

MODEL 3800 AND 3800 SDS FORWARD FOLDING PLANTER (EdgeVac® Seed Metering) OPERATOR & PARTS MANUAL

PRELIMINARY M0215 Rev. 4/08

This manual is applicable to: Model: 3800 And 3800 SDS Forward Folding Planters
Serial Number: 755215 And On

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

Model Number _____

Serial Number _____

Date Purchased _____

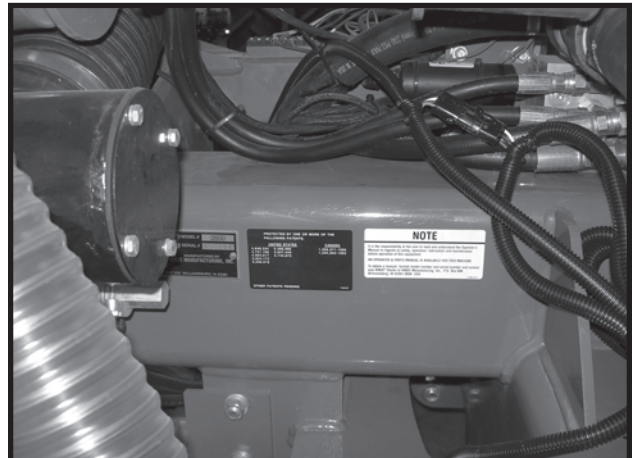
Monitor Serial Number _____
Measured Pulses Per Mile/Km (Radar Distance Sensor) _____
Measured Pulses Per Mile/Km (Magnetic Distance Sensor) _____

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.

D01050701



**3800 Planter With Conventional Seed Hoppers
Shown**

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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 torques.
- 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.
- Vacuum fan PTO drive pump is attached correctly to the tractor. Reservoir is filled to capacity and system is inspected for leaks.
- PTO shaft meets specifications for tractor being used with planer.

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. _____

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.

- Check for proper operation of vacuum fan, PTO driven pump and PTO assembly with tractor to be used with planter.
- 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.
- Check with the customer as to the performance of the EdgeVac® Seed Metering System.
- 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

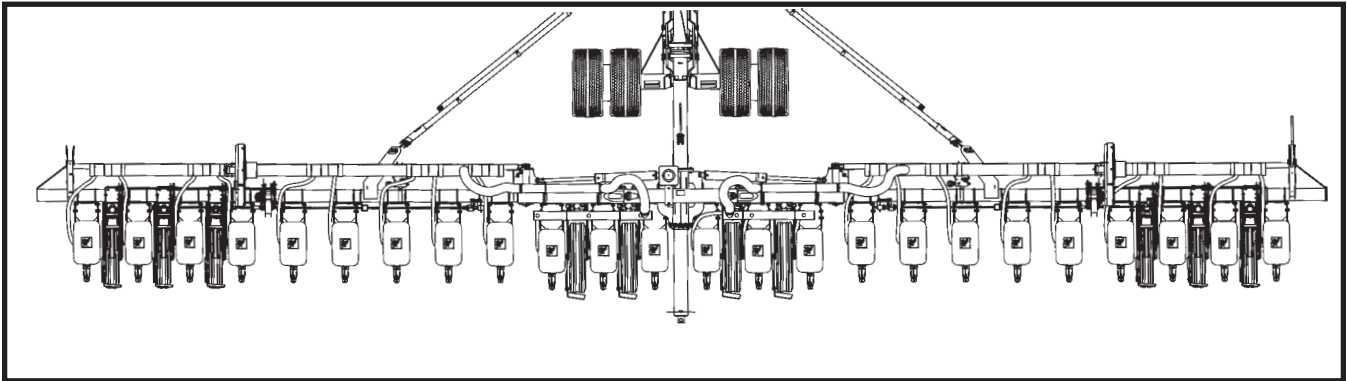
Model 3800 Forward Folding Planters are available in multiple size configurations with bulk seed delivery system (SDS) or conventional seed hoppers. The design permits installation of liquid fertilizer application equipment and various row unit attachments.

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.

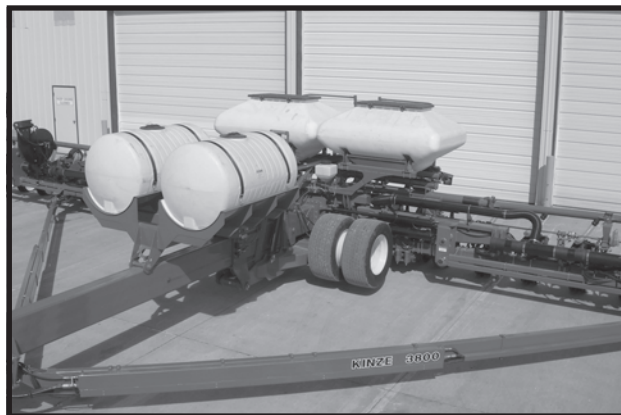
Right hand (R.H.) and left hand (L.H.), as used throughout this manual, are determined by facing in the direction the machine will travel when in use unless otherwise stated.

(FWD124a)



Model 3800 Conventional EdgeVac® 24 Row 30" Planter

D03220615



**Model 3800 SDS EdgeVac® 36 Row 30" Planter
With Liquid Fertilizer Package**

INTRODUCTION

SPECIFICATIONS

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

SEED METER TYPE - EdgeVac® Seed Metering System

EDGEVAC® SEED METERING SYSTEM INCLUDES -

EdgeVac® Seed Meters (Less Seed Discs), Meter Drive Clutches, No. 41 Chains, Two 20" Diameter Vacuum Fans With Mounting Components, Hydraulic Motors, Oil Filters And Coolers, 1000 RPM 1 3/4"-20 Spline PTO 2-Section Gear Pump (Planter Mounted), 8 Gallon Capacity Oil Reservoir, Hoses And Fittings, 4" Diameter Vacuum Feed Hoses, Manifolds With Mounting Brackets And Hardware, 2" Diameter Meter Vacuum Hoses With Connectors, Analog Vacuum Gauges And EdgeVac® Control Console

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 24 Row 30"/Four On SDS 24 Row 30" And 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 (32 Row 30" And 36 Row 30" Only), 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

HITCH - Category 3N, 3 Or 4N

SPECIFICATIONS

MACHINE OPTIONS

- Electronic Seed Monitor
 - 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)

ROW UNIT OPTIONS/ATTACHMENTS

- 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 Pressure Package
- 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)	25,159 Lbs.	32,324 Lbs.	36,156 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"
TANK HEIGHT (Planting Position)	9' 4"	9' 4"	9' 4"
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)	25,434 Lbs.	35,034 Lbs.	39,331 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. A PTO pump and hydraulic motors power the vacuum fans. 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.



Never operate vacuum fans with cover removed.



Always wear ear protection when working around operating vacuum fans.

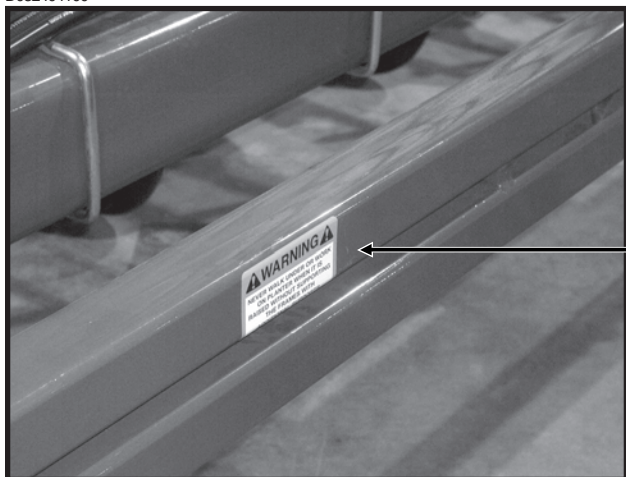
SAFETY WARNING SIGNS

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.

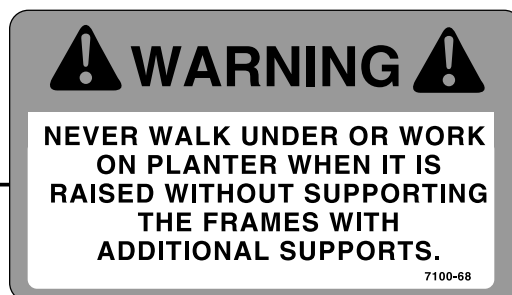
NOTE: Style and locations of SMV sign, reflective decals and safety/warning lights conform to ANSI/SAE S279.13 DEC2005 and ANSI/SAE S276.6 JAN2005.

D032404100



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

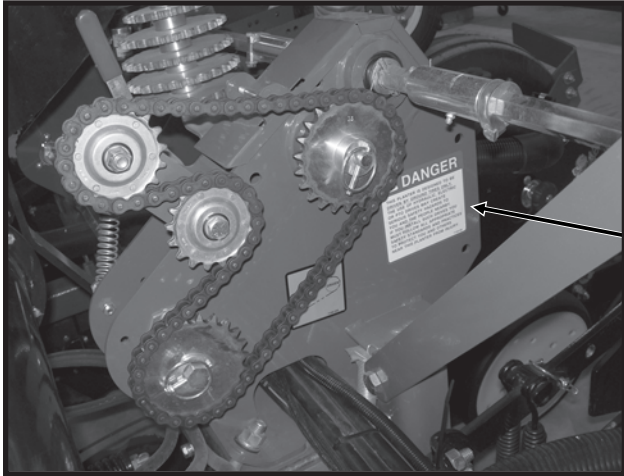
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Part No. G7100-68 (Qty. 2 - Located On Stub Wings On Both Sides Of Planter)

SAFETY WARNING SIGNS

D01050736



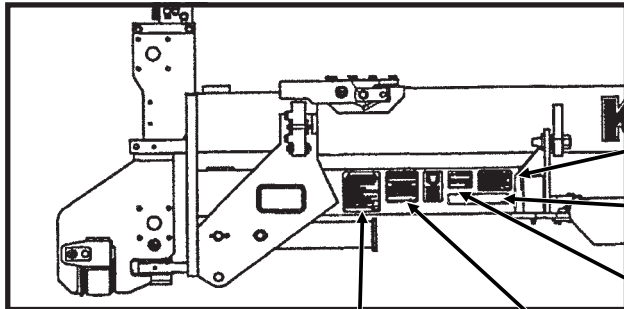
 DANGER

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 - One Located On Seed Rate Transmissions On Each Side Of Planter)

(FWD162)



 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

Part No. G7100-90 (Qty. 1)



Part No. G7100-259 Amber Reflective Decal (Qty. 2 - One Located On Each Side Of 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)

 WARNING

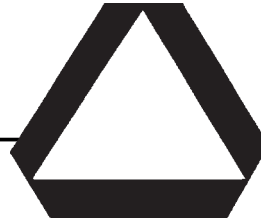
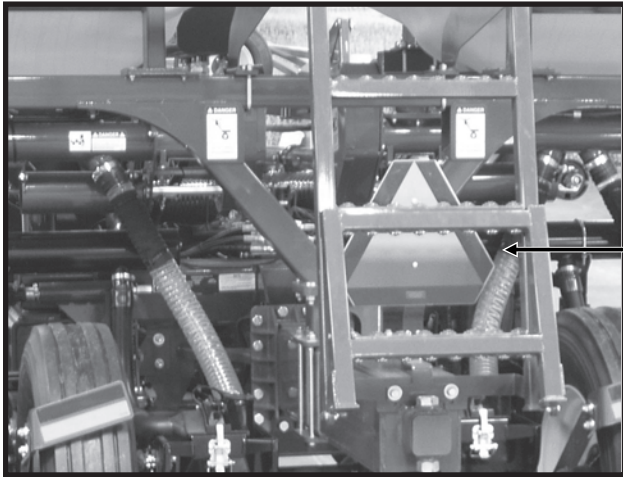
TOW ONLY WITH FARM TRACTOR

7100-56

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

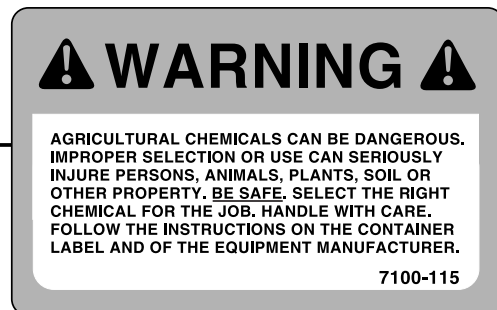
SAFETY WARNING SIGNS

D02270807



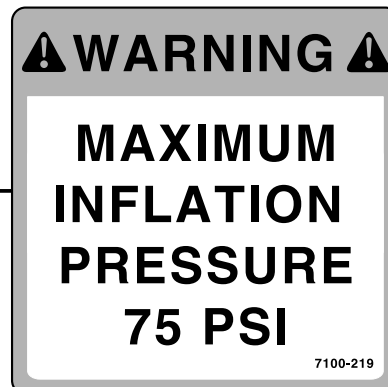
Part No. GD2199 (Qty. 1 - Located On Rear Center Section Of Planter)

D06039901



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

D040204101

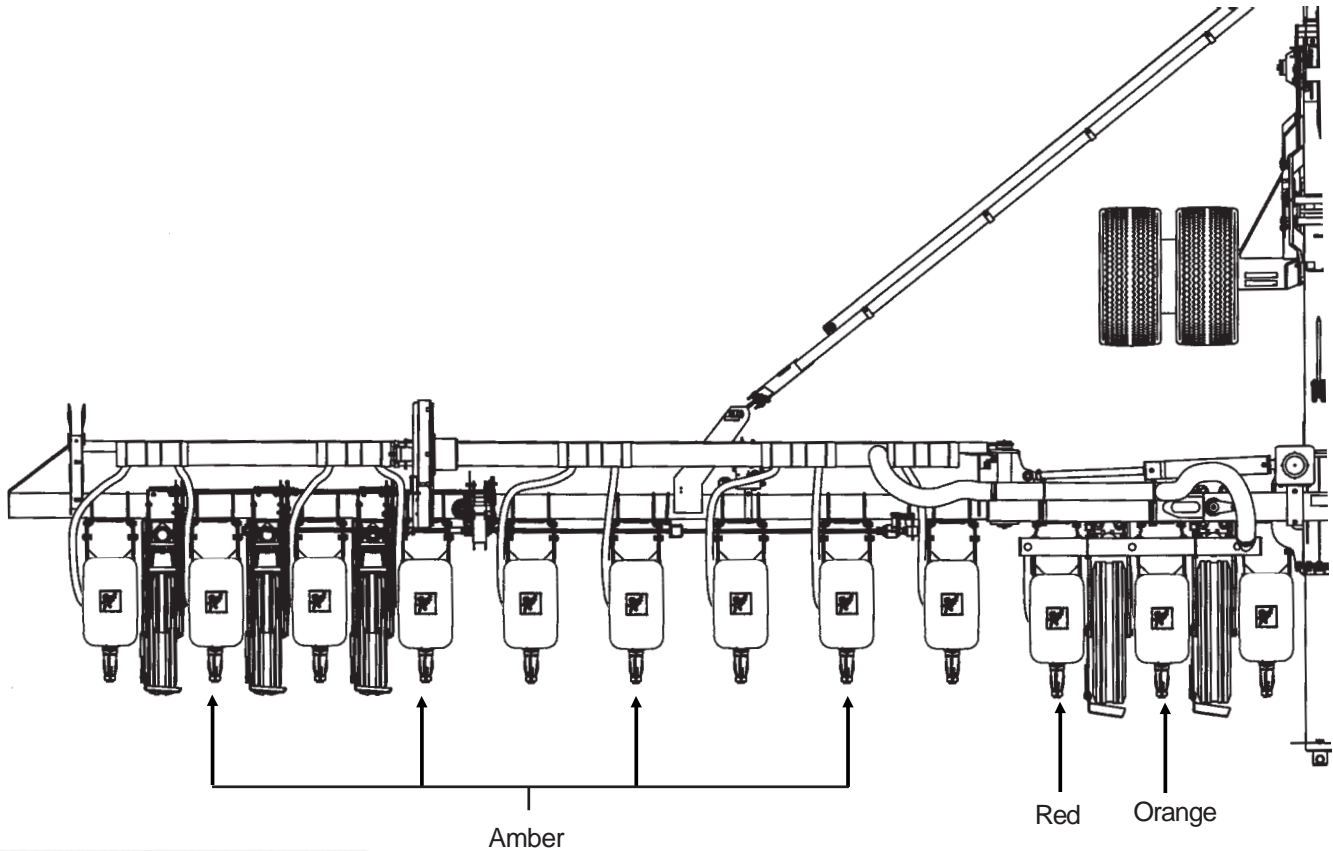


Part No. G7100-219 (Qty. 4 - One Per 41 x 11R22.5" Center Section Lift/Gauge Tire)

SAFETY WARNING SIGNS

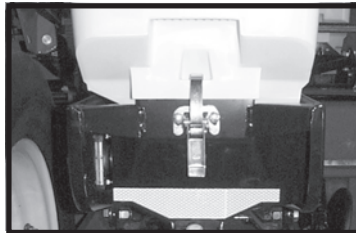
(FWD124a)

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)

D060800114



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)

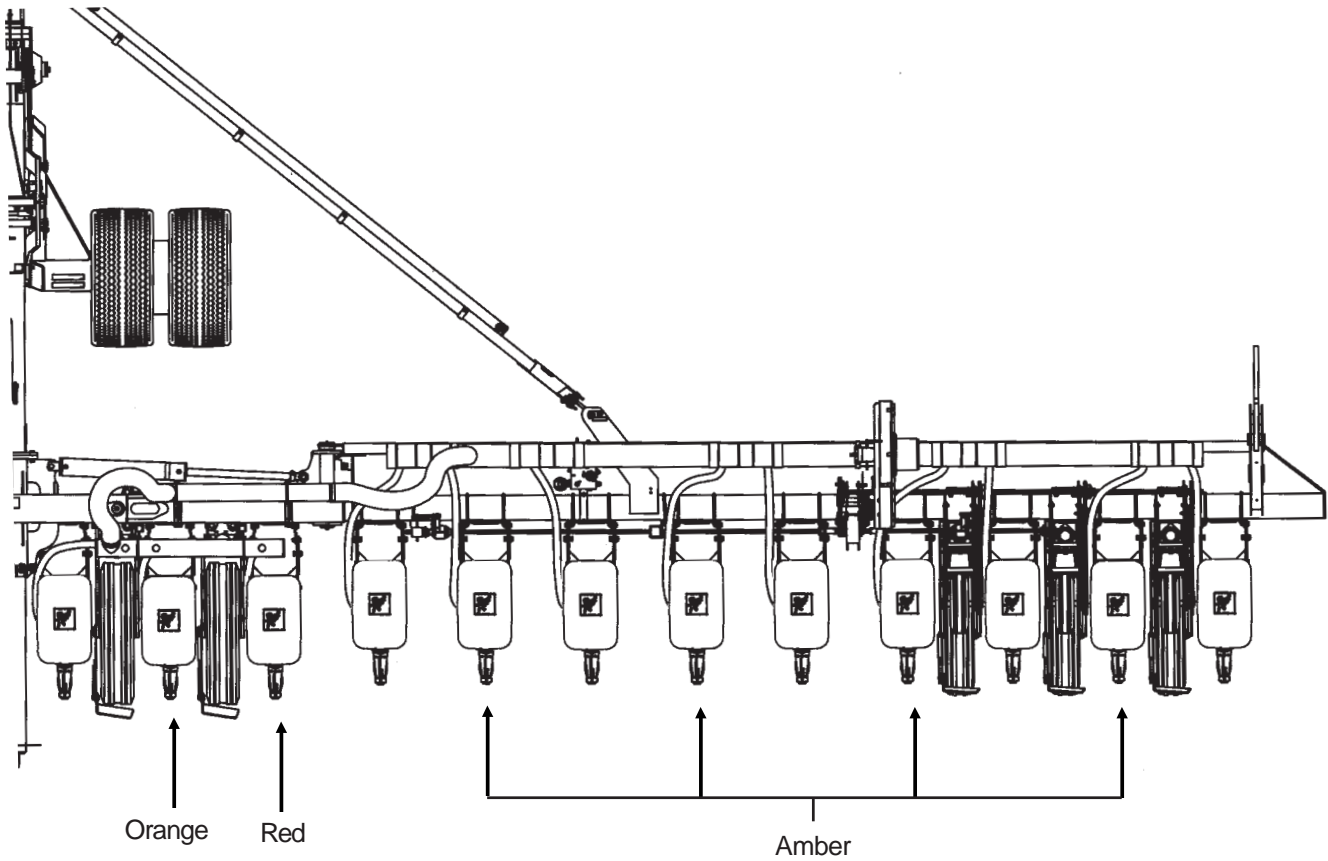
D062300102



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)

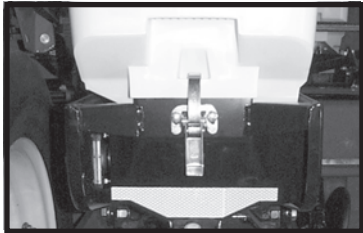


Part No. G7100-262 Amber Reflective Decal (Located On The Hopper Support On Every Other Row Unit Beginning On The 2nd Row Unit In On The R.H. End Of The Planter - Side-Facing In Transport Position)
(Standard) (If Applicable)



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

D060800114



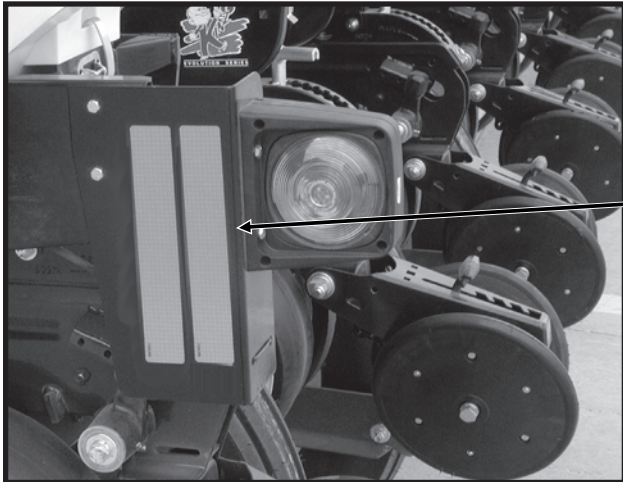
Part No. G7100-259 Amber Reflective Decal (Located On The Granular Chemical Hopper Panel Extension On Every Other Row Unit Beginning On The 2nd Row Unit In On The R.H. End Of The Planter - Side-Facing In Transport Position) **(With Optional Granular Chemical)**
 (If Applicable)

D062300102



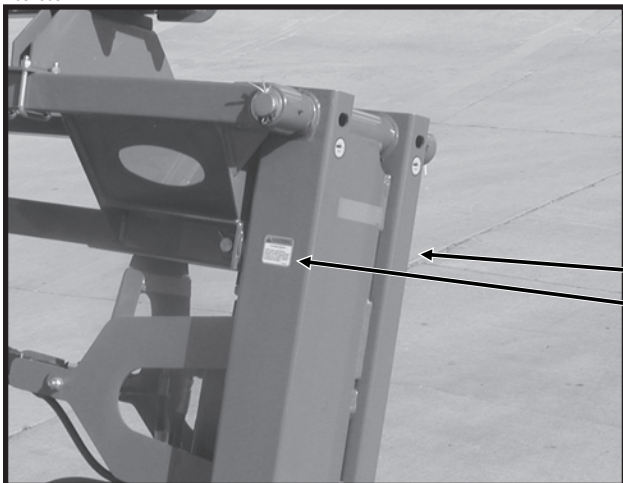
SAFETY WARNING SIGNS

D040604130a



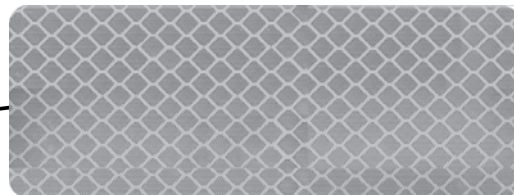
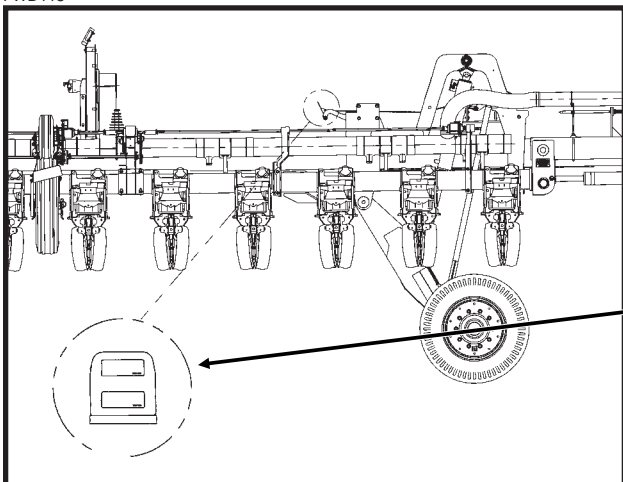
Part No. G7100-259 Amber Reflective Decal
(Qty. 2 - Located On Each End Row Unit - Forward-Facing In Transport Position)

D081905111



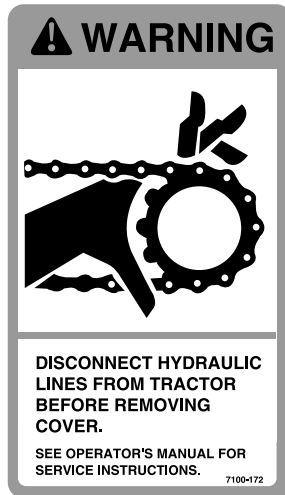
Part No. G7100-42 (Qty. 4 - Two Per Optional Row Marker)

FWD118



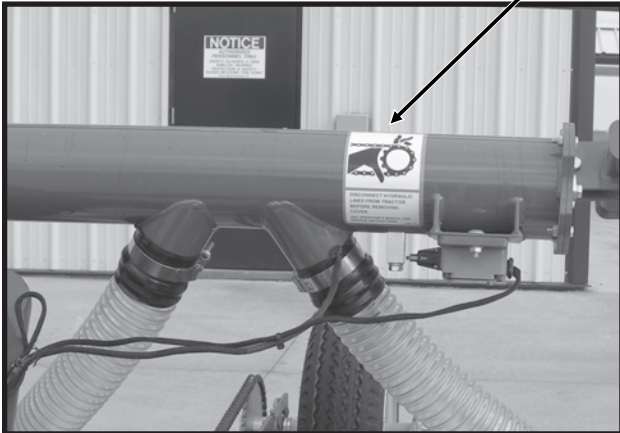
Part No. G7100-322 (Qty. 2 - Located On Slide Assembly Flap)

SAFETY WARNING SIGNS

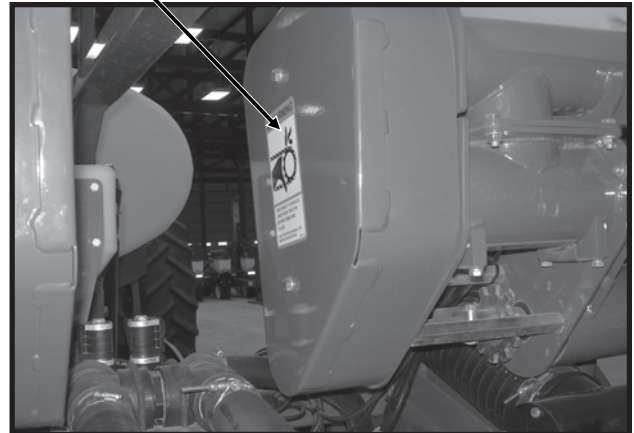


Part No. G7100-172 (Qty. 4)
(SDS Planters Only)

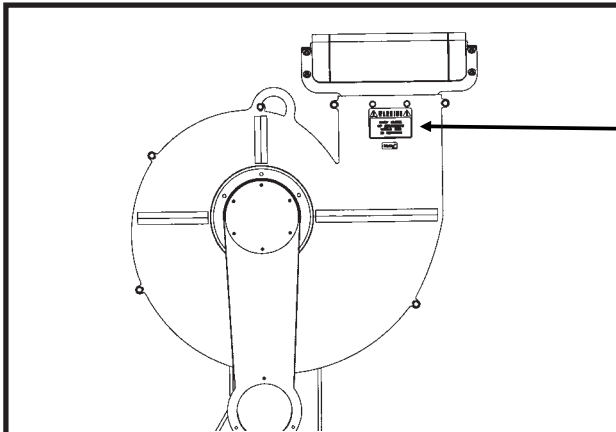
D03060601



D01050731

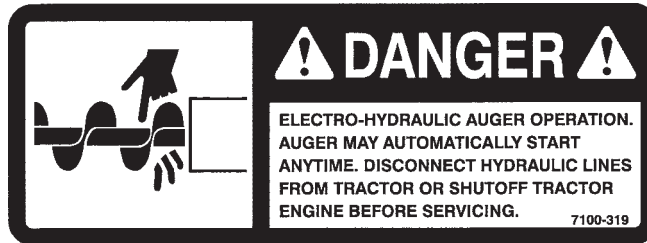


(FWD121)



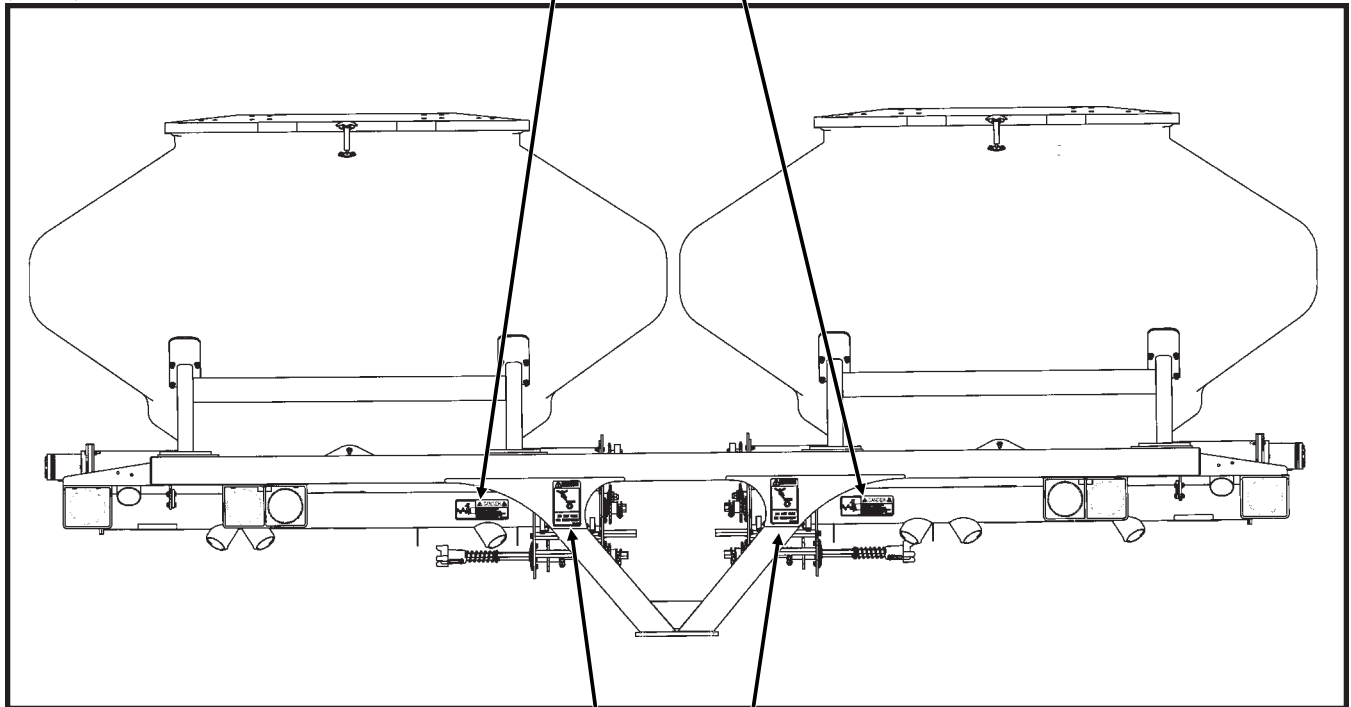
Part No. G7100-301 (Qty. 4 - One On Each Side Of Each Vacuum Fan)

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.

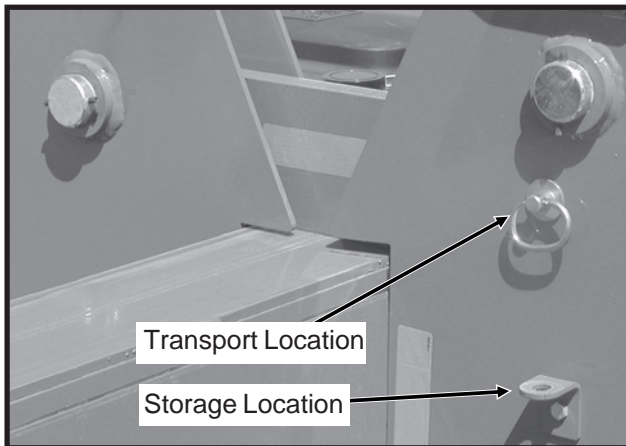
The KINZE EdgeVac® Seed Metering System includes seed meters, seed discs and an air system consisting of hydraulic driven vacuum fans which draw air through the manifolds and hoses and the seed meters on each row unit.

⚠ WARNING: Never operate vacuum fans with the cover removed.

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.

D081905131

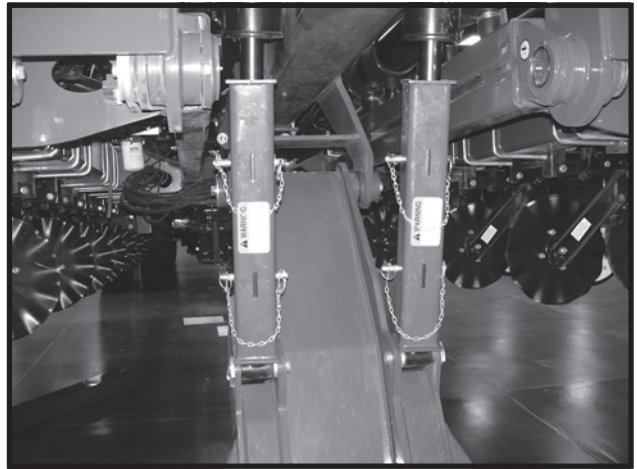


For field operation remove the wing latch hook safety pin(s) and store in the storage location(s) provided.

TRANSPORT LOCKUP, 24 ROW 30" ONLY

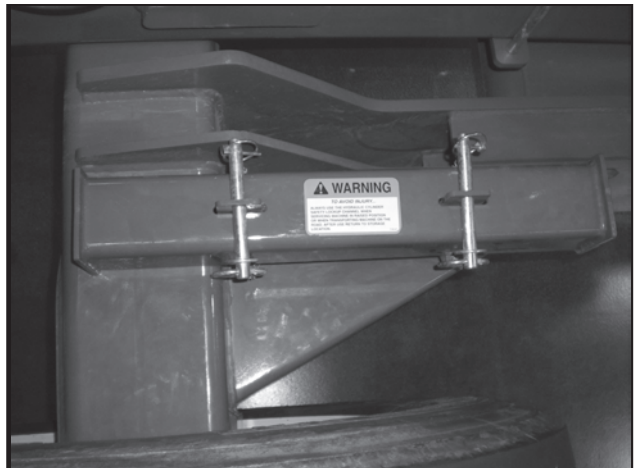
Install transport lock when transporting or working around the planter. When lockups are not in use, store in the storage position provided on the transport axle assembly.

D02270802



In Transport Position

D02070821



In Stored Field Operation Position

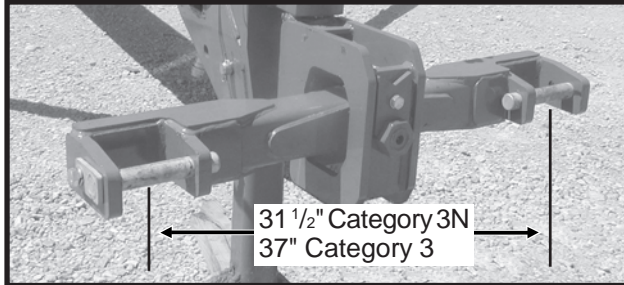
MACHINE OPERATION

INITIAL PREPARATION OF THE PLANTER

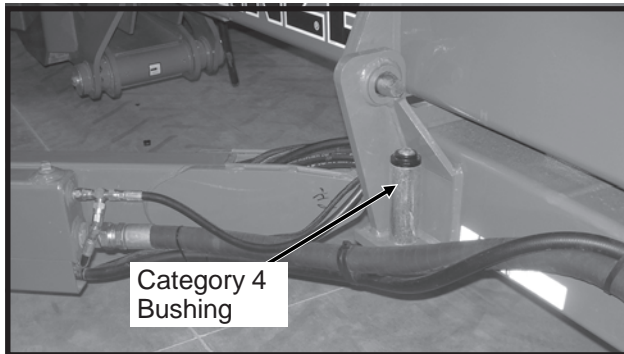
Lubricate the planter and row units per the lubrication information in this manual. Make sure all tires have been properly inflated. See "Tire Pressure". Check all drive chains for proper tension, alignment and lubrication.

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

D081605102



D01050714



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.

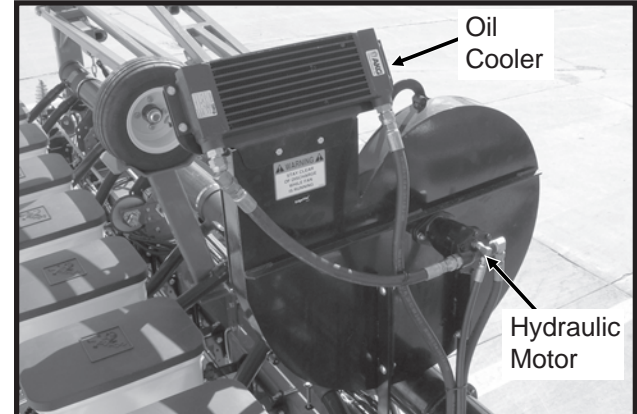


Transport stability is critical. The gross weight of the tractor must be greater than the gross weight of the planter. Gross weight varies with planter attachments. Tow 24 Row 30" planters with 200 HP farm tractor (minimum HP). Tow 32 Row 30" or 36 Row 30" planters with 250 HP farm tractor (minimum HP).

NOTE: A 3-point quick hitch adapter is required.

A 1 3/4"-20 spline 1000 RPM PTO is required to operate the PTO-driven hydraulic pump. The pump is a two section pump capable of supplying 15 GPM to two hydraulic motors/vacuum fans. Other components of the dual fan system include two oil coolers, two replaceable cartridge-type filters, two motorized flow controls, pressure compensating valves, solenoid valves and relief valves. The entire EdgeVac® Seed Metering System operates from an 8 gallon capacity oil reservoir.

D03200631



Vacuum Fan Assembly With Oil Cooler

A 12 volt battery connection is required to power the vacuum fan control console. Connect the "red" wire to the positive (+) battery terminal and the "black" wire to the negative (-) battery terminal.

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.

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.

A 3-point quick hitch adapter is required.

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.

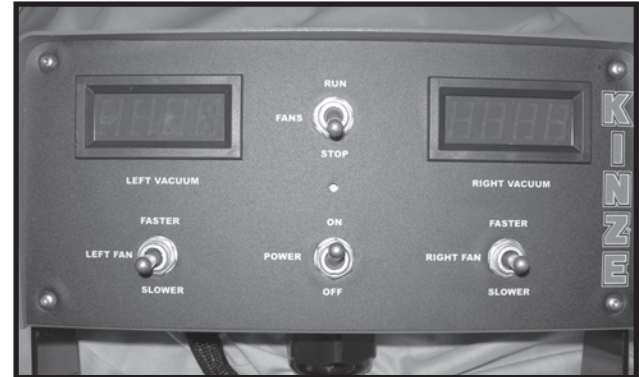
1. Install planter control console, digital vacuum gauges control console and SDS control console (If Applicable) on tractor in convenient locations within reach of the operator and close to the hydraulic controls. Mount control consoles securely and route power cords to the power source.

D10060624



Planter Control Console

D10060618



Digital Vacuum Gauges 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.

MACHINE OPERATION

- Install applicable PTO shaft assembly between tractor PTO output shaft and hydraulic pump gearbox on planter.

CAUTION: A tractor model-specific PTO shaft assembly is required. The procedure described in the following steps **MUST** be followed every time a different tractor is attached to determine if the correct length PTO shaft assembly is being used. FAILURE TO FOLLOW THESE GUIDELINES WILL RESULT IN SEVERE DAMAGE TO THE IMPLEMENT AND/OR THE TRACTOR.

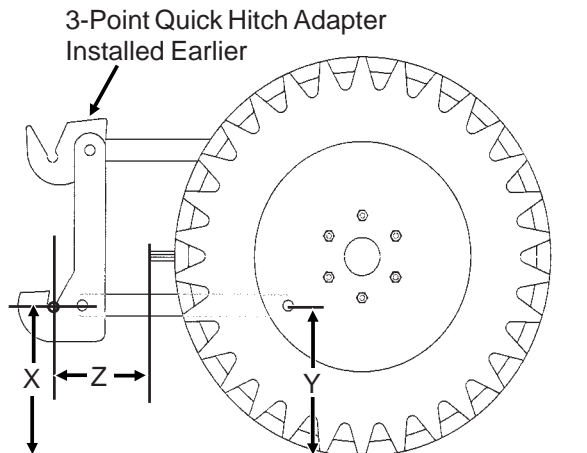
IMPORTANT: The tractor must be equipped with a 1 3/4"-20 spine PTO.

NOTE: A 3-point quick hitch adapter is required on all Model 3800 EdgeVac® Planters.

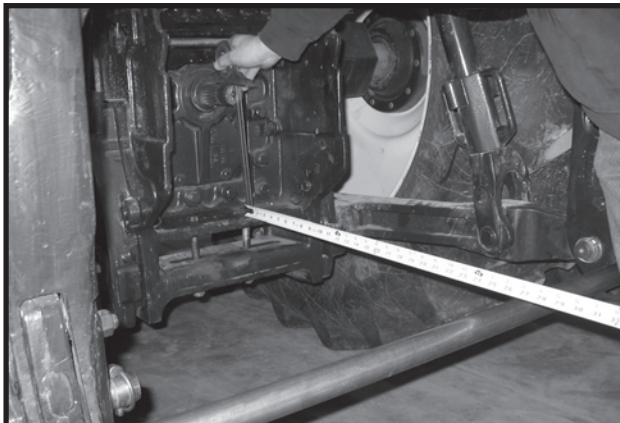
IMPORTANT: The tractor drawbar must be removed prior to attaching planter to tractor. Failure to remove drawbar will cause damage to planter and/or tractor.

A. To determine the correct length of PTO shaft to be used, dimension Z in the illustration below must be determined.

(FWD152)



D01290829



B. With tractor and planter on a level surface, raise or lower the hitch until X and Y are equal.

C. With a rod positioned across the lower lift links, measure the precise distance between the center of the lower lift point and the end of the tractor's PTO shaft to obtain dimension Z. As shown in photo, use a square on the PTO shaft to take an accurate measurement. Dimension Z must fall in one of the ranges for the PTO assemblies listed below.

PTO Assembly Options (Select Using Dimension Z):

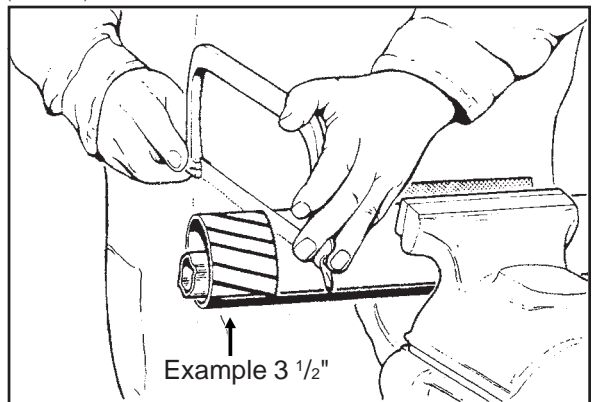
- 658-00688 - 24 1/2" to 27"
- 658-00689 - 31 1/2" to 34 1/2" (If measurement is between 27" and 31 1/2", shorten as needed.)
- 658-00690 - Over 34 1/2" (Trim to fit the application as needed.)

PTO LENGTH ADJUSTMENT

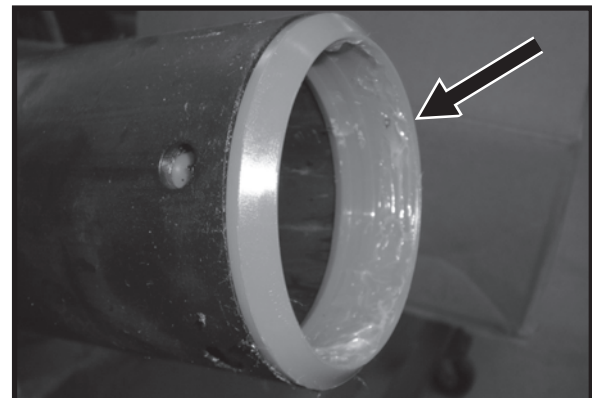
IMPORTANT: Trim all guard tubes and inner/outer sliding profiles equally.

NOTE: For example: if dimension Z is 28", 658-00689 PTO should be used and 3 1/2" (31 1/2" - 28" = 3 1/2") must be trimmed off the tractor and planter ends of the PTO guards and tubes following the steps as follows:

(FWD151a)



D01130801

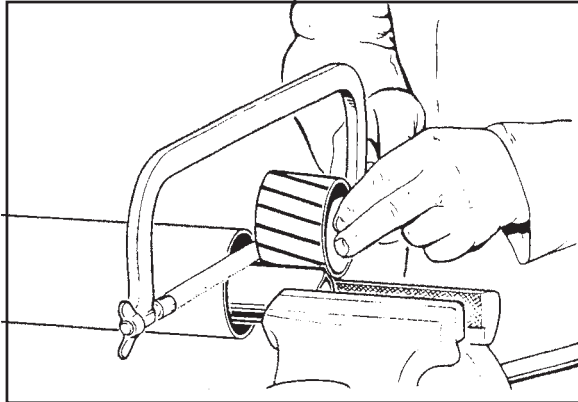


MACHINE OPERATION

STEP 1 - Shorten inner and outer plastic gaurd tubes by determined length.

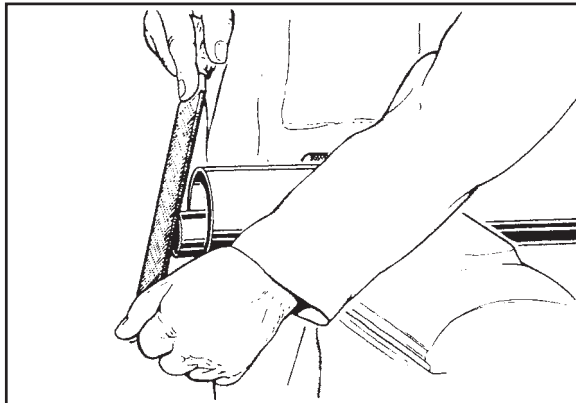
The inner plastic guard tube has an insert that must be removed prior to trimming and inserted back into the tube after the tube is trimmed. See photo on preceeding page. Using trimmed portion of inner tube as a template, locate and drill $\frac{5}{16}$ " holes in the guard tube to allow reinstallation of the insert.

(FWD151b)



STEP 2 - Using plastic tube as a template for length, shorten inner and outer metal liding profiles by the same length as the guard tubes. This will leave the inner profile to extend beyond the guard tube as before.

(FWD151c)

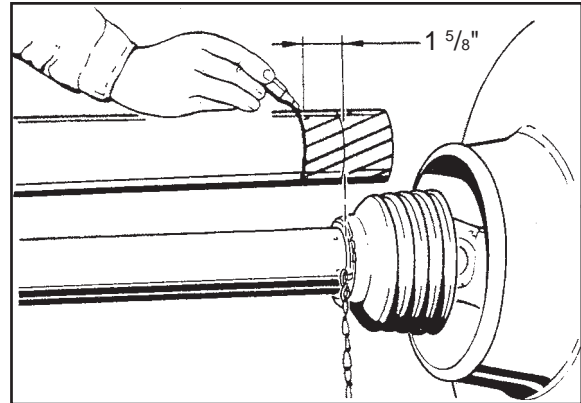


STEP 3 - Round off all sharp edges and remove burrs. Grease sliding profiles. No other changes may be made to the PTO assembly.

If dimension X is over $34 \frac{1}{2}$ ", use 658-00690 PTO assembly. **With the 3-point arms completely raised, connect PTO to tractor and to planter with the sections disconnected. Hold the PTO halves side-by-side as shown below.**

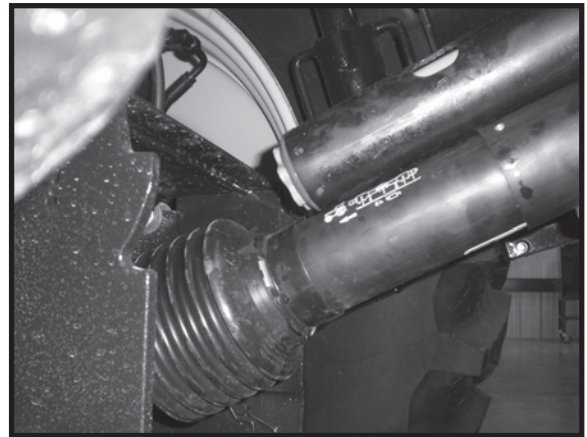
658-00690 PTO ASSEMBLY ONLY

(FWD151)



If dimension is not available, hold the half-shafts next to each other in the shortest working poistion (with the 3-point arms completely raised) and mark the location $1 \frac{5}{8}$ " from where it would collide with the U-joint area of the PTO.

D01300803



Shown Properly Cut To Length With Plastic Guard Tubes In Place

MACHINE OPERATION

IMPORTANT: The PTO shaft coupling should be cleaned and greased each time the pump is installed.

IMPORTANT: To extend life of shaft splines, apply a coating of high-speed industrial coupling grease, such as Chevron® Coupling Grease, that meets AGMA CG-1 and CG-2 Standards.

(The Chevron® trademark is owned by Chevron Products Company. AGMA is the acronym for the American Gear Manufacturers Association)

Fill reservoir with hydraulic fluid. A SAE 10W-20 multigrade wide temperature range transmission hydraulic fluid is recommended.

Start system. Allow to run with tractor at idle and the fans turned off for 1-2 minutes.

Allow to run with tractor at idle and the fans at full speed for 1-2 minutes.

Check fluid level in reservoir and fill as required.

To allow the fluid to expand, when heated, fluid level in each tank should be within 1"-2" from the top of the tank after the pump has run and hydraulic hoses have been primed.

Bring tractor to PTO speed and adjust flow control to the desired vacuum level using the switches on the vacuum fan control console.

6. 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.

MACHINE OPERATION

7. Connect cable on planter to planter control console cable on tractor. Connect cable on planter to vacuum fan control console and cable on planter to SDS control console (If Applicable). 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.

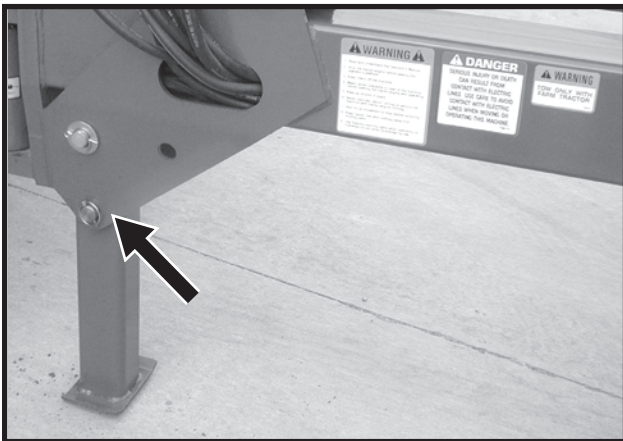
Connect harness on planter to digital vacuum gauge console on tractor. Connect power lead to power source. A power lead adapter may be required.

8. 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.

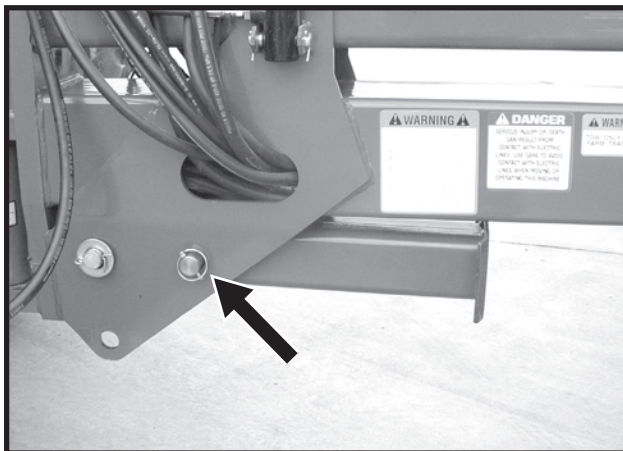
9. For proper operation of the planter and row units, it is important that the planter toolbars and row unit parallel arms be level side-to-side and front-to-rear. The toolbar should operate at 20"-22" height from planting surface. Tire pressure must be maintained at pressures specified and toolbar heights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

D040604101a



D040604100



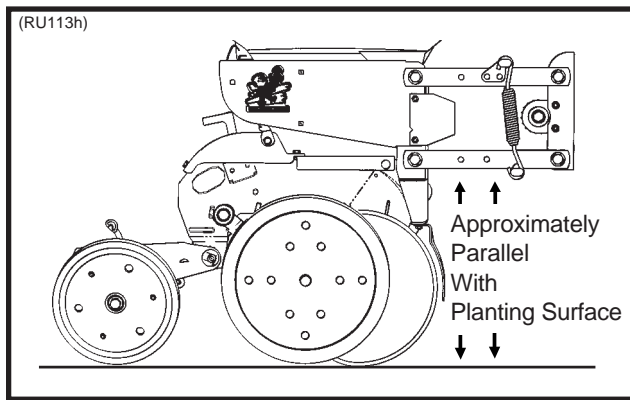
MACHINE OPERATION

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.

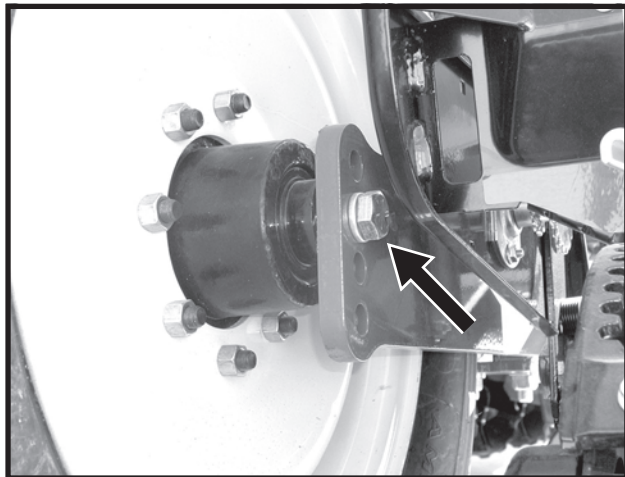
It is important for the planter to operate level laterally. Tire pressure must be maintained at pressures specified. See "Tire Pressure".

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.



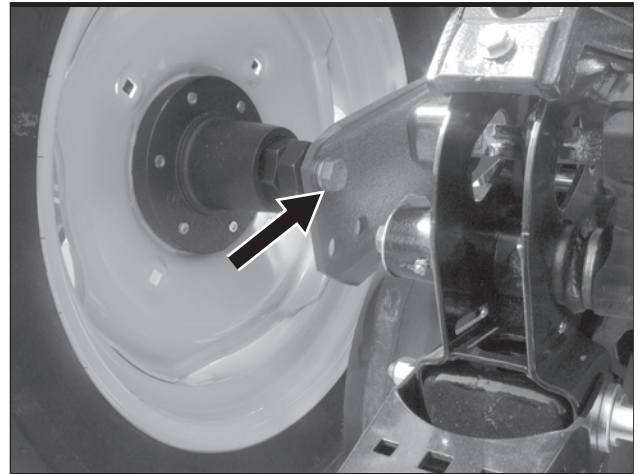
When the planter has been fully loaded with seed, granular chemicals, etc.; a field check should be made to be sure the wings are level with the center frame. If the wings are not level with the center frame, the lift/gauge wheels can be raised or lowered in the wheel arms to increase or decrease planter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

D040604201



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

D033104202

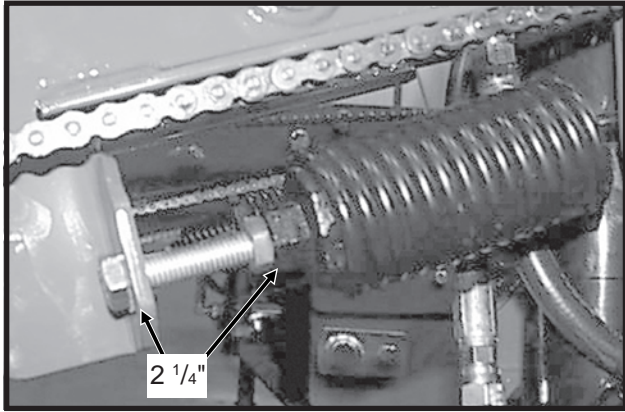


Wing Lift/Gauge Wheel - Initial Setting Shown

MACHINE OPERATION

CONTACT WHEEL SPRING ADJUSTMENT

D102704100

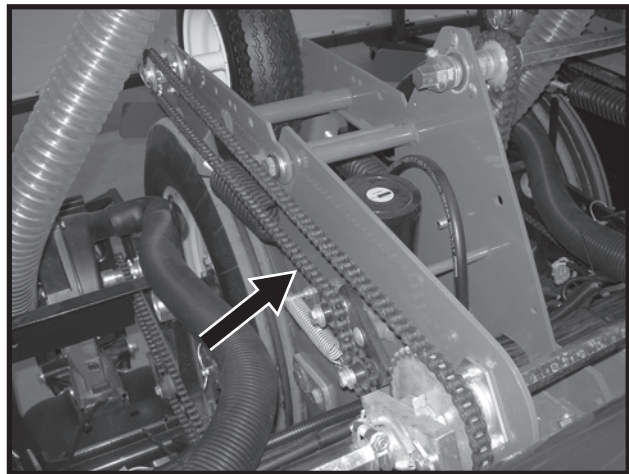


There are two down pressure springs on each contact drive wheel. The spring tension is factory preset and should require no further adjustment.

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

CONTACT WHEEL IDLER ADJUSTMENT

D01050743

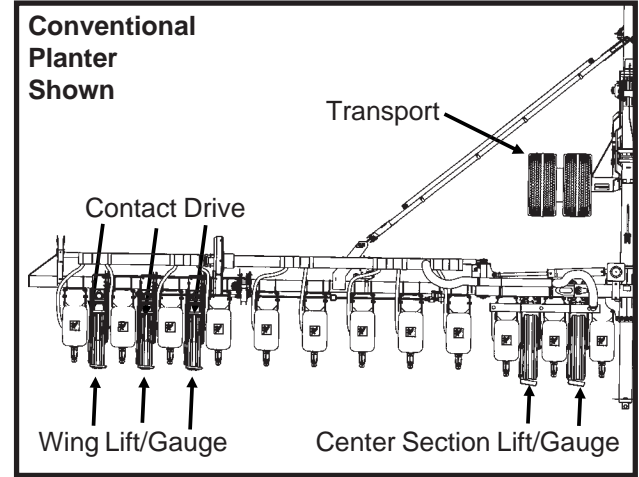


The 3/8" nut on the bolt that attaches the contact wheel idler must be tightened so the idler is free to rotate under spring load but tight enough so the carriage bolt is stable.

NOTE: See "Contact Wheel Drive Sprockets" for additional information when using 54 cell sunflower discs.

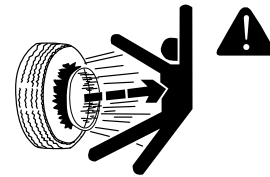
TIRE PRESSURE

(FWD124a)



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.

MACHINE OPERATION

SEED RATE TRANSMISSION ADJUSTMENT

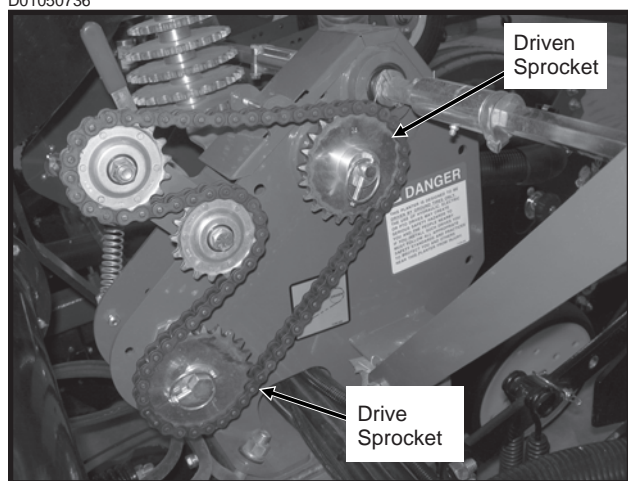
Planting population rate changes are made at the two transmission assemblies. The seed rate transmissions are designed to allow simple, rapid changes of sprockets to obtain the desired planting population. By removing the lynch pins on the hexagon shafts, sprockets can be interchanged with those from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

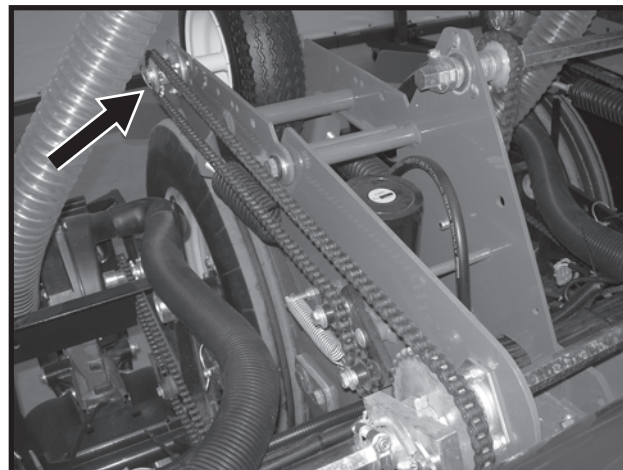
Seed rate transmissions should be set equally.

D01050736



CONTACT WHEEL DRIVE SPROCKETS

D01050743



NOTE: 15 tooth, 19 tooth or 38 tooth sprockets at each contact drive wheel can be interchanged from the sprocket storage rod bolted near the wheel module on each side of the planter. 38 tooth sprockets require use of 168 pitch chains. 15 and 19 tooth sprockets required use of 160 pitch chains.

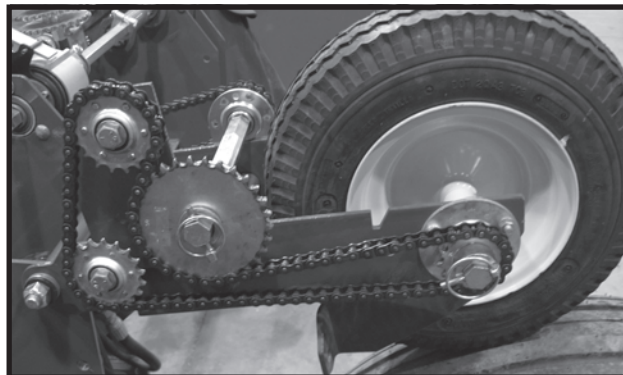
Chain tension is controlled by a spring-loaded sprocket idler. The amount of spring tension on the chain is controlled by the idler arm.

The planting rate charts found in Seed Meter Operation/Maintenance section will aid you in selecting the correct sprockets.

NOTE: 15, 19 and 38 tooth drive sprockets are NOT applicable to all rate charts. Check chart titles to ensure proper rate charts are selected.

NOTE: When using the 54 cell sunflower disc, make changes at contact wheel assembly using sprockets, chains, hex shafts, etc. supplied in G1K472 Sunflower Rate Reduction Kit. Each kit contains components for two contact wheel assemblies. Order kits according to number of contact wheel assemblies on the planter.

D012508111



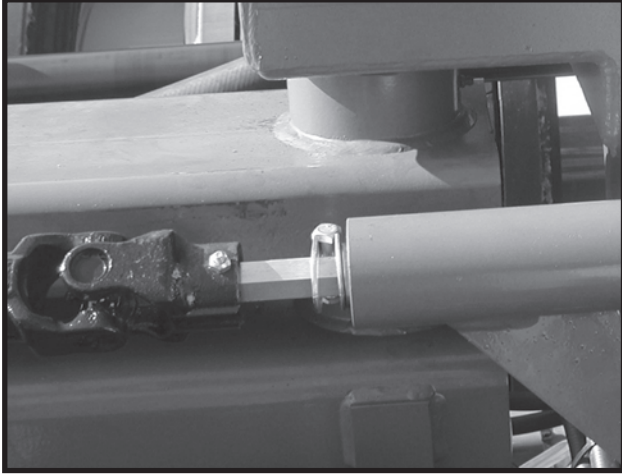
NOTE: After each sprocket combination adjustment, make a field test to be sure you are planting at the desired rate.

MACHINE OPERATION

U-JOINT SHAFT ASSEMBLIES

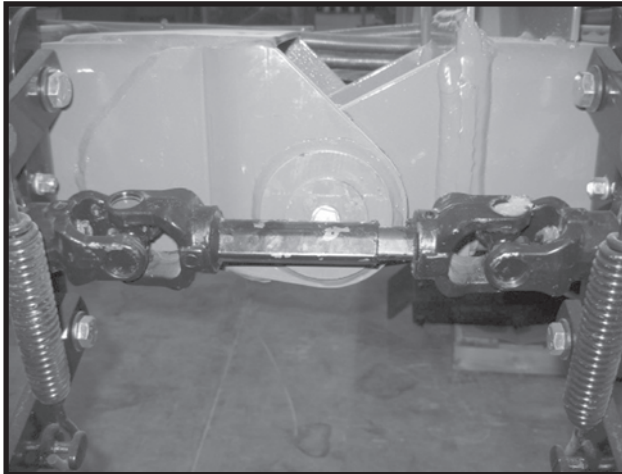
A U-joint shaft assembly is used between the center section of the planter and the wing assembly on each half of the planter to allow up and down wing movement.

D081905101



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.

D020206109



36 Row 30" Planter Shown

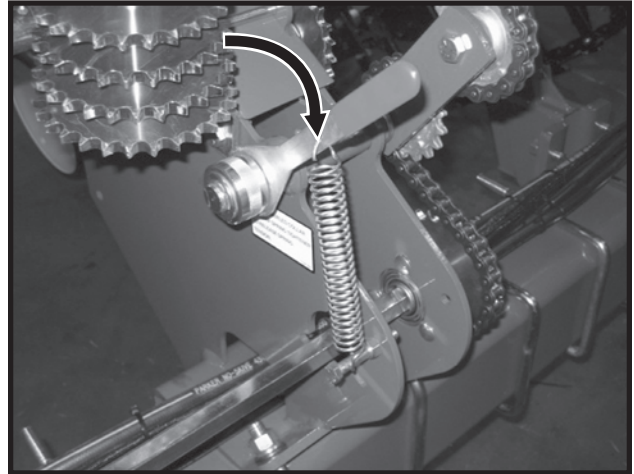
See "Grease Fittings" in the Lubrication Section of this manual.

WRAP SPRING WRENCH OPERATION

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

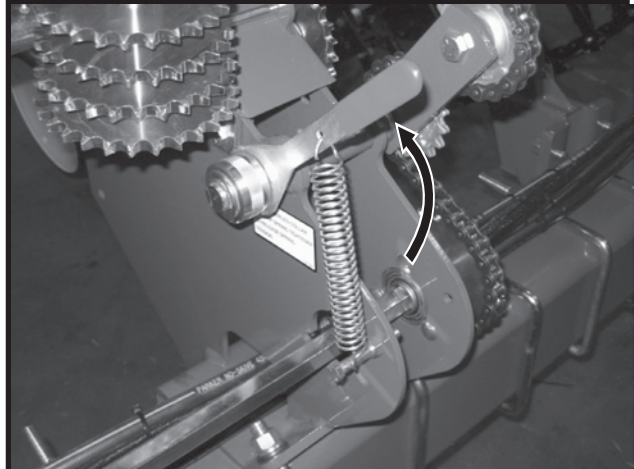
To release chain tension, rotate the knurled collar on the wrap spring wrench while rotating the chain idler away from the chain.

D021406101



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

D021406102



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.

MACHINE OPERATION

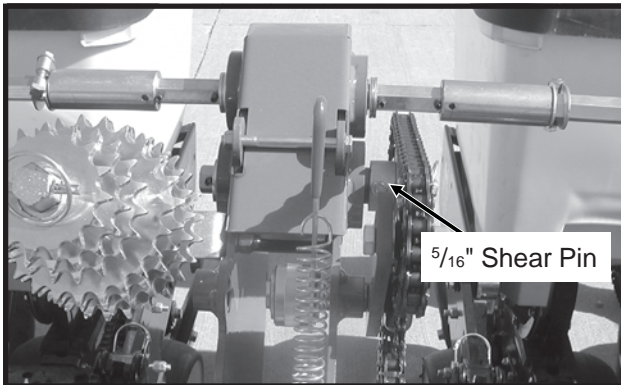
SHEAR PROTECTION

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.

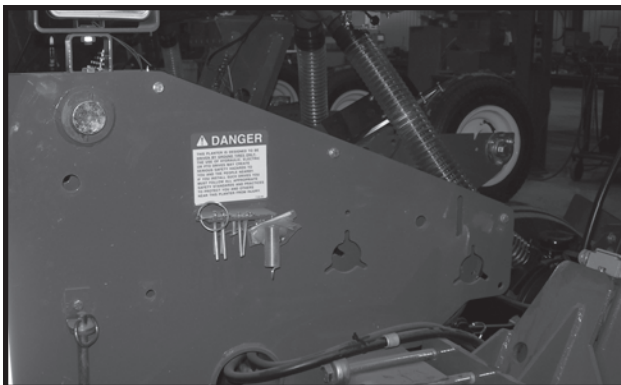
D081905108



Seed Rate Transmission Shaft

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

D022106202



MACHINE OPERATION

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 control. 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.

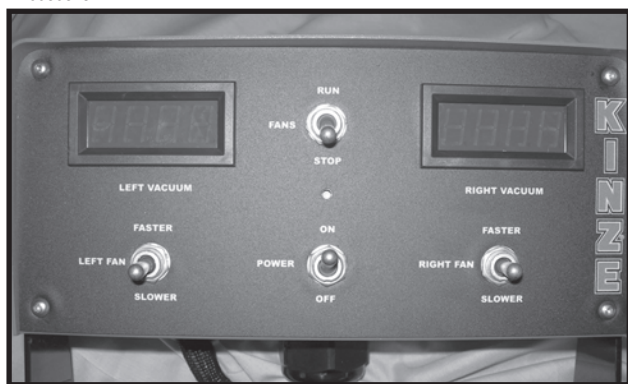
MACHINE OPERATION

DIGITAL VACUUM GAUGE OPERATION

The digital vacuum gauge control console is equipped with a power toggle switch, run/stop (fans) toggle switch and two fan speed control toggle switches for the vacuum fans. The power switch provides power to the control console. The run/stop toggle switch will turn both fans on when the power switch is ON. The fan speed control switches allow fan speed adjustment on each fan (left or right).

NOTE: The power switch should be left in OFF position when the planter is not in use. If left in ON position, the tractor battery will be drained.

D10060618

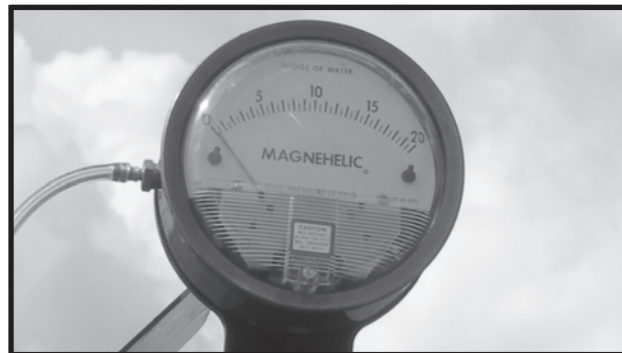


The digital vacuum gauge is calibrated at the factory, however, vacuum will vary throughout the manifold system and it may be necessary to adjust the digital readout so it agrees with the actual vacuum at the meter. With the seed discs loaded with seed, compare the digital vacuum gauge readouts to the reading taken from the analog gauges or a hand held gauge at several meters along the length of the planter. The elbow connections located on the covers of the seed meters allow testing of meter vacuum levels without removing the vacuum hoses. If there is more difference than 1" or 2" (H₂O), the digital gauge can be adjusted by inserting a small flat bladed screwdriver into the opening on the back of the digital gauge housing and turning the potentiometer until the digital gauge displays the vacuum that is present at the meter. Compare readings at 10" and 20" of vacuum.

ANALOG VACUUM GAUGES

The analog vacuum gauge on each side of the planter connects directly to the manifold. Digital vacuum gauges should then be calibrated to match that reading. See "Digital Vacuum Gauge Operation".

D06260653



The only adjustment to the gauge is to "zero" the needle with no vacuum present. If there is a significant difference between this gauge and a reading taken at the meters, a different manifold location should be found to connect hose to the gauge.

VACUUM FAN MOTOR VALVE BLOCK ASSEMBLY

A pressure relief valve in the hydraulic circuit on each side of the planter prevents build up of oil pressure over 35 PSI in the case drain line when the vacuum fan motor is in operation. This valve will vent oil to the outside of the valve block through a drain hole in the aluminum valve block. This can occur whenever the case drain is connected improperly or pressure in the motor circuit builds.

See "Hydraulic Diagram - Vacuum Fan Motor System" in Maintenance section.

The valve block also contains a check valve that serves two purposes. This valve (a) prevents the vacuum fan from operating in the wrong direction if pressure is applied to the return side of the motor and (b) allows the fan to coast to a stop when the tractor hydraulic control is returned to the neutral position.

NOTE: If reverse pressure is applied the fan will turn at a reduced speed.

MACHINE OPERATION

TRANSPORT TO FIELD SEQUENCE

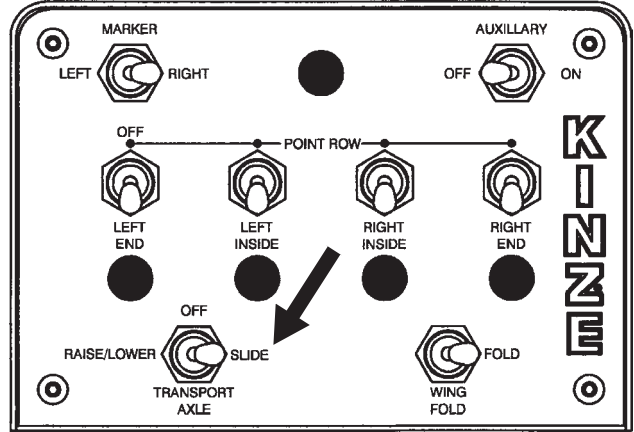
Position the planter in a relatively flat open area. Try to avoid an area with furrows, etc.

SUMMARIZED TRANSPORT TO FIELD SEQUENCE

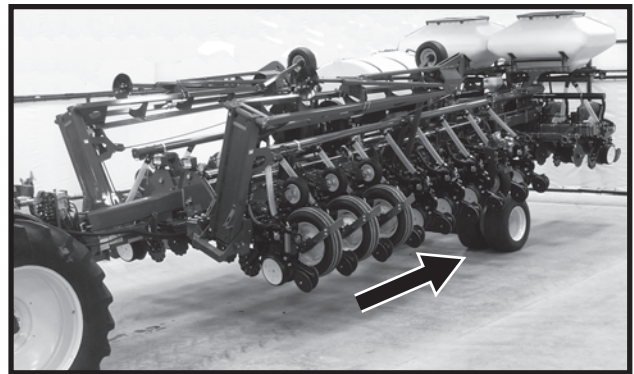
- Remove wing latch hook safety pin(s) from transport (locked) positions and place in storage locations provided.
 - Raise field tires/wheels and hold to rephase.
 - Fully raise planter using transport axle.
 - Slide transport axle to rear position. (32/36 Row Only)
 - Lower field tires/wheels.
 - Lower 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.**

- (32/36 Row Only) 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.

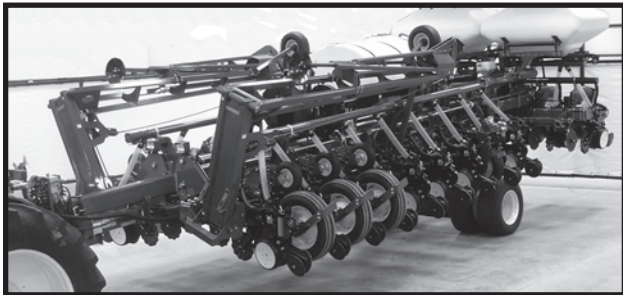
(FWD30bb)



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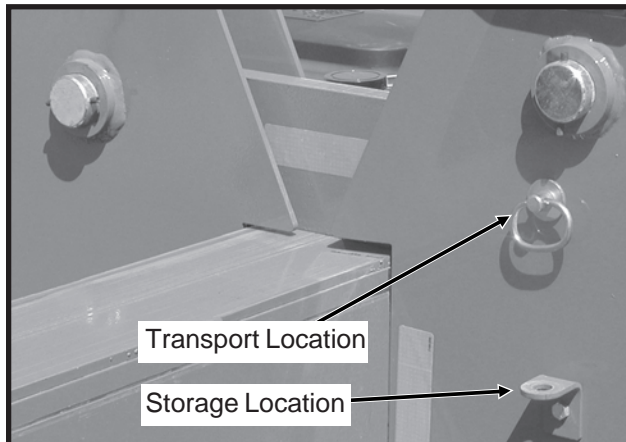


D012507128



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

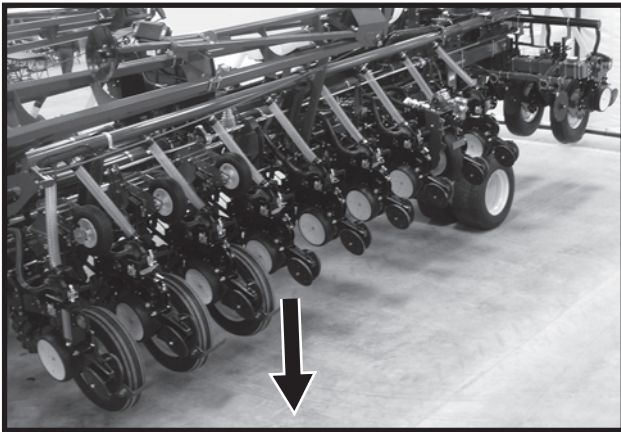
D081905131



MACHINE OPERATION

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

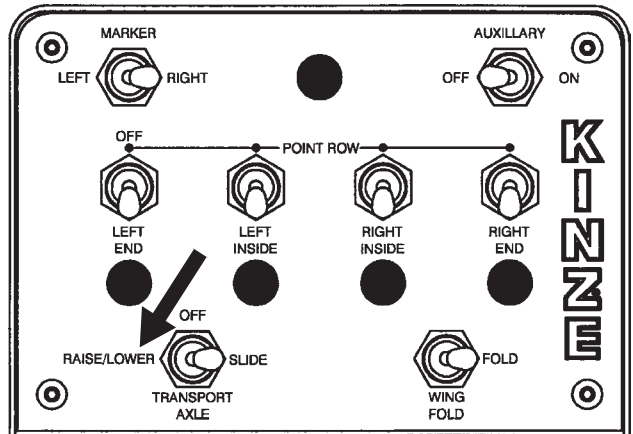
D012507125



- 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)



D012507123

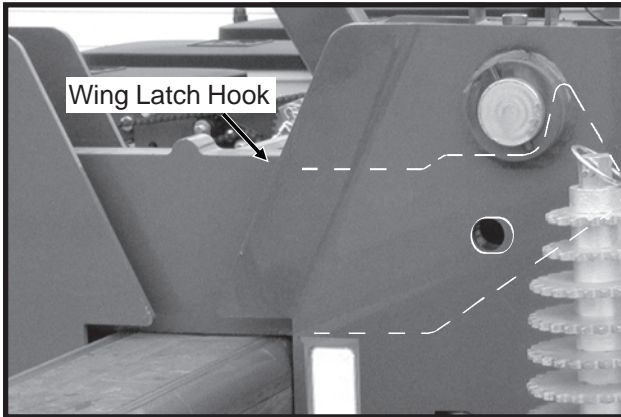


MACHINE OPERATION

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

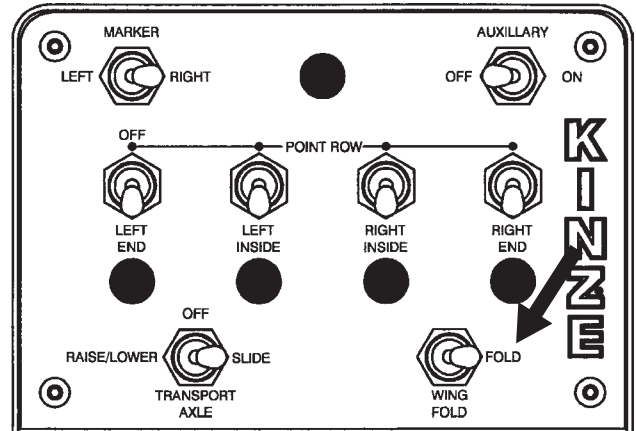
IMPORTANT: Only lower 3 point hitch until wing latch hooks release. DO NOT lower hitch further or damage will occur at the rear of the wing folding links.

D040604144/A10104a

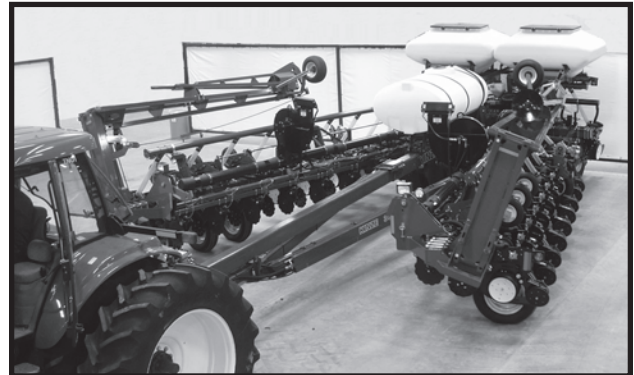


- Hold the control console switch labeled WING FOLD in **FOLD** and operate the fold/unfold functions hydraulic control to unfold the planter. The tongue will begin to retract and the wings, carried on the wing wheels, will begin to unfold. Place the tractor transmission in neutral or a low reverse gear. 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)



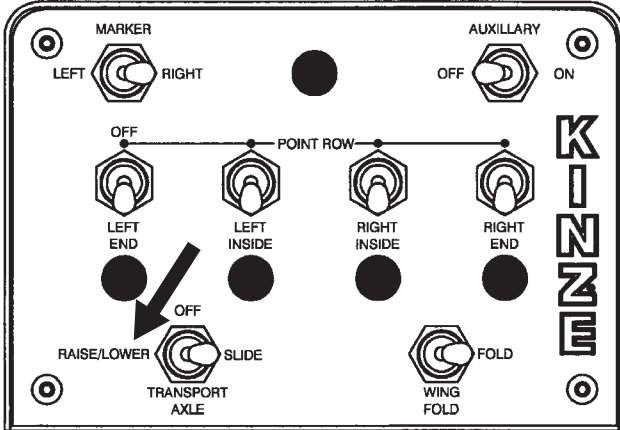
D012507119



MACHINE OPERATION

- 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)



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

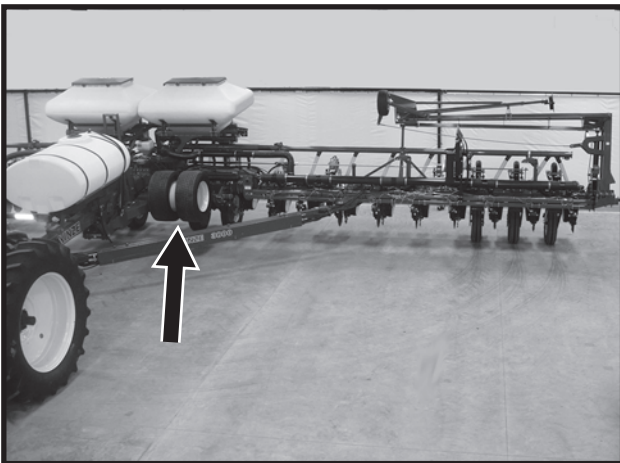
FIELD OPERATION

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.

D012507111

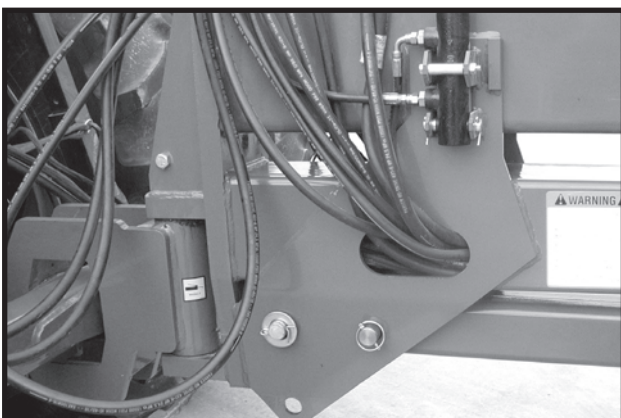


D012507111



- Lower the 3 point to level hitch position.

D040604100



MACHINE OPERATION

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. 32/36 Row Only
- 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.

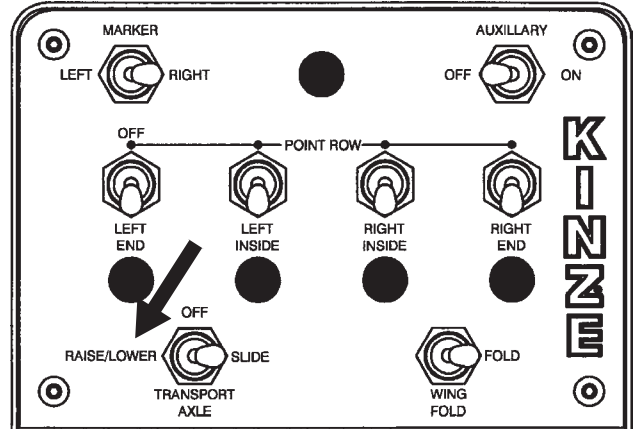
D012507111



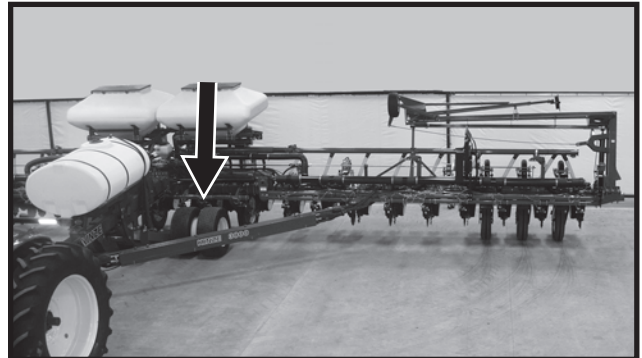
2. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to lower the transport axle wheels until they touch the ground.

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)



D012507113



MACHINE OPERATION

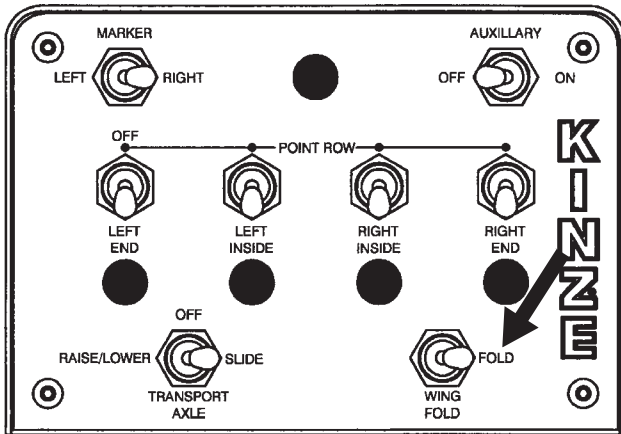
3. Hold the control console switch labeled WING FOLD in **FOLD** and operate the fold/unfold functions hydraulic control to fold the planter to transport position. It is necessary to **slowly** idle the tractor forward as you fold the planter, allowing the center axle tires to remain stationary and the 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.

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 planter.

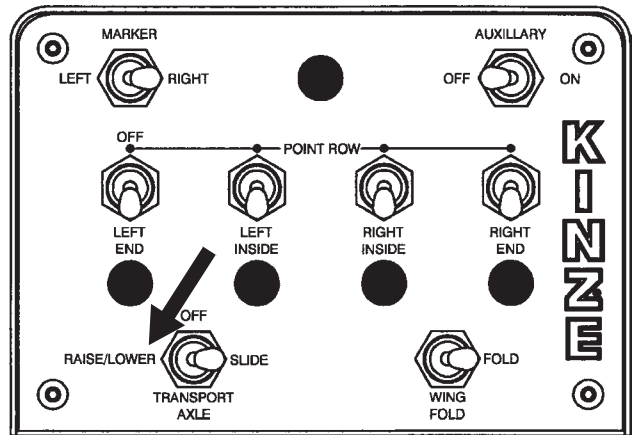
(FWD30bb)



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(FWD30bb)



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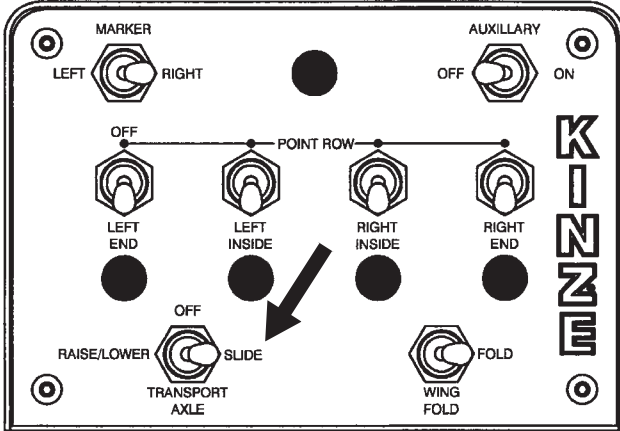


NOTE: The transport axle cylinder circuit is equipped with counter balance valves which hydraulically lock the cylinders. The cylinders will not extend or retract until hydraulic pressure/flow is applied.

MACHINE OPERATION

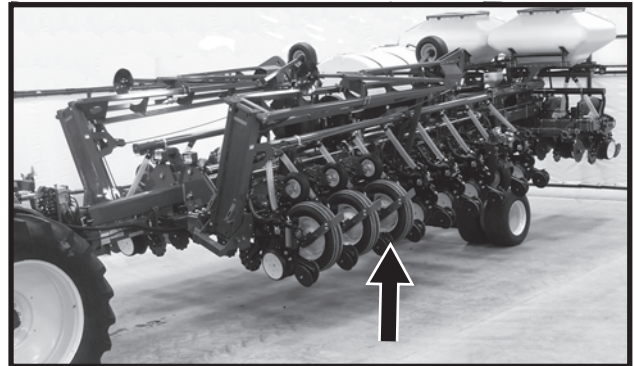
- (32/36 Row Only) Hold the control console switch labeled TRANSPORT AXLE in **SLIDE** and operate the fold/unfold functions hydraulic control to slide the transport axle fully forward into transport position.

(FWD30bb)



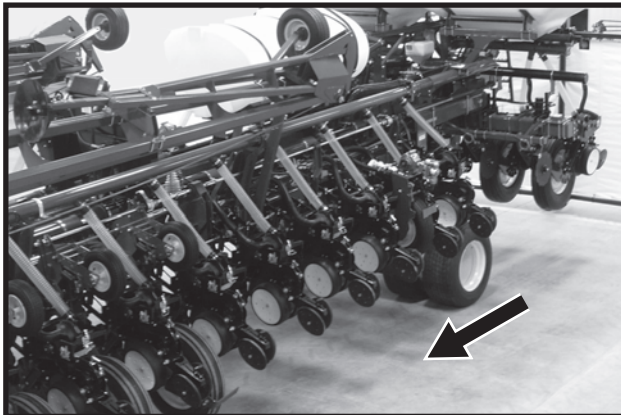
- Operate the field raise function hydraulic control to raise the field tires/wheels.

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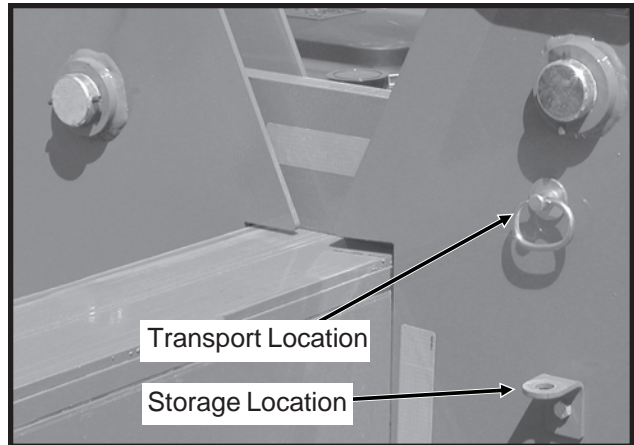


- Remove wing latch hook safety pin(s) from their storage location(s) and install in locked position(s).

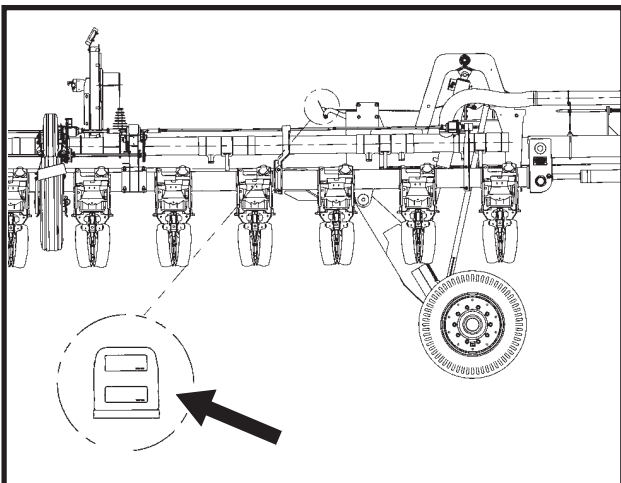
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(FWD118)

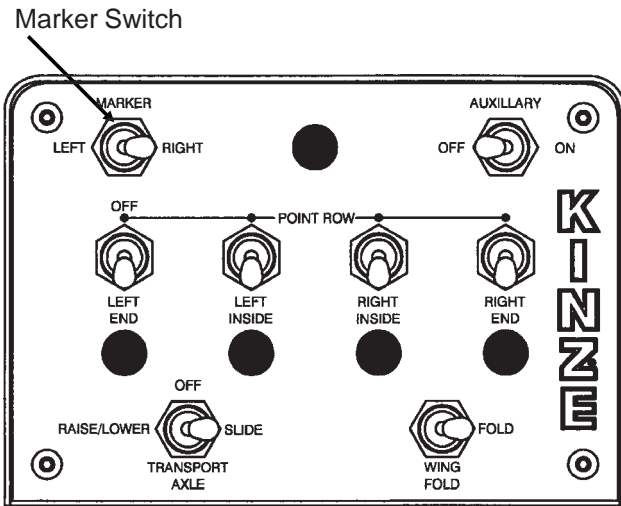


IMPORTANT: Indicator flap will be in raised position when the transport axle is fully forward into the transport position.

MACHINE OPERATION

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 the opposite position.
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 is 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.

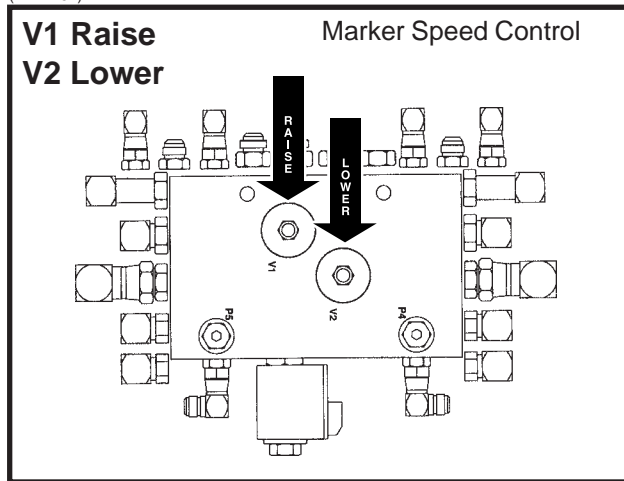
IMPORTANT: Row markers **MUST** be operated with hydraulic circuit in float position to prevent damage to marker assemblies.

MACHINE OPERATION

ROW MARKER SPEED ADJUSTMENT

The row marker hydraulic system includes two flow control valves. One flow control valve sets the lowering speed of both markers and one sets 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 control(s) 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 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 control 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.

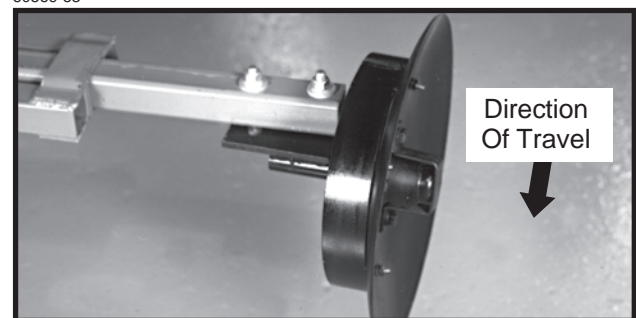
ROW MARKER LENGTH ADJUSTMENT

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 row marker assemblies equally and securely tighten clamping bolts. An example of marker length adjustment follows:

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

24 Rows x 30" Spacing = 720" Marker Dimension

60569-53



Row Marker Disc Blade Shown With Depth Band

The marker disc blade should be installed so the concave side of the blade faces 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.

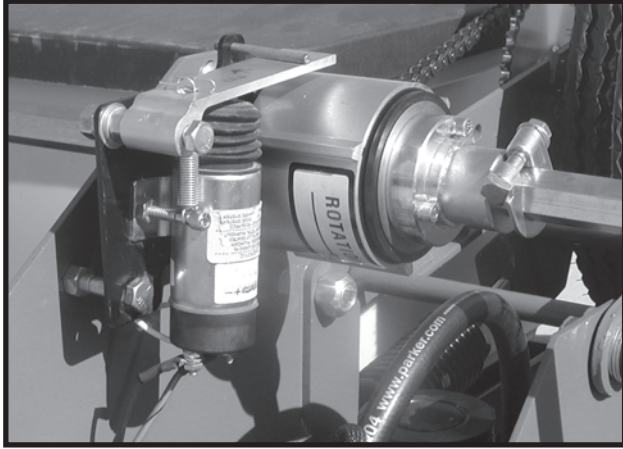
A field test is recommended to ensure the markers are properly adjusted. After the field test is made, make any minor adjustments as necessary.

Notched marker blades, for use in more severe no till conditions, are available from KINZE® Repair Parts through your KINZE® Dealer.

MACHINE OPERATION

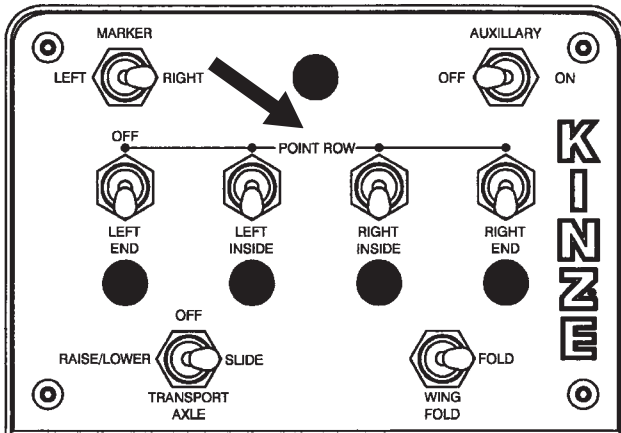
POINT ROW CLUTCHES

D081905107



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.

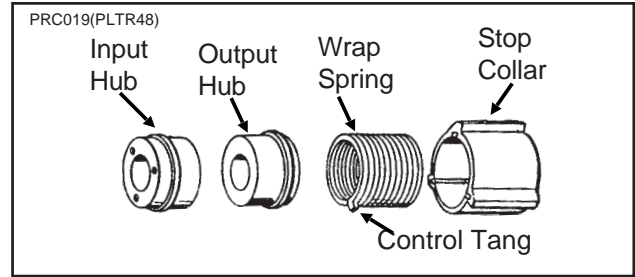
(FWD30bb)



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.



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 III ELECTRONIC SEED MONITOR

D10190501



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).

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.

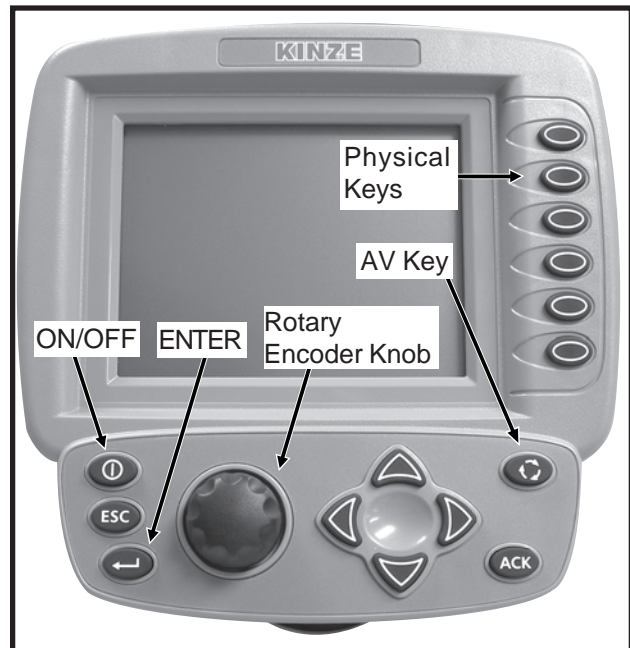
The monitor system will power down if no activity is detected within one hour. No activity means there has been no new seed flow and no operator push key input.

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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.



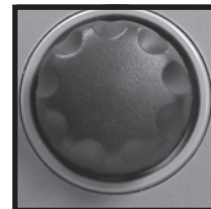
ENTER KEY

- 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.



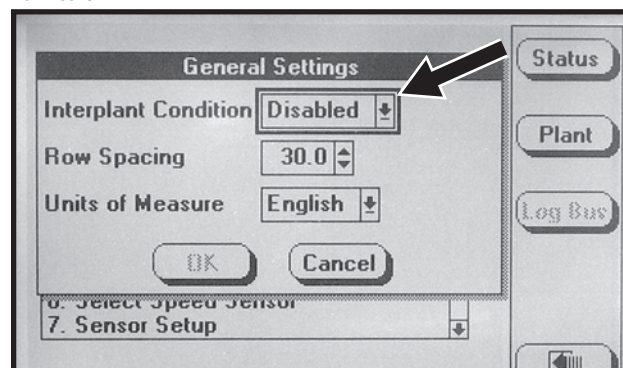
ARROW KEYS

- 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

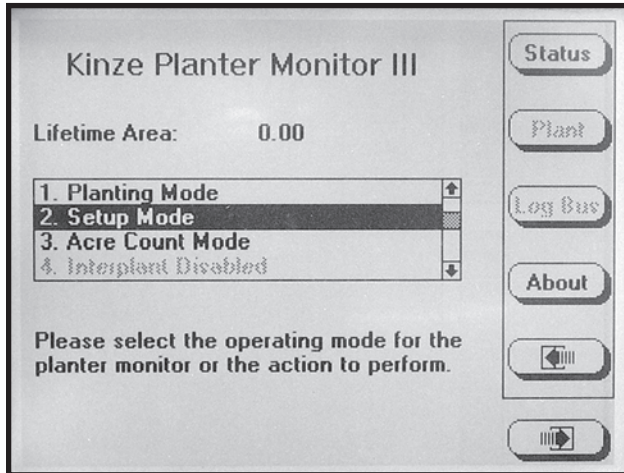


CONFIGURING PLANTER MONITOR

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.

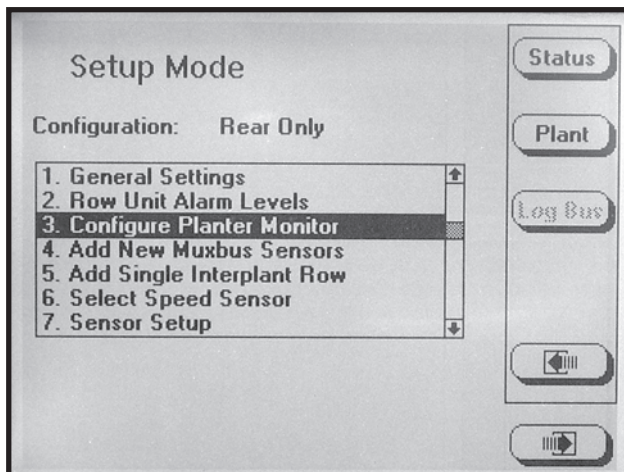
D02140614



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.

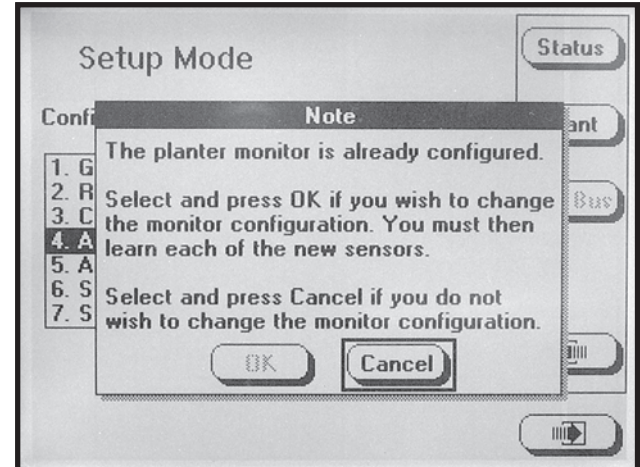
D02140624



NOTE: The planter monitor cannot be reconfigured while planting.

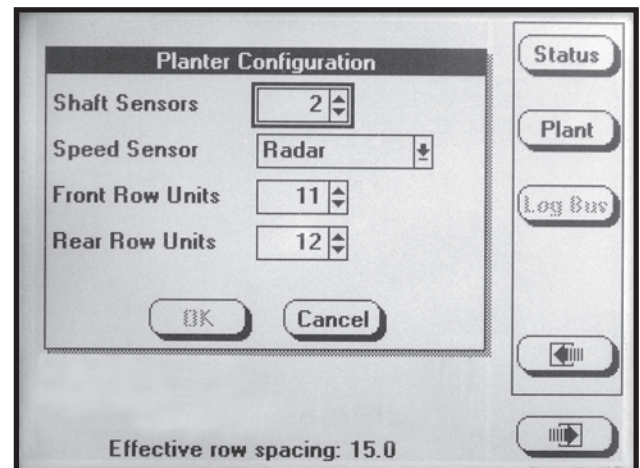
NOTE: If the monitor has already been configured the message shown below will appear.

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.

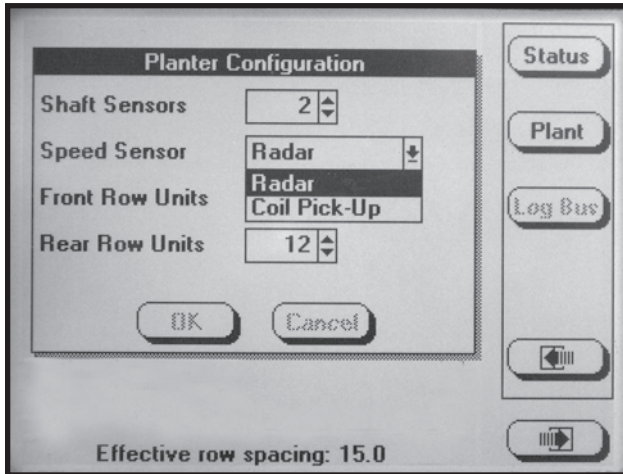
D05310601



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.

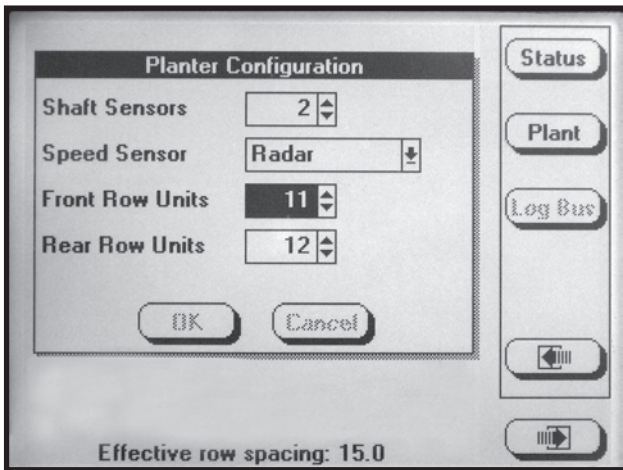
STEP 5 Press the knob or ENTER key and a drop down menu will appear; select either “Radar” or “Coil Pick-Up” (MDS) by turning the knob or using the UP or DOWN arrow keys. When the desired selection is highlighted press the knob or ENTER key. The black box will advance to “Front Row Units” field.

D05310604



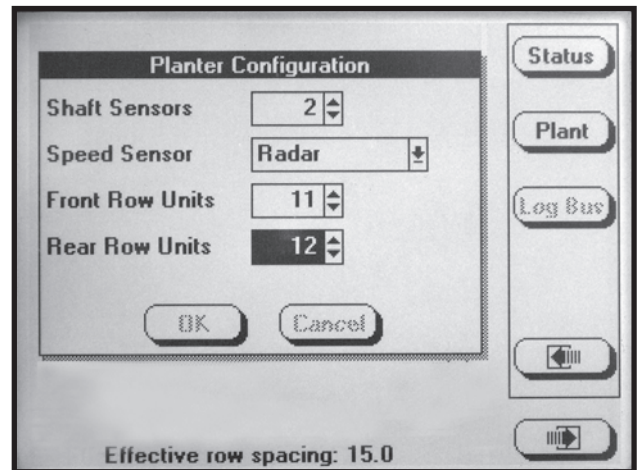
STEP 6 If there are front rows on the planter, press the knob or ENTER key to highlight the “Front Row Units” field. Turn the knob or use the UP or DOWN arrow keys to obtain correct number of push row units. Press the knob or ENTER key when desired quantity is displayed. The black box will advance to “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



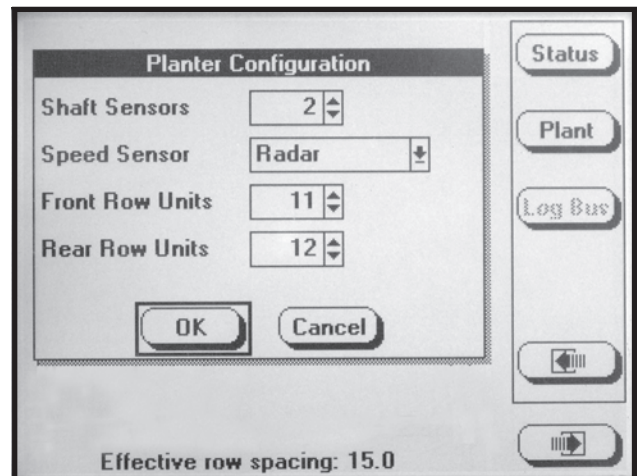
STEP 7 Press the knob or ENTER key to highlight the “Rear Row Units” field. Turn the knob or use the UP or DOWN arrow keys to obtain correct number of pull row units. Press the knob or ENTER key when desired quantity is displayed. The black box will advance to the OK key.

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.

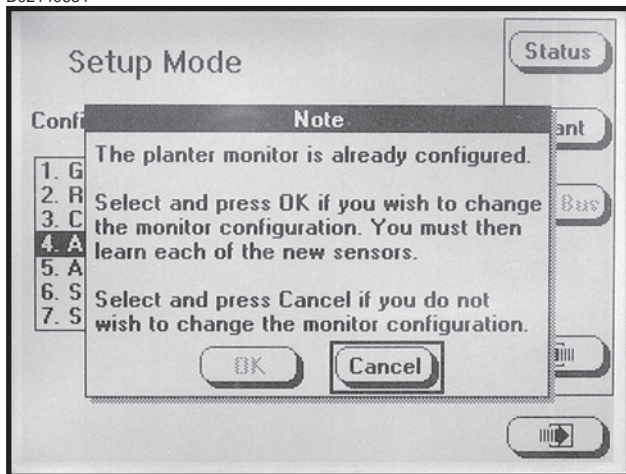
STEP 9 The monitor screen shown below will appear.

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



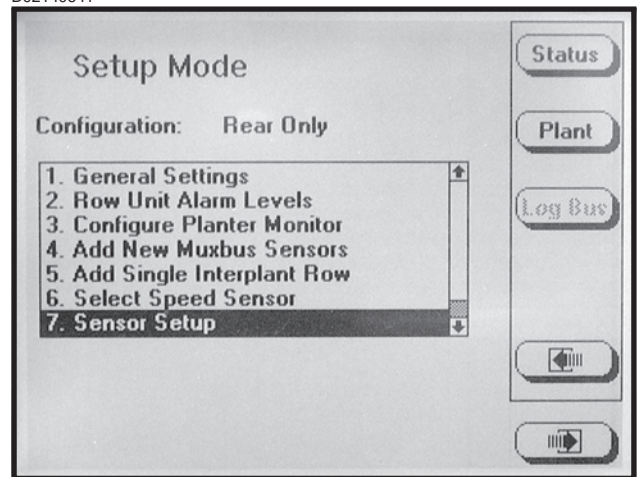
PROGRAMMING/CONNECTING SEED TUBES, SHAFT ROTATION SENSORS AND/OR RADAR/MAGNETIC DISTANCE SENSORS

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.

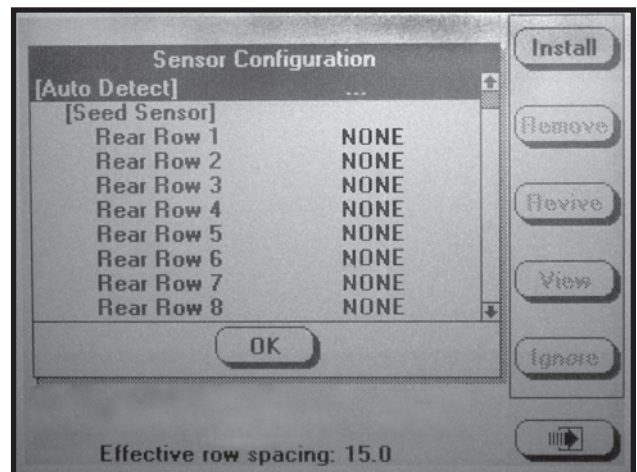
STEP 3 Select "Sensor Setup" by turning the knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

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

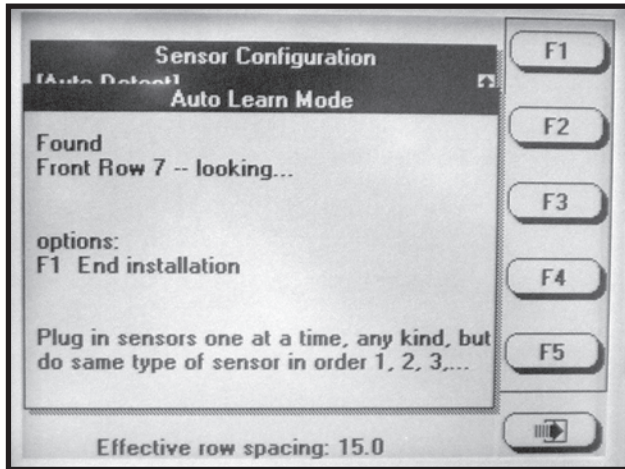


STEP 5 Plug in the first seed sensor (row 1), working from left to right (rear row units and front next if applicable). When a sensor is connected to the planter harness wait for the monitor to acknowledge with two beeps.

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.

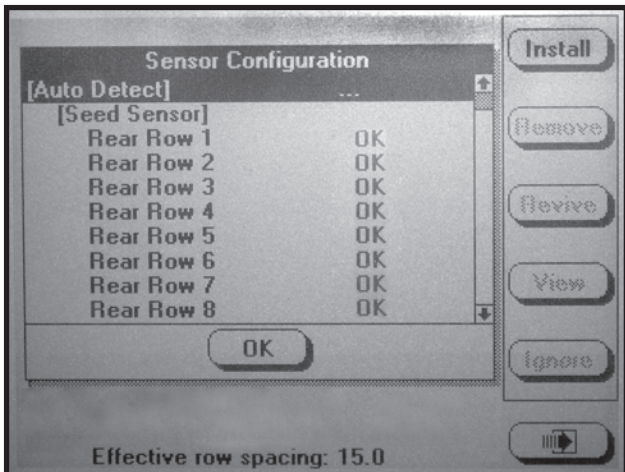
When all sensors are installed press the F1 key to end the installation.

D02170617



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

D02210601b

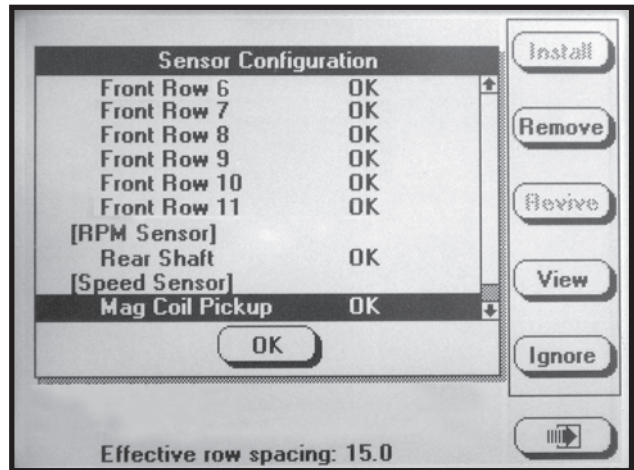


STEP 6 If “OK” appears behind ALL sensors, press the knob or the ENTER key to save the configuration. The “Setup Mode” menu will then appear.

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



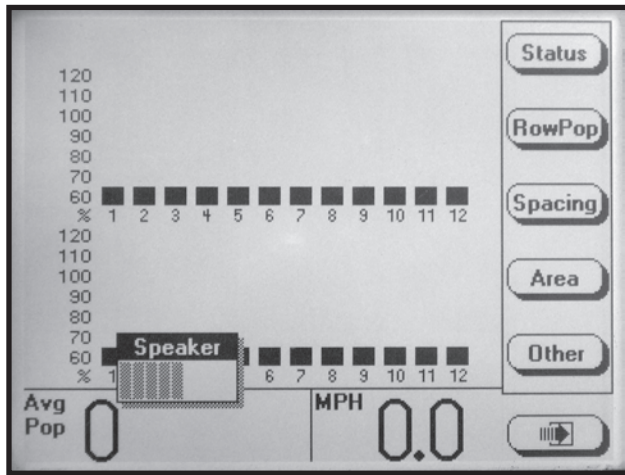
STEP 7 To return to “Planting Mode” select the PLANT key or press the F6 key until “Planting Mode” screen appears.

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

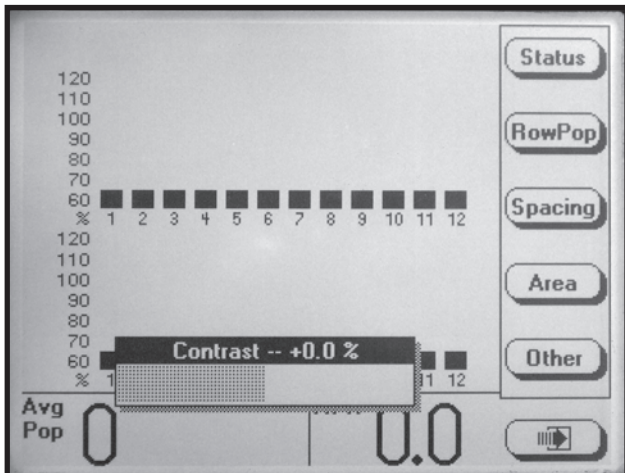


STEP 2 Use the LEFT and RIGHT arrows or turn the rotary encoder knob to adjust the volume. The volume of the sound emitted from the speaker changes as the adjustment is being made.

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

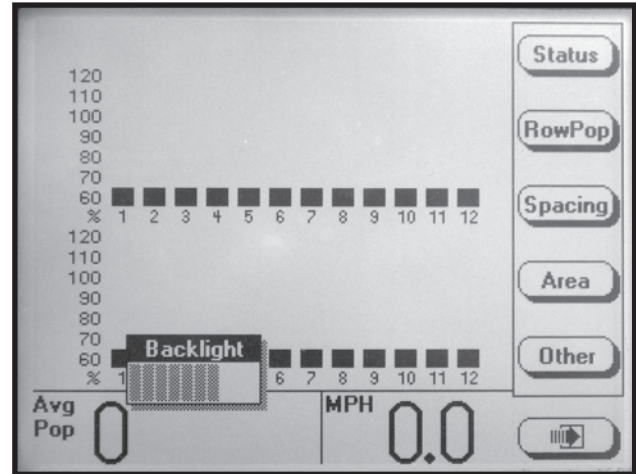


STEP 5 Use the LEFT and RIGHT arrows or turn the knob to adjust contrast. The effect of the adjustment will be visible on the display.

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



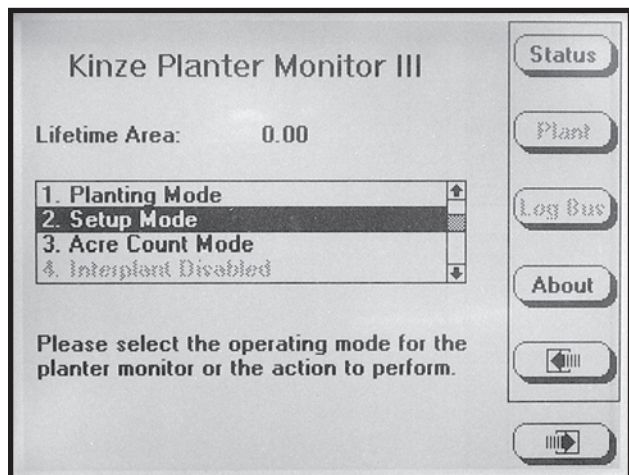
STEP 8 Use the LEFT and RIGHT arrows or turn the knob to adjust backlighting. The effect of the adjustment will be visible on the display.

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.

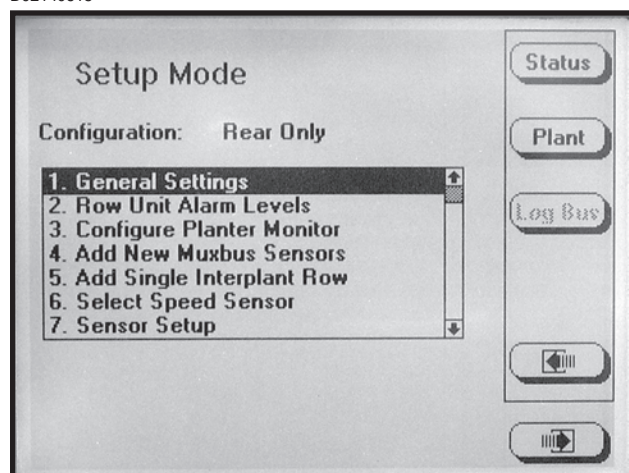
D02140614



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.

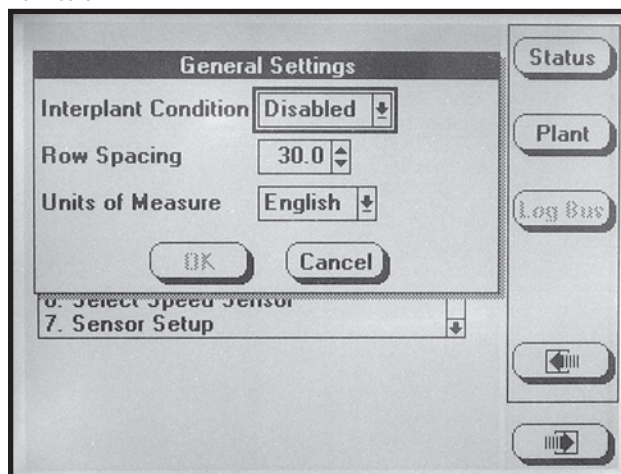
STEP 3 Select “General Settings” by turning the knob or using the UP or DOWN arrow keys. Press the knob or the ENTER key to display the highlighted item.

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.

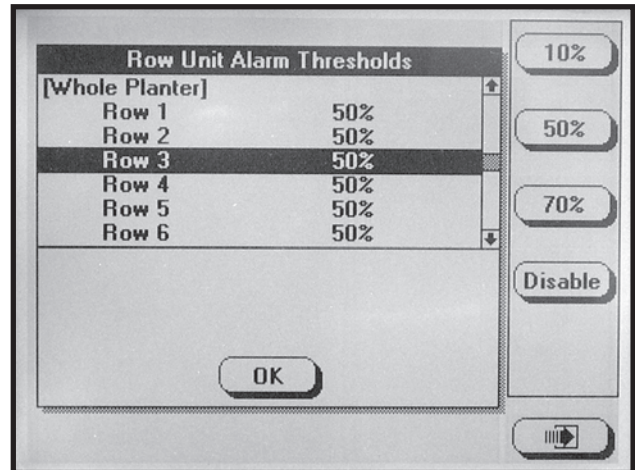
STEP 8 To return to “Planting Mode” press the PLANT key.

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.

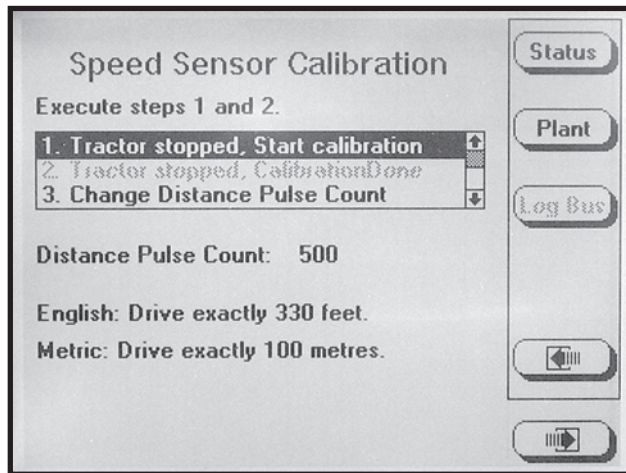
STEP 5 To return to “Planting Mode” press the PLANT key.

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.

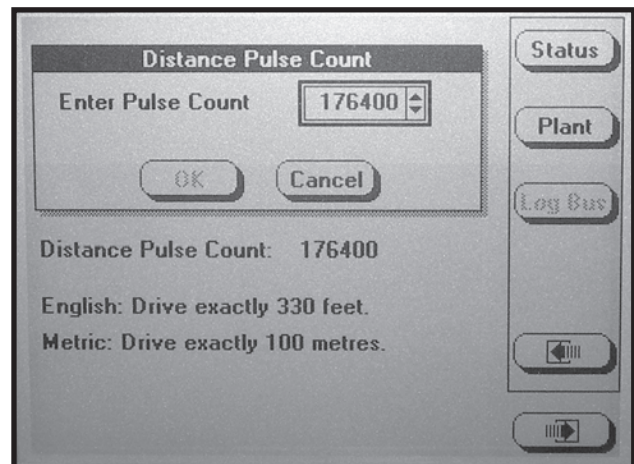
NOTE: If the Distance Pulse Count number starts to count pulses with the tractor not moving, check radar distance sensor for vibration or other interference.

- 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.

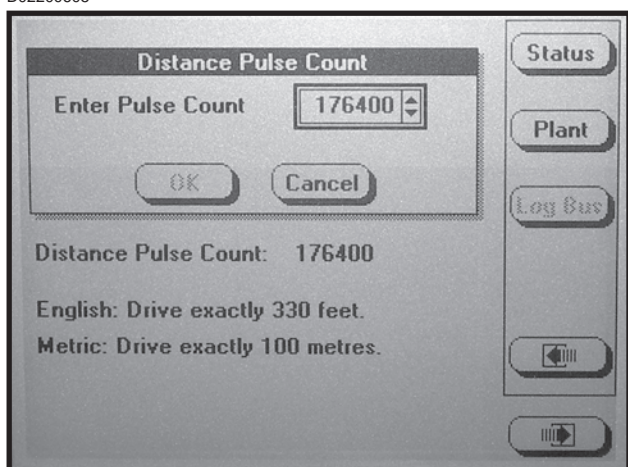
STEP 3 To return to “Planting Mode” press the PLANT key.

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

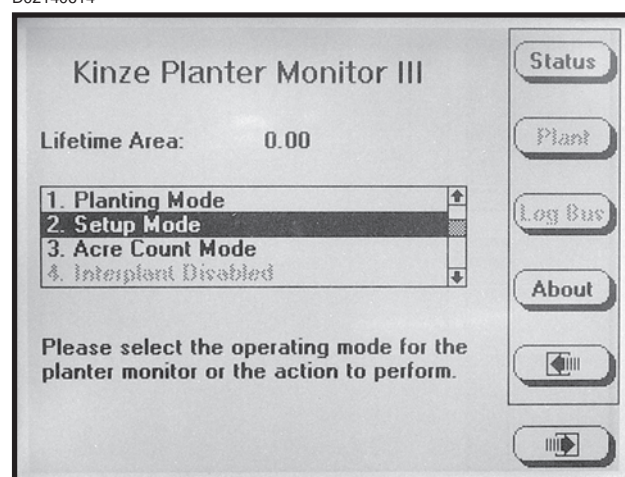
This setting must be specified when the monitor is first configured. It will be necessary to reprogram to use an alternate speed sensor.

NOTE: Speed sensors may not be changed while planting.

RADAR TO MAGNETIC DISTANCE SENSOR

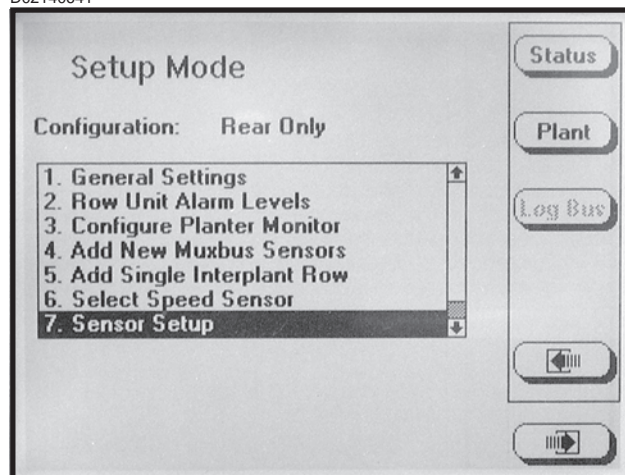
STEP 1 Press the F6 key until the “Mode Selection” screen appears. Select “Setup Mode” by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614



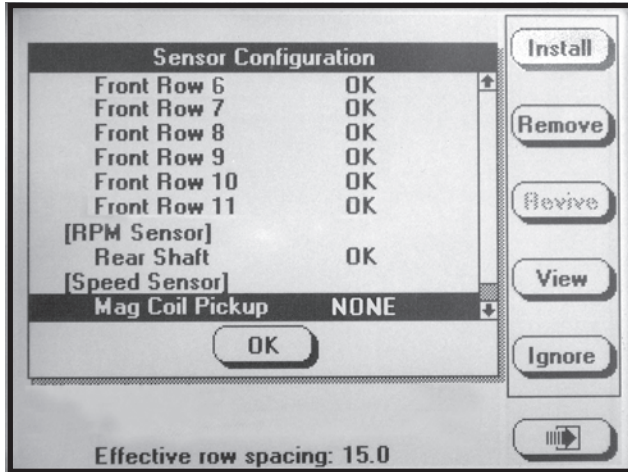
STEP 2 Turn the knob or use the UP or DOWN arrow keys to choose “Sensor Setup”. Press the knob or ENTER key to display the highlighted item.

D02140641

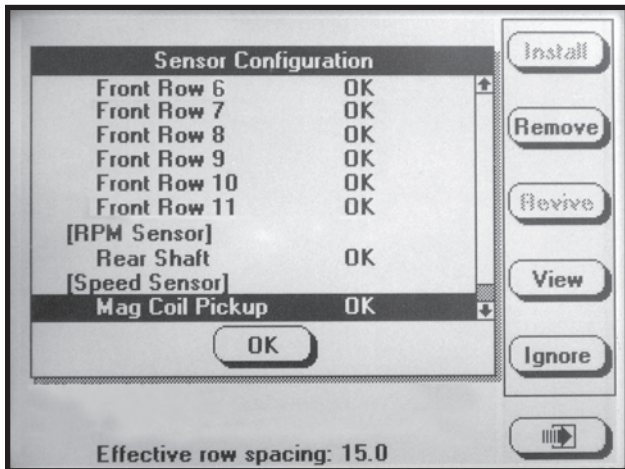


STEP 3 Turn the knob or use the UP or DOWN arrow keys to highlight “Mag Coil Pickup”. Plug in Magnetic Distance Sensor and press the INSTALL key. Press the knob or ENTER key to save information.

D05310609a

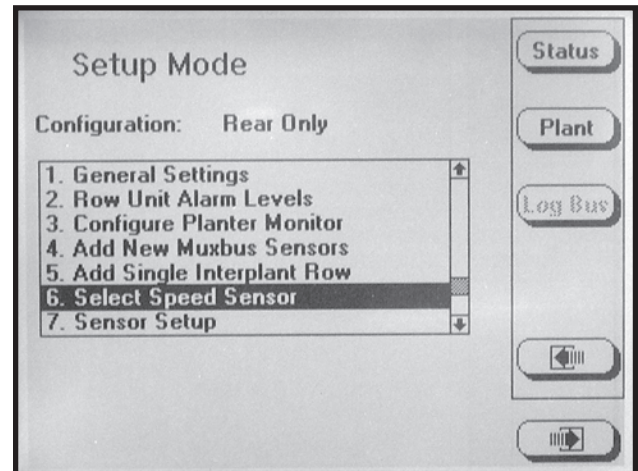


D05310609

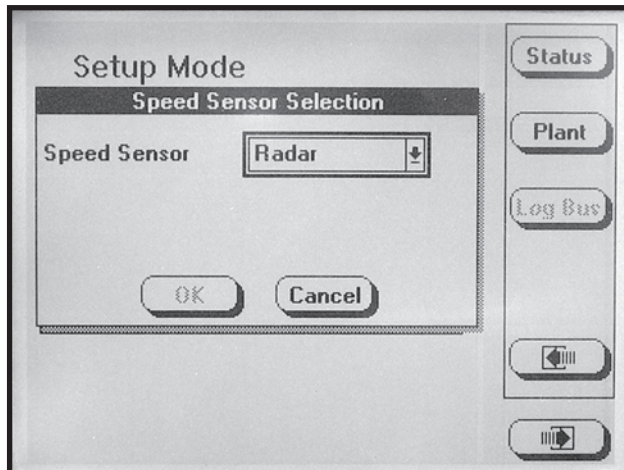


STEP 4 Turn the knob or use the UP or DOWN arrow keys to select “Select Speed Sensor” and press the knob or ENTER key. Press the knob or ENTER key to select the “Speed Sensor” field and a drop down menu will appear. Turn the knob or use the UP or DOWN arrow keys to select “Coil Pick-Up” and press the 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

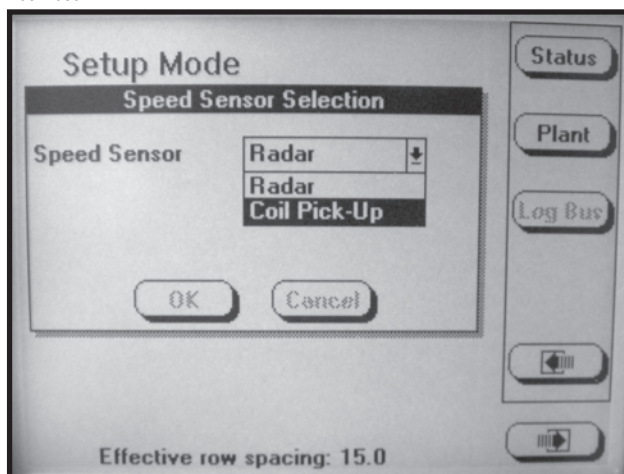


D02140639



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.

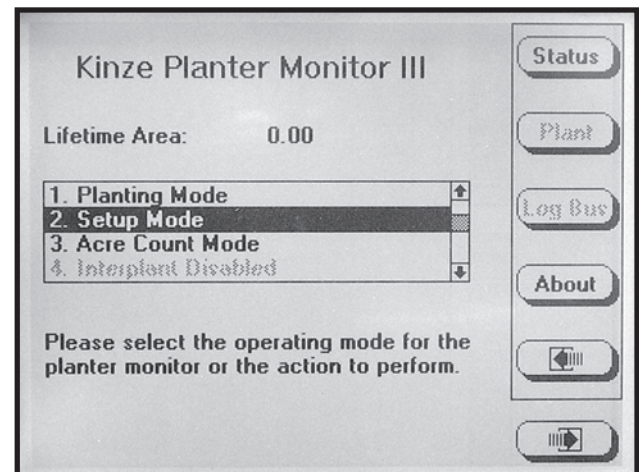
STEP 6 Press the PLANT key to return to main planting screen.

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

MAGNETIC DISTANCE SENSOR TO RADAR

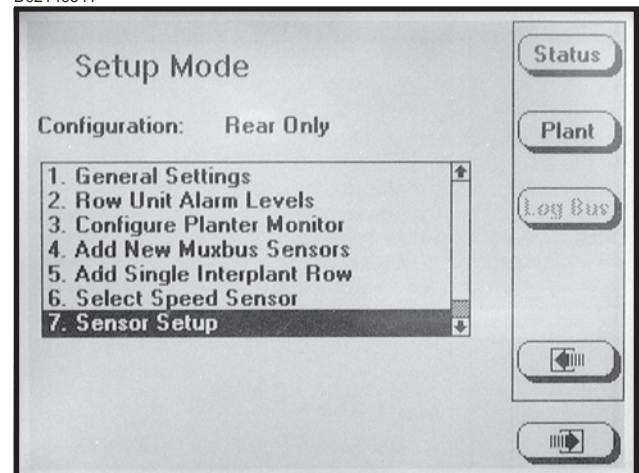
STEP 1 Press the F6 key until the “Mode Selection” screen appears. Select “Setup Mode” by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614

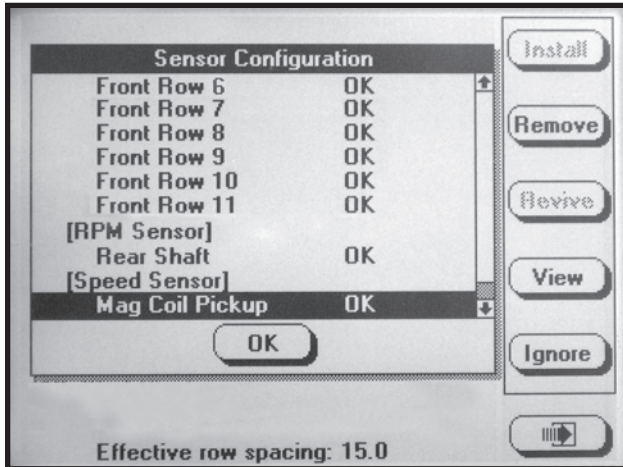


STEP 2 Turn the knob or use the UP or DOWN arrow keys to choose “Sensor Setup”. Turn the knob or use the UP or DOWN arrow keys to highlight “Mag Coil Pickup”. Press the REMOVE key, a note will appear for confirmation select as appropriate. Unplug Magnetic Distance Sensor and press the knob or ENTER key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

D02140641

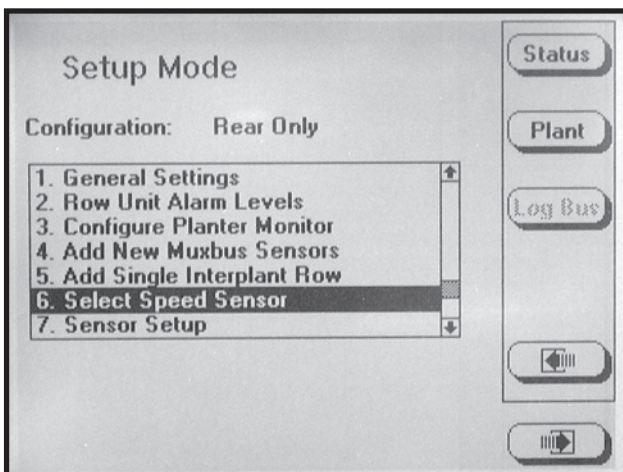


D05310609

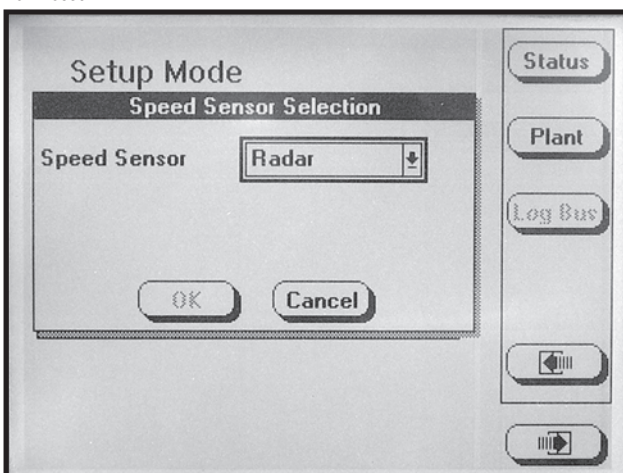


STEP 3 Turn the knob or use the UP or DOWN arrow keys to select “Select Speed Sensor” and press the knob or ENTER key. Press the knob or ENTER key to select the “Speed Sensor” field and a drop down menu will appear. Turn the knob or use the UP or DOWN arrow keys to select “Radar” and press the knob or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

D02140639

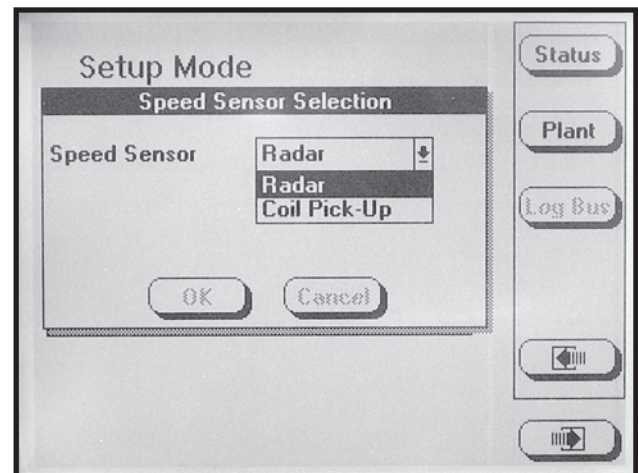


D02140639



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.

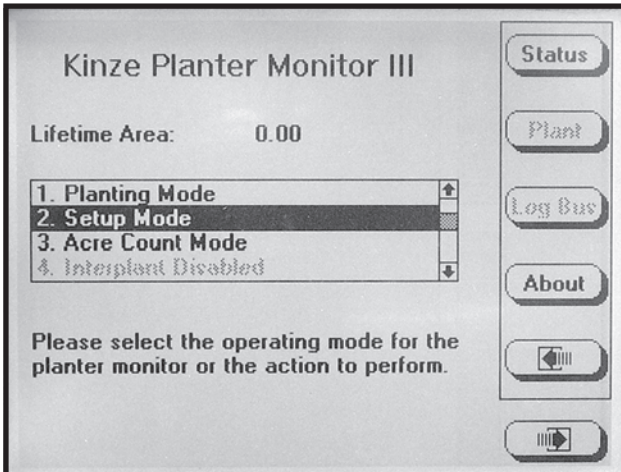
NOTE: When switching between speed sensors, verify the distance pulse count is correct for the chosen sensor. There will be significant distance pulse count variation between radar and magnetic distance sensors.

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

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

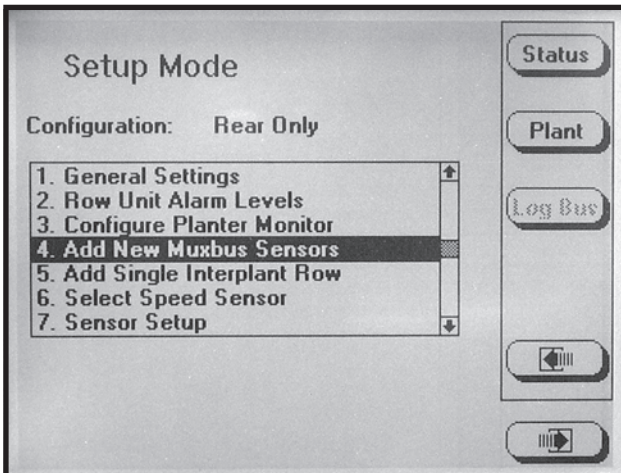
STEP 2 Select “Setup Mode” by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614



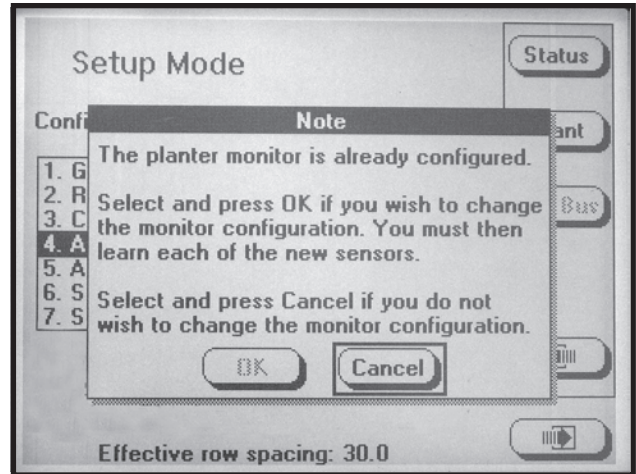
STEP 3 Select “Add New Muxbus Sensors” by turning the knob or using the UP and DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

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.

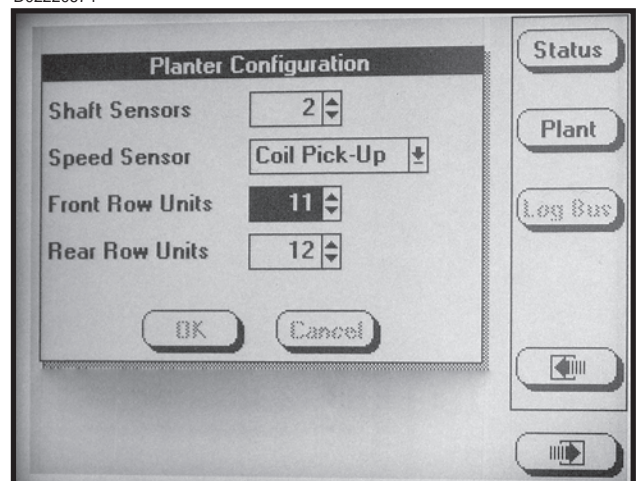
D03010601



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.

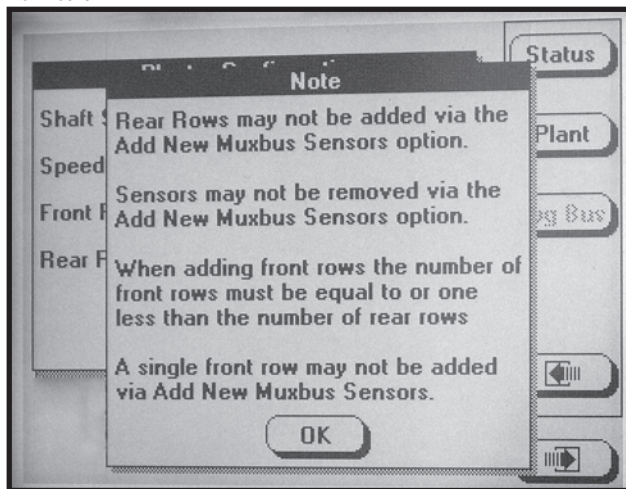
NOTE: To prevent the configuration from being changed select CANCEL, then press the knob, ENTER key or ESC key.

D02220674



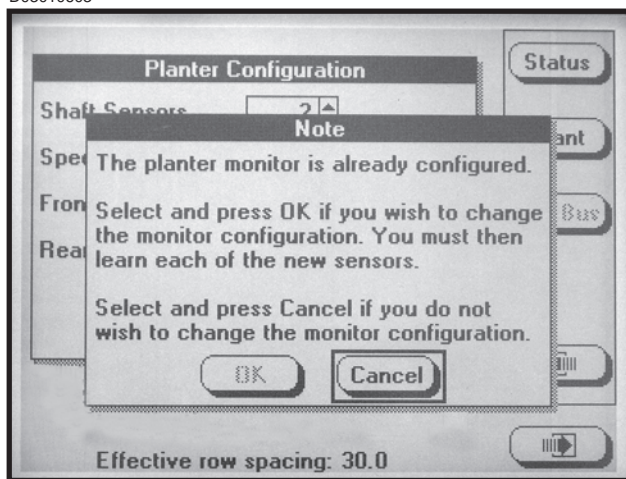
NOTE: Attempting to add rear rows while adding new muxbus sensors will cause the following note to appear.

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.

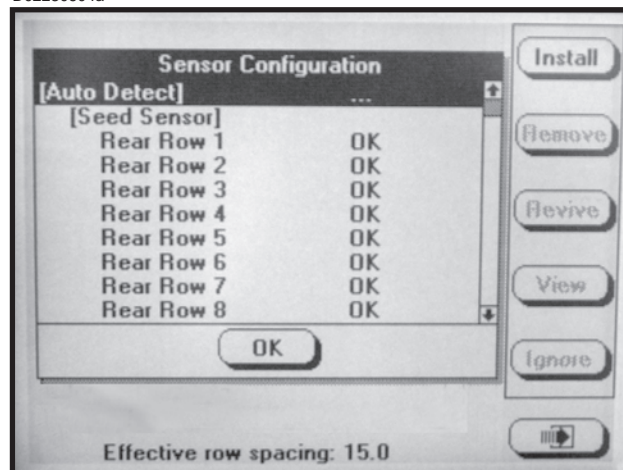
D03010603



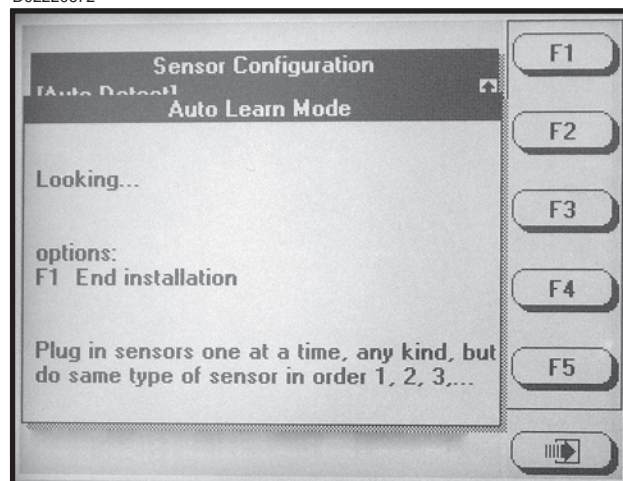
NOTE: To prevent the configuration from being changed select CANCEL, then press the knob, ENTER key or ESC key.

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

D02230604a



D02220672

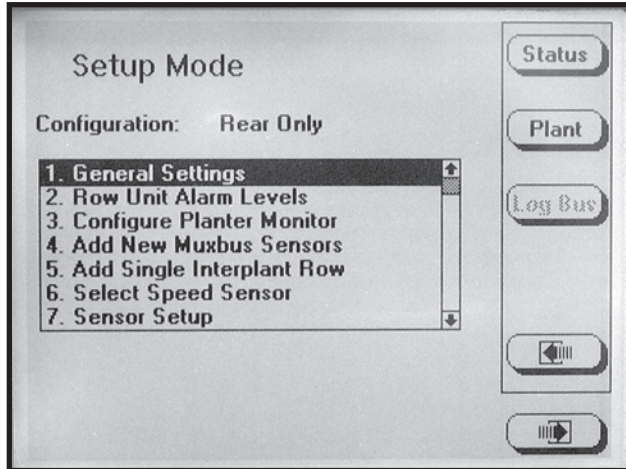


STEP 8 When all sensors are learned select F1 to end installation. Scroll down to verify the front rows are learned. Select OK by pressing the knob or ENTER key.

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.

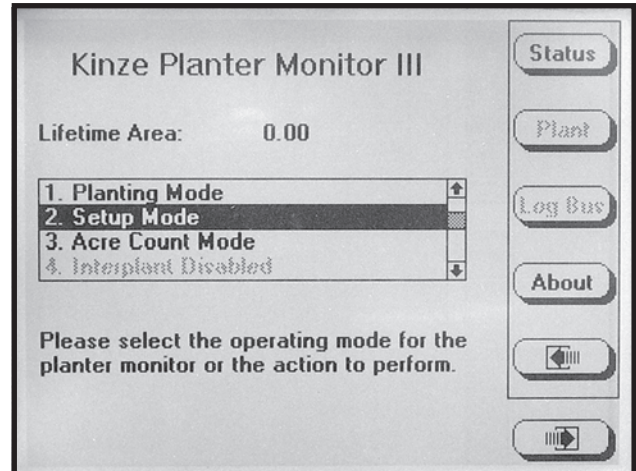
STEP 11 To return to “Planting Mode” press the PLANT key.

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

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

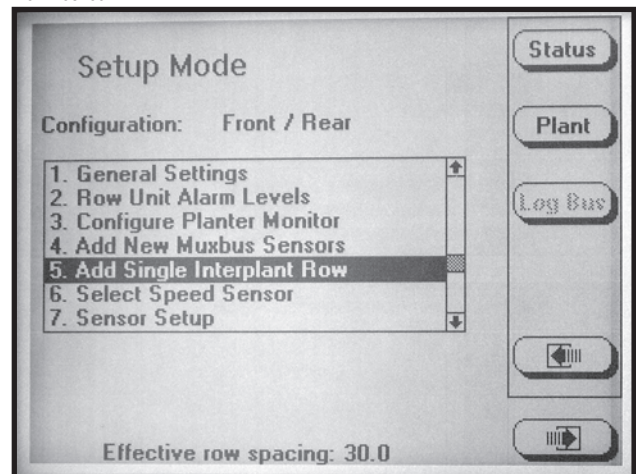
STEP 2 Select “Setup Mode” by turning the rotary encoder knob or using the UP or DOWN arrow keys. Press the knob or ENTER key to display the highlighted item.

D02140614



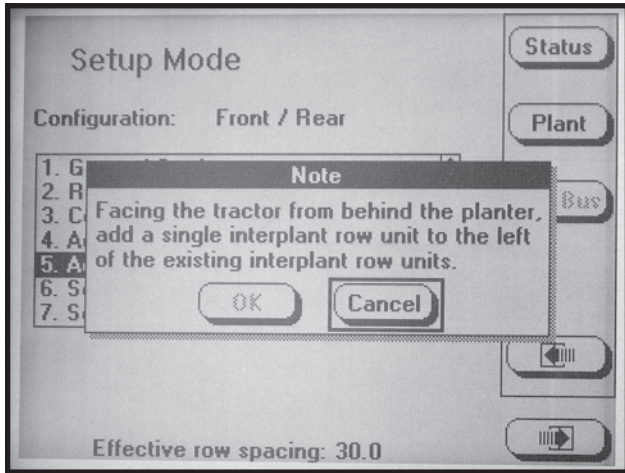
STEP 3 Select “Add Single Interplant Row” by turning the knob or using the UP and DOWN arrow keys. Press the knob or the ENTER key to display the highlighted item.

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.

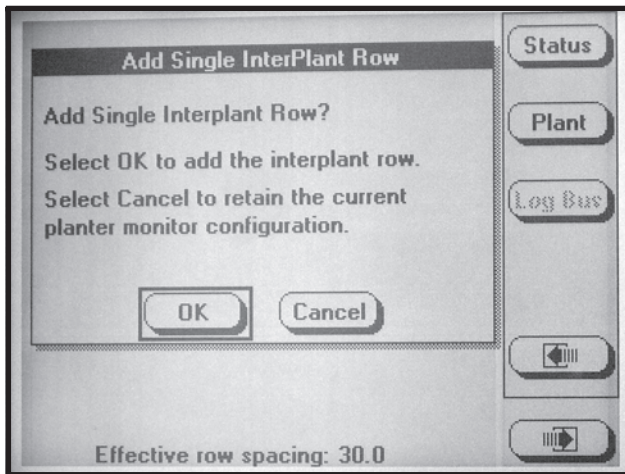
D022206201



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

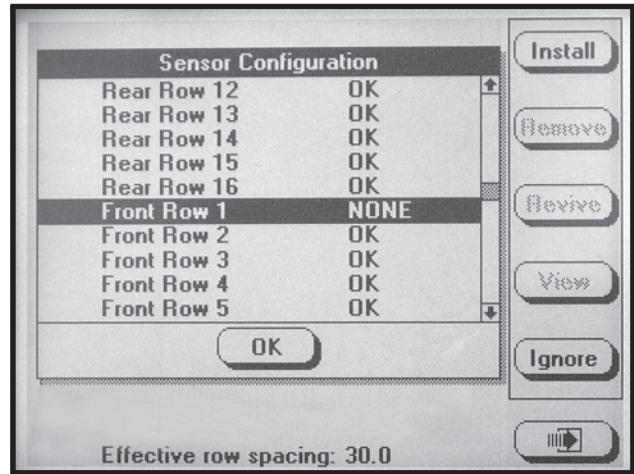
If the single Interplant row is to be added turn the knob or use the UP or DOWN arrow keys to select OK and then press the knob or ENTER key to add the Interplant row. If the single Interplant row is not to be added select the CANCEL key and press the knob or ENTER key to cancel or press the ESC key.

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

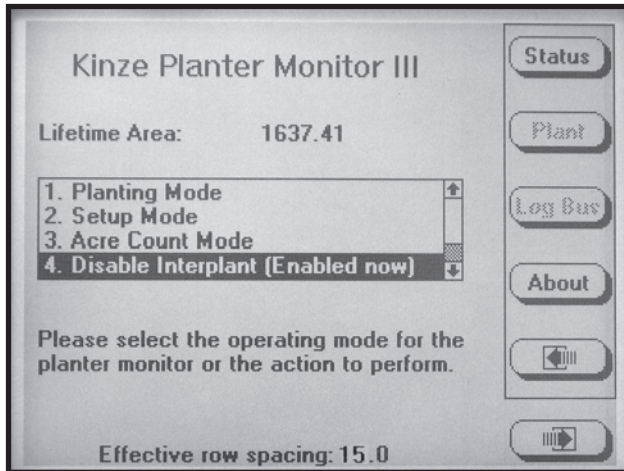


STEP 7 To return to “Planting Mode” press the PLANT key.

ENABLING/DISABLING INTERPLANT® ROWS

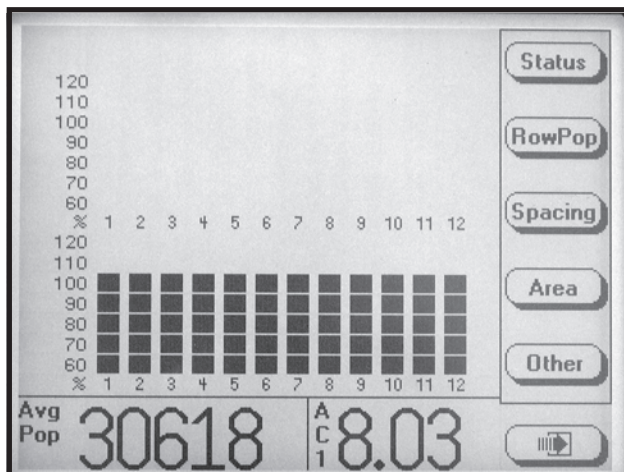
To Enable or Disable Interplant (a) press the F6 key until the “Mode Selection” screen appears, (b) turn the rotary encoder knob or use the UP or DOWN arrow keys to highlight “Disable/Enable Interplant”, (c) press the knob or ENTER key to “Disable” or “Enable” Interplant. To verify selection, the row 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 pressing the knob or ENTER key or press F6 to return to the “Planting Mode”.

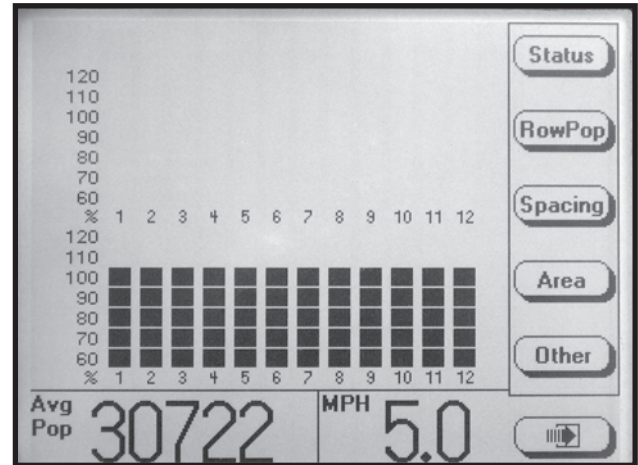
D02240602



ROW POPULATION

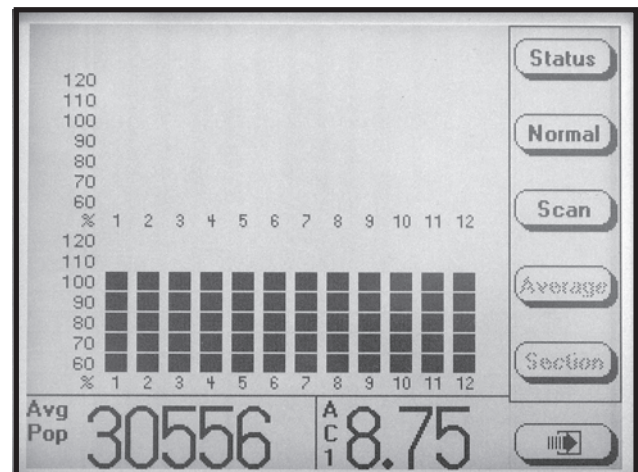
- Press the ROW POP key to display row population. Average planter population will be shown in the lower L.H. corner of the display.

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.

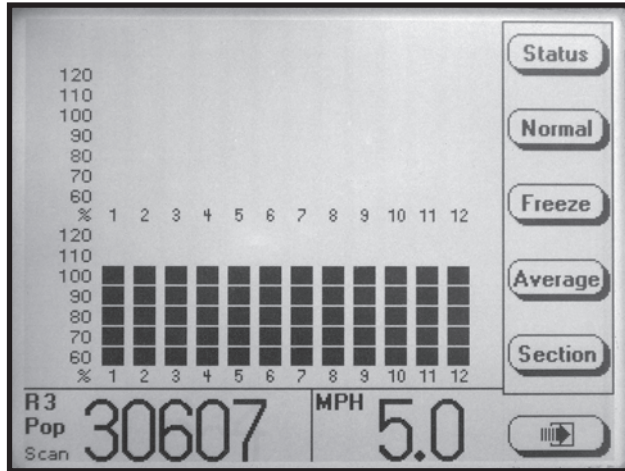
D02240604



- 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



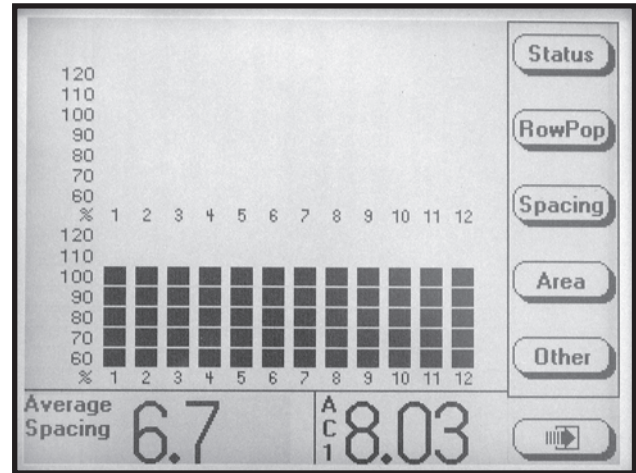
- When either Scan or Frzn is displayed in the L.H. corner the SECTION and arrow keys function as follows: (a) SECTION or RIGHT arrow key advances to the first row of the next section; (b) SECTION or LEFT arrow key selects the first row of the previous section, wrapping around to the first row of the 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.

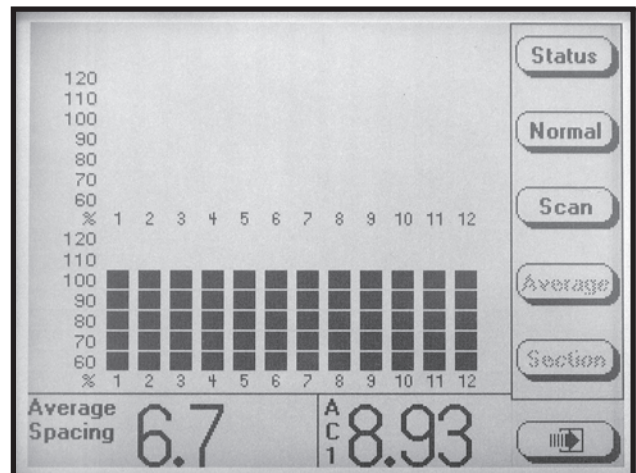
ROW SPACING

- 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.

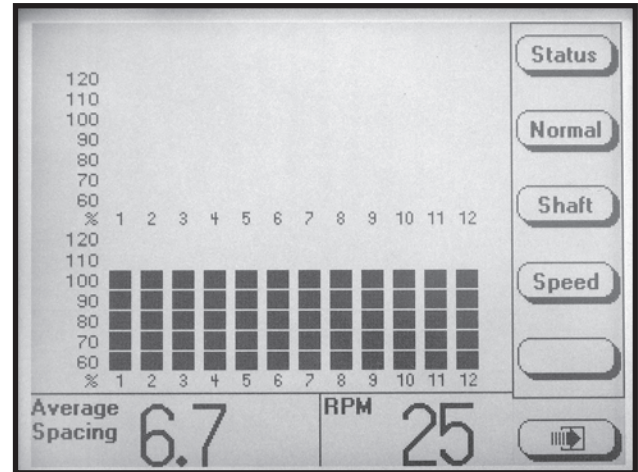
SPEED/SHAFT ROTATION

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

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

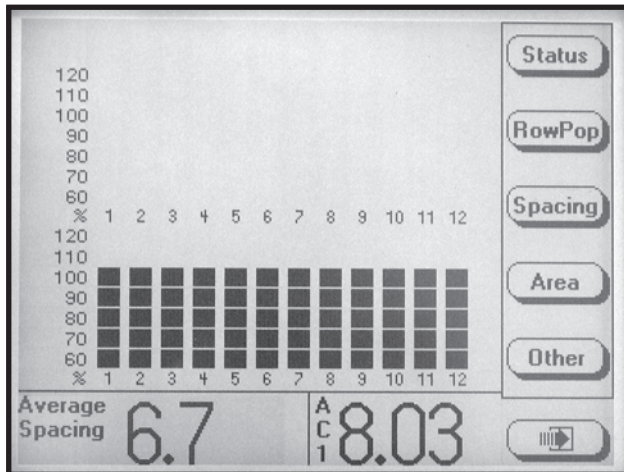
NOTE: Applicable to planters with shaft rotation sensors installed.

D02240607

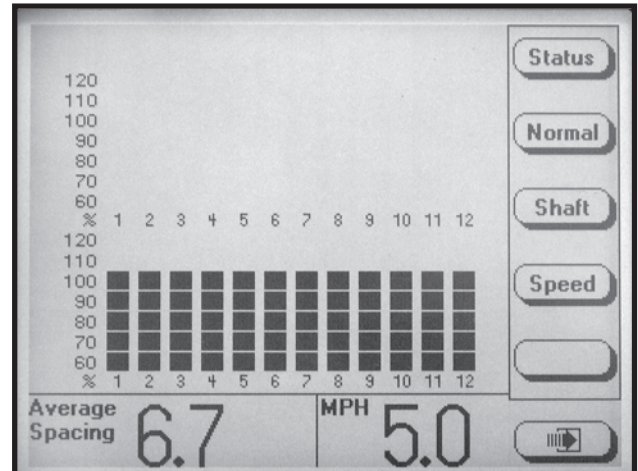


- Press the SPEED key to view the ground speed. The value will appear in the bottom R.H. corner of the display.

D02240602



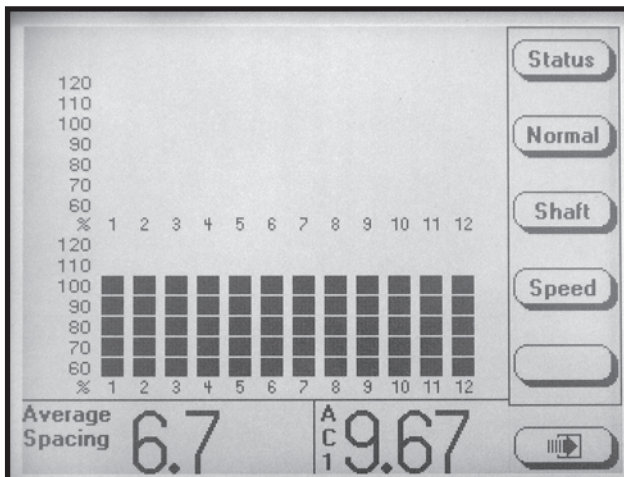
D02240608



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

- Press NORMAL to bring back the standard key labels.

D02240606



WARNINGS AND ALARMS

- 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.

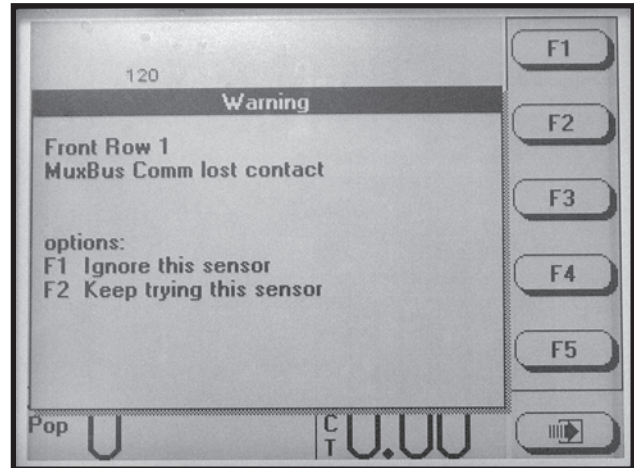
NOTE: The only way to remove an alarm is to find and correct the problem. Alarms are not reported for rows that seed rate alarm thresholds have been disabled.

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

- 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.

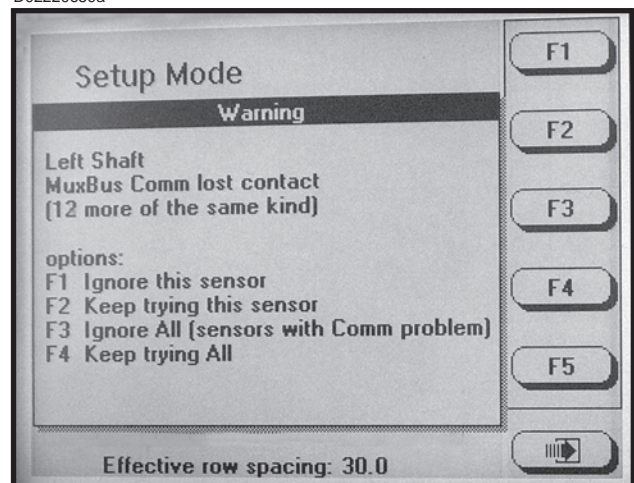
- Seed Counting Sensors Not Communicating With Monitor** - When the monitor detects a communication error between the sensor and the monitor, the monitor will emit two beeps to alert the user. Try to reestablish communication with sensor(s) by pressing F2. If the monitor is unable to establish communication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

D02220687



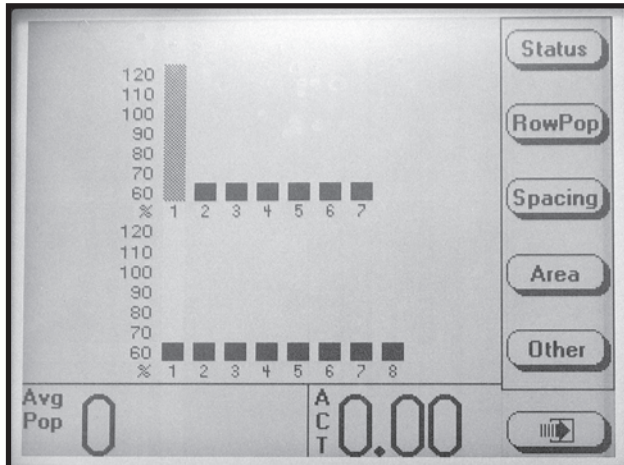
If multiple sensors have lost contact, the message will indicate which sensors have lost contact.

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



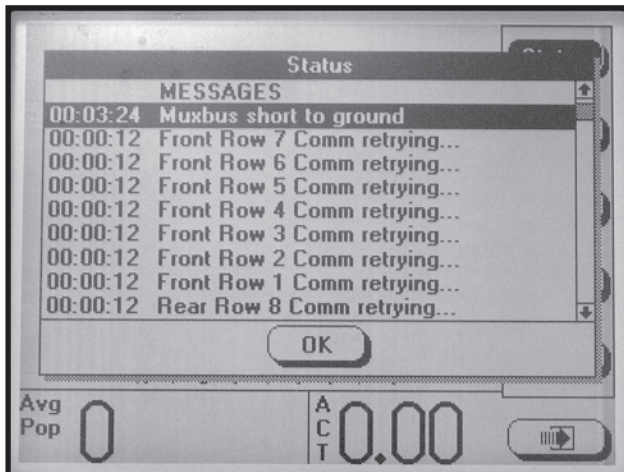
NOTE: If the sensors are not faulty, F2 or F4 should be pressed and the message shown below will appear when the STATUS key is pressed.

- 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.

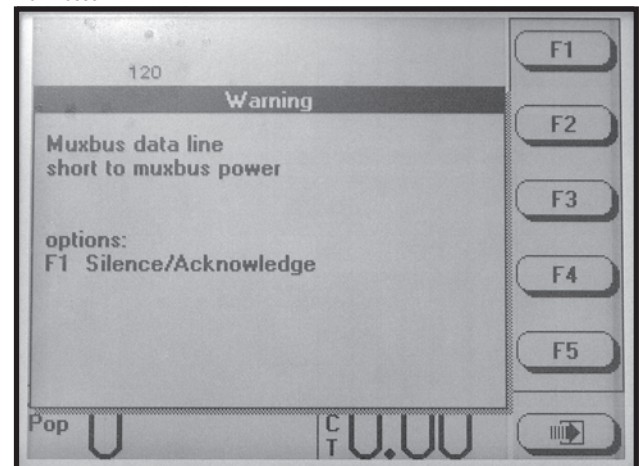
- Wire Shorts** - When a wire is shorted any one of the messages shown below will appear, stating which wires are shorted. The short must be located and fixed to continue planting. Cycle the power on the monitor to clear the alarm.

D02220685

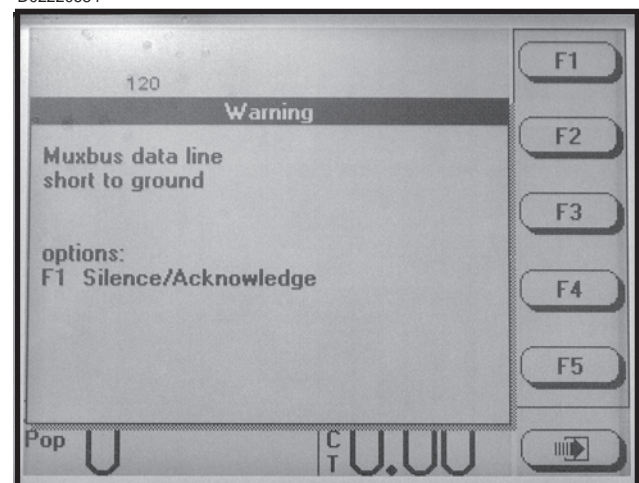


NOTE: If a sensor has been ignored, the sensor configuration screen will display as shown below.

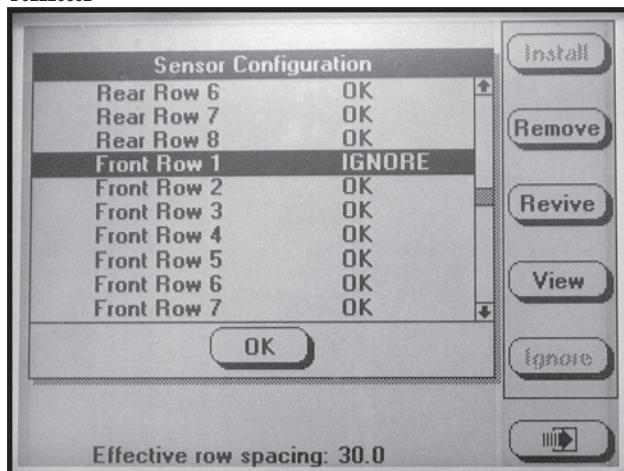
D02220683



D02220684



D02220692

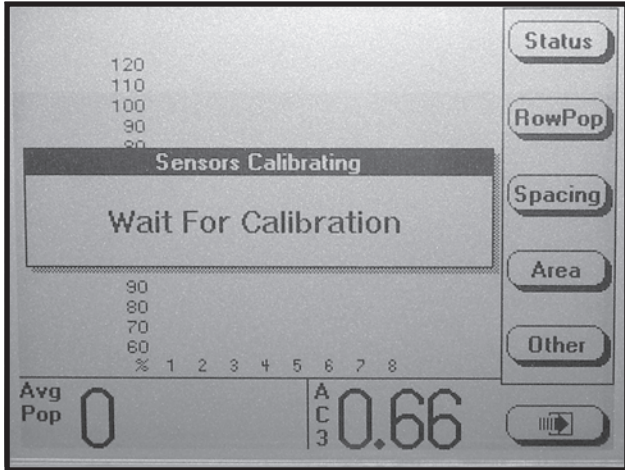


FIELD OPERATION

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.

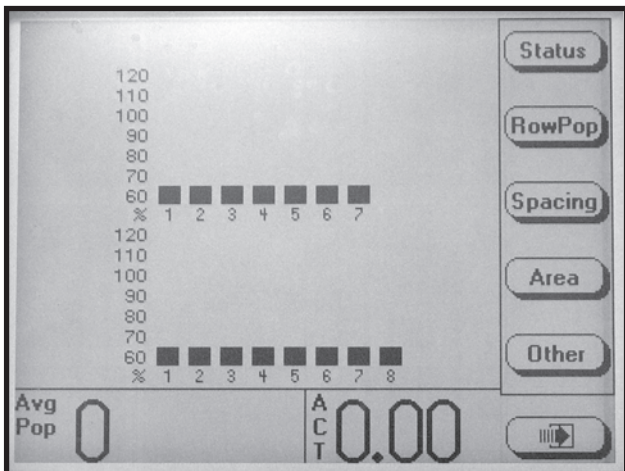
D02200606



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

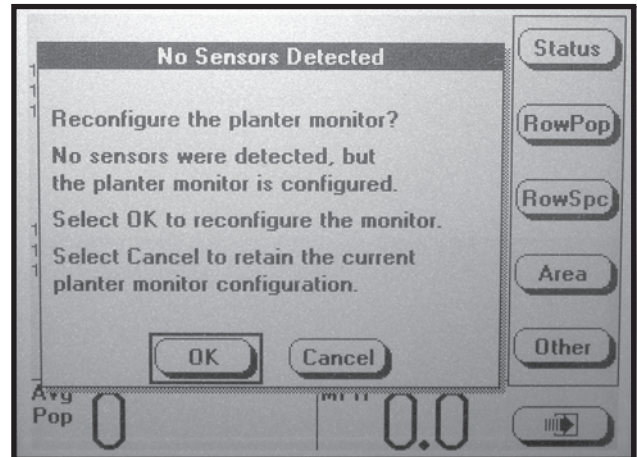
NOTE: If the monitor can communicate with the sensors the normal planting mode screen will be displayed.

D0220689a



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

D02200627



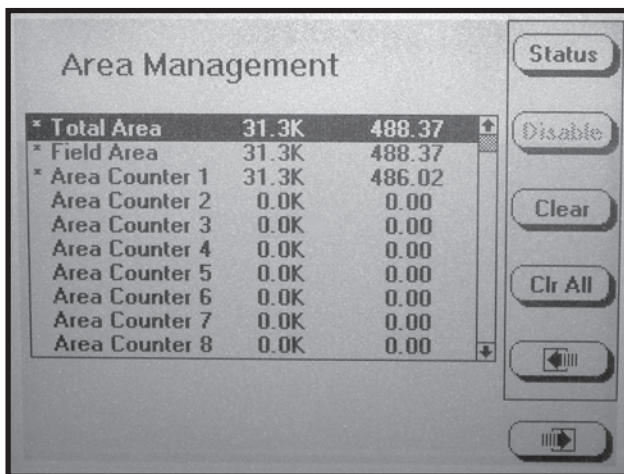
NOTE: Selecting OK will reconfigure the monitor requiring all sensors to be re-learned. Selecting CANCEL will maintain the current configuration and the monitor will continue trying to communicate with the sensors.

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

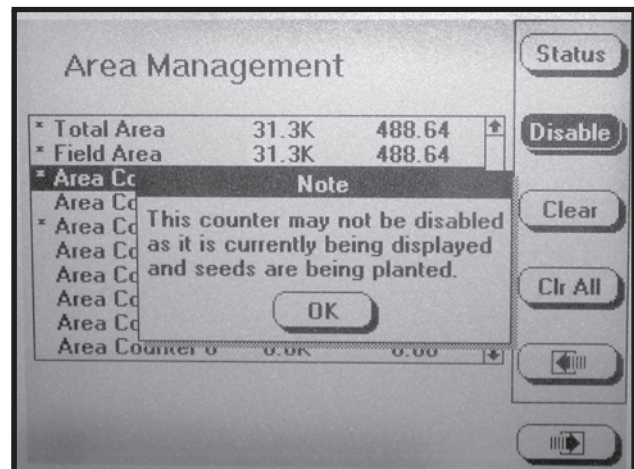
Each of the "Disabled Area Counters" may be enabled up to a total of four "Area Counters". To Enable a Disabled "Area Counter": (a) highlight the desired "Area Counter" by turning the rotary encoder knob or using the UP or DOWN arrow keys; (b) press the ENABLE key or press the knob or ENTER key and an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

DISABLE AREA COUNTER

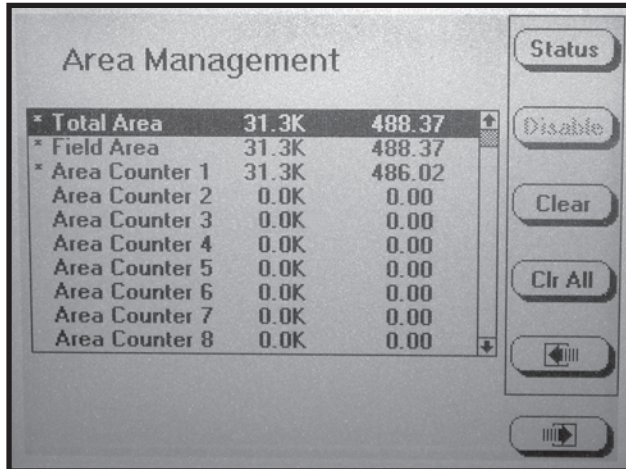
Each of the Enabled Area Counters may be disabled, with the exception of the Total Area Counter. To disable an enabled area counter: (a) highlight that "Area Counter"; (b) press the DISABLE key or press the rotary encoder knob or ENTER key and the asterisk next to the "Area Counter" will disappear. The "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

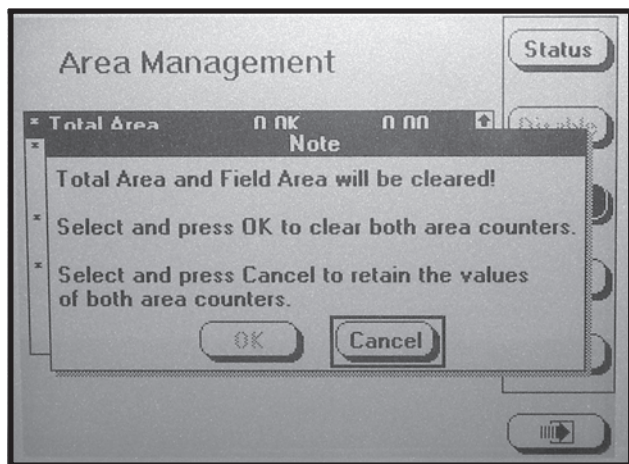


D02210626a



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

D02200612



CLEAR AREA COUNTER

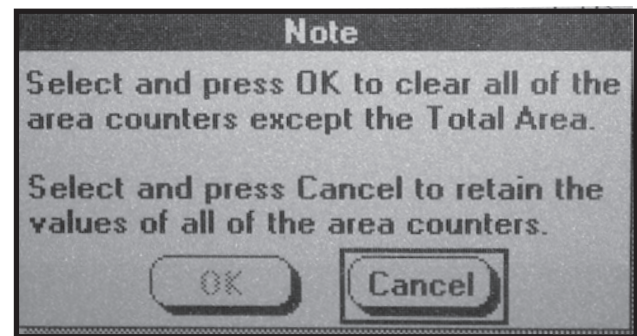
Total Area, Field Area and Area Counters 1 through 8 can be cleared, whether they are Enabled or Disabled. Clearing the "Total Area" counter forces the "Field Area" counter to also be cleared. Clearing any other "Area Counter" including the "Field Area" counter clears only that counter.

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.

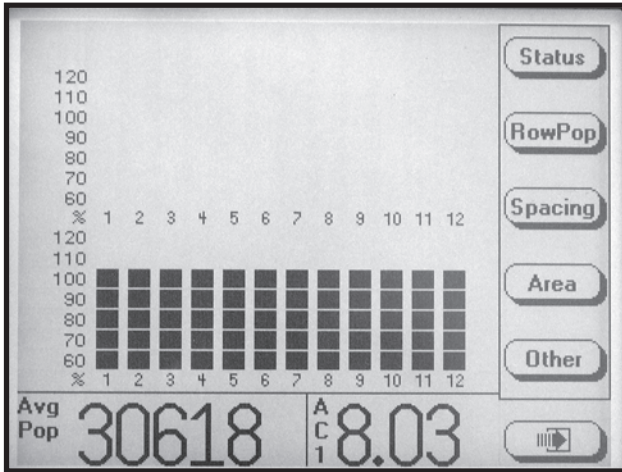
D02210628



AREA COUNTERS

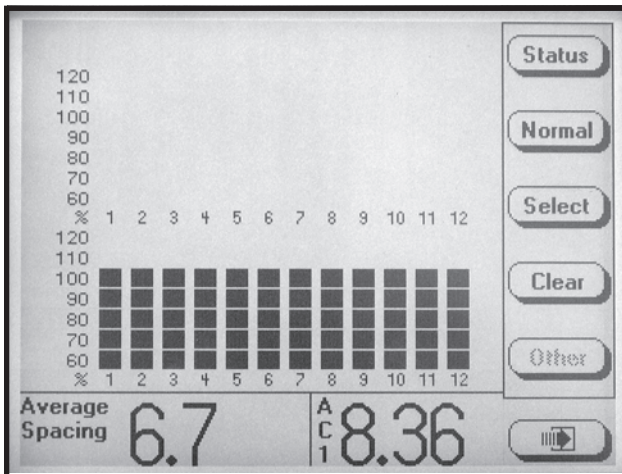
STEP 1 On the main planting screen press the AREA key.

D02240602



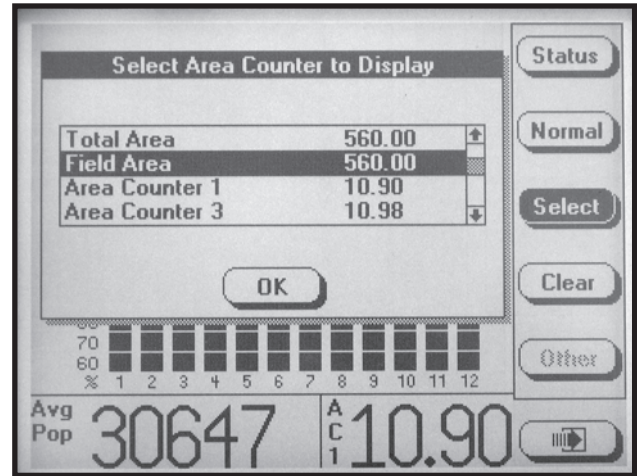
STEP 2 Press the SELECT key to display the list of the Enabled Area Counters.

D02240603



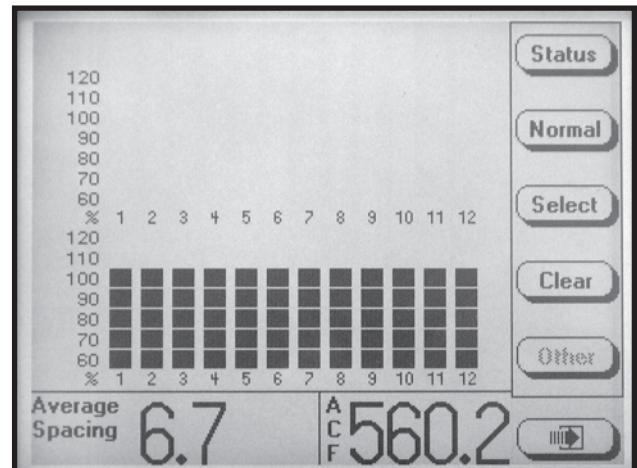
STEP 3 To select the desired active "Area Counter" turn the knob or use the UP or DOWN arrows to highlight the desired "Area Counter".

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

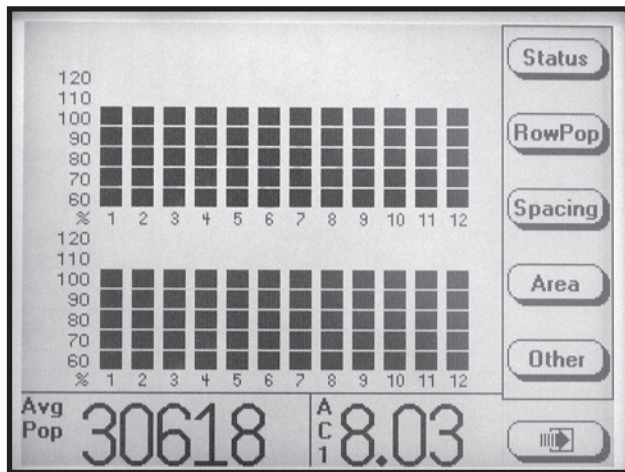


NOTE: The abbreviation for the selected area counter numerical value will appear in the bottom R.H. corner of the screen. In the above photo "ACF" represents "Area Counter Field".

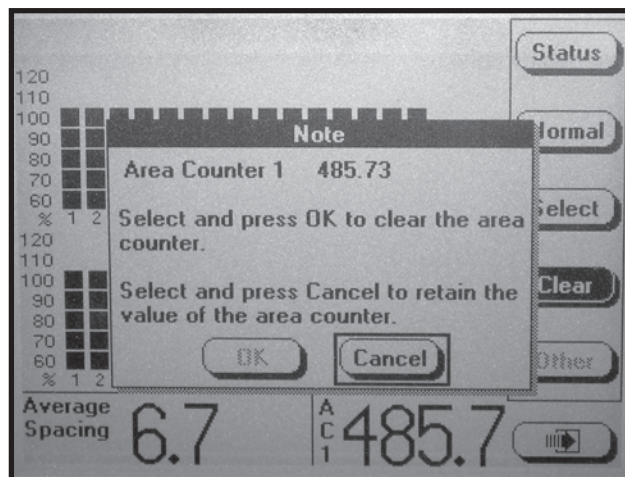
CLEARING FIELD AREA

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.

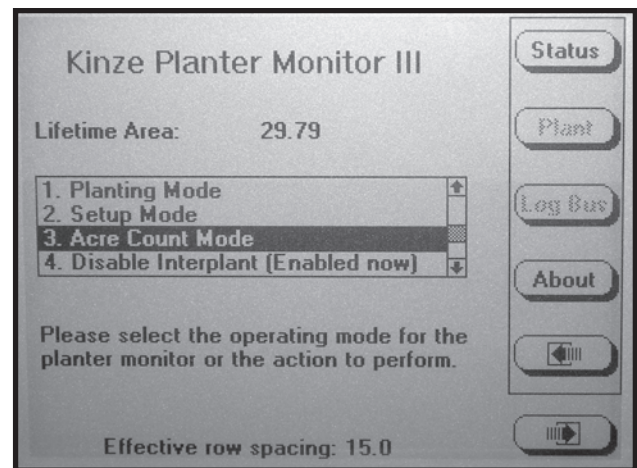
Acre Count Switch Kit

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



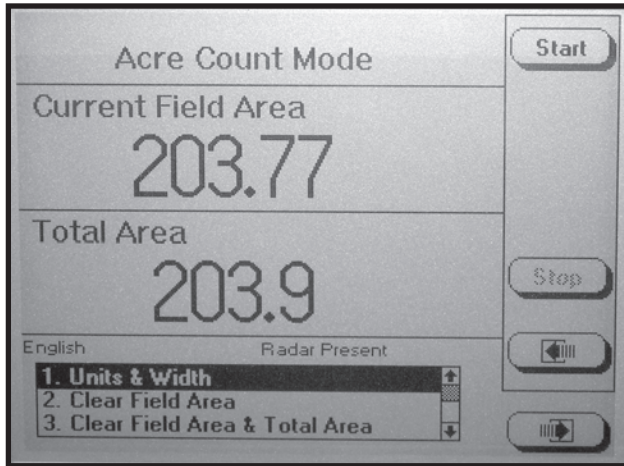
NOTE: If no radar unit is detected a warning will appear.

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.

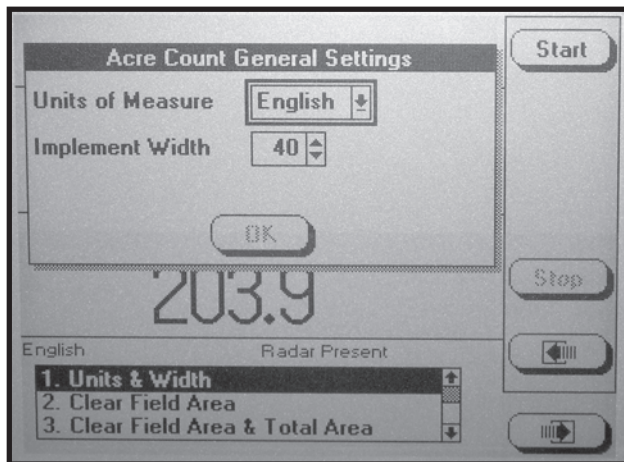
STEP 2 In the menu, “Units & Width” will be highlighted. Press the knob or ENTER key.

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)

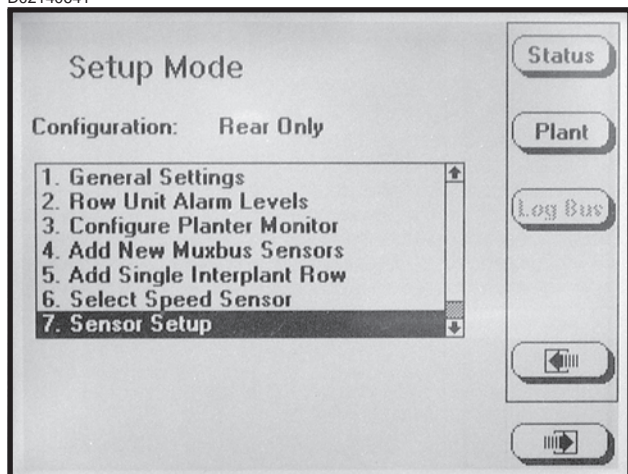
To replace a single faulty sensor: (a) turn OFF the monitor, (b) replace the sensor, (c) turn monitor ON. It will then recognize that a single sensor has been replaced.

NOTE: Monitor will beep twice when the new sensor(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.

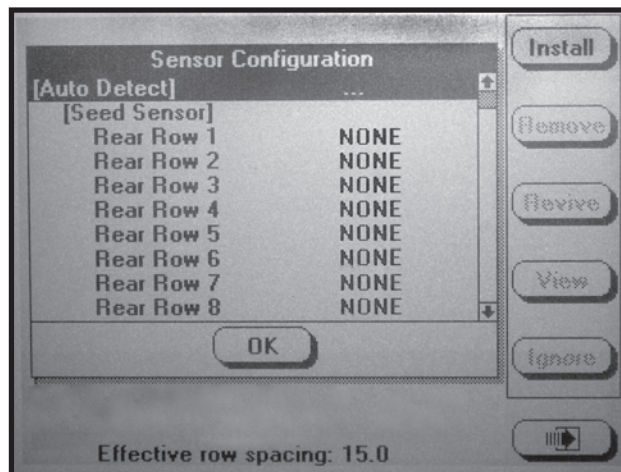
D02140641



- 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 harness, 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



MACHINE OPERATION

NOTCHED SINGLE DISC FERTILIZER OPENER

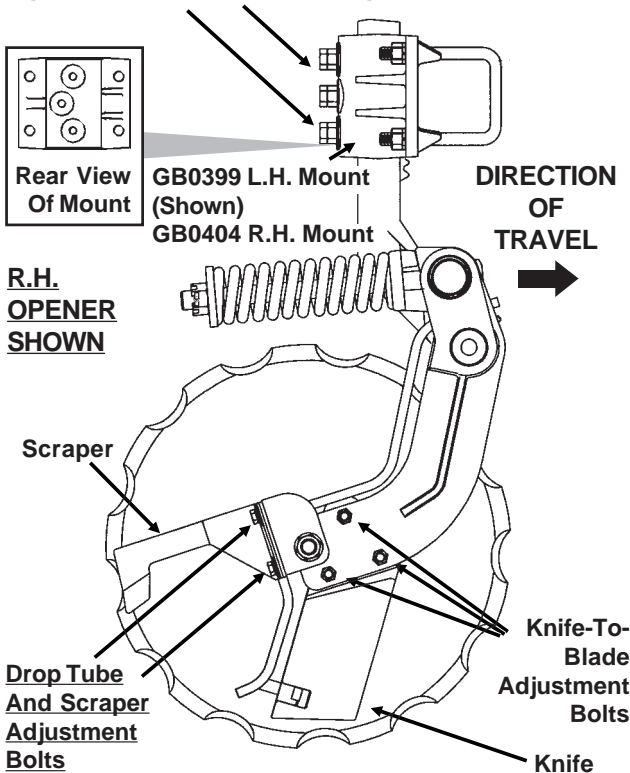
The notched single disc fertilizer opener is designed for use in minimum and no till planting conditions. Placement of fertilizer with the 16 ³/₄" diameter notched single disc fertilizer opener is recommended at 2 ¹/₂" - 3" from the row. The opener is designed to hold the blade at a set-angle so the 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)

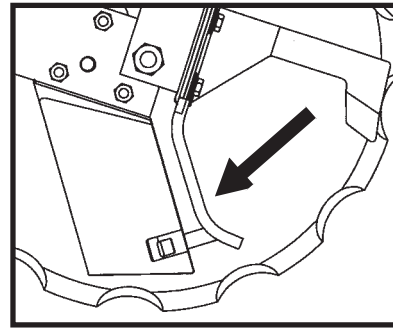
Depth Adjustment Cap Screws - Recommended Maximum Operating Depth 4" (Middle Cap Screw Holds Blade Angle But Must Be Loosened To Adjust Depth And Tightened First To Set Blade Angle)



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.

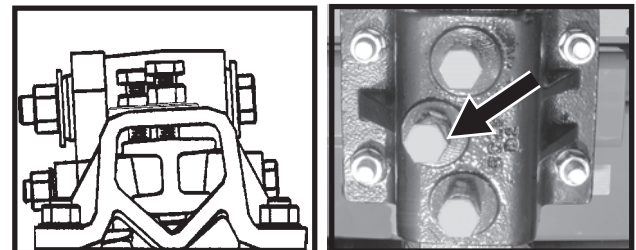
Adjust scraper to just touch the opener blade. As the mounting hardware is tightened, the scraper is drawn tighter to the blade. After adjustment, rotate opener blade to be sure blade will turn by hand with slight resistance, but will not coast or freewheel.

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.

MACHINE OPERATION

DEPTH/GAUGE WHEEL ATTACHMENT FOR NOTCHED SINGLE DISC FERTILIZER OPENER

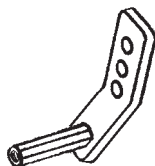
D061101202a



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 $\frac{5}{8}$ " hardware through the disc blade hub w/bearing.

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.

(FRTZ256a)



MACHINE OPERATION

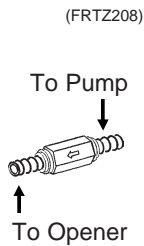
LIQUID FERTILIZER ATTACHMENT

D01050702



Model 3800 SDS EdgeVac® 24 Row 30" With Liquid Fertilizer 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.



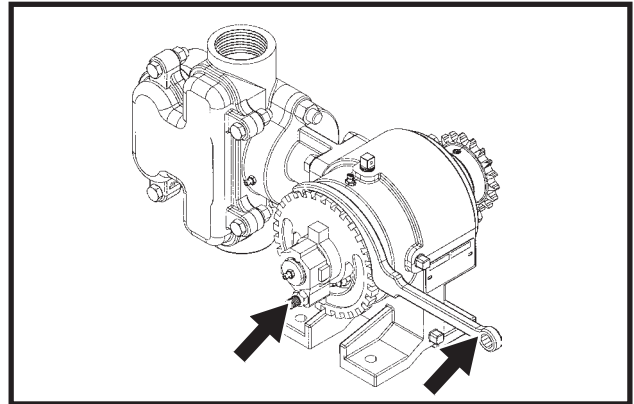
PISTON PUMP

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 $\frac{3}{8}$ " 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 $\frac{3}{8}$ " lock nut being careful not to over tighten.

(A12330b)



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

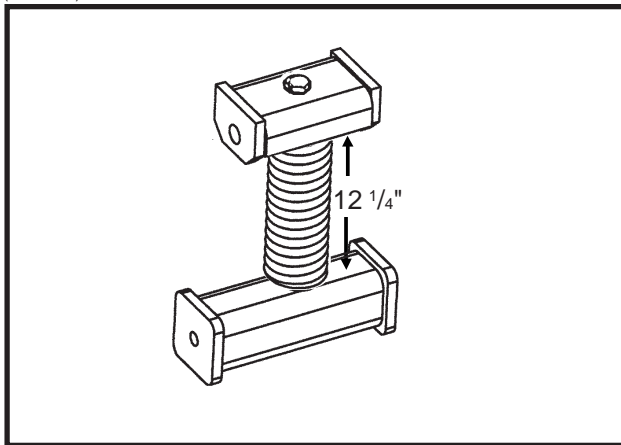
NOTE: Periodically check flow to all rows. If one or more lines are plugged, set rate will be delivered to remaining rows.

MACHINE OPERATION

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)



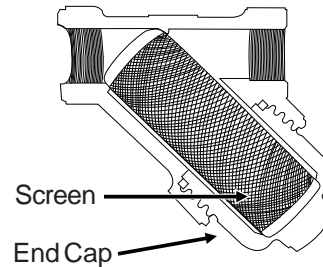
NOTE: The piston pump ground drive wheel assembly is designed to allow the assembly to be locked in raised position when not in use. Remove the two cap screws that attach the upper end of the spring to the spring mount. Reattach the spring using the upper holes in the spring mount. Reverse procedure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

MACHINE OPERATION

LIQUID FERTILIZER PISTON PUMP APPLICATION RATES GALLONS PER ACRE

Applies To Model NGP-7055 Pump 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.

MACHINE OPERATION

REAR TRAILER HITCH

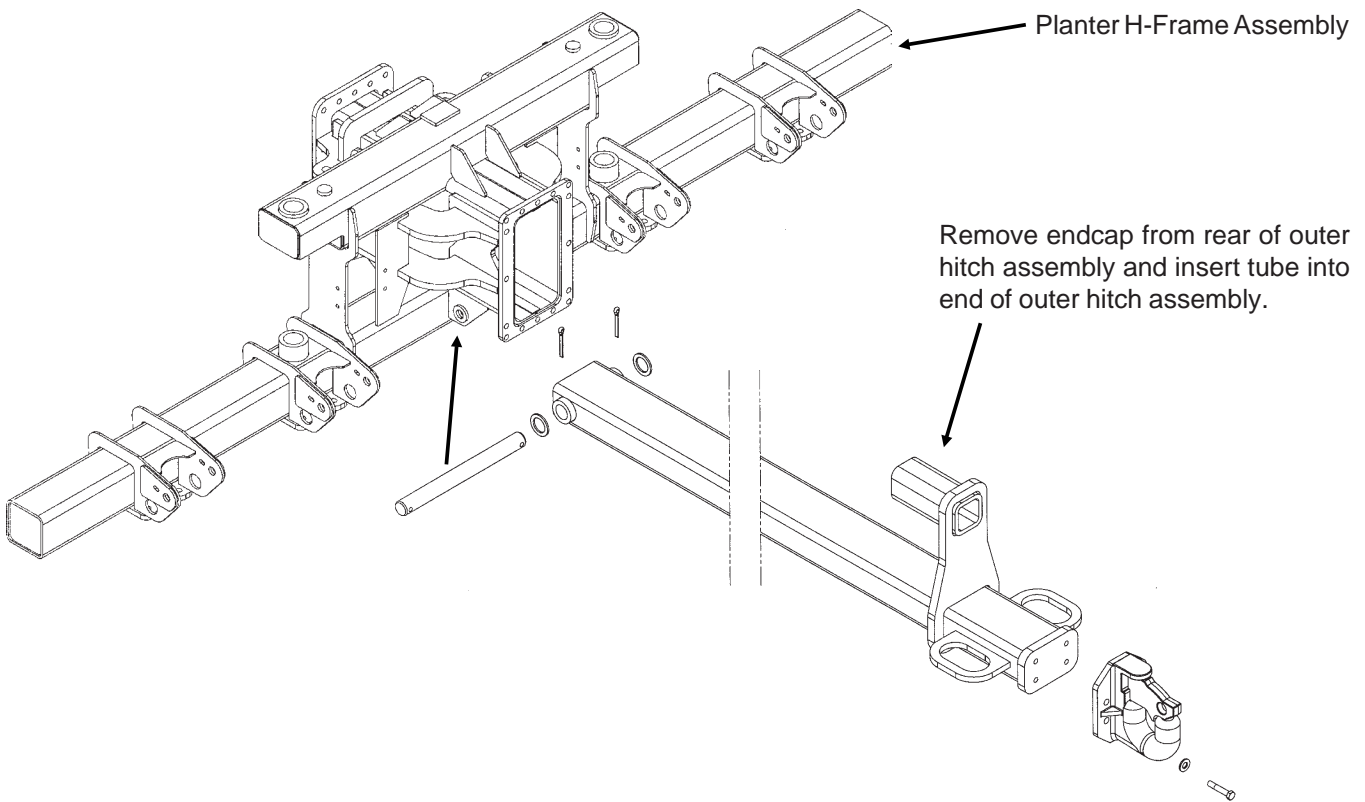
The Rear Trailer Hitch is used to tow a 3 or 4 wheel wagon behind the planter. Any hoses routed to the rear trailer hitch should follow hydraulic hose routings on the planter to allow the planter to be raised and folded to and from the transport position without stretching the hoses.

(A11210/FWD159)

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.



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

Note: The lower section of the ladder at the rear of the SDS tanks can not be folded down when using the rear trailer hitch. (Ladder applicable to 3800 SDS only.)

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. Generally, higher ground speeds will cause more variation in seed spacing. Speeds above 5.5 MPH are typically not recommended. See “Planting And Application Rate Charts” in Seed Meter Operation/Maintenance section for specific recommendations.

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 “Planting And Application Rate Charts” in the Seed Meter Operation/Maintenance section and “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.

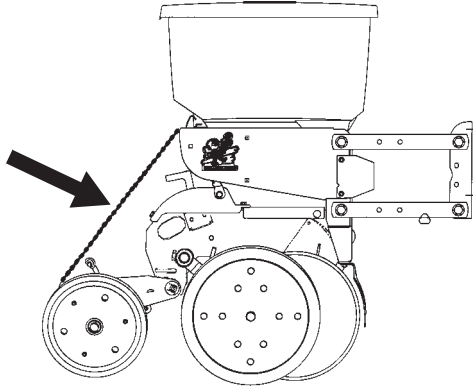
- Hoses And Fittings
- Bolts And Nuts
- Cotter Pins And Spring Pins
- Drive Chain Alignment

MACHINE OPERATION

CHECKING SEED POPULATION

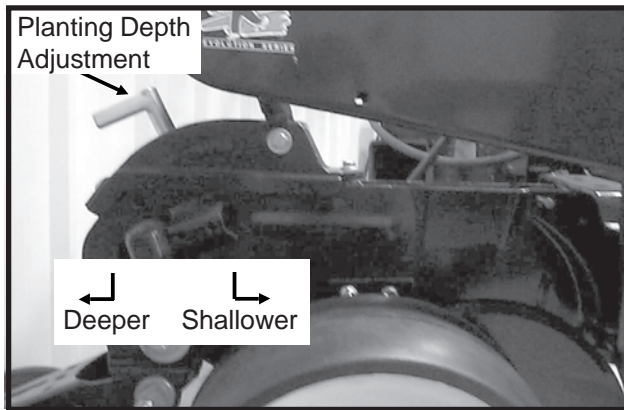
1. Tie up one or more sets of closing wheels by running a chain or rubber tarp strap between the hopper support panel and closing wheels. It may be necessary to decrease closing wheel arm spring tension.

(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 $\frac{1}{1000}$ of an acre. See chart for correct distance for row width being planted. For example, if planting 30" rows $\frac{1}{1000}$ of an acre would be 17' 5".

LENGTH OF ROW IN FEET AND INCHES	
Fraction Of Acre	30" Row Width
$\frac{1}{1000}$	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 $\frac{1}{1000}$ of an acre by 1000. This will give you total population.

EXAMPLE: With 30" row spacing 17' 5" equals $\frac{1}{1000}$ 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 seed cell has lost its seed. If two seeds are found within a short distance of each other, the seed cell has metered two seeds instead of one.

See "Seed Metering System Troubleshooting" in the Seed Meter Operation/Maintenance section of this manual.

MACHINE OPERATION

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 "Seed Metering System Troubleshooting" in the Seed Meter Operation/Maintenance section of this manual.

CHECKING GRANULAR CHEMICAL APPLICATION RATE

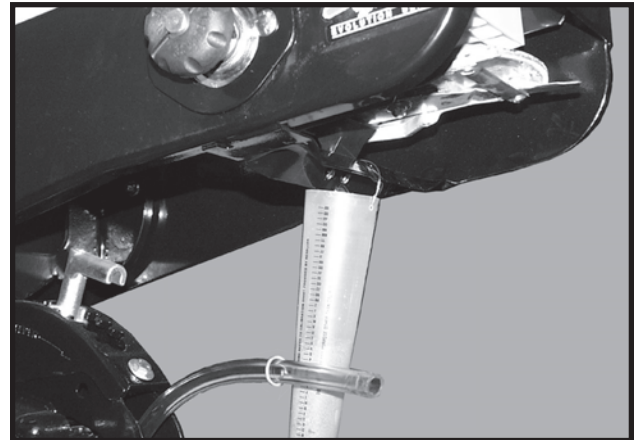
Many things can affect the rate of delivery of granular chemicals such as temperature, humidity, speed, ground conditions, flowability of different material or any obstruction in the meter.



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.

SEED METER OPERATION/MAINTENANCE

GENERAL PLANTING RATE INFORMATION

These planting rate charts are applicable to KINZE® Model 3800 and 3800 SDS EdgeVac® 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 following seed discs are available for use with the KINZE® EdgeVac® Seed Metering System:

Corn/Popcorn: 39 cell. Light blue color-coded. For all seed corn grades from 35 to 70 pounds per 80,000 kernel count unit or popcorn seed size range from 2210 to 4200 seeds per pound. Also used for No. 1 sunflower seeds. *When planting popcorn this seed disc requires use of seed baffle. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Low-Rate Corn/Popcorn: 24 cell. Light green color-coded. For all seed corn grades from 35 to 70 pounds per 80,000 kernel count unit or popcorn seed size range from 2210 to 4200 seeds per pound. Also used for No. 1 sunflower seeds. *When planting popcorn this seed disc requires use of seed baffle. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Soybean: 60 cell. Black color-coded. Seed size range from 2200 to 4000 seeds per pound. *This seed disc requires use of seed baffle. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Soybean, High-Rate: 120 cell. Dark blue color-coded. Seed size range from 2200 to 4000 seeds per pound. *This seed disc requires use of seed baffle. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Milo/Grain Sorghum: 60 cell. Yellow color-coded. Seed size range from 10,000 to 20,000 seeds per pound. *This seed disc requires use of seed baffle and cleanout brush. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Hill-Drop Cotton, Acid-Delinted (3 Seeds Per Cell): 20 cell. Brown color-coded. Cotton seed size range from 3800 to 4400 seeds per pound. *This seed disc requires use of cleanout brush w/ball-type ejector. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Small Hill-Drop Cotton, Acid-Delinted (3 Seeds Per Cell): 20 cell. Grey color-coded. Cotton seed size range from 4200 to 5200 seeds per pound. *This seed disc requires use of cleanout brush w/ball-type ejector. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Cotton, Acid-Delinted/Small Dry Edible Bean: 54 cell. Dark green color-coded. Cotton seed size range from 3800 to 4400 seeds per pound or dry edible bean seed size range from 1200 to 2500 seeds per pound. *This seed disc requires use of cleanout brush w/ball-type ejector. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Small Cotton/Sunflower: 54 cell. White color-coded. Cotton seed size range from 4200 to 5200 seeds per pound or sunflower seed sizes No. 2, 3 and 4. *This seed disc requires use of cleanout brush w/ball-type ejector. See "Seed Meter" on pages 7-2 and 7-3 for additional information.*

Large Dry Edible Bean: 54 cell. Tan color-coded. Seed size range from 800 to 1200 seeds per pound.

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

NOTE: See "Seed Meter Singulator Brush And Vacuum Level Adjustments" on page 7-26.

NOTE: 15, 19 and 38 tooth drive sprockets are NOT applicable to all rate charts. Check chart titles at top of each chart to ensure proper rate chart is selected. 38 tooth sprockets require use of 168 pitch No. 40 chains. 15 and 19 tooth sprockets require use of 160 pitch No. 40 chains.

NOTE: When using the 54 cell sunflower disc, make changes at contact wheel assembly using sprockets, chains, hex shafts, etc. supplied in G1K472 Sunflower Rate Reduction Kit. Each kit contains components for two contact wheel assemblies. Order kits according to number of contact wheel assemblies on the planter. See "Contact Wheel Drive Sprockets" in Machine Operation section.

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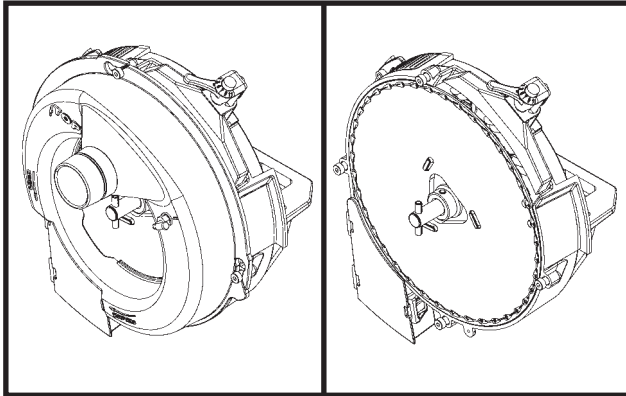


NOTE: Contact wheel drive sprocket referenced at top of each rate chart.

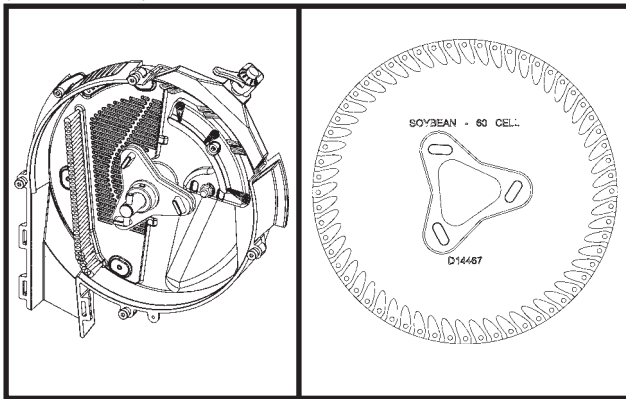
SEED METER OPERATION/MAINTENANCE

SEED METER

(METR71/METR71a)

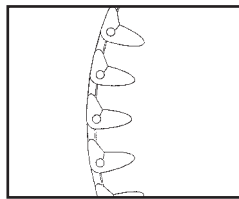


(METR70/D14467a)

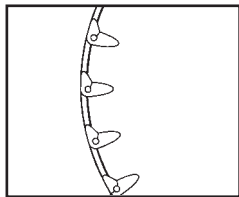


The seed discs below and at right are available for use with the KINZE® EdgeVac® Seed Metering System:

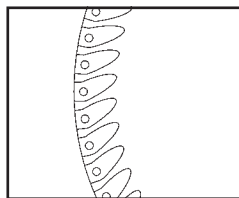
Corn/Popcorn: 39 cell. For all seed corn grades from 35 to 70 pounds per 80,000 kernel count unit. Popcorn seed size range from 2210 to 4200 seeds per pound. Also used for No. 1 sunflower seeds. (*Light blue color-coded.*) (D14465)



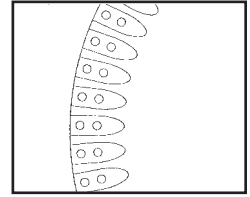
Low-Rate Corn/Popcorn: 24 cell. For all seed corn grades from 35 to 70 pounds per 80,000 kernel count unit. Popcorn seed size range from 2210 to 4200 seeds per pound. Also used for No. 1 sunflower seeds. (*Light green color-coded.*) (D16734a)



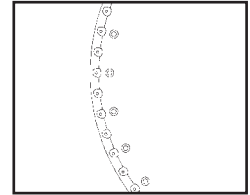
Soybean: 60 cell. Seed size range from 2200 to 4000 seeds per pound. (*Black color-coded.*) (D14467a)



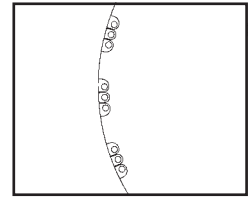
Soybean, High-Rate: 120 cell. Seed size range from 2200 to 4000 seeds per pound. (*Dark blue color-coded.*) (D14468a)



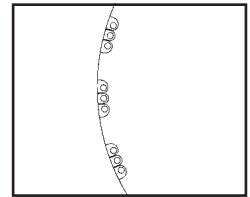
Milo/Grain Sorghum: 60 cell. Seed size range from 10,000 to 20,000 seeds per pound. (*Yellow color-coded.*) (D17050)



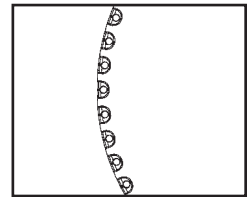
Hill-Drop Cotton, Acid-Delinted (3 Seeds Per Cell): 20 cell. Cotton seed size range from 3800 to 4400 seeds per pound. (*Brown color-coded.*) (D17187)



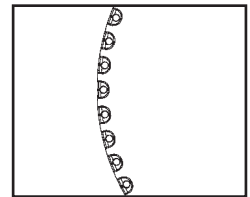
Small Hill-Drop Cotton, Acid-Delinted (3 Seeds Per Cell): 20 cell. Cotton seed size range from 4200 to 5200 seeds per pound. (*Grey color-coded.*) (D17187)



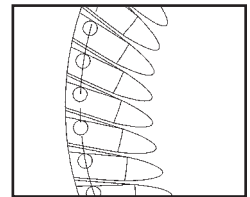
Cotton, Acid-Delinted/Small Dry Edible Bean: 54 cell. Cotton seed size range from 3800 to 4400 seeds per pound. Dry edible bean seed size range from 1200 to 2500 seeds per pound. (*Dark green color-coded.*) (D17186)



Small Cotton/Sunflower: 54 cell. Cotton seed size range from 4200 to 5200 seeds per pound. Sunflower seed sizes No. 2, 3 and 4. (*White color-coded.*) (D17186)



Large Dry Edible Bean: 54 cell. Seed size range from 800 to 1200 seeds per pound. (*Tan color-coded.*) (D14477)



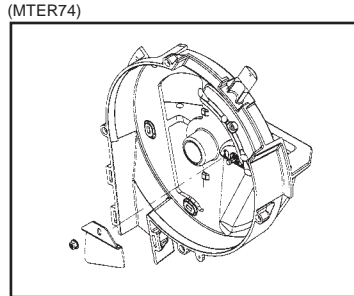
Install the selected seed disc. Position the vacuum cover on the meter by aligning the keyhole slots over the bolt heads. Push the cover on the meter and turn counter clockwise to lock in place. **See following page for additional components required with specific seed discs.**

SEED METER OPERATION/MAINTENANCE

NOTE: Use of damaged seed or seed containing foreign material will cause plugging of seed disc orifices and require more frequent seed meter cleanout to prevent underplanting.

SEED Baffle

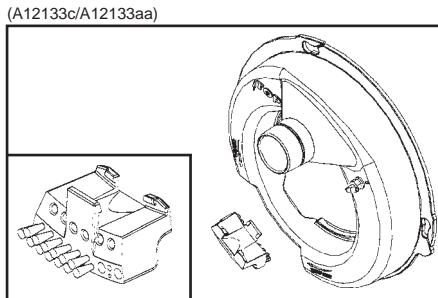
- Milo/Grain Sorghum
- Soybeans
- Popcorn



The **seed baffle** is designed to prevent excessive seed in the meter from restricting air flow through the seed. **Used with 60 Cell Milo/Grain Sorghum Disc, 60 Cell Soybean Disc, 120 Cell High-Rate Soybean Disc and 39 Cell and 24 Cell Popcorn Discs.**

CLEANOUT BRUSH

- Milo/Grain Sorghum

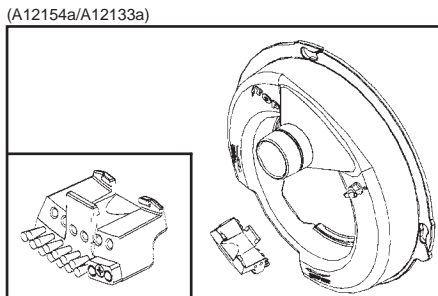


The **cleanout brush** is designed to remove foreign material and seed remnants to help prevent plugging of seed disc orifices.

Used with 60 Cell Milo/Grain Sorghum Disc.

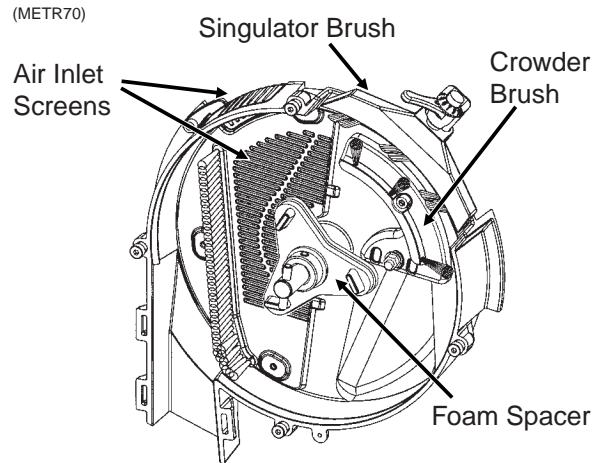
CLEANOUT BRUSH W/BALL-TYPE EJECTOR

- Cotton
- Small Edible Beans
- No. 2, No. 3 And No. 4 Sunflowers



The **cleanout brush w/ball-type ejector** is designed to eject seed remnants from the seed disc orifices. **Used with 20 Cell Hill-Drop Cotton, Acid-Delinted (3 Seeds Per Cell) Discs; 54 Cell Acid-Delinted Cotton/Small Dry Edible Bean; and Small Cotton/Sunflower Discs.**

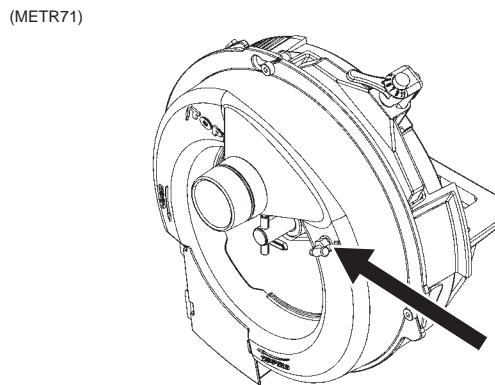
NOTE: Foreign material in seed disc orifices, such as seed chips, hulls, stems, etc., may affect seed delivery. Clean seed is required to ensure accurate seed metering from the vacuum seed meter. Seed discs should be removed daily to check for buildup of foreign material in the seed disc orifices.



The crowder brush aids in the singulation of small flat seeds by (a) crowding seeds to the outer perimeter of the seed disc and (b) orienting seeds to allow the singulator brush to be more effective.

The air inlet screens allow air to enter the system and aids in keeping field residue or other foreign material out of the meter.

The foam spacer gently preloads the seed disc against the vacuum cover when no vacuum is present.



The $\frac{3}{16}$ " hose barb elbow on the seed meter vacuum cover allows measurement of vacuum level at each meter. A customer-supplied vacuum gauge is required.

See "Seed Meter Singulator Brush And Vacuum Level Adjustments", "Seed Meter Maintenance" and "Preparation For Storage" for additional EdgeVac® Seed Metering System information.

SEED METER OPERATION/MAINTENANCE

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.

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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 discs and meter components. Coat seed disc and brushes with talc before installing meter. Fill hopper $\frac{1}{2}$ full of seed, add $\frac{1}{4}$ cup of talc and **mix thoroughly**. Finish filling hopper, add another $\frac{1}{4}$ cup of talc and **mix thoroughly**. (For sunflowers, increase talc amount from $\frac{1}{4}$ cup to $\frac{1}{2}$ cup.) 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 discs and/or brushes.

NOTE: Some liquid seed treatments or inoculants may create buildup on the 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 may cause bridging of the seed in the meter, reducing population or stopping the meter from planting.

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.

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Powdered graphite should be added with the seed each time the bulk seed hopper is filled. Use 1 cup per hopper fill for 12 row machines and $1 \frac{1}{2}$ cup per hopper fill for 16 row machines. 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 $\frac{1}{2}$ full of seed, add $4 \frac{1}{4}$ cups of talc and mix thoroughly. Finish filling bulk seed hopper, add another $4 \frac{1}{4}$ cups of talc. (For sunflowers, double the amount 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.

SEED METER OPERATION/MAINTENANCE

SDS SEED DELIVERY SYSTEM (Continued)

NOTE: Some liquid seed treatments or inoculants may create buildup on seed discs or meter components. 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.

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. Lay the hopper on it's right side.

Disassemble seed meter by rotating vacuum cover clockwise to align key hole slots with bolt heads. Lift off cover. Remove seed disc. Empty the meter and hopper by allowing the seed to run out of the meter. Inspect brushes in meter to ensure all seed is removed. Replace seed disc and install vacuum cover.

NOTE: Use of damaged seed or seed containing foreign material will cause plugging of seed cell orifices and require more frequent seed meter cleanout to prevent underplanting.

SEED METER OPERATION/MAINTENANCE

SEED METER CLEANOUT (SDS Seed Delivery System)

To maintain genetic purity, thorough seed meter cleanout is important.

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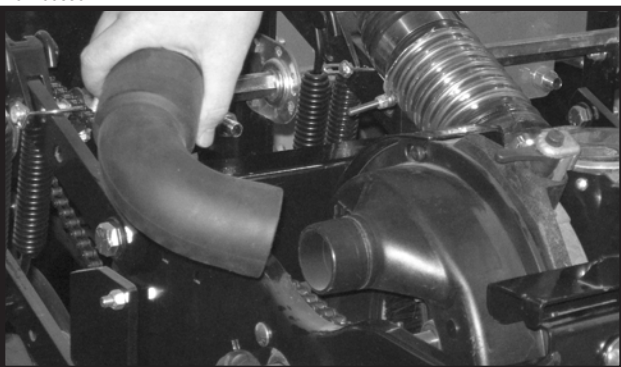


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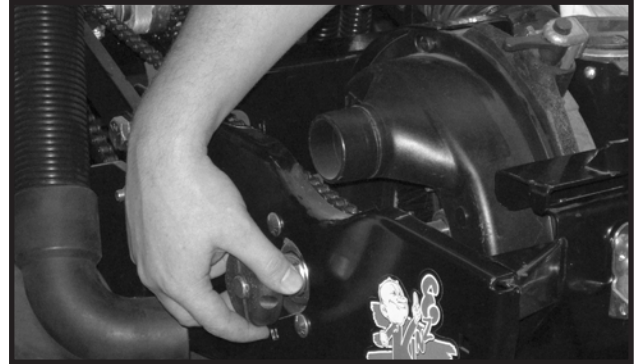


To clean the seed meter, remove locking pin and release latch that secures seed meter and mount.

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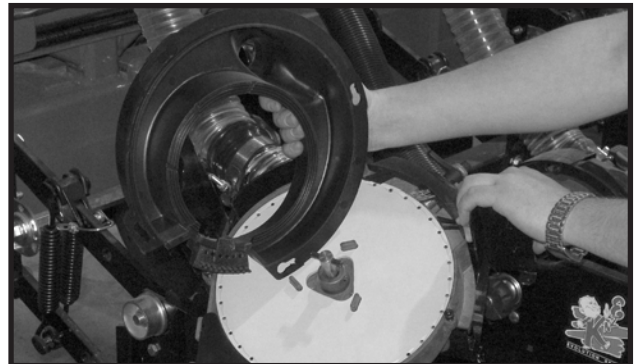


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Disconnect drop hose from seed meter and seed meter drive and remove assembly from row unit.

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Disassemble vacuum cover and remove seed disc from seed meter. Allow all seed to exit meter and inspect for complete clean-out.

Reassemble.

Follow procedure on all rows.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR CORN/POPCORN 39 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
13689	15	25	4 to 6	15.3
14365	17	27	4 to 6	14.6
14917	17	26	4 to 6	14.0
15514	17	25	4 to 6	13.5
16055	19	27	4 to 6	13.0
16672	19	26	4 to 6	12.5
16863	17	23	4 to 6	12.4
17339	19	25	4 to 6	12.1
18012	15	19	4 to 6	11.6
18062	19	24	4 to 6	11.6
18847	19	23	4 to 6	11.1
19435	23	27	4 to 6	10.8
20131	15	17	4 to 6	10.4
20182	23	26	4 to 6	10.4
20280	24	27	4 to 6	10.3
20413	17	19	4 to 6	10.2
20990	23	25	4 to 6	10.0
21060	24	26	4 to 6	9.9
21125	25	27	4 to 6	9.9
21294	14	15	4 to 6	9.8
21864	23	24	4 to 6	9.6
21902	24	25	4 to 6	9.5
21937	25	26	4 to 6	9.5
21970	26	27	4 to 6	9.5
22815	23	23	4 to 6	9.2
23692	27	26	4 to 6	8.8
23727	26	25	4 to 6	8.8
23765	25	24	4 to 6	8.8
23807	24	23	4 to 6	8.8
24444	15	14	4 to 6	8.6
24640	27	25	4 to 6	8.5
24716	26	24	4 to 6	8.5
24799	25	23	4 to 6	8.4
25499	19	17	4 to 6	8.2
25667	27	24	4 to 6	8.1
25791	26	23	4 to 6	8.1
25857	17	15	4 to 6	8.1
26783	27	23	4 to 6	7.8
27618	23	19	4 to 6	7.6
27704	17	14	4 to 6	7.5
28819	24	19	4 to 6	7.3
28899	19	15	4 to 6	7.2
30020	25	19	4 to 6	7.0
30867	23	17	4 to 6	6.8
30963	19	14	4 to 6	6.8
31220	26	19	4 to 6	6.7
32209	24	17	4 to 6	6.5
32421	27	19	4 to 6	6.4
33551	25	17	4 to 6	6.2
34893	26	17	4 to 6	6.0
34983	23	15	4 to 6	6.0
36235	27	17	4 to 6	5.8
36504	24	15	4 to 6	5.7
37482	23	14	4 to 6	5.6
38025	25	15	4 to 6	5.5

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR CORN/POPCORN 39 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
17339	15	25	4 to 6	12.1
18196	17	27	4 to 6	11.5
18895	17	26	4 to 6	11.1
19651	17	25	4 to 6	10.6
20336	19	27	4 to 6	10.3
21118	19	26	4 to 6	9.9
21360	17	23	4 to 6	9.8
21963	19	25	4 to 6	9.5
22815	15	19	4 to 6	9.2
22878	19	24	4 to 6	9.1
23873	19	23	4 to 6	8.8
24618	23	27	4 to 6	8.5
25499	15	17	4 to 6	8.2
25564	23	26	4 to 6	8.2
25688	24	27	4 to 6	8.1
25857	17	19	4 to 6	8.1
26587	23	25	4 to 6	7.9
26676	24	26	4 to 6	7.8
26758	25	27	4 to 6	7.8
26972	14	15	4 to 6	7.8
27695	23	24	4 to 6	7.5
27743	24	25	4 to 6	7.5
27787	25	26	4 to 6	7.5
27828	26	27	4 to 6	7.5
28899	23	23	4 to 6	7.2
30010	27	26	4 to 6	7.0
30055	26	25	4 to 6	7.0
30103	25	24	4 to 6	6.9
30155	24	23	4 to 6	6.9
30963	15	14	4 to 6	6.8
31211	27	25	4 to 6	6.7
31307	26	24	4 to 6	6.7
31412	25	23	4 to 6	6.7
32299	19	17	4 to 6	6.5
32511	27	24	4 to 6	6.4
32668	26	23	4 to 6	6.4
32752	17	15	4 to 6	6.4
33925	27	23	4 to 6	6.2
34983	23	19	4 to 6	6.0
35091	17	14	4 to 6	6.0
36504	24	19	4 to 6	5.7
36605	19	15	4 to 6	5.7
38025	25	19	4 to 6	5.5
39098	23	17	4 to 6	5.3
39220	19	14	4 to 6	5.3
39546	26	19	4 to 6	5.3
40798	24	17	4 to 6	5.1
41067	27	19	4 to 6	5.1
42498	25	17	4 to 6	4.9
44198	26	17	4 to 6	4.7
44312	23	15	4 to 6	4.7
45898	27	17	4 to 6	4.6
46238	24	15	4 to 6	4.5
47477	23	14	4 to 6	4.4
48165	25	15	4 to 6	4.3

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR LOW-RATE CORN/POPCORN 24 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
8424	15	25	4 to 6	24.8
8840	17	27	4 to 6	23.7
9180	17	26	4 to 6	22.8
9547	17	25	4 to 6	21.9
9880	19	27	4 to 6	21.2
10260	19	26	4 to 6	20.4
10377	17	23	4 to 6	20.1
10670	19	25	4 to 6	19.6
11084	15	19	4 to 6	18.9
11115	19	24	4 to 6	18.8
11598	19	23	4 to 6	18.0
11960	23	27	4 to 6	17.5
12388	15	17	4 to 6	16.9
12420	23	26	4 to 6	16.8
12480	24	27	4 to 6	16.8
12562	17	19	4 to 6	16.6
12917	23	25	4 to 6	16.2
12960	24	26	4 to 6	16.1
13000	25	27	4 to 6	16.1
13104	14	15	4 to 6	16.0
13455	23	24	4 to 6	15.5
13478	24	25	4 to 6	15.5
13500	25	26	4 to 6	15.5
13520	26	27	4 to 6	15.5
14040	23	23	4 to 6	14.9
14580	27	26	4 to 6	14.3
14602	26	25	4 to 6	14.3
14625	25	24	4 to 6	14.3
14650	24	23	4 to 6	14.3
15043	15	14	4 to 6	13.9
15163	27	25	4 to 6	13.8
15210	26	24	4 to 6	13.7
15261	25	23	4 to 6	13.7
15692	19	17	4 to 6	13.3
15795	27	24	4 to 6	13.2
15871	26	23	4 to 6	13.2
15912	17	15	4 to 6	13.1
16482	27	23	4 to 6	12.7
16996	23	19	4 to 6	12.3
17048	17	14	4 to 6	12.3
17735	24	19	4 to 6	11.8
17784	19	15	4 to 6	11.8
18474	25	19	4 to 6	11.3
18995	23	17	4 to 6	11.0
19054	19	14	4 to 6	11.0
19213	26	19	4 to 6	10.9
19821	24	17	4 to 6	10.5
19951	27	19	4 to 6	10.5
20647	25	17	4 to 6	10.1
21473	26	17	4 to 6	9.7
21528	23	15	4 to 6	9.7
22299	27	17	4 to 6	9.4
22464	24	15	4 to 6	9.3
23066	23	14	4 to 6	9.1
23400	25	15	4 to 6	8.9

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR LOW-RATE CORN/POPCORN 24 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE HILLS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
10670	15	25	4 to 6	19.6
11197	17	27	4 to 6	18.7
11628	17	26	4 to 6	18.0
12093	17	25	4 to 6	17.3
12515	19	27	4 to 6	16.7
12996	19	26	4 to 6	16.1
13145	17	23	4 to 6	15.9
13516	19	25	4 to 6	15.5
14040	15	19	4 to 6	14.9
14079	19	24	4 to 6	14.9
14691	19	23	4 to 6	14.2
15149	23	27	4 to 6	13.8
15692	15	17	4 to 6	13.3
15732	23	26	4 to 6	13.3
15808	24	27	4 to 6	13.2
15912	17	19	4 to 6	13.1
16361	23	25	4 to 6	12.8
16416	24	26	4 to 6	12.7
16467	25	27	4 to 6	12.7
16598	14	15	4 to 6	12.6
17043	23	24	4 to 6	12.3
17073	24	25	4 to 6	12.2
17100	25	26	4 to 6	12.2
17125	26	27	4 to 6	12.2
17784	23	23	4 to 6	11.8
18468	27	26	4 to 6	11.3
18495	26	25	4 to 6	11.3
18525	25	24	4 to 6	11.3
18557	24	23	4 to 6	11.3
19054	15	14	4 to 6	11.0
19207	27	25	4 to 6	10.9
19266	26	24	4 to 6	10.9
19330	25	23	4 to 6	10.8
19876	19	17	4 to 6	10.5
20007	27	24	4 to 6	10.5
20104	26	23	4 to 6	10.4
20155	17	15	4 to 6	10.4
20877	27	23	4 to 6	10.0
21528	23	19	4 to 6	9.7
21595	17	14	4 to 6	9.7
22464	24	19	4 to 6	9.3
22526	19	15	4 to 6	9.3
23400	25	19	4 to 6	8.9
24061	23	17	4 to 6	8.7
24135	19	14	4 to 6	8.7
24336	26	19	4 to 6	8.6
25107	24	17	4 to 6	8.3
25272	27	19	4 to 6	8.3
26153	25	17	4 to 6	8.0
27199	26	17	4 to 6	7.7
27269	23	15	4 to 6	7.7
28245	27	17	4 to 6	7.4
28454	24	15	4 to 6	7.3
29216	23	14	4 to 6	7.2
29640	25	15	4 to 6	7.1

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

PLANTING RATES FOR SOYBEAN AND MILO/GRAIN SORGHUM 60 CELL DISCS

15 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
21060	15	25	4 to 6	9.9
22100	17	27	4 to 6	9.5
22950	17	26	4 to 6	9.1
23868	17	25	4 to 6	8.8
24700	19	27	4 to 6	8.5
25650	19	26	4 to 6	8.2
25943	17	23	4 to 6	8.1
26676	19	25	4 to 6	7.8
27710	15	19	4 to 6	7.5
27787	19	24	4 to 6	7.5
28995	19	23	4 to 6	7.2
29900	23	27	4 to 6	7.0
30970	15	17	4 to 6	6.8
31050	23	26	4 to 6	6.7
31200	24	27	4 to 6	6.7
31405	17	19	4 to 6	6.7
32292	23	25	4 to 6	6.5
32400	24	26	4 to 6	6.5
32500	25	27	4 to 6	6.4
32760	14	15	4 to 6	6.4
33637	23	24	4 to 6	6.2
33696	24	25	4 to 6	6.2
33750	25	26	4 to 6	6.2
33800	26	27	4 to 6	6.2
35100	23	23	4 to 6	6.0
36450	27	26	4 to 6	5.7
36504	26	25	4 to 6	5.7
36562	25	24	4 to 6	5.7
36626	24	23	4 to 6	5.7
37607	15	14	4 to 6	5.6
37908	27	25	4 to 6	5.5
38025	26	24	4 to 6	5.5
38152	25	23	4 to 6	5.5
39229	19	17	4 to 6	5.3
39487	27	24	4 to 6	5.3
39678	26	23	4 to 6	5.3
39780	17	15	4 to 6	5.3
41204	27	23	4 to 6	5.1
42489	23	19	4 to 6	4.9
42621	17	14	4 to 6	4.9
44337	24	19	4 to 6	4.7
44460	19	15	4 to 6	4.7
46184	25	19	4 to 6	4.5
47488	23	17	4 to 6	4.4
47635	19	14	4 to 6	4.4
48031	26	19	4 to 6	4.4
49553	24	17	4 to 6	4.2
49879	27	19	4 to 6	4.2
51617	25	17	4 to 6	4.1
53682	26	17	4 to 6	3.9
53820	23	15	4 to 6	3.9
55747	27	17	4 to 6	3.8
56160	24	15	4 to 6	3.7
57664	23	14	4 to 6	3.6
58500	25	15	4 to 6	3.6

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR SOYBEAN AND MILO/GRAIN SORGHUM 60 CELL DISCS
19 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
26676	15	25	4 to 6	7.8
27993	17	27	4 to 6	7.5
29070	17	26	4 to 6	7.2
30233	17	25	4 to 6	6.9
31286	19	27	4 to 6	6.7
32490	19	26	4 to 6	6.4
32862	17	23	4 to 6	6.4
33789	19	25	4 to 6	6.2
35100	15	19	4 to 6	6.0
35197	19	24	4 to 6	5.9
36728	19	23	4 to 6	5.7
37873	23	27	4 to 6	5.5
39229	15	17	4 to 6	5.3
39330	23	26	4 to 6	5.3
39520	24	27	4 to 6	5.3
39780	17	19	4 to 6	5.3
40903	23	25	4 to 6	5.1
41040	24	26	4 to 6	5.1
41166	25	27	4 to 6	5.1
41496	14	15	4 to 6	5.0
42607	23	24	4 to 6	4.9
42681	24	25	4 to 6	4.9
42750	25	26	4 to 6	4.9
42813	26	27	4 to 6	4.9
44460	23	23	4 to 6	4.7
46170	27	26	4 to 6	4.5
46238	26	25	4 to 6	4.5
46312	25	24	4 to 6	4.5
46393	24	23	4 to 6	4.5
47635	15	14	4 to 6	4.4
48017	27	25	4 to 6	4.4
48165	26	24	4 to 6	4.3
48326	25	23	4 to 6	4.3
49690	19	17	4 to 6	4.2
50017	27	24	4 to 6	4.2
50259	26	23	4 to 6	4.2
50388	17	15	4 to 6	4.1
52192	27	23	4 to 6	4.0
53820	23	19	4 to 6	3.9
53987	17	14	4 to 6	3.9
56160	24	19	4 to 6	3.7
56316	19	15	4 to 6	3.7
58500	25	19	4 to 6	3.6
60151	23	17	4 to 6	3.5
60338	19	14	4 to 6	3.5
60840	26	19	4 to 6	3.4
62767	24	17	4 to 6	3.3
63180	27	19	4 to 6	3.3
65382	25	17	4 to 6	3.2
67997	26	17	4 to 6	3.1
68172	23	15	4 to 6	3.1
70613	27	17	4 to 6	3.0
71136	24	15	4 to 6	2.9
73041	23	14	4 to 6	2.9
74100	25	15	4 to 6	2.8

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR SOYBEAN 60 CELL DISC
38 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
53352	15	25	4 to 6	3.9
55986	17	27	4 to 6	3.7
58140	17	26	4 to 6	3.6
60465	17	25	4 to 6	3.5
62573	19	27	4 to 6	3.3
64980	19	26	4 to 6	3.2
65723	17	23	4 to 6	3.2
67579	19	25	4 to 6	3.1
70200	15	19	4 to 6	3.0
70395	19	24	4 to 6	3.0
73455	19	23	4 to 6	2.8
75746	23	27	4 to 6	2.8
78458	15	17	4 to 6	2.7
78660	23	26	4 to 6	2.7
79040	24	27	4 to 6	2.6
79560	17	19	4 to 6	2.6
81806	23	25	4 to 6	2.6
82080	24	26	4 to 6	2.5
82333	25	27	4 to 6	2.5
82991	14	15	4 to 6	2.5
85214	23	24	4 to 6	2.5
85363	24	25	4 to 6	2.4
85499	25	26	4 to 6	2.4
85626	26	27	4 to 6	2.4
88919	23	23	4 to 6	2.4
92339	27	26	4 to 6	2.3
92476	26	25	4 to 6	2.3
92624	25	24	4 to 6	2.3
92786	24	23	4 to 6	2.3
95271	15	14	4 to 6	2.2
96033	27	25	4 to 6	2.2
96329	26	24	4 to 6	2.2
96652	25	23	4 to 6	2.2
99381	19	17	4 to 6	2.1
100034	27	24	4 to 6	2.1
100518	26	23	4 to 6	2.1
100775	17	15	4 to 6	2.1
104384	27	23	4 to 6	2.0
107639	23	19	4 to 6	1.9
107974	17	14	4 to 6	1.9
112319	24	19	4 to 6	1.9
112631	19	15	4 to 6	1.9
116999	25	19	4 to 6	1.8
120303	23	17	4 to 6	1.7
120676	19	14	4 to 6	1.7
121679	26	19	4 to 6	1.7
125533	24	17	4 to 6	1.7
126359	27	19	4 to 6	1.7
130764	25	17	4 to 6	1.6
135994	26	17	4 to 6	1.5
136343	23	15	4 to 6	1.5
141225	27	17	4 to 6	1.5
142271	24	15	4 to 6	1.5
146082	23	14	4 to 6	1.4
148199	25	15	4 to 6	1.4

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR HIGH-RATE SOYBEAN 120 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
42120	15	25	4 to 6	5.0
44200	17	27	4 to 6	4.7
45900	17	26	4 to 6	4.6
47736	17	25	4 to 6	4.4
49400	19	27	4 to 6	4.2
51300	19	26	4 to 6	4.1
51887	17	23	4 to 6	4.0
53352	19	25	4 to 6	3.9
55421	15	19	4 to 6	3.8
55575	19	24	4 to 6	3.8
57991	19	23	4 to 6	3.6
59800	23	27	4 to 6	3.5
61941	15	17	4 to 6	3.4
62100	23	26	4 to 6	3.4
62400	24	27	4 to 6	3.4
62810	17	19	4 to 6	3.3
64584	23	25	4 to 6	3.2
64800	24	26	4 to 6	3.2
65000	25	27	4 to 6	3.2
65520	14	15	4 to 6	3.2
67275	23	24	4 to 6	3.1
67392	24	25	4 to 6	3.1
67500	25	26	4 to 6	3.1
67600	26	27	4 to 6	3.1
70200	23	23	4 to 6	3.0
72900	27	26	4 to 6	2.9
73008	26	25	4 to 6	2.9
73125	25	24	4 to 6	2.9
73252	24	23	4 to 6	2.9
75214	15	14	4 to 6	2.8
75816	27	25	4 to 6	2.8
76050	26	24	4 to 6	2.7
76304	25	23	4 to 6	2.7
78458	19	17	4 to 6	2.7
78975	27	24	4 to 6	2.6
79356	26	23	4 to 6	2.6
79560	17	15	4 to 6	2.6
82408	27	23	4 to 6	2.5
84978	23	19	4 to 6	2.5
85242	17	14	4 to 6	2.5
88673	24	19	4 to 6	2.4
88919	19	15	4 to 6	2.4
92368	25	19	4 to 6	2.3
94976	23	17	4 to 6	2.2
95271	19	14	4 to 6	2.2
96063	26	19	4 to 6	2.2
99105	24	17	4 to 6	2.1
99757	27	19	4 to 6	2.1
103235	25	17	4 to 6	2.0
107364	26	17	4 to 6	1.9
107639	23	15	4 to 6	1.9
111493	27	17	4 to 6	1.9
112319	24	15	4 to 6	1.9
115328	23	14	4 to 6	1.8
116999	25	15	4 to 6	1.8

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR HIGH-RATE SOYBEAN 120 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
53352	15	25	4 to 6	3.9
55986	17	27	4 to 6	3.7
58140	17	26	4 to 6	3.6
60465	17	25	4 to 6	3.5
62573	19	27	4 to 6	3.3
64980	19	26	4 to 6	3.2
65723	17	23	4 to 6	3.2
67579	19	25	4 to 6	3.1
70200	15	19	4 to 6	3.0
70395	19	24	4 to 6	3.0
73455	19	23	4 to 6	2.8
75746	23	27	4 to 6	2.8
78458	15	17	4 to 6	2.7
78660	23	26	4 to 6	2.7
79040	24	27	4 to 6	2.6
79560	17	19	4 to 6	2.6
81806	23	25	4 to 6	2.6
82080	24	26	4 to 6	2.5
82333	25	27	4 to 6	2.5
82991	14	15	4 to 6	2.5
85214	23	24	4 to 6	2.5
85363	24	25	4 to 6	2.4
85499	25	26	4 to 6	2.4
85626	26	27	4 to 6	2.4
88919	23	23	4 to 6	2.4
92339	27	26	4 to 6	2.3
92476	26	25	4 to 6	2.3
92624	25	24	4 to 6	2.3
92786	24	23	4 to 6	2.3
95271	15	14	4 to 6	2.2
96033	27	25	4 to 6	2.2
96329	26	24	4 to 6	2.2
96652	25	23	4 to 6	2.2
99381	19	17	4 to 6	2.1
100034	27	24	4 to 6	2.1
100518	26	23	4 to 6	2.1
100775	17	15	4 to 6	2.1
104384	27	23	4 to 6	2.0
107639	23	19	4 to 6	1.9
107974	17	14	4 to 6	1.9
112319	24	19	4 to 6	1.9
112631	19	15	4 to 6	1.9
116999	25	19	4 to 6	1.8
120303	23	17	4 to 6	1.7
120676	19	14	4 to 6	1.7
121679	26	19	4 to 6	1.7
125533	24	17	4 to 6	1.7
126359	27	19	4 to 6	1.7
130764	25	17	4 to 6	1.6
135994	26	17	4 to 6	1.5
136343	23	15	4 to 6	1.5
141225	27	17	4 to 6	1.5
142271	24	15	4 to 6	1.5
146082	23	14	4 to 6	1.4
148199	25	15	4 to 6	1.4

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

PLANTING RATES FOR HILL-DROP COTTON (3 SEEDS PER CELL), 20 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
 APPROXIMATE HILLS/ACRE FOR VARIOUS ROW WIDTHS

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
7020	15	25	4 to 6	29.8
7367	17	27	4 to 6	28.4
7650	17	26	4 to 6	27.3
7956	17	25	4 to 6	26.3
8233	19	27	4 to 6	25.4
8550	19	26	4 to 6	24.5
8648	17	23	4 to 6	24.2
8892	19	25	4 to 6	23.5
9237	15	19	4 to 6	22.6
9262	19	24	4 to 6	22.6
9665	19	23	4 to 6	21.6
9967	23	27	4 to 6	21.0
10323	15	17	4 to 6	20.3
10350	23	26	4 to 6	20.2
10400	24	27	4 to 6	20.1
10468	17	19	4 to 6	20.0
10764	23	25	4 to 6	19.4
10800	24	26	4 to 6	19.4
10833	25	27	4 to 6	19.3
10920	14	15	4 to 6	19.1
11212	23	24	4 to 6	18.6
11232	24	25	4 to 6	18.6
11250	25	26	4 to 6	18.6
11267	26	27	4 to 6	18.6
11700	23	23	4 to 6	17.9
12150	27	26	4 to 6	17.2
12168	26	25	4 to 6	17.2
12187	25	24	4 to 6	17.2
12209	24	23	4 to 6	17.1
12536	15	14	4 to 6	16.7
12636	27	25	4 to 6	16.5
12675	26	24	4 to 6	16.5
12717	25	23	4 to 6	16.4
13076	19	17	4 to 6	16.0
13162	27	24	4 to 6	15.9
13226	26	23	4 to 6	15.8
13260	17	15	4 to 6	15.8
13735	27	23	4 to 6	15.2
14163	23	19	4 to 6	14.8
14207	17	14	4 to 6	14.7
14779	24	19	4 to 6	14.1
14820	19	15	4 to 6	14.1
15395	25	19	4 to 6	13.6
15829	23	17	4 to 6	13.2
15878	19	14	4 to 6	13.2
16010	26	19	4 to 6	13.1
16518	24	17	4 to 6	12.7
16626	27	19	4 to 6	12.6
17206	25	17	4 to 6	12.2
17894	26	17	4 to 6	11.7
17940	23	15	4 to 6	11.7
18582	27	17	4 to 6	11.3
18720	24	15	4 to 6	11.2
19221	23	14	4 to 6	10.9
19500	25	15	4 to 6	10.7

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

PLANTING RATES FOR HILL-DROP COTTON (3 SEEDS PER CELL), 20 CELL DISC

19 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)

APPROXIMATE HILLS/ACRE FOR VARIOUS ROW WIDTHS

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
8892	15	25	4 to 6	23.5
9331	17	27	4 to 6	22.4
9690	17	26	4 to 6	21.6
10078	17	25	4 to 6	20.7
10429	19	27	4 to 6	20.0
10830	19	26	4 to 6	19.3
10954	17	23	4 to 6	19.1
11263	19	25	4 to 6	18.6
11700	15	19	4 to 6	17.9
11732	19	24	4 to 6	17.8
12243	19	23	4 to 6	17.1
12624	23	27	4 to 6	16.6
13076	15	17	4 to 6	16.0
13110	23	26	4 to 6	15.9
13173	24	27	4 to 6	15.9
13260	17	19	4 to 6	15.8
13634	23	25	4 to 6	15.3
13680	24	26	4 to 6	15.3
13722	25	27	4 to 6	15.2
13832	14	15	4 to 6	15.1
14202	23	24	4 to 6	14.7
14227	24	25	4 to 6	14.7
14250	25	26	4 to 6	14.7
14271	26	27	4 to 6	14.7
14820	23	23	4 to 6	14.1
15390	27	26	4 to 6	13.6
15413	26	25	4 to 6	13.6
15437	25	24	4 to 6	13.5
15464	24	23	4 to 6	13.5
15878	15	14	4 to 6	13.2
16006	27	25	4 to 6	13.1
16055	26	24	4 to 6	13.0
16109	25	23	4 to 6	13.0
16563	19	17	4 to 6	12.6
16672	27	24	4 to 6	12.5
16753	26	23	4 to 6	12.5
16796	17	15	4 to 6	12.4
17397	27	23	4 to 6	12.0
17940	23	19	4 to 6	11.7
17996	17	14	4 to 6	11.6
18720	24	19	4 to 6	11.2
18772	19	15	4 to 6	11.1
19500	25	19	4 to 6	10.7
20050	23	17	4 to 6	10.4
20113	19	14	4 to 6	10.4
20280	26	19	4 to 6	10.3
20922	24	17	4 to 6	10.0
21060	27	19	4 to 6	9.9
21794	25	17	4 to 6	9.6
22666	26	17	4 to 6	9.2
22724	23	15	4 to 6	9.2
23538	27	17	4 to 6	8.9
23712	24	15	4 to 6	8.8
24347	23	14	4 to 6	8.6
24700	25	15	4 to 6	8.5

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

PLANTING RATES FOR COTTON/SMALL DRY EDIBLE BEAN/SUNFLOWER, 54 CELL DISC
 15 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
 APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
18954	15	25	4 to 6	11.0
19890	17	27	4 to 6	10.5
20655	17	26	4 to 6	10.1
21481	17	25	4 to 6	9.7
22230	19	27	4 to 6	9.4
23085	19	26	4 to 6	9.1
23349	17	23	4 to 6	9.0
24008	19	25	4 to 6	8.7
24939	15	19	4 to 6	8.4
25009	19	24	4 to 6	8.4
26096	19	23	4 to 6	8.0
26910	23	27	4 to 6	7.8
27873	15	17	4 to 6	7.5
27945	23	26	4 to 6	7.5
28080	24	27	4 to 6	7.4
28265	17	19	4 to 6	7.4
29063	23	25	4 to 6	7.2
29160	24	26	4 to 6	7.2
29250	25	27	4 to 6	7.1
29484	14	15	4 to 6	7.1
30274	23	24	4 to 6	6.9
30326	24	25	4 to 6	6.9
30375	25	26	4 to 6	6.9
30420	26	27	4 to 6	6.9
31590	23	23	4 to 6	6.6
32805	27	26	4 to 6	6.4
32853	26	25	4 to 6	6.4
32906	25	24	4 to 6	6.4
32963	24	23	4 to 6	6.3
33846	15	14	4 to 6	6.2
34117	27	25	4 to 6	6.1
34222	26	24	4 to 6	6.1
34337	25	23	4 to 6	6.1
35306	19	17	4 to 6	5.9
35539	27	24	4 to 6	5.9
35710	26	23	4 to 6	5.9
35802	17	15	4 to 6	5.8
37084	27	23	4 to 6	5.6
38240	23	19	4 to 6	5.5
38359	17	14	4 to 6	5.5
39903	24	19	4 to 6	5.2
40014	19	15	4 to 6	5.2
41566	25	19	4 to 6	5.0
42739	23	17	4 to 6	4.9
42872	19	14	4 to 6	4.9
43228	26	19	4 to 6	4.8
44597	24	17	4 to 6	4.7
44891	27	19	4 to 6	4.7
46456	25	17	4 to 6	4.5
48314	26	17	4 to 6	4.3
48438	23	15	4 to 6	4.3
50172	27	17	4 to 6	4.2
50544	24	15	4 to 6	4.1
51898	23	14	4 to 6	4.0
52650	25	15	4 to 6	4.0

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR COTTON/SMALL DRY EDIBLE BEAN/SUNFLOWER, 54 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
24008	15	25	4 to 6	8.7
25194	17	27	4 to 6	8.3
26163	17	26	4 to 6	8.0
27209	17	25	4 to 6	7.7
28158	19	27	4 to 6	7.4
29241	19	26	4 to 6	7.2
29575	17	23	4 to 6	7.1
30410	19	25	4 to 6	6.9
31590	15	19	4 to 6	6.6
31678	19	24	4 to 6	6.6
33055	19	23	4 to 6	6.3
34086	23	27	4 to 6	6.1
35306	15	17	4 to 6	5.9
35397	23	26	4 to 6	5.9
35568	24	27	4 to 6	5.9
35802	17	19	4 to 6	5.8
36813	23	25	4 to 6	5.7
36936	24	26	4 to 6	5.7
37050	25	27	4 to 6	5.6
37346	14	15	4 to 6	5.6
38347	23	24	4 to 6	5.5
38413	24	25	4 to 6	5.4
38475	25	26	4 to 6	5.4
38532	26	27	4 to 6	5.4
40014	23	23	4 to 6	5.2
41553	27	26	4 to 6	5.0
41614	26	25	4 to 6	5.0
41681	25	24	4 to 6	5.0
41753	24	23	4 to 6	5.0
42872	15	14	4 to 6	4.9
43215	27	25	4 to 6	4.8
43348	26	24	4 to 6	4.8
43493	25	23	4 to 6	4.8
44721	19	17	4 to 6	4.7
45015	27	24	4 to 6	4.6
45233	26	23	4 to 6	4.6
45349	17	15	4 to 6	4.6
46973	27	23	4 to 6	4.5
48438	23	19	4 to 6	4.3
48588	17	14	4 to 6	4.3
50544	24	19	4 to 6	4.1
50684	19	15	4 to 6	4.1
52650	25	19	4 to 6	4.0
54136	23	17	4 to 6	3.9
54304	19	14	4 to 6	3.9
54756	26	19	4 to 6	3.8
56490	24	17	4 to 6	3.7
56862	27	19	4 to 6	3.7
58844	25	17	4 to 6	3.6
61198	26	17	4 to 6	3.4
61354	23	15	4 to 6	3.4
63551	27	17	4 to 6	3.3
64022	24	15	4 to 6	3.3
65737	23	14	4 to 6	3.2
66690	25	15	4 to 6	3.1

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

PLANTING RATES FOR SUNFLOWER, 54 CELL DISC

15 TOOTH TO 30 TOOTH TO 15 TOOTH CONTACT WHEEL DRIVE SPROCKETS (See Page 7-1)

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
9477	15	25	4 to 6	22.1
9945	17	27	4 to 6	21.0
10327	17	26	4 to 6	20.2
10741	17	25	4 to 6	19.5
11115	19	27	4 to 6	18.8
11542	19	26	4 to 6	18.1
11674	17	23	4 to 6	17.9
12004	19	25	4 to 6	17.4
12470	15	19	4 to 6	16.8
12504	19	24	4 to 6	16.7
13048	19	23	4 to 6	16.0
13455	23	27	4 to 6	15.5
13937	15	17	4 to 6	15.0
13972	23	26	4 to 6	15.0
14040	24	27	4 to 6	14.9
14132	17	19	4 to 6	14.8
14531	23	25	4 to 6	14.4
14580	24	26	4 to 6	14.3
14625	25	27	4 to 6	14.3
14742	14	15	4 to 6	14.2
15137	23	24	4 to 6	13.8
15163	24	25	4 to 6	13.8
15187	25	26	4 to 6	13.8
15210	26	27	4 to 6	13.7
15795	23	23	4 to 6	13.2
16402	27	26	4 to 6	12.7
16427	26	25	4 to 6	12.7
16453	25	24	4 to 6	12.7
16482	24	23	4 to 6	12.7
16923	15	14	4 to 6	12.4
17058	27	25	4 to 6	12.3
17111	26	24	4 to 6	12.2
17168	25	23	4 to 6	12.2
17653	19	17	4 to 6	11.8
17769	27	24	4 to 6	11.8
17855	26	23	4 to 6	11.7
17901	17	15	4 to 6	11.7
18542	27	23	4 to 6	11.3
19120	23	19	4 to 6	10.9
19180	17	14	4 to 6	10.9
19951	24	19	4 to 6	10.5
20007	19	15	4 to 6	10.5
20783	25	19	4 to 6	10.1
21370	23	17	4 to 6	9.8
21436	19	14	4 to 6	9.8
21614	26	19	4 to 6	9.7
22299	24	17	4 to 6	9.4
22445	27	19	4 to 6	9.3
23228	25	17	4 to 6	9.0
24157	26	17	4 to 6	8.7
24219	23	15	4 to 6	8.6
25086	27	17	4 to 6	8.3
25272	24	15	4 to 6	8.3
25949	23	14	4 to 6	8.1
26325	25	15	4 to 6	7.9

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR LARGE DRY EDIBLE BEAN, 54 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
28,490	15	25	4 to 6	7.3
29,897	17	27	4 to 6	7.0
31,047	17	26	4 to 6	6.7
32,289	17	25	4 to 6	6.5
33,414	19	27	4 to 6	6.3
34,700	19	26	4 to 6	6.0
35,097	17	23	4 to 6	6.0
36,088	19	25	4 to 6	5.8
37,487	15	19	4 to 6	5.6
37,591	19	24	4 to 6	5.6
39,226	19	23	4 to 6	5.3
40,449	23	27	4 to 6	5.2
41,897	15	17	4 to 6	5.0
42,005	23	26	4 to 6	5.0
42,208	24	27	4 to 6	5.0
42,485	17	19	4 to 6	4.9
43,685	23	25	4 to 6	4.8
43,831	24	26	4 to 6	4.8
43,966	25	27	4 to 6	4.8
44,318	14	15	4 to 6	4.7
45,505	23	24	4 to 6	4.6
45,584	24	25	4 to 6	4.6
45,657	25	26	4 to 6	4.6
45,725	26	27	4 to 6	4.6
47,484	23	23	4 to 6	4.4
49,310	27	26	4 to 6	4.2
49,383	26	25	4 to 6	4.2
49,462	25	24	4 to 6	4.2
49,548	24	23	4 to 6	4.2
50,875	15	14	4 to 6	4.1
51,282	27	25	4 to 6	4.1
51,441	26	24	4 to 6	4.1
51,613	25	23	4 to 6	4.1
53,070	19	17	4 to 6	3.9
53,419	27	24	4 to 6	3.9
53,677	26	23	4 to 6	3.9
53,815	17	15	4 to 6	3.9
55,742	27	23	4 to 6	3.8
57,480	23	19	4 to 6	3.6
57,659	17	14	4 to 6	3.6
59,979	24	19	4 to 6	3.5
60,146	19	15	4 to 6	3.5
62,478	25	19	4 to 6	3.3
64,242	23	17	4 to 6	3.3
64,442	19	14	4 to 6	3.2
64,978	26	19	4 to 6	3.2
67,036	24	17	4 to 6	3.1
67,477	27	19	4 to 6	3.1
69,829	25	17	4 to 6	3.0
72,622	26	17	4 to 6	2.9
72,808	23	15	4 to 6	2.9
75,415	27	17	4 to 6	2.8
75,974	24	15	4 to 6	2.8
78,009	23	14	4 to 6	2.7
79,139	25	15	4 to 6	2.6

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

**PLANTING RATES FOR LARGE DRY EDIBLE BEAN, 54 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE SPROCKET (See Page 7-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

30" Rows	Transmission Sprockets		Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
36,088	15	25	4 to 6	5.8
37,870	17	27	4 to 6	5.5
39,326	17	26	4 to 6	5.3
40,899	17	25	4 to 6	5.1
42,325	19	27	4 to 6	4.9
43,953	19	26	4 to 6	4.8
44,456	17	23	4 to 6	4.7
45,711	19	25	4 to 6	4.6
47,484	15	19	4 to 6	4.4
47,615	19	24	4 to 6	4.4
49,686	19	23	4 to 6	4.2
51,235	23	27	4 to 6	4.1
53,070	15	17	4 to 6	3.9
53,206	23	26	4 to 6	3.9
53,463	24	27	4 to 6	3.9
53,815	17	19	4 to 6	3.9
55,334	23	25	4 to 6	3.8
55,519	24	26	4 to 6	3.8
55,691	25	27	4 to 6	3.8
56,136	14	15	4 to 6	3.7
57,640	23	24	4 to 6	3.6
57,740	24	25	4 to 6	3.6
57,833	25	26	4 to 6	3.6
57,918	26	27	4 to 6	3.6
60,146	23	23	4 to 6	3.5
62,459	27	26	4 to 6	3.3
62,552	26	25	4 to 6	3.3
62,652	25	24	4 to 6	3.3
62,761	24	23	4 to 6	3.3
64,442	15	14	4 to 6	3.2
64,958	27	25	4 to 6	3.2
65,158	26	24	4 to 6	3.2
65,376	25	23	4 to 6	3.2
67,222	19	17	4 to 6	3.1
67,664	27	24	4 to 6	3.1
67,991	26	23	4 to 6	3.1
68,165	17	15	4 to 6	3.1
70,606	27	23	4 to 6	3.0
72,808	23	19	4 to 6	2.9
73,034	17	14	4 to 6	2.9
75,974	24	19	4 to 6	2.8
76,185	19	15	4 to 6	2.7
79,139	25	19	4 to 6	2.6
81,374	23	17	4 to 6	2.6
81,627	19	14	4 to 6	2.6
82,305	26	19	4 to 6	2.5
84,912	24	17	4 to 6	2.5
85,470	27	19	4 to 6	2.4
88,450	25	17	4 to 6	2.4
91,988	26	17	4 to 6	2.3
92,224	23	15	4 to 6	2.3
95,526	27	17	4 to 6	2.2
96,233	24	15	4 to 6	2.2
98,811	23	14	4 to 6	2.1
100,243	25	15	4 to 6	2.1

IMPORTANT: 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.

SEED METER OPERATION/MAINTENANCE

DRY INSECTICIDE APPLICATION RATES APPROXIMATE POUNDS/ACRE AT 5 MPH FOR 30" ROW WIDTH

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.

SEED METER OPERATION/MAINTENANCE

DRY HERBICIDE APPLICATION RATES

APPROXIMATE POUNDS/ACRE AT 5 MPH FOR 30" ROW WIDTH

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.

**See “Liquid Fertilizer Rate Chart”
in Machine Operation section.**

SEED METER OPERATION/MAINTENANCE

SEED METER SINGULATOR BRUSH AND VACUUM LEVEL ADJUSTMENTS

SEED DISC SELECTION

CROP	CELLS	SEED SIZE RANGE	COLOR-CODE
Corn	39	35 To 70 Lbs./80,000 Kernel Count Unit	Light Blue
Low-Rate Corn	24	35 To 70 Lbs./80,000 Kernel Count Unit	Light Green
Popcorn	39	2210 To 4200 Seeds/Lb.	Light Blue
Low-Rate Popcorn	24	2210 To 4200 Seeds/Lb.	Light Green
Soybean	60	2200 To 4000 Seeds/Lb.	Black
High-Rate Soybean	120	2200 To 4000 Seeds/Lb.	Dark Blue
Milo/Grain Sorghum	60	10,000 To 20,000 Seeds/Lb.	Yellow
Hill-Drop Cotton, Acid-Delinted (3 Seeds Per Cell)	20	3800 To 5200 Seeds/Lb.	Brown
Cotton, Acid-Delinted	54	3800 To 5200 Seeds/Lb.	Dark Green
Dry Edible Bean (Small)	54	1200 To 2500 Seeds/Lb.	Dark Green
Dry Edible Bean (Large)	54	800 To 1200 Seeds/Lb.	Tan

EDGEVAC® INITIAL SETTINGS

CROP	SIZE	SINGULATOR SEED DISC	VACUUM BRUSH SETTING	SETTING (H ₂ O)	SEE NOTES
Corn	35-45 Lbs./80K	Corn/Popcorn	7	20	4, 5
	45-60 Lbs./80K	Corn/Popcorn	6	20	4, 5
	60-70 Lbs./80K	Corn/Popcorn	5	20	4, 5
Popcorn	2210-4200 Seeds/Lb.	Corn/Popcorn	9	18	1, 4, 5
Soybeans	2200-4000 Seeds/Lb.	Soybean	5	10	1
Milo/Grain Sorghum	10,000-20,000 Seeds/Lb.	Milo/Grain Sorghum	7	18	1, 2
Hill-Drop Cotton	3800-5200 Seeds/Lb.	Hill-Drop Cotton	8	23	3
Cotton	3800-5200 Seeds/Lb.	Cotton	8	20	3
Edible Beans	800-1200 Seeds/Lb.	Large Edible Bean	5	18	5
	1200-2500 Seeds/Lb.	Small Edible Bean	6	18	3, 5

NOTES:

- Requires use of seed meter baffle. Refer to page 7-3 for additional information.
- Requires use of cleanout brush. Refer to page 7-3 for additional information.
- Requires use of cleanout brush w/ball-type ejector. Refer to page 7-3 for additional information.
- For flat seeds, higher vacuum level may be required.
- Larger seeds may require a lower numbered singulator brush setting from the initial setting. Smaller seeds may require a higher numbered setting.

Refer to the planting rate charts in this manual for seed drive transmission sprocket combinations.

IMPORTANT: 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.

NOTE: Singulator brush settings are marked from 1 thru 11. The lower the singulator brush setting, the less aggressive. The higher singulator brush settings are the most aggressive. Refer to illustrations on page 7-27.

NOTE: Optimum meter performance will be attained with consistent seed size and shape. A mixture of seed sizes and shapes will affect meter performance.

NOTE: 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 disc fill (population). See “Seed Meter”.

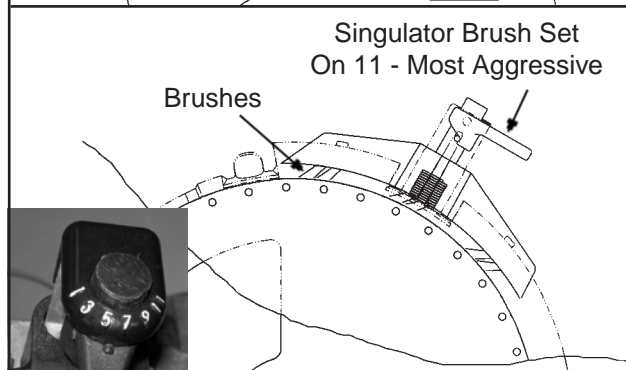
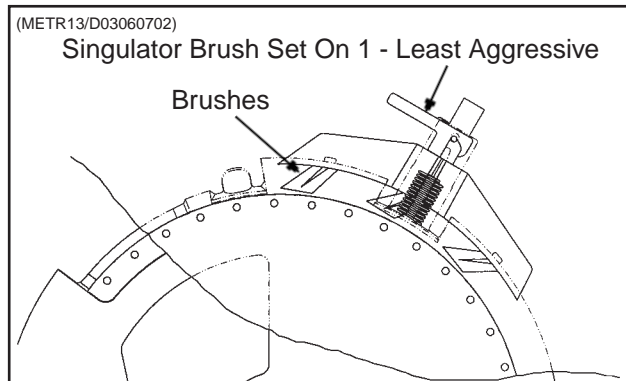
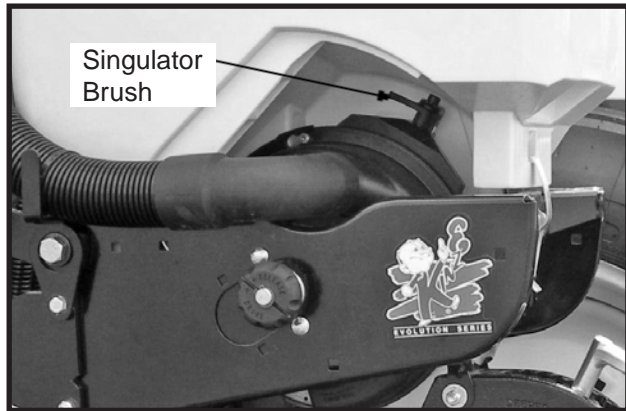
NOTE: Excessive seed treatment, humidity and light-weight seed can affect meter performance. Use ½ cup of talc with each hopper fill of seed and mix thoroughly so that all seeds are coated, adjust rates as needed. Use of talc will aid the seed flow into the meter, singulation and seed drop from the disc.

SEED METER OPERATION/MAINTENANCE

STEP 1 Select seed disc (and seed meter baffle, cleanout brush and/or cleanout brush w/ball-type ejector if applicable) to match crop and population.

STEP 2 Adjust the singulator brush to initial setting. Note that seed size, seed shape, seed treatments, travel speed and planting rate will all affect meter performance.

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STEP 3 With vacuum fan running, lower planter to planting position and drive forward a short distance to load seed into the seed disc cells.

Adjust vacuum level to the initial setting according to the tables on preceding page. Note that seed size, seed shape, seed treatments, travel speed and planting rate will all affect meter performance.

NOTE: Vacuum reading will be much lower when seed disc cells are empty. Prior to setting vacuum level, load all seed cells.

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See "Digital Vacuum Gauge Operation" in Machine Operation section

NOTE: Operate vacuum fan 3-5 minutes to bring oil up to normal operating temperature prior to making the final vacuum level adjustment.

STEP 4 Perform optional seed disc fill check.

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With vacuum hose connected and vacuum fan operating, remove vacuum cover and seed disc as an assembly. Inspect seed discs for proper seed fill.

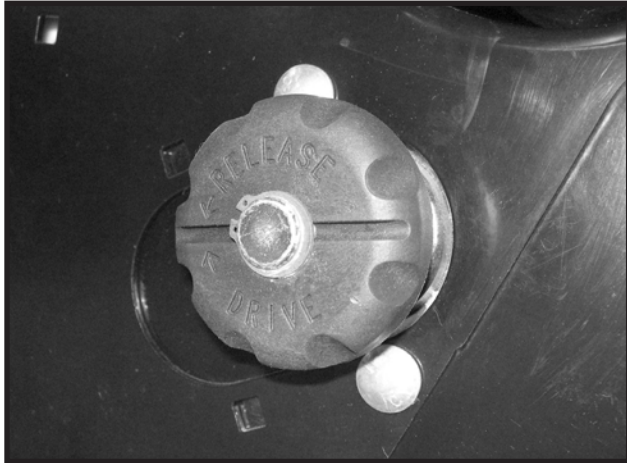
See "Seed Metering System Troubleshooting" at the end of this section.

SEED METER OPERATION/MAINTENANCE

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 meter and mount or hopper. Disconnecting the drive allows the operator to check granular chemical application rates without dropping seed. It also allows the drive to one or more of the rows to be disconnected when finishing fields.

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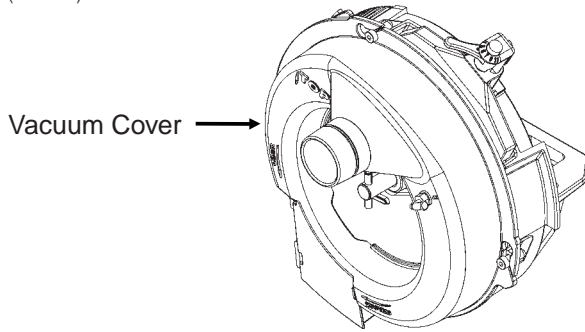


To disengage the drive, turn the knob $\frac{1}{4}$ turn counter-clockwise. To engage the drive, turn the knob $\frac{1}{4}$ turn clockwise.

SEED METER OPERATION/MAINTENANCE

SEED METER MAINTENANCE

(METR71)



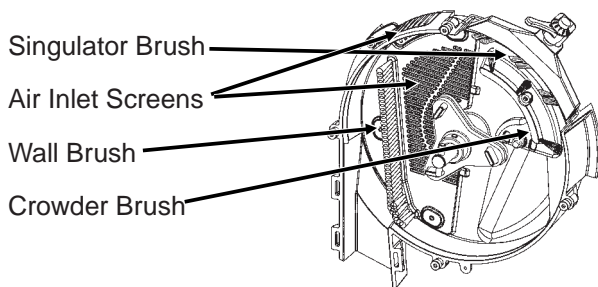
Clean, high quality seed should be used for maximum meter accuracy. Damaged or cracked seed, hulls or foreign material may become lodged in the seed disc orifices and greatly reduce meter accuracy.

It is suggested that the seed disc be inspected and cleaned daily, checking for any buildup of foreign material or any blocked orifices. Clean the seed disc by washing it with soap and water as needed. Dry thoroughly.

Inspect singulator brush for wear and replace if necessary following every 200 acres per row of operation.

The seed disc and/or vacuum cover should be replaced if abnormally high vacuum is required for consistent operation or if consistent operation can not be achieved. If adjustment of the singulator brush does not affect performance of the meter or if the brushes appear frayed, the singulator brush may need to be replaced. If the seed disc orifices are plugged frequently with seed remnants, the cleanout brush or cleanout brush with ball-type ejector (if applicable) may need to be replaced. High quality seed should be used to attain best performance.

(METR70)



Prior to each planting season, inspect seed discs, singulator brush, crowder brush, wall brush and air inlet screens and clean or replace as needed.

See "Preparation For Storage" for additional EdgeVac® Seed Metering System maintenance.

IMPORTANT: Replace hopper lids after hoppers are filled to prevent accumulation of dust or dirt in the seed meter which will cause premature wear.

NOTE: Remove seed discs from meters for annual storage and store the seed discs vertically on a dowel or pipe.

VACUUM MANIFOLD MAINTENANCE

In the course of normal operation, dust will accumulate in manifolds and hoses. Manifolds should be cleaned annually. More frequent cleaning may be necessitated by abnormally dusty planting conditions.

Remove vacuum hose from each seed meter. Operate the vacuum fan at full hydraulic flow from the tractor for two minutes to clear manifolds, hoses and fittings of dust and debris.

SEED METER OPERATION/MAINTENANCE

SEED METERING SYSTEM TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Low seed count.	Meter RPM too high.	Reduce planting rate or planting speed.
	Singulator brush setting too aggressive.	Adjust singulator brush.
	Vacuum level too low.	Increase fan speed.
	Seed sensor not picking up all seeds dropped.	Clean seed tube. Move meter to different row.
	Seeds sticking to seed disc.	Use graphite or talc to aid release.
	Seed treatment buildup in seed disc recesses.	Reduce amount of treatment used and or mix thoroughly. Add talc.
	Seed size too large for disc used.	Use appropriate disc for seed size.
	Wrong transmission setting.	Change transmission to desired rate.
	Wrong seed disc.	Use appropriate disc for seed type and size.
	Drive wheel slippage.	Compensate by adjusting transmission sprockets.
	Low tire pressure.	Adjust tire pressure to correct level.
	Failed/worn drive components.	Inspect and replace parts as required.
	Plugged orifices in seed disc.	Inspect and clean disc. Check cleanout brush. (If Applicable)
	Loss of vacuum at meter.	Check for foreign material between vacuum cover and disc. Inspect parts for wear/damage. Clean or replace as required.
	Seed bridging in hopper.	Add graphite to improve seed flow.
	Faulty vacuum gauge reading.	Repair/replace gauge.
	Dirt in vacuum manifold.	Check vacuum manifold for dirt and clean.
	Seed baffle (If Applicable) not allowing seed flow due to bridging of seed.	Thoroughly mix talc to coat all seeds. Remove seed baffle. See "Seed Meter" in Seed Meter Operation/Maintenance section.
	60 cell soybean disc not filling properly due to excessive RPM.	Replace with 120 cell soybean disc.
	Seed disc worn.	Replace.
Vacuum cover worn.	Replace.	
Not planting seed.	Seed hoppers empty.	Fill seed hopper.
	Seed tube plugged/damaged.	Clean or replace tube.
	Meter drive damaged.	Repair/replace drive components.
	Low/no vacuum.	Inspect vacuum system and repair as necessary.
	Singulator brush setting too aggressive.	Adjust singulator brush.
	Faulty vacuum gauge.	Repair/replace vacuum gauge.
	Seed bridging in hopper.	Add graphite to improve seed flow.
	Loss of vacuum at meter.	Check for foreign material between vacuum cover and disc. Inspect parts for wear/damage. Clean and/or replace as required.
	Wrong seed disc.	Use appropriate disc for seed type and size.
	Meter drive clutch not engaged.	Engage drive clutch.
	Fan not running.	Start fan.
	Dirt in vacuum manifold.	Check vacuum manifold for dirt and clean.

(Continued On Following Page)

SEED METER OPERATION/MAINTENANCE

SEED METERING SYSTEM TROUBLESHOOTING (Continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
Not planting seed. (Continued)	Seed baffle (If Applicable) not allowing seed flow due to bridging of seed.	Thoroughly mix talc to coat all seeds. Remove seed baffle. See "Seed Meter" in Seed Meter Operation/Maintenance section.
	60 cell soybean disc not filling properly due to excessive RPM.	Replace with 120 cell soybean disc.
High seed count.	Wrong transmission setting.	Change transmission to desired rate.
	High vacuum.	Adjust vacuum level to appropriate level.
	Wrong seed disc.	Replace seed disc.
	Singulator brush setting not aggressive enough.	Adjust singulator brush.
	Worn singulator brush.	Inspect brush and replace as required.
	Seed leaking past wall brush.	Inspect wall brush condition and installation. Replace as necessary.
	Faulty vacuum gauge.	Check gauge line for dirt/obstruction. Repair/replace vacuum gauge.
Poor seed spacing.	Obstruction in seed tube.	Clean seed tube.
	Dirty/damaged seed disc.	Inspect seed disc for damage, foreign material in orifices or seed treatment buildup in recesses. Clean or replace as required.
	Wrong vacuum setting.	Adjust vacuum to appropriate level.
	Excess foreign material in seed.	Inspect and clean meter and seed discs. Use clean, undamaged seed.
	Incorrect singulator brush setting.	Adjust singulator brush to appropriate setting.
	Inconsistent driveline.	Inspect drive components for rust, misalignment, worn or damaged parts. Replace/repair as required.
	Toolbar not level or wrong height.	Adjust hitch to level toolbar and row units.
	Planting too fast for conditions.	Reduce speed.
	Rough field conditions.	Reduce speed.
Irregular seed population.	Driving too fast.	Reduce speed.
	Drive wheels slipping.	Reduce speed. Decrease row unit down pressure spring settings.
Unable to achieve desired vacuum level.	Tractor hydraulic flow set too low.	Increase flow to fan motor.
	Incorrect hydraulic connections.	Check all hydraulic connections and hose routings.
	Damaged fan components.	Inspect motor and impeller for wear/damage and repair/replace as necessary.
	Vacuum hose pinched/kinked/blocked.	Inspect air lines for any damage or obstruction. Clean air lines and manifold by removing end cap from manifold and running fan at high speed.
	Vacuum hose loose/disconnected.	Inspect and reattach all air hoses.
	Tractor not producing required hydraulic flow/pressure.	Have tractor serviced by qualified technician.
	Dirt in vacuum gauge line.	Check gauge line for dirt/obstruction and clean.

SEED METER OPERATION/MAINTENANCE

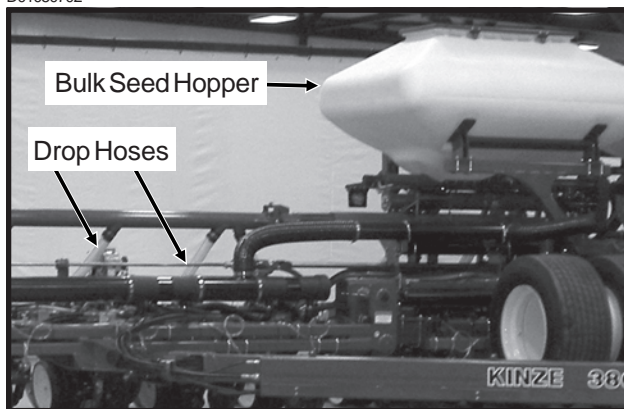
SDS SEED DELIVERY SYSTEM OPERATION

INTRODUCTION

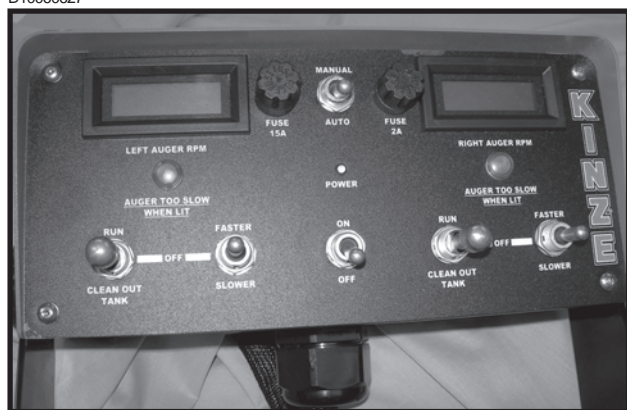
The seed delivery system consists of two bulk seed hoppers with removable lids that each service half of the planter. Approximate capacity of each hopper is 55 bushels for a total of 110 bushels. Seed hoppers are accessible via a rear-mounted ladder and access deck. Individual mini-hoppers are filled 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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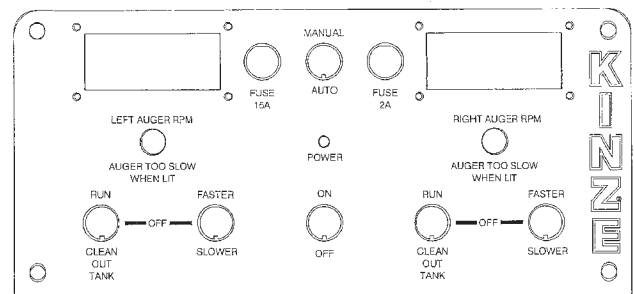
NOTE: After all row outlets are filled to capacity, seed will continue to be evenly distributed to all rows until the bulk seed hopper is empty. When the bulk seed hopper is empty or the auger system is shut off, all drop hoses will “plant out” equally and all rows should run out of seed at approximately 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.

(FWD83)



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)

SDS SEED DELIVERY SYSTEM OPERATION



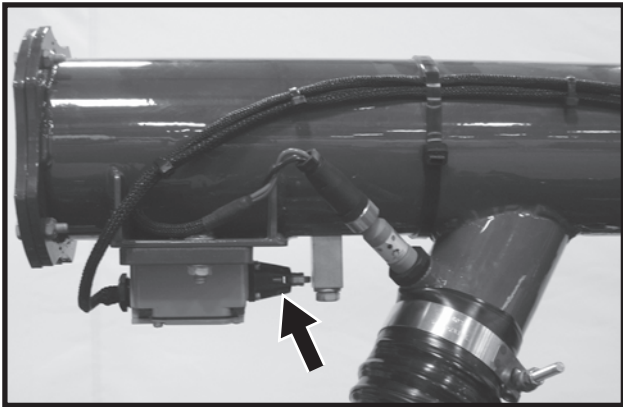
WARNING: ALWAYS use master power switch to turn the system OFF when leaving the tractor operator platform, as the system can start and run at any time if seed demand occurs. Always turn the system OFF before transport. A limit switch on each half of the system at the center of the planter disables the 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

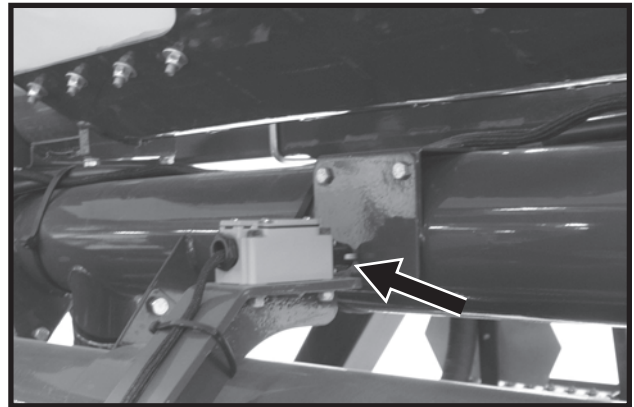
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The limit (secondary overload) switches on the outer ends of the tubes are connected as normally CLOSED switches. When relaxed (no pressure applied to the roller), they allow current to flow through the switches. A $\frac{1}{8}$ " air gap should be 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 $\frac{1}{4}$ ". The system should shut off and then restart when the actuator arm is released. To adjust for $\frac{1}{8}$ " air gap, reposition the switch by loosening the bolts holding the retainer plate.

LIMIT SWITCHES - LOCATED NEAR CENTER OF PLANTER

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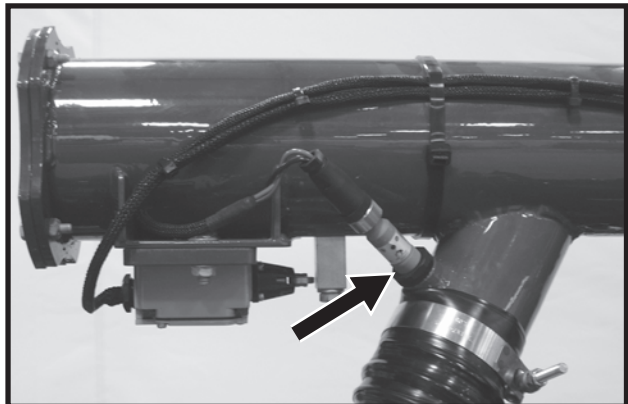


Two limit (transport safety) switches are located near the center of the machine on both sides. These switches are connected as normally OPEN switches. When relaxed (no pressure applied to the roller), they do not allow current to flow through the switch. These switches shut off the power when the planter 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 $\frac{1}{8}$ " after a click is heard. Tighten mounting hardware and test system.

SDS SEED DELIVERY SYSTEM OPERATION

PROXIMITY SENSORS

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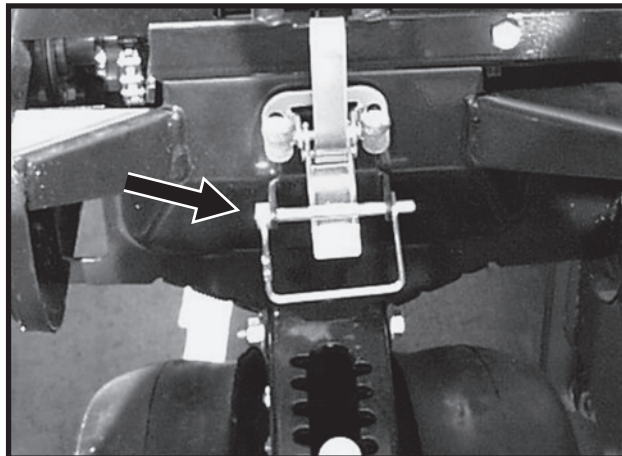
The proximity sensor screws into the outer drop tube at each end of the planter. The tip of the sensor should be approximately 1/2" up from the bottom of the deflector pad in the drop tube. When replacing a sensor draw a line on the sensor 1 1/2" up from the sensing tip. Screw the sensor into the drop 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 “Seed Meter Operation/Maintenance” section for additional information.

SDS TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
System does not operate.	No power to main switch.	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 correctly.
	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.

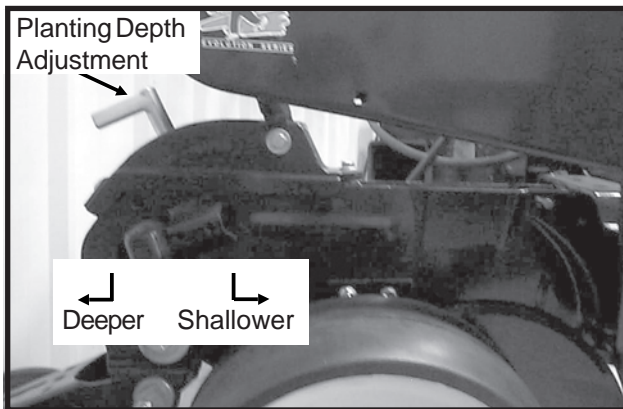
ROW UNIT OPERATION

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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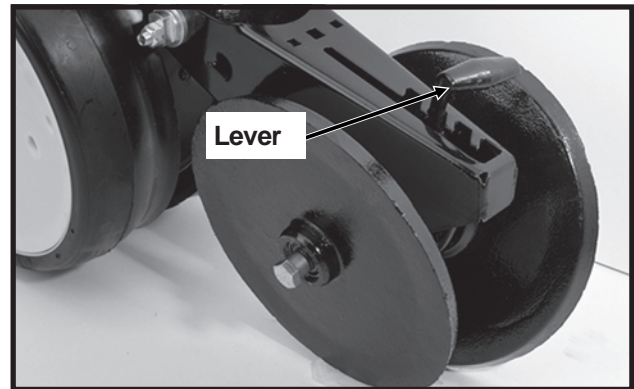
"V" CLOSING WHEEL ADJUSTMENT (Rubber And Cast Iron)

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.

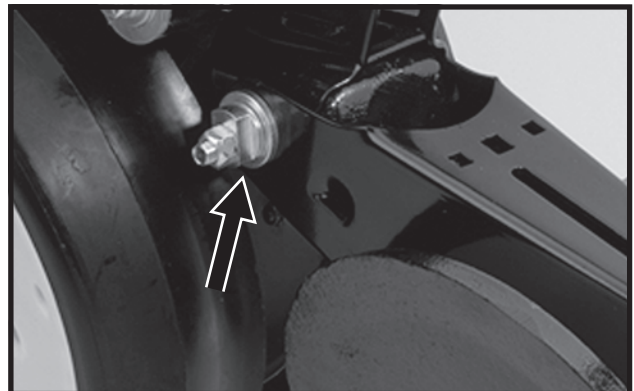
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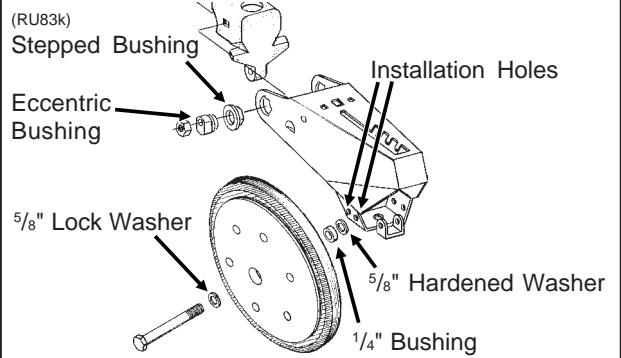
Light soil usually requires less down force at average depth (approximately 2") while heavy soil requires increased down force.

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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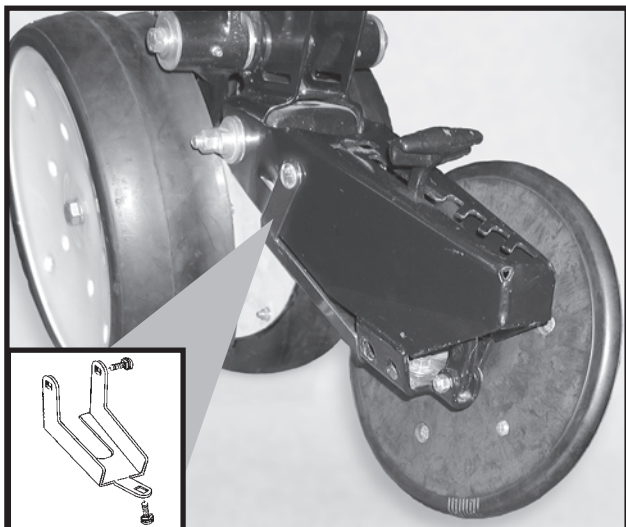
The closing wheels can be installed in two locations either "offset" (to improve residue flow) or "directly" opposite. If set "directly" opposite, the forward installation holes should be used.



ROW UNIT OPERATION

CLOSING WHEEL SHIELD (Rubber And Cast Iron "V" Closing Wheels)

D11090208a



Shown With Closing Wheel Removed For Visual Clarity

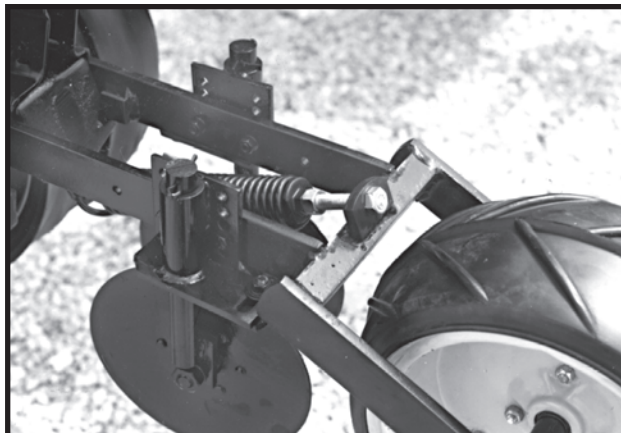
The optional closing wheel shield is designed to be installed onto the underside of the closing wheel arm to help prevent root balls and stalks from plugging the closing wheels.

COVERING DISCS/SINGLE PRESS WHEEL ADJUSTMENT



WARNING: Raise planter and install safety lockup devices before making covering discs/single press wheel adjustments.

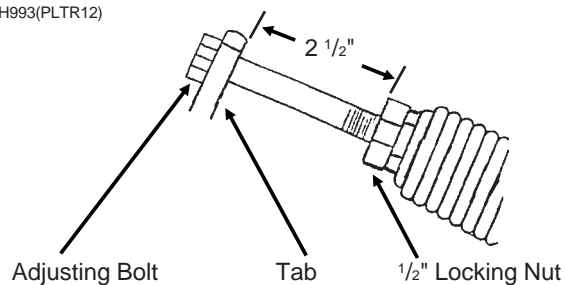
72359-31



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.

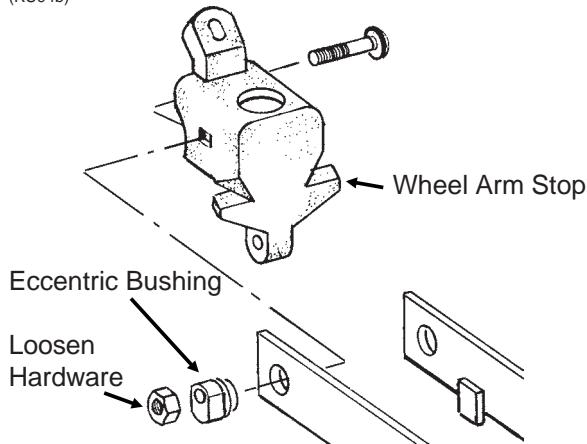
RH993(PLTR12)



ROW UNIT OPERATION

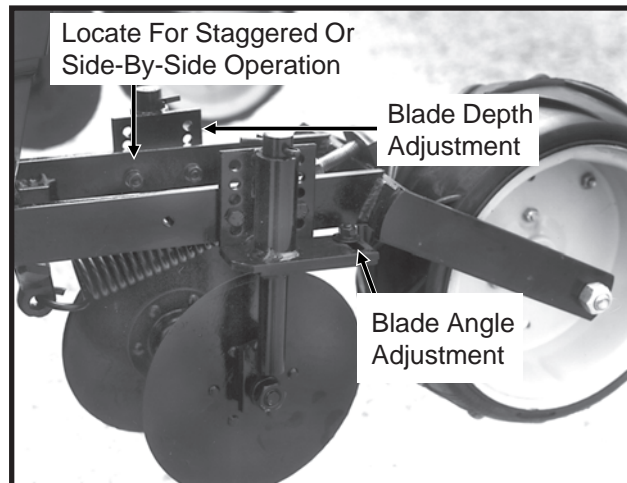
Eccentric bushings in the wheel arm stop allow for lateral adjustment of the covering discs/single press wheel assembly. Using a $\frac{3}{4}$ " wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another $\frac{3}{4}$ " wrench, turn the eccentric bushings until the press 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



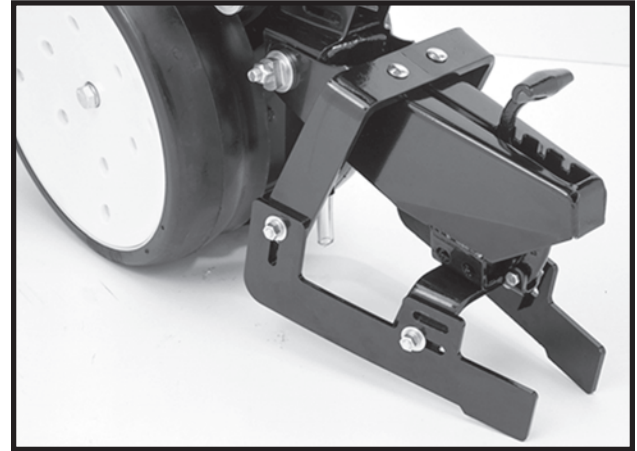
Five sets of holes in each disc bracket allow for $\frac{1}{2}$ " incremental blade depth adjustment.

Slotted holes in the disc mount and bracket allow for $0^\circ - 15^\circ$ blade angle adjustment.

Adjust covering discs on all row units to similar settings.

DRAG CLOSING ATTACHMENT

LF212299-18



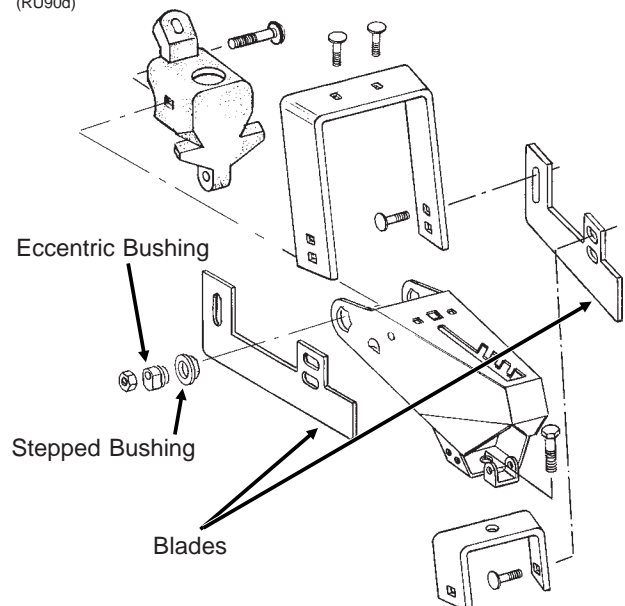
The drag closing attachment is designed to pull loose soil over the seed trench.

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 $\frac{3}{4}$ " wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another $\frac{3}{4}$ " wrench, turn the eccentric bushings until the drag closing attachment is aligned with the seed trench.

ROW UNIT OPERATION

SEED HOPPER (Conventional Seed Hoppers)

LF212199-7a



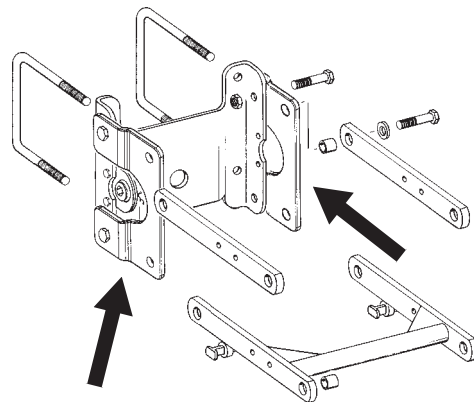
The seed hopper has a capacity of 1.9 bushels.

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 "Seed Meter" in Seed Meter Operation/Maintenance section.

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 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

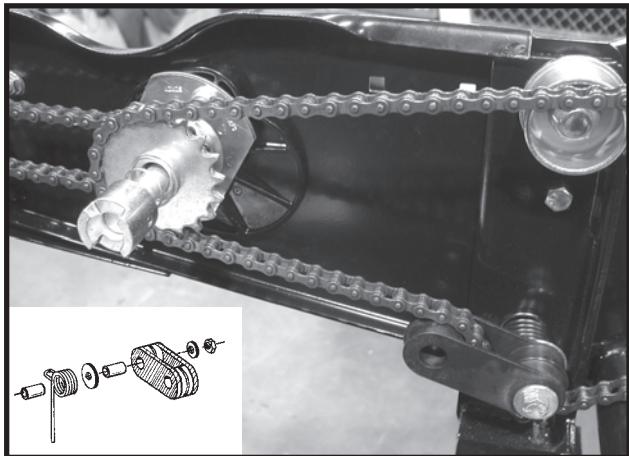
ROW UNIT CHAIN ROUTING

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.

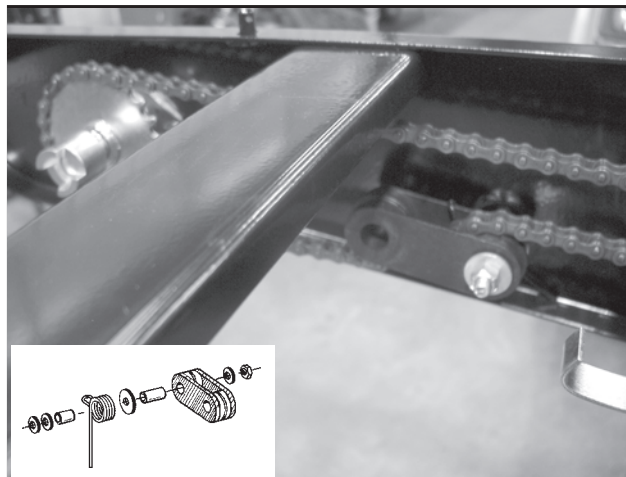
NOTE: When idler shows signs of wear, it can be reversed for prolonged use.

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 →

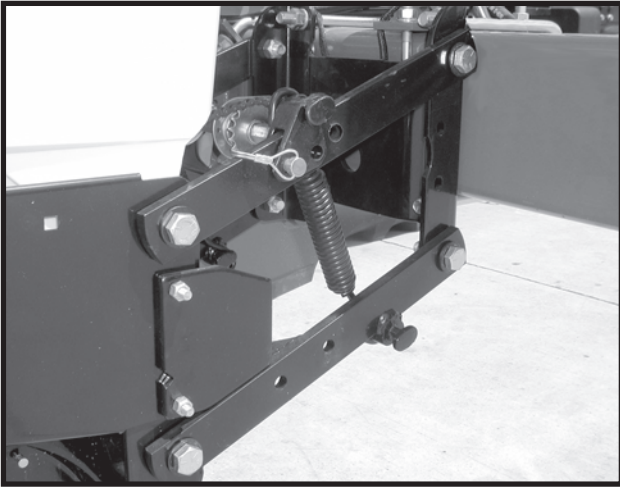
ROW UNIT OPERATION

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.

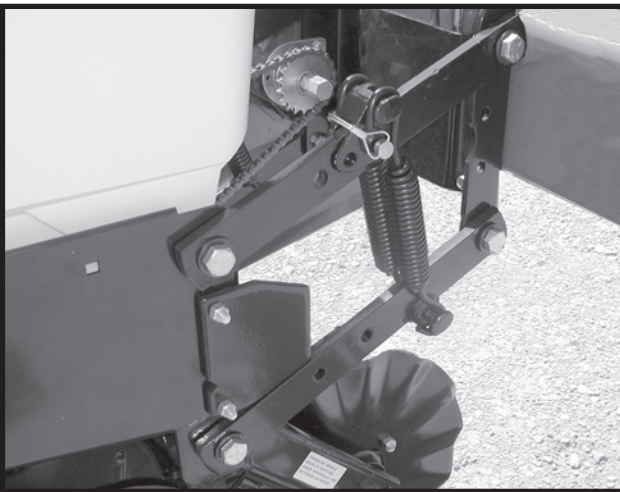
Two springs per row, one on the L.H. parallel arms and one on the R.H. parallel arms, are used unless equipped with row unit mounted no till coulters. Four springs per row are used with row unit mounted no till coulters.

D06300305



Two Springs Per Row (Dual)

D07010301

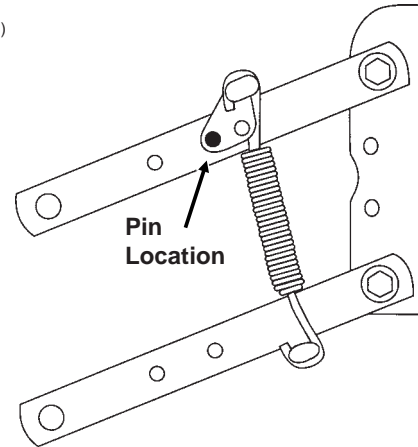


Four Springs Per Row (Quad)

NOTE: Four springs per row are to be used with row unit mounted no till coulters only.

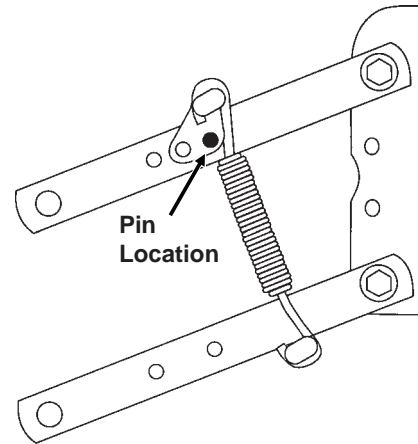
There are four positions for spring tension adjustment. Position 1 allows for minimum down pressure and position 4 for maximum down pressure.

L0096(PLTR27e)



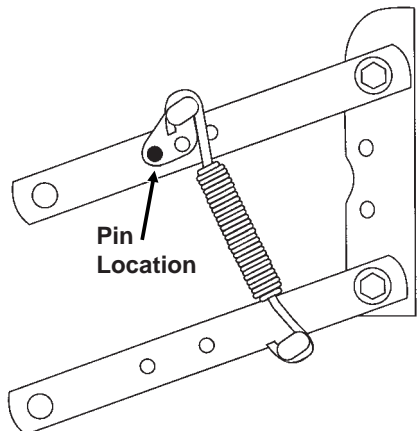
Position 1 (Minimum)

(PLTR28e)



Position 2

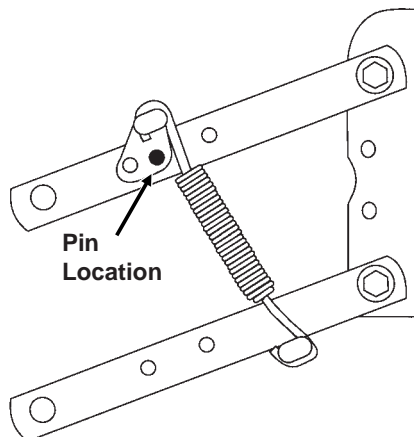
(PLTR29e)



Position 3

ROW UNIT OPERATION

(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.

ROW UNIT OPERATION

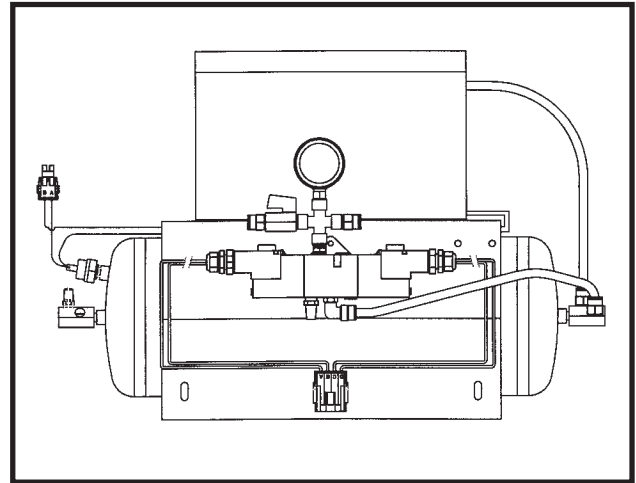
PNEUMATIC DOWN PRESSURE PACKAGE

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, $\frac{3}{8}$ " O.D. nylon hoses, dual solenoid air valve and stainless steel, 160 psi, 2" liquid-filled gauge and planter wiring harness.

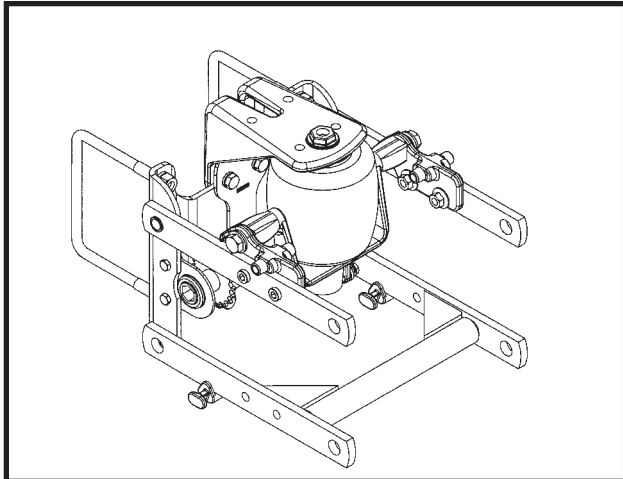
Pneumatic down pressure row unit extension brackets are required in some applications.

(PNE01)



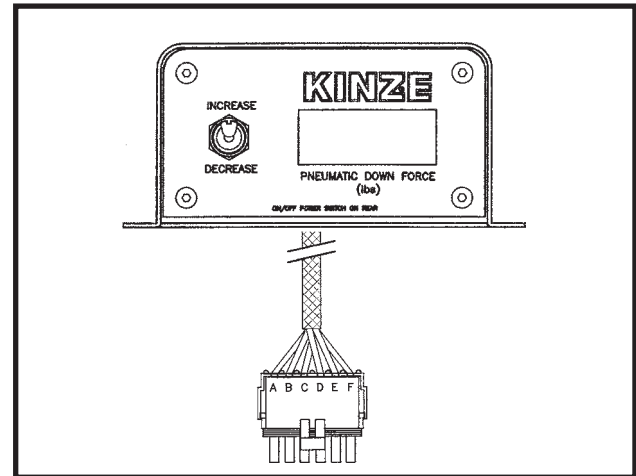
Air Compressor With Dual Solenoid Assembly

(PNE07)



Pull Row Unit Air Spring

(A12644a)

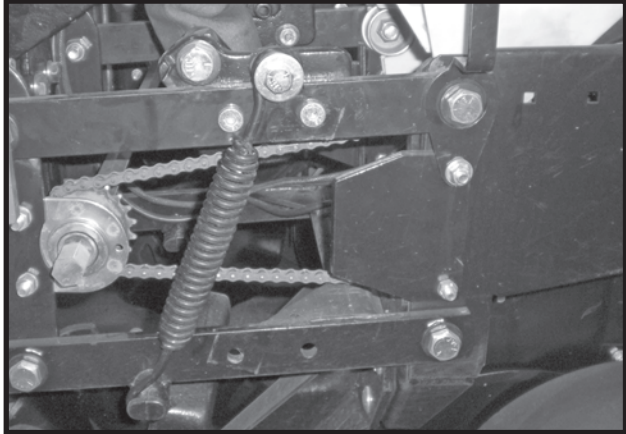


Control Console Assembly

ROW UNIT OPERATION

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

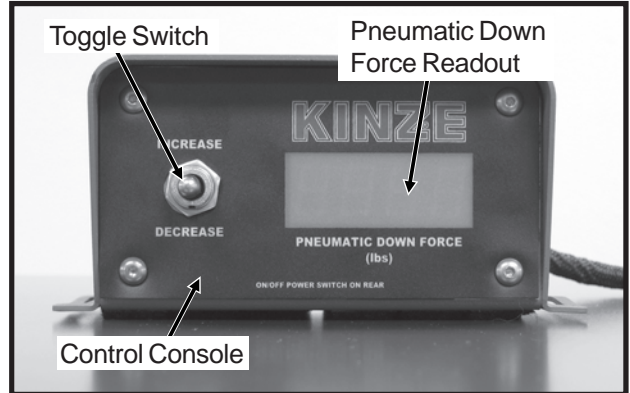


Pull Row Unit Assist Springs

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.

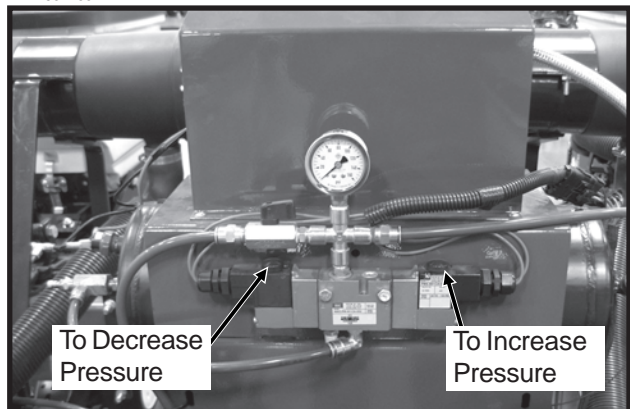
To adjust down pressure from planter:

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).

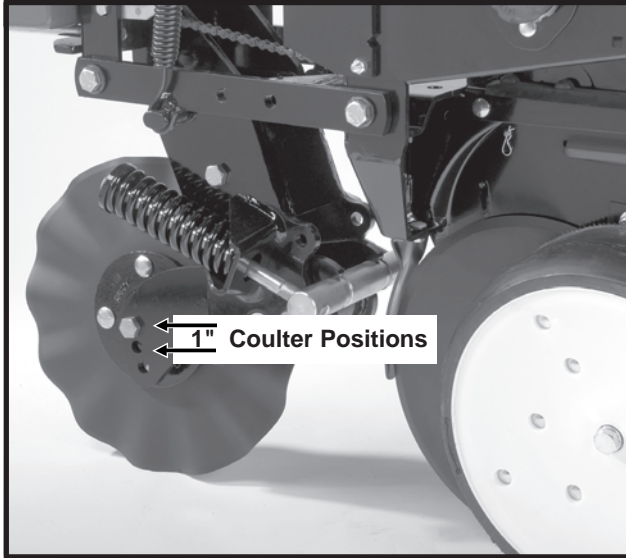
D112907100



ROW UNIT OPERATION

FRAME MOUNTED COULTER

LF083002101

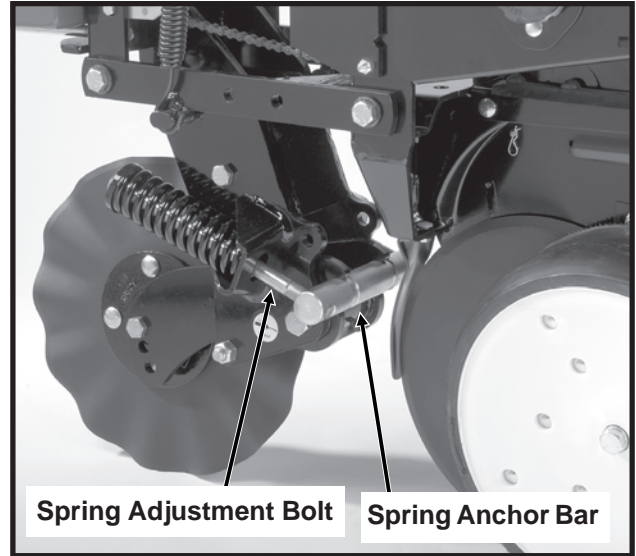


Frame mounted coulters with 1" bubbled, 1" fluted (8 flutes) or 3/4" fluted (13 flutes) blades may be used on pull row units only. (Not compatible with push row units.)

The frame mounted coulters is designed to apply necessary spring down pressure on the coulters for maximum penetration while exerting less shock load on the row unit.

The initial location of the coulters 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 coulters components when the coulters strikes an obstacle.

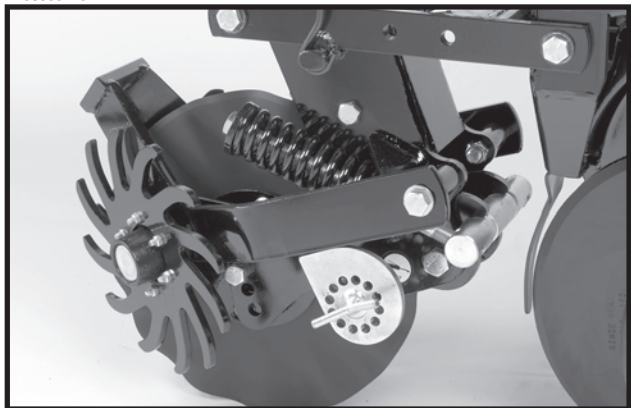
ROW UNIT OPERATION

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.

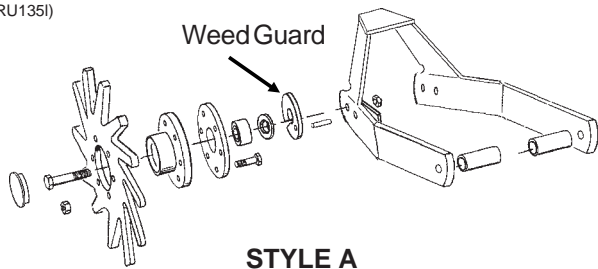
LF083002102



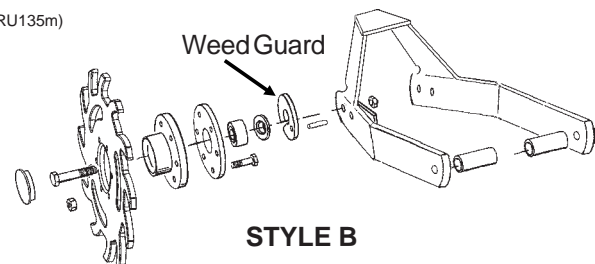
STYLE A Shown

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)



(RU135m)



NOTE: Opening in weed guard must point down.

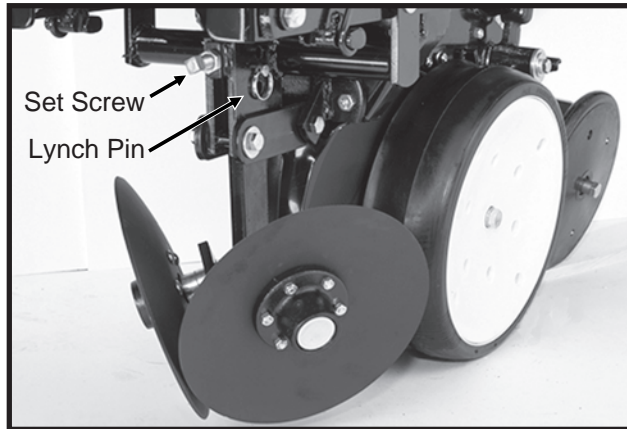
ROW UNIT OPERATION

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.

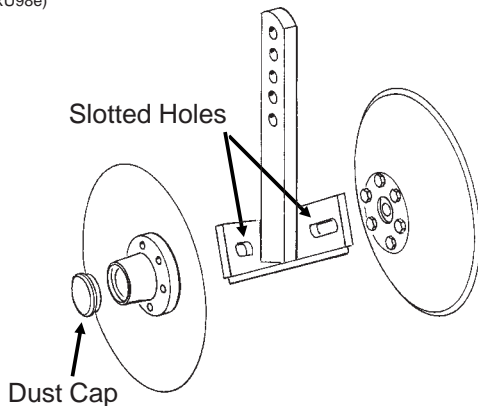
Disc furrowers are used to clear crop residue, dirt clods and dry soil from in front of the row units for a clean and smooth seed bed. Notched blades are used for heavier residue conditions. The notched blades cut crop residue and move it aside to prevent plugging or pushing.

LF212299-22



Vertical adjustment in $\frac{1}{3}$ " 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 $\frac{5}{8}$ " x $2\frac{1}{4}$ " set screw to clamp the support arm in the required position.

(RU98e)

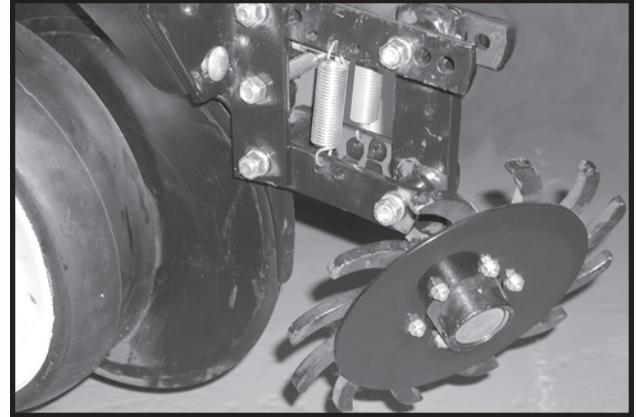


Slotted holes in the support arm where the blades are mounted allow fore and aft adjustment of the disc blades. Blades can be adjusted so the front edges meet or one blade can be moved to the rear and the other to the front of the slot so the cutting edge of one blade overlaps the edge of the other blade. The dust cap must be removed to make these adjustments.

ROW UNIT MOUNTED RESIDUE WHEEL

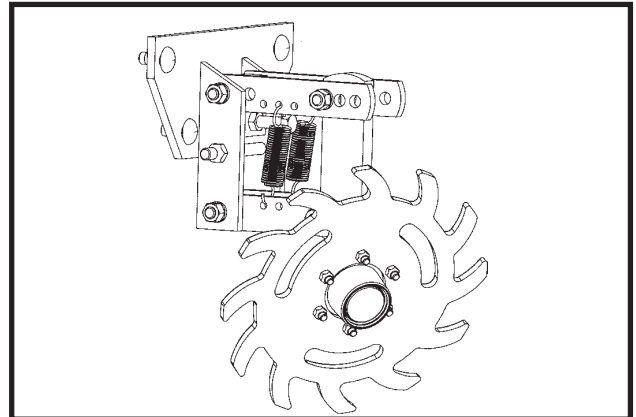
The row unit mounted residue wheel may be used on pull row units and push row units.

D101701113



STYLE A

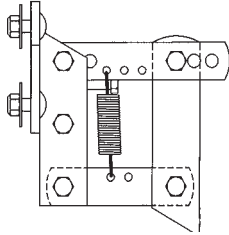
(A12685)



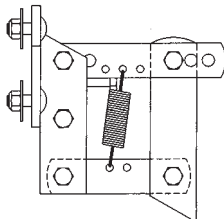
STYLE B

ROW UNIT OPERATION

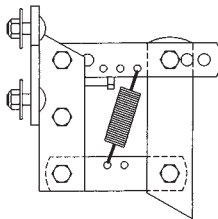
Two adjustable springs on the parallel links on each residue wheel allow for down force adjustment. Position 1 as shown below provides minimum down pressure and position 3 maximum down pressure.



Position 1 (Minimum) (PLTR31a)



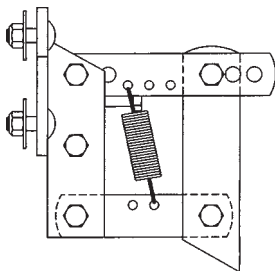
Position 2 (PLTR32a)



Position 3 (Maximum) (PLTR33a)

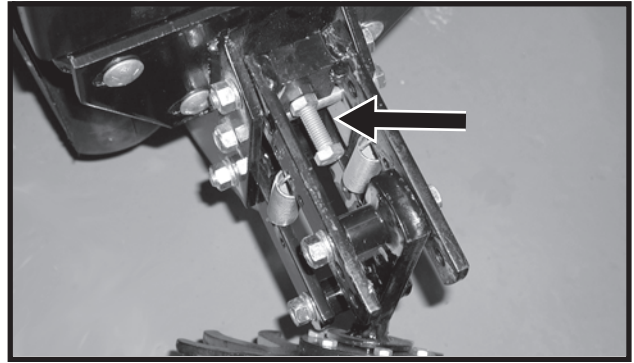
For additional uplift or float, position springs as shown below.

(PLTR34a)



To adjust down force springs, raise the row unit out of the ground and reposition springs as shown for the desired down pressure.

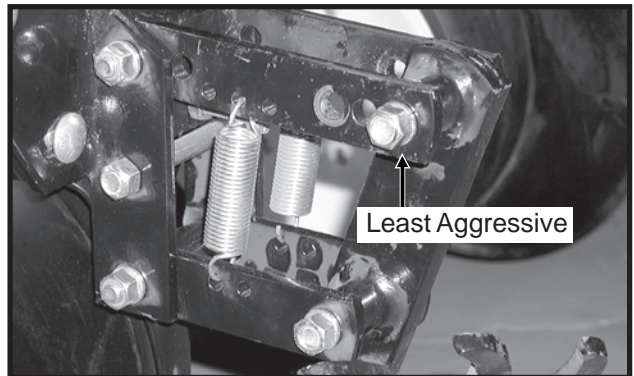
D10170112



A full threaded bolt and jam nut located on the upper link allows maximum depth to be set for loose soil conditions. Initial setting should be 1 3/4" above the depth of the row unit double disc opener.

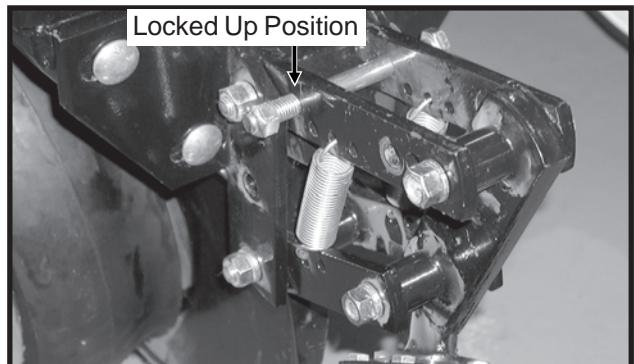
Three holes in the upper link allow for wheel angle adjustment. With the wheel mount in the most vertical position, using the rear hole in the upper link, the residue wheel is most aggressive. Moving the wheel mount to one of the forward holes reduces the aggressiveness of the wheel for use in mulch till applications where the soil is loose.

D101701202



To lock the residue wheel up out of the ground, remove the 1/2" x 5" lockup bolt, raise the residue wheel and install bolt.

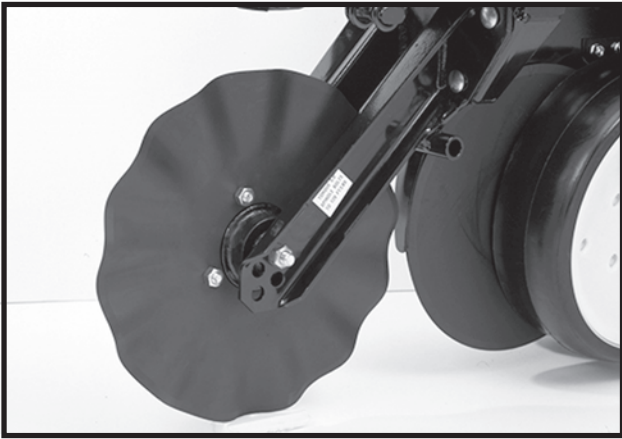
D011701203



ROW UNIT OPERATION

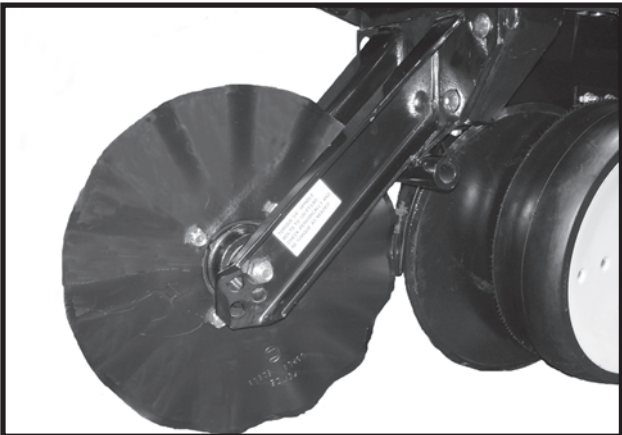
ROW UNIT MOUNTED NO TILL COULTER

LF212299-19a



STYLE A (Two Sleeves For Installing Coulters Mounted Residue Wheels)

D05170706a



STYLE B (One Sleeve For Installing Coulters Mounted Residue Wheels)

Row unit mounted no till coulters with 1" bubbled, 1" fluted (8 flutes) or $\frac{3}{4}$ " fluted (13 flutes) blades may be used on pull row units and push row units. ($\frac{3}{4}$ " 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 coulters blade should be aligned in relation to the row unit double disc openers. The coulters assembly can be adjusted by loosening the four attaching bolts, moving coulters arm to align and tightening the four attaching bolts.

The coulters blade can be adjusted to one of four $\frac{1}{2}$ " incremental settings in the forked arm. Initial location of the coulters is in the top hole. As the coulters blade wears, the blade should be adjusted downward to one of the three lower settings to maintain the coulters 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 coulters to operate below the depth of the double disc opener blades.

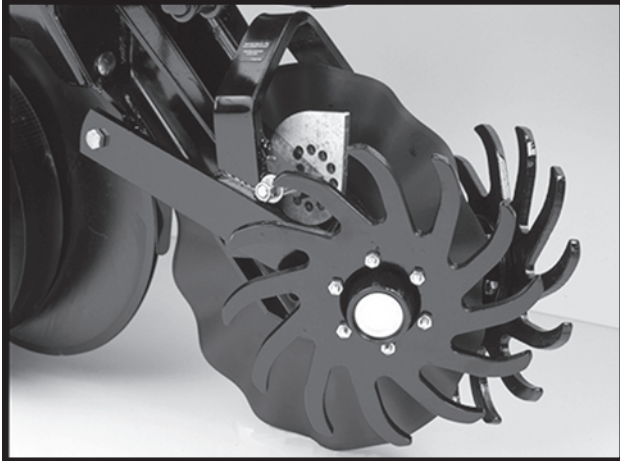
Operating depth can be checked by setting the planter down on a level concrete floor and checking the relationship between the coulters blade and row unit opener blade. Make sure the planter is level and coulters is square with the planter frame and aligned with the row unit disc opener.

NOTE: Torque $\frac{5}{8}$ " spindle hardware to 120 ft. lbs.

ROW UNIT OPERATION

COULTER MOUNTED RESIDUE WHEELS

LF212299-23



STYLE A - Used With Style A Row Unit Mounted No Till Coulters

D05170708a

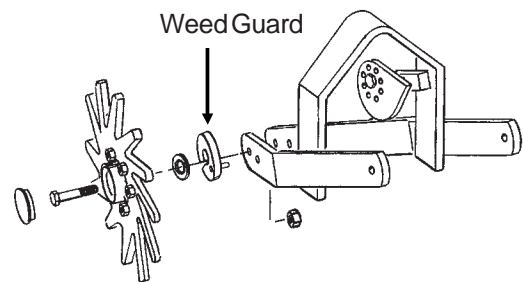


STYLE B - Used With Style B Row Unit Mounted No Till Coulters

Coulters-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 coulters-mounted residue wheels.

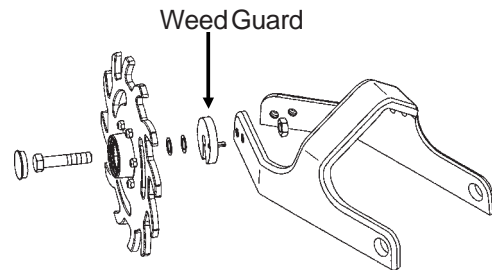
The coulters-mounted residue wheels are attached to the row unit mounted no till coulters with one cap screw and sleeve allowing the unit to free-float. A 2-position spindle bolt mounting allows the tined wheels to be mounted interlocked or staggered. A lock nut on the inside of the mount locks the spindle 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.

ROW UNIT OPERATION

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.

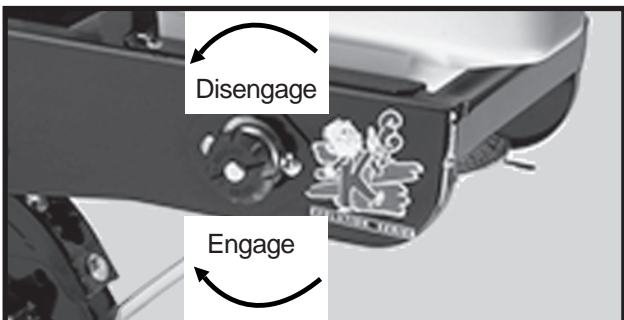
The metering gate located on the bottom of the hopper regulates the application rate. See "Dry Insecticide And Dry Herbicide Application Rate Charts" in this manual. Calibrate using the chemical manufacturers' instructions.



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 $\frac{1}{4}$ turn clockwise. To disengage the drive, turn the knob $\frac{1}{4}$ turn counterclockwise. Slotted holes in the hopper support panel and clutch housing allow for alignment adjustment between the clutch drive coupler and meter shaft.

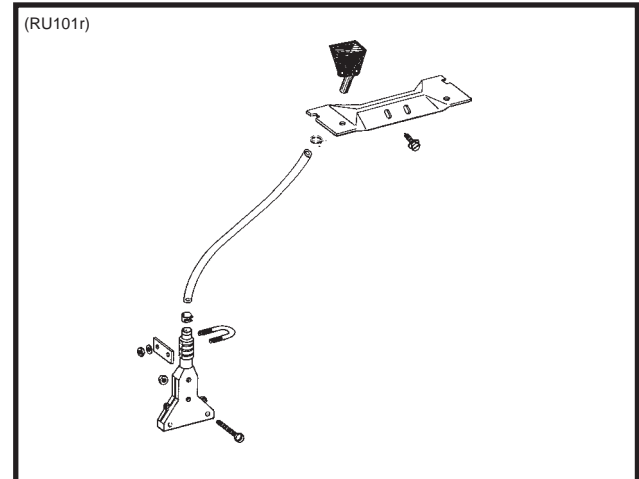
LF212299-4



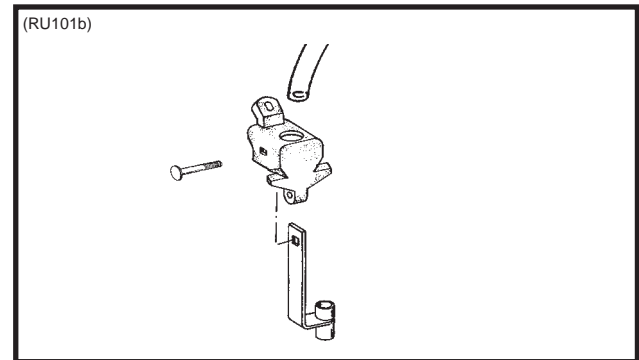
GRANULAR CHEMICAL BANDING OPTIONS

Granular chemical banding options allow $4\frac{1}{2}$ " slope-compensating banding, straight drop in-furrow placement or 14" rear banding.

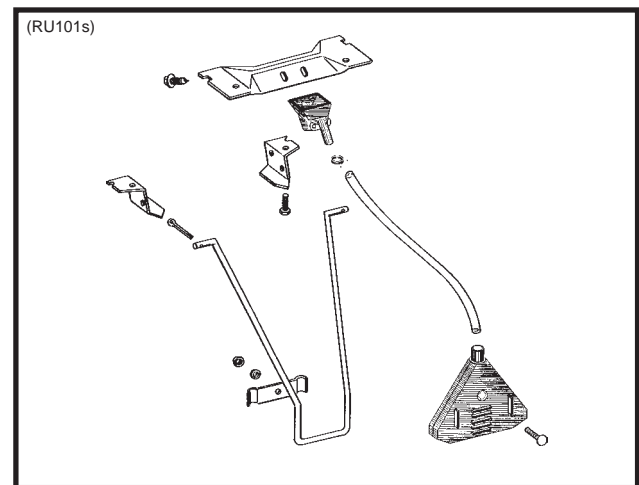
NOTE: The granular chemical rear bander is not compatible with the covering discs/single press wheel option.



4 1/2" Slope-Compensating Bander



Straight Drop In-Furrow Placement



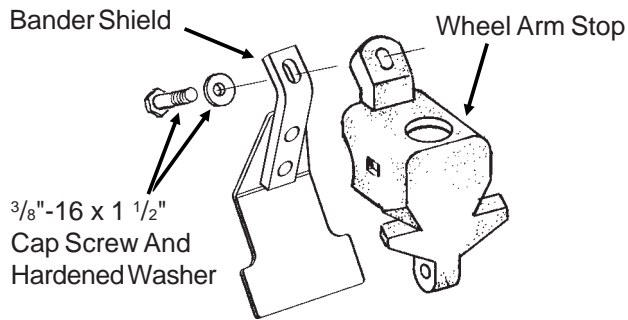
14" Rear Banding

ROW UNIT OPERATION

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)

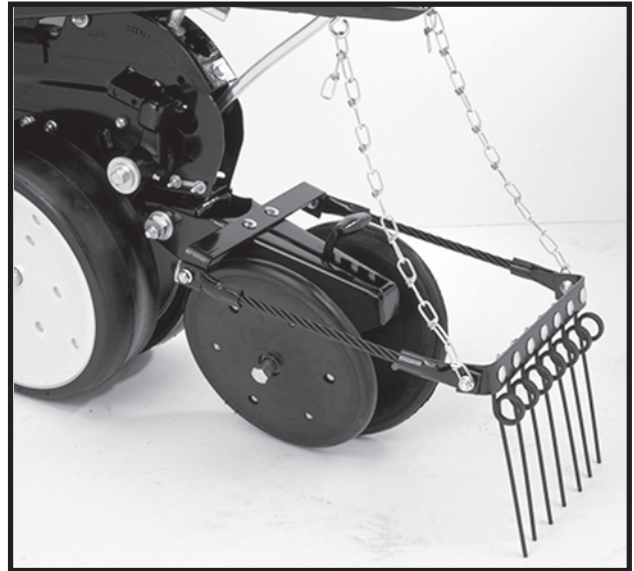


SPRING TOOTH INCORPORATOR

The spring tooth incorporator smooths 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 $\frac{1}{8}$ " 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



ROW UNIT OPERATION

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



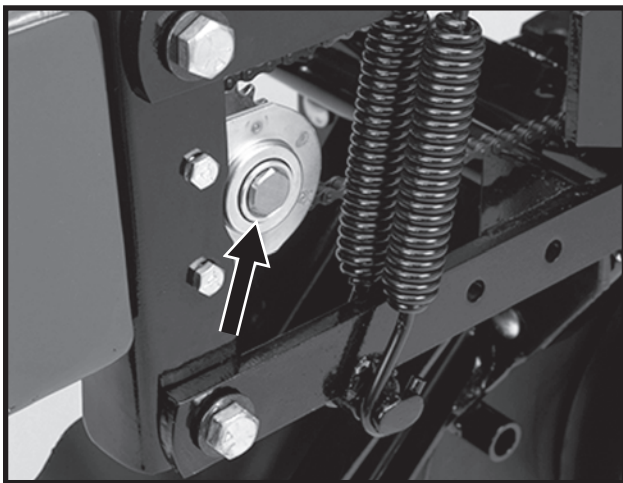
Lubricate at frequency indicated with an SAE multipurpose grease.



Lubricate at frequency indicated with a high quality SAE 10 weight oil or a quality spray lubricant.

SEALED BEARINGS

LF212199-3

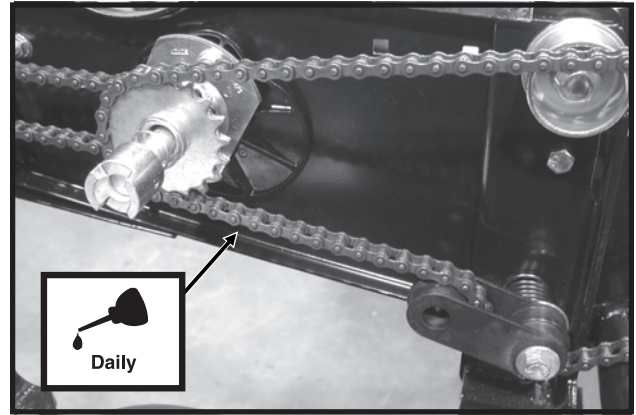


A number of sealed bearings are used on your KINZE® planter to provide trouble free operation. These are located in such areas as the drive shaft, row units and transmission bearings. Sealed bearings are lubricated for life. Due to the seals, relubrication is not practical.

DRIVE CHAINS

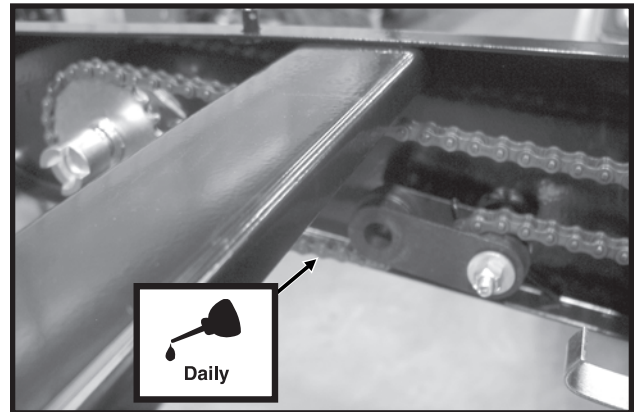
All transmission and drive chains should be lubricated daily with a high quality chain lubricant. Extreme operating conditions such as dirt, temperature or speed may require more frequent lubrication. If a chain becomes stiff, it should be removed, soaked and washed in solvent to loosen and remove dirt from the joints. Then soak the chain in oil so the lubricant can penetrate between the rollers and bushings.

D051705103



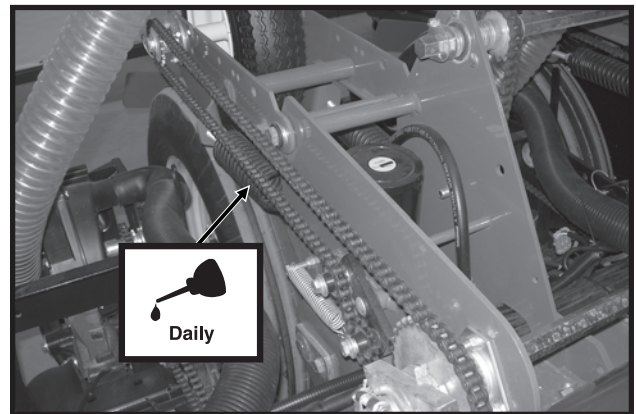
Pull Row Unit Drive Chains

D051705102



Row Unit Granular Chemical Drive Chains

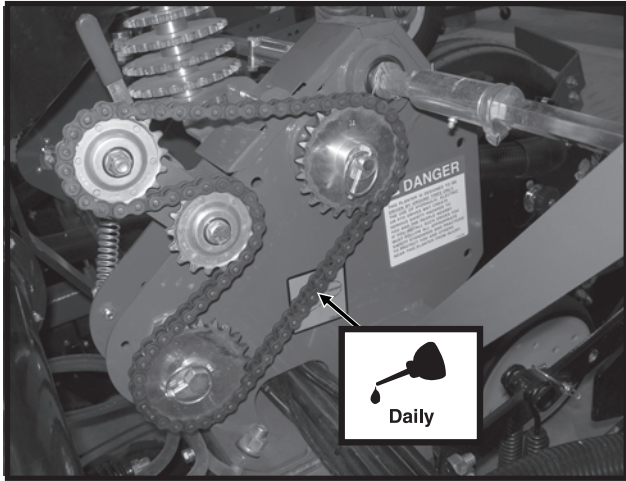
D01050743



Contact Wheel Chains

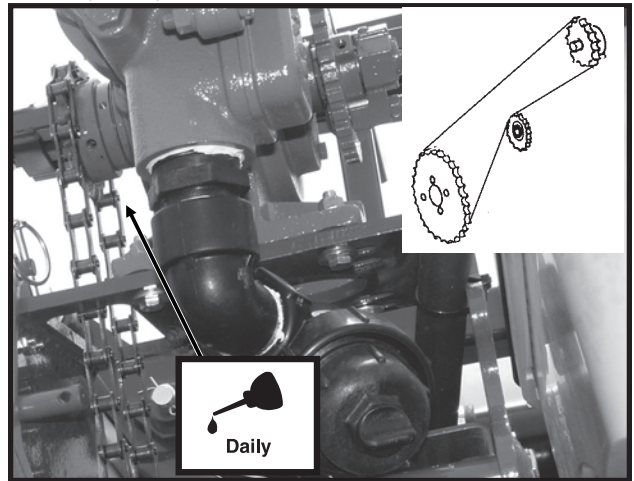
LUBRICATION

D01050736



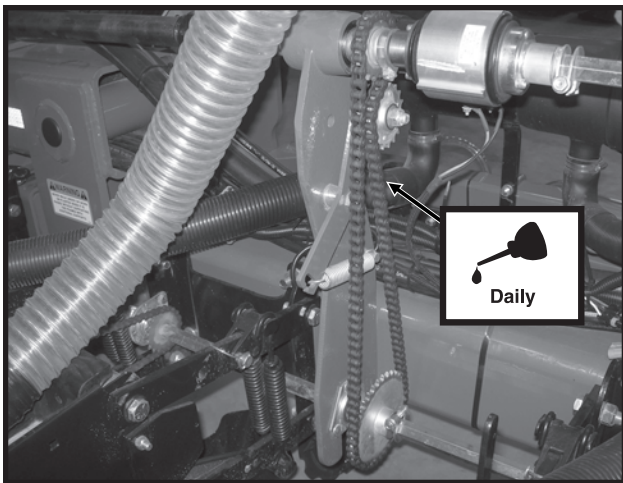
Seed Rate Transmission Drive Chains

D05230703(TWL219c)



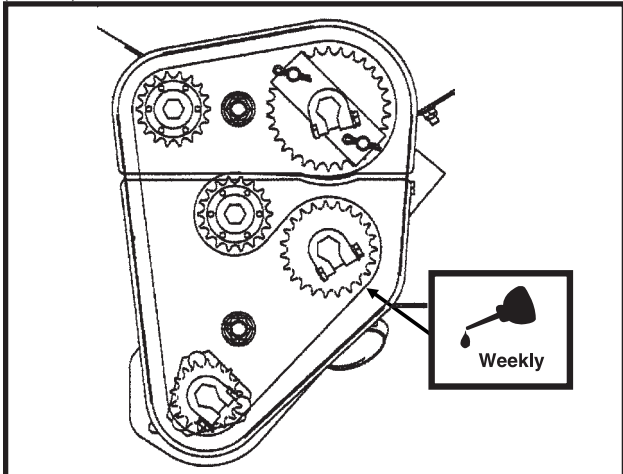
Liquid Fertilizer Drive Chain (Piston Pump)

D01050740



Row Unit Drill Shaft Drive Chains

(FWD149)



SDS Drive Chains

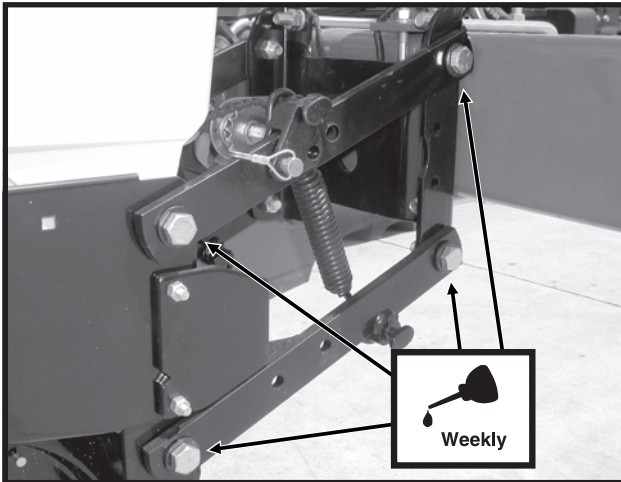
LUBRICATION

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



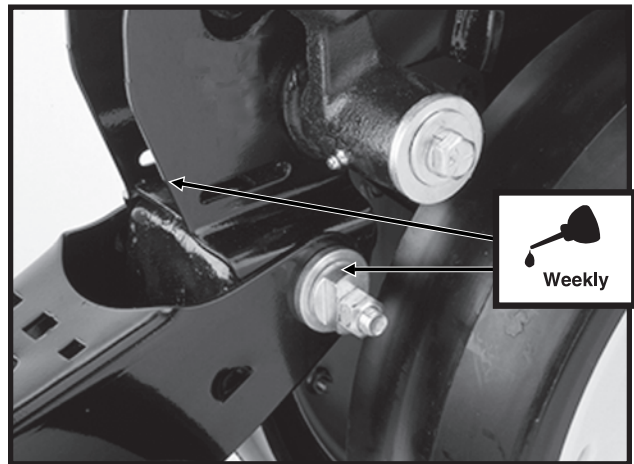
Pull Row Unit Parallel Linkages (8 Per Row)

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

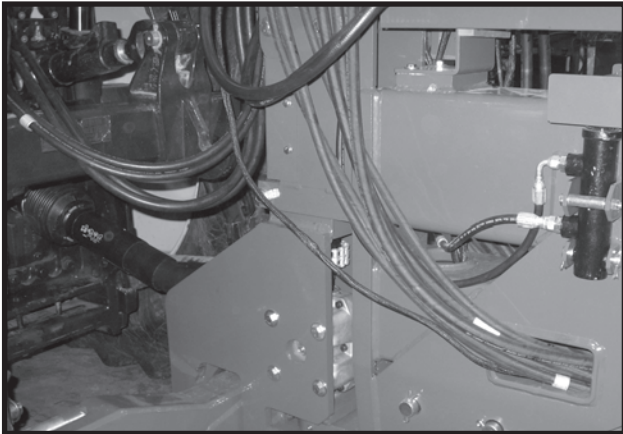
The chain idler is equipped with a wrap spring wrench. The wrench components may require occasional lubrication to operate correctly. Disassembly is required to lubricate. (a) Remove the cap screw that secures the idler with sprockets to the wrench tightener shaft. (b) Remove the wrap spring wrench from 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



PTO SHAFT ASSEMBLY

D01290844



IMPORTANT: The PTO assembly should be cleaned and greased each time the PTO is installed.

IMPORTANT: To extend life of shaft splines, apply a coating of high-speed industrial coupling grease, such as Chevron® Coupling Grease, that meets AGMA CG-1 and CG-2 Standards.

(The Chevron® trademark is owned by Chevron Products Company. AGMA is the acronym for the American Gear Manufacturers Association)

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 Maintenance section.

To repack wheel hubs, follow the procedure outlined for wheel bearing replacement with the exception that bearings and bearing cups are reused.

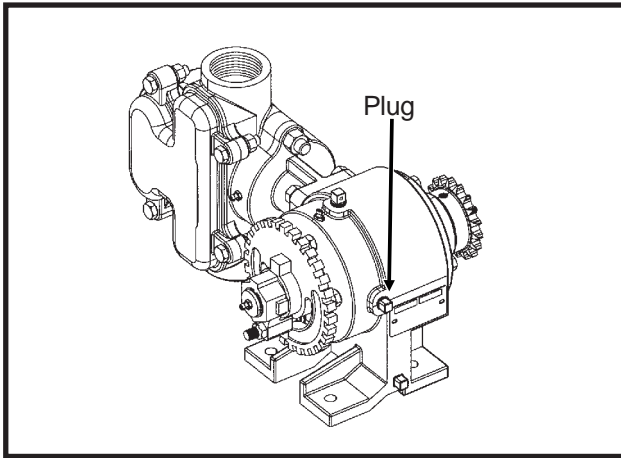
HITCH SLIDE ASSEMBLY (If Applicable)

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

(A12330a)



Check crankcase oil daily and maintain at plug level. Fill as needed with EP 90 weight gear oil. Total oil capacity is approximately $\frac{3}{4}$ pint.

Refer to operator and instruction manual supplied with the pump and flow divider for additional information.

GREASE FITTINGS

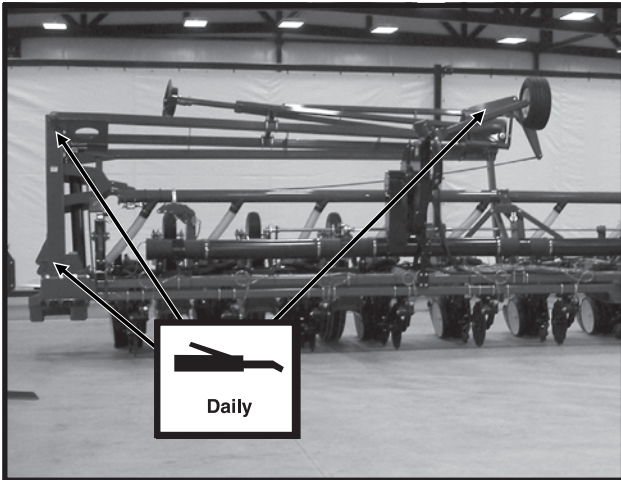
Those parts equipped with grease fittings should be lubricated at the frequency indicated with an SAE multipurpose grease. Be sure to clean the fitting thoroughly before using grease gun. The frequency of lubrication recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent attention.



WARNING: Always install safety lockup devices or lower the planter to the ground before working under or around the machine.

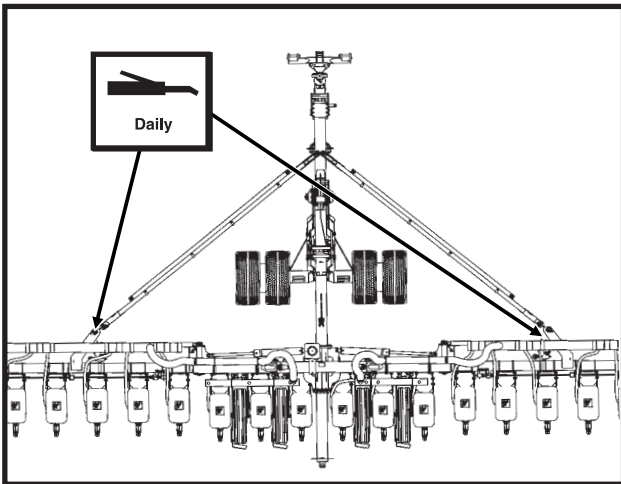
LUBRICATION

D01050702



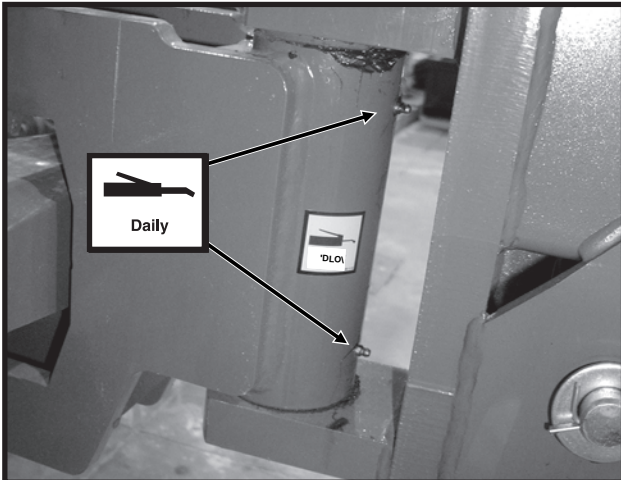
1. Row Marker Assemblies - 11 Zerks Per Assembly On 24 Row 30" - 15 Zerks Per Assembly On 32 Row 30" And 36 Row 30" (24 Row 30" Shown)

(FWD124a)



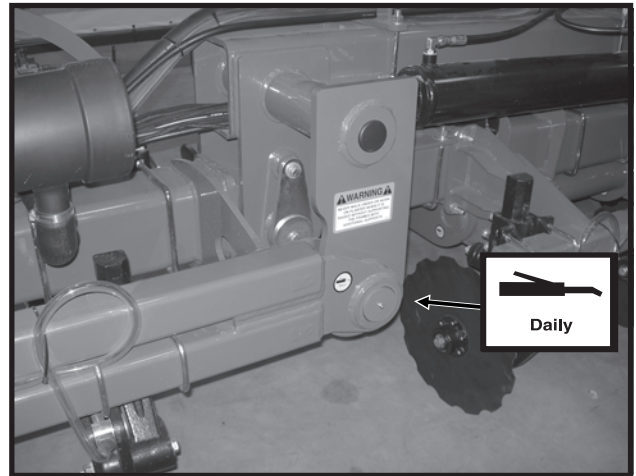
2. Wing Linkage Pivot - 1 Zerk Per Wing

D033104100



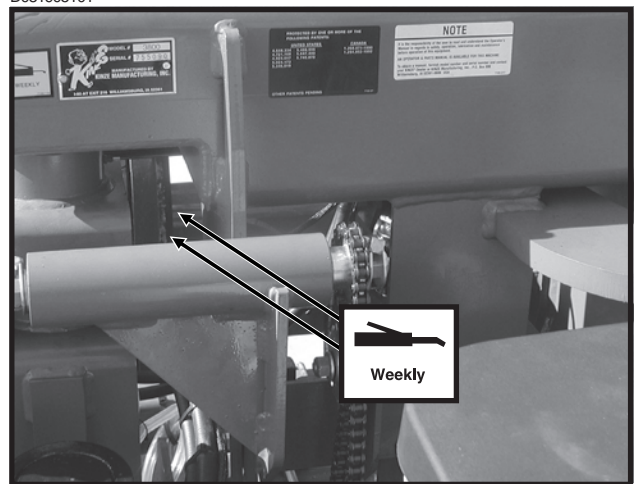
3. Hitch Pivot - 2 Zerks

D01050708



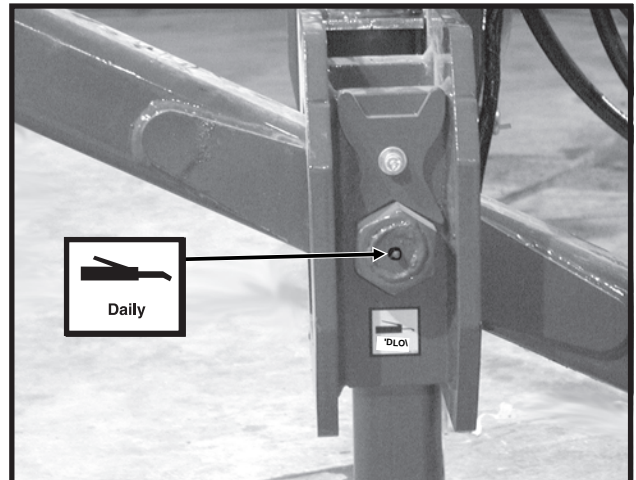
4. Outer End Of Stub Wing - 3 Zerks Per Assembly

D081905101



5. Inner End Of Stub Wing - 2 Zerks Per Assembly

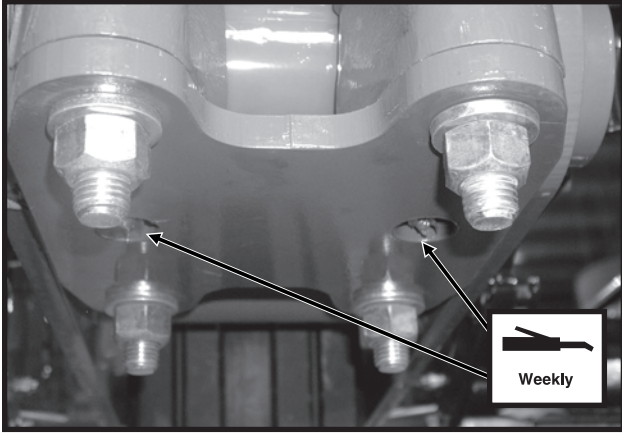
D032404143



6. Hitch Pivot Pin - 1 Zerk

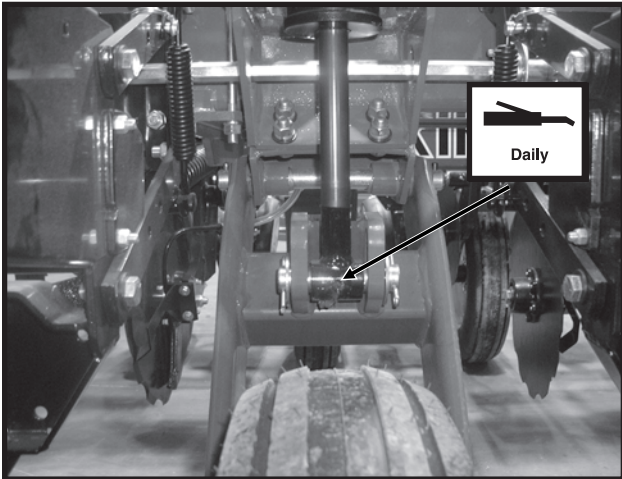
LUBRICATION

D040204102



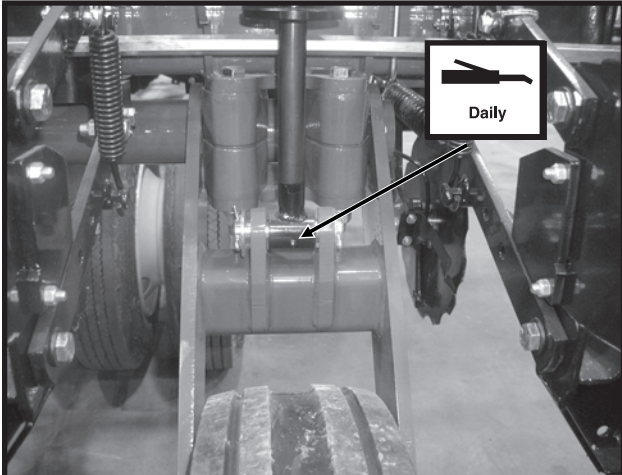
7. Center Section Lift Axle Pivot - 2 Zerks Per Wheel Assembly

D033104113



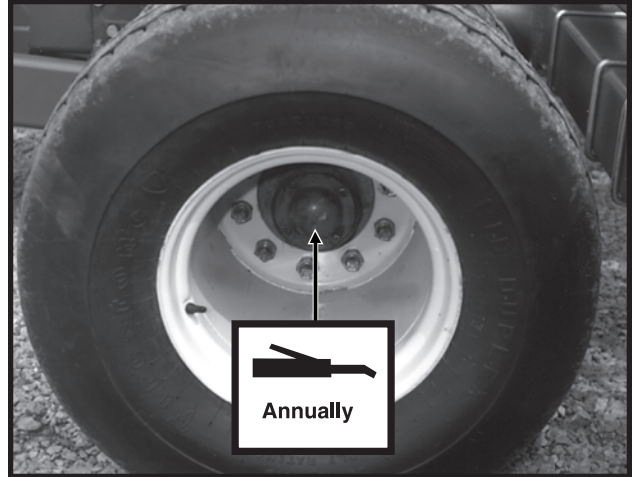
8. Wing Lift Cylinders - 1 Zerk Per Cylinder

D033104112



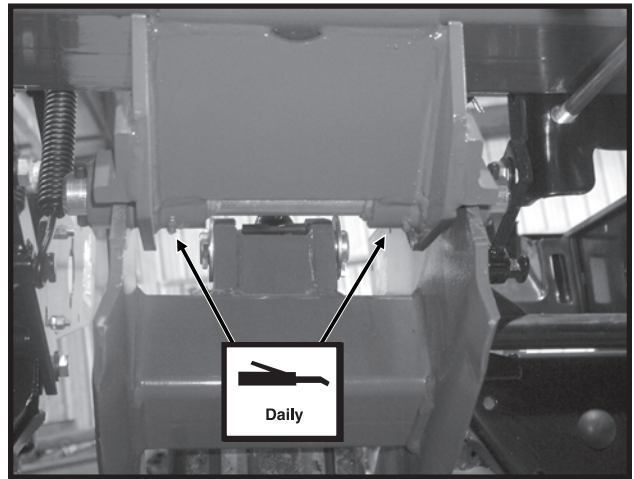
9. Center Section Lift Cylinders - 1 Zerk Per Cylinder

72495-5



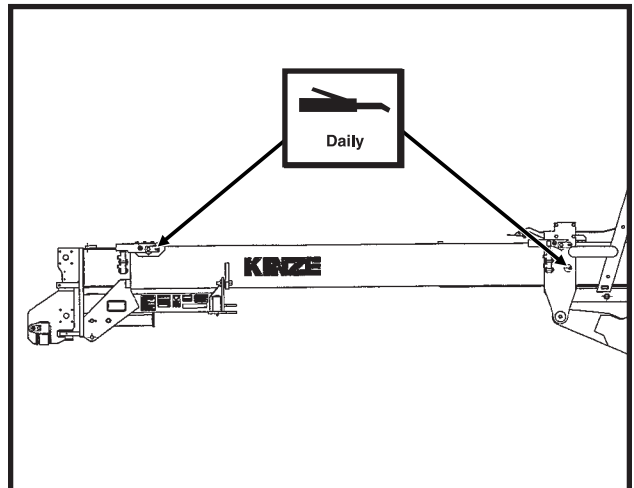
10. Transport Wheel Bearings - 1 Zerk Per Hub

D040204105



11. Wing Wheel Pivot - 2 Zerks Per Wheel Module

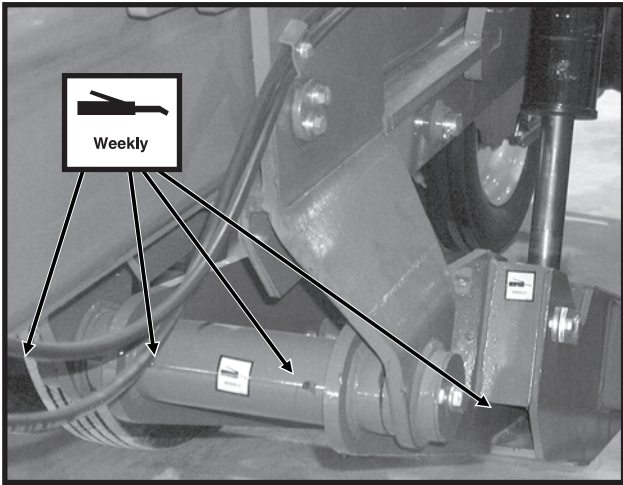
(FWD163)



12. Slide Stops/Catches - 32 Row 30" And 36 Row 30" -2 Zerks/24 Row 30" 1 Zerk (36 Row 30" Shown)

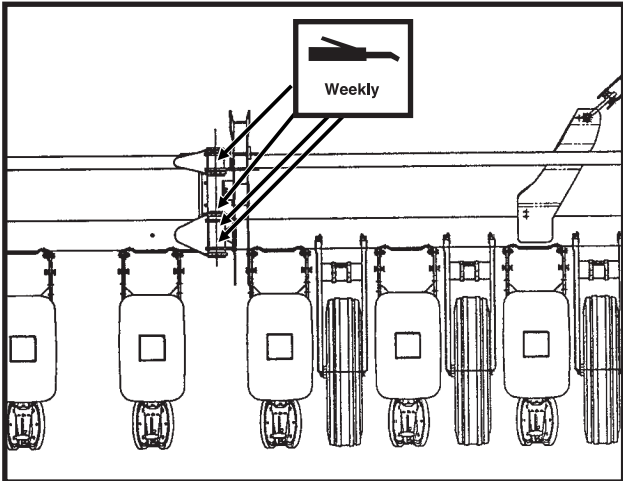
LUBRICATION

D032404124



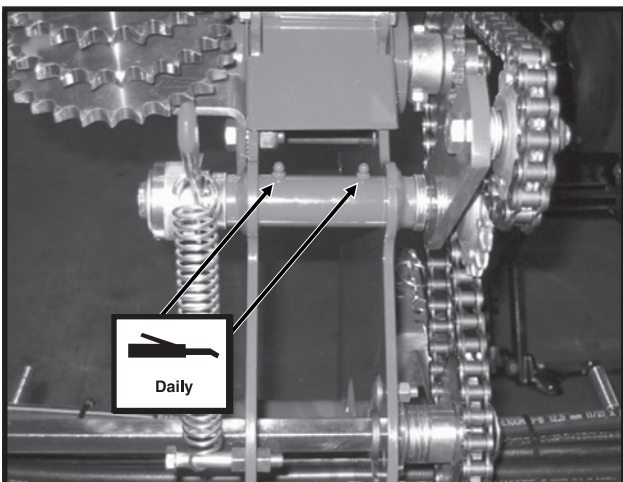
13. Transport Axle Pivot - 4 Zerks

(FWD52)



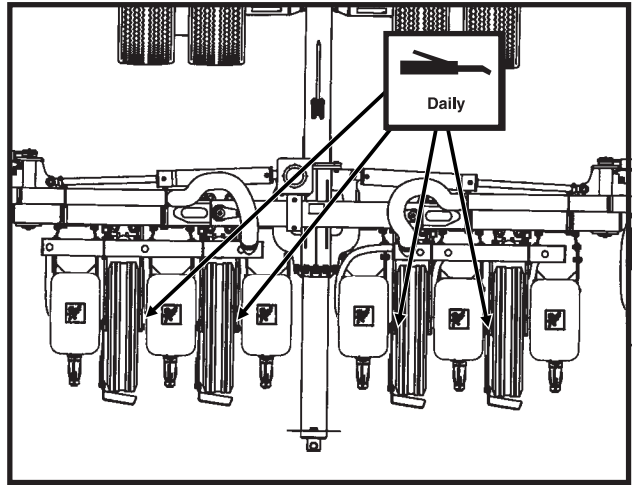
14. Outer Wing Hinge - 3 Zerks Per Assembly
(32 Row 30" And 36 Row 30" Only)

D021406100



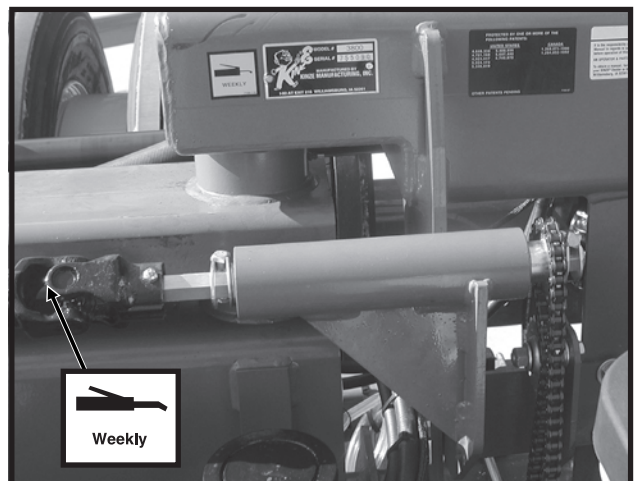
15. Seed Rate Transmission Assembly - 2 Zerks Per Transmission

(FWD124a)



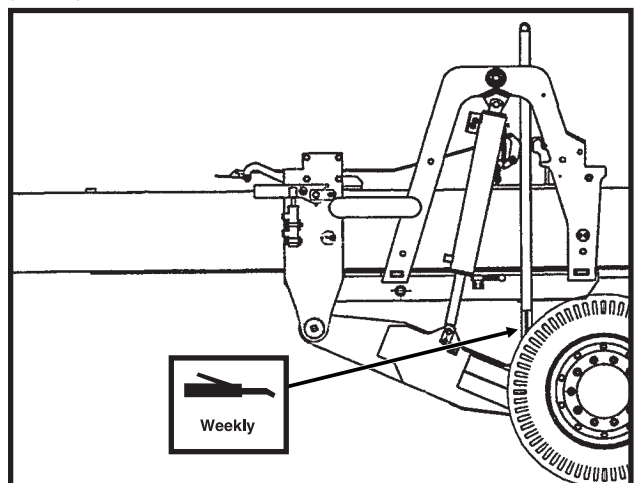
16. Rock Shaft Wheel Hub Assembly - 1 Zerk Per Hub

D081905101



17. U-Joint Shaft Between Center Section And Wing - 1 Zerk On Each End Of U-Joint Shafts (2 Per U-Joint Shaft)

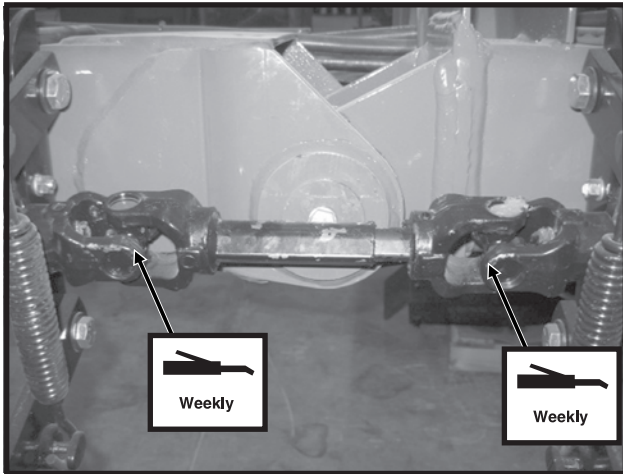
(FWD163)



18. Slide Assembly Lockup Stand - 2 Zerks (32 Row 30" And 36 Row 30" Only)

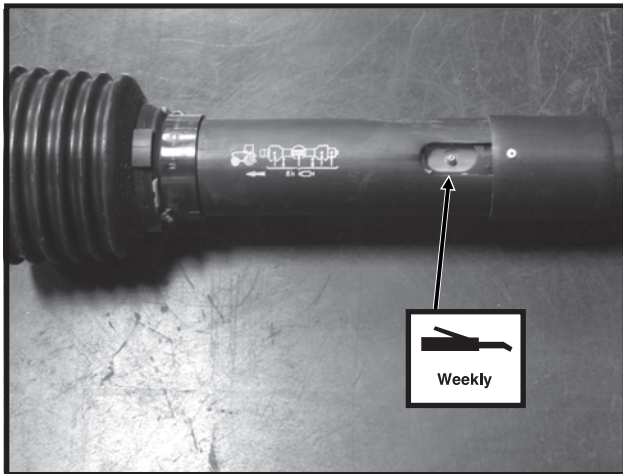
LUBRICATION

D020206109



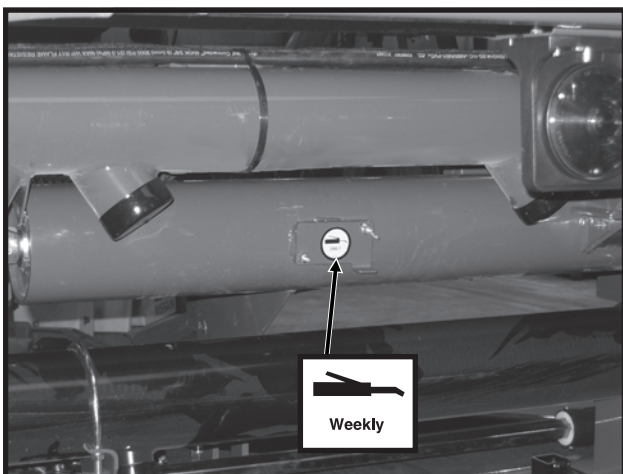
19. U-Joint Shaft Between Inner And Outer Wings (32 Row 30" And 36 Row 30" Only) - 1 Zerk On Each End Of U-Joint Shaft (2 Per U-Joint Shaft)

D01290834



20. PTO Assembly- 1 Zerk

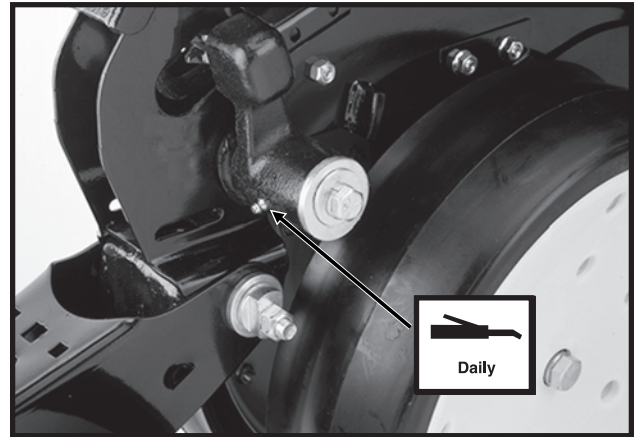
D02808101



21. SDS Auger Shaft - 1 Zerk On Each Side Of Planter

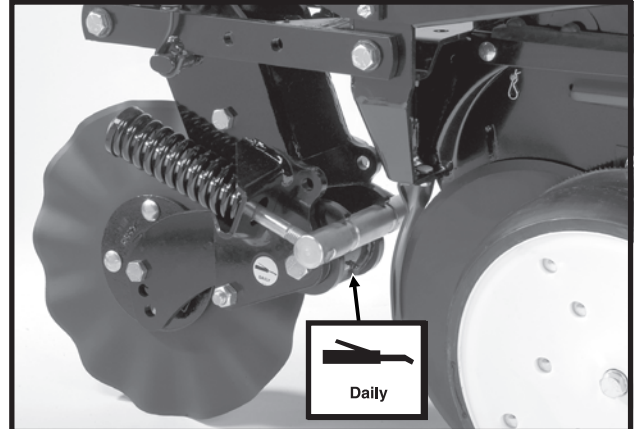
Row Unit

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

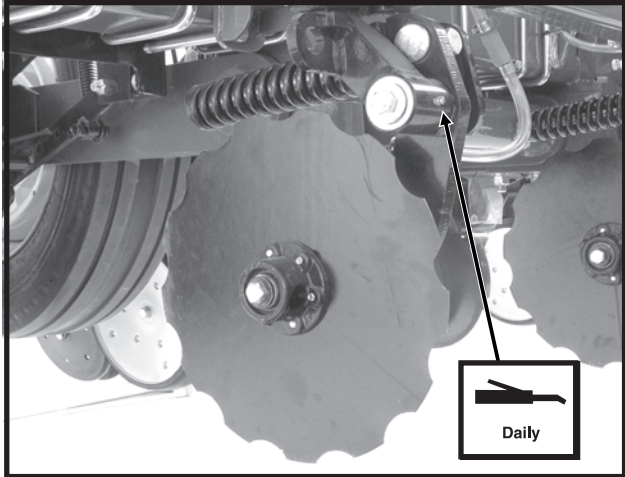


Frame Mounted Coulter - 1 Zerk Per Arm

LUBRICATION

Fertilizer Openers

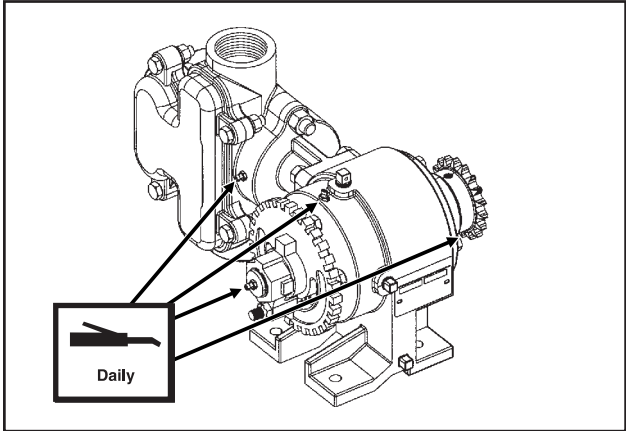
D040704104



Notched Single Disc Fertilizer Opener - 1 Zerk

Liquid Fertilizer Piston Pump

(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.

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.

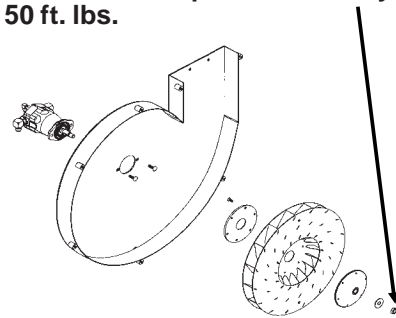
3 Point Hitch Adapter Pin And Pivot Bolt - 550 Ft. Lbs.

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.

IMPORTANT: Torque setting for ⁵/₈"-18 hex jam nut that secures fan impellor assembly to motor shaft is 50 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

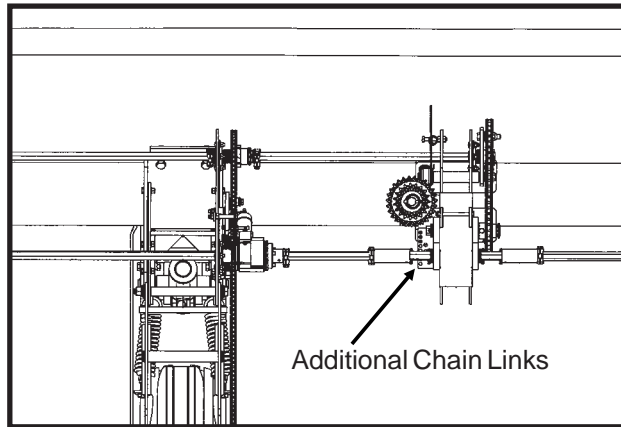
MAINTENANCE

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.

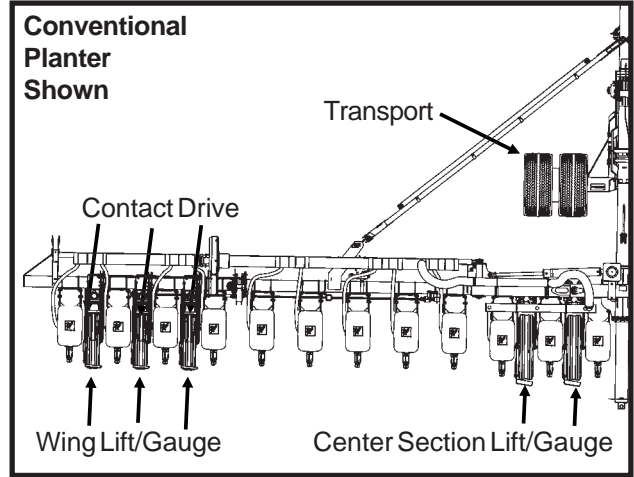
Additional chain links can be found in the storage areas located at each planter transmission assembly.

(FWD56)



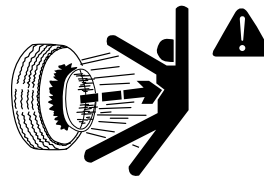
TIRE PRESSURE

(FWD124a)



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 the 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.

MAINTENANCE

PTO PUMPS AND OIL COOLERS

Drain the reservoirs and change filters annually.

Refill system with a SAE 10W-20 multigrade wide temperature range transmission hydraulic fluid.

Reservoirs are supplied with a drain hose to allow easy draining.

Replace filters with high quality 10 micron filters.

Start the system and allow to run with tractor at idle and the fans turned off for 1-2 minutes. Allow to run with tractor at idle and the fans at full speed for 1-2 minutes. Check reservoir fluid level and fill as required. Hydraulic fluid level should be within 2" from the top of the reservoir after the pumps have run and hydraulic hoses have been primed to allow the fluid to expand when heated. Bring tractor to PTO speed and adjust flow control to the desired vacuum level using the switches on the vacuum fan control console.

PTO PUMPS AND OIL COOLERS TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump is squealing.	Lack of oil to pump.	Check oil level.
Oil temperature is high.	Low oil level.	Check oil level and add as required.
	Coolers plugged not allowing oil to flow across them.	Wash or blow off coolers.
Desired fan speed cannot be achieved.	Low oil level.	Check oil level and add as required.
	Plugged filter.	Check and change as required.
Vacuum level is not displayed.	Digital vacuum gauge console power is OFF.	Turn ON.
	Cable not plugged in.	Check connection.
	Digital vacuum gauge console has no power.	Check fuse.

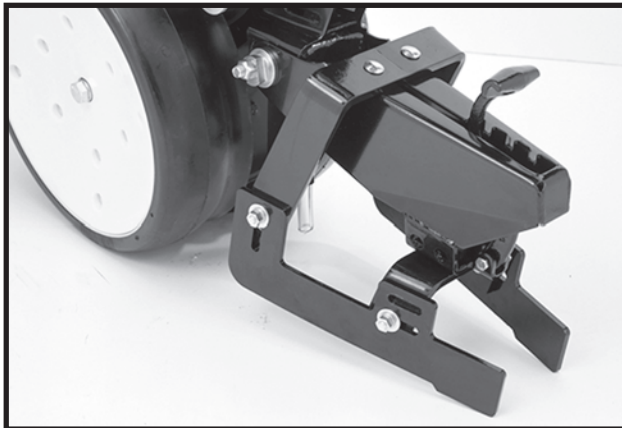
MAINTENANCE

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".

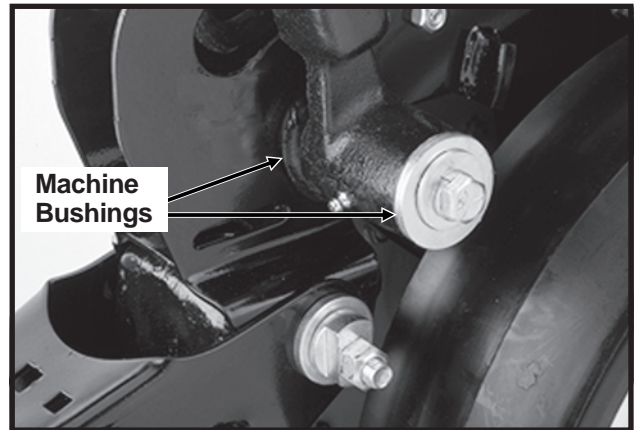
DRAG CLOSING ATTACHMENT

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.

LF212199-2



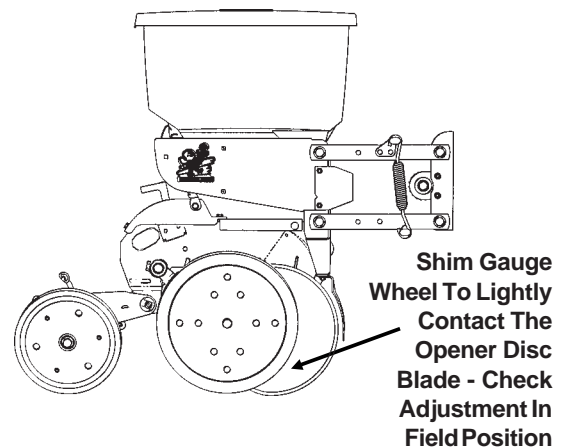
(RU113g)

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.

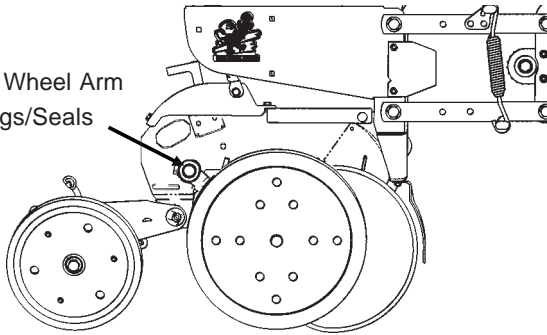


MAINTENANCE

GAUGE WHEEL ARM BUSHING AND/OR SEAL REPLACEMENT

(RU113g)

Gauge Wheel Arm Bushings/Seals

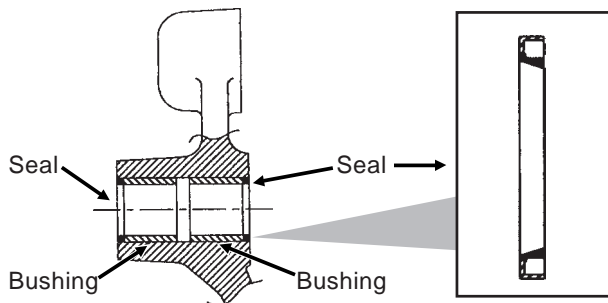


NOTE: A Gauge Wheel Arm Bushing And Seal Driver Kit (G1K296), for use in bushing and seal replacement, is available through your KINZE® Dealer.

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.

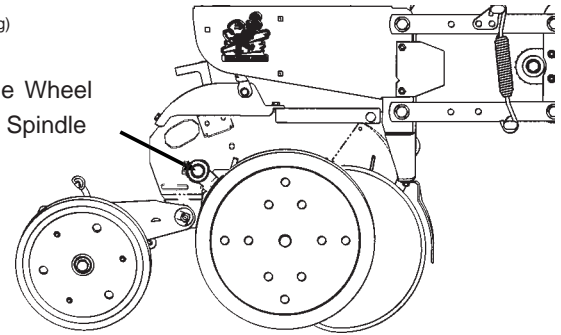
NOTE: Special machine bushing between gauge wheel arm and gauge wheel.

9. Shim for proper gauge wheel tire/disc blade clearance.
10. Lubricate with an SAE multipurpose grease.

GAUGE WHEEL ARM PIVOT SPINDLE REPLACEMENT

(RU113g)

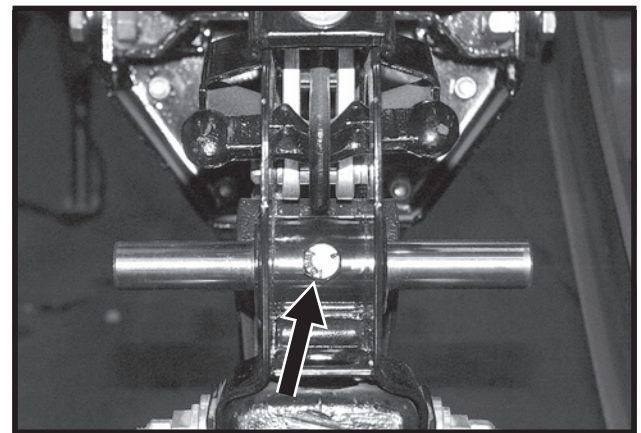
Gauge Wheel Pivot Spindle



To replace gauge wheel pivot spindle:

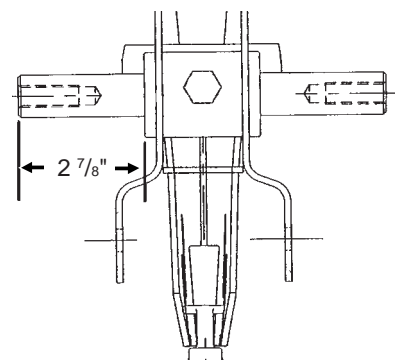
1. Remove the gauge wheel and arm assemblies from the shank assembly.
2. Remove 1/2" x 3/4" cap screw that locks the pivot spindle in place and remove the spindle.

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.

MAINTENANCE

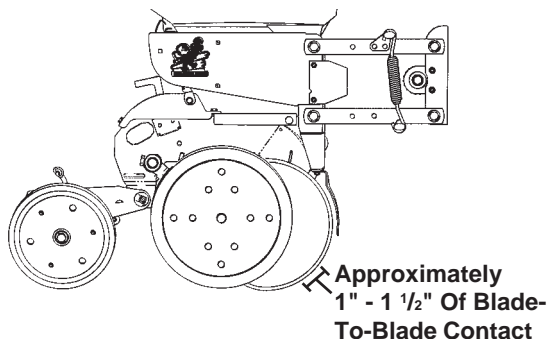
15" SEED OPENER DISC BLADE/ BEARING ASSEMBLY

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.

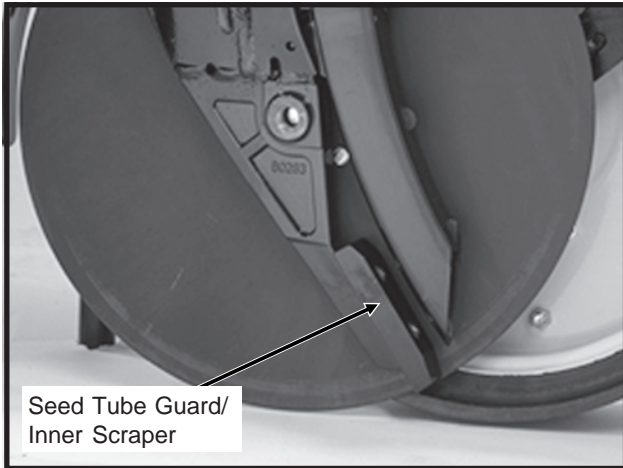
MAINTENANCE

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 $\frac{5}{8}$ " or less at the lower end. A new seed tube guard measures approximately $\frac{7}{8}$ ".

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.

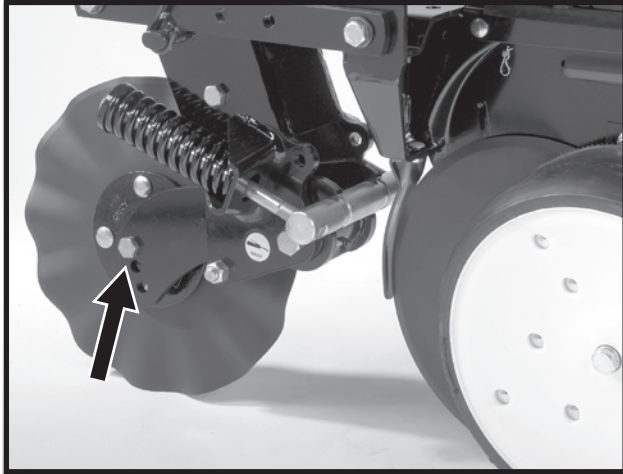
To replace the seed tube guard, remove the seed tube and the two hex socket head cap screws which attach the seed tube guard. Hold the replacement seed tube guard centered between the seed opener disc blades. Install, but **DO NOT** tighten, the hex socket head cap screws. Using a clamp or vise-grip, 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.

MAINTENANCE

FRAME MOUNTED COULTER

LF083002101



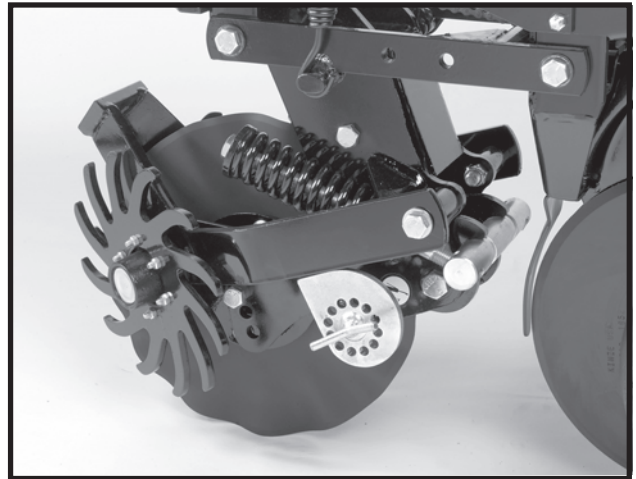
NOTE: Torque $\frac{5}{8}$ " spindle hardware to 120 ft. lbs.

See "Frame Mounted Coultter" in Row Unit Operation section of this manual for depth and spring adjustment.

When the 16" diameter coultter blade (1" fluted, 1" bubbled or $\frac{3}{4}$ " fluted) is worn to 14 $\frac{1}{2}$ " (maximum allowable wear), it should be replaced.

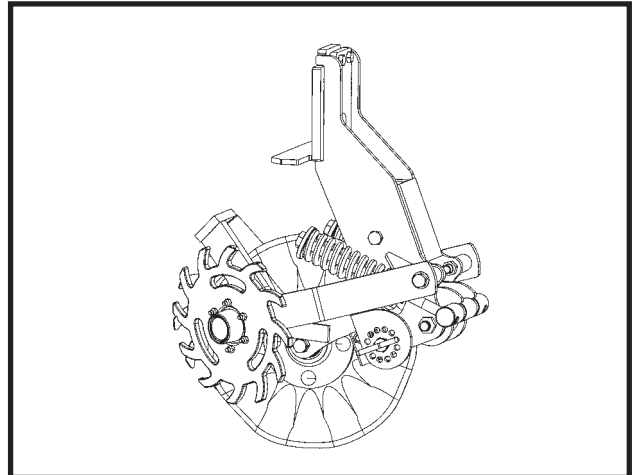
RESIDUE WHEELS (For Use With Frame Mounted Coultter)

LF083002102



STYLE A

(RU154)



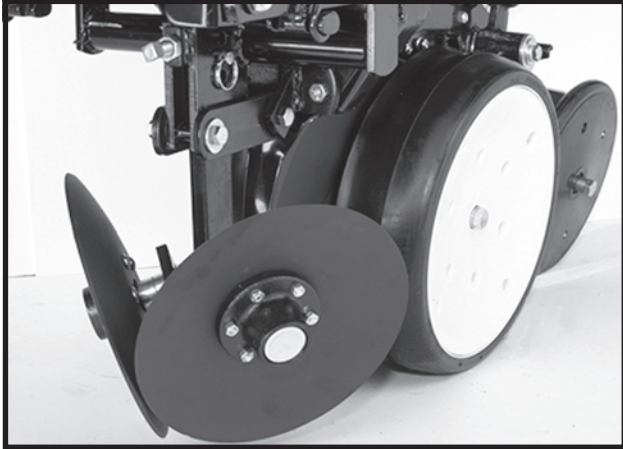
STYLE B

The wheel hub is equipped with sealed bearings. If a bearing sounds or feels rough when the wheel is rotated, replace the bearings.

MAINTENANCE

ROW UNIT MOUNTED DISC FURROWER

LF212299-22



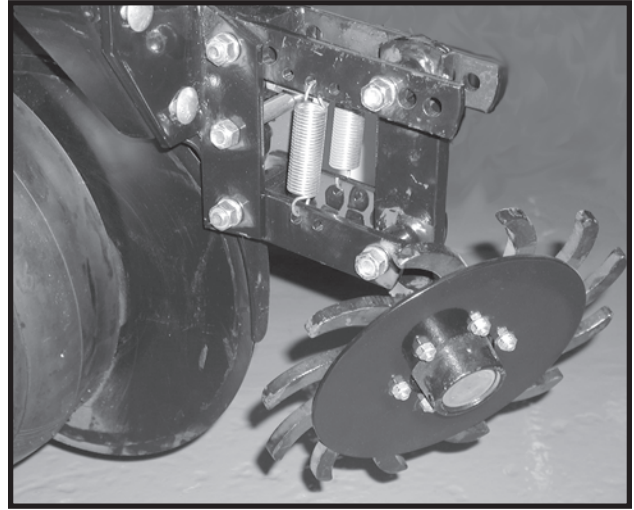
Lubricate the bushings in the support arm and mounting bracket at the frequency indicated in the Lubrication Section of this manual. Using a torque wrench, check each bolt for proper torque. If the bolt is loose, it should be removed and the bushing inspected for cracks and wear. Replace bushings as 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.

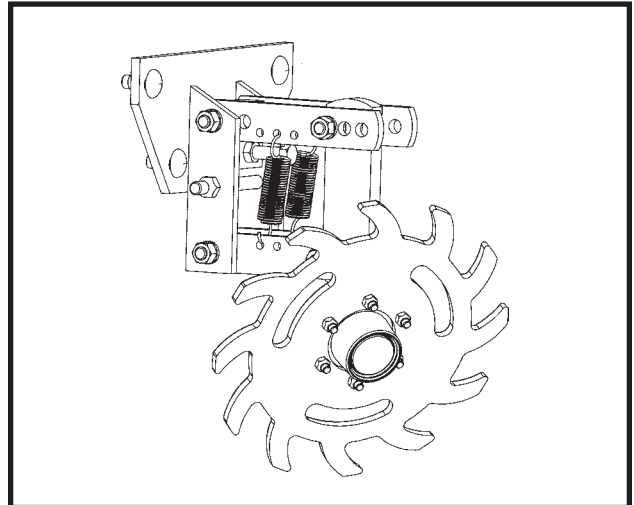
ROW UNIT MOUNTED RESIDUE WHEEL

D101701113



STYLE A

(A12685)



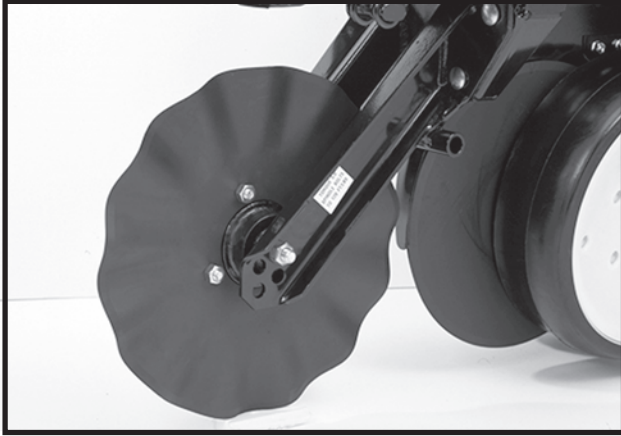
STYLE B

The wheel hub is equipped with sealed bearings. If a bearing sounds or feels rough when the wheel is rotated, replace the bearings.

MAINTENANCE

ROW UNIT MOUNTED NO TILL COULTER

LF212299-19a



STYLE A (Two Sleeves For Installing Coulters Mounted Residue Wheels)

D05170706a



STYLE B (One Sleeve For Installing Coulters Mounted Residue Wheels)

Check periodically to be sure nuts and hardware are tightened to proper torque specification.

NOTE: Torque $\frac{5}{8}$ " spindle hardware to 120 ft. lbs.

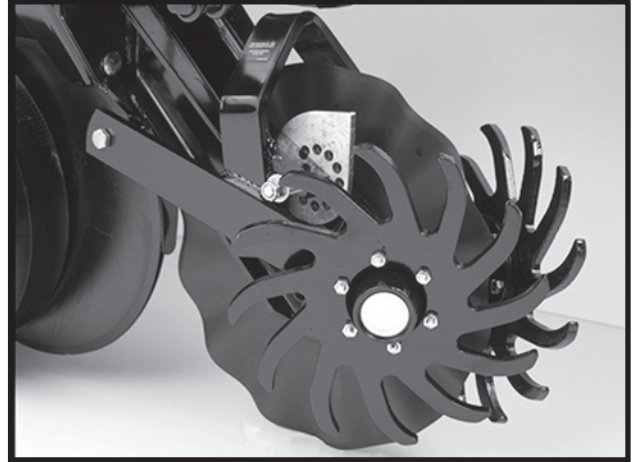
Be sure the coulters are positioned square with the row unit and aligned in front of row unit disc opener.

The coulters 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 Coulters" in Row Unit Operation section of this manual.

When the 16" diameter coulters blade is worn to 14 $\frac{1}{2}$ " (maximum allowable wear), it should be replaced.

COULTER MOUNTED RESIDUE WHEELS

LF212299-23



STYLE A - Used With Style A Row Unit Mounted No Till Coulters

D05170708a



STYLE B - Used With Style B Row Unit Mounted No Till Coulters

The wheel hubs are equipped with sealed bearings. If bearings sound or feel rough when the wheel is rotated, replace the bearings.

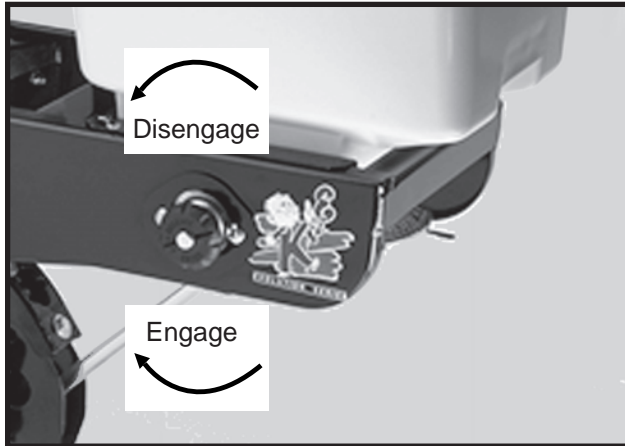
MAINTENANCE

GRANULAR CHEMICAL ATTACHMENT

Prior to storage of the planter, disengage the granular chemical drive by rotating the throwout knob $\frac{1}{4}$ 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.

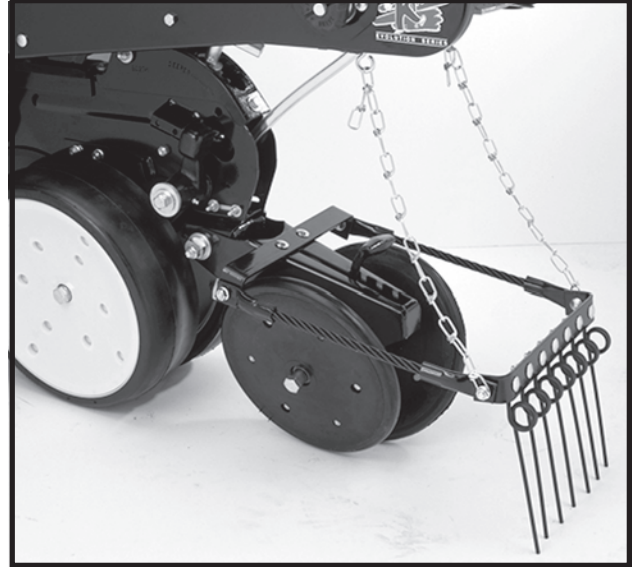
LF212299-4



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.

LF212299-26



MAINTENANCE

KPM III ELECTRONIC SEED MONITOR TROUBLESHOOTING

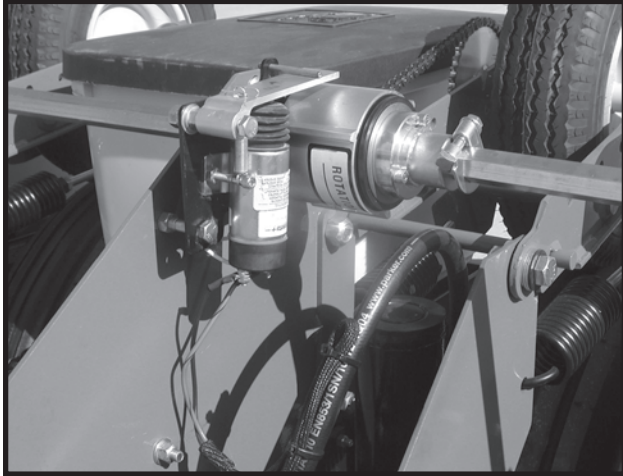
PROBLEM	POSSIBLE CAUSE	SOLUTION
Single sensor communication alarm comes on.	Faulty seed tube sensor.	Replace sensor.
	Break in the harness just before the seed tube sensor.	Inspect for break in harness and repair. If break can't be found, replace harness section.
	Dirty or corroded connector.	Clean connector.
Sensor communication alarms come on for all sensors.	Faulty monitor.	Repair/replace 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.

MAINTENANCE

POINT ROW CLUTCHES

The point row clutches are permanently lubricated and sealed and require no periodic maintenance.

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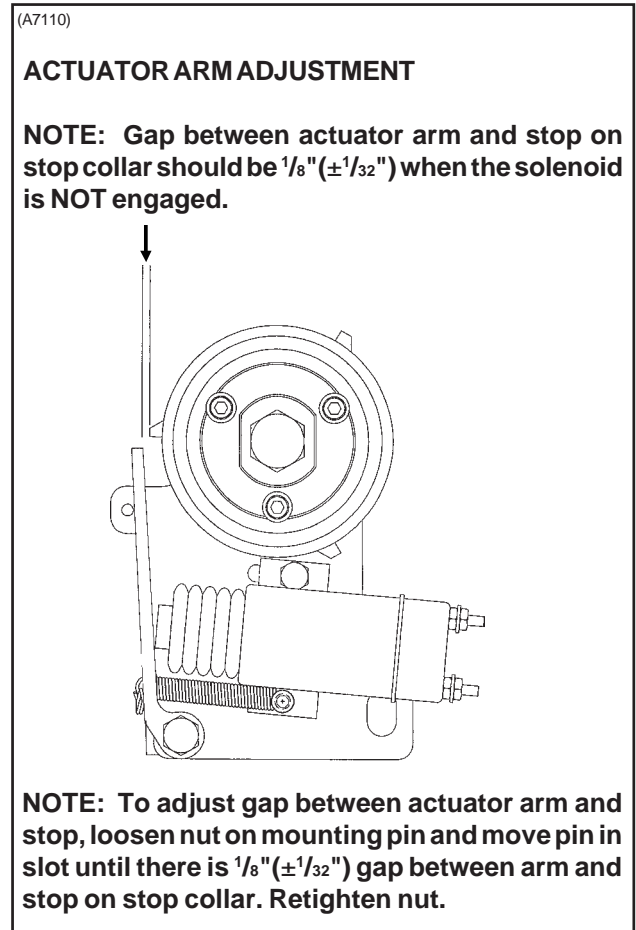
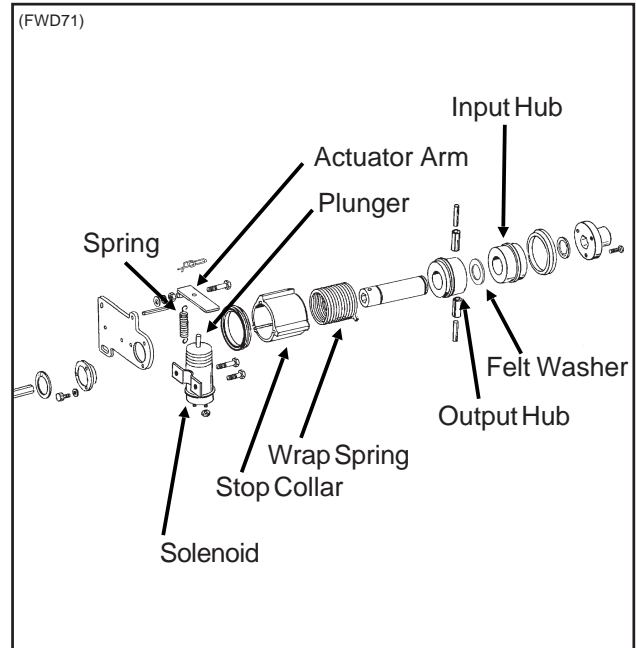


The clutches on the outer L.H. and inner R.H. sections operate clockwise and the clutches on the outer R.H. and inner L.H. sections operate counterclockwise. Therefore, some of the parts of the clutches such as the wrap springs differ from one location on the planter to another. Be sure to use the correct 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.



MAINTENANCE

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.

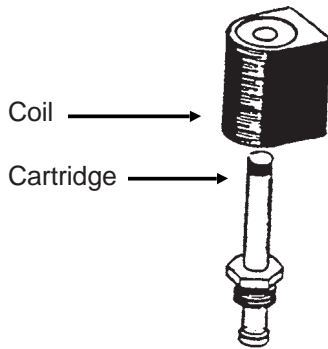
MAINTENANCE

SOLENOID VALVE

The solenoid valve consists of a chambered body containing a cartridge valve which is activated by an electrical coil.

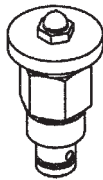
If the solenoid or solenoids fail to operate, first determine if the problem is electrical or hydraulic. If the valve is working properly, a click will be heard when the solenoid coil is energized. This will be the valve stem opening up. If no sound is heard, check the solenoid coil by touching the top 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

(FWD157)



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 (Located At Center Of Rear H-Frame - 32 Row 30" And 36 Row 30")

(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 (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.

MAINTENANCE

PRESSURE RELIEF VALVE (Located At Each Row Marker)

32 Row 30" And 36 Row 30" Only

(FWD26)

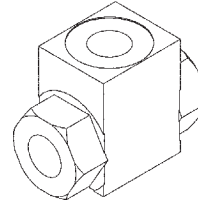


The pressure relief valve functions during the operation of the marker cylinder to equalize the hydraulic pressure applied to the row marker lift assist cylinder. The valve is factory set and should require no additional adjustments. Consult your KINZE® Dealer for service.

FLOW REGULATOR VALVE (Located At Each Row Marker)

32 Row 30" And 36 Row 30" Only

(A10645)



The flow regulator valve directs hydraulic pressure to the row marker lift assist cylinder.

MAINTENANCE

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.

MAINTENANCE

ROW MARKER CIRCUIT TROUBLESHOOTING

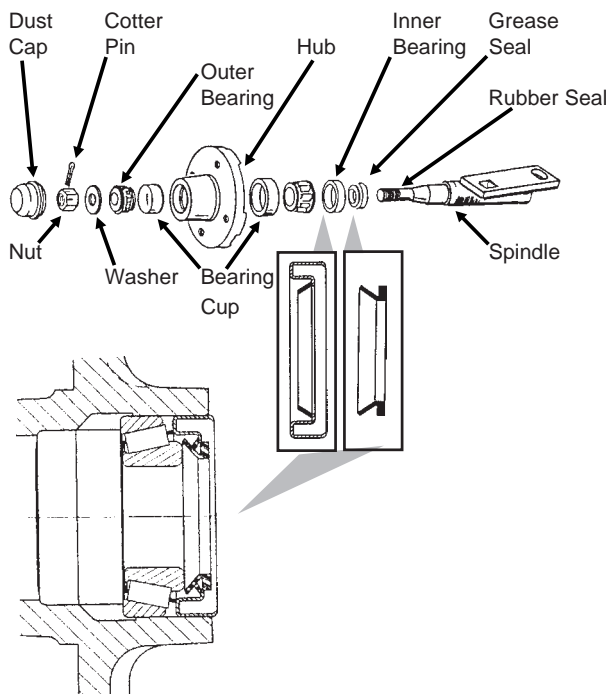
PROBLEM	POSSIBLE CAUSE	SOLUTION
Right marker lowering slower than left marker.	Solenoid valve cartridge in port V3 not opening completely.	Switch cartridge with one in port V4. If problem follows cartridge, replace cartridge.
	Hose pinched or collapsed.	Inspect hose routing. Replace or repair hoses as 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 $\frac{3}{4}$ full of wheel bearing grease and install on hub.
12. Install blade and dust cap retainer on hub and tighten evenly and securely.

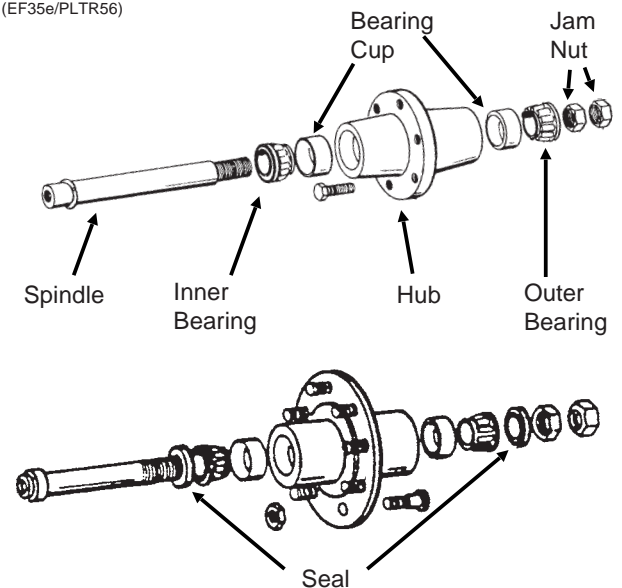
(PLTR45/PLTR99/PLTR98/PLTR102)



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 $\frac{1}{4}$ 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.

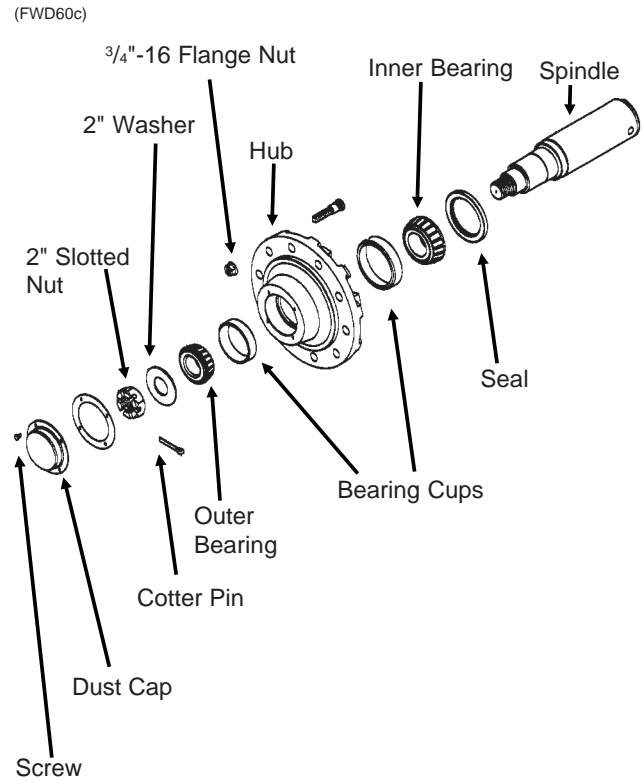
(EF35e/PLTR56)



MAINTENANCE

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.



MAINTENANCE

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.

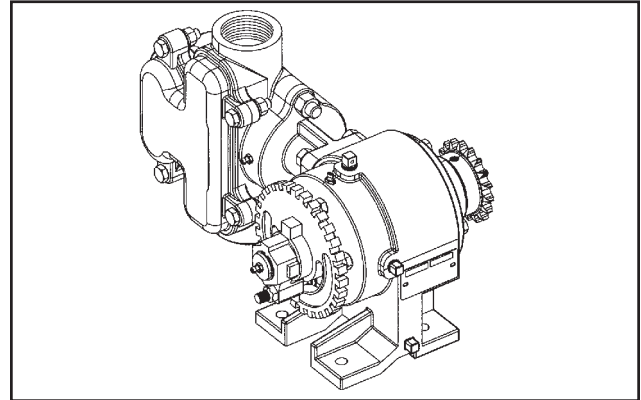
Overnight Storage

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.

(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.

MAINTENANCE

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.

Remove seed discs from seed meters, clean and store meters in a rodent-free, dry area with discs removed. Store seed discs vertically on a dowel or pipe.

Remove vacuum hose from each seed meter. Operate vacuum fans at full hydraulic flow from the tractor for two minutes to clear manifolds, hoses and fittings of dust and debris.

Clean breather on analog vacuum gauges.

Disassemble, clean and grease all U-joint slides.

Grease or paint disc openers/blades and row marker disc blades to prevent rust.

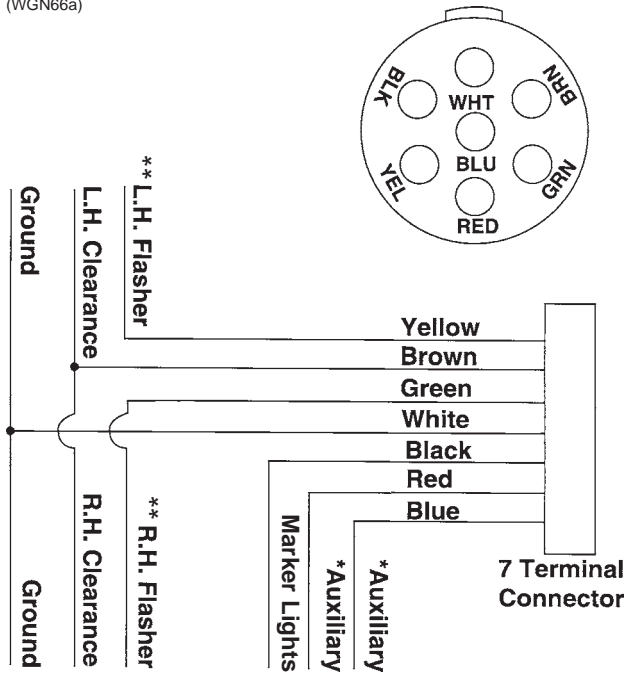
Flush liquid fertilizer metering pump with clean water. See “Piston Pump Storage”.

Disengage row unit clutch and unlatch mini-hopper on each row unit to release stress on drop hoses and hoppers during storage. (SDS Only)

MAINTENANCE

ELECTRICAL WIRING DIAGRAM FOR 7-TERMINAL LIGHT CONNECTOR

(WGN66a)



69922-35



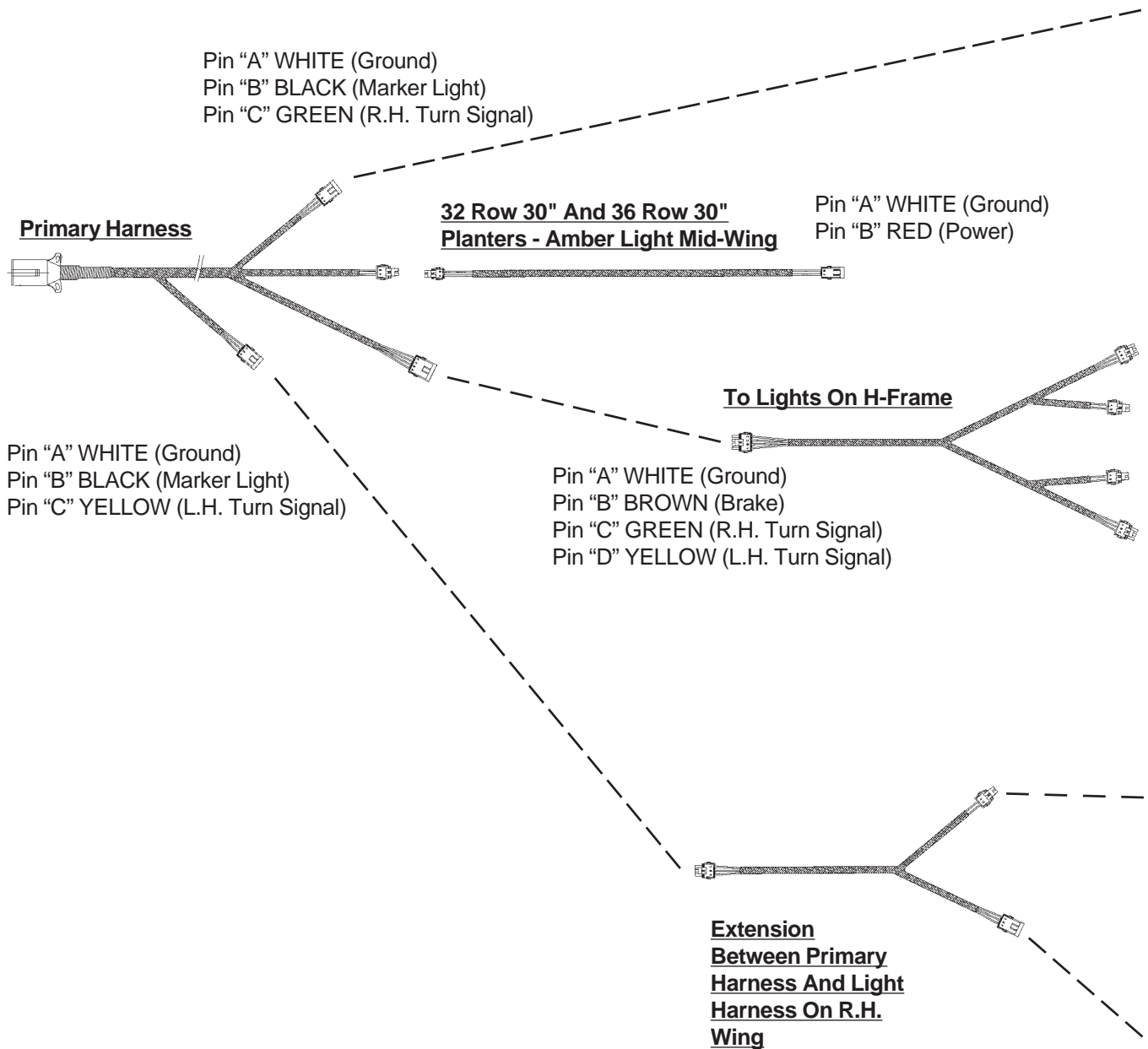
- * Optional customer-supplied auxiliary lights and wires may be wired into existing plug terminals.
- ** Rear and side flashers.

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.

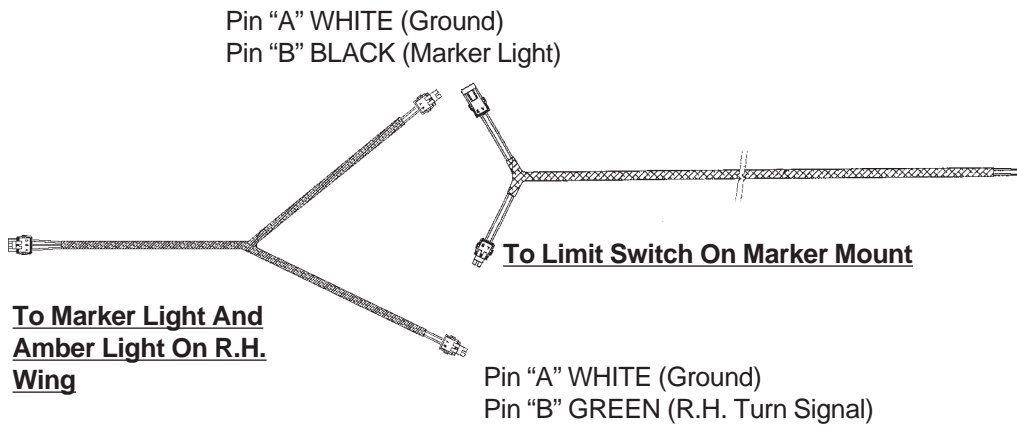
MAINTENANCE

ELECTRICAL LIGHT HARNESS SCHEMATICS

(A10315/A10316/A10317/A10318/A10319)



MAINTENANCE



Pin "A" WHITE (Ground)
Pin "B" BROWN (Brake)
Pin "C" GREEN (R.H. Turn Signal)

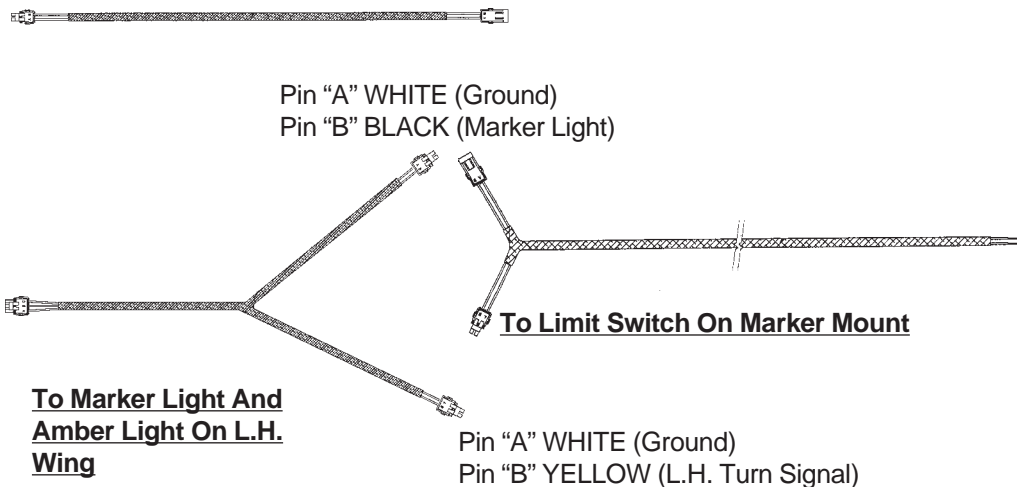
Pin "A" WHITE (Ground)
Pin "B" GREEN (R.H. Turn Signal)

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)

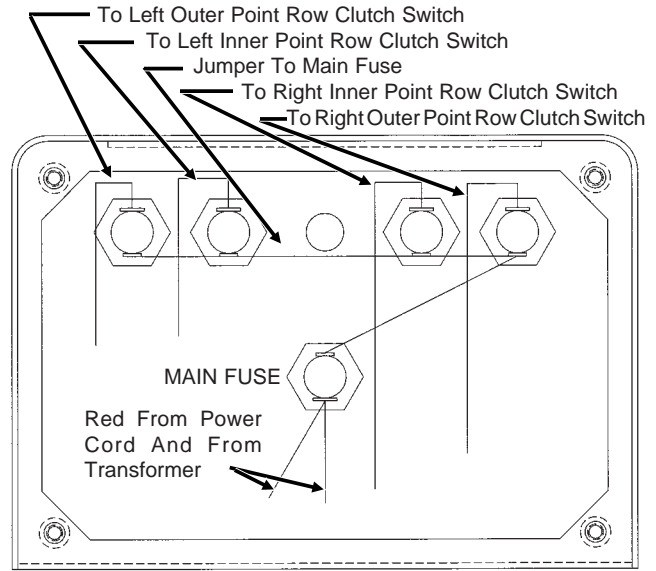
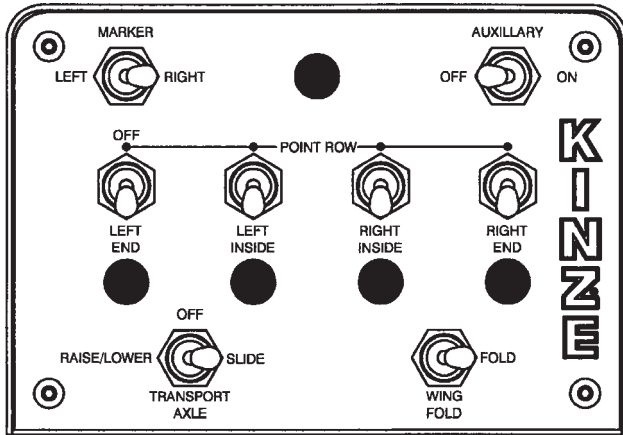


MAINTENANCE

ELECTRICAL CONTROL CONSOLE SCHEMATIC (Planter Functions)

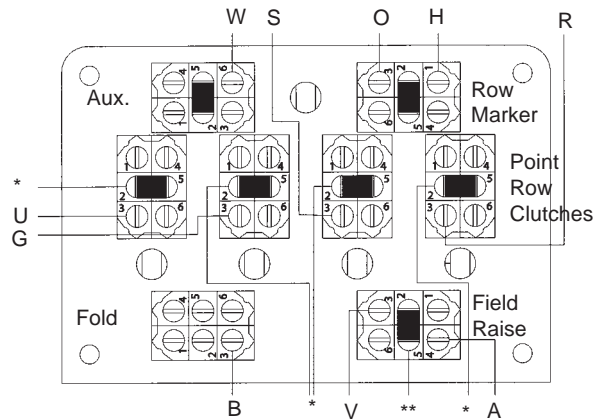
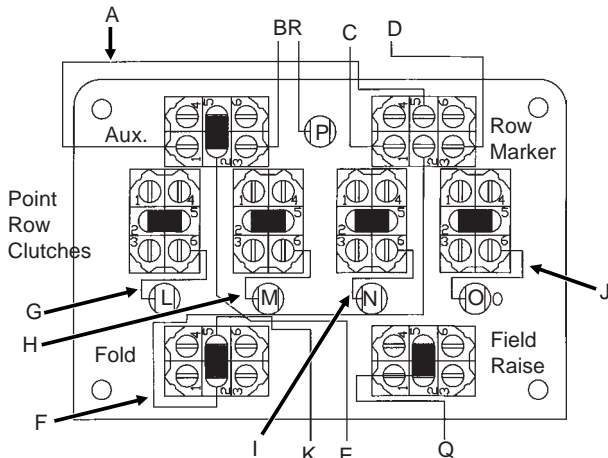
IMPORTANT: Before doing any electrical work, disconnect the control console from the tractor battery. Keep wiring harnesses away from high temperature areas or sharp edges. **DO NOT** route the wiring harnesses along battery cables. Use tie straps to keep wire harnesses away from moving parts on tractor 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



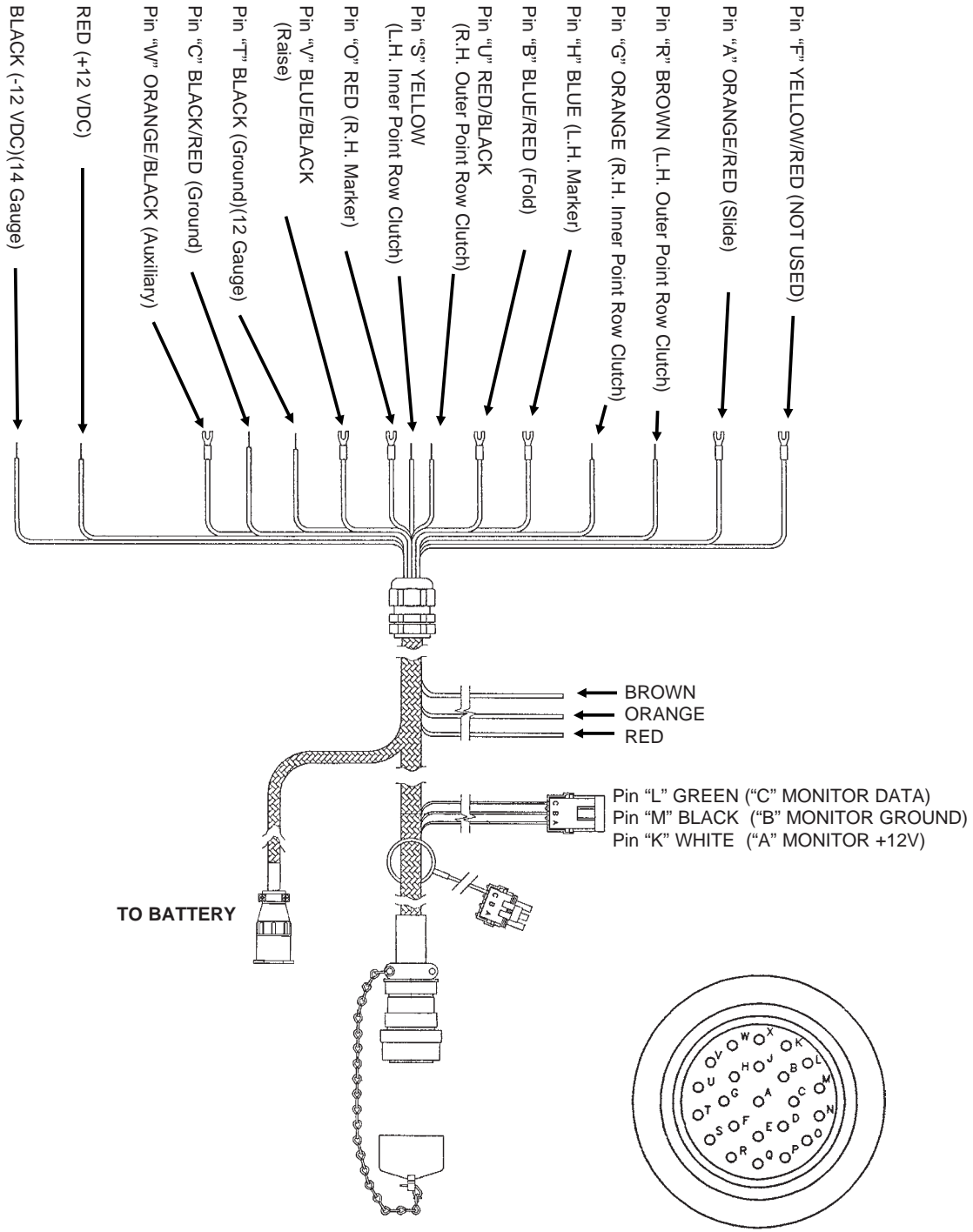
NOTE:

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 console.
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.)

MAINTENANCE

ELECTRICAL WIRING HARNESS SCHEMATIC (On Tractor)

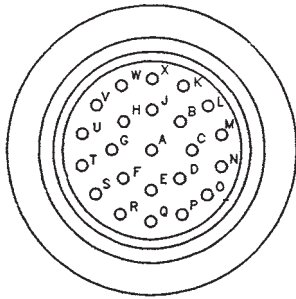
(ELC10c/ELC13)



MAINTENANCE

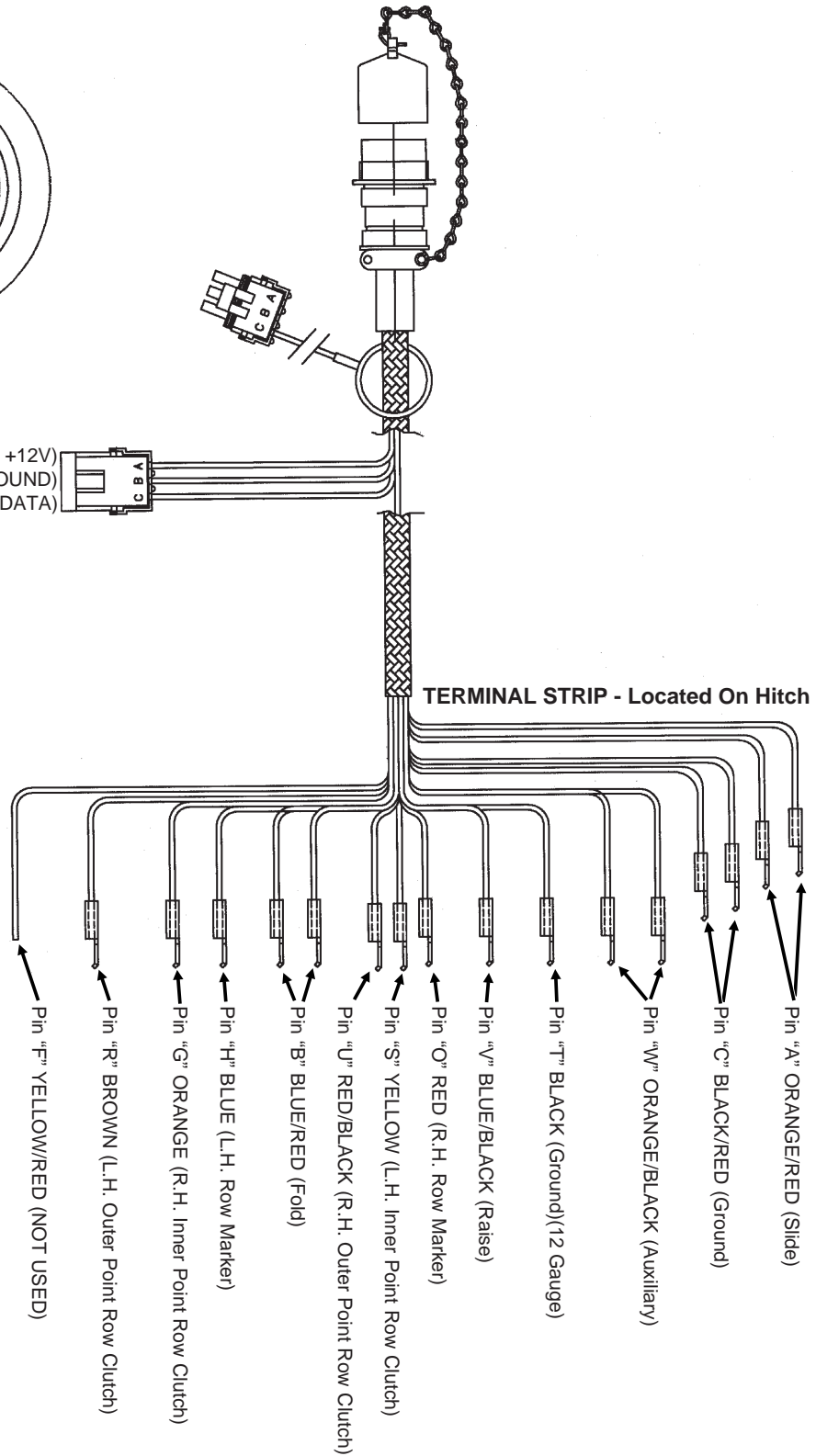
ELECTRICAL WIRING HARNESSES SCHEMATIC (On Planter)

(ELC13/A10308)



23 Pin Capacity

- Pin "K" WHITE ("A" MONITOR +12V)
- Pin "M" BLACK ("B" MONITOR GROUND)
- Pin "L" GREEN ("C" MONITOR DATA)

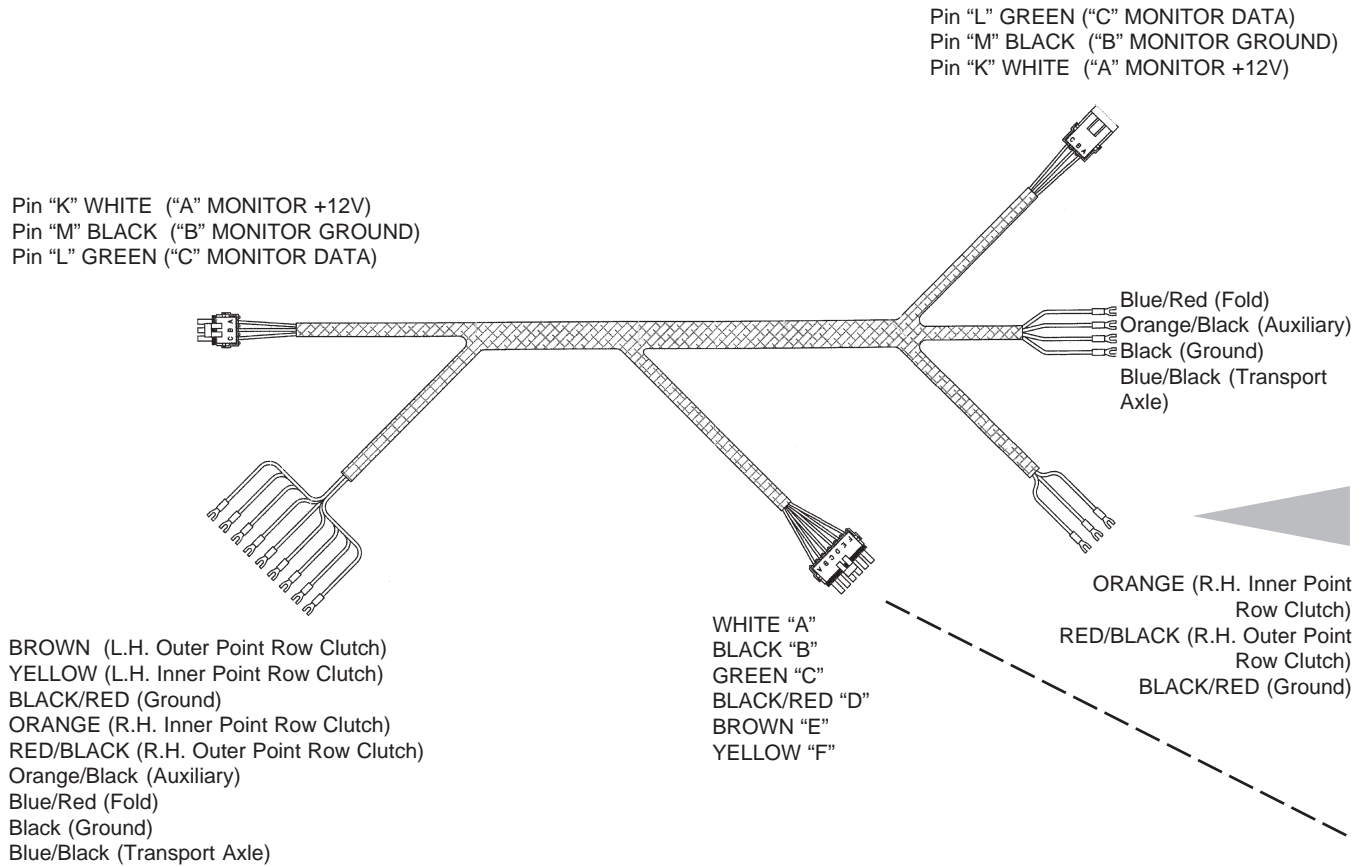


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MAINTENANCE

ELECTRICAL WIRING HARNESSES SCHEMATIC (Continued) (On Planter)

(A12652)

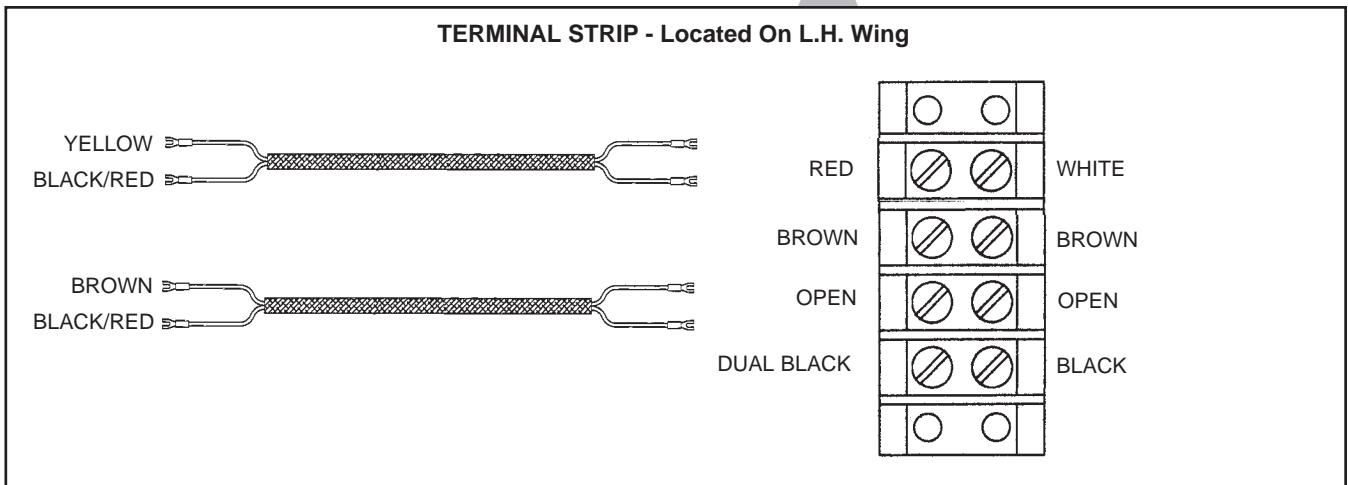
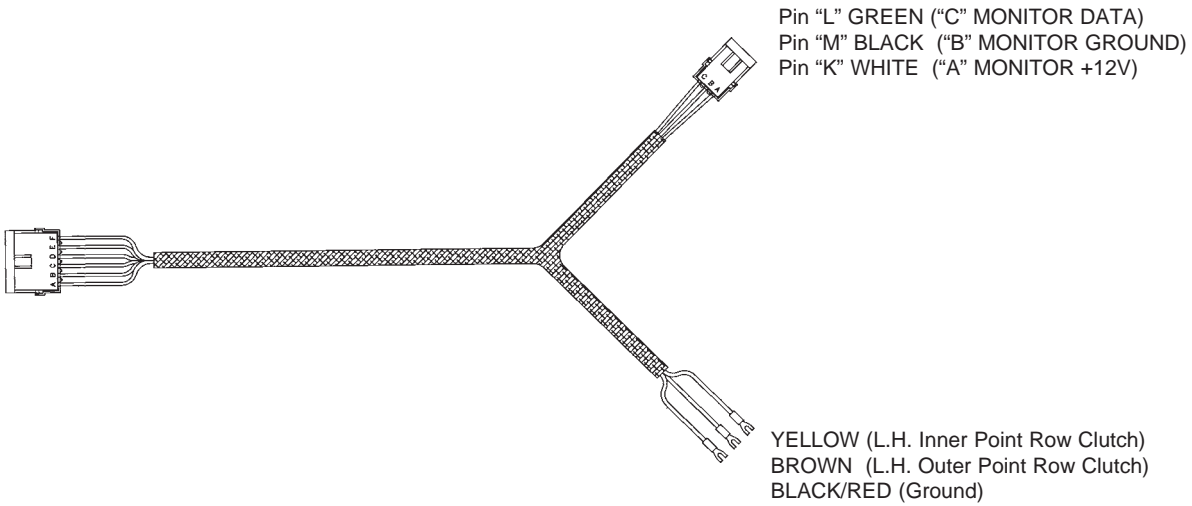
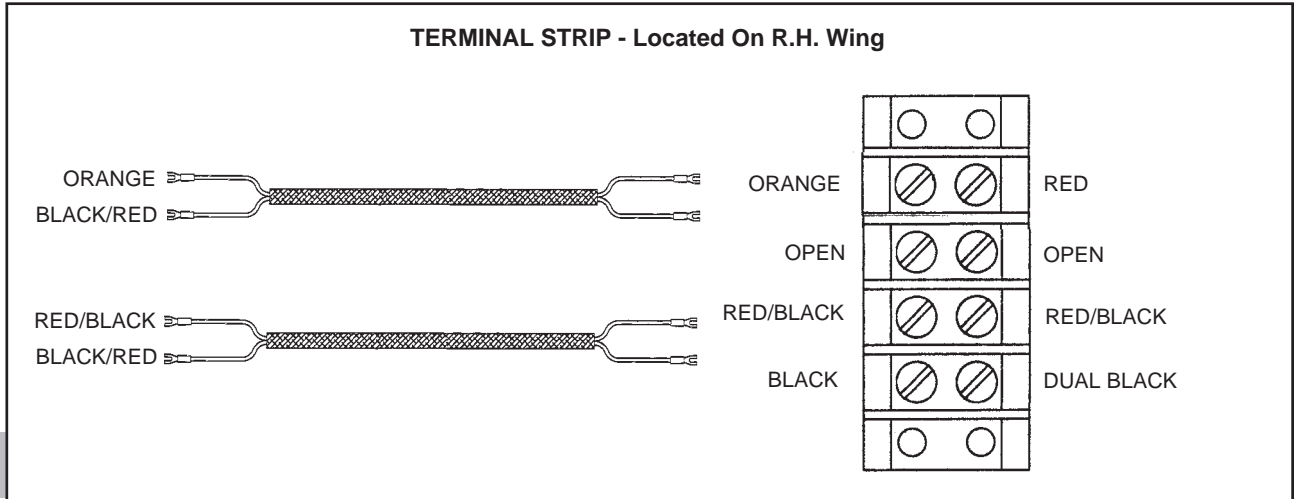


TERMINAL STRIP - Located On Hitch

MAINTENANCE

ELECTRICAL WIRING HARNESSES SCHEMATIC (Continued) (On Planter)

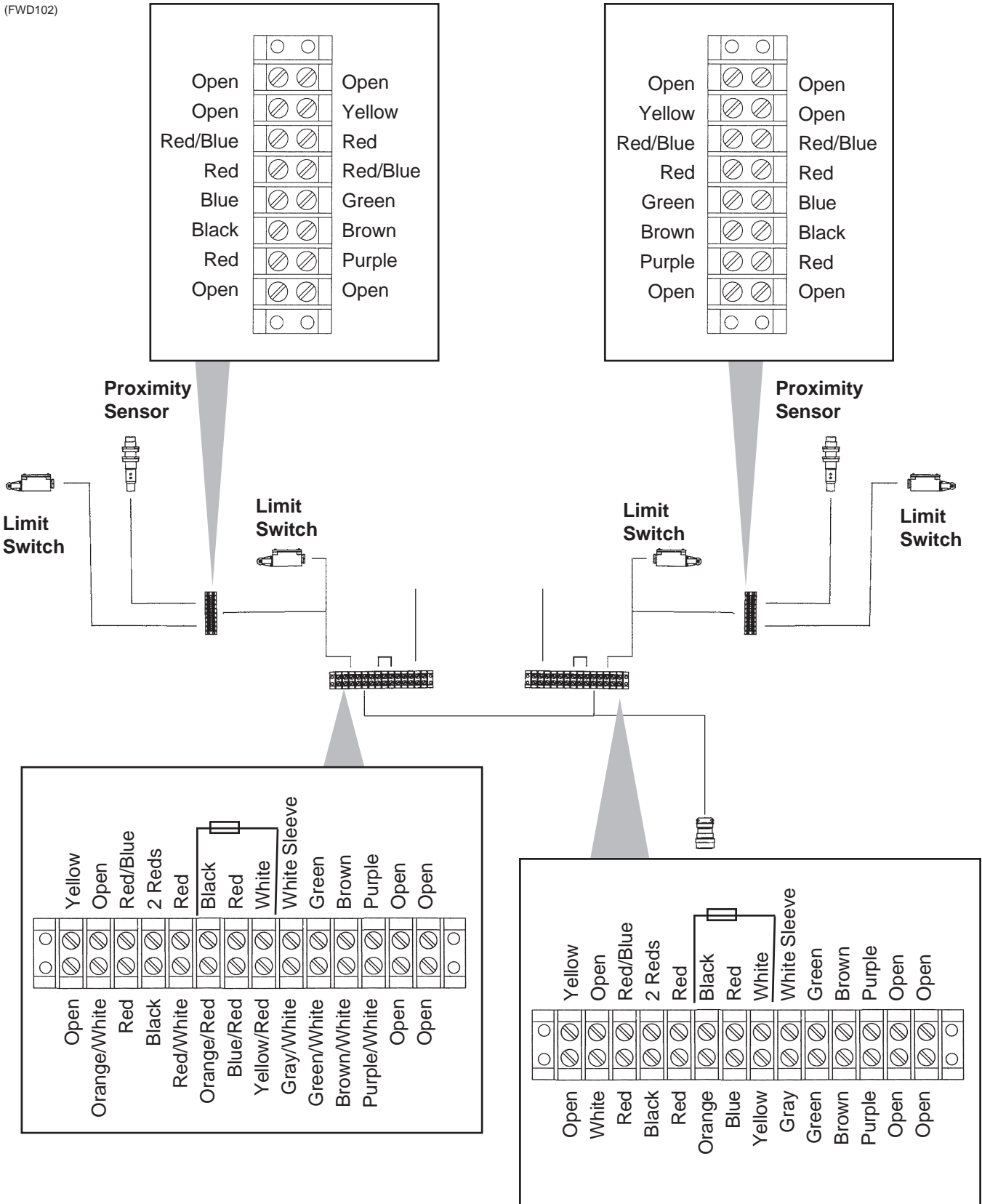
(A10311/A9510/A10310)



MAINTENANCE

ELECTRICAL WIRING SCHEMATIC (SDS)

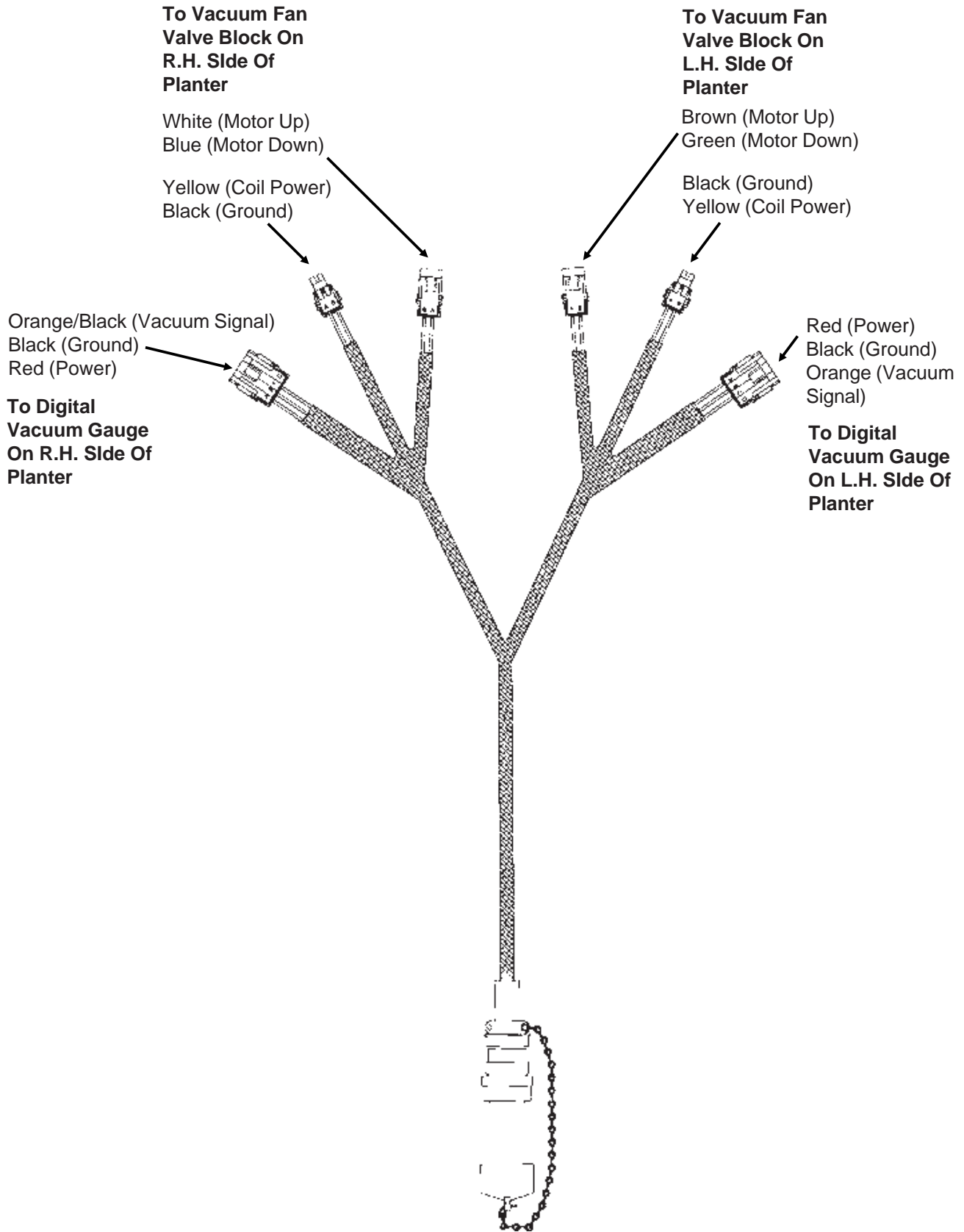
(FWD102)



MAINTENANCE

ELECTRICAL WIRING HARNESS SCHEMATIC (Vacuum Fan Gauges)

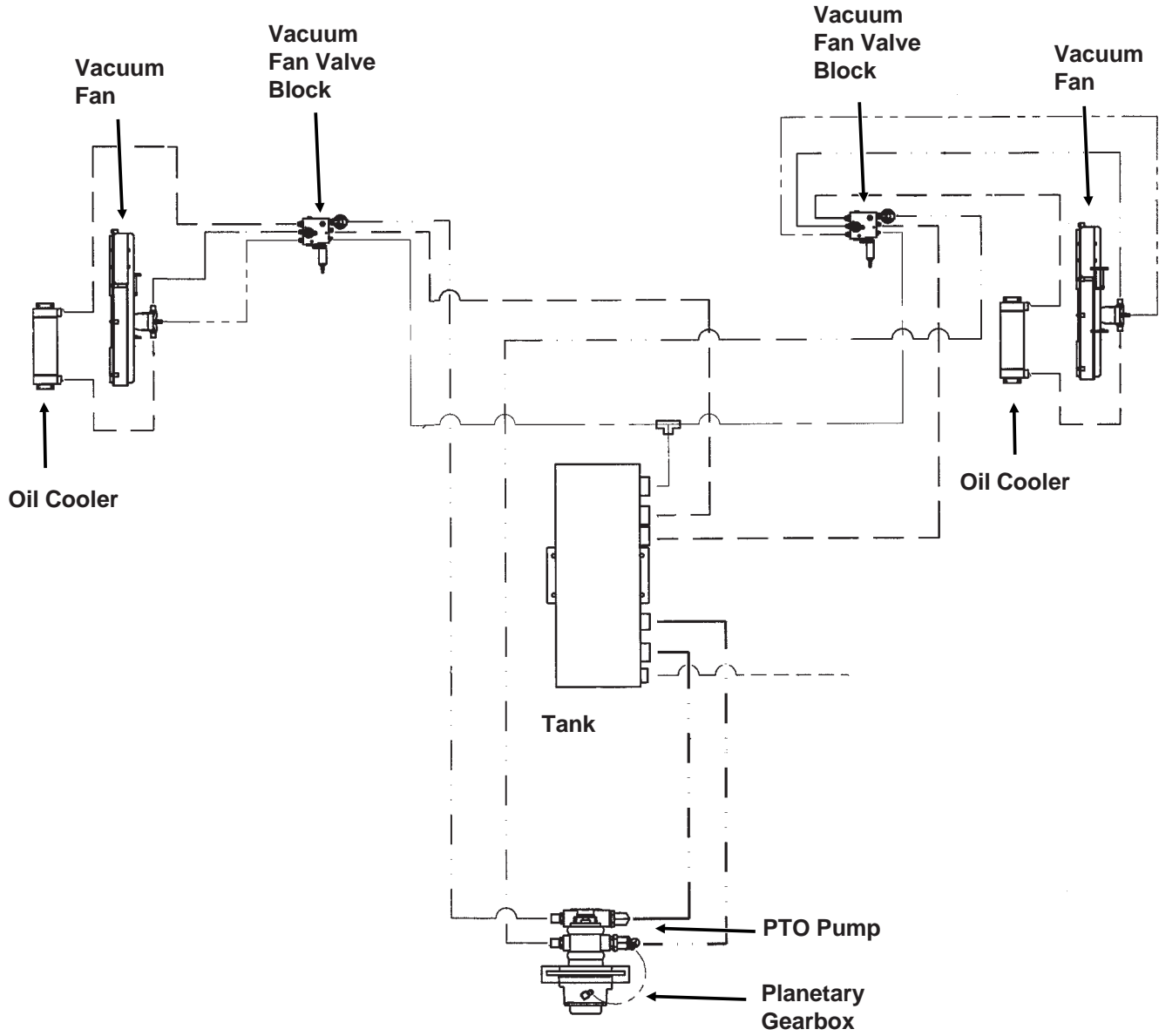
(A11689)



MAINTENANCE

HYDRAULIC SCHEMATIC (24 Row 30" Vacuum Fan System)

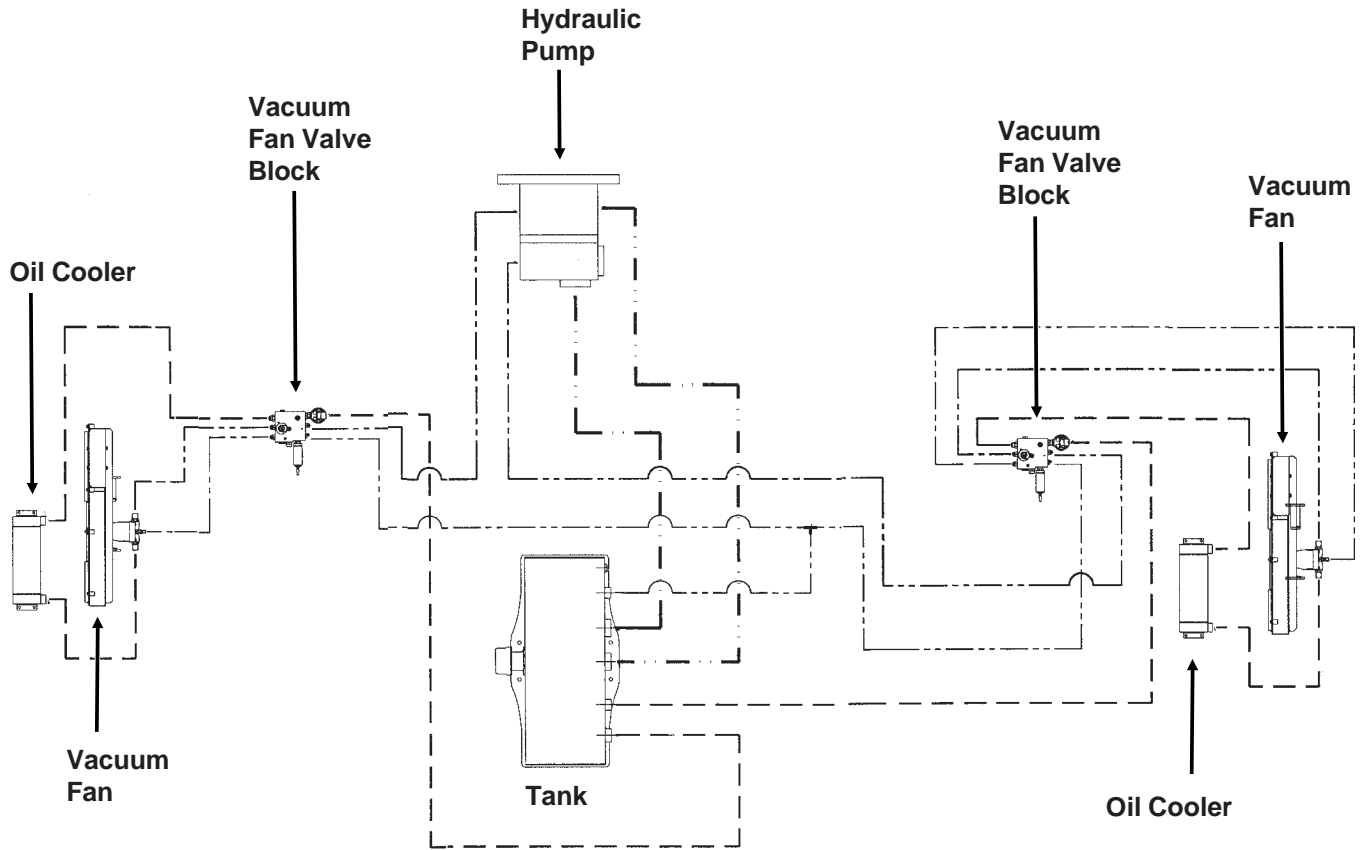
(A12484-2a)



MAINTENANCE

HYDRAULIC SCHEMATIC (32 Row 30" And 36 Row 30" Vacuum Fan System)

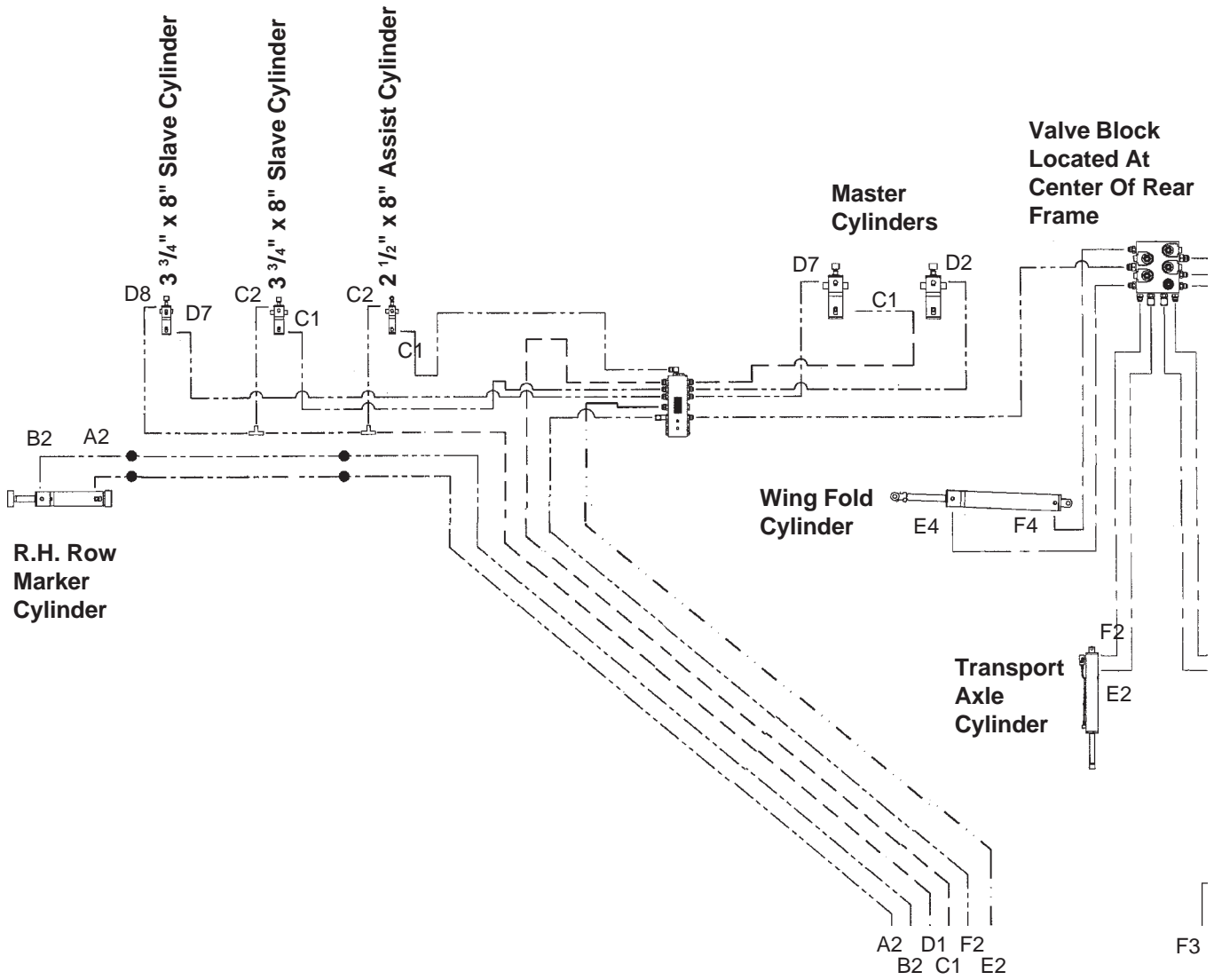
(A13054-2a)



MAINTENANCE

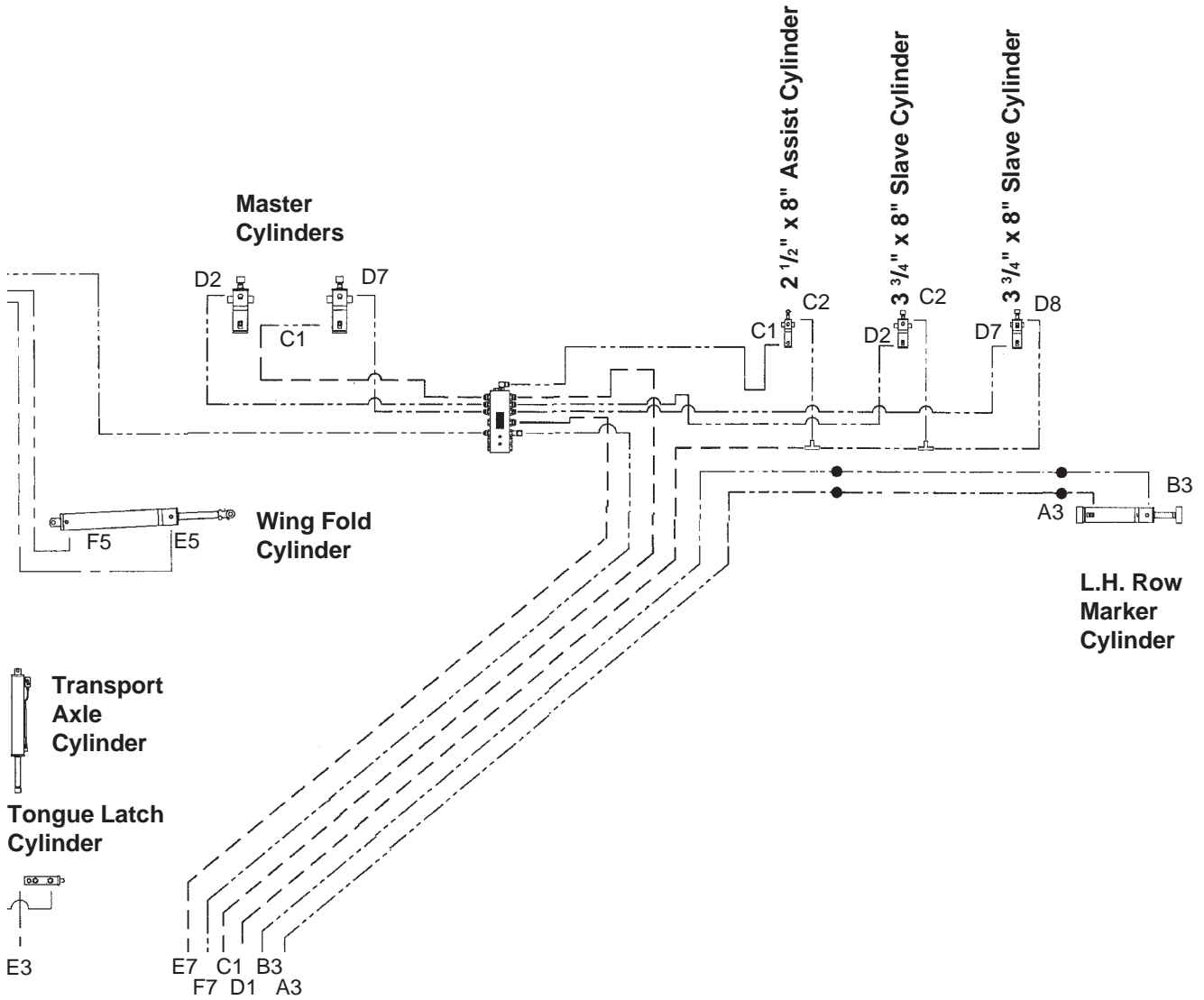
HYDRAULIC SYSTEM SCHEMATIC (24 Row 30")

(FWD154)



Valve Blocks Located At Front Of Hitch

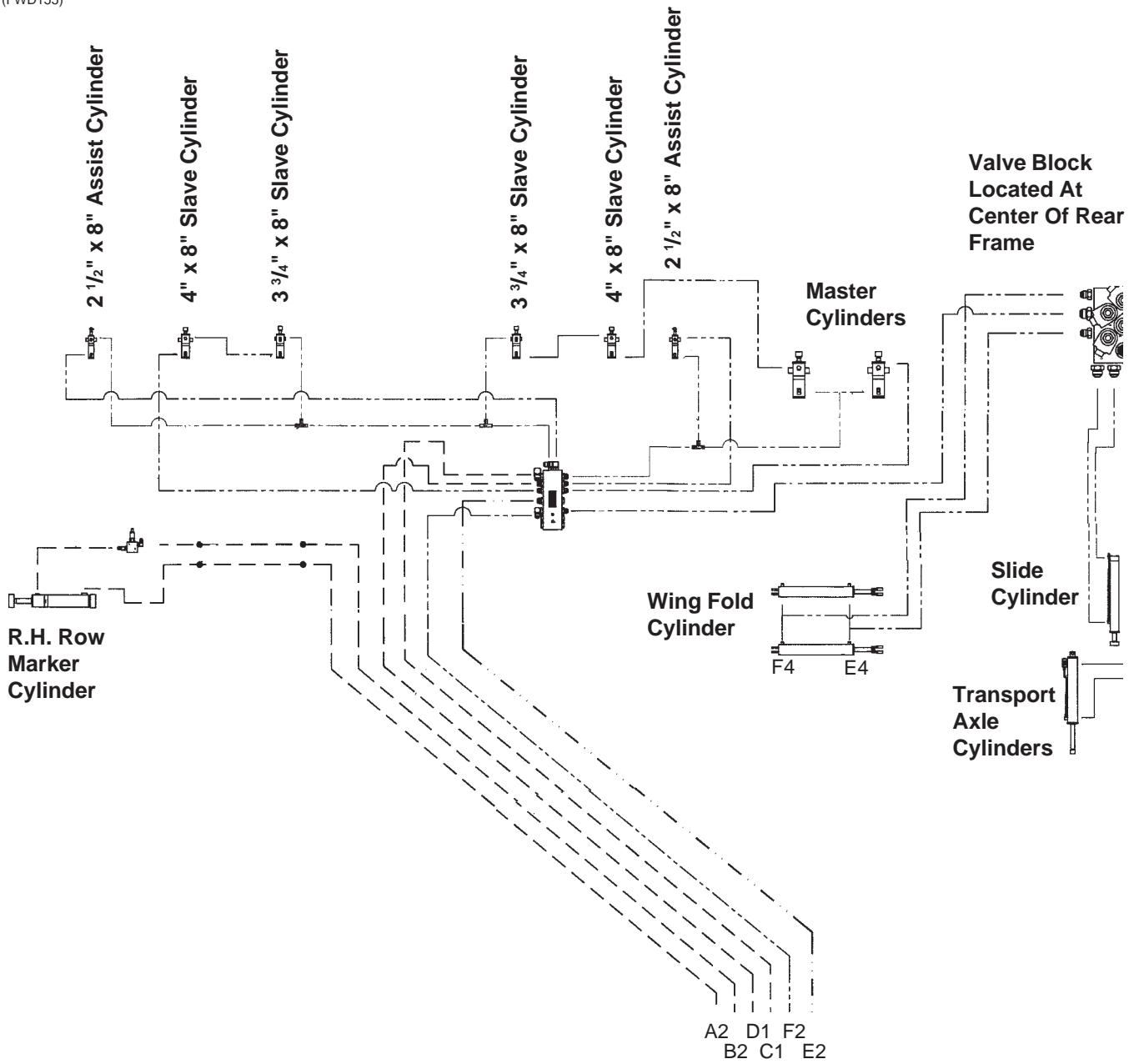
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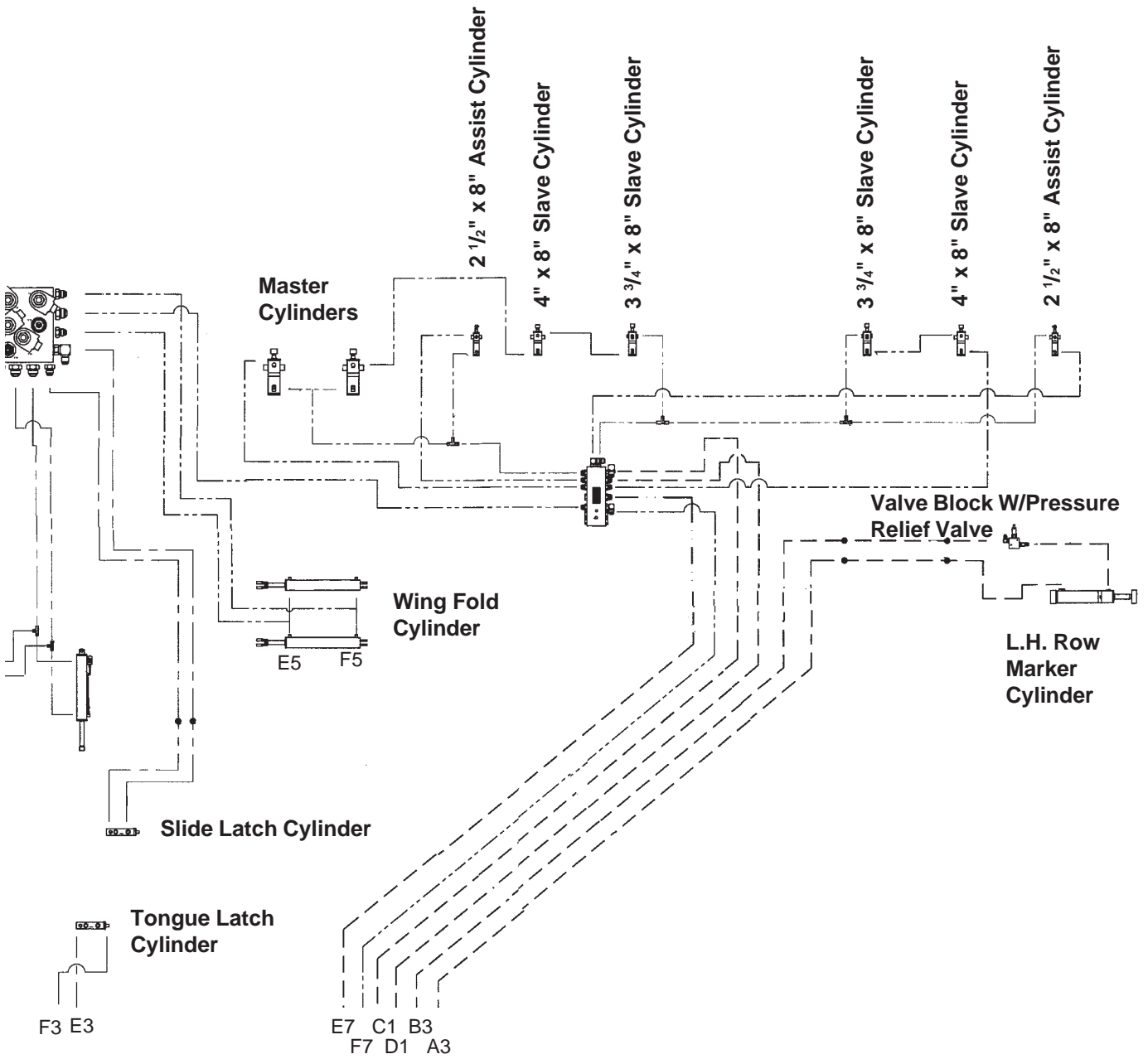
MAINTENANCE

HYDRAULIC SYSTEM SCHEMATIC (32 Row 30")

(FWD155)



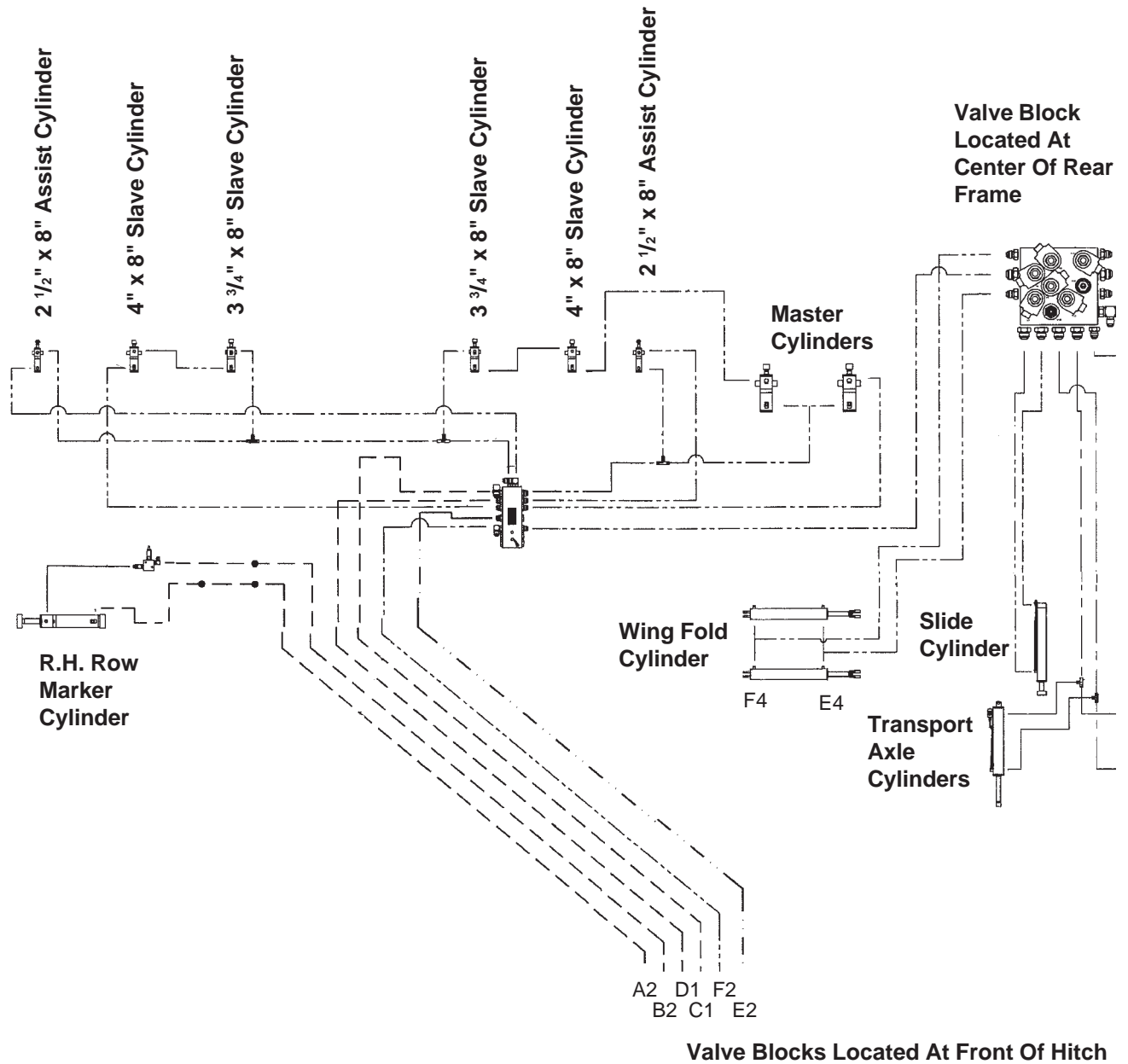
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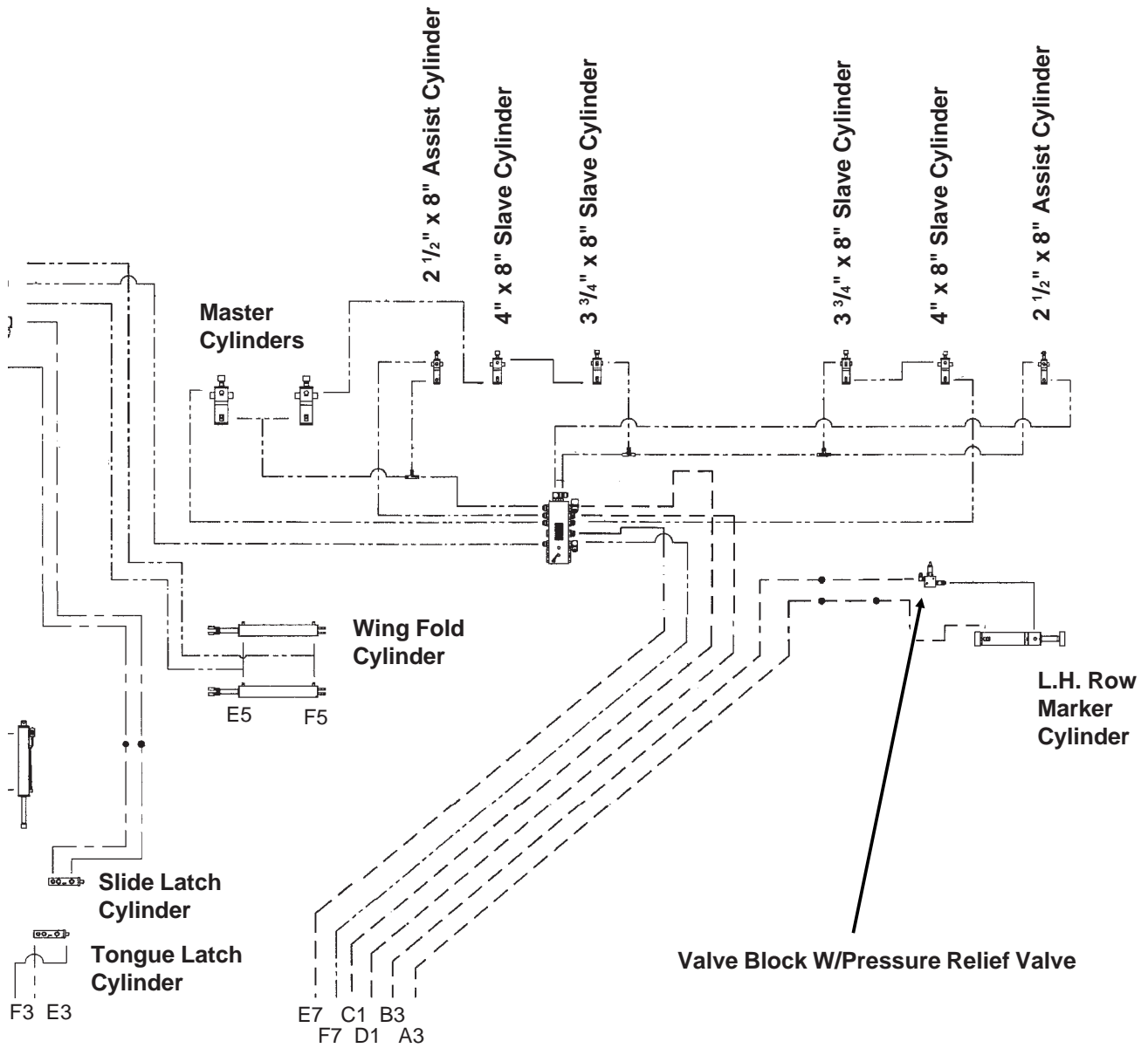
MAINTENANCE

HYDRAULIC SYSTEM SCHEMATIC (36 Row 30")

(FWD156)



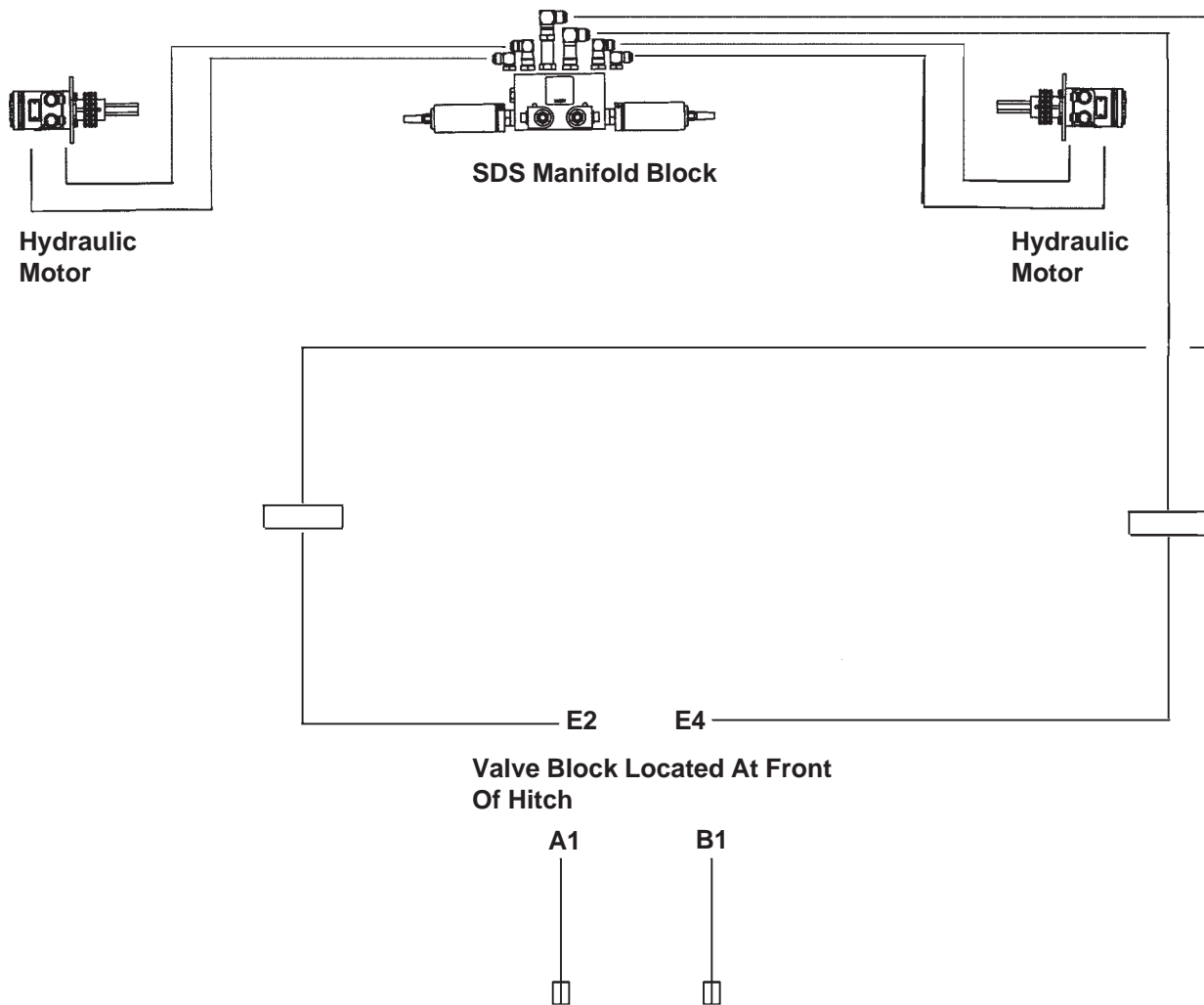
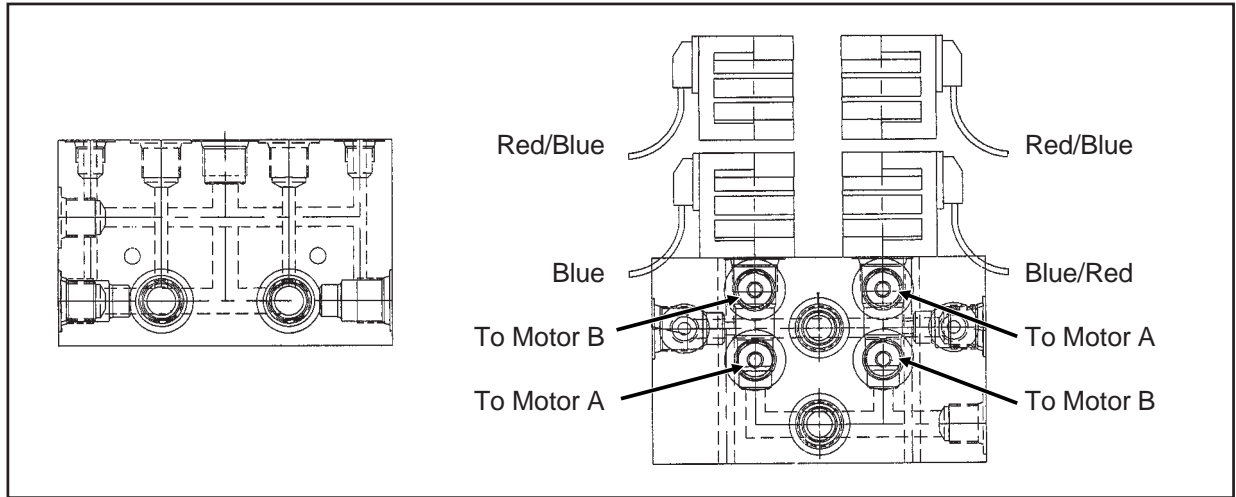
MAINTENANCE



MAINTENANCE

HYDRAULIC SCHEMATIC (SDS)

(FWD103/FWD101a)

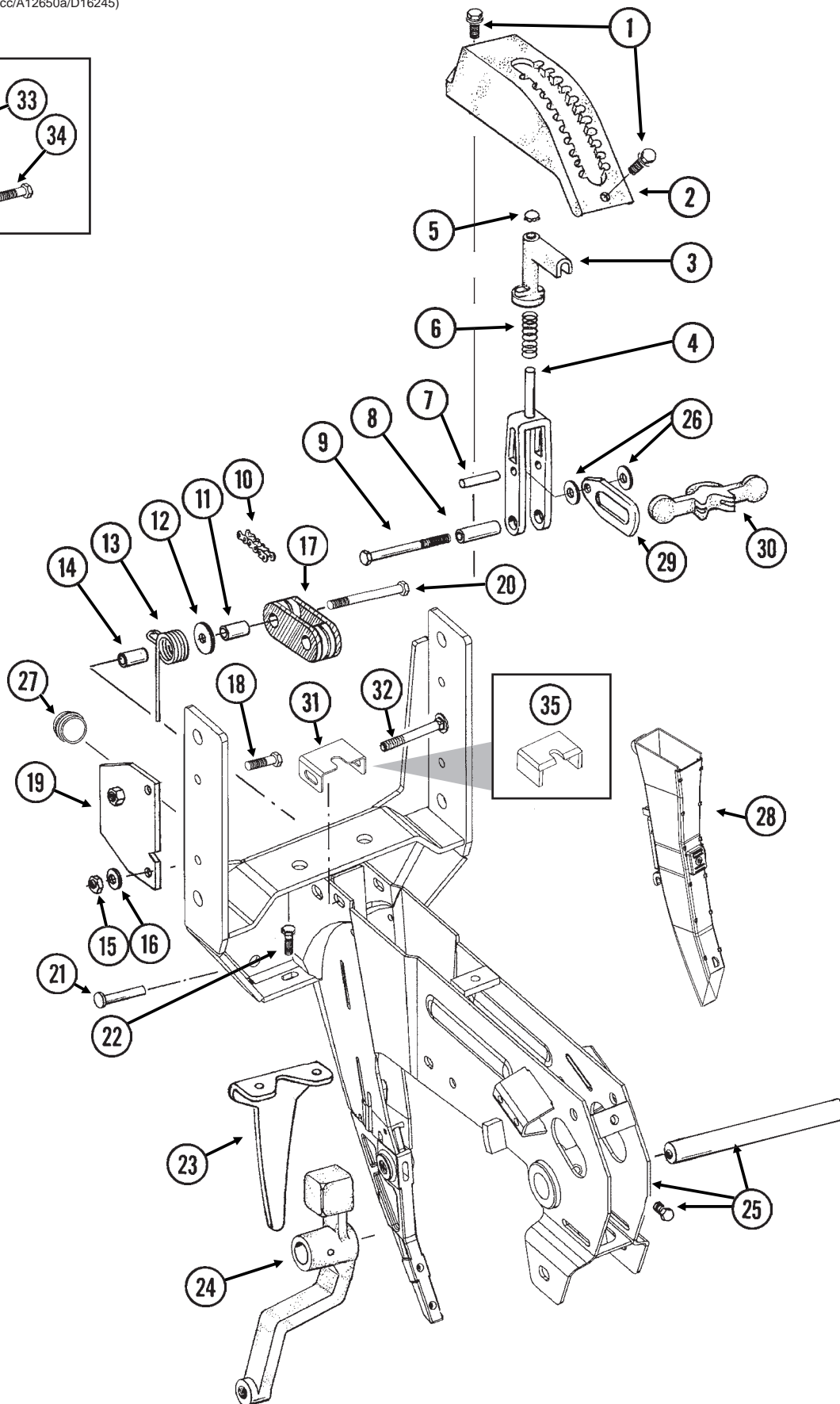
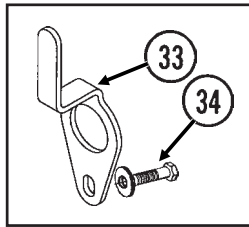


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SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

(D17014/METR29cc/A12650a/D16245)

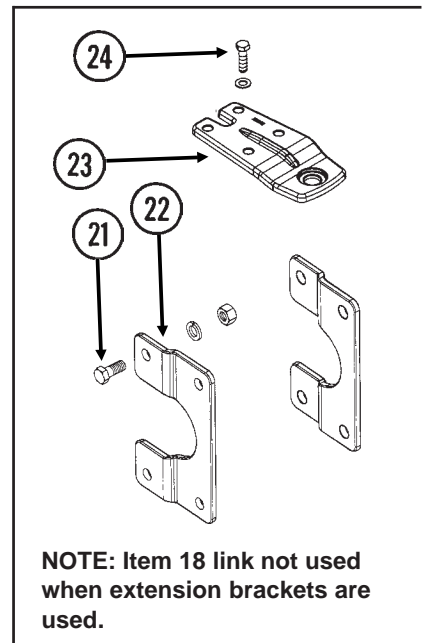
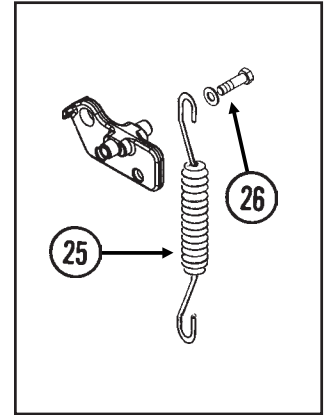
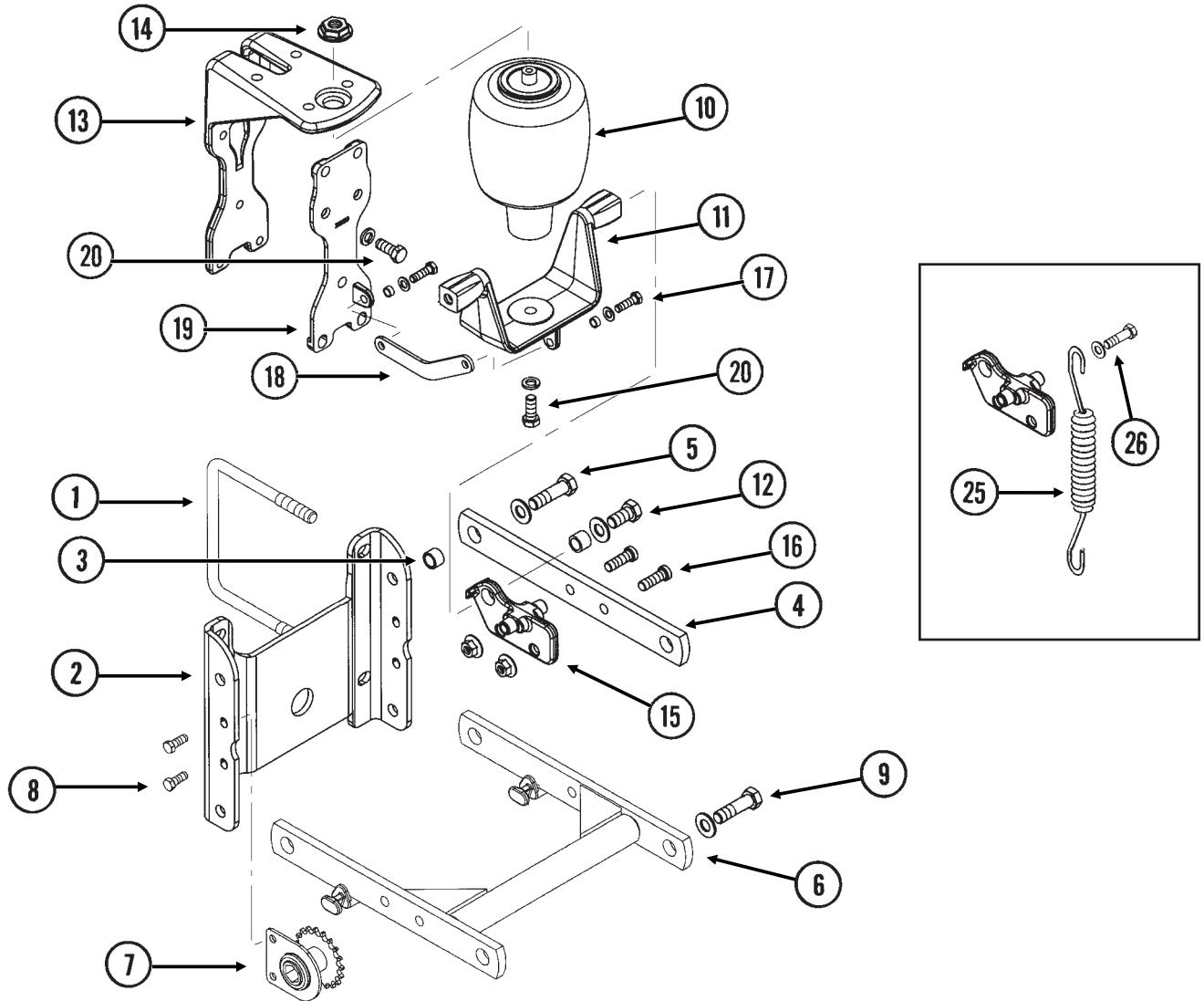


SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11015	2	Hex Washer Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{4}$ "
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, $\frac{3}{8}$ " x 1 $\frac{2}{3}$ "
8.	GD11259	1	Sleeve, $\frac{3}{8}$ " I.D. x $\frac{5}{8}$ " O.D. x 1 $\frac{25}{32}$ " Long
9.	G11008	1	Hex Head Cap Screw, $\frac{3}{8}$ "-24 x 2 $\frac{1}{2}$ ", Grade 8
	G11007	1	Lock Nut, $\frac{3}{8}$ "-24, Grade C
10.	G3303-104	1	Chain, No. 41, 104 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 $\frac{3}{16}$ " Long
12.	G10201	1	Special Washer, $\frac{3}{8}$ " x 1 $\frac{1}{2}$ " O.D.
13.	GD1065	1	Idler Spring
14.	GD7318	1	Sleeve, 1" Long
15.	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
16.	G10210	1	Washer, $\frac{3}{8}$ " USS
17.	GD11962	1	Idler
18.	G10003	3	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ "
	G10108	3	Lock Nut, $\frac{3}{8}$ "-16
19.	GD10867	2	Stop
20.	G10326	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 3 $\frac{3}{4}$ "
21.	G10551	1	Clevis Pin, $\frac{1}{4}$ " x 2 $\frac{1}{2}$ "
	G10669	1	Hair Pin Clip, No. 22
22.	G10312	2	Carriage Bolt, $\frac{5}{16}$ "-18 x $\frac{3}{4}$ "
	G10620	2	Serrated Flange Nut, $\frac{5}{16}$ "-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, $\frac{1}{2}$ "-13 x $\frac{3}{4}$ "
26.	G10207	2	Washer, $\frac{7}{8}$ " O.D. x $\frac{13}{32}$ " I.D. x .134" (If Applicable)
27.	GD11845	1	Dust Cap
28.			See "KPM III Electronic Seed Monitor" And "Planter Monitor Module (PMM)", Pages P160-P163
29.	GB0285	1	Collar, Depth Adjustment
30.	GB0265	1	Pivot Link, Depth Adjustment
31.	GD15970	1	Sun Shade
32.	G10304	1	Carriage Bolt, $\frac{3}{8}$ "-16 x 3"
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
33.	GD17014	1	Hose Guide
34.	G10047	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{3}{4}$ "
	G10203	2-3	Washer, $\frac{3}{8}$ " SAE
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
35.	GD16245	-	Sun Shade (Rubber)

PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

(RU157a/RU159/RU157aa)

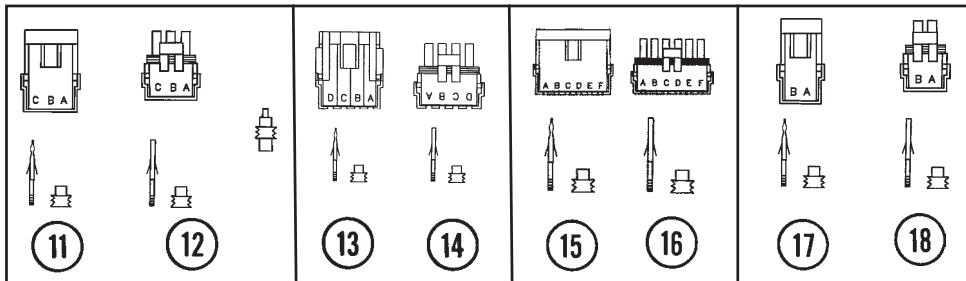
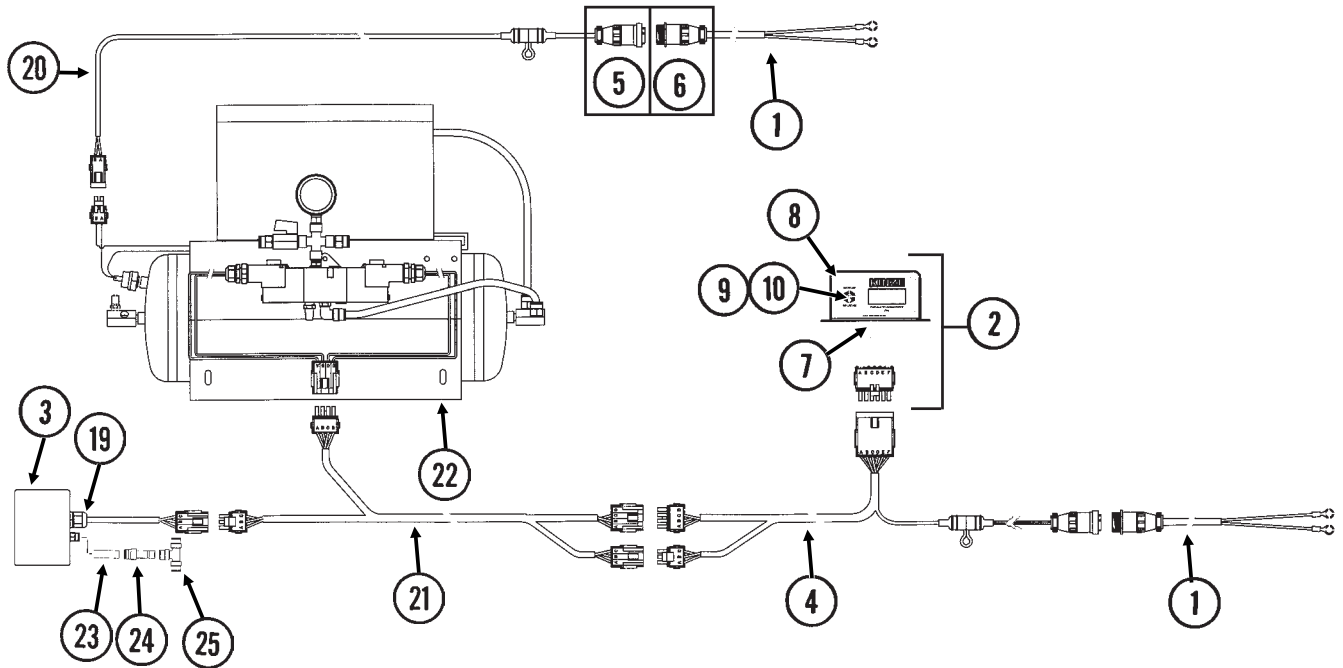


PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

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, 2 1/32" 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 2 1/32"
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/MTR27f)

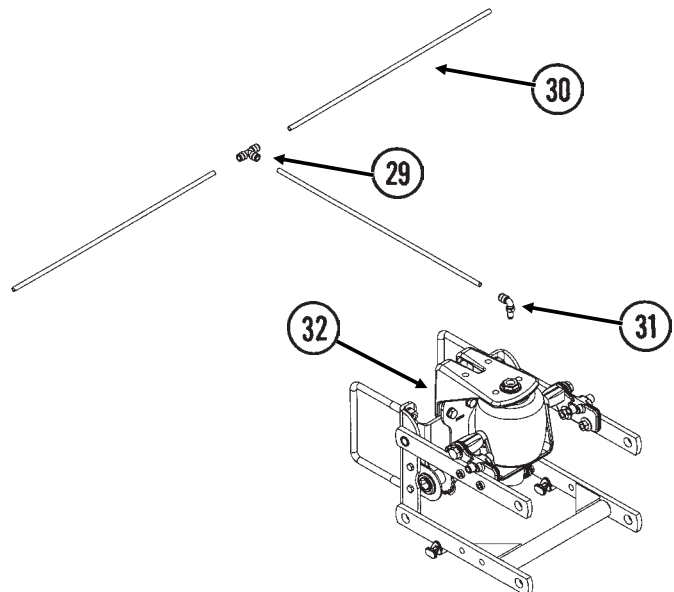
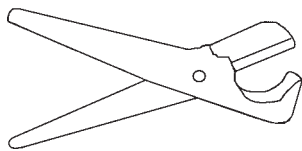
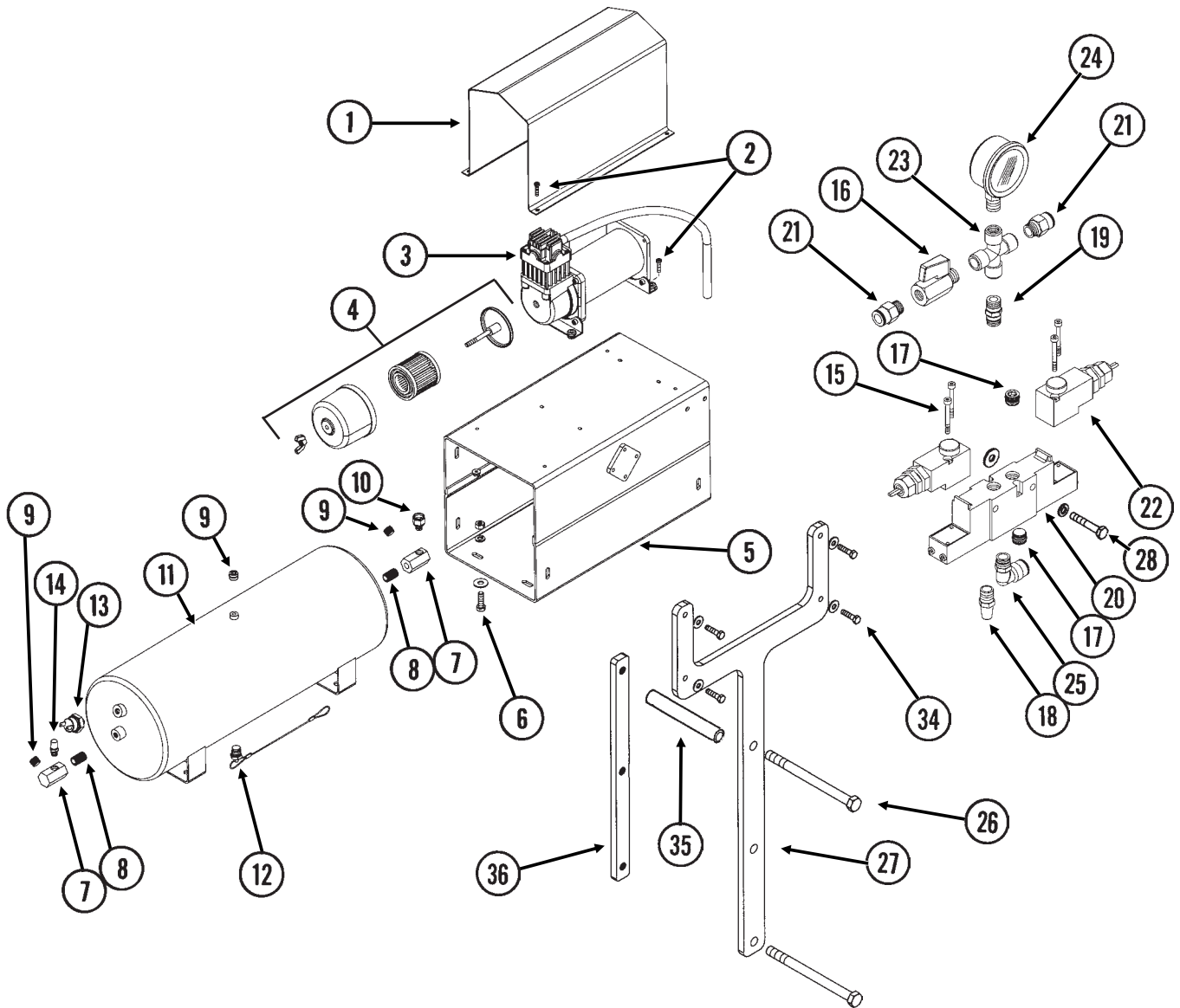


PNEUMATIC DOWN PRESSURE CONTROL CONSOLE, SENDING UNIT AND HARNESSSES

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, Momentary On-Off-Momentary 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)

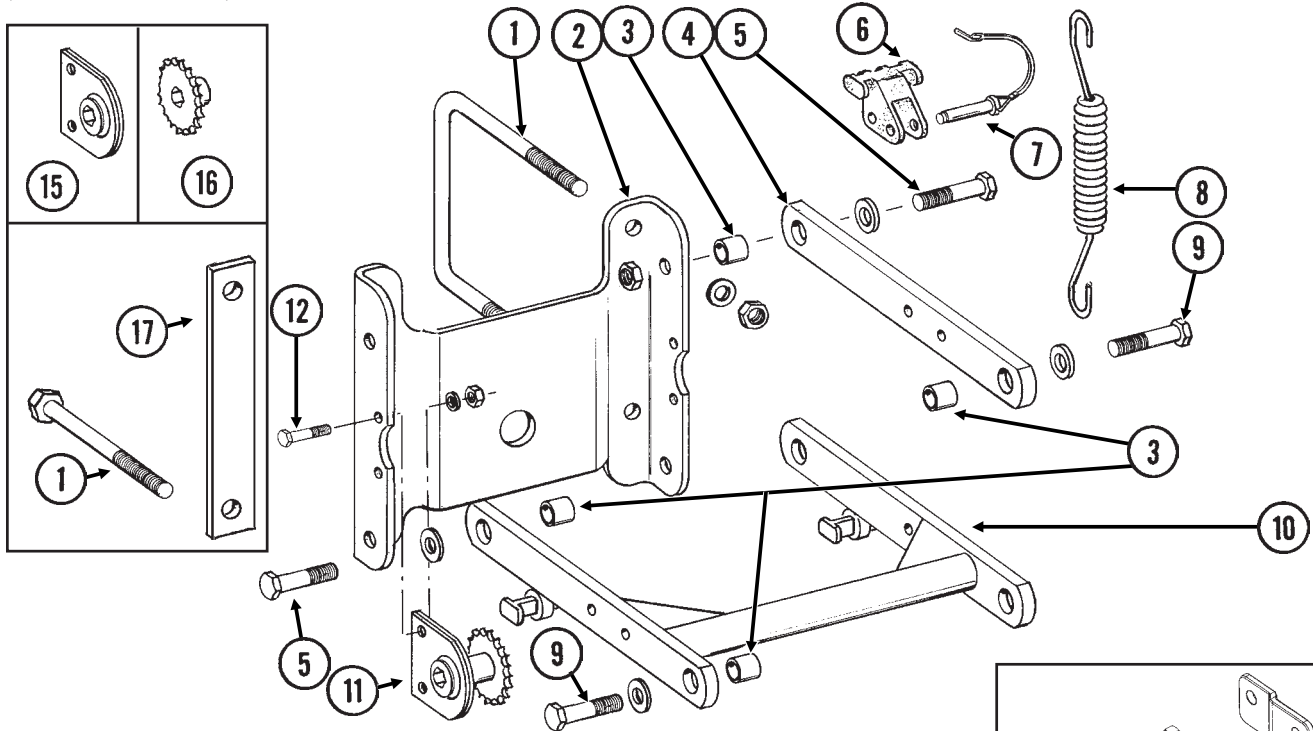


PNEUMATIC DOWN PRESSURE AIR COMPRESSOR, DUAL SOLENOID ASSEMBLY, TUBING AND FITTINGS

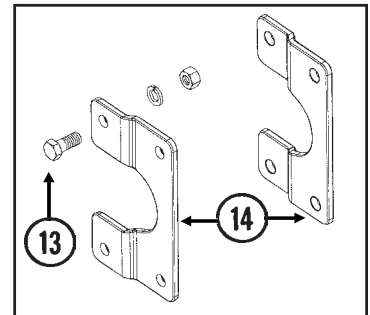
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18112	1	Cover
2.	G11066	8	Phillips Pan Head Machine Screw, No. 10-24 x 3/4", Stainless Steel
	G10992	8	Serrated Flange Nut, No. 10-24
3.	GA12102	1	Air Compressor
4.	GA12404	1	Filter Assembly
	GR1809	-	Filter
5.	GA12358	1	Mount
6.	G10019	8	Hex Head Cap Screw, 5/16"-18 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 Compressor 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)

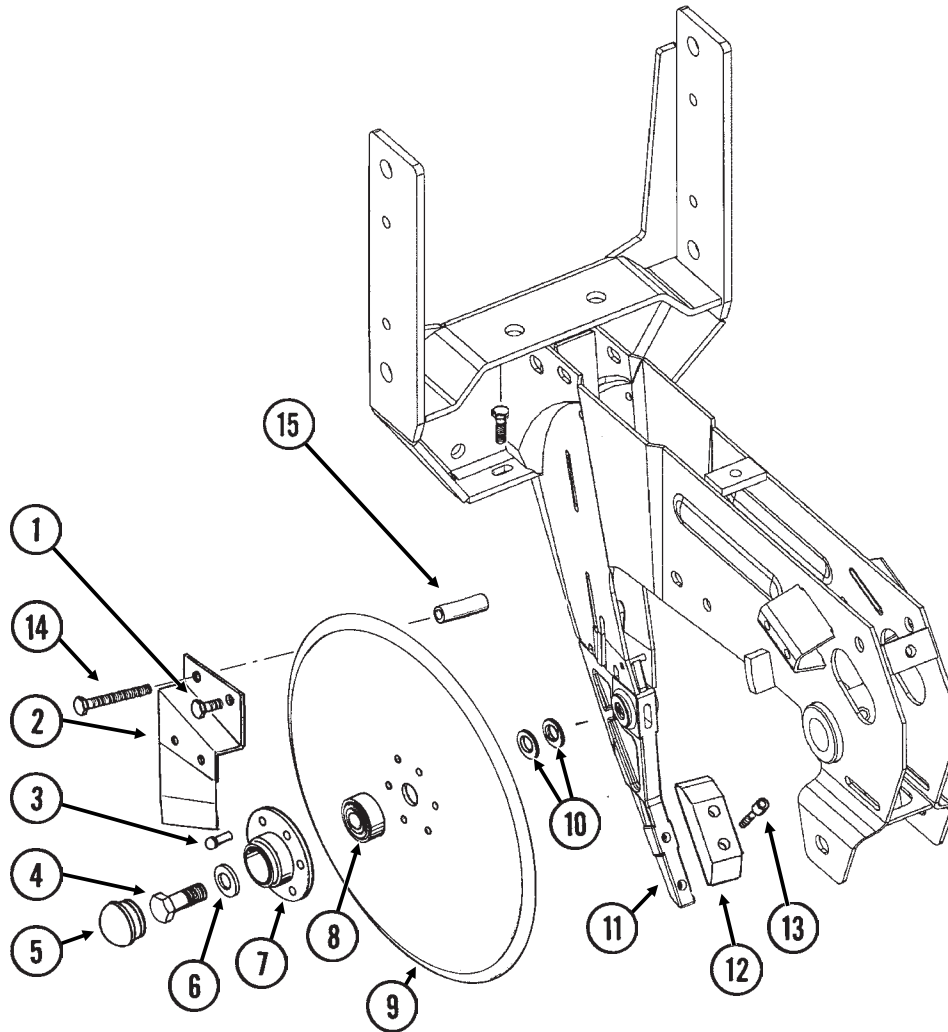


ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10152	-	Hex Head Cap Screw, 5/8"-11 x 9"
	G10217	-	Washer, 5/8" USS
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
2.	GD10036	1	Mounting Support Plate
3.	GB0218	4	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
4.	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

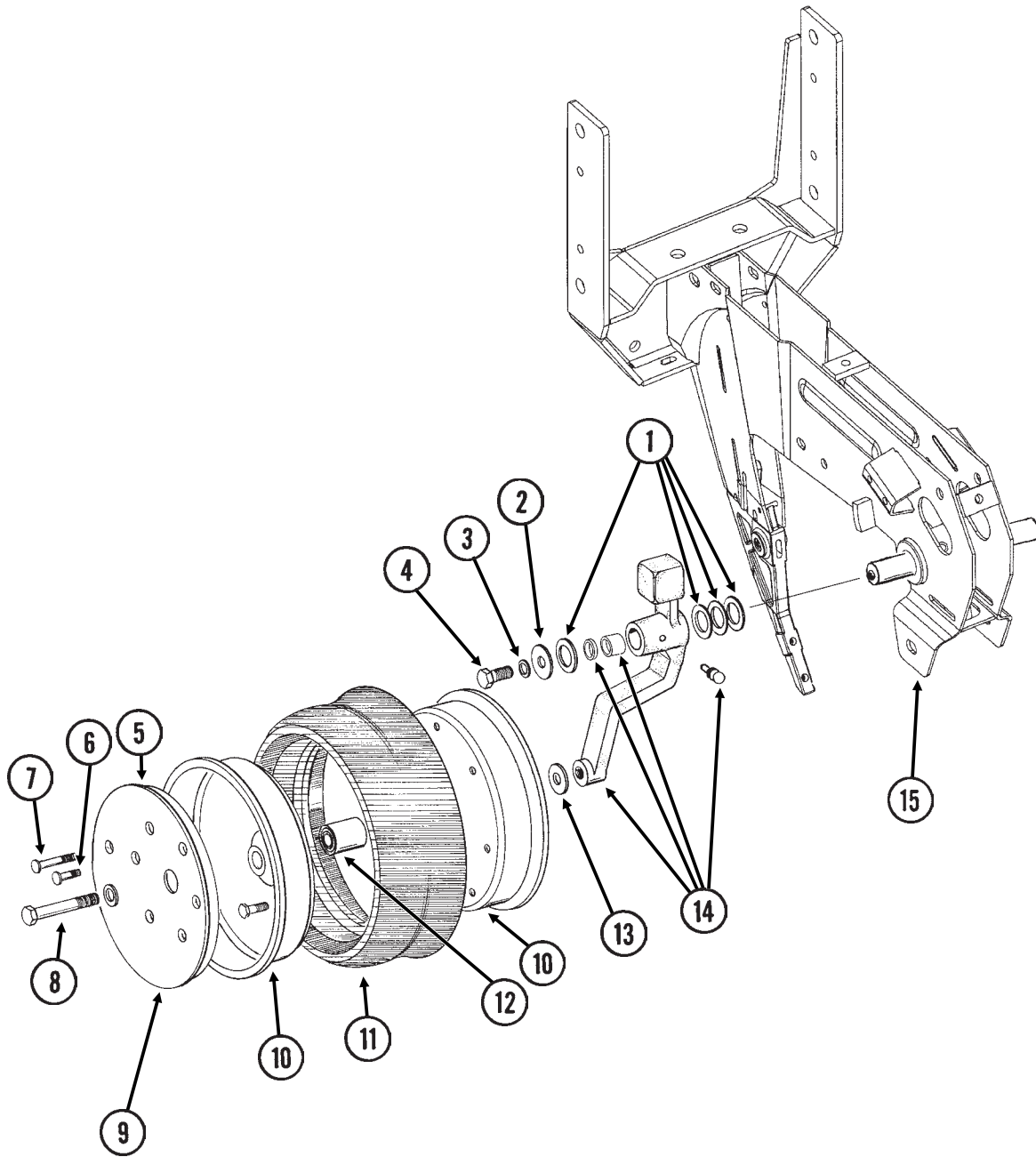
(RU139)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10328	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x $\frac{5}{8}$ "
	G10622	2	Serrated Flange Nut, $\frac{3}{8}$ "-16
2.	GA2012R	1	Disc Scraper, R.H.
	GA2012L	-	Disc Scraper, L.H. (Shown)
3.	G10427	12	Rivet, $\frac{1}{4}$ " x $\frac{1}{2}$ "
4.	GD11017	1	Special Hex Head Cap Screw, $\frac{5}{8}$ "-11 x $1\frac{1}{2}$ ", L.H. Threads
	G10007	1	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x $1\frac{1}{2}$ "
5.	GD11845	2	Dust Cap
6.	G10204	2	Special Machine Bushing, $\frac{5}{8}$ " 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, $\frac{5}{8}$ " (.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, $\frac{5}{16}$ "-18 x 1", Grade 8
14.	G10325	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x $2\frac{3}{4}$ "
	G10622	1	Serrated Flange Nut, $\frac{3}{8}$ "-16
15.	GD11259	1	Sleeve, $\frac{3}{8}$ " I.D. x $\frac{5}{8}$ " O.D. x $1\frac{25}{32}$ " Long
A.	GA8324	-	Disc Blade/Bearing Assembly, Less Dust Cap (Items 3 And 7-9) P11

GAUGE WHEELS

(RU140)

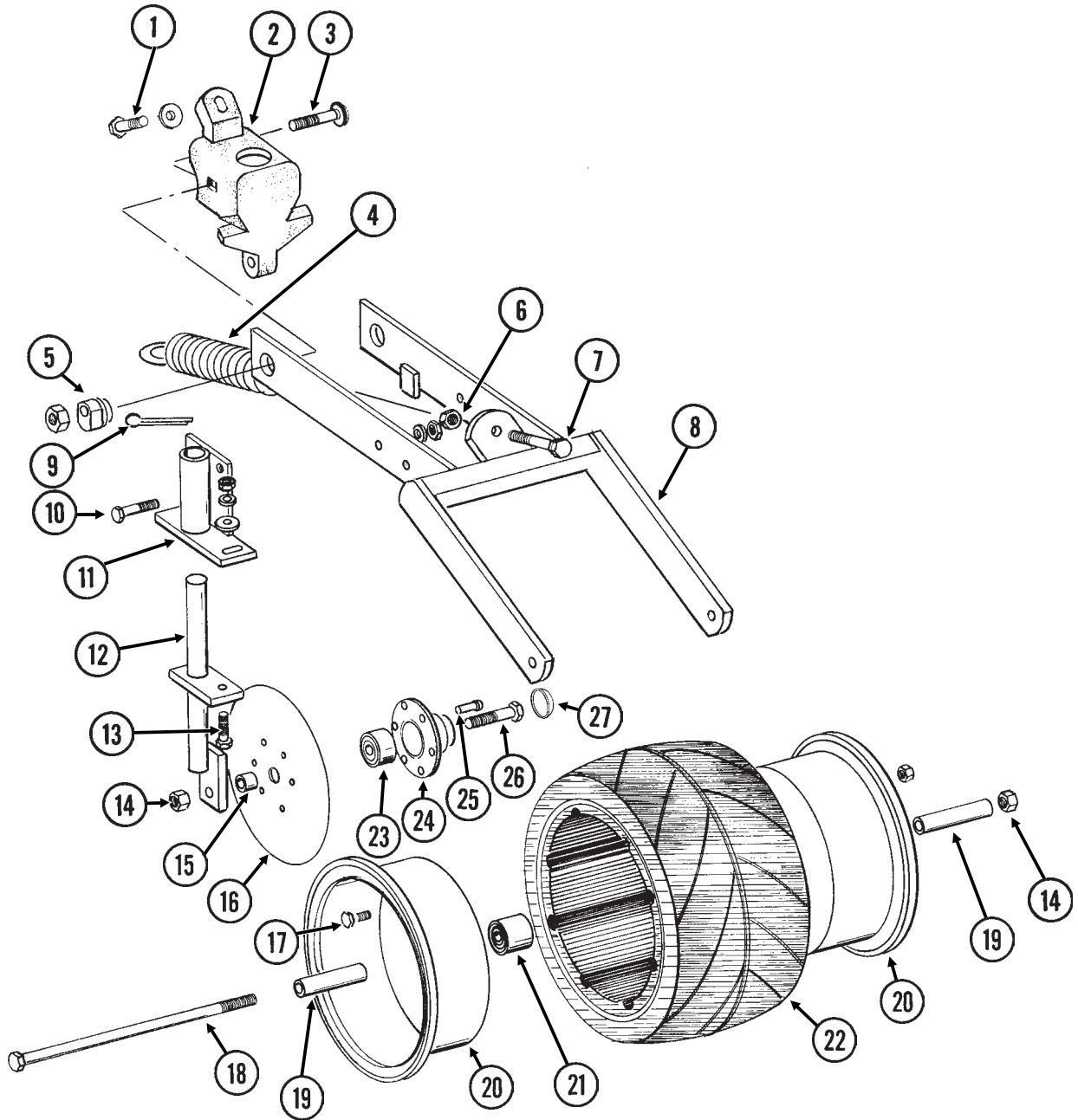


GAUGE WHEELS

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)

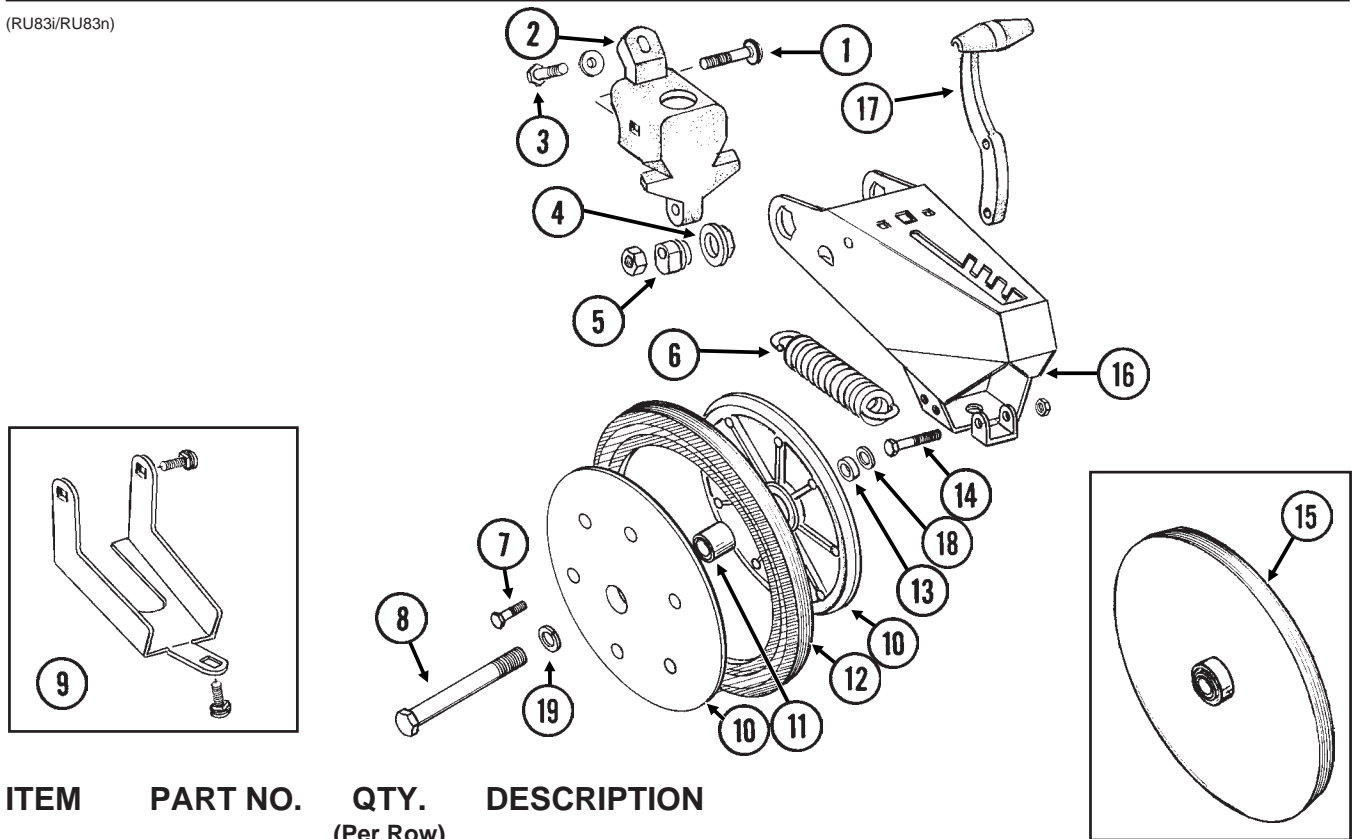


COVERING DISCS/SINGLE PRESS WHEEL

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10001	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10210	1	Washer, $\frac{3}{8}$ " USS
2.	GB0268	1	Wheel Arm Stop
3.	G10801	2	Carriage Bolt, $\frac{1}{2}$ "-13 x 2 $\frac{1}{4}$ "
	G10315	-	Carriage Bolt, $\frac{1}{2}$ "-13 x 2 $\frac{1}{2}$ " (Used W/Straight Drop In-Furrow Granular Chemical Bracket)
	G10102	2	Hex Nut, $\frac{1}{2}$ "-13
4.	GA2054	1	Spring
5.	GB0239	2	Eccentric Bushing
6.	G10102	1	Hex Nut, $\frac{1}{2}$ "-13
7.	G10015	1	Adjusting Bolt, $\frac{1}{2}$ "-13 x 5"
8.	GA6619	1	Mounting Arm
9.	G10463	2	Cotter Pin, $\frac{1}{4}$ " x 1 $\frac{1}{2}$ "
10.	G10171	4	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x 1 $\frac{1}{4}$ "
	G10232	4	Lock Washer, $\frac{5}{16}$ "
	G10106	4	Hex Nut, $\frac{5}{16}$ "-18
11.	GA6620	2	Bracket
12.	GA6618	2	Mount
13.	G10303	2	Carriage Bolt, $\frac{5}{16}$ "-18 x 1"
	G10219	2	Washer, $\frac{5}{16}$ " USS
	G10232	2	Lock Washer, $\frac{5}{16}$ "
	G10106	2	Hex Nut, $\frac{5}{16}$ "-18
14.	G10107	3	Lock Nut, $\frac{5}{8}$ "-11
15.	GD1109	2	Bushing, $\frac{41}{64}$ " I.D. x $\frac{7}{8}$ " O.D. x $\frac{1}{4}$ " Long
16.	GD9290	2	Disc Blade, 8"
17.	G10018	7	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x $\frac{5}{8}$ "
	G10109	7	Lock Nut, $\frac{5}{16}$ "-18, Grade 8
18.	G10152	1	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 9"
19.	GD3180-12	2	Sleeve, $\frac{5}{8}$ " I.D. x $\frac{7}{8}$ " O.D. x 2 $\frac{7}{8}$ " 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, $\frac{1}{4}$ " x $\frac{1}{2}$ "
26.	G10006	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 2 $\frac{1}{4}$ "
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

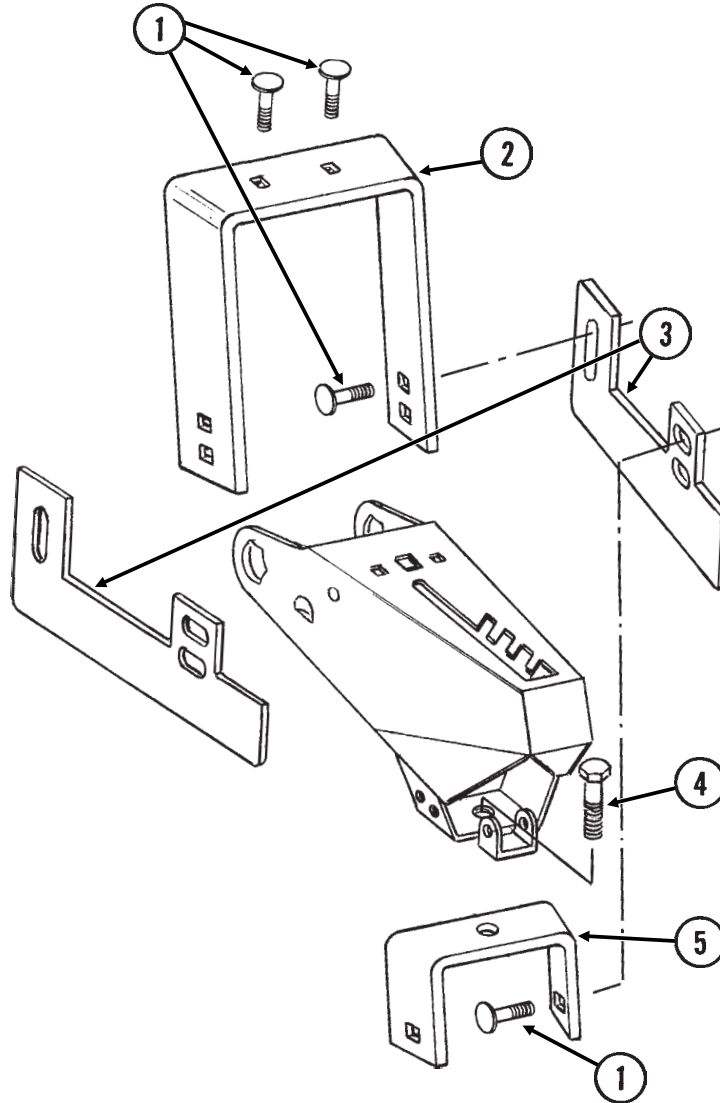
(RU83i/RU83n)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10801 G10315	2 -	Carriage Bolt, 1/2"-13 x 2 1/4" 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 G10210	1 1	Hex Head Cap Screw, 3/8"-16 x 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 G10107	2 2	Hex Head Cap Screw, 5/8"-11 x 3 1/2" 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 G10109	1 1	Hex Head Cap Screw, 5/16"-18 x 1 1/2" 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

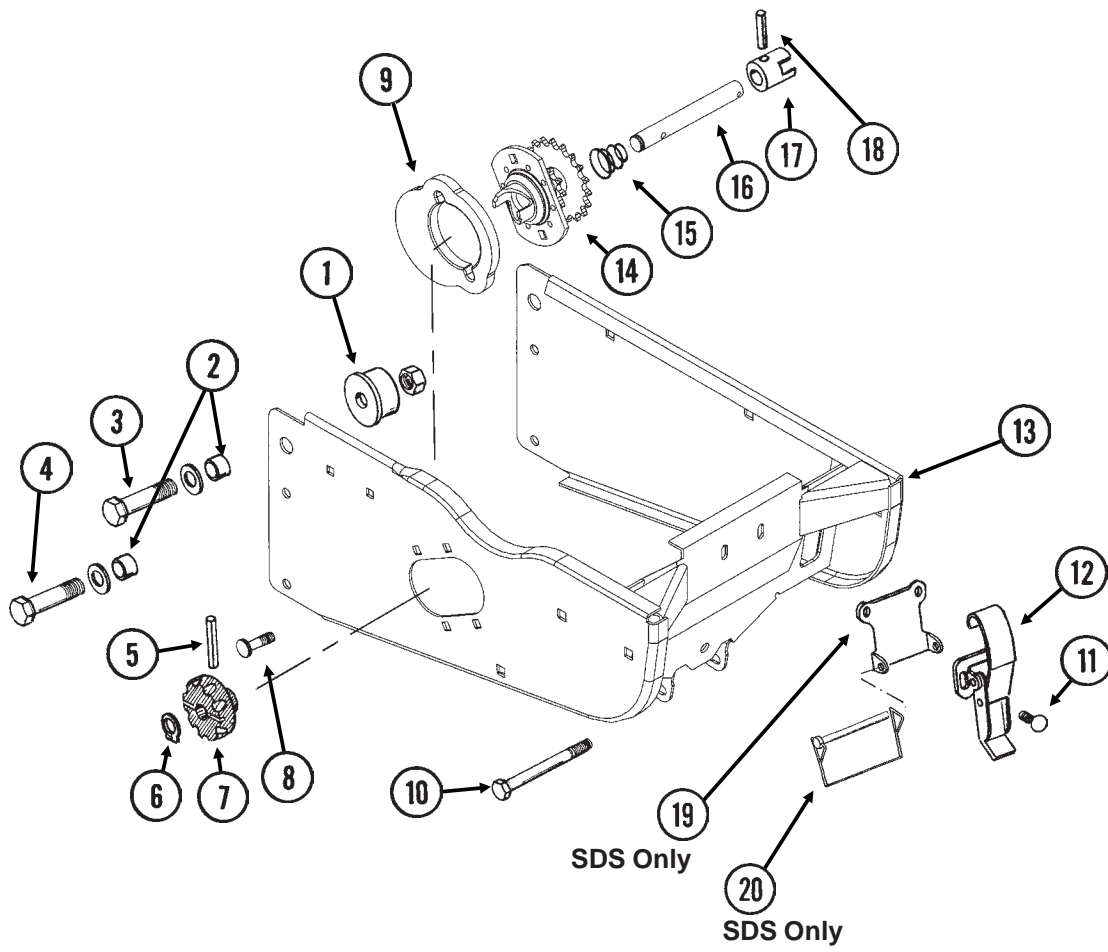
RUB050(RU90c)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Row)	
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)

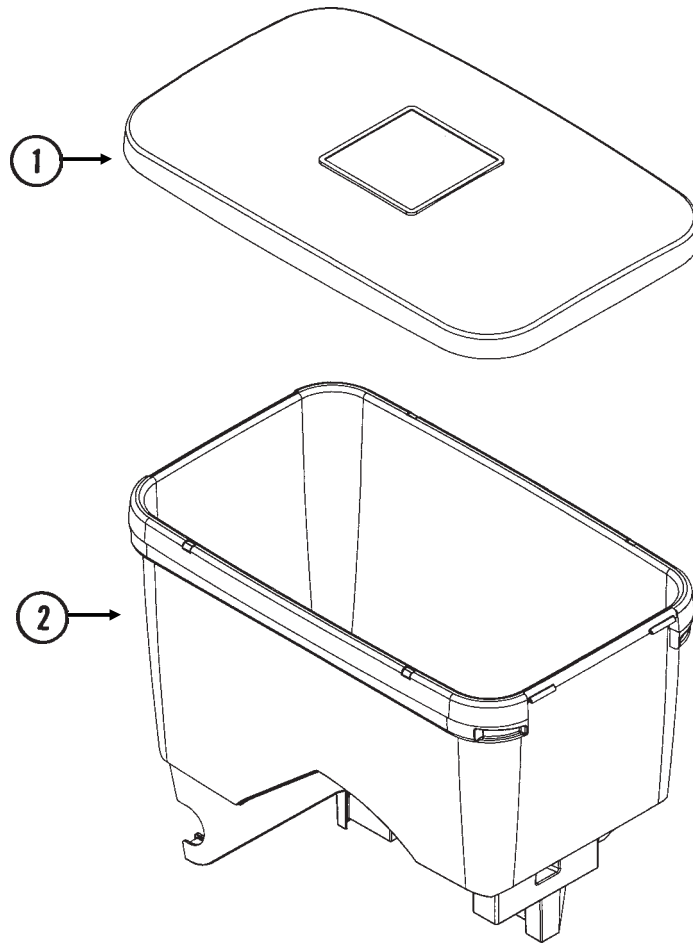


HOPPER SUPPORT AND METER DRIVE

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GB0314	2	Hopper Mount
2.	GB0218	4	Bushing, $2\frac{1}{32}$ " I.D. x $\frac{7}{8}$ " O.D. x $1\frac{19}{32}$ " Long
3.	G10752	2	Hex Head Cap Screw, $\frac{5}{8}$ "-18 x $2\frac{1}{4}$ "
	GD7805	2	Special Washer, $\frac{5}{8}$ ", Hardened
	G10412	2	Lock Nut, $\frac{5}{8}$ "-18
4.	G10751	2	Hex Head Cap Screw, $\frac{5}{8}$ "-18 x $1\frac{3}{4}$ "
	GD7805	2	Special Washer, $\frac{5}{8}$ ", Hardened
	G10412	2	Lock Nut, $\frac{5}{8}$ "-18
5.	G10602	1	Spring Pin, $\frac{1}{4}$ " x $1\frac{1}{2}$ "
6.	G10567	1	External Retaining Ring, $\frac{5}{8}$ "
7.	GD11239	1	Knob
8.	G10338	2	Carriage Bolt, $\frac{5}{16}$ "-18 x $1\frac{1}{4}$ "
	G10620	2	Serrated Flange Nut, $\frac{5}{16}$ "-18
9.	GB0331	1	Clutch Adapter Plate
10.	G10061	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x $3\frac{1}{2}$ "
	G10210	2	Washer, $\frac{3}{8}$ " USS
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
11.	G10309	2	Carriage Bolt, $\frac{1}{4}$ "-20 x $\frac{5}{8}$ ", Grade 2
	G10621	2	Serrated Flange Nut, $\frac{1}{4}$ "-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, $\frac{3}{16}$ " x $1\frac{1}{4}$ "
19.	GD13110	1	Retainer (SDS Only)
20.	GD10705	1	Locking Clip Pin, $\frac{1}{4}$ " x $2\frac{1}{2}$ " (SDS Only)
A.	GA10151	-	Meter Drive Assembly, 11/19 Tooth (Items 5-7 And 14-18)

SEED HOPPER AND LID (Conventional)

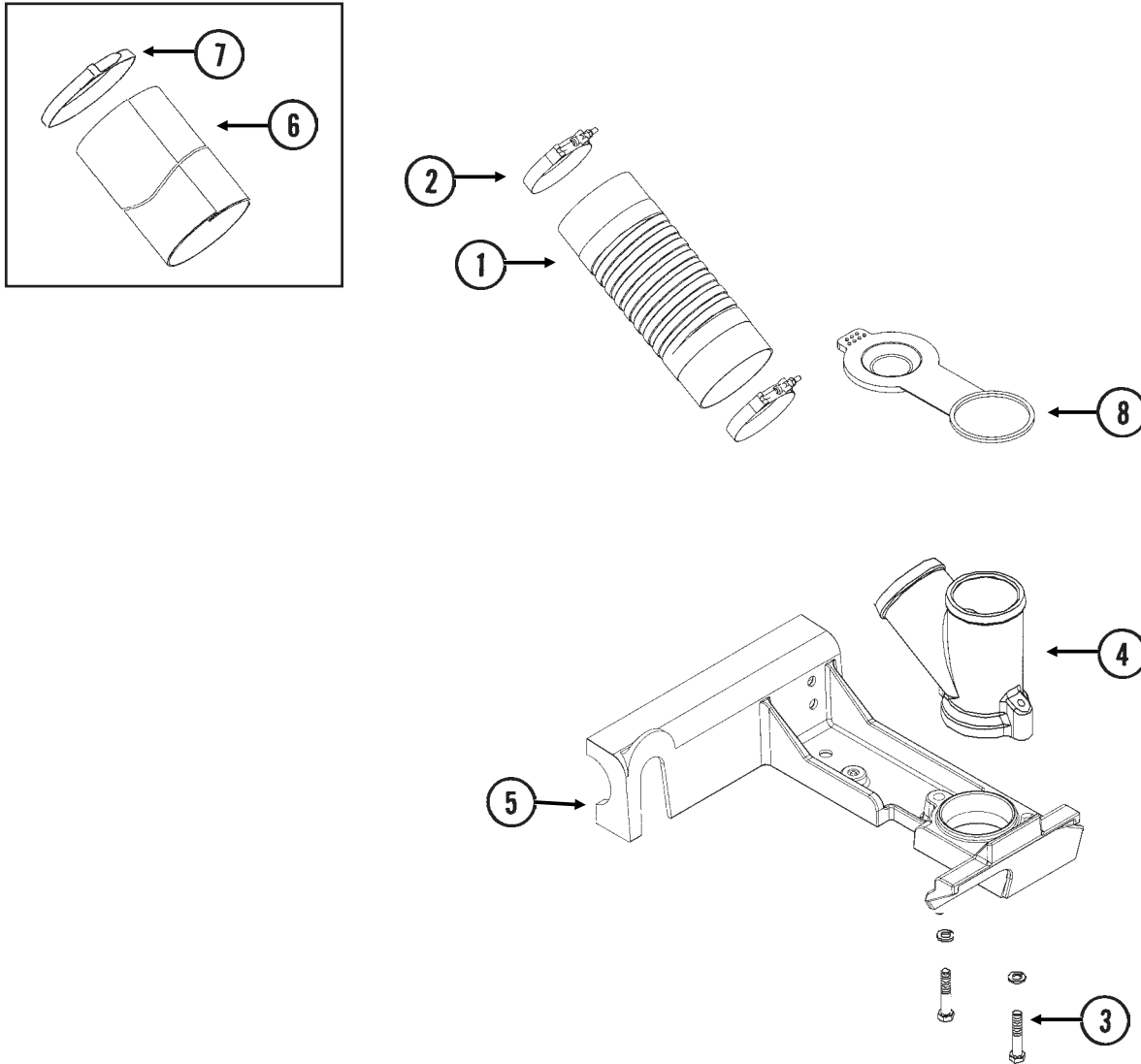
(METR12)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD11279	1	Lid
2.	GA10634	1	Seed Hopper

SEED METER MOUNT AND DROP HOSES (SDS)

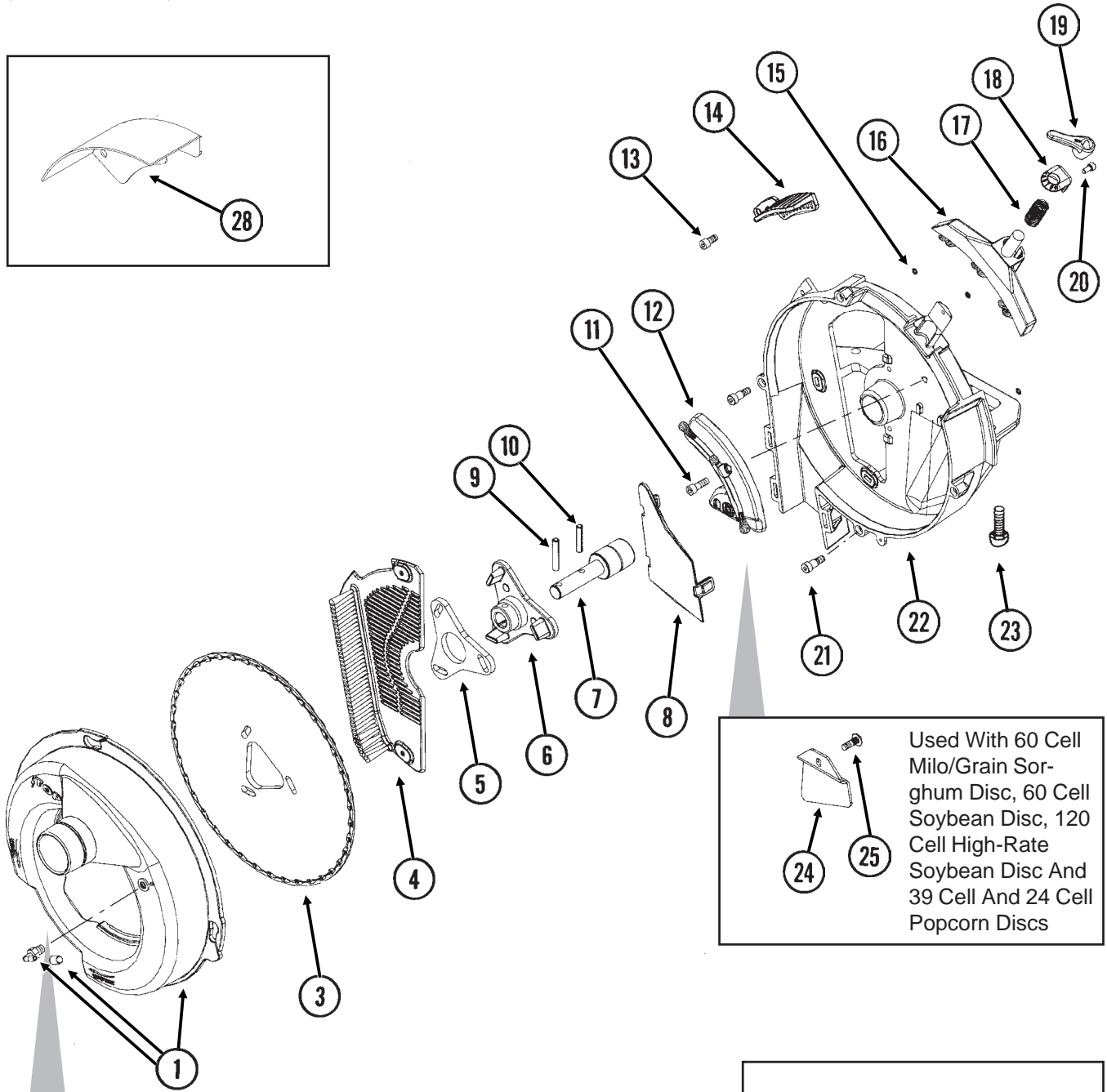
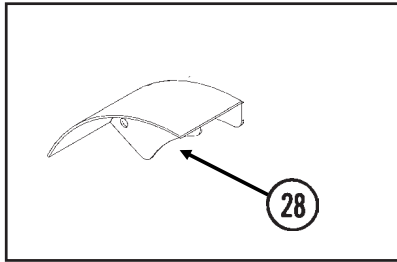
(D16399/METR63bb)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD12797-02	1	Drop Hose, 3 1/4" x 30"
	GD12797-04	-	Drop Hose, 3 1/4" x 32"
	GD12797-05	-	Drop Hose, 3 1/4" x 36"
	GD12797-09	-	Drop Hose, 3 1/4" x 39"
2.	G10999	2	T-Bolt Hose Clamp, 3 1/4"
3.	G10047	2	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10229	2	Lock Washer, 3/8"
4.	GB0371	1	Inlet, Short
5.	GA11392	1	Meter Mount
6.	GD16399-01	-	Sleeve, 3" x 10"
7.	GD2117	-	Tie Strap, 14 1/2"
8.	GD13412	1	View Cap

SEED METER

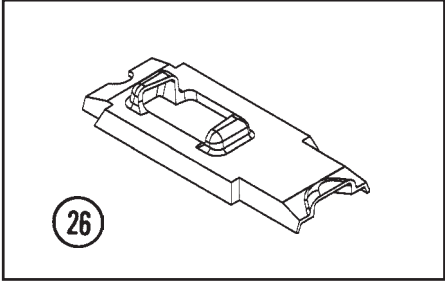
(METR69/METR65/A12133)



Used With 60 Cell Milo/Grain Sorghum Disc, 60 Cell Soybean Disc, 120 Cell High-Rate Soybean Disc And 39 Cell And 24 Cell Popcorn Discs

2 Used With 60 Cell Milo/Grain Sorghum Disc

27 Used With 20 Cell Hill-Drop Acid-Delinted Cotton Discs; 54 Cell Acid-Delinted Cotton/ Small Dry Edible Bean Disc; And Small Cotton/Sunflower Disc

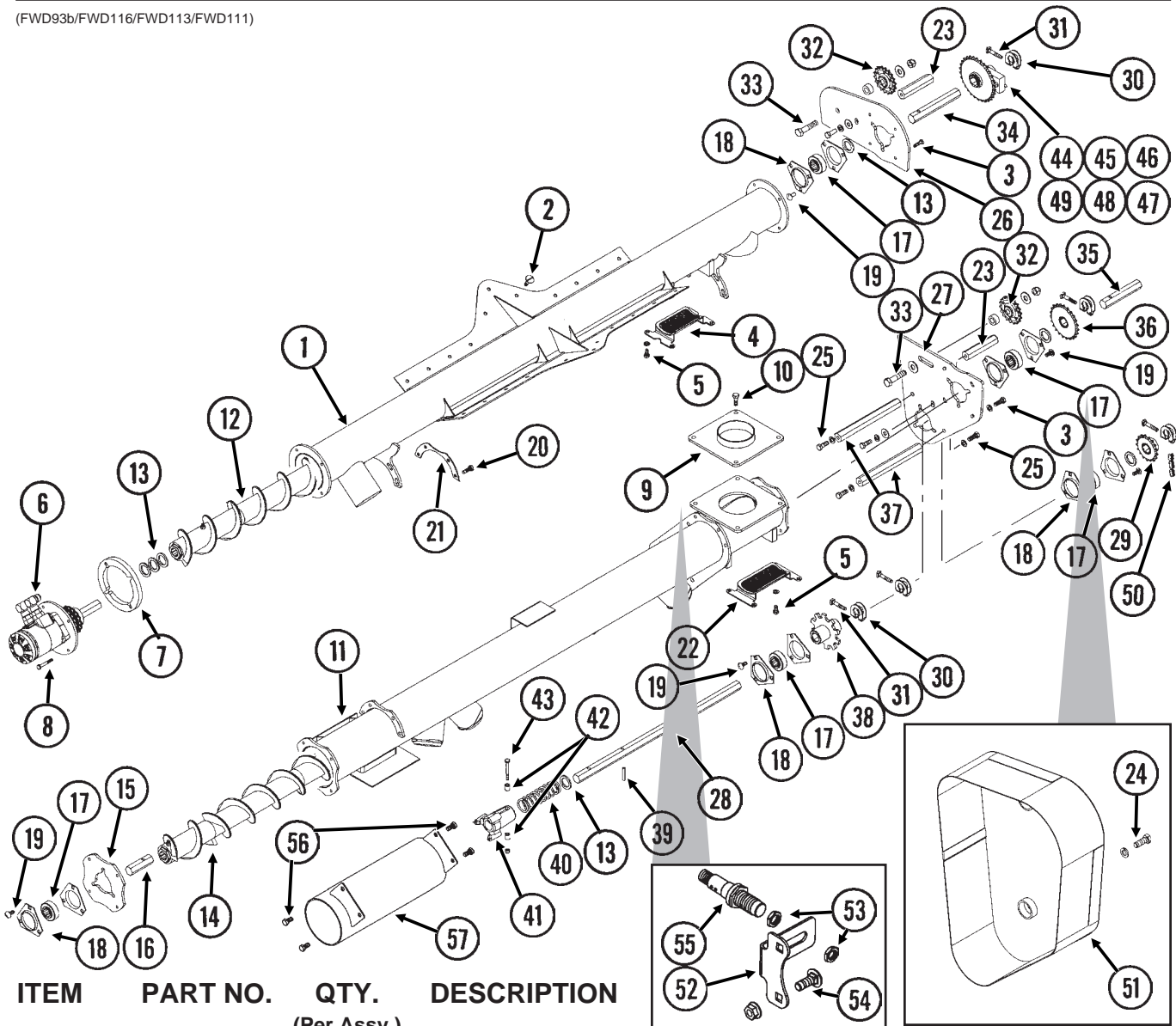


SEED METER

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11911	1	Vacuum Cover W/Elbow And Cap
	GD17099	-	³ / ₁₆ " Hose Barb Elbow
	GD17152	-	Cap
2.	GA12133	1	Cleanout Brush (Used With 60 Cell Milo/Grain Sorghum Disc)
3.	GD17049	-	Seed Disc, Corn/Popcorn, 39 Cell, Light Blue Color-Coded
	GD17048	-	Seed Disc, Low-Rate Corn/Popcorn, 24 Cell, Light Green Color-Coded
	GD14467	-	Seed Disc, Soybean, 60 Cell, Black Color-Coded
	GD14468	-	Seed Disc, High-Rate Soybean, 120 Cell, Dark Blue Color-Coded
	GD17050	-	Seed Disc, Milo/Grain Sorghum, 60 Cell, Yellow Color-Coded
	GD17187	-	Seed Disc, Hill-Drop Cotton, Acid-Delinted, 20 Cell (3 Seeds Per Cell), Brown Color-Coded
	GD18095	-	Seed Disc, Small Hill-Drop Cotton, Acid-Delinted, 20 Cell (3 Seeds Per Cell), Grey Color-Coded
	GD17186	-	Seed Disc, Cotton, Acid-Delinted/Small Dry Edible Bean, 54 Cell, Dark Green Color-Coded
	GD18098	-	Seed Disc, Small Cotton/Sunflower, 54 Cell, White Color-Coded
	GD14477	-	Seed Disc, Large Dry Edible Bean, 54 Cell, Tan Color-Coded
4.	GD17028	1	Wall Brush/Vent
5.	GD17021	1	Foam Spacer
6.	GB0328	1	Mount
7.	GA5698	1	Bearing
8.	GD14541	1	Discharge Cover
9.	G10602	1	Spring Pin, ¹ / ₄ " x 1 ¹ / ₂ "
10.	G10603	1	Spring Pin, ¹ / ₄ " x 1 ¹ / ₄ "
11.	G11213	1	Hex Socket Head Cap Screw, ¹ / ₄ "-20 x ³ / ₄ "
12.	GA11935	1	Crowder Brush
13.	G10260	1	Hex Socket Head Cap Screw, ¹ / ₄ "-20 x ¹ / ₂ " (Conventional Planters)
	G10252	1	Hex Socket Head Cap Screw, ¹ / ₄ "-20 x ⁷ / ₈ " (SDS Planters)
	G10209	1	Washer, ¹ / ₄ " USS (SDS Planters)
	G10110	1	Lock Nut, ¹ / ₄ "-20, Grade B (SDS Planters)
14.	GD17047	1	Air Inlet Screen
15.	GD17162	3	Push Nut, ¹ / ₈ " I.D.
16.	GA10755	1	Singulator Brush
17.	GD14592	1	Spring
18.	GB0358	1	Cap
19.	GD15663	1	Brush Adjustment Lever
20.	G11173	1	Hex Socket Head Cap Screw, No. 10-24 x ³ / ₈ ", Stainless Steel
21.	G11172	4	Hex Socket Head Shoulder Screw, ¹ / ₄ "-20 x ³ / ₈ ", Stainless Steel
22.	GB0319	1	Housing
23.	G11009	2	Locking Thumbscrew, ⁵ / ₁₆ "-18 x ³ / ₄ " (Conventional Planters)
	G10171	2	Hex Head Cap Screw, ⁵ / ₁₆ "-18 x 1 ¹ / ₄ " (SDS Planters)
	G10232	2	Lock Washer, ⁵ / ₁₆ " (SDS Planters)
24.	GD17104	1	Seed Baffle (Used With 60 Cell Milo/Grain Sorghum Disc, 60 Cell Soybean Disc, 120 Cell High-Rate Soybean Disc And 39 Cell And 24 Cell Popcorn Discs)
25.	G11210	1	Rib Neck Bolt, ¹ / ₄ "-20 x ³ / ₄ "
	G10323	1	Hex Flange Nut, ¹ / ₄ "-20, No Serrations
26.	GD15700	1	Shank Cover, EdgeVac [®] Meter
27.	GA12154	-	Cleanout Brush W/Ball-Type Ejector (Used With 20 Cell Hill-Drop Acid-Delinted Cotton Discs And 54 Cell Acid-Delinted Cotton/Small Dry Edible Bean And Small Cotton/Sunflower Discs)
28.	GD15923	1	Meter Cover (SDS Only)
A.	G1K472	-	Sunflower Rate Reduction Kit, Includes: (2)122 Pitch Chains, (2)94 Pitch Chains, (2)Bars, (4)Spacers, (4)Lynch Pins, (2)Hex Shafts, (1)Hardware Bag, (4)Hanger Bearings, (2)30Tooth Sprockets, (4)15 Tooth Sprockets, (4)18 Tooth Sprockets And (1) Instruction (For Two Contact Wheel Assemblies)

CENTER AUGER ASSEMBLIES (SDS)

(FWD93b/FWD116/FWD113/FWD111)



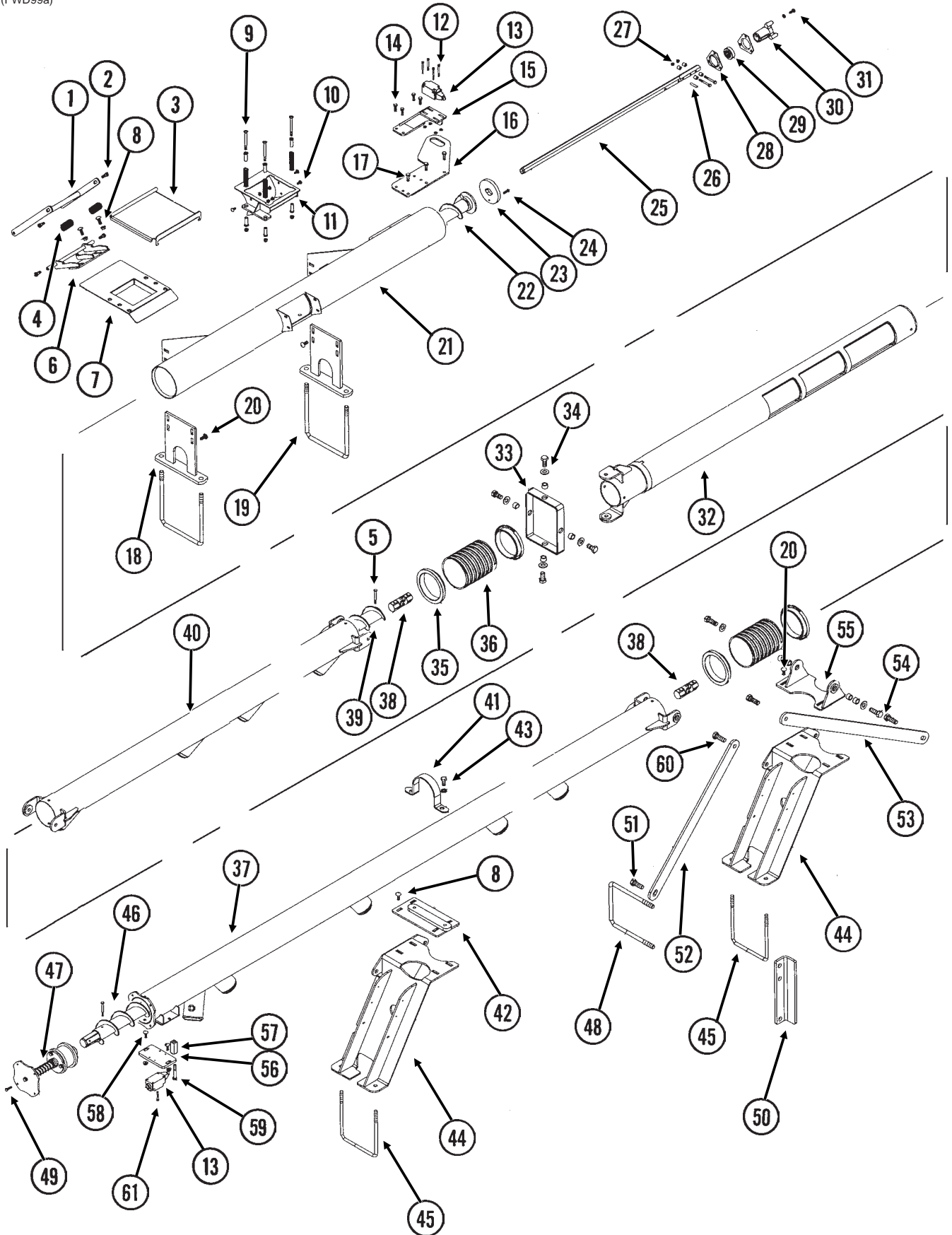
ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA11395	1	Upper Tube, L.H. (Shown)
	GA11396	-	Upper Tube, R.H.
2.	G11192	22	Bolt, 5/16"-18 x 1"
	G10221	22	Washer, 5/16" SAE
	G11182	22	Lock Nut W/Nylon Insert, 5/16"-18
3.	G10064	10	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	10	Lock Nut, 1/4"-20, Grade 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 P150 And P151
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	1	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.	DESCRIPTION
		(Per Assy.)	
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 P154 And P155
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, $\frac{5}{16}$ "-18 x $\frac{3}{8}$ "
3.	GA11538	2	Lid
4.	GD16983	4	Spring
5.	G10880	-	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x 2 $\frac{1}{4}$ "
	G10110	-	Lock Nut, $\frac{1}{4}$ "-20, Grade B
6.	GA11540	2	Link Mount
7.	GA11541	2	Plate
8.	G10305	-	Carriage Bolt, $\frac{3}{8}$ "-16 x 1"
	G10622	-	Serrated Flange Nut, $\frac{3}{8}$ "-16
9.	G11197	6	Slotted Flat Head Machine Screw, $\frac{5}{16}$ "-18 x 3 $\frac{1}{2}$ "
	GD16634	12	Sleeve
	GD16982	6	Spring
	G11182	6	Lock Nut W/Nylon Insert, $\frac{5}{16}$ "-18
10.	G10309	8	Carriage Bolt, $\frac{1}{4}$ "-20 x $\frac{5}{8}$ ", Grade 2
	G10621	8	Serrated Flange Nut, $\frac{1}{4}$ "-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 P154 And P155
14.	G10019	8	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x 1"
	G10620	8	Serrated Flange Nut, $\frac{5}{16}$ "-18
15.	GA11548	2	Mount
16.	GD16672	2	Plate
17.	G10001	6	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10622	6	Serrated Flange Nut, $\frac{3}{8}$ "-16
18.	GA11531	4	Mount
19.	GD16320	4	U-Bolt, 8" x 8" x $\frac{5}{8}$ "-11
	G10230	4	Lock Washer, $\frac{5}{8}$ "
	G10104	4	Hex Nut, $\frac{5}{8}$ "-11
20.	G10305	8	Carriage Bolt, $\frac{3}{8}$ "-16 x 1"
	G10622	8	Serrated Flange Nut, $\frac{3}{8}$ "-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, $\frac{1}{4}$ "-20 x 2 $\frac{1}{2}$ "
	G10110	-	Lock Nut, $\frac{1}{4}$ "-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, $\frac{1}{4}$ "-20 x 1"
	G10110	2	Lock Nut, $\frac{1}{4}$ "-20, Grade B
25.	GA11580	2	Shaft
26.	G10602	2	Spring Pin, $\frac{1}{4}$ " x 1 $\frac{1}{2}$ "

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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

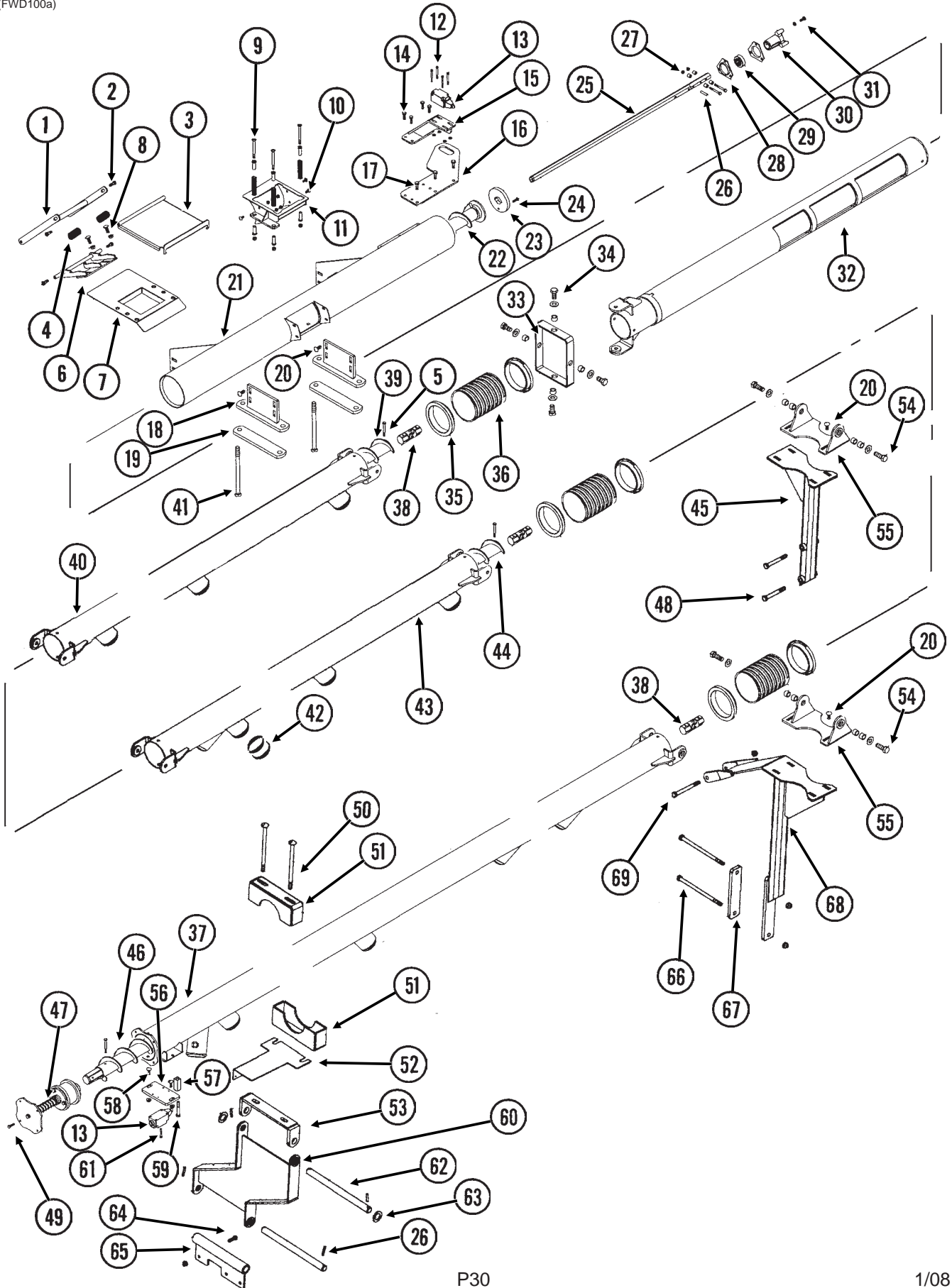
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WING AUGER ASSEMBLIES, 24 ROW 30" (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
51.	G10005	4	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 1 $\frac{3}{4}$ "
	G10205	4	Washer, $\frac{5}{8}$ " SAE
	G10107	4	Lock Nut, $\frac{5}{8}$ "-11
52.	GD16602	2	Brace
53.	GD16601	2	Brace
54.	G10008	4	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 2"
	GD3180-29	4	Sleeve, $\frac{7}{8}$ " O.D. x $\frac{5}{8}$ " I.D. x 1 $\frac{5}{16}$ "
55.	GA11684	2	Pivot Mount
56.	GD16680	2	Mount
57.	GD16701	2	Arm, $\frac{3}{4}$ " x $\frac{3}{4}$ " x 2"
58.	G10303	2	Carriage Bolt, $\frac{5}{16}$ "-18 x 1"
	G10620	2	Serrated Flange Nut, $\frac{5}{16}$ "-18
59.	G10049	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 2 $\frac{1}{2}$ "
	G10229	2	Lock Washer, $\frac{3}{8}$ "
60.	G10005	4	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 1 $\frac{3}{4}$ "
	G10107	4	Lock Nut, $\frac{5}{8}$ "-11
61.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 $\frac{1}{2}$ ", 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, $\frac{5}{16}$ "-18 x $\frac{3}{8}$ "
3.	GA11538	2	Lid
4.	GD16983	4	Spring
5.	G10880	-	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x 2 $\frac{1}{4}$ "
	G10110	-	Lock Nut, $\frac{1}{4}$ "-20, Grade B
6.	GA11540	2	Link Mount
7.	GA11541	2	Plate
8.	G10305	-	Carriage Bolt, $\frac{3}{8}$ "-16 x 1"
	G10622	-	Serrated Flange Nut, $\frac{3}{8}$ "-16
9.	G11197	6	Slotted Flat Head Machine Screw, $\frac{5}{16}$ "-18 x 3 $\frac{1}{2}$ "
	GD16634	12	Sleeve
	GD16982	6	Spring
	G11182	6	Lock Nut W/Nylon Insert, $\frac{5}{16}$ "-18
10.	G10309	8	Carriage Bolt, $\frac{1}{4}$ "-20 x $\frac{5}{8}$ "
	G10621	8	Serrated Flange Nut, $\frac{1}{4}$ "-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 P154 And P155
14.	G10019	8	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x 1"
	G10620	8	Serrated Flange Nut, $\frac{5}{16}$ "-18
15.	GA11548	2	Mount
16.	GD16672	2	Plate
17.	G10001	6	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10622	6	Serrated Flange Nut, $\frac{3}{8}$ "-16
18.	GA11532	4	Mount
19.	GD16620	4	Plate
20.	G10305	8	Carriage Bolt, $\frac{3}{8}$ "-16 x 1"
	G10622	8	Serrated Flange Nut, $\frac{3}{8}$ "-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, $\frac{1}{4}$ "-20 x 2 $\frac{1}{2}$ "
	G10110	-	Lock Nut, $\frac{1}{4}$ "-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, $\frac{1}{4}$ "-20 x 1"
	G10110	2	Lock Nut, $\frac{1}{4}$ "-20, Grade B
25.	GA11580	2	Shaft
26.	G10602	2	Spring Pin, $\frac{1}{4}$ " x 1 $\frac{1}{2}$ "

(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, 2 1/32" 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
	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.
45.	GD16385-08	-	Hex Tube, 112"
	GA11729	2	Support

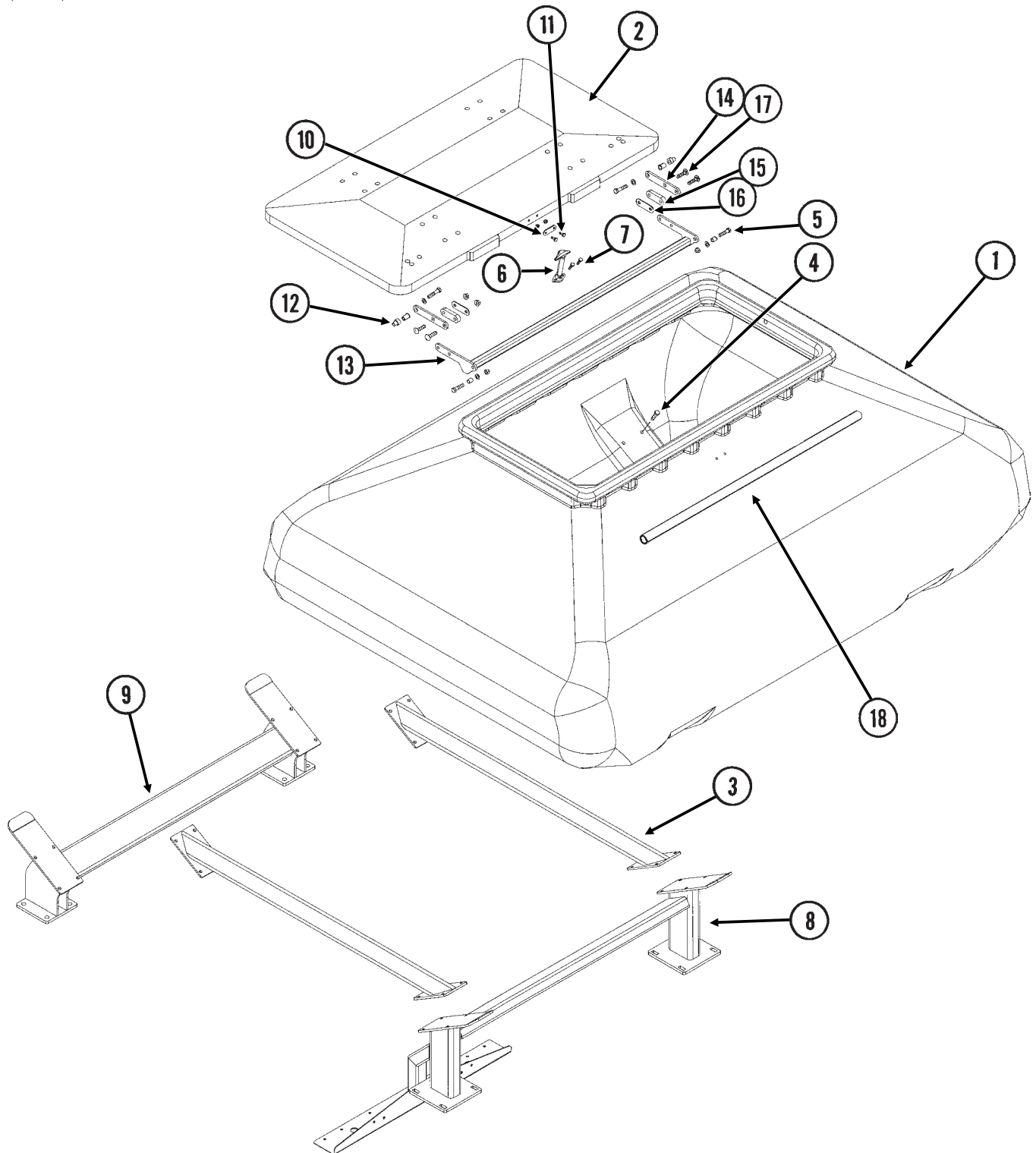
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WING AUGER ASSEMBLIES, 32 ROW 30" AND 36 ROW 30" (SDS)

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)

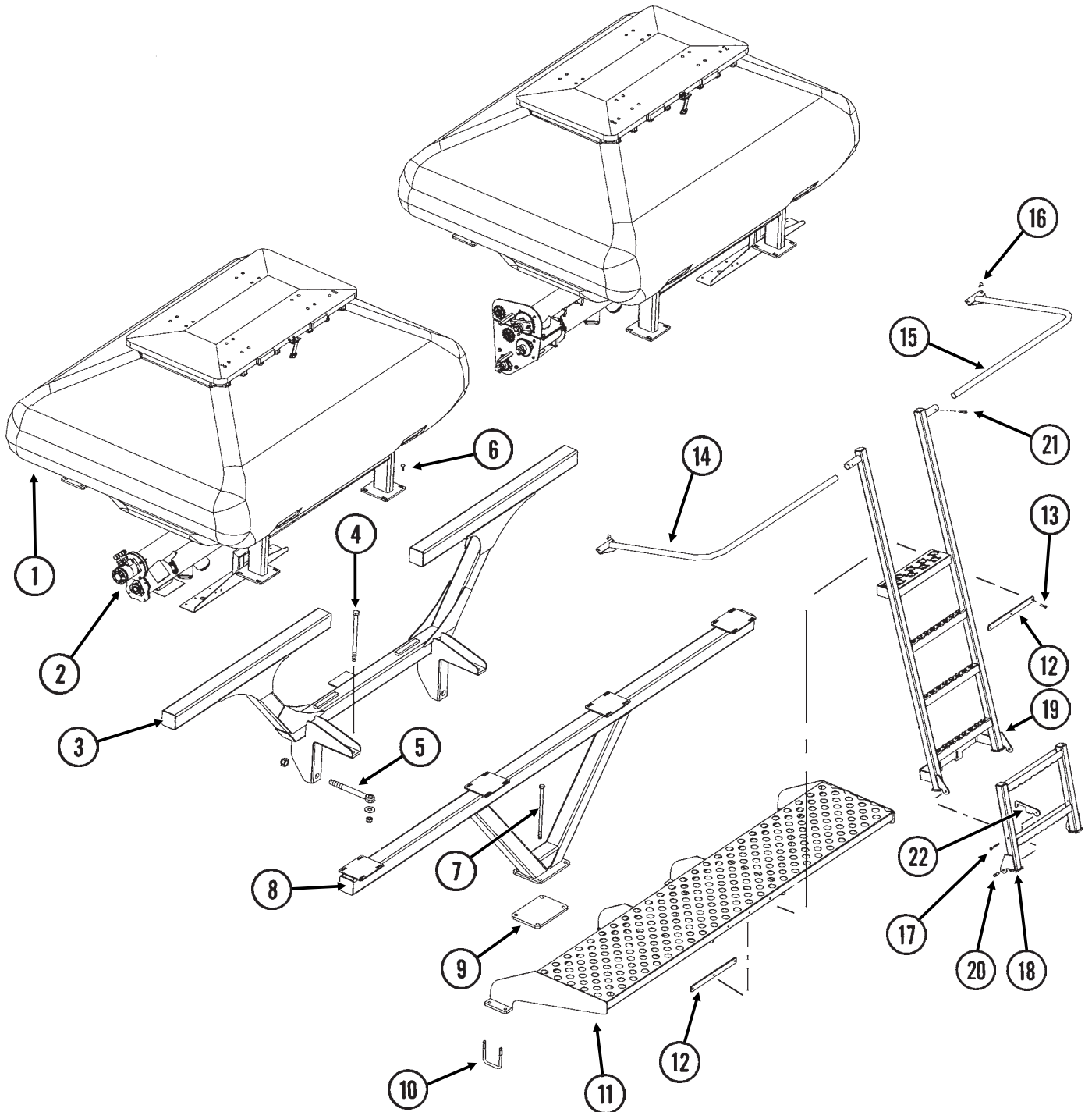


BULK SEED HOPPER ASSEMBLY (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ "
	G10203	16	Washer, $\frac{3}{8}$ " SAE
	G10108	16	Lock Nut, $\frac{3}{8}$ "-16
5.	G10003	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ "
	GD11963-03	2	Tube, $\frac{1}{2}$ " O.D. x $\frac{25}{64}$ " I.D. x $\frac{9}{16}$ "
	G10203	2	Washer, $\frac{3}{8}$ " SAE
	G10108	2	Lock Nut, $\frac{3}{8}$ "-16
6.	GA11635	1	Latch Cover
7.	G10064	2	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x 1"
	G10211	2	Washer, $\frac{1}{4}$ " SAE
	G10110	2	Lock Nut, $\frac{1}{4}$ "-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, $\frac{1}{4}$ "-20 x $\frac{5}{8}$ "
	G10110	2	Lock Nut, $\frac{1}{4}$ "-20, Grade B
12.	G10047	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{3}{4}$ "
	G10203	2	Washer, $\frac{3}{8}$ " SAE
	GD16694	2	Bushing
	G11226	2	Tee Nut, $\frac{3}{8}$ "-16
13.	GA11587	1	Hinge
14.	GD16692	2	Bar
15.	GD16693	2	Spacer
16.	GD16691	2	Shim
17.	G10301	4	Carriage Bolt, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ "
	G10622	4	Serrated Flange Nut, $\frac{3}{8}$ "-16
18.	GD13575-05	-	Tube, 1" x 43" (If Applicable)

BULK SEED HOPPER CATWALK (SDS)

(FWD97)

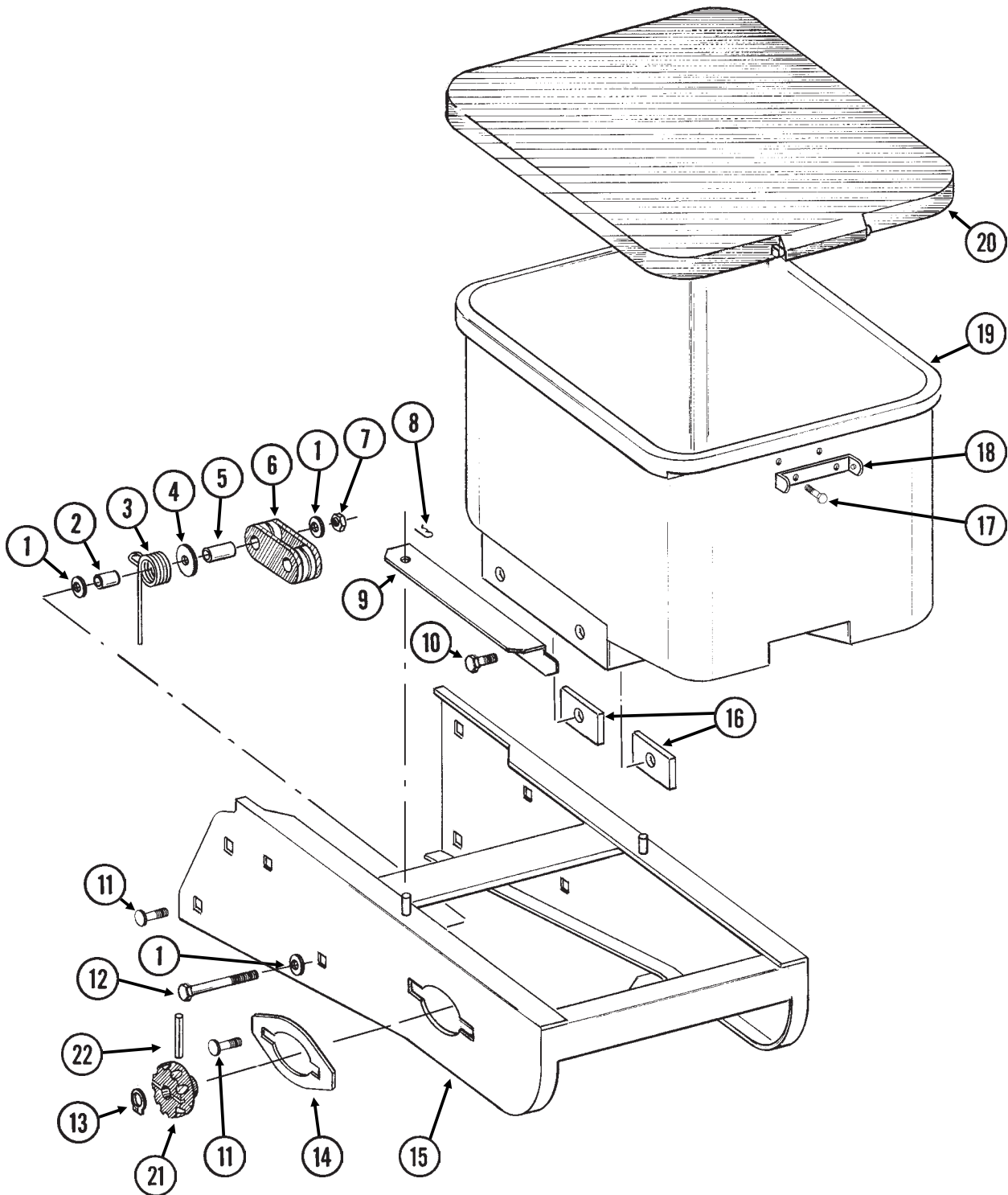


BULK SEED HOPPER CATWALK (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See "Bulk Seed Hopper Assembly (SDS)", Pages P34 And P35
2.		-	See "Center Auger Assemblies (SDS)", Pages P24 And P25
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

GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

(METR14d)

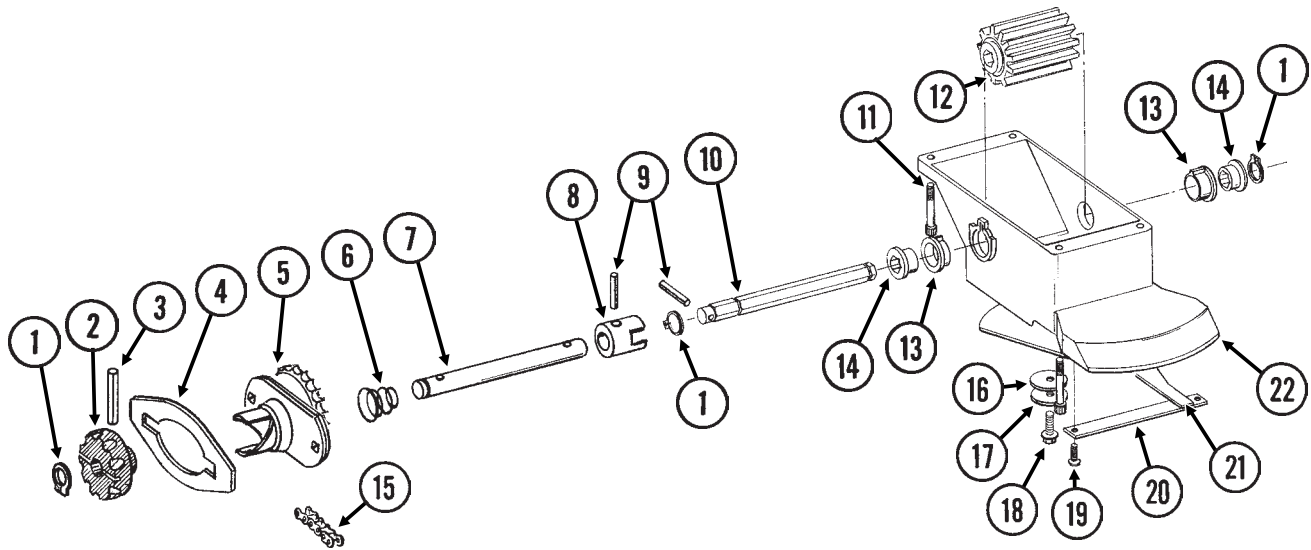


GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

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

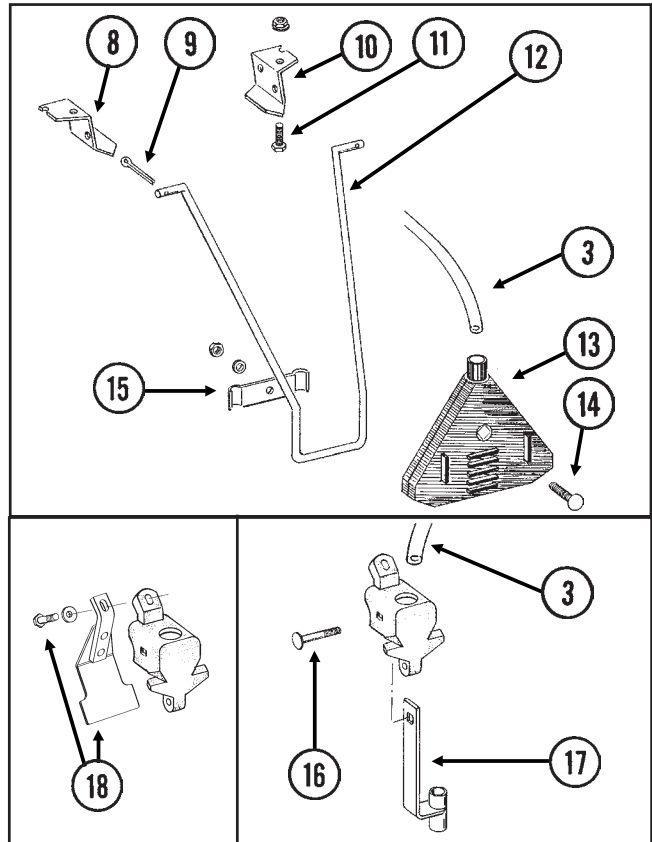
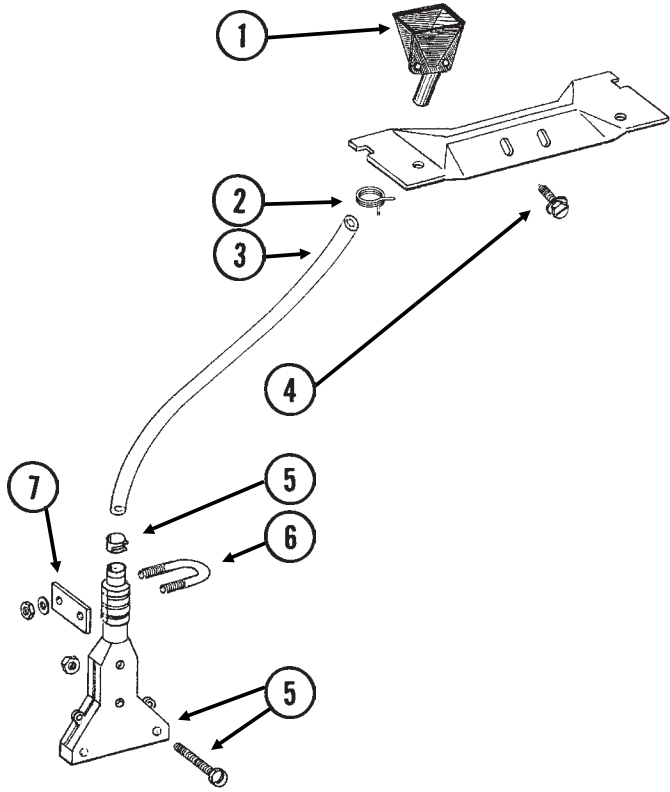
RUA051/RUB028(RU91a)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10567	3	External Retaining Ring, $\frac{5}{8}$ "
2.	GD11239	1	Knob
3.	G10602	1	Spring Pin, $\frac{1}{4}$ " x $1 \frac{1}{2}$ "
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, $\frac{3}{16}$ " x $1 \frac{1}{4}$ "
10.	GD11297	1	Shaft
11.	G10921	4	Hex Socket Head Cap Screw, No. 10-24 x $\frac{7}{8}$ "
	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, $\frac{1}{2}$ "
17.	G10209	1	Washer, $\frac{1}{4}$ " USS
18.	G10570	1	Slotted Hex Self-Tapping Screw, $\frac{1}{4}$ "-20 x $\frac{3}{4}$ "
19.	G11073	2	Slotted Hex Self-Tapping Screw, No. 10 x $\frac{3}{8}$ "
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

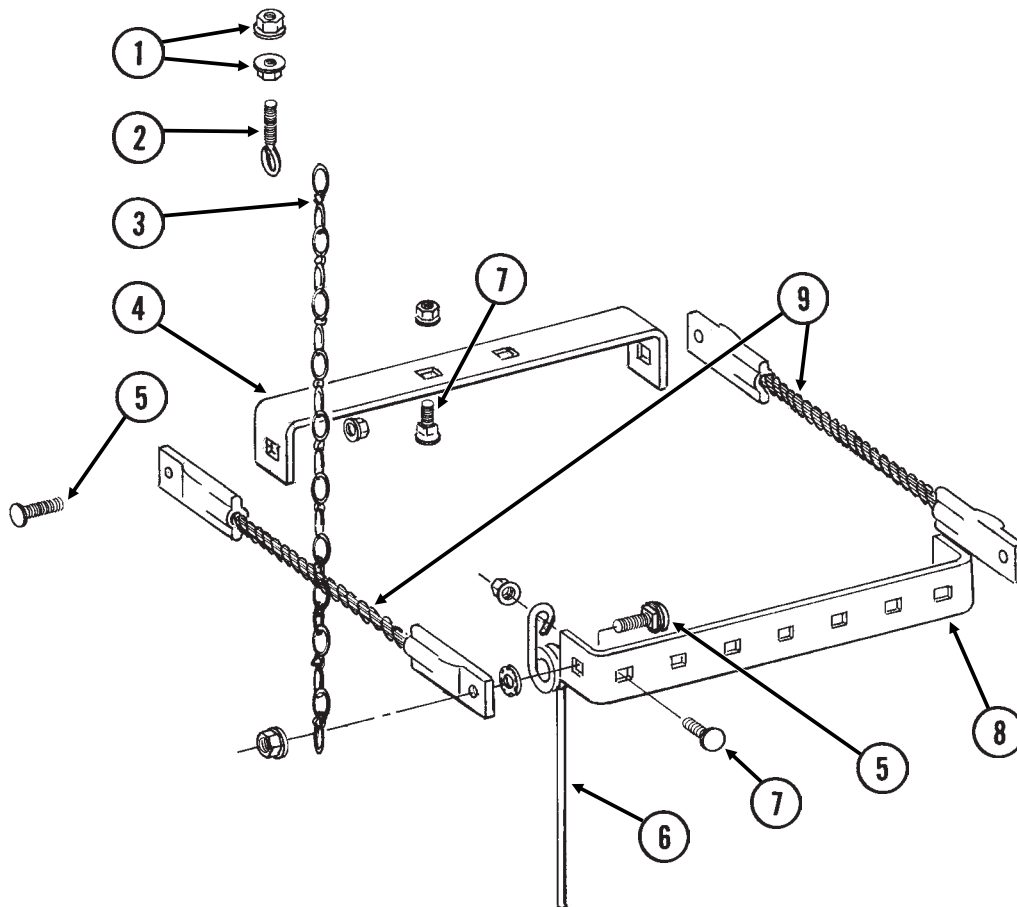
RUA061/RUA073(RU101mm/RU83m)



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

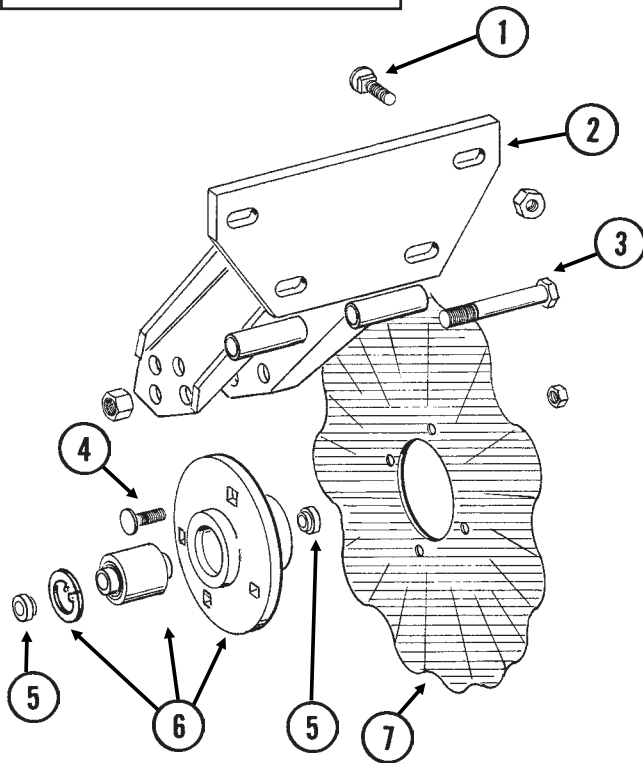
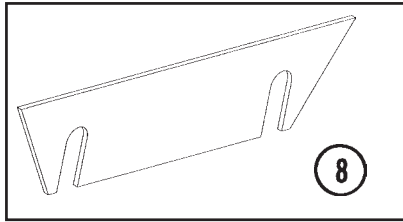
RUA055(RU95)



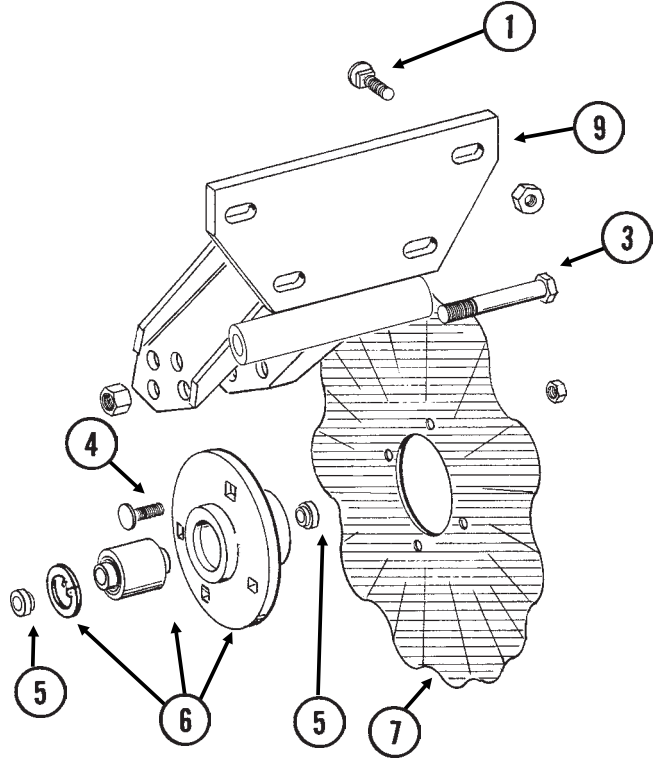
ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10621	4	Serrated Flange Nut, 1/4"-20
2.	GD2460	2	Eyebolt, 1/4"-20
3.	G3305-01	4	Twin Loop Chain, 9 Links
4.	GD1143	1	Front Bracket
5.	G10305	4	Carriage Bolt, 3/8"-16 x 1"
	G10529	4	External Tooth Lock Washer, 3/8"
	G10622	4	Serrated Flange Nut, 3/8"-16
6.	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

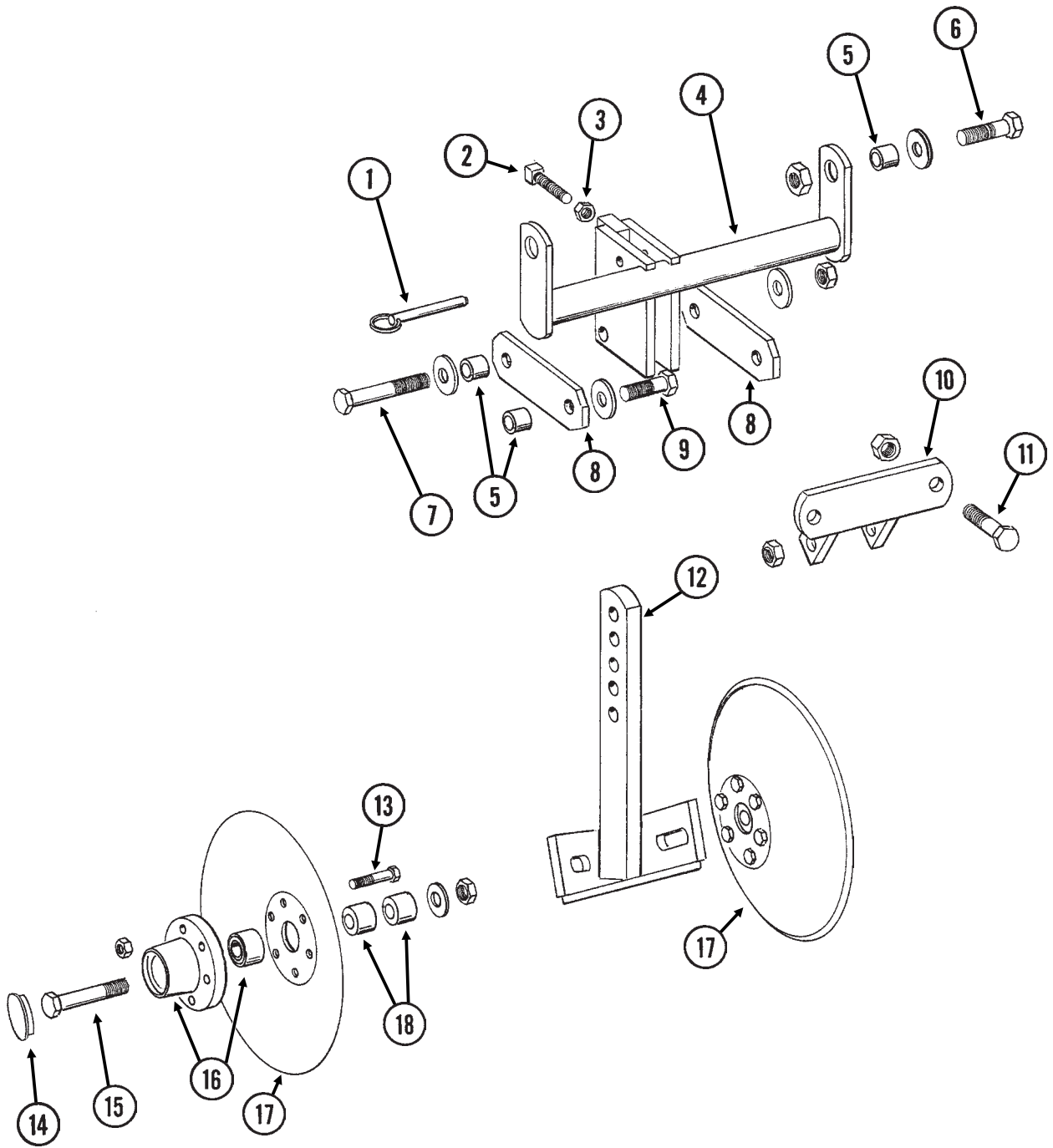


STYLE B

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Row)	
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)

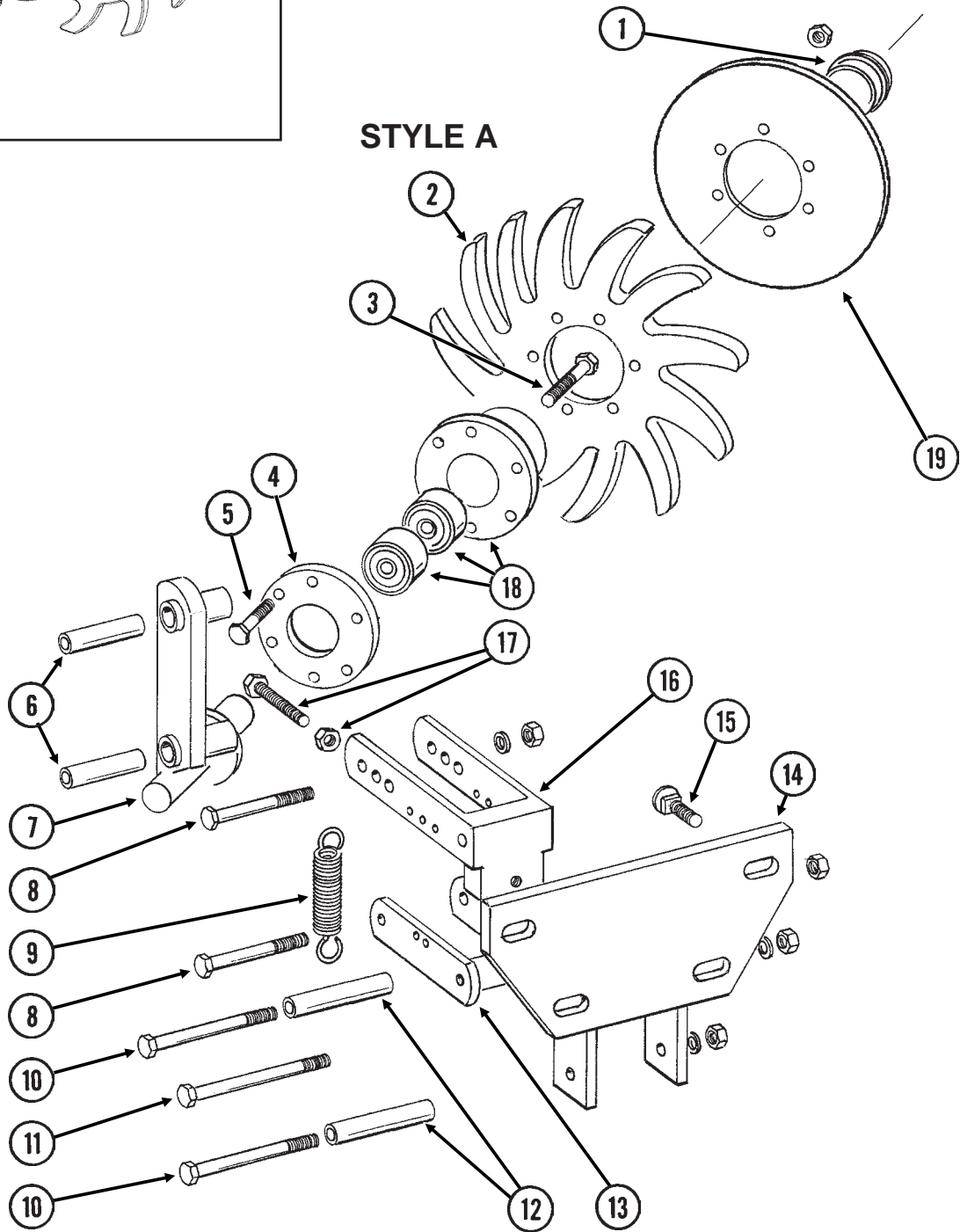
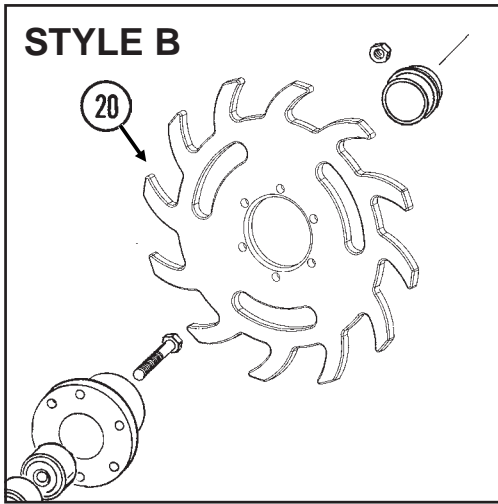


ROW UNIT MOUNTED DISC FURROWER

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)



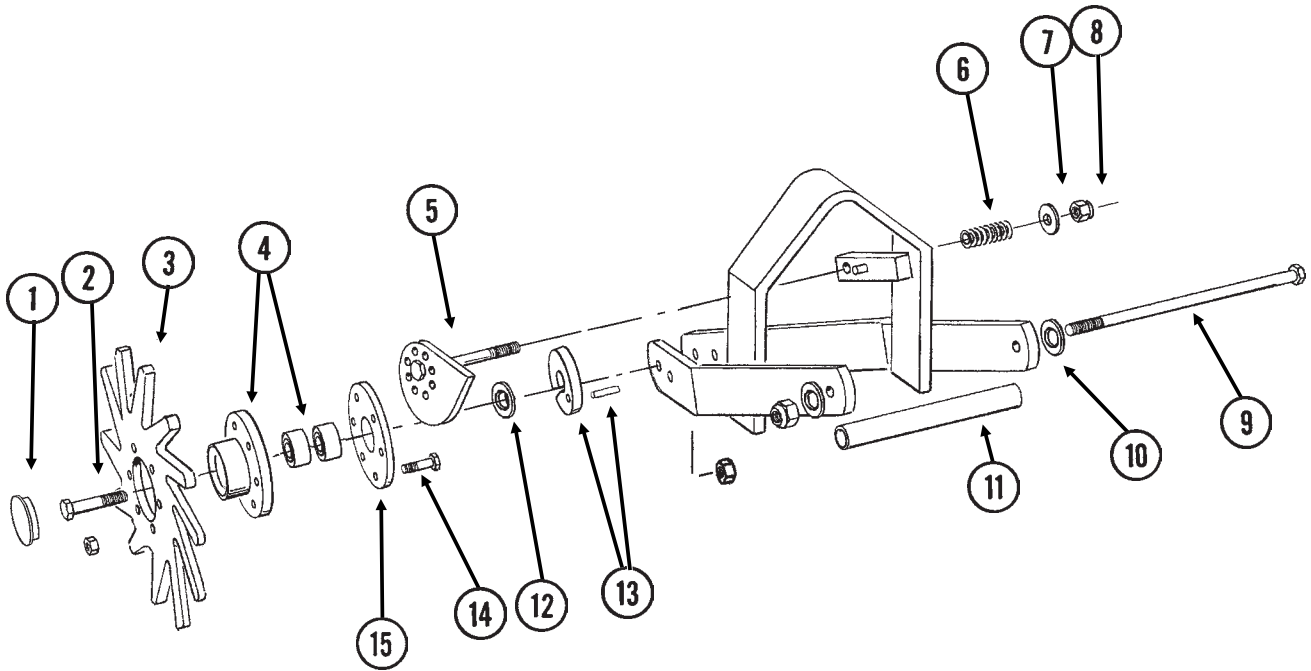
ROW UNIT MOUNTED RESIDUE WHEEL

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1132	1	Dust Cap
2.	GD10552	1	Wheel, 12 Tine, $\frac{3}{8}$ " x 12"
3.	G10006	1	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 2 $\frac{1}{4}$ "
4.	GD9724	1	Backing Plate
5.	G10133	6	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x 1 $\frac{1}{2}$ "
	G10109	6	Lock Nut, $\frac{5}{16}$ "-18, Grade 8
6.	GD9720	2	Spacer, $\frac{1}{2}$ " x 2 $\frac{3}{16}$ " Long
7.	GA6838	1	Wheel Mount
8.	G10033	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 3 $\frac{1}{2}$ "
	G10228	2	Lock Washer, $\frac{1}{2}$ "
	G10102	2	Hex Nut, $\frac{1}{2}$ "-13
9.	GD5857	2	Spring
10.	G10045	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 4 $\frac{1}{2}$ "
	G10228	2	Lock Washer, $\frac{1}{2}$ "
	G10102	2	Hex Nut, $\frac{1}{2}$ "-13
11.	G10348	1	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 5" (Lockup Bolt)
	G10111	1	Lock Nut, $\frac{1}{2}$ "-13
12.	GD9715	2	Spacer, $\frac{1}{2}$ " x 3" Long
13.	GA6834	1	Lower Link
14.	GA6832	1	Mount
15.	G10574	4	Carriage Bolt, $\frac{1}{2}$ "-13 x 1 $\frac{1}{4}$ "
	G10111	4	Lock Nut, $\frac{1}{2}$ "-13
16.	GA6833	1	Upper Link
17.	G10371	1	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 3", Full Thread
	G10501	1	Hex Jam Nut, $\frac{1}{2}$ "-13, Grade 2
18.	GA5654	1	Hub W/Bearings
	GA2014	-	Bearing
19.	GD12534	-	Cover
20.	GB0387	1	Wheel, 12 Tine, $\frac{3}{8}$ " 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)

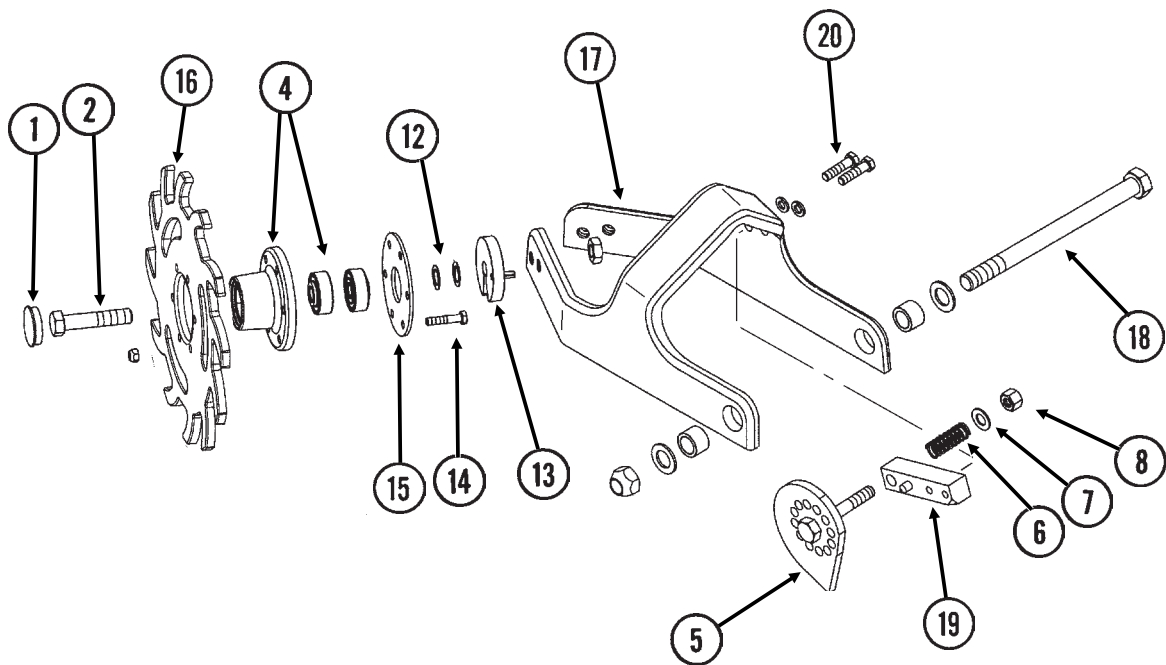
COULTER MOUNTED RESIDUE WHEELS

(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

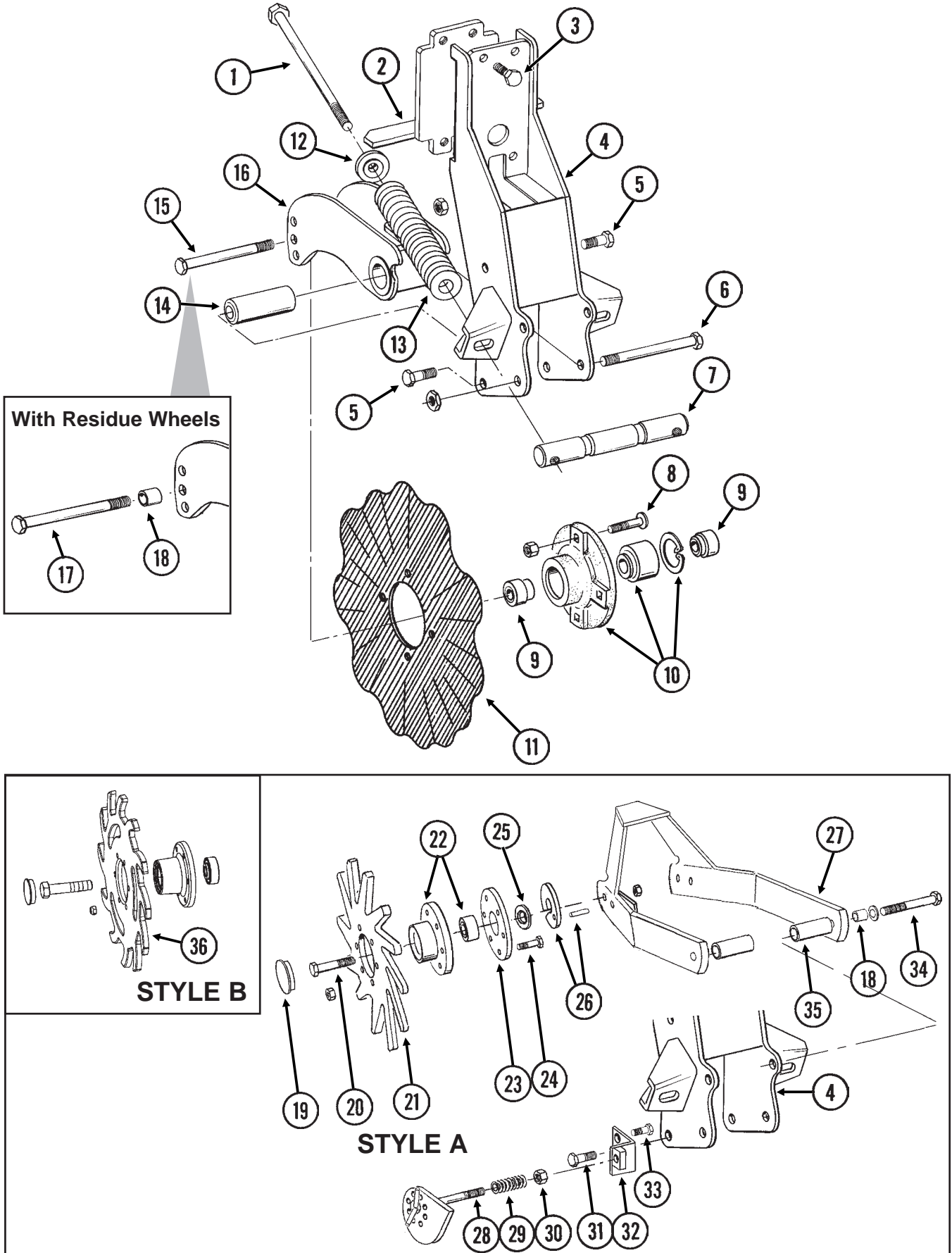


COULTER MOUNTED RESIDUE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1132	2	Dust Cap
2.	G10010	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 3"
	G10503	2	Hex Jam Nut, $\frac{5}{8}$ "-11, Grade 2
3.	GD10552	2	Wheel, 12 Tine, $\frac{3}{8}$ " x 12"
4.	GA5654	2	Hub W/Bearings
	GA2014	-	Bearing
5.	GA7412	1	Cam
6.	GD10519	1	Spring
7.	G10206	1	Washer, $\frac{1}{2}$ " SAE
8.	G10974	1	Lock Nut W/Nylon Insert, $\frac{1}{2}$ "-13
9.	G11098	1	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 9 $\frac{1}{2}$ ", Grade 8
	GD14674	2	Special Washer, $\frac{1}{2}$ ", Hardened
	G10974	1	Lock Nut W/Nylon Insert, $\frac{1}{2}$ "-13
10.	GA7271	1	Mount
11.	GD10526	1	Sleeve, 7 $\frac{1}{2}$ "
12.	G10213	2-4	Machine Bushing, $\frac{5}{8}$ " (.030" Thick)
13.	GA8760	2	Weed Guard W/Spring Pin
	G10765	-	Spring Pin, $\frac{1}{4}$ " x 1"
14.	G10133	12	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x 1 $\frac{1}{2}$ "
	G10109	12	Lock Nut, $\frac{5}{16}$ "-18, Grade 8
15.	GD9724	2	Backing Plate
16.	GB0387	2	Wheel, 12 Tine, $\frac{3}{8}$ " x 12"
17.	GB0401	1	Mount
18.	G11236	1	Hex Head Cap Screw, $\frac{3}{4}$ "-10 x 10 $\frac{1}{2}$ "
	GB0383	2	Bushing, 1 $\frac{1}{8}$ " O.D. x $\frac{25}{32}$ " I.D. x $\frac{3}{4}$ " Long
	G10194	2	Washer, $\frac{3}{4}$ " SAE
	G11228	1	Lock Nut, $\frac{3}{4}$ "-10
19.	GA12256	1	Locking Pin
20.	G10003	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ "
	G10229	2	Lock Washer, $\frac{3}{8}$ "
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)



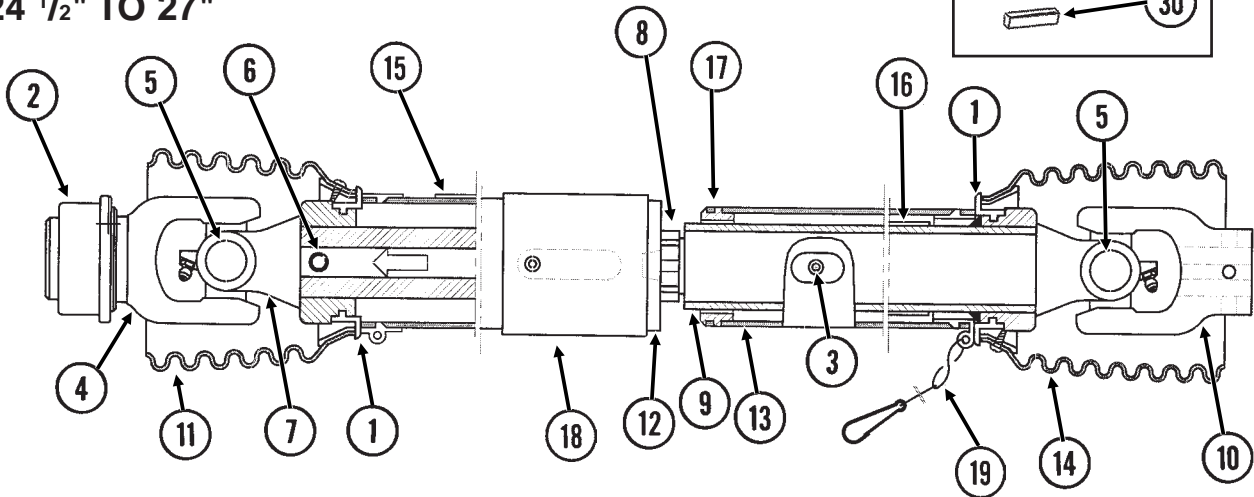
FRAME MOUNTED COULTER W/RESIDUE WHEELS

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)

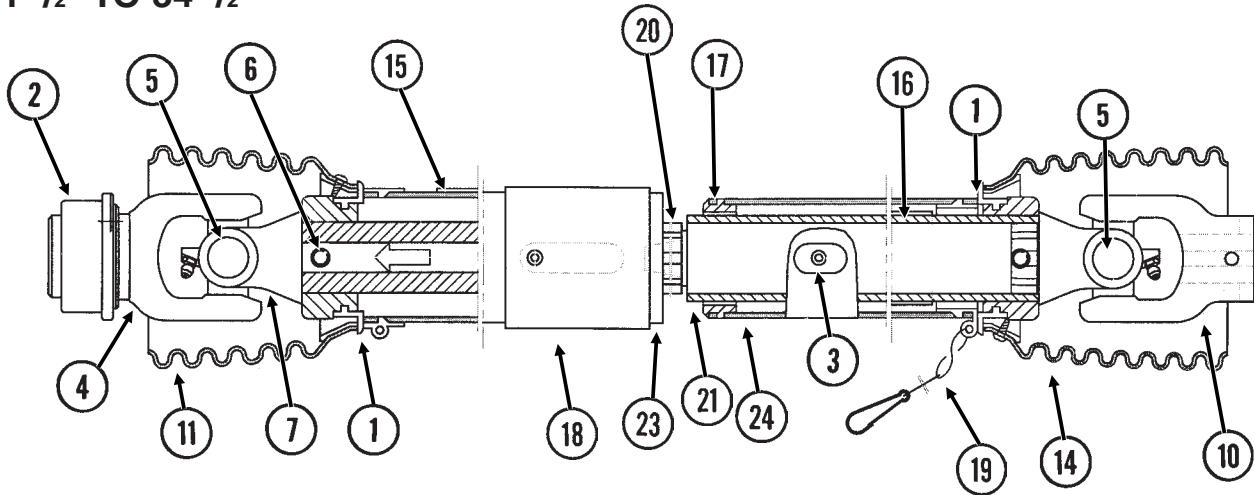
PTO ASSEMBLY

(A13248/A13249/A13250/FWD165)

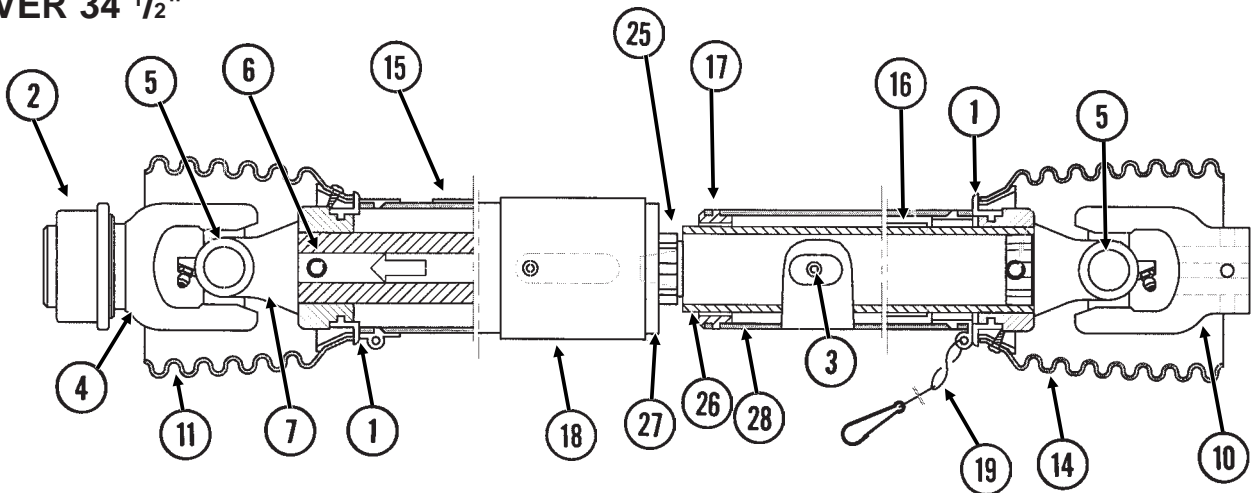
24 1/2" TO 27"



31 1/2" TO 34 1/2"



OVER 34 1/2"



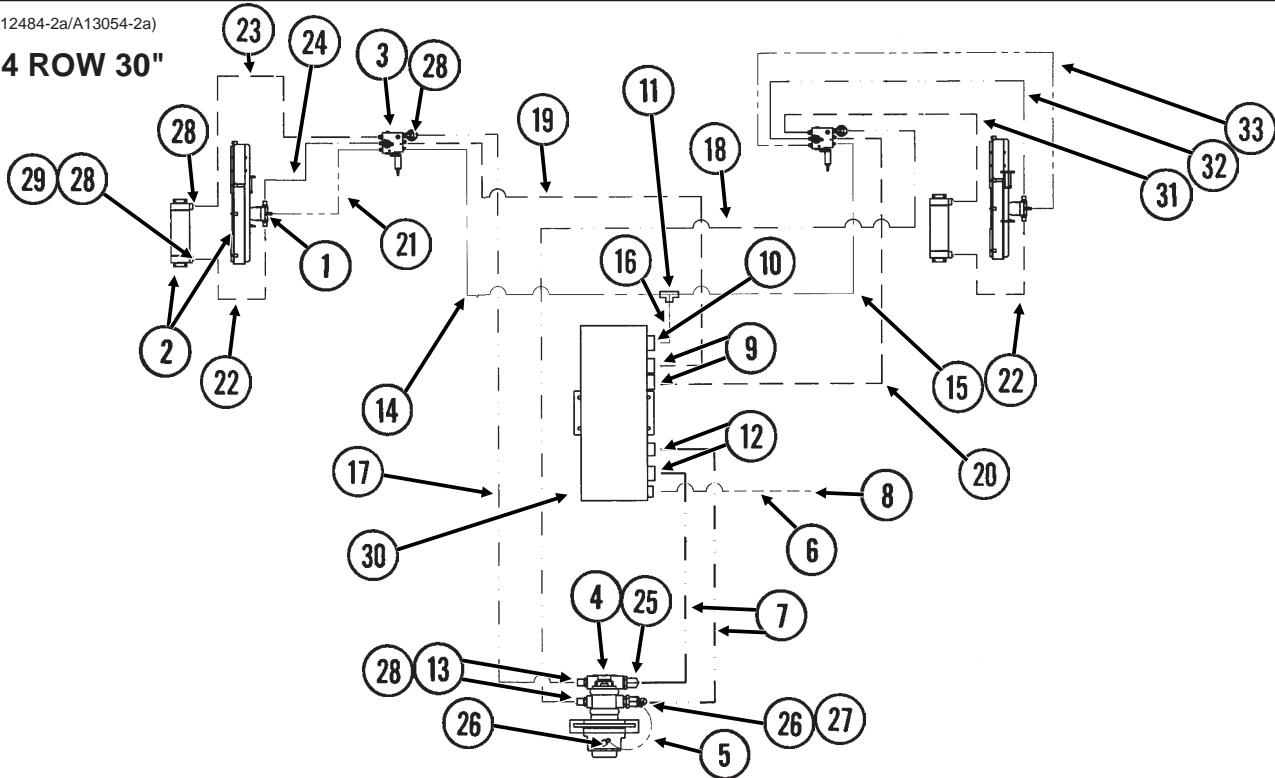
PTO ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1220	2	Bearing Ring
2.	GR1246	1	Quick Disconnect Kit
3.	GR1430	1	Grease Fitting, $\frac{3}{16}$ " Drive-In
4.	GR1850	1	Yoke, 1 $\frac{3}{4}$ "-20 Spline
5.	GR1851	2	Cross & Bearing Kit
6.	GR1852	1	Spring Pin, 10mm x 80mm
7.	GR1853	1	Inboard Yoke
8.	GR1855	1	Inner Profile
9.	GR1858	1	Outer Profile
10.	GR1861	1	Yoke, 1 $\frac{3}{8}$ "
11.	GR1862	1	Shield Cone
12.	GR1864	1	Outer Shield Tube
13.	GR1867	1	Inner Shield Tube
14.	GR1869	1	Shield Cone
15.	GR1870	1	Outer Decal
16.	GR1871	1	Inner Decal
17.	GR1872	1	Support Bearing
18.	GR1874	1	Cover
19.	GR1875	1	Safety Chain
20.	GR1856	1	Inner Profile
21.	GR1859	1	Outer Profile
22.	GR1960	1	Inboard Yoke
23.	GR1865	1	Outer Shield Tube
24.	GR1868	1	Inner Shield Tube
25.	GR1854	1	Inner Profile
26.	GR1857	1	Outer Profile
27.	GR1863	1	Outer Shield Tube
28.	GR1866	1	Inner Shield Tube
29.	G10062	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 3"
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
30.	GD13226-02	1	Key, $\frac{5}{16}$ " Square x 1 $\frac{3}{4}$ "

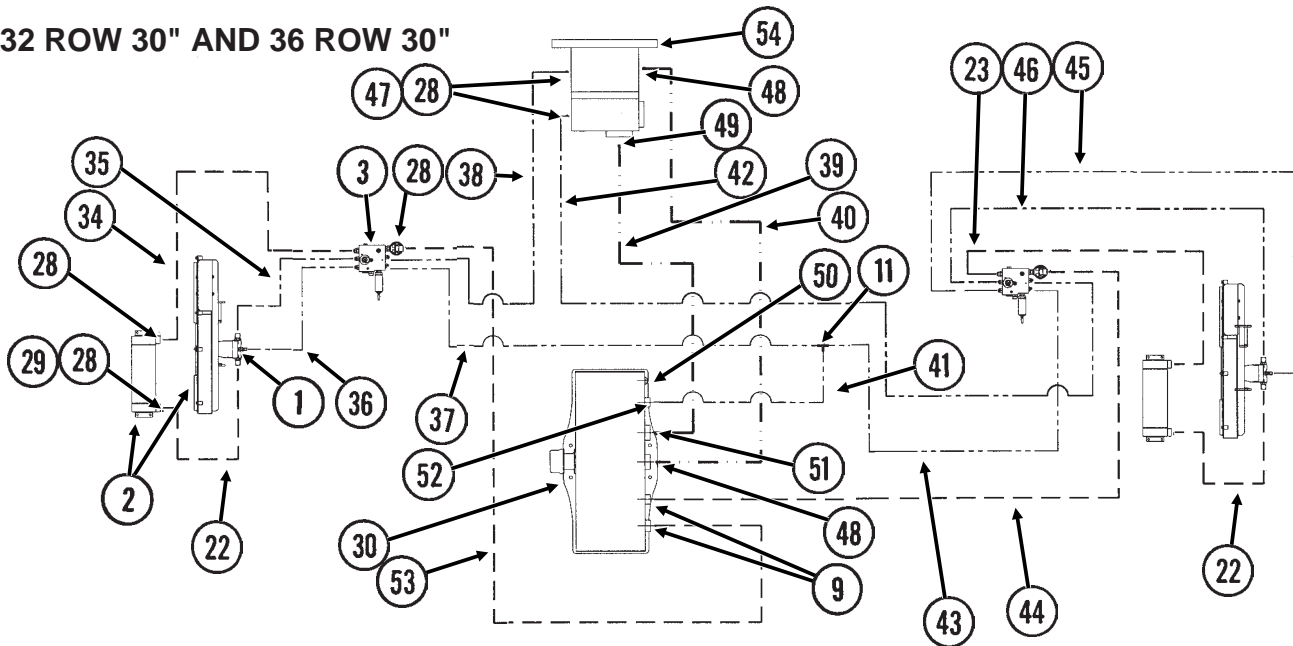
VACUUM FAN HYDRAULIC COMPONENTS

(A12484-2a/A13054-2a)

24 ROW 30"



32 ROW 30" AND 36 ROW 30"



ITEM	PART NO.	QTY.	DESCRIPTION
1.	-	-	See "Vacuum Fan Hydraulic Motor Assembly", Page P58
2.	-	-	See "Vacuum Gauges, Control Console And Vacuum Fan Assembly With Oil Cooler", Pages P58 And P59
3.	-	-	See "Vacuum Fan Motor Valve Block Assembly (Located On Both Sides Of Planter)", Page P59
4.	-	-	See PTO Pump Assembly, Page P56
5.	*A3292	1	Hose Assembly, 3/8" x 22"
6.	*A12704	1	Hose Assembly, 1/2" x 32"
7.	*A11805	2	Hose Assembly, 1 1/4" x 24"
8.	G304-C-10	1	Cap Nut, 7/8"-14 JIC
9.	G6801-12 GR1467	2 -	Elbow W/O-Ring, 90°, 1 1/16"-12 Male JIC To O-Ring O-Ring

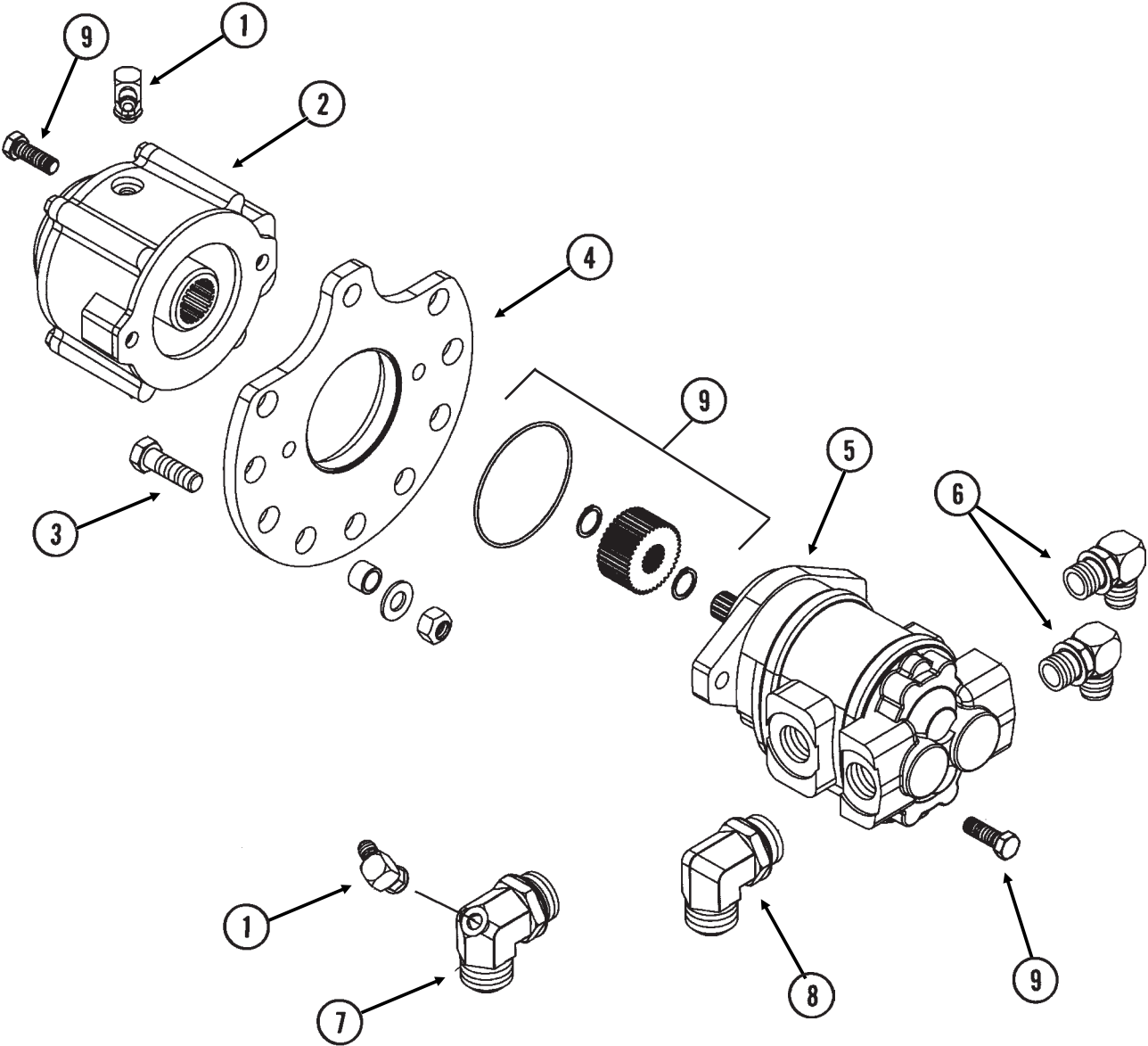
VACUUM FAN HYDRAULIC COMPONENTS

ITEM	PART NO.	QTY.	DESCRIPTION
10.	G6801-10	1	Elbow W/O-Ring, 90°, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
11.	G2603-08	1	Tee, 3/4"-16 Male JIC
12.	G6400-20	2	Adapter, 1 5/8"-12 JIC To O-Ring
	GR1787	-	O-Ring
13.	G6701-L-12	2	Tube L, 90°, 1 1/16"-12 JIC To Swivel
14.	*A3201	1	Hose Assembly, 3/8" x 176"
15.	*A3283	1	Hose Assembly, 3/8" x 108"
16.	*A12048	1	Hose Assembly, 3/8" x 76"
17.	GA11427	1	Hose Assembly, 5/8" x 218"
18.	*A11426	1	Hose Assembly, 5/8" x 224"
19.	*A12903	1	Hose Assembly, 3/4" x 246"
20.	*A12902	1	Hose Assembly, 3/4" x 262"
21.	*A3290	1	Hose Assembly, 3/8" x 98"
22.	*A3381	2	Hose Assembly, 3/4" x 26"
23.	*A3384	1	Hose Assembly, 3/4" x 122"
24.	*A11410	1	Hose Assembly, 5/8" x 98"
25.	G6801-20	1	Elbow W/O-Ring, 90°, 1 5/8"-12 Male JIC To O-Ring
	GR1787	-	O-Ring
26.	G6801-06	2	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
27.	GD16994	1	Special Elbow W/O-Ring, 90°, 1 5/8"-12 Male JIC To O-Ring
	GR1787	-	O-Ring
28.	G6400-12	8	Connector W/O-Ring, 1 1/16"-12 Male JIC To O-Ring
	GR1467	-	O-Ring
29.	G6502-12	2	Swivel Elbow, 45°, 1 1/16"-12 Male JIC To Female
30.	GA12845	1	Tank, 8 Gallon
31.	*A3385	1	Hose Assembly, 3/4" x 182"
32.	*A11409	1	Hose Assembly, 5/8" x 170"
33.	*A3291	1	Hose Assembly, 3/8" x 168"
34.	*A3392	1	Hose Assembly, 3/4" x 50"
35.	*A11435	1	Hose Assembly, 5/8" x 28"
36.	*A12014	1	Hose Assembly, 3/8" x 34"
37.	*A12055	1	Hose Assembly, 3/8" x 275"
38.	*A11436	1	Hose Assembly, 5/8" x 326"
39.	*A11806	1	Hose Assembly, 1 1/4" x 60"
40.	*A11807	1	Hose Assembly, 1 1/4" x 78"
41.	*A3222	1	Hose Assembly, 3/8" x 18"
42.	*A11437	1	Hose Assembly, 5/8" x 348"
43.	*A12056	1	Hose Assembly, 3/8" x 323"
44.	*A12907	1	Hose Assembly, 3/4" x 323"
45.	*A3290	1	Hose Assembly, 3/8" x 98"
46.	*A11410	1	Hose Assembly, 5/8" x 98"
47.	G6500-12	2	Swivel Elbow, 90°, 1 1/16"-12 Male JIC To Female
48.	G6801-LL-20	2	X-Long Elbow W/O-Ring, 90°, 1 5/8"-12 Male JIC To O-Ring
	GR1787	-	O-Ring
49.	6400-20-16	1	Connector W/O-Ring, 1 5/8"-12 JIC To 1 5/16"-12 O-Ring
	GR1786	-	O-Ring
50.	G5406-08P	1	Pipe Plug, 1/2" NPT
51.	G6801-L-20	1	Long Elbow W/O-Ring, 90°, 1 5/8"-12 Male JIC To O-Ring
	GR1787	-	O-Ring
52.	G6801-08-10	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To 7/8"-14 O-Ring
	GR1468	-	Seal Kit, Includes: (4)O-Rings, (5) BU Rings
53.	*A3398	1	Hose Assembly, 3/4" x 274"
54.	GA13245	1	Hydraulic Pump

* Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.

PTO PUMP ASSEMBLY

(FWD123)

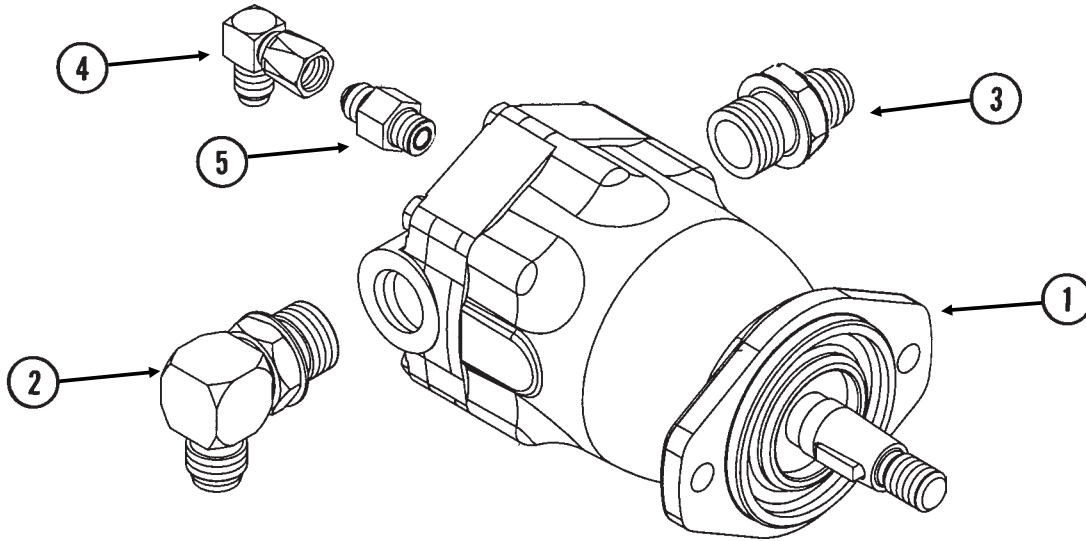


PTO PUMP ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-06	2	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
2.	GA11677	1	Planetary Gearbox
3.	G10008	5	Hex Head Cap Screw, 5/8"-11 x 2"
	GB0218	5	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
	GD7805	5	Special Washer, 5/8", Hardened
	G10107	5	Lock Nut, 5/8"-11
4.	GD17215	1	Plate
5.	GA11676	1	PTO Pump
6.	G6801-12	2	Elbow W/O-Ring, 90°, 1 1/16"-12 Male JIC To O-Ring
	GR1467	-	O-Ring
7.	GD16994	1	Special Elbow W/O-Ring, 90°, 1 5/8"-12 Male JIC To O-Ring
	GR1787	-	O-Ring
8.	G6801-20	1	Elbow W/O-Ring, 90°, 1 5/8"-12 Male JIC To O-Ring
	GR1787	-	O-Ring
9.	GA11678	1	Gearbox Mounting Kit, Includes: (4) Bolts, (1) O-Ring, (2) Retainers, (1) Gear

VACUUM FAN HYDRAULIC MOTOR ASSEMBLY

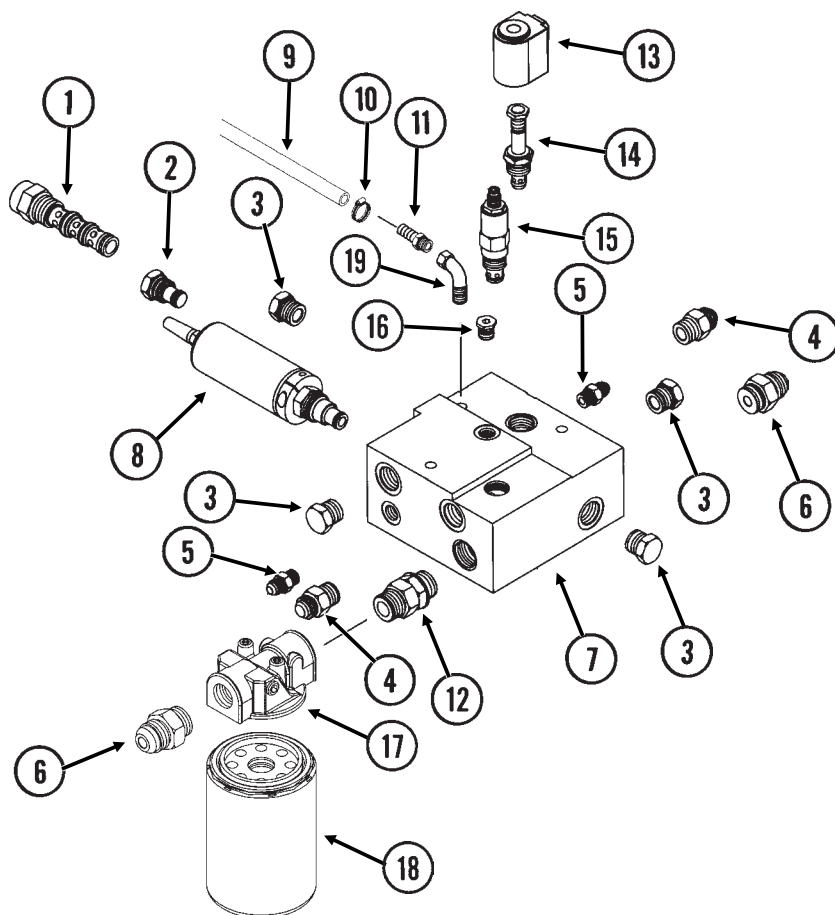
(METR21b)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10149 GR1734	1 -	Hydraulic Motor Seal Kit
2.	G6801-10-12 GR1467	1 -	Elbow W/O-Ring, 90°, 7/8"-14 Male JIC To 1 1/16"-12 O-Ring O-Ring
3.	G6400-12 GR1467	2 -	Connector W/O-Ring, 1 1/16"-12 Male JIC To O-Ring O-Ring
4.	G6500-06	1	Swivel Elbow, 90°, 9/16"-18 Male JIC To Female
5.	G6400-06 GR1045	1 -	Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring O-Ring

VACUUM FAN MOTOR VALVE BLOCK ASSEMBLY (Located On Both Sides Of Planter)

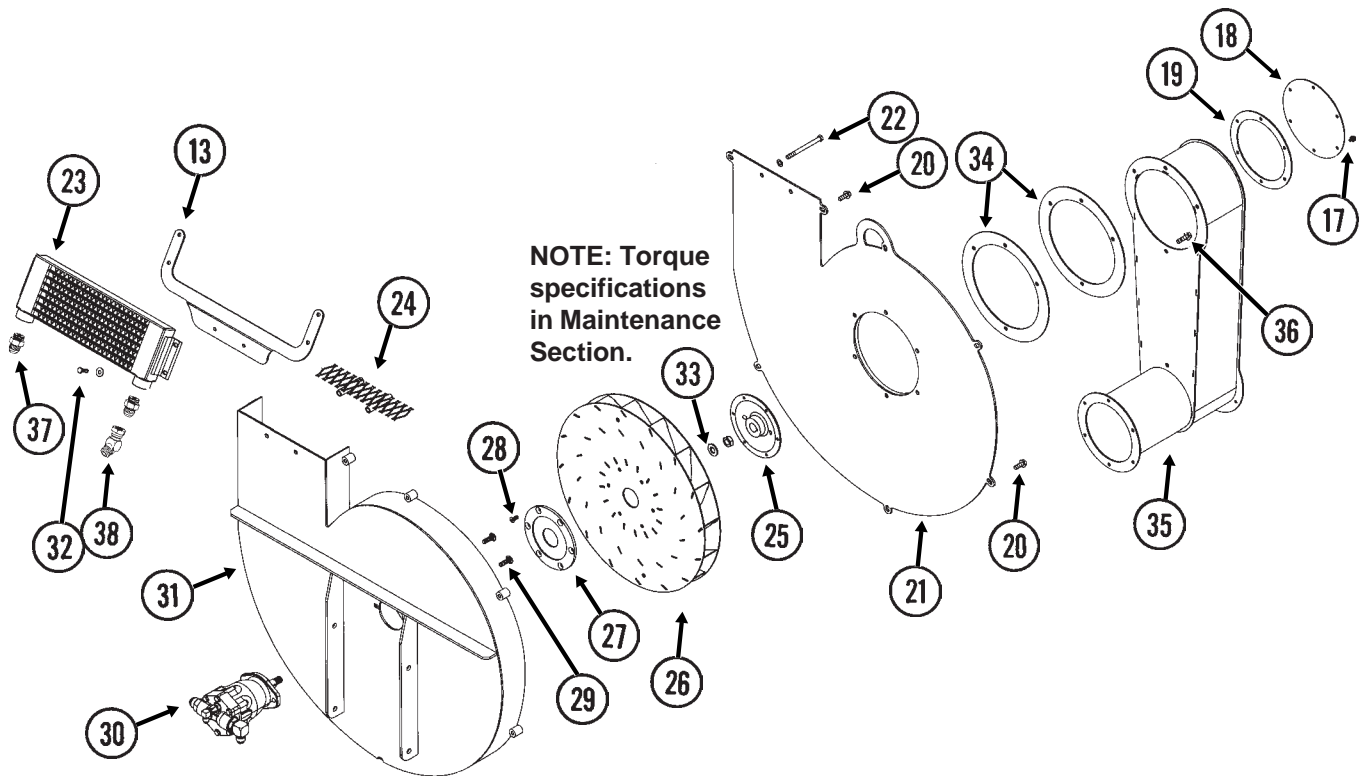
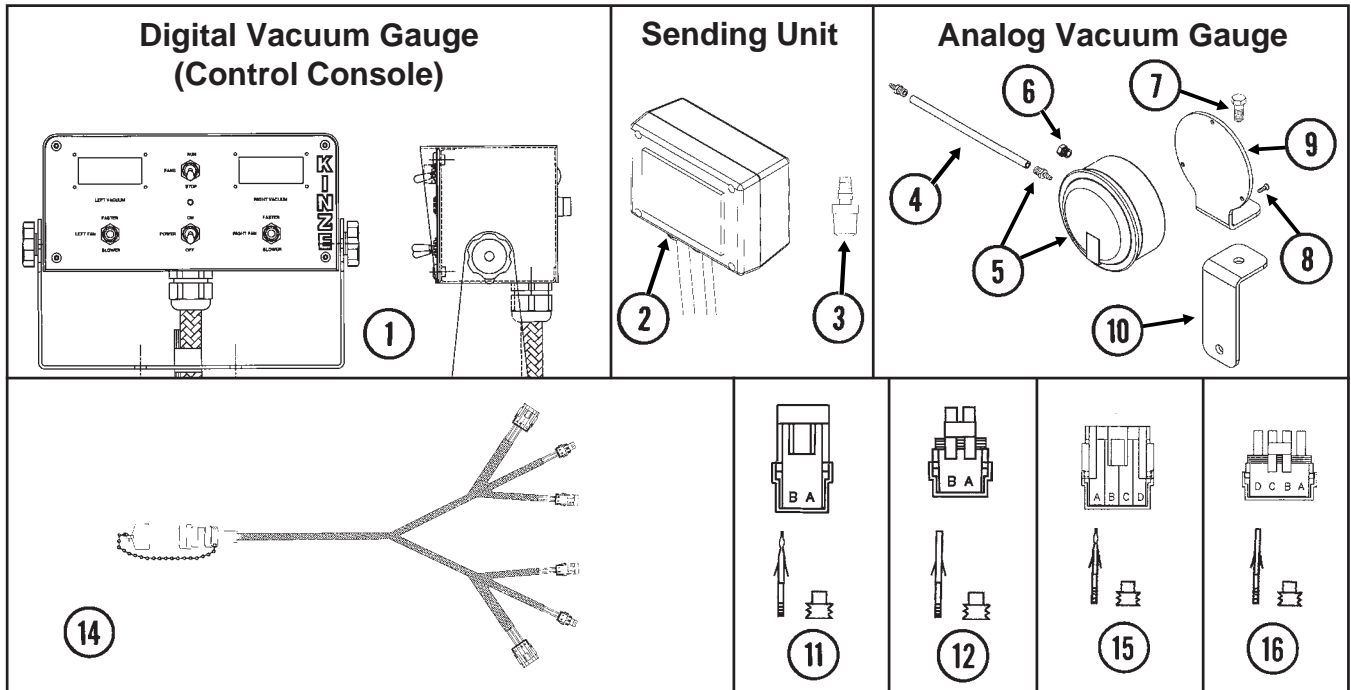
(FWD126a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11682	1	Pressure Compensating Element
2.	GA11934	1	Relief Valve Cartridge
3.	G6408-10	4	Plug W/O-Ring, 7/8"-14 O-Ring
	GR1466	-	O-Ring
4.	G6400-10	2	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
5.	G6400-06	2	Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
6.	G6400-12	2	Connector W/O-Ring, 1 1/16"-12 Male JIC To O-Ring
	GR1467	-	O-Ring
7.	GD16873	1	Valve Block
8.	GA11799	1	Flow Control Cartridge W/Terminals
9.	GD6279-05	1	Clear Plastic Tubing, 9/16" O.D. x 60"
10.	G10681	1	Hose Clamp, No. 6
11.	GD11700	1	Adapter, 1/4" NPT To 3/8" Barb
12.	G6403-NWO-12	1	Adjustable Union, 1 1/16"-12 O-Ring
	GR1467	-	O-Ring
13.	GA11900	1	Coil W/Terminals
14.	GA11680	1	Cartridge
15.	GA11679	1	Relief Valve
16.	G6408-H06-O	1	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
17.	GD16038	1	Filter Head
18.	GD16037	1	Oil Filter, 10 Micron
19.	G11260	1	Elbow, 1/4" NPT Male To Female

VACUUM GAUGES, CONTROL CONSOLE AND VACUUM FAN ASSEMBLY WITH OIL COOLER

(A11692/A11156/GR1736/A10765/A11158/A11699/A7856/A11155/A8329/FWD127)

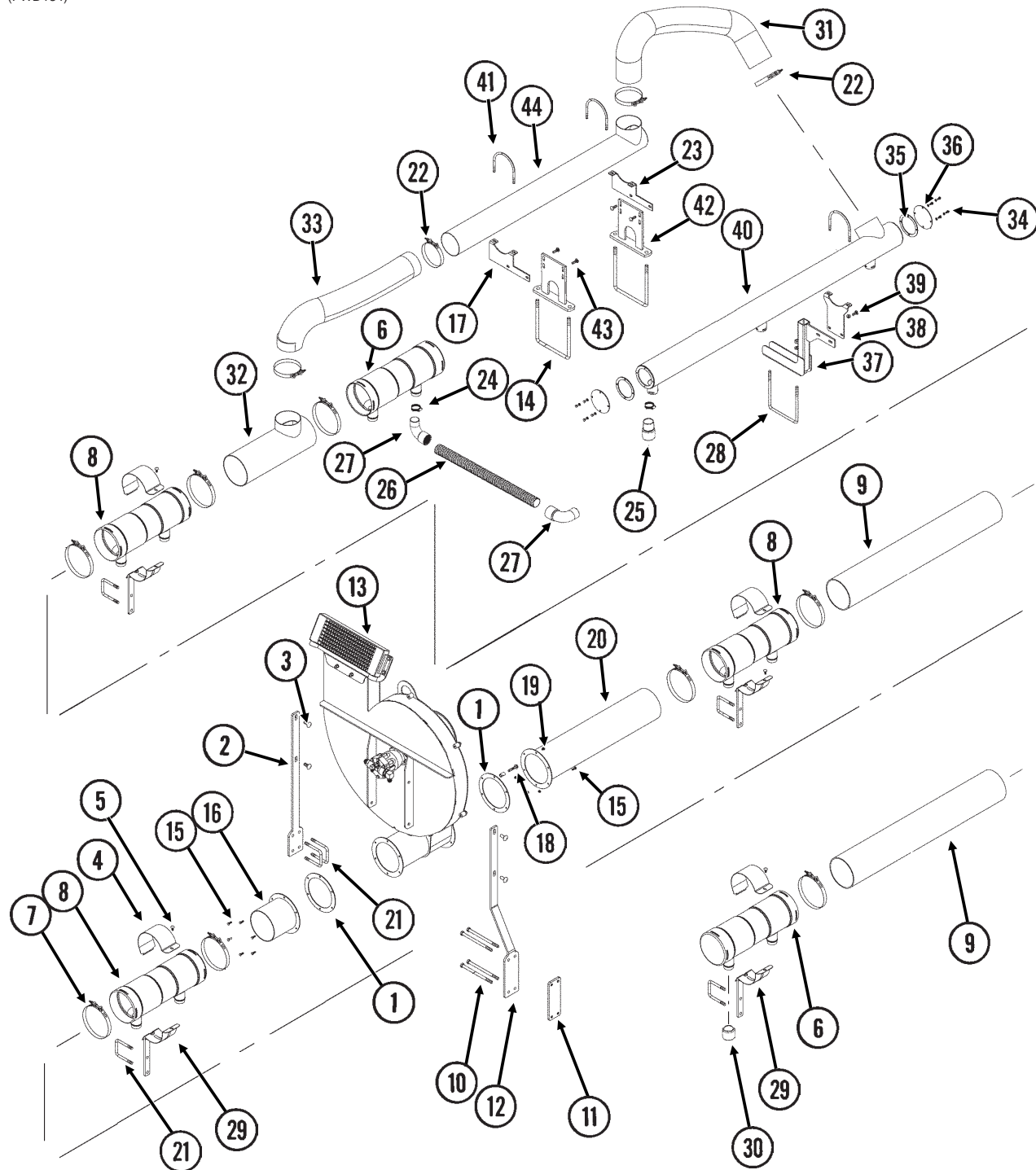


VACUUM GAUGES, CONTROL CONSOLE AND VACUUM FAN ASSEMBLY WITH OIL COOLER

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G8081X	1	Backlit Control Console Assembly W/Mounting Brackets, Harness W/Dust Cap And Power Cable
	GD14640	-	Mounting Bracket
	GA6975	-	Knob
	GD2829	-	Fuse, 15 Amp, Type AGC
2.	GA11156	1	Sending Unit W/1/4" Tubing And Harness
	GD16324-01	-	Clear Plastic Tubing, 1/4" x 45"
	GA9964	-	Strain Relief
3.	GR1736	1	Hose Barb, 1/8" Male NPT To Barb
4.	GD15849-02	1	Clear Plastic Tubing, 5/16" O.D. x 3/16" I.D. x 120"
5.	GA10765	1	Analog Vacuum Gauge W/Hose Barb
	GR1777	-	Hose Barb, 1/8" Male NPT To 3/16" Barb
6.	GA10799	1	Breather, 1/8" Male NPT
7.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10210	1	Washer, 3/8" USS
	G10108	1	Lock Nut, 3/8"-16
8.	G11138	3	Hex Socket Head Cap Screw, No. 6-32 x 1/2", Grade 8
9.	GD15804	1	Mount
10.	GD15803	1	Support
11.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
12.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
13.	GD16608	1	Bracket
14.	GA11689	1	Harness, 432", 24 Row 30"
	GA11691	-	Harness, 519", 32 Row 30" And 36 Row 30"
15.	GA8328	-	4-Pin Female Connector Kit, Includes: (1) 4-Pin Female Housing, (4) Seals, (4) Pin Contacts
16.	GA8329	-	4-Pin Male Connector Kit, Includes: (1) 4-Pin Male Housing, (4) Seals, (4) Sockets
17.	G11166	6	Whiz Lock Bolt, 1/4"-20 x 3/4"
18.	GD16840	1	Cover
19.	GD16991	1	Cover Gasket, 1/8" x 8 3/8" (6 1/2" I.D.)
20.	G11124	7	Whiz Lock Bolt, 3/8"-18 x 1"
21.	GA10752	1	Cover
22.	G10063	2	Hex Head Cap Screw, 3/8"-16 x 4"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
23.	GA10917	1	Oil Cooler
24.	GA11987	2	Screen
25.	GD15790	1	Hub
26.	GA10635	1	Impeller
27.	GD15789	1	Backing Plate
28.	G11133	6	Hex Socket Head Cap Screw, 5/16"-18 x 3/4", Grade 8
29.	G10599	2	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
30.		-	See "Vacuum Fan Hydraulic Motor Assembly", Page P58
31.	GA10148	1	Shroud
32.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10219	4	Washer, 5/16" USS
	G10109	4	Lock Nut, 5/16"-18, Grade B
33.	G10205	1	Washer, 5/8" SAE
	G10499	1	Hex Jam Nut, 5/8"-18, Grade 2
34.	GD16992	2	Gasket, 1/8" x 11 7/8"
35.	GA11651	1	Outlet
36.	G11204	4	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
37.	G6400-12	2	Connector W/O-Ring, 1 1/16"-12 Male JIC To O-Ring
	GR1467	-	O-Ring
38.	G6502-12	1	Swivel Elbow, 45°, 1 1/16"-12 Male JIC To Female
A.	GA11757	-	Vacuum Fan Assembly (Items 13, 20-31 And 33)

MANIFOLDS AND DISTRIBUTION HOSES, 24 ROW 30"

(FWD134)



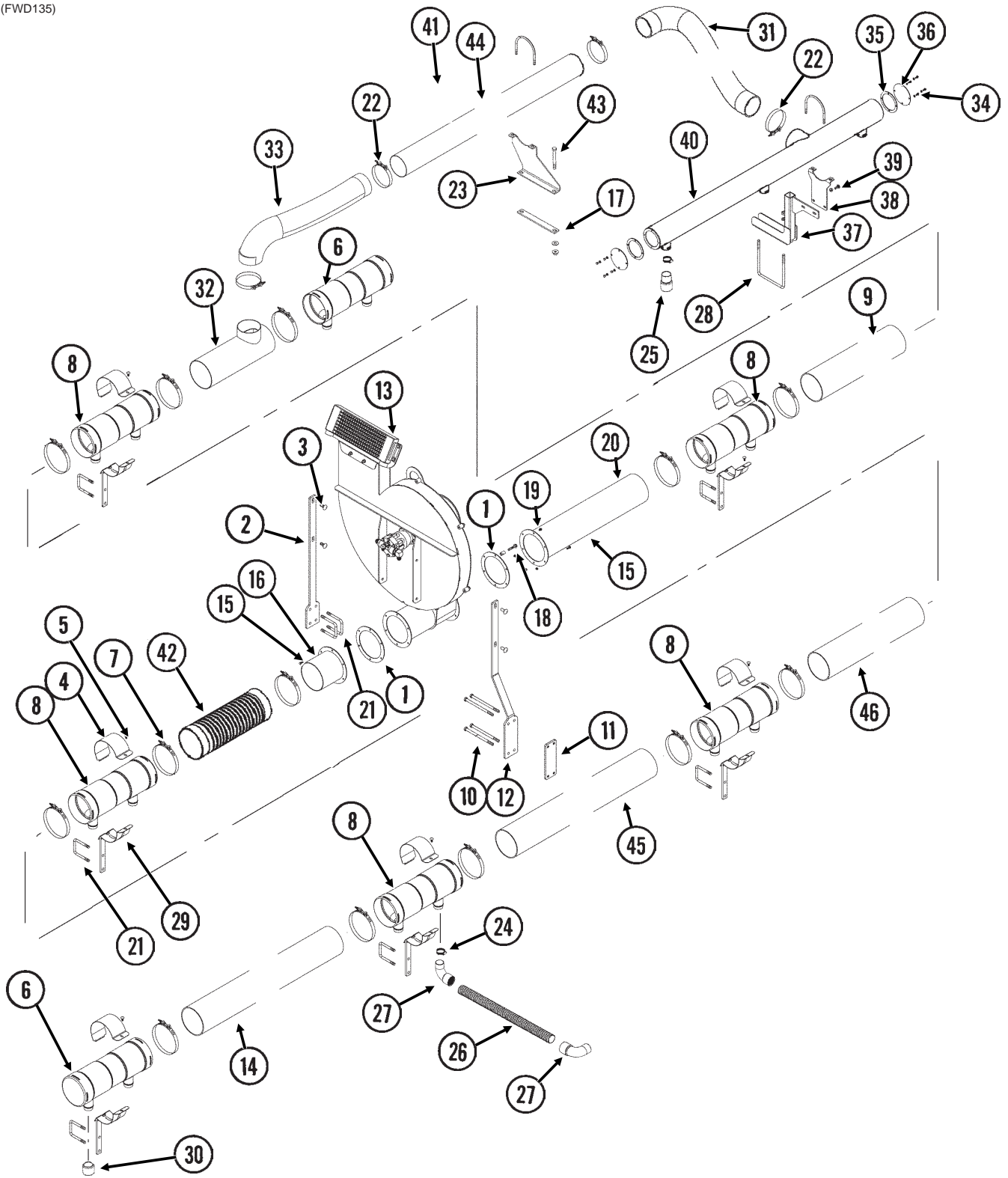
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16842	4	Manifold Gasket, 1/8" x 8 3/8" (6 5/8" I.D.)
2.	GD16844	-	Support
3.	G10574	-	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10071	-	Serrated Flange Nut, 1/2"-13
4.	GD15854	10	Clamp
5.	G10312	-	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	-	Serrated Flange Nut, 5/16"-18
6.	GD15850	4	Manifold, 21" (Open One End)
7.	G11145	-	T-Bolt Clamp, 7"

MANIFOLDS AND DISTRIBUTION HOSES, 24 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
8.	GD15799	6	Manifold, 21" (Open Both Ends)
9.	GD15856-07	2	Pipe, 6" x 42"
10.	G11200	8	Hex Head Cap Screw, 1/2"-13 x 8"
11.	GD16843	2	Tap Block
12.	GD16845	2	Support
13.		-	See "Vacuum Gauges, Control Console And Vacuum Fan Assembly With Oil Cooler", Pages P60 And P61
14.	GD16320	-	U-Bolt, 8" x 8" x 5/8"-11
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 5/8"-11
15.	G10023	-	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10110	-	Lock Nut, 1/4"-20, Grade B
16.	GA11653	2	Manifold Flange, 6"
17.	GD16862	2	Support, R.H.
18.	G11199	2	Whiz Lock Bolt, 3/8"-16 x 2"
	GD8893-07	2	Sleeve, 1" Long
19.	G11166	-	Whiz Lock Bolt, 1/4"-20 x 3/4"
20.	GA11655	1	Manifold Flange, 31"
	GA11654	-	Manifold Flange, 26"
21.	GD4743	-	U-Bolt, 3" x 3" x 1/2"-13
	G10228	-	Lock Washer, 1/2"
	G10102	-	Hex Nut, 1/2"-13
22.	G11188	4	T-Bolt Clamp, 5 1/4"
23.	GD16863	2	Support, L.H.
	GD16862	-	Support, R.H.
24.	G10676	24	Hose Clamp, No. 36, Stainless Steel
25.	GD14627	6	Coupler
26.	GD15792-03	1	Hose, 2" x 28"
	GD15792-05	1	Hose, 2" x 38"
	GD15792-06	7	Hose, 2" x 42"
	GD15792-12	11	Hose, 2" x 44"
	GD15792-19	4	Hose, 2" x 26"
27.	GD14626	42	Elbow, 90°, 2"
28.	GD7145	-	U-Bolt, 7" x 7" x 1/2"-13
	G10228	-	Lock Washer, 1/2"
	G10102	-	Hex Nut, 1/2"-13
29.	GA11656	10	Support
30.	G11147	-	Cap, 2"
31.	GD15867-05	2	Hose, 5" x 55"
32.	GA11204	2	Manifold, 19"
33.	GD15867-02	2	Hose, 5" x 50"
34.	G10022	-	Hex Head Cap Screw, 1/4"-20 x 1/2"
	G10227	-	Lock Washer, 1/4"
35.	GD16864	4	Gasket, 1/8"
36.	GD16854	4	Cover
37.	GA11660	4	Support
38.	GD16855	4	Support
39.	G10305	-	Carriage Bolt, 3/8"-16 x 1"
	G10622	-	Serrated Flange Nut, 3/8"-16
40.	GA11659	1	Manifold, 68 55/64", L.H.
	GA11658	1	Manifold, 53 23/64", R.H.
41.	GD15833	-	U-Bolt, 5" Diameter x 3/8"-16
	G10622	-	Serrated Flange Nut, 3/8"-16
42.	GA11531	4	Mount
43.	G10599	-	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10622	-	Serrated Flange Nut, 3/8"-16
44.	GA11657	2	Manifold, 52 7/64"

MANIFOLDS AND DISTRIBUTION HOSES, 36 ROW 30"

(FWD135)



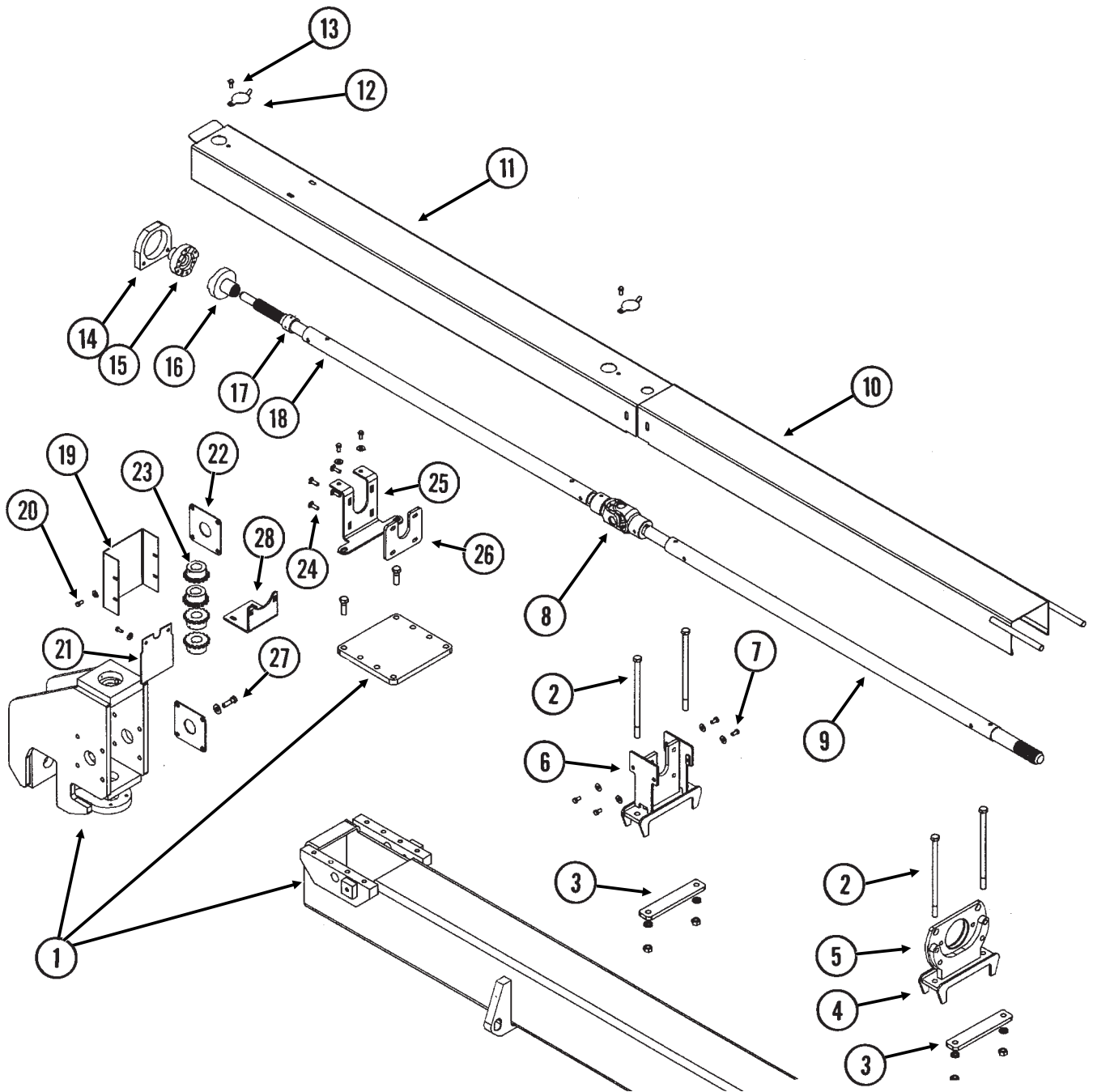
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16842	4	Manifold Gasket, 1/8" x 8 3/8" (6 5/8" I.D.)
2.	GD16844	-	Support
3.	G10574	-	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10071	-	Serrated Flange Nut, 1/2"-13
4.	GD15854	14	Clamp
5.	G10312	-	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	-	Serrated Flange Nut, 5/16"-18

MANIFOLDS AND DISTRIBUTION HOSES, 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
6.	GD15850	4	Manifold, 21" (Open One End)
7.	G11145	-	T-Bolt Clamp, 7"
8.	GD15799	10	Manifold, 21" (Open Both Ends)
9.	GD15856-09	1	Pipe, 6" x 45 1/2", L.H.
	GD15856-12	-	Pipe, 6" x 67", R.H.
10.	G11200	8	Hex Head Cap Screw, 1/2"-13 x 8"
11.	GD16843	2	Tap Block
12.	GD16845	2	Support
13.		-	See "Vacuum Gauges, Control Console And Vacuum Fan Assembly With Oil Cooler", Pages P60 And P61
14.	GD15856-08	1	Pipe, 6" x 43 1/2", L.H.
	GD15856-07	-	Pipe, 6" x 42", R.H.
15.	G10023	-	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10110	-	Lock Nut, 1/4"-20, Grade B
16.	GA11673	2	Manifold Flange, 5"
17.	GD17016	4	Plate, 1 1/4" x 10"
18.	G11199	2	Whiz Lock Bolt, 3/8"-16 x 2"
	GD8893-07	2	Sleeve, 1" Long
19.	G11166	-	Whiz Lock Bolt, 1/4"-20 x 3/4"
20.	GA11675	1	Manifold Flange, 37 41/64", L.H.
	GA11674	-	Manifold Flange, 11 9/64", R.H.
21.	GD4743	-	U-Bolt, 3" x 3" x 1/2"-13
	G10228	-	Lock Washer, 1/2"
	G10102	-	Hex Nut, 1/2"-13
22.	G11188	4	T-Bolt Clamp, 5 1/4"
23.	GD16898	4	Support
24.	G10676	36	Hose Clamp, No. 36, Stainless Steel
25.	GD14627	8	Coupler
26.	GD15792-05	2	Hose, 2" x 38"
	GD15792-06	17	Hose, 2" x 42"
	GD15792-14	5	Hose, 2" x 46"
	GD15792-16	1	Hose, 2" x 55"
	GD15792-20	5	Hose, 2" x 32"
	GD15792-21	4	Hose, 2" x 52"
	GD15792-22	2	Hose, 2" x 58"
27.	GD14626	64	Elbow, 90°, 2"
28.	GD7145	-	U-Bolt, 7" x 7" x 1/2"-13
	G10228	-	Lock Washer, 1/2"
	G10102	-	Hex Nut, 1/2"-13
29.	GA11656	10	Support
30.	G11147	-	Cap, 2"
31.	GD15867-03	2	Hose, 5" x 36"
32.	GA11204	2	Manifold, 19"
33.	GD15867-04	2	Hose, 5" x 42"
34.	G10022	-	Hex Head Cap Screw, 1/4"-20 x 1/2"
	G10227	-	Lock Washer, 1/4"
35.	GD16864	4	Gasket, 1/8"
36.	GD16854	4	Cover
37.	GA11660	4	Support
38.	GD16855	4	Support
39.	G10305	-	Carriage Bolt, 3/8"-16 x 1"
	G10622	-	Serrated Flange Nut, 3/8"-16
40.	GA11671	1	Manifold, 68 55/64", L.H.
	GA11672	1	Manifold, 53 23/64", R.H.
41.	GD15833	-	U-Bolt, 5" Diameter x 3/8"-16
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 3/8"-11
42.	GD17317-01	2	Hose, 7" x 21"
43.	G10045	-	Hex Head Cap Screw, 1/2"-13 x 4 1/2"
	G10216	-	Washer, 1/2" USS
	G10071	-	Serrated Flange Nut, 1/2"-13
44.	GD16119-12	2	Tube, 5" O.D. x 72"
45.	GD15856-08	1	Pipe, 6" x 43 1/2", L.H.
	GD15856-09	-	Pipe, 6" x 44 1/2", R.H.
46.	GD15856-10	1	Pipe, 6" x 55", L.H.
	GD15856-11	-	Pipe, 6" x 60", R.H.

PTO ASSEMBLY ON HITCH, 24 ROW 30"

(FWD166)



NOTE: See "Vacuum Fan Hydraulic Components, pages P54 and P55 for PTO pump and planetary gearbox.

PTO ASSEMBLY ON HITCH, 24 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See "Inner/Outer Fixed Hitch, 24 Row 30'", Pages P70 And P71
2.	G11122	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 12"
	GD7805	2	Special Washer, $\frac{5}{8}$ ", Hardened
	G10107	2	Lock Nut, $\frac{5}{8}$ "-11
3.	GD18279	-	Plate
4.	GA12843	-	Pump Mount
5.	GD18282	-	Plate
6.	GA12844	1	Bearing Mount
7.	G10002	8	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x $\frac{3}{4}$ "
	G10210	8	Washer, $\frac{3}{8}$ " USS
8.	GA12863	1	PTO Knuckle Assembly
9.	GA12850	1	Rear PTO Shaft
10.	GA12819	1	Rear Shaft Cover
11.	GD18193	1	Front PTO Shaft
12.	GD18194	2	Door
13.	G10002	8	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x $\frac{3}{4}$ "
	G10108	5	Lock Nut, $\frac{3}{8}$ "-16
14.	GD18319	1	Guide Pad
15.	GD18190	1	Coupler
16.	GD18191	1	Coupler
17.	GD18324	1	Lock Sleeve
18.	GA12849	1	Front PTO Shaft
19.	GD18309	1	Upper Front PTO Cover
20.	G10043	4	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x $\frac{3}{4}$ "
	G10219	4	Washer, $\frac{5}{16}$ " USS
21.	GD18308	1	Lower Front PTO Cover
22.	GD18307	2	Shim
23.	GD18318	4	Coupling
24.	G10599	4	Carriage Bolt, $\frac{3}{8}$ "-16 x 1 $\frac{1}{4}$ "
	G10622	6	Serrated Flange Nut, $\frac{3}{8}$ "-16
25.	GA12851	1	Shaft Guide Mount
26.	GD18321	1	Pad
27.	G10039	12	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 1 $\frac{3}{4}$ "
	G10216	8	Washer, $\frac{1}{2}$ " USS
28.	GD18320	1	Mount

PTO ASSEMBLY ON HITCH, 32 ROW 30" AND 36 ROW 30"

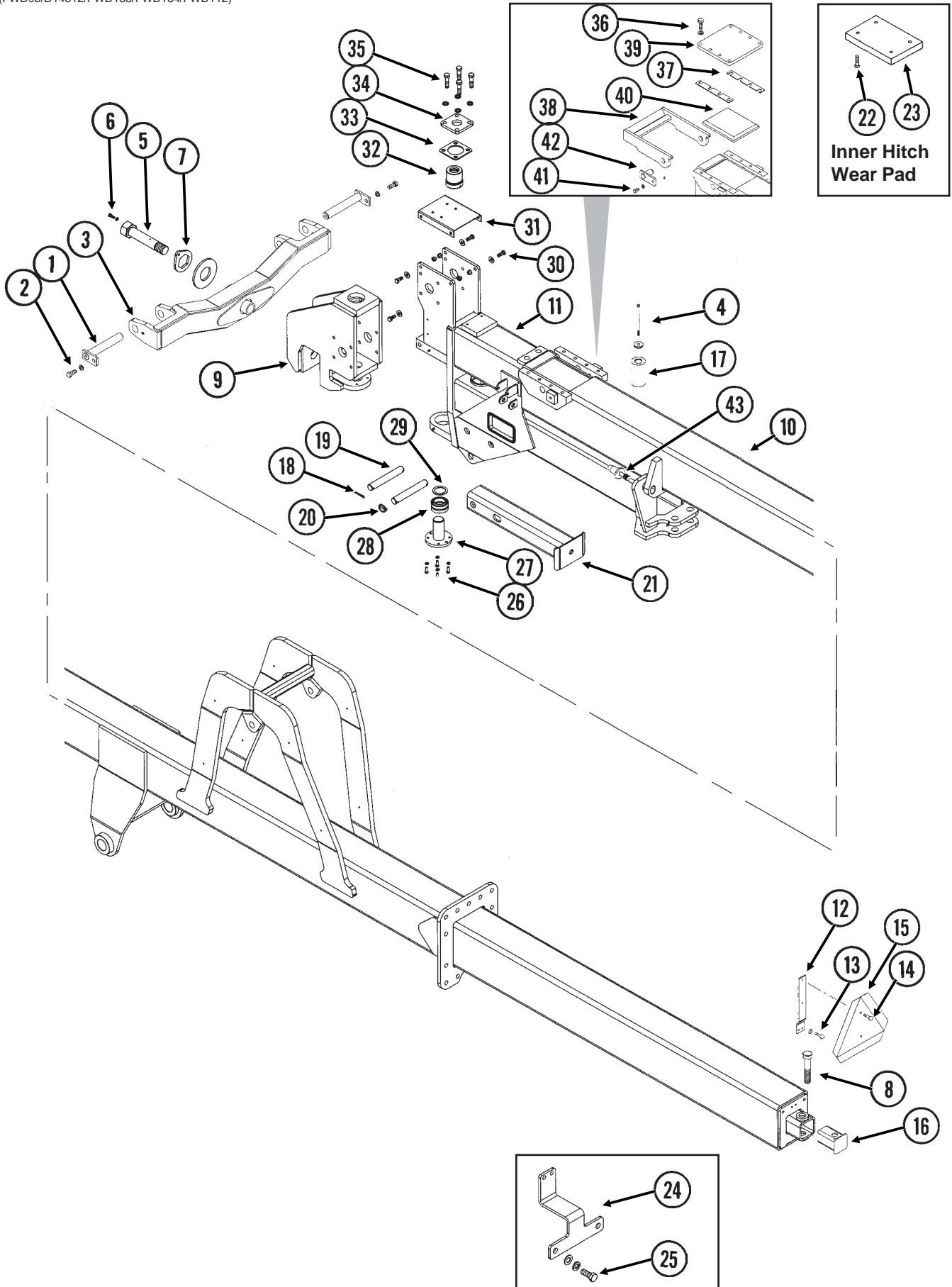
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PTO ASSEMBLY ON HITCH, 32 ROW 30" AND 36 ROW 30"

Information not available.

INNER/OUTER FIXED HITCH, 24 ROW 30"

(FWD9b/D14812/FWD153/FWD164/FWD112)

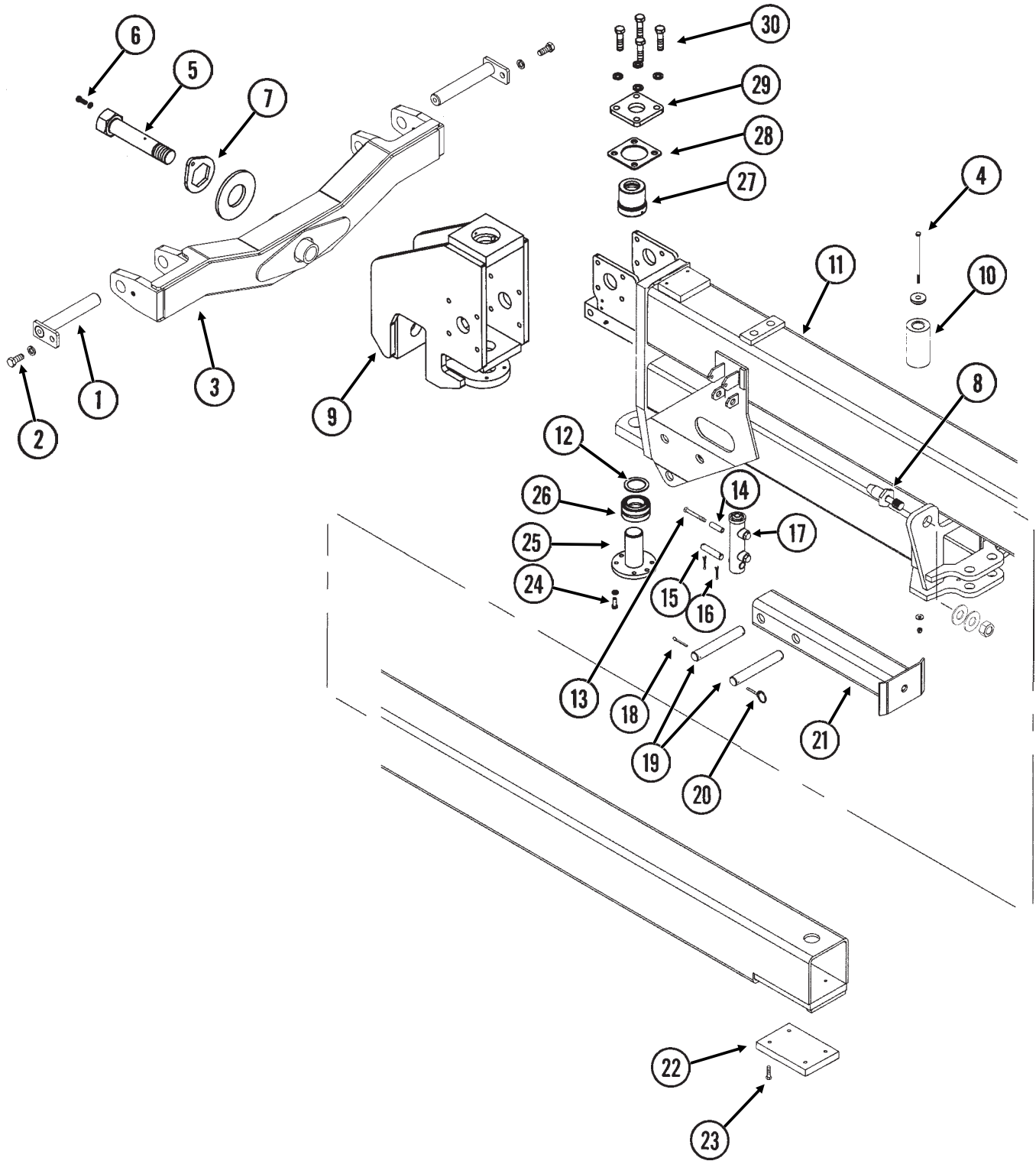


INNER/OUTER FIXED HITCH, 24 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11079	2	Hammer Strap, Category 3N And 3
2.	G10007	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 1 $\frac{1}{2}$ "
	G10230	2	Lock Washer, $\frac{5}{8}$ "
3.	GA12657	1	Hitch Bar
4.	G11048	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 7 $\frac{1}{2}$ "
	GB0212	2	Spring Washer
	G10210	2	Washer, $\frac{3}{8}$ " USS
	G10108	2	Lock Nut, $\frac{3}{8}$ "-16
5.	GA11082	1	Pivot Bolt W/Grease Fitting, 1 $\frac{3}{4}$ " x 10 $\frac{3}{8}$ " (Total Length)
	G10640	-	Grease Fitting, $\frac{1}{4}$ "-28
	GD18170	1	Spacer
6.	G10001	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10229	1	Lock Washer, $\frac{3}{8}$ "
7.	GD18143	1	Pivot Lock Nut
8.	G10042	1	Hex Head Cap Screw, 1 $\frac{1}{4}$ "-7 x 6 $\frac{1}{2}$ "
	G10157	1	Lock Nut, 1 $\frac{1}{4}$ "-7
9.	GA12679	1	Hitch Pivot
10.	GA12455	1	Outer Hitch
11.	GA12687	1	Inner Hitch
12.	GD15624	1	SMV Bracket, Conventional
13.	G10043	2	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x $\frac{3}{4}$ "
	G10232	2	Lock Washer, $\frac{5}{16}$ "
14.	G10020	2	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x $\frac{5}{8}$ "
	G10227	2	Lock Washer, $\frac{1}{4}$ "
	G10103	2	Hex Nut, $\frac{1}{4}$ "-20
15.	GD2199	1	SMV Sign
16.	GA10483	1	Hitch Endcap
17.	GD16227	2	Bushing, 2" O.D. x 1 $\frac{29}{64}$ " I.D. x 5 $\frac{5}{8}$ ", Category 4
18.	G10460	3	Cotter Pin, $\frac{1}{4}$ " x 2"
19.	GD3737	2	Pin, 1 $\frac{1}{4}$ " x 8 $\frac{1}{2}$ "
20.	GD2558	1	Lynch Pin, $\frac{1}{4}$ "
21.	GA10280	1	Hitch Stand
22.	G11099	4	Hex Socket Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ ", Grade 8
23.	GD14812	1	Wear Pad, 5 $\frac{7}{8}$ " x 6 $\frac{1}{2}$ " x 1"
24.	GD16786	1	SMV Extension Bracket, 9 $\frac{3}{4}$ ", SDS
25.	G10037	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 1 $\frac{1}{4}$ "
	G10228	2	Lock Washer, $\frac{1}{2}$ "
	G10206	2	Washer, $\frac{1}{2}$ " SAE
26.	G10001	4	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10229	4	Lock Washer, $\frac{3}{8}$ "
27.	GA12681	1	Pivot Pin
28.	GA12689	1	Spherical Bearing
29.	GD18175	1	Shim
30.	G10037	4	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 1 $\frac{1}{4}$ "
	G10216	4	Washer, $\frac{1}{2}$ " USS
	G10111	4	Lock Nut, $\frac{1}{2}$ "-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, $\frac{5}{8}$ "-11 x 2 $\frac{1}{2}$ "
	G10239	4	Hex Nut, $\frac{5}{8}$ "-11
36.	G10008	8	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 2"
	G10230	12	Lock Washer, $\frac{5}{8}$ "
37.	GD14842	4	Shim, 1 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ ", 10 Gauge
38.	GA10281	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, $\frac{1}{4}$ "-28
39.	GD14841	1	Cover, 10 $\frac{1}{2}$ " x 11" x $\frac{3}{4}$ "
40.	GD14843	1	Wear Pad
41.	G10014	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 1"
	G10228	2	Lock Washer, $\frac{1}{2}$ "
42.	GA10282	2	Pin, 2 $\frac{1}{4}$ "
43.	GD18004	2	Hitch Lock Pin
	G11132	2	Washer, 1 $\frac{1}{8}$ " SAE
	G11097	2	Hex Nut, 1 $\frac{1}{8}$ "-12

INNER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30"

(FWD58a)

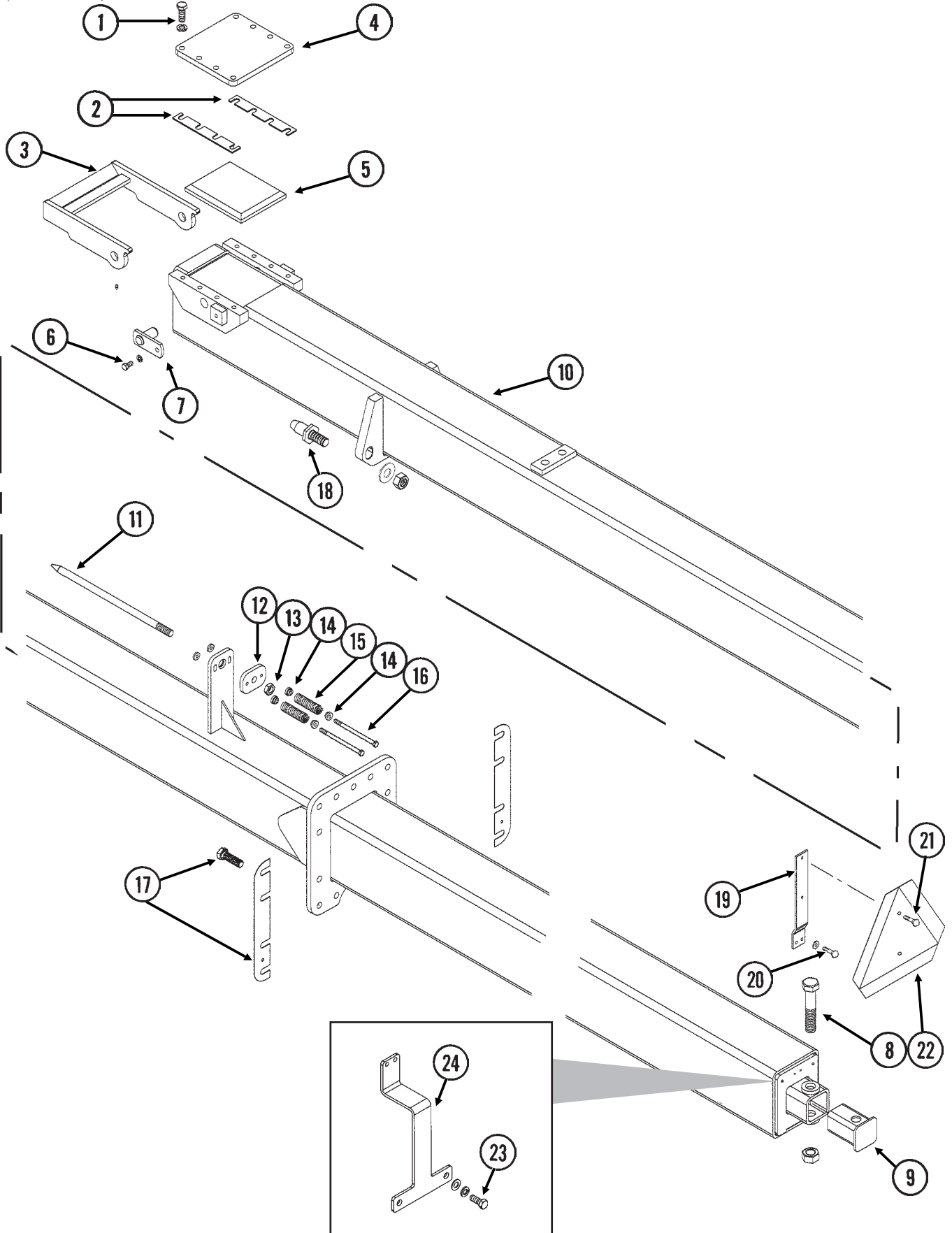


INNER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11079	2	Pin, Category 3N And 3
2.	G10007	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 1 $\frac{1}{2}$ "
	G10230	2	Lock Washer, $\frac{5}{8}$ "
3.	GA12657	1	Hitch Bar
4.	G10686	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 8"
	GB0212	2	Spring Washer
	G10210	2	Washer, $\frac{3}{8}$ " USS
	G10108	2	Lock Nut, $\frac{3}{8}$ "-16
5.	GA11082	1	Pivot Bolt W/Grease Fitting, 1 $\frac{3}{4}$ " x 10 $\frac{3}{8}$ " (Total Length)
	G10640	-	Grease Fitting, $\frac{1}{4}$ "-28
	GD18170	1	Spacer
6.	G10001	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10229	1	Lock Washer, $\frac{3}{8}$ "
7.	GD18143	1	Pivot Lock Nut
8.		-	See "Outer Slide Hitch", Pages P74 And P75
9.	GA12679	1	Hitch Pivot
10.	GD16227	2	Bushing, 2" O.D. x 1 $\frac{29}{64}$ " I.D. x 5 $\frac{5}{8}$ ", Category 4
11.	GA13006	-	Inner Hitch, 348 $\frac{1}{2}$ ", 32 Row 30"
	GA13007	-	Inner Hitch, 373 $\frac{1}{2}$ ", 36 Row 30"
12.	GD18175	1	Shim
13.	G10809	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 3 $\frac{1}{4}$ "
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
14.	GD7137	1	Pin, $\frac{3}{4}$ " x 3 $\frac{3}{8}$ "
15.	GD2971-09	1	Sleeve, 2" Long
16.	G10457	2	Cotter Pin, $\frac{5}{32}$ " x 1 $\frac{1}{2}$ "
17.		1	See "Tongue Latch Cylinder", Page P130
18.	G10460	3	Cotter Pin, $\frac{1}{4}$ " x 2"
19.	GD3737	2	Pin, 1 $\frac{1}{4}$ " x 8 $\frac{1}{2}$ "
20.	GD2558	1	Lynch Pin, $\frac{1}{4}$ "
21.	GA10280	1	Hitch Stand
22.	G11099	4	Hex Socket Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ ", Grade 8
23.	GD14812	1	Wear Pad, 5 $\frac{7}{8}$ " x 6 $\frac{1}{2}$ " x 1"
24.	G10001	4	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10229	4	Lock Washer, $\frac{3}{8}$ "
25.	GA12681	1	Pivot Pin
26.	GA12689	1	Spherical Bearing
27.	GA12688	1	Special Spherical Bearing
28.	GD18151	1	Spacer
29.	GD18152	1	Cap
30.	G10009	4	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 2 $\frac{1}{2}$ "
	G10239	4	Hex Nut, $\frac{5}{8}$ "-11

OUTER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30"

(FWD9a/FWD112a)



OUTER SLIDE HITCH, 32 ROW 30" AND 36 ROW 30"

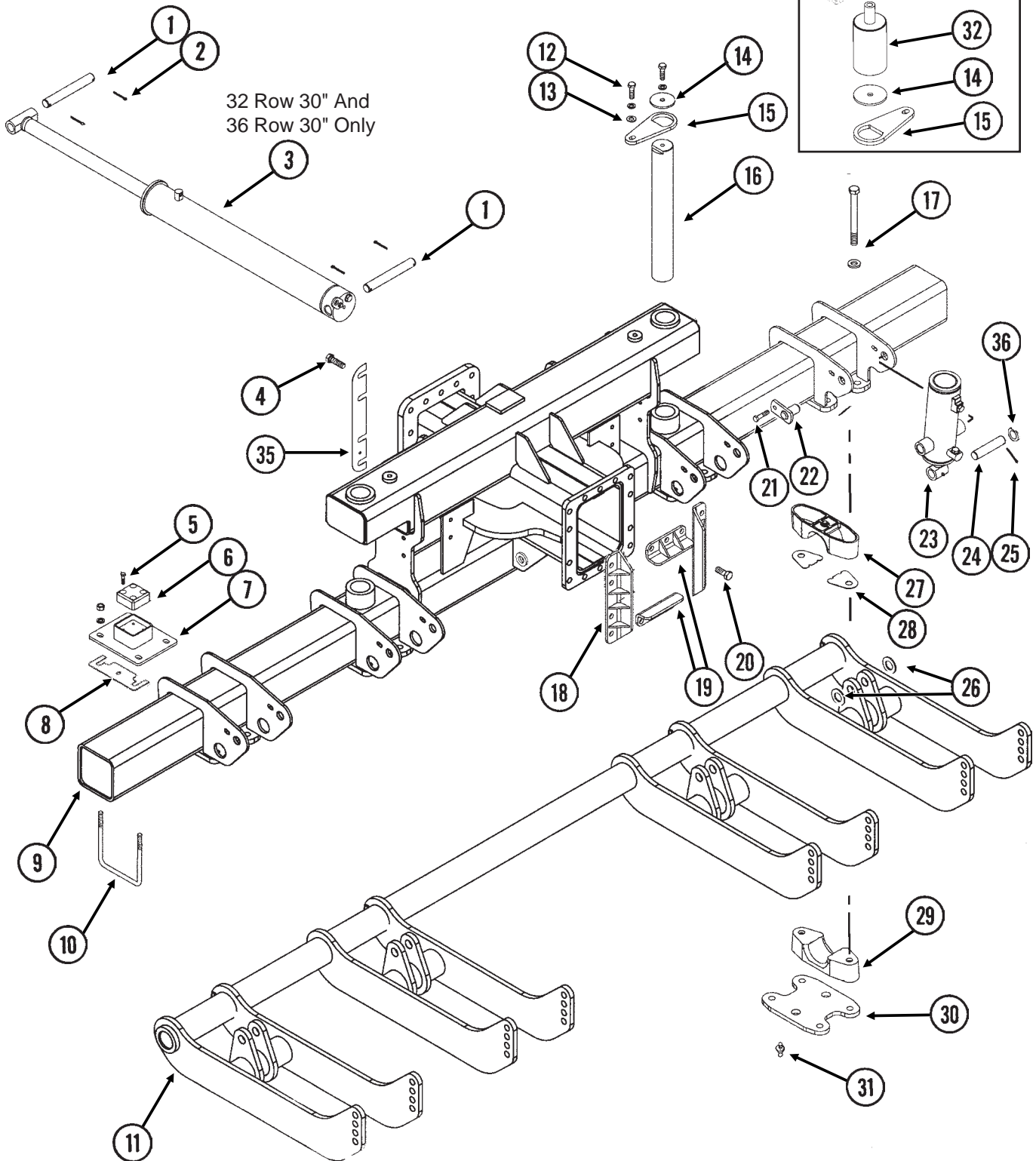
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10008	8	Hex Head Cap Screw, $\frac{5}{8}$ "-10 x 2"
	G10230	8	Lock Washer, $\frac{5}{8}$ "
2.	GD14842	4	Shim, 1 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ ", 10 Gauge
3.	GA10281	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, $\frac{1}{4}$ "-28
4.	GD14841	1	Cover, 10 $\frac{1}{2}$ " x 11" x $\frac{3}{4}$ "
5.	GD14843	1	Wear Pad
6.	G10014	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 1"
	G10228	2	Lock Washer, $\frac{1}{2}$ "
7.	GA10282	2	Pin, 2 $\frac{1}{4}$ "
8.	G10042	1	Hex Head Cap Screw, 1 $\frac{1}{4}$ "-7 x 6 $\frac{1}{2}$ "
	G10157	1	Lock Nut, 1 $\frac{1}{4}$ "-7
9.	GA10483	1	Hitch Endcap
10.	GA10221	1	Outer Hitch, 325 $\frac{5}{8}$ ", 32 Row 30"
	GA10269	1	Outer Hitch, 355 $\frac{5}{8}$ ", 36 Row 30"
11.	GD15669	1	Rod, $\frac{7}{8}$ " x 21"
12.	GD15668	1	Tap Block, 4" x 3" x $\frac{1}{2}$ "
13.	G10189	1	Hex Jam Nut, $\frac{7}{8}$ "-14
14.	GD15674	4	Spring Seat
15.	GD15675	2	Compression Spring
16.	G10756	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 6"
	G10203	2	Washer, $\frac{3}{8}$ " SAE
	G10108	2	Lock Nut, $\frac{3}{8}$ "-16
17.		-	See "Center Toolbar/Rear H-Frame Assembly", Pages P76 And P77
18.	GD18004	2	Hitch Lock Pin
	G11132	2	Washer, 1 $\frac{1}{8}$ " SAE
	G11097	2	Hex Nut, 1 $\frac{1}{8}$ "-12
19.	GD15624	1	SMV Bracket, Conventional
20.	G10043	2	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x $\frac{3}{4}$ "
	G10232	2	Lock Washer, $\frac{5}{16}$ "
21.	G10020	2	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x $\frac{5}{8}$ "
	G10227	2	Lock Washer, $\frac{1}{4}$ "
	G10103	2	Hex Nut, $\frac{1}{4}$ "-20
22.	GD2199	1	SMV Sign
23.	G10037	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 1 $\frac{1}{4}$ "
	G10228	2	Lock Washer, $\frac{1}{2}$ "
	G10206	2	Washer, $\frac{1}{2}$ " SAE
24.	GD16787	-	SMV Extension Bracket, 15 $\frac{3}{4}$ ", SDS

CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

(FWD10b/FWD115)

24 Row 30" SDS Only

This inset diagram shows the assembly sequence for the 24 Row 30 inch SDS. It includes a long pin (33), a bracket (34), a sleeve (32), a washer (14), a nut (15), and a shorter pin (17).

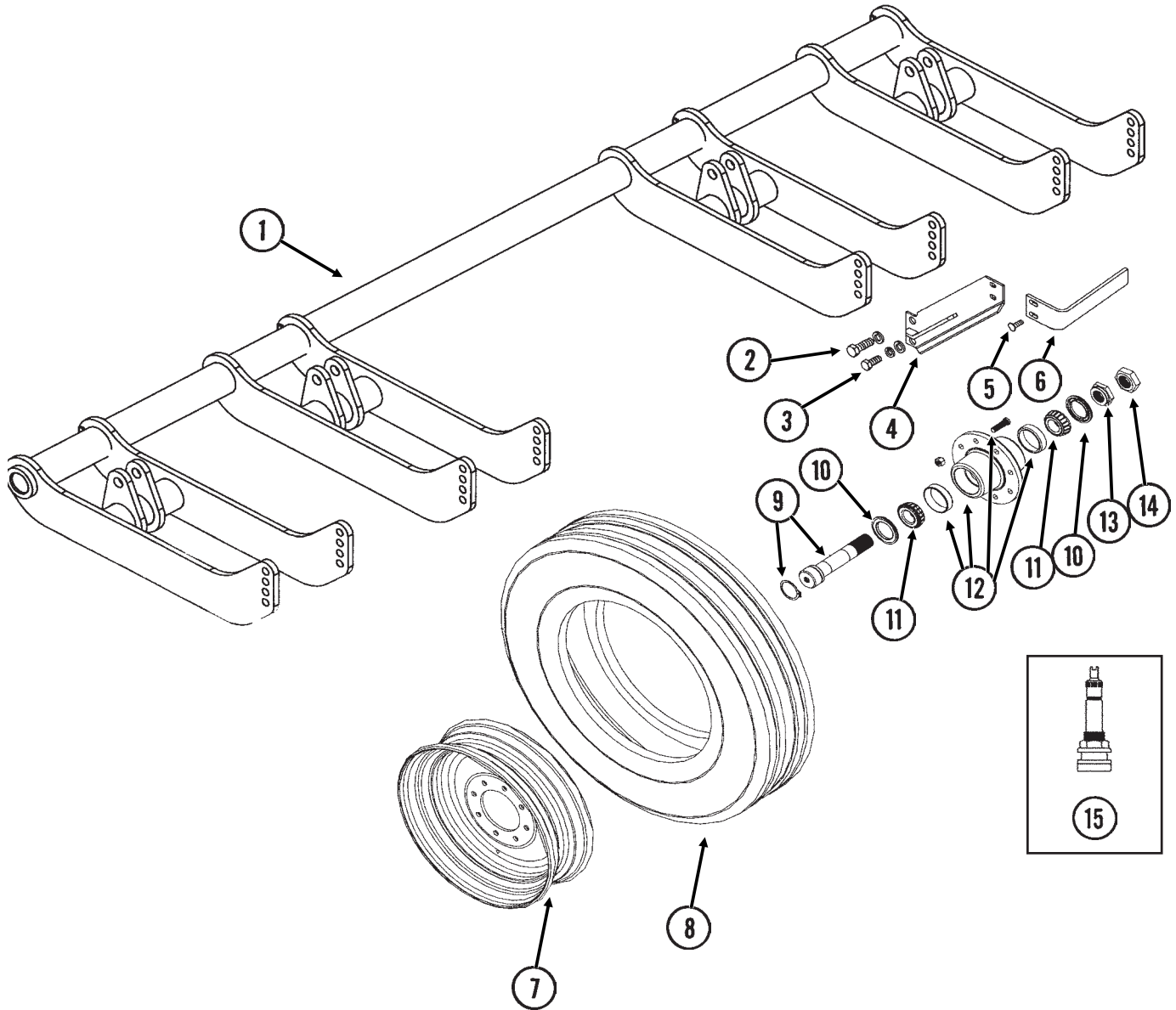


CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

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", Page P129
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 P78 And P79
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	Washer, 7/8", Hardened
	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 P123 And P124
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 P176 And P177
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)



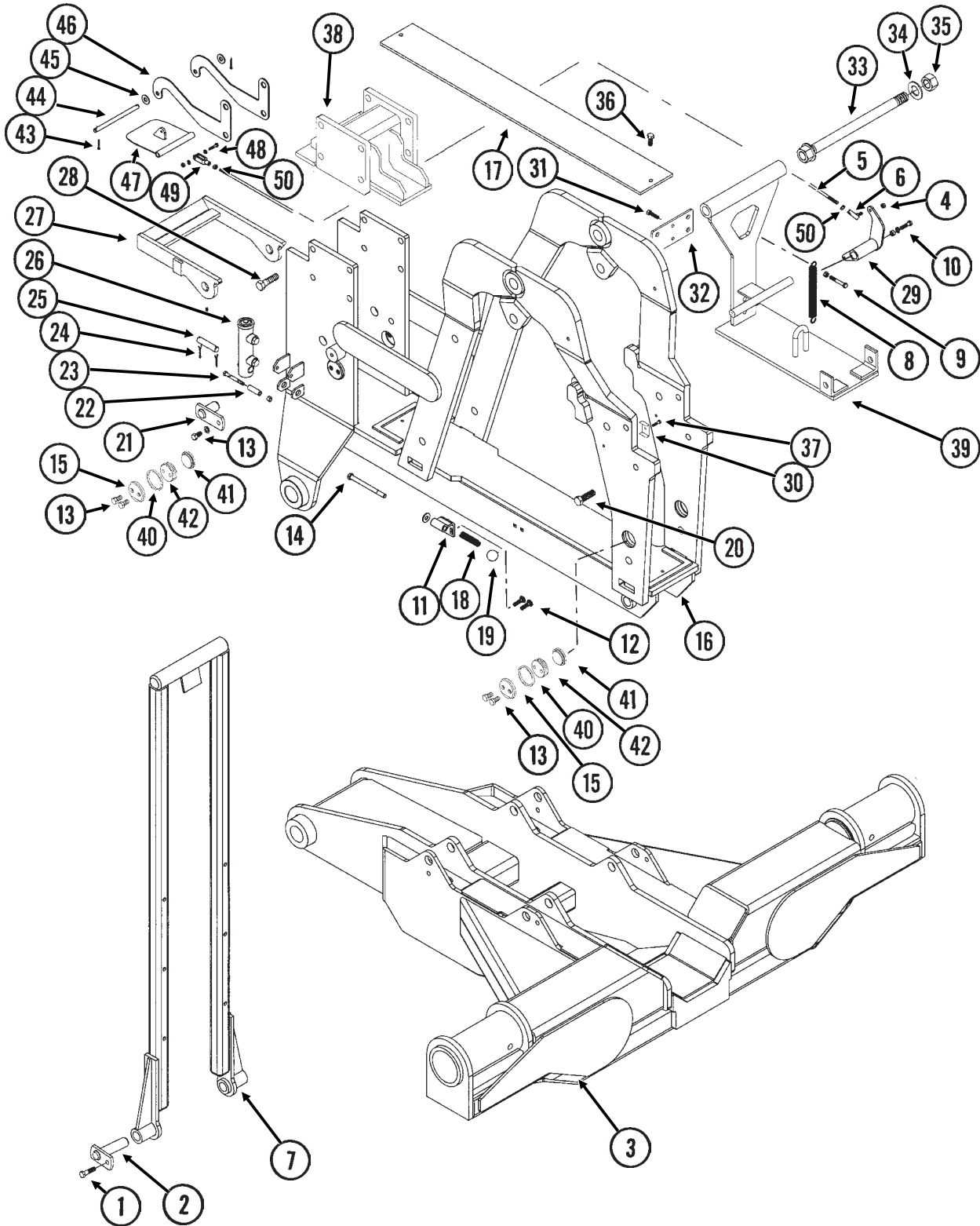
ROCK SHAFT AXLE ASSEMBLY AND WHEELS

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 (32 Row 30" And 36 Row 30")

(FWD62aaa)

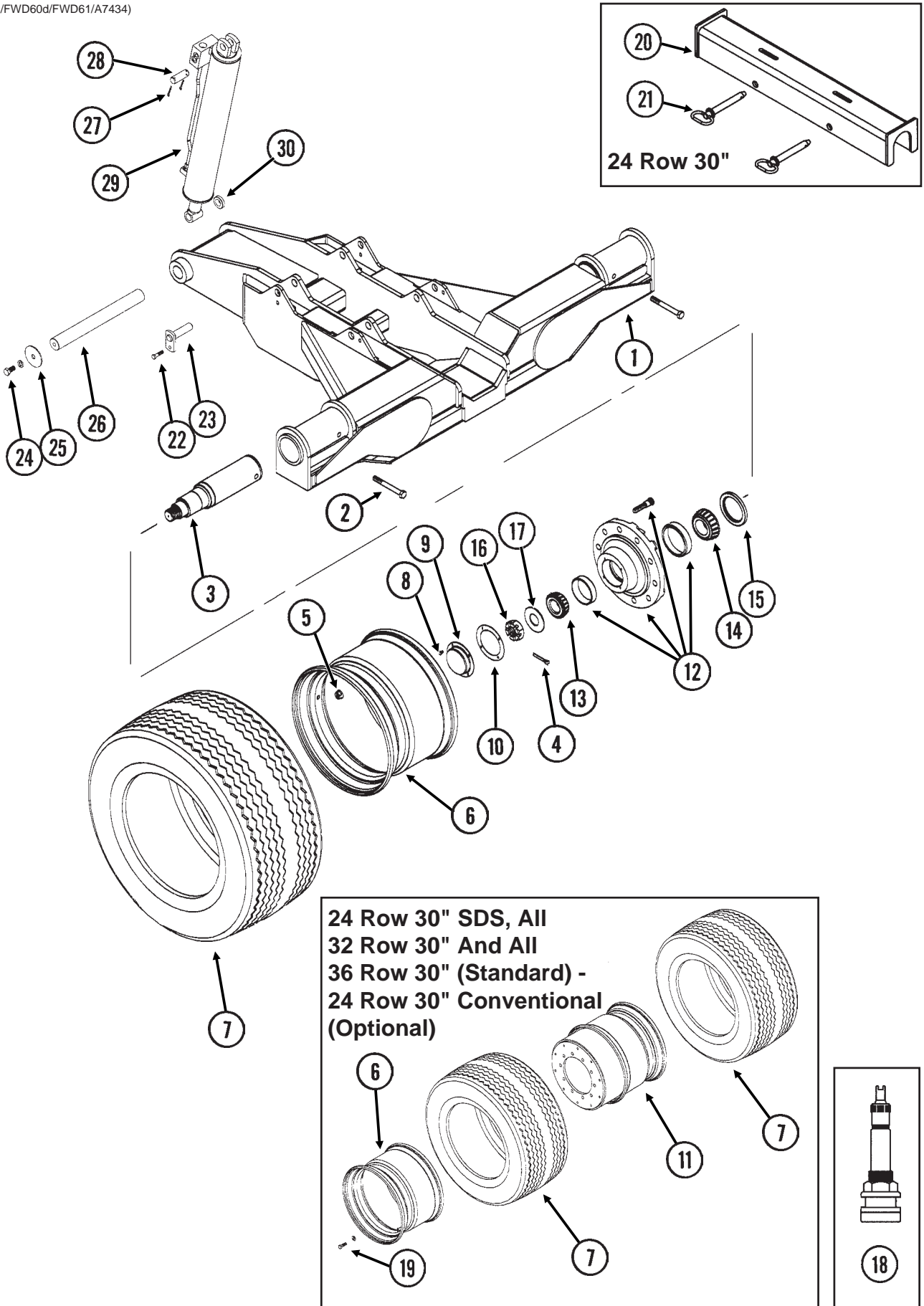


SLIDE ASSEMBLY (32 Row 30" And 36 Row 30")

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 P82 And P83
4.	G11179	3	Hex Nut, 5/16"-24
5.	GD16393	1	Rod
6.	GA11264	1	Link
7.	GA10503	1	Lockup, 68 3/8"
8.	GD5857	1	Spring
9.	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
10.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10203	1	Washer, 3/8" SAE
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.	GA11206	1	Slide Assembly
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 P130
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.	GA11263	1	Arm
30.	GD5892	2	Hose Clamp, 5/8" x 1 1/2" x 1 1/2"
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
39.	GA11634	1	Rear Bracket
40.	GD15783	4	Spacer, 2 3/4" O.D. x 2 7/16" x 1/4"
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

TRANSPORT AXLE ASSEMBLY AND WHEELS

(A12501/FWD60d/FWD61/A7434)



TRANSPORT AXLE ASSEMBLY AND WHEELS

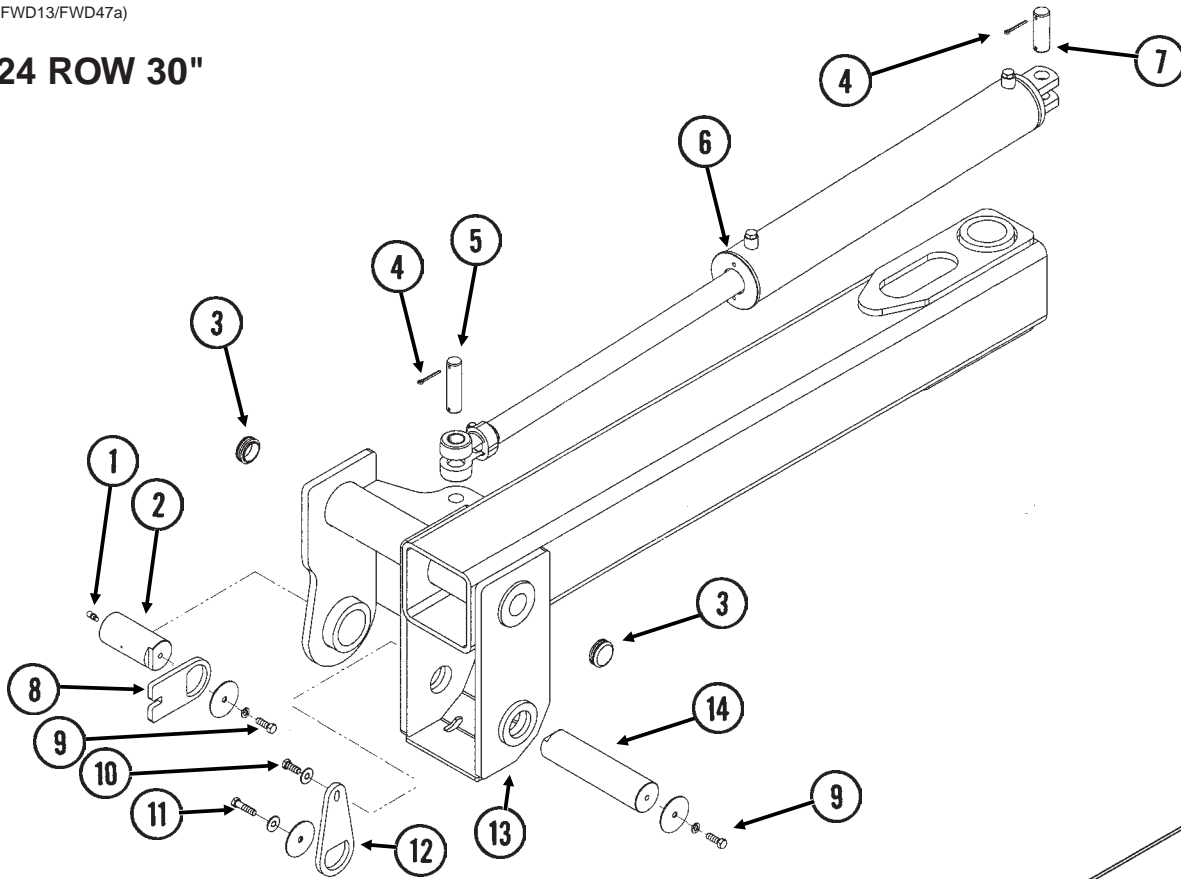
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA12460	1	Axle W/Grease Fittings, 24 Row 30"
	GA11112	1	Axle W/Grease Fittings, 32 Row 30" And 36 Row 30"
	G10640	2	Grease Fitting, 1/4"-28
2.	G10400	2	Hex Head Cap Screw, 3/4"-10 x 6 1/2"
	G10112	2	Lock Nut, 3/4"-10
3.	GD13740	2	Spindle, 4 1/2"
4.	G10471	2	Cotter Pin, 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, 14" x 22.5", 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	-	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 P131
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.

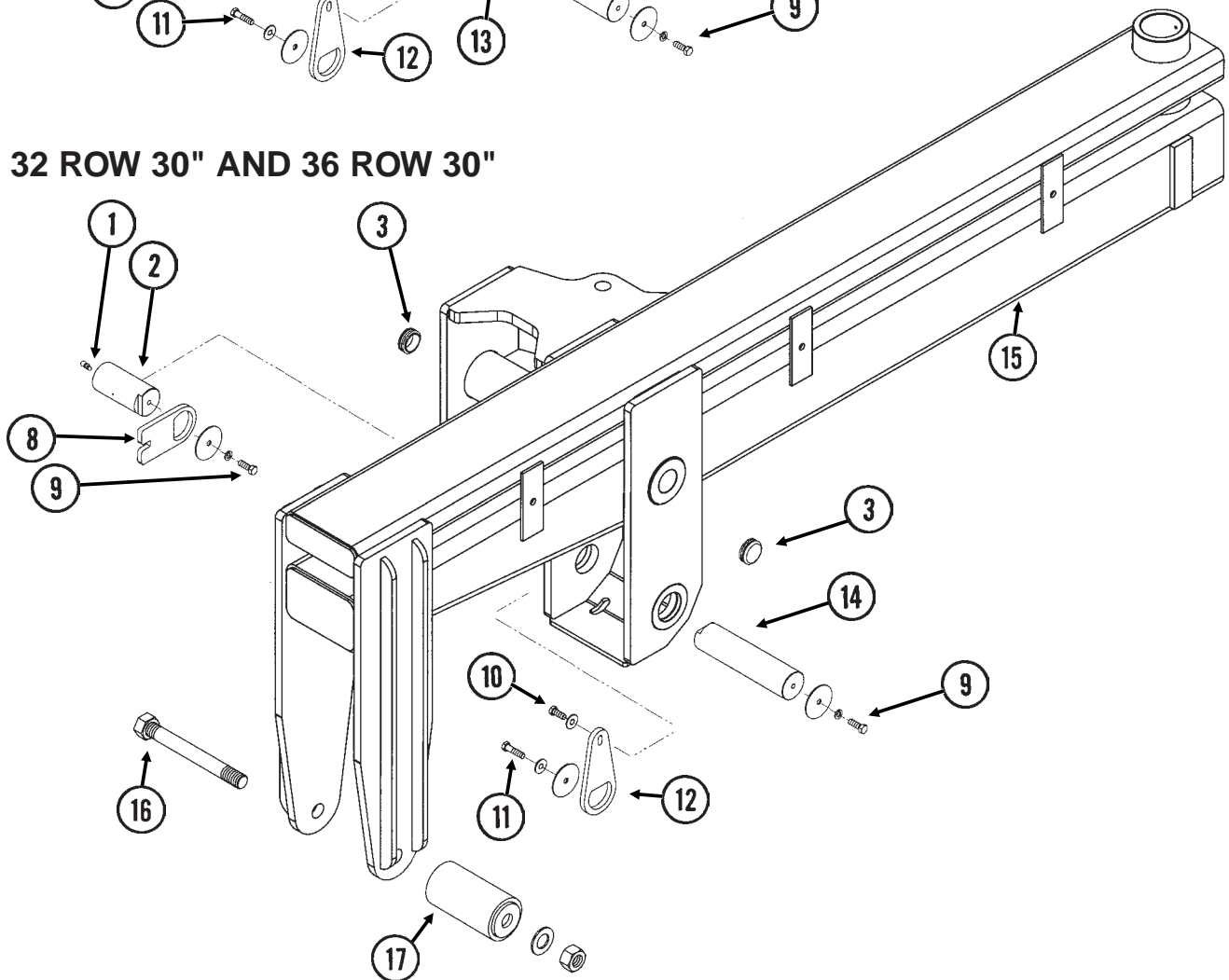
STUB WING

(FWD13/FWD47a)

24 ROW 30"



32 ROW 30" AND 36 ROW 30"



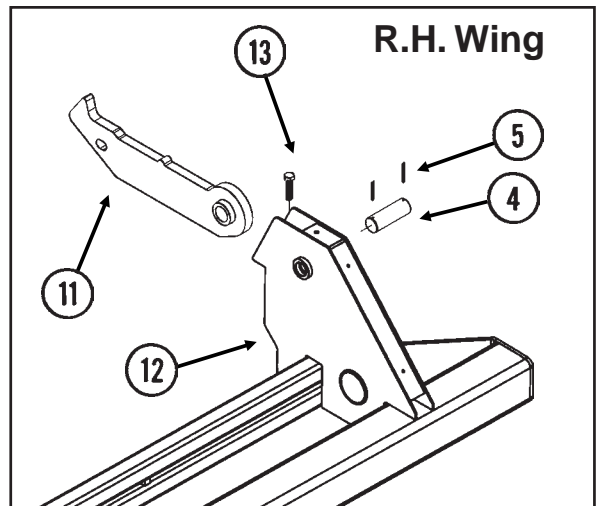
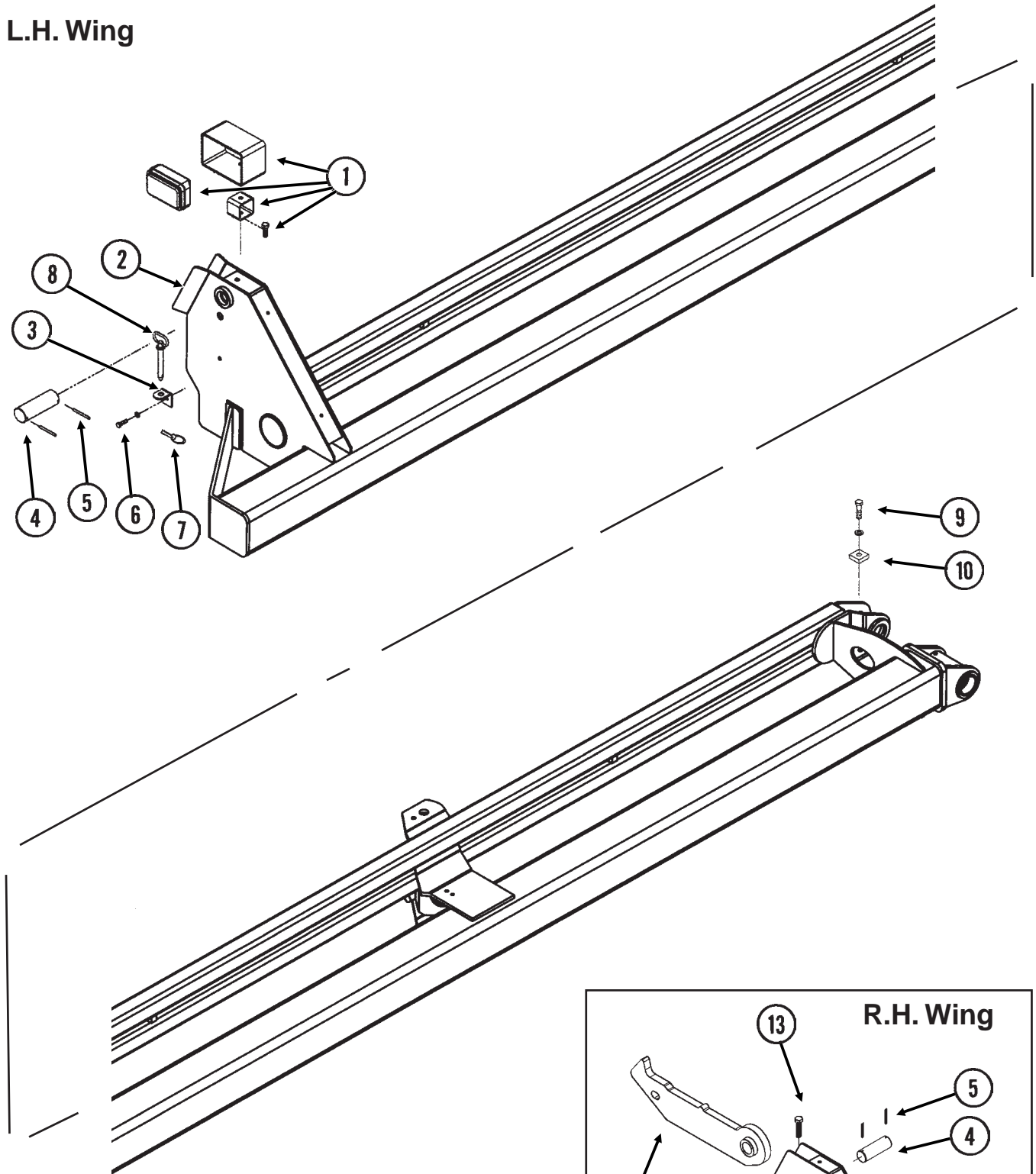
STUB WING

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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 P128
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



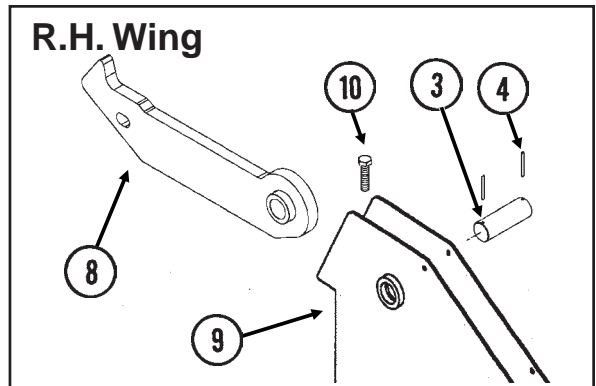
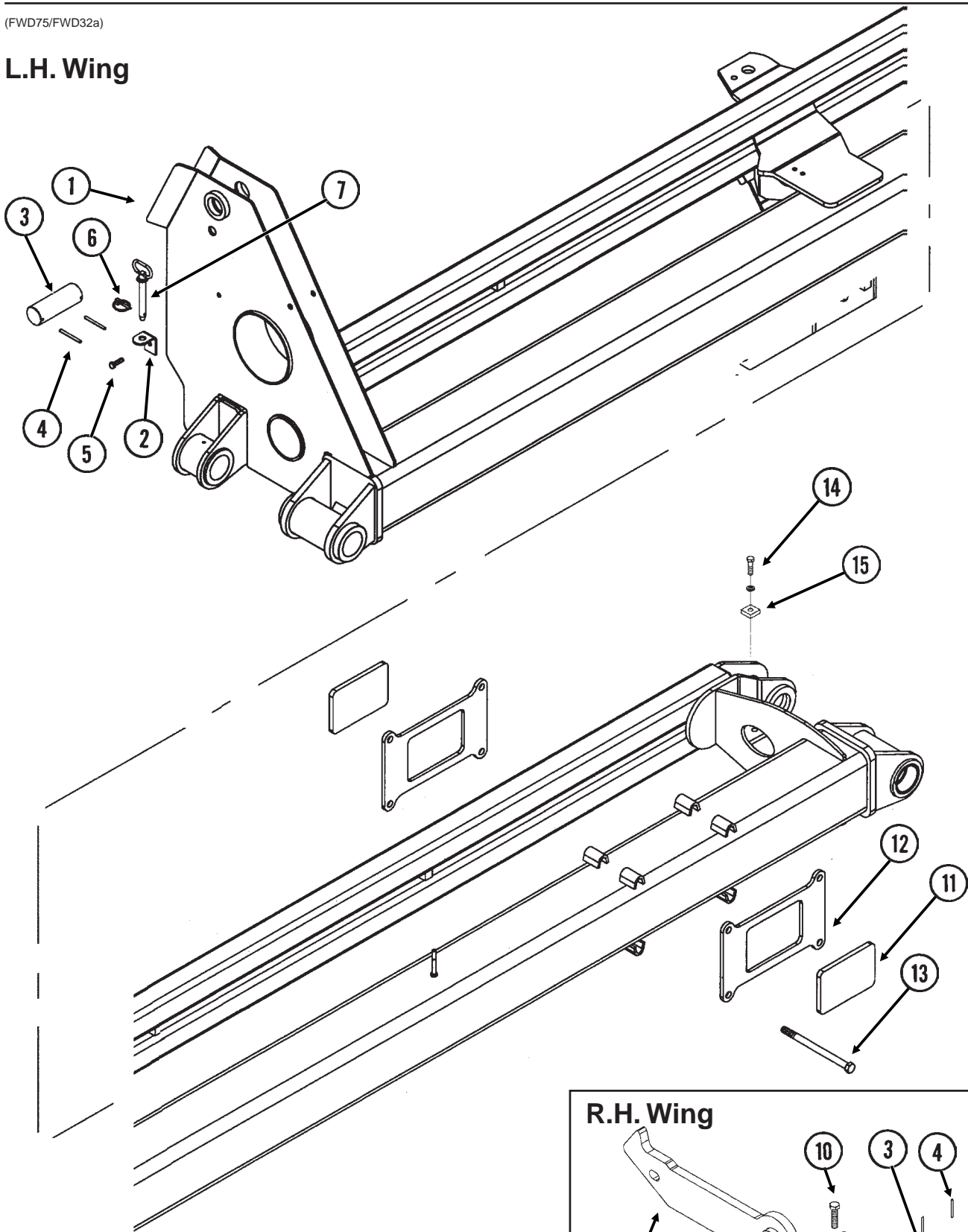
OUTER WING, 24 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.		-	See "Light Assemblies And Brackets", Pages P160 And P161
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



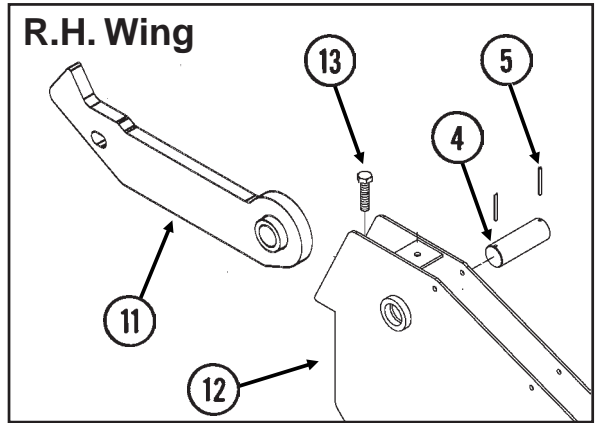
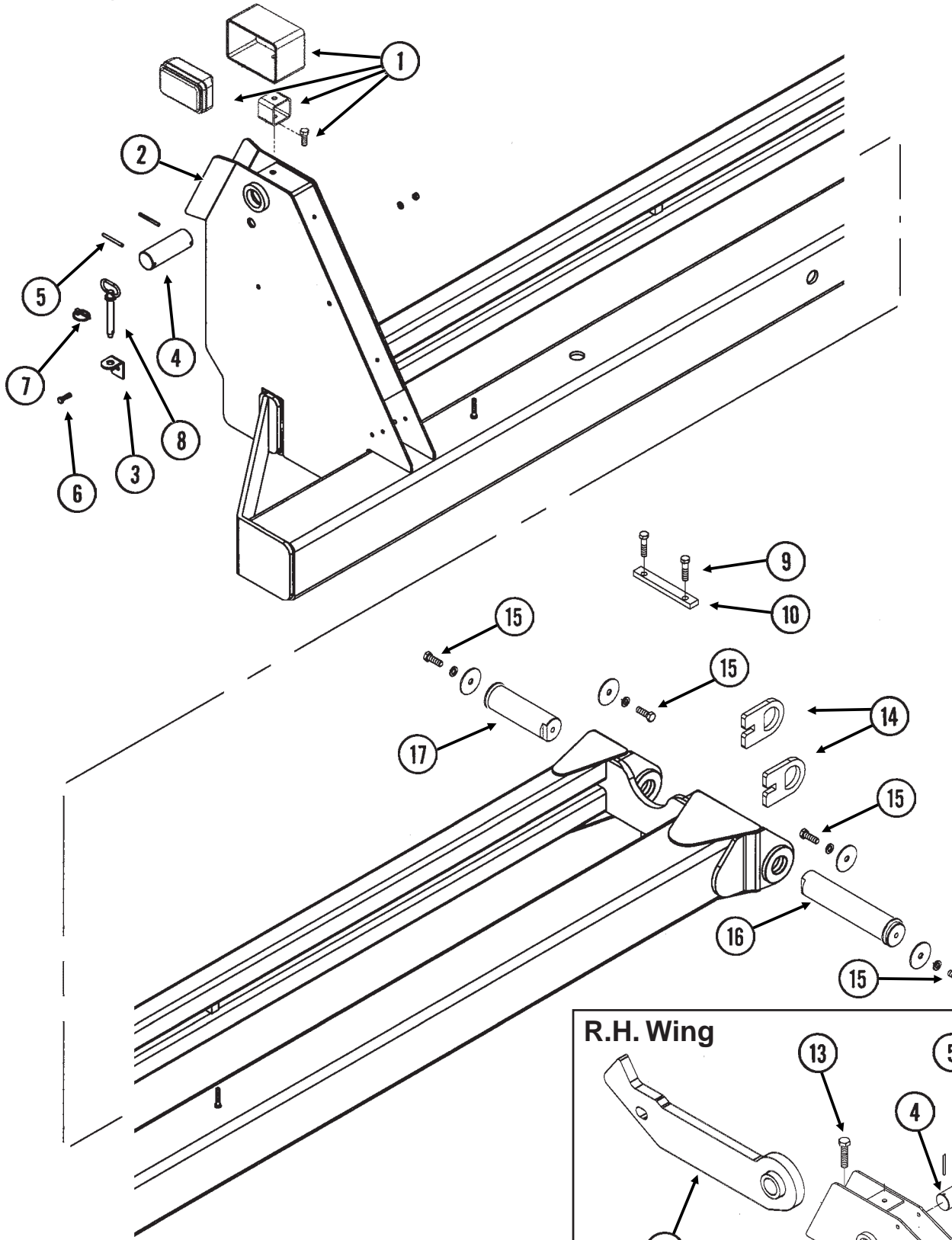
INNER WING, 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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

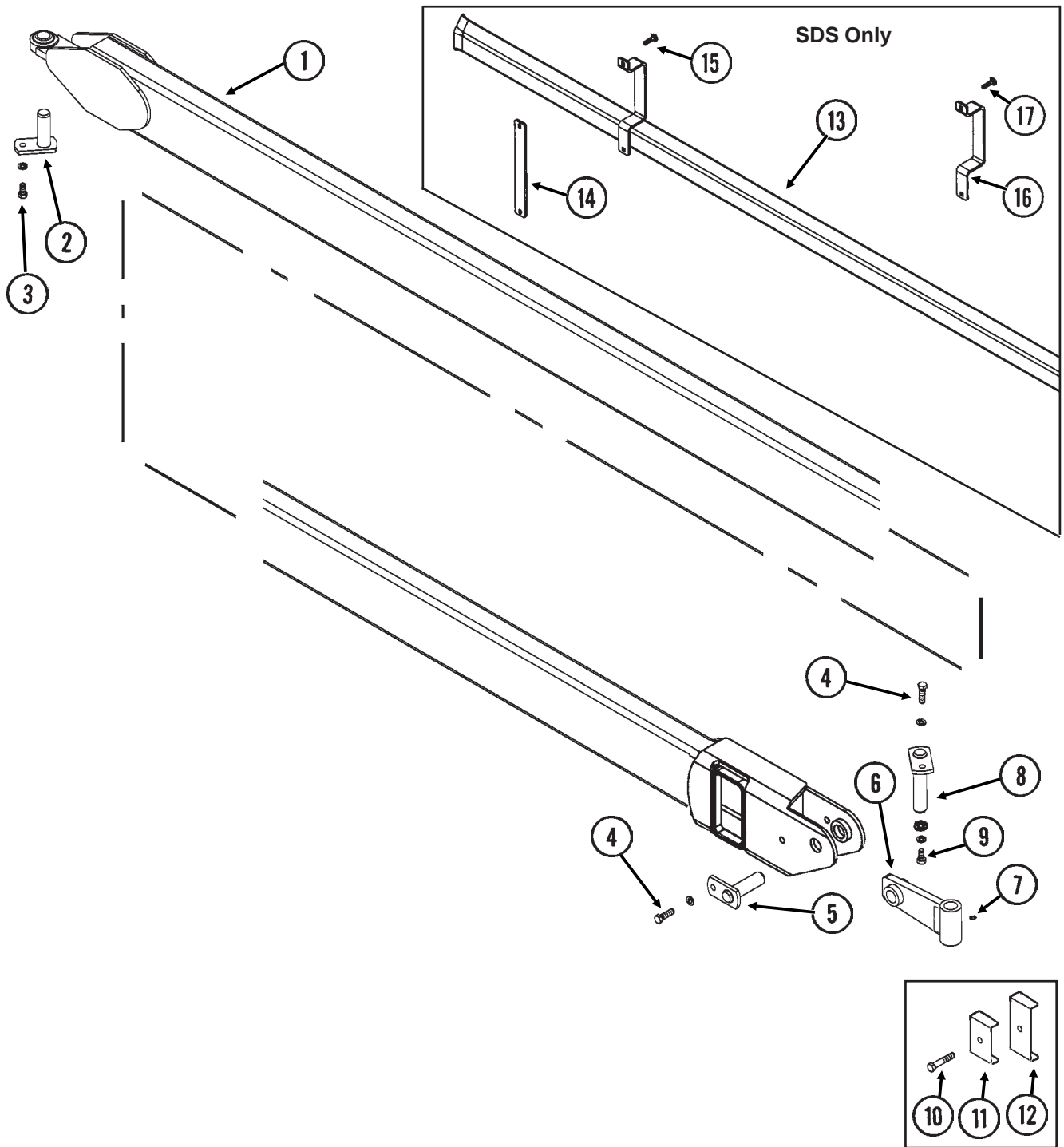


OUTER WING, 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.		-	See "Light Assemblies And Brackets", Pages P148 And P149
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/D16890/FWD16aaa/FWD128/FWD74)

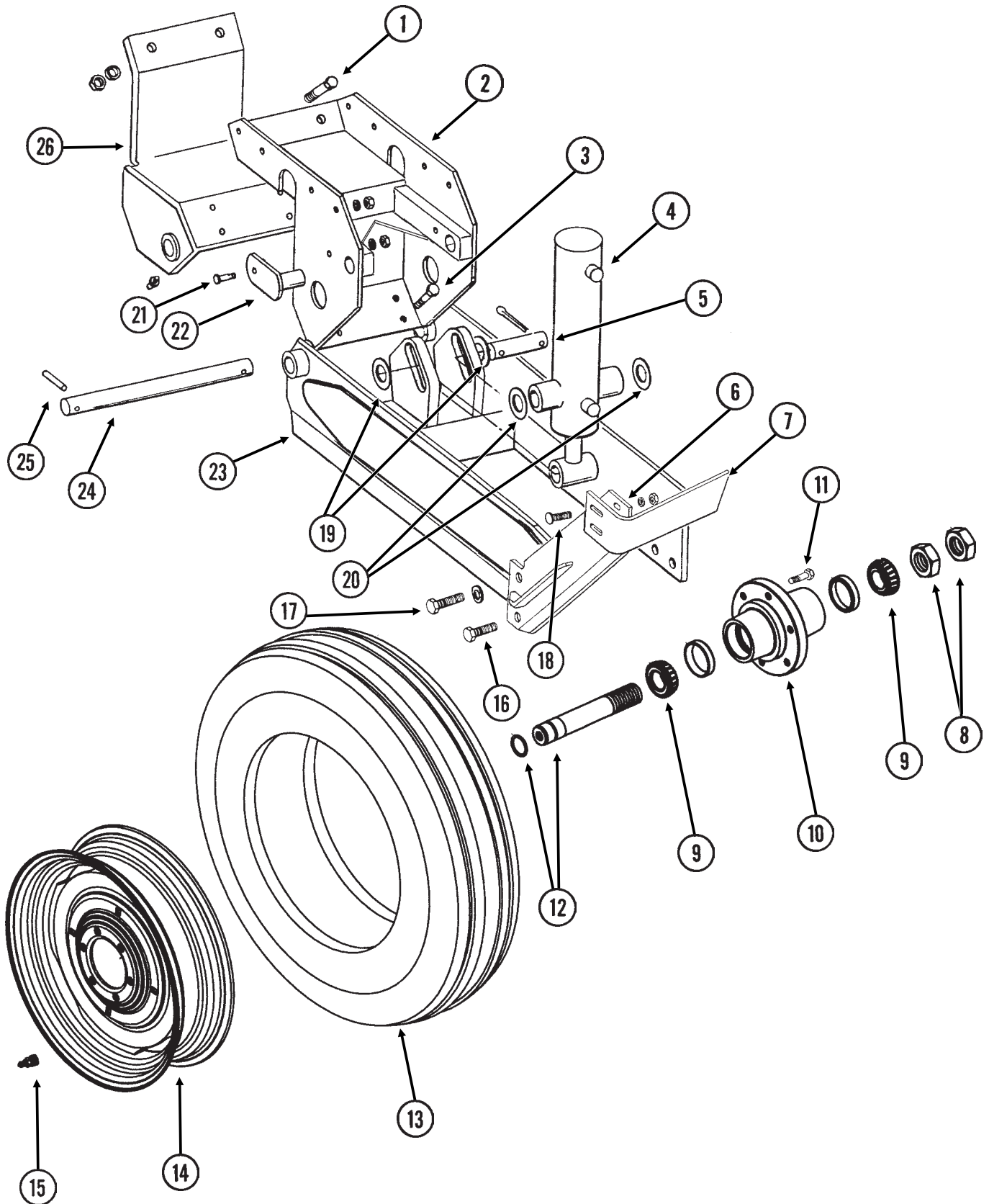


DRAFT LINK

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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
	GA11669	1	Hose Tube, 111", 36 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
16.	GD16890	-	Clamp
17.	G10599	-	Carriage Bolt, ³ / ₈ "-16 x 1 ¹ / ₄ "
	G10622	-	Serrated Flange Nut, ³ / ₈ "-16

LIFT/GAUGE WHEEL

(FWD64)



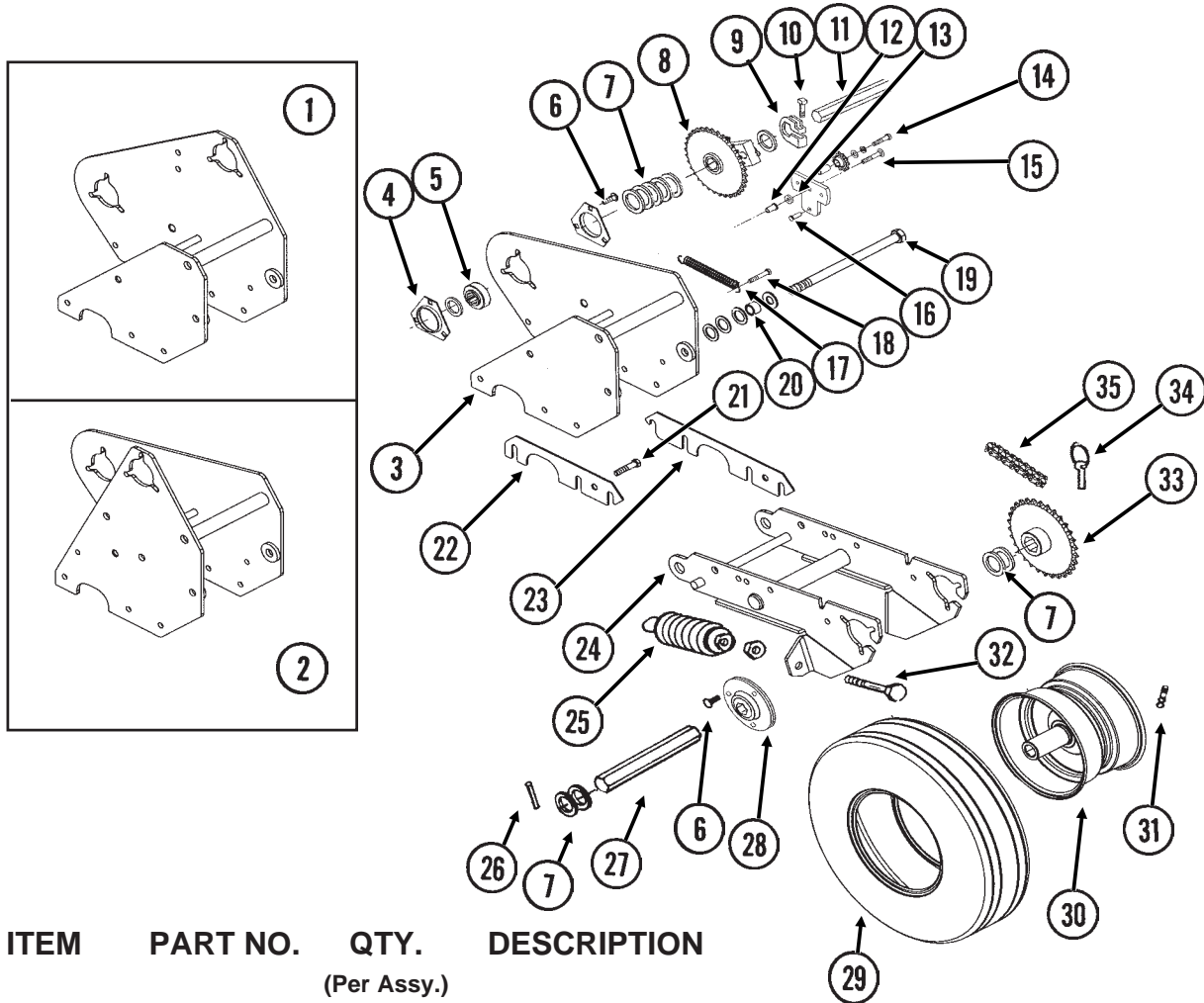
LIFT/GAUGE WHEEL

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	G10009	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 2 $\frac{1}{2}$ "
	G10230	2	Lock Washer, $\frac{5}{8}$ "
	G10104	2	Hex Nut, $\frac{5}{8}$ "-11
2.	GA5122	1	Wheel Tower Clamp
3.	G10008	4	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 2"
	GD7805	6	Special Washer, $\frac{5}{8}$ ", Hardened
	G10230	4	Lock Washer, $\frac{5}{8}$ "
	G10104	4	Hex Nut, $\frac{5}{8}$ "-11
4.		-	See "Master/Slave/Lift Assist Cylinders", Pages P123-P127
5.	GD5841	1	Pin, 1 $\frac{1}{4}$ " x 5 $\frac{5}{8}$ "
	G10460	2	Cotter Pin, $\frac{1}{4}$ " x 2"
6.	GA7376	1	Scraper Mount
7.	GD12543	1	Scraper
8.	G11081	2	Hex Jam Nut, 1 $\frac{1}{2}$ "-12, Grade 2
9.	GA0895	2	Bearing
10.	GA2148	1	Hub W/Cups, 6 Bolt
	GR0434	-	Cup
11.	GR0270	6	Lug Bolt, $\frac{9}{16}$ "-18
12.	GA2558	1	Spindle W/Round External Retaining Ring, 9 $\frac{1}{2}$ "
	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, $\frac{3}{4}$ "-10 x 1 $\frac{1}{2}$ "
	G10231	2	Lock Washer, $\frac{3}{4}$ "
	G10105	2	Hex Nut, $\frac{3}{4}$ "-10
17.	G10026	2	Hex Head Cap Screw, $\frac{3}{4}$ "-10 x 2"
	G10231	2	Lock Washer, $\frac{3}{4}$ "
18.	G10636	4	Carriage Bolt, $\frac{1}{2}$ "-13 x 1 $\frac{1}{2}$ "
	G10228	4	Lock Washer, $\frac{1}{2}$ "
	G10216	4	Washer, $\frac{1}{2}$ " USS
	G10102	4	Hex Nut, $\frac{1}{2}$ "-13
19.	G10139	2	Washer, 1 $\frac{1}{4}$ " USS
20.	G10159	-	Machine Bushing, 1 $\frac{1}{4}$ ", 10 Gauge (As Required)
21.	G10581	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 2 $\frac{1}{4}$ "
	G10111	2	Lock Nut, $\frac{1}{2}$ "-13
22.	GA5121	2	Pin, 2 $\frac{1}{8}$ "
23.	GA11276	1	Arm
24.	GD11695	1	Pin, 1 $\frac{1}{4}$ " x 13 $\frac{1}{4}$ "
25.	G10610	2	Spring Pin, $\frac{3}{8}$ " x 2"
26.	GA9877	1	Clamp W/Grease Fittings
	G10640	2	Grease Fitting, $\frac{1}{4}$ "-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 WHEEL, ARM AND TOWER ASSEMBLIES

(FWD65)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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
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"

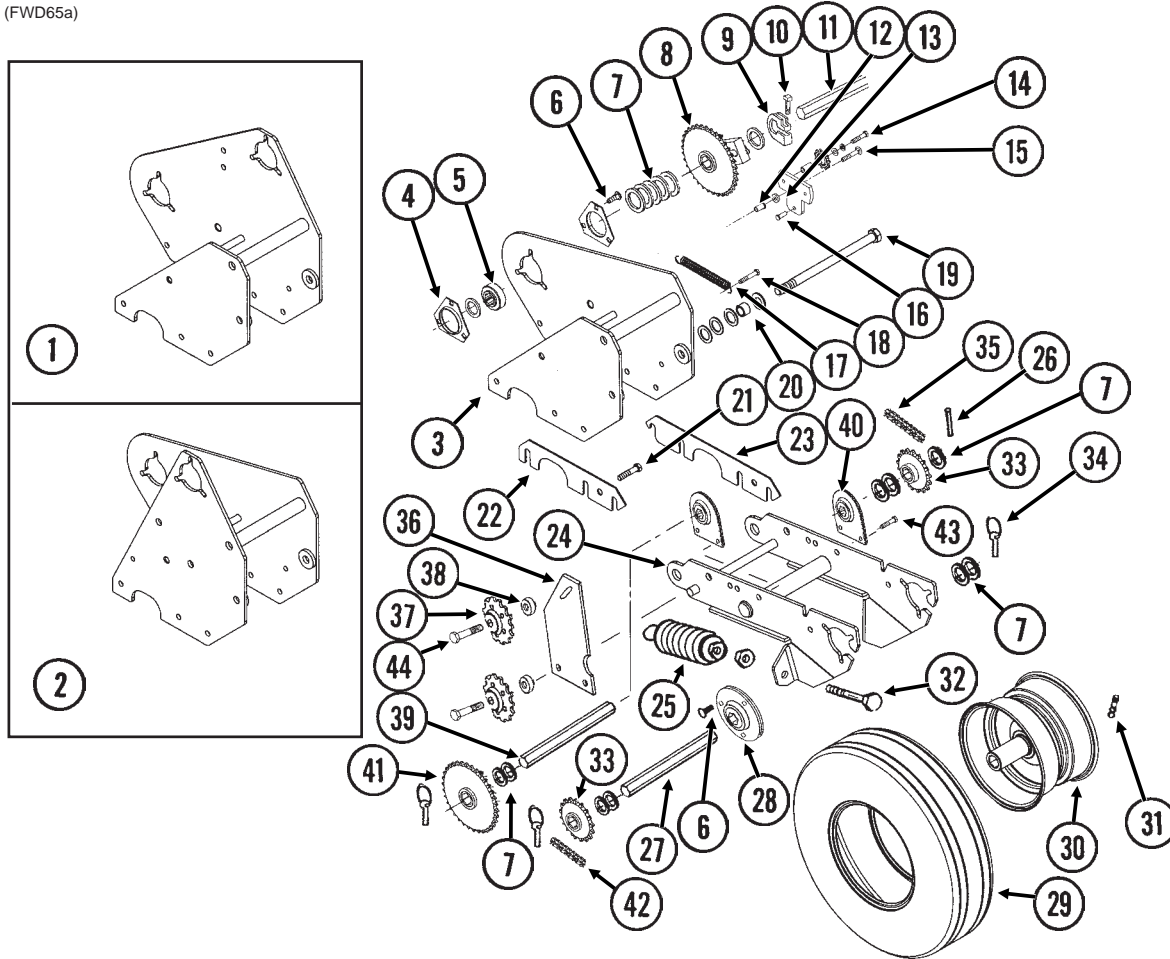
CONTACT WHEEL, ARM AND TOWER ASSEMBLIES

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
13.	GD15538	1	Spacer, $\frac{3}{8}$ " I.D. x $\frac{7}{8}$ " O.D., 7 Gauge
14.	GA11287	1	Idler W/Sprockets, Sleeves And Hardware
	GD7426	2	Sprocket, 12 Tooth
	GD1026	2	Sleeve, 1 $\frac{3}{16}$ " Long
	G10047	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{3}{4}$ "
	G10210	2	Washer, $\frac{3}{8}$ " USS
	G10229	2	Lock Washer, $\frac{3}{8}$ "
15.	G11119	1	Carriage Bolt, $\frac{3}{8}$ "-16 x 2 $\frac{1}{4}$ "
	G10203	1	Washer, $\frac{3}{8}$ " SAE
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
16.	G11118	1	Clevis Pin, $\frac{3}{8}$ " x $\frac{3}{4}$ "
	G10860	1	Retaining Ring, $\frac{3}{8}$ "
17.	GD5857	1	Spring
18.	G10939	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 2 $\frac{1}{4}$ "
	G10210	1	Washer, $\frac{3}{8}$ " USS
	G10101	1	Hex Nut, $\frac{3}{8}$ "-16
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
19.	G10953	1	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 10"
	G10235	6	Machine Bushing, $\frac{7}{8}$ ", 14 Gauge
	GD7805	2	Special Washer, $\frac{5}{8}$ ", Hardened
	G10107	1	Lock Nut, $\frac{5}{8}$ "-11
20.	GB0218	2	Bushing, $\frac{21}{32}$ " I.D. x $\frac{7}{8}$ " O.D. x $\frac{19}{32}$ " Long
21.	G10004	7	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{4}$ "
	G10229	7	Lock Washer, $\frac{3}{8}$ "
	G10101	7	Hex Nut, $\frac{3}{8}$ "-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, $\frac{1}{4}$ " x 1 $\frac{1}{2}$ "
27.	GD6775	1	Hex Shaft, $\frac{7}{8}$ " x 11 $\frac{3}{4}$ " (2 Holes)
28.	GA9846	-	Flanged Bearing, $\frac{7}{8}$ " 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, $\frac{1}{2}$ "-13 x 4", Grade 2
	G10501	2	Hex Jam Nut, $\frac{1}{2}$ "-13, Grade 2
33.	GA5105	1	Sprocket, 15 Tooth
	GA5107	1	Sprocket, 19 Tooth
	GA11285	1	Sprocket, 38 Tooth
34.	GD2558	1	Lynch Pin, $\frac{1}{4}$ "
35.	G3310-160	1	Chain, No. 40, 160 Pitch Including Connector Link (Used With 15 And 19 Tooth Sprockets)
	G3310-168	1	Chain, No. 40, 168 Pitch Including Connector Link (Used With 38 Tooth Sprocket)
	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.

CONTACT WHEEL, ARM AND TOWER ASSEMBLIES (When Using G1K472 Sunflower Rate Reduction Kit)

(FWD65a)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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
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

CONTACT WHEEL, ARM AND TOWER ASSEMBLIES (When Using G1K472 Sunflower Rate Reduction Kit)

ITEM	PART NO.	QTY.	DESCRIPTION
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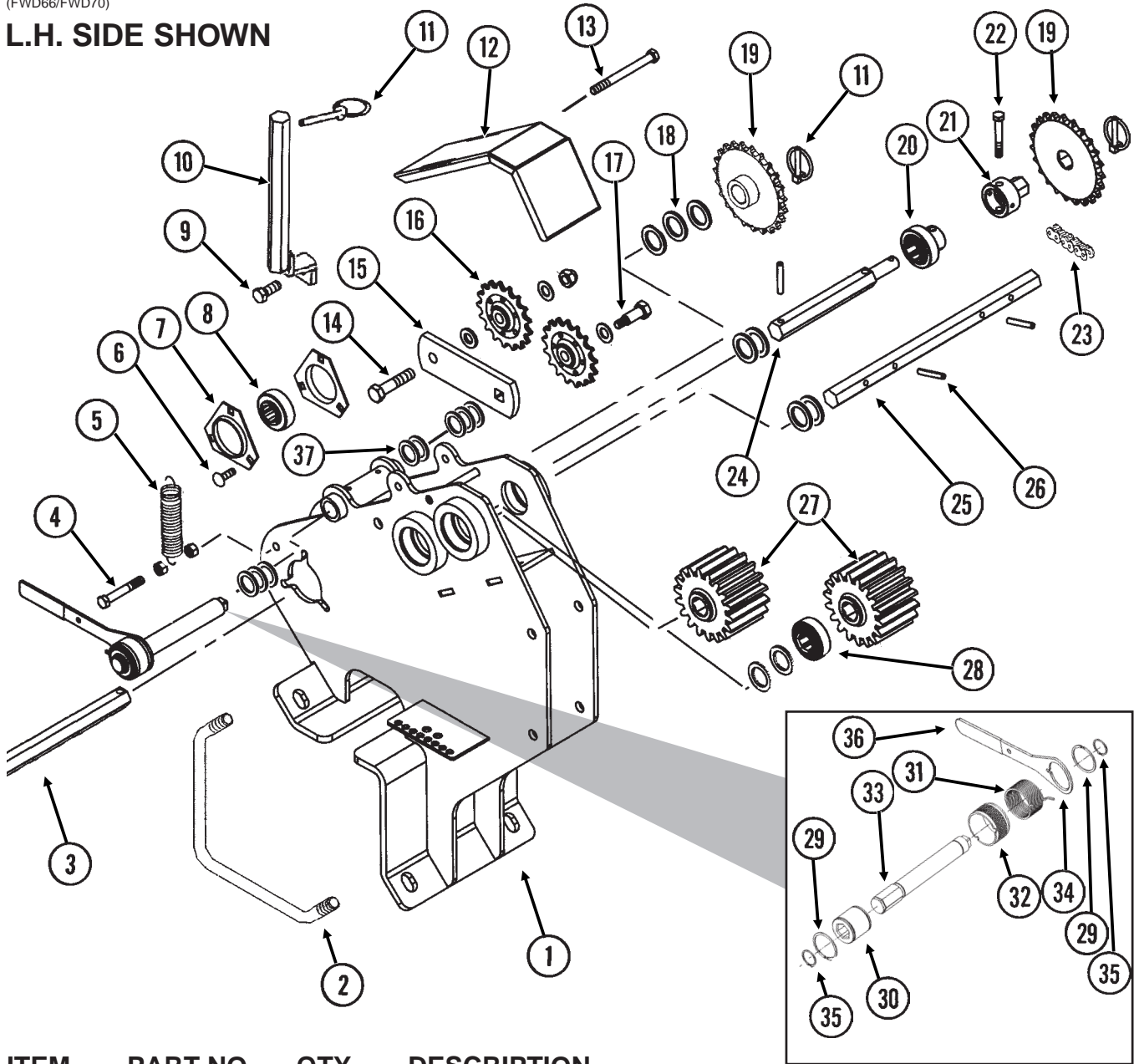
(Per Assy.)

* 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.	DESCRIPTION
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(Per Assy.)

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 P94 And P95
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

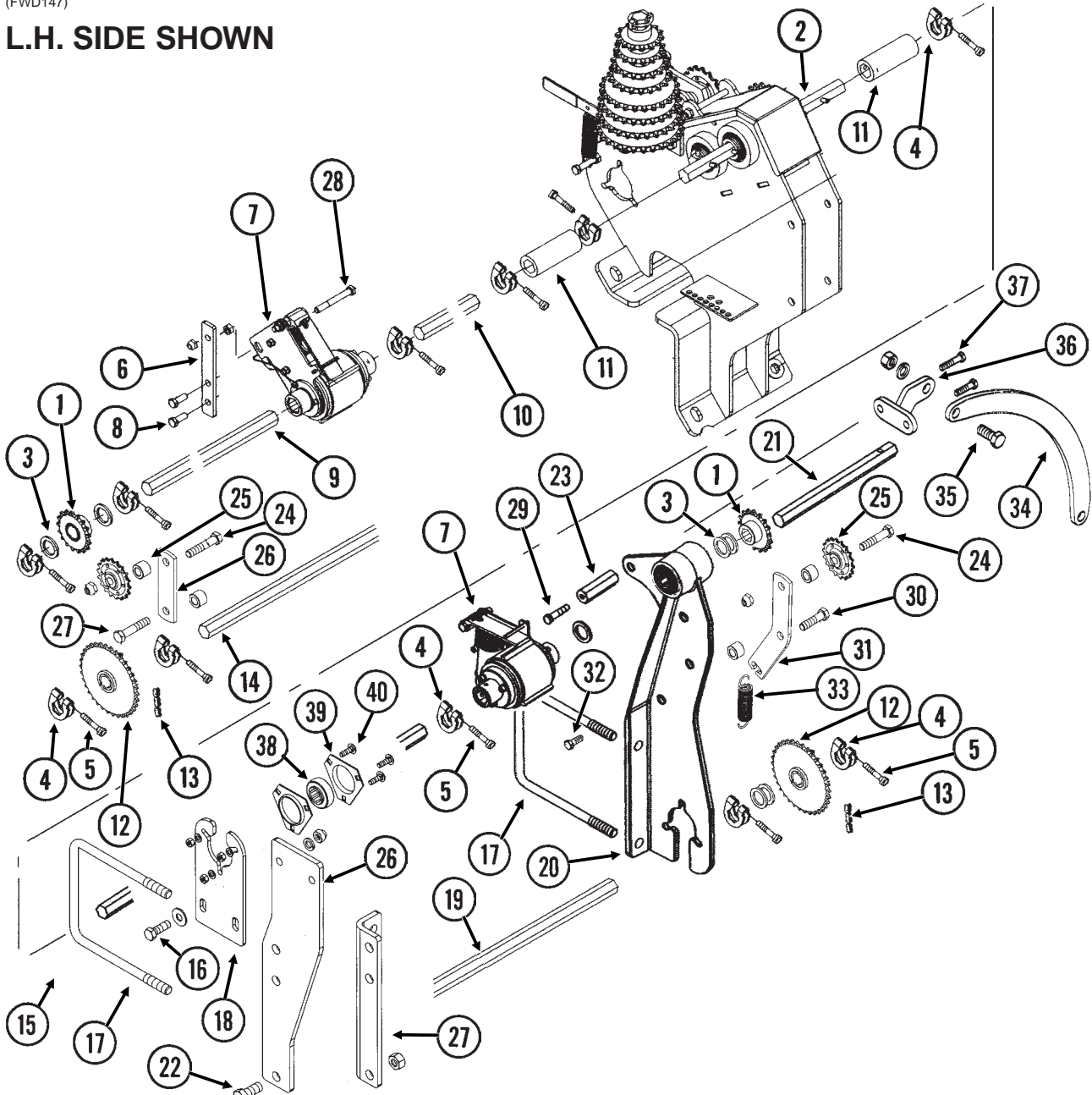
SEED RATE TRANSMISSION

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
7.	G3400-01	2	Flangette
8.	G2100-03	1	Bearing, 7/8" Hex Bore, Spherical
9.	G100581	1	Hex Head Cap Screw, 1/2"-13 x 2 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"

(FWD147)

L.H. SIDE SHOWN



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA5106	4	Sprocket, 17 Tooth
2.		-	See "Seed Rate Transmission", Pages P100 And P101
3.	G10233	-	Machine Bushing, 1", 10 Gauge
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, $\frac{5}{16}$ "-18 x 1 $\frac{3}{4}$ "
	G10923	-	Flange Nut, $\frac{5}{16}$ "-18, No Serration
6.	GD16417	2	Bracket
7.		-	See "Point Row Clutches", Pages P110 And P111
8.	G10001	4	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10108	4	Lock Nut, $\frac{3}{8}$ "-16
9.	GD0914-46	1	Hex Shaft, $\frac{7}{8}$ " x 46" (No Holes), L.H. Side
	GD0914-30	-	Hex Shaft, $\frac{7}{8}$ " x 30" (No Holes), R.H. Side
10.	GD0914-13.5	1	Hex Shaft, $\frac{7}{8}$ " x 13 $\frac{1}{2}$ " (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, $\frac{7}{8}$ " 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"

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA5106	4	Sprocket, 17 Tooth
2.		-	See "Seed Rate Transmission", Pages P100 And P101
3.	G10233	-	Machine Bushing, 1", 10 Gauge
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, $\frac{5}{16}$ "-18 x 1 $\frac{3}{4}$ "
	G10923	-	Flange Nut, $\frac{5}{16}$ "-18, No Serration
6.	GD16417	2	Bracket
7.		-	See "Point Row Clutches", Pages P110 And P111
8.	G10001	4	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10108	4	Lock Nut, $\frac{3}{8}$ "-16
9.	GD0914-76	1	Hex Shaft, $\frac{7}{8}$ " x 76" (No Holes), L.H. Side
	GD0914-60	-	Hex Shaft, $\frac{7}{8}$ " x 60" (No Holes), R.H. Side
10.	GD0914-13.5	1	Hex Shaft, $\frac{7}{8}$ " x 13 $\frac{1}{2}$ " (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, $\frac{7}{8}$ " 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, $\frac{7}{8}$ " x 36" (No Holes), L.H. Side, 32 Row 30"
	GD0914-48	-	Hex Shaft, $\frac{7}{8}$ " x 48" (No Holes), R.H. Side, 32 Row 30"
	GD0914-20	-	Hex Shaft, $\frac{7}{8}$ " x 20" (No Holes), L.H. Side, 36 Row 30"
	GD0914-36	-	Hex Shaft, $\frac{7}{8}$ " x 36" (No Holes), R.H. Side, 36 Row 30"
15.	GD16451	1	Shaft, $\frac{7}{8}$ " x 56" (1 Hole), L.H. Side
	GD16450	1	Shaft, $\frac{7}{8}$ " 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 $\frac{5}{8}$ "-11
	G10230	8	Lock Washer, $\frac{5}{8}$ "
	G10104	8	Hex Nut, $\frac{5}{8}$ "-11
18.	GA11257	1	Support W/Bearings And Rings, L.H. Side
	GA11256	-	Support W/Bearings And Rings, R.H. Side
	GA5116	-	Bearing, $\frac{7}{8}$ " Hex Bore, Cylindrical
	GD6551	-	Ring
19.	GD0914-132	2	Hex Shaft, $\frac{7}{8}$ " x 132" (No Holes), 32 Row 30"
	GD0914-156	-	Hex Shaft, $\frac{7}{8}$ " x 156" (No Holes), 36 Row 30"
20.	GA11258	2	Chain Mount W/Bearings And Rings
	GA5116	-	Bearing, $\frac{7}{8}$ " Hex Bore, Cylindrical
	GD6551	-	Ring
21.	GD0914-10.5	1	Hex Shaft, $\frac{7}{8}$ " x 10 $\frac{1}{2}$ " (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, $\frac{7}{8}$ " x 21" (No Holes), R.H. Side
22.	G10001	1	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G10229	1	Lock Washer, $\frac{3}{8}$ "
23.	GD15114	1	Hex Shaft Spacer
24.	G10053	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 2 $\frac{1}{2}$ "
	GD10356	2	Bushing, $\frac{3}{4}$ " Long
	G10111	2	Lock Nut, $\frac{1}{2}$ "-13

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DRIVEN AND DRILL SHAFTS ON WINGS, 32 ROW 30" AND 36 ROW 30"

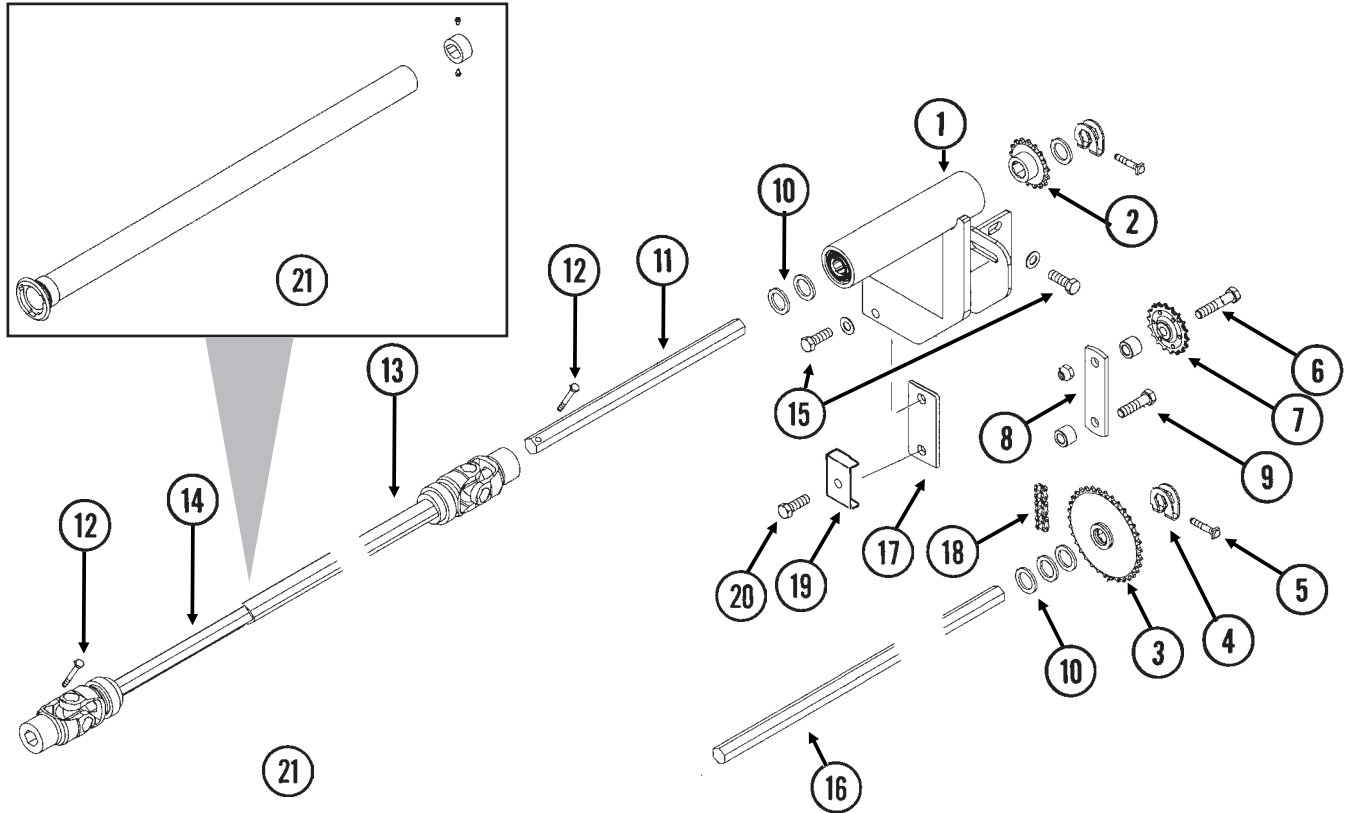
ITEM	PART NO.	QTY.	DESCRIPTION
25.	GA7154	2	Sprocket W/Bearing, 18 Tooth
26.	GD16362	2	Plate
27.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10527	4	Lock Washer, 1/2", Internal/External
	G10111	2	Lock Nut, 1/2"-13
28.	G10062	2	Hex Head Cap Screw, 3/8"-16 x 3"
	G10108	2	Lock 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

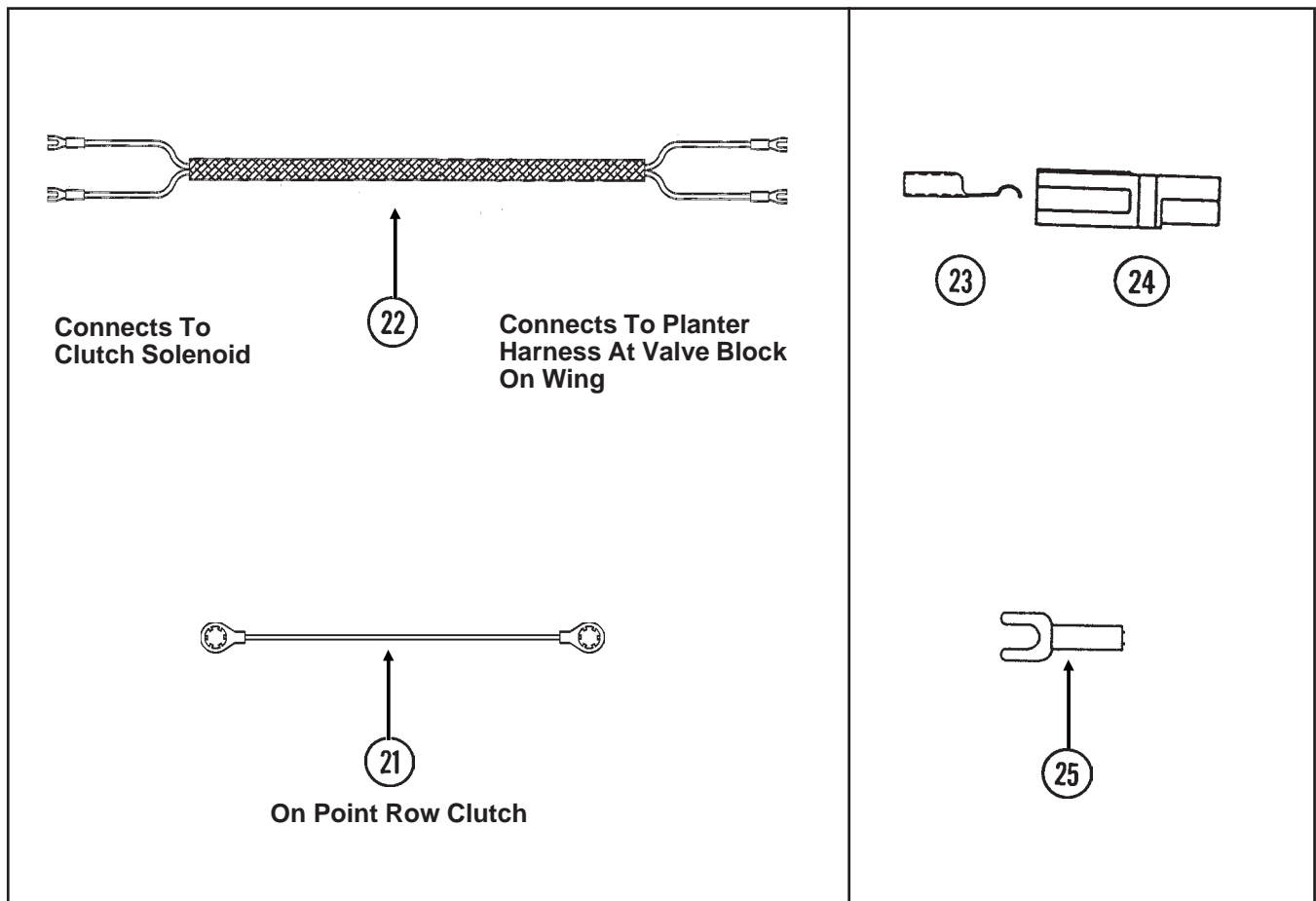
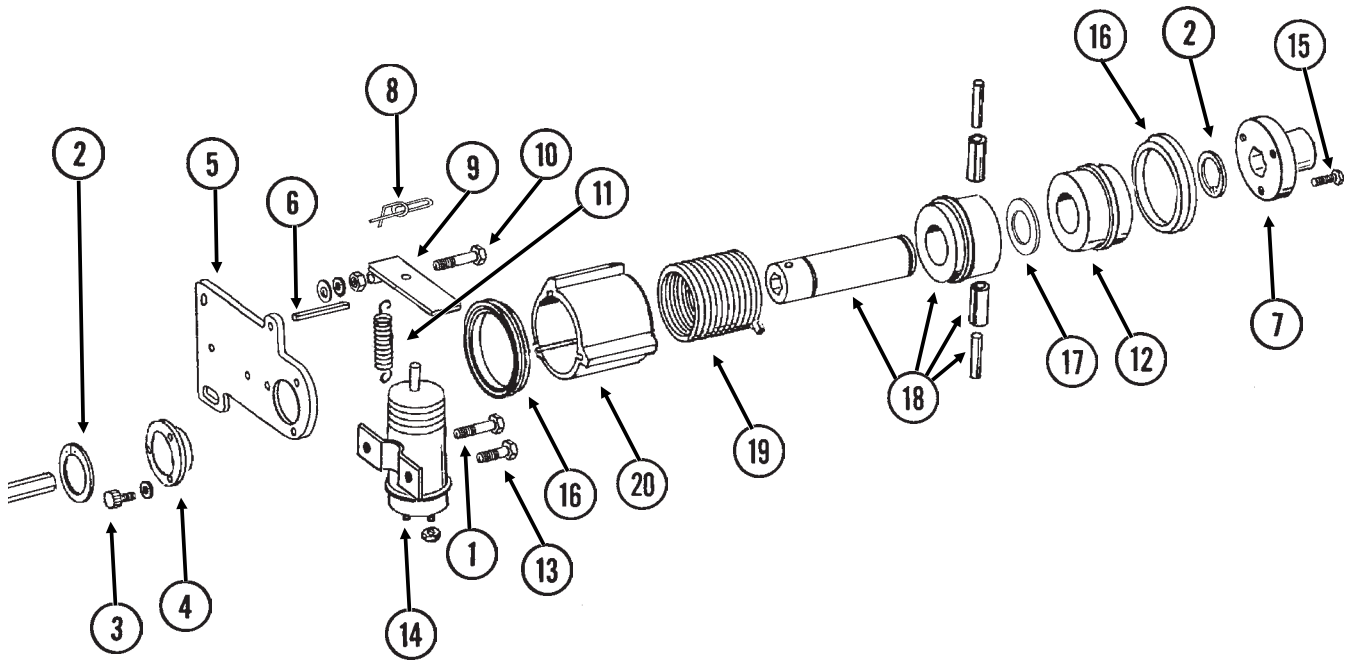
DRIVEN AND DRILL SHAFTS ON CENTER SECTION

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, $\frac{5}{16}$ "-18 x 1 $\frac{3}{4}$ "
	G10923	-	Flange Nut, $\frac{5}{16}$ "-18, No Serration
6.	G10053	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 2 $\frac{1}{2}$ "
	GD10356	2	Bushing, $\frac{3}{4}$ " Long
	G10111	2	Lock Nut, $\frac{1}{2}$ "-13
7.	GA7154	2	Sprocket W/Bearing, 18 Tooth
8.	GD16362	2	Plate
9.	G10016	2	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 2"
	GD10356	4	Bushing, $\frac{3}{4}$ " Long
	G10527	4	Lock Washer, $\frac{1}{2}$ ", Internal/External
	G10111	2	Lock Nut, $\frac{1}{2}$ "-13
10.	G10233	-	Machine Bushing, 1", 10 Gauge
11.	GD2548-16	2	Hex Shaft, $\frac{7}{8}$ " x 16" (1 Hole)
12.	G10880	4	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x 2 $\frac{1}{4}$ "
	G10110	4	Lock Nut, $\frac{1}{4}$ "-20, Grade B
13.	GA11169	2	U-Joint W/Grease Fitting, Female, 61 $\frac{15}{32}$ "
	GR1294	-	Cross And Bearing Kit
	GR1352	-	Inboard Yoke
	GR1300	-	Grease Fitting, 67.5°, Metric
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1365	-	Yoke, $\frac{7}{8}$ " Hex
	GR1741	-	Outer Profile
14.	GA8001	2	U-Joint W/Grease Fitting, Male, 40 $\frac{13}{32}$ "
	GR1294	-	Cross And Bearing Kit
	GR1295	-	Inboard Yoke
	GR1300	-	Grease Fitting, 67.5°, Metric
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1365	-	Yoke, $\frac{7}{8}$ " Hex
	GR1377	-	Inner Profile
15.	G10017	8	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 1 $\frac{1}{2}$ "
	G10206	8	Washer, $\frac{1}{2}$ " SAE
	G10228	8	Lock Washer, $\frac{1}{2}$ "
	G10102	8	Hex Nut, $\frac{1}{2}$ "-13
16.	GD0914-78	1	Hex Shaft, $\frac{7}{8}$ " x 78" (No Holes), L.H. Side
	GD0914-68	-	Hex Shaft, $\frac{7}{8}$ " 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 $\frac{1}{4}$ "
18.	G3310-108	1	Chain, No. 40, 108 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
19.	GD0740	1	Hose Clamp, $\frac{3}{4}$ " x 4" x 3 $\frac{1}{2}$ "
20.	G10585	1	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 3 $\frac{1}{4}$ "
	G10206	1	Washer, $\frac{1}{2}$ " SAE
	G10228	1	Lock Washer, $\frac{1}{2}$ "
	G10102	1	Hex Nut, $\frac{1}{2}$ "-13
21.	GA12114	1	Cover W/Plug And Screws
	GD17100	-	Plug
	G11073	-	Slotted Hex Self-Tapping Screw, No. 10 x $\frac{3}{8}$ "

POINT ROW CLUTCHES

(FWD71/TWL71d/TWL71/TWL18/A10054)

L.H. POINT ROW CLUTCH SHOWN

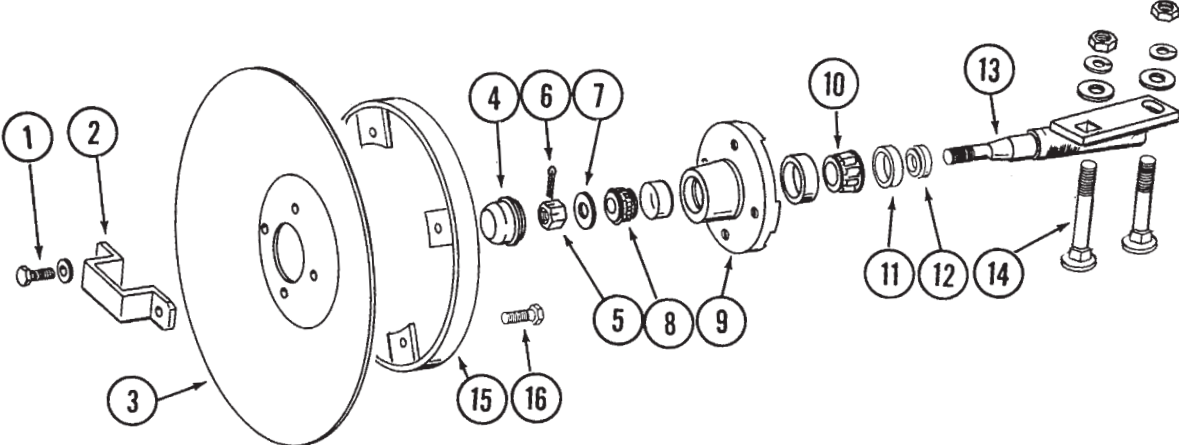


POINT ROW CLUTCHES

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
	GD10123	1	Spring
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)
	GD9530	-	Contact
23.	GD9530	-	Contact
	GD9529	-	Housing, Black
24.	GD12726	-	Housing, Red
	G10996	-	Fork Terminal
A.	GA11267	-	Point Row Clutch Assembly, L.H., (Used On Outer R.H. Wing And Inner) (Items 1-21)
	GA11268	-	Point Row Clutch Assembly, R.H., (Used On Outer L.H. Wing And Inner) (Items 1-21)

ROW MARKER SPINDLE/HUB/BLADE

MKR020(MKR4)



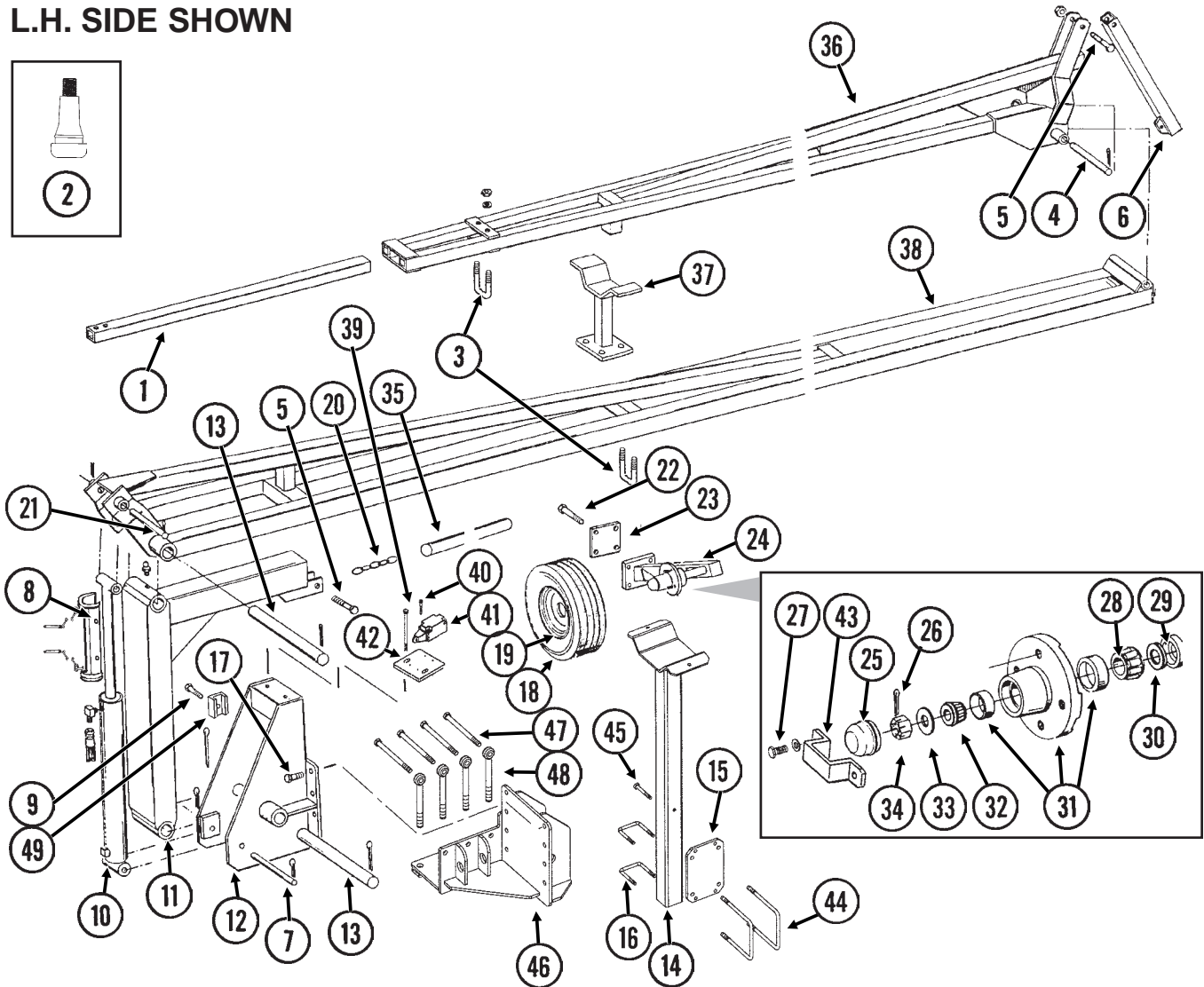
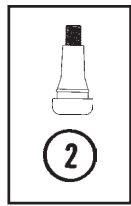
ROW MARKER SPINDLE/HUB/BLADE

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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, 24 ROW 30"

(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", Page P132
11.	GA6870	1	Arm, First Stage

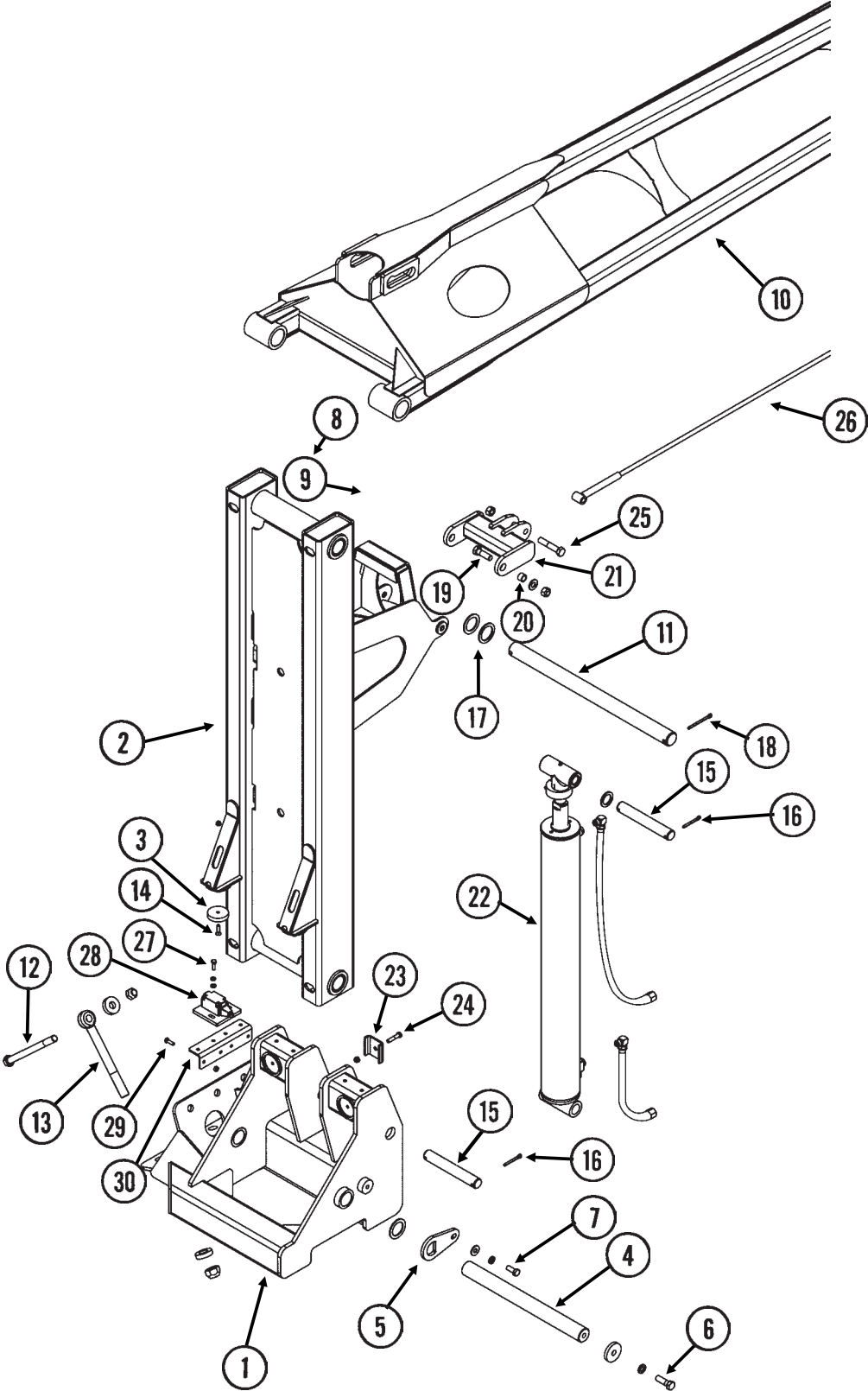
ROW MARKER ASSEMBLY, 24 ROW 30"

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
12.	GA4031	1	Mount W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
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.	GA13474	1	Limit Switch
42.	GD16175	1	Mount
43.	GD2597	1	Retainer
44.	GD14559	2	U-Bolt, 7" x 7" x 5/8"-11 (9" Long)
	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 2 1/2" x 2"
	GD10231	4	Special Washer, 1 1/16" I.D. x 2" O.D.
	G11108	4	Lock Nut, 1"-14
49.	GD5875	1	Hose Clamp
A.	GA10409	-	Tire And Rim Assembly (Items 2, 18 And 19)

* Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.

ROW MARKER ASSEMBLY (Mount And First Stage), 32 ROW 30" AND 36 ROW 30"

(FWD167)

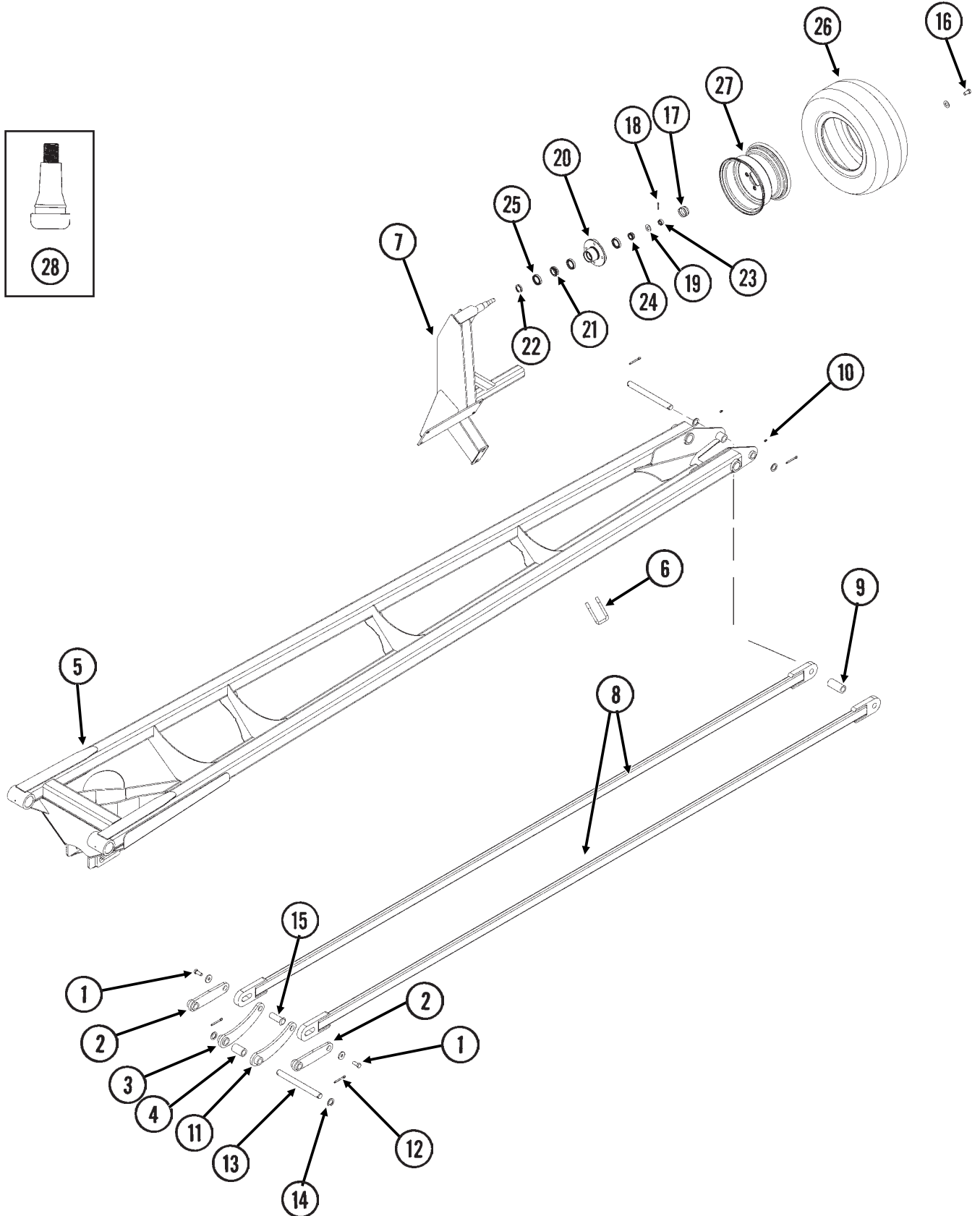


ROW MARKER ASSEMBLY (Mount And First Stage), 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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 2 1/32" 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	Rubber Stop
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, 2 1/32" 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"

(FWD168)

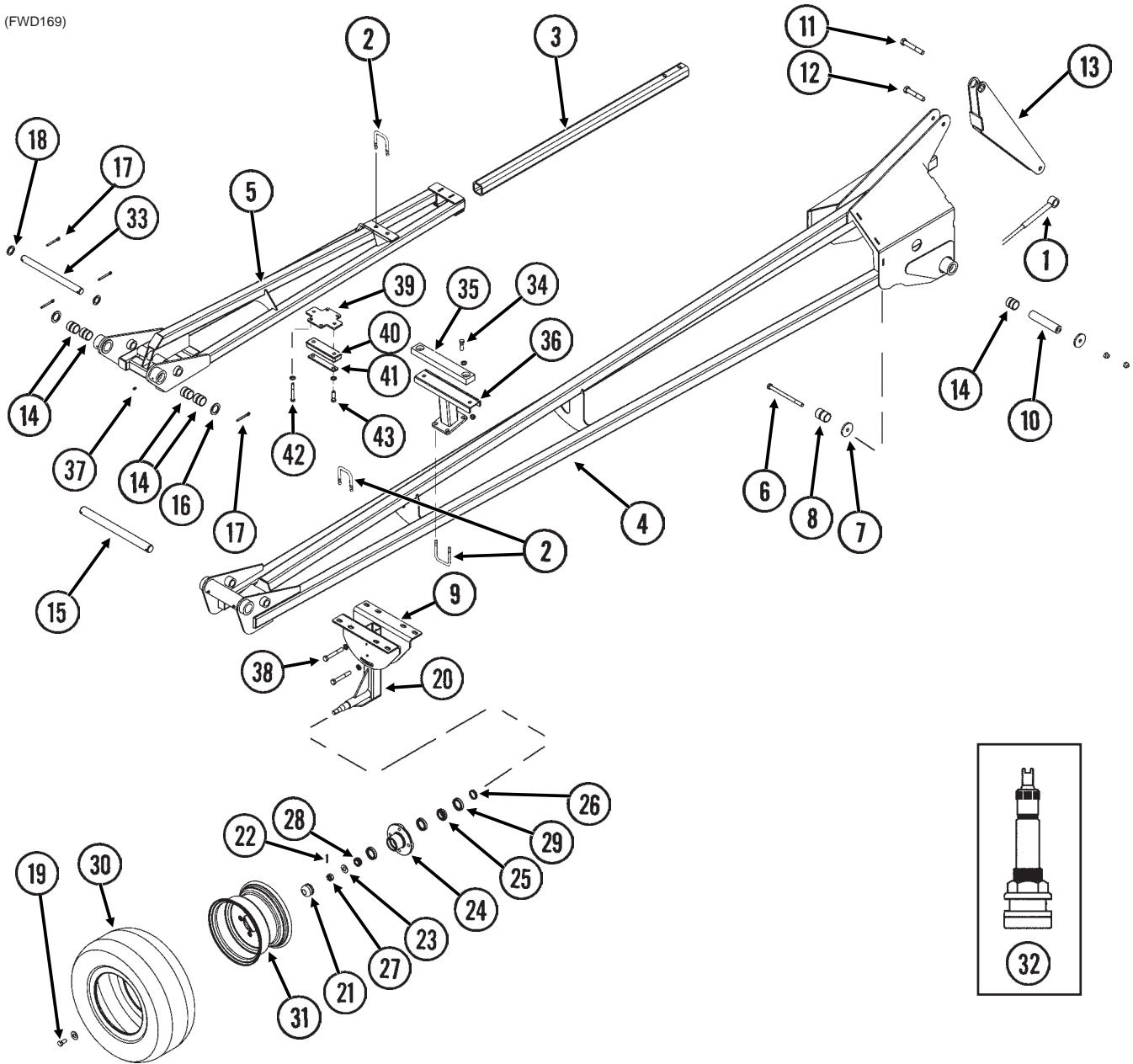


ROW MARKER ASSEMBLY (Second Stage), 32 ROW 30" AND 36 ROW 30"

ITEM	PART NO.	QTY.	DESCRIPTION
(Per Assy.)			
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"

(FWD169)



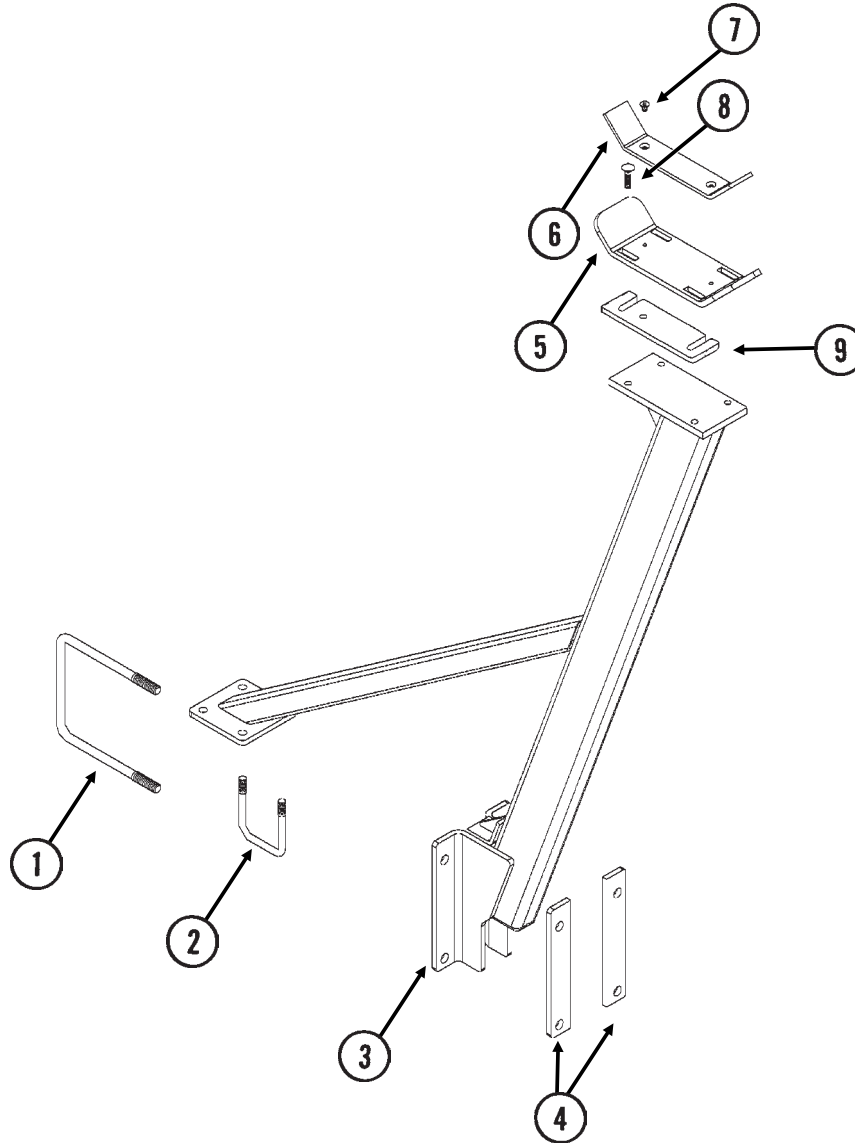
ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA10507	1	Cable, 132 1/2"
2.	GD2721	7	U-Bolt, 2" x 2" x 1/2"-13
	G10228	14	Lock Washer, 1/2"
	G10102	14	Hex Nut, 1/2"-13
3.	GD0453-07	1	Extension Tube, 45"
4.	GA10375	1	Arm W/Grease Fittings, Third Stage, 148 1/2"
	G10640	-	Grease Fitting, 1/4"-28
5.	GA10376	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"

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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 1/2"
	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, 1/2"-13 x 3 1/2"
	GD18939	2	Marker Wheel Washer
	G10111	2	Lock Nut, 1/2"-13
39.	GD18904	1	Plate Mount
40.	GD18905	1	Pad Mount
41.	GA9145	1	Pad
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 1/2"
	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, 32 ROW 30" AND 36 ROW 30"

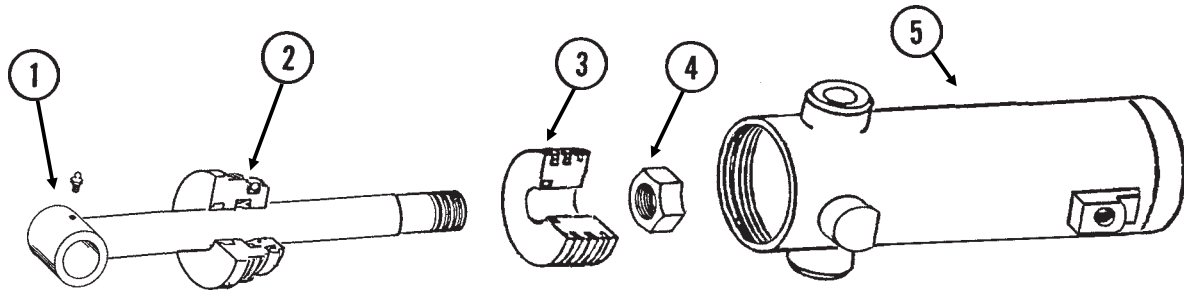
(FWD18a)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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"

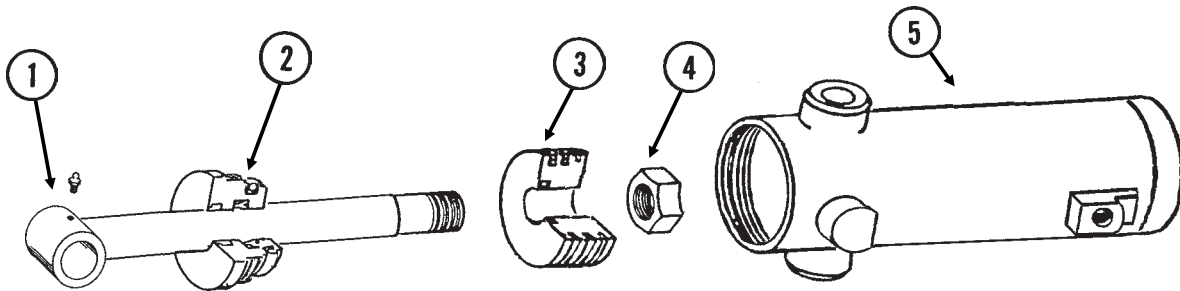
(CYL58)



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" <i>(Part Number Stamped On Barrel)</i>
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"

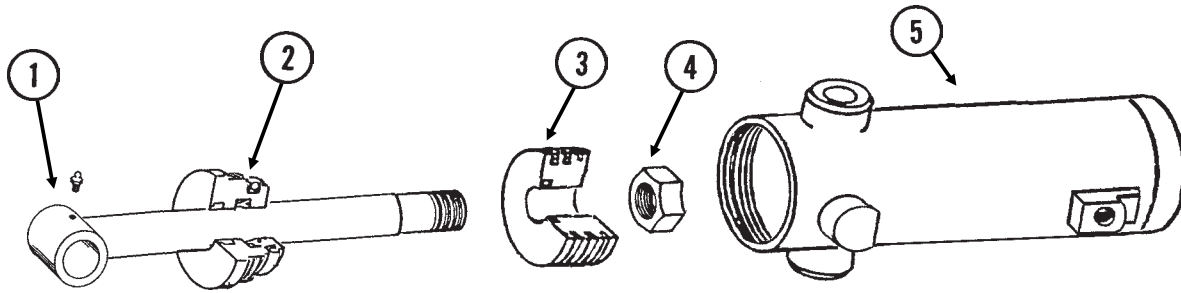
(CYL58)



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" <i>(Part Number Stamped On Barrel)</i>
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"

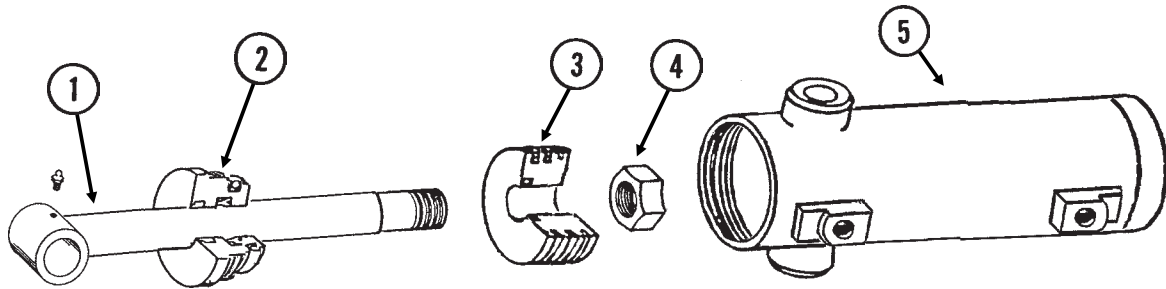
(CYL58)



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" (<i>Part Number Stamped On Barrel</i>)
B.	GR1757	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) BU Ring, (1) Wear Ring, (1) T-Seal

SLAVE/LIFT ASSIST CYLINDERS, 24 ROW 30", 32 ROW 30" AND 36 ROW 30"

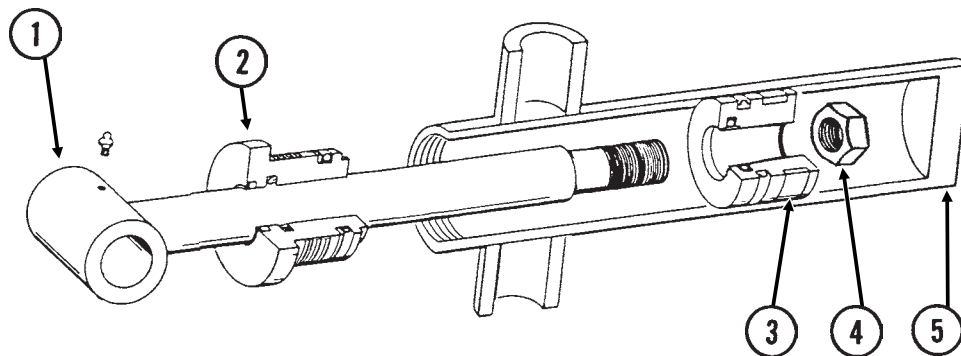
(CYL59)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10363 G10640	1 -	Rod Assembly W/Grease Fitting 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

SLAVE/LIFT ASSIST CYLINDERS, 24 ROW 30", 32 ROW 30" AND 36 ROW 30"

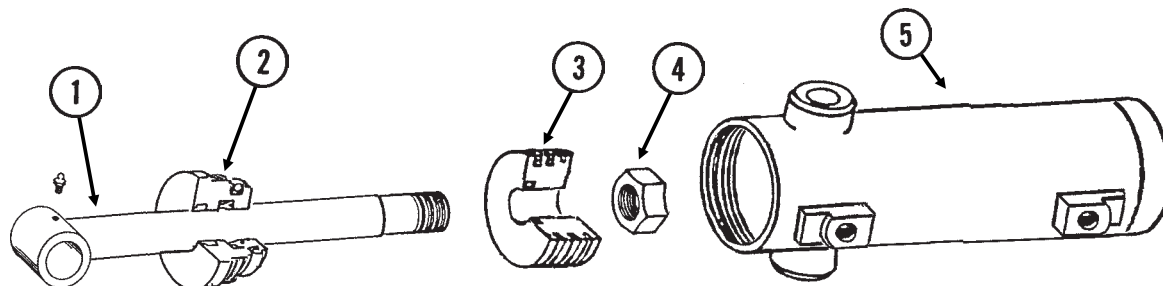
CYL026(CYL4d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA8831 G10640	1 -	Rod Assembly W/Grease Fitting 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"

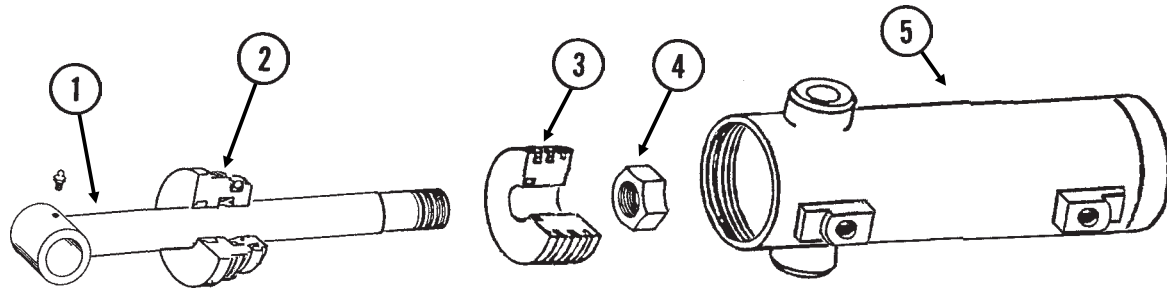
(CYL59)



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" (<i>Part Number Stamped On Barrel</i>)
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"

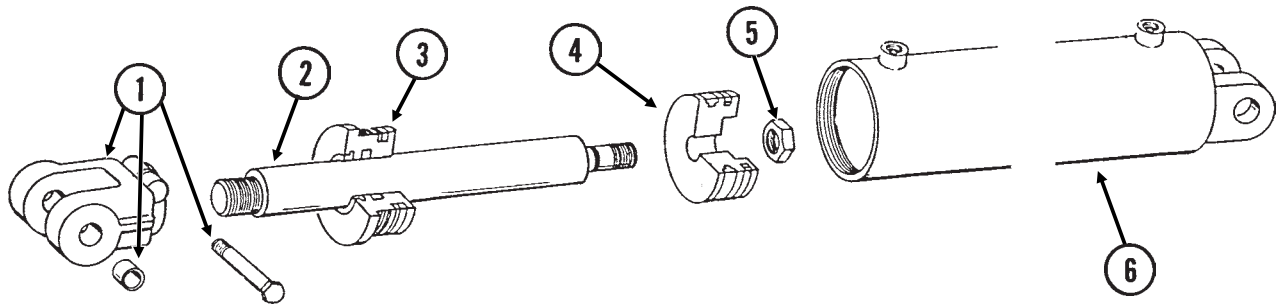
(CYL59)



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" (<i>Part Number Stamped On Barrel</i>)
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

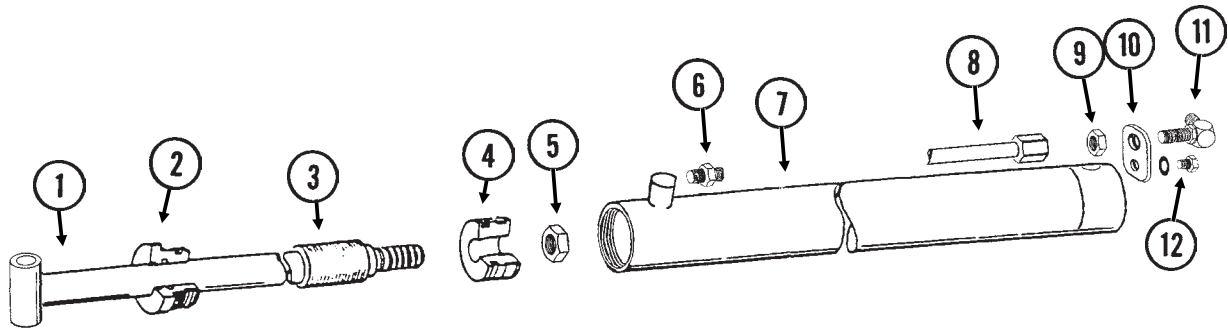
(CYL15e)



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, $\frac{3}{8}$ "-16 x 2 $\frac{1}{4}$ "
	G10101	1	Hex Nut, $\frac{3}{8}$ "-16
2.	GD14908	1	Rod
3.	GD12522	1	Gland
4.	GD14910	1	Piston
5.	G10972	1	Lock Nut, 1 $\frac{1}{4}$ "-12
6.	A10372	1	Barrel (Non-Stock Item)
A.	GA10373	-	Cylinder Complete, 4 $\frac{1}{2}$ " x 30" (<i>Part Number Stamped On Barrel</i>)
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, 32 ROW 30" AND 36 ROW 30"

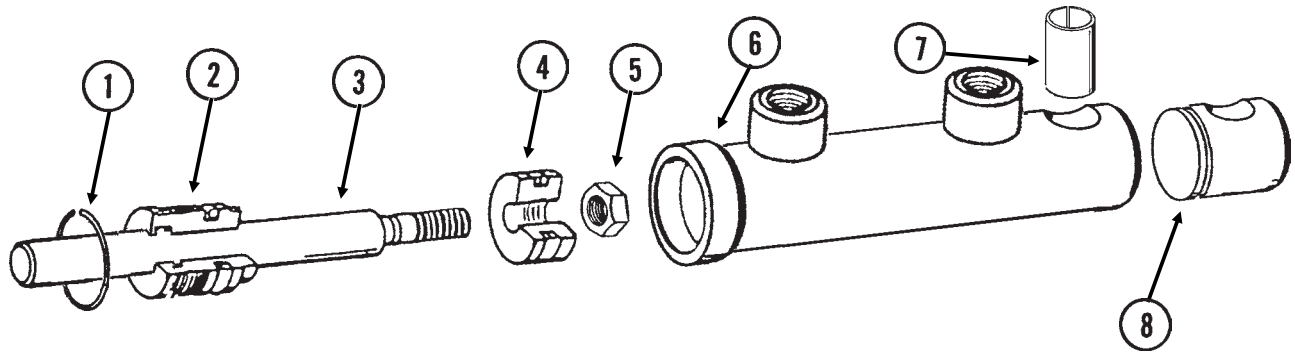
(CYL12g)



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" (<i>Part Number Stamped On Barrel</i>)
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, ALL SIZES

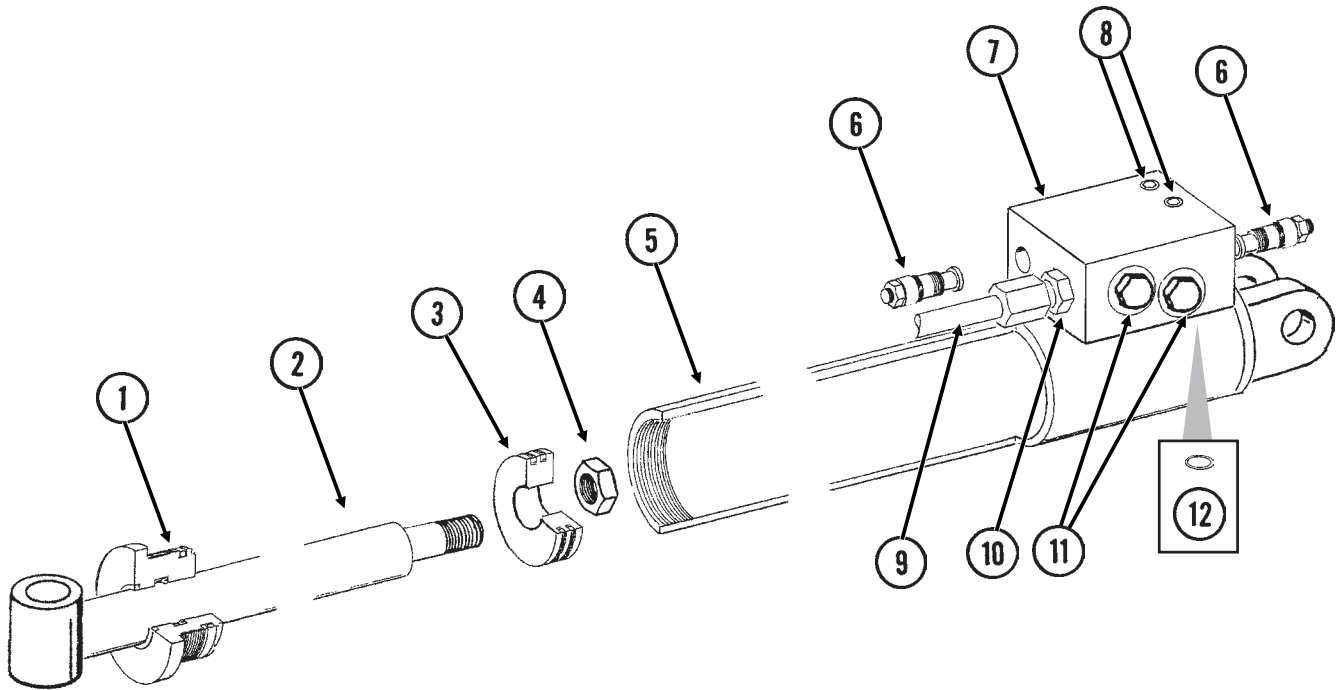
CYL035(CYL9d)



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 " (<i>Part Number Stamped On Barrel</i>)
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

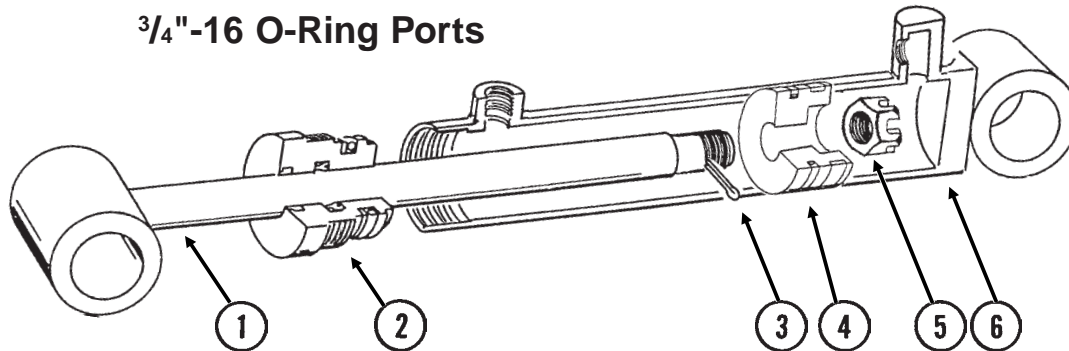
(CYL54d/D12239)



ITEM	PART NO.	QTY.	DESCRIPTION
(Per Cylinder)			
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" <i>(Part Number Stamped On Barrel)</i>
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, 24 ROW 30"

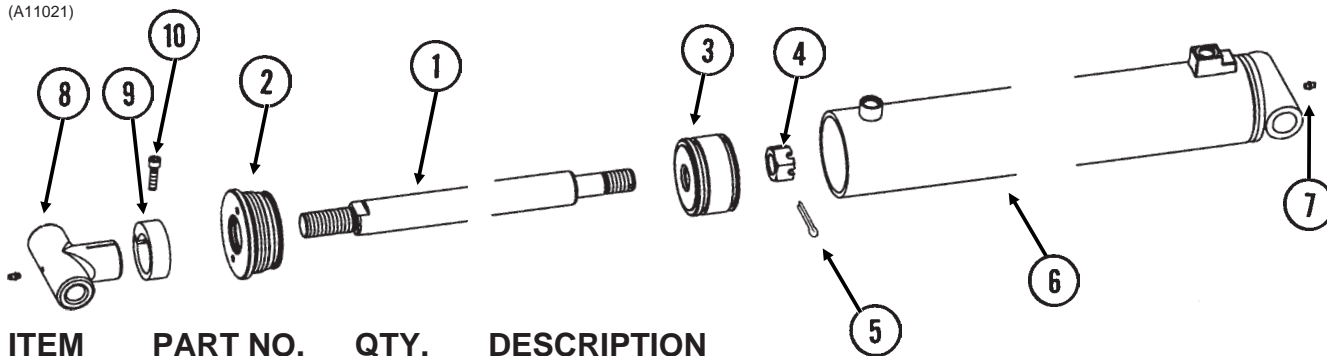
(CYL032d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA8948	1	Rod Assembly
2.	GD12548	1	Gland
3.	G10984	1	Cotter Pin, $\frac{3}{16}$ " x 2 $\frac{1}{2}$ "
4.	GD12550	1	Piston
5.	G10983	1	Slotted Hex Nut, 1 $\frac{1}{8}$ "-12
6.	A8950	1	Barrel (Non-Stock Item)
A.	GA8951	-	Cylinder Complete, 3 $\frac{1}{2}$ " x 20" (<i>Part Number Stamped On Barrel</i>)
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"

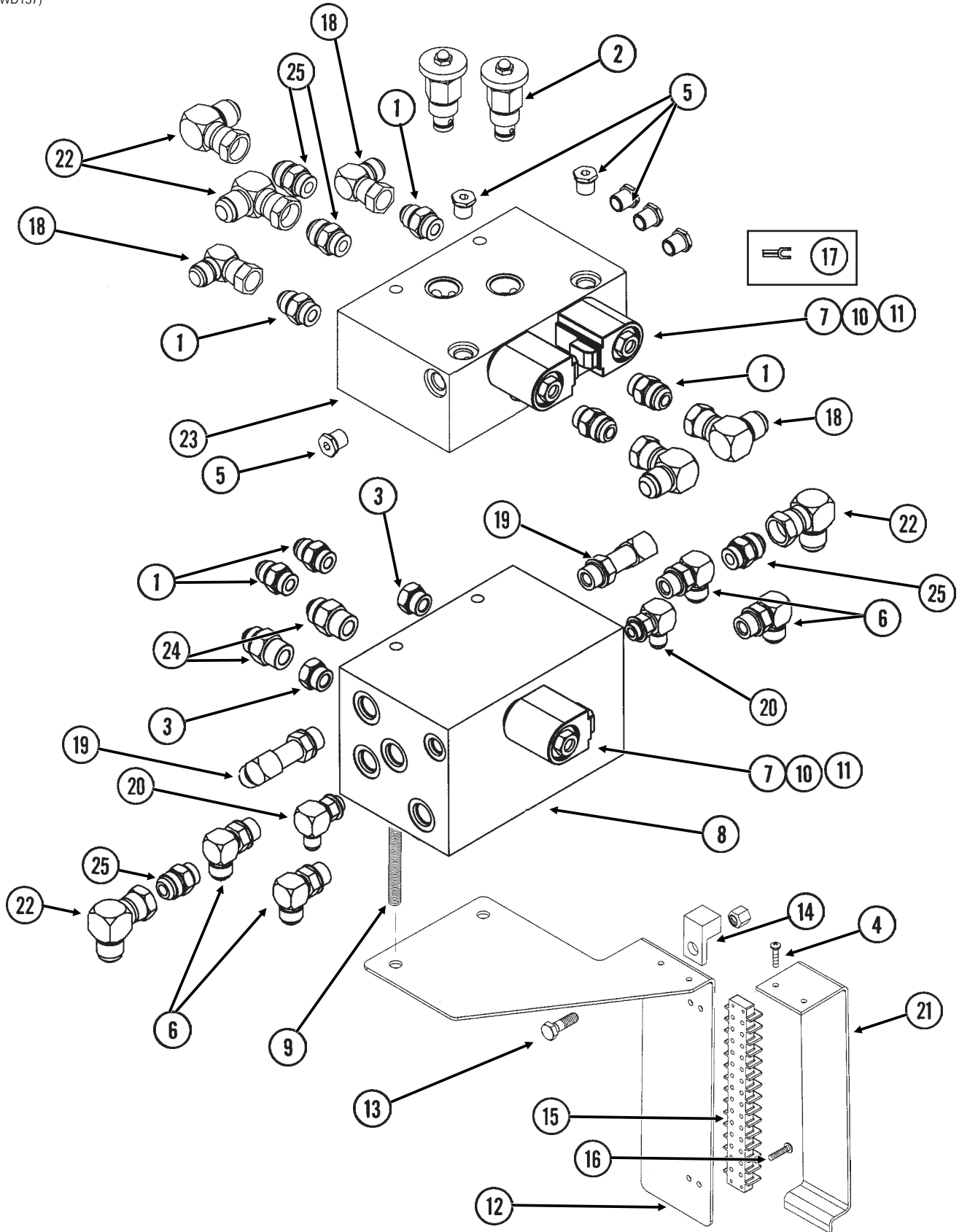
(A11021)



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" <i>(Part Number Stamped On Barrel)</i>
B.	GR1630	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wiper, (1) T-Seal, (1) Cast Iron Ring, (1) U-Cup Seal

VALVE BLOCKS - LOCATED ON HITCH, 24 ROW 30"

(FWD157)

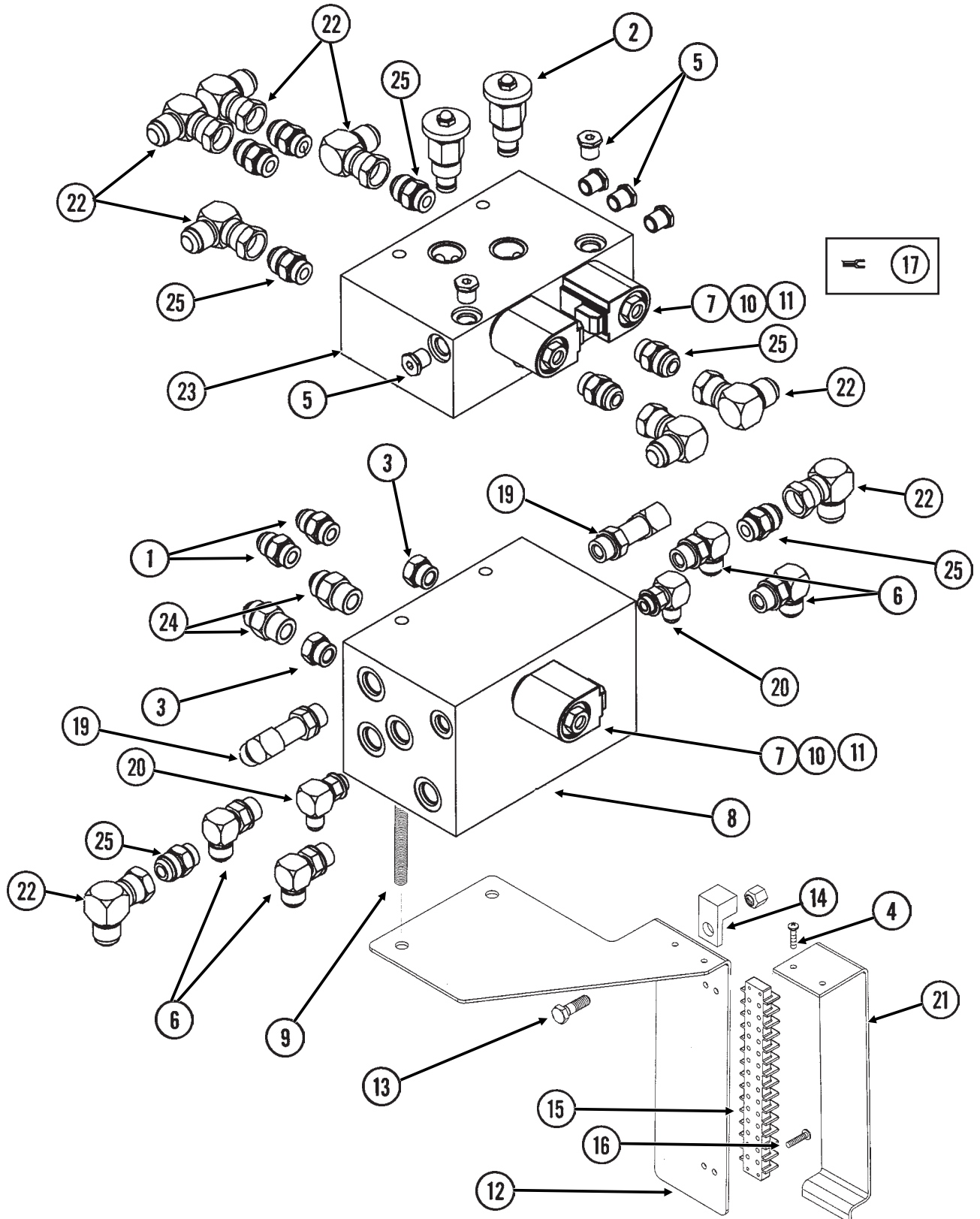


VALVE BLOCKS - LOCATED ON HITCH, 24 ROW 30"

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"

(FWD158)

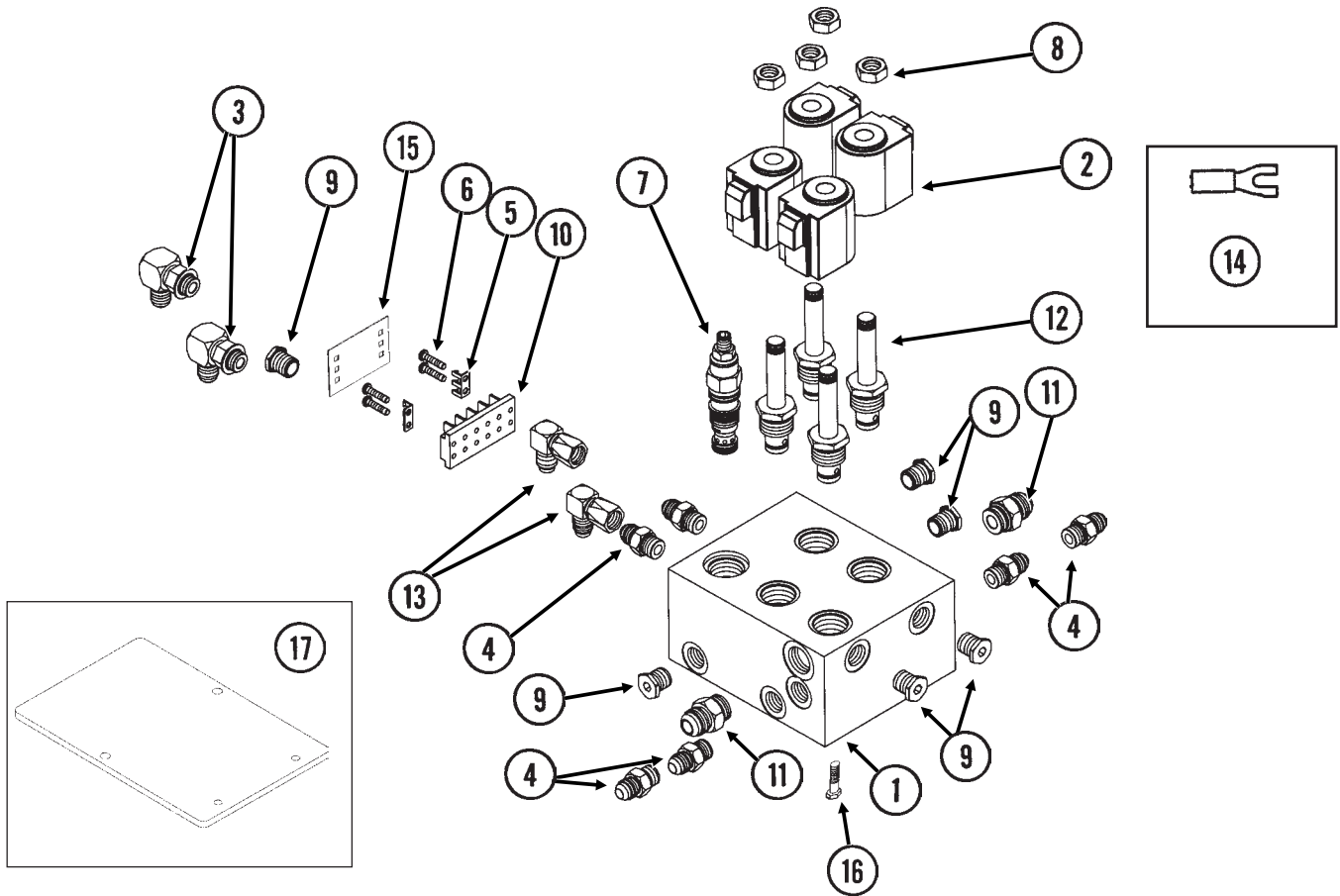


VALVE BLOCKS - LOCATED ON HITCH, 32 ROW 30" AND 36 ROW 30"

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, 24 ROW 30"

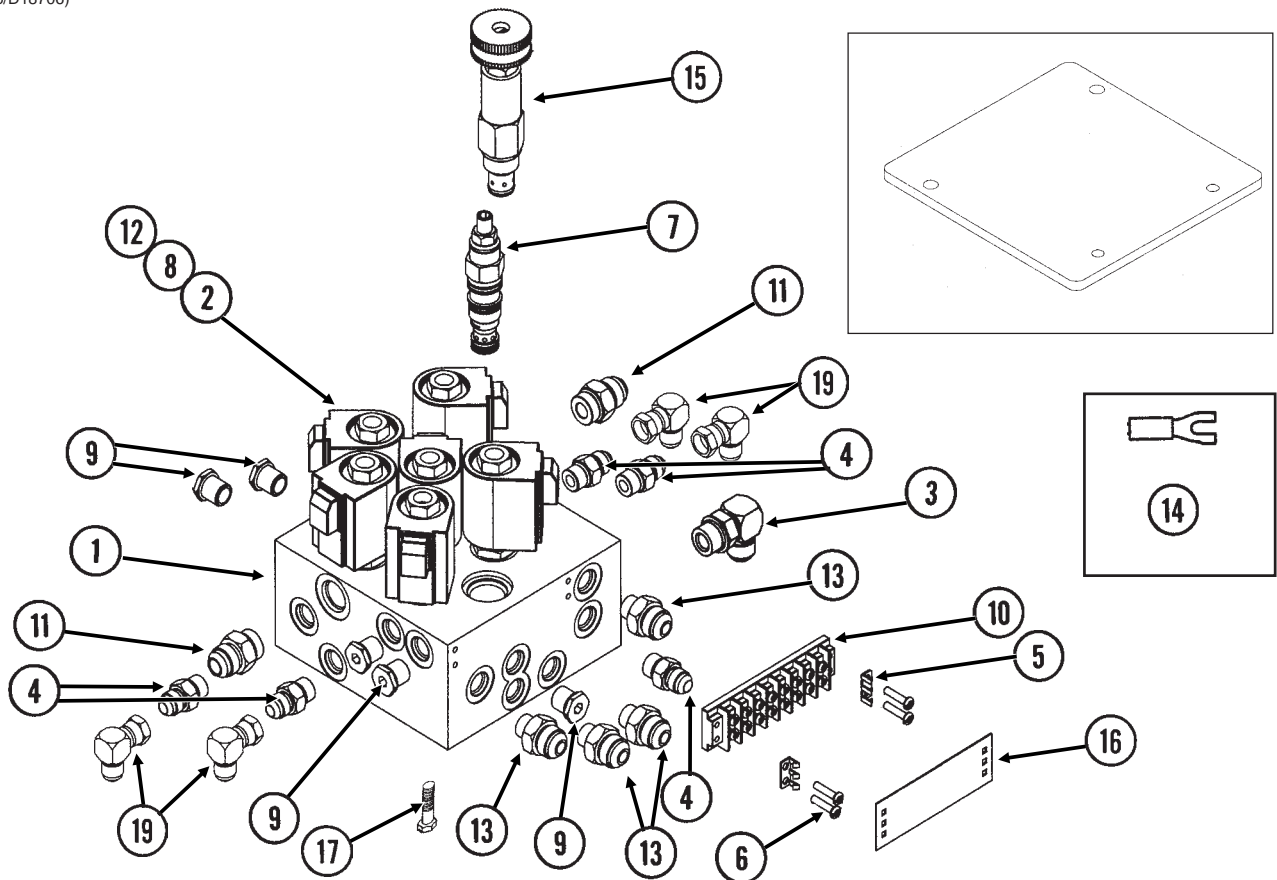
(A12639a/A9481/D18137)



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"

(A13233b/D18706)

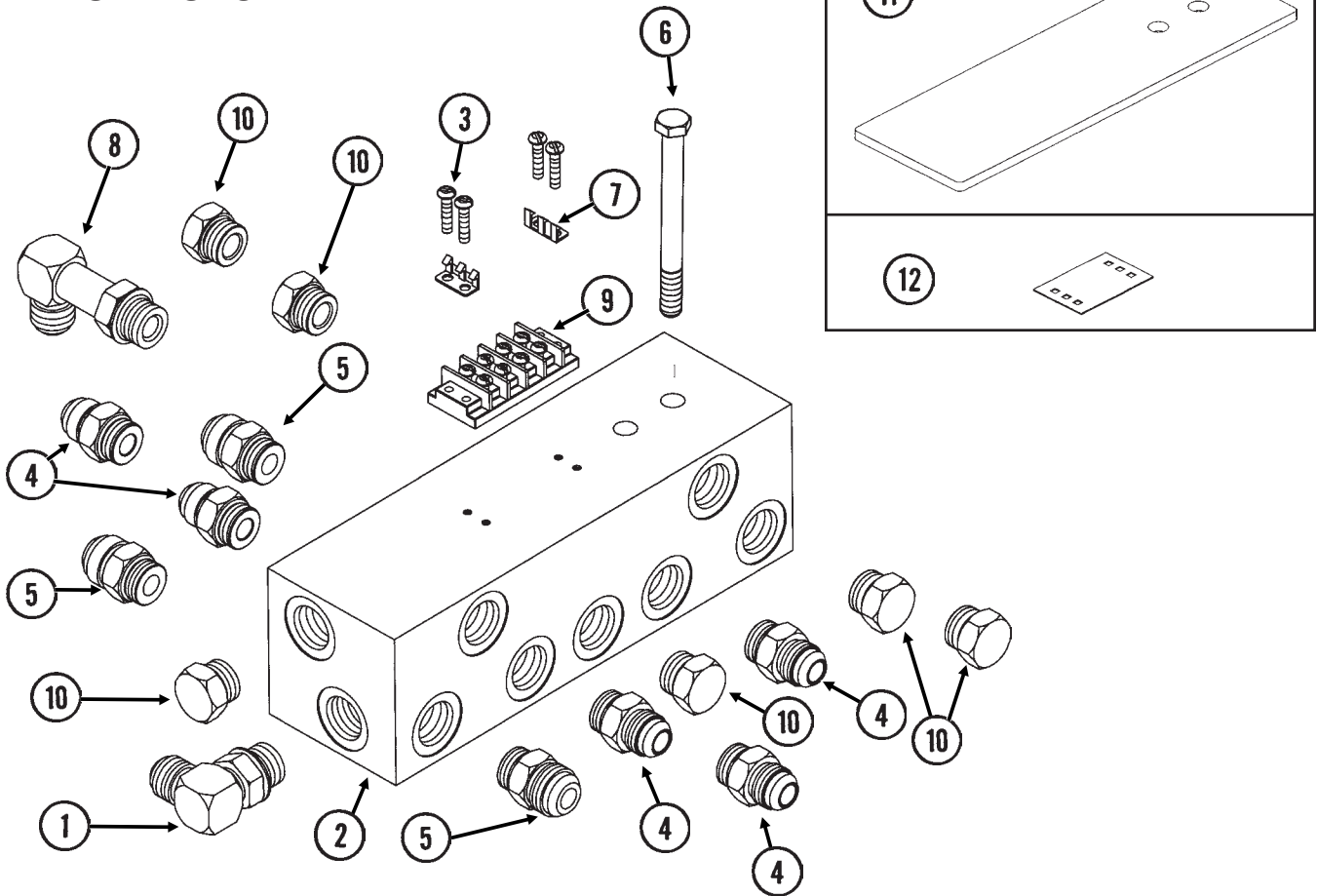


ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18631	1	Block
2.	GR1445	6	Coil
3.	G6801-08-06	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To 9/16"-18 O-Ring
4.	GR1045	-	O-Ring
5.	G6400-06	5	Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring
6.	GR1045	-	O-Ring
7.	GD18100	2	Clip
8.	G11067	4	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
9.	GA10632	1	Counter Balance Valve
10.	GR0761	6	Special Hex Nut, 1/2"-20
11.	G6408-H06-0	5	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
12.	GR1045	-	O-Ring
13.	GA9098	1	Terminal Strip W/Screws, No. 6, 8 Terminal
14.	GR1635	-	Screw, No. 6-32 x 1/4"
15.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
16.	GR1037	-	O-Ring
17.	GR0763	6	Cartridge
18.	G6400-08-06	4	Connector W/O-Ring, 3/4"-16 Male JIC To 9/16"-18 O-Ring
19.	GR1045	-	O-Ring
A.	G10996	12	Fork Terminal
	GA3407	1	Pressure Relief Valve, 1000 PSI
	GD18102	1	Cover, 1 3/8" x 4"
	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
	GD18706	1	Plate, 5 1/4" x 6 1/4"
	G6502-06	4	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
	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

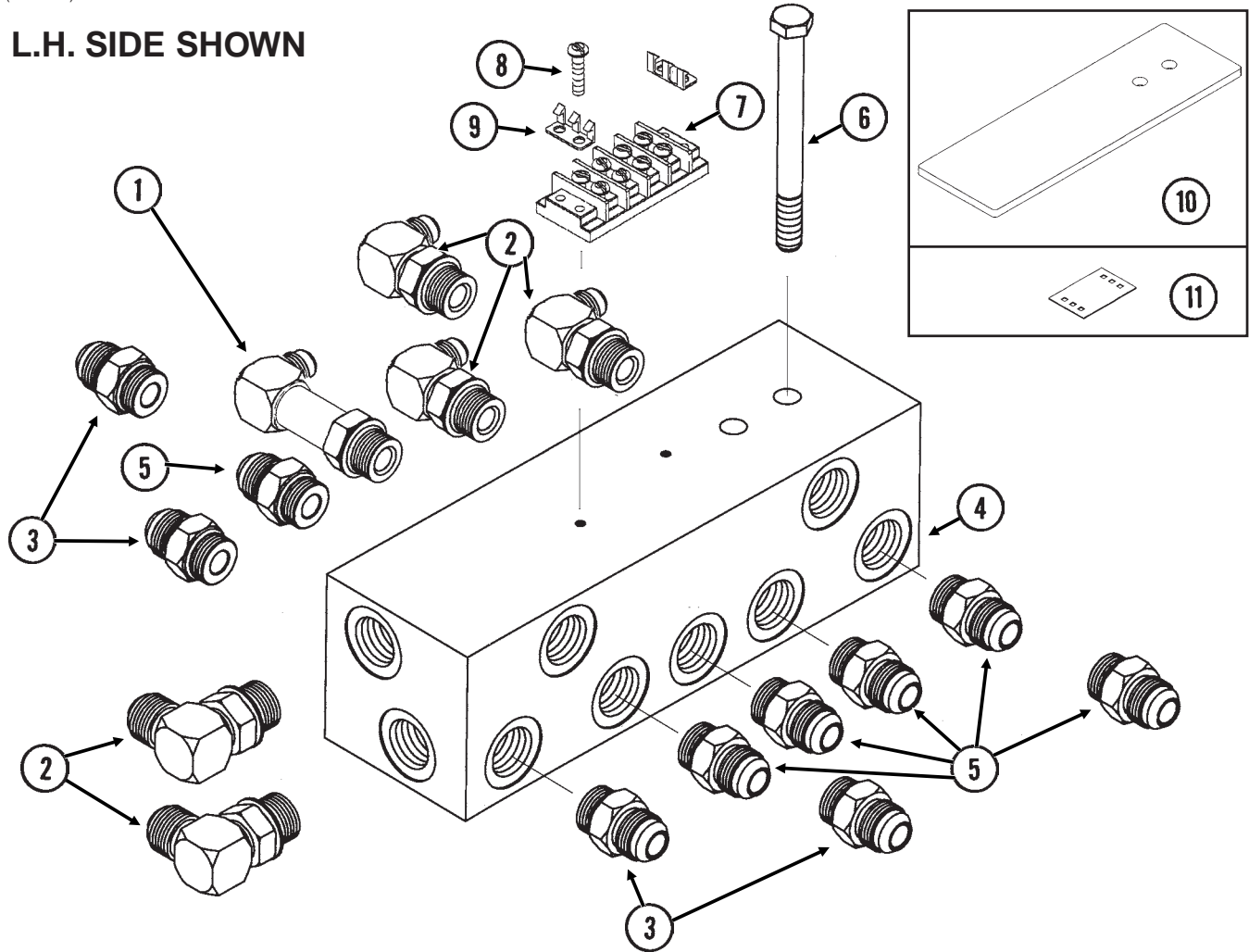


ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	G6801-08 GR1037	1 -	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
2.	GD14925	1	Block
3.	G11067	4	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
4.	G6400-08 GR1037	5 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
5.	G6400-10-08 GR1037	3 -	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring
6.	G10753 G10108	2 2	Hex Head Cap Screw, 3/8"-16 x 4 1/2" Lock Nut, 3/8"-16
7.	GD18100	2	Clip
8.	G6801-L-08 GR1037	1 -	Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
9.	GA9510 GR1635	1 -	Terminal Strip W/Screws, No. 6, 4 Terminal
10.	G6408-08 GR1037	6 -	Plug W/O-Ring, 3/4"-16 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

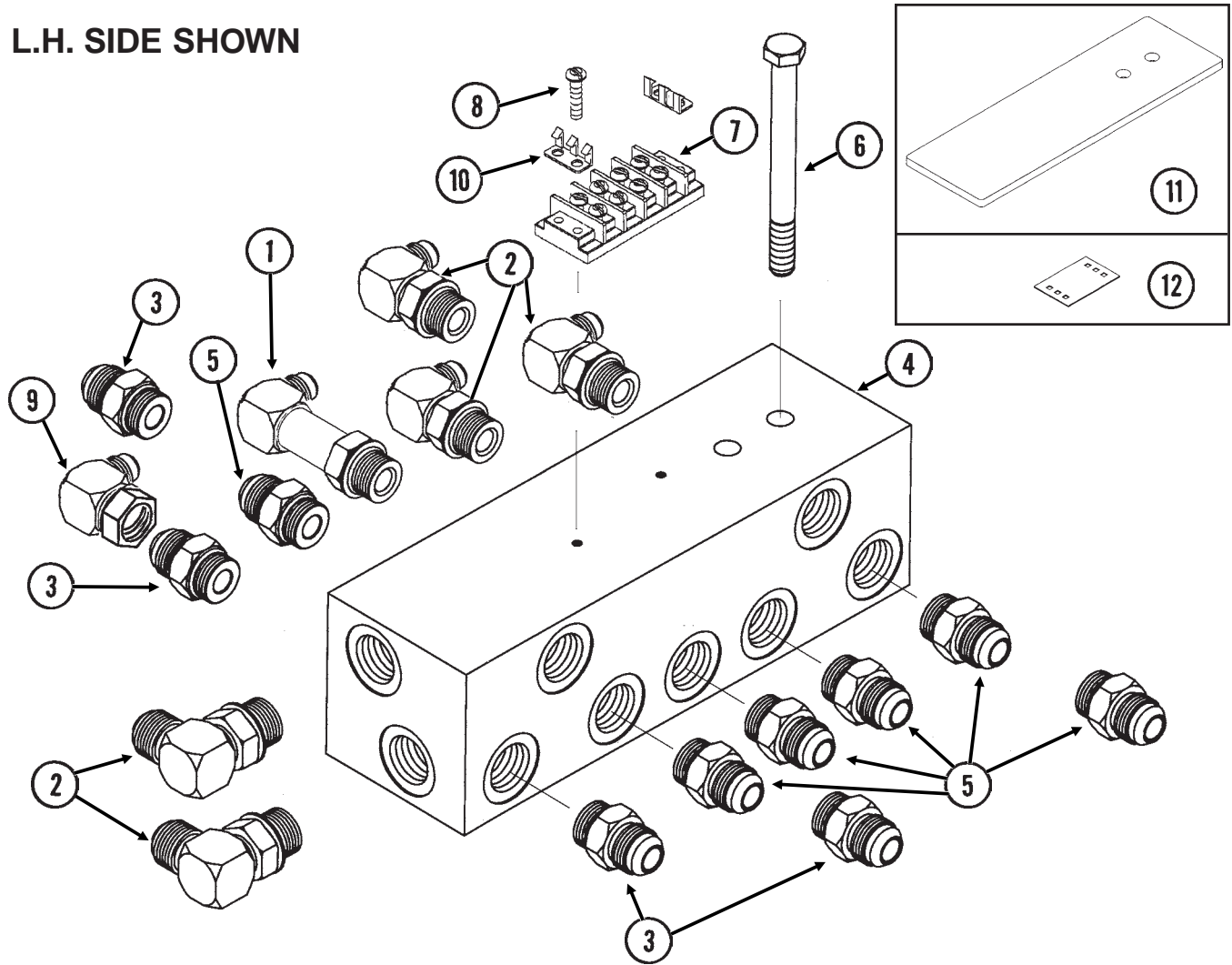


ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	G6801-L-08 GR1037	1 -	Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
2.	G6801-08 GR1037	5 -	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
3.	G6400-10-08 GR1037	4 -	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring
4.	GD14925	1	Block
5.	G6400-08 GR1037	6 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
6.	G10063 G10203 G10108	2 2 2	Hex Head Cap Screw, 3/8"-16 x 4" Washer, 3/8" SAE Lock Nut, 3/8"-16
7.	GA9510 GR1635	1 -	Terminal Strip W/Screws, No. 6, 4 Terminal
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)

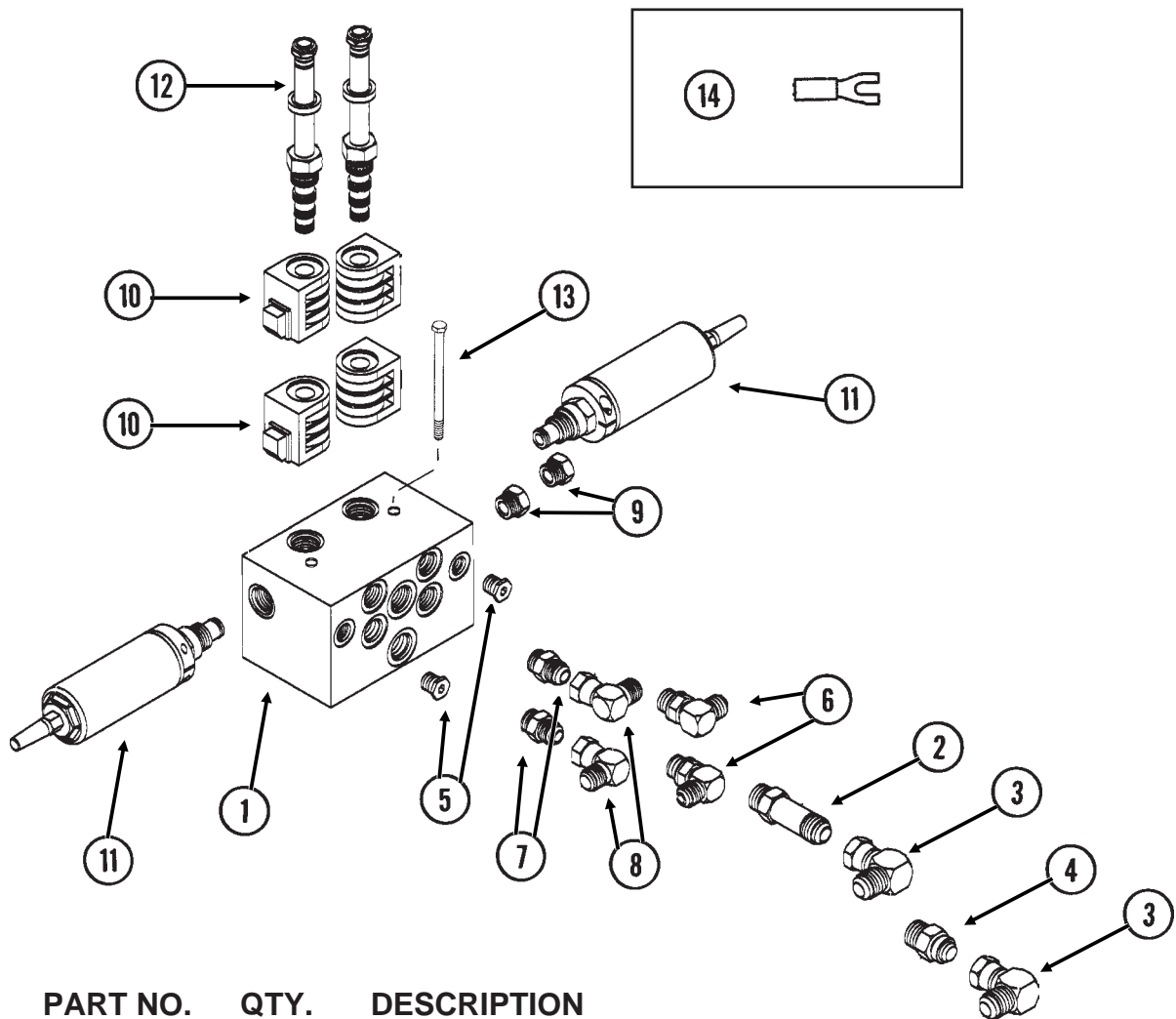
L.H. SIDE SHOWN



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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

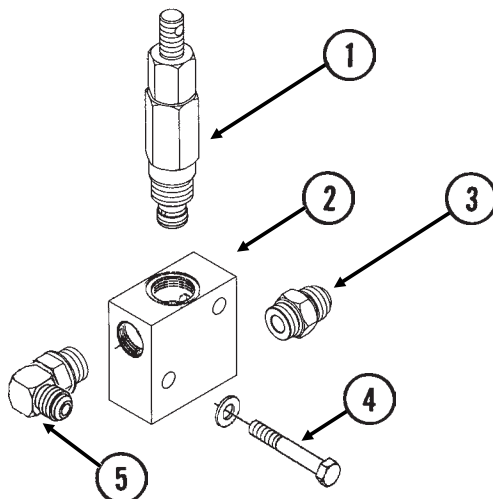
(FWD96/A9481)



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)



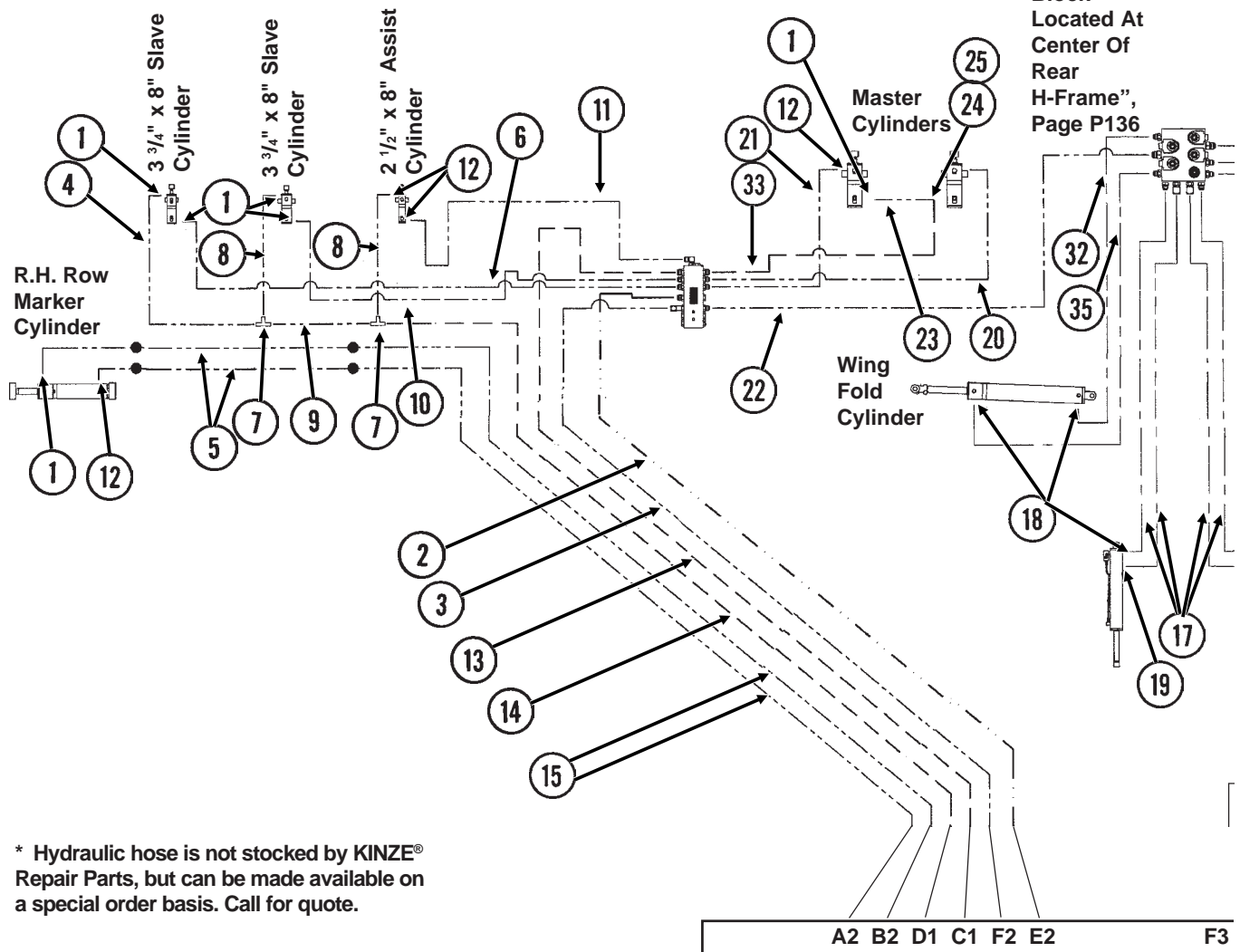
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA3407	-	Pressure Relief Valve, 1000 PSI
	GR1515	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
2.	GD14528	1	Valve Block
3.	G6400-08	1	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
4.	G10069	2	Hex Head Cap Screw, 5/16"-18 x 2 1/4"
	G10221	2	Washer, 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

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HYDRAULIC HOSES AND FITTINGS, 24 ROW 30"

(FWD154/D4086)

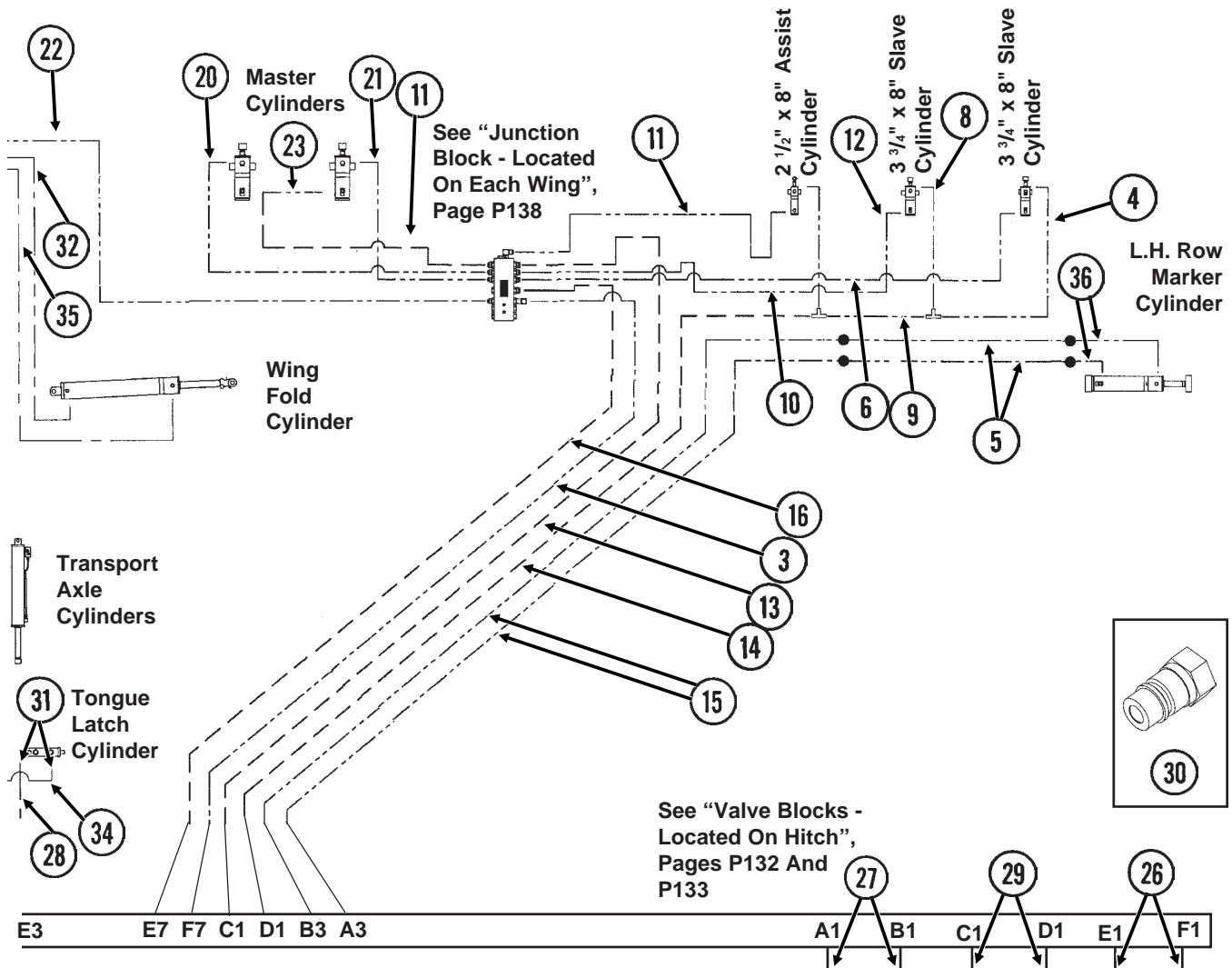
See "Valve Block - Located At Center Of Rear H-Frame", Page P136



* 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

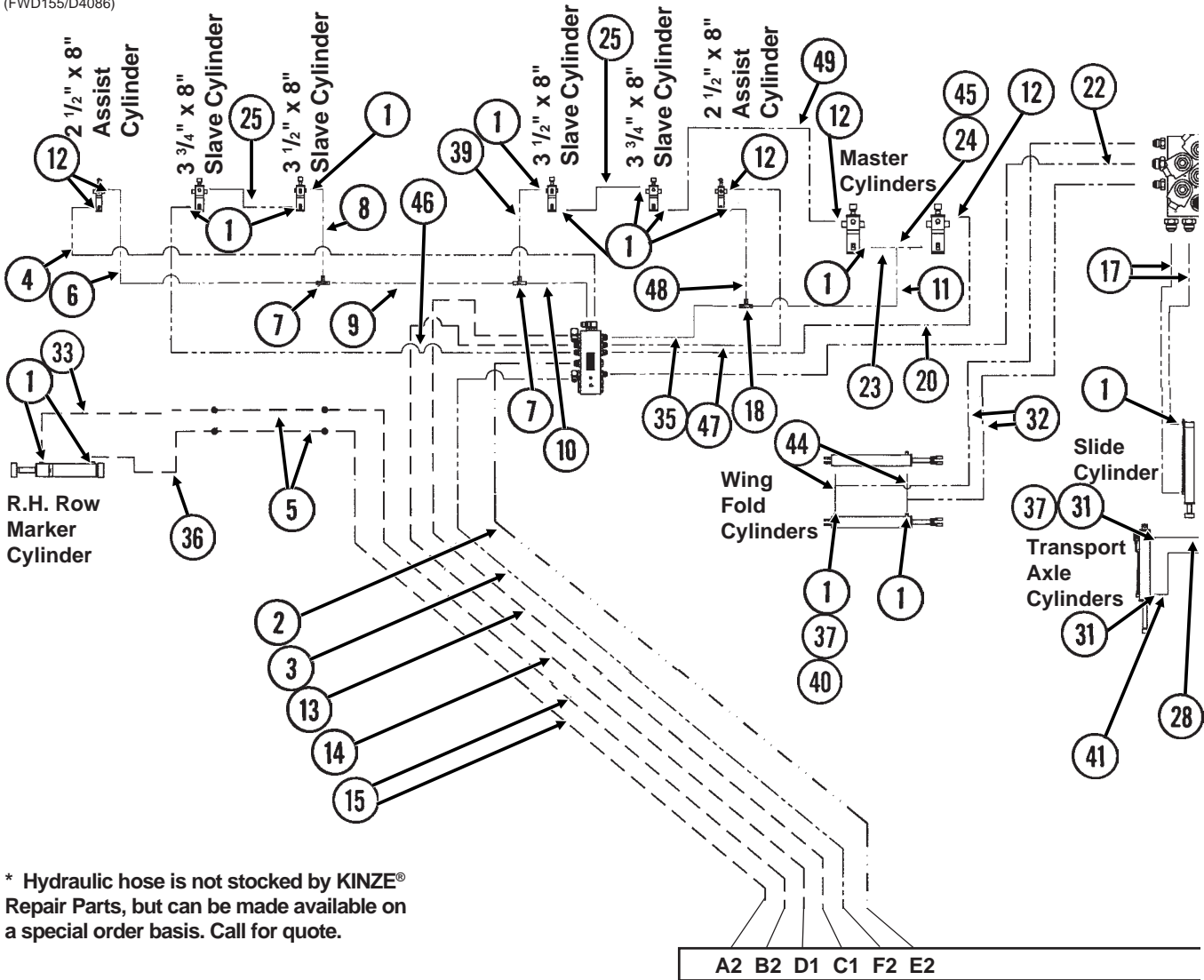
HYDRAULIC HOSES AND FITTINGS, 24 ROW 30"



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"

(FWD155/D4086)

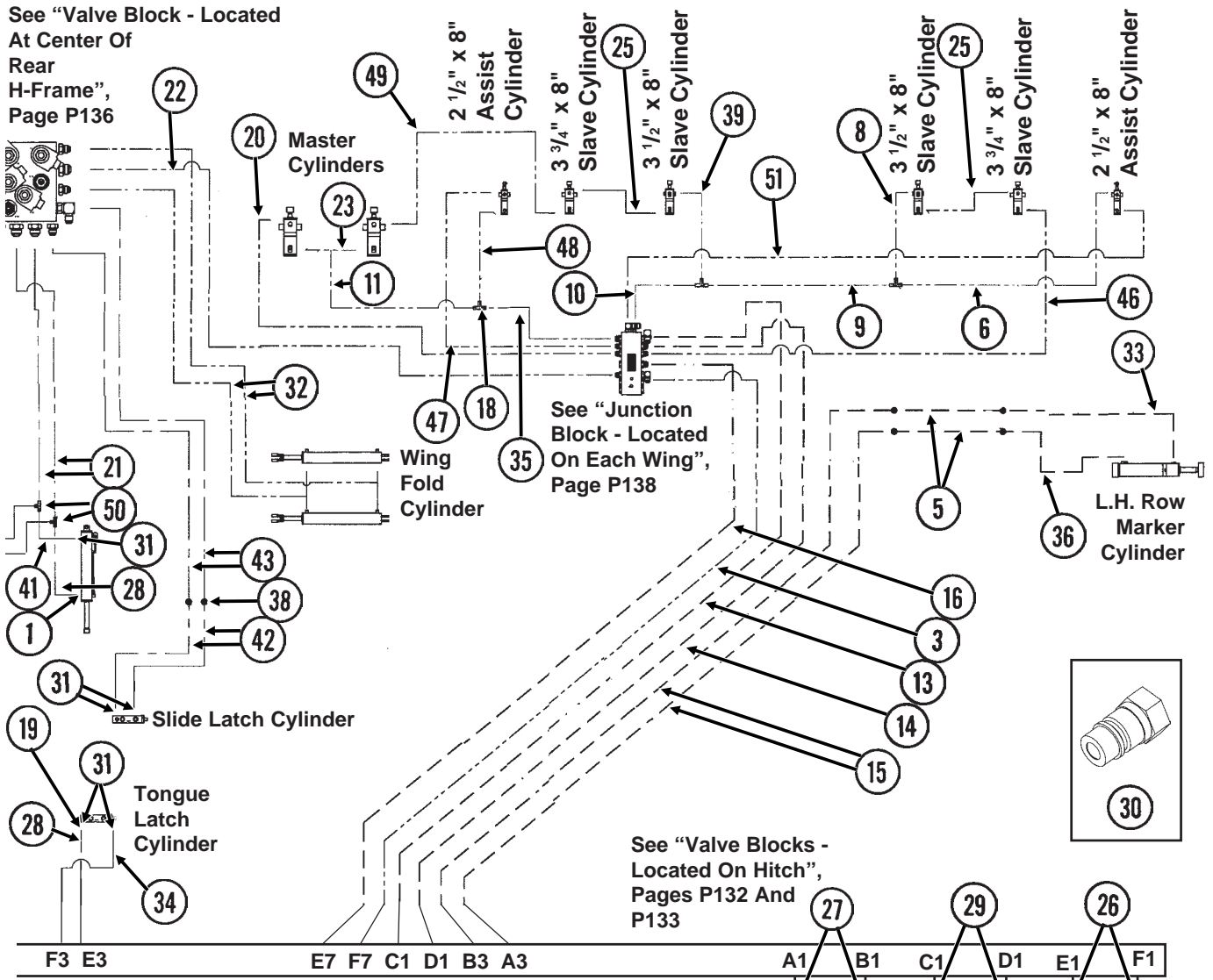


* Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08 GR1037	29 -	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring 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 190"
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 GR1037	12 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring 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.	G6502-06	2	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 GR1037	2 -	Tee, 3/4"-16 Male NPT To O-Ring O-Ring
25.	*A1055	4	Hose Assembly, 3/8" x 66"

HYDRAULIC HOSES AND FITTINGS, 32 ROW 30"

See "Valve Block - Located At Center Of Rear H-Frame", Page P136

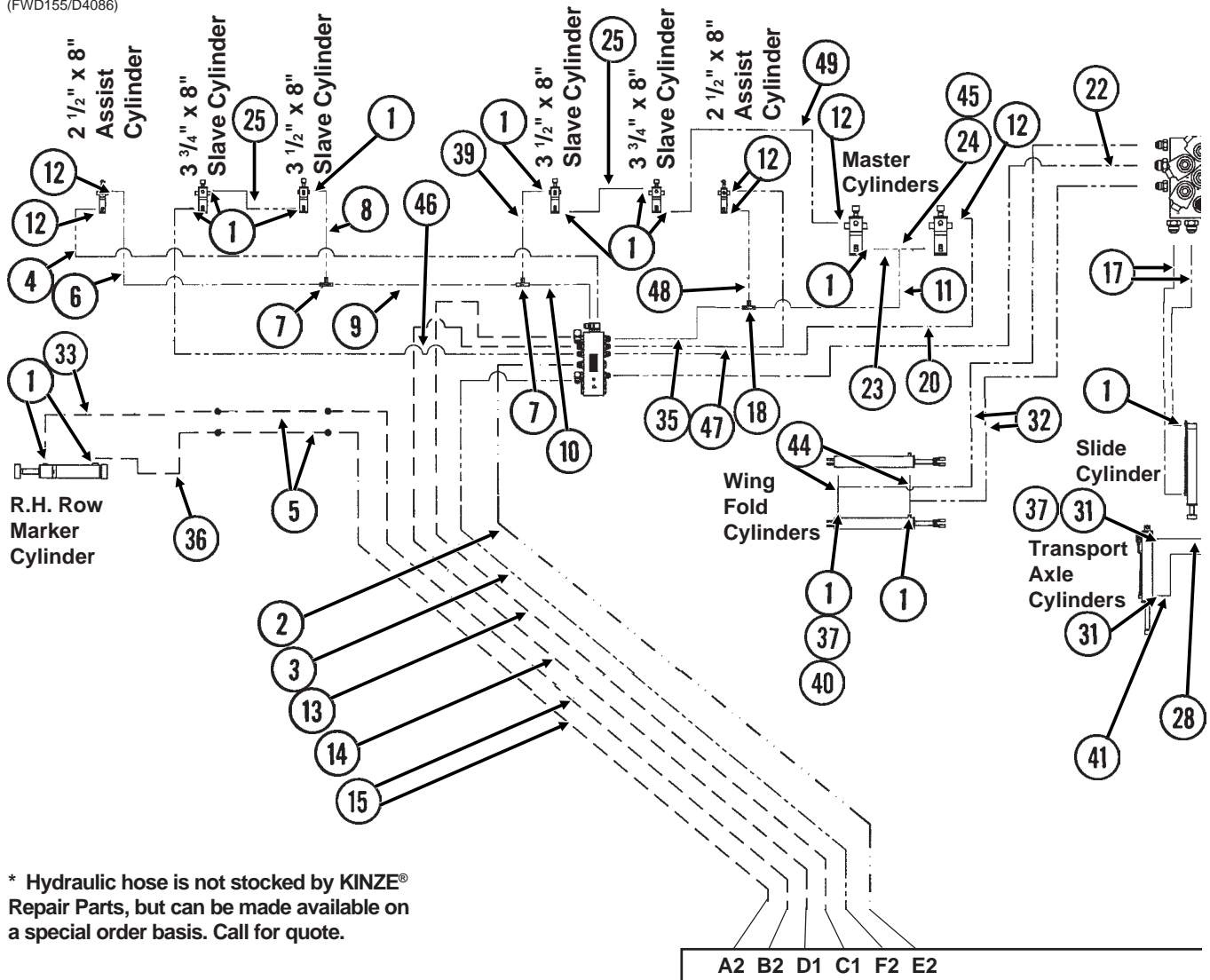


F3 E3 E7 F7 C1 D1 B3 A3 A1 B1 C1 D1 E1 F1

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"

(FWD155/D4086)



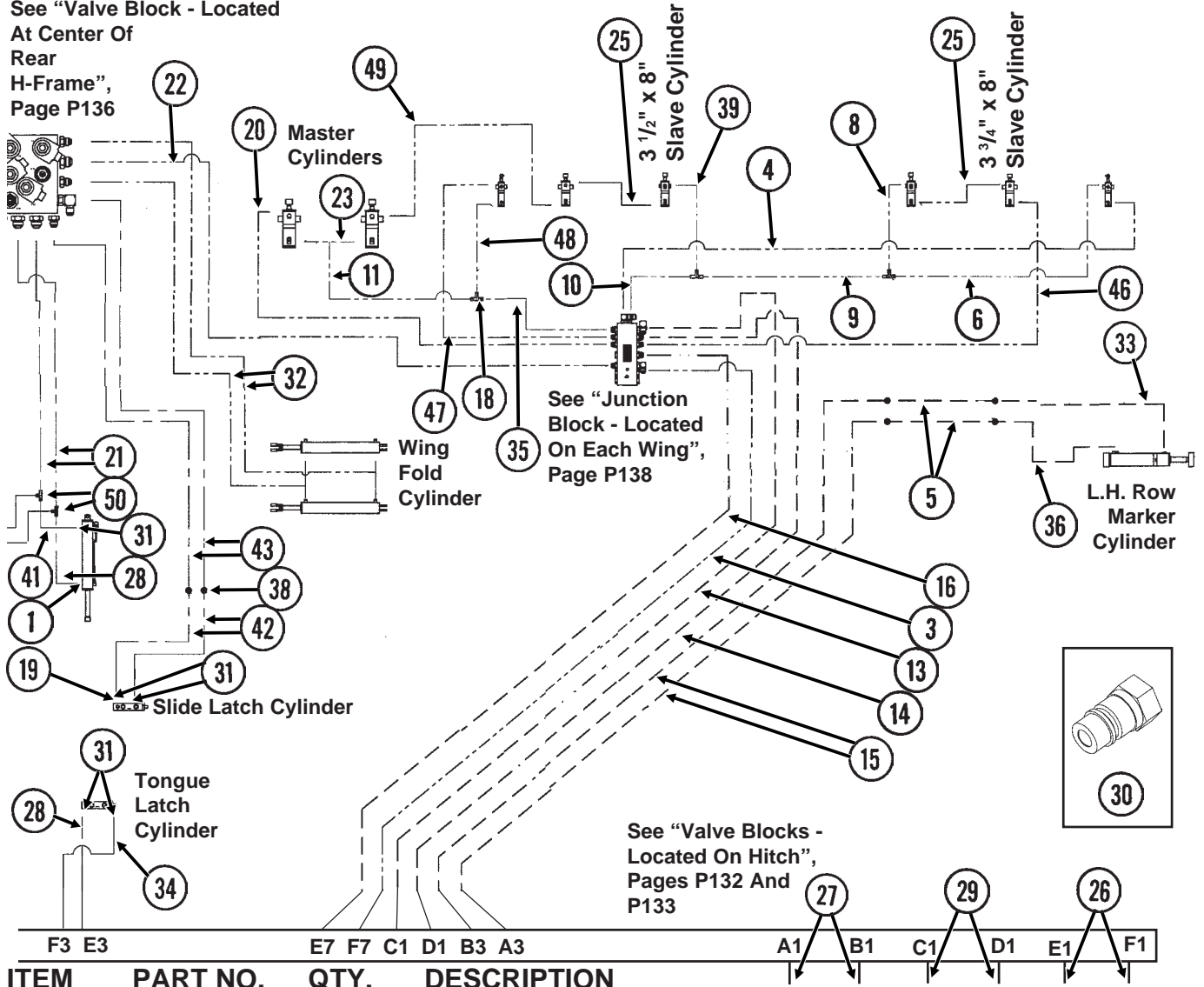
* Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08 GR1037	29 -	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring 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 GR1037	12 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring 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 GR1037	2 -	Tee, 3/4"-16 Male NPT To O-Ring O-Ring
25.	*A1055	4	Hose Assembly, 3/8" x 66"

A2 B2 D1 C1 F2 E2

HYDRAULIC HOSES AND FITTINGS, 36 ROW 30"

See "Valve Block - Located At Center Of Rear H-Frame", Page P136

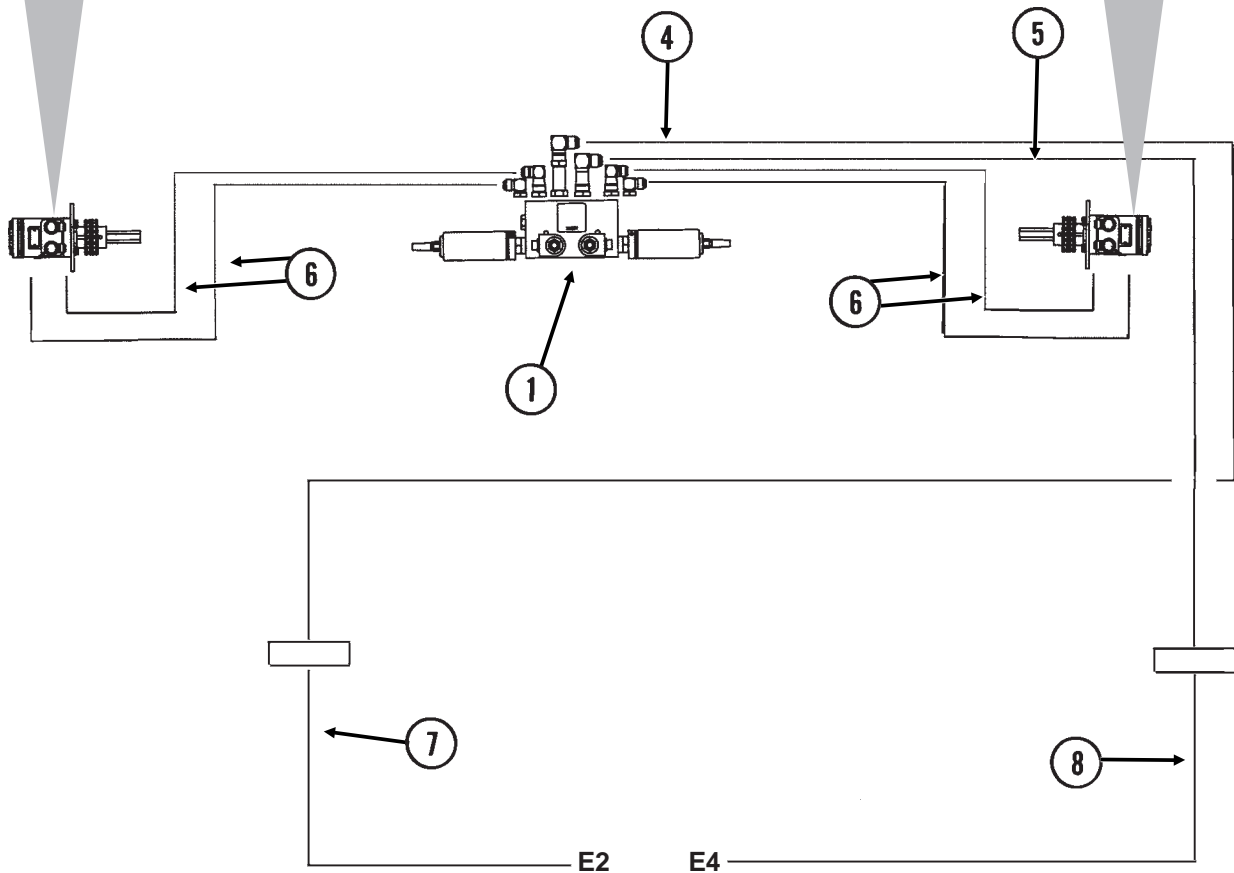
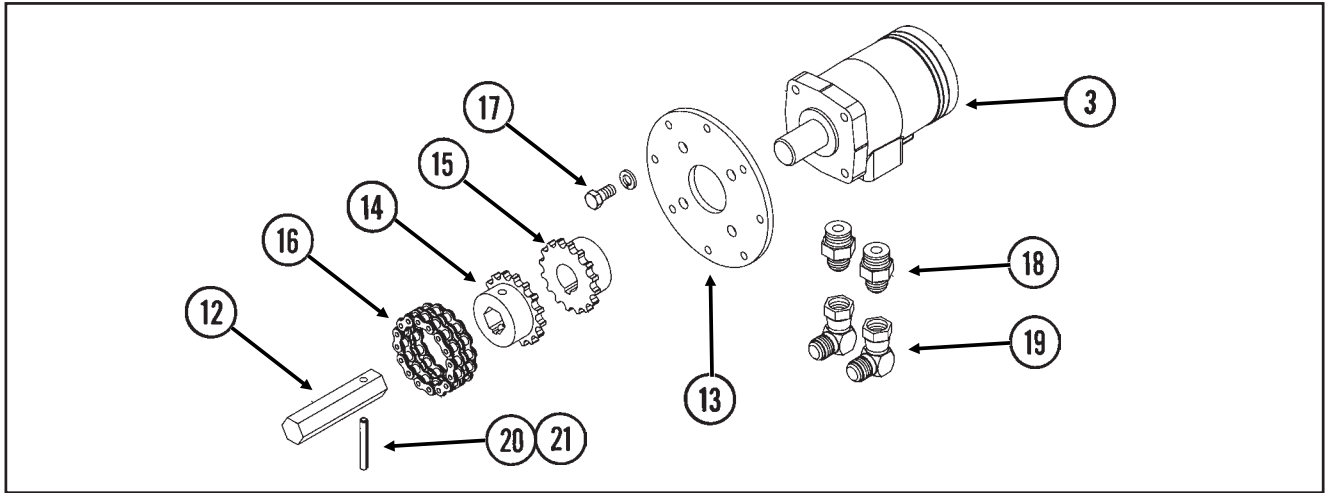


F3 E3 E7 F7 C1 D1 B3 A3 A1 B1 C1 D1 E1 F1

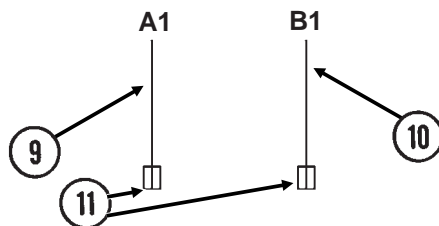
ITEM	PART NO.	QTY.	DESCRIPTION
26.	*A3236	2	Hose Assembly, 3/8" x 72"
27.	*A8230	2	Hose Assembly, 1/2" x 84"
28.	*A1192	3	Hose Assembly, 1/4" x 20"
29.	*A8231	2	Hose Assembly, 1/2" x 72"
30.	GD4086	6	ISO Coupler
31.	G6400-06-08	7	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
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

(FWD105/FWD101a)



2 Valve Block Located At Front Of Hitch

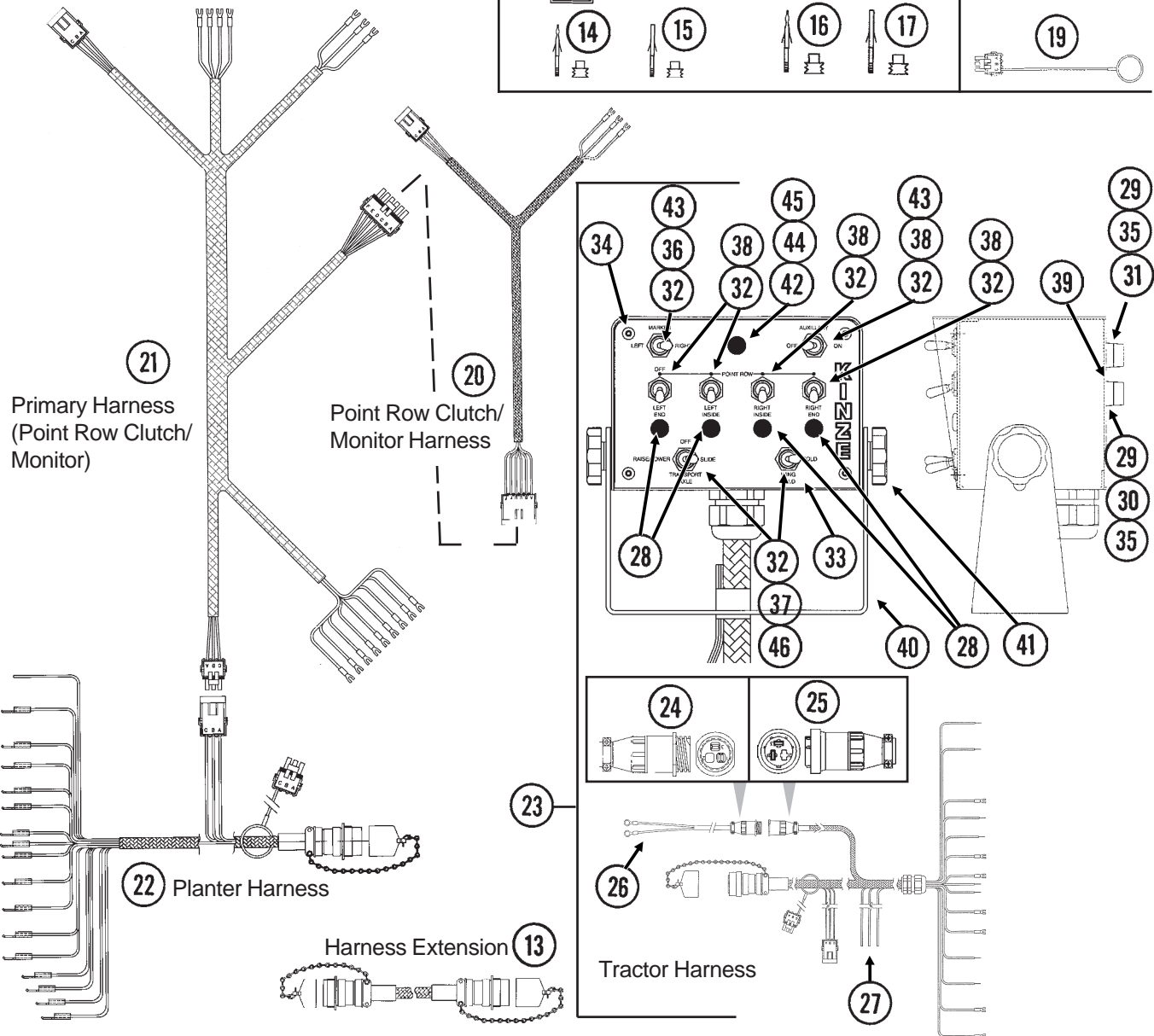
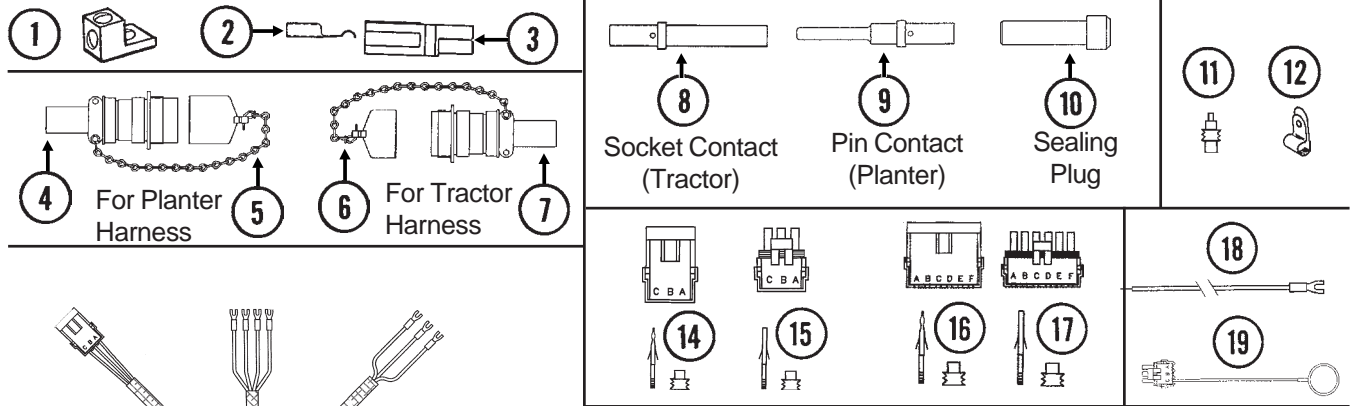


SDS HYDRAULIC SYSTEM

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See "SDS Manifold Block", Page P143
2.		-	See "Valve Blocks - Located On Hitch (SDS)", Pages P134-P137
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)

(TWL19a/TWL18/ELC3a/ELC5c/ELC14/MTR27a/ELC39/TWL26e/MTR27a/MTR45/A9481/ELC8/A10310/A12652/A10308/ELC34/ELC35/FWD30b)



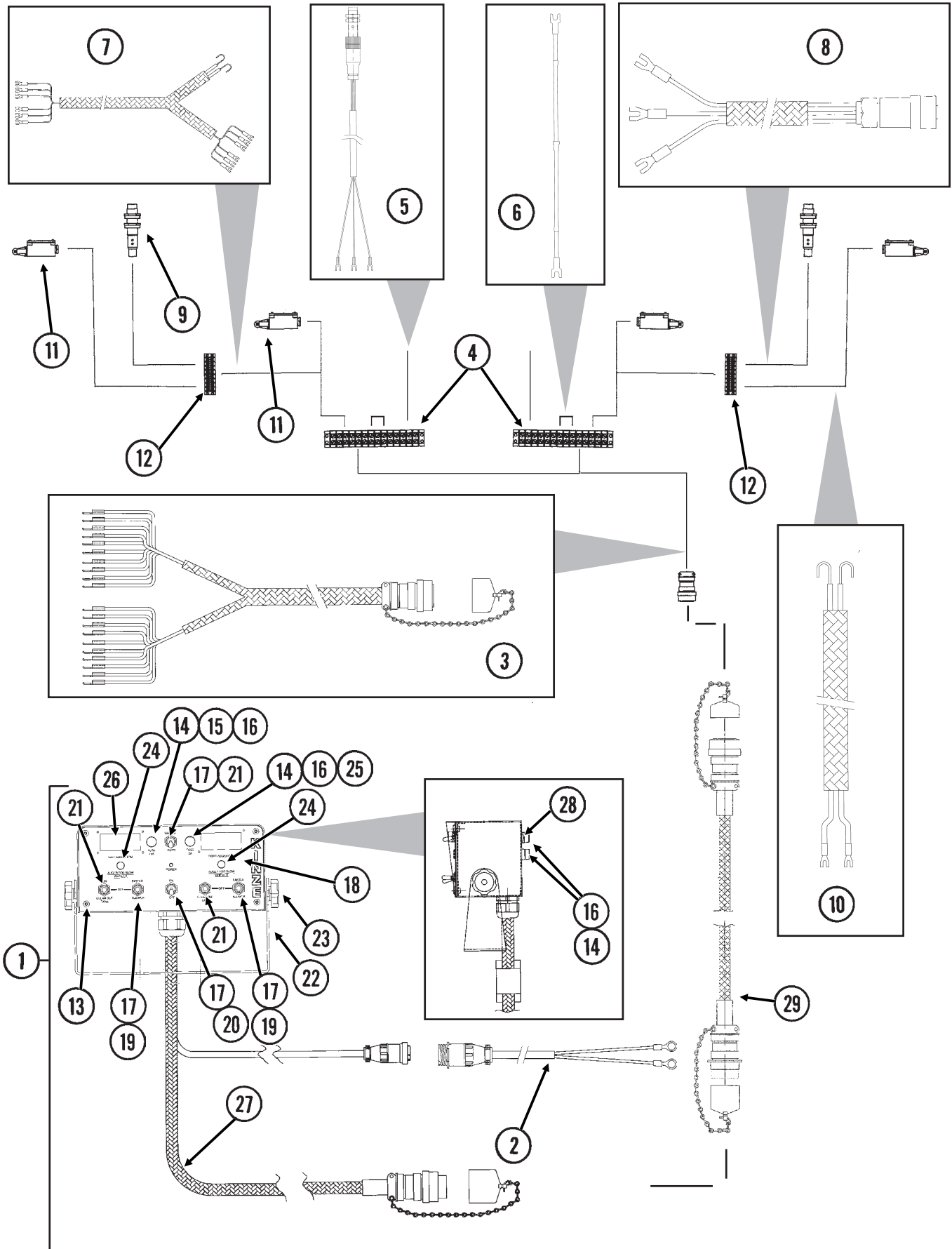
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA3584	-	Ground Clamp
2.	GD9530	-	Contact
3.	GD9529	-	Housing, Black
	GD12726	-	Housing, Red
4.	GA6109	1	Connector W/Cable Clamp, 23 Pin Capacity

ELECTRICAL COMPONENTS (Planter Control Console)

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)

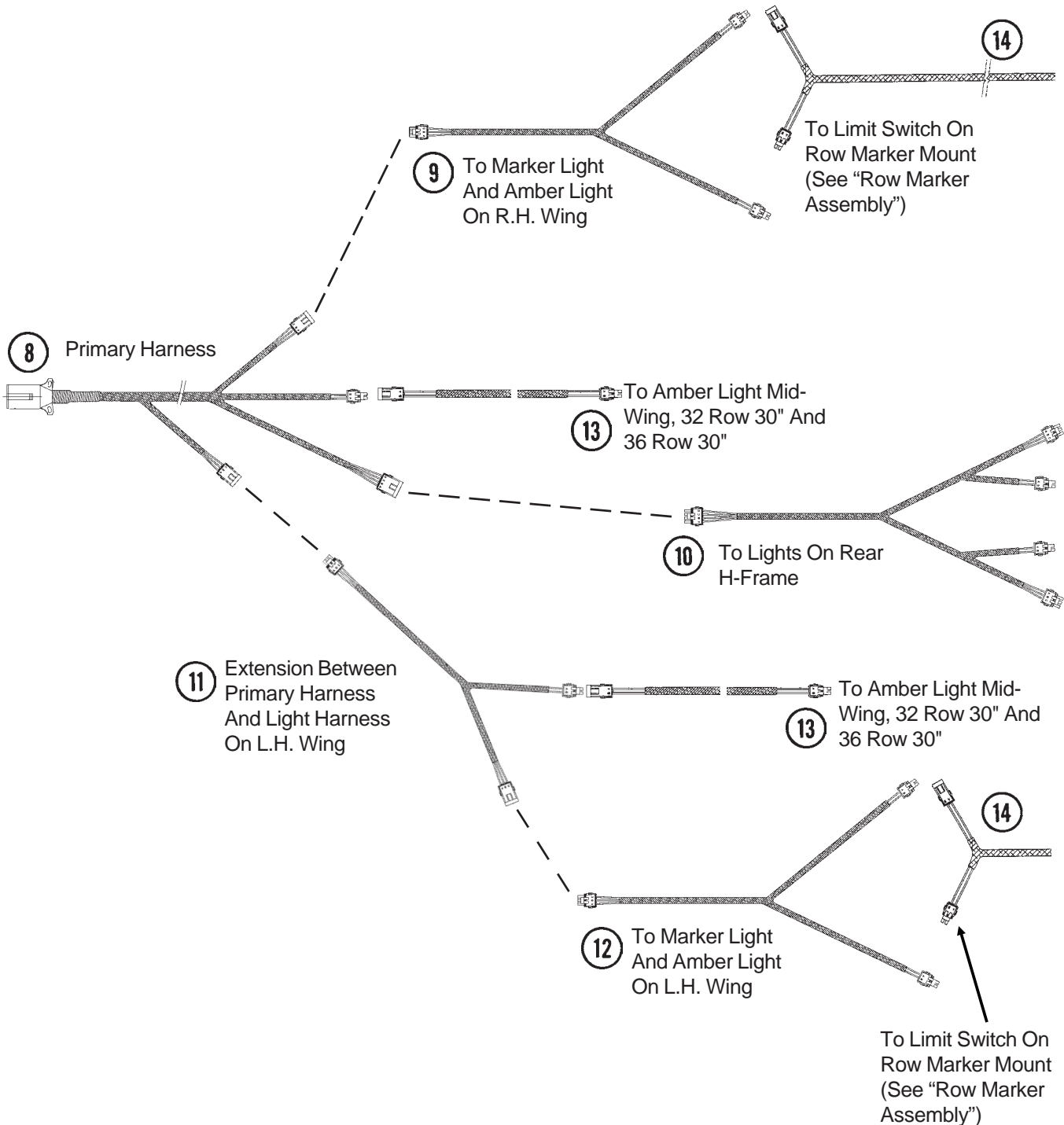
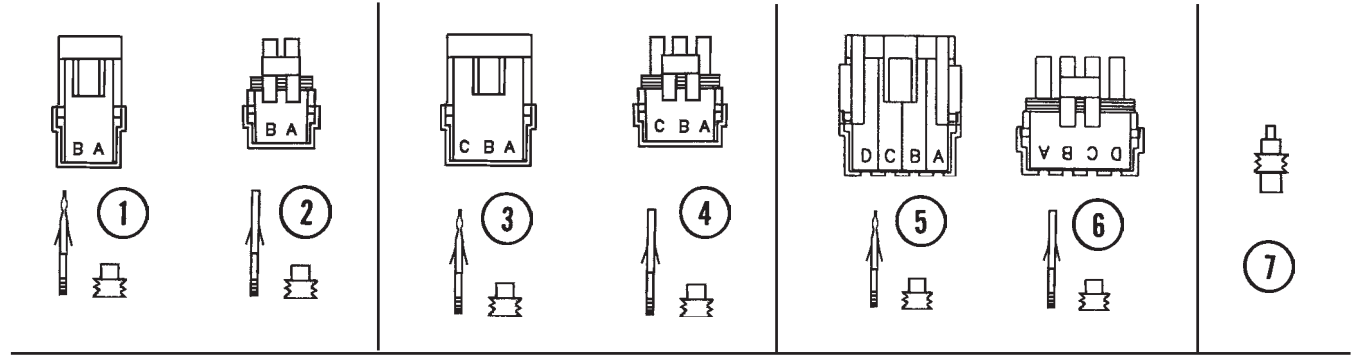


ELECTRICAL COMPONENTS (SDS Control Console)

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, 2 Position Locking Toggle
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)

(MTR27v/MTR27a/ELC27b/MTR27a/A10315/A10318/A10317/A10316/A10452/A11042)

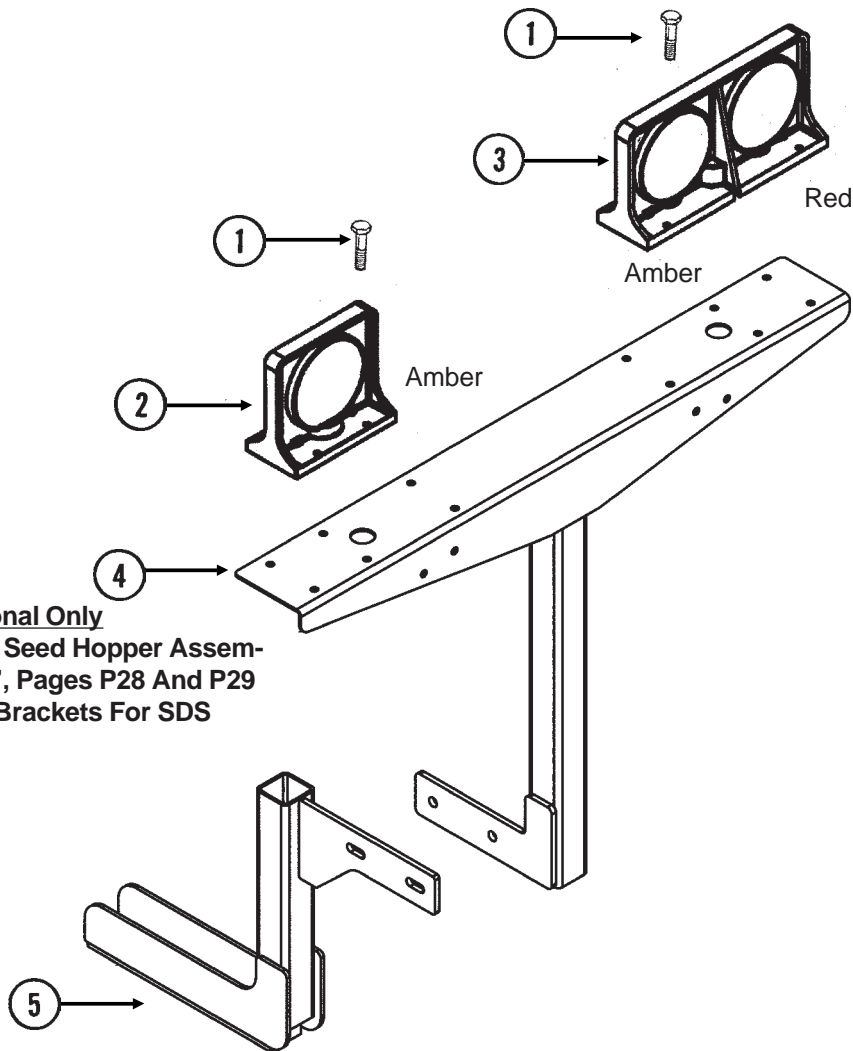


ELECTRICAL COMPONENTS (Lights)

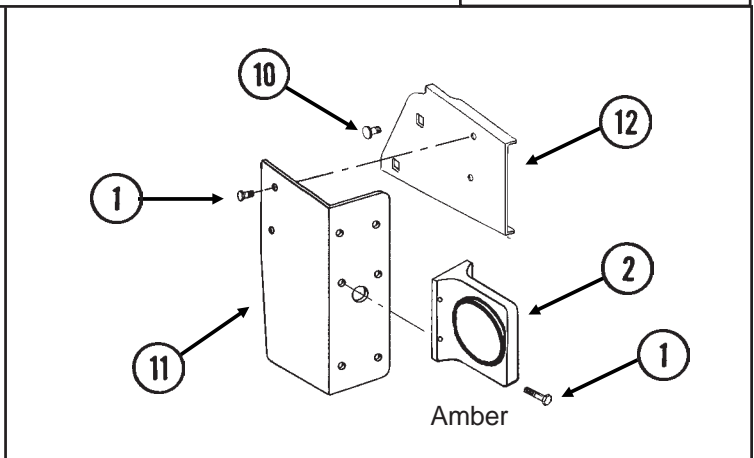
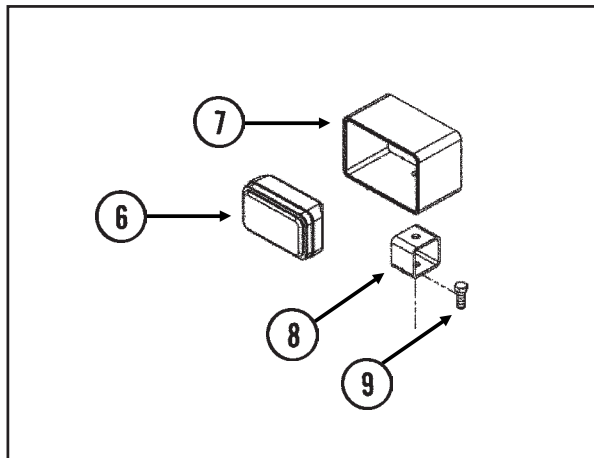
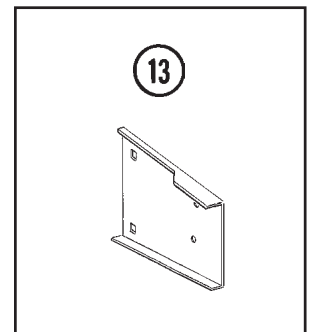
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
2.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
3.	G1K248	-	3-Pin Female Connector Kit (Black), 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

(FWD133/FWD14/RU130b/RU131f)



Conventional Only
See "Bulk Seed Hopper Assembly (SDS)", Pages P28 And P29
For Light Brackets For SDS
Planters



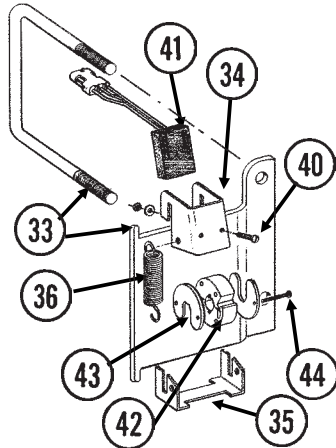
LIGHT ASSEMBLIES AND BRACKETS

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.	GA11771	1	Light Bracket, L.H. (Conventional Planters) (Shown)
	GA11772	-	Light Bracket, R.H. (Conventional Planters)
5.		-	See "Manifolds And Distribution Hoses", Pages P52-P55
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

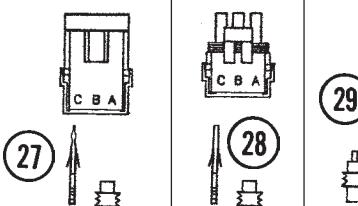
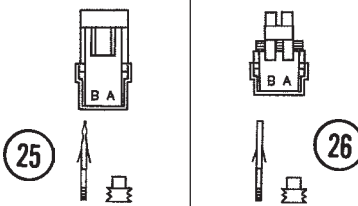
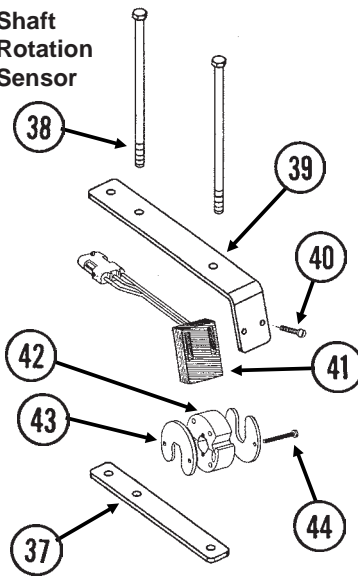
KPM III ELECTRONIC SEED MONITOR

(MTR43w)

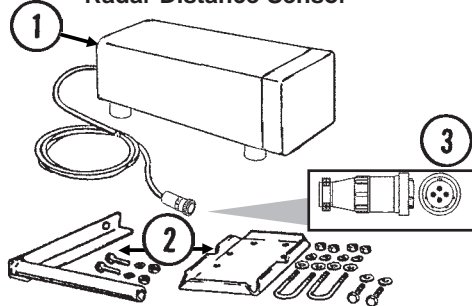
Shaft Rotation Sensor



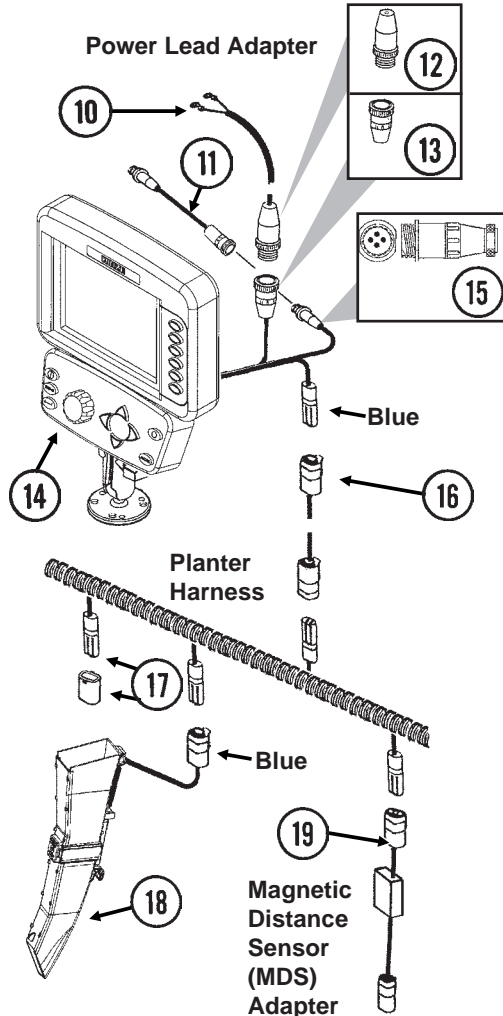
Shaft Rotation Sensor



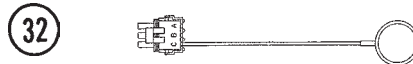
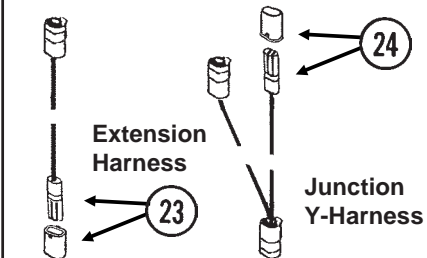
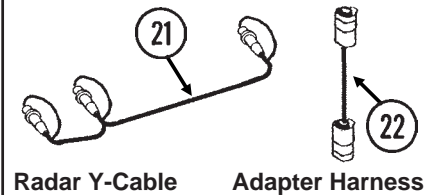
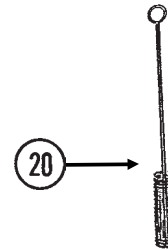
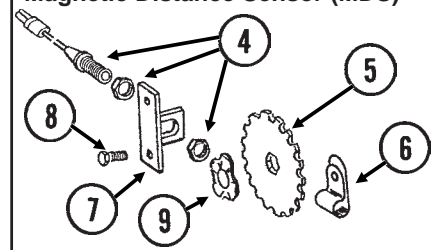
Radar Distance Sensor



Power Lead Adapter



Magnetic Distance Sensor (MDS)



TEM	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

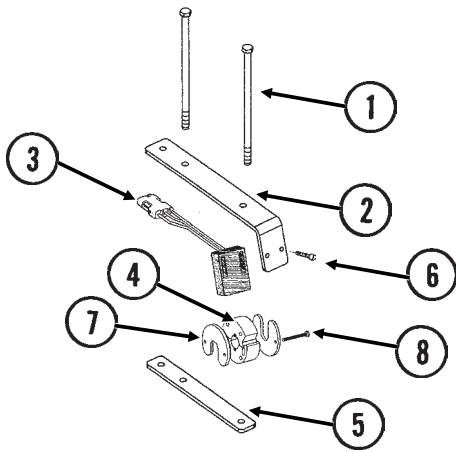
KPM III ELECTRONIC SEED MONITOR

ITEM	PART NO.	QTY.	DESCRIPTION
9.	GD8771	1	Spring Wave Washer
10.	GA7856	1	Power Lead Adapter
11.	GA9144	-	Monitor/Radar Adapter Cable, 10"
12.	G1K267	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (3) Male Terminal Pins
13.	G1K268	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (1) Lock Ring, (3) Female Terminal Pins
14.	GA11039	1	KPM III Backlit Console W/Brush (Item 23), Dust Plug (Item 34), Mounting Bracket Assembly, Console Mounting Bracket Hardware And Power Harness
	GA12403	-	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) No. 10 Lock Washers
	GR1764	-	Power Harness
15.	G1K322	-	4-Pin Connector Kit W/Male Housing, (4) Female Socket Contacts And (1) Cable Clamp
16.		-	Included In Tractor/Planter Wiring Harnesses, See Pages P154 And P155
17.	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
18.	GA12650	-	Seed Tube W/Computerized Sensor, EdgeVac®
	GR1737	-	Sensor Only, EdgeVac®
	GA12636	-	Seed Tube (With Holes For Sensor Installation), EdgeVac®
19.	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
20.	GR0594	-	Brush
21.	GR0586	1	Radar Y-Cable (Used To Connect Radar Distance Sensor For Multiple Functions)
22.	GA7849	-	Extension Harness, 15'
23.	GA7854	-	Extension Harness W/Dust Cap, 15'
	GA7855	-	Extension Harness W/Dust Cap, 30'
	GD11993	-	Dust Cap
24.	GA7853	-	Junction Y-Harness W/Dust Cap
	GD11993	-	Dust Cap
25.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
26.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
27.	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
28.	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
29.	GD11089	-	Sealing Plug
30.	G1K249	-	Acre Counter Switch Kit
31.	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
32.	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
33.	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
34.	GD11169	1	Mount
35.	GD11170	1	Spring Mount
36.	GD5857	2	Spring
37.	GD18168	2	Mount
38.	G10686	4	Hex Head Cap Screw, 3/8"-16 x 8"
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
39.	GD18118	2	Shaft Sensor Mount
40.	G10757	4	Pan Head Screw, No. 10-32 x 1 1/4"
	G10243	4	Washer, No. 10 SAE
	G10758	4	Hex Nut, No. 10-32
41.	GR1415	1	Rotation Sensor
42.	GR1414	1	Actuator
43.	GD11474	4	Cover
44.	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
A.	GA6147	-	Magnetic Distance Sensor And Mounting Package (Items 4-9)

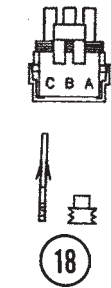
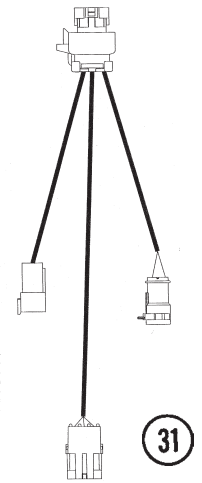
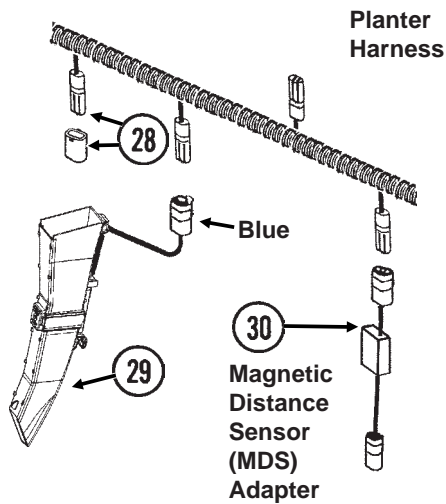
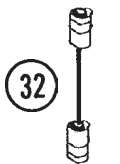
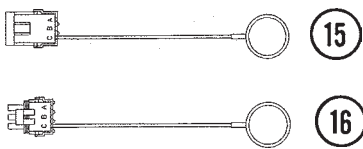
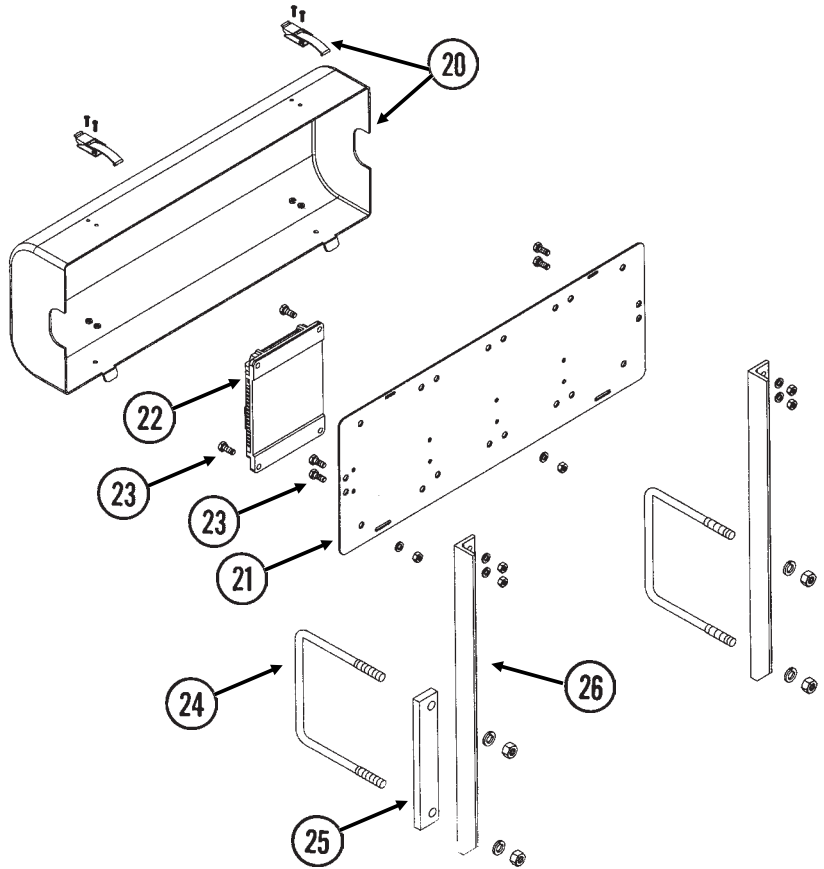
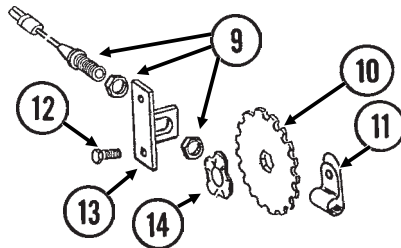
PLANTER MONITOR MODULE (PMM)

(MTR60/MTR63/PMM01/MTR65/MTR61/MTR64/MTR62/PMM02)

Shaft Rotation Sensor



Magnetic Distance Sensor (MDS)



NOTE: See Ag Leader manual for Ag Leader Insight display and associated cab harness components.

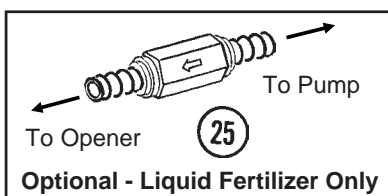
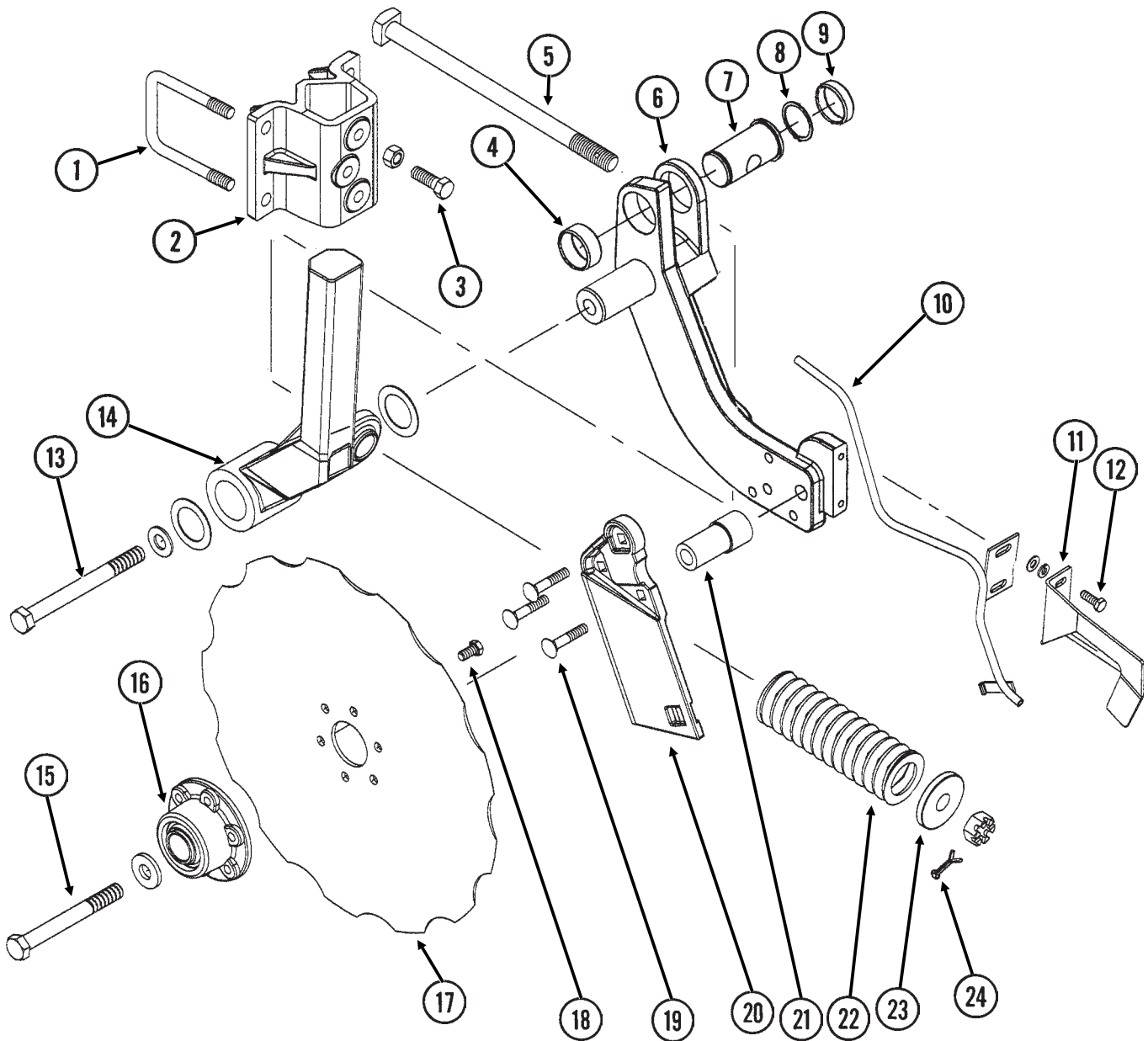
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10686	4	Hex Head Cap Screw, 3/8"-16 x 8"
	G1-229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
2.	GD18118	2	Shaft Sensor Mount
3.	GR1415	1	Rotation Sensor
4.	GR1414	1	Actuator
5.	GD18168	2	Mount

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 ¼", 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, ⅜"
12.	G10001	2	Hex Head Cap Screw, ⅜"-16 x 1"
	G10229	2	Lock Washer, ⅜"
	G10101	2	Hex Nut, ⅜"-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 ⅝", 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, ⅝"-18 x ¾"
	G10232	4	Lock Washer, ⅝"
	G10106	4	Hex Nut, ⅝"-18
24.	GD7145	2	U-Bolt, 7" x 7" x ½"-13
	G10228	4	Lock Washer, ½"
	G10102	4	Hex Nut, ½"-13
25.	GD16316	2	Spacer, 1 ½" x 9"
26.	GD16315	2	Support, 21 ½"
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.	GA12650	-	Seed Tube W/Computerized Sensor, EdgeVac®
	GR1737	-	Sensor Only, EdgeVac®
	GA12636	-	Seed Tube (With Holes For Sensor Installation), EdgeVac®
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)

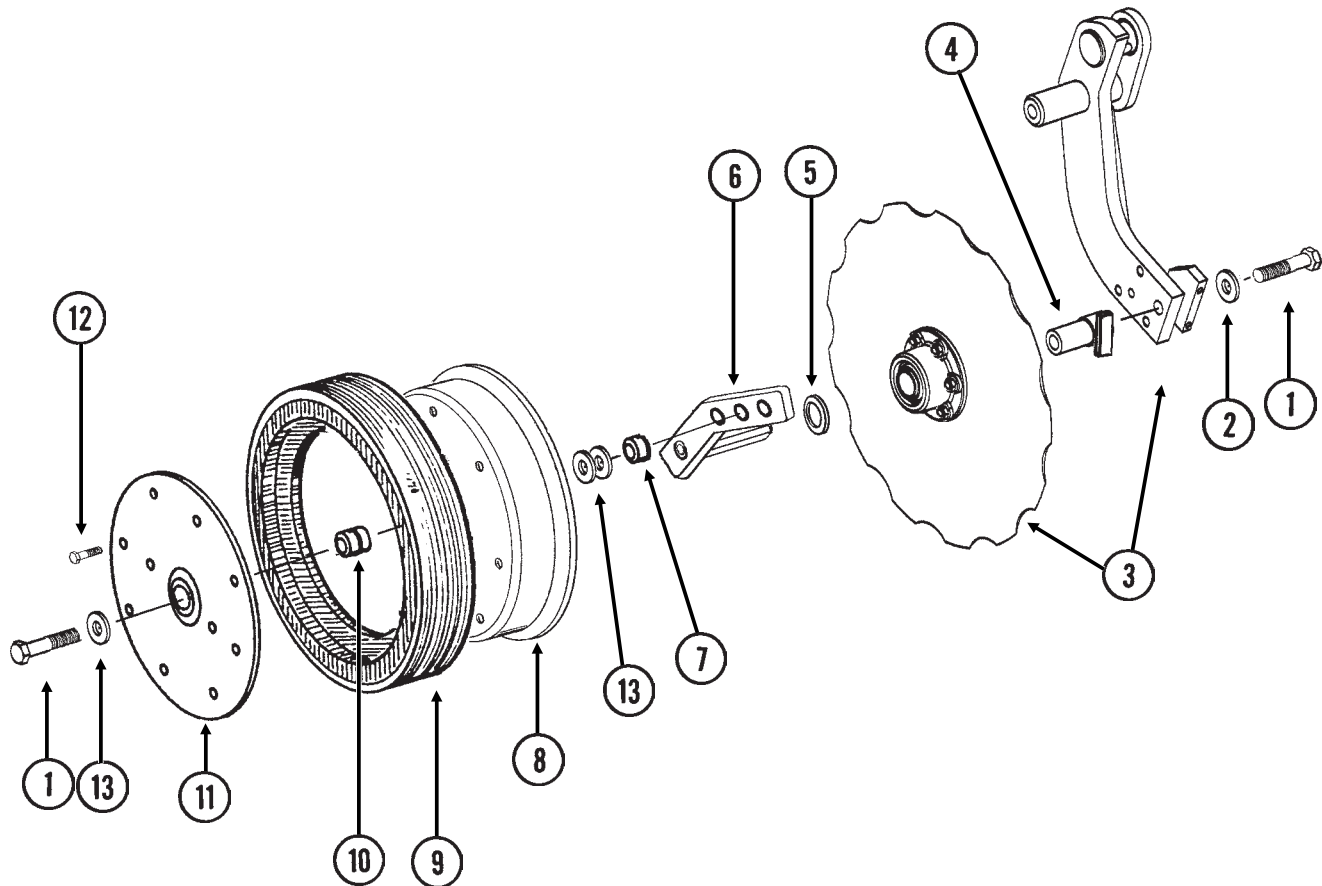


NOTCHED SINGLE DISC FERTILIZER OPENER

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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

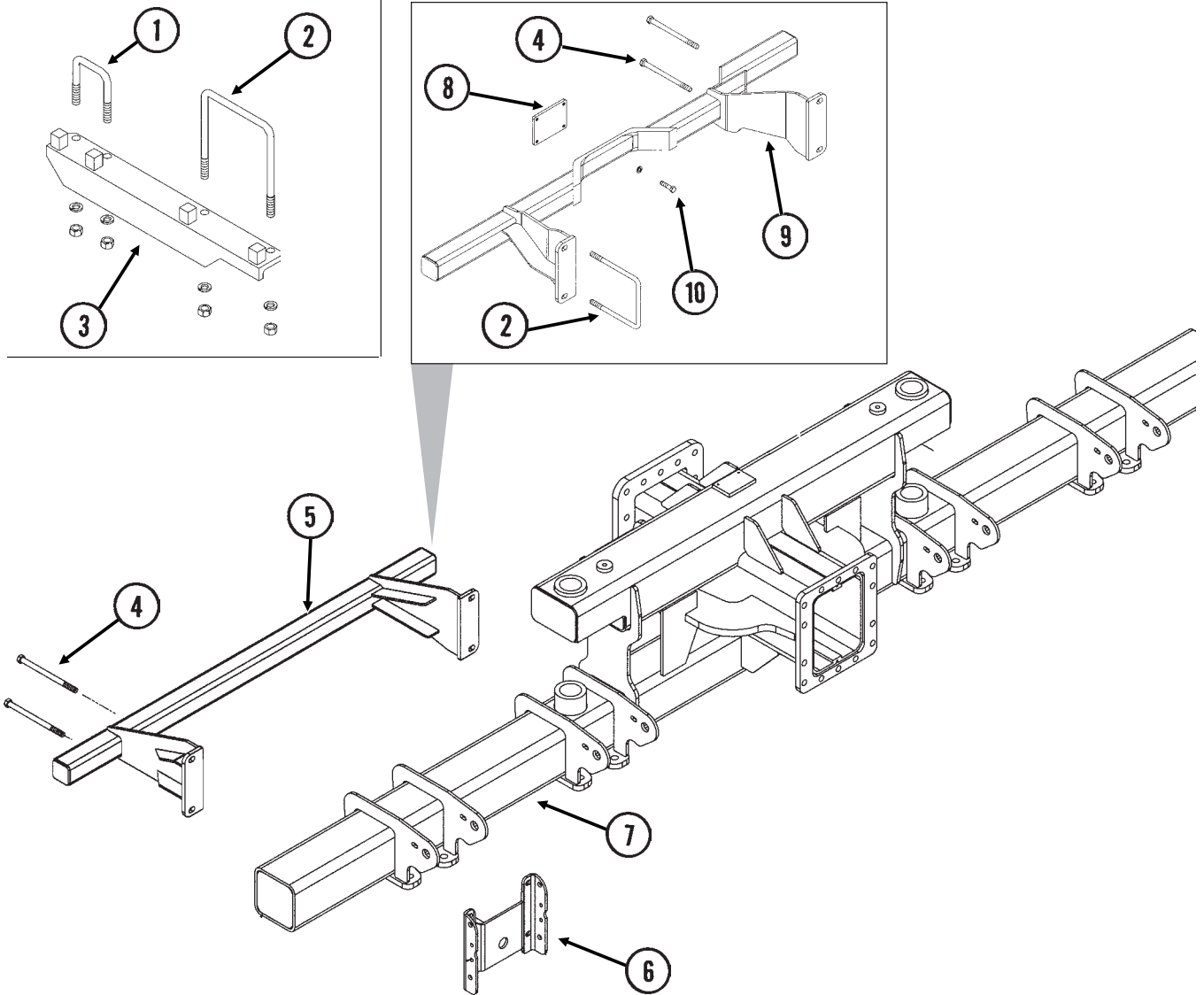
(FRTZ257)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	G10010	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 3"
2.	GD7805	1	Special Washer, $\frac{5}{8}$ ", Hardened
3.		-	See "Notched Single Disc Fertilizer Opener", Pages P166 And P167
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, $\frac{5}{16}$ "-18 x $\frac{3}{4}$ ", No Serration
	G10620	11	Serrated Flange Nut, $\frac{5}{16}$ "-18
13.	G10204	-	Special Machine Bushing, $\frac{5}{8}$ " x 1" O.D. (As Required)
A.	GA8877	-	Gauge Wheel Complete (Items 8-12)

FERTILIZER OPENER MOUNTS

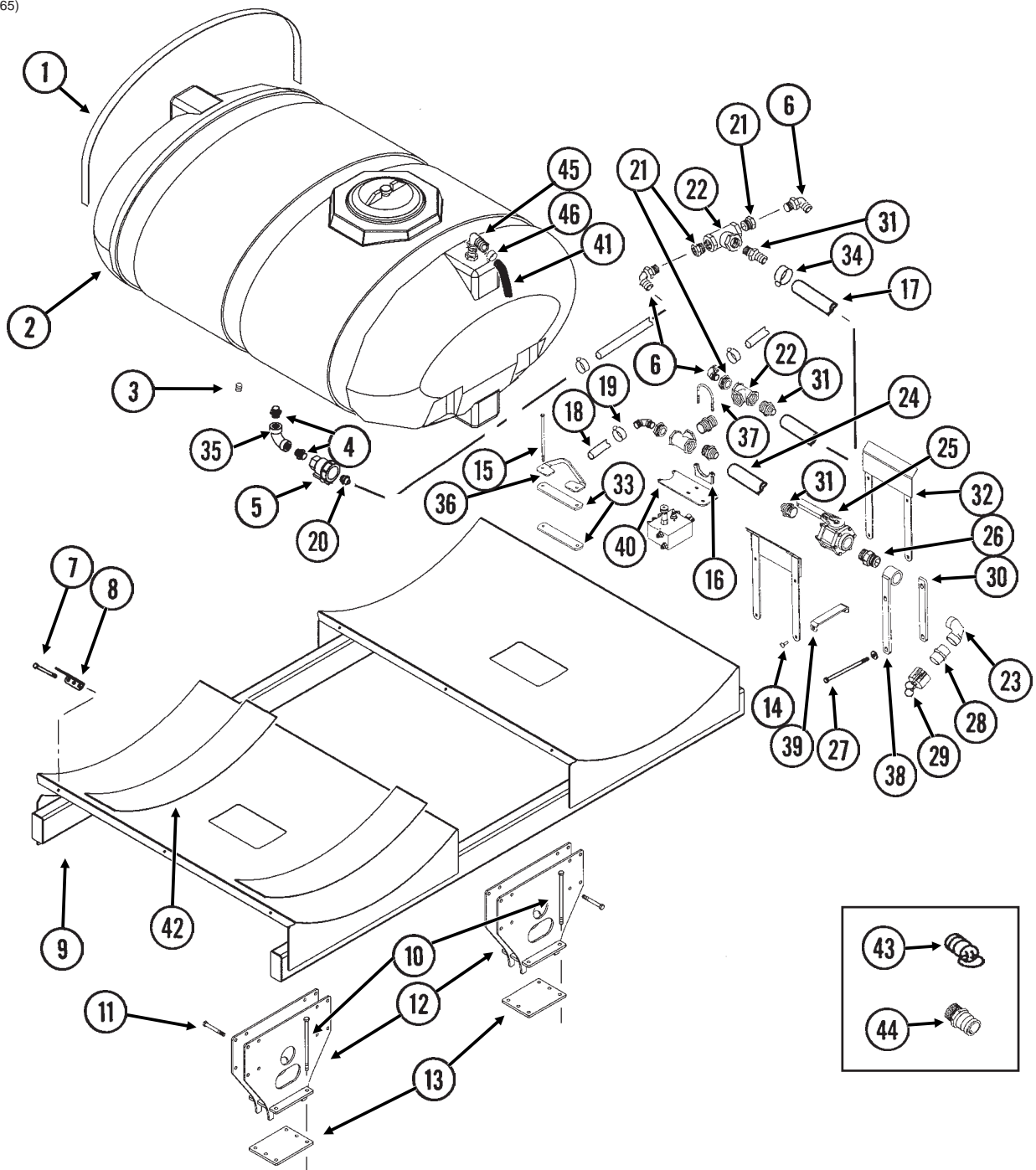
(FWD28/FWD138/FWD29a)



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 P4
7.		-	See "Center Toolbar/Rear H-Frame Assembly", Pages P76 And P77
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)



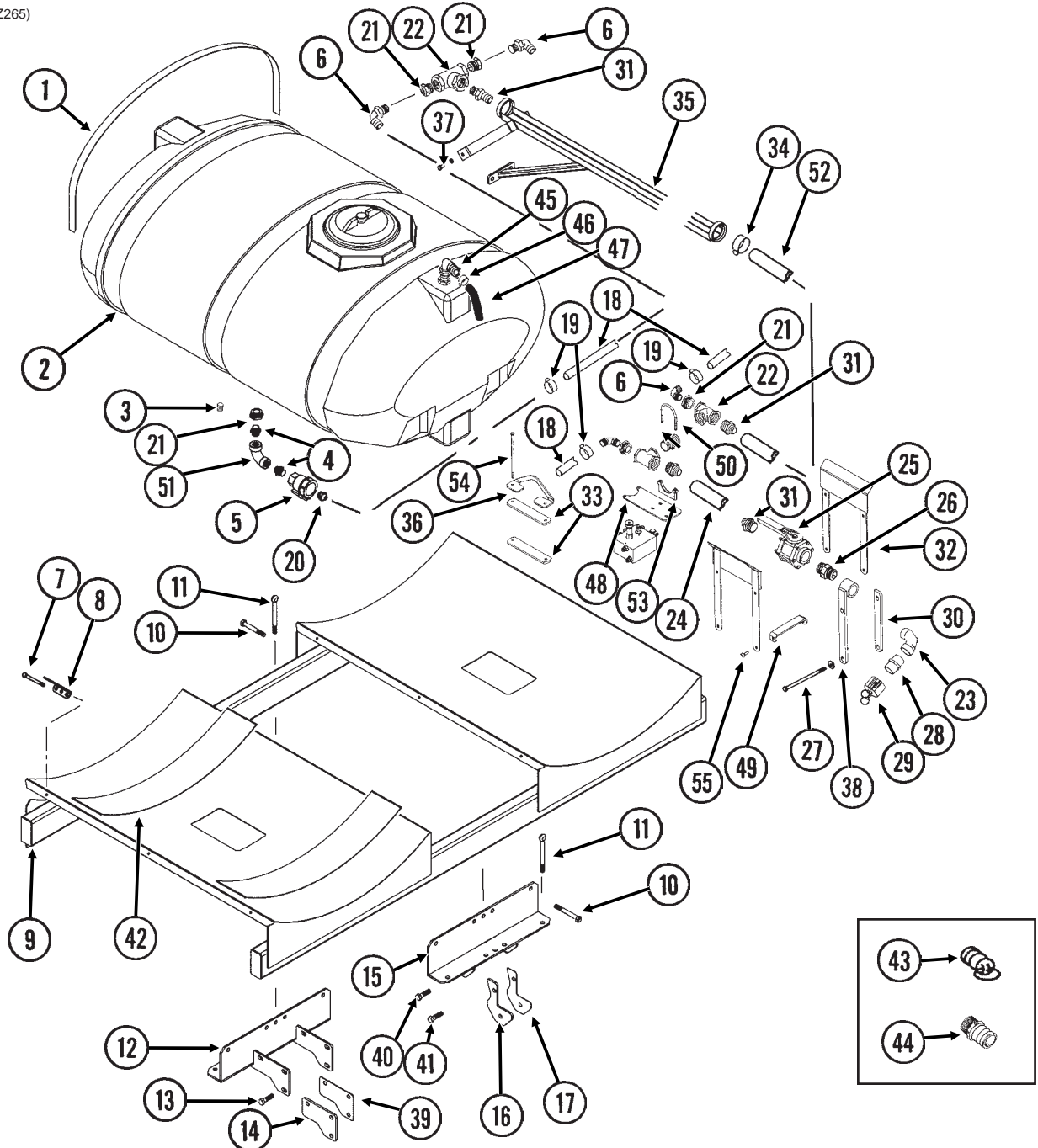
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA10201	2	Tank W/Lid And Fittings, 500 Gallon
	GR1702	-	Lid/Fillwell, 8" (Top Of Tank)
	GR1708	-	3/4" Bulkhead Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring) (Top And Bottom Of Tank)
	GR1739	-	2" Bulkhead Fitting Assembly (Nut, Bushing And O-Ring) (Bottom Of Tank)
	GR1686	-	Lanyard, 12 1/2" (Top Of Tank)
3.	G10096	2	Pipe 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, Stainless Steel
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)



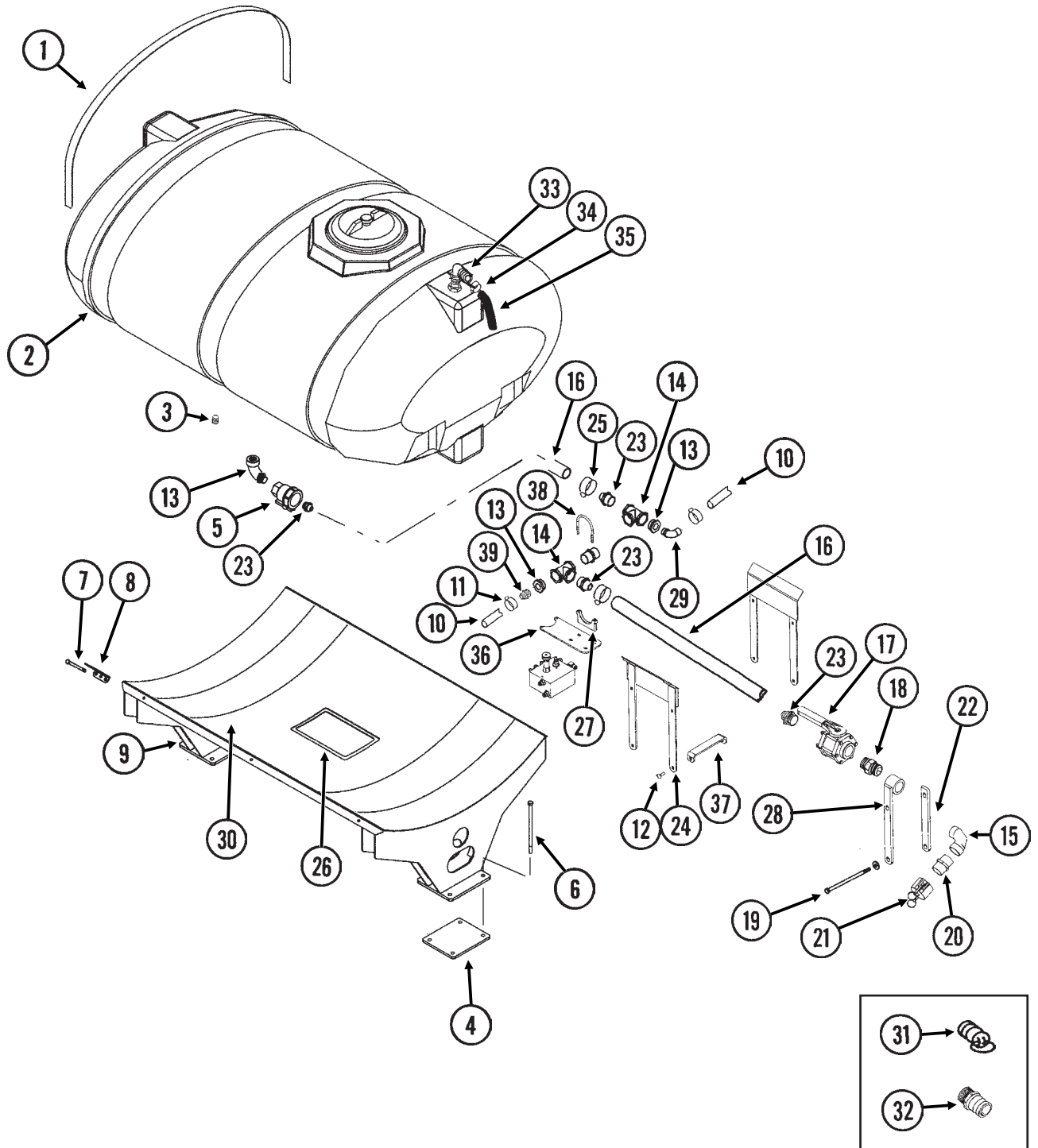
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA10201	2	Tank W/Lid And Fittings, 500 Gallon
	GR1702	-	Lid/Fillwell, 8" (Top Of Tank)
	GR1708	-	3/4" Bulkhead Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring) (Top And Bottom Of Tank)
	GR1739	-	2" Bulkhead Fitting Assembly (Nut, Bushing And O-Ring) (Bottom Of Tank)
	GR1686	-	Lanyard, 12 1/2" (Top Of Tank)
3.	G10096	2	Pipe 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, Stainless Steel
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)

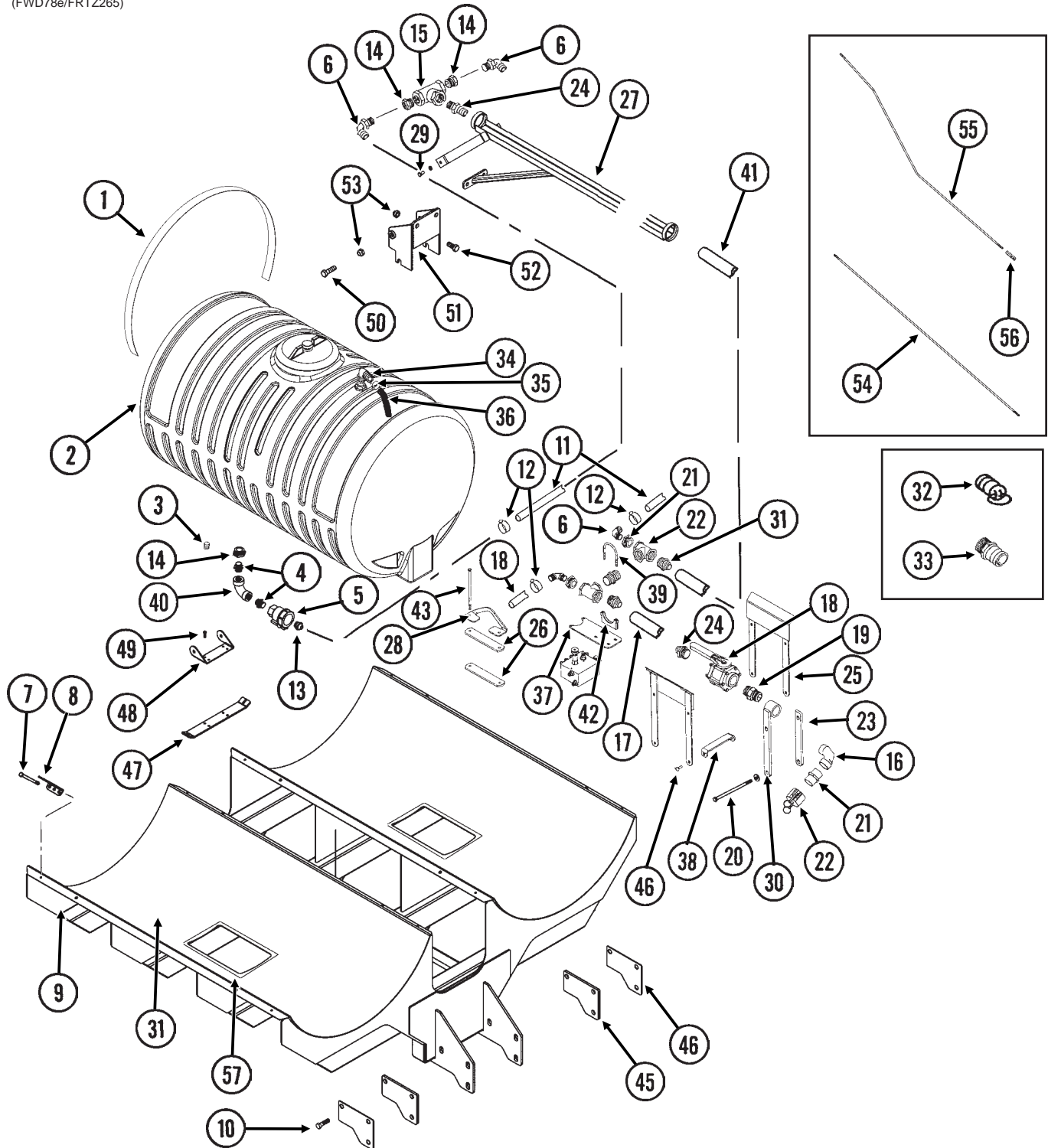


LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (SDS 24 Row 30")

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
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	Pipe 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, Stainless Steel
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)



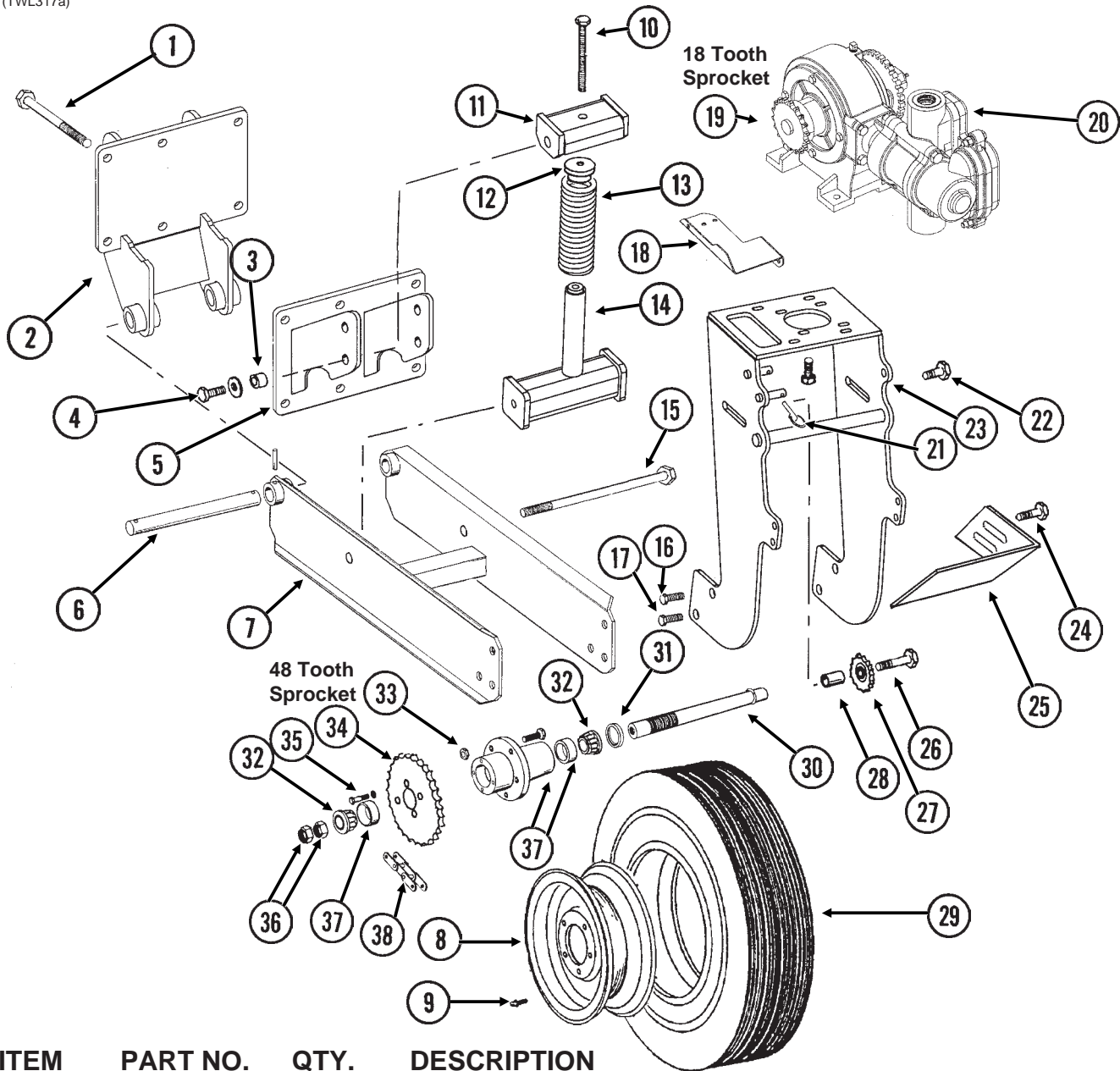
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA11743	2	Tank W/Lid And Fittings, 300 Gallon
	GR1006	-	Lid W/Removable Vent, 10" (Top Of Tank)
	GR1005	-	Fillwell, 10" (Top Of Tank)
	GR0508	-	1 1/4" Polypropylene Fitting Assembly (Nut, Bushing, And O-Ring) (Bottom Of Tank)
	GR1435	-	1 1/4" Anti-Vortex Fitting Assembly (Anti-Vortex 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, $\frac{5}{8}$ "-11 x 9"
	G10230	6	Lock Washer, $\frac{5}{8}$ "
	G10104	6	Hex Nut, $\frac{5}{8}$ "-11
2.	GA10355	1	Wheel Arm Mount
3.	GB0218	2	Bushing, $2\frac{1}{32}$ " I.D. x $\frac{7}{8}$ " O.D. x $\frac{19}{32}$ " Long
4.	G10005	2	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x $1\frac{3}{4}$ "
	GD7805	2	Special Washer, $\frac{5}{8}$ ", Hardened
	G10107	2	Lock Nut, $\frac{5}{8}$ "-11
5.	GA9712	1	Spring Mount
6.	GD2681	1	Pin, $1\frac{1}{4}$ " x $13\frac{1}{2}$ "
	G10460	2	Cotter Pin, $\frac{1}{4}$ " x 2"
7.	GA10621	1	Arm W/Grease Fittings
	G10641	2	Grease Fitting, $\frac{1}{8}$ " NPT
8.	GA0241	1	Wheel, 5" x 15"
9.	GD1166	1	Valve Stem

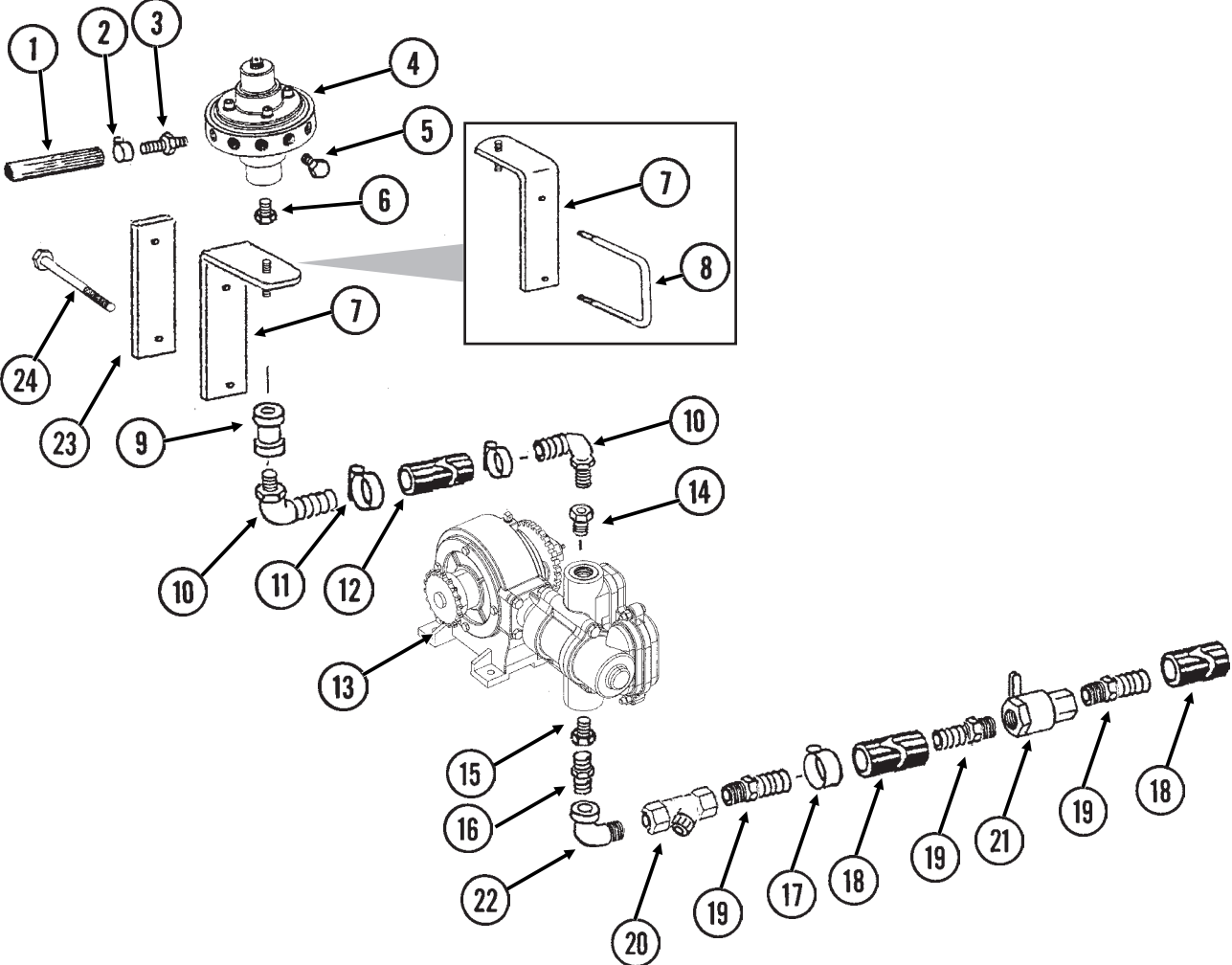
LIQUID FERTILIZER PISTON PUMP MOUNT AND GROUND DRIVE WHEEL

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 P182 And P183
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

(FRTZ299)



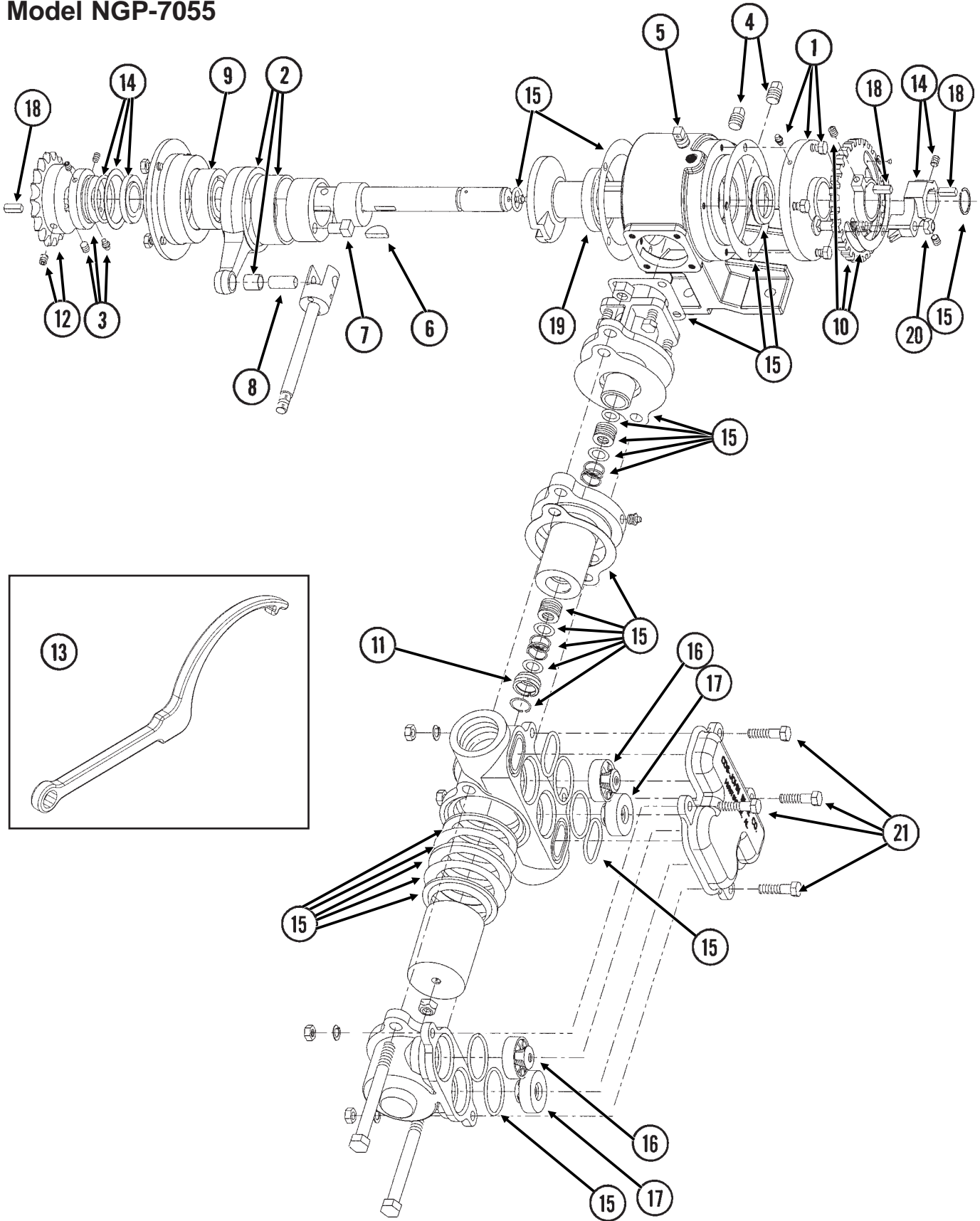
LIQUID FERTILIZER FLOW DIVIDER MOUNT AND HOSES

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 P184 And P185
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", Pages P182 And P183
14.	G11237	1	Reducing Bushing, 1 1/2" Male NPT To 3/4" Female
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 P170-P177
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
	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

LIQUID FERTILIZER PISTON PUMP (Uses 18 Tooth Sprocket)

(A12335a/GR1808)

Model NGP-7055

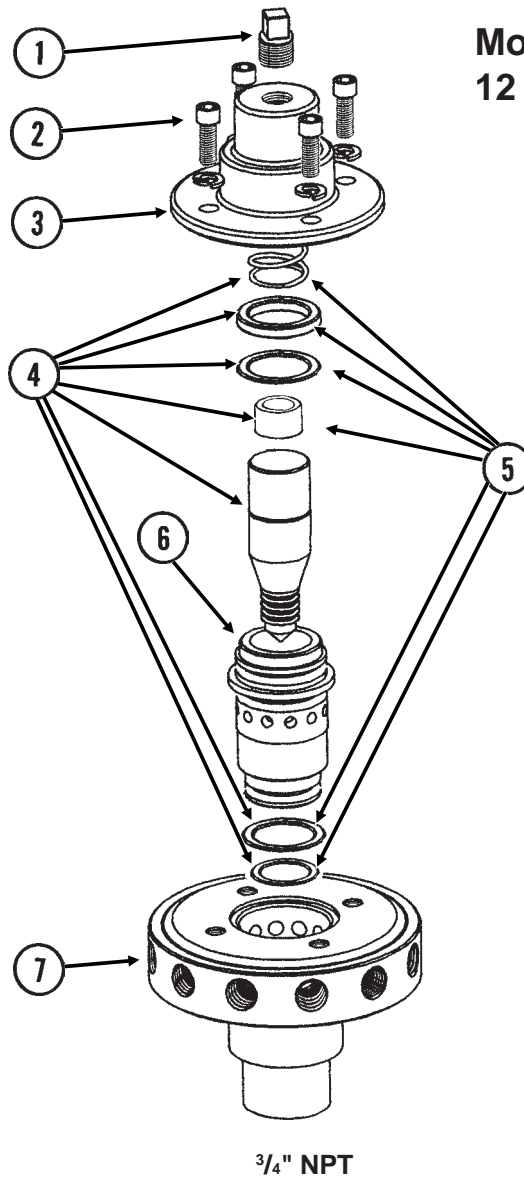


LIQUID FERTILIZER PISTON PUMP (Uses 18 Tooth Sprocket)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1804	1	Flange Cover Assembly
	G10991	4	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x $\frac{7}{8}$ "
2.	GR1803	1	Connecting Rod Assembly
3.	GR1801	1	Spacer Assembly
	G10693	3	Hex Socket Head Set Screw, $\frac{5}{16}$ "-18 x $\frac{3}{8}$ "
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, $\frac{3}{8}$ "-16 x 2"
	G10108	1	Lock Nut, $\frac{3}{8}$ "-16
21.	G10003	4	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1 $\frac{1}{2}$ "
	G10210	4	Washer, $\frac{3}{8}$ " USS
	G10229	4	Lock Washer, $\frac{3}{8}$ "
	G10101	4	Hex Nut, $\frac{3}{8}$ "-16
A.	GA12335	-	Piston Pump Complete W/18 Tooth Sprocket (Model NGP-7055)

LIQUID FERTILIZER PISTON PUMP FLOW DIVIDER, 24 ROW 30"

(FRTZ202c)

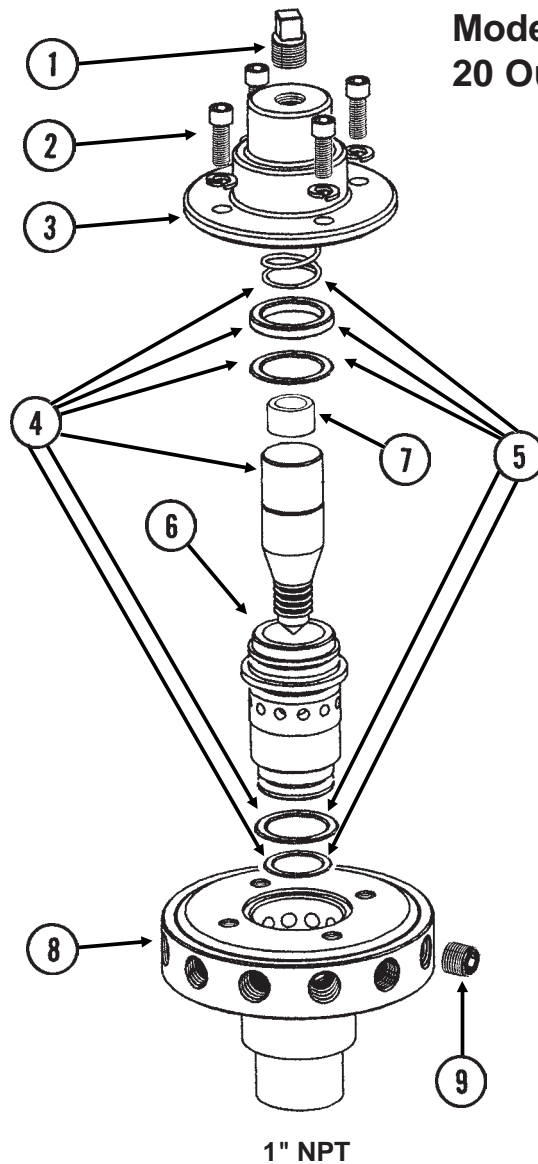


**Model FD-1200 Flow Divider,
12 Outlet**

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)

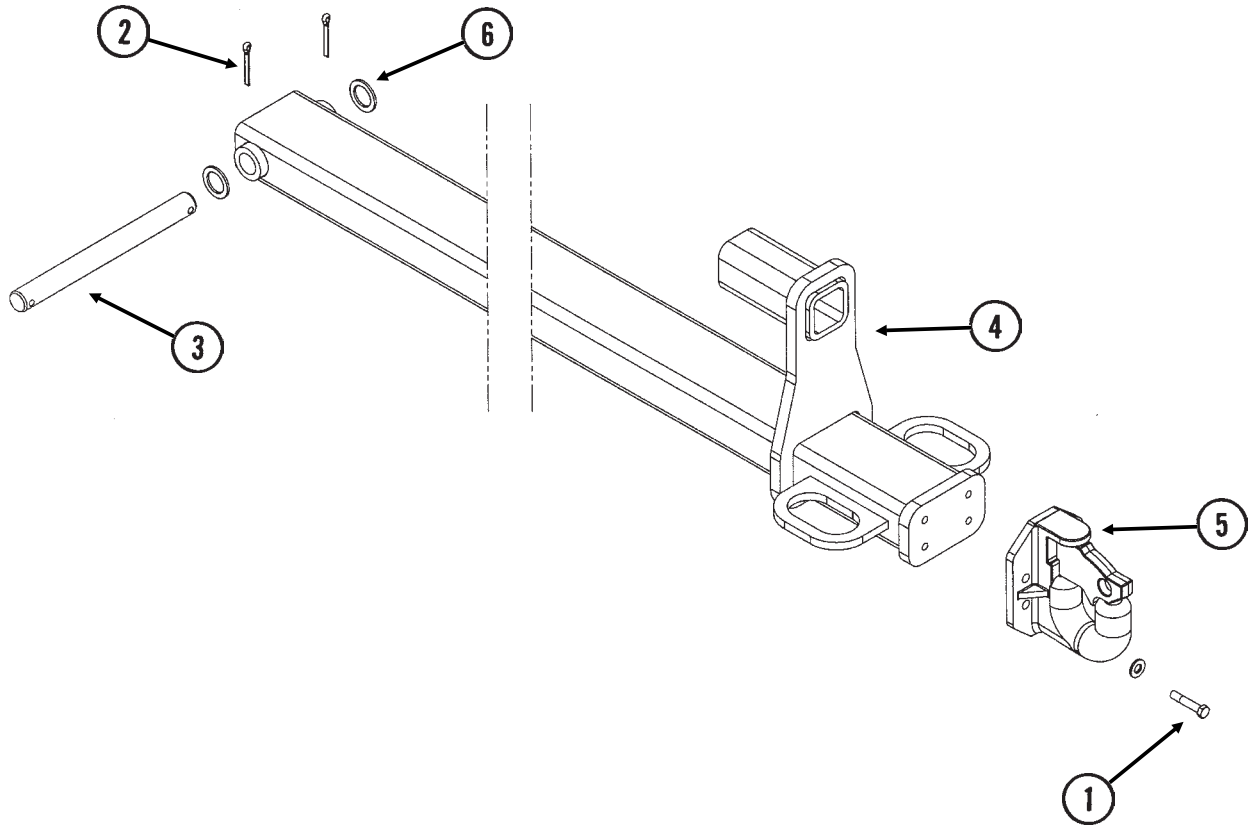


**Model FD-2000 Flow Divider,
20 Outlet**

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

(FWD159)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G11264	4	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	GD14674	4	Special Washer, 1/2", Hardened
2.	G10460	2	Cotter Pin, 1/4" x 2"
3.	GD19148	1	Pin, 1 1/4" x 9 1/4"
4.	GA13238	1	Hitch Mount
5.	GA10859	1	Pintle Hitch
6.	G10159	2	Machine Bushing, 1 1/4", 10 Gauge

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

⚠ 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

NEVER WALK UNDER OR WORK ON PLANTER WHEN IT IS RAISED WITHOUT SUPPORTING THE FRAMES WITH ADDITIONAL SUPPORTS.

7100-68

4

⚠ 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

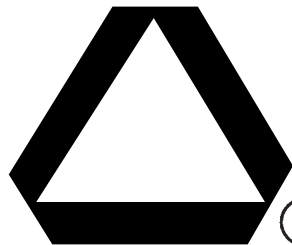
TORQUE 5/8" SPINDLE BOLTS TO 120 FT/LBS. CHECK PERIODICALLY AND RE-TORQUE AS NEEDED.

7100-224

16



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

19



20



21

 ANNUALLY

22

DECALS, PAINT AND MISCELLANEOUS

ROTATE KNURLED COLLAR
ON WRAP SPRING TIGHTENER
TO RELEASE SPRING
TENSION

7100-295

23

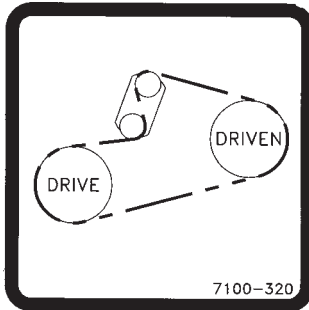
KINZE

3800

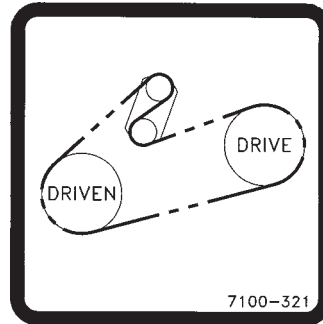
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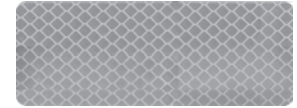
25



26



27



28

⚠ WARNING ⚠

STAY CLEAR
OF DISCHARGE
WHILE FAN
IS RUNNING

7100-301

29

TRANSPORT

7100-307

30

KINZE

31

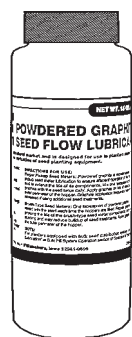


32

OPERATOR & PARTS
MANUAL

KINZE

33



34



35



36

⚠ WARNING

DISCONNECT HYDRAULIC
LINES FROM TRACTOR
BEFORE REMOVING
COVER.

SEE OPERATOR'S MANUAL FOR
SERVICE INSTRUCTIONS.

7100-172

37

⚠ DANGER ⚠

ELECTRO-HYDRAULIC AUGER OPERATION.
AUGER MAY AUTOMATICALLY START
ANYTIME. DISCONNECT HYDRAULIC LINES
FROM TRACTOR OR SHUTOFF TRACTOR
ENGINE BEFORE SERVICING.

7100-319

38

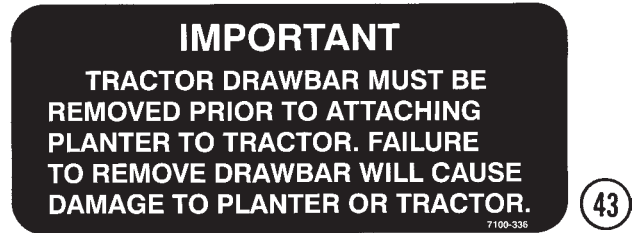
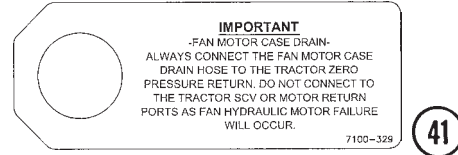
⚠ DANGER

DO NOT RIDE
ON EQUIPMENT

7100-266

39

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 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, Green AA
	GD10057-06	-	Hose Identification Sleeve, Green BB
	GD10057-09	-	Hose Identification Sleeve, White AA
	GD10057-10	-	Hose Identification Sleeve, White BB

(Continued On Following Page)

DECALS, PAINT AND MISCELLANEOUS

ITEM	PART NO.	QTY.	DESCRIPTION
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.	G7100-301	-	Decal, Warning
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.	GM0215	-	Operator & Parts Manual, Model 3800 And 3800 SDS (EdgeVac® 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
39.	G7100-266	-	Decal, Danger
40.	G7100-311	-	Decal, EdgeVac®
41.	G7100-329	-	Tag, Fan Motor Case Drain
42.	G7100-344	-	Decal, Caution
43.	G7100-336	-	Decal, Important

NUMERICAL INDEX

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*A1018	P148, P150	*A12903	P55	D3180-35	P117
*A1020	P146	*A12907	P55	G10001	P5, P10, P15, P16, P24, P25, P27, P31, P37, P61, P71, P73, P99, P102, P105, P162, P165
*A1031	P148, P150	*A3136	P146	G10002	P25, P39, P67, P135, P137, P153, P167
*A1033	P148, P150	*A3139	P147	G10003	P3, P35, P41, P49, P81, 103, P106, P183
*A1039	P148, P150	*A3153	P149, P151	G10004	P5, P33, P81, P87, P89, P91, P97, P99
*A1055	P148, P150	*A3154	P147	G10005	P29, P51, P178
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