MODEL 3800 AND 3800 SDS FORWARD FOLDING PLANTER

(Mechanical Seed Metering)

OPERATOR & PARTS MANUAL

M0197 Rev. 1/08

This manual is applicable to: Model: 3800 And 3800 SDS Forward Folding Planters
Serial Number: 755102 And On

Record the model number and serial number of your planter along with date purchased:

Model Number _____

Serial Number _____

Date Purchased _____

Monitor Serial Number _____

Measured Pulses Per Mile/Km (Radar Distance Sensor) _____

Measured Pulses Per Mile/Km (Magnetic Distance Sensor) _____

SERIAL NUMBER

The serial number plate is located on the center portion of the planter frame to be readily available. It is suggested that your serial number and purchase date also be recorded above.

The serial number provides important information about your planter and may be required to obtain the correct replacement part. Always provide the model number and serial number to your KINZE® Dealer when ordering parts or anytime correspondence is made with KINZE Manufacturing, Inc.

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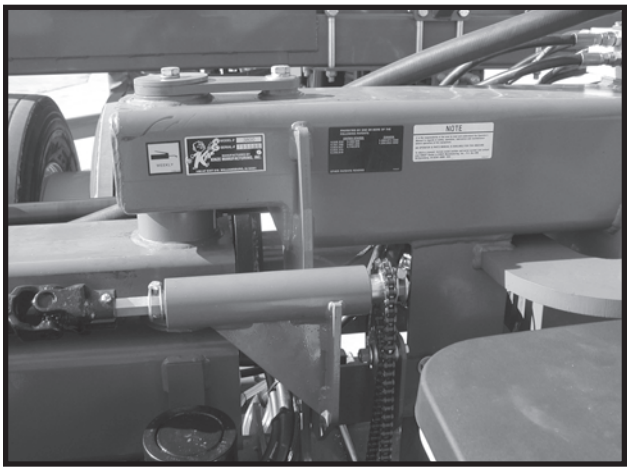

3800 Planter With Conventional Seed Hoppers Shown

PREDELIVERY/DELIVERY CHECKLIST

TO THE DEALER

Predelivery service includes assembly, lubrication, adjustment and test. This service helps to ensure that the planter will be delivered to the customer ready for field use.

PREDELIVERY CHECKLIST

After the planter has been completely assembled, use the following checklist and inspect the planter. Check off each item as it is found satisfactory or after proper adjustment is made.

- ❑ Recheck to be sure row units are properly spaced and optional attachments are correctly assembled.
- ❑ The closing wheels have been installed. See “Row Unit Assembly And Installation Instructions”.
- ❑ Row markers are set at the correct length (If Applicable). See “Row Marker Length Adjustment” in the Machine Operation section of the Operator & Parts Manual.
- ❑ Be sure all grease fittings are in place and lubricated.
- ❑ Check planter and make sure all working parts are moving freely, bolts are tight and cotter pins are spread.
- ❑ Check all drive chains for proper tension and alignment.
- ❑ Check for oil leaks and proper hydraulic operation.
- ❑ Check to be sure hydraulic hoses are routed correctly to prevent damage.
- ❑ Inflate tires to specified PSI air pressure. Tighten wheel lug bolts and lug nuts to specified torque.
- ❑ Check to be sure all safety decals and SMV sign are correctly located and legible. Replace if damaged.
- ❑ Check to be sure safety/warning lights are installed correctly and working properly.
- ❑ Check to be sure the reflective decals are correctly located and visible when the planter is in transport position.
- ❑ Paint all parts scratched in shipment or assembly.
- ❑ Be sure all safety lockup devices are on the planter and correctly located.
- ❑ Check seed meters on test stand to ensure proper performance.

This planter has been thoroughly checked and to the best of my knowledge is ready for delivery to the customer.

_____

(Signature Of Set-Up Person/Dealer Name/Date)

OWNER REGISTER

Name _____ Delivery Date _____

Street Address _____ Model No. _____ Serial No. _____

City, State/Province _____ Dealer Name _____

ZIP/Postal Code _____ Dealer No. _____

Rev. 1/08

DELIVERY CHECKLIST

At the time the planter is delivered, the following checklist is to be used as a reminder of very important information which should be conveyed to the customer. Check off each item as it is fully explained to the customer.

- ❑ Advise the customer that the life expectancy of this or any other machine is dependent on regular lubrication as directed in the Operator & Parts Manual.
- ❑ Tell the customer about all applicable safety precautions.
- ❑ Along with the customer, check to be sure the reflective decals and SMV sign are clearly visible with the planter in transport position and attached to the tractor. Check to be sure safety/warning lights are in working condition. Tell the customer to check federal, state/provincial and local regulations before towing or transporting on a road or highway.
- ❑ Give the Operator & Parts Manual to the customer and explain all operating adjustments.
- ❑ Read warranty to customer.
- ❑ Complete Warranty And Delivery Report form.

To the best of my knowledge this machine has been delivered ready for field use and customer has been fully informed as to proper care and operation.

_____

(Signature Of Delivery Person/Dealer Name/Date)

AFTER DELIVERY CHECKLIST

The following is a list of items we suggest to check during the first season of use of the equipment.

- ❑ Check with the customer as to the performance of the planter.
- ❑ Review with the customer the importance of proper maintenance and adherence with all safety precautions.
- ❑ Check for parts that may need to be adjusted or replaced.
- ❑ Check to be sure all safety warning signs (decals), SMV sign and reflective decals are correctly located and that decals are legible. Replace if damaged or missing.
- ❑ Check to be sure safety/warning lights are working properly.

_____

(Signature Of Follow-Up Person/Dealer Name/Date)

RETURN THIS COMPLETED FORM TO KINZE® IMMEDIATELY along with Warranty And Delivery Report.
Retain photocopy of this form at dealership for After Delivery Check.

Tear Along Perforation

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TO THE OWNER

KINZE Manufacturing, Inc. would like to thank you for your patronage. We appreciate your confidence in KINZE® farm machinery. Your KINZE® planter has been carefully designed to provide dependable operation in return for your investment.

This manual has been prepared to aid you in the operation and maintenance of the planter. It should be considered a permanent part of the machine and remain with the machine when you sell it.

It is the responsibility of the user to read and understand the Operator & Parts Manual in regards to safety, operation, lubrication and maintenance before operation of this equipment. It is the user's responsibility to inspect and service the machine routinely as directed in the Operator & Parts Manual. We have attempted to cover all areas of safety, operation, lubrication and maintenance; however, there may be times when special care must be taken to fit your conditions.

Throughout this manual the symbol ⚠ and/or the words **NOTE, IMPORTANT, CAUTION, WARNING** or **DANGER** are used to call your attention to important information. The definition of each of these terms follows:

NOTE: Indicates a special point of information or addresses a machine adjustment.

IMPORTANT: Indicates an operation or maintenance condition which, if not corrected, could result in damage to the machine, property, crops or the environment.

⚠ **CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate personal injury.**

⚠ **WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious personal injury.**

⚠ **DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious personal injury.**

⚠ **WARNING: Some photos in this manual may show safety covers, shields or lockup devices removed for visual clarity. NEVER OPERATE the machine without all safety covers, shields and lockup devices in place.**

NOTE: Some photos in this manual may have been taken of prototype machines or similar models and vary slightly in appearance.

NOTE: Some photos and illustrations in this manual show optional attachments installed. Contact your KINZE® Dealer for purchase of optional attachments.

WARRANTY

The KINZE® Limited Warranty for your new machine is stated on the back of the retail purchaser's copy of the Warranty And Delivery Report form. Additional copies of the Limited Warranty can be obtained through your KINZE® Dealer.

Warranty, within the warranty period, is provided as part of KINZE's support program for registered KINZE® products which have been operated and maintained as described in this manual. Evidence of equipment abuse or modification beyond original factory specifications will void the warranty. Normal maintenance, service and repair is not covered by KINZE® warranty.

To register your KINZE® product for warranty, a Warranty And Delivery Report form must be completed by the KINZE® Dealer and signed by the retail purchaser, with copies to the Dealer, to the retail purchaser and to KINZE Manufacturing, Inc. Registration must be completed and sent to KINZE Manufacturing, Inc. within 30 days of delivery of the KINZE® product to the retail purchaser. KINZE Manufacturing, Inc. reserves the right to refuse warranty on serial numbered products which have not been properly registered.

If service or replacement of failed parts which are covered by the Limited Warranty are required, it is the user's responsibility to deliver the machine along with the retail purchaser's copy of the Warranty And Delivery Report to the KINZE® Dealer for service. KINZE® warranty does not include cost of travel time, mileage, hauling or labor. Any prior arrangement made between the Dealer and the retail purchaser in which the Dealer agrees to absorb all or part of this expense should be considered a courtesy to the retail purchaser.

KINZE® warranty does not include cost of travel time, mileage, hauling or labor.

INTRODUCTION

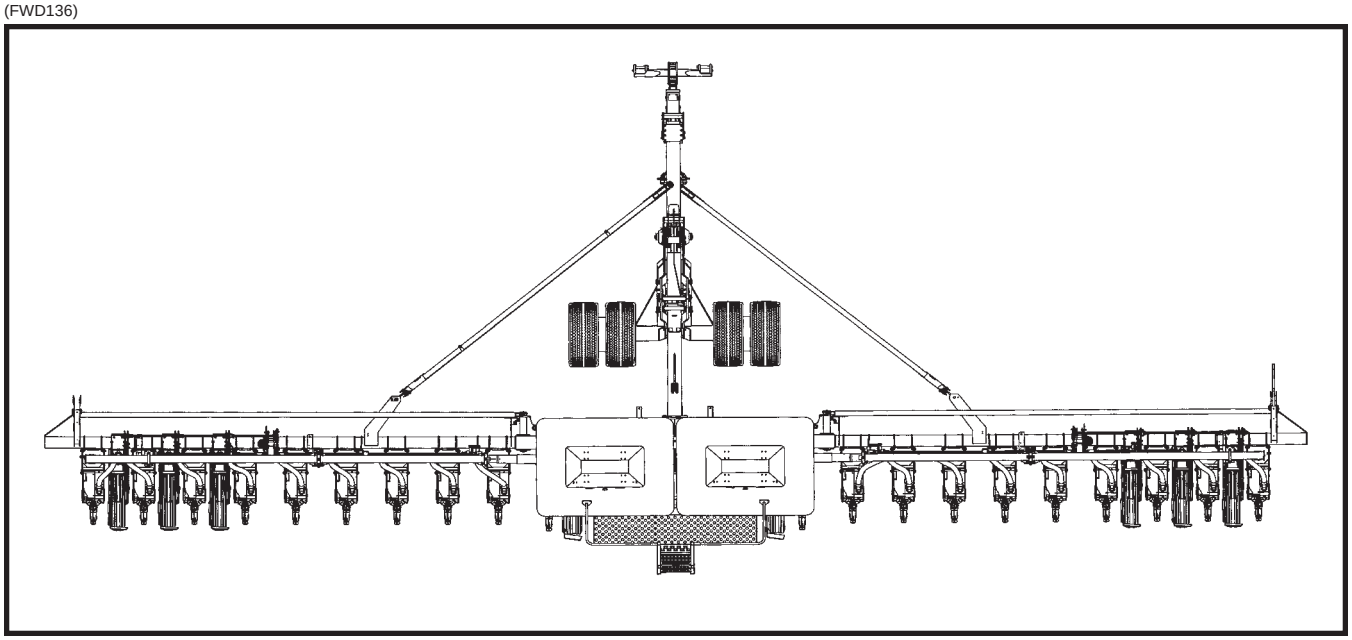
Model 3800 Forward Folding Planters are available in multiple size configurations with bulk seed delivery systems (SDS) or conventional seed hoppers. The design permits installation of liquid fertilizer application equipment and various row unit attachments.

GENERAL INFORMATION

The information used in this manual was current at the time of printing. However, due to KINZE's continual attempts to improve its product, production changes may cause your machine to appear slightly different in detail. KINZE Manufacturing, Inc. reserves the right to change specifications or design without notice and without incurring obligation to install the same on machines previously manufactured.

Right hand (R.H.) and left hand (L.H.), as used throughout this manual, are determined by facing in the direction the machine will travel when in use unless otherwise stated.

(FWD136)



Model 3800 SDS 24 Row 30" Planter

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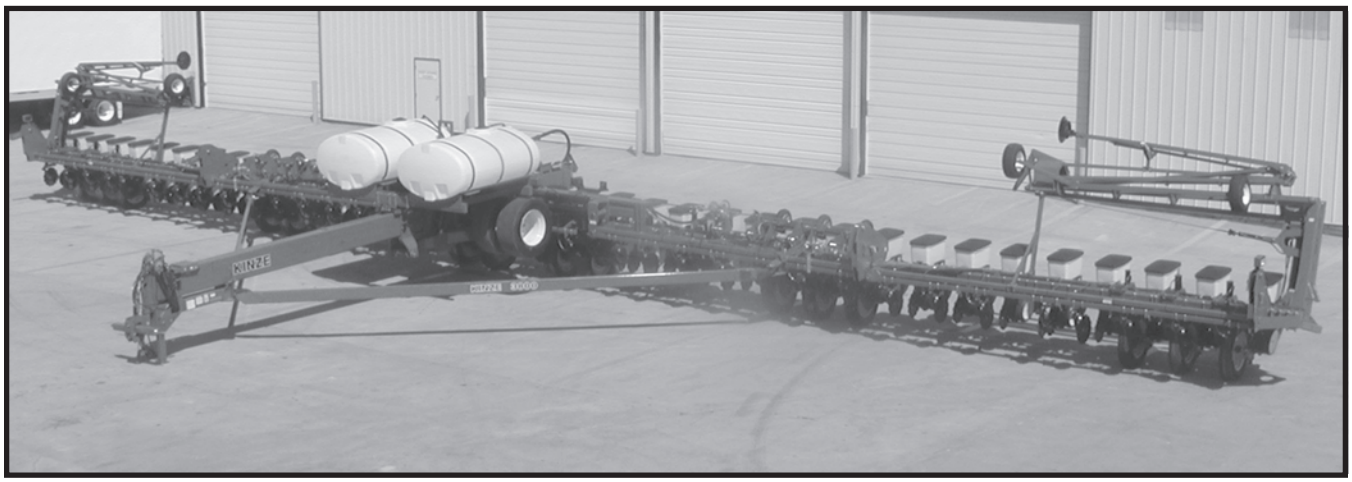

Model 3800 Conventional 36 Row 30" Planter With Optional Row Markers And Liquid Fertilizer Package

SPECIFICATIONS

BASE MACHINE TYPE - Semi-Mounted/Pull Type - Forward Folding Toolbar - Hydraulic Operation

SEED METER TYPE - Mechanical Seed Metering System

PLANTING UNIT TYPES - Pull Row Units
- SDS Bulk Seed Delivery System Or Conventional Seed Hoppers

ROW SPACING - 24 Row Narrow - 30" Rows (Six Rows On Center Section, Nine Rows On Outer Wings)
- 32 Row Narrow - 30" Rows (Six Rows On Center Section, Seven Rows On Inner Wings, Six Rows On Outer Wings)
- 36 Row Narrow - 30" Rows (Six Rows On Center Section, Seven Rows On Inner Wings, Eight Rows On Outer Wings)

DRIVE SYSTEM - Spring-Loaded Contact Drive System
- Six 4.80" x 8" Contact Drive Tires
- No. 40 Roller Chain And Spring-Loaded Idlers
- Two Transmissions (One Per Half)
- Point Row Clutches Standard (Four Clutches)
- 7/8" Hex Drill/Drive Shafts With Spring-Loaded Hardened Couplers And U-Joint Shafts At Wing Hinges

FIELD OPERATION TIRES - Center Section - Four 41 x 11R 22.5 Radial Load Range H
- Wings - 7.50 x 20", 8 Ply Custom Rib Implement Adjustable Height Wheels Three Per Wing (Six On 24 Row 30"/Twelve On 32 Row 30" And 36 Row 30")

TRANSPORT TIRES - 445-50R 22.5R Radial Load Range H (Two On 3800 24 Row 30"/Four On 3800 SDS 24 Row 30", All 32 Row 30" And All 36 Row 30")

ROW MARKERS (OPTIONAL) - Depth Band On Marker Blade
- 24 Row 30" - Three-Fold
- 32 Row 30" And 36 Row 30" - Four-Fold

HYDRAULICS - Three SCV For Independent Operation Of Field Lift, Fold Functions And Optional Row Marker Functions With 12 VDC Control Console
- Master/Slave Lift
  - Four 4" x 8" Master Cylinders, Four 3 3/4" x 8" Slave Cylinders And Two 2 1/2" x 8" Lift Assist Cylinders On 24 Row 30"
  - Four 4" x 8" Master Cylinders, Four 3 3/4" x 8" Slave Cylinders, Four 3 1/2" x 8" Slave Cylinders And Four 2 1/2" x 8" Lift Assist Cylinders On 32 Row 30" And 36 Row 30"
- Transport Lift/Slide - One Slide Cylinder Under Tongue, Two Transport Axle Cylinders
- Wing Fold - Two Cylinders On 24 Row 30" - Four Cylinders On 32 Row 30" And 36 Row 30"
- Latch Cylinders - One Slide Latch Cylinder And One Tongue Latch Cylinder
- Row Markers - Two Primary Stage Cylinders; Two Link Assist Single Acting Cylinders On Four-Fold Markers (Prior To Serial Number 755215)

HITCH - Category 3N, 3 Or 4N

MACHINE OPTIONS
- Electronic Seed Monitor
  - KPM II Stack-Mode With Magnetic Distance Sensor Or Radar Distance Sensor
  - KPM III With Magnetic Distance Sensor Or Radar Distance Sensor
  - Planter Monitor Module (PMM)
- Liquid Fertilizer Package
- Piston Pump Mount And Drive Package
- Notched Single Disc Fertilizer Openers
- Low Rate Check Valve Packages
- Rear Trailer Hitch
- Dual Transport Tire Option (Conventional 24 Row 30" Only)

SPECIFICATIONS

ROW UNIT OPTIONS/ATTACHMENTS

- Finger Pickup Or Brush-Type Seed Meters
- Brush-Type Seed Meter Discs
- Closing Wheel Options
  - Rubber “V” Closing Wheels
  - Cast Iron “V” Closing Wheels
  - Covering Discs/Single Press Wheel
  - Drag Closing Attachment
- Down Pressure Options
  - Quick Adjustable Down Force Springs
  - Pneumatic Down Force Springs
- Granular Chemical Application
- Hopper Panel Extension Package
- Spring Tooth Incorporator
- Row Unit Extension Brackets
- Row Unit Mounted No Till Coulter
- Coulter Mounted Residue Wheels
- Row Unit Mounted Disc Furrowers
- Row Unit Mounted Residue Wheel
- Frame Mounted Coulter
- Residue Wheels For Frame Mounted Coulter

SPECIFICATIONS

MODEL 3800 CONVENTIONAL DIMENSIONS/WEIGHTS

PLANTER SIZE	24 Row 30"	32 Row 30"	36 Row 30"
PLANTING WIDTH	62' 6"	82' 6"	92' 6"
PLANTING LENGTH	24' 9"	29' 9"	29' 9"
TRANSPORT WIDTH (See NOTE Below)	14' 7"	14' 7"	14' 7"
TRANSPORT LENGTH	39' 0"	51' 0"	56' 0"
TRANSPORT HEIGHT (With Markers)	13' 6"	13' 6"	13' 6"
WEIGHT* (Base Machine)	21,710 Lbs.	30,678 Lbs.	34,687 Lbs.

MODEL 3800 SDS DIMENSIONS/WEIGHTS

PLANTER SIZE	24 Row 30"	32 Row 30"	36 Row 30"
PLANTING WIDTH	62' 6"	82' 6"	92' 6"
PLANTING LENGTH	24' 9"	29' 9"	29' 9"
TRANSPORT WIDTH (See NOTE Below)	14' 7"	14' 7"	14' 7"
TRANSPORT LENGTH	39' 0"	51' 0"	56' 0"
TRANSPORT HEIGHT (With Markers)	13' 6"	13' 6"	13' 6"
WEIGHT* (Base Machine)	24,210 Lbs.	33,478 Lbs.	37,862 Lbs.

*** Estimated base machine weights include planter frame, drive components, tires and wheels, hydraulic cylinders and hoses, 12VDC control console, KINZE® pull row units (closing wheel arms less closing wheels), seed hoppers and lids on conventional planters or bulk seed hoppers and seed delivery system on SDS planters, dual quick-adjustable down force springs and point row clutches.**

NOTE: Truck shipping width is 13' 9". Transport widths with optional granular chemical attachments are 15' 9".

SPECIFICATIONS

SAFETY PRECAUTIONS

Safe and careful operation of the tractor and planter at all times will contribute significantly to the prevention of accidents.

Since a large portion of farm accidents occur as a result of fatigue or carelessness, safety practices should be of utmost concern. Read and understand the instructions provided in this manual and on the warning signs. Review these instructions frequently! Listed below are other safety suggestions that should become common practice.

Never allow the planter to be operated by anyone who is unfamiliar with the operation of all functions of the unit. All operators should read and thoroughly understand the instructions given in this manual prior to moving the unit.

Never permit any persons other than the operator to ride on the tractor.

Never ride on the planter or allow others to do so.

Always make sure there are no persons near the planter when row marker assemblies are in operation or when folding the planter.

Always keep hands, feet and clothing away from moving parts. Do not wear loose-fitting clothing which may catch in moving parts.

Always wear protective clothing, substantial shoes and suitable hearing and eye sight protectors applicable for the situation.

Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the planter.

Be aware of bystanders, particularly children! Always look around to make sure it is safe to start the engine of the towing vehicle or move the planter. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.

Use a tractor equipped with a roll-over-protective-system and fasten your seat belt prior to starting the engine.

Before operating the planter for the first time and periodically thereafter, check to be sure the lug bolts (and cap screws if applicable) on the transport wheels are torqued properly. This is especially important if the planter is to be transported for a long distance.

Never work under the planter while in raised position without installing safety lockup devices.

Watch for obstructions such as wires, tree limbs, etc. when folding row markers.

To avoid serious injury or death, care must be taken when operating row markers around overhead power lines.

The seed and fertilizer metering systems of this planter are designed to be driven by ground tires. Hydraulic motors power the bulk seed distribution system. The use of aftermarket hydraulic, electric or PTO drives may create serious safety hazards to you and the people nearby. If you install such drives you must follow all appropriate safety standards and practices to protect you and others near this planter from injury.

This machine has been designed and built with your safety in mind. Do not make any alterations or changes to this machine. Any alteration to the design or construction may create safety hazards.

Check to be sure all safety/warning lights are working properly before transporting the machine on public roads.

Avoid transporting planter with hoppers loaded whenever possible. When it is necessary to transport the planter with the hoppers loaded, the added weight should be distributed evenly on the planter frame before folding the planter.

SAFETY PRECAUTIONS

Limit towing speed to 15 MPH.

Transport stability is critical. The gross weight of the tractor must be greater than the gross weight of the planter. Gross weight varies with planter attachments. Tow 24 Row 30" planters with 200 HP farm tractor (minimum HP). Tow 32 Row 30" or 36 Row 30" planters with 250 HP farm tractor (minimum HP).

Always make sure safety/warning lights, reflective decals and SMV sign are in place and visible prior to transporting the machine on public roads. In this regard, check federal, state/provincial and local regulations.

Allow for unit length when making turns.

Always drive at a safe speed relative to local conditions and ensure your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.

Reduce speed prior to turns to avoid the risk of overturning.

Always keep the tractor in gear to provide engine braking when going downhill. Do not coast.

Avoid sudden uphill turns on steep slopes.

Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.

Rim and tire servicing can be dangerous. Explosive separation of a tire and rim parts can cause serious injury or death.

Agricultural chemicals used with this unit can be dangerous. Improper selection or use can seriously injure persons, animals, plants, soil and other property. BE SAFE: Select the right chemical for the job. Handle it with care. Follow the instructions on the container and of the equipment manufacturer.

Store the planter in an area away from human activity. DO NOT permit children to play on or around the stored unit.

Make sure the parked machine is on a hard, level surface. Wheel chocks may be needed to prevent unit from rolling.

Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

SAFETY WARNING SIGNS

The “WARNING” signs illustrated on these pages are placed on the machine to warn of hazards. The warnings found on these signs are for your personal safety and the safety of those around you. OBSERVE THESE WARNINGS!

- **Keep these signs clean so they can be readily observed. Wash with soap and water or cleaning solution as required.**
- **Replace “WARNING” signs should they become damaged, painted over or if they are missing.**
- **Check reflective decals and SMV sign periodically. Replace if they show loss of any of their reflective properties.**
- **When replacing decals, clean the machine surface thoroughly using soap and water or cleaning solution to remove all dirt and grease.**

NOTE: Style and locations of SMV sign, reflective decals and safety/warning lights conform to ANSI/ASAE S279.13 DEC2005 and ANSI/ASAE S276.6 JAN2005.

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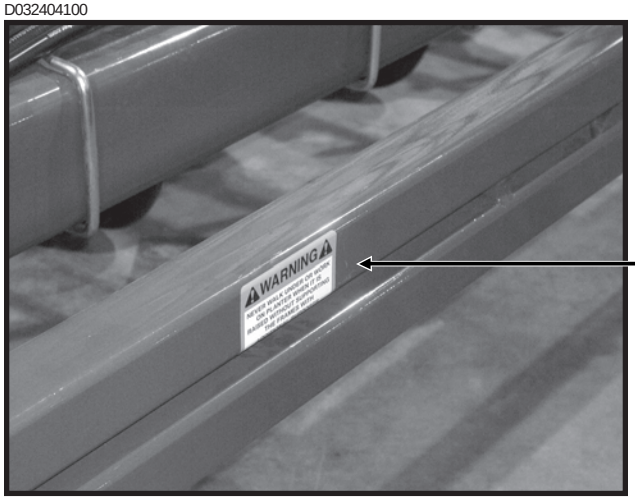

Part No. G7100-68 (Qty. 2 - Located On Forward Toolbars On Both Sides Of Planter)

D032404114

Part No. G7100-68 (Qty. 2 - Located On Stub Wings On Both Sides Of Planter)

SAFETY WARNING SIGNS

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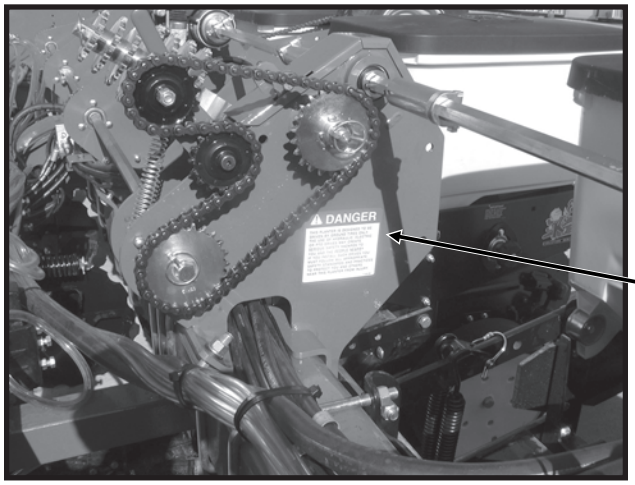


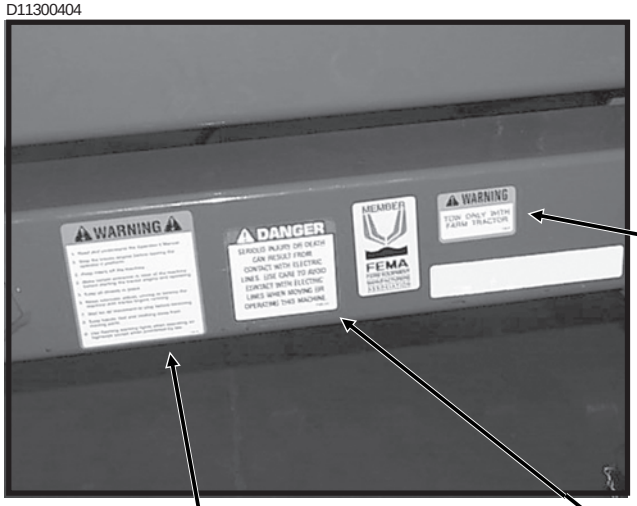
DANGER

THIS PLANTER IS DESIGNED TO BE DRIVEN BY GROUND TIRES ONLY. THE USE OF HYDRAULIC, ELECTRIC OR PTO DRIVES MAY CREATE SERIOUS SAFETY HAZARDS TO YOU AND THE PEOPLE NEARBY. IF YOU INSTALL SUCH DRIVES YOU MUST FOLLOW ALL APPROPRIATE SAFETY STANDARDS AND PRACTICES TO PROTECT YOU AND OTHERS NEAR THIS PLANTER FROM INJURY.

7100-89

Part No. G7100-89 (Qty. 2 - Located At End Seed Rate Transmissions On Both Sides Of Planter)

D11300404



WARNING

TOW ONLY WITH FARM TRACTOR

7100-56

Part No. G7100-56 (Qty. 1 - Located On Planter Hitch)

WARNING

1. Read and understand the Operator's Manual.
2. Stop the tractor engine before leaving the operator's platform.
3. Keep riders off the machine.
4. Make certain everyone is clear of the machine before starting the tractor engine and operating.
5. Keep all shields in place.
6. Never lubricate, adjust, unclog or service the machine with tractor engine running.
7. Wait for all movement to stop before servicing.
8. Keep hands, feet and clothing away from moving parts.
9. Use flashing warning lights when operating on highways except when prohibited by law.

7100-46

Part No. G7100-46 (Qty. 1 - Located On Planter Hitch)

DANGER

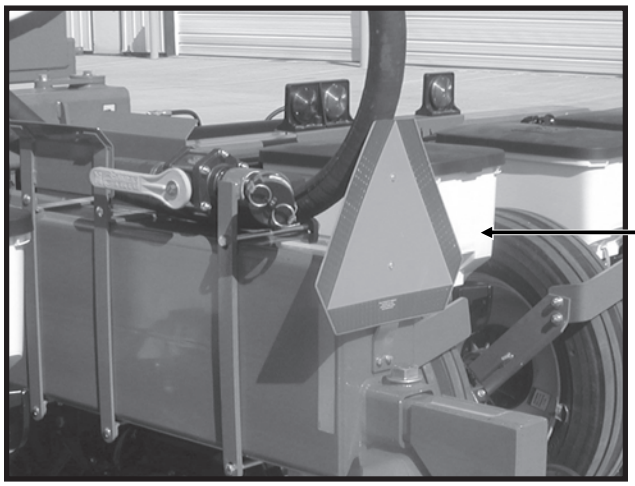
SERIOUS INJURY OR DEATH CAN RESULT FROM CONTACT WITH ELECTRICAL LINES. USE CARE TO AVOID CONTACT WITH ELECTRIC LINES WHEN MOVING OR OPERATING THIS MACHINE.

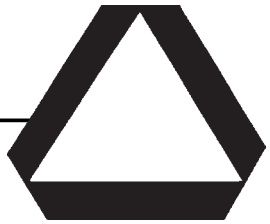
7100-117

Part No. G7100-117 (Qty. 1 - Located On Planter Hitch)

SAFETY WARNING SIGNS

D081905112





Part No. GD2199 (Qty. 1 - Located On Rear Center Section Of Planter)

D06039901

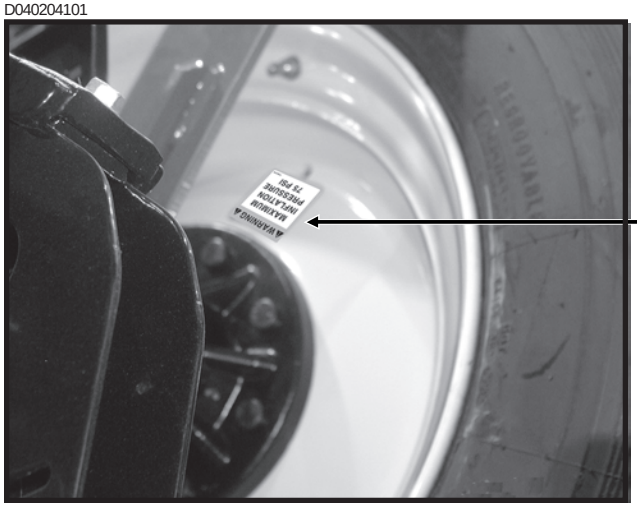
⚠ WARNING ⚠

AGRICULTURAL CHEMICALS CAN BE DANGEROUS. IMPROPER SELECTION OR USE CAN SERIOUSLY INJURE PERSONS, ANIMALS, PLANTS, SOIL OR OTHER PROPERTY. BE SAFE. SELECT THE RIGHT CHEMICAL FOR THE JOB. HANDLE WITH CARE. FOLLOW THE INSTRUCTIONS ON THE CONTAINER LABEL AND OF THE EQUIPMENT MANUFACTURER.

7100-115

Part No. G7100-115 (Qty. 1 Per Row Unit - Located On Underside Of Optional Granular Chemical Hopper Lids)

D040204101



⚠ WARNING ⚠

MAXIMUM INFLATION PRESSURE 75 PSI

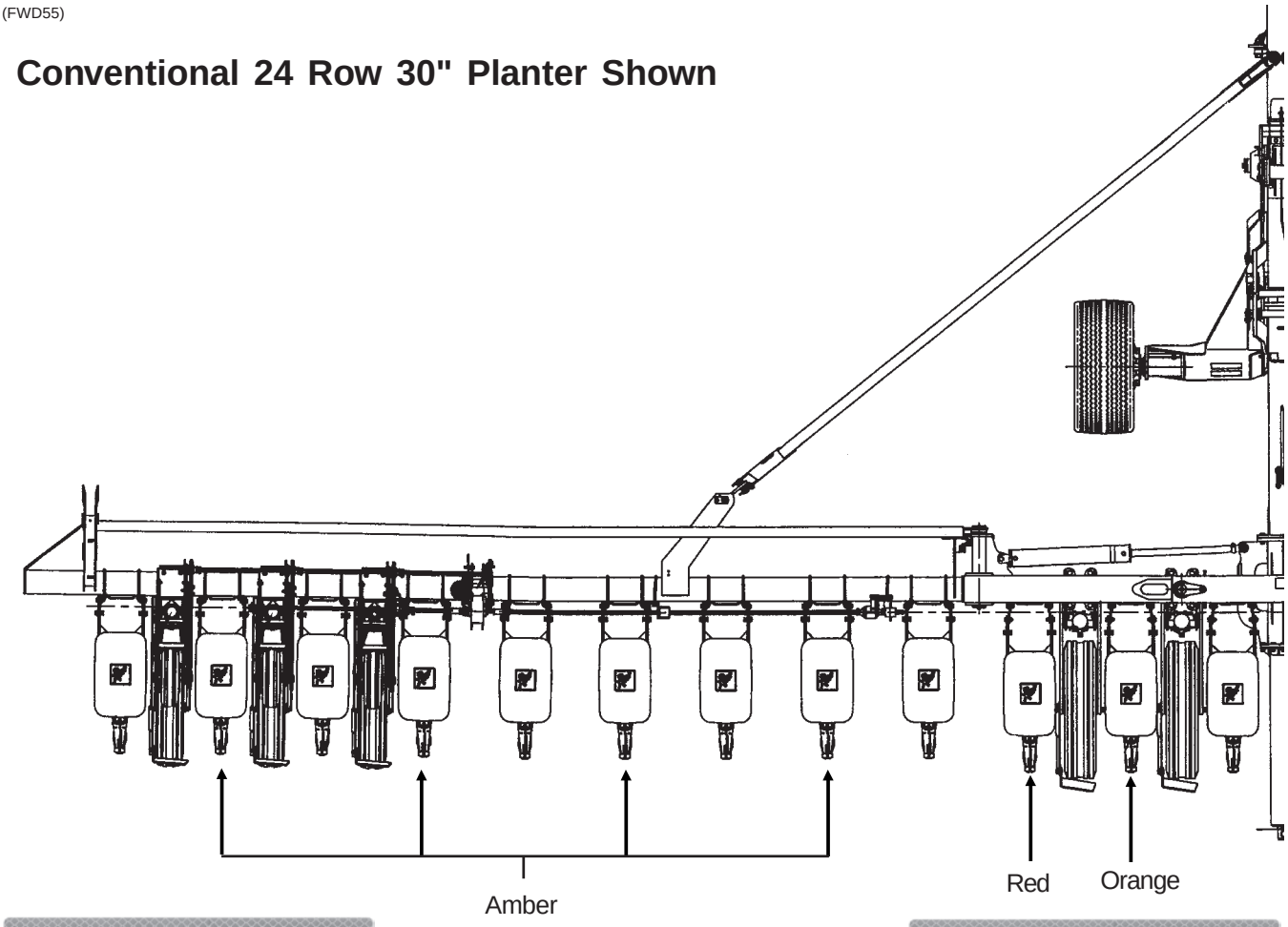
7100-219

Part No. G7100-219 (Qty. 4 - One Per 41 x 11R22.5" Center Section Lift/Gauge Tire)

SAFETY WARNING SIGNS ⚠

(FWD55)

Conventional 24 Row 30" Planter Shown



Part No. G7100-262 Amber Reflective Decal (Located On The Hopper Support On Every Other Row Unit Beginning On The 2nd Row Unit In On The L.H. End Of The Planter - Side-Facing In Transport Position)
(Standard) (If Applicable)

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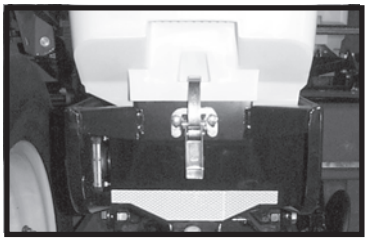


Part No. G7100-261 Red Reflective Decal
Part No. G7100-260 Orange Reflective Decal
(Located As Shown Above)
(Standard) (If Applicable)

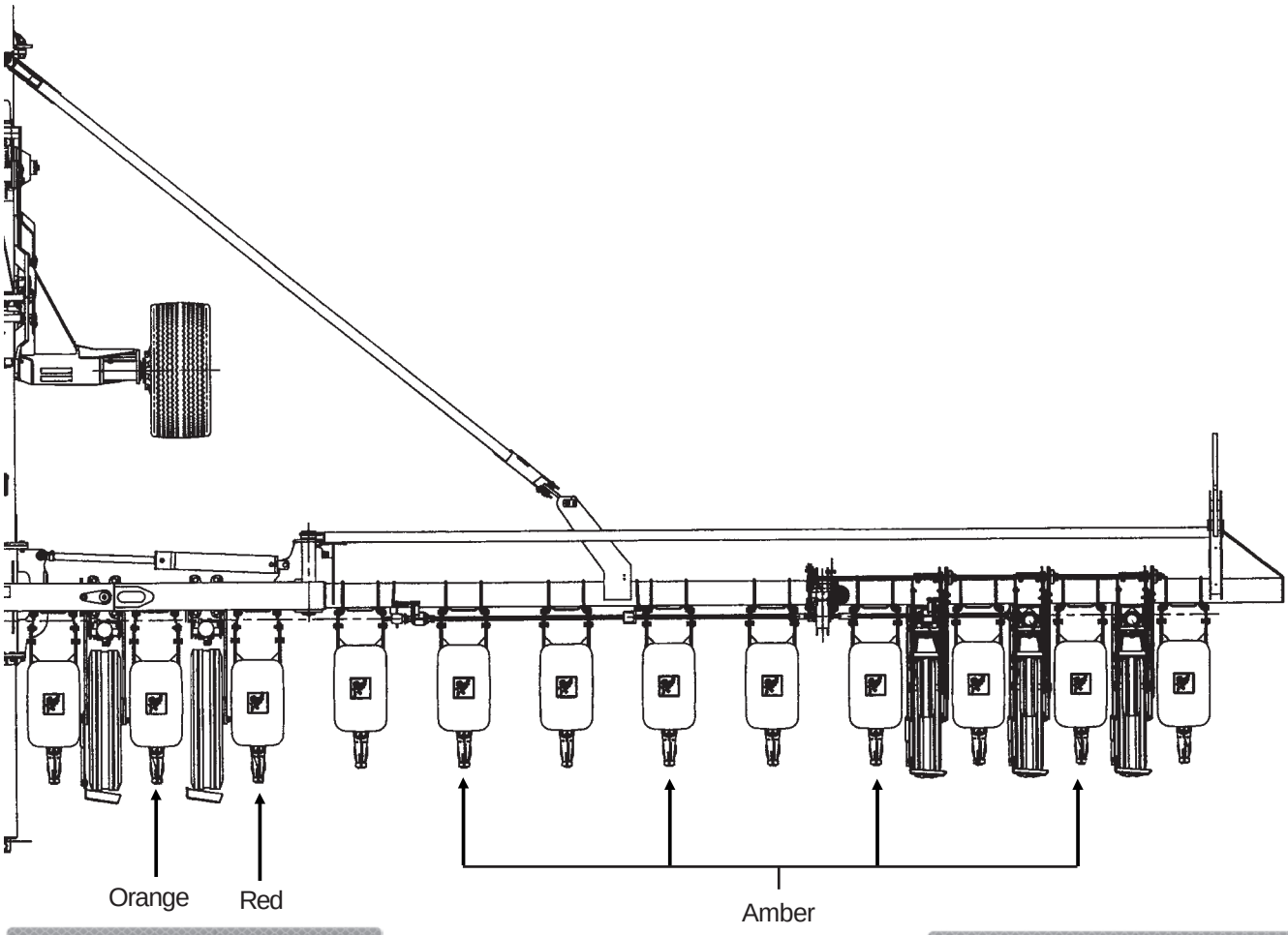
Part No. G7100-259 Amber Reflective Decal (Located On The Granular Chemical Hopper Panel Extension On Every Other Row Unit Beginning On The 2nd Row Unit In On The L.H. End Of The Planter - Side-Facing In Transport Position) (**With Optional Granular Chemical)** (If Applicable)

D062300102

Part No. G7100-258 Red Reflective Decal
Part No. G7100-260 Orange Reflective Decal
(Located As Shown Above)
(**With Optional Granular Chemical)**
(If Applicable)

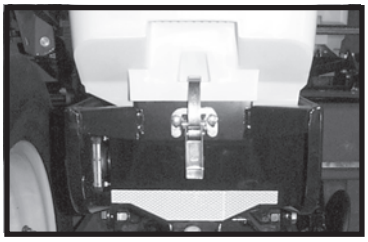
NOTE: Eight Decals Used On 24 Row 30", Twelve Decals Used On 32 Row 30" And Fourteen Decals Used On 36 Row 30"

SAFETY WARNING SIGNS



Part No. G7100-261 Red Reflective Decal
Part No. G7100-260 Orange Reflective Decal
(Located As Shown Above)
(Standard) (If Applicable)

D060800114



Part No. G7100-262 Amber Reflective Decal (Located On The Hopper Support On Every Other Row Unit Beginning On The 2nd Row Unit In On The R.H. End Of The Planter - Side-Facing In Transport Position)
(Standard) (If Applicable)

Part No. G7100-258 Red Reflective Decal
Part No. G7100-260 Orange Reflective Decal
(Located As Shown Above)
(**With Optional Granular Chemical)**
(If Applicable)

D062300102

Part No. G7100-259 Amber Reflective Decal (Located On The Granular Chemical Hopper Panel Extension On Every Other Row Unit Beginning On The 2nd Row Unit In On The R.H. End Of The Planter - Side-Facing In Transport Position) (**With Optional Granular Chemical)**
(If Applicable)

SAFETY WARNING SIGNS

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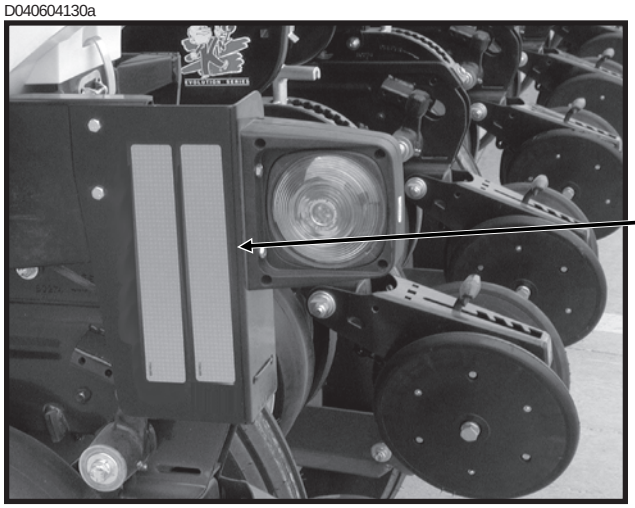
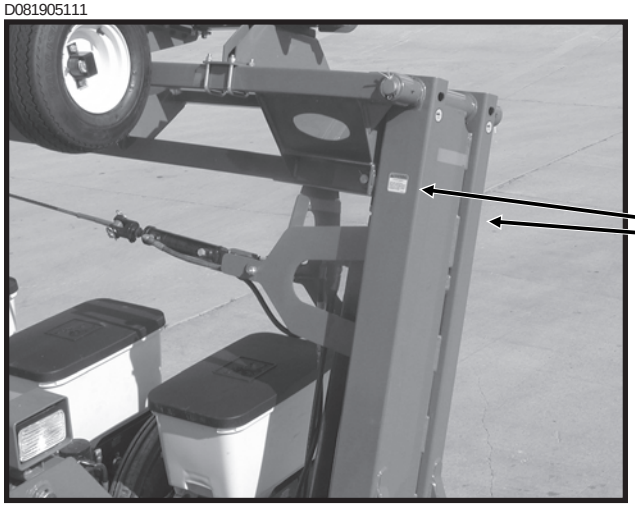


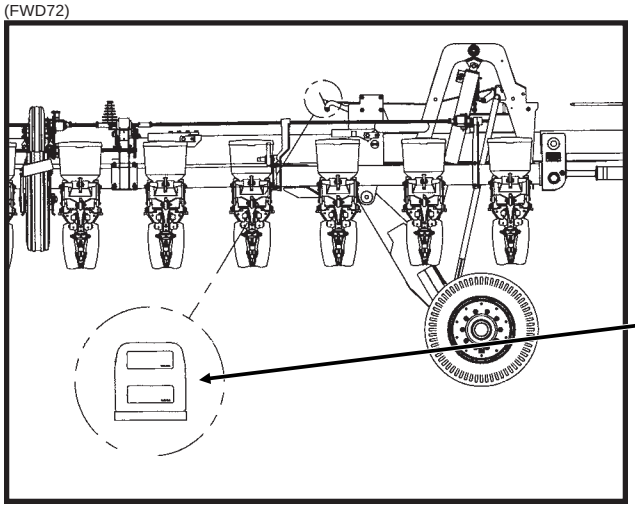
Part No. G7100-259 Amber Reflective Decal (Qty. 2 - Located On Each End Row Unit - Forward-Facing In Transport Position)

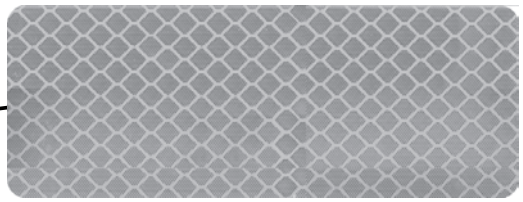
D081905111



Part No. G7100-42 (Qty. 4 - Two Per Optional Row Marker)

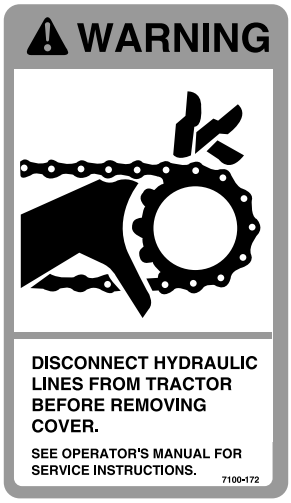
(FWD72)





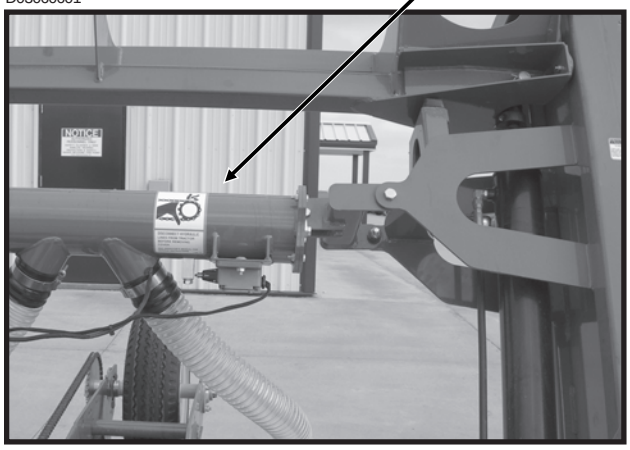
Part No. G7100-322 (Qty. 2 - Located On Slide Assembly Flap)

SAFETY WARNING SIGNS

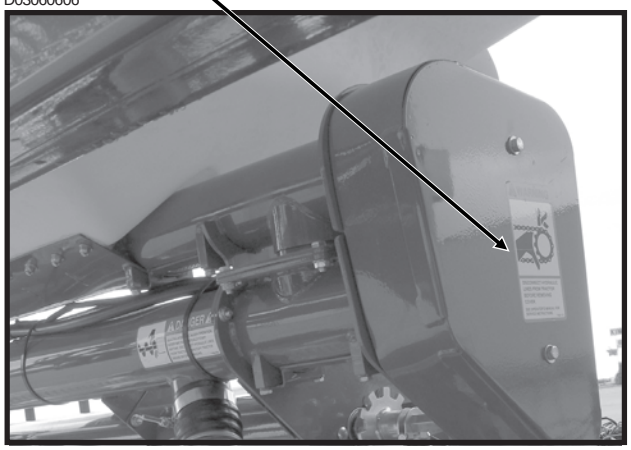


Part No. G7100-172 (Qty. 4)
(SDS Planters Only)

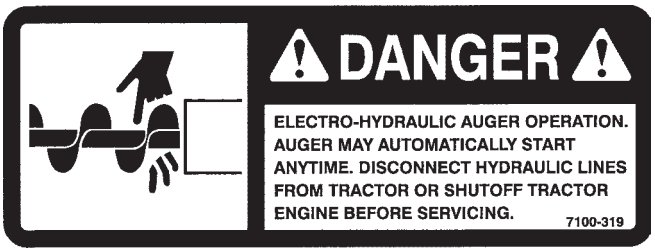
D03060601



D03060606

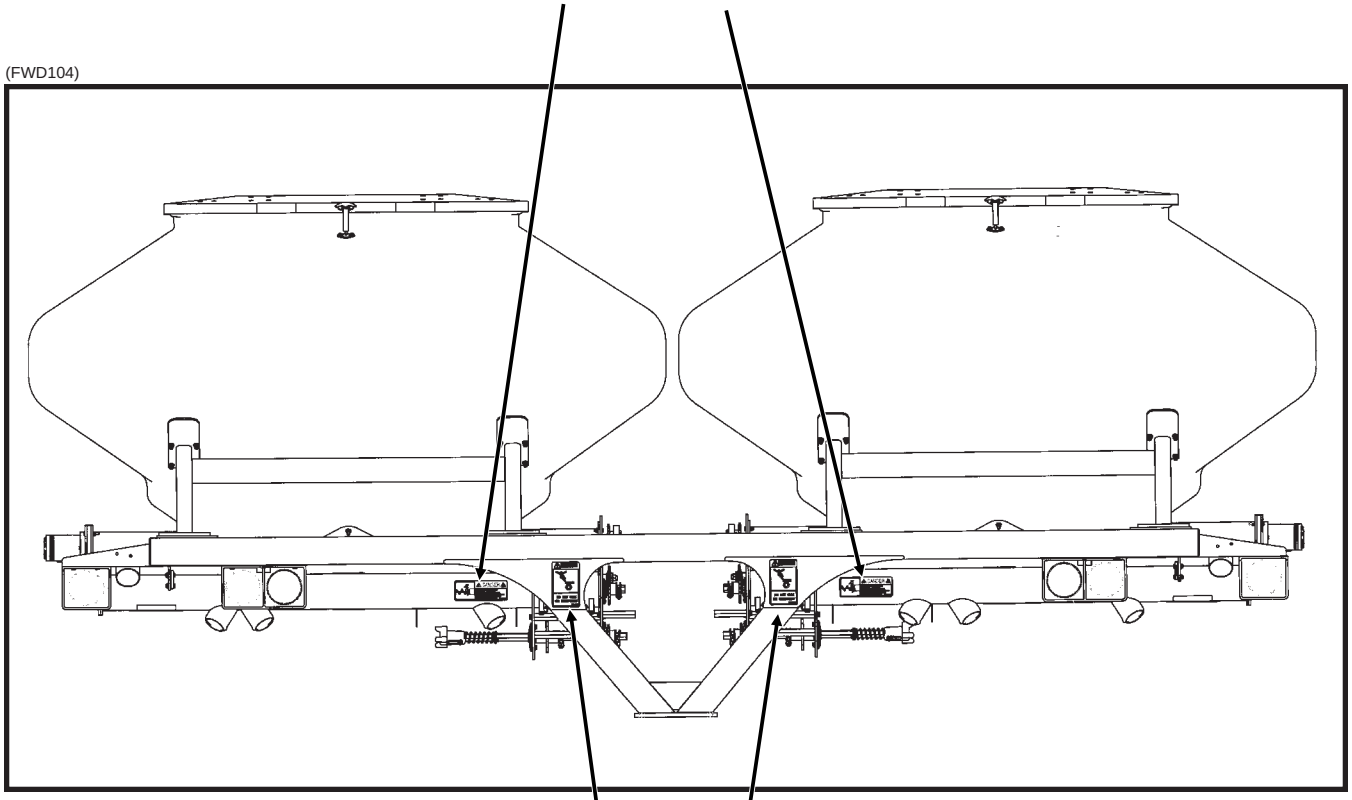


SAFETY WARNING SIGNS ⚠



Part No. G7100-319 (Qty. 2) (SDS Planters Only)

(FWD104)



Part No. G7100-266 (Qty. 2) (SDS Planters Only)

MACHINE OPERATION

The following information is general in nature and was written to aid the operator in preparation of the tractor and planter for use, and to provide general operating procedures. The operator's experience, familiarity with the machine and the following information should combine for efficient planter operation and good working habits.

IMPORTANT: Always raise the planter out of the ground when making sharp turns or backing up.

WING LATCH HOOK SAFETY PIN(S)

The wing latch hook safety pin(s) when installed will prevent the latch bar from disengaging and allowing the planter frame to swing away. Never transport the planter without installing the wing latch hook safety pin(s). One wing latch hook safety pin is used on the 24 Row 30" size; two pins are used on 32 Row 30" and 36 Row 30" sizes.

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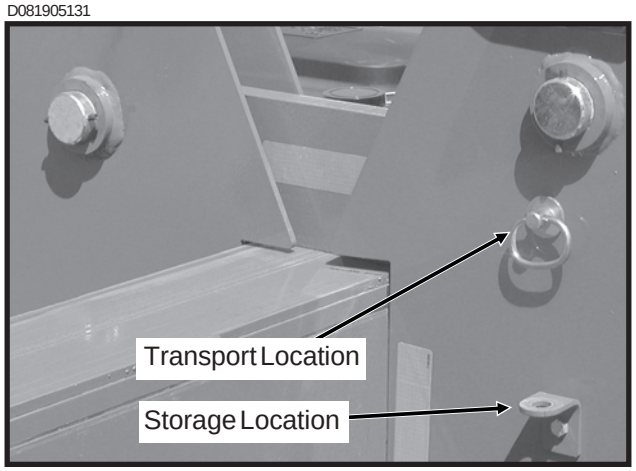
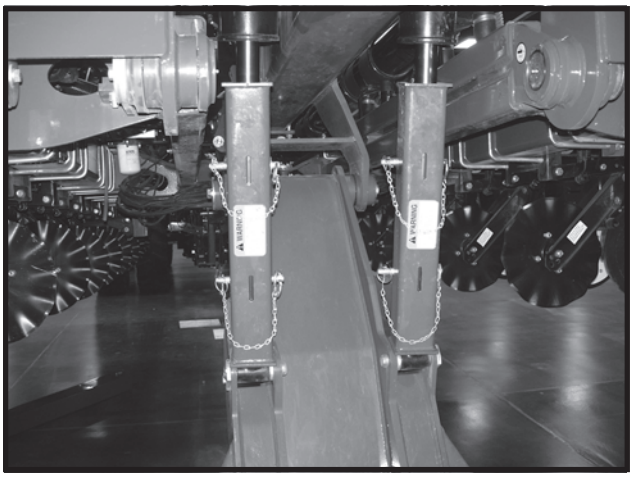


For field operation remove the wing latch hook safety pin(s) and store in the storage location(s) provided.

TRANSPORT LOCKUP, 24 ROW 30" ONLY (Serial Number 755215 And On)

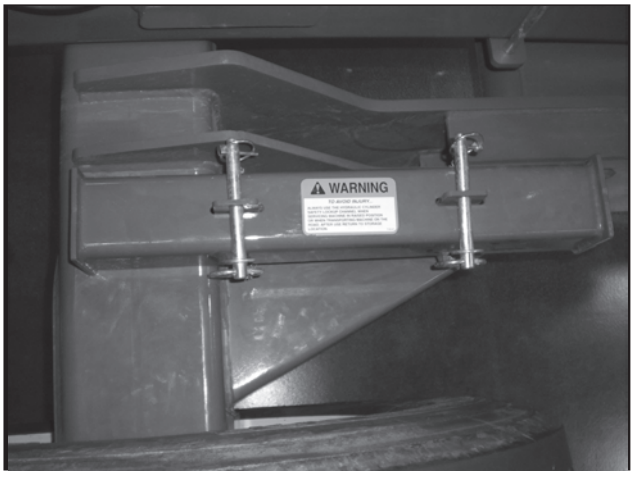
Install transport lock when transporting or working around the planter. When lockups are not in use, store in the storage position provided on the transport axle assembly.

D02270802



In Transport Position

D02070821



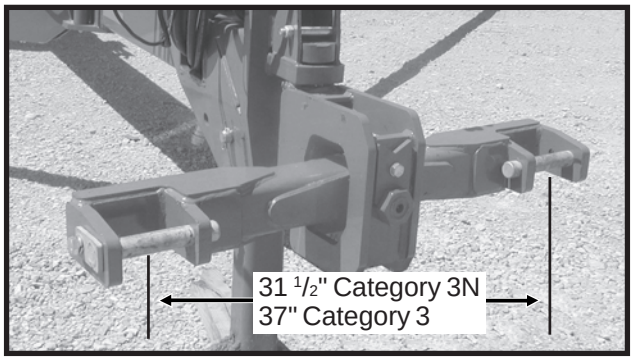
In Stored Field Operation Position

INITIAL PREPARATION OF THE PLANTER

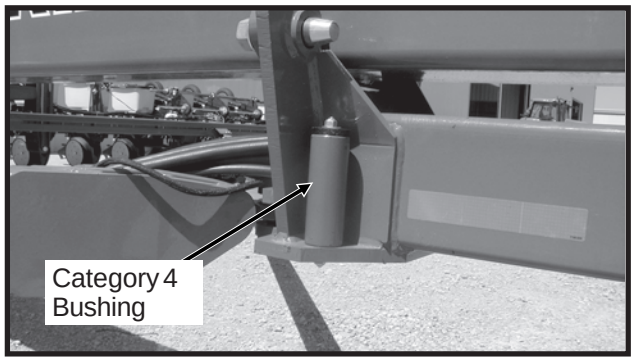
Lubricate the planter and row units per the lubrication information in this manual. Make sure all tires have been properly inflated. See “Tire Pressure”. Check all drive chains for proper tension, alignment and lubrication.

The planter may be hitched to the tractor using a Category 3N, Category 3 or Category 4 hitch.

D081605102



D081605102-3



Install two 2" bushings, stored on the front inner hitch, onto the two hitch pins for Category 4 use.

TRACTOR REQUIREMENTS

Consult your dealer for information on horsepower requirements and tractor compatibility. Requirements will vary with planter options, tillage and terrain. Three dual remote hydraulic outlets (SCV) are required on all sizes of conventional planters equipped with row markers. Four dual remote hydraulic outlets (SCV) are required on all sizes of SDS planters equipped with row markers. A 12 volt DC electrical system is required on all sizes.

NOTE: The tractor’s 3 point hitch must have a minimum lift capacity of 10,000 lbs. to raise the hitch weight of the machine, attachments, seed and dry chemicals.

Tractor front end stability is necessary for safe, efficient operation. Therefore, it may be necessary to add front ballast to your tractor for satisfactory field operation, as well as adequate transport stability. Refer to your tractor operator’s manual for front ballast recommendations.

NOTE: Tractor drawbar may need to be removed to provide clearance for the planter.

Transport stability is critical. The gross weight of the tractor must be greater than the gross weight of the planter. Gross weight varies with planter attachments. Tow 24 Row 30" planters with 200 HP farm tractor (minimum HP). Tow 32 Row 30" or 36 Row 30" planters with 250 HP farm tractor (minimum HP).

MACHINE OPERATION

TRACTOR PREPARATION AND HOOKUP

Correct adjustment and operation of the tractor's 3 point hitch is very important for peak performance of the planter.

The tractor's 3 point hitch must be operated in POSITION mode, not DRAFT mode. Operation in DRAFT mode can cause the hitch to move up and down causing unlevel operation of the planter.

The tractor's 3 point hitch response sensitivity settings should be adjusted for the correct reaction speed for raising/controlling the hitch of the planter for the fold and unfold functions.

IMPORTANT: Movement of the tractor's 3 point hitch (during field operation) is undesirable and may cause poor planter performance and/or damage to the planter. Consult your tractor dealer if necessary.

1. Install planter control console and SDS control console (If Applicable) on tractor in a convenient location within reach of the operator and close to the hydraulic controls. Mount control console(s) securely and route power cord to the power source.

D10060624

Planter Control Console

D10060627

SDS Control Console (If Applicable)

The control consoles operate on 12 volt DC only. If two 12 volt batteries are connected in series, ALWAYS make power connection on the battery which is grounded to the tractor chassis.

2. Set tractor rear wheel spacing at 60" or double the planter row spacing. Dual tires should center on 120". Check tractor operator's manual for correct front and rear tire pressures. (If Applicable)

3. Adjust lower lift links on tractor so planter will lift level from side to side and raise high enough for planter transport clearance. Set the sway blocks on the tractor in position to prevent side sway.

4. Back tractor up to planter and connect planter.

5. Connect hydraulic hoses to tractor ports in a sequence which is both familiar and comfortable to the operator.

   Before attaching hoses, move tractor control levers back and forth to relieve any pressure in the tractor hydraulic system.

   The hydraulic hoses are color coded as follows:

   Red AA - Field Raise Function (Return)
   Red BB - Field Raise Function (Pressure)

   Blue AA - Fold/UnFold Functions (Return)
   Blue BB - Fold/UnFold Functions (Pressure)

   Black AA - Row Marker Functions (Return)
   Black BB - Row Marker Functions (Pressure)

   White AA - $^{5}/_{8}$" Hose - Bulk Seed Delivery System (SDS) Functions (Return)
   White BB - $^{1}/_{2}$" Hose - Bulk Seed Delivery System (SDS) Functions (Pressure)

DANGER: Before applying pressure to the hydraulic system, make sure all connections are tight and hoses and fittings have not been damaged. Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin, causing injury or infection.

IMPORTANT: Always wipe hose ends to remove any dirt before connecting couplers to tractor ports.

6. Connect cable on planter to planter control console cable on tractor. Connect cable on planter to SDS control console (If Applicable) on tractor. Connect ASAE Standards 7 terminal connector for safety/warning lights on planter to ASAE Standards receptacle on tractor. If your tractor is not equipped with an ASAE Standards receptacle, check with your tractor manufacturer for availability. Check to be sure safety/warning lights on planter are working in conjunction with warning lights on tractor.

7. Raise planter slowly and watch for any interference. Remove pin from jack stand and swing jack stand to the horizontal position. Install pin in storage position.

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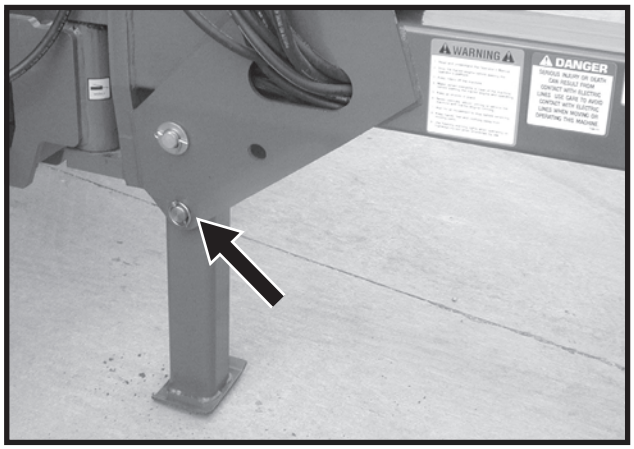

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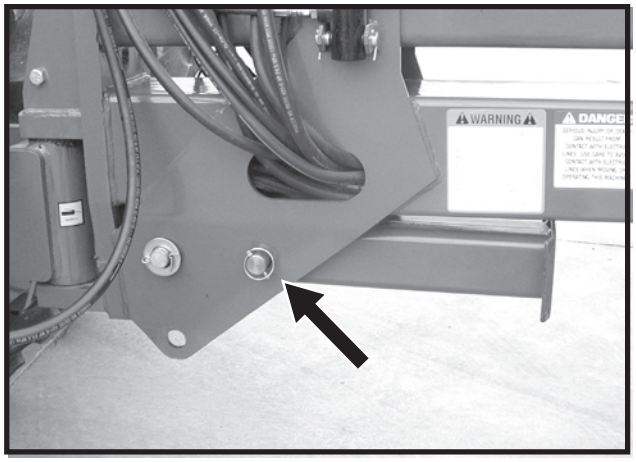


8. For proper operation of the planter and row units, it is important that the planter toolbars and row unit parallel arms be level side-to-side and front-to-rear. The toolbar should operate at 20"-22" heights from planting surface. Tire pressure must be maintained at pressures specified and toolbar height must be adjusted equally. Check to be sure planter toolbarsare level and at correct operating heights. See “Leveling The Planter”.

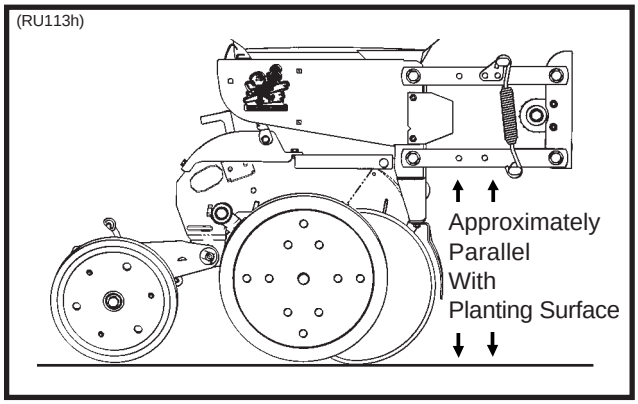
NOTE: The transport axle cylinders are equipped with counter balance valves which hydraulically lock the cylinders when not in use.

LEVELING THE PLANTER

With the planter lowered to proper operating height, check to be sure the toolbars and row unit parallel arms are level fore and aft. Recheck when planter is in the field.

It is important for the planter to operate level laterally. Tire pressure must be maintained at pressures specified. See “Tire Pressure”.

Field and actual planting conditions will dictate which of the wheel settings to use to ensure row unit parallel arms are approximately parallel with the planting surface.



When the planter has been fully loaded with seed, granular chemicals, etc.; a field check should be made to be sure the wings are level with the center frame. If the wings are not level with the center frame, the lift/gauge wheels can be raised or lowered in the wheel arms to increase or decrease planter toolbar height. Hitch height should be positioned to ensure level operation.

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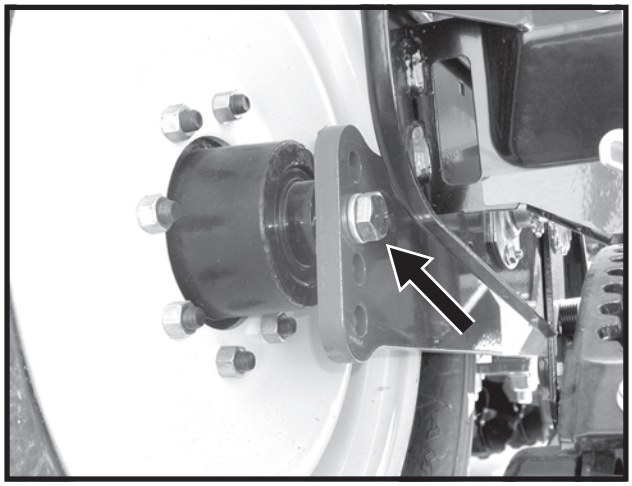
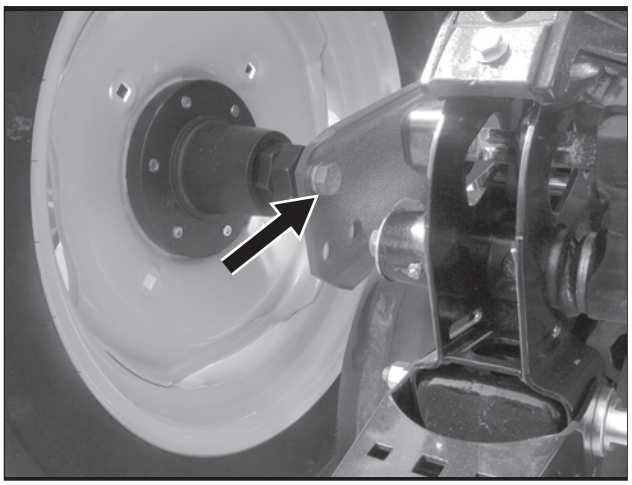


Center Section Lift/Gauge Wheel (Rock Shaft Axle) - Initial Setting Shown

D033104202



Wing Lift/Gauge Wheel - Initial Setting Shown

CONTACT WHEEL SPRING ADJUSTMENT

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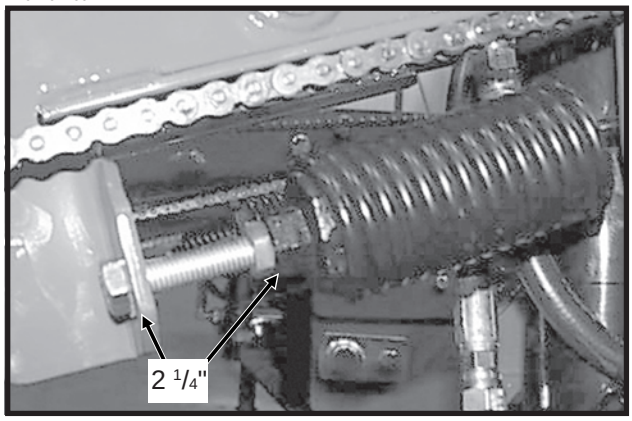
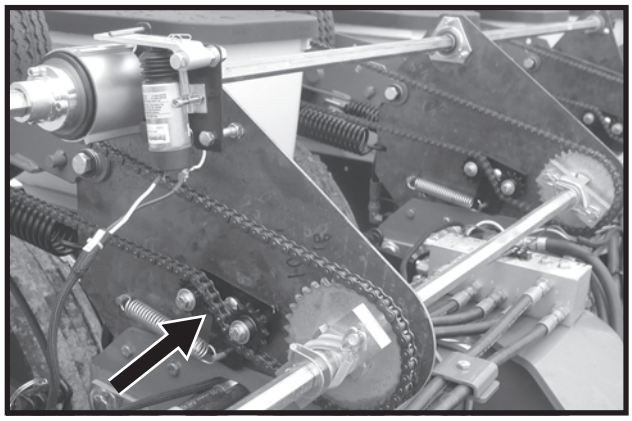


There are two down pressure springs on each contact drive wheel. The down pressure is factory preset and should need no further adjustment.

The spring tension is set leaving 2 1/4" between the spring plug and the bolt head.

CONTACT WHEEL IDLER ADJUSTMENT

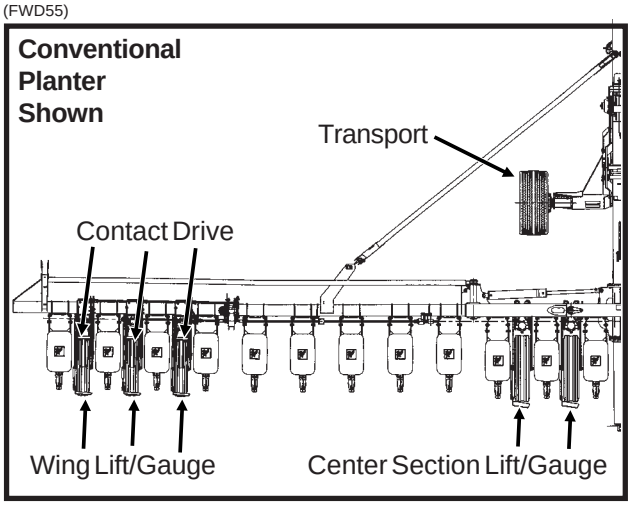
D08120523



The 3/8" nut on the bolt that attaches the contact wheel idler must be tightened so the idler is free to rotate under spring load but tight enough so the carriage bolt is stable.

TIRE PRESSURE

(FWD55)



Tire pressure should be checked regularly and maintained as follows:

(4) 41 x 11R22.5" Radial Load Range H
(Center Section Lift/Gauge) ..... 75 PSI
(6-12) 7.50" x 20" 8 Ply Custom Rib Implement
(Wing Lift/Gauge) ..... 40 PSI
(2-4) 445-50R22.5R Radial Load Range H
(Transport) ..... 120 PSI
(6) 4.80" x 8" (Contact Drive) ..... 50 PSI
(2) 20.5" x 8.0-10 (Marker) ..... 35 PSI
(2) 7.60" x 15" Rib Implement
(Liquid Fertilizer Piston Pump) ..... 40 PSI

DANGER: Rim and tire servicing can be dangerous. Explosive separation of tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. This should only be done by persons properly trained and equipped to do the job.

Always maintain the correct tire pressures. Do not inflate tires above the recommended pressures.

When inflating tires, use a clip-on air chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage to enclose the tire and rim assembly when inflating.

Inspect tires and wheels daily. Do not operate with low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

SEED RATE TRANSMISSION ADJUSTMENT

Planting population rate changes are made at the two transmission assemblies. The seed rate transmissions are designed to allow simple, rapid changes of sprockets to obtain the desired planting population. By removing the lynch pins on the hexagon shafts, sprockets can be interchanged with those from the sprocket storage rod bolted to each transmission.

Chain tension is controlled by spring-loaded, dual-sprocket idlers. The idler assembly is adjusted with a easy-release idler arm. See “Wrap Spring Wrench Operation”. This arm has a release position to remove spring tension for replacing sprockets. The amount of spring tension on the chain is controlled by the idler arm.

A decal positioned on the transmission module illustrates proper chain routing. The planting rate charts found at the back of this section will aid you in selecting the correct sprocket combinations.

Seed rate transmisions should be set equally.

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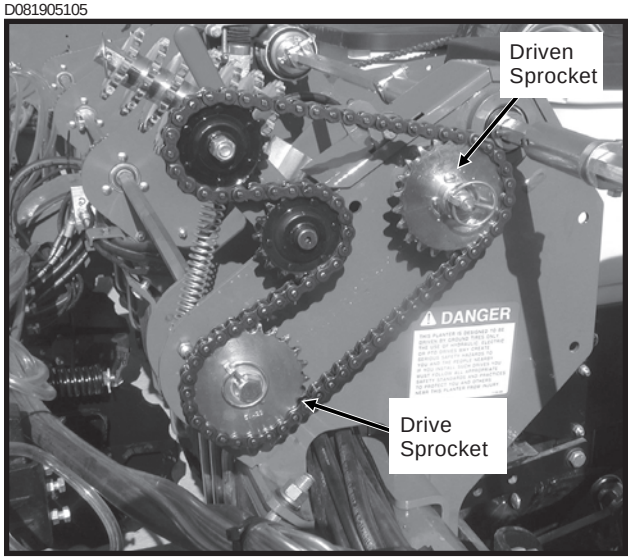
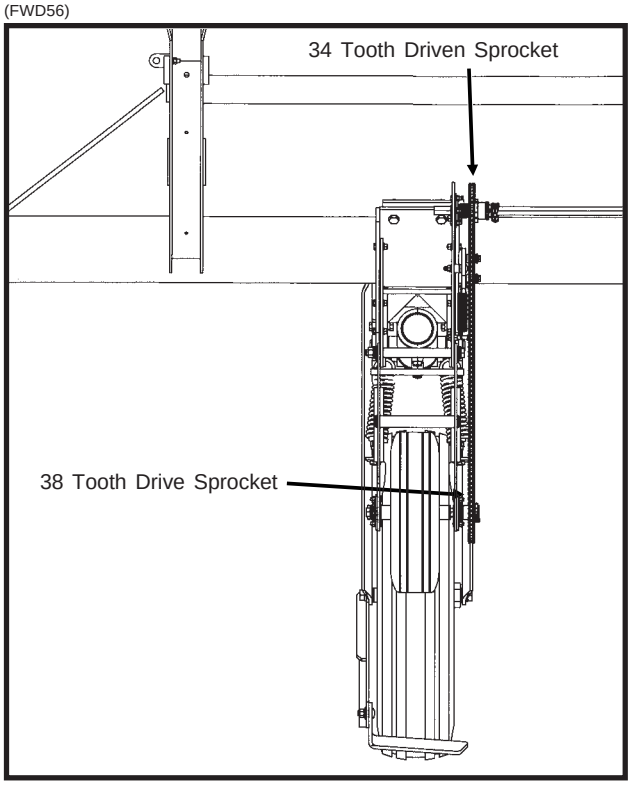


CONTACT WHEEL SPROCKETS

(FWD56)



Seed planting rate charts are based on a 38 tooth contact drive wheel sprocket and a 34 tooth contact wheel driven sprocket.

U-JOINT SHAFT ASSEMBLIES

A U-joint shaft assembly is used between the center section of the planter and the wing assembly on each half of the planter to allow up and down wing movement.

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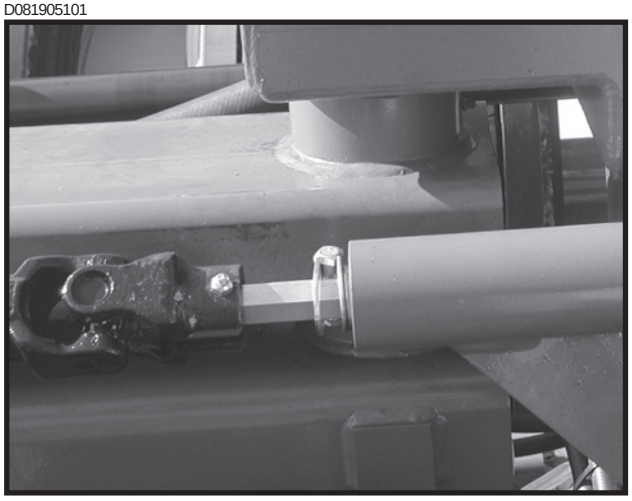

On 32 Row 30" and 36 Row 30" planters a U-joint shaft assembly is used to span the space between the inner and outer wing assemblies and allow up and down wing movement of the wings on each half of the planter.

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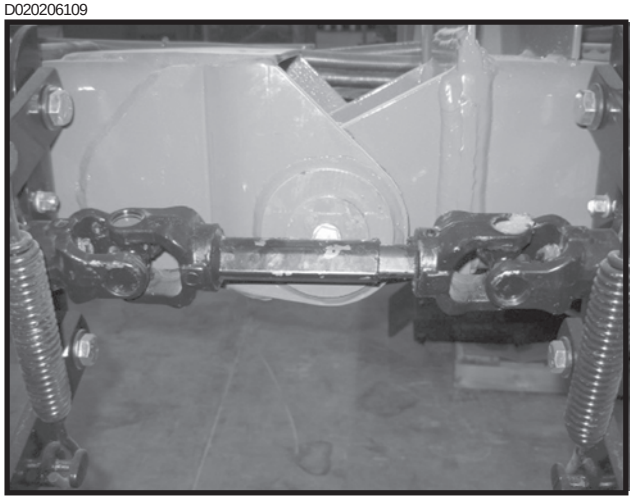

36 Row 30" Planter Shown

See “Grease Fittings” in the Lubrication Section of this manual.

WRAP SPRING WRENCH OPERATION

The chain idlers are equipped with wrap spring wrenches. Chain tension is released and/or added as shown below.

To release chain tension, rotate the knurled collar on the wrap spring wrench while rotating the chain idler away from the chain.

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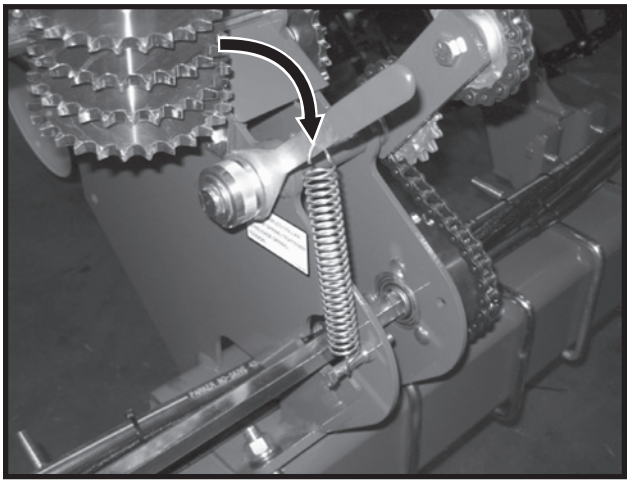

To add chain tension, rotate the chain idler into the chain while rotating the handle to tension idler spring.

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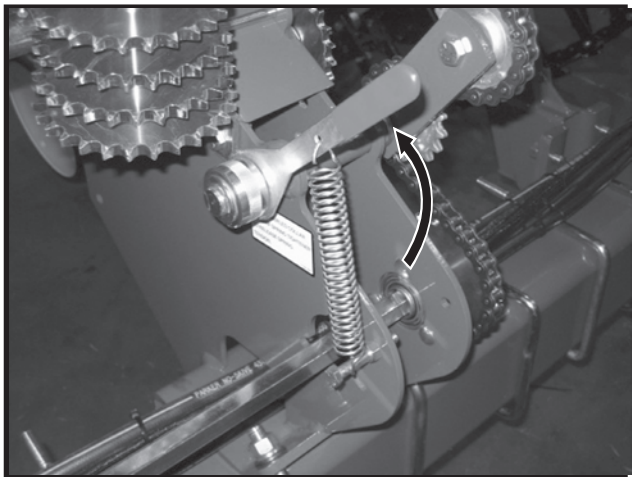

The wrap spring wrenches are made in L.H. and R.H. configurations, which can be identified by the silver or gold release collars, respectively.

SHEAR PROTECTION

The planter driveline and seed, granular chemical and fertilizer drivelines are protected from damage by shear pins.

If excessive load should cause a pin to shear, it is important to determine where binding has occurred before replacing the pin. Replace shear pins with same size and type.

To prevent future binding or breakage of components, check driveline alignment and follow prescribed lubrication schedules.

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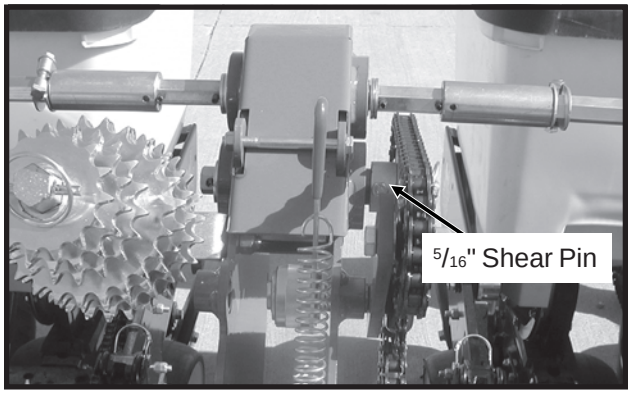

Seed Rate Transmission Shaft

Additional shear pins can be found in the storage area located at each end of the planter toolbar.

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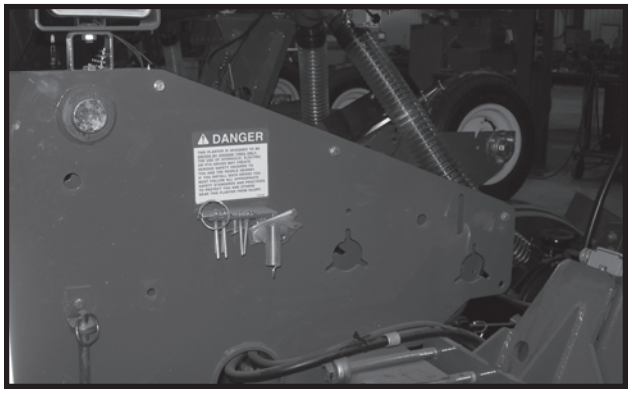
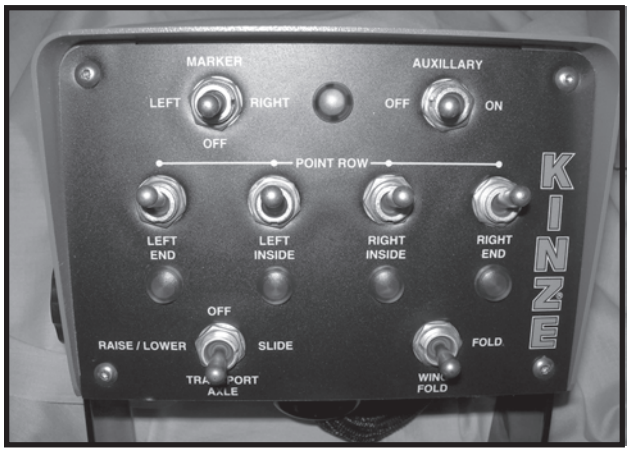


HYDRAULIC/ELECTRIC OPERATION

D10060624



Planter Control Console

D10060627

SDS Control Console

The tractor's hydraulic system and switches on the planter control console located on the tractor are used to raise the planter to transport position, operate the fold functions and raise and lower the row markers. The SDS control console (If Applicable) monitors seed flow and controls auger speed.

DANGER: To avoid serious injury or death, care must be taken when operating row markers around overhead power lines.

Model 3800 planters with conventional seed hoppers are equipped to operate from three dual remote hydraulic outlets (SCV), including one SCV for optional row markers. Model 3800 SDS planters are equipped to operate from four dual remote hydraulic outlets (SCV), including one SCV for optional row markers and one for the bulk seed delivery system (SDS).

Four point row clutches are standard equipment to allow four equal sections across the planter to be engaged/ disengaged.

The marker and point row selector switches are an ON-OFF-ON type.

The transport axle and wing fold switches are MOMENTARY ON-OFF-MOMENTARY ON type and must be held in position while operating the tractor hydraulic lever. Activating a fold function switch disables the marker circuit.

WARNING: To ensure the safety of the operator and others nearby, the marker selector switch should be placed in its OFF (center) position when not in use. An indicator light on the control box panel is ON whenever the marker circuit or point row clutch circuit are energized.

The auxiliary switch is an ON-OFF type switch which is used in conjunction with the hydraulic row marker/ folding functions control to operate optional attachments. All 3800 planters are shipped with the auxiliary switch installed in the control console. The auxiliary switch must be in the OFF position to enable other functions.

NOTE: Activating the auxiliary switch disables all control console switches except the point row clutch switches.

NOTE: The lift cylinders are (port type) rephasing cylinders. It is necessary for the cylinders to fully retract before they will rephase in the lowered position. Cylinder stops cannot be used.

WARNING: Make sure all hydraulic hoses are properly connected before operating the planter. Never connect or disconnect hydraulic hoses without first stopping the tractor engine and moving the hydraulic operating controls in both directions to relieve any pressure in the system.

WARNING: Never walk under or work on planter when it is raised without supporting the frames with additional supports.

TRANSPORT TO FIELD SEQUENCE

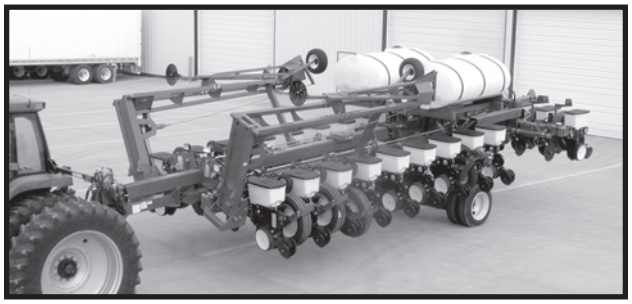
Position the planter in a relatively flat open area. Try to avoid an area with furrows, etc.

SUMMARIZED TRANSPORT TO FIELD SEQUENCE

- Remove wing latch hook safety pin(s) from transport (locked) positions and place in storage locations provided.
- Raise field tires/wheels and hold to rephase.
- Fully raise planter using transport axle.
- Slide transport axle to rear position. (24 Row Prior To Serial Number 755215 And All 32/36 Row)
- Lower field tires/wheels.
- Lower rear of planter using transport axle until field tires touch the ground.
- Partially lower tractor 3 point hitch to release wing latch hooks.
- Unfold planter to planting position.
- Fully raise transport axle tires/wheels.
- Lower 3 point to level hitch position.

NOTE: Read the following information for more detailed instructions.

D040604102



1. Remove wing latch hook safety pin(s) from transport positions and place in storage locations provided.

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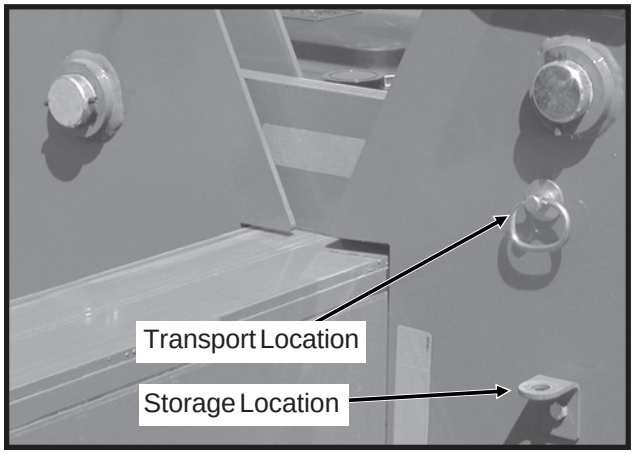
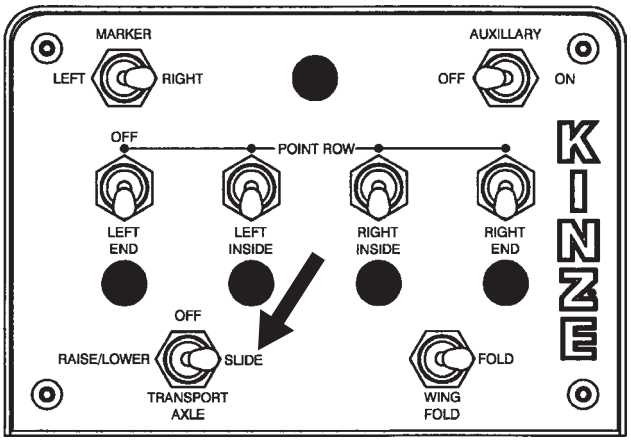


2. (24 Row Prior To Serial Number 755215 And All 32/36 Row)Hold the control console switch labeled TRANSPORT AXLE in **SLIDE** and operate the fold/unfold functions hydraulic control to move the transport axle to the rear position.

(FWD30bb)



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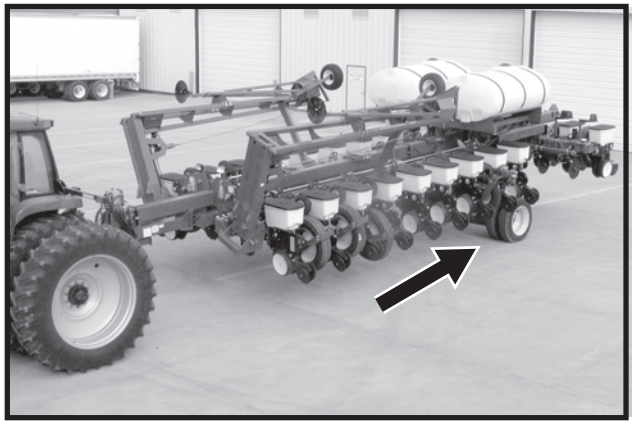

3. Operate the field raise function hydraulic control to lower the field tires/wheels.

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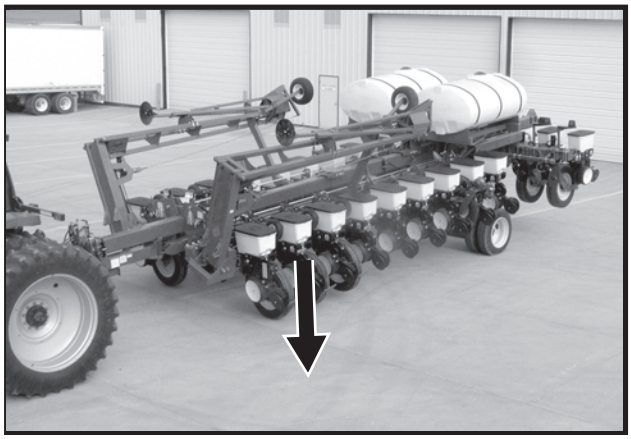
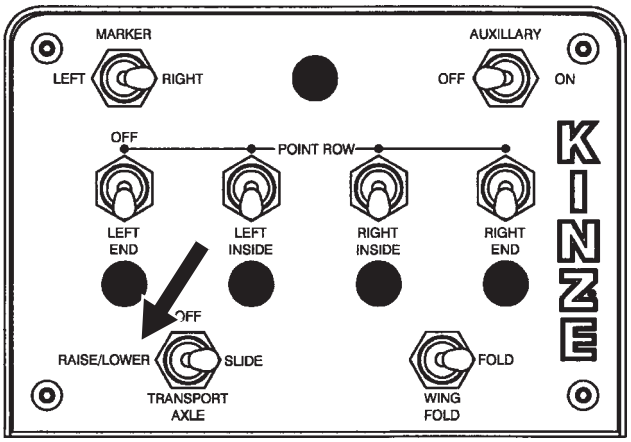


4. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to raise the transport axle, lowering the rear of the planter until the field tires touch the ground.

   IMPORTANT: DO NOT retract the transport cylinders completely or damage will occur to the driveline and transport tires. The weight of the planter should be on the field tires, but the transport axle tires should remain on the ground during folding.

(FWD30bb)



D040604107

5. Partially lower the tractor 3 point hitch to release the wing latch hooks.

   IMPORTANT: Only lower 3 point hitch until wing latch hooks release. DO NOT lower hitch further or damage will occur at the rear of the wing folding links.

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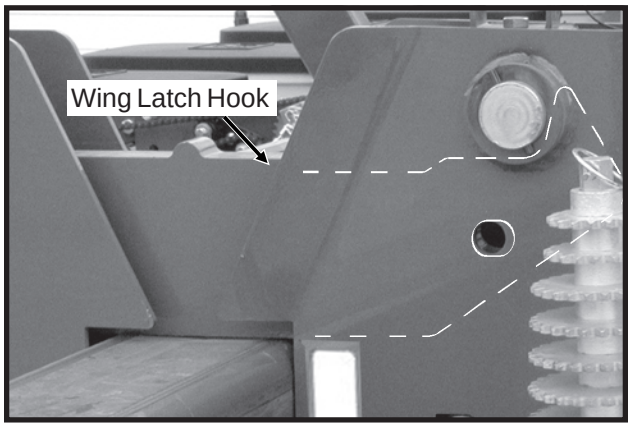
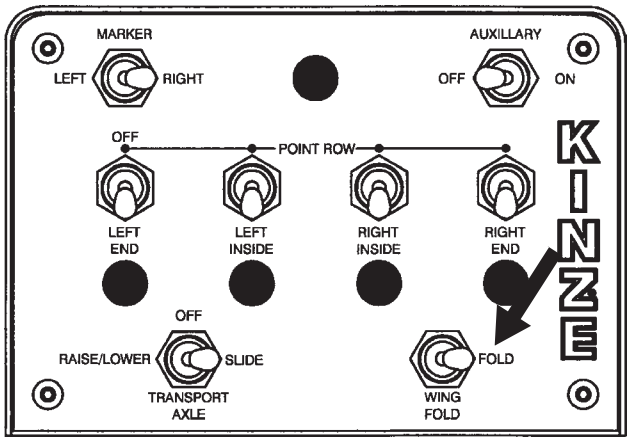


6. Hold the control console switch labeled WING FOLD in **FOLD** and operate the fold/unfold functions hydraulic control to unfold the planter. The tongue will begin to retract and the wings, carried on the wing wheels, will begin to unfold. Place the tractor transmission in neutral or a low reverse gear. Allow the tractor to roll in reverse as the planter unfolds. The center axle tires should remain stationary and the wing tires should roll in a continuous arc with minimal side loading on the tires or their mounting structures.

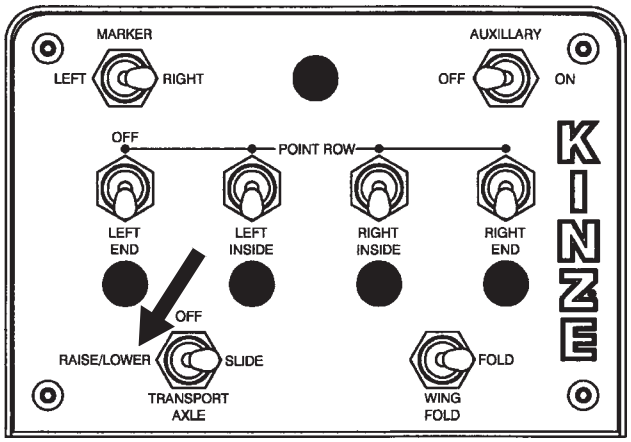
(FWD30bb)



D040604108

7. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to raise the transport axle wheels to the fully raised planting position.

(FWD30bb)



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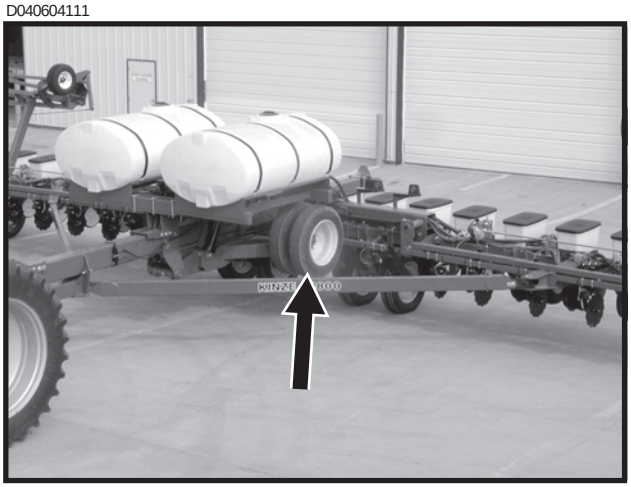

8. Lower the 3 point to level hitch position.

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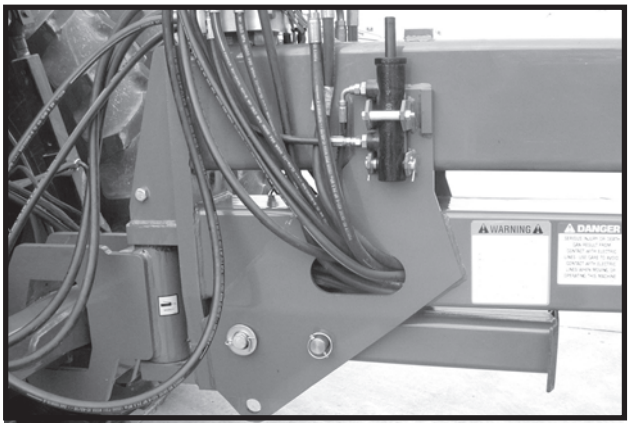

WARNING: Never walk under or work on planter when it is raised without supporting the frames with additional supports.

FIELD OPERATION

Normal planting operation in the field requires the use of the tractor's hydraulic control to raise and lower the planter frame when making field turn arounds.

Operate row markers with the control console switch for that marker in the ON (LEFT or RIGHT) position and the tractor's hydraulic control. After markers are lowered to the ground, move the hydraulic control to operate markers in float position. Marker speed is controlled with flow control valves located in the valve block on the planter hitch. One valve controls the raise speed of both markers while the other valve controls the lower speed of both markers. See "Row Marker Speed Adjustment" and "Row Marker Operation".

IMPORTANT: Operate row markers in float position to prevent damage to row markers.

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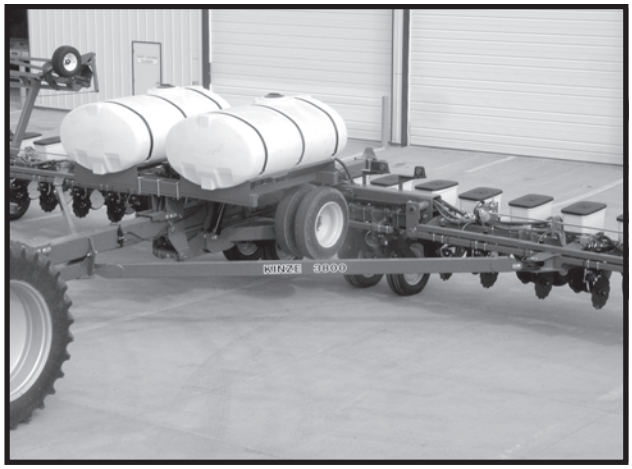

FIELD TO TRANSPORT SEQUENCE

Position the planter in a relatively flat open area. Try to avoid an area with furrows, etc.

SUMMARIZED FIELD TO TRANSPORT SEQUENCE

- Raise planter to field turn height.
- Lower transport axle to the ground.
- Fold planter to transport position.
- Raise front of planter using tractor 3 point hitch.
- Raise rear of planter using transport axle.
- Slide transport axle forward into transport position.(24 Row Prior To Serial Number 755215 And All 32/36 Row)
- Raise field tires/wheels.
- Remove wing latch hook safety pin(s) from storage location(s) and install in locked position(s).

NOTE: Read the following information for more detailed instructions.

1. Operate the field raise function hydraulic control to raise the planter to raised field height.

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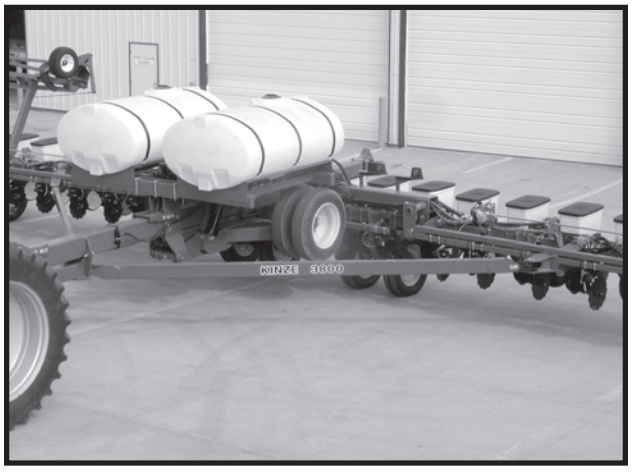
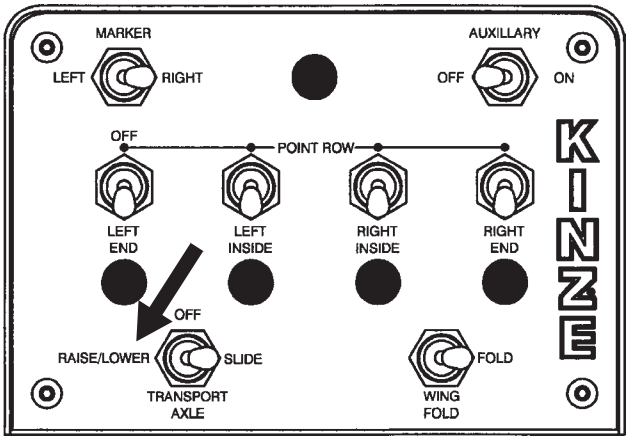


2. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to lower the transport axle wheels until they touch the ground.

IMPORTANT: Lower transport axle tires until weight begins to transfer onto transport axle tires. DO NOT carry the full weight of the planter on the transport axle tires during folding.

(FWD30bb)



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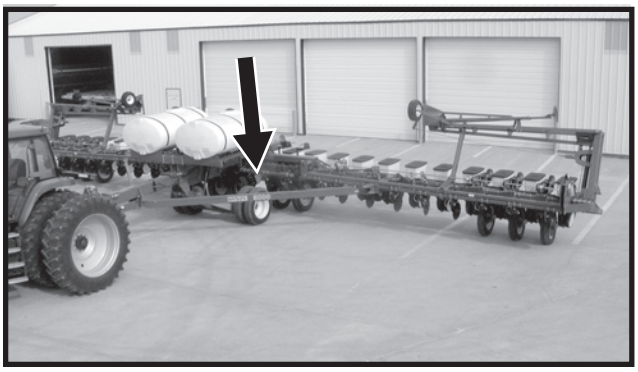
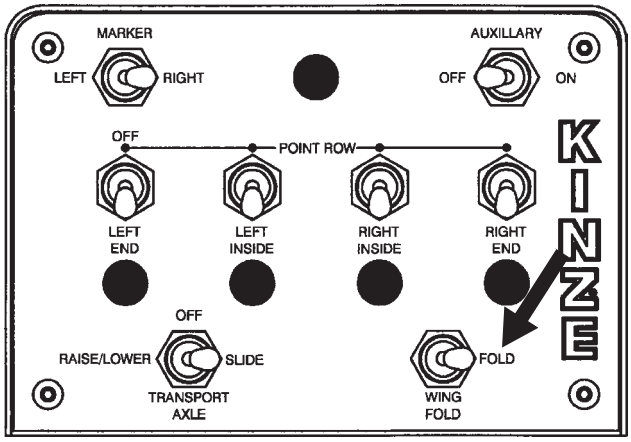


3. Hold the control console switch labeled WING FOLD in **FOLD** and operate the fold/unfold functions hydraulic control to fold the planter to transport position. It is necessary to **slowly** idle the tractor forward as you fold the planter, allowing the center axle tires to remain stationary and the wing tires to roll in a continuous arc with minimal side loading on the tires or their mounting structures.

   IMPORTANT: Use the tractor 3 point control to adjust the hitch height as necessary to make sure the wing latch hooks pass over the hitch and engage the latch pins.

   NOTE: In soft soil conditions the wings may not fold completely into position against the tongue. If this occurs, retract the wing wheels slightly to allow the wings to fold into latching position.

(FWD30bb)



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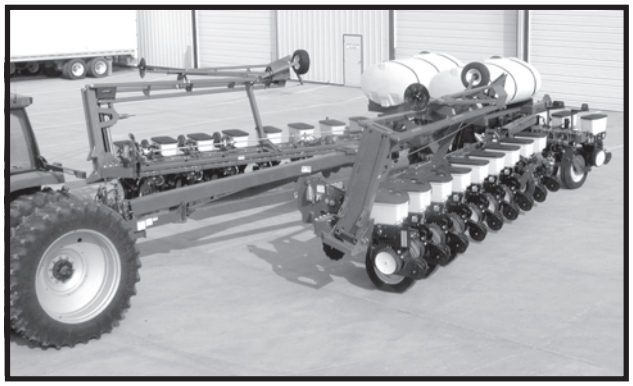
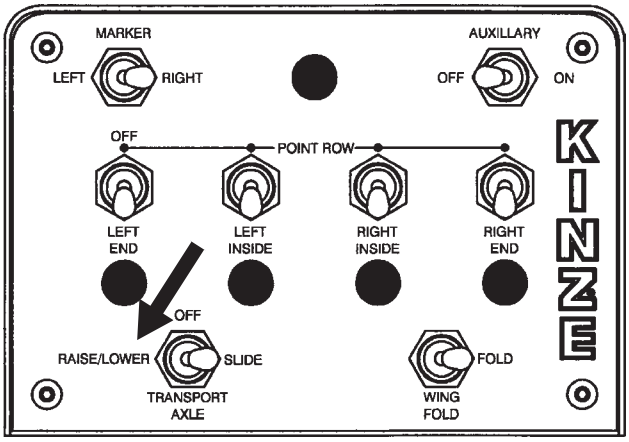


4. Raise the front of the planter using the tractor 3 point hitch.

5. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to fully lower the transport axle tires, raising the rear of the planters.

(FWD30bb)

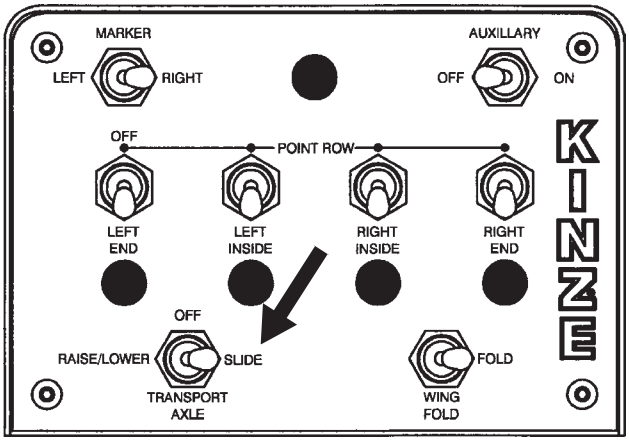


D040604107

NOTE: The transport axle cylinder circuit is equipped with counter balance valves which hydraulically lock the cylinders. The cylinders will not extend or retract until hydraulic pressure/flow is applied.

6. (24 Row Prior To Serial Number 755215 And All 32/36 Row) Hold the control console switch labeled TRANSPORT AXLE in **SLIDE** and operate the fold/unfold functions hydraulic control to slide the transport axle fully forward into transport position.

(FWD30bb)



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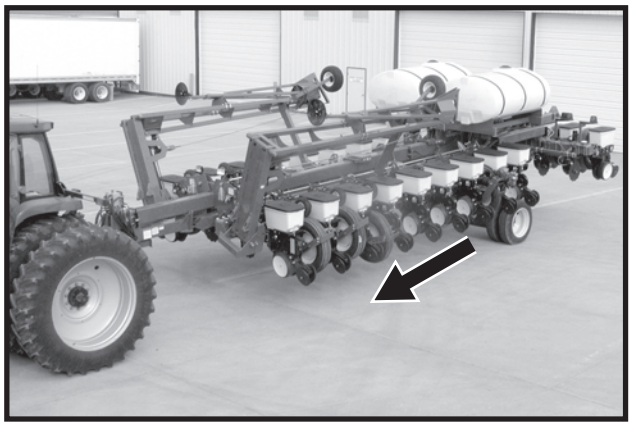
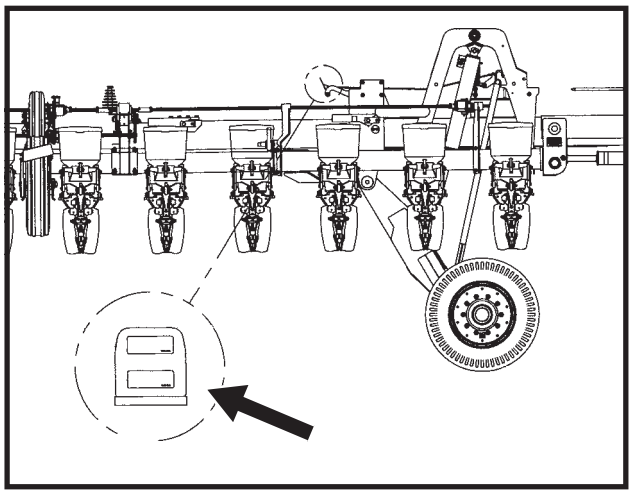


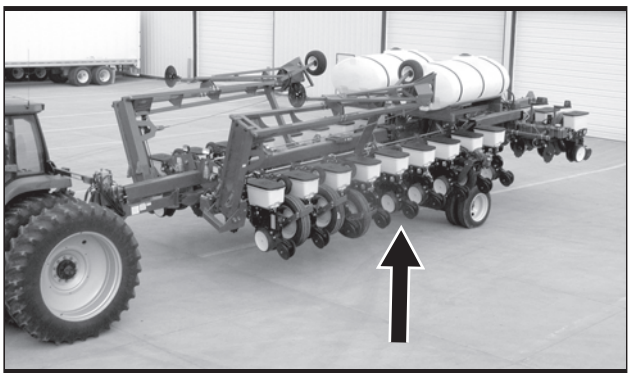
(FWD72)



IMPORTANT: Indicator flap will be in raised position when the transport axle is fully forward into the transport position.

7. Operate the field raise function hydraulic control to raise the field tires/wheels.

D040604102



8. Remove wing latch hook safety pin(s) from their storage location(s) and install in locked position(s).

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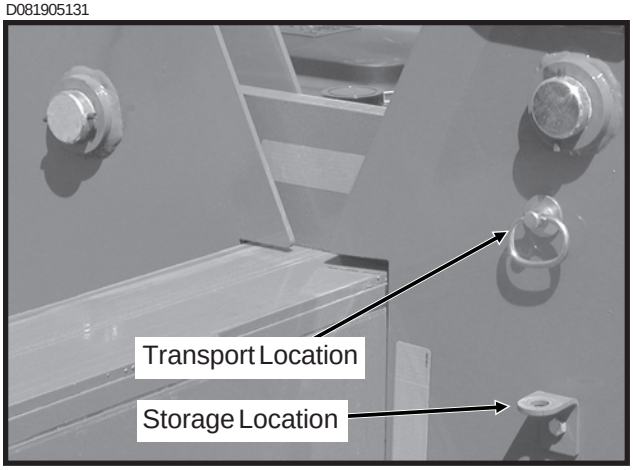
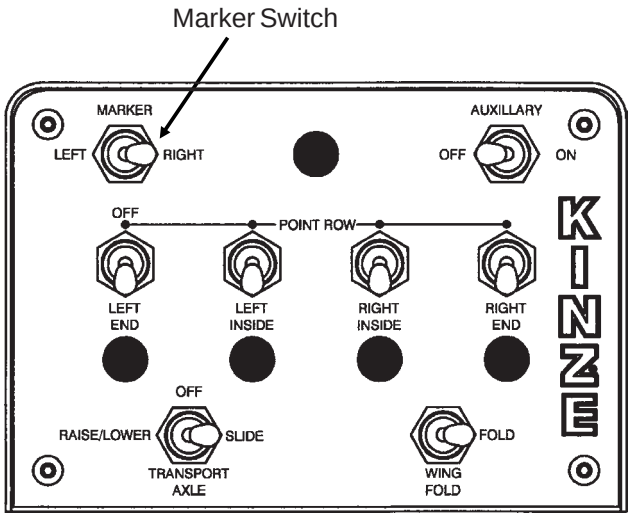


ROW MARKER OPERATION

(FWD30bb)



Three Position Selector Switch On Control Console

Two solenoid valves, located on the valve block at the front of the planter, along with a three position selector switch on the control console permit the operator to lower or raise the desired row marker.

See “Row Marker Speed Adjustment”.

1. On the control console, select the row marker you want to lower.
2. Operate hydraulic control to lower marker.
3. If opposite marker is to be used next, change switch to other side.
4. At end of field, using hydraulic control, raise the down marker.
5. After making the turn, using the hydraulic control, lower the pre-selected marker.
6. Continue to follow this procedure.

NOTE: Both row markers can be lowered by operating the switch in each position and operating the hydraulic control twice. The markers will raise simultaneously when the hydraulic control moved to the raise position.

NOTE: Control console switch should be left in OFF position when planter is not in use. If left in ON position, it will discharge the tractor battery.

If the electrical system fails to operate properly:

Check fuse.
Check wiring connections.
Check control switch.
Check solenoid. SOLENOID HOUSING SHOULD BE MAGNETIZED WHEN ENERGIZED.

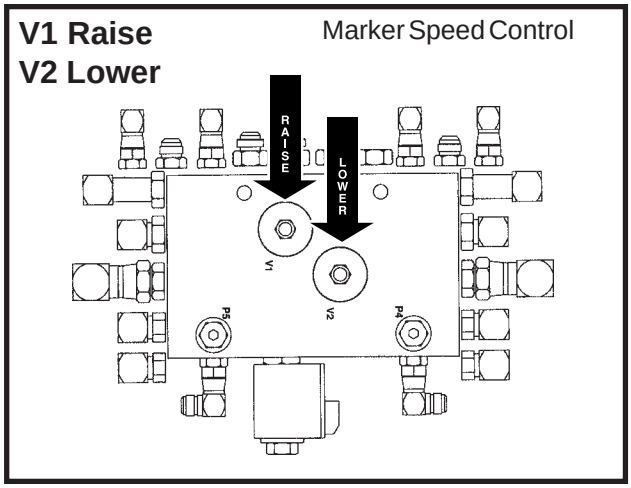
DANGER: To avoid serious injury or death, care must be taken when operating row markers around overhead power lines.

IMPORTANT: Row markers must be operated with hydraulic circuit in float position to prevent damage to marker assemblies.

ROW MARKER SPEED ADJUSTMENT

The row marker hydraulic system includes two flow control valves. One flow control valve controls the lowering speed of both markers and one controls the raising speed of both markers. To adjust marker speed, loosen the jam nut and turn the control(s) clockwise, or IN, to slow the travel speed and counterclockwise, or OUT, to increase the travel speed. The flow controls determine the amount of oil flow restriction through the valve(s), therefore varying travel speed of the markers. Tighten jam nut after adjustments are complete.

(FWD161)



IMPORTANT: The flow controls should be properly adjusted before the marker assembly is first put into use. Excessive marker travel speed of the markers can damage the marker assembly.

NOTE: When oil is cold, hydraulics operate slowly. Make sure all adjustments are made with warm oil.

NOTE: On a tractor where the oil flow can not be controlled, the rate of flow of oil from the tractor may be greater than the rate at which the marker cylinder can accept the oil. The tractor hydraulic control lever will have to be held until the cylinder reaches the end of its stroke. This occurs most often on tractors with open center hydraulic systems.

On tractors equipped with flow control valves, row marker speed adjustment should be made with the tractor flow controls in maximum position. After marker speed is set, the tractor flow controls can be adjusted to allow the hydraulic lever to stay in detent during the marker raise or lower cycle.

DANGER: To avoid serious injury or death, care must be taken when operating row markers around overhead power lines.

ROW MARKER LENGTH ADJUSTMENT

To determine the correct length at which to set the row marker assemblies, multiply the number of rows by the average row spacing in inches. This provides the total planting width. Adjust the marker extension so the distance from the marker disc blade to the center line of the planter is equal to the total planting width previously obtained. Both the planter and row marker assembly should be lowered to the ground when measurements are being taken. The measurement should be taken from the point where the blade contacts the ground. Adjust right and left marker assemblies equally and securely tighten clamping bolts. An example of marker length adjustment follows:

Number Of Rows	x	Row Spacing (Inches)	=	Dimension Between Planter Center Line And Marker Disc Blade

24 Rows x 30" Spacing = 720" Marker Dimension

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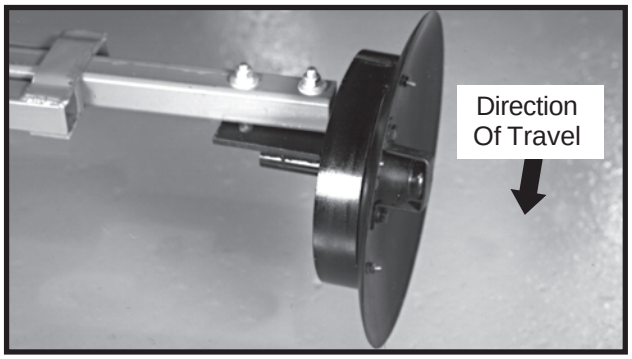

Row Marker Disc Blade Shown With Depth Band.

The marker disc blade should be installed so the concave side of the blade is outward to throw dirt away from the grease seals. The spindle assembly is slotted so the hub and blade can be angled to throw more or less dirt. To adjust the hub and spindle, loosen the 1/2" hardware and move the assembly as required. Tighten bolts to the specified torque.

IMPORTANT: A marker disc blade assembly that is set at a sharper angle than necessary will add unnecessary stress to the complete marker assembly and shorten the life of bearings and blades. Set the blade angle only as needed to leave a clear mark.

A field test is recommended to ensure the markers are properly adjusted. After the field test is made, make any minor adjustments as necessary.

A notched marker blade, for use in more severe no till conditions, is available from KINZE® through your KINZE® Dealer.

POINT ROW CLUTCHES

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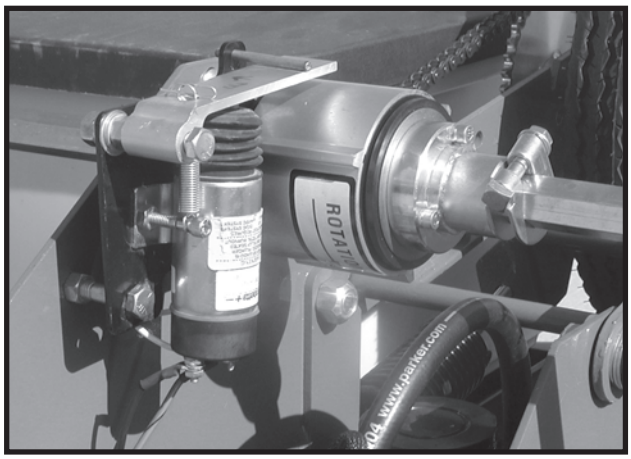
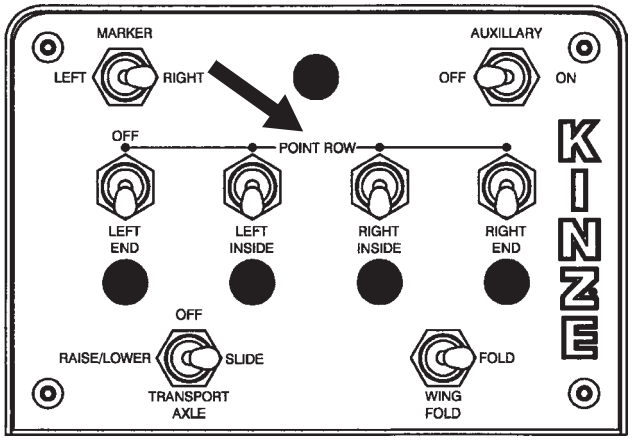


All Model 3800 planters are equipped with four point row clutches. With the use of electric-activated clutches, which disengage the drive, various sections of the planter may be shut off for finishing up fields or long point row situations.

(FWD30bb)

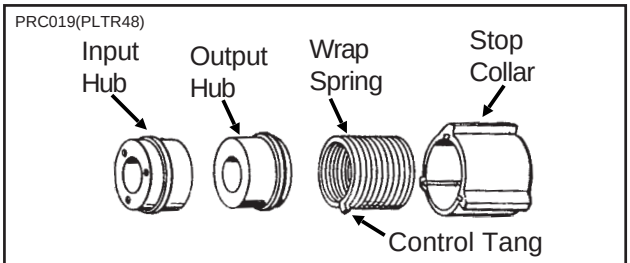


The selector switches for the clutches are located on the planter control console.

NOTE: Switches should be left in OFF position when planter is not in use. If left in ON position, it will discharge the tractor battery.

NOTE: Since the liquid fertilizer piston pumps use dedicated drive wheels, liquid fertilizer application will not be controlled by use of the point row clutches.

PRC019(PLTR48)



The point row clutch consists of a wrap spring riding on an input hub and an output hub. During operation the wrap spring is wrapped tightly over the hubs connecting them in a positive engagement. The greater the force of rotation the tighter the grip of the spring on the hubs.

Rotation in the opposite direction or stopping the spring from rotating prevents the transmission of torque from the input hub to the output hub, stopping the planter drive.

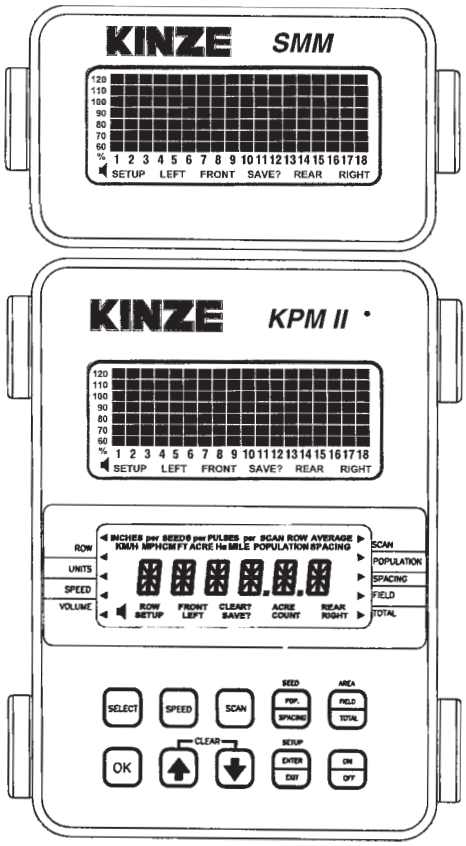
The input end of the spring is bent outward and is referred to as the control tang. The control tang fits into a slot in the stop collar that is located between the input and output hubs and over the wrap spring. If the stop collar is allowed to rotate with the input hub, the clutch is engaged. If the stop collar is stopped from rotating, the control tang connected to it is forced back and the spring opens. This allows the input hub to continue rotating without transmitting torque to the output hub; therefore, stopping the planter drive.

The stop collar is controlled by the use of an electric solenoid and an actuator arm. When the selector switch on the tractor control console is in the OFF position the solenoid coil is NOT ENERGIZED and the actuator arm will not contact the stop on the stop collar allowing it to rotate with the hubs and drive the planter.

When the operational switch is in the “DISENGAGE” (right or left) position the solenoid coil is ENERGIZED and the plunger in the solenoid coil retracts, allowing the actuator arm to contact the stop on the stop collar, disengaging the wrap spring and stopping the planter drive.

KPM II STACK-MODE ELECTRONIC SEED MONITOR

(MTR41e)



NOTE: SMM console may not be applicable to all models.

The KPM II Stack-Mode electronic seed monitor system consists of (a) a KPM II Stack-Mode console, which is mounted on the tractor; (b) seed tubes with sensors, one of which is installed in each planter row unit; (c) a magnetic distance sensor, which is installed on the planter, or a radar distance sensor, which is installed on the tractor; (d) shaft rotation sensors, which are installed on the planter drill shafts; and (e) a planter harness (junction Y-harness and/or extension harness where applicable), to which the individual seed tube sensors connect. The primary harness, which connects the monitor console to the planter harness, is hard-wired into the safety/warning light harness or control console harness included as standard equipment with the planter.

The software design of the KPM II Stack-Mode console allows the use of an add-on SMM console for simultaneous viewing of the seed flow bar graphs for standard and/or Interplant® System rows (up to 36 rows in two sections). A total of 72 rows may be displayed in multiple sections (rear/front, left/right or four sections). The SMM console must be used to allow utilization of the four section feature and is included with the KPM II Stack-Mode Electronic Seed Monitor Package for Model 3800 planters.

The monitor system is powered by the tractor battery (requires 12 volts DC). The console receives information from each of the sensors and translates this information.

The KPM II Stack-Mode console has two backlit Liquid Crystal Displays (LCD). The upper display shows the active section, the number of monitored rows per section, the relative seed rate for each row (using a bar graph display) and scrolls various alarm and warning messages when an alarm condition exists. A continuous audible alarm will sound upon system malfunction or underflow conditions for any monitored row. Alarms must be acknowledged by the user. Various warnings may sound the alarm or flash one or more icons. The lower display is used to display alphanumeric data such as row spacing, units (Metric or English), speed, volume, seed population, seed spacing, field area, total area and distance sensor pulses per mile/kilometer.

The SMM console has one backlit Liquid Crystal Display (LCD) which functions the same as the upper display on the KPM II Stack-Mode console except it does not scroll alarm and warning messages. The SMM console must be programmed into the system before printed text will display on the LCD.

The monitor system will power down if no activity is detected within one hour. No activity means there has been no new seed flow and no operator push key input.

MONITOR KEY FUNCTIONS

Push keys allow the user to select or change the operating mode, the active displays or the current configuration. Depending on the operating mode or the current display selected, some keys are valid while some are not. Each key press, if valid, is acknowledged by a short beep and an action is taken. If the key press has no action associated, the key press is considered invalid, and the user will not get any feedback.

SELECT
- Selects the application mode (rear/front, left/right or four sections up to a maximum of 72 rows) at the beginning of installation in the setup mode.
- Selects the active section(s) (rear, rear/front, left, right or left/right) in the operation mode.
- Has no affect on a system configured to monitor only one section.
- While programming the monitor, the key will select the digit to change.

SPEED
- Immediately displays the current ground speed.

SCAN
- If the current average population or average spacing is displayed, this key sequentially displays the seed population/spacing on each row.
- If the display shows functions other than average seed population or spacing, pressing SCAN will sequentially display speed, average seed population and average seed spacing.
- Pressing a second time freezes the display on the current row.
- Pressing a third time restarts the sequential display.

SEED POPULATION/SEED SPACING
- Immediately displays the average seed POPULATION and the average seed SPACING of all active rows.
- Each press alternates between seed spacing and seed population.

AREA FIELD/AREA TOTAL
- Immediately displays the field or total area planted since the field/total area was last cleared.
- Each press alternates between field area and total area.

OK
- Ends and saves the new setup during installation.
- Acknowledges and silences alarms in the operation mode.

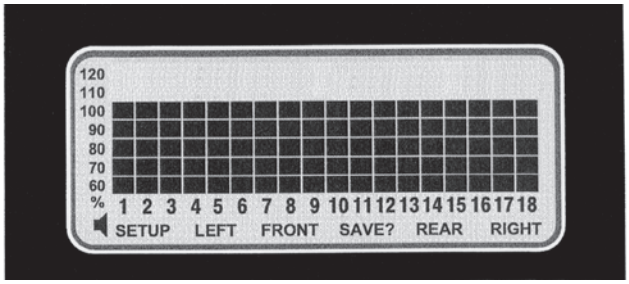
UP ARROW AND DOWN ARROW
- Scrolls sequentially through the display options on the lower LCD display.
- Freezes on the current row in the scan mode.
- Scrolls sequentially through the rows when the population scan is frozen.
- Used to enter programmable values in the programming mode.
- The UP and DOWN Arrow keys can be pressed at the same time to start the CLEAR function.

SETUP ENTER/SETUP EXIT
- Enters and exits the programming mode.

ON/OFF
- Powers the unit on and off.

UPPER LCD FUNCTIONS

(MTR29h)



The monitor collects data on the planting rates from all active rows and calculates an average. This average will determine the 100% mark. Seed rate for each row is then compared to the average value and the result is displayed on the bar graph.

With only the KPM II Stack-Mode console programmed into the system, the information regarding each section is displayed alternately every 5 seconds. While operating a system with two sections programmed, one or both sections may be selected any time. When only one section is selected, the monitor calculates the average based on the remaining active rows from that section.

With the SMM console programmed into the system, two sections are viewed at the same time. If the system configuration is for four sections, the display will alternate every 5 seconds between a pair of sections. The select key will lock the display on rear sections. The SMM console shows RIGHT in the left/right configuration, FRONT in the rear/front configuration and FRONT RIGHT/ REAR RIGHT in four sections configuration. The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and FRONT LEFT/REAR LEFT in four sections configuration.

STEP 1 Press SELECT key once to show one section. The flashing icon shows the section that is not selected. The selected section icon is continuously displayed on the LCD.

EXAMPLE: The system is setup to display rear section on KPM II Stack-Mode console and front section on SMM console. Press SELECT key. The FRONT icon will be flashing and the REAR section will be displayed on the bar graph. The SMM console is only backlit. After 1 minute the front row icon will stop flashing. The monitor will stay in this REAR only display through power down and power up. Each time the monitor is turned on while in REAR only mode, the FRONT icon will flash for 1 minute.

If seed flow is sensed in the FRONT section while planting, the FRONT icon will resume flashing.

When the front section is disabled, the row spacing will automatically double to maintain the proper implement width in the monitor. A 23 or 24 row 15" configuration changes to a 12 row 30" configuration with a touch of the SELECT key.

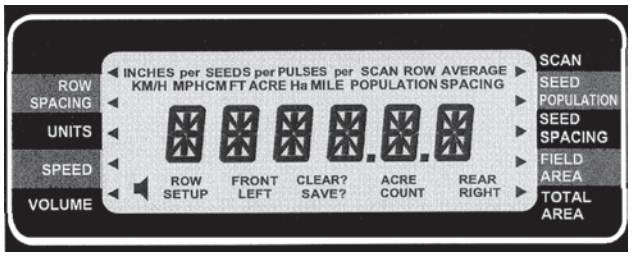
STEP 2 Press SELECT key again to activate both sections.

For simple applications, where only one section is programmed, the display will automatically lock on that section. Pressing the SELECT key will have no affect.

NOTE: When alternating between two sections, the display will lock on the section containing the first recognized alarm until the alarm is acknowledged by pressing the OK key or the alarm condition is removed.

LOWER LCD FUNCTIONS

(MTR29g)



- The UP and DOWN arrow keys will sequentially change what is being displayed on the lower LCD. Pressing the UP or DOWN arrow keys will move the arrow head icon (on the left and right hand side of the display) to another item. For example, if the arrow icon is pointing to SPEED, ground speed will be displayed on the LCD. Pressing the UP arrow key will move the icon to UNITS. The display will change to display all the icons used to represent the current (English or Metric) measurement system.

- The shortcut keys SPEED, SEED POPULATION/ SPACING and AREA FIELD/TOTAL allow direct access to their respective displays. For example, no matter what is currently being displayed on the lower LCD, pressing the SPEED key will change the display to the current speed. Pressing the SEED POPULATION/SPACING or AREA FIELD/TOTAL keys will alternate between the two functions assigned to those keys.

- Pressing the SCAN key while displaying seed spacing or population will cause a sequential display of each individual row. Pressing the SCAN key a second time will freeze the display on the currently displayed row. The UP or DOWN arrow keys can be used to change the currently displayed row. Pressing the SCAN key will restart the automatic advancing of the scan function.

- Pressing the SCAN key while displaying speed will cause a sequential display of speed, average planter population and average seed spacing. Pressing the SCAN key a second time will freeze the display on the currently displayed reading.

ROW SPACING
Press the arrow keys to ROW SPACING to display the current spacing between rows in inches or centimeters. The ROW SPACING icons turn on, displaying a 3 digit, one decimal place format. In the area count mode, this function displays the implement width in feet or meters, using a 3 digit, no decimal places format.

UNITS
Press the arrow keys to UNITS to display all the icons from the currently selected English or Metric measurement system. For the English system, the icons are: INCH, MPH, FT, ACRE and MILE. For the Metric system, the icons are: M, KM/H and Ha.

SPEED
Press the SPEED key to display the current speed in MPH or KM/H, using a 3 digit, one decimal place format.

VOLUME
Press the arrow keys to VOLUME to display the presently selected audible alarm volume. The SPEAKER icon turns on.

SCAN
Press the SCAN key to display the seed spacing or seed population (see Steps 1-3 following) of each individual row. (1)Pressing the SCAN key while displaying any other function will cause the monitor to sequentially display speed, average seed population and average seed spacing. (2)Pressing the SCAN key a second time will freeze the display. (3)Pressing the SCAN key a third time restarts the sequential display. The UP and DOWN arrow keys can be used to change the current display.

SEED POPULATION/SEED SPACING
Each SEED POP/SPACING key press alternates between seed population and seed spacing.

Seed population displays the average number of seeds or the row average number of seeds per acre or seeds per hectare for all the active rows. The average is displayed using a 6 digits, no decimal places format. The AVERAGE POPULATION icon will turn on. When in the scan mode, the scan arrow and SCAN ROW POPULATION will appear. The ROW number icon and the current row will be displayed on the left and the population will be displayed on the right in 1000's using 3 digits, one decimal place (e.g. 32.9 means 32,900). When in scan freeze mode, the scan arrow and ROW POPULATION will turn on (scan arrow may be flashing). The UP and DOWN keys may be used to lock on the desired row.

Seed spacing displays the average distance or the row average distance between seeds for all active rows in inches per seed or centimeters per seed using a 3 digit, one decimal place format. When the average is displayed the AVERAGE SPACING icons are turned on. When in the scan mode, the scan arrow and SCAN ROW SPACING icons will appear. The ROW number icon and the current row will be displayed on the left and the spacing will be displayed on the right. The display will sequence to the next row every 5 seconds. When in scan freeze mode, the scan arrow and SPACING will turn on (scan arrow may be flashing). The UP and DOWN keys may be used to lock on the desired row.

FIELD AREA/TOTAL AREA
Each AREA FIELD/TOTAL key press alternates between field area and total area.

Field area displays the total number of acres or hectares using a 6 digit, one decimal place format.

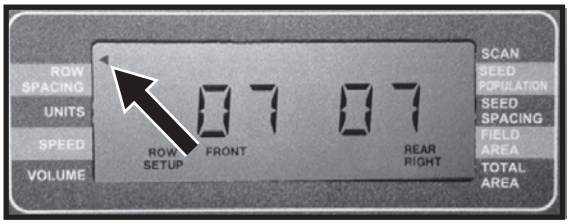
NOTE: When FIELD AREA is selected, the UP or DOWN key must be held in slightly longer than normal so the monitor will not mistake this action with a CLEAR, which consists of the UP and DOWN arrow keys pressed simultaneously. A beep will sound when the function activates.

Total area displays the total number of acres or hectares using a 6 digit, one decimal place format. The total area counter updates every time the field area counter increments. Clearing the total area counter will also clear the field area counter.

When the monitor is programmed as a rear only or rear/front configuration and shaft rotation sensors are installed, pressing the UP arrow to move beyond row spacing lights an arrow on an unlabeled area above ROW SPACING. This is the automatically set division line between the L.H. shaft sensor and the R.H. shaft sensor. The display shows the first row on the rear section and the front section assigned to the R.H. shaft rotation sensor.

EXAMPLE: On a 12 Row 30" planter with Interplant® Package, the display would appear as follows:

092597-21



THIS DISPLAY IS NOT ACCESSIBLE ON LEFT/RIGHT CONFIGURATIONS OR SYSTEMS WITHOUT SHAFT ROTATION SENSORS.

PROGRAMMING - Changing The Audible Alarm Volume

STEP 1 To enter the programming mode, press and hold the SETUP key. The monitor will emit several short beeps, followed by a long beep. On the lower LCD, the SETUP icon turns on and the arrow head icon will flash, indicating that the user can select an item to program.

NOTE: The monitor must be in a programmable function (row spacing, units, speed, volume or area) to enter setup. The monitor will not enter setup in seed population or seed spacing.

STEP 2 Press the UP or DOWN arrow keys to move the flashing arrow to VOLUME. As the arrow icon moves, the lower LCD will display the current setting of the item selected.

STEP 3 Press the OK key and the flashing arrow becomes solid and the audible alarm will sound.

NOTE: The lower LCD will display the current volume and the SPEAKER icon is turned on. Settings are from 0 to 9.

- Use the UP or DOWN arrow keys to change the setting. With every UP arrow key push, the alarm will increment by one step between the minimum and the maximum. If the maximum level (9) is reached the volume rolls over to the minimum level (0).
- Pressing the DOWN arrow key lowers the volume until the minimum level (0) is reached, at which point the volume rolls over to the maximum level (9).

STEP 4 To exit without saving, press and release the OK key. The monitor will restore the lower LCD to show the setting of the item, and the arrow icon will flash, allowing the user to select another item to program.

To exit and save, press and hold the OK key. The monitor will emit several short beeps and SAVE? icon is turned on. After a short time a long beep is heard, and the lower LCD will display the word “DONE”. Release the OK key. If the OK key is released BEFORE the word “DONE” is displayed, the changes WILL NOT BE SAVED. The word “DONE” MUST be displayed in order for the save to have occurred.

NOTE: The programming mode may be exited at any time, by pressing the SETUP key. Pressing this key will return the monitor to its normal operation. All items changed and saved will come into effect immediately. Any items changed, but not saved will revert to the original programmed value.

PROGRAMMING - Units (Metric Or English)

STEP 1 To enter the programming mode, press and hold the SETUP key. The monitor will emit several short beeps, followed by a long beep. On the lower LCD, the SETUP icon turns on and the arrow head icon will flash, indicating that the user can select an item to program.

NOTE: The monitor must be in a programmable function (row spacing, units, speed, volume or area) to enter setup. The monitor will not enter setup in seed population or seed spacing.

STEP 2 Press the UP or DOWN arrow keys to move the flashing arrow to UNITS. As the arrow icon moves, the lower LCD will display the current setting of the item selected.

STEP 3 Press the OK key and the flashing arrow becomes solid and the audible alarm will sound.

NOTE: The lower LCD will alternately display all Metric icons or all English icons, indicating the Metric or English mode respectively.

•Use the UP or DOWN arrow keys to change the setting.

STEP 4 To exit without saving, press and release the OK key. The monitor will restore the lower LCD to show the setting of the item, and the arrow icon will flash, allowing the user to select another item to program.

To exit and save, press and hold the OK key. The monitor will emit several short beeps and SAVE? icon is turned on. After a short time a long beep is heard, and the lower LCD will display the word “DONE”. Release the OK key. If the OK key is released BEFORE the word “DONE” is displayed, the changes WILL NOT BE SAVED. The word “DONE” MUST be displayed in order for the save to have occurred.

NOTE: The programming mode may be exited at any time, by pressing the SETUP key. Pressing this key will return the monitor to its normal operation. All items changed and saved will come into effect immediately. Any items changed, but not saved will revert to the original programmed value.

PROGRAMMING - Row Spacing

STEP 1 Prior to entering the programming mode, the application mode (rear/front, left/right or four sections) must be active. If the monitor is programmed in a rear/front configuration, both sections will be active (alternating every 5 seconds if the SMM console is not used). You can then set the row spacing to the Interplant® System row spacing.

EXAMPLE: On a 12 Row 30" with Interplant® Package set the row spacing to 15.0 with front active.

When the monitor is in normal field operation mode, disabling the front section will automatically change the row spacing to 30".

STEP 2 To enter the programming mode, press and hold the SETUP key. The monitor will emit several short beeps, followed by a long beep. On the lower LCD, the SETUP icon turns on and the arrow head icon will flash, indicating that the user can select an item to program.

NOTE: The monitor must be in a programmable function (row spacing, units, speed, volume or area) to enter setup. The monitor will not enter setup in seed population or seed spacing.

STEP 3 Press the UP or DOWN arrow keys to move the flashing arrow to ROW SPACING. As the arrow icon moves, the lower LCD will display the current setting of the item selected.

STEP 4 Press the OK key and the flashing arrow becomes solid and the audible alarm will sound.

NOTE: The lower LCD will display the current row spacing (in inches or centimeters) and ROW SPACING icon is turned on.

•The least significant digit of the displayed value will be blinking.
•This value can be changed by pressing either the UP or DOWN arrow keys.
•Once this digit is correct, press the MODE SELECT key and the blinking digit will move to the next significant digit, where the process can be repeated.

NOTE: The monitor limits the entry of row spacing to a minimum of 10.0 inches (25.4 cm) and to a maximum of 99.9 inches (253.7 cm). If the monitor is configured to a rear/front configuration, the limits change to a minimum of 5.0 inches (12.7 cm) and a maximum of 49.9 inches (126.8 cm).

STEP 5 To exit without saving, press and release the OK key. The monitor will restore the lower LCD to show the setting of the item and the arrow icon will flash, allowing the user to select another item to program.

To exit and save, press and hold the OK key. The monitor will emit several short beeps and SAVE? icon is turned on. After a short time a long beep is heard, and the lower LCD will display the word “DONE”. Release the OK key. If the OK key is released BEFORE the word “DONE” is displayed, the changes WILL NOT BE SAVED. The word “DONE” MUST be displayed in order for the save to have occurred.

To exit setup mode, press the SETUP key.

NOTE: The programming mode may be exited at any time, by pressing the SETUP key. Pressing this key will return the monitor to its normal operation. All items changed and saved will come into effect immediately. Any items changed, but not saved will revert to the original programmed value.

PROGRAMMING - Speed

STEP 1 To enter the programming mode, press and hold the SETUP key. The monitor will emit several short beeps, followed by a long beep. On the lower LCD, the SETUP icon turns on and the arrow head icon will flash, indicating that the user can select an item to program.

NOTE: The monitor must be in a programmable function (row spacing, units, speed, volume or area) to enter setup. The monitor will not enter setup in seed population or seed spacing.

STEP 2 Press the UP or DOWN arrow keys to move the flashing arrow to SPEED. As the arrow icon moves, the lower LCD will display the current setting of the item selected.

STEP 3 Press the OK key and the flashing arrow becomes solid and the audible alarm will sound. The R.H. digit on the display will be blinking.

The speed constant is used to record how many pulses are generated per mile (or kilometer) from the ground speed sensor. The lower LCD will display the current pulses per mile (or kilometer) using a 6 digit, no decimal place format. The PULSES per MILE (or PULSES per KM) icons are turned on.

NOTE: It is highly recommended that a field calibration be done to establish the PPM/PPKM (Pulses Per Mile/Kilometer) number on a new machine installation. Several factors can affect this value such as wheel slip on the magnetic distance sensor, mounting angle and height on the radar distance sensor, etc. IT IS NOT UNCOMMON FOR THE SPEED ON THE MONITOR TO VARY SLIGHTLY FROM THE TRACTOR SPEEDOMETER. *Adjusting the PPM/PPKM in the monitor to make the speed agree can cause serious errors in acre/hectare and population counts.* Do field checks to verify populations and seed spacings.

NOTE: On new system installations, the monitor will default to 500 PPM (310 PPKM). This will have to be changed to obtain accurate readings from the monitor.

• In field conditions, measure 330 feet ($^1/_{16}$ mile) or 100 meters, depending on the unit of measurement selected.

• Pull the tractor up to the starting line.

• Press the UP and DOWN arrow keys at the same time and hold them down until the CLEAR? icon is displayed and the monitor beeps several times. When the data is actually cleared, the monitor will emit a long beep and the number of pulses is cleared.

NOTE: If the PPM/PPKM number starts to count pulses with the tractor not moving, check the radar for vibration or other kinds of interference.

• Drive the tractor for 330 feet ($^1/_{16}$ mile) or 100 meters and stop.

• The monitor will count the number of pulses and display them.

STEP 4 To exit without saving, press and release the OK key. The monitor will restore the lower LCD to show the previous setting of the item, and the arrow icon will flash, allowing the user to select another item to program.

To exit and save, press and hold the OK key. The monitor will emit several short beeps and SAVE? icon is turned on. After a short time a long beep is heard, and the lower LCD will display the word “DONE”. Release the OK key. If the OK key is released BEFORE the word “DONE” is displayed, the changes WILL NOT BE SAVED. The word “DONE” MUST be displayed in order for the save to have occurred.

NOTE: The programming mode may be exited at any time, by pressing the SETUP key. Pressing this key will return the monitor to its normal operation. All items changed and saved will come into effect immediately. Any items changed, but not saved will revert to the original programmed value.

NOTE: If a discrepancy occurs and digits must be changed, follow STEPS 1 and 2 to enter the programming mode and proceed as follows:
•Press the OK key and the flashing arrow becomes solid. The least significant digit of the displayed value will be blinking.
•This value can be changed by pressing either the UP or DOWN arrow keys.
•Once this digit is correct, press the SELECT key and the blinking digit will move to the next significant digit, where the process can be repeated.

The monitor limits the entry of pulses per mile or kilometer to a minimum of 500 PPM (310 PPKM), and to a maximum of 500,000 PPM (310,686 PPKM).

KEY Action	Flashing Digit	Display Value
Press The UP Key	Right Most Digit	203**1**, 203**2**, 203**3**
Press The SELECT Key	Second Digit From Right	20**3**3
Press The DOWN Key	Second Digit From Right	20**2**3, 20**1**3, 20**0**3, 20**9**3, 20**8**3
Press The SELECT Key Twice	Left Most Digit	**2**083
Press The DOWN Key	Left Most Digit	**1**083, **0**500 (Min. Value), **9**500, **8**500

PROGRAMMING - Clearing Total Area

NOTE: Clearing the total area counter will also clear the field area counter.

STEP 1 To enter the programming mode, press and hold the SETUP key. The monitor will emit several short beeps followed by a long beep. On the lower LCD, the SETUP icon turns on and the arrow head icon will flash, indicating that the user can select an item to program.

NOTE: The monitor must be in a programmable function (row spacing, units, speed, volume or area) to enter setup. The monitor will not enter setup in seed population or seed spacing.

STEP 2 Press the UP or DOWN arrow keys to move the flashing arrow to TOTAL AREA. As the arrow icon moves, the lower LCD will display the current setting of the item selected.

STEP 3 Press the OK key and the flashing arrow becomes solid and the audible alarm will sound.

•The lower LCD will display the total area and the ACRE (or Ha) icon turns on.
•With the flashing arrow on TOTAL AREA, press the OK key.
•To reset the counter, press the UP and DOWN arrow keys at the same time and hold them down for a short period of time to clear the data. The CLEAR? icon will be displayed and the monitor will beep several times. When the data is actually cleared, the monitor will emit a long beep, and the total area is reset to zeros. After the long beep, the previous recorded total area is not retrievable. Once cleared, the user **may not** choose to exit programming mode without saving as described in STEP 4.

STEP 4 To exit and save, press and hold the OK key. The monitor will emit several short beeps and SAVE? icon is turned on. After a short time a long beep is heard, and the lower LCD will display the word “DONE”. Release the OK key. If the OK key is released BEFORE the word “DONE” is displayed, the changes WILL NOT BE SAVED. The word “DONE” MUST be displayed in order for the save to have occurred.

NOTE: The programming mode may be exited at any time, by pressing the SETUP key. Pressing this key will return the monitor to its normal operation. All items changed and saved will come into effect immediately. Any items changed, but not saved will revert to the original programmed value.

AREA COUNTER/SPEEDOMETER MODE

If the monitor is installed with only a radar distance sensor (no seed tubes attached), the monitor becomes a speedometer. If (a) the monitor is connected to a radar distance sensor, (b) the signal cable from the back of the console is connected to a sensing switch (Part No. G1K249 Acre Counter Switch Kit) instead of the seed tubes and (c) the implement width in feet (or meters) is programmed into the monitor, the monitor will function as an area counter.

The seed spacing and seed population functions are not available in this mode. If the monitor is powered down, the seed tubes connected and the monitor powered up, the monitor will again show seed population and seed spacing in inches or centimeters. Row spacing reverts back to its programmed setting.

WARNINGS AND ALARMS

1. **System Alarms** - A system alarm is activated when the monitor detects a faulty sensor or one of several other communication faults.

   The corresponding row number starts flashing and the audible alarm sounds. All segments on the corresponding bar graph are turned off. Pushing the OK key to acknowledge the warning will turn the alarm off. The row number will continue to flash until the alarm condition is removed. If the monitor detects a faulty sensor and there is no planting activity present, the monitor will scroll "CHECK CONNECTION".

   If the distance sensor is detected as faulty, the monitor will display either "PICKUP" or "RADAR", depending on the type of sensor installed, and the audible alarm will sound. The user can push the OK key to acknowledge the alarm. When the distance sensor is faulty, the monitor will change to a bar graph only mode where the rows are still displayed relative to each other. No area related information (speed, field area, total area, seed spacing or seed population) will be accumulated or displayed.

   If a rotation shaft sensor is faulty, "SHAFT1", "SHAFT2", "SHAFT3" or "SHAFT4" will display.

   Another type of system alarm occurs when the monitor detects a data communication bus error.

   The four possible data communication bus errors are:

LCD Display	Error Condition
SYS HI	The data communication lead (green) has been shorted to the power lead (white).
SYS LO	The data communication lead (green) has been shorted to the ground lead (black).
SYS EC	An internal error has been detected.
COP	Cycled power ON/OFF to quickly.

2. **Under Flow Alarms** - If the seed rate for one or more rows is less than 55% of the calculated average, the corresponding 60% segment will stay on, the corresponding row number starts flashing and the alarm sounds. Pushing the OK key to acknowledge the warning will turn the alarm off. The 60% segment of the bar graph remains on and the row number continues to flash until the alarm condition is corrected.

NOTE: All alarms present within a short time before planting stops are frozen on the screen and the text LOW or FAIL will display on the LCD. If the under flow is between 0% and 10%, this warrants a "FAIL" condition. If the under flow is between 10% and 55%, a "LOW" condition is generated. If multiple rows have an under flow condition, "FAIL" will display if any one or more rows is between 0% and 10%. This allows the user to identify and fix the problem rows.

NOTE: This warning will not trigger unless a minimum time of continuous planting has passed.

NOTE: If all the rows show a seed rate of zero, the condition will not generate an alarm. It will be assumed the planter has stopped. The row numbers and the bottom 60% segment will remain on for all selected rows.

3. **Multiple Alarms** - If more than one alarm condition occurs at the same time, pushing the OK key will acknowledge all alarms that are currently displayed. For example, if one row on the front and one row on the rear are alarming, pushing the OK key will only acknowledge one of them. However, if there are two alarms on the front, both alarms would be acknowledged with one push of the OK key.

4. **Section Not Selected Warning** - If the monitor was programmed for two sections and only one is currently selected for display (by pressing the SELECT key), the icon of the disabled section will flash for a period of 1 minute, then turn off at each power up. If seed flow is sensed in the disabled section, the icon for that section (front, left or right) will begin to flash.

5. **Seed Planting Stopped Warning** - When the monitor detects no seed flow on all rows, the monitor will emit 3 short beeps to alert the user. This warning will occur each time the planter is stopped, each time the planter is raised at the end of a row or if the mechanical drive fails while planting.

NOTE: This warning will not trigger unless a minimum time of continuous planting has passed.

6. **Seed Counting Sensor In Calibration Warning** - All seed counting sensors run a self-calibration sequence on power up. While in calibration the bottom segment of each corresponding bar graph will flash if the monitor detects movement or planting activity. If the monitor does not detect this, the message "WAIT CALIBRATION" will be scrolled.

7. **Seed Counting Sensor Too Dirty Warning** - After the seed counting sensors end their internal self-calibration, the monitor may detect one or more sensors are either too dirty or blocked. If the monitor detects planting or movement, the corresponding bar graph remains flashing. The monitor will display "CLEAN SENSORS" on the top LCD if no movement or planting is detected, prompting the user to clean the tubes. If the tubes are dirty, they will still show seed flow with less accuracy. If the tubes are blocked the user will get an alarm as soon as planting starts. The corresponding bar graph will remain flashing until the problem is corrected and the monitor is powered down and then powered back up.

8. **Low Battery Warning** - The monitor is constantly monitoring its input voltage to quickly detect low power conditions. If the monitor detects that the input voltage has dropped below 11.0V, it will display "LO SYS" on the lower LCD on the KPM II Stack-Mode console, provided that the monitor does not detect speed or planting.

NOTE: After the alarms have been acknowledged and if the alarm condition is still present, the LCD will continue to display the alarm condition.

REPLACING A FAULTY SENSOR

NOTE: Stack-Mode Seed Sensors are identified by a blue 3-pin connector. Replace Stack-Mode Seed Sensors with like components only.

To replace a faulty sensor; (a) disconnect the faulty sensor and check the monitor to be sure the correct sensor was disconnected, (b) turn the monitor off, (c) after a few seconds, turn the monitor back on and (d) plug in the replacement sensor. The monitor will chirp twice to acknowledge the new sensor was learned and saved.

To replace more than one faulty sensor, proceed as stated above for rear/front or left/right configurations beginning with the lowest numbered row in the rear or left section and continue to replace sensors in ascending order. Then move on to the front or right section and continue in ascending order. For four section configurations, begin with rear/left and continue to rear/right, then front/left and ending with front/right.

If the monitor detects a faulty distance sensor, the lower LCD will immediately move to the speed display, show the word "PICKUP" or "RADAR" depending on the distance sensor installed, and the alarm will sound.

NOTE: If the monitor is not turned off and then on, the replacement sensor(s) will be ignored until the next power on, at which point the sensors will be randomly learned by the monitor.

FIELD OPERATION

Press the ON/OFF key to turn the monitor on.

(MTR28e)

Information regarding each section is displayed alternately every 5 seconds.

REAR/FRONT CONFIGURATION (Without SMM Console Installed)

(MTR28c)

- Press the SELECT key once to show REAR section only. (Monitor sets correct row spacing.)
- Press the SELECT key a second time to return to each section being displayed alternately every 5 seconds on KPM II Stack-Mode console. (Monitor sets correct row spacing.)
- Press the SELECT key a third time to show REAR section only again.

REAR/FRONT CONFIGURATION (With SMM Console Installed)

(MTR28c)

- Press the SELECT key once to show REAR section only on KPM II Stack-Mode console. (Monitor sets correct row spacing.)
- Press the SELECT key a second time to show FRONT section on SMM console and REAR section on KPM II Stack-Mode console. (Monitor sets correct row spacing.)
- Press the SELECT key a third time to show REAR section only again.

FOUR SECTION CONFIGURATION (With SMM Console Installed)

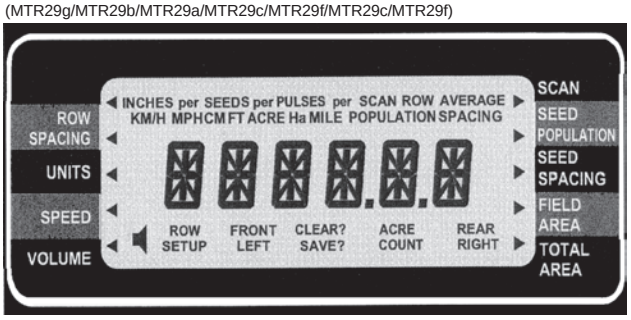
(MTR28c)

- Press the SELECT key once to show REAR and LEFT sections on KPM II Stack-Mode console and REAR and RIGHT sections on SMM console. (Monitor sets correct row spacing.)
- Press the SELECT key a second time to return to all four sections, alternating right front and right rear on SMM console and alternating left front and left rear on KPM II Stack-Mode console. (Monitor sets correct row spacing.)
- Press the SELECT key a third time to show REAR and LEFT sections on KPM II Stack-Mode console and REAR and RIGHT sections on SMM console again.

NOTE: SELECT key has no function when only a single section is being used.

At power up, the lower LCD will show speed (MPH or KM/H).

(MTR29g/MTR29b/MTR29a/MTR29c/MTR29f/MTR29c/MTR29f)



Press the UP or DOWN arrow keys to move the flashing arrow on the lower LCD to change what is displayed on the lower LCD.

Press the shortcut keys SPEED, SEED POPULATION/SEED SPACING or AREA FIELD/TOTAL for direct access to these displays.

(MTR29c/MTR29d/MTR29b/MTR29c)

Press the SEED POPULATION/SEED SPACING or AREA FIELD/TOTAL keys to alternate between the two functions assigned to that key.

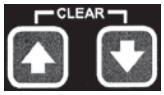
Press the SEED POPULATION/SEED SPACING key to choose average seed spacing/population per acre.

Press the SCAN key to display individual rows starting at row 1.

Press the SCAN key again to lock on current row.

Press the SCAN key again to resume scrolling.

Use the UP or DOWN arrow keys to move to a particular row.



Press the SEED POPULATION/SEED SPACING key to go back to planter average.

CLEARING FIELD AREA

(MTR29n/MTR28b)

To reset the counter, press the UP or DOWN arrow keys to move the arrow in the lower display to FIELD AREA.

Press the UP and DOWN arrow keys at the same time and hold them down for a short period of time to clear the data. The CLEAR? icon will be displayed and the monitor will beep several times. When the data is actually cleared, the monitor will emit a long beep, and the field area is reset to zero. After the long beep, the previous field area recorded is not retrievable.

NOTE: Clearing the field area counter will not clear the total area counter. See "Programming-Clearing Total Area" for clearing total area.

Press the OK key to silence alarms. See "Warnings And Alarms".

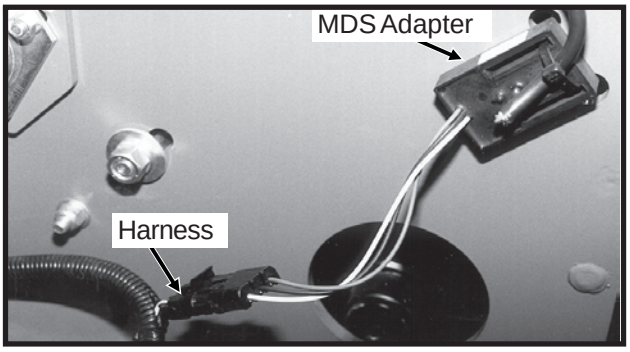
PROGRAMMING/CONNECTING SMM CONSOLE, SHAFT ROTATION SENSORS, SEED TUBES AND/OR RADAR/MAGNETIC DISTANCE SENSORS

STEP 1 All sensors (including the seed tubes w/ sensors, radar, magnetic distance, SMM console and shaft rotation sensors) must be unplugged from the harness and/or console and the monitor must be off.

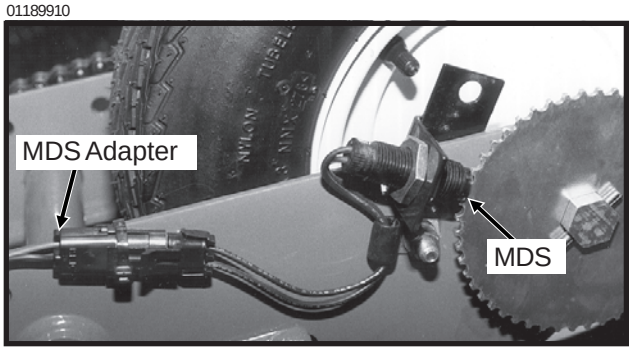
NOTE: If the monitor detects a radar sensor but no seed tubes at power up, it will automatically go into AREA COUNT mode. See "Area Counter/ Speedometer Mode".

NOTE: Disconnect magnetic distance sensor between MDS adapter and planter harness. DO NOT disconnect between MDS and MDS adapter.

01189909



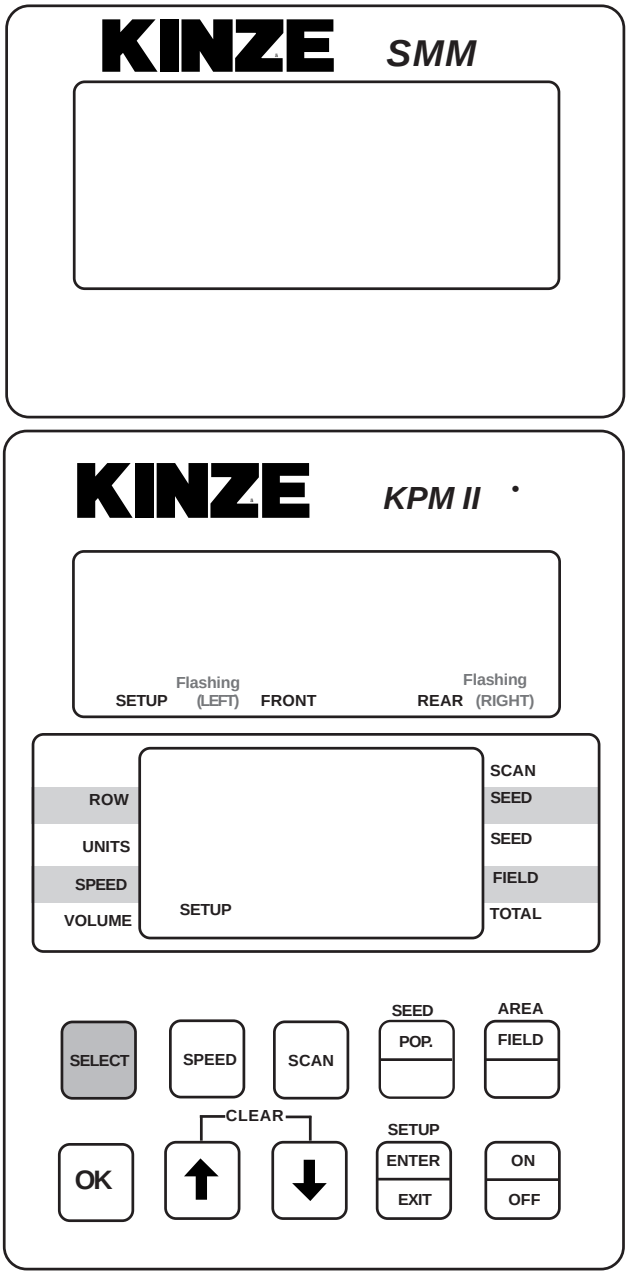
01189910



STEP 2 Press the ON key. The monitor automatically enters the setup procedure. Monitor will scroll "NO SENSOR" on top LCD of KPM II Stack-Mode console.

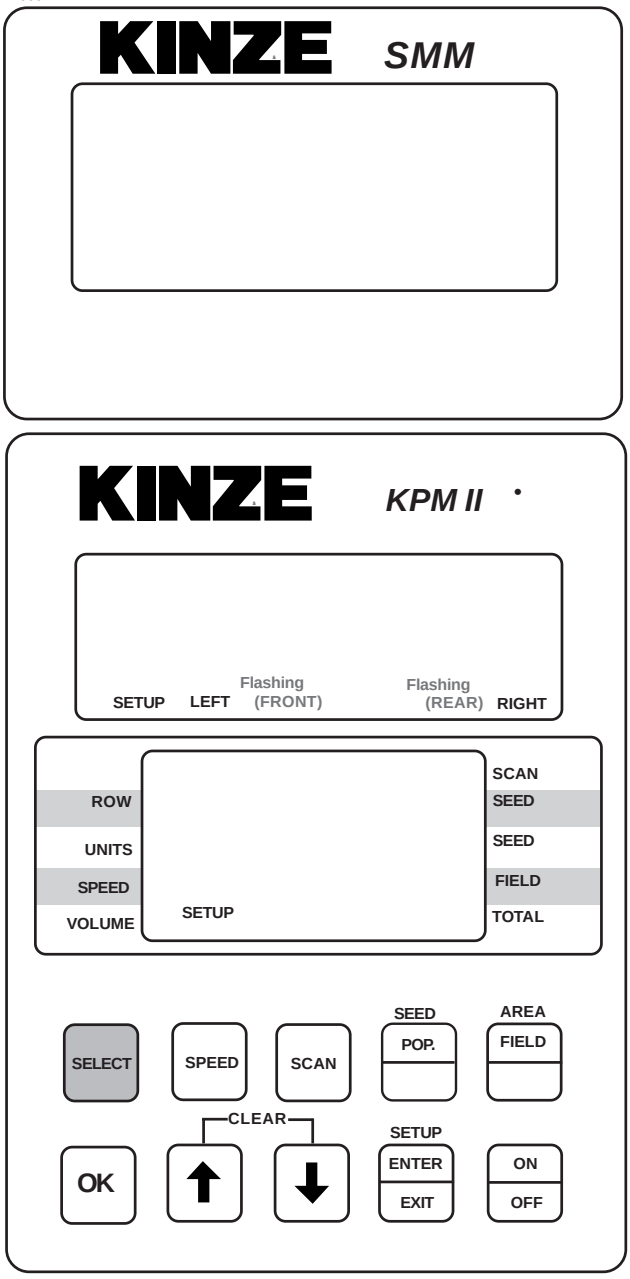
STEP 3 The monitor automatically defaults to rear/ front. Press the SELECT key once for left/ right and twice for four sections (front right/ front left/rear right/rear left). ***The selected display will be solid and the configuration not currently selected will be flashing.***

12060211



NOTE: SMM console may not be applicable to all models.

12060211



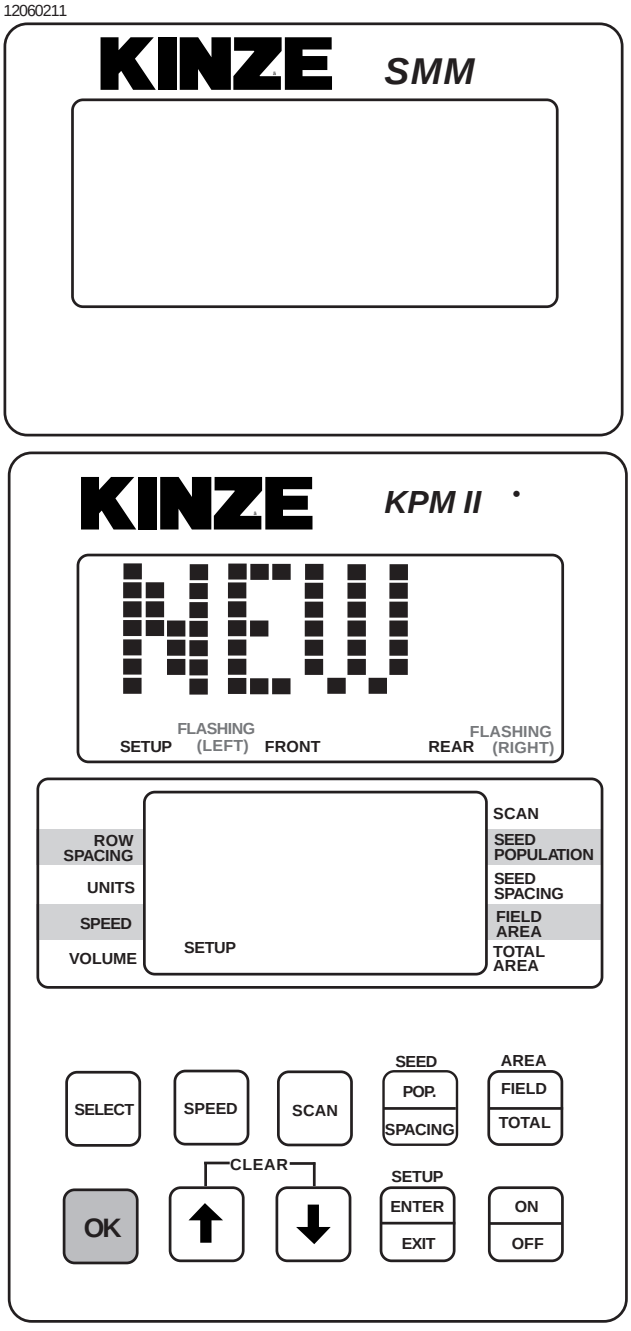
NOTE: SMM console may not be applicable to all models.

NOTE: Model 3800 planters select left/right configuration.

STEP 4 Press and hold the OK key to confirm selection. The upper display will alternate between "NEW" and "SYS?".

The alarm will sound four short beeps followed by one long beep. At this point your selection has been saved and row numbers will appear flashing on the upper display.

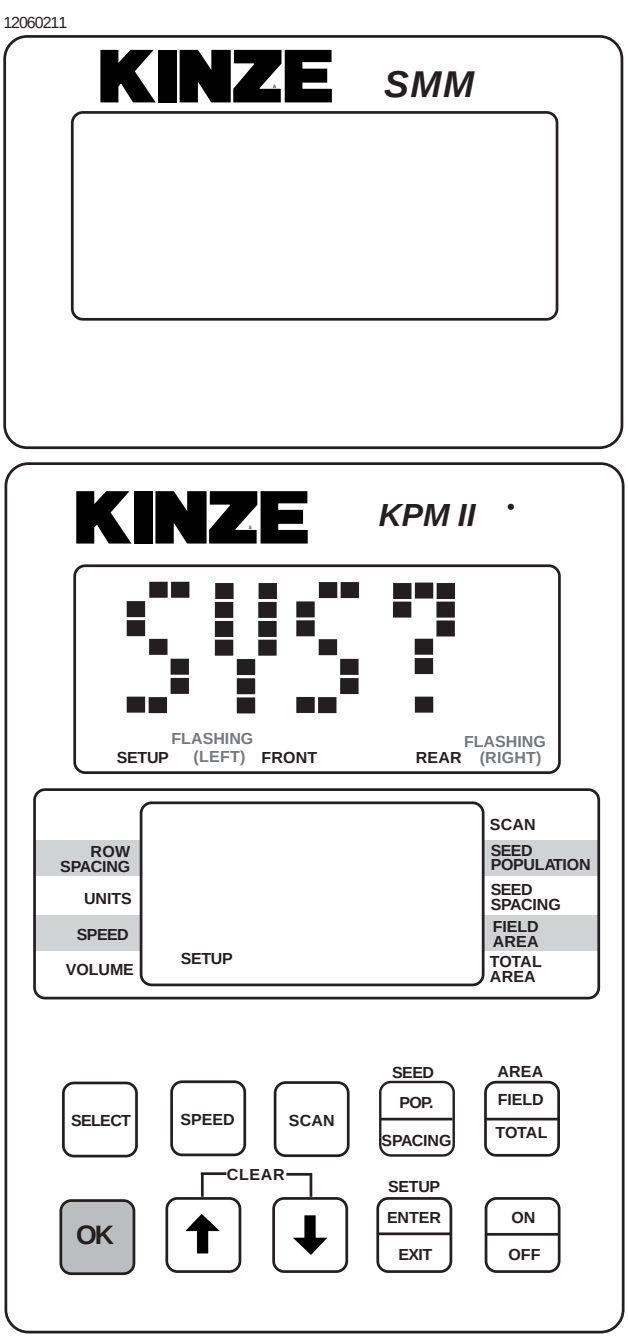
12060211



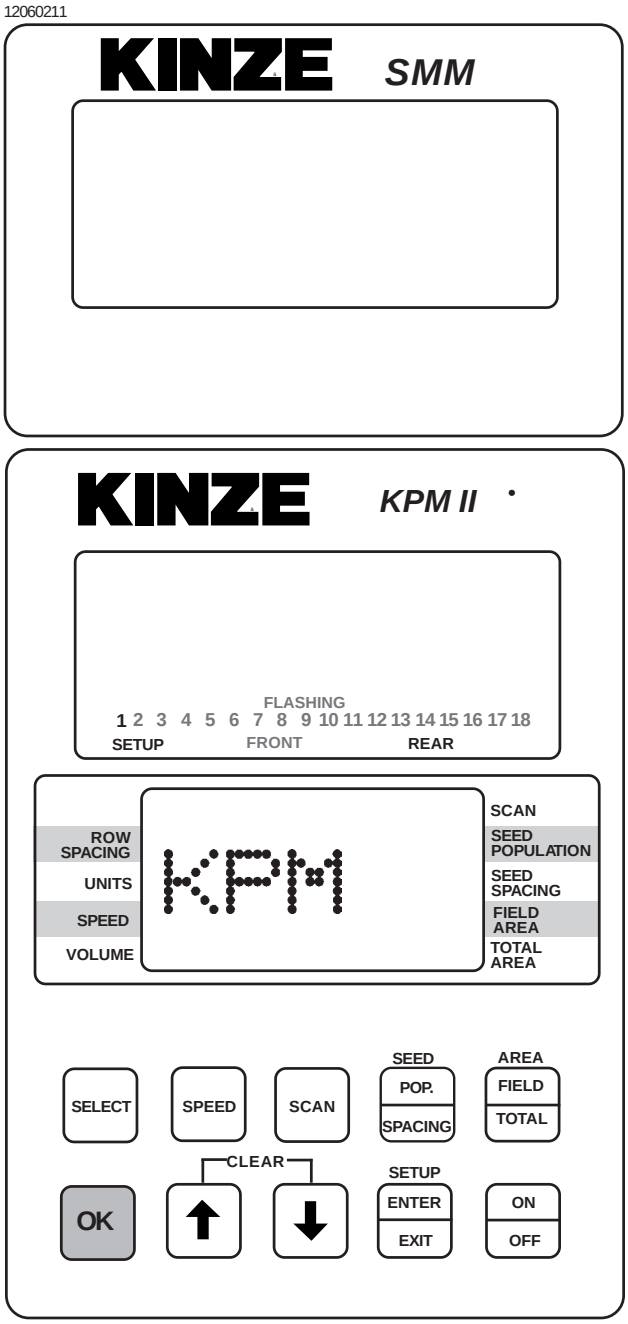
NOTE: SMM console may not be applicable to all models.

NOTE: <u>Illustrated using rear/front configuration.</u> The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and FRONT LEFT/REAR LEFT in the four sections configuration.

STEP 5 (If Applicable) Connect SMM console into junction Y-harness which was installed between the KPM II Stack-Mode console and the primary harness. The SMM console will show a lighted screen and KPM will show on the lower LCD.



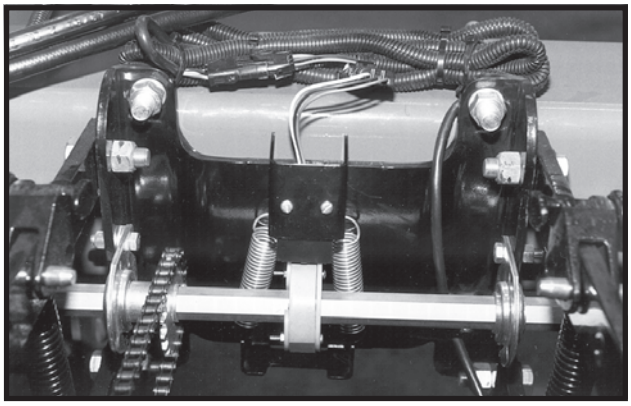
NOTE: SMM console may not be applicable to all models.



NOTE: SMM console may not be applicable to all models.

STEP 6 If the monitor system includes shaft rotation sensors, these should be installed at this time as the seed tubes are connected. The first shaft rotation sensor installed will be assigned to the rows on the outer L.H. half of the planter and the second shaft rotation sensor connected will be assigned to the rows on the inner L.H. half of the planter.

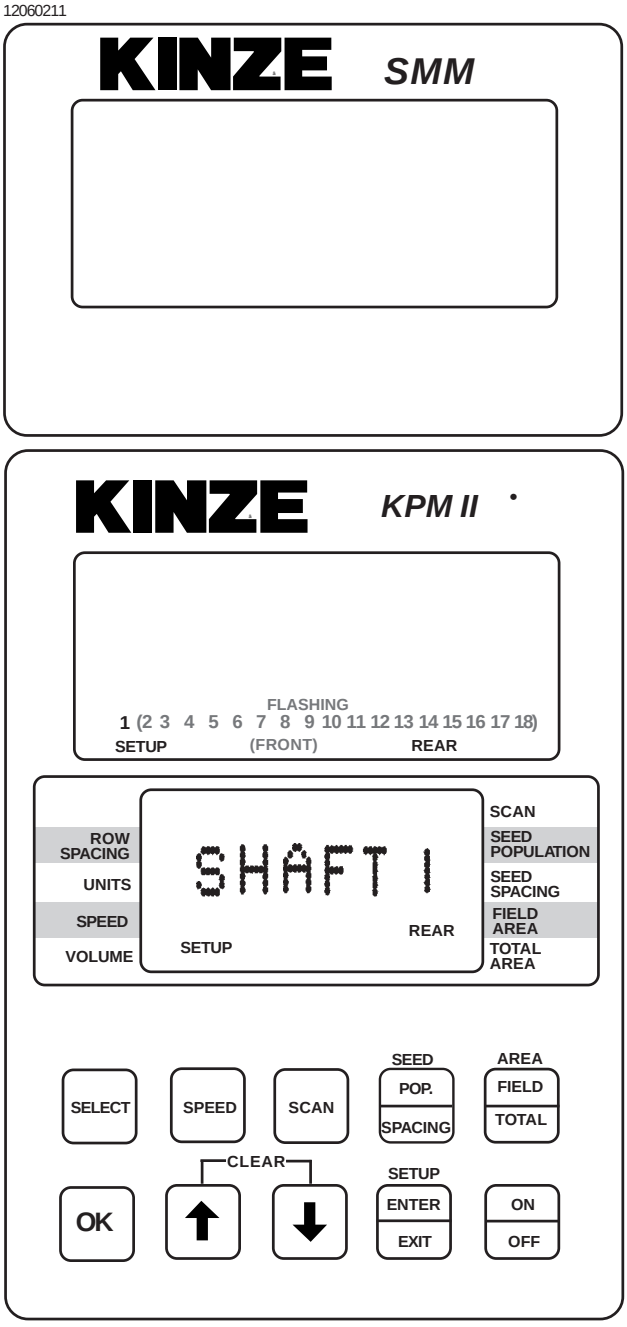
01189906



"SHAFT 1" will display on the lower LCD when the first shaft rotation sensor is installed. "SHAFT 2" will display when the second shaft rotation sensor is installed. "SHAFT 3" will display on the lower LCD when the third shaft rotation sensor is installed on the inner R.H. half of the planter. "SHAFT 4" will display when the fourth shaft rotation sensor is installed on the outer R.H. half of the planter.

NOTE: Illustrated using rear/front configuration. The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and REAR LEFT/FRONT LEFT in the four sections configuration.

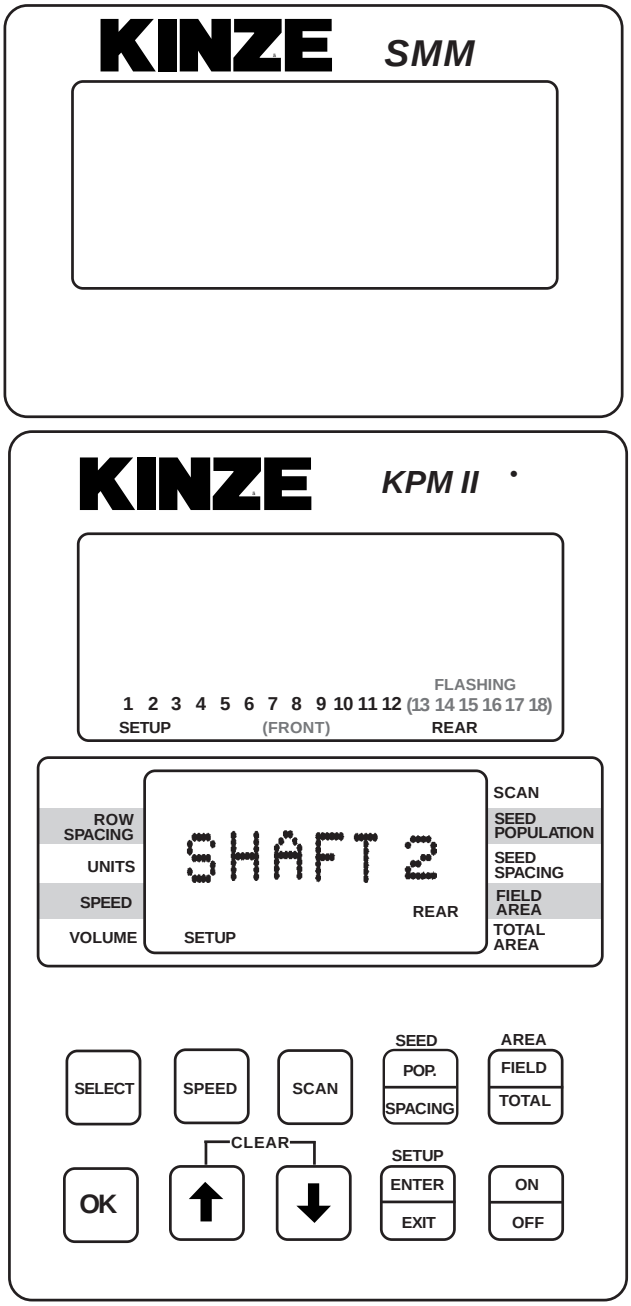
12060211



NOTE: SMM console may not be applicable to all models.

STEP 6 (Continued)

12060211

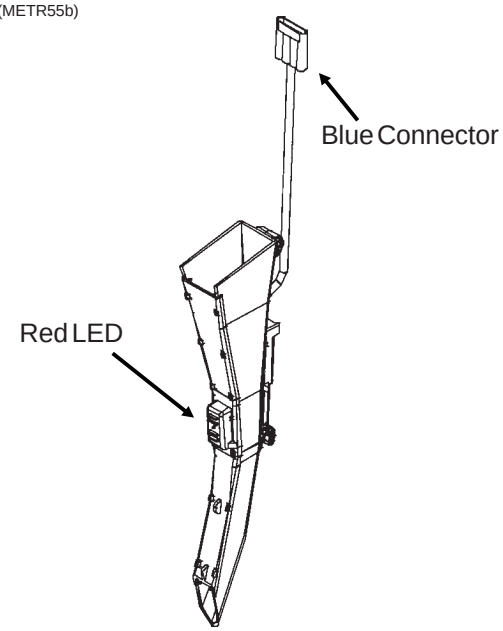


NOTE: SMM console may not be applicable to all models.

STEP 7 Determine which row you want as number one and plug the seed tube w/sensor into the harness.

Continue plugging in sensors along with shaft rotation sensors if so equipped. Row 1 first, row 2 second and so on up to 18 rows. When a sensor is plugged in, the corresponding row number on the upper LCD display will stay solid, the monitor will chirp twice and a red LED (Light Emitting Diode) on the seed tube sensor will turn on for approximately 30 seconds to show connection is made.

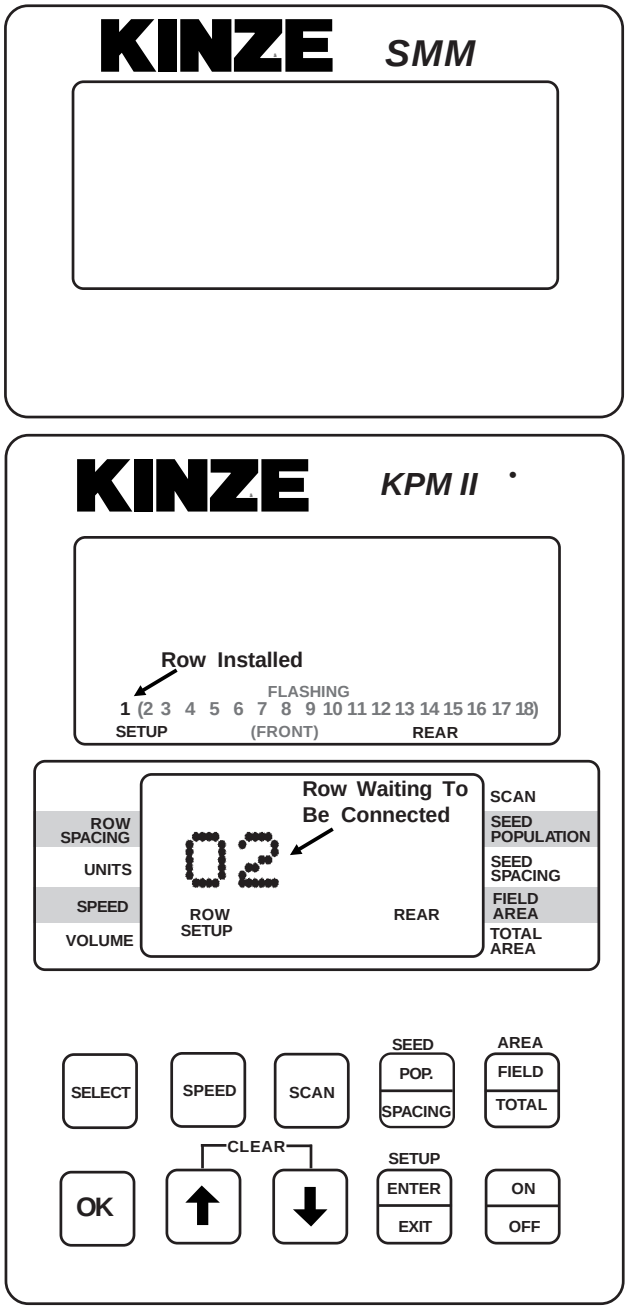
(METR55b)



STEP 7 (Continued)

NOTE: <u>Illustrated using rear/front configuration.</u> The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and REAR LEFT/FRONT LEFT in the four sections configuration.

12060211

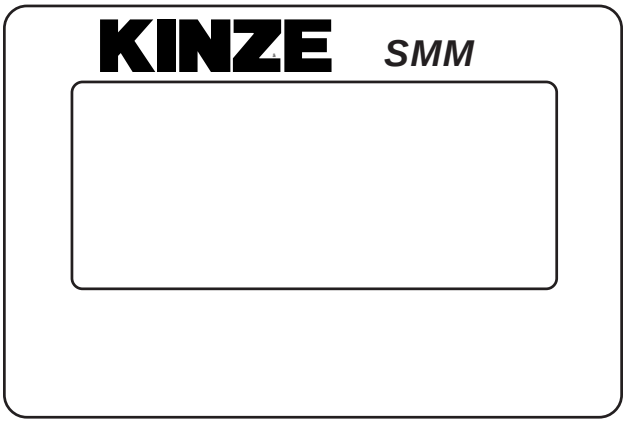


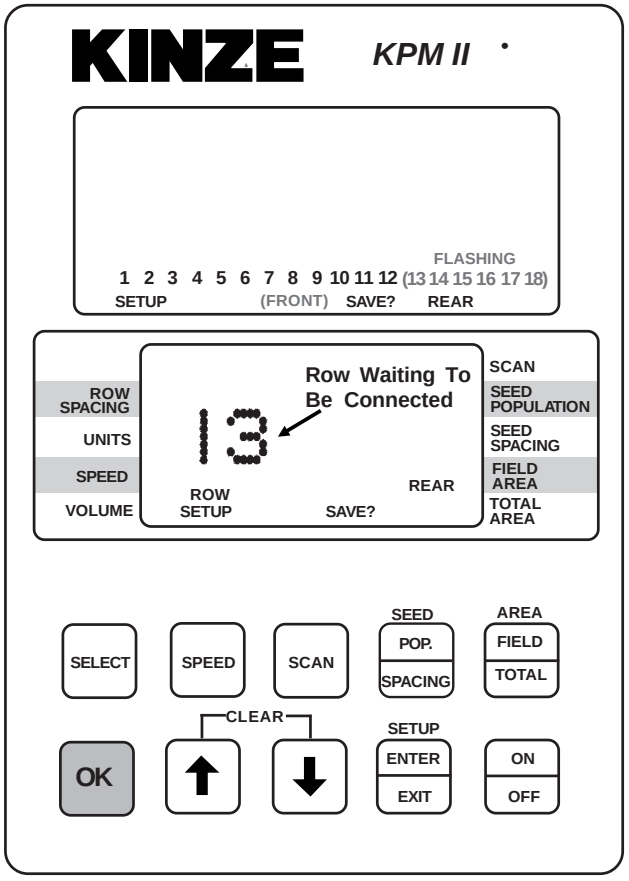
NOTE: SMM console may not be applicable to all models.

STEP 8 When all the seed tubes for the current section (rear/front, left/right or four section) are installed, check to be sure the upper LCD on the KPM II Stack-Mode console displays solid numbers for the number of seed tubes connected. Press and hold the OK key to save the setup for the current section. The SAVE? icon will display followed by continuous short beeps indicating the monitor is preparing to save. The installer has 5 seconds to decide to save the current configuration. During this time, four short beeps will sound followed by a long beep and the SAVE? icon will turn off and the word "DONE" shows on the screen. The monitor will continue to the second section installation (If Applicable).

NOTE: Illustrated using rear/front configuration. The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and FRONT LEFT/REAR LEFT in the four sections configuration.

12060211

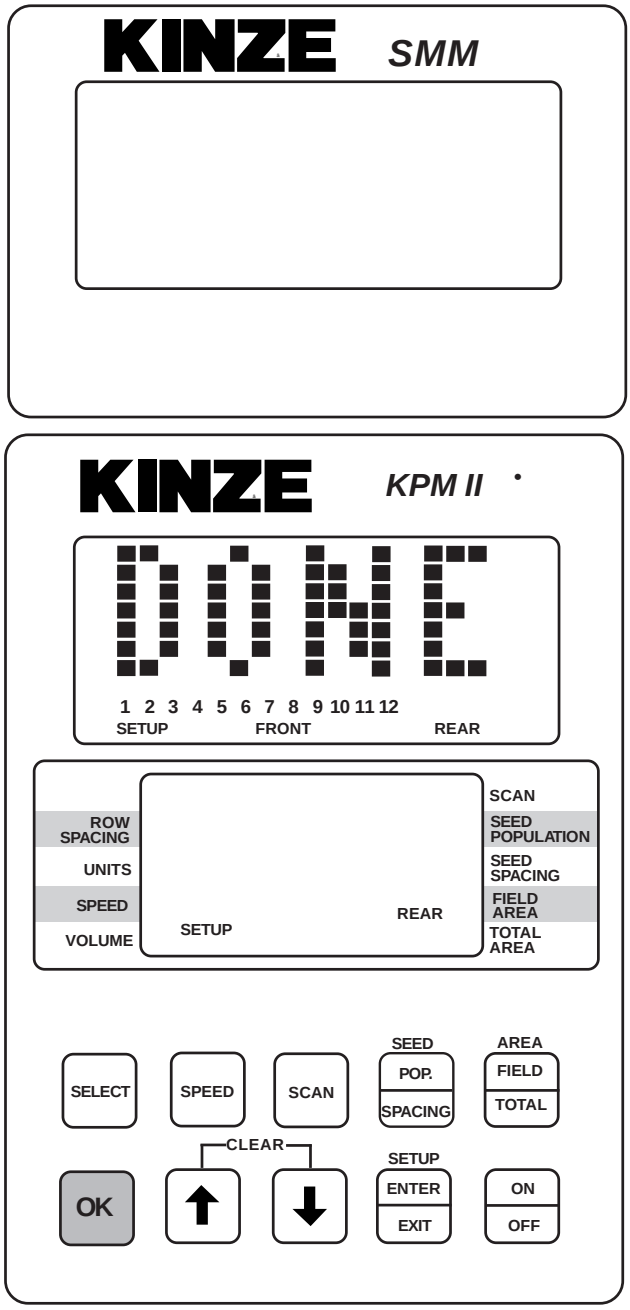




NOTE: SMM console may not be applicable to all models.

STEP 8 (Continued)

12060211



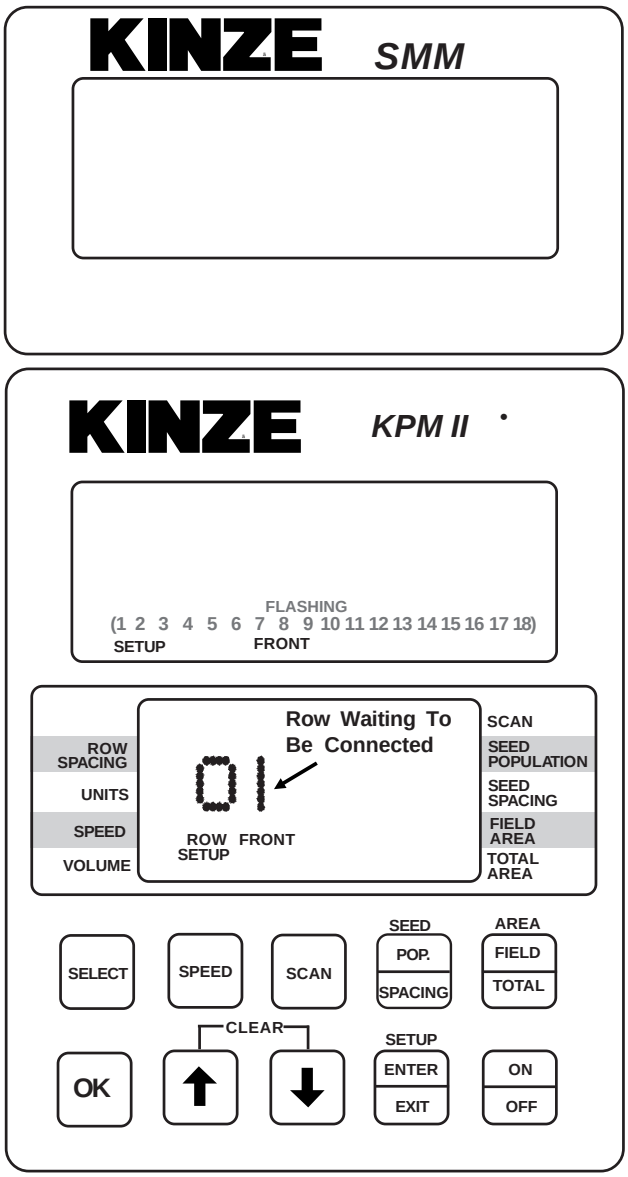
NOTE: SMM console may not be applicable to all models.

STEP 9 Follow STEPS 6, 7 and 8 to install the second, third and fourth sections. If no seed tubes are installed on additional sections, press and hold the OK key. The word "DONE" will appear on upper display. The alarm will sound four short beeps followed by one long beep and the SAVE? icon turns off. The monitor has exited the setup mode. When you release the OK key the upper display will scroll "WAITING CALIBRATION". The lower display will show "GNDSPD" and the alarm will sound continually until the distance sensor is connected. See STEP 10.

NOTE: The SMM console LCD remains blank (except the backlighted screen) until the entire system is saved.

NOTE: Illustrated using rear/front configuration. The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and FRONT LEFT/REAR LEFT in the four sections configuration. The SMM console shows RIGHT in the left/right configuration, FRONT in the front/rear configuration and FRONT RIGHT/REAR RIGHT in four sections configuration.

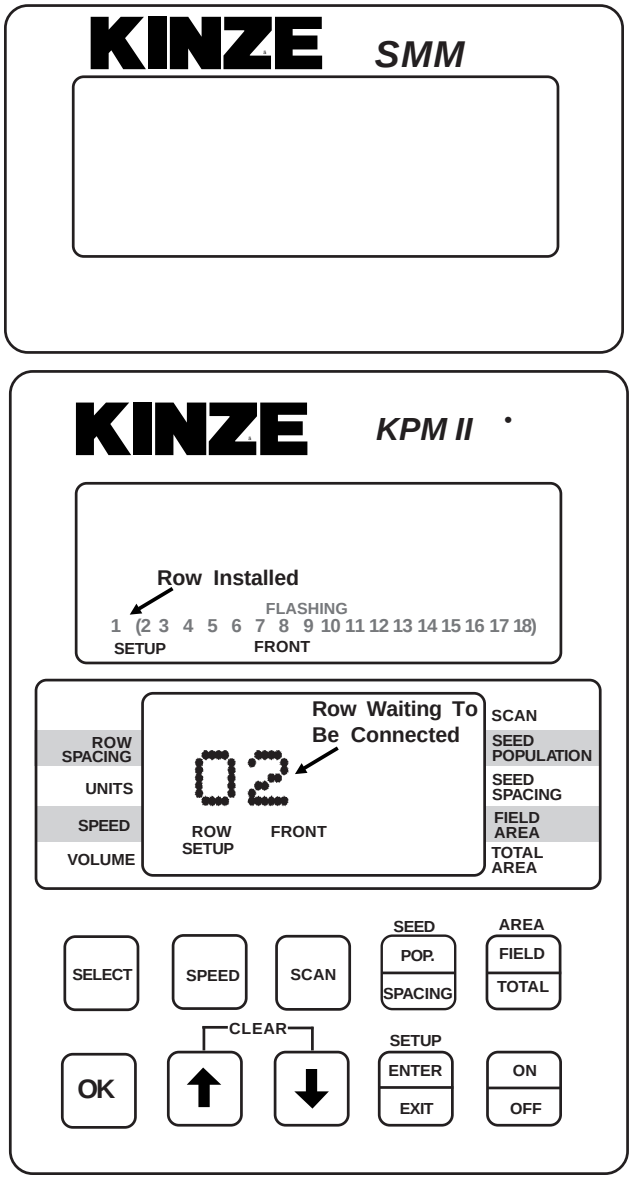
12060212



NOTE: SMM console may not be applicable to all models.

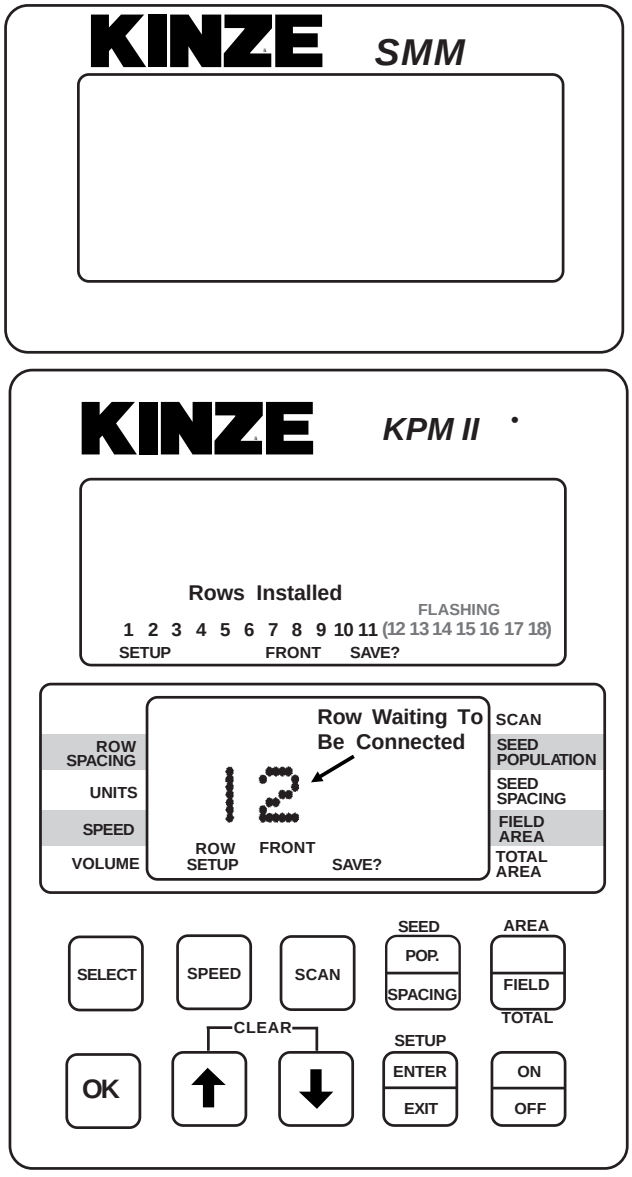
STEP 9 (Continued)

12060213



NOTE: SMM console may not be applicable to all models.

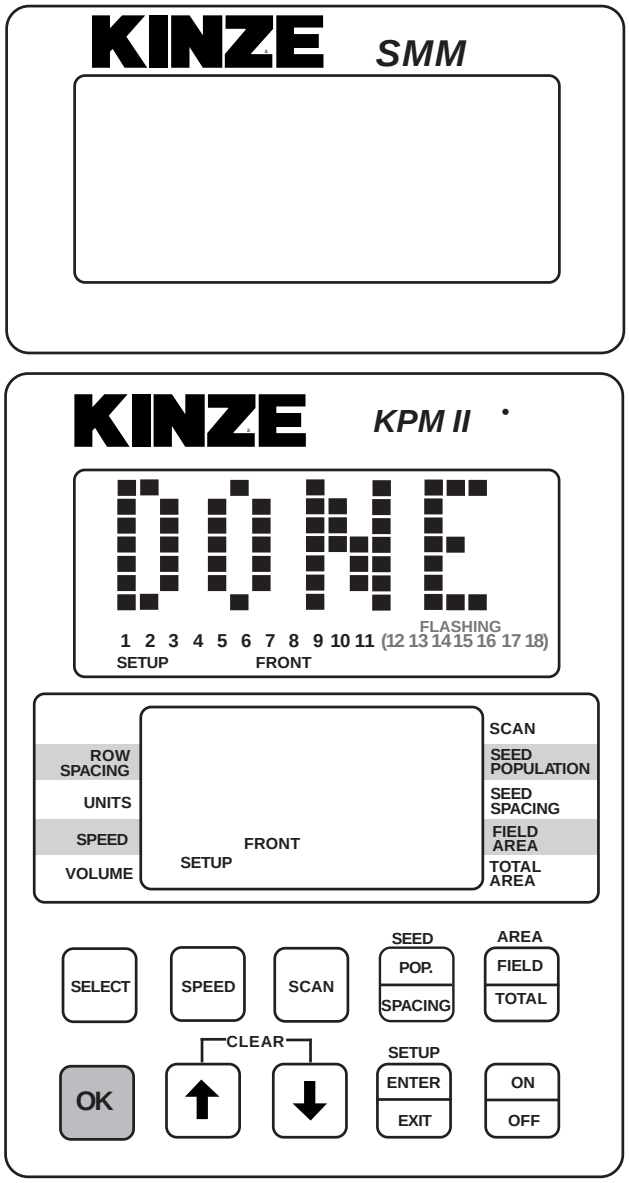
12060214



NOTE: SMM console may not be applicable to all models.

STEP 9 (Continued)

12060215



NOTE: SMM console may not be applicable to all models.

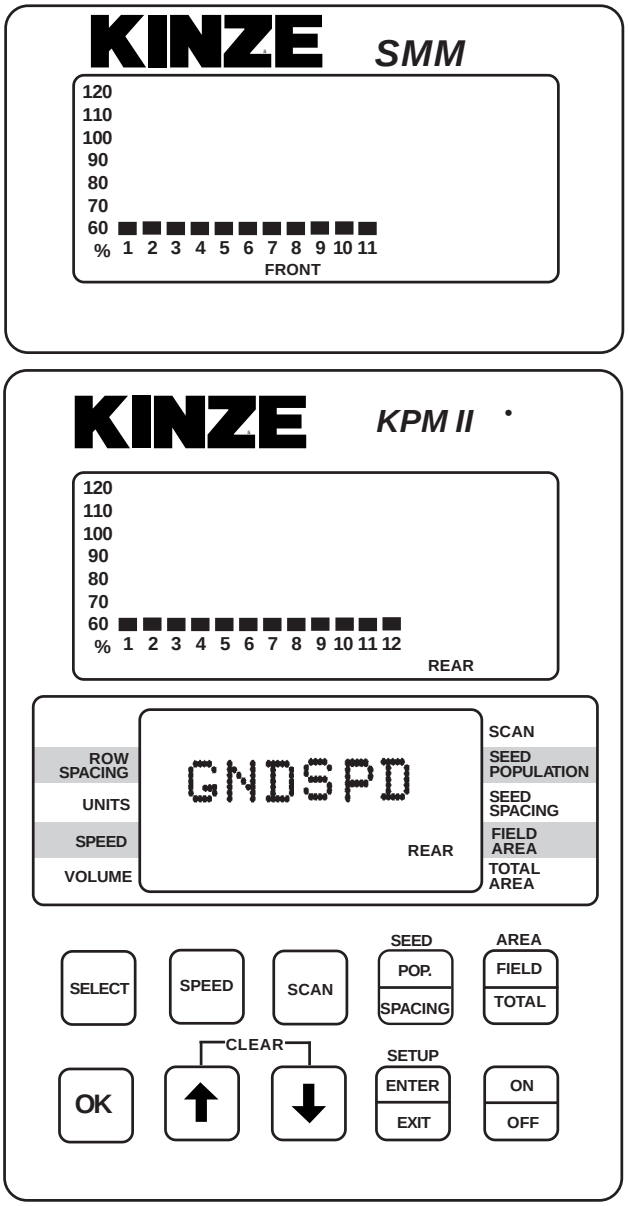
STEP 10 With the lower display showing "GNDSPD", connect the distance sensor. The monitor will display "PICKUP" if a magnetic distance sensor is connected or "RADAR" if a radar distance sensor is installed. Only one distance sensor can be connected at a time.

NOTE: Illustrated using rear/front configuration. The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and FRONT LEFT/REAR LEFT in the four sections configuration. The SMM console shows RIGHT in the left/right configuration, FRONT in the rear/front configuration and FRONT RIGHT/REAR RIGHT in four sections configuration.

NOTE: To connect the radar distance sensor, install the 10" monitor/radar adapter between the console and radar distance sensor to adapt the monitor system to various tractor radar systems. DO NOT CONNECT 10" MONITOR/RADAR ADAPTER PRIOR TO THIS STEP.

STEP 10 (Continued)

12060216

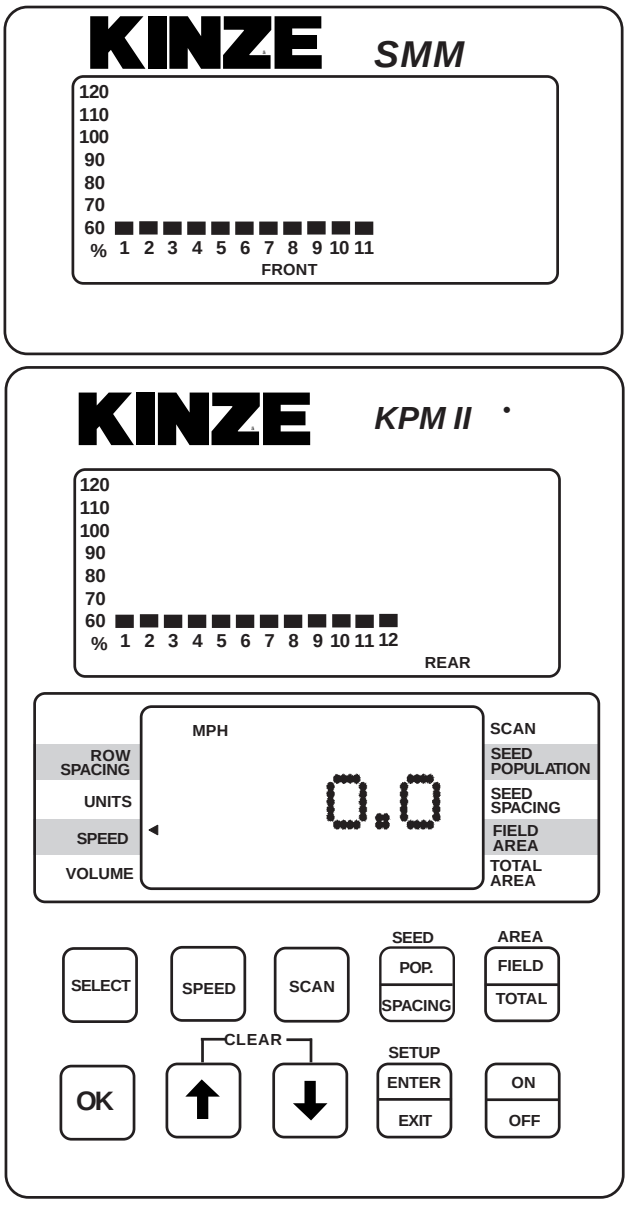


NOTE: SMM console may not be applicable to all models.

NOTE: To reprogram the system to monitor more or less rows (up to the maximum of 18 per section, 72 total in four section configuration), all sensors must be unplugged, followed by the complete setup procedure.

NOTE: Individual seed tubes may be unplugged for special situations. An alarm will sound which can be silenced by touching the OK key. The monitor will recognize the seed tube(s) when reconnected.

12060217



NOTE: SMM console may not be applicable to all models.

ROW-BY-ROW ALARM LEVEL SETTING
(Requires Version V2.05 Or Higher Software - KPM II Stack-Mode Monitors Only)

This feature allows the audio alarm to be disabled on selected rows in applications such as planting seed corn.

NOTE: The system should be programmed to monitor all planter rows prior to performing these steps.

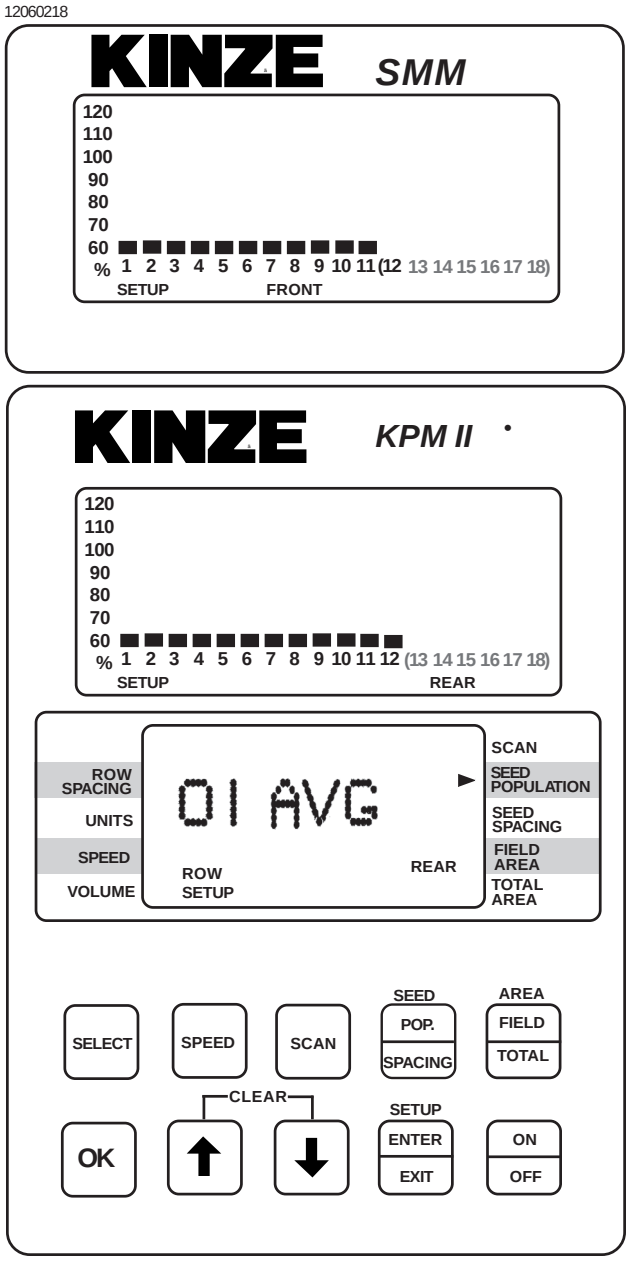
NOTE: <u>Illustrated using rear/front configuration.</u> The KPM II Stack-Mode console shows LEFT in the left/right configuration, REAR in the rear/front configuration and FRONT LEFT/REAR LEFT in the four sections configuration. The SMM console shows RIGHT in the left/right configuration, FRONT in the rear/front configuration and FRONT RIGHT/REAR RIGHT in four sections configuration.

STEP 1 Enter the programming mode by pressing and holding the SETUP key. The monitor will emit several short beeps, followed by a long beep. On the lower LCD, the SETUP icon will turn on and the arrow head icon will flash, indicating the user can select an item to program.

NOTE: The monitor must be in a programmable function (row spacing, unit, speed, volume or area) to enter setup. The monitor will not enter setup in seed population or seed spacing.

STEP 2 Press the UP or DOWN arrow keys to move the flashing arrow to SEED POPULATION. As the arrow icon moves, the lower LCD will display the current setting of each item selected.

12060218



NOTE: SMM console may not be applicable to all models.

STEP 3 Press the OK key. Row number starts flashing.

STEP 4 Arrow UP or DOWN to desired row.

STEP 5 Press SELECT key. “AVG” starts flashing.

STEP 6 Arrow UP or DOWN to choose one of the following options.

HIGH - For Early Alarm (70%)
AVG - For Standard Alarm Setting (55%)
LOW - For Failed Alarm Only (25%)
OFF - To Disable Row Alarm

STEP 7 Press and hold the OK key to save alarm setting. There will be four short beeps, one long beep and the word “DONE” will appear when the save is completed.

STEP 8 Repeat STEPS 3 through 7 for each row on which you wish to adjust the alarm setting.

STEP 9 When finished, press the SETUP key to exit setup mode.

NOTE: The programming mode may be exited at any time by pressing the SETUP key. Pressing this key will return the monitor to its normal operation. All items changed and saved will come into effect immediately. Any items changed, but not saved will revert to the original programmed value.

NOTE: Repeat STEPS 3 through 7 to change seed monitor back to the original settings when special row-by-row alarm level settings are no longer required.

NOTE:
See “Programming - Row Spacing” for programming applicable row spacing.

See “KPM II Stack-Mode Electronic Seed Monitor Troubleshooting” in the Maintenance Section.

KPM III ELECTRONIC SEED MONITOR

D10190501

The monitor system is powered by the tractor battery (requires 12 volts DC). The console receives information from each of the sensors and translates this information.

The KPM III console uses a single backlit Liquid Crystal Display (LCD) to show, the number of monitored rows, the relative seed rate for each row (using bargraph displays) and displays various alarm and warning messages when an alarm condition exists. A continuous audible alarm will sound upon system malfunction or underflow conditions for any monitored row. Alarms must be acknowledged by the user. Various warnings may sound the alarm or flash one or more messages. The LCD also shows alphanumeric data such as row spacing, units (Metric or English), speed (MPH or KM/H), volume, seed population, seed spacing, field area and total area.

The monitor system will power down if no activity is detected within one hour. No activity means there has been no new seed flow and no operator push key input.

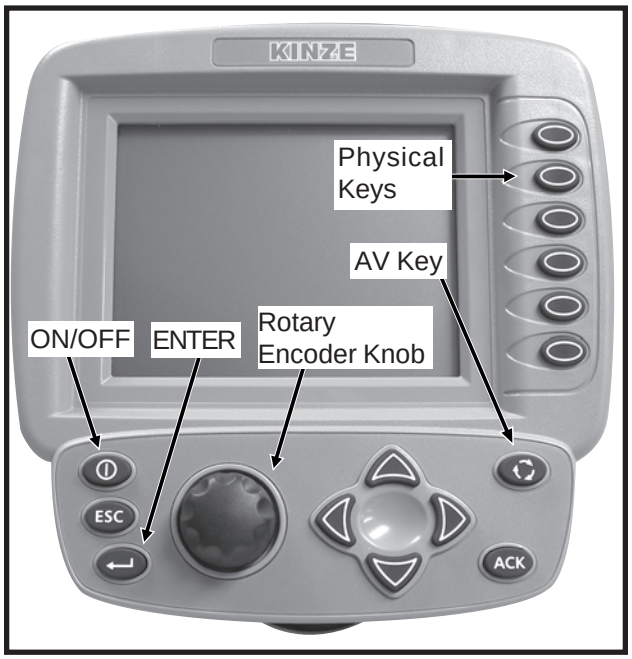
The KPM III electronic seed monitor system consists of (a) a KPM III console, which is mounted on the tractor; (b) seed tubes with sensors, one of which is installed in each planter row unit; (c) a magnetic distance sensor, which is installed on the planter, or a radar distance sensor, which is installed on the tractor; (d) shaft rotation sensors (if applicable), which are installed on the planter drill shafts; and (e) planter harnesses (junction Y-harness and/or extension harness where applicable), to which the individual seed tube sensors connect. The primary harness, which connects the monitor console to the planter harness, is hard-wired into the safety/warning light harness or control console harness included as standard equipment with the planter.

The software design of the KPM III console allows simultaneous viewing of seed flow bargraphs for standard and/or Interplant® System rows (up to 36 rows).

MONITOR KEY FUNCTIONS

Push keys allow the user to select or change the operating mode, the active displays or the current configuration. Depending on the operating mode or the current display selected, some keys may not be active. Each key press, if valid, is acknowledged by a short beep and an action is taken. If the key press has no action associated, the key press is considered invalid, and the user will not receive feedback.

D10190501



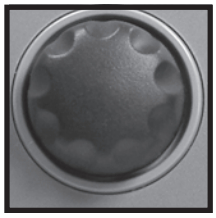
PHYSICAL KEYS
- Located on R.H. side of console and referred to as F1, F2, F3, F4, F5 and F6
- Keys are referenced in descending order with F1 at the top and F6 at the bottom.

ON/OFF KEY
- Powers the unit on and off.

ESC KEY
- Used as the CANCEL (escape) key.

ENTER KEY
- Confirms or accepts the highlighted selection.

ROTARY ENCODER KNOB
- Turn knob clockwise to increase or counterclockwise to decrease value of item.
- Turn knob clockwise to scroll up or counterclockwise to scroll down.
- Press knob to enter selection.



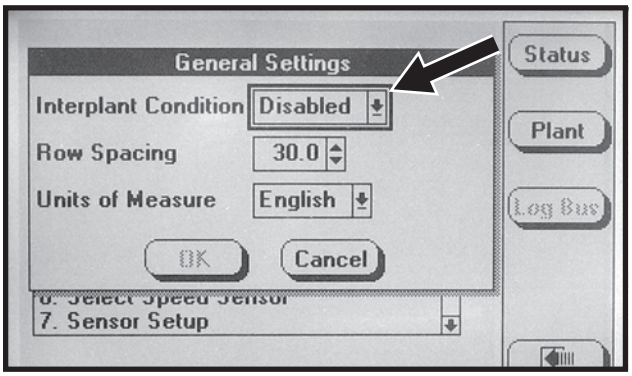
AV (AUDIO/VIDEO) KEY
- Set alarm volume.
- Adjust the contrast.
- Adjust backlighting of the LCD display.

ACK (ACKNOWLEDGE) KEY
- Used to silence (acknowledge) the warning alarm when various error conditions occur. **NOTE: Alarms can be viewed by pressing the STATUS key.**

ARROW KEYS
- UP arrow key is used to increase the value of an item by one or to scroll up.
- DOWN arrow key is used to decrease the value of an item by one or to scroll down.
- LEFT arrow key multiplies the numeric value of the item by 10.
- RIGHT arrow key divides the numeric value of the item by 10.

NOTE: Within the LCD, the black box around the smaller box as shown below indicates which field is selected/highlighted. Turning the rotary encoder knob or pressing the UP or DOWN arrow keys moves the black box. When the black box is positioned on a programmable item, such as Shaft Sensors, Speed Sensor, Front Row Units or Rear Row Units, pressing the knob or ENTER key will highlight the programmable item. A programmable item may only be changed when it is highlighted.

D02140616

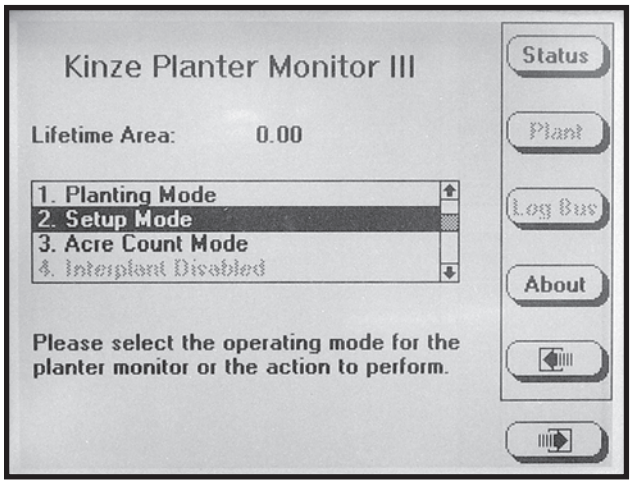


CONFIGURING PLANTER MONITOR

When the KPM III is powered on for the first time it will go directly into the ''Planter Configuration'' screen (STEP 4).

STEP 1 Press the F6 key until ''Mode Selection'' screen appears.

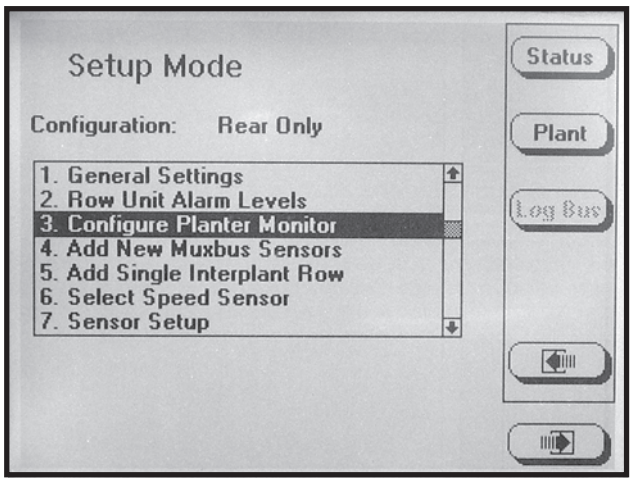
D02140614



STEP 2 Select ''Setup Mode'' by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display highlighted item.

STEP 3 Select ''Configure Planter Monitor'' by turning the knob or using the UP and DOWN arrow keys. Press the knob or the ENTER key to display the highlighted item.

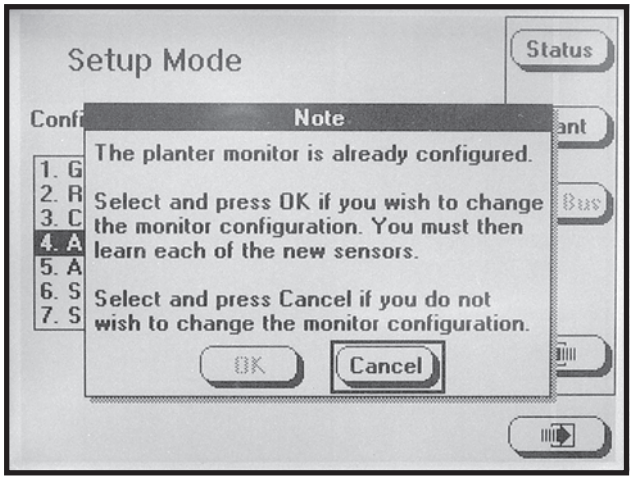
D02140624



NOTE: The planter monitor cannot be reconfigured while planting.

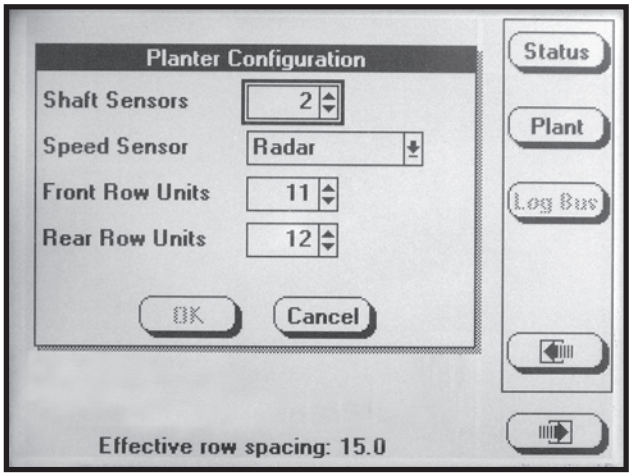
NOTE: If the monitor has already been configured the message shown below will appear.

D02140634



STEP 4 Press the knob or ENTER key, to highlight the ''Shaft Sensors'' field. Enter the number of ''Shaft Sensors'' by turning the knob or using the UP or DOWN arrow keys. When the correct value is displayed press the knob or ENTER key. The black box will advance to ''Speed Sensor'' field.

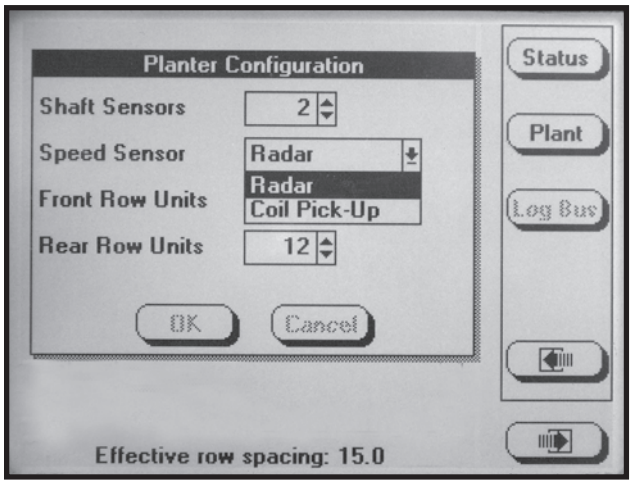
D05310601



NOTE: The numeric value may be changed only if the item is highlighted. Turning the rotary encoder knob increases or decreases the value of the item. The UP arrow key may be used to increase the value of the item by one and the DOWN arrow key may be used to decrease the value of the field by one.

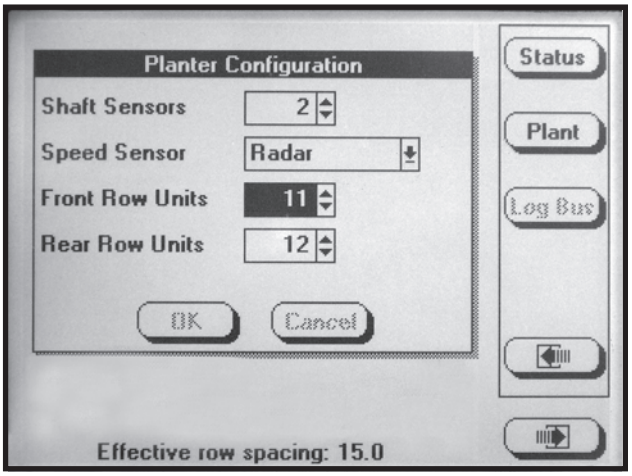
STEP 5 Press the knob or ENTER key and a drop down menu will appear; select either ''Radar'' or ''Coil Pick-Up'' (MDS) by turning the knob or using the UP or DOWN arrow keys. When the desired selection is highlighted press the knob or ENTER key. The black box will advance to ''Front Row Units'' field.

D05310604



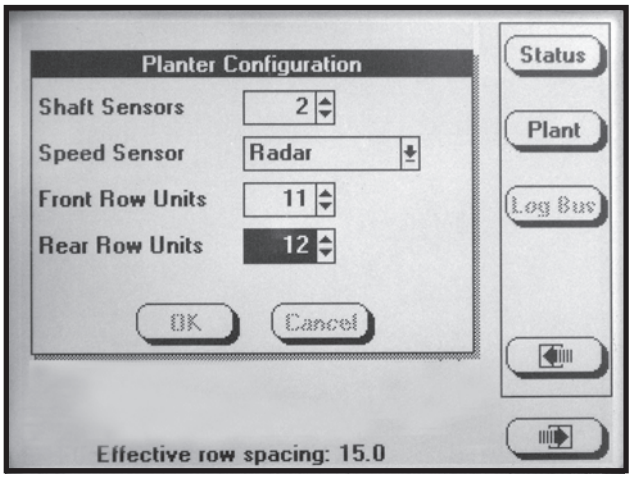
STEP 6 If there are front rows on the planter, press the knob or ENTER key to highlight the ''Front Row Units'' field. Turn the knob or use the UP or DOWN arrow keys to obtain correct number of push row units. Press the knob or ENTER key when desired quantity is displayed. The black box will advance to ''Rear Row Units'' field. If no front rows need to be entered simply turn the knob or press the DOWN arrow key to advance to ''Rear Row Units''.

D05310605



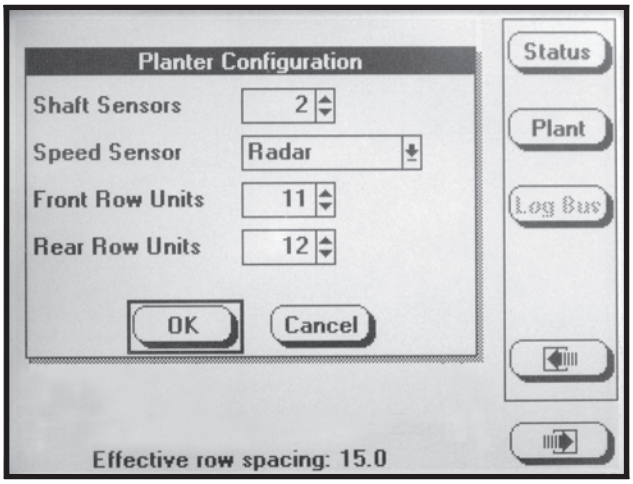
STEP 7 Press the knob or ENTER key to highlight the ''Rear Row Units'' field. Turn the knob or use the UP or DOWN arrow keys to obtain correct number of pull row units. Press the knob or ENTER key when desired quantity is displayed. The black box will advance to the OK key.

D05310606



STEP 8 Press the knob or the ENTER key to save the information.

D05310607



NOTE: To prevent the configuration from being saved press ESC or select the CANCEL button, then press the rotary encoder knob or ENTER key.

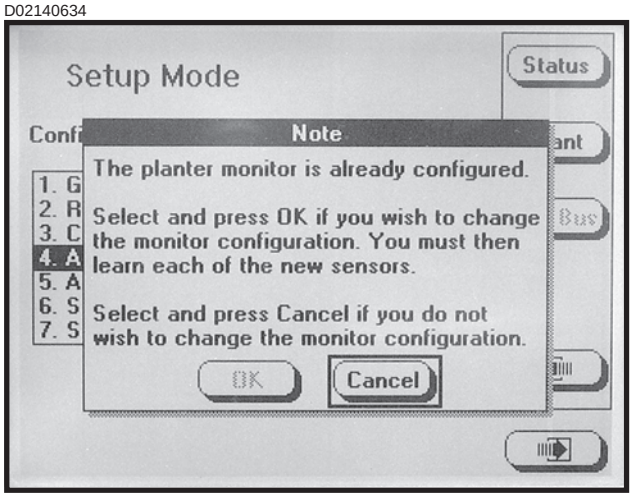
STEP 9 The monitor screen shown below will appear.

If the new planter configuration is to be saved turn the knob or press the UP or DOWN arrow keys to select the OK button then press the knob or ENTER key to save the planter configuration. If the monitor configuration is not to be changed select the CANCEL key, press the knob or ENTER key to CANCEL or press the ESC key.

If OK is selected the monitor will advance to ''Sensor Setup'' (STEP 4 in PROGRAMMING/CONNECTING SEED TUBES, SHAFT ROTATION SENSORS AND/OR RADAR/MAGNETIC DISTANCE SENSORS section).

NOTE: STEP 9 does not apply if configuring the monitor for the first time.

D02140634



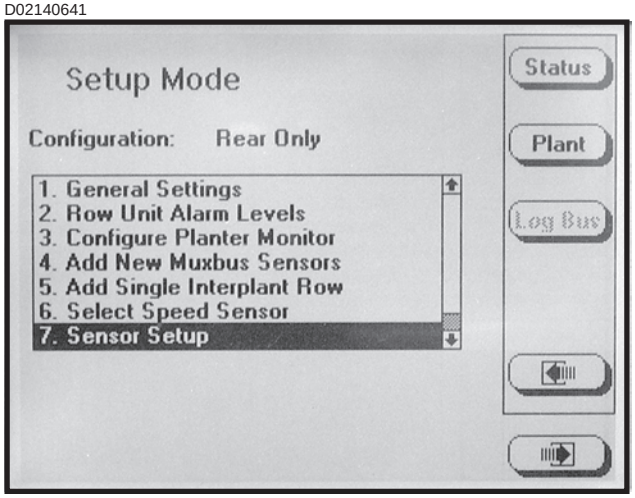
PROGRAMMING/CONNECTING SEED TUBES, SHAFT ROTATION SENSORS AND/OR RADAR/ MAGNETIC DISTANCE SENSORS

STEP 1 To enter ''Mode Selection'', press F6 key until the ''Mode Selection'' screen appears.

STEP 2 Select ''Setup Mode'' by turning the rotary encoder knob or press the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

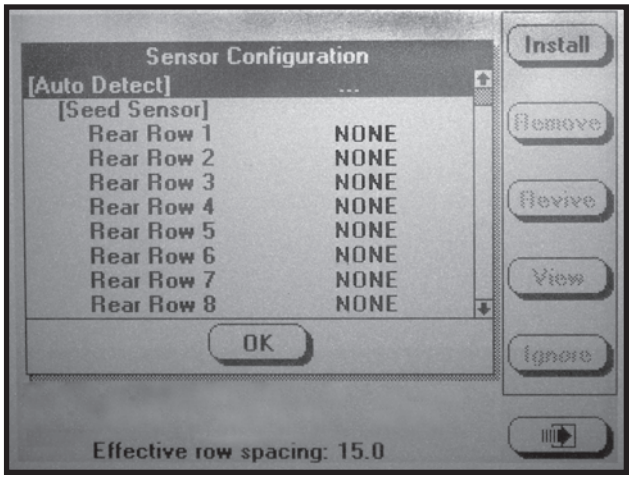
STEP 3 Select ''Sensor Setup'' by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140641



STEP 4 Attach the planter harness to the KPM III. Do NOT connect any of the sensors to the planter harness. With [Auto Detect] selected press the INSTALL key.

D02210601a

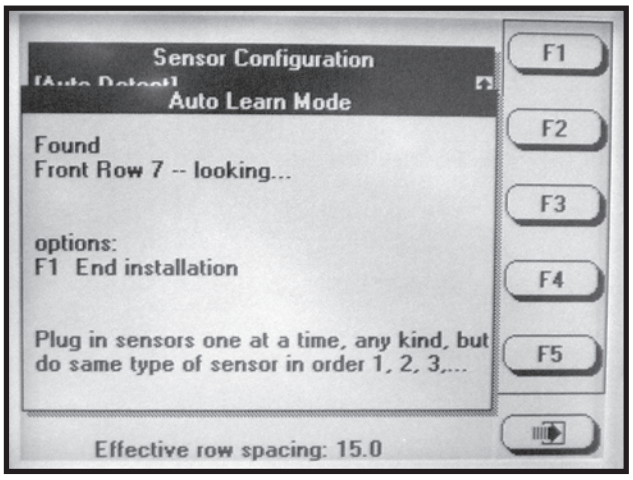


STEP 5 Plug in the first seed sensor (row 1), working from left to right (rear row units and front next if applicable). When a sensor is connected to the planter harness wait for the monitor to acknowledge with two beeps.

Continue connecting seed sensors along with shaft rotation sensors or speed sensors. Progress will reflect on the LCD screen. The example below indicates that the last seed sensor found was Front Row 7 and the monitor is looking for the next sensor.

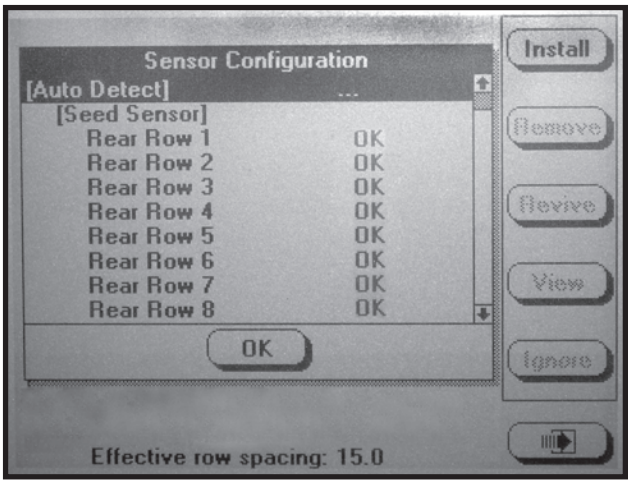
When all sensors are installed press the F1 key to end the installation.

D02170617



NOTE: After each sensor has been installed ''OK'' will appear after the sensor name.

D02210601b

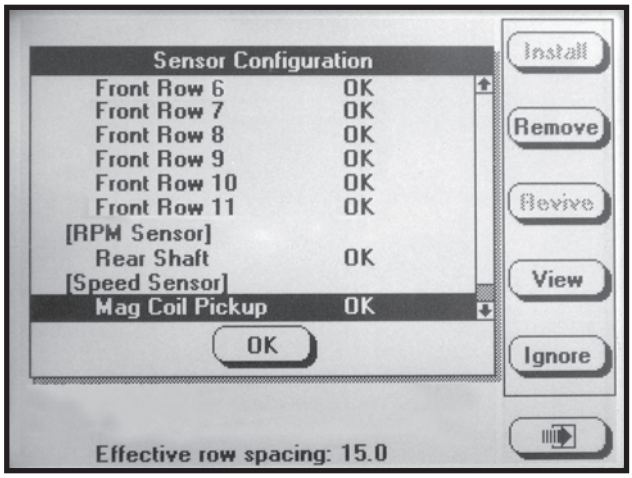


STEP 6 If ''OK'' appears behind ALL sensors, press the knob or the ENTER key to save the configuration. The ''Setup Mode'' menu will then appear.

NOTE: If ''NONE'' appears after a sensor, the sensor was not recognized. All sensors must be disconnected from the planter harness and reconnected as described in STEP 5.

NOTE: If ''OK slow'' appears after a sensor, the sensor is able to communicate but at a slower speed. For the system to run at top speed of 9600 baud the slow sensor must be replaced.

D05310609



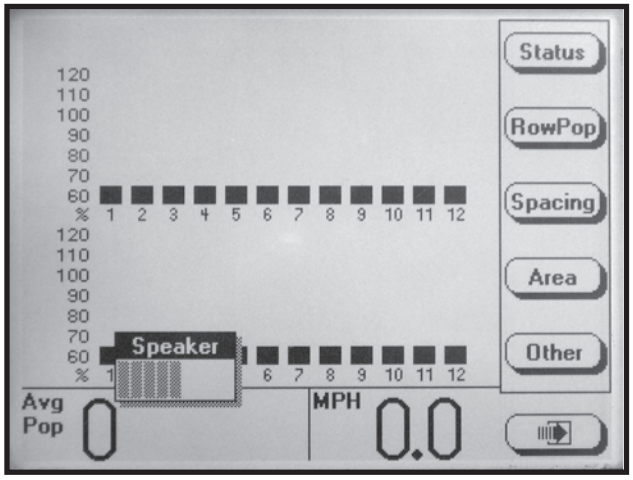
STEP 7 To return to "Planting Mode" select the PLANT key or press the F6 key until "Planting Mode" screen appears.

CHANGING VOLUME, CONTRAST AND BACKLIGHTING

The alarm volume and LCD screen contrast and backlighting may be adjusted at anytime, regardless of what is displayed on the screen.

STEP 1 Press the AV key. The speaker adjustment dialog box will appear in the lower L.H. corner of the display.

D05310610

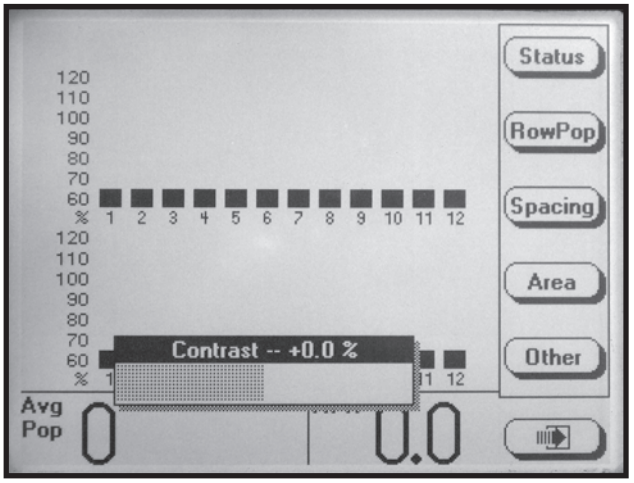


STEP 2 Use the LEFT and RIGHT arrows or turn the rotary encoder knob to adjust the volume. The volume of the sound emitted from the speaker changes as the adjustment is being made.

STEP 3 To adjust contrast or backlight, go to STEP 4. If finished press ENTER to save and exit.

STEP 4 Press the AV button a second time. The contrast adjustment dialog box will appear in the lower portion of the display.

D05310611

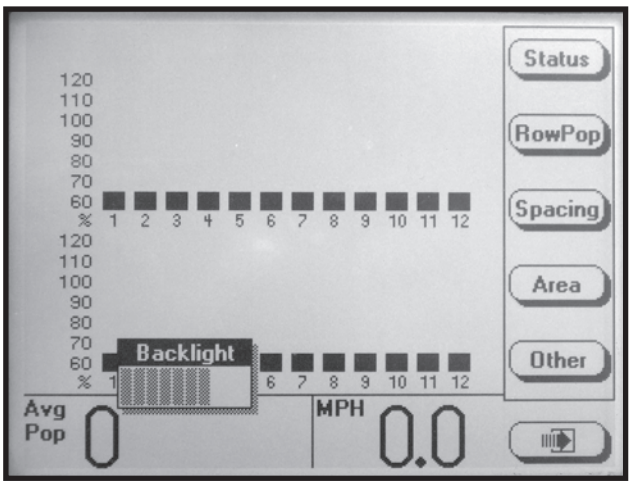


STEP 5 Use the LEFT and RIGHT arrows or turn the knob to adjust contrast. The effect of the adjustment will be visible on the display.

STEP 6 To adjust backlighting go to STEP 7. If finished press ENTER to save and exit.

STEP 7 Press the AV button a third time. The backlight adjustment dialog box will appear in the lower L.H. corner of the display.

D05310612



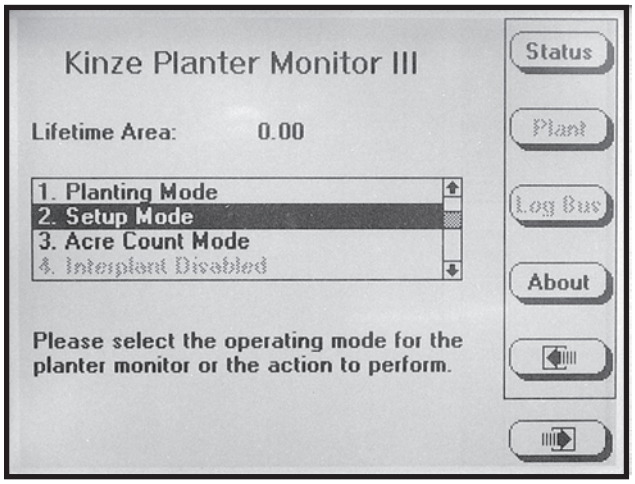
STEP 8 Use the LEFT and RIGHT arrows or turn the knob to adjust backlighting. The effect of the adjustment will be visible on the display.

STEP 9 Press the knob, ENTER or press the AV button a fourth time to save the volume, contrast and backlight settings. The backlight adjustment dialog box will disappear.

PROGRAMMING INTERPLANT® CONDITION, ROW SPACING AND UNITS (Metric Or English)

STEP 1 To enter ''Mode Selection'' screen press the F6 key until ''Mode Selection'' screen appears.

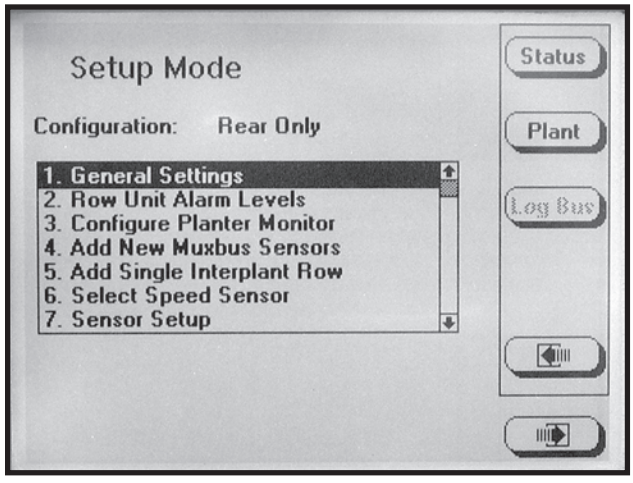
D02140614



STEP 2 Select ''Setup Mode'' by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

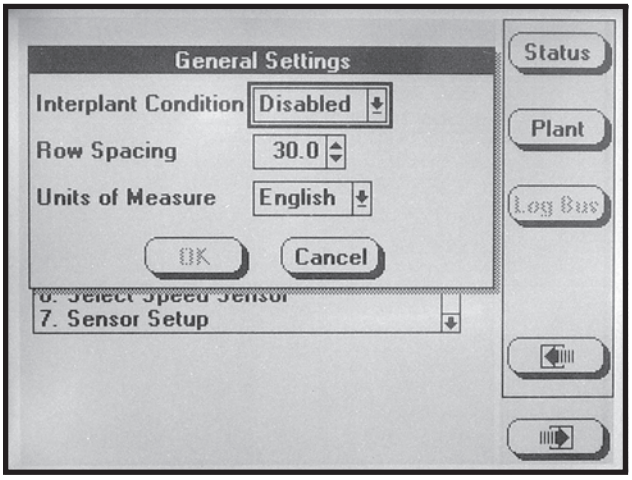
STEP 3 Select ''General Settings'' by turning the knob or using the UP or DOWN arrow keys. Press the knob or the ENTER key to display the highlighted item.

D02140615



STEP 4 Press the knob or ENTER key and a drop down menu will appear. Select either ''Enabled'' (push row units are being used for planting) or ''Disabled'' (push row units are not being used for planting and no seed rate alarms will be generated for the front rows; no bargraphs are to be displayed for the front rows and the front rows do not contribute to the average population and spacing or acre counts). Use the knob or UP or DOWN arrow keys to make selection. Press the knob or ENTER key to select highlighted item. The black box will advance to "Row Spacing" field.

D02140616



NOTE: When English is selected inches are displayed, if Metric is selected centimeters are displayed.

STEP 5 Press the knob or ENTER key to enter the correct value for ''Row Spacing''. Turn the knob to increase or decrease the number. The UP arrow key is used to increase the value of the item by one and the DOWN arrow key is used to decrease the value of the field by one. The LEFT arrow key multiplies the value of the item by 10 and the RIGHT arrow key divides the value of the item by 10. When the correct number has been entered press the knob or ENTER key. The black box will advance to ''Units of Measure'' field.

NOTE: The narrowest row spacing the planter is equipped to plant should be entered for "Row Spacing". Example: 12 Row 30" with Interplant, row spacing would be set to 15".

STEP 6 Select ''Units Of Measure'' field by pressing the knob or ENTER key and a drop down menu will appear. Select either ''English'' or ''Metric'' by turning the knob or using the UP or DOWN arrow keys. Press the knob or the ENTER key. The black box will advance to OK.

STEP 7 Press the knob or ENTER key, when correct values are entered.

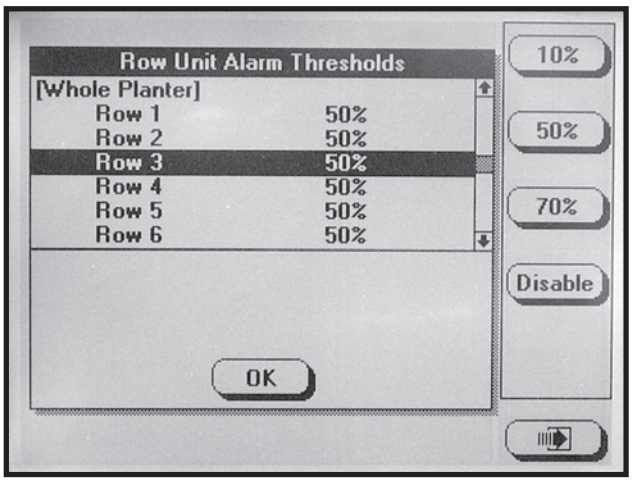
STEP 8 To return to "Planting Mode" press the PLANT key.

PROGRAMMING ROW UNIT ALARM LEVELS

The Row Unit Alarm Levels allow the thresholds for the seed rate alarms to be set. The default is 50% or Average. If the average population drops below 50% for a given row a seed rate alarm will be generated for that row unit. The alarm threshold can be set to 70%, 50%, 10% or disabled for any row.

NOTE: When the alarm threshold is disabled for any row no seed rate alarm will be generated.

D02140623



The alarm thresholds can be set for the whole planter, any planter section or individual rows.

NOTE: A section is determined by a set of rows driven by one or more shafts, designated to a single shaft sensor.

STEP 1 To enter ''Mode Selection'', press F6 key until the ''Mode Selection'' screen appears.

STEP 2 Select ''Setup Mode'' by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

STEP 3 Select ''Row Unit Alarm Levels'' by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

STEP 4 To set alarm thresholds for whole planter, select "Whole Planter". Press the key next to the desired threshold. When the desired threshold has been specified for all row units, press the knob or ENTER key.

To set alarm thresholds for all the rows in one section, select rear section or front section. Press the key next to the desired threshold. When the desired threshold has been specified for all row units, press the knob or ENTER key.

To set alarm thresholds for individual rows, select the desired row. Press the key next to the desired threshold. When the desired threshold has been specified for all row units, press the knob or ENTER key.

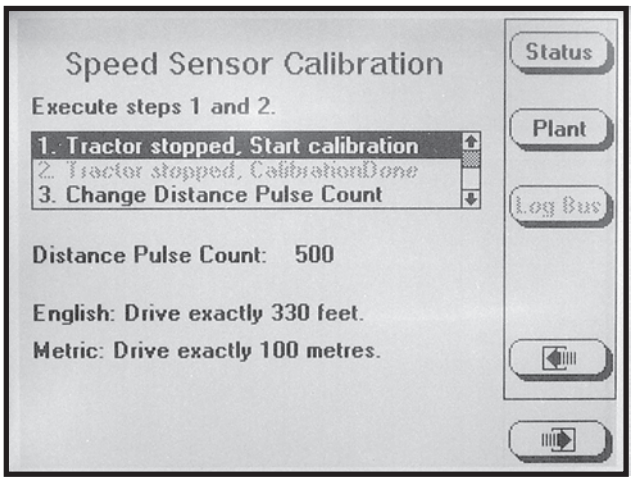
STEP 5 To return to "Planting Mode" press the PLANT key.

SPEED SENSOR CALIBRATION/PROGRAMMING

STEP 1 To enter the ''Speed Sensor Calibration'' mode, press F6 until the ''Mode Selection'' screen appears. (If Applicable) Select ''Setup Mode'' and press the rotary encoder knob or ENTER key. Press F6 to advance to the ''Speed Sensor Calibration'' screen.

The Distance Pulse Count is used to record how many pulses are generated per mile/ kilometer from the ground speed sensor. The monitor will display the current pulses per mile/kilometer using a 6 digit, no decimal place format.

D02140643



NOTE: A field calibration must be performed to establish the Distance Pulse Count number. Several factors can affect this value, such as wheel slip on the magnetic distance sensor. IT IS NOT UNCOMMON FOR THE SPEED ON THE MONITOR TO VARY SLIGHTLY FROM THE TRACTOR SPEEDOMETER. *Adjusting the Distance Pulse Count in the monitor to make the speed agree with the tractor can cause serious errors in acre/hectare and population/spacing readings.* Do field checks to verify populations and seed spacing.

- In field conditions, measure 330 feet or 100 meters, depending on the unit of measurement selected. Place a marker at the start point and end point.
- Pull the tractor up to the starting point.
- Select "Tractor stopped. Start calibration".
- Press the rotary encoder knob or ENTER key to change the Distance Pulse Count on the display to 0.

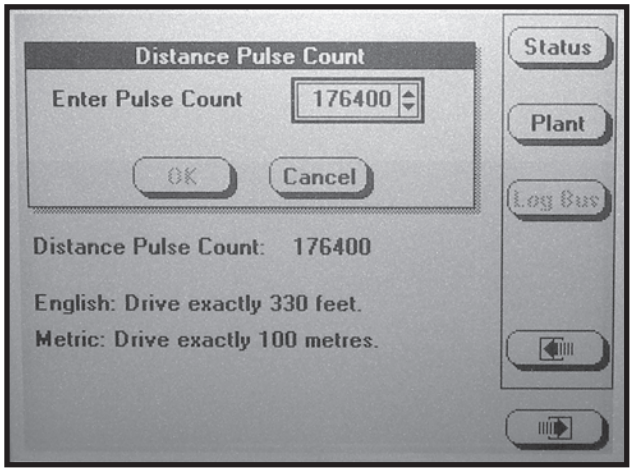
NOTE: If the Distance Pulse Count number starts to count pulses with the tractor not moving, check radar distance sensor for vibration or other interference.

- Drive the tractor for 330 feet or 100 meters.
- The monitor will count the number of pulses and display them.
- Stop the tractor at the end point.
- Select "Tractor stopped. Calibration Done".
- Press the knob or ENTER key.

NOTE: Repeat the above steps multiple times. Record and average the values. Use this average for the "Distance Pulse Count" number constant.

STEP 2 Select ''Change Distance Pulse Count'' by turning the knob or using the DOWN arrow key. Press the knob or ENTER key.

D02200605



NOTE: The Distance Pulse Count will vary from the above example.

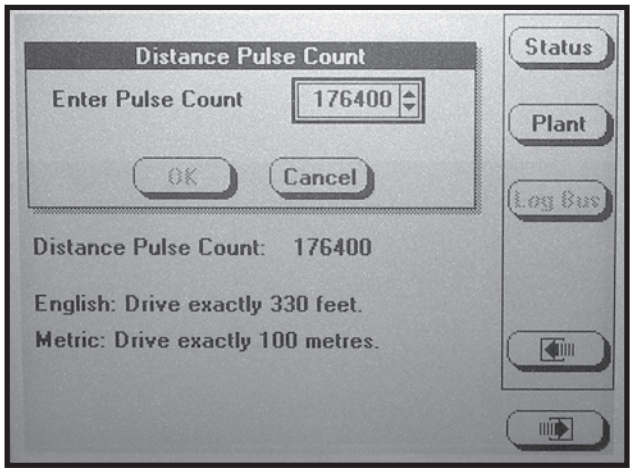
STEP 3 To return to "Planting Mode" press the PLANT key.

WHEN THE CORRECT DISTANCE PULSE COUNT IS KNOWN, CALIBRATION IS NOT NEEDED AND THE FOLLOWING STEPS MAY BE USED.

STEP 1 To enter the “Speed Sensor Calibration” screen, press F6 key until the ‘‘Mode Selection’’ screen appears (If Applicable). Select ‘‘Setup Mode’’ and press the rotary encoder knob or ENTER key. Press F6 key to advance to the ‘‘Speed Sensor Calibration’’ screen.

STEP 2 Select ‘‘Change Distance Pulse’’ field by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key.

D02200605



NOTE: The Distance Pulse Count will vary from the above example.

STEP 3 With the “Enter Pulse Count” field selected press the knob or ENTER key.

STEP 4 Change the Pulse Count to the desired value using the UP or DOWN arrow keys or turn the knob until the desired value is obtained. Press the knob or ENTER key.

NOTE: The LEFT arrow key multiplies the value of the item by 10 and the RIGHT arrow key divides the value of the item by 10.

STEP 5 Select OK by pressing the knob or ENTER key to save the new count. Select CANCEL to retain the old value of the Distance Pulse Count.

STEP 6 Press PLANT key to return to main planting screen.

REPROGRAMMING SPEED SENSOR

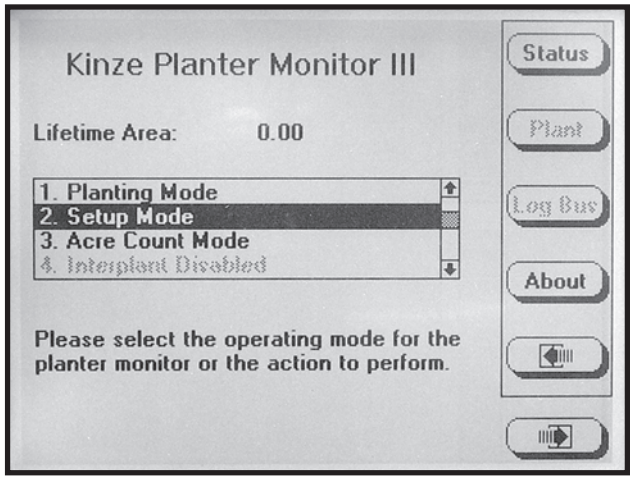
This setting must be specified when the monitor is first configured. It will be necessary to reprogram to use an alternate speed sensor.

NOTE: Speed sensors may not be changed while planting.

RADAR TO MAGNETIC DISTANCE SENSOR

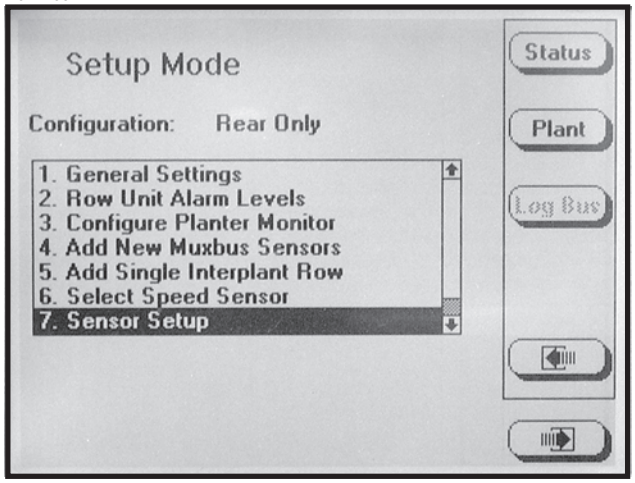
STEP 1 Press the F6 key until the ‘‘Mode Selection’’ screen appears. Select ‘‘Setup Mode’’ by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614



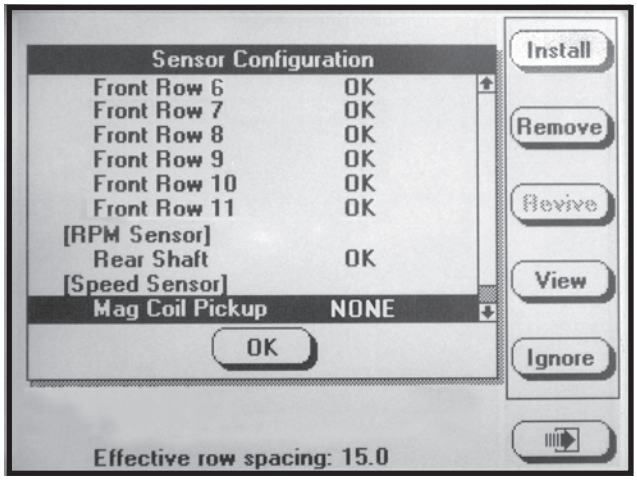
STEP 2 Turn the knob or use the UP or DOWN arrow keys to choose ‘‘Sensor Setup’’. Press the knob or ENTER key to display the highlighted item.

D02140641

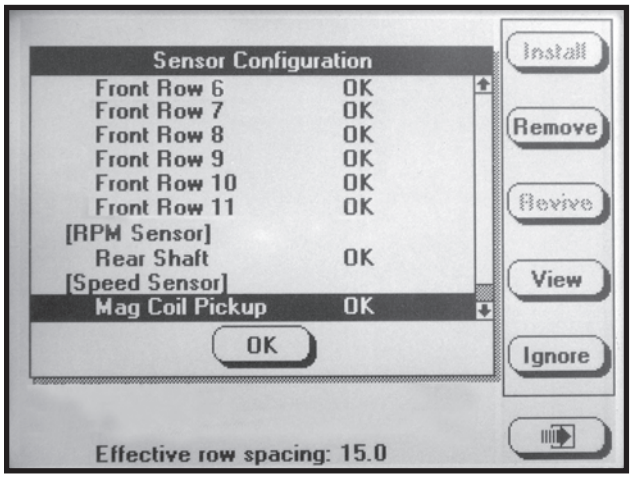


STEP 3 Turn the knob or use the UP or DOWN arrow keys to highlight ''Mag Coil Pickup''. Plug in Magnetic Distance Sensor and press the INSTALL key. Press the knob or ENTER key to save information.

D05310609a

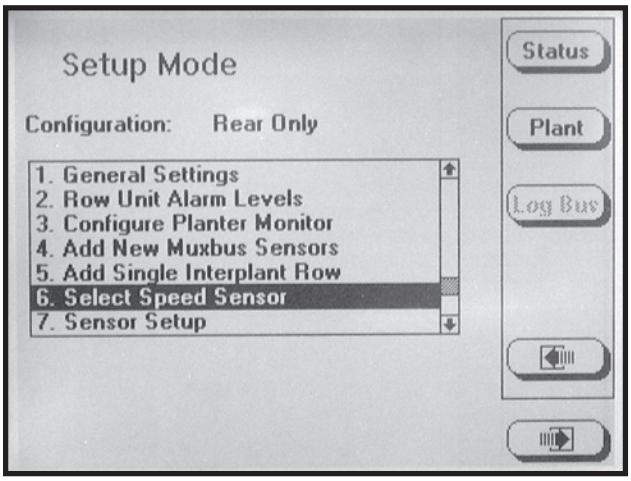


D05310609

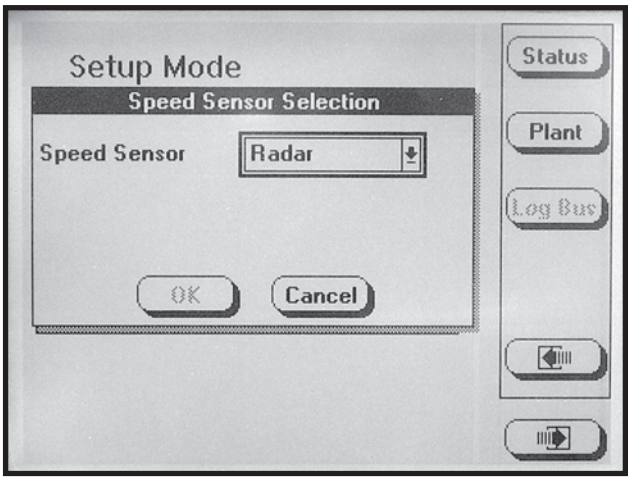


STEP 4 Turn the knob or use the UP or DOWN arrow keys to select ''Select Speed Sensor''and press the knob or ENTER key. Press the knob or ENTER key to select the ''Speed Sensor'' field and a drop down menu will appear. Turn the knob or use the UP or DOWN arrow keys to select ''Coil Pick-Up'' and press the knob or ENTER key to make selection. The black box will advance to OK press the knob or ENTER key to save the information.

D02140639

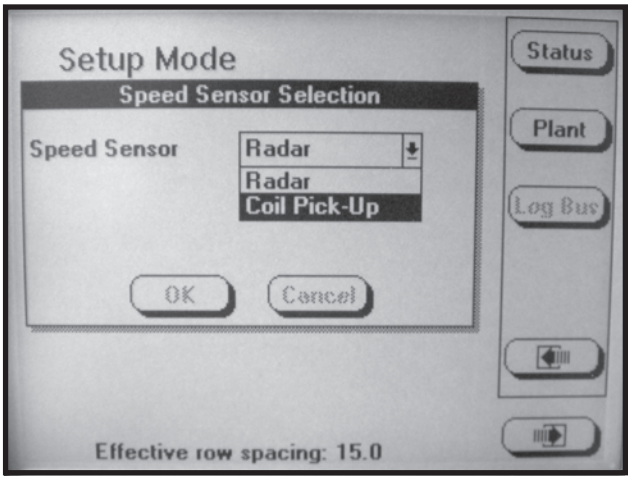


D02140639



NOTE: To prevent the configuration from being changed select CANCEL, then press the rotary encoder knob, ENTER key or ESC key.

D06210601



STEP 5 Unplug the radar from the tractor.

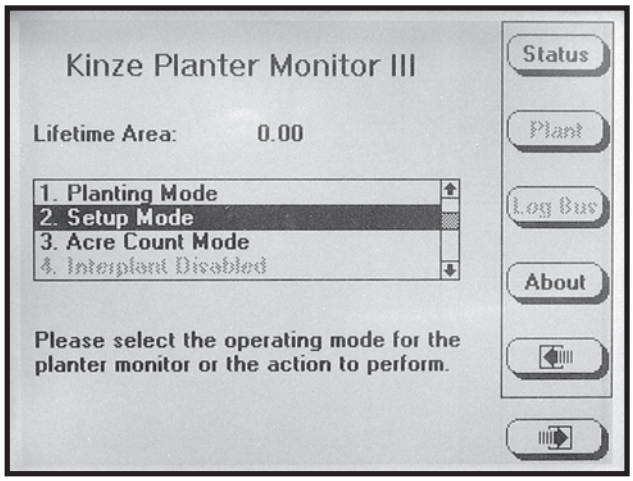
STEP 6 Press the PLANT key to return to main planting screen.

NOTE: When switching between speed sensors, verify the distance pulse count is correct for the chosen sensor. There wil be significant distance pulse count variation between radar and coil pick-up sensors.

MAGNETIC DISTANCE SENSOR TO RADAR

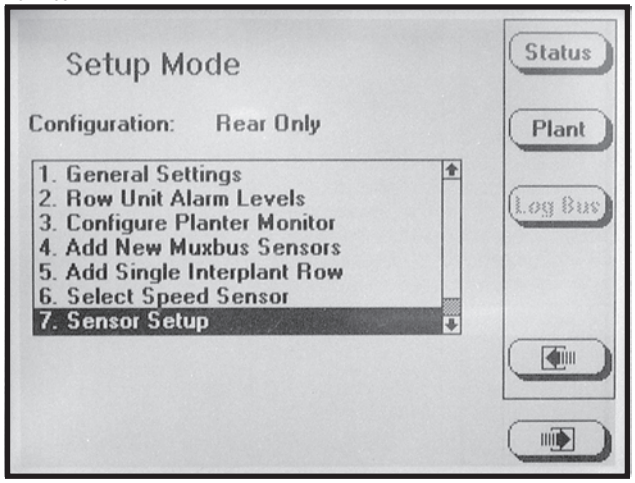
STEP 1 Press the F6 key until the ''Mode Selection'' screen appears. Select ''Setup Mode'' by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614

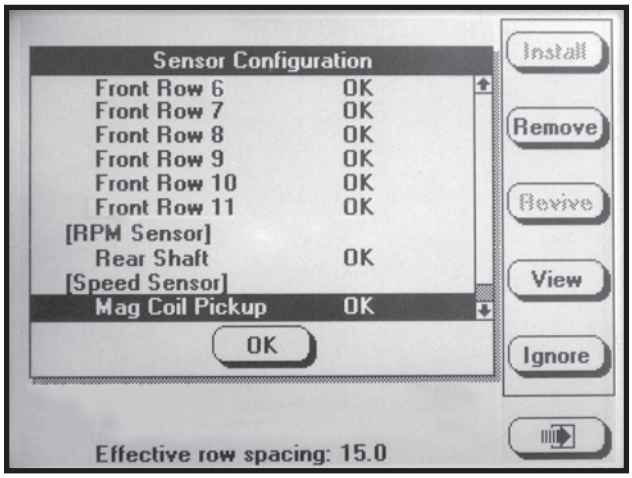


STEP 2 Turn the knob or use the UP or DOWN arrow keys to choose ''Sensor Setup''. Turn the knob or use the UP or DOWN arrow keys to highlight ''Mag Coil Pickup''. Press the REMOVE key, a note will appear for confirmation select as appropriate. Unplug Magnetic Distance Sensor and press the knob or ENTER key to save the information.

D02140641

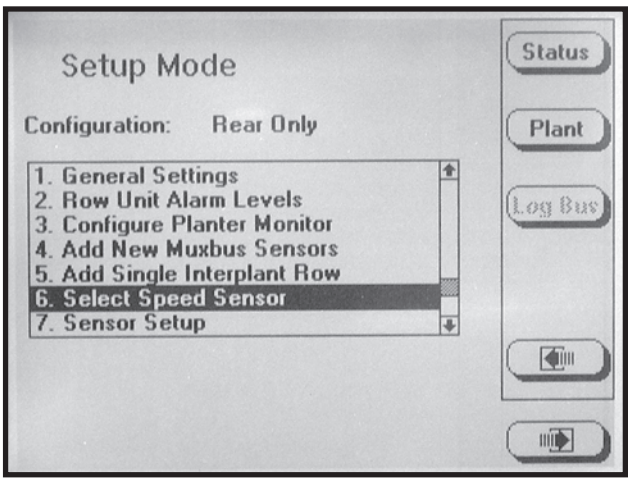


D05310609

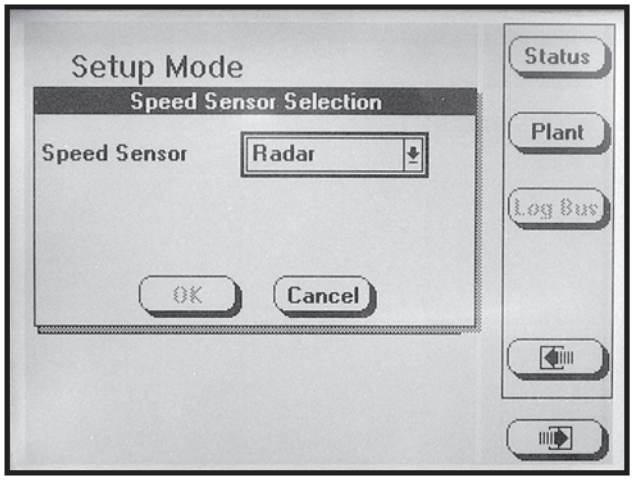


STEP 3 Turn the knob or use the UP or DOWN arrow keys to select ''Select Speed Sensor'' and press the knob or ENTER key. Press the knob or ENTER key to select the ''Speed Sensor'' field and a drop down menu will appear. Turn the knob or use the UP or DOWN arrow keys to select ''Radar'' and press the knob or ENTER key to make selection.

D02140639

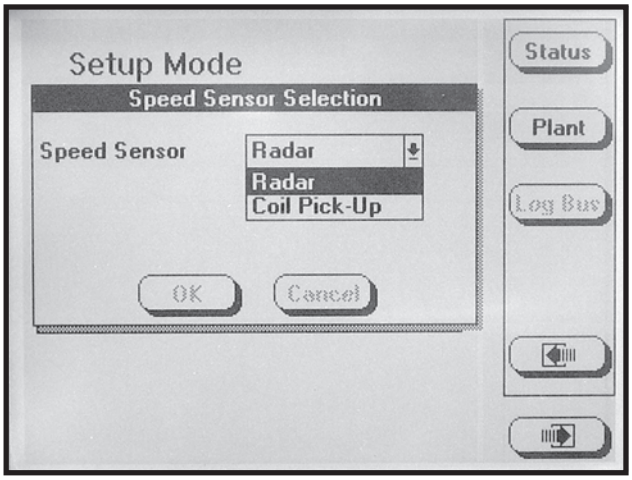


D02140639



NOTE: To prevent the configuration from being changed select CANCEL, then press the knob, ENTER key or ESC key.

D02140640



STEP 4 Plug in the Radar and the black box will advance to OK. Press the knob or ENTER key to save the information.

STEP 5 Press the PLANT key to return to main planting screen.

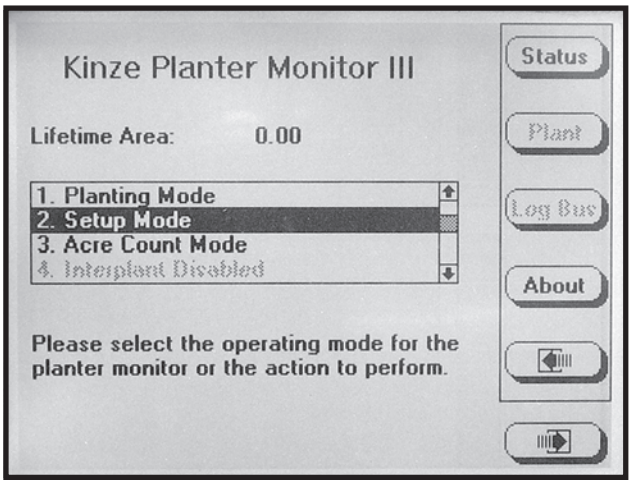
NOTE: When switching between speed sensors, verify the distance pulse count is correct for the chosen sensor. There wil be significant distance pulse count variation between radar and magnetic distance sensors.

ADDING INTERPLANT® ROWS (If Rear Rows Have Previously Been Programmed)

STEP 1 Press the F6 key until ''Mode Selection'' screen appears.

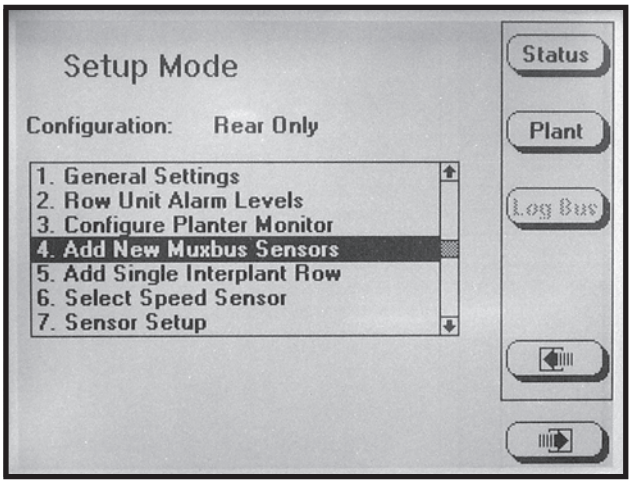
STEP 2 Select ''Setup Mode'' by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614



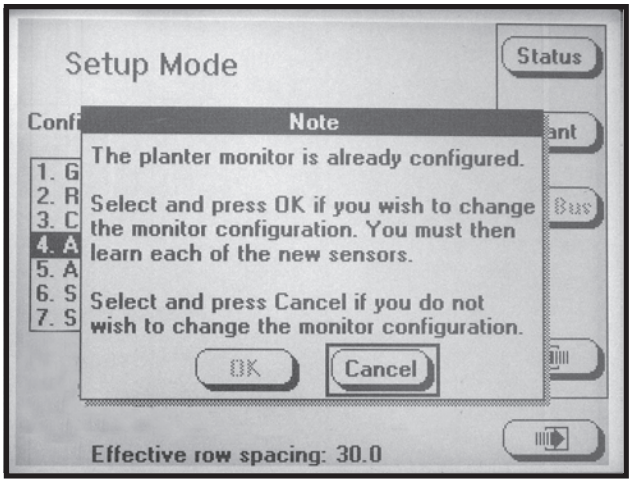
STEP 3 Select ''Add New Muxbus Sensors'' by turning the knob or using the UP and DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140633



STEP 4 The note shown below will appear. Select OK by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to make the selection.

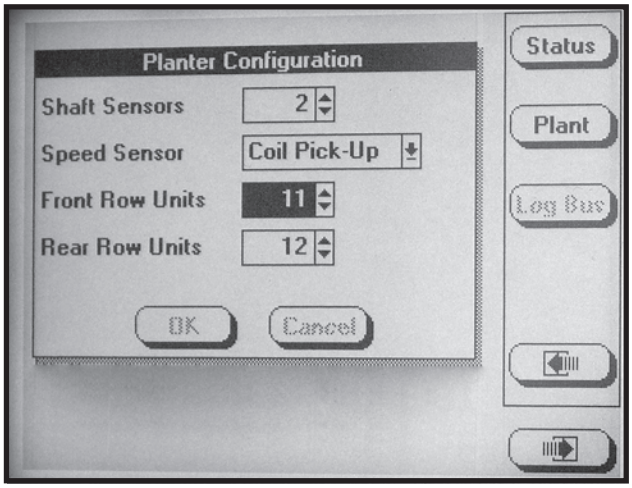
D03010601



STEP 5 Turn the knob or use the UP or DOWN arrow keys to select the ''Front Row Units'' field and press the knob or ENTER key to highlight the field. Turn the knob or use the UP or DOWN arrow keys to obtain the desired number of rows. When the correct value has been entered press the knob or ENTER key. The black box will advance to the OK key. Press the knob or ENTER key to save the information.

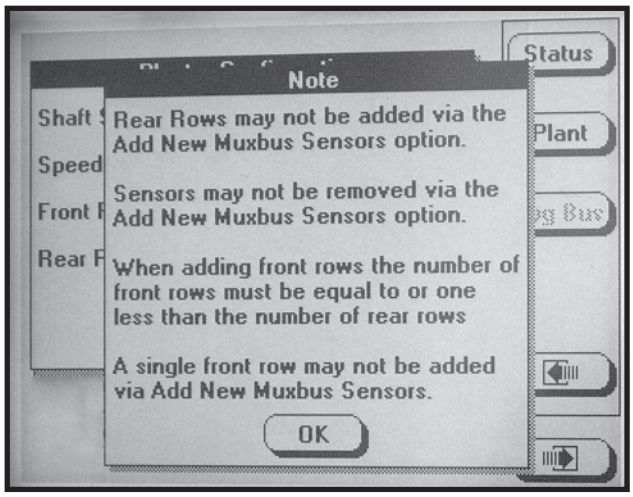
NOTE: To prevent the configuration from being changed select CANCEL, then press the knob, ENTER key or ESC key.

D02220674



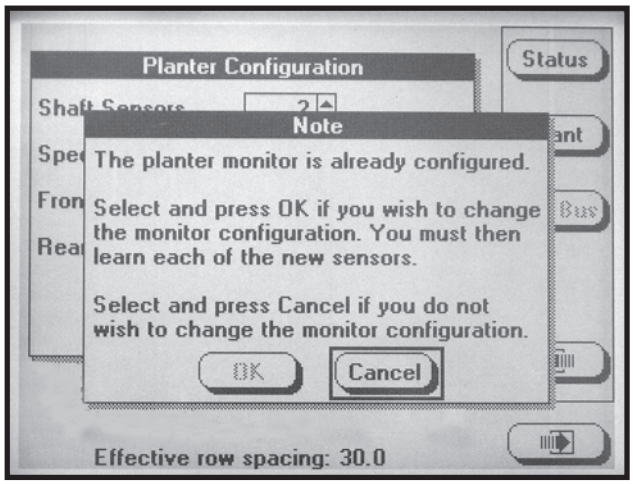
NOTE: Attempting to add rear rows while adding new muxbus sensors will cause the following note to appear.

D02220675



STEP 6 The note shown below will appear. Select OK by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to make the selection.

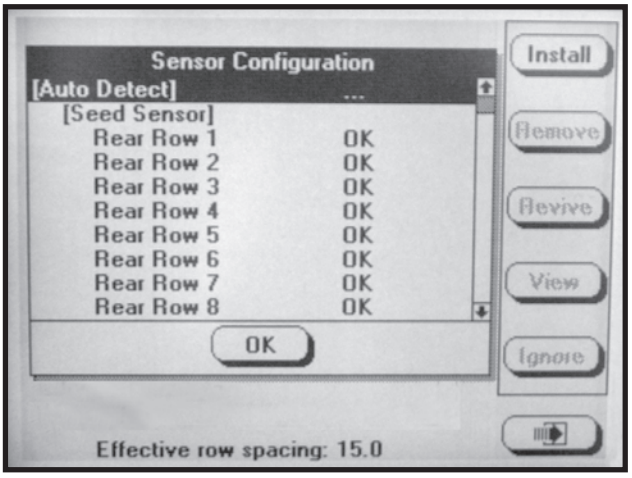
D03010603



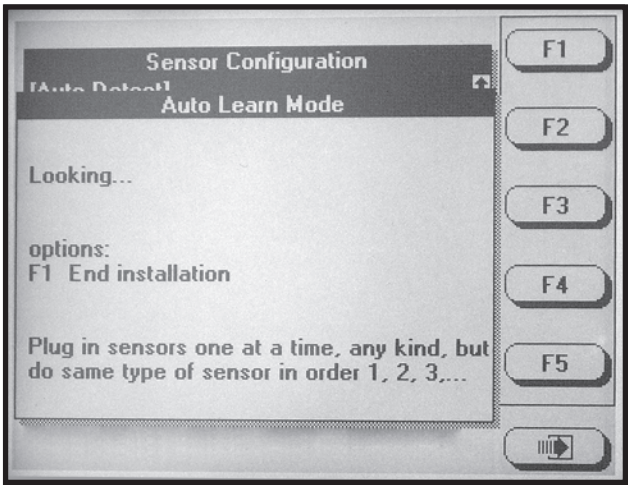
NOTE: To prevent the configuration from being changed select CANCEL, then press the knob, ENTER key or ESC key.

STEP 7 The sensor configuration screen will appear. With [Auto Detect] highlighted select INSTALL. Begin to install sensors from left to right.

D02230604a



D02220672

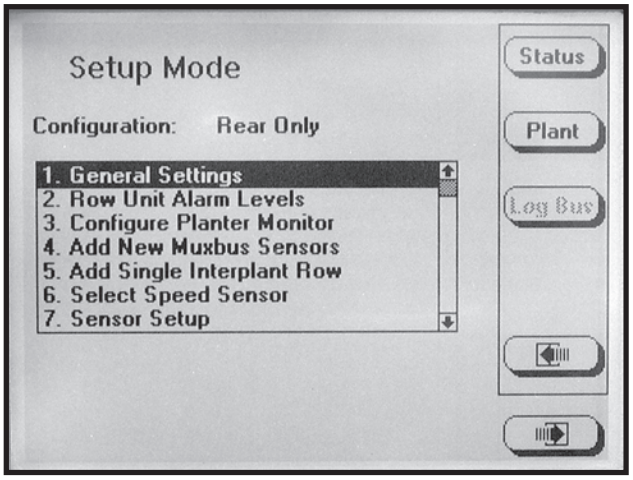


STEP 8 When all sensors are learned select F1 to end installation. Scroll down to verify the front rows are learned. Select OK by pressing the knob or ENTER key.

NOTE: ''OK'' will appear next to each sensor if no errors are detected.

STEP 9 Select ''General Settings'', by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to make the selection.

D02140615



STEP 10 Select the ''Row Spacing'' field by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to highlight field. Adjust the row spacing to Interplant spacing by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to enter the value. Then turn the knob or use the UP or DOWN arrow keys to advance to OK. Press the knob or enter key to save row spacing.

NOTE: To prevent the configuration from being changed select CANCEL, then press the knob, ENTER key or ESC key.

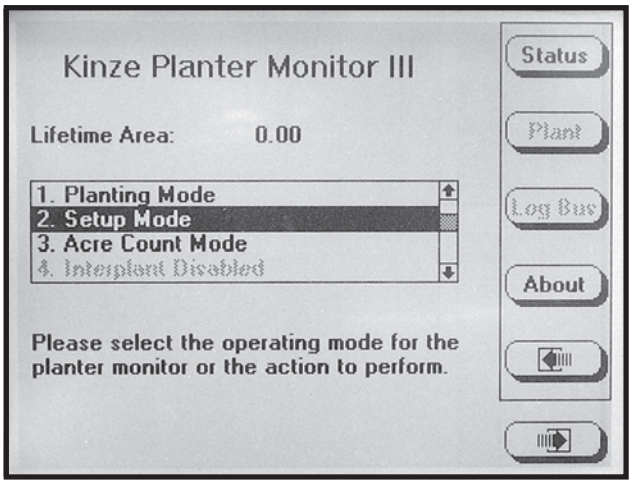
STEP 11 To return to "Planting Mode" press the PLANT key.

ADDING EVEN-ROW PACKAGE (If Front Rows Have Previously Been Programmed)

STEP 1 Press the F6 key until ''Mode Selection'' screen appears.

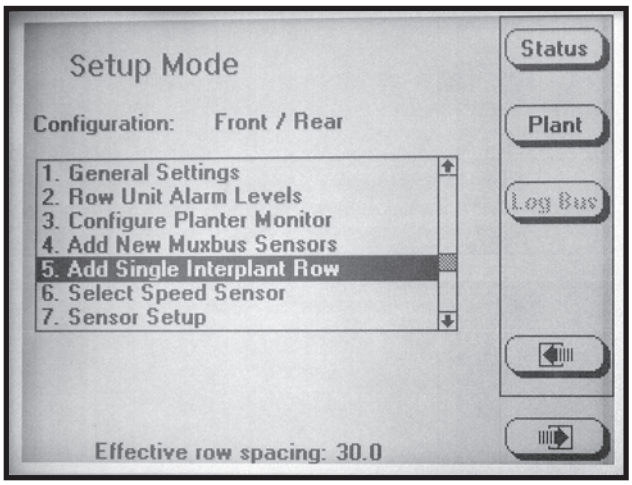
STEP 2 Select ''Setup Mode'' by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614



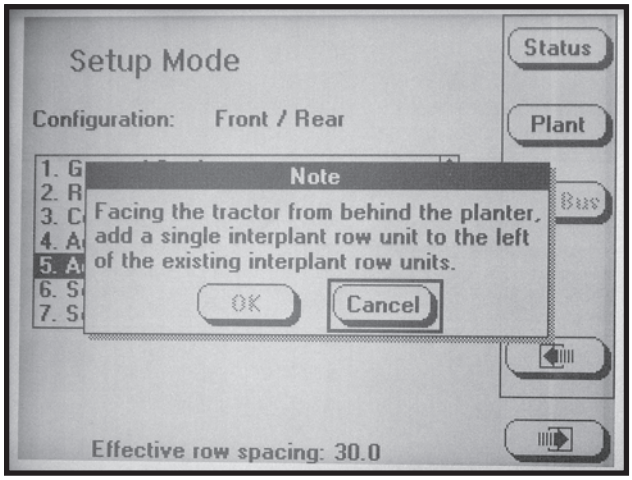
STEP 3 Select ''Add Single Interplant Row'' by turning the knob or using the UP and DOWN arrow keys. Press the knob or the ENTER key to display the highlighted item.

D022206200



STEP 4 To confirm the following note turn the knob or use the UP or DOWN arrow keys to select OK and then press the knob or ENTER key to confirm. If the single Interplant row is not to be added select the CANCEL key and press the knob or ENTER key to cancel or press the ESC key.

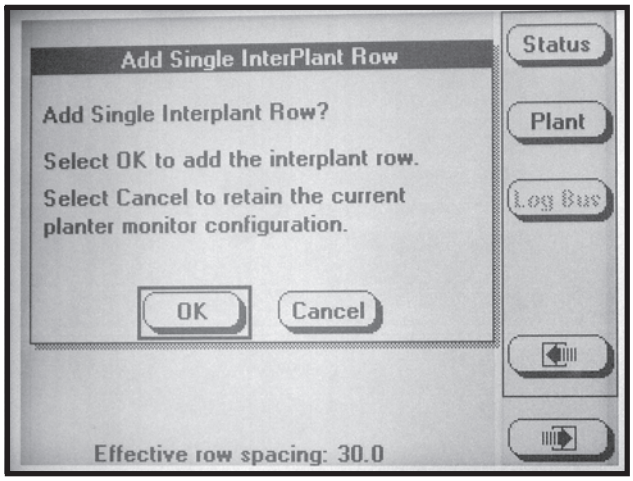
D022206201



STEP 5 To ''Add Single Interplant Row'' the following screen will appear.

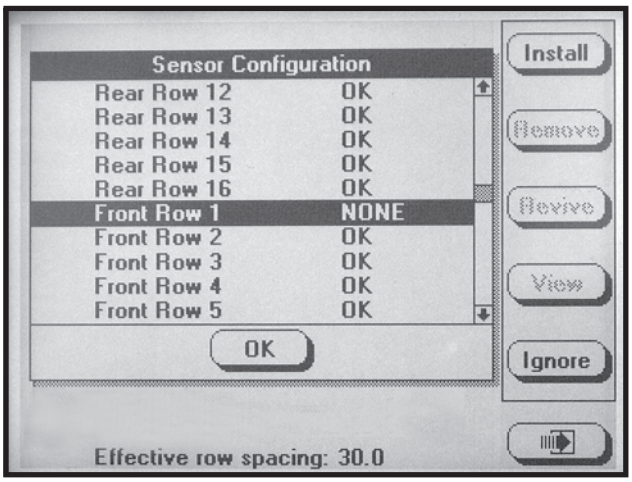
If the single Interplant row is to be added turn the knob or use the UP or DOWN arrow keys to select OK and then press the knob or ENTER key to add the Interplant row. If the single Interplant row is not to be added select the CANCEL key and press the knob or ENTER key to cancel or press the ESC key.

D022206202



STEP 6 The ''Sensor Configuration'' screen will appear. Plug in the new sensor then scroll down to highlight "Front Row 1" by turning the knob or using the UP or DOWN arrow keys. Select INSTALL to learn the new sensor. Press the knob or ENTER key to return to setup mode.

D02220670

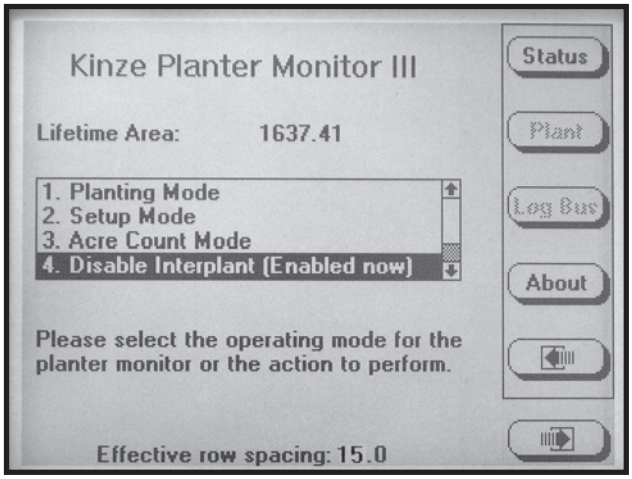


STEP 7 To return to "Planting Mode" press the PLANT key.

ENABLING/DISABLING INTERPLANT® ROWS

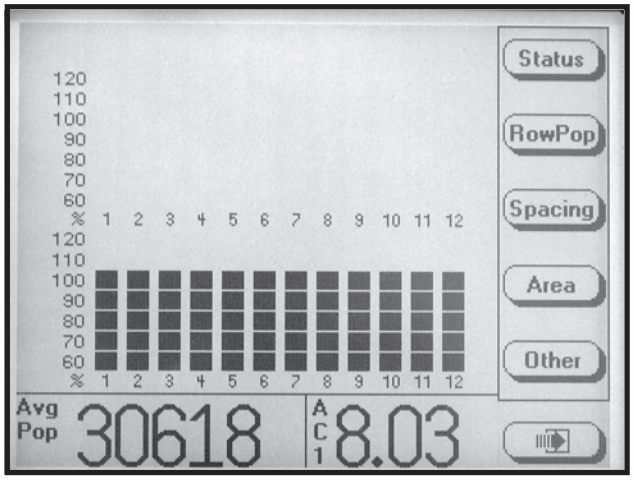
To Enable or Disable Interplant (a) press the F6 key until the ''Mode Selection'' screen appears, (b) turn the rotary encoder knob or use the UP or DOWN arrow keys to highlight ''Disable/Enable Interplant'', (c) press the knob or ENTER key to ''Disable'' or ''Enable'' Interplant. To verify selection, the row spacing is displayed on the bottom of the screen.

D03010605a



Either select the ''Planting Mode'' by turning the knob or using the UP arrow key and press the knob or ENTER key or press F6 to return to the ''Planting Mode''.

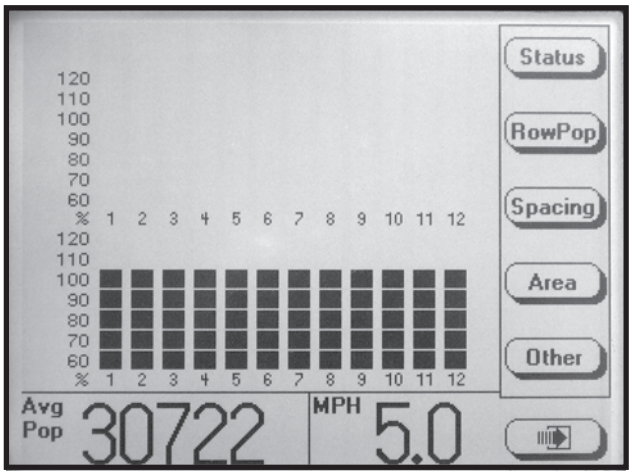
D02240602



ROW POPULATION

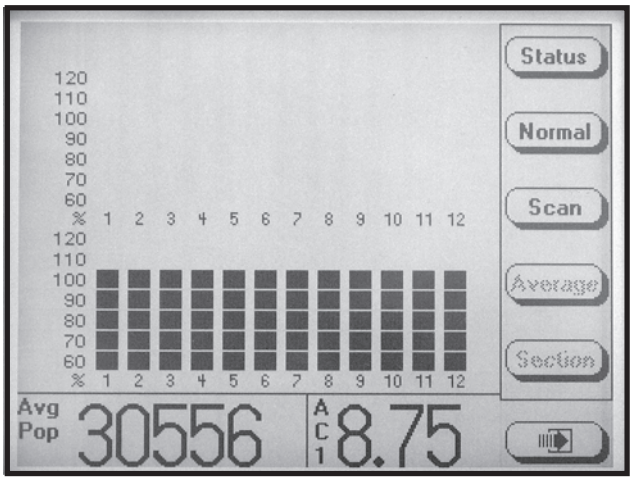
- Press the ROW POP key to display row population. Average planter population will be shown in the lower L.H. corner of the display.

D05310614



- Press the SCAN key and the monitor will scan through each row in ascending order displaying the average seed population for each row. After all rows have been scanned the average population is displayed and scan function will continue with the first rear row.

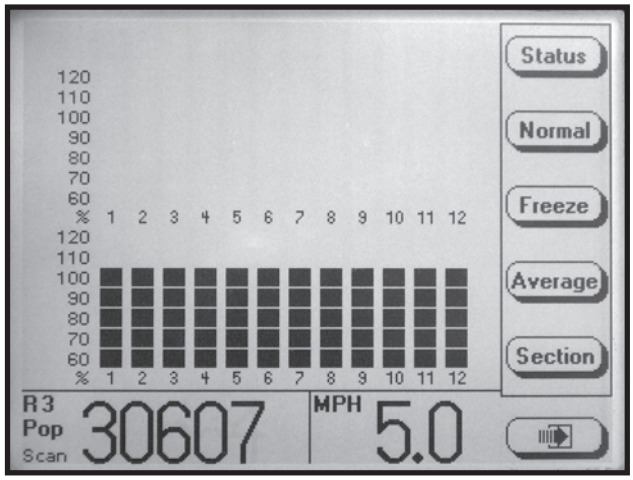
D02240604



- Press the FREEZE key to stop scanning, the left display item will be frozen on a particular row. “Frzn” appears in the lower L.H. corner to indicate the display is frozen. To resume scan press the SCAN key.

EXAMPLE: When average row population is shown, R3 indicates rear row 3, F2 indicates front row 2, etc.

D05310615



- When either Scan or Frzn is displayed in the L.H. corner the SECTION and arrow keys function as follows: (a) SECTION or RIGHT arrow key advances to the first row of the next section; (b) SECTION or LEFT arrow key selects the first row of the previous section, wrapping around to the first row of the last section when moving past the first section; (c) UP arrow key moves forward to the next row of the planter, wrapping around to the first row when moving past the last row; (d) DOWN arrow key moves backward to the previous row of the planter, wrapping around to the last row of the planter when moving past the first row.

- Press the AVERAGE key to display the average population in the bottom L.H. corner.

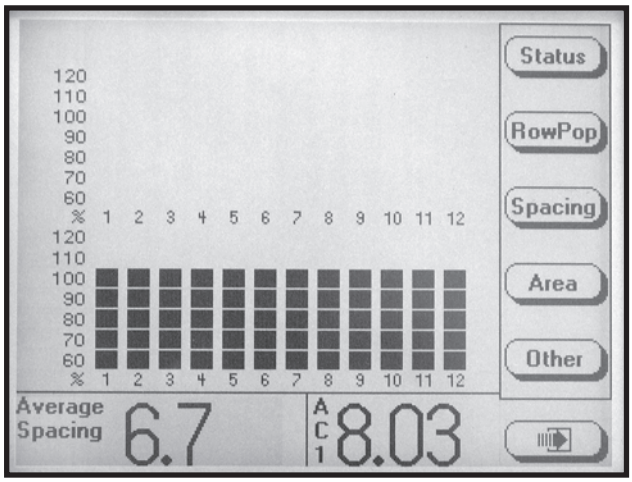
- Press the NORMAL key to display the normal screen for planting mode.

NOTE: If the rows are being scanned and the AVERAGE key is selected the scan function will stop.

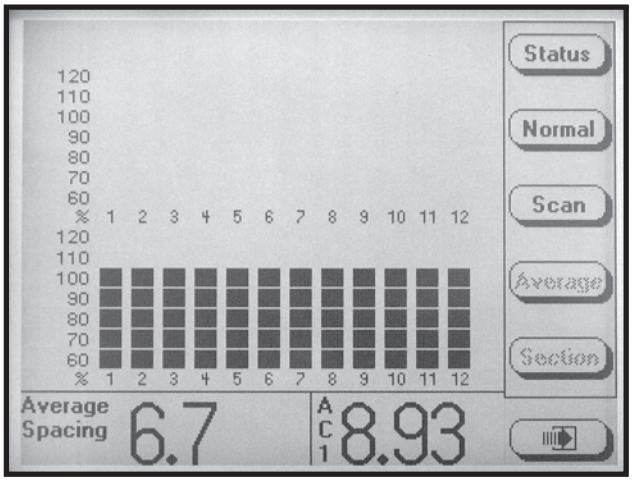
ROW SPACING

- Press the SPACING key to display seed spacing keys. Seed spacing will appear in the bottom L.H. corner of the display.

D02240602



D02240605



- Press the SCAN key and the monitor will scan through each row in ascending order displaying the average seed spacing for each row. Scan appears in the L.H. corner to indicate the display is scanning. After all rows have been scanned the average population is displayed and scanning will continue with the first rear row.

- Press the FREEZE key to stop scanning and the left display item will be frozen on a particular row. “Frzn” appears to indicate the display is frozen. To resume scan press the SCAN key.

- When either “Scan” or “Frzn” is displayed in the left display item the SECTION and arrow keys function as follows: (a) SECTION and RIGHT arrow key advances to the first row of the next section; (b) LEFT arrow key selects the first row of the previous section, wrapping around to the first row of the last section when moving past the first section; (c) UP arrow key moves forward to the next row of the planter, wrapping around to the first row when moving past the last row; (d) DOWN arrow key moves backward to the previous row of the planter, wrapping around to the last row of the planter when moving past the first row.

- Press the AVERAGE key to display the average seed spacing in the bottom L.H. corner.

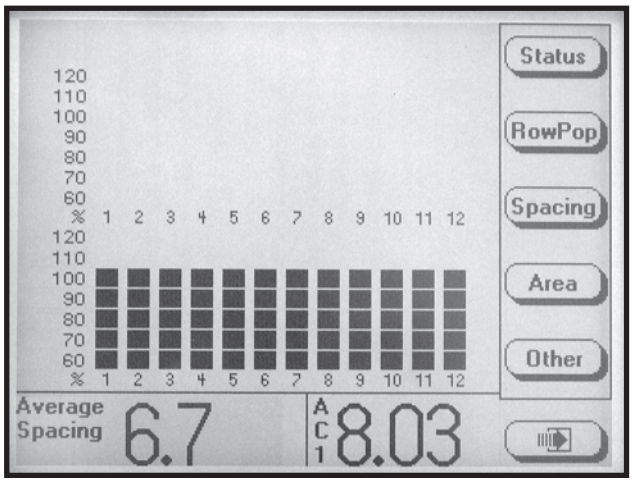
- Press the NORMAL key to display the main planting mode.

NOTE: If the rows are being scanned and the AVERAGE key is selected the scan function will stop.

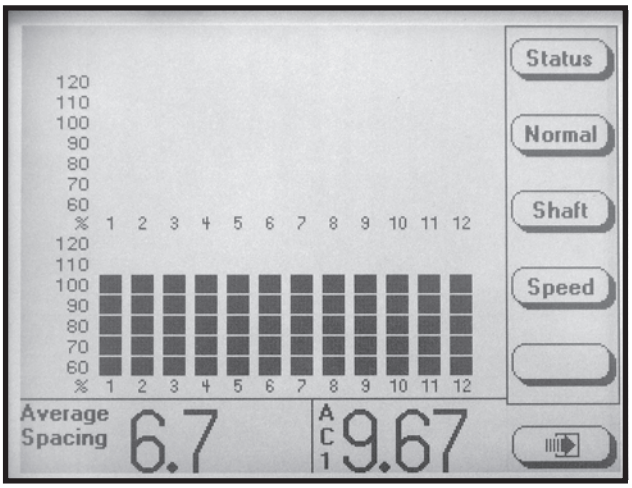
SPEED/SHAFT ROTATION

- Press the OTHER key to display items available to display in the bottom R.H. corner.

D02240602



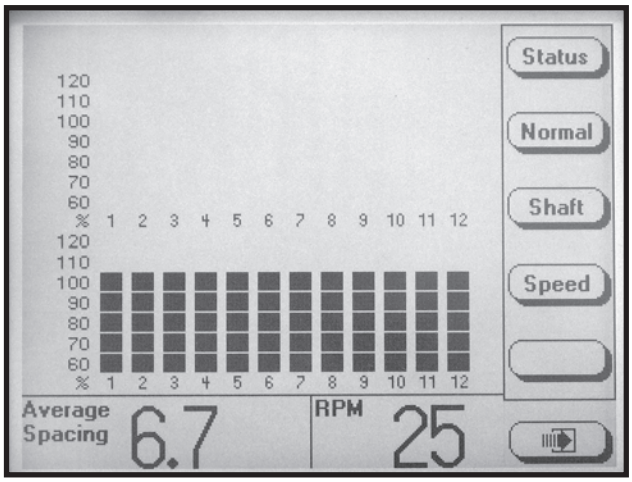
D02240606



- Press the SHAFT key to view the average meter shaft RPM. The value will appear in the bottom R.H. corner of the display.

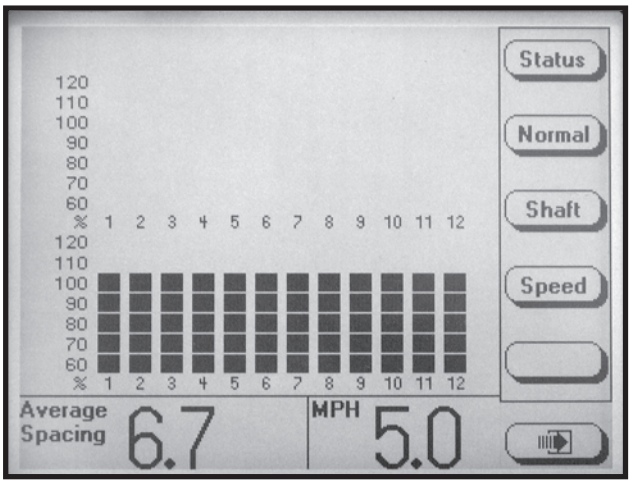
NOTE: Applicable to planters with shaft rotation sensors installed.

D02240607



- Press the SPEED key to view the ground speed. The value will appear in the bottom R.H. corner of the display.

D02240608



NOTE: The appropriate units of measure will be displayed (English or Metric).

- Press NORMAL to bring back the standard key labels.

WARNINGS AND ALARMS

1. **Seed Rate Alarm** - A seed rate alarm is activated whenever the row average seed population drops below the threshold set for that row.

   The corresponding row on the bargraph starts flashing and the monitor emits a series of beeps that persist until the alarm is clear or the ACK button is pressed. ''Seed Rate Alarm'' appears in the upper left corner of the screen. The bargraph for the row drops down based on the threshold set for the alarm.

EXAMPLE: If the threshold is 70% the lower two bargraph segments are shown. If the threshold is 50% or 10% the lowest bargraph segment is shown.

   The status message associated with an alarm contains more information about the alarm. To view the ''Status Message'' for a seed rate alarm, press the STATUS key.

   If the sensor is detecting no seed flow it will display which row is not functioning. The alarm may be indicating a mechanical problem that is reducing the seed flow or an electrical problem causing the seed counts to be incorrect.

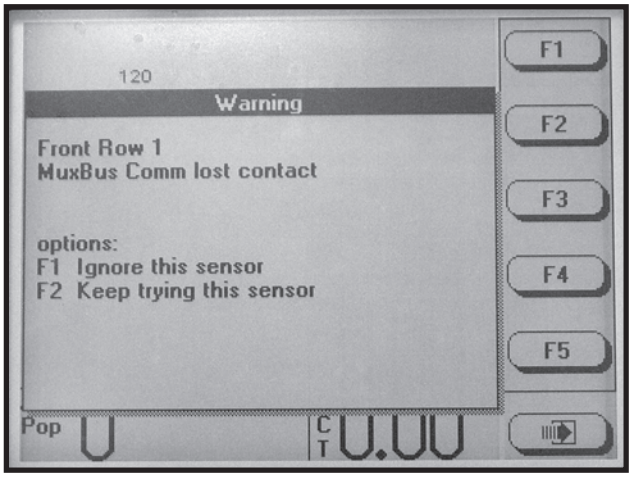
NOTE: The only way to remove an alarm is to find and correct the problem. Alarms are not reported for rows that seed rate alarm thresholds have been disabled.

NOTE: The percentage shown in the alarm message is the percentage at the time the alarm occured.

2. **Section Not Planting** - When the monitor detects an entire section not planting, the monitor will emit three beeps to alert the user. The bargraph for the affected section flashes and is reduced to the lowest segment. An alarm message is added to the list of ''Status Messages''. Press the STATUS key to view the alarm message.

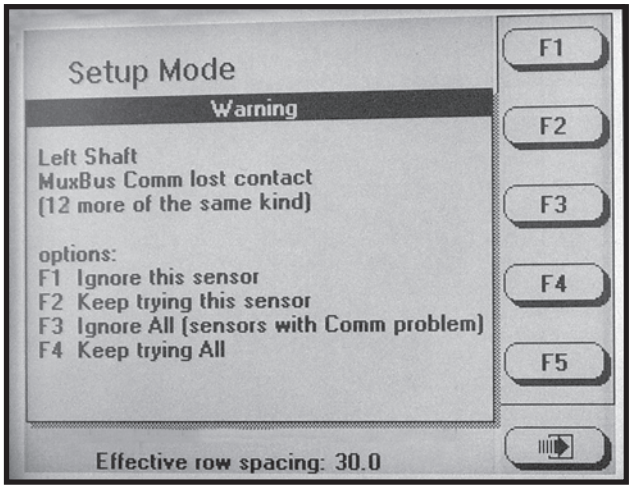
3. **Seed Counting Sensors Not Communicating With Monitor -** When the monitor detects a communication error between the sensor and the monitor, the monitor will emit two beeps to alert the user. Try to reestablish communication with sensor(s) by pressing F2. If the monitor is unable to establish communication there may be (a) a faulty sensor, (b) a poor electrical connection or (c) a cut or pinched wire harness.

D02220687



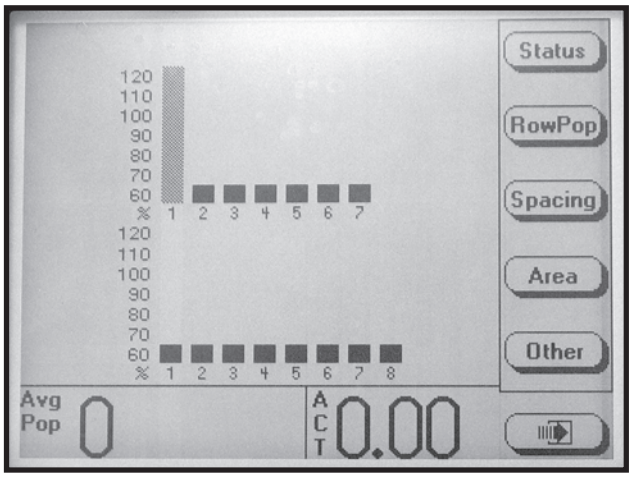
If multiple sensors have lost contact, the message will indicate which sensors have lost contact.

D02220659a



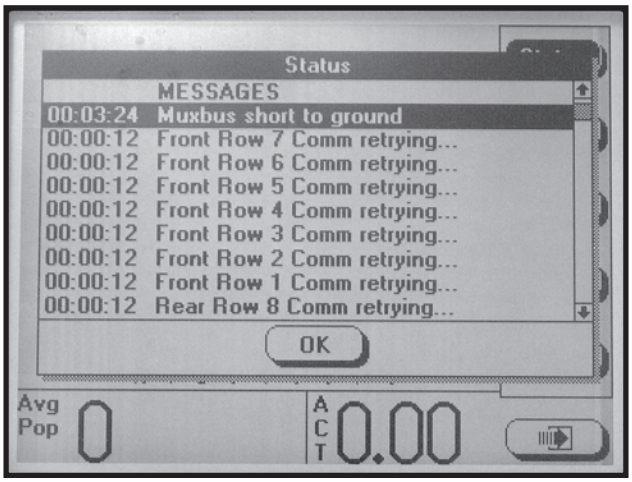
NOTE: When it is known that a sensor or a group of sensors are faulty, F1 or F3 should be pressed. The monitor will no longer try to communicate with the sensor(s). In the planting mode the corresponding bargraphs will be grayed out in the main screen.

D02220691



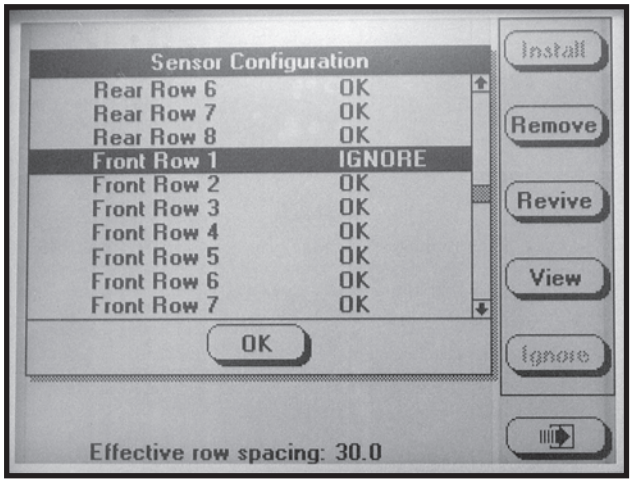
NOTE: If the sensors are not faulty, F2 or F4 should be pressed and the message shown below will appear when the STATUS key is pressed.

D02220685



NOTE: If a sensor has been ignored, the sensor configuration screen will display as shown below.

D02220692

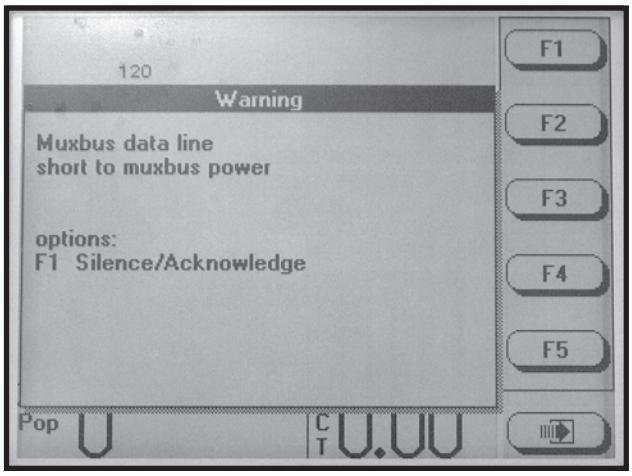


4. **Seed Counting Sensors Too Dirty Warning** - When powering on the KPM III, each of the seed sensors will do a self check. If a seed tube is too dirty, the message ''Clean Or Replace Sensor As Necessary'' will be displayed and the bargraph for that row will flash. The LED on the seed tube sensor will not flash. The sensor will not function until the problem is corrected.

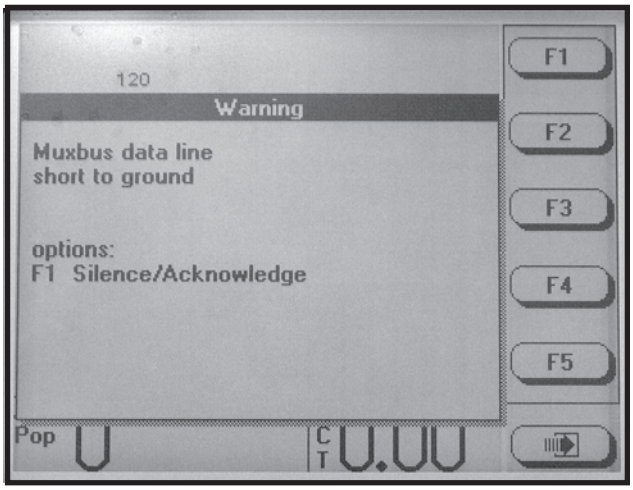
NOTE: After the alarms have been acknowledged and if the alarm condition is still present, the LCD screen will continue to display the alarm condition.

5. **Wire Shorts** - When a wire is shorted any one of the messages shown below will appear, stating which wires are shorted. The short must be located and fixed to continue planting. Cycle the power on the monitor to clear the alarm.

D02220683



D02220684

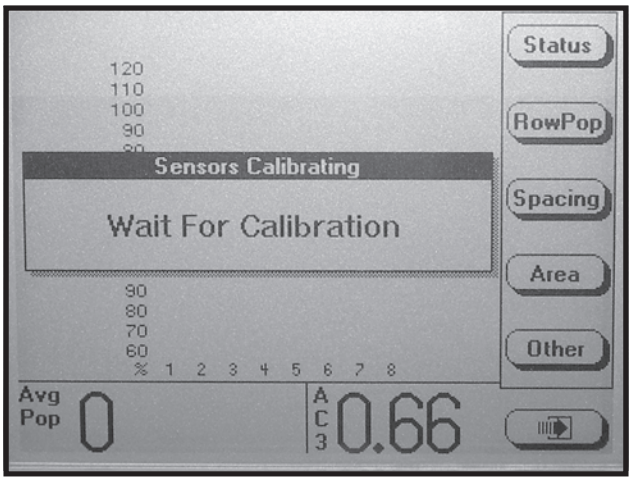


FIELD OPERATION

Press the ON/OFF key to turn the monitor ON.

If the monitor has been configured, it will enter the normal planting mode and attempt to communicate with the seed sensors.

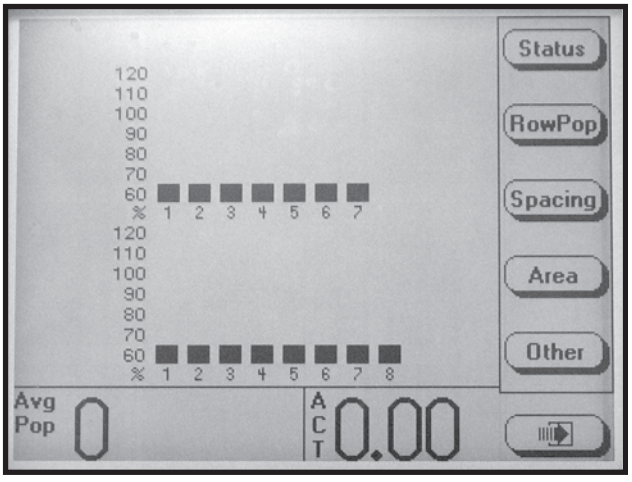
D02200606



NOTE: Do not attempt planting before the ''Wait For Calibration'' message disappears. If planter is moving while sensors are calibrating alarms will be generated.

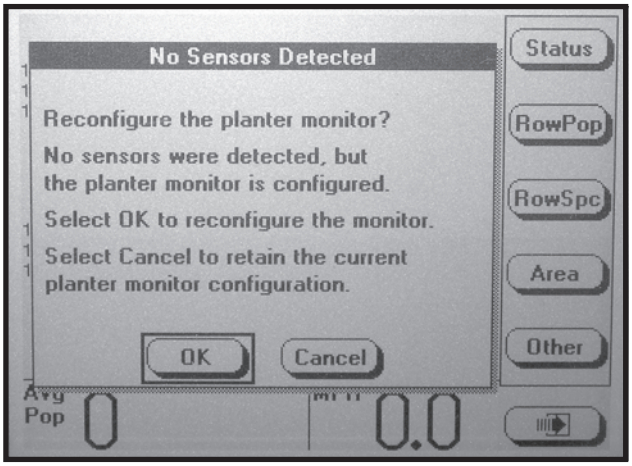
NOTE: If the monitor can communicate with the sensors the normal planting mode screen will be displayed.

D02220689a



If the monitor does not detect any sensors the message shown below will appear.

D02200627



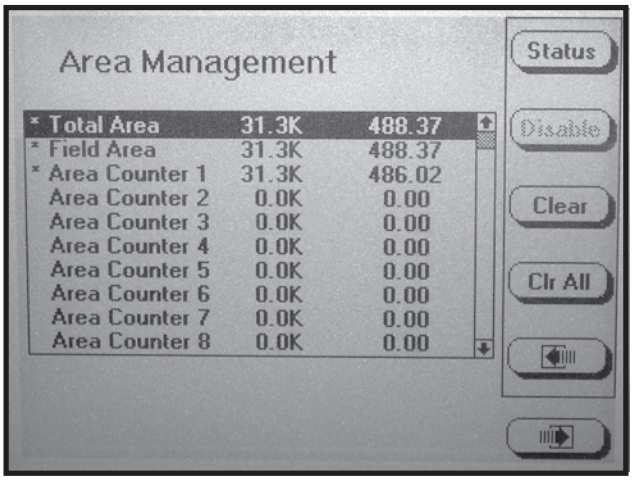
NOTE: Selecting OK will reconfigure the monitor requiring all sensors to be re-learned. Selecting CANCEL will maintain the current configuration and the monitor will continue trying to communicate with the sensors.

AREA MANAGEMENT

There are 10 area counters: Total Area, Field Area and area counters 1 through 8. The Total Area is always active but may be cleared. If it is cleared, the Field Area is also cleared. Field Area and Area Counters 1 through 8 may be cleared independent of each other. They may also be started or stopped at anytime. In addition, there is a Lifetime Area Counter (located on the Mode Selection Screen) which can not be disabled or cleared by the user.

To enter the ''Area Management'' screen, press the F6 key until the ''Area Management'' screen appears.

D02210626a



NOTE: Total area counter can never be disabled, but can be reset to zero (cleared).

- The asterisk next to the name of the area counter indicates the area counter is enabled and accumulating area.

EXAMPLE: In the photo shown above, 31.3K indicates the average seed population for the accumulated area is 31,300 seeds per unit area (acre/hectare). This number has been rounded off. The actual seed population ranges anywhere from 30,500 to 31,499 per unit area. The last column of numbers is the area accumulated (acres/hectares).

- Turn the knob or use the UP or DOWN arrow keys to highlight the desired ''Area Counter''.

- Press the ENABLE or DISABLE key.

NOTE: Up to four area counters can be enabled at one time (two area counters in addition to Total Area and Field Area). If four area counters are already enabled, disable one active area counter in order to enable a new area counter. To disable or enable area counters see next column.

NOTE: When a key is dimmed it does not perform any operation on the highlighted area counter.

ENABLE AREA COUNTER

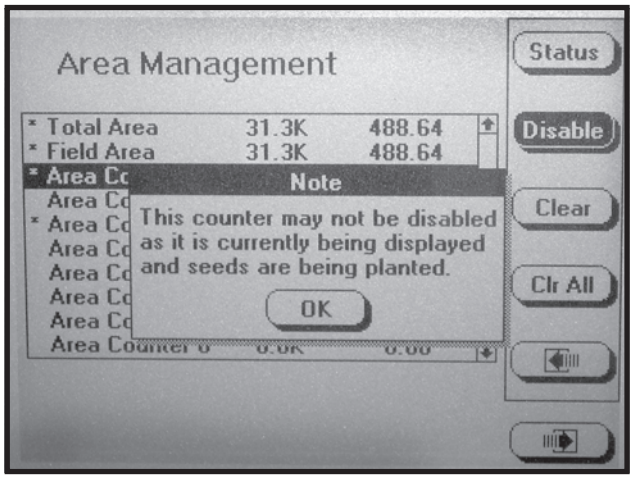
Each of the ''Disabled Area Counters'' may be enabled up to a total of four ''Area Counters''. To Enable a Disabled ''Area Counter'': (a) highlight the desired ''Area Counter'' by turning the rotary encoder knob or using the UP or DOWN arrow keys; (b) press the ENABLE key or press the knob or ENTER key and an asterisk will appear next to the ''Area Counter''. The Enabled ''Area Counter'' starts accumulating area.

DISABLE AREA COUNTER

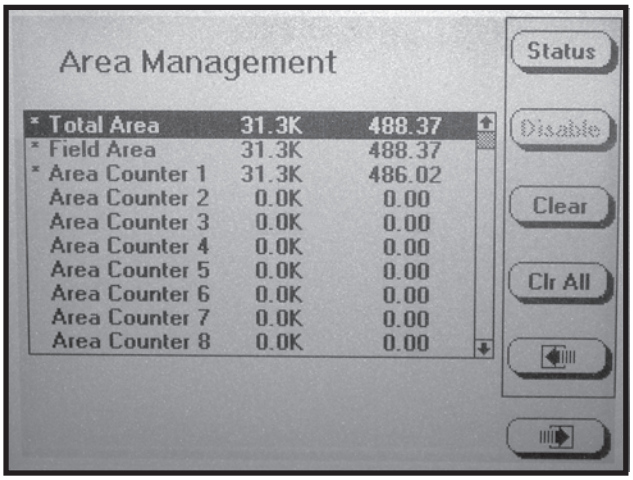
Each of the Enabled Area Counters may be disabled, with the exception of the Total Area Counter. To disable an enabled area counter: (a) highlight that ''Area Counter''; (b) press the DISABLE key or press the rotary encoder knob or ENTER key and the asterisk next to the ''Area Counter'' will disappear. The ''Disabled Area Counter'' will no longer accumulate area.

NOTE: Attempts to disable an Area Counter that is currently being displayed while planting will cause the following alarm.

D02210627a

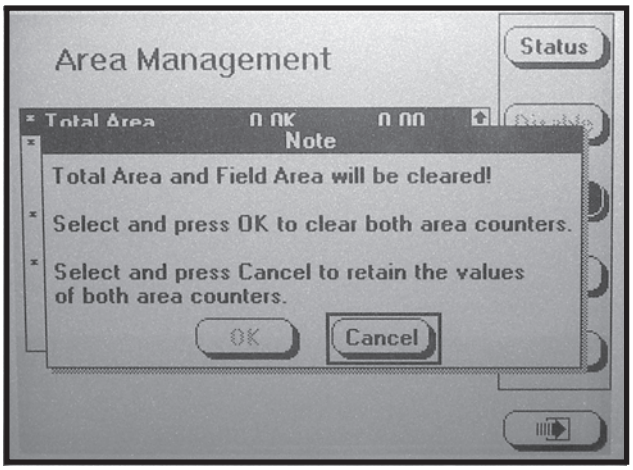


D02210626a



NOTE: If the total area is highlighted and the CLEAR key is pressed the following request for confirmation will appear.

D02200612



CLEAR AREA COUNTER

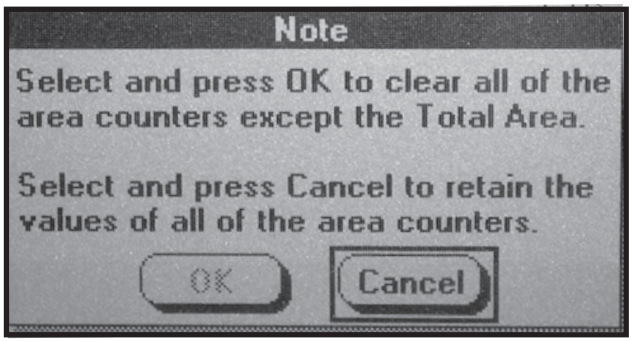
Total Area, Field Area and Area Counters 1 through 8 can be cleared, whether they are Enabled or Disabled. Clearing the ''Total Area'' counter forces the ''Field Area'' counter to also be cleared. Clearing any other ''Area Counter'' including the ''Field Area'' counter clears only that counter.

NOTE: Lifetime Area Counter can never be cleared or disabled.

To clear an Area Counter: (a) highlight the desired area counter, by turning the rotary encoder knob or using the UP or DOWN arrow keys, (b) press the CLEAR key, (c) the request for confirmation shown below will appear, (d) turn the knob or use the UP or DOWN arrow keys to select OK or CANCEL, (e) press the knob or ENTER key to make selection.

To Clear All Area Counters except the ''Total Area Counter'': (a) select the CLR ALL key; (b) a request for confirmation will appear; (c) turn the knob or use the UP or DOWN arrow keys to select either OK or CANCEL; (d) press the knob or ENTER key to confirm selection.

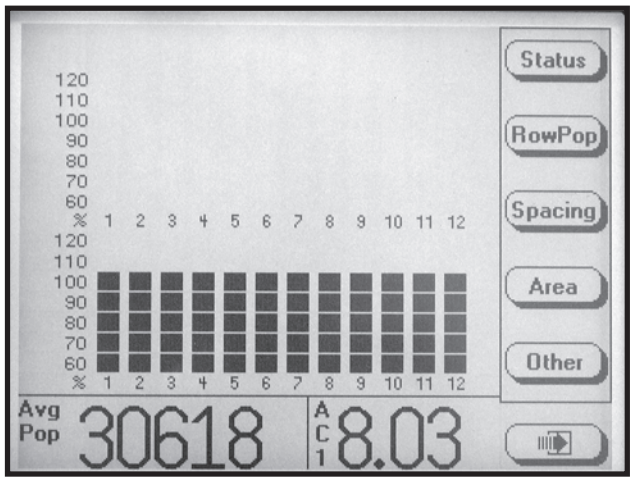
D02210628



AREA COUNTERS

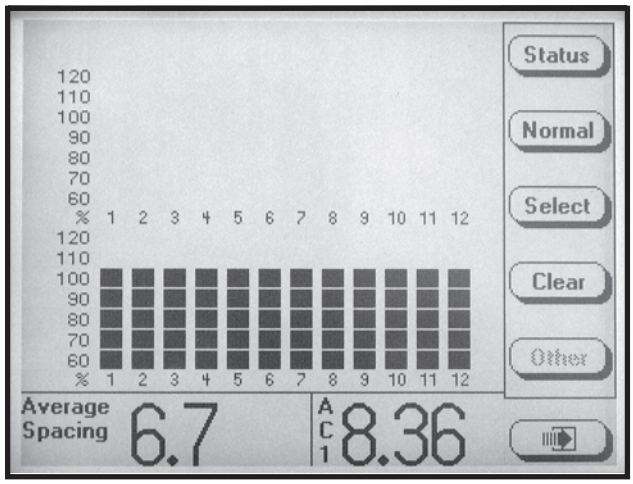
STEP 1 On the main planting screen press the AREA key.

D02240602



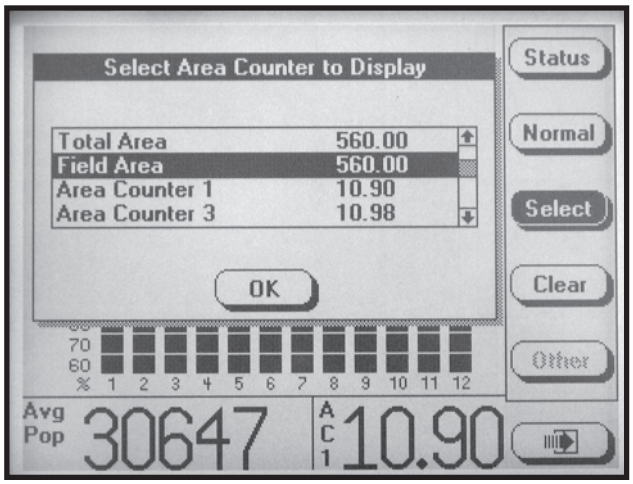
STEP 2 Press the SELECT key to display the list of the Enabled Area Counters.

D02240603



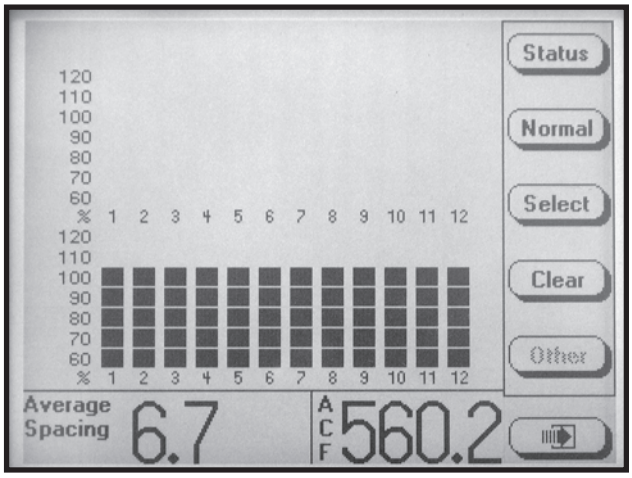
STEP 3 To select the desired active ''Area Counter'' turn the knob or use the UP or DOWN arrows to highlight the desired ''Area Counter''.

D02240609



STEP 4 Press the knob or ENTER key to select OK. The planting screen will then be displayed. Press NORMAL to display main planting screen.

D02240610

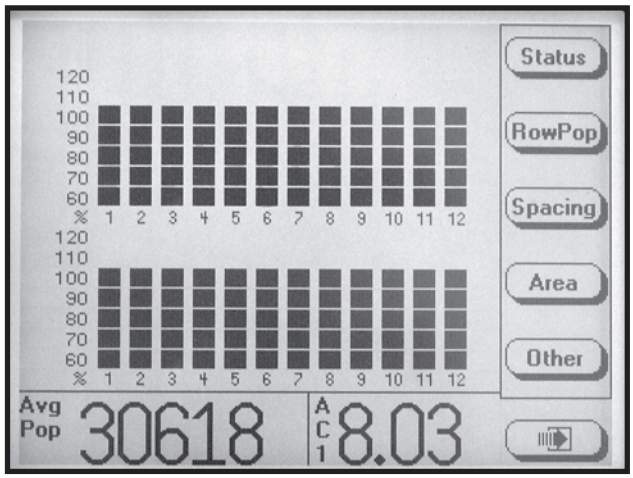


NOTE: The abbreviation for the selected area counter numerical value will appear in the bottom R.H. corner of the screen. In the above photo ''ACF'' represents ''Area Counter Field''.

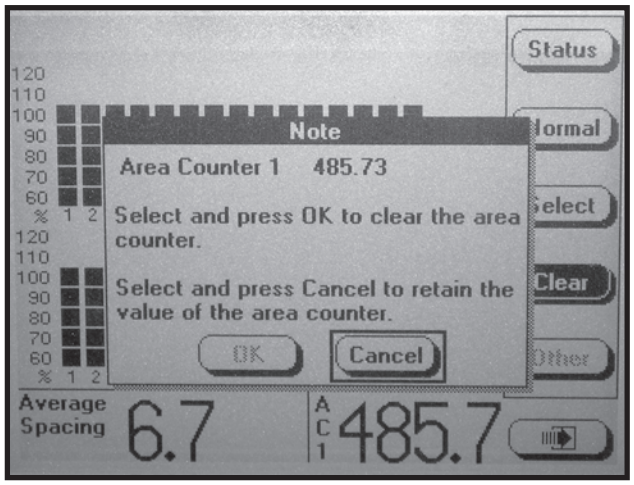
CLEARING FIELD AREA

To reset the counter, display the main planting screen by pressing the F6 key until it appears. Press the AREA key then select the CLEAR key, a dialog box will appear requesting confirmation to clear. Select OK or CANCEL key by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to verify the selection.

D02210625



D02210625



NOTE: Only the displayed Area Counter can be disabled.

ACRE COUNT MODE

When a tractor is equipped with a radar distance sensor, accumulating area without a planter attached is possible. Two routes are provided to enter acre count mode: (a) Installation of an Acre Count Switch Kit or (b) entry into Acre Count Mode.

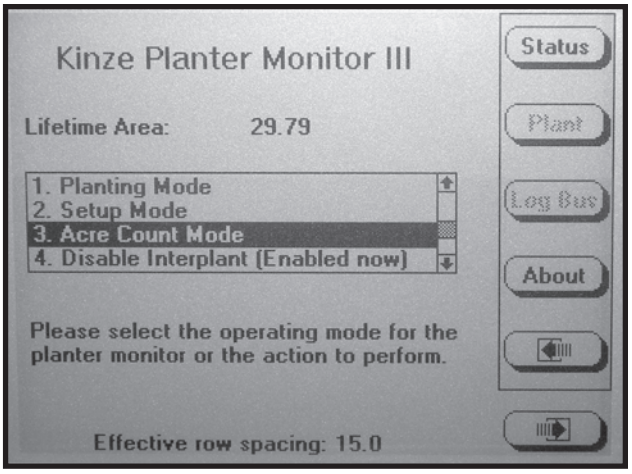
Acre Count Switch Kit

STEP 1 With the monitor OFF, attach an Acre Count Switch Kit to the Muxbus connector and then turn monitor ON and advance to STEP 2.

Acre Count Mode

STEP 1 Press the F6 key until the ''Mode Selection'' screen appears. Turn the rotary encoder knob or use the UP or DOWN arrow keys to select ''Acre Count Mode''. Press the knob or ENTER key.

D02200618



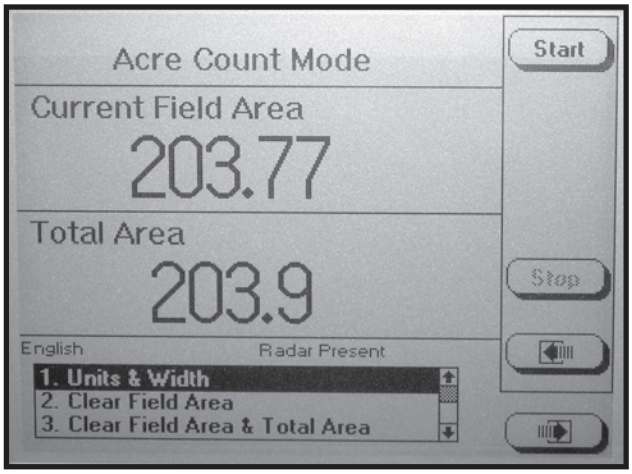
NOTE: If no radar unit is detected a warning will appear.

NOTE: If using acre count mode, acre (acres or hectares) is accumulated in "Lifetime Area Counter".

NOTE: DO NOT BEGIN ACCUMULATING AREA IF THE RADAR UNIT HAS NOT BEEN CALIBRATED. Always check the distance pulse count value immediately after entering acre count mode and before pressing start.

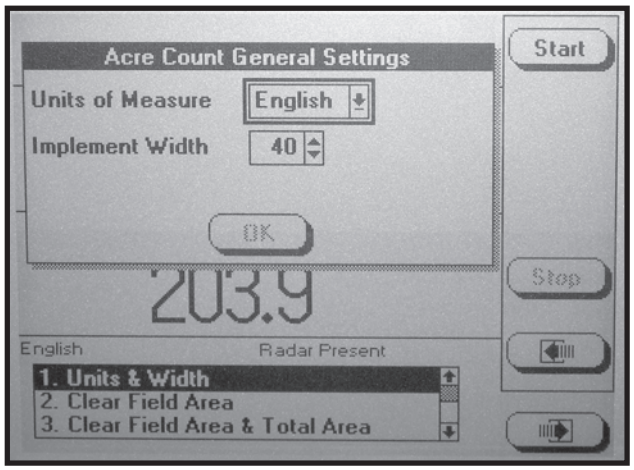
STEP 2 In the menu, ''Units & Width'' will be highlighted. Press the knob or ENTER key.

D02200619



STEP 3 A drop down menu will appear. Select the correct units of measure ''English'' or ''Metric'' by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to make the selection. The black box will advance to ''Implement Width'' field showing implement width in feet.

D02200621



STEP 4 Press the knob or ENTER key to highlight the field. Turn the knob or use the UP or DOWN arrow keys to select desired number in feet. When desired number is obtained press the knob or ENTER key. The black box will advance to OK key.

NOTE: The implement width entered in acre count mode has no effect on planting mode settings.

STEP 5 Press the knob or ENTER key when done.

NOTE: Tractor should be at a complete stop before starting.

STEP 6 To begin accumulating area press the START key.

STEP 7 To stop accumulating area or to move to a different location, press the STOP key.

There are two counters in the Acre Count Mode (Field Area Counter and Total Area Counter). The ''Field Area'' counter can be cleared independent of the ''Total Area'' counter. Clearing the ''Total Area'' counter causes the ''Field Area'' counter to also be cleared.

- To Clear Field Area. Highlight ''Clear Field Area'' and press the knob or ENTER key. A note will appear verifying the decision to reset the field area to zero. Select OK and press the knob or ENTER key to clear the field to zero. Select Cancel and press the knob or the ENTER key to retain the current field value.

- To Clear Both Field Area And Total Area. Highlight the ''Clear Field Area & Total Area'' and press the knob or ENTER key. A note will appear to verify the decision to reset the field area and the total area to zero. Select OK and press the knob or ENTER key to clear the field to zero. Select CANCEL and press the knob or ENTER key to retain the current field value.

With planter reconnected to monitor return to normal plant screen by pressing the F6 key until the ''Mode Selection'' screen appears. Select ''Planting Mode'' by turning the knob or using the UP or DOWN arrow keys, press the knob or ENTER key.

REPLACING FAULTY SENSOR(S)

To replace a single faulty sensor: (a) turn OFF the monitor, (b) replace the sensor, (c) turn monitor ON. It will then recognize that a single sensor has been replaced.

NOTE: Monitor will beep twice when the new senor(s) is learned.

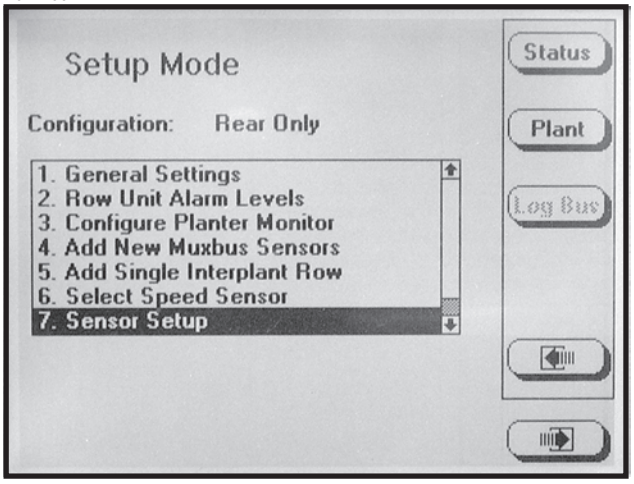
To replace more than one faulty sensor:

STEP 1 Press F6 key until the ''Mode Selection'' screen appears.

STEP 2 Select ''Setup Mode'' by turning the knob or press the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

STEP 3 Select ''Sensor Setup'' by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

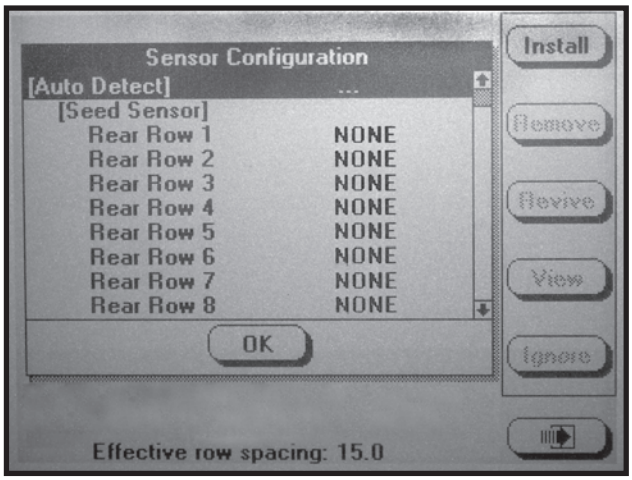
D02140641



STEP 4 Highlight faulty sensor. Press REMOVE key and unplug sensor. Plug in new sensor and press INSTALL key.

Repeat above procedure for each faulty sensor being replaced.

D02210601a



NOTE: Highlighting a sensor and pressing VIEW gives additional information when troubleshooting a problem. If a faulty sensor has been ignored it may be highlighted in the list of sensors, press REVIVE. The monitor will try to communicate with the sensor. If successful, ''OK'' will appear next to the sensor.

STEP 5 Press the knob or ENTER key to return to ''Setup Mode'' screen.

STEP 6 To return to "Planting Mode" press the PLANT key.

See "KPM III Electronic Seed Monitor Troubleshooting" in the Maintenance Section.

PLANTER MONITOR MODULE (PMM)

The PMM Magnetic Distance Sensor Package includes a planter-mounted module enclosure with cover and mounting hardware, seed tubes w/sensors, planter harnes, planter monitor cable, shaft rotation sensors and magnetic distance sensor components. A customer-supplied Ag Leader Insight display and associated cab harnesses are also required.

NOTE: See information supplied with Ag Leader Insight display for installation and programming.

D11200710a

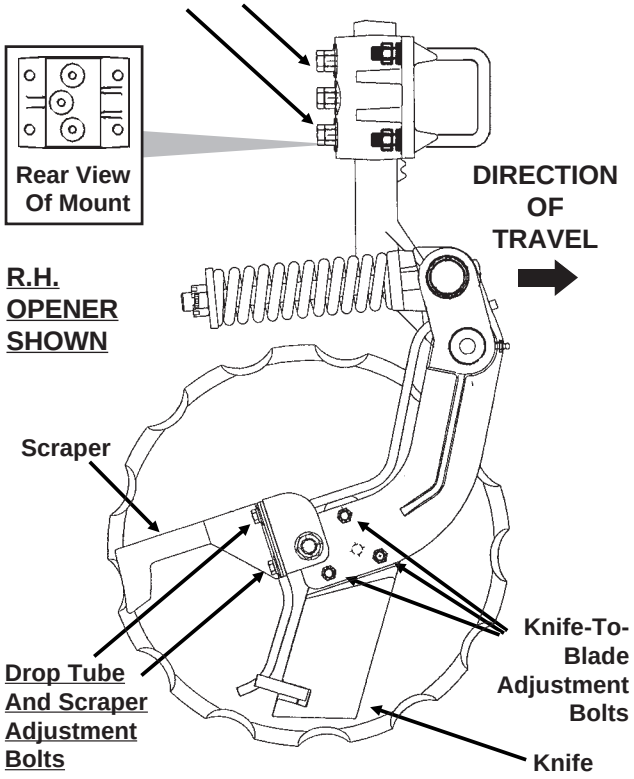
NOTCHED SINGLE DISC FERTILIZER OPENER (Style A)

The notched single disc fertilizer opener is designed for use in minimum and no till planting conditions. Placement of fertilizer with the 16 3/4" diameter notched single disc fertilizer opener is recommended at 2 1/2"- 3" from the row. The opener is designed to hold the blade at a set-angle so the knife and drop tube operate in the shadow of the blade. **Never locate the opener to place fertilizer closer than 2".**

WARNING: Spring under pressure. DO NOT disassemble.

(B0297/A10216bb)

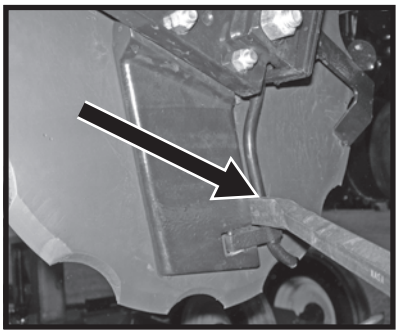
Depth Adjustment Cap Screws - Recommended Maximum Operating Depth 4" (Middle Cap Screw Holds Blade Angle But Must Be Loosened To Adjust Depth And Tightened First To Set Blade Angle)



Adjust knife-to-blade contact on each fertilizer opener so blade will turn by hand with slight resistance, but will not coast or freewheel. In dry, loose soil the knife adjustment is critical. If adjustment is not maintained, soil or residue may wedge between knife and blade, resulting in the blade not turning. If the knife is adjusted too tight, the blade will not turn causing the blade to push soil and residue. **Knife adjustment is made using the three 3/8" mounting carriage bolts** and pivot pad on the knife. Because of blade runout, rotate blade one full revolution after adjustment. Readjust knife to the blade's tight spot as needed. **Never strike the knife with a heavy object or damage may occur.**

Using the slotted mounting holes in the drop tube mount, **adjust fertilizer drop tube** behind the knife so it is protected from soil contact and wear. The liquid drop tube should be adjusted 1/4"- 3/8" from the opener blade while keeping it behind the knife. Insert a flat bladed pry bar between the knife and drop tube just above the drop tube tab as shown below. Bend the tube inward toward the disc blade to obtain the desired 1/4"- 3/8" adjustment.

D01040702



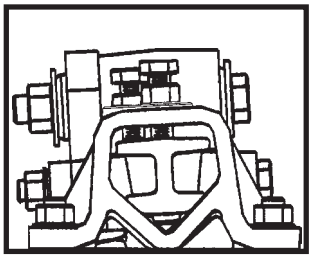
NOTE: Adjusting the liquid drop tube will ensure it is out of the path of the soil flow across the knife. Drop tube and tab will wear quickly if not adjusted correctly.

Adjust scraper to just touch the opener blade. As the mounting hardware is tightened, the scraper is drawn tighter to the blade. After adjustment, rotate opener blade to be sure blade will turn by hand with slight resistance, but will not coast or freewheel.

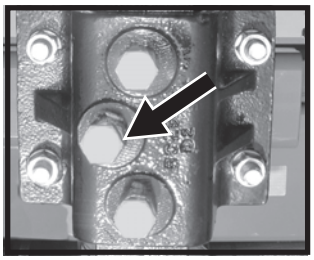
Adjust blade depth on each row using the cap screws and jam nuts located on the opener mount. The blade can be adjusted to allow a maximum 4" blade depth. Check fertilizer hose clearance (If Applicable) after adjusting opener depth. Torque cap screws and jam nuts to 57 ft. lbs.

NOTE: The blade cuts through the soil at an angle relative to the direction of travel. For this reason and to ensure proper operation, the cast mount should be oriented so the double ribs are on the same side of the blade as the drop tube.

FRTZ296



D070103100



NOTE: Recommended maximum operating depth is 4". To adjust depth: (a) Loosen depth adjustment cap screws. (b) Adjust depth to desired setting. (c) Tighten upper and lower cap screws slightly to hold opener arm in place. (d) Tighten middle cap screw to set the opener arm angle. (e) Tighten upper and lower cap screws and all jam nuts.

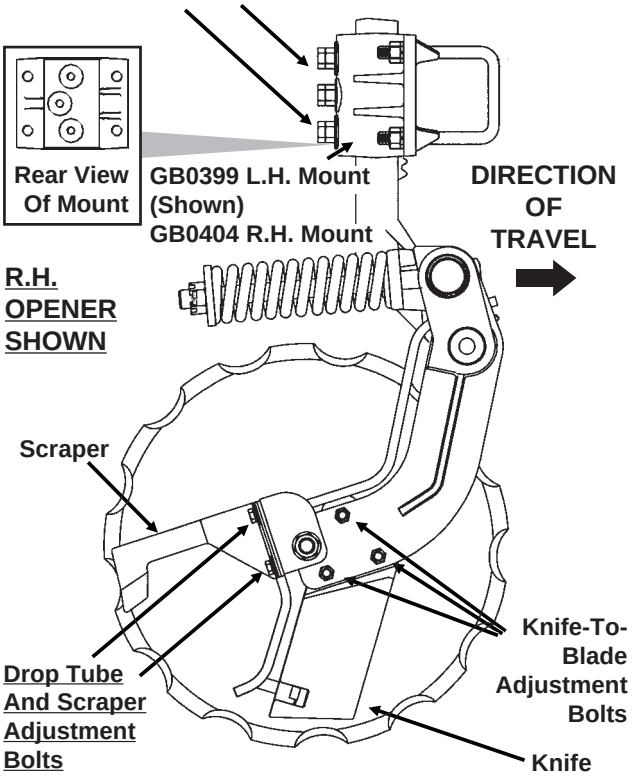
NOTCHED SINGLE DISC FERTILIZER OPENER (Style B)

The notched single disc fertilizer opener is designed for use in minimum and no till planting conditions. Placement of fertilizer with the 16 3/4" diameter notched single disc fertilizer opener is recommended at 2 1/2"- 3" from the row. The opener is designed to hold the blade at a set-angle so the knife and drop tube operate in the shadow of the blade. **Never locate the opener to place fertilizer closer than 2".**

WARNING: Spring under pressure. DO NOT disassemble.

(B0297/A12422)

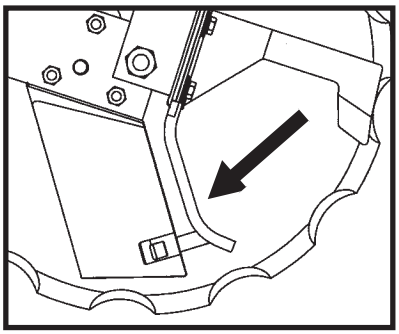
Depth Adjustment Cap Screws - Recommended Maximum Operating Depth 4" (Middle Cap Screw Holds Blade Angle But Must Be Loosened To Adjust Depth And Tightened First To Set Blade Angle)



Adjust knife-to-blade contact on each fertilizer opener so blade will turn by hand with slight resistance, but will not coast or freewheel. In dry, loose soil the knife adjustment is critical. If adjustment is not maintained, soil or residue may wedge between knife and blade, resulting in the blade not turning. If the knife is adjusted too tight, the blade will not turn causing the blade to push soil and residue. **Knife adjustment is made using the three 3/8" mounting carriage bolts** and pivot pad on the knife. Because of blade runout, rotate blade one full revolution after adjustment. Readjust knife to the blade's tight spot as needed. **Never strike the knife with a heavy object or damage may occur.**

Using the slotted mounting holes in the drop tube mount, **adjust fertilizer drop tube** behind the knife so it is protected from soil contact and wear. The liquid drop tube should be adjusted 1/4"- 3/8" from the opener blade while keeping it behind the knife. Insert a flat bladed pry bar between the knife and drop tube just above the drop tube tab as shown below. Bend the tube inward toward the disc blade to obtain the desired 1/4"- 3/8" adjustment.

D01040702



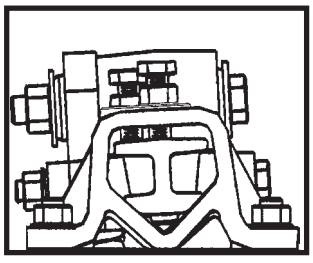
NOTE: Adjusting the liquid drop tube will ensure it is out of the path of the soil flow across the knife. Drop tube and tab will wear quickly if not adjusted correctly.

Adjust scraper to just touch the opener blade. As the mounting hardware is tightened, the scraper is drawn tighter to the blade. After adjustment, rotate opener blade to be sure blade will turn by hand with slight resistance, but will not coast or freewheel.

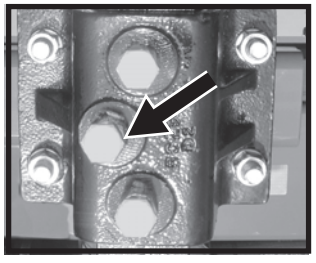
Adjust blade depth on each row using the cap screws and jam nuts located on the opener mount. The blade can be adjusted to allow a maximum 4" blade depth. Check fertilizer hose clearance (If Applicable) after adjusting opener depth. Torque cap screws and jam nuts to 57 ft. lbs.

NOTE: The blade cuts through the soil at an angle relative to the direction of travel. For this reason and to ensure proper operation, the cast mount should be oriented so the double ribs are on the same side of the blade as the drop tube.

FRTZ296



D070103100



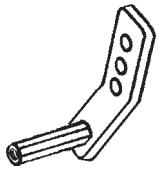
NOTE: Recommended maximum operating depth is 4". To adjust depth: (a) Loosen depth adjustment cap screws. (b) Adjust depth to desired setting. (c) Tighten upper and lower cap screws slightly to hold opener arm in place. (d) Tighten middle cap screw to set the opener arm angle. (e) Tighten upper and lower cap screws and all jam nuts.

DEPTH/GAUGE WHEEL ATTACHMENT FOR NOTCHED SINGLE DISC FERTILIZER OPENER

D061101202a

The depth/gauge wheel attachment for the notched single disc fertilizer opener is designed for use in situations where additional gauging is required to maintain desired fertilizer opener depth. The depth/gauge wheel is attached to the notched single disc fertilizer opener using a mounting block fastened to the pivot arm using $^{5}/_{8}$" hardware through the disc blade hub w/ bearing.

(FRTZ256a)



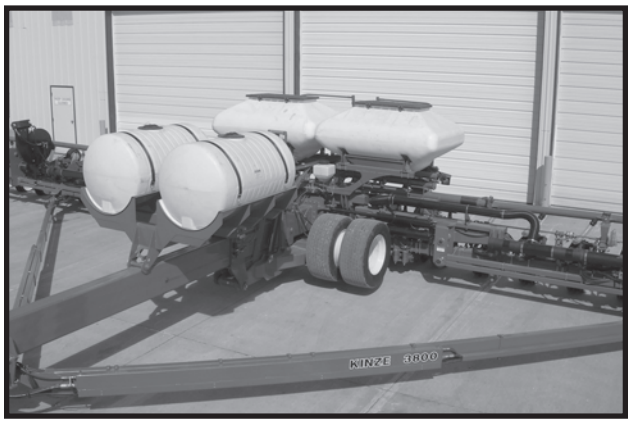
Depth adjustment is made by using the adjustment holes in the depth/gauge wheel mounting block. Moving the depth/gauge wheel increases/decreases depth in approximate 1" increments in relation to the blade depth setting made at the vertical mounting post.

LIQUID FERTILIZER ATTACHMENT

D03230604

Model 3800 SDS 24 Row 30" With Optional Liquid Fertilizer Package, Notched Single Disc Fertilizer Openers And Piston Pump Package

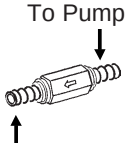
D03220615



Model 3800 SDS 36 Row 30" With Optional Liquid Fertilizer Package, Notched Single Disc Fertilizer Openers And Piston Pump Package

NOTE: An optional low rate check valve is available for installation in-line between the liquid fertilizer piston pump and the liquid fertilizer openers to ensure equal distribution of product at low rates. The check valves also eliminate the need for anti-siphon loops if the valves are installed as close as possible to the fertilizer opener drop tubes.

(FRTZ208)



OPTIONAL PISTON PUMP

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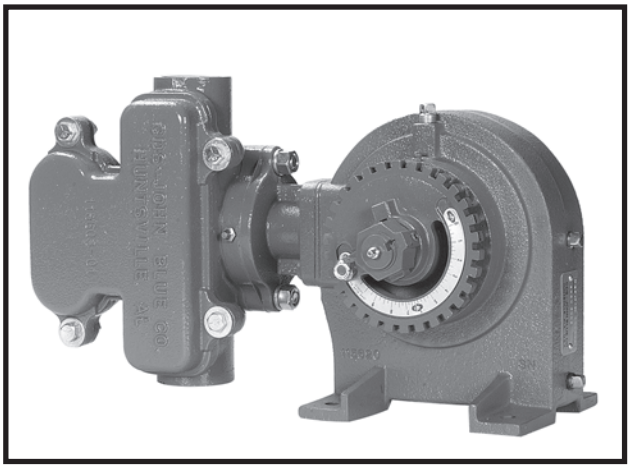
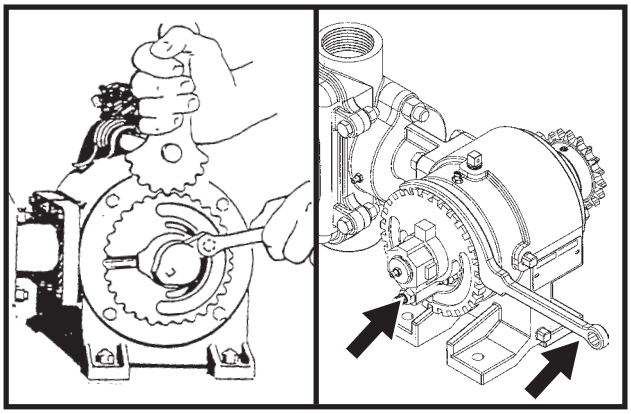


If the machine is equipped with the piston pump option, the rate of liquid fertilizer application is determined by the piston pump settings.

The delivery rate chart found at the end of this section provides an approximate application rate only. Actual delivery will vary with temperature and the particular fertilizer being used.

To adjust delivery rate, loosen the 3/8" lock nut that secures the arm with the pointer and rotate the scale flange until the pointer is over the desired scale setting. The adjustment wrench will facilitate rotation of the scale flange. Tighten the 3/8" lock nut being careful not to over tighten.

(PLTR9/A12330b)



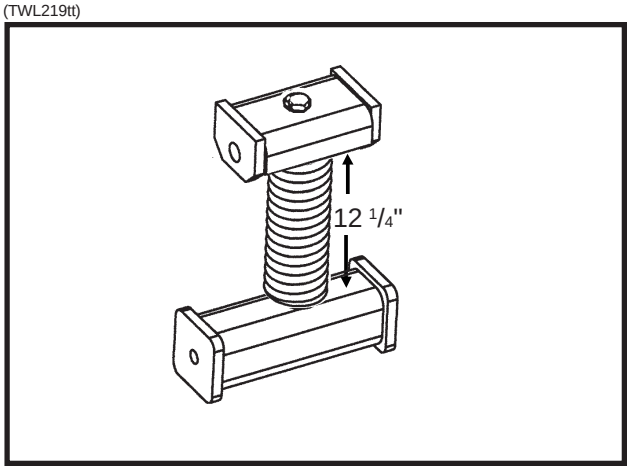
The operator and instruction manual shipped with the pump and flow divider should be kept and stored with this manual for future reference.

NOTE: Periodically check flow to all rows. If one or more lines are plugged, set rate will be delivered to remaining rows.

PISTON PUMP GROUND DRIVE WHEEL SPRING ADJUSTMENT

Initial spring tension of the down pressure spring on the piston pump ground drive wheel is set leaving 12 1/4" between the bottom of the mounting plate and the plug on top of the spring. This dimension is taken with the planter in raised position (tire not contacting the ground). Further adjustment can be made to fit conditions.

(TWL219tt)



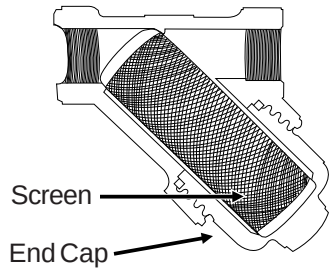
NOTE: The piston pump ground drive wheel assembly is designed to allow the assembly to be locked in raised position when not in use. Remove the two cap screws that attach the upper end of the spring to the spring mount. Reattach the spring using the upper holes in the spring mount. Reverse procedure to reset for field use.

CLEANING

The tanks and all hoses are made of sturdy plastic and rubber to resist corrosion. However, the tanks, hoses and metering pump should be thoroughly cleaned with water at the end of the planting season or prior to an extended period of non-use. Do not allow fertilizer to crystalize due to cold temperature or evaporation.

The strainer, located between the piston pump and ball valve (machines equipped with the piston pump), should be taken apart and cleaned daily. Remove the end cap to clean the screen.

(INS220)



See “Piston Pump Storage” (If Applicable) in the Maintenance Section of this manual.

REAR TRAILER HITCH

The Rear Trailer Hitch is used to tow a 3 or 4 wheel wagon behind the planter. Any hoses routed to the rear trailer hitch should follow hydraulic hose routings on the planter to allow the planter to be raised and folded to and from the transport position without stretching the hoses.

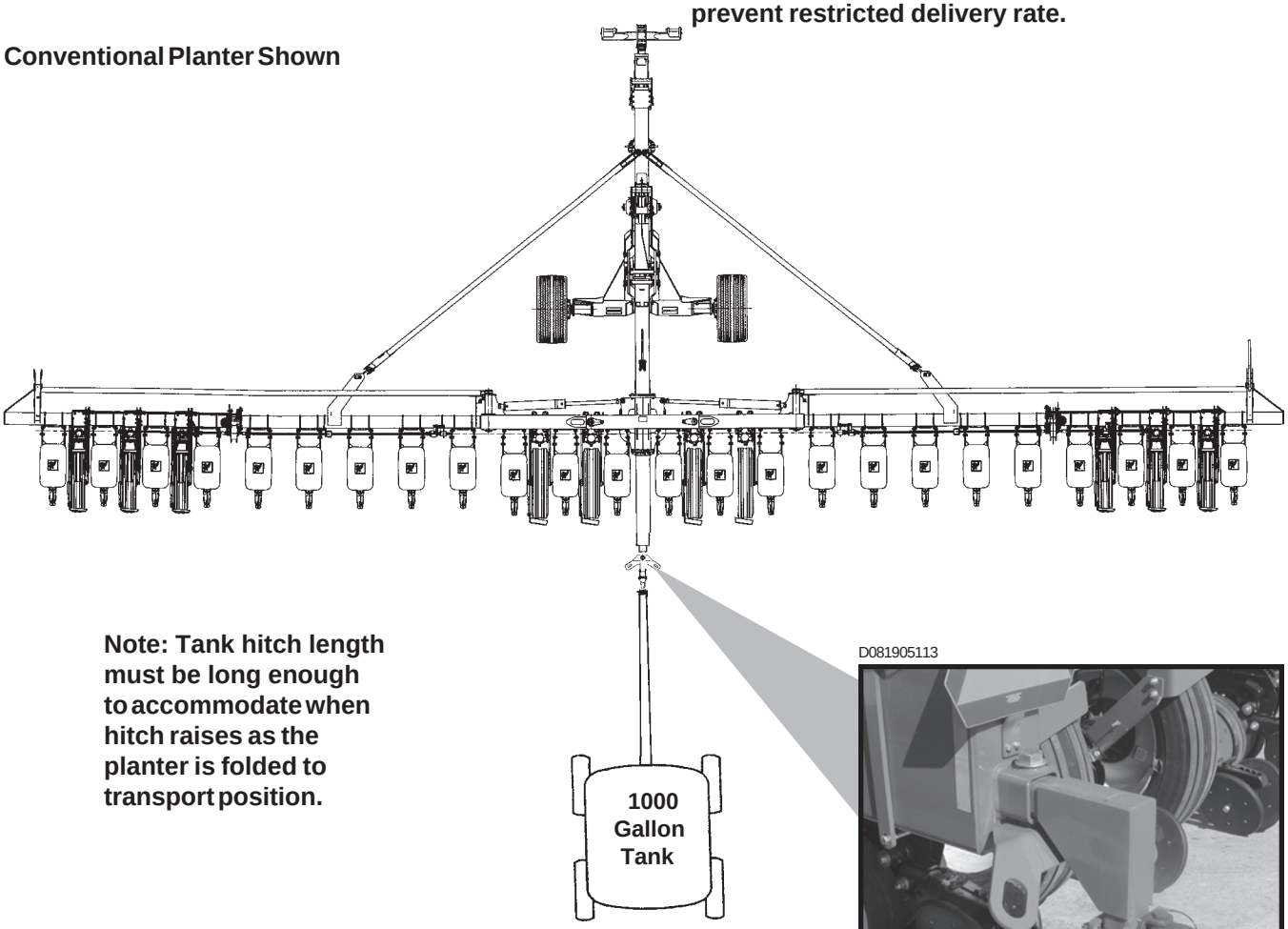
(FWD55a)

IMPORTANT: Maximum allowable hitch weight is 200 lbs. Gross towing weight should not exceed 16,000 lbs. or the equivalent of a loaded 1000 gallon tank and running gear.

IMPORTANT: Connection points are provided on the rear trailer hitch for connection of customer-supplied transport safety chains.

NOTE: Periodically check feed hose for kinks to prevent restricted delivery rate.

Conventional Planter Shown



Note: Tank hitch length must be long enough to accommodate when hitch raises as the planter is folded to transport position.

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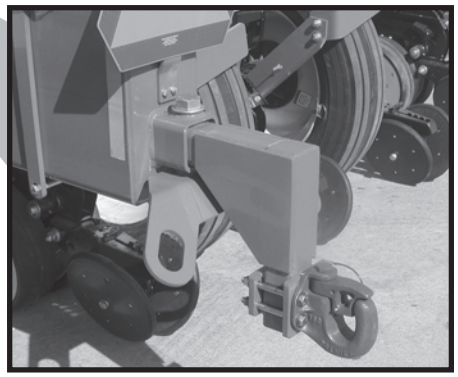


MACHINE OPERATION

TRANSPORTING THE PLANTER

WARNING: Always make sure safety/ warning lights, reflective decals and SMV sign are in place and visible prior to transporting the machine on public roads. In this regard, check federal, state/provincial and local regulations.

IMPORTANT: Avoid transporting planter with hoppers loaded whenever possible. When it is necessary to transport the planter with the hoppers loaded, the added weight should be distributed evenly on the planter frame before folding the planter.

METRIC CONVERSION TABLE

MULTIPLY	BY	TO GET
Inches (in.)	x 2.54	= centimeters (cm)
Inches (in.)	x 25.4	= millimeters (mm)
Feet (ft.)	x 30.48	= centimeters (cm)
Acres	x 0.405	= hectares (ha)
Miles per hour (mph)	x 1.609	= kilometers per hour (Km/h)
Pounds (lbs.)	x 0.453	= kilograms (kg)
Bushels (bu.)	x 35.238	= liters (l)
Gallons (gal.)	x 3.785	= liters (l)
Pounds per square inch (psi)	x 6.894	= kilopascals (kPa) (100 kPa = 1 bar)
Inch pounds (in. lbs.)	x 0.113	= newtons-meters (N•m)
Foot pounds (ft. lbs.)	x 1.356	= newtons-meters (N•m)
Centimeters (cm)	x .394	= inches (in.)
Millimeters (mm)	x .0394	= inches (in.)
Centimeters (cm)	x .0328	= feet (ft.)
Hectares (ha)	x 2.469	= acres
Kilometers per hour (Km/h)	x 0.621	= miles per hour (mph)
Kilograms (kg)	x 2.208	= pounds (lbs.)
Liters (l)	x 0.028	= bushels (bu.)
Liters (l)	x 0.264	= gallons (gal.)
Kilopascals (kPa) (100 kPa = 1 bar)	x 0.145	= pounds per square inch (psi)
Newtons-meters (N•m)	x 8.85	= inch pounds (in. lbs.)
Newtons-meters (N•m)	x 0.738	= foot pounds (ft. lbs.)

PLANTING SPEED

Planters are designed to operate within a speed range of 2 to 8 MPH. See “Planting And Application Rate Charts”. Variations in ground speed will produce variations in rates. Finger pickup seed meter populations will tend to be disproportionately higher at high ground speeds.

NOTE: Due to a multitude of variables, seed spacing can be adversely affected at speeds above 5.5 MPH.

FIELD TEST

With any change of field and/or planting conditions, seed size or planter adjustment, we recommend a field test be made to ensure proper seed placement and operation of row units. See “Rate Charts”, “Checking Seed Population” and “Checking Granular Chemical Application Rate” at end of this section.

- ❑ Check the planter for fore to aft and lateral level operation. See “Leveling The Planter” .
- ❑ Check **all** row units to be certain they are running level. When planting, the row unit parallel arms should be approximately parallel to the ground.
- ❑ Check row markers for proper operation and adjustment. See “Row Marker Length Adjustment”, “Row Marker Speed Adjustment” and “Row Marker Operation”.
- ❑ Check for proper application rates and placement of granular chemicals on **all** rows. See “Checking Granular Chemical Application Rate”.
- ❑ Check for desired depth placement and seed population on **all** rows. See “Checking Seed Population”.
- ❑ Check for proper application rates of fertilizer on **all** rows. See “Fertilizer Application Rate Chart”.

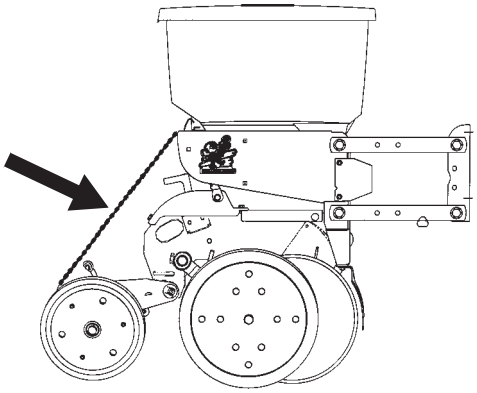
After the planter has been field tested, reinspect the machine.

- ❑ Hoses And Fittings
- ❑ Bolts And Nuts
- ❑ Cotter Pins And Spring Pins
- ❑ Drive Chain Alignment

CHECKING SEED POPULATION

1. Tie up one or more sets of closing wheels by running a chain or rubber tarp strap between the hopper support panel and closing wheels. It may be necessary to decrease closing wheel arm spring tension.

(RU113b)



2. Plant a short distance and check to see if seed is visible in the seed trench. Adjust planting depth to a shallower setting if seed is not visible and recheck.

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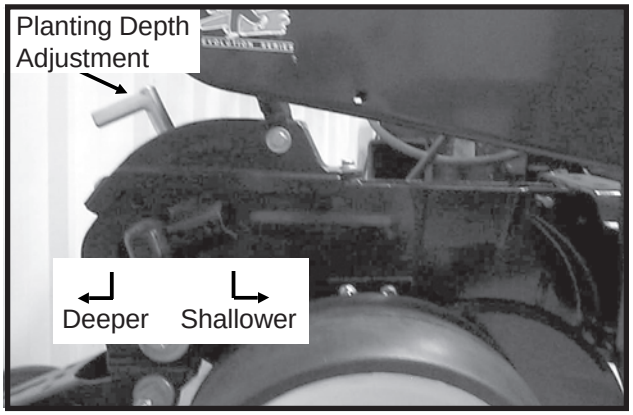

3. Measure $^{1}/_{1000}$ of an acre. See chart for correct distance for row width being planted. For example, if planting 30" rows $^{1}/_{1000}$ of an acre would be 17' 5".

LENGTH OF ROW IN FEET AND INCHES	
Fraction Of Acre	30" Row Width
$^{1}/_{1000}$	17' 5"

NOTE: When planting with closing wheels raised and planting depth set shallow, seeds may bounce or roll affecting seed spacing accuracy.

4. Count seeds in measured distance.

5. Multiply the number of seeds placed in $^{1}/_{1000}$ of an acre by 1000. This will give you total population.

EXAMPLE: With 30" row spacing 17' 5" equals $^{1}/_{1000}$ acre.

26 Seeds Counted	x	1000	=	26,000 Seeds Per Acre

Seed count can be affected by drive ratio between drive wheel and seed meter, tire pressure and/or seed meter malfunction.

If seed check shows the average distance between seeds in inches is significantly different than the seed rate chart indicates, first check drive ratio between drive wheel and seed meter. Check drive wheel air pressure, check for incorrect sprocket(s) in driveline and check drive and driven sprockets on transmission(s) for proper selection.

Second, check for seed meter performance. For example, if spacing between kernels of corn at the transmission setting being used is 8" and a gap of 16" is observed, a finger has lost its seed. If two seeds are found within a short distance of each other, the finger has metered two seeds instead of one.

See “Finger Pickup Seed Meter Troubleshooting” and/or “Brush-Type Seed Meter Troubleshooting” in the Maintenance section of this manual.

Determining Pounds Per Acre (Brush-Type Seed Meter)

To determine pounds per acre:

Seeds Per Acre On Chart	÷	Seeds Per Pound From Seed Tag On Bag	=	Pounds Per Acre

To determine bushels per acre:

Pounds Per Acre	÷	Unit Weight Of Seed	=	Bushels Per Acre

The unit weight of:

1 Bushel Soybeans = 60 Pounds
1 Bushel Milo/Grain Sorghum = 56 Pounds
1 Bushel Cotton = 32 Pounds

If seeds per pound information is not available the following is an average:

2,600 seeds per pound for medium size soybeans
15,000 seeds per pound for medium size milo/ grain sorghum
4,500 seeds per pound for medium size cotton

If seed population check shows planting rate is significantly different than seed rate chart shows or if a particular meter is not planting accurately, see “Brush-Type Seed Meter Maintenance” and “Brush-Type Seed Meter Troubleshooting”.

CHECKING GRANULAR CHEMICAL APPLICATION RATE

Many things can affect the rate of delivery of granular chemicals such as temperature, humidity, speed, ground conditions, flowability of different material or any obstruction in the meter.

WARNING: Agricultural chemicals can be dangerous if not selected and handled with care. Always read and follow directions supplied by the chemical manufacturer.

A field check is important to determine correct application rates.

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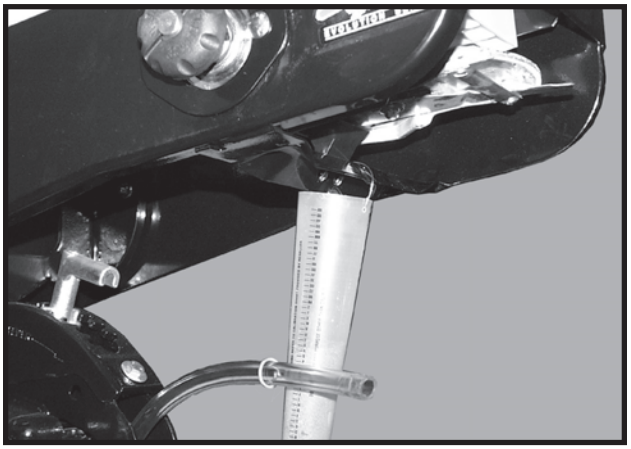

To check, fill insecticide and/or herbicide hoppers. Attach a calibrated vial to each granular chemical meter. Lower the planter and proceed as follows.

NOTE: It is not necessary for seed meter clutch to be engaged during test. Disengage clutch to avoid dropping seed.

Drive 1320 feet at planting speed. Weigh the chemical in ounces that was caught in one vial. Multiply that amount by the factor shown to determine pounds per acre.

POUNDS PER ACRE FACTOR FOR GIVEN ROW WIDTH	
Row Width	Factor
30"	0.83

EXAMPLE: You are planting 30" rows. You have planted for 1320 feet at the desired planting speed. You caught 12.0 ounces of chemical in one vial. 12.0 ounces times 0.83 equals 9.96 pounds per acre.

NOTE: It is important to check calibration of all rows.

Metering Gate

Use the metering gate setting for distributing insecticide or herbicide as a starting point. The charts are based on a 5 miles per hour planting speed. For speeds faster than 5 miles per hour a higher gate setting should be used. For speeds slower than 5 miles per hour a lower gate setting should be used.

GENERAL PLANTING RATE INFORMATION

These planting rate charts are applicable to KINZE® Model 3800 and 3800 SDS Forward Folding Planters. See "Tire Pressure" for recommended tire pressures.

IMPORTANT: The sprocket combinations listed in these charts are best for average conditions. Changes in sprocket combinations may be required to obtain desired planting population. TO PREVENT PLANTING MISCALCULATIONS, MAKE FIELD CHECKS TO BE SURE YOU ARE PLANTING AT THE DESIRED RATE.

The size and shape of seed may affect the planting rate.

Finger Pickup Corn Meter

Larger grades will generally plant more accurately at the high end of the ground speed range than smaller grades. Higher than optimum speeds may result in population rate increase or higher incidence of doubles, particularly with small seed. Medium round corn seed is most desirable for planting accuracy at optimum speed.

Finger Pickup Oil Sunflower Meter

Larger grades will generally plant more accurately at the high end of the ground speed range than smaller grades. Higher than optimum speeds may result in population rate increase or higher incidence of doubles, particularly with small seed. No. 3 and/or No. 4 size oil sunflower seeds are recommended for use in the finger pickup seed meter equipped with oil sunflower fingers. No. 1 and/or No. 2 size confectionery sunflower seeds are recommended for use in the finger pickup seed meter equipped with corn fingers.

NOTE: Seed additives, added to the seed in the hopper, may adversely affect performance of the finger pickup seed meter and accelerate wear. See "Finger Pickup Seed Meter" in the Row Unit Operation section.

Brush-Type Seed Meter (Soybean, Milo/Grain Sorghum, Acid-Delinted Cotton)

Rate charts are given in seeds per acre as well as seed spacing in inches rounded to the nearest tenth of an inch. Because of the large range in seed size, pounds per acre is not a suggested method of selecting transmission settings. When using smaller size seeds it may appear the pounds per acre is below what was expected and vice versa on large seed. To determine pounds per acre, use the formula given in "Determining Pounds Per Acre (Brush-Type Seed Meter)" in the "Checking Seed Population" section of this manual.

NOTE: Due to a multitude of variables, seed spacing can be adversely affected at speeds above 5.5 MPH.

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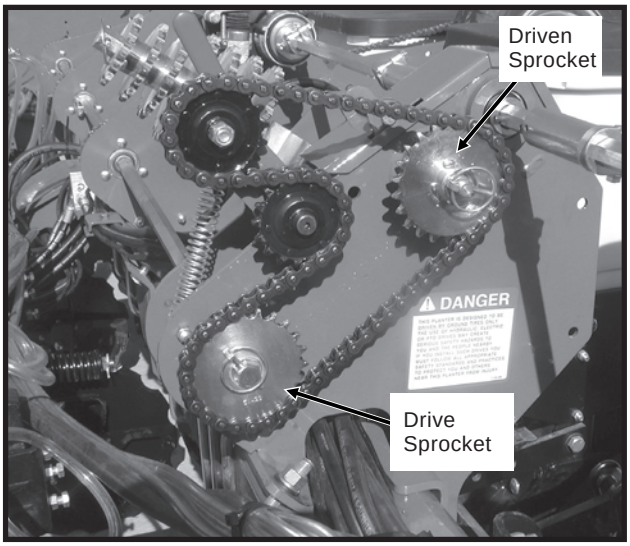

PLANTING RATES FOR FINGER PICKUP SEED METERS (STANDARD DRIVE)
APPROXIMATE SEEDS/ACRE

30" Rows	Transmission Sprockets Drive	Transmission Sprockets Driven	Recommended Speed Range (MPH)	Average Seed Spacing In Inches
16,000	15	25	4 to 6	13.1
16,800	17	27	4 to 6	12.5
17,450	17	26	4 to 6	12.0
18,150	17	25	4 to 6	11.5
18,750	19	27	4 to 6	11.1
19,500	19	26	4 to 6	10.7
19,700	17	23	4 to 6	10.6
20,250	19	25	4 to 6	10.3
21,050	15	19	4 to 6	9.9
21,100	19	24	4 to 6	9.9
22,000	19	23	4 to 6	9.5
22,700	23	27	4 to 6	9.2
23,500	15	17	4 to 6	8.9
23,600	23	26	4 to 6	8.9
23,700	24	27	4 to 6	8.8
23,850	17	19	4 to 6	8.8
24,550	23	25	4 to 6	8.5
24,600	24	26	4 to 6	8.5
24,700	25	27	4 to 6	8.5
24,900	14	15	4 to 6	8.4
25,550	23	24	4 to 6	8.2
25,600	24	25	4 to 6	8.2
25,650	25	26	4 to 6	8.2
25,700	26	27	4 to 6	8.1
26,650	23	23	4 to 6	7.8
27,650	27	26	4 to 6	7.6
27,750	26	25	4 to 6	7.5
27,800	25	24	4 to 6	7.5
27,850	24	23	4 to 6	7.5
28,550	15	14	4 to 6	7.3
28,800	27	25	4 to 6	7.3
28,900	26	24	4 to 6	7.2
29,000	25	23	4 to 6	7.2
29,800	19	17	4 to 6	7.0
30,000	27	24	4 to 6	7.0
30,150	26	23	4 to 6	6.9
30,200	17	15	4 to 6	6.9
31,300	27	23	4 to 6	6.7
32,250	23	19	4 to 6	6.5
32,350	17	14	3 to 5.5	6.5
33,650	24	19	3 to 5.5	6.2
33,750	19	15	3 to 5.5	6.2
35,050	25	19	3 to 5	6.0
36,050	23	17	2 to 5	5.8
36,200	19	14	2 to 5	5.8
36,500	26	19	3 to5	5.7
37,650	24	17	3 to 5	5.6
37,900	27	19	3 to 5	5.5
39,200	25	17	3 to 4.5	5.3
40,750	26	17	3 to 4.5	5.1
40,900	23	15	3 to 4.5	5.1
42,300	27	17	3 to 4.5	4.9
42,650	24	15	3 to 4.5	4.9
43,800	23	14	3 to 4.5	4.8
44,450	25	15	3 to 4.5	4.7

NOTE: See “General Planting Rate Information” and “Checking Seed Population” pages for additional information. Always check seed population in the field to ensure planting rates are correct.

PLANTING RATES FOR BRUSH-TYPE SEED METERS (STANDARD DRIVE)
APPROXIMATE SEEDS/ACRE

Transmission Sprockets		60 Cell Soybean Or High-Rate Milo/ Grain Sorghum	Average Seed Spacing In	48 Cell Specialty Soybean Or High-Rate Acid-Delinted Cotton	Average Seed Spacing In	Speed Range
Drive	Driven	30" Rows	Inches	30" Rows	Inches	(MPH)
15	25	80,000	2.6	64,000	3.3	2 to 8
17	27	83,950	2.5	67,150	3.1	2 to 8
17	26	87,150	2.4	69,700	3.0	2 to 8
17	25	90,650	2.3	72,500	2.9	2 to 8
19	27	93,800	2.2	75,050	2.8	2 to 8
19	26	97,400	2.1	77,950	2.7	2 to 8
17	23	98,500	2.1	78,800	2.7	2 to 8
19	25	101,300	2.1	81,050	2.6	2 to 8
15	19	105,250	2.0	84,200	2.5	2 to 8
19	24	105,500	2.0	84,400	2.5	2 to 8
19	23	110,100	1.9	88,100	2.4	2 to 8
23	27	113,550	1.8	90,850	2.3	2 to 8
15	17	117,600	1.8	94,100	2.2	2 to 8
23	26	117,900	1.8	94,350	2.2	2 to 8
24	27	118,500	1.8	94,800	2.2	2 to 8
17	19	119,250	1.8	95,400	2.2	2 to 8
23	25	122,650	1.7	98,100	2.1	2 to 8
24	26	123,050	1.7	98,450	2.1	2 to 8
25	27	123,400	1.7	98,750	2.1	2 to 8
14	15	124,400	1.7	99,550	2.1	2 to 8
23	24	127,750	1.6	102,200	2.0	2 to 8
24	25	127,950	1.6	102,350	2.0	2 to 8
25	26	128,150	1.6	102,550	2.0	2 to 8
26	27	128,350	1.6	102,700	2.0	2 to 8
23	23	133,300	1.6	106,650	2.0	2 to 8
27	26	138,400	1.5	110,750	1.9	2 to 8
26	25	138,650	1.5	110,900	1.9	2 to 8
25	24	138,850	1.5	111,100	1.9	2 to 8
24	23	139,100	1.5	111,250	1.9	2 to 8
15	14	142,800	1.5	114,250	1.8	2 to 8
27	25	143,950	1.5	115,150	1.8	2 to 8
26	24	144,400	1.4	115,500	1.8	2 to 8
25	23	144,900	1.4	115,900	1.8	2 to 8
19	17	148,950	1.4	119,200	1.8	2 to 8
27	24	149,950	1.4	119,950	1.7	2 to 8
26	23	150,700	1.4	120,550	1.7	2 to 8
17	15	151,050	1.4	120,850	1.7	2 to 8
27	23	156,500	1.3	125,200	1.7	2 to 8
23	19	161,350	1.3	129,100	1.6	2 to 8
17	14	161,850	1.3	129,500	1.6	2 to 8
24	19	168,350	1.2	134,700	1.6	2 to 8
19	15	168,850	1.2	135,050	1.5	2 to 8
25	19	175,400	1.2	140,300	1.5	2 to 8
23	17	180,350	1.2	144,250	1.4	2 to 8
19	14	180,900	1.2	144,700	1.4	2 to 8
26	19	182,400	1.1	145,900	1.4	2 to 7
24	17	188,200	1.1	150,550	1.4	2 to 7
27	19	189,400	1.1	151,550	1.4	2 to 7
25	17	196,000	1.1	156,800	1.3	2 to 7
26	17	203,850	1.0	163,100	1.3	2 to 7
23	15	204,400	1.0	163,500	1.3	2 to 7
27	17	211,700	1.0	169,350	1.2	2 to 7
24	15	213,250	1.0	170,600	1.2	2 to 7
23	14	219,000	1.0	175,200	1.2	2 to 7
25	15	222,150	0.9	177,750	1.2	2 to 7

NOTE: See "General Planting Rate Information" and "Checking Seed Population" pages for additional information.

NOTE: When using the Half Rate (2 To 1) Drive Reduction Package, rates will be approximately 50% of given numbers.

NOTE: Always check seed population in the field to ensure planting rates are correct.

PLANTING RATES FOR BRUSH-TYPE SEED METERS (STANDARD DRIVE)
APPROXIMATE SEEDS/ACRE

Transmission Sprockets		36 Cell Acid-Delinted Large Cotton	Average Seed Spacing In	30 Cell Milo/Grain Sorghum Or Acid-Delinted Cotton	Average Seed Spacing In	Speed Range
Drive	Driven	30" Rows	Inches	30" Rows	Inches	(MPH)
15	25	48,000	4.4	40,000	5.2	2 to 8
17	27	50,350	4.2	41,950	5.0	2 to 8
17	26	52,300	4.0	43,600	4.8	2 to 8
17	25	54,400	3.8	45,300	4.6	2 to 8
19	27	56,300	3.7	46,900	4.5	2 to 8
19	26	58,450	3.6	48,700	4.3	2 to 8
17	23	59,100	3.5	49,250	4.2	2 to 8
19	25	60,800	3.4	50,650	4.1	2 to 8
15	19	63,150	3.3	52,600	4.0	2 to 8
19	24	63,300	3.3	52,750	4.0	2 to 8
19	23	66,050	3.2	55,050	3.8	2 to 8
23	27	68,150	3.1	56,750	3.7	2 to 8
15	17	70,550	3.0	58,800	3.6	2 to 8
23	26	70,750	3.0	58,950	3.5	2 to 8
24	27	71,100	2.9	59,250	3.5	2 to 8
17	19	71,550	2.9	59,650	3.5	2 to 8
23	25	73,600	2.8	61,300	3.4	2 to 8
24	26	73,800	2.8	61,500	3.4	2 to 8
25	27	74,050	2.8	61,700	3.4	2 to 8
14	15	74,650	2.8	62,200	3.4	2 to 8
23	24	76,650	2.7	63,850	3.3	2 to 8
24	25	76,800	2.7	64,000	3.3	2 to 8
25	26	76,900	2.7	64,100	3.3	2 to 8
26	27	77,000	2.7	64,200	3.3	2 to 8
23	23	79,950	2.6	66,650	3.1	2 to 8
27	26	83,050	2.5	69,200	3.0	2 to 8
26	25	83,200	2.5	69,300	3.0	2 to 8
25	24	83,300	2.5	69,400	3.0	2 to 8
24	23	83,450	2.5	69,550	3.0	2 to 8
15	14	85,700	2.4	71,400	2.9	2 to 8
27	25	86,400	2.4	72,000	2.9	2 to 8
26	24	86,650	2.4	72,200	2.9	2 to 8
25	23	86,950	2.4	72,450	2.9	2 to 8
19	17	89,400	2.3	74,500	2.8	2 to 8
27	24	89,950	2.3	75,000	2.8	2 to 8
26	23	90,400	2.3	75,350	2.8	2 to 8
17	15	90,650	2.3	75,550	2.8	2 to 8
27	23	93,900	2.2	78,250	2.7	2 to 8
23	19	96,800	2.2	80,700	2.6	2 to 8
17	14	97,100	2.2	80,950	2.6	2 to 8
24	19	101,000	2.1	84,200	2.5	2 to 8
19	15	101,300	2.1	84,400	2.5	2 to 8
25	19	105,250	2.0	87,700	2.4	2 to 8
23	17	108,200	1.9	90,150	2.3	2 to 8
19	14	108,550	1.9	90,450	2.3	2 to 8
26	19	109,450	1.9	91,200	2.3	2 to 7
24	17	112,900	1.9	94,100	2.2	2 to 7
27	19	113,650	1.8	94,700	2.2	2 to 7
25	17	117,600	1.8	98,000	2.1	2 to 7
26	17	122,300	1.7	101,950	2.1	2 to 7
23	15	122,650	1.7	102,200	2.0	2 to 7
27	17	127,000	1.6	105,850	2.0	2 to 7
24	15	127,950	1.6	106,650	2.0	2 to 7
23	14	131,400	1.6	109,500	1.9	2 to 7
25	15	133,300	1.6	111,100	1.9	2 to 7

NOTE: See "General Planting Rate Information" and "Checking Seed Population" pages for additional information.

NOTE: When using the Half Rate (2 To 1) Drive Reduction Package, rates will be approximately 50% of given numbers.

NOTE: Always check seed population in the field to ensure planting rates are correct.

PLANTING RATES FOR BRUSH-TYPE SEED METERS (STANDARD DRIVE)
APPROXIMATE HILLS/ACRE

Due to variations in cotton seed size, meters equipped with 12 cell acid-delinted hill-drop cotton discs will plant from 3 to 6 seeds per cell. Select proper disc for seed size range to be planted.

To determine planter transmission setting, **determine desired hill spacing and select the transmission ratio closest to the hill spacing in inches on the chart. To decrease population increase spacing. To increase population decrease spacing.**

To determine population per acre, **determine average seeds per hill and hills per acre by doing a field check. Measure $^{1}/_{1000}$ of an acre (1/1000 acre = Length of row 17' 5" for 30" row widths). Multiply average seeds per hill by hills per acre. EXAMPLE: 4 seeds per hill x (13 hills x 1000) = 52,000**

Transmission Sprockets		NUMBER OF HILLS PER ACRE 12 Cell Hill-Drop Cotton, Acid-Delinted	Average Hill Spacing	Speed Range
Drive	Driven	30" Rows	In Inches	(MPH)
15	25	16,000	13.1	2 to 8
17	27	16,800	12.5	2 to 8
17	26	17,450	12.0	2 to 8
17	25	18,150	11.5	2 to 8
19	27	18,750	11.1	2 to 8
19	26	19,500	10.7	2 to 8
17	23	19,700	10.6	2 to 8
19	25	20,250	10.3	2 to 8
15	19	21,050	9.9	2 to 8
19	24	21,100	9.9	2 to 8
19	23	22,000	9.5	2 to 8
23	27	22,700	9.2	2 to 8
15	17	23,500	8.9	2 to 8
23	26	23,600	8.9	2 to 8
24	27	23,700	8.8	2 to 8
17	19	23,850	8.8	2 to 8
23	25	24,550	8.5	2 to 8
24	26	24,600	8.5	2 to 8
25	27	24,700	8.5	2 to 8
14	15	24,900	8.4	2 to 8
23	24	25,550	8.2	2 to 8
24	25	25,600	8.2	2 to 8
25	26	25,650	8.2	2 to 8
26	27	25,650	8.1	2 to 8
23	23	26,650	7.8	2 to 8
27	26	27,700	7.6	2 to 8
26	25	27,750	7.5	2 to 8
25	24	27,750	7.5	2 to 8
24	23	27,800	7.5	2 to 8
15	14	28,550	7.3	2 to 8
27	25	28,800	7.3	2 to 8
26	24	28,900	7.2	2 to 8
25	23	29,000	7.2	2 to 8
19	17	29,800	7.0	2 to 8
27	24	30,000	7.0	2 to 8
26	23	30,150	6.9	2 to 8
17	15	30,200	6.9	2 to 8
27	23	31,300	6.7	2 to 8
23	19	32,250	6.5	2 to 8
17	14	32,350	6.5	2 to 8
24	19	33,650	6.2	2 to 8
19	15	33,750	6.2	2 to 8
25	19	35,050	6.0	2 to 8
23	17	36,050	5.8	2 to 8
19	14	36,200	5.8	2 to 8
26	19	36,500	5.7	2 to 7
24	17	37,650	5.6	2 to 7
27	19	37,900	5.5	2 to 7
25	17	39,200	5.3	2 to 7
26	17	40,750	5.1	2 to 7
23	15	40,850	5.1	2 to 7
27	17	42,350	4.9	2 to 7
24	15	42,650	4.9	2 to 7
23	14	43,800	4.8	2 to 7
25	15	44,450	4.7	2 to 7

NOTE: See "General Planting Rate Information" and "Checking Seed Population" pages for additional information.

NOTE: When using the Half Rate (2 To 1) Drive Reduction Package, rates will be approximately 50% of given numbers.

NOTE: Always check seed population in the field to ensure planting rates are correct.

DRY INSECTICIDE APPLICATION RATES
APPROXIMATE POUNDS/ACRE AT 5 MPH

Meter Setting	30" Rows
CLAY GRANULES	
10	4.9
11	5.4
12	6.1
13	6.9
14	7.7
15	8.5
16	9.6
17	10.7
18	11.4
19	13.1
20	14.2
21	15.5
22	16.4
23	17.2
24	18.8
25	20.9
26	23.0
27	24.1
28	25.4
29	27.8
30	29.6
SAND GRANULES	
5	2.9
6	4.9
7	5.3
8	6.3
9	7.8
10	8.9
11	10.2
12	11.2
13	12.6
14	14.1
15	15.5
16	17.5
17	19.4
18	21.8
19	24.3
20	25.7
21	27.6
22	29.6
23	32.0
24	34.4
25	36.9

NOTE: The above chart represents average values and should be used only as a starting point. The granular chemical flows through the given meter opening at a nearly uniform rate regardless of roller speed. Your actual rate will vary depending upon the insecticide you are using, your planting speed and your plant population. Planting speed/ground speed has the greatest effect on application rate.

Your actual rate must be checked in the field with the actual insecticide that you are using and at the speed and population at which you will be planting. See "Checking Granular Chemical Application Rate" page for additional information.

WARNING: Agricultural chemicals can be dangerous if not selected and handled with care. Always read and follow directions supplied by the chemical manufacturer.

DRY HERBICIDE APPLICATION RATES

APPROXIMATE POUNDS/ACRE AT 5 MPH

CLAY GRANULES

Meter Setting	30" Rows
10	4.7
11	5.2
12	5.8
13	6.5
14	7.3
15	8.2
16	9.0
17	9.9
18	10.7
19	11.6
20	12.6
21	13.6
22	14.6
23	15.7
24	17.0
25	18.1
26	19.4
27	20.9
28	22.6
29	24.3
30	26.7

NOTE: The above chart represents average values and should be used only as a starting point. The granular chemical flows through the given meter opening at a nearly uniform rate regardless of roller speed. Your actual rate will vary depending upon the herbicide you are using, your planting speed and your plant population. Planting speed/ground speed has the greatest effect on application rate.

Your actual rate must be checked in the field with the actual herbicide that you are using and at the speed and population at which you will be planting. See "Checking Granular Chemical Application Rate" page for additional information.

WARNING: Agricultural chemicals can be dangerous if not selected and handled with care. Always read and follow directions supplied by the chemical manufacturer.

LIQUID FERTILIZER PISTON PUMP APPLICATION RATES GALLONS PER ACRE

Applies To Model L-4405 And NGP-7055 Pumps With 18 Tooth Sprocket (Planter Equipped With Two Piston Pumps)

Pump Setting	1	2	3	4	5	6	7	8	9	10
24 Row 30"	3.7	7.4	11.1	14.8	18.5	22.1	25.8	29.5	33.2	36.9
32 Row 30"	2.8	5.5	8.3	11.1	13.9	16.6	19.4	22.2	24.9	27.7
36 Row 30"	2.5	4.9	7.3	9.8	12.2	14.6	17.0	19.5	21.9	24.4

Above chart is for planters equipped with 7.60" x 15" drive wheel, based on 91" forward travel per wheel revolution, 48 tooth drive sprocket and 18 tooth driven sprocket on metering pump. Chart is based on average wheel slippage and liquid viscosities.

Measure and weigh one gallon of actual fertilizer solution to determine exact application rate. This chart was calculated based on a solution weighing ten pounds per gallon.

NOTE: Fertilizer application rates can vary from the above chart. To prevent application miscalculations, make field checks to be sure you are applying fertilizer to all rows at the desired rate.

NOTE: Flow to all rows should be checked periodically. If one or more lines are plugged, the desired rate will be delivered to the remaining rows keeping total application rate at desired rate.

To check the exact number of gallons your fertilizer attachment will actually deliver on a 30" row spacing, proceed as follows:

Remove the hose from one of the fertilizer openers and insert it into a collection container which has been secured to the planter frame. Engage the fertilizer attachment and drive forward for 174'. Measure the fluid ounces caught in the container and multiply that amount by 100. Divide that amount by 128. The result will be the gallons of fertilizer delivered per acre when planting in 30" rows. Rinse the collection container and repeat test on other rows if necessary.

SDS SEED DELIVERY SYSTEM OPERATION

INTRODUCTION

The seed delivery system consists of two bulk seed hoppers with removable lids that each service half of the planter. Approximate capacity of each hopper is 55 bushels for a total of 110 bushels. Seed hoppers are accessible via a rear-mounted ladder and access deck. Individual mini-hoppers are filled from the central-mounted seed hoppers with 3 1/2" diameter augers in steel tubes which flex to match wing flex and fold requirements. The auger system is hydraulic driven with two variable speed motors controlled from a cab mounted console. The control console includes two electronic tachometers and switches for master shut-off and variable speed control by section. The system is driven on-demand to ensure constant supply to all rows. Limit switches disable the system when the planter is in folded position.

The mini-hoppers are used in lieu of conventional seed hoppers. The row units and seed meters are the same as used on other KINZE® planters.

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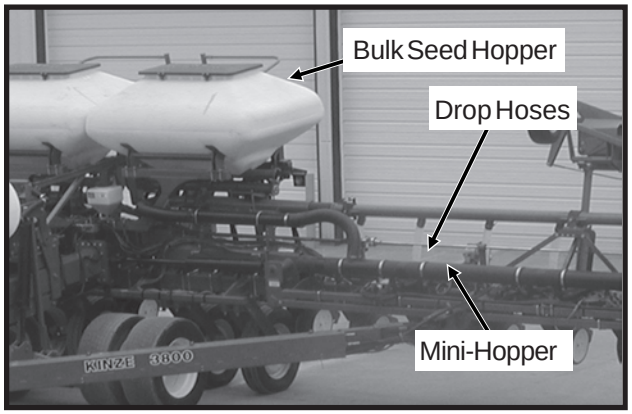

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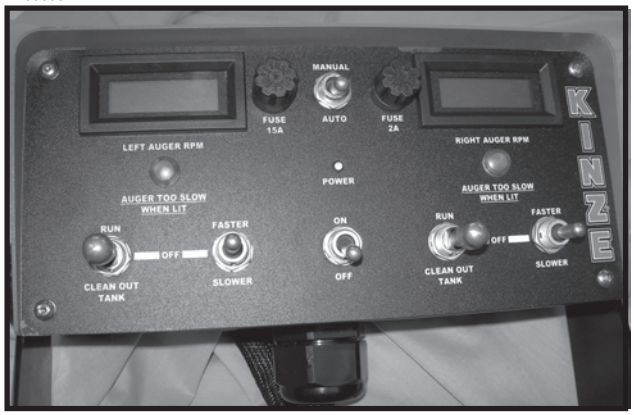

NOTE: After all row outlets are filled to capacity, seed will continue to be evenly distributed to all rows until the bulk seed hopper is empty. When the bulk seed hopper is empty or the auger system is shut off, all drop hoses will "plant out" equally and all rows should run out of seed at approximately the same time.

OPERATION

To operate the Seed Delivery System (SDS) the tractor must be equipped with a closed center hydraulic system.

Position the main power switch on the control console to **ON**. The left and right side of the planter use independent systems that operate the same, except for auger flighting direction. Toggle switches are used to control the auger systems on each half of the planter. To operate, place switches in **RUN** position. Place hydraulic lever in **ON** position. The auger systems will continue to run until they have charged the system. The operator can increase or decrease the speed by utilizing the **FASTER/SLOWER** switches positioned to the right of each **RUN** switch. Auger RPM is displayed for each side using an LCD tachometer. Recommended starting speed is 100 RPM. Adjust for the type and weight of seed and population being planted.

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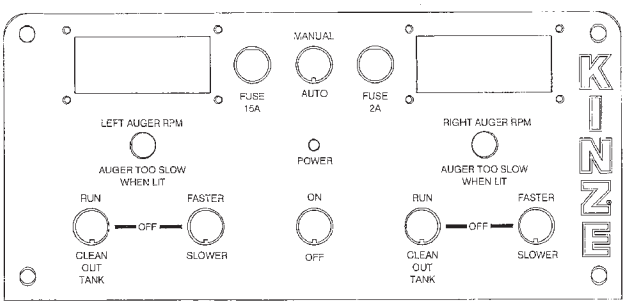

The outermost drop on each side of the planter is equipped with a proximity sensor that will stop the system when the drop tube is full. When the seed level drops away from the sensor, the system will automatically start after a short time delay (approximately 2 minutes). The augers will then restart and run until the system is fully recharged. If the system does not recharge fast enough, a light on the display will illuminate. Increase the auger RPM to ensure adequate seed availability

In the event of a sensor failure, the system will not operate. Hold the **MANUAL/AUTO** switch in the **MANUAL** position to override the sensor and run the system. This override is intended ONLY for emergency operation until the system can be repaired. An additional shut-off switch (limit switch) on each outboard end is designed to keep the system from stuffing if the proximity sensor fails and the MANUAL run switch is engaged too long.

(Continued On Following Page)

WARNING: ALWAYS use master power switch to turn the system OFF when leaving the tractor operator platform, as the system can start and run at any time if seed demand occurs. Always turn the system OFF before transport. A limit switch on each half of the system at the center of the planter disables the system when the planter is folded.

To empty the bulk seed hoppers, a nipple is provided near the hydraulic motor on each hopper. Connect a 3" hose to each nipple and move the **RUN/CLEANOUT TANK** switch to **CLEANOUT**. To operate toggle lever, pull the toggle lever out and reposition it to the **CLEANOUT** position. The auger below the hopper will run in reverse to empty the hopper. The rest of the system will not run in reverse.

ADJUSTMENT OF LIMIT (SAFETY) SWITCHES AND PROXIMITY SENSORS

LIMIT SWITCHES - LOCATED ON OUTER ENDS OF PLANTER

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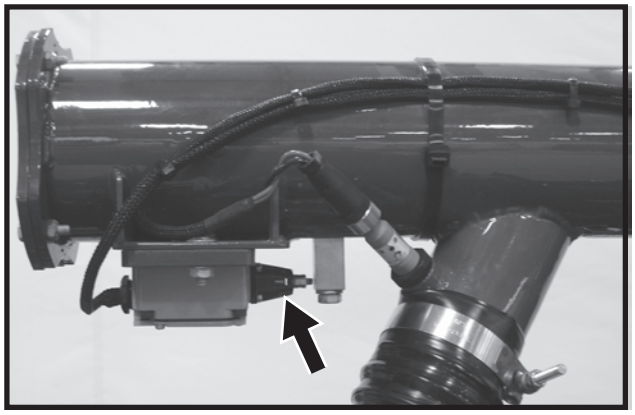

The limit (secondary overload) switches on the outer ends of the tubes are connected as normally CLOSED switches. When relaxed (no pressure applied to the roller), they allow current to flow through the switches. A 1/8" air gap should be maintained between the switch roller and the actuator arm when all components are in a relaxed state to allow current to pass through the switches. This function can be tested by turning the system ON. While the system is running, carefully pull back the actuator arm until it makes contact with the switch roller. Continue to pull the actuator arm back another 1/4". The system should shut off and then restart when the actuator arm is released. To adjust for 1/8" air gap, reposition the switch by loosing the bolts holding the retainer plate.

LIMIT SWITCHES - LOCATED NEAR CENTER OF PLANTER

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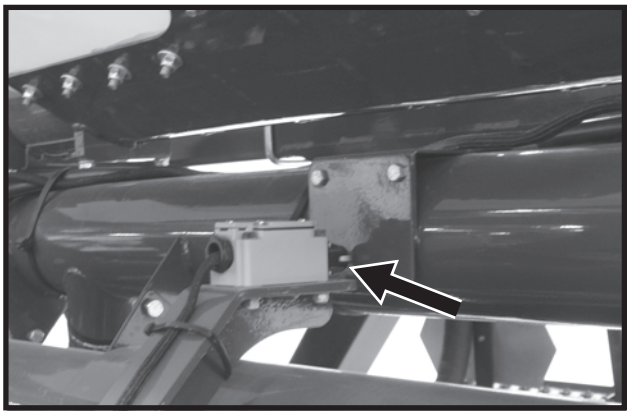

Two limit (transport safety) switches are located near the center of the machine on both sides. These switches are connected as normally OPEN switches. When relaxed (no pressure applied to the roller), they do not allow current to flow through the switch. These switches shut off the power when the planter is folded to avoid accidental operation of the system during transport. The system can be run in CLEANOUT mode while the planter is folded to allow easier access to the hopper unload nipples. These switches must be depressed when the planter is in field operation position to allow electrical current to pass through the switches to other components of the seed delivery system. To adjust the switch with planter in field operation position, loosen the nuts holding the switch to the mount. Move the switch toward the striking plate an additional 1/8" after a click is heard. Tighten mounting hardware and test system.

PROXIMITY SENSORS

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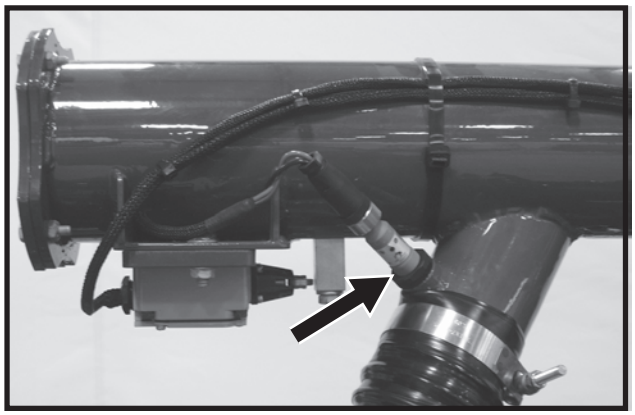

The proximity sensor screws into the outer drop tube at each end of the planter. The tip of the sensor should be approximately 1/2" up from the bottom of the deflector pad in the drop tube. When replacing a sensor draw a line on the sensor 1 1/2" up from the sensing tip. Screw the sensor into the drop tube until the line is just below the surface. Rotate the sensor so the indicator light is visible. Tighten the plastic jam nut to prevent the sensor from rotating and vibrating. Be careful not to over tighten the jam nut.

To test the sensor, turn the key ON in the tractor but DO NOT start the tractor. Turn the power switch ON. The control console power light should be illuminated. The sensor light should only be illuminated if it senses seed. Remove the drop hose and pass your finger under the sensor. When your finger gets to within 12 mm (approximately 7/16") from the tip of the sensor the indicator light on the sensor should come on. When you remove your finger the light should go out. If the light stays illuminated, try cleaning the sensor with a dry cloth. DO NOT adjust the sensitivity on the sensor without contacting factory service personnel.

MINI-HOPPER LATCH

Due to the pull exerted by the drop hose on the mini-hopper as the row unit moves up and down, a pin is provided to secure the mini-hopper latch.

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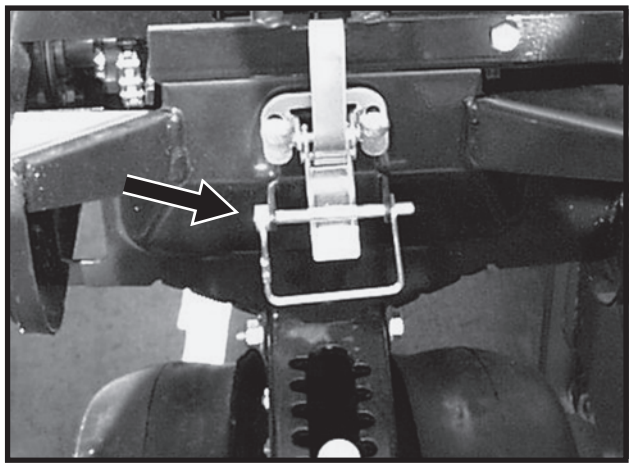

IMPORTANT: Disengage row unit clutch and unlatch mini-hopper on each row unit to release stress on drop hoses and hoppers during storage.

SDS SEED DELIVERY SYSTEM OPERATION

SEED LUBRICATION

The use of powdered graphite is recommended. In addition to the benefits graphite provides the seed meters, graphite will also aid seed flow through the bulk seed auger system. If seed treatments or inoculants that add moisture to the seed are used, talc is recommended along with the graphite. Be sure to test unfamiliar combinations before completely filling the system. Apply any seed treatments, graphite and/or talc alternately in layers with the seed while filling the bulk seed hopper. The auger system will assist in mixing the seed, seed treatments, graphite and/or talc. For this reason, pre-mixing may not be as critical as with planters equipped with individual seed hoppers.

82354-1e

See "Finger Pickup Seed Meter" and "Brush-Type Seed Meter" in the Row Unit Operation section for additional information.

SDS TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
System does not operate.	No power to main swtich.	Check to be sure the main power switch and RUN switch are both ON. Check all fuses.
	Limit switches incorrectly positioned.	Check to make sure limit switches are adjusted corrrectly.
	Faulty proximity sensor.	Check if proximity sensors are working correctly. Replace if necessary.
	Built-in 2 minute delay.	Wait 2-3 minutes after cycling proximity sensors to determine if system is in TIME DELAY mode.
	No hydraulic flow.	Check to determine tractor hydraulic valve is detented ON (in the correct position) and set for proper flow.
	Auger speed set too low.	Increase auger speed. If set too slow system will stall.

ROW UNIT OPERATION

PLANTING DEPTH

Planting depth is maintained by the row unit gauge wheels. To increase or decrease the planting depth, first raise the planter to remove weight from the wheels. Then push down on the depth adjustment handle and reposition it forward to decrease depth or rearward to increase planting depth. Adjust all units to the same setting initially. Then lower the planter and check operation and planting depth of all row units. It may be necessary to readjust some rows to obtain uniform operation. Available depth adjustment range is approximately 1/2" to 3 1/2".

WARNING: Never work under the planter while in raised position without using safety lockup devices.

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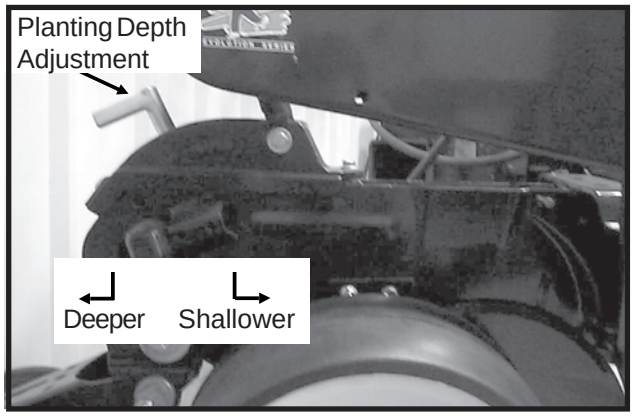

"V" CLOSING WHEEL ADJUSTMENT (Rubber And Cast Iron)

WARNING: Raise planter and install safety lockup devices before making closing wheel adjustments.

After adjusting planting depth, check the operation of the "V" closing wheels. The "V" closing wheels should have enough down pressure to close the seed trench and ensure good soil to seed contact. To increase spring pressure on the closing wheels, move the 5-position quick adjustable down force lever located on the top of the closing wheel arm to the rear. Moving the lever forward decreases spring tension.

Adjust all row units to a similar setting.

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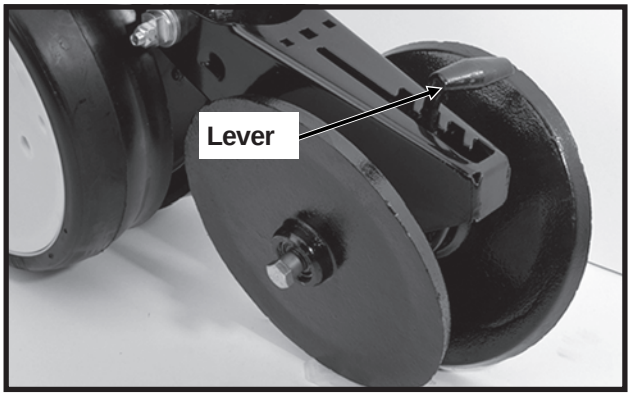

Light soil usually requires less down force at average depth (approximately 2") while heavy soil requires increased down force.

Eccentric bushings in the wheel arm stop allow for lateral adjustment of the "V" closing wheel assembly. Using a 3/4" wrench, loosen the hardware which attaches the closing wheel arm to the wheel arm stop. Using another 3/4" wrench turn the eccentric bushings until the **closing wheels are aligned with the seed trench**. Tighten hardware.

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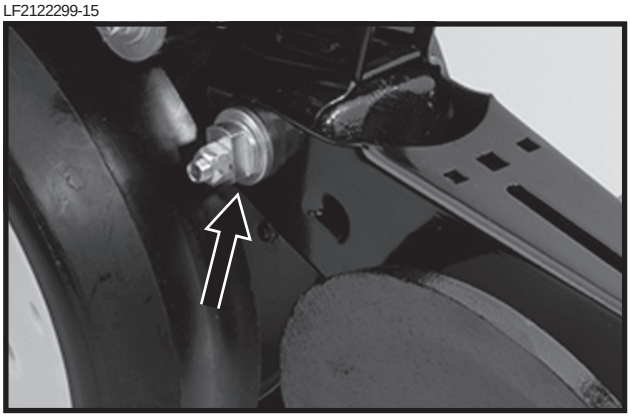

The closing wheels can be installed in two locations either "offset" (to improve residue flow) or "directly" opposite. If set "directly" opposite, the forward installation holes should be used.

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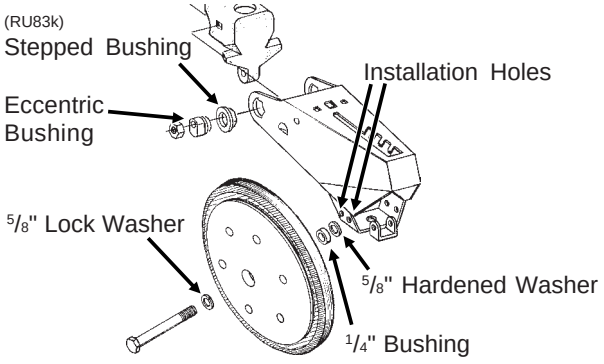

CLOSING WHEEL SHIELD
(Rubber And Cast Iron "V" Closing Wheels)

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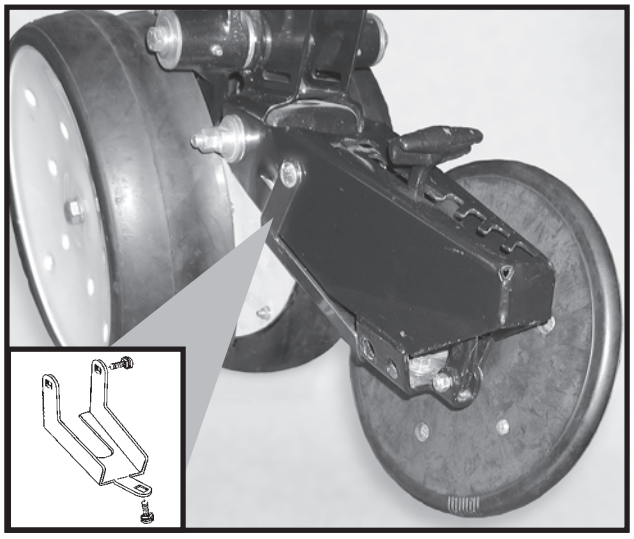


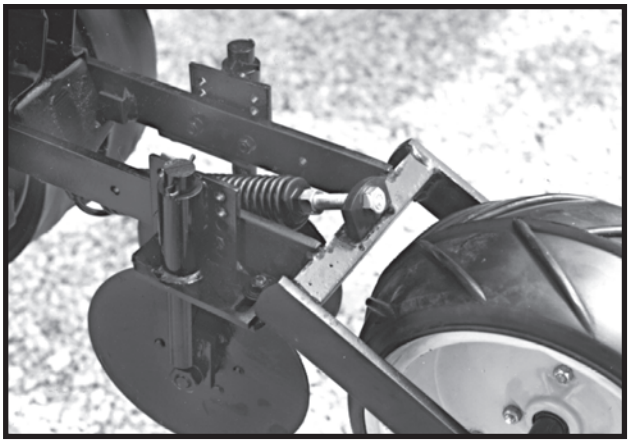
Shown With Closing Wheel Removed For Visual Clarity

The optional closing wheel shield is designed to be installed onto the underside of the closing wheel arm to help prevent root balls and stalks from plugging the closing wheels.

COVERING DISCS/SINGLE PRESS WHEEL ADJUSTMENT

WARNING: Raise planter and install safety lockup devices before making covering discs/single press wheel adjustments.

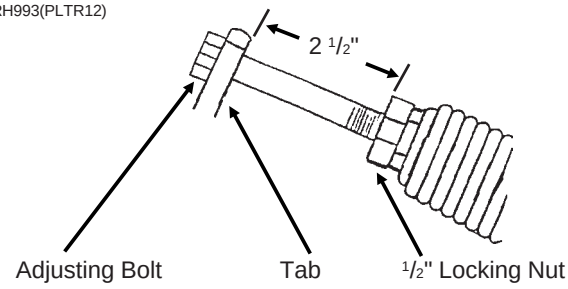
72359-31



After adjusting planting depth, check the operation of the covering discs/single press wheels.

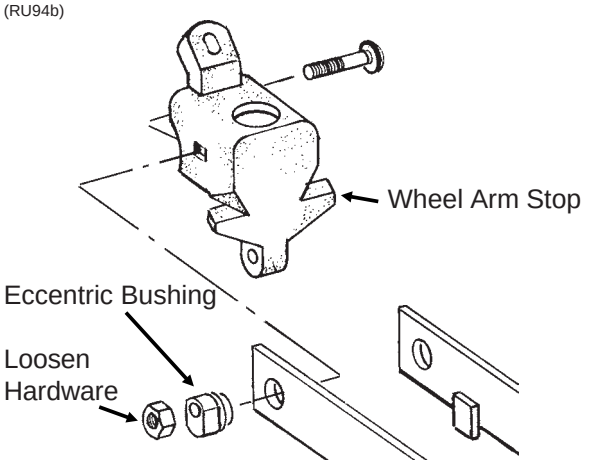
Initial press wheel down force setting should be with 2 1/2" between mounting arm tab and locking nut. To adjust down force spring, loosen 1/2" locking nut and turn adjusting bolt in to increase down force or out to decrease down force. Tighten locking nut against spring plug. Adjust all row units to a similar setting.

RH993(PLTR12)



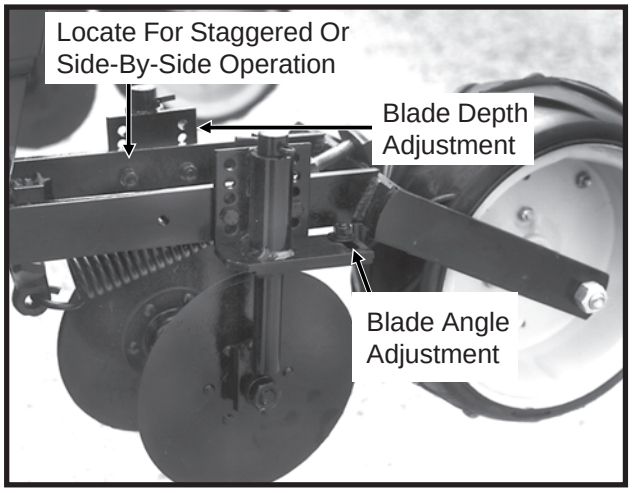
Eccentric bushings in the wheel arm stop allow for lateral adjustment of the covering discs/single press wheel assembly. Using a 3/4" wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another 3/4" wrench, turn the eccentric bushings until the press wheel is aligned with the seed trench.

(RU94b)



Two sets of holes in the mounting arm allow the covering discs to be located for staggered or side-by-side operation as desired.

72359-35



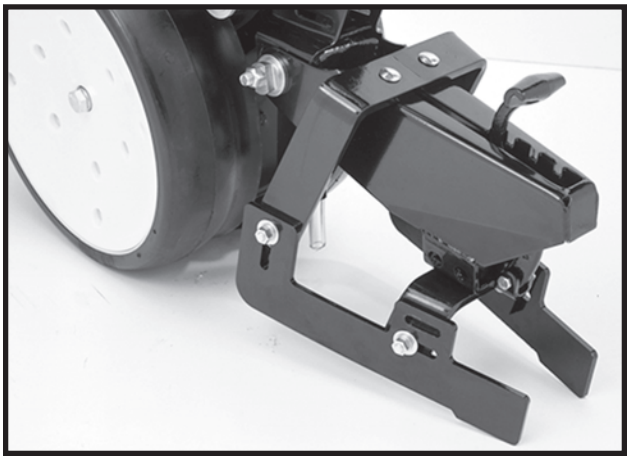
Five sets of holes in each disc bracket allow for 1/2" incremental blade depth adjustment.

Slotted holes in the disc mount and bracket allow for 0° - 15° blade angle adjustment.

Adjust covering discs on all row units to similar settings.

DRAG CLOSING ATTACHMENT

LF212299-18



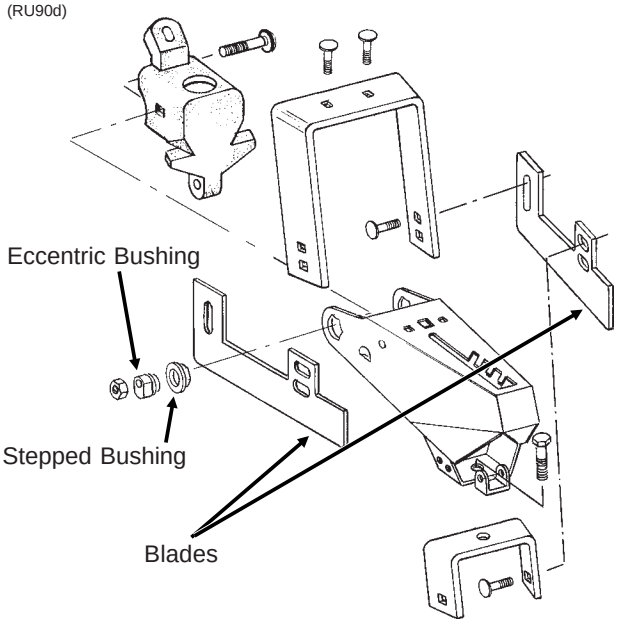
The drag closing attachment is designed to pull loose soil over the seed trench.

Front and rear adjustment is made using the slotted holes in the blades. Adjust all rows the same.

NOTE: Use of a seed firming wheel or other seed firming device is recommended with the drag closing attachment.

WARNING: Raise planter and install safety lockup devices before making drag closing attachment adjustments.

(RU90d)

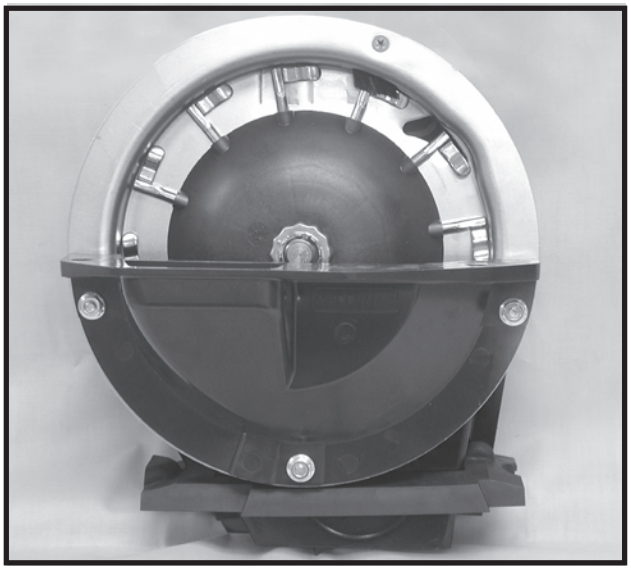


Eccentric bushings allow for lateral adjustment of the drag closing attachment. Using a 3/4" wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another 3/4" wrench, turn the eccentric bushings until the drag closing attachment is aligned with the seed trench.

FINGER PICKUP SEED METER

Refer to the planting rate chart for recommended seed drive transmission sprocket combinations.

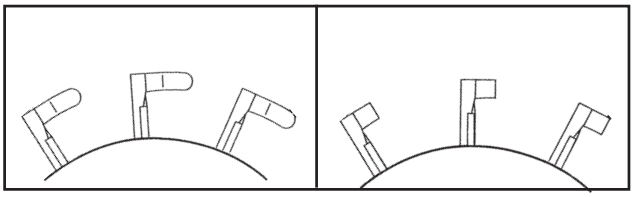
D12220401



Shown With Corn Fingers Installed

The following seed fingers are available for use with the finger pickup seed meter:

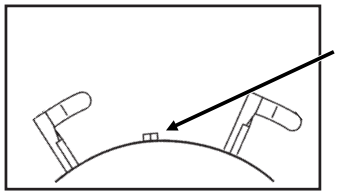
(PLTR91/PLTR92/PLTR91a)



Corn Fingers **Oil Sunflower Fingers**

No. 3 and/or No. 4 size oil sunflower seeds are recommended for use in the finger pickup seed meter equipped with oil sunflower fingers.

No. 1 and/or No. 2 size confectionery sunflower seeds are recommended for use in the finger pickup seed meter equipped with corn fingers.



Half Rate Blank Finger

Blank fingers are used to replace alternate fingers in the finger wheel to reduce the planting rate by half while allowing the finger wheel to maintain a minimum of 40 RPM when planting low rates.

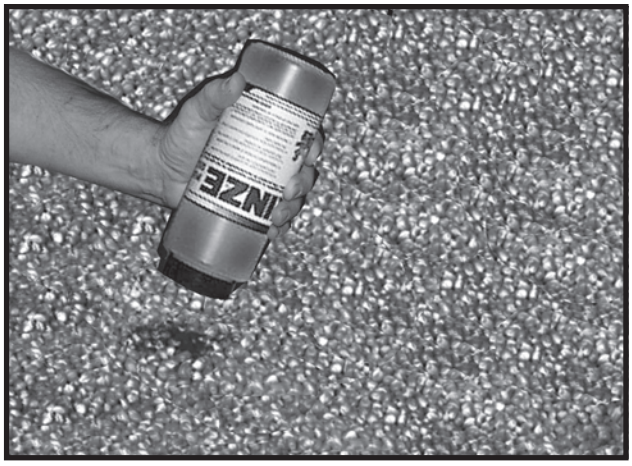
NOTE: Always check seed population in the field to ensure planting rates are correct.

SDS SEED DELIVERY SYSTEM

NOTE: To ensure efficient operation of the finger pickup seed meter and extend the life of its components, powdered graphite should be mixed with the seed twice daily. Use 2 cups per hopper fill. Even distribution of the graphite with the seed is critical with newer seed coatings to provide lubrication for the finger pickup mechanism. Graphite application frequency may need to be increased if using additional seed additives.

NOTE: See "Seed Lubrication" in SDS Seed Delivery System Operation section for additional information.

82354-1e



NOTE: Follow manufacturer's recommendations when applying and mixing other seed treatments.

CONVENTIONAL SEED HOPPERS

NOTE: Powdered graphite is recommended for finger pickup seed meter lubrication to ensure efficient operation of the mechanism and to extend the life of its components. Mix one teaspoon of powdered graphite with the seed twice daily. Apply graphite on top of seed around the outer perimeter of the hopper as shown below. Graphite application frequency and volume may need to be increased if using additional seed treatments.

NOTE: Do NOT apply graphite only in the center of the hopper. It will filter too quickly through the seed and not distribute as evenly as desired.

D05230121b

NOTE: Follow manufacturer's recommendations when applying and mixing other seed treatments. If the additive is to be applied on top of the seed, apply around the outer perimeter of the hopper as with graphite.

See "General Planting Rate Information", "Finger Pickup Seed Meter Troubleshooting" and "Finger Pickup Seed Meter Inspection/Adjustment" for additional information.

CLEANOUT

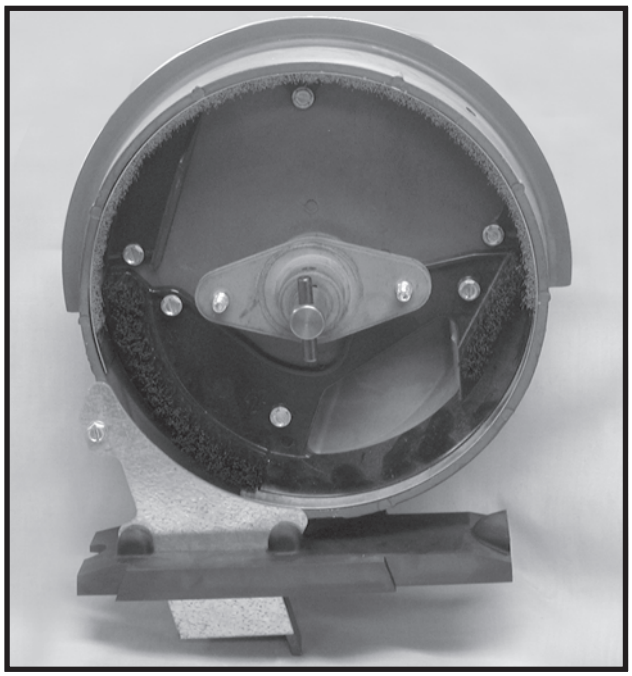
To maintain genetic purity, thorough seed meter cleanout is important.

To clean the seed meter, disengage the seed drive and remove the seed hopper and meter. Dump the seed from the right rear corner of the hopper into a container. Turn the seed drive several times. Invert hopper to dump seed again. Shake the hopper and listen for any remaining seed. Turn seed drive and shake and dump hopper until all seed is removed.

See "General Planting Rate Information", "Finger Pickup Seed Meter Troubleshooting" and "Finger Pickup Seed Meter Inspection/Adjustment" for additional information.

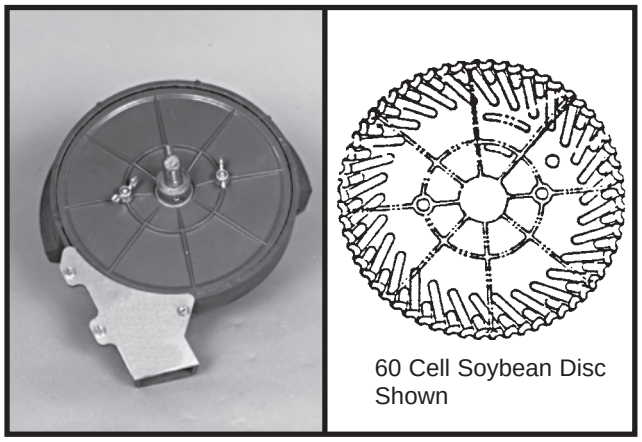
BRUSH-TYPE SEED METER

D12220403



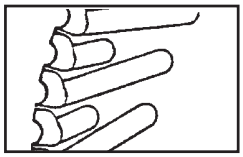
Shown Without Seed Disc Installed

60607-40a(PLTR13)

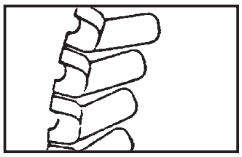


The following seed discs are available for use with the brush-type seed meter:

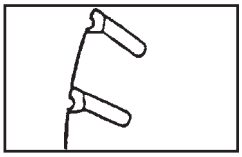
Soybean: 60 cells to meter seed sizes from 2200 to 4000 seeds per pound (Black color-coded).
(PLTR14)



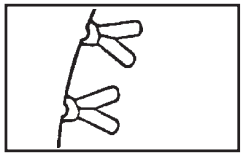
Specialty soybean: 48 cells to meter seed sizes from 1400 to 2200 seeds per pound (Dark blue color-coded).
(PLTR15)



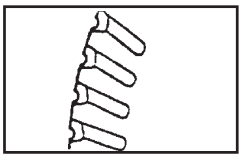
Small milo/grain sorghum: 30 cells to meter seed sizes from 14,000 to 20,000 seeds per pound (Red color-coded).
(PLTR16)



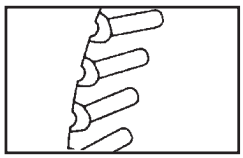
Large milo/grain sorghum: 30 cells to meter seed sizes from 10,000 to 16,000 seeds per pound (Light blue color-coded).
(PLTR17)



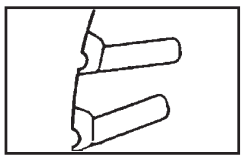
High-rate small milo/grain sorghum: 60 cells to meter seed sizes from 12,000 to 18,000 seeds per pound (Red color-coded). (PLTR18)



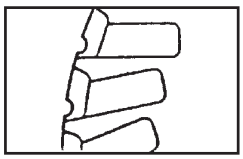
High-rate large milo/grain sorghum: 60 cells to meter seed sizes from 10,000 to 14,000 seeds per pound (Yellow color-coded). (PLTR19)



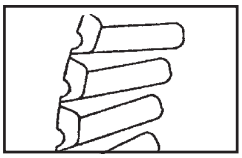
Cotton, acid-delinted: 30 cells to meter seed sizes from 4200 to 5200 seeds per pound (White color-coded).
(PLTR20)



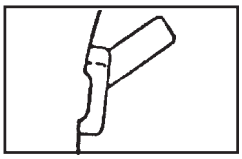
Large cotton, acid-delinted: 36 cells to meter seed sizes from 3800 to 4400 seeds per pound (Tan color-coded).
(PLTR21)



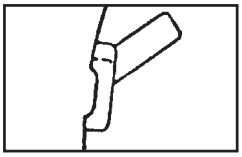
High-rate cotton, acid-delinted: 48 cells to meter seed sizes from 4200 to 5200 seeds per pound (Light green color-coded).
(PLTR22)



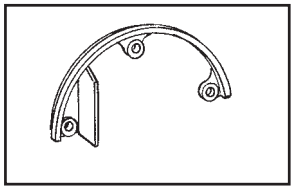
Hill-drop cotton, acid-delinted: 12 cells, 3 to 6 seeds/cell, to meter seed sizes from 4000 to 5200 seeds per pound (Brown color-coded). (PLTR23)



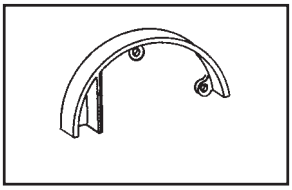
Small hill-drop cotton, acid-delinted: 12 cells, 3 to 6 seeds/cell, to meter seed sizes from 5000 to 6200 seeds per pound (Dark green color-coded).
(PLTR23)



(RU14c)



Use GD11122 upper brush retainer when using soybean and cotton discs.



Use GD8237 upper brush retainer when using milo/grain sorghum discs.

When installing the seed disc onto the meter hub, turn the disc counterclockwise while tightening the two wing nuts that retain the disc. The seed disc should have only slight resistance when rotated counterclockwise after wing nuts are tight.

The brush-type seed meter attaches to the mini-hopper in the same manner as the finger pickup seed meter. Secure to bottom of mini-hopper/seed hopper with two $^{5}/_{16}$" thumbscrews. Tighten thumbscrews slightly with pliers. DO NOT OVER TIGHTEN.

Erratic seed spacing may result from misalignment between the drive coupler and seed meter input shaft. Misalignment may cause momentary stoppage of seed disc. Check alignment after initial installation. If adjustment is required, refer to "Meter Drive Adjustment" for correct procedure.

Refer to the planting rate charts in this manual for recommended seed drive transmission sprocket combinations.

NOTE: Foreign material, such as hulls, stems, etc., may affect seed delivery. Clean seed is required to ensure accurate seed metering from the brush-type seed meter. Seed discs should be removed daily to check for buildup of foreign material, such as hulls, in the seed meter or the brushes.

SDS SEED DELIVERY SYSTEM

IMPORTANT: Use powdered graphite or talc with each fill of seed. Additional graphite or talc may be required to retard buildup of seed treatments on meter components. Frequency of monitor seed tube cleaning may be affected due to use of additional graphite or talc.

82354-1e

SDS SEED DELIVERY SYSTEM (Continued)

Powdered graphite should be added with the seed each time the bulk seed hopper is filled. Use 2 cups per hopper fill. Graphite should be added in layers as the bulk seed hoppers are filled. The use of powdered graphite will prolong the life of the seed meter components, reduce buildup of seed treatment on components in the meter and improve seed spacing.

Talc seed lubricant may be used in lieu of or in addition to graphite to reduce seed treatment buildup on bulk fill auger system components, seed discs and other meter components and will improve meter performance. Coat seed discs and brushes with talc before installing meters. Fill each bulk hopper $^{1}/_{2}$ full of seed, add 4 $^{1}/_{2}$ cups of talc and mix thoroughly. Finish filling bulk seed hopper, add another 4 $^{1}/_{2}$ cups of talc. Adjust rate of talc use as needed so all seeds are coated, while avoiding a buildup of talc in the bottom of the hopper. Humid conditions and/or small sized seeds with extra seed treatment may require additional talc to prevent seed treatment buildup on auger bristles, seed discs and/or meter brushes.

NOTE: Some liquid seed treatments or inoculants may create buildup on seed discs or brushes. Check frequently for proper population and/or seed delivery when using any liquid seed treatment.

All seed treatment should be thoroughly mixed with the seed per the manufacturers' recommendations. Seed treatment dumped on top of the seed after the hopper is filled, and not mixed properly will cause bridging of the seed in the meter, reducing population or stopping the meter from planting. Additional graphite or talc may be required to retard buildup of seed treatments on meter components.

NOTE: See "Seed Lubrication" in SDS Seed Delivery System Operation section for additional information.

CONVENTIONAL SEED HOPPERS

One tablespoon of **powdered graphite** should be mixed with the seed each time the hoppers are filled. Regular graphite use will prolong the life of the brush-type seed meter components, improve seed spacing, and may reduce buildup of seed treatments. Apply graphite around the outer perimeter of the hopper as shown below.

D05300104b

NOTE: DO NOT apply graphite only in the center of the hopper. It will filter too quickly through the seed and not distribute as evenly as desired.

NOTE: Additional graphite or talc may be required to retard buildup of seed treatments on meter components. Frequency of monitor seed tube cleaning may be affected due to use of additional graphite or talc.

Talc seed lubricant may be used in lieu of or in addition to graphite to reduce seed treatment buildup on seed disc and meter components. Coat seed disc and brushes with talc before installing meter. Fill hopper 1/2 full of seed, add 1/4 cup of talc and **mix thoroughly**. Finish filling hopper, add another 1/4 cup of talc and **mix thoroughly**. Adjust rate of talc use as needed so all seeds are coated, while avoiding a buildup of talc in the bottom of the hopper. Humid conditions and/or small sized seeds with extra seed treatment may require as much as one cup of talc per hopper to prevent seed treatment buildup on seed disc and/or brushes.

CONVENTIONAL SEED HOPPERS (Continued)

NOTE: Some liquid seed treatments or inoculants may create buildup on the seed disc or brushes. Check frequently for proper population and/or seed delivery when using any liquid seed treatment. All seed treatment should be thoroughly mixed with the seed per the manufacturers' recommendations. Seed treatment dumped on top of the seed after the hopper is filled, and not mixed properly may cause bridging of the seed in the meter, reducing population or stopping the meter from planting.

SEED METER CLEANOUT (Conventional Seed Hoppers)

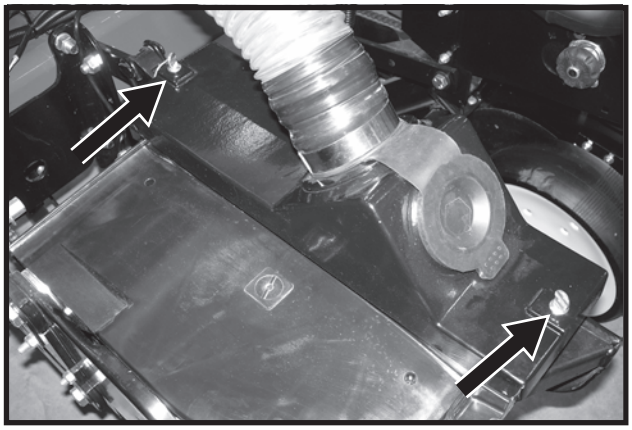
To maintain genetic purity, thorough seed meter cleanout is important.

To clean the seed meter, disengage the seed drive and remove the seed hopper and meter. Dump the seed from the right rear corner of the hoper into a container. Disassemble seed meter and thoroughly clean and inspect the meter to ensure all seed is removed.

SEED METER CLEANOUT (SDS Seed Delivery System)

To maintain genetic purity, thorough seed meter cleanout is important.

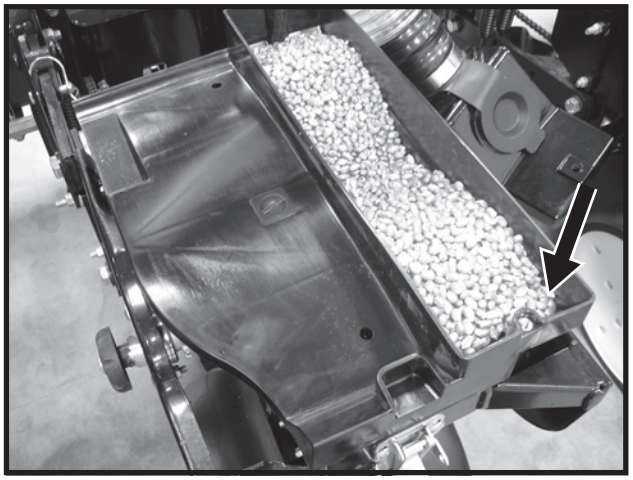
D01030701



Disengage the seed drive and remove the seed hopper and meter.

Dump the seed from the right rear corner of the hopper into a container.

D01030705



Disassemble seed meter and thoroughly clean and inspect the meter to ensure all seed is removed.

SEED HOPPER (Conventional Seed Hoppers)

LF212199-7a

Seed hopper capacity is 1.9 bushels.

When filling the seed hopper use clean seed and make certain there are no foreign objects in the hopper. **Replace hopper lids after hoppers are filled to prevent the accumulation of dust or dirt in the seed meter which will cause premature wear.** See "Finger Pickup Seed Meter Lubrication" and/or "Brush-Type Seed Meter Lubrication".

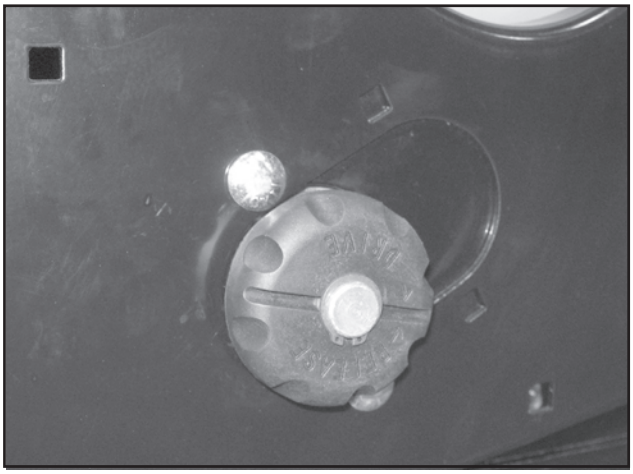
Periodically empty the hoppers completely to remove any foreign objects and to ensure proper seed meter operation. To empty hopper, disengage meter drive and hopper latch and lift hopper off the hopper support. See "Seed Meter Drive Release".

ROW UNIT OPERATION

SEED METER DRIVE RELEASE

The seed meter drive is equipped with a clutch release mechanism that allows the drive to be disengaged from the seed metering unit for removal of the seed hopper. Disconnecting the drive allows the operator to check granular chemical application rates without dropping seed. It also allows one or more of the rows to be disconnected when finishing fields.

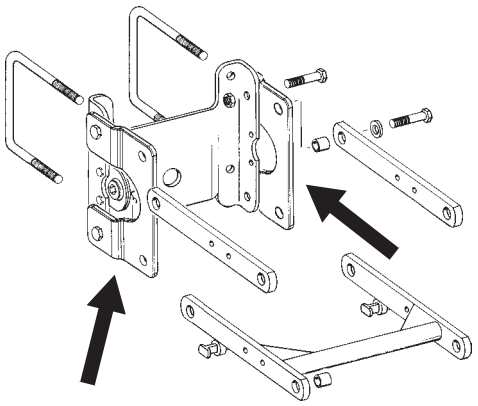
D011006100



To disengage the drive, turn the knob 1/4 turn counter-clockwise. To engage the drive, turn the knob 1/4 turn clockwise.

ROW UNIT EXTENSION BRACKETS

(RU145)



Model 3800 and 3800 SDS planters are equipped with row unit extension brackets on the the six center section rows to provide clearance at the axle rock shaft.

Row unit extension brackets are required on all row units if 3800 planters are equipped with coulter mounted residue wheels and notched single disc fertilizer openers.

ROW UNIT OPERATION

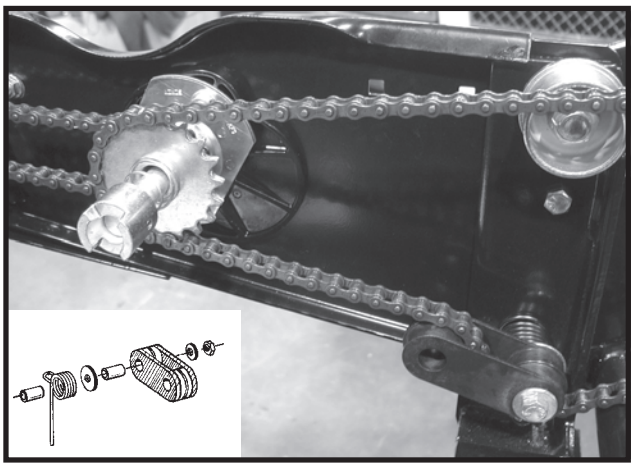
ROW UNIT CHAIN ROUTING

For proper operation and to minimize wear, the row unit drive chains must be properly tensioned and aligned.

Inspect and replace weak, worn or broken springs and/or idlers and idler bushings.

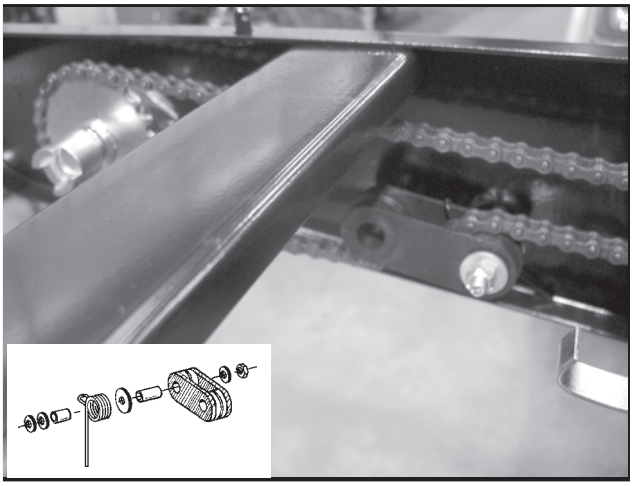
NOTE: When idler shows signs of wear, it can be reversed for prolonged use.

D051705103



Pull Row Unit Meter Drive

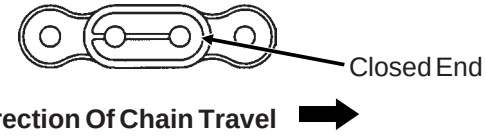
D051705102



Row Unit Granular Chemical Drive

NOTE: Make sure connector link is installed with closed end oriented properly as shown below.

(PLTR24)



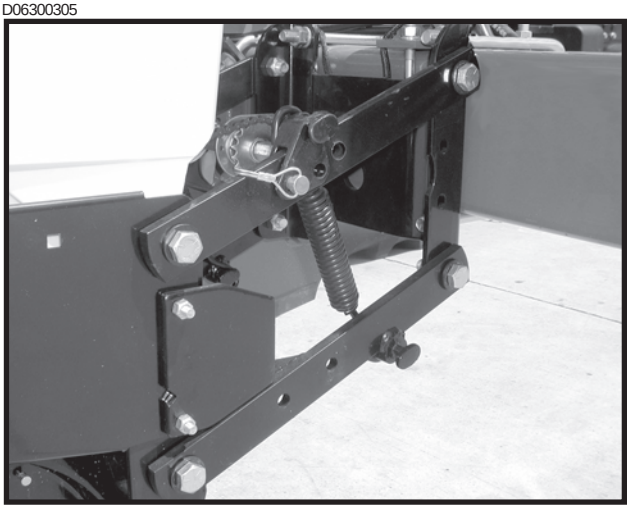
Direction Of Chain Travel

QUICK ADJUSTABLE DOWN FORCE SPRINGS

Quick adjustable down force springs are designed to increase penetration in hard soil and keep the row unit from bouncing in rough field conditions.

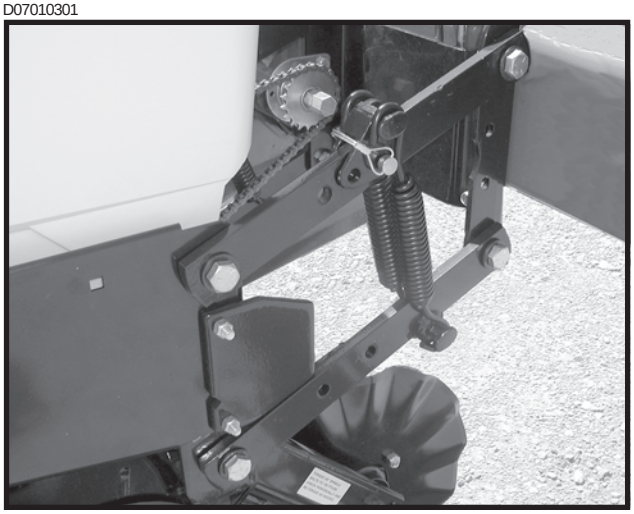
Two springs per row, one on the L.H. parallel arms and one on the R.H. parallel arms, are used unless equipped with row unit mounted no till coulters. Four springs per row are used with row unit mounted no till coulters.

D06300305



Two Springs Per Row (Dual)

D07010301

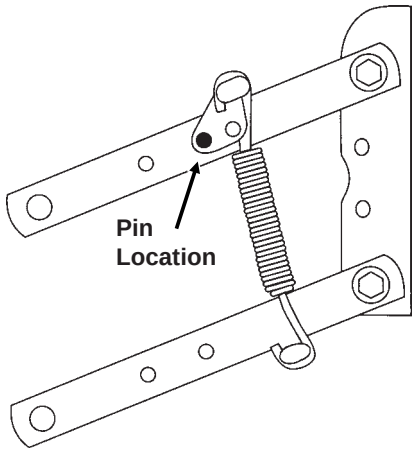


Four Springs Per Row (Quad)
(Used Only In Conjunction With Row Unit Mounted No Till Coulters)

NOTE: Four springs per row are to be used with row unit mounted no-til coulters only.

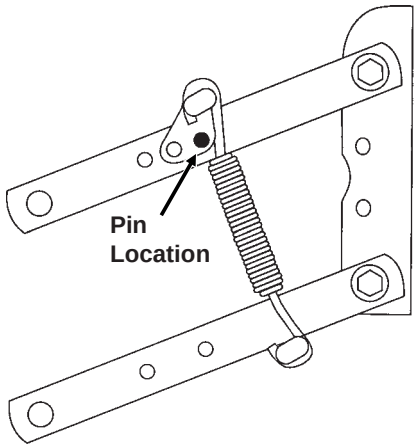
There are four positions for spring tension adjustment. Position 1 allows for minimum down pressure and position 4 for maximum down pressure.

L0096(PLTR27e)



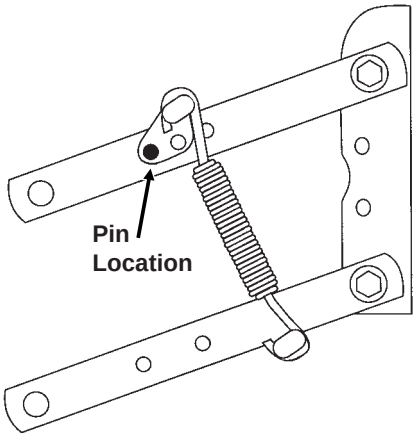
Position 1 (Minimum)

(PLTR28e)



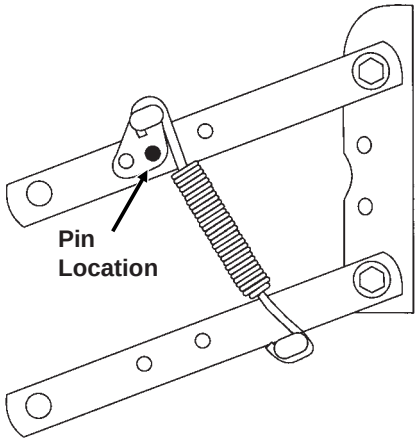
Position 2

(PLTR29e)



Position 3

(PLTR30e)



Position 4 (Maximum)

To adjust spring tension, raise planter and remove spring mount pin at top of spring. Slide mount to desired position and install pin.

NOTE: It is necessary for the operator to adjust springs according to field conditions. If springs are adjusted for too much down pressure for field conditions, it is possible for the row units to lift the planter to the extent that the drive wheels do not make sufficient contact. Too much down pressure in soft field conditions can cause the row unit to run too deep.

WARNING: Always install safety lockup devices or lower machine to the ground before working under or around the machine.

IMPORTANT: Springs must always be installed with open side of spring hooks toward the seed hoppers to prevent binding on spring mount adjustment pins.

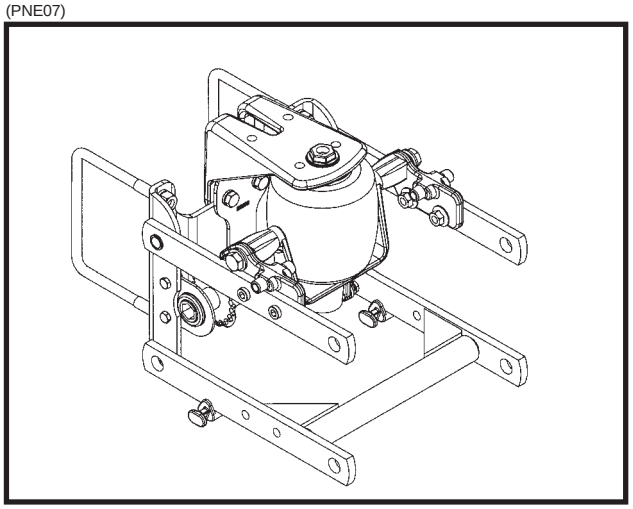
PNEUMATIC DOWN PRESSURE PACKAGE

With pneumatic down pressure option, the operator can vary row unit down pressure on-the-go as field conditions change. A cab-mounted digital readout displays down force (lbs.) applied. A planter-mounted 12 VDC air compressor, with 3 gallon capacity air tank, supplies air for the down pressure system.

Packages also include upper and lower air spring mounting castings for pull row units, 150 psi rated air springs, 3/8" O.D. nylon hoses, dual solenoid air valve and stainless steel, 160 psi, 2" liquid-filled gauge and planter wiring harness.

Pneumatic down pressure row unit extension brackets are required in some applications.

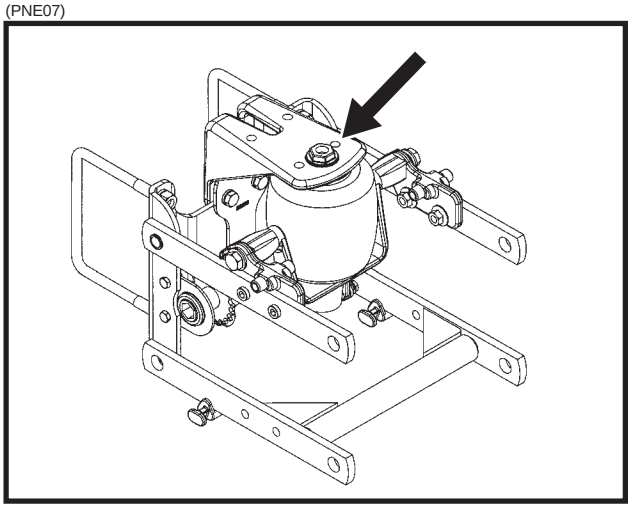
(PNE07)



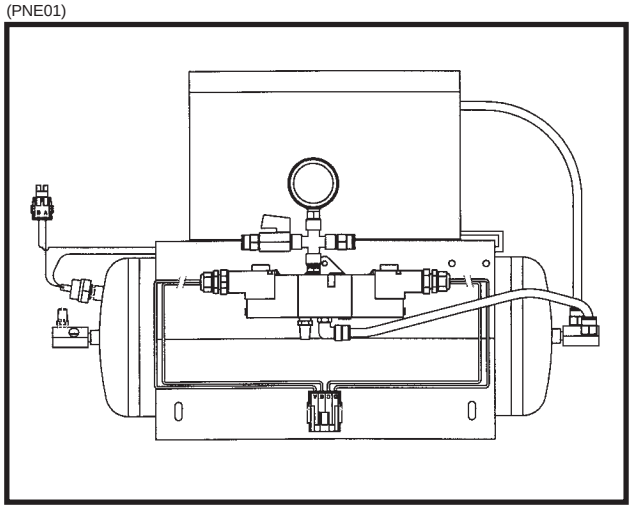
Pull Row Unit Air Spring

NOTE: Shoulder nut(s) should be torqued to 350 in. lbs. Refer to page 10-1 for additional torque values.

(PNE07)

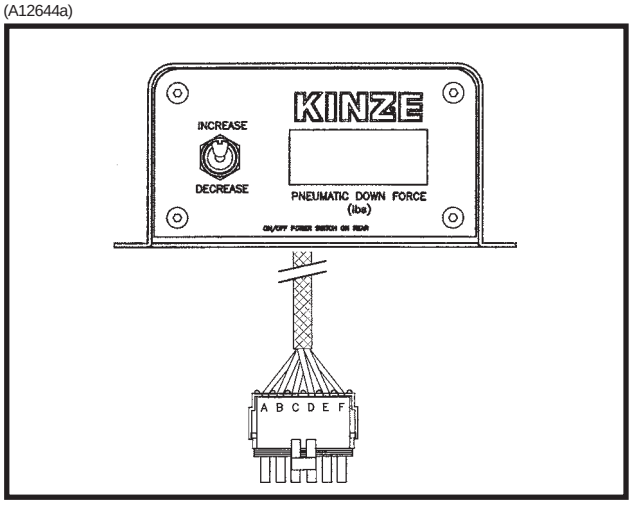


(PNE01)



Air Compressor With Dual Solenoid Assembly

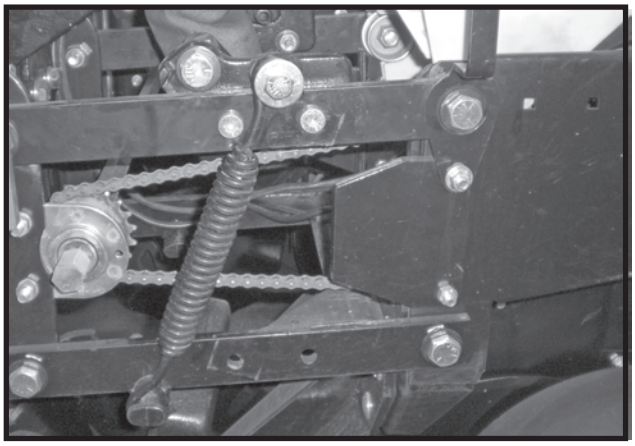
(A12644a)



Control Console Assembly

NOTE: If additional down pressure is needed with the Pneumatic Down Pressure Package, assist springs are available through your KINZE® dealer. One spring is installed on the outer side of the parallel arms on each side of the row unit as shown below.

D11280153a

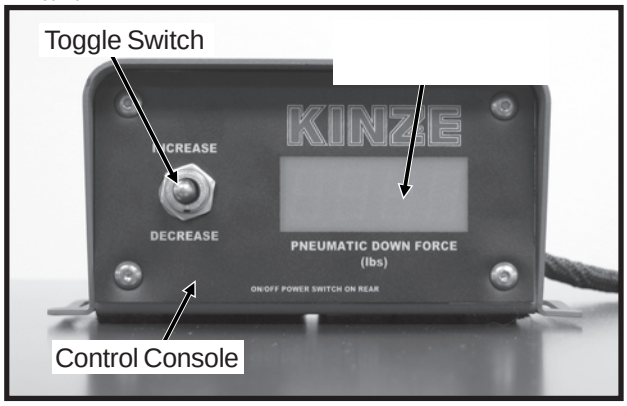


Pull Row Unit Assist Springs

FIELD OPERATION

NOTE: For the most accurate adjustment, adjust down pressure with planter lowered and row units in the ground. Pressure can be adjusted from tractor using the control console, or at planter using the manual control valves.

D112907101



To adjust down pressure from cab:

To INCREASE pressure, push toggle switch up.

To DECREASE pressure, push toggle switch down.

The readout value on the control console is pounds of down pressure force.

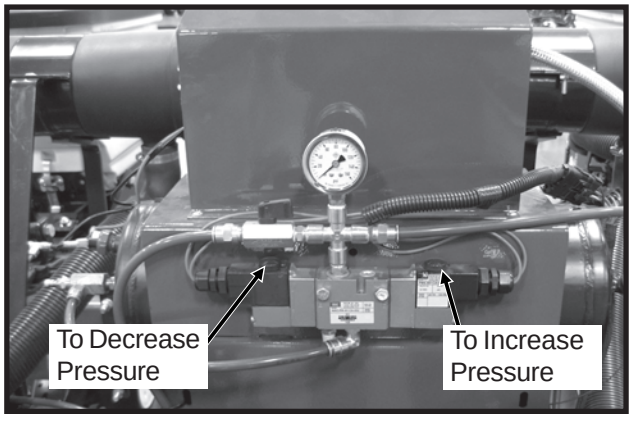
To adjust down pressure from planter:

To INCREASE pressure, press and hold button on solenoid as shown below.

To DECREASE pressure, press and hold button on solenoid as shown below.

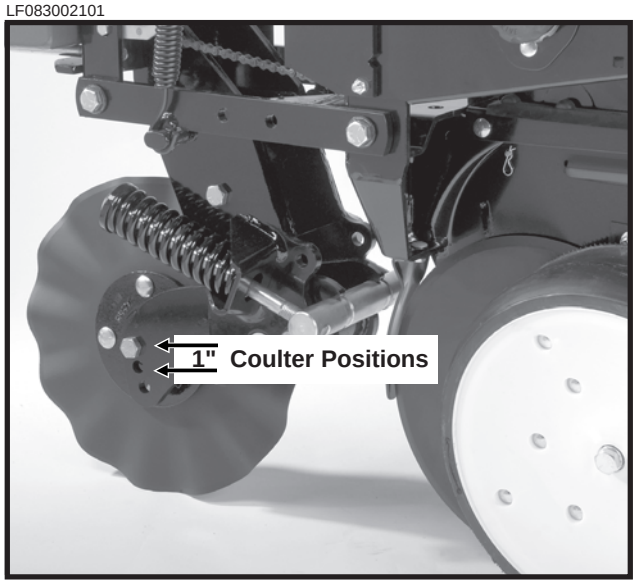
The readout value on the air pressure gauge is NOT the down pressure force value. To calculate the force value, multiply the air pressure (psi) by four (4).

D112907100



FRAME MOUNTED COULTER

LF083002101

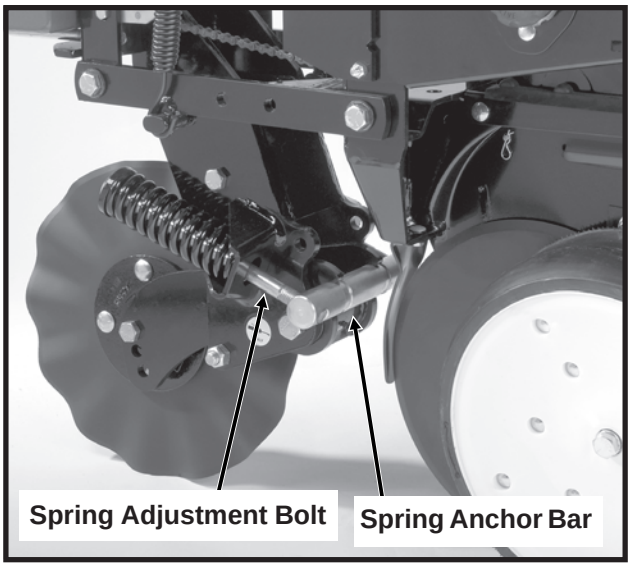


Frame mounted coulters with 1" bubbled, 1" fluted (8 flutes) or 3/4" fluted (13 flutes) blades may be used on pull row units only. (Not compatible with push row units.)

The frame mounted coulter is designed to apply necessary spring down pressure on the coulter for maximum penetration while exerting less shock load on the row unit.

The initial location of the coulter blade is in the top hole. The blade can be relocated to one of the lower two holes (1" increments) as wear occurs or if deeper operation of the blade is desired.

LF083002101



DOWN PRESSURE ADJUSTMENT

Down force adjustment is made by tightening or loosening the two spring adjustment bolts. With the planter in raised position, turn the bolts clockwise to increase down pressure or counterclockwise to decrease down force. Set both springs the same.

Down force on the blade is shown below in lbs.

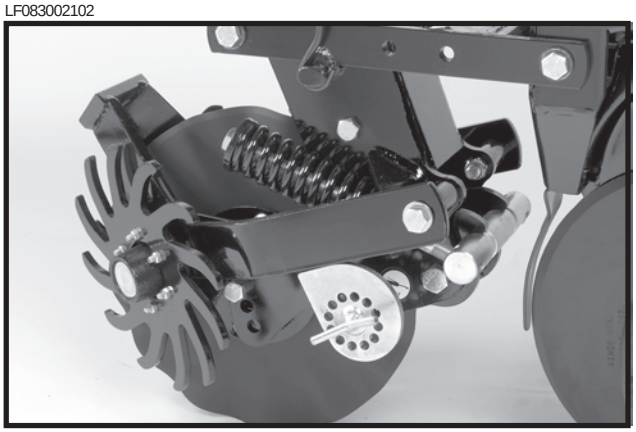
End Of Spring Adjustment Bolt Flush With Spring Anchor Bar (Shown Above)	End Of Spring Adjustment Bolt Extended 1/2" Through Spring Anchor Bar	All Threads Used (Maximum)
275 lbs.	400 lbs.	500 lbs.

NOTE: Avoid setting down pressure higher than is required for consistent soil penetration. Excessive pressure will increase the chances of damage to coulter components when the coulter strikes an obstacle.

RESIDUE WHEELS
(For Use With Frame Mounted Coulter)

The residue wheels for use with the frame mounted coulter may be used on pull row units only.

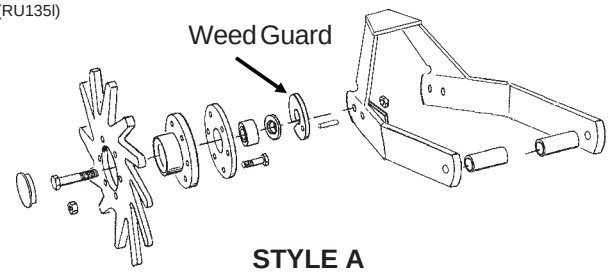
LF083002102



STYLE A Shown

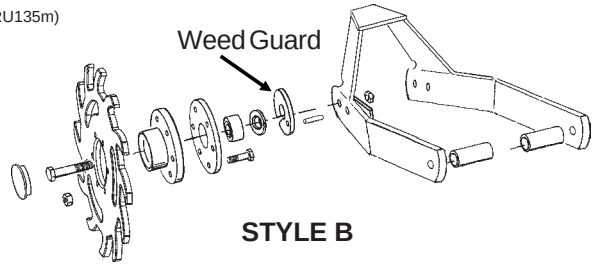
The residue wheels are attached to the frame mounted coulter with two cap screws and sleeves allowing the unit to free-float. A 2-position spindle bolt mounting allows the tined wheels to be mounted interlocked or staggered. Depth adjustment is made using a spring-loaded cam and pin with 11 positions in 1/4" increments. A high point on the cam allows the wheels to be locked up so they do not contact the ground. A weed guard, located on the inboard side of each wheel, aids in the prevention of weed wrap which can cause premature bearing failure.

(RU135l)



STYLE A

(RU135m)



STYLE B

NOTE: Opening in weed guard must point down.

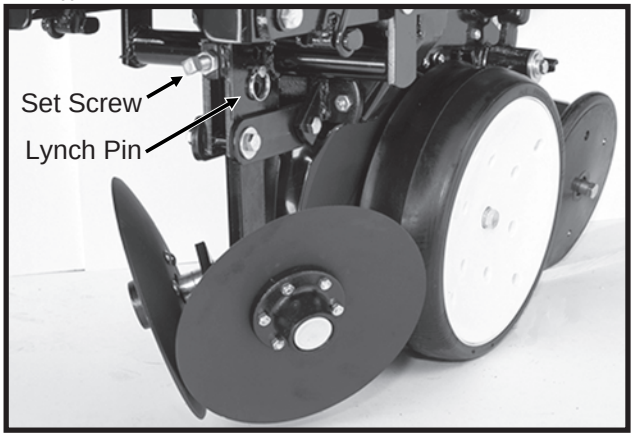
ROW UNIT OPERATION

ROW UNIT MOUNTED DISC FURROWER

The row unit mounted disc furrower is for use on pull row units only (not compatible with Interplant® push row units). The disc furrower may be equipped with either 12" solid blades or 12" notched blades.

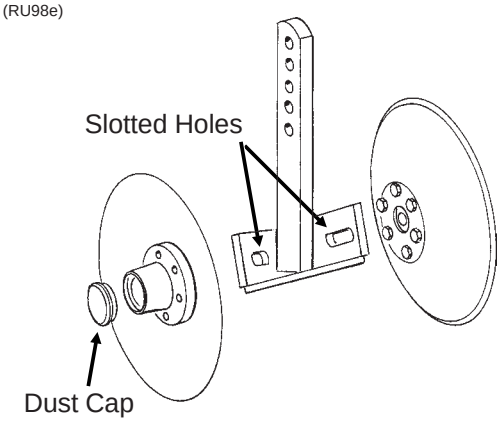
Disc furrowers are used to clear crop residue, dirt clods and dry soil from in front of the row units for a clean and smooth seed bed. Notched blades are used for heavier residue conditions. The notched blades cut crop residue and move it aside to prevent plugging or pushing.

LF212299-22



Vertical adjustment in 1/3" increments is possible by removing the lynch pin which secures the vertical support arm and moving the support arm up or down as required. Reinstall lynch pin. Finer adjustment can be attained by removing the lynch pin and using the 5/8" x 2 1/4" set screw to clamp the support arm in the required position.

(RU98e)

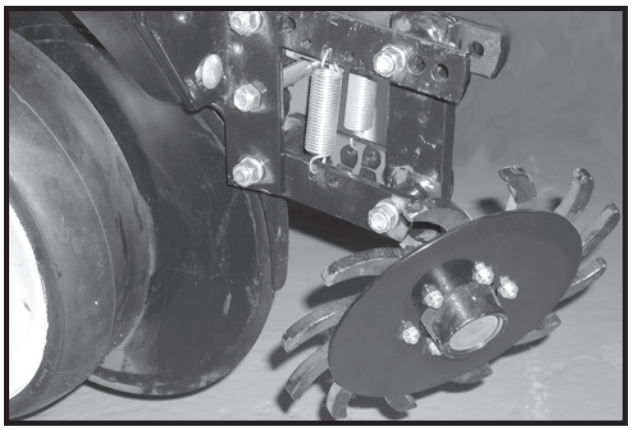


Slotted holes in the support arm where the blades are mounted allow fore and aft adjustment of the disc blades. Blades can be adjusted so the front edges meet or one blade can be moved to the rear and the other to the front of the slot so the cutting edge of one blade overlaps the edge of the other blade. The dust cap must be removed to make these adjustments.

ROW UNIT MOUNTED RESIDUE WHEEL

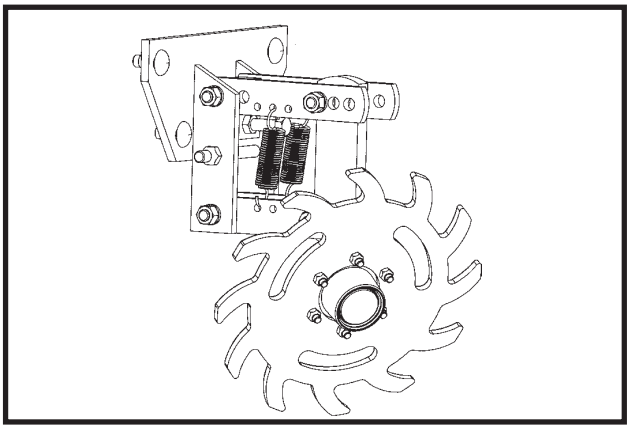
The row unit mounted residue wheel may be used on pull row units and push row units.

D101701113



STYLE A

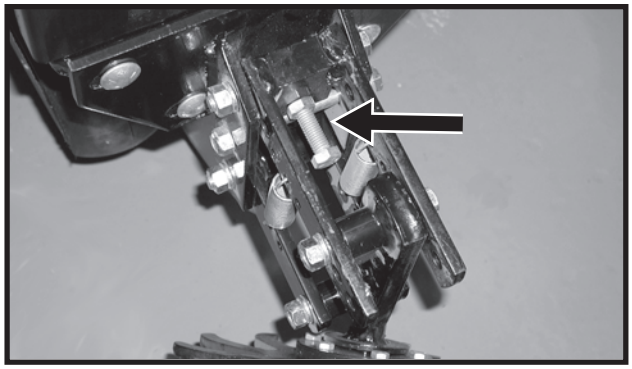
(A12685)

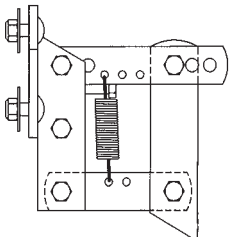


STYLE B

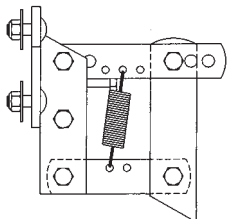
ROW UNIT OPERATION

Two adjustable springs on the parallel links on each residue wheel allow for down force adjustment. Position 1 as shown below provides minimum down pressure and position 3 maximum down pressure.

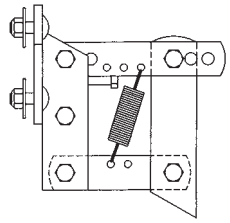




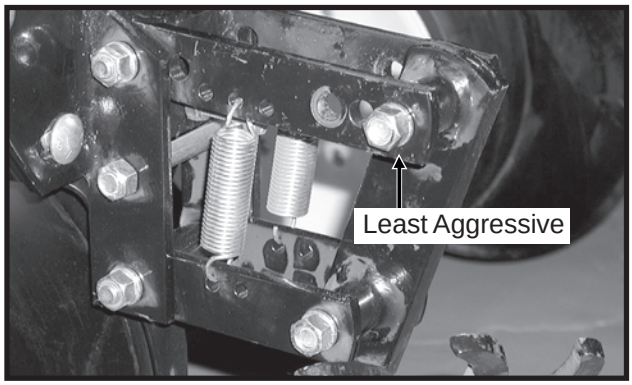
Position 1 *(Minimum)* (PLTR31a)



Position 2 (PLTR32a)

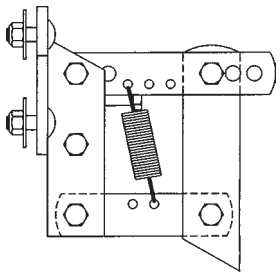


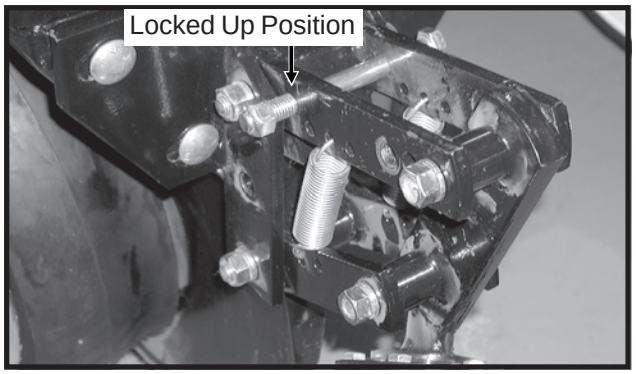
Position 3 *(Maximum)* (PLTR33a)



For additional uplift or float, position springs as shown below.

(PLTR34a)

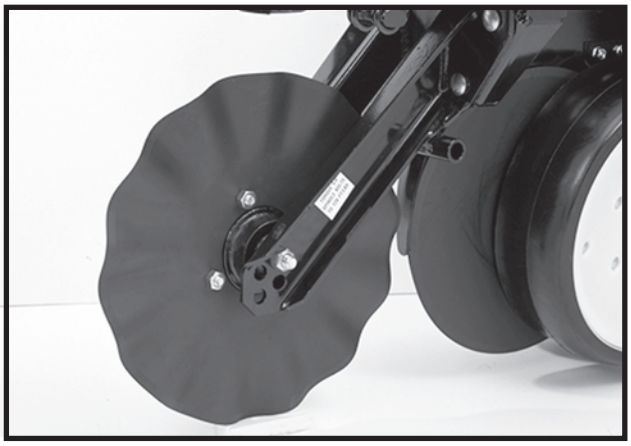




To adjust down force springs, raise the row unit out of the ground and reposition springs as shown for the desired down pressure.

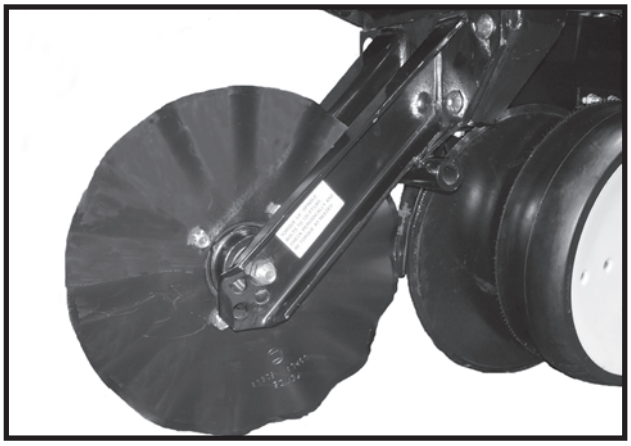
ROW UNIT MOUNTED NO TILL COULTER

LF212299-19a



STYLE A (Two Sleeves For Installing Coulter Mounted Residue Wheels)

D05170706a



STYLE B (One Sleeve For Installing Coulter Mounted Residue Wheels)

Row unit mounted no till coulters with 1" bubbled, 1" fluted (8 flutes) or 3/4" fluted (13 flutes) blades may be used on pull row units and push row units. (3/4" fluted shown)

Four quick adjustable down force springs are required per row when using row unit mounted no till coulters. See "Quick Adjustable Down Force Springs".

For proper operation, the coulter blade should be aligned in relation to the row unit double disc openers. The coulter assembly can be adjusted by loosening the four attaching bolts, moving coulter arm to align and tightening the four attaching bolts.

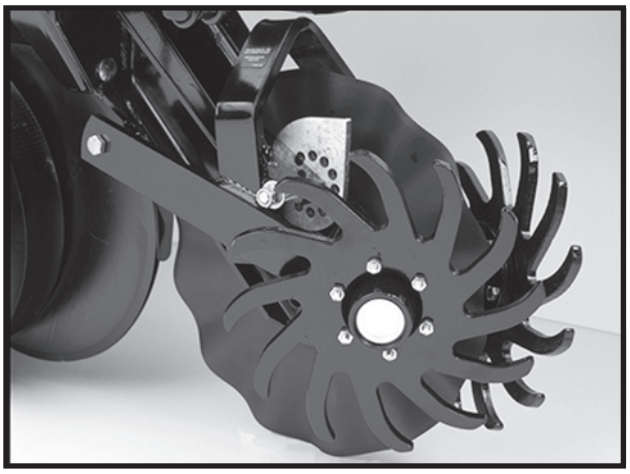
The coulter blade can be adjusted to one of four 1/2" incremental settings in the forked arm. Initial location of the coulter is in the top hole. As the coulter blade wears, the blade should be adjusted downward to one of the three lower settings to maintain the coulter blade at or slightly below the opener discs. In very hard soil conditions such as compacted wheel tracks, opener penetration and cutting of surface residue may be improved by adjusting the coulter to operate below the depth of the double disc opener blades.

Operating depth can be checked by setting the planter down on a level concrete floor and checking the relationship between the coulter blade and row unit opener blade. Make sure the planter is level and coulter is square with the planter frame and aligned with the row unit disc opener.

NOTE: Torque 5/8" spindle hardware to 120 ft. lbs.

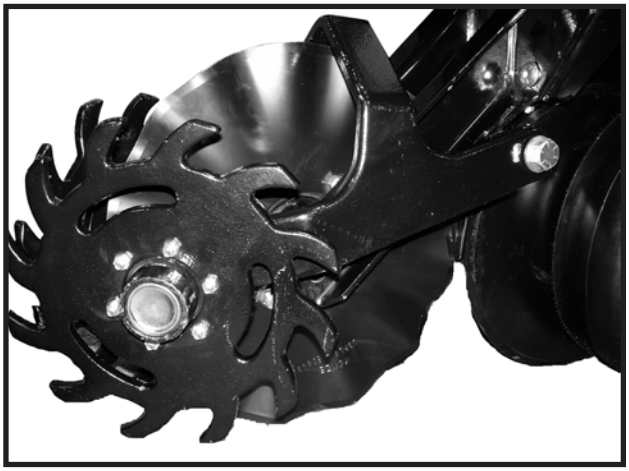
COULTER MOUNTED RESIDUE WHEELS

LF212299-23



STYLE A - Used With Style A Row Unit Mounted No Till Coulter

D05170708a

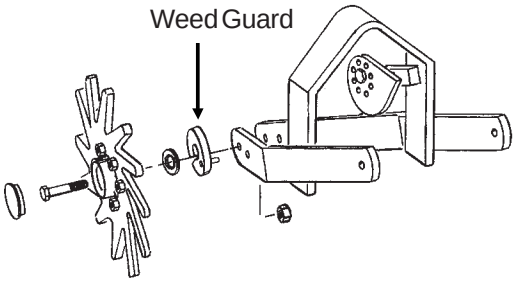


STYLE B - Used With Style B Row Unit Mounted No Till Coulter

Coulter mounted residue wheels are designed for use on pull row units and push row units. Row unit extension brackets are required on the four center pull row units if the planter is equipped with coulter mounted residue wheels.

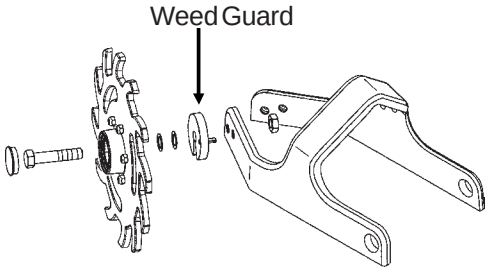
The coulter mounted residue wheels are attached to the row unit mounted no till coulter with one cap screw and sleeve allowing the unit to free-float. A 2-position spindle bolt mounting allows the tined wheels to be mounted interlocked or staggered. A lock nut on the inside of the mount locks the spindle cap screw. Depth adjustment is made using a spring-loaded cam and pin with 11 positions in $^{1}/_{4}$" increments. A high point on the cam allows the wheels to be locked up so they do not contact the ground. A weed guard, located on the inboard side of each wheel, aids in the prevention of weed wrap which can cause premature bearing failure.

(RU104tt)



STYLE A

(RU153a)



STYLE B

NOTE: Opening in weed guard must point down.

GRANULAR CHEMICAL HOPPER AND DRIVE

LF212299-6

The granular chemical hopper has a 1.4 cubic feet capacity.

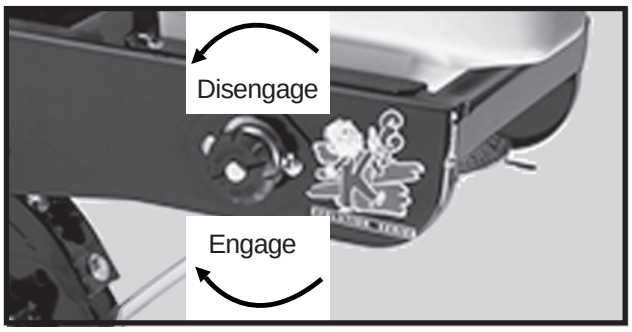
Be sure no foreign objects get into the hopper when it is being filled. Replace the hopper lids after filling the hoppers to prevent the accumulation of dirt and moisture.

The metering gate located on the bottom of the hopper regulates the application rate. See "Dry Insecticide And Dry Herbicide Application Rate Charts" in this manual. Calibrate using the chemical manufacturers' instructions.

WARNING: Agricultural chemicals can be dangerous. Improper selection or use can seriously injure persons, animals, plants, soil or other property. BE SAFE: Select the right chemical for the job. Handle it with care. Follow the instructions on the container label and of the equipment manufacturer.

The granular chemical clutch drive coupler and meter shaft can be disengaged and engaged by turning the throwout knob located at the rear of the hopper support panel. To engage the drive, turn the knob 1/4 turn clockwise. To disengage the drive, turn the knob 1/4 turn counterclockwise. Slotted holes in the hopper support panel and clutch housing allow for alignment adjustment between the clutch drive coupler and meter shaft.

LF212299-4

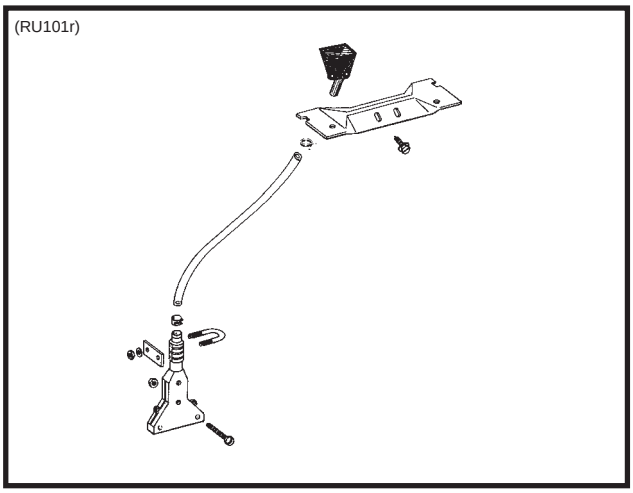


GRANULAR CHEMICAL BANDING OPTIONS

Granular chemical banding options allow 4 1/2" slope-compensating banding, straight drop in-furrow placement or 14" rear banding.

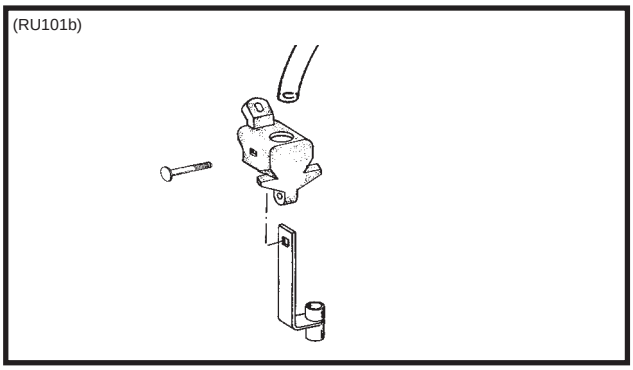
NOTE: The granular chemical rear bander is not compatible with the covering discs/single press wheel option.

(RU101r)



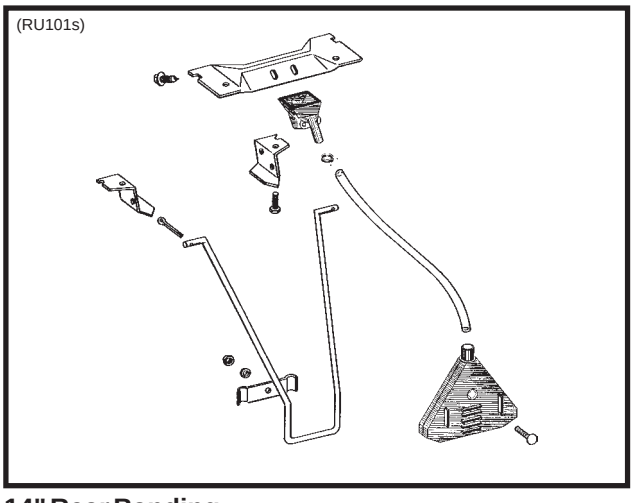
4 1/2" Slope-Compensating Bander

(RU101b)



Straight Drop In-Furrow Placement

(RU101s)

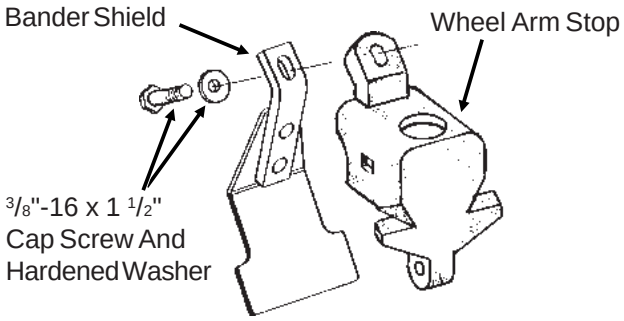


14" Rear Banding

GRANULAR CHEMICAL BANDER SHIELD

The optional granular chemical bander shield is designed to be installed onto the underside of the wheel arm stop to shield crop residue from lodging in the granular chemical bander.

(RU83m)

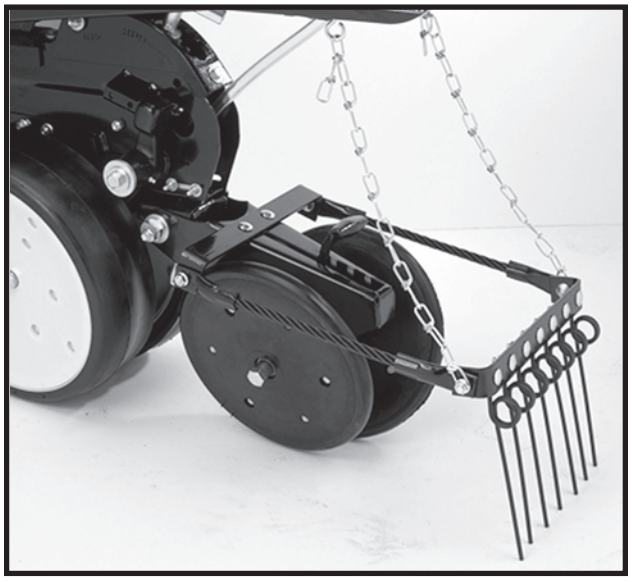


SPRING TOOTH INCORPORATOR

The spring tooth incorporator smoothes the soil behind the row unit and incorporates granular chemicals. The two mounting chains on each spring tooth incorporator should be adjusted so there is approximately 1/8" slack in the chain when the unit is lowered to planting position.

NOTE: The spring tooth incorporator is not compatible with the covering discs/single press wheel option.

LF212299-26

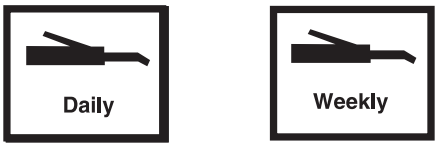


LUBRICATION

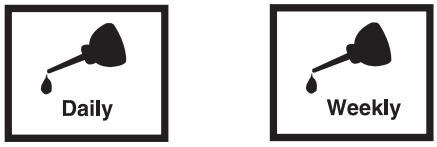
The following pages show the locations of all lubrication points. Proper lubrication of all moving parts will help ensure efficient operation of your KINZE® planter and prolong the life of friction producing parts.

WARNING: Always install safety lockup devices or lower the planter to the ground before working under or around the machine.

LUBRICATION SYMBOLS



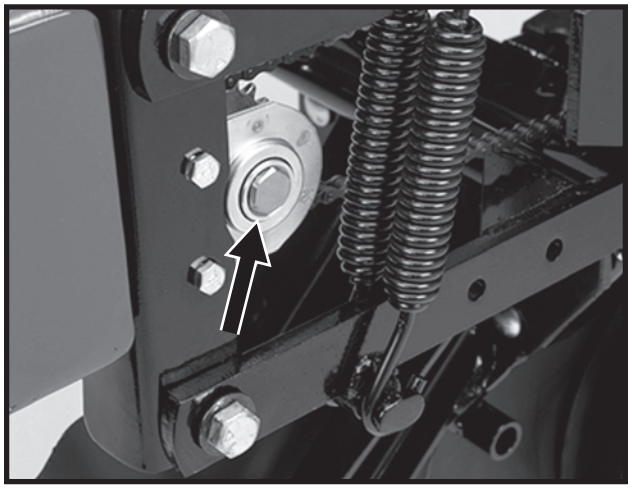
Lubricate at frequency indicated with an SAE multipurpose grease.



Lubricate at frequency indicated with a high quality SAE 10 weight oil or a quality spray lubricant.

SEALED BEARINGS

LF212199-3

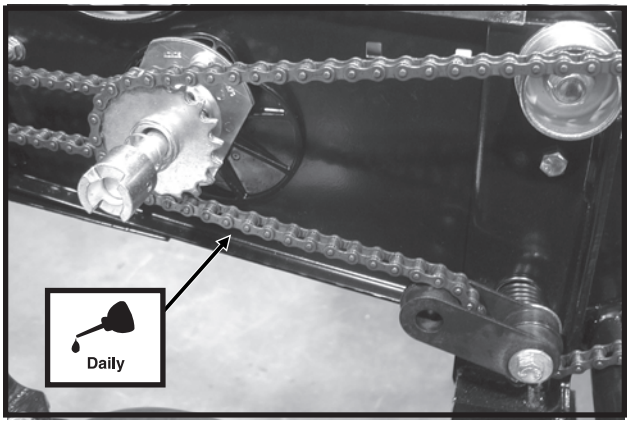


A number of sealed bearings are used on your KINZE® planter to provide trouble free operation. These are located in such areas as the drive shaft, row units and transmission bearings. Sealed bearings are lubricated for life. Due to the seals, relubrication is not practical.

DRIVE CHAINS

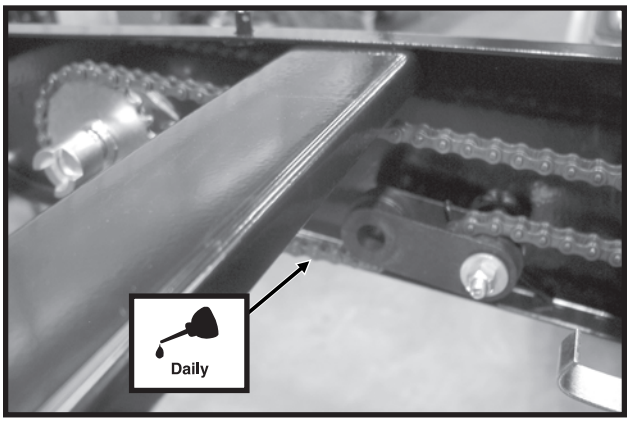
All transmission and drive chains should be lubricated daily with a high quality chain lubricant. Extreme operating conditions such as dirt, temperature or speed may require more frequent lubrication. If a chain becomes stiff, it should be removed, soaked and washed in solvent to loosen and remove dirt from the joints. Then soak the chain in oil so the lubricant can penetrate between the rollers and bushings.

D051705103



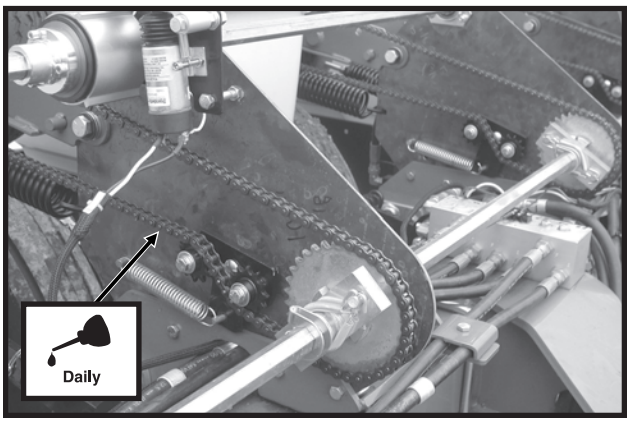
Pull Row Unit Drive Chains

D051705102



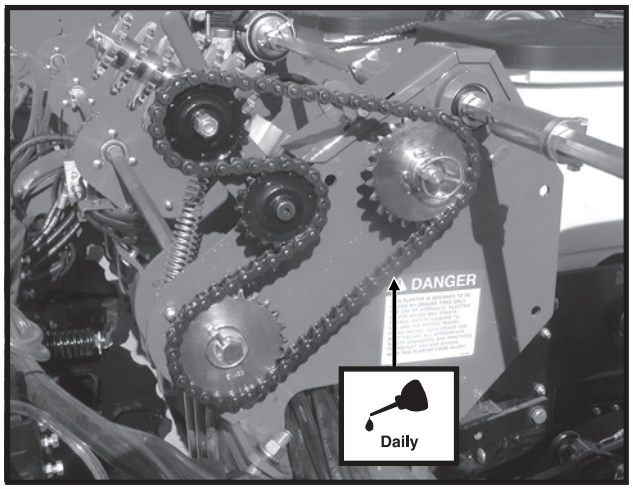
Row Unit Granular Chemical Drive Chains

D08120523



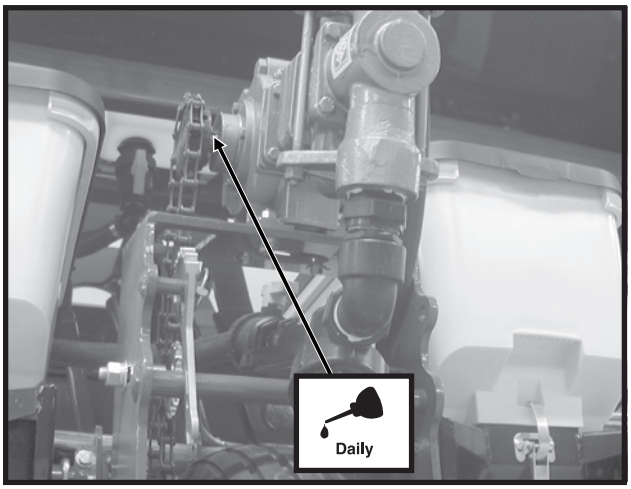
Contact Drive Wheel Chains

D081905105



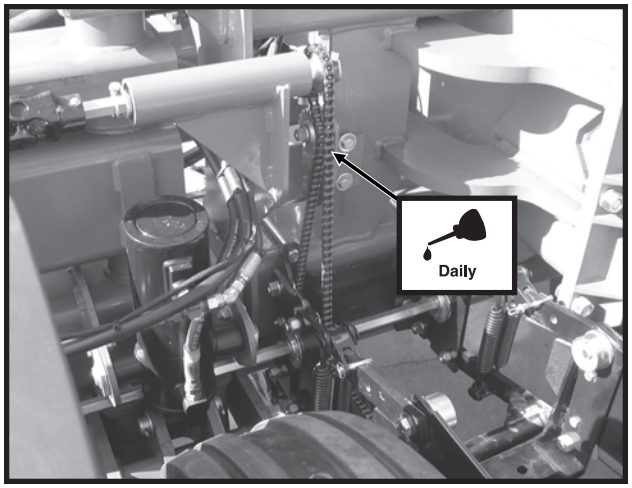
Seed Rate Transmission Drive Chains

D11240401



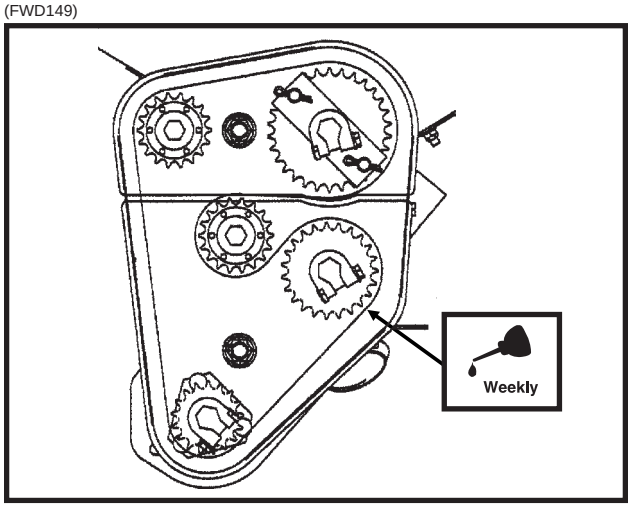
Liquid Fertilizer Drive Chain (Piston Pump)

D081905103



Row Unit Drill Shaft Drive Chains

(FWD149)



SDS Drive Chains

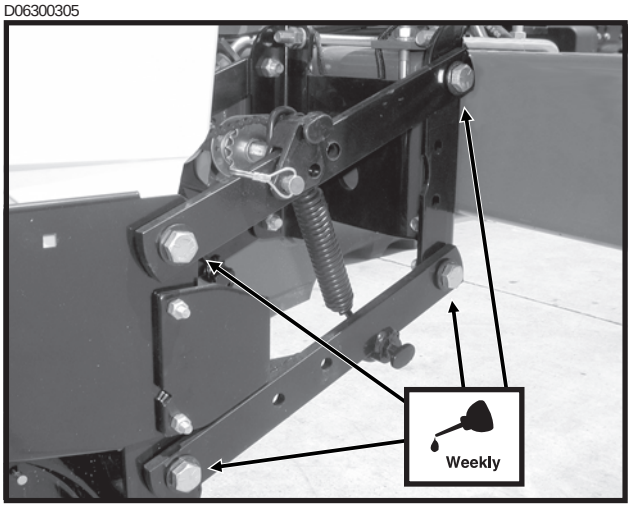
LUBRICATION

BUSHINGS

Lubricate bushings at the frequency indicated.

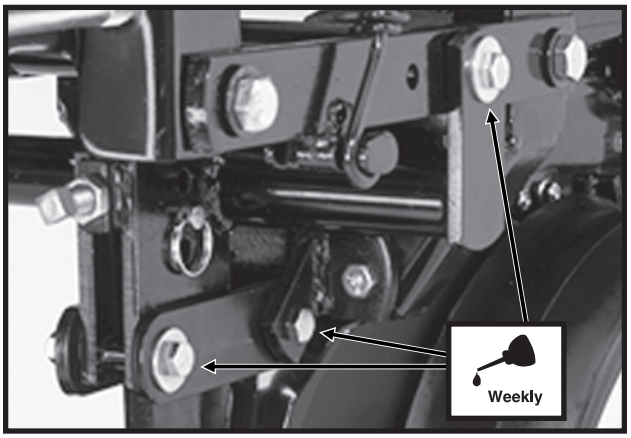
Using a torque wrench, check each bolt for proper torque. If bolt is loose, it should be removed and the bushing inspected for cracks and wear. Replace bushing if necessary. **Only hardened flat washers should be used. Replace damaged flat washers with proper part. Torque hardware to 130 ft. lbs.**

D06300305



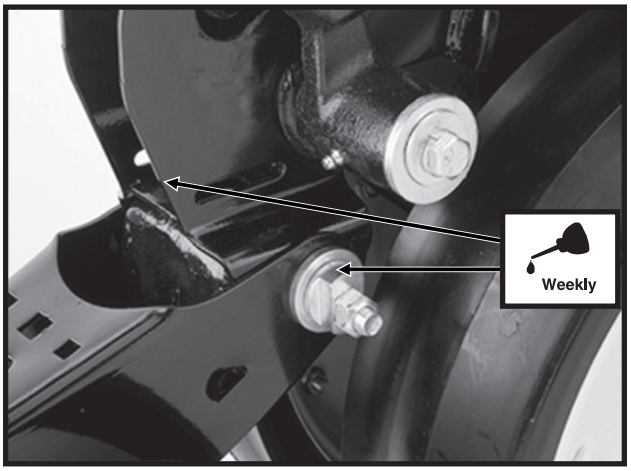
Pull Row Unit Parallel Linkages (8 Per Row)

LF212299-22



Row Unit Mounted Disc Furrower Parallel Linkages (6 Per Row)

LF212199-2



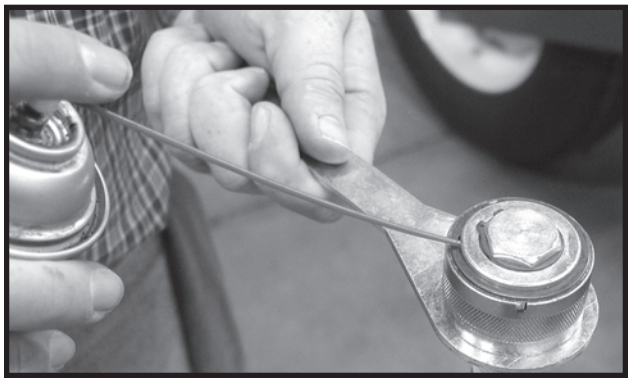
Row Unit "V" Closing Wheel, Covering Discs/ Single Press Wheel And/Or Drag Closing Wheel Eccentric Bushings (2 Per Row)

LUBRICATION

WRAP SPRING WRENCH ASSEMBLY

The chain idler is equipped with a wrap spring wrench. The wrench components may require occasional lubrication to operate correctly. Disassembly is required to lubricate. (a) Remove the cap screw that secures the idler with sprockets to the wrench tightener shaft. (b) Remove the wrap spring wrench from the planter. (c) Tip the wrap spring wrench on its side and lubricate using a high quality spray lubricant. Lubricant must be absorbed into the wrap spring area. (d) Reinstall wrench on planter.

D101303102



WHEEL BEARINGS

The transport wheel hubs are equipped with grease fittings. Pump grease into the hub until grease comes out around the seals. See “Grease Fittings” for lubrication frequency.

All wheel bearings should be repacked annually and checked for wear. This applies to all drive wheels, transport wheels and marker hubs.

To check for wear, lift the wheel off the ground. Check for endplay in the bearings by moving the tire in and out. Rotate the tire to check for roughness in the bearings. If bearings sound rough, the hub should be removed and the bearings inspected and replaced if necessary. See “Wheel Bearing Lubrication Or Replacement”.

To repack wheel hubs, follow the procedure outlined for wheel bearing replacement with the exception that bearings and bearing cups are reused.

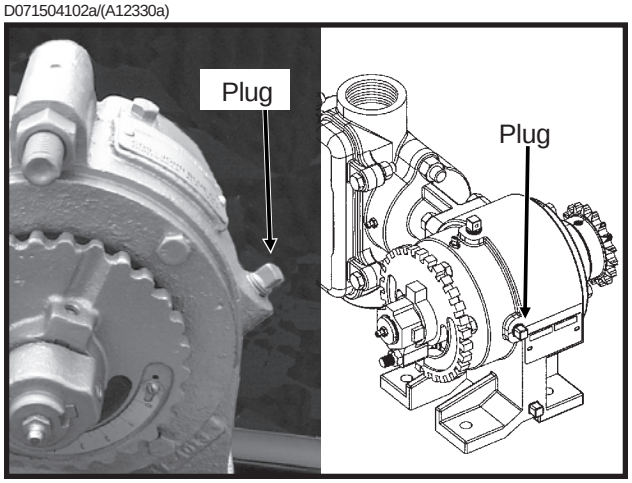
HITCH SLIDE ASSEMBLY (If Applicable)

If the hitch does not extend or retract smoothly, extend the hitch and spray the inner slide area using a heavy duty aerosol grease lubricant.

LUBRICATION

LIQUID FERTILIZER PISTON PUMP CRANKCASE OIL LEVEL

D071504102a/(A12330a)



Check crankcase oil daily and maintain at plug level. Fill as needed with EP 90 weight gear oil. Total oil capacity is approximately 3/4 pint.

Refer to operator and instruction manual supplied with the pump and flow divider for additional information.

GREASE FITTINGS

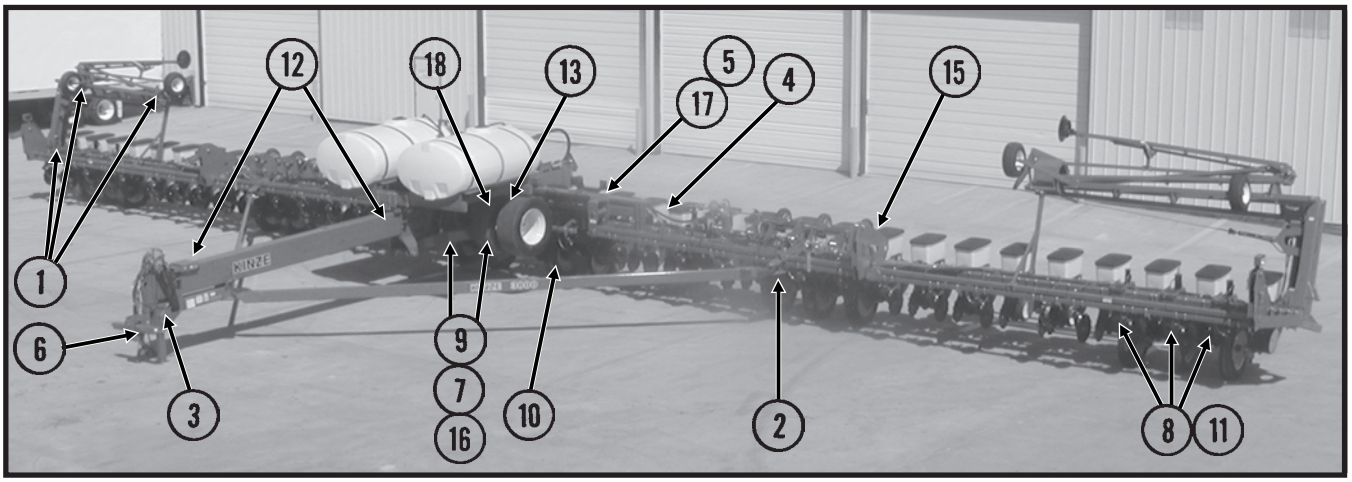
Those parts equipped with grease fittings should be lubricated at the frequency indicated with an SAE multipurpose grease. Be sure to clean the fitting thoroughly before using grease gun. The frequency of lubrication recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent attention.

WARNING: Always install safety lockup devices or lower the planter to the ground before working under or around the machine.

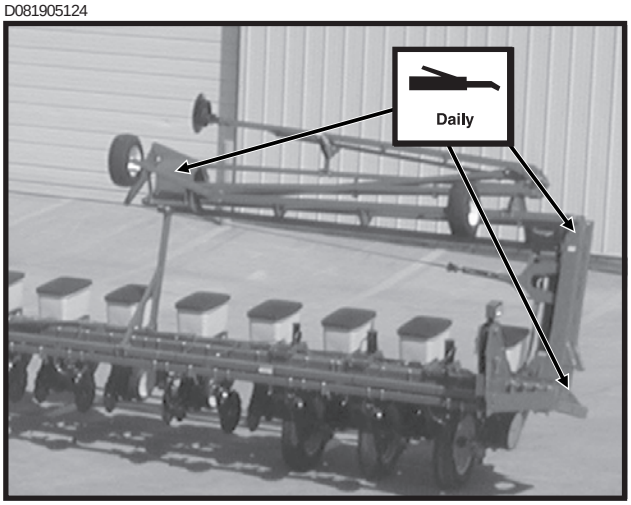
NOTE: Numbers on below photo correspond to photos on following pages showing lubrication frequencies.

D081905124

Model 3800 Conventional 36 Row 30" Shown

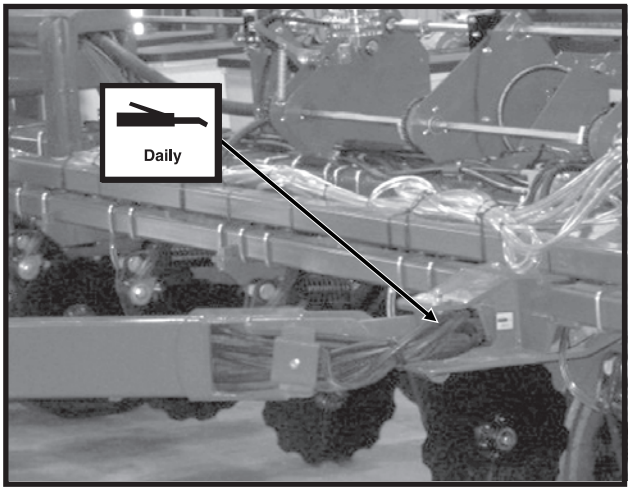


D081905124



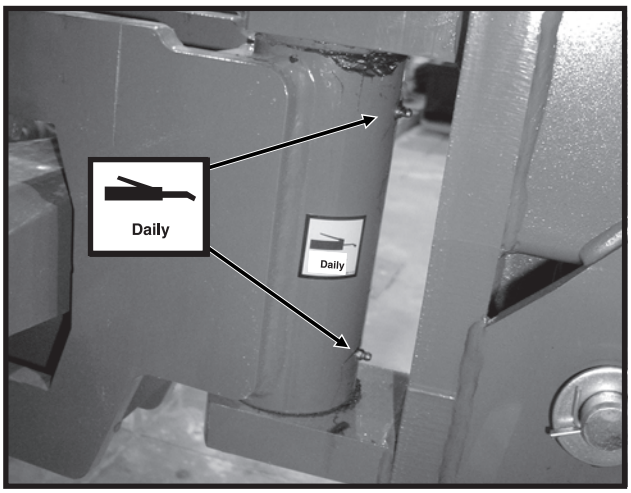
1. Row Marker Assemblies - 11 Zerks Per Assembly On 24 Row 30" - 15 Zerks Per Assembly On 32 Row 30" And 36 Row 30" (24 Row 30" Shown)

D081705295



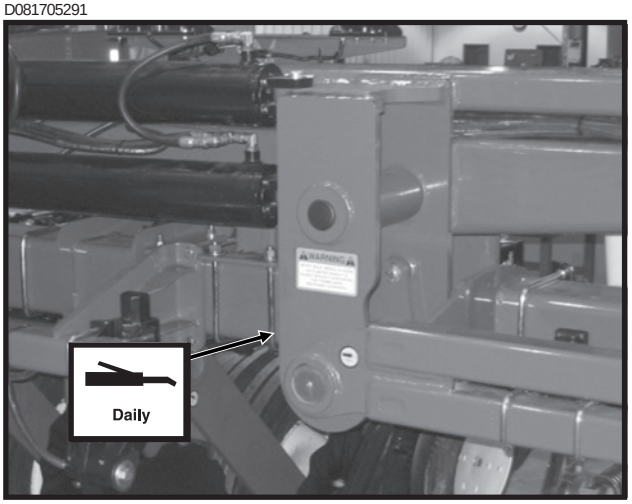
2. Wing Linkage Pivot - 1 Zerk Per Wing

D033104100



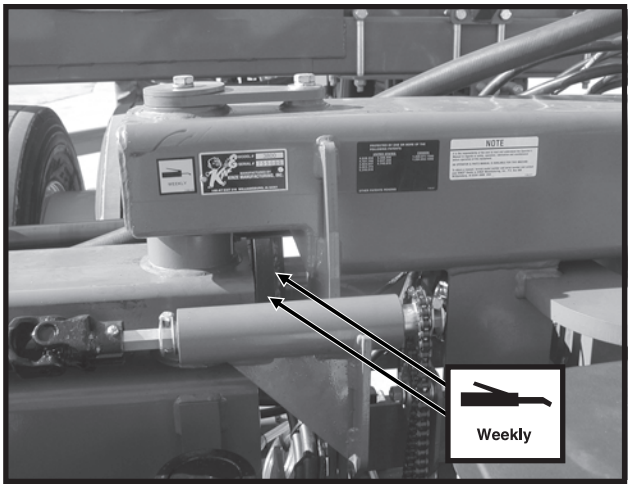
3. Hitch Pivot - 2 Zerks

D081705291



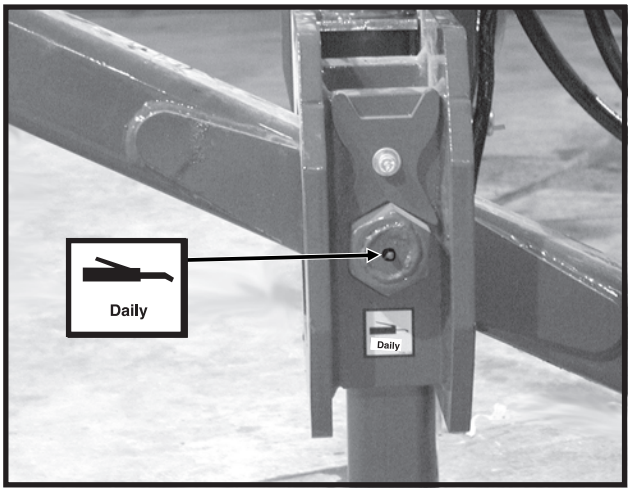
4. Outer End Of Stub Wing - 3 Zerks Per Assembly

D081905101



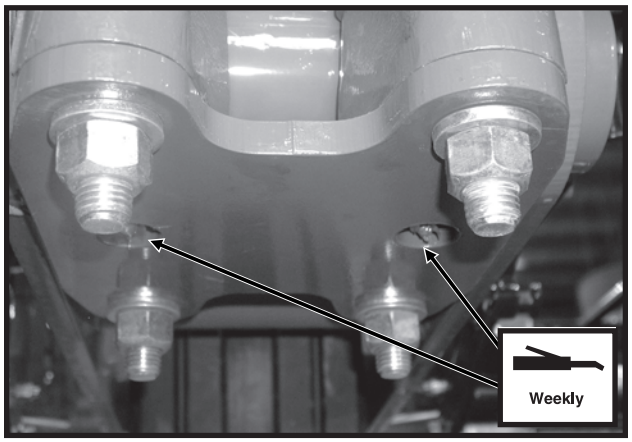
5. Inner End Of Stub Wing - 2 Zerks Per Assembly

D032404143



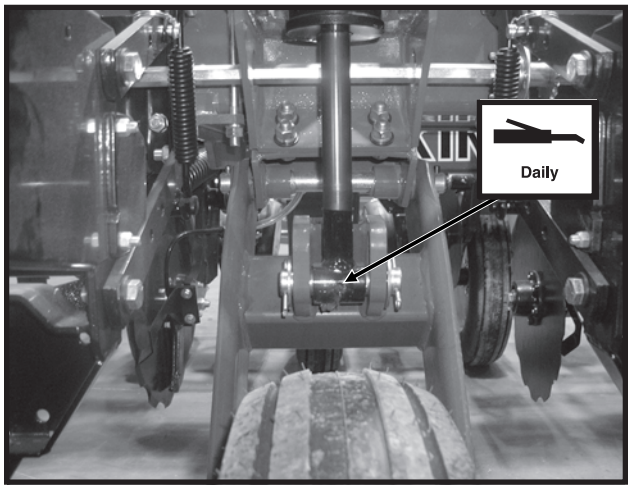
6. Hitch Pivot Pin - 1 Zerk

D040204102



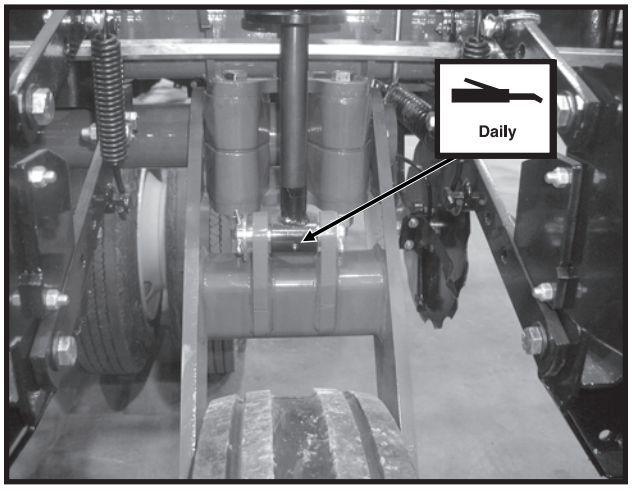
7. Center Section Lift Axle Pivot - 2 Zerks Per Wheel Assembly

D033104113



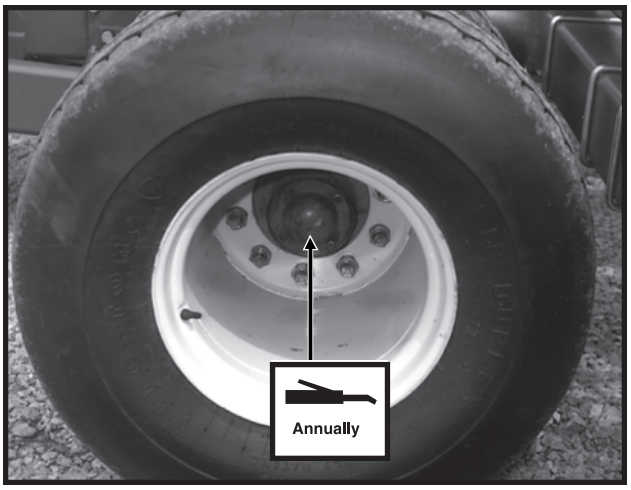
8. Wing Lift Cylinders - 1 Zerk Per Cylinder

D033104112



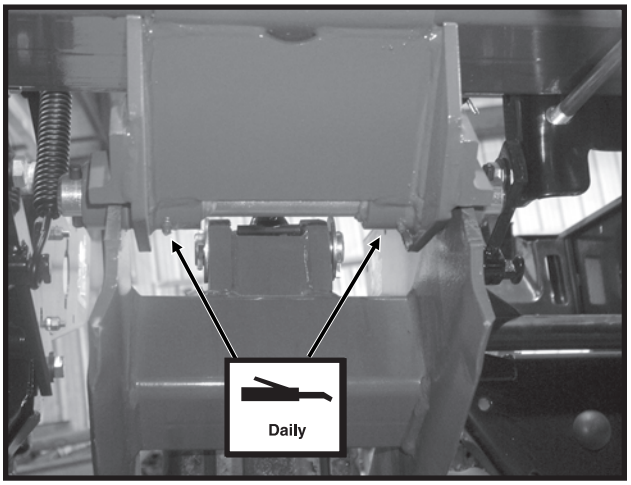
9. Center Section Lift Cylinders - 1 Zerk Per Cylinder

72495-5



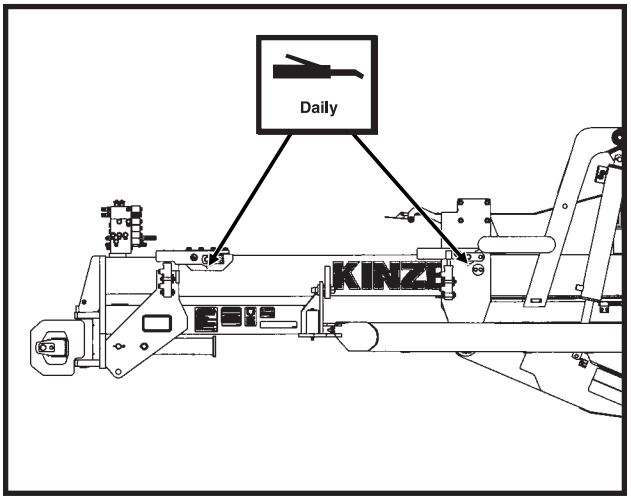
10. Transport Wheel Bearings - 1 Zerk Per Hub

D040204105



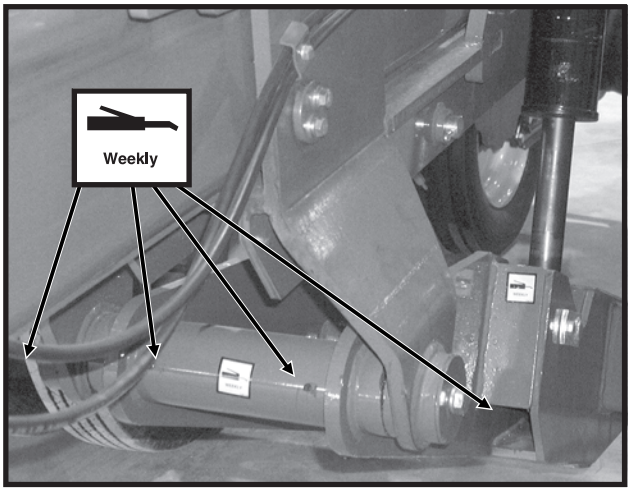
11. Wing Wheel Pivot - 2 Zerks Per Wheel Module

(FWD54)



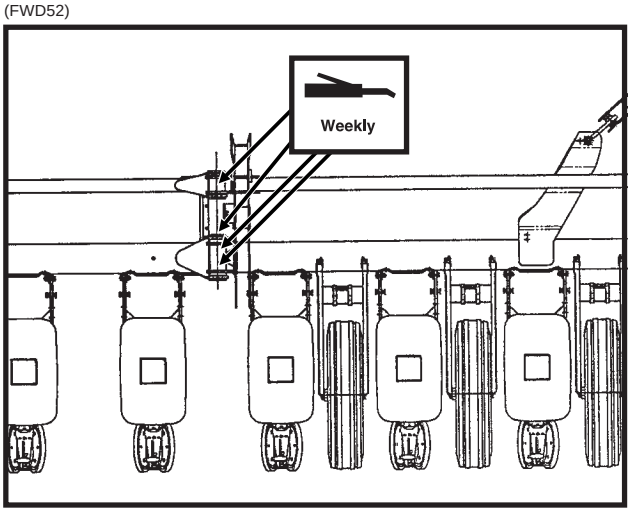
12. Slide Stops/Catches - 2 Zerks Per Stop/Catch (24 Row 30" - 1 Zerk)

D032404124



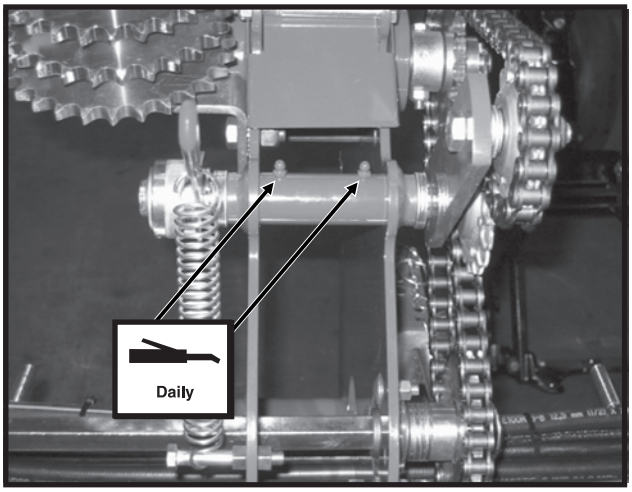
13. Transport Axle Pivot - 4 Zerks

(FWD52)



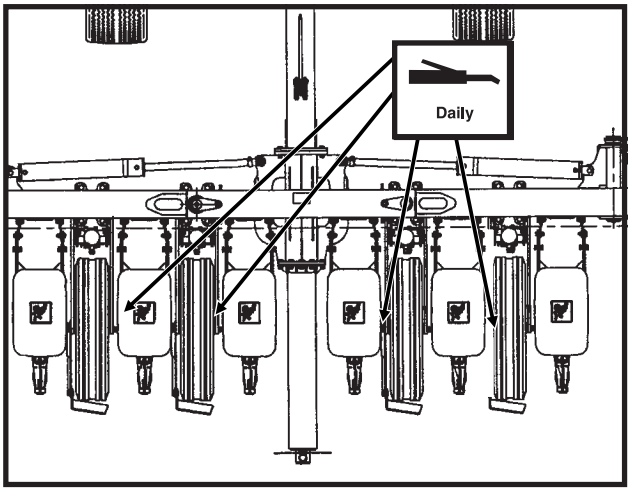
14. Outer Wing Hinge - 3 Zerks Per Assembly (32 Row 30" And 36 Row 30" Only)

D021406100



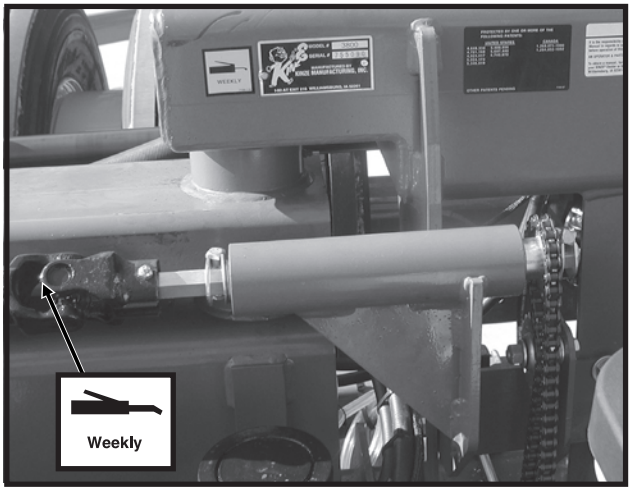
15. Seed Rate Transmission Assembly - 2 Zerks Per Transmission

(FWD55)



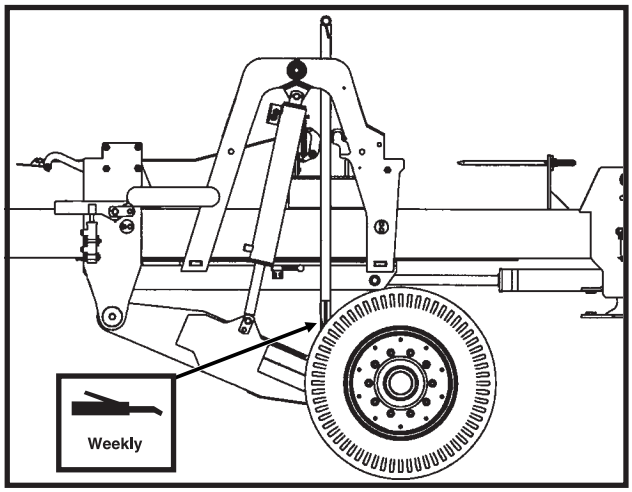
16. Rock Shaft Wheel Hub Assembly - 1 Zerk Per Hub

D081905101



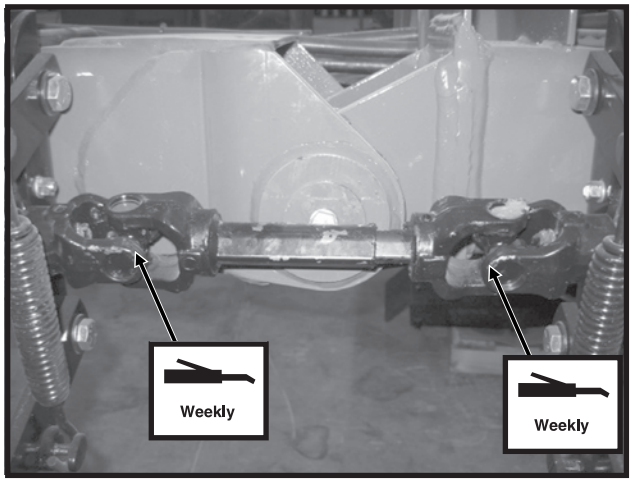
17. U-Joint Shaft Between Center Section And Wing - 1 Zerk On Each End Of U-Joint Shafts (2 Per U-Joint Shaft)

(FWD57)



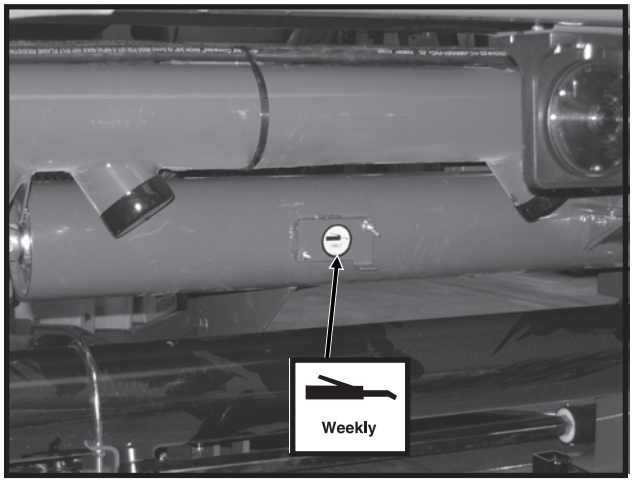
18. Slide Assembly Lockup Stand - 2 Zerks (If Applicable)

D020206109



19. U-Joint Shaft Between Inner And Outer Wings (32 Row 30" And 36 Row 30" Only) - 1 Zerk On Each End Of U-Joint Shaft (2 Per U-Joint Shaft)

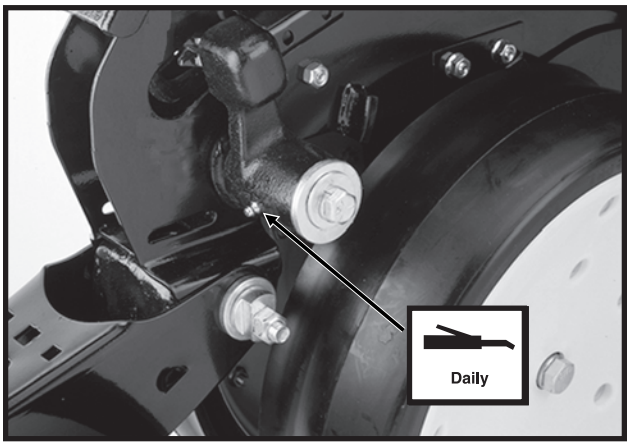
D02808101



20. SDS Auger Shaft - 1 Zerk On Each Side Of Planter

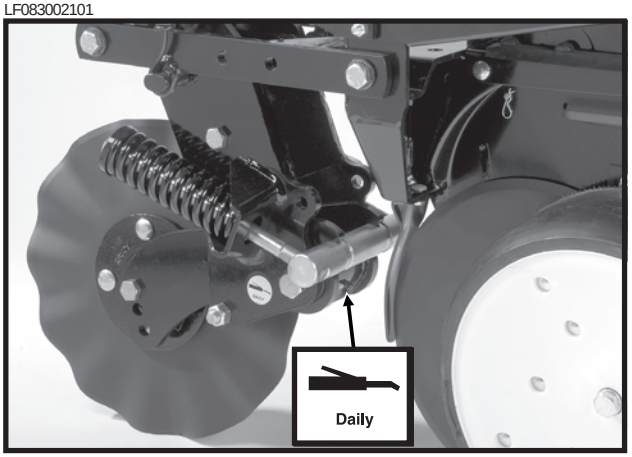
Row Unit

LF212199-2



Gauge Wheel Arms - 1 Zerk Per Arm
(Seals in gauge wheel arm are installed with lip facing out to allow grease to purge dirt away from seal. Pump grease into arm until fresh grease appears between washers and arm.)

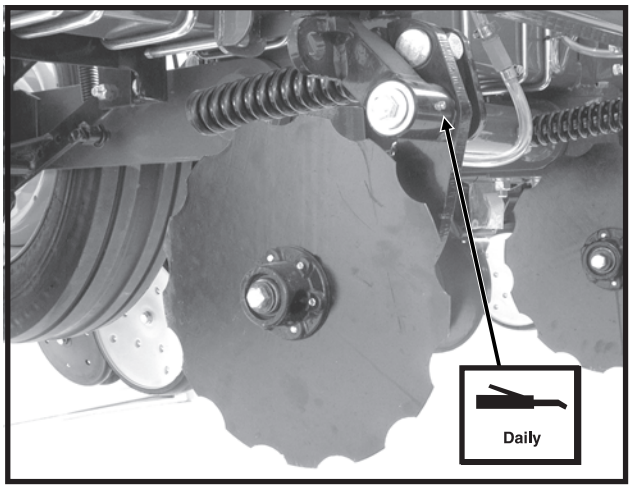
LF083002101



Frame Mounted Coulter - 1 Zerk Per Arm

Fertilizer Openers

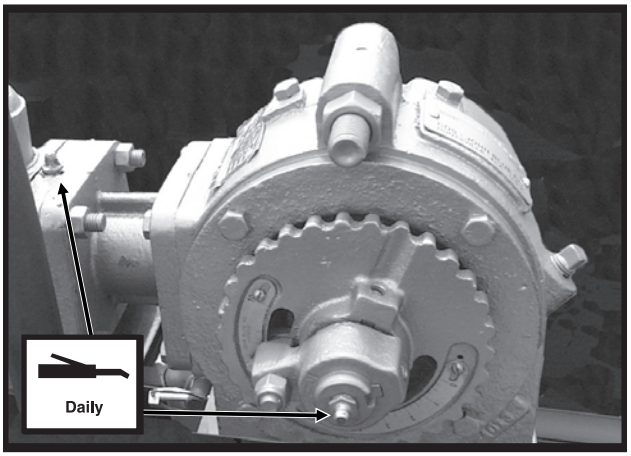
D040704104



Notched Single Disc Fertilizer Opener - 1 Zerk

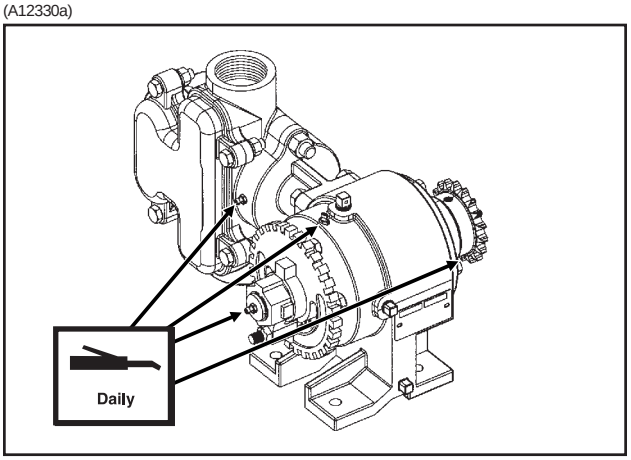
Liquid Fertilizer Piston Pump

D071504102a



Piston Pump - 2 Zerks **(Fill zerk on outboard stuffing box until lubricant seeps out of drain hole in bottom.)**

(A12330a)



Liquid Fertilizer Piston Pump - 4 Zerks **(Fill zerk on outboard stuffing box until lubricant seeps out of drain hole in bottom.)**

MAINTENANCE

MOUNTING BOLTS AND HARDWARE

Before operating the planter for the first time, check to be sure all hardware is tight. Check all hardware again after approximately the first 50 hours of operation and at the beginning of each planting season thereafter.

All hardware used on the KINZE® planter is Grade 5 (high strength), unless otherwise noted. Grade 5 cap screws are marked with three radial lines on the head. If hardware must be replaced, be sure to replace it with hardware of equal size, strength and thread type. Refer to the torque values chart when tightening hardware.

Row Unit Parallel Linkage Bushing Hardware - 130 Ft. Lbs. (See "Bushings" in the Lubrication section of this manual.)
5/8" No Till Coulter Spindle Hardware - 120 Ft. Lbs.

IMPORTANT: Over tightening hardware can cause as much damage as under tightening. Tightening hardware beyond the recommended range can reduce its shock load capacity.

WARNING: Before operating the planter for the first time and periodically thereafter, check to be sure the lug nuts on the transport wheels are tight. This is especially important if the planter is to be transported for a long distance.

Transport Tire Flange Nuts - 350 Ft. Lbs.
Transport Tire (W/Duals) Cap Screws - 125 Ft. Lbs.
Center Section Lift/Gauge Tire Lug Nuts - 90 Ft. Lbs.
Wing Lift/Gauge Tire Lug Bolts - 125 Ft. Lbs.
3 Point Hitch Adapter Pin And Pivot Bolt - 550 Ft. Lbs.

TORQUE VALUES CHART - PLATED HARDWARE

Bolt Diameter	Grade 2		Grade 5		Grade 8	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
1/4"	50 In. Lbs.	56 In. Lbs.	76 In. Lbs.	87 In. Lbs.	9 Ft. Lbs.	10 Ft. Lbs.
5/16"	8 Ft. Lbs.	9 Ft. Lbs.	13 Ft. Lbs.	14 Ft. Lbs.	18 Ft. Lbs.	20 Ft. Lbs.
3/8"	15 Ft. Lbs.	17 Ft. Lbs.	23 Ft. Lbs.	26 Ft. Lbs.	33 Ft. Lbs.	37 Ft. Lbs.
7/16"	25 Ft. Lbs.	27 Ft. Lbs.	37 Ft. Lbs.	41 Ft. Lbs.	52 Ft. Lbs.	58 Ft. Lbs.
1/2"	35 Ft. Lbs.	40 Ft. Lbs.	57 Ft. Lbs.	64 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.
9/16"	50 Ft. Lbs.	60 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.	115 Ft. Lbs.	130 Ft. Lbs.
5/8"	70 Ft. Lbs.	80 Ft. Lbs.	110 Ft. Lbs.	125 Ft. Lbs.	160 Ft. Lbs.	180 Ft. Lbs.
3/4"	130 Ft. Lbs.	145 Ft. Lbs.	200 Ft. Lbs.	220 Ft. Lbs.	280 Ft. Lbs.	315 Ft. Lbs.
7/8"	125 Ft. Lbs.	140 Ft. Lbs.	320 Ft. Lbs.	350 Ft. Lbs.	450 Ft. Lbs.	500 Ft. Lbs.
1"	190 Ft. Lbs.	205 Ft. Lbs.	480 Ft. Lbs.	530 Ft. Lbs.	675 Ft. Lbs.	750 Ft. Lbs.
1 1/8"	265 Ft. Lbs.	300 Ft. Lbs.	600 Ft. Lbs.	670 Ft. Lbs.	960 Ft. Lbs.	1075 Ft. Lbs.
1 1/4"	375 Ft. Lbs.	415 Ft. Lbs.	840 Ft. Lbs.	930 Ft. Lbs.	1360 Ft. Lbs.	1500 Ft. Lbs.
1 3/8"	490 Ft. Lbs.	560 Ft. Lbs.	1100 Ft. Lbs.	1250 Ft. Lbs.	1780 Ft. Lbs.	2030 Ft. Lbs.
1 1/2"	650 Ft. Lbs.	730 Ft. Lbs.	1450 Ft. Lbs.	1650 Ft. Lbs.	2307 Ft. Lbs.	2670 Ft. Lbs.

NOTE: Unplated hardware and bolts with lock nuts should be torqued approximately 1/3 higher than the above values. Bolts lubricated prior to installation should be torqued to 70% of value shown in chart.


GRADE 2
No Marks


GRADE 5
3 Marks


GRADE 8
6 Marks

TORQUE VALUES- ALUMINUM

Bolt Diameter	Torque Value
1/8"	180-220 In. Lbs.
3/4"	350-400 In. Lbs.
1/2"	350-400 In. Lbs.
3/8"	350-380 In. Lbs.

NOTE: These torque values are to be used with pneumatic down pressure components.

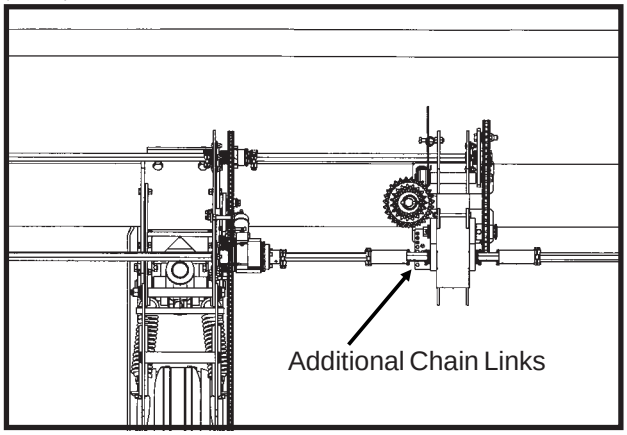
MAINTENANCE

CHAIN TENSION ADJUSTMENT

The drive chains have spring loaded idlers and therefore are self-adjusting. The only adjustment needed is to shorten the chain if wear stretches the chain and reduces spring tension. The pivot point of these idlers should be checked periodically to ensure they rotate freely. See "Wrap Spring Wrench Assembly" in Lubrication Section for additional information.

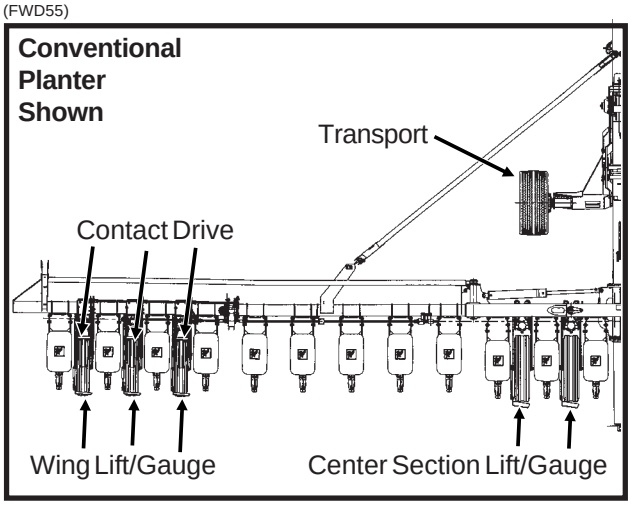
Additional chain links can be found in the storage areas located at each planter transmission assembly.

(FWD56)



TIRE PRESSURE

(FWD55)



Tire pressure should be checked regularly and maintained as follows:

(4) 41 x 11R22.5" Radial Load Range H
(Center Section Lift/Gauge) ..... 75 PSI
(6-12) 7.50" x 20" 8 Ply Custom Rib Implement
(Wing Lift/Gauge) ..... 40 PSI
(2-4) 445-50R22.5R Radial Load Range H
(Transport) ..... 120 PSI
(6) 4.80" x 8" (Contact Drive) ..... 50 PSI
(2) 20.5" x 8.0-10 (Marker) ..... 35 PSI
(2) 7.60" x 15" Rib Implement
(Liquid Fertilizer Piston Pump) ..... 40 PSI

DANGER: Rim and tire servicing can be dangerous. Explosive separation of tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. This should only be done by persons properly trained and equipped to do the job.

Always maintain the correct tire pressures. Do not inflate tires above the recommended pressures.

When inflating tires, use a clip-on air chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage to enclose the tire and rim assembly when inflating.

Inspect tires and wheels daily. Do not operate with low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

FINGER PICKUP SEED METER INSPECTION/ADJUSTMENT

To inspect or service the finger pickup seed meter, remove the meter from the seed hopper by removing the two thumbscrews which secure the mechanism to the hopper. Remove the baffle from the meter assembly by removing three cap screws. This will permit access to the finger pickup.

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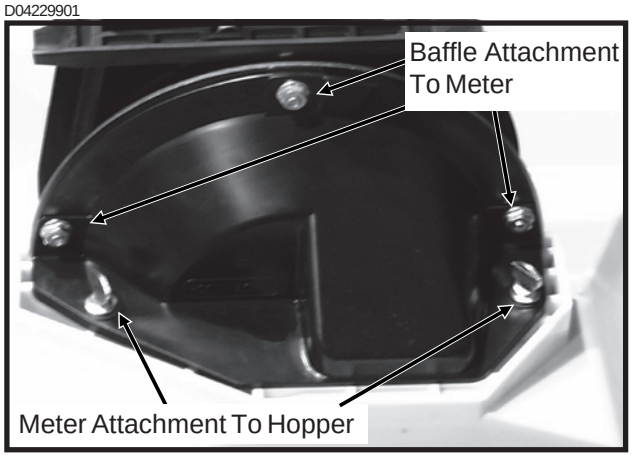

Rotate the seed meter drive by hand to ensure that the springs are holding the tabs of the fingers against the carrier plate where indicated in the photo and that the fingers are being raised in the correct area.

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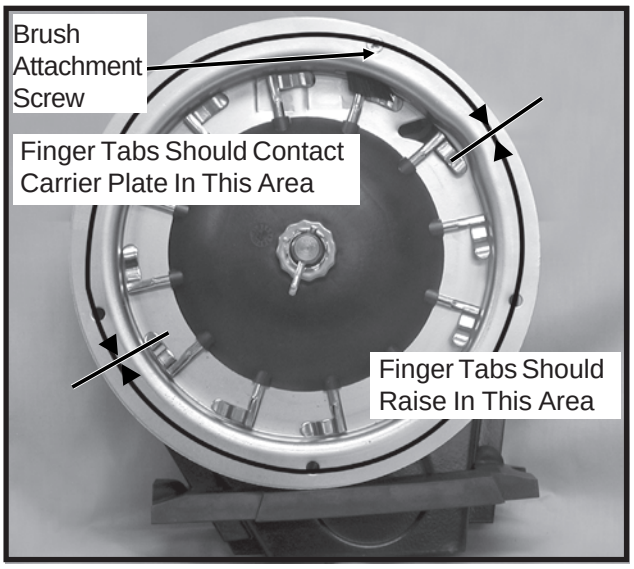
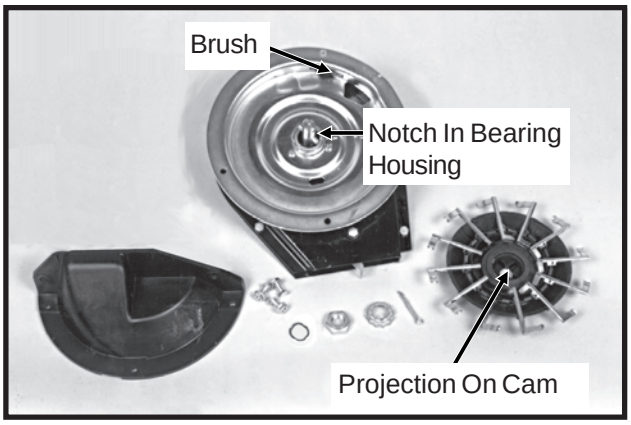


A buildup of debris or chaff may prevent proper finger operation and will require disassembly and cleaning of the finger pickup meter as follows:

1. Remove cotter pin, cover nut and adjusting nut and wave washer (If Applicable) from drive shaft.

2. Carefully lift finger holder, along with fingers and cam, off of the shaft. Clean.

60620-3b



3. Check brush for wear and replace if necessary or following every 100 acres per row of operation.

EXAMPLE: Approximately 800 acres of corn or sunflowers on a 8 row machine, 1200 acres on a 12 row machine or 1600 acres on a 16 row machine.

NOTE: It is not necessary to remove finger assembly to replace brush.

4. To replace fingers or springs, remove springs from fingers and remove finger from holder by lifting it out of the friction fit slot. Under average conditions, life expectancy of these parts should be 600-900 acres per row of operation.

5. After cleaning and/or replacing defective parts, reassemble the meter in the reverse order. When replacing fingers, make sure the open end of the spring loop is toward the inside of the finger holder.

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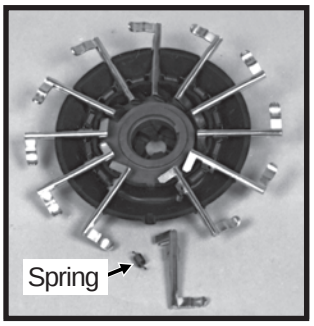

Corn Finger Assembly
(Position Spring Opening Toward Holder)

D07299902

Oil Sunflower Finger Assembly

6. Make sure fingers are installed in holder so that holder will be positioned flush with the carrier plate when assembled. A projection on the cam is designed to align with a mating notch in the bearing housing to ensure proper operation when assembled.

D021506100

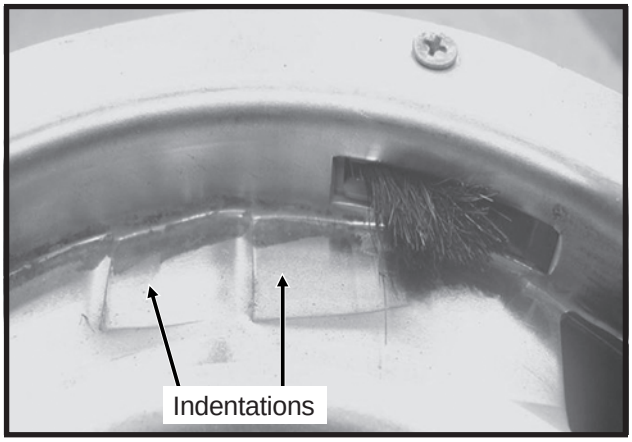

Photo Shows Worn Carrier Plate

7. Before installing the finger holder on the carrier plate, check the indentations on the carrier plate for wear. Excessive wear of the carrier plate at the indentations will cause over planting especially when using small sizes of seed.

   Inspect the carrier plate annually. Under average conditions, the life expectancy of the carrier plate should be 250-300 acres per row of operation.

8. With finger holder flush against the carrier, install wave washer and adjusting nut. Tighten adjusting nut to fully compress wave washer. Then back off nut 1/2 to 2 flats (1/12 to 1/3 turn) to obtain rolling torque of 22 to 25 inch pounds.

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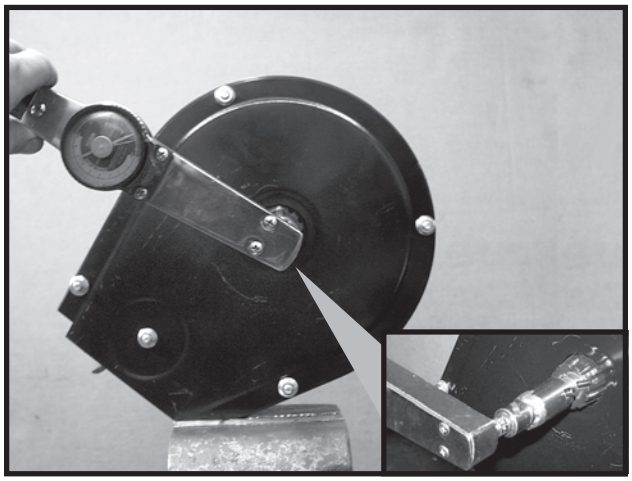

9. Turn finger holder by hand to make sure it is positioned firmly against the carrier plate, but is not over tightened and can be rotated with moderate force.

10. Install cover nut and cotter pin and reinstall baffle.

NOTE: Check tightness of adjusting nut on each unit after first day of use and periodically thereafter.

To inspect or replace the seed belt, remove the four cap screws around the edge of the housing cover and the nut from the belt idler mounting bolt.

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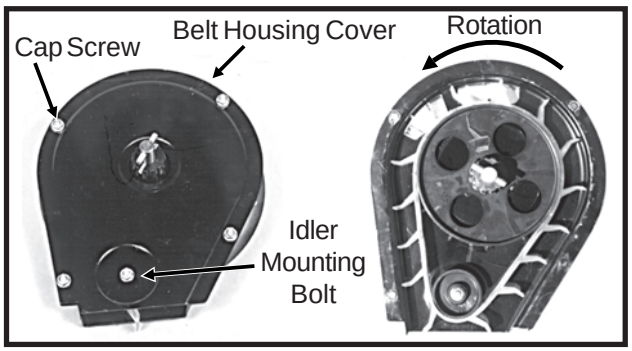
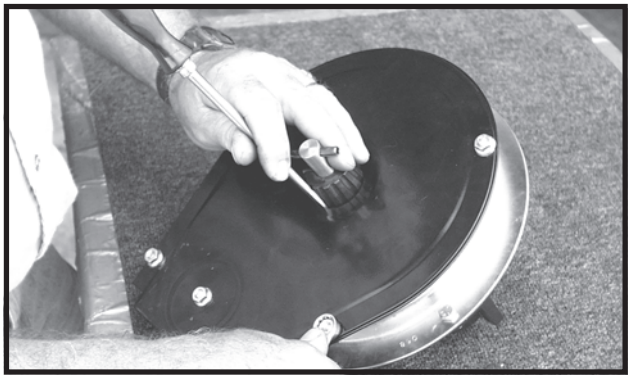


If the belt is being replaced, make sure it is installed to correctly orient the paddles as shown. A diagram molded into the drive sprocket also illustrates the correct orientation.

Reinstall the housing cover. DO NOT TIGHTEN hardware at this time. Wedge a screwdriver between the sprocket hub and housing cover as shown below. Pry cover down until it is centered on the belt housing and tighten hardware. Check idler alignment by rotating meter drive shaft. The seed belt should "run" centered on the idler or with only slight contact with the belt housing or cover.

IMPORTANT: Do not over tighten hardware.

D06200030



FINGER PICKUP SEED METER CLEANING

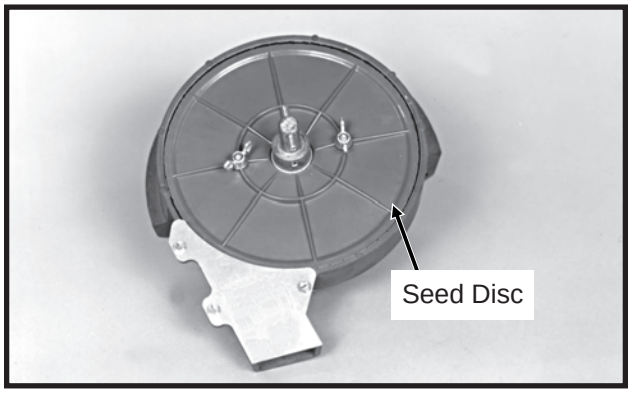
1. Disassemble meter.
2. Blow out any foreign material present in the meter mechanism.
3. Wash in mild soap and water. DO NOT USE GASOLINE, KEROSENE OR ANY OTHER PETROLEUM BASED PRODUCT.
4. Dry thoroughly.
5. Coat lightly with a rust inhibiter.
6. Rotate finger assembly so finger does not touch brush.
7. Reassemble and store in a dry rodent-free place.

FINGER PICKUP SEED METER TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
One row not planting seed.	Drive release not engaged.	Engage drive release mechanism.
	Foreign material in hopper.	Clean hopper and finger carrier mechanism.
	Seed hopper empty.	Fill seed hopper.
	Row unit drive chain off of sprocket or broken.	Check drive chain.
Drive release does not engage properly.	Drive release shaft is not aligned properly with meter drive shaft.	Align drive mechanism. See “Seed Meter Drive Adjustment”.
Unit is skipping.	Finger holder improperly adjusted.	Adjust to specifications. (22 to 25 in. lbs. rolling torque)
	Broken fingers.	Replace fingers and/or springs as required.
	Planting too slowly.	Increase planting speed to within recommended range.
Planting too many doubles.	Planting too fast.	Stay within recommended speed range.
	Loose finger holder.	Adjust to specifications. (22 to 25 in. lbs. rolling torque)
	Worn brush in carrier plate.	Inspect and replace if necessary.
Overplanting.	Worn carrier plate.	Inspect and replace if necessary.
	Seed hopper additive being used.	Reduce or eliminate additive or increase graphite.
Underplanting.	Seed belt installed backwards.	Remove and install correctly.
	Weak or broken springs.	Replace.
	Spring not properly installed.	Remove finger holder and correct.
	Seed belt catching or dragging.	Replace belt.
	Brush dislodging seed.	Replace brush.
Irregular or incorrect seed spacing.	Driving too fast.	Check chart for correct speed.
	Wrong tire pressure.	Inflate tires to correct air pressure.
	Drive wheels slipping.	Reduce down pressure on row unit down force springs.
	Wrong sprockets.	Check seed rate charts for correct sprocket combinations.
Seed spacing not as indicated in charts.	Wrong tire pressure.	Inflate tires to correct air pressure.
	Inconsistent seed size.	Perform field check and adjust sprockets accordingly.
	Wrong sprockets.	Check chart for correct sprocket combination.
	Charts are approximate.	Slight variations due to wear in meter components and tire slippage due to field conditions may produce seed spacing variations.
	Stiff or worn drive chains.	Replace chains.
Scattering of seeds.	Planting too fast.	Reduce planting speed.
	Seed tube improperly installed.	Check seed tube installation.
	Seed tube worn or damaged.	Replace seed tube.
Seed tubes and/or openers plugging.	Allowing planter to roll backward when lowering.	Lower planter only when tractor is moving forward.
Inconsistent seed depth.	Rough seed bed.	Adjust down pressure springs. Reduce planting speed.
	Partially plugged seed tube.	Inspect and clean.
	Seed tube improperly installed.	Install properly.

BRUSH-TYPE SEED METER MAINTENANCE

60607-10a



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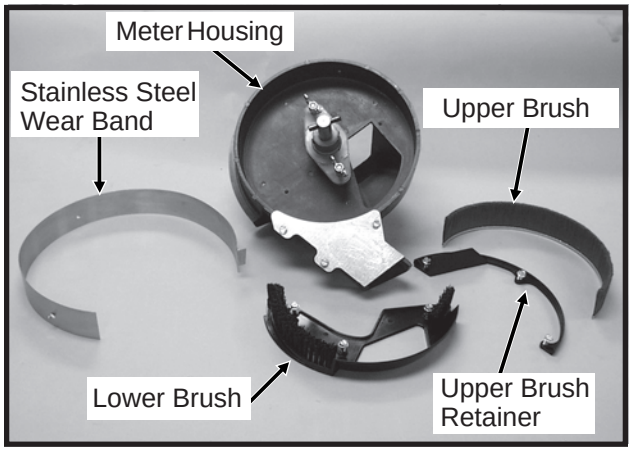
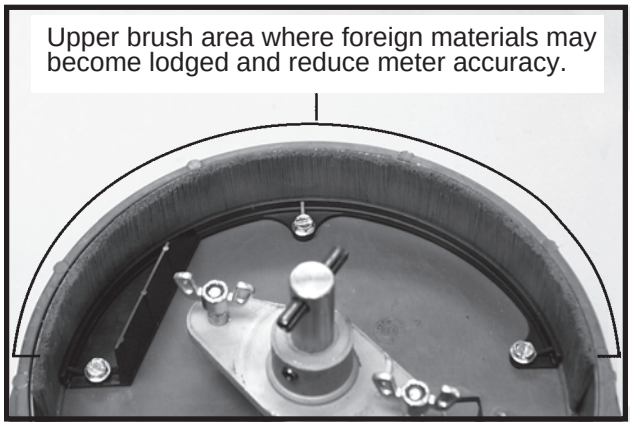


Only clean, high quality seed should be used for maximum meter accuracy. Damaged or cracked seed, hulls or foreign materials may become lodged in the upper brush and greatly reduce meter accuracy. It is suggested that the seed disc be removed daily, inspected and cleaned. Check for buildup of foreign material on the seed disc, particularly in the seed loading slots. Clean the disc by washing it with soap and water. Check for cracked seed, hulls, etc. lodged between the brush retainer and stainless steel wear band which can greatly reduce the accuracy of the meter because the upper brush will not be able to retain the seed in the seed disc pocket. Clean the brush areas of the meter housing thoroughly.

D04239912a



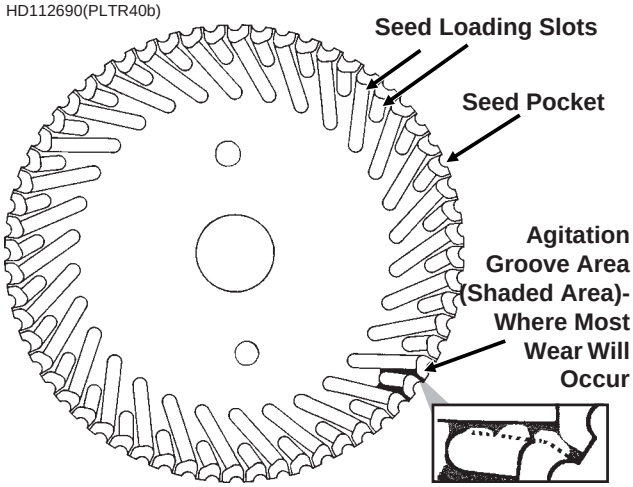
IMPORTANT: Replace hopper lids after hoppers are filled to prevent accumulation of dust or dirt in the seed meter which will cause premature wear.

Cleaning brush-type seed meter for storage:

1. Remove meter from seed hopper by removing the two thumbscrews which secure the meter to the hopper.
2. Remove seed disc and wash with soap and water and dry thoroughly.
3. Remove upper brush by removing the three hex head screws from the brush retainer and removing brush retainer and upper brush.
4. Remove the three hex head screws from the lower brush and remove lower brush and stainless steel wear band.
5. Wash all parts and meter housing with soap and water and dry thoroughly.
6. Inspect all parts for wear and replace worn parts.
7. Reassemble meter except for seed disc. **Meter should be stored in a rodent-free space with seed disc removed.**

Seed Disc Wear

HD112690(PLTR40b)



Most wear on the seed disc will be found in the agitation groove area (area between the seed loading slots). Wear will affect planting accuracy at high RPM. To measure for wear, lay a straight edge across the surface of the disc and measure the gap between the disc (at the agitation groove area) and the straight edge. If the agitation groove areas are worn in excess of .030" and accuracy starts to drop off at higher meter RPM, the seed disc should be replaced.

Estimated life expectancy of the seed disc under normal operating conditions should be approximately 200 acres per row. Severe operating conditions such as dust, lack of lubrication or abrasive seed coating could reduce life expectancy of the seed disc to under 100 acres per row.

Upper Brush

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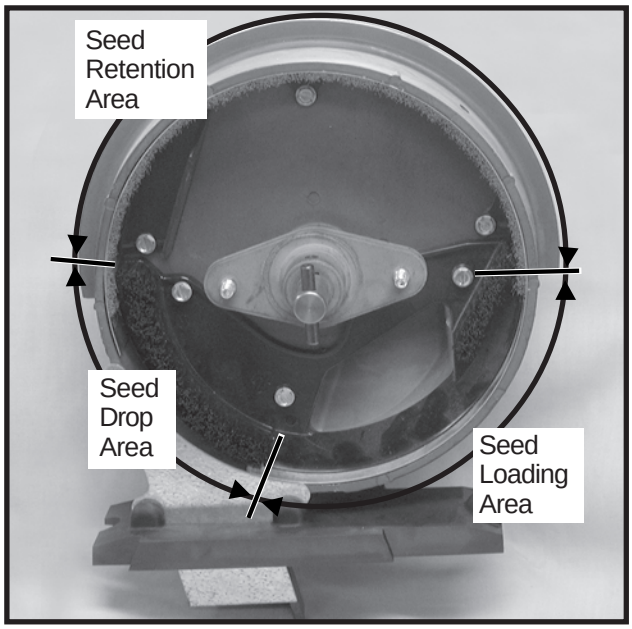


The upper brush holds seed in the seed disc pocket in the seed retention area.

The brush must apply enough pressure against the seed in the seed disc pocket as the disc rotates through the seed retention area to prevent the seed from dropping out of the disc pocket. A damaged spot, excessive wear on the brush or foreign material lodged in the brush may greatly reduce meter performance.

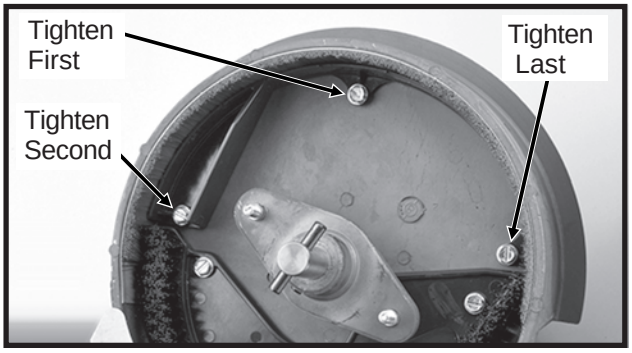
The upper brush should be replaced at approximately 120-400 acres per row of use or sooner if damage or excessive wear is found.

Installation Of Upper Brush

Position upper brush into inner perimeter of seed retention area. Make sure the base of the brush is tight against the bottom of the meter housing. Install brush retainer and three hex head screws. Tighten center screw first, left screw second and right screw last.

NOTE: Use GD11122 upper brush retainer when using soybean and cotton discs. Use GD8237 upper brush retainer when using milo/grain sorghum discs. GD11122 brush retainer shown.

LF212299-13a



Stainless Steel Wear Band

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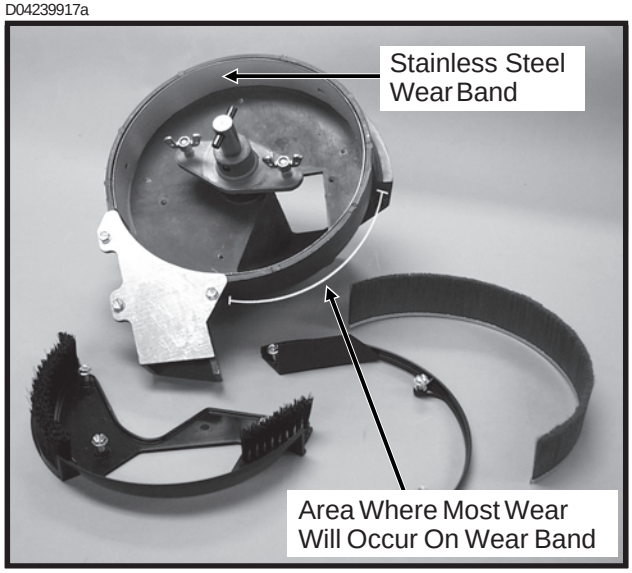

The purpose of the stainless steel wear band is to protect the meter housing from wear. The band is .030" thick and should be replaced when approximately .020" of wear is found in the primary area of wear. If the wear band is allowed to wear through or if the meter is used without the wear band in place, damage to the meter housing may occur.

Estimated life expectancy of the stainless steel wear band is 240-800 acres per row.

Lower Brush

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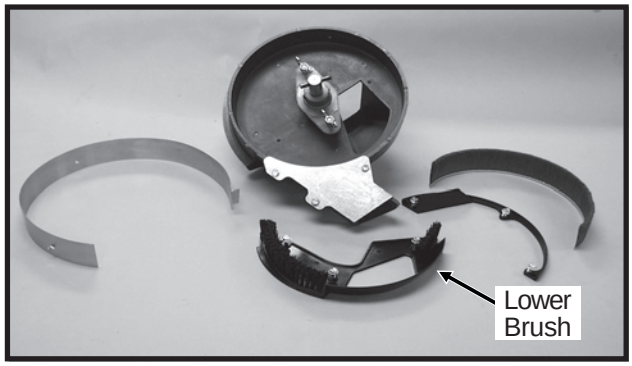


The lower brush has several functions. One function is to move seed down the seed loading slots to the seed pockets. The second function is to isolate seed in the reservoir from entering the seed tube and a third is to clean the seed loading slots.

Estimated life expectancy of the lower brush is 240-800 acres per row. The lower brush should be replaced if the bristles are deformed or missing or if there are cracks in the brush retainer.

BRUSH-TYPE SEED METER TROUBLESHOOTING

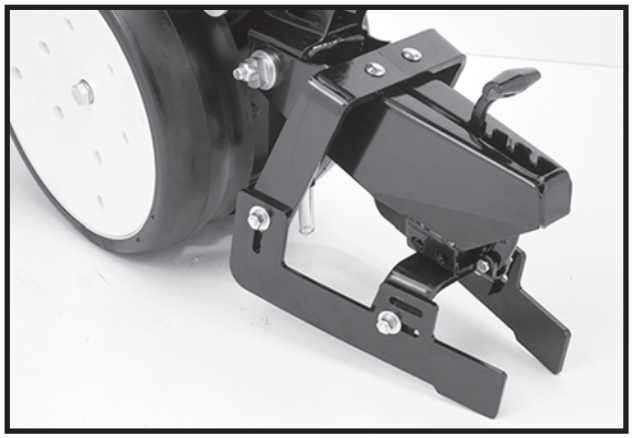
PROBLEM	POSSIBLE CAUSE	SOLUTION
Low count.	Meter RPM too high.	Reduce planting speed.
	Seed sensor not picking up all seeds dropped.	Clean seed tube. Switch meter to different row. If problem stays with same row, replace sensor.
	Lack of lubrication causing seeds not to release from disc properly.	Use graphite or talc as recommended.
	Seed size too large for seed disc being used.	Switch to smaller seed or appropriate seed disc. See “Brush-Type Seed Meter” for proper seed disc for size of seed being used.
	Seed treatment buildup in meter.	Reduce amount of treatment used and/or thoroughly mix treatment with seed. Add talc.
Low count at low RPM and higher count at higher RPM.	Foreign material lodged in upper brush.	Remove seed disc and remove foreign material from between brush retainer and bristles. Clean thoroughly.
	Worn upper brush.	Replace. See “Maintenance”.
Low count at higher RPM and normal count at low RPM.	Seed disc worn in the agitation groove area.	Replace disc. See “Maintenance”.
High count.	Seed size too small for seed disc.	Switch to larger seed or appropriate seed disc.
	Incorrect seed rate transmission setting.	Reset transmission. Refer to proper rate chart in “Machine Operation” section of manual.
	Upper brush too wide (fanned out) for small seed size.	Replace upper brush.
High count. (Milo/Grain Sorghum)	Incorrect brush retainer being used.	Make sure GD8237 brush retainer is installed to keep upper brush from fanning out.
Upper brush laid back.	Seed treatment buildup on brush.	Remove brush. Wash with soap and water. Dry thoroughly before reinstalling. See “Maintenance”.
	Buildup of foreign material at base of brush.	Remove brush retainer and brush. Clean thoroughly. Reinstall.

CLOSING WHEEL TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Closing wheel(s) leave severe imprint in soil.	Too much closing wheel down pressure.	Adjust closing wheel pressure.
Closing wheel(s) not firming soil around seed.	Insufficient closing wheel down pressure.	Adjust closing wheel pressure. Severe no till conditions may require use of cast iron closing wheels.
"V" closing wheel running on top of seed furrow.	Improper centering.	Align. See "V Closing Wheel Adjustment".
Single closing wheel not directly over seed.	Improper centering.	Align. See "Covering Discs/Single Press Wheel Adjustment".

DRAG CLOSING ATTACHMENT

LF212299-18



Prior to storage of the planter, inspect each drag closing attachment and replace any worn or broken parts. Check for loose hardware and tighten as needed.

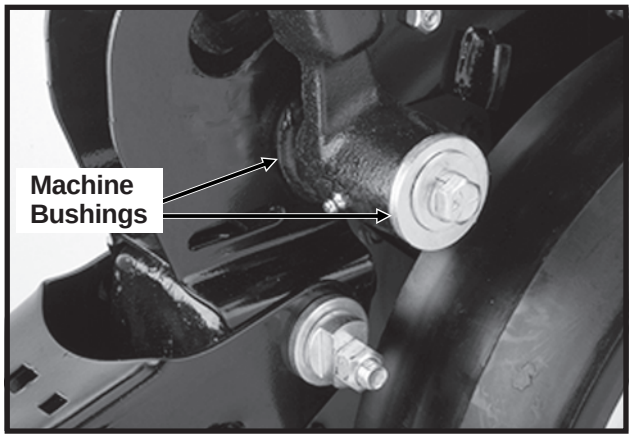
GAUGE WHEEL ADJUSTMENT

To prevent an accumulation of dirt or trash, gauge wheels should lightly contact the opener blades. Gauge wheels and opener blades should turn with only slight resistance.

To adjust clearance between gauge wheels and opener blades, add or remove machine bushings between the shank and gauge wheel arm. Store remaining machine bushings between gauge wheel arm and flat washer on outer side of gauge wheel arm.

NOTE: It may be desirable to space gauge wheel further from blade when operating in sticky soils.

LF212199-2



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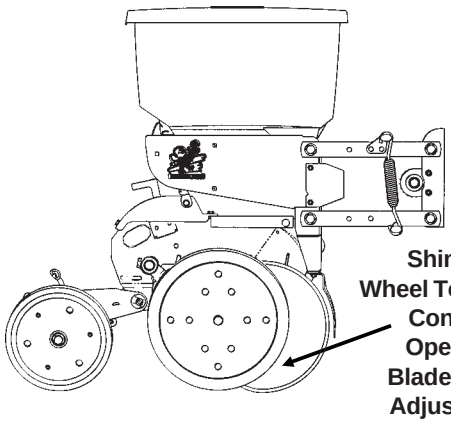
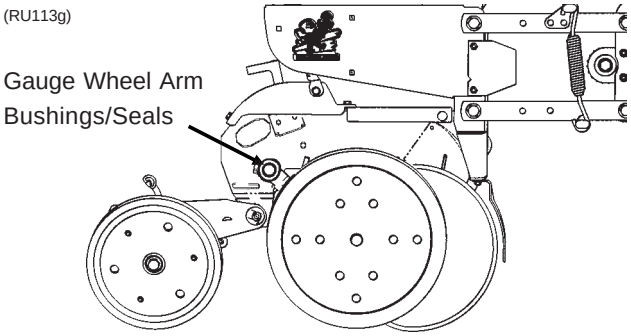


GAUGE WHEEL ARM BUSHING AND/OR SEAL REPLACEMENT

(RU113g)

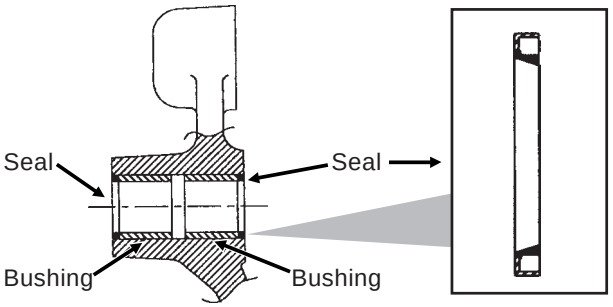


NOTE: A Gauge Wheel Arm Bushing And Seal Driver Kit (G1K296), for use in bushing and seal replacement, is available through your KINZE® Dealer.

To replace gauge wheel arm assembly bushing(s) and/or seal(s):

1. Remove gauge wheel from arm.
2. Remove the gauge wheel arm assembly from the shank assembly.
3. Remove seal and bushing and discard. Clean and dry inner bore.

(A7975/RU122)



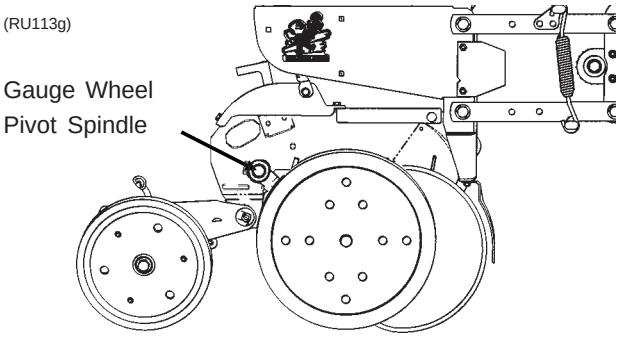
4. Drive/press replacement bushing inside bore of arm to a depth of .125" below flush.
5. Coat wiping edge of seal with grease.
6. Drive/press seal into place with lip to the outside as shown above.

   NOTE: Use extra care to protect the sealing lip during installation. Apply uniform pressure to assemble the seal into the bore of the arm. Never apply a direct hammer blow to the seal surface.

7. Inspect gauge wheel pivot spindle.
8. Reinstall gauge wheel arm assembly and gauge wheel.
   NOTE: Special machine bushing between gauge wheel arm and gauge wheel.
9. Shim for proper gauge wheel tire/disc blade clearance.
10. Lubricate with an SAE multipurpose grease.

GAUGE WHEEL ARM PIVOT SPINDLE REPLACEMENT

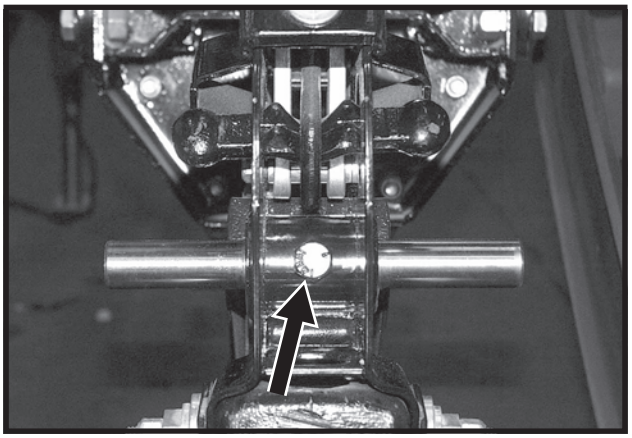
(RU113g)



To replace gauge wheel pivot spindle:

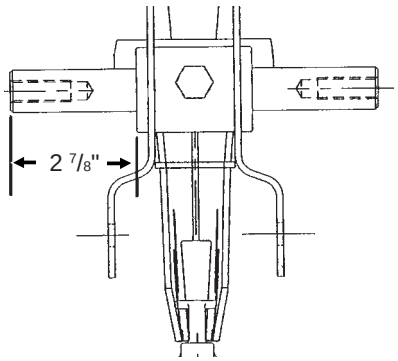
1. Remove the gauge wheel and arm assemblies from the shank assembly.
2. Remove 1/2" x 3/4" cap screw that locks the pivot spindle in place and remove the spindle.

D06189902



3. Install the replacement spindle and position as shown below. Exact centering is critical.

(A7966)



4. Install 1/2" x 3/4" cap screw and torque to lock pivot spindle in place.
5. Install gauge wheel and arm assemblies. Shim for proper gauge wheel tire/disc blade clearance.

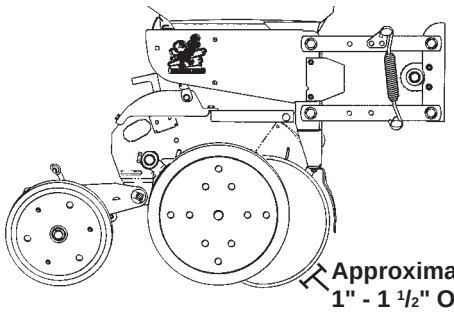
15" SEED OPENER DISC BLADE/ BEARING ASSEMBLY

Approximately 1" - 1 1/2" of blade-to-blade contact should be maintained to properly open and form the seed trench. As the blade diameter decreases, due to wear, it will be necessary to relocate machine bushings from inside to outside to maintain approximately 1" - 1 1/2" of contact.

NOTE: If proper blade-to-blade contact cannot be maintained after relocating machine bushings or if blade diameter wears below 14 1/2", the blades should be replaced.

IMPORTANT: Excessive blade contact may result in premature disc opener bearing/hub failures and excessive wear on seed tube guard/inner scraper. When properly adjusted, if one blade is held in fixed position, the opposite blade should be able to be rotated with minimal force (Less than 5 pounds force at outer edge of blade).

(RU113g)



To replace disc blade/bearing assembly:

1. Remove gauge wheel.
2. Remove scraper.
3. Remove bearing dust cap.
4. Remove cap screw, washer and disc blade/bearing assembly. The machine bushings between the shank and disc blade are used to maintain the approximate 1" - 1 1/2" of blade-to-blade contact.

IMPORTANT: Left hand side of opener uses a left hand threaded cap screw. DO NOT OVER TIGHTEN. Damage to shank threads will require replacement of row unit shank assembly.

5. Install machine bushing(s), new disc blade/bearing assembly, washer and cap screw. Torque 5/8"-11 Grade 5 cap screw to value shown in "Torque Values Chart".

   NOTE: Replace disc blades only with disc blades of equal thickness.

6. Replace bearing dust cap.
7. Install scraper.
8. Install gauge wheel.

It may be necessary to replace only the bearing if there is excessive endplay or if the bearing sounds or feels rough when the disc blade is rotated.

To replace bearing:

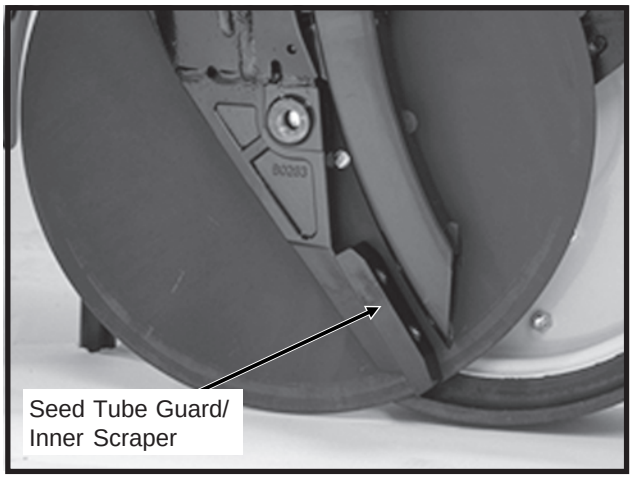
1. Remove gauge wheel, scraper, bearing cap, cap screw, washer and disc blade/bearing assembly.
2. Remove 1/4" rivets from bearing housing to expose bearing.
3. After installing new bearing, install three evenly spaced 1/4" cap screws into three of the six holes in the bearing housing to hold the bearing and bearing housing in place. Install rivets in the other three holes. Remove 1/4" cap screws and install rivets in those three holes.
4. Reinstall disc blade/bearing assembly, washer and cap screw. Torque 5/8"-11 cap screw to value shown in "Torque Values Chart" at the beginning of this section.
5. Replace bearing dust cap.
6. Install scraper and gauge wheel.

SEED TUBE GUARD/INNER SCRAPER

The seed tube guard protects the seed tube and acts as the inner scraper for the seed opener disc blades.

Remove the seed tube and check for wear. Excessive wear on the seed tube indicates a worn seed tube guard. Replace the seed tube guard if it measures $^{5}/_{8}$" or less at the lower end. A new seed tube guard measures approximately $^{7}/_{8}$".

LF212199-12



Shown With Gauge Wheel And Seed Opener Disc Blade Removed For Visual Clarity

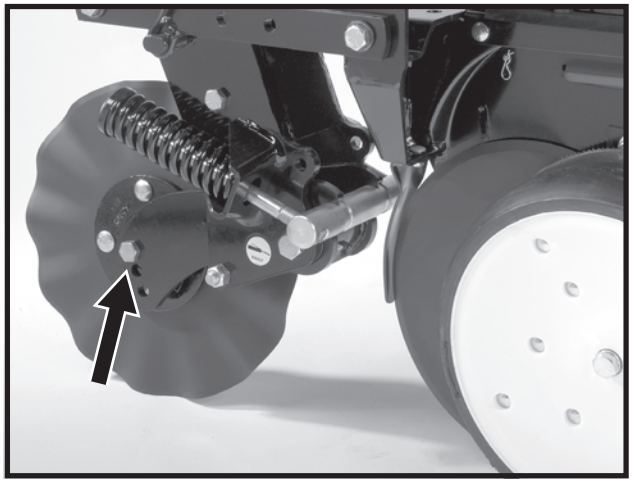
IMPORTANT: No till planting or planting in hard ground conditions, especially when the planter is not equipped with no till coulters, and/or excessive blade-to-blade contact will increase seed tube guard wear and necessitate more frequent inspection and/or replacement.

To replace the seed tube guard, remove the seed tube and the two hex socket head cap screws which attach the seed tube guard. Hold the replacement seed tube guard centered between the seed opener disc blades. Install, but DO NOT tighten, the hex socket head cap screws. Using a clamp or vise-grip, squeeze the opener blades together in front of the seed tube guard. Tighten the seed tube guard retaining screws. Remove the clamps. The distance between the seed tube guard and opener blades should be equal on both sides. Reinstall seed tube.

IMPORTANT: Over tightening the hex socket head cap screws may damage the threads in the shank and require replacement of the shank. A seed tube guard that is worn excessively may allow the blades to wear into the row unit shank, also requiring replacement of the shank.

FRAME MOUNTED COULTER

LF083002101



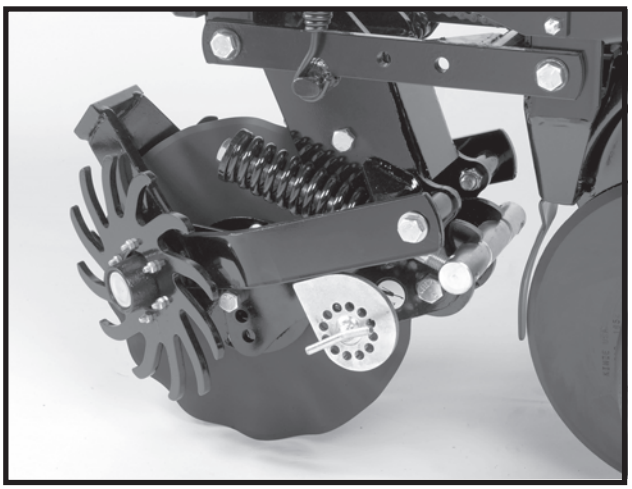
NOTE: Torque 5/8" spindle hardware to 120 ft. lbs.

See “Frame Mounted Coulter” in Row Unit Operation section of this manual for depth and spring adjustment.

When the 16" diameter coulter blade (1" fluted, 1" bubbled or 3/4" fluted) is worn to 14 1/2" (maximum allowable wear), it should be replaced.

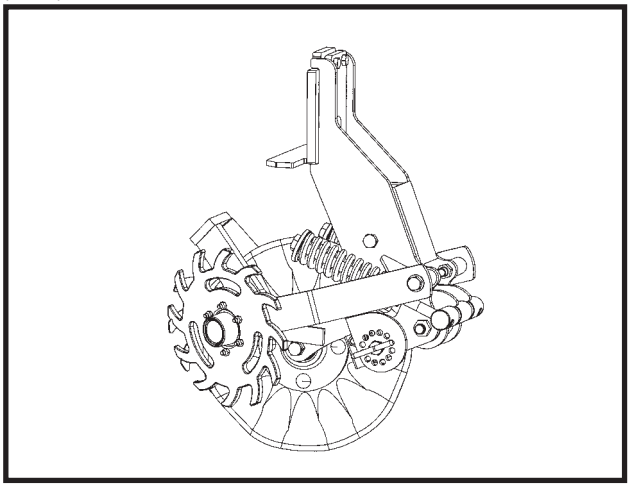
RESIDUE WHEELS (For Use With Frame Mounted Coulter)

LF083002102



STYLE A

(RU154)

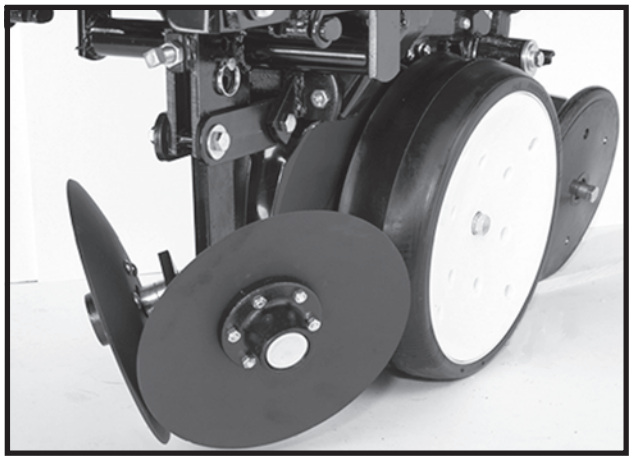


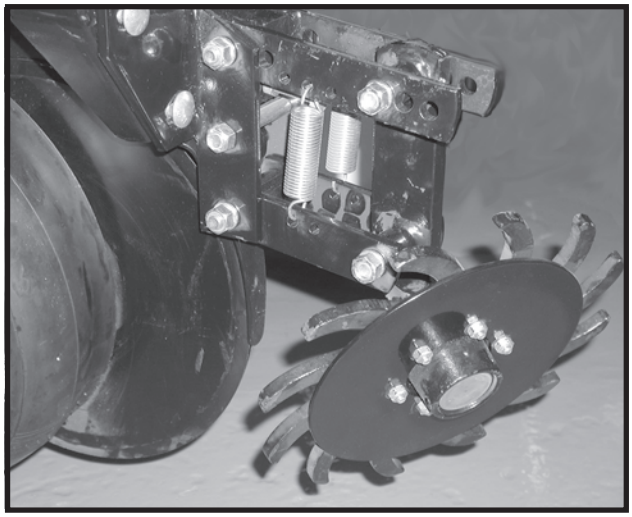
STYLE B

The wheel hub is equipped with sealed bearings. If a bearing sounds or feels rough when the wheel is rotated, replace the bearings.

ROW UNIT MOUNTED DISC FURROWER

LF212299-22

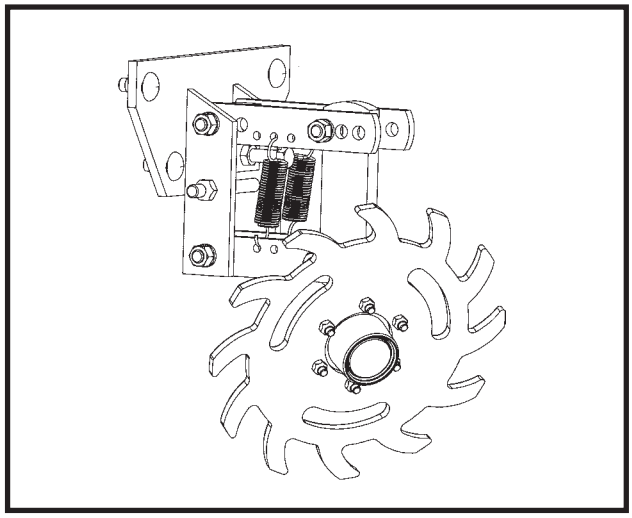




Lubricate the bushings in the support arm and mounting bracket at the frequency indicated in the Lubrication Section of this manual. Using a torque wrench, check each bolt for proper torque. If the bolt is loose, it should be removed and the bushing inspected for cracks and wear. Replace bushings as necessary. **Only hardened flat washers should be used. Replace damaged flat washers with proper part. Torque cap screws to 57 ft. lbs.**

The blade hubs are equipped with sealed bearings. If bearings sound or feel rough when the blade is rotated, replace the bearings.

When the 12" diameter blades (solid or notched) are worn to 11", they should be replaced.



ROW UNIT MOUNTED NO TILL COULTER

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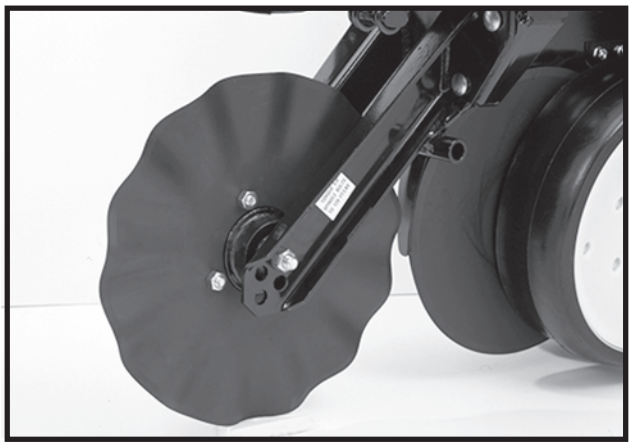
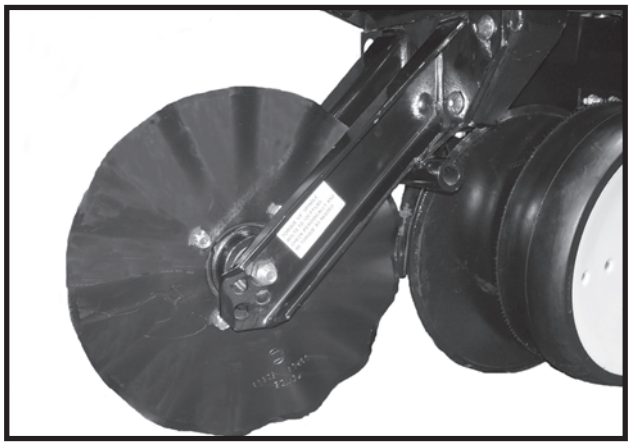


STYLE A (Two Sleeves For Installing Coulter Mounted Residue Wheels)

D05170706a



STYLE B (One Sleeve For Installing Coulter Mounted Residue Wheels)

Check periodically to be sure nuts and hardware are tightened to proper torque specification.

NOTE: Torque $^{5}/_{8}$" spindle hardware to 120 ft. lbs.

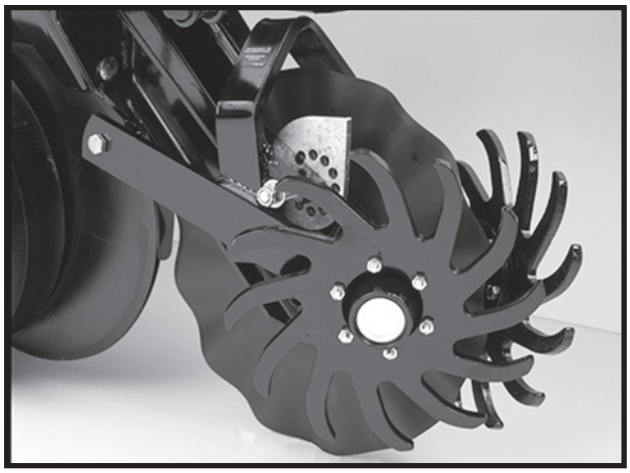
Be sure the coulter is positioned square with the row unit and aligned in front of row unit disc opener.

The coulter blade can be adjusted to one of four settings. Initially the blade is set in the highest position. As the blade wears it can be adjusted to one of the three lower settings. See "Row Unit Mounted No Till Coulter" in Row Unit Operation section of this manual.

When the 16" diameter coulter blade is worn to 14 $^{1}/_{2}$" (maximum allowable wear), it should be replaced.

COULTER MOUNTED RESIDUE WHEELS

LF212299-23



STYLE A - Used With Style A Row Unit Mounted No Till Coulter

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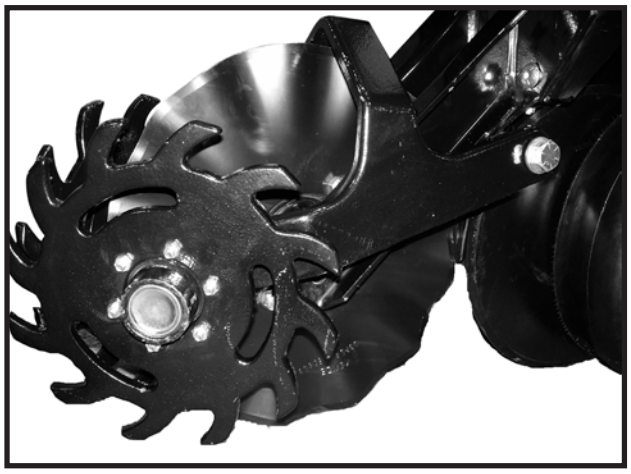


STYLE B - Used With Style B Row Unit Mounted No Till Coulter

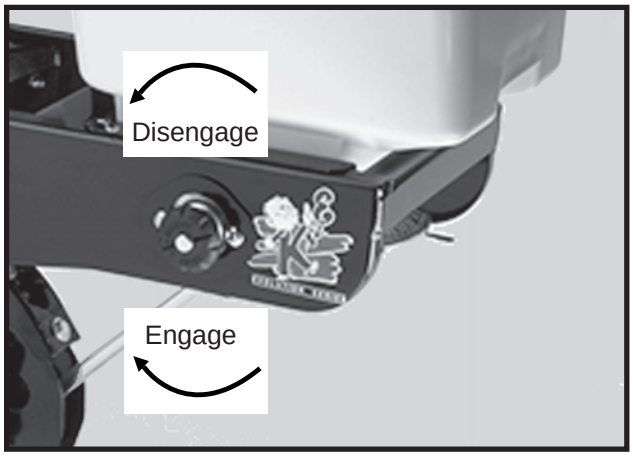
The wheel hubs are equipped with sealed bearings. If bearings sound or feel rough when the wheel is rotated, replace the bearings.

GRANULAR CHEMICAL ATTACHMENT

Prior to storage of the planter, disengage the granular chemical drive by rotating the throwout knob 1/4 turn counterclockwise. Remove the drive chain and empty and clean all granular chemical hoppers. Clean the drive chains and coat them with a rust preventive spray or submerge chains in oil. Inspect and replace any worn or broken parts.

Install hoppers and chains. Check chain alignment.

LF212299-4



SPRING TOOTH INCORPORATOR

Prior to storage of the planter, inspect each spring tooth incorporator and replace any worn or broken parts. Check for loose hardware and tighten as needed.

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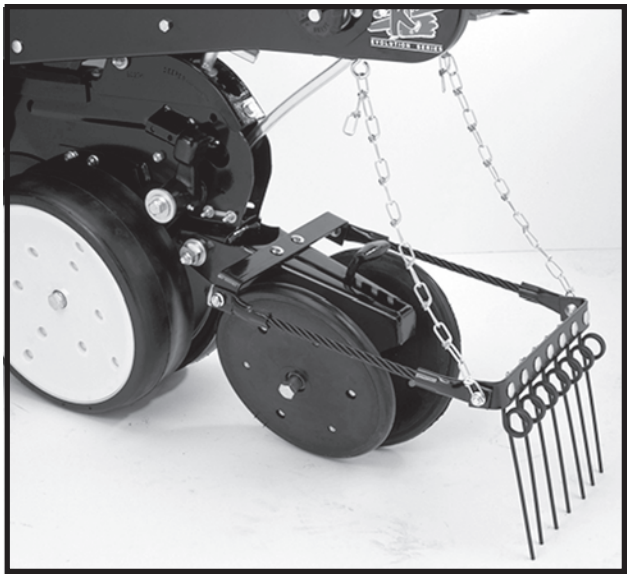

KPM II STACK-MODE ELECTRONIC SEED MONITOR TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Single sensor communication alarm comes on (alarm on with no bargraph and a flashing row number on a single row).	Faulty seed tube sensor.	Replace sensor.
	Break in the harness just before the seed tube sensor.	Inspect for break in harness and repair. If break can't be found, replace harness section.
	Dirty or corroded connector.	Clean connector.
Sensor communication alarms come on for all sensors (alarm on with no bargraphs and flashing row numbers on all rows).	Faulty monitor.	Replace/repair monitor.
	Break in the harness just after the monitor.	Inspect for break in harness and repair. If break can't be found, replace harness section.
	Dirty or corroded connector.	Clean connector.
Sensor communication alarms come on for some sensors (alarm on with no bargraphs and flashing row numbers on all rows).	Break in the harness.	Inspect for break in harness and repair. If break can't be found, replace harness section corresponding with the alarming sensors.
	Dirty or corroded connector.	Clean connector.
Faulty monitor values (such as speed, area, etc.) being displayed.	Incorrect monitor settings.	Change settings to properly correspond to the system.
	Faulty radar/magnetic distance sensor.	Replace sensor.
	Improperly mounted radar sensor.	Properly mount sensor.
Underplanting or no planting alarm on a single sensor when planting (alarm on with a single bargraph segment on and a flashing row number on a single row).	Seed tube sensor is blocked.	Clean sensor.
	Faulty seed tube sensor.	Replace sensor.
	Meter not planting or underplanting.	Repair/replace meter.
	Chain broken or off sprocket.	Repair as necessary.
Seed tube sensor dirty or blocked warning comes on (after calibration, bargraph keeps flashing for a single row).	Seed tube sensor is dirty.	Clean sensor.
	Faulty seed tube sensor.	Replace sensor.
LED on the seed tube sensor will not come on.	Faulty seed tube sensor.	Replace sensor.
	Dirty or corroded connector.	Clean connector.
	Break in the harness just before the sensor.	Repair harness.
Erroneous MPH readings at idle. (Radar Distance Sensor Only)	Radar sensor not located in a stable location.	Relocate to a more stable location.

KPM III ELECTRONIC SEED MONITOR TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Single sensor communication alarm comes on.	Faulty seed tube sensor.	Replace sensor.
	Break in the harness just before the seed tube sensor.	Inspect for break in harness and repair. If break can't be found, replace harness section.
	Dirty or corroded connector.	Clean connector.
Sensor communication alarms come on for all sensors.	Faulty monitor.	Replace/repair monitor.
	Break in the harness just after the monitor.	Inspect for break in harness and repair. If break can't be found, replace harness section.
	Dirty or corroded connector.	Clean connector.
Sensor communication alarms come on for some sensors.	Break in the harness.	Inspect for break in harness and repair. If break can't be found, replace harness section corresponding with the alarming sensors.
	Dirty or corroded connector.	Clean connector.
Faulty monitor values (such as speed, area, etc.) being displayed.	Incorrect monitor settings.	Change settings to properly correspond to the system.
	Faulty radar/magnetic distance sensor.	Replace sensor.
	Improperly mounted radar sensor.	Properly mount sensor.
Underplanting or no planting alarm on a single sensor when planting (alarm on with a single bargraph segment on and a flashing row number on a single row).	Seed tube sensor is blocked.	Clean sensor.
	Faulty seed tube sensor.	Replace sensor.
	Meter not planting or underplanting.	Repair/replace meter.
	Chain broken or off sprocket.	Repair as necessary.
Seed tube sensor dirty or blocked warning comes on.	Seed tube sensor is dirty.	Clean sensor.
	Faulty seed tube sensor.	Replace sensor.
LED on the seed tube sensor will not come on.	Faulty seed tube sensor.	Replace sensor.
	Dirty or corroded connector.	Clean connector.
	Break in the harness just before the sensor.	Repair harness.
Erroneous MPH readings at idle. (Radar Distance Sensor Only)	Radar sensor not located in a stable location.	Relocate to a more stable location.

POINT ROW CLUTCHES

The point row clutches are permanently lubricated and sealed and require no periodic maintenance.

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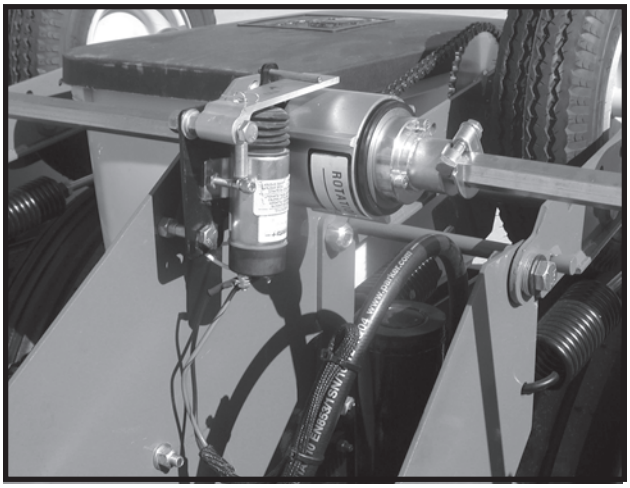


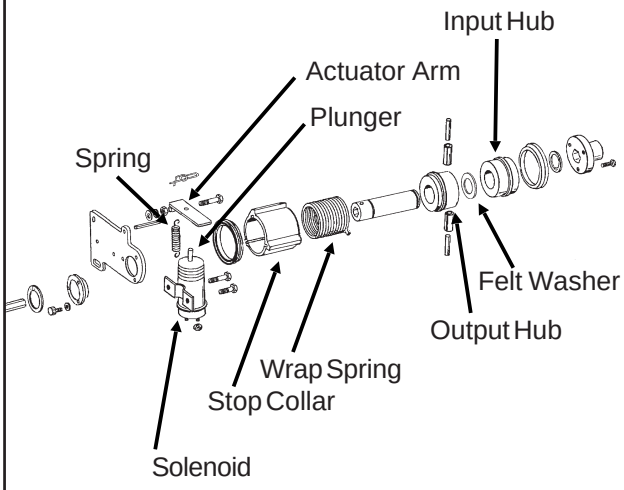
The clutches on the outer L.H. and inner R.H. sections operate clockwise and the clutches on the outer R.H. and inner L.H. sections operate counterclockwise. Therefore, some of the parts of the clutches such as the wrap springs differ from one location on the planter to another. Be sure to use the correct repair part if a clutch must be repaired.

Outer L.H. Section	**Uses R.H. (CW) Point Row Clutch**
Inner L.H. Section	**Uses L.H. (CCW) Point Row Clutch**
Inner R.H. Section	**Uses R.H. (CW) Point Row Clutch**
Outer R.H. Section	**Uses L.H. (CCW) Point Row Clutch**

If the clutch or clutches fail to operate, first determine if the problem is electrical or mechanical. Place the operational switch in the RIGHT INSIDE, RIGHT END, LEFT INSIDE or LEFT END position. When the switch is in the RIGHT INSIDE, RIGHT END, LEFT INSIDE or LEFT END position and the fuse on the rear of the control console is in working condition, the red indicator light on the control console should be lighted. If light does not come on, check the fuses on the front of the control console. See "Point Row Clutch Troubleshooting" chart. If fuses are not blown, check the clutch and wiring harness for power with a test light or volt meter. If the solenoid is operating properly, the plunger on the solenoid will retract causing a clicking sound. The plunger will also be magnetized which can be checked by touching the plunger with a metal object.

NOTE: Always replace fuse with proper size and type when replacing fuse. Use MDL 10 amp slow blow fuse on front of control console.

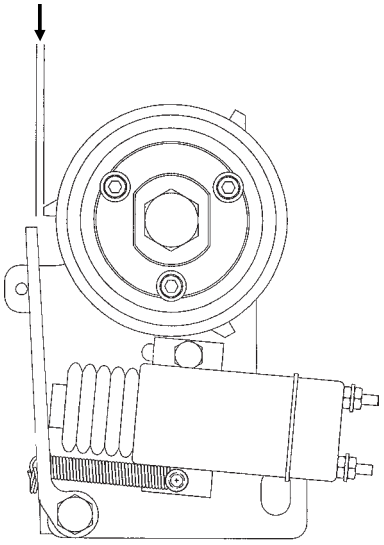
(FWD71)



(A7110)

ACTUATOR ARM ADJUSTMENT

NOTE: Gap between actuator arm and stop on stop collar should be $^1/_8$"($\pm^1/_{32}$") when the solenoid is NOT engaged.



NOTE: To adjust gap between actuator arm and stop, loosen nut on mounting pin and move pin in slot until there is $^1/_8$"($\pm^1/_{32}$") gap between arm and stop on stop collar. Retighten nut.

POINT ROW CLUTCH TROUBLESHOOTING

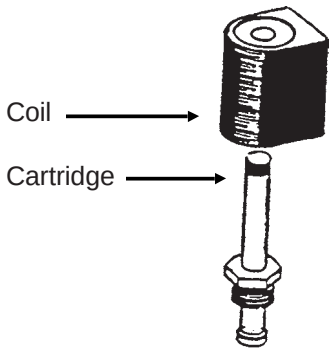
PROBLEM	POSSIBLE CAUSE	SOLUTION
None of the clutches will disengage.	Main fuse blown in control console.	Replace defective fuse.
	Poor terminal connection in wiring harness.	Repair or replace.
	Wiring damage in wiring harness.	Repair or replace.
	Low voltage at coil. (12 volts required)	Check battery connections.
One section of planter will not re-engage.	Shear pin at seed drive transmission(s) sheared.	Replace pin with one of equal size and grade.
One clutch will not engage.	Fuses blown.	Replace defective fuses.
	Actuator arm and plunger stuck in disengaged position.	Remove, free up and reinstall.
	Actuator arm out of adjustment.	Adjust actuator arm mounting pin in slot so that actuator arm clears stop on stop collar by approximately 1/8" when clutch is rotated.
	Wrap spring broken or stretched.	Disassemble clutch and replace spring.
	Something touching the stop collar.	Check to ensure collar is free to turn with clutch.
	Clutch assembled incorrectly.	Check clutch and diagram for correct assembly.
Clutch slipping.	Wrap spring stretched.	"Lock" clutch output shaft from turning. Place torque wrench on input shaft and rotate in direction of drive. After input shaft has rotated a short distance the wrap spring should tighten onto the input hub. If slippage occurs at less than 100 ft. lbs. replace spring. If spring still slips after installing new spring, replace input hub.
Planter section will not re-engage while planter is moving forward.	Spring in actuator arm not strong enough to push arm away from stop collar when operational switch is turned to the ON position.	Remove spring from inside solenoid and stretch spring slightly or replace. Reinstall spring. If that fails, file the stop on the stop collar slightly so that the stop is not as aggressive.
Frequent solenoid burnout.	Fuses too large.	Replace fuses on front panel with 10 amp slow blow fuses.
Frequent fuse burnout.	Low voltage (12 volts required).	Check power source voltage for partially discharged battery, etc.
	Damage to wiring harness.	Locate damage and repair or replace harness.
Clutch or clutches will not disengage.	Input and output shafts out of alignment.	Align input and output shafts to prevent drag.
	Input or output shaft is pushed in too far creating a coupler.	Reposition input and output shafts.

SOLENOID VALVE INSPECTION

The solenoid valve consists of a chambered body containing a cartridge valve which is activated by an electrical coil.

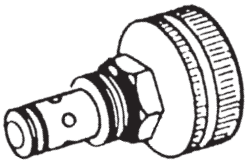
If the solenoid or solenoids fail to operate, first determine if the problem is electrical or hydraulic. If the valve is working properly, a click will be heard when the solenoid coil is energized. This will be the valve stem opening up. If no sound is heard, check the solenoid coil by touching the top of the coil housing with a metallic object such as a pliers or screwdriver. If the coil is working properly, the coil housing will be strongly magnetized when energized. If the voltage to the coil is low, the coil will be weakly magnetized when energized and no click will be heard.

VVB019(PLTR55)



FLOW CONTROL VALVE INSPECTION

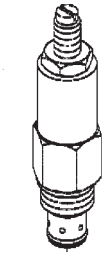
VVB020(TWL28)



The flow control valves should be adjusted for row marker raise and lower speed as part of the assembly procedure or upon initial operation. If the valve fails to function properly or requires frequent adjustment, it should be removed for inspection. Check for foreign material and contamination on both the valve and the seating area of the valve body. Replace any components found to be defective.

PRESSURE RELIEF VALVE INSPECTION (Located At Center Of Rear H-Frame)

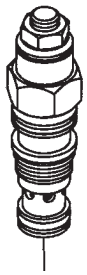
(FWD23)



The pressure relief valve limits the available hydraulic pressure to the transport axle cylinder when the cylinder is retracting. Consult your KINZE® Dealer for service.

COUNTER BALANCE VALVE INSPECTION (Located At Center Of Rear H-Frame)

(FWD21)

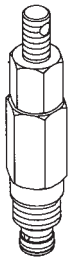


The counter balance valve is used for hydraulic load holding. This is a safety feature to prevent the planter from being unintentionally lowered. The valve is factory set and should require no additional adjustments. Consult your KINZE® Dealer for service.

PRESSURE RELIEF VALVE INSPECTION (Located At Each Row Marker)

32 Row 30" And 36 Row 30" Only

(FWD26)

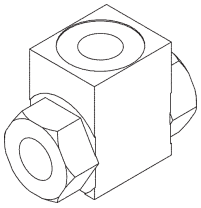


The pressure relief valve functions during the operation of the marker cylinder to equalize the hydraulic pressure applied to the row marker lift assist cylinder. The valve is factory set and should require no additional adjustments. Consult your KINZE® Dealer for service.

FLOW REGULATOR VALVE INSPECTION (Located At Each Row Marker)

32 Row 30" And 36 Row 30" Only (If Applicable)

(A10645)



The flow regulator valve directs hydraulic pressure to the row marker lift assist cylinder.

SOLENOID VALVE TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
None of the solenoids will operate.	Low voltage.	Must be connected to 12 volt DC only. Negative ground.
	Blown fuse.	Replace fuse in control console on tractor with AGC-15 amp only.
	Poor battery connection.	Clean and tighten.
	Wiring harness damaged.	Repair or replace.
One solenoid valve will not operate.	Bad switch.	Replace on control panel.
	Cut wire in harness.	Locate and repair.
	Bad coil.	Replace.
	Poor connection at coil.	Check.
Valve operating when not energized.	Valve stem stuck open.	Replace cartridge.
	O-ring leaking.	Install new o-ring kit.
	Foreign material under poppet.	Remove cartridge and clean.

LIFT/FOLD CIRCUIT TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	TROUBLESHOOTING*	SOLUTION
Planter raising uneven.	Master cylinder is leaking.	Raise planter **slowly** until master cylinder reaches mid stroke. If master cylinder is leaking the corresponding slave cylinder will have a greater rod length. If planter settles when hydraulic lever is released, check assist cylinders.	Perform leak test. Consult your KINZE® Dealer for leak testing. Install seal kit.
	Slave cylinder is leaking.	Fold planter to transport position. Retract field tires and observe which tire settles.	Perform leak test. Consult your KINZE® Dealer for leak testing. Install seal kit.
Planter raising even; however, planter settles when hydraulic lever is released.	Assist cylinder is leaking.	Fold planter to transport position. Retract assist cylinder and observe which tire settles.	Perform leak test. Consult your KINZE® Dealer for leak testing. Install seal kit.

* Operate hydraulics slowly to accentuate the problem.

ROW MARKER CIRCUIT TROUBLESHOOTING

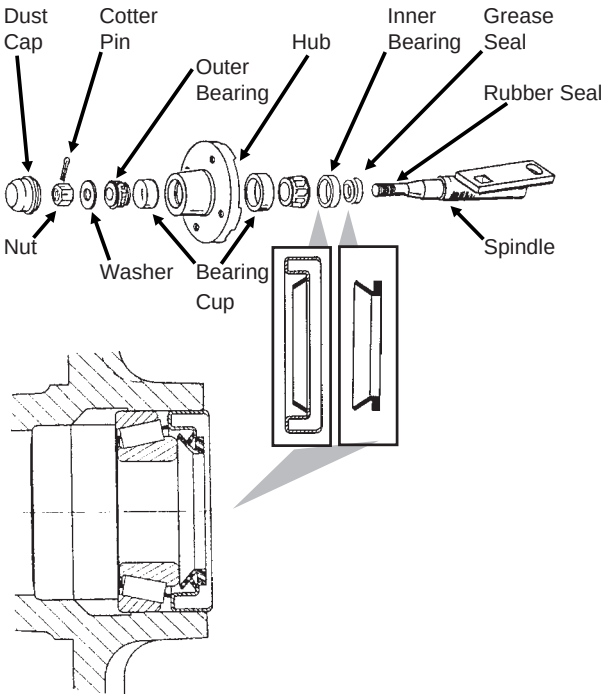
PROBLEM	POSSIBLE CAUSE	SOLUTION
Right marker lowering slower than left marker.	Solenoid valve cartridge in port V3 not opening completely.	Switch cartridge with one in port V4. If problem follows cartridge, replace cartridge.
	Hose pinched or collapsed.	Inspect hose routing. Replace or repair hoses as required.
Left marker lowering slower than right marker.	Solenoid valve cartridge in port V4 not opening completely.	Switch cartridge with one in port V3. If problem follows cartridge, replace cartridge.
	Hose pinched or collapsed.	Inspect hose routing. Replace or repair hoses as required.
Both markers lowering.	Solenoid valve cartridge stuck open. If marker switch is in the left marker position, the right cartridge (V3) is defective. If the marker switch is in the right marker position, the left cartridge (V4) is defective.	Replace solenoid valve cartridge.
Neither marker will lower.	Blown fuse.	Check red light on control console. It should be on if switch is ON. If light is not on, switch to opposite marker position. If light comes on, switch may be defective. Replace switch. Otherwise replace fuse.
	Coils at V3 and V4 not energized.	Poor ground on wire, bad wire connection or damaged wire. Repair as required.
	Marker flow control valve closed too far.	See “Machine Operation” for adjustment.
Neither marker will raise.	Marker flow control valve closed too far.	See “Machine Operation” for adjustment.
Right marker will not lower.	Solenoid coil in port V3 not energized.	Check switch on control console. Replace if defective. Check coil ground wire. Check for poor connection or damaged wire.
	Solenoid cartridge in port V3 stuck closed.	Switch cartridge with one on the planter you know is operating properly. If right marker lowers, replace defective cartridge.
Left marker will not lower.	Solenoid coil in port V4 not energized.	Check switch on control console. Replace if defective. Check coil ground wire. Check for poor connection or damaged wire.
	Solenoid cartridge in port V4 stuck closed.	Switch cartridge with one on the planter you know is operating properly. If right marker lowers, replace defective cartridge.
Markers traveling too fast and damaging row marker stands and/or damaging pivot at rod end of marker cylinders.	Marker flow control valve out of adjustment.	See “Machine Operation” for adjustment.

MAINTENANCE

ROW MARKER BEARING LUBRICATION OR REPLACEMENT

1. Remove row marker blade.
2. Remove dust cap from hub.
3. Remove cotter pin, nut and washer.
4. Slide hub from spindle.
5. Remove bearings and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings only and not cups if repacking.
6. Press in new bearing cups with thickest edge facing in. (Bearing replacement procedure only.)
7. Pack bearings with heavy duty wheel bearing grease thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.
8. Install rubber seal into grease seal. Place inner bearing in place and press in new rubber seal/ grease seal.
9. Clean spindle and install hub.
10. Install outer bearing, washer and slotted hex nut. Tighten slotted hex nut while rotating hub until there is some drag. This assures that all bearing surfaces are in contact. Back off slotted nut to nearest locking slot and install cotter pin.
11. Fill dust caps approximately 3/4 full of wheel bearing grease and install on hub.
12. Install blade and dust cap retainer on hub and tighten evenly and securely.

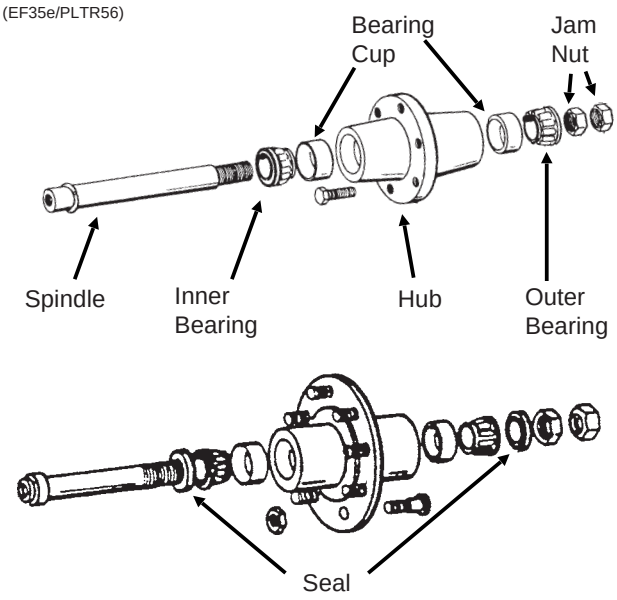
(PLTR45/PLTR99/PLTR98/PLTR102)



LIFT/GROUND DRIVE WHEEL BEARING LUBRICATION OR REPLACEMENT

1. Raise tire clear of ground and remove wheel.
2. Remove double jam nuts and slide hub from spindle.
3. Remove bearings, seals (Where Applicable) and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings only and not cups if repacking.
4. Press in new bearing cups with thickest edge facing in. (Bearing replacement procedure only.)
5. Pack bearings with heavy duty wheel bearing grease thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.
6. Place inner bearing and seal (If Applicable) in place.
7. Clean spindle and install hub.
8. Install outer bearing, seal (If Applicable) and stepped nut. Tighten jam nut while rotating hub until there is some drag. This assures that all bearing surfaces are in contact. Back off jam nut 1/4 turn or until there is only slight drag when rotating the hub. Install second jam nut to lock against first.
9. Install wheel on hub and tighten evenly and securely. Torque lug bolts or nuts to specified torque.

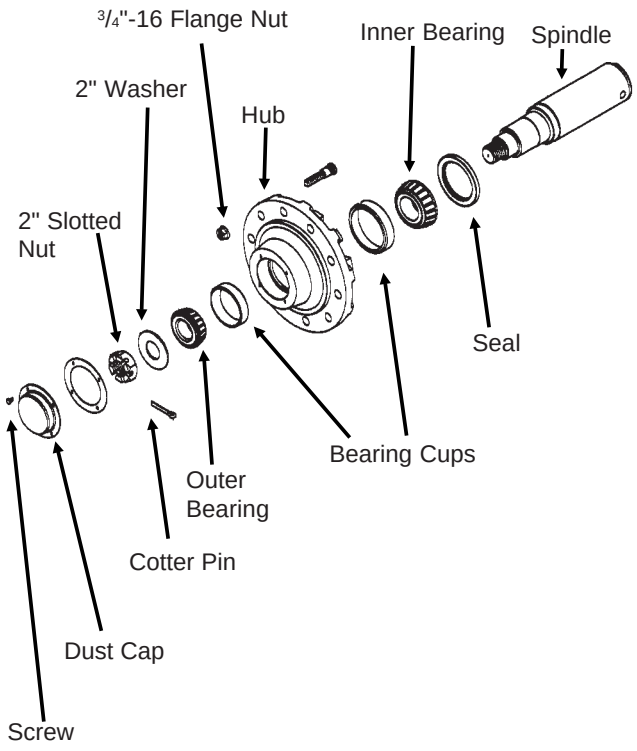
(EF35e/PLTR56)



TRANSPORT WHEEL BEARING REPLACEMENT

1. Raise tires clear of ground and remove wheels.
2. Remove dust cap attachment hardware and remove cap from wheel hub.
3. Remove cotter pin, axle nut and 2" washer.
4. Slide hub from axle spindle, using a hub puller if necessary.
5. Remove bearings and cups from hub and discard. Thoroughly clean and dry wheel hub.
6. Press in new bearing cups with thickest edges facing in.
7. Pack bearing with heavy-duty wheel bearing grease, thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.
8. Place inner bearing in hub and press in new grease seal with lip pointing towards bearing.
9. Clean axle spindle and install hub.
10. Install outer bearing, 2" washer and slotted hex nut. Tighten slotted hex nut while rotating the hub until there is some drag. This assures that all bearing surfaces are in contact. Back off slotted nut to nearest locking slot and install cotter pin. Check for endplay in bearings.
11. Fill dust cap half full of wheel bearing grease and install on hub with attachment bolts.
12. Install wheels and remove jack. Torque wheel nuts (and cap screws if applicable) to specified torque.

(FWD60c)



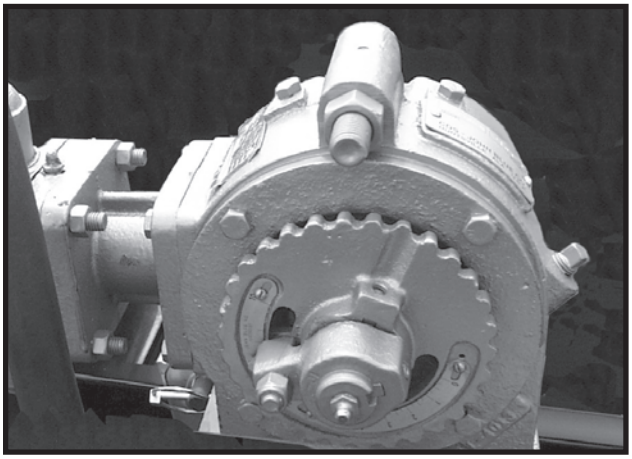
PISTON PUMP STORAGE

IMPORTANT: KEEP AIR OUT OF PUMP! This is the only way to prevent corrosion. Even for short periods of storage, the entrance of air into the pump, will cause RAPID AND SEVERE CORROSION.

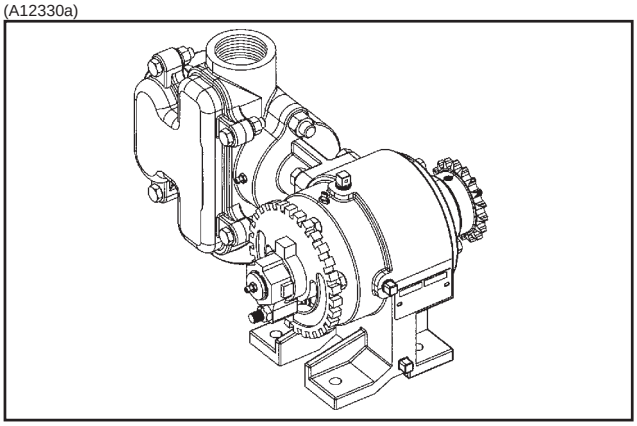
Overnight Storage
SUSPENSION FERTILIZER must be flushed from the pump for ANY storage period.

Winter Storage
1. Flush pump thoroughly with 5 to 10 gallons of fresh water and circulate until all corrosive salts are dissolved in the pump.
2. With the pump set on 10, draw in a mixture of half diesel fuel and half 10 weight oil until the discharge is clean. Then plug inlet and outlet.

D071504102a



(A12330a)



PISTON PUMP TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump hard or impossible to prime.	Valves fouled or in wrong place.	Inspect and clean valves.
	Air leak in suction line.	Repair leak.
	Pump set too low.	Adjust pump setting.
	Packing washers worn out.	Replace.
Low metering.	Valves fouled or in wrong place.	Inspect and clean valves.
	Air leak in suction line.	Repair leak.
	Pump set too low.	Adjust pump setting.
	Broken valve spring.	Replace spring.
Over meters.	Broken discharge valve spring.	Replace spring.
	Trash under valves.	Inspect and clean valves.
	Improper rate setting.	Adjust pump setting.
Leaks through when stopped.	Broken discharge valve spring.	Replace spring.
	Trash under valves.	Inspect and clean valves.
Fertilizer solution leaking under stuffing box.	Packing washers worn out.	Replace.
Pump using excessive oil.	Oil seals or o-ring worn and leaking.	Replace.
Pump operates noisily.	Crankcase components worn excessively.	Inspect and replace if necessary.

PREPARATION FOR STORAGE

Store the planter in a dry sheltered area if possible.

Remove all trash that may be wrapped on sprockets or shafts and remove dirt that can draw and hold moisture.

Clean all drive chains and coat with a rust preventative spray, or remove chains and submerge in oil.

Lubricate planter and row units at all lubrication points.

Inspect the planter for parts that are in need of replacement and order during the “off” season.

Make sure all seed and granular chemical hoppers are empty and clean.

Clean seed meters and store in a rodent-free, dry area.

Remove seed discs from brush-type seed meters, clean and store meters with discs removed.

Disassemble, clean and grease all U-joint slides.

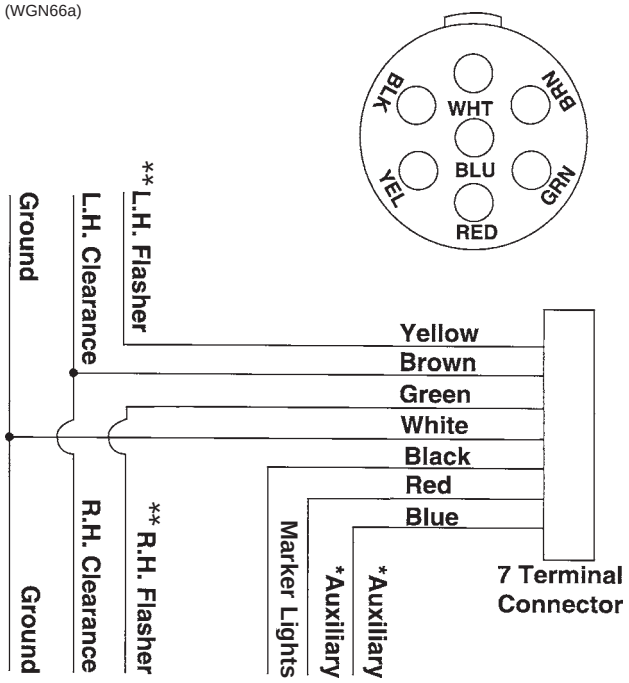
Grease or paint disc openers/blades and row marker disc blades to prevent rust.

Flush liquid fertilizer metering pump with clean water. See “Piston Pump Storage”.

Disengage row unit clutch and unlatch mini-hopper on each row unit to release stress on drop hoses and hoppers during storage. (SDS Only)

ELECTRICAL WIRING DIAGRAM FOR 7-TERMINAL LIGHT CONNECTOR

(WGN66a)

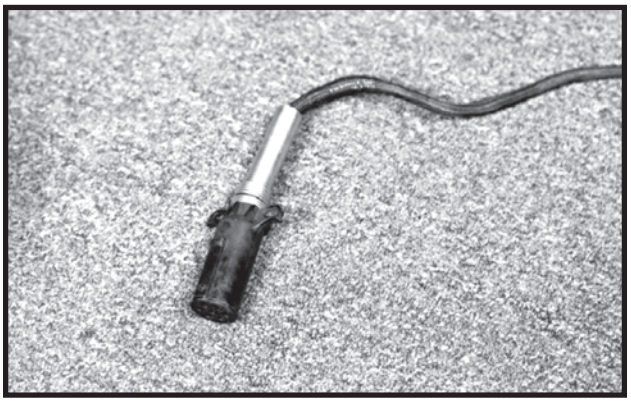


*** Optional customer-supplied auxiliary lights and wires may be wired into existing plug terminals.**

**** Rear and side flashers.**

The light packages supplied on Model 3800 SDS and 3800 Conventional Forward Folding Planters meet ASAE Standards. For the correct wiring harness to be wired into the lights on your tractor, check with the tractor manufacturer.

69922-35



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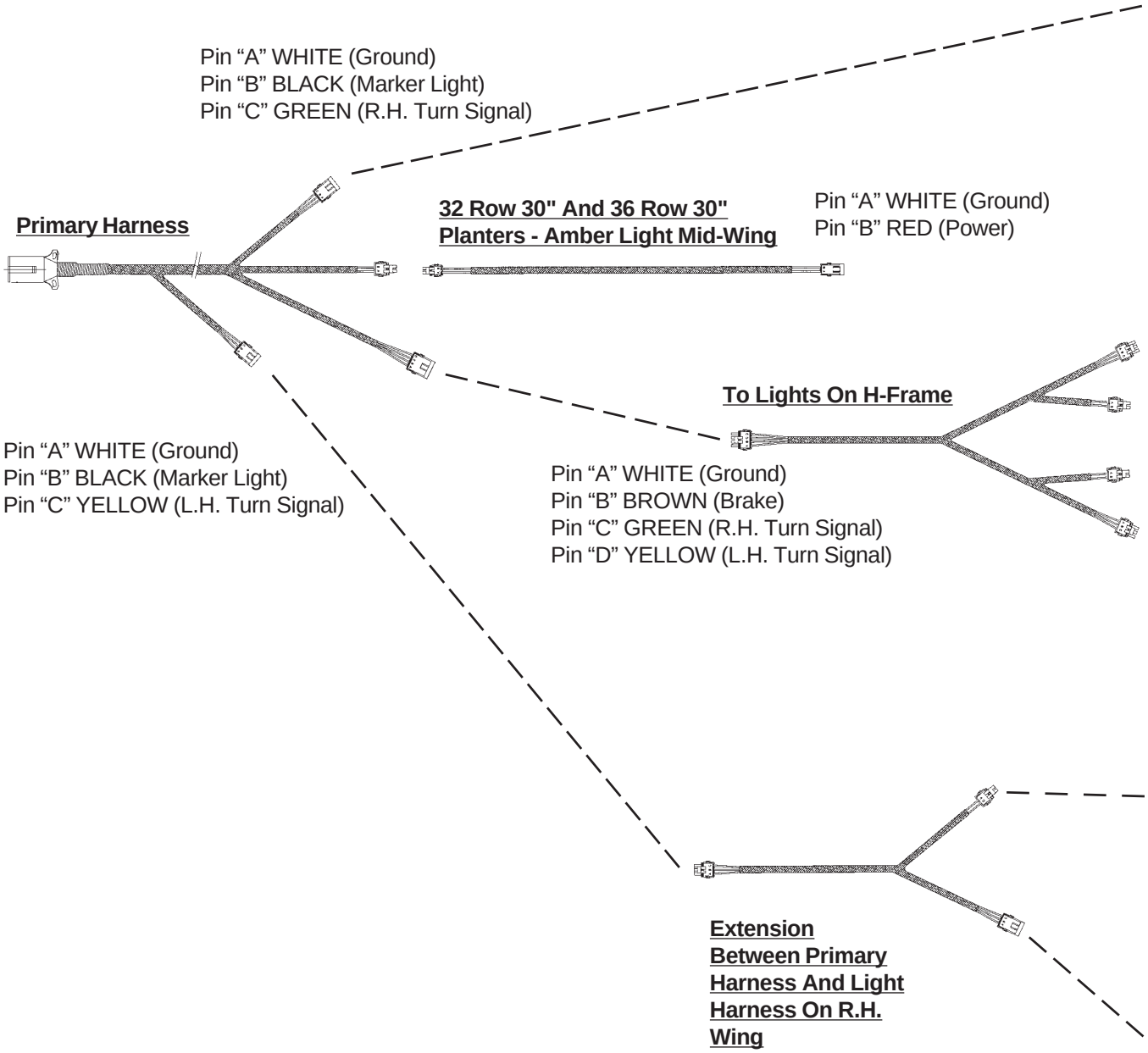
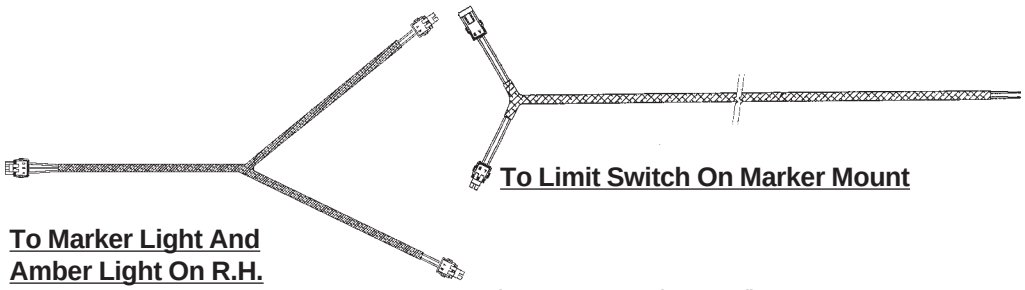
ELECTRICAL LIGHT HARNESS SCHEMATICS

(A10315/A10316/A10317/A10318/A10319)



Pin “A” WHITE (Ground)
Pin “B” BLACK (Marker Light)



To Limit Switch On Marker Mount

To Marker Light And Amber Light On R.H. Wing

Pin “A” WHITE (Ground)
Pin “B” GREEN (R.H. Turn Signal)

Pin “A” WHITE (Ground)
Pin “B” BROWN (Brake)
Pin “C” GREEN (R.H. Turn Signal)

Pin “A” WHITE (Ground)
Pin “B” GREEN (R.H. Turn Signal)

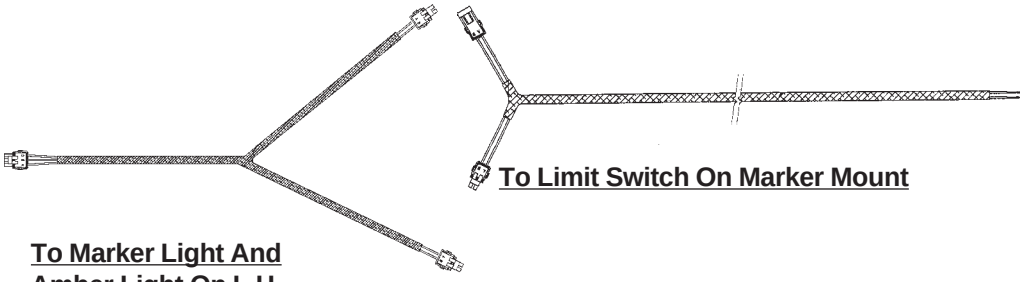
Pin “A” WHITE (Ground)
Pin “B” YELLOW (L.H. Turn Signal)

Pin “A” WHITE (Ground)
Pin “B” BROWN (Brake)
Pin “C” YELLOW (L.H. Turn Signal)

32 Row 30" And 36 Row 30" Planters - Amber Light Mid-Wing

Pin “A” WHITE (Ground)
Pin “B” RED (Power)

Pin “A” WHITE (Ground)
Pin “B” BLACK (Marker Light)



To Limit Switch On Marker Mount

To Marker Light And Amber Light On L.H. Wing

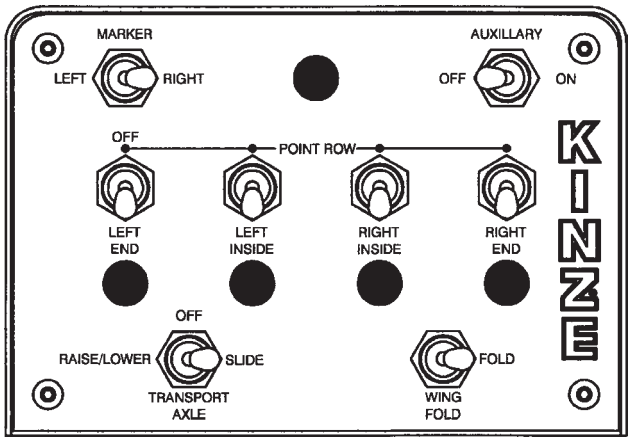
Pin “A” WHITE (Ground)
Pin “B” YELLOW (L.H. Turn Signal)

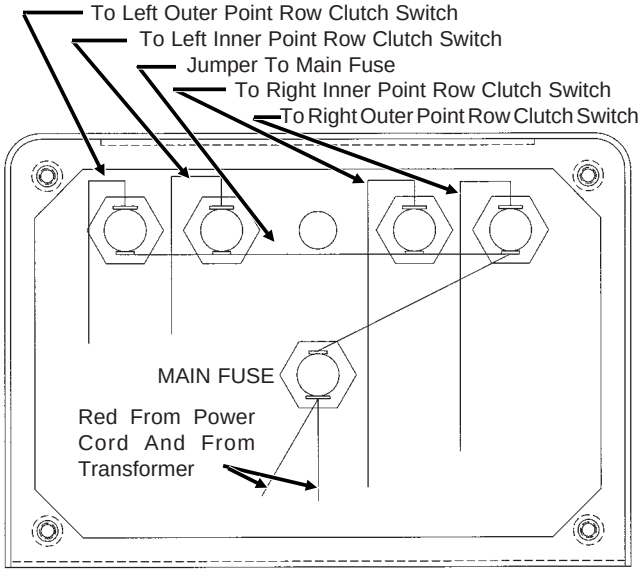
MAINTENANCE

ELECTRICAL CONTROL CONSOLE SCHEMATIC (Planter Functions)

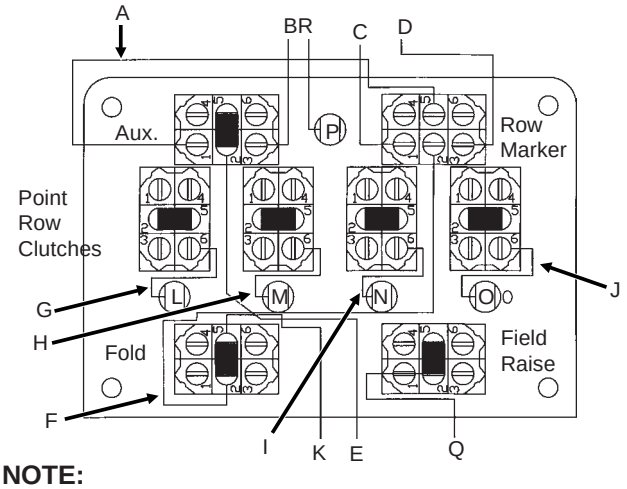
IMPORTANT: Before doing any electrical work, disconnect the control console from the tractor battery. Keep wiring harnesses away from high temperature areas or sharp edges. DO NOT route the wiring harnesses along battery cables. Use tie straps to keep wire harnesses away from moving parts on tractor and planter. Be sure ground connections to the tractor frame are clean to provide good electrical contact.

(FWD30bb/FWD36a/FWD30c/FWD36)

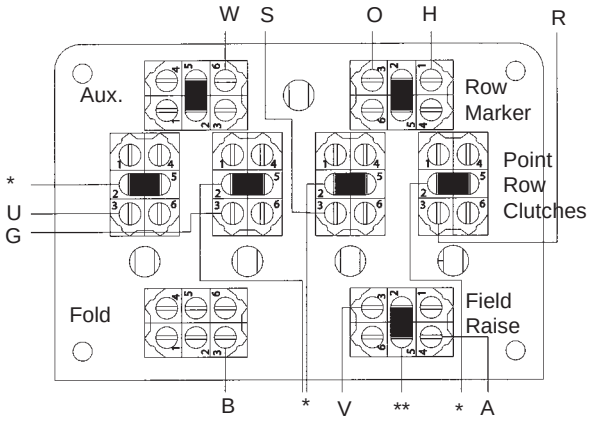




A. 6" White Jumper
B.-D., Q. 4" White Jumper (4)
E. 4" Red Jumper
F. 7" Orange Jumper
G.-J. 3" White Jumper (4)
K. 5" Black Jumper
L.-P. 7" Purple Jumper (5)
R. 4" White Jumper



Pin “A” ORANGE/RED (Slide)
Pin “R” BROWN (L.H. Outer Point Row Clutch)
Pin “G” ORANGE (R.H. Inner Point Row Clutch)
Pin “H” BLUE (L.H. Marker)
Pin “B” BLUE/RED (Fold)
Pin “U” RED/BLACK (R.H. Outer Point Row Clutch)
Pin “S” YELLOW (L.H. Inner Point Row Clutch)
Pin “O” RED (R.H. Marker)
Pin “V” BLUE/BLACK (Raise To Transport)
Pin “T” BLACK (Ground)(12 Gauge)
Pin “C” BLACK/RED (Ground)
Pin “W” ORANGE/BLACK (Auxiliary)
* To Point Row Clutch Fuses
** To Main Fuse

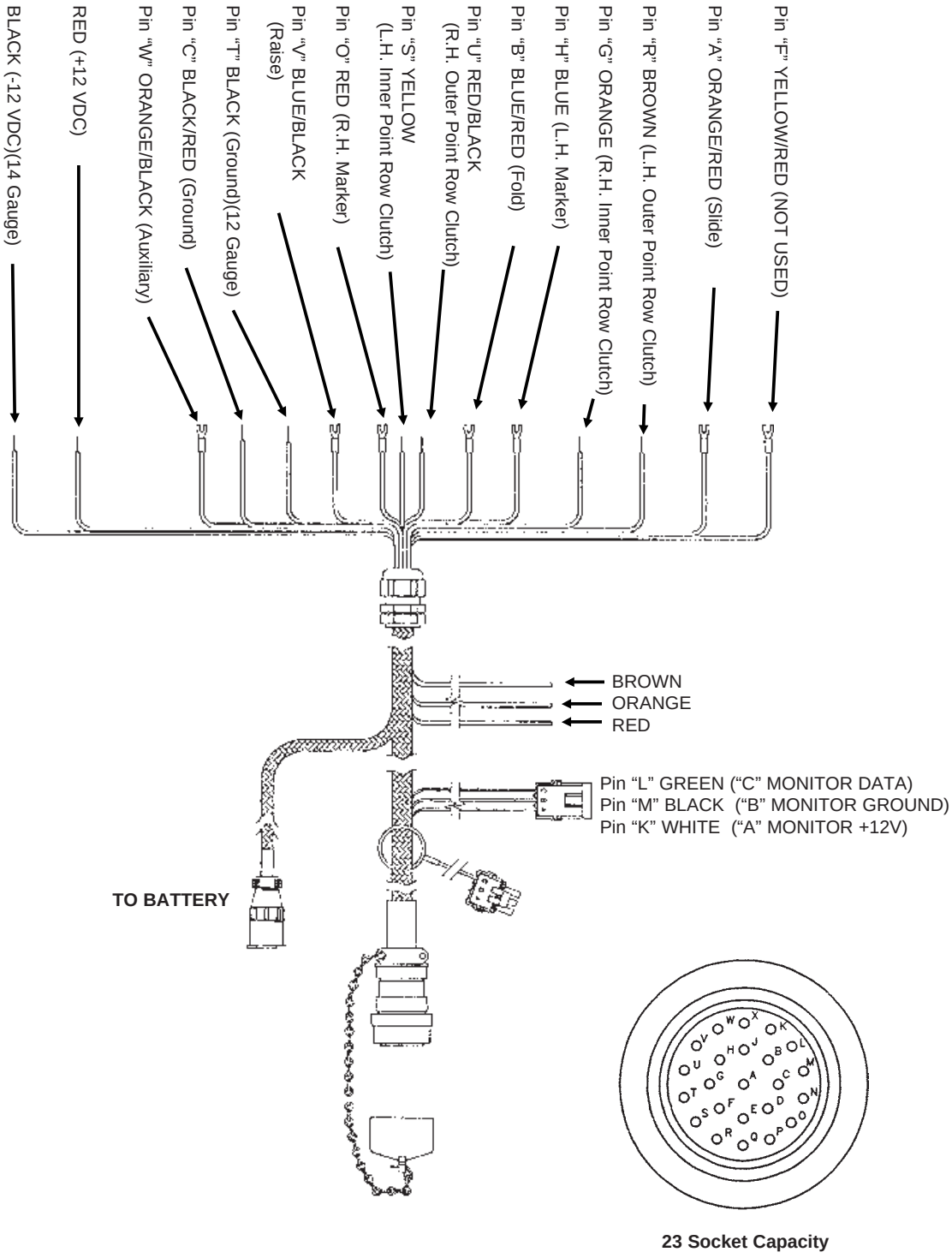


NOTE:

1. Operating marker or point row switches in either direction lights panel light.
2. Point row clutch switches operate independently of the rest of the control box.
3. Power to the marker switch is fed through the auxiliary switch and the two transport function switches. Operating any of the switches in the lower row disables the marker function and turns off the panel light. (If the point row clutch switches are in the “OFF” position.)

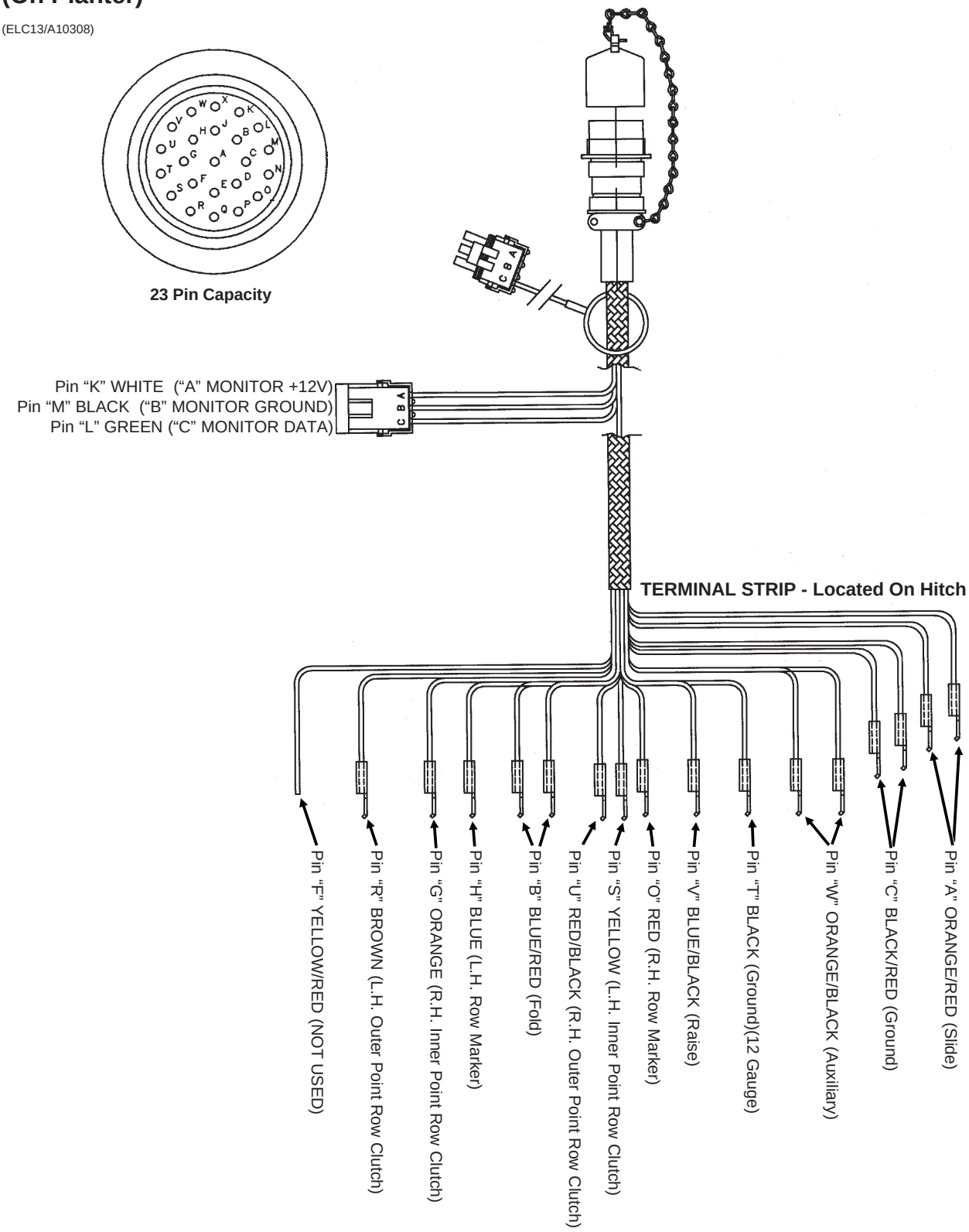
ELECTRICAL WIRING HARNESS SCHEMATIC (On Tractor)

(ELC10c/ELC13)



ELECTRICAL WIRING HARNESSES SCHEMATIC (On Planter)

(ELC13/A10308)



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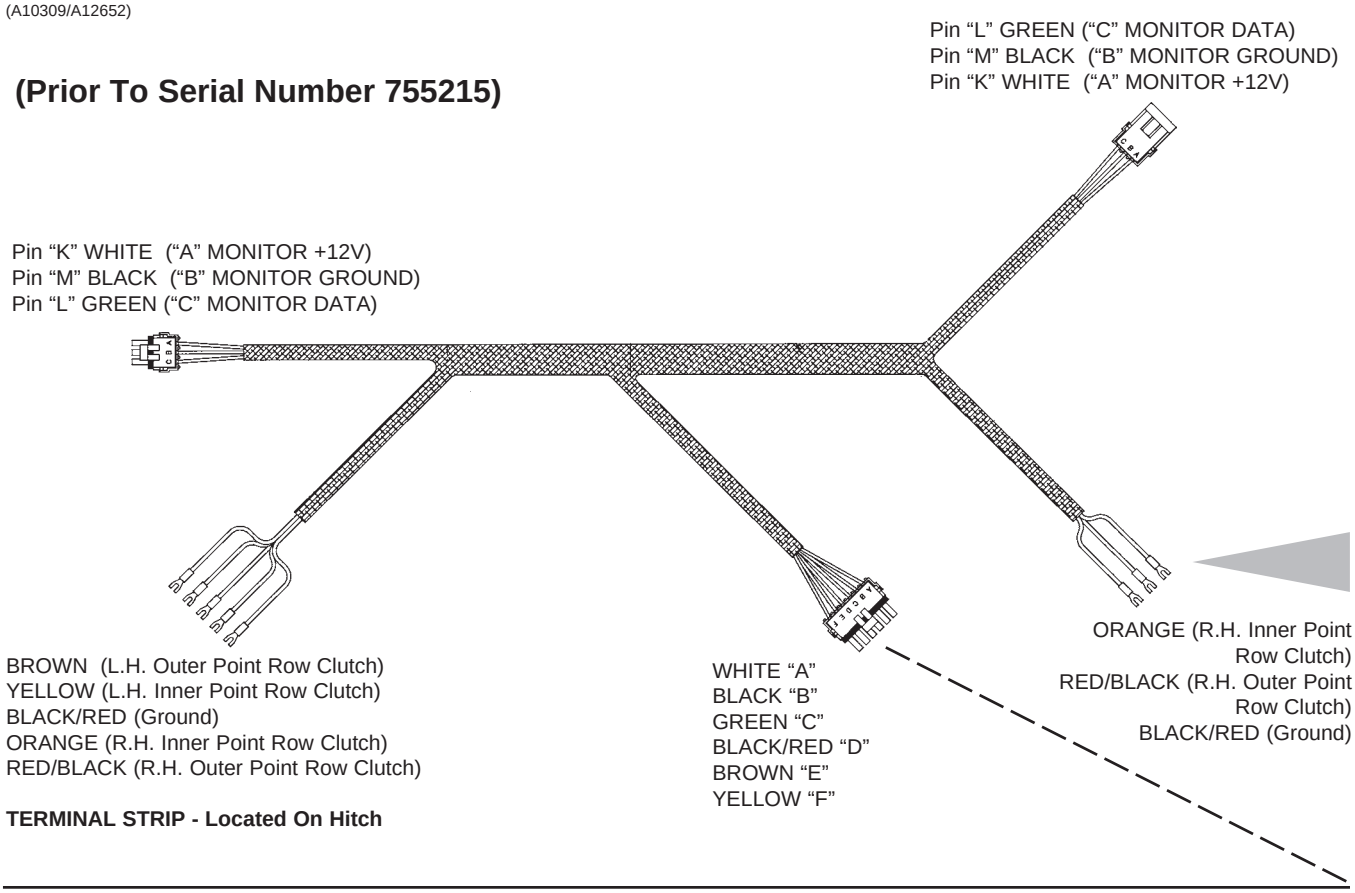
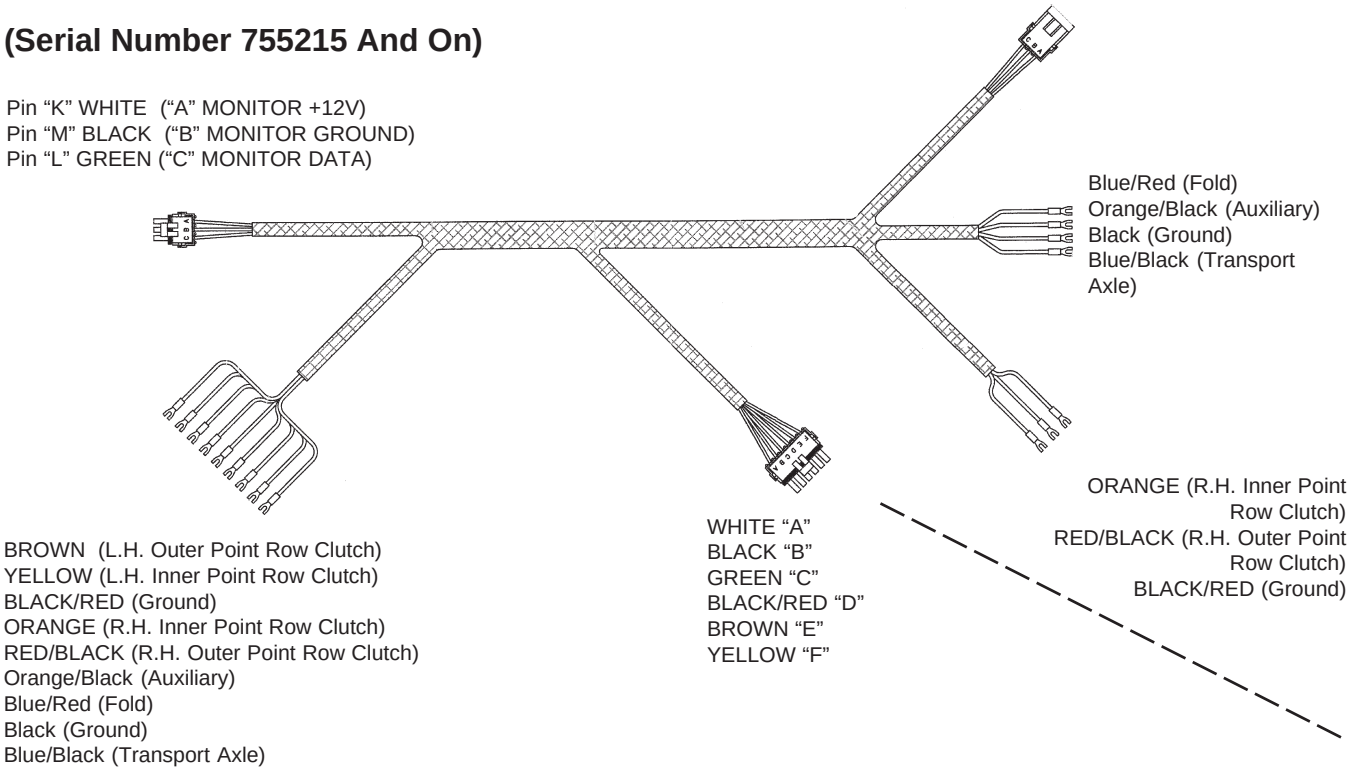
ELECTRICAL WIRING HARNESSES SCHEMATIC (Continued)
(On Planter)

(A10309/A12652)

(Prior To Serial Number 755215)



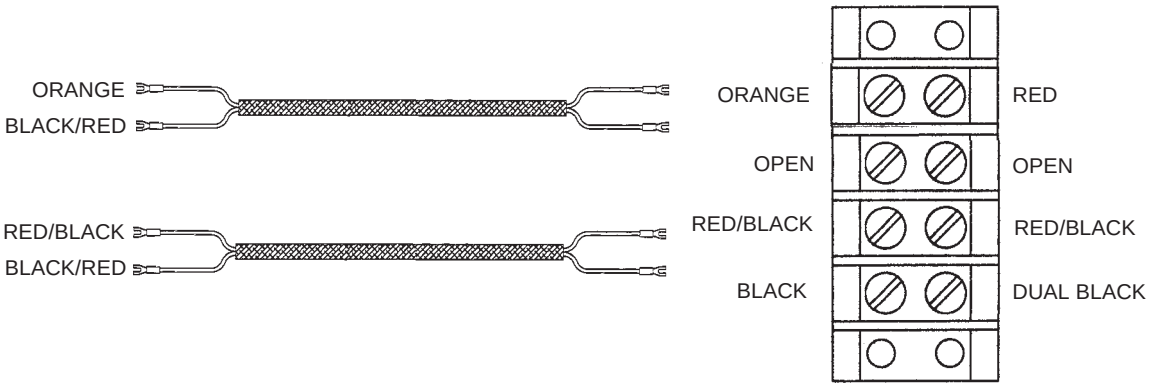
(Serial Number 755215 And On)

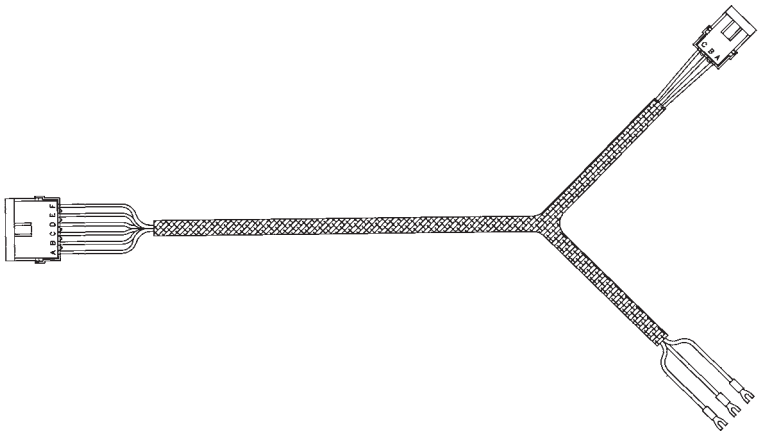


ELECTRICAL WIRING HARNESSES SCHEMATIC (Continued)
(On Planter)

(A10311/A9510/A10310)

TERMINAL STRIP - Located On R.H. Wing

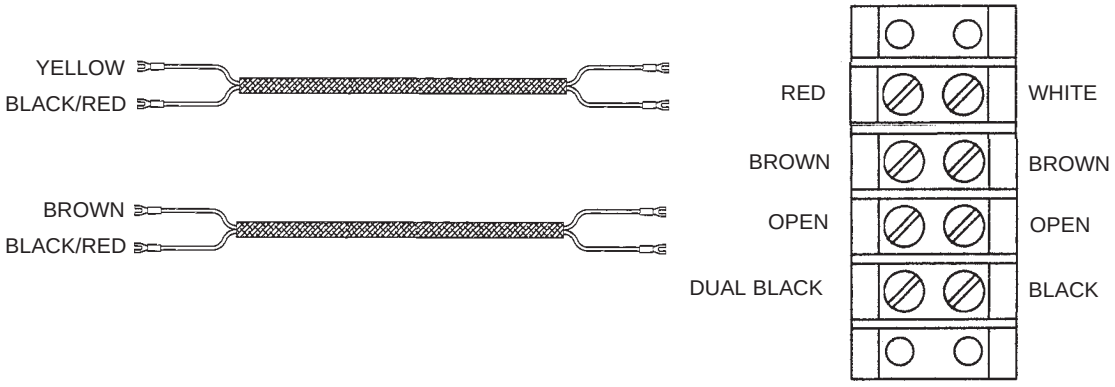




Pin “L” GREEN (“C” MONITOR DATA)
Pin “M” BLACK (“B” MONITOR GROUND)
Pin “K” WHITE (“A” MONITOR +12V)

YELLOW (L.H. Inner Point Row Clutch)
BROWN (L.H. Outer Point Row Clutch)
BLACK/RED (Ground)

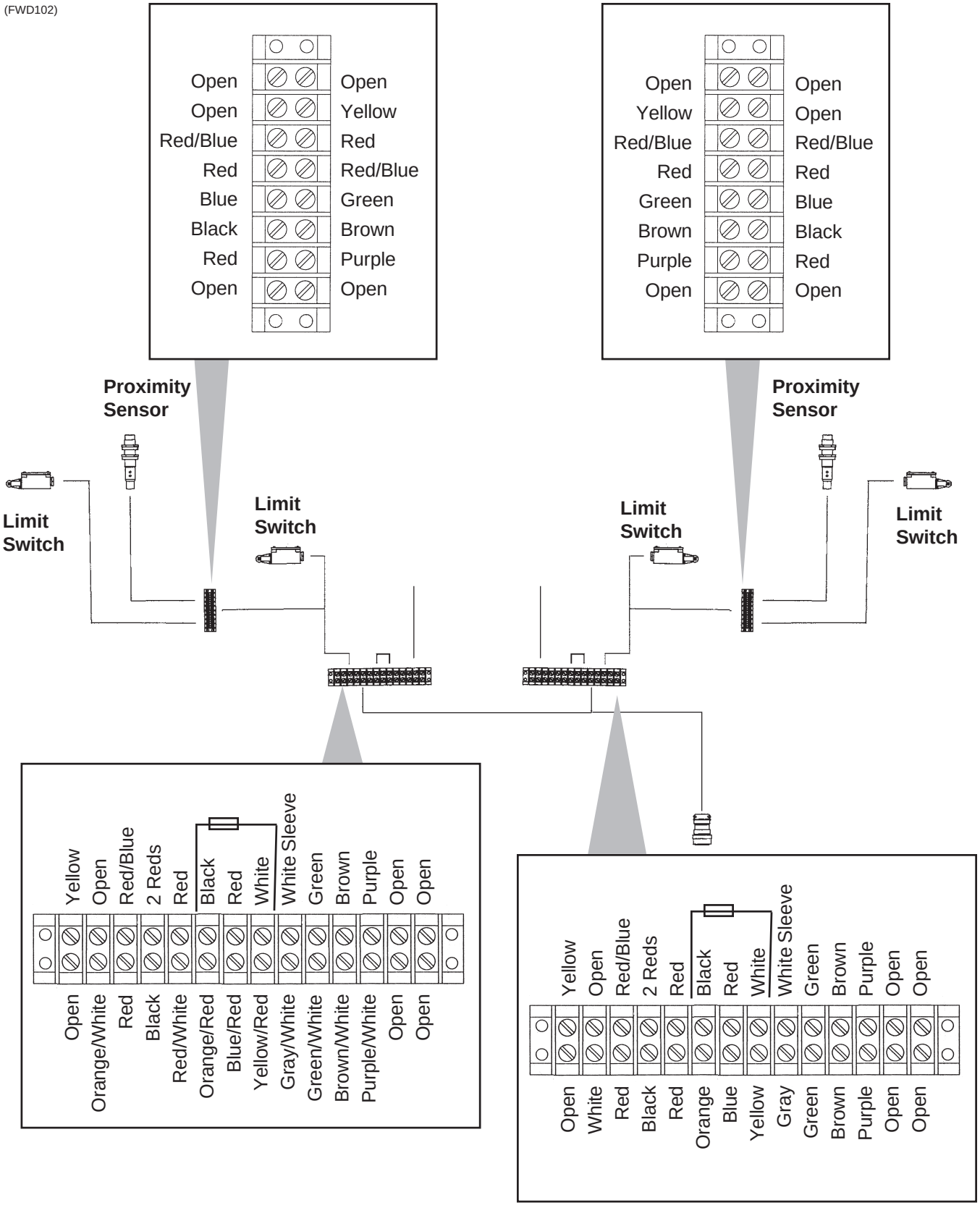
TERMINAL STRIP - Located On L.H. Wing



MAINTENANCE

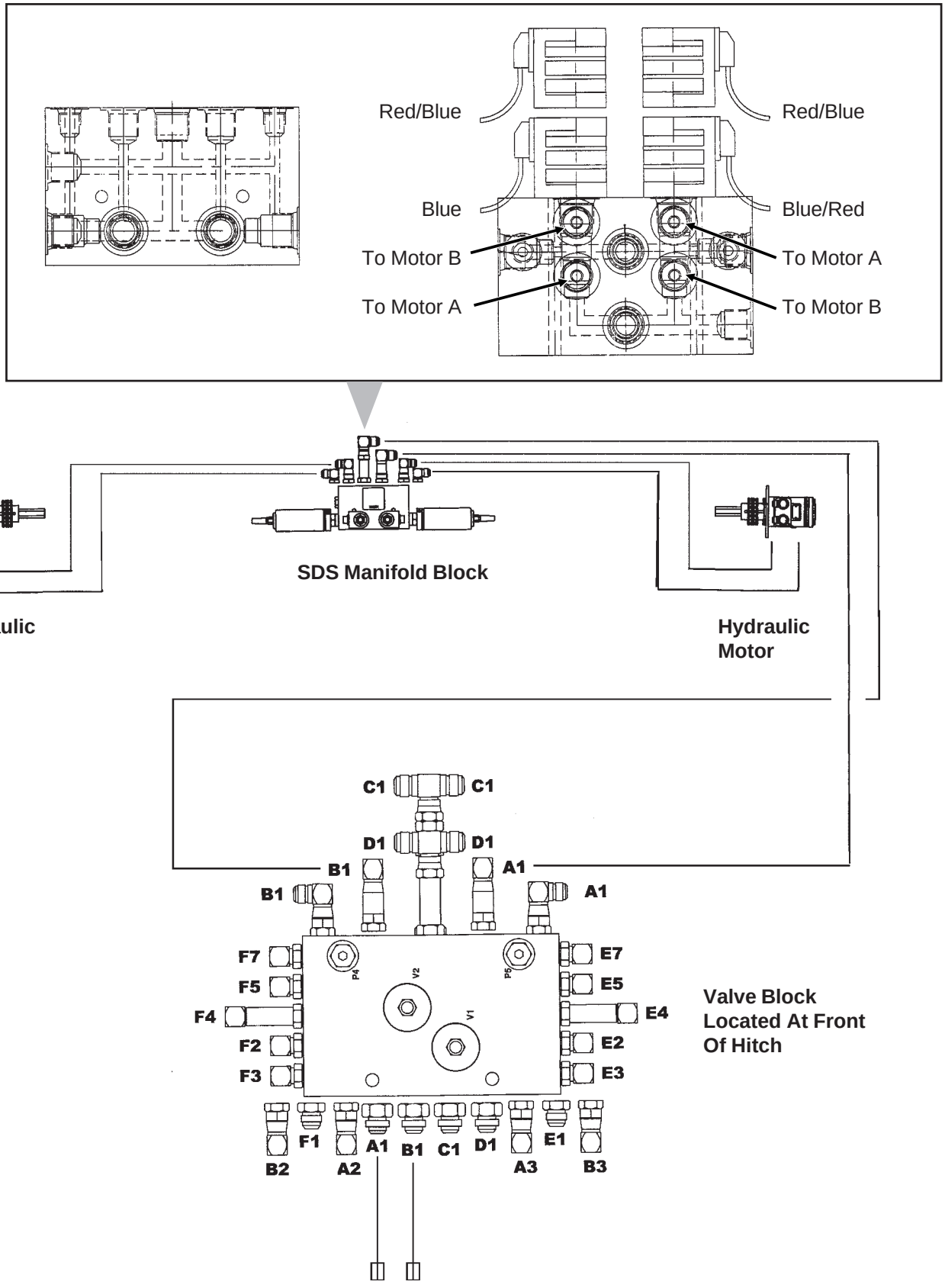
ELECTRICAL WIRING SCHEMATIC (SDS)

(FWD102)



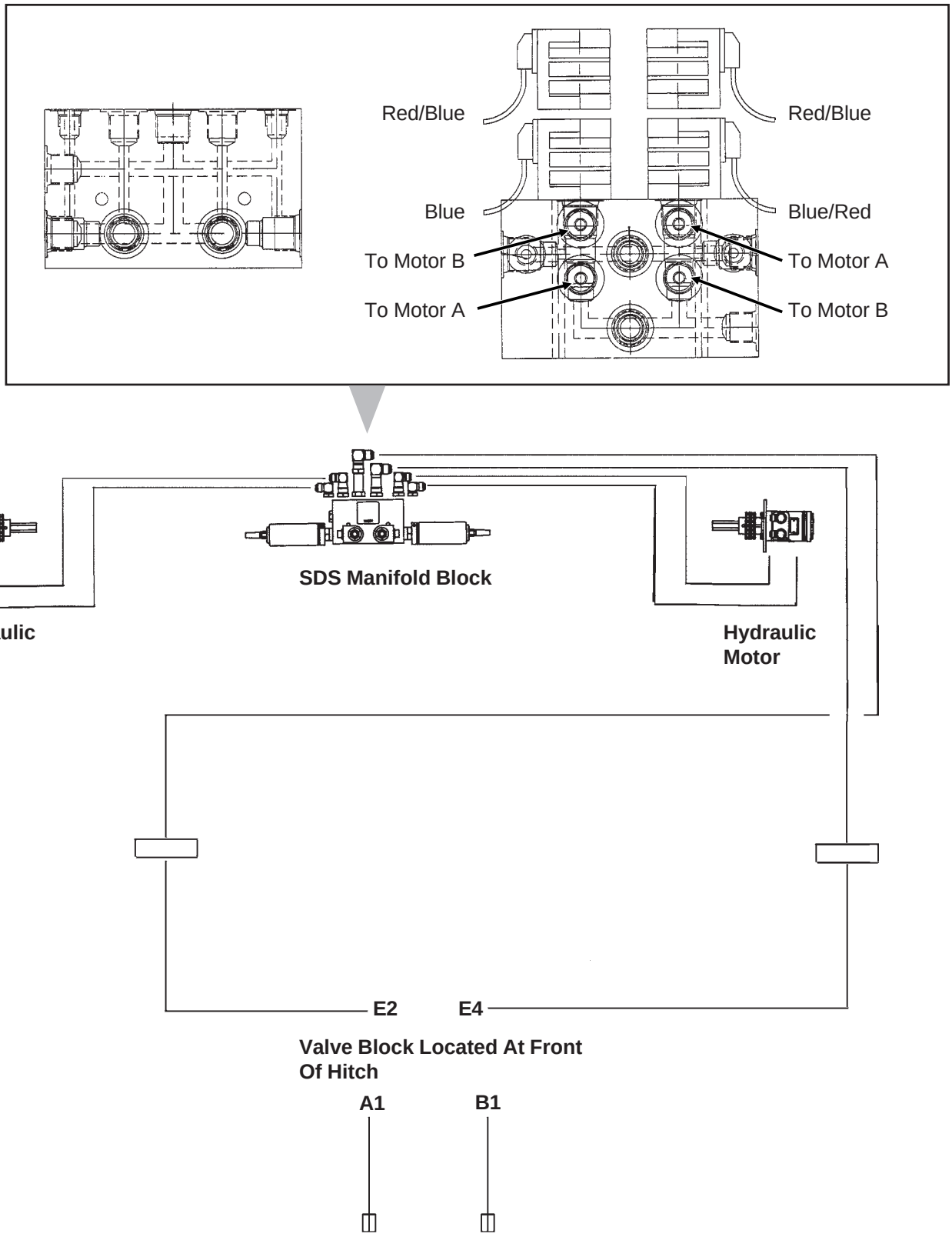
HYDRAULIC SCHEMATIC (SDS) (Prior To Serial Number 755215)

(FWD103/FWD101)



HYDRAULIC SCHEMATIC (SDS) (Serial Number 755215 And On)

(FWD103/FWD101a)



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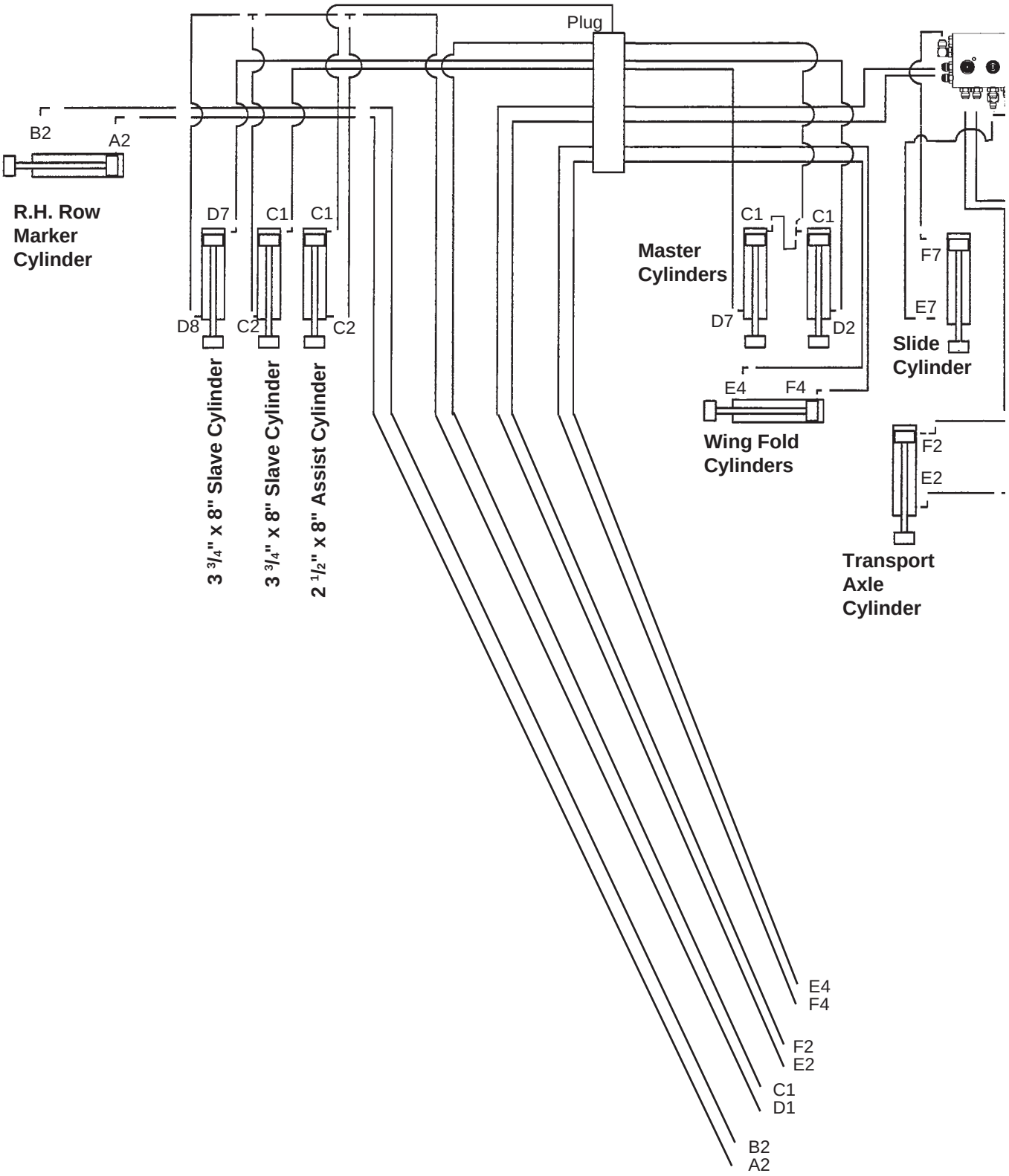
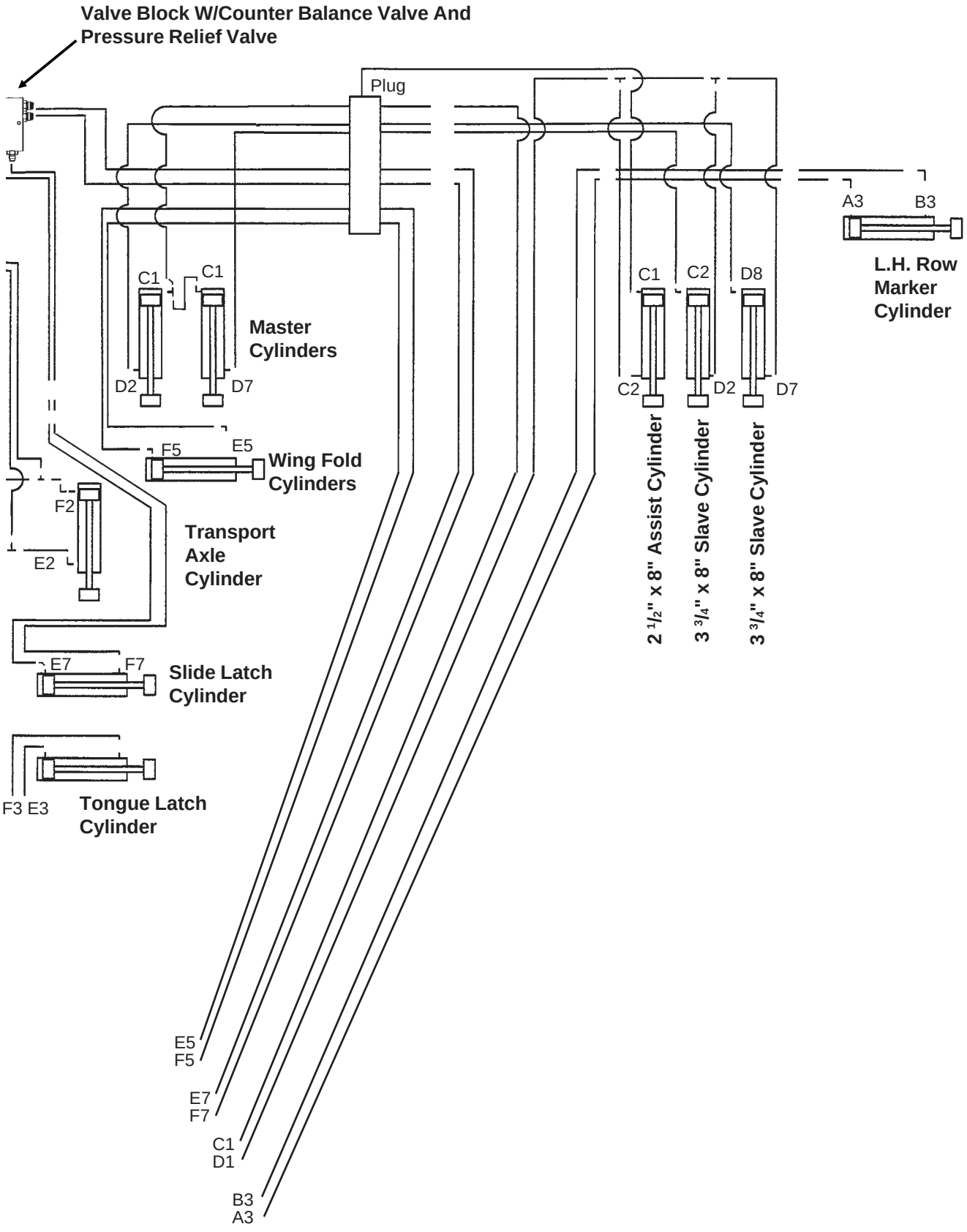
HYDRAULIC SYSTEM SCHEMATIC (24 Row 30" Prior To Serial Number 755215)

(FWD25b)

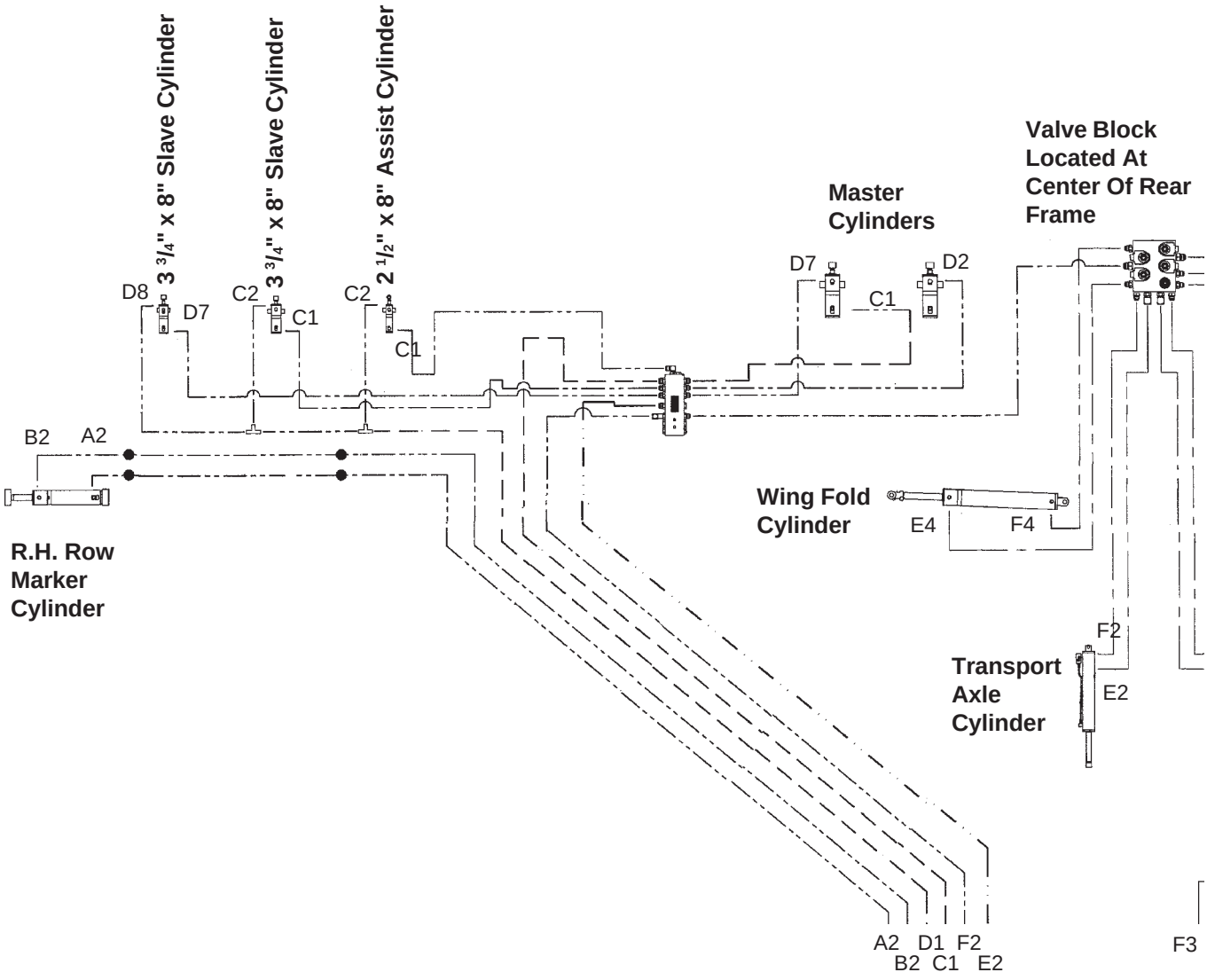


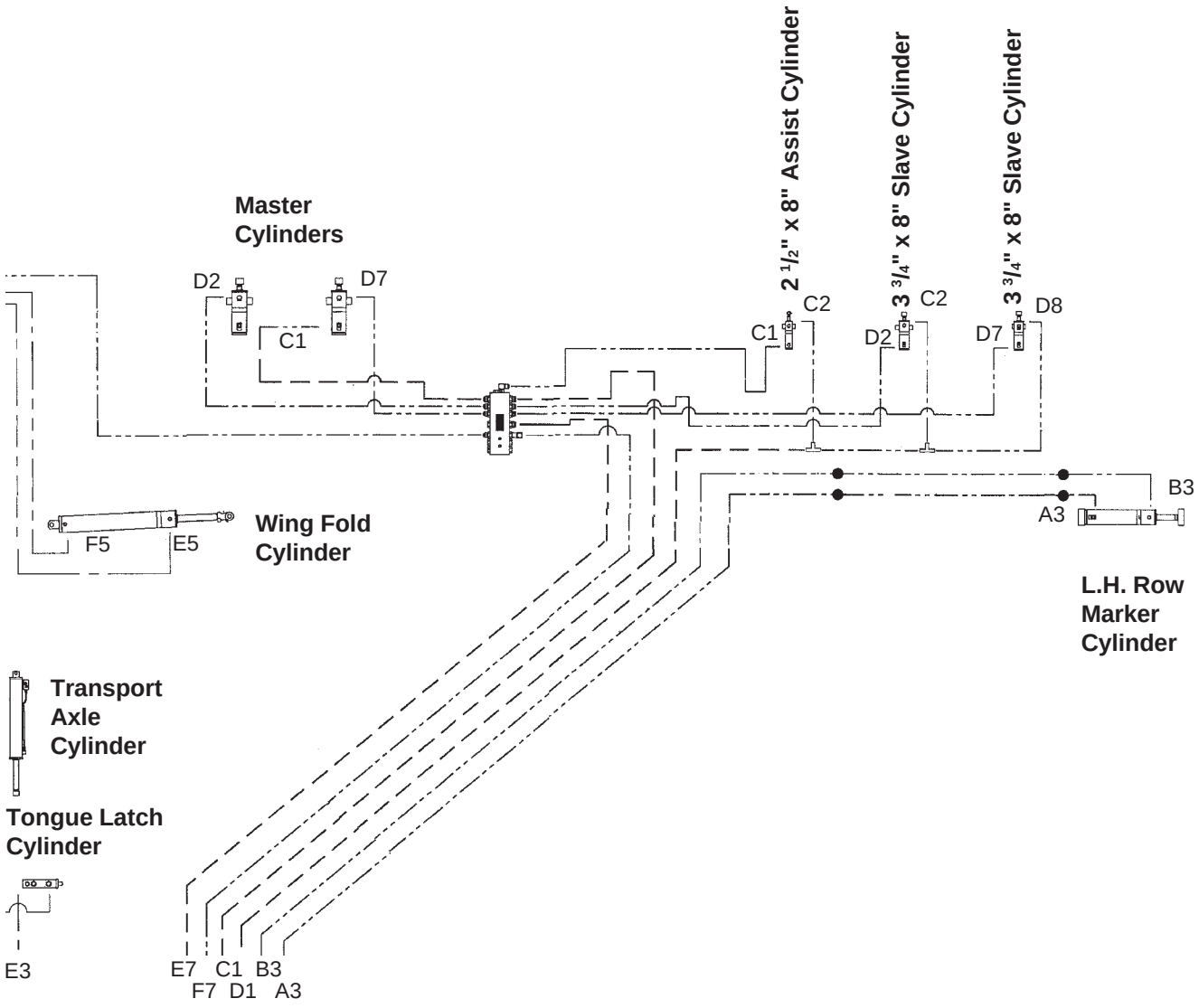
Valve Blocks Located At Front Of Hitch


Valve Block W/Counter Balance Valve And Pressure Relief Valve
Plug
C1
C1
D2
D7
Master Cylinders
F5
E5
Wing Fold Cylinders
F2
E2
Transport Axle Cylinder
E7
F7
Slide Latch Cylinder
F3 E3
Tongue Latch Cylinder
C1
C2
D8
C2
D2
D7
2 1/2" x 8" Assist Cylinder
3 3/4" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
A3
B3
L.H. Row Marker Cylinder
E5
F5
E7
F7
C1
D1
B3
A3

HYDRAULIC SYSTEM SCHEMATIC (24 Row 30" Serial Number 755215 And On)

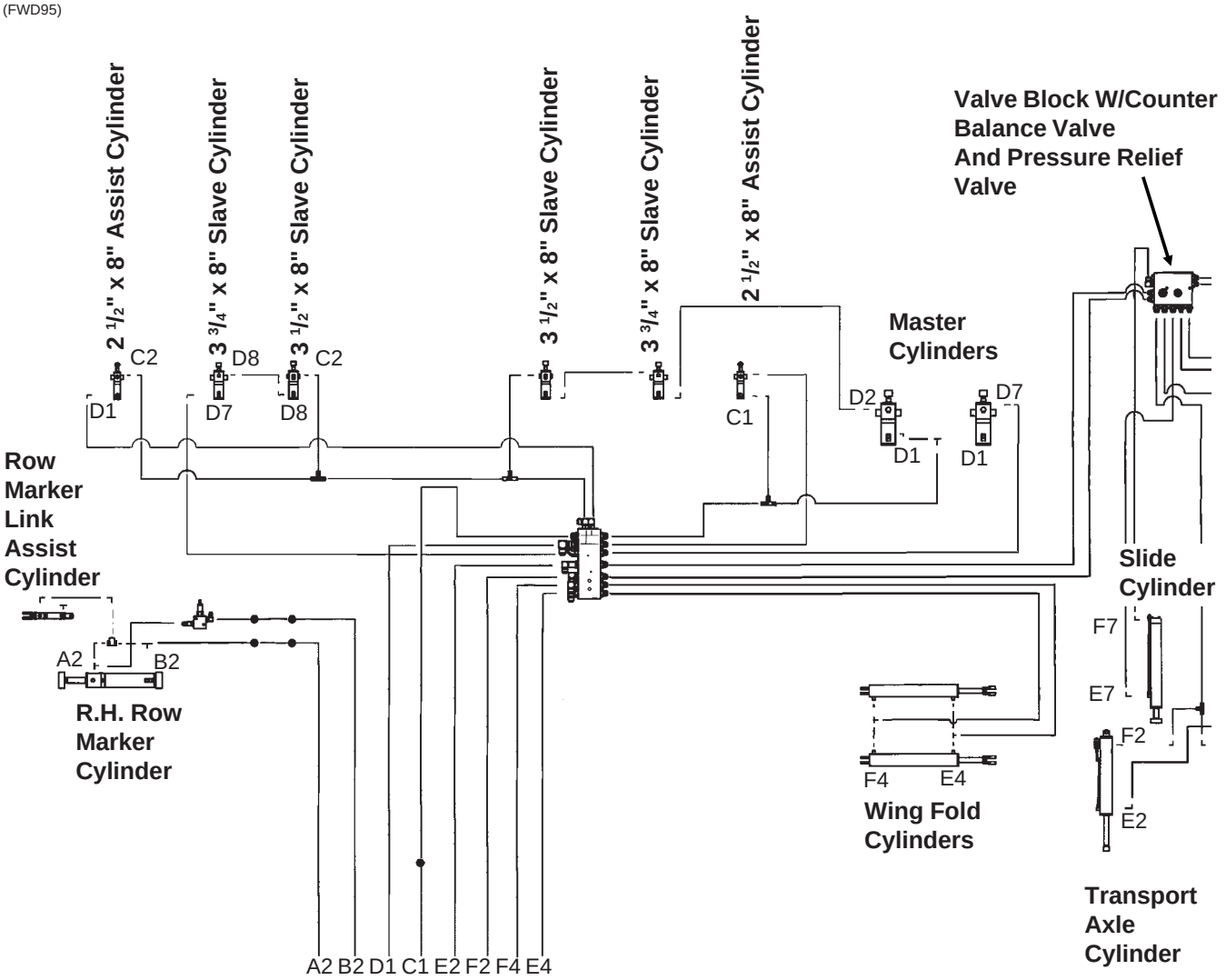
(FWD154)



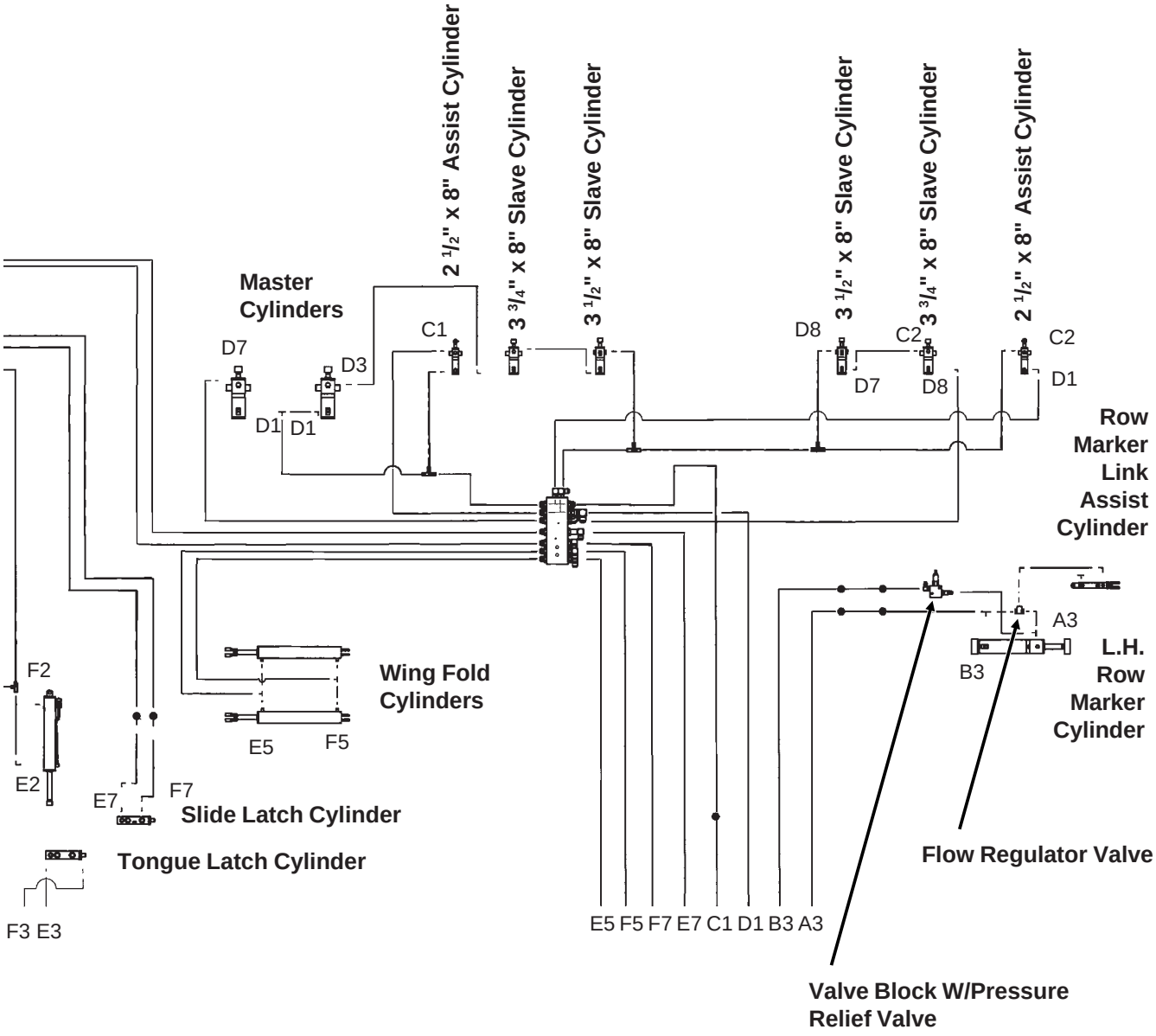

Master
Cylinders
D2
D7
C1
2 1/2" x 8" Assist Cylinder
C1
C2
3 3/4" x 8" Slave Cylinder
D2
C2
3 3/4" x 8" Slave Cylinder
D7
D8
B3
A3
F5
E5
Wing Fold
Cylinder
L.H. Row
Marker
Cylinder
Transport
Axle
Cylinder
Tongue Latch
Cylinder
E3
E7
F7
C1
D1
B3
A3

HYDRAULIC SYSTEM SCHEMATIC (32 Row 30" Prior To Serial Number 755215)

(FWD95)

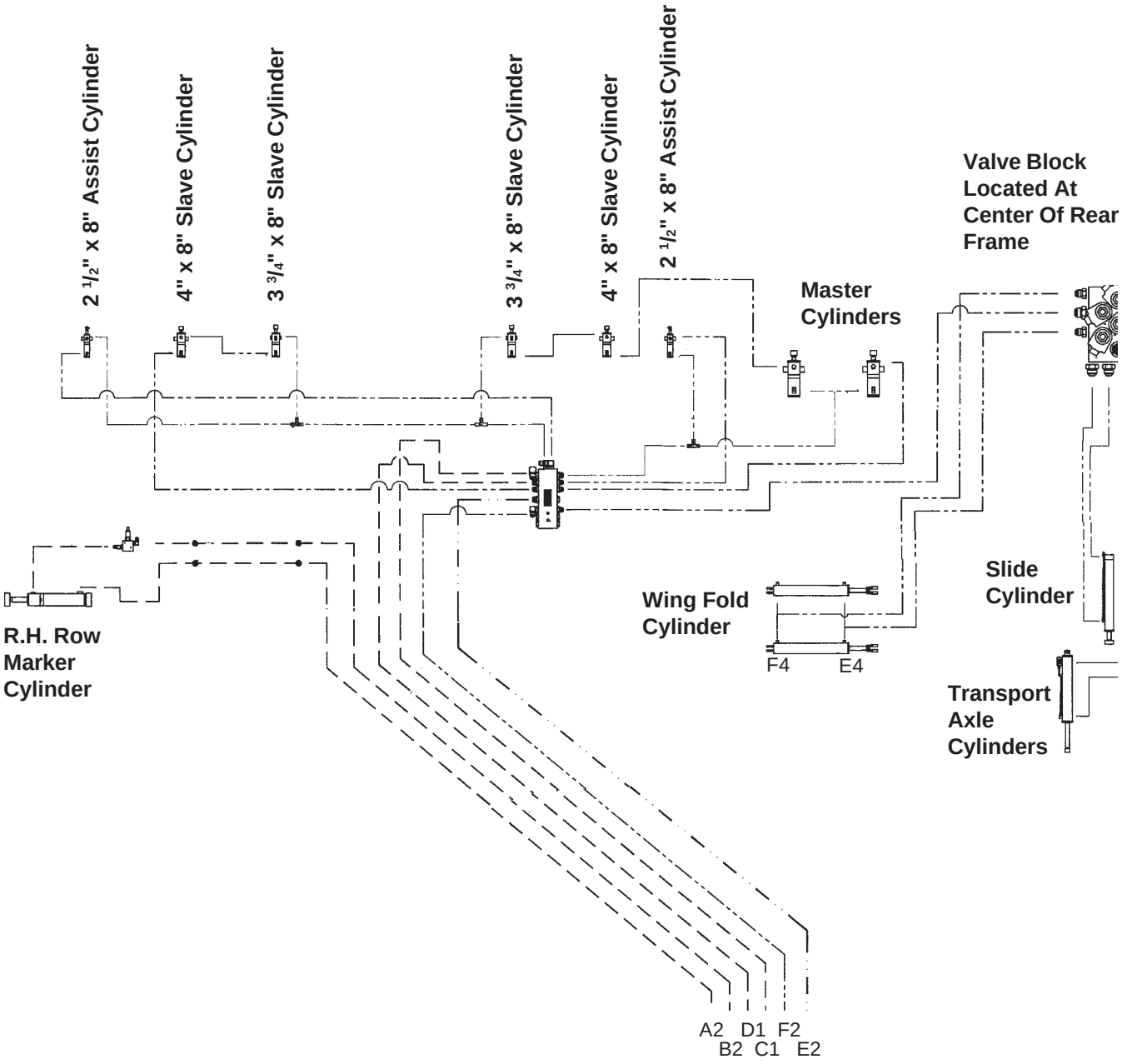


Valve Blocks Located At Front Of Hitch

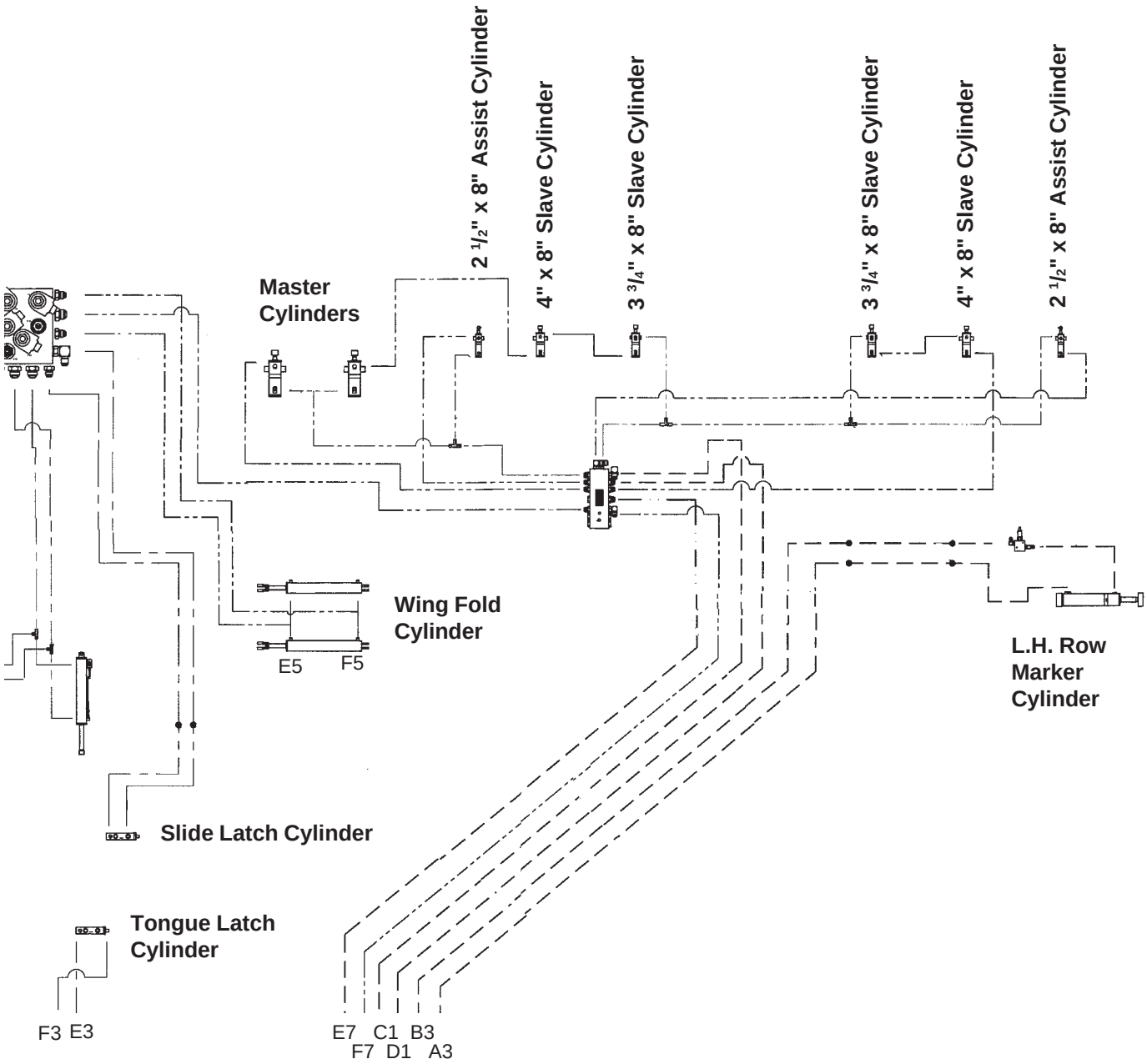

2 1/2" x 8" Assist Cylinder
3 3/4" x 8" Slave Cylinder
3 1/2" x 8" Slave Cylinder
3 1/2" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
2 1/2" x 8" Assist Cylinder
Master Cylinders
D7
D3
C1
D1
D1
D8
C2
D7
D8
C2
D1
Row Marker Link Assist Cylinder
A3
B3
L.H. Row Marker Cylinder
F2
E2
E7
F7
Slide Latch Cylinder
Wing Fold Cylinders
E5
F5
Tongue Latch Cylinder
F3 E3
E5 F5 F7 E7 C1 D1 B3 A3
Flow Regulator Valve
Valve Block W/Pressure Relief Valve

HYDRAULIC SYSTEM SCHEMATIC (32 Row 30" Serial Number 755215 And On)

(FWD155)

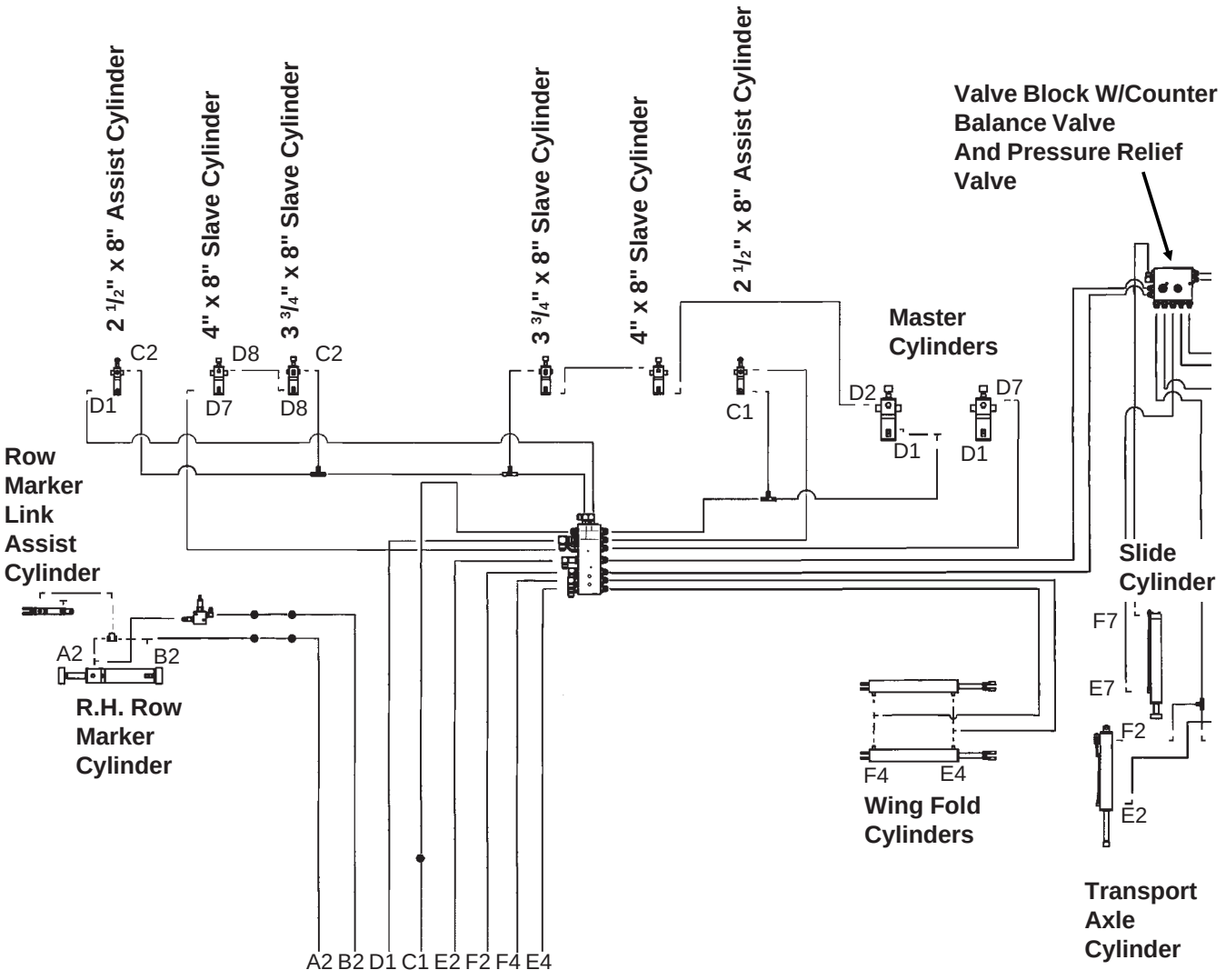


Valve Blocks Located At Front Of Hitch

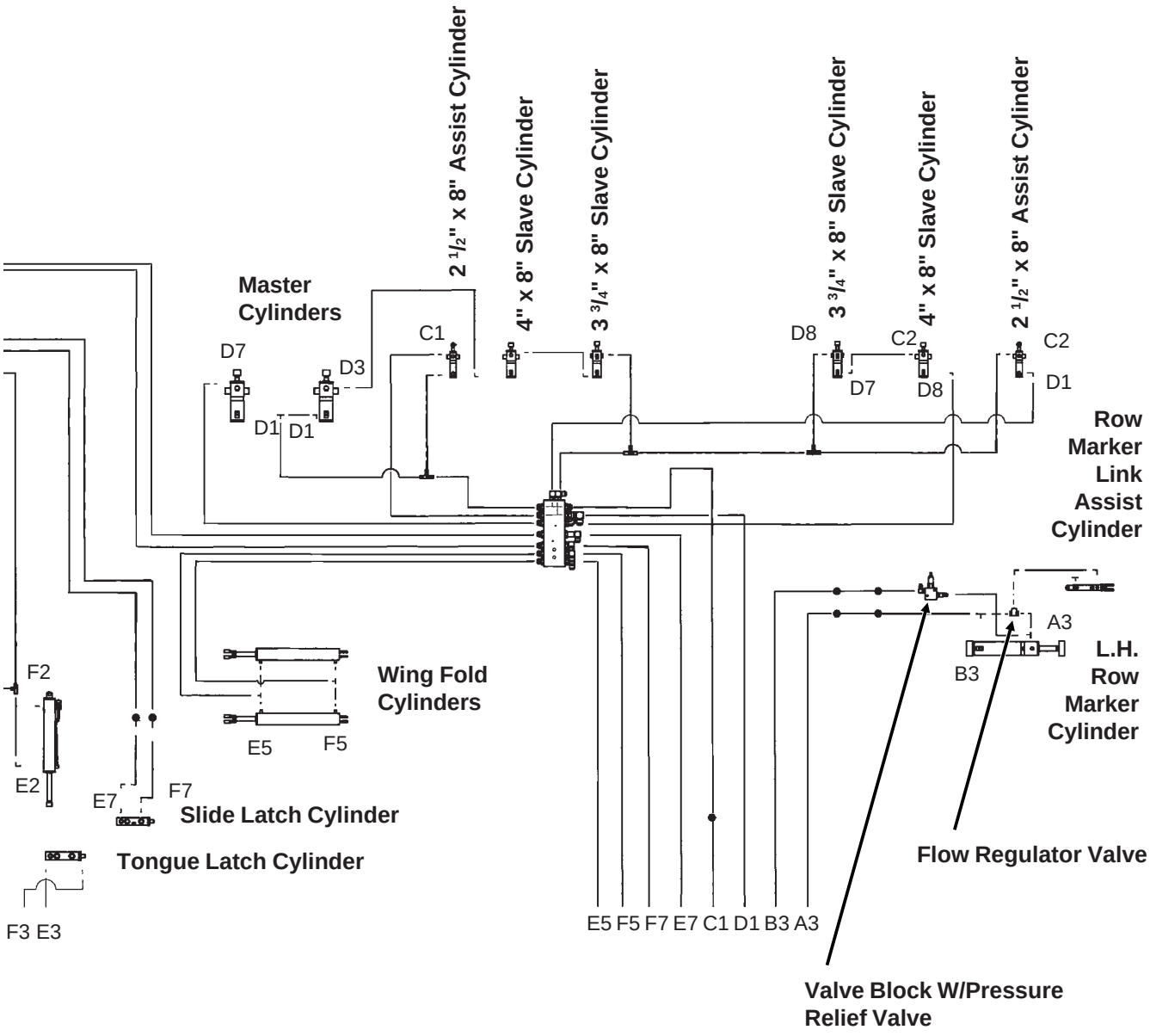

2 1/2" x 8" Assist Cylinder
4" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
4" x 8" Slave Cylinder
2 1/2" x 8" Assist Cylinder
Master Cylinders
Wing Fold Cylinder
E5
F5
L.H. Row Marker Cylinder
Slide Latch Cylinder
Tongue Latch Cylinder
F3 E3
E7 C1 B3
F7 D1 A3

HYDRAULIC SYSTEM SCHEMATIC (36 Row 30" Prior To Serial Number 755215)

(FWD95)

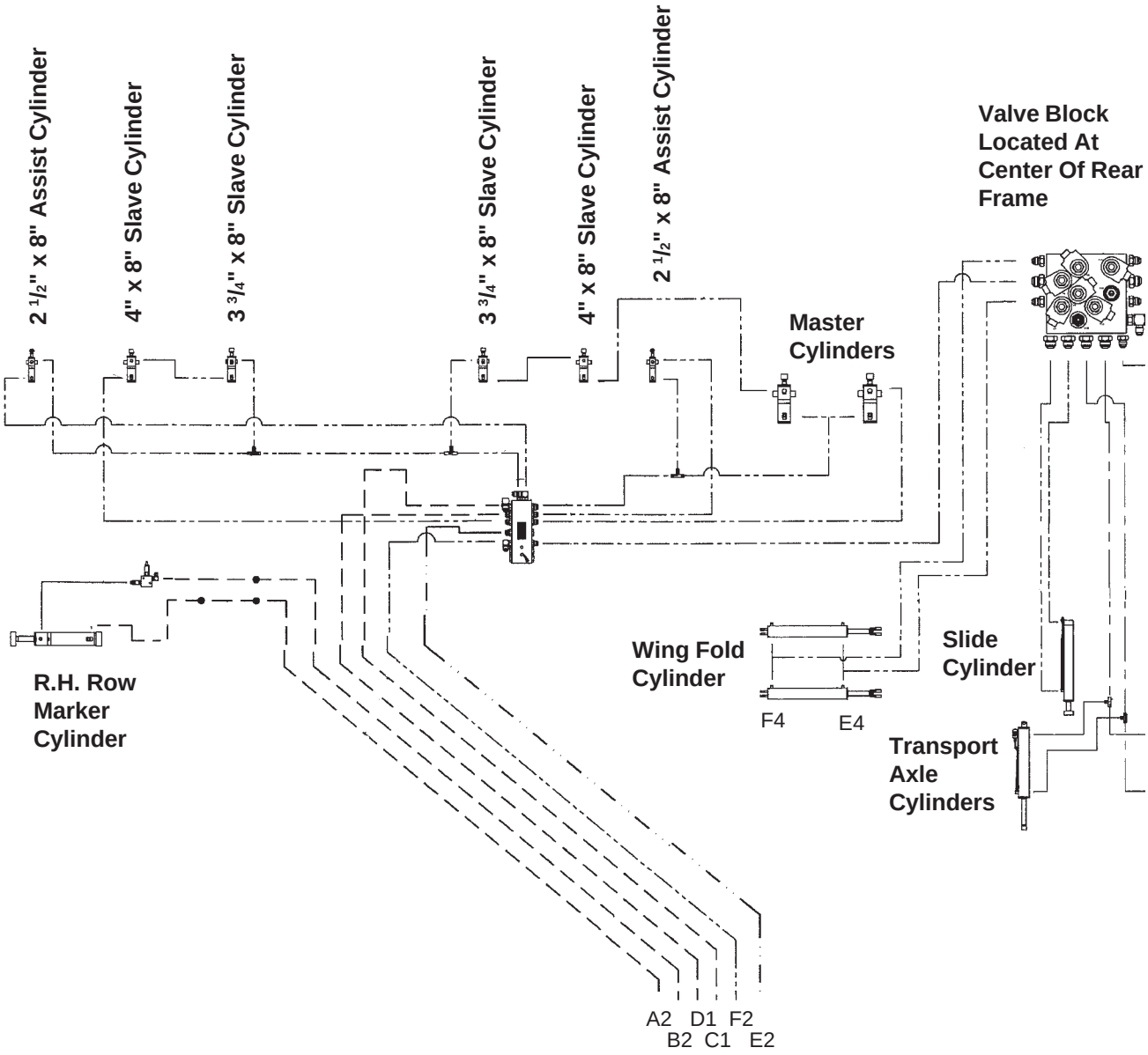


Valve Blocks Located At Front Of Hitch

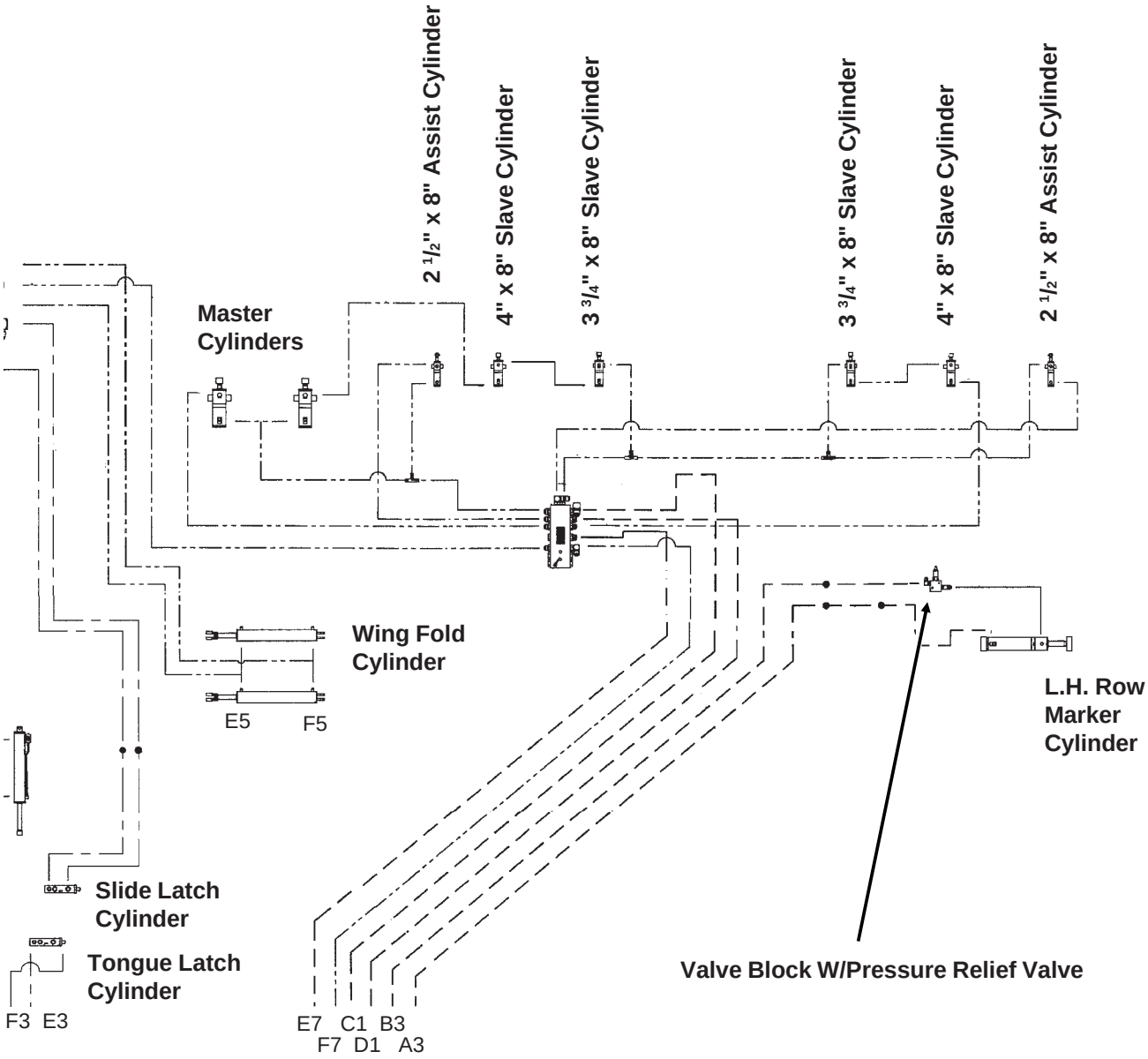

2 1/2" x 8" Assist Cylinder
4" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
4" x 8" Slave Cylinder
2 1/2" x 8" Assist Cylinder
Master Cylinders
D7
D3
C1
D1
D1
D8
C2
C2
D7
D8
D1
Row Marker Link Assist Cylinder
A3
B3
L.H. Row Marker Cylinder
F2
E2
E7
F7
Slide Latch Cylinder
Wing Fold Cylinders
E5
F5
Tongue Latch Cylinder
F3 E3
E5 F5 F7 E7 C1 D1 B3 A3
Flow Regulator Valve
Valve Block W/Pressure Relief Valve

HYDRAULIC SYSTEM SCHEMATIC (36 Row 30" Serial Number 755215 And On)

(FWD156)



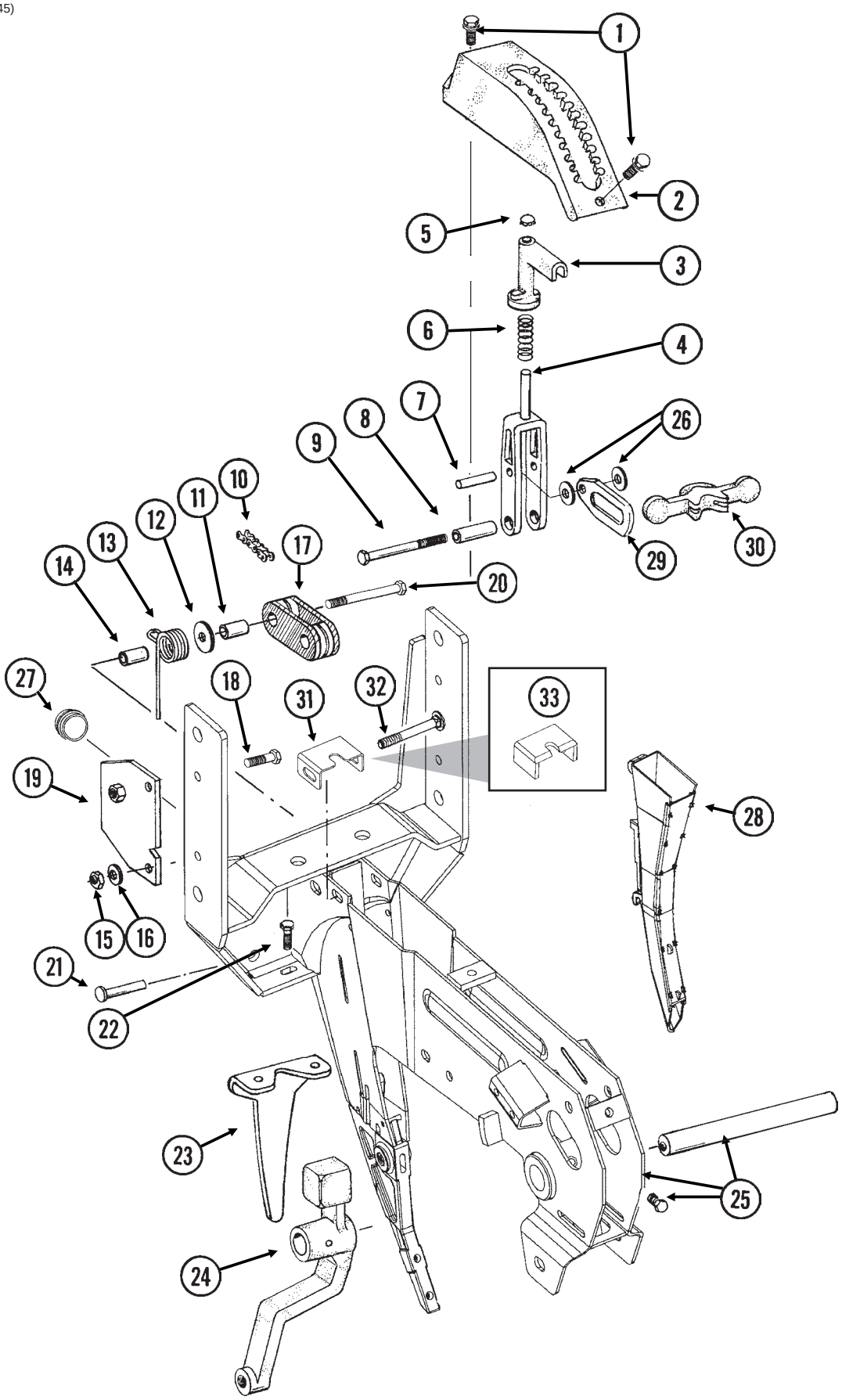
Valve Blocks Located At Front Of Hitch


2 1/2" x 8" Assist Cylinder
4" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
3 3/4" x 8" Slave Cylinder
4" x 8" Slave Cylinder
2 1/2" x 8" Assist Cylinder
Master Cylinders
Wing Fold Cylinder
E5
F5
L.H. Row Marker Cylinder
Slide Latch Cylinder
Tongue Latch Cylinder
F3 E3
E7 C1 B3
F7 D1 A3
Valve Block W/Pressure Relief Valve

PARTS LIST INDEX

SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

(METR29cc/D16245)

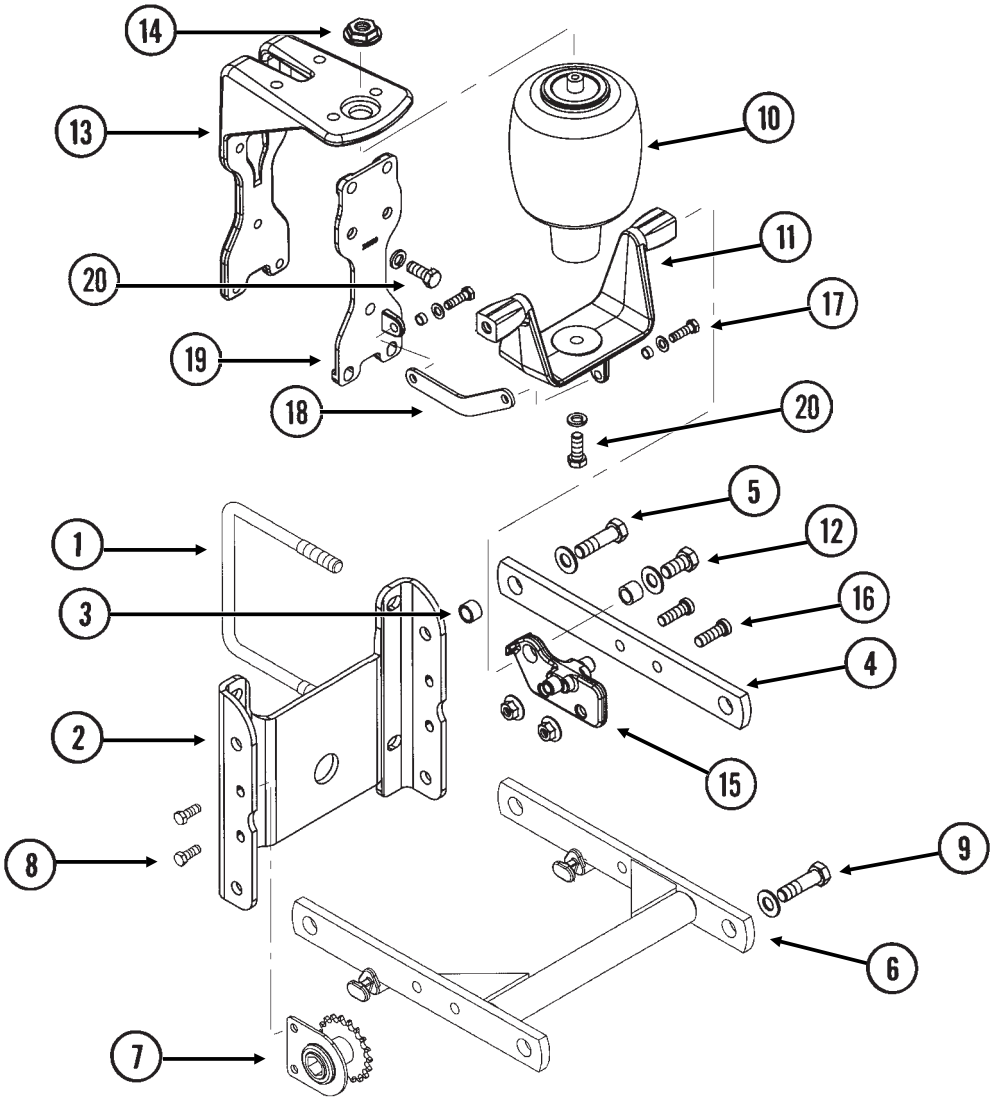


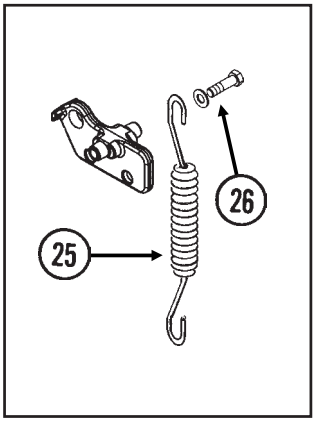
SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

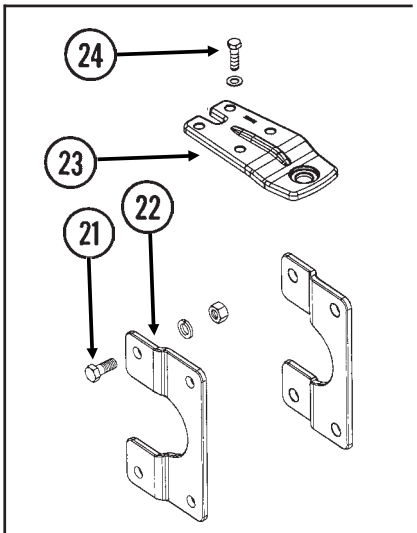
ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11015	2	Hex Washer Head Cap Screw, 3/8"-16 x 1 1/4"
2.	GB0274	1	Cover, Depth Adjustment
3.	GB0266	1	Handle, Depth Adjustment
4.	GB0267	1	Lever, Depth Adjustment
5.	GD3612	1	Cap Plug
6.	GD10993	1	Spring
7.	GD13361	1	Pin, 3/8" x 1 2/3"
8.	GD11259	1	Sleeve, 3/8" I.D. x 5/8" O.D. x 1 25/32" Long
9.	G11008	1	Hex Head Cap Screw, 3/8"-24 x 2 1/2", Grade 8
	G11007	1	Lock Nut, 3/8"-24, Grade C
10.	G3303-98	1	Chain, No. 41, 98 Pitch Including Connector Link
	G3303-114	1	Chain, No. 41, 114 Pitch Including Connector Link
	G3303-16	1	Chain, No. 41, 16 Pitch Including Connector Link (Used W/Row Unit Extension Brackets)
	GR0196	1	Connector Link, No. 41
11.	GD1026	1	Sleeve, 1 3/16" Long
12.	G10201	1	Special Washer, 3/8" x 1 1/2" O.D.
13.	GD1065	1	Idler Spring
14.	GD7318	1	Sleeve, 1" Long
15.	G10108	1	Lock Nut, 3/8"-16
16.	G10210	1	Washer, 3/8" USS
17.	GD11962	1	Idler
18.	G10003	3	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10108	3	Lock Nut, 3/8"-16
19.	GD10867	2	Stop
20.	G10326	1	Hex Head Cap Screw, 3/8"-16 x 3 3/4"
21.	G10551	1	Clevis Pin, 1/4" x 2 1/2"
	G10669	1	Hair Pin Clip, No. 22
22.	G10312	2	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	2	Serrated Flange Nut, 5/16"-18
23.	GD1033	1	Shield
24.		-	Wheel Arm, See “Gauge Wheels”, Pages P12 And P13
25.	GA10157	1	Shank W/Gauge Wheel Pivot Spindle And Set Screw
	GD11001	-	Spindle
	G10438	-	Hex Head Cap Screw, 1/2"-13 x 3/4"
26.	G10207	2	Washer, 7/8" O.D. x 13/32" I.D. x .134" (If Applicable)
27.	GD11845	1	Dust Cap
28.			See “KPM II Stack-Mode/KPM III Electronic Seed Monitors” And “Planter Monitor Module (PMM)”, Pages P176-P177
29.	GB0285	1	Collar, Depth Adjustment
30.	GB0265	1	Pivot Link, Depth Adjustment
31.	GD15970	1	Sun Shade
32.	G10304	1	Carriage Bolt, 3/8"-16 x 3"
	G10108	1	Lock Nut, 3/8"-16
33.	GD16245	-	Sun Shade (Rubber)

PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

(RU157a/RU159/RU157aa)







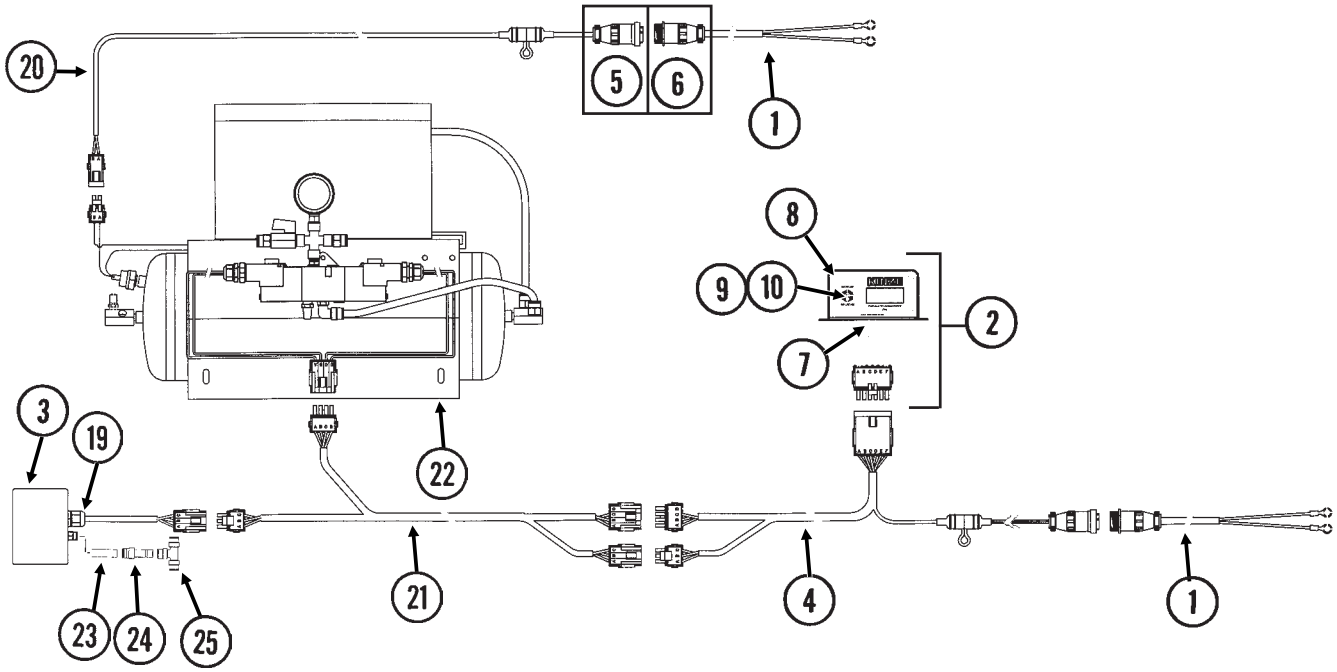
NOTE: Item 18 link not used when extension brackets are used.

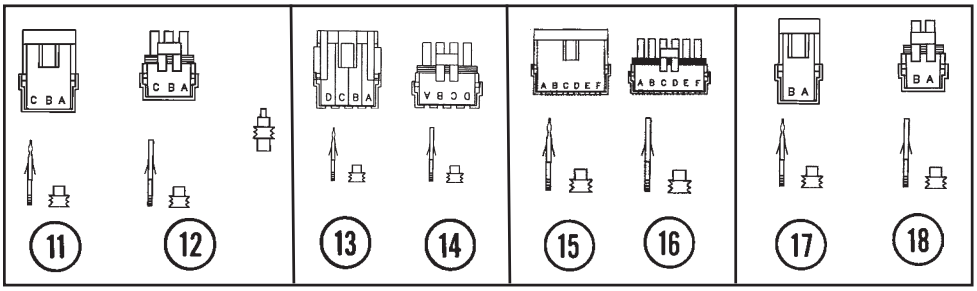
PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
2.	GD10036	1	Mounting Support Plate
3.	GB0218	4	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
4.	GD11422	2	Upper Parallel Arm
5.	G10732	4	Hex Head Cap Screw, 5/8"-18 x 2"
	GD7805	4	Special Washer, 5/8", Hardened
	G10412	4	Lock Nut, 5/8"-18
6.	GA5651	1	Lower Parallel Arm
7.	GA1720	1	Bearing/Sprocket, 7/8" Hex Bore
8.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
9.		-	See “Hopper Support And Meter Drive”, Page P18
10.	GA11982	1	Air Spring Assembly
11.	GB0394	1	Saddle
12.	G11018	2	Hex Head Cap Screw, 5/8"-18 x 1 1/4"
	GD7805	2	Special Washer, 5/8", Hardened
	GD3180-30	2	Sleeve, 7/8" O.D. x 5/8" I.D. x 21/32"
13.	GB0396	1	Head Mount
14.	GB0397	1	Shoulder Nut, 3/4"-16
15.	GB0395	2	Bracket
16.	G11220	4	Hex Socket Cap Screw, 1/2"-13 x 1 1/2"
	G10071	4	Serrated Flange Nut, 1/2"-13
17.	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10203	2	Washer, 3/8" SAE
	GD11963-04	2	Spacer, 1/4"
	G10108	2	Lock Nut, 3/8"-16
18.	GD17794	1	Link
19.	GB0393	1	Plate
20.	G10037	7	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10206	2	Washer, 1/2" SAE (Lower Two Holes Only)
	G10228	7	Lock Washer, 1/2"
21.	G10007	4	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
22.	GB0366	2	Extension Bracket
23.	GB0398	1	Extension
24.	G10039	4	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	G10206	4	Washer, 1/2" SAE
	G10111	4	Lock Nut, 1/2"-13
25.	GD8249	2	Spring
26.	G10438	2	Hex Head Cap Screw, 1/2"-13 x 3/4"
	G10216	2	Washer, 1/2" USS
A.	G6326X	-	U-Bolt Package For 7" x 7" Toolbar, Includes: (2) GD1114, (4) G10230, (4) G10104
B.	G1K465	-	Pull Row Unit Assist Springs Package, Includes: (2) G10438, (2) G10216 And (2) GD8249

PNEUMATIC DOWN PRESSURE CONTROL CONSOLE, SENDING UNIT AND HARNESSES

(PNE01a/MTR27a/ELC27b/MTR45/MTR27t)



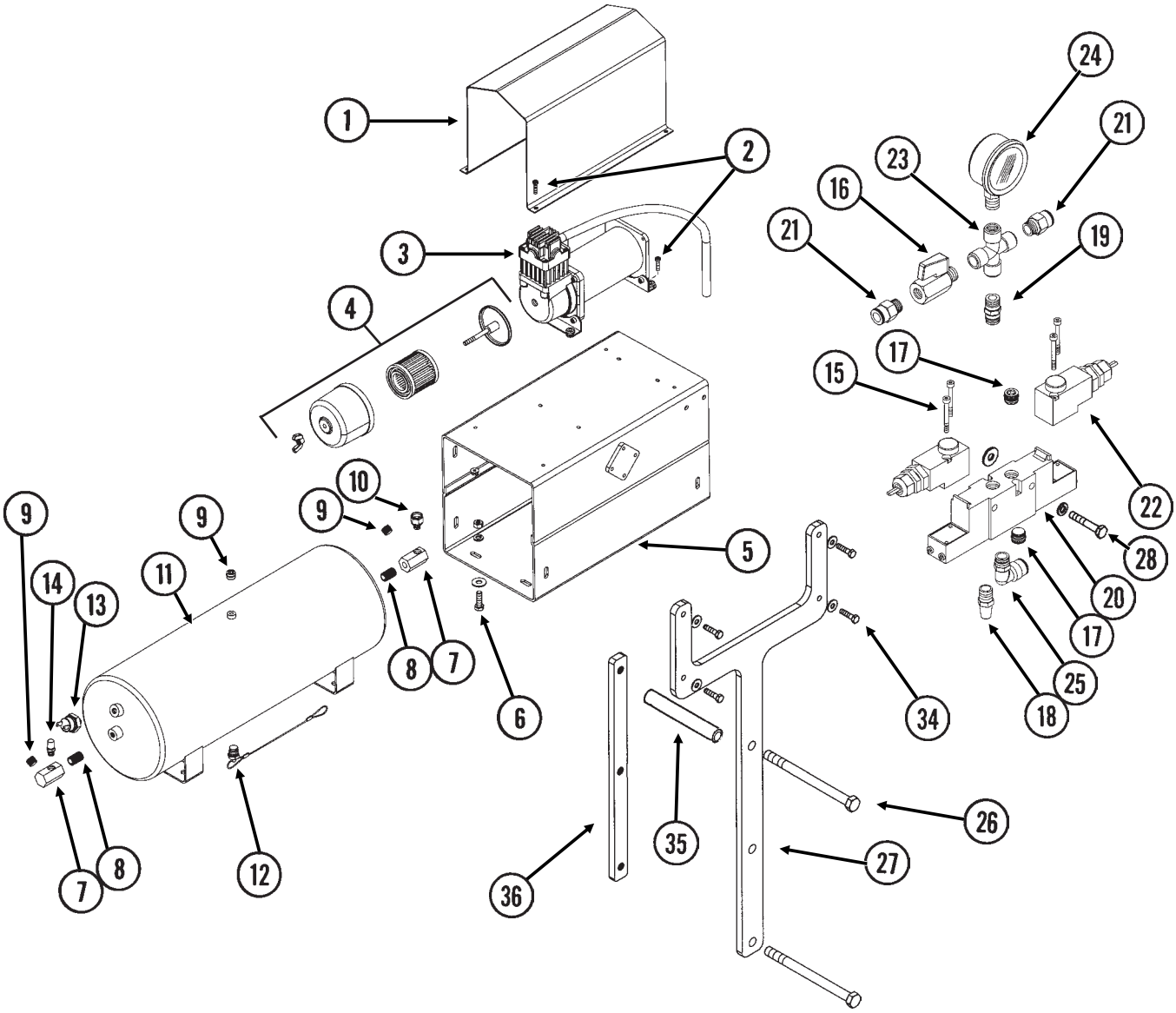


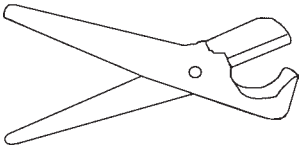
PNEUMATIC DOWN PRESSURE CONTROL CONSOLE, SENDING UNIT AND HARNESSES

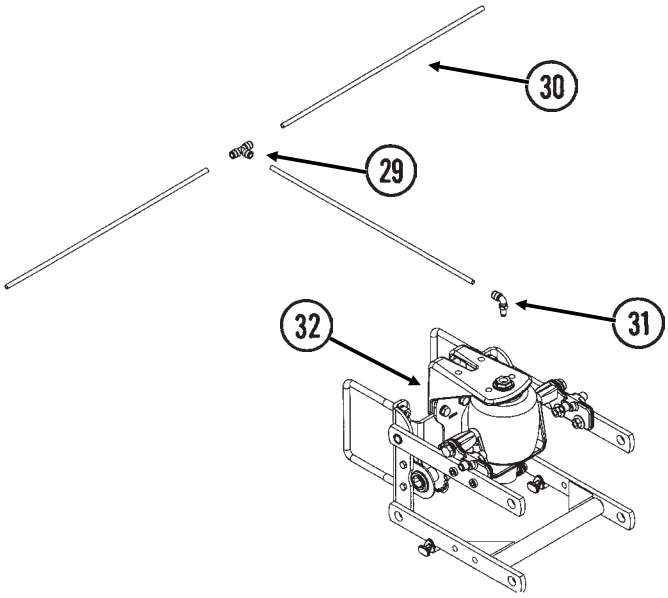
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA7856	2	Power Lead Adapter
2.	GA12644	1	Control Console Assembly
3.	GA12646	1	Sending Unit
4.	GA12645	1	Wiring Harness W/Fuse Holder And Fuse, 206"
	GD14258	-	Fuse Holder
	GD14660	-	Fuse, 2 Amp Delay Action
5.	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (1) Lock Ring, (3) Female Terminal Pins
6.	G1K267	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (3) Male Terminal Pins
7.	GA9963	1	Strain Relief
8.	GR1292	4	Pan Head Screw, No. 8-32 x 1/2"
9.	GR1363	1	Hex Face Nut, 15/32"-32
10.	GA6978	1	Switch, 3 Position Toggle, On-Off-On
11.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
12.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
13.	GA8328	-	4-Pin Female Connector Kit, Includes: (1) 4-Pin Female Housing, (4) Pin Contacts, (4) Seals
14.	GA8329	-	4-Pin Male Connector Kit, Includes: (1) 4-Pin Male Housing, (4) Socket Contacts, (4) Seals
15.	G1K396	-	6-Pin Female Connector Kit (Black), Includes: (3) 6-Pin Female Housings,(18) Pin Contacts, (18) Seals
16.	G1K395	-	6-Pin Male Connector Kit (Black), Includes: (3) 6-Pin Male Housings, (18) Socket Contacts, (18) Seals
17.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
18.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
19.	GA9964	2	Strain Relief
20.	GA12683	1	Wiring Harness W/Fuse Holder And Fuse, 50'
	GD14258	-	Fuse Holder
	GD18275	-	Fuse, 20 Amp
21.	GA12671	1	Wiring Harness, 50'
22.		-	See “Pneumatic Down Pressure Air Compressor, Dual Solenoid Assembly, Tubing And Fittings”, Pages P8 And P9
23.	GD17151-06	1	Nylon Tubing, 1/4" O. D. x 1 1/2'
24.	GD18796	1	Reducer, 3/8" To 1/4"
25.	GD18010	1	Tee, 3/8" Tube Union

PNEUMATIC DOWN PRESSURE AIR COMPRESSOR, DUAL SOLENOID ASSEMBLY, TUBING AND FITTINGS

(PNE06/PNE02/PNE29b/A13169/PNE09/PNE08)





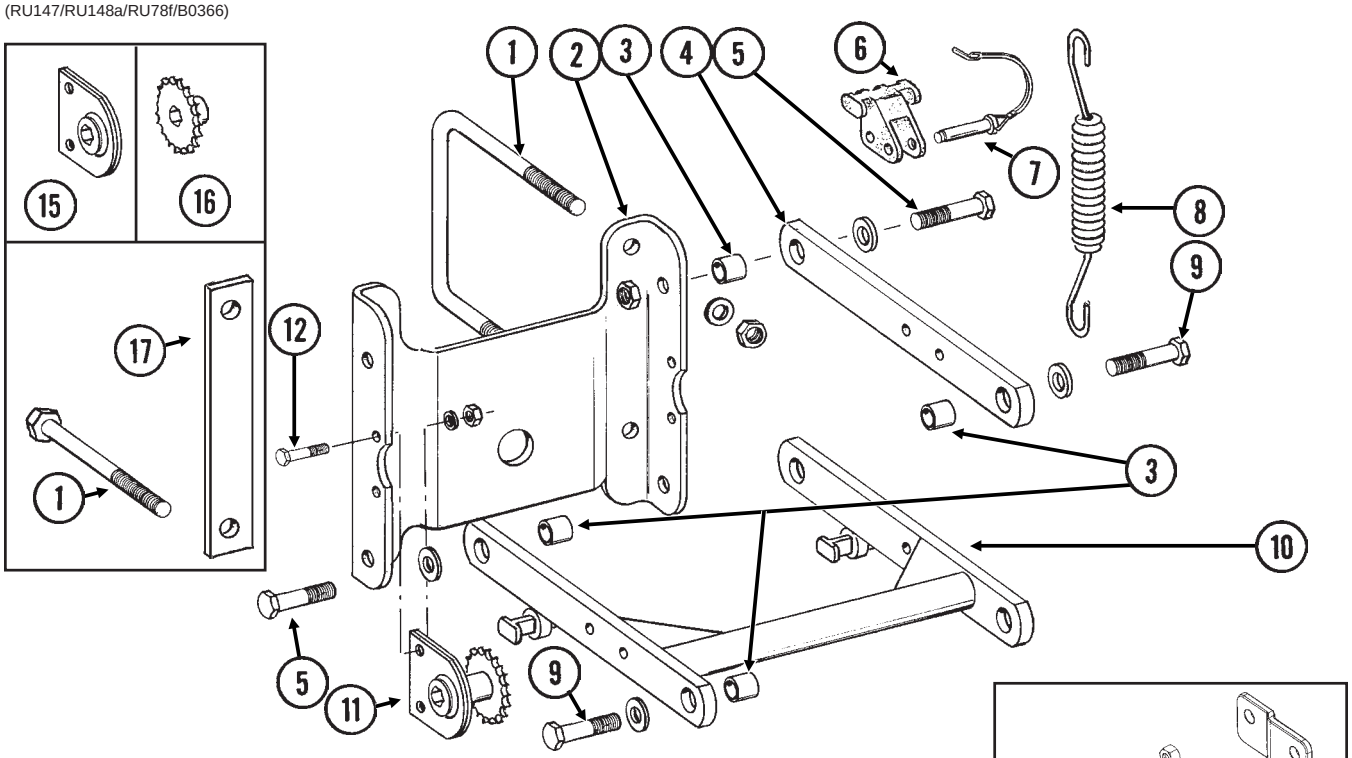


PNEUMATIC DOWN PRESSURE AIR COMPRESSOR, DUAL SOLENOID ASSEMBLY, TUBING AND FITTINGS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18112	1	Cover
2.	G11066	8	Phillips Pan Head Machine Screw, No. 10-24 x 3/4", Stainless Steel
	G10992	8	Serrated Flange Nut, No. 10-24
3.	GA12102	1	Air Compressor
4.	GA12404	1	Filter Assembly
	GR1809	-	Filter
5.	GA12358	1	Mount
6.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10219	8	Washer, 5/16" USS
	G10232	8	Lock Washer, 5/16"
	G10106	8	Hex Nut, 5/16"-18
7.	GD17298	2	Manifold, 1/4" NPT
8.	GD18081	2	Close Nipple, 1/4" NPT
9.	GD17156	3	Plug, 1/4" NPT
10.	GD17144	1	Reducer, 1/8" Male To 1/4" Female
11.	GA11988	1	Tank, 3 Gallon
12.	GA11991	1	Drain, 1/4" NPT
13.	GR1778	1	Pressure Switch
14.	GA11989	1	Valve Stem, 1/8" NPT
15.	G11247	4	Slotted Pan Head Machine Screw, M4-0.7 x 8
16.	GA11992	1	Shutoff Valve, 1/4" NPT
17.	GD17156	2	Plug, 1/4" NPT
18.	GA11997	1	Breather, 1/4" NPT
19.	GD17154	1	Connector, 1/4" Male NPT
20.	GA11993	1	Block
21.	GD17141	3	Connector, 1/4" Male NPT
22.	GA11994	2	Solenoid
23.	GD18078	1	Female Cross, 1/4" NPT
24.	GA12104	1	Pressure Gauge, 1/4" NPT
25.	GD17143	1	Swivel Elbow, 1/4" NPT x 3/8"
26.	G10341	3	Hex Head Cap Screw, 5/8"-11 x 8"
27.	GD18173	2	Bracket
28.	G10021	2	Hex Head Cap Screw, 1/4"-20 x 1 1/2"
	G10227	2	Lock Washer, 1/4"
	G10209	2	Washer, 1/4" USS
29.	GD18010	-	Tee, 3/8" Tube Union
30.	GD17150-05	-	Nylon Tubing, 3/8" O.D. x 112', 24 Row
	GD17150-06	-	Nylon Tubing, 3/8" O.D. x 150', 32 Row
	GD17150-07	-	Nylon Tubing, 3/8" O.D. x 168', 36 Row
31.	GD18011	-	Elbow, 3/8" x 1/8" NPT Extended
32.		-	See “Parallel Arms, Mounting Support Plate And Pneumatic Down Pressure Package”, Pages P4 And P5
33.	GA13169	1	Tube Cutter W/Blade
	GR1843	-	Blade
34.	G10171	4	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10219	4	Washer, 5/16" USS
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
35.	GD3180-33	1	Sleeve, 7"
36.	GD18901	1	Tap Block, Long
A.	GA12626	-	Air Compresor Assembly (Items 1-14)
B.	GA11995	-	Dual Solenoid Assembly (Items 15-25)

PARALLEL ARMS, MOUNTING SUPPORT PLATE AND QUICK ADJUSTABLE DOWN FORCE SPRINGS

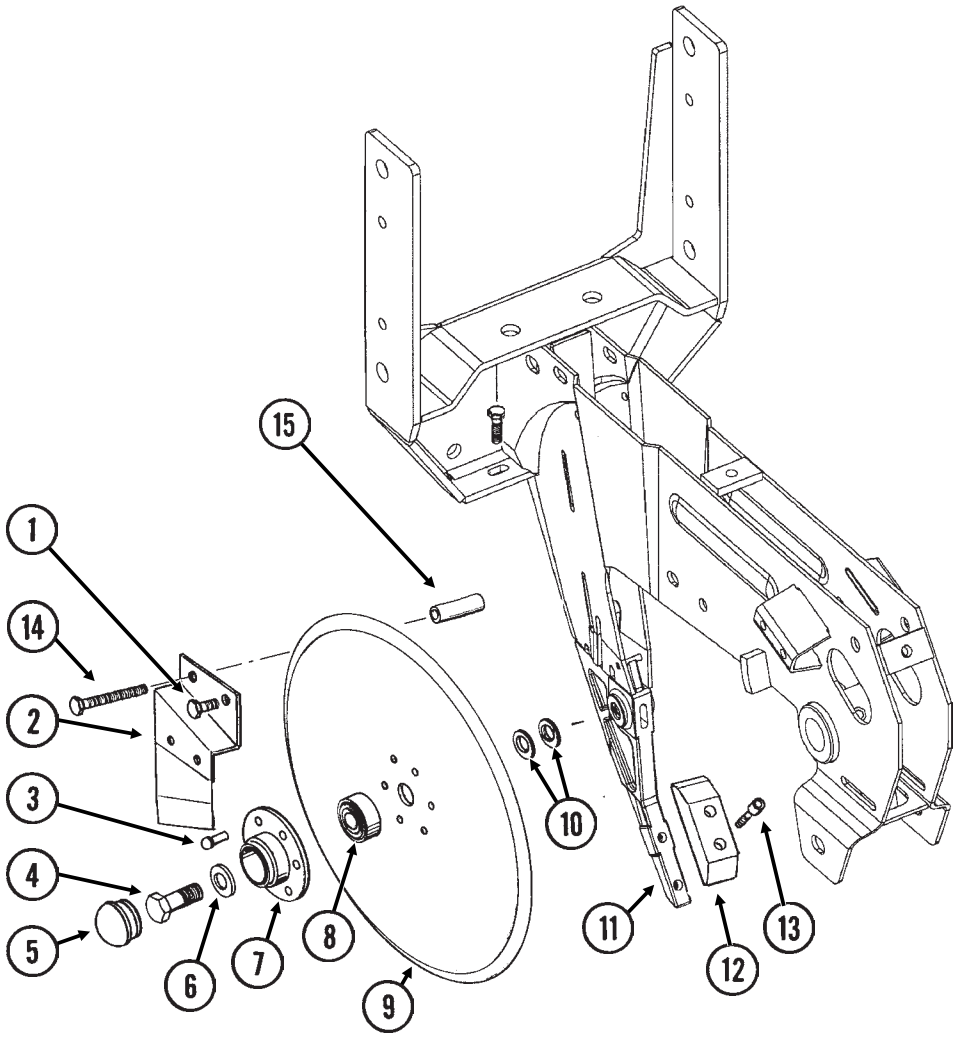
(RU147/RU148a/RU78f/B0366)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10152	-	Hex Head Cap Screw, 5/8"-11 x 9"
	G10217	-	Washer, 5/8" USS
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
2.	GD10036	1	Mounting Support Plate
3.	GB0218	4	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
4.	GD11422	2	Upper Parallel Arm
5.	G10732	4	Hex Head Cap Screw, 5/8"-18 x 2"
	GD7805	4	Special Washer, 5/8", Hardened
	G10412	4	Lock Nut, 5/8"-18
6.	GB0186	2	Spring Anchor
7.	GD14217	2	Tab Lock Pin, 7/16" x 1 1/2"
8.	GD8249	2-4	Spring
9.		-	See “Hopper Support And Meter Drive”, Page P18
10.	GA5651	1	Lower Parallel Arm
11.	GA1720	1	Bearing/Sprocket, 7/8" Hex Bore
12.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
13.	G10007	4	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
14.	GB0366	2	Extension Bracket
15.	GA2180	-	Hanger Bearing, 7/8" Hex Bore
16.	GA11255	-	Sprocket, 19 Tooth
17.	GD1908	-	Mounting Bracket
A.	G6326X	-	U-Bolt Package For 7" x 7" Toolbar, Includes: (2) GD1114, (4) G10230, (4) G10104

15" SEED OPENER DISC BLADE/BEARING ASSEMBLY AND SCRAPERS

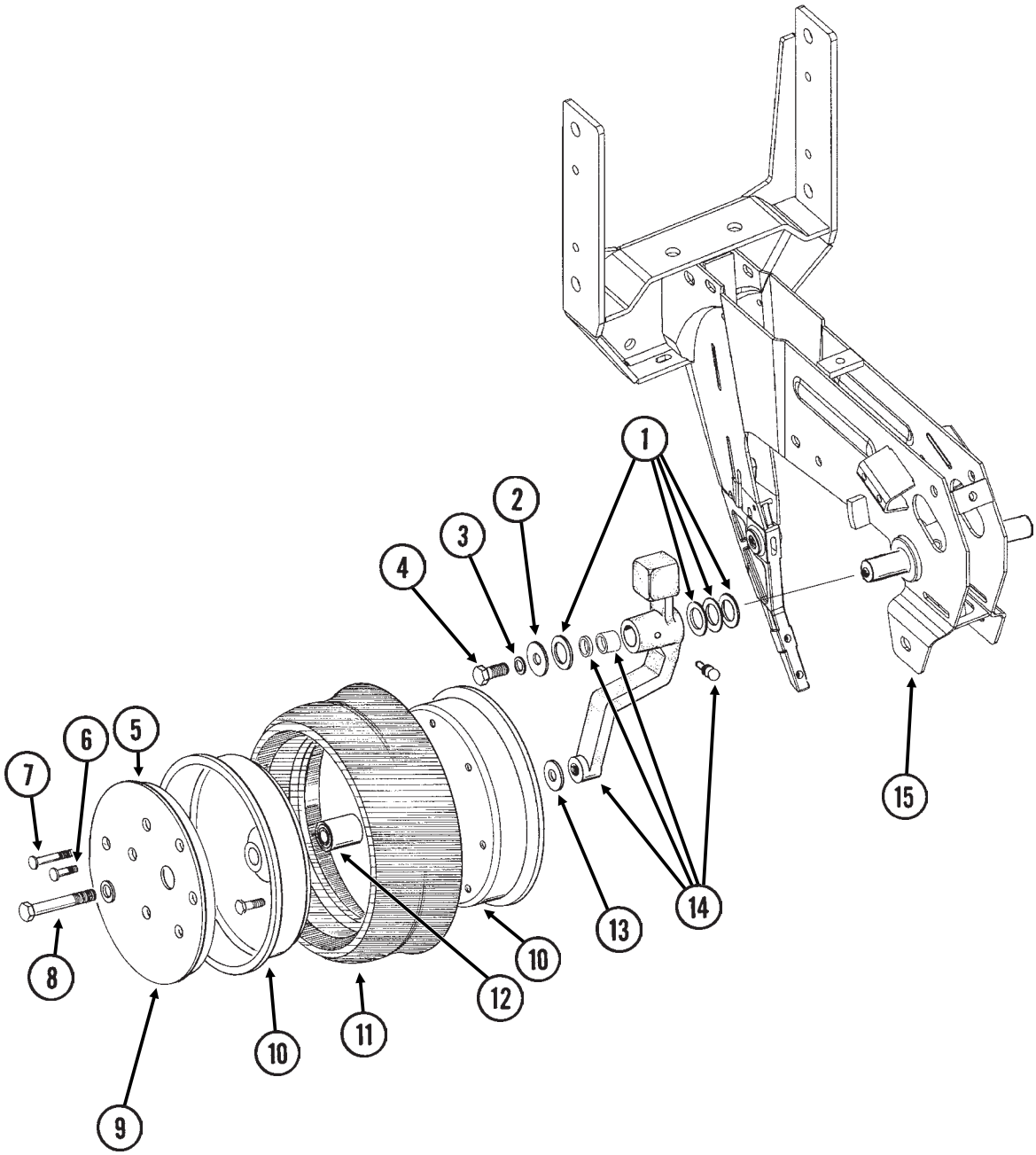
(RU139)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10328	2	Hex Head Cap Screw, 3/8"-16 x 5/8"
	G10622	2	Serrated Flange Nut, 3/8"-16
2.	GA2012R	1	Disc Scraper, R.H.
	GA2012L	-	Disc Scraper, L.H. (Shown)
3.	G10427	12	Rivet, 1/4" x 1/2"
4.	GD11017	1	Special Hex Head Cap Screw, 5/8"-11 x 1 1/2", L.H. Threads
	G10007	1	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
5.	GD11845	2	Dust Cap
6.	G10204	2	Special Machine Bushing, 5/8" x 1" O.D.
7.	GD10473	2	Bearing Housing
8.	GA2014	2	Bearing
9.	GD11306	2	Disc Blade, 3.5 mm x 15"
10.	G10213	-	Machine Bushing, 5/8" (.030" Thick)(As Required)
11.		-	See “Shank Assembly”, Pages P2 And P3
12.	GB0301	1	Seed Tube Guard/Inner Scraper
13.	G10912	2	Hex Socket Head Cap Screw, 5/16"-18 x 1", Grade 8
14.	G10325	1	Hex Head Cap Screw, 3/8"-16 x 2 3/4"
	G10622	1	Serrated Flange Nut, 3/8"-16
15.	GD11259	1	Sleeve, 3/8" I.D. x 5/8" O.D. x 1 25/32" Long
A.	GA8324	-	Disc Blade/Bearing Assembly, Less Dust Cap (Items 3 And 7-9)

GAUGE WHEELS

(RU140)

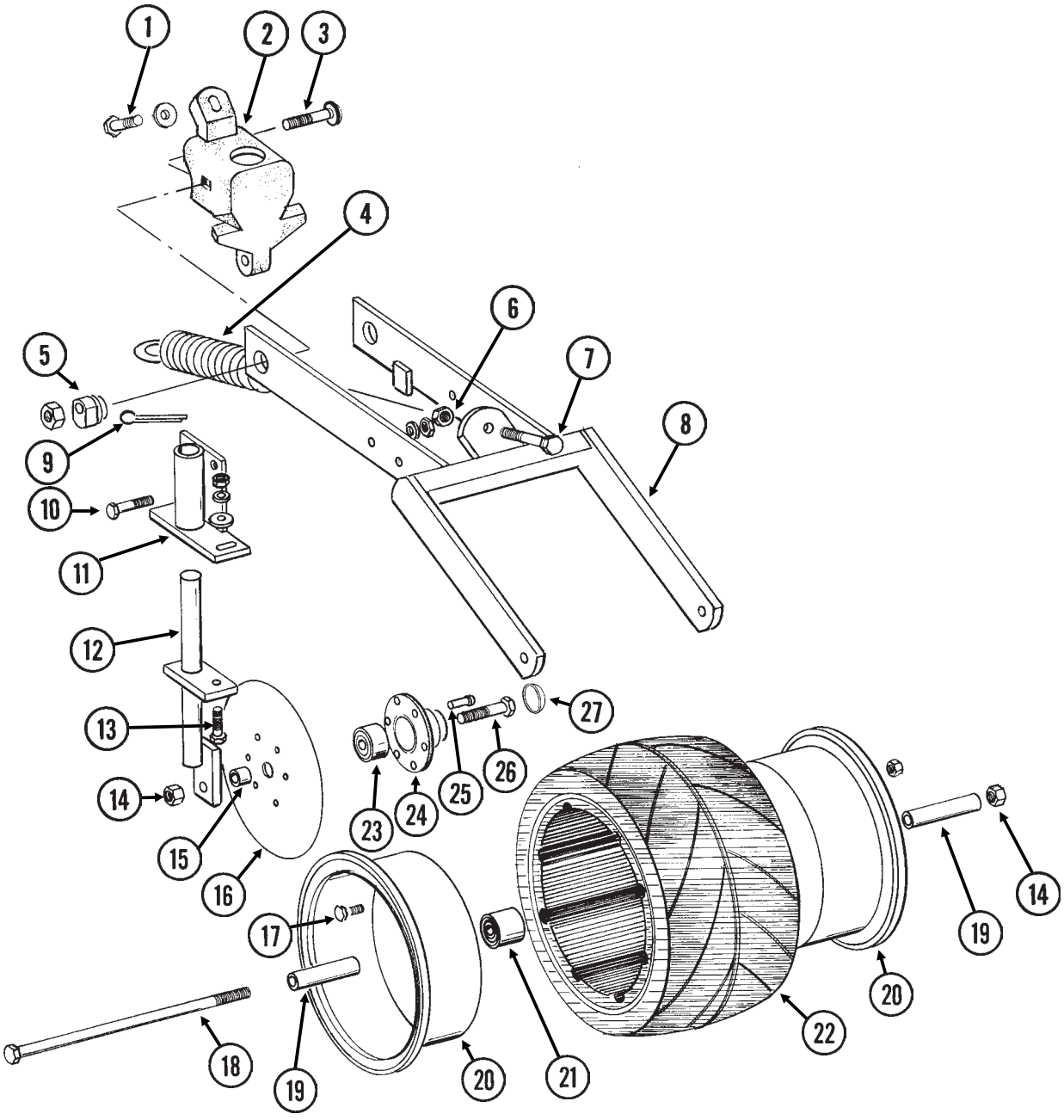


GAUGE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10940	-	Machine Bushing, 1" (.048" Thick)
2.	G10216	2	Washer, 1/2" USS
3.	G10228	2	Lock Washer, 1/2"
4.	G10014	1	Hex Head Cap Screw, 1/2"-13 x 1"
5.	GD11453	2	Cover
6.	G10338	12	Carriage Bolt, 5/16"-18 x 1 1/4"
	G10620	12	Serrated Flange Nut, 5/16"-18
7.	G10924	8	Carriage Bolt, 5/16"-18 x 1 3/4"
	G10620	8	Serrated Flange Nut, 5/16"-18
8.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
	G10230	2	Lock Washer, 5/8"
9.	G10018	14	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10109	14	Lock Nut, 5/16"-18, Grade 8
10.	GD11423	4	Half Wheel
11.	GD1086	2	Tire
12.	GA6171	2	Bearing
13.	G10204	2	Special Machine Bushing, 5/8" x 1" O.D.
14.	GA7975	1	Wheel Arm W/Grease Fitting, Bushings And Seals, L.H. (Shown)
	GA7976	1	Wheel Arm W/Grease Fitting, Bushings And Seals, R.H.
	G10640	1	Grease Fitting, 1/4"-28 (Per Arm)
	GB0276	2	Bushing, 1" I.D. x 1 1/4" O.D. x 1" Long (Per Arm)
	GD10991	2	Seal (Per Arm)
15.		-	See “Shank Assembly”, Pages P2 And P3
A.	GA7949	-	Gauge Wheel Complete (Items 5-7 And 9-12)
B.	G1K296	-	Gauge Wheel Arm Bushing And Seal Driver Kit, Includes: (1) Seal Driver, (1) Bushing Driver, (1) Instruction

COVERING DISCS/SINGLE PRESS WHEEL

RUA054/RUB026(RU94d)

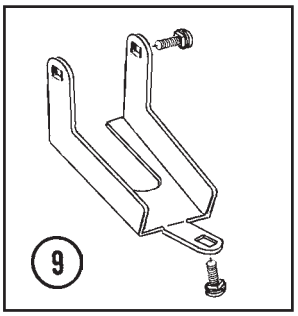


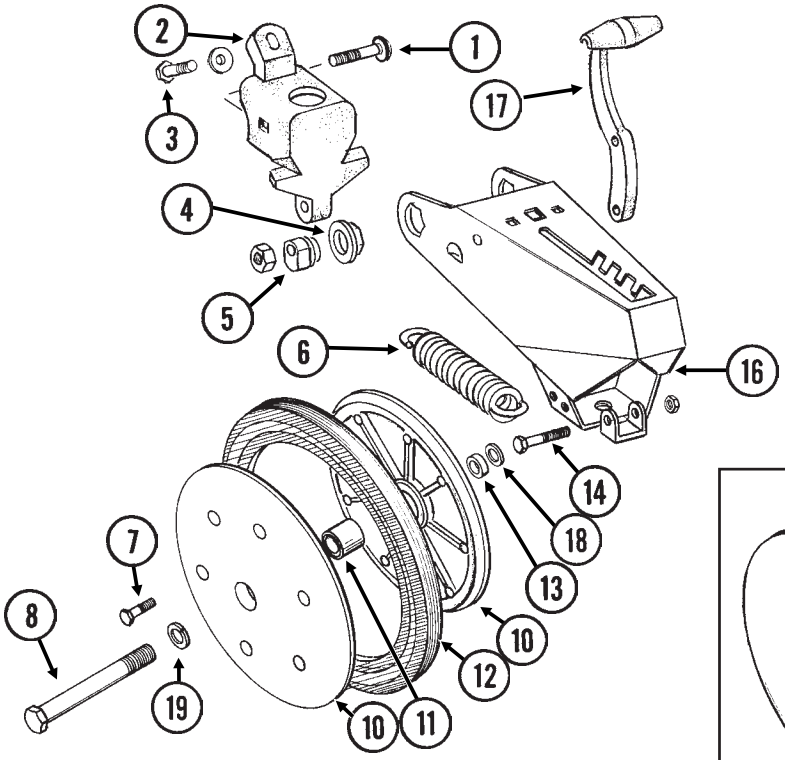
COVERING DISCS/SINGLE PRESS WHEEL

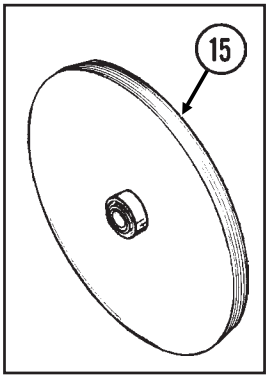
ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10210	1	Washer, 3/8" USS
2.	GB0268	1	Wheel Arm Stop
3.	G10801	2	Carriage Bolt, 1/2"-13 x 2 1/4"
	G10315	-	Carriage Bolt, 1/2"-13 x 2 1/2" (Used W/Straight Drop In-Furrow Granular Chemical Bracket)
	G10102	2	Hex Nut, 1/2"-13
4.	GA2054	1	Spring
5.	GB0239	2	Eccentric Bushing
6.	G10102	1	Hex Nut, 1/2"-13
7.	G10015	1	Adjusting Bolt, 1/2"-13 x 5"
8.	GA6619	1	Mounting Arm
9.	G10463	2	Cotter Pin, 1/4" x 1 1/2"
10.	G10171	4	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
11.	GA6620	2	Bracket
12.	GA6618	2	Mount
13.	G10303	2	Carriage Bolt, 5/16"-18 x 1"
	G10219	2	Washer, 5/16" USS
	G10232	2	Lock Washer, 5/16"
	G10106	2	Hex Nut, 5/16"-18
14.	G10107	3	Lock Nut, 5/8"-11
15.	GD1109	2	Bushing, 41/64" I.D. x 7/8" O.D. x 1/4" Long
16.	GD9290	2	Disc Blade, 8"
17.	G10018	7	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10109	7	Lock Nut, 5/16"-18, Grade 8
18.	G10152	1	Hex Head Cap Screw, 5/8"-11 x 9"
19.	GD3180-12	2	Sleeve, 5/8" I.D. x 7/8" O.D. x 2 7/8" Long
20.	GD9562	2	Half Wheel
21.	GA6171	1	Bearing
22.	GD9305	1	Tire
23.	GA2014	2	Bearing
24.	GD10473	2	Bearing Housing
25.	G10427	12	Rivet, 1/4" x 1/2"
26.	G10006	2	Hex Head Cap Screw, 5/8"-11 x 2 1/4"
27.	GD11845	2	Dust Cap
A.	GA6733	-	Single Press Wheel Complete W/Bearing (Items 17 And 20-22)
B.	GA6801	-	Covering Disc Blade Complete W/Bearing (Items 16 And 23-25)

“V” CLOSING WHEELS

(RU83i/RU83n)



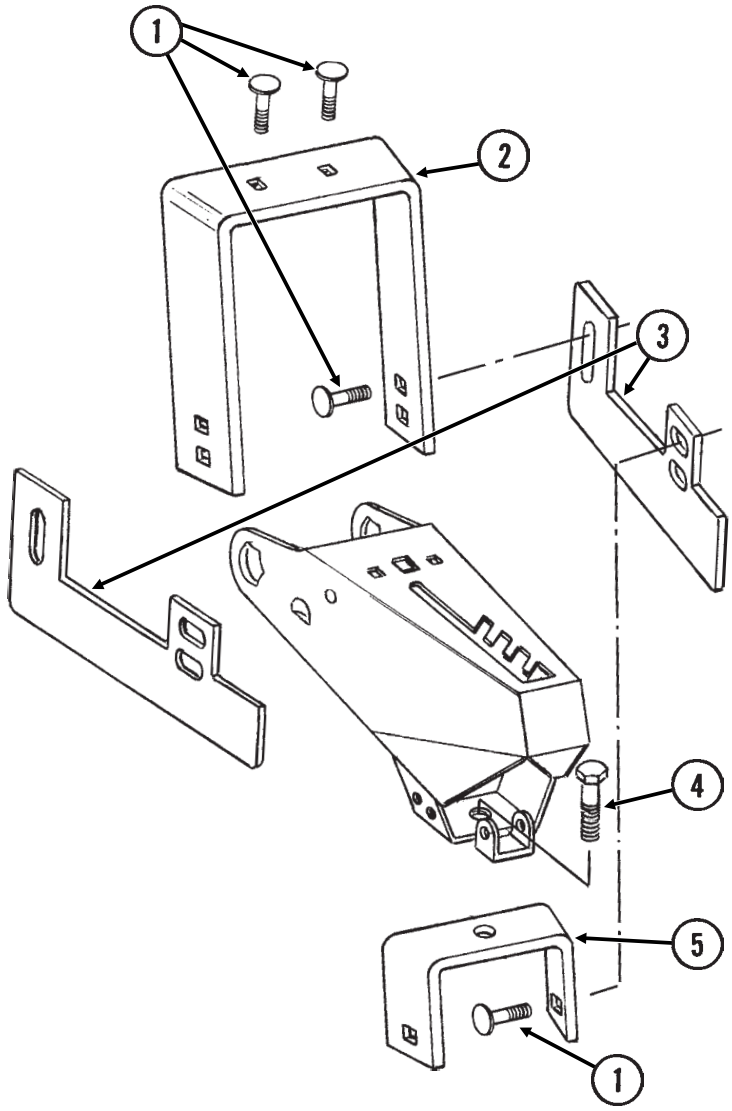




ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10801	2	Carriage Bolt, 1/2"-13 x 2 1/4"
	G10315	-	Carriage Bolt, 1/2"-13 x 2 1/2" (Used W/Straight Drop In-Furrow Granular Chemical Bracket)
	G10111	2	Lock Nut, 1/2"-13
2.	GB0268	1	Wheel Arm Stop
3.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10210	1	Washer, 3/8" USS
4.	GB0282	2	Stepped Bushing
5.	GB0239	2	Eccentric Bushing
6.	GD8460	1	Spring
7.	G10064	6	Hex Head Cap Screw, 1/4"-20 x 1"
8.	G10013	2	Hex Head Cap Screw, 5/8"-11 x 3 1/2"
	G10107	2	Lock Nut, 5/8"-11
9.	G1K345	-	Closing Wheel Shield Kit W/Hardware And Instruction
	G10308	2	Carriage Bolt, 3/8"-16 x 3/4"
	G10599	1	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10210	1	Washer, 3/8" USS
	G10229	3	Lock Washer, 3/8"
	G10101	3	Hex Nut, 3/8"-16
10.	GD9120	4	Nylon Half Wheel
11.	GA6171	2	Bearing
12.	GD1085	2	Rubber Tire, 1" x 12"
13.	GD1109	2	Bushing, 41/64" I.D. x 7/8" O.D. x 1/4" Long
14.	G10133	1	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G10109	1	Lock Nut, 5/16"-18, Grade 8
15.	GA6597	-	Cast Iron Closing Wheel W/Bearing
	GA6171	-	Bearing
16.	GA8322	1	Arm
17.	GB0254	1	Lever
18.	GD7805	2	Special Washer, 5/8", Hardened
19.	G10230	2	Lock Washer, 5/8"
A.	GA6434	-	Rubber Closing Wheel Complete W/Bearing (Items 7 And 10-12)

DRAG CLOSING ATTACHMENT

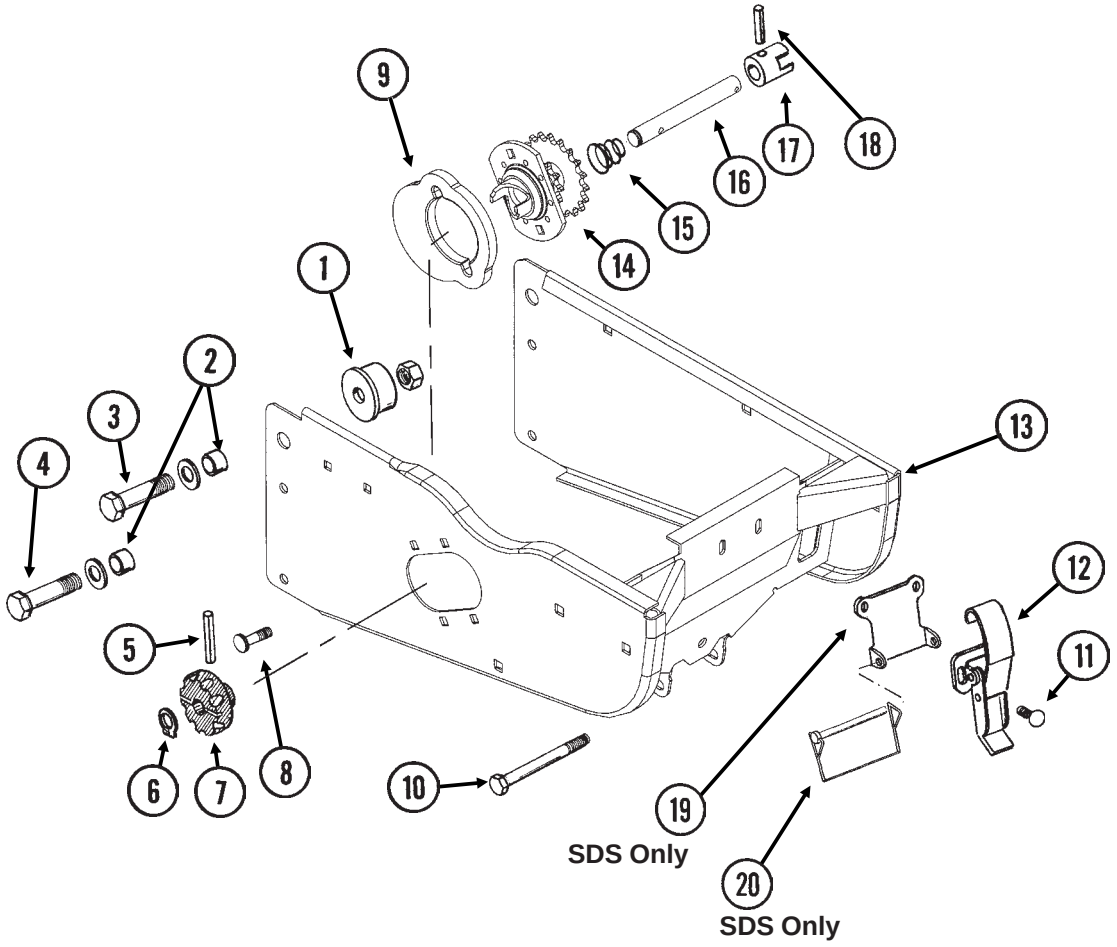
RUB050(RU90c)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10599	6	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10210	6	Washer, 3/8" USS
	G10229	6	Lock Washer, 3/8"
	G10101	6	Hex Nut, 3/8"-16
2.	GD11508	1	Front Bracket
3.	GD11313	2	Blade
4.	G10007	1	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	1	Lock Washer, 5/8"
	G10104	1	Hex Nut, 5/8"-11
5.	GD11509	1	Rear Bracket
A.	G7566X	-	Drag Closing Attachment Complete (Items 1-5)

HOPPER SUPPORT AND METER DRIVE

(METR22f)

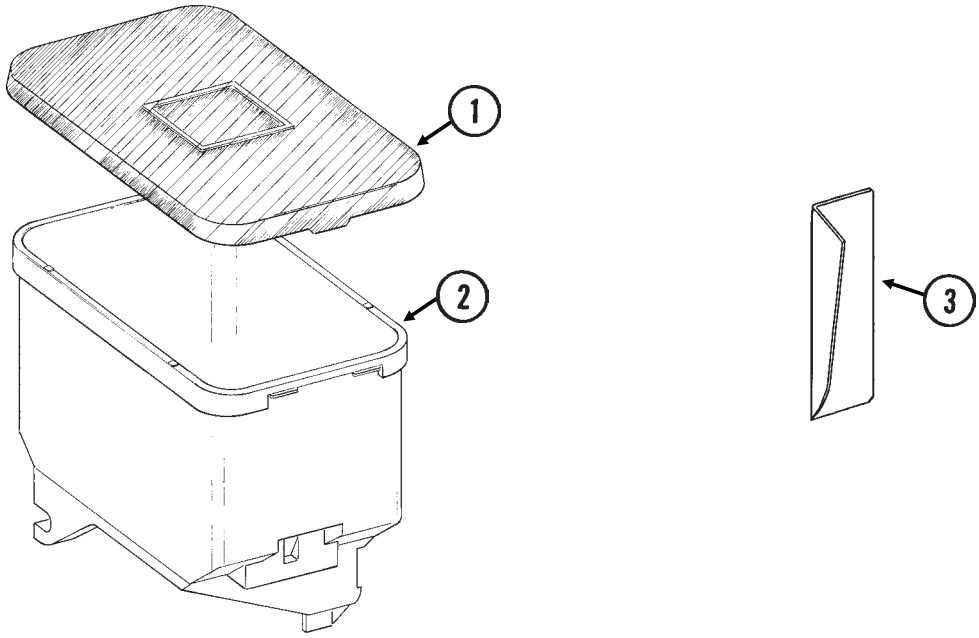


HOPPER SUPPORT AND METER DRIVE

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GB0314	2	Hopper Mount
2.	GB0218	4	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
3.	G10752	2	Hex Head Cap Screw, 5/8"-18 x 2 1/4"
	GD7805	2	Special Washer, 5/8", Hardened
	G10412	2	Lock Nut, 5/8"-18
4.	G10751	2	Hex Head Cap Screw, 5/8"-18 x 1 3/4"
	GD7805	2	Special Washer, 5/8", Hardened
	G10412	2	Lock Nut, 5/8"-18
5.	G10602	1	Spring Pin, 1/4" x 1 1/2"
6.	G10567	1	External Retaining Ring, 5/8"
7.	GD11239	1	Knob
8.	G10338	2	Carriage Bolt, 5/16"-18 x 1 1/4"
	G10620	2	Serrated Flange Nut, 5/16"-18
9.	GB0331	1	Clutch Adapter Plate
10.	G10061	1	Hex Head Cap Screw, 3/8"-16 x 3 1/2"
	G10210	2	Washer, 3/8" USS
	G10108	1	Lock Nut, 3/8"-16
11.	G10309	2	Carriage Bolt, 1/4"-20 x 5/8", Grade 2
	G10621	2	Serrated Flange Nut, 1/4"-20
12.	GA2007	1	Hopper Hold Down Latch
13.	GA10155	1	Hopper Support
14.	GA10137	1	Double Sprocket And Bearing, Drive Clutch, 11/19 Tooth
15.	GD11413	1	Spring
16.	GD15747	1	Shaft
17.	GB0278	1	Coupler
18.	G10546	1	Spring Pin, 3/16" x 1 1/4"
19.	GD13110	1	Retainer (SDS Only)
20.	GD10705	1	Locking Clip Pin, 1/4" x 2 1/2" (SDS Only)
A.	GA10151	-	Meter Drive Assembly, 11/19 Tooth (Items 5-7 And 14-18)

SEED HOPPER AND LID (Conventional Planters)

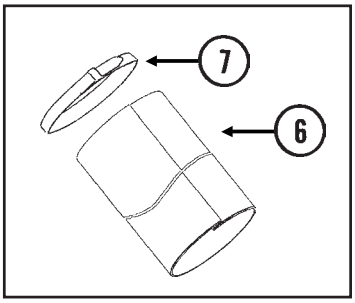
(RU87a/RU87e)

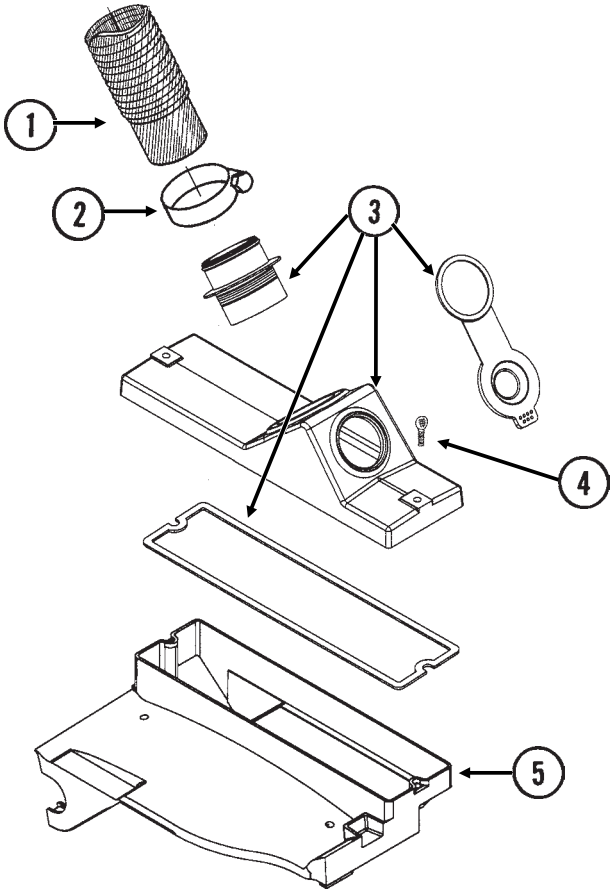


ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD11279	1	Lid
2.	GA9714	1	Seed Hopper, Reinforced
3.	GD11747	1	Seed Reserve Baffle (Optional)

MINI-HOPPER AND DROP HOSES (SDS)

(D16399/FWD94)

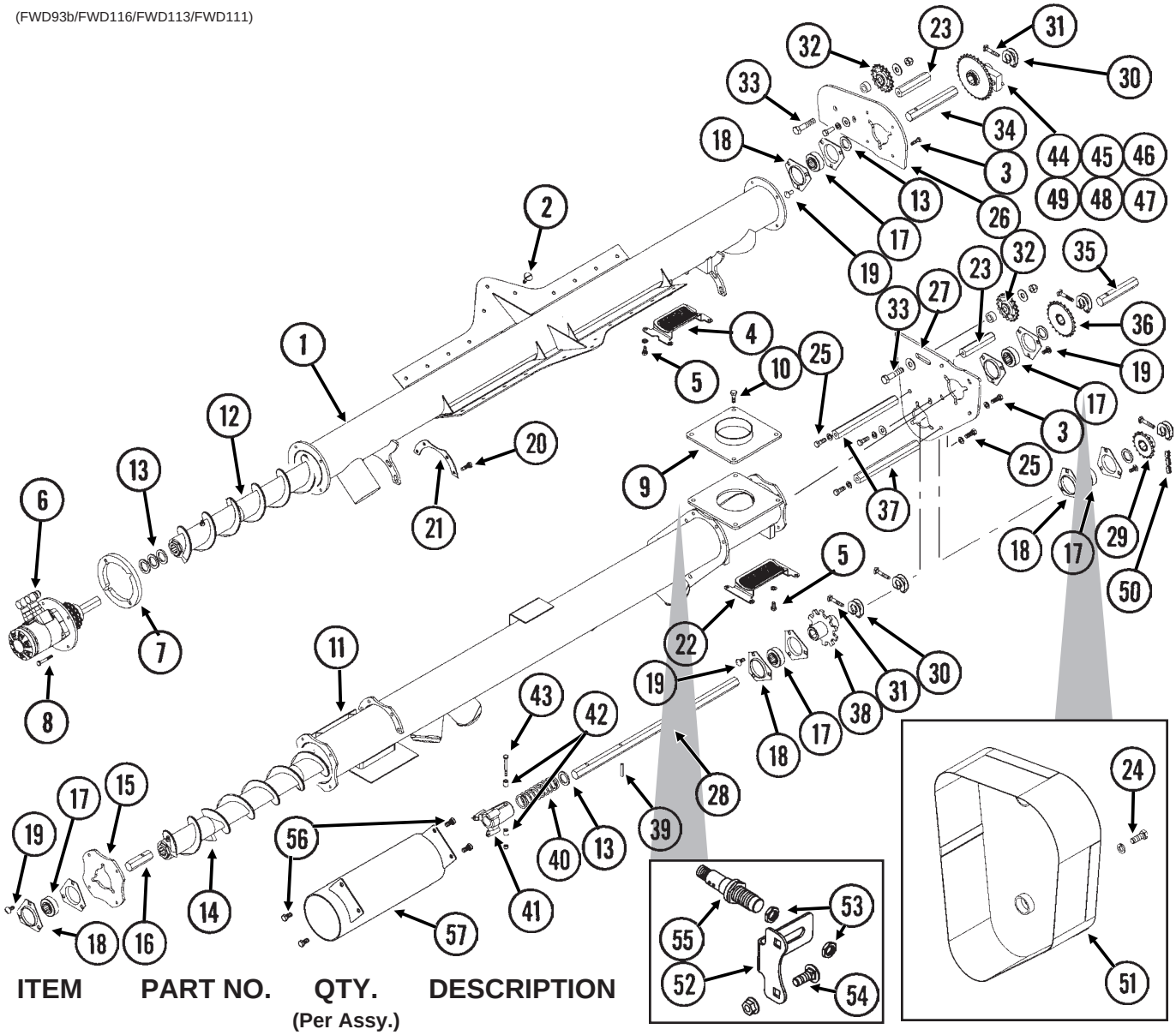




ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD12797-01	1	Drop Hose, 3 1/4" x 34"
	GD12797-04	-	Drop Hose, 3 1/4" x 32"
	GD12797-07	-	Drop Hose, 3 1/4" x 26"
	GD12797-11	-	Drop Hose, 3 1/4" x 28"
2.	G10999	2	T-Bolt Hose Clamp, 3 1/4"
3.	GA11613	1	Lid W/Gasket, Nipple And View Cap
	GD13530	-	Gasket
	GB0312	-	Nipple
	GD13412	-	View Cap
4.	G11033	2	Thumbscrew, 5/16"-18 x 1"
	GD12132	2	Seal
5.	GA9547	1	Mini-Hopper
6.	GD16399-01	-	Sleeve, 3" x 10"
7.	GD2117	-	Tie Strap, 14 1/2"

CENTER AUGER ASSEMBLIES (SDS)

(FWD93b/FWD116/FWD113/FWD111)



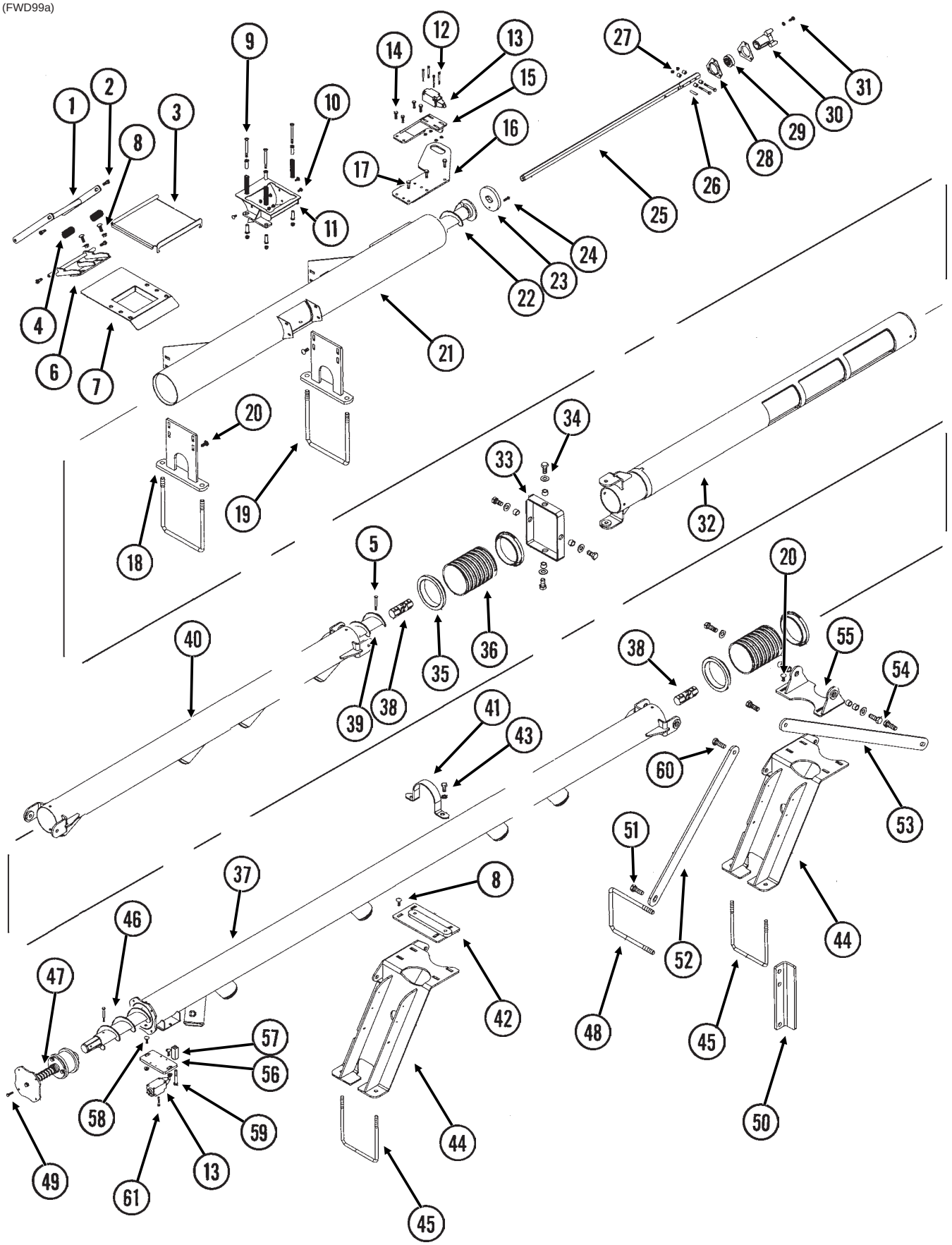
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11395	1	Upper Tube, L.H. (Shown)
	GA11396	-	Upper Tube, R.H.
2.	G11192	22	Bolt, 5/16"-18 x 1"
	G10221	22	Washer, 5/16" SAE
	G11182	22	Lock Nut W/Nylon Insert, 5/16"-18
3.	G10064	10	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	10	Lock Nut, 1/4"-20, Grade B
4.	GA11623	1	Screen
5.	G10018	8	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10232	8	Lock Washer, 5/16"
6.		-	See “SDS Hydraulic System”, Pages P162 And P165
7.	GD16766	1	Ring
8.	G10021	4	Hex Head Cap Screw, 1/4"-20 x 1 1/2"
	G10110	4	Lock Nut, 1/4"-20, Grade B
9.	GA11391	1	Transfer Plate
10.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10622	-	Serrated Flange Nut, 3/8"-16
11.	GA11389	1	Lower Tube, L.H. (Shown)
	GA11390	-	Lower Tube, R.H.
12.	GA11625	1	Auger Assembly, 61 5/8", L.H. (Shown)
	GA11624	1	Auger Assembly, 61 5/8", R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11584	-	Hex Tube, 61 5/8"

CENTER AUGER ASSEMBLIES (SDS)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
13.	G10233	3	Machine Bushing, 1", 10 Gauge
14.	GA11627	1	Auger Assembly, 63 3/8", L.H. (Shown)
	GA11626	1	Auger Assembly, 63 3/8", R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11585	-	Hex Tube, 63 3/8"
15.	GD16547	1	Bearing Plate
16.	GD16707	1	Shaft
17.	G2100-03	5	Bearing, 7/8" Hex Bore, Spherical
18.	G3400-01	-	Flangette
19.	G10312	-	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	-	Serrated Flange Nut, 5/16"-18
20.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10620	8	Serrated Flange Nut, 5/16"-18
21.	GD16550	1	Shim
22.	GA11763	1	Screen
23.	GD16542	2	Guard
24.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10210	-	Washer, 3/8" USS
	G10229	-	Lock Washer, 3/8"
25.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	-	Lock Washer, 3/8"
26.	GD16539	1	Plate
27.	GD16540	1	Lower Plate
28.	GD11394-23	1	Hex Shaft, 7/8" x 23" (2 Holes)
29.	GA5106	1	Sprocket, 17 Tooth
30.	GD11045	5	Lock Clamp
31.	G10130	5	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	5	Flange Nut, 5/16"-18, No Serration
32.	GA7154	2	Sprocket W/Bearing, 18 Tooth
33.	G10581	2	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	GD4887-10	2	Sleeve
	G10216	3	Washer, 1/2" USS
	G10111	2	Lock Nut, 1/2"-13
34.	GD16705	1	Hex Shaft
35.	GD16706	1	Shaft
36.	GA5108	1	Sprocket, 23 Tooth
37.	GD17002	2	Hex Shaft, 7/8" x 8 1/2"
38.	GA11375	1	Sensor Wheel
39.	G10602	1	Spring Pin, 1/4" x 1 1/2"
40.	GD2962	1	Spring
41.	GB0283	1	Coupler
42.	GD11395	2	Bushing, 1/2"
43.	G10880	1	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	1	Lock Nut, 1/4"-20, Grade B
44.	G10464	2	Cotter Pin, 3/16" x 1"
45.	GD1256	2	Spring
46.	GA0378	1	Block And Hub Assembly
47.	GD1255	2	L-Pin
48.	GA5165	1	Sprocket, 30 Tooth
49.	G10430	1	External Retaining Ring, 1 1/4"
50.	G3310-112	1	Chain, No. 40, 112 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
51.	GA11515	1	Guard, L.H.
	GA11513	-	Guard, R.H. (Shown)
52.	GD16535	1	Sensor Mount
53.	GD14257	2	Nut, M12 x 1"
54.	G10305	2	Carriage Bolt, 3/8"-16 x 1"
	G10622	2	Serrated Flange Nut, 3/8"-16
55.		-	Proximity Sensor, See “Electrical Components (SDS Control Console)”, Pages P170 And P171
56.	G10002	4	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10108	4	Lock Nut, 3/8"-16
57.	GA11393	1	Coupler
A.	GA5164	-	Ratchet/Sprocket Assembly, L.H. Hopper (Items 44-49)
	GA9843	-	Ratchet/Sprocket Assembly, R.H. Hopper (Items 44-49)

WING AUGER ASSEMBLIES, 24 ROW 30" (SDS)

(FWD99a)



WING AUGER ASSEMBLIES, 24 ROW 30" (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11539	2	Link
2.	G10183	4	Hex Socket Head Set Screw, 5/16"-18 x 3/8"
3.	GA11538	2	Lid
4.	GD16983	4	Spring
5.	G10880	-	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	-	Lock Nut, 1/4"-20, Grade B
6.	GA11540	2	Link Mount
7.	GA11541	2	Plate
8.	G10305	-	Carriage Bolt, 3/8"-16 x 1"
	G10622	-	Serrated Flange Nut, 3/8"-16
9.	G11197	6	Slotted Flat Head Machine Screw, 5/16"-18 x 3 1/2"
	GD16634	12	Sleeve
	GD16982	6	Spring
	G11182	6	Lock Nut W/Nylon Insert, 5/16"-18
10.	G10309	8	Carriage Bolt, 1/4"-20 x 5/8", Grade 2
	G10621	8	Serrated Flange Nut, 1/4"-20
11.	GA11555	1	Transfer Chute, L.H.
	GA11556	-	Transfer Chute, R.H.
12.	G11205	8	Hex Socket Head Cap Screw, No. 10-32 x 2"
	G10243	8	Washer, No. 10 SAE
	G11206	8	Lock Nut, No. 10-32
13.		-	Limit Switch, See “Electrical Components (SDS Control Console), Pages P170 And P171
14.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10620	8	Serrated Flange Nut, 5/16"-18
15.	GA11548	2	Mount
16.	GD16672	2	Plate
17.	G10001	6	Hex Head Cap Screw, 3/8"-16 x 1"
	G10622	6	Serrated Flange Nut, 3/8"-16
18.	GA11531	4	Mount
19.	GD16320	4	U-Bolt, 8" x 8" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
20.	G10305	8	Carriage Bolt, 3/8"-16 x 1"
	G10622	8	Serrated Flange Nut, 3/8"-16
21.	GA11563	1	Outer Auger Tube, L.H.
	GA11562	-	Outer Auger Tube, R.H.
22.	GA12673	1	Auger Assembly, L.H. (Shown)
	GA12672	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16674	-	Spacer
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11581	-	Hex Tube, 64"
23.	GD16675	2	Pad
24.	G11180	2	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	2	Lock Nut, 1/4"-20, Grade B
25.	GA11580	2	Shaft
26.	G10602	2	Spring Pin, 1/4" x 1 1/2"

(Continued On Following Page)

WING AUGER ASSEMBLIES, 24 ROW 30" (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
27.	G10880	4	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	GD11395	8	Bushing, 1/2"
	G10110	4	Lock Nut, 1/4"-20, Grade B
28.	G3400-01	4	Flangette
29.	G2100-03	2	Bearing, 7/8" Hex Bore, Spherical
30.	GB0283	2	Coupler
31.	G10043	6	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	6	Lock Washer, 5/16"
32.	GA11705	1	Inner Auger Tube, L.H. (Shown)
	GA11706	-	Inner Auger Tube, R.H.
33.	GD16556	2	Pivot Tube
34.	G10055	8	Hex Head Cap Screw, 5/8"-11 x 1 1/4"
	GD7805	8	Special Washer, 5/8", Hardened
	GB0218	8	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
35.	GD16788	8	Hose Keeper
36.	GD16913	4	Hose, 5"
37.	GA11551	1	Auger Tube, L.H. (Shown)
	GA11552	-	Auger Tube, R.H.
38.	GA11575	4	U-Joint
39.	GA11631	1	Auger Assembly, L.H. (Shown)
	GA11630	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GD16385-04	-	Hex Tube, 97 1/4"
40.	GA11549	1	Auger Tube, L.H. (Shown)
	GA11550	-	Auger Tube, R.H.
41.	GD16631	2	Strap
42.	GA11518	2	Strap
43.	G10014	4	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	4	Lock Washer, 1/2"
44.	GA11517	4	Support
45.	GD7145	4	U-Bolt, 7" x 7" x 1/2"-13
	G10228	8	Lock Washer, 1/2"
	G10102	8	Hex Nut, 1/2"-13
46.	GA11633	1	Auger Assembly, L.H. (Shown)
	GA11632	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11582	-	Hex Tube, 125 7/8"
	GA11583	-	Hex Tube, 118 7/8"
47.	GA11778	2	Auger Stop
48.	GD14559	2	U-Bolt, 7" x 7" x 5/8"-11 (9" Long)
	G10230	4	Lock Washer, 5/8"
	G10102	4	Hex Nut, 5/8"-11
49.	G10064	4	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	4	Lock Nut, 1/4"-20, Grade B
50.	GD16466	1	Bracket, R.H. Side (Shown)
	GD16467	-	Bracket, L.H. Side

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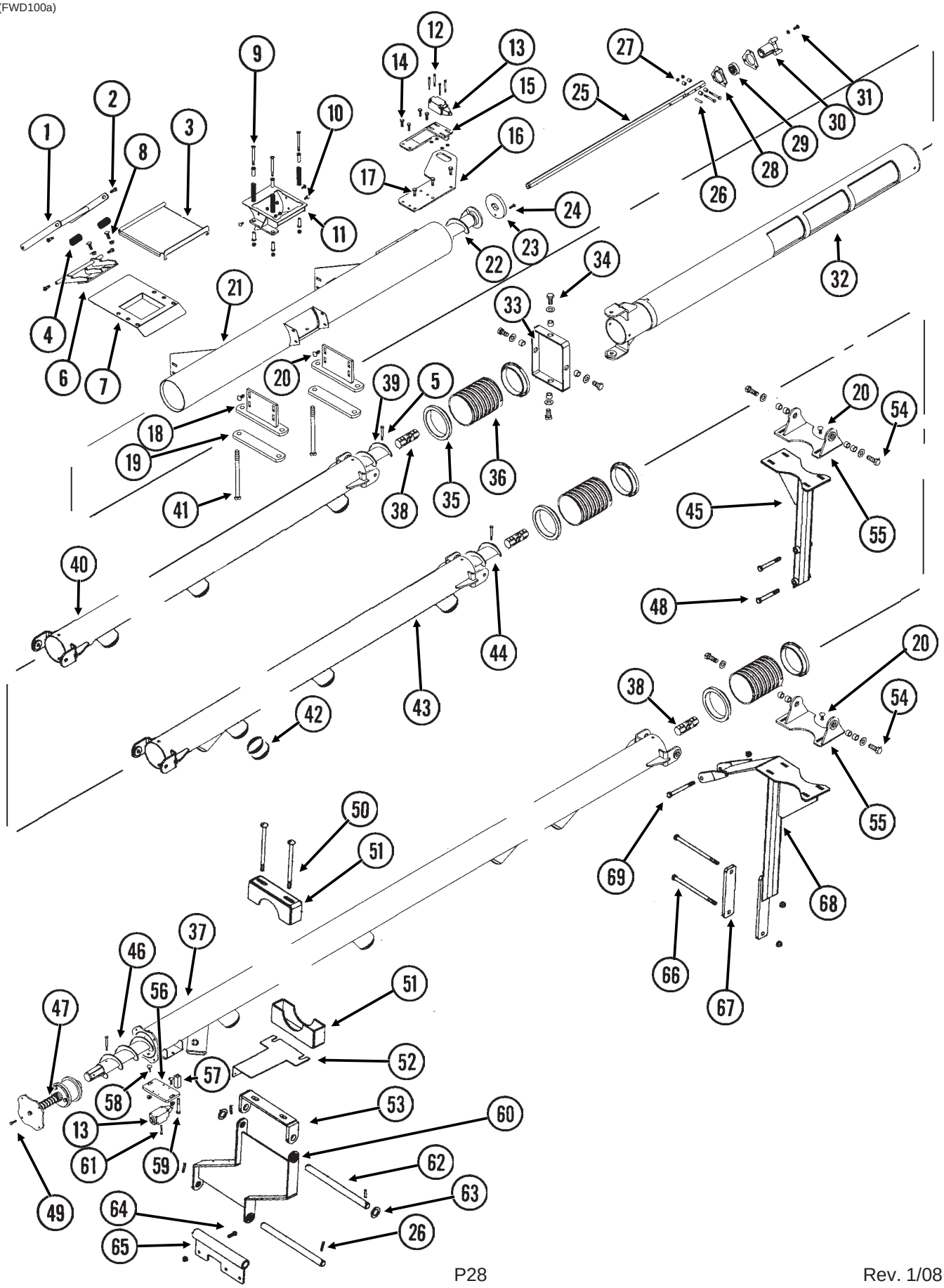
WING AUGER ASSEMBLIES, 24 ROW 30" (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
51.	G10005	4	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G10205	4	Washer, 5/8" SAE
	G10107	4	Lock Nut, 5/8"-11
52.	GD16602	2	Brace
53.	GD16601	2	Brace
54.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	GD3180-29	4	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 5/16"
55.	GA11684	2	Pivot Mount
56.	GD16680	2	Mount
57.	GD16701	2	Arm, 3/4" x 3/4" x 2"
58.	G10303	2	Carriage Bolt, 5/16"-18 x 1"
	G10620	2	Serrated Flange Nut, 5/16"-18
59.	G10049	2	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10229	2	Lock Washer, 3/8"
60.	G10005	4	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G10107	4	Lock Nut, 5/8"-11
61.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 1/2", Grade 8

WING AUGER ASSEMBLIES, 32 ROW 30" AND 36 ROW 30" (SDS)

(FWD100a)



WING AUGER ASSEMBLIES, 32 ROW 30" AND 36 ROW 30" (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11539	2	Link
2.	G10183	4	Hex Socket Head Set Screw, 5/16"-18 x 3/8"
3.	GA11538	2	Lid
4.	GD16983	4	Spring
5.	G10880	-	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	-	Lock Nut, 1/4"-20, Grade B
6.	GA11540	2	Link Mount
7.	GA11541	2	Plate
8.	G10305	-	Carriage Bolt, 3/8"-16 x 1"
	G10622	-	Serrated Flange Nut, 3/8"-16
9.	G11197	6	Slotted Flat Head Machine Screw, 5/16"-18 x 3 1/2"
	GD16634	12	Sleeve
	GD16982	6	Spring
	G11182	6	Lock Nut W/Nylon Insert, 5/16"-18
10.	G10309	8	Carriage Bolt, 1/4"-20 x 5/8", Grade 2
	G10621	8	Serrated Flange Nut, 1/4"-20
11.	GA11555	1	Transfer Chute, L.H.
	GA11556	-	Transfer Chute, R.H.
12.	G11205	8	Hex Socket Head Cap Screw, No. 10-32 x 2"
	G10243	8	Washer, No. 10 SAE
	G11206	8	Lock Nut, No. 10-32
13.		-	Limit Switch, See “Electrical Components (SDS Control Console), Pages P170 And P171
14.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10620	8	Serrated Flange Nut, 5/16"-18
15.	GA11548	2	Mount
16.	GD16672	2	Plate
17.	G10001	6	Hex Head Cap Screw, 3/8"-16 x 1"
	G10622	6	Serrated Flange Nut, 3/8"-16
18.	GA11532	4	Mount
19.	GD16620	4	Plate
20.	G10305	8	Carriage Bolt, 3/8"-16 x 1"
	G10622	8	Serrated Flange Nut, 3/8"-16
21.	GA11563	1	Outer Auger Tube, L.H.
	GA11562	-	Outer Auger Tube, R.H.
22.	GA12673	1	Auger Assembly, L.H. (Shown)
	GA12672	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16674	-	Spacer
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11581	-	Hex Tube, 64"
23.	GD16675	2	Pad
24.	G11180	2	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	2	Lock Nut, 1/4"-20, Grade B
25.	GA11580	2	Shaft
26.	G10602	2	Spring Pin, 1/4" x 1 1/2"

(Continued On Following Page)

WING AUGER ASSEMBLIES, 32 ROW 30" AND 36 ROW 30" (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
27.	G10880	4	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	GD11395	8	Bushing, 1/2"
	G10110	4	Lock Nut, 1/4"-20, Grade B
28.	G3400-01	4	Flangette
29.	G2100-03	2	Bearing, 7/8" Hex Bore, Spherical
30.	GB0283	2	Coupler
31.	G10043	6	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	6	Lock Washer, 5/16"
32.	GA11705	1	Inner Auger Tube, L.H. (Shown)
	GA11706	-	Inner Auger Tube, R.H.
33.	GD16556	2	Pivot Tube
34.	G10055	8	Hex Head Cap Screw, 5/8"-11 x 1 1/4"
	GD7805	8	Special Washer, 5/8", Hardened
	GB0218	8	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
35.	GD16788	8	Hose Keeper
36.	GD16913	4	Hose, 5"
37.	GA11713	1	Auger Tube, L.H., 32 Row 30" (Shown)
	GA11712	-	Auger Tube, R.H., 32 Row 30"
	GA11715	1	Auger Tube, L.H., 36 Row 30" (Shown)
	GA11714	-	Auger Tube, R.H., 36 Row 30"
38.	GA11575	4	U-Joint
39.	GA11723	1	Auger Assembly, L.H. (Shown)
	GA11724	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GD16385-07	-	Hex Tube, 67 1/4"
40.	GA11709	1	Auger Tube, L.H. (Shown)
	GA11708	-	Auger Tube, R.H.
41.	G10046	8	Hex Head Cap Screw, 5/8"-11 x 5"
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
42.	G11000	-	Cap, 3"
43.	GA11711	1	Auger Tube, L.H. (Shown)
	GA11710	-	Auger Tube, R.H.
44.	GA11721	1	Auger Assembly, L.H. (Shown)
	GA11722	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GD16385-08	-	Hex Tube, 112"
45.	GA11729	2	Support

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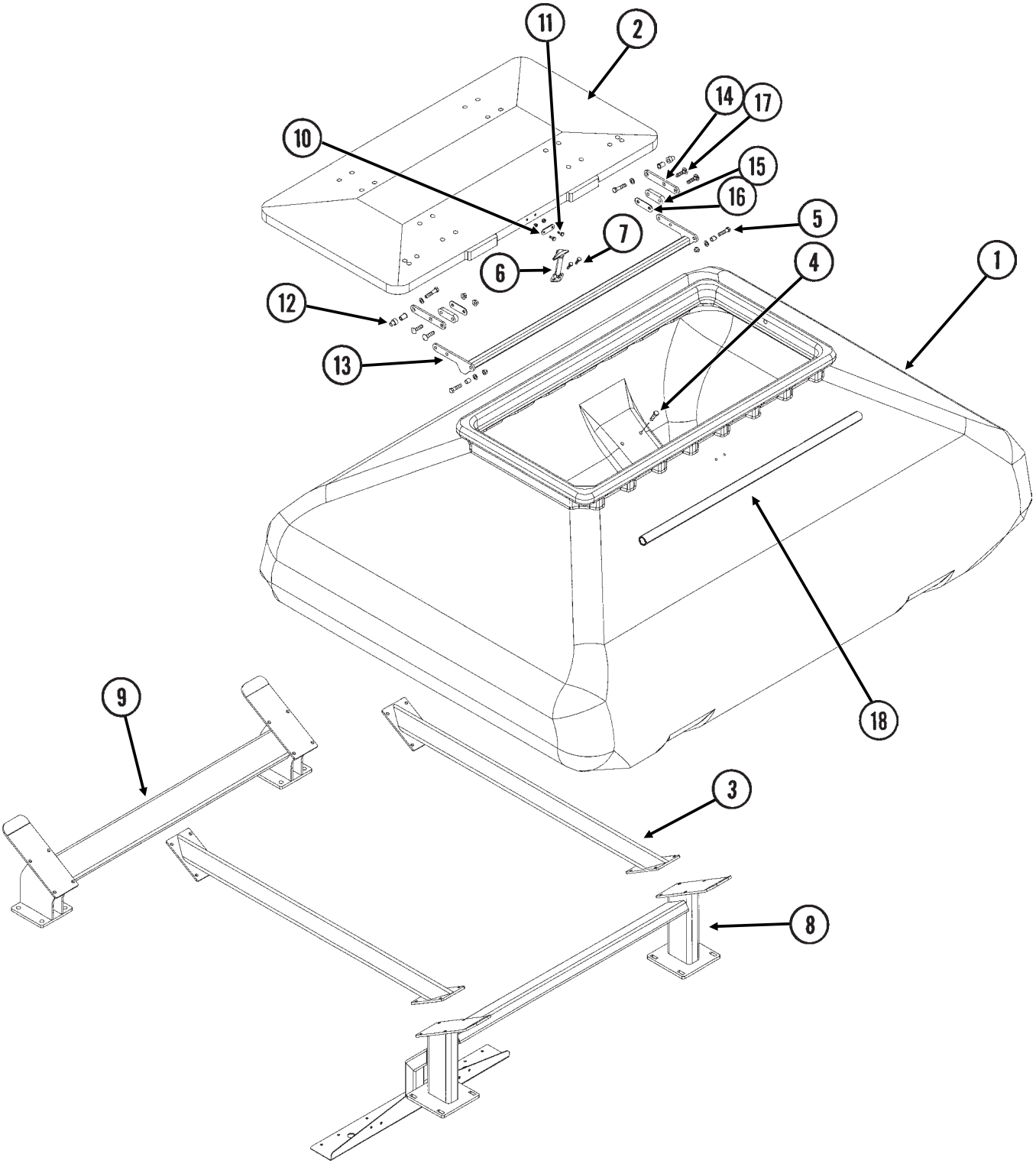
WING AUGER ASSEMBLIES, 32 ROW 30" AND 36 ROW 30" (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
46.	GA11719	1	Auger Assembly, L.H., 32 Row 30" (Shown)
	GA11720	-	Auger Assembly, R.H., 32 Row 30"
	GA11717	1	Auger Assembly, L.H., 36 Row 30" (Shown)
	GA11718	-	Auger Assembly, R.H., 36 Row 30"
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11725	-	Hex Tube, 155 3/8", 32 Row 30"
	GA11726	-	Hex Tube, 162 3/8", 32 Row 30"
	GA11728	-	Hex Tube, 222 3/8", 36 Row 30"
	GA11727	-	Hex Tube, 215 3/8", 36 Row 30"
47.	GA11778	2	Auger Stop
48.	G10035	4	Hex Head Cap Screw, 1/2"-13 x 4"
	G10111	4	Lock Nut, 1/2"-13
49.	G10064	8	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	8	Lock Nut, 1/4"-20, Grade B
50.	G11207	8	Carriage Bolt, 1/2"-13 x 8 1/2"
	G10216	8	Washer, 1/2" USS
	G10111	8	Lock Nut, 1/2"-13
51.	GA11733	4	Clamp
52.	GD16972	1	Mount, L.H. Only
53.	GA11731	2	Support
54.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	GD3180-29	4	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 5/16"
55.	GA11684	2	Pivot Mount
56.	GD16680	2	Mount
57.	GD16701	2	Arm, 3/4" x 3/4" x 2"
58.	G10303	2	Carriage Bolt, 5/16"-18 x 1"
	G10620	2	Serrated Flange Nut, 5/16"-18
59.	G10049	2	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10229	2	Lock Washer, 3/8"
60.	GA11732	2	Support
61.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 1/2", Grade 8
62.	GD16973	4	Pin, 1" x 13 1/2"
63.	G10082	8	Washer, 1" SAE
64.	G10004	-	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10622	-	Serrated Flange Nut, 3/8"-16
65.	GA11730	2	Support
66.	G10909	4	Hex Head Cap Screw, 1/2"-13 x 9"
	G10111	4	Lock Nut, 1/2"-13
67.	GD16957	2	Bracket
68.	GA11716	2	Hook Plate Mount
69.	G10348	2	Hex Head Cap Screw, 1/2"-13 x 5"
	G10111	2	Lock Nut, 1/2"-13

BULK SEED HOPPER ASSEMBLY (SDS)

(FWD93a)

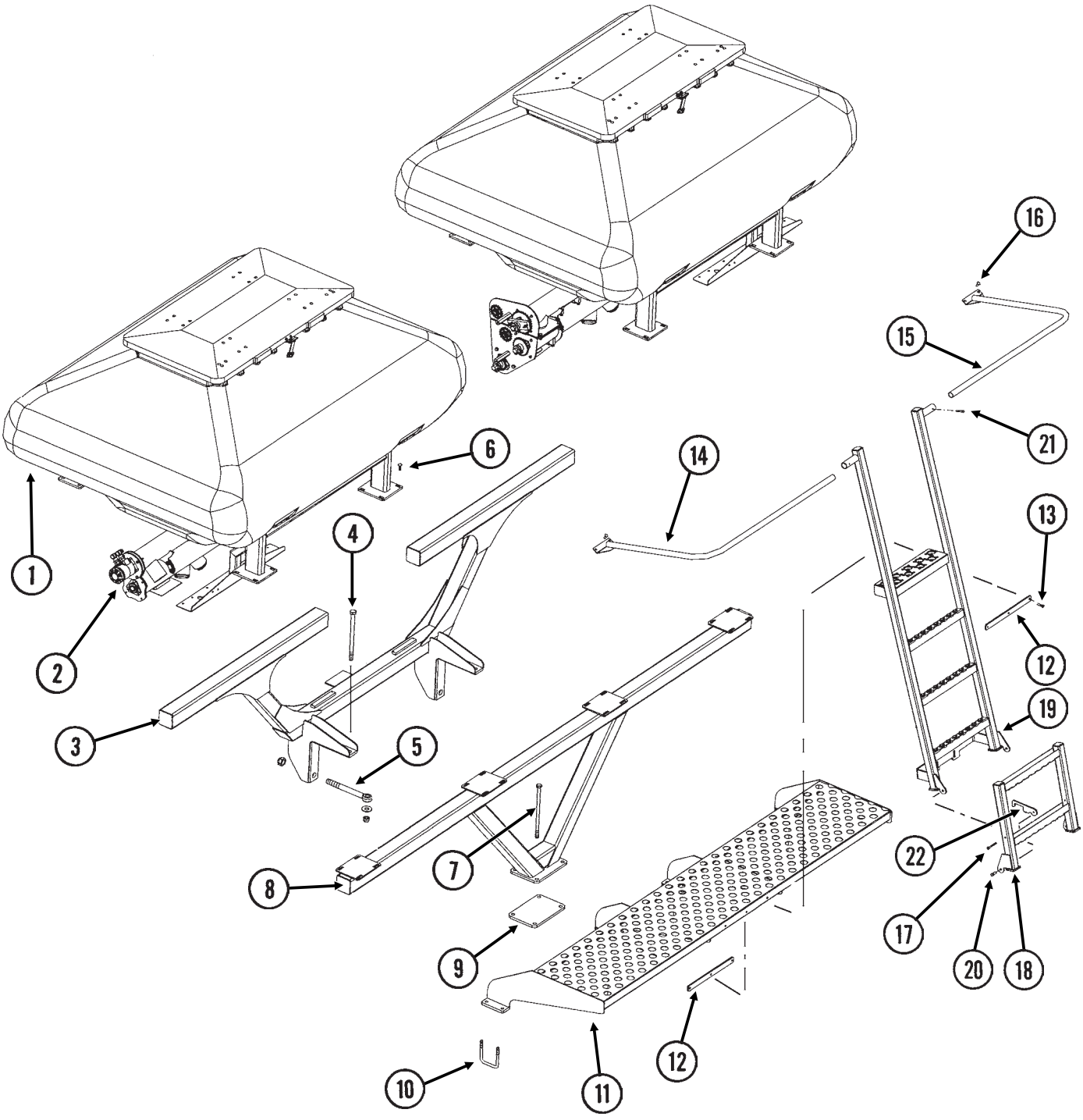


BULK SEED HOPPER ASSEMBLY (SDS)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD17308	1	Hopper, R.H.
	GD17309	-	Hopper, L.H.
2.	GA11579	1	Lid
3.	GA11381	2	Hopper Stiffener
4.	G10003	16	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10203	16	Washer, 3/8" SAE
	G10108	16	Lock Nut, 3/8"-16
5.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	GD11963-03	2	Tube, 1/2" O.D. x 25/64" I.D. x 9/16"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
6.	GA11635	1	Latch Cover
7.	G10064	2	Hex Head Cap Screw, 1/4"-20 x 1"
	G10211	2	Washer, 1/4" SAE
	G10110	2	Lock Nut, 1/4"-20, Grade B
8.	GA11617	1	Rear Mount, L.H.
	GA11616	-	Rear Mount, R.H.
9.	GA11615	1	Front Mount
10.	GD16979	1	Latch
11.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10110	2	Lock Nut, 1/4"-20, Grade B
12.	G10047	2	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10203	2	Washer, 3/8" SAE
	GD16694	2	Bushing
	G11226	2	Tee Nut, 3/8"-16
13.	GA11587	1	Hinge
14.	GD16692	2	Bar
15.	GD16693	2	Spacer
16.	GD16691	2	Shim
17.	G10301	4	Carriage Bolt, 3/8"-16 x 1 1/2"
	G10622	4	Serrated Flange Nut, 3/8"-16
18.	GD13575-05	-	Tube, 1" x 43" (If Applicable)

BULK SEED HOPPER CATWALK (SDS)

(FWD97)

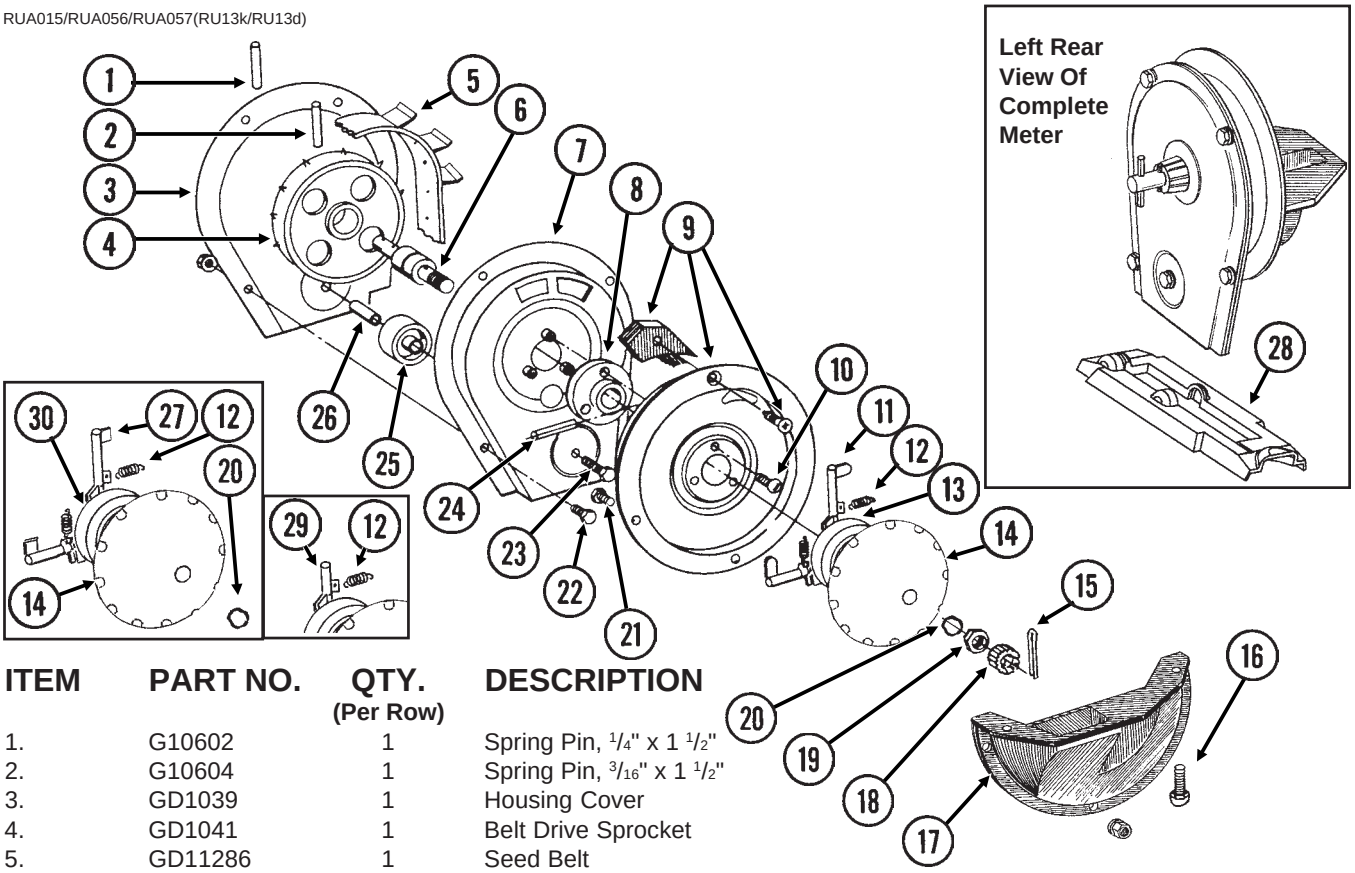


BULK SEED HOPPER CATWALK (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “Bulk Seed Hopper Assembly (SDS)”, Pages P32 And P33
2.		-	See “Center Auger Assemblies (SDS)”, Pages P22 And P23
3.	GA11355	1	Hopper Mount, Front, 24 Row 30"
	GA11536	-	Hopper Mount, Front, 32 Row 30" And 36 Row 30"
4.	G10541	1	Hex Head Cap Screw, 3/4"-10 x 11"
	G10218	1	Washer, 3/4" USS
	G10112	1	Lock Nut, 3/4"-10
5.	GD15283	1	Eyebolt, 1"-14 x 10"
	G11108	1	Lock Nut, 1"-14
6.	G10599	4	Carriage Bolt, 3/8"-16 x 1 1/4", 24 Row 30"
	G10301	-	Carriage Bolt, 3/8"-16 x 1 1/2", 32 Row 30" And 36 Row 30"
	G10622	4	Serrated Flange Nut, 3/8"-16
7.	G11122	4	Hex Head Cap Screw, 5/8"-11 x 12", 24 Row 30"
	GA11775	-	Special Bolt, 5/8"-11 x 18 1/2", 32 Row 30" And 36 Row 30"
	G10205	4	Washer, 5/8" SAE
	G10107	4	Lock Nut, 5/8"-11
8.	GA11356	1	Hopper Mount, Rear, 24 Row 30"
	GA11537	-	Hopper Mount, Rear, 32 Row 30" And 36 Row 30"
9.	GD16530	1	Plate
10.	GD16356	4	U-Bolt, 3 1/2" x 3 1/2" x 1/2"-13
	G10228	8	Lock Washer, 1/2"
	G10102	8	Hex Nut, 1/2"-13
11.	GA11638	1	Catwalk
12.	GD16778	2	Bracket
13.	G10171	3	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10109	3	Lock Nut, 5/16"-18, Grade 8
14.	GA11639	1	Railing, L.H.
15.	GA11640	1	Railing, R.H.
16.	G10303	4	Carriage Bolt, 5/16"-18 x 1"
	G10219	4	Washer, 5/16" USS
	G10109	4	Lock Nut, 5/16"-18, Grade 8
17.	G10403	1	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	1	Lock Nut, 1/4"-20, Grade B
18.	GA11637	1	Lower Ladder
19.	GA11636	1	Ladder
20.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10108	2	Lock Nut, 3/8"-16
21.	G10040	2	Hex Head Cap Screw, 1/4"-20 x 1 3/4"
	G10110	2	Lock Nut, 1/4"-20, Grade B
22.	GD16779	1	Hook

FINGER PICKUP SEED METER

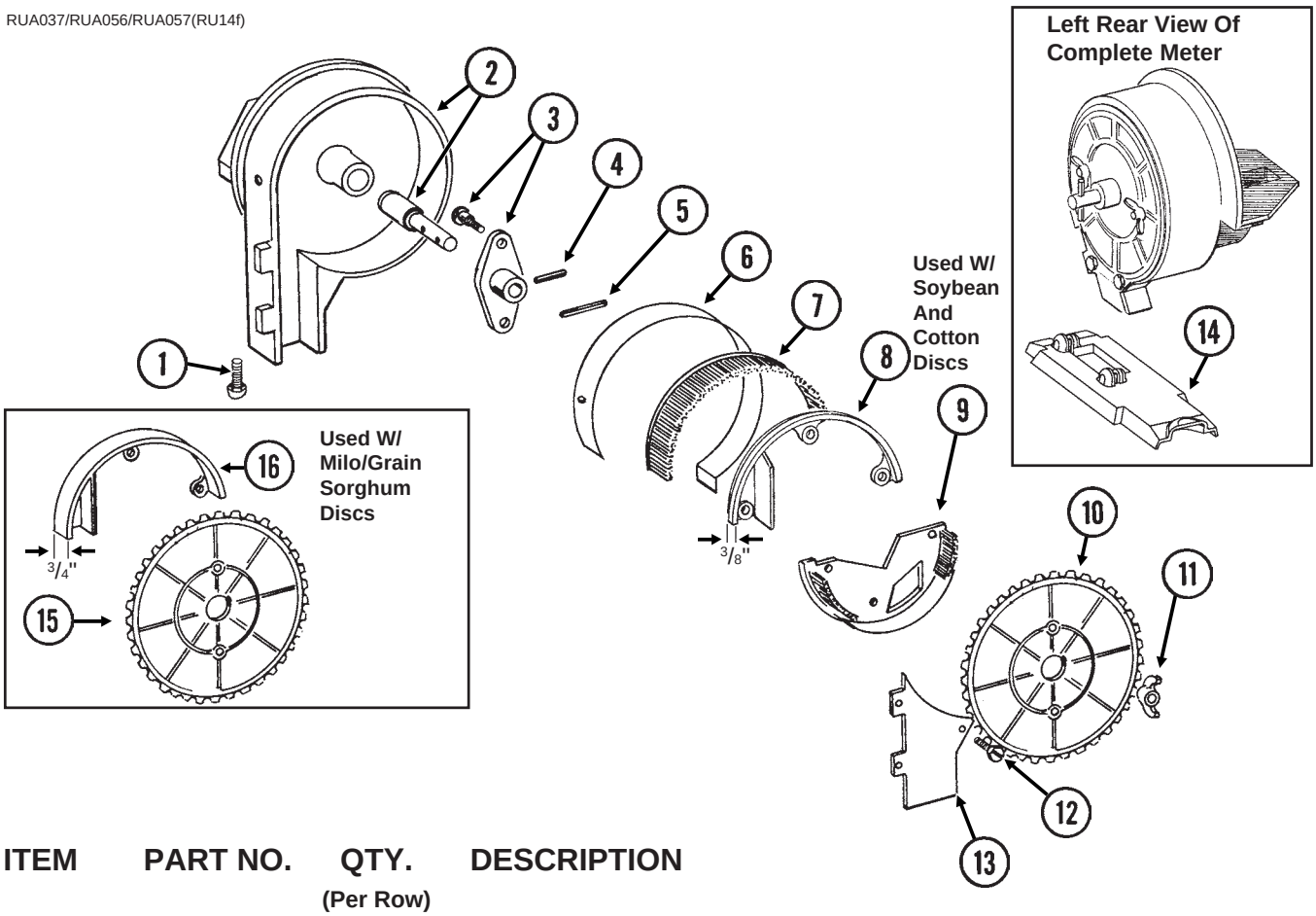
RUA015/RUA056/RUA057(RU13k/RU13d)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10602	1	Spring Pin, 1/4" x 1 1/2"
2.	G10604	1	Spring Pin, 3/16" x 1 1/2"
3.	GD1039	1	Housing Cover
4.	GD1041	1	Belt Drive Sprocket
5.	GD11286	1	Seed Belt
6.	GA2019	1	Bearing
7.	GA2018	1	Conveyor Housing
8.	GB0110	1	Bearing Housing
9.	GR1569	1	Carrier Plate W/Brush And Screw
	GA2020	-	Brush
	G10690	-	Rolling Thread Screw, No. 10 x 3/4"
10.	G10401	3	Slotted Hex Washer Head Screw, No. 10-32 x 5/8"
11.	GD18704	12	Finger, Corn
12.	GD6501	12	Spring
13.	GB0410	1	Cam
14.	GD11528	1	Finger Holder
15.	G10470	1	Cotter Pin, 5/32" x 1"
16.	G11009	2	Locking Thumbscrew, 5/16"-18 x 3/4"
17.	GD11311	1	Seed Baffle
18.	GD1083	1	Cover Nut
19.	G10500	1	Jam Nut, 5/8"-18 UNF
20.	GA8343	1	Wave Washer, 5/8" (Triple Wave)
21.	G10020	3	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10323	3	Hex Flange Nut, 1/4"-20, No Serrations
22.	G10022	4	Hex Head Cap Screw, 1/4"-20 x 1/2"
	G10621	4	Serrated Flange Nut, 1/4"-20
23.	G10021	1	Hex Head Cap Screw, 1/4"-20 x 1 1/2"
	G10621	1	Serrated Flange Nut, 1/4"-20
24.	G10603	1	Spring Pin, 1/4" x 1 1/4"
25.	GD1042	1	Idler
26.	GB0120	1	Bushing, 17/64" I.D. x 1 1/32" Long
27.	GD10226	12	Finger, Oil Sunflower
28.	GD15698	1	Shank Cover, Finger Pickup Seed Meter
29.	GD11787	-	Half Rate Blank Finger
30.	GB0111	1	Cam
A.	GR1848	-	Finger Assembly, Corn (Items 11-14 And 20)
B.	GR1327	-	Finger Assembly, Oil Sunflower (Items 12, 14, 20, 27 And 30)

BRUSH-TYPE SEED METER

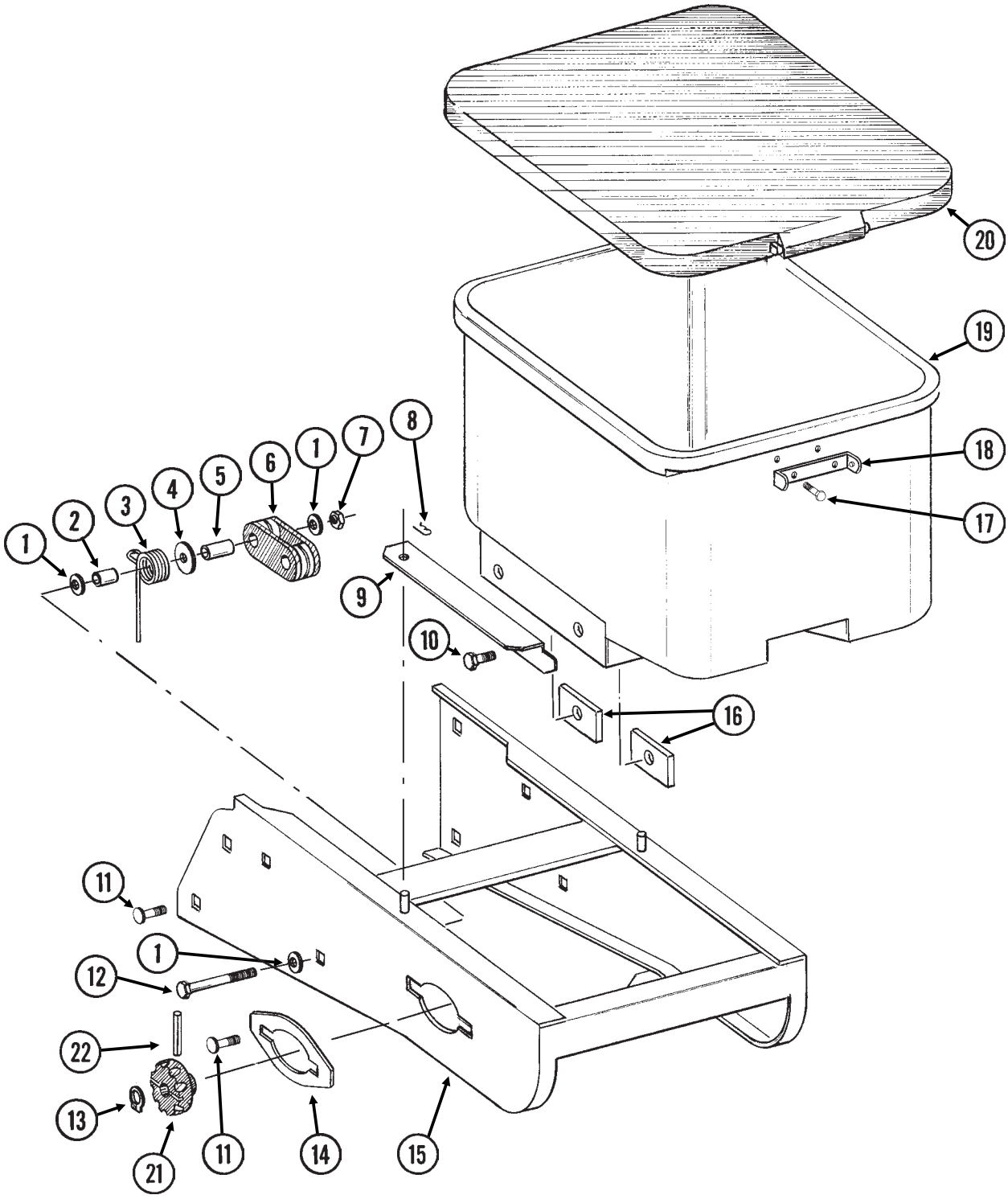
RUA037/RUA056/RUA057(RU14f)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11009	2	Locking Thumbscrew, 5/16"-18 x 3/4"
2.	GA6027	1	Housing W/Bearing
	GA5698	-	Bearing
3.	GA6038	1	Hub W/Shoulder Bolts
	GD1755	-	Shoulder Bolt, 1/4"-20 (2 Used)
4.	G10603	1	Spring Pin, 1/4" x 1 1/4"
5.	G10602	1	Spring Pin, 1/4" x 1 1/2"
6.	GD8778	1	Wear Strip
7.	GA5699	1	Upper Brush
8.	GD11122	1	Upper Brush Retainer (Used W/Soybean And Cotton Discs)
9.	GA5834	1	Lower Brush
10.	GA5794	-	Seed Disc, Soybean, 60 Cell, Black Color-Coded
	GA6184	-	Seed Disc, Specialty Soybean, 48 Cell, Dark Blue Color-Coded
	GA5796	-	Seed Disc, Cotton, Acid-Delinted, 30 Cell, White Color-Coded
	GA6168	-	Seed Disc, Large Cotton, Acid-Delinted, 36 Cell, Tan Color-Coded
	GA6478	-	Seed Disc, High-Rate Cotton, Acid-Delinted, 48 Cell, Light Green Color-Coded
	GA6182	-	Seed Disc, Hill-Drop Cotton, Acid-Delinted, 12 Cell, Brown Color-Coded
	GA7255	-	Seed Disc, Small Hill-Drop Cotton, Acid-Delinted, 12 Cell, Dark Green Color-Coded
11.	G10531	2	Wing Nut W/Nylon Insert, 1/4"-20
12.	G11151	9	Hex Washer Head Screw, No. 10-24 x 1/2"
	G10634	-	Slotted Tap Screw, No. 10-24 x 5/8" (Use As Required)
13.	GD7878	1	Cover
14.	GD15699	1	Shank Cover, Brush-Type Seed Meter
15.	GA5982	-	Seed Disc, Small Milo/Grain Sorghum, 30 Cell, Red Color-Coded
	GA6187	-	Seed Disc, Large Milo/Grain Sorghum, 30 Cell, Light Blue Color-Coded
	GA5795	-	Seed Disc, High-Rate Small Milo/Grain Sorghum, 60 Cell, Red Color-Coded
	GA6633	-	Seed Disc, High-Rate Large Milo/Grain Sorghum, 60 Cell, Yellow Color-Coded
16.	GD8237	-	Upper Brush Retainer (Used W/Milo/Grain Sorghum Discs)

GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

(METR14d)

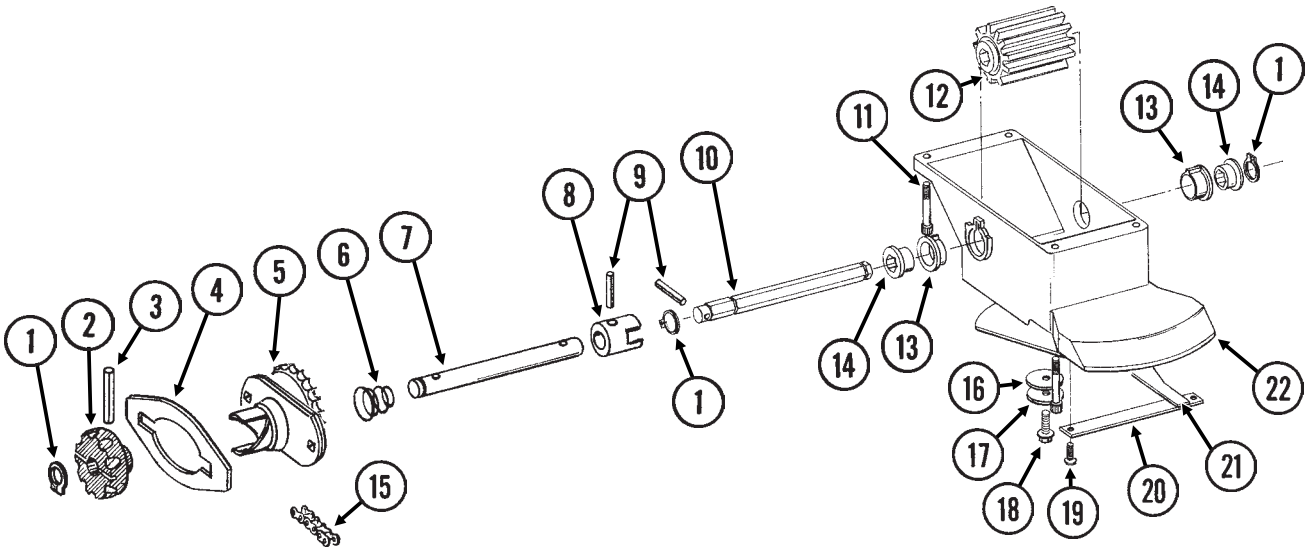


GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10210	3	Washer, 3/8" USS
2.	GD2971-10	1	Sleeve, 9/16" Long
3.	GD11219	1	Spring
4.	G10201	1	Special Washer, 3/8" x 1 1/2" O.D.
5.	GD1026	1	Sleeve, 1 3/16" Long
6.	GD11962	1	Idler
7.	G10108	1	Lock Nut, 3/8"-16
8.	G10670	2	Hair Pin Clip, No. 3
9.	GD1059L	1	Support, L.H. (Shown)
	GD1059R	1	Support, R.H.
10.	G10002	4	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10229	4	Lock Washer, 3/8"
11.	G10312	8	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	8	Serrated Flange Nut, 5/16"-18
12.	G10325	1	Hex Head Cap Screw, 3/8"-16 x 2 3/4"
13.	G10567	3	External Retaining Ring, 5/8"
14.	GD11305	1	Plate
15.	A10759	1	Hopper Panel Extension **(Non-Stock Item)** **(Sub Wholegoods Order Code 700-01099)**
16.	GD11424	4	Block
17.	G10023	2	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10621	2	Serrated Flange Nut, 1/4"-20
18.	GD1060	1	Hinge
19.	GA8371	1	Hopper
20.	GA4444	1	Lid
21.	GD11239	1	Knob
22.	G10602	1	Spring Pin, 1/4" x 1 1/2"

GRANULAR CHEMICAL METER AND METER DRIVE

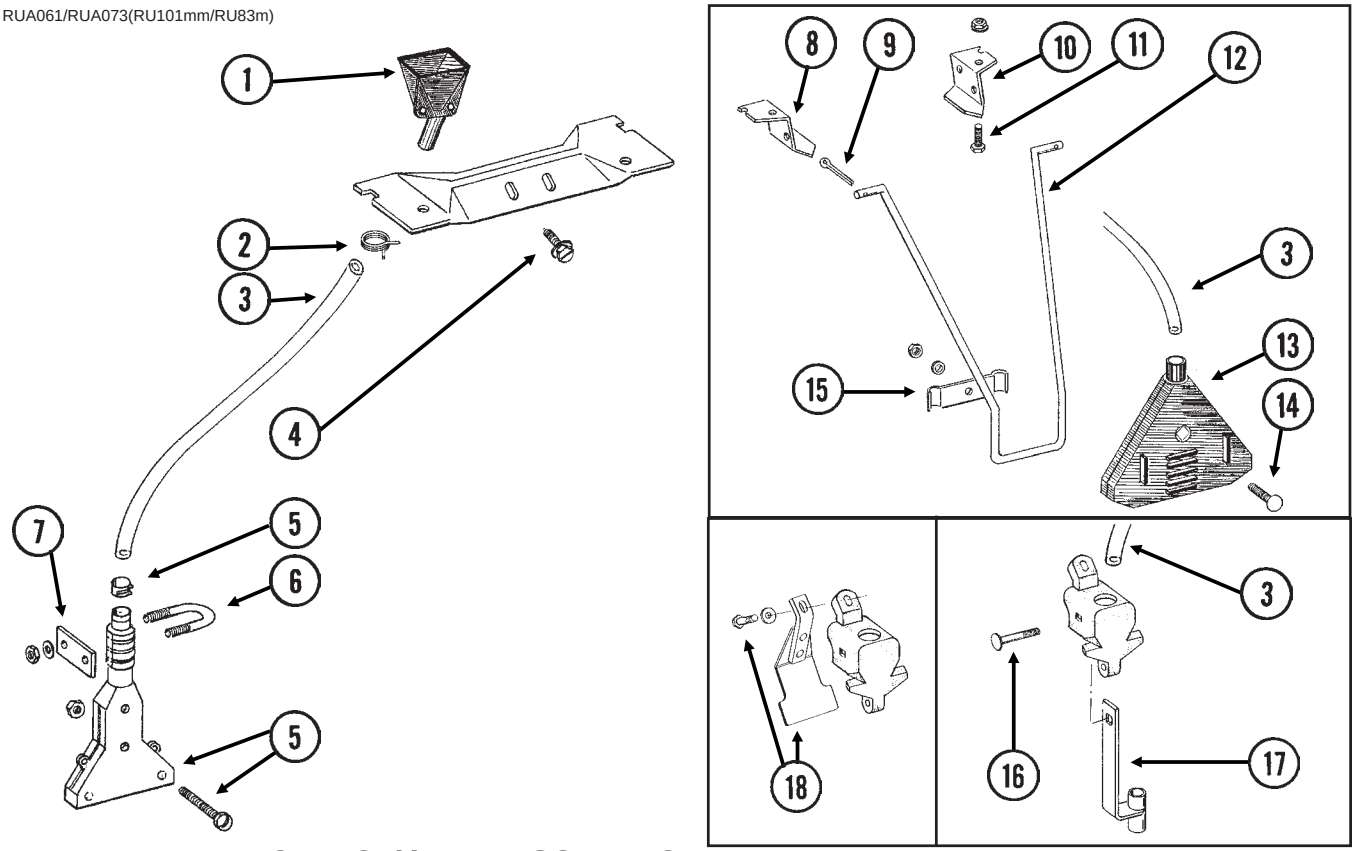
RUA051/RUB028(RU91a)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10567	3	External Retaining Ring, 5/8"
2.	GD11239	1	Knob
3.	G10602	1	Spring Pin, 1/4" x 1 1/2"
4.		-	See “Granular Chemical Hopper And Hopper Panel Extension”, Pages P38 And P39
5.	GA8364	1	Sprocket And Bearing, Drive Clutch, 24 Tooth
6.	GD11413	1	Spring
7.	GD11240	1	Shaft
8.	GB0278	1	Coupler
9.	G10546	2	Spring Pin, 3/16" x 1 1/4"
10.	GD11297	1	Shaft
11.	G10921	4	Hex Socket Head Cap Screw, No. 10-24 x 7/8"
	G10257	4	Lock Washer, No. 10
12.	GD7148	1	Feed Roller, Hex Bore
13.	GB0115	2	Bearing
14.	GD7258	2	Hex Bushing
15.	G3303-114	1	Chain, No. 41, 114 Pitch Including Connector Link
	GR0196	1	Connector Link, No. 41
16.	G10660	1	Wave Washer, 1/2"
17.	G10209	1	Washer, 1/4" USS
18.	G10570	1	Slotted Hex Self-Tapping Screw, 1/4"-20 x 3/4"
19.	G11073	2	Slotted Hex Self-Tapping Screw, No. 10 x 3/8"
20.	GD1061	1	Support Strap
21.	GD1063	1	Metering Gate
22.	GB0116	1	Granular Housing
A.	GA8326	-	Granular Chemical Meter Complete (Items 1, 9, 10, 12-14 And 16-22)

GRANULAR CHEMICAL BANDING OPTIONS

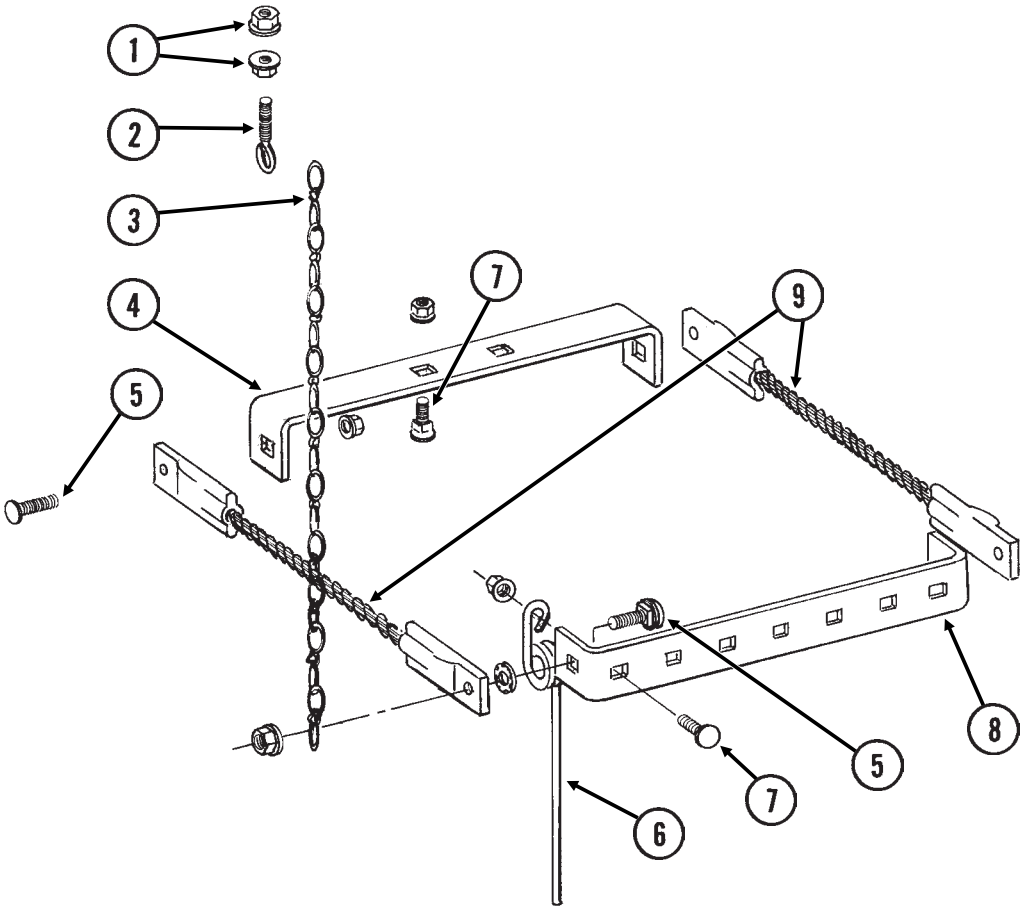
RUA061/RUA073(RU101mm/RU83m)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD2423	1	Funnel
2.	G11209	1	Wire Hose Clamp, 3/4"
3.	GD2947	1	Hose, 7/16" x 28"
4.	G10523	2	Slotted Pan Head Self-Tapping Screw, No. 10 x 1/2"
5.	GA6907	1	Slope-Compensating Bander W/Hardware (4 1/2" Band Width)
	G10864	1	Uni-Clamp
	G10757	2	Pan Head Screw, No. 10-32 x 1 1/4"
	G10758	2	Hex Nut, No. 10-32
6.	GD10963	1	U-Bolt, 1 1/2" x 1 5/16" x 1/4"-20
	G10209	2	Washer, 1/4" USS
	G10110	2	Lock Nut, 1/4"-20, Grade B
7.	GD10984	1	Spacer
8.	GD1115L	-	Hanger Bracket, L.H.
9.	G10452	-	Cotter Pin, 1/8" x 1/2"
10.	GD1115R	-	Hanger Bracket, R.H.
11.	G10310	-	Carriage Bolt, 1/4"-20 x 3/4", Grade 2
	G10227	-	Lock Washer, 1/4"
	G10103	-	Hex Nut, 1/4"-20
12.	GD1116	-	Hanger
13.	GA2075	-	Diffuser, 14" Band
14.	G10306	-	Carriage Bolt, 3/8"-16 x 2"
	G10229	-	Lock Washer, 3/8"
	G10101	-	Hex Nut, 3/8"-16
15.	GD1118	-	Clamp
16.	G10315	1	Carriage Bolt, 1/2"-13 x 2 1/2" (Replaces Existing 1/2" x 2 1/4" Hardware)
17.	GA6741	1	Bracket (Straight Drop In-Furrow)
18.	G1K385	-	Bander Shield Kit W/Hardware And Instruction
	G10003	1	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	GD14659	1	Special Washer, 3/8", Hardened

SPRING TOOTH INCORPORATOR

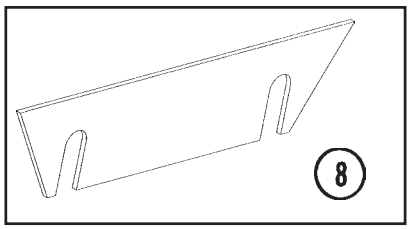
RUA055(RU95)

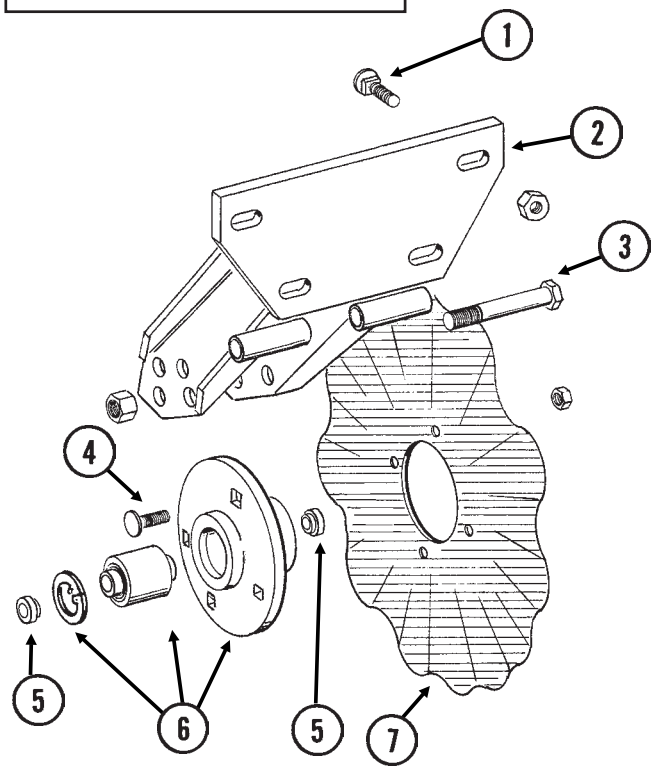


ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10621	4	Serrated Flange Nut, 1/4"-20
2.	GD2460	2	Eyebolt, 1/4"-20
3.	G3305-01	4	Twin Loop Chain, 9 Links
4.	GD1143	1	Front Bracket
5.	G10305	4	Carriage Bolt, 3/8"-16 x 1"
	G10529	4	External Tooth Lock Washer, 3/8"
	G10622	4	Serrated Flange Nut, 3/8"-16
6.	GD1145	7	Spring Tooth
7.	G10308	9	Carriage Bolt, 3/8"-16 x 3/4"
	G10622	9	Serrated Flange Nut, 3/8"-16
8.	GD1144	1	Rear Bracket
9.	GA2094	2	Cable Assembly

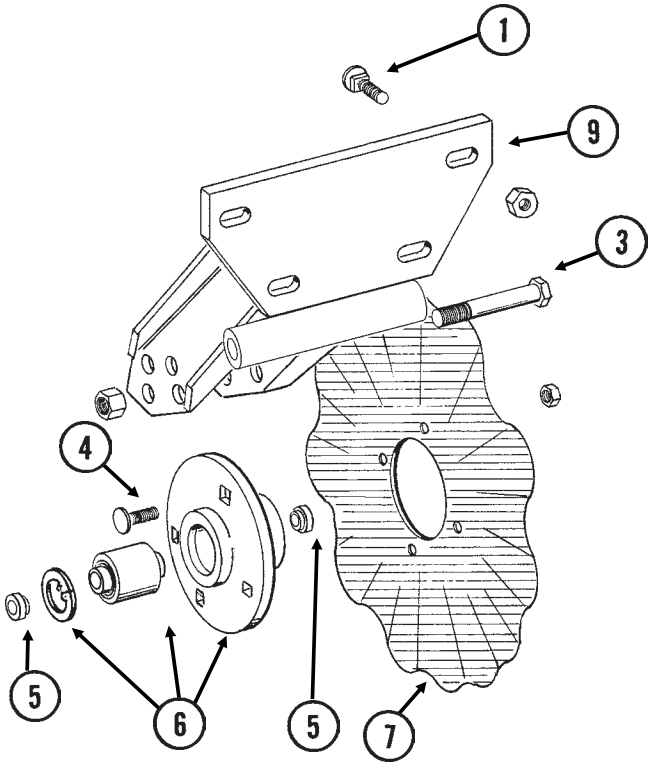
ROW UNIT MOUNTED NO TILL COULTER

(D14398/RU102c/RU152)





STYLE A

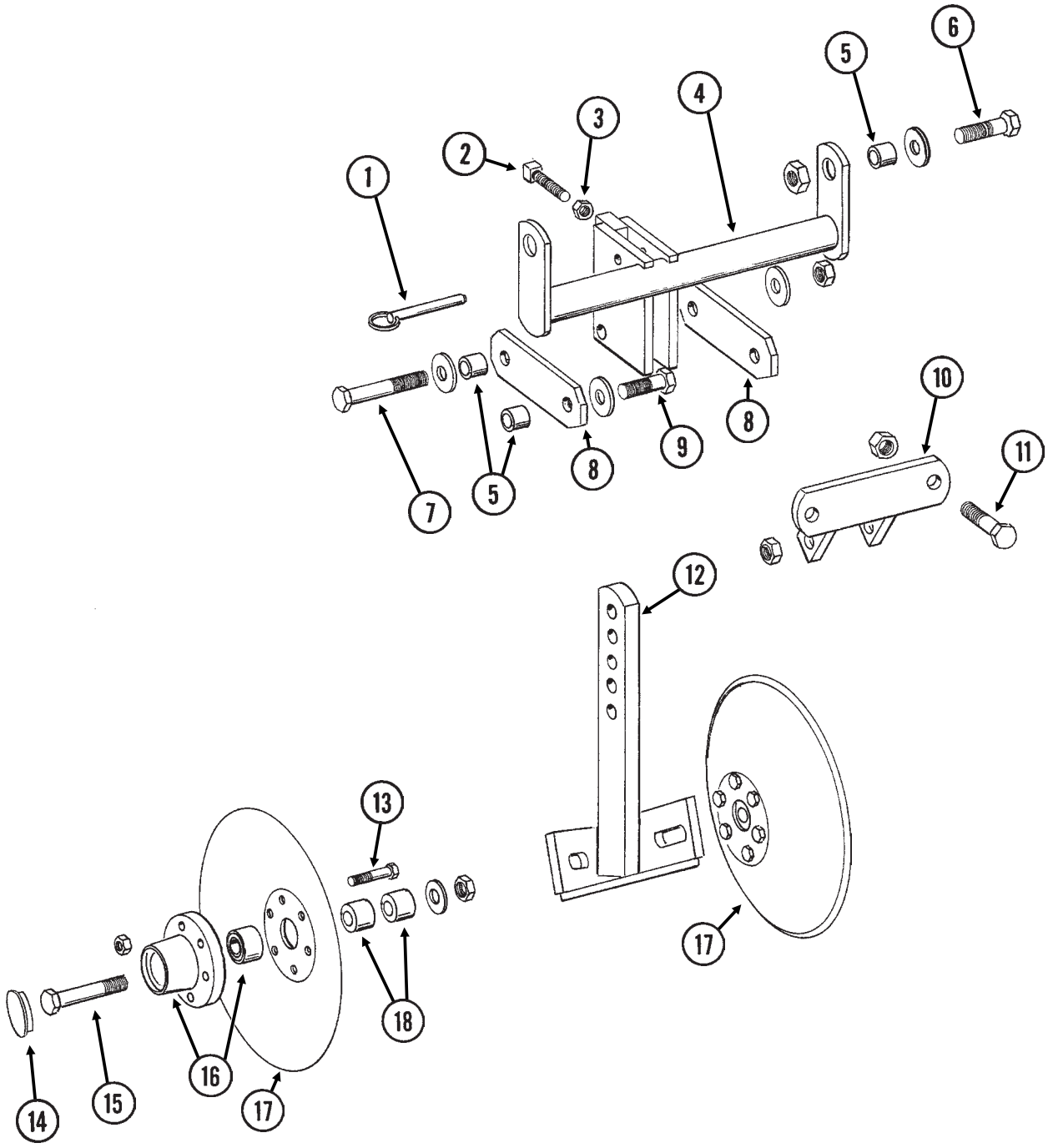


STYLE B

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10574	4	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10111	4	Lock Nut, 1/2"-13
2.	GA5625	1	Arm (Style A)
3.	G10036	1	Hex Head Cap Screw, 5/8"-11 x 4"
	G10107	1	Lock Nut, 5/8"-11
4.	G10574	4	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10111	4	Lock Nut, 1/2"-13
5.	GD11677	2	Adapter
6.	GA8641	1	Hub W/Bearing And Retaining Ring
	GA8603	-	Bearing, Double Row
	GD11652	-	Retaining Ring, 2 7/16"
7.	GD7803	-	Disc Blade, Fluted, 1", 8 Flutes (Shown)
	GD7804	-	Disc Blade, Bubbled, 1"
	GD9254	-	Disc Blade, Fluted, 3/4", 13 Flutes
8.	GD14398	-	Spacer
9.	GA11520	1	Arm (Style B)

ROW UNIT MOUNTED DISC FURROWER

RUA059/RUA058(RU99/RU98g)

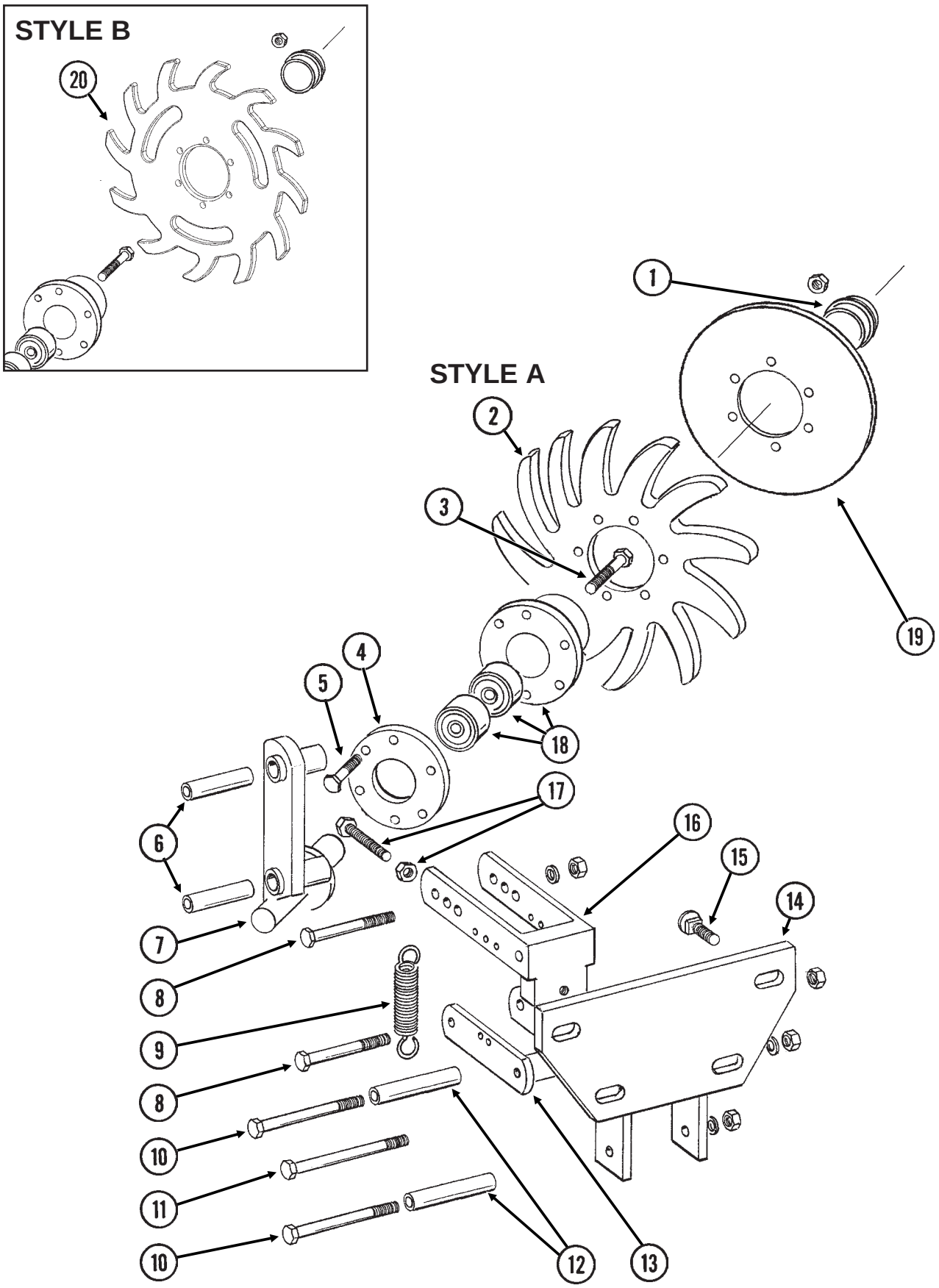


ROW UNIT MOUNTED DISC FURROWER

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10536	1	Detent Pin, 1/2" x 2 1/2" Grip
2.	G10597	1	Square Head Set Screw, 5/8"-11 x 2 1/4"
3.	G10503	1	Hex Jam Nut, 5/8"-11, Grade 2
4.	GA5719	1	Mounting Bracket
5.	GD7889	6	Bushing, 1" O.D. x 9/16" I.D. x 7/16" Long
6.	G10039	2	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	GD14674	2	Special Washer, 1/2", Hardened
	G10111	2	Lock Nut, 1/2"-13
7.	G10585	1	Hex Head Cap Screw, 1/2"-13 x 3 1/4"
	G10216	2	Washer, 1/2" USS
	G10111	1	Lock Nut, 1/2"-13
8.	GD7890	2	Link
9.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10216	2	Washer, 1/2" USS
	G10111	2	Lock Nut, 1/2"-13
10.	GA5715	1	Anchor
11.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10111	2	Lock Nut, 1/2"-13
12.	GA5718	1	Support Arm
13.	G10572	6	Truss Head Slotted Machine Screw, 5/16"-18 x 7/8"
	G10106	6	Hex Nut, 5/16"-18
14.	GD1132	2	Dust Cap
15.	G10318	2	Hex Head Cap Screw, 5/8"-11 x 4 1/2"
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	2	Lock Nut, 5/8"-11
16.	GA5654	2	Hub W/Bearings
	GA2014	-	Bearing
17.	GD7823	-	Disc Blade, Solid, 12" (Shown)
	GD8307	-	Disc Blade, Notched, 12"
18.	GD7817-01	2	Spacer, 11/16" I.D. x 3/4" Long
	GD7817-04	2	Spacer, 11/16" I.D. x 1/2" Long

ROW UNIT MOUNTED RESIDUE WHEEL

(RU103dd/RU103d)



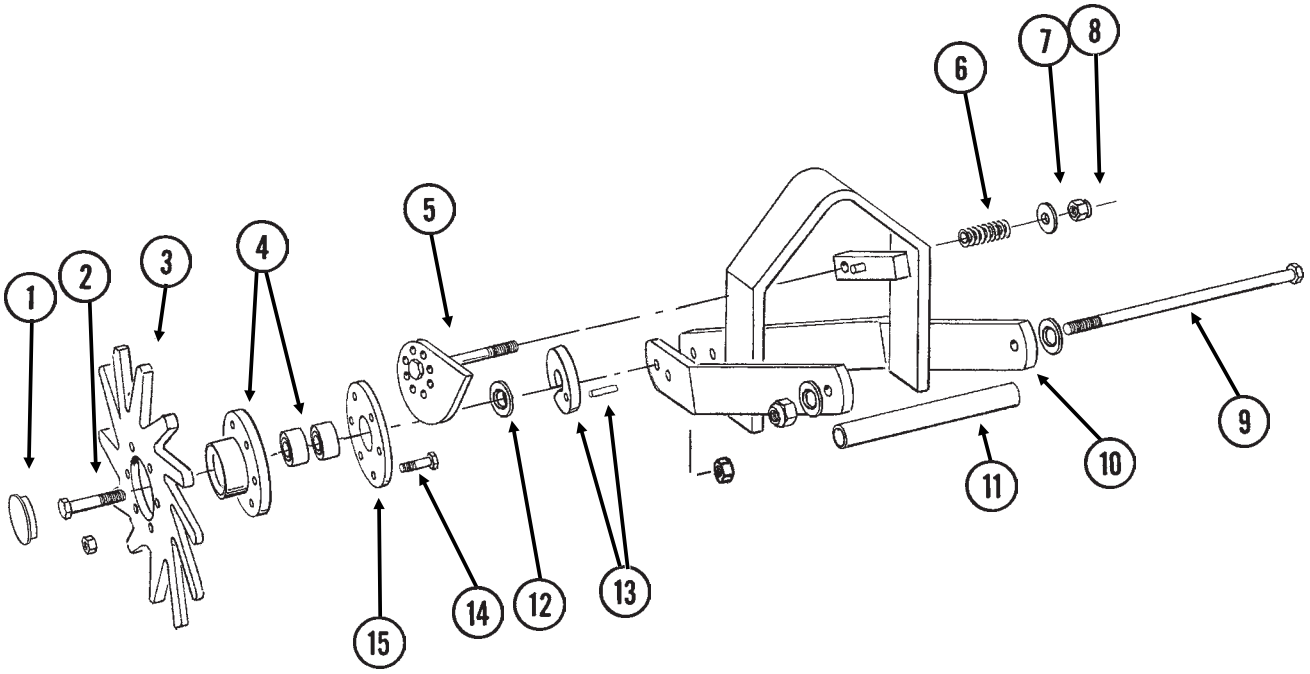
ROW UNIT MOUNTED RESIDUE WHEEL

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1132	1	Dust Cap
2.	GD10552	1	Wheel, 12 Tine, 3/8" x 12"
3.	G10006	1	Hex Head Cap Screw, 5/8"-11 x 2 1/4"
4.	GD9724	1	Backing Plate
5.	G10133	6	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G10109	6	Lock Nut, 5/16"-18, Grade 8
6.	GD9720	2	Spacer, 1/2" x 2 3/16" Long
7.	GA6838	1	Wheel Mount
8.	G10033	2	Hex Head Cap Screw, 1/2"-13 x 3 1/2"
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
9.	GD5857	2	Spring
10.	G10045	2	Hex Head Cap Screw, 1/2"-13 x 4 1/2"
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
11.	G10348	1	Hex Head Cap Screw, 1/2"-13 x 5" (Lockup Bolt)
	G10111	1	Lock Nut, 1/2"-13
12.	GD9715	2	Spacer, 1/2" x 3" Long
13.	GA6834	1	Lower Link
14.	GA6832	1	Mount
15.	G10574	4	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10111	4	Lock Nut, 1/2"-13
16.	GA6833	1	Upper Link
17.	G10371	1	Hex Head Cap Screw, 1/2"-13 x 3", Full Thread
	G10501	1	Hex Jam Nut, 1/2"-13, Grade 2
18.	GA5654	1	Hub W/Bearings
	GA2014	-	Bearing
19.	GD12534	-	Cover
20.	GB0387	1	Wheel, 12 Tine, 3/8" x 12"
A.	GA7446	-	Wheel Assembly, 12 Tine, R.H. (Items 2, 4, 5 And 18)
B.	GA12236	-	Wheel Assembly, 12 Tine, R.H. (Items 4, 5, 18 And 20)

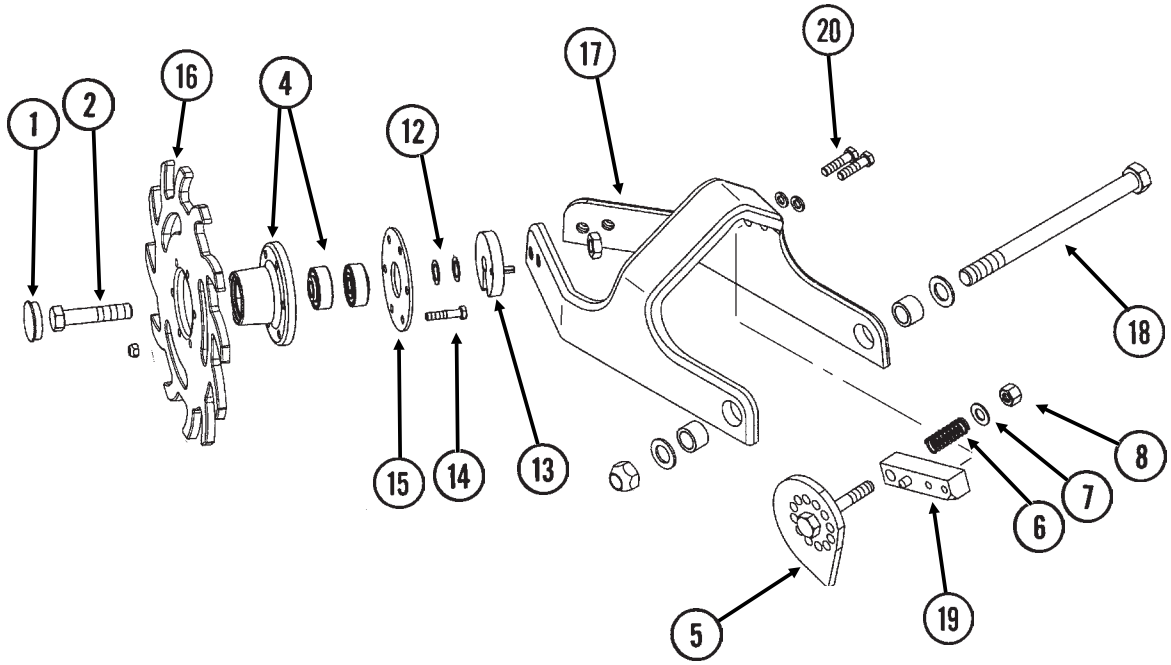
COULTER MOUNTED RESIDUE WHEELS

(RU104uuu/RU153)

STYLE A - Used With Style A Row Unit Mounted No Till Coulter



STYLE B - Used With Style B Row Unit Mounted No Till Coulter

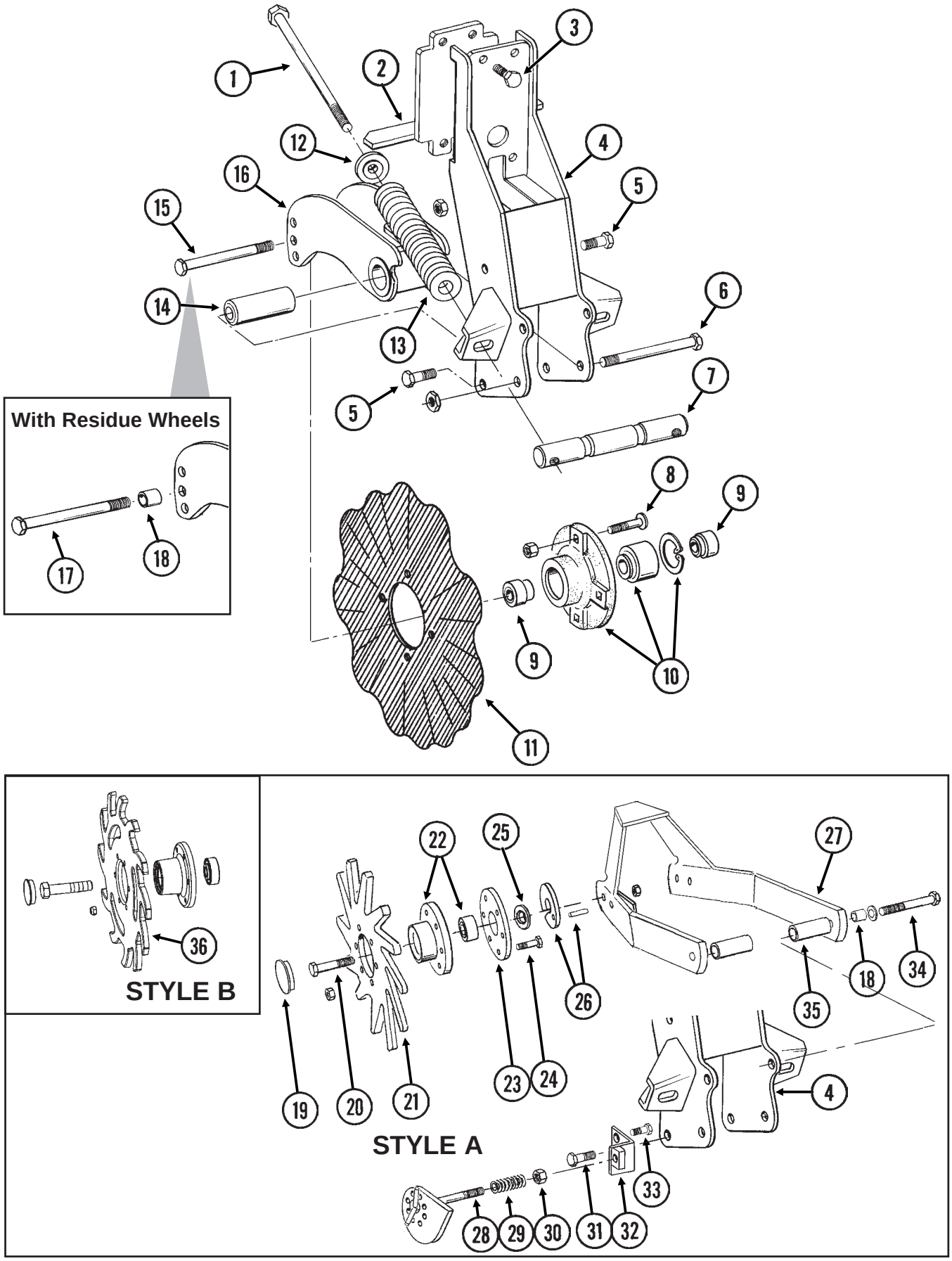


COULTER MOUNTED RESIDUE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1132	2	Dust Cap
2.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
	G10503	2	Hex Jam Nut, 5/8"-11, Grade 2
3.	GD10552	2	Wheel, 12 Tine, 3/8" x 12"
4.	GA5654	2	Hub W/Bearings
	GA2014	-	Bearing
5.	GA7412	1	Cam
6.	GD10519	1	Spring
7.	G10206	1	Washer, 1/2" SAE
8.	G10974	1	Lock Nut W/Nylon Insert, 1/2"-13
9.	G11098	1	Hex Head Cap Screw, 1/2"-13 x 9 1/2", Grade 8
	GD14674	2	Special Washer, 1/2", Hardened
	G10974	1	Lock Nut W/Nylon Insert, 1/2"-13
10.	GA7271	1	Mount
11.	GD10526	1	Sleeve, 7 1/2"
12.	G10213	2-4	Machine Bushing, 5/8" (.030" Thick)
13.	GA8760	2	Weed Guard W/Spring Pin
	G10765	-	Spring Pin, 1/4" x 1"
14.	G10133	12	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G10109	12	Lock Nut, 5/16"-18, Grade 8
15.	GD9724	2	Backing Plate
16.	GB0387	2	Wheel, 12 Tine, 3/8" x 12"
17.	GB0401	1	Mount
18.	G11236	1	Hex Head Cap Screw, 3/4"-10 x 10 1/2"
	GB0383	2	Bushing, 1 1/8" O.D. x 25/32" I.D. x 3/4" Long
	G10194	2	Washer, 3/4" SAE
	G11228	1	Lock Nut, 3/4"-10
19.	GA12256	1	Locking Pin
20.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	2	Lock Washer, 3/8"
A.	GA7446	-	Wheel Assembly, 12 Tine, R.H. (Items 3, 4, 14 And 15) (Shown)
	GA7445	-	Wheel Assembly, 12 Tine, L.H. (Items 3, 4, 14 And 15)
B.	GA12236	-	Wheel Assembly, 12 Tine, R.H. (Items 4, 14, 15 And 16) (Shown)
	GA12235	-	Wheel Assembly, 12 Tine, L.H. (Items 4, 14, 15 And 16)
C.	G1K467	-	Residue Wheel Mount Kit (Items 17-20)

FRAME MOUNTED COULTER W/RESIDUE WHEELS

(RU135c/RU135g/RU153b/RU135hh)

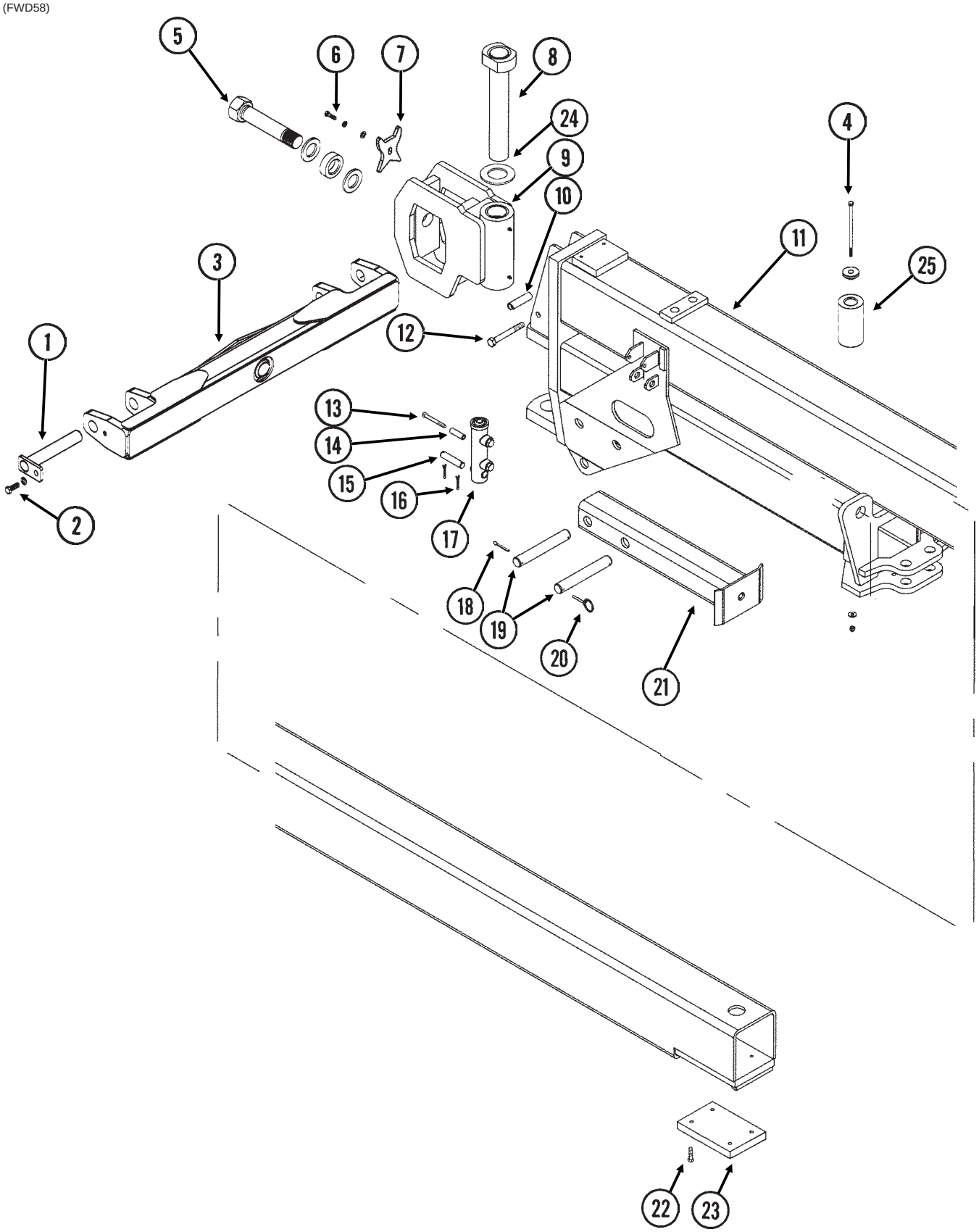


FRAME MOUNTED COULTER W/RESIDUE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11010	2	Hex Head Cap Screw, 3/4"-10 x 12"
2.	GA9844	1	Plate W/Angle
3.	G10039	4	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
4.	GA9131	1	Coulter Frame
5.	G10007	4	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10107	4	Lock Nut, 5/8"-11
6.	G10400	1	Hex Head Cap Screw, 3/4"-10 x 6 1/2"
	G10112	1	Lock Nut, 3/4"-10
7.	GD12826	1	Spring Anchor Bar
8.	G10574	4	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10111	4	Lock Nut, 1/2"-13
9.	GD12827	2	Adapter
10.	GA8641	1	Hub W/Bearing And Retaining Ring
	GA8603	1	Bearing, Double Row
	GD11652	1	Retaining Ring, 2 7/16"
11.	GD7803	1	Disc Blade, Fluted, 1", 8 Flutes (Shown)
	GD7804	-	Disc Blade, Bubbled, 1"
	GD9254	-	Disc Blade, Fluted, 3/4", 13 Flutes
12.	GB0213	2	Spring Seat
13.	GD12817	2	Compression Spring
14.	GD12829	1	Sleeve
15.	G10046	1	Hex Head Cap Screw, 5/8"-11 x 5"
	G10107	1	Lock Nut, 5/8"-11
16.	GA9845	1	Coulter Arm W/Grease Fitting
	G10643	-	Grease Fitting, 45°, 1/4"-28
17.	G10011	1	Hex Head Cap Screw, 5/8"-11 x 5 1/2"
	G10107	1	Lock Nut, 5/8"-11
18.	GB0218	3	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
19.	GD1132	2	Dust Cap
20.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
	G10503	2	Hex Jam Nut, 5/8"-11, Grade 2
21.	GD10552	2	Wheel, 12 Tine, 3/8" x 12"
22.	GA5654	2	Hub W/Bearings
	GA2014	-	Bearing
23.	GD9724	2	Backing Plate
24.	G10133	12	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G10109	12	Lock Nut, 5/16"-18, Grade 8
25.	G10213	2	Machine Bushing, 5/8" (.030" Thick)
26.	GA9862	2	Weed Guard W/Spring Pin
	G10765	-	Spring Pin, 1/4" x 1"
27.	GA9865	1	Mount
28.	GA9861	1	Cam
29.	GD10519	1	Spring
30.	G10974	1	Lock Nut W/Nylon Insert, 1/2"-13
31.	G10005	1	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G10107	4	Lock Nut, 5/8"-11
32.	GA9864	1	Support
33.	G10014	1	Hex Head Cap Screw, 1/2"-13 x 1"
	G10102	1	Hex Nut, 1/2"-13
34.	G10011	2	Hex Head Cap Screw, 5/8"-11 x 5 1/2"
	G10205	2	Washer, 5/8" SAE
	G10730	2	Lock Nut W/Nylon Insert, 5/8"-11
35.	GD14170	2	Sleeve, 3"
36.	GB0386	2	Wheel, 12 Tine, 3/8" x 12"
A.	GA7446	-	Wheel Assembly, 12 Tine, R.H. (Items 21-24) (Shown)
	GA7445	-	Wheel Assembly, 12 Tine, L.H. (Items 21-24)
B.	GA12236	-	Wheel Assembly, 12 Tine, R.H. (Items 22, 23, 24 And 36) (Shown)
	GA12235	-	Wheel Assembly, 12 Tine, L.H. (Items 22, 23, 24 And 36)

INNER HITCH (Prior To Serial Number 755125)

(FWD58)

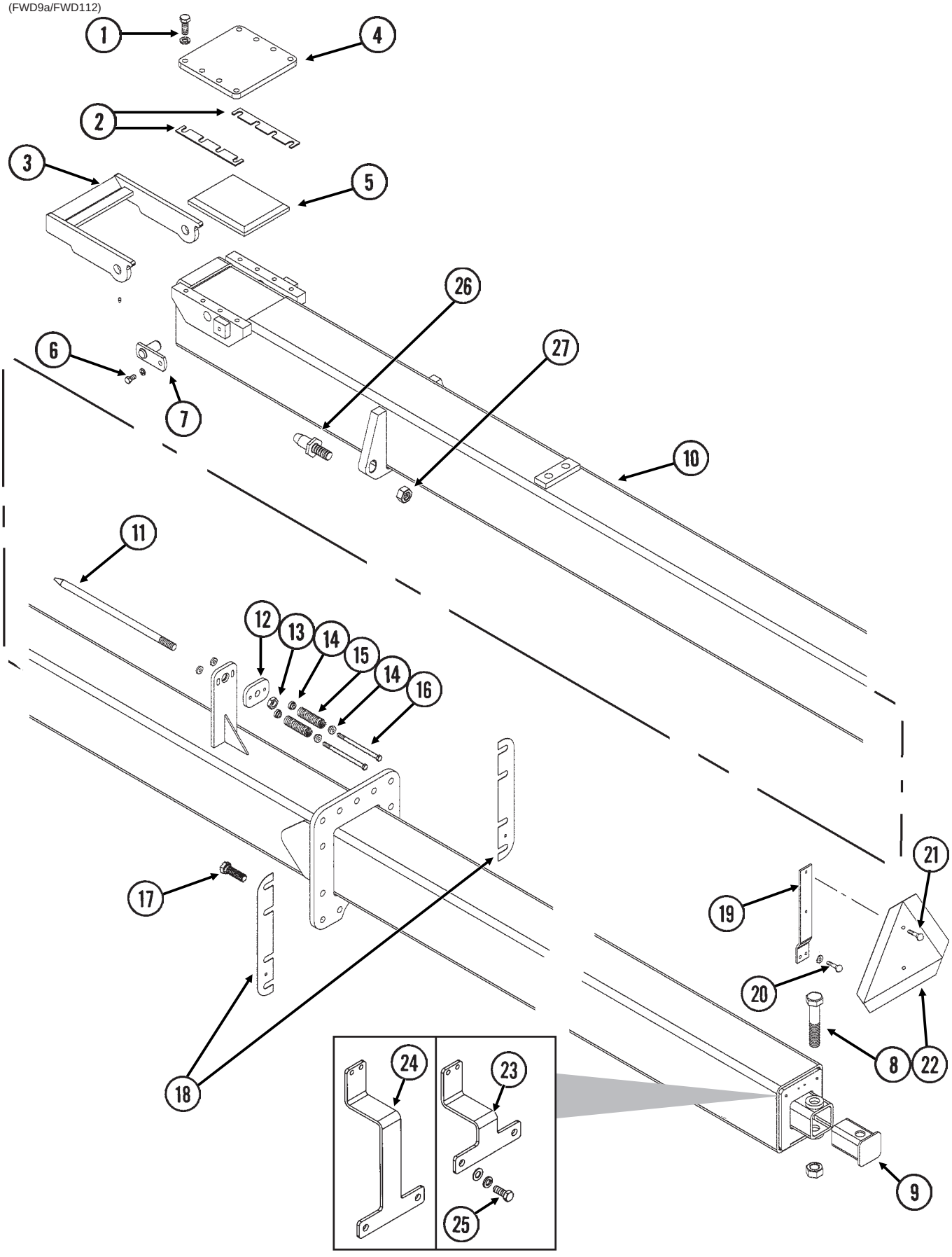


INNER HITCH (Prior To Serial Number 755125)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11079	2	Hammer Strap, Category 3 And 3N
2.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
3.	GA11078	1	Hitch Bar
4.	G11048	2	Hex Head Cap Screw, 3/8"-16 x 7 1/2"
	GB0212	2	Spring Washer
	G10210	2	Washer, 3/8" USS
	G10108	2	Lock Nut, 3/8"-16
5.	GA11082	1	Pivot Bolt W/Grease Fitting, 1 3/4" x 10 3/8" (Total Length)
	G10640	-	Grease Fitting, 1/4"-28
	GD16303	2	Washer, 3" O.D. x 1 25/32" x 1/4" Thick
	GD16226	1	Sleeve, 3" O.D. x 1 25/32" x 29/32" Thick
6.	G10005	1	Hex Head Cap Screw, 5/8"-11 x 1 1/4"
	G10230	1	Lock Washer, 5/8"
7.	GD15100	1	Pivot Lock
8.	GA10346	1	Pin, 15"
9.	GA11083	1	Hitch Pivot W/Bushings And Grease Fittings
	GD14562	2	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 3"
	G10779	2	Grease Fitting, 90°, 1/4"-28
10	GD3180-10	1	Sleeve, 5/8" I.D. x 7/8" O.D. x 3 1/4" Long
11.	GA10420	1	Inner Hitch, 287 1/4", 24 Row 30"
	GA10210	-	Inner Hitch, 347 1/4", 32 Row 30"
	GA10271	-	Inner Hitch, 377 1/4", 36 Row 30"
12.	G10046	1	Hex Head Cap Screw, 5/8"-11 x 5"
	G10107	1	Lock Nut, 5/8"-11
13.	G10809	1	Hex Head Cap Screw, 3/8"-16 x 3 1/4"
	G10108	1	Lock Nut, 3/8"-16
14.	GD7137	1	Pin, 3/4" x 3 3/8"
15.	GD2971-09	1	Sleeve, 2" Long
16.	G10457	2	Cotter Pin, 5/32" x 1 1/2"
17.		1	See “Tongue Latch Cylinder”, Page P127
18.	G10460	3	Cotter Pin, 1/4" x 2"
19.	GD3737	2	Pin, 1 1/4" x 8 1/2"
20.	GD2558	1	Lynch Pin, 1/4"
21.	GA10280	1	Hitch Stand
22.	G11099	4	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
23.	GD14812	1	Wear Pad, 5 7/8" x 6 1/2" x 1"
24.	GD15725	1	Washer, 4" O.D. x 2 1/4" I.D. x 1/4"
25.	GD16227	2	Bushing, 2" O.D. x 1 29/64" I.D. x 5 5/8", Category 4

OUTER HITCH (Prior To Serial Number 755125)

(FWD9a/FWD112)

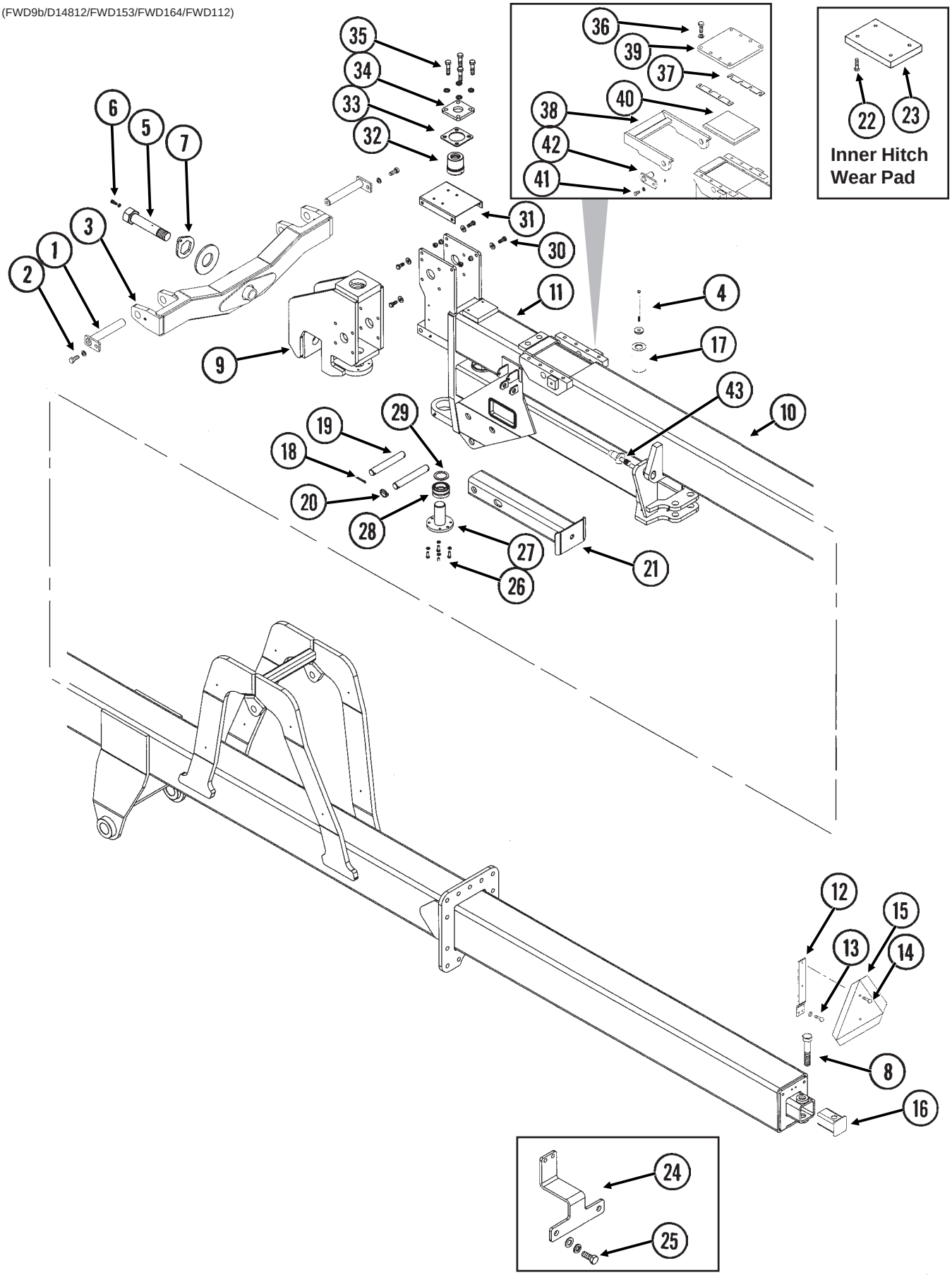


OUTER HITCH (Prior To Serial Number 755125)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10026	8	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	8	Lock Washer, 3/4"
2.	GD14842	4	Shim, 1 1/2" x 10 1/2", 10 Gauge
3.	GA10281	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
4.	GD14841	1	Cover, 10 1/2" x 11" x 3/4"
5.	GD14843	1	Wear Pad
6.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
7.	GA10282	2	Pin, 2 1/4"
8.	G10042	1	Hex Head Cap Screw, 1 1/4"-7 x 6 1/2"
	G10239	1	Hex Nut, 1 1/4"-7
9.	GA10483	1	Hitch Endcap
10.	GA10421	1	Outer Hitch, 265 5/8", 24 Row 30"
	GA10221	1	Outer Hitch, 325 5/8", 32 Row 30"
	GA10269	1	Outer Hitch, 355 5/8", 36 Row 30"
11.	GD15669	1	Rod, 7/8" x 21"
12.	GD15668	1	Tap Block, 4" x 3" x 1/2"
13.	G10189	1	Hex Jam Nut, 7/8"-14
14.	GD15674	4	Spring Seat
15.	GD15675	2	Compression Spring
16.	G10756	2	Hex Head Cap Screw, 3/8"-16 x 6"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
17.	G10027	8	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
	G10026	-	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	8	Lock Washer, 3/4"
	G10105	8	Hex Nut, 3/4"-10
18.	GD15451	3	Shim, 2 3/4" x 18", 16 Gauge, 24 Row 30"
	GD15780	3	Shim, 1 7/8" x 18", 22 Gauge, 24 Row 30"
	GD14842	-	Shim, 1 1/2" x 10 1/2", 10 Gauge, 32 Row 30" And 36 Row 30"
	GD15450	-	Shim, 2 3/4" x 24", 16 Gauge, 32 Row 30" And 36 Row 30"
	GD15796	-	Shim, 2 3/4" x 24", 22 Gauge, 32 Row 30" And 36 Row 30"
19.	GD15624	1	SMV Bracket
20.	G10043	2	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	2	Lock Washer, 5/16"
21.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10227	2	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
22.	GD2199	1	SMV Sign
23.	GD16786	1	SMV Extension Bracket, 9 3/4", 24 Row 30" SDS
24.	GD16787	-	SMV Extension Bracket, 15 3/4", 32 Row 30" SDS And 36 Row 30" SDS
25.	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	2	Lock Washer, 1/2"
	G10206	2	Washer, 1/2" SAE
26.	GD18004	2	Hitch Lock Pin
27.	G11132	2	Washer, 1 1/8" SAE
	G11097	2	Hex Nut, 1 1/8"-12

INNER/OUTER FIXED HITCH, 24 ROW 30" (Serial Number 755215 And On)

(FWD9b/D14812/FWD153/FWD164/FWD112)

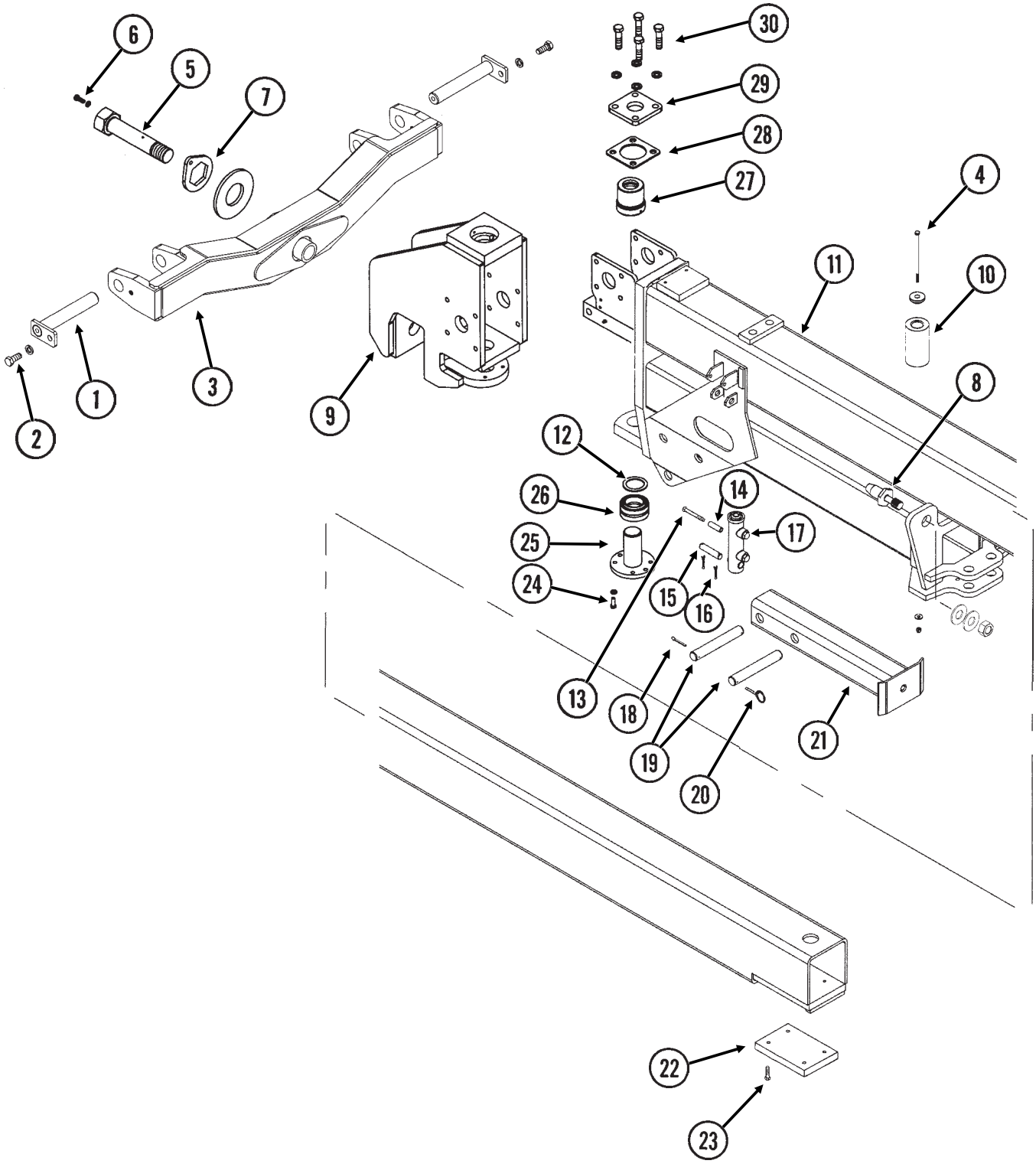


INNER/OUTER FIXED HITCH, 24 ROW 30" (Serial Number 755215 And On)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11079	2	Hammer Strap, Category 3 And 3N
2.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
3.	GA12657	1	Hitch Bar
4.	G11048	2	Hex Head Cap Screw, 3/8"-16 x 7 1/2"
	GB0212	2	Spring Washer
	G10210	2	Washer, 3/8" USS
	G10108	2	Lock Nut, 3/8"-16
5.	GA11082	1	Pivot Bolt W/Grease Fitting, 1 3/4" x 10 3/8" (Total Length)
	G10640	-	Grease Fitting, 1/4"-28
	GD18170	1	Spacer
6.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
7.	GD18143	1	Pivot Lock Nut
8.	G10042	1	Hex Head Cap Screw, 1 1/4"-7 x 6 1/2"
	G10157	1	Lock Nut, 1 1/4"-7
9.	GA12679	1	Hitch Pivot
10	GA12455	1	Outer Hitch
11.	GA12687	1	Inner Hitch
12.	GD15624	1	SMV Bracket, Conventonal
13.	G10043	2	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	2	Lock Washer, 5/16"
14.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10227	2	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
15.	GD2199	1	SMV Sign
16.	GA10483	1	Hitch Endcap
17.	GD16227	2	Bushing, 2" O.D. x 1 29/64" I.D. x 5 5/8", Category 4
18.	G10460	3	Cotter Pin, 1/4" x 2"
19.	GD3737	2	Pin, 1 1/4" x 8 1/2"
20.	GD2558	1	Lynch Pin, 1/4"
21.	GA10280	1	Hitch Stand
22.	G11099	4	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
23.	GD14812	1	Wear Pad, 5 7/8" x 6 1/2" x 1"
24.	GD16786	1	SMV Extension Bracket, 9 3/4", SDS
25.	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	2	Lock Washer, 1/2"
	G10206	2	Washer, 1/2" SAE
26.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	4	Lock Washer, 3/8"
27.	GA12681	1	Pivot Pin
28.	GA12689	1	Spherical Bearing
29.	GD18175	1	Shim
30.	G10037	4	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10216	4	Washer, 1/2" USS
	G10111	4	Lock Nut, 1/2"-13
31.	GD18171	1	Cover
32.	GA12688	1	Special Spherical Bearing
33.	GD18151	1	Spacer
34.	GD18152	1	Cap
35.	G10009	4	Hex Head Cap Screw, 5/8"-11 x 2 1/2"
	G10239	4	Hex Nut, 1 1/4"-7
36.	G10008	8	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	12	Lock Washer, 5/8"
37.	GD14842	4	Shim, 1 1/2" x 10 1/2", 10 Gauge
38.	GA10281	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
39.	GD14841	1	Cover, 10 1/2" x 11" x 3/4"
40.	GD14843	1	Wear Pad
41.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
42.	GA10282	2	Pin, 2 1/4"
43.	GD18004	2	Hitch Lock Pin
	G11132	2	Washer, 1 1/8" SAE
	G11097	2	Hex Nut, 1 1/8"-12

INNER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30" (Serial Number 755125 And On)

(FWD58a)

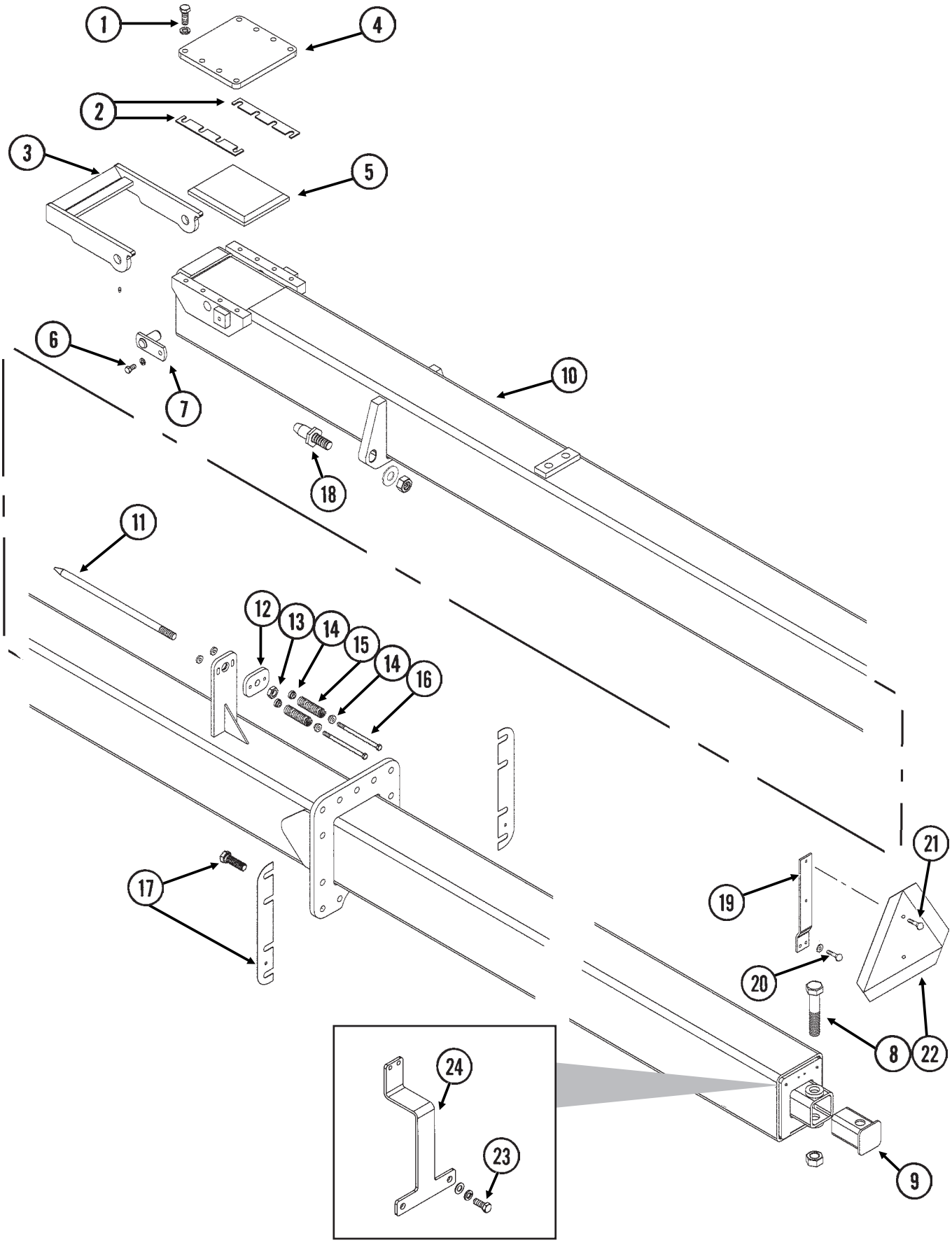


INNER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30" (Serial Number 755125 And On)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11079	2	Hammer Strap, Category 3 And 3N
2.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
3.	GA12657	1	Hitch Bar
4.	G10686	2	Hex Head Cap Screw, 3/8"-16 x 8"
	GB0212	2	Spring Washer
	G10210	2	Washer, 3/8" USS
	G10108	2	Lock Nut, 3/8"-16
5.	GA11082	1	Pivot Bolt W/Grease Fitting, 1 3/4" x 10 3/8" (Total Length)
	G10640	-	Grease Fitting, 1/4"-28
	GD18170	1	Spacer
6.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
7.	GD18143	1	Pivot Lock Nut
8.		-	See “Outer Slide Hitch”, Pages P72 And P73
9.	GA12679	1	Hitch Pivot
10.	GD16227	2	Bushing, 2" O.D. x 1 29/64" I.D. x 5 5/8", Category 4
11.	GA13006	-	Inner Hitch, 348 1/2", 32 Row 30"
	GA13007	-	Inner Hitch, 373 1/2", 36 Row 30"
12.	GD18175	1	Shim
13.	G10809	1	Hex Head Cap Screw, 3/8"-16 x 3 1/4"
	G10108	1	Lock Nut, 3/8"-16
14.	GD7137	1	Pin, 3/4" x 3 3/8"
15.	GD2971-09	1	Sleeve, 2" Long
16.	G10457	2	Cotter Pin, 5/32" x 1 1/2"
17.		1	See “Tongue Latch Cylinder”, Page P128
18.	G10460	3	Cotter Pin, 1/4" x 2"
19.	GD3737	2	Pin, 1 1/4" x 8 1/2"
20.	GD2558	1	Lynch Pin, 1/4"
21.	GA10280	1	Hitch Stand
22.	G11099	4	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
23.	GD14812	1	Wear Pad, 5 7/8" x 6 1/2" x 1"
24.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	4	Lock Washer, 3/8"
25.	GA12681	1	Pivot Pin
26.	GA12689	1	Spherical Bearing
27.	GA12688	1	Special Sperical Bearing
28.	GD18151	1	Spacer
29.	GD18152	1	Cap
30.	G10009	4	Hex Head Cap Screw, 5/8"-11 x 2 1/2"
	G10239	4	Hex Nut, 1 1/4"-7

OUTER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30" (Serial Number 755125 And On)

(FWD9a/FWD112a)

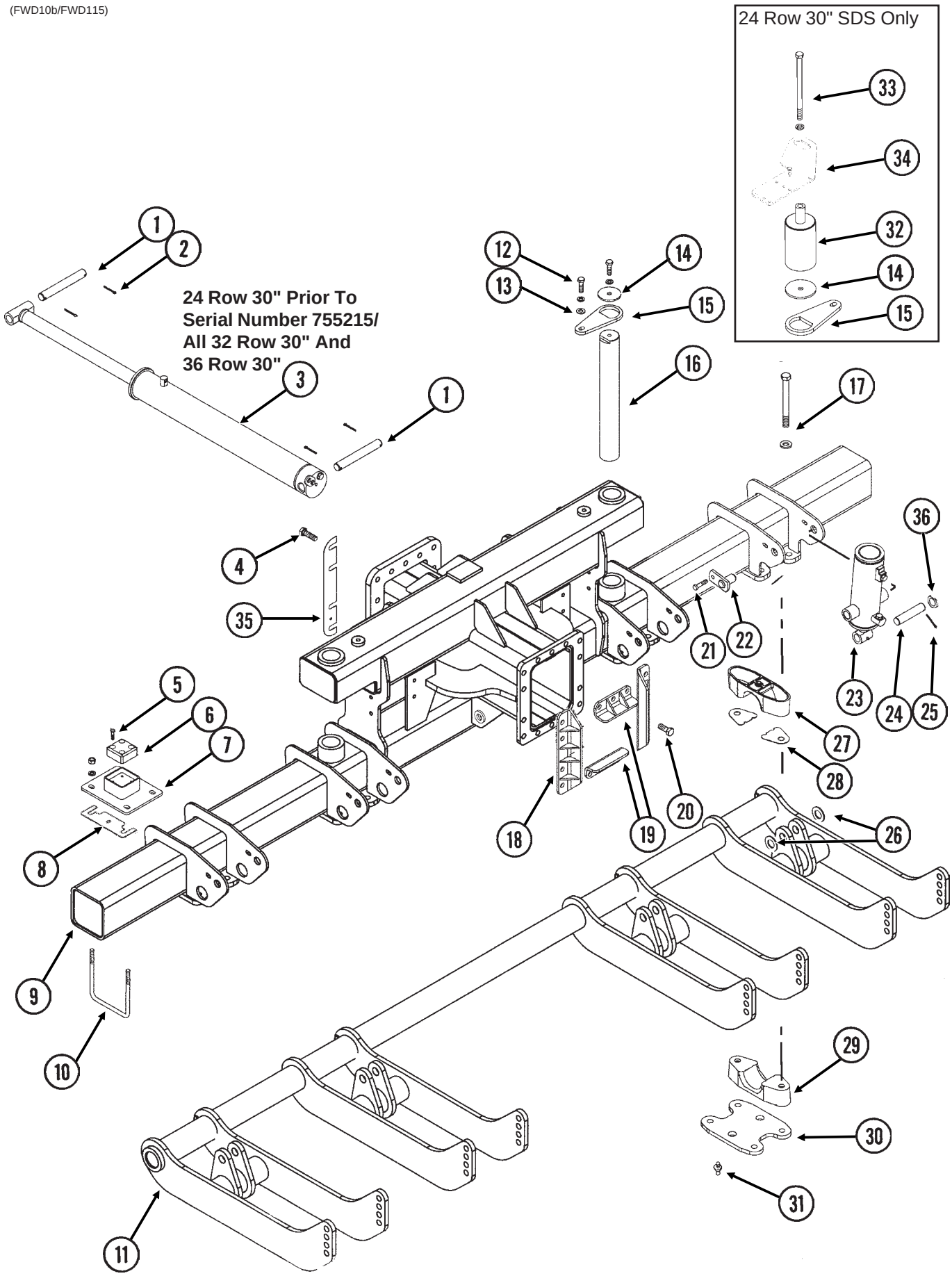


OUTER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30" (Serial Number 755125 And On)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10008	8	Hex Head Cap Screw, 5/8"-10 x 2"
	G10230	8	Lock Washer, 5/8"
2.	GD14842	4	Shim, 1 1/2" x 10 1/2", 10 Gauge
3.	GA10281	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
4.	GD14841	1	Cover, 10 1/2" x 11" x 3/4"
5.	GD14843	1	Wear Pad
6.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
7.	GA10282	2	Pin, 2 1/4"
8.	G10042	1	Hex Head Cap Screw, 1 1/4"-7 x 6 1/2"
	G10157	1	Lock Nut, 1 1/4"-7
9.	GA10483	1	Hitch Endcap
10.	GA10221	1	Outer Hitch, 325 5/8", 32 Row 30"
	GA10269	1	Outer Hitch, 355 5/8", 36 Row 30"
11.	GD15669	1	Rod, 7/8" x 21"
12.	GD15668	1	Tap Block, 4" x 3" x 1/2"
13.	G10189	1	Hex Jam Nut, 7/8"-14
14.	GD15674	4	Spring Seat
15.	GD15675	2	Compression Spring
16.	G10756	2	Hex Head Cap Screw, 3/8"-16 x 6"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
17.		-	See “Center Toolbar/Rear H-Frame Assembly”, Pages P62 And P63
18.	GD18004	2	Hitch Lock Pin
	G11132	2	Washer, 1 1/8" SAE
	G11097	2	Hex Nut, 1 1/8"-12
19.	GD15624	1	SMV Bracket, Conventional
20.	G10043	2	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	2	Lock Washer, 5/16"
21.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10227	2	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
22.	GD2199	1	SMV Sign
23.	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	2	Lock Washer, 1/2"
	G10206	2	Washer, 1/2" SAE
24.	GD16787	-	SMV Extension Bracket, 15 3/4", SDS

CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

(FWD10b/FWD115)

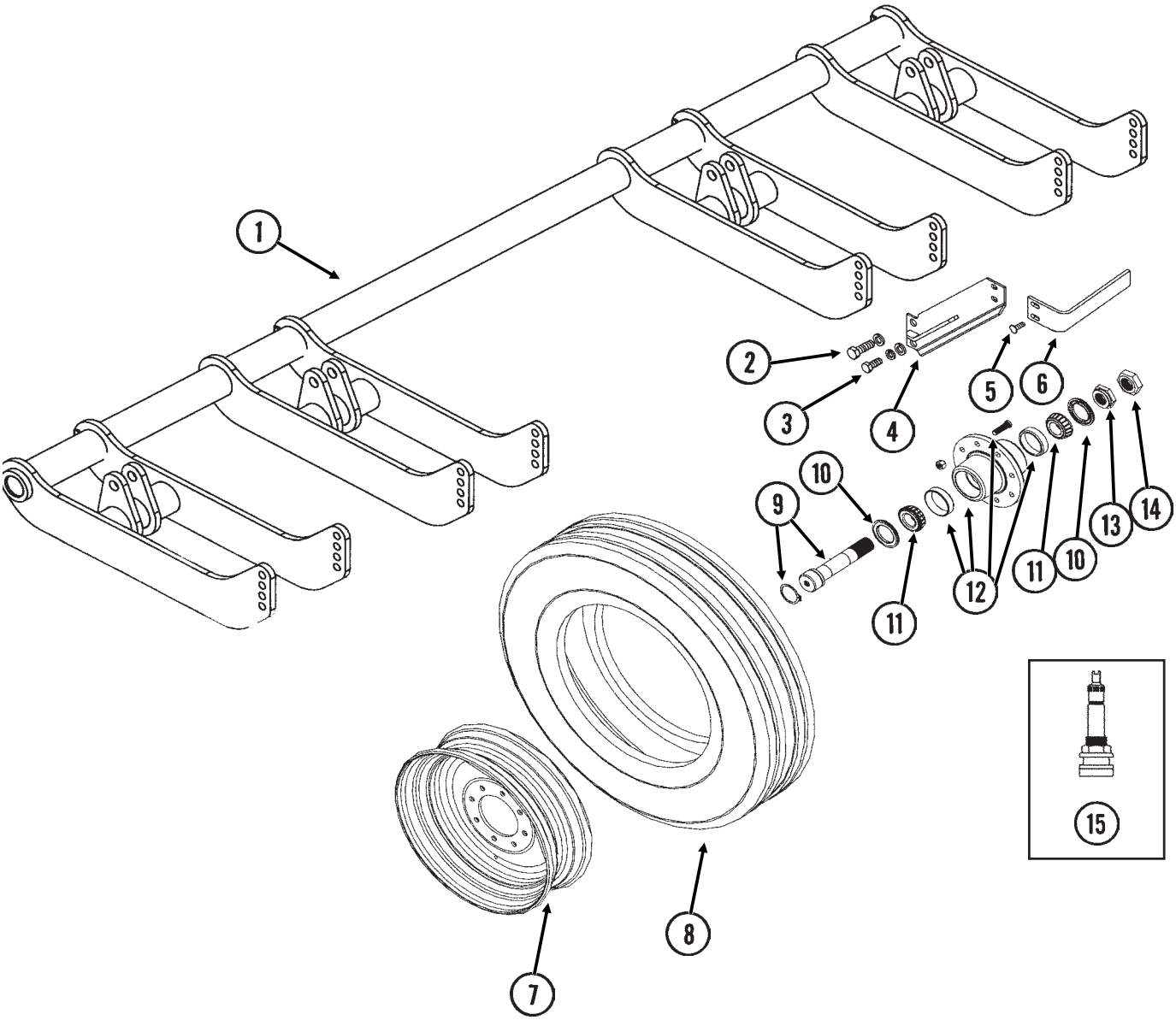


CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15051	2	Pin, 1 1/4" x 9 1/4"
2.	G10460	4	Cotter Pin, 1/4" x 2"
3.		-	See “Axle Slide Cylinder”, Pages P125 And P126
4.	G10027	8	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
	G10026	-	Hex Head Cap Screw, 3/4"-10 x 2"
	G10025	-	Hex Head Cap Screw, 3/4"-10 x 1 1/2"
	G10231	8	Lock Washer, 3/4"
	G10105	8	Hex Nut, 3/4"-10
5.	G11099	8	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
6.	GD15169	2	Wear Block
7.	GA10343	2	Mount, 8" x 10"
8.	GD15170	-	Shim, 3 1/4" x 10", 16 Gauge (As Required)
9.	GA11210	1	H-Frame Assembly, 24 Row 30"
	GA11215	-	H-Frame Assembly, 32 Row 30" And 36 Row 30"
10.	GD17039	4	U-Bolt, 7" x 7" x 5/8"-11
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
11.			See “Rock Shaft Axle Assembly And Wheels”, Pages P64 And P65
12.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	4	Lock Washer, 5/8"
13.	G10217	2	Washer, 5/8" USS
14.	GD15046	2	Washer, 21/32" I.D. x 4" O.D. x 1/4"
15.	GD15045	2	Capture Plate
16.	GD15369	2	Pivot Pin, 3" x 22 1/2", 24 Row 30"
	GD15047	2	Pivot Pin, 3" x 28 1/2", 32 Row 30" And 36 Row 30"
17.	G11095	16	Hex Head Cap Screw, 7/8"-9 x 9"
	GD10063	16	Hardened Washer, 7/8"
	G10418	16	Lock Nut, 7/8"-9
18.	GB0357	2	Keeper, 24 Row 30"
	GB0356	-	Keeper, 32 Row 30" And 36 Row 30"
19.	GB0355	2	Keeper
20.	G10026	16	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	16	Lock Washer, 3/4"
	G10105	16	Hex Nut, 3/4"-10
21.	G10016	8	Hex Head Cap Screw, 1/2"-13 x 2"
	G10216	8	Washer, 1/2" USS
	G10111	8	Lock Nut, 1/2"-13
22.	GA6761	8	Pin, 1 3/4"
	GA5121	-	Pin, 2 1/8"
23.		-	See “Master Cylinder”, Pages P119 And P120
24.	GD5841	4	Pin, 1 1/4" x 5 5/8"
25.	G10460	8	Cotter Pin, 1/4" x 2"
26.	G10226	8	Washer, 1 1/4" SAE
27.	GB0332	8	Bearing
28.	GD15172	16	Shim
29.	GD14941	8	Bearing
30.	GD14926	4	Clamp Plate
31.	G10640	8	Grease Fitting, 1/4"-28
32.	GA11385	1	Pivot Post, 24 Row 30"
33.	G10953	1	Hex Head Cap Screw, 5/8"-11 x 10"
	G10230	1	Lock Washer, 5/8"
34.		-	See “Wing Auger Assemblies, 24 Row 30" (SDS)”, Pages P24 And P25
35.	GD15451	3	Shim, 2 3/4" x 18", 16 Gauge, 24 Row 30"
	GD15780	3	Shim, 1 7/8" x 18", 22 Gauge, 24 Row 30"
	GD14842	-	Shim, 1 1/2" x 10 1/2", 10 Gauge, 32 Row 30" And 36 Row 30"
	GD15450	-	Shim, 2 3/4" x 24", 16 Gauge, 32 Row 30" And 36 Row 30"
	GD15796	-	Shim, 2 3/4" x 24", 22 Gauge, 32 Row 30" And 36 Row 30"
36.	G10139	8	Washer, 1 1/4" USS

ROCK SHAFT AXLE ASSEMBLY AND WHEELS

(FWD10c)



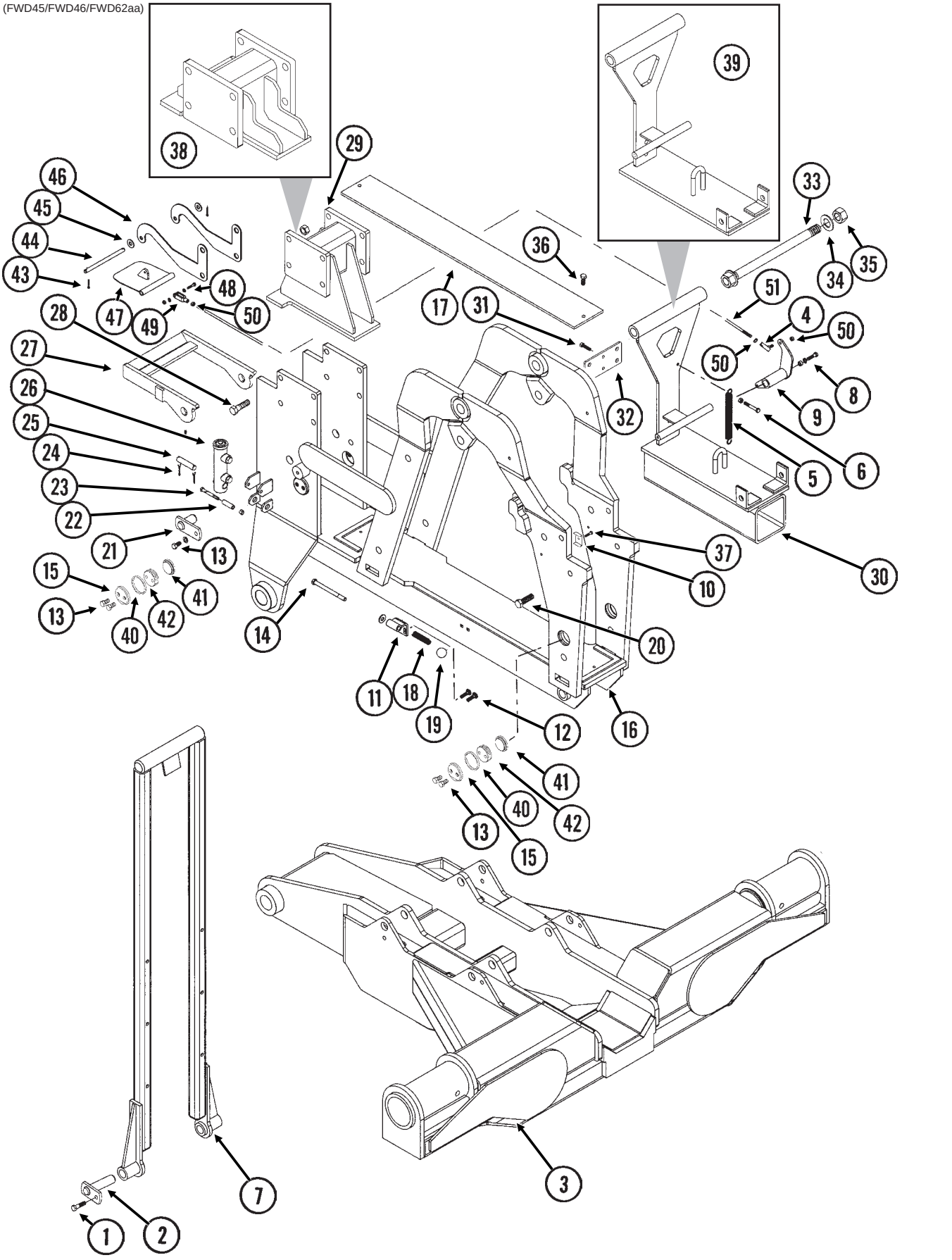
ROCK SHAFT AXLE ASSEMBLY AND WHEELS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11174	1	Rock Shaft Axle, 133 1/2"
2.	G10448	8	Hex Head Cap Screw, 7/8"-9 x 2 1/2", Grade 8
	G10330	8	Lock Washer, 7/8"
3.	G11071	4	Hex Head Cap Screw, 3/4"-10 x 2 1/4"
	G10194	8	Washer, 3/4" SAE
	G10231	4	Lock Washer, 3/4"
	G10105	4	Hex Nut, 3/4"-10
4.	GA11227	4	Scraper Mount
5.	G10636	8	Carriage Bolt, 1/2"-13 x 1 1/2"
	G10216	8	Washer, 1/2" USS
	G10228	8	Lock Washer, 1/2"
	G10102	8	Hex Nut, 1/2"-13
6.	GD12543	4	Scraper
7.	GA9544	4	Rim, 5.5" x 22.5"
8.	GD15406	4	Tire, 41 x 11 R22.5" W/O Center Rib (Specify Brand*)
9.	GA10139	4	Spindle W/Retaining Ring, 1 3/4"
	G10913	-	External Retaining Ring, 2 1/2"
10.	GA4722	8	Seal
11.	GA4723	8	Bearing
12.	GA4729	4	Hub W/Cups, Bolts, Nuts And Grease Fitting, 8 Bolt, 1 3/4" Bore
	G10640	-	Grease Fitting, 1/4"-28
	GD7079	-	Cup
	GR0528	-	Stud, 5/8"-12 x 2 1/4", Grade 8
	GR0531	-	Lug Nut, 5/8"-18 UNF
13.	GD7089	4	Special Nut, 1 3/4"-12 UNF
14.	GD7864	4	Special Hex Nut, 1 3/4"-12 UNF
15.	GA7434	4	Valve Stem
A.	GA10553	-	Tire And Rim Assembly (Items 7, 8 And 15) (Specify Brand*)

*** Specific brand requests will be supplied only as available from current KINZE® Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied.**

SLIDE ASSEMBLY (24 Row 30" Prior To Serial Number 755215/All 32 Row 30" And 36 Row 30")

(FWD45/FWD46/FWD62aa)

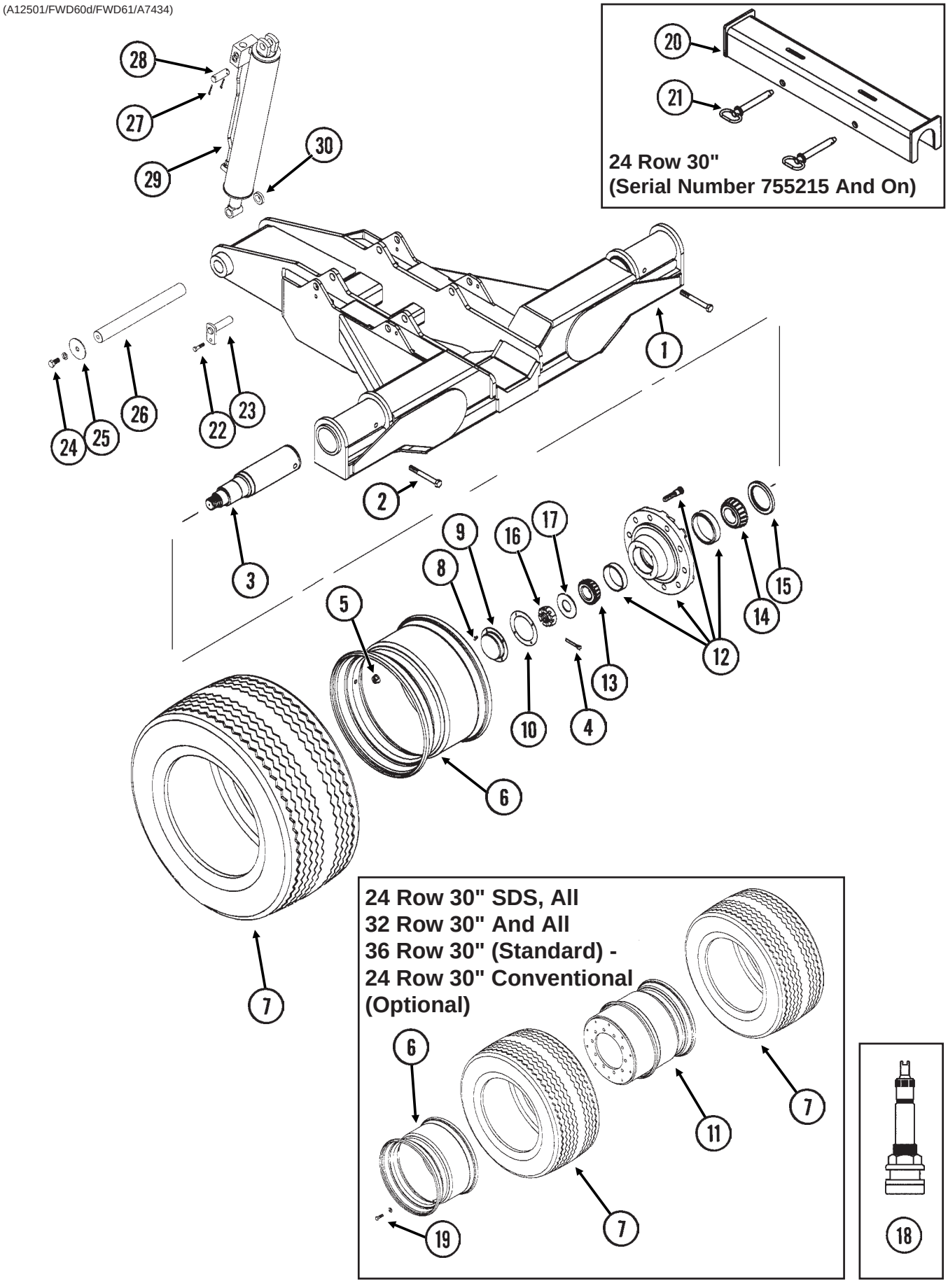


SLIDE ASSEMBLY (24 Row 30" Prior To Serial Number 755215/All 32 Row 30" And 36 Row 30")

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10017	4	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10111	4	Lock Nut, 1/2"-13
2.	GA10279	4	Pin, 5 1/4"
3.		-	See “Transport Axle Assembly And Wheels”, Pages P68 And P69
4.	GA11264	1	Link
5.	GD5857	1	Spring
6.	G10049	1	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10101	1	Hex Nut, 3/8"-16
	GD2971-15	1	Sleeve, 5/16" Long
7.	GA10503	1	Lockup, 68 3/8"
8.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10203	1	Washer, 3/8" SAE
9.	GA11263	1	Arm
10.	GD5892	2	Hose Clamp, 5/8" x 1 1/2" x 1 1/2"
11.	GA10504	2	Support
12.	G10301	4	Carriage Bolt, 3/8"-16 x 1 1/2"
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
13.	G10014	10	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	10	Lock Washer, 1/2"
14.	G10871	2	Hex Head Cap Screw, 1/2"-13 x 6"
	G10216	2	Washer, 1/2" USS
	G10111	2	Lock Nut, 1/2"-13
15.	GB0230	4	Cap
16.	GA11207	1	Slide Assembly, 24 Row 30"
	GA11206	-	Slide Assembly, 32 Row 30" And 36 Row 30"
17.	GD15492	1	Wear Pad, 6" x 48"
18.	GD15677	2	Compression Spring
19.	GD15679	2	Ball Knob
20.	G10027	2	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
	G10112	2	Lock Nut, 3/4"-10
21.	GA10282	2	Pin, 2 1/4"
22.	GD2971-09	1	Sleeve, 2" Long
23.	G10809	1	Hex Head Cap Screw, 3/8"-16 x 3 1/4"
	G10108	1	Lock Nut, 3/8"-16
24.	G10457	2	Cotter Pin, 5/32" x 1 1/2"
25.	GD7137	1	Pin, 3/4" x 3 3/8"
26.		-	See “Slide Latch Cylinder”, Page P127
27.	GA10466	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
28.	G10802	8	Hex Head Cap Screw, 3/4"-10 x 2 3/4"
	G10112	8	Lock Nut, 3/4"-10
29.	GA10595	1	Slide Bracket, 24 Row 30"
30.	GA11353	1	Rear Bracket, 24 Row 30"
31.	G10003	8	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	8	Lock Washer, 3/8"
	G10101	8	Hex Nut, 3/8"-16
32.	GD15664	1	Plate, 3 9/16" x 7 1/4"
33.	GA10455	1	Cross Pin, 19"
34.	G10226	1	Washer, 1 1/4" SAE
35.	G10157	1	Lock Nut, 1 1/4"-7
36.	G11130	2	Hex Socket Head Cap Screw, 5/16"-18 x 1 1/2", Grade 8
	G10109	2	Lock Nut, 5/16"-18, Grade 8
37.	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	2	Lock Washer, 3/8"
38.	GA10584	1	Slide Bracket, 32 Row 30" And 36 Row 30"
39.	GA11634	1	Rear Bracket, 32 Row 30" And 36 Row 30"
40.	GD15783	4	Spacer, 2 3/4" O.D. x 2 7/16" x 1/4", 24 Row 30"
41.	GD9093	4	Poly Wear Pad
42.	GB0234	4	Adjustment Plug
43.	G10470	2	Cotter Pin, 5/32" x 1"
44.	GD16394	1	Pin, 1/2" x 7 1/2"
45.	G10216	2	Washer, 1/2" USS
46.	GD16388	2	Mount
47.	GA11262	1	Flap
48.	G10857	1	Hex Head Cap Screw, 1/4"-20 x 1 1/4"
	G10211	2	Washer, 1/4" SAE
	G10103	1	Hex Nut, 1/4"-20
49.	GD16392	1	Clevis
50.	G11179	3	Hex Nut, 5/16"-24
51.	GD16393	1	Rod

TRANSPORT AXLE ASSEMBLY AND WHEELS

(A12501/FWD60d/FWD61/A7434)



TRANSPORT AXLE ASSEMBLY AND WHEELS

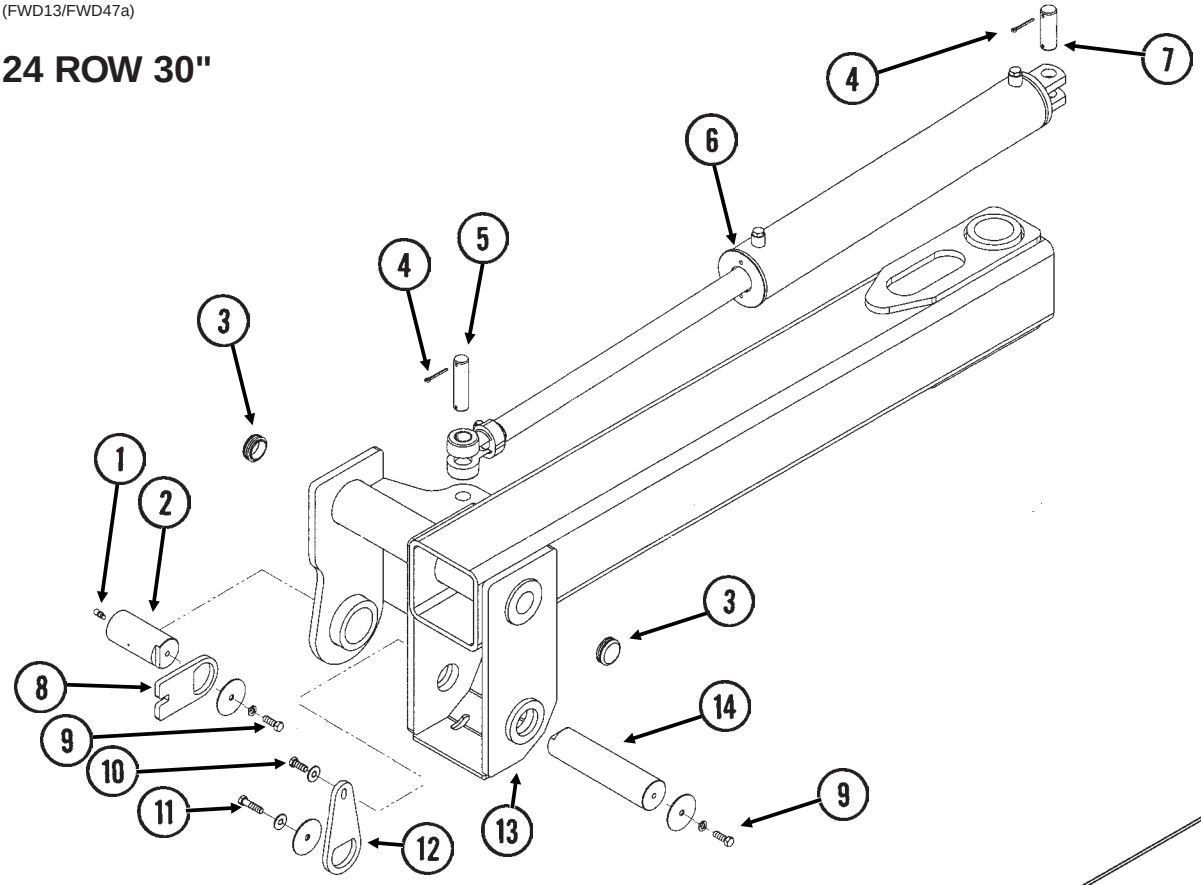
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA12460	1	Axle W/Grease Fittings, 24 Row 30"
	GA11112	1	Axle W/Grease Fittings, 32 Row 30" And 36 Row 30"
	G10640	2	Grease Fitting, 1/4"-28
2.	G10400	2	Hex Head Cap Screw, 3/4"-10 x 6 1/2"
	G10112	2	Lock Nut, 3/4"-10
3.	GD13740	2	Spindle, 4 1/2"
4.	G10471	2	Cotter Pin, 3/8" x 2 1/2"
5.	G10625	20	Flange Nut, 3/4"-16
6.	GA11277	2	Rim, 14" x 22.5"
7.	GD16058	2-4	Tire, 445-50R22.5 Radial Load Range H (Specify Brand*)
8.	G10054	8	Hex Head Cap Screw, 5/16"-18 x 1/2"
9.	GD1360	2	Dust Cap
10.	GD1359	2	Seal
11.	GA11265	2	Rim, 22.5" x 14", Offset
12.	GA9306	2	Hub W/Cups, Grease Fitting And Stud Bolts (10 Bolt High Strength)
	GR0192	-	Outer Cup
	GR0191	-	Inner Cup
	G10373	-	Grease Fitting, 45°, 1/8"-27
	GR1681	-	Stud Bolt, 3/4"-16 x 3 7/8"
13.	GA0530	2	Outer Bearing
14.	GA0531	2	Inner Bearing
15.	GA0532	2	Seal
16.	G10726	2	Slotted Hex Nut, 2"-12
17.	G10198	2	Washer, 2" USS
18.	GA7434	-	Valve Stem
19.	G11174	10	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	10	Special Washer, 5/8", Hardened
20.	GA12501	2	Cylinder Lockup
21.	GA6189	2	Hitch Pin W/Lynch Pin
22.	G10017	4	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10111	4	Lock Nut, 1/2"-13
23.	GA10279	4	Pin, 5 1/4"
24.	G10025	2	Hex Head Cap Screw, 3/4"-10 x 1 1/2"
	G10231	2	Lock Washer, 3/4"
25.	GD15041	2	Washer, 13/16" I.D. x 4" O.D., 7 Gauge
26.	GD15042	1	Pin, 2 1/4" x 20 1/16"
27.	G10460	4	Cotter Pin, 1/4" x 2"
28.	GD12790	2	Pin, 1 1/4" x 3 1/2"
29.		-	See “Transport Axle Cylinder”, Page P128
30.	GD0752-53	2	Sleeve, 3/8"
A.	GA11278	-	Tire And Rim Assembly (Items 6, 7, And 18)
	GA11266	-	Tire And Rim Assembly (Items 7, 11 And 18)
B.	GA9315	-	Hub And Spindle Assembly (Items 3, 4, 5, 8, 9, 10 And 12-17)

*** Specific brand requests will be supplied only as available from current KINZE® Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied.**

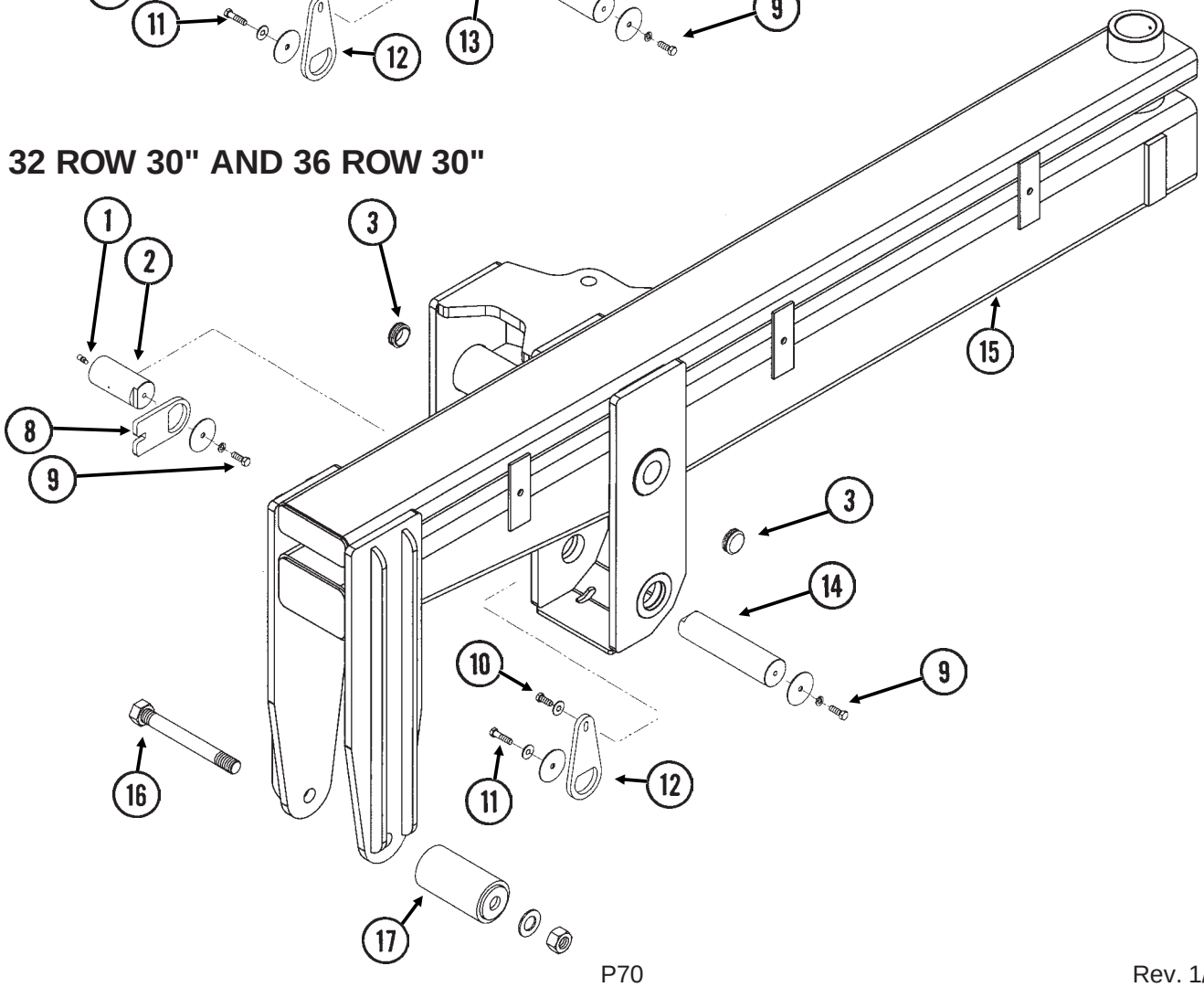
STUB WING

(FWD13/FWD47a)

24 ROW 30"



32 ROW 30" AND 36 ROW 30"



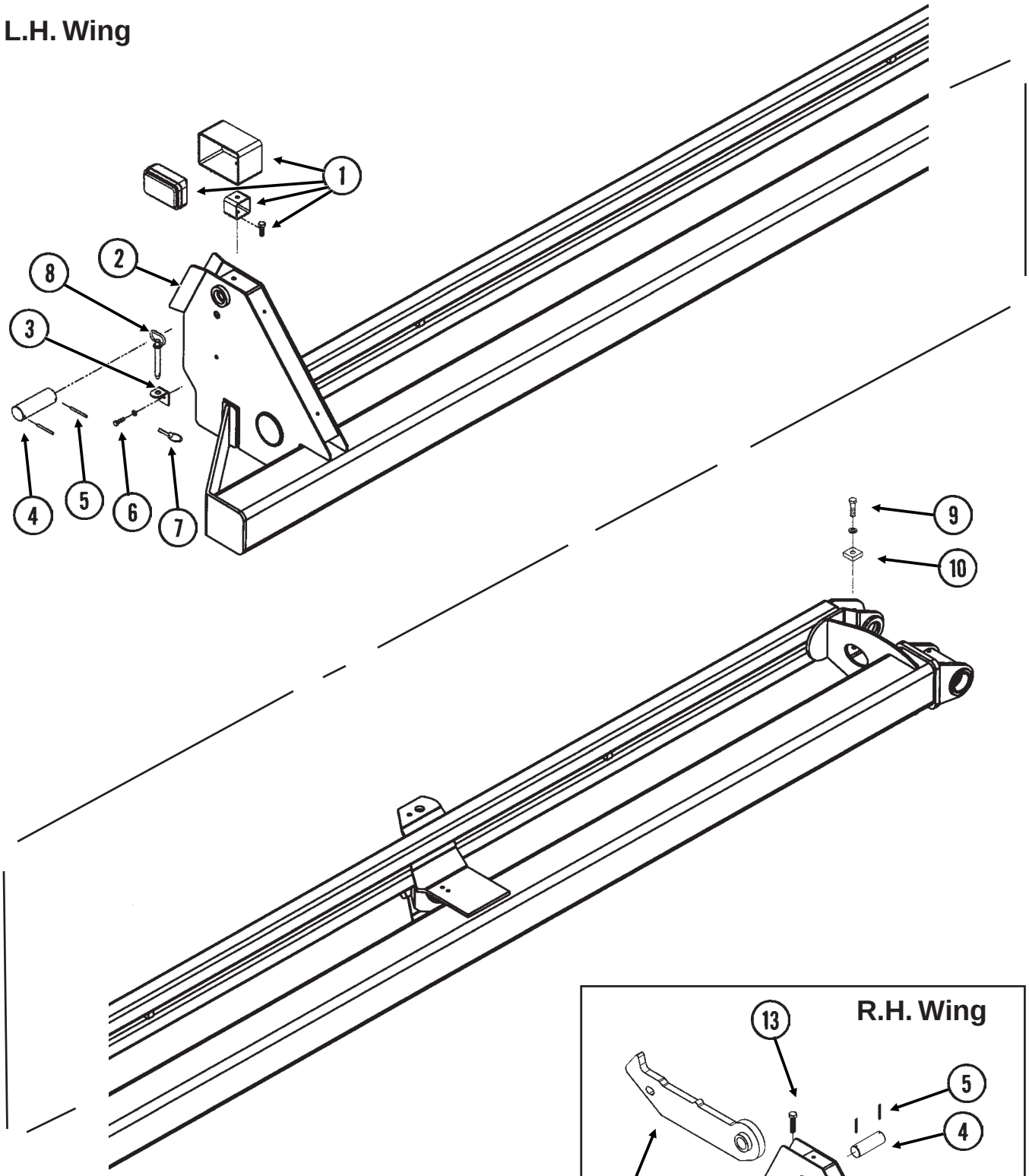
STUB WING

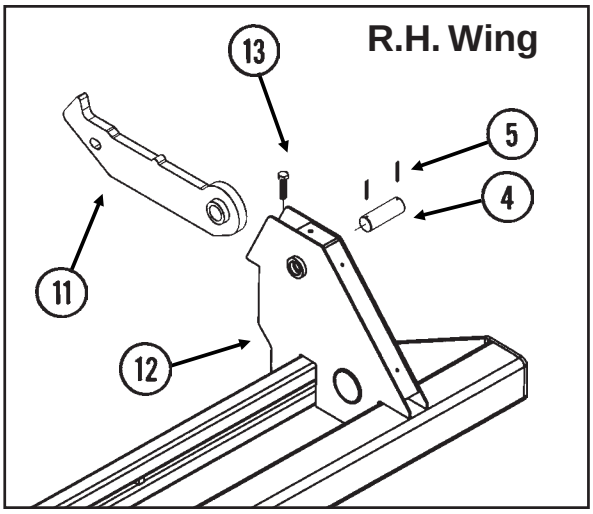
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10640	1	Grease Fitting, 1/4"-28
2.	GD15067	1	Pin, 2 3/4" x 5 13/16"
3.	G11105	2	Cap
4.	G10460	4	Cotter Pin, 1/4" x 2"
5.	GD15048	1-2	Pin, 1 1/4" x 5 1/16"
6.		-	See “Wing Fold Cylinder”, Page P124
7.	GD15049	1-2	Pin, 1 1/4" x 4 5/16"
8.	GD15069	1	Capture Plate
9.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10228	2	Lock Washer, 1/2"
	GD15068	2	Washer, 3 3/4" O.D. x 1/2" I.D. x 1/4"
10.	G10037	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10216	1	Washer, 1/2" USS
11.	G10016	1	Hex Head Cap Screw, 1/2"-13 x 2"
	G10216	1	Washer, 1/2" USS
	GD15068	1	Washer, 3 3/4" O.D. x 1/2" I.D. x 1/4"
12.	GD15072	1	Capture Plate
13.	GA11219	1	Stub Wing W/Bushings And Grease Fittings, L.H., 24 Row 30" (Shown)
	GA11220	-	Stub Wing W/Bushings And Grease Fittings, R.H., 24 Row 30"
	GD14565	-	Hardened Bushing, 3 1/2" O.D. x 3" I.D. x 4"
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	G10640	-	Grease Fitting, 1/4"-28
14.	GD15070	1	Pin, 2 3/4" x 11 1/4"
15.	GA11249	1	Stub Wing W/Bushings And Grease Fittings, L.H., 32 Row 30" And 36 Row 30" (Shown)
	GA11250	-	Stub Wing W/Bushings And Grease Fittings, R.H., 32 Row 30" And 36 Row 30"
	GD14565	-	Hardened Bushing, 3 1/2" O.D. x 3" I.D. x 4"
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	G10640	-	Grease Fitting, 1/4"-28
16.	GA10456	1	Roller Pin, 1 1/4"-7 x 12"
	G10226	1	Washer, 1 1/4" SAE
	G10239	1	Hex Nut, 1 1/4"-7
17.	GA10287	1	Roller

OUTER WING, 24 ROW 30"

(FWD63/FWD63a)

L.H. Wing





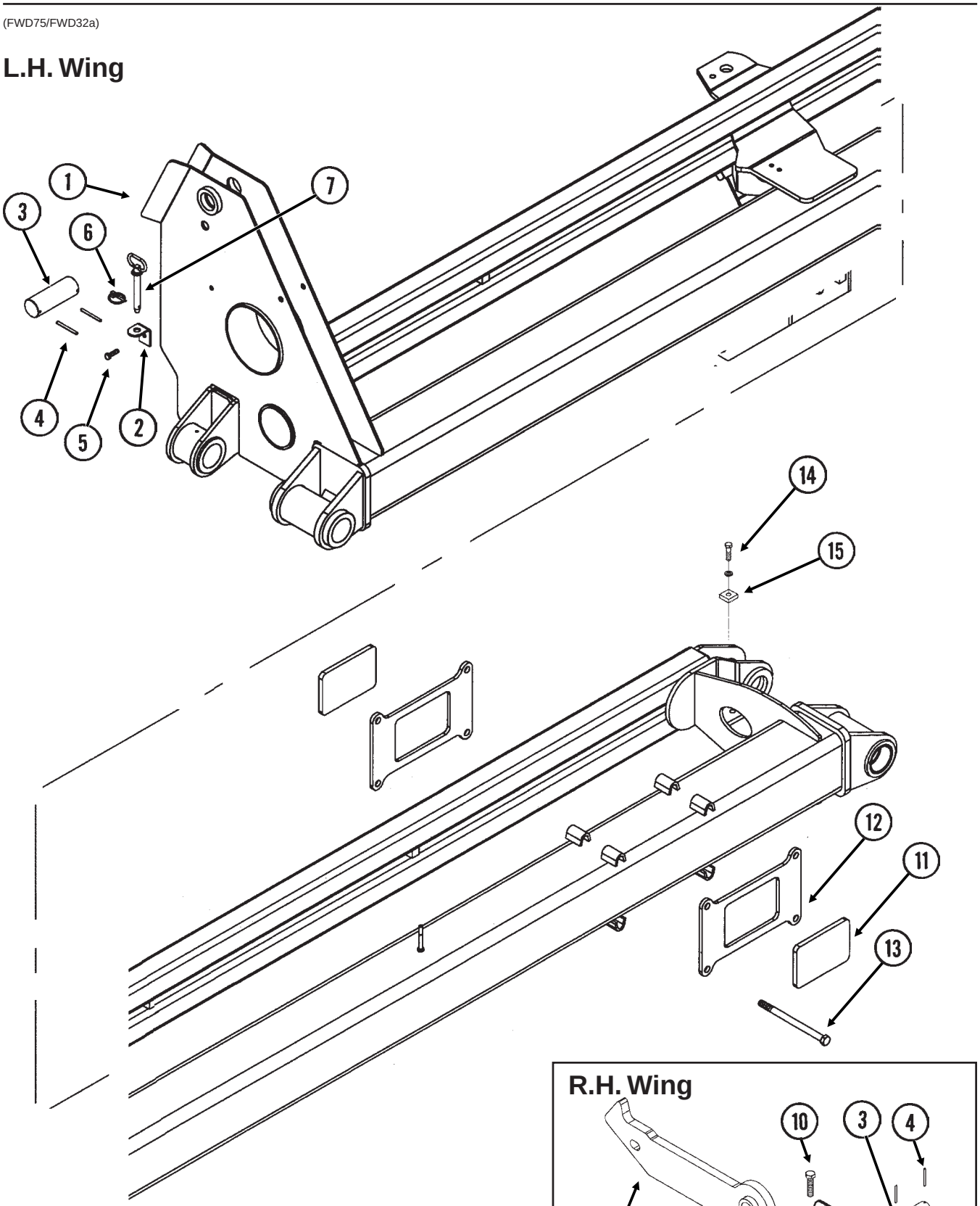
OUTER WING, 24 ROW 30"

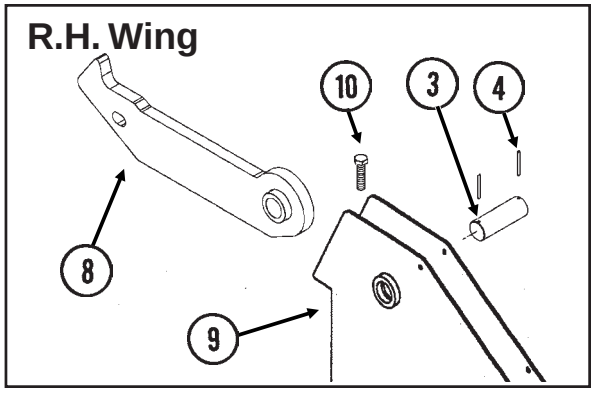
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.		-	See “Light Assemblies And Brackets”, Pages P174 And P175
2.	GA11225	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, L.H., 284 1/8"
	G10640	-	Grease Fitting, 1/4"-28
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" I.D. x 2 7/8" O.D. x 1 7/8" Long
3.	GD15285	1	Storage Bracket
4.	GD15074	1	Pin, 2" x 5 3/4"
5.	G10191	2	Spring Pin, 1/4" x 2 3/4"
6.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	1	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
7.	GD5625	1	Lynch Pin, 3/16"
8.	GD15282	1	Pin, 5/8" x 4"
9.	G10016	1	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	1	Lock Washer, 1/2"
	G10111	1	Lock Nut, 1/2"-13
10.	GD15066	1	Stop
11.	GA10404	1	Outer Hook, 29 13/16" Long
12.	GA11226	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, R.H., 284 1/8"
	G10640	-	Grease Fitting, 1/4"-28
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" I.D. x 2 7/8" O.D. x 1 7/8" Long
13.	G10543	1	Hex Head Cap Screw, 3/4"-10 x 3", Full Thread
	G10105	1	Hex Nut, 3/4"-10

INNER WING, 32 ROW 30" AND 36 ROW 30"

(FWD75/FWD32a)

L.H. Wing





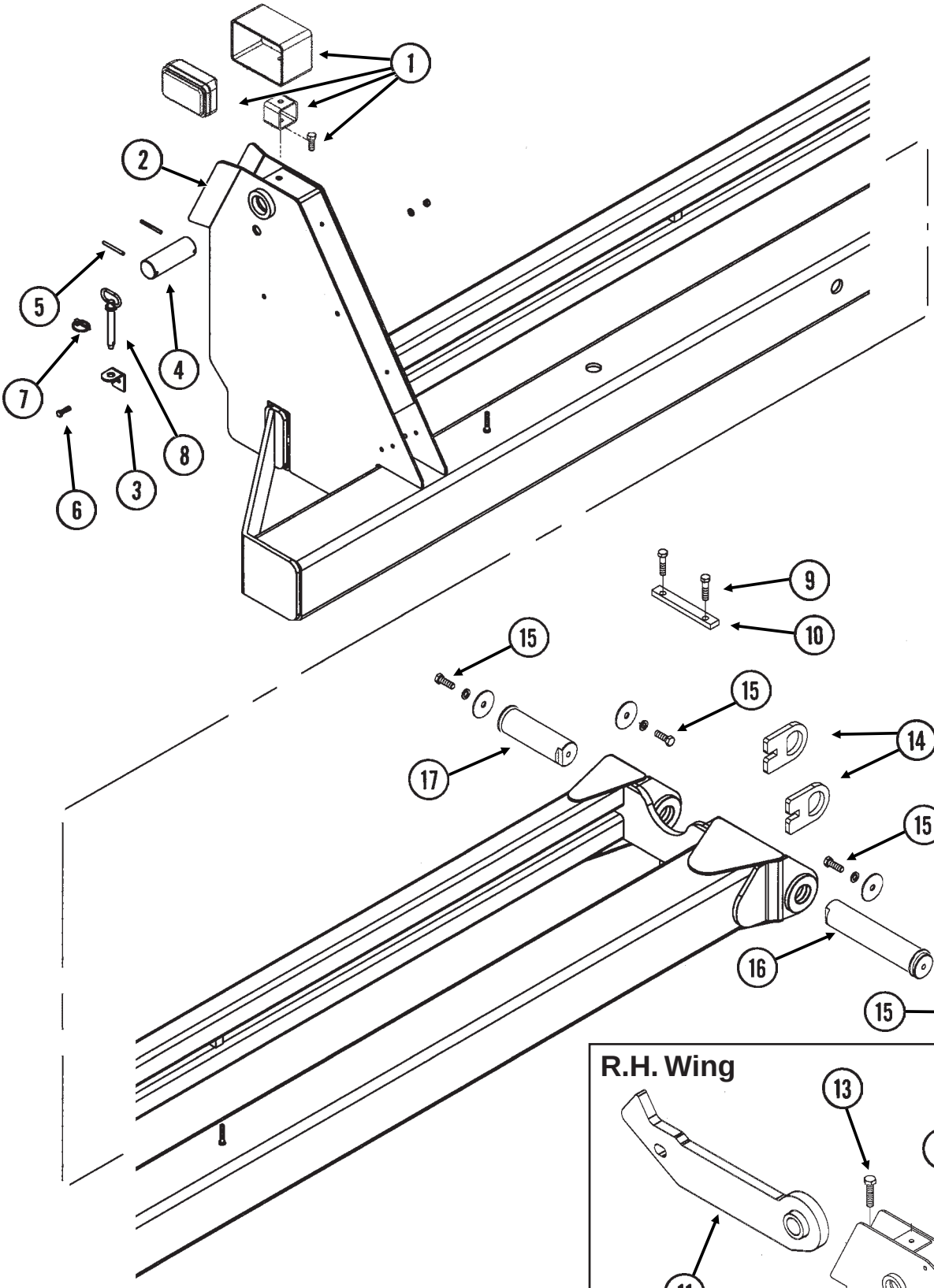
INNER WING, 32 ROW 30" AND 36 ROW 30"

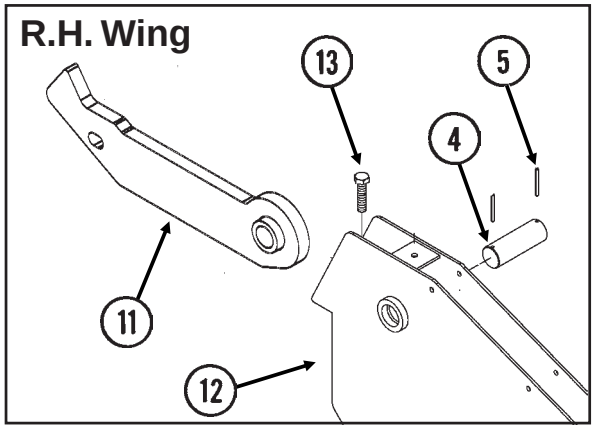
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11307	1	Inner Wing W/Grease Fittings, Bushings, Spacer And Sleeve, L.H., 209 5/8", 32 Row 30"
	GA11323	-	Inner Wing W/Grease Fittings, Bushings, Spacer And Sleeve, L.H., 209 5/8", 36 Row 30"
	G10640	-	Grease Fitting, 1/4"-28
	GD14564	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 4 1/2"
	GD15109	-	Spacer, 2 3/4" O.D. x 2 3/8" I.D. x 2 3/8"
	GD14562	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8", Long
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
2.	GD15285	1	Storage Bracket
3.	GD15074	1	Pin, 2" x 5 3/4"
4.	G10191	2	Spring Pin, 1/4" x 2 3/4"
5.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	1	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
6.	GD5625	1	Lynch Pin, 3/16"
7.	GD15282	1	Pin, 5/8" x 4"
8.	GA10378	1	Inner Hook, 29 1/4" Long
9.	GA11308	-	Inner Wing W/Grease Fittings, Bushings, Spacer And Sleeve, R.H., 209 5/8", 32 Row 30"
	GA11324	-	Inner Wing W/Grease Fittings, Bushings, Spacer And Sleeve, R.H., 209 5/8", 36 Row 30"
	G10640	-	Grease Fitting, 1/4"-28
	GD14564	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 4 1/2"
	GD15109	-	Spacer, 2 3/4" O.D. x 2 3/8" I.D. x 2 3/8" (If Applicable)
	GD14562	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 3" (If Applicable)
	GD17450	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 4 3/16" (If Applicable)
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8", Long
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
10.	G10543	1	Hex Head Cap Screw, 3/4"-10 x 3", Full Thread
	G10105	1	Hex Nut, 3/4"-10
11.	GD15720	2	Bronze Pad, 5" x 7 1/2"
12.	GD15719	2	Capture Plate
13.	G10152	4	Hex Head Cap Screw, 5/8"-11 x 9"
	G10217	4	Washer, 5/8" USS
	G10107	4	Lock Nut, 5/8"-11
14.	G10016	1	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	1	Lock Washer, 1/2"
	G10111	1	Lock Nut, 1/2"-13
15.	GD15066	1	Stop

OUTER WING, 32 ROW 30" AND 36 ROW 30"

(FWD48aa/FWD49)

L.H. Wing



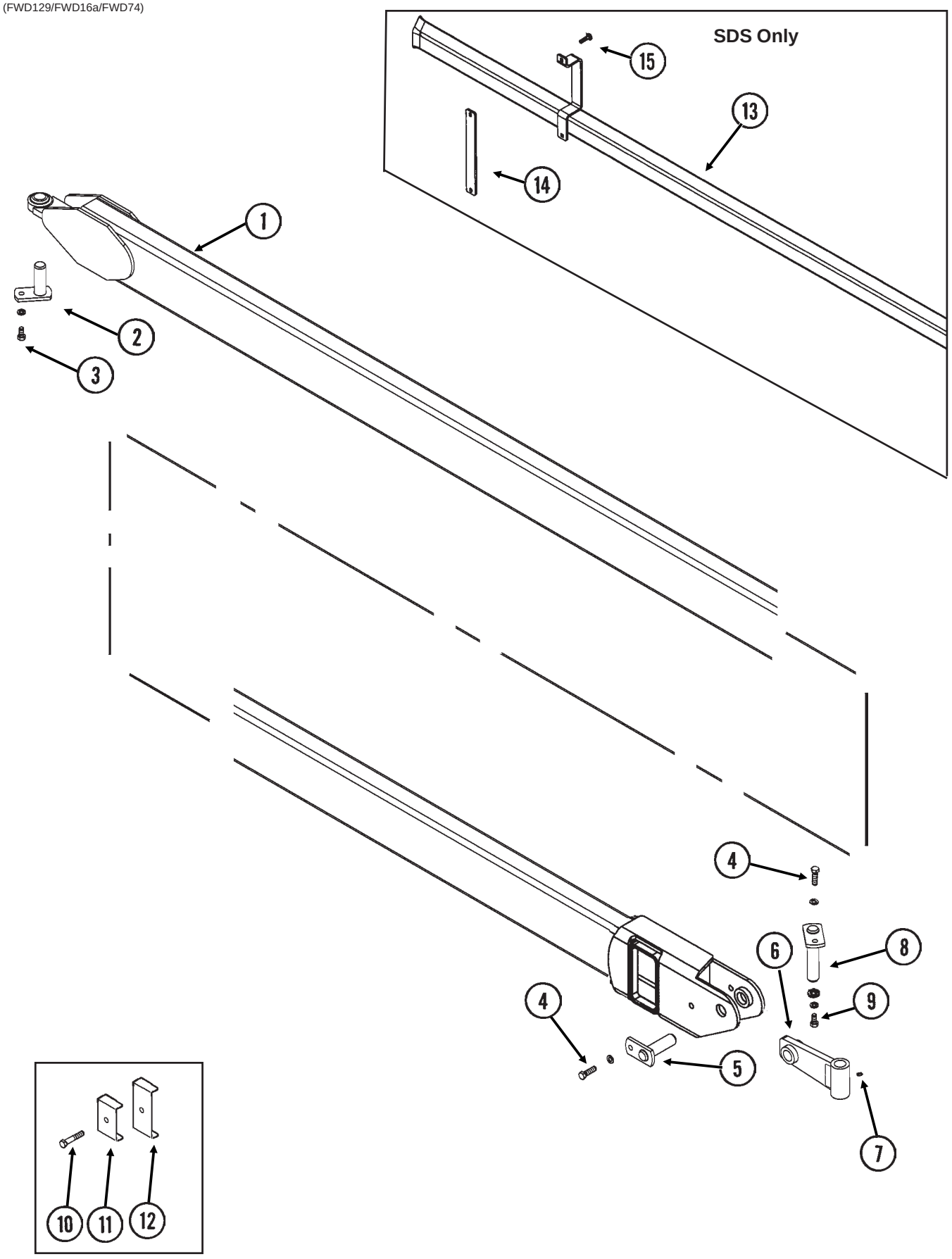


OUTER WING, 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.		-	See “Light Assemblies And Brackets”, Pages P174 And P175
2.	GA10353	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, L.H., 194 1/2", 32 Row 30"
	GA10413	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, L.H., 254 1/2", 36 Row 30"
	G10640	-	Grease Fitting, 1/4"-28
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8" Long
3.	GD15285	1	Storage Bracket
4.	GD15074	1	Pin, 2" x 5 3/4"
5.	G10191	2	Spring Pin, 1/4" x 2 3/4"
6.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	1	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
7.	GD5625	1	Lynch Pin, 3/16"
8.	GD15282	1	Pin, 5/8" x 4"
9.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	2	Lock Washer, 1/2"
	G10111	2	Lock Nut, 1/2"-13
10.	GD15065	1	Capture Plate
11.	GA10743	-	Outer Hook, 29 15/16" Long
12.	GA10352	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, R.H., 194 1/2", 32 Row 30"
	GA10414	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, R.H., 254 1/2", 36 Row 30"
	G10640	-	Grease Fitting, 1/4"-28
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8" Long
13.	G10543	1	Hex Head Cap Screw, 3/4"-10 x 3", Full Thread
	G10105	1	Hex Nut, 3/4"-10
14.	GD15064	2	Capture Plate
15.	G10026	4	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	4	Lock Washer, 3/4"
	GD17180	4	Washer, 3 1/2" O.D. x 13/16" I.D. x 3/8"
16.	GA12128	1	Pin, 2 1/4" x 11 1/8"
17.	GA12127	1	Pin, 2 1/4" x 7 1/8"

DRAFT LINK

(FWD129/FWD16a/FWD74)

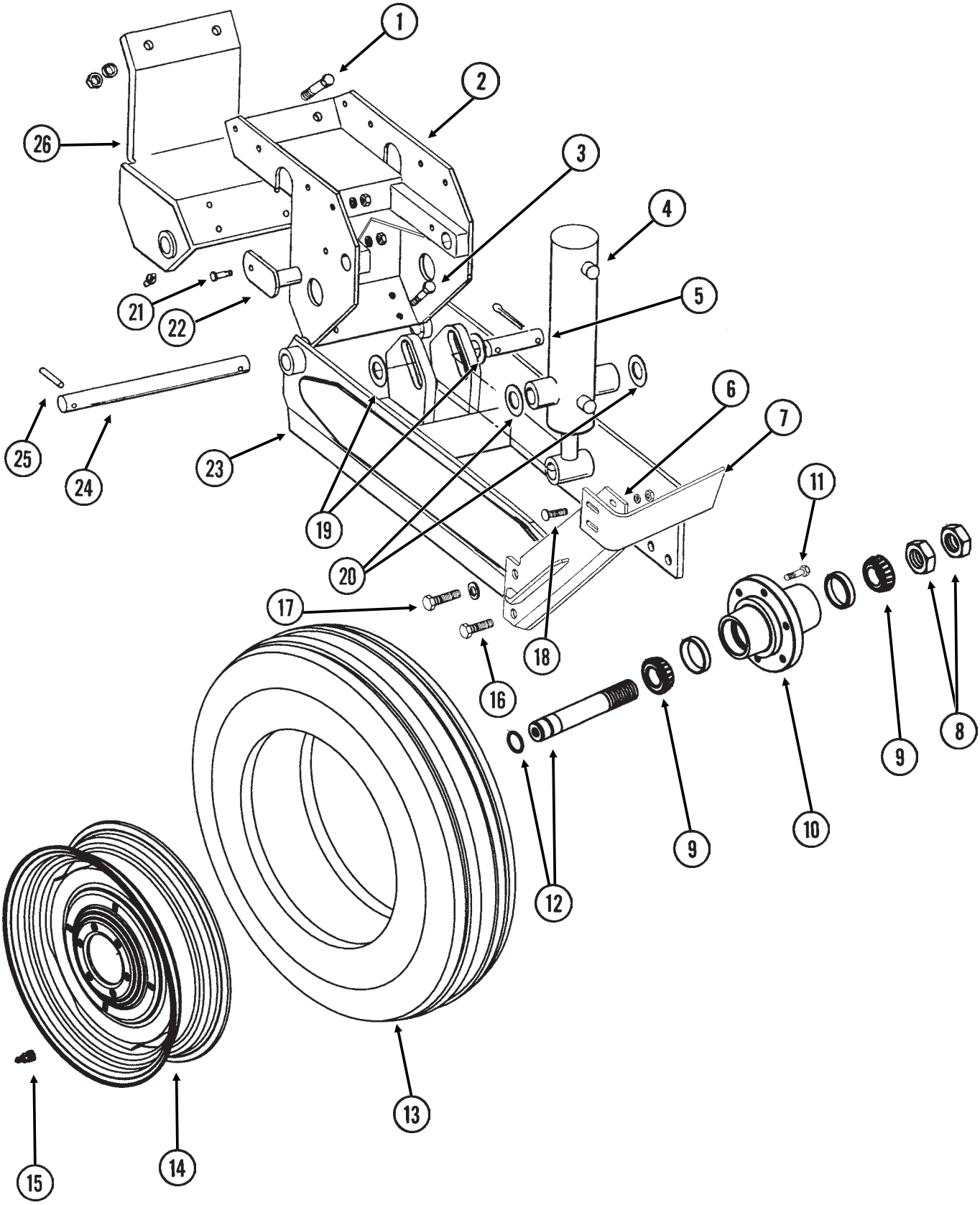


DRAFT LINK

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11015	1	Draft Link, L.H., 202 3/8", 24 Row 30"
	GA11016	1	Draft Link, R.H., 202 3/8", 24 Row 30"
	GA11025	1	Draft Link, L.H., 277", 32 Row 30"
	GA11026	1	Draft Link, R.H., 277", 32 Row 30"
	GA11027	1	Draft Link, L.H., 314 1/8", 36 Row 30"
	GA11028	1	Draft Link, R.H., 314 1/8", 36 Row 30"
2.	GA10276	1	Pin, 3 5/8"
3.	G10014	1	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	1	Lock Washer, 1/2"
4.	G10039	1	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
5.	GA10277	1	Pin, 4"
6.	GA10275	1	Link Yoke
7.	G10640	1	Grease Fitting, 1/4"-28
8.	GA10278	1	Pin, 6"
9.	G10039	1	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	G10228	1	Lock Washer, 1/2"
	GD15235	1	Washer, 2 1/4" O.D. x 1/2" I.D. x 1/4"
10.	G10585	-	Hex Head Cap Screw, 1/2"-13 x 3 1/4"
	G10111	-	Lock Nut, 1/2"-13
11.	GD0740	-	Hose Clamp, 3/4" x 4" x 3 1/2"
12.	GD8188	-	Hose Clamp, 7/8" x 3" x 5 3/8"
13.	GA11667	1	Hose Tube, 168", 24 Row 30" SDS
	GA11670	1	Hose Tube, 287 3/4", 36 Row 30" SDS
14.	GD16887	2-4	Support
15.	G10301	8	Carriage Bolt, 3/8"-16 x 1 1/2"
	G10210	8	Washer, 3/8" USS
	G10108	8	Lock Nut, 3/8"-16

LIFT/GAUGE WHEEL

(FWD64)



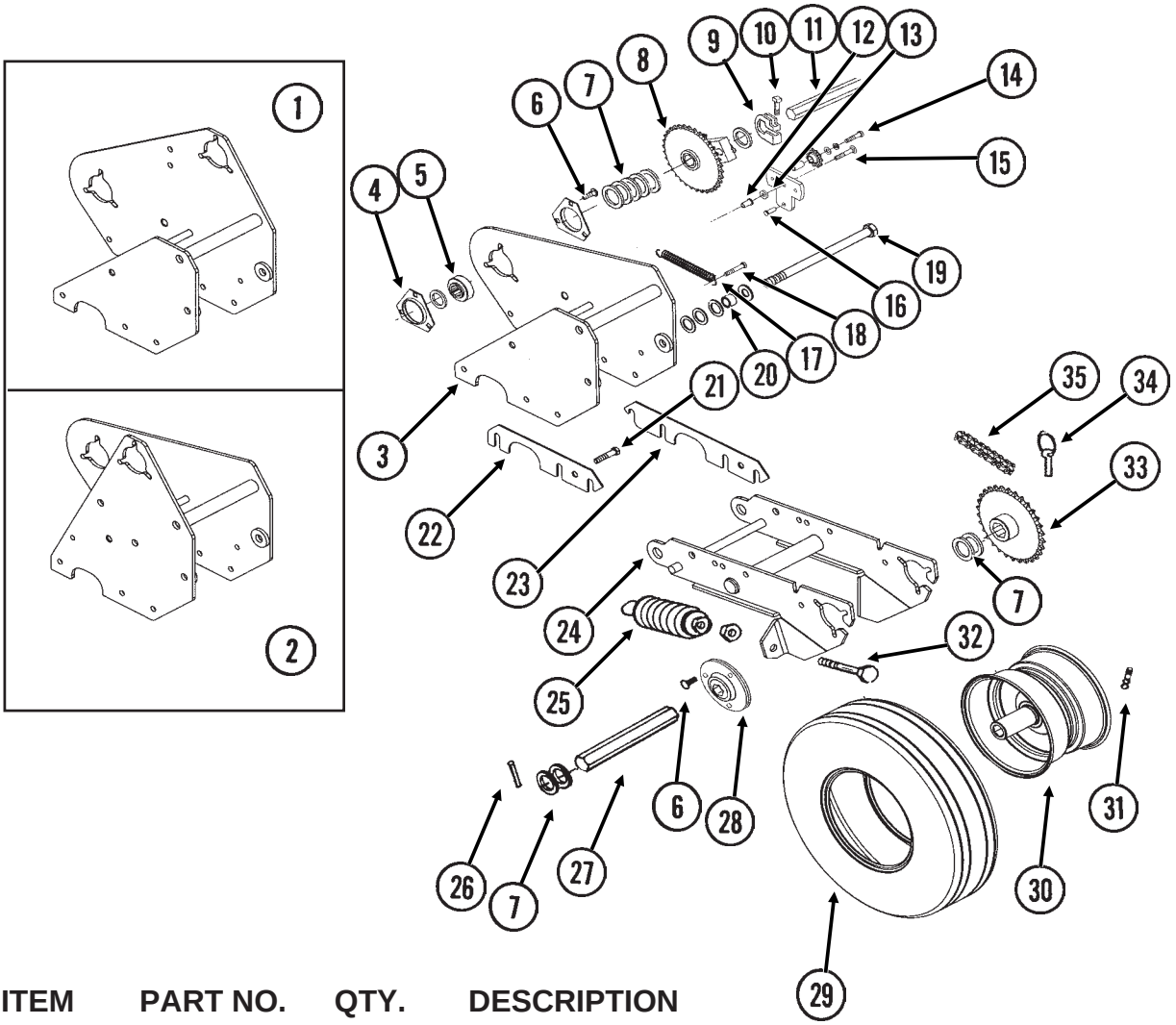
LIFT/GAUGE WHEEL

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10009	2	Hex Head Cap Screw, 5/8"-11 x 2 1/2"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
2.	GA5122	1	Wheel Tower Clamp
3.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	6	Special Washer, 5/8", Hardened
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
4.		-	See “Master/Slave/Lift Assist Cylinders”, Pages P119-P123
5.	GD5841	1	Pin, 1 1/4" x 5 5/8"
	G10460	2	Cotter Pin, 1/4" x 2"
6.	GA7376	1	Scraper Mount
7.	GD12543	1	Scraper
8.	G11081	2	Hex Jam Nut, 1 1/2"-12, Grade 2
9.	GA0895	2	Bearing
10.	GA2148	1	Hub W/Cups, 6 Bolt
	GR0434	-	Cup
11.	GR0270	6	Lug Bolt, 9/16"-18
12.	GA2558	1	Spindle W/Round External Retaining Ring, 9 1/2"
	GD11490	-	Round External Retaining Ring
13.	GD13401	-	Tire, 7.50" x 20", 8 Ply, Tubeless W/O Center Rib (Specify Brand*)
14.	GA2142	1	Rim, 5.50" x 20"
15.	GA7434	1	Valve Stem
16.	G10025	2	Hex Head Cap Screw, 3/4"-10 x 1 1/2"
	G10231	2	Lock Washer, 3/4"
	G10105	2	Hex Nut, 3/4"-10
17.	G10026	2	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	2	Lock Washer, 3/4"
18.	G10636	4	Carriage Bolt, 1/2"-13 x 1 1/2"
	G10228	4	Lock Washer, 1/2"
	G10216	4	Washer, 1/2" USS
	G10102	4	Hex Nut, 1/2"-13
19.	G10139	2	Washer, 1 1/4" USS
20.	G10159	-	Machine Bushing, 1 1/4", 10 Gauge (As Required)
21.	G10581	2	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10111	2	Lock Nut, 1/2"-13
22.	GA5121	2	Pin, 2 1/8"
23.	GA11276	1	Arm
24.	GD11695	1	Pin, 1 1/4" x 13 1/4"
25.	G10610	2	Spring Pin, 3/8" x 2"
26.	GA9877	1	Clamp W/Grease Fittings
	G10640	2	Grease Fitting, 1/4"-28
A.	GA2147	-	Hub And Spindle Assembly (Items 8-10 And 12)
B.	GA7409	-	Scraper Assembly (Items 6, 7, 16 And 18)

*** Specific brand requests will be supplied only as available from current KINZE® Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied.**

CONTACT DRIVE WHEEL, ARM AND TOWER ASSEMBLIES

(FWD65)



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11281	1	Tower, Inner Module On 24 Row 30"/Inner And Center Module On 32 Row 30" And 36 Row 30"
2.	GA11280	1	Tower, Center Module On 24 Row 30"/Outer Module On 32 Row 30" And 36 Row 30"
3.	GA11279	1	Tower, Outer Module On 24 Row 30" Only
4.	G3400-01	-	Flangette
5.	G2100-03	-	Bearing, 7/8" Hex Bore, Spherical
6.	G10303	-	Carriage Bolt, 5/16"-18 x 1"
	G10232	-	Lock Washer, 5/16"
	G10106	-	Hex Nut, 5/16"-18
7.	G10233	-	Machine Bushing, 1", 10 Gauge
8.	GA10173	3	Ratchet/Sprocket Assembly, L.H.
	GD1256	2	Spring
	G10453	2	Cotter Pin, 3/16" x 1"
	GA0378	1	Block And Hub Assembly
	GD1255	2	L-Pin
	GA7572	1	Sprocket, 34 Tooth
	G10430	1	External Retaining Ring, 1 1/4"
9.	GD11045	-	Lock Clamp
10.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration

CONTACT DRIVE WHEEL, ARM AND TOWER ASSEMBLIES

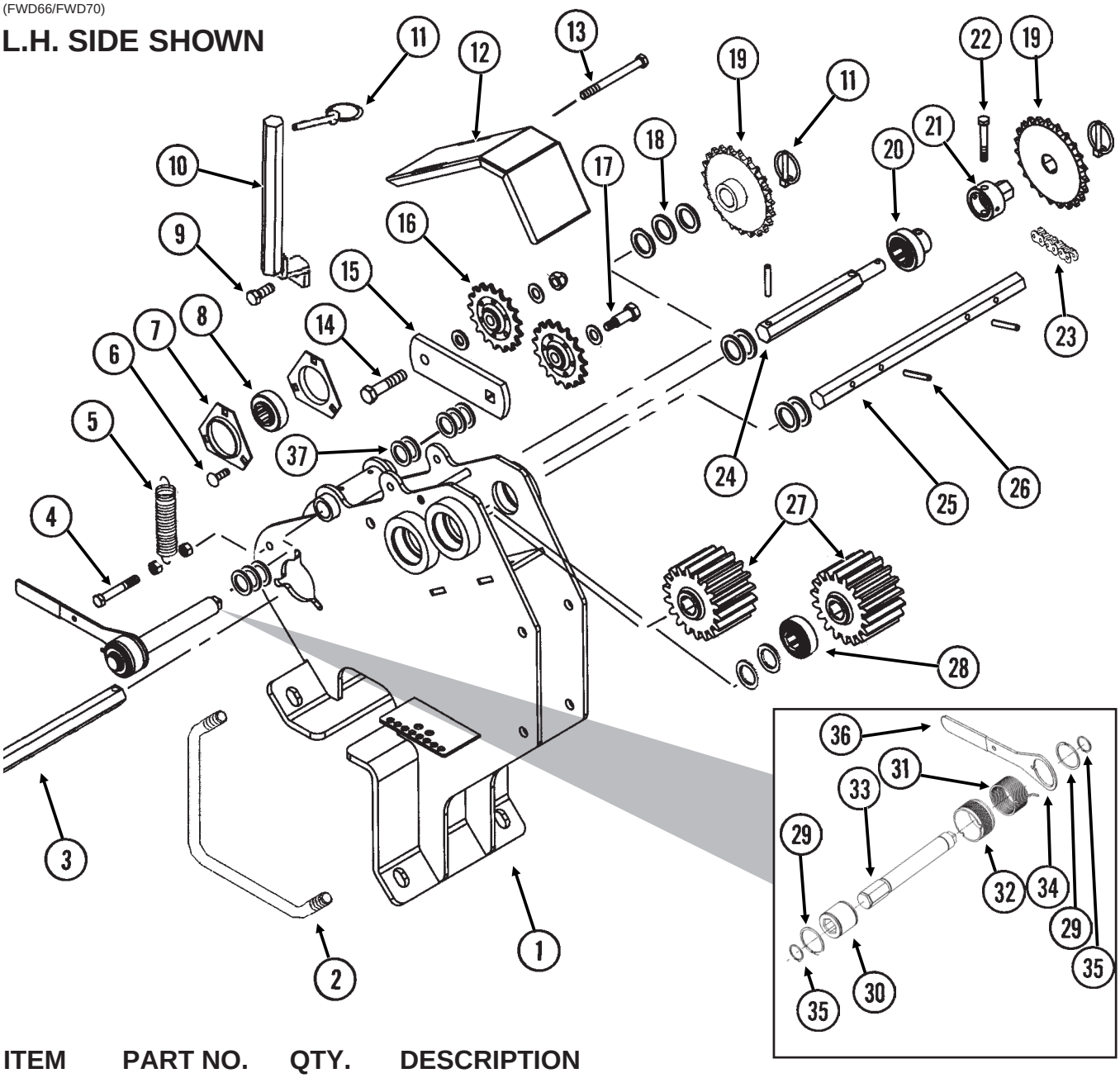
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
11.	GD2548-93	1	Hex Shaft, 7/8" x 93", L.H. Side (1 Hole)
	GD2548-104	-	Hex Shaft, 7/8" x 104", R.H. Side (1 Hole)
12.	GD15532	1	Bronze Bushing, 1"
13.	GD15538	1	Spacer, 3/8" I.D. x 7/8" O.D., 7 Gauge
14.	GA11287	1	Idler W/Sprockets, Sleeves And Hardware
	GD7426	2	Sprocket, 12 Tooth
	GD1026	2	Sleeve, 1 3/16" Long
	G10047	2	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10210	2	Washer, 3/8" USS
	G10229	2	Lock Washer, 3/8"
15.	G11119	1	Carriage Bolt, 3/8"-16 x 2 1/4"
	G10203	1	Washer, 3/8" SAE
	G10108	1	Lock Nut, 3/8"-16
16.	G11118	1	Clevis Pin, 3/8" x 3/4"
	G10860	1	Retaining Ring, 3/8"
17.	GD5857	1	Spring
18.	G10939	1	Hex Head Cap Screw, 3/8"-16 x 2 1/4"
	G10210	1	Washer, 3/8" USS
	G10101	1	Hex Nut, 3/8"-16
	G10108	1	Lock Nut, 3/8"-16
19.	G10953	1	Hex Head Cap Screw, 5/8"-11 x 10"
	G10235	6	Machine Bushing, 7/8", 14 Gauge
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	1	Lock Nut, 5/8"-11
20.	GB0218	2	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
21.	G10004	7	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	7	Lock Washer, 3/8"
	G10101	7	Hex Nut, 3/8"-16
22.	GD16438	1	Shim
23.	GD16437	1	Shim
24.	GA7372	1	Wheel Arm
25.	GA2068	2	Spring W/Plug
26.	G10602	2	Spring Pin, 1/4" x 1 1/2"
27.	GD6775	1	Hex Shaft, 7/8" x 11 3/4" (2 Holes)
28.	GA9846	-	Flanged Bearing, 7/8" Hex Bore
29.	GD4700	1	Tire, 4.80" x 8", 4 Ply, Rib Implement (Specify Brand*)
30.	GA3553	1	Rim, 3.75" x 8"
31.	GD4701	-	Valve Stem
32.	G10890	2	Hex Head Adjusting Bolt, 1/2"-13 x 4", Grade 2
	G10501	2	Hex Jam Nut, 1/2"-13, Grade 2
33.	GA11285	1	Sprocket, 38 Tooth
34.	GD2558	1	Lynch Pin, 1/4"
35.	G3310-168	1	Chain, No. 40, 168 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
A.	G1K324	-	Contact Wheel Arm Replacement Kit, (Items 6, 7, 24, 26-28, 32 And 34)
B.	GA3552	-	Tire And Rim Assembly (Items 29-31)

*** Specific brand requests will be supplied only as available from current KINZE® Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied. Different brand tires may have different diameters. Change in tire brand may affect rates. Field checks are recommended after any change in contact tires.**

SEED RATE TRANSMISSION

(FWD66/FWD70)

L.H. SIDE SHOWN



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11297	1	Transmission Plate W/Grease Fittings
	G10640	2	Grease Fitting, 1/4"-28
2.	GD8175	2	U-Bolt, 7" x 7" (Diamond) x 5/8"-11
	GD7805	4	Special Washer, 5/8", Hardened
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
3.		-	See “Contact Drive Wheel, Arm And Tower Assemblies”, Pages P82 And P83
4.	G10049	1	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10101	2	Hex Nut, 3/8"-16
5.	GD5857	1	Spring
6.	G10303	3	Carriage Bolt, 5/16"-18 x 1"
	G10232	3	Lock Washer, 5/16"
	G10106	3	Hex Nut, 5/16"-18

SEED RATE TRANSMISSION

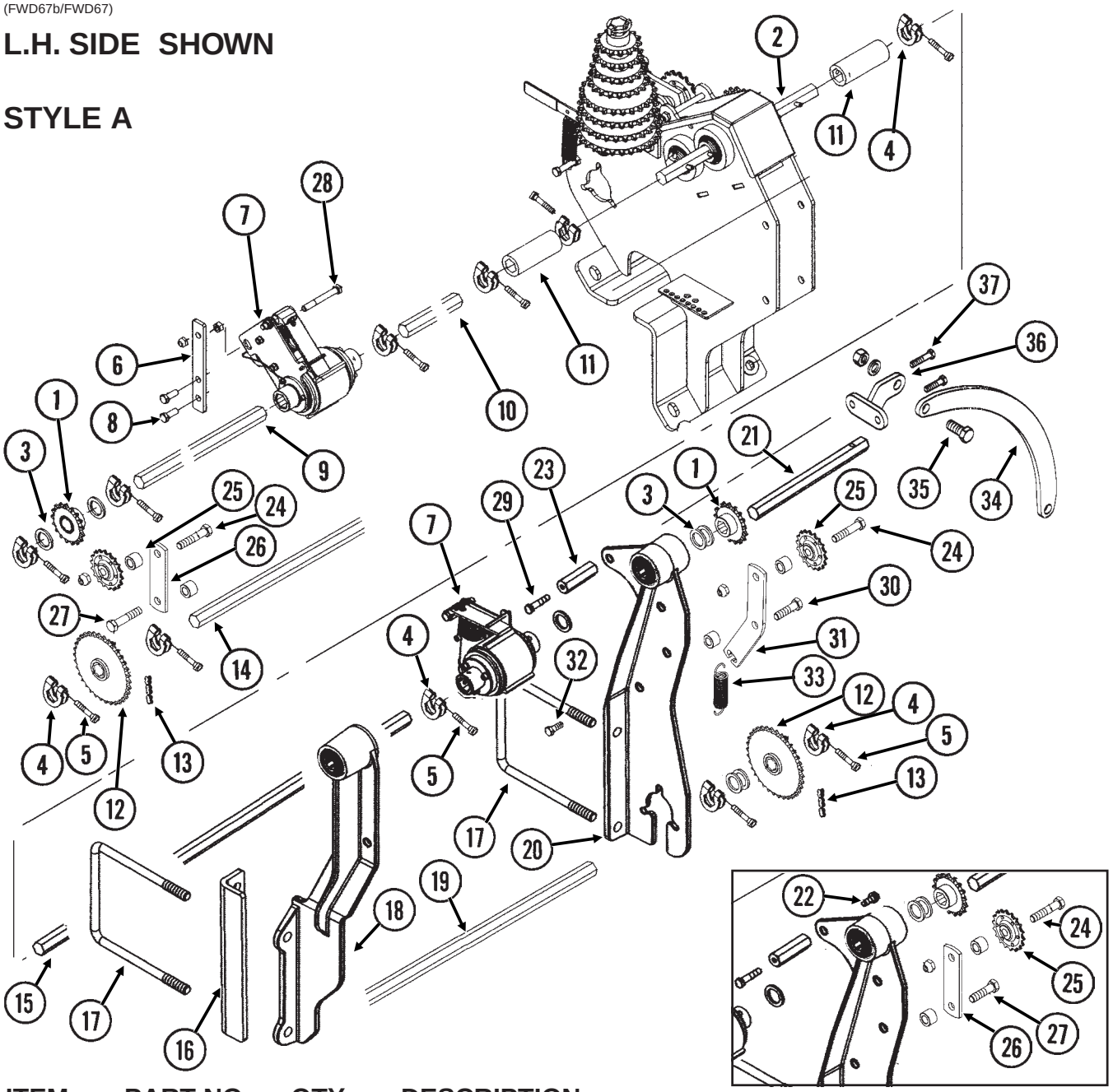
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
7.	G3400-01	2	Flangette
8.	G2100-03	1	Bearing, 7/8" Hex Bore, Spherical
9.	G10581	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10527	2	Lock Washer, 1/2", Internal/External
	GD10356	1	Bushing, 3/4" Long
	G10111	1	Lock Nut, 1/2"-13
10.	GA11245	1	Sprocket Storage Rod
11.	GD2558	3	Lynch Pin, 1/4"
12.	GD16449	1	Cover
13.	G10063	1	Hex Head Cap Screw, 3/8"-16 x 4"
	G10108	1	Lock Nut, 3/8"-16
14.	G10581	1	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10206	3	Washer, 1/2" SAE
	G10111	1	Lock Nut, 1/2"-13
15.	GD16446	1	Idler Plate
16.	GA11244	2	Idler Sprocket, 17 Tooth
17.	GD16440	1	Shoulder Bolt, 1/2" x 3/8"-16 x 1"
18.	G10233	-	Machine Bushing, 1", 10 Gauge (As Required)
19.	GA11235	1	Sprocket, 14 Tooth
	GA11236	1	Sprocket, 15 Tooth
	GA11237	1	Sprocket, 17 Tooth
	GA11238	1	Sprocket, 19 Tooth
	GA11239	2	Sprocket, 23 Tooth
	GA11240	1	Sprocket, 24 Tooth
	GA11241	1	Sprocket, 25 Tooth
	GA11242	1	Sprocket, 26 Tooth
	GA11243	1	Sprocket, 27 Tooth
20.	GA11394	1	Cylindrical Bearing
21.	GD7127	1	Shear Coupler
22.	G10069	1	Hex Head Cap Screw, 5/16"-18 x 2 1/4"
	G10109	1	Lock Nut, 5/16"-18, Grade 8
23.	G3316-80	1	Chain, No. 50, 80 Pitch Including Connector Link
	GR1743	-	Connector Link, No. 50
24.	GD16448	1	Shaft, 8 1/4"
25.	GD16447	1	Shaft, 14"
26.	G11103	1	Spring Pin, 1/4" x 1 3/4"
27.	GD16370	2	Gear, 18 Tooth
28.	GA5116	3	Bearing, 7/8" Hex Bore, Cylindrical
29.	G11075	2	External Inverted Snap Ring, 7/8"
30.	GD14432	1	Sleeve, 1 1/4"
31.	GD14414	1	Torsion Spring, R.H. (Used On L.H. Wrap Spring Wrench)
	GD14413	-	Torsion Spring, L.H. (Used On R.H. Wrap Spring Wrench) (Shown)
32.	GD14429	-	Release Collar, Silver, L.H.
	GD14430	1	Release Collar, Gold, R.H. (Shown)
33.	GD16439	1	Tightener Shaft, 7 5/16"
34.	GD14431	1	Handle
35.	G10496	2	External Inverted Snap Ring, 1 1/2"
36.	G11078	1	Vinyl Cap
37.	G10235	8	Machine Bushing, 7/8", 14 Gauge
A.	GA11311	-	Wrap Spring Wrench Assembly, Silver Collar, L.H. (Items 29-35)
	GA11312	1	Wrap Spring Wrench Assembly, Gold Collar, R.H. (Items 29-35) (Shown)

DRIVEN AND DRILL SHAFTS ON WINGS, 24 ROW 30"

(FWD67b/FWD67)

L.H. SIDE SHOWN

STYLE A



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA5106	4	Sprocket, 17 Tooth
2.		-	See “Seed Rate Transmission”, Pages P84 And P85
3.	G10233	-	Machine Bushing, 1", 10 Gauge
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
6.	GD16417	2	Bracket
7.		-	See “Point Row Clutches”, Pages P96 And P97
8.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10108	4	Lock Nut, 3/8"-16
9.	GD0914-46	1	Hex Shaft, 7/8" x 46" (No Holes), L.H. Side
	GD0914-30	-	Hex Shaft, 7/8" x 30" (No Holes), R.H. Side
10.	GD0914-13.5	1	Hex Shaft, 7/8" x 13 1/2" (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, 7/8" x 21" (No Holes), R.H. Side

DRIVEN AND DRILL SHAFTS ON WINGS, 24 ROW 30"

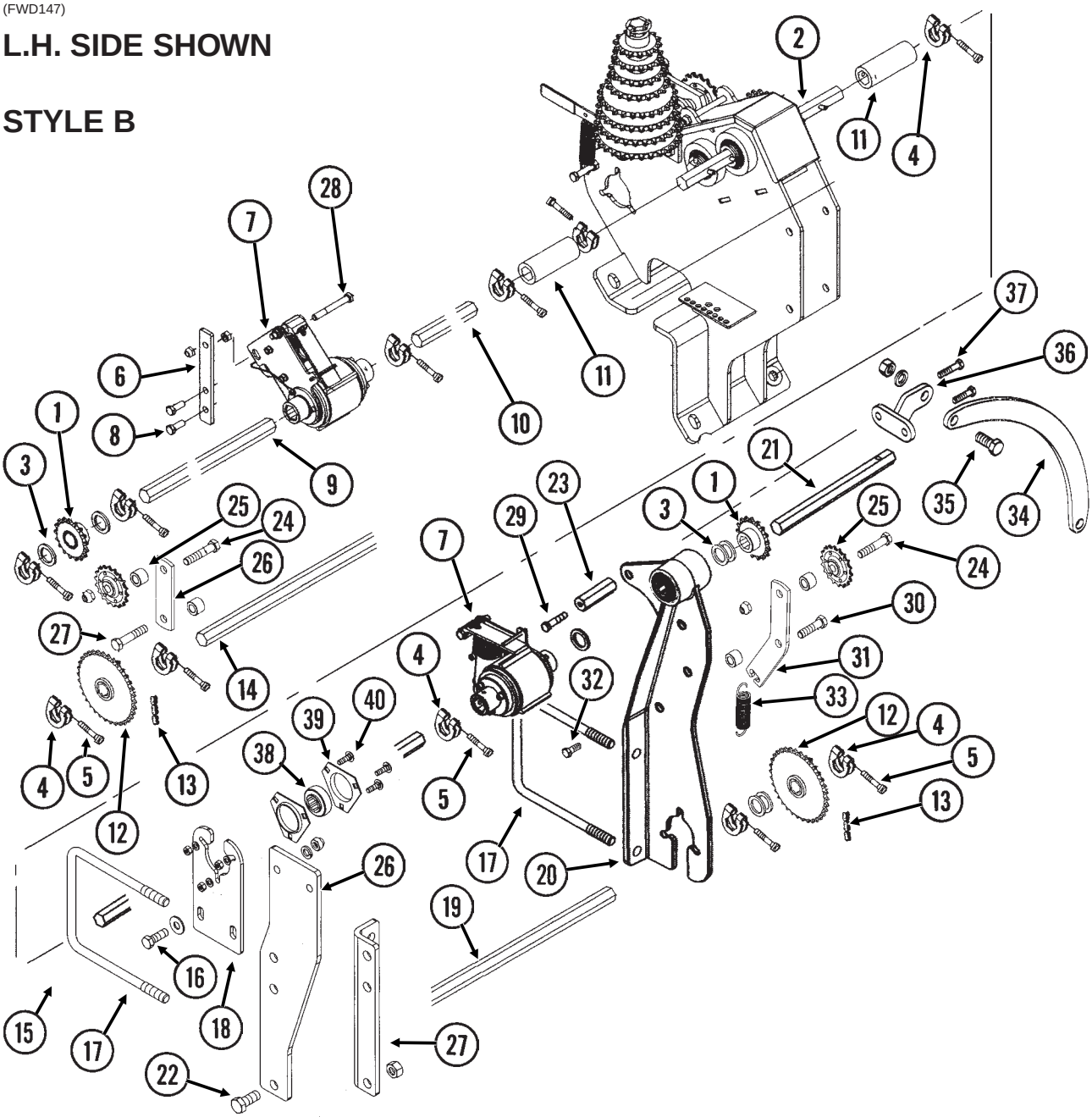
ITEM	PART NO.	QTY.	DESCRIPTION
11.	GD10126	4	Coupler, 4"
12.	GA5202	4	Sprocket, 34 Tooth
13.	G3310-108	4	Chain, No. 40, 108 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
14.	GD0914-156	2	Hex Shaft, 7/8" x 156" (No Holes)
15.	GD0914-108.5	2	Hex Shaft, 7/8" x 108 1/2" (No Holes)
16.	GD16467	1	Bracket, L.H. Side
	GD16466	-	Bracket, R.H. Side
17.	GD1114	8	U-Bolt, 7" x 7" x 5/8"-11
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
18.	GA11257	1	Support W/Bearings And Rings, L.H. Side
	GA11256	-	Support W/Bearings And Rings, R.H. Side
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
19.	GD0914-68	2	Hex Shaft, 7/8" x 68" (No Holes)
20.	GA11258	2	Chain Mount W/Bearings And Rings
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
21.	GD16405	2	Shaft, 7/8" x 11" (1 Hole)
22.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
23.	GD15114	1	Hex Shaft Spacer
24.	G10053	2	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	GD10356	2	Bushing, 3/4" Long
	G10111	2	Lock Nut, 1/2"-13
25.	GA7154	2	Sprocket W/Bearing, 18 Tooth
26.	GD16362	2	Plate
27.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10527	4	Lock Washer, 1/2", Internal/External
	G10111	2	Lock Nut, 1/2"-13
28.	G10062	2	Hex Head Cap Screw, 3/8"-16 x 3"
	G10108	2	Lock Nut, 3/8"-16
	G10101	2	Hex Nut, 3/8"-16
29.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10101	1	Hex Nut, 3/8"-16
30.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10206	4	Washer, 1/2" SAE
	G10111	2	Lock Nut, 1/2"-13
31.	GD17051	2	Idler
32.	G10560	2	Clevis Pin, 1/2" x 1 3/4"
	G10456	2	Cotter Pin, 1/8" x 3/4"
33.	GD5857	2	Spring
34.	GD17095	1	Bar, 21", L.H.
	GD17094	-	Bar, 19 3/4", R.H.
35.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
36.	GA11964	2	Mount
37.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16

DRIVEN AND DRILL SHAFTS ON WINGS, 24 ROW 30"

(FWD147)

L.H. SIDE SHOWN

STYLE B



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA5106	4	Sprocket, 17 Tooth
2.		-	See “Seed Rate Transmission”, Pages P84 And P85
3.	G10233	-	Machine Bushing, 1", 10 Gauge
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
6.	GD16417	2	Bracket
7.		-	See “Point Row Clutches”, Pages P96 And P97
8.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10108	4	Lock Nut, 3/8"-16
9.	GD0914-46	1	Hex Shaft, 7/8" x 46" (No Holes), L.H. Side
	GD0914-30	-	Hex Shaft, 7/8" x 30" (No Holes), R.H. Side
10.	GD0914-13.5	1	Hex Shaft, 7/8" x 13 1/2" (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, 7/8" x 21" (No Holes), R.H. Side

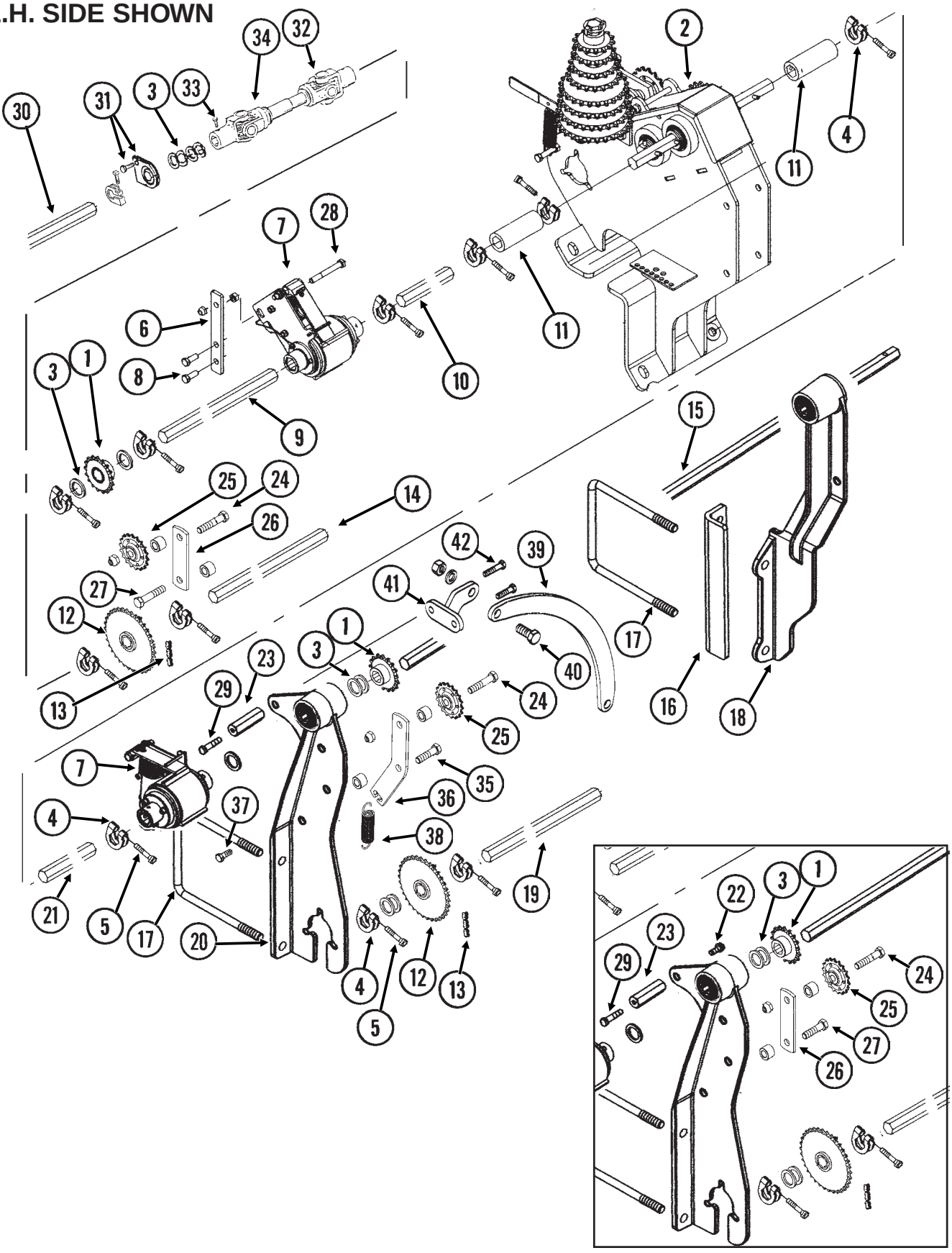
DRIVEN AND DRILL SHAFTS ON WINGS, 24 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
11.	GD10126	4	Coupler, 4"
12.	GA5202	4	Sprocket, 34 Tooth
13.	G3310-108	4	Chain, No. 40, 108 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
14.	GD0914-156	2	Hex Shaft, 7/8" x 156" (No Holes)
15.	GD0914-108.5	2	Hex Shaft, 7/8" x 108 1/2" (No Holes)
16.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10111	2	Lock Nut, 1/2"-13
17.	GD1114	8	U-Bolt, 7" x 7" x 5/8"-11
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
18.	GD18080	1	Flangette
19.	GD0914-68	2	Hex Shaft, 7/8" x 68" (No Holes)
20.	GA11258	2	Chain Mount W/Bearings And Rings
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
21.	GD16405	2	Shaft, 7/8" x 11" (1 Hole)
22.	G10007	3	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10107	2	Lock Nut, 5/8"-11
23.	GD15114	1	Hex Shaft Spacer
24.	G10053	2	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	GD10356	2	Bushing, 3/4" Long
	G10111	2	Lock Nut, 1/2"-13
25.	GA7154	2	Sprocket W/Bearing, 18 Tooth
26.	GD18079	1	Mount
27.	GD18082	1	Brace
28.	G10062	2	Hex Head Cap Screw, 3/8"-16 x 3"
	G10108	2	Lock Nut, 3/8"-16
	G10101	2	Hex Nut, 3/8"-16
29.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10101	1	Hex Nut, 3/8"-16
30.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10206	4	Washer, 1/2" SAE
	G10111	2	Lock Nut, 1/2"-13
31.	GD17051	2	Idler
32.	G10560	2	Clevis Pin, 1/2" x 1 3/4"
	G10456	2	Cotter Pin, 1/8" x 3/4"
33.	GD5857	2	Spring
34.	GD17095	1	Bar, 21", L.H.
	GD17094	-	Bar, 19 3/4", R.H.
35.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
36.	GA11964	2	Mount
37.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
38.	G2100-03	1	Bearing, 7/8" Hex Bore, Spherical
39.	G3400-01	2	Flangette
40.	G10303	3	Carriage Bolt, 5/16"-18 x 1"
	G10232	3	Lock Washer, 5/16"
	G10106	3	Hex Nut, 5/16"-18

DRIVEN AND DRILL SHAFTS ON WINGS, 32 ROW 30" AND 36 ROW 30"

(FWD67aaFWD67a)

L.H. SIDE SHOWN



DRIVEN AND DRILL SHAFTS ON WINGS, 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA5106	4	Sprocket, 17 Tooth
2.		-	See “Seed Rate Transmission”, Pages P84 And P85
3.	G10233	-	Machine Bushing, 1", 10 Gauge
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
6.	GD16417	2	Bracket
7.		-	See “Point Row Clutches”, Pages P96 And P97
8.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10108	4	Lock Nut, 3/8"-16
9.	GD0914-76	1	Hex Shaft, 7/8" x 76" (No Holes), L.H. Side
	GD0914-60	-	Hex Shaft, 7/8" x 60" (No Holes), R.H. Side
10.	GD0914-13.5	1	Hex Shaft, 7/8" x 13 1/2" (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, 7/8" x 21" (No Holes), R.H. Side
11.	GD10126	4	Coupler, 4"
12.	GA5202	4	Sprocket, 34 Tooth
13.	G3310-108	4	Chain, No. 40, 108 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
14.	GD0914-36	1	Hex Shaft, 7/8" x 36" (No Holes), L.H. Side, 32 Row 30"
	GD0914-48	-	Hex Shaft, 7/8" x 48" (No Holes), R.H. Side, 32 Row 30"
	GD0914-20	-	Hex Shaft, 7/8" x 20" (No Holes), L.H. Side, 36 Row 30"
	GD0914-36	-	Hex Shaft, 7/8" x 36" (No Holes), R.H. Side, 36 Row 30"
15.	GD16451	1	Shaft, 7/8" x 56" (1 Hole), L.H. Side
	GD16450	1	Shaft, 7/8" x 44" (1 Hole), R.H. Side
16.	GD16467	1	Bracket, L.H. Side
	GD16466	-	Bracket, R.H. Side
17.	GD1114	8	U-Bolt, 7" x 7" x 5/8"-11
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
18.	GA11257	1	Support W/Bearings And Rings, L.H. Side
	GA11256	-	Support W/Bearings And Rings, R.H. Side
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
19.	GD0914-132	2	Hex Shaft, 7/8" x 132" (No Holes), 32 Row 30"
	GD0914-156	-	Hex Shaft, 7/8" x 156" (No Holes), 36 Row 30"
20.	GA11258	2	Chain Mount W/Bearings And Rings
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
21.	GD0914-10.5	1	Hex Shaft, 7/8" x 10 1/2" (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, 7/8" x 21" (No Holes), R.H. Side
22.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
23.	GD15114	1	Hex Shaft Spacer
24.	G10053	2	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	GD10356	2	Bushing, 3/4" Long
	G10111	2	Lock Nut, 1/2"-13

(Continued On Following Page)

DRIVEN AND DRILL SHAFTS ON WINGS, 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
25.	GA7154	2	Sprocket W/Bearing, 18 Tooth
26.	GD16362	2	Plate
27.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10527	4	Lock Washer, 1/2", Internal/External
	G10111	2	Lock Nut, 1/2"-13
28.	G10062	2	Hex Head Cap Screw, 3/8"-16 x 3"
	G10108	2	Lock Nut, 3/8"-16
	G10101	2	Hex Nut, 3/8"-16
29.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10101	1	Hex Nut, 3/8"-16
30.	GD0914-166	1	Hex Shaft, 7/8" x 166" (No Holes), L.H. Side, 32 Row 30"
	GD0914-156	-	Hex Shaft, 7/8" x 156" (No Holes), R.H. Side, 32 Row 30"
	GD0914-228	-	Hex Shaft, 7/8" x 228" (No Holes), L.H. Side, 36 Row 30"
	GD0914-218	-	Hex Shaft, 7/8" x 218" (No Holes), R.H. Side, 36 Row 30"
31.		-	See “Parallel Arms, Mounting Support Plate And Quick Adjustable Down Force Springs”, Page P10
32.	GA7051	2	U-Joint W/Grease Fitting, Male, 12 1/4" Long
	GR1557	-	Grease Fitting, 45°, Metric
	GR1296	-	Inner Profile
	GR1295	-	Inboard Yoke
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1294	-	Cross And Bearing Kit
	GR1293	-	Yoke, 7/8" Hex
33.	G10688	4	Square Head Set Screw, 3/8"-16 x 5/8"
34.	GA7052	2	U-Joint W/Grease Fitting, Female, 10 1/4" Long
	GR1557	-	Grease Fitting, 45°, Metric
	GR1298	-	Inboard Yoke And Outer Profile (18 1/4" U-Joint)
	GR1297	-	Inboard Yoke And Outer Profile (10 1/4" U-Joint)
	GR1294	-	Cross And Bearing Kit
	GR1293	-	Yoke, 7/8" Hex
35.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10206	4	Washer, 1/2" SAE
	G10111	2	Lock Nut, 1/2"-13
36.	GD17051	2	Idler
37.	G10560	2	Clevis Pin, 1/2" x 1 3/4"
38.	GD5857	2	Spring
39.	GD17095	-	Bar, 21", L.H.
	GD17094	1	Bar, 19 3/4", R.H.
40.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
41.	GA11964	2	Mount
42.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16

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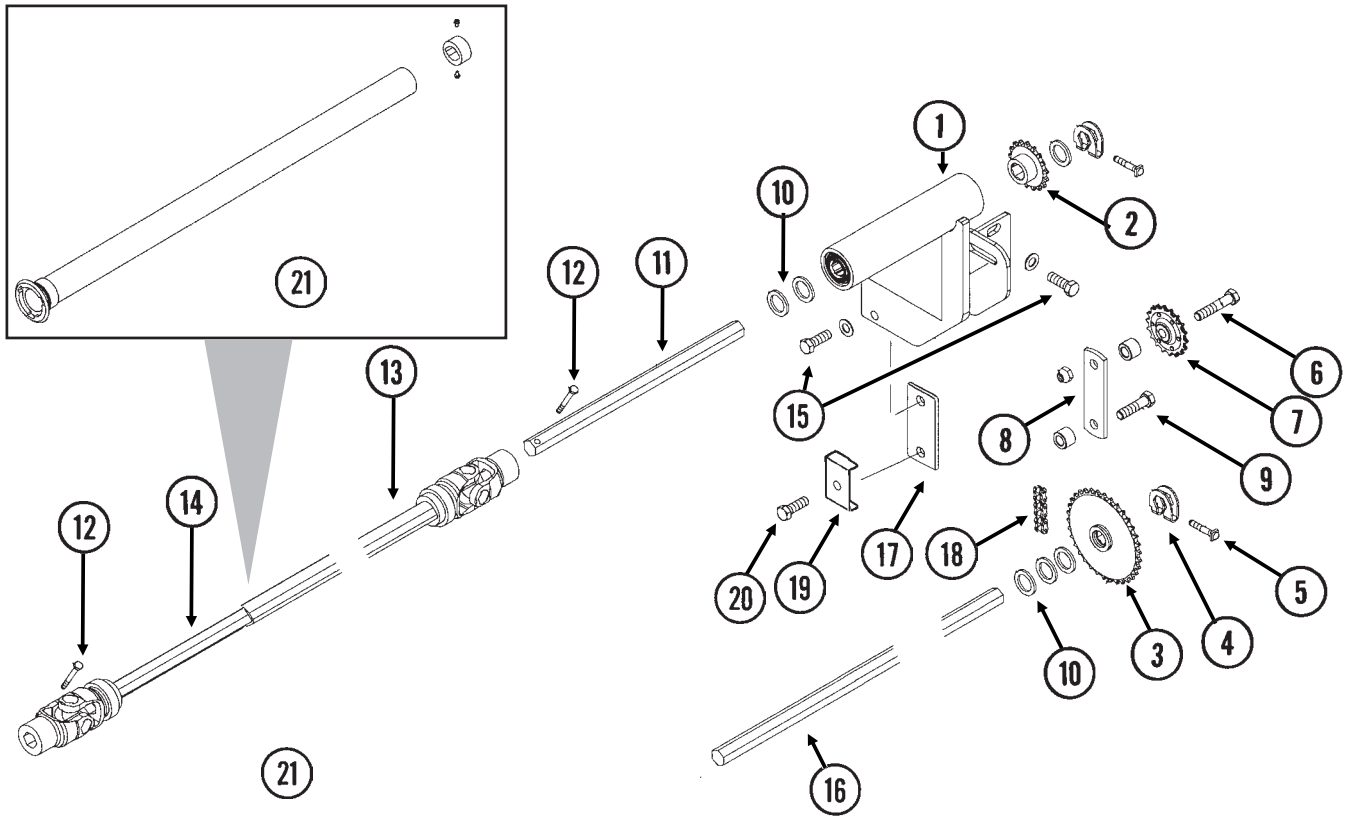
DRIVEN AND DRILL SHAFTS ON CENTER SECTION

(A12114/FWD73c)

L.H. SIDE SHOWN



ITEM	PART NO.	QTY. (Per Side)	DESCRIPTION
1.	GA11187	1	Mount W/Bearings And Rings, L.H. Side (Shown)
	GA11186	-	Mount W/Bearings And Rings, R.H. Side
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring

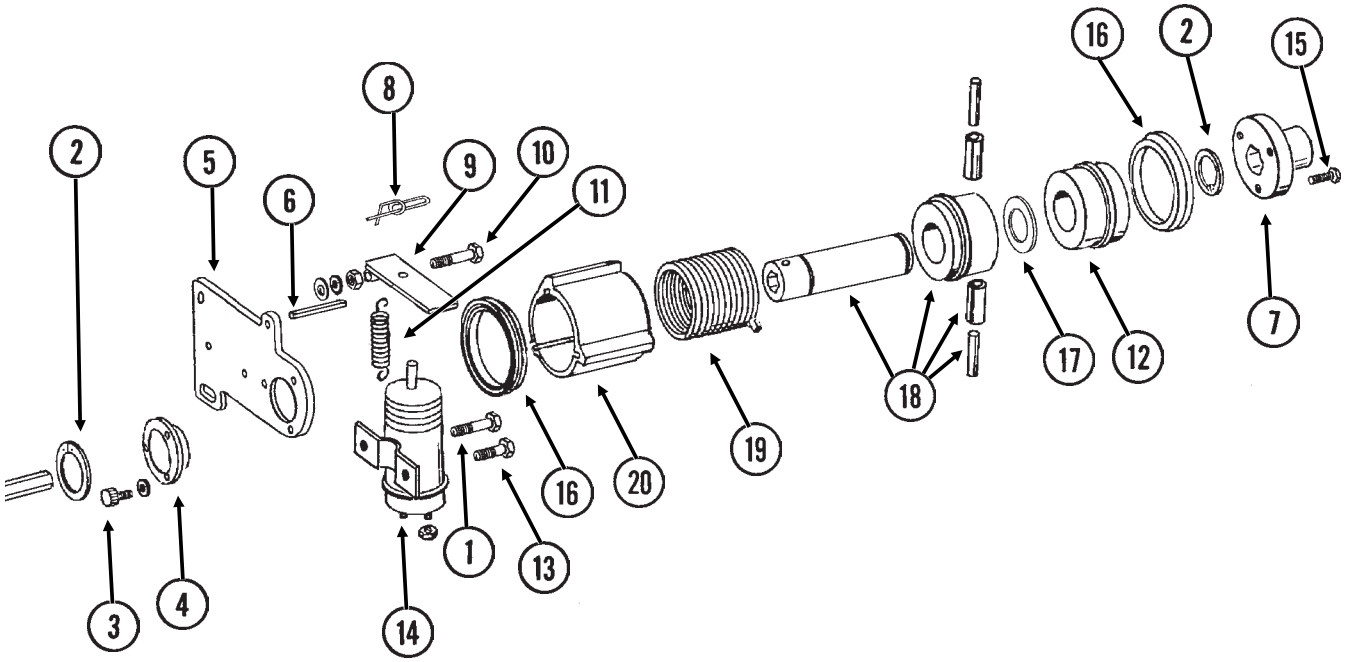
DRIVEN AND DRILL SHAFTS ON CENTER SECTION

ITEM	PART NO.	QTY. (Per Side)	DESCRIPTION
2.	GA5106	2	Sprocket, 17 Tooth
3.	GA5202	4	Sprocket, 34 Tooth
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
6.	G10053	2	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	GD10356	2	Bushing, 3/4" Long
	G10111	2	Lock Nut, 1/2"-13
7.	GA7154	2	Sprocket W/Bearing, 18 Tooth
8.	GD16362	2	Plate
9.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10527	4	Lock Washer, 1/2", Internal/External
	G10111	2	Lock Nut, 1/2"-13
10.	G10233	-	Machine Bushing, 1", 10 Gauge
11.	GD2548-16	2	Hex Shaft, 7/8" x 16" (1 Hole)
12.	G10880	4	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	4	Lock Nut, 1/4"-20, Grade B
13.	GA11169	2	U-Joint W/Grease Fitting, Female, 61 15/32"
	GR1294	-	Cross And Bearing Kit
	GR1352	-	Inboard Yoke
	GR1300	-	Grease Fitting, 67.5°, Metric
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1365	-	Yoke, 7/8" Hex
	GR1741	-	Outer Profile
14.	GA8001	2	U-Joint W/Grease Fitting, Male, 40 13/32"
	GR1294	-	Cross And Bearing Kit
	GR1295	-	Inboard Yoke
	GR1300	-	Grease Fitting, 67.5°, Metric
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1365	-	Yoke, 7/8" Hex
	GR1377	-	Inner Profile
15.	G10017	8	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10206	8	Washer, 1/2" SAE
	G10228	8	Lock Washer, 1/2"
	G10102	8	Hex Nut, 1/2"-13
16.	GD0914-78	1	Hex Shaft, 7/8" x 78" (No Holes), L.H. Side
	GD0914-68	-	Hex Shaft, 7/8" x 68" (No Holes), R.H. Side
17.	GD16355-01	-	Shim, 2" x 4" x 16 Gauge
	GD16355-02	-	Shim, 2" x 4" x 10 Gauge
	GD16355-03	-	Shim, 2" x 4" x 1/4"
18.	G3310-108	1	Chain, No. 40, 108 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
19.	GD0740	1	Hose Clamp, 3/4" x 4" x 3 1/2"
20.	G10585	1	Hex Head Cap Screw, 1/2"-13 x 3 1/4"
	G10206	1	Washer, 1/2" SAE
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
21.	GA12114	1	Cover W/Plug And Screws
	GD17100	-	Plug
	G11073	-	Slotted Hex Self-Tapping Screw, No. 10 x 3/8"

POINT ROW CLUTCHES

(FWD71/TWL71d/TWL71/TWL18/A10054)

L.H. POINT ROW CLUTCH SHOWN

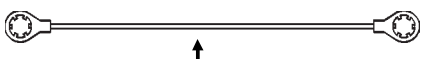


22

Connects To Clutch Solenoid

Connects To Planter Harness At Valve Block On Wing

23 24



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On Point Row Clutch

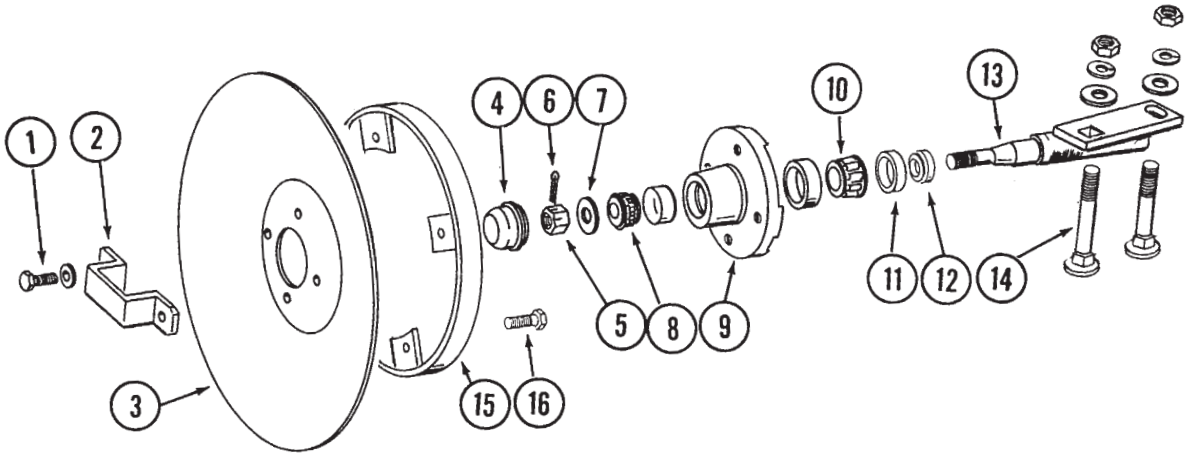
25

POINT ROW CLUTCHES

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10900	1	Hex Socket Head Cap Screw, 1/4"-20 x 1 3/4", Grade 8
	G10227	1	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
2.	G10496	2	External Inverted Snap Ring, 1 1/2"
3.	G10253	3	Hex Socket Head Screw, No. 10-32 x 1/2"
	G10257	3	Lock Washer, No. 10
4.	GD9667	1	Bushing
5.	GD10103	1	Mounting Plate
6.	G10859	1	Spring Pin, 3/16" x 2 1/4"
7.	GA9068	1	Hex Coupler
8.	GD11120	1	Rue Ring Cotter, 5/16"
9.	GD10510	1	Actuator Arm
10.	G10049	1	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10101	1	Hex Nut, 3/8"-16
	G10203	1	Washer, 3/8" SAE
	G10229	2	Lock Washer, 3/8"
	G10497	1	Hex Jam Nut, 3/8"-16, Grade 2
11.	GD10123	1	Spring
12.	GD10104	1	Input Hub
13.	G10023	1	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10227	1	Lock Washer, 1/4"
	G10103	1	Hex Nut, 1/4"-20
14.	GA8393	1	Solenoid Complete
	GR1306	1	Snap Ring
	GR1303	1	Spring
	GR1304	1	Boot
	GR1305	1	Plunger
15.	G10374	3	Hex Socket Head Cap Screw, 1/4"-20 x 1"
	G10227	3	Lock Washer, 1/4"
16.	GD14512	2	V-Ring Seal
17.	GD14513	1	Felt Washer
18.	GA7137	1	Hub/Sleeve Assembly W/Spring Pins
	G10804	-	Spring Pin, 5/32" x 7/8"
	G10765	-	Spring Pin, 1/4" x 1"
19.	GD9672	1	Spring, R.H. (Used In GA11268)
	GD9671	-	Spring, L.H. (Used In GA11267)
20.	GD10102	1	Stop Collar
21.	GA10054	-	Ground Cable, Green
22.	GA11361	1	Wiring Harness, 96" (Brown-Black/Red Ends), 24 Row 30" (L.H. Outer PRC)
	GA11362	1	Wiring Harness, 96" (Yellow-Black/Red Ends), 24 Row 30", 32 Row 30" And 36 Row 30" (L.H. Inner PRC)
	GA11363	1	Wiring Harness, 96" (Orange-Black/Red Ends), 24 Row 30", 32 Row 30" And 36 Row 30" (R.H. Inner PRC)
	GA11364	1	Wiring Harness, 96" (Red/Black-Black/Red Ends), 24 Row 30" (R.H. Outer PRC)
	GA11619	1	Wiring Harness, 42" (Brown-Black/Red Ends), 32 Row 30" And 36 Row 30" (L.H. Outer PRC)
	GA11620	1	Wiring Harness, 36" (Red/Black-Black/Red Ends), 32 Row 30" And 36 Row 30" (R.H. Outer PRC)
23.	GD9530	-	Contact
24.	GD9529	-	Housing, Black
	GD12726	-	Housing, Red
25.	G10996	-	Fork Terminal
A.	GA11267	-	Point Row Clutch Assembly, (Used On Outer L.H. Wing And Inner R.H. Wing) (Items 1-21)
	GA11268	-	Point Row Clutch Assembly, (Used On Outer R.H. Wing And Inner L.H. Wing) (Items 1-21)

ROW MARKER SPINDLE/HUB/BLADE

MKR020(MKR4)

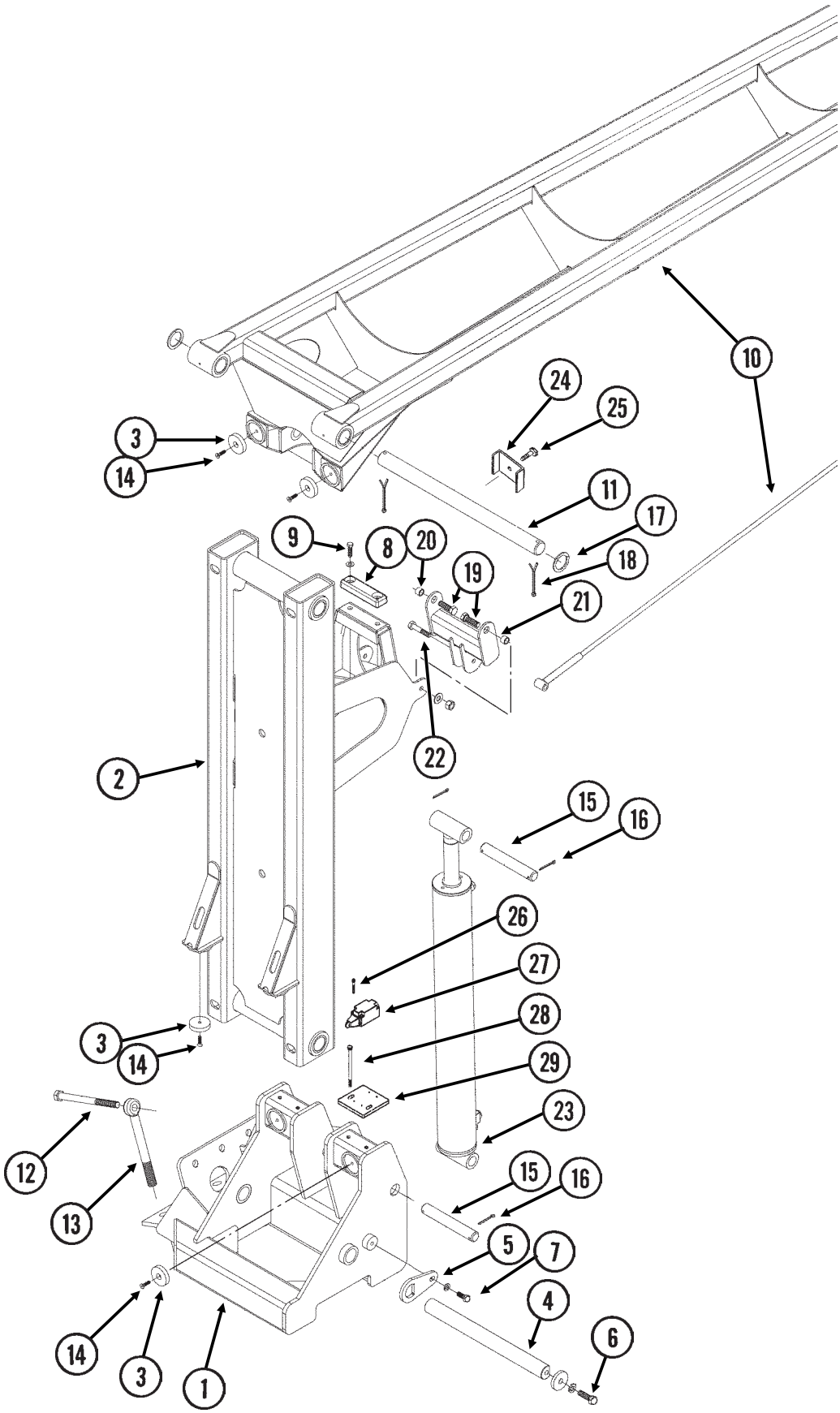


ROW MARKER SPINDLE/HUB/BLADE

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
2.	GD2597	1	Retainer
3.	GD0746	1	Disc Blade, Solid, 16" (Shown)
	GD10283	-	Disc Blade, Notched, 16" (Optional)
4.	GD0840	1	Dust Cap
5.	G10725	1	Slotted Hex Nut, 5/8"-18
6.	G10544	1	Cotter Pin, 5/32" x 1"
7.	G10724	1	Washer, 5/8" SAE
8.	GA0257	1	Bearing
9.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
10.	GA0245	1	Bearing
11.	GA0243	1	Grease Seal
12.	GA0899	1	Rubber Seal
13.	GA1676	1	Spindle, R.H.
	GA1677	-	Spindle, L.H. (Shown)
14.	G10844	2	Carriage Bolt, 1/2"-13 x 3 1/2"
	G11162	-	Carriage Bolt, 1/2"-13 x 1 3/4"
	G10168	2	Machine Bushing, 1/2", 7 Gauge
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
15.	GA5853	1	Depth Band
16.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10109	4	Lock Nut, 5/16"-18, Grade 8
A.	GA1679	-	Hub And Spindle Assembly, L.H. (Items 1, 2 And 4-13)
	GA1678	-	Hub And Spindle Assembly, R.H. (Items 1, 2 And 4-13)

ROW MARKER ASSEMBLY (Mount And First Stage), 24 ROW 30" (Prior To Serial Number 755215)

(FWD17d)

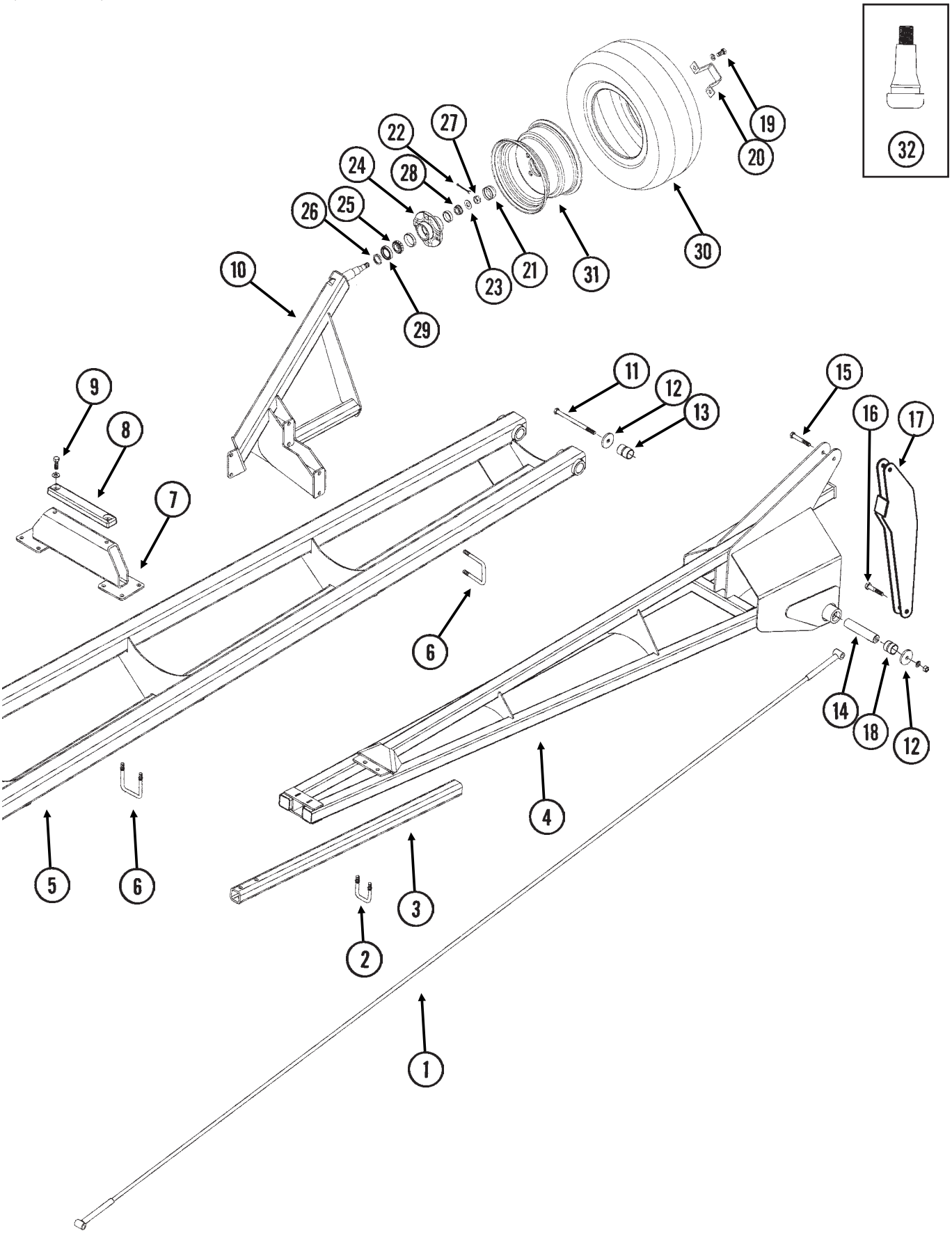


ROW MARKER ASSEMBLY (Mount And First Stage), 24 ROW 30" (Prior To Serial Number 755215)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA10395	1	Mount, L.H. (Shown)
	GA10394	-	Mount, R.H.
2.	GA10493	1	Arm W/Grease Fittings And Bushings, 66", First Stage
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
3.	GD15140	6	Bumper Pad
4.	GD15194	1	Pin, 1 3/4" x 19 1/4"
5.	GD15192	1	Capture Plate
6.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	2	Lock Washer, 5/8"
	GD15193	2	Washer, 2 3/8" O.D. x 21/32" I.D. x 3/8"
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
7.	G10037	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	1	Lock Washer, 1/2"
	G10216	1	Washer, 1/2" USS
8.	GA9145	1	Molded Stop, 6 1/4" Long
9.	G10644	2	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10199	2	Washer, 7/16" SAE
	G10237	2	Lock Washer, 7/16"
	G10100	2	Hex Nut, 7/16"-14
10.		-	See “Row Marker Assembly (Second And Third Stages, 24 Row 30")”, Pages P102 And P103
11.	GD15228	1	Pin, 1 3/4" x 26"
12.	G10477	4	Hex Head Cap Screw, 3/4"-10 x 10"
	GD17372	4	Washer, 2" O.D. x 13/16" I.D. x 1/2"
	G10112	4	Lock Nut, 3/4"-10
13.	GD15283	4	Eyebolt, 1"-14 x 10"
	GD17371	4	Washer, 2" O.D. x 1 1/16" I.D. x 1/2"
	G11108	4	Lock Nut, 1"-14
14.	G11110	6	Hex Socket Cap Screw, 5/16"-18 x 1 1/4", Grade 8
	G10109	6	Lock Nut, 5/16"-18, Grade 8
15.	GD15227	2	Pin, 1 1/4" x 8 3/8"
16.	G10460	4	Cotter Pin, 1/4" x 2"
17.	G10356	2	Machine Bushing, 1 3/4", 10 Gauge
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
18.	G10362	2	Cotter Pin, 1/4" x 3"
19.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	2	Lock Nut, 5/8"-11
20.	GB0218	2	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
21.	GA10400	1	Mount
22.	G10397	1	Hex Head Cap Screw, 1/2"-13 x 2 3/4"
	G10111	1	Lock Nut, 1/2"-13
23.		-	See “Row Marker Cylinder”, Pages P129 And P130
24.	GD5875	1	Hose Clamp, 9/16" x 2 1/2" x 2"
25.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10108	1	Lock Nut, 3/8"-16
26.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 1/2", Grade 8
27.	GA11066	1	Limit Switch
28.	G10764	2	Hex Head Cap Screw, 5/16"-18 x 5"
	G10221	2	Washer, 5/16" SAE
	G10109	2	Lock Nut, 5/16"-18, Grade 8
29.	GD16175	1	Mount

ROW MARKER ASSEMBLY (Second And Third Stages), 24 ROW 30" (Prior To Serial Number 755215)

(FWD17c/A10458)



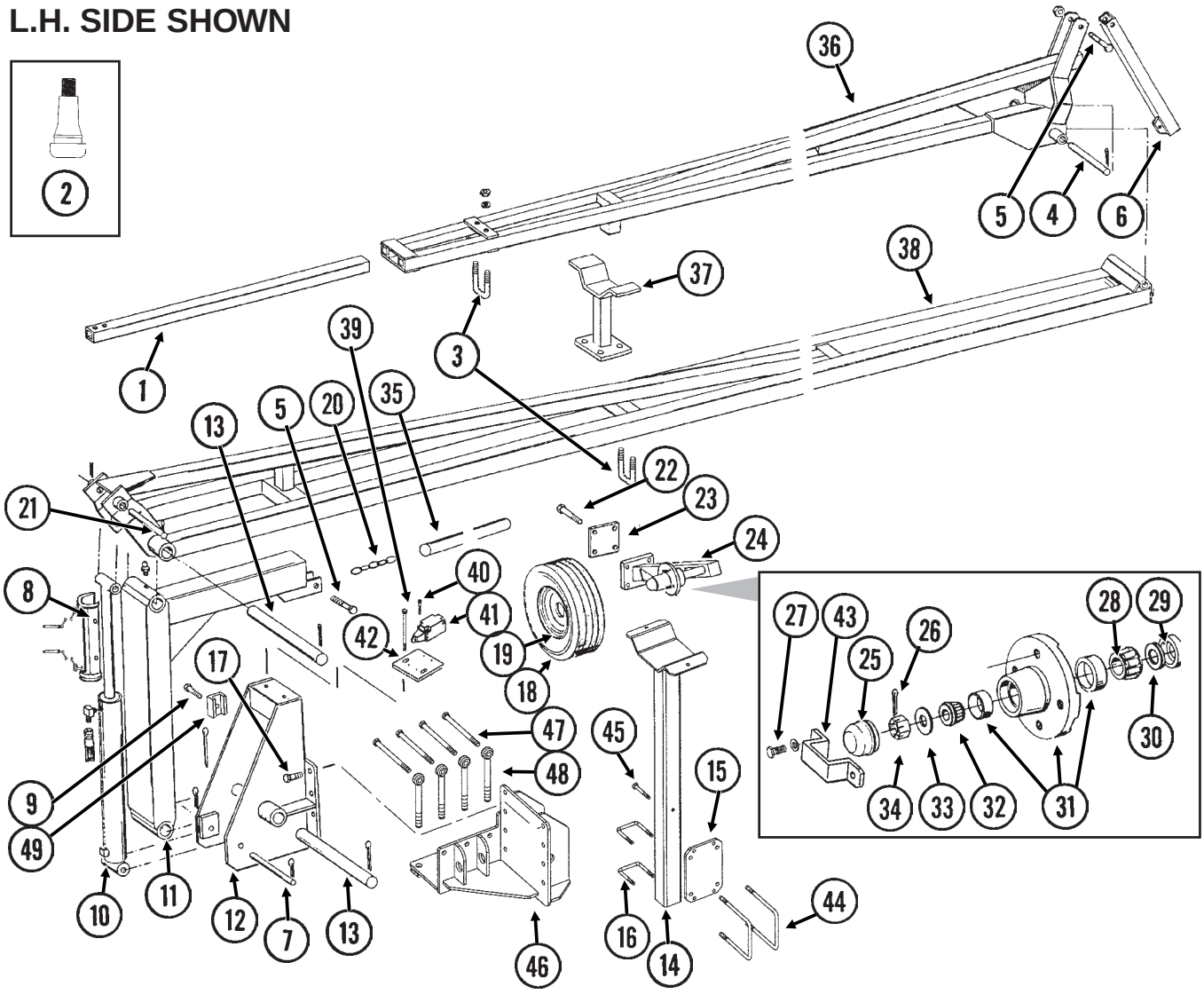
ROW MARKER ASSEMBLY (Second And Third Stages), 24 ROW 30" (Prior To Serial Number 755215)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA10445	1	Cable, 155"
2.	GD2721	1	U-Bolt, 2" x 2" x 1/2"-13
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
3.	GD0453-07	1	Extension Tube, 45"
4.	GA10391	1	Arm W/Grease Fittings, Third Stage, 108 1/8"
	G10640	-	Grease Fitting, 1/4"-28
5.	GA10494	1	Arm W/Grease Fittings And Bushings, Second Stage, 164 1/16"
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
6.	GD4743	7	U-Bolt, 3" x 3" x 1/2"-13
	G10228	14	Lock Washer, 1/2"
	G10102	14	Hex Nut, 1/2"-13
7.	GA10436	1	Bumper Mount
8.	GA9088	1	Molded Stop, 12 1/4" Long
9.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10206	2	Washer, 1/2" SAE
10.	GA10396	1	Wheel Mount, L.H. (Shown)
	GA10397	1	Wheel Mount, R.H.
11.	G11109	2	Hex Head Cap Screw, 1/2"-13 x 7 1/2"
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
12.	GD15235	4	Washer, 2 1/4" O.D. x 1/2" I.D. x 1/4"
13.	GD12613	4	Spring Bushing, 1 1/2" O.D. x 1 1/4" I.D. x 2"
14.	GD15229	2	Sleeve, 1 1/4" O.D. x 1/2" I.D. x 5 15/16"
15.	G10585	1	Hex Head Cap Screw, 1/2"-13 x 3 1/4"
	G10111	1	Lock Nut, 1/2"-13
16.	G10397	1	Hex Head Cap Screw, 1/2"-13 x 2 3/4"
	G10111	1	Lock Nut, 1/2"-13
17.	GA10902	1	Swing Link
18.	GD15290	2	Spring Bushing, 1 1/2" Long
19.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
20.	GD2597	1	Retainer
21.	GD0840	1	Dust Cap
22.	G10544	1	Cotter Pin, 5/32" x 1"
23.	G10724	1	Washer, 5/8" SAE
24.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
25.	GA0245	1	Bearing
26.	GA0899	1	Rubber Seal
27.	G10725	1	Slotted Hex Nut, 5/8"-18
28.	GA0257	1	Bearing
29.	GA0243	1	Grease Seal
30.	GD15489	1	Tire, 20.5 x 8.0-10 (Specify Brand*)
31.	GA10457	1	Rim, 6" x 10"
32.	GA10458	-	Valve Stem
A.	GA10409	-	Tire And Rim Assembly (Items 30-32)

ROW MARKER ASSEMBLY, 24 ROW 30"
(Serial Number 755215 And On)

(FF18h/A10458)

L.H. SIDE SHOWN



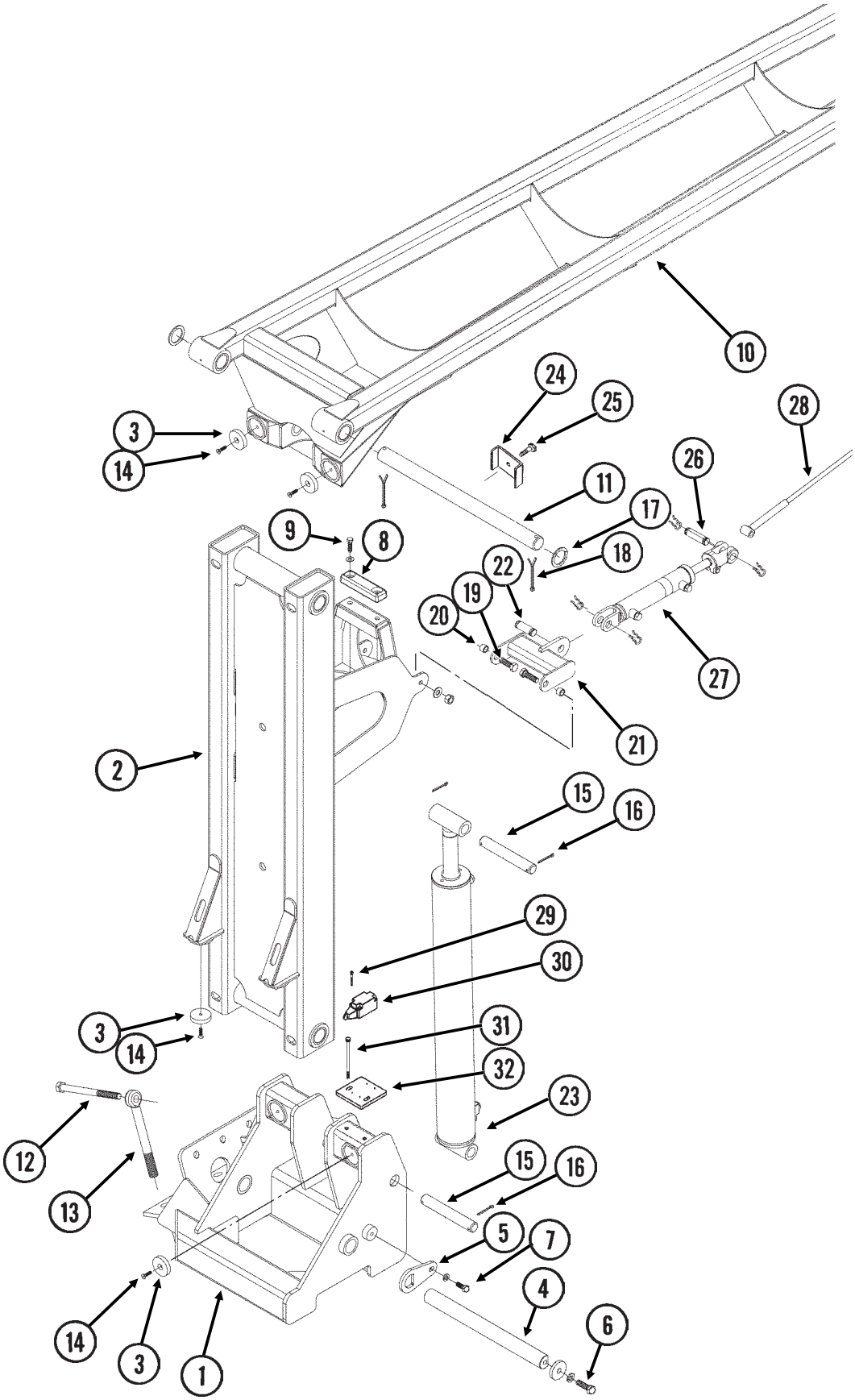
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD0453-07	1	Extension Tube, 45"
2.	GA10458	1	Valve Stem
3.	GD2721	1-3	U-Bolt, 2" x 2" x 1/2"-13
	G10228	2-6	Lock Washer, 1/2"
	G10102	2-6	Hex Nut, 1/2"-13
4.	GD0704	1	Pin, 1 1/4" x 14"
	G10460	2	Cotter Pin, 1/4" x 2"
5.	G10033	3	Hex Head Cap Screw, 1/2"-13 x 3 1/2"
	G10038	-	Hex Head Cap Screw, 1/2"-13 x 3"
	G10581	-	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10111	3	Lock Nut, 1/2"-13
6.	GA6860	1	Bracket
7.	GD10186	1	Pin, 1 1/4" x 9 1/2"
	G10979	-	Special Washer, 1 1/4" (If Applicable)
	G10460	2	Cotter Pin, 1/4" x 2"
8.	GA8172	1	Safety Lockup W/Detent Pins, 20"
	G10536	-	Detent Pin, 1/2" x 2 1/2" Grip
9.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10108	1	Lock Nut, 3/8"-16
10.		-	See “Row Marker Cylinder”, Pages P129 And P130
11.	GA6870	1	Arm, First Stage
12.	GA4031	1	Mount W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28

ROW MARKER ASSEMBLY, 24 ROW 30"
(Serial Number 755215 And On)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
13.	GD0677	2	Pin, 2 1/8" x 15 3/4"
	G10461	4	Cotter Pin, 3/8" x 3"
14.	GA12476	1	Tire Support
15.	GD17967	1	Plate, 7 1/2" x 11 1/4"
16.	GD16356	2	U-Bolt, 3 1/2" x 3 1/2" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
17.	G10027	8	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
	G10194	8	Washer, 3/4" SAE
	G10112	8	Lock Nut, 3/4"-10
18.	GD15489	1	Tire, 20.5 x 8.0-10 (Specify Brand*)
19.	GA10457	1	Rim, 6" x 10"
20.	G3302-05	1	Coil Chain, No. 9/0, 79 Links
21.	GD9964	1	Pin, 1 1/4" x 10 1/2"
	G10979	-	Special Washer, 1 1/4" (If Applicable)
	G10460	2	Cotter Pin, 1/4" x 2"
22.	G10063	8	Hex Head Cap Screw, 3/8"-16 x 4"
	G10210	-	Washer, 3/8" USS (As Required)
	G10229	8	Lock Washer, 3/8"
	G10101	8	Hex Nut, 3/8"-16
23.	GD0692	2	Mounting Plate, 5" x 4"
24.	GA0160R	1	Support, R.H.
	GA0160L	-	Support, L.H. (Shown)
25.	GD0840	1	Dust Cap
26.	G10544	1	Cotter Pin, 5/32" x 1"
27.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
28.	GA0245	1	Bearing
29.	GA0243	1	Grease Seal
30.	GA0899	1	Rubber Seal
31.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
32.	GA0257	1	Bearing
33.	G10724	1	Washer, 5/8" SAE
34.	G10725	1	Slotted Hex Nut, 5/8"-18
35.	GD10674-01	1	Nylon Cover, 141"
36.	GA9103	-	Arm W/Grease Fittings, Third Stage, 117"
	G10640	-	Grease Fitting, 1/4"-28
37.	GA9101	1	Stop Weld, 24 Row 22", 24 Row 30" And 36 Row 20"
38.	GA9102	1	Arm W/Grease Fittings, Second Stage, 185"
	G10640	-	Grease Fitting, 1/4"-28
39.	G10764	2	Hex Head Cap Screw, 5/16"-18 x 5"
	G10221	2	Washer, 5/16" SAE
	G10109	2	Lock Nut, 5/16"-18, Grade 8
40.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 1/2", Grade 8
41.	GA11066	1	Limit Switch
42.	GD16175	1	Mount
43.	GD2597	1	Retainer
44.	GD14559	2	U-Bolt, 7" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
45.	G10045	1	Hex Head Cap Screw, 1/2-13 x 4 1/2"
	G10111	1	Lock Nut, 1/2"-13
46.	GA12475	1	Mount, L.H. (Shown)
	GA12474	-	Mount, R.H.
47.	G10477	4	Hex Head Cap Screw, 3/4"-10 x 10"
	GD2169	4	Special Washer, 25/32" I.D. x 1 1/4" O.D., Hardened
	G10112	4	Lock Nut, 3/4"-10
48.	GD15283	4	Eyebolt, 1"-14 x 10"
	GD10231	4	Special Washer, 1 1/16" I.D. x 2" O.D.
	G11108	4	Lock Nut, 1"-14
49.	GD5875	1	Hose Clamp, 9/16" x 2 1/2" x 2
A.	GA10409	-	Tire And Rim Assembly (Items 2, 18 And 19)

ROW MARKER ASSEMBLY (Mount And First Stage), 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

(FWD51a)

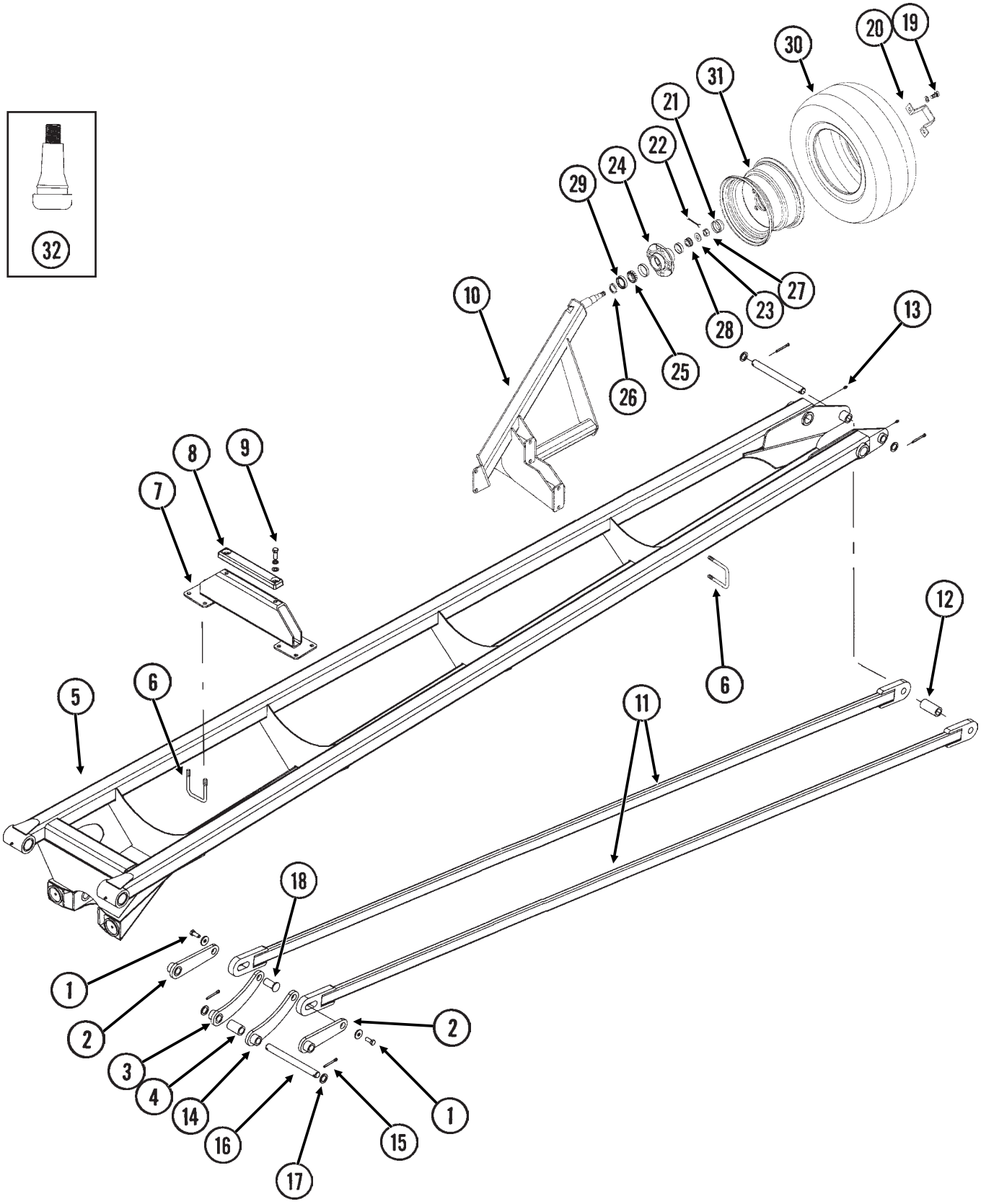


ROW MARKER ASSEMBLY (Mount And First Stage), 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA10395	1	Mount, L.H. (Shown)
	GA10394	-	Mount, R.H.
2.	GA10493	1	Arm W/Grease Fittings And Bushings, 66", First Stage
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
3.	GD15140	6	Bumper Pad
4.	GD15194	1	Pin, 1 3/4" x 19 1/4"
5.	GD15192	1	Capture Plate
6.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	2	Lock Washer, 5/8"
	GD15193	2	Washer, 2 3/8" O.D. x 21/32" I.D. x 3/8"
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
7.	G10037	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	1	Lock Washer, 1/2"
	G10216	1	Washer, 1/2" USS
8.	GA9145	1	Molded Stop, 6 1/4" Long
9.	G10644	2	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10199	2	Washer, 7/16" SAE
	G10113	2	Lock Nut, 7/16"-14
10.		-	See “Row Marker Assembly (Second Stage), 32 Row 30" And 36 Row 30”, Pages P108 And P109
11.	GD15228	1	Pin, 1 3/4" x 26"
12.	G10477	4	Hex Head Cap Screw, 3/4"-10 x 10"
	G10112	4	Lock Nut, 3/4"-10
13.	GD15283	4	Eyebolt, 1"-14 x 10"
	G11108	4	Lock Nut, 1"-14
14.	G11110	6	Hex Socket Cap Screw, 5/16"-18 x 1 1/4", Grade 8
	G10109	6	Lock Nut, 5/16"-18, Grade 8
15.	GD15227	2	Pin, 1 1/4" x 8 3/8"
16.	G10460	4	Cotter Pin, 1/4" x 2"
17.	G10356	2	Machine Bushing, 1 3/4", 10 Gauge
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
18.	G10362	2	Cotter Pin, 1/4" x 3"
19.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	2	Lock Nut, 5/8"-11
20.	GB0218	2	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
21.	GA10401	1	Mount
22.	GR0367	1	Pin, 1" x 2 7/8"
	GR0193	2	Hair Pin Clip
23.		-	See “Row Marker Cylinder”, Pages P129 And P130
24.	GD5875	1	Hose Clamp, 9/16" x 2 1/2" x 2"
25.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10108	1	Lock Nut, 3/8"-16
26.	GR0375	1	Pin, 1" x 3 1/2"
	GR0193	2	Hair Pin Clip
27.		-	See “Row Marker Link Assist Cylinder”, Page P131
28.		-	See “Row Marker Assembly (Third And Fourth Stages), 32 Row 30" And 36 Row 30"", Pages P110 And P111
29.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 1/2", Grade 8
30.	GA11066	1	Limit Switch
31.	G10764	2	Hex Head Cap Screw, 5/16"-18 x 5"
	G10221	2	Washer, 5/16" SAE
	G10109	2	Lock Nut, 5/16"-18, Grade 8
32.	GD16175	1	Mount

ROW MARKER ASSEMBLY (Second Stage), 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

(FWD50/A10458)

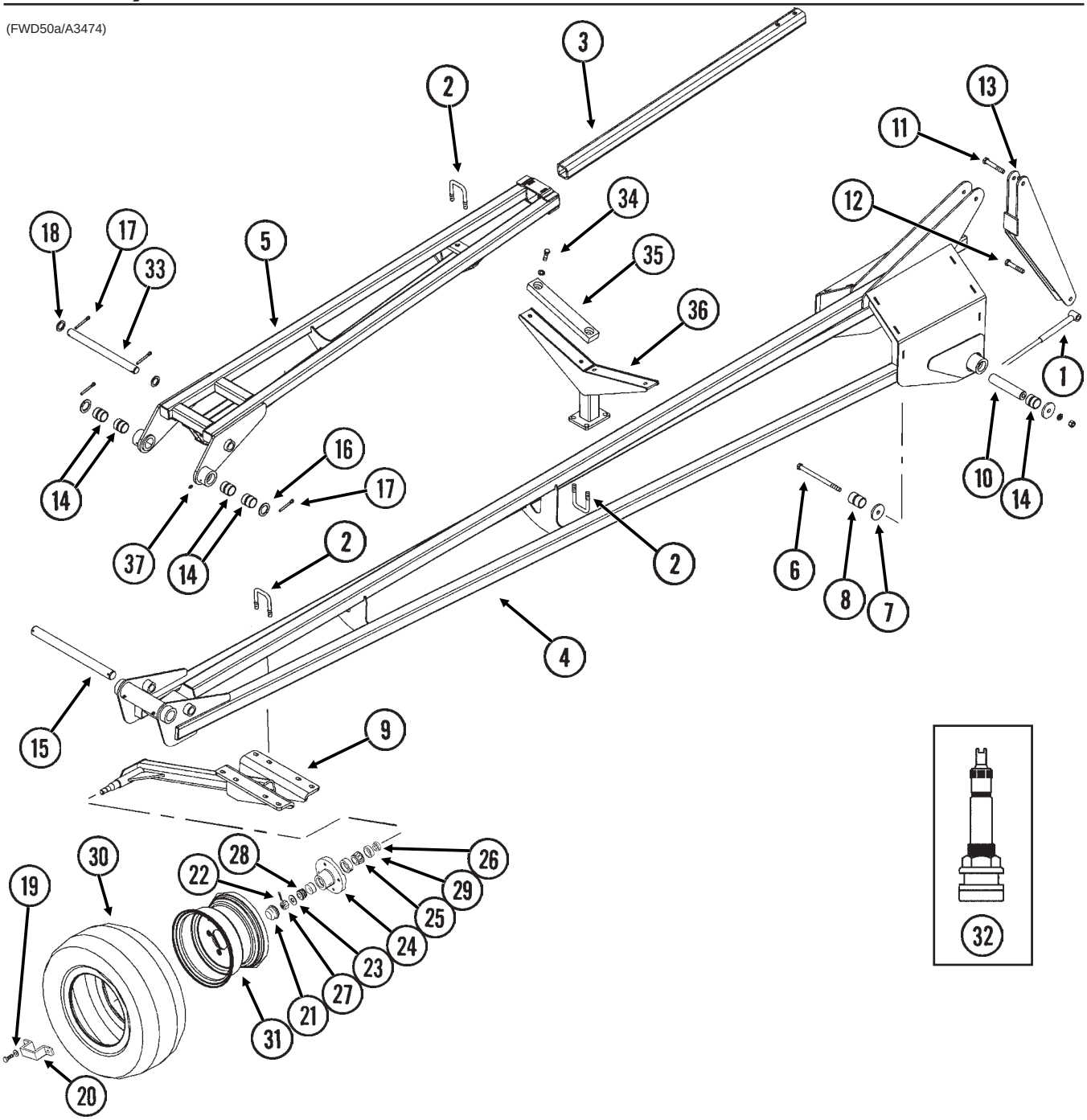


ROW MARKER ASSEMBLY (Second Stage), 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	GD15234	2	Washer, 1 1/2" O.D. x 1/2" I.D. x 7 Gauge
2.	GA10383	2	Short Link
3.	GA10384	1	Long Link
4.	GD5900-21	1	Sleeve, 2 3/8"
5.	GA10720	1	Arm W/Grease Fittings And Bushings, Second Stage, 164"
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
6.	GD4743	6	U-Bolt, 3" x 3" x 1/2"-13
	G10228	12	Lock Washer, 1/2"
	G10102	12	Hex Nut, 1/2"-13
7.	GA10392	1	Bumper Mount
8.	GA9088	1	Molded Stop, 12 1/4" Long
9.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10206	2	Washer, 1/2" SAE
10.	GA10396	1	Wheel Mount, L.H. (Shown)
	GA10397	1	Wheel Mount, R.H.
11.	GA10386	2	Link, 143 3/4"
12.	GD5900-20	1	Sleeve, 3 3/16"
13.	G10640	4	Grease Fitting, 1/4"-28
14.	GA10385	1	Long Link
15.	G10460	4	Cotter Pin, 1/4" x 2"
16.	GD15230	2	Pin, 1" x 10 3/4"
17.	G10233	4	Machine Bushing, 1", 10 Gauge
18.	GD15233	2	Pin, 1 1/2" x 2 19/64"
19.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
20.	GD2597	1	Retainer
21.	GD0840	1	Dust Cap
22.	G10544	1	Cotter Pin, 5/32" x 1"
23.	G10724	1	Washer, 5/8" SAE
24.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
25.	GA0245	1	Bearing
26.	GA0899	1	Rubber Seal
27.	G10725	1	Slotted Hex Nut, 5/8"-18
28.	GA0257	1	Bearing
29.	GA0243	1	Grease Seal
30.	GD15489	1	Tire, 20.5" x 8.0-10 (Specify Brand*)
31.	GA10457	1	Rim, 6" x 10"
32.	GA10458	-	Valve Stem
A.	GA10409	-	Tire And Rim Assembly (Items 30-32)

ROW MARKER ASSEMBLY (Third And Fourth Stages), 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

(FWD50a/A3474)



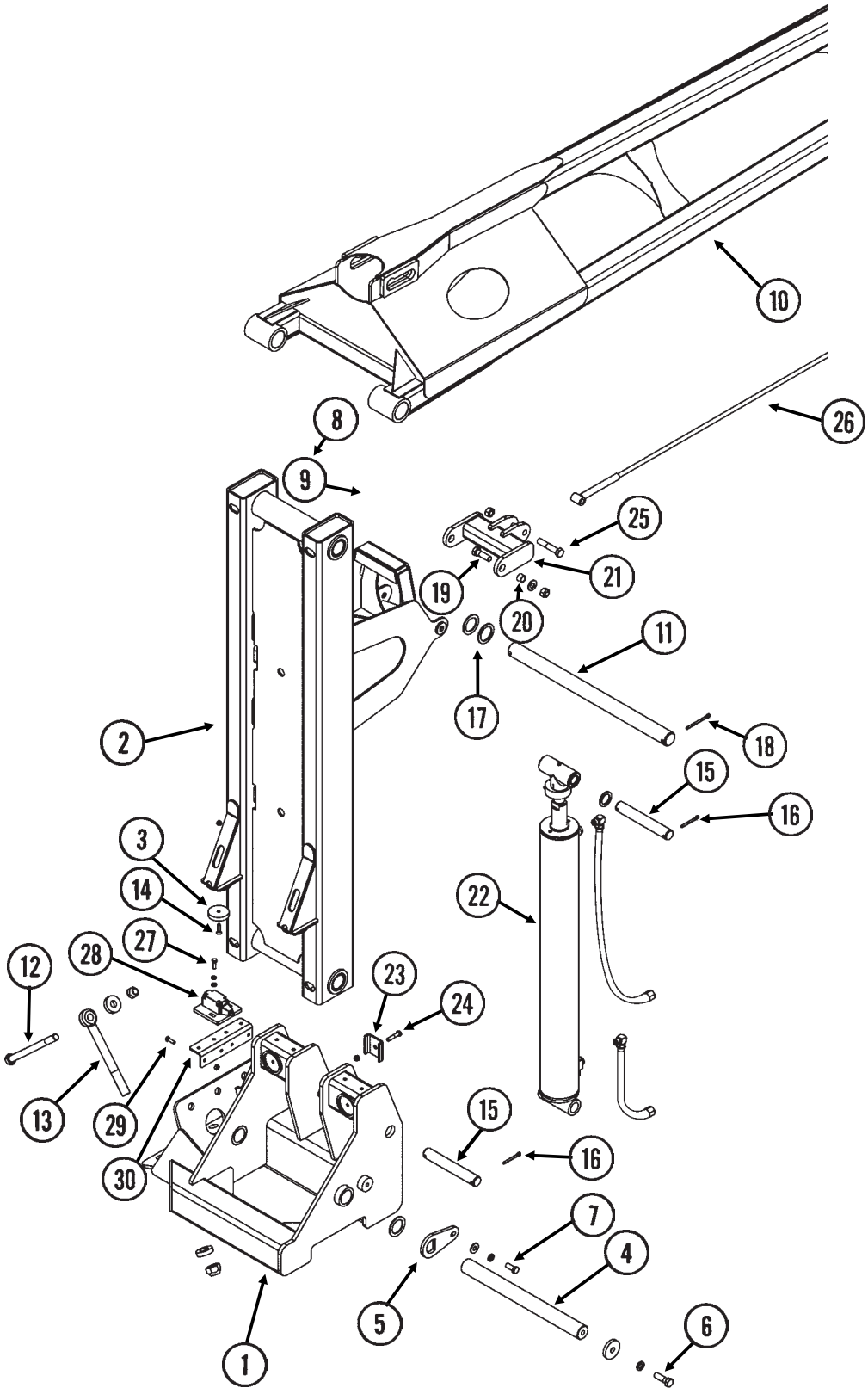
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA10507	1	Cable, 132 1/2"
2.	GD2721	7	U-Bolt, 2" x 2" x 1/2"-13
	G10228	14	Lock Washer, 1/2"
	G10102	14	Hex Nut, 1/2"-13
3.	GD0453-07	1	Extension Tube, 45"
4.	GA10375	1	Arm W/Grease Fittings, Third Stage, 148 1/2"
	G10640	-	Grease Fitting, 1/4"-28

ROW MARKER ASSEMBLY (Third And Fourth Stages), 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
5.	GA10376	1	Arm, Fourth Stage, 70 5/32", 32 Row 30"
	GA10426	-	Arm, Fourth Stage, 130", 36 Row 30"
6.	G11034	2	Hex Head Cap Screw, 1/2"-13 x 7"
	G10111	2	Lock Nut, 1/2"-13
7.	GD15235	4	Washer, 2 1/4" O.D. x 1/2" I.D. x 1/4"
8.	GD12613	4	Spring Bushing, 1 1/2" O.D. x 1 1/4" I.D. x 2"
9.	GA10398	1	Wheel Arm, R.H. (Shown)
	GA10399		Wheel Arm, L.H.
10.	GD15229	2	Sleeve, 1 1/4" O.D. x 1/2" I.D. x 5 15/16"
11.	G10585	1	Hex Head Cap Screw, 1/2"-13 x 3 1/4"
	G10111	1	Lock Nut, 1/2"-13
12.	G10397	1	Hex Head Cap Screw, 1/2"-13 x 2 3/4"
	G10111	1	Lock Nut, 1/2"-13
13.	GA10382	1	Swing Link
14.	GD15290	6	Spring Bushing, 1 1/2" Long
15.	GD15231	1	Pin, 1 1/4" x 14 7/8"
16.	G10159	2	Machine Bushing, 1 1/4", 10 Gauge
17.	G10460	4	Cotter Pin, 1/4" x 2"
18.	G10233	2	Machine Bushing, 1", 10 Gauge
19.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
20.	GD2597	1	Retainer
21.	GD0840	1	Dust Cap
22.	G10544	1	Cotter Pin, 5/32" x 1"
23.	G10724	1	Washer, 5/8" SAE
24.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
25.	GA0245	1	Bearing
26.	GA0899	1	Rubber Seal
27.	G10725	1	Slotted Hex Nut, 5/8"-18
28.	GA0257	1	Bearing
29.	GA0243	1	Grease Seal
30.	GD15489	1	Tire, 20.5" x 8.0-10 (Specify Brand*)
31.	GA10457	1	Rim, 6" x 10"
32.	GA10458	-	Valve Stem
33.	GD15232	1	Pin, 1" x 12 3/4"
34.	G10644	4	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10199	4	Washer, 7/16" SAE
	G10113	4	Lock Nut, 7/16"-14
35.	GD15649	2	Wear Pad
36.	GA10496	1	Support
37.	G10640	1	Grease Fitting, 1/4"-28
A.	GA10409	-	Tire And Rim Assembly (Items 30-32)

ROW MARKER ASSEMBLY (Mount And First Stage), 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

(FWD167)

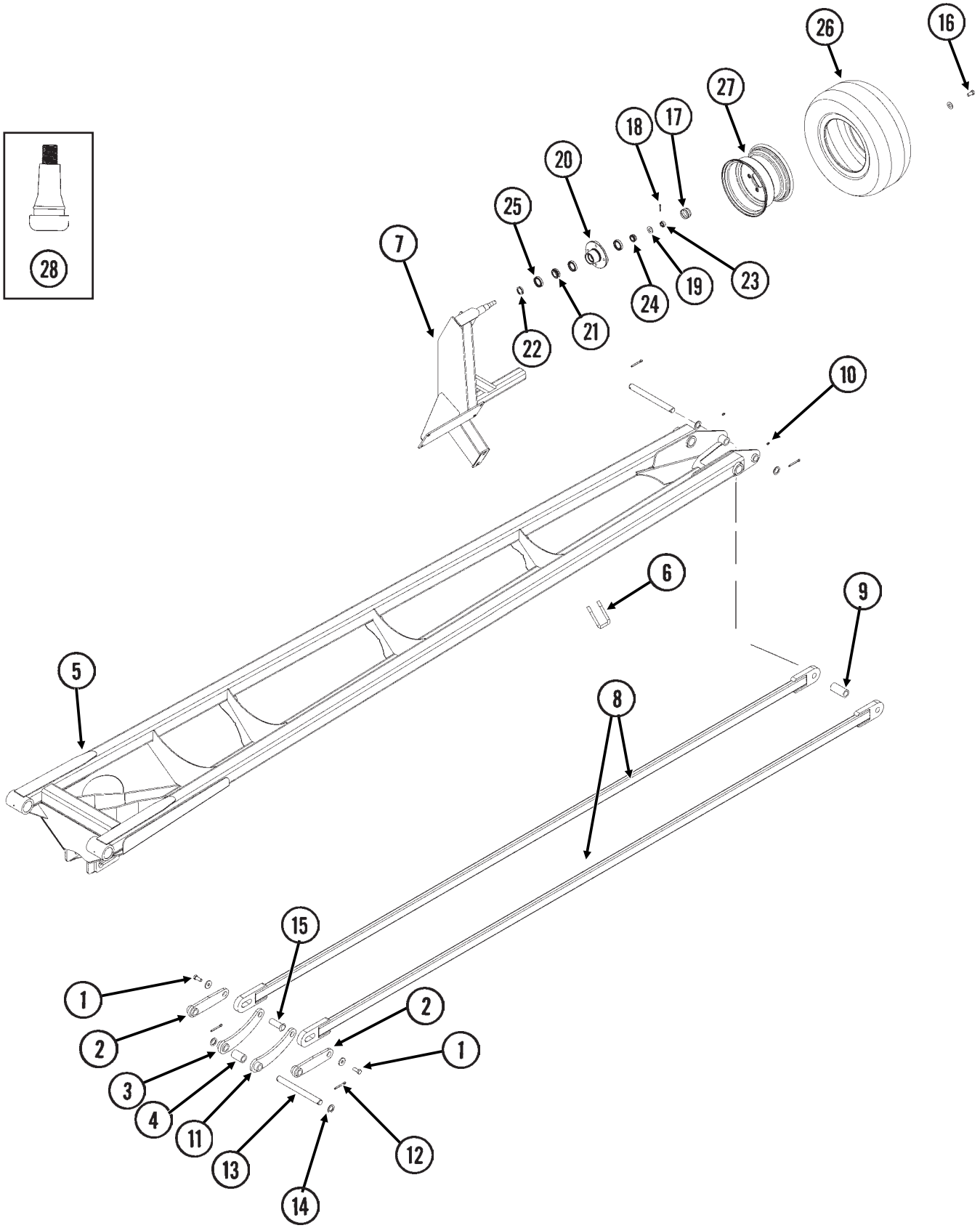


ROW MARKER ASSEMBLY (Mount And First Stage), 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA10395	1	Mount, L.H. (Shown)
	GA10394	-	Mount, R.H.
2.	GA10493	1	Arm W/Grease Fittings And Bushings, 66", First Stage
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
3.	GD15140	2	Bumper Pad
4.	GD15194	1	Pin, 1 3/4" x 19 1/4"
5.	GD15192	1	Capture Plate
6.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	2	Lock Washer, 5/8"
	GD15193	2	Washer, 2 3/8" O.D. x 21/32" I.D. x 3/8"
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
7.	G10037	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	1	Lock Washer, 1/2"
	G10216	1	Washer, 1/2" USS
8.	GA9145	1	Molded Stop, 6 1/4" Long
9.	G10644	2	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10199	2	Washer, 7/16" SAE
	G10113	2	Lock Nut, 7/16"-14
10.		-	See “Row Marker Assembly (Second Stage), 32 Row 30" And 36 Row 30”, Pages P118 And P119
11.	GD15228	1	Pin, 1 3/4" x 26"
12.	G10477	4	Hex Head Cap Screw, 3/4"-10 x 10"
	G10112	4	Lock Nut, 3/4"-10
13.	GD15283	4	Eyebolt, 1"-14 x 10"
	G11108	4	Lock Nut, 1"-14
14.	G11110	2	Hex Socket Cap Screw, 5/16"-18 x 1 1/4", Grade 8
	G10109	2	Lock Nut, 5/16"-18, Grade 8
15.	GD15227	2	Pin, 1 1/4" x 8 3/8"
16.	G10460	4	Cotter Pin, 1/4" x 2"
17.	G10356	2	Machine Bushing, 1 3/4", 10 Gauge
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
18.	G10362	2	Cotter Pin, 1/4" x 3"
19.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	2	Lock Nut, 5/8"-11
20.	GB0218	2	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
21.	GA10401	1	Mount
22.		-	See “Row Marker Cylinder”, Pages P132 And P133
23.	GD5875	1	Hose Clamp, 9/16" x 2 1/2" x 2"
24.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10108	1	Lock Nut, 3/8"-16
25.	G10862	1	Hex Head Cap Screw, 5/8"-11 x 3 1/4"
	D3180-35	1	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 1/2"
	G10107	1	Lock Nut, 5/8"-11
26.		-	See “Row Marker Assembly (Third And Fourth Stages), 32 Row 30" And 36 Row 30"”, Pages P120 And P121
27.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10232	4	Lock Washer, 5/16"
	G10221	4	Washer, 5/16" SAE
28.	GA13474	1	Limit Switch
29.	G10019	2	Hex Head Cap Screw, 5/16"-18 x 1"
	G10106	2	Lock Nut, 5/16"-18
30.	GD18957	1	Mount

ROW MARKER ASSEMBLY (Second Stage), 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

(FWD168)

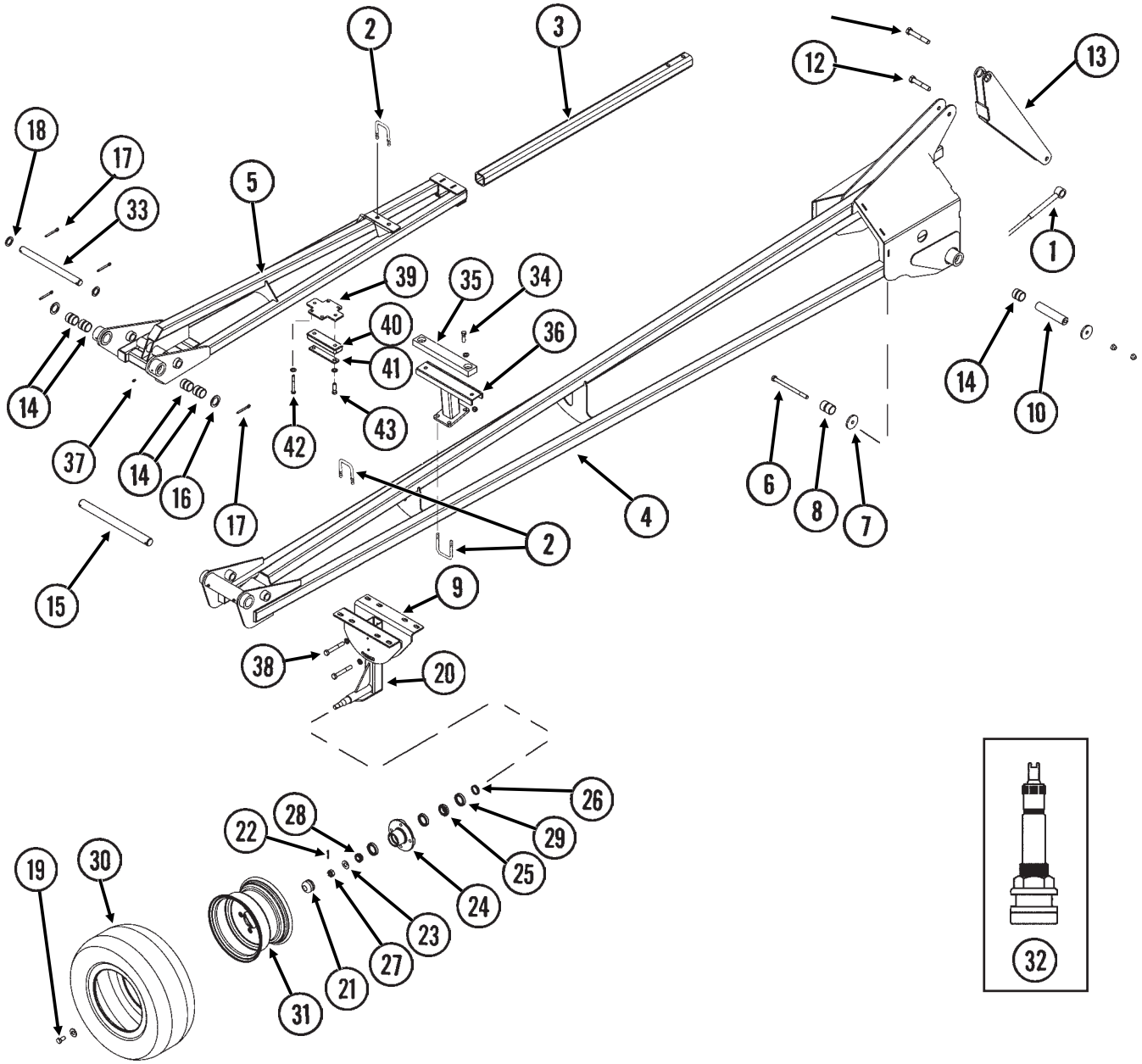


ROW MARKER ASSEMBLY (Second Stage), 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	GD15234	2	Washer, 1 1/2" O.D. x 1/2" I.D. x 7 Gauge
2.	GA10383	2	Short Link
3.	GA10384	1	Long Link
4.	GD5900-21	1	Sleeve, 2 3/8"
5.	GA10720	1	Arm W/Grease Fittings And Bushings, Second Stage, 164"
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
6.	GD4743	6	U-Bolt, 3" x 3" x 1/2"-13
	G10228	6	Lock Washer, 1/2"
	G10102	6	Hex Nut, 1/2"-13
7.	GA13477	1	Wheel Mount, L.H. (Shown)
	GA13478	1	Wheel Mount, R.H.
	GD18939	6	Wheel Marker Washer
8.	GA10386	2	Link, 143 3/4"
9.	GD5900-20	1	Sleeve, 3 3/16"
10.	G10640	4	Grease Fitting, 1/4"-28
11.	GA10385	1	Long Link
12.	G10460	4	Cotter Pin, 1/4" x 2"
13.	GD15230	2	Pin, 1" x 10 3/4"
14.	G10233	3	Machine Bushing, 1", 10 Gauge
15.	GD15233	2	Pin, 1 1/2" x 2 19/64"
16.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
17.	GD0840	1	Dust Cap
18.	G10544	1	Cotter Pin, 5/32" x 1"
19.	G10724	1	Washer, 5/8" SAE
20.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
21.	GA0245	1	Bearing
22.	GA0899	1	Rubber Seal
23.	G10725	1	Slotted Hex Nut, 5/8"-18
24.	GA0257	1	Bearing
25.	GA0243	1	Grease Seal
26.	GD15489	1	Tire, 20.5" x 8.0-10 (Specify Brand*)
27.	GA10457	1	Rim, 6" x 10"
28.	GA10458	-	Valve Stem
A.	GA10409	-	Tire And Rim Assembly (Items 26-28)

ROW MARKER ASSEMBLY (Third And Fourth Stages), 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

(FWD169)



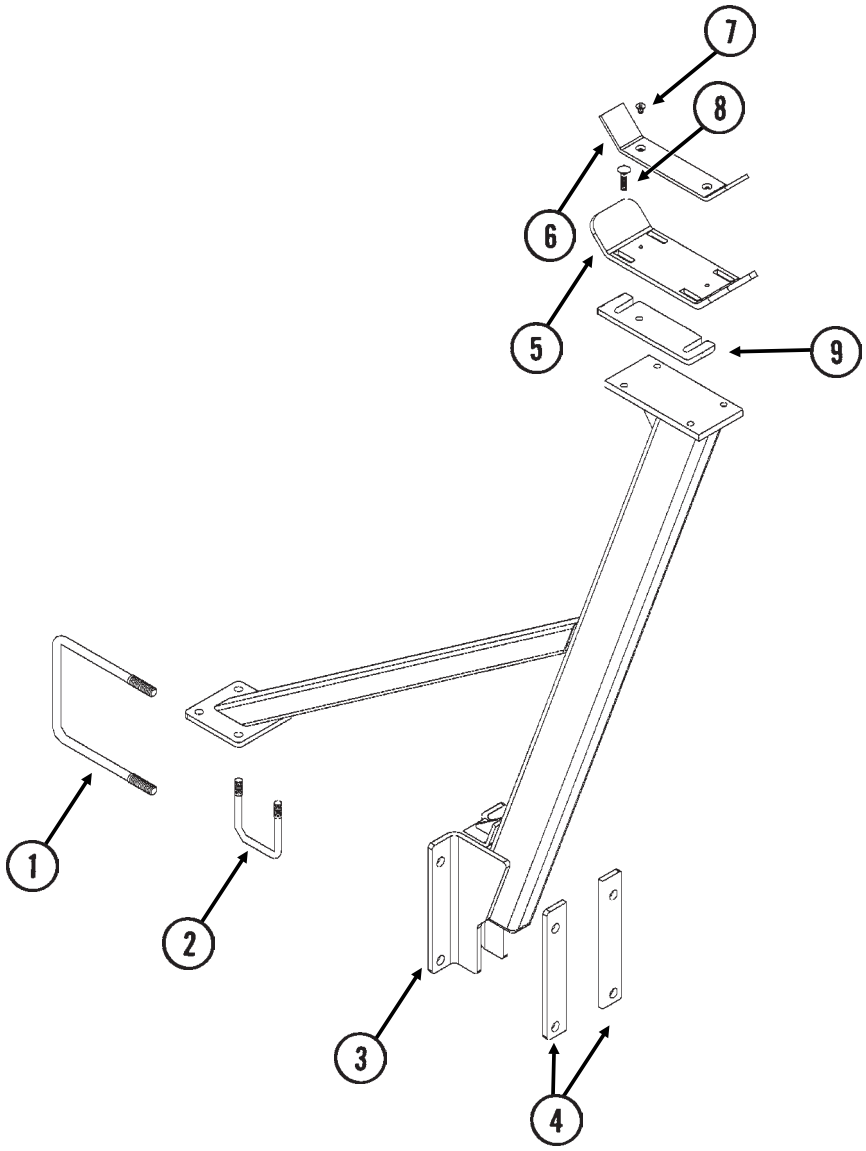
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA10507	1	Cable, 132 1/2"
2.	GD2721	7	U-Bolt, 2" x 2" x 1/2"-13
	G10228	14	Lock Washer, 1/2"
	G10102	14	Hex Nut, 1/2"-13
3.	GD0453-07	1	Extension Tube, 45"
4.	GA10375	1	Arm W/Grease Fittings, Third Stage, 148 1/2"
	G10640	-	Grease Fitting, 1/4"-28
5.	GA10376	1	Arm, Fourth Stage, 70 5/32", 32 Row 30"
	GA10426	-	Arm, Fourth Stage, 130", 36 Row 30"
6.	G11034	2	Hex Head Cap Screw, 1/2"-13 x 7"
	G10111	2	Lock Nut, 1/2"-13
7.	GD15235	4	Washer, 2 1/4" O.D. x 1/2" I.D. x 1/4"

ROW MARKER ASSEMBLY (Third And Fourth Stages), 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
8.	GD12613	4	Spring Bushing, 1 1/2" O.D. x 1 1/4" I.D. x 2"
9.	GD18934	1	Marker Wheel Mount Plate, R.H.
	GD18935		Marker Wheel Mount Plate, L.H.
10.	GD15229	2	Sleeve, 1 1/4" O.D. x 1/2" I.D. x 5 15/16"
11.	G10036	1	Hex Head Cap Screw, 5/8"-11 x 4"
	G10107	1	Lock Nut, 5/8"-11
	GD3180-36	1	Sleeve, 7/8" O.D. x 5/8" I.D. x 2"
12.	G10013	1	Hex Head Cap Screw, 5/8"-11 x 3 ½"
	G10107	1	Lock Nut, 5/8"-11
	GD3180-35	1	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 1/2"
13.	GA10382	1	Swing Link
14.	GD15290	6	Spring Bushing, 1 1/2" Long
15.	GD15231	1	Pin, 1 1/4" x 14 7/8"
16.	G10159	2	Machine Bushing, 1 1/4", 10 Gauge
17.	G10460	4	Cotter Pin, 1/4" x 2"
18.	G10233	2	Machine Bushing, 1", 10 Gauge
19.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
20.	GA13476	1	Gauge Wheel Mount
21.	GD0840	1	Dust Cap
22.	G10544	1	Cotter Pin, 5/32" x 1"
23.	G10724	1	Washer, 5/8" SAE
24.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
25.	GA0245	1	Bearing
26.	GA0899	1	Rubber Seal
27.	G10725	1	Slotted Hex Nut, 5/8"-18
28.	GA0257	1	Bearing
29.	GA0243	1	Grease Seal
30.	GD15489	1	Tire, 20.5" x 8.0-10 (Specify Brand*)
31.	GA10457	1	Rim, 6" x 10"
32.	GA10458	-	Valve Stem
33.	GD15232	1	Pin, 1" x 12 3/4"
34.	G10644	4	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10199	4	Washer, 7/16" SAE
	G10113	4	Lock Nut, 7/16"-14
35.	GD15649	2	Wear Pad
36.	GA10496	1	Support
37.	G10640	1	Grease Fitting, 1/4"-28
38.	G10033	2	Hex Head Cap Screw, ½"-13 x 3 ½"
	GD18939	2	Marker Wheel Washer
	G10111	2	Lock Nut, ½"-13
39.	GD18904	1	Plate Mount
40.	GD18905	1	Pad Mount
41.	GA9145	1	Molded Stop, 6 1/4" Long
42.	G10062	4	Hex Head Cap Screw, 3/8"-16 x 3"
	G10101	4	Hex Nut, 3/8"-16
	G10299	4	Washer, 3/8"
43.	G10644	2	Hex Head Cap Screw, 7/16"-14 x 1 ½"
	G10113	2	Lock Nut, 7/16"-14
	G10199	2	Washer, 7/16" SAE
A.	GA10409	-	Tire And Rim Assembly (Items 30-32)

ROW MARKER STAND, ALL SIZES (If Applicable)

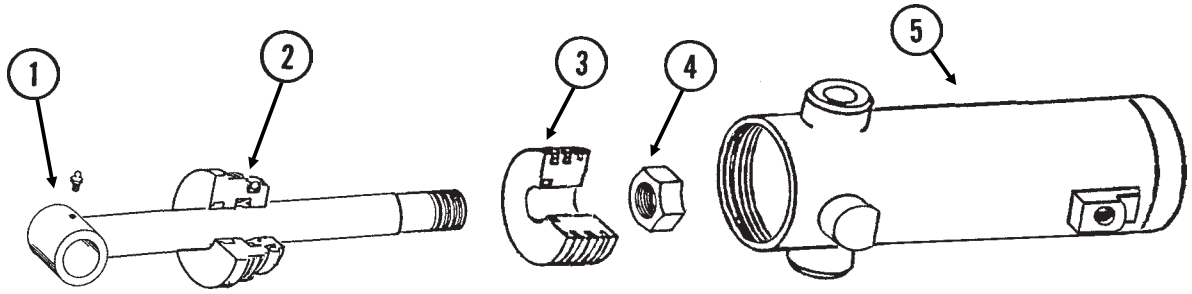
(FWD18a)



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
2.	GD4743	2	U-Bolt, 3" x 3" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
3.	GA10468	1	Stand
4.	GD15545	2	Bar, 1 3/4" x 10"
5.	GD15552	1	Plate
6.	GD15560	1	Pad
7.	G11133	2	Hex Socket Head Cap Screw, 5/16"-18 x 3/4", Grade 8
8.	G11134	4	Carriage Bolt, 3/8"-16 x 1 3/4"
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
9.	GD15784	-	Shim (As Required)

MASTER CYLINDER, 24 ROW 30" AND 32 ROW 30"

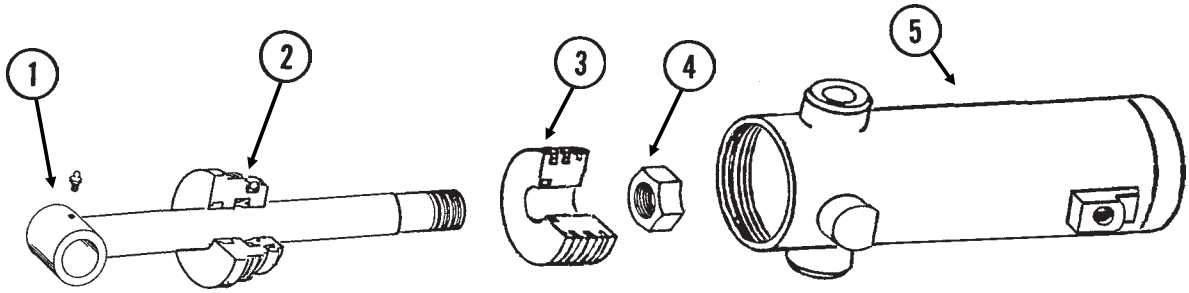
(CYL58)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10359	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD14898	1	Gland
3.	GD14897	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A10361	1	Barrel **(Non-Stock Item)**
A.	GA10362	-	Cylinder Complete, 4" x 8" ***(Part Number Stamped On Barrel)***
B.	GR1688	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Expander, (2) Cast Iron Rings, (1) BU Ring, (1) Piston Seal

MASTER CYLINDER, 24 ROW 30" AND 32 ROW 30"

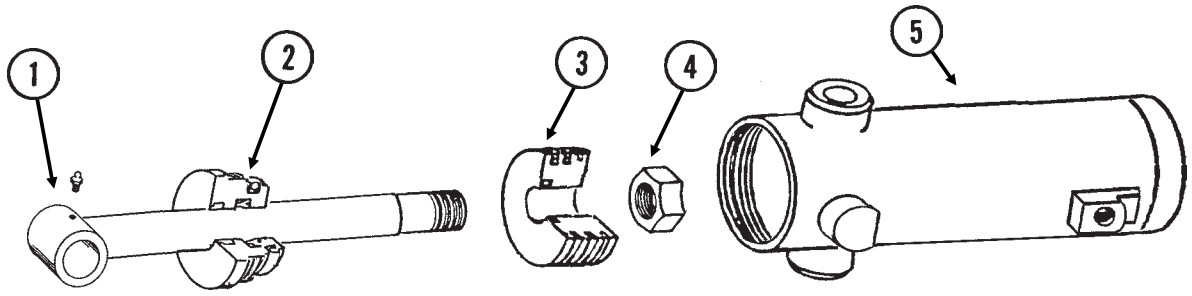
(CYL58)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10359	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD14898	1	Gland
3.	GD14897	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A13311	1	Barrel **(Non-Stock Item)**
A.	GA13312	-	Cylinder Complete, 4" x 8" ***(Part Number Stamped On Barrel)***
B.	GR1688	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Expander, (2) Cast Iron Rings, (1) BU Ring, (1) Piston Seal

MASTER CYLINDER, 36 ROW 30"

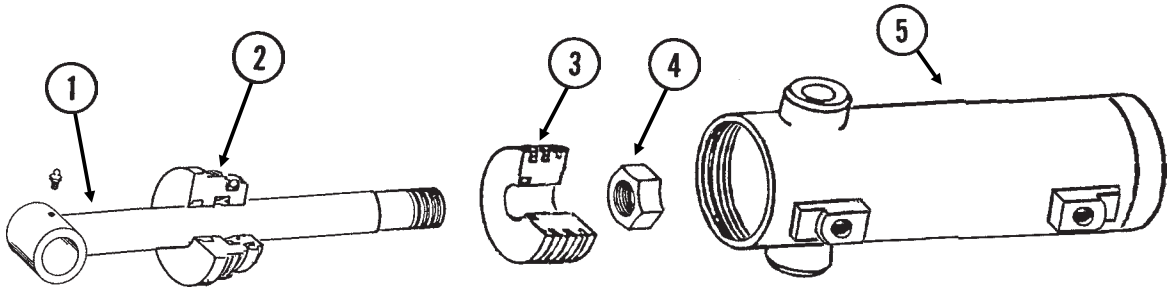
(CYL58)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11370	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD12522	1	Gland
3.	GA11374	1	Piston W/Rephasing Valve
	GR1169	-	Rephasing Valve Replacement Kit (Set Screw, Guide, 2 Springs And Ball)
4.	G10958	1	Lock Nut, 1"-14
5.	A11368	1	Barrel **(Non-Stock Item)**
A.	GA11367	-	Cylinder Complete, 4 1/2" x 8" ***(Part Number Stamped On Barrel)***
B.	GR1757	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) BU Ring, (1) Wear Ring, (1) T-Seal

LIFT ASSIST/SLAVE CYLINDERS, 24 ROW 30", 32 ROW 30" AND 36 ROW 30"

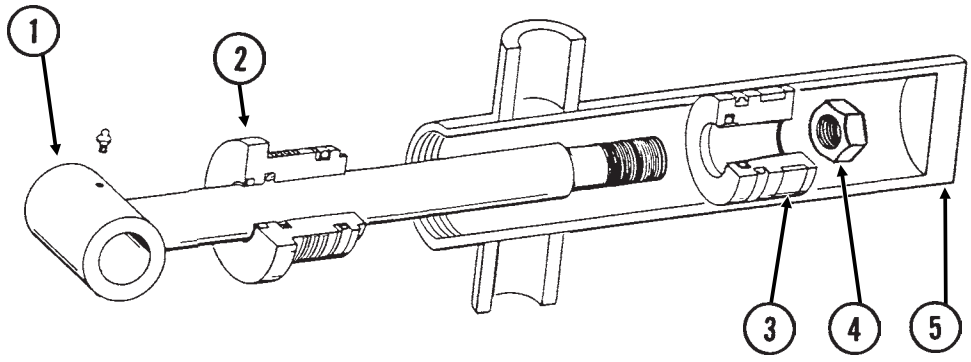
(CYL59)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10363	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD14902	1	Gland
3.	GD14901	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A10365	1	Barrel **(Non-Stock Item)**
A.	GA10366	-	Cylinder Complete, 3 3/4" x 8" ***(Part Number Stamped On Barrel)***
B.	GR1689	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Seal, (2) Cast Iron Rings, (1) BU Ring, (1) Expander

LIFT ASSIST/SLAVE CYLINDERS, 24 ROW 30", 32 ROW 30" AND 36 ROW 30"

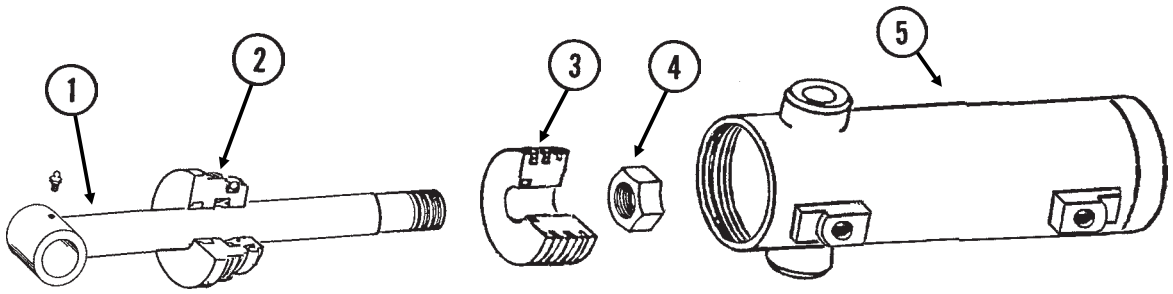
CYL026(CYL4d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA8831	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD11985	1	Gland
3.	GD11986	1	Piston
4.	G10969	1	Lock Nut, 7/8"-14
5.	A8827	1	Barrel **(Non-Stock Item)**
A.	GA8828	-	Cylinder Complete, 2 1/2" x 8" ***(Part Number Stamped On Barrel)***
B.	GR1522	-	Seal Kit, Includes: (1) T-Seal, (2) O-Rings, (1) BU Ring, (1) U-Cup, (1) Wiper

SLAVE CYLINDER, 32 ROW 30"

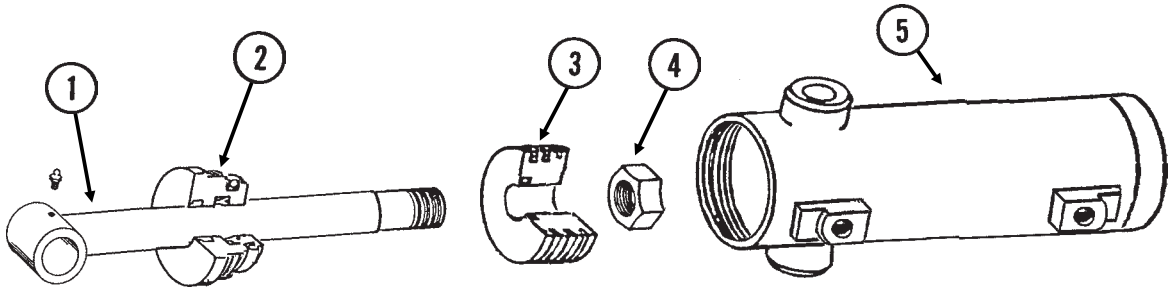
(CYL59)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10367	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD12507	1	Gland
3.	GD14907	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A10369	1	Barrel **(Non-Stock Item)**
A.	GA10370	-	Cylinder Complete, 3 1/2" x 8" ***(Part Number Stamped On Barrel)***
B.	GR1690	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Seal, (2) Cast Iron Rings, (1) BU Ring, (1) Expander

SLAVE CYLINDER, 36 ROW 30"

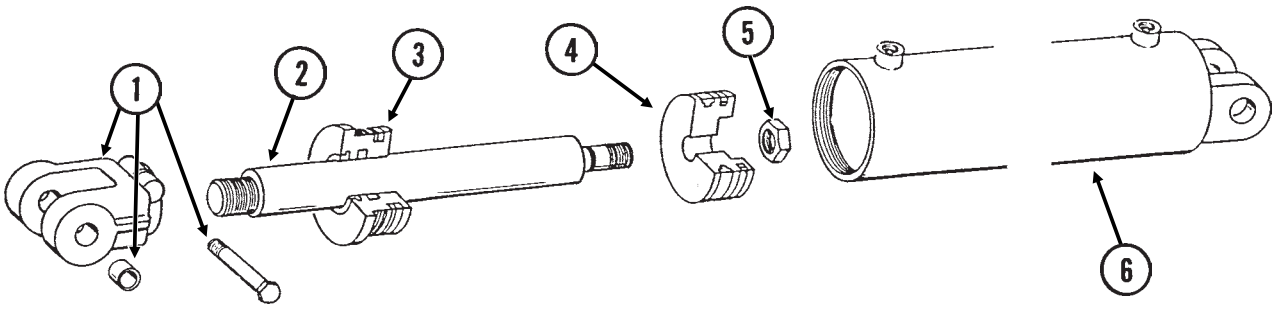
(CYL59)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10359	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD14898	1	Gland
3.	GD14897	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A11372	1	Barrel **(Non-Stock Item)**
A.	GA11371	-	Cylinder Complete, 4" x 8" ***(Part Number Stamped On Barrel)***
B.	GR1688	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Seal, (2) Cast Iron Rings, (1) BU Ring, (1) Expander

WING FOLD CYLINDER, ALL SIZES

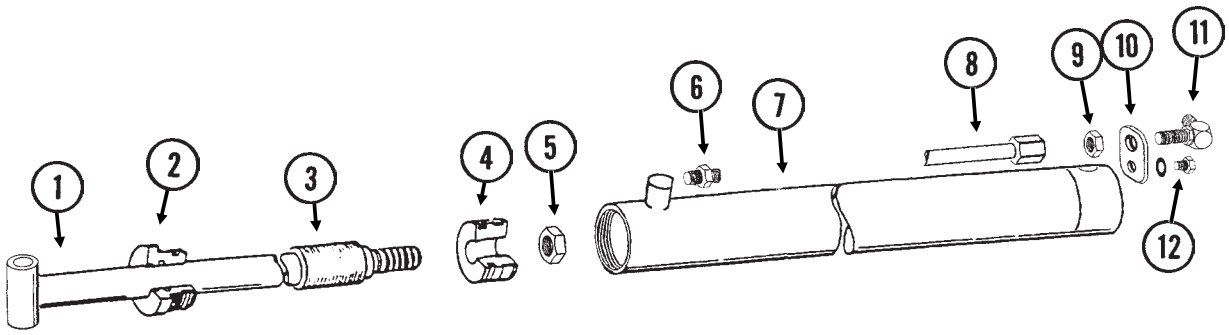
(CYL15e)



ITEM	PART NO.	QTY	DESCRIPTION
1.	GA8130	1	Clevis W/Bushings, Hex Head Cap Screw And Hex Nut
	GD11751	2	Steel Bushing, 1" Wide
	G10939	1	Hex Head Cap Screw, 3/8"-16 x 2 1/4"
	G10101	1	Hex Nut, 3/8"-16
2.	GD14908	1	Rod
3.	GD12522	1	Gland
4.	GD14910	1	Piston
5.	G10972	1	Lock Nut, 1 1/4"-12
6.	A10372	1	Barrel **(Non-Stock Item)**
A.	GA10373	-	Cylinder Complete, 4 1/2" x 30" ***(Part Number Stamped On Barrel)***
B.	GR1691	-	Seal Kit (For Cylinder And Counter Balance Valve), Includes: (1) Wiper, (1) U-Cup, (3) O-Rings, (1) BU Ring, (1) T-Seal, (1) Wear Ring

AXLE SLIDE CYLINDER, 24 ROW 30" (If Applicalbe)

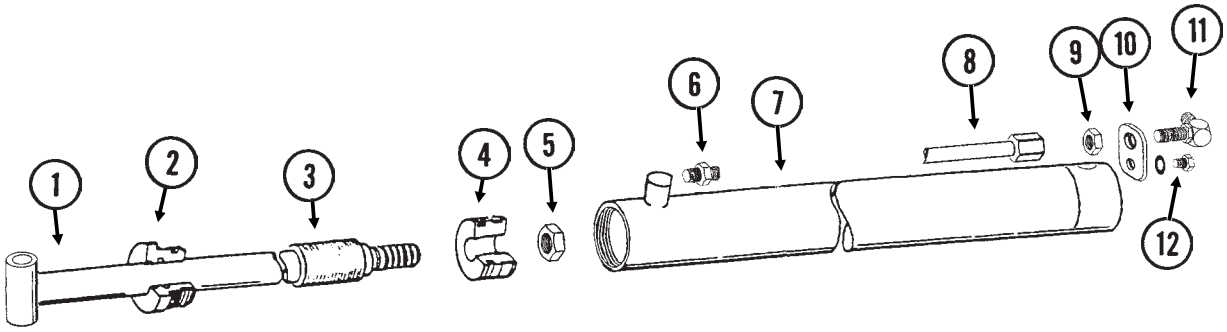
(CYL12g)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10248	1	Rod Assembly
2.	GD12670	1	Gland
3.	GD14915	1	Sleeve, 6 1/2"
4.	GD12672	1	Piston
5.	G10972	1	Lock Nut, 1 1/4"-12
6.	G6400-08-04	1	Connector W/O-Ring, 3/4"-16 Male JIC To 7/16"-20 O-Ring
	GR1465	-	O-Ring
7.	A10250	1	Barrel **(Non-Stock Item)**
8.	GA10242	1	Steel Hydraulic Line, 66 7/16"
9.	G306-08	1	Lock Nut, 3/4"-16
10.	GD12597	1	Bracket
11.	G2701-08	1	Bulkhead Elbow, 90°, 3/4"-16 Male JIC
12.	G10328	1	Hex Head Cap Screw, 3/8"-16 x 5/8"
	G10229	1	Lock Washer, 3/8"
A.	GA10251	-	Cylinder Complete, 4" x 24" ***(Part Number Stamped On Barrel)***
B.	GR1552	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wear Ring, (1) Wiper, (1) U-Cup, (1) T-Seal

AXLE SLIDE CYLINDER, 32 ROW 30" AND 36 ROW 30"

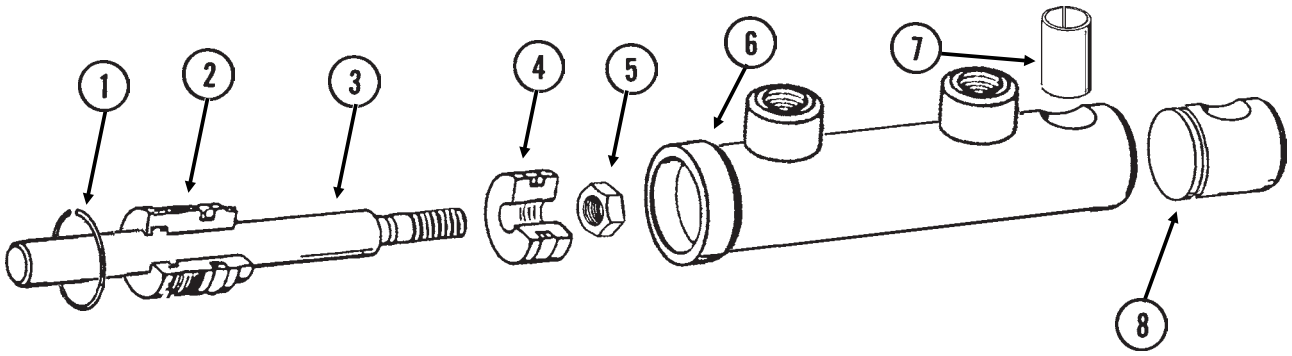
(CYL12g)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10243	1	Rod Assembly
2.	GD12670	1	Gland
3.	GD14915	1	Sleeve, 6 1/2"
4.	GD12672	1	Piston
5.	G10972	1	Lock Nut, 1 1/4"-12
6.	G6400-08-04	1	Connector W/O-Ring, 3/4"-16 Male JIC To 7/16"-20 O-Ring
	GR1465	-	O-Ring
7.	GA10245	1	Barrel
8.	GA10242	1	Steel Hydraulic Line, 66 7/16"
9.	G306-08	1	Lock Nut, 3/4"-16
10.	GD12597	1	Bracket
11.	G2701-08	1	Bulkhead Elbow, 90°, 3/4"-16 Male JIC
12.	G10328	1	Hex Head Cap Screw, 3/8"-16 x 5/8"
	G10229	1	Lock Washer, 3/8"
A.	GA10246	-	Cylinder Complete, 4" x 60" ***(Part Number Stamped On Barrel)***
B.	GR1552	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wear Ring, (1) Wiper, (1) U-Cup, (1) T-Seal

TONGUE LATCH AND SLIDE LATCH CYLINDER (If Applicable On 24 Row 30"), ALL SIZES

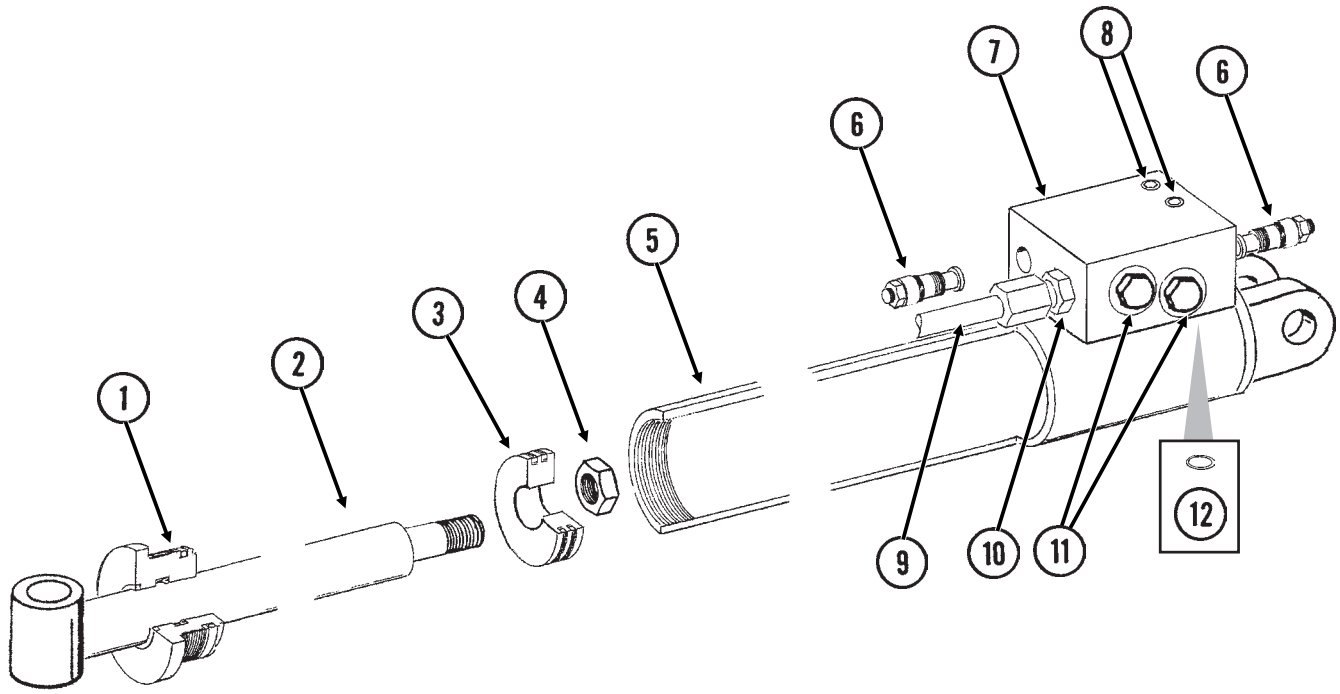
CYL035(CYL9d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10770	1	Internal Retaining Ring, 1 $^{11}/_{16}$"
2.	GD13170	1	Gland
3.	GD13171	1	Rod
4.	GD13172	1	Piston
5.	G11016	1	Lock Nut, $^{1}/_{2}$"-20
6.	D13169	1	Barrel **(Non-Stock Item)**
7.	GD13400	1	Tension Bushing, 1" x 2" Long
8.	GD13173	1	End Cap
A.	GA9205	-	Cylinder Complete, 1 $^{1}/_{2}$" x 2 $^{1}/_{2}$" ***(Part Number Stamped On Barrel)***
B.	GR1598	-	Seal Kit, Includes: (3) O-Rings, (2) BU Rings, (1) Wiper, (1) T-Seal, (1) Bronze Bushing, (1) U-Cup

TRANSPORT AXLE CYLINDER, ALL SIZES

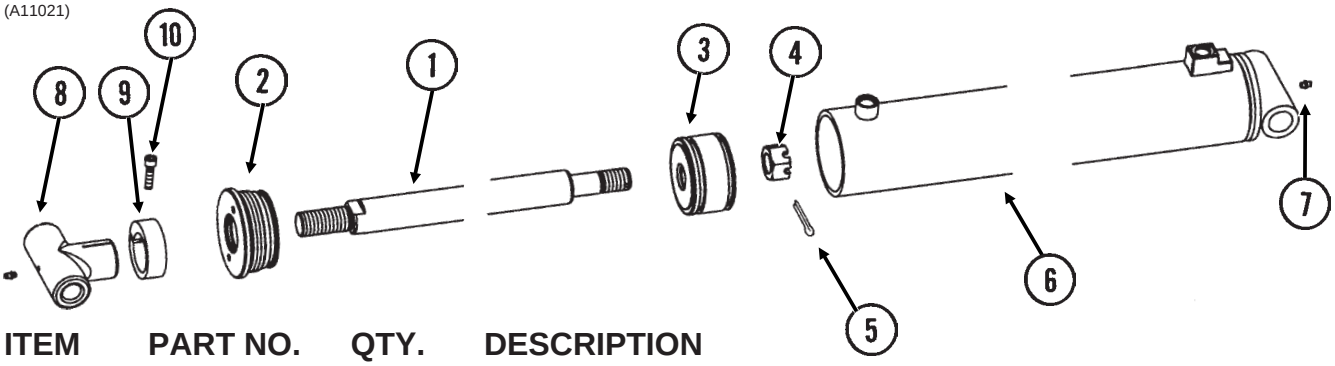
(CYL54d/D12239)



ITEM	PART NO.	QTY. (Per Cylinder)	DESCRIPTION
1.	GD12522	1	Gland
2.	GA10253	1	Rod Assembly
3.	GD15774	1	Piston
4.	G10972	1	Lock Nut, 1 1/4"-12
5.	A10255	1	Barrel **(Non-Stock Item)**
6.	GA10714	2	Counter Balance Valve
7.	GD15623	1	Block
8.	G10932	2	Hex Socket Head Cap Screw, 5/16"-18 x 2", Grade 8
9.	GA10623	1	Steel Hydraulic Line, 23 1/4"
10.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
11.	G6408-08	-	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
12.	GD12239	1	O-Ring, No. 016
A.	GA10256	-	Cylinder Complete, 4 1/2" x 28" ***(Part Number Stamped On Barrel)***
B.	GR1691	-	Seal Kit (For Cylinder And Counter Balance Valve), Includes: (1) Wiper, (1) U-Cup, (3) O-Rings, (1) BU Ring, (1) T-Seal, (1) Wear Ring
C.	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings

ROW MARKER CYLINDER, ALL SIZES (If Applicable)

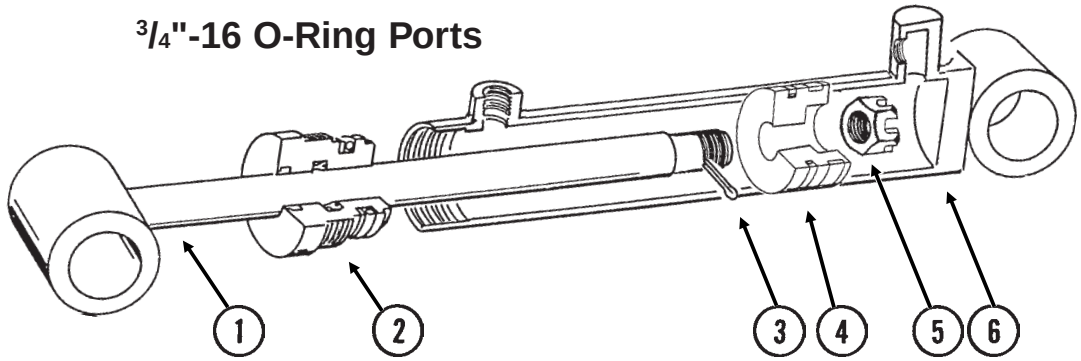
(A11021)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16147	1	Rod
2.	GD12539	1	Gland
3.	GD14089	1	Piston
4.	G10983	1	Slotted Hex Nut, 1 1/8"-12
5.	G10984	1	Cotter Pin, 3/16" x 2 1/2"
6.	A11020	1	Barrel **(Non-Stock Item)**
7.	G10640	2	Grease Fitting, 1/4"-28
8.	GD16184	1	Clamp
9.	GD16060	1	Sleeve
10.	G11099	1	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
A.	GA11021	-	Cylinder Complete, 4" x 32" ***(Part Number Stamped On Barrel)***
B.	GR1630	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wiper, (1) T-Seal, (1) Cast Iron Ring, (1) U-Cup Seal

ROW MARKER CYLINDER, 24 ROW 30" (If Applicable)

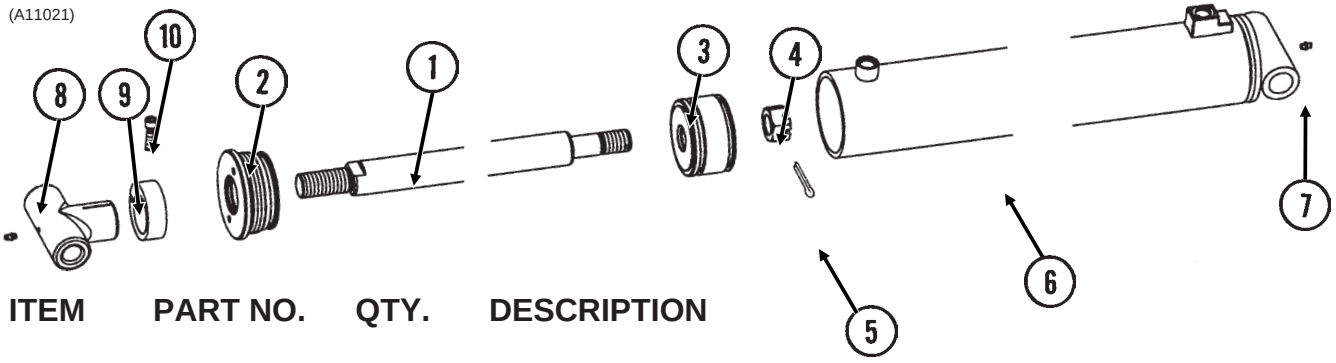
(CYL032d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA8948	1	Rod Assembly
2.	GD12548	1	Gland
3.	G10984	1	Cotter Pin, 3/16" x 2 1/2"
4.	GD12550	1	Piston
5.	G10983	1	Slotted Hex Nut, 1 1/8"-12
6.	A8950	1	Barrel **(Non-Stock Item)**
A.	GA8951	-	Cylinder Complete, 3 1/2" x 20" ***(Part Number Stamped On Barrel)***
B.	GR1532	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) T-Seal, (1) BU Ring, (1) Cast Iron Ring

ROW MARKER CYLINDER, 32 ROW 30" AND 36 ROW 30" (If Applicable)

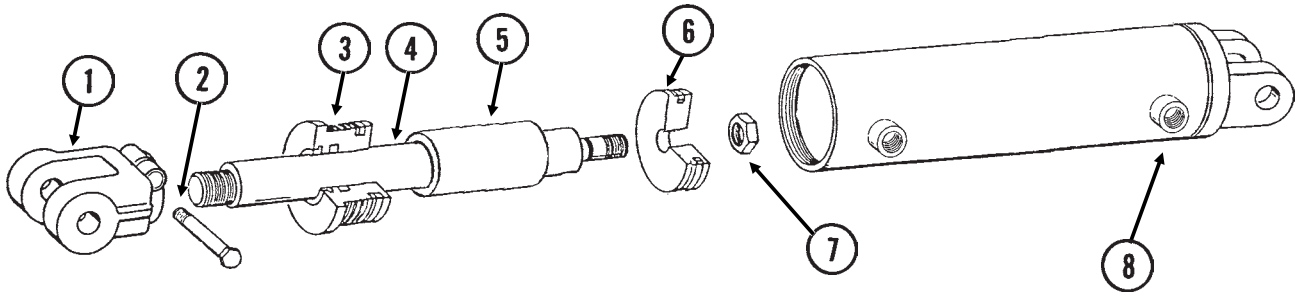
(A11021)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16147	1	Rod
2.	GD12539	1	Gland
3.	GD14089	1	Piston
4.	G10983	1	Slotted Hex Nut, 1 1/8"-12
5.	G10984	1	Cotter Pin, 3/16" x 2 1/2"
6.	A11020	1	Barrel **(Non-Stock Item)**
7.	G10640	2	Grease Fitting, 1/4"-28
8.	GD16184	1	Clamp
9.	GD16060	1	Sleeve
10.	G11099	1	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
A.	GA11021	-	Cylinder Complete, 4" x 32" ***(Part Number Stamped On Barrel)***
B.	GR1630	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wiper, (1) T-Seal, (1) Cast Iron Ring, (1) U-Cup Seal

ROW MARKER LINK ASSIST CYLINDER, 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

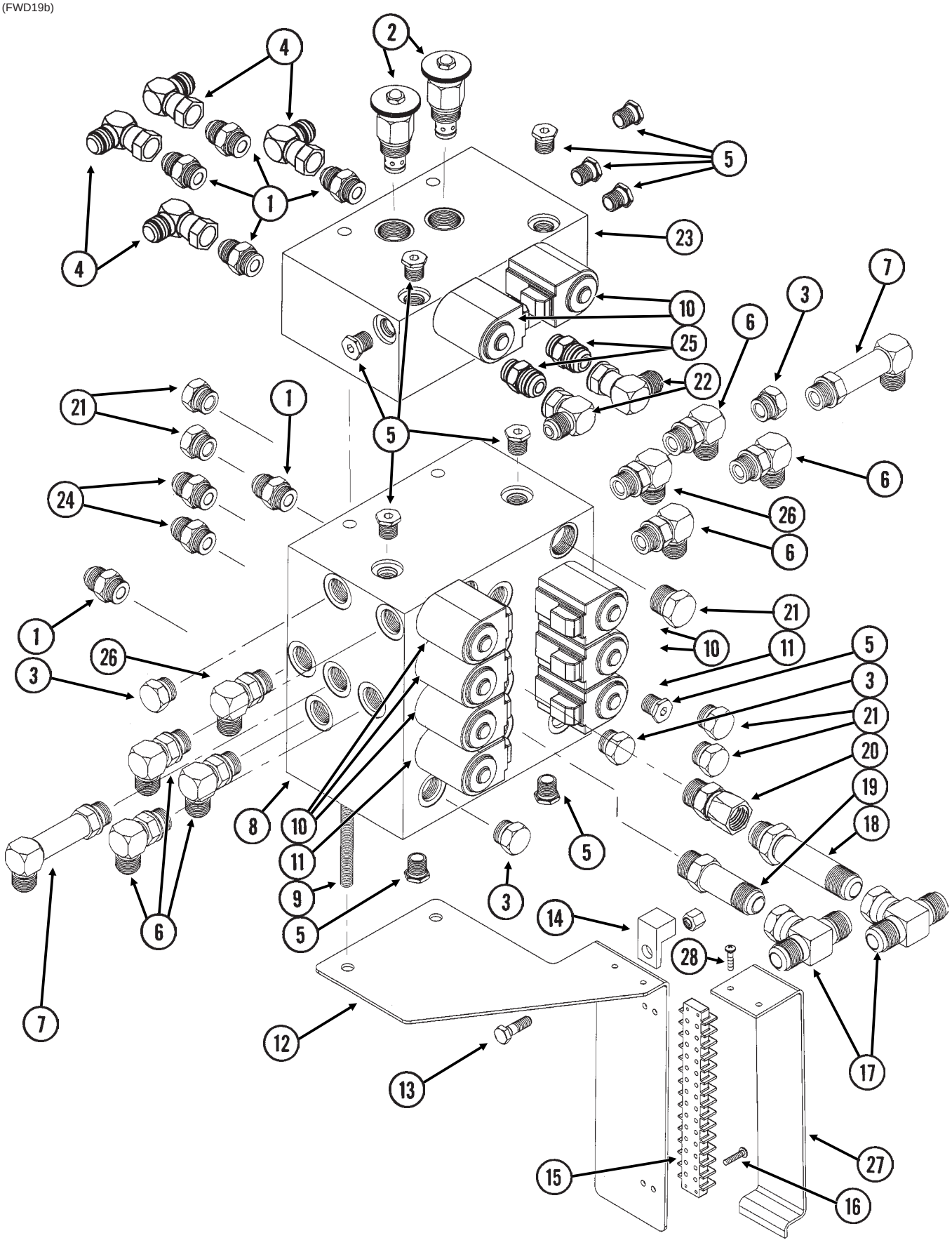
(CYL33j)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD11950	1	Clevis
2.	G10939	1	Hex Head Cap Screw, 3/8"-16 x 2 1/4"
	G10108	1	Lock Nut, 3/8"-16
3.	GD12510	1	Gland
4.	GD14233	1	Rod
5.	GD5900-19	1	Sleeve, 4"
6.	GD12511	1	Piston
7.	G10967	1	Lock Nut, 3/4"-16
8.	A8775	1	Barrel **(Non-Stock Item)**
A.	GA10410	-	Cylinder Complete, 2" x 4" ***(Part Number Stamped On Barrel)***
B.	GR1529	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wiper, (1) T-Seal, (2) U-Cup Seals, (1) Instruction

VALVE BLOCKS - LOCATED ON HITCH (Conventional) (Prior To Serial Number 755215)

(FWD19b)

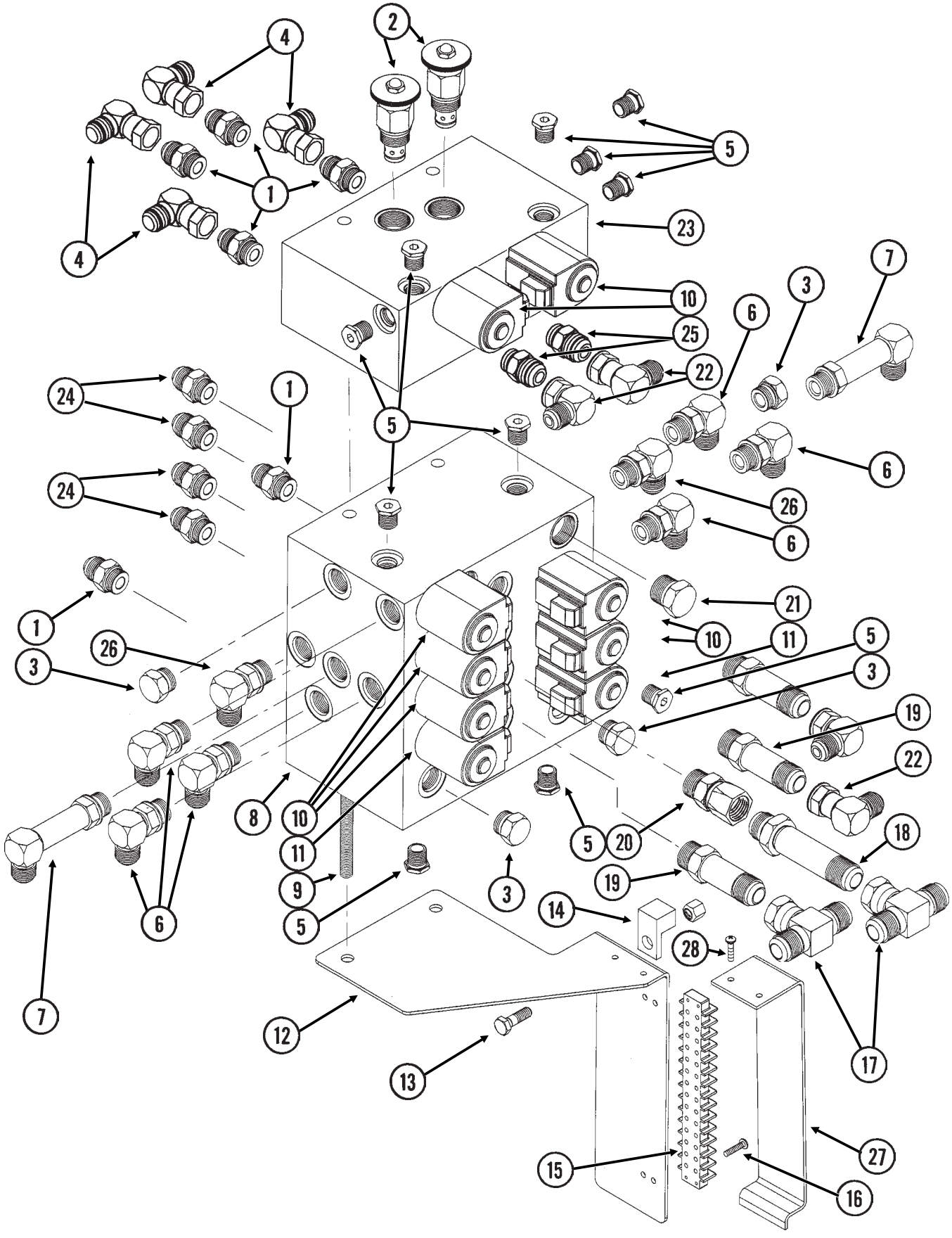


VALVE BLOCKS - LOCATED ON HITCH (Conventional) (Prior To Serial Number 755215)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	6	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GA3413	2	Flow Control Valve
	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
3.	G6408-08	4	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
4.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
5.	G6408-H06-0	11	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
6.	G6801-08	6	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	G6801-LL-08	2	X-Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
8.	GD14922	1	Block
9.	GD15187-01	2	Threaded Rod, 3/8"-16 x 13"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
10.		-	See “Solenoid Valve (G1K275)”, Page P148
11.		-	See “Solenoid Valve (G1K276)”, Page P149
12.	GD15634	1	Mount
13.	G10002	1	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10622	1	Serrated Flange Nut, 3/8"-16
14.	GA3584	1	Ground Clamp
15.	GA9097	1	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
16.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
17.	G6600-10	2	Swivel Tee, 7/8"-14 JIC
18.	G2700-10	1	Bulkhead Tube Union, 7/8"-14 Male JIC
19.	G6400-L-10	1	Long Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
20.	G6402-10	1	Connector W/O-Ring, 7/8"-14 Female JIC To Male O-Ring
	GR1466	-	O-Ring
21.	G6408-10	5	Plug W/O-Ring, 7/8"-14 O-Ring
	GR1466	-	O-Ring
22.	G6500-10	2	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
23.	GD14923	1	Block
24.	G6400-10	2	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
25.	G6400-10-08	2	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
26.	G6801-06-08	2	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
27.	GD16146	1	Cover
28.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
	G10928	2	Hex Nut, No. 8-32, Stainless Steel

VALVE BLOCKS - LOCATED ON HITCH (SDS Planters) (Prior To Serial Number 755215)

(FWD19c)

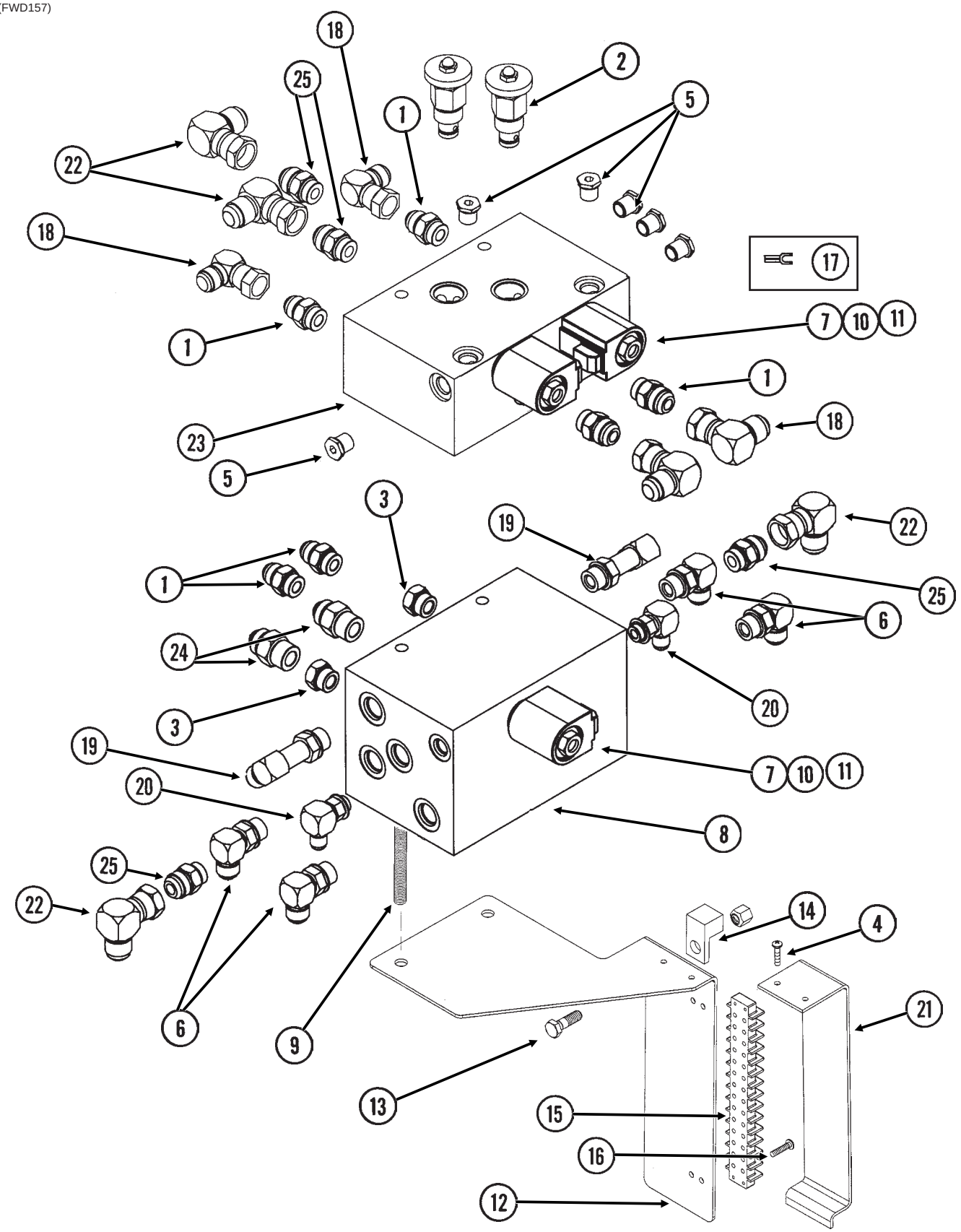


VALVE BLOCKS - LOCATED ON HITCH (SDS Planters) (Prior To Serial Number 755215)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	6	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GA3413	2	Flow Control Valve
	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
3.	G6408-08	4	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
4.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
5.	G6408-H06-0	11	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
6.	G6801-08	6	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	G6801-LL-08	2	X-Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
8.	GD14922	1	Block
9.	GD15187-01	2	Threaded Rod, 3/8"-16 x 13"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
10.		-	See “Solenoid Valve (G1K275)”, Page P148
11.		-	See “Solenoid Valve (G1K276)”, Page P149
12.	GD15634	1	Mount
13.	G10002	1	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10622	1	Serrated Flange Nut, 3/8"-16
14.	GA3584	1	Ground Clamp
15.	GA9097	1	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
16.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
17.	G6600-10	2	Swivel Tee, 7/8"-14 JIC
18.	G2700-10	1	Bulkhead Tube Union, 7/8"-14 Male JIC
19.	G6400-L-10	3	Long Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
20.	G6402-10	3	Connector W/O-Ring, 7/8"-14 Female JIC To Male O-Ring
	GR1466	-	O-Ring
21.	G6408-10	1	Plug W/O-Ring, 7/8"-14 O-Ring
	GR1466	-	O-Ring
22.	G6500-10	4	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
23.	GD14923	1	Block
24.	G6400-10	2	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
25.	G6400-10-08	2	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
26.	G6801-06-08	2	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
27.	GD16146	1	Cover
28.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
	G10928	2	Hex Nut, No. 8-32, Stainless Steel

VALVE BLOCKS - LOCATED ON HITCH, 24 ROW 30" (Serial Number 755215 And On)

(FWD157)

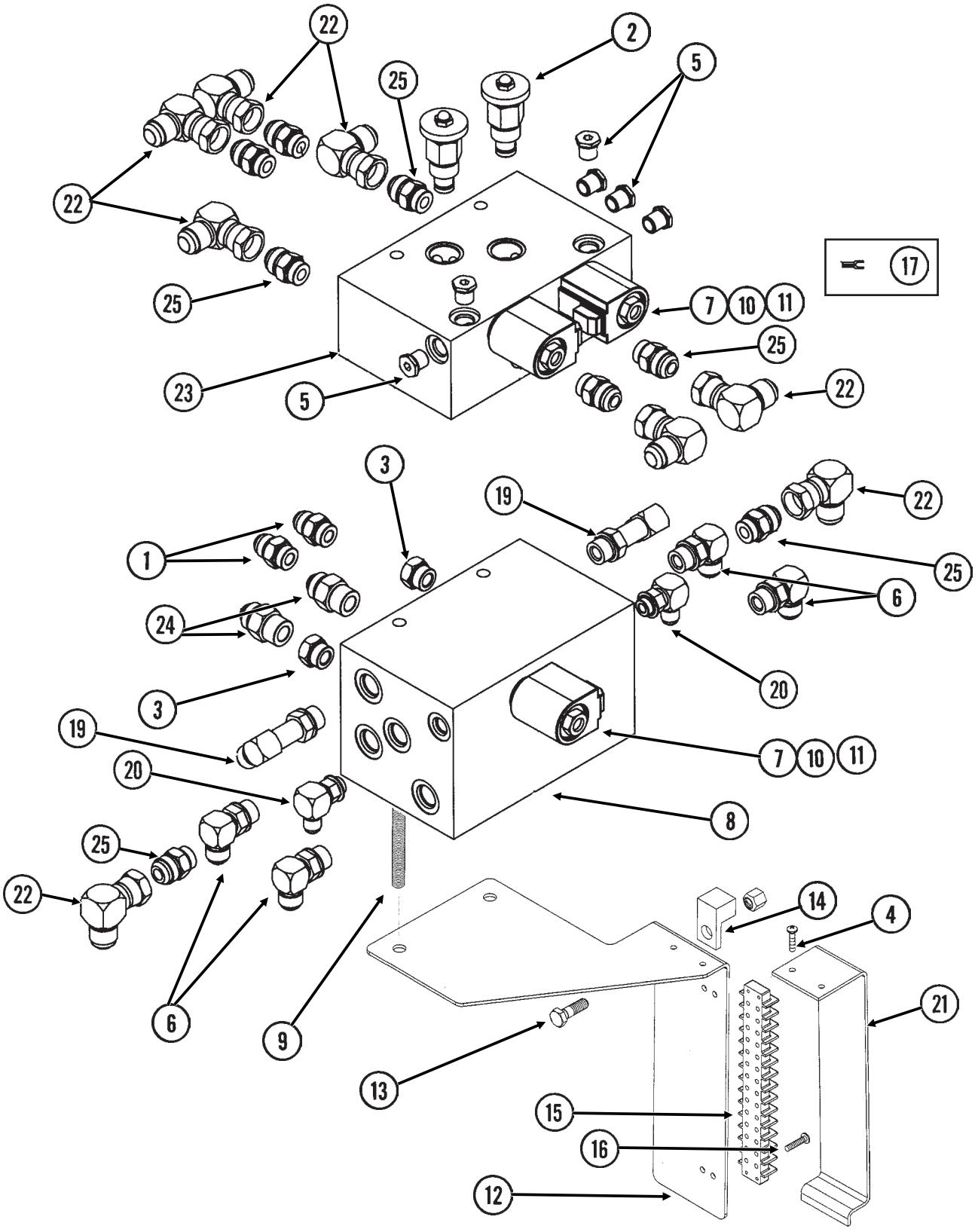


VALVE BLOCKS - LOCATED ON HITCH, 24 ROW 30" (Serial Number 755215 And On)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	6	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GA3413	2	Flow Control Valve
	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
3.	G6408-08	2	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
4.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
	G10928	2	Hex Nut, No. 8-32, Stainless Steel
5.	G6408-H06-0	6	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
6.	G6801-08	6	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	GR0761	3	Special Hex Nut, 1/2"-20
8.	GD18096	1	Block
9.	GD15187-01	2	Threaded Rod, 3/8"-16 x 13"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
10.	GR0763	3	Cartridge
11.	GR1445	3	Coil
12.	GD15634	1	Mount
13.	G10002	1	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10622	1	Serrated Flange Nut, 3/8"-16
14.	GA3584	1	Ground Clamp
15.	GA9097	1	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
16.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
17.	G10996	3	Fork Terminal
18.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
19.	G6400-L-08	2	Long Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
20.	G6801-06	2	ElbowW/O-Ring, 90°, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
21.	GD16146	1	Cover
22.	G6500-10	4	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
23.	GD14923	1	Block
24.	G6400-10	2	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
25.	G6400-10-08	4	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring

VALVE BLOCKS - LOCATED ON HITCH, 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

(FWD158)

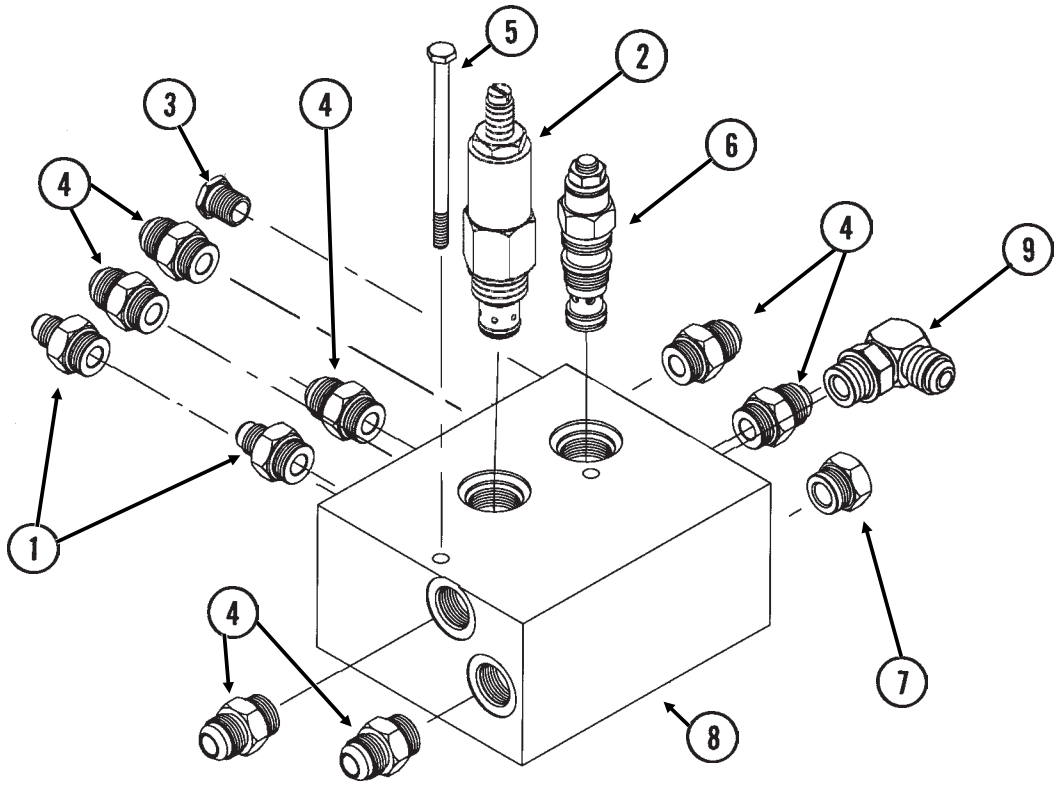


VALVE BLOCKS - LOCATED ON HITCH, 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 And On)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GA3413	2	Flow Control Valve
	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
3.	G6408-08	2	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
4.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
	G10928	2	Hex Nut, No. 8-32, Stainless Steel
5.	G6408-H06-0	6	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
6.	G6801-08	4	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	GR0761	3	Special Hex Nut, 1/2"-20
8.	GD18096	1	Block
9.	GD15187-01	2	Threaded Rod, 3/8"-16 x 13"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
10.	GR0763	3	Cartridge
11.	GR1445	3	Coil
12.	GD15634	1	Mount
13.	G10002	1	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10622	1	Serrated Flange Nut, 3/8"-16
14.	GA3584	1	Ground Clamp
15.	GA9097	1	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
16.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
17.	G10996	3	Fork Terminal
18.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
19.	G6400-L-08	2	Long Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
20.	G6801-06	2	ElbowW/O-Ring, 90°, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
21.	GD16146	1	Cover
22.	G6500-10	4	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
23.	GD14923	1	Block
24.	G6400-10	2	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
25.	G6400-10-08	6	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring

VALVE BLOCK - LOCATED AT CENTER OF REAR H-FRAME (Prior To Serial Number 755215)

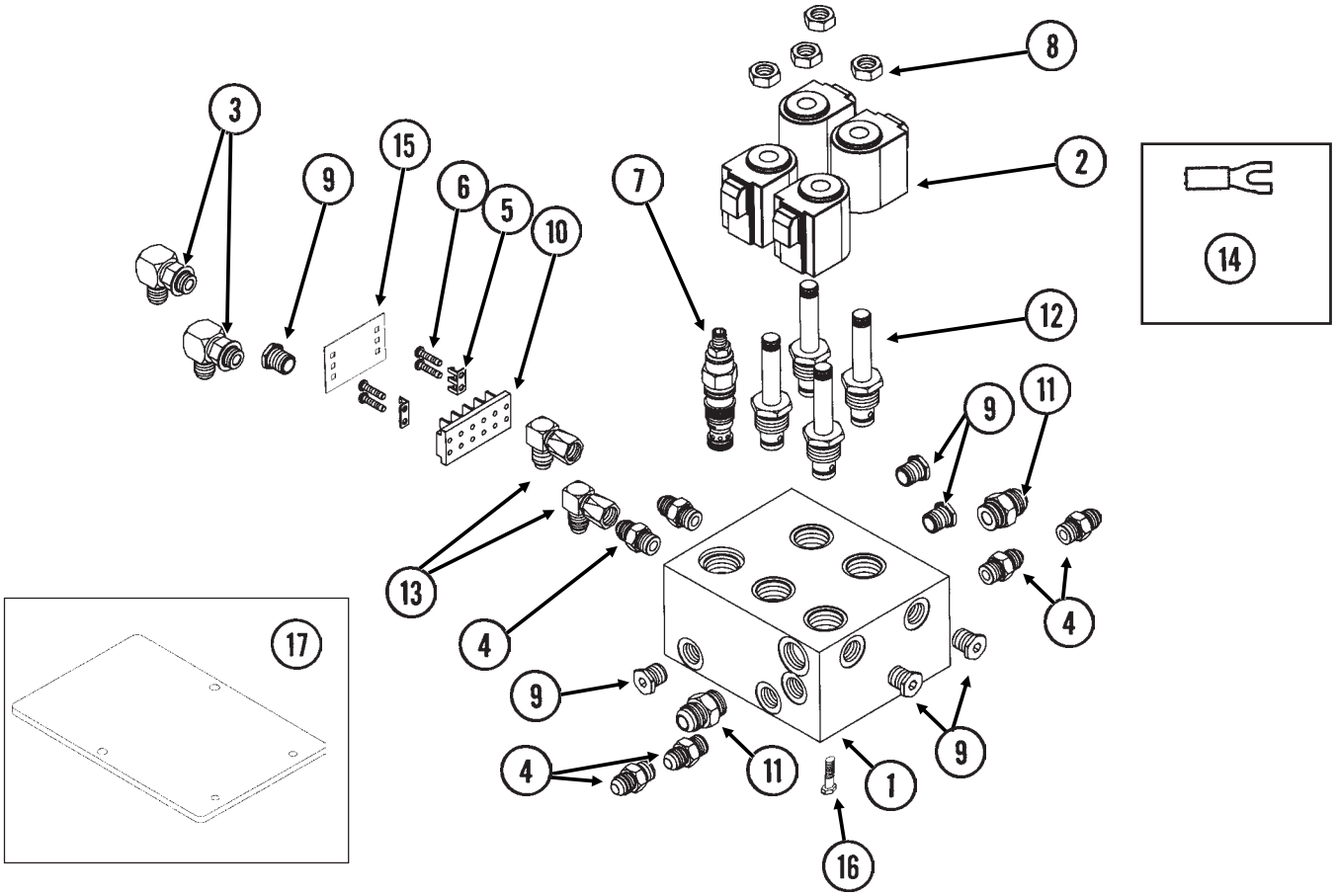
(A11008a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-06-08	2	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
2.	GA3407	1	Pressure Relief Valve, 1000 PSI
	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
3.	G6408-H06-0	1	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
4.	G6400-08	7	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
5.	G10943	2	Hex Head Cap Screw, 1/4"-20 x 4"
	G10227	2	Lock Washer, 1/4"
6.	GA10632	1	Counter Balance Valve
7.	G6408-08	1	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
8.	GD16130	1	Block
9.	G6801-08	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
A.	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings

VALVE BLOCK - LOCATED AT CENTER OF REAR H-FRAME, 24 ROW 30" (Serial Number 755215 And On)

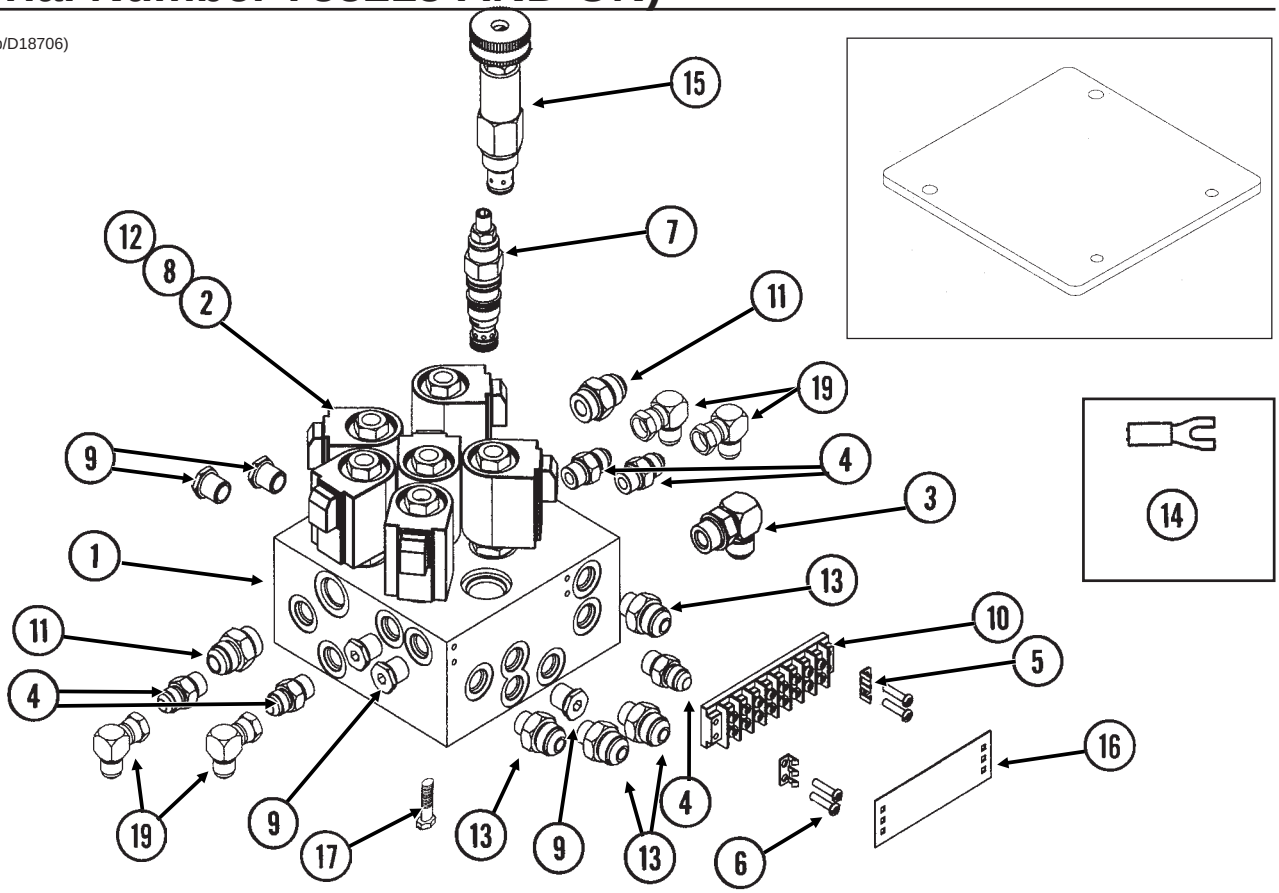
(A12639a/A9481/D18137)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18097	1	Block
2.	GR1445	4	Coil
3.	G6801-06	2	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
4.	G6400-06	6	Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
5.	GD18100	2	Clip
6.	G11067	4	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
7.	GA10632	1	Counter Balance Valve
8.	GR0761	4	Special Hex Nut, 1/2"-20
9.	G6408-H06-0	6	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
10.	GA9510	1	Terminal Strip W/Screws, No. 6, 4 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
11.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
12.	GR0763	4	Cartridge
13.	G6500-06	2	Swivel Elbow, 90°, 9/16"-18 Male JIC To Female
14.	G10996	4	Fork Terminal
15.	GD18101	1	Cover
16.	G10171	2	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10232	2	Lock Washer, 5/16"
	G10221	2	Washer, 5/16" SAE
17.	GD18137	1	Plate, 5" x 7 3/4"
A.	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings

VALVE BLOCK - LOCATED AT CENTER OF REAR H-FRAME, 32 ROW 30" AND 36 ROW 30" (Serial Number 755215 AND ON)

(A13233b/D18706)

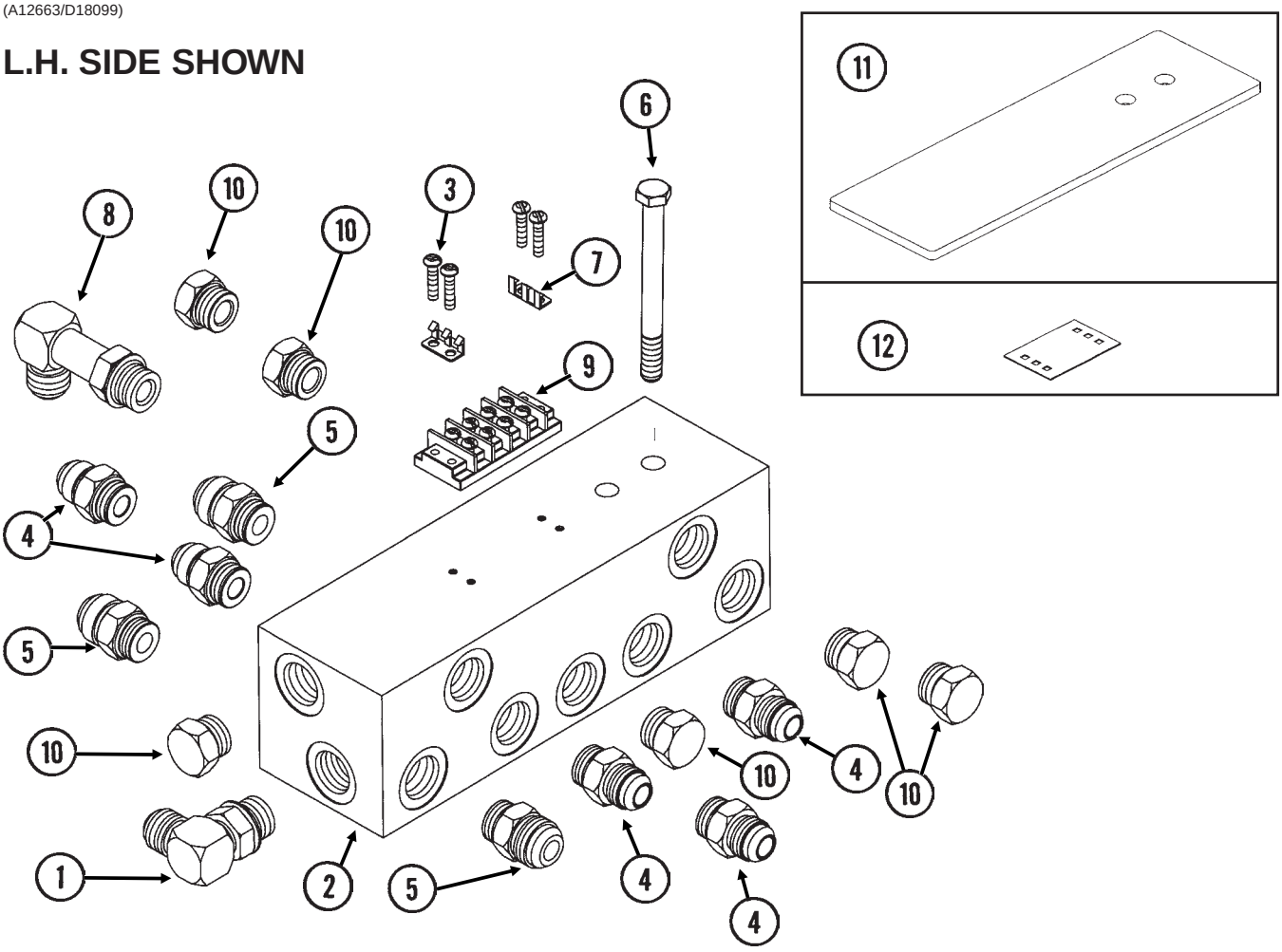


ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18631	1	Block
2.	GR1445	6	Coil
3.	G6801-08-06	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To 9/16"-18 O-Ring
	GR1045	-	O-Ring
4.	G6400-06	5	Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
5.	GD18100	2	Clip
6.	G11067	4	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
7.	GA10632	1	Counter Balance Valve
8.	GR0761	6	Special Hex Nut, 1/2"-20
9.	G6408-H06-0	5	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
10.	GA9098	1	Terminal Strip W/Screws, No. 6, 8 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
11.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
12.	GR0763	6	Cartridge
13.	G6400-08-06	4	Connector W/O-Ring, 3/4"-16 Male JIC To 9/16"-18 O-Ring
	GR1045	-	O-Ring
14.	G10996	12	Fork Terminal
15.	GA3407	1	Pressure Releif Valve, 1000 PSI
16.	GD18102	1	Cover, 1 3/8" x 4"
17.	G10171	2	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10232	2	Lock Washer, 5/16"
	G10221	2	Washer, 5/16" SAE
18.	GD18706	1	Plate, 5 1/4" x 6 1/4"
19.	G6502-06	4	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
A.	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings

JUNCTION BLOCK - LOCATED ON EACH WING, 24 ROW 30"

(A12663/D18099)

L.H. SIDE SHOWN

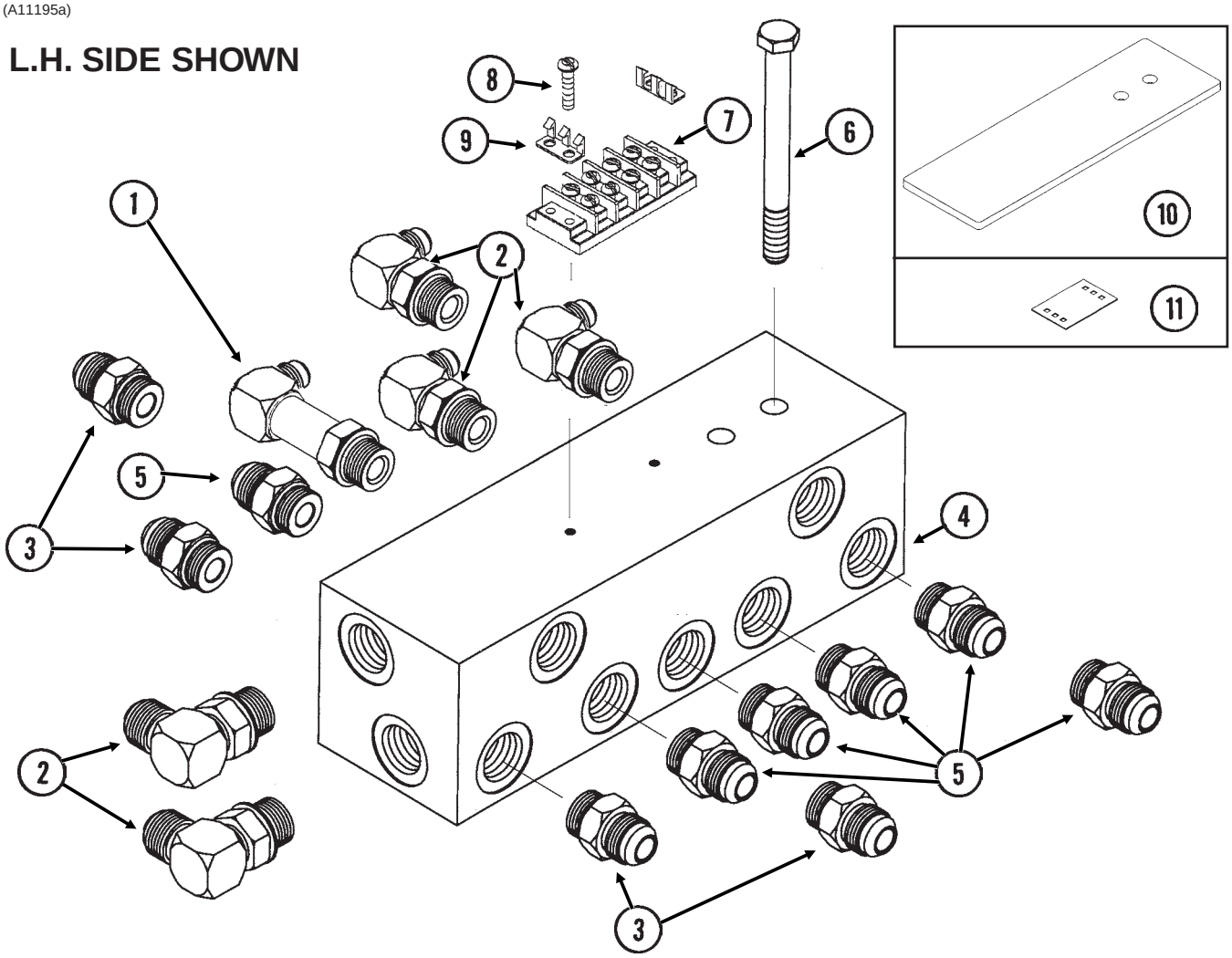


ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G6801-08	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GD14925	1	Block
3.	G11067	4	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
4.	G6400-08	5	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
5.	G6400-10-08	3	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
6.	G10753	2	Hex Head Cap Screw, 3/8"-16 x 4 1/2"
	G10108	2	Lock Nut, 3/8"-16
7.	GD18100	2	Clip
8.	G6801-L-08	1	Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
9.	GA9510	1	Terminal Strip W/Screws, No. 6, 4 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
10.	G6408-08	6	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
11.	GD18099	1	Spacer Plate
12.	GD18101	1	Cover

JUNCTION BLOCK - LOCATED ON EACH WING, 32 ROW 30"

(A11195a)

L.H. SIDE SHOWN

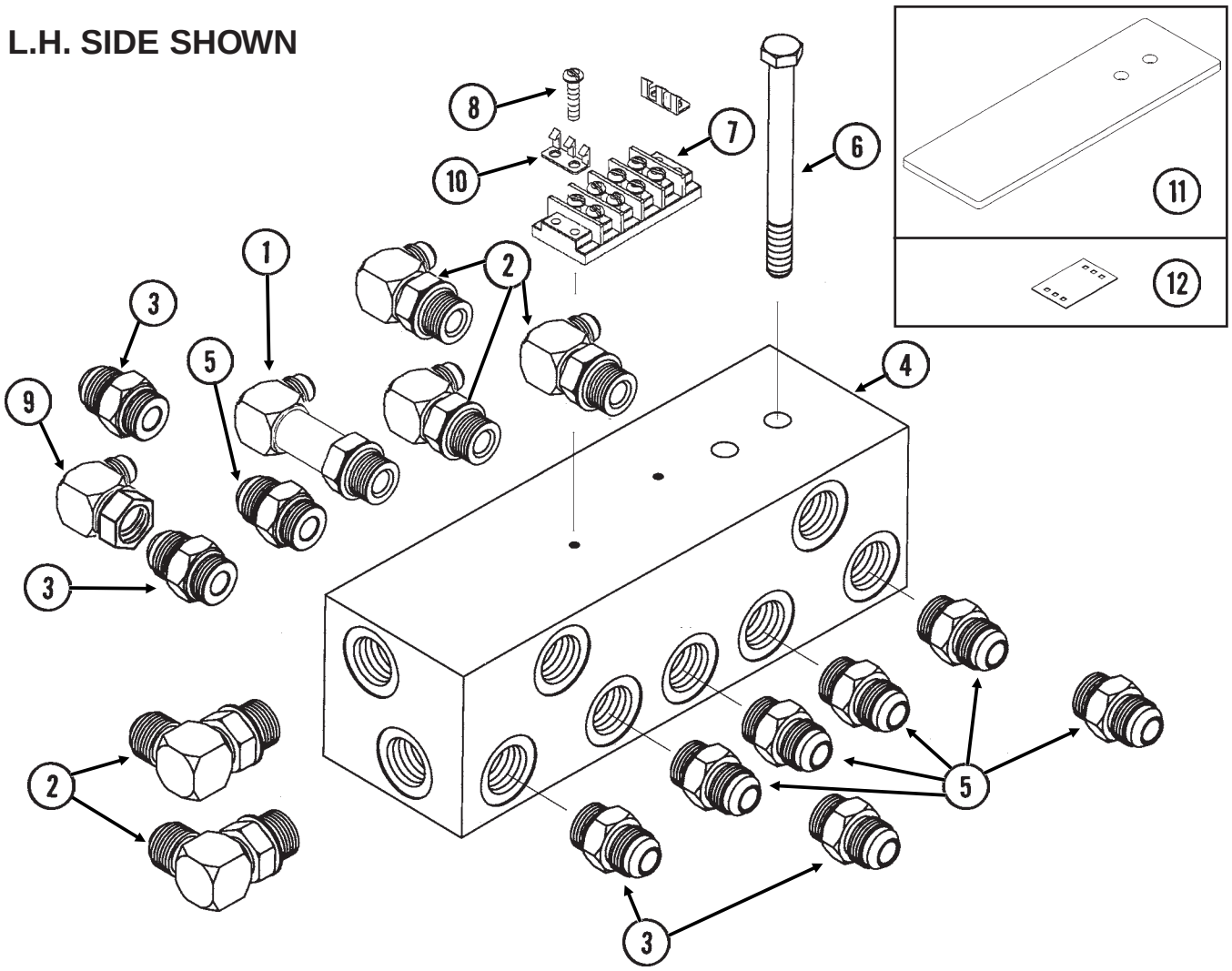


ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G6801-L-08	1	Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	G6801-08	5	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
3.	G6400-10-08	4	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
4.	GD14925	1	Block
5.	G6400-08	6	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
6.	G10063	2	Hex Head Cap Screw, 3/8"-16 x 4"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
7.	GA9510	1	Terminal Strip W/Screws, No. 6, 4 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
8.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
9.	GD18100	2	Clip
10.	GD18099	1	Spacer Plate
11.	GD18101	1	Cover

JUNCTION BLOCK - LOCATED ON EACH WING, 36 ROW 30"

(A11197a)

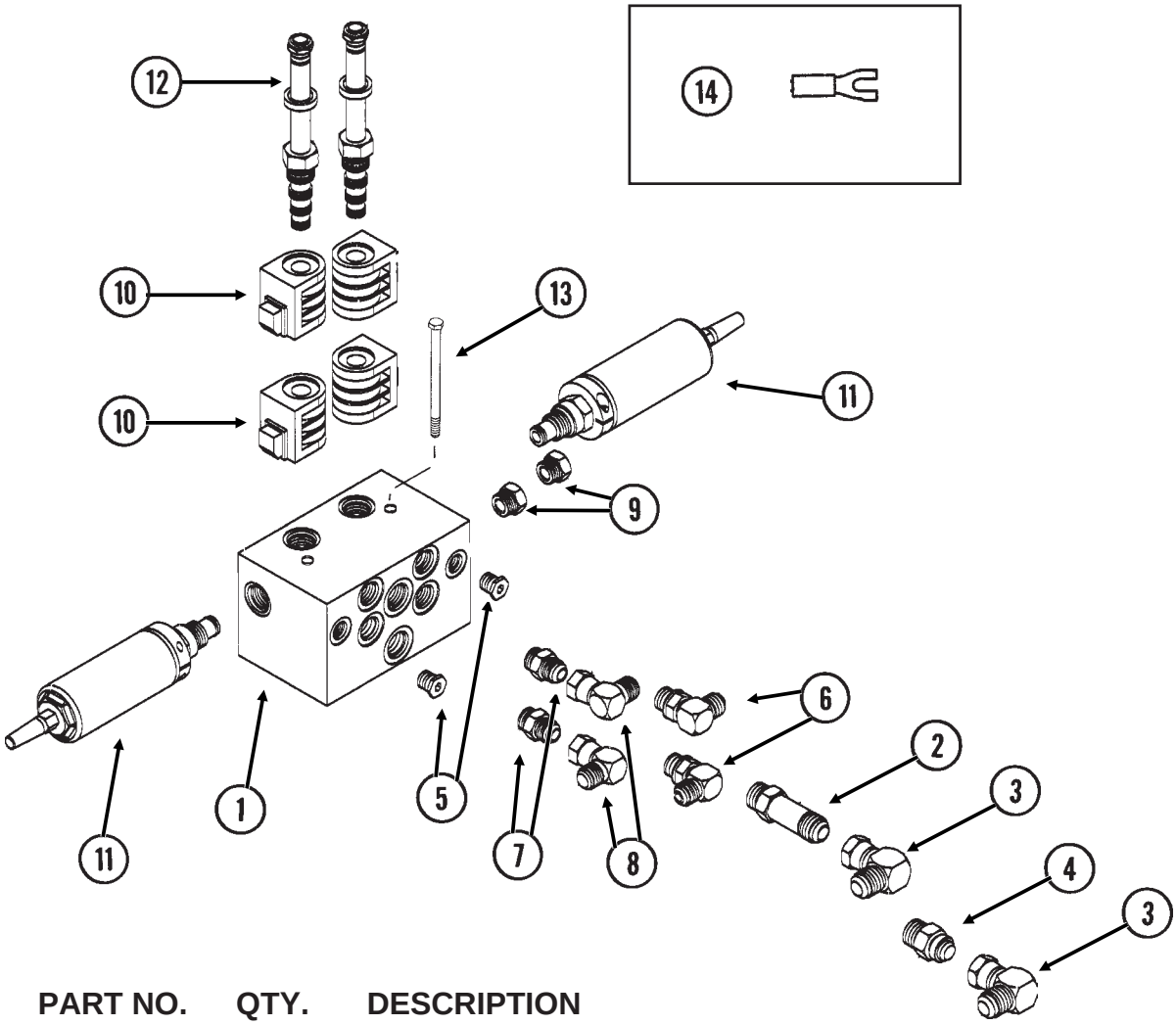
L.H. SIDE SHOWN



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G6801-LL-08	1	X-Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	G6801-08	5	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
3.	G6400-10-08	4	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
4.	GD14925	1	Block
5.	G6400-08	6	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
6.	G10063	2	Hex Head Cap Screw, 3/8"-16 x 4"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
7.	GA9510	1	Terminal Strip W/Screws, No. 6, 4 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
8.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
9.	G6500-10	1	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
10.	GD18100	2	Clip
11.	GD18099	1	Spacer Plate
12.	GD18101	1	Cover

SDS MANIFOLD BLOCK

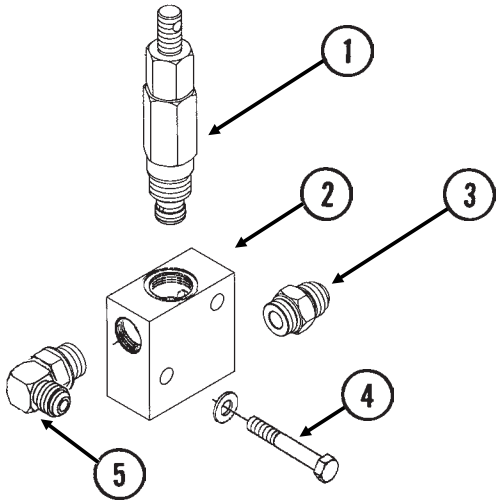
(FWD96/A9481)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16500	1	Block
2.	G6400-L-10	1	Long Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
3.	G6500-10	2	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
4.	GA11360	1	Check Valve
5.	G6408-H06-0	2	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
6.	G6801-08	2	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
8.	G6500-08	2	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
9.	G6408-08	2	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
10.	GR1748	4	Coil
11.	GA10987	2	Flow Control Cartridge
12.	GA11365	2	Spool Valve
13.	G11203	2	Hex Head Cap Screw, 1/4"-20 x 4 1/2"
	G10227	2	Lock Washer, 1/4"
14.	G10996	-	Fork Terminal
A.	GR1756	-	Seal Kit For Coil, Includes: (6) BU Rings, (4) O-Rings

VALVE BLOCK - LOCATED AT EACH ROW MARKER ON OUTER WING, 32 ROW 30" AND 36 ROW 30"

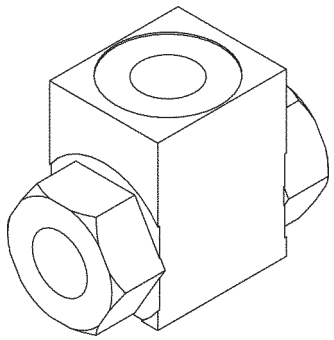
(FWD26a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA3407	-	Pressure Relief Valve, 1000 PSI
	GR1515	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
2.	GD14528	1	Valve Block
3.	G6400-08	1	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
4.	G10069	2	Hex Head Cap Screw, 5/16"-18 x 2 1/4"
	G10221	2	Washer, 5/16" SAE
	G10109	2	Lock Nut, 5/16"-18, Grade 8
5.	G6801-08	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring

FLOW REGULATOR VALVE - LOCATED AT EACH ROW MARKER ON OUTER WING, 32 ROW 30" AND 36 ROW 30" (Prior To Serial Number 755215)

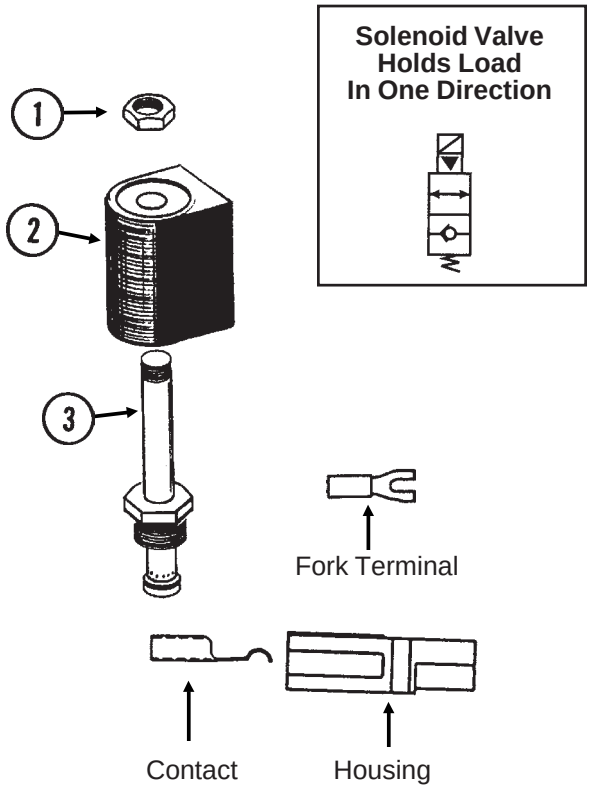
(A10645)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10645	-	Flow Regulator Valve

SOLENOID VALVE (G1K275)

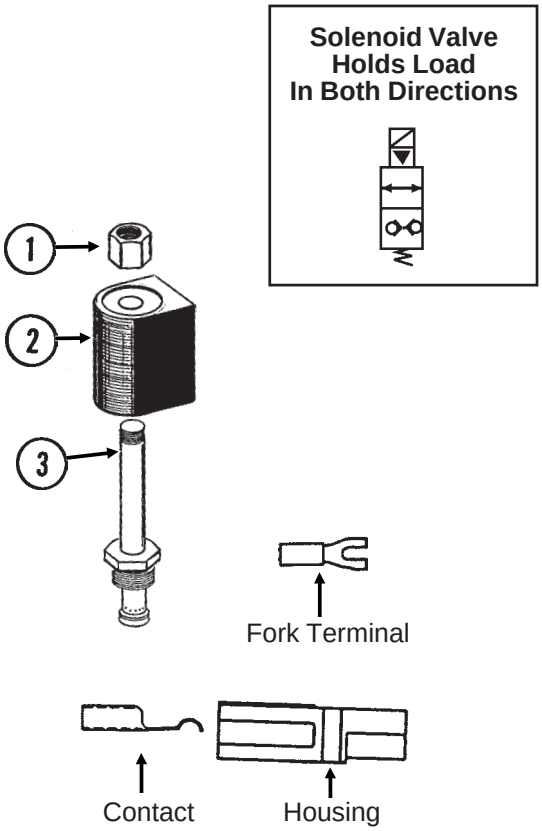
VVB019(TWL27c/TWL18/PLTR75c/A9481)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR0761	1	Special Hex Nut, 1/2"-20
2.	G1K274	1	Coil Kit W/Contacts, Housings And Fork Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
3.	GR0763	1	Cartridge
A.	G1K275	-	Solenoid Valve Kit W/Solenoid Valve, Contacts, Housings And Fork Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
B.	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring

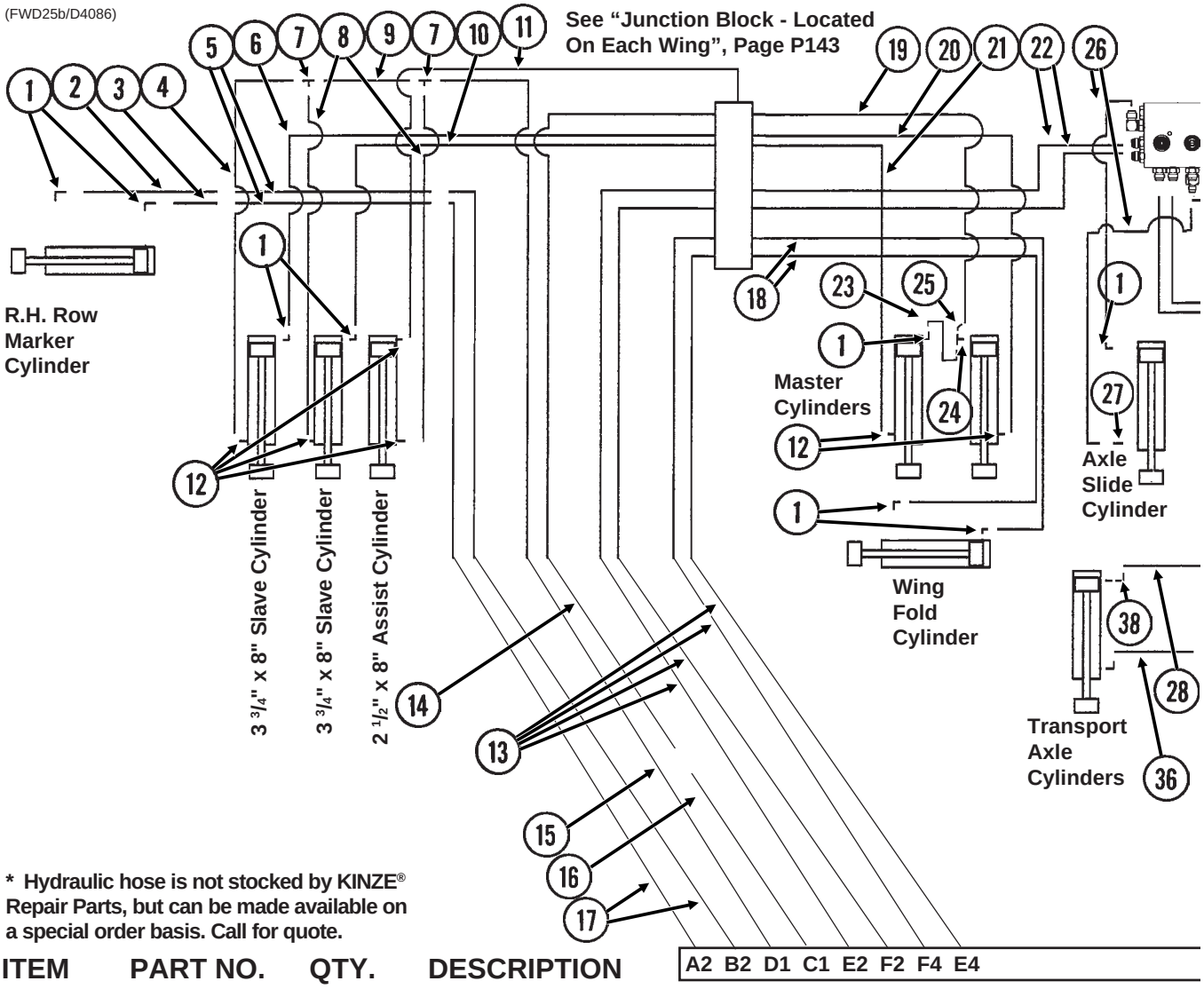
SOLENOID VALVE (G1K276)

VVB019(FF25/TWL18/PLTR75c)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1322	1	Special Hex Nut, $^{1}/_{2}$"-20
2.	G1K274	1	Coil Kit W/Contacts, Housings And Fork Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
3.	GR1321	1	Cartridge
A.	G1K276	-	Solenoid Valve Kit W/Housings, Contacts And Forked Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
B.	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring

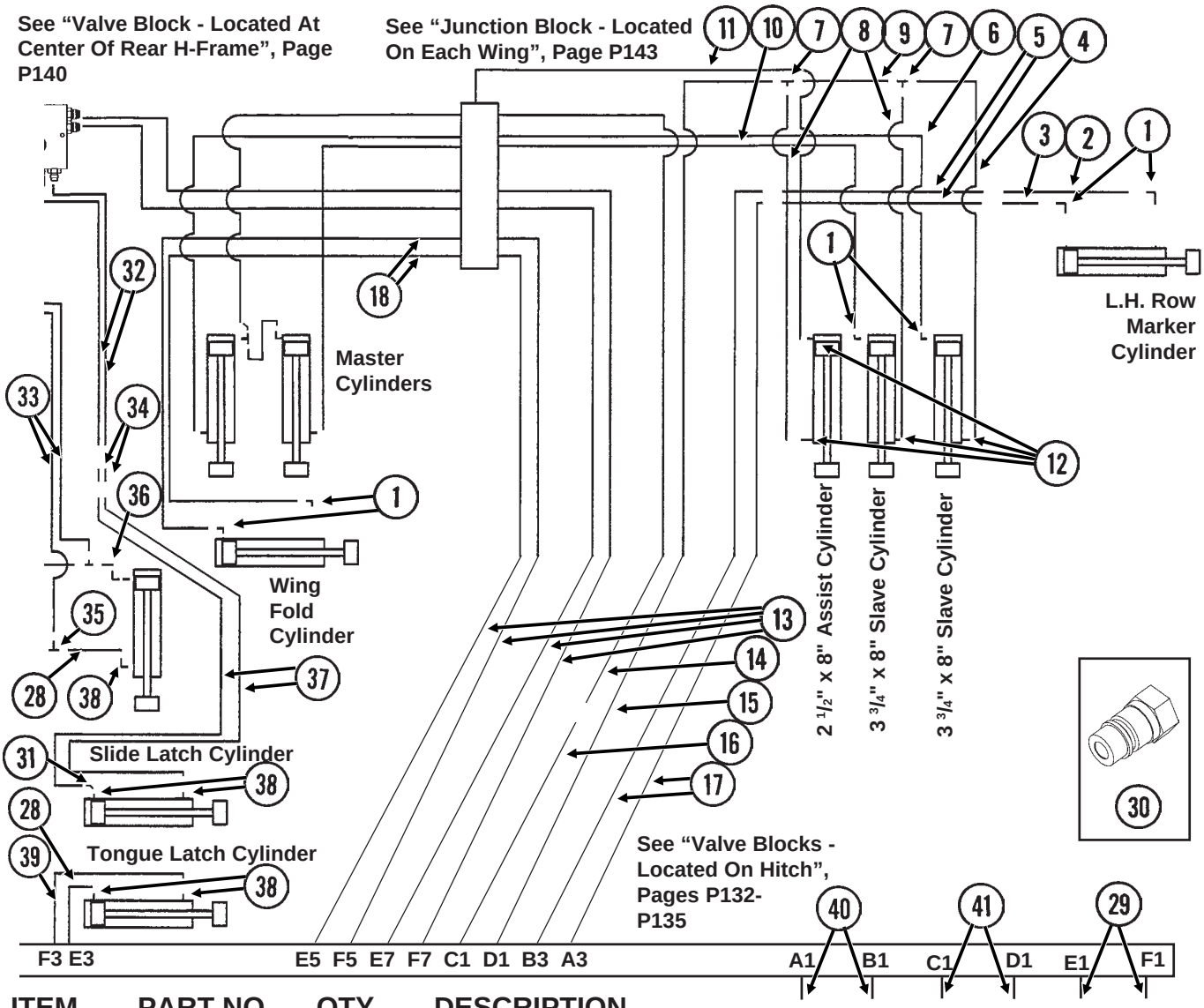
HYDRAULIC HOSES AND FITTINGS, 24 ROW 30"
(Prior To Serial Number 755215)



*** Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.**

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08	15	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	*A3220	2	Hose Assembly, 3/8" x 82"
3.	*A3149	2	Hose Assembly, 3/8" x 46"
4.	*A1020	2	Hose Assembly, 3/8" x 48"
5.	*A3247	4	Hose Assembly, 3/8" x 156" (Male To Female)
6.	*A1090	2	Hose Assembly, 3/8" x 162"
7.	G2603-08	4	Tee, 3/4"-16 Male JIC
8.	*A1079	4	Hose Assembly, 3/8" x 24"
9.	*A1086	2	Hose Assembly, 3/8" x 28"
10.	*A3249	2	Hose Assembly, 3/8" x 132"
11.	*A3136	2	Hose Assembly, 3/8" x 100"
12.	G6400-08	8	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
13.	*A3268	8	Hose Assembly, 3/8" x 324"
14.	*A8278	2	Hose Assembly, 1/2" x 312" (Elbow End)
15.	*A8254	2	Hose Assembly, 1/2" x 400" (Elbow End)
16.	*A8277	2	Hose Assembly, 1/2" x 12" (Elbow Ends)
17.	*A3269	4	Hose Assembly, 3/8" x 340"
18.	*A3206	4	Hose Assembly, 3/8" x 184"
19.	*A8237	2	Hose Assembly, 1/2" x 202"
20.	*A3161	2	Hose Assembly, 3/8" x 210"
21.	*A3139	2	Hose Assembly, 3/8" x 254"
22.	*A3154	4	Hose Assembly, 3/8" x 196"
23.	*A3158	2	Hose Assembly, 3/8" x 46"

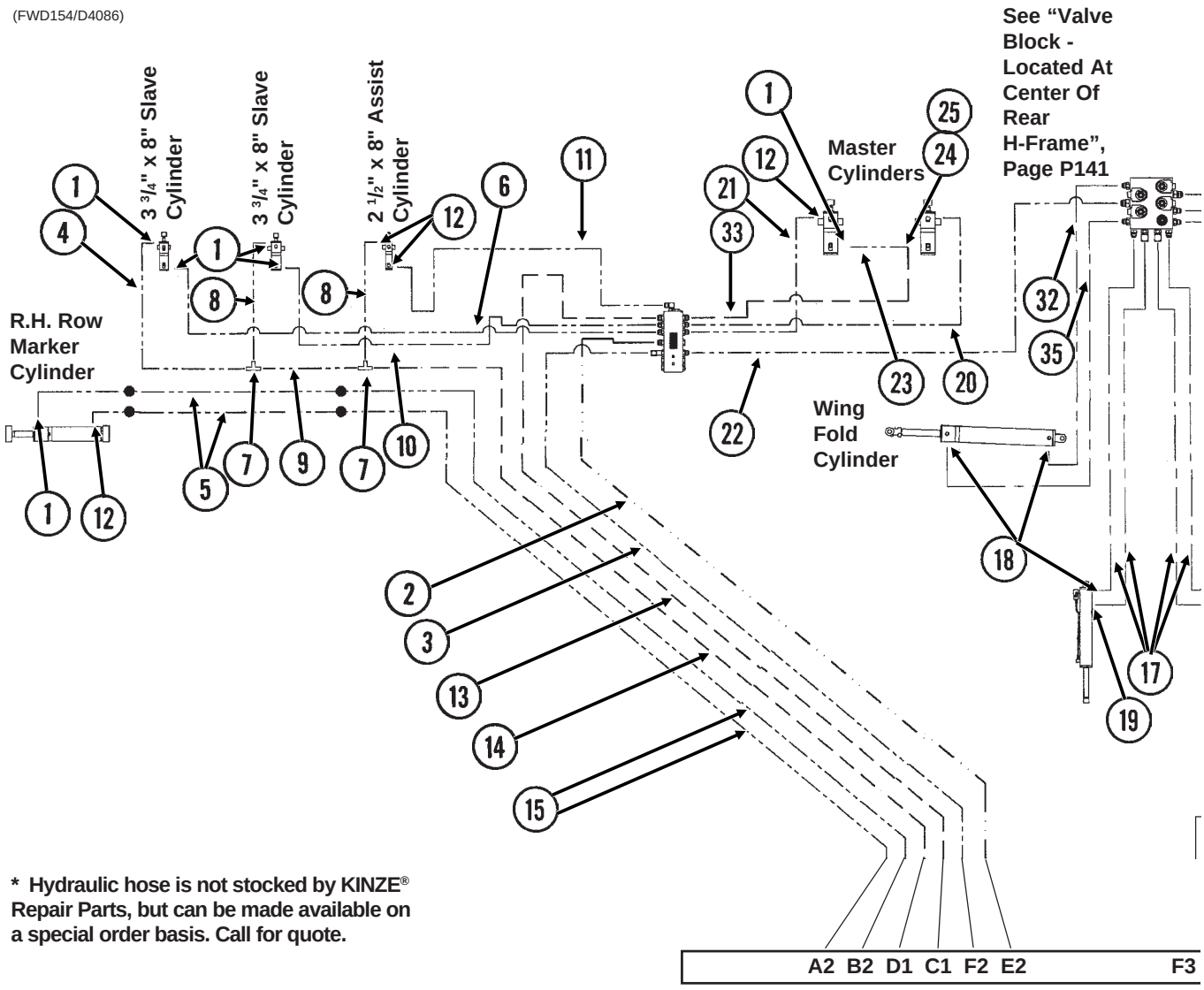
HYDRAULIC HOSES AND FITTINGS, 24 ROW 30" (Prior To Serial Number 755215)



ITEM	PART NO.	QTY.	DESCRIPTION
24.	G6803-08	2	Tee, 3/4"-16 Male NPT To O-Ring
	GR1037	-	O-Ring
25.	G6502-08	2	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female
26.	*A3248	2	Hose Assembly, 3/8" x 48" (Elbow End)
27.		-	See "Axle Slide Cylinder", Page P125
28.	*A1192	3	Hose Assembly, 1/4" x 20"
29.	*A3236	2	Hose Assembly, 3/8" x 72"
30.	GD4086	6	ISO Coupler
31.	G6502-06	1	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
32.	*A1102	2	Hose Assembly, 1/4" x 95"
33.	*A3257	2	Hose Assembly, 3/8" x 86"
34.	G2700-06-06	2	Bulkhead Tube Union, 9/16"-18 Male JIC
	G306-08	2	Lock Nut, 3/4"-16
	G306-06	2	Lock Nut, 9/16"-18
35.	G2704-06	2	Bulkhead Tee, 9/16"-18 JIC
36.	*A7614	2	Hose Assembly, 1/4" x 17"
37.	*A1132	2	Hose Assembly, 1/4" x 44"
38.	G6400-06-08	8	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
39.	*A7613	1	Hose Assembly, 1/4" x 44" (Elbow End)
40.	*A8230	2	Hose Assembly, 1/2" x 84" (Elbow End)
41.	*A8231	2	Hose Assembly, 1/2" x 72"

HYDRAULIC HOSES AND FITTINGS, 24 ROW 30" (Serial Number 755215 And On)

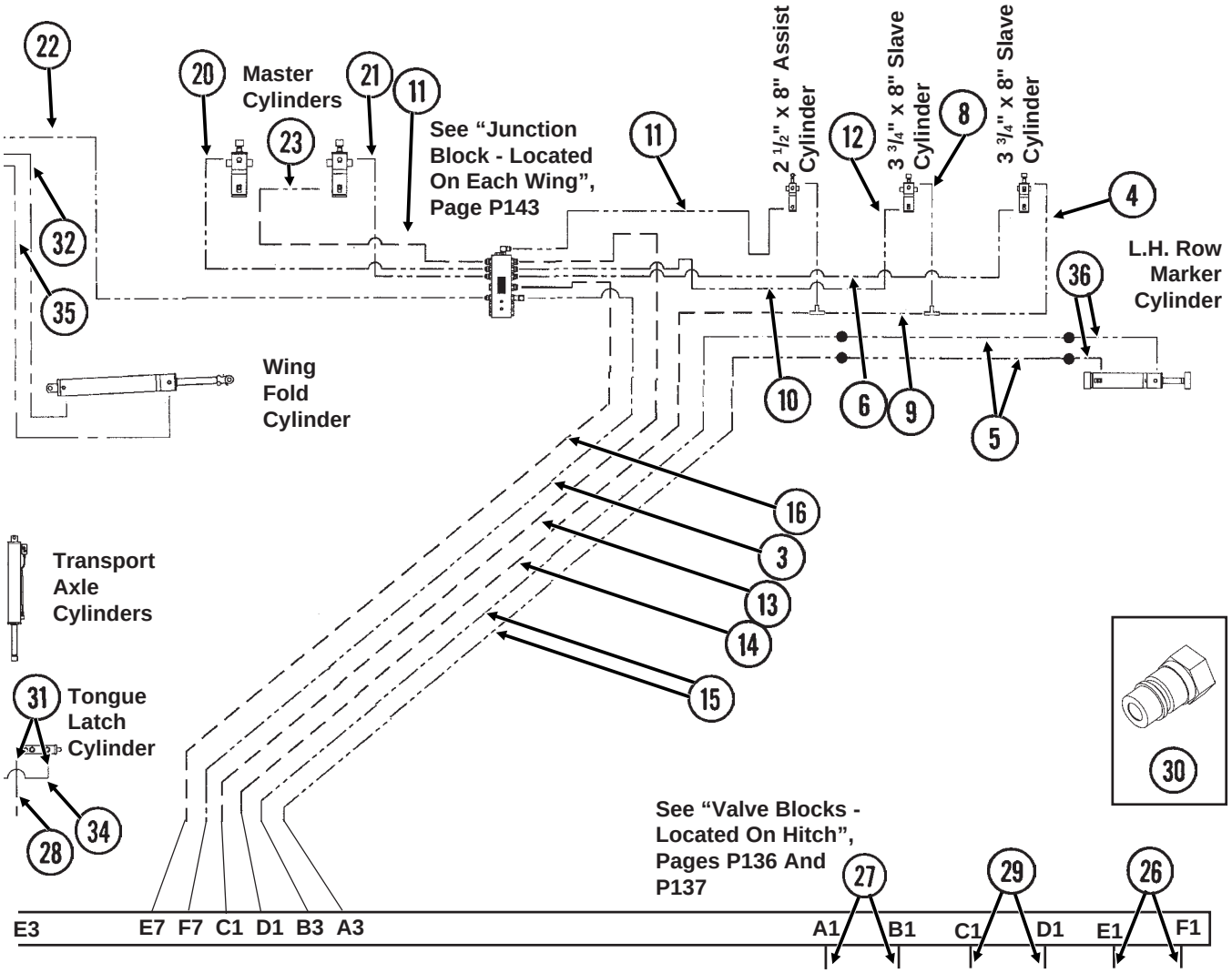
(FWD154/D4086)



*** Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.**

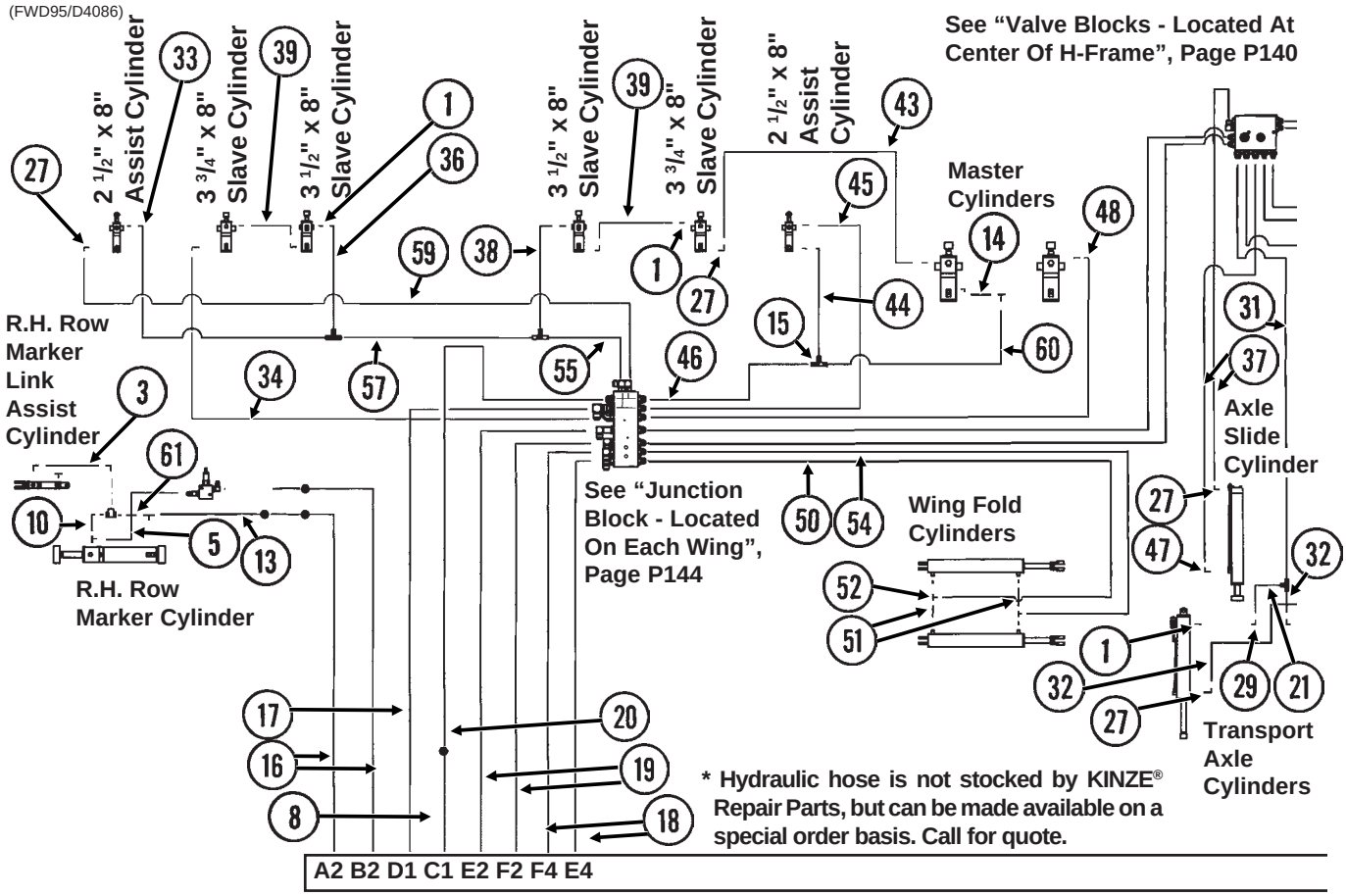
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08	12	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	*A11424	1	Hose Assembly, 5/8" x 342"
3.	*A12046	2	Hose Assembly, 3/8" x 348"
4.	*A1020	2	Hose Assembly, 3/8" x 48"
5.	*A3247	4	Hose Assembly, 3/8" x 156" (Male To Female)
6.	*A1090	2	Hose Assembly, 3/8" x 162"
7.	G2603-08	4	Tee, 3/4"-16 Male JIC
8.	*A1079	4	Hose Assembly, 3/8" x 24"
9.	*A1086	2	Hose Assembly, 3/8" x 28"
10.	*A3249	2	Hose Assembly, 3/8" x 132"
11.	*A3136	2	Hose Assembly, 3/8" x 100"
12.	G6400-08	10	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
13.	*A12702	2	Hose Assembly, 1/2" x 348"
14.	*A12701	2	Hose Assembly, 1/2" x 438"
15.	*A12043	4	Hose Assembly, 3/8" x 356"
16.	*A12700	1	Hose Assembly, 1/2" x 342"
17.	*A1170	4	Hose Assembly, 1/4" x 90"
18.	G6801-06-08	6	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring

HYDRAULIC HOSES AND FITTINGS, 24 ROW 30" (Serial Number 755215 And On)



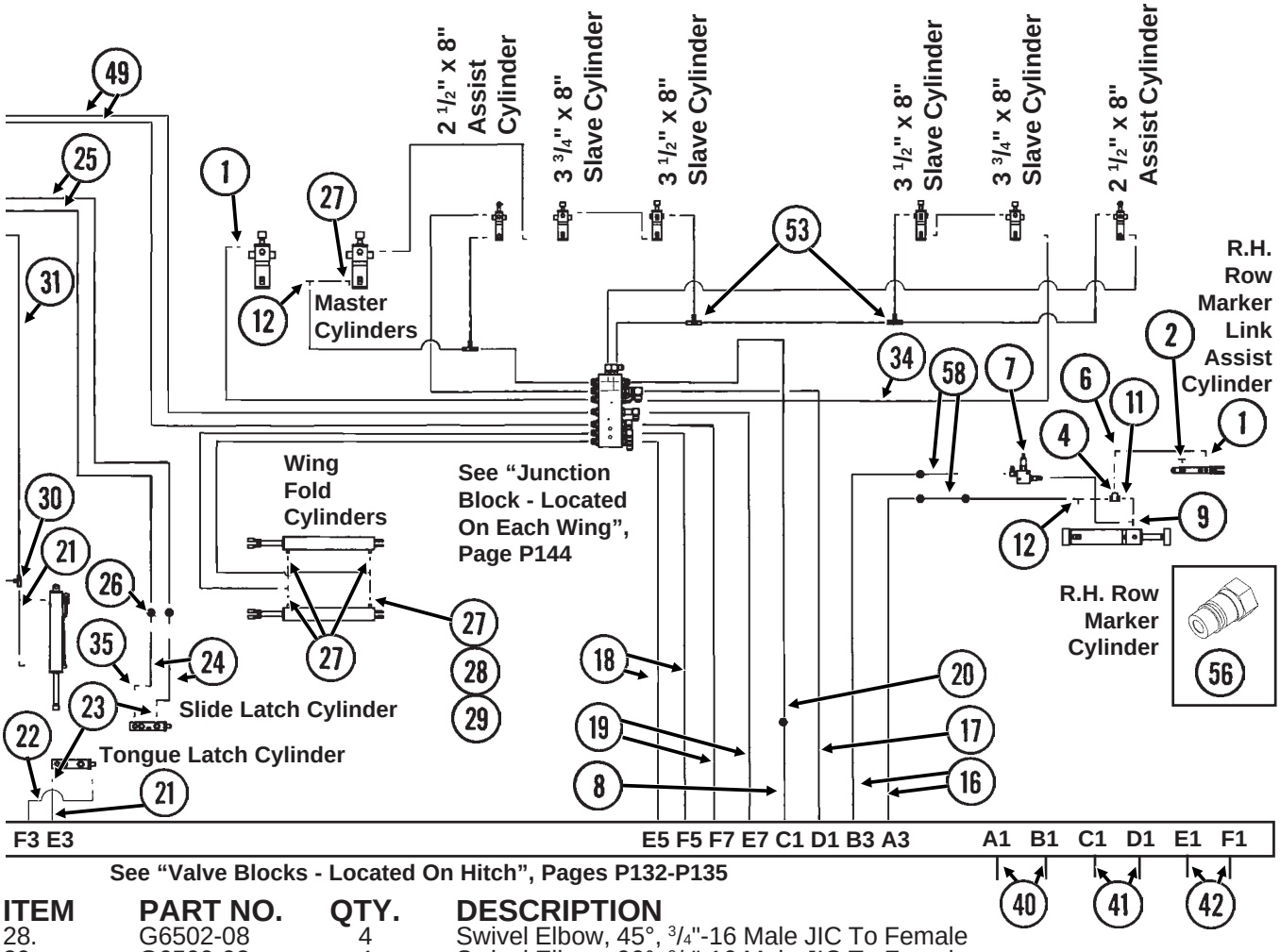
ITEM	PART NO.	QTY.	DESCRIPTION
19.	G6801-LL-06-08	2	X-Long Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
20.	*A3161	2	Hose Assembly, 3/8" x 210"
21.	*A3139	2	Hose Assembly, 3/8" x 254"
22.	*A3154	2	Hose Assembly, 3/8" x 196"
23.	*A3158	2	Hose Assembly, 3/8" x 46"
24.	G6803-08	2	Tee, 3/4"-16 Male NPT To O-Ring
	GR1037	-	O-Ring
25.	G6502-08	2	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female
26.	*A8231	2	Hose Assembly, 1/2" x 72"
27.	*A8230	2	Hose Assembly, 1/2" x 84" (Elbow End)
28.	*A7613	1	Hose Assembly, 1/4" x 44" (Elbow End)
29.	*A3236	2	Hose Assembly, 3/8" x 72"
30.	GD4086	6	ISO Coupler
31.	G6400-06-08	8	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
32.	*A1138	2	Hose Assembly, 1/4" x 29"
33.	*A8237	2	Hose Assembly, 1/2" x 202"
34.	*A1132	1	Hose Assembly, 1/4" x 44"
35.	*A1140	2	Hose Assembly, 1/4" x 52"
36.	*A3220	4	Hose Assembly, 3/8" x 82"

HYDRAULIC HOSES AND FITTINGS, 32 ROW 30" (Prior To Serial Number 755215)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	26	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GA5531	2	Breather Plug W/O-Ring, 3/4"-16
	GR1037	-	O-Ring
3.	*A1020	2	Hose Assembly, 3/8" x 48"
4.		-	See "Flow Regulator Valve", Page P147
5.	*A8242	2	Hose Assembly, 1/2" x 67"
6.	G6801-08-06	2	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To 9/16"-18 O-Ring
	GR1045	-	O-Ring
7.		-	See "Valve Block - Located At Each Row Marker", Page P147
8.	*A8277	2	Hose Assembly, 1/2" x 12"
9.	G6804-08	2	Adjustable Tee, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
10.	*A3258	2	Hose Assembly, 3/8" x 9" (Elbow End)
11.	G6400-08-06	6	Connector W/O-Ring, 3/4"-16 Male JIC To 9/16"-18 O-Ring
	GR1045	-	O-Ring
12.	G6803-08	2	Tee, 3/4"-16 Male NPT To O-Ring
	GR1037	-	O-Ring
13.	*A8243	2	Hose Assembly, 1/2" x 76"
14.	*A3158	2	Hose Assembly, 3/8" x 46"
15.	G2603-10	2	Tee, 7/8"-14 Male JIC
16.	*A8260	4	Hose Assembly, 1/2" x 424"
17.	*A8227	2	Hose Assembly, 1/2" x 408" (Elbow End)
18.	*A3273	4	Hose Assembly, 3/8" x 410"
19.	*A3271	4	Hose Assembly, 3/8" x 402"
20.	*A8290	2	Hose Assembly, 1/2" x 396" (Elbow End)
21.	*A1192	3	Hose Assembly, 1/4" x 20"
22.	*A7612	1	Hose Assembly, 1/4" x 52" (Elbow End)
23.	G6400-06-08	4	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
24.	*A1132	2	Hose Assembly, 1/4" x 44"
25.	*A7615	2	Hose Assembly, 1/4" x 122"
26.	G2700-06-06	2	Bulkhead Tube Union, 9/16"-18 Male JIC
27.	G6801-08	16	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring

HYDRAULIC HOSES AND FITTINGS, 32 ROW 30" (Prior To Serial Number 755215)

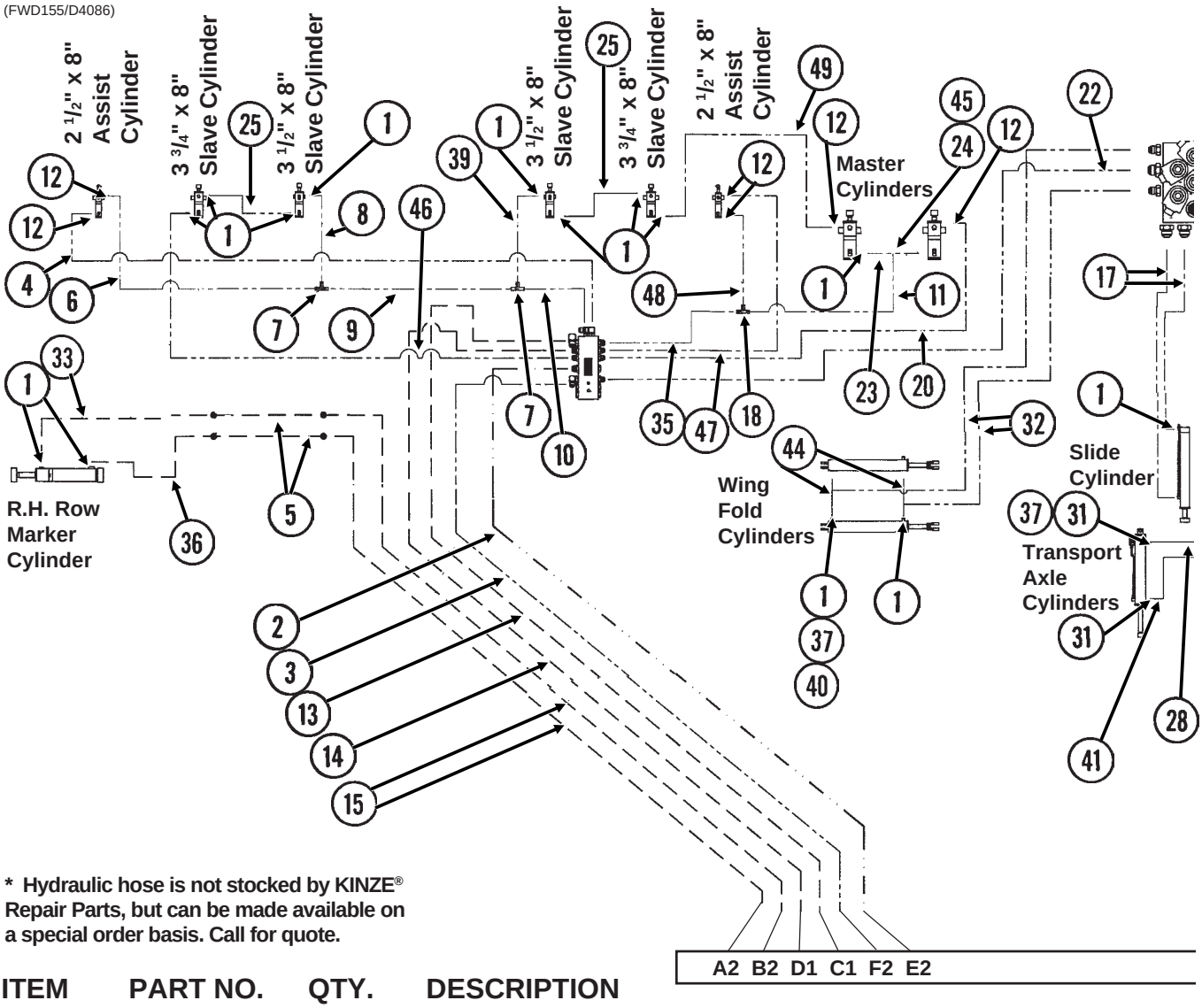


See "Valve Blocks - Located On Hitch", Pages P132-P135

ITEM	PART NO.	QTY.	DESCRIPTION
28.	G6502-08	4	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female
29.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
30.	G2704-06	2	Bulkhead Tee, 9/16"-18 JIC
31.	*A3259	2	Hose Assembly, 3/8" x 122"
32.	*A7614	2	Hose Assembly, 1/4" x 17"
33.	*A1039	2	Hose Assembly, 3/8" x 76"
34.	*A1057	2	Hose Assembly, 3/8" x 216"
35.	G6502-06	1	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
36.	*A1082	2	Hose Assembly, 3/8" x 19"
37.	*A3225	2	Hose Assembly, 3/8" x 56" (Elbow End)
38.	*A1098	2	Hose Assembly, 3/8" x 26"
39.	*A1055	4	Hose Assembly, 3/8" x 66"
40.	*A8230	2	Hose Assembly, 1/2" x 84" (Elbow End)
41.	*A8231	2	Hose Assembly, 1/2" x 72"
42.	*A3236	2	Hose Assembly, 3/8" x 72"
43.	*A3228	2	Hose Assembly, 3/8" x 306"
44.	*A3223	2	Hose Assembly, 3/8" x 24"
45.	*A3224	2	Hose Assembly, 3/8" x 28"
46.	*A8229	2	Hose Assembly, 1/2" x 15"
47.		-	See "Axle Slide Cylinder", Page P126
48.	*A1031	2	Hose Assembly, 3/8" x 234"
49.	*A1033	4	Hose Assembly, 3/8" x 250"
50.	*A3154	2	Hose Assembly, 3/8" x 196"
51.	*A3153	6	Hose Assembly, 3/8" x 22"
52.	G6602-08	2	Swivel Tee, 3/4"-16 JIC
53.	G2603-08	4	Tee, 3/4"-16 Male JIC
54.	*A3163	2	Hose Assembly, 3/8" x 225"
55.	*A1018	4	Hose Assembly, 3/8" x 40"
56.	GD4086	-	ISO Coupler
57.	*A3199	2	Hose Assembly, 3/8" x 132"
58.	*A8225	4	Hose Assembly, 1/2" x 209"
59.	*A1029	2	Hose Assembly, 3/8" x 190"
60.	*A8226	2	Hose Assembly, 1/2" x 208"
61.	*A3260	2	Hose Assembly, 3/8" x 22"

HYDRAULIC HOSES AND FITTINGS, 32 ROW 30" (Serial Number 755215 And On)

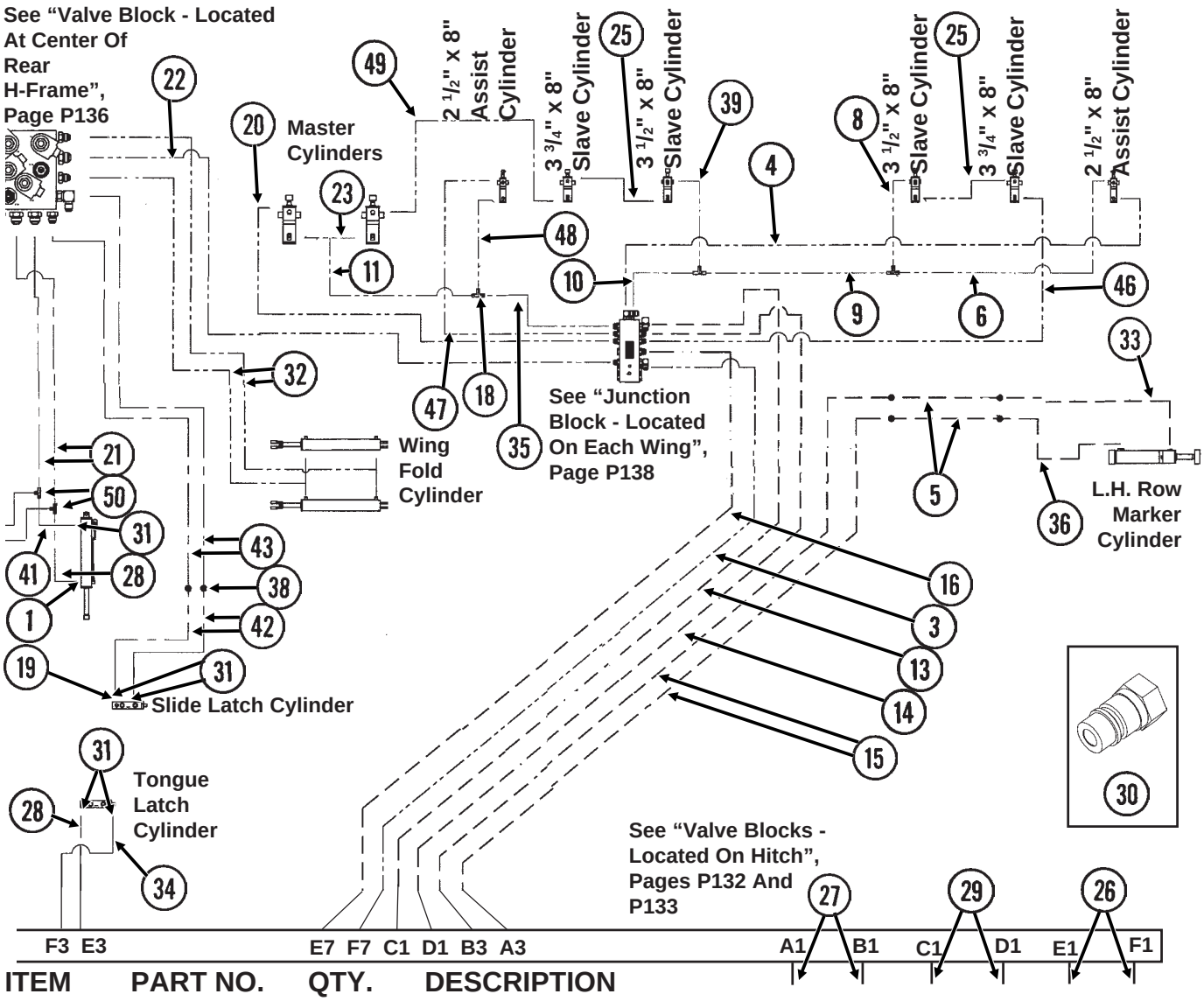
(FWD155/D4086)



*** Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.**

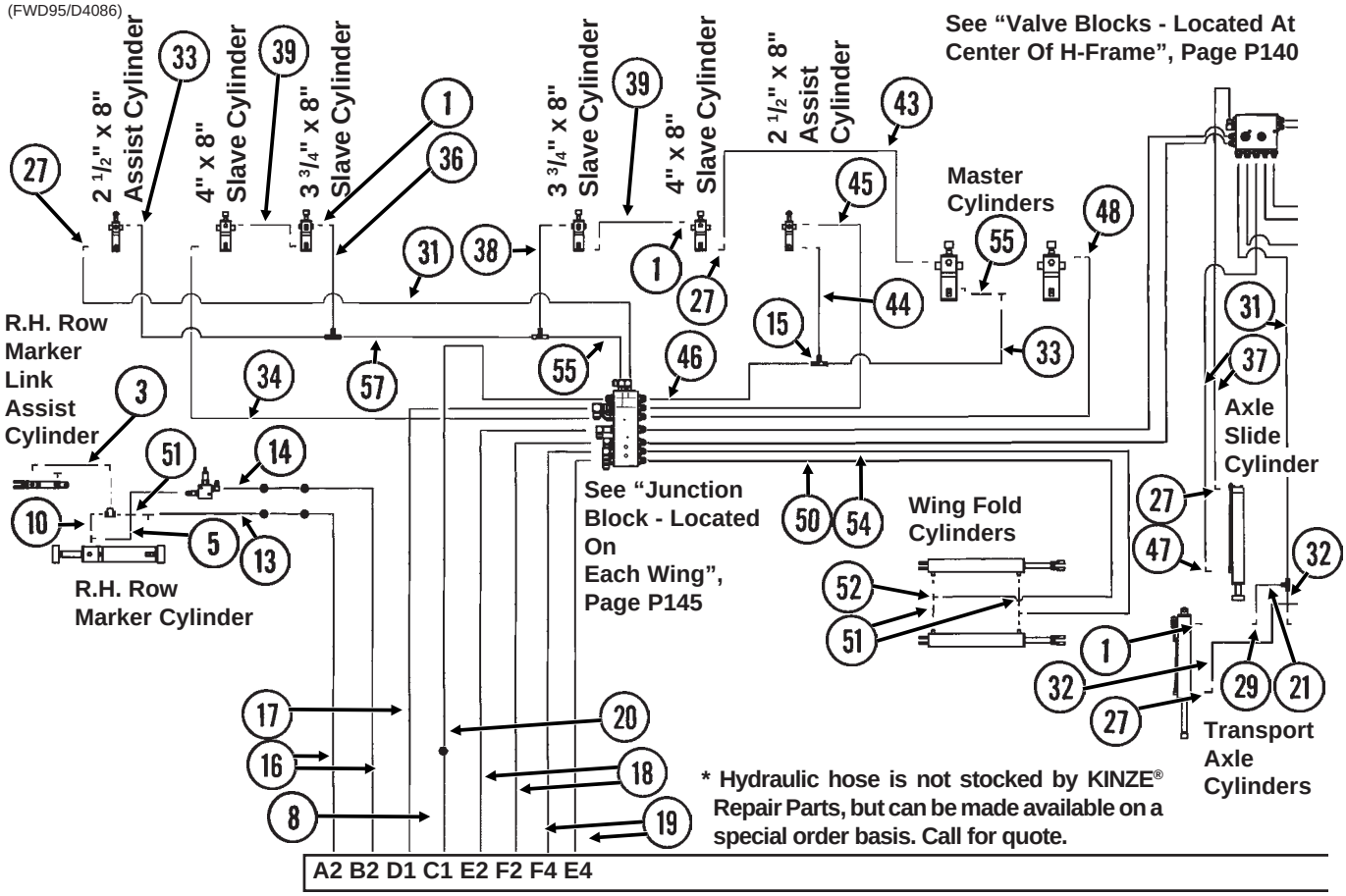
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08	29	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	*A11438	1	Hose Assembly, 5/8" x 410"
3.	*A12064	2	Hose Assembly, 3/8" x 410"
4.	*A12067	2	Hose Assembly, 3/8" x 237"
5.	*A8225	4	Hose Assembly, 1/2" x 209"
6.	*A1039	2	Hose Assembly, 3/8" x 76"
7.	G2603-08	4	Tee, 3/4"-16 Male JIC
8.	*A1082	2	Hose Assembly, 3/8" x 19"
9.	*A3199	2	Hose Assembly, 3/8" x 132"
10.	*A1018	2	Hose Assembly, 3/8" x 40"
11.	*A8226	2	Hose Assembly, 1/2" x 208"
12.	G6400-08	12	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
13.	*A12724	2	Hose Assembly, 1/2" x 410"
14.	*A12725	2	Hose Assembly, 1/2" x 410"
15.	*A8260	4	Hose Assembly, 1/2" x 424"
16.	*A12723	1	Hose Assembly, 1/2" x 410"
17.	*A3225	2	Hose Assembly, 3/8" x 56"
18.	G2603-10	2	Tee, 7/8"-14 Male JIC
19.	6502-06	1	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
20.	*A1031	2	Hose Assembly, 3/8" x 234"
21.	*A3259	2	Hose Assembly, 3/8" x 122"
22.	*A1033	2	Hose Assembly, 3/8" x 250"
23.	*A3158	2	Hose Assembly, 3/8" x 46"
24.	G6803-08	2	Tee, 3/4"-16 Male NPT To O-Ring
	GR1037	-	O-Ring
25.	*A1055	4	Hose Assembly, 3/8" x 66"

HYDRAULIC HOSES AND FITTINGS, 32 ROW 30" (Serial Number 755215 And On)



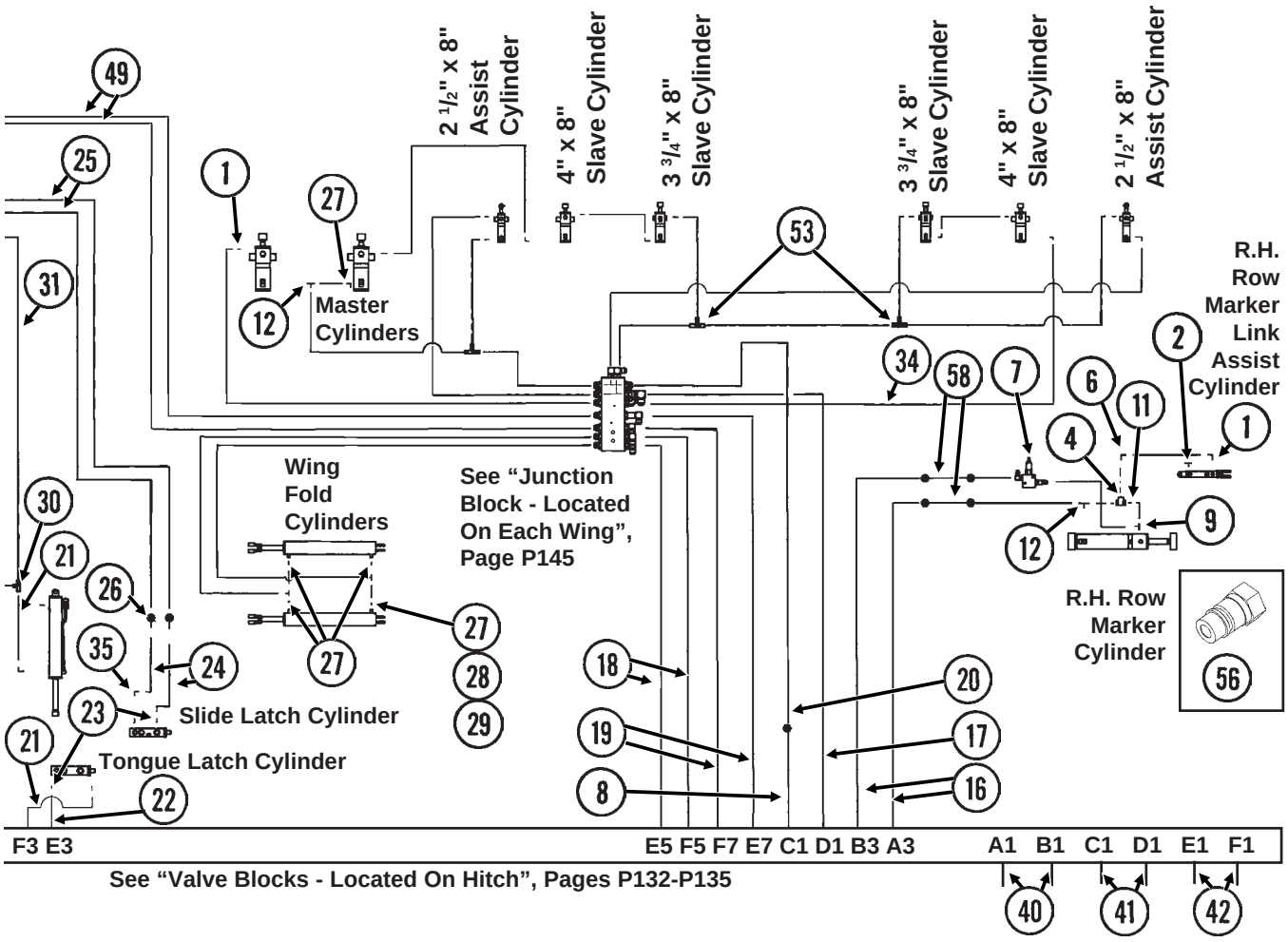
ITEM	PART NO.	QTY.	DESCRIPTION
26.	*A3236	2	Hose Assembly, 3/8" x 72"
27.	*A8230	2	Hose Assembly, 1/2" x 84"
28.	*A1192	3	Hose Assembly, 1/4" x 20"
29.	*A8231	2	Hose Assembly, 1/2" x 72"
30.	GD4086	6	ISO Coupler
31.	G6400-06-08	7	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
32.	*A12053	4	Hose Assembly, 3/8" x 46"
33.	*A12729	2	Hose Assembly, 1/2" x 82"
34.	*A7613	1	Hose Assembly, 1/4" x 44"
35.	*A8229	2	Hose Assembly, 1/2" x 15"
36.	*A12730	2	Hose Assembly, 1/2" x 52"
37.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
38.	G2700-06-06	2	Bulkhead Tube Union, 9/16"-18 Male JIC
	G306-06	4	Lock Nut, 9/16"-18
39.	*A1098	2	Hose Assembly, 3/8" x 26"
40.	G6602-08	4	Swivel Tee, 3/4"-16 JIC
41.	*A7614	2	Hose Assembly, 1/4" x 17"
42.	*A1132	2	Hose Assembly, 1/4" x 44"
43.	*A7615	2	Hose Assembly, 1/4" x 122"
44.	*A3153	4	Hose Assembly, 3/8" x 22"
45.	G6502-08	2	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female
46.	*A1057	2	Hose Assembly, 3/8" x 216"
47.	*A1076	2	Hose Assembly, 3/8" x 30"
48.	*A3223	2	Hose Assembly, 3/8" x 24"
49.	*A3228	2	Hose Assembly, 3/8" x 306"
50.	G2704-06	2	Bulkhead Tee, 9/16"-18 JIC
51.	*A12041	1	Hose Assembly, 3/8" x 244"

HYDRAULIC HOSES AND FITTINGS, 36 ROW 30" (Prior To Serial Number 755215)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	26	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GA5531	2	Breather Plug W/O-Ring, 3/4"-16
	GR1037	-	O-Ring
3.	*A1020	2	Hose Assembly, 3/8" x 48"
4.		-	See "Flow Regulator Valve", Page P147
5.	*A8242	2	Hose Assembly, 1/2" x 67"
6.	G6801-08-06	2	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To 9/16"-18 O-Ring
	GR1045	-	O-Ring
7.		-	See "Valve Block - Located At Each Row Marker", Page P147
8.	*A8277	2	Hose Assembly, 1/2" x 12"
9.	G6804-08	2	Adjustable Tee, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
10.	*A3258	2	Hose Assembly, 3/8" x 9" (Elbow End)
11.	G6400-08-06	6	Connector W/O-Ring, 3/4"-16 Male JIC To 9/16"-18 O-Ring
	GR1045	-	O-Ring
12.	G6803-08	2	Tee, 3/4"-16 Male NPT To O-Ring
	GR1037	-	O-Ring
13.	*A8243	2	Hose Assembly, 1/2" x 76"
14.	*A8244	2	Hose Assembly, 1/2" x 36"
15.	G2603-10	2	Tee, 7/8"-14 Male JIC
16.	*A8258	4	Hose Assembly, 1/2" x 454"
17.	*A8256	2	Hose Assembly, 1/2" x 436" (Elbow Ends)
18.	*A3270	4	Hose Assembly, 3/8" x 431"
19.	*A3272	4	Hose Assembly, 3/8" x 426"
20.	*A8291	2	Hose Assembly, 1/2" x 424" (Elbow End)
21.	*A1192	3	Hose Assembly, 1/4" x 20"
22.	*A7612	1	Hose Assembly, 1/4" x 52" (Elbow End)
23.	G6400-06-08	4	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
24.	*A1132	2	Hose Assembly, 1/4" x 44"
25.	*A7615	2	Hose Assembly, 1/4" x 122"
26.	G2700-06-06	2	Bulkhead Tube Union, 9/16"-18 Male JIC
27.	G6801-08	16	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring

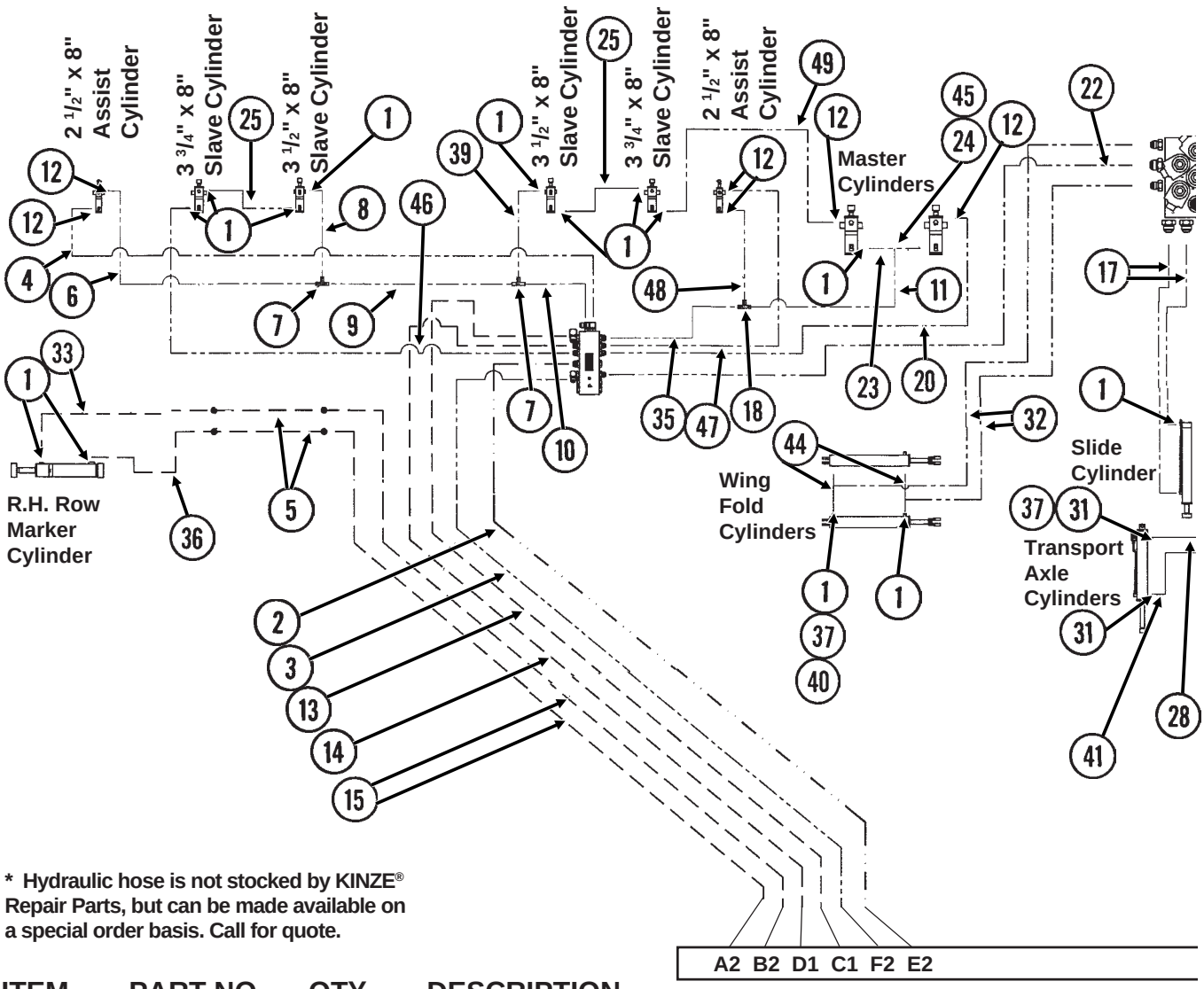
HYDRAULIC HOSES AND FITTINGS, 36 ROW 30" (Prior To Serial Number 755215)



ITEM	PART NO.	QTY.	DESCRIPTION
28.	G6502-08	4	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female
29.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
30.	G2704-06	2	Bulkhead Tee, 9/16"-18 JIC
31.	*A3259	4	Hose Assembly, 3/8" x 122"
32.	*A7614	2	Hose Assembly, 1/4" x 17"
33.	*A1039	4	Hose Assembly, 3/8" x 76"
34.	*A8226	2	Hose Assembly, 1/2" x 208"
35.	G6502-06	1	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
36.	*A1082	2	Hose Assembly, 3/8" x 19"
37.	*A3225	2	Hose Assembly, 3/8" x 56" (Elbow End)
38.	*A1098	2	Hose Assembly, 3/8" x 26"
39.	*A1055	4	Hose Assembly, 3/8" x 66"
40.	*A8230	2	Hose Assembly, 1/2" x 84" (Elbow End)
41.	*A8231	2	Hose Assembly, 1/2" x 72"
42.	*A3236	2	Hose Assembly, 3/8" x 72"
43.	*A3228	2	Hose Assembly, 3/8" x 306"
44.	*A3223	2	Hose Assembly, 3/8" x 24"
45.	*A3242	2	Hose Assembly, 3/8" x 43"
46.	*A8202	2	Hose Assembly, 1/2" x 17"
47.		-	See "Axle Slide Cylinder", Page P126
48.	*A1089	2	Hose Assembly, 3/8" x 240"
49.	*A3139	4	Hose Assembly, 3/8" x 254"
50.	*A3111	2	Hose Assembly, 3/8" x 200"
51.	*A3153	6	Hose Assembly, 3/8" x 22"
52.	G6602-08	2	Swivel Tee, 3/4"-16 JIC
53.	G2603-08	4	Tee, 3/4"-16 Male JIC
54.	*A3265	2	Hose Assembly, 3/8" x 164"
55.	*A1022	4	Hose Assembly, 3/8" x 60"
56.	GD4086	-	ISO Coupler
57.	*A1057	2	Hose Assembly, 3/8" x 216"
58.	*A8234	4	Hose Assembly, 1/2" x 254"

HYDRAULIC HOSES AND FITTINGS, 36 ROW 30" (Serial Number 755215 And On)

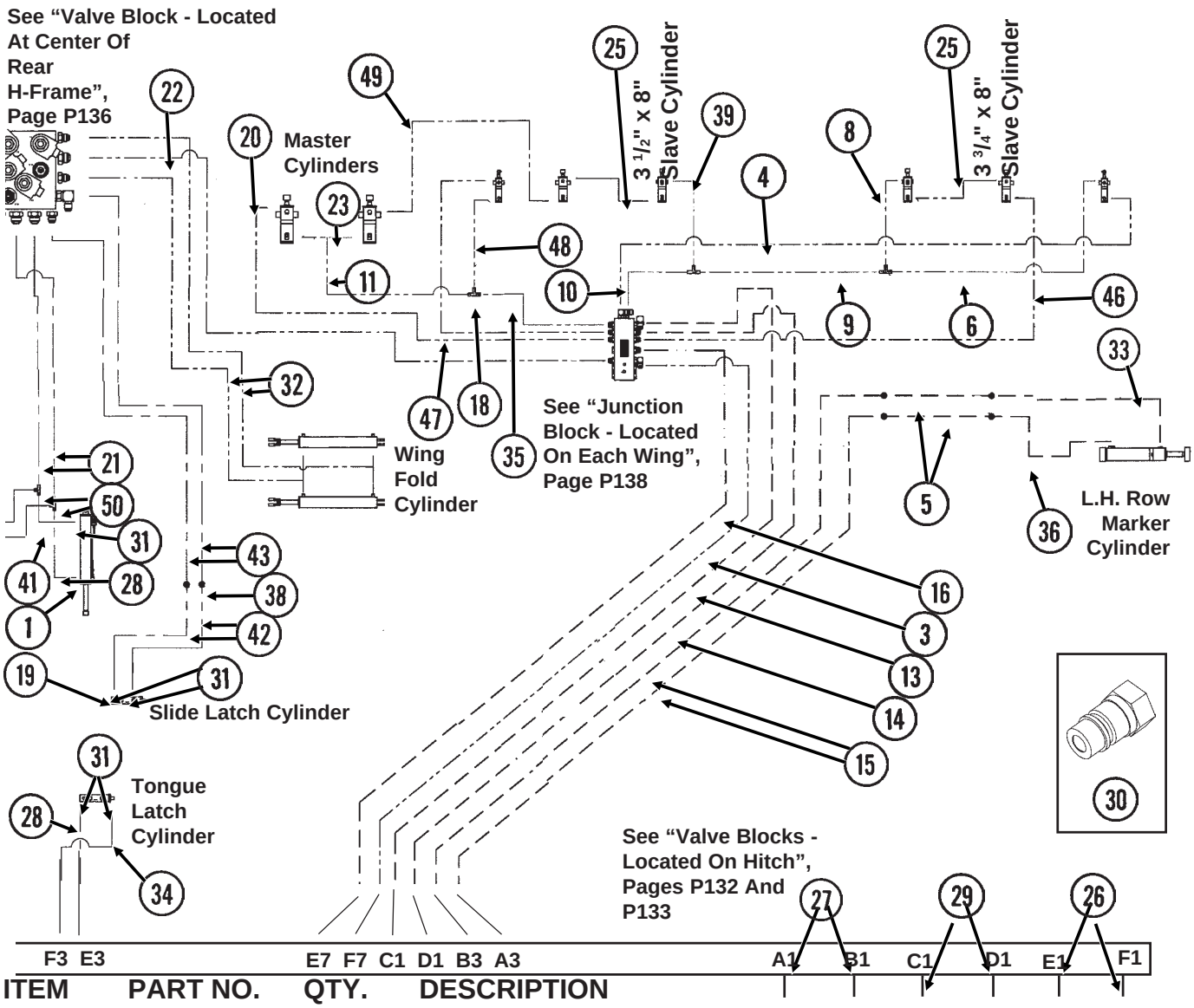
(FWD155/D4086)



*** Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.**

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08	29	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	*A11438	1	Hose Assembly, 5/8" x 410"
3.	*A12064	2	Hose Assembly, 3/8" x 410"
4.	*A12067	2	Hose Assembly, 3/8" x 237"
5.	*A8225	4	Hose Assembly, 1/2" x 209"
6.	*A1039	2	Hose Assembly, 3/8" x 76"
7.	G2603-08	4	Tee, 3/4"-16 Male JIC
8.	*A1082	2	Hose Assembly, 3/8" x 19"
9.	*A3199	2	Hose Assembly, 3/8" x 132"
10.	*A1018	2	Hose Assembly, 3/8" x 40"
11.	*A8226	2	Hose Assembly, 1/2" x 208"
12.	G6400-08	12	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
13.	*A12724	2	Hose Assembly, 1/2" x 410"
14.	*A12725	2	Hose Assembly, 1/2" x 410"
15.	*A8260	4	Hose Assembly, 1/2" x 424"
16.	*A12723	1	Hose Assembly, 1/2" x 410"
17.	*A3225	2	Hose Assembly, 3/8" x 56"
18.	G2603-10	2	Tee, 7/8"-14 Male JIC
19.	6502-06	1	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
20.	*A1031	2	Hose Assembly, 3/8" x 234"
21.	*A3259	2	Hose Assembly, 3/8" x 122"
22.	*A1033	2	Hose Assembly, 3/8" x 250"
23.	*A3158	2	Hose Assembly, 3/8" x 46"
24.	G6803-08	2	Tee, 3/4"-16 Male NPT To O-Ring
	GR1037	-	O-Ring
25.	*A1055	4	Hose Assembly, 3/8" x 66"

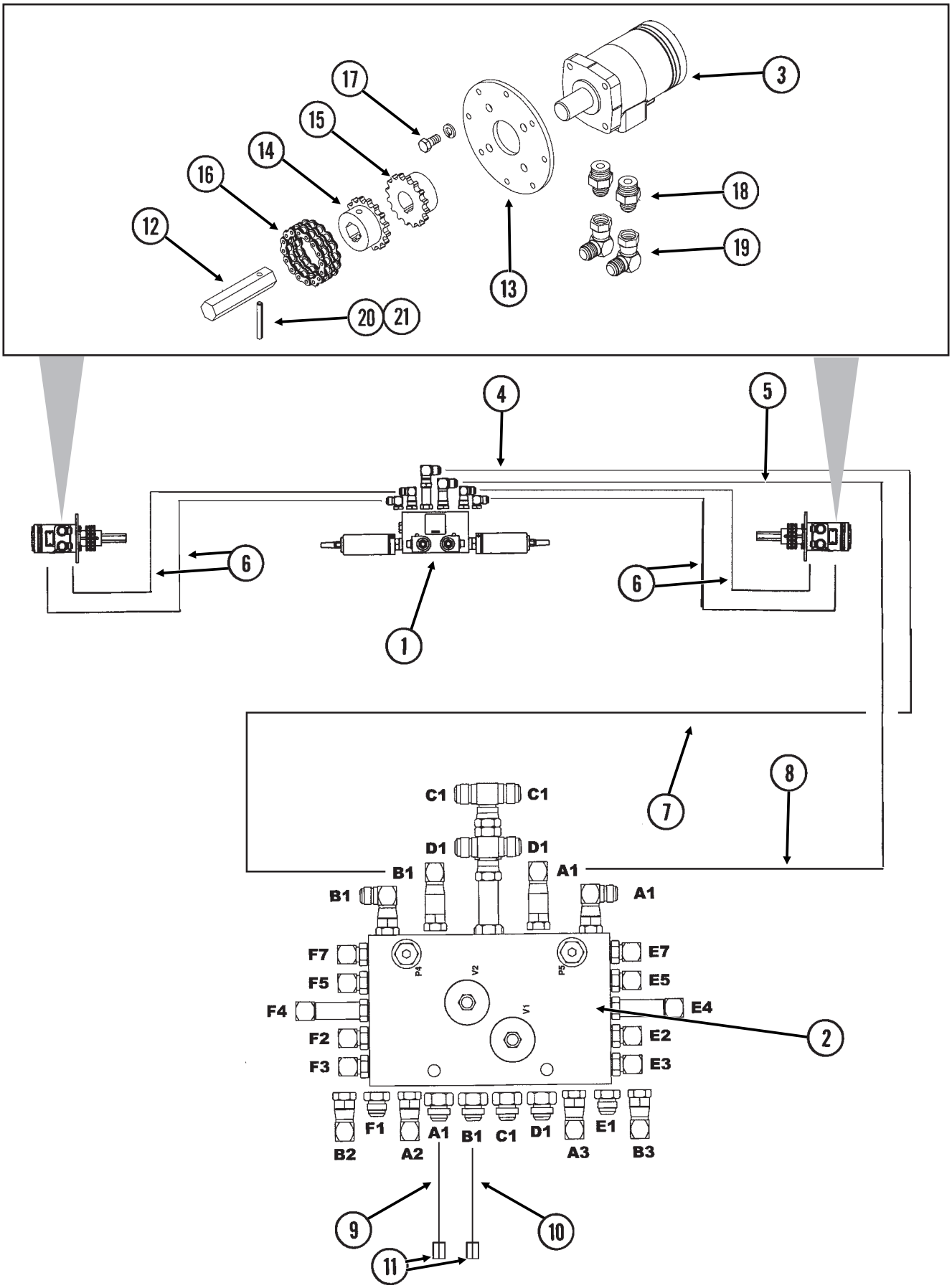
HYDRAULIC HOSES AND FITTINGS, 36 ROW 30" (Serial Number 755215 And On)



ITEM	PART NO.	QTY.	DESCRIPTION
26.	*A3236	2	Hose Assembly, 3/8" x 72"
27.	*A8230	2	Hose Assembly, 1/2" x 84"
28.	*A1192	3	Hose Assembly, 1/4" x 20"
29.	*A8231	2	Hose Assembly, 1/2" x 72"
30.	GD4086	6	ISO Coupler
31.	G6400-06-08	7	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
32.	*A12053	4	Hose Assembly, 3/8" x 46"
33.	*A12729	2	Hose Assembly, 1/2" x 82"
34.	*A7613	1	Hose Assembly, 1/4" x 44"
35.	*A8229	2	Hose Assembly, 1/2" x 15"
36.	*A12730	2	Hose Assembly, 1/2" x 52"
37.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
38.	G2700-06-06	2	Bulkhead Tube Union, 9/16"-18 Male JIC
	G306-06	4	Lock Nut, 9/16"-18
39.	*A1098	2	Hose Assembly, 3/8" x 26"
40.	G6602-08	4	Swivel Tee, 3/4"-16 JIC
41.	*A7614	2	Hose Assembly, 1/4" x 17"
42.	*A1132	2	Hose Assembly, 1/4" x 44"
43.	*A7615	2	Hose Assembly, 1/4" x 122"
44.	*A3153	4	Hose Assembly, 3/8" x 22"
45.	G6502-08	2	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female
46.	*A1057	2	Hose Assembly, 3/8" x 216"
47.	*A1076	2	Hose Assembly, 3/8" x 30"
48.	*A3223	2	Hose Assembly, 3/8" x 24"
49.	*A3228	2	Hose Assembly, 3/8" x 306"
50.	G2704-06	2	Bulkhead Tee, 9/16"-18 JIC
51.	*A12041	1	Hose Assembly, 3/8" x 244"

SDS HYDRAULIC SYSTEM (Prior To Serial Number 755215)

(FWD105/FWD101)

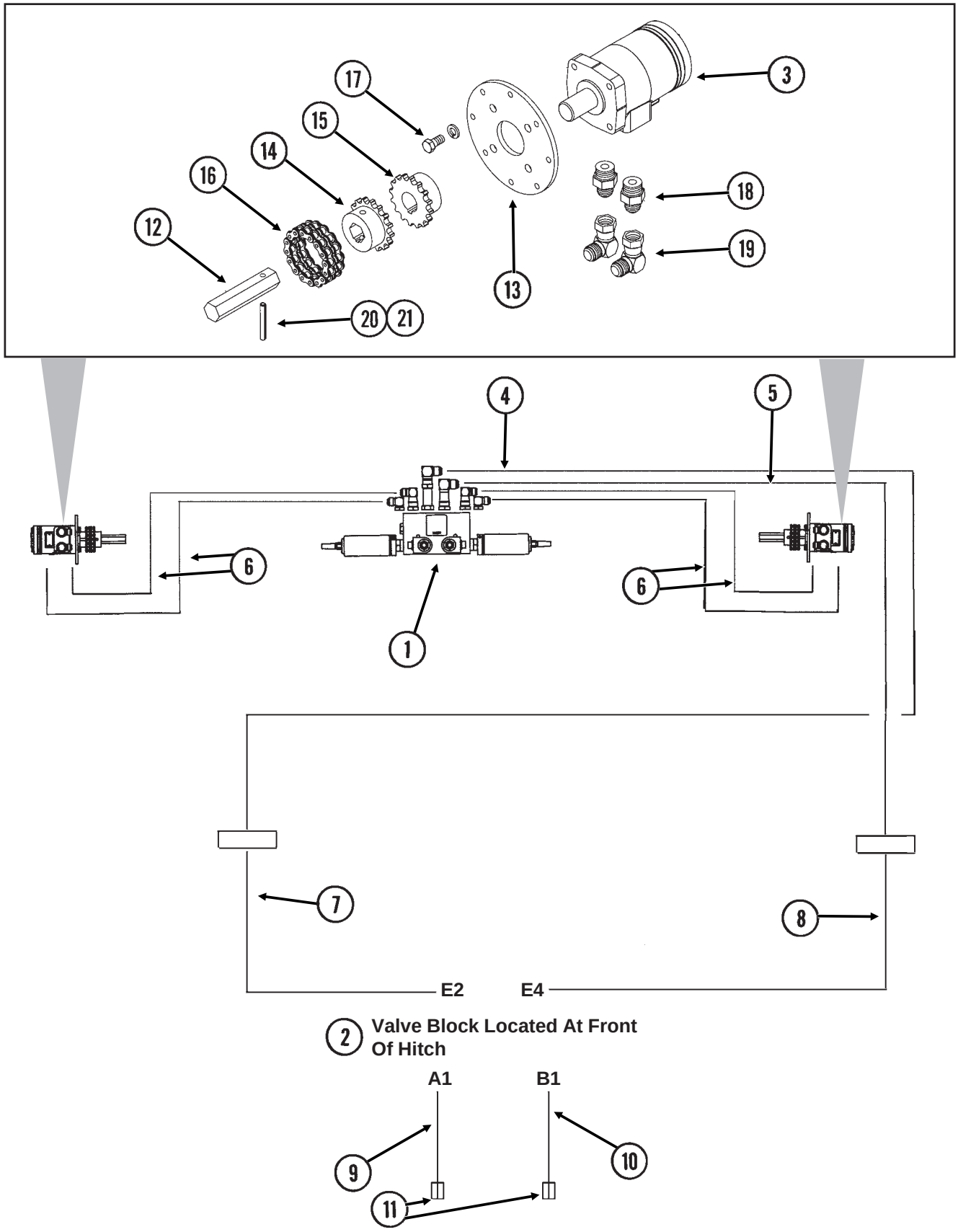


SDS HYDRAULIC SYSTEM (Prior To Serial Number 755215)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “SDS Manifold Block”, Page P146
2.		-	See “Valve Blocks - Located On Hitch (SDS)”, Pages P134 And P135
3.	GA11774	2	Hydraulic Motor
4.	*A11401	1	Hose Assembly, 5/8" x 144", 24 Row 30"
	*A11415	-	Hose Assembly, 5/8" x 234", 36 Row 30"
5.	*A8276	1	Hose Assembly, 1/2" x 144", 24 Row 30"
	*A8289	-	Hose Assembly, 1/2" x 234", 36 Row 30"
6.	*A3159	4	Hose Assembly, 3/8" x 97"
7.	*A11402	1	Hose Assembly, 5/8" x 420", 24 Row 30"
	*A11416	-	Hose Assembly, 5/8" x 480", 36 Row 30"
8.	*A8275	1	Hose Assembly, 1/2" x 420", 24 Row 30"
	*A8288	-	Hose Assembly, 1/2" x 480", 36 Row 30"
9.	*A8231	1	Hose Assembly, 1/2" x 72"
10.	*A11400	1	Hose Assembly, 5/8" x 72"
11.	GD4086	2	ISO Coupler
12.	GD16538	1	Shaft
13.	GD16537	1	Plate
14.	GD16489	1	Coupler, 7/8" Hex
15.	GD16490	1	Coupler, 1" I.D.
16.	G3317-16	1	Chain, Double No. 40, 16 Pitches
	GR1790	-	Connector Link, Double No. 40
	GR1790	-	Connector Link, Double No. 40
17.	G10002	4	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10229	4	Lock Washer, 3/8"
18.	G6400-08-10	2	Connector W/O-Ring, 3/4"-16 Male JIC To 7/8"-14 O-Ring
	GR1466	-	O-Ring
19.	G6500-08	2	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
20.	G10606	1	Spring Pin, 1/4" x 2"
21.	GD13524-01	1	Lock Wire, 10", Stainless Steel

SDS HYDRAULIC SYSTEM (Serial Number 755215 And On)

(FWD105/FWD101a)

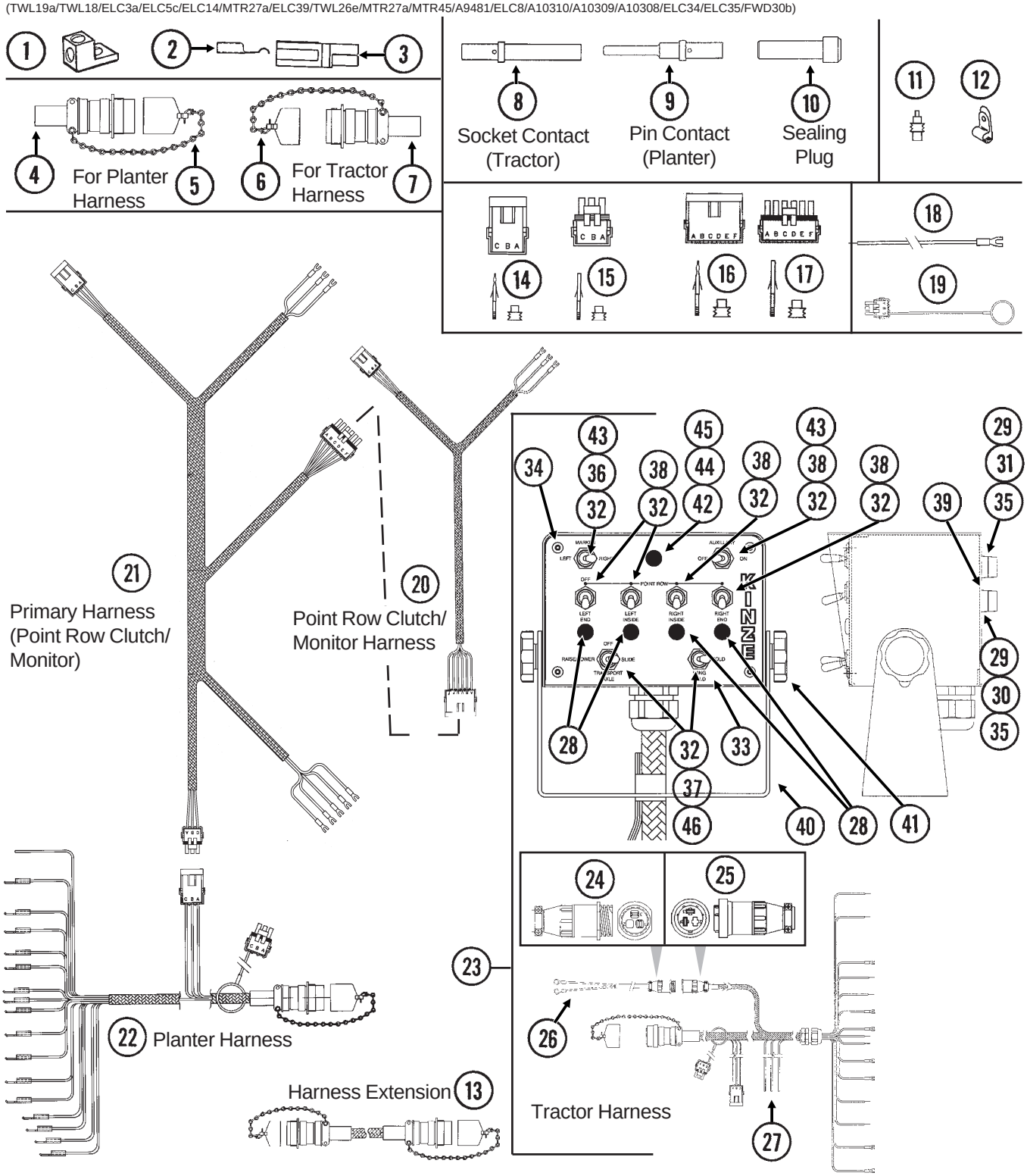


SDS HYDRAULIC SYSTEM (Serial Number 755215 And On)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “SDS Manifold Block”, Page P146
2.		-	See “Valve Blocks - Located On Hitch (SDS)”, Pages P136-P139
3.	GA11774	2	Hydraulic Motor
4.	*A11425	1	Hose Assembly, 5/8" x 194"
5.	*A12703	1	Hose Assembly, 1/2" x 194"
6.	*A3159	4	Hose Assembly, 3/8" x 97"
7.	*A11424	1	Hose Assembly, 5/8" x 342", 24 Row 30"
	*A11434	-	Hose Assembly, 5/8" x 431", 36 Row 30"
8.	*A12700	1	Hose Assembly, 1/2" x 342", 24 Row 30"
	*A12710	-	Hose Assembly, 1/2" x 431", 36 Row 30"
9.	*A8231	1	Hose Assembly, 1/2" x 72"
10.	*A11400	1	Hose Assembly, 5/8" x 72"
11.	GD4086	2	ISO Coupler
12.	GD16538	1	Shaft
13.	GD16537	1	Plate
14.	GD16489	1	Coupler, 7/8" Hex
15.	GD16490	1	Coupler, 1" I.D.
16.	G3317-16	1	Chain, Double No. 40, 16 Pitches
	GR1790	-	Connector Link, Double No. 40
17.	G10002	4	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10229	4	Lock Washer, 3/8"
18.	G6400-08-10	2	Connector W/O-Ring, 3/4"-16 Male JIC To 7/8"-14 O-Ring
	GR1466	-	O-Ring
19.	G6500-08	2	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
20.	G10606	1	Spring Pin, 1/4" x 2"
21.	GD13524-01	1	Lock Wire, 10", Stainless Steel

ELECTRICAL COMPONENTS (Planter Control Console) (Prior To Serial Number 755215)

(TWL19a/TWL18/ELC3a/ELC5c/ELC14/MTR27a/ELC39/TWL26e/MTR27a/MTR45/A9481/ELC8/A10310/A10309/A10308/ELC34/ELC35/FWD30b)



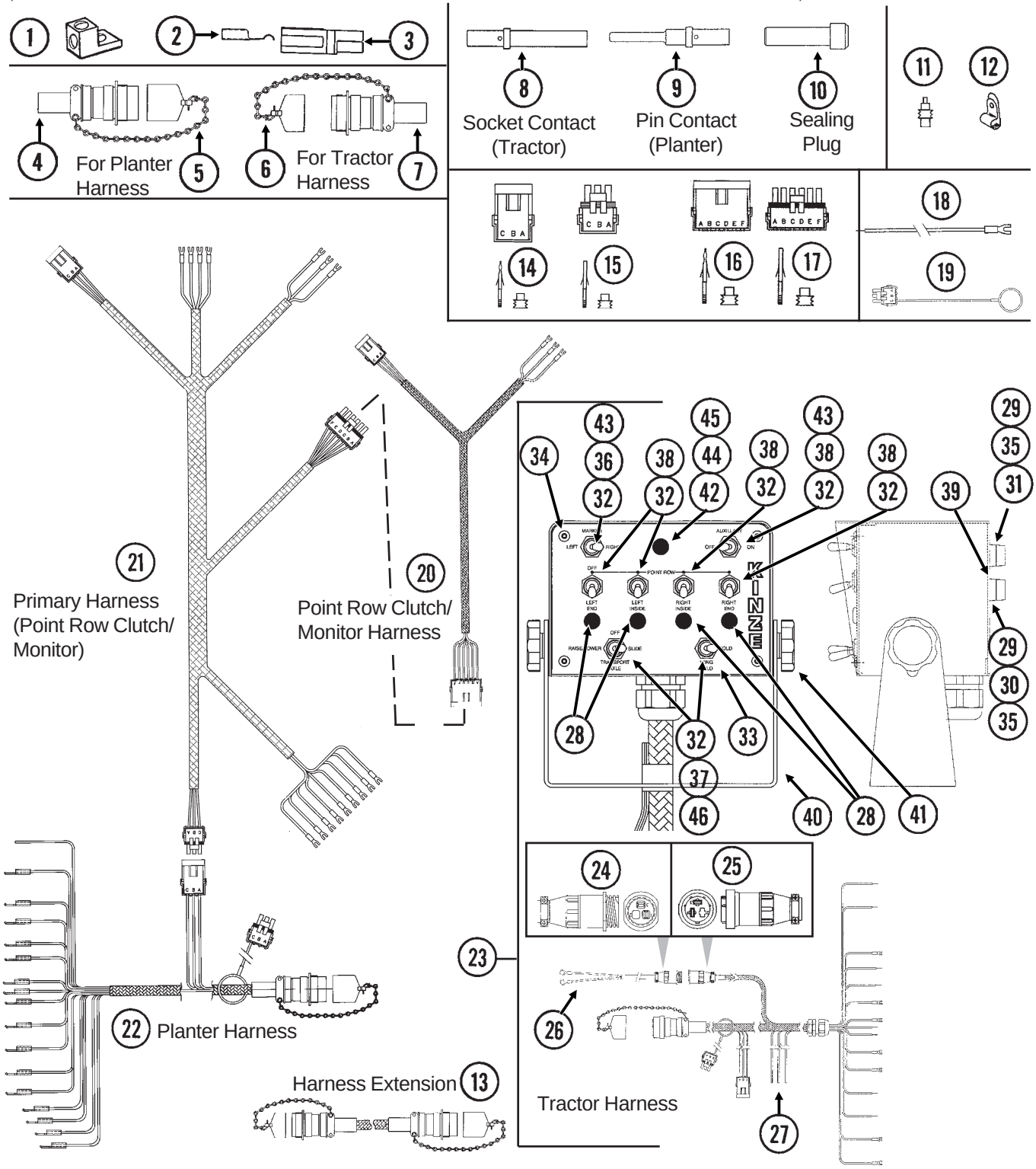
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA3584	-	Ground Clamp
2.	GD9530	-	Contact
3.	GD9529	-	Housing, Black
	GD12726	-	Housing, Red
4.	GA6109	1	Connector W/Cable Clamp, 23 Pin Capacity
5.	GA7862	-	Dust Cap W/Chain
6.	GA7863	-	Dust Cap W/Chain

ELECTRICAL COMPONENTS (Planter Control Console) (Prior To Serial Number 755215)

ITEM	PART NO.	QTY.	DESCRIPTION
7.	GA6108	1	Connector W/Cable Clamp, 23 Socket Capacity
8.	GD8740	-	Socket Contact, No. 14
9.	GD8741	-	Pin Contact, No. 14
10.	GD8739	-	Sealing Plug, No. 12
11.	GD11089	-	Sealing Plug
12.	GD6291	-	Insulated Clamp, 3/8"
13.	GA7399	-	Harness Extension W/Dust Caps, 180"
14.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
15.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
16.	G1K396	-	6-Pin Female Connector Kit (Black), Includes: (3) 6-Pin Female Housings, (18) Pin Contacts, (18) Seals
17.	G1K395	-	6-Pin Male Connector Kit (Black), Includes: (3) 6-Pin Male Housings, (18) Socket Contacts, (18) Seals
18.	GA9481	-	Jumper Wire W/Fork Terminal, 13"
	G10996	-	Fork Terminal
19.	GA8047	-	Dust Plug (Black)
20.	GA10310	1	Wiring Harness, 254", 24 Row 30"
	GA10321	1	Wiring Harness, 327", 32 Row 30"
	GA10329	1	Wiring Harness, 359", 36 Row 30"
21.	GA10309	1	Wiring Harness, 392", 24 Row 30"
	GA10320	1	Wiring Harness, 465", 32 Row 30"
	GA10328	1	Wiring Harness, 497", 36 Row 30"
22.	GA10308	1	Wiring Harness W/Dust Cap, 96"
23.	G7848X	-	Backlit Control Console Assembly W/Mounting Brackets, Short Harness W/Dust Cap And Power Cable
24.	G1K267	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (3) Male Terminal Pins
25.	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (1) Lock Ring, (3) Female Terminal Pins
26.	GA7856	1	Power Lead Adapter
27.	GA10307	1	Wiring Harness W/Dust Cap And Power Cable
28.	GA10194	4	Indicator Light, Red
29.	GA2612	5	Fuse Holder W/Spade, 1 33/50"
30.	GD2829	1	Fuse, 15 Amp, Type AGC
31.	GD10243	4	Fuse, MDL 10 Amp Delay Action
32.	GR1363	8	Hex Face Nut, 15/32"-32
	GR1364	8	Internal Tooth Lock Washer, 15/32"
33.	GA10686	1	Cover Plate
34.	GR1292	4	Pan Head Screw, No. 8-32 x 1/2"
35.	GD3860	5	O-Ring (If Applicable)
36.	GA2528	1	Switch, 3 Position Toggle, On-Off-On
37.	GA6978	2	Switch, 3 Position Toggle, Momentary On-Off-Momentary On
38.	GA6977	5	Switch, 2 Position Toggle, On-Off
39.	GA8731	1	Switch, Push Button W/Transformer
40.	GD9896	1	Mounting Bracket
41.	GA6975	2	Knob
	G10211	4	Washer, 1/4" SAE
	GR1290	2	Cage Nut, 1/4"-20
42.	GA10206	1	Indicator Light, Green
43.	GA10682	2	Jumper Wire, 3", Gray
44.	GA10683	1	Jumper Wire, 5", White
45.	GA10684	1	Jumper Wire, 3", Red
46.	GA10685	4	Jumper Wire, 5", White

ELECTRICAL COMPONENTS (Planter Control Console) (Serial Number 755215 And On)

(TWL19a/TWL18/ELC3a/ELC5c/ELC14/MTR27a/ELC39/TWL26e/MTR27a/MTR45/A9481/ELC8/A10310/A12652/A10308/ELC34/ELC35/FWD30b)



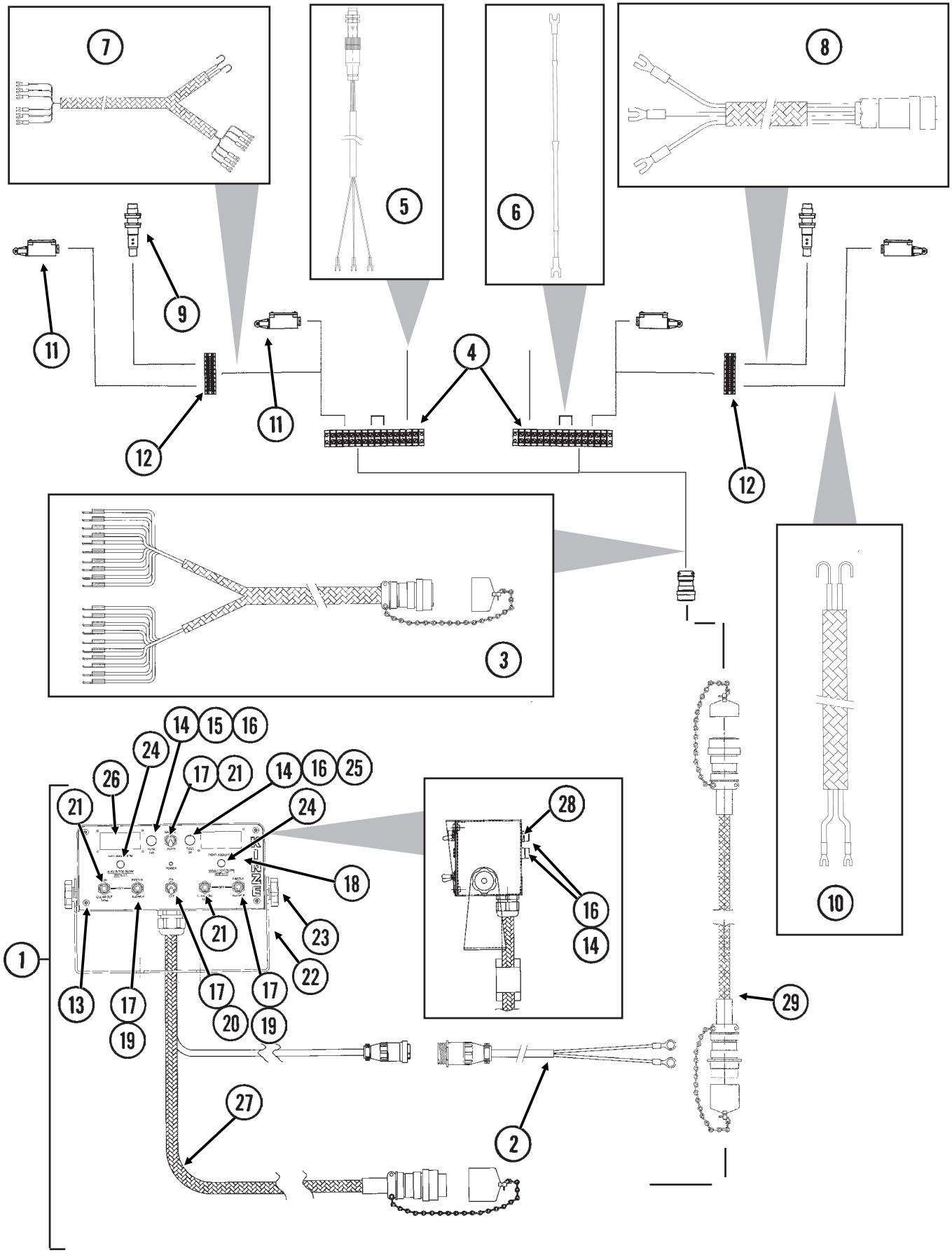
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA3584	-	Ground Clamp
2.	GD9530	-	Contact
3.	GD9529	-	Housing, Black
	GD12726	-	Housing, Red
4.	GA6109	1	Connector W/Cable Clamp, 23 Pin Capacity

ELECTRICAL COMPONENTS (Planter Control Console) (Serial Number 755215 And On)

ITEM	PART NO.	QTY.	DESCRIPTION
5.	GA7862	-	Dust Cap W/Chain
6.	GA7863	-	Dust Cap W/Chain
7.	GA6108	1	Connector W/Cable Clamp, 23 Socket Capacity
8.	GD8740	-	Socket Contact, No. 14
9.	GD8741	-	Pin Contact, No. 14
10.	GD8739	-	Sealing Plug, No. 12
11.	GD11089	-	Sealing Plug
12.	GD6291	-	Insulated Clamp, 3/8"
13.	GA7399	-	Harness Extension W/Dust Caps, 180"
14.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
15.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
16.	G1K396	-	6-Pin Female Connector Kit (Black), Includes: (3) 6-Pin Female Housings, (18) Pin Contacts, (18) Seals
17.	G1K395	-	6-Pin Male Connector Kit (Black), Includes: (3) 6-Pin Male Housings, (18) Socket Contacts, (18) Seals
18.	GA9481	-	Jumper Wire W/Fork Terminal, 13"
	G10996	-	Fork Terminal
19.	GA8047	-	Dust Plug (Black)
20.	GA10310	1	Wiring Harness, 254", 24 Row 30"
	GA10321	1	Wiring Harness, 327", 32 Row 30"
	GA10329	1	Wiring Harness, 359", 36 Row 30"
21.	GA12652	1	Wiring Harness, 392", 24 Row 30"
	GA13197	1	Wiring Harness, 465", 32 Row 30"
	GA13198	1	Wiring Harness, 497", 36 Row 30"
22.	GA10308	1	Wiring Harness W/Dust Cap, 96"
23.	G7848X	-	Backlit Control Console Assembly W/Mounting Brackets, Short Harness W/Dust Cap And Power Cable
24.	G1K267	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (3) Male Terminal Pins
25.	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (1) Lock Ring, (3) Female Terminal Pins
26.	GA7856	1	Power Lead Adapter
27.	GA10307	1	Wiring Harness W/Dust Cap And Power Cable
28.	GA10194	4	Indicator Light, Red
29.	GA2612	5	Fuse Holder W/Spade, 1 33/50"
30.	GD2829	1	Fuse, 15 Amp, Type AGC
31.	GD10243	4	Fuse, MDL 10 Amp Delay Action
32.	GR1363	8	Hex Face Nut, 15/32"-32
	GR1364	8	Internal Tooth Lock Washer, 15/32"
33.	GA10686	1	Cover Plate
34.	GR1292	4	Pan Head Screw, No. 8-32 x 1/2"
35.	GD3860	5	O-Ring (If Applicable)
36.	GA2528	1	Switch, 3 Position Toggle, On-Off-On
37.	GA6978	2	Switch, 3 Position Toggle, Momentary On-Off-Momentary On
38.	GA6977	5	Switch, 2 Position Toggle, On-Off
39.	GA8731	1	Switch, Push Button W/Transformer
40.	GD9896	1	Mounting Bracket
41.	GA6975	2	Knob
	G10211	4	Washer, 1/4" SAE
	GR1290	2	Cage Nut, 1/4"-20
42.	GA10206	1	Indicator Light, Green
43.	GA10682	2	Jumper Wire, 3", Gray
44.	GA10683	1	Jumper Wire, 5", White
45.	GA10684	1	Jumper Wire, 3", Red
46.	GA10685	4	Jumper Wire, 5", White

ELECTRICAL COMPONENTS (SDS Control Console)

(A11377/A9954/A11502/A11906/FWD102/A11376/A11378/A11348a/A11736)

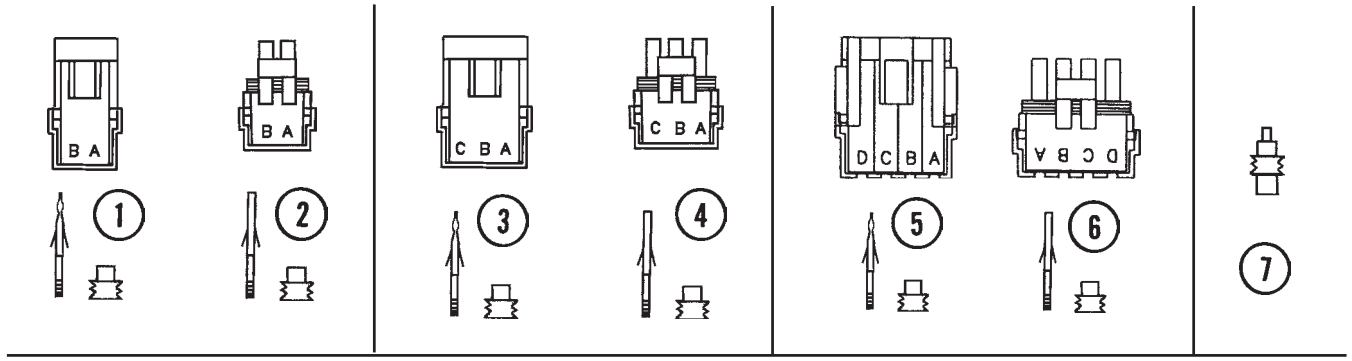


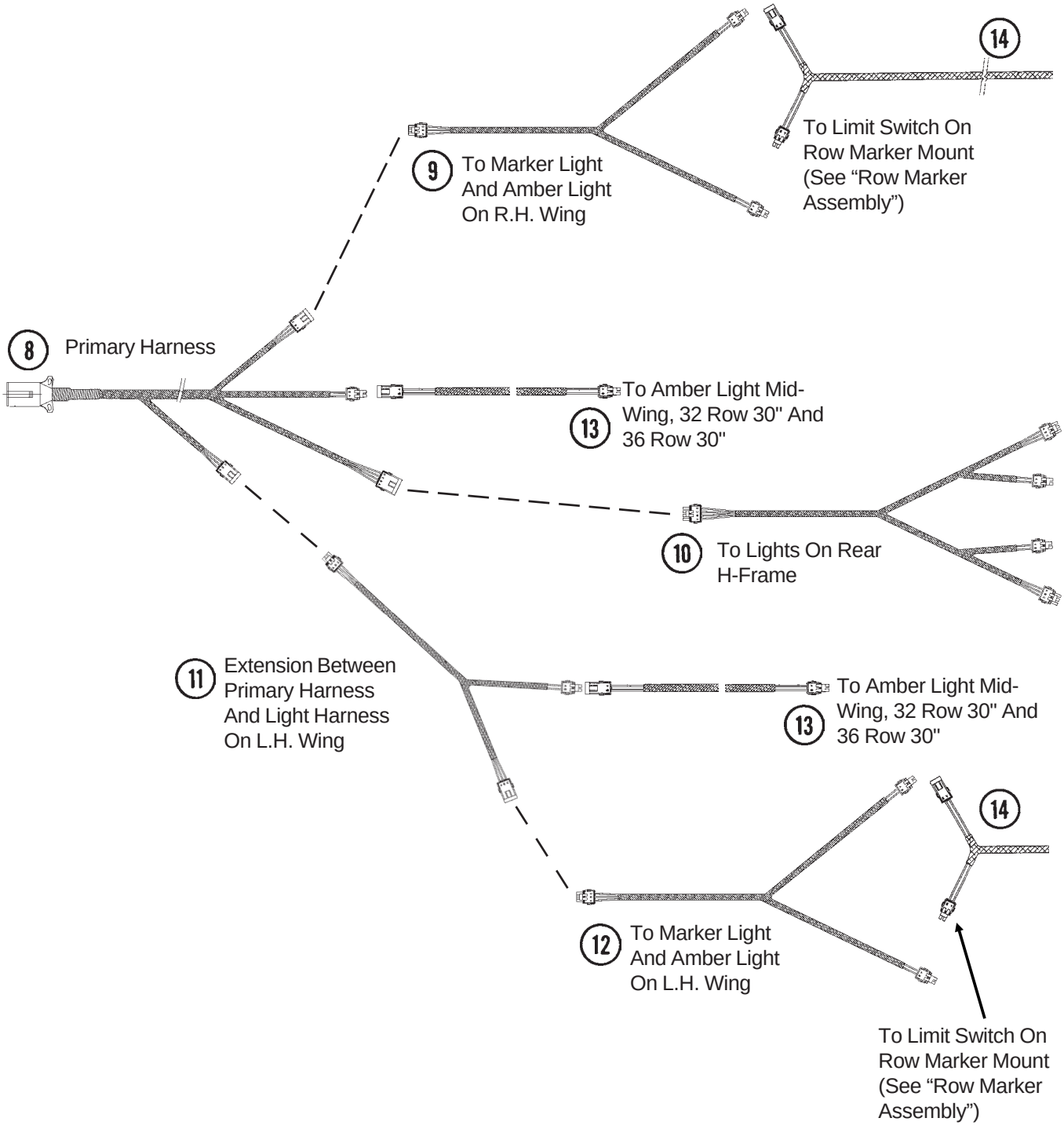
ELECTRICAL COMPONENTS (SDS Control Console)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11348	1	SDS Control Console Assembly
2.	GA7856	1	Power Lead Adapter
3.	GA11376	1	Wiring Harness, 648", 24 Row 30"
	GA11506	-	Wiring Harness, 756", 32 Row 30" And 36 Row 30"
4.	GA9097	2	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
5.	GA9954	2	Speed Sensor Assembly
6.	GA11502	2	Voltage Stabilizer, 8 1/2"
7.	GA11377	2	Wiring Harness, 360", 24 Row 30"
	GA11507	-	Wiring Harness, 576", 32 Row 30" And 36 Row 30"
8.	GA11906	2	4-Pin Connector, 48"
9.	GA11387	2	Proximity Sensor
10.	GA11378	2	Wiring Harness, 48"
11.	GA11066	4	Limit Switch
12.	GA9098	2	Terminal Strip W/Screws, No. 6, 8 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
13.	GR1292	4	Pan Head Screw, No. 8-32 x 1/2"
14.	GA2612	3	Fuse Holder W/Spade, 1 33/50"
15.	GD2829	1	Fuse, 15 Amp, Type AGC
16.	GD3860	3	O-Ring
17.	GR1363	4	Hex Face Nut, 15/32"-32
	GR1364	4	Internal Tooth Lock Washer, 15/32"
18.	GA12171	1	Cover Plate
19.	GA6978	2	Switch, 3 Position Toggle, Momentary On-Off-Momentary On
20.	GA6977	1	Switch, 2 Position Toggle, On-Off
21.	GA12173	2	Switch, 3 Position Locking ToggleToggle
22.	GD14640	1	Mounting Bracket
23.	GA6975	2	Knob
	G10211	4	Washer, 1/4" SAE
	GR1290	2	Cage Nut, 1/4"-20
24.	GA10195	2	Indicator Light, Amber
25.	GA12174	1	Switch, 2 Position Toggle, Momentary-On
26.	GA9965	2	Tachometer
27.	GA12180	1	Wiring Harness W/Dust Cap And Power Cable
28.	G11112	1	Plug, 3/8"
29.	GA11736	-	Harness Extension W/Dust Caps, 180"

ELECTRICAL COMPONENTS (Lights)

(MTR27t/MTR27a/ELC27b/MTR27a/A10315/A10318/A10317/A10316/A10452/A11042)



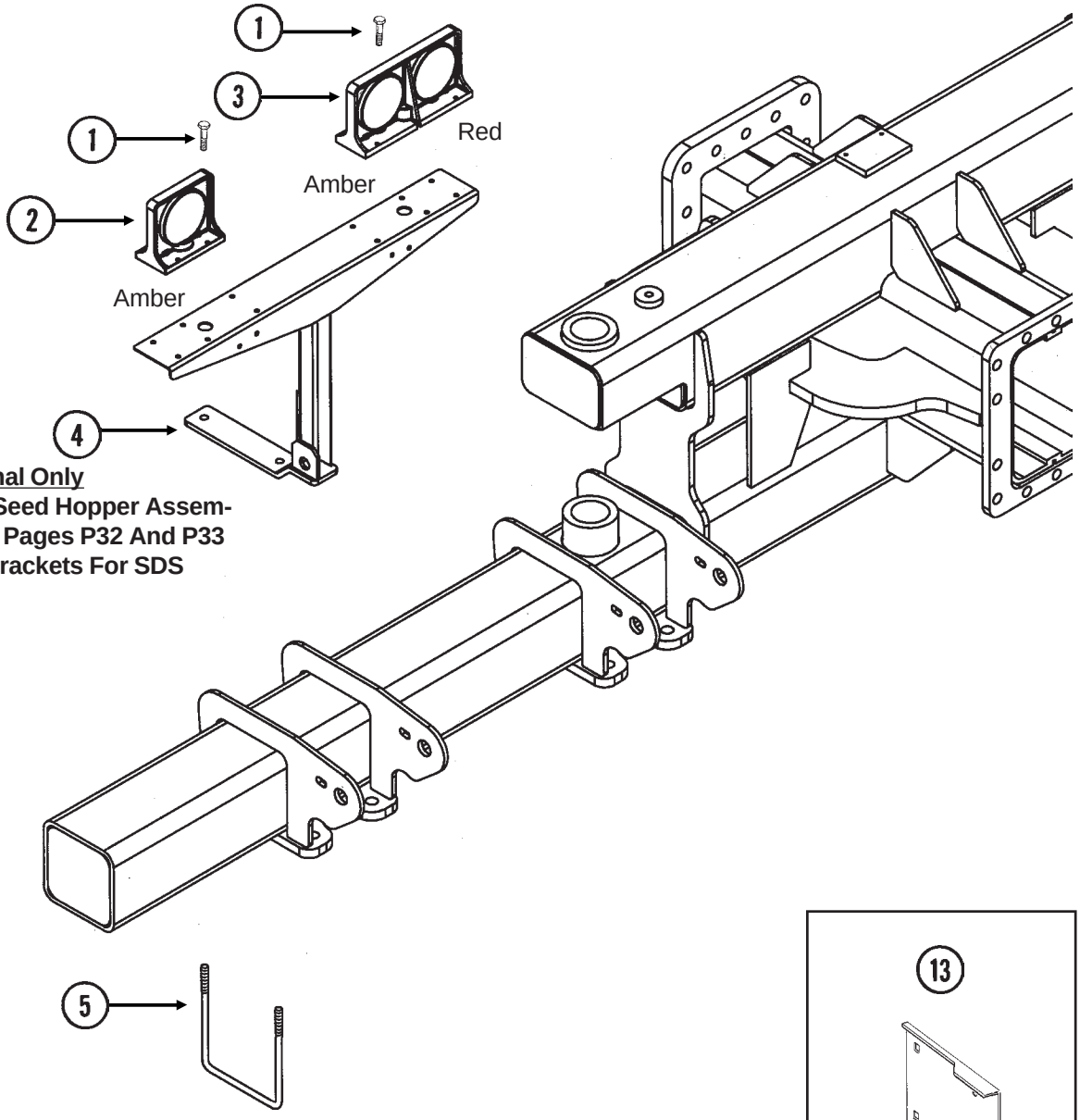


ELECTRICAL COMPONENTS (Lights)

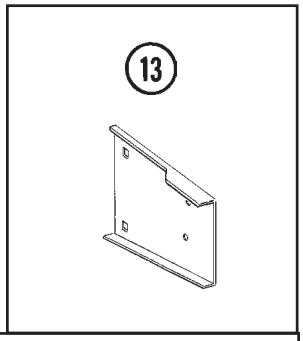
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
2.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
3.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
4.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
5.	GA8328	-	4-Pin Female Connector Kit, Includes: (1) 4-Pin Female Housing, (4) Pin Contacts, (4) Seals
6.	GA8329	-	4-Pin Male Connector Kit, Includes: (1) 4-Pin Male Housing, (4) Socket Contacts, (4) Seals
7.	GD11089	-	Sealing Plug
8.	GA10315	1	Wiring Harness, 414", 24 Row 30"
	GA10323	1	Wiring Harness, 487", 32 Row 30"
	GA10334	1	Wiring Harness, 543", 36 Row 30"
9.	GA10318	1	Wiring Harness, 156", 24 Row 30"
	GA10326	1	Wiring Harness, 231", 32 Row 30"
	GA10338	1	Wiring Harness, 276", 36 Row 30"
10.	GA10317	1	Wiring Harness, 198", 24 Row 30"
	GA10325	1	Wiring Harness, 243", 32 Row 30"
	GA10336	1	Wiring Harness, 258", 36 Row 30"
11.	GA10316	1	Wiring Harness, 254", 24 Row 30"
	GA10324	1	Wiring Harness, 327", 32 Row 30"
	GA10335	1	Wiring Harness, 359", 36 Row 30"
12.	GA10319	1	Wiring Harness, 156", 24 Row 30"
	GA10327	1	Wiring Harness, 231", 32 Row 30"
	GA10337	1	Wiring Harness, 276", 36 Row 30"
13.	GA10452	2	Wiring Harness, 63", 32 Row 30" And 36 Row 30"
14.	GA11299	2	Wiring Harness, 63", All Sizes

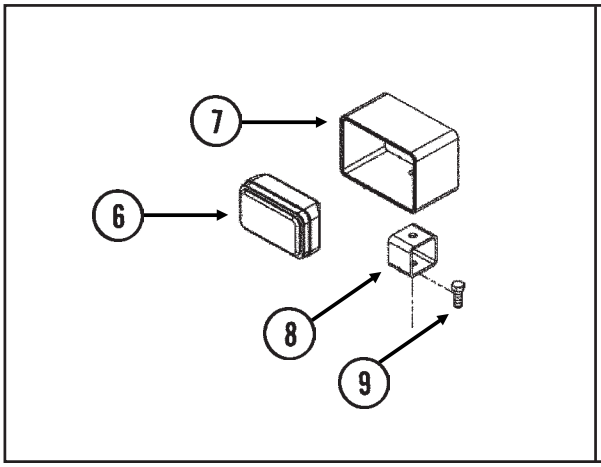
LIGHT ASSEMBLIES AND BRACKETS

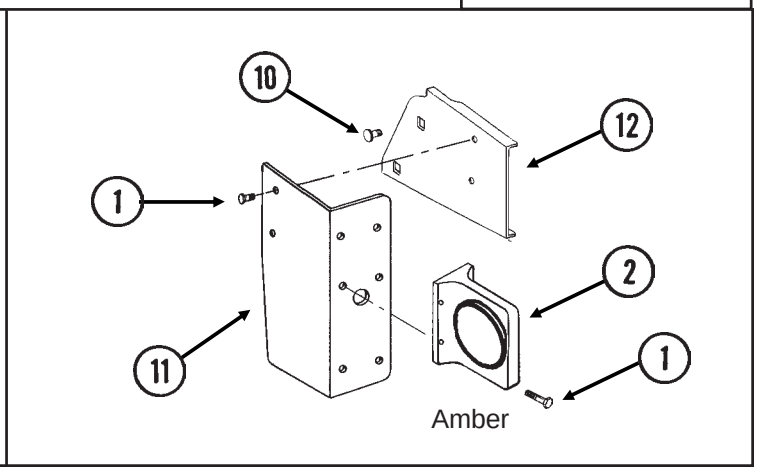
(FWD24a/FWD14/RU130b/RU131f)



Conventional Only
See "Bulk Seed Hopper Assembly (SDS)", Pages P32 And P33 For Light Brackets For SDS Planters





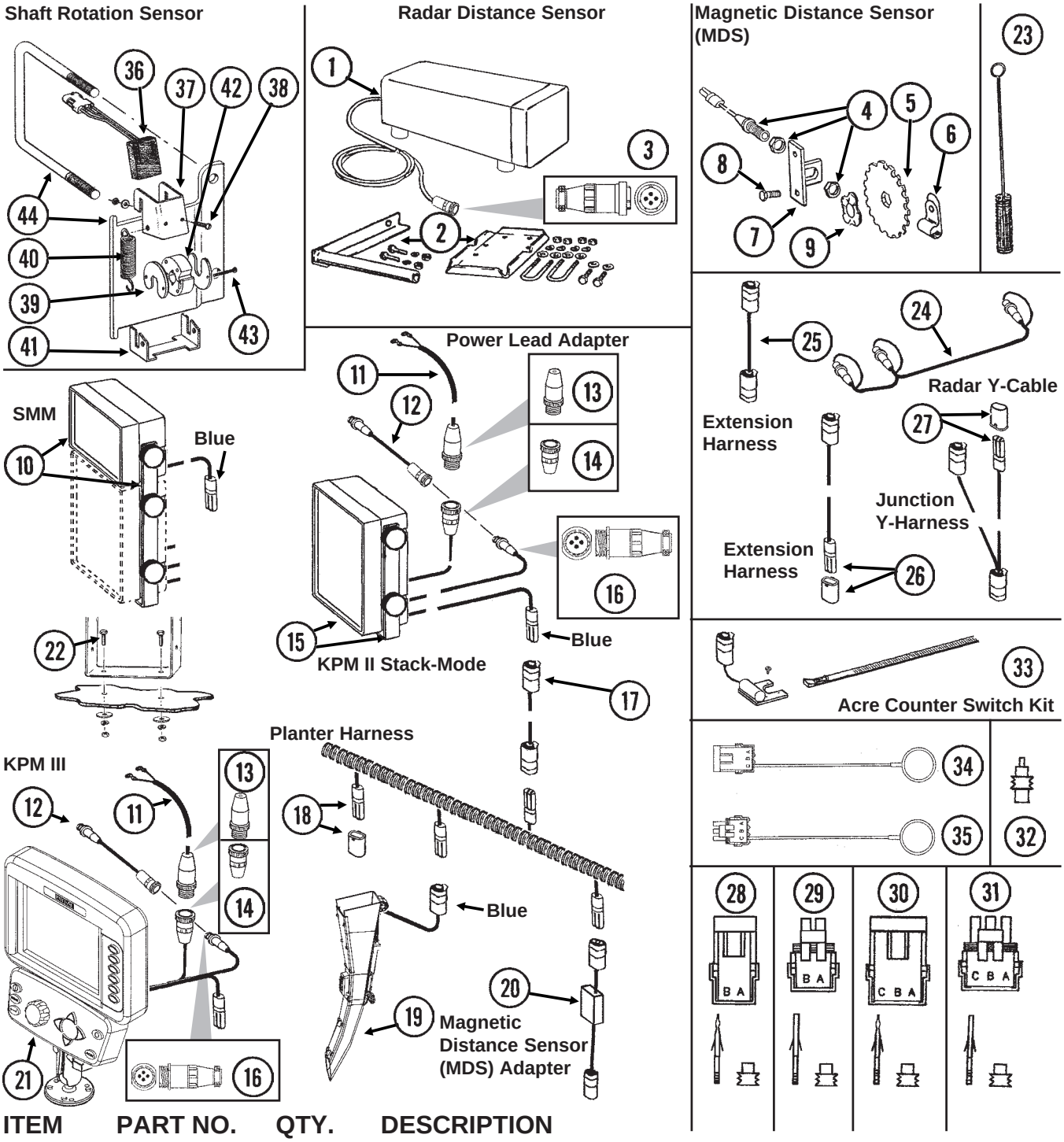


LIGHT ASSEMBLIES AND BRACKETS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10064	-	Hex Head Cap Screw, 1/4"-20 x 1"
	G10227	-	Lock Washer, 1/4"
	G10103	-	Hex Nut, 1/4"-20
2.	GA10576	4	Single Amber Light Assembly
	GR1731	-	Amber Lens
	GR1208	-	Bulb
3.	GA10571	1	Double Light Assembly
	GA10572	-	Double Light Assembly (Shown)
	GR1733	-	Red Lens
	GR1731	-	Amber Lens
	GR1732	-	Cover
	GR1208	-	Bulb
4.	GA10291	2	Light Bracket (Conventional)
5.	GD7145	2	U-Bolt, 7" x 7" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
6.	GA10297	2	Work Light Assembly W/Halogen Lamp
	GR1707	-	Halogen Lamp, 3" x 5"
7.	GD15582	1	Light Protector
8.	GD14987	1	Light Bracket
9.	G10017	1	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
10.	G10312	-	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	-	Serrated Flange Nut, 5/16"-18
11.	GD12725	1	Bracket (Shown)
	GD12724	1	Bracket
12.	GD15968	1	Light Mount Extension
13.	GD12723	1	Light Mount Extension

KPM II STACK-MODE/KPM III ELECTRONIC SEED MONITORS

(MTR43jj/A10901a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA7858	-	Radar Distance Sensor W/20' Cable
2.	GA8026	-	Radar Sensor Pipe/Mounting Bracket Package
3.	G1K323	-	4-Pin Connector Kit W/Female Housing, Includes: (4) Pins, (1) Cable Clamp
4.	GA5600	1	Magnetic Distance Sensor
5.	GD8751	-	Magnetic Distance Sensor Pulse Wheel
6.	GD6291	-	Insulated Clamp, 3/8"
7.	GD8770	1	Bracket
8.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
9.	GD8771	1	Spring Wave Washer
10.	GA9857	1	SMM Backlit Console W/Mounting Bracket And Dust Plug (Item 34)
	GR1631	-	Mounting Bracket, KPM II Stack-Mode And SMM Consoles
	GR1632	-	Console Mounting Bracket Hardware Package (Includes 2 Knobs And 1/4" Hardware)
11.	GA7856	1	Power Lead Adapter

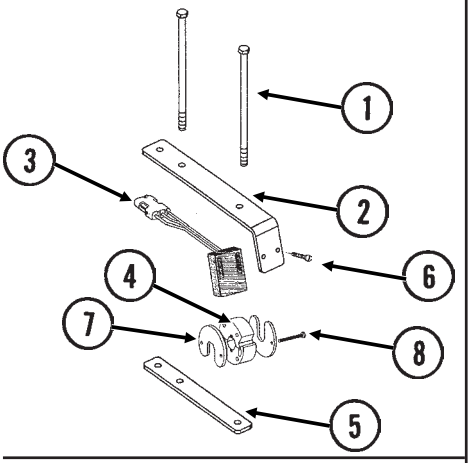
KPM II STACK-MODE/KPM III ELECTRONIC SEED MONITORS

ITEM	PART NO.	QTY.	DESCRIPTION
12.	GA9144	-	Monitor/Radar Adapter Cable, 10"
13.	G1K267	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (3) Male Terminal Pins
14.	G1K268	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (1) Lock Ring, (3) Female Terminal Pins
15.	GA10575	-	KPM II Backlit Console W/Mounting Bracket, Fuse Holder And Fuse, Power Lead Adapter (Item 11), Brush (Item 23), Dust Plug (Item 34) And Monitor/Radar Adapter, 10" (Item 12)
	GR1391	-	Mounting Bracket, KPM II
	GR1393	-	Console Mounting Bracket Hardware Package (Includes 4 Knobs And 1/4" Hardware)
	GA10601	-	Fuse Holder
	GD7639	-	Fuse
16.	G1K322	-	4-Pin Connector Kit W/Male Housing Includes: (4) Female Socket Contacts And (1) Cable Clamp
17.		-	Included In Tractor/Planter Wiring Harnesses, See Pages P166-P169
18.	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7851	-	Planter Harness W/Dust Caps, 12 Row (16 Connectors)
	GA7852	-	Planter Harness W/Dust Caps, 16 Row (20 Connectors)
	GD11993	-	Dust Cap
19.	GA10901	-	Seed Tube W/Computerized Sensor
	GR1629	-	Sensor Only
	GA10940	-	Seed Tube (With Holes For Sensor Installation)
20.	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
21.	GA11039	1	KPM III Backlit Console W/Brush (Item 23), Dust Plug (Item 34), Mounting Bracket Assembly, Console Mounting Bracket Hardware And Power Harness
	GR1761	-	Mounting Bracket Assembly, Includes: (2) Mounting Brackets, (2) Connector Halves, (1) Compression Spring, (1) Tension Knob, (1) 1/4"-20 x 1 3/4" Hex Head Cap Screw, (1) 1/4" Plastic Washer, (1) 1/4" Steel Washer
	GR1762	-	Console Mounting Bracket Hardware Package, Includes: (3) No. 10-32 x 5/8" Hex Socket Pan Head Screws, (3) 1/4" Lock Washers
	GR1764	-	Power Harness
22.	G10022	2	Hex Head Cap Screw, 1/4"-20 x 1/2"
	G10211	2	Washer, 1/4" SAE
	G10227	2	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
23.	GR0594	-	Brush
24.	GR0586	1	Radar Y-Cable (Used To Connect Radar Distance Sensor For Multiple Functions)
25.	GA7849	-	Extension Harness, 15'
26.	GA7854	-	Extension Harness W/Dust Cap, 15'
	GA7855	-	Extension Harness W/Dust Cap, 30'
	GD11993	-	Dust Cap
27.	GA7853	-	Junction Y-Harness W/Dust Cap
	GD11993	-	Dust Cap
28.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
29.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
30.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
	G1K362	-	3-Pin Female Connector Kit (Blue), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
31.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
	G1K363	-	3-Pin Male Connector Kit (Blue), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
32.	GD11089	-	Sealing Plug
33.	G1K249	-	Acre Counter Switch Kit
34.	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
35.	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
36.	GR1415	1	Rotation Sensor
37.	GD11169	1	Mount
38.	G10757	2	Pan Head Screw, No. 10-32 x 1 1/4"
	G10243	2	Washer, No. 10 SAE
	G10758	2	Hex Nut, No. 10-32
39.	GD11474	2	Cover
40.	GD5857	2	Spring
41.	GD11170	1	Spring Mount
42.	GR1414	1	Actuator
43.	G10927	2	Pan Head Machine Screw, No. 8-32 x 1 1/4", Stainless Steel
	G10931	2	Lock Washer, No. 8, Internal/External, Stainless Steel
	G10928	2	Hex Nut, No. 8-32, Stainless Steel
44.	G1K364	-	Rotation Sensor Mount Kit, Includes: (2) Mounts, (2) GD11721 5" x 7" U-Bolts, (4) G10228 Lock Washers, (4) G10102 Hex Nuts, (1) Instruction
A.	GA6147	-	Magnetic Distance Sensor And Mounting Package (Items 4-9)

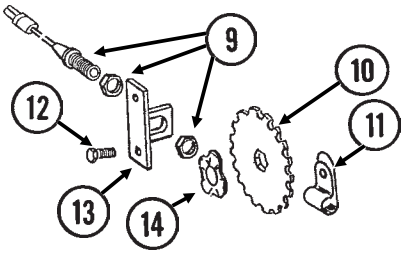
PLANTER MONITOR MODULE (PMM)

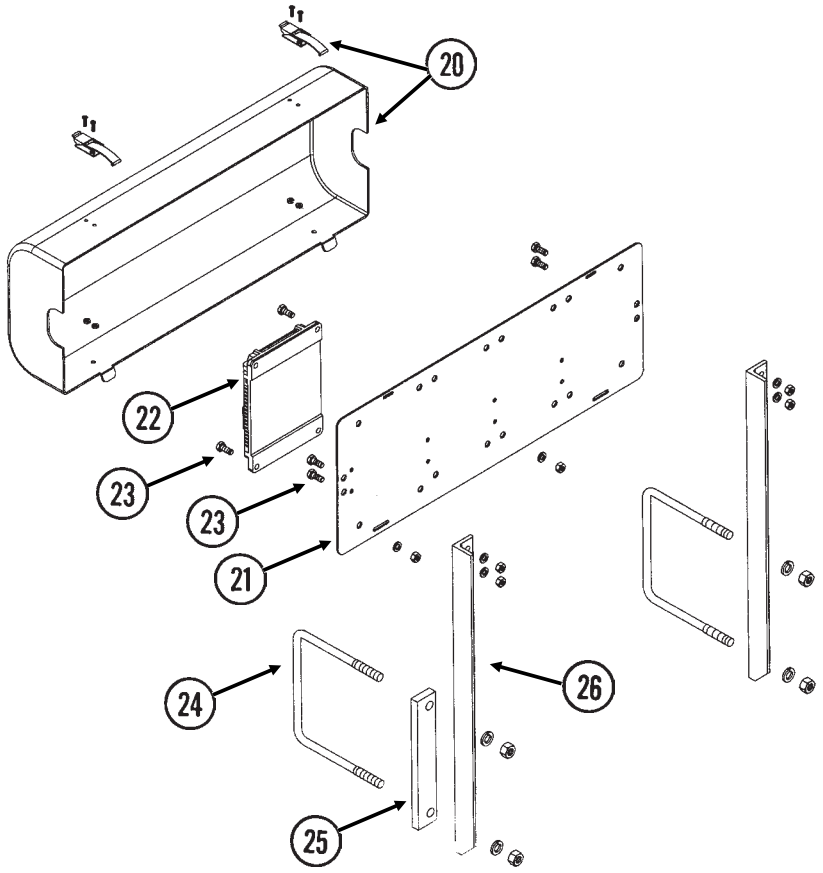
(MTR60/MTR63/PMM01/MTR65/MTR61/MTR64/MTR62/PMM02/A7849)

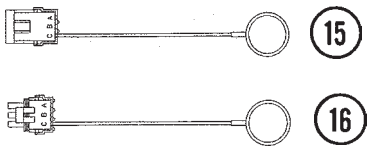
Shaft Rotation Sensor

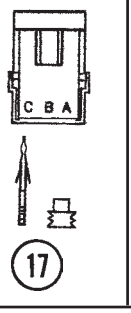


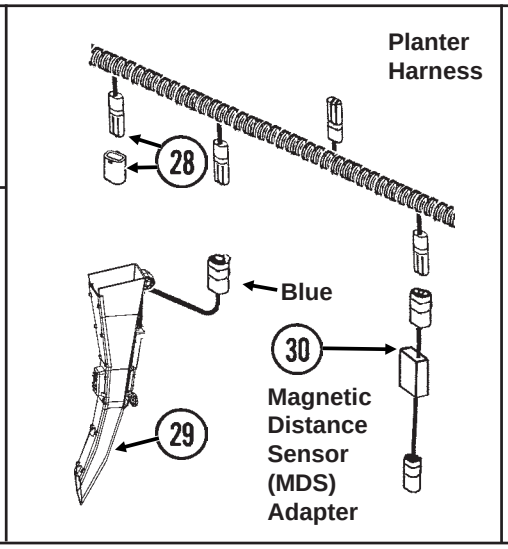
Magnetic Distance Sensor (MDS)

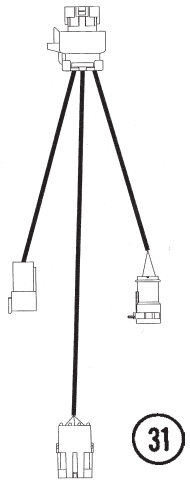












NOTE: See Ag Leader manual for Ag Leader Insight display and associated cab harness components.

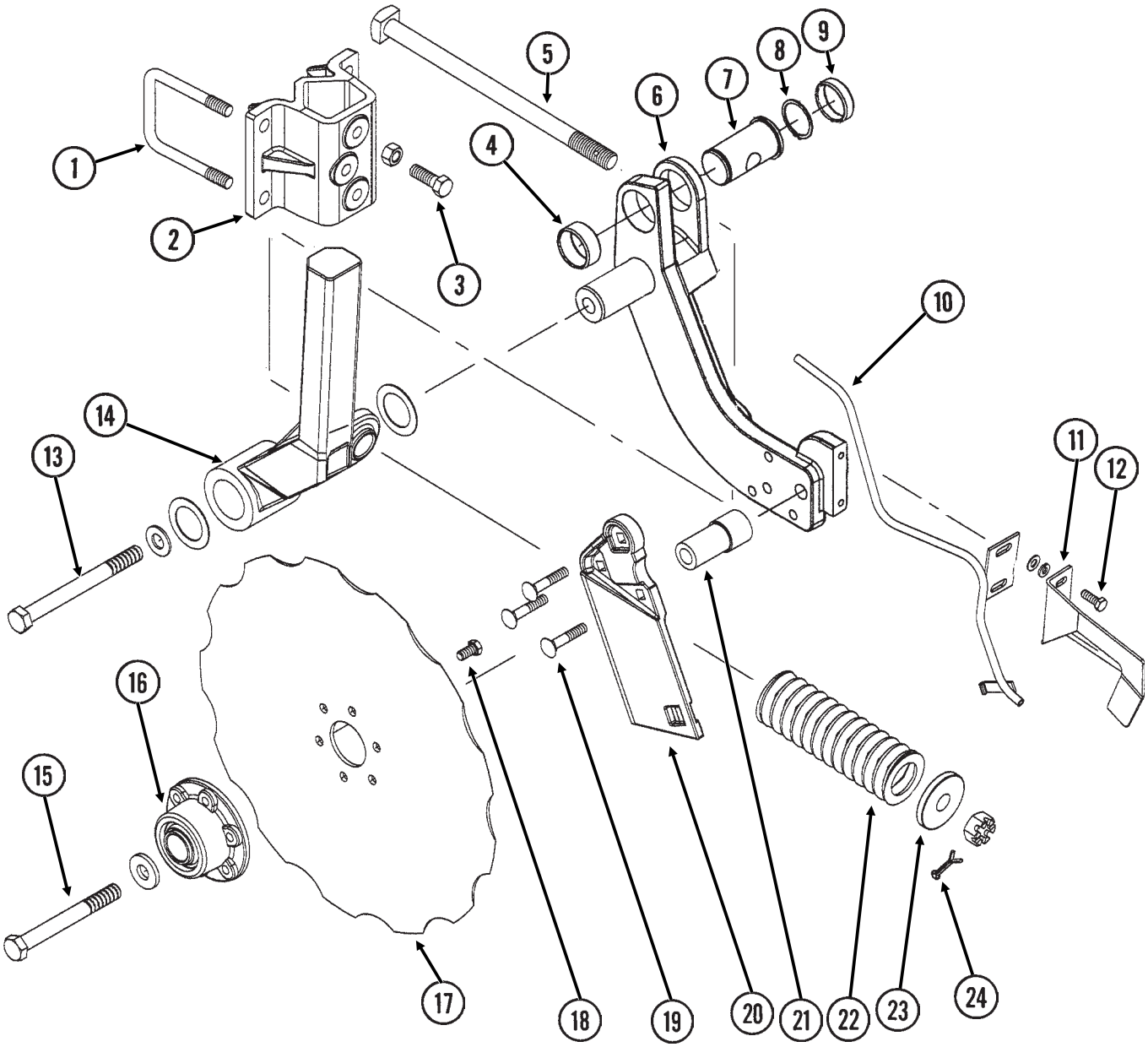
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10686	4	Hex Head Cap Screw, 3/8"-16 x 8"
	G1-229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
2.	GD18118	2	Shaft Sensor Mount
3.	GR1415	1	Rotation Sensor
4.	GR1414	1	Actuator
5.	GD18168	2	Mount

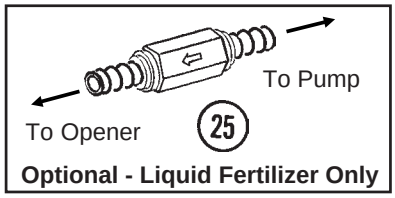
PLANTER MONITOR MODULE (PMM)

ITEM	PART NO.	QTY.	DESCRIPTION
6.	G10757	2	Pan Head Screw, No. 10-32 x 1 ¼"
	G10243	2	Washer, No. 10 SAE
	G10758	2	Hex Nut, No. 10-32
7.	GD11474	4	Cover
8.	G10927	4	Pan Head Machine Screw, No. 8-32 x 1 1/4", Stainless Steel
	G10931	4	Lock Washer, No. 8, Internal/External, Stainless Steel
	G10928	4	Hex Nut, No. 8-32, Stainless Steel
9.	GA5600	1	Magnetic Distance Sensor
10.	GD8751	-	Magnetic Distance Sensor Pulse Wheel
11.	GD6291	-	Insulated Clamp, 3/8"
12.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
13.	GD8770	1	Bracket
14.	GD8771	1	Spring Wave Washer
15.	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
16.	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
17.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
	G1K362	-	3-Pin Female Connector Kit (Blue), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
18.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
	G1K363	-	3-Pin Male Connector Kit (Blue), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
19.	GD11089	-	Sealing Plug
20.	GA12563	1	Module Cover Assembly W/Lock Clamps
	GA12641	-	Lock Clamp
	G11065	-	Phillips Pan Head Machine Screw, No. 8-32 x 5/8", Stainless Steel
	G11202	-	Lock Nut W/Nylon Insert, No. 8-32, Stainless Steel
21.	GD18013	1	Bracket
22.	GA12538	1	Planter Monitor Module
23.	G10043	4	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
24.	GD7145	2	U-Bolt, 7" x 7" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
25.	GD16316	2	Spacer
26.	GD16315	2	Support
27.	GR0594	-	Brush
28.	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7851	-	Planter Harness W/Dust Caps, 12 Row (16 Connectors)
	GA7852	-	Planter Harness W/Dust Caps, 16 Row (20 Connectors)
	GD11993	-	Dust Cap
29.	GA10901	-	Seed Tube W/Computerized Sensor
	GR1629	-	Sensor Only
	GA10940	-	Seed Tube (With Holes For sensor Installation)
30.	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
31.	GA12557	1	Planter Monitor Cable
32.	GA7849	1	Extension Harness, 15'
A.	GA6147	-	Magnetic Distance Sensor And Mounting Package (Items 9-14)

NOTCHED SINGLE DISC FERTILIZER OPENER

(A10216aa)





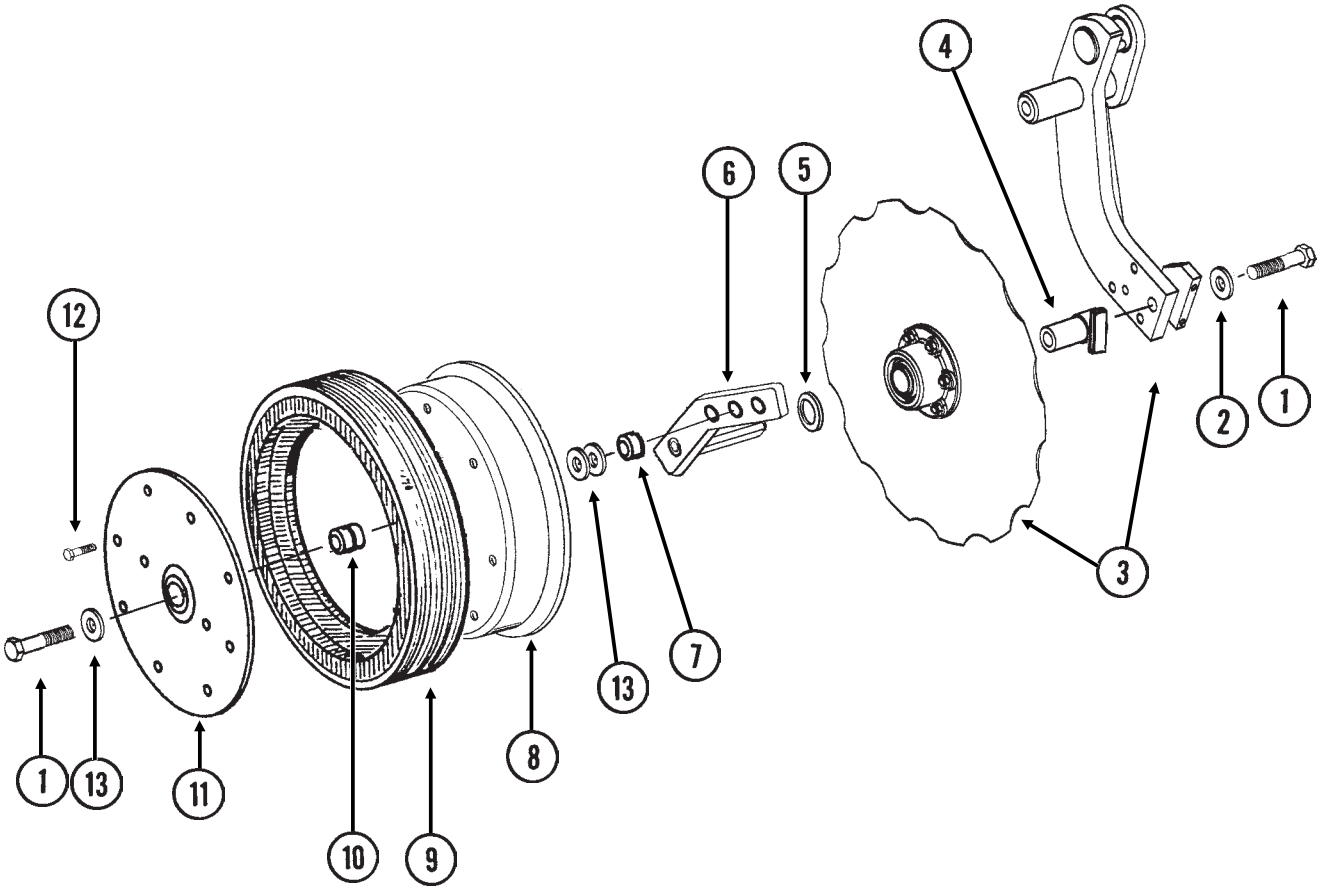
Optional - Liquid Fertilizer Only

NOTCHED SINGLE DISC FERTILIZER OPENER

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD17006	2	U-Bolt, 3" x 3" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
2.	GB0343	1	Mount
3.	G10017	3	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10102	3	Hex Nut, 1/2"-13
4.	GD14672	1	Spring Bushing, 3/4"
5.	GD15226	1	Special Bolt, 3/4"-10 x 12"
	G11116	1	Slotted Hex Nut, 3/4"-10
6.	GA10704	1	Pivot Arm W/Shaft, R.H. (Shown)
	GA10705	-	Pivot Arm W/Shaft, L.H.
	GD14651	-	Shaft
7.	GD14649	-	Pin
8.	G10283	1	External Retaining Ring, 1 1/2"
9.	GD14673	1	Spring Bushing, 1/2"
10.	GA11760	1	Drop Tube, R.H., Liquid Fertilizer (Shown)
	GA11759	-	Drop Tube, L.H., Liquid Fertilizer
11.	GD11558	-	Scraper, R.H. (Shown)
	GD11557	1	Scraper, L.H.
12.	G10991	2	Hex Head Cap Screw, 5/16"-18 x 7/8"
	G10232	2	Lock Washer, 5/16"
	G10219	2	Washer, 5/16" USS
13.	G10012	1	Hex Head Cap Screw, 5/8"-11 x 6 1/2"
	G10450	2	Machine Bushing, 1 1/2", 18 Gauge
	G10217	1	Washer, 5/8" USS
	G10107	1	Lock Nut, 5/8"-11
14.	GA10646	1	Arm Mount W/Grease Fitting, Bushing And Seal, R.H. (Shown)
	GA10647	-	Arm Mount W/Grease Fitting, Bushing And Seal, L.H.
	G10640	-	Grease Fitting, 1/4"-28
	GD15600	-	Bushing
	GD15568	-	Seal
15.	G10011	1	Hex Head Cap Screw, 5/8"-11 x 5 1/2"
	GD12677	1	Washer, 1 1/2" O.D., 7 Gauge, Hardened
	G10107	1	Lock Nut, 5/8"-11
16.	GA9437	1	Hub W/Bearing
	GA8603	-	Bearing, Double Row
17.	GD12676	1	Disc Blade, Notched, 16 3/4"
18.	G10002	6	Hex Head Cap Screw, 3/8"-16 x 3/4"
19.	G10306	3	Carriage Bolt, 3/8"-16 x 2"
	G10108	3	Lock Nut, 3/8"-16
20.	GB0322	-	Knife, R.H. (Shown)
	GB0323	1	Knife, L.H.
21.	GD12679	1	Stepped Spacer, 3" Long
22.	GD12817	1	Compression Spring
23.	GB0213	1	Spring Seat
24.	G10462	1	Cotter Pin, 3/16" x 2"
25.	GA8983	-	Check Valve, Low Rate

DEPTH/GAUGE WHEEL ATTACHMENT FOR NOTCHED SINGLE DISC FERTILIZER OPENER

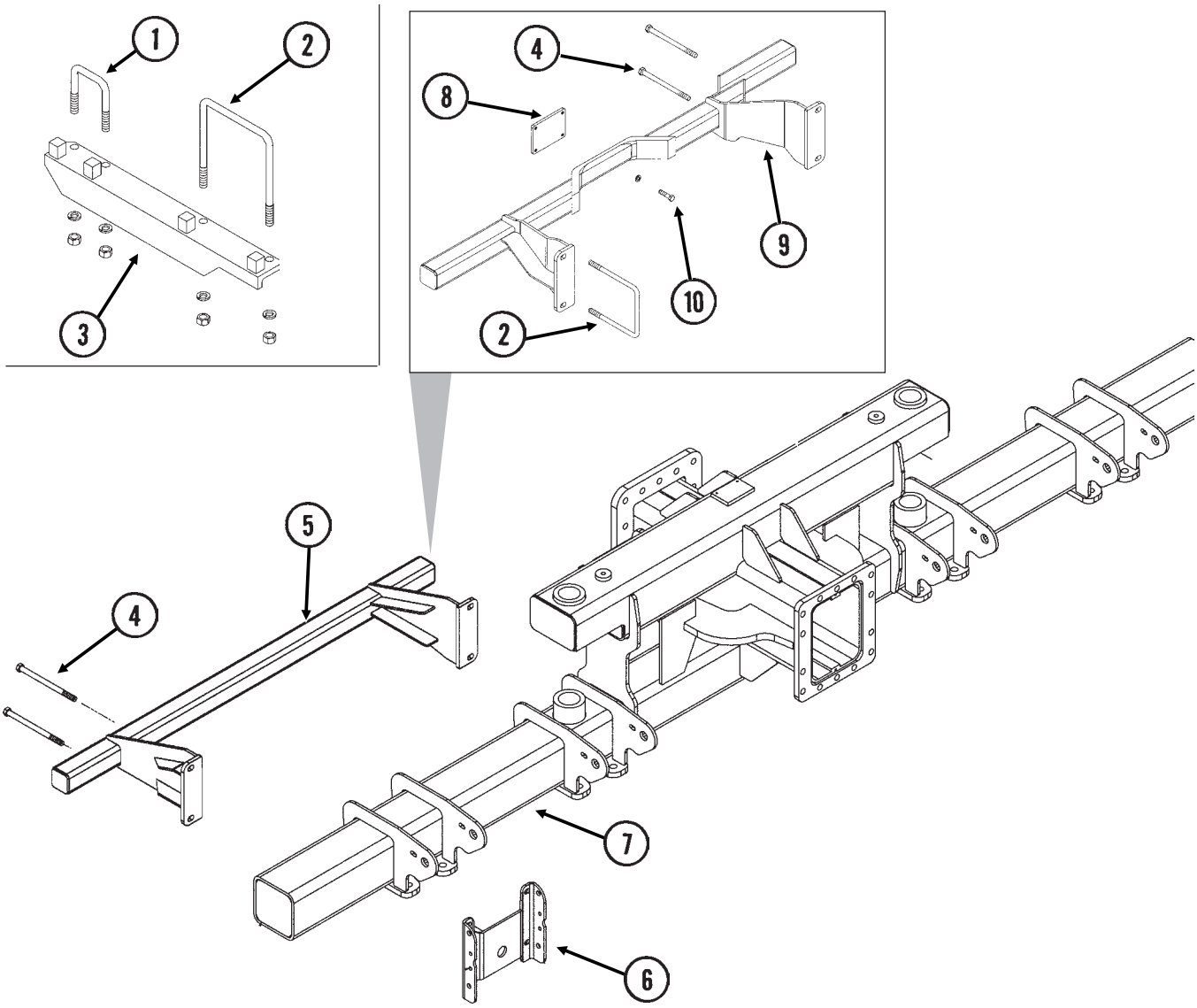
(FRTZ257)



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
2.	GD7805	1	Special Washer, 5/8", Hardened
3.		-	See “Notched Single Disc Fertilizer Opener”, Pages P180 And P181
4.	GA9472	1	Blade Mount
5.	G10233	1	Machine Bushing, 1", 10 Gauge
6.	GA10037	1	Wheel Mount, L.H. (Shown)
	GA10036	1	Wheel Mount, R.H.
7.	GD13309	1	Spacer
8.	GD11423	1	Half Wheel
9.	GD11953	1	Offset Tire
10.	GA6171	1	Bearing
11.	GD11954	1	Half Wheel Cover, Nylon
12.	G10961	11	Flanged Whiz-Lock Screw, 5/16"-18 x 3/4", No Serration
	G10620	11	Serrated Flange Nut, 5/16"-18
13.	G10204	-	Special Machine Bushing, 5/8" x 1" O.D. (As Required)
A.	GA8877	-	Gauge Wheel Complete (Items 8-12)

FERTILIZER OPENER MOUNTS

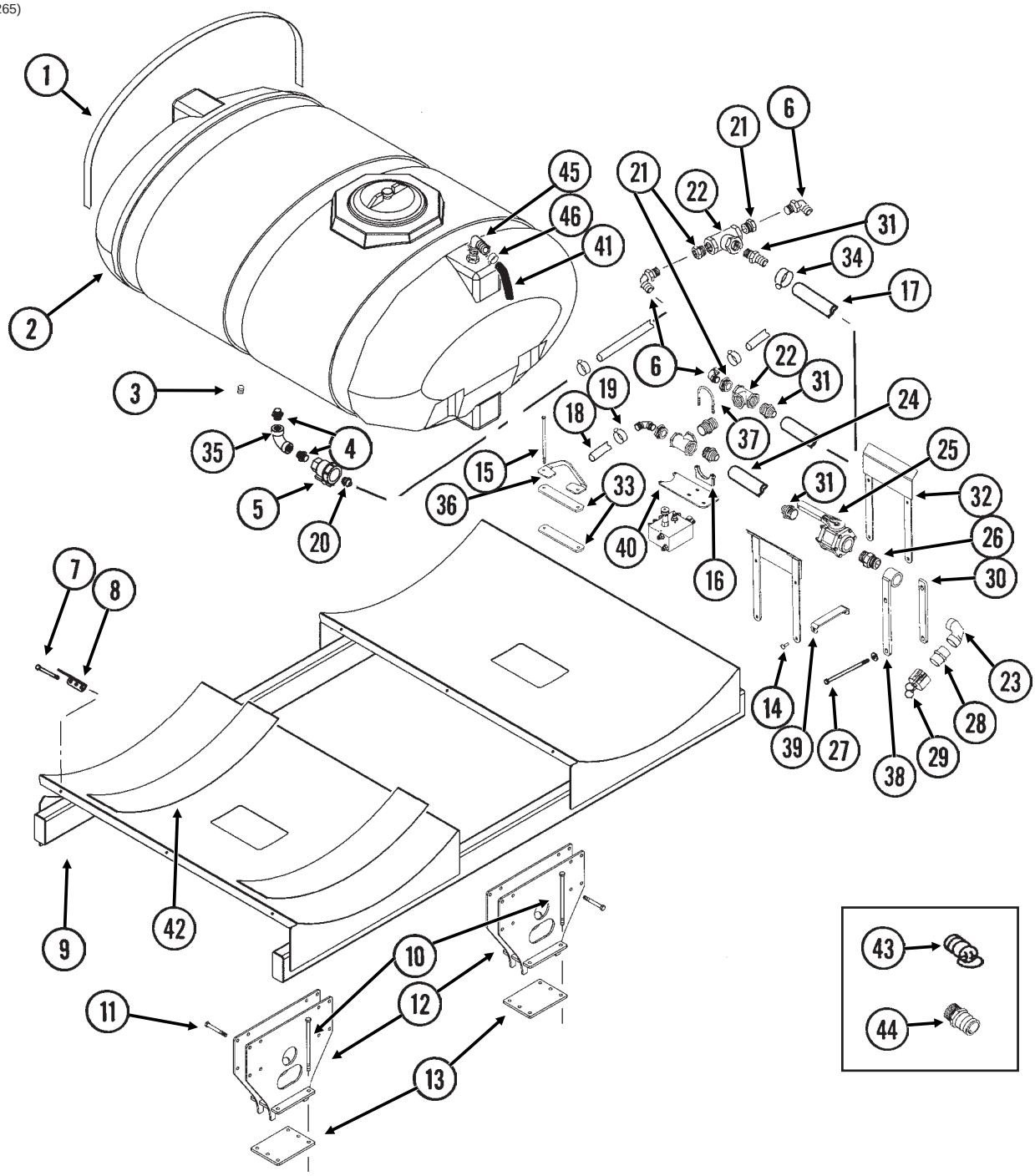
(FWD28/FWD138/FWD29a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD14671	-	U-Bolt, 3" x 3" x 5/8"-11
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 5/8"-11
2.	GD17039	-	U-Bolt, 7" x 7" x 5/8"-11
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 5/8"-11
3.	GB0365	-	Brace, L.H. (Shown)
	GB0370	-	Brace, R.H.
4.	G10177	-	Hex Head Cap Screw, 5/8"-11 x 9 1/2"
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 5/8"-11
5.	GA10923	2	Mount
6.		-	See “Parallel Arms, Mounting Support Plate And Quick Adjustable Down Force Springs”, Page P10
7.		-	See “Center Toolbar/Rear H-Frame Assembly”, Pages P62 And P63
8.	GD17973	2	Tap Block
9.	GA12487	1	Opener Mount, L.H. (Shown)
	GA12488	-	Opener Mount, R.H.
10.	G10016	8	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	8	Lock Washer, 1/2"

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (Conventional 24 Row 30")

(FWD146/FRTZ265)



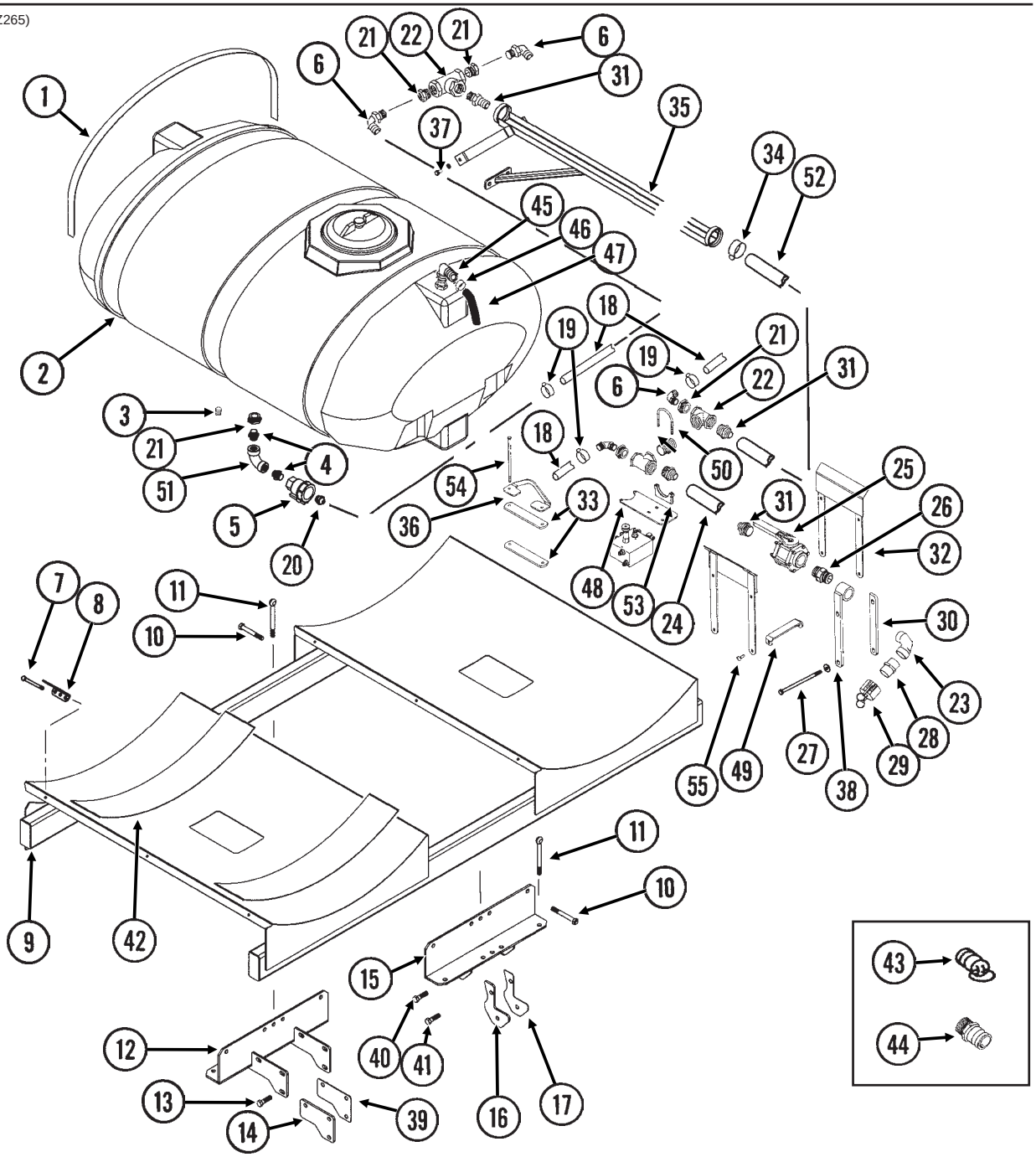
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA10201	2	Tank W/Lid And Fittings, 500 Gallon
	GR1702	-	Lid/Fillwell, 8" (Top Of Tank)
	GR1708	-	3/4" Bulkhead Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring) (Top And Bottom Of Tank)
	GR1739		2" Bulkhead Fitting Assembly (Nut, Bushing And O-Ring) (Bottom Of Tank)
	GR1686	-	Lanyard, 12 1/2" (Top Of Tank)
3.	G10096	2	Plug, 3/4" NPT
4.	G10619	4	Close Nipple, 1 1/4" NPT

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (Conventional 24 Row 30")

ITEM	PART NO.	QTY.	DESCRIPTION
5.	GA4976	2	Shutoff Valve, 1 1/4" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
6.	G10629	4	Elbow, 90°, 1 1/4" NPT To Barb
7.	G10485	6	Hex Head Tap Bolt, 3/8"-16 x 5" (6 Per Tank)
	G10901	6	Lock Nut W/ Nylon Insert, 3/8"-16 (6 Per Tank)
8.	GD11123	6	Anchor **(Sub GA8114)**
9.	GA10356	1	Tank Mount
10.	G11122	12	Hex Head Cap Screw, 5/8"-11 x 12"
	G10205	12	Washer, 5/8" SAE
	G10107	12	Lock Nut, 5/8"-11
11.	G10046	12	Hex Head Cap Screw, 5/8"-11 x 5"
	G10205	12	Washer, 5/8" SAE
	G10107	12	Lock Nut, 5/8"-11
12.	GA12503	2	Mounting Bracket
13.	GD17995	2	Plate, 8 3/4" x 10 1/2"
14.	G10599	8	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10203	8	Washer, 3/8" SAE
	G10108	8	Lock Nut, 3/8"-16
15.	G11193	8	Hex Head Cap Screw, 3/8"-16 x 9 1/2", 24 Row 30"
	G10753	-	Hex Head Cap Screw, 3/8"-16 x 4 1/2", 32 Row 30" And 36 Row 30"
	G10108	8	Lock Nut, 3/8"-16
16.	GA8768	2	Clamp, 3"
17.	G4206-01	1	Hose, 2" x 18'
18.	G4200-05	2	Hose, 1 1/4" x 50'
19	G10674	48	Hose Clamp, No. 24
20.	G10626	2	Adapter, 1 1/4" NPT To Barb
21.	G10616	6	Reducing Bushing, 2" Male NPT To 1 1/4" Female
22.	G10888	3	Tee, 2" Female NPT
23.	G10287	1	Elbow, 90°, 2" Male NPT To Female
24.	G4201-02	1	Hose, 2" x 12'
25.	GA2660	1	Shutoff Valve, 2" NPT
26.	G10623	3	Close Nipple, 2" NPT
27.	G10148	2	Hex Head Cap Screw, 1/2"-13 x 9 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
28.	GD3622	1	Adapter, 2" Female NPT To Cam Lock
29.	GD3951	1	Dust Cap, 2" Cam Lock
30.	GD15703	1	Bracket, 1 1/2" x 12 1/2", 24 Row 30"
	GD15706	-	Bracket, 1 1/2" x 18 1/2", 32 Row 30" And 36 Row 30"
31.	G10628	4	Adapter, 2" NPT To Barb
32.	GA11064	2	Hose Support, 24 Row 30"
	GA11063	-	Hose Support, 32 Row 30" And 36 Row 30"
33.	GD16478	4	Bracket
34.	G10676	4	Hose Clamp, No. 36
35.	G10897	2	Elbow, 90°, 1 1/4" Female NPT
36.	GD16479	4	Mount
37.	G11165	2	T-Bolt Clamp, 2 1/2", Stainless Steel
38.	GA10509	1	Straight Mount, Quick Fill, 14 19/32", 24 Row 30"
	GA10510	-	Straight Mount, Quick Fill, 20 19/32", 32 Row 30" And 36 Row 30"
39.	GD16189	4	Tie Bracket
40.	GD16210	1	Bracket
41.	G4205-10	1	Hose, 3/4" x 200" (100" Per Tank)
42.	GD1862	2	Pad, 8" x 14'
43.	GD10777	2	Dust Plug, 2" Male Cam Lock
44.	GD3623	1	Adapter, 2" Male NPT To Cam Lock
45.	G10917	2	Elbow, 90°, 3/4" NPT To Barb
46.	G10278	10	Hose Clamp, No. 16

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (Conventional 32 Row 30" And 36 Row 30")

(FWD78a/FRTZ265)



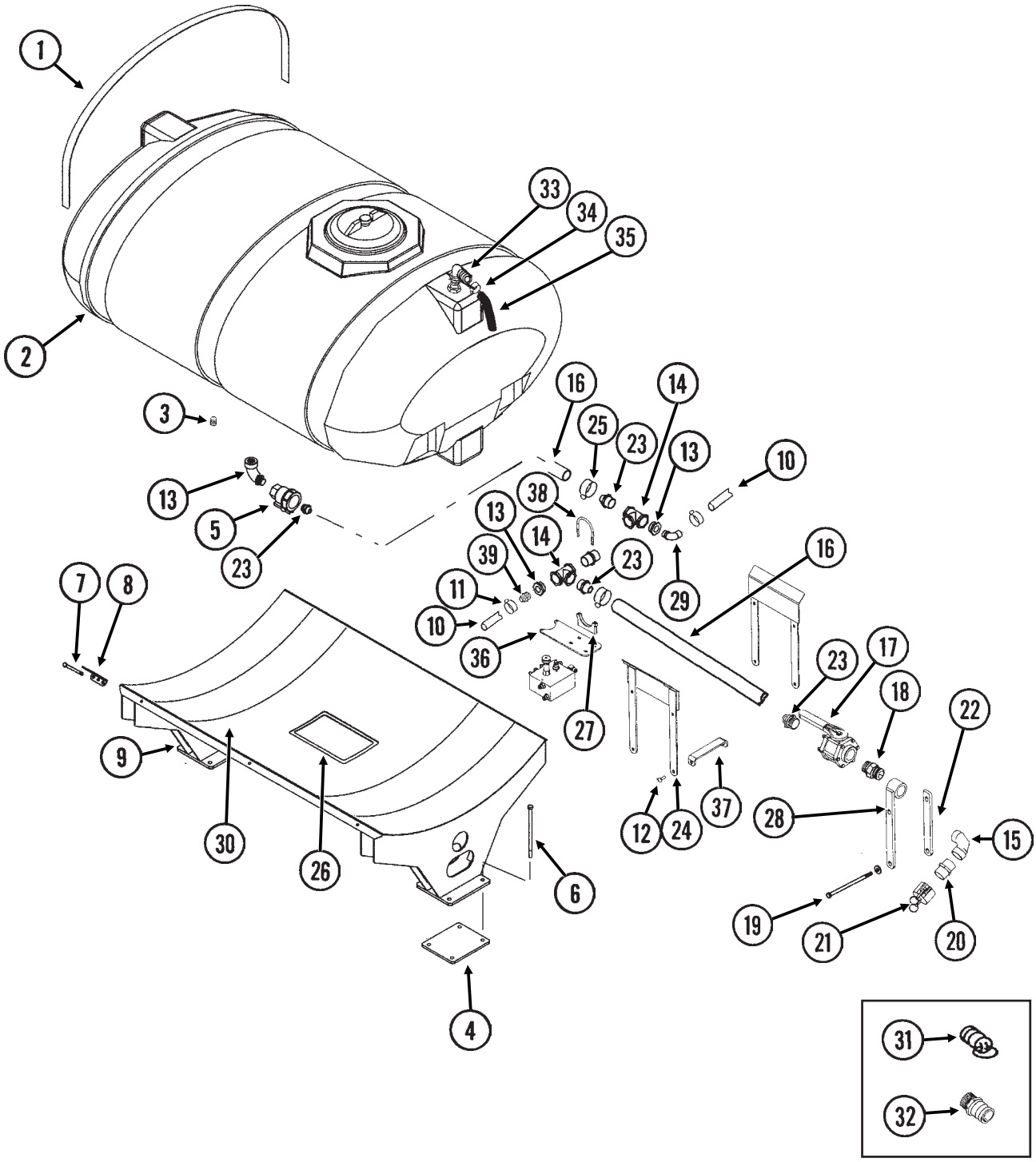
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA10201	2	Tank W/Lid And Fittings, 500 Gallon
	GR1702	-	Lid/Fillwell, 8" (Top Of Tank)
	GR1708	-	3/4" Bulkhead Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring) (Top And Bottom Of Tank)
	GR1739		2" Bulkhead Fitting Assembly (Nut, Bushing And O-Ring) (Bottom Of Tank)
	GR1686	-	Lanyard, 12 1/2" (Top Of Tank)
3.	G10096	2	Plug, 3/4" NPT
4.	G10619	4	Close Nipple, 1 1/4" NPT
5.	GA4976	2	Shutoff Valve, 1 1/4" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (Conventional 32 Row 30" And 36 Row 30")

ITEM	PART NO.	QTY.	DESCRIPTION
6.	G10629	4	Elbow, 90°, 1 1/4" NPT To Barb
7.	G10485	6	Hex Head Tap Bolt, 3/8"-16 x 5" (6 Per Tank)
	G10901	6	Lock Nut W/ Nylon Insert, 3/8"-16 (6 Per Tank)
8.	GD11123	6	Anchor **(Sub GA8114)**
9.	GA10356	1	Tank Mount
10.	G10058	7	Hex Head Cap Screw, 3/4"-10 x 5 1/2"
	G10112	7	Lock Nut, 3/4"-10
11.	GD14645	8	Eyebolt, 3/4"-10 x 8"
	G10112	8	Lock Nut, 3/4"-10
12.	GA10358	1	Tank Mount
13.	G10044	6	Hex Head Cap Screw, 3/4"-10 x 4"
	G10112	6	Lock Nut, 3/4"-10
14.	GD15472	3	Shim, 3/8"
15.	GA10357	1	Tank Mount
16.	GD15474	2	Shim, 3/8"
17.	GD15475	2	Shim, 12 Gauge
18.	G4200-05	2	Hose, 1 1/4" x 50'
19	G10674	48	Hose Clamp, No. 24
20.	G10626	2	Adapter, 1 1/4" NPT To Barb
21.	G10616	6	Reducing Bushing, 2" Male NPT To 1 1/4" Female
22.	G10888	3	Tee, 2" Female NPT
23.	G10287	1	Elbow, 90°, 2" Male NPT To Female
24.	G4201-02	1	Hose, 2" x 12'
25.	GA2660	1	Shutoff Valve, 2" NPT
26.	G10623	3	Close Nipple, 2" NPT
27.	G10148	2	Hex Head Cap Screw, 1/2"-13 x 9 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
28.	GD3622	1	Adapter, 2" Female NPT To Cam Lock
29.	GD3951	1	Dust Cap, 2" Cam Lock
30.	GD15703	1	Bracket, 1 1/2" x 12 1/2", 24 Row 30"
	GD15706	-	Bracket, 1 1/2" x 18 1/2", 32 Row 30" And 36 Row 30"
31.	G10628	4	Adapter, 2" NPT To Barb
32.	GA11064	2	Hose Support, 24 Row 30"
	GA11063	-	Hose Support, 32 Row 30" And 36 Row 30"
33.	GD16478	4	Bracket
34.	G10676	4	Hose Clamp, No. 36
35.	GA10663	1	Hose Support
36.	GD16479	4	Mount
37.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
38.	GA10509	1	Straight Mount, Quick Fill, 14 19/32", 24 Row 30"
	GA10510	-	Straight Mount, Quick Fill, 20 19/32", 32 Row 30" And 36 Row 30"
39.	GD15473	2-3	Shim, 12 Gauge
40.	G10028	2	Hex Head Cap Screw, 3/4"-10 x 3"
	G10112	2	Lock Nut, 3/4"-10
41.	G10056	2	Hex Head Cap Screw, 3/4"-10 x 3 1/2"
	G10112	2	Lock Nut, 3/4"-10
42.	GD1862	2	Pad, 8" x 14'
43.	GD10777	2	Dust Plug, 2" Male Cam Lock
44.	GD3623	1	Adapter, 2" Male NPT To Cam Lock
45.	G10917	2	Elbow, 90°, 3/4" NPT To Barb
46.	G10278	10	Hose Clamp. No. 16
47.	G4205-10	1	Hose, 3/4" x 200" (100" Per Tank)
48.	GD16210	1	Bracket
49.	GD16189	4	Tie Bracket
50.	G11165	2	T-Bolt Clamp, 2 1/2", Stainless Steel
51.	G10897	2	Elbow, 90°, 1 1/4" Female NPT
52.	G4206-01	1	Hose, 2" x 18'
53.	GA8768	2	Clamp, 3"
54.	G11193	8	Hex Head Cap Screw, 3/8"-16 x 9 1/2", 24 Row 30"
	G10753	-	Hex Head Cap Screw, 3/8"-16 x 4 1/2", 32 Row 30" And 36 Row 30"
	G10108	8	Lock Nut, 3/8"-16
55.	G10599	8	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10203	8	Washer, 3/8" SAE
	G10108	8	Lock Nut, 3/8"-16

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (SDS 24 Row 30")

(FWD145c/FRTZ265)

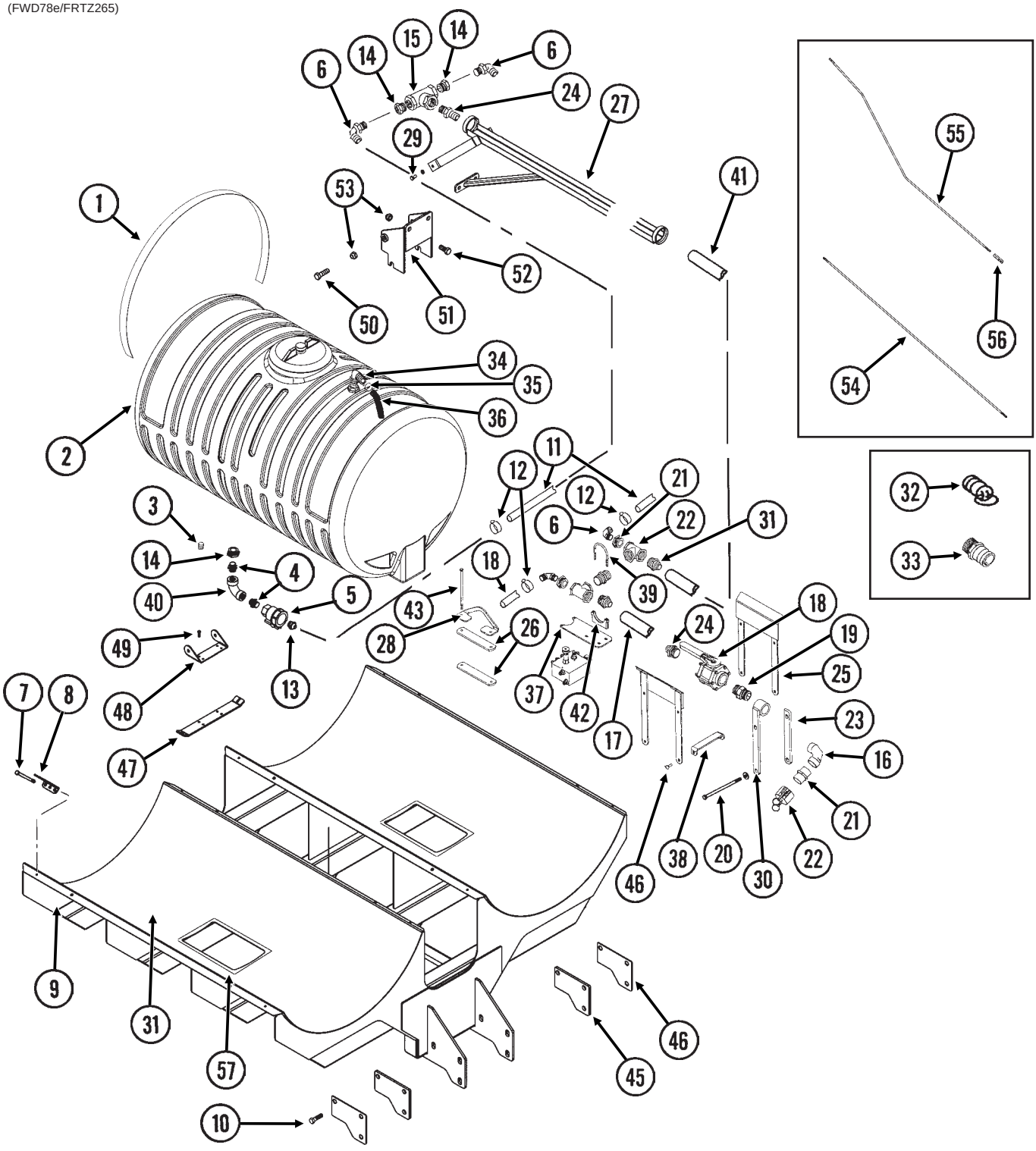


LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (SDS 24 Row 30")

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band
2.	GA10201	1	Tank W/Lid And Fittings, 500 Gallon
	GR1702	-	Lid/Fillwell, 8" (Top Of Tank)
	GR1708	-	3/4" Bulkhead Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring) (Top And Bottom Of Tank)
	GR1739		2" Bulkhead Fitting Assembly (Nut, Bushing And O-Ring) (Bottom Of Tank)
	GR1686	-	Lanyard, 12 1/2" (Top Of Tank)
3.	G10096	2	Plug, 3/4" NPT
4.	GD17992	2	Plate
5.	GA11399	2	Shutoff Valve, 2" NPT
	GR1769	-	Handle
	GR1768	-	Ball
	GR1017	-	Teflon Seat
	GR1767	-	Stem O-Ring
	GR1766	-	Body O-Ring
6.	G11122	8	Hex Head Cap Screw, 5/8"-11 x 12"
	G10205	8	Washer, 5/8" SAE
	G10107	8	Lock Nut, 5/8"-11
7.	G10485	6	Hex Head Tap Bolt, 3/8"-16 x 5" (6 Per Tank)
	G10901	6	Lock Nut W/ Nylon Insert, 3/8"-16 (6 Per Tank)
8.	GD11123	6	Anchor **(Sub GA8114)**
9.	GA12520	1	Tank Mount
10.	G4200-05	1	Hose, 1 1/4" x 50'
11.	G10674	46	Hose Clamp, No. 24
12.	G10599	8	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10203	8	Washer, 3/8" SAE
	G10108	8	Lock Nut, 3/8"-16
13.	G10616	2	Reducing Bushing, 2" Male NPT To 1 1/4" Female
14.	G10888	2	Tee, 2" Female NPT
15.	G10287	2	Elbow, 90°, 2" Male NPT To Female
16.	G4201-03	1	Hose, 2" x 18'
17.	GA2660	1	Shutoff Valve, 2" NPT
18.	G10623	6	Close Nipple, 2" NPT
19.	G10148	2	Hex Head Cap Screw, 1/2"-13 x 9 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
20.	GD3622	1	Adapter, 2" Female NPT To Cam Lock
21.	GD3951	1	Dust Cap, 2" Cam Lock
22.	GD15703	1	Bracket, 1 1/2" x 12 1/2", 24 Row 30"
23.	G10628	4	Adapter, 2" NPT To Barb
24.	GA11064	2	Hose Support, 24 Row 30"
25.	G10676	4	Hose Clamp, No. 36
26.	G4427-01	-	Edge Molding, 1/8" x 12"
	G4427-02	-	Edge Molding, 1/8" x 7"
27.	GA8768	2	Clamp, 3"
28.	GA10509	1	Straight Mount, Quick Fill, 14 19/32"
29.	G10629	1	Elbow, 90°, 1 1/4" NPT To Barb
30.	GD1862	1	Pad, 8" x 14'
31.	GD10777	2	Dust Plug, 2" Male Cam Lock
32.	GD3623	1	Adapter, 2" Male NPT To Cam Lock
33.	G10917	2	Elbow, 90°, 3/4" NPT To Barb
34.	G10278	10	Hose Clamp, No. 16
35.	G4205-10	1	Hose, 3/4" x 200" (100" Per Tank)
36.	GD16210	1	Bracket
37.	GD16189	4	Tie Bracket
38.	G11165	2	T-Bolt Clamp, 2 1/2", Stainless Steel
39.	G10626	1	Adapter, 1 1/4" NPT To Barb

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (SDS 32 Row 30" And 36 Row 30")

(FWD78e/FRTZ265)



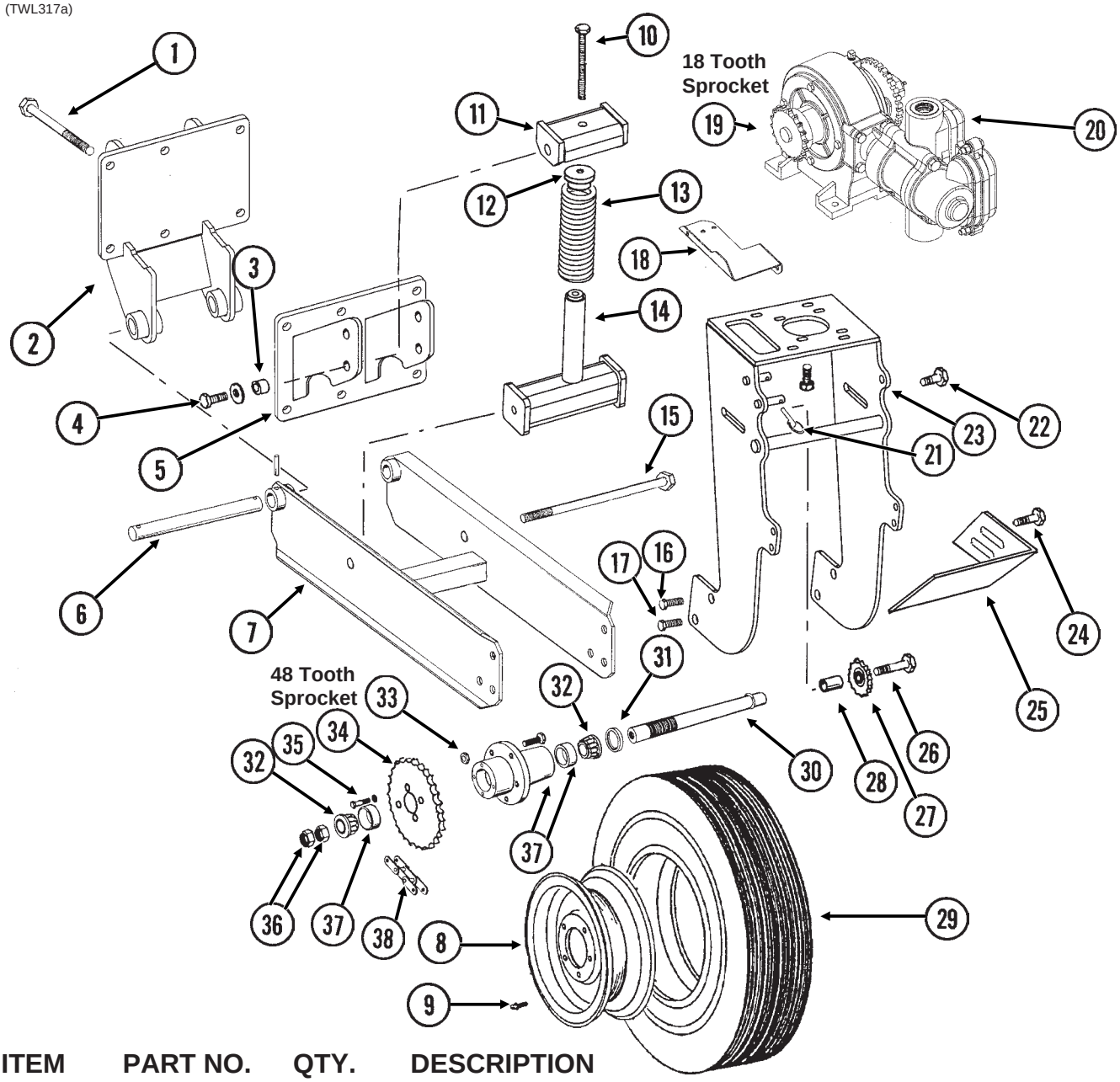
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA11743	2	Tank W/Lid And Fittings, 300 Gallon
	GR1006	-	Lid W/Removable Vent, 10" (Top Of Tank)
	GR1005	-	Fillwell, 10" (Top Of Tank)
	GR0508	-	1 1/4" Polypropylene Fitting Assembly (Nut, Bushing, And O-Ring) (Bottom Of Tank)
	GR1435		1 1/4" Anti-Vortex Fitting Assembly (Nut, Bushing And O-Ring)
	GR0513	-	3/4" Polypropylene Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring)
	GR1571	-	Strap W/Cap Rivet
3.	G10739	2	Plug, 1 1/4" NPT

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (SDS 32 Row 30" And 36 Row 30")

ITEM	PART NO.	QTY.	DESCRIPTION
4.	G10619	4	Close Nipple, 1 1/4" NPT
5.	GA4976	2	Shutoff Valve, 1 1/4" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
6.	G10629	4	Elbow, 90°, 1 1/4" NPT To Barb
7.	G10485	6	Hex Head Tap Bolt, 3/8"-16 x 5" (6 Per Tank)
	G10901	6	Lock Nut W/Nylon Insert, 3/8"-16 (6 Per Tank)
8.	GD11123	6	Anchor **(Sub GA8114)**
9.	GA11607	1	Tank Mount W/Wheels, Sleeve, Bushings And Hardware
	GD16714	-	Wheel
	GD5900-28	-	Sleeve, 1 1/2" O.D. x 1" I.D. x 2 1/8"
	GD16717	-	Bronze Bushing
	GD16718	-	Flanged Bronze Bushing
	GD16716	-	Special Bolt, 1"-8 x 12"
	G10640	-	Grease Fitting, 1/4"-28
10.	G10044	6	Hex Head Cap Screw, 3/4"-10 x 4"
	G10112	6	Lock Nut, 3/4"-10
11.	G4200-13	2	Hose, 1 1/4" x 50'
12.	G10674	48	Hose Clamp, No. 24
13.	G10626	2	Adapter, 1 1/4" NPT To Barb
14.	G10616	6	Reducing Bushing, 2" Male NPT To 1 1/4" Female
15.	G10888	3	Tee, 2" Female NPT
16.	G10287	1	Elbow, 90°, 2" Male NPT To Female
17.	G4201-02	1	Hose, 2" x 12'
18.	GA2660	1	Shutoff Valve, 2" NPT
19.	G10623	3	Close Nipple, 2" NPT
20.	G10148	2	Hex Head Cap Screw, 1/2"-13 x 9 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
21.	GD3622	2	Adapter, 2" Female NPT To Cam Lock
22.	GD3951	1	Dust Cap, 2" Cam Lock
23.	GD15706	-	Bracket, 1 1/2" x 18 1/2", 32 Row 30" And 36 Row 30"
24.	G10628	4	Adapter, 2" NPT To Barb
25.	GA11063	-	Hose Support, 32 Row 30" And 36 Row 30"
26.	GD16478	4	Bracket
27.	GA10663	1	Hose Support
28.	GD16479	4	Mount
29.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
30.	GA10510	-	Straight Mount, Quick Fill, 20 19/32", 32 Row 30" And 36 Row 30"
31.	GD1862	2	Pad, 8" x 14'
32.	GD10777	2	Dust Plug, 2" Male Cam Lock
33.	GD3623	1	Adapter, 2" Male NPT To Cam Lock
34.	G10917	2	Elbow, 90°, 3/4" NPT To Barb
35.	G10278	10	Hose Clamp. No. 16
36.	G4205-10	1	Hose, 3/4" x 200" (100" Per Tank)
37.	GD16210	1	Bracket
38.	GD16189	4	Tie Bracket
39.	G11165	2	T-Bolt Clamp, 2 1/2", Stainless Steel
40.	G10897	2	Elbow, 90°, 1 1/4" Female NPT
41.	G4206-01	1	Hose, 2" x 18'
42.	GA8768	2	Clamp, 3"
43.	G10753	-	Hex Head Cap Screw, 3/8"-16 x 4 1/2", 32 Row 30" And 36 Row 30"
	G10108	8	Lock Nut, 3/8"-16
44.	G10599	8	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10203	8	Washer, 3/8" SAE
	G10108	8	Lock Nut, 3/8"-16
45.	GD16733	2	Shim, 3/8"
46.	GD16731	4	Shim, 12 Gauge
47.	GD16943	1	Mounting Plate
	G10599	-	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10227	-	Lock Washer, 1/4"
	G10103	-	Hex Nut, 1/4"-20
48.	GD16942	1	Flapper
49.	G10064	6	Hex Head Cap Screw, 1/4"-20 x 1"
50.	G10027	2	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
51.	GA11608	-	Hose Support Mount
52.	G11042	2	Hex Head Cap Screw, 3/4"-10 x 1 3/4"
53.	G10112	12	Lock Nut, 3/4"-10
54.	GD16751	1	Extension Rod
55.	GD16944	1	Flapper Rod
56.	GD16572	1	Flapper Pivot Mount
57.	G4427-01	-	Edge Molding, 1/8" x 12"
	G4427-02	-	Edge Molding, 1/8" x 7"

LIQUID FERTILIZER PISTON PUMP MOUNT AND GROUND DRIVE WHEEL

(TWL317a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10152	6	Hex Head Cap Screw, 5/8"-11 x 9"
	G10230	6	Lock Washer, 5/8"
	G10104	6	Hex Nut, 5/8"-11
2.	GA10355	1	Wheel Arm Mount
3.	GB0218	2	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
4.	G10005	2	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	2	Lock Nut, 5/8"-11
5.	GA9712	1	Spring Mount
6.	GD2681	1	Pin, 1 1/4" x 13 1/2"
	G10460	2	Cotter Pin, 1/4" x 2"
7.	GA10621	1	Arm W/Grease Fittings
	G10641	2	Grease Fitting, 1/8" NPT
8.	GA0241	1	Wheel, 5" x 15"
9.	GD1166	1	Valve Stem

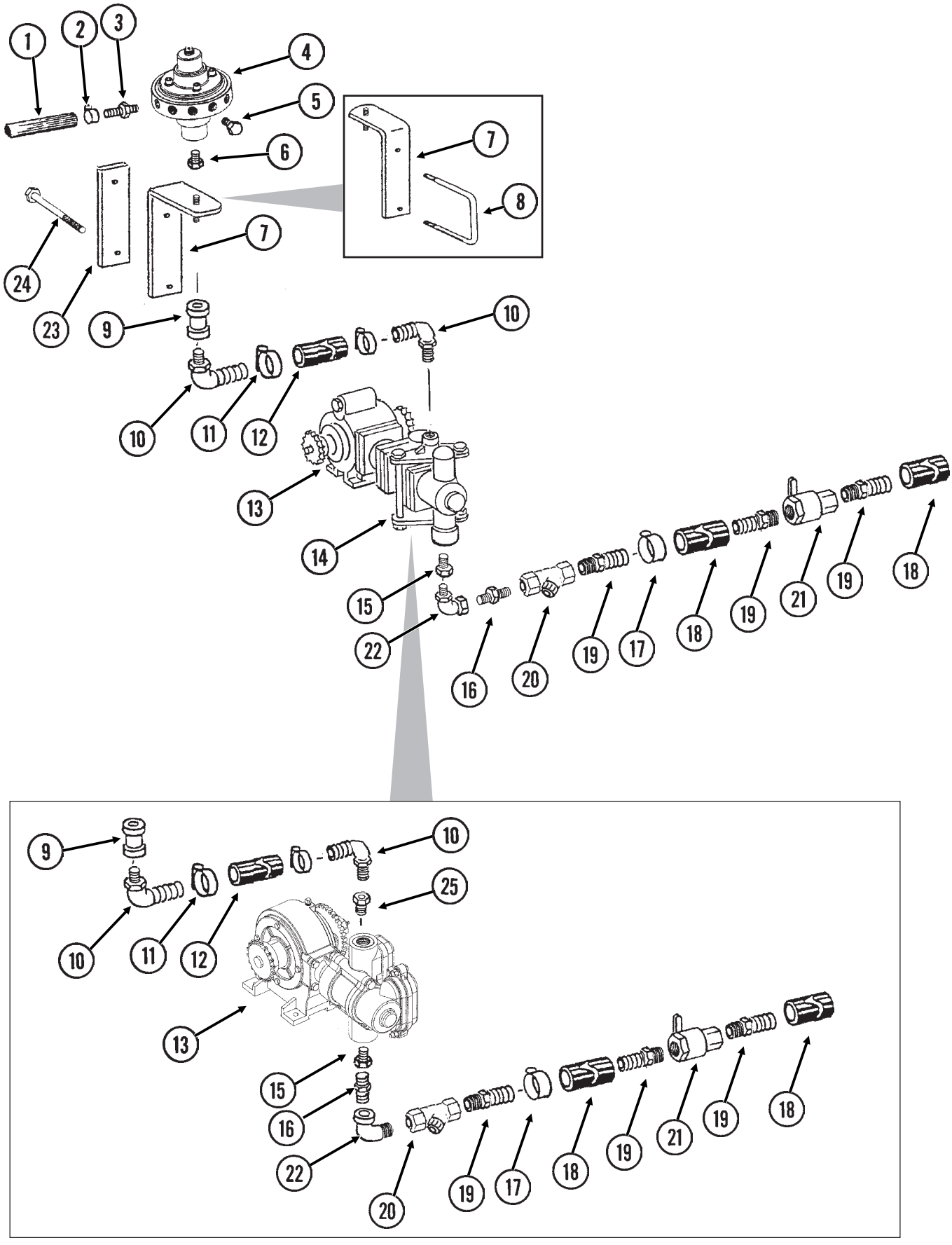
LIQUID FERTILIZER PISTON PUMP MOUNT AND GROUND DRIVE WHEEL

ITEM	PART NO.	QTY.	DESCRIPTION
10.	G10012	1	Hex Head Cap Screw, 5/8"-11 x 6 1/2"
	GD7805	1	Special Washer, 5/8", Hardened
11.	GA10908	1	Spring Mount
12.	GB0196	1	Washer
13.	GD7831	1	Compression Spring
14.	GA10907	1	Spring Guide
15.	G11122	1	Hex Head Cap Screw, 5/8"-11 x 12"
	G10107	1	Lock Nut, 5/8"-11
16.	G10026	2	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	2	Lock Washer, 3/4"
17.	G11042	2	Hex Head Cap Screw, 3/4"-10 x 1 3/4"
	G10231	2	Lock Washer, 3/4"
	G10105	2	Hex Nut, 3/4"-10
18.	GD13744	1	Hose Holder
19.	GR1146	1	Sprocket, 18 Tooth
20.		-	See “Liquid Fertilizer Piston Pump”, Pages P196-P201
21.	GD2558	1	Lynch Pin, 1/4"
22.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10217	2	Washer, 5/8" USS
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
23.	GA10894	1	Pump Mount
24.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
25.	GD13328	1	Scraper
26.	G10013	1	Hex Head Cap Screw, 5/8"-11 x 3 1/2"
	G10205	1	Washer, 5/8" SAE
	G10230	1	Lock Washer, 5/8"
	G10104	1	Hex Nut, 5/8"-11
27.	GA0262	1	Idler Sprocket W/Bearing, 15 Tooth
28.	GD7817-05	1	Spacer, 11/16" I.D. x 1 1/4" Long
29.	GD0844	1	Tire, 7.60" x 15", 8 Ply (Specify Brand*)
30.	GA2559	1	Spindle
31.	GA0252	2	Seal
32.	GA0251	2	Bearing
33.	GR0267	5	Lug Nut, 1/2"-20
34.	G2500-84	1	Sprocket, 48 Tooth
35.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10232	4	Lock Washer, 5/16"
36.	GD0831	2	Shoulder Nut, 1 1/4"-12 UNF-2A
37.	GA0547	1	Hub W/Cups And Studs, 5 Bolt
	GR0190	2	Cup
	GR0204	5	Stud
38.	G3200-63	1	Chain, No. 2050, 63 Pitch Including Connector Link
	GR0195	1	Connector Link, No. 2050
	GR0200	1	Offset Link, No. 2050

*** Specific brand requests will be supplied only as available from current KINZE® Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied. Different brand tires may have different diameters. Change in tire brand may affect rates. Field checks are recommended after any change in tires.**

LIQUID FERTILIZER FLOW DIVIDER MOUNT AND HOSES

(FRTZ215j)



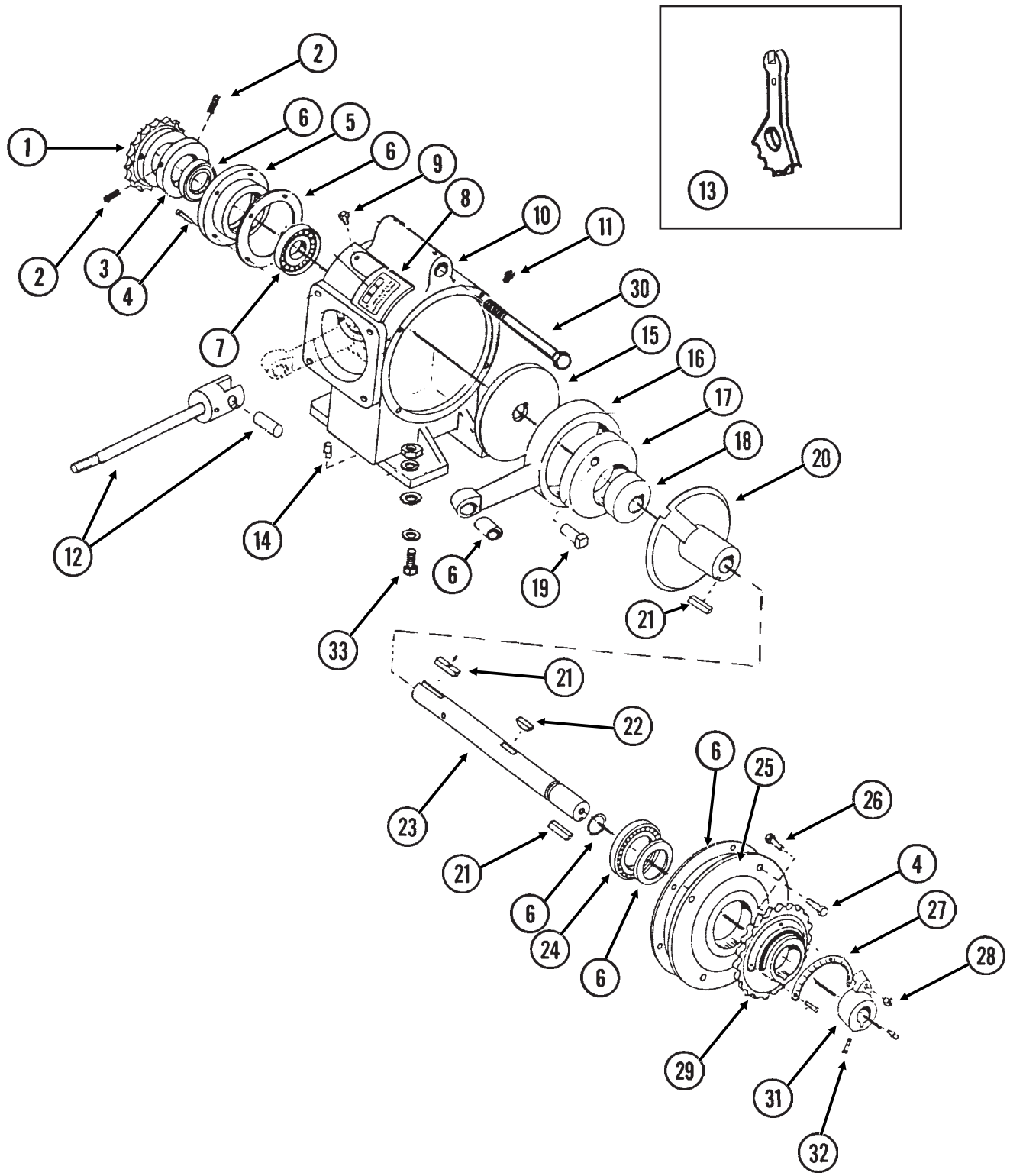
LIQUID FERTILIZER FLOW DIVIDER MOUNT AND HOSES

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G4301-02	-	Hose, 3/8" x 50'
	G4301-04	-	Hose, 3/8" x 100'
	G4301-08	-	Hose, 3/8" x 250'
2.	G10681	24-32	Hose Clamp, No. 6
3.	GD11700	12-16	Adapter, 1/4" NPT To 3/8" Barb
4.		-	See “Liquid Fertilizer Piston Pump Flow Divider”, Pages P202 And P203
5.	G10292	-	Pipe Plug, 1/4" NPT
6.	G10995	1	Reducing Bushing, 1" Male NPT To 3/4" Female, Stainless Steel, 32 Row 30" And 36 Row 30"
7.	GA6527	1	Mount, 3/4" NPT
8.	GD1114	1	U-Bolt, 7" x 7" x 5/8"-11
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
9.	G11083	1	Coupler, 3/4" Female NPT
10.	G10917	2	Elbow, 90°, 3/4" NPT To Barb
11.	G10278	2	Hose Clamp, No. 16
12.	G4205-10	-	Hose, 3/4" x 200"
13.		-	See “Liquid Fertilizer Piston Pump (Crankcase Assembly)”, Pages P196 And P197
14.		-	See “Liquid Fertilizer Piston Pump (Cylinder Assembly)”, Pages P198 And P199
15.	G10615	1	Reducing Bushing, 1 1/2" Male NPT To 1 1/4" Female
16.	G10619	1	Close Nipple, 1 1/4" NPT
17.	G10674	2	Hose Clamp, No. 24
18.		-	Hose, 1 1/4", See “Liquid Fertilizer Tanks, Saddles, Saddle Mounts And Hoses”, Pages P184-P191
19.	G10626	3	Adapter, 1 1/4" NPT To Barb
20.	GA3893	1	Strainer Complete
	GR0880	-	Screen, No. 40 Mesh
	GR0881	-	Gasket
	GR0882	-	Y-Body
	GR0883	-	End Cap
21.	GA4976	-	Shutoff Valve, 1 1/4" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
22.	G10887	2	Elbow, 90°, 1 1/4" Male NPT To Female
23.	GD15483	1	Mount, 32 Row 30" And 36 Row 30"
24.	G10046	2	Hex Head Cap Screw, 5/8"-11 x 5"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
25.	G11237	1	Reducing Bushing, 1 1/2" Male NPT To 3/4" Female

LIQUID FERTILIZER PISTON PUMP (Crankcase Assembly)

(PT38a/GR1100)

John Blue® Model L-4405



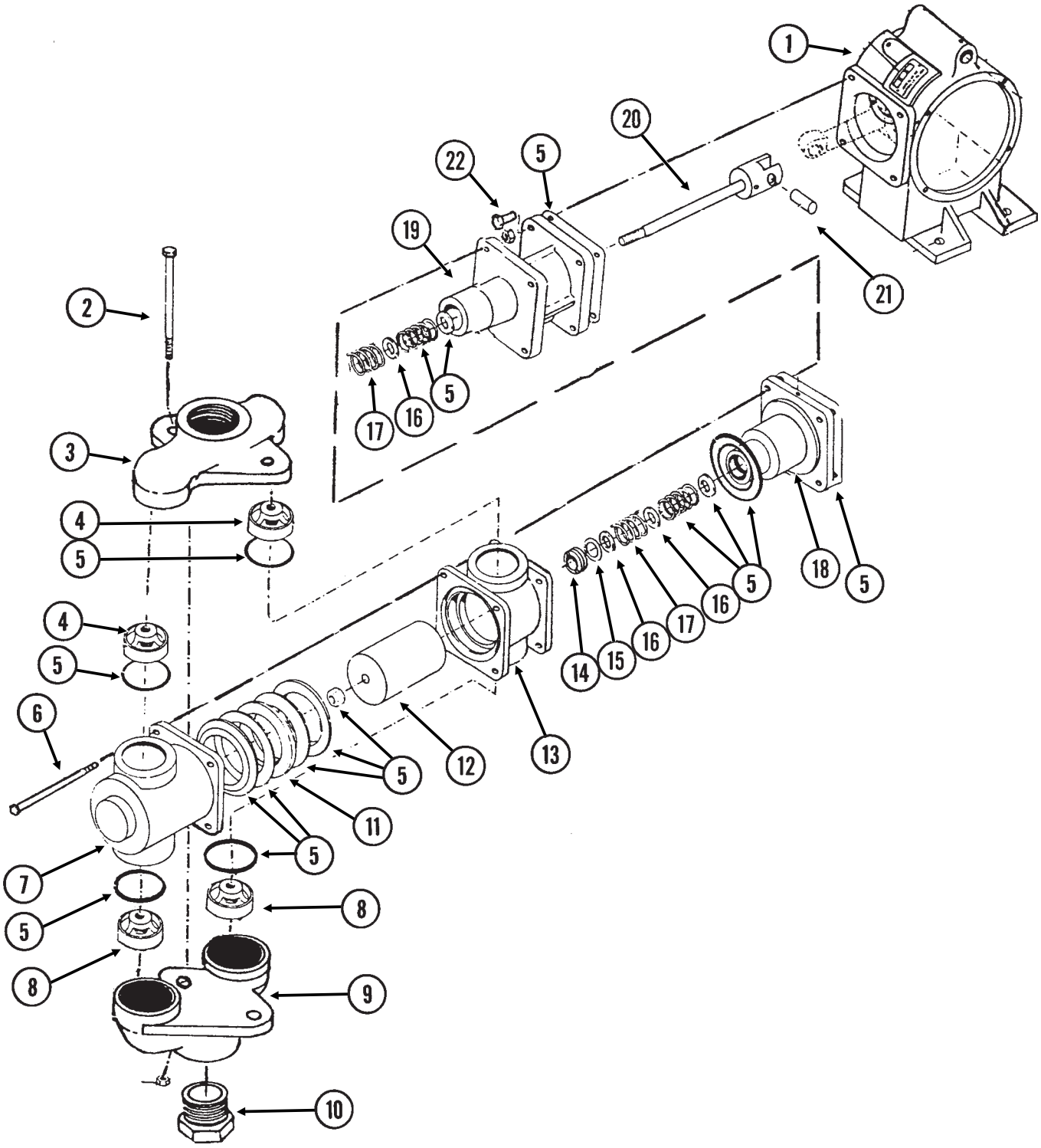
LIQUID FERTILIZER PISTON PUMP (Crankcase Assembly)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “Liquid Fertilizer Piston Pump Mount And Ground Drive Wheel”, Pages P192 And P193
2.	G10688	2	Square Head Set Screw, 3/8"-16 x 5/8"
3.	GR1147	1	Spacer
4.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
5.	GR1102	1	Housing
6.	GR1173	-	Repair Kit, Includes Item 5 On “Liquid Fertilizer Piston Pump (Cylinder Assembly)”, Pages P198 And P199
7.	GR1104	1	Bearing
8.	GR1105	1	Name Plate
9.	G10054	2	Hex Head Cap Screw, 5/16"-18 x 1/2"
10.	GR1106	1	Crankcase
11.	GR1107	1	Vent Plug
12.		-	See “Liquid Fertilizer Piston Pump (Cylinder Assembly)”, Pages P198 And P199
13.	GR1100	1	Adjustment Wrench
14.	GR1123	3	Plug
15.	GR1108	1	Disc
16.	GR1109	1	Connecting Rod
17.	GR1110	1	Large Eccentric
18.	GR1111	1	Small Eccentric
19.	GR1120	1	Eccentric Pin
20.	GR1119	1	Sleeve
21.	GR1118	3	Setting Arm Key
22.	GR1112	1	Woodruff Key
23.	GR1148	1	Crankshaft
24.	GR1116	1	Bearing
25.	GR1166	1	Cover Plate
26.	GR1167	1	Square Head Cap Screw, 3/8"-16 x 1 3/4"
27.	GR1168	1	Scale
28.	G10108	1	Lock Nut, 3/8"-16
29.	GR1114	1	Flange
30.	G10318	1	Hex Head Cap Screw, 5/8"-11 x 4 1/2"
	G10104	1	Hex Nut, 5/8"-11
31.	GR1165	1	Arm
32.	G10693	4	Hex Socket Head Set Screw, 5/16"-18 x 3/8"
33.	G10003	4	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	GR1122	4	Mounting Pad
	G10210	8	Washer, 3/8" USS
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
A.	GA6154	1	Piston Pump Complete Less Sprocket (L-4405), Includes Crankcase (Items 2-33 On This Page) And Cylinder (Items 1-22 On Pages P198 And P199) Assemblies

LIQUID FERTILIZER PISTON PUMP (Cylinder Assembly)

(PT39a)

John Blue® Model L-4405



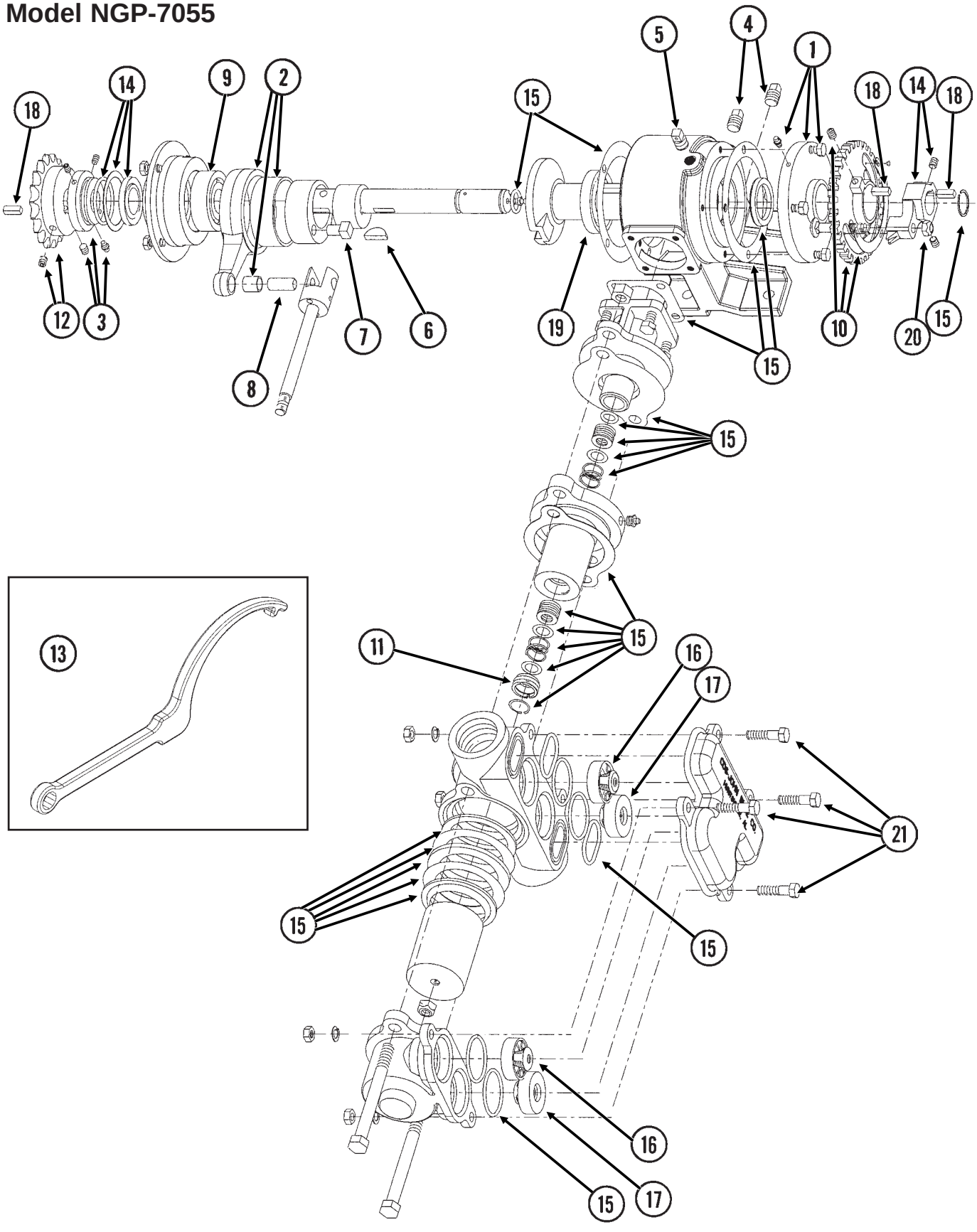
LIQUID FERTILIZER PISTON PUMP (Cylinder Assembly)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “Liquid Fertilizer Piston Pump (Crankcase Assembly)”, Pages P196 And P197
2.	G10686	2	Hex Head Cap Screw, 3/8"-16 x 8"
	G10101	2	Hex Nut, 3/8"-16
3.	GR1145	1	Discharge Manifold
4.	GR1144	2	Discharge Valve
5.	GR1173	-	Repair Kit, Includes Item 6 On “Liquid Fertilizer Piston
		-	Pump (Crankcase Assembly)”, Pages P196 And P197
6.	G10687	4	Hex Head Cap Screw, 3/8"-16 x 5 1/2"
	G10101	4	Hex Nut, 3/8"-16
7.	GR1143	1	Outboard Cylinder
8.	GR1142	2	Suction Valve
9.	GR1140	1	Suction Manifold
10.		-	See “Liquid Fertilizer Piston Pump Mount And Ground Drive Wheel”, Pages P192 And P193
11.	GR1137	1	Flange Packing Washer
12.	GR1136	1	Plunger
13.	GR1135	1	Inboard Cylinder
14.	GR1134	1	Stuffing Box Insert
15.	GR1133	1	Retaining Ring
16.	GR1129	3	Washer
17.	GR1130	2	Packing Spring
18.	GR1132	1	Outboard Stuffing Box
19.	GR1127	1	Crosshead Guide
20.	GR1125	1	Piston Rod
21.	GR1124	1	Pin
22.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"

LIQUID FERTILIZER PISTON PUMP
(Uses 18 Tooth Sprocket)

(A12335a/GR1808)

Model NGP-7055

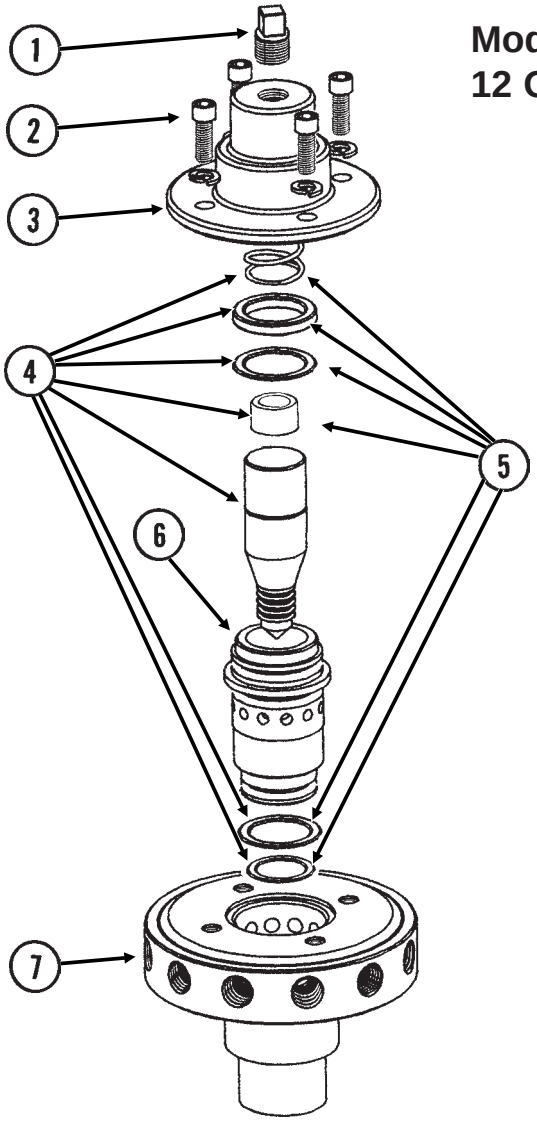


LIQUID FERTILIZER PISTON PUMP
(Uses 18 Tooth Sprocket)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1804	1	Flange Cover Assembly
	G10991	4	Hex Head Cap Screw, 5/16"-18 x 7/8"
2.	GR1803	1	Connecting Rod Assembly
3.	GR1801	1	Spacer Assembly
	G10693	3	Hex Socket Head Set Screw, 5/16"-18 x 3/8"
4.	GR1123	2	Plug
5.	GR1543	1	Vent Plug
6.	GR1112	1	Woodruff Key
7.	GR1120	1	Eccentric Pin
8.	GR1124	1	Pin
9.	GR1104	1	Bearing
10.	GR1805	1	Setting Hub Assembly
11.	GR1134	1	Stuffing Box Insert
12.	GR1146	1	Sprocket, 18 Tooth
13.	GR1808	1	Adjustment Wrench
14.	GR1806	1	Setting Pointer Assembly
15.	GR1796	1	Repair Kit, Includes: (6) Gaskets, (9) O-Rings, (4) Washers, (1) Retaining Ring, (2) Oil Seals, (1) Snap Ring, (1) Thrust Washer, (1) Rod Bushing, (2) Flange Plunger Packings, (2) Packing Springs, (2) Rod Vee Packing Sets
16.	GR1800	2	Discharge Valve Assembly
17.	GR1798	2	Suction Valve Assembly
18.	GR1118	3	Setting Arm Key
19.	GR1116	1	Bearing
20.	G10306	1	Carriage Bolt, 3/8"-16 x 2"
	G10108	1	Lock Nut, 3/8"-16
21.	G10003	4	Hex Head Head Cap Screw, 3/8"-16 x 1 1/2"
	G10210	4	Washer, 3/8" USS
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
A.	GA12335	-	Piston Pump Complete W/18 Tooth Sprocket (Model NGP-7055)

LIQUID FERTILIZER PISTON PUMP FLOW DIVIDER, 24 ROW 30"

(FRTZ202c)



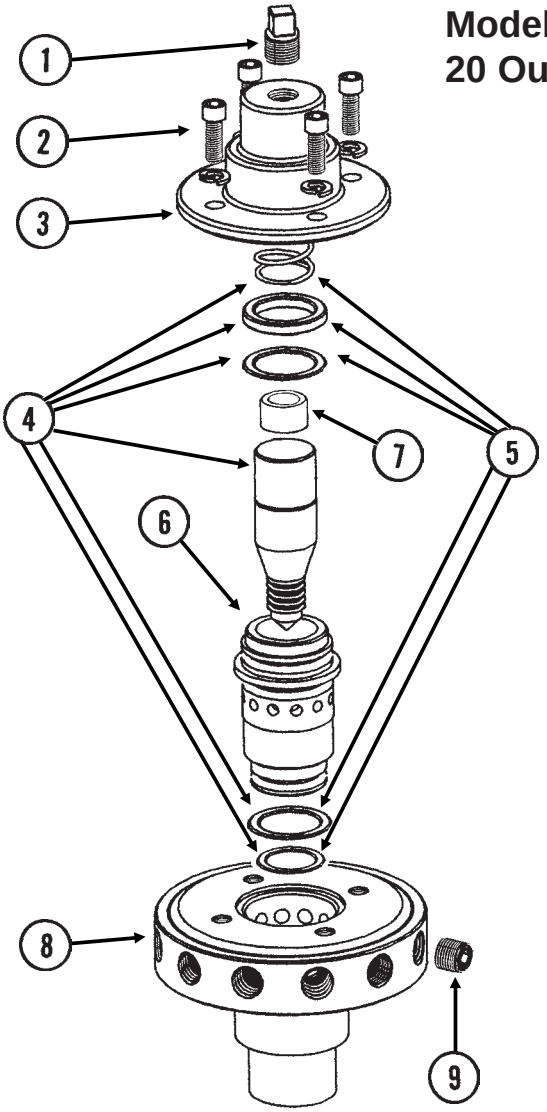
Model FD-1200 Flow Divider, 12 Outlet

3/4" NPT

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1543	1	Vent Plug
2.	GR1542	4	Hex Socket Head Screw, 1/4"-20 x 3/4"
	GR1541	4	Lock Washer, 1/4", Stainless Steel
3.	GR1540	1	Cap
4.	GR1544	1	Needle Assembly W/Seal Kit (Item 5)
5.	GR1545	1	Seal Kit, Includes: (3) O-Rings, (1) Seal, (1) Spring, (1) Stainless Steel Sleeve
6.	GR1535	1	Sleeve
7.	GR1533	1	Body (12 Outlets)
A.	GA8931	1	Liquid Fertilizer Piston Pump Flow Divider Complete, 12 Outlet (Model FD-1200)

LIQUID FERTILIZER PISTON PUMP FLOW DIVIDER, 32 ROW 30" AND 36 ROW 30"

(FRTZ202d)



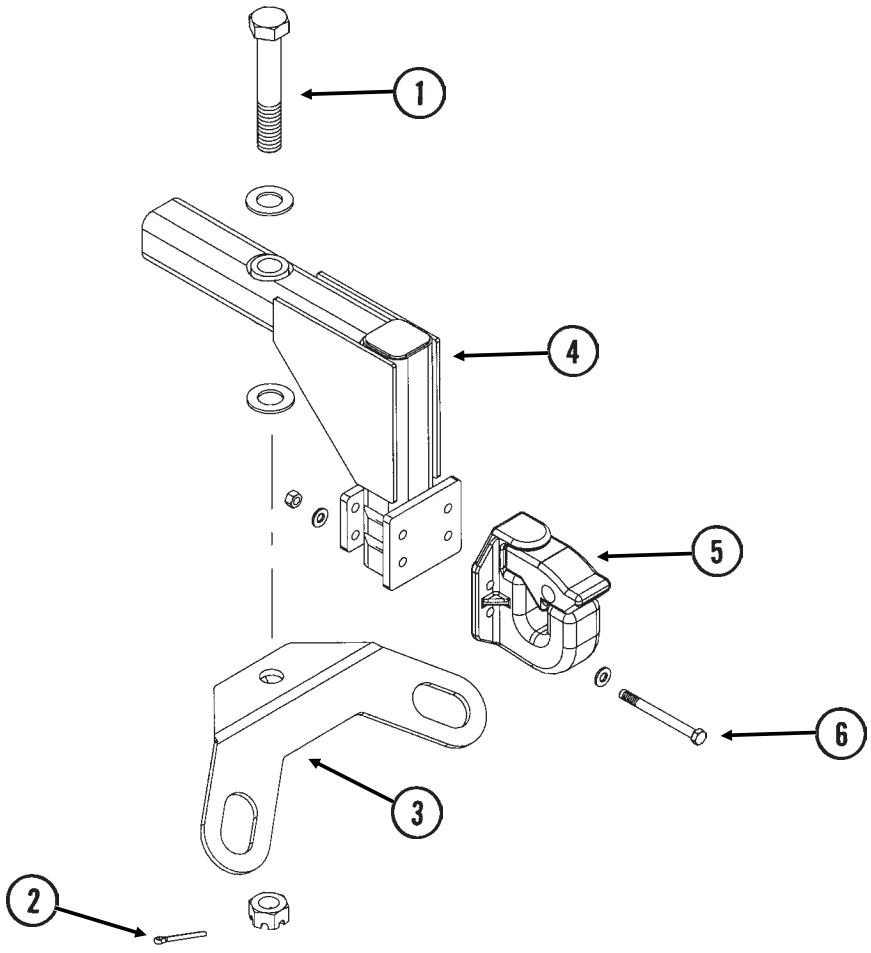
Model FD-2000 Flow Divider, 20 Outlet

1" NPT

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1543	1	Vent Plug
2.	GR1542	4	Hex Socket Head Screw, 1/4"-20 x 3/4"
	GR1541	4	Lock Washer, 1/4", Stainless Steel
3.	GR1566	1	Cap
4.	GR1567	1	Needle Assembly W/Seal Kit (Item 5)
5.	GR1568	1	Seal Kit, Includes: (3) O-Rings, (1) Seal, (1) Spring
6.	GR1561	1	Sleeve
7.	GR1574	1	Sleeve, 1" O.D. x 1/2" Long, Stainless Steel
8.	GR1559	1	Body (20 Outlets)
9.	G10350	4	Hex Socket Head Plug, 1/4" NPT, Stainless Steel
A.	GA9407	1	Liquid Fertilizer Piston Pump Flow Divider Complete, 20 Outlet (Model FD-2000)

REAR TRAILER HITCH

(FWD53)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15939	1	Hex Head Cap Screw, 1 1/4"-7 x 7 1/2"
	G10226	2	Washer, 1 1/4" SAE
	G10506	1	Slotted Nut, 1 1/4"-7
2.	G10460	1	Cotter Pin, 1/4" x 2"
3.	GD15929	1	Safety Chain Mount
4.	GA10858	1	Hitch Mount
5.	GA10859	1	Pintle Hitch
6.	G11153	4	Hex Head Cap Screw, 1/2"-20 x 5 1/2", Grade 8
	GD14674	8	Special Washer, 1/2", Hardened
	G11154	4	Lock Nut, 1/2"-20, Grade 8

DECALS, PAINT AND MISCELLANEOUS

WARNING

TO AVOID INJURY --
STAND CLEAR--KEEP OTHERS AWAY WHEN RAISING OR LOWERING MARKERS. BEFORE TRANSPORTING PLANTER FULLY EXTEND HYDRAULIC CYLINDERS AND INSTALL LOCKING PINS WHERE PROVIDED.

7100-42

1

WARNING

1. Read and understand the Operator's Manual.
2. Stop the tractor engine before leaving the operator's platform.
3. Keep riders off the machine.
4. Make certain everyone is clear of the machine before starting the tractor engine and operating.
5. Keep all shields in place.
6. Never lubricate, adjust, unclog or service the machine with tractor engine running.
7. Wait for all movement to stop before servicing.
8. Keep hands, feet and clothing away from moving parts.
9. Use flashing warning lights when operating on highways except when prohibited by law.

7100-46

2

WARNING

TOW ONLY WITH FARM TRACTOR

7100-56

3

WARNING

NEVER WALK UNDER OR WORK ON PLANTER WHEN IT IS RAISED WITHOUT SUPPORTING THE FRAMES WITH ADDITIONAL SUPPORTS.

7100-68

4

DANGER

THIS PLANTER IS DESIGNED TO BE DRIVEN BY GROUND TIRES ONLY. THE USE OF HYDRAULIC, ELECTRIC OR PTO DRIVES MAY CREATE SERIOUS SAFETY HAZARDS TO YOU AND THE PEOPLE NEARBY. IF YOU INSTALL SUCH DRIVES YOU MUST FOLLOW ALL APPROPRIATE SAFETY STANDARDS AND PRACTICES TO PROTECT YOU AND OTHERS NEAR THIS PLANTER FROM INJURY.

7100-89

5

WARNING

THIS MACHINE HAS BEEN DESIGNED AND BUILT WITH YOUR SAFETY IN MIND. DO NOT MAKE ANY ALTERATIONS OR CHANGES TO THIS MACHINE. ANY ALTERATION TO THE DESIGN OR CONSTRUCTION MAY CREATE SAFETY HAZARDS.

7100-90

6

WEEKLY

7

DAILY

8

WARNING

AGRICULTURAL CHEMICALS CAN BE DANGEROUS. IMPROPER SELECTION OR USE CAN SERIOUSLY INJURE PERSONS, ANIMALS, PLANTS, SOIL OR OTHER PROPERTY. BE SAFE. SELECT THE RIGHT CHEMICAL FOR THE JOB. HANDLE WITH CARE. FOLLOW THE INSTRUCTIONS ON THE CONTAINER LABEL AND OF THE EQUIPMENT MANUFACTURER.

7100-115

9

DAILY

7100-116

10

DANGER

SERIOUS INJURY OR DEATH CAN RESULT FROM CONTACT WITH ELECTRICAL LINES. USE CARE TO AVOID CONTACT WITH ELECTRIC LINES WHEN MOVING OR OPERATING THIS MACHINE.

7100-117

11

USE 1 TABLESPOON POWDERED GRAPHITE WITH EACH HOPPER FILL OF SEED. SEED TREATMENT, FOREIGN MATERIAL, DIRT, OR SEED CHAFF MAY CAUSE GRADUAL REDUCTION OF SEED POPULATION. REFER TO MANUAL FOR MAINTENANCE AND CARE.

7100-153

12

ROTATION

7100-192

13

NOTE

It is the responsibility of the user to read and understand the Operator's Manual in regards to safety, operation, lubrication and maintenance before operation of this equipment.

AN OPERATOR & PARTS MANUAL IS AVAILABLE FOR THIS MACHINE.

To obtain a manual, furnish model number and serial number and contact your KINZE Dealer or KINZE Manufacturing, Inc., P.O. Box 806 Williamsburg, IA 52361-0806 USA

14

WARNING

MAXIMUM INFLATION PRESSURE 75 PSI

7100-219

15

TORQUE 5/8" SPINDLE BOLTS TO 120 FT/LBS. CHECK PERIODICALLY AND RE-TORQUE AS NEEDED.

7100-234

16

EVOLUTION SERIES

17

18

CAUTION

SET DOWN PRESSURE SPRINGS TO MINIMUM. LOWER PLANTER TO GROUND AND EMPTY SEED HOPPERS. REQUIRES 90 LB MIN TO LIFT .

7100-249

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21

ANNUALLY

22

DECALS, PAINT AND MISCELLANEOUS

23

KINZE

3800

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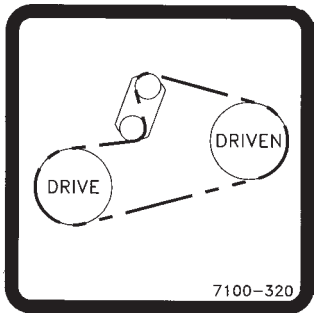

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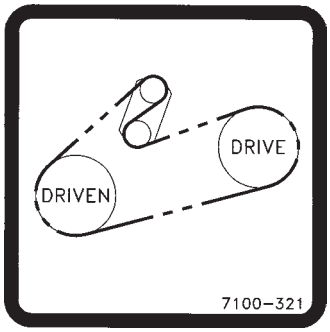

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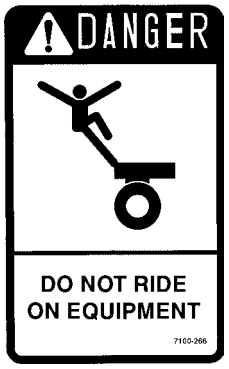

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KINZE

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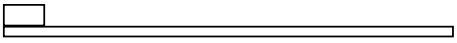

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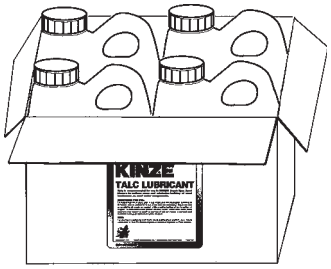

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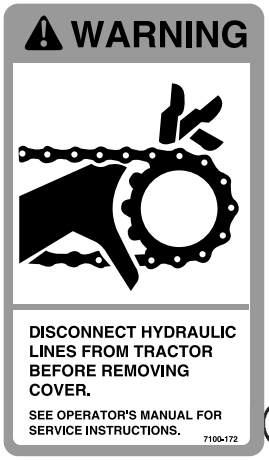

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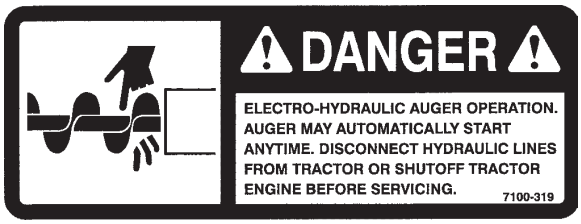

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DECALS, PAINT AND MISCELLANEOUS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G7100-42	4	Decal, Warning
2.	G7100-46	1	Decal, Warning
3.	G7100-56	1	Decal, Warning
4.	G7100-68	3	Decal, Warning
5.	G7100-89	2	Decal, Danger
6.	G7100-90	1	Decal, Warning
7.	G7100-110	-	Decal, Grease Weekly
8.	G7100-111	-	Decal, Oil Daily
9.	G7100-115	-	Decal, Warning (1 Per Granular Chemical Hopper)
10.	G7100-116	-	Decal, Grease Daily
11.	G7100-117	1	Decal, Danger
12.	G7100-153	-	Decal, Information (1 Per Brush-Type Seed Meter)
13.	G7100-192	-	Decal, Point Row Clutch Rotation
14.	G7100-217	-	Decal, Note
15.	G7100-219	-	Decal, Warning
16.	G7100-234	-	Decal, Bolt Torque
17.	G7100-247	-	Decal, Logo, 4 3/8" x 4 1/2" (2 Per Row Unit)
	G7100-252	-	Decal, Logo, 3 1/2" x 3 5/8" (Hopper Panel Extension)
18.	GD2199	1	SMV Sign
19.	G7100-249	-	Decal, Caution
20.	G7100-258	-	Reflective Decal, Red, 1 1/2" x 9", Rectangular (If Applicable)
	G7100-259	-	Reflective Decal, Amber, 1 1/2" x 9", Rectangular (If Applicable)
	G7100-260	-	Reflective Decal, Orange, 1 1/2" x 9", Rectangular (If Applicable)
21.	G7100-261	-	Reflective Decal, Red, 1 3/4" x 9", Die-Cut (If Applicable)
	G7100-262	-	Reflective Decal, Amber, 1 3/4" x 9", Die-Cut (If Applicable)
	G7100-263	-	Reflective Decal, Orange, 1 3/4" x 9", Die-Cut (If Applicable)
22.	G7100-277	-	Decal, Grease Annually
23.	G7100-295	-	Decal, Spring Tension Release
24.	G7100-300	2	Decal, KINZE® 3800
25.	GD10057-01	-	Hose Identification Sleeve, Red AA
	GD10057-02	-	Hose Identification Sleeve, Red BB
	GD10057-03	-	Hose Identification Sleeve, Blue AA
	GD10057-04	-	Hose Identification Sleeve, Blue BB
	GD10057-05	-	Hose Identification Sleeve, Black AA
	GD10057-06	-	Hose Identification Sleeve, Black BB
	GD10057-09	-	Hose Identification Sleeve, White AA
	GD10057-10	-	Hose Identification Sleeve, White BB
26.	G7100-320	-	Decal, Transmission, R.H.
27.	G7100-321	-	Decal, Transmission, L.H.
28.	G7100-322	-	Reflective Decal, Orange-Red, 1 1/2" x 4"
29.	G7100-266	-	Decal, Danger
30.	G7100-317	-	Decal, Transport
31.	G7100-310	-	Decal, KINZE®, 6 11/16" x 28 5/16"
32.	GD1512	-	Tie Strap, 7 1/2"
	GD2117	-	Tie Strap, 14 1/2"
	GD1162	-	Tie Strap, 28"
	GD2984	-	Tie Strap, 34"
33.	GM0197	-	Operator & Parts Manual, Model 3800 (Mechanical Seed Metering)
34.	GR0146MPP	-	Powdered Graphite, Twenty-Four 1 Pound Containers
35.	GR0155MPP	-	Blue Paint, Twelve Aerosol Cans
36.	GR1570MPP	-	Talc Lubricant, Four 8 Pound Containers
37.	G7100-172	-	Decal, Warning
38.	G7100-319	-	Decal, Danger

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