MODEL 3800 AND 3800 SDS FORWARD FOLDING PLANTER

(Mechanical Seed Metering W/Hydraulic Drive)

OPERATOR & PARTS MANUAL

PRELIMINARY M0219 10/08

This manual is applicable to: Model: 3800 And 3800 SDS Forward Folding Planters
Serial Number: 755299 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.

D081905101

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.
- ❑ Check seed meters on test stand to ensure proper performance.

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

_____

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

OWNER REGISTER

Name _____ Delivery Date _____

Street Address _____ Model No. 3800 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.

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

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

(Signature Of Delivery Person/Dealer Name/Date)

AFTER DELIVERY CHECKLIST

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

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

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

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

Tear Along Perforation

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TO THE OWNER

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

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

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

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

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

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

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

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

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

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

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

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

WARRANTY

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

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

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

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

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

INTRODUCTION

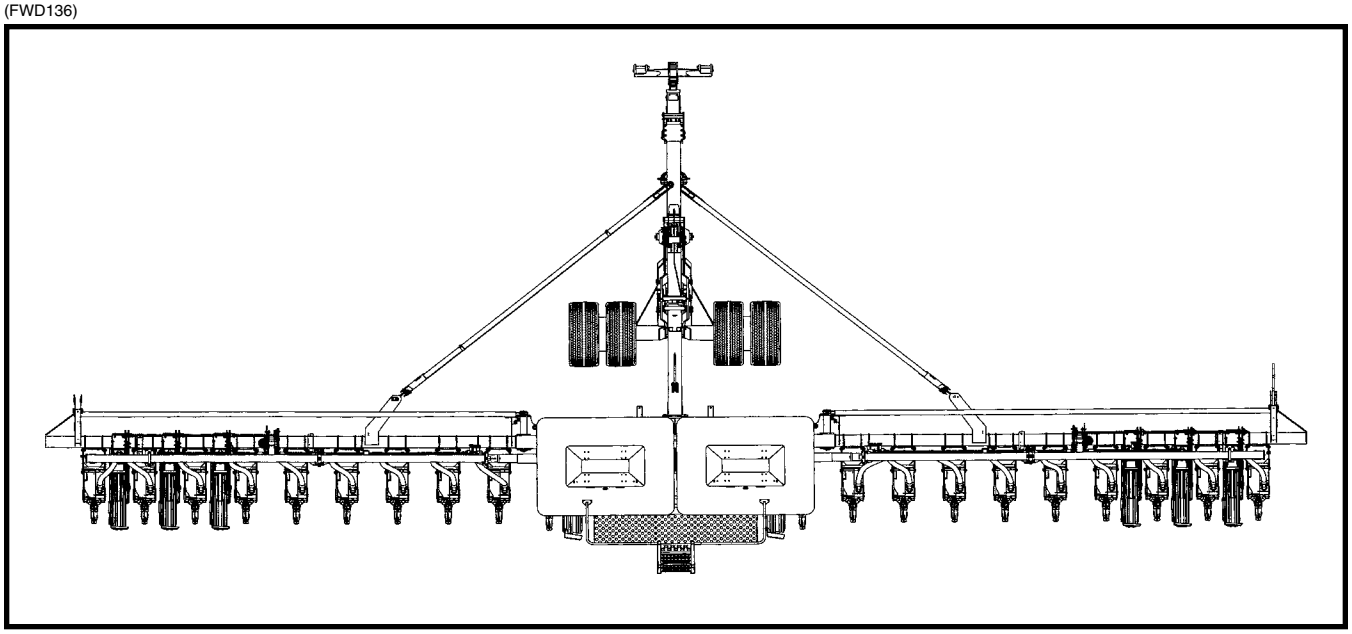
Model 3800 Forward Folding Planters are available in multiple size configurations with bulk seed delivery systems (SDS) or conventional seed hoppers. The design permits installation of liquid fertilizer application equipment and various row unit attachments.

GENERAL INFORMATION

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

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

(FWD136)



Model 3800 SDS 24 Row 30" Planter

D10200819

Model 3800 Conventional 24 Row 30" Planter With Optional Row Markers

SPECIFICATIONS

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

SEED METER TYPE - Mechanical Seed Metering System

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

ROW SPACING - 24 Row Narrow - 30" Rows (Six Rows On Center Section, Nine Rows On Outer Wings)

DRIVE SYSTEM - Dual Motor
- 2 Section Hydaulic Drive w/No. 40 Chain
- Single Row Air Clutches

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")

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

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

HYDRAULICS - Four SCV For Independent Operation Of Field Lift, Fold Functions, Hydraulic Drive And Optional Row Marker Functions With 12 VDC Control Console
- Master/Slave Lift
  - Four 4" x 8" Master Cylinders, Four 3 ¾" x 8" Slave Cylinders And Two 2 ½" x 8" Lift Assist Cylinders On 24 Row 30"
  - Four 4" x 8" Master Cylinders, Four 3 ¾" x 8" Slave Cylinders, Four 3 ½" x 8" Slave Cylinders
- Transport Lift/Slide - One Slide Cylinder Under Tongue, Two Transport Axle Cylinders
- Wing Fold - Two Cylinders On 24 Row 30"
- Latch Cylinders - One Slide Latch Cylinder And One Tongue Latch Cylinder
- Row Markers - Two Primary Stage Cylinders

HITCH - Category 3N, 3 Or 4N

MACHINE OPTIONS

- Electronic Seed Monitor
  - KINZE Vision® Display
  - KINZE Cobalt™ Display
  - 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 Only)

SPECIFICATIONS

ROW UNIT OPTIONS/ATTACHMENTS

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

SPECIFICATIONS

MODEL 3800 CONVENTIONAL DIMENSIONS/WEIGHTS

PLANTER SIZE	24 Row 30"
PLANTING WIDTH	62' 6"
PLANTING LENGTH	24' 9"
TRANSPORT WIDTH (See NOTE Below)	14' 7"
TRANSPORT LENGTH	39' 0"
TRANSPORT HEIGHT (With Markers)	13' 6"
WEIGHT* (Base Machine)	23,609 Lbs.

MODEL 3800 SDS DIMENSIONS/WEIGHTS

PLANTER SIZE	24 Row 30"
PLANTING WIDTH	62' 6"
PLANTING LENGTH	24' 9"
TANK HEIGHT (Planting Position)	9'4"
TRANSPORT WIDTH (See NOTE Below)	14' 7"
TRANSPORT LENGTH	39' 0"
TRANSPORT HEIGHT (With Markers)	13' 6"
WEIGHT* (Base Machine)	26,884 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.**

NOTE: Truck shipping width is 13' 9".

SAFETY PRECAUTIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SAFETY PRECAUTIONS

Limit towing speed to 15 MPH.

Transport stability is critical. The gross weight of the tractor must be greater than the gross weight of the planter. Gross weight varies with planter attachments.Tow 24 Row 30" planters with farm tractor of a minimum 200 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.

Planter hydraulic drive system can start at any time. Entanglement with driveline components can cause severe personal injury or death. Fully shut down tractor and neutralize hydraulic lines before adjusting or servicing planter hydraulic drive system.

Pressurized hydraulic fluid can penetrate body tissue and result in serious infection, injury, or death. Before applying pressure to the hydraulic system, make sure all connections are tight and that hoses and fittings have not been damaged. Leaks can be invisible. Keep away from suspected leaks. Relieve pressure in the hydraulic system before searching for leaks, disconnecting hoses, or performing any other work on the system. Fluid injected under the skin must be IMMEDIATELY removed by a surgeon familiar with this type of injury.

SAFETY WARNING SIGNS

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

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

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

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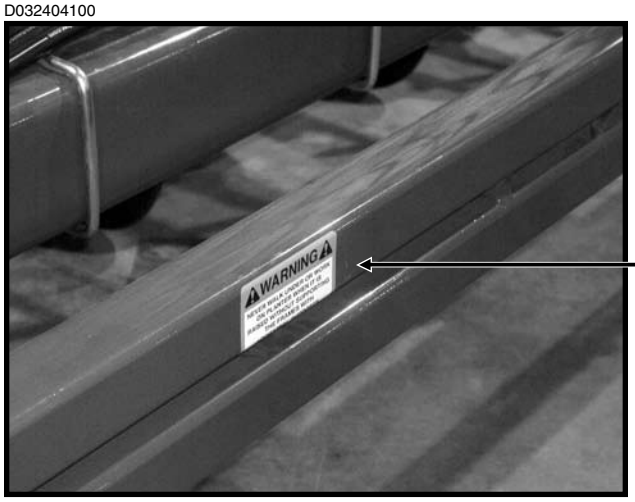


Part No. G7100-68 (Qty. 2 - Located On Forward Toolbars On Both Sides Of Planter)

D032404114

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

SAFETY WARNING SIGNS

D11300404

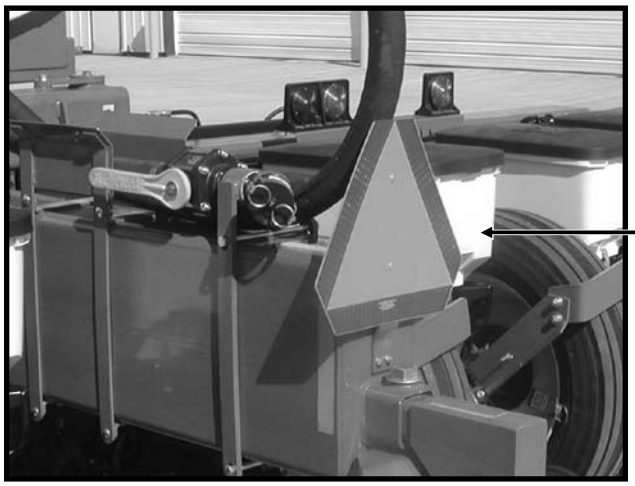
Part No. G7100-56 (Qty. 1 - Located On Planter Hitch)

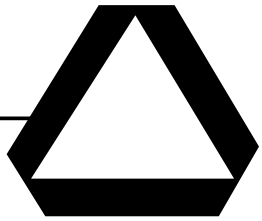
Part No. G7100-46 (Qty. 1 - Located On Planter Hitch)

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

SAFETY WARNING SIGNS

D081905112





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

D06039901

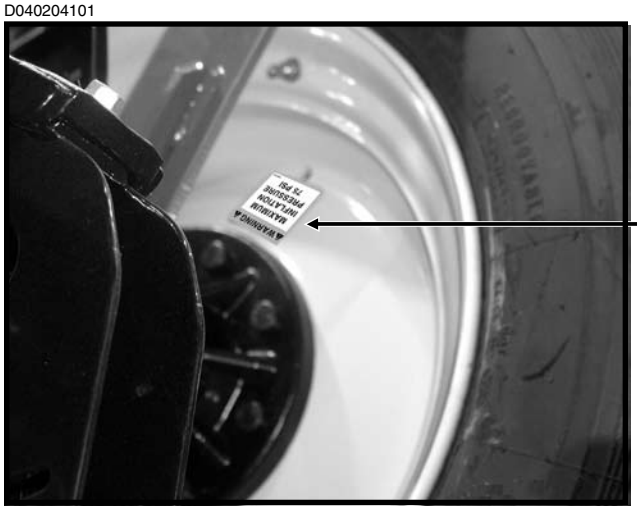
WARNING

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

7100-115

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

D040204101



WARNING

MAXIMUM INFLATION PRESSURE 75 PSI

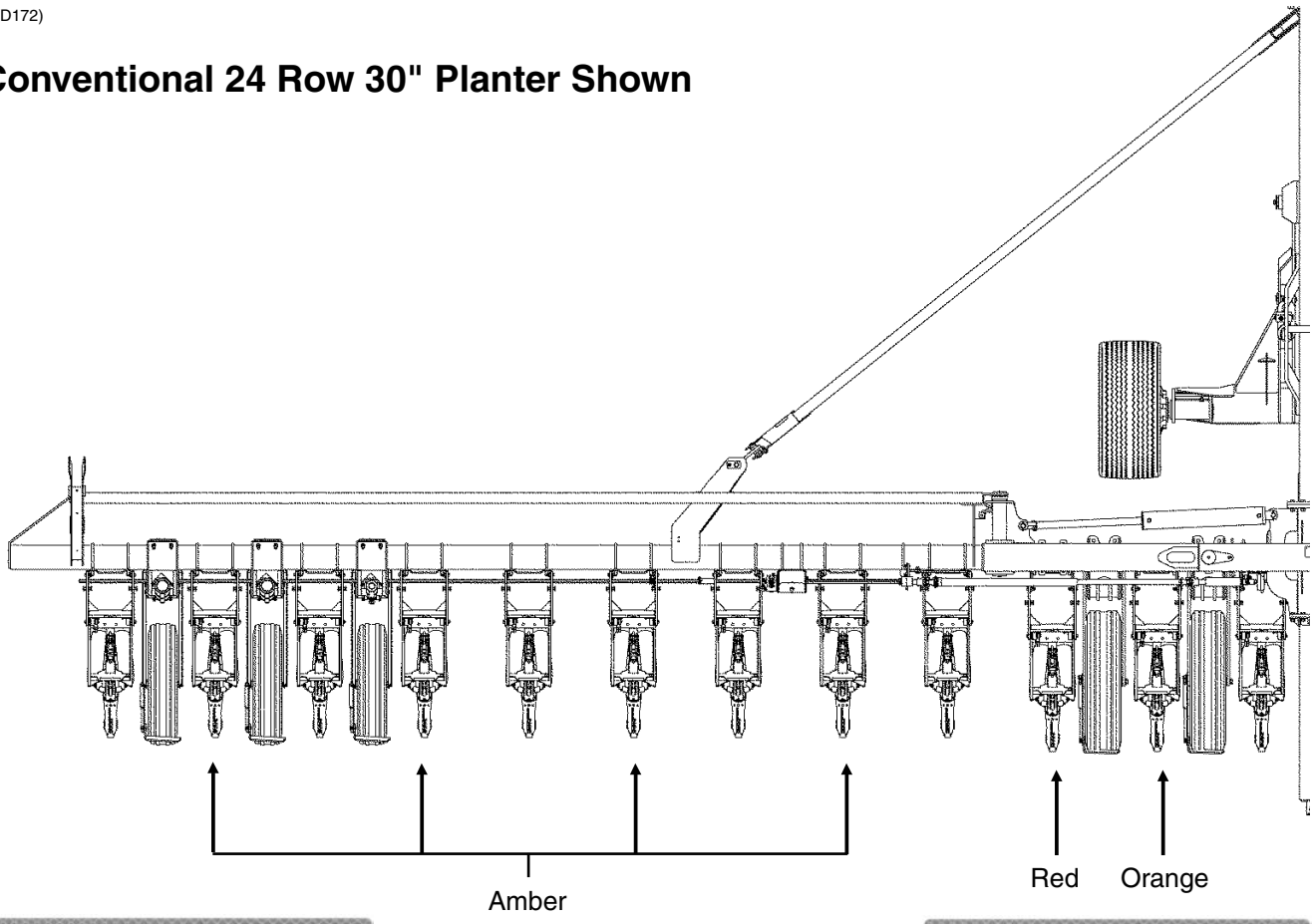
7100-219

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

SAFETY WARNING SIGNS ⚠

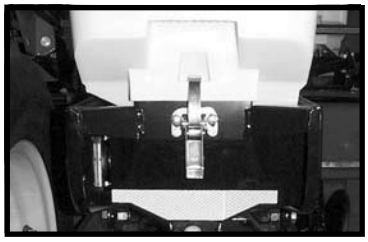
(FWD172)

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)

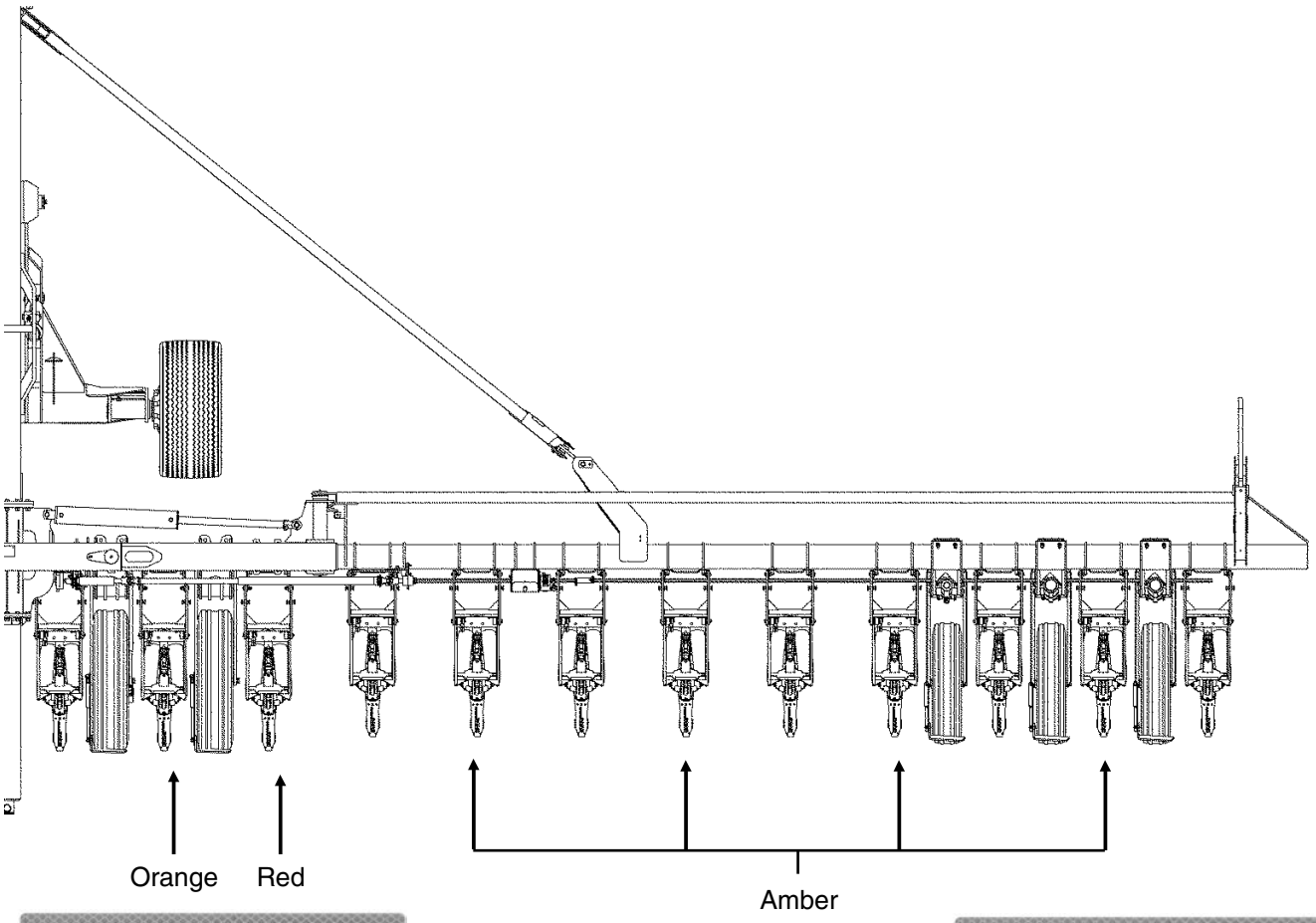
Part No. G7100-259 Amber Reflective Decal (Located On The Granular Chemical Hopper Panel Extension On Every Other Row Unit Beginning On The 2nd Row Unit In On The L.H. End Of The Planter - Side-Facing In Transport Position) (**With Optional Granular Chemical)** (If Applicable)

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)

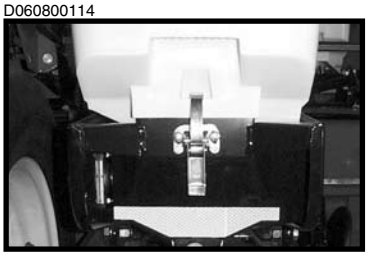
NOTE: Eight Decals Used On 24 Row 30".

SAFETY WARNING SIGNS ⚠



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

D060800114



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

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

D062300102

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

SAFETY WARNING SIGNS ⚠

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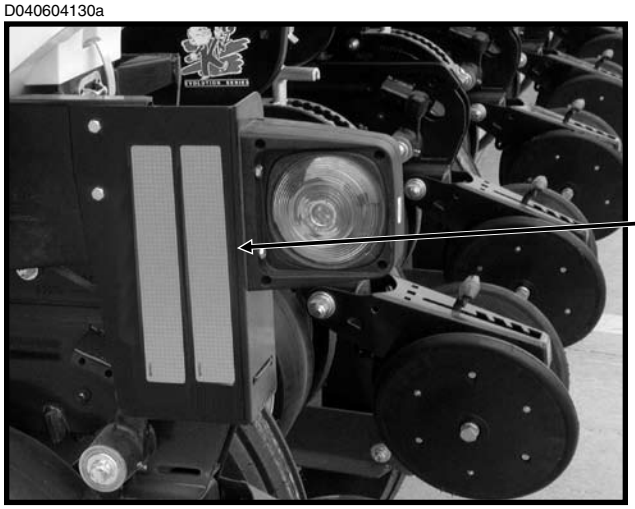
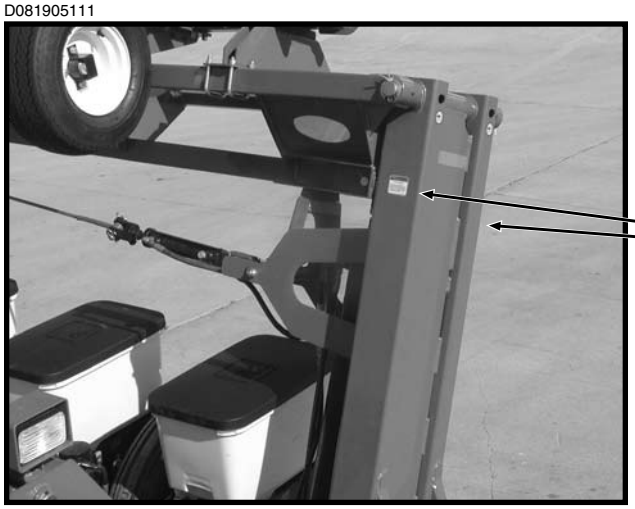


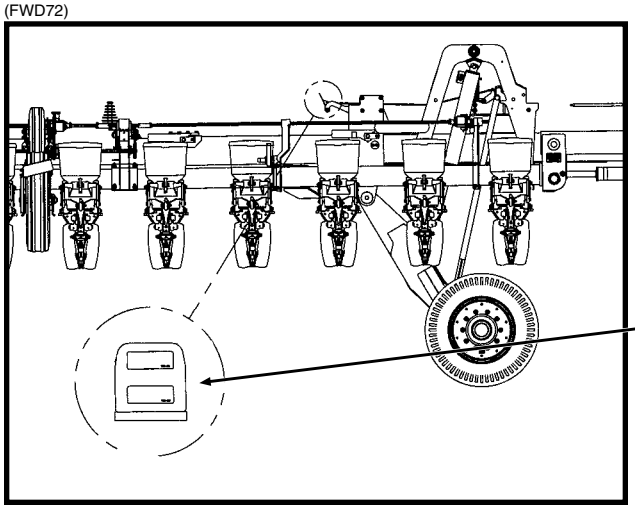
Part No. G7100-259 Amber Reflective Decal (Qty. 2 - Located On Each End Row Unit - Forward-Facing In Transport Position)

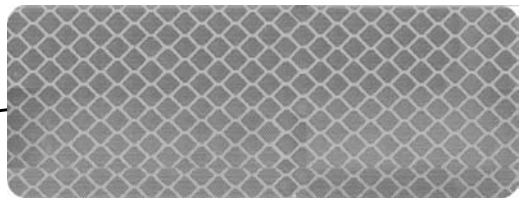
D081905111



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

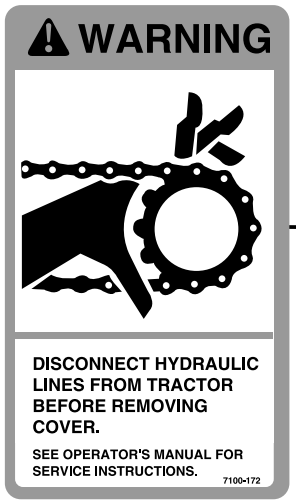
(FWD72)





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

SAFETY WARNING SIGNS



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

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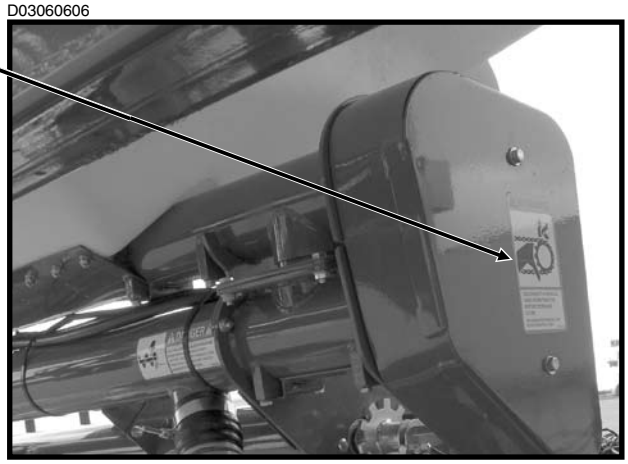

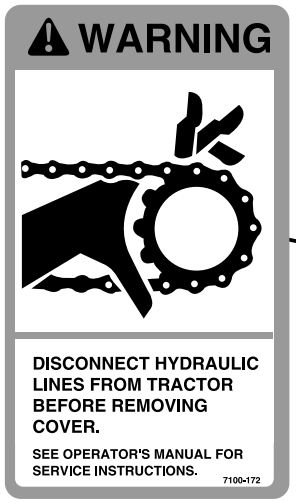

Part No. G7100-172 (Qty. 2 -
Located On Each Hydraulic
Drive Cover)

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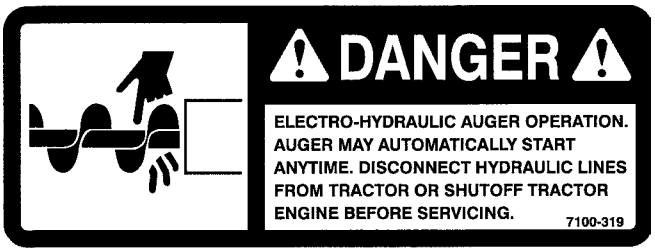
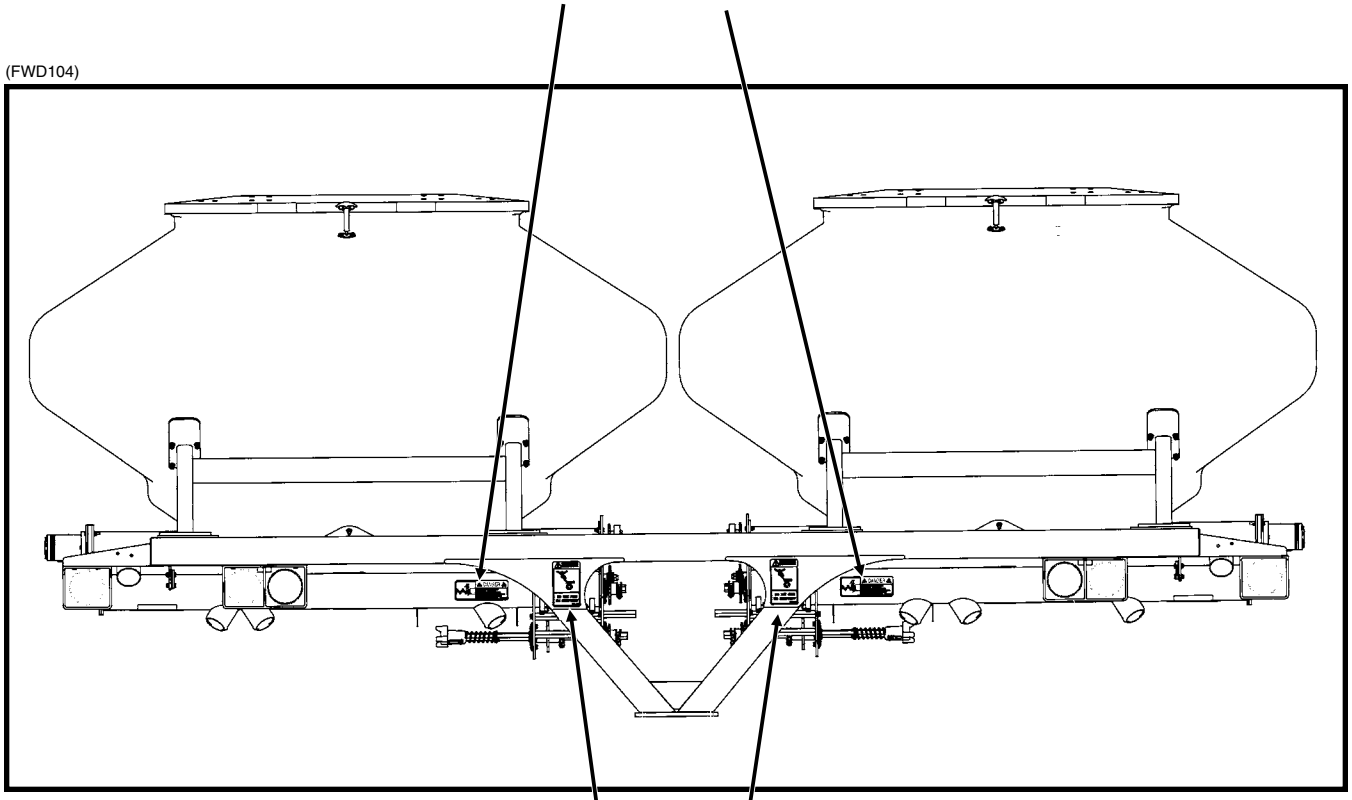
SAFETY WARNING SIGNS ⚠



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

(FWD104)



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

MACHINE OPERATION

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

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

WING LATCH HOOK SAFETY PIN(S)

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

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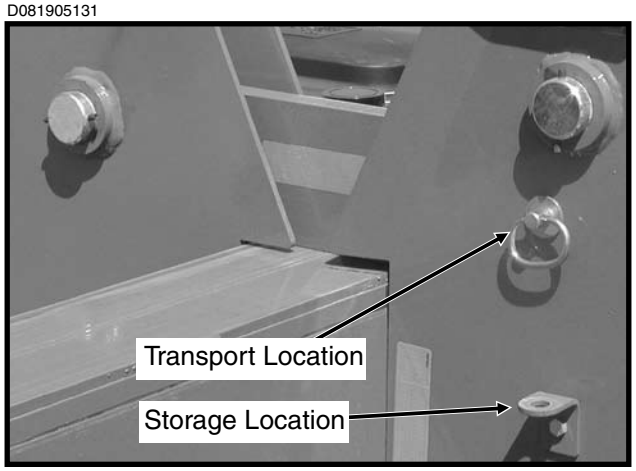

For field operation remove the wing latch hook safety pin(s) and store in the storage location(s) provided.

TRANSPORT LOCKUP

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.

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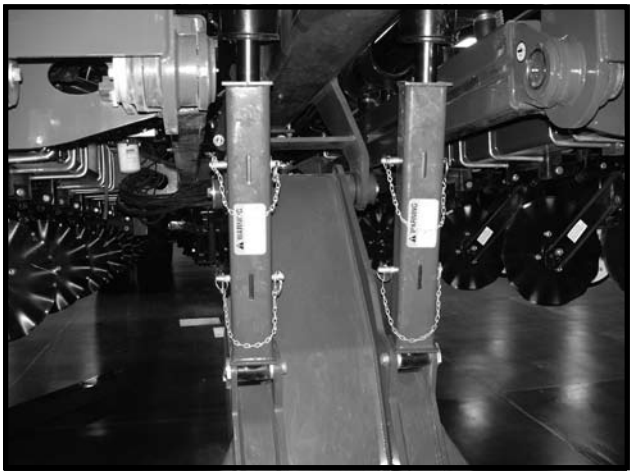

In Transport Position

D02070821

In Stored Field Operation Position

INITIAL PREPARATION OF THE PLANTER

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

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

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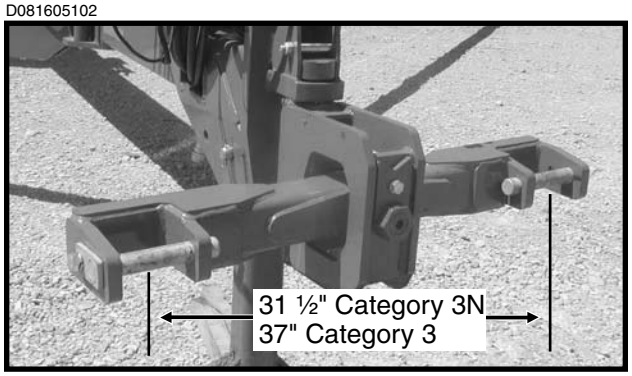

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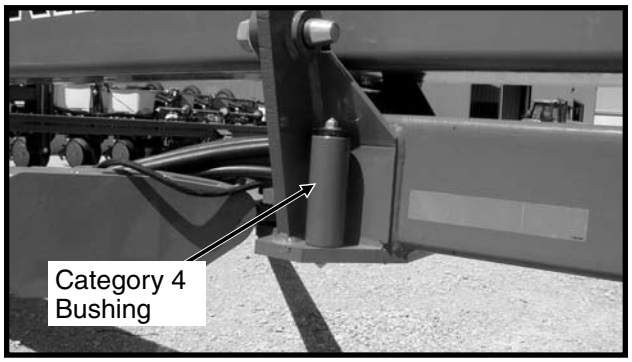

Install two 2" bushings, stored on the front inner hitch, onto the two hitch pins for Category 4 use.

TRACTOR REQUIREMENTS

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

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

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

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

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

TRACTOR PREPARATION AND HOOKUP

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

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

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

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

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

D10060624

Planter Control Console

D10060627

SDS Control Console (If Applicable)

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

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

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

4. Back tractor up to planter and connect planter.

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

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

   The hydraulic hoses are color coded as follows:

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

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

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

   White AA - ⅝" Hose - Bulk Seed Delivery System (SDS) and Hydraulic Motor Functions (Return)
   White BB - ½" Hose - Bulk Seed Delivery System (SDS) and Hydraulic Motor Functions (Pressure)

NOTE: The Hydraulic Drive/SDS System requires constant system pressure. If erratic behavior is observed in the hydraulic drive it may be nessesary to disable the load sense system on the tractor. Please refer to your tractor manual for instructions.

DANGER: Pressurized hydraulic fluid can penetrate body tissue and result in serious infection, injury, or death. Before applying pressure to the hydraulic system, make sure all connections are tight and that hoses and fittings have not been damaged. Leaks can be invisible. Keep away from suspected leaks. Relieve pressure in the hydraulic system before searching for leaks, disconnecting hoses, or performing any other work on the system. Fluid injected under the skin must be IMMEDIATELY removed by a surgeon familiar with this type of injury.

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

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

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

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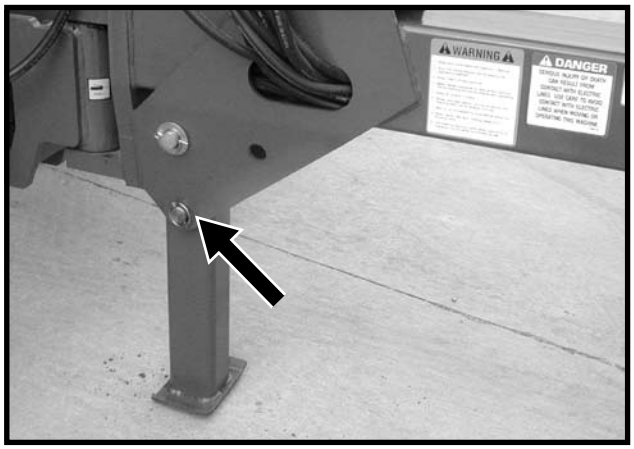

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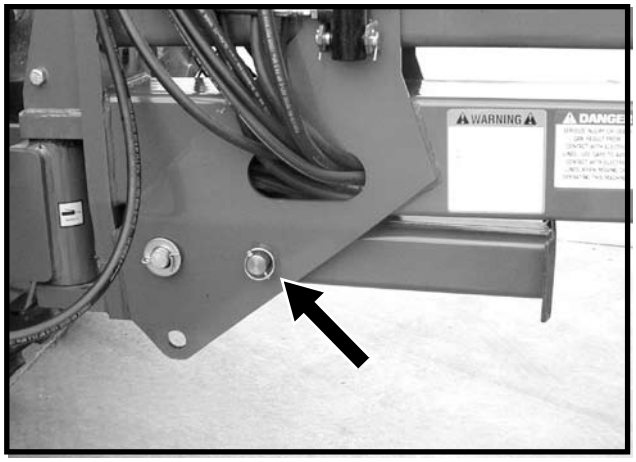


8. For proper operation of the planter and row units, it is important that the planter toolbars and row unit parallel arms be level side-to-side and front-to-rear. The toolbar should operate at 20"-22" heights from planting surface. Tire pressure must be maintained at pressures specified and toolbar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

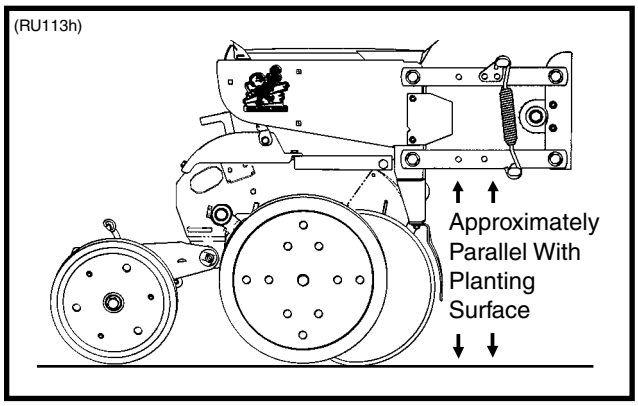
NOTE: The transport axle cylinders are equipped with counter balance valves which hydraulically lock the cylinders when not in use.

LEVELING THE PLANTER

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

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

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



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

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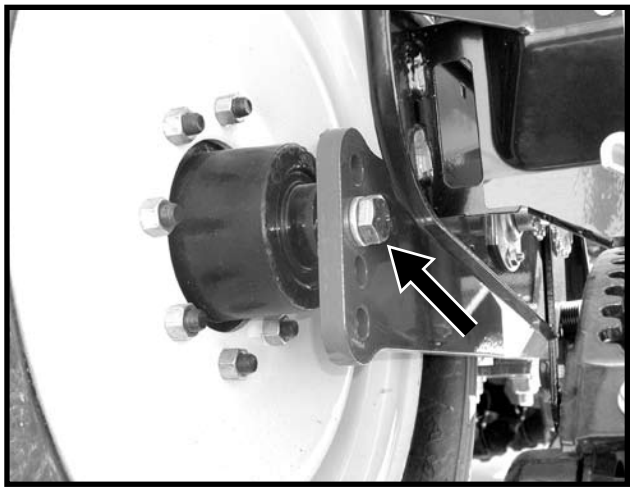

Center Section Lift/Gauge Wheel (Rock Shaft Axle) - Initial Setting Shown

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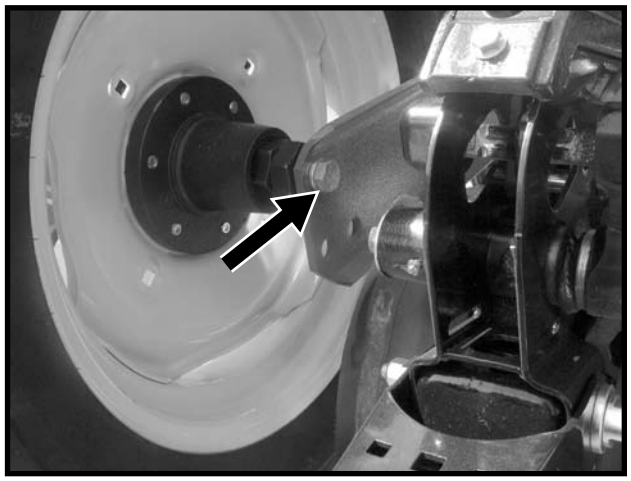
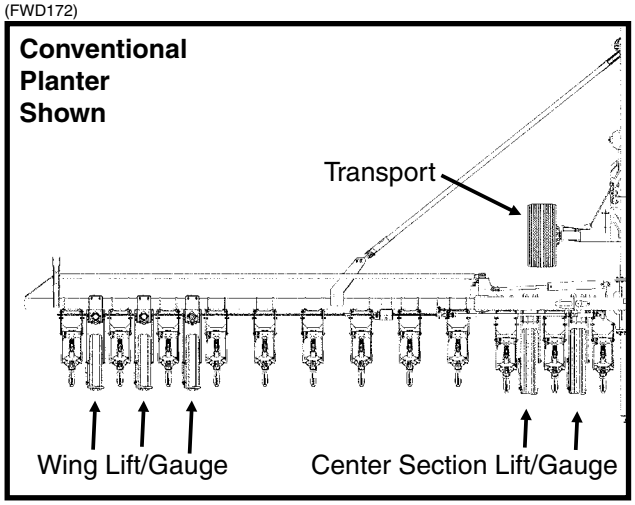


Wing Lift/Gauge Wheel - Initial Setting Shown

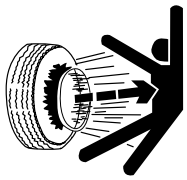
TIRE PRESSURE

(FWD172)



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
(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.

U-JOINT SHAFT ASSEMBLIES

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

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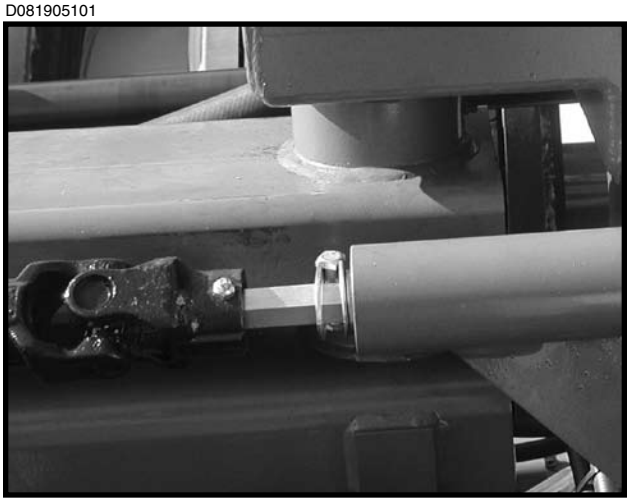

See “Grease Fittings” in the Lubrication Section of this manual.

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 four 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).

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

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

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

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

NOTE: Activating the auxiliary switch disables all control console switches.

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

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

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

TRANSPORT TO FIELD SEQUENCE

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

SUMMARIZED TRANSPORT TO FIELD SEQUENCE

- Remove wing latch hook safety pin(s) from transport (locked) positions and place in storage locations provided.
- Raise field tires/wheels and hold to rephase.
- Fully raise planter using transport axle.
- 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.

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

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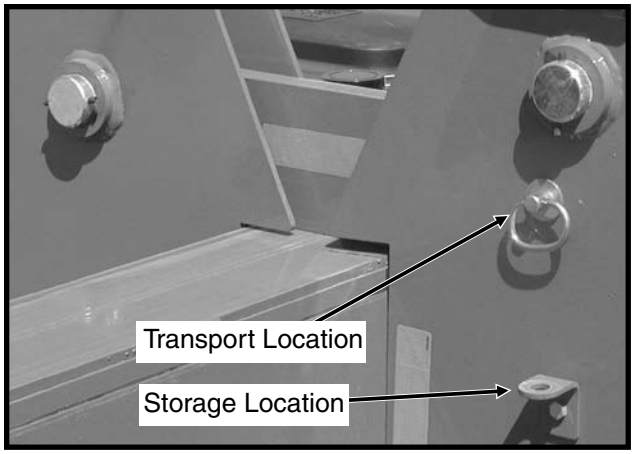

2. Operate the field raise function hydraulic control to lower the field tires/wheels.

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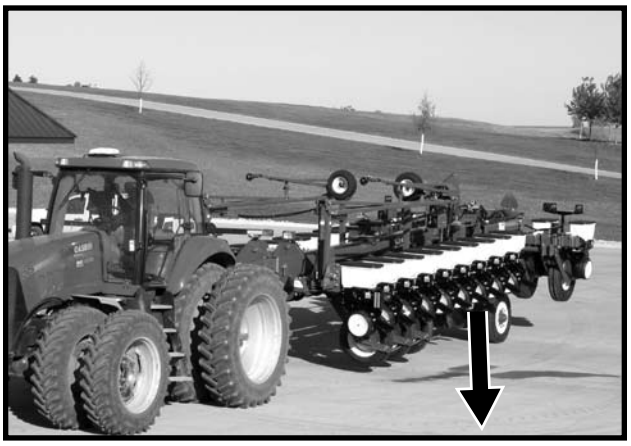
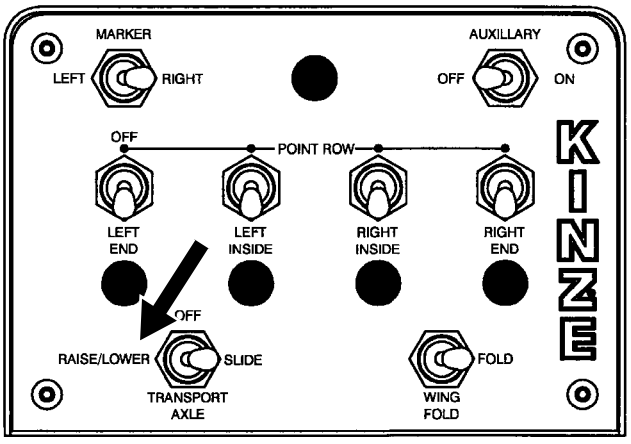


3. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to raise the transport axle, lowering the rear of the planter until the field tires touch the ground.

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)



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

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

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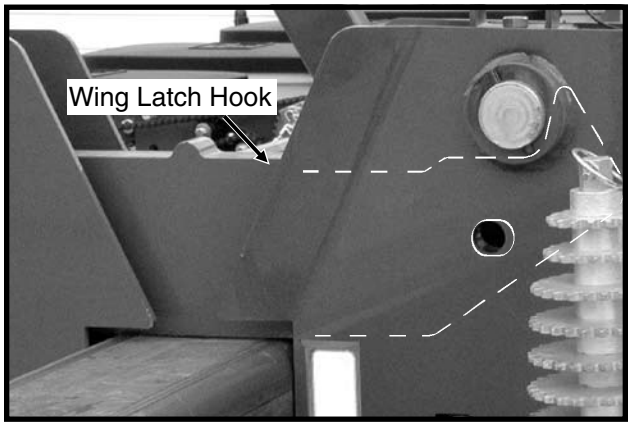
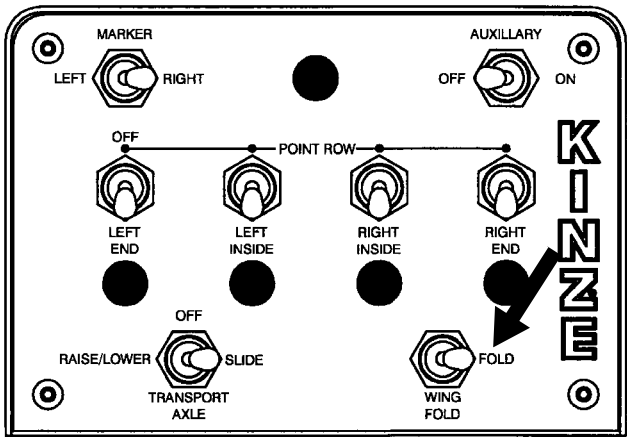


5. Hold the control console switch labeled WING FOLD in **FOLD** and operate the fold/unfold functions hydraulic control to unfold the planter. The tongue will begin to retract and the wings, carried on the wing wheels, will begin to unfold. Place the tractor transmission in neutral or a low reverse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



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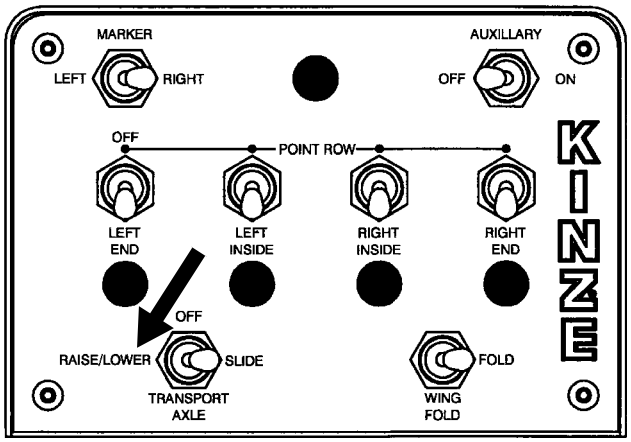
6. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to raise the transport axle wheels to the fully raised planting position.

(FWD30bb)



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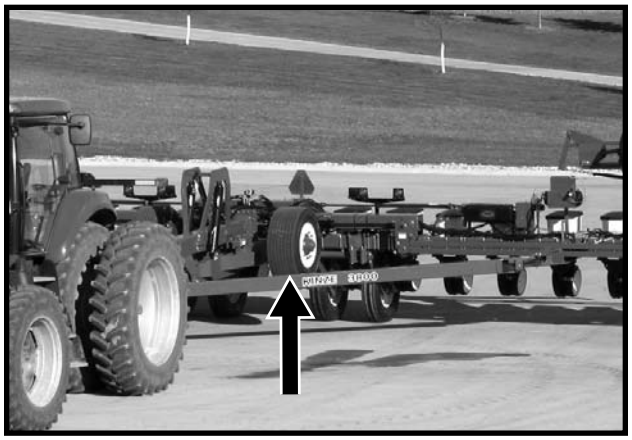

7. Lower the 3 point to level hitch position.

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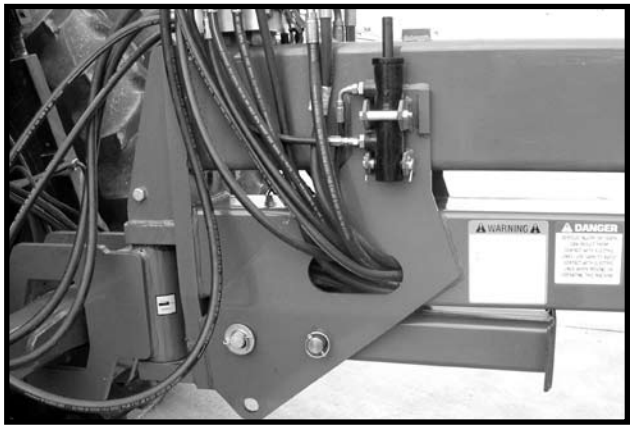

WARNING: Never walk under or work on planter when it is raised without supporting the frames with additional supports.

FIELD OPERATION

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

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

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

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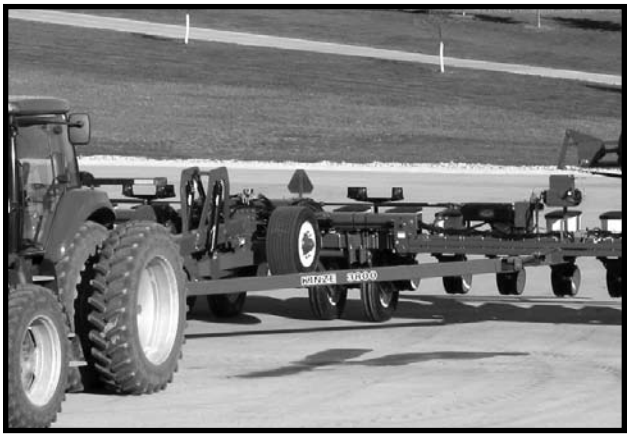


FIELD TO TRANSPORT SEQUENCE

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

SUMMARIZED FIELD TO TRANSPORT SEQUENCE
- Raise planter to field turn height.
- Lower transport axle to the ground.
- Fold planter to transport position.
- Raise front of planter using tractor 3 point hitch.
- Raise rear of planter using transport axle.
- 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.

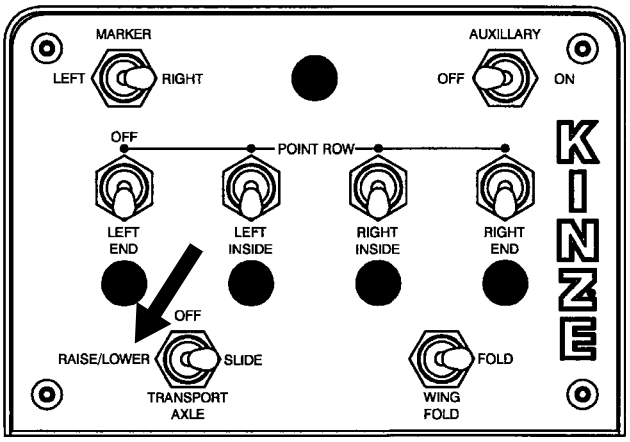
1. Operate the field raise function hydraulic control to raise the planter to raised field height.

D10200816

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

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

(FWD30bb)



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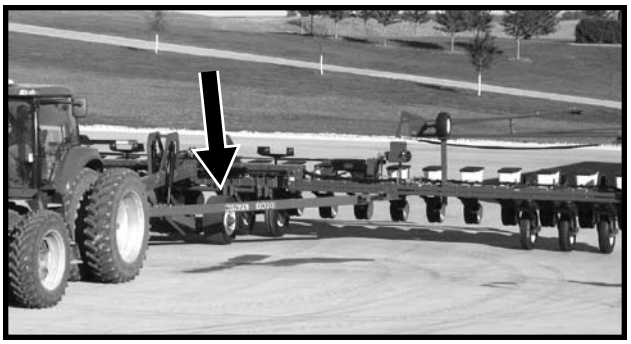
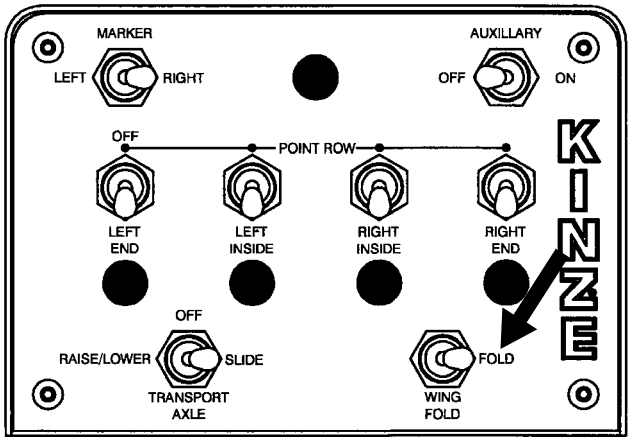


3. Hold the control console switch labeled WING FOLD in **FOLD** and operate the fold/unfold functions hydraulic control to fold the planter to transport position. It is necessary to **slowly** idle the tractor forward as you fold the planter, allowing the center axle tires to remain stationary and the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

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

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

(FWD30bb)



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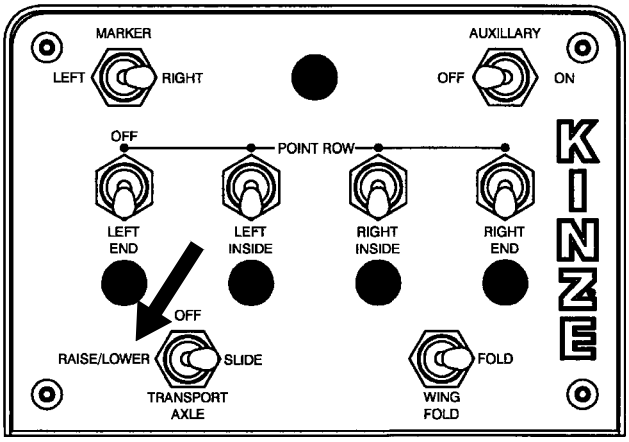
4. Raise the front of the planter using the tractor 3 point hitch.

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

(FWD30bb)

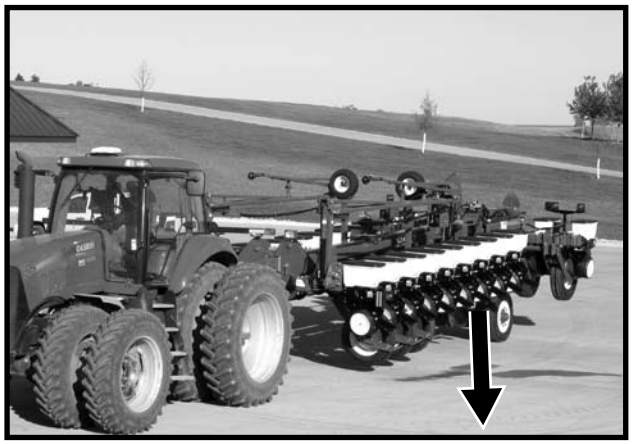


D10200805

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

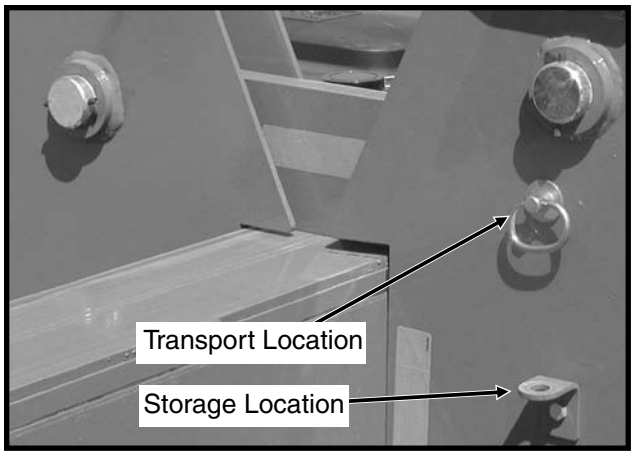
6. Operate the field raise function hydraulic control to raise the field tires/wheels.

D10200838

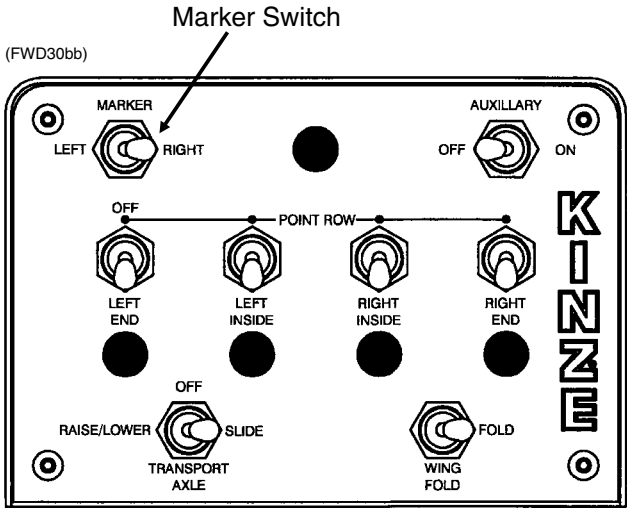


7. Remove wing latch hook safety pin(s) from their storage location(s) and install in locked position(s).

D081905131



ROW MARKER OPERATION



Three Position Selector Switch On Control Console

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

See “Row Marker Speed Adjustment”.

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

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

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

If the electrical system fails to operate properly:
Check fuse.
Check wiring connections.
Check control switch.
Check solenoid. SOLENOID HOUSING SHOULD BE MAGNETIZED WHEN ENERGIZED.

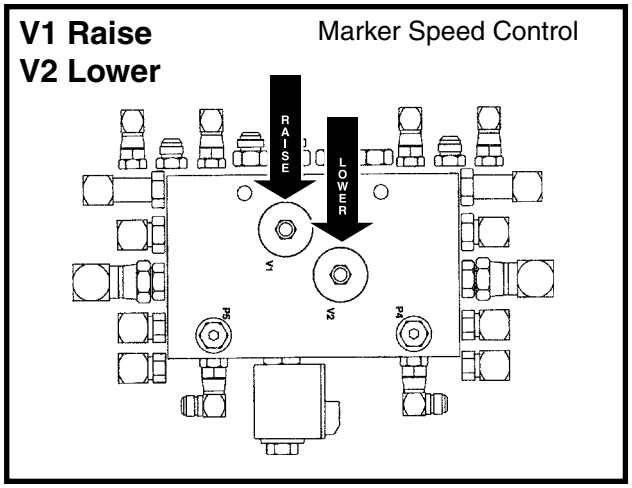
DANGER: To avoid serious injury or death, care must be taken when operating row markers around overhead power lines.

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

ROW MARKER SPEED ADJUSTMENT

The row marker hydraulic system includes two flow control valves. One flow control valve 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 controls determine the amount of oil flow restriction through the valve(s), therefore varying travel speed of the markers. Tighten jam nut after adjustments are complete.

(FWD161)



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

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

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

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

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

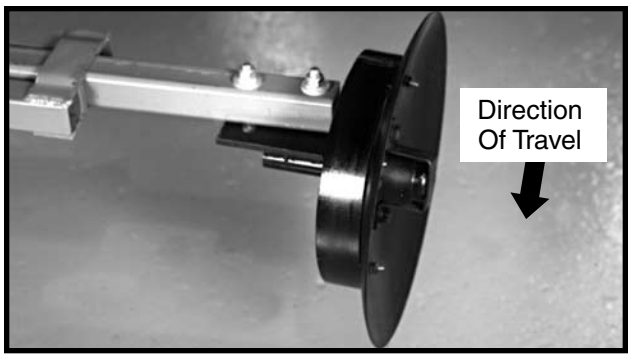
ROW MARKER LENGTH ADJUSTMENT

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

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

24 Rows x 30" Spacing = 720" Marker Dimension

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 ½" hardware and move the assembly as required. Tighten bolts to the specified torque.

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

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

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

KINZE COBALT™ SYSTEM

D09190804

The Cobalt electronic seed monitor system consists of a console, which is mounted on the tractor; seed tubes with computerized sensors, one of which is installed in each planter row unit; a primary harness, which connects the console to the planter harness; and a planter harness (junction Y-harness and/or harness extension where applicable), to which the individual seed tube sensors connect.

The Cobalt system allows manual control of air clutches and variable population control when planter is equipped with these options. It is not GPS compatible.

This system is compatible with all KINZE planters, and can be transferred between multiple vehicles to maximize the return on investment cost.

The Cobalt monitor has been built to withstand the harsh environment associated with today's agricultural industry. The weathertight enclosure is designed to seal out any dirt and moisture that is encountered during normal operating conditions

NOTE: See operator manual supplied with KINZE Cobalt™ display for installation and programming.

KINZE VISION® SYSTEM

D012908205

The KINZE Vision display is a GPS-compatible universal monitor/controller for use in crop production and protection. It can easily be transferred between multiple vehicles through out the growing season to maximize your return on investment. The KINZE Vision display has its own internal memory for recording GPS and logging all information collected during various field activities. The KINZE Vision display has been built to with stand the harsh environment associated with today's agricultural industry. The weather tight enclosure is designed to seal out any dirt and moisture encountered during normal operating conditions.

NOTE: See operator manual supplied with KINZE Vision® display for installation and programming.

PLANTER MONITOR MODULE (PMM)

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

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

D11200710a

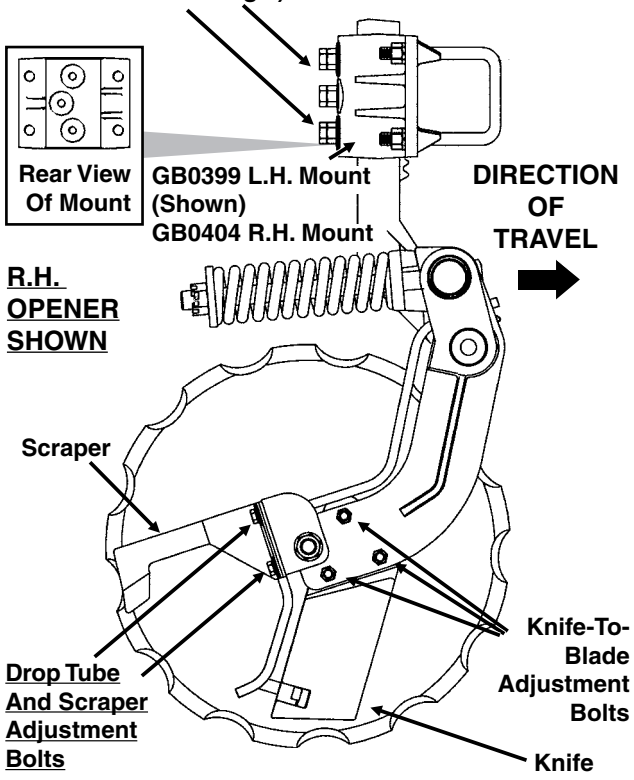
NOTCHED SINGLE DISC FERTILIZER OPENER

The notched single disc fertilizer opener is designed for use in minimum and no till planting conditions. Placement of fertilizer with the 16 ¾" diameter notched single disc fertilizer opener is recommended at 2 ½"- 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)

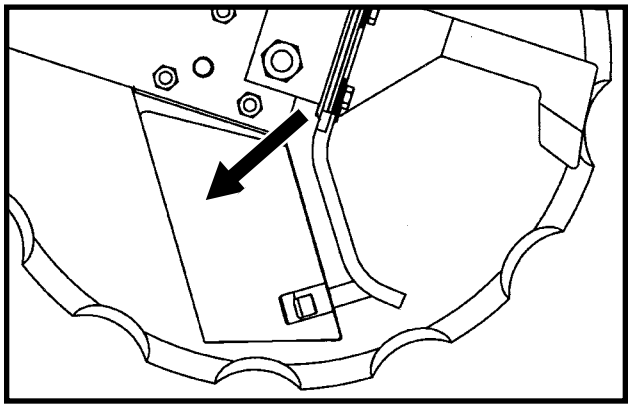
Depth Adjustment Cap Screws - Recommended Maximum Operating Depth 4" (Middle Cap Screw Holds Blade Angle But Must Be Loosened To Adjust Depth And Tightened First To Set Blade Angle)



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 ⅜" 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 ¼"- ⅜" 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 ¼"- ⅜" adjustment.

D01040702



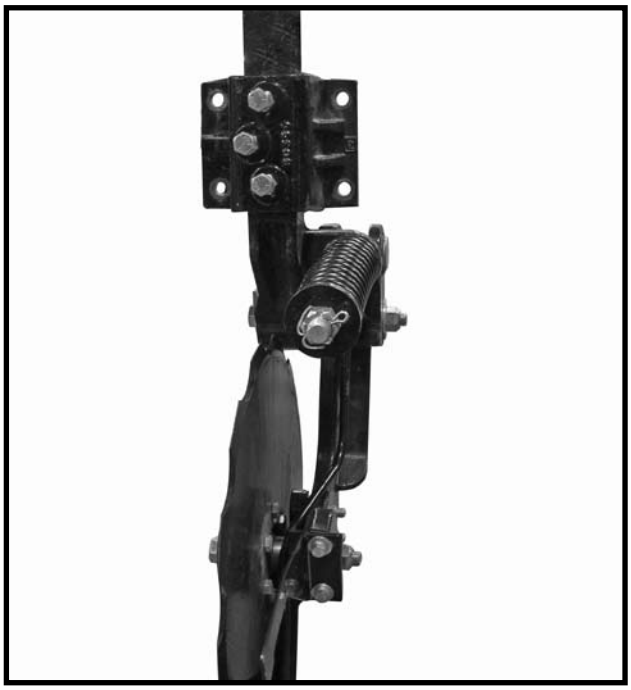
NOTE: Adjusting the liquid drop tube will ensure it is out of the path of the soil flow across the knife. Drop tube and tab will wear quickly if not adjusted correctly.

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 front and bottom of the blade tilt towards the knife.

D11200805a



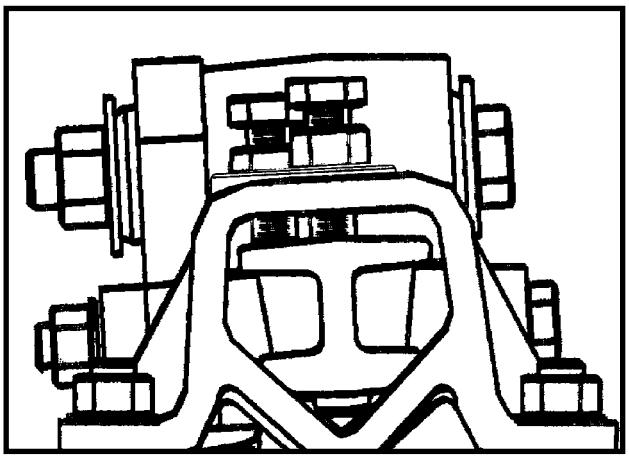
L.H. Opener (B0399)

D11200808a

R.H. Opener (B0404)

NOTE: L.H. and R.H. openers are determined by what side the blade is on, by standing behind the planter in the direction of travel.

FRTZ296



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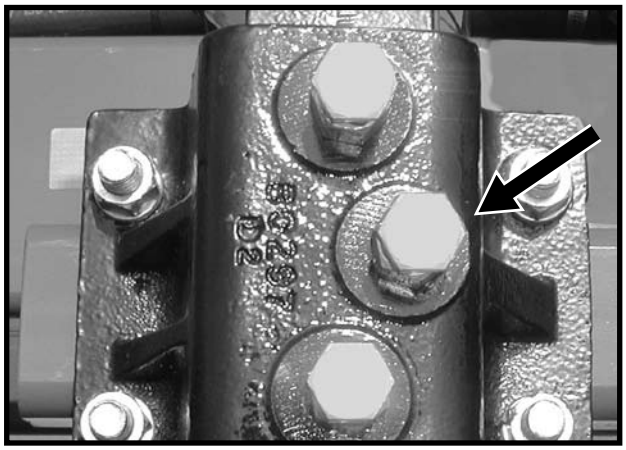
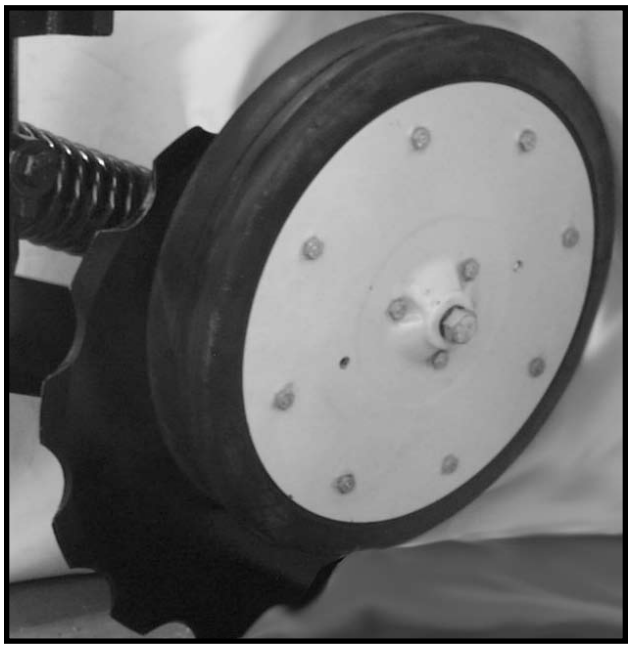


NOTE: Recommended maximum operating depth is 4". To adjust depth: (a) Loosen depth adjustment cap screws. (b) Adjust depth to desired setting. (c) Tighten upper and lower cap screws slightly to hold opener arm in place. (d) Tighten middle cap screw to set the opener arm angle. (e) Tighten upper and lower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

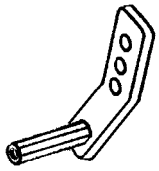
DEPTH/GAUGE WHEEL ATTACHMENT FOR NOTCHED SINGLE DISC FERTILIZER OPENER

D061101202a



The depth/gauge wheel attachment for the notched single disc fertilizer opener is designed for use in situations where additional gauging is required to maintain desired fertilizer opener depth. The depth/gauge wheel is attached to the notched single disc fertilizer opener using a mounting block fastened to the pivot arm using ⅝" hardware through the disc blade hub w/bearing.

(FRTZ256a)



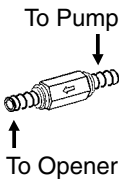
Depth adjustment is made by using the adjustment holes in the depth/gauge wheel mounting block. Moving the depth/gauge wheel increases/decreases depth in approximate 1" increments in relation to the blade depth setting made at the vertical mounting post.

LIQUID FERTILIZER ATTACHMENT

D03230604

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

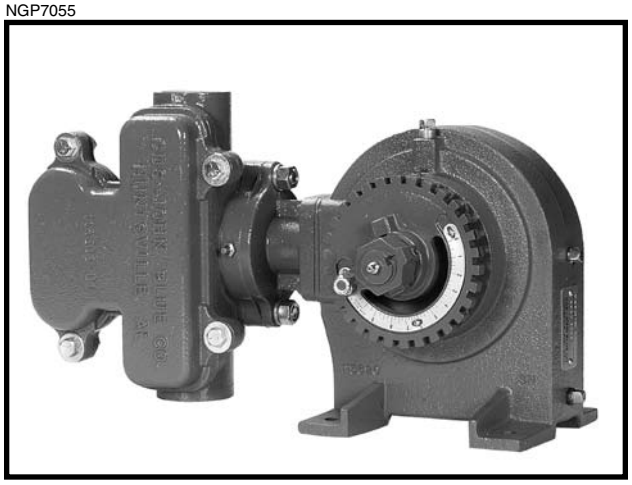
(FRTZ208)



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.

OPTIONAL PISTON PUMP

NGP7055

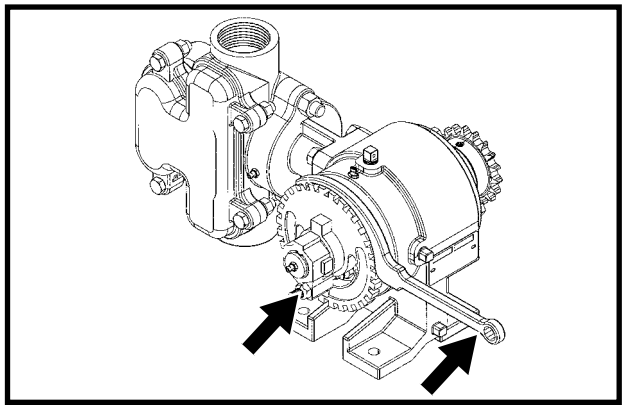


If the machine is equipped with the piston pump option, the rate of liquid fertilizer application is determined by the piston pump settings.

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 ⅜" 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 ⅜" lock nut being careful not to over tighten.

(PLTR9/A12330b)



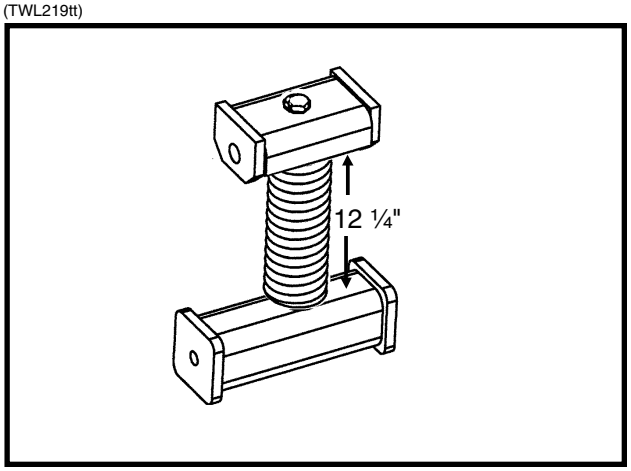
The operator and instruction manual shipped with the pump and flow divider should be kept and stored with this manual for future reference.

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

PISTON PUMP GROUND DRIVE WHEEL SPRING ADJUSTMENT

Initial spring tension of the down pressure spring on the piston pump ground drive wheel is set leaving 12 ¼" between the bottom of the mounting plate and the plug on top of the spring. This dimension is taken with the planter in raised position (tire not contacting the ground). Further adjustment can be made to fit conditions.

(TWL219tt)



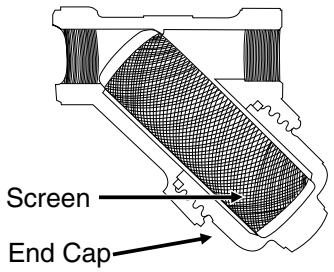
NOTE: The piston pump ground drive wheel assembly is designed to allow the assembly to be locked in raised position when not in use. Remove the two cap screws that attach the upper end of the spring to the spring mount. Reattach the spring using the upper holes in the spring mount. Reverse procedure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

CLEANING

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

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

(INS220)



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

REAR TRAILER HITCH

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

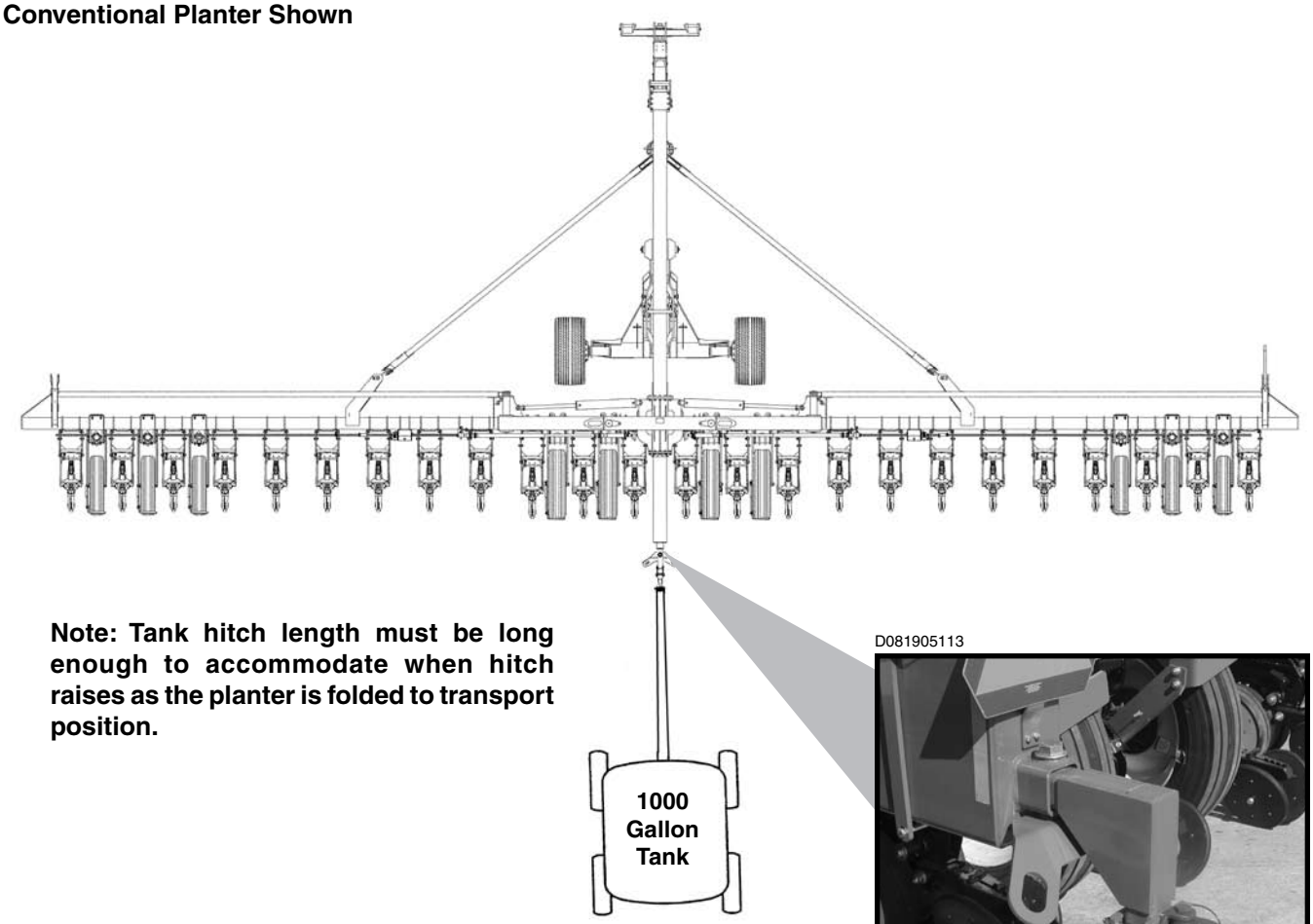
(FWD175)

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

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

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

Conventional Planter Shown



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

D081905113

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.)

HALL EFFECT SENSOR

Hall Effect sensor should be set within ⅛" of pick-up disc.

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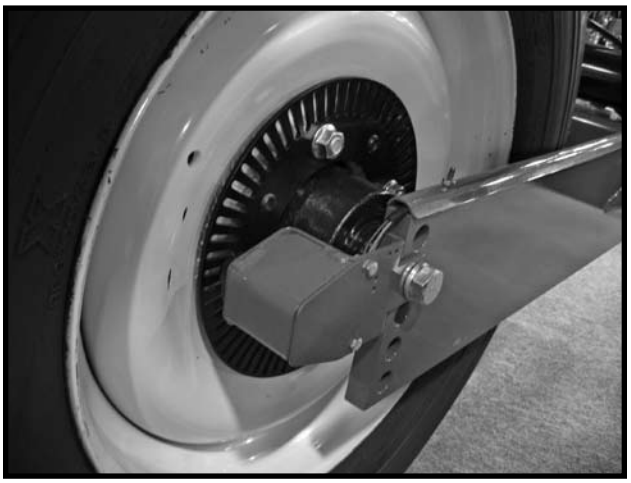


HYDRAULIC DRIVE

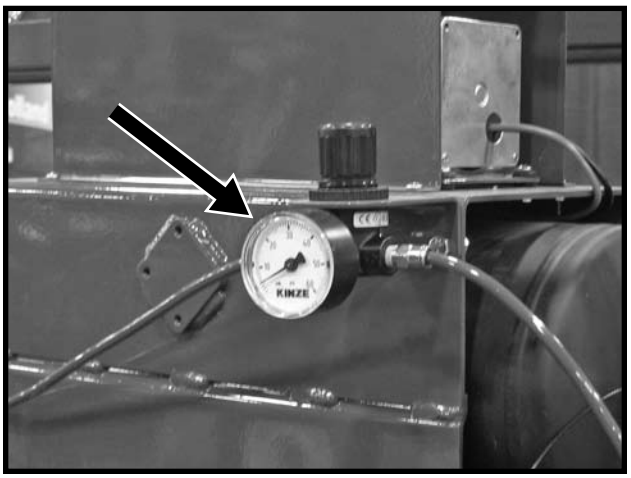
When stopping in the middle of the field the drive will run a split second after the tractor and planter has come to a complete stop. To avoid the bunching of seeds in this spot shut the master switch off before coming to a complete stop.

To avoid skips when starting from a complete stop in the middle of the field, lift the planter and back-up 4-6 feet, put the planter in the ground, and continue planting. Also, when accelerating from a complete stop, do so very slowly. This will reduce the number of skips in the field when starting from a complete stop.

ROW UNIT AIR CLUTCHES

Air clutch system pressure should be set at 50 psi.

D05010824



PLANTING SPEED

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

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

FIELD TEST

With any change of field and/or planting conditions, seed size or planter adjustment, we recommend a field test be made to ensure proper seed placement and operation of row units. See "Rate Charts" 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".

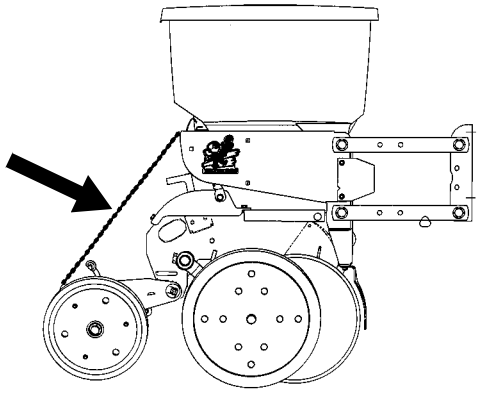
After the planter has been field tested, reinspect the machine.

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

CHECKING SEED POPULATION

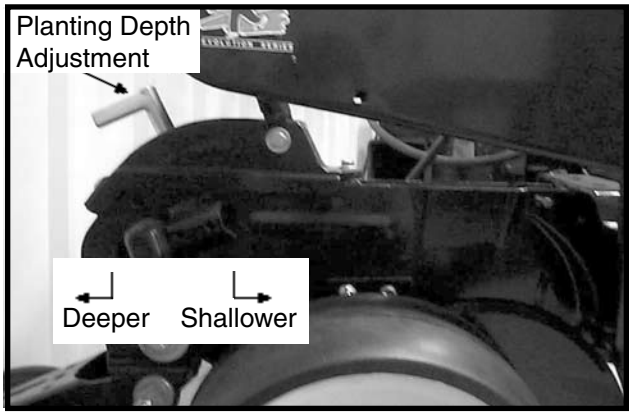
1. Tie up one or more sets of closing wheels by running a chain or rubber tarp strap between the hopper support panel and closing wheels. It may be necessary to decrease closing wheel arm spring tension.

(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.

D020705102



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

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

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

4. Count seeds in measured distance.

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

EXAMPLE: With 30" row spacing 17' 5" equals 1/1000 acre.

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

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

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

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

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

Determining Pounds Per Acre (Brush-Type Seed Meter)

To determine pounds per acre:

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

To determine bushels per acre:

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

The unit weight of:
- 1 Bushel Soybeans = 60 Pounds
- 1 Bushel Milo/Grain Sorghum = 56 Pounds
- 1 Bushel Cotton = 32 Pounds

If seeds per pound information is not available the following is an average:
- 2,600 seeds per pound for medium size soybeans
- 15,000 seeds per pound for medium size milo/grain sorghum
- 4,500 seeds per pound for medium size cotton

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

CHECKING GRANULAR CHEMICAL APPLICATION RATE

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

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

A field check is important to determine correct application rates.

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

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

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

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

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

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

Metering Gate

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

GENERAL PLANTING RATE INFORMATION

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

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

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

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

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

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

DRY INSECTICIDE APPLICATION RATES
APPROXIMATE POUNDS/ACRE AT 5 MPH

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

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

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

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

DRY HERBICIDE APPLICATION RATES

APPROXIMATE POUNDS/ACRE AT 5 MPH

CLAY GRANULES

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

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

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

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

LIQUID FERTILIZER PISTON PUMP APPLICATION RATES GALLONS PER ACRE

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

Pump Setting	1	2	3	4	5	6	7	8	9	10
24 Row 30"	3.7	7.4	11.1	14.8	18.5	22.1	25.8	29.5	33.2	36.9

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

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

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

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

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

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

SDS SEED DELIVERY SYSTEM OPERATION

INTRODUCTION

The seed delivery system consists of two bulk seed hoppers with removable lids that each service half of the planter. Approximate capacity of each hopper is 55 bushels for a total of 110 bushels. Seed hoppers are accessible via a rear-mounted ladder and access deck. Individual mini-hoppers are filled from the central-mounted seed hoppers with 3 ½" diameter augers in steel tubes which flex to match wing flex and fold requirements. The auger system is hydraulic driven with two variable speed motors controlled from a cab mounted console. The control console includes two electronic tachometers and switches for master shut-off and variable speed control by section. The system is driven on-demand to ensure constant supply to all rows. Limit switches disable the system when the planter is in folded position.

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

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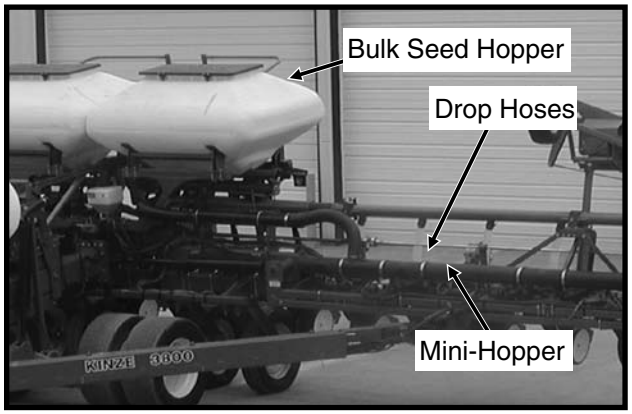

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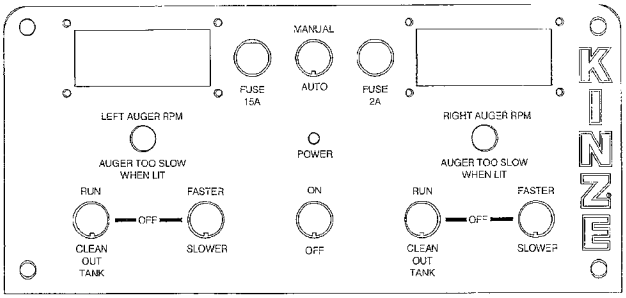
NOTE: After all row outlets are filled to capacity, seed will continue to be evenly distributed to all rows until the bulk seed hopper is empty. When the bulk seed hopper is empty or the auger system is shut off, all drop hoses will "plant out" equally and all rows should run out of seed at approximately the same time.

OPERATION

To operate the Seed Delivery System (SDS) the tractor must be equipped with a closed center hydraulic system.

Position the main power switch on the control console to **ON**. The left and right side of the planter use independent systems that operate the same, except for auger flighting direction. Toggle switches are used to control the auger systems on each half of the planter. To operate, place switches in **RUN** position. Place hydraulic lever in **ON** position. The auger systems will continue to run until they have charged the system. The operator can increase or decrease the speed by utilizing the **FASTER/SLOWER** switches positioned to the right of each **RUN** switch. Auger RPM is displayed for each side using an LCD tachometer. Recommended starting speed is 100 RPM. Adjust for the type and weight of seed and population being planted.

(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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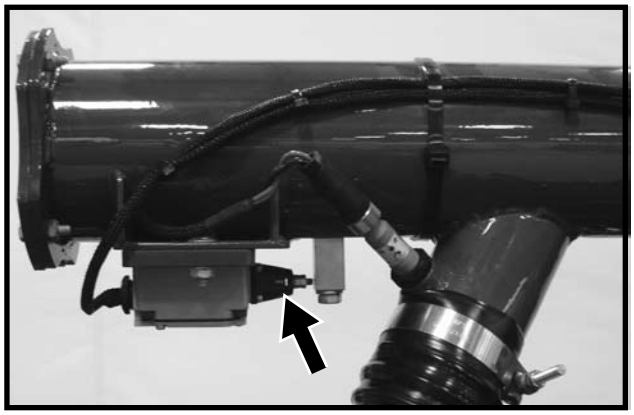

The limit (secondary overload) switches on the outer ends of the tubes are connected as normally CLOSED switches. When relaxed (no pressure applied to the roller), they allow current to flow through the switches. A ⅛" air gap should be maintained between the switch roller and the actuator arm when all 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 ¼". The system should shut off and then restart when the actuator arm is released. To adjust for ⅛" air gap, reposition the switch by loosing the bolts holding the retainer plate.

LIMIT SWITCHES - LOCATED NEAR CENTER OF PLANTER

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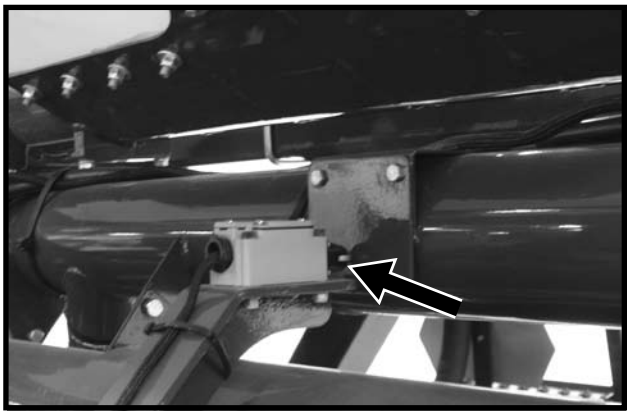

Two limit (transport safety) switches are located near the center of the machine on both sides. These switches are connected as normally OPEN switches. When relaxed (no pressure applied to the roller), they do not allow current to flow through the switch. These switches shut off the power when the planter is folded to avoid accidental operation of the system during transport. The system can be run in CLEANOUT mode while the planter is folded to allow easier access to the hopper unload nipples. These switches must be depressed when the planter is in field operation position to allow electrical current to pass through the switches to other components of the seed delivery system. To adjust the switch with planter in field operation position, loosen the nuts holding the switch to the mount. Move the switch toward the striking plate an additional ⅛" after a click is heard. Tighten mounting hardware and test system.

PROXIMITY SENSORS

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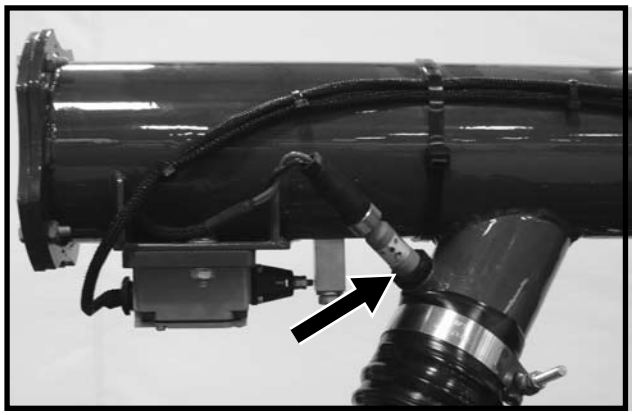

The proximity sensor screws into the outer drop tube at each end of the planter. The tip of the sensor should be approximately ½" up from the bottom of the deflector pad in the drop tube. When replacing a sensor draw a line on the sensor 1 ½" up from the sensing tip. Screw the sensor into the drop tube until the line is just below the surface. Rotate the sensor so the indicator light is visible. Tighten the plastic jam nut to prevent the sensor from rotating and vibrating. Be careful not to over tighten the jam nut.

To test the sensor, turn the key ON in the tractor but DO NOT start the tractor. Turn the power switch ON. The control console power light should be illuminated. The sensor light should only be illuminated if it senses seed. Remove the drop hose and pass your finger under the sensor. When your finger gets to within 12 mm (approximately 7⁄16") from the tip of the sensor the indicator light on the sensor should come on. When you remove your finger the light should go out. If the light stays illuminated, try cleaning the sensor with a dry cloth. DO NOT adjust the sensitivity on the sensor without contacting factory service personnel.

MINI-HOPPER LATCH

Due to the pull exerted by the drop hose on the mini-hopper as the row unit moves up and down, a pin is provided to secure the mini-hopper latch.

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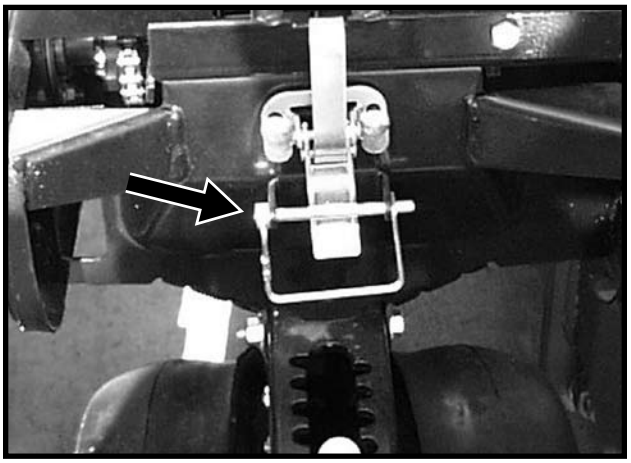

IMPORTANT: Disengage row unit clutch and unlatch mini-hopper on each row unit to release stress on drop hoses and hoppers during storage.

SDS SEED DELIVERY SYSTEM OPERATION

SEED LUBRICATION

The use of powdered graphite is recommended. In addition to the benefits graphite provides the seed meters, graphite will also aid seed flow through the bulk seed auger system. If seed treatments or inoculants that add moisture to the seed are used, talc is recommended along with the graphite. Be sure to test unfamiliar combinations before completely filling the system. Apply any seed treatments, graphite and/or talc alternately in layers with the seed while filling the bulk seed hopper. The auger system will assist in mixing the seed, seed treatments, graphite and/or talc. For this reason, pre-mixing may not be as critical as with planters equipped with individual seed hoppers.

82354-1e

See "Finger Pickup Seed Meter" and "Brush-Type Seed Meter" in the Row Unit Operation section for additional information.

SDS TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
System does not operate.	No power to main swtich.	Check to be sure the main power switch and RUN switch are both ON. Check all fuses.
	Limit switches incorrectly positioned.	Check to make sure limit switches are adjusted corrrectly.
	Faulty proximity sensor.	Check if proximity sensors are working correctly. Replace if necessary.
	Built-in 2 minute delay.	Wait 2-3 minutes after cycling proximity sensors to determine if system is in TIME DELAY mode.
	No hydraulic flow.	Check to determine tractor hydraulic valve is detented ON (in the correct position) and set for proper flow.
	Auger speed set too low.	Increase auger speed. If set too slow system will stall.

ROW UNIT OPERATION

PLANTING DEPTH

Planting depth is maintained by the row unit gauge wheels. To increase or decrease the planting depth, first raise the planter to remove weight from the wheels. Then push down on the depth adjustment handle and reposition it forward to decrease depth or rearward to increase planting depth. Adjust all units to the same setting initially. Then lower the planter and check operation and planting depth of all row units. It may be necessary to readjust some rows to obtain uniform operation. Available depth adjustment range is approximately ½" to 3 ½".

WARNING: Never work under the planter while in raised position without using safety lockup devices.

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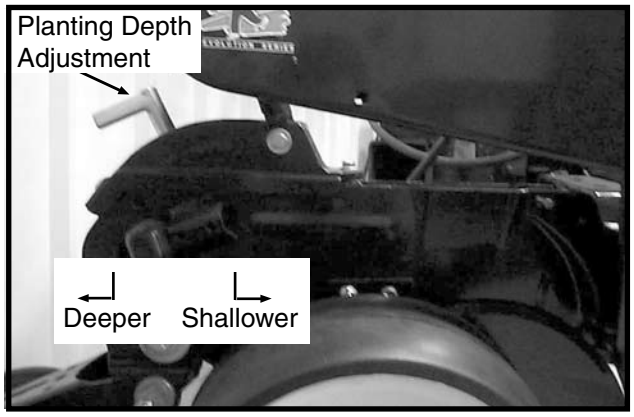

"V" CLOSING WHEEL ADJUSTMENT (Rubber And Cast Iron)

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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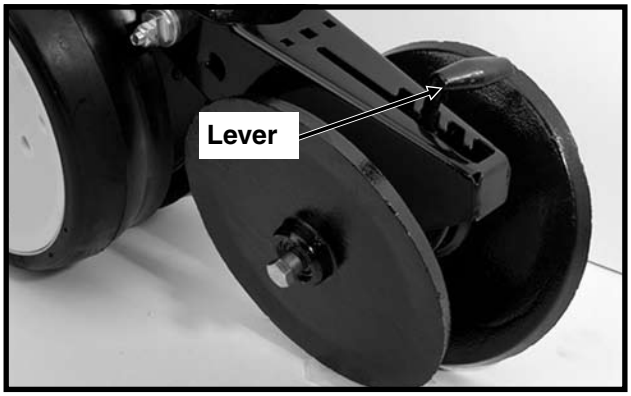
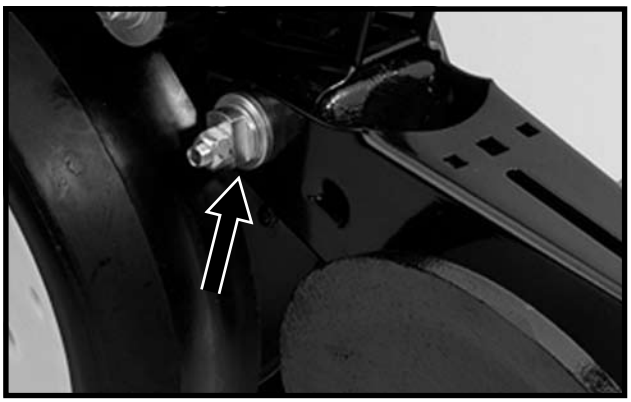


Light soil usually requires less down force at average depth (approximately 2") while heavy soil requires increased down force.

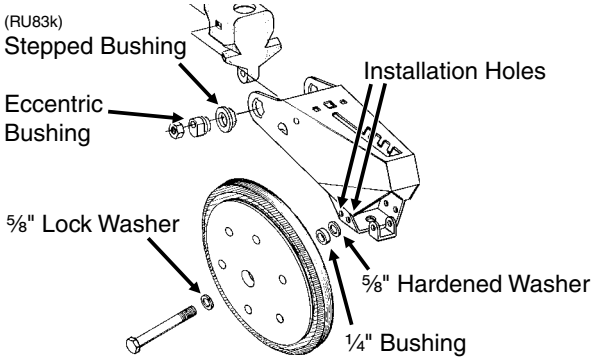
Eccentric bushings in the wheel arm stop allow for lateral adjustment of the "V" closing wheel assembly. Using a ¾" wrench, loosen the hardware which attaches the closing wheel arm to the wheel arm stop. Using another ¾" wrench turn the eccentric bushings until the **closing wheels are aligned with the seed trench**. Tighten hardware.

LF2122299-15



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.

(RU83k)



CLOSING WHEEL SHIELD

(Rubber And Cast Iron "V" Closing Wheels)

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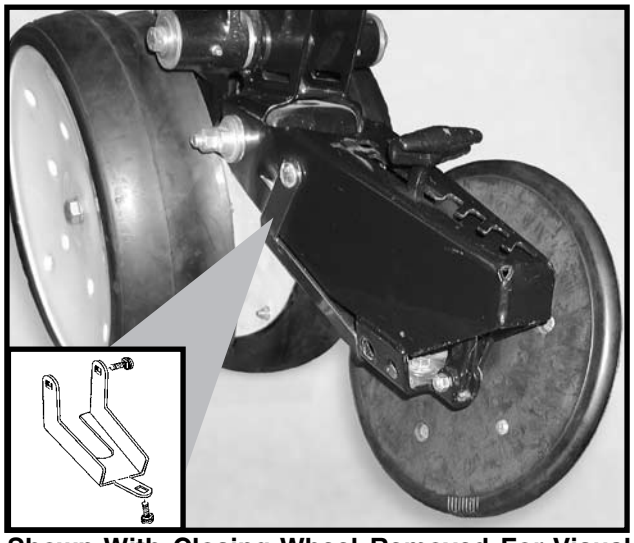


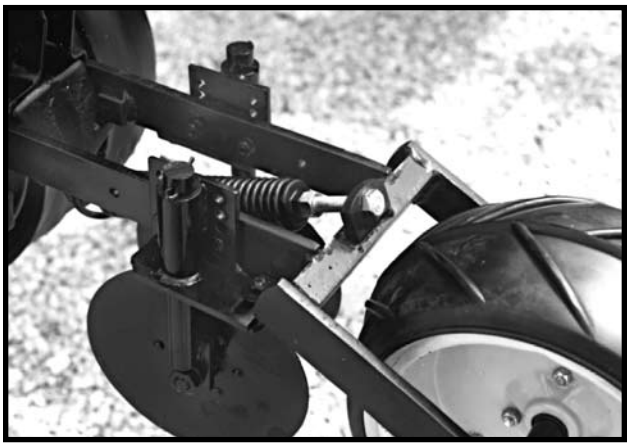
Shown With Closing Wheel Removed For Visual Clarity

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

COVERING DISCS/SINGLE PRESS WHEEL ADJUSTMENT

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

72359-31



After adjusting planting depth, check the operation of the covering discs/single press wheels.

Initial press wheel down force setting should be with 2 ½" between mounting arm tab and locking nut. To adjust down force spring, loosen ½" 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.

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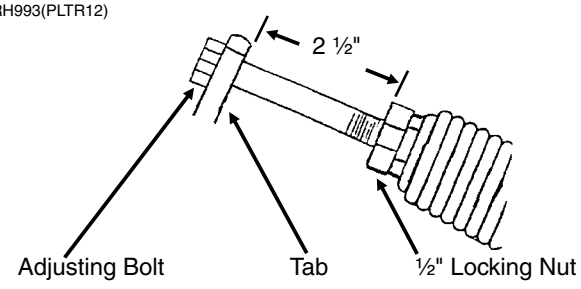
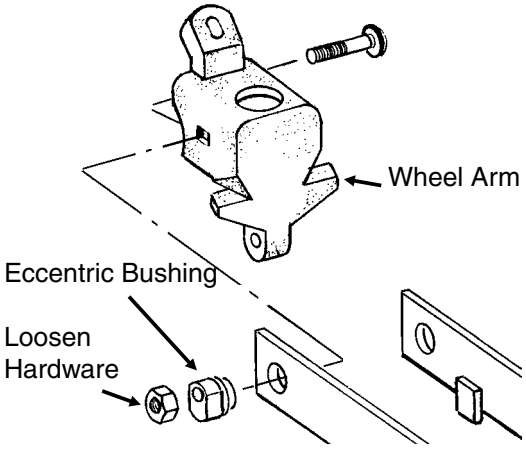


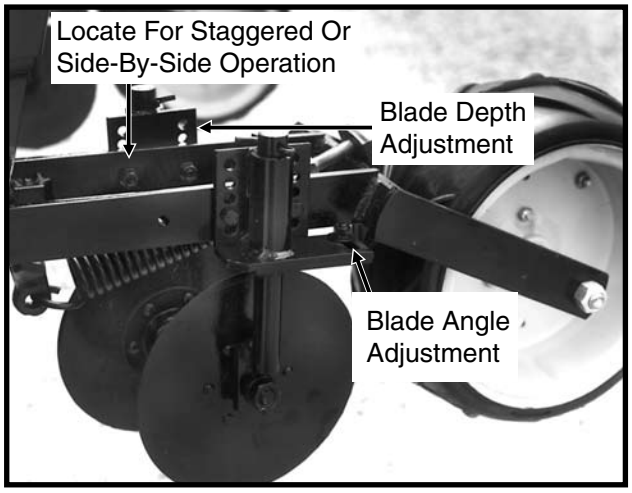
Eccentric bushings in the wheel arm stop allow for lateral adjustment of the covering discs/single press wheel assembly. Using a ¾" wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another ¾" wrench, turn the eccentric bushings until the press wheel is aligned with 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



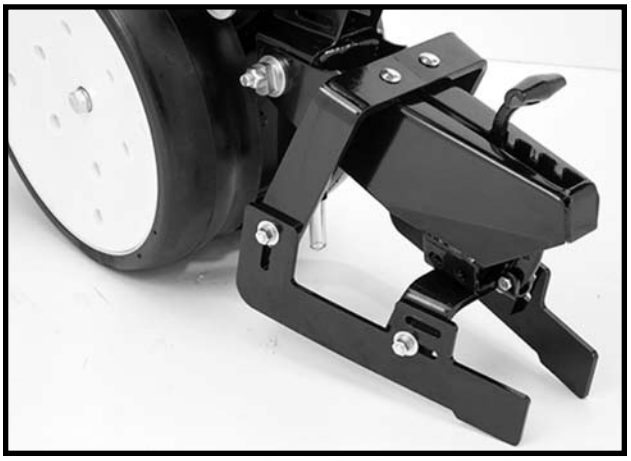
Five sets of holes in each disc bracket allow for ½" incremental blade depth adjustment.

Slotted holes in the disc mount and bracket allow for 0° - 15° blade angle adjustment.

Adjust covering discs on all row units to similar settings.

DRAG CLOSING ATTACHMENT

LF212299-18



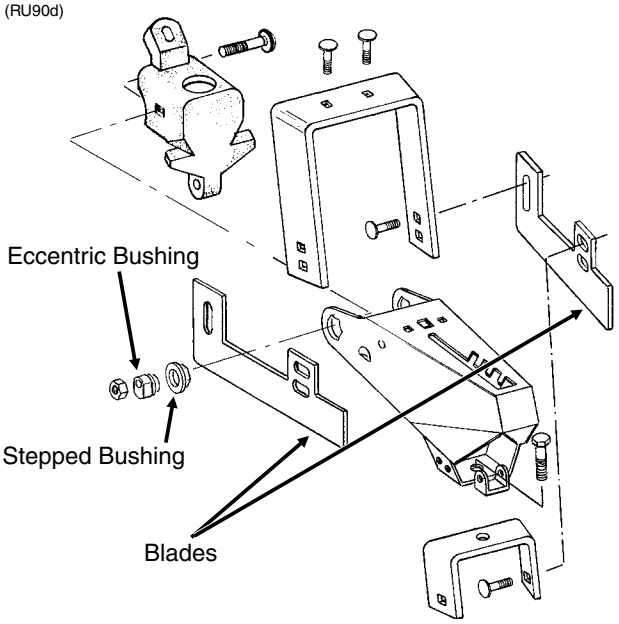
The drag closing attachment is designed to pull loose soil over the seed trench.

Front and rear adjustment is made using the slotted holes in the blades. Adjust all rows the same.

NOTE: Use of a seed firming wheel or other seed firming device is recommended with the drag closing attachment.

WARNING: Raise planter and install safety lockup devices before making drag closing attachment adjustments.

(RU90d)



Eccentric bushings allow for lateral adjustment of the drag closing attachment. Using a ¾" wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another ¾" wrench, turn the eccentric bushings until the drag closing attachment is aligned with the seed trench.

FINGER PICKUP SEED METER

Refer to the planting rate chart for recommended seed drive transmission sprocket combinations.

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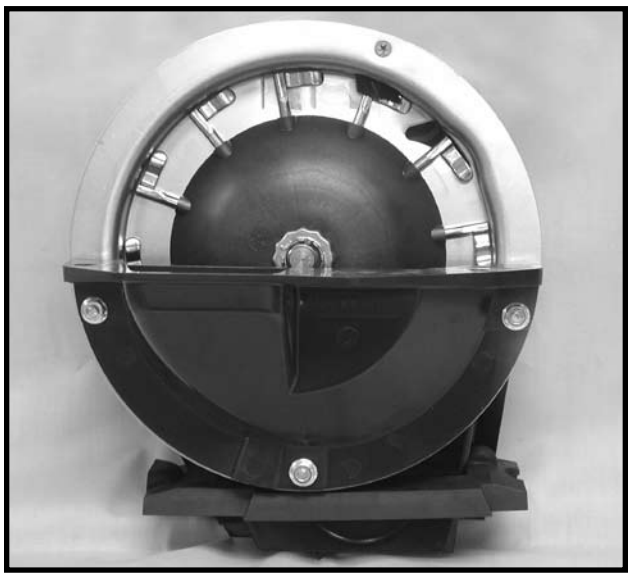
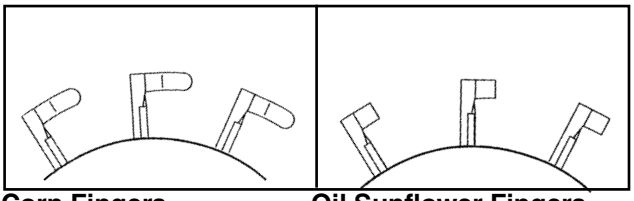


Shown With Corn Fingers Installed

The following seed fingers are available for use with the finger pickup seed meter:

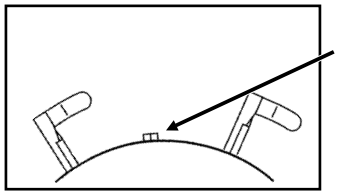
(PLTR91/PLTR92/PLTR91a)



Corn Fingers **Oil Sunflower Fingers**

No. 3 and/or No. 4 size oil sunflower seeds are recommended for use in the finger pickup seed meter equipped with oil sunflower fingers.

No. 1 and/or No. 2 size confectionery sunflower seeds are recommended for use in the finger pickup seed meter equipped with corn fingers.



Half Rate Blank Finger

Blank fingers are used to replace alternate fingers in the finger wheel to reduce the planting rate by half while allowing the finger wheel to maintain a minimum of 40 RPM when planting low rates.

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

SDS SEED DELIVERY SYSTEM

NOTE: To ensure efficient operation of the finger pickup seed meter and extend the life of its components, powdered graphite should be mixed with the seed twice daily. Use 2 cups per hopper fill. Even distribution of the graphite with the seed is critical with newer seed coatings to provide lubrication for the finger pickup mechanism. Graphite application frequency may need to be increased if using additional seed additives.

NOTE: See "Seed Lubrication" in SDS Seed Delivery System Operation section for additional information.

82354-1e

NOTE: Follow manufacturer's recommendations when applying and mixing other seed treatments.

CONVENTIONAL SEED HOPPERS

NOTE: Powdered graphite is recommended for finger pickup seed meter lubrication to ensure efficient operation of the mechanism and to extend the life of its components. Mix one teaspoon of powdered graphite with the seed twice daily. Apply graphite on top of seed around the outer perimeter of the hopper as shown below. Graphite application frequency and volume may need to be increased if using additional seed treatments.

NOTE: Do NOT apply graphite only in the center of the hopper. It will filter too quickly through the seed and not distribute as evenly as desired.

D05230121b

NOTE: Follow manufacturer's recommendations when applying and mixing other seed treatments. If the additive is to be applied on top of the seed, apply around the outer perimeter of the hopper as with graphite.

See "General Planting Rate Information", "Finger Pickup Seed Meter Troubleshooting" and "Finger Pickup Seed Meter Inspection/Adjustment" for additional information.

CLEANOUT

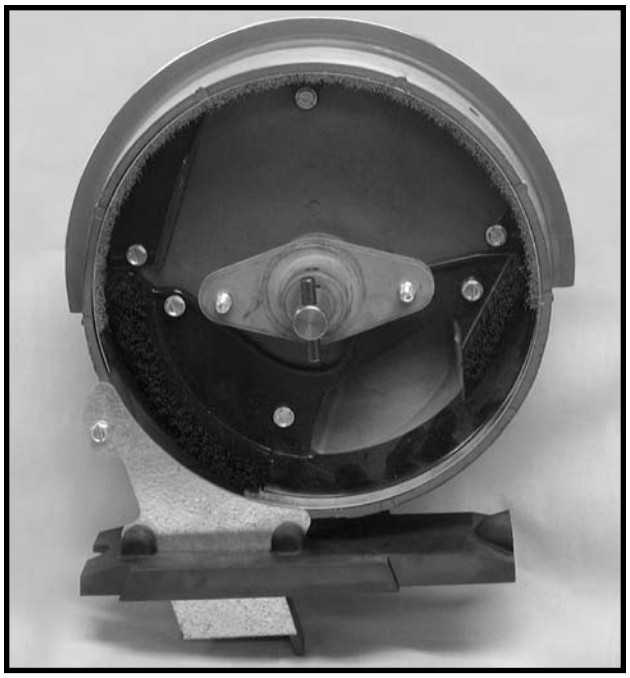
To maintain genetic purity, thorough seed meter cleanout is important.

To clean the seed meter, disengage the seed drive and remove the seed hopper and meter. Dump the seed from the right rear corner of the hopper into a container. Turn the seed drive several times. Invert hopper to dump seed again. Shake the hopper and listen for any remaining seed. Turn seed drive and shake and dump hopper until all seed is removed.

See "General Planting Rate Information", "Finger Pickup Seed Meter Troubleshooting" and "Finger Pickup Seed Meter Inspection/Adjustment" for additional information.

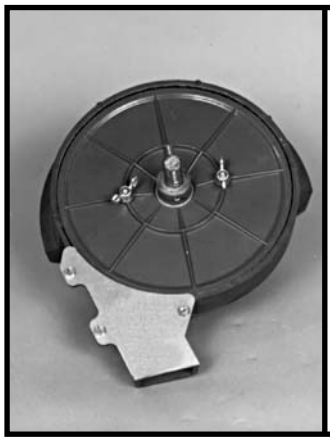
BRUSH-TYPE SEED METER

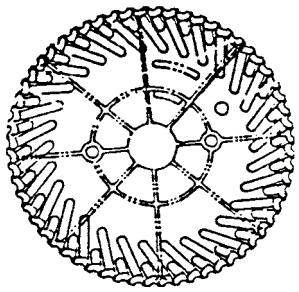
D12220403



Shown Without Seed Disc Installed

60607-40a(PLTR13)

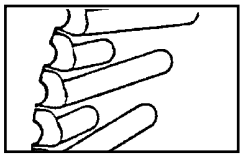




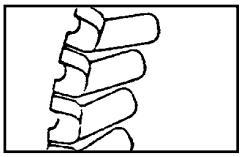
60 Cell Soybean Disc Shown

The following seed discs are available for use with the brush-type seed meter:

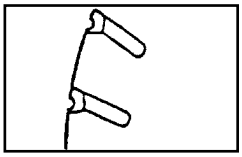
Soybean: *60 cells to meter seed sizes from 2200 to 4000 seeds per pound (Black color-coded).* (PLTR14)



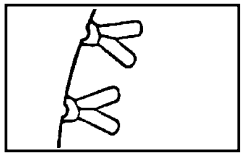
Specialty soybean: *48 cells to meter seed sizes from 1400 to 2200 seeds per pound (Dark blue color-coded).* (PLTR15)



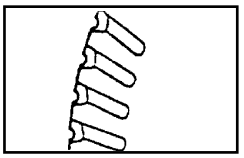
Small milo/grain sorghum: *30 cells to meter seed sizes from 14,000 to 20,000 seeds per pound (Red color-coded).* (PLTR16)



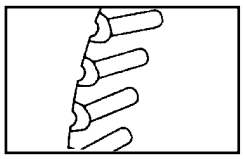
Large milo/grain sorghum: *30 cells to meter seed sizes from 10,000 to 16,000 seeds per pound (Light blue color-coded).* (PLTR17)



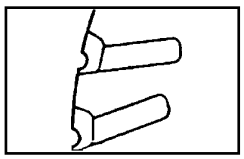
High-rate small milo/grain sorghum: *60 cells to meter seed sizes from 12,000 to 18,000 seeds per pound (Red color-coded).* (PLTR18)



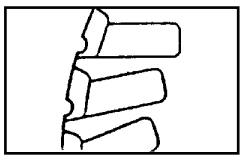
High-rate large milo/grain sorghum: *60 cells to meter seed sizes from 10,000 to 14,000 seeds per pound (Yellow color-coded).* (PLTR19)



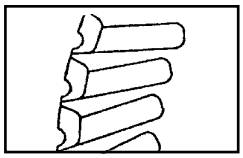
Cotton, acid-delinted: *30 cells to meter seed sizes from 4200 to 5200 seeds per pound (White color-coded).* (PLTR20)



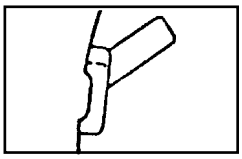
Large cotton, acid-delinted: *36 cells to meter seed sizes from 3800 to 4400 seeds per pound (Tan color-coded).* (PLTR21)



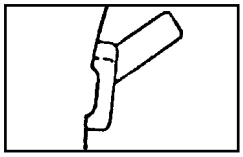
High-rate cotton, acid-delinted: *48 cells to meter seed sizes from 4200 to 5200 seeds per pound (Light green color-coded).* (PLTR22)



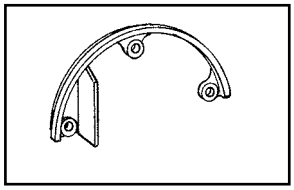
Hill-drop cotton, acid-delinted: *12 cells, 3 to 6 seeds/cell, to meter seed sizes from 4000 to 5200 seeds per pound (Brown color-coded).* (PLTR23)



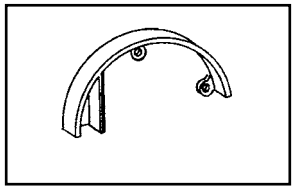
Small hill-drop cotton, acid-delinted: *12 cells, 3 to 6 seeds/cell, to meter seed sizes from 5000 to 6200 seeds per pound (Dark green color-coded).* (PLTR23)



(RU14c)



Use GD11122 upper brush retainer when using soybean and cotton discs.



Use GD8237 upper brush retainer when using milo/ grain sorghum discs.

When installing the seed disc onto the meter hub, turn the disc counterclockwise while tightening the two wing nuts that retain the disc. The seed disc should have only slight resistance when rotated counterclockwise after wing nuts are tight.

The brush-type seed meter attaches to the mini-hopper in the same manner as the finger pickup seed meter. Secure to bottom of mini-hopper/seed hopper with two 5⁄16" thumbscrews. Tighten thumbscrews slightly with pliers. DO NOT OVER TIGHTEN.

Erratic seed spacing may result from misalignment between the drive coupler and seed meter input shaft. Misalignment may cause momentary stoppage of seed disc. Check alignment after initial installation. If adjustment is required, refer to "Meter Drive Adjustment" for correct procedure.

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

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

SDS SEED DELIVERY SYSTEM

IMPORTANT: Use powdered graphite or talc with each fill of seed. Additional graphite or talc may be required to retard buildup of seed treatments on meter components. Frequency of monitor seed tube cleaning may be affected due to use of additional graphite or talc.

82354-1e

SDS SEED DELIVERY SYSTEM (Continued)

Powdered graphite should be added with the seed each time the bulk seed hopper is filled. Use 2 cups per hopper fill. Graphite should be added in layers as the bulk seed hoppers are filled. The use of powdered graphite will prolong the life of the seed meter components, reduce buildup of seed treatment on components in the meter and improve seed spacing.

Talc seed lubricant may be used in lieu of or in addition to graphite to reduce seed treatment buildup on bulk fill auger system components, seed discs and other meter components and will improve meter performance. Coat seed discs and brushes with talc before installing meters. Fill each bulk hopper ½ full of seed, add 4 ½ cups of talc and mix thoroughly. Finish filling bulk seed hopper, add another 4 ½ cups of talc. Adjust rate of talc use as needed so all seeds are coated, while avoiding a buildup of talc in the bottom of the hopper. Humid conditions and/or small sized seeds with extra seed treatment may require additional talc to prevent seed treatment buildup on auger bristles, seed discs and/or meter brushes.

NOTE: Some liquid seed treatments or inoculants may create buildup on seed discs or brushes. Check frequently for proper population and/or seed delivery when using any liquid seed treatment.

All seed treatment should be thoroughly mixed with the seed per the manufacturers' recommendations. Seed treatment dumped on top of the seed after the hopper is filled, and not mixed properly will cause bridging of the seed in the meter, reducing population or stopping the meter from planting. Additional graphite or talc may be required to retard buildup of seed treatments on meter components.

NOTE: See "Seed Lubrication" in SDS Seed Delivery System Operation section for additional information.

CONVENTIONAL SEED HOPPERS

One tablespoon of **powdered graphite** should be mixed with the seed each time the hoppers are filled. Regular graphite use will prolong the life of the brush-type seed meter components, improve seed spacing, and may reduce buildup of seed treatments. Apply graphite around the outer perimeter of the hopper as shown below.

D05300104b

NOTE: DO NOT apply graphite only in the center of the hopper. It will filter too quickly through the seed and not distribute as evenly as desired.

NOTE: Additional graphite or talc may be required to retard buildup of seed treatments on meter components. Frequency of monitor seed tube cleaning may be affected due to use of additional graphite or talc.

Talc seed lubricant may be used in lieu of or in addition to graphite to reduce seed treatment buildup on seed disc and meter components. Coat seed disc and brushes with talc before installing meter. Fill hopper ½ full of seed, add ¼ cup of talc and **mix thoroughly**. Finish filling hopper, add another ¼ cup of talc and **mix thoroughly**. Adjust rate of talc use as needed so all seeds are coated, while avoiding a buildup of talc in the bottom of the hopper. Humid conditions and/or small sized seeds with extra seed treatment may require as much as one cup of talc per hopper to prevent seed treatment buildup on seed disc and/or brushes.

CONVENTIONAL SEED HOPPERS (Continued)

NOTE: Some liquid seed treatments or inoculants may create buildup on the seed disc or brushes. Check frequently for proper population and/or seed delivery when using any liquid seed treatment. All seed treatment should be thoroughly mixed with the seed per the manufacturers' recommendations. Seed treatment dumped on top of the seed after the hopper is filled, and not mixed properly may cause bridging of the seed in the meter, reducing population or stopping the meter from planting.

SEED METER CLEANOUT (Conventional Seed Hoppers)

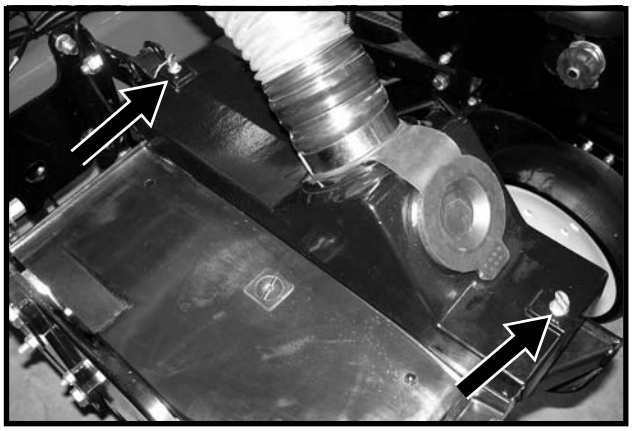
To maintain genetic purity, thorough seed meter cleanout is important.

To clean the seed meter, disengage the seed drive and remove the seed hopper and meter. Dump the seed from the right rear corner of the hoper into a container. Disassemble seed meter and thoroughly clean and inspect the meter to ensure all seed is removed.

SEED METER CLEANOUT (SDS Seed Delivery System)

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

D01030701



Disengage the seed drive and remove the seed hopper and meter.

Dump the seed from the right rear corner of the hopper into a container.

D01030705

Disassemble seed meter and thoroughly clean and inspect the meter to ensure all seed is removed.

SEED HOPPER (Conventional Seed Hoppers)

LF212199-7a

Seed hopper capacity is 1.9 bushels.

When filling the seed hopper use clean seed and make certain there are no foreign objects in the hopper. **Replace hopper lids after hoppers are filled to prevent the accumulation of dust or dirt in the seed meter which will cause premature wear.** See "Finger Pickup Seed Meter Lubrication" and/or "Brush-Type Seed Meter Lubrication".

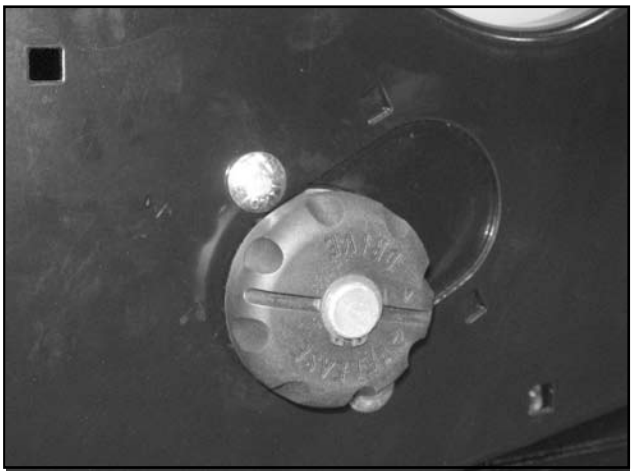
Periodically empty the hoppers completely to remove any foreign objects and to ensure proper seed meter operation. To empty hopper, disengage meter drive and hopper latch and lift hopper off the hopper support. See "Seed Meter Drive Release".

ROW UNIT OPERATION

SEED METER DRIVE RELEASE

The seed meter drive is equipped with a clutch release mechanism that allows the drive to be disengaged from the seed metering unit for removal of the seed hopper. Disconnecting the drive allows the operator to check granular chemical application rates without dropping seed. It also allows one or more of the rows to be disconnected when finishing fields.

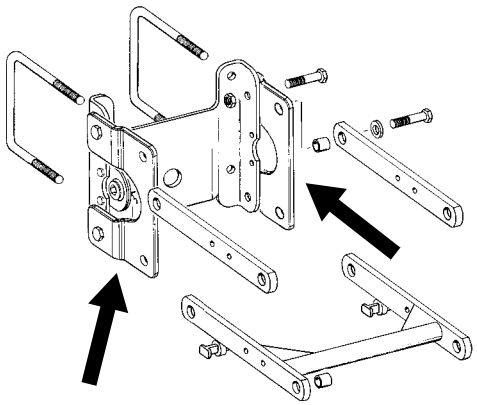
D011006100



To disengage the drive, turn the knob ¼ turn counterclockwise. To engage the drive, turn the knob ¼ turn clockwise.

ROW UNIT EXTENSION BRACKETS

(RU145)



Model 3800 and 3800 SDS planters are equipped with row unit extension brackets on the the six center section rows to provide clearance at the axle rock shaft.

Row unit extension brackets are required on all row units if 3800 planters are equipped with coulter mounted residue wheels and notched single disc fertilizer openers.

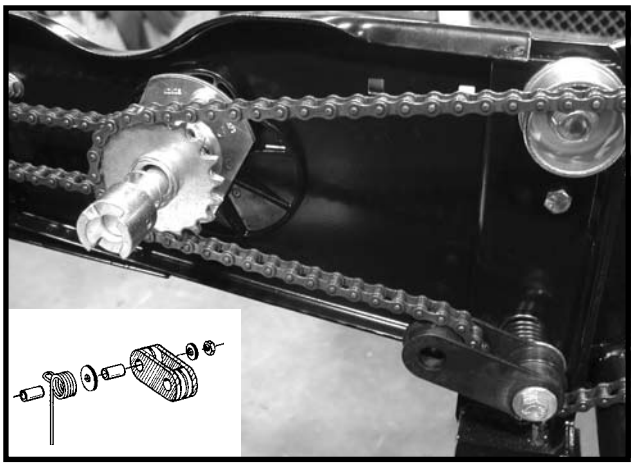
ROW UNIT CHAIN ROUTING

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.

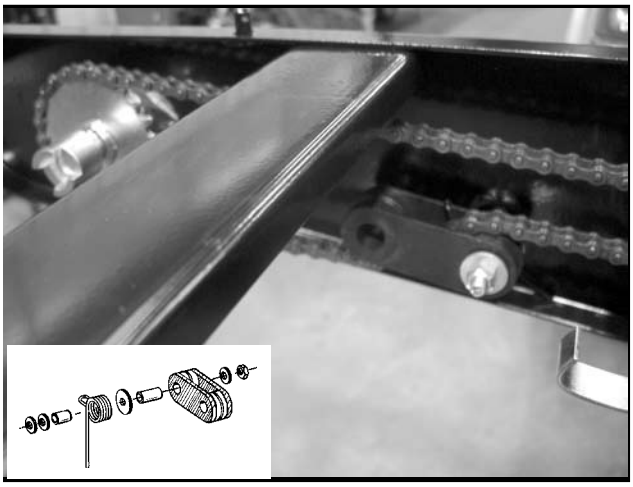
NOTE: When idler shows signs of wear, it can be reversed for prolonged use.

D051705103



Pull Row Unit Meter Drive

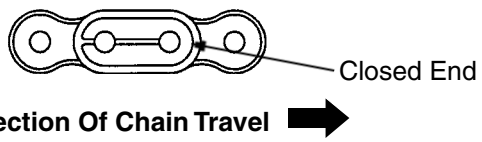
D051705102



Row Unit Granular Chemical Drive

NOTE: Make sure connector link is installed with closed end oriented properly as shown below.

(PLTR24)

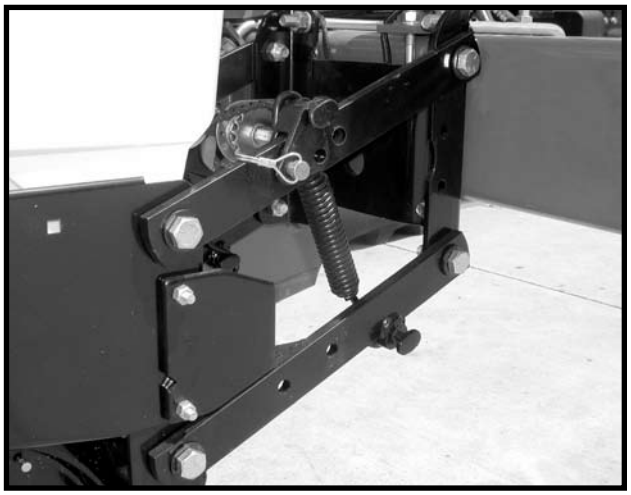


QUICK ADJUSTABLE DOWN FORCE SPRINGS

Quick adjustable down force springs are designed to increase penetration in hard soil and keep the row unit from bouncing in rough field conditions.

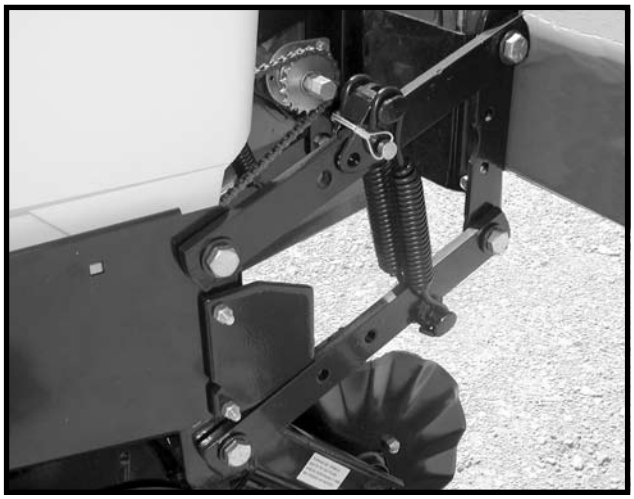
Two springs per row, one on the L.H. parallel arms and one on the R.H. parallel arms, are used unless equipped with row unit mounted no till coulters. Four springs per row are used with row unit mounted no till coulters.

D06300305



Two Springs Per Row (Dual)

D07010301

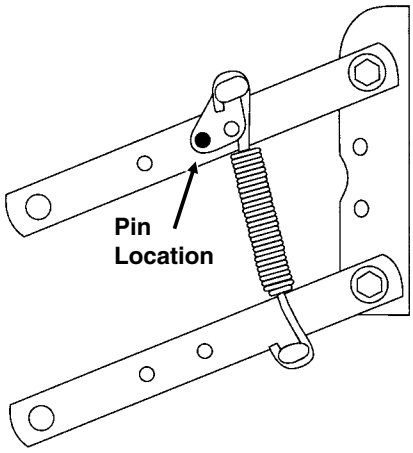


Four Springs Per Row (Quad)
(Used Only In Conjunction With Row Unit Mounted No Till Coulters)

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

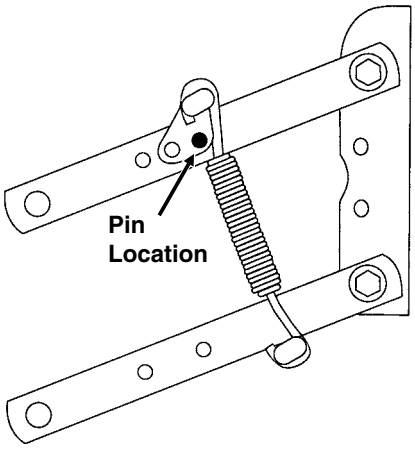
There are four positions for spring tension adjustment. Position 1 allows for minimum down pressure and position 4 for maximum down pressure.

L0096(PLTR27e)



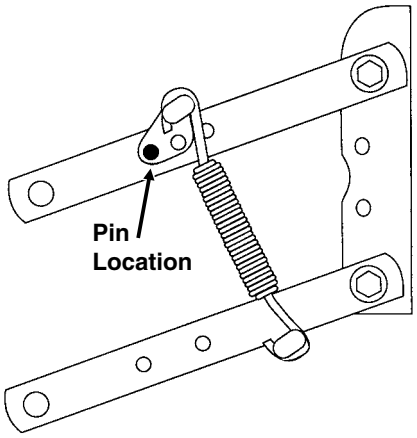
Position 1 (Minimum)

(PLTR28e)



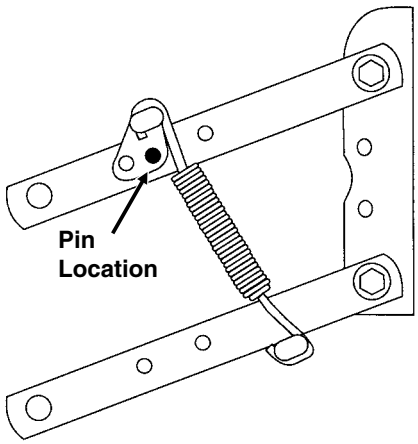
Position 2

(PLTR29e)



Position 3

(PLTR30e)



Position 4 (Maximum)

To adjust spring tension, raise planter and remove spring mount pin at top of spring. Slide mount to desired position and install pin.

NOTE: It is necessary for the operator to adjust springs according to field conditions. If springs are adjusted for too much down pressure for field conditions, it is possible for the row units to lift the planter to the extent that the drive wheels do not make sufficient contact. Too much down pressure in soft field conditions can cause the row unit to run too deep.

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

IMPORTANT: Springs must always be installed with open side of spring hooks toward the seed hoppers to prevent binding on spring mount adjustment pins.

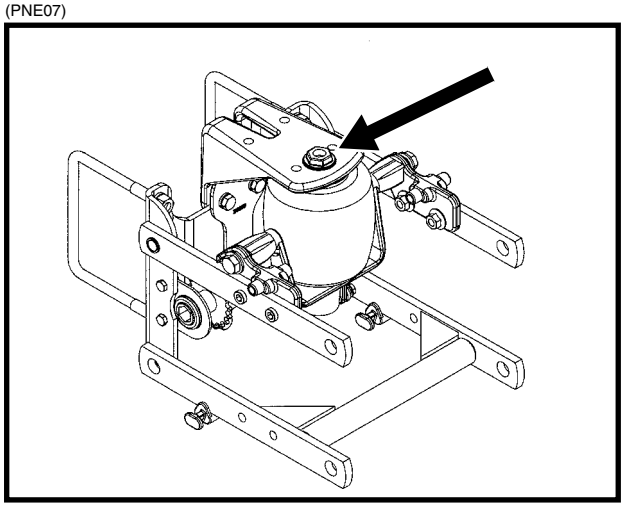
PNEUMATIC DOWN PRESSURE PACKAGE OPTION

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 (fore and aft air spring mounting castings for push row units), 150 psi rated air springs, ⅜" O.D. nylon hoses, dual solenoid air valve and stainless steel, 160 psi, 2" liquid-filled gauge and planter wiring harness.

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

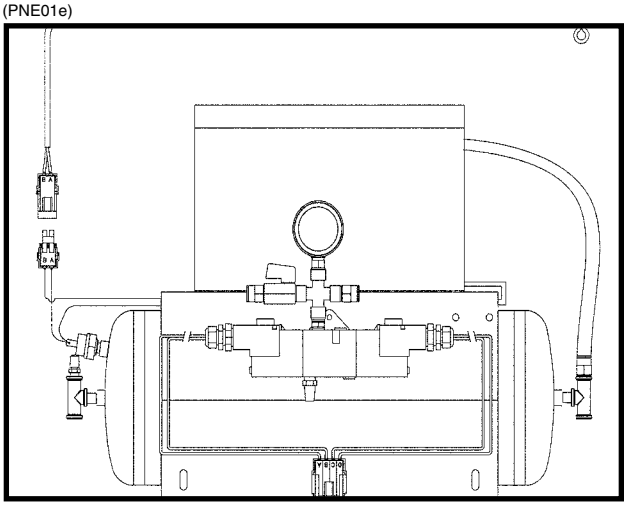
(PNE07)



Pull Row Unit Air Spring

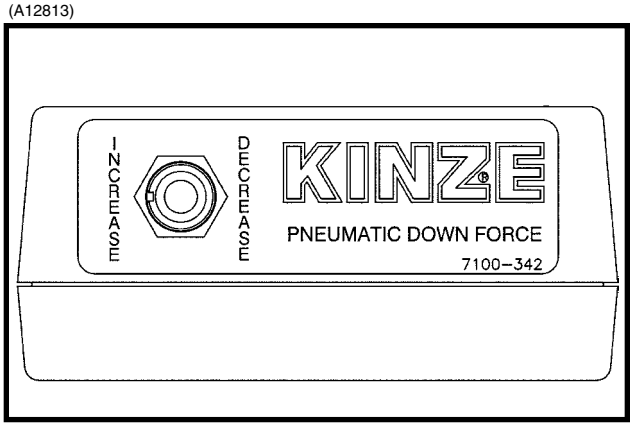
NOTE: Shoulder nut(s) should be torqued to 350 in. lbs. Refer to page 10-1 for additional torque values.

(PNE01e)



Air Compressor With Dual Solenoid Assembly

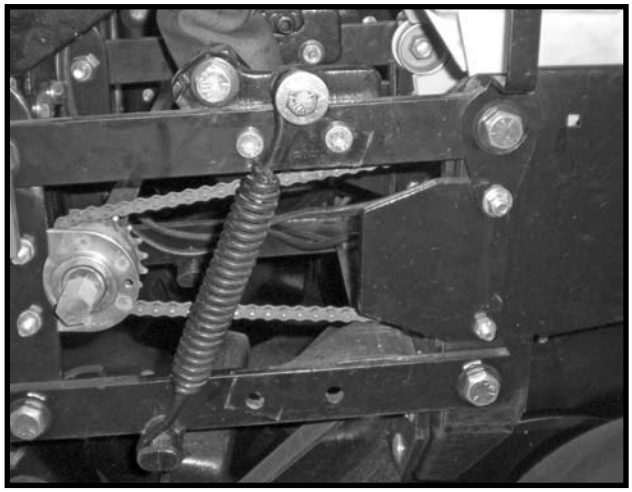
(A12813)



Control Console Assembly

NOTE: If additional down pressure is needed with the Pneumatic Down Pressure Package, assist springs are available through your KINZE® dealer. One spring is installed on the outer side of the parallel arms on each side of the row unit as shown below.

D11280753a

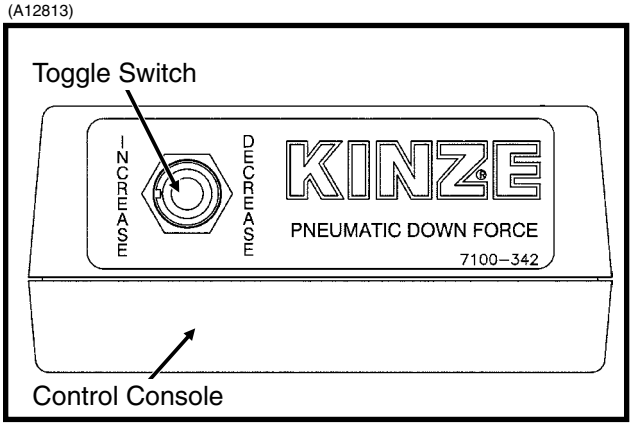


Pull Row Unit Assist Springs

FIELD OPERATION

NOTE: For the most accurate adjustment, adjust down pressure with planter lowered and row openers in the ground. Pressure can be adjusted from tractor using the control console, or at planter using the manual control valves.

(A12813)



To adjust down pressure from cab:

To INCREASE pressure, push toggle switch left.

To DECREASE pressure, push toggle switch right.

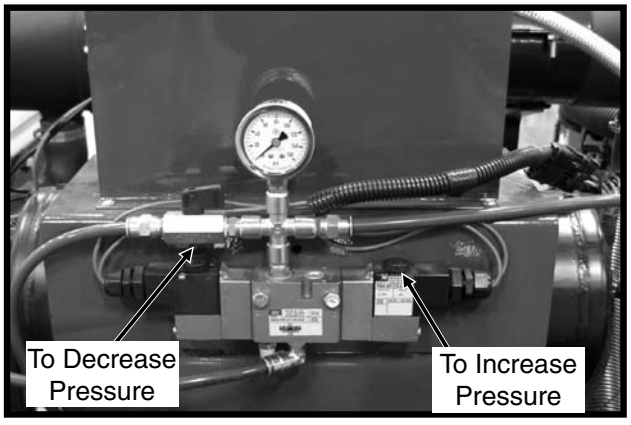
To adjust down pressure from planter:

To INCREASE pressure, press and hold button on solenoid as shown below.

To DECREASE pressure, press and hold button on solenoid as shown below.

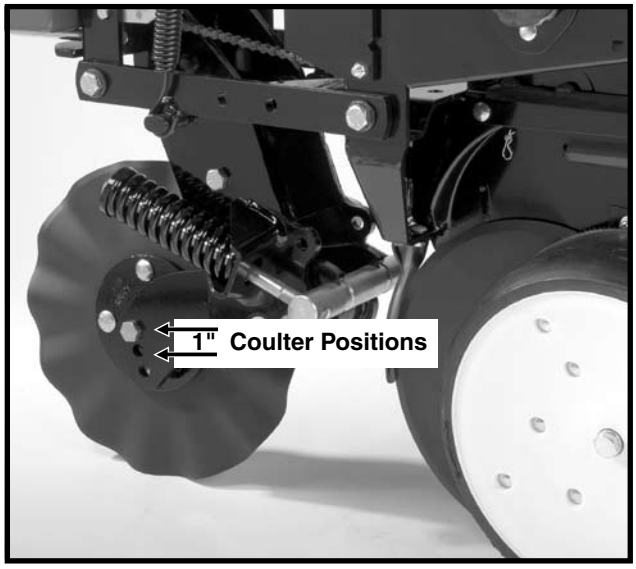
The readout value on the air pressure gauge is NOT the down pressure force value. To calculate the force value, multiply the air pressure (psi) by four (4).

D112907100



FRAME MOUNTED COULTER

LF083002101

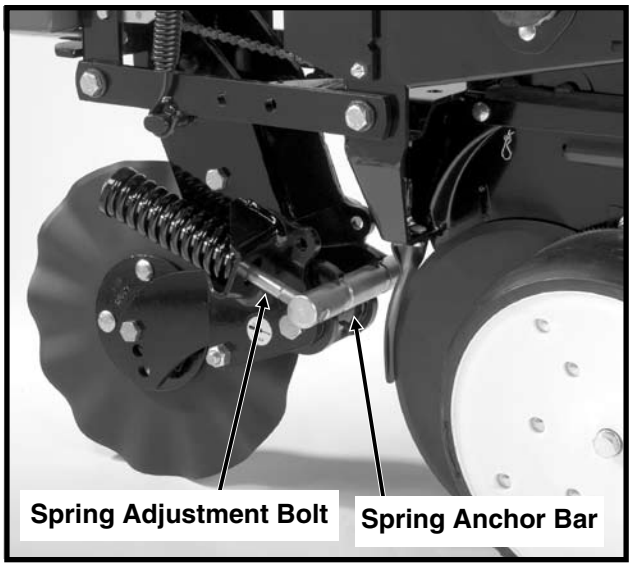


Frame mounted coulters with 1" bubbled, 1" fluted (8 flutes) or ¾" fluted (13 flutes) blades may be used on pull row units only. (Not compatible with push row units.)

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

The initial location of the coulter blade is in the top hole. The blade can be relocated to one of the lower two holes (1" increments) as wear occurs or if deeper operation of the blade is desired.

LF083002101



DOWN PRESSURE ADJUSTMENT

Down force adjustment is made by tightening or loosening the two spring adjustment bolts. With the planter in raised position, turn the bolts clockwise to increase down pressure or counterclockwise to decrease down force. Set both springs the same.

Down force on the blade is shown below in lbs.

End Of Spring Adjustment Bolt Flush With Spring Anchor Bar (Shown Above)	End Of Spring Adjustment Bolt Extended ½" Through Spring Anchor Bar	All Threads Used (Maximum)
275 lbs.	400 lbs.	500 lbs.

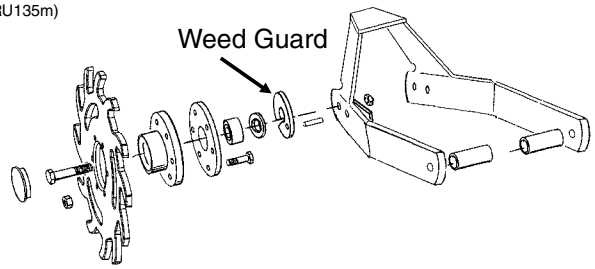
NOTE: Avoid setting down pressure higher than is required for consistent soil penetration. Excessive pressure will increase the chances of damage to coulter components when the coulter strikes an obstacle.

RESIDUE WHEELS
(For Use With Frame Mounted Coulter)

The residue wheels for use with the frame mounted coulter may be used on pull row units only.

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 ¼" 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.

(RU135m)



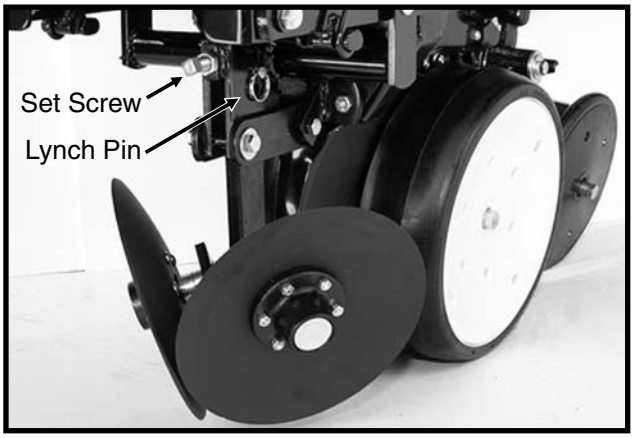
NOTE: Opening in weed guard must point down.

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.

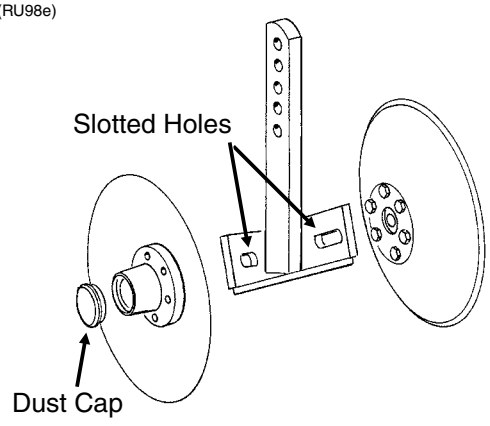
Disc furrowers are used to clear crop residue, dirt clods and dry soil from in front of the row units for a clean and smooth seed bed. Notched blades are used for heavier residue conditions. The notched blades cut crop residue and move it aside to prevent plugging or pushing.

LF212299-22



Vertical adjustment in ⅓" 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 ⅝" x 2 ¼" set screw to clamp the support arm in the required position.

(RU98e)

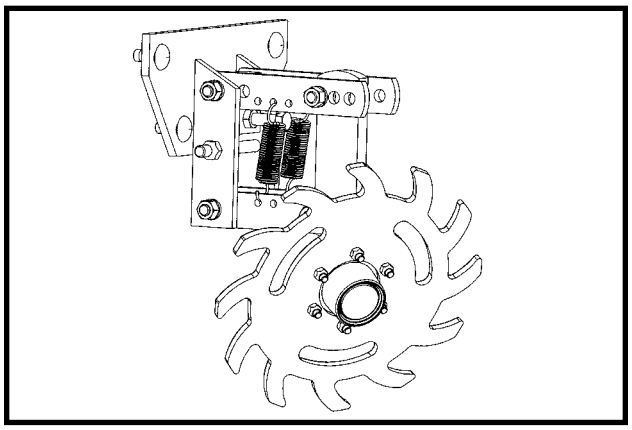


Slotted holes in the support arm where the blades are mounted allow fore and aft adjustment of the disc blades. Blades can be adjusted so the front edges meet or one blade can be moved to the rear and the other to the front of the slot so the cutting edge of one blade overlaps the edge of the other blade.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

ROW UNIT MOUNTED RESIDUE WHEEL

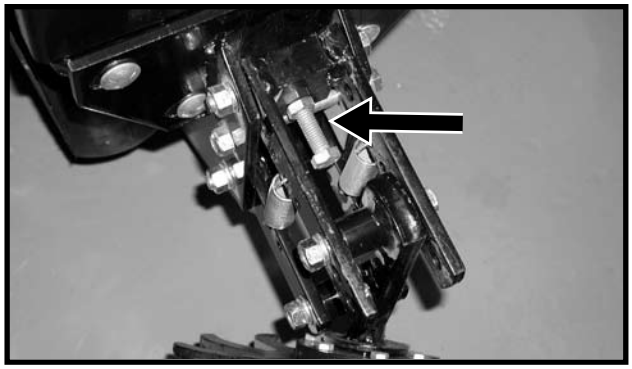
The row unit mounted residue wheel may be used on pull row units and push row units.

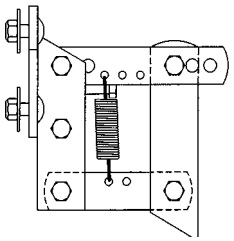
(A12685)



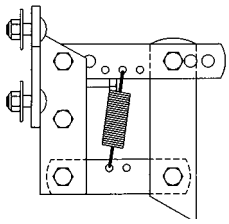
ROW UNIT OPERATION

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

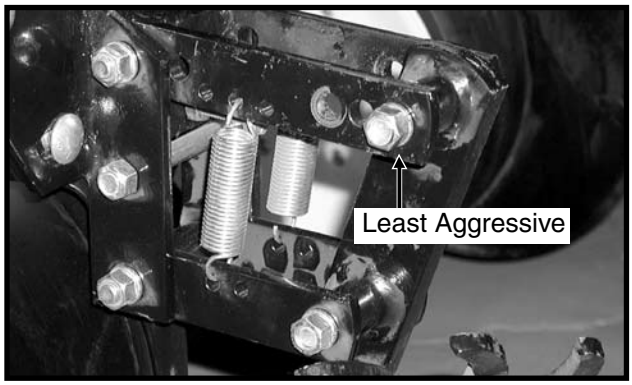


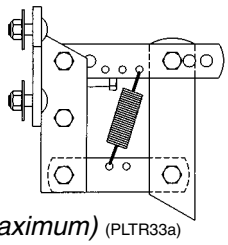


Position 1 *(Minimum)* (PLTR31a)



Position 2 (PLTR32a)

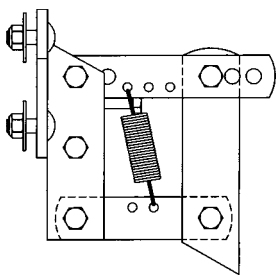


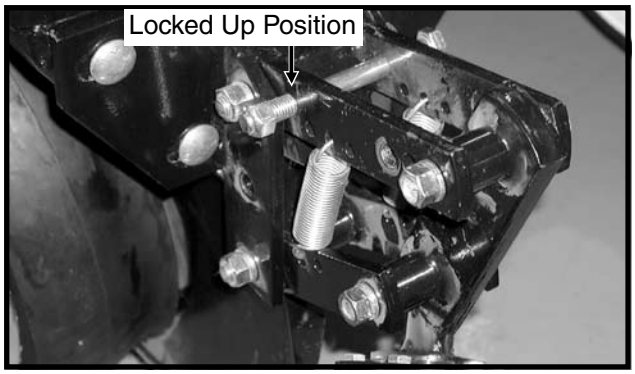


Position 3 *(Maximum)* (PLTR33a)

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

(PLTR34a)





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

ROW UNIT MOUNTED NO TILL COULTER

D05170706a

Row unit mounted no till coulters with 1" bubbled, 1" fluted (8 flutes) or ¾" fluted (13 flutes) blades may be used on pull row units and push row units. (¾" fluted shown)

Four quick adjustable down force springs are required per row when using row unit mounted no till coulters. See “Quick Adjustable Down Force Springs”.

For proper operation, the coulter blade should be aligned in relation to the row unit double disc openers. The coulter assembly can be adjusted by loosening the four attaching bolts, moving coulter arm to align and tightening the four attaching bolts.

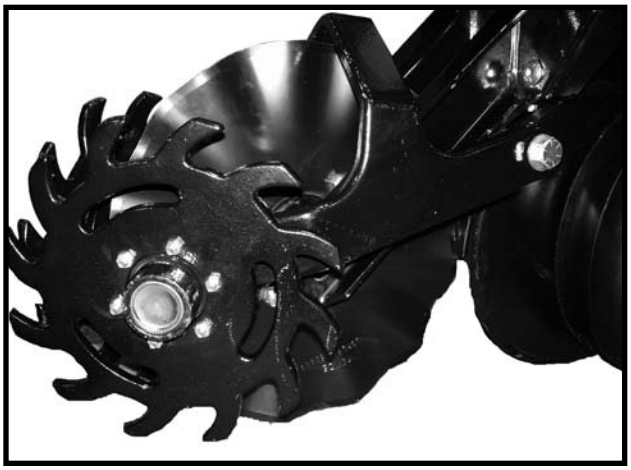
The coulter blade can be adjusted to one of four ½" incremental settings in the forked arm. Initial location of the coulter is in the top hole. As the coulter blade wears, the blade should be adjusted downward to one of the three lower settings to maintain the coulter blade at or slightly below the opener discs. In very hard soil conditions such as compacted wheel tracks, opener penetration and cutting of surface residue may be improved by adjusting the coulter to operate below the depth of the double disc opener blades.

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

NOTE: Torque ⅝" spindle hardware to 120 ft. lbs.

COULTER MOUNTED RESIDUE WHEELS

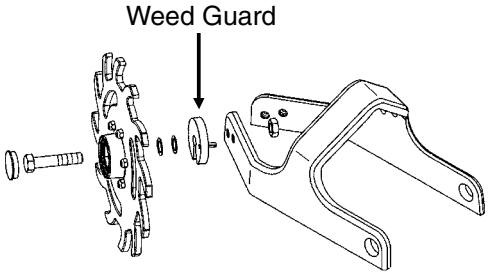
D05170708a



Coulter mounted residue wheels are designed for use on pull row units and push row units. Row unit extension brackets are required on the four center pull row units if the planter is equipped with coulter mounted residue wheels.

The coulter mounted residue wheels are attached to the row unit mounted no till coulter with one cap screw and sleeve allowing the unit to free-float. A 2-position spindle bolt mounting allows the tined wheels to be mounted interlocked or staggered. A lock nut on the inside of the mount locks the spindle cap screw. Depth adjustment is made using a spring-loaded cam and pin with 11 positions in ¼" 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.

(RU153a)



NOTE: Opening in weed guard must point down.

GRANULAR CHEMICAL HOPPER AND DRIVE

LF212299-6

The granular chemical hopper has a 1.4 cubic feet capacity.

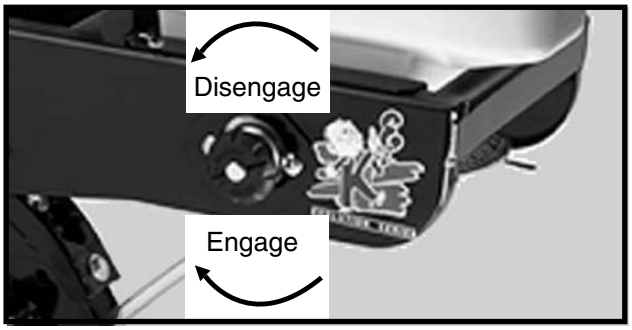
Be sure no foreign objects get into the hopper when it is being filled. Replace the hopper lids after filling the hoppers to prevent the accumulation of dirt and moisture.

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

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

The granular chemical clutch drive coupler and meter shaft can be disengaged and engaged by turning the throwout knob located at the rear of the hopper support panel. To engage the drive, turn the knob ¼ turn clockwise. To disengage the drive, turn the knob ¼ 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

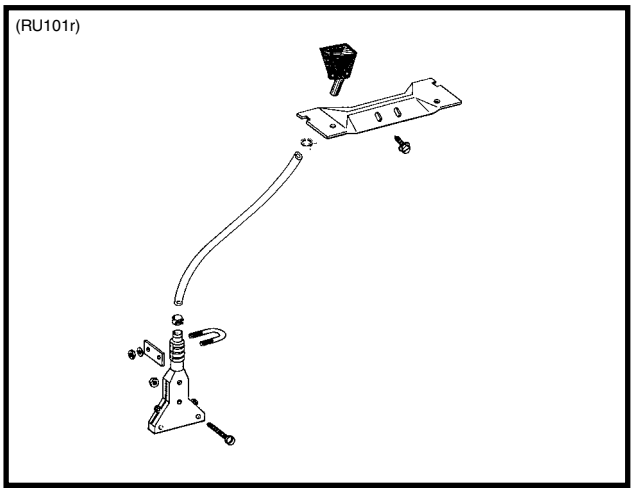


GRANULAR CHEMICAL BANDING OPTIONS

Granular chemical banding options allow 4 ½" slope-compensating banding, straight drop in-furrow placement or 14" rear banding.

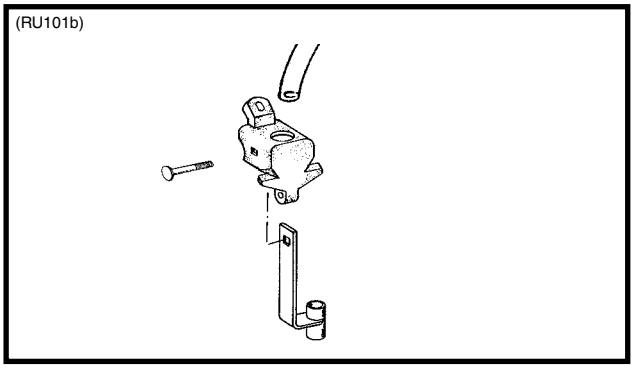
NOTE: The granular chemical rear bander is not compatible with the covering discs/single press wheel option.

(RU101r)



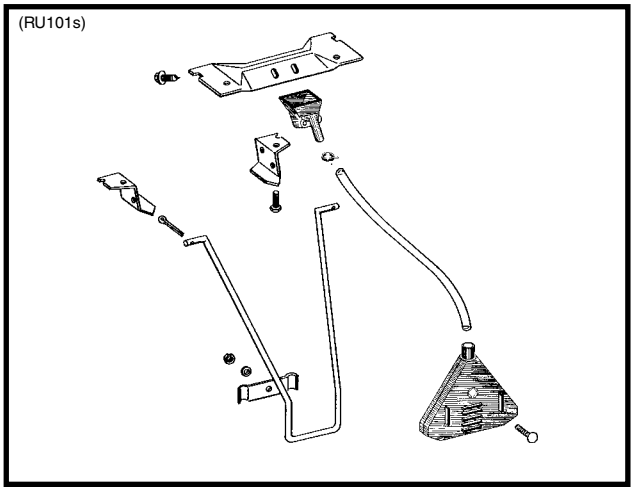
4 ½" Slope-Compensating Bander

(RU101b)



Straight Drop In-Furrow Placement

(RU101s)

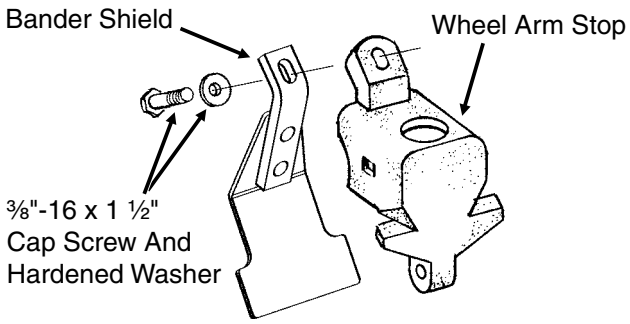


14" Rear Banding

GRANULAR CHEMICAL BANDER SHIELD

The optional granular chemical bander shield is designed to be installed onto the underside of the wheel arm stop to shield crop residue from lodging in the granular chemical bander.

(RU83m)

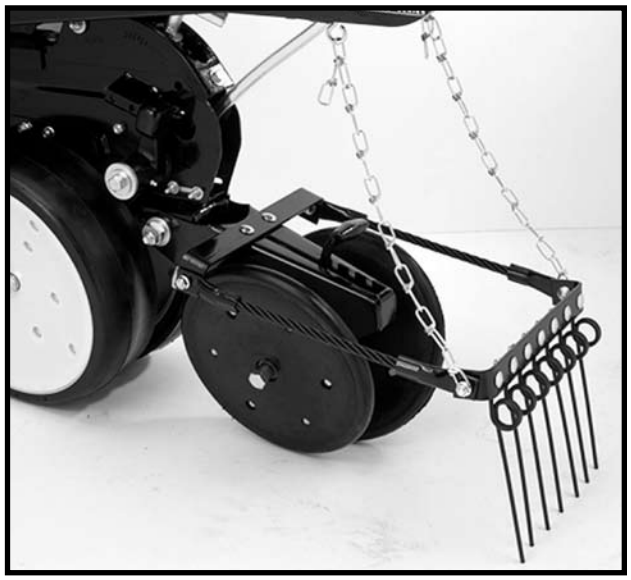


SPRING TOOTH INCORPORATOR

The spring tooth incorporator smoothes the soil behind the row unit and incorporates granular chemicals. The two mounting chains on each spring tooth incorporator should be adjusted so there is approximately ⅛" 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



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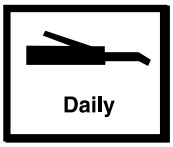
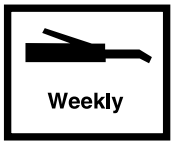
LUBRICATION

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



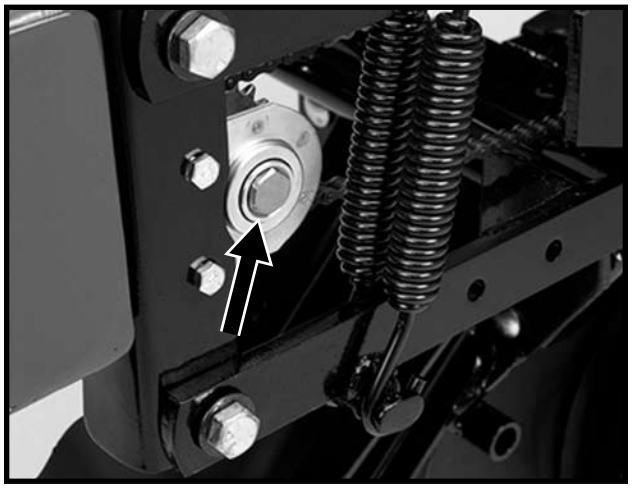


Lubricate at frequency indicated with an SAE multipurpose grease.

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

SEALED BEARINGS

LF212199-3



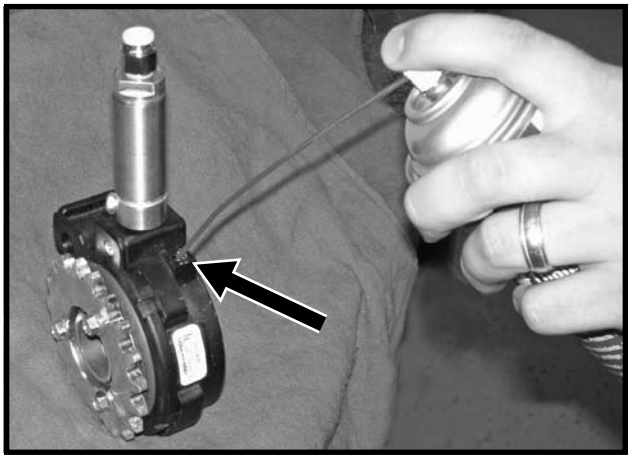
A number of sealed bearings are used on your KINZE® planter to provide trouble free operation. These are located in such areas as the drive shaft, row units and transmission bearings. Sealed bearings are lubricated for life. Due to the seals, relubrication is not practical.

AIR CLUTCHES

Lubricate air clutches every 75-100 hours.

Using a Phillips head screw driver remove the Phillips screw as shown and spray a 1-2 second burst of silicone spray into each clutch, then insert and retighten the screws.

D06060802

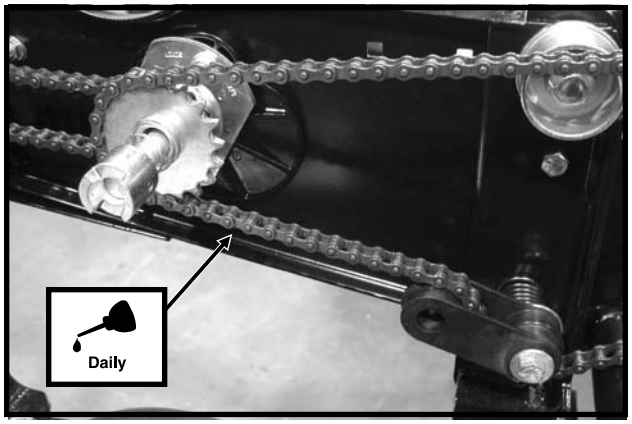


LUBRICATION

DRIVE CHAINS

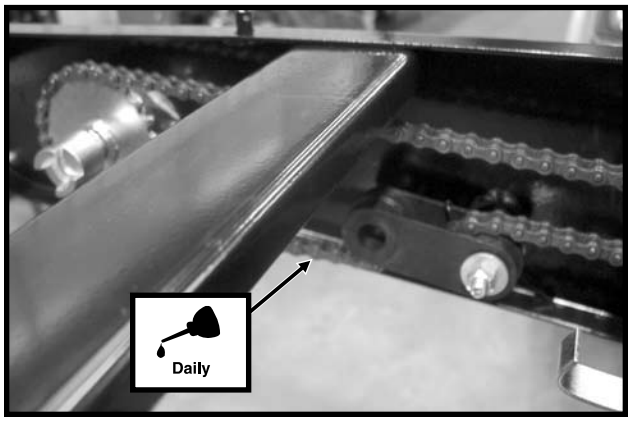
All drive chains should be lubricated daily with a high quality chain lubricant. Extreme operating conditions such as dirt, temperature or speed may require more frequent lubrication. If a chain becomes stiff, it should be removed, soaked and washed in solvent to loosen and remove dirt from the joints.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

D051705103



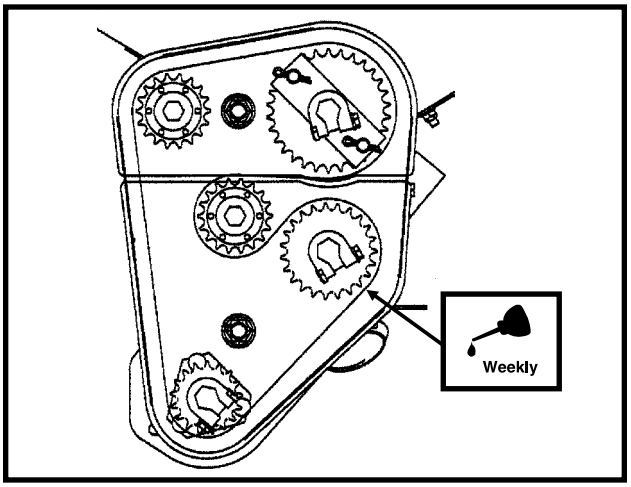
Pull Row Unit Drive Chains

D051705102



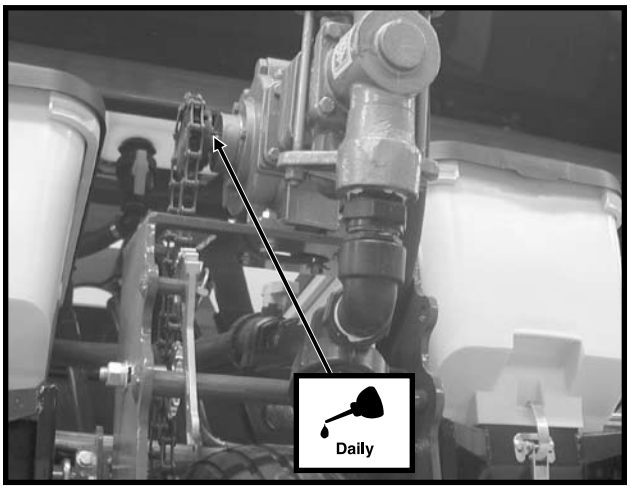
Row Unit Granular Chemical Drive Chains

(FWD149)



SDS Drive Chains

D11240401



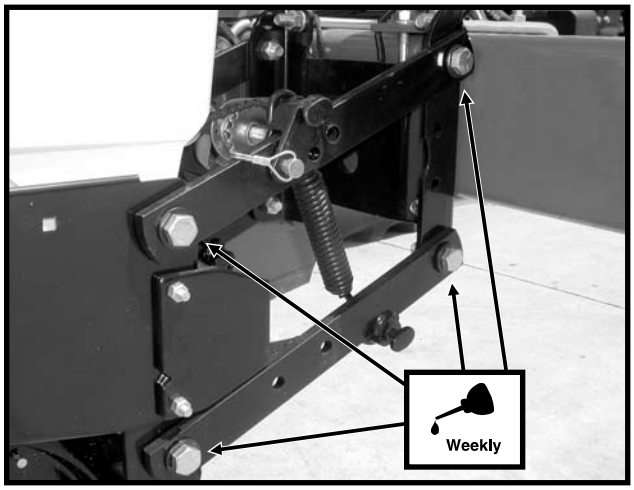
Liquid Fertilizer Drive Chain (Piston Pump)

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

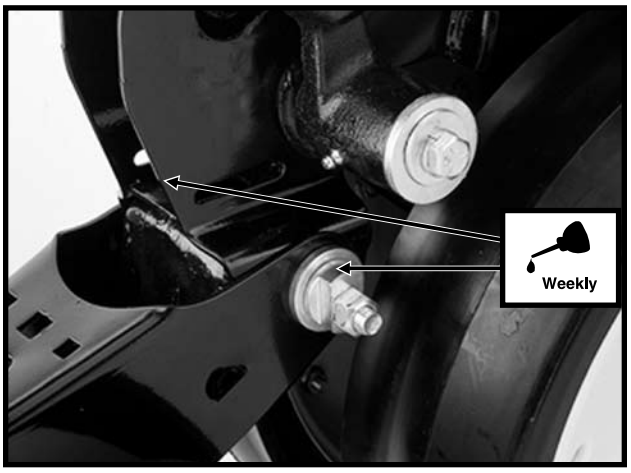


Pull Row Unit Parallel Linkages (8 Per Row)

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

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.

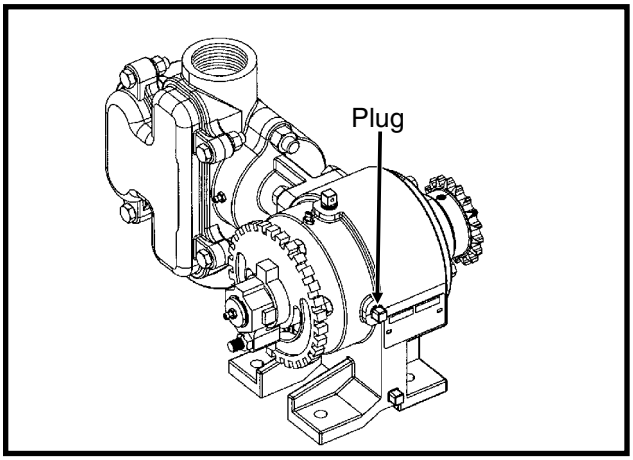
All wheel bearings should be repaced annually and checked for wear. This applies to all drive wheels, transport wheels and marker hubs.

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.

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 ¾ pint.

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

GREASE FITTINGS

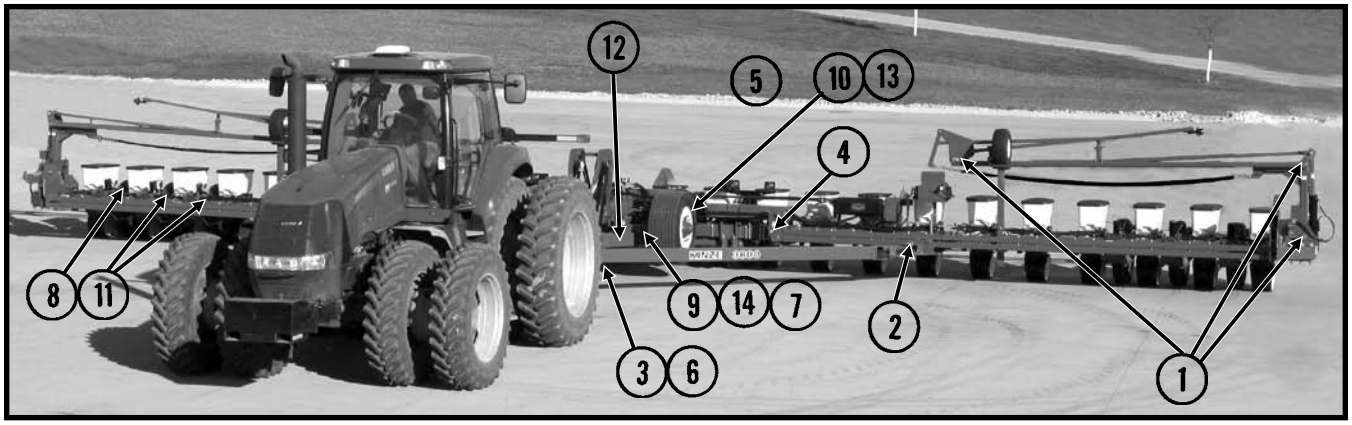
Those parts equipped with grease fittings should be lubricated at the frequency indicated with an SAE multipurpose grease. Be sure to clean the fitting thoroughly before using grease gun. The frequency of lubrication recommended is based on normal operating conditions. Severe or unusual conditions may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

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

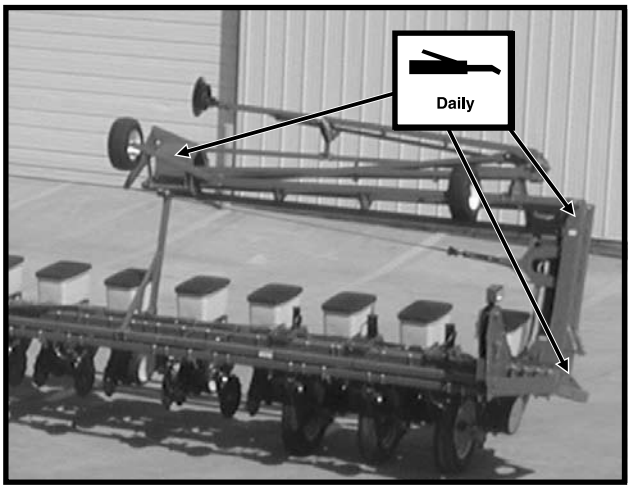
NOTE: Numbers on below photo correspond to photos on following pages showing lubrication frequencies.

D10200819

Model 3800 Conventional 24 Row 30" Shown

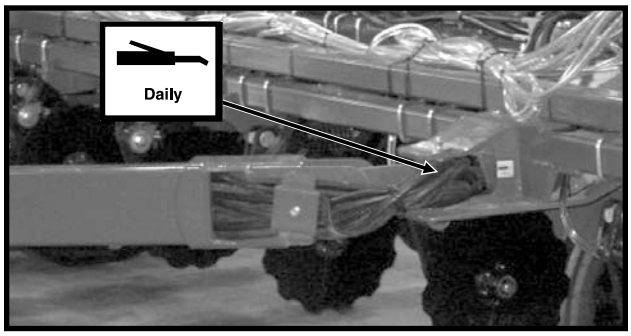


D081905124



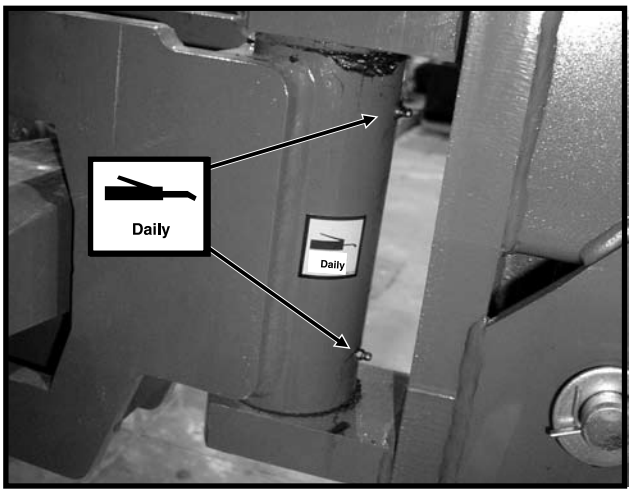
1. Row Marker Assemblies - 11 Zerks Per Assembly

D081705295



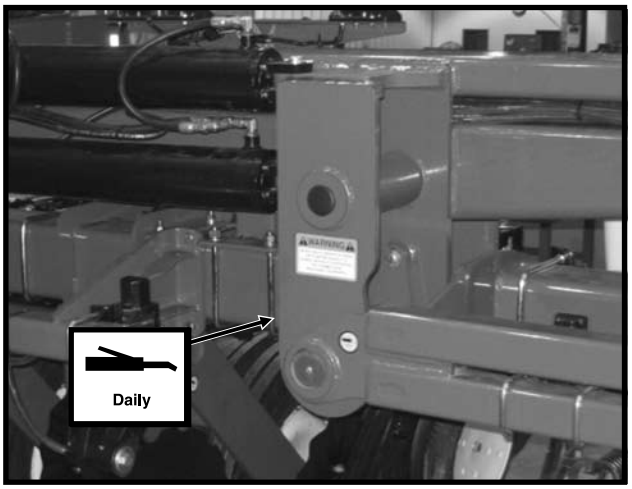
2. Wing Linkage Pivot - 1 Zerk Per Wing

D033104100



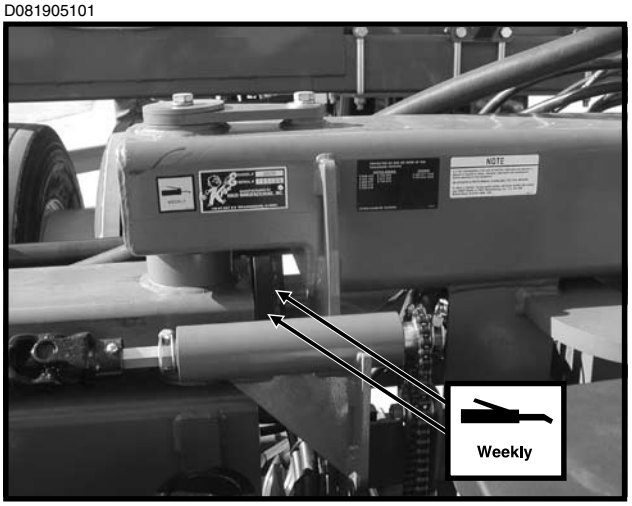
3. Hitch Pivot - 2 Zerks

D081705291



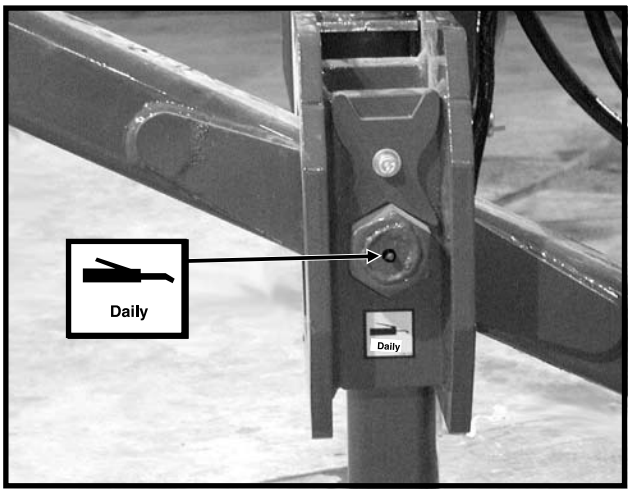
4. Outer End Of Stub Wing - 3 Zerks Per Assembly

D081905101



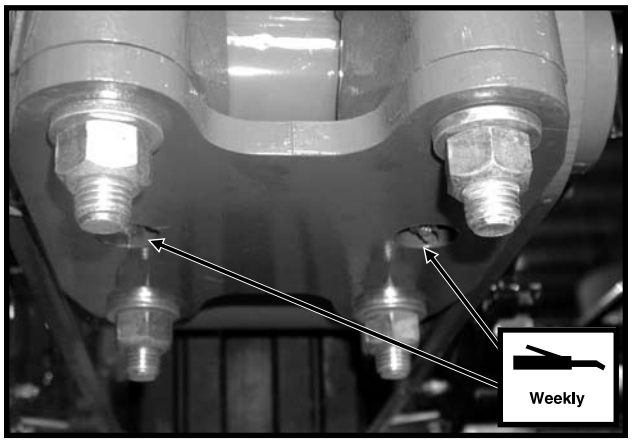
5. Inner End Of Stub Wing - 2 Zerks Per Assembly

D032404143



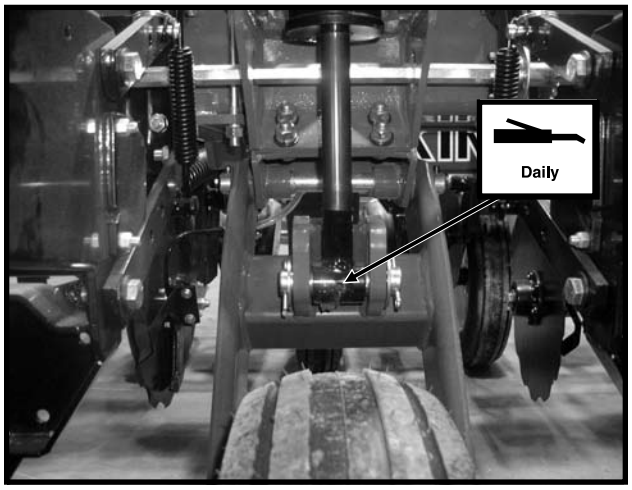
6. Hitch Pivot Pin - 1 Zerk

D040204102



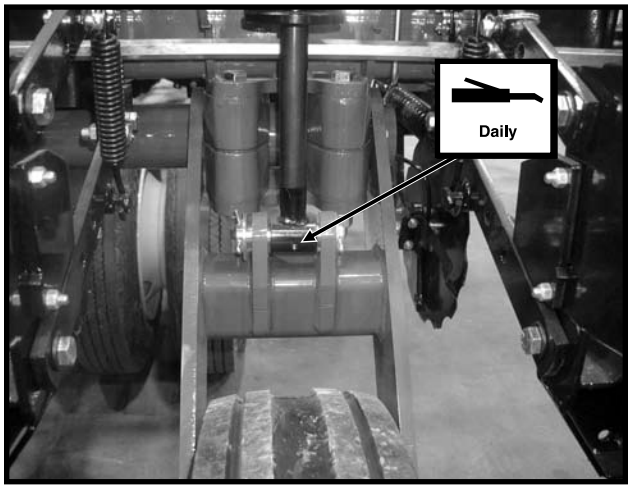
7. Center Section Lift Axle Pivot - 2 Zerks Per Wheel Assembly

D033104113



8. Wing Lift Cylinders - 1 Zerk Per Cylinder

D033104112

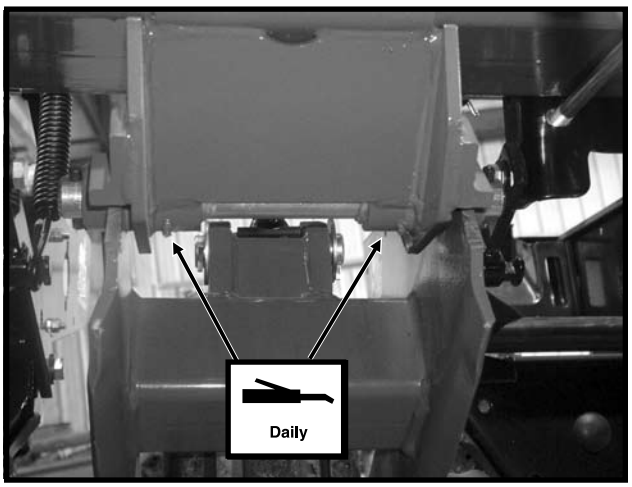


9. Center Section Lift Cylinders - 1 Zerk Per Cylinder

72495-5

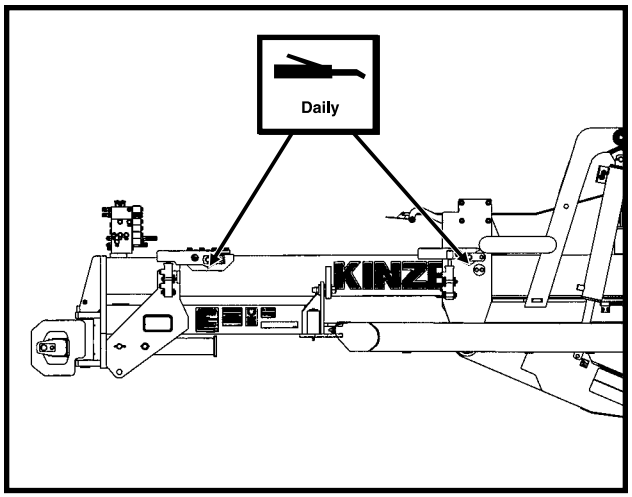
10. Transport Wheel Bearings - 1 Zerk Per Hub

D040204105



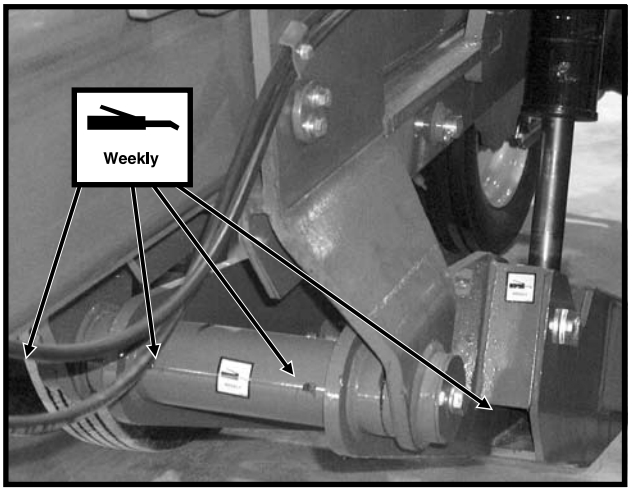
11. Wing Wheel Pivot - 2 Zerks Per Wheel Module

(FWD54)



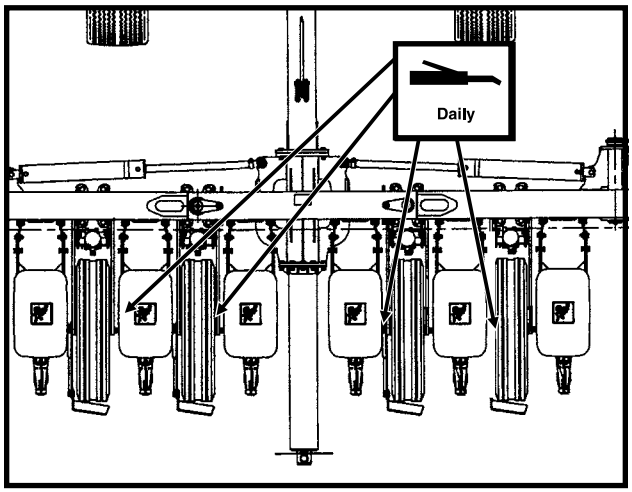
12. Slide Stops/Catches - 2 Zerks Per Stop/Catch (24 Row 30" - 1 Zerk)

D032404124



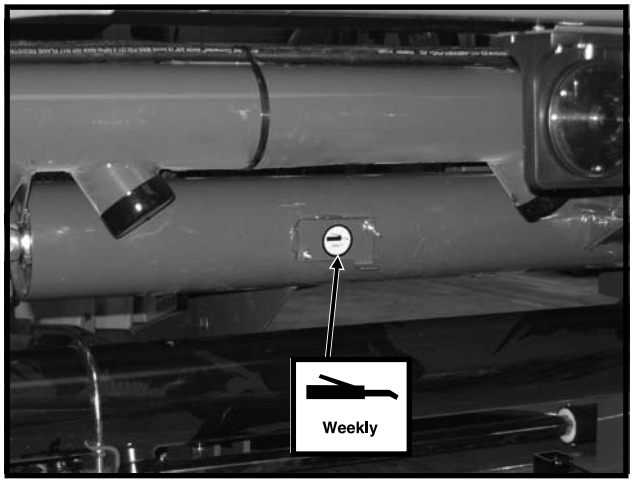
13. Transport Axle Pivot - 4 Zerks

(FWD55)



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

D02808101

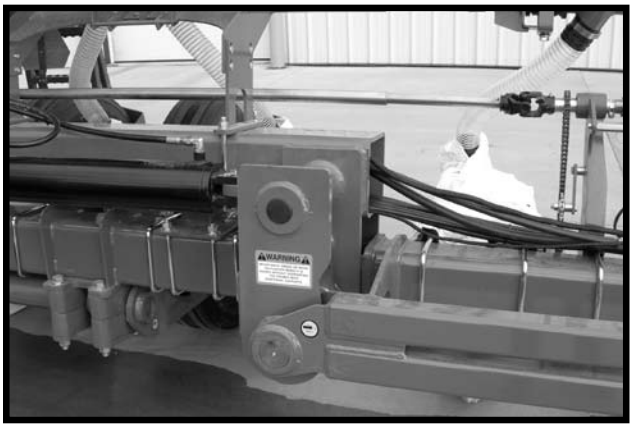


15. SDS Auger Shaft - 1 Zerk On Each Side Of Planter

U-Joint Slides

Lubricate all u-joint slides with a high quality lubricant.

D03060602



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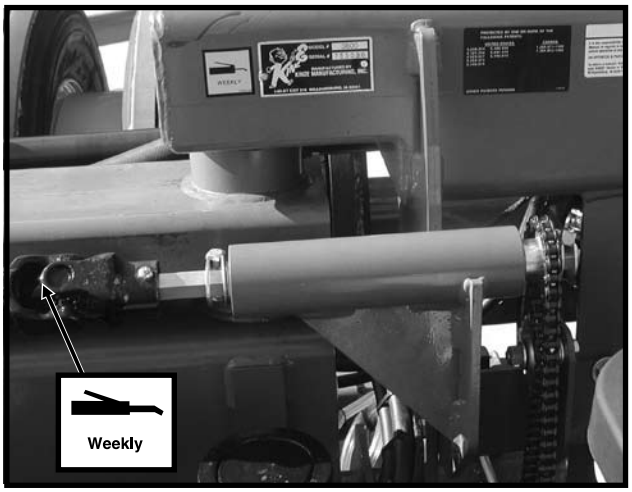
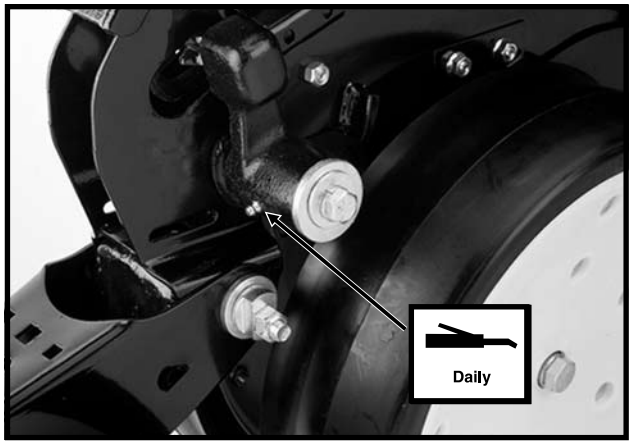


U-Joint Shaft Between Center Section And Wing - 1 Zerk On Each End Of U-Joint Shafts (2 Per U-Joint Shaft)

LUBRICATION

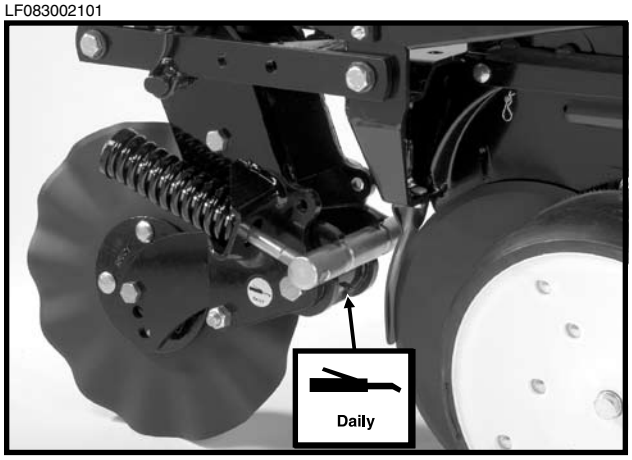
Row Unit

LF212199-2



Gauge Wheel Arms - 1 Zerk Per Arm
(Seals in gauge wheel arm are installed with lip facing out to allow grease to purge dirt away from seal. Pump grease into arm until fresh grease appears between washers and arm.)

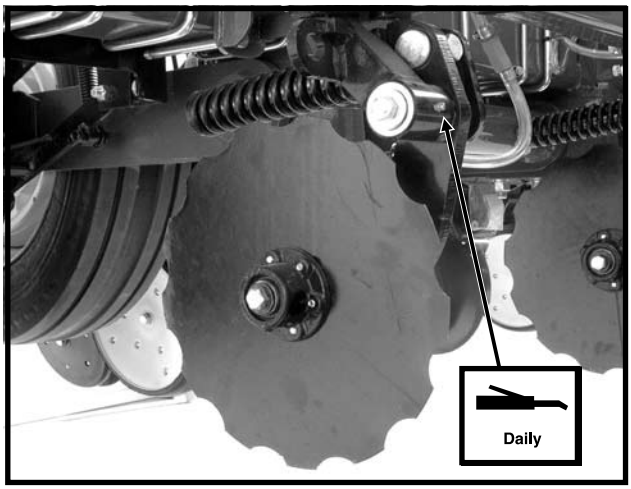
LF083002101



Frame Mounted Coulter - 1 Zerk Per Arm

Fertilizer Openers

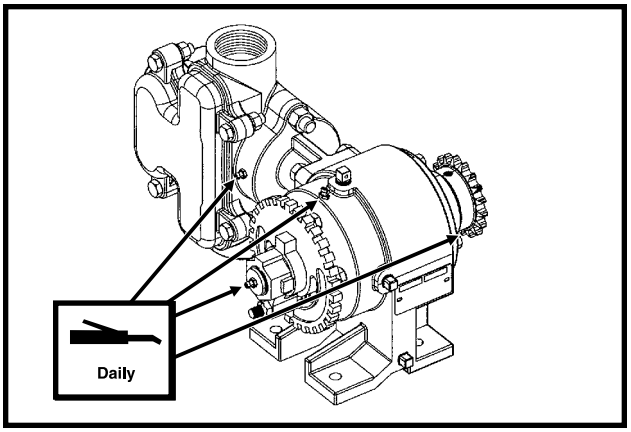
D040704104



Notched Single Disc Fertilizer Opener - 1 Zerk

Liquid Fertilizer Piston Pump

(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.)
⅝" No Till Coulter Spindle Hardware - 120 Ft. Lbs.

IMPORTANT: Over tightening hardware can cause as much damage as under tightening. Tightening hardware beyond the recommended range can reduce its shock load capacity.

WARNING: Before operating the planter for the first time and periodically thereafter, check to be sure the lug nuts on the transport wheels are tight.This is especially important if the planter is to be transported for a long distance.

Transport Tire Flange Nuts - 350 Ft. Lbs.
Transport Tire (W/Duals) Cap Screws - 160 Ft. Lbs.
Center Section Lift/Gauge Tire Lug Nuts - 180 Ft. Lbs.
Wing Lift/Gauge Tire Lug Bolts - 90 Ft. Lbs.
3 Point Hitch Adapter Pin And Pivot Bolt - 550 Ft. Lbs.

TORQUE VALUES CHART - PLATED HARDWARE

Bolt Diameter	Grade 2		Grade 5		Grade 8	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
¼"	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.
⅜"	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.
½"	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.
⅝"	70 Ft. Lbs.	80 Ft. Lbs.	110 Ft. Lbs.	125 Ft. Lbs.	160 Ft. Lbs.	180 Ft. Lbs.
¾"	130 Ft. Lbs.	145 Ft. Lbs.	200 Ft. Lbs.	220 Ft. Lbs.	280 Ft. Lbs.	315 Ft. Lbs.
⅞"	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 ⅛"	265 Ft. Lbs.	300 Ft. Lbs.	600 Ft. Lbs.	670 Ft. Lbs.	960 Ft. Lbs.	1075 Ft. Lbs.
1 ¼"	375 Ft. Lbs.	415 Ft. Lbs.	840 Ft. Lbs.	930 Ft. Lbs.	1360 Ft. Lbs.	1500 Ft. Lbs.
1 ⅜"	490 Ft. Lbs.	560 Ft. Lbs.	1100 Ft. Lbs.	1250 Ft. Lbs.	1780 Ft. Lbs.	2030 Ft. Lbs.
1 ½"	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 ⅓ higher than the above values. Bolts lubricated prior to installation should be torqued to 70% of value shown in chart.


GRADE 2
No Marks


GRADE 5
3 Marks


GRADE 8
6 Marks

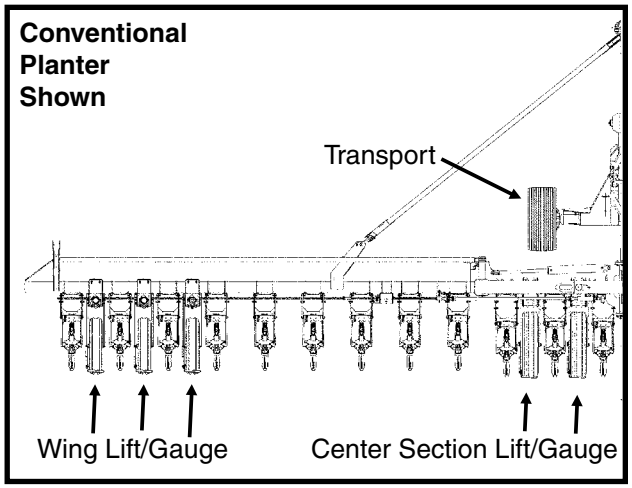
TORQUE VALUES- ALUMINUM

Bolt Diameter	Torque Value
⅛"	180-220 In. Lbs.
¾"	350-400 In. Lbs.
½"	350-400 In. Lbs.
⅜"	350-380 In. Lbs.

NOTE: These torque values are to be used with pneumatic down pressure components.

TIRE PRESSURE

(FWD172)



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
(2) 20.5" x 8.0-10 (Marker) .....35 PSI
(2) 7.60" x 15" Rib Implement
(Liquid Fertilizer Piston Pump) .....40 PSI

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

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

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

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

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

FINGER PICKUP SEED METER INSPECTION/ADJUSTMENT

To inspect or service the finger pickup seed meter, remove the meter from the seed hopper by removing the two thumbscrews which secure the mechanism to the hopper. Remove the baffle from the meter assembly by removing three cap screws. This will permit access to the finger pickup.

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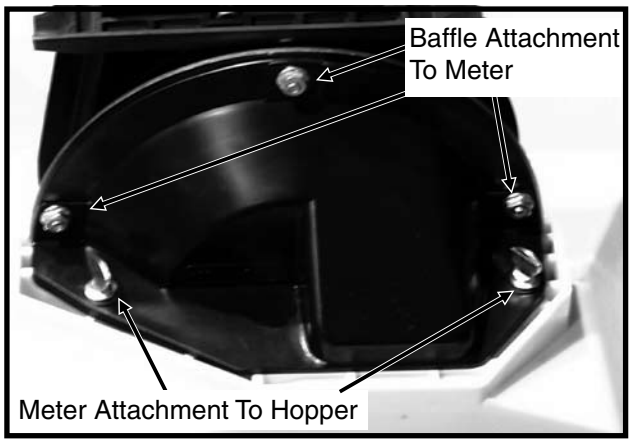

Rotate the seed meter drive by hand to ensure that the springs are holding the tabs of the fingers against the carrier plate where indicated in the photo and that the fingers are being raised in the correct area.

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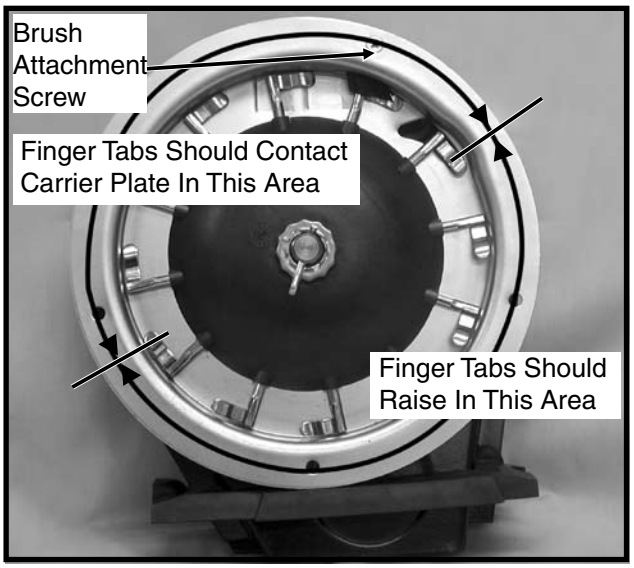
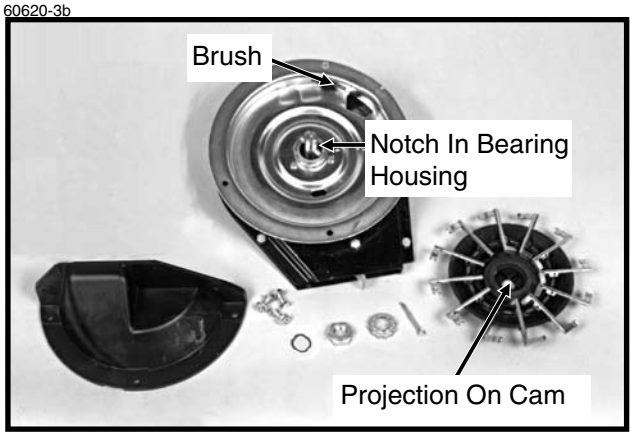


A buildup of debris or chaff may prevent proper finger operation and will require disassembly and cleaning of the finger pickup meter as follows:

1. Remove cotter pin, cover nut and adjusting nut and wave washer (If Applicable) from drive shaft.

2. Carefully lift finger holder, along with fingers and cam, off of the shaft. Clean.

60620-3b



3. Check brush for wear and replace if necessary or following every 100 acres per row of operation.

EXAMPLE: Approximately 800 acres of corn or sunflowers on a 8 row machine, 1200 acres on a 12 row machine or 1600 acres on a 16 row machine.

NOTE: It is not necessary to remove finger assembly to replace brush.

4. To replace fingers or springs, remove springs from fingers and remove finger from holder by lifting it out of the friction fit slot. Under average conditions, life expectancy of these parts should be 600-900 acres per row of operation.

5. After cleaning and/or replacing defective parts, reassemble the meter in the reverse order. When replacing fingers, make sure the open end of the spring loop is toward the inside of the finger holder.

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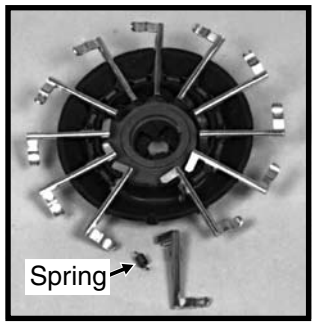

Corn Finger Assembly
(Position Spring Opening Toward Holder)

D07299902

Oil Sunflower Finger Assembly

6. Make sure fingers are installed in holder so that holder will be positioned flush with the carrier plate when assembled. A projection on the cam is designed to align with a mating notch in the bearing housing to ensure proper operation when assembled.

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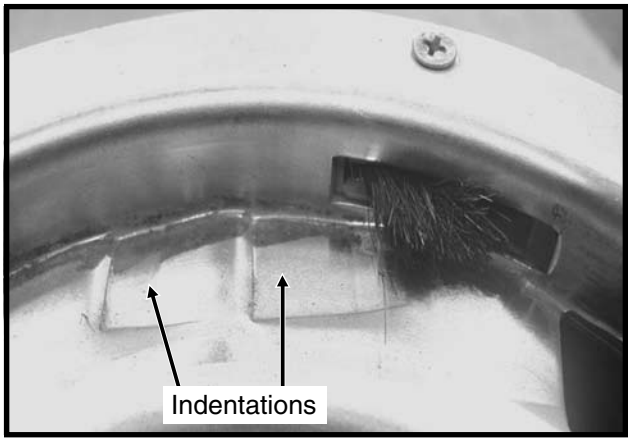

Photo Shows Worn Carrier Plate

7. Before installing the finger holder on the carrier plate, check the indentations on the carrier plate for wear. Excessive wear of the carrier plate at the indentations will cause over planting especially when using small sizes of seed.

   Inspect the carrier plate annually. Under average conditions, the life expectancy of the carrier plate should be 250-300 acres per row of operation.

8. With finger holder flush against the carrier, install wave washer and adjusting nut. Tighten adjusting nut to fully compress wave washer. Then back off nut ½ to 2 flats (1/12 to ⅓ turn) to obtain rolling torque of 22 to 25 inch pounds.

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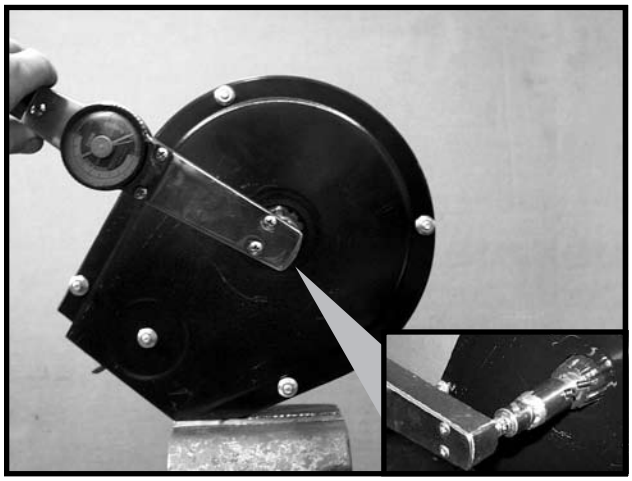

9. Turn finger holder by hand to make sure it is positioned firmly against the carrier plate, but is not over tightened and can be rotated with moderate force.

10. Install cover nut and cotter pin and reinstall baffle.

NOTE: Check tightness of adjusting nut on each unit after first day of use and periodically thereafter.

To inspect or replace the seed belt, remove the four cap screws around the edge of the housing cover and the nut from the belt idler mounting bolt.

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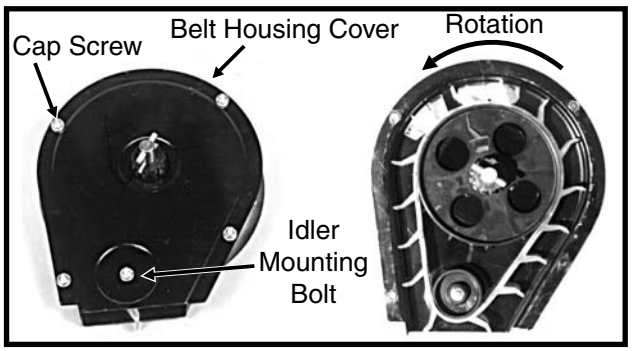


If the belt is being replaced, make sure it is installed to correctly orient the paddles as shown. A diagram molded into the drive sprocket also illustrates the correct orientation.

Reinstall the housing cover. DO NOT TIGHTEN hardware at this time. Wedge a screwdriver between the sprocket hub and housing cover as shown below. Pry cover down until it is centered on the belt housing and tighten hardware. Check idler alignment by rotating meter drive shaft. The seed belt should "run" centered on the idler or with only slight contact with the belt housing or cover.

IMPORTANT: Do not over tighten hardware.

D06200030

FINGER PICKUP SEED METER CLEANING

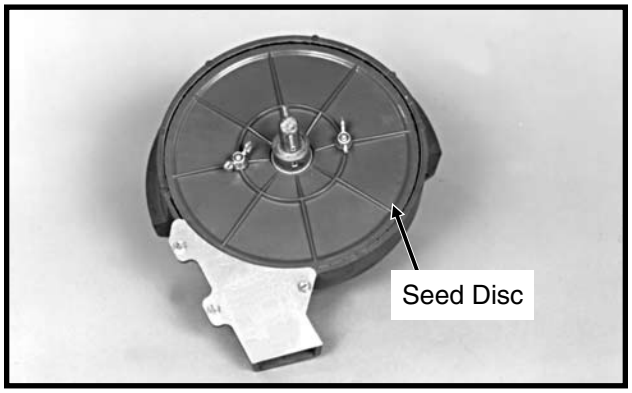
1. Disassemble meter.
2. Blow out any foreign material present in the meter mechanism.
3. Wash in mild soap and water. DO NOT USE GASOLINE, KEROSENE OR ANY OTHER PETROLEUM BASED PRODUCT.
4. Dry thoroughly.
5. Coat lightly with a rust inhibiter.
6. Rotate finger assembly so finger does not touch brush.
7. Reassemble and store in a dry rodent-free place.

FINGER PICKUP SEED METER TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
One row not planting seed.	Drive release not engaged.	Engage drive release mechanism.
	Foreign material in hopper.	Clean hopper and finger carrier mechanism.
	Seed hopper empty.	Fill seed hopper.
	Row unit drive chain off of sprocket or broken.	Check drive chain.
Drive release does not engage properly.	Drive release shaft is not aligned properly with meter drive shaft.	Align drive mechanism. See “Seed Meter Drive Adjustment”.
Unit is skipping.	Finger holder improperly adjusted.	Adjust to specifications. (22 to 25 in. lbs. rolling torque)
	Broken fingers.	Replace fingers and/or springs as required.
	Planting too slowly.	Increase planting speed to within recommended range.
Planting too many doubles.	Planting too fast.	Stay within recommended speed range.
	Loose finger holder.	Adjust to specifications. (22 to 25 in. lbs. rolling torque)
	Worn brush in carrier plate.	Inspect and replace if necessary.
Overplanting.	Worn carrier plate.	Inspect and replace if necessary.
	Seed hopper additive being used.	Reduce or eliminate additive or increase graphite.
Underplanting.	Seed belt installed backwards.	Remove and install correctly.
	Weak or broken springs.	Replace.
	Spring not properly installed.	Remove finger holder and correct.
	Seed belt catching or dragging.	Replace belt.
	Brush dislodging seed.	Replace brush.
Irregular or incorrect seed spacing.	Driving too fast.	Check chart for correct speed.
	Wrong tire pressure.	Inflate tires to correct air pressure.
	Drive wheels slipping.	Reduce down pressure on row unit down force springs.
	Wrong sprockets.	Check seed rate charts for correct sprocket combinations.
Seed spacing not as indicated in charts.	Wrong tire pressure.	Inflate tires to correct air pressure.
	Inconsistent seed size.	Perform field check and adjust sprockets accordingly.
	Wrong sprockets.	Check chart for correct sprocket combination.
	Charts are approximate.	Slight variations due to wear in meter components and tire slippage due to field conditions may produce seed spacing variations.
	Stiff or worn drive chains.	Replace chains.
Scattering of seeds.	Planting too fast.	Reduce planting speed.
	Seed tube improperly installed.	Check seed tube installation.
	Seed tube worn or damaged.	Replace seed tube.
Seed tubes and/or openers plugging.	Allowing planter to roll backward when lowering.	Lower planter only when tractor is moving forward.
Inconsistent seed depth.	Rough seed bed.	Adjust down pressure springs. Reduce planting speed.
	Partially plugged seed tube.	Inspect and clean.
	Seed tube improperly installed.	Install properly.

BRUSH-TYPE SEED METER MAINTENANCE

60607-10a



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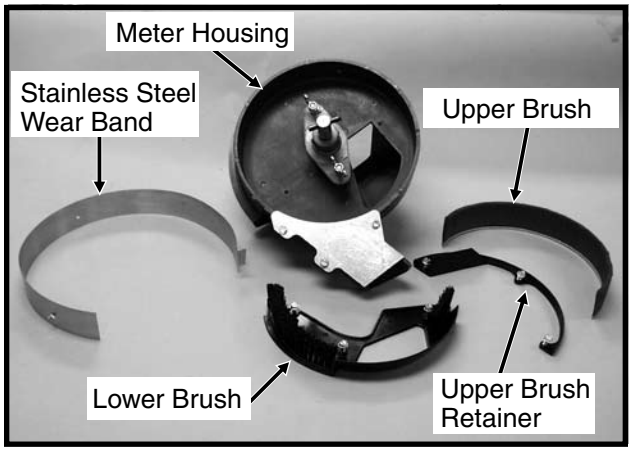


Only clean, high quality seed should be used for maximum meter accuracy. Damaged or cracked seed, hulls or foreign materials may become lodged in the upper brush and greatly reduce meter accuracy. It is suggested that the seed disc be removed daily, inspected and cleaned. Check for buildup of foreign material on the seed disc, particularly in the seed loading slots. Clean the disc by washing it with soap and water. Check for cracked seed, hulls, etc. lodged between the brush retainer and stainless steel wear band which can greatly reduce the accuracy of the meter because the upper brush will not be able to retain the seed in the seed disc pocket. Clean the brush areas of the meter housing thoroughly.

D04239912a

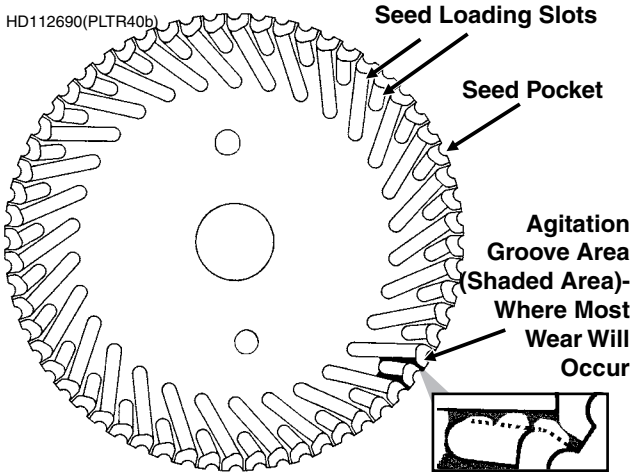
IMPORTANT: Replace hopper lids after hoppers are filled to prevent accumulation of dust or dirt in the seed meter which will cause premature wear.

Cleaning brush-type seed meter for storage:

1. Remove meter from seed hopper by removing the two thumbscrews which secure the meter to the hopper.
2. Remove seed disc and wash with soap and water and dry thoroughly.
3. Remove upper brush by removing the three hex head screws from the brush retainer and removing brush retainer and upper brush.
4. Remove the three hex head screws from the lower brush and remove lower brush and stainless steel wear band.
5. Wash all parts and meter housing with soap and water and dry thoroughly.
6. Inspect all parts for wear and replace worn parts.
7. Reassemble meter except for seed disc. **Meter should be stored in a rodent-free space with seed disc removed.**

Seed Disc Wear

HD112690(PLTR40b)

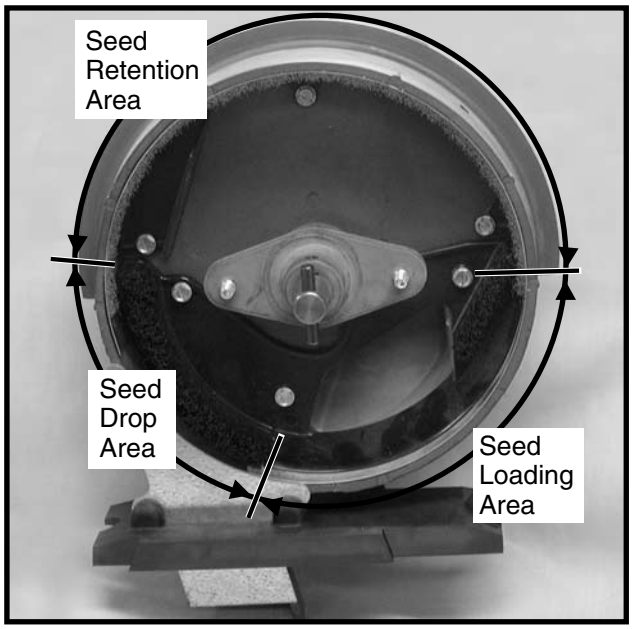


Most wear on the seed disc will be found in the agitation groove area (area between the seed loading slots). Wear will affect planting accuracy at high RPM. To measure for wear, lay a straight edge across the surface of the disc and measure the gap between the disc (at the agitation groove area) and the straight edge. If the agitation groove areas are worn in excess of .030" and accuracy starts to drop off at higher meter RPM, the seed disc should be replaced.

Estimated life expectancy of the seed disc under normal operating conditions should be approximately 200 acres per row. Severe operating conditions such as dust, lack of lubrication or abrasive seed coating could reduce life expectancy of the seed disc to under 100 acres per row.

Upper Brush

D12220403



The upper brush holds seed in the seed disc pocket in the seed retention area.

The brush must apply enough pressure against the seed in the seed disc pocket as the disc rotates through the seed retention area to prevent the seed from dropping out of the disc pocket. A damaged spot, excessive wear on the brush or foreign material lodged in the brush may greatly reduce meter performance.

The upper brush should be replaced at approximately 120-400 acres per row of use or sooner if damage or excessive wear is found.

Installation Of Upper Brush

Position upper brush into inner perimeter of seed retention area. Make sure the base of the brush is tight against the bottom of the meter housing. Install brush retainer and three hex head screws. Tighten center screw first, left screw second and right screw last.

NOTE: Use GD11122 upper brush retainer when using soybean and cotton discs. Use GD8237 upper brush retainer when using milo/grain sorghum discs. GD11122 brush retainer shown.

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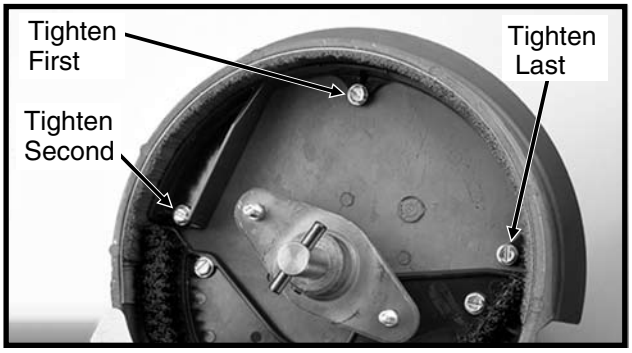

Stainless Steel Wear Band

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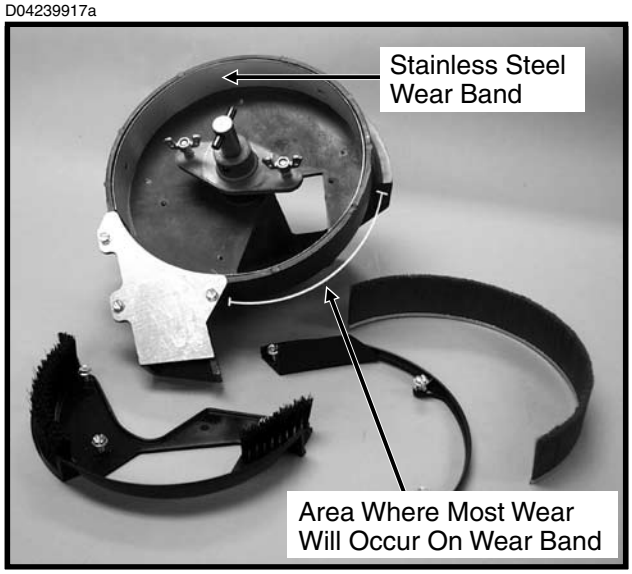
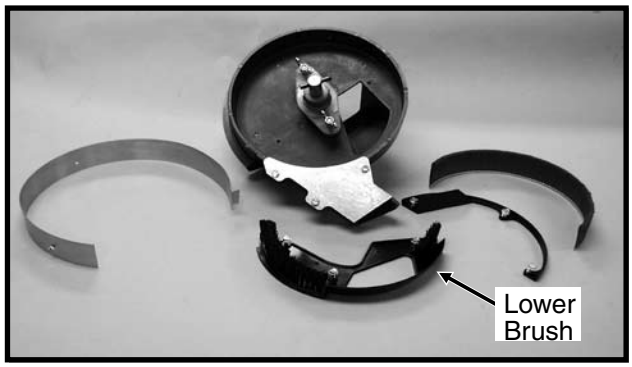


The purpose of the stainless steel wear band is to protect the meter housing from wear. The band is .030" thick and should be replaced when approximately .020" of wear is found in the primary area of wear. If the wear band is allowed to wear through or if the meter is used without the wear band in place, damage to the meter housing may occur.

Estimated life expectancy of the stainless steel wear band is 240-800 acres per row.

Lower Brush

D04239911



The lower brush has several functions. One function is to move seed down the seed loading slots to the seed pockets. The second function is to isolate seed in the reservoir from entering the seed tube and a third is to clean the seed loading slots.

Estimated life expectancy of the lower brush is 240-800 acres per row. The lower brush should be replaced if the bristles are deformed or missing or if there are cracks in the brush retainer.

BRUSH-TYPE SEED METER TROUBLESHOOTING

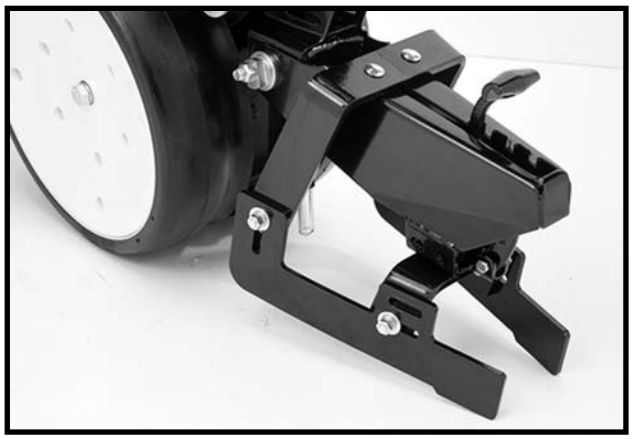
PROBLEM	POSSIBLE CAUSE	SOLUTION
Low count.	Meter RPM too high.	Reduce planting speed.
	Seed sensor not picking up all seeds dropped.	Clean seed tube. Switch meter to different row. If problem stays with same row, replace sensor.
	Lack of lubrication causing seeds not to release from disc properly.	Use graphite or talc as recommended.
	Seed size too large for seed disc being used.	Switch to smaller seed or appropriate seed disc. See “Brush-Type Seed Meter” for proper seed disc for size of seed being used.
	Seed treatment buildup in meter.	Reduce amount of treatment used and/or thoroughly mix treatment with seed. Add talc.
Low count at low RPM and higher count at higher RPM.	Foreign material lodged in upper brush.	Remove seed disc and remove foreign material from between brush retainer and bristles. Clean thoroughly.
	Worn upper brush.	Replace. See “Maintenance”.
Low count at higher RPM and normal count at low RPM.	Seed disc worn in the agitation groove area.	Replace disc. See “Maintenance”.
High count.	Seed size too small for seed disc.	Switch to larger seed or appropriate seed disc.
	Incorrect seed rate transmission setting.	Reset transmission. Refer to proper rate chart in “Machine Operation” section of manual.
	Upper brush too wide (fanned out) for small seed size.	Replace upper brush.
High count. (Milo/Grain Sorghum)	Incorrect brush retainer being used.	Make sure GD8237 brush retainer is installed to keep upper brush from fanning out.
Upper brush laid back.	Seed treatment buildup on brush.	Remove brush. Wash with soap and water. Dry thoroughly before reinstalling. See “Maintenance”.
	Buildup of foreign material at base of brush.	Remove brush retainer and brush. Clean thoroughly. Reinstall.

CLOSING WHEEL TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Closing wheel(s) leave severe imprint in soil.	Too much closing wheel down pressure.	Adjust closing wheel pressure.
Closing wheel(s) not firming soil around seed.	Insufficient closing wheel down pressure.	Adjust closing wheel pressure. Severe no till conditions may require use of cast iron closing wheels.
"V" closing wheel running on top of seed furrow.	Improper centering.	Align. See "V Closing Wheel Adjustment".
Single closing wheel not directly over seed.	Improper centering.	Align. See "Covering Discs/Single Press Wheel Adjustment".

DRAG CLOSING ATTACHMENT

LF212299-18



Prior to storage of the planter, inspect each drag closing attachment and replace any worn or broken parts. Check for loose hardware and tighten as needed.

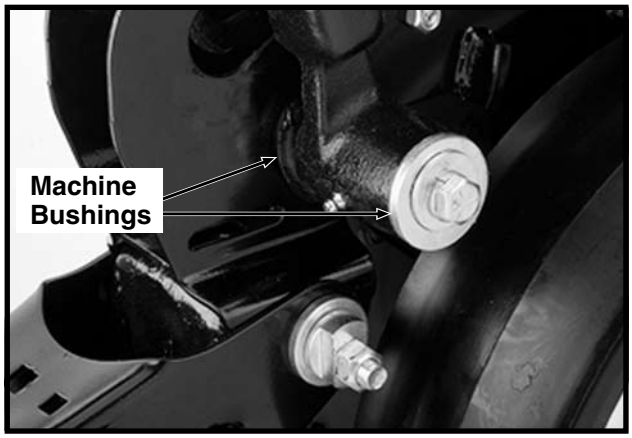
GAUGE WHEEL ADJUSTMENT

To prevent an accumulation of dirt or trash, gauge wheels should lightly contact the opener blades. Gauge wheels and opener blades should turn with only slight resistance.

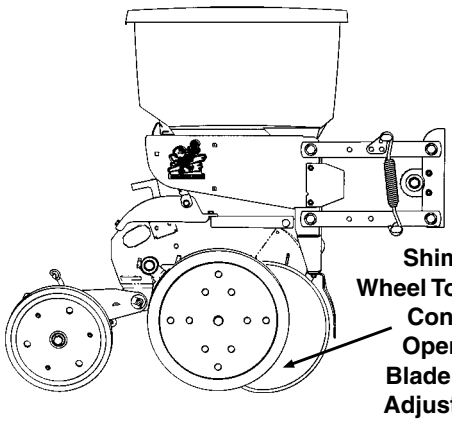
To adjust clearance between gauge wheels and opener blades, add or remove machine bushings between the shank and gauge wheel arm. Store remaining machine bushings between gauge wheel arm and flat washer on outer side of gauge wheel arm.

NOTE: It may be desirable to space gauge wheel further from blade when operating in sticky soils.

LF212199-2

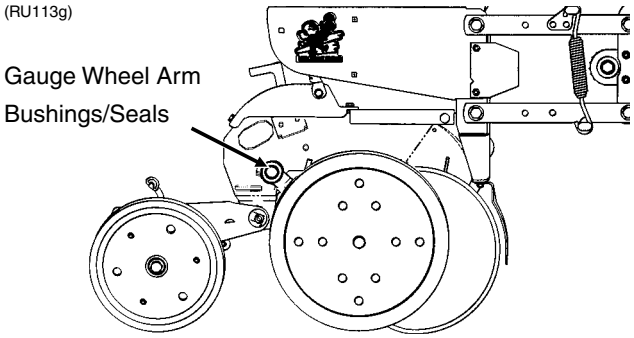


(RU113g)



GAUGE WHEEL ARM BUSHING AND/OR SEAL REPLACEMENT

(RU113g)

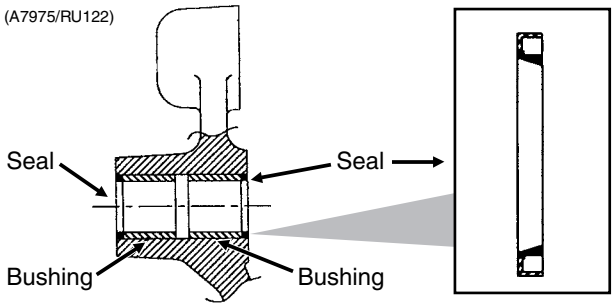


NOTE: A Gauge Wheel Arm Bushing And Seal Driver Kit (G1K296), for use in bushing and seal replacement, is available through your KINZE® Dealer.

To replace gauge wheel arm assembly bushing(s) and/or seal(s):

1. Remove gauge wheel from arm.
2. Remove the gauge wheel arm assembly from the shank assembly.
3. Remove seal and bushing and discard. Clean and dry inner bore.

(A7975/RU122)



4. Drive/press replacement bushing inside bore of arm to a depth of .125" below flush.
5. Coat wiping edge of seal with grease.
6. Drive/press seal into place with lip to the outside as shown above.

NOTE: Use extra care to protect the sealing lip during installation. Apply uniform pressure to assemble the seal into the bore of the arm. Never apply a direct hammer blow to the seal surface.

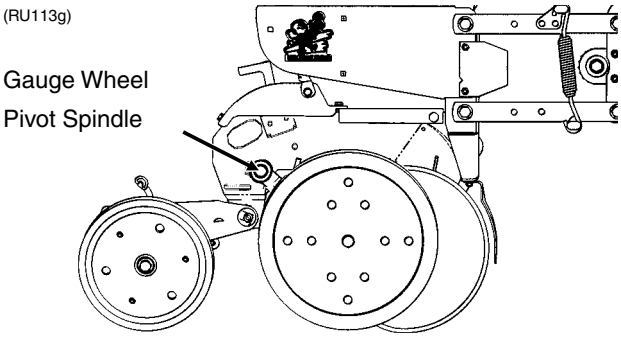
7. Inspect gauge wheel pivot spindle.
8. Reinstall gauge wheel arm assembly and gauge wheel.

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

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

GAUGE WHEEL ARM PIVOT SPINDLE REPLACEMENT

(RU113g)



To replace gauge wheel pivot spindle:

1. Remove the gauge wheel and arm assemblies from the shank assembly.
2. Remove ½" x ¾" cap screw that locks the pivot spindle in place and remove the spindle.

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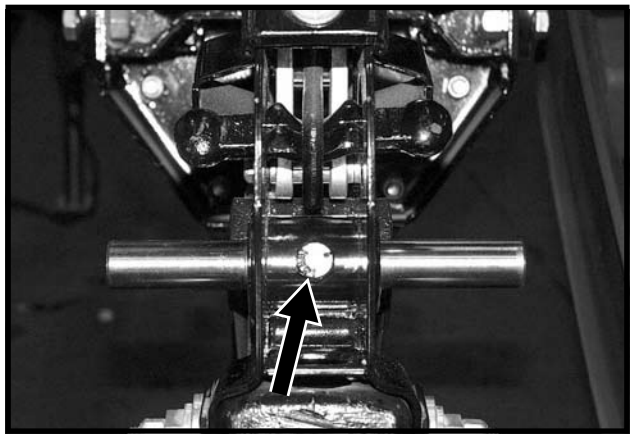
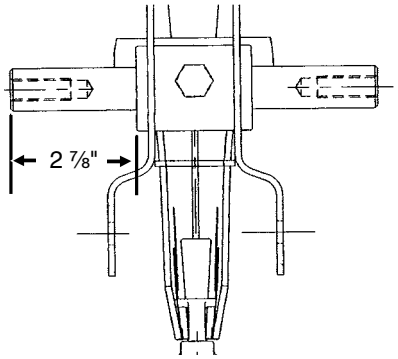


3. Install the replacement spindle and position as shown below. Exact centering is critical.

(A7966)



4. Install ½" x ¾" cap screw and torque to lock pivot spindle in place.
5. Install gauge wheel and arm assemblies. Shim for proper gauge wheel tire/disc blade clearance.

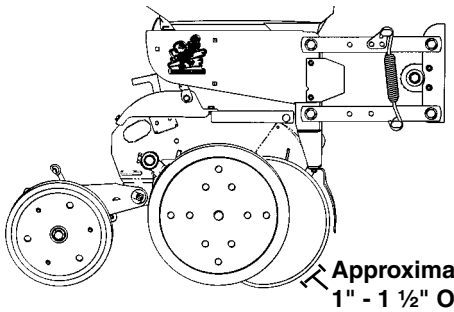
15" SEED OPENER DISC BLADE/ BEARING ASSEMBLY

Approximately 1" - 1 ½" 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 ½" of contact.

NOTE: If proper blade-to-blade contact cannot be maintained after relocating machine bushings or if blade diameter wears below 14 ½", 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)



Approximately 1" - 1 ½" Of Blade-To-Blade Contact

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 ½" of blade-to-blade contact.

IMPORTANT: Left hand side of opener uses a left hand threaded cap screw. DO NOT OVERTIGHTEN. 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 ⅝"-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 ¼" rivets from bearing housing to expose bearing.
3. After installing new bearing, install three evenly spaced ¼" 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 ¼" cap screws and install rivets in those three holes.
4. Reinstall disc blade/bearing assembly, washer and cap screw. Torque ⅝"-11 cap screw to value shown in "Torque Values Chart" at the beginning of this section.
5. Replace bearing dust cap.
6. Install scraper and gauge wheel.

SEED TUBE GUARD/INNER SCRAPER

The seed tube guard protects the seed tube and acts as the inner scraper for the seed opener disc blades.

Remove the seed tube and check for wear. Excessive wear on the seed tube indicates a worn seed tube guard. Replace the seed tube guard if it measures 5⁄8" or less at the lower end. A new seed tube guard measures approximately 7⁄8".

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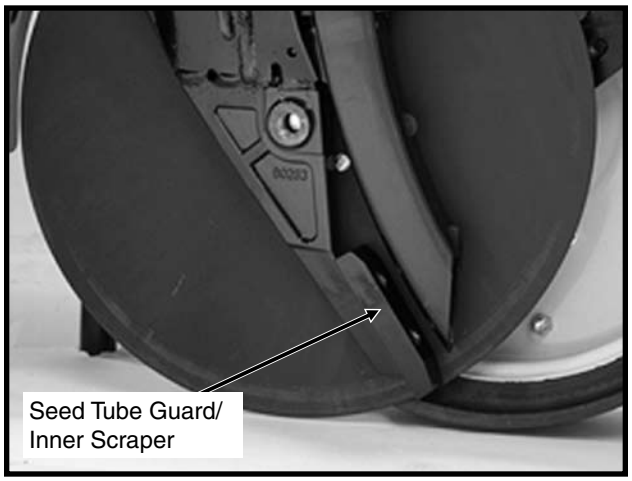


Shown With Gauge Wheel And Seed Opener Disc Blade Removed For Visual Clarity

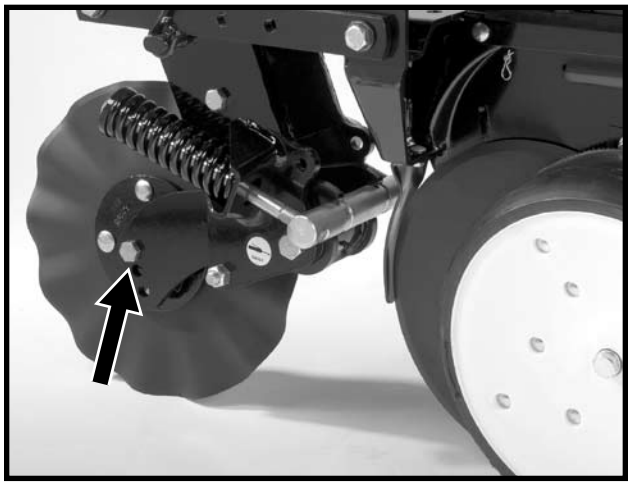
IMPORTANT: No till planting or planting in hard ground conditions, especially when the planter is not equipped with no till coulters, and/or excessive blade-to-blade contact will increase seed tube guard wear and necessitate more frequent inspection and/or replacement.

To replace the seed tube guard, remove the seed tube and the two hex socket head cap screws which attach the seed tube guard. Hold the replacement seed tube guard centered between the seed opener disc blades. Install, but DO NOT tighten, the hex socket head cap screws. Using a clamp or vise-grip, squeeze the opener blades together in front of the seed tube guard. Tighten the seed tube guard retaining screws. Remove the clamps. The distance between the seed tube guard and opener blades should be equal on both sides. Reinstall seed tube.

IMPORTANT: Over tightening the hex socket head cap screws may damage the threads in the shank and require replacement of the shank. A seed tube guard that is worn excessively may allow the blades to wear into the row unit shank, also requiring replacement of the shank.

FRAME MOUNTED COULTER

LF083002101



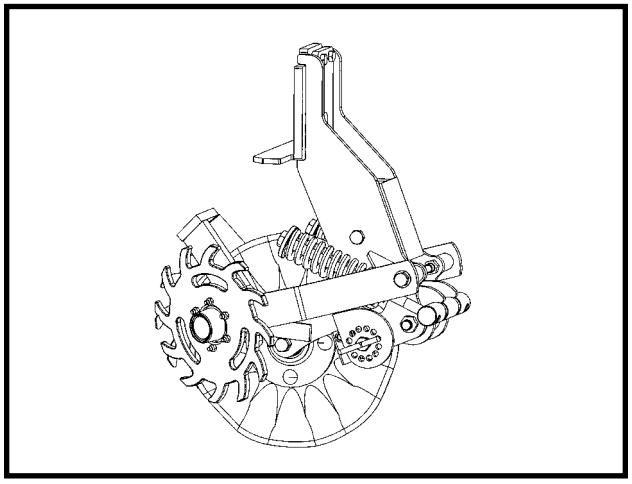
NOTE: Torque ⅝" spindle hardware to 120 ft. lbs.

See “Frame Mounted Coulter” in Row Unit Operation section of this manual for depth and spring adjustment.

When the 16" diameter coulter blade (1" fluted, 1" bubbled or ¾" fluted) is worn to 14 ½" (maximum allowable wear), it should be replaced.

RESIDUE WHEELS (For Use With Frame Mounted Coulter)

(RU154)



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

ROW UNIT MOUNTED DISC FURROWER

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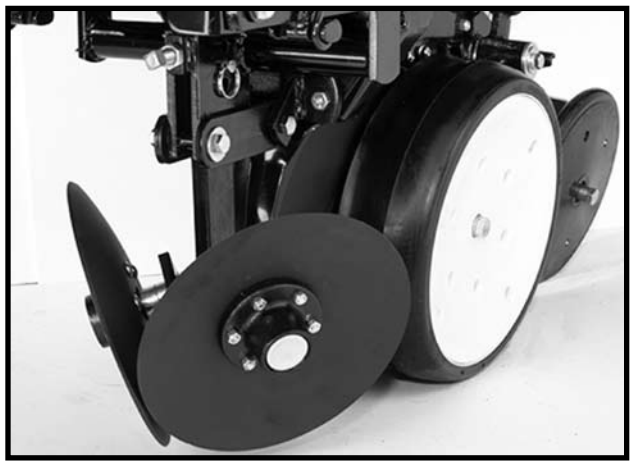


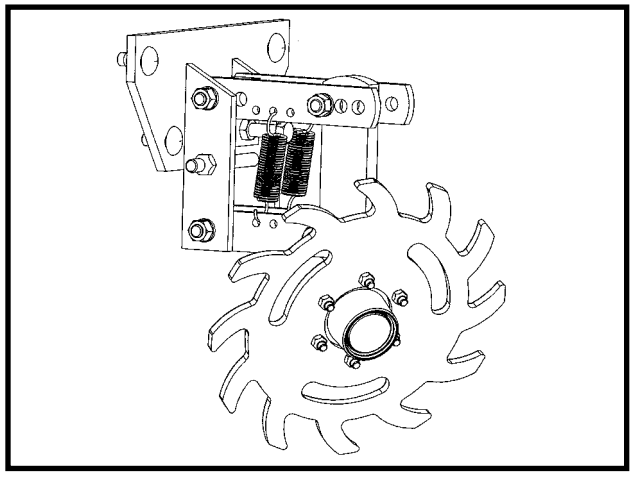
Lubricate the bushings in the support arm and mounting bracket at the frequency indicated in the Lubrication Section of this manual. Using a torque wrench, check each bolt for proper torque. If the bolt is loose, it should be removed and the bushing inspected for cracks and wear. Replace bushings as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

LF212299-22



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

ROW UNIT MOUNTED NO TILL COULTER

D05170706a

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

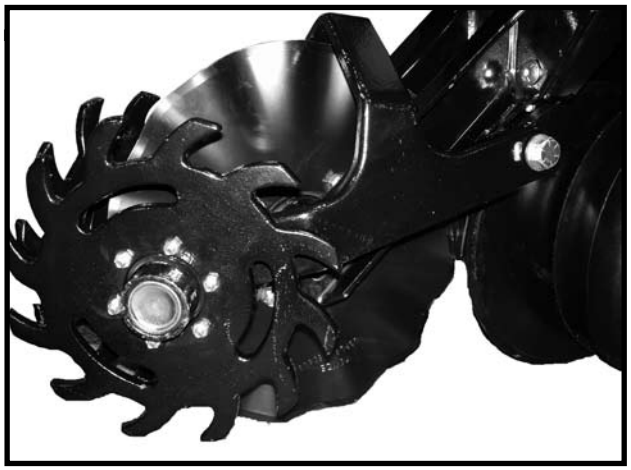
NOTE: Torque ⅝" spindle hardware to 120 ft. lbs.

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

The coulter blade can be adjusted to one of four settings. Initially the blade is set in the highest position. As the blade wears it can be adjusted to one of the three lower settings. See "Row Unit Mounted No Till Coulter" in Row Unit Operation section of this manual.

When the 16" diameter coulter blade is worn to 14½" (maximum allowable wear), it should be replaced.

COULTER MOUNTED RESIDUE WHEELS



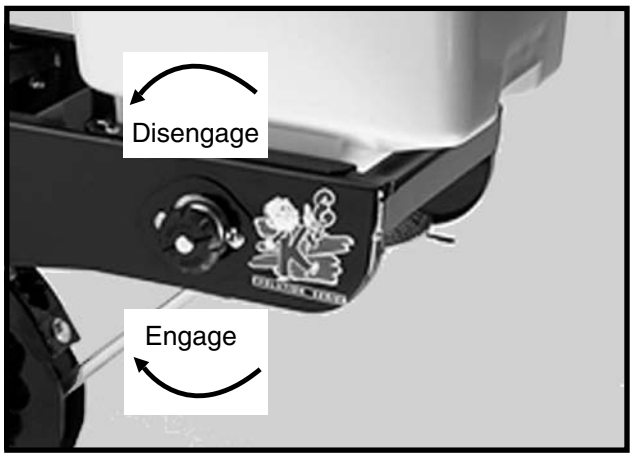
The wheel hubs are equipped with sealed bearings. If bearings sound or feel rough when the wheel is rotated, replace the bearings.

GRANULAR CHEMICAL ATTACHMENT

Prior to storage of the planter, disengage the granular chemical drive by rotating the throwout knob ¼ turn counterclockwise. Remove the drive chain and empty and clean all granular chemical hoppers. Clean the drive chains and coat them with a rust preventive spray or submerge chains in oil. Inspect and replace any worn or broken parts.

Install hoppers and chains. Check chain alignment.

LF212299-4



SPRING TOOTH INCORPORATOR

Prior to storage of the planter, inspect each spring tooth incorporator and replace any worn or broken parts. Check for loose hardware and tighten as needed.

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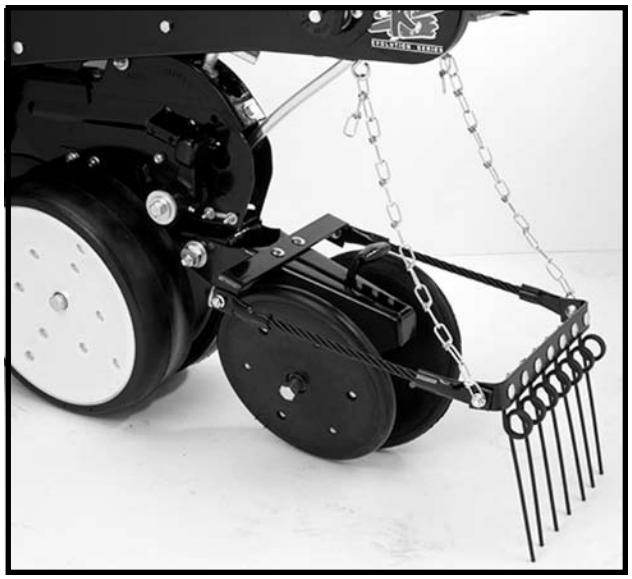
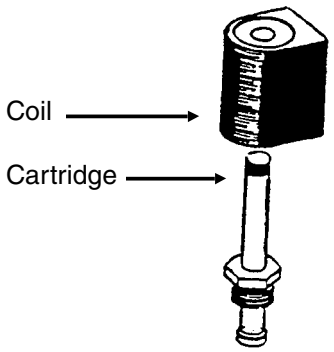


SOLENOID VALVE INSPECTION

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

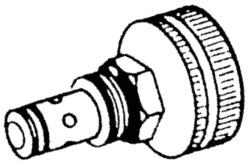
If the solenoid or solenoids fail to operate, first determine if the problem is electrical or hydraulic. If the valve is working properly, a click will be heard when the solenoid coil is energized. This will be the valve stem opening up. If no sound is heard, check the solenoid coil by touching the top of the coil housing with a metallic object such as a pliers or screwdriver. If the coil is working properly, the coil housing will be strongly magnetized when energized. If the voltage to the coil is low, the coil will be weakly magnetized when energized and no click will be heard.

VVB019(PLTR55)



FLOW CONTROL VALVE INSPECTION

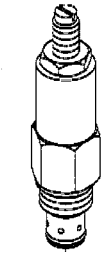
VVB020(TWL28)



The flow control valves should be adjusted for row marker raise and lower speed as part of the assembly procedure or upon initial operation. If the valve fails to function properly or requires frequent adjustment, it should be removed for inspection. Check for foreign material and contamination on both the valve and the seating area of the valve body. Replace any components found to be defective.

PRESSURE RELIEF VALVE INSPECTION (Located At Center Of Rear H-Frame)

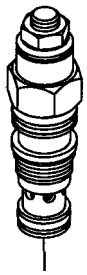
(FWD23)



The pressure relief valve limits the available hydraulic pressure to the transport axle cylinder when the cylinder is retracting. Consult your KINZE® Dealer for service.

COUNTER BALANCE VALVE INSPECTION (Located At Center Of Rear H-Frame)

(FWD21)



The counter balance valve is used for hydraulic load holding. This is a safety feature to prevent the planter from being unintentionally lowered. The valve is factory set and should require no additional adjustments. Consult your KINZE® Dealer for service.

SOLENOID VALVE TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
None of the solenoids will operate.	Low voltage.	Must be connected to 12 volt DC only. Negative ground.
	Blown fuse.	Replace fuse in control console on tractor with AGC-15 amp only.
	Poor battery connection.	Clean and tighten.
	Wiring harness damaged.	Repair or replace.
One solenoid valve will not operate.	Bad switch.	Replace on control panel.
	Cut wire in harness.	Locate and repair.
	Bad coil.	Replace.
	Poor connection at coil.	Check.
Valve operating when not energized.	Valve stem stuck open.	Replace cartridge.
	O-ring leaking.	Install new o-ring kit.
	Foreign material under poppet.	Remove cartridge and clean.

LIFT/FOLD CIRCUIT TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	TROUBLESHOOTING*	SOLUTION
Planter raising uneven.	Master cylinder is leaking.	Raise planter **slowly** until master cylinder reaches mid stroke. If master cylinder is leaking the corresponding slave cylinder will have a greater rod length. If planter settles when hydraulic lever is released, check assist cylinders.	Perform leak test. Consult your KINZE® Dealer for leak testing. Install seal kit.
	Slave cylinder is leaking.	Fold planter to transport position. Retract field tires and observe which tire settles.	Perform leak test. Consult your KINZE® Dealer for leak testing. Install seal kit.
Planter raising even; however, planter settles when hydraulic lever is released.	Assist cylinder is leaking.	Fold planter to transport position. Retract assist cylinder and observe which tire settles.	Perform leak test. Consult your KINZE® Dealer for leak testing. Install seal kit.

* Operate hydraulics slowly to accentuate the problem.

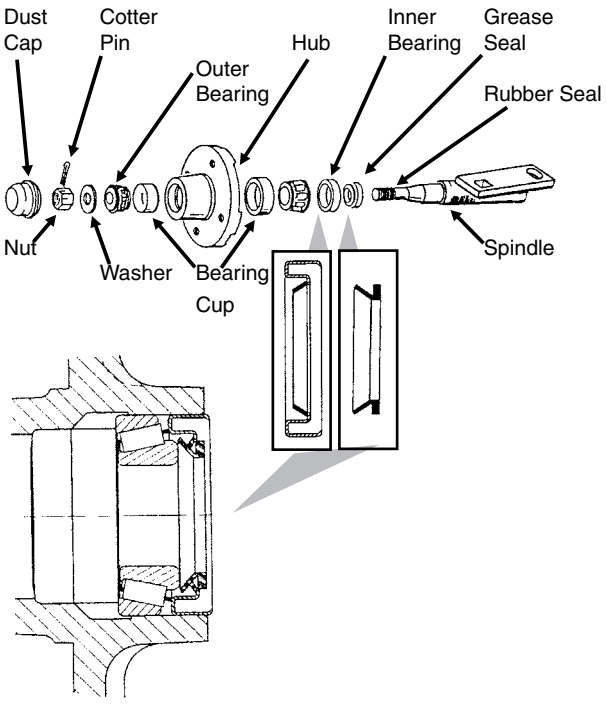
ROW MARKER CIRCUIT TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Right marker lowering slower than left marker.	Solenoid valve cartridge in port V3 not opening completely.	Switch cartridge with one in port V4. If problem follows cartridge, replace cartridge.
	Hose pinched or collapsed.	Inspect hose routing. Replace or repair hoses as required.
Left marker lowering slower than right marker.	Solenoid valve cartridge in port V4 not opening completely.	Switch cartridge with one in port V3. If problem follows cartridge, replace cartridge.
	Hose pinched or collapsed.	Inspect hose routing. Replace or repair hoses as required.
Both markers lowering.	Solenoid valve cartridge stuck open. If marker switch is in the left marker position, the right cartridge (V3) is defective. If the marker switch is in the right marker position, the left cartridge (V4) is defective.	Replace solenoid valve cartridge.
Neither marker will lower.	Blown fuse.	Check red light on control console. It should be on if switch is ON. If light is not on, switch to opposite marker position. If light comes on, switch may be defective. Replace switch. Otherwise replace fuse.
	Coils at V3 and V4 not energized.	Poor ground on wire, bad wire connection or damaged wire. Repair as required.
	Marker flow control valve closed too far.	See “Machine Operation” for adjustment.
Neither marker will raise.	Marker flow control valve closed too far.	See “Machine Operation” for adjustment.
Right marker will not lower.	Solenoid coil in port V3 not energized.	Check switch on control console. Replace if defective. Check coil ground wire. Check for poor connection or damaged wire.
	Solenoid cartridge in port V3 stuck closed.	Switch cartridge with one on the planter you know is operating properly. If right marker lowers, replace defective cartridge.
Left marker will not lower.	Solenoid coil in port V4 not energized.	Check switch on control console. Replace if defective. Check coil ground wire. Check for poor connection or damaged wire.
	Solenoid cartridge in port V4 stuck closed.	Switch cartridge with one on the planter you know is operating properly. If right marker lowers, replace defective cartridge.
Markers traveling too fast and damaging row marker stands and/or damaging pivot at rod end of marker cylinders.	Marker flow control valve out of adjustment.	See “Machine Operation” for adjustment.

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 ¾ full of wheel bearing grease and install on hub.
12. Install blade and dust cap retainer on hub and tighten evenly and securely.

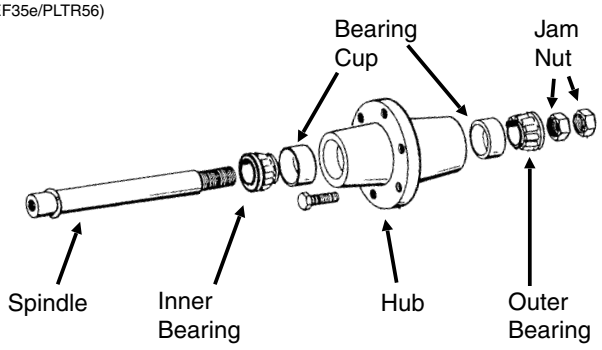
(PLTR45/PLTR99/PLTR98/PLTR102)



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 ¼ turn or until there is only slight drag when rotating the hub. Install second jam nut to lock against first.
9. Install wheel on hub and tighten evenly and securely. Torque lug bolts or nuts to specified torque.

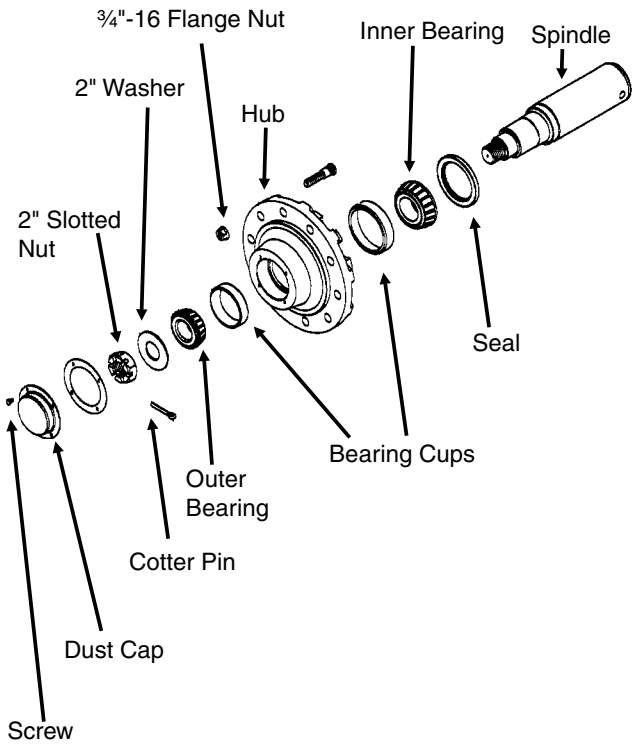
(EF35e/PLTR56)



TRANSPORT WHEEL BEARING REPLACEMENT

1. Raise tires clear of ground and remove wheels.
2. Remove dust cap attachment hardware and remove cap from wheel hub.
3. Remove cotter pin, axle nut and 2" washer.
4. Slide hub from axle spindle, using a hub puller if necessary.
5. Remove bearings and cups from hub and discard. Thoroughly clean and dry wheel hub.
6. Press in new bearing cups with thickest edges facing in.
7. Pack bearing with heavy-duty wheel bearing grease, thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.
8. Place inner bearing in hub and press in new grease seal with lip pointing towards bearing.
9. Clean axle spindle and install hub.
10. Install outer bearing, 2" washer and slotted hex nut. Tighten slotted hex nut while rotating the hub until there is some drag. This assures that all bearing surfaces are in contact. Back off slotted nut to nearest locking slot and install cotter pin. Check for endplay in bearings.
11. Fill dust cap half full of wheel bearing grease and install on hub with attachment bolts.
12. Install wheels and remove jack. Torque wheel nuts (and cap screws if applicable) to specified torque.

(FWD60c)



MAINTENANCE

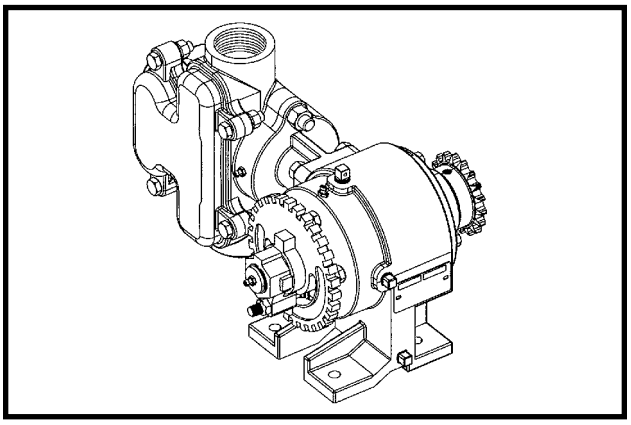
PISTON PUMP STORAGE

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.

PREPARATION FOR STORAGE

Store the planter in a dry sheltered area if possible.

Remove all trash that may be wrapped on sprockets or shafts and remove dirt that can draw and hold moisture.

Clean all drive chains and coat with a rust preventative spray, or remove chains and submerge in oil.

Lubricate planter and row units at all lubrication points.

Inspect the planter for parts that are in need of replacement and order during the “off” season.

Make sure all seed and granular chemical hoppers are empty and clean.

Clean seed meters and store in a rodent-free, dry area.

Remove seed discs from brush-type seed meters, clean and store meters with discs removed.

Disassemble, clean and grease all U-joint slides.

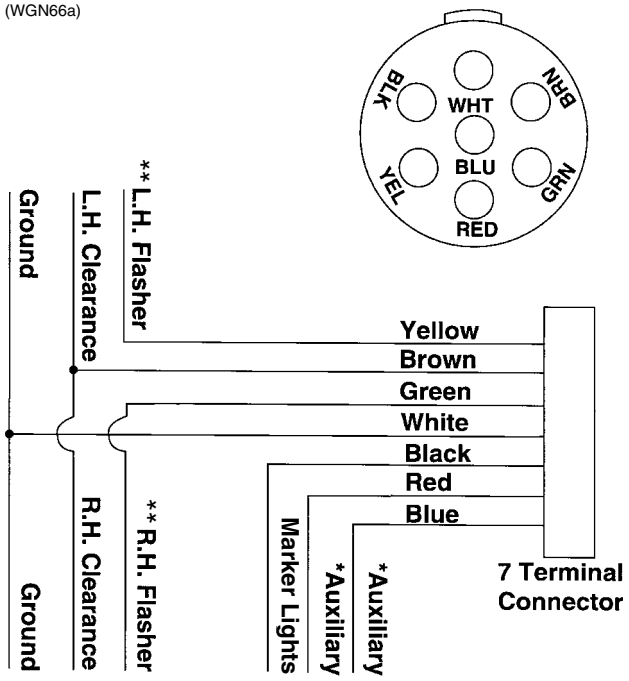
Grease or paint disc openers/blades and row marker disc blades to prevent rust.

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

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

ELECTRICAL WIRING DIAGRAM FOR 7-TERMINAL LIGHT CONNECTOR

(WGN66a)



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

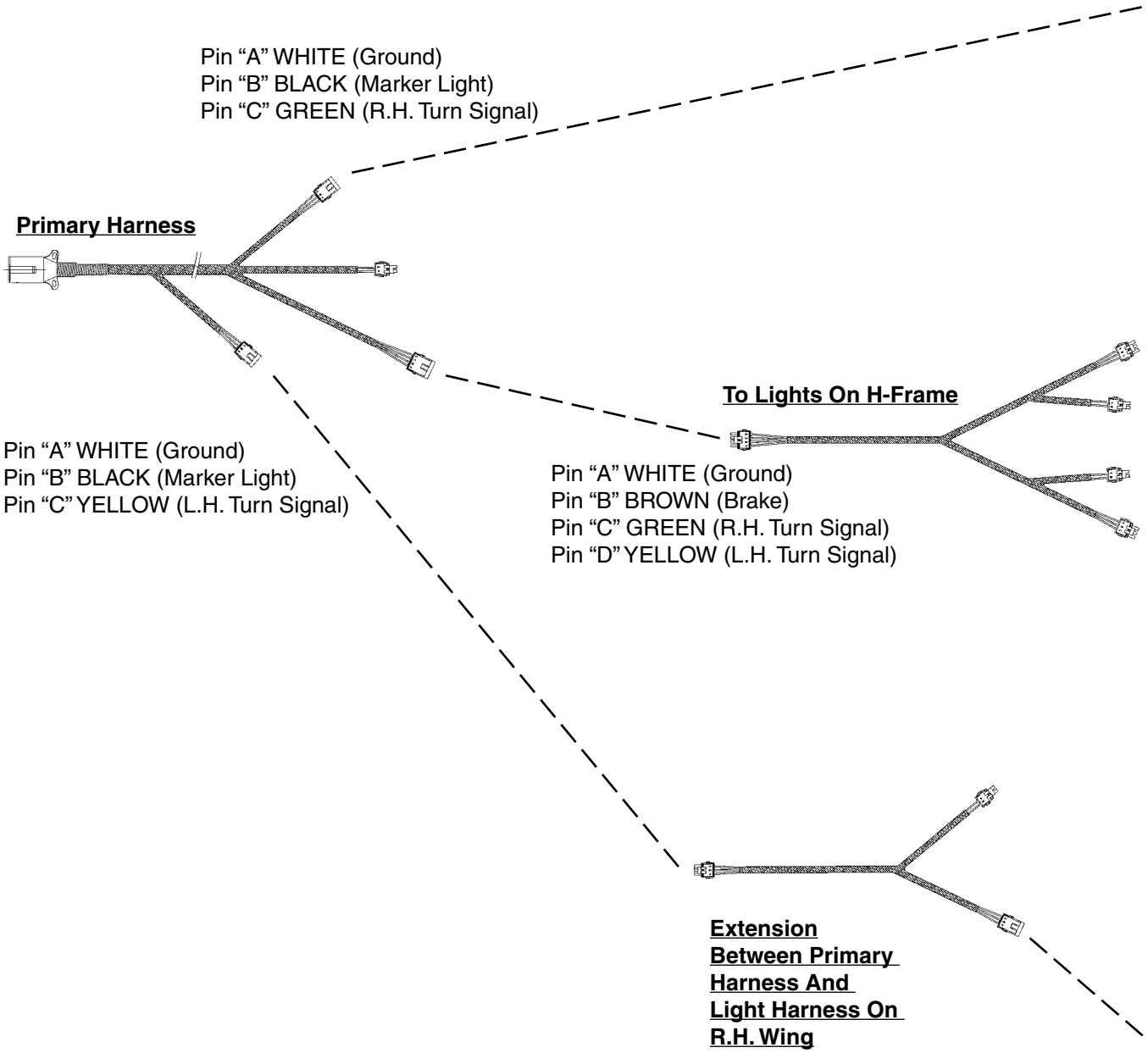
**** Rear and side flashers.**

The light packages supplied on Model 3800 SDS and 3800 Conventional Forward Folding Planters meet ASAE Standards. For the correct wiring harness to be wired into the lights on your tractor, check with the tractor manufacturer.

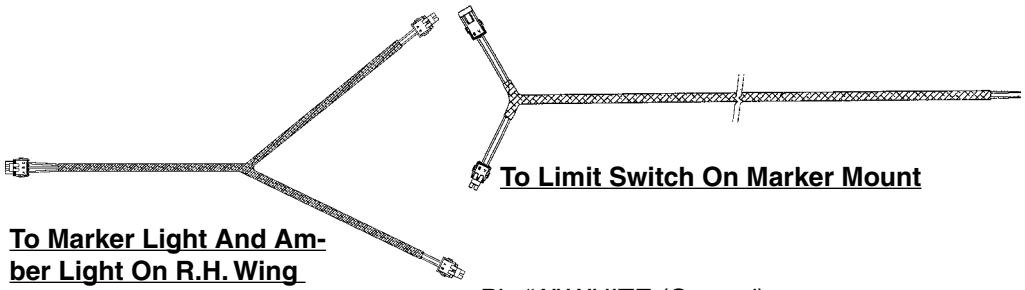
69922-35

ELECTRICAL LIGHT HARNESS SCHEMATICS

(A10315/A10316/A10317/A10318/A10319)



Pin “A” WHITE (Ground)
Pin “B” BLACK (Marker Light)



To Limit Switch On Marker Mount

To Marker Light And Amber Light On R.H. Wing

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

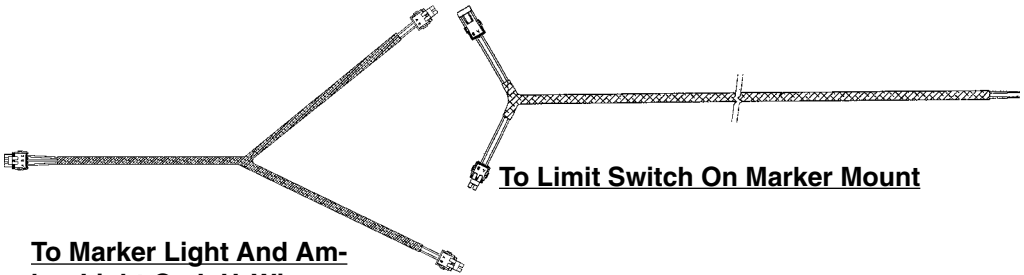
Pin “A” WHITE (Ground)
Pin “B” BROWN (Brake)
Pin “C” GREEN (R.H. Turn Signal)

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

Pin “A” WHITE (Ground)
Pin “B” YELLOW (L.H. Turn Signal)

Pin “A” WHITE (Ground)
Pin “B” BROWN (Brake)
Pin “C” YELLOW (L.H. Turn Signal)

Pin “A” WHITE (Ground)
Pin “B” BLACK (Marker Light)



To Limit Switch On Marker Mount

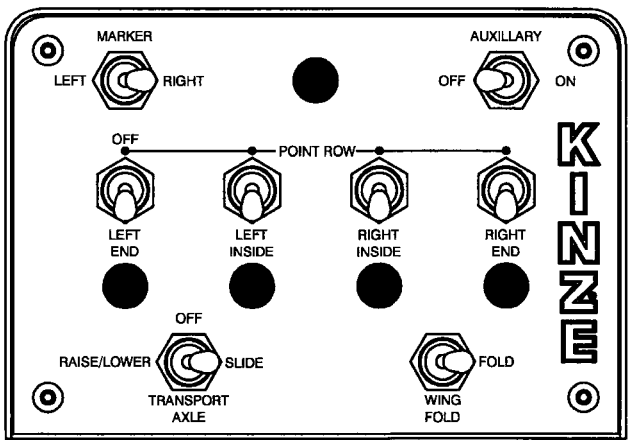
To Marker Light And Amber Light On L.H. Wing

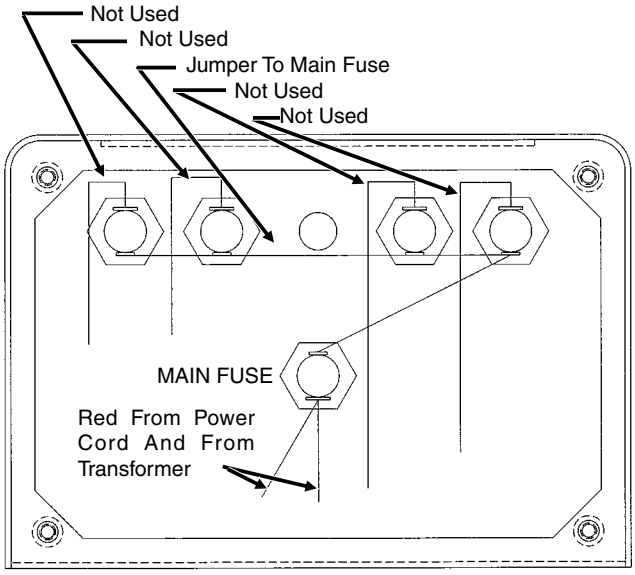
Pin “A” WHITE (Ground)
Pin “B” YELLOW (L.H. Turn Signal)

ELECTRICAL CONTROL CONSOLE SCHEMATIC (Planter Functions)

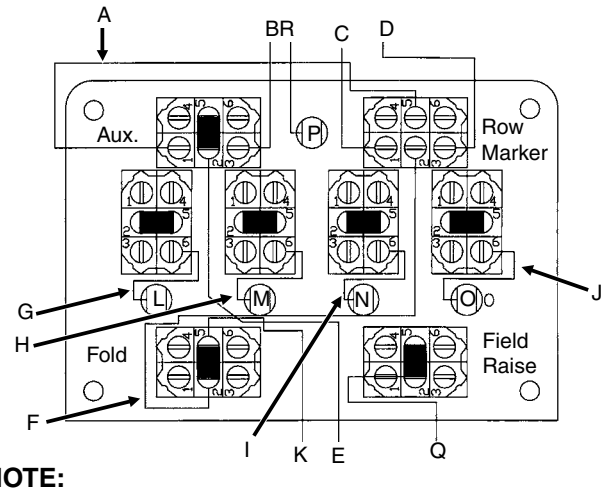
IMPORTANT: Before doing any electrical work, disconnect the control console from the tractor battery. Keep wiring harnesses away from high temperature areas or sharp edges. DO NOT route the wiring harnesses along battery cables. Use tie straps to keep wire harnesses away from moving parts on tractor and planter. Be sure ground connections to the tractor frame are clean to provide good electrical contact.

(FWD30bb/FWD36a/FWD30c/FWD36)

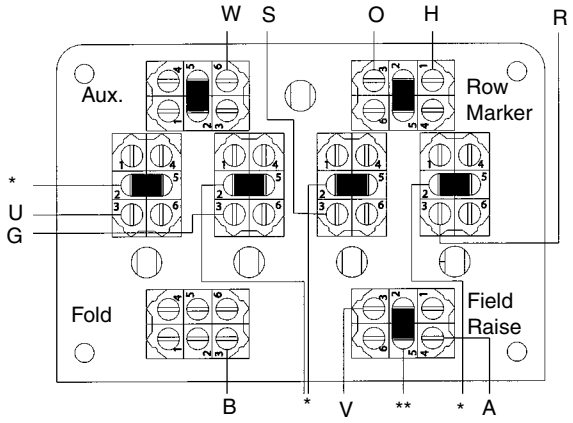




A. 6" White Jumper
B.-D., Q. 4" White Jumper (4)
E. 4" Red Jumper
F. 7" Orange Jumper
G.-J. 3" White Jumper (4)
K. 5" Black Jumper
L.-P. 7" Purple Jumper (5)
R. 4" White Jumper



Pin "A" ORANGE/RED (Slide)
Pin "R" BROWN (Not Used)
Pin "G" ORANGE (Not Used)
Pin "H" BLUE (L.H. Marker)
Pin "B" BLUE/RED (Fold)
Pin "U" RED/BLACK (Not Used)
Pin "S" YELLOW (Not Used)
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)
* Not Used
** To Main Fuse

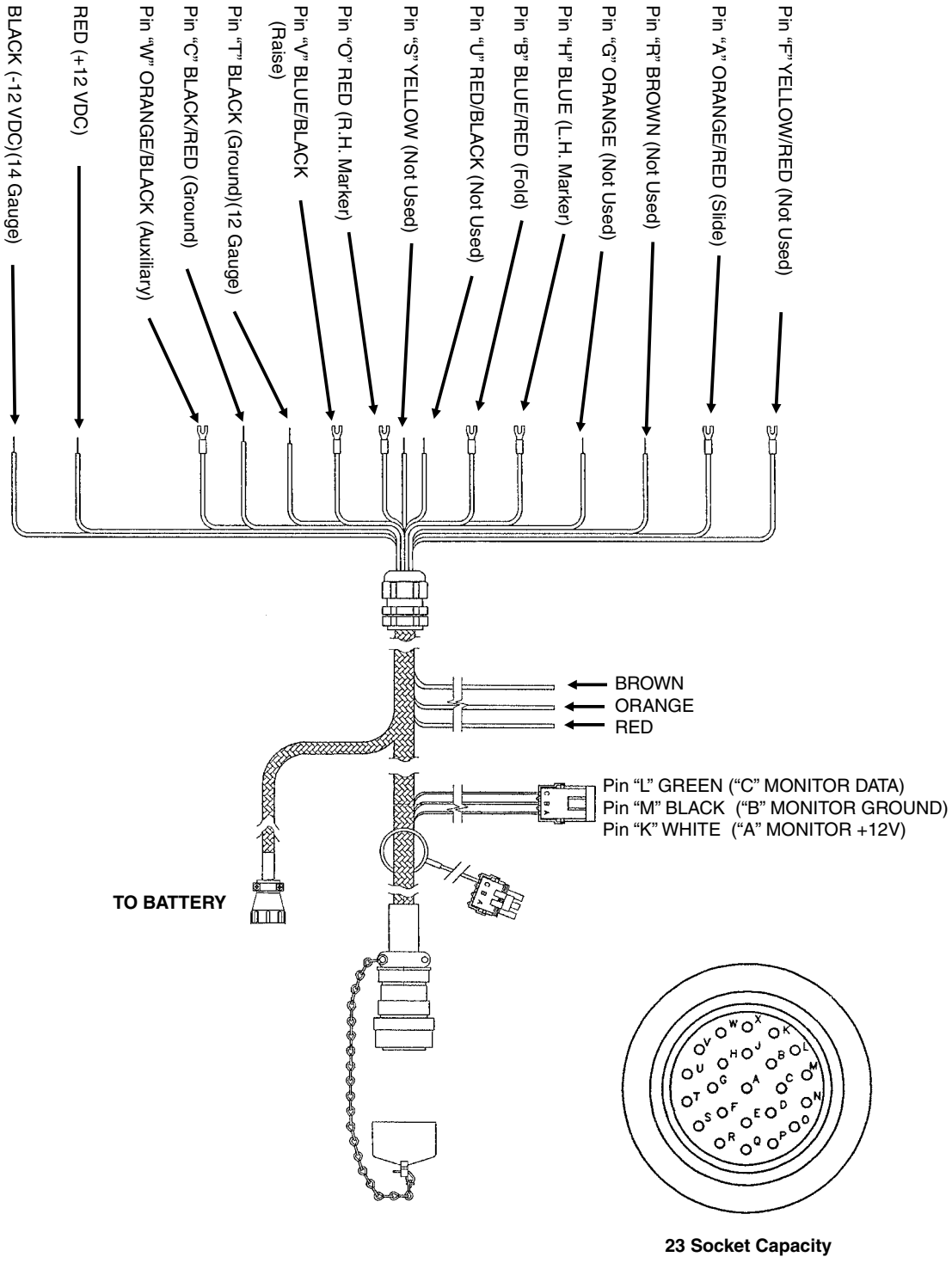


NOTE:

1. Operating marker switches in either direction lights panel light.
2. 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.

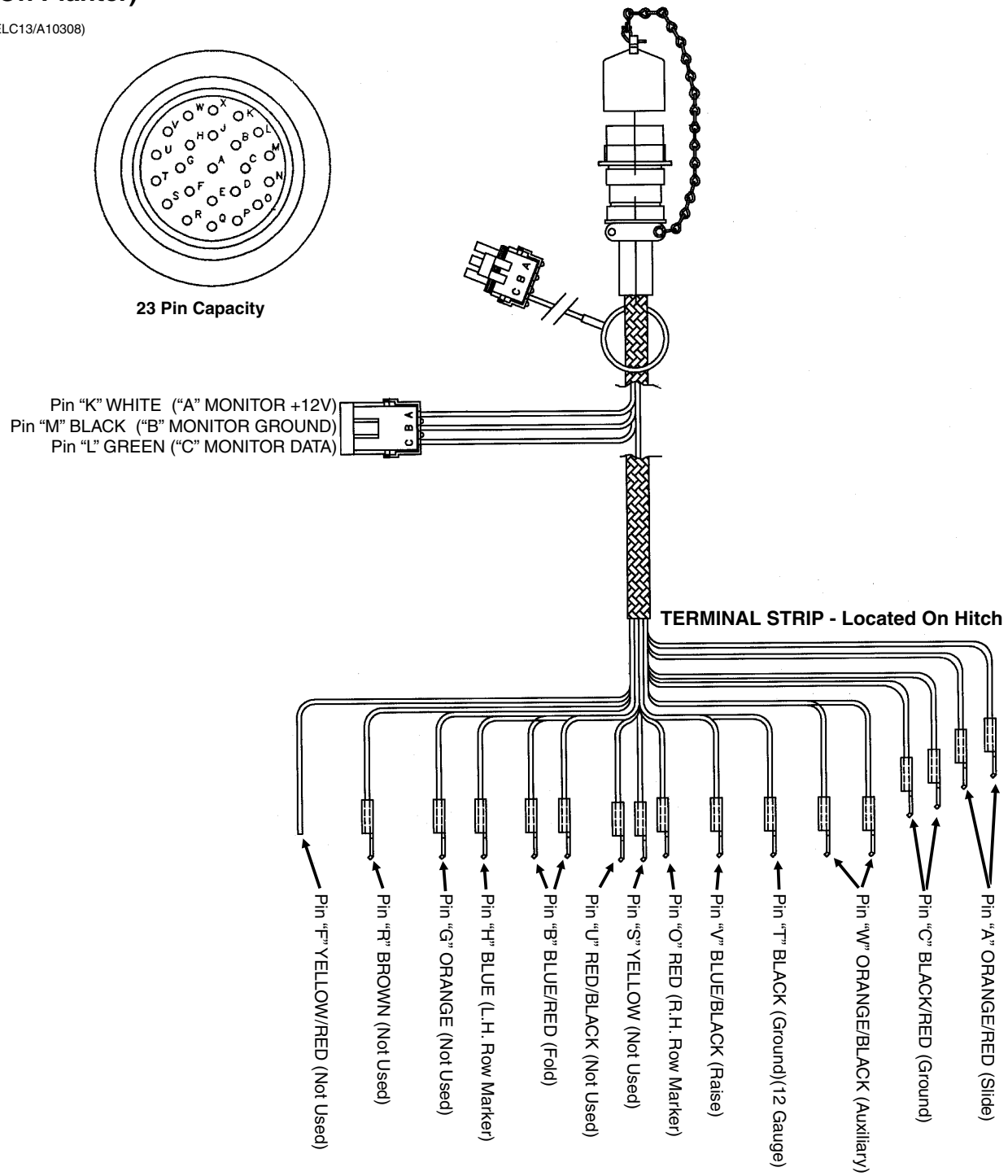
ELECTRICAL WIRING HARNESS SCHEMATIC (On Tractor)

(ELC10c/ELC13)



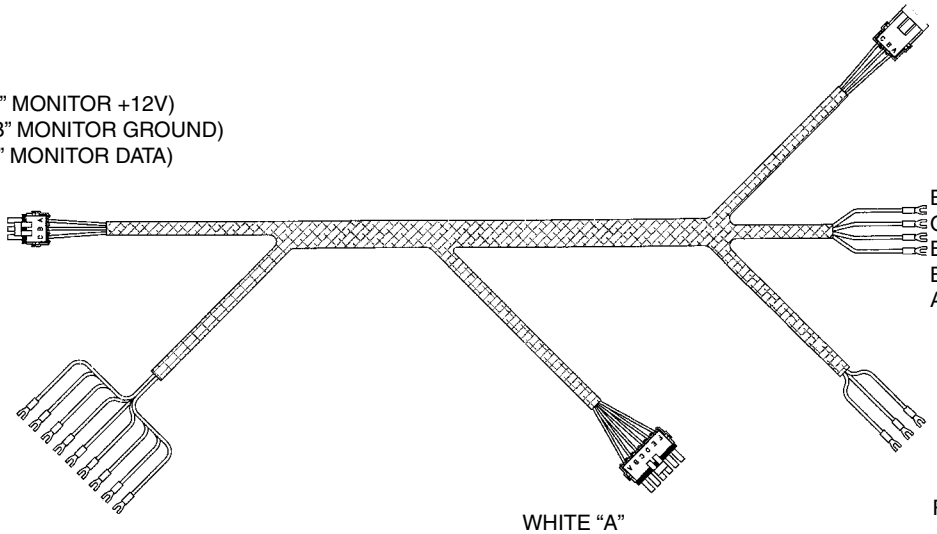
ELECTRICAL WIRING HARNESSES SCHEMATIC (On Planter)

(ELC13/A10308)



ELECTRICAL WIRING HARNESSES SCHEMATIC (Continued)
(On Planter)

(A12652)



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

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

Blue/Red (Fold)
Orange/Black (Auxiliary)
Black (Ground)
Blue/Black (Transport Axle)

ORANGE (Not Used)
RED/BLACK (Not Used)
BLACK/RED (Ground)

WHITE “A”
BLACK “B”
GREEN “C”
BLACK/RED “D”
BROWN “E”
YELLOW “F”

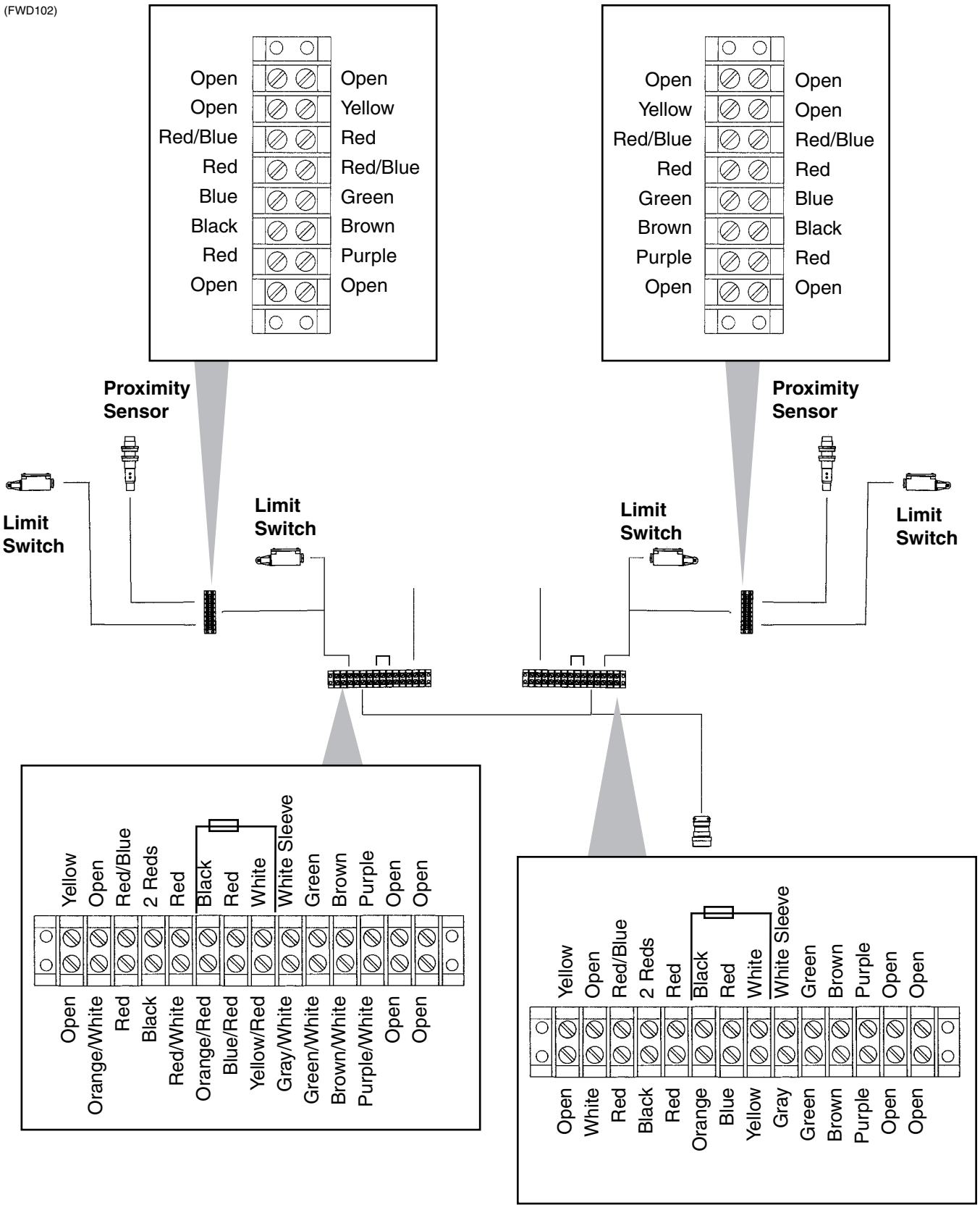
BROWN (Not Used)
YELLOW (Not Used)
BLACK/RED (Ground)
ORANGE (Not Used)
RED/BLACK (Not Used)
Orange/Black (Auxiliary)
Blue/Red (Fold)
Black (Ground)
Blue/Black (Transport Axle)

TERMINAL STRIP - Located On Hitch

MAINTENANCE

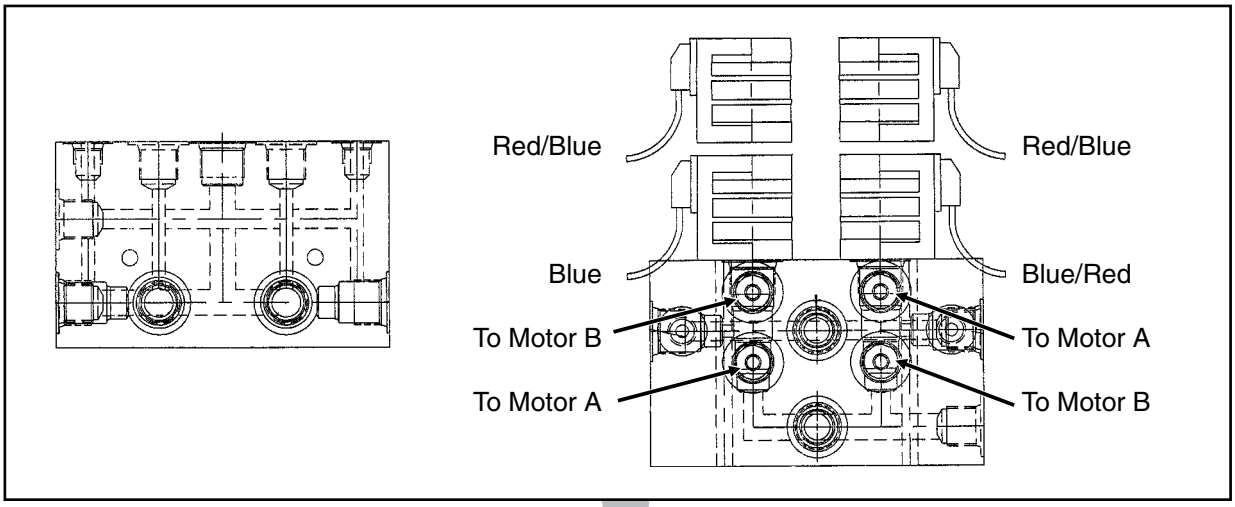
ELECTRICAL WIRING SCHEMATIC (SDS)

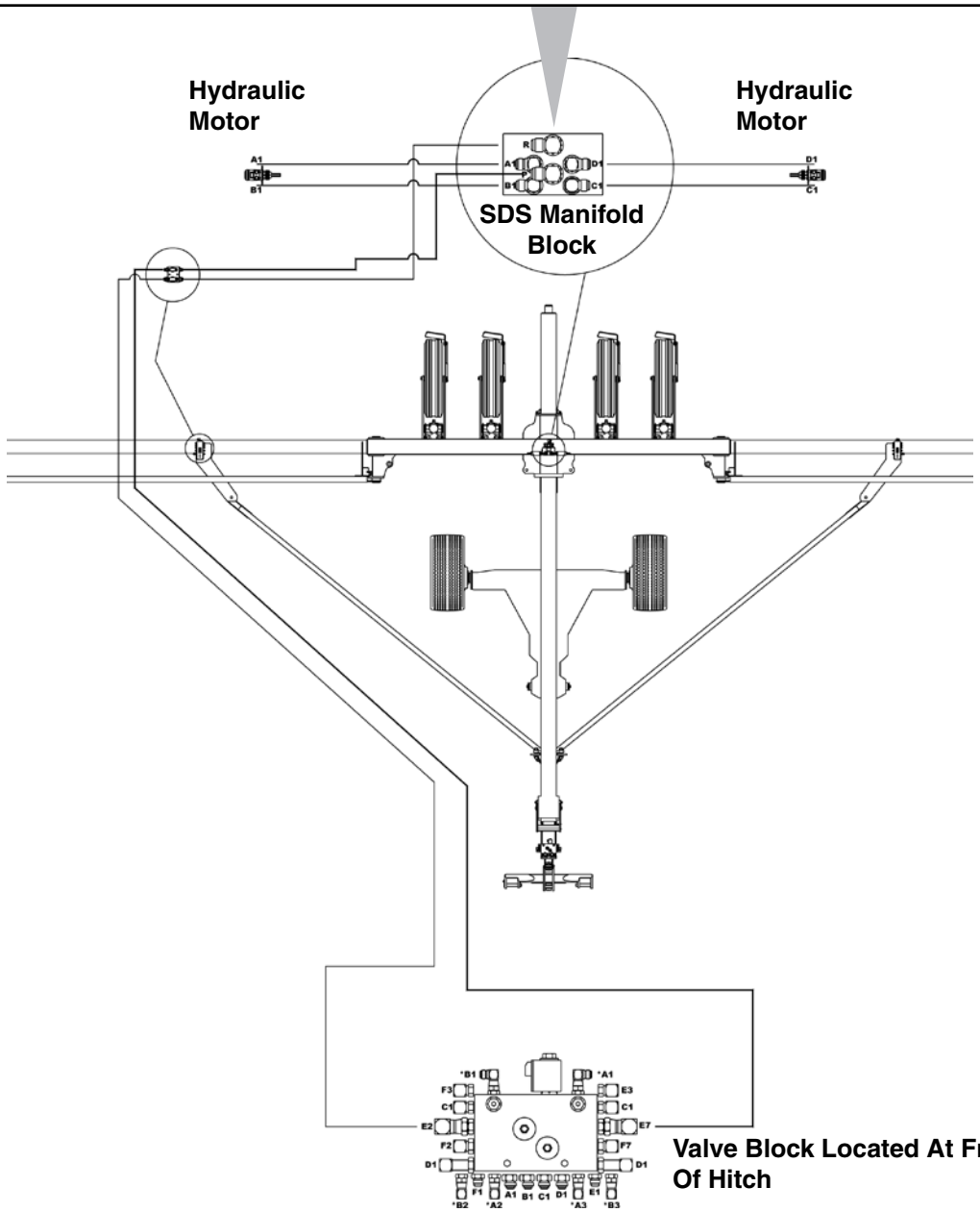
(FWD102)



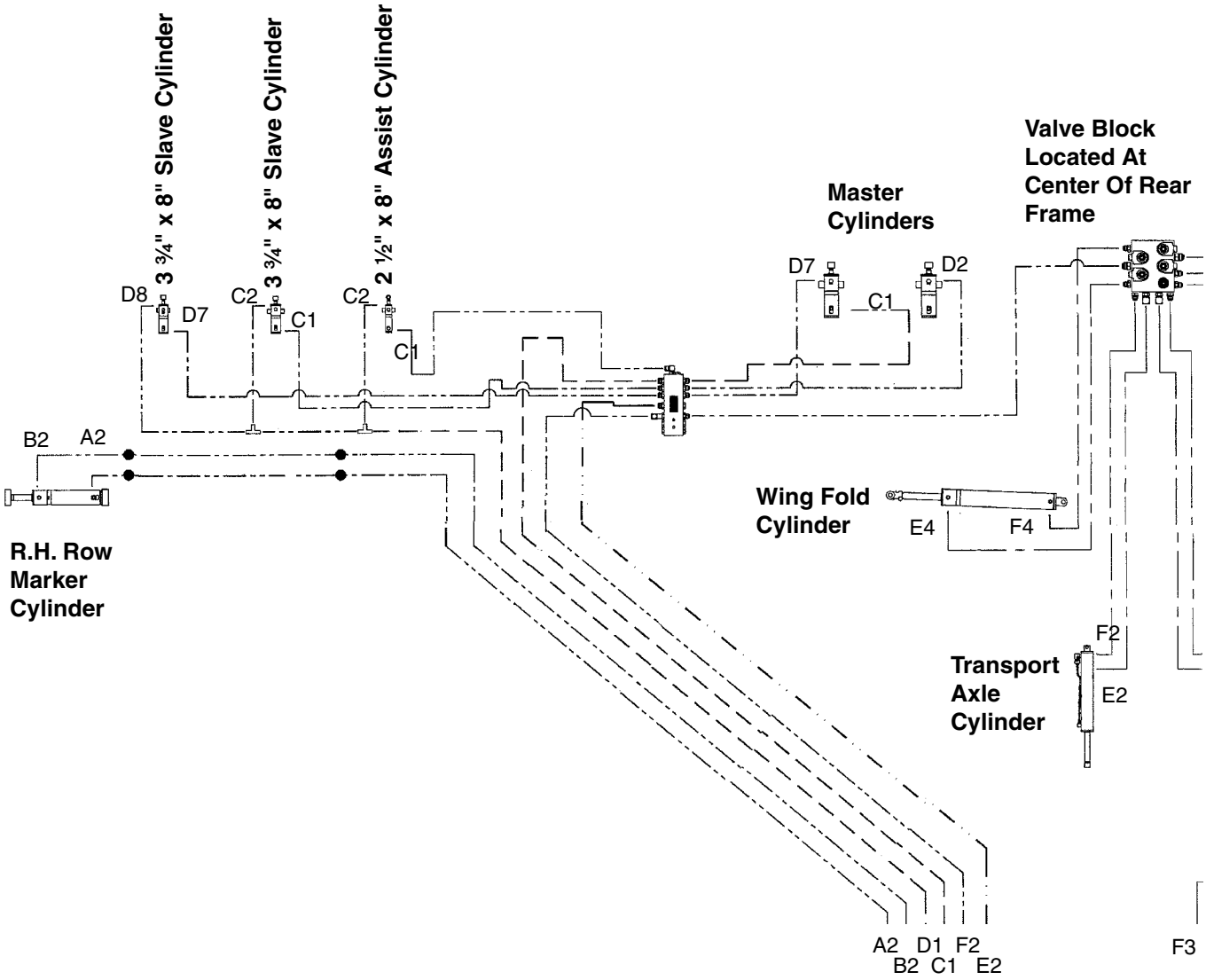
HYDRAULIC SCHEMATIC (SDS)

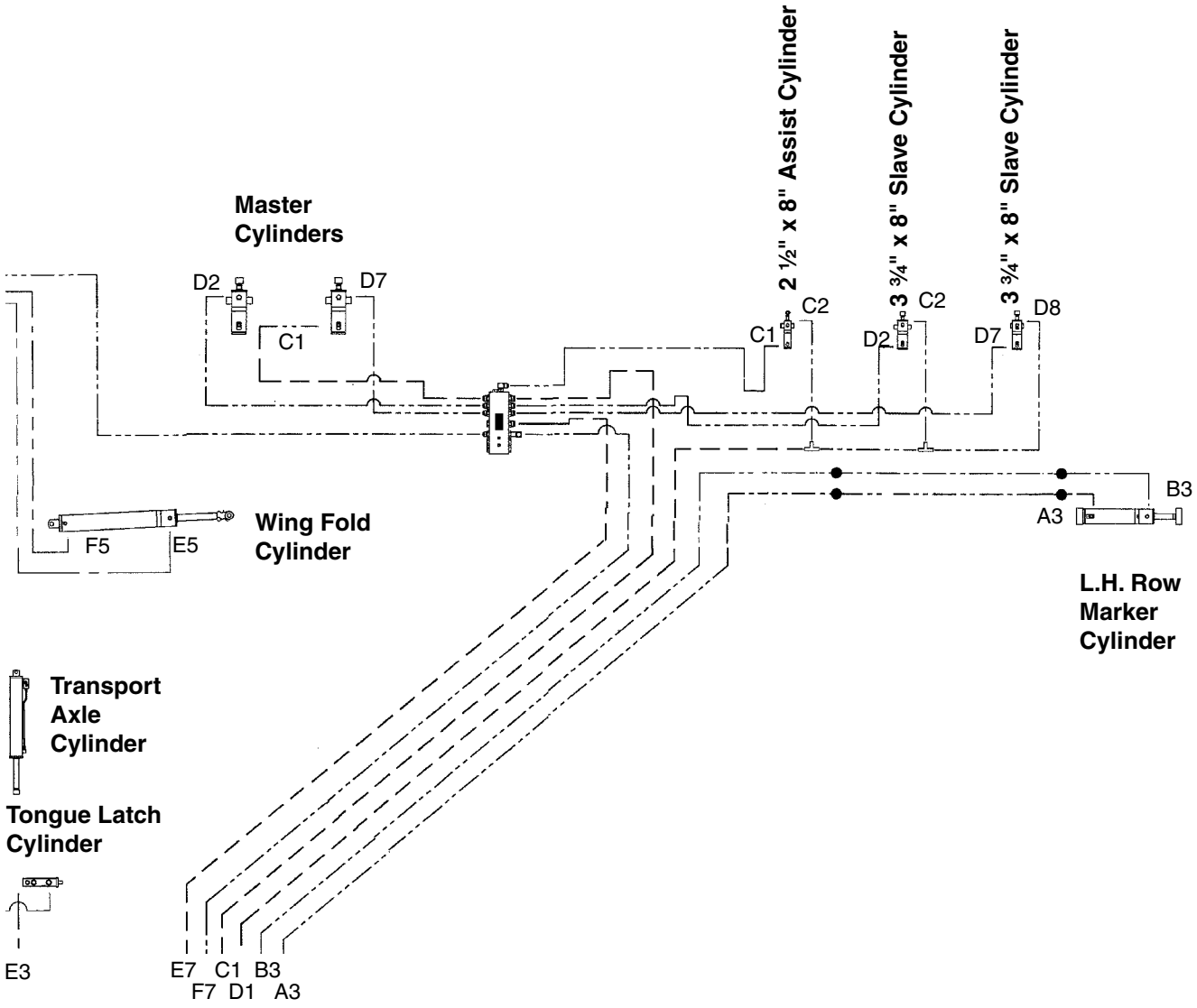
(FWD103/FWD101a)



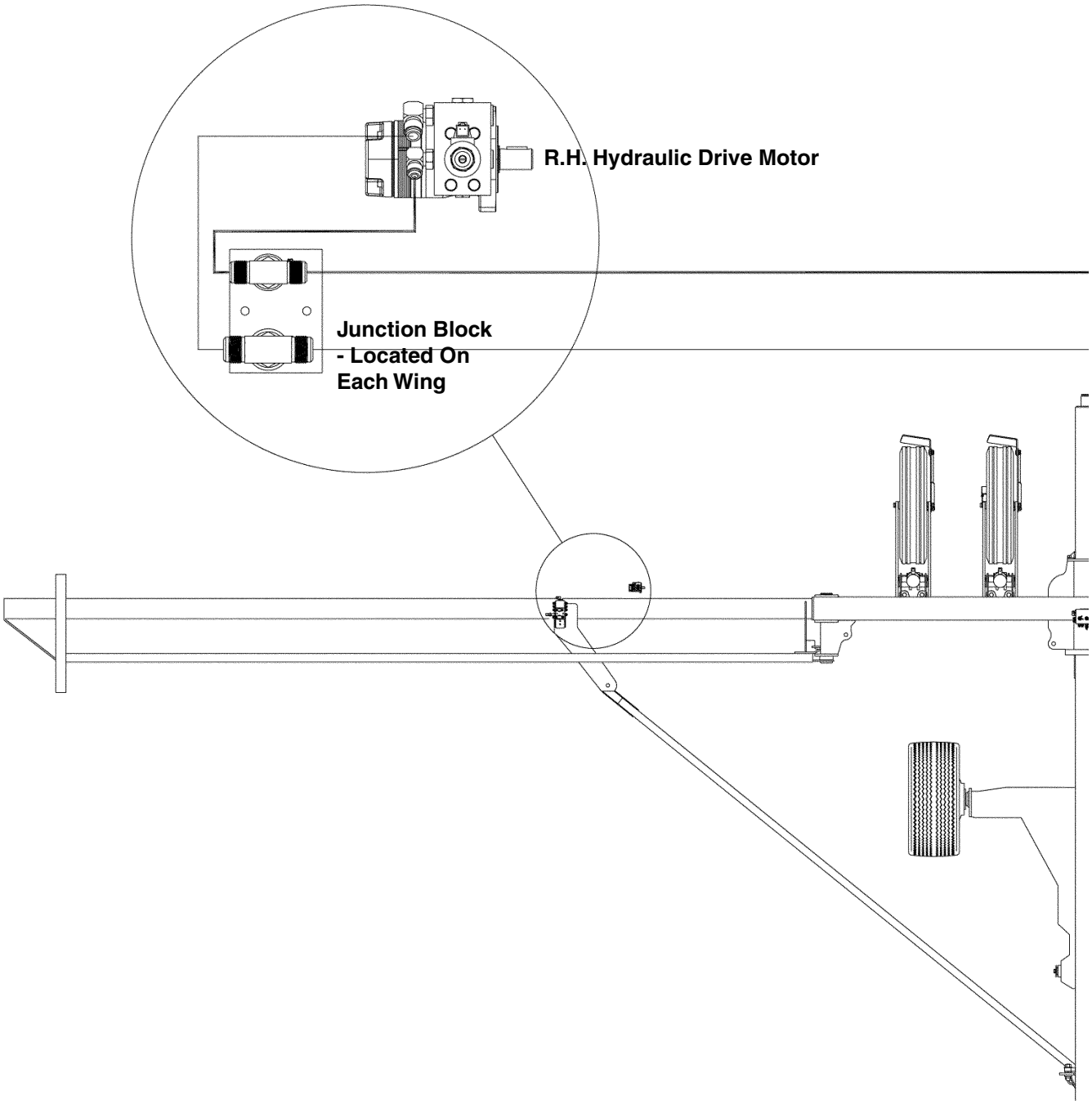


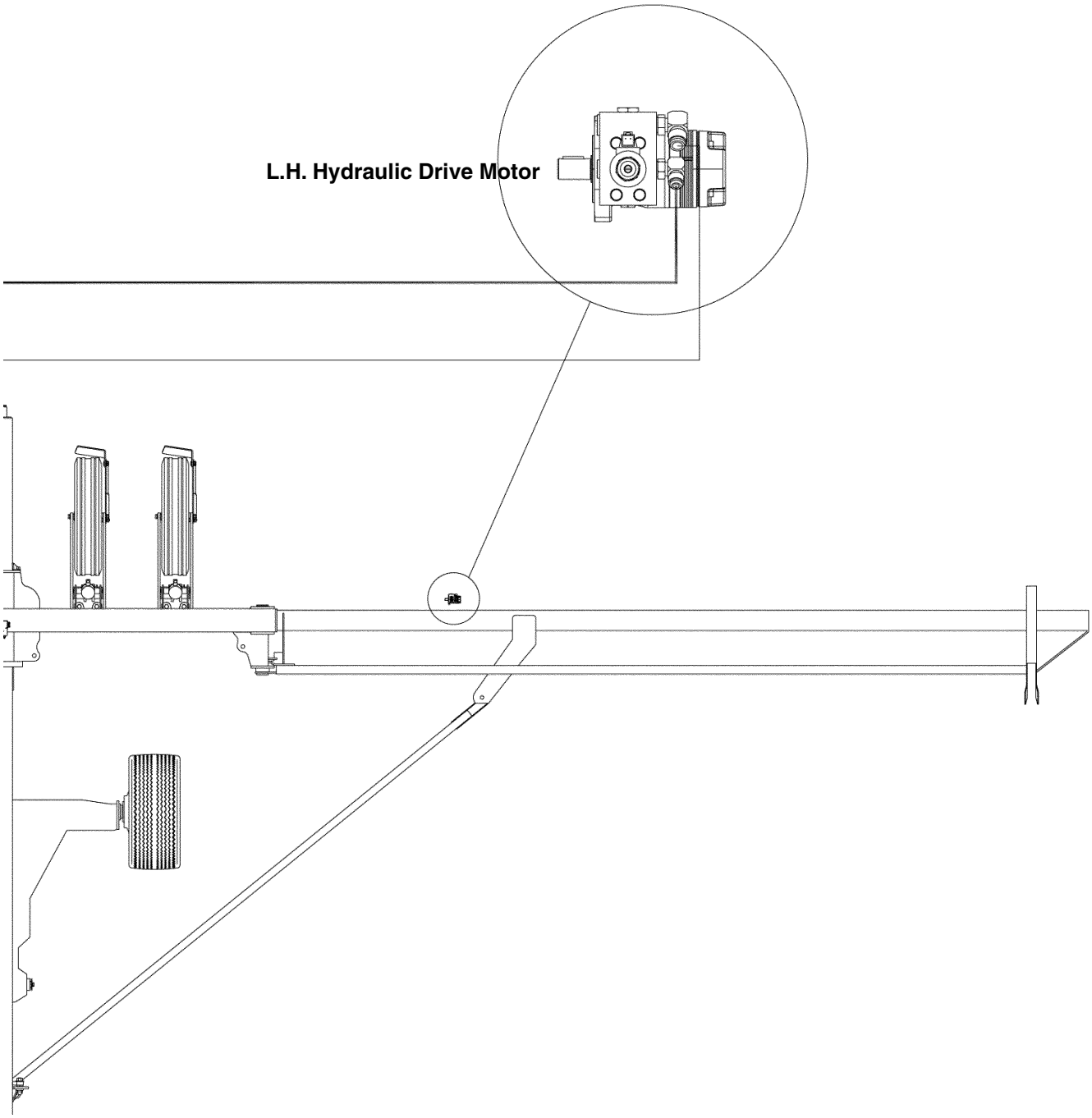
HYDRAULIC SYSTEM SCHEMATIC
(FWD154)



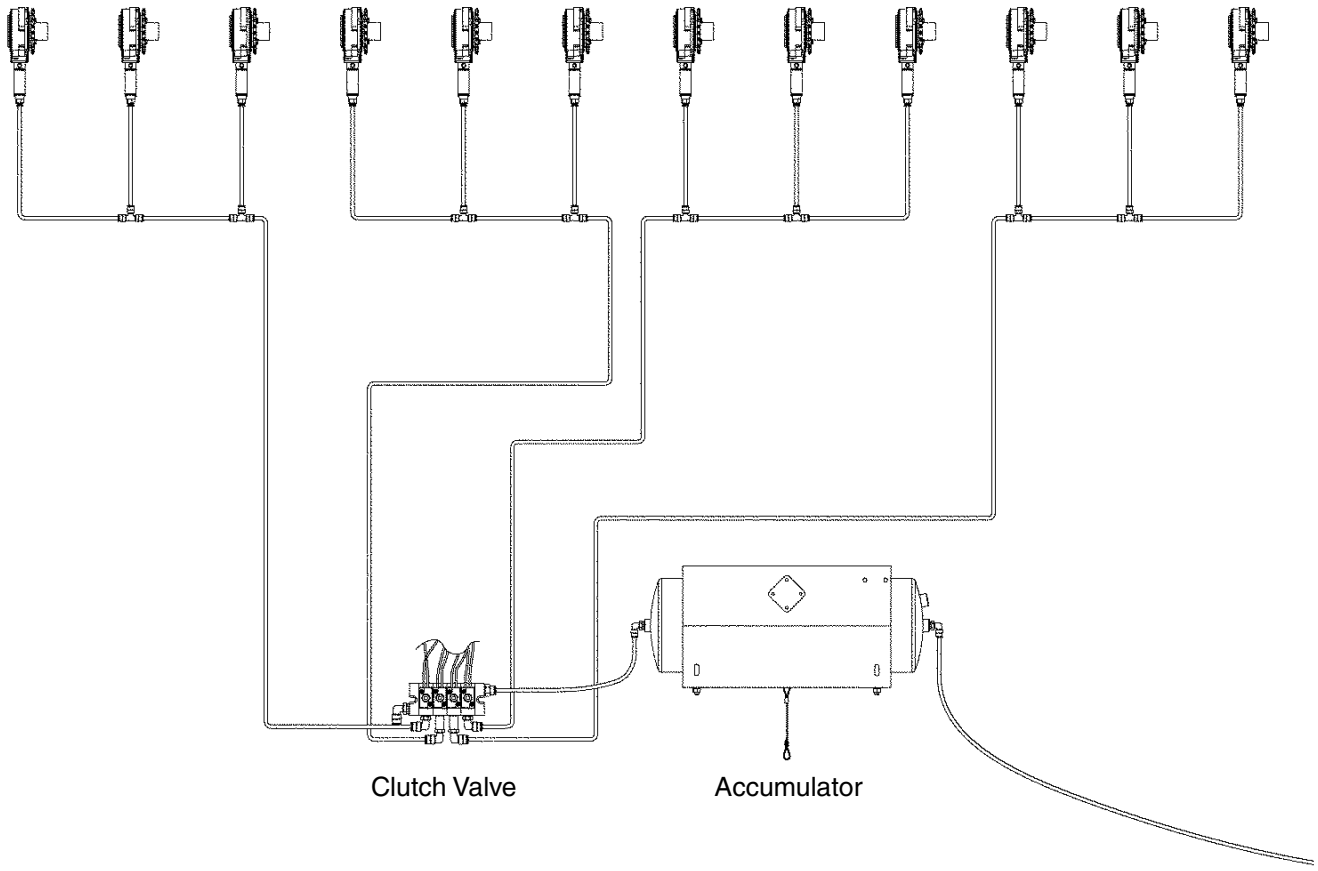

Master
Cylinders
D2
D7
C1
2 ½" x 8" Assist Cylinder
3 ¾" x 8" Slave Cylinder
3 ¾" x 8" Slave Cylinder
C1
C2
D2
C2
D7
D8
B3
A3
F5
E5
Wing Fold
Cylinder
L.H. Row
Marker
Cylinder
Transport
Axle
Cylinder
Tongue Latch
Cylinder
E3
E7 C1 B3
F7 D1 A3

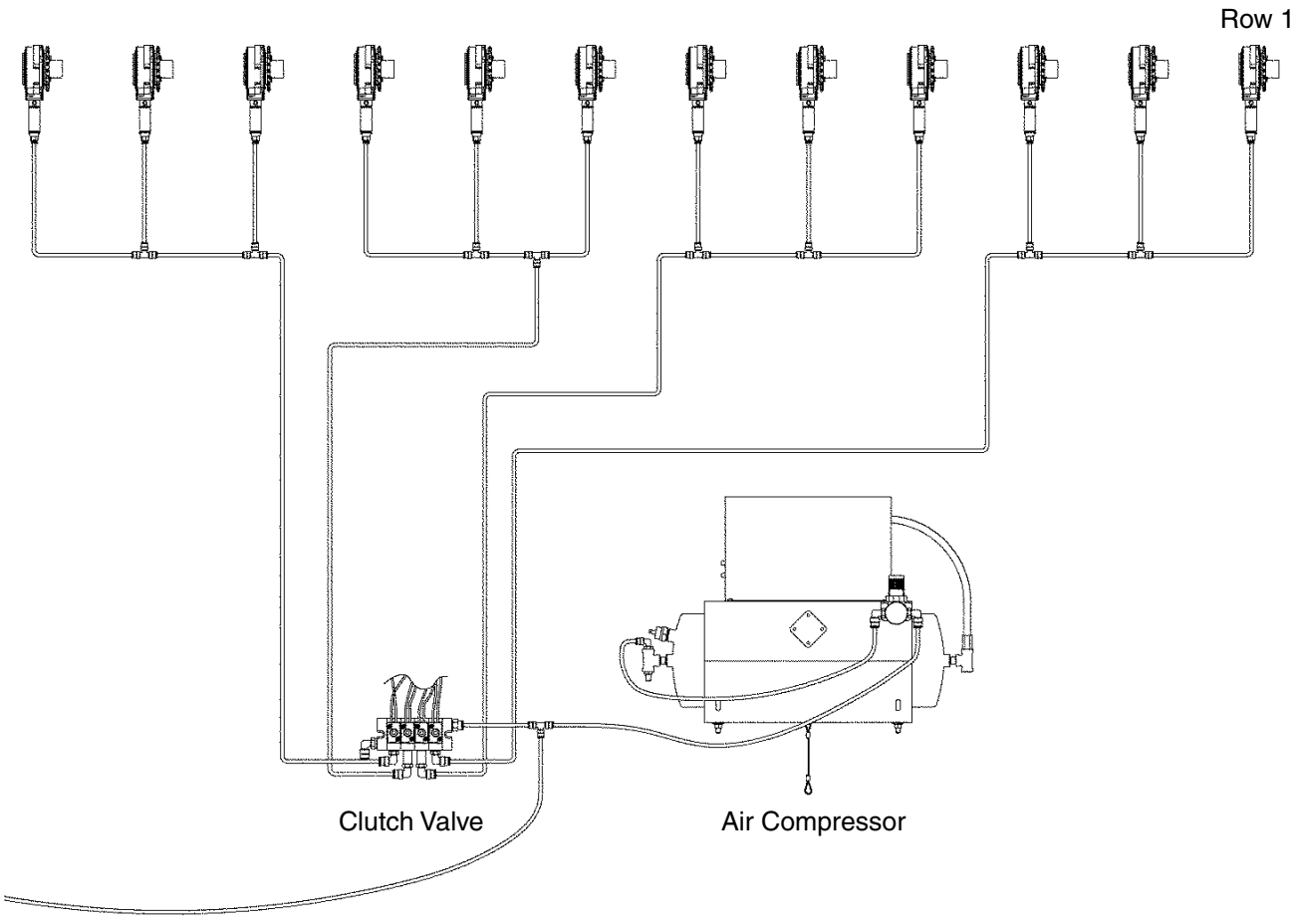
HYDRAULIC DRIVE HYDRAULIC SYSTEM SCHEMATIC
(FWD181)




L.H. Hydraulic Drive Motor

AIRLINE SCHEMATIC
(VI61)

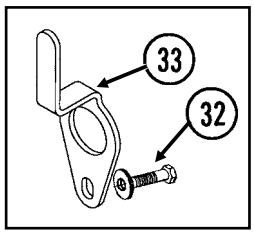


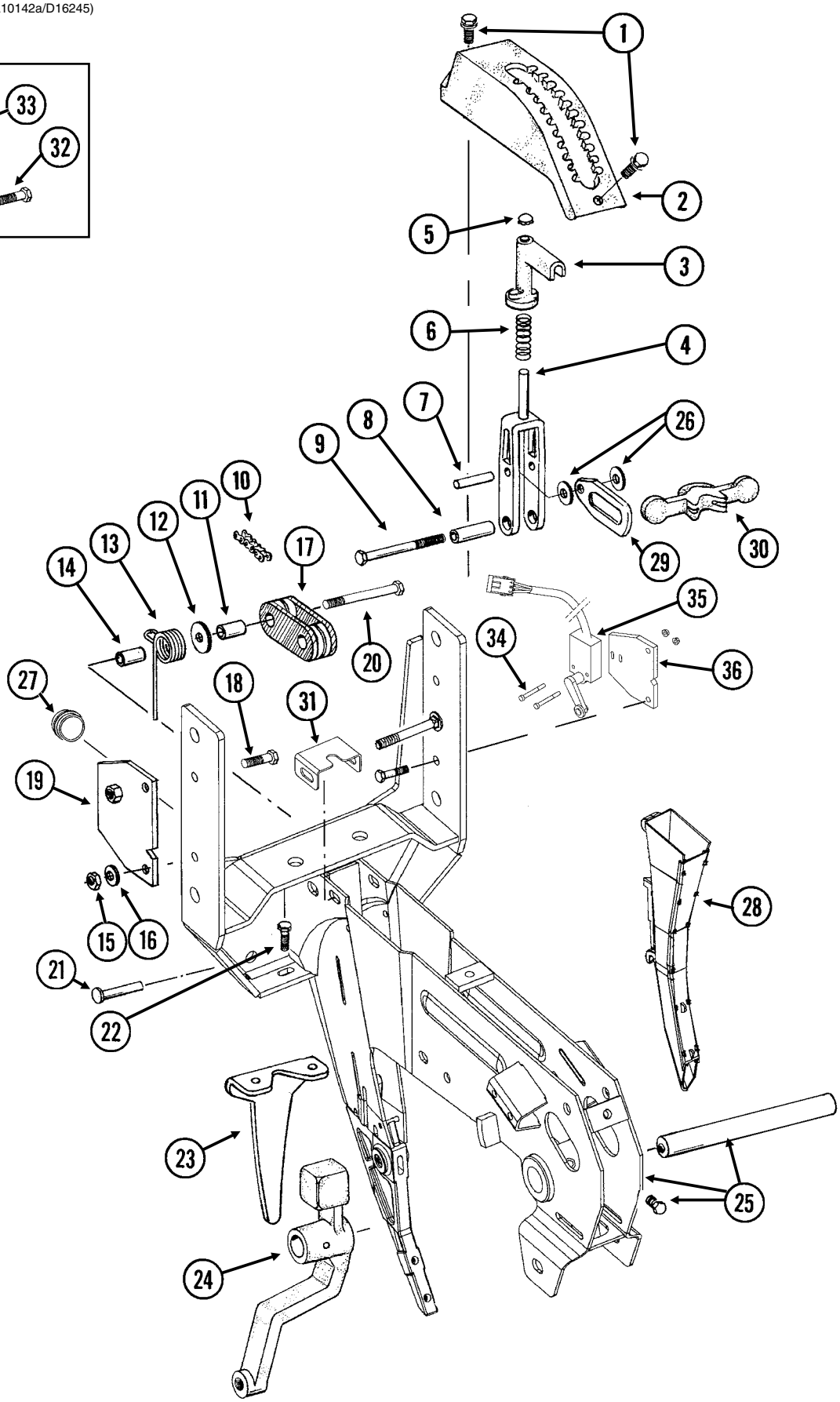

Row 1
Clutch Valve
Air Compressor

PARTS LIST INDEX

SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

(D17014/RU166/A10142a/D16245)





SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

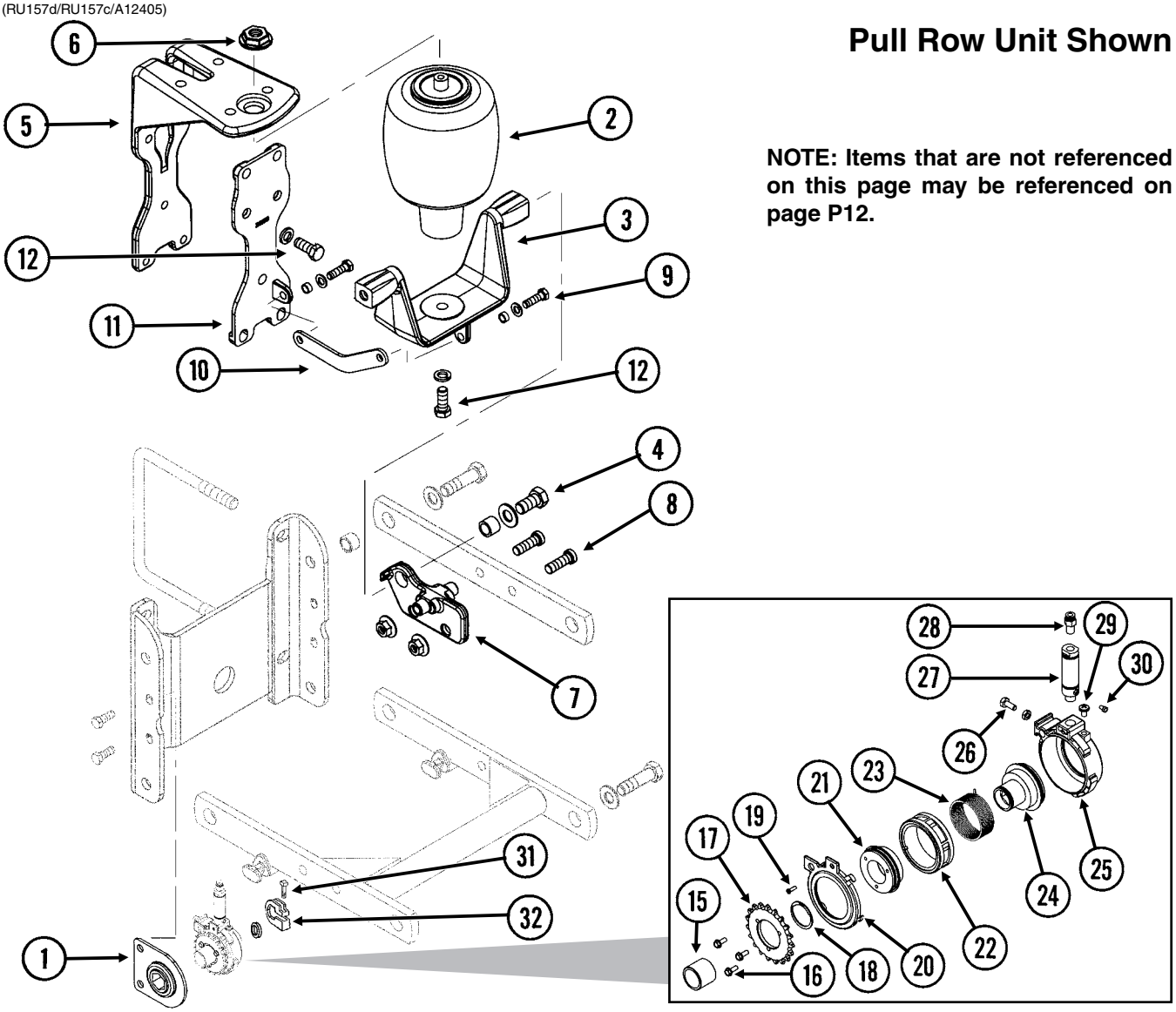
ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11015	2	Hex Washer Head Cap Screw, 3/8"-16 x 1 1/4"
2.	GB0274	1	Cover, Depth Adjustment
3.	GB0266	1	Handle, Depth Adjustment
4.	GB0267	1	Lever, Depth Adjustment
5.	GD3612	1	Cap Plug
6.	GD10993	1	Spring
7.	GD13361	1	Pin, 3/8" x 1 2/3"
8.	GD11259	1	Sleeve, 3/8" I.D. x 5/8" O.D. x 1 25/32" Long
9.	G11008	1	Hex Head Cap Screw, 3/8"-24 x 2 1/2", Grade 8
	G11007	1	Lock Nut, 3/8"-24, Grade C
10.	G3303-108	1	Chain, No. 41, 108 Pitch Including Connector Link
	G3303-16	1	Chain, No. 41, 16 Pitch Including Connector Link (Used W/Row Unit Extension Brackets)
	GR0196	1	Connector Link, No. 41
11.	GD1026	1	Sleeve, 1 3/16" Long
12.	G10201	1	Special Washer, 3/8" x 1 1/2" O.D.
13.	GD1065	1	Idler Spring
14.	GD7318	1	Sleeve, 1" Long
15.	G10108	1	Lock Nut, 3/8"-16
16.	G10210	1	Washer, 3/8" USS
17.	GD11962	1	Idler
18.	G10003	3	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10108	3	Lock Nut, 3/8"-16
19.	GD10867	2	Stop
20.	G10326	1	Hex Head Cap Screw, 3/8"-16 x 3 3/4"
21.	G10551	1	Clevis Pin, 1/4" x 2 1/2"
	G10669	1	Hair Pin Clip, No. 22
22.	G10312	2	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	2	Serrated Flange Nut, 5/16"-18
23.	GD1033	1	Shield
24.		-	Wheel Arm, See “Gauge Wheels”, Pages P14 And P15
25.	GA10157	1	Shank W/Gauge Wheel Pivot Spindle And Set Screw
	GD11001	-	Spindle
	G10438	-	Hex Head Cap Screw, 1/2"-13 x 3/4"
26.	G10207	2	Washer, 7/8" O.D. x 13/32" I.D. x .134" (If Applicable)
27.	GD11845	1	Dust Cap
28.			See “Planter Monitor Module (PMM)”, Pages P110 And P111
29.	GB0285	1	Collar, Depth Adjustment
30.	GB0265	1	Pivot Link, Depth Adjustment
31.	GD16245	-	Sun Shade (Rubber)
32.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10203	2-3	Washer, 3/8" SAE
	G10108	1	Lock Nut, 3/8"-16
33.	GD17014	1	Hose Guide
34.	G11298	2	Hex Slotted Head Cap Screw, #10-32 x 1"
	G11284	2	Serrated Flange Nut, #10-32
35.	GA13580	1	Limit Switch W/Cable
36.	GD19317	1	Implement Switch Bracket
A.	GA13593	-	Implement Switch Assembly, (Items 34-36)

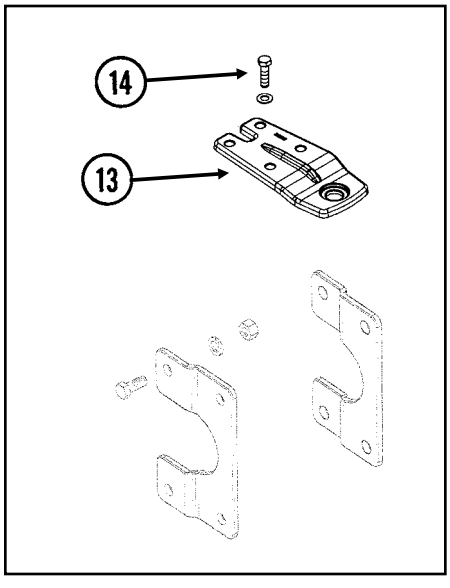
PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

(RU157d/RU157c/A12405)

Pull Row Unit Shown

NOTE: Items that are not referenced on this page may be referenced on page P12.



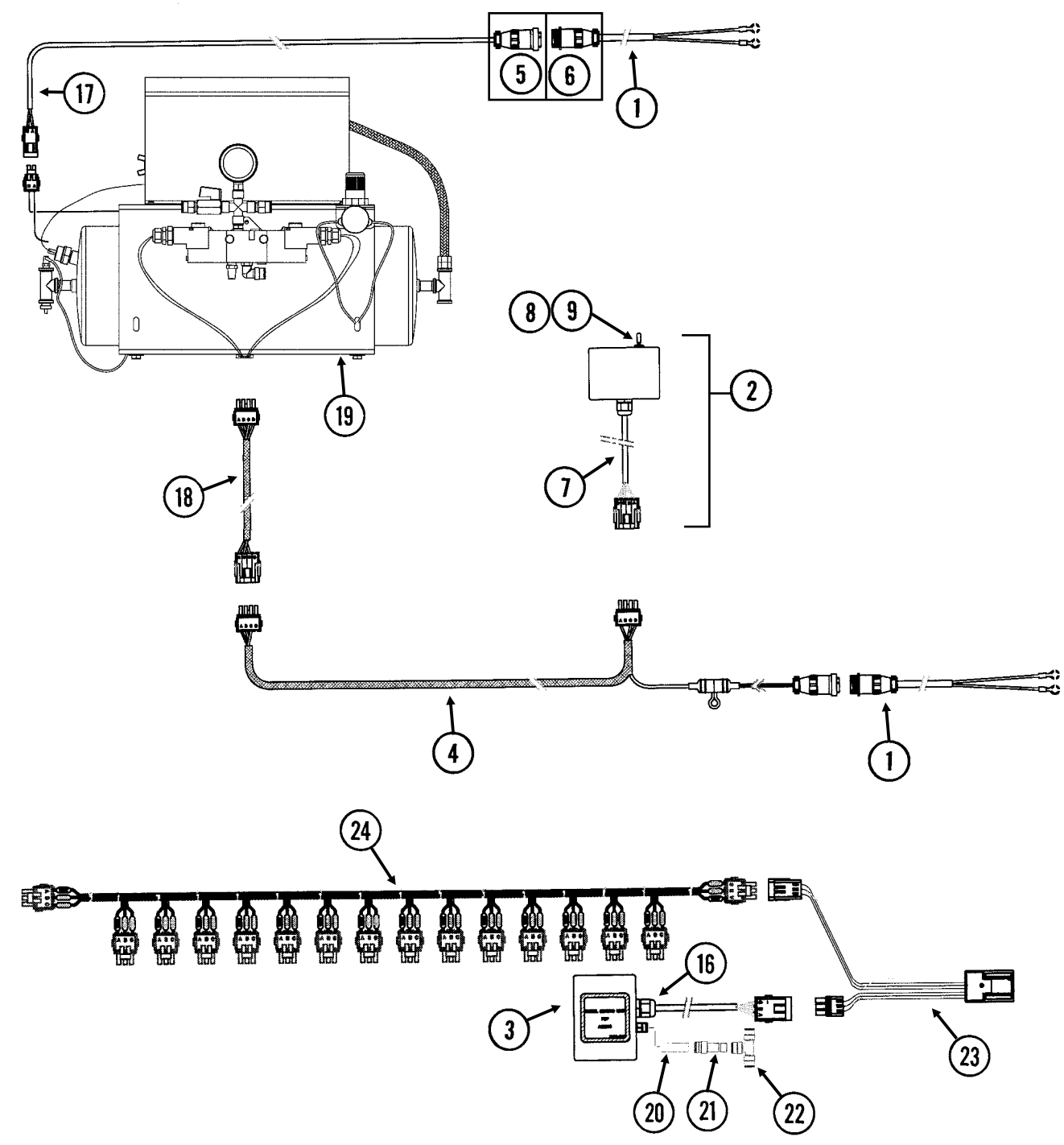


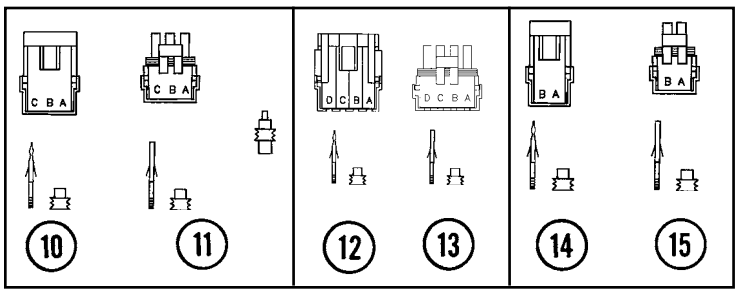
PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GA2180	1	Hanger Bearing, 7/8" Hex Bore
2.	GA11982	1	Air Spring Assembly
3.	GB0394	1	Saddle
4.	G11018	2	Hex Head Cap Screw, 5/8"-18 x 1 1/4"
	GD7805	2	Special Washer, 5/8", Hardened
	GD3180-30	2	Sleeve, 7/8" O.D. x 5/8" I.D. x 21/32"
5.	GB0396	1	Head Mount
6.	GB0397	1	Shoulder Nut, 3/4"-16
7.	GB0395	2	Bracket
8.	G11220	4	Hex Socket Cap Screw, 1/2"-13 x 1 1/2"
	G10071	4	Serrated Flange Nut, 1/2"-13
9.	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
10.	GD17794	1	Link
11.	GB0393	1	Plate
12.	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"
13.	GB0398	1	Extension
14.	G10016	4	Hex Head Cap Screw, 1/2"-13 x 2"
	G10206	4	Washer, 1/2" SAE
	G10111	4	Lock Nut, 1/2"-13
15.	GD18891	1	Spacer, 1 1/4" O.D. x 1"
16.	G10020	1	Hex Head Cap Screw, 1/4"-20 x 5/8"
17.	GR1812	1	Sprocket, 19 Tooth
18.	G11295	1	Retaining Ring
19.	G11243	1	Slotted Flat Head Machine Screw, No. 8-32 x 1/2", Stainless Steel
20.	GR1894	1	Air Housing Cover
21.	GR1815	1	Sprocket Hub
22.	GR1818	1	Ratchet Gear
23.	GR1813	1	Clutch Spring
24.	GR1830	1	Hex Bushing
25.	GR1895	1	Air Clutch Housing
26.	G10023	3	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10103	3	Hex Nut, 1/4"-20
27.	GR1896	1	Air Cylinder
28.	GR1819	1	Push Connect, 1/8" NPT Male x 1/4"
29.	G11296	1	Pan Head Machine Screw, 1/4"-20 x 3/4" x 3/4"
30.	GR1898	1	Filter
31.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
32.	GD11045	-	Lock Clamp
A.	G6325X	-	U-Bolt Package For 5" x 7" Toolbar, Includes: (2) GD1113, (4) G10230, (4) G10104
B.	GA12405	-	Air Clutch Assembly, (Items 32-48)
C.	G1K465	-	Pull Row Unit Assist Springs Package, Includes: (2) G10438, (2) G10216 And (2) GD8249

PNEUMATIC DOWN PRESSURE CONTROL CONSOLE, SENDING UNIT AND HARNESSES

(PNE30b/MTR27a/ELC27b/MTR45/MTR27t/PNE30c)



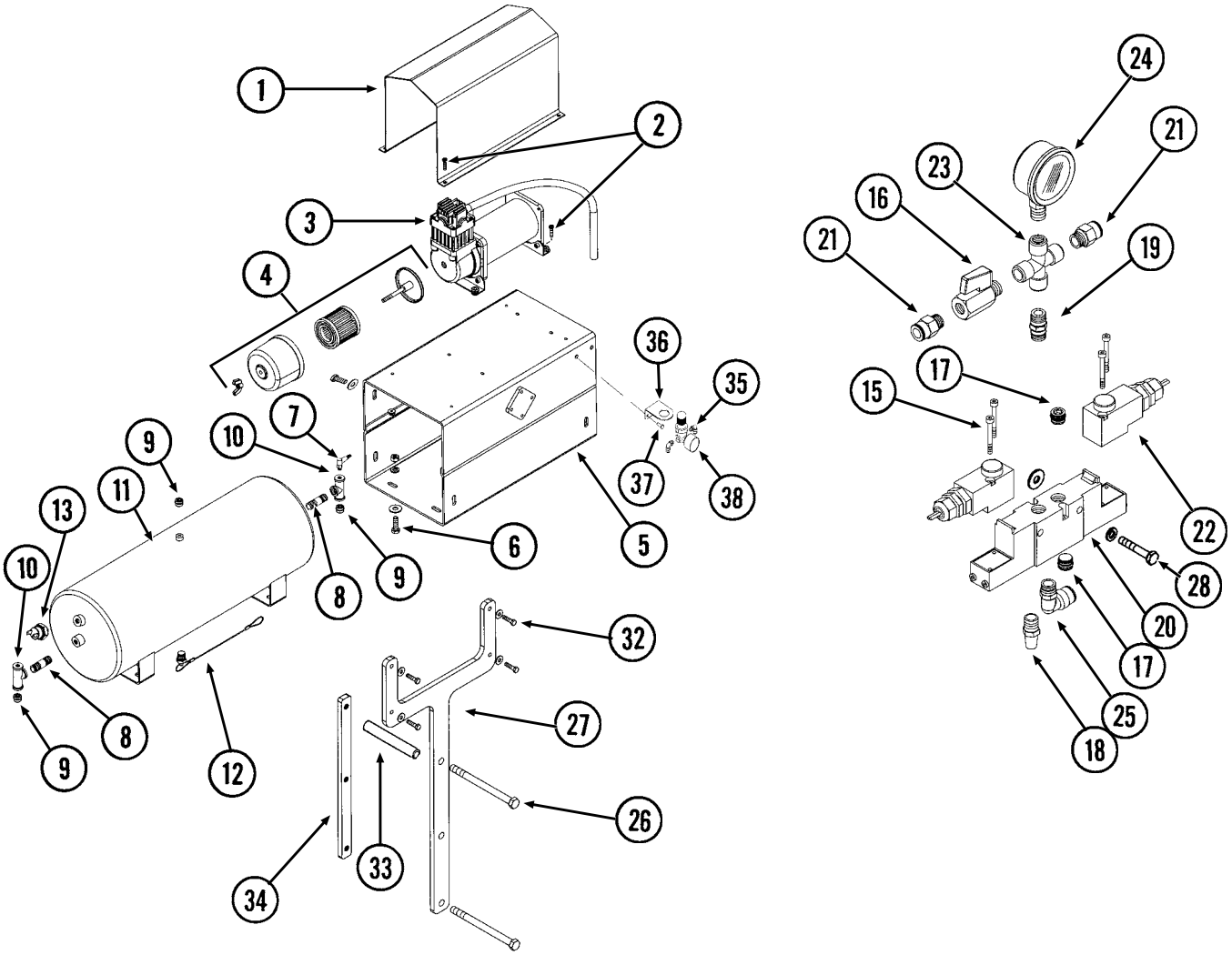


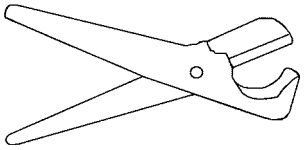
PNEUMATIC DOWN PRESSURE CONTROL CONSOLE, SENDING UNIT AND HARNESSES

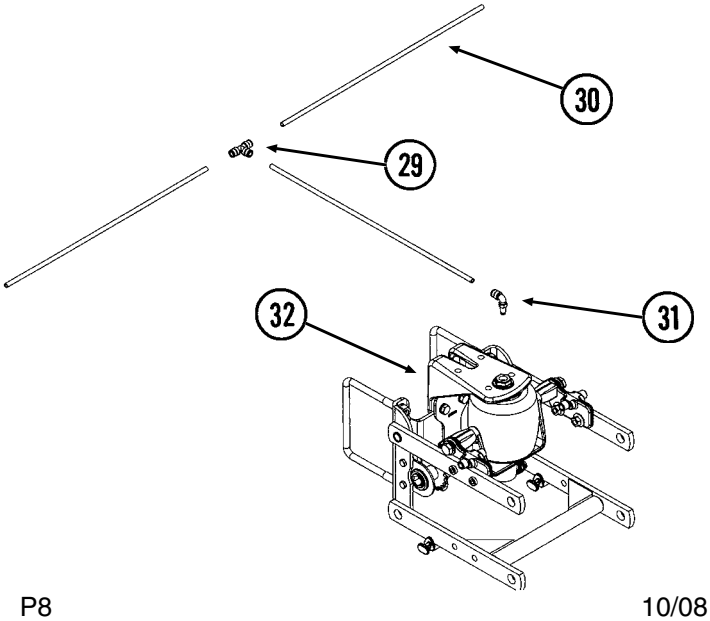
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA7856	2	Power Lead Adapter
2.	GA12813	1	Control Box Assembly
3.	GA12815	1	Sending Unit
4.	GA12814	1	Wiring Harness W/Fuse Holder And Fuse, 206"
	GD14258	-	Fuse Holder
	GD14660	-	Fuse, 2 Amp Delay Action
5.	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (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.	GA9964	1	Strain Relief
8.	GR1363	1	Hex Face Nut, 15⁄32"-32
	GR1364	1	Internal Tooth Lock Washer, 15⁄32"
9.	GA6978	1	Switch, 3 Position Toggle, Momentary On-Off-Momentary On
10.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
11.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
12.	GA8328	-	4-Pin Female Connector Kit, Includes: (1) 4-Pin Female Housing, (4) Pin Contacts, (4) Seals
13.	GA8329	-	4-Pin Male Connector Kit, Includes: (1) 4-Pin Male Housing, (4) Socket Contacts, (4) Seals
14.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
15.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
16.	GA9964	2	Strain Relief
17.	GA12684	1	Wiring Harness W/Fuse Holder And Fuse, 60'
	GD14258	-	Fuse Holder
	GD18275	-	Fuse, 20 Amp
18.	GA12858	1	Wiring Harness, 60'
19.			See “Pneumatic Down Pressure Air Compressor, Dual Solenoid Assembly, Tubing And Fittings”, Pages P8 And P9
20.	GD17151-06	1	Nylon Tubing, ¼" O.D. x 1 ½'
21.	GD18796	1	Reducer, ⅜" To ¼"
22.	GD18010	1	Tee, ⅜" Tube Union
23.	GA12812	1	Hall Effect Adapter
24.			See “KINZE Vision Display”, Pages P106 And P107

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

(PNE06b/PNE02/PNE05/A13169/PNE09/PNE08)





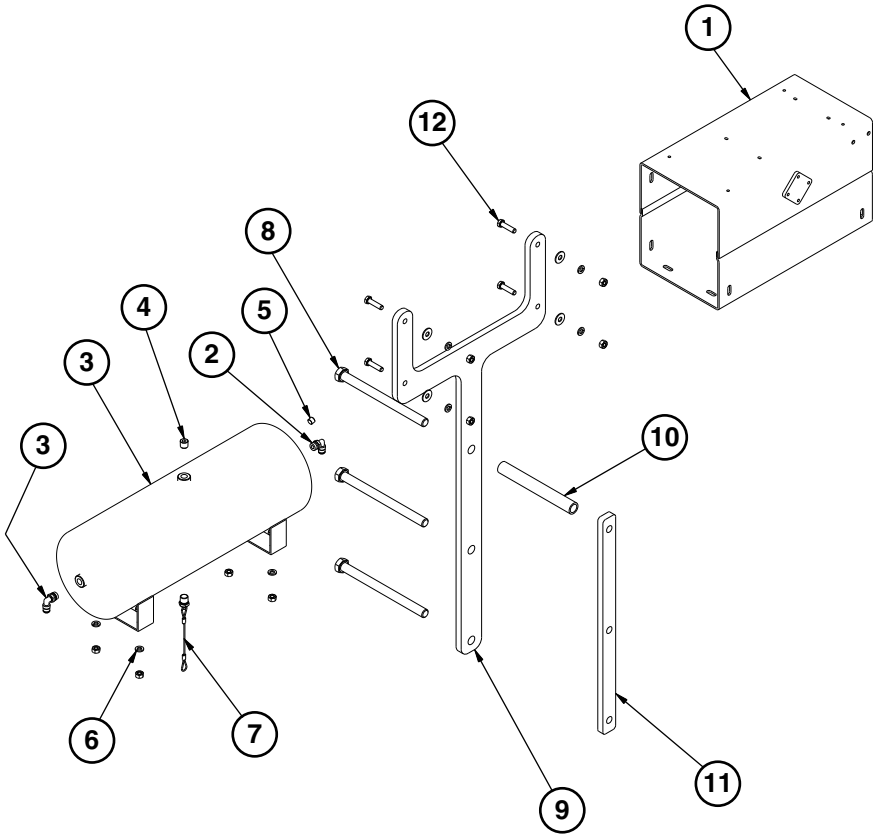


PNEUMATIC DOWN PRESSURE AIR COMPRESSOR, DUAL SOLENOID ASSEMBLY, TUBING AND FITTINGS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18112	1	Cover
2.	G11066	8	Phillips Pan Head Machine Screw, No. 10-24 x ¾", 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.	GA13512	1	Valve Stem, ¼" NPT
8.	GD19238	2	Nipple, ¼" NPT
9.	GD17156	3	Plug, ¼" NPT
10.	GD19237	2	Tee, ¼" NPT
11.	GA11988	1	Tank, 3 Gallon
12.	GA11991	1	Drain, ¼" NPT
13.	GR1778	1	Pressure Switch
14.	GA13169	1	Tube Cutter W/Blade
	GR1843	-	Blade
15.	G11247	4	Slotted Pan Head Machine Screw, M4-0.7 x 8
16.	GA11992	1	Shutoff Valve, ¼" NPT
17.	GD17156	2	Plug, ¼" NPT
18.	GA11997	1	Breather, ¼" NPT
19.	GD17154	1	Connector, ¼" Male
20.	GA11993	1	Block
21.	GD17141	3	Connector, ¼" Male
22.	GA11994	2	Solenoid
23.	GD18078	1	Female Cross, ¼" NPT
24.	GA12104	1	Pressure Gauge, ¼" NPT
25.	GD17143	1	Swivel Elbow, ¼" NPT x ⅜"
26.	G10341	3	Hex Head Cap Screw, ⅝"-11 x 8"
27.	GD18173	2	Bracket
28.	G10040	2	Hex Head Cap Screw, ¼"-20 x 1 ¾"
	G10227	2	Lock Washer, ¼"
	G10209	2	Washer, ¼" USS
29.	GD18010	-	Tee, ⅜" Tube Union, Pull Row Unit (Pneumatic Down Pressure)
	GD18015	-	Tee, ¼" Press On, Pull Row Unit (Air Clutch)
30.	GD17150-05	-	Nylon Tubing, ⅜" O.D. x 112' (Pneumatic Down Pressure)
	GD17151-01	-	Nylon Tubing, ¼" O.D. x 52' (Air Clutch)
31.	GD18011	-	Elbow, ⅜" x ⅛" NPT Extended
32.	G10171	4	Hex Head Cap Screw, 5/16"-18 x 1 ¼"
	G10219	4	Washer, 5/16"-18 USS
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
33.	GD3180-33	1	Sleeve, 7"
34.	GD18901	1	Tap Block, Long
35.	GD19080	2	Elbow, ¼" x ⅛" NPT Swivel
36.	GD18084	1	Regulator Bracket
37.	G10023	2	Hex Head Cap Screw, ¼"-20 x ¾"
	G10227	2	Lock Washer, ¼"
	G10103	2	Hex Nut, ¼"-20
A.	GA12626	-	Air Compresor Assembly (Items 1-14)
B.	GA11995	-	Dual Solenoid Assembly (Items 15-25)

ACCUMULATOR ASSEMBLY

(IP1040)

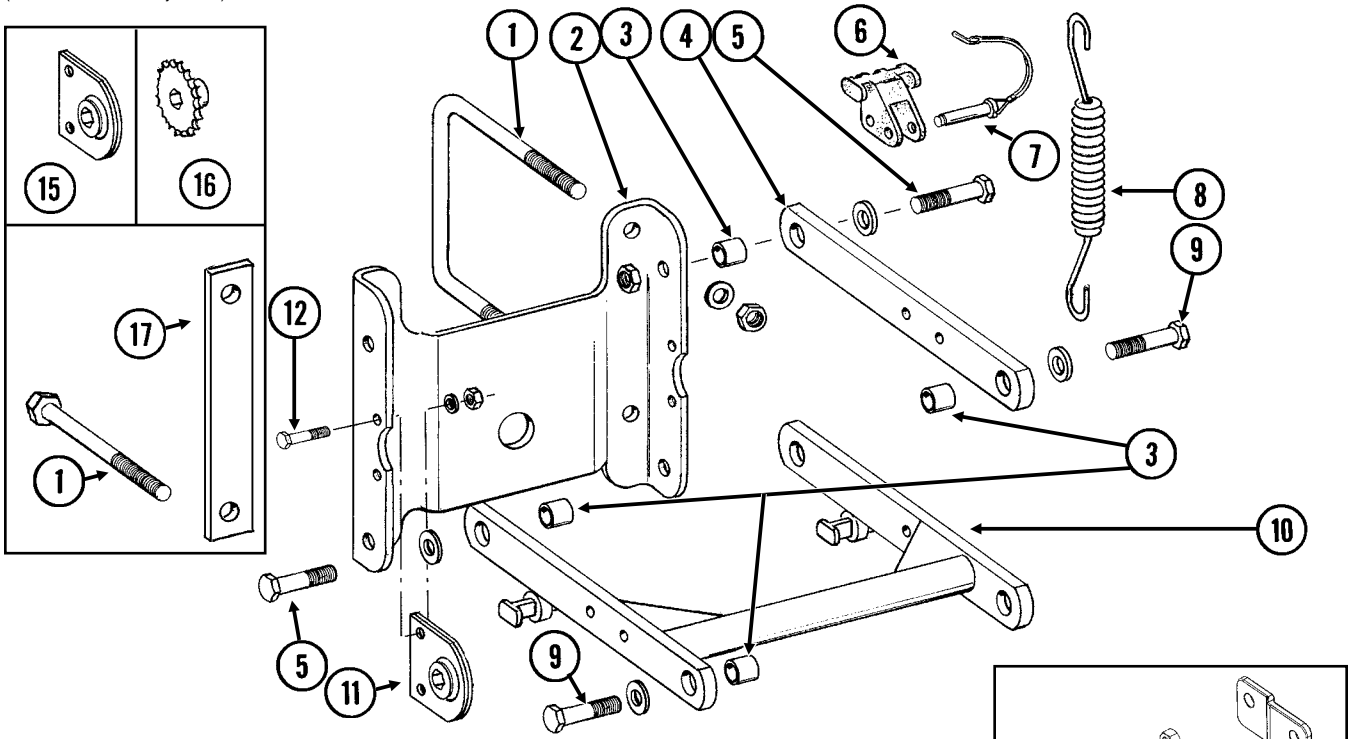


ACCUMULATOR ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA12358	1	Compressor Mount
2.	GA11988	1	Tank, 3 Gallon
3.	GD17148	2	Male Connector, ¼"
4.	GD17156	1	Plug, ¼" NPT
5.	GD19079	1	Plug, ⅛" NPT
6.	G10232	4	Lock Washer, 5⁄16"
	G10106	4	Hex Nut, 5⁄16"-18
	G10043	4	Hex Head Cap Screw, 5⁄16"-18 x ¾"
7.	GA11991	1	Hex Head Cap Screw, ⅝"-11 x 8"
8.	G10341	3	Hex Head Cap Screw, ⅝"-11 x 8"
9.	GD18173	1	Bracket
10.	GD3180-33	1	Sleeve, 7"
11.	GD18901	1	Tap Block, Long
12.	G10171	4	Hex Head Cap Screw, 5⁄16"-18 x 1 ¼"
	G10232	4	Lock Washer, 5⁄16"
	G10219	4	Washer, 5⁄16" USS
	G10106	4	Hex Nut, 5⁄16"-18

PARALLEL ARMS, MOUNTING SUPPORT PLATE AND QUICK ADJUSTABLE DOWN FORCE SPRINGS

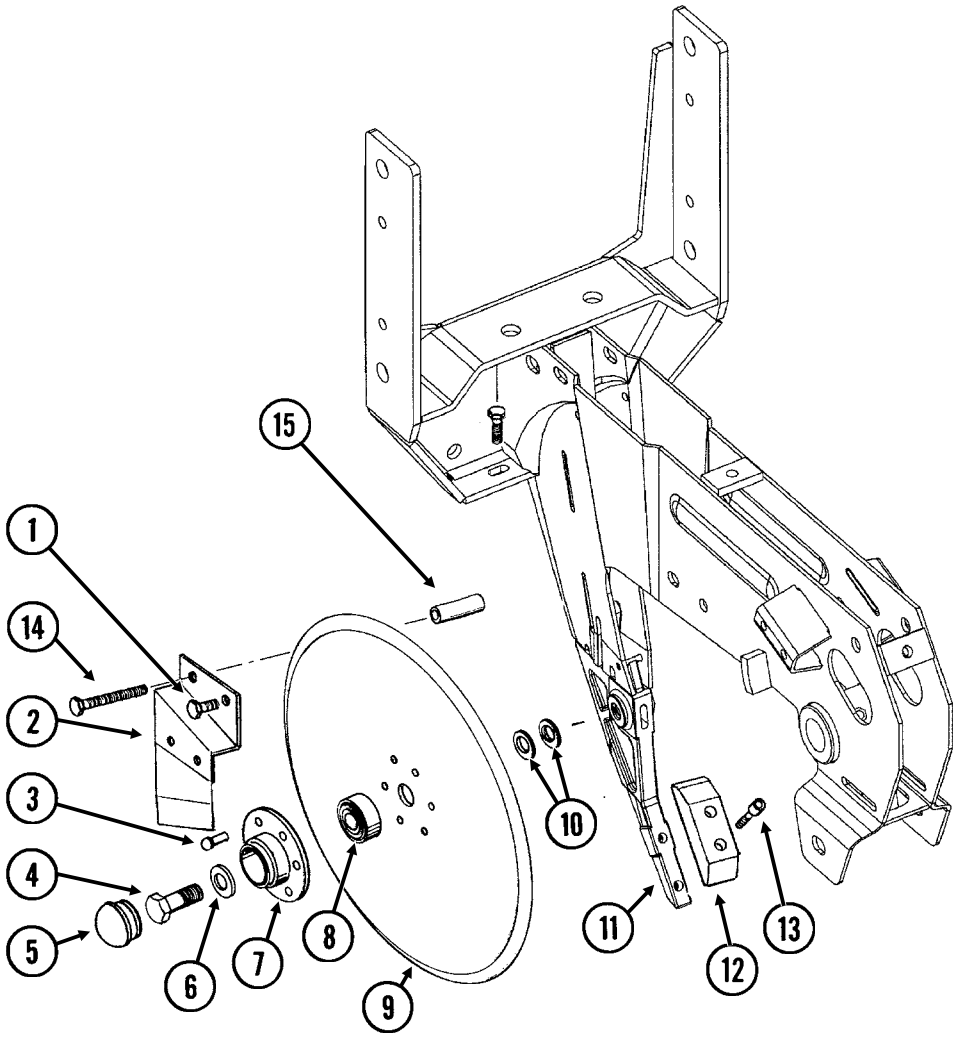
(RU147/RU148a/RU78j/B0366)



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, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" 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 P20
10.	GA5651	1	Lower Parallel Arm
11.	GA2180	1	Hanger Bearing, 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

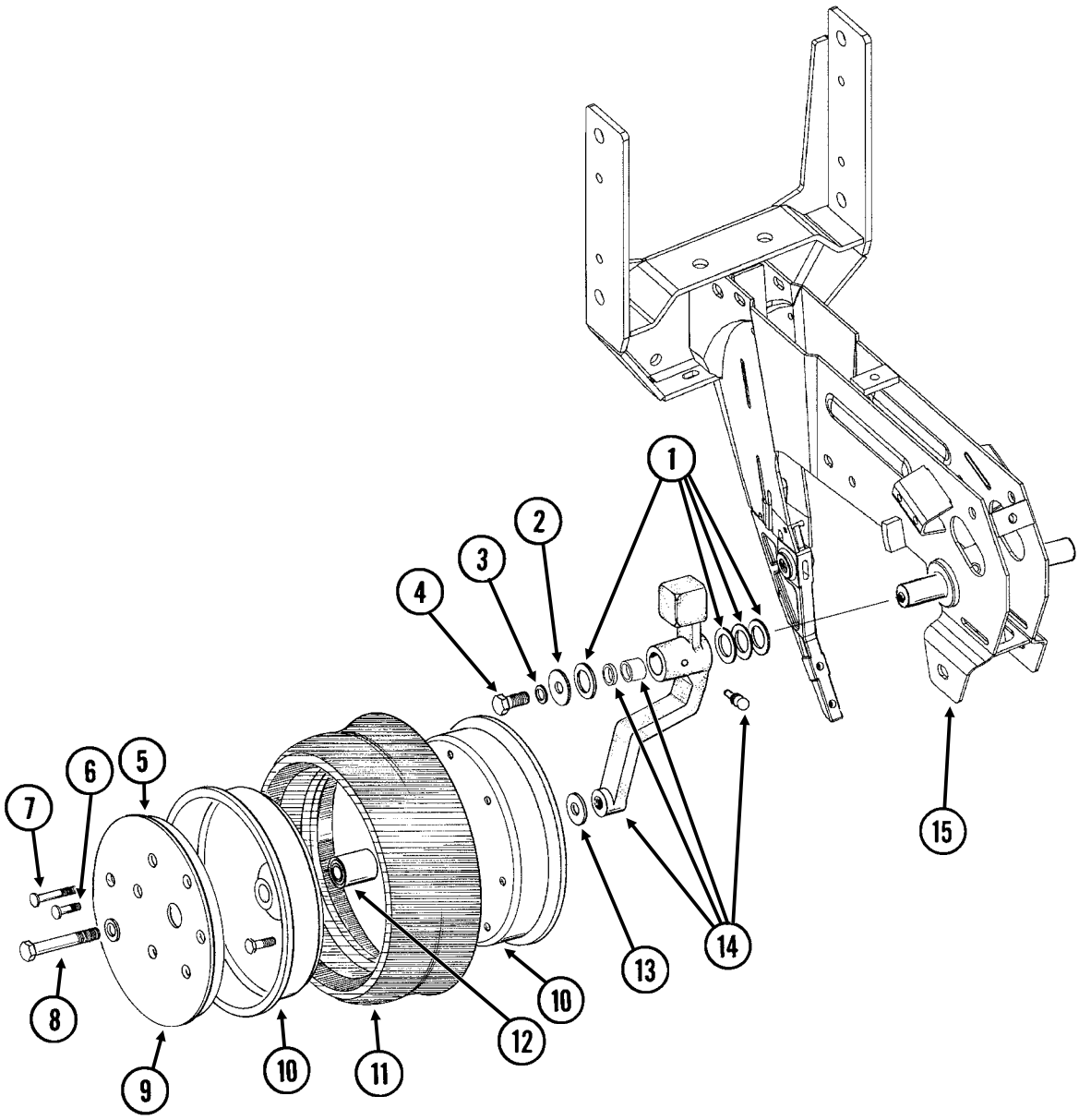
(RU139)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10328	2	Hex Head Cap Screw, ⅜"-16 x ⅝"
	G10622	2	Serrated Flange Nut, ⅜"-16
2.	GA2012R	1	Disc Scraper, R.H.
	GA2012L	-	Disc Scraper, L.H. (Shown)
3.	G10427	12	Rivet, ¼" x ½"
4.	GD11017	1	Special Hex Head Cap Screw, ⅝"-11 x 1 ½", L.H. Threads
	G10007	1	Hex Head Cap Screw, ⅝"-11 x 1 ½"
5.	GD11845	2	Dust Cap
6.	G10204	2	Special Machine Bushing, ⅝" 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, ⅝" (.030" Thick)(As Required)
11.		-	See “Shank Assembly”, Pages P2 And P3
12.	GB0301	1	Seed Tube Guard/Inner Scraper
13.	G10912	2	Hex Socket Head Cap Screw, 5⁄16"-18 x 1", Grade 8
14.	G10325	1	Hex Head Cap Screw, ⅜"-16 x 2 ¾"
	G10622	1	Serrated Flange Nut, ⅜"-16
15.	GD11259	1	Sleeve, ⅜" I.D. x ⅝" O.D. x 1 25⁄32" Long
A.	GA8324	-	Disc Blade/Bearing Assembly, Less Dust Cap (Items 3 And 7-9)

GAUGE WHEELS

(RU140)

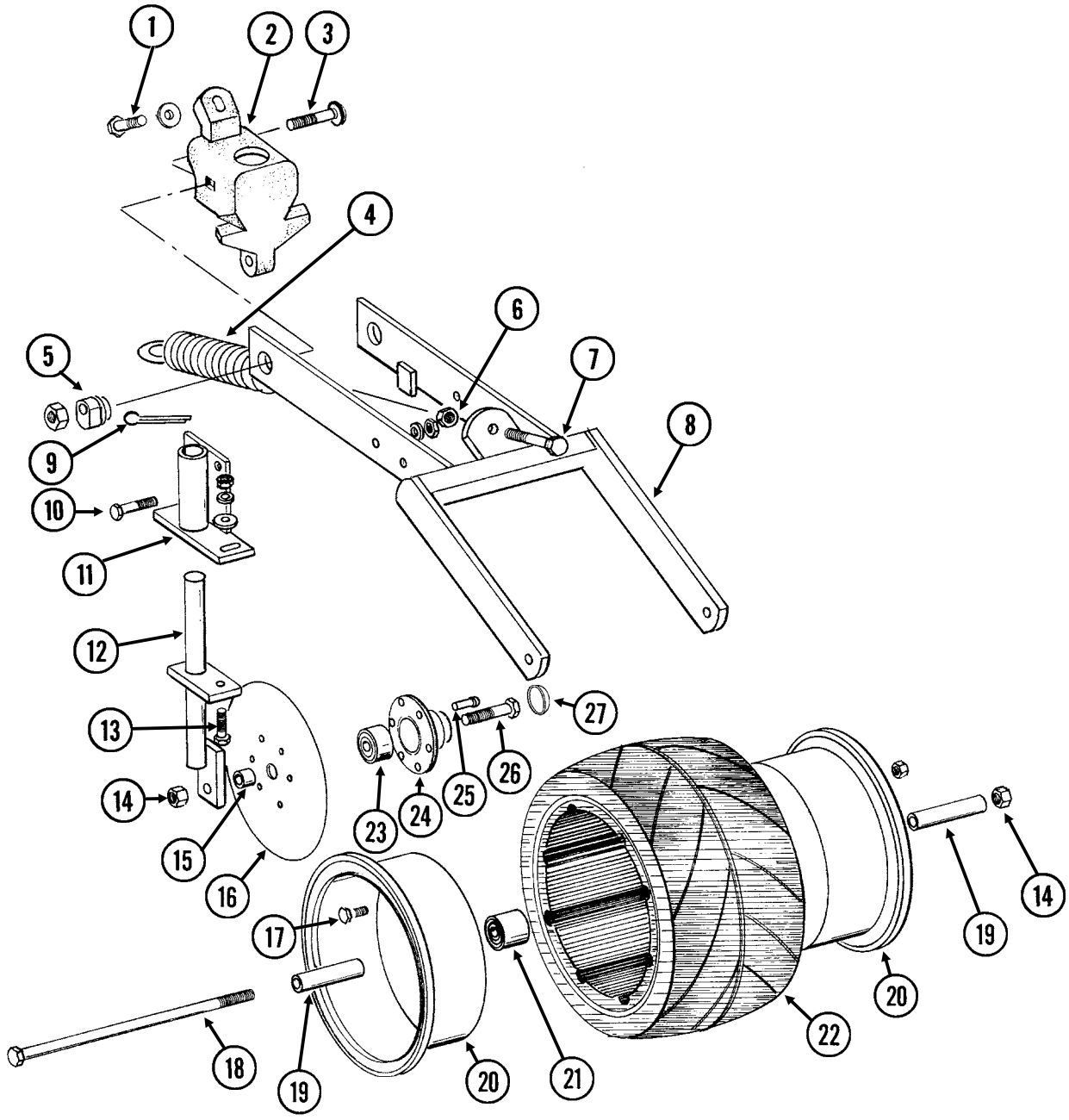


GAUGE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10940	-	Machine Bushing, 1" (.048" Thick)
2.	G10216	2	Washer, ½" USS
3.	G10228	2	Lock Washer, ½"
4.	G10014	1	Hex Head Cap Screw, ½"-13 x 1"
5.	GD11453	2	Cover
6.	G10338	12	Carriage Bolt, 5/16"-18 x 1 ¼"
	G10620	12	Serrated Flange Nut, 5/16"-18
7.	G10924	8	Carriage Bolt, 5/16"-18 x 1 ¾"
	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, ¼"-28 (Per Arm)
	GB0276	2	Bushing, 1" I.D. x 1 ¼" O.D. x 1" Long (Per Arm)
	GD10991	2	Seal (Per Arm)
15.		-	See “Shank Assembly”, Pages P2 And P3
A.	GA7949	-	Gauge Wheel Complete (Items 5-7 And 9-12)
B.	G1K296	-	Gauge Wheel Arm Bushing And Seal Driver Kit, Includes: (1) Seal Driver, (1) Bushing Driver, (1) Instruction

COVERING DISCS/SINGLE PRESS WHEEL

RUA054/RUB026(RU94d)

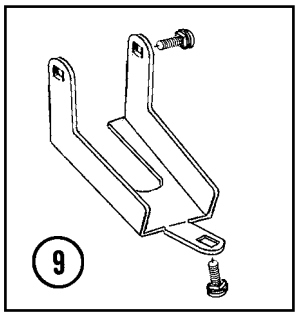


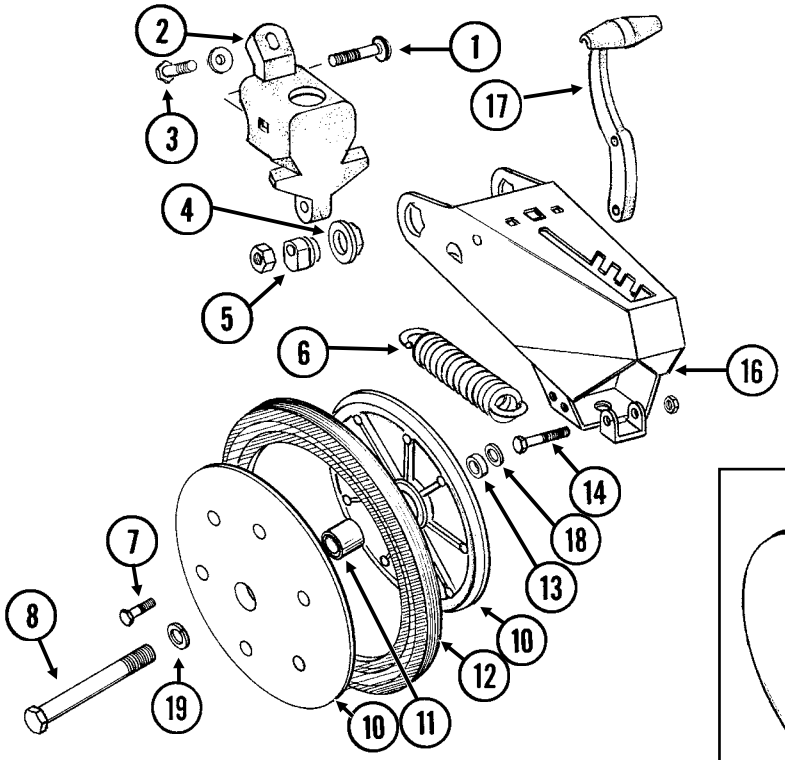
COVERING DISCS/SINGLE PRESS WHEEL

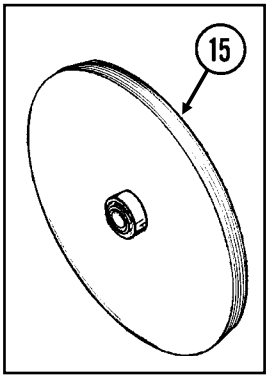
ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10210	1	Washer, 3/8" USS
2.	GB0268	1	Wheel Arm Stop
3.	G10801	2	Carriage Bolt, 1/2"-13 x 2 1/4"
	G10315	-	Carriage Bolt, 1/2"-13 x 2 1/2" (Used W/Straight Drop In-Furrow Granular Chemical Bracket)
	G10102	2	Hex Nut, 1/2"-13
4.	GA2054	1	Spring
5.	GB0239	2	Eccentric Bushing
6.	G10102	1	Hex Nut, 1/2"-13
7.	G10015	1	Adjusting Bolt, 1/2"-13 x 5"
8.	GA6619	1	Mounting Arm
9.	G10463	2	Cotter Pin, 1/4" x 1 1/2"
10.	G10171	4	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
11.	GA6620	2	Bracket
12.	GA6618	2	Mount
13.	G10303	2	Carriage Bolt, 5/16"-18 x 1"
	G10219	2	Washer, 5/16" USS
	G10232	2	Lock Washer, 5/16"
	G10106	2	Hex Nut, 5/16"-18
14.	G10107	3	Lock Nut, 5/8"-11
15.	GD1109	2	Bushing, 41/64" I.D. x 7/8" O.D. x 1/4" Long
16.	GD9290	2	Disc Blade, 8"
17.	G10018	7	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10109	7	Lock Nut, 5/16"-18, Grade 8
18.	G10152	1	Hex Head Cap Screw, 5/8"-11 x 9"
19.	GD3180-12	2	Sleeve, 5/8" I.D. x 7/8" O.D. x 2 7/8" Long
20.	GD9562	2	Half Wheel
21.	GA6171	1	Bearing
22.	GD9305	1	Tire
23.	GA2014	2	Bearing
24.	GD10473	2	Bearing Housing
25.	G10427	12	Rivet, 1/4" x 1/2"
26.	G10006	2	Hex Head Cap Screw, 5/8"-11 x 2 1/4"
27.	GD11845	2	Dust Cap
A.	GA6733	-	Single Press Wheel Complete W/Bearing (Items 17 And 20-22)
B.	GA6801	-	Covering Disc Blade Complete W/Bearing (Items 16 And 23-25)

“V” CLOSING WHEELS

(RU83i/RU83n)



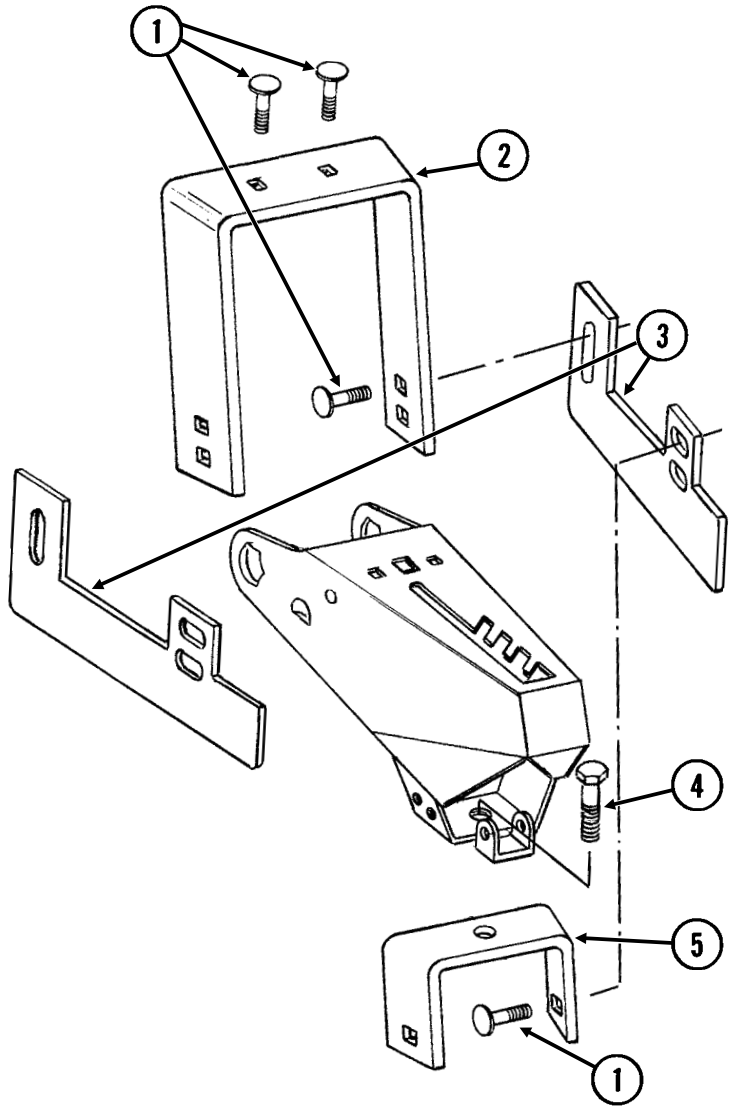




ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10801	2	Carriage Bolt, ½"-13 x 2 ¼"
	G10315	-	Carriage Bolt, ½"-13 x 2 ½" (Used W/Straight Drop In-Furrow Granular Chemical Bracket)
	G10111	2	Lock Nut, ½"-13
2.	GB0268	1	Wheel Arm Stop
3.	G10001	1	Hex Head Cap Screw, ⅜"-16 x 1"
	G10210	1	Washer, ⅜" USS
4.	GB0282	2	Stepped Bushing
5.	GB0239	2	Eccentric Bushing
6.	GD8460	1	Spring
7.	G10064	6	Hex Head Cap Screw, ¼"-20 x 1"
8.	G10013	2	Hex Head Cap Screw, ⅝"-11 x 3 ½"
	G10107	2	Lock Nut, ⅝"-11
9.	G1K345	-	Closing Wheel Shield Kit W/Hardware And Instruction
	G10308	2	Carriage Bolt, ⅜"-16 x ¾"
	G10599	1	Carriage Bolt, ⅜"-16 x 1 ¼"
	G10210	1	Washer, ⅜" USS
	G10229	3	Lock Washer, ⅜"
	G10101	3	Hex Nut, ⅜"-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 ⅞" O.D. x ¼" Long
14.	G10133	1	Hex Head Cap Screw, 5⁄16"-18 x 1 ½"
	G10109	1	Lock Nut, 5⁄16"-18, Grade 8
15.	GA6597	-	Cast Iron Closing Wheel W/Bearing
	GA6171	-	Bearing
16.	GA8322	1	Arm
17.	GB0254	1	Lever
18.	GD7805	2	Special Washer, ⅝", Hardened
19.	G10230	2	Lock Washer, ⅝"
A.	GA6434	-	Rubber Closing Wheel Complete W/Bearing (Items 7 And 10-12)

DRAG CLOSING ATTACHMENT

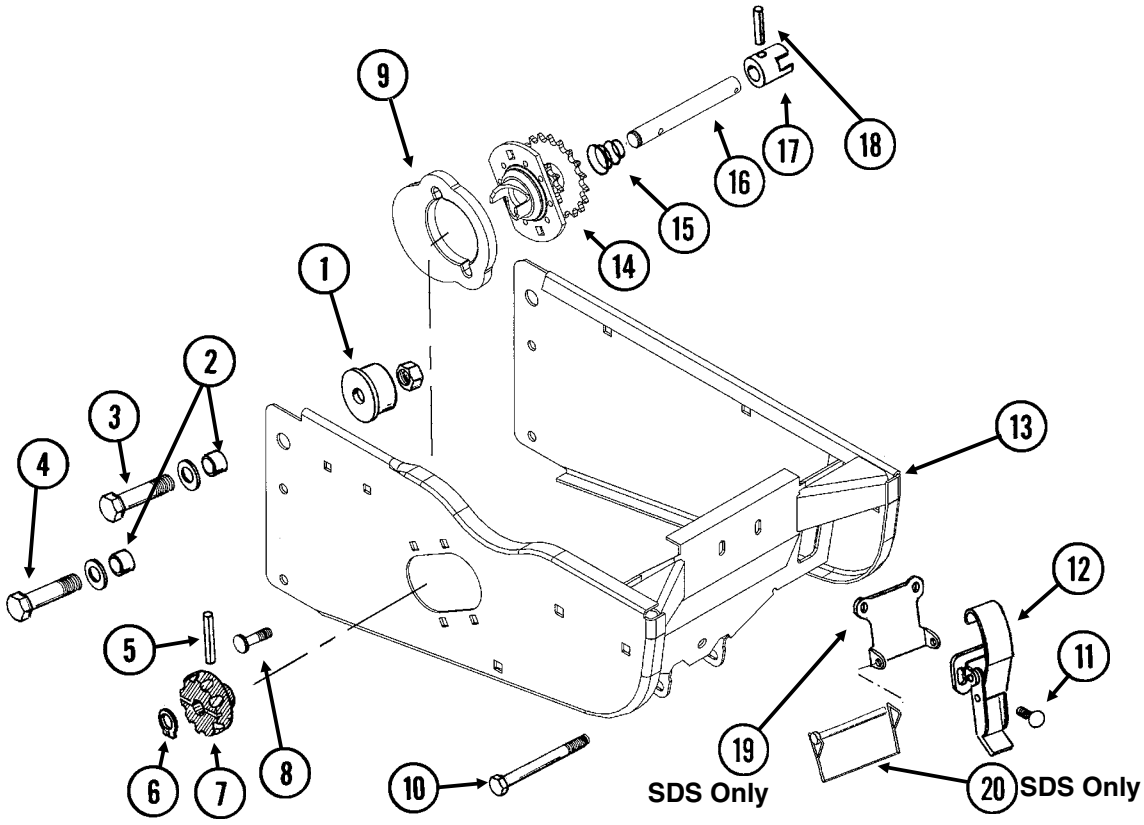
RUB050(RU90c)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10599	6	Carriage Bolt, ⅜"-16 x 1 ¼"
	G10210	6	Washer, ⅜" USS
	G10229	6	Lock Washer, ⅜"
	G10101	6	Hex Nut, ⅜"-16
2.	GD11508	1	Front Bracket
3.	GD11313	2	Blade
4.	G10007	1	Hex Head Cap Screw, ⅝"-11 x 1 ½"
	G10230	1	Lock Washer, ⅝"
	G10104	1	Hex Nut, ⅝"-11
5.	GD11509	1	Rear Bracket
A.	G7566X	-	Drag Closing Attachment Complete (Items 1-5)

HOPPER SUPPORT AND METER DRIVE

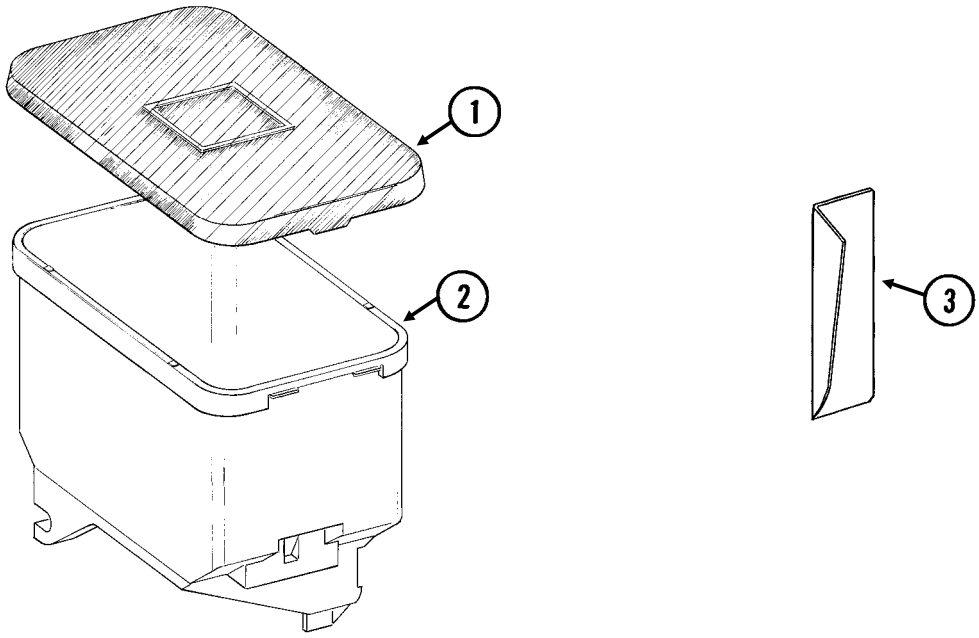
(METR22f)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GB0314	2	Hopper Mount
2.	GB0218	4	Bushing, 2 1/32" I.D. x 7/8" O.D. x 19/32" Long
3.	G10752	2	Hex Head Cap Screw, 5/8"-18 x 2 1/4"
	GD7805	2	Special Washer, 5/8", Hardened
	G10412	2	Lock Nut, 5/8"-18
4.	G10751	2	Hex Head Cap Screw, 5/8"-18 x 1 3/4"
	GD7805	2	Special Washer, 5/8", Hardened
	G10412	2	Lock Nut, 5/8"-18
5.	G10602	1	Spring Pin, 1/4" x 1 1/2"
6.	G10567	1	External Retaining Ring, 5/8"
7.	GD11239	1	Knob
8.	G10338	2	Carriage Bolt, 5/16"-18 x 1 1/4"
	G10620	2	Serrated Flange Nut, 5/16"-18
9.	GB0331	1	Clutch Adapter Plate
10.	G10061	1	Hex Head Cap Screw, 3/8"-16 x 3 1/2"
	G10210	2	Washer, 3/8" USS
	G10108	1	Lock Nut, 3/8"-16
11.	G10309	2	Carriage Bolt, 1/4"-20 x 5/8", Grade 2
	G10621	2	Serrated Flange Nut, 1/4"-20
12.	GA2007	1	Hopper Hold Down Latch
13.	GA10155	1	Hopper Support
14.	GA10137	1	Double Sprocket And Bearing, Drive Clutch, 11/19 Tooth
15.	GD11413	1	Spring
16.	GD15747	1	Shaft
17.	GB0278	1	Coupler
18.	G10546	1	Spring Pin, 3/16" x 1 1/4"
19.	GD13110	1	Retainer (SDS Only)
20.	GD10705	1	Locking Clip Pin, 1/4" x 2 1/2" (SDS Only)
A.	GA10151	-	Meter Drive Assembly, 11/19 Tooth (Items 5-7 And 14-18)

SEED HOPPER AND LID (Conventional Planters)

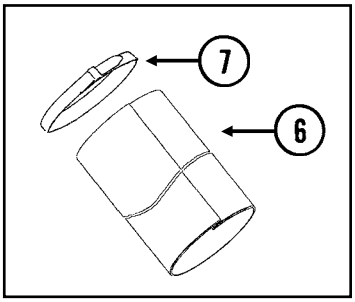
(RU87a/RU87e)

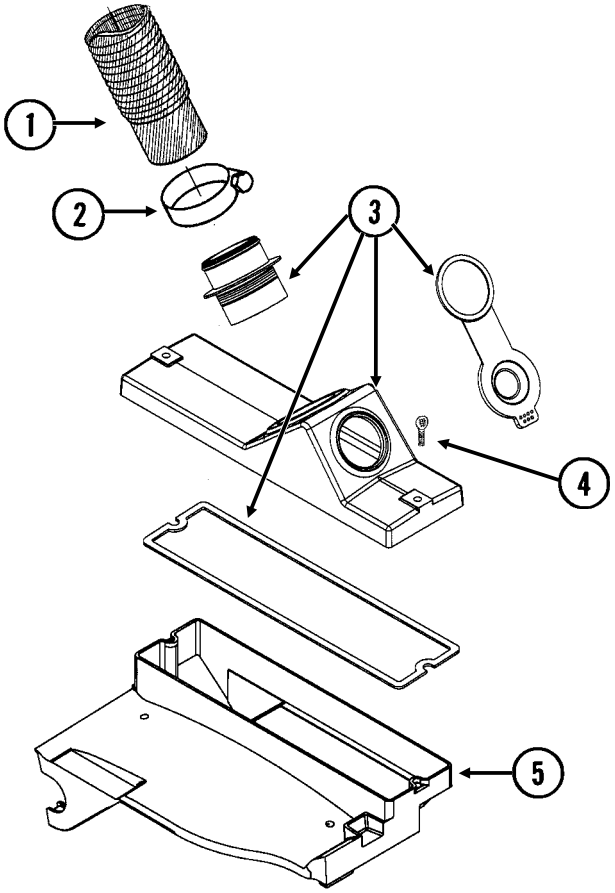


ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD11279	1	Lid
2.	GA9714	1	Seed Hopper, Reinforced
3.	GD11747	1	Seed Reserve Baffle (Optional)

MINI-HOPPER AND DROP HOSES (SDS)

(D16399/FWD94)



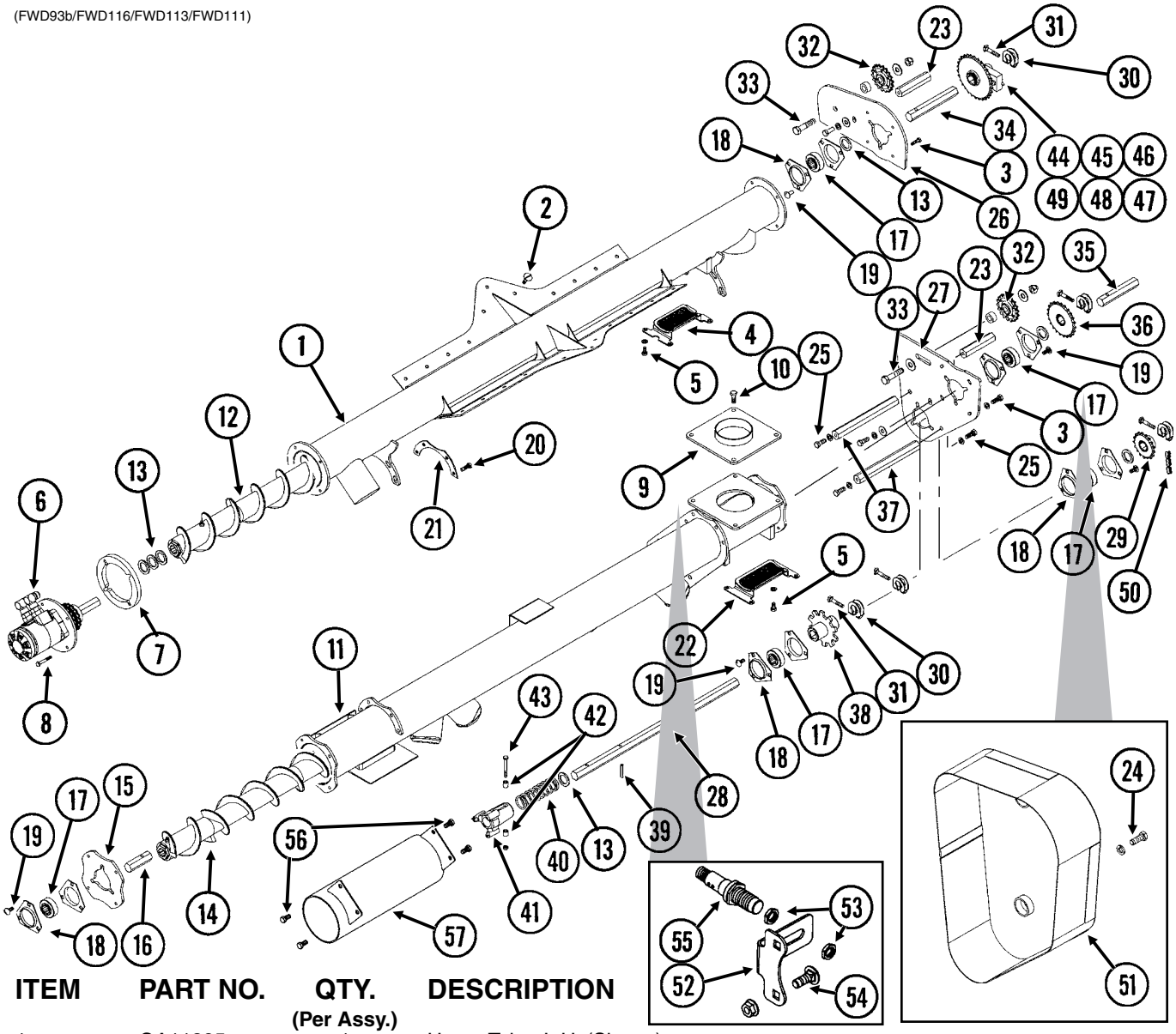


MINI-HOPPER AND DROP HOSES (SDS)

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD12797-01	1	Drop Hose, 3 ¼" x 34"
	GD12797-04	-	Drop Hose, 3 ¼" x 32"
	GD12797-07	-	Drop Hose, 3 ¼" x 26"
	GD12797-11	-	Drop Hose, 3 ¼" x 28"
2.	G10999	2	T-Bolt Hose Clamp, 3 ¼"
3.	GA11613	1	Lid W/Gasket, Nipple And View Cap
	GD13530	-	Gasket
	GB0312	-	Nipple
	GD13412	-	View Cap
4.	G11033	2	Thumbscrew, 5⁄16"-18 x 1"
	GD12132	2	Seal
5.	GA9547	1	Mini-Hopper
6.	GD16399-01	-	Sleeve, 3" x 10"
7.	GD2117	-	Tie Strap, 14 ½"

CENTER AUGER ASSEMBLIES (SDS)

(FWD93b/FWD116/FWD113/FWD111)



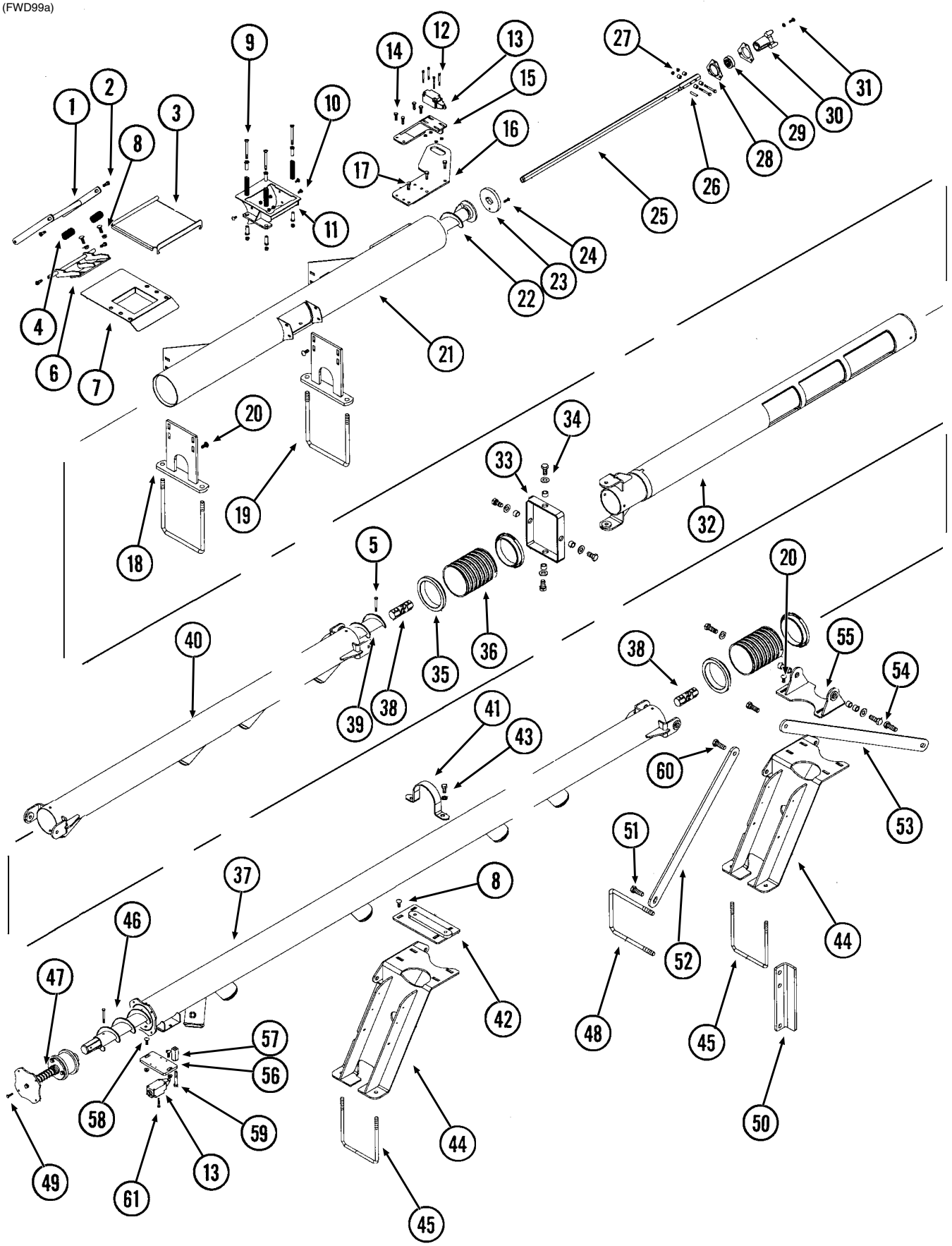
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11395	1	Upper Tube, L.H. (Shown)
	GA11396	-	Upper Tube, R.H.
2.	G11192	22	Bolt, 5/16"-18 x 1"
	G10221	22	Washer, 5/16" SAE
	G11182	22	Lock Nut W/Nylon Insert, 5/16"-18
3.	G10064	10	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	10	Lock Nut, 1/4"-20, Grade B
4.	GA11623	1	Screen
5.	G10018	8	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10232	8	Lock Washer, 5/16"
6.		-	See "SDS Hydraulic System", Pages P96 And P97
7.	GD16766	1	Ring
8.	G10021	4	Hex Head Cap Screw, 1/4"-20 x 1 1/2"
	G10110	4	Lock Nut, 1/4"-20, Grade B
9.	GA11391	1	Transfer Plate
10.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10622	-	Serrated Flange Nut, 3/8"-16
11.	GA11389	1	Lower Tube, L.H. (Shown)
	GA11390	-	Lower Tube, R.H.
12.	GA11625	1	Auger Assembly, 61 5/8", L.H. (Shown)
	GA11624	1	Auger Assembly, 61 5/8", R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11584	-	Hex Tube, 61 5/8"

CENTER AUGER ASSEMBLIES (SDS)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
13.	G10233	3	Machine Bushing, 1 ½" x 1/32", 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, ¼"-20 x 2 ½"
	G10110	-	Lock Nut, ¼"-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, ½"-13 x 2 ¼"
	GD4887-10	2	Sleeve
	G10216	3	Washer, ½" USS
	G10111	2	Lock Nut, ½"-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, ¼" x 1 ½"
40.	GD2962	1	Spring
41.	GB0283	1	Coupler
42.	GD11395	2	Bushing, ½"
43.	G10880	1	Hex Head Cap Screw, ¼"-20 x 2 ¼"
	G10110	1	Lock Nut, ¼"-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 ¼"
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 P100 And P101
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 (SDS)

(FWD99a)



WING AUGER ASSEMBLIES (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11539	2	Link
2.	G10183	4	Hex Socket Head Set Screw, 5/16"-18 x 3/8"
3.	GA11538	2	Lid
4.	GD16983	4	Spring
5.	G10880	-	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	-	Lock Nut, 1/4"-20, Grade B
6.	GA11540	2	Link Mount
7.	GA11541	2	Plate
8.	G10305	-	Carriage Bolt, 3/8"-16 x 1"
	G10622	-	Serrated Flange Nut, 3/8"-16
9.	G11197	6	Slotted Flat Head Machine Screw, 5/16"-18 x 3 1/2"
	GD16634	12	Sleeve
	GD16982	6	Spring
	G11182	6	Lock Nut W/Nylon Insert, 5/16"-18
10.	G10309	8	Carriage Bolt, 1/4"-20 x 5/8", Grade 2
	G10621	8	Serrated Flange Nut, 1/4"-20
11.	GA11555	1	Transfer Chute, L.H.
	GA11556	-	Transfer Chute, R.H.
12.	G11205	8	Hex Socket Head Cap Screw, No. 10-32 x 2"
	G10243	8	Washer, No. 10 SAE
	G11206	8	Lock Nut, No. 10-32
13.		-	Limit Switch, See “Electrical Components (SDS Control Console), Pages P100 And P101
14.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10620	8	Serrated Flange Nut, 5/16"-18
15.	GA11548	2	Mount
16.	GD16672	2	Plate
17.	G10001	6	Hex Head Cap Screw, 3/8"-16 x 1"
	G10622	6	Serrated Flange Nut, 3/8"-16
18.	GA11531	4	Mount
19.	GD16320	4	U-Bolt, 8" x 8" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
20.	G10305	8	Carriage Bolt, 3/8"-16 x 1"
	G10622	8	Serrated Flange Nut, 3/8"-16
21.	GA11563	1	Outer Auger Tube, L.H.
	GA11562	-	Outer Auger Tube, R.H.
22.	GA12673	1	Auger Assembly, L.H. (Shown)
	GA12672	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16674	-	Spacer
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11581	-	Hex Tube, 64"
23.	GD16675	2	Pad
24.	G11180	2	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	2	Lock Nut, 1/4"-20, Grade B
25.	GA11580	2	Shaft
26.	G10602	2	Spring Pin, 1/4" x 1 1/2"

(Continued On Following Page)

WING AUGER ASSEMBLIES (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
27.	G10880	4	Hex Head Cap Screw, ¼"-20 x 2 ¼"
	GD11395	8	Bushing, ½"
	G10110	4	Lock Nut, ¼"-20, Grade B
28.	G3400-01	4	Flangette
29.	G2100-03	2	Bearing, ⅞" Hex Bore, Spherical
30.	GB0283	2	Coupler
31.	G10043	6	Hex Head Cap Screw, 5⁄16"-18 x ¾"
	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, ⅝"-11 x 1 ¼"
	GD7805	8	Special Washer, ⅝", Hardened
	GB0218	8	Bushing, 21⁄32" I.D. x ⅞" 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, ¼"-20 x 2 ½"
	G10110	-	Lock Nut, ¼"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GD16385-04	-	Hex Tube, 97 ¼"
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, ½"-13 x 1"
	G10228	4	Lock Washer, ½"
44.	GA11517	4	Support
45.	GD7145	4	U-Bolt, 7" x 7" x ½"-13
	G10228	8	Lock Washer, ½"
	G10102	8	Hex Nut, ½"-13
46.	GA11633	1	Auger Assembly, L.H. (Shown)
	GA11632	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, ¼"-20 x 2 ½"
	G10110	-	Lock Nut, ¼"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11582	-	Hex Tube, 125 ⅞"
	GA11583	-	Hex Tube, 118 ⅞"
47.	GA11778	2	Auger Stop
48.	GD14559	2	U-Bolt, 7" x 7" x ⅝"-11 (9" Long)
	G10230	4	Lock Washer, ⅝"
	G10102	4	Hex Nut, ⅝"-13
49.	G10064	4	Hex Head Cap Screw, ¼"-20 x 1"
	G10110	4	Lock Nut, ¼"-20, Grade B
50.	GD16466	1	Bracket, R.H. Side (Shown)
	GD16467	-	Bracket, L.H. Side

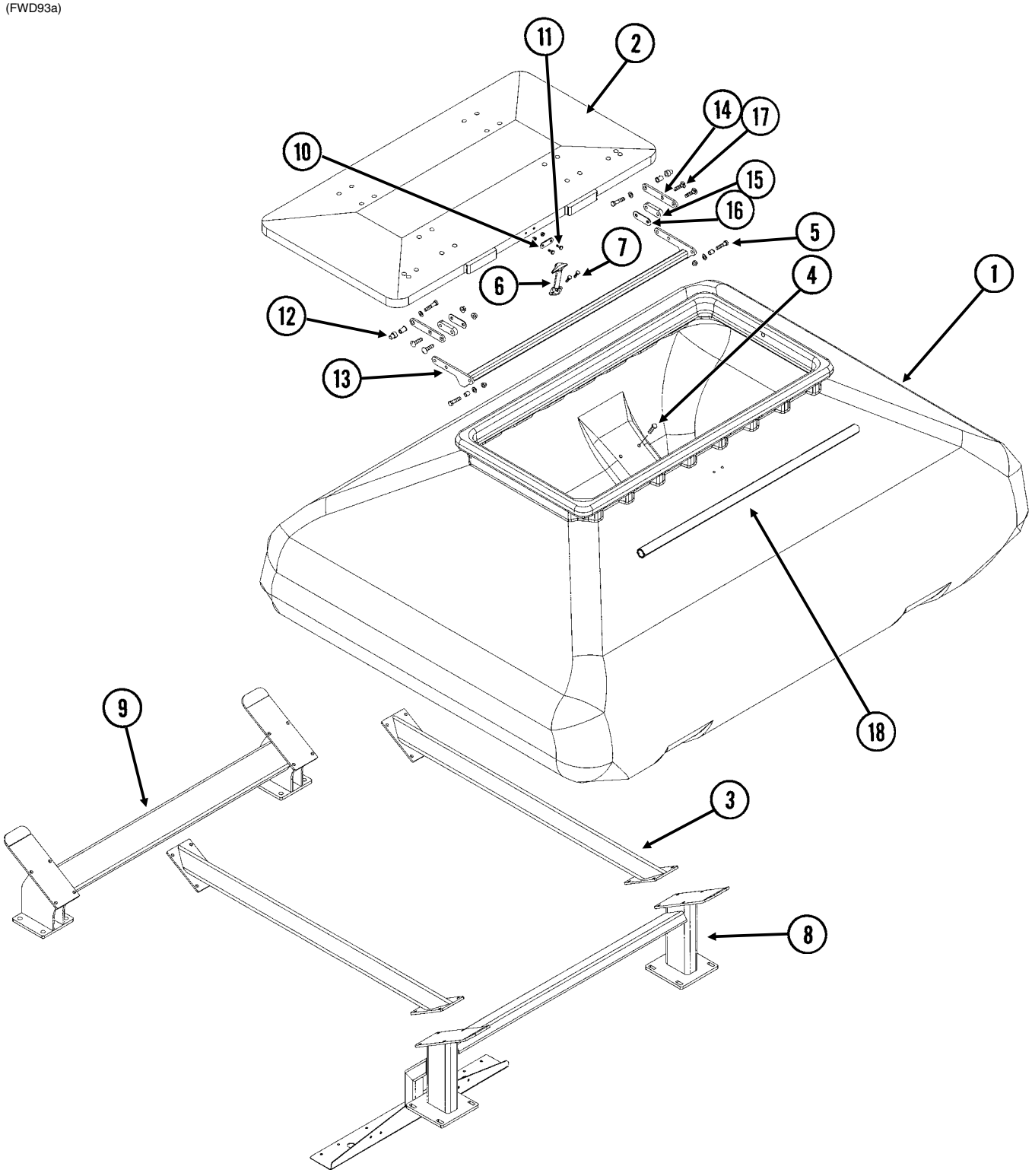
(Continued On Following Page)

WING AUGER ASSEMBLIES (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
51.	G10005	4	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G10205	4	Washer, 5/8" SAE
	G10107	4	Lock Nut, 5/8"-11
52.	GD16602	2	Brace
53.	GD16601	2	Brace
54.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	GD3180-29	4	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 5/16"
55.	GA11684	2	Pivot Mount
56.	GD16680	2	Mount
57.	GD16701	2	Arm, 3/4" x 3/4" x 2"
58.	G10303	2	Carriage Bolt, 5/16"-18 x 1"
	G10620	2	Serrated Flange Nut, 5/16"-18
59.	G10049	2	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10229	2	Lock Washer, 3/8"
60.	G10005	4	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G10107	4	Lock Nut, 5/8"-11
61.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 1/2", Grade 8

BULK SEED HOPPER ASSEMBLY (SDS)

(FWD93a)

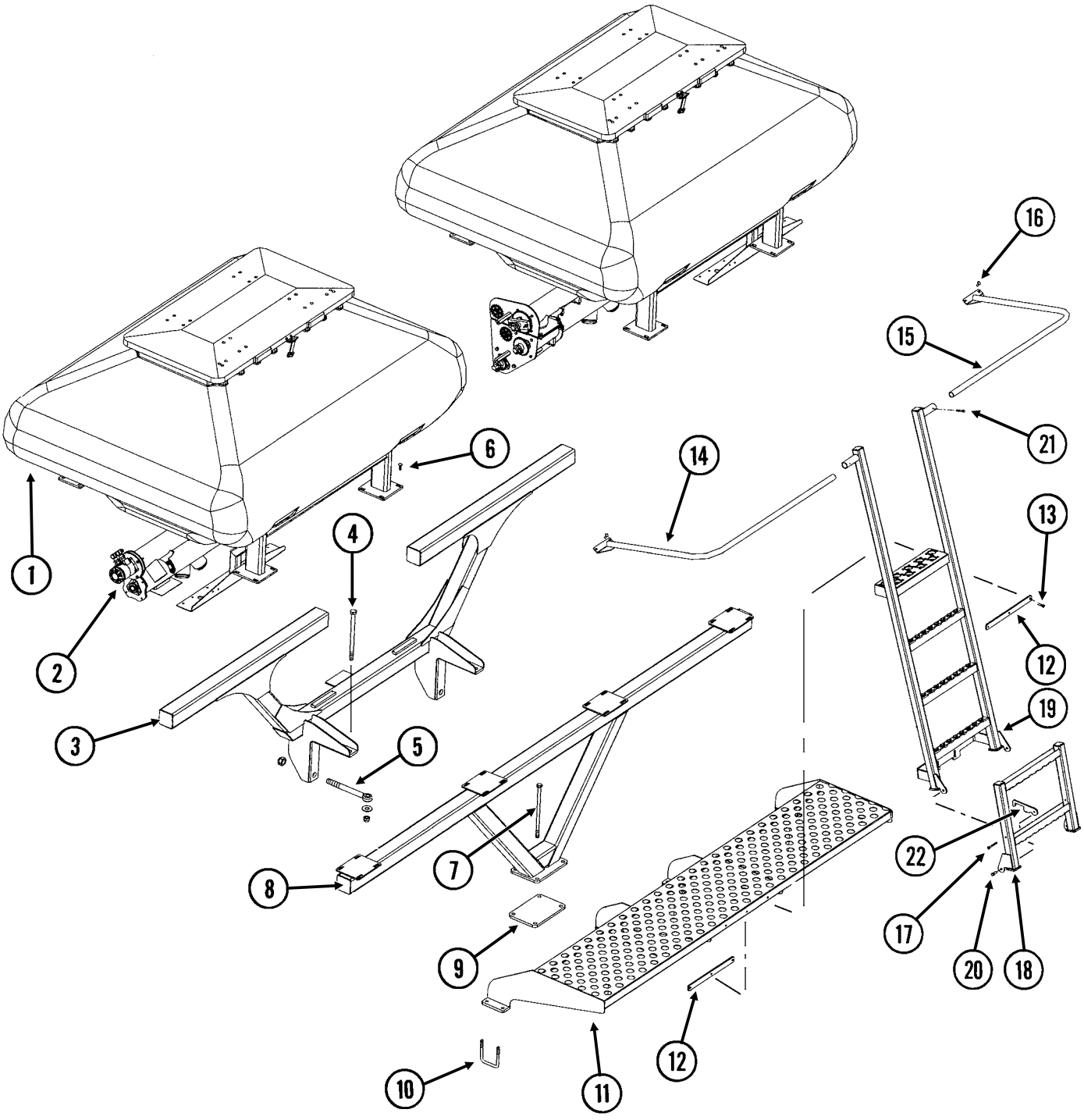


BULK SEED HOPPER ASSEMBLY (SDS)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD17308	1	Hopper, R.H.
	GD17309	-	Hopper, L.H.
2.	GA11579	1	Lid
3.	GA11381	2	Hopper Stiffener
4.	G10003	16	Hex Head Cap Screw, ⅜"-16 x 1 ½"
	G10203	16	Washer, ⅜" SAE
	G10108	16	Lock Nut, ⅜"-16
5.	G10003	2	Hex Head Cap Screw, ⅜"-16 x 1 ½"
	GD11963-03	2	Tube, ½" O.D. x 25⁄64" I.D. x 9⁄16"
	G10203	2	Washer, ⅜" SAE
	G10108	2	Lock Nut, ⅜"-16
6.	GA11635	1	Latch Cover
7.	G10064	2	Hex Head Cap Screw, ¼"-20 x 1"
	G10211	2	Washer, ¼" SAE
	G10110	2	Lock Nut, ¼"-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, ¼"-20 x ⅝"
	G10110	2	Lock Nut, ¼"-20, Grade B
12.	G10047	2	Hex Head Cap Screw, ⅜"-16 x 1 ¾"
	G10203	2	Washer, ⅜" SAE
	GD16694	2	Bushing
	G11226	2	Tee Nut, ⅜"-16
13.	GA11587	1	Hinge
14.	GD16692	2	Bar
15.	GD16693	2	Spacer
16.	GD16691	2	Shim
17.	G10301	4	Carriage Bolt, ⅜"-16 x 1 ½"
	G10622	4	Serrated Flange Nut, ⅜"-16
18.	GD13575-05	-	Tube, 1" x 43" (If Applicable)

BULK SEED HOPPER CATWALK (SDS)

(FWD97)

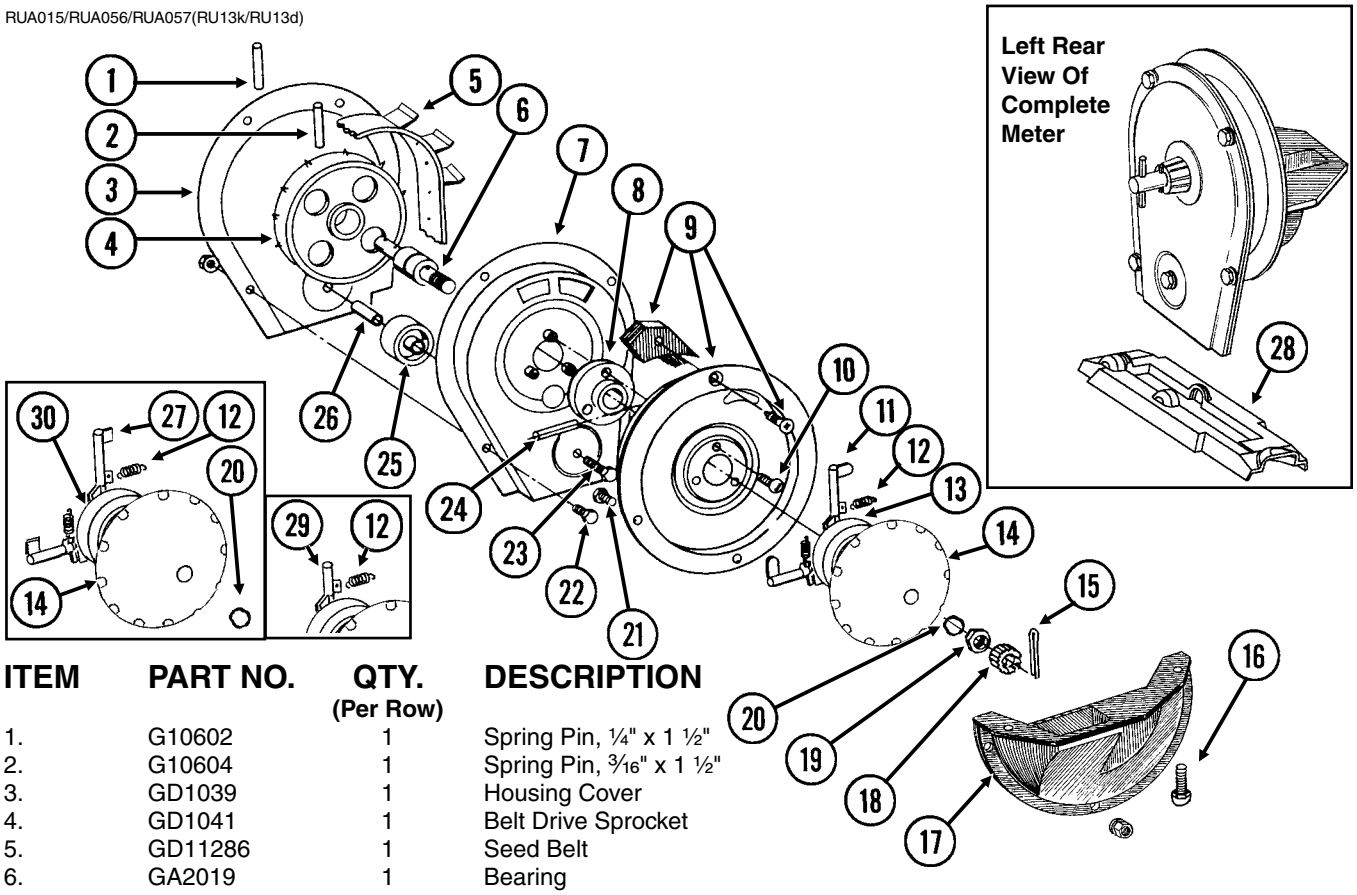


BULK SEED HOPPER CATWALK (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “Bulk Seed Hopper Assembly (SDS)”, Pages P30 And P31
2.		-	See “Center Auger Assemblies (SDS)”, Pages P24 And P25
3.	GA11355	1	Hopper Mount, Front
4.	G10541	1	Hex Head Cap Screw, ¾"-10 x 11"
	G10218	1	Washer, ¾" USS
	G10112	1	Lock Nut, ¾"-10
5.	GD15283	1	Eyebolt, 1"-14 x 10"
	G11108	1	Lock Nut, 1"-14
6.	G10599	4	Carriage Bolt, ⅜"-16 x 1 ¼"
	G10622	4	Serrated Flange Nut, ⅜"-16
7.	G11122	4	Hex Head Cap Screw, ⅝"-11 x 12"
	G10205	4	Washer, ⅝" SAE
	G10107	4	Lock Nut, ⅝"-11
8.	GA11356	1	Hopper Mount, Rear, 24 Row 30"
9.	GD16530	1	Plate
10.	GD16356	4	U-Bolt, 3 ½" x 3 ½" x ½"-13
	G10228	8	Lock Washer, ½"
	G10102	8	Hex Nut, ½"-13
11.	GA11638	1	Catwalk
12.	GD16778	2	Bracket
13.	G10171	3	Hex Head Cap Screw, 5⁄16"-18 x 1 ¼"
	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, ¼"-20 x 2 ½"
	G10110	1	Lock Nut, ¼"-20, Grade B
18.	GA11637	1	Lower Ladder
19.	GA11636	1	Ladder
20.	G10001	2	Hex Head Cap Screw, ⅜"-16 x 1"
	G10108	2	Lock Nut, ⅜"-16
21.	G10040	2	Hex Head Cap Screw, ¼"-20 x 1 ¾"
	G10110	2	Lock Nut, ¼"-20, Grade B
22.	GD16779	1	Hook

FINGER PICKUP SEED METER

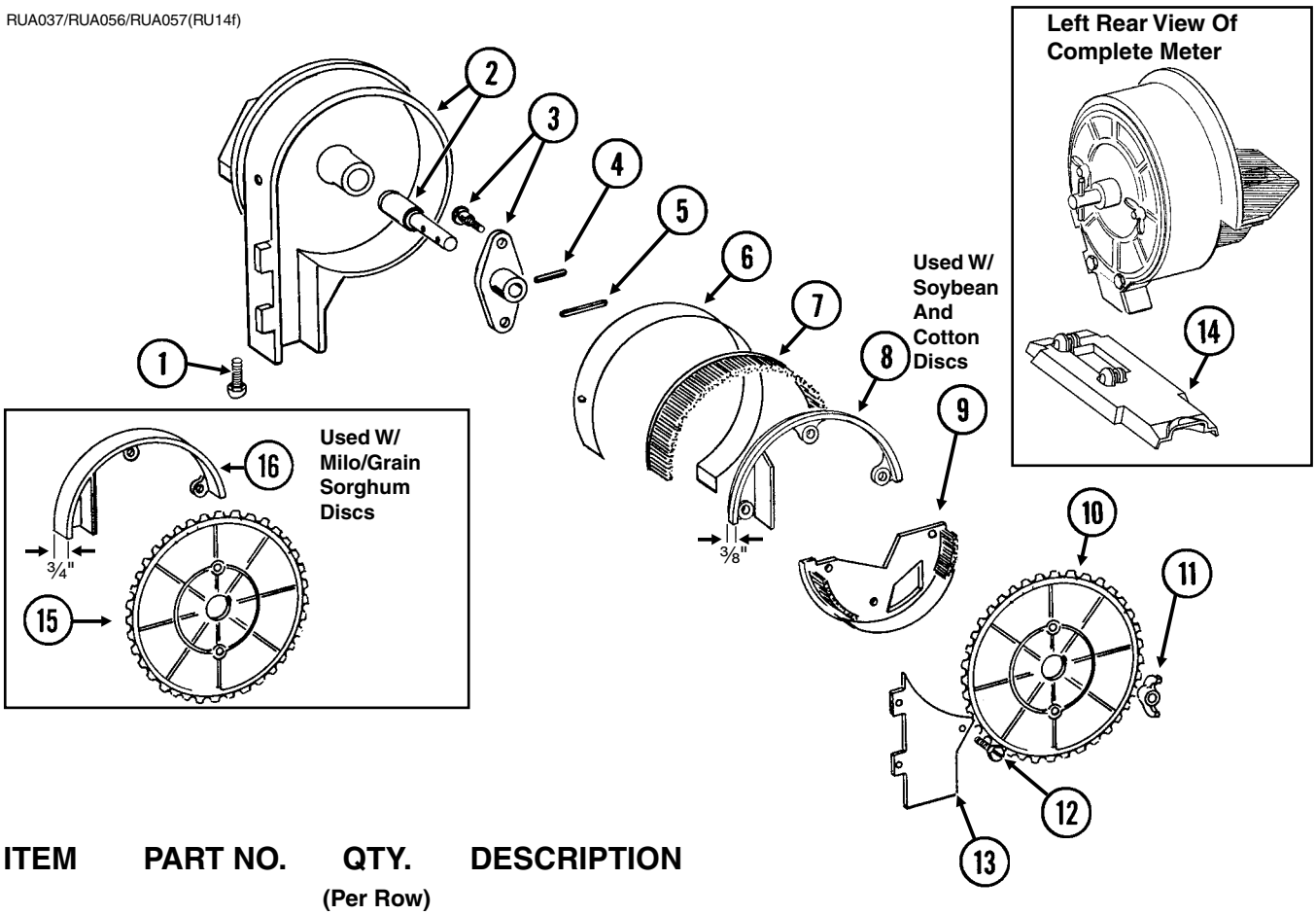
RUA015/RUA056/RUA057(RU13k/RU13d)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10602	1	Spring Pin, ¼" x 1 ½"
2.	G10604	1	Spring Pin, 3⁄16" x 1 ½"
3.	GD1039	1	Housing Cover
4.	GD1041	1	Belt Drive Sprocket
5.	GD11286	1	Seed Belt
6.	GA2019	1	Bearing
7.	GA2018	1	Conveyor Housing
8.	GB0110	1	Bearing Housing
9.	GR1569	1	Carrier Plate W/Brush And Screw (Corn)
	GA2020	-	Brush
	G10690	-	Rolling Thread Screw, No. 10 x ¾"
10.	G10401	3	Slotted Hex Washer Head Screw, No. 10-32 x ⅝"
11.	GD18704	12	Finger, Corn
12.	GD6501	12	Spring
13.	GB0410	1	Cam (Corn)
14.	GD11528	1	Finger Holder
15.	G10470	1	Cotter Pin, 5⁄32" x 1"
16.	G11009	2	Locking Thumbscrew, 5⁄16"-18 x ¾"
17.	GD11311	1	Seed Baffle
18.	GD1083	1	Cover Nut
19.	G10500	1	Jam Nut, ⅝"-18 UNF
20.	GA8343	1	Wave Washer, ⅝" (Triple Wave)
21.	G10020	3	Hex Head Cap Screw, ¼"-20 x ⅝"
	G10323	3	Hex Flange Nut, ¼"-20, No Serrations
22.	G10022	4	Hex Head Cap Screw, ¼"-20 x ½"
	G10621	4	Serrated Flange Nut, ¼"-20
23.	G10021	1	Hex Head Cap Screw, ¼"-20 x 1 ½"
	G10621	1	Serrated Flange Nut, ¼"-20
24.	G10603	1	Spring Pin, ¼" x 1 ¼"
25.	GD1042	1	Idler
26.	GB0120	1	Bushing, 17⁄64" I.D. x 1 1⁄32" Long
27.	GD19333	12	Finger, Oil Sunflower
28.	GD15698	1	Shank Cover, Finger Pickup Seed Meter
29.	GD11787	-	Half Rate Blank Finger
30.	GB0111	1	Cam (Sunflower)
	GR0664	1	Carrier Plate W/Brush and Screw (Sunflower)
A.	GR1848	-	Finger Assembly, Corn (Items 11-14 And 20)
B.	GR1327	-	Finger Assembly, Oil Sunflower (Items 12, 14, 20, 27 And 30)

BRUSH-TYPE SEED METER

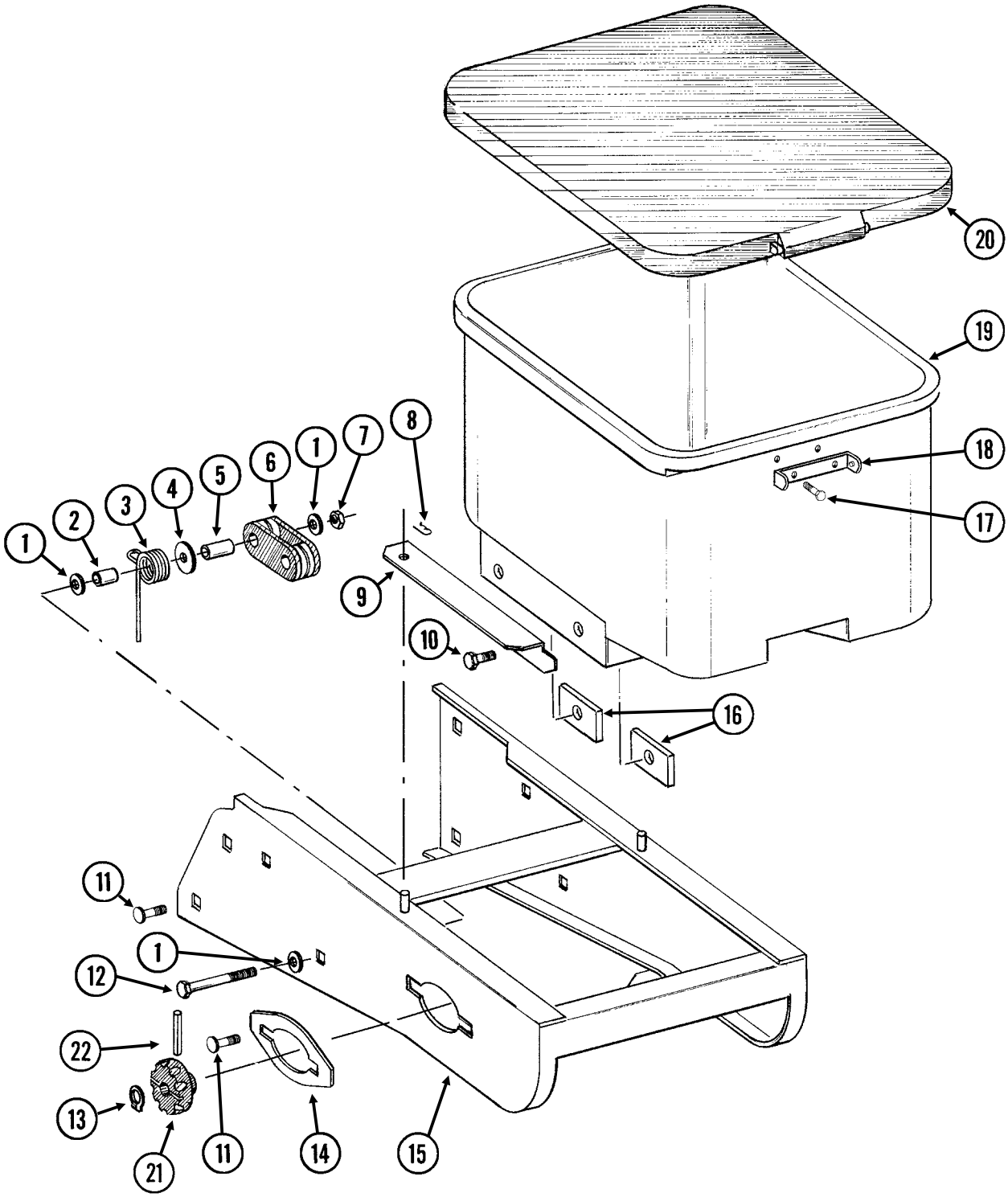
RUA037/RUA056/RUA057(RU14f)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11009	2	Locking Thumbscrew, 5/16"-18 x 3/4"
2.	GA6027	1	Housing W/Bearing
	GA5698	-	Bearing
3.	GA6038	1	Hub W/Shoulder Bolts
	GD1755	-	Shoulder Bolt, 1/4"-20 (2 Used)
4.	G10603	1	Spring Pin, 1/4" x 1 1/4"
5.	G10602	1	Spring Pin, 1/4" x 1 1/2"
6.	GD8778	1	Wear Strip
7.	GA5699	1	Upper Brush
8.	GD11122	1	Upper Brush Retainer (Used W/Soybean And Cotton Discs)
9.	GA5834	1	Lower Brush
10.	GA5794	-	Seed Disc, Soybean, 60 Cell, Black Color-Coded
	GA6184	-	Seed Disc, Specialty Soybean, 48 Cell, Dark Blue Color-Coded
	GA5796	-	Seed Disc, Cotton, Acid-Delinted, 30 Cell, White Color-Coded
	GA6168	-	Seed Disc, Large Cotton, Acid-Delinted, 36 Cell, Tan Color-Coded
	GA6478	-	Seed Disc, High-Rate Cotton, Acid-Delinted, 48 Cell, Light Green Color-Coded
	GA6182	-	Seed Disc, Hill-Drop Cotton, Acid-Delinted, 12 Cell, Brown Color-Coded
	GA7255	-	Seed Disc, Small Hill-Drop Cotton, Acid-Delinted, 12 Cell, Dark Green Color-Coded
11.	G10531	2	Wing Nut W/Nylon Insert, 1/4"-20
12.	G11151	9	Hex Washer Head Screw, No. 10-24 x 1/2"
	G10634	-	Slotted Tap Screw, No. 10-24 x 5/8" (Use As Required)
13.	GD7878	1	Cover
14.	GD15699	1	Shank Cover, Brush-Type Seed Meter
15.	GA5982	-	Seed Disc, Small Milo/Grain Sorghum, 30 Cell, Red Color-Coded
	GA6187	-	Seed Disc, Large Milo/Grain Sorghum, 30 Cell, Light Blue Color-Coded
	GA5795	-	Seed Disc, High-Rate Small Milo/Grain Sorghum, 60 Cell, Red Color-Coded
	GA6633	-	Seed Disc, High-Rate Large Milo/Grain Sorghum, 60 Cell, Yellow Color-Coded
16.	GD8237	-	Upper Brush Retainer (Used W/Milo/Grain Sorghum Discs)

GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

(METR14d)

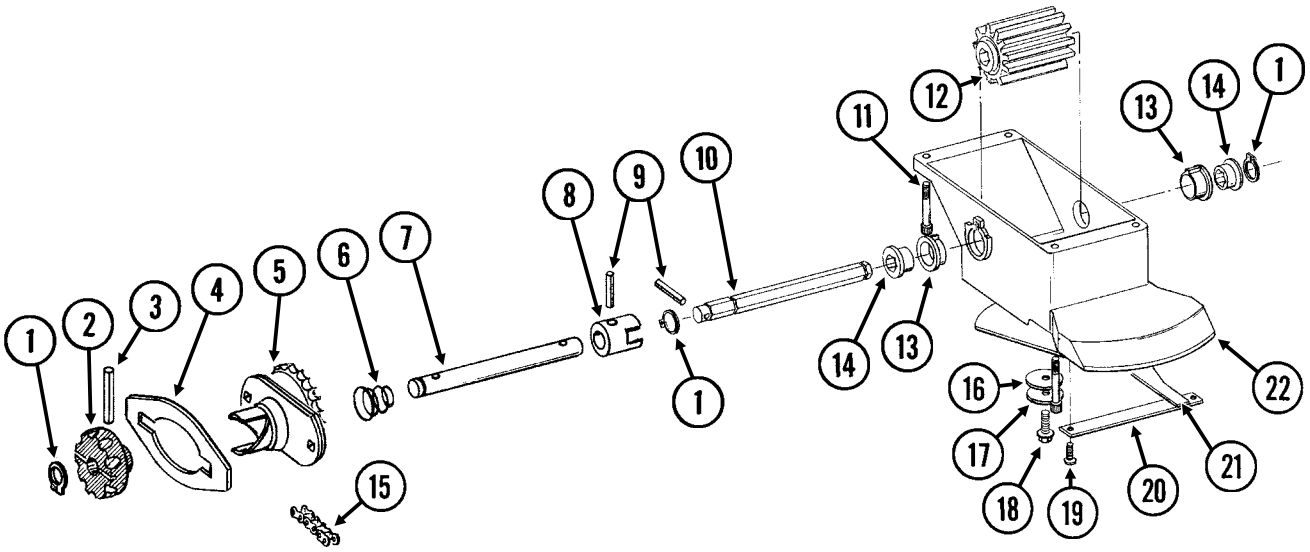


GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10210	3	Washer, ⅜" USS
2.	GD2971-10	1	Sleeve, 9⁄16" Long
3.	GD11219	1	Spring
4.	G10201	1	Special Washer, ⅜" x 1 ½" O.D.
5.	GD1026	1	Sleeve, 1 3⁄16" Long
6.	GD11962	1	Idler
7.	G10108	1	Lock Nut, ⅜"-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, ⅜"-16 x ¾"
	G10229	4	Lock Washer, ⅜"
11.	G10312	8	Carriage Bolt, 5⁄16"-18 x ¾"
	G10620	8	Serrated Flange Nut, 5⁄16"-18
12.	G10325	1	Hex Head Cap Screw, ⅜"-16 x 2 ¾"
13.	G10567	3	External Retaining Ring, ⅝"
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, ¼"-20 x ¾"
	G10621	2	Serrated Flange Nut, ¼"-20
18.	GD1060	1	Hinge
19.	GA8371	1	Hopper
20.	GA4444	1	Lid
21.	GD11239	1	Knob
22.	G10602	1	Spring Pin, ¼" x 1 ½"

GRANULAR CHEMICAL METER AND METER DRIVE

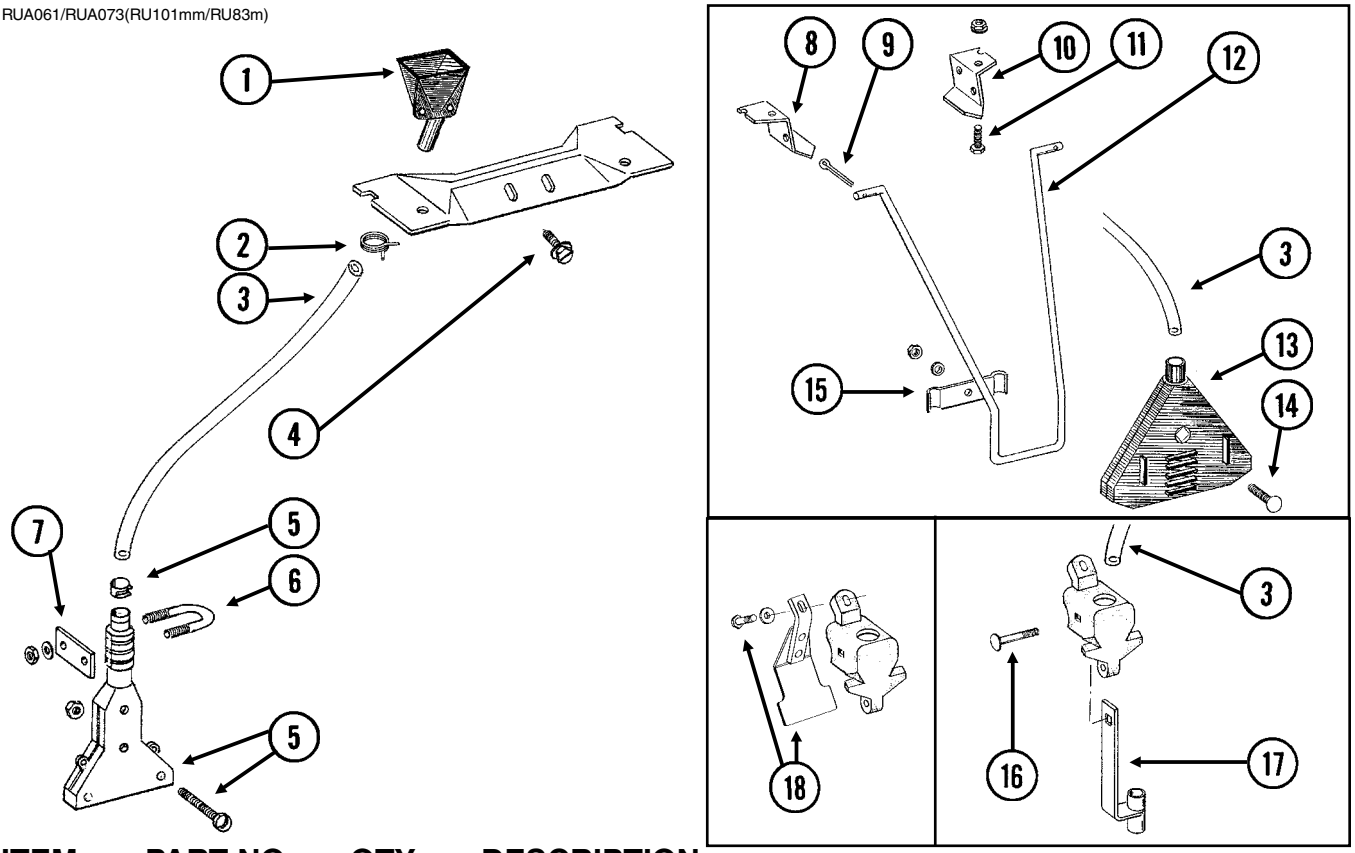
RUA051/RUB028(RU91a)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10567	3	External Retaining Ring, 5/8"
2.	GD11239	1	Knob
3.	G10602	1	Spring Pin, 1/4" x 1 1/2"
4.		-	See “Granular Chemical Hopper And Hopper Panel Extension”, Pages P36 And P37
5.	GA8364	1	Sprocket And Bearing, Drive Clutch, 24 Tooth
6.	GD11413	1	Spring
7.	GD11240	1	Shaft
8.	GB0278	1	Coupler
9.	G10546	2	Spring Pin, 3/16" x 1 1/4"
10.	GD11297	1	Shaft
11.	G10921	4	Hex Socket Head Cap Screw, No. 10-24 x 7/8"
	G10257	4	Lock Washer, No. 10
12.	GD7148	1	Feed Roller, Hex Bore
13.	GB0115	2	Bearing
14.	GD7258	2	Hex Bushing
15.	G3303-114	1	Chain, No. 41, 114 Pitch Including Connector Link
	GR0196	1	Connector Link, No. 41
16.	G10660	1	Wave Washer, 1/2"
17.	G10209	1	Washer, 1/4" USS
18.	G10570	1	Slotted Hex Self-Tapping Screw, 1/4"-20 x 3/4"
19.	G11073	2	Slotted Hex Self-Tapping Screw, No. 10 x 3/8"
20.	GD1061	1	Support Strap
21.	GD1063	1	Metering Gate
22.	GB0116	1	Granular Housing
A.	GA8326	-	Granular Chemical Meter Complete (Items 1, 9, 10, 12-14 And 16-22)

GRANULAR CHEMICAL BANDING OPTIONS

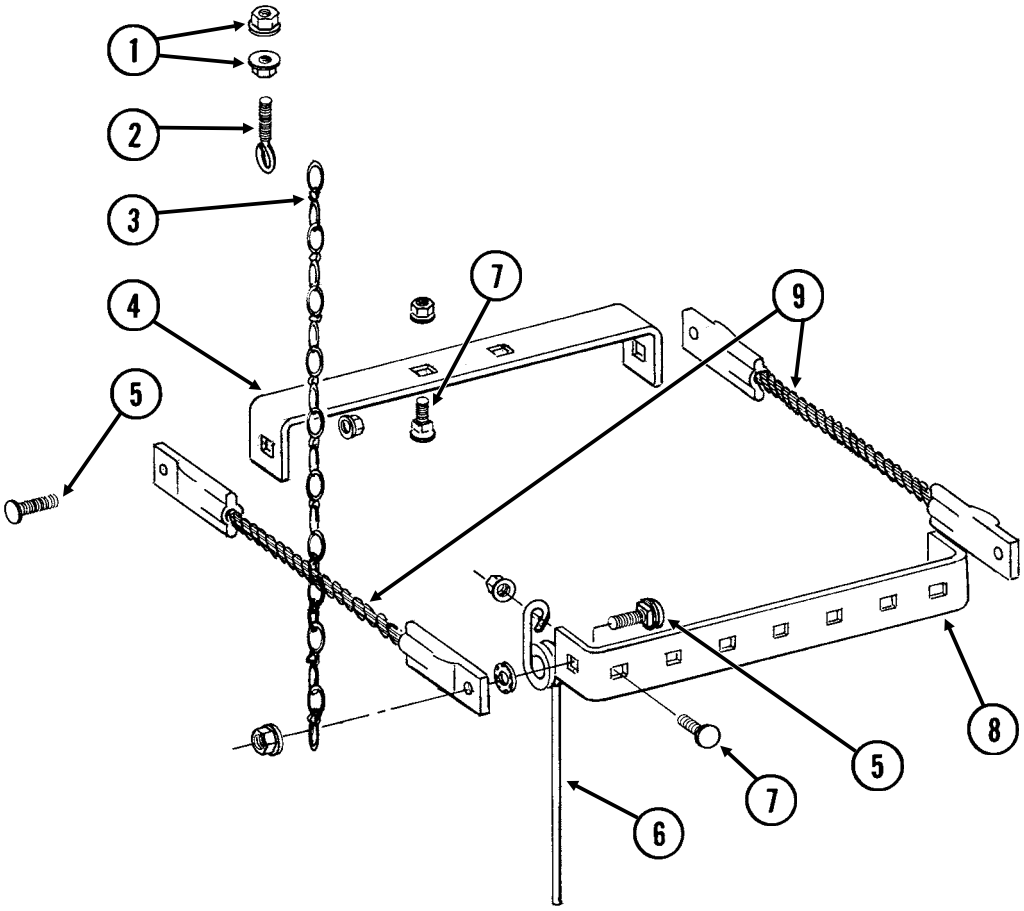
RUA061/RUA073(RU101mm/RU83m)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD2423	1	Funnel
2.	G11209	1	Wire Hose Clamp, ¾"
3.	GD2947	1	Hose, $^{7}/_{16}$" x 28"
4.	G10523	2	Slotted Pan Head Self-Tapping Screw, No. 10 x ½"
5.	GA6907	1	Slope-Compensating Bander W/Hardware (4 ½" Band Width)
	G10864	1	Uni-Clamp
	G10757	2	Pan Head Screw, No. 10-32 x 1 ¼"
	G10758	2	Hex Nut, No. 10-32
6.	GD10963	1	U-Bolt, 1 ½" x 1 5⁄16" x ¼"-20
	G10209	2	Washer, ¼" USS
	G10110	2	Lock Nut, ¼"-20, Grade B
7.	GD10984	1	Spacer
8.	GD1115L	-	Hanger Bracket, L.H.
9.	G10452	-	Cotter Pin, ⅛" x ½"
10.	GD1115R	-	Hanger Bracket, R.H.
11.	G10310	-	Carriage Bolt, ¼"-20 x ¾", Grade 2
	G10227	-	Lock Washer, ¼"
	G10103	-	Hex Nut, ¼"-20
12.	GD1116	-	Hanger
13.	GA2075	-	Diffuser, 14" Band
14.	G10306	-	Carriage Bolt, ⅜"-16 x 2"
	G10229	-	Lock Washer, ⅜"
	G10101	-	Hex Nut, ⅜"-16
15.	GD1118	-	Clamp
16.	G10315	1	Carriage Bolt, ½"-13 x 2 ½" (Replaces Existing ½" x 2 ¼" Hardware)
17.	GA6741	1	Bracket (Straight Drop In-Furrow)
18.	G1K385	-	Bander Shield Kit W/Hardware And Instruction
	G10003	1	Hex Head Cap Screw, ⅜"-16 x 1 ½"
	GD14659	1	Special Washer, ⅜", Hardened

SPRING TOOTH INCORPORATOR

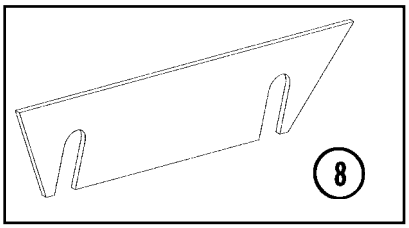
RUA055(RU95)

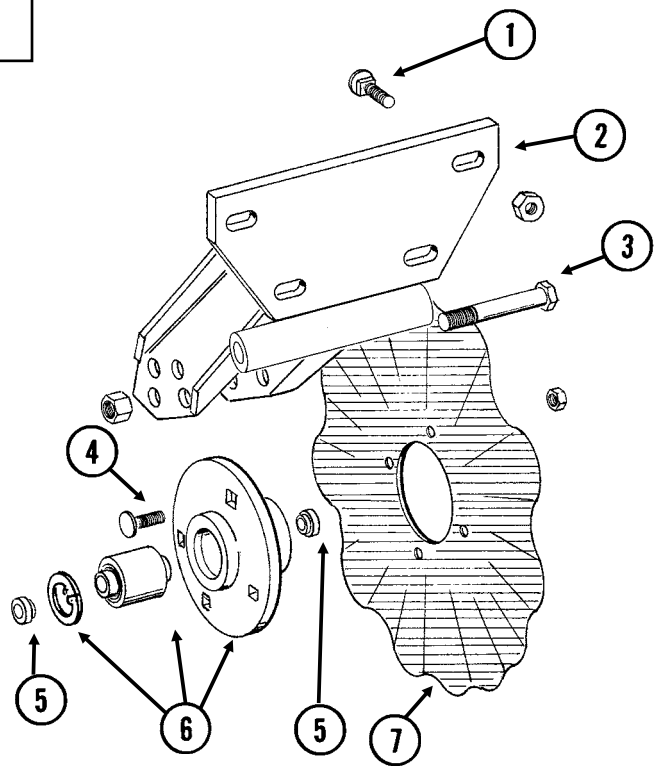


ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10621	4	Serrated Flange Nut, ¼"-20
2.	GD2460	2	Eyebolt, ¼"-20
3.	G3305-01	4	Twin Loop Chain, 9 Links
4.	GD1143	1	Front Bracket
5.	G10305	4	Carriage Bolt, ⅜"-16 x 1"
	G10529	4	External Tooth Lock Washer, ⅜"
	G10622	4	Serrated Flange Nut, ⅜"-16
6.	GD1145	7	Spring Tooth
7.	G10308	9	Carriage Bolt, ⅜"-16 x ¾"
	G10622	9	Serrated Flange Nut, ⅜"-16
8.	GD1144	1	Rear Bracket
9.	GA2094	2	Cable Assembly

ROW UNIT MOUNTED NO TILL COULTER

(D14398/RU102c/RU152)

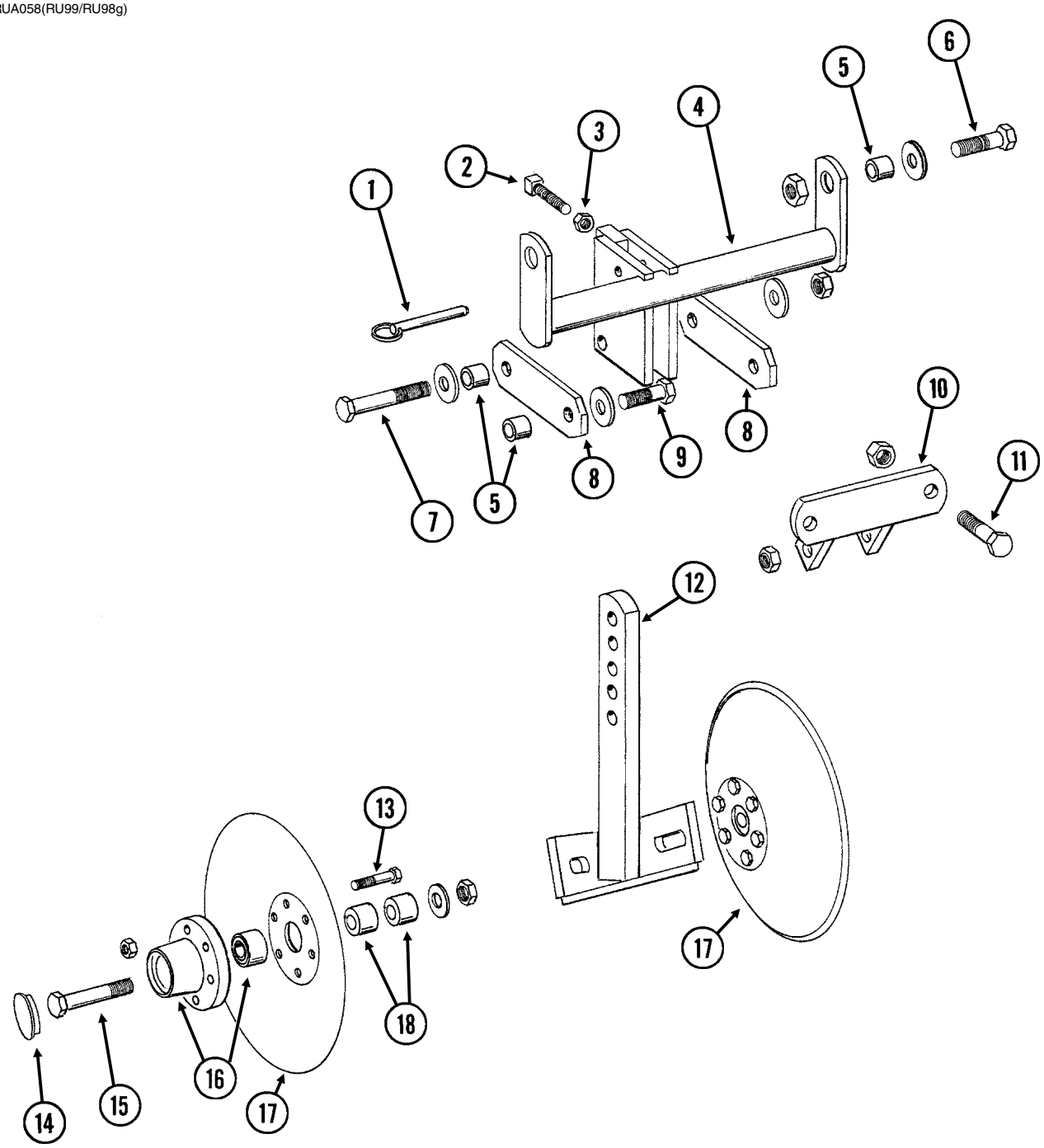




ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10574	4	Carriage Bolt, ½"-13 x 1 ¼"
	G10111	4	Lock Nut, ½"-13
2.	GA11520	1	Arm
3.	G10036	1	Hex Head Cap Screw, ⅝"-11 x 4"
	G10107	1	Lock Nut, ⅝"-11
4.	G10574	4	Carriage Bolt, ½"-13 x 1 ¼"
	G10111	4	Lock Nut, ½"-13
5.	GD11677	2	Adapter
6.	GA8641	1	Hub W/Bearing 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, ¾", 13 Flutes
8.	GD14398	-	Spacer

ROW UNIT MOUNTED DISC FURROWER

RUA059/RUA058(RU99/RU98g)

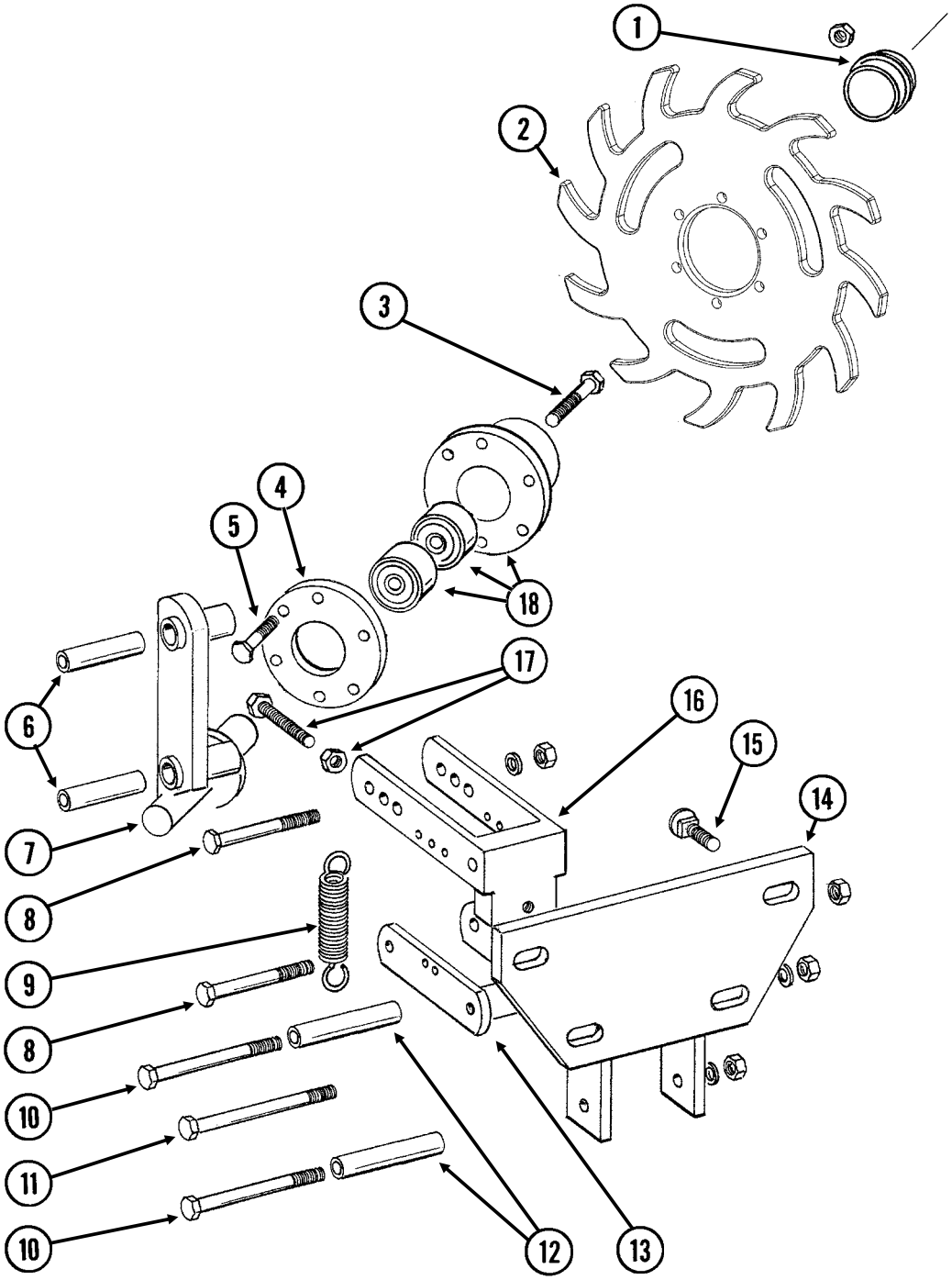


ROW UNIT MOUNTED DISC FURROWER

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, 1 1/16" I.D. x 3/4" Long
	GD7817-04	2	Spacer, 1 1/16" I.D. x 1/2" Long

ROW UNIT MOUNTED RESIDUE WHEEL

(RU103dd)

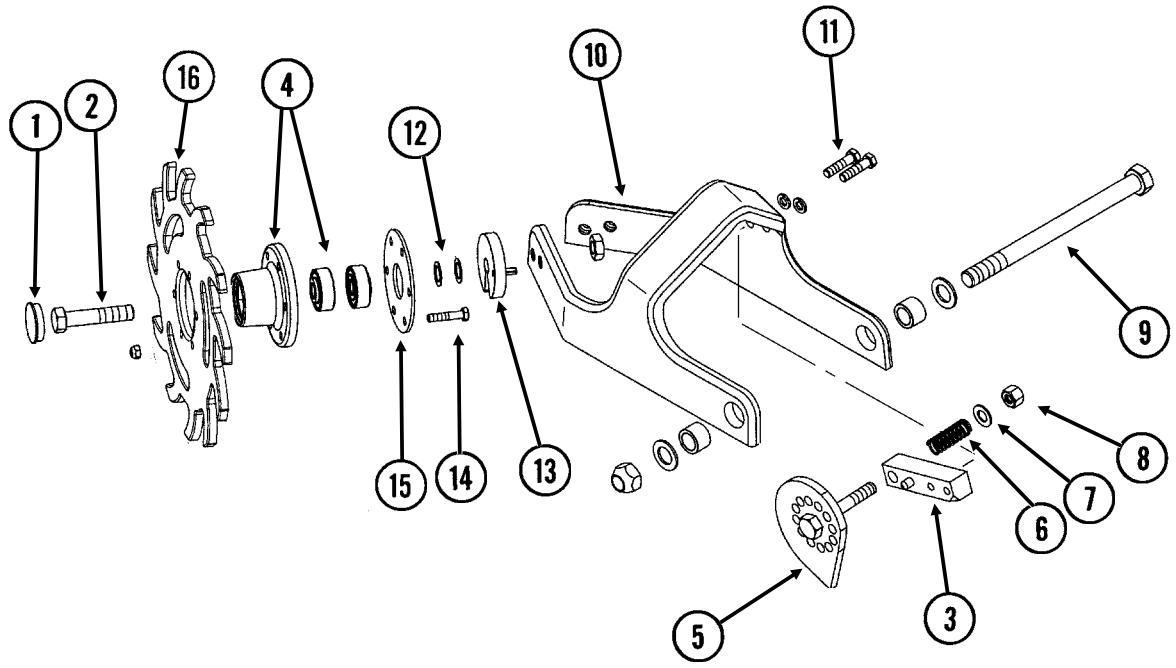


ROW UNIT MOUNTED RESIDUE WHEEL

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1132	1	Dust Cap
2.	GB0387	1	Wheel, 12 Tine, ⅜" x 12"
3.	G10006	1	Hex Head Cap Screw, ⅝"-11 x 2 ¼"
4.	GD9724	1	Backing Plate
5.	G10133	6	Hex Head Cap Screw, 5/16"-18 x 1 ½"
	G10109	6	Lock Nut, 5/16"-18, Grade 8
6.	GD9720	2	Spacer, ½" x 2 3/16" Long
7.	GA6838	1	Wheel Mount
8.	G10033	2	Hex Head Cap Screw, ½"-13 x 3 ½"
	G10228	2	Lock Washer, ½"
	G10102	2	Hex Nut, ½"-13
9.	GD5857	2	Spring
10.	G10045	2	Hex Head Cap Screw, ½"-13 x 4 ½"
	G10228	2	Lock Washer, ½"
	G10102	2	Hex Nut, ½"-13
11.	G10348	1	Hex Head Cap Screw, ½"-13 x 5" (Lockup Bolt)
	G10111	1	Lock Nut, ½"-13
12.	GD9715	2	Spacer, ½" x 3" Long
13.	GA6834	1	Lower Link
14.	GA6832	1	Mount
15.	G10574	4	Carriage Bolt, ½"-13 x 1 ¼"
	G10111	4	Lock Nut, ½"-13
16.	GA6833	1	Upper Link
17.	G10371	1	Hex Head Cap Screw, ½"-13 x 3", Full Thread
	G10501	1	Hex Jam Nut, ½"-13, Grade 2
18.	GA5654	1	Hub W/Bearings
	GA2014	-	Bearing
A.	GA12236	-	Wheel Assembly, 12 Tine, R.H. (Items 2, 4, 5, And 18)

COULTER MOUNTED RESIDUE WHEELS

(RU153)

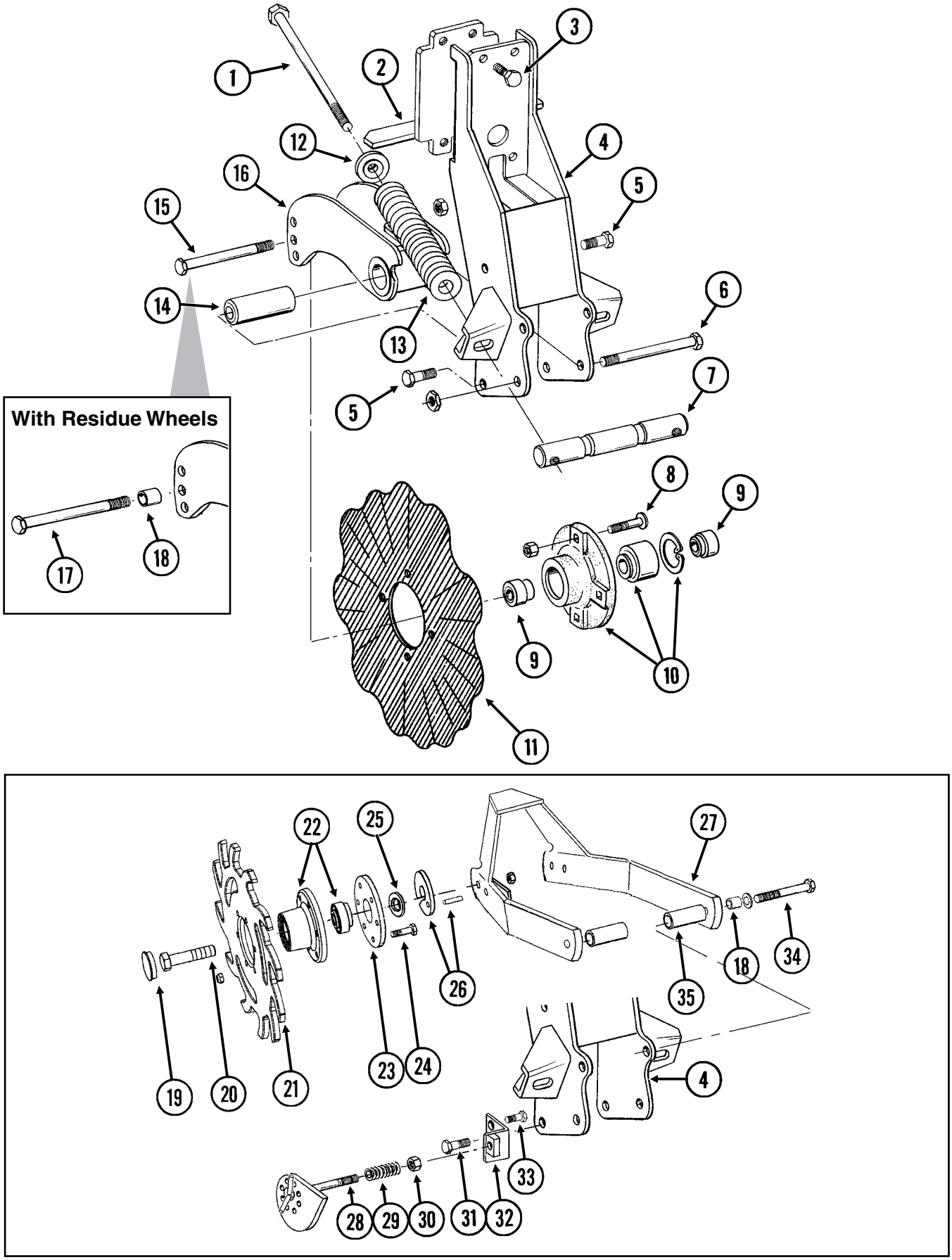


COULTER MOUNTED RESIDUE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1132	2	Dust Cap
2.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
	G10503	2	Hex Jam Nut, 5/8"-11, Grade 2
3.	GA12256	1	Locking Pin
4.	GA5654	2	Hub W/Bearings
	GA2014	-	Bearing
5.	GA7412	1	Cam
6.	GD10519	1	Spring
7.	G10206	1	Washer, 1/2" SAE
8.	G10974	1	Lock Nut W/Nylon Insert, 1/2"-13
9.	G11236	1	Hex Head Cap Screw, 3/4"-10 x 10 1/2"
	GB0383	2	Bushing, 1 1/8" O.D. x 25/32" I.D. x 3/4" Long
	G10194	2	Washer, 3/4" SAE
	G11228	1	Lock Nut, 3/4"-10
10.	GB0401	1	Mount
11.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	2	Lock Washer, 3/8"
12.	G10213	2-4	Machine Bushing, 5/8" (.030" Thick)
13.	GA8760	2	Weed Guard W/Spring Pin
	G10765	-	Spring Pin, 1/4" x 1"
14.	G10133	12	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G10109	12	Lock Nut, 5/16"-18, Grade 8
15.	GD9724	2	Backing Plate
16.	GB0387	2	Wheel, 12 Tine, 3/8" x 12"
A.	GA12236	-	Wheel Assembly, 12 Tine, R.H. (Items 3, 4, 14, And 15) (Shown)
	GA12235	-	Wheel Assembly, 12 Tine, L.H. (Items 3, 4, 14, And 15)
B.	G1K467	-	Residue Wheel Mount Kit (Items 17-20)

FRAME MOUNTED COULTER W/RESIDUE WHEELS

(RU135c/RU135g/RU153b/RU135hh)

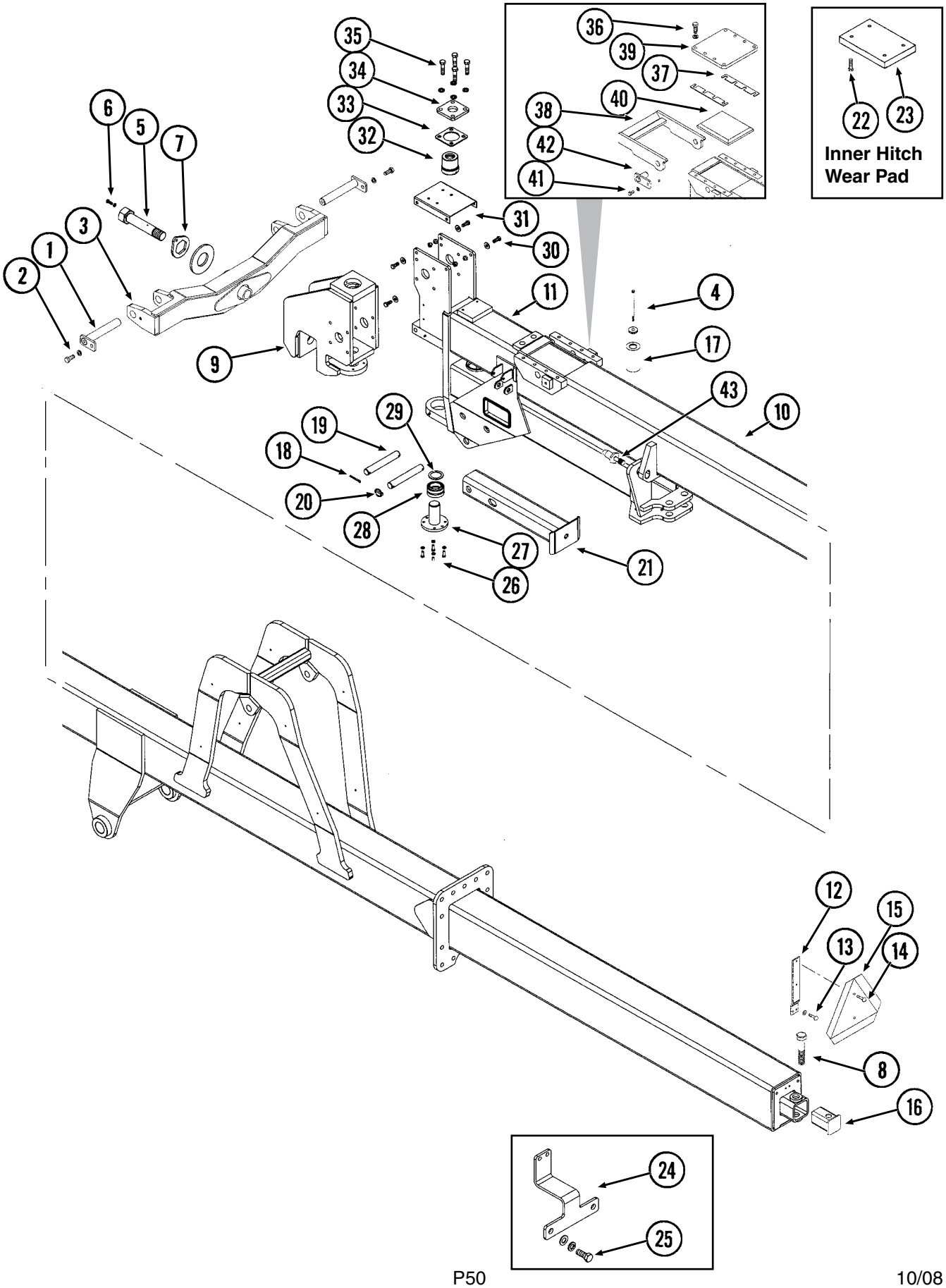


FRAME MOUNTED COULTER W/RESIDUE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11010	2	Hex Head Cap Screw, ¾"-10 x 12"
2.	GA9844	1	Plate W/Angle
3.	G10039	4	Hex Head Cap Screw, ½"-13 x 1 ¾"
4.	GA9131	1	Coulter Frame
5.	G10007	4	Hex Head Cap Screw, ⅝"-11 x 1 ½"
	G10107	4	Lock Nut, ⅝"-11
6.	G10400	1	Hex Head Cap Screw, ¾"-10 x 6 ½"
	G10112	1	Lock Nut, ¾"-10
7.	GD12826	1	Spring Anchor Bar
8.	G10574	4	Carriage Bolt, ½"-13 x 1 ¼"
	G10111	4	Lock Nut, ½"-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, ¾", 13 Flutes
12.	GB0213	2	Spring Seat
13.	GD12817	2	Compression Spring
14.	GD12829	1	Sleeve
15.	G10046	1	Hex Head Cap Screw, ⅝"-11 x 5"
	G10107	1	Lock Nut, ⅝"-11
16.	GA9845	1	Coulter Arm W/Grease Fitting
	G10643	-	Grease Fitting, 45°, ¼"-28
17.	G10011	1	Hex Head Cap Screw, ⅝"-11 x 5 ½"
	G10107	1	Lock Nut, ⅝"-11
18.	GB0218	3	Bushing, 21⁄32" I.D. x ⅞" O.D. x 19⁄32" Long
19.	GD1132	2	Dust Cap
20.	G10010	2	Hex Head Cap Screw, ⅝"-11 x 3"
	G10503	2	Hex Jam Nut, ⅝"-11, Grade 2
21.	GB0386	2	Wheel, 12 Tine, ⅜" 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 ½"
	G10109	12	Lock Nut, 5⁄16"-18, Grade 8
25.	G10213	2	Machine Bushing, ⅝" (.030" Thick)
26.	GA9862	2	Weed Guard W/Spring Pin
	G10765	-	Spring Pin, ¼" x 1"
27.	GA9865	1	Mount
28.	GA9861	1	Cam
29.	GD10519	1	Spring
30.	G10974	1	Lock Nut W/Nylon Insert, ½"-13
31.	G10005	1	Hex Head Cap Screw, ⅝"-11 x 1 ¾"
	G10107	4	Lock Nut, ⅝"-11
32.	GA9864	1	Support
33.	G10014	1	Hex Head Cap Screw, ½"-13 x 1"
	G10102	1	Hex Nut, ½"-13
34.	G10011	2	Hex Head Cap Screw, ⅝"-11 x 5 ½"
	G10205	2	Washer, ⅝" SAE
	G10730	2	Lock Nut W/Nylon Insert, ⅝"-11
35.	GD14170	2	Sleeve, 3"
A.	GA12236	-	Wheel Assembly, 12 Tine, R.H. (Items 21, 22, 23, And 24) (Shown)
	GA12235	-	Wheel Assembly, 12 Tine, L.H. (Items 21, 22, 23, And 24)

INNER/OUTER FIXED HITCH

(FWD9b/D14812/FWD153/FWD164/FWD112)

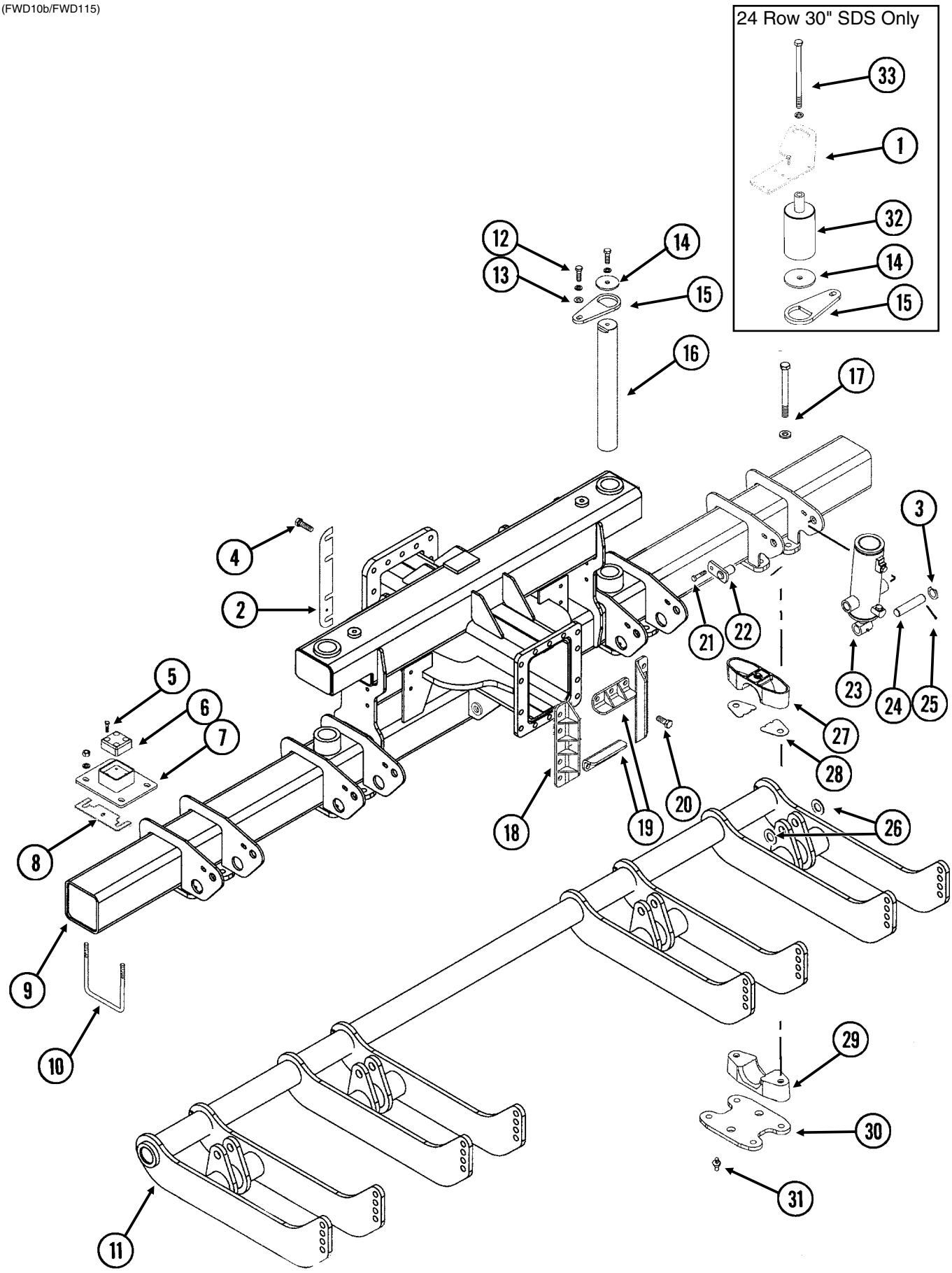


INNER/OUTER FIXED HITCH

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11079	2	Hammer Strap, Category 3 And 3N
2.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
3.	GA12657	1	Hitch Bar
4.	G11048	2	Hex Head Cap Screw, 3/8"-16 x 7 1/2"
	GB0212	2	Spring Washer
	G10210	2	Washer, 3/8" USS
	G10108	2	Lock Nut, 3/8"-16
5.	GA11082	1	Pivot Bolt W/Grease Fitting, 1 3/4" x 10 3/8" (Total Length)
	G10640	-	Grease Fitting, 1/4"-28
	GD18170	1	Spacer
6.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
7.	GD18143	1	Pivot Lock Nut
8.	G10042	1	Hex Head Cap Screw, 1 1/4"-7 x 6 1/2"
	G10157	1	Lock Nut, 1 1/4"-7
9.	GA12679	1	Hitch Pivot
10	GA12455	1	Outer Hitch
11.	GA12687	1	Inner Hitch
12.	GD15624	1	SMV Bracket, Conventional
13.	G10043	2	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	2	Lock Washer, 5/16"
14.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10227	2	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
15.	GD2199	1	SMV Sign
16.	GA10483	1	Hitch Endcap
17.	GD16227	2	Bushing, 2" O.D. x 1 29/64" I.D. x 5 5/8", Category 4
18.	G10460	3	Cotter Pin, 1/4" x 2"
19.	GD3737	2	Pin, 1 1/4" x 8 1/2"
20.	GD2558	1	Lynch Pin, 1/4"
21.	GA10280	1	Hitch Stand
22.	G11099	4	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
23.	GD14812	1	Wear Pad, 5 7/8" x 6 1/2" x 1"
24.	GD16786	1	SMV Extension Bracket, 9 3/4", SDS
25.	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	2	Lock Washer, 1/2"
	G10206	2	Washer, 1/2" SAE
26.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	4	Lock Washer, 3/8"
27.	GA12681	1	Pivot Pin
28.	GA12689	1	Spherical Bearing
29.	GD18175	1	Shim
30.	G10037	4	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10216	4	Washer, 1/2" USS
	G10111	4	Lock Nut, 1/2"-13
31.	GD18171	1	Cover
32.	GA12688	1	Special Spherical Bearing
33.	GD18151	1	Spacer
34.	GD18152	1	Cap
35.	G10009	4	Hex Head Cap Screw, 5/8"-11 x 2 1/2"
	G10239	4	Hex Nut, 1 1/4"-7
36.	G10008	8	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	12	Lock Washer, 5/8"
37.	GD14842	4	Shim, 1 1/2" x 10 1/2", 10 Gauge
38.	GA10281	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
39.	GD14841	1	Cover, 10 1/2" x 11" x 3/4"
40.	GD14843	1	Wear Pad
41.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
42.	GA10282	2	Pin, 2 1/4"
43.	GD18004	2	Hitch Lock Pin
	G11132	2	Washer, 1 1/8" SAE
	G11097	2	Hex Nut, 1 1/8"-12

CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

(FWD10b/FWD115)

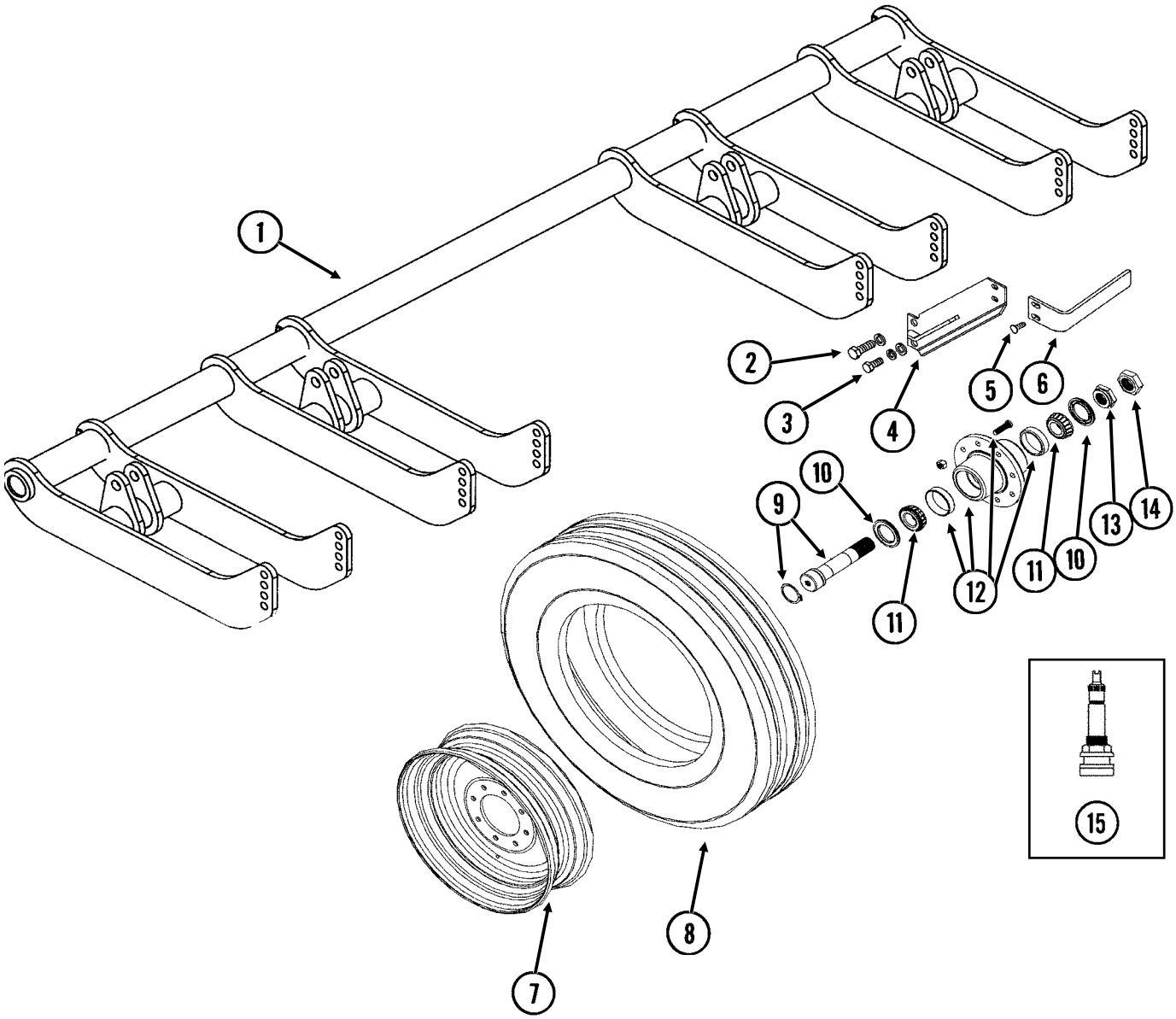


CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “Wing Auger Assemblies (SDS)”, Pages P26-P28
2.	GD15451	3	Shim, 2 ¾" x 18", 16 Gauge
	GD15780	3	Shim, 1 ⅞" x 18", 22 Gauge
3.	G10139	8	Washer, 1 ¼" USS
4.	G10027	8	Hex Head Cap Screw, ¾"-10 x 2 ½"
	G10026	-	Hex Head Cap Screw, ¾"-10 x 2"
	G10025	-	Hex Head Cap Screw, ¾"-10 x 1 ½"
	G10231	8	Lock Washer, ¾"
	G10105	8	Hex Nut, ¾"-10
5.	G11099	8	Hex Socket Head Cap Screw, ⅜"-16 x 1 ½", Grade 8
6.	GD15169	2	Wear Block
7.	GA10343	2	Mount, 8" x 10"
8.	GD15170	-	Shim, 3 ¼" x 10", 16 Gauge (As Required)
9.	GA11210	1	H-Frame Assembly
10.	GD17039	4	U-Bolt, 7" x 7" x ⅝"-11
	G10230	8	Lock Washer, ⅝"
	G10104	8	Hex Nut, ⅝"-11
11.			See “Rock Shaft Axle Assembly And Wheels”, Pages P54 And P55
12.	G10008	4	Hex Head Cap Screw, ⅝"-11 x 2"
	G10230	4	Lock Washer, ⅝"
13.	G10217	2	Washer, ⅝" USS
14.	GD15046	2	Washer, ²¹⁄₃₂" I.D. x 4" O.D. x ¼"
15.	GD15045	2	Capture Plate
16.	GD15369	2	Pivot Pin, 3" x 22 ½"
17.	G11095	16	Hex Head Cap Screw, ⅞"-9 x 9"
	GD10063	16	Hardened Washer, ⅞"
	G10418	16	Lock Nut, ⅞"-9
18.	GB0357	2	Keeper
19.	GB0355	2	Keeper
20.	G10026	14	Hex Head Cap Screw, ¾"-10 x 2"
	G10231	14	Lock Washer, ¾"
	G10105	14	Hex Nut, ¾"-10
21.	G10016	8	Hex Head Cap Screw, ½"-13 x 2"
	G10216	8	Washer, ½" USS
	G10111	8	Lock Nut, ½"-13
22.	GA6761	8	Pin, 1 ¾"
	GA5121	-	Pin, 2 ⅛"
23.		-	See “Master Cylinder”, Pages P78
24.	GD5841	4	Pin, 1 ¼" x 5 ⅝"
25.	G10460	8	Cotter Pin, ¼" x 2"
26.	G10226	8	Washer, 1 ¼" SAE
27.	GB0332	8	Bearing
28.	GD15172	16	Shim
29.	GD14941	8	Bearing
30.	GD14926	4	Clamp Plate
31.	G10640	8	Grease Fitting, ¼"-28
32.	GA11385	1	Pivot Post
33.	G10953	1	Hex Head Cap Screw, ⅝"-11 x 10"
	G10230	1	Lock Washer, ⅝"

ROCK SHAFT AXLE ASSEMBLY AND WHEELS

(FWD10c)



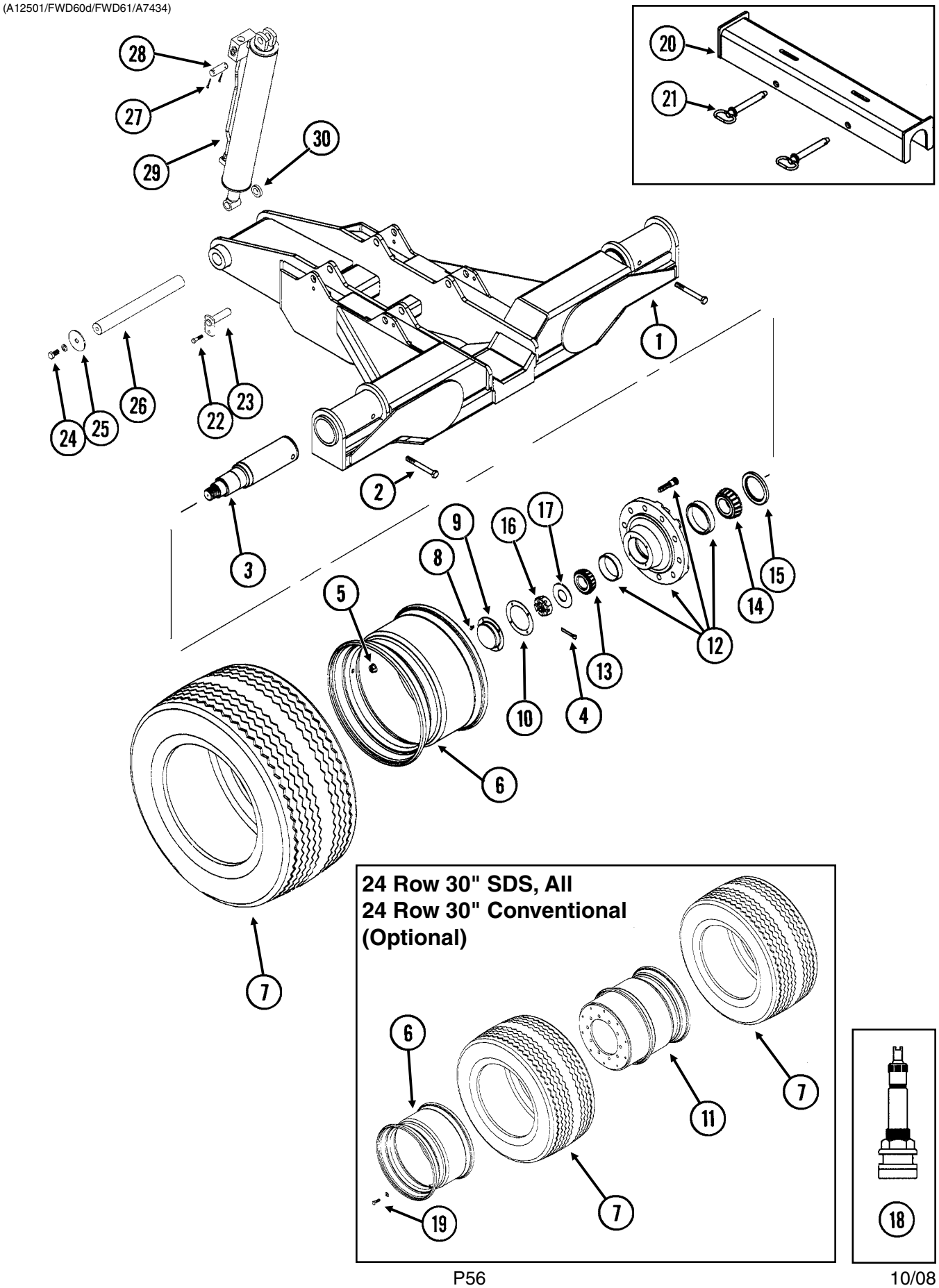
ROCK SHAFT AXLE ASSEMBLY AND WHEELS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11174	1	Rock Shaft Axle, 133 ½"
2.	G10448	8	Hex Head Cap Screw, ⅞"-9 x 2 ½", Grade 8
	G10330	8	Lock Washer, ⅞"
3.	G11071	4	Hex Head Cap Screw, ¾"-10 x 2 ¼"
	G10194	8	Washer, ¾" SAE
	G10231	4	Lock Washer, ¾"
	G10105	4	Hex Nut, ¾"-10
4.	GA11227	4	Scraper Mount
5.	G10636	8	Carriage Bolt, ½"-13 x 1 ½"
	G10216	8	Washer, ½" USS
	G10228	8	Lock Washer, ½"
	G10102	8	Hex Nut, ½"-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 ¾"
	G10913	-	External Retaining Ring, 2 ½"
10.	GA4722	8	Seal
11.	GA4723	8	Bearing
12.	GA4729	4	Hub W/Cups, Bolts, Nuts And Grease Fitting, 8 Bolt, 1 ¾" Bore
	G10640	-	Grease Fitting, ¼"-28
	GD7079	-	Cup
	GR0528	-	Stud, ⅝"-12 x 2 ¼", Grade 8
	GR0531	-	Lug Nut, ⅝"-18 UNF
13.	GD7089	4	Special Nut, 1 ¾"-12 UNF
14.	GD7864	4	Special Hex Nut, 1 ¾"-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.**

TRANSPORT AXLE ASSEMBLY AND WHEELS

(A12501/FWD60d/FWD61/A7434)



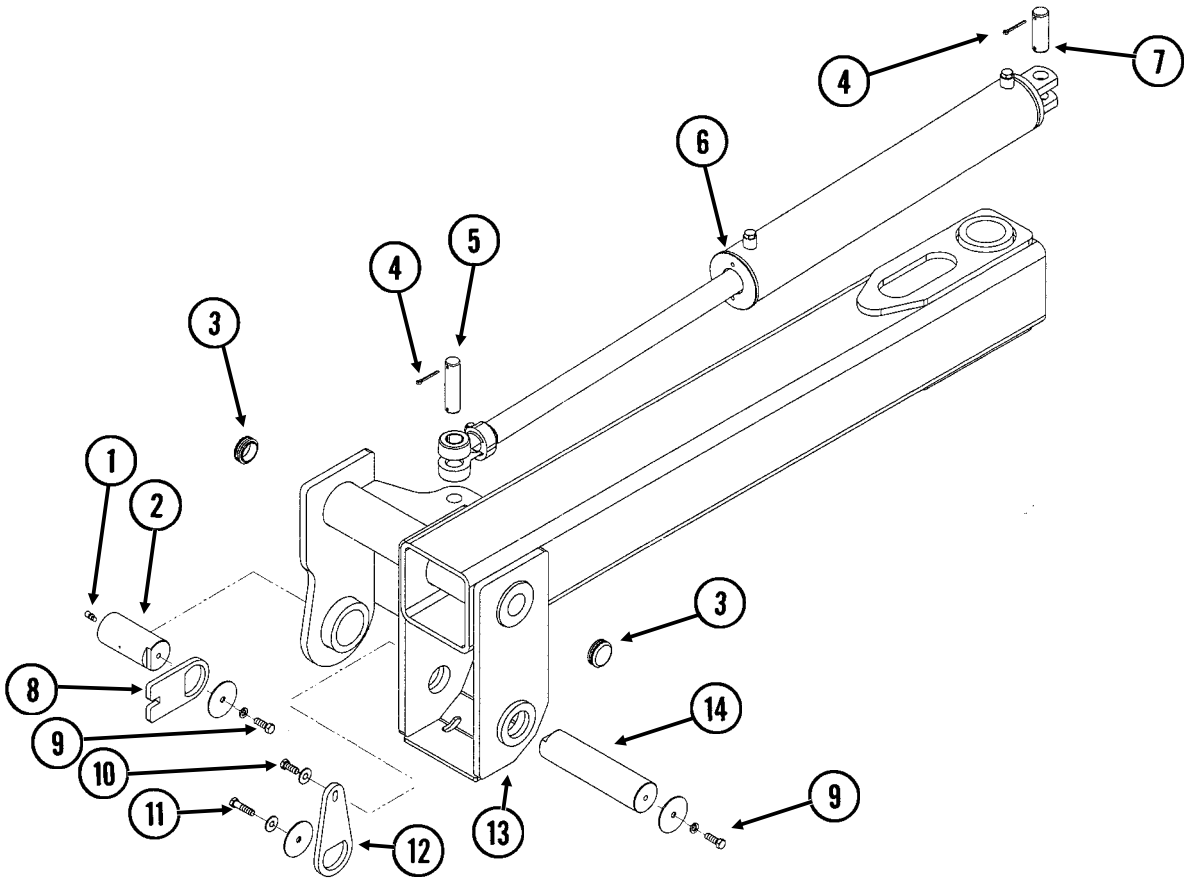
TRANSPORT AXLE ASSEMBLY AND WHEELS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA12460	1	Axle W/Grease Fittings
	G10640	2	Grease Fitting, ¼"-28
2.	G10400	2	Hex Head Cap Screw, ¾"-10 x 6 ½"
	G10112	2	Lock Nut, ¾"-10
3.	GD13740	2	Spindle, 4 ½"
4.	G10471	2	Cotter Pin, ⅜" x 2 ½"
5.	G10625	20	Flange Nut, ¾"-16
6.	GA11277	2	Rim, 22.5" x 14"
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 ½"
9.	GD1360	2	Dust Cap
10.	GD1359	2	Seal
11.	GA11265	2	Rim, 22.5" x 14", Offset
12.	GA9306	2	Hub W/Cups, Grease Fitting And Stud Bolts (10 Bolt High Strength)
	GR0192	-	Outer Cup
	GR0191	-	Inner Cup
	G10373	-	Grease Fitting, 45°, ⅛"-27
	GR1681	-	Stud Bolt, ¾"-16 x 3 ⅞"
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, ⅝"-11 x 2"
	GD7805	10	Special Washer, ⅝", Hardened
20.	GA12501	2	Cylinder Lockup
21.	GA6189	2	Hitch Pin W/Lynch Pin
22.	G10017	4	Hex Head Cap Screw, ½"-13 x 1 ½"
	G10111	4	Lock Nut, ½"-13
23.	GA10279	4	Pin, 5 ¼"
24.	G10025	2	Hex Head Cap Screw, ¾"-10 x 1 ½"
	G10231	2	Lock Washer, ¾"
25.	GD15041	2	Washer, 13/16" I.D. x 4" O.D., 7 Gauge
26.	GD15042	1	Pin, 2 ¼" x 20 1/16"
27.	G10460	4	Cotter Pin, ¼" x 2"
28.	GD12790	2	Pin, 1 ¼" x 3 ½"
29.		-	See “Transport Axle Cylinder”, Page P81
30.	GD0752-53	2	Sleeve, ⅜"
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)



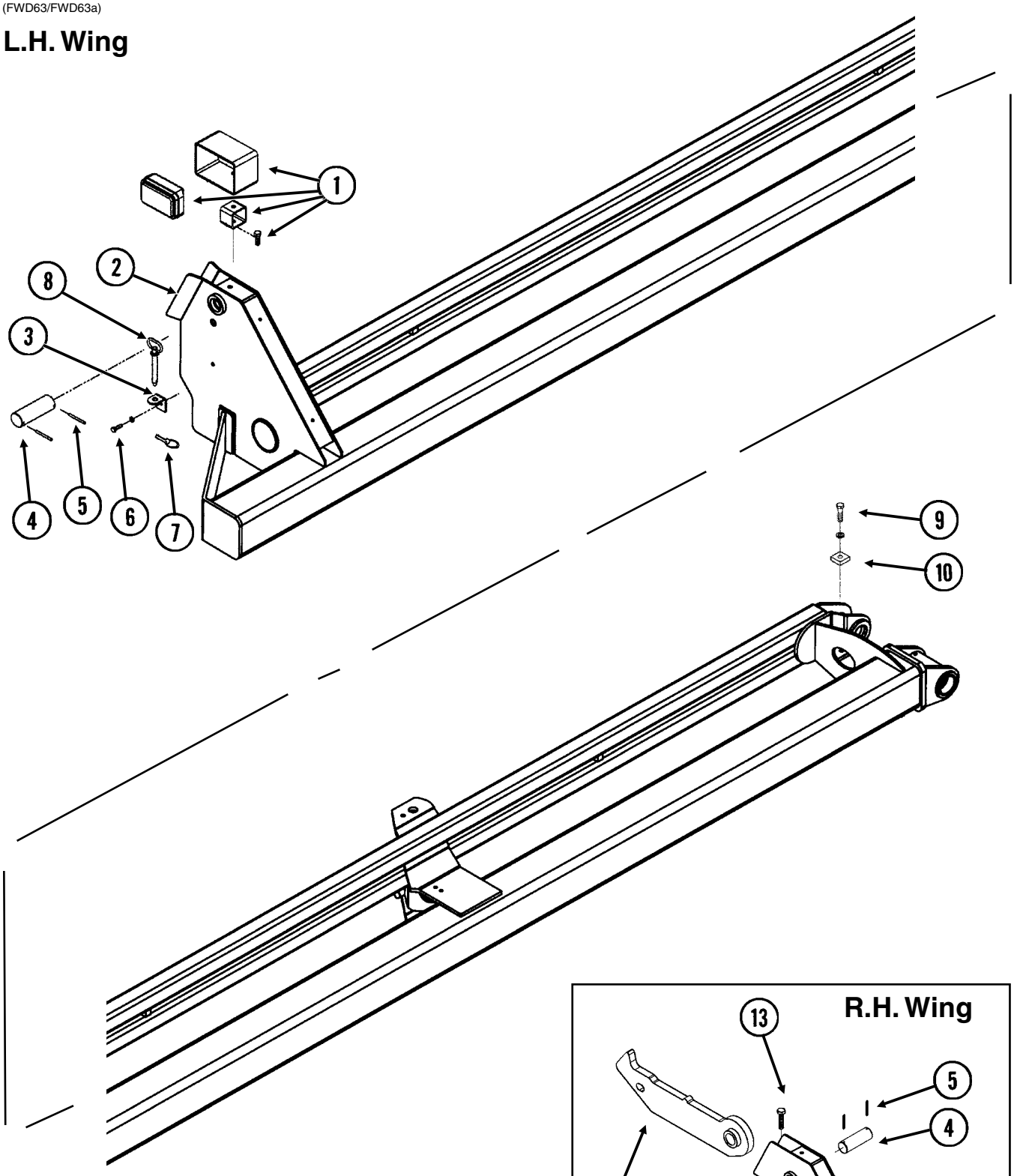
STUB WING

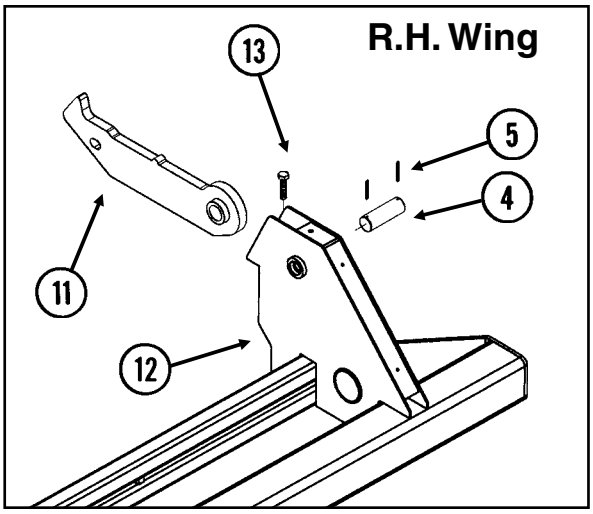
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10640	1	Grease Fitting, ¼"-28
2.	GD15067	1	Pin, 2 ¾" x 5 13⁄16"
3.	G11105	2	Cap
4.	G10460	4	Cotter Pin, ¼" x 2"
5.	GD15048	1-2	Pin, 1 ¼" x 5 1⁄16"
6.		-	See “Wing Fold Cylinder”, Page P80
7.	GD15049	1-2	Pin, 1 ¼" x 4 5⁄16"
8.	GD15069	1	Capture Plate
9.	G10017	2	Hex Head Cap Screw, ½"-13 x 1 ½"
	G10228	2	Lock Washer, ½"
	GD15068	2	Washer, 3 ¾" O.D. x ½" I.D. x ¼"
10.	G10037	1	Hex Head Cap Screw, ½"-13 x 1 ¼"
	G10216	1	Washer, ½" USS
11.	G10016	1	Hex Head Cap Screw, ½"-13 x 2"
	G10216	1	Washer, ½" USS
	GD15068	1	Washer, 3 ¾" O.D. x ½" I.D. x ¼"
12.	GD15072	1	Capture Plate
13.	GA11219	1	Stub Wing W/Bushings And Grease Fittings, L.H. (Shown)
	GA11220	-	Stub Wing W/Bushings And Grease Fittings, R.H.
	GD14565	-	Hardened Bushing, 3 ½" O.D. x 3" I.D. x 4"
	GD14563	-	Hardened Bushing, 3 ¼" O.D. x 2 ¾" I.D. x 3"
	G10640	-	Grease Fitting, ¼"-28
14.	GD15070	1	Pin, 2 ¾" x 11 ¼"

OUTER WING

(FWD63/FWD63a)

L.H. Wing



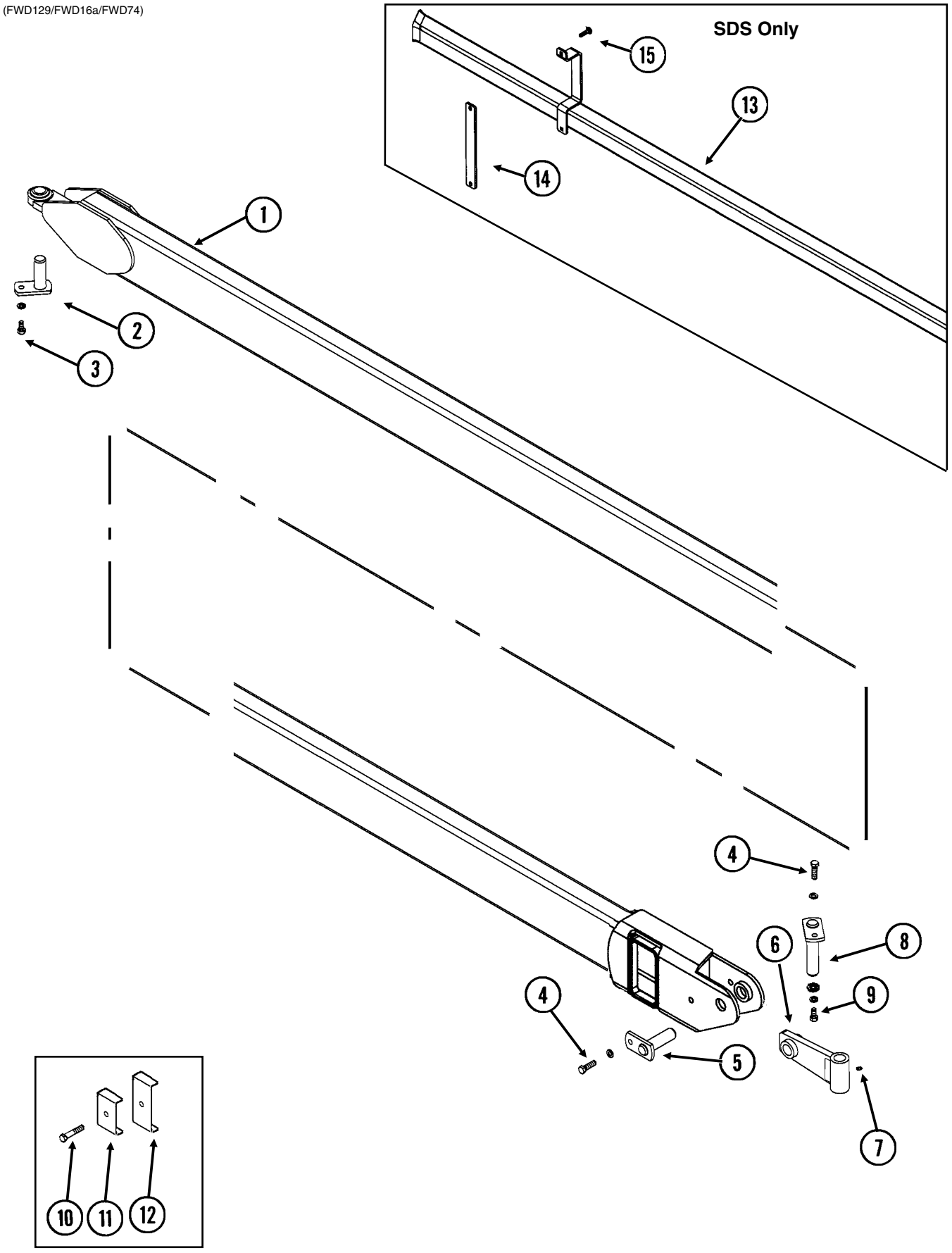


OUTER WING

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.		-	See “Light Assemblies And Brackets”, Pages P104 And P105
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 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

DRAFT LINK

(FWD129/FWD16a/FWD74)

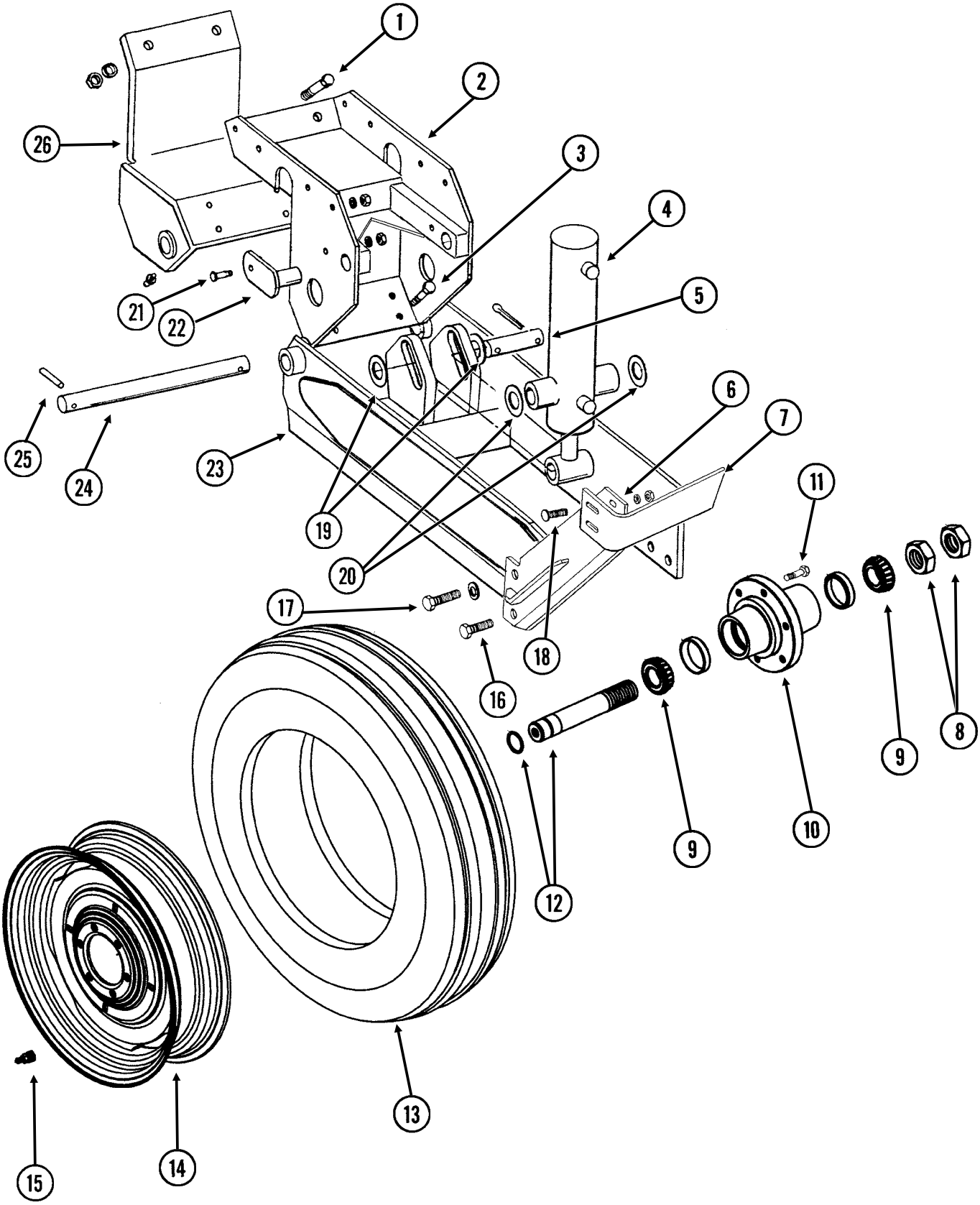


DRAFT LINK

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11015	1	Draft Link, L.H., 202 ⅜"
	GA11016	1	Draft Link, R.H., 202 ⅜"
2.	GA10276	1	Pin, 3 ⅝"
3.	G10014	1	Hex Head Cap Screw, ½"-13 x 1"
	G10228	1	Lock Washer, ½"
4.	G10039	1	Hex Head Cap Screw, ½"-13 x 1 ¾"
	G10228	1	Lock Washer, ½"
	G10102	1	Hex Nut, ½"-13
5.	GA10277	1	Pin, 4"
6.	GA10275	1	Link Yoke
7.	G10640	1	Grease Fitting, ¼"-28
8.	GA10278	1	Pin, 6"
9.	G10039	1	Hex Head Cap Screw, ½"-13 x 1 ¾"
	G10228	1	Lock Washer, ½"
	GD15235	1	Washer, 2 ¼" O.D. x ½" I.D. x ¼"
10.	G10585	-	Hex Head Cap Screw, ½"-13 x 3 ¼"
	G10111	-	Lock Nut, ½"-13
11.	GD0740	-	Hose Clamp, ¾" x 4" x 3 ½"
12.	GD8188	-	Hose Clamp, ⅞" x 3" x 5 ⅜"
13.	GA11667	1	Hose Tube, 168", SDS
14.	GD16887	2-4	Support
15.	G10301	8	Carriage Bolt, ⅜"-16 x 1 ½"
	G10210	8	Washer, ⅜" USS
	G10108	8	Lock Nut, ⅜"-16

LIFT/GAUGE WHEEL

(FWD64)



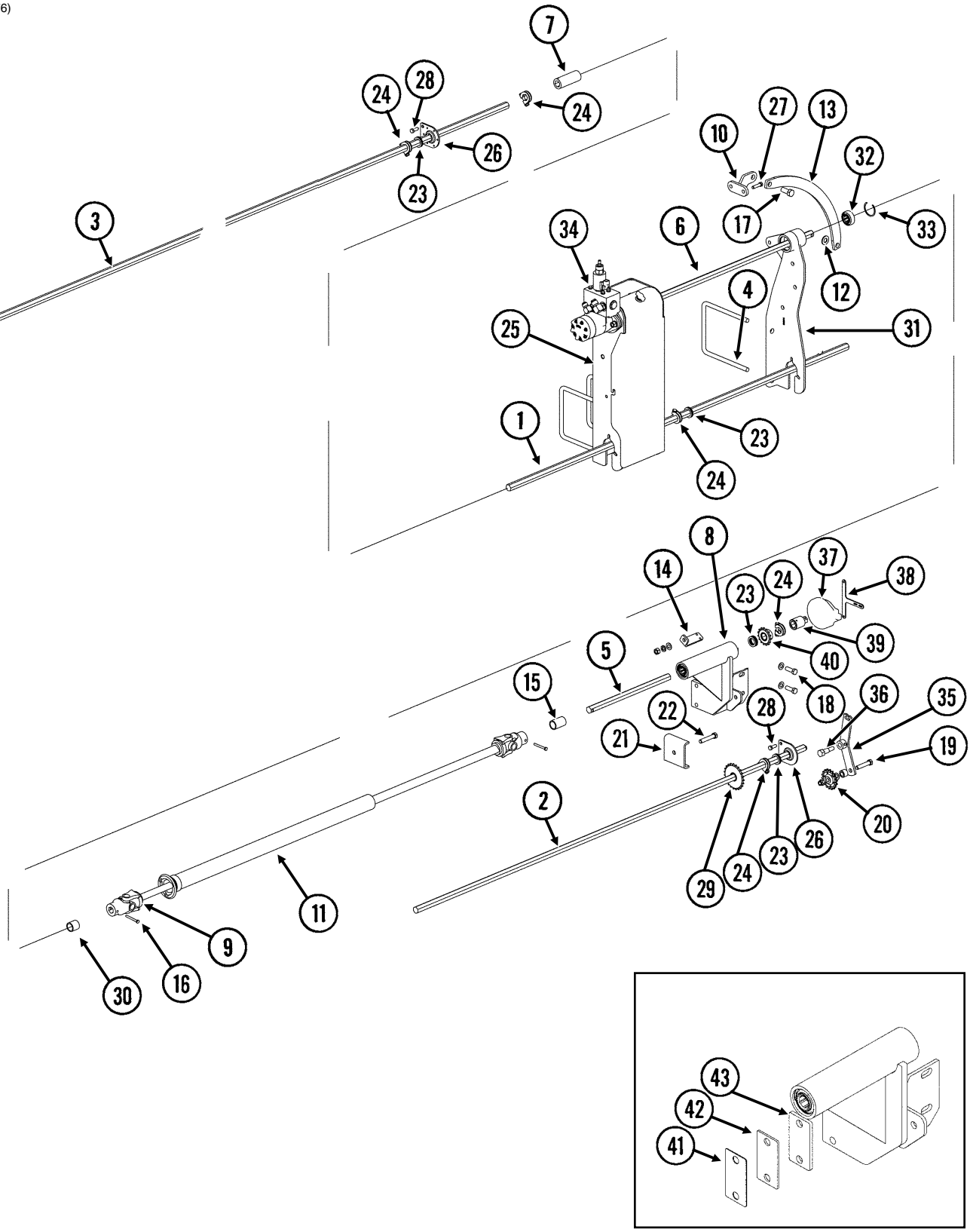
LIFT/GAUGE WHEEL

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10009	2	Hex Head Cap Screw, 5/8"-11 x 2 1/2"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
2.	GA5122	1	Wheel Tower Clamp
3.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	6	Special Washer, 5/8", Hardened
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
4.		-	See "Master/Slave/Lift Assist Cylinders", Pages P78 And P79
5.	GD5841	1	Pin, 1 1/4" x 5 5/8"
	G10460	2	Cotter Pin, 1/4" x 2"
6.	GA7376	1	Scraper Mount
7.	GD12543	1	Scraper
8.	G11081	2	Hex Jam Nut, 1 1/2"-12, Grade 2
9.	GA0895	2	Bearing
10.	GA2148	1	Hub W/Cups, 6 Bolt
	GR0434	-	Cup
11.	GR0270	6	Lug Bolt, 9/16"-18
12.	GA2558	1	Spindle W/Round External Retaining Ring, 9 1/2"
	GD11490	-	Round External Retaining Ring
13.	GD13401	-	Tire, 7.50" x 20", 8 Ply, Tubeless W/O Center Rib (Specify Brand*)
14.	GA2142	1	Rim, 5.50" x 20"
15.	GA7434	1	Valve Stem
16.	G10025	2	Hex Head Cap Screw, 3/4"-10 x 1 1/2"
	G10231	2	Lock Washer, 3/4"
	G10105	2	Hex Nut, 3/4"-10
17.	G10026	2	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	2	Lock Washer, 3/4"
18.	G10636	4	Carriage Bolt, 1/2"-13 x 1 1/2"
	G10228	4	Lock Washer, 1/2"
	G10216	4	Washer, 1/2" USS
	G10102	4	Hex Nut, 1/2"-13
19.	G10139	2	Washer, 1 1/4" USS
20.	G10159	-	Machine Bushing, 1 1/4", 10 Gauge (As Required)
21.	G10581	2	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10111	2	Lock Nut, 1/2"-13
22.	GA5121	2	Pin, 2 1/8"
23.	GA11276	1	Arm
24.	GD11695	1	Pin, 1 1/4" x 13 1/4"
25.	G10610	2	Spring Pin, 3/8" x 2"
26.	GA9877	1	Clamp W/Grease Fittings
	G10640	2	Grease Fitting, 1/4"-28
A.	GA2147	-	Hub And Spindle Assembly (Items 8-10 And 12)
B.	GA7409	-	Scraper Assembly (Items 6, 7, 16 And 18)

*** Specific brand requests will be supplied only as available from current KINZE® Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied.**

R.H. HYDRAULIC DRIVELINE ASSEMBLY

(FWD176)

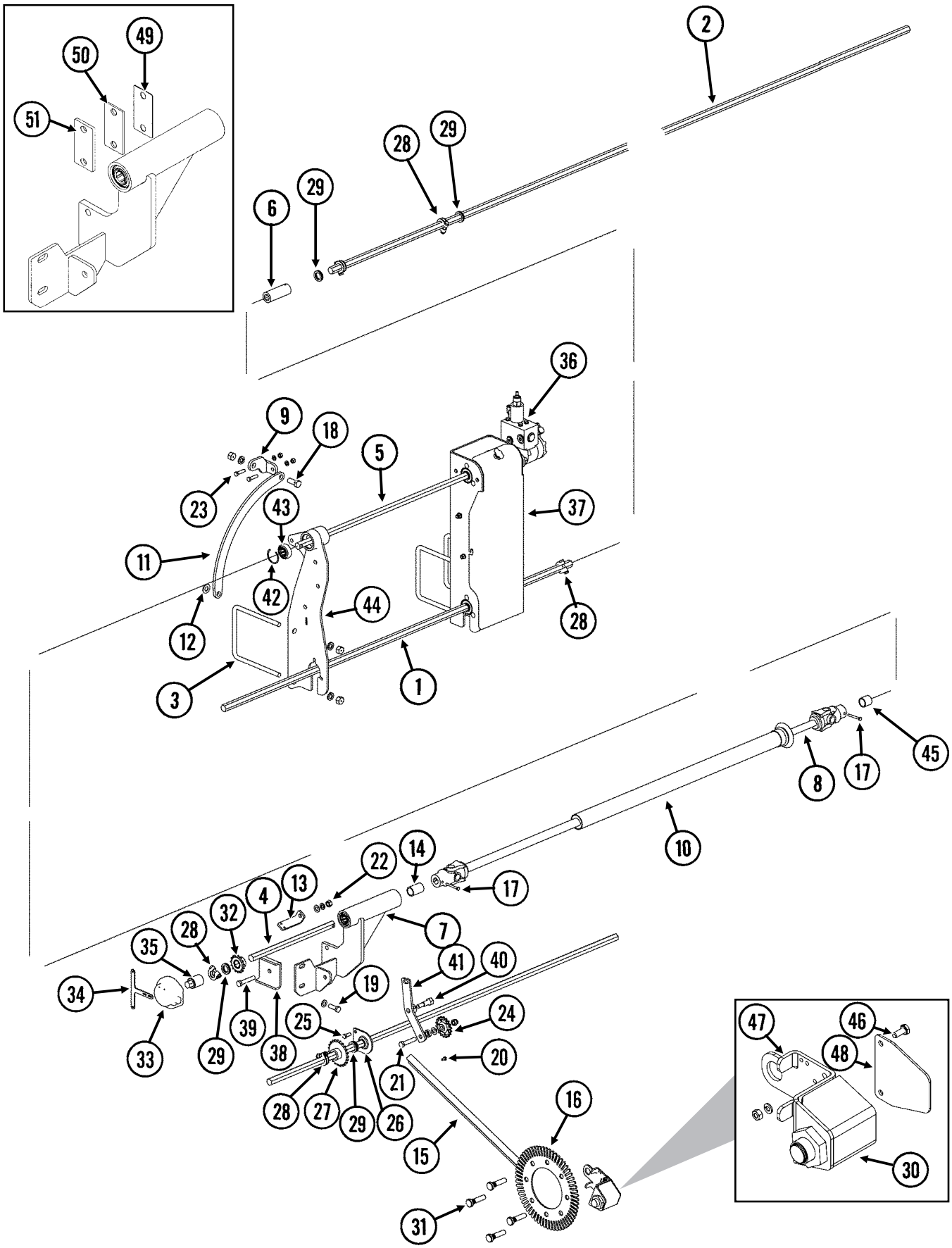


R.H. HYDRAULIC DRIVELINE ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD0914-68	1	Hex Shaft, 7/8" x 68" (No Holes)
2.	GD0914-78	1	Hex Shaft, 7/8" x 78" (No Holes)
3.	GD0914-180	1	Hex Shaft, 7/8" x 180" (No Holes)
4.	GD1114	1	U-Bolt, 7" x 7" x 5/8"-11
	G10104	1	Hex Nut, 5/8"-11
	G10230		Lock Washer, 5/8"
5.	GD2548-16	1	Hex Shaft, 7/8" x 16" (1 Hole)
6.	GD2548-39	1	Hex Shaft, 7/8" x 39"
7.	GD10126	1	Coupler, 4"
8.	GA11187	1	Mount W/Bearings And Rings, L.H. Side
9.	GA11176	1	U-Joint Assembly
10.	GA11964	1	Brace Mount
11.	GA12114	1	Drive Shaft Cover Assembly
12.	GD7805	1	Special Washer, 5/8", Hardened
13.	GD17095	1	Brace Bar, 21", L.H.
14.	GD18070	1	Spring Mount Bracket
15.	GD1199-04	1	Spacer
16.	G10880	2	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	2	Lock Nut, 1/4"-20, Grade B
17.	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
18.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10228	2	Lock Washer, 1/2"
	G10206	2	Washer, 1/2" SAE
	G10102	2	Hex Nut, 1/2"-13
19.	G10053	1	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
20.	GA7154	1	Sprocket W/Bearing, 18 Tooth
21.	GD0740	1	Hose Clamp, 3/4" x 4" x 3 1/2"
22.	G10397	1	Hex Head Cap Screw, 1/2"-13 x 2 3/4"
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
	G10206	1	Washer, 1/2" SAE
23.	G10233	5	Machine Bushing, 1 1/2" x 1/32", 10 Gauge
24.	GA11331	5	Hex Lock Clamp Assembly
25.	GA13524	1	Motor Mount Bracket
26.	GA2180	2	Hanger Bearing, 7/8" Hex Bore
27.	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
28.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	-	Lock Washer, 3/8"
	G10101	-	Hex Nut, 3/8"-16
29.	GA5108	1	Sprocket, 23 Tooth
	G3310-100	1	Chain, No. 40, 100 Pitch Including Connector Link
	GR0912	1	Connector Link, No. 40
30.	GD1199-06	1	Spacer
31.	GB0374	1	Chain Mount
32.	GA5116	1	Bearing, 7/8" Hex Bore, Cylindrical
33.	GD6551	1	Ring
34.			See “Hydraulic Motor - Located On R.H. Driveline”, Page P82
35.	GA13235	1	Idler Arm (L.H.)
36.	GD18699	1	Shoulder Bolt, 1/2"-13
	G10206	1	Washer, 1/2" SAE
	G10111	1	Lock Nut, 1/2"-13
37.	GA12565	1	Encoder Module
38.	GD19248	1	Anti-Rotation Encoder Bracket
39.	GA12661	1	Hex Adapter Encoder
	G11242	-	Hex Socket Set Screw, 1/4"-20 x 3/8"
40.	GA5105	1	Sprocket, 15 Tooth
41.	GD16355-01	1	Shim
42.	GD16355-02	1	Shim
43.	GD16355-03	1	Shim

L.H. HYDRAULIC DRIVELINE ASSEMBLY

(FWD177)

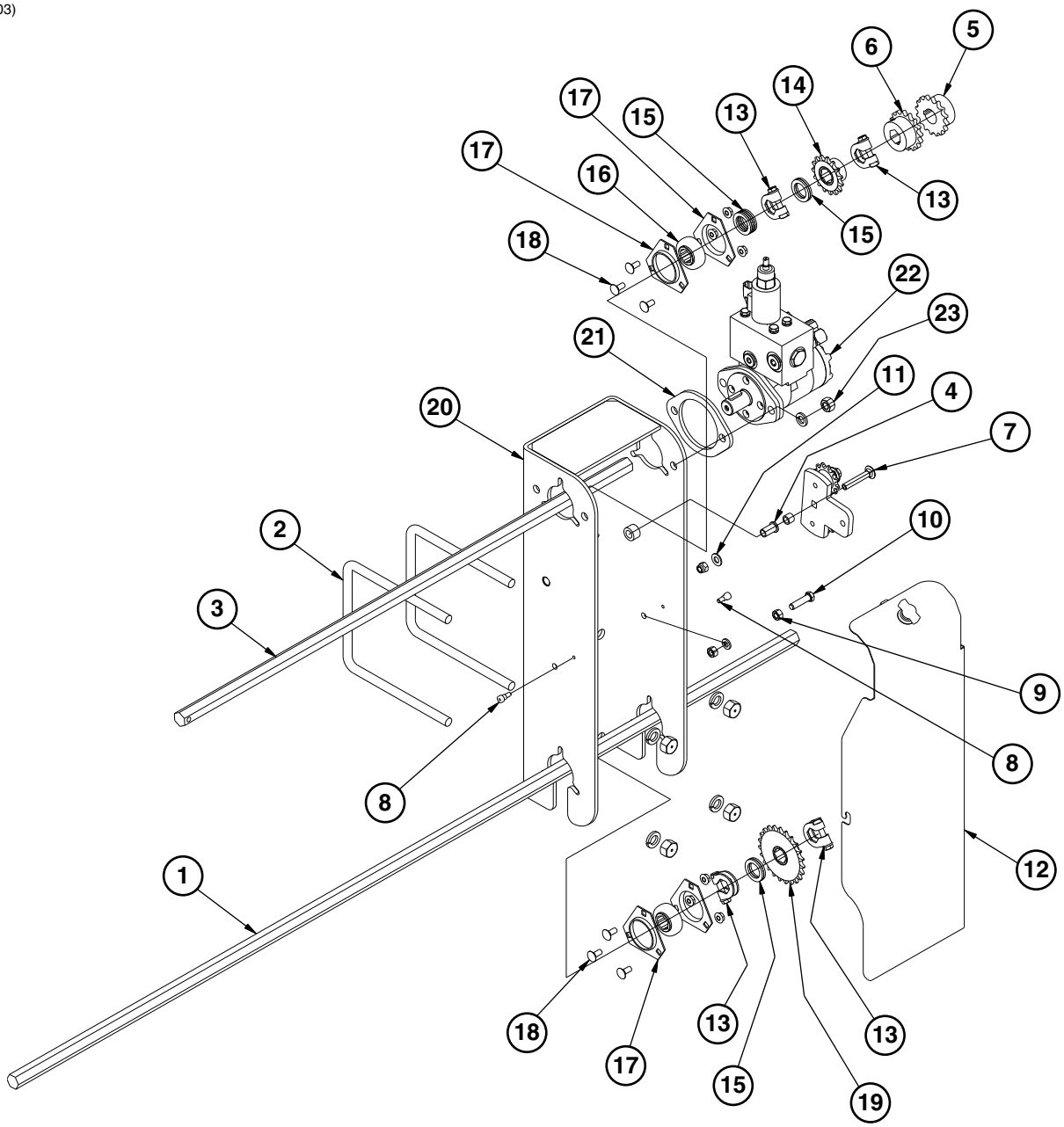


L.H. HYDRAULIC DRIVELINE ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD0914-68	2	Hex Shaft, 7/8" x 68" (No Holes)
2.	GD0914-180	1	Hex Shaft, 7/8" x 180" (No Holes)
3.	GD1114	1	U-Bolt, 7" x 7" x 5/8"-11
	G10104	2	Hex Nut, 5/8"-11
	G10230	2	Lock Washer, 5/8"
4.	GD2548-16	1	Hex Shaft, 7/8" x 16" (1 Hole)
5.	GD2548-39	1	Hex Shaft, 7/8" x 39"
6.	GD10126	1	Coupler, 4"
7.	GA11186	1	Mount W/Bearings And Rings, R.H. Side
8.	GA11176	1	U-Joint Assembly
9.	GA11964	1	Brace Mount
10.	GA12114	1	Drive Shaft Cover Assembly
11.	GD17094	1	Brace Bar, 19 3/4", R.H.
12.	GD7805	1	Special Washer, 5/8", Hardened
13.	GD18070	1	Spring Mount Bracket
14.	GD1199-04	1	Spacer
15.	GD19252	1	Cable Guard Bracket
16.	GD18643	1	Jump Start Wheel
17.	G10880	2	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	2	Lock Nut, 1/4"-20, Grade B
18.	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
19.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10206	2	Washer, 1/2" SAE
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
20.	G10022	2	Hex Head Cap Screw, 1/4"-20 x 1/2"
	G10227	2	Lock Washer, 1/4"
21.	G10053	1	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	G10111	1	Lock Nut, 1/2"-13
	G10206	1	Washer, 1/2" SAE
	GD10161	1	Spacer, 3/8"
22.	G10228	1	Lock Washer, 1/2"
	G10206	1	Washer, 1/2" SAE
	G10102	1	Hex Nut, 1/2"-13
23.	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
24.	GA7154	1	Sprocket W/Bearing, 18 Tooth
25.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	-	Lock Washer, 3/8"
	G10101	-	Hex Nut, 3/8"-16
26.	GA2180	1	Hanger Bearing, 7/8" Hex Bore
27.	GA5108	1	Sprocket, 23 Tooth
	G3310-100	1	Chain, No. 40, 100 Pitch Including Connector Link
	GR0912	1	Connector Link, No. 40
28.	GA11331	4	Hex Lock Clamp Assembly
29.	G10233	-	Machine Bushing, 1 1/2" x 1/32", 10 Gauge
30.	GA13204	1	Hall Effect Sensor
31.	GD18676	4	Lug Bolt, 5/8"-18 x 2 3/4"
	G11254	4	Serrated Flange Nut, 5/8"-18
32.	GA5105	1	Sprocket, 15 Tooth
33.	GA12565	1	Encoder Module
34.	GD19248	1	Anti-Rotation Encoder Bracket
35.	GA12661	1	Hex Adapter Encoder
	G11242	-	Hex Socket Set Screw, 1/4"-20 x 3/8"
36.			See “Hydraulic Motor - Located On L.H. Driveline”, Page P83
37.	GA13524	1	Motor Mount Bracket
38.	GD0740	1	Hose Clamp, 3/4" x 4" x 3 1/2"
39.	G10397	1	Hex Head Cap Screw, 1/2"-13 x 2 3/4"
	G10206	1	Washer, 1/2" SAE
	G10111	1	Lock Nut, 1/2"-13
	GD5857	1	Spring
40.	GD18699	1	Shoulder Bolt, 1/2"-13
	G10206	1	Washer, 1/2" SAE
	G10111	1	Lock Nut, 1/2"-13
	GD5857	1	Spring
41.	GA13234	1	R.H. Idler Arm
42.	GD6551	1	Ring
43.	GA5116	1	Bearing, 7/8" Hex Bore, Cylindrical
44.	GB0374	1	Chain Mount
45.	GD1199-06	1	Spacer
46.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10227	2	Lock Washer, 1/4"-20
	G10103	2	Hex Nut, 1/4"-20
47.	GA13227	1	Sensor Bracket
48.	GD18646	1	Sensor Bracket Cover
49.	GD16355-01	1	Shim
50.	GD16355-02	1	Shim
51.	GD16355-03	1	Shim
A.	GA13214	1	Sensor Bracket Assembly (Items 30, And 46-48)

R.H. HYDRAULIC MOTOR DRIVELINE ASSEMBLY

(IP1003)

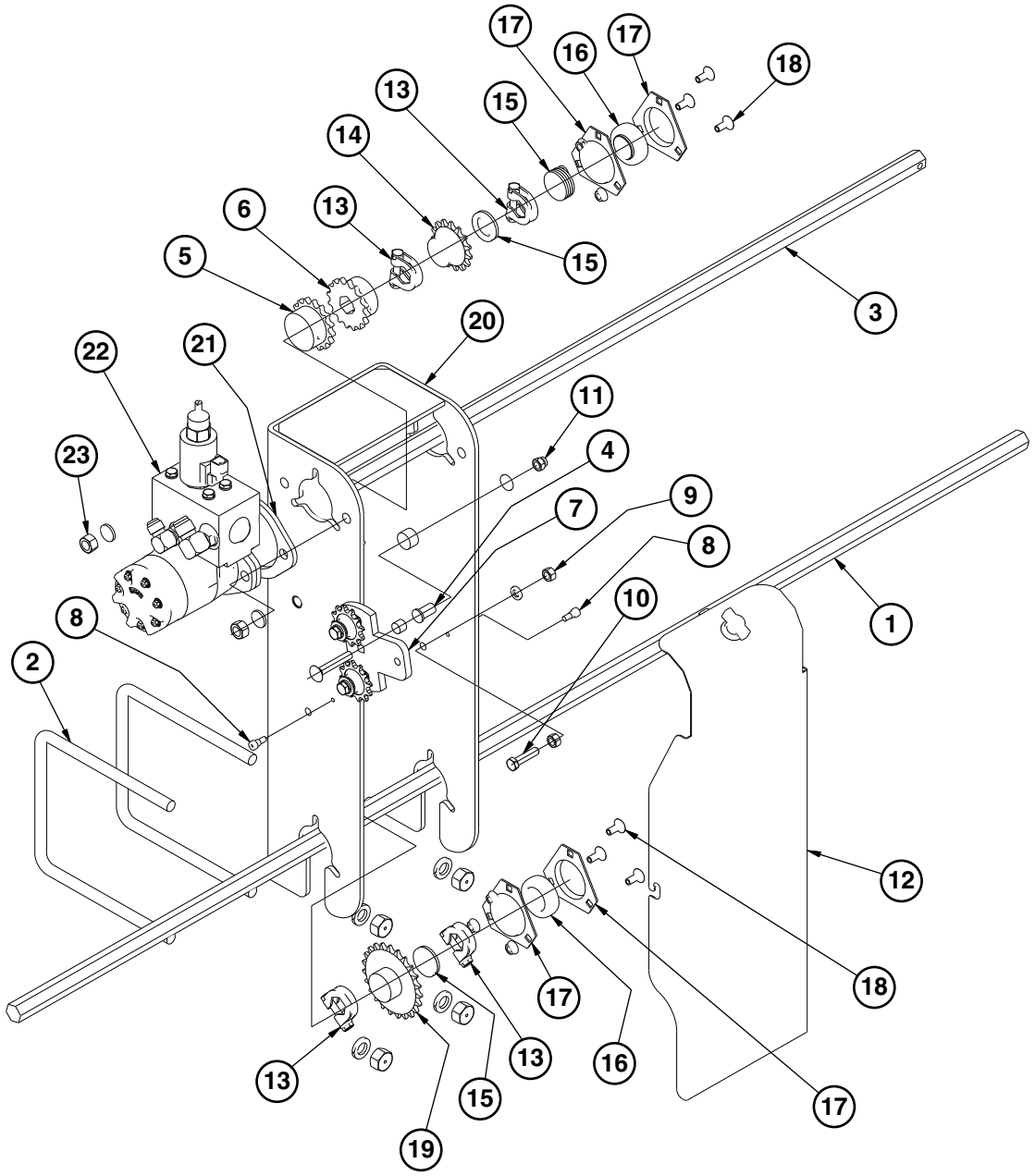


R.H. HYDRAULIC MOTOR DRIVELINE ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD0914-68	1	Hex Shaft, 7/8" x 68" (No Holes)
2.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
3.	GD2548-39	1	Hex Shaft, 7/8" x 39"
4.	GD2971-03	1	Tube
	GD15532	1	Bronze Bushing, 1"
5.	GD16490	1	Coupler, 1" I.D.
	G3317-16	1	Chain, Double No. 40, 16 Pitches
	GR1790	-	Connector Link, Double No. 40
6.	GD16489	1	Coupler, 7/8" Hex
7.	G11119	1	Carriage Bolt, 3/8"-16 x 2 1/4"
	GD5857	1	Spring
	GA11287	1	Idler W/Sprockets, Sleeves And Hardware
	G11118	1	Clevis Pin, 3/8" x 3/4"
	G10860	1	Retaining Ring, 3/8"
8.	G11293	2	Hex Socket Head Shoulder Screw, 5/16"-20 x 1/4"
9.	G10229	2	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
10.	G10003	1	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
11.	G10203	1	Washer, 3/8" SAE
	G10108	1	Lock Nut, 3/8"-16
12.	GA13525	1	Hydraulic Drive Cover
13.	GA11331	4	Hex Lock Clamp Assembly
14.	GA5105	1	Sprocket, 15 Tooth
15.	G10233	8	Machine Bushing, 1 1/2" x 1/32", 10 Gauge
16.	G2100-03	2	Bearing, 7/8" Hex Bore, Spherical
17.	G3400-01	4	Flangette
18.	G10620	6	Serrated Flange Nut, 5/16"-18
	G10312	6	Carriage Bolt, 5/16"-18 x 3/4"
19.	GA5108	1	Sprocket, 23 Tooth
	G3310-100	1	Chain, No. 40, 100 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
20.	GA13524	1	Motor Mount Bracket
21.	GD19242	1	Adapter Plate
22.			See "Hydraulic Motor - Located On R.H. Driveline", Page P82
23.	G10102	2	Hex Nut, 1/2"-13
	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	2	Lock Washer, 1/2"

L.H. HYDRAULIC MOTOR DRIVELINE ASSEMBLY

(IP1001)

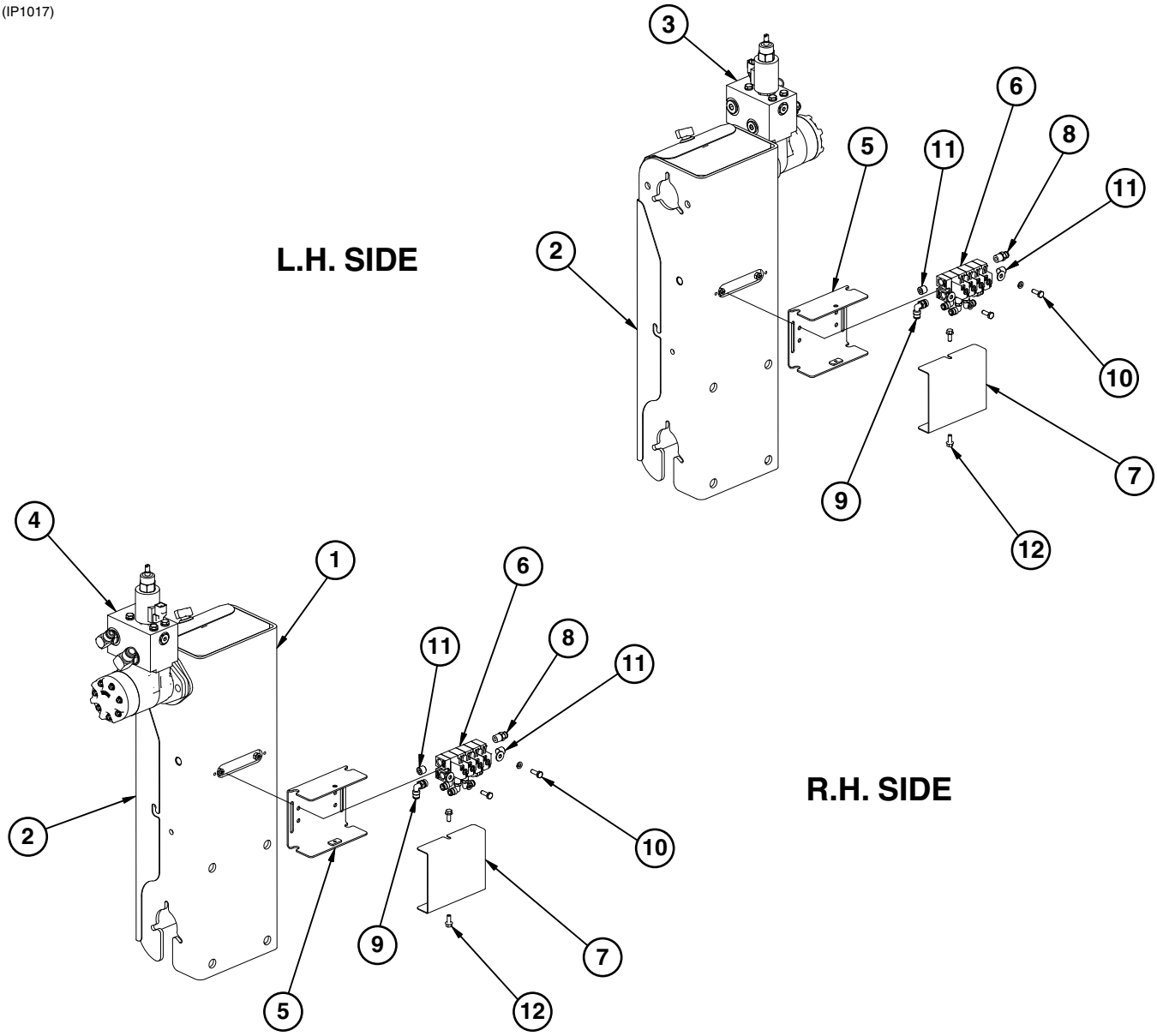


L.H. HYDRAULIC MOTOR DRIVELINE ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD0914-68	1	Hex Shaft, 7/8" x 68" (No Holes)
2.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
3.	GD2548-39	1	Hex Shaft, 7/8" x 39"
4.	GD15532	1	Bronze Bushing, 1"
	GD2971-03	1	Tube
5.	GD16490	1	Coupler, 1" I.D.
	G3317-16	1	Chain, Double No. 40, 16 Pitches
	GR1790	-	Connector Link, Double No. 40
6.	GD16489	1	Coupler, 7/8" Hex
7.	GA11287	1	Idler W/Sprockets, Sleeves And Hardware
	GD5857	1	Spring
	G11119	1	Carriage Bolt, 3/8"-16 x 2 1/4"
	G11118	1	Clevis Pin, 3/8" x 3/4"
	G10860	1	Retaining Ring, 3/8"
8.	G11293	2	Hex Socket Head Shoulder Screw, 5/16"-20 x 1/4"
9.	G10101	2	Hex Nut, 3/8"-16
	G10229	1	Lock Washer, 3/8"
10.	G10003	1	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
11.	G10108	1	Lock Nut, 3/8"-16
	G10203	1	Washer, 3/8" SAE
12.	GA13525	1	Hydraulic Drive Cover
13.	GA11331	4	Hex Lock Clamp Assembly
14.	GA5105	1	Sprocket, 15 Tooth
15.	G10233	8	Machine Bushing, 1 1/2" x 1/32", 10 Gauge
16.	G2100-03	2	Bearing, 7/8" Hex Bore, Spherical
17.	G3400-01	4	Flangette
18.	G10312	6	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	6	Serrated Flange Nut, 5/16"-18
19.	GA5108	1	Sprocket, 23 Tooth
	G3310-100	1	Chain, No. 40, 100 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
20.	GA13524	1	Motor Mount Bracket
21.	GD19242	1	Adapter Plate
22.			See “Hydraulic Motor - Located On L.H. Driveline”, Page P83
23.	G10102	2	Hex Nut, 1/2"-13
	G10228	2	Lock Washer, 1/2"
	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"

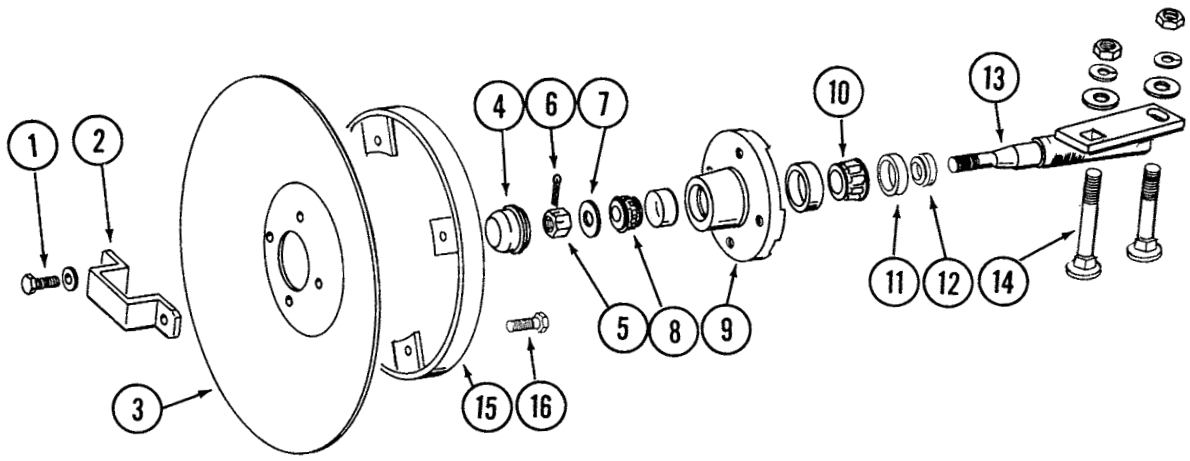
CLUTCH VALVE ASSEMBLIES

(IP1017)



ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “Hydraulic Motor Driveline Assemblies ", Pages P70-P73
2.		-	See “Hydraulic Motor Driveline Assemblies ", Pages P70-P73
3.		-	See “Hydraulic Motor Located On R.H. Driveline”, Pages P82
4.		-	See “Hydraulic Motor Located On L.H. Driveline”, Pages P83
5.	GA13574	2	Clutch Valve Bracket
6.	GA13529	2	Clutch Valve Assembly
	G11276	4	Hex Socket Head Cap Screw, ¼"-20 X 1 ¼"
	G10103	4	Hex Nut, ¼"-20
7.	GD19190	2	Clutch Valve Cover
8.	GD18085	2	Male Connector, ¼"
9.	GD17148	2	Male Connector, ¼"
10.	G10023	4	Hex Head Cap Screw, ¼"-20 x ¾"
	G10227	8	Lock Washer, ¼"
	G10209	4	Washer, ¼" USS
11.	GD17156	4	Plug, ¼" NPT
12.	G10960	4	Flanged Whiz Lock Screw, ¼"-20 x ⅝", No Serration

ROW MARKER SPINDLE/HUB/BLADE

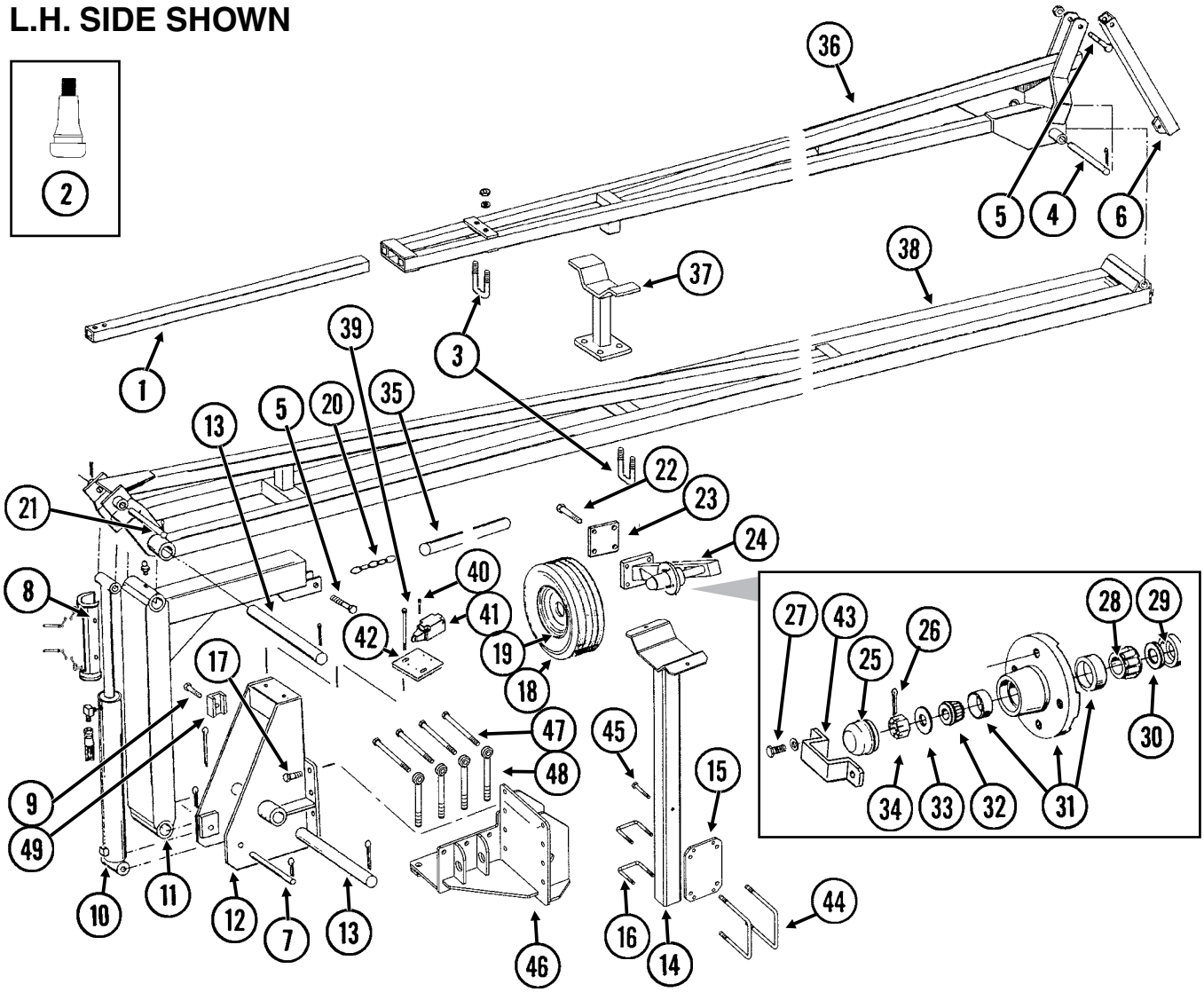


ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10722	4	Hex Head Cap Screw, ½"-20 x 1"
	G10228	4	Lock Washer, ½"
2.	GD2597	1	Retainer
3.	GD0746	1	Disc Blade, Solid, 16" (Shown)
	GD10283	-	Disc Blade, Notched, 16" (Optional)
4.	GD0840	1	Dust Cap
5.	G10725	1	Slotted Hex Nut, ⅝"-18
6.	G10544	1	Cotter Pin, 5/32" x 1"
7.	G10724	1	Washer, ⅝" 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, ½"-13 x 3 ½"
	G11162	-	Carriage Bolt, ½"-13 x 1 ¾"
	G10168	2	Machine Bushing, ½", 7 Gauge
	G10228	2	Lock Washer, ½"
	G10102	2	Hex Nut, ½"-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

(FF18h/A10458)

L.H. SIDE SHOWN



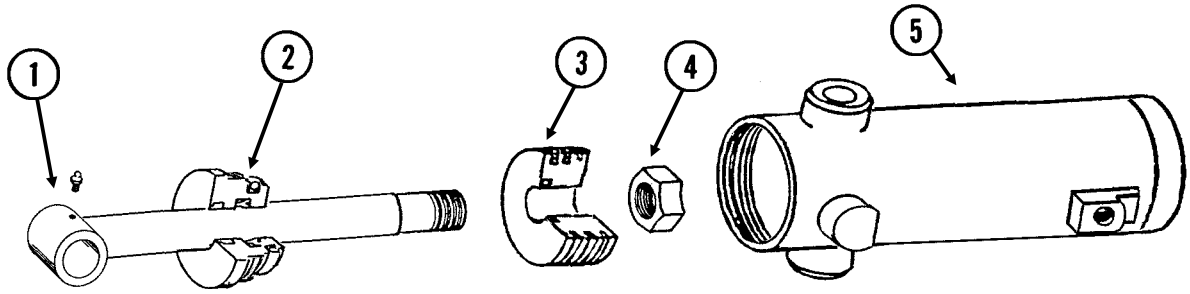
ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD0453-07	1	Extension Tube, 45"
2.	GA10458	1	Valve Stem
3.	GD2721	1-3	U-Bolt, 2" x 2" x ½"-13
	G10228	2-6	Lock Washer, ½"
	G10102	2-6	Hex Nut, ½"-13
4.	GD0704	1	Pin, 1 ¼" x 14"
	G10460	2	Cotter Pin, ¼" x 2"
5.	G10033	3	Hex Head Cap Screw, ½"-13 x 3 ½"
	G10038	-	Hex Head Cap Screw, ½"-13 x 3"
	G10581	-	Hex Head Cap Screw, ½"-13 x 2 ¼"
	G10111	3	Lock Nut, ½"-13
6.	GA6860	1	Bracket
7.	GD10186	1	Pin, 1 ¼" x 9 ½"
	G10979	-	Special Washer, 1 ¼" (If Applicable)
	G10460	2	Cotter Pin, ¼" x 2"
8.	GA8172	1	Safety Lockup W/Detent Pins, 20"
	G10536	-	Detent Pin, ½" x 2 ½" Grip
9.	G10047	1	Hex Head Cap Screw, ⅜"-16 x 1 ¾"
	G10108	1	Lock Nut, ⅜"-16
10.		-	See “Row Marker Cylinder”, Page P81
11.	GA6870	1	Arm, First Stage
12.	GA4031	1	Mount W/Grease Fittings
	G10640	-	Grease Fitting, ¼"-28

ROW MARKER ASSEMBLY

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
13.	GD0677	2	Pin, 2 ⅛" x 15 ¾"
	G10461	4	Cotter Pin, ⅜" x 3"
14.	GA12476	1	Tire Support
15.	GD17967	1	Plate, 7 ½" x 11 ¼"
16.	GD16356	2	U-Bolt, 3 ½" x 3 ½" x ½"-13
	G10228	4	Lock Washer, ½"
	G10102	4	Hex Nut, ½"-13
17.	G10027	8	Hex Head Cap Screw, ¾"-10 x 2 ½"
	G10194	8	Washer, ¾" SAE
	G10112	8	Lock Nut, ¾"-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 ¼" x 10 ½"
	G10979	-	Special Washer, 1 ¼" (If Applicable)
	G10460	2	Cotter Pin, ¼" x 2"
22.	G10063	8	Hex Head Cap Screw, ⅜"-16 x 4"
	G10210	-	Washer, ⅜" USS (As Required)
	G10229	8	Lock Washer, ⅜"
	G10101	8	Hex Nut, ⅜"-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, ½"-20 x 1"
	G10228	4	Lock Washer, ½"
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, ⅝" SAE
34.	G10725	1	Slotted Hex Nut, ⅝"-18
35.	GD10674-01	1	Nylon Cover, 141"
36.	GA9103	-	Arm W/Grease Fittings, Third Stage, 117"
	G10640	-	Grease Fitting, ¼"-28
37.	GA9101	1	Stop Weld
38.	GA9102	1	Arm W/Grease Fittings, Second Stage, 185"
	G10640	-	Grease Fitting, ¼"-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 ½", Grade 8
41.	GA11066	1	Limit Switch
42.	GD16175	1	Mount
43.	GD2597	1	Retainer
44.	GD14559	2	U-Bolt, 7" x 7" x ⅝"-11
	G10230	4	Lock Washer, ⅝"
	G10104	4	Hex Nut, ⅝"-11
45.	G10045	1	Hex Head Cap Screw, ½-13 x 4 ½"
	G10111	1	Lock Nut, ½"-13
46.	GA12475	1	Mount, L.H. (Shown)
	GA12474	-	Mount, R.H.
47.	G10477	4	Hex Head Cap Screw, ¾"-10 x 10"
	GD2169	4	Special Washer, 25/32" I.D. x 1 ¼" O.D., Hardened
	G10112	4	Lock Nut, ¾"-10
48.	GD15283	4	Eyebolt, 1"-14 x 10"
	GD10231	4	Special Washer, 1 1/16" I.D. x 2" O.D.
	G11108	4	Lock Nut, 1"-14
49.	GD5875	1	Hose Clamp, 9/16" x 2 ½" x 2
A.	GA10409	-	Tire And Rim Assembly (Items 2, 18 And 19)

MASTER CYLINDER

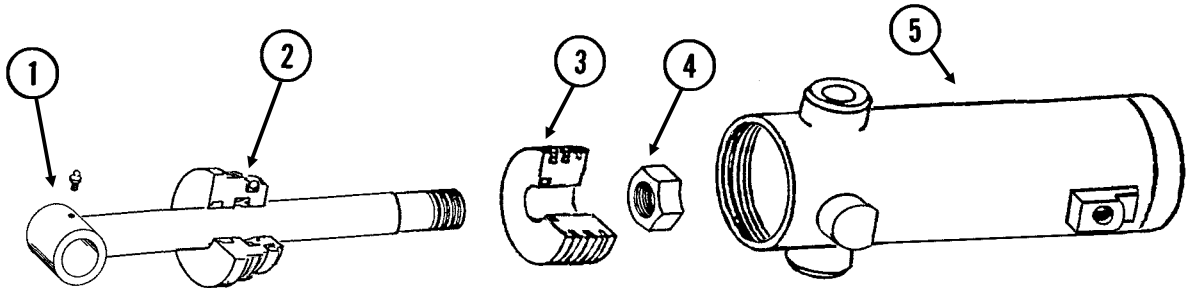
(CYL58)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10359	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, ¼"-28
2.	GD14898	1	Gland
3.	GD14897	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A10361	1	Barrel **(Non-Stock Item)**
A.	GA10362	-	Cylinder Complete, 4" x 8" *(Part Number Stamped On Barrel)*
B.	GR1688	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Expander, (2) Cast Iron Rings, (1) BU Ring, (1) Piston Seal

MASTER CYLINDER

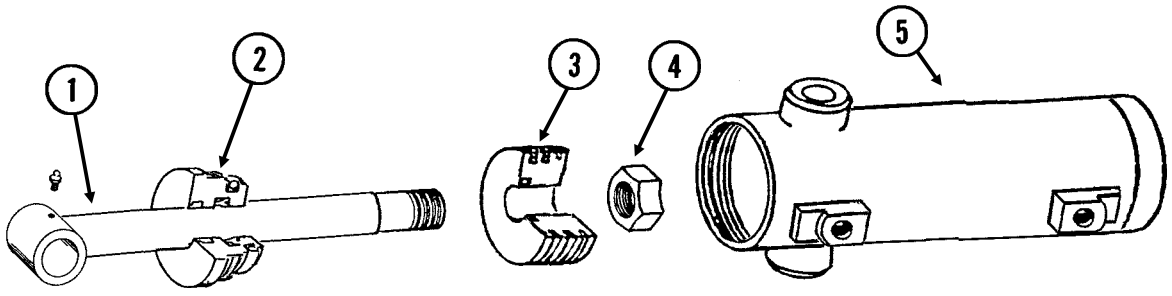
(CYL58)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10359	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, ¼"-28
2.	GD14898	1	Gland
3.	GD14897	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A13311	1	Barrel **(Non-Stock Item)**
A.	GA13312	-	Cylinder Complete, 4" x 8" *(Part Number Stamped On Barrel)*
B.	GR1688	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Expander, (2) Cast Iron Rings, (1) BU Ring, (1) Piston Seal

LIFT ASSIST/SLAVE CYLINDERS

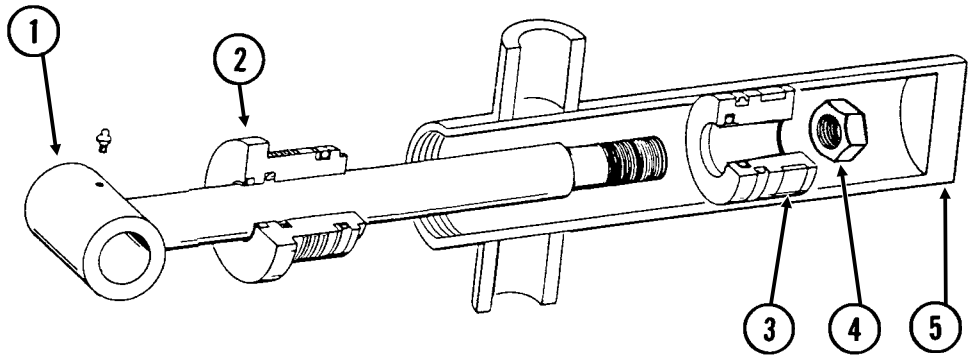
(CYL59)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10363	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, ¼"-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 ¾" x 8" *(Part Number Stamped On Barrel)*
B.	GR1689	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Seal, (2) Cast Iron Rings, (1) BU Ring, (1) Expander

LIFT ASSIST/SLAVE CYLINDERS

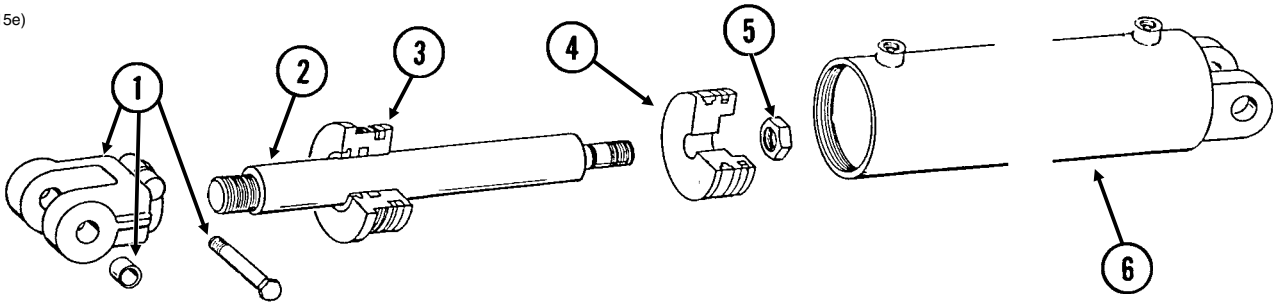
CYL026(CYL4d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA8831	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, ¼"-28
2.	GD11985	1	Gland
3.	GD11986	1	Piston
4.	G10969	1	Lock Nut, ⅞"-14
5.	A8827	1	Barrel **(Non-Stock Item)**
A.	GA8828	-	Cylinder Complete, 2 ½" 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

WING FOLD CYLINDER, ALL SIZES

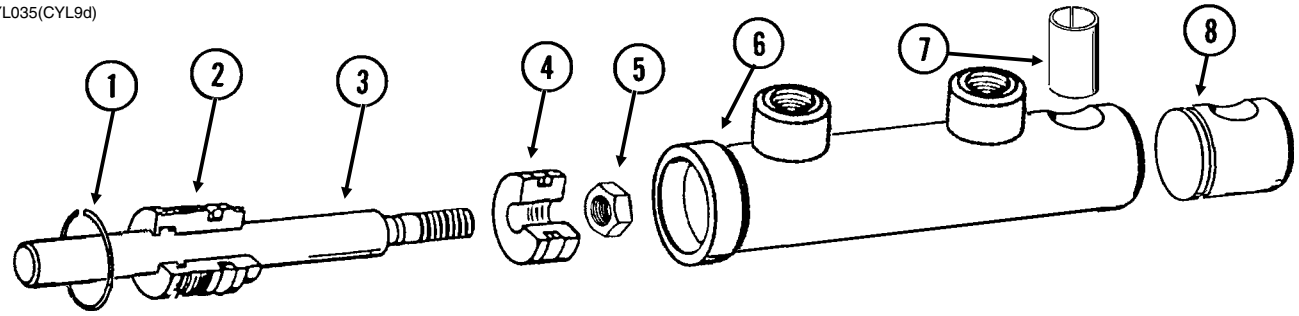
(CYL15e)



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, ⅜"-16 x 2 ¼"
	G10101	1	Hex Nut, ⅜"-16
2.	GD14908	1	Rod
3.	GD12522	1	Gland
4.	GD14910	1	Piston
5.	G10972	1	Lock Nut, 1 ¼"-12
6.	A10372	1	Barrel **(Non-Stock Item)**
A.	GA10373	-	Cylinder Complete, 4 ½" x 30" *(Part Number Stamped On Barrel)*
B.	GR1691	-	Seal Kit (For Cylinder And Counter Balance Valve), Includes: (1) Wiper, (1) U-Cup, (3) O-Rings, (1) BU Ring, (1) T-Seal, (1) Wear Ring

TONGUE LATCH AND SLIDE LATCH CYLINDER (If Applicable)

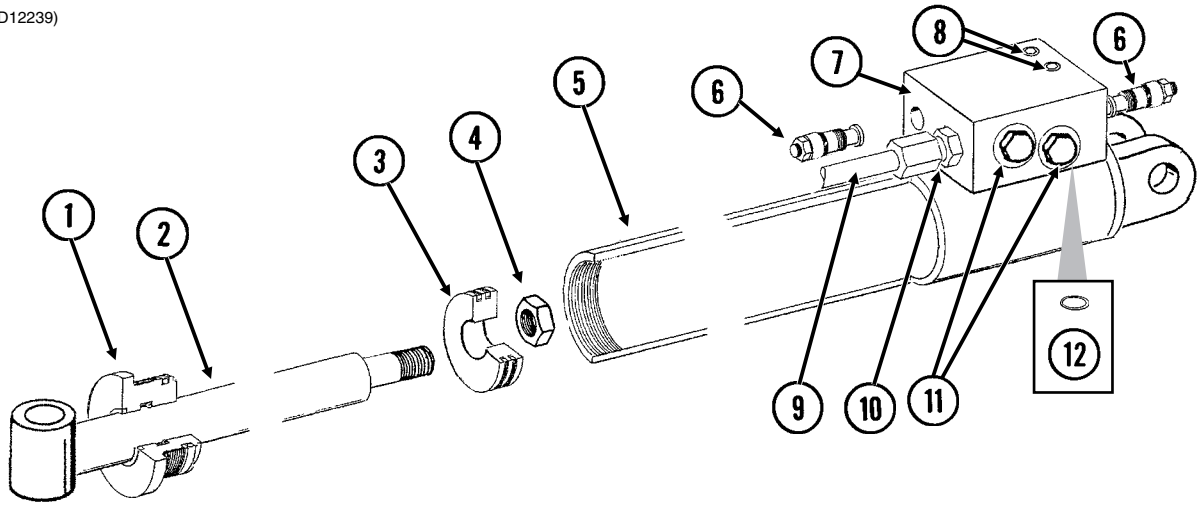
CYL035(CYL9d)



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, ½"-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 ½" x 2 ½" *(Part Number Stamped On Barrel)*
B.	GR1598	-	Seal Kit, Includes: (3) O-Rings, (2) BU Rings, (1) Wiper, (1) T-Seal, (1) Bronze Bushing, (1) U-Cup

TRANSPORT AXLE CYLINDER

(CYL54d/D12239)

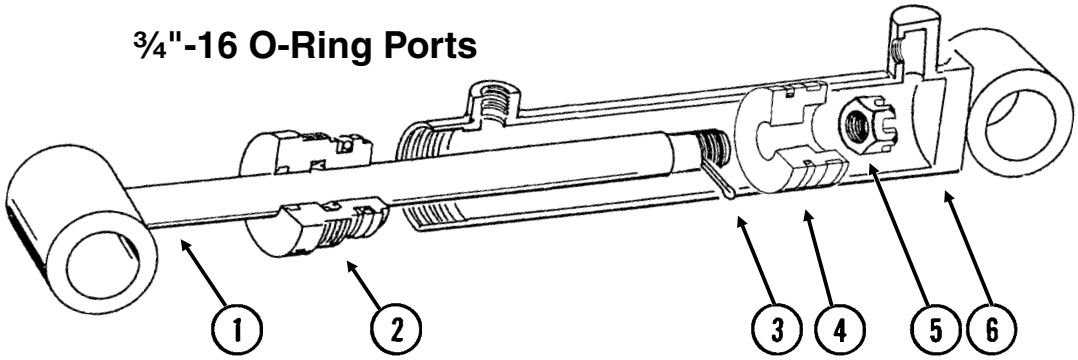


ITEM	PART NO.	QTY. (Per Cylinder)	DESCRIPTION
1.	GD12522	1	Gland
2.	GA10253	1	Rod Assembly
3.	GD15774	1	Piston
4.	G10972	1	Lock Nut, 1 ¼"-12
5.	A10255	1	Barrel **(Non-Stock Item)**
6.	GA10714	2	Counter Balance Valve
7.	GD15623	1	Block
8.	G10932	2	Hex Socket Head Cap Screw, 5/16"-18 x 2", Grade 8
9.	GA10623	1	Steel Hydraulic Line, 23 ¼"
10.	G6400-08	2	Connector W/O-Ring, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
11.	G6408-08	-	Plug W/O-Ring, ¾"-16 O-Ring
	GR1037	-	O-Ring
12.	GD12239	1	O-Ring, No. 016
A.	GA10256	-	Cylinder Complete, 4 ½" x 28" *(Part Number Stamped On Barrel)*
B.	GR1691	-	Seal Kit (For Cylinder And Counter Balance Valve), Includes: (1) Wiper, (1) U-Cup, (3) O-Rings, (1) BU Ring, (1) T-Seal, (1) Wear Ring
C.	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings

ROW MARKER CYLINDER

(CYL032d)

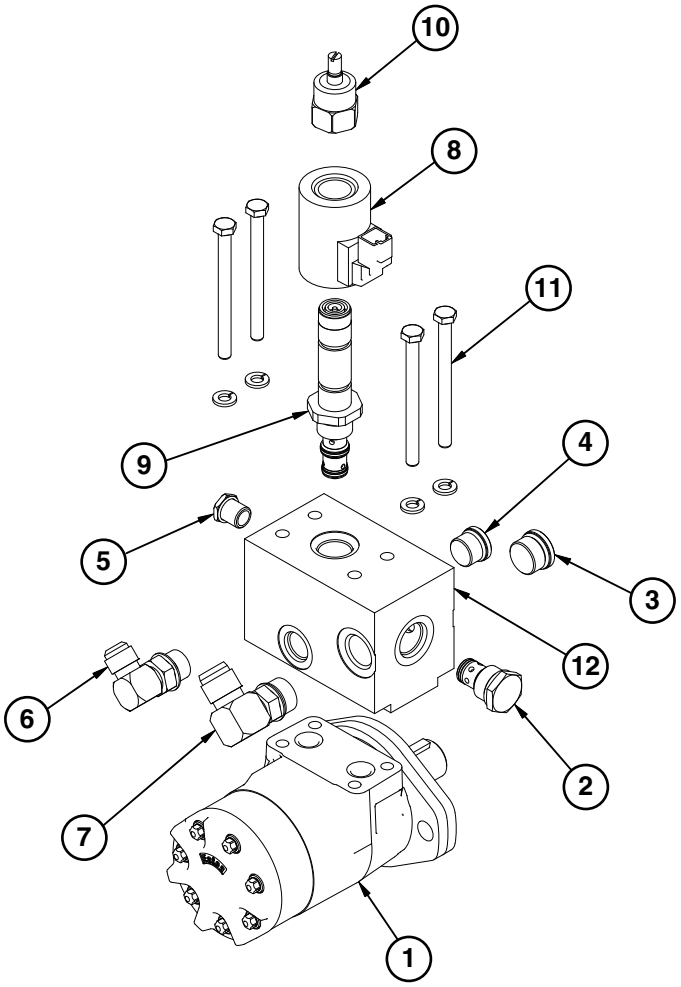
¾"-16 O-Ring Ports



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA8948	1	Rod Assembly
2.	GD12548	1	Gland
3.	G10984	1	Cotter Pin, 3/16" x 2 ½"
4.	GD12550	1	Piston
5.	G10983	1	Slotted Hex Nut, 1 1/16"-12
6.	A8950	1	Barrel **(Non-Stock Item)**
A.	GA8951	-	Cylinder Complete, 3 ½" x 20" *(Part Number Stamped On Barrel)*
B.	GR1532	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) T-Seal, (1) BU Ring, (1) Cast Iron Ring

HYDRAULIC MOTOR - LOCATED ON R.H. DRIVELINE

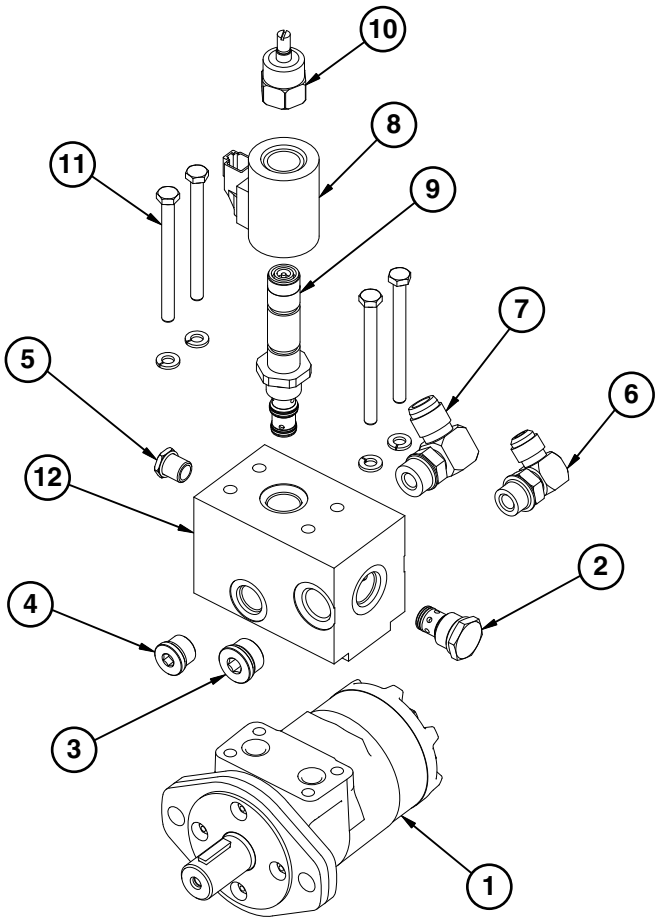
(IP1008)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA13633	1	Hydraulic Motor
2.	GA4293	1	Check Valve
3.	G6408-H10-0	1	Hex Socket Head Plug W/O-Ring, 7/8"-14 O-Ring
4.	G6408-H08-0	1	Hex Socket Head Plug W/O-Ring, 3/4"-16
5.	G6408-H06-0	1	Hex Socket Head Plug W/O-Ring, 9/16"-1
6.	G6801-08	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
7.	G6801-10	1	Elbow W/O-Ring, 90°, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
8.	GA13079	1	Coil
9.	GA13078	1	Proportional Valve
10.	GR1846	1	Manual Override
11.	G11309	4	Hex Head Cap Screw, 5/16"-18 x 3 3/4"
	G10232	4	Lock Washer, 5/16"
12.	GD19440	1	Valve Block

HYDRAULIC MOTOR - LOCATED ON L.H. DRIVELINE

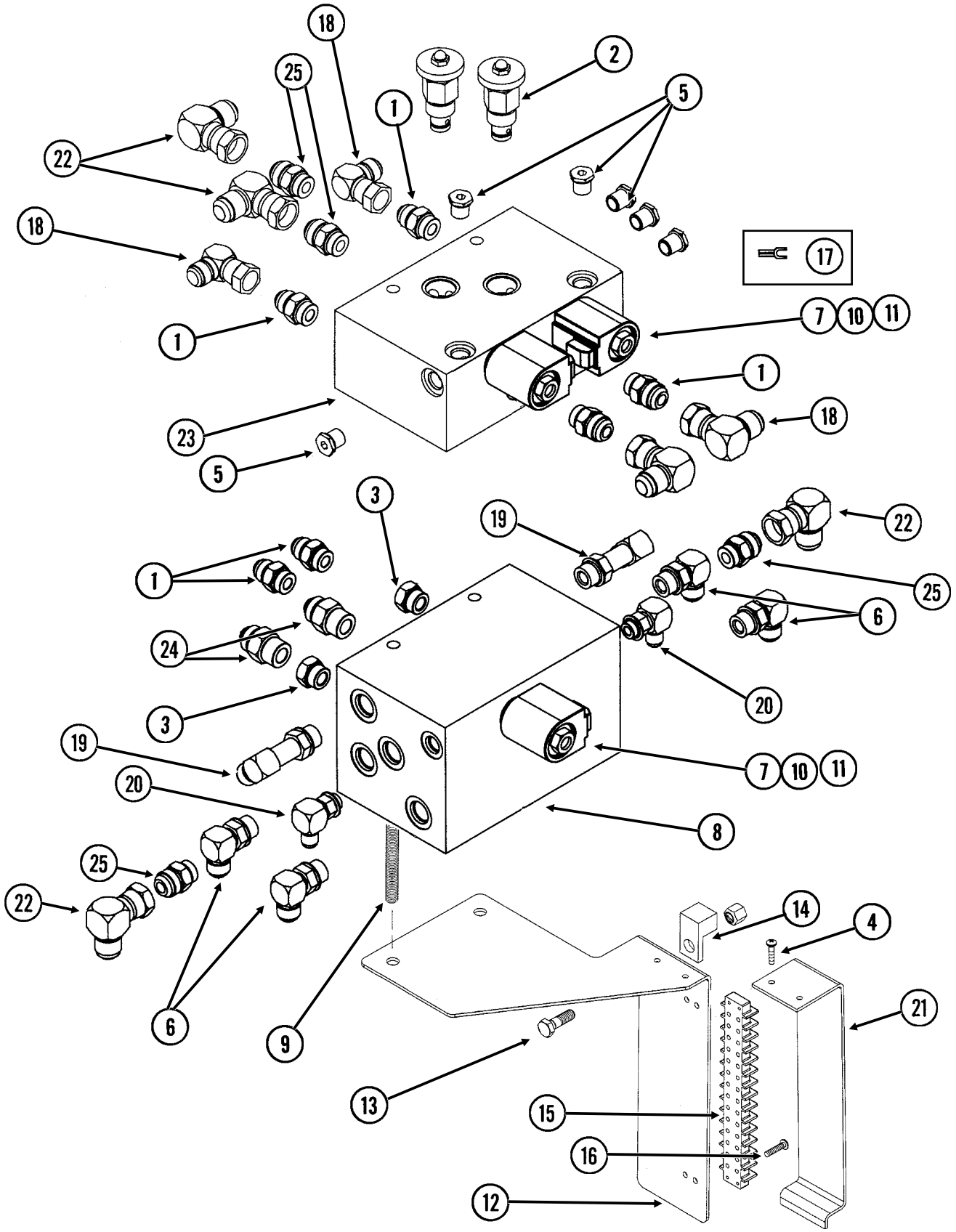
(IP1009)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA13633	1	Hydraulic Motor
2.	GA4293	1	Check Valve
3.	G6408-H10-0	1	Hex Socket Head Plug W/O-Ring, 7/8"-14 O-Ring
4.	G6408-H08-0	1	Hex Socket Head Plug W/O-Ring, 3/4"-16
5.	G6408-H06-0	1	Hex Socket Head Plug W/O-Ring, 9/16"-1
6.	G6801-08	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
7.	G6801-10	1	Elbow W/O-Ring, 90°, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
8.	GA13079	1	Coil
9.	GA13078	1	Proportional Valve
10.	GR1846	1	Manual Override
11.	G11309	4	Hex Head Cap Screw, 5/16"-18 x 3 3/4"
	G10232	4	Lock Washer, 5/16"
12.	GD19440	1	Valve Block

VALVE BLOCKS - LOCATED ON HITCH

(FWD157)

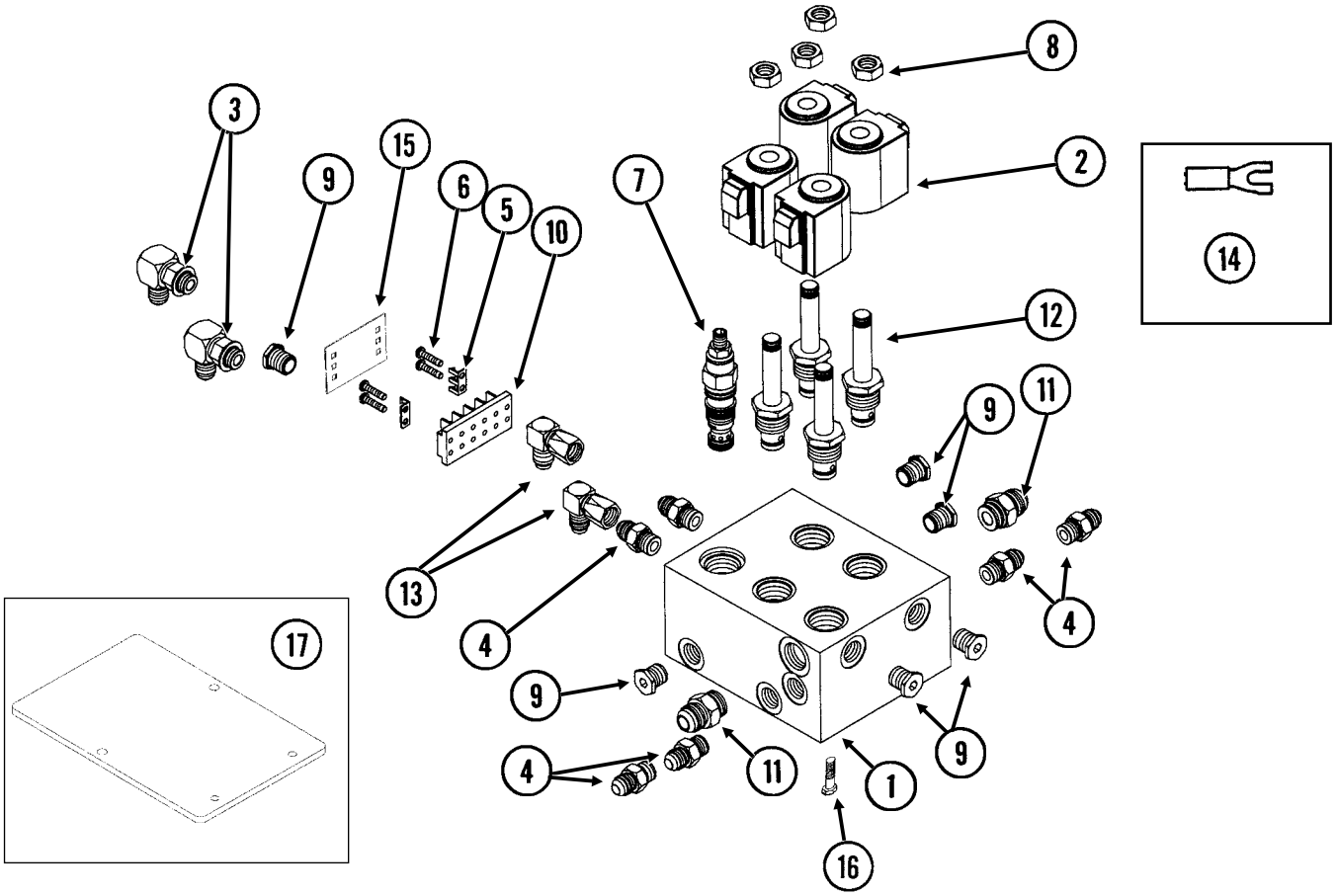


VALVE BLOCKS - LOCATED ON HITCH

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	6	Connector W/O-Ring, ¾"-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, ¾"-16 O-Ring
	GR1037	-	O-Ring
4.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x ¾", 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°, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	GR0761	3	Special Hex Nut, ½"-20
8.	GD18096	1	Block
9.	GD15187-01	2	Threaded Rod, ⅜"-16 x 13"
	G10203	2	Washer, ⅜" SAE
	G10108	2	Lock Nut, ⅜"-16
10.	GR0763	3	Cartridge
11.	GR1445	3	Coil
12.	GD15634	1	Mount
13.	G10002	1	Hex Head Cap Screw, ⅜"-16 x ¾"
	G10622	1	Serrated Flange Nut, ⅜"-16
14.	GA3584	1	Ground Clamp
15.	GA9097	1	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x ¼"
16.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x ¾", Stainless Steel
17.	G10996	3	Fork Terminal
18.	G6500-08	4	Swivel Elbow, 90°, ¾"-16 Male JIC To Female
19.	G6400-L-08	2	Long Connector W/O-Ring, ¾"-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°, ⅞"-14 Male JIC To Female
23.	GD14923	1	Block
24.	G6400-10	2	Connector W/O-Ring, ⅞"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
25.	G6400-10-08	4	Connector W/O-Ring, ⅞"-14 Male JIC To ¾"-16 O-Ring

VALVE BLOCK - LOCATED AT CENTER OF REAR H-FRAME

(A12639a/A9481/D18137)



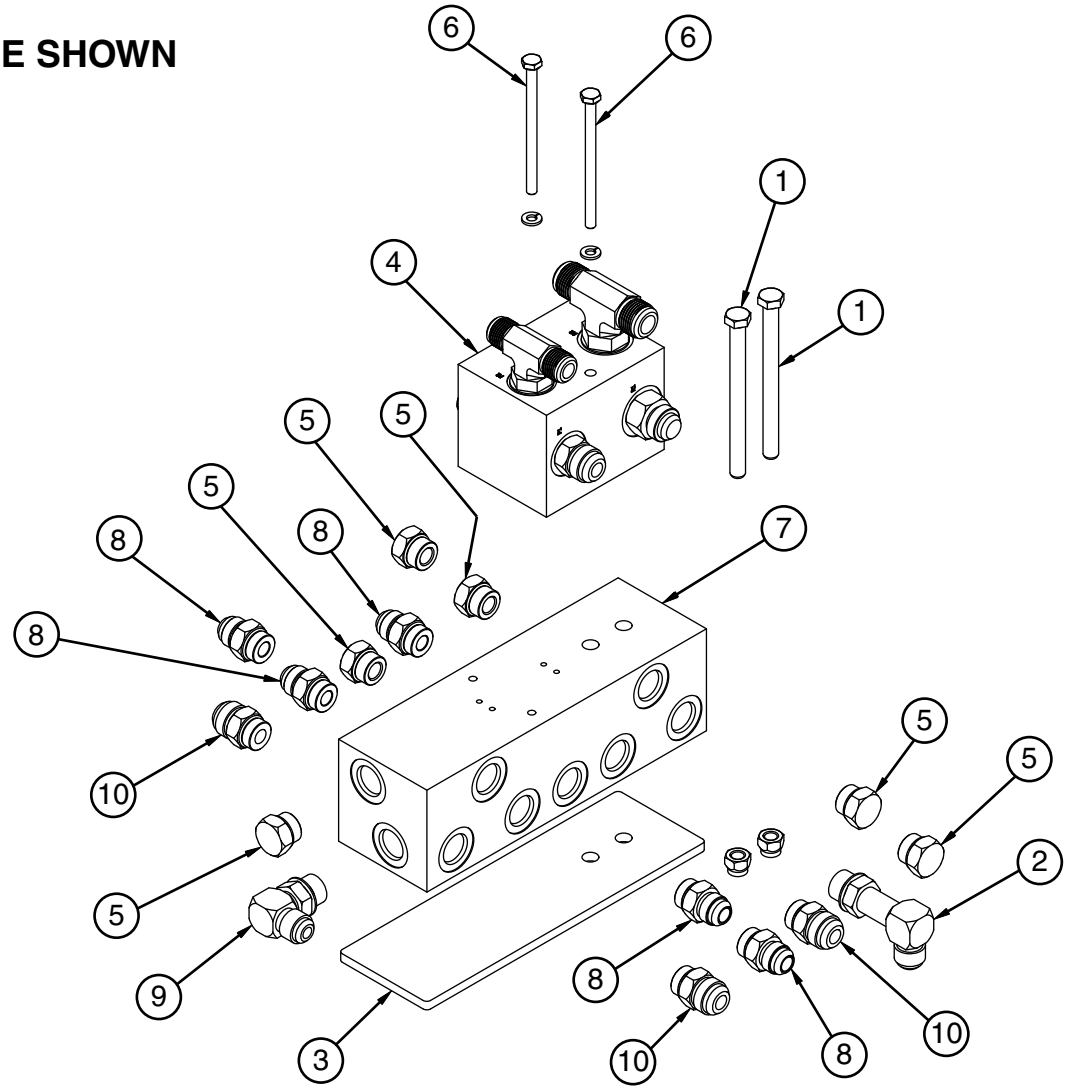
VALVE BLOCK - LOCATED AT CENTER OF REAR H-FRAME

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 ¾", Stainless Steel
7.	GA10632	1	Counter Balance Valve
8.	GR0761	4	Special Hex Nut, ½"-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 ¼"
11.	G6400-08	2	Connector W/O-Ring, ¾"-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 ¼"
	G10232	2	Lock Washer, 5/16"
	G10221	2	Washer, 5/16" SAE
17.	GD18137	1	Plate, 5" x 7 ¾"
A.	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings

JUNCTION BLOCK - LOCATED ON EACH WING

(A13538TP2)

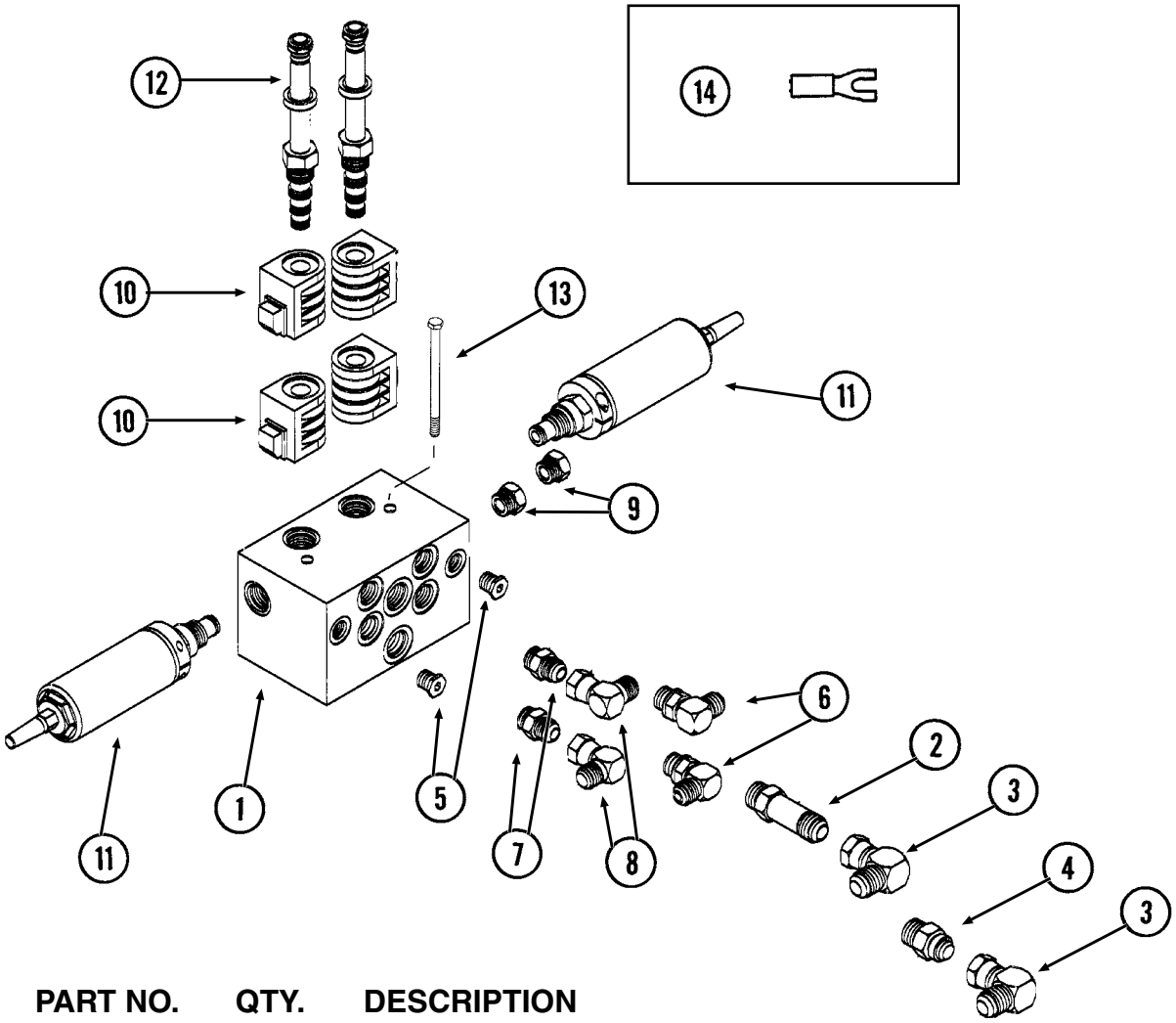
R.H. SIDE SHOWN



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10753	2	Hex Head Cap Screw, ⅜"-16 x 4 ½"
	G10108	2	Lock Nut, ⅜"-16
2.	G6801-L-08	1	Long Elbow W/O-Ring, 90°, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
3.	GD18099	1	Spacer Plate
4.	GA13528	1	Junction Block
5.	G6408-08	6	Plug W/O-Ring, ¾"-16 O-Ring
	GR1037	-	O-Ring
6.	G11135	2	Hex Head Cap Screw, ¼"-20 X 3 ¾"
	G10227	2	Lock Washer, ¼"
7.	GD14925	1	Block
8.	G6400-08	5	Connector W/O-Ring, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
9.	G6801-08	1	Elbow W/O-Ring, 90°, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
10.	G6400-10-08	3	Connector W/O-Ring, ⅞"-14 Male JIC To ¾"-16 O-Ring
	GR1037	-	O-Ring

SDS MANIFOLD BLOCK

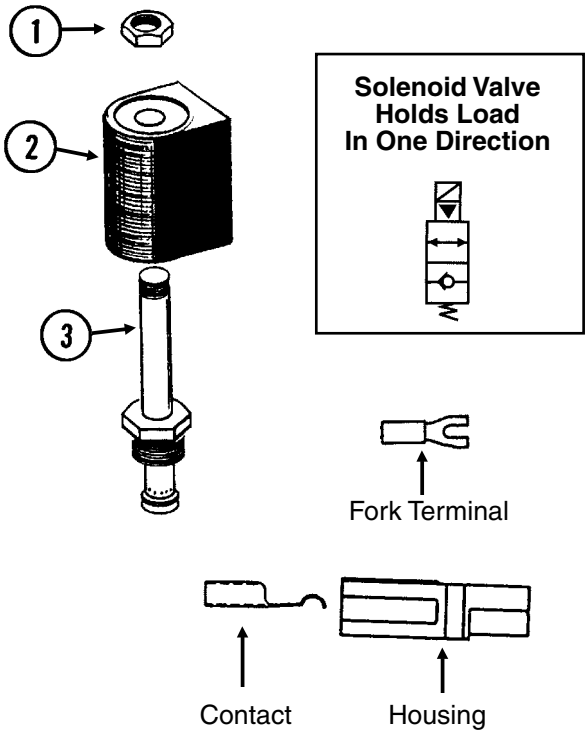
(FWD96/A9481)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16500	1	Block
2.	G6400-L-10	1	Long Connector W/O-Ring, ⅞"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
3.	G6500-10	2	Swivel Elbow, 90°, ⅞"-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°, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	G6400-08	2	Connector W/O-Ring, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
8.	G6500-08	2	Swivel Elbow, 90°, ¾"-16 Male JIC To Female
9.	G6408-08	2	Plug W/O-Ring, ¾"-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, ¼"-20 x 4 ½"
	G10227	2	Lock Washer, ¼"
14.	G10996	-	Fork Terminal
A.	GR1756	-	Seal Kit For Coil, Includes: (6) BU Rings, (4) O-Rings

SOLENOID VALVE (G1K275)

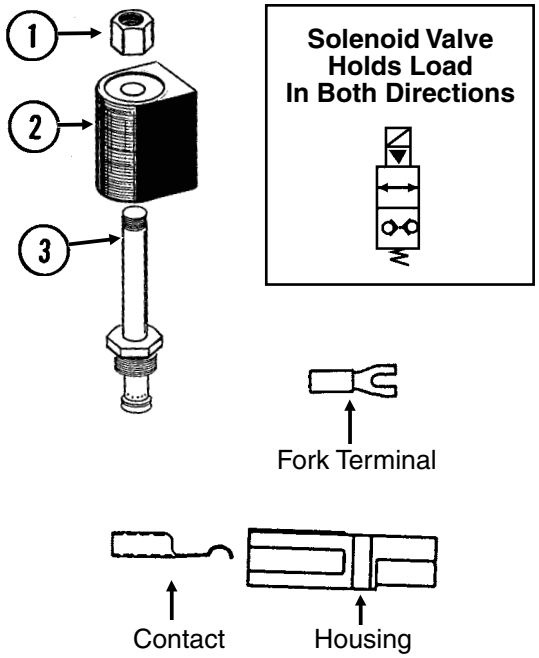
VVB019(TWL27c/TWL18/PLTR75c/A9481)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR0761	1	Special Hex Nut, ½"-20
2.	G1K274	1	Coil Kit W/Contacts, Housings And Fork Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
3.	GR0763	1	Cartridge
A.	G1K275	-	Solenoid Valve Kit W/Solenoid Valve, Contacts, Housings And Fork Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
B.	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring

SOLENOID VALVE (G1K276)

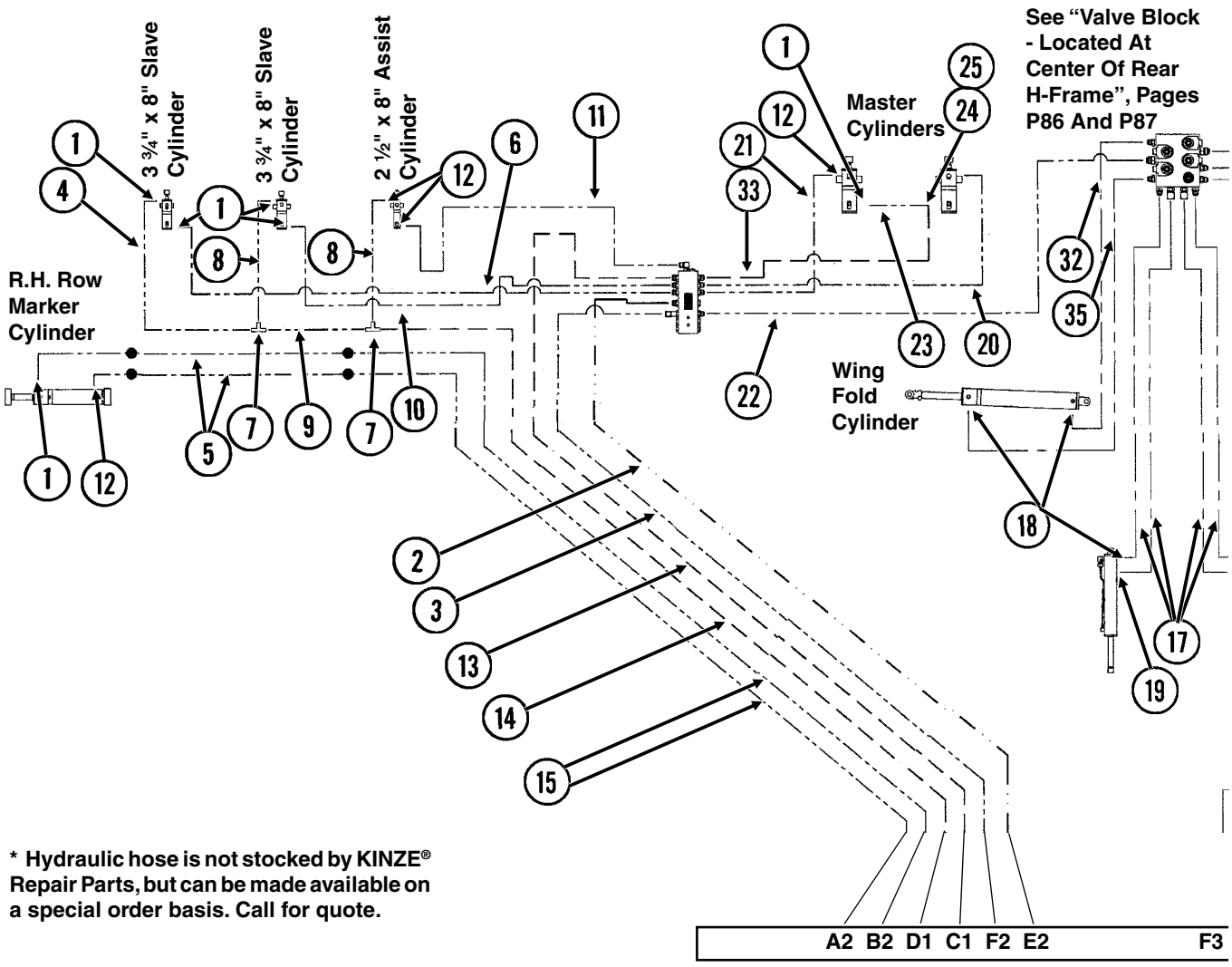
VVB019(FF25/TWL18/PLTR75c)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1322	1	Special Hex Nut, ½"-20
2.	G1K274	1	Coil Kit W/Contacts, Housings And Fork Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
3.	GR1321	1	Cartridge
A.	G1K276	-	Solenoid Valve Kit W/Housings, Contacts And Forked Terminals
	GD9529	2	Housing, Black
	GD9530	2	Contact
	G10996	2	Fork Terminal
B.	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring

HYDRAULIC HOSES AND FITTINGS

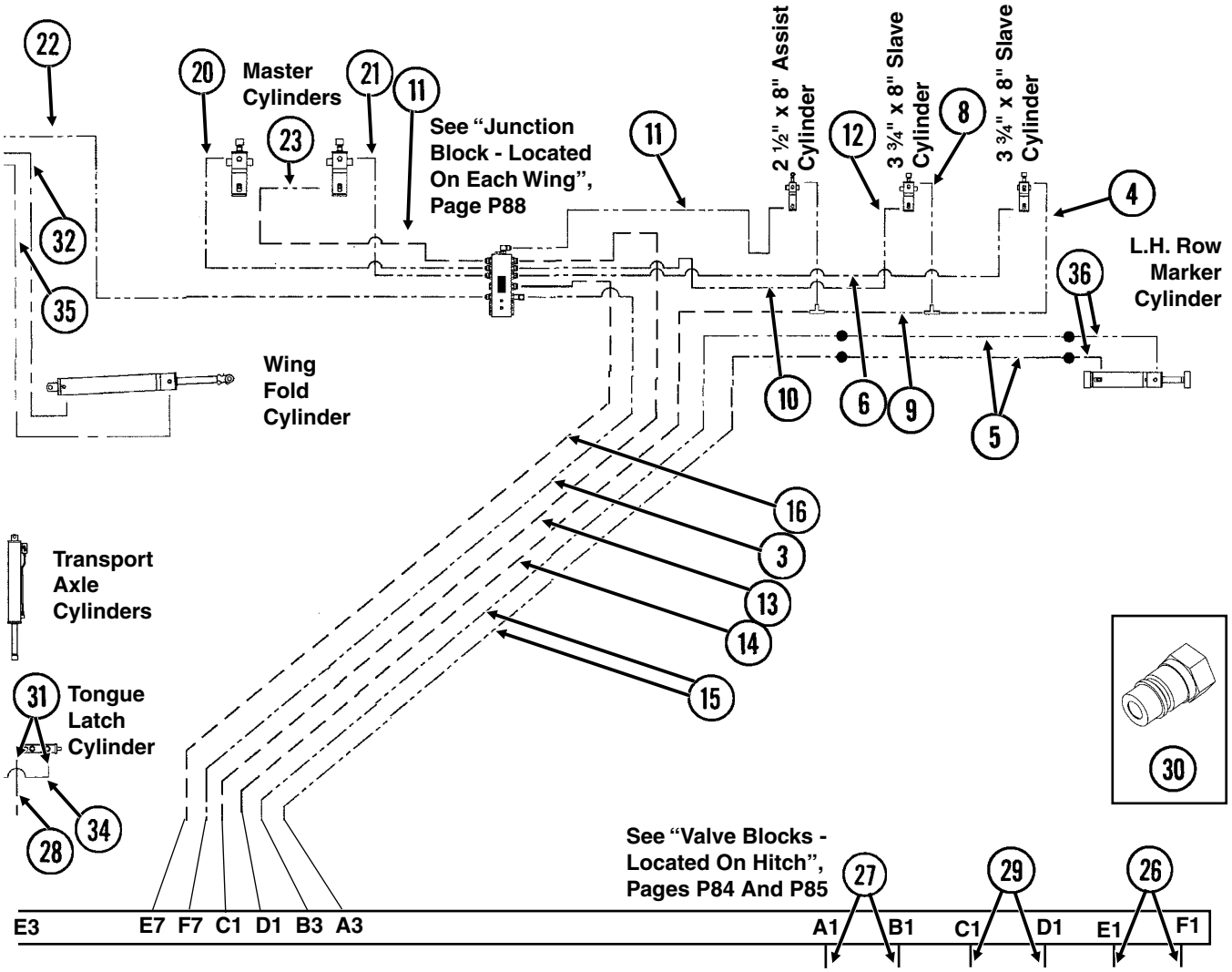
(FWD154/D4086)



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

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08	10	Elbow W/O-Ring, 90°, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	*A11424	1	Hose Assembly, ⅝" x 342"
3.	*A12046	2	Hose Assembly, ⅜" x 348"
4.	*A1020	2	Hose Assembly, ⅜" x 48"
5.	*A3247	4	Hose Assembly, ⅜" x 156" (Male To Female)
6.	*A1090	2	Hose Assembly, ⅜" x 162"
7.	G2603-08	4	Tee, ¾"-16 Male JIC
8.	*A1079	4	Hose Assembly, ⅜" x 24"
9.	*A1086	2	Hose Assembly, ⅜" x 28"
10.	*A3249	2	Hose Assembly, ⅜" x 132"
11.	*A3136	2	Hose Assembly, ⅜" x 100"
12.	G6400-08	8	Connector W/O-Ring, ¾"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
13.	*A12702	2	Hose Assembly, ½" x 348"
14.	*A12701	2	Hose Assembly, ½" x 438"
15.	*A12043	4	Hose Assembly, ⅜" x 356"
16.	*A12700	1	Hose Assembly, ½" x 342"
17.	*A1170	4	Hose Assembly, ¼" x 90"
18.	G6801-06-08	6	Elbow W/O-Ring, 90°, 9⁄16"-18 Male JIC To ¾"-16 O-Ring
	GR1037	-	O-Ring

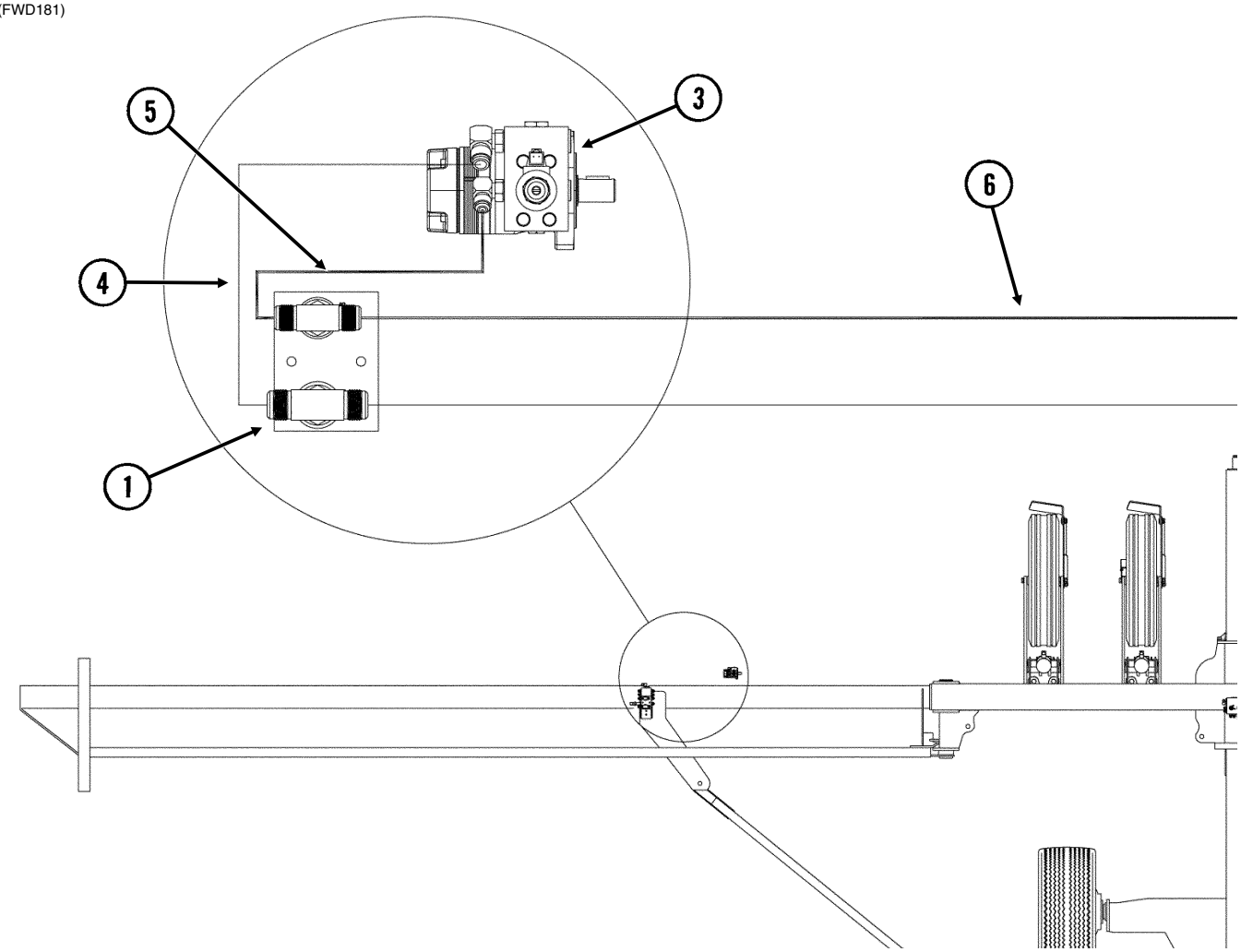
HYDRAULIC HOSES AND FITTINGS



ITEM	PART NO.	QTY.	DESCRIPTION
19.	G6801-LL-06-08	2	X-Long Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To ¾"-16 O-Ring
	GR1037	-	O-Ring
20.	*A3161	2	Hose Assembly, ⅜" x 210"
21.	*A3139	2	Hose Assembly, ⅜" x 254"
22.	*A3154	2	Hose Assembly, ⅜" x 196"
23.	*A3158	2	Hose Assembly, ⅜" x 46"
24.	G6803-08	2	Tee, ¾"-16 Male NPT To O-Ring
	GR1037	-	O-Ring
25.	G6502-08	2	Swivel Elbow, 45°, ¾"-16 Male JIC To Female
26.	*A8231	2	Hose Assembly, ½" x 72"
27.	*A8230	2	Hose Assembly, ½" x 84" (Elbow End)
28.	*A7613	1	Hose Assembly, ¼" x 44" (Elbow End)
29.	*A3236	2	Hose Assembly, ⅜" x 72"
30.	GD4086	6	ISO Coupler
31.	G6400-06-08	8	Connector W/O-Ring, 9/16"-18 Male JIC To ¾"-16 O-Ring
	GR1037	-	O-Ring
32.	*A1138	2	Hose Assembly, ¼" x 29"
33.	*A8237	2	Hose Assembly, ½" x 202"
34.	*A1132	1	Hose Assembly, ¼" x 44"
35.	*A1140	2	Hose Assembly, ¼" x 52"
36.	*A3220	4	Hose Assembly, ⅜" x 82"

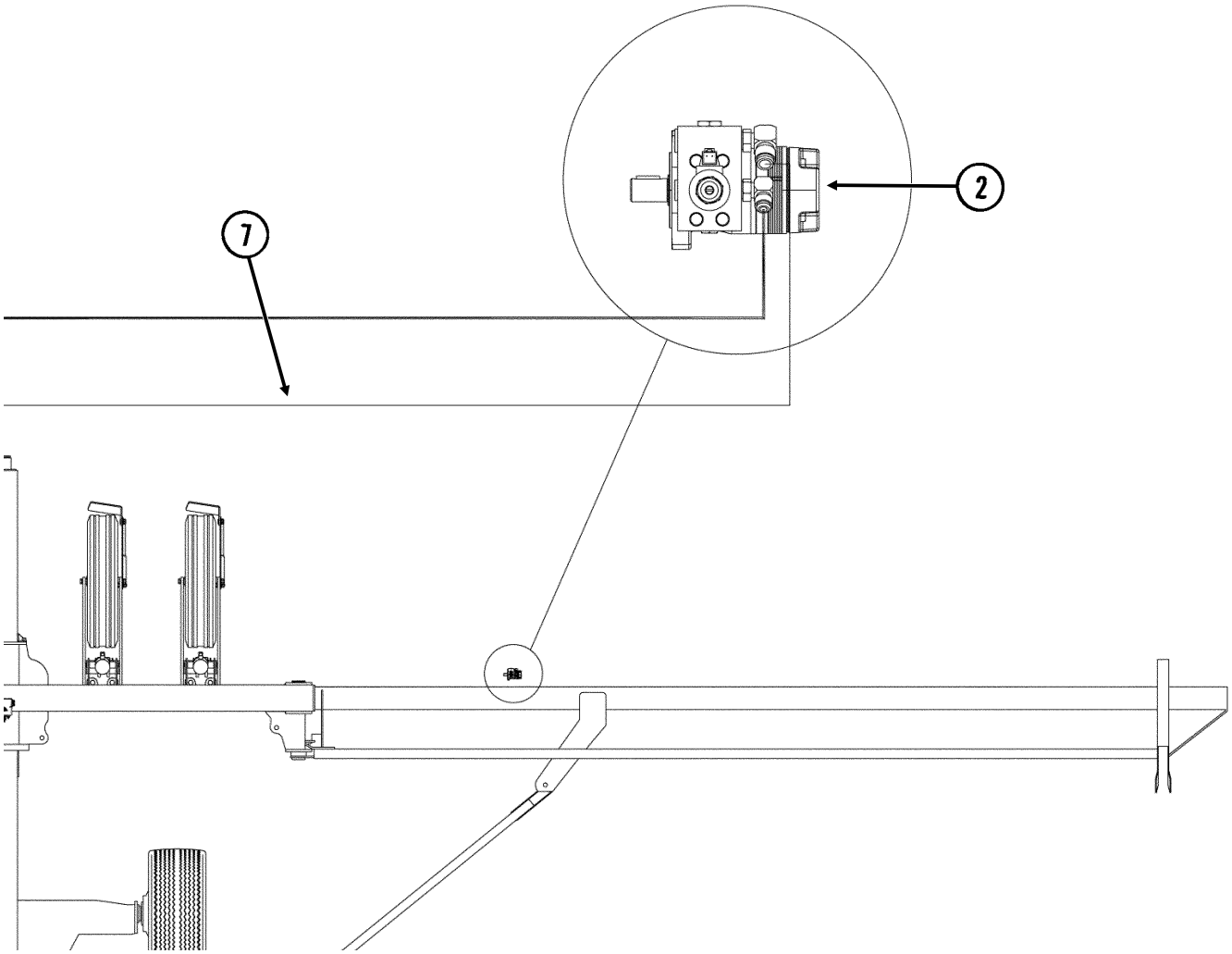
HYDRAULIC DRIVE HOSE ROUTINGS

(FWD181)



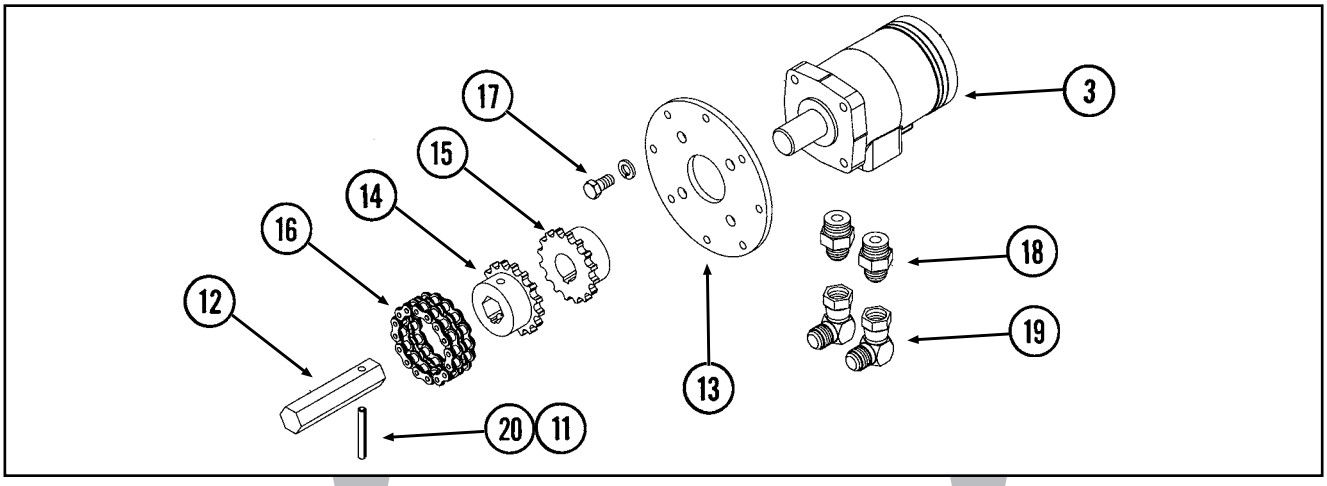
ITEM	PART NO.	QTY.	DESCRIPTION
1.			See “Junction Block - Located On Each Wing”, Pages P88
2.			See “Hydraulic Motor Located On L.H. Driveline”, Pages P83
3.			See “Hydraulic Motor Located On R.H. Driveline”, Pages P82
4.	*A1460	1	Hose Assembly, ½" x 62"
5.	*A3152	1	Hose Assembly, ⅜" x 62"
6.	*A3271	1	Hose Assembly, ⅜" x 402"
7.	*A12735	1	Hose Assembly, ½" x 402

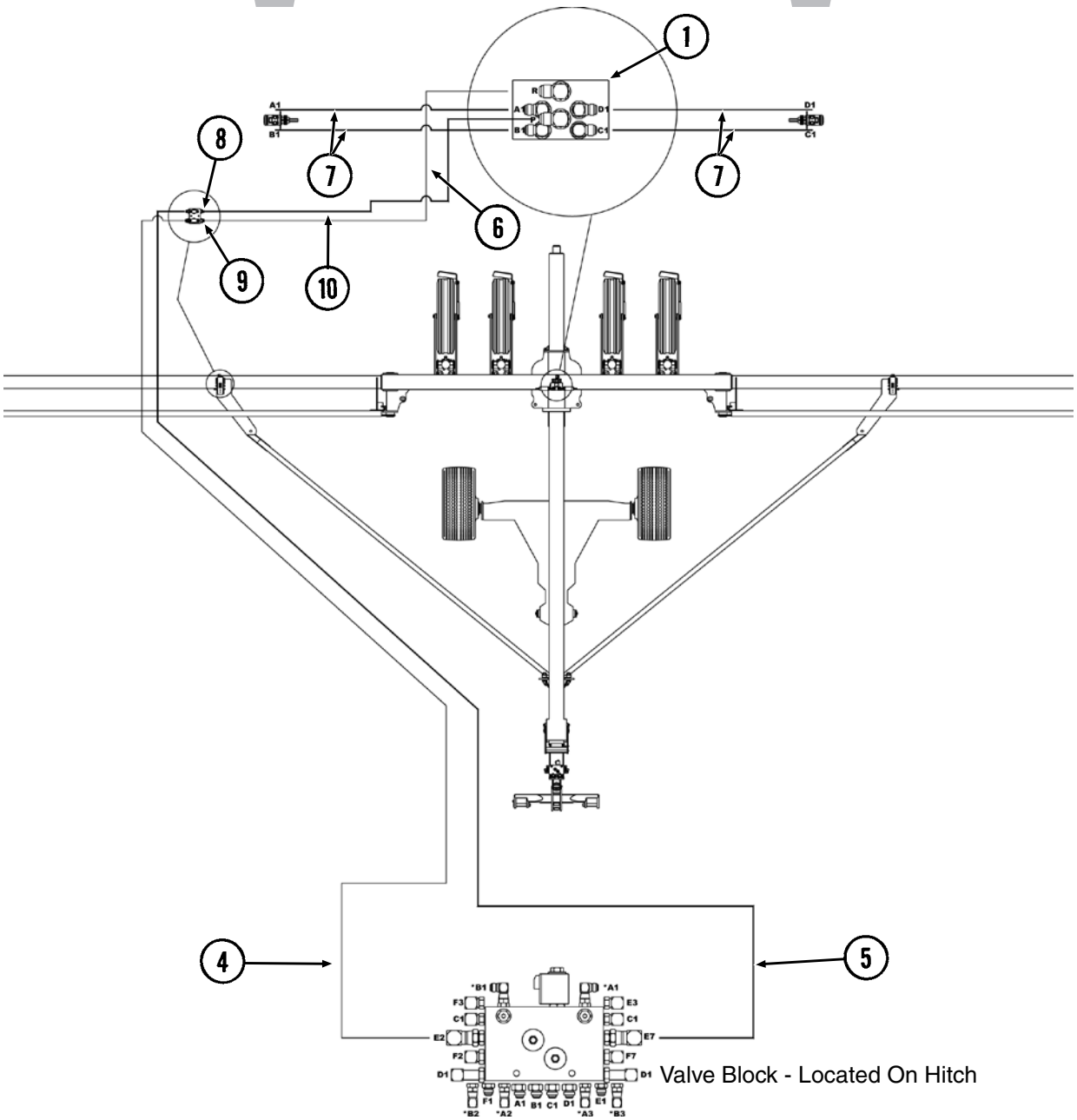
HYDRAULIC DRIVE HOSE ROUTINGS



SDS HYDRAULIC SYSTEM

(FWD105/FWD180)





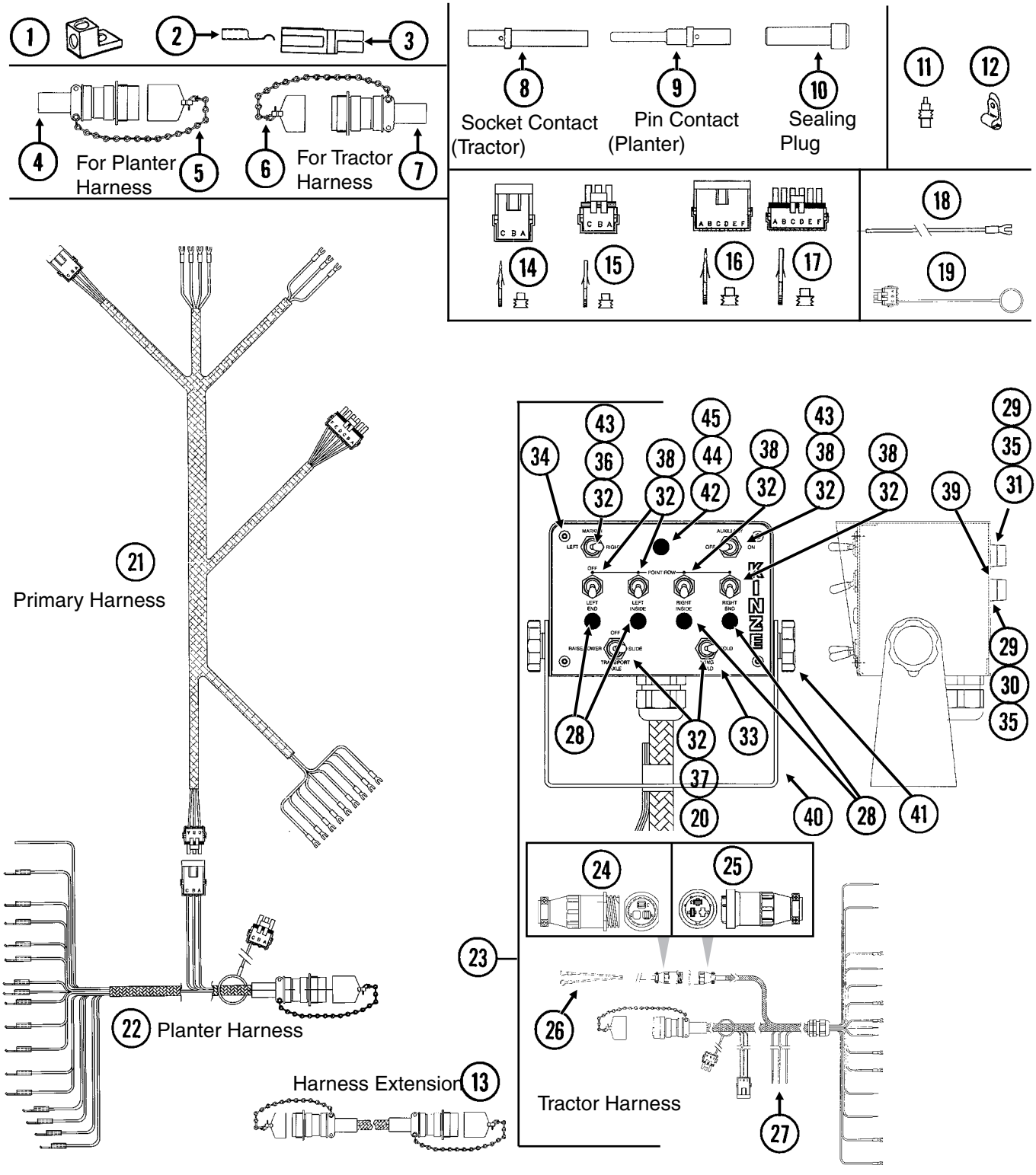
Valve Block - Located On Hitch

SDS HYDRAULIC SYSTEM

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See “SDS Manifold Block”, Page P89
2.		-	See “Valve Blocks - Located On Hitch (SDS)”, Pages P84 And P85
3.	GA11774	2	Hydraulic Motor
4.	*A13918	1	Hose Assembly, ¾" x 342"
5.	*A12700	1	Hose Assembly, ½" x 342"
6.	*A11425	1	Hose Assembly, ⅝" x 194"
7.	*A3159	4	Hose Assembly, ⅜" x 97"
8.	G6400-08	1	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
9.	G6400-10	1	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
10.	*A12703	1	Hose Assembly, ½" x 194"
11.	GD13524-01	1	Lock Wire, 10", Stainless Steel
12.	GD16538	1	Shaft
13.	GD16537	1	Plate
14.	GD16489	1	Coupler, ⅞" 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, ⅜"-16 x ¾"
	G10229	4	Lock Washer, ⅜"
18.	G6400-08-10	2	Connector W/O-Ring, ¾"-16 Male JIC To ⅞"-14 O-Ring
	GR1466	-	O-Ring
19.	G6500-08	2	Swivel Elbow, 90°, ¾"-16 Male JIC To Female
20.	G10606	1	Spring Pin, ¼" x 2"

ELECTRICAL COMPONENTS (Planter Control Console)

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

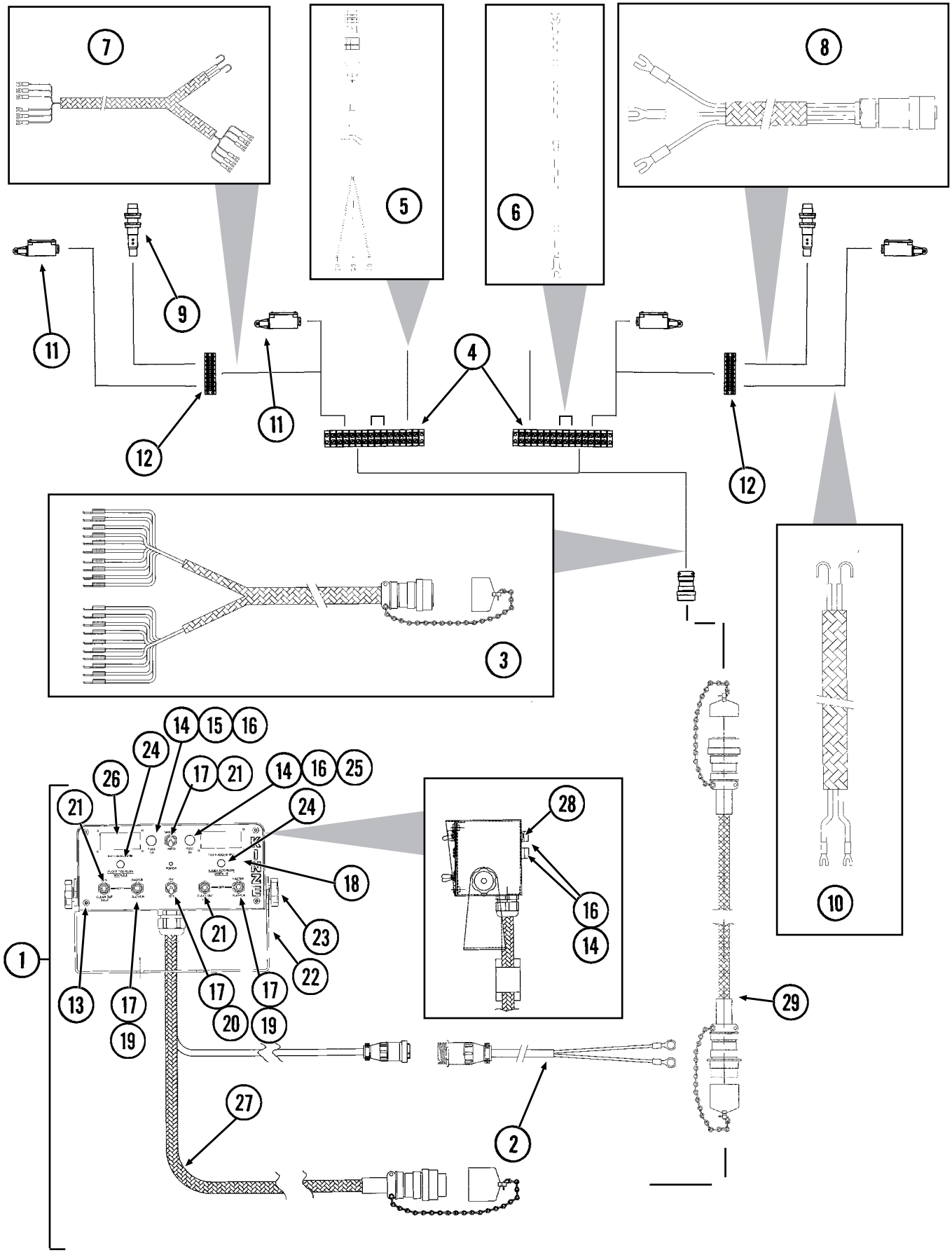


ELECTRICAL COMPONENTS (Planter Control Console)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA3584	-	Ground Clamp
2.	GD9530	-	Contact
3.	GD9529	-	Housing, Black
	GD12726	-	Housing, Red
4.	GA6109	1	Connector W/Cable Clamp, 23 Pin Capacity
5.	GA7862	-	Dust Cap W/Chain
6.	GA7863	-	Dust Cap W/Chain
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, ⅜"
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.	GA10685	4	Jumper Wire, 5", White
21.	GA12652	1	Wiring Harness, 392"
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 ½"
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, ¼" SAE
	GR1290	2	Cage Nut, ¼"-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

ELECTRICAL COMPONENTS (SDS Control Console)

(A11377/A9954/A11502/A11906/FWD102/A11376/A11378/A11348a/A11736)

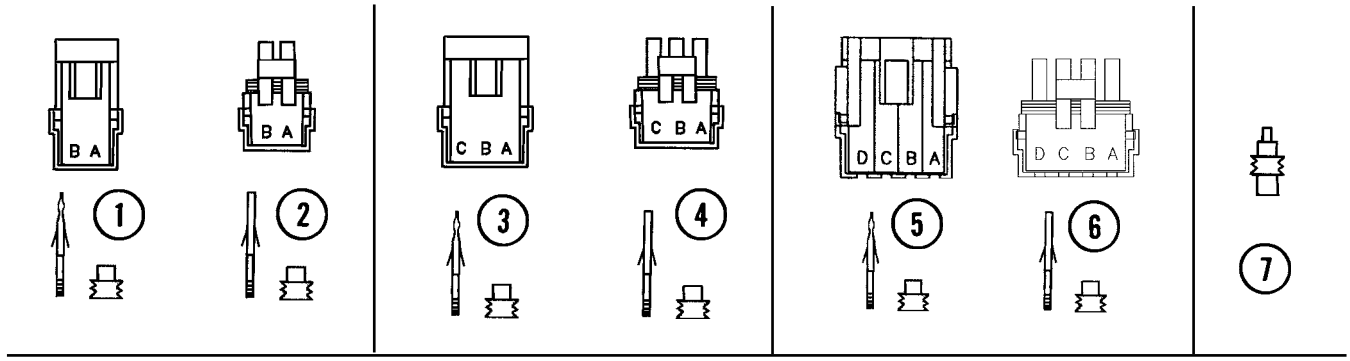


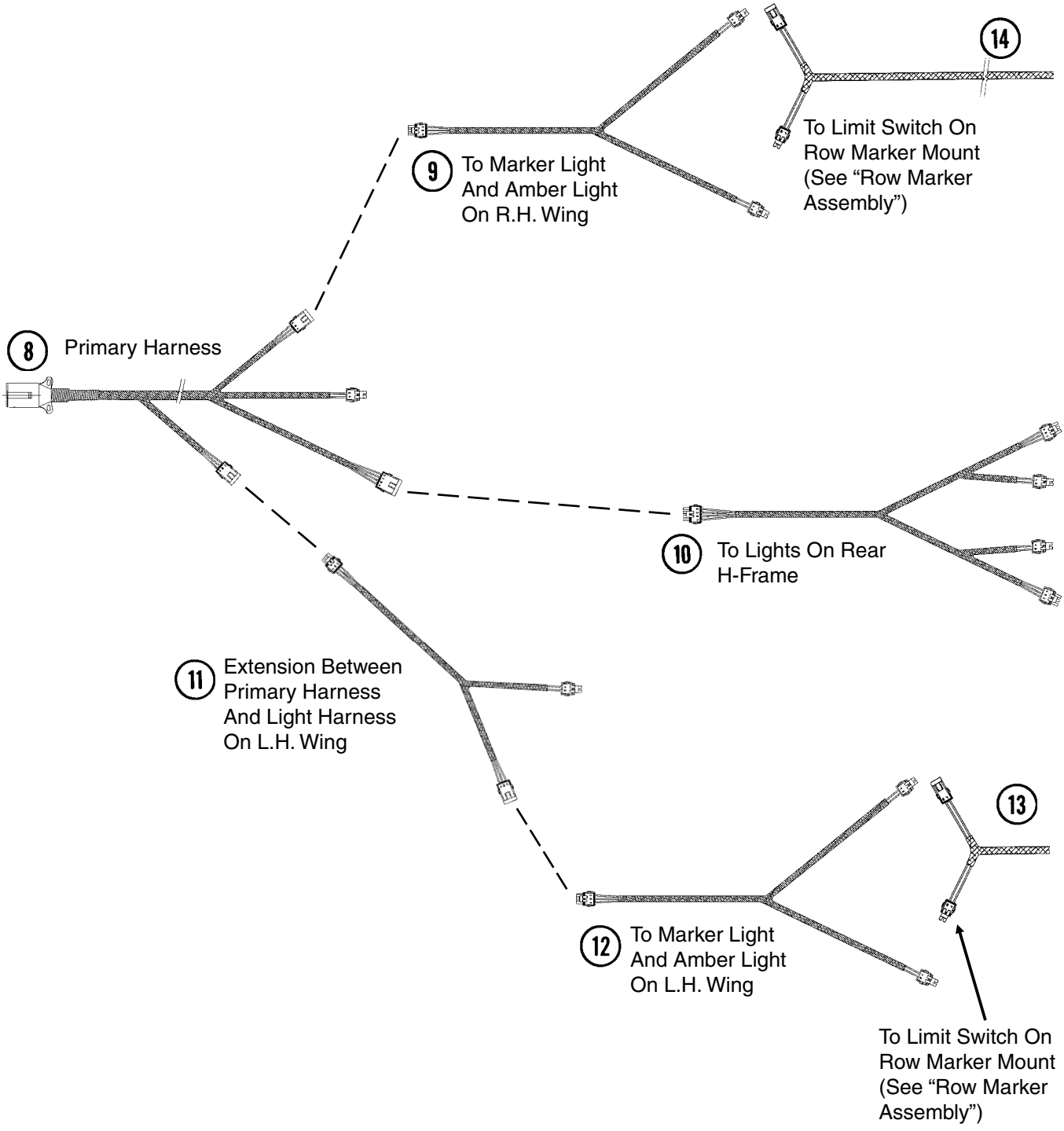
ELECTRICAL COMPONENTS (SDS Control Console)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11348	1	SDS Control Console Assembly
2.	GA7856	1	Power Lead Adapter
3.	GA11376	1	Wiring Harness, 648"
4.	GA9097	2	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x ¼"
5.	GA9954	2	Speed Sensor Assembly
6.	GA11502	2	Voltage Stabilizer, 8 ½"
7.	GA11377	2	Wiring Harness, 360"
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 ¼"
13.	GR1292	4	Pan Head Screw, No. 8-32 x ½"
14.	GA2612	3	Fuse Holder W/Spade, 1 33⁄50"
15.	GD2829	1	Fuse, 15 Amp, Type AGC
16.	GD3860	3	O-Ring
17.	GR1363	4	Hex Face Nut, 15⁄32"-32
	GR1364	4	Internal Tooth Lock Washer, 15⁄32"
18.	GA12171	1	Cover Plate
19.	GA6978	2	Switch, 3 Position Toggle, Momentary On-Off-Momentary On
20.	GA6977	1	Switch, 2 Position Toggle, On-Off
21.	GA12173	2	Switch, 3 Position Locking Toggle
22.	GD14640	1	Mounting Bracket
23.	GA6975	2	Knob
	G10211	4	Washer, ¼" SAE
	GR1290	2	Cage Nut, ¼"-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, ⅜"
29.	GA11736	-	Harness Extension W/Dust Caps, 180"

ELECTRICAL COMPONENTS (Lights)

(MTR27t/MTR27a/ELC27b/MTR27a/A10315/A10318/A10317/A10316/A10452/A11042)



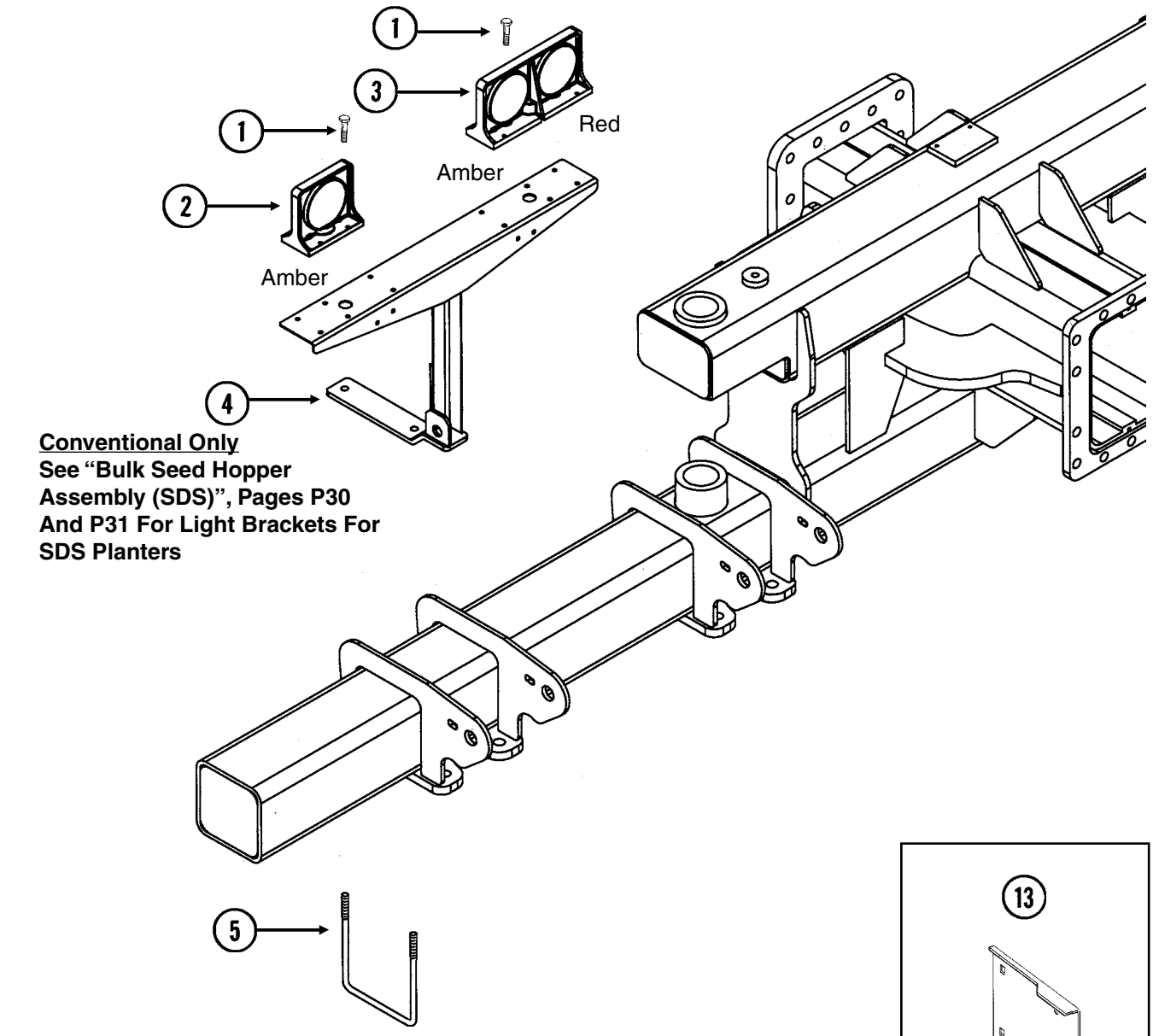


ELECTRICAL COMPONENTS (Lights)

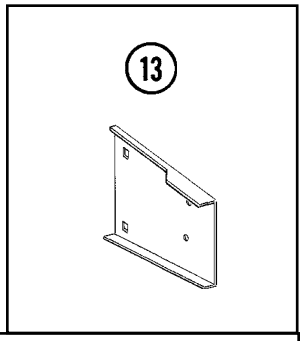
ITEM	PART NO.	QTY.	DESCRIPTION
1.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
2.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
3.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
4.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
5.	GA8328	-	4-Pin Female Connector Kit, Includes: (1) 4-Pin Female Housing, (4) Pin Contacts, (4) Seals
6.	GA8329	-	4-Pin Male Connector Kit, Includes: (1) 4-Pin Male Housing, (4) Socket Contacts, (4) Seals
7.	GD11089	-	Sealing Plug
8.	GA10315	1	Wiring Harness, 414"
9.	GA10318	1	Wiring Harness, 156"
10.	GA10317	1	Wiring Harness, 198"
11.	GA10316	1	Wiring Harness, 254"
12.	GA10319	1	Wiring Harness, 156"
13.	GA11299	2	Wiring Harness, 63"

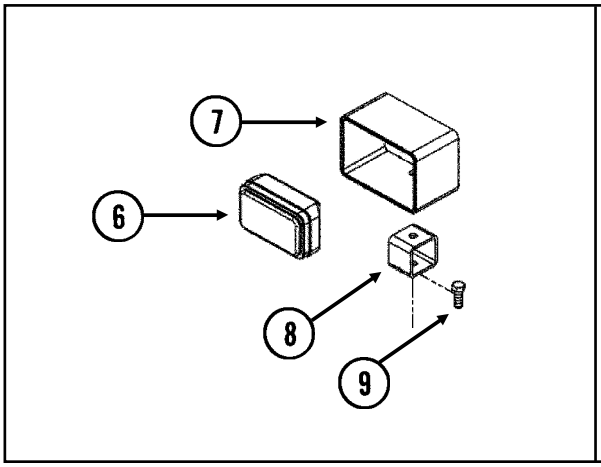
LIGHT ASSEMBLIES AND BRACKETS

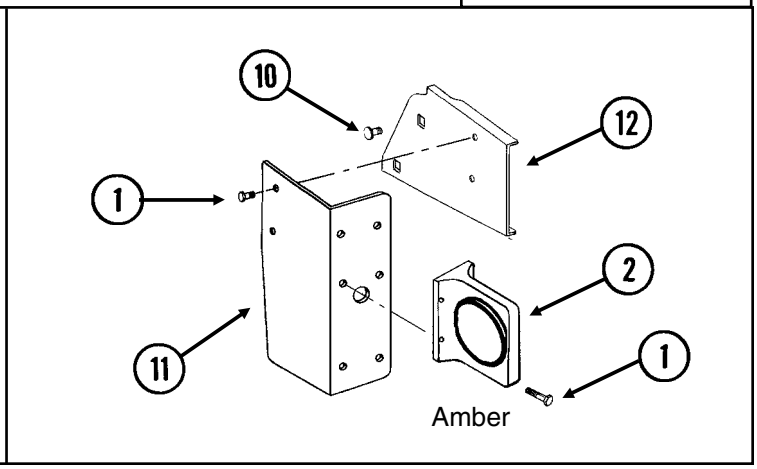
(FWD24a/FWD14/RU130b/RU131f)



Conventional Only
See "Bulk Seed Hopper Assembly (SDS)", Pages P30 And P31 For Light Brackets For SDS Planters





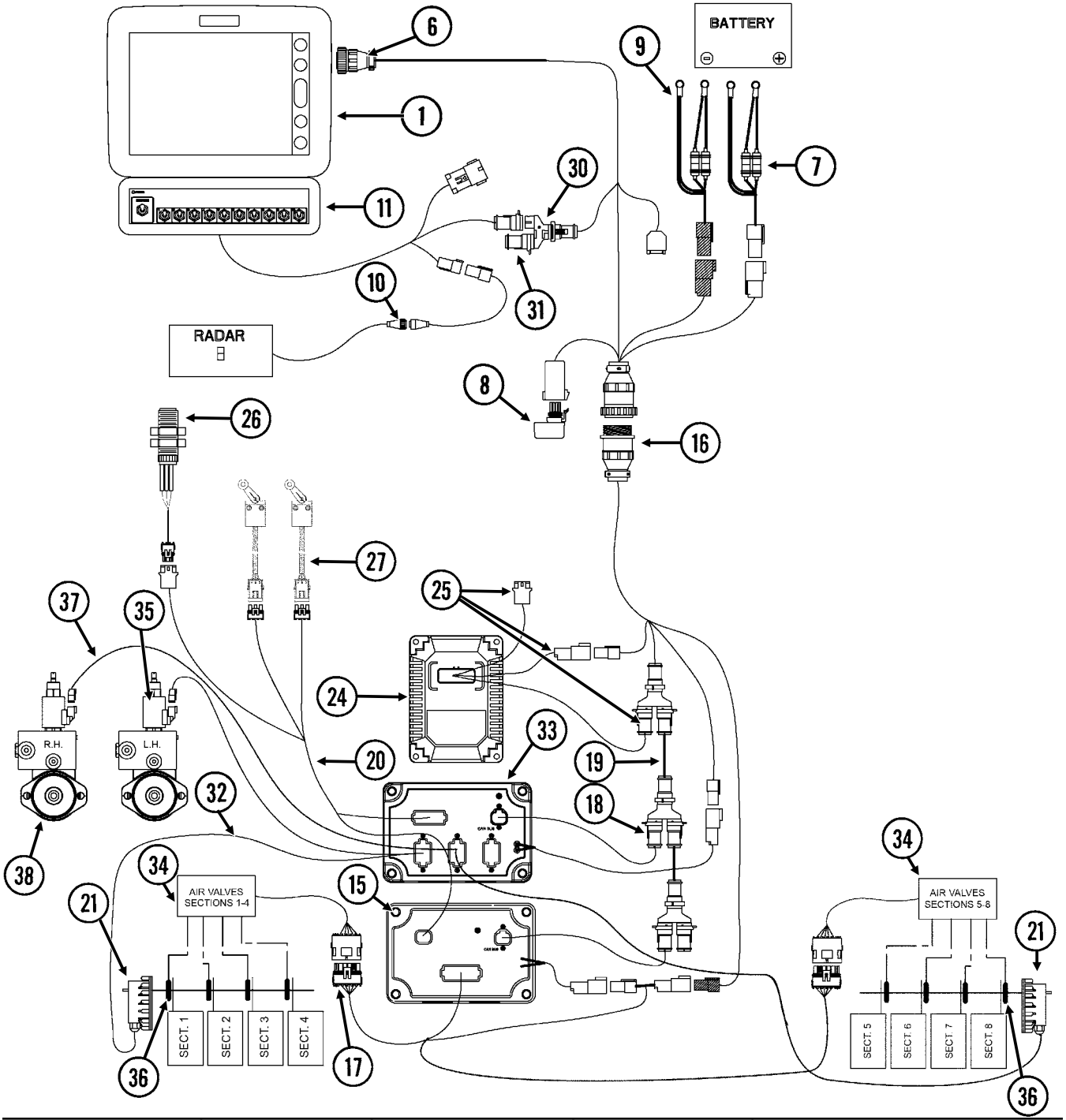


LIGHT ASSEMBLIES AND BRACKETS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10064	-	Hex Head Cap Screw, ¼"-20 x 1"
	G10110	-	Lock Nut, ¼"-20, Grade B
2.	GA10576	4	Single Amber Light Assembly
	GR1731	-	Amber Lens
	GR1208	-	Bulb
3.	GA10571	1	Double Light Assembly
	GA10572	-	Double Light Assembly (Shown)
	GR1733	-	Red Lens
	GR1731	-	Amber Lens
	GR1732	-	Cover
	GR1208	-	Bulb
4.	GA10291	2	Light Bracket (Conventional)
5.	GD7145	2	U-Bolt, 7" x 7" x ½"-13
	G10228	4	Lock Washer, ½"
	G10102	4	Hex Nut, ½"-13
6.	GA10297	2	Work Light Assembly W/Halogen Lamp
	GR1707	-	Halogen Lamp, 3" x 5"
7.	GD15582	1	Light Protector
8.	GD14987	1	Light Bracket
9.	G10017	1	Hex Head Cap Screw, ½"-13 x 1 ½"
	G10228	1	Lock Washer, ½"
	G10102	1	Hex Nut, ½"-13
10.	G10312	-	Carriage Bolt, 5⁄16"-18 x ¾"
	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

KINZE VISION® DISPLAY

(VI50b/VI18/VI21/A12553/GR1916/GR1839/A12852/A12853)

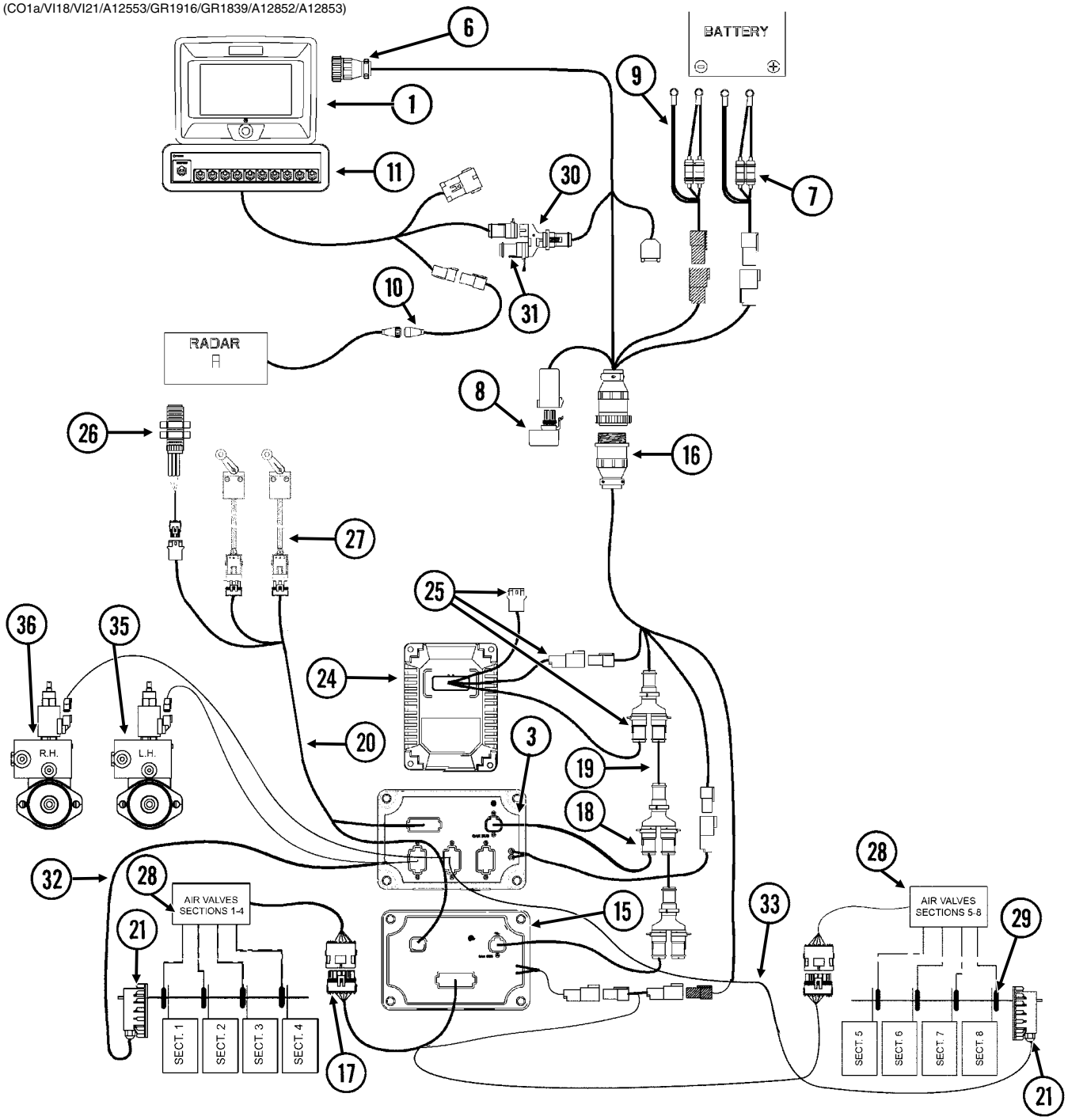


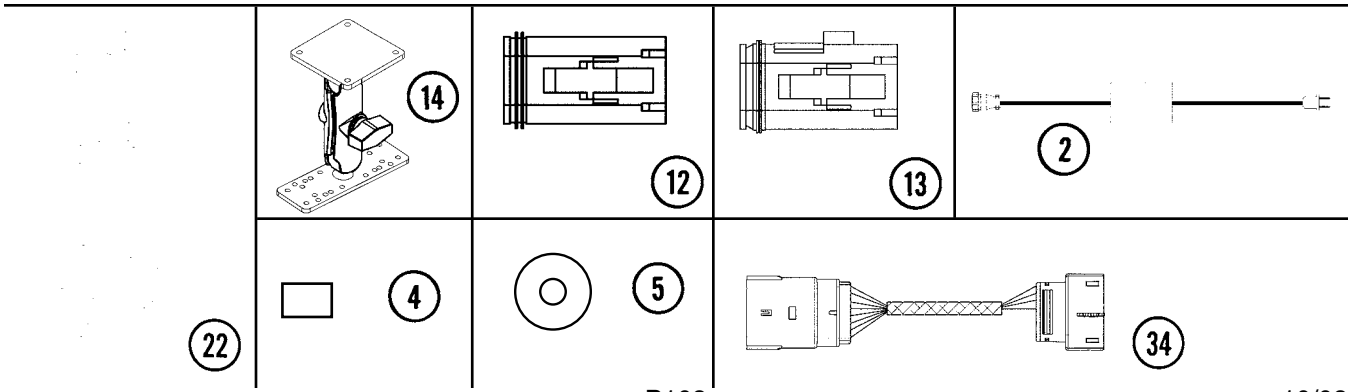
KINZE VISION® DISPLAY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA12536	1	Vision Display
2.	GA12852	1	Power Supply
3.	GA12853	1	Null Modem Cable
4.	GR1835	1	Flash Card
5.	GR1836	1	SMS CD
6.	GA12551	1	Display Cable
7.	GA12562	1	Power Cable
8.	GA12540	1	Power Control Relay
9.	GA12598	1	Seed Rate Power Cable
10.	GA12596	1	Radar Adapter Cable
11.	GA12539	1	Switch Box Module
12.	GR1838	1	Dust Plug
13.	GR1839	1	Dust Plug
14.	GA12868	1	Mounting Bracket Assembly
	GD18407	1	Ram Base
	GD18408	1	Ram Vesa Base
15.	GA12537	1	Clutch Control Module
16.	GA12655	-	Implement Cable (16 Row)
17.	GA13530	1	Clutch Control Cable
18.	GA12558	1	Can Stub Cable, 8"
19.	GA12559	1	Can Extension, 5"
20.	GA13531	1	Implement Switch Extension Cable
21.	GA12565	1	Encoder Module
22.	GR1916	1	Switch Box Bracket
24.		-	See “Planter Monitor Module (PMM)”, Pages P110 And P111
25.		-	See “Planter Monitor Module (PMM)”, Pages P110 And P111
26.	GA13204	1	Hall Effect Sensor
27.			See “Shank Assembly, Seed Tube And Depth Adjustment”, Pages P2 And P3
28.	GA12553	1	GPS Cable
29.	GA12552	1	GPS Antenna
30.	GD18176	-	Y-Splice Connector
31.	GD18177	-	Terminator
32.	GA13533	1	Seed Rate Cable (L.H.)
33.	GA12564	1	Seed Rate Control Module
34.		-	See “Hydraulic Driveline Assemblies”, Pages P66 And P69
35.		-	See “Hydraulic Motor - Located On L.H. Driveline”, Page P83
36.		-	See “Pneumatic Down Pressure Package Option”, Pages P4 And P5
37.	GA13532	1	Seed Rate Cable (R.H.)
38.			See “Hydraulic Motor - Located On L.H. Drivline” Page P82

KINZE COBALT™ DISPLAY

(CO1a/VI18/VI21/A12553/GR1916/GR1839/A12852/A12853)





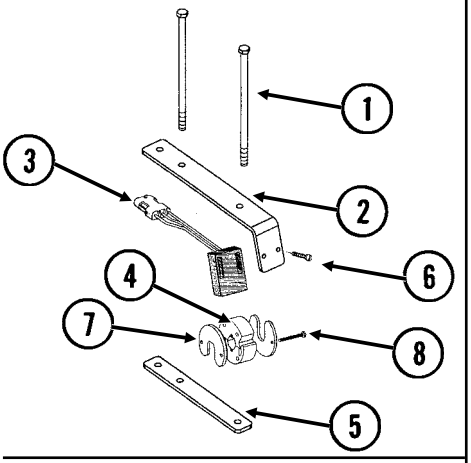
KINZE COBALT™ DISPLAY

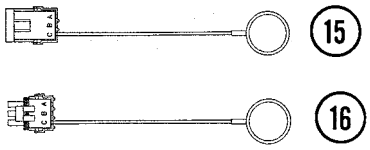
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA13554	1	Cobalt Display
2.	GA12852	1	Power Supply
3.	GA12564	1	Seed Rate Control Module
4.	GR1835	1	Flash Card
5.	GR1836	1	SMS CD
6.	GA12551	1	Display Cable
7.	GA12562	1	Power Cable
8.	GA12540	1	Power Control Relay
9.	GA12598	1	Seed Rate Power Cable
10.	GA12596	1	Radar Adapter Cable
11.	GA12539	1	Switch Box Module
12.	GR1838	1	Dust Plug
13.	GR1839	1	Dust Plug
14.	GA12868	1	Mounting Bracket Assembly
	GD18407	1	Ram Base
	GD18408	1	Ram Vesa Base
15.	GA12537	1	Clutch Control Module
16.	GA12555	1	Implement Cable (12 Row)
	GA12655	-	Implement Cable (16 Row)
17.	GA13530	1	Clutch Control Cable
18.	GA12558	1	Can Stub Cable, 8''
19.	GA12559	1	Can Extension, 5''
20.	GA13531	1	Implement Switch Extension Cable
21.	GA12565	1	Encoder Module
22.	GR1916	1	Switch Box Bracket
24.		-	See “Planter Monitor Module (PMM)”, Pages P110 And P111
25.		-	See “Planter Monitor Module (PMM)”, Pages P110 And P111
26.	GA13204	1	Hall Effect Sensor
27.			See “Shank Assembly, Seed Tube And Depth Adjustment”, Pages P2 And P3
28.			See “Hydraulic Driveline Assemblies”, Pages P66-P69
29.			See “Pneumatic Down Pressure Package Option”, Pages P4 And P5
30.	GD18176	-	Y-Splice Connector
31.	GD18177	-	Terminator
32.	GA13533	1	Seed Rate Cable (L.H.)
33.	GA13532	1	Seed Rate Cable (R.H.)
34.	GA13654	-	Adapter Cable
35.			See “Hydraulic Motor - Located On L.H. Driveline”, Page P83
36.			See “Hydraulic Motor - Located On R.H. Driveline”, Page P82

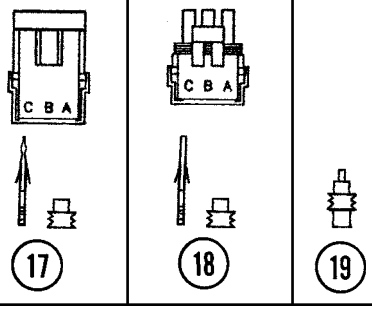
PLANTER MONITOR MODULE (PMM)

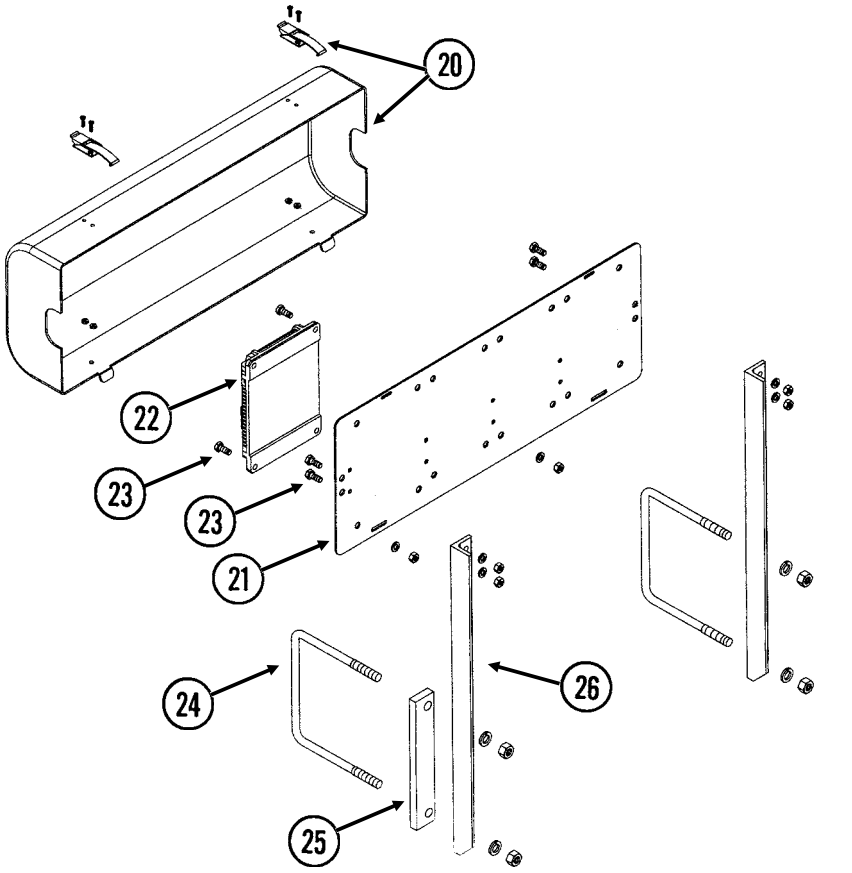
(MTR60/PMM01/MTR65/MTR61/MTR64/MTR62/PMM02/A7849)

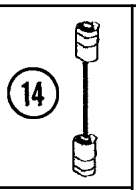
Shaft Rotation Sensor

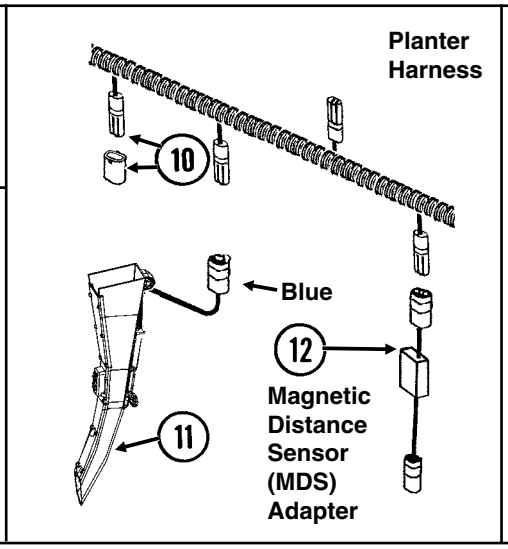


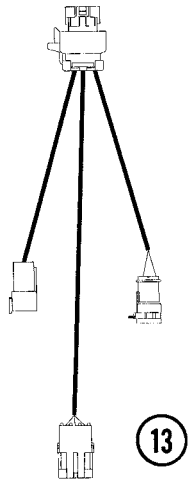












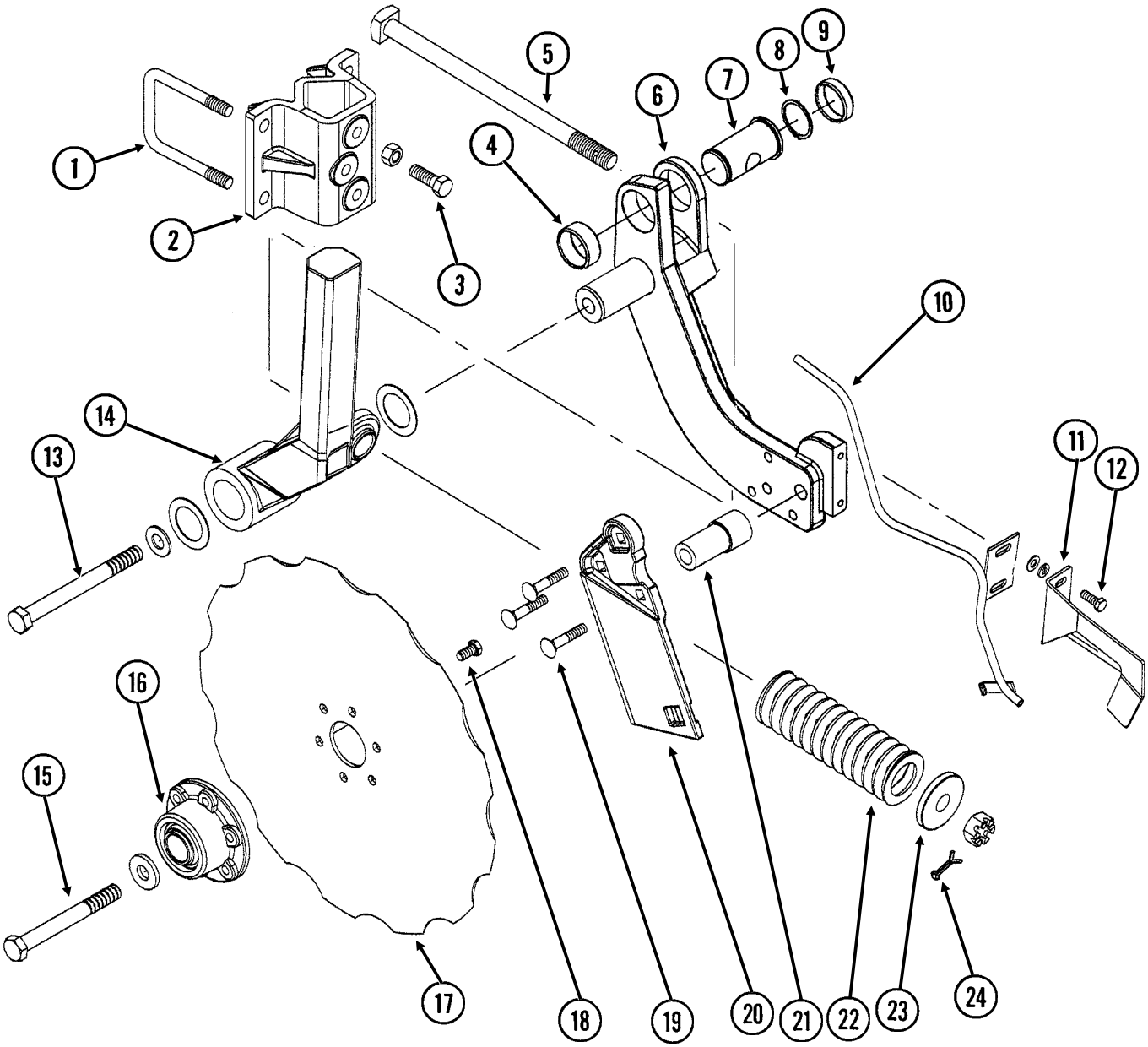
PLANTER MONITOR MODULE (PMM)

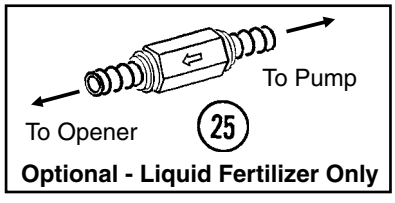
NOTE: See Ag Leader manual for Ag Leader Insight display and associated cab harness components.

TEM	PART NO.	QTY.	DESCRIPTION
1.	G10686	4	Hex Head Cap Screw, 3/8"-16 x 8"
	G10229	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
6.	G11288	2	Pan Head Screw, No. 10-32 x 1 1/4"
	G10243	2	Washer, No. 10 SAE
	G10758	2	Hex Nut, No. 10-32
7.	GD11474	4	Cover
8.	G10927	4	Pan Head Machine Screw, No. 8-32 x 1 1/4", Stainless Steel
	G10931	4	Lock Washer, No. 8, Internal/External, Stainless Steel
	G10928	4	Hex Nut, No. 8-32, Stainless Steel
9.	GR0594	-	Brush
10.	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7851	-	Planter Harness W/Dust Caps, 12 Row (16 Connectors)
	GD11993	-	Dust Cap
11.	GA10901	-	Seed Tube W/Computerized Sensor
	GR1629	-	Sensor Only
	GA10940	-	Seed Tube (With Holes For sensor Installation)
12.	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
13.	GA12557	1	Planter Monitor Module Cable
14.	GA7849	1	Extension Harness, 15'
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
	GD18642	1	Module Cover
	GA12641	-	Lock Clamp
	G11065	-	Phillips Pan Head Machine Screw, No. 8-32 x 5/8", Stainless Steel
	G11241	-	Serrated Flange Nut
21.	GD18013	1	Bracket
22.	GA12538	1	Planter Monitor Module
23.	G10043	4	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
24.	GD7145	2	U-Bolt, 7" x 7" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
25.	GD16316	2	Spacer, 1 1/2" x 9"
26.	GD16315	2	Support, 21 1/2"

NOTCHED SINGLE DISC FERTILIZER OPENER

(A10216aa)





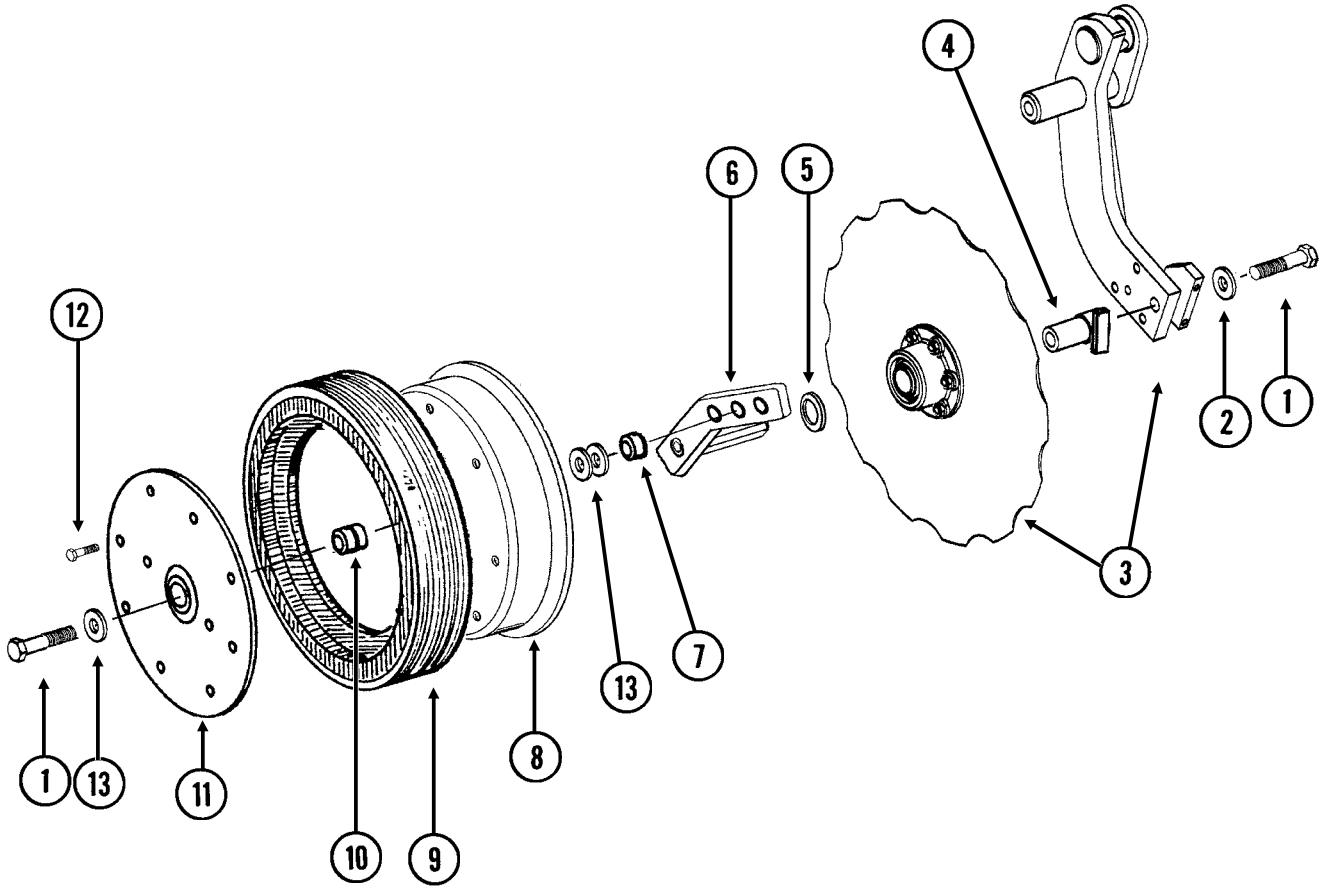
Optional - Liquid Fertilizer Only

NOTCHED SINGLE DISC FERTILIZER OPENER

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD17006	2	U-Bolt, 3" x 3" x ½"-13
	G10228	4	Lock Washer, ½"
	G10102	4	Hex Nut, ½"-13
2.	GB0343	1	Mount
3.	G10017	3	Hex Head Cap Screw, ½"-13 x 1 ½"
	G10102	3	Hex Nut, ½"-13
4.	GD14672	1	Spring Bushing, ¾"
5.	GD15226	1	Special Bolt, ¾"-10 x 12"
	G11116	1	Slotted Hex Nut, ¾"-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 ½"
9.	GD14673	1	Spring Bushing, ½"
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 ½"
	G10450	2	Machine Bushing, 1 ½", 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, ¼"-28
	GD15600	-	Bushing
	GD15568	-	Seal
15.	G10011	1	Hex Head Cap Screw, 5⁄8"-11 x 5 ½"
	GD12677	1	Washer, 1 ½" 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 ¾"
18.	G10002	6	Hex Head Cap Screw, 3⁄8"-16 x ¾"
19.	G10306	3	Carriage Bolt, 3⁄8"-16 x 2"
	G10108	3	Lock Nut, 3⁄8"-16
20.	GB0322	-	Knife, R.H. (Shown)
	GB0323	1	Knife, L.H.
21.	GD12679	1	Stepped Spacer, 3" Long
22.	GD12817	1	Compression Spring
23.	GB0213	1	Spring Seat
24.	G10462	1	Cotter Pin, 3⁄16" x 2"
25.	GA8983	-	Check Valve, Low Rate

DEPTH/GAUGE WHEEL ATTACHMENT FOR NOTCHED SINGLE DISC FERTILIZER OPENER

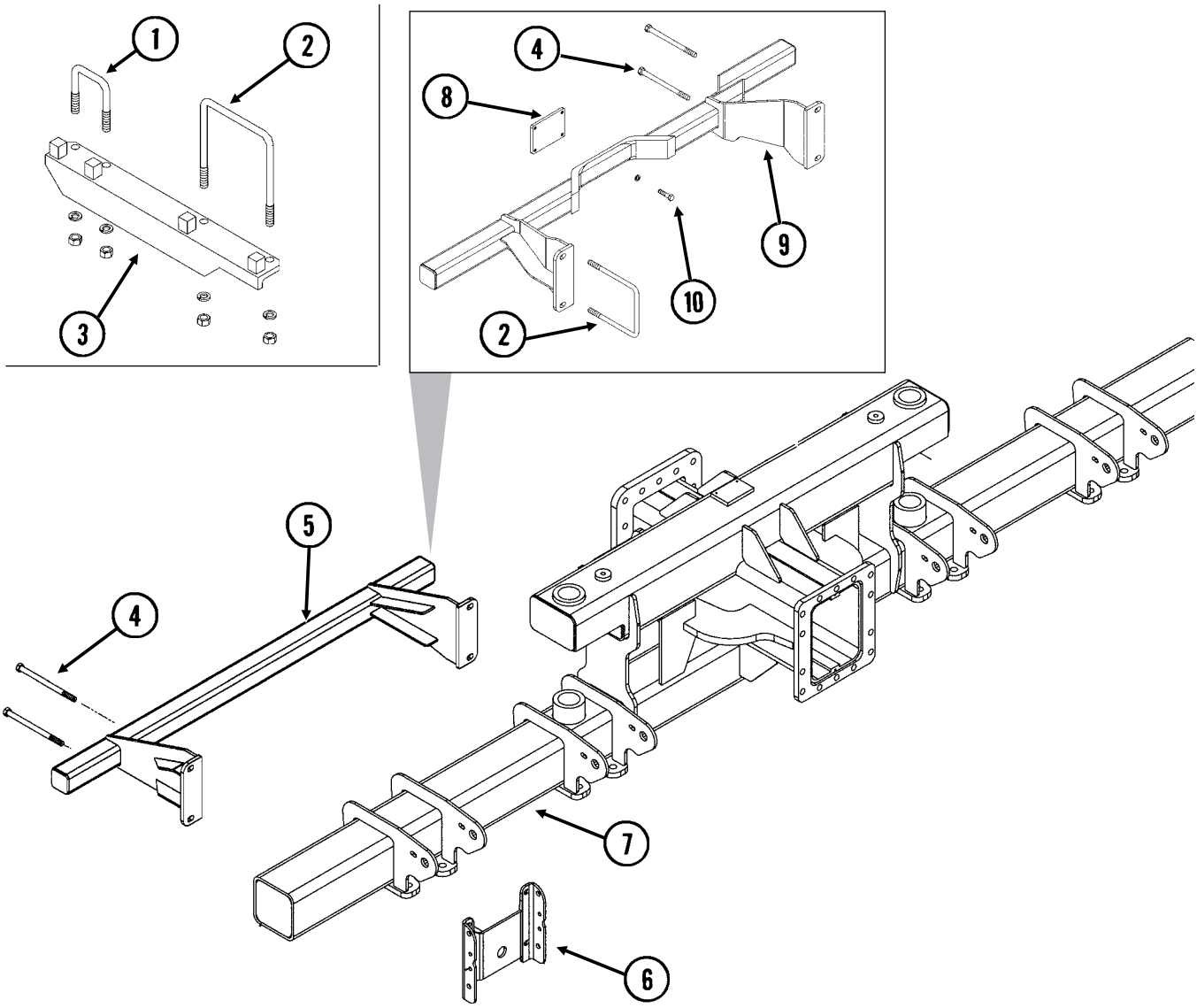
(FRTZ257)



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
2.	GD7805	1	Special Washer, 5/8", Hardened
3.		-	See “Notched Single Disc Fertilizer Opener”, Pages P112 And P113
4.	GA9472	1	Blade Mount
5.	G10233	1	Machine Bushing, 1 1/2" x 1/32", 10 Gauge
6.	GA10037	1	Wheel Mount, L.H. (Shown)
	GA10036	1	Wheel Mount, R.H.
7.	GD13309	1	Spacer
8.	GD11423	1	Half Wheel
9.	GD11953	1	Offset Tire
10.	GA6171	1	Bearing
11.	GD11954	1	Half Wheel Cover, Nylon
12.	G10961	11	Flanged Whiz-Lock Screw, 5/16"-18 x 3/4", No Serration
	G10620	11	Serrated Flange Nut, 5/16"-18
13.	G10204	-	Special Machine Bushing, 5/8" x 1" O.D. (As Required)
A.	GA8877	-	Gauge Wheel Complete (Items 8-12)

FERTILIZER OPENER MOUNTS

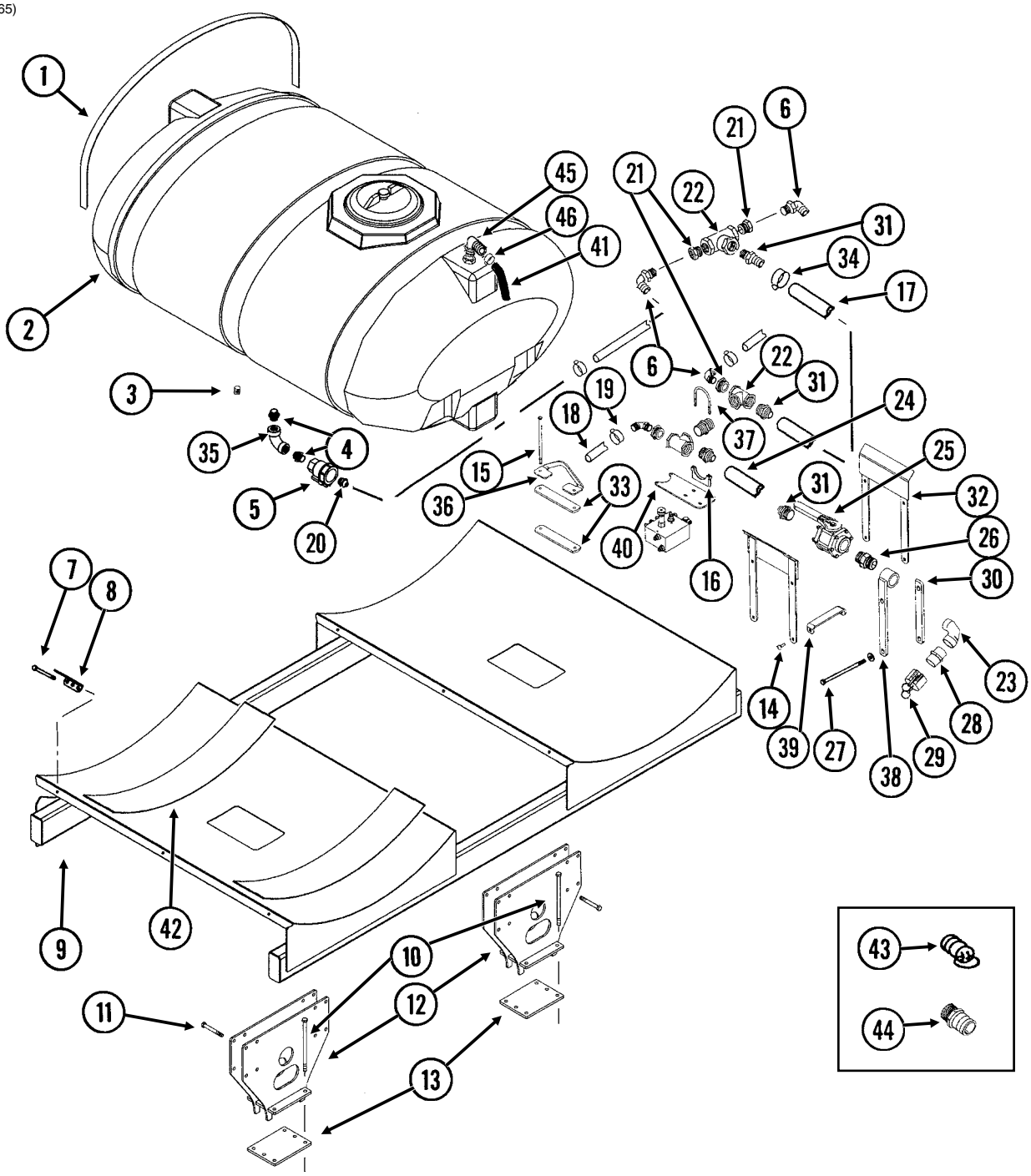
(FWD28/FWD138/FWD29a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD14671	-	U-Bolt, 3" x 3" x ⅝"-11
	G10230	-	Lock Washer, ⅝"
	G10104	-	Hex Nut, ⅝"-11
2.	GD17039	-	U-Bolt, 7" x 7" x ⅝"-11
	G10230	-	Lock Washer, ⅝"
	G10104	-	Hex Nut, ⅝"-11
3.	GB0365	-	Brace, L.H. (Shown)
	GB0370	-	Brace, R.H.
4.	G10177	-	Hex Head Cap Screw, ⅝"-11 x 9 ½"
	G10230	-	Lock Washer, ⅝"
	G10104	-	Hex Nut, ⅝"-11
5.	GA10923	2	Mount
6.		-	See “Parallel Arms, Mounting Support Plate And Quick Adjustable Down Force Springs”, Page P12
7.		-	See “Center Toolbar/Rear H-Frame Assembly”, Pages P52 And P53
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, ½"-13 x 2"
	G10228	8	Lock Washer, ½"

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (Conventional)

(FWD146/FRTZ265)



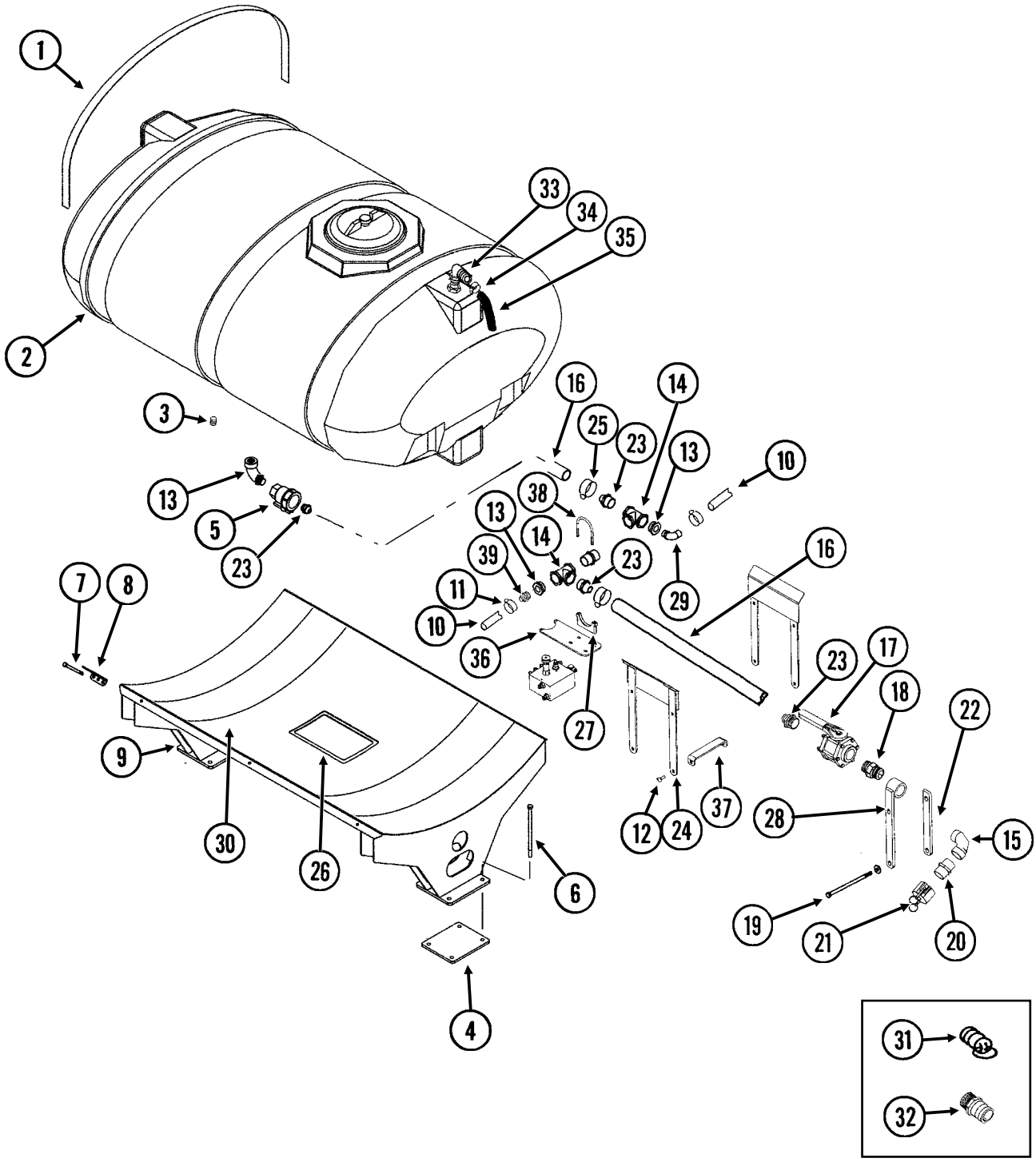
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA10201	2	Tank W/Lid And Fittings, 500 Gallon
	GR1702	-	Lid/Fillwell, 8" (Top Of Tank)
	GR1708	-	¾" Bulkhead Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring) (Top And Bottom Of Tank)
	GR1739		2" Bulkhead Fitting Assembly (Nut, Bushing And O-Ring) (Bottom Of Tank)
	GR1686	-	Lanyard, 12 ½" (Top Of Tank)
3.	G10096	2	Pipe Plug, ¾" NPT
4.	G10619	4	Close Nipple, 1 ¼" NPT

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (Conventional)

ITEM	PART NO.	QTY.	DESCRIPTION
5.	GA4976	2	Shutoff Valve, 1 ¼" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
6.	G10629	4	Elbow, 90°, 1 ¼" NPT To Barb
7.	G10485	6	Hex Head Tap Bolt, ⅜"-16 x 5" (6 Per Tank)
	G10901	6	Lock Nut W/ Nylon Insert, ⅜"-16 (6 Per Tank)
8.	GD11123	6	Anchor **(Sub GA8114)**
9.	GA10356	1	Tank Mount
10.	G11122	12	Hex Head Cap Screw, ⅝"-11 x 12"
	G10205	12	Washer, ⅝" SAE
	G10107	12	Lock Nut, ⅝"-11
11.	G10046	12	Hex Head Cap Screw, ⅝"-11 x 5"
	G10205	12	Washer, ⅝" SAE
	G10107	12	Lock Nut, ⅝"-11
12.	GA12503	2	Mounting Bracket
13.	GD17995	2	Plate, 8 ¾" x 10 ½"
14.	G10599	8	Carriage Bolt, ⅜"-16 x 1 ¼"
	G10203	8	Washer, ⅜" SAE
	G10108	8	Lock Nut, ⅜"-16
15.	G11193	8	Hex Head Cap Screw, ⅜"-16 x 9 ½"
	G10108	8	Lock Nut, ⅜"-16
16.	GA8768	2	Clamp, 3"
17.	G4206-01	1	Hose, 2" x 18'
18.	G4200-05	2	Hose, 1 ¼" x 50'
19	G10674	48	Hose Clamp, No. 24
20.	G10626	2	Adapter, 1 ¼" NPT To Barb
21.	G10616	6	Reducing Bushing, 2" Male NPT To 1 ¼" 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, ½"-13 x 9 ½"
	G10216	2	Washer, ½" USS
	G10228	2	Lock Washer, ½"
	G10102	2	Hex Nut, ½"-13
28.	GD3622	1	Adapter, 2" Female NPT To Cam Lock
29.	GD3951	1	Dust Cap, 2" Cam Lock
30.	GD15703	1	Bracket, 1 ½" x 12 ½"
31.	G10628	4	Adapter, 2" NPT To Barb
32.	GA11064	2	Hose Support
33.	GD16478	4	Bracket
34.	G10676	4	Hose Clamp, No. 36, Stainless Steel
35.	G10897	2	Elbow, 90°, 1 ¼" Female NPT
36.	GD16479	4	Mount
37.	G11165	2	T-Bolt Clamp, 2 ½", Stainless Steel
38.	GA10509	1	Straight Mount, Quick Fill, 14 19⁄32"
39.	GD16189	4	Tie Bracket
40.	GD16210	1	Bracket
41.	G4205-10	1	Hose, ¾" 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°, ¾" NPT To Barb
46.	G10278	10	Hose Clamp, No. 16

LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (SDS)

(FWD145c/FRTZ265)

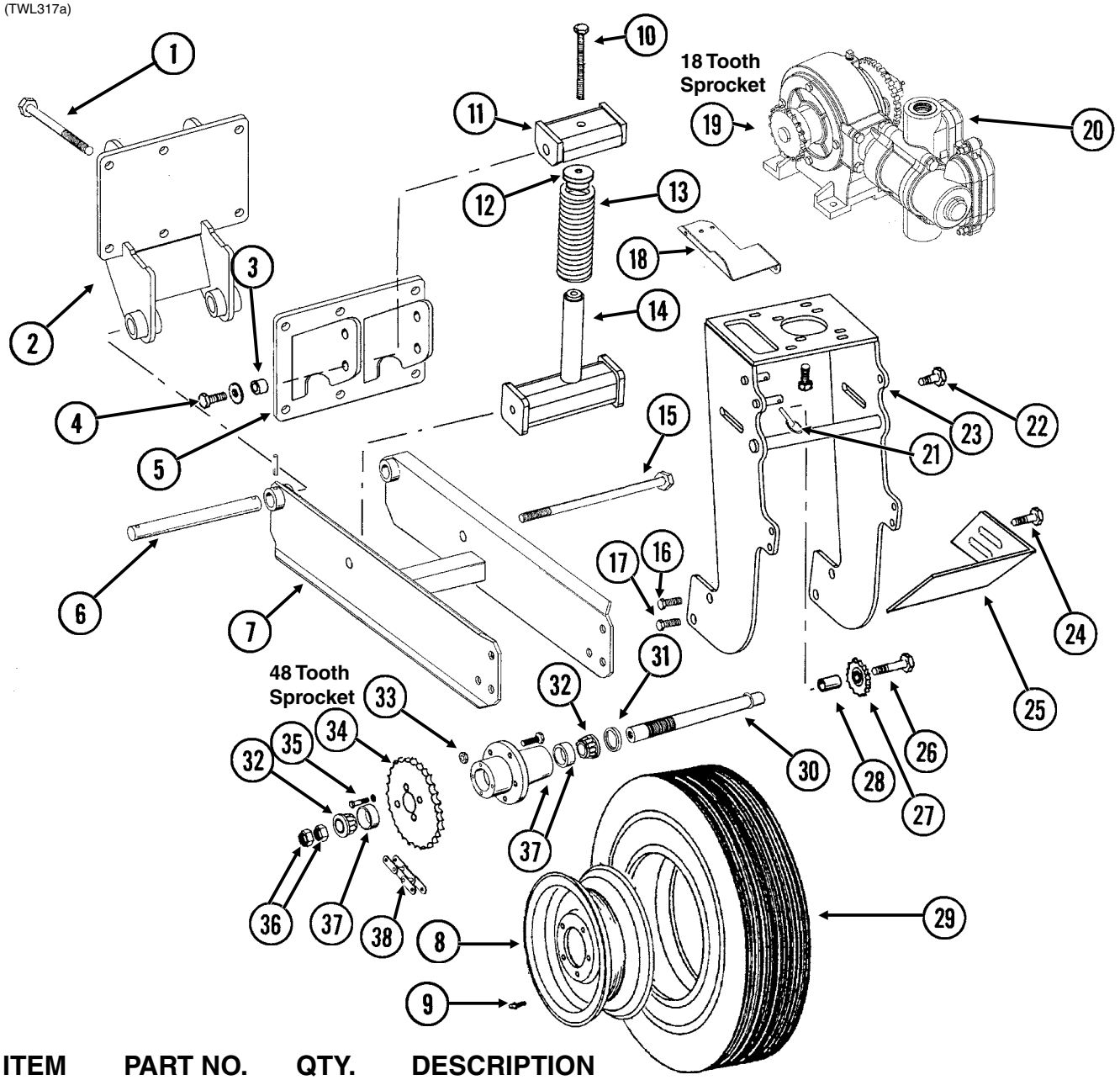


LIQUID FERTILIZER TANKS, SADDLES, SADDLE MOUNTS AND HOSES (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band
2.	GA10201	1	Tank W/Lid And Fittings, 500 Gallon
	GR1702	-	Lid/Fillwell, 8" (Top Of Tank)
	GR1708	-	¾" 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 ½" (Top Of Tank)
3.	G10096	2	Pipe Plug, ¾" 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, ⅝"-11 x 12"
	G10205	8	Washer, ⅝" SAE
	G10107	8	Lock Nut, ⅝"-11
7.	G10485	6	Hex Head Tap Bolt, ⅜"-16 x 5" (6 Per Tank)
	G10901	6	Lock Nut W/ Nylon Insert, ⅜"-16 (6 Per Tank)
8.	GD11123	6	Anchor **(Sub GA8114)**
9.	GA12520	1	Tank Mount
10.	G4200-05	1	Hose, 1 ¼" x 50'
11.	G10674	46	Hose Clamp, No. 24
12.	G10599	8	Carriage Bolt, ⅜"-16 x 1 ¼"
	G10203	8	Washer, ⅜" SAE
	G10108	8	Lock Nut, ⅜"-16
13.	G10616	2	Reducing Bushing, 2" Male NPT To 1 ¼" 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, ½"-13 x 9 ½"
	G10216	2	Washer, ½" USS
	G10228	2	Lock Washer, ½"
	G10102	2	Hex Nut, ½"-13
20.	GD3622	1	Adapter, 2" Female NPT To Cam Lock
21.	GD3951	1	Dust Cap, 2" Cam Lock
22.	GD15703	1	Bracket, 1 ½" x 12 ½"
23.	G10628	4	Adapter, 2" NPT To Barb
24.	GA11064	2	Hose Support
25.	G10676	4	Hose Clamp, No. 36, Stainless Steel
26.	G4427-01	-	Edge Molding, ⅛" x 12"
	G4427-02	-	Edge Molding, ⅛" x 7"
27.	GA8768	2	Clamp, 3"
28.	GA10509	1	Straight Mount, Quick Fill, 14 19⁄32"
29.	G10629	1	Elbow, 90°, 1 ¼" 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°, ¾" NPT To Barb
34.	G10278	10	Hose Clamp, No. 16
35.	G4205-10	1	Hose, ¾" x 200" (100" Per Tank)
36.	GD16210	1	Bracket
37.	GD16189	4	Tie Bracket
38.	G11165	2	T-Bolt Clamp, 2 ½", Stainless Steel
39.	G10626	1	Adapter, 1 ¼" NPT To Barb

LIQUID FERTILIZER PISTON PUMP MOUNT AND GROUND DRIVE WHEEL

(TWL317a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10152	6	Hex Head Cap Screw, 5/8"-11 x 9"
	G10230	6	Lock Washer, 5/8"
	G10104	6	Hex Nut, 5/8"-11
2.	GA10355	1	Wheel Arm Mount
3.	GB0218	2	Bushing, 21/32" I.D. x 7/8" O.D. x 19/32" Long
4.	G10005	2	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	2	Lock Nut, 5/8"-11
5.	GA9712	1	Spring Mount
6.	GD2681	1	Pin, 1 1/4" x 13 1/2"
	G10460	2	Cotter Pin, 1/4" x 2"
7.	GA10621	1	Arm W/Grease Fittings
	G10641	2	Grease Fitting, 1/8" NPT
8.	GA0241	1	Wheel, 5" x 15"
9.	GD1166	1	Valve Stem

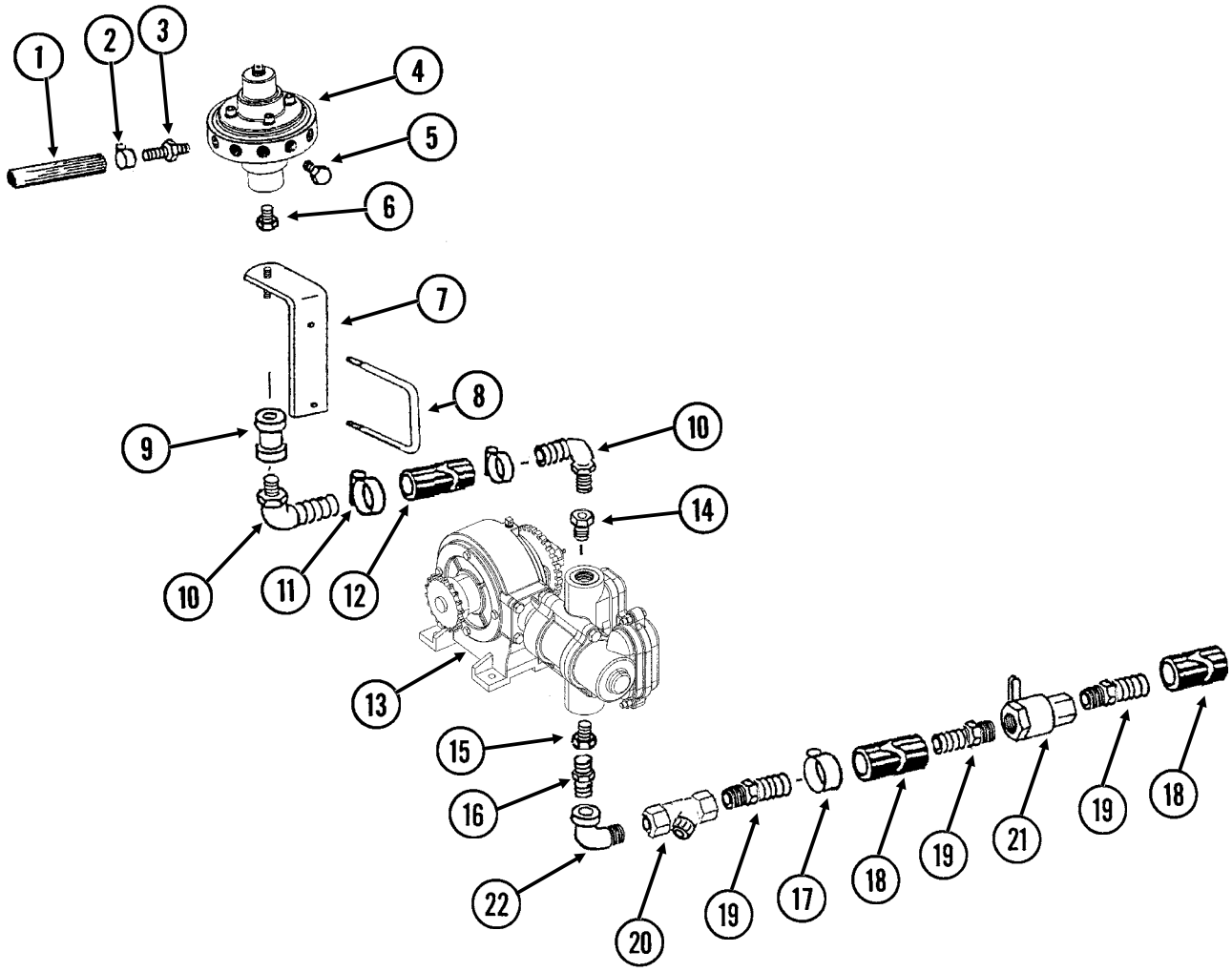
LIQUID FERTILIZER PISTON PUMP MOUNT AND GROUND DRIVE WHEEL

ITEM	PART NO.	QTY.	DESCRIPTION
10.	G10012	1	Hex Head Cap Screw, 5/8"-11 x 6 1/2"
	GD7805	1	Special Washer, 5/8", Hardened
11.	GA10908	1	Spring Mount
12.	GB0196	1	Washer
13.	GD7831	1	Compression Spring
14.	GA10907	1	Spring Guide
15.	G11122	1	Hex Head Cap Screw, 5/8"-11 x 12"
	G10107	1	Lock Nut, 5/8"-11
16.	G10026	2	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	2	Lock Washer, 3/4"
17.	G11042	2	Hex Head Cap Screw, 3/4"-10 x 1 3/4"
	G10231	2	Lock Washer, 3/4"
	G10105	2	Hex Nut, 3/4"-10
18.	GD13744	1	Hose Holder
19.	GR1146	1	Sprocket, 18 Tooth
20.		-	See “Liquid Fertilizer Piston Pump”, Pages P122 And P123
21.	GD2558	1	Lynch Pin, 1/4"
22.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10217	2	Washer, 5/8" USS
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
23.	GA10894	1	Pump Mount
24.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
25.	GD13328	1	Scraper
26.	G10013	1	Hex Head Cap Screw, 5/8"-11 x 3 1/2"
	G10205	1	Washer, 5/8" SAE
	G10230	1	Lock Washer, 5/8"
	G10104	1	Hex Nut, 5/8"-11
27.	GA0262	1	Idler Sprocket W/Bearing, 15 Tooth
28.	GD7817-05	1	Spacer, 11/16" I.D. x 1 1/4" Long
29.	GD0844	1	Tire, 7.60" x 15", 8 Ply (Specify Brand*)
30.	GA2559	1	Spindle
31.	GA0252	2	Seal
32.	GA0251	2	Bearing
33.	GR0267	5	Lug Nut, 1/2"-20
34.	G2500-84	1	Sprocket, 48 Tooth
35.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10232	4	Lock Washer, 5/16"
36.	GD0831	2	Shoulder Nut, 1 1/4"-12 UNF-2A
37.	GA0547	1	Hub W/Cups And Studs, 5 Bolt
	GR0190	2	Cup
	GR0204	5	Stud
38.	G3200-63	1	Chain, No. 2050, 63 Pitch Including Connector Link
	GR0195	1	Connector Link, No. 2050
	GR0200	1	Offset Link, No. 2050

*** Specific brand requests will be supplied only as available from current KINZE® Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied. Different brand tires may have different diameters. Change in tire brand may affect rates. Field checks are recommended after any change in tires.**

LIQUID FERTILIZER FLOW DIVIDER MOUNT AND HOSES

(FRTZ215j)



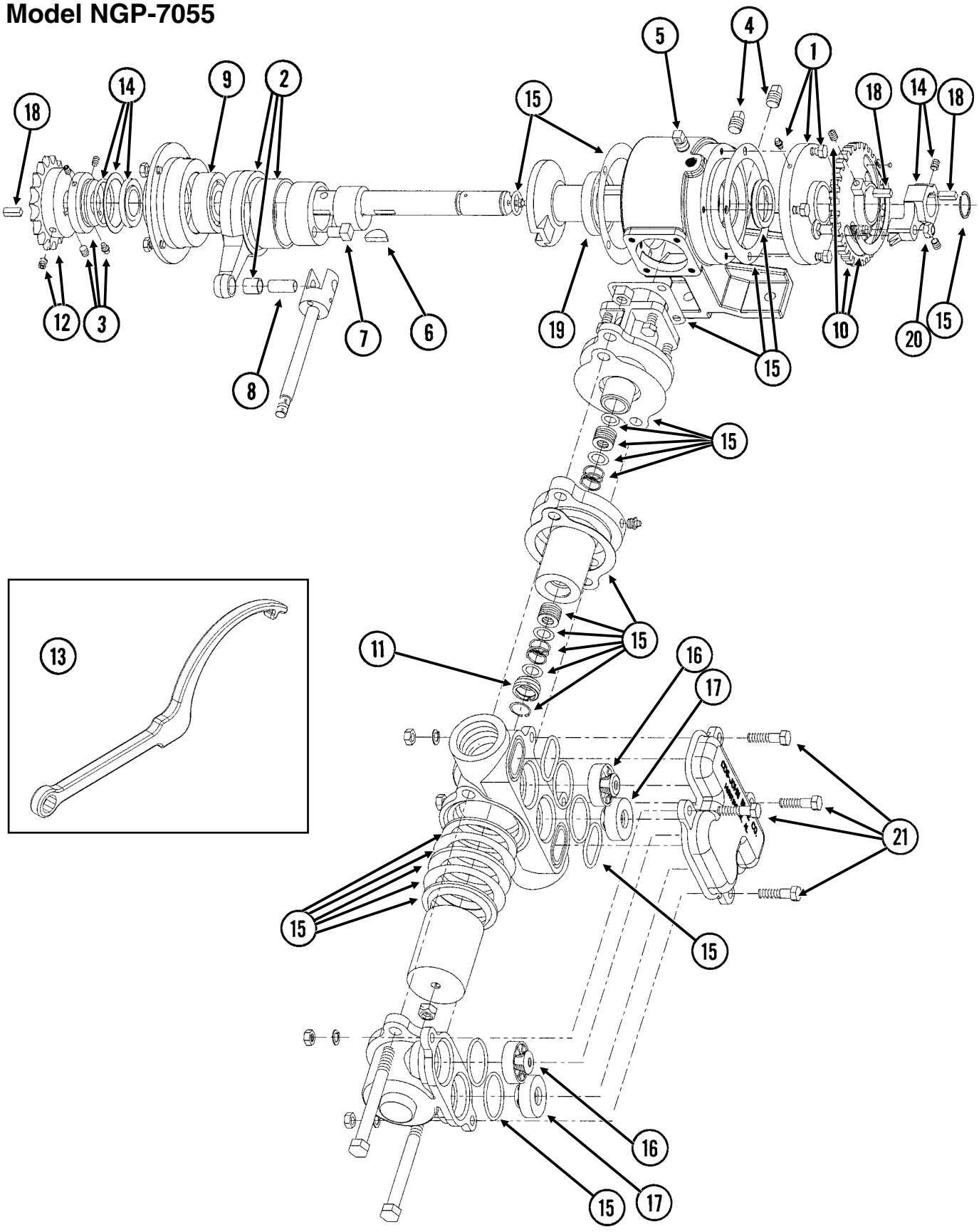
LIQUID FERTILIZER FLOW DIVIDER MOUNT AND HOSES

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G4301-02	-	Hose, ⅜" x 50'
	G4301-04	-	Hose, ⅜" x 100'
	G4301-08	-	Hose, ⅜" x 250'
2.	G10681	24-32	Hose Clamp, No. 6
3.	GD11700	12-16	Adapter, ¼" NPT To ⅜" Barb
4.		-	See “Liquid Fertilizer Piston Pump Flow Divider”, Pages P126
5.	G10292	-	Pipe Plug, ¼" NPT
6.	G10995	1	Reducing Bushing, 1" Male NPT To ¾" Female, Stainless Steel
7.	GA6527	1	Mount, ¾" NPT
8.	GD1114	1	U-Bolt, 7" x 7" x ⅝"-11
	G10230	2	Lock Washer, ⅝"
	G10104	2	Hex Nut, ⅝"-11
9.	G11083	1	Coupler, ¾" Female NPT
10.	G10917	2	Elbow, 90°, ¾" NPT To Barb
11.	G10278	2	Hose Clamp, No. 16
12.	G4205-10	-	Hose, ¾" x 200"
13.		-	See “Liquid Fertilizer Piston Pump, Pages P124 And P125
14.	G11237	1	Reducing Bushing, 1 ½" Male NPT To ¾" Female
15.	G10615	1	Reducing Bushing, 1 ½" Male NPT To 1 ¼" Female
16.	G10619	1	Close Nipple, 1 ¼" NPT
17.	G10674	2	Hose Clamp, No. 24
18.		-	Hose, 1 ¼", See “Liquid Fertilizer Tanks, Saddles, Saddle Mounts And Hoses”, Pages P116-119
19.	G10626	3	Adapter, 1 ¼" NPT To Barb
20.	GA3893	1	Strainer Complete
	GR0880	-	Screen, No. 40 Mesh
	GR0881	-	Gasket
	GR0882	-	Y-Body
	GR0883	-	End Cap
21.	GA4976	-	Shutoff Valve, 1 ¼" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
22.	G10887	2	Elbow, 90°, 1 ¼" Male NPT To Female

LIQUID FERTILIZER PISTON PUMP
(Uses 18 Tooth Sprocket)

(A12335a/GR1808)

Model NGP-7055

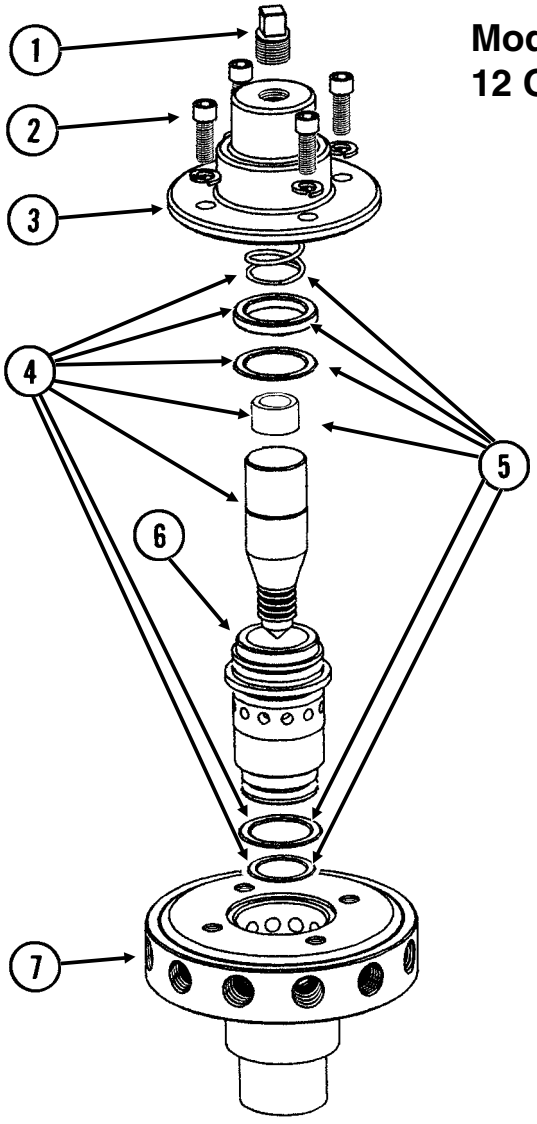


LIQUID FERTILIZER PISTON PUMP
(Uses 18 Tooth Sprocket)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1804	1	Flange Cover Assembly
	G10991	4	Hex Head Cap Screw, 5/16"-18 x 7/8"
2.	GR1803	1	Connecting Rod Assembly
3.	GR1801	1	Spacer Assembly
	G10693	3	Hex Socket Head Set Screw, 5/16"-18 x 3/8"
4.	GR1123	2	Plug
5.	GR1543	1	Vent Plug
6.	GR1112	1	Woodruff Key
7.	GR1120	1	Eccentric Pin
8.	GR1124	1	Pin
9.	GR1104	1	Bearing
10.	GR1805	1	Setting Hub Assembly
11.	GR1134	1	Stuffing Box Insert
12.	GR1146	1	Sprocket, 18 Tooth
13.	GR1808	1	Adjustment Wrench
14.	GR1806	1	Setting Pointer Assembly
15.	GR1796	1	Repair Kit, Includes: (6) Gaskets, (9) O-Rings, (4) Washers, (1) Retaining Ring, (2) Oil Seals, (1) Snap Ring, (1) Thrust Washer, (1) Rod Bushing, (2) Flange Plunger Packings, (2) Packing Springs, (2) Rod Vee Packing Sets
16.	GR1800	2	Discharge Valve Assembly
17.	GR1798	2	Suction Valve Assembly
18.	GR1118	3	Setting Arm Key
19.	GR1116	1	Bearing
20.	G10306	1	Carriage Bolt, 3/8"-16 x 2"
	G10108	1	Lock Nut, 3/8"-16
21.	G10003	4	Hex Head Head Cap Screw, 3/8"-16 x 1 1/2"
	G10210	4	Washer, 3/8" USS
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
A.	GA12335	-	Piston Pump Complete W/18 Tooth Sprocket (Model NGP-7055)

LIQUID FERTILIZER PISTON PUMP FLOW DIVIDER

(FRTZ202c)



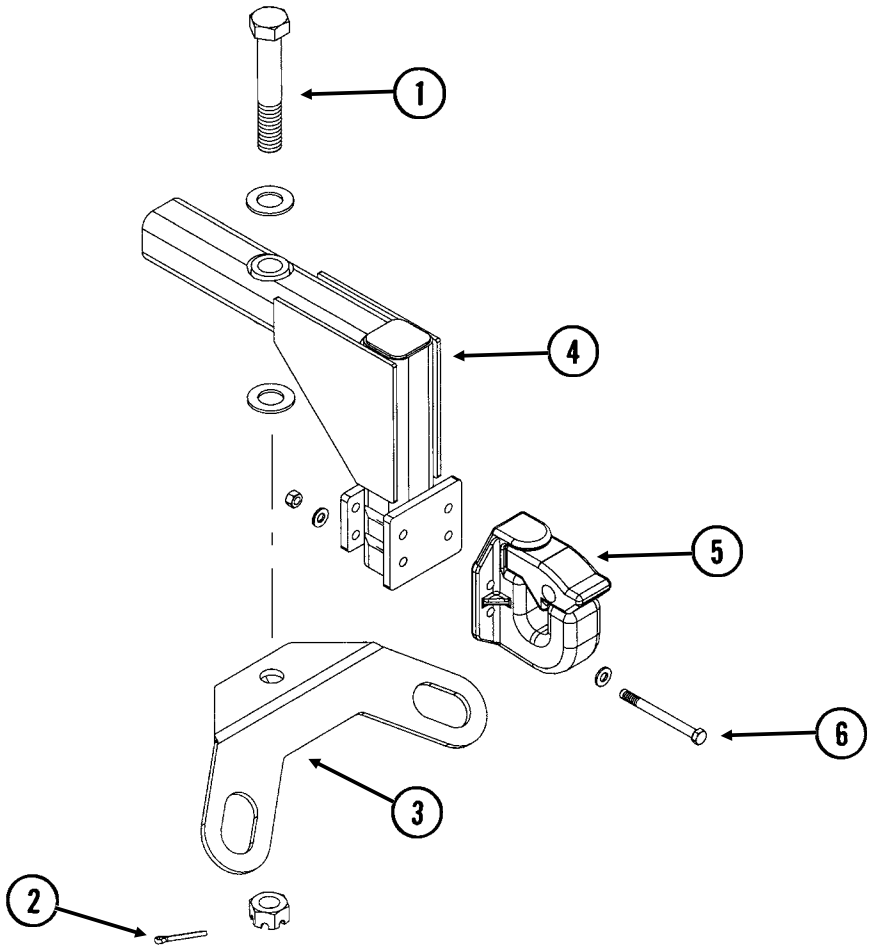
Model FD-1200 Flow Divider, 12 Outlet

¾" NPT

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1543	1	Vent Plug
2.	GR1542	4	Hex Socket Head Screw, ¼"-20 x ¾", Stainless Steel
	GR1541	4	Lock Washer, ¼", 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)

REAR TRAILER HITCH

(FWD53)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15939	1	Hex Head Cap Screw, 1 ¼"-7 x 7 ½"
	G10226	2	Washer, 1 ¼" SAE
	G10506	1	Slotted Nut, 1 ¼"-7
2.	G10460	1	Cotter Pin, ¼" x 2"
3.	GD15929	1	Safety Chain Mount
4.	GA10858	1	Hitch Mount
5.	GA10859	1	Pintle Hitch
6.	G11153	4	Hex Head Cap Screw, ½"-20 x 5 ½", Grade 8
	GD14674	8	Special Washer, ½", Hardened
	G11154	4	Lock Nut, ½"-20, Grade 8

DECALS, PAINT AND MISCELLANEOUS

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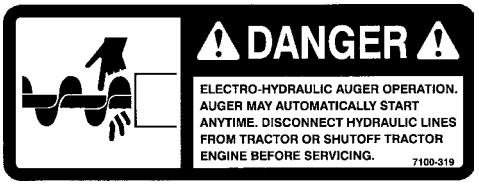

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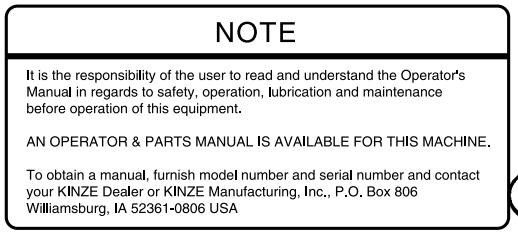

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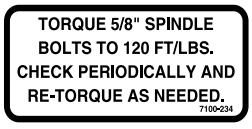

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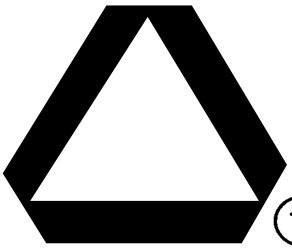
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DECALS, PAINT AND MISCELLANEOUS

ROTATE KNURLED COLLAR
ON WRAP SPRING TIGHTENER
TO RELEASE SPRING
TENSION

7100-295

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KINZE

3800

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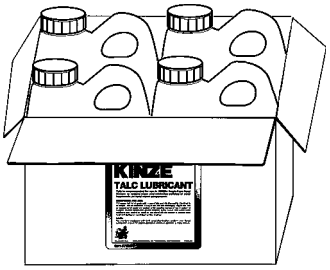

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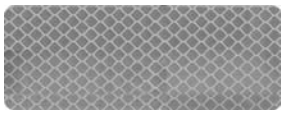

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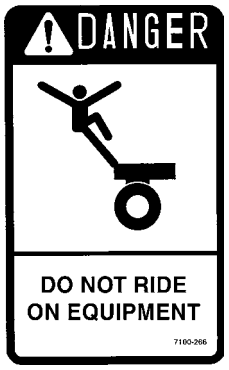

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TRANSPORT

7100-317

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KINZE

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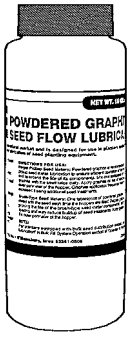

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DECALS, PAINT AND MISCELLANEOUS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G7100-42	4	Decal, Warning
2.	G7100-46	1	Decal, Warning
3.	G7100-56	1	Decal, Warning
4.	G7100-68	3	Decal, Warning
5.	G7100-89	2	Decal, Danger
6.	G7100-90	1	Decal, Warning
7.	G7100-110	-	Decal, Grease Weekly
8.	G7100-111	-	Decal, Oil Daily
9.	G7100-319	-	Decal, Danger
10.	G7100-116	-	Decal, Grease Daily
11.	G7100-117	1	Decal, Danger
12.	G7100-153	-	Decal, Information (1 Per Brush-Type Seed Meter)
13.	G7100-172	-	Decal, Warning
14.	G7100-217	-	Decal, Note
15.	G7100-219	-	Decal, Warning
16.	G7100-234	-	Decal, Bolt Torque
17.	G7100-247	-	Decal, Logo, 4 3/8" x 4 1/2" (2 Per Row Unit)
	G7100-252	-	Decal, Logo, 3 1/2" x 3 5/8" (Hopper Panel Extension)
18.	GD2199	1	SMV Sign
19.	G7100-249	-	Decal, Caution
20.	G7100-258	-	Reflective Decal, Red, 1 1/2" x 9", Rectangular (If Applicable)
	G7100-259	-	Reflective Decal, Amber, 1 1/2" x 9", Rectangular (If Applicable)
	G7100-260	-	Reflective Decal, Orange, 1 1/2" x 9", Rectangular (If Applicable)
21.	G7100-261	-	Reflective Decal, Red, 1 3/4" x 9", Die-Cut (If Applicable)
	G7100-262	-	Reflective Decal, Amber, 1 3/4" x 9", Die-Cut (If Applicable)
	G7100-263	-	Reflective Decal, Orange, 1 3/4" x 9", Die-Cut (If Applicable)
22.	G7100-277	-	Decal, Grease Annually
23.	G7100-295	-	Decal, Spring Tension Release
24.	G7100-300	2	Decal, KINZE® 3800
25.	GD10057-01	-	Hose Identification Sleeve, Red AA
	GD10057-02	-	Hose Identification Sleeve, Red BB
	GD10057-03	-	Hose Identification Sleeve, Blue AA
	GD10057-04	-	Hose Identification Sleeve, Blue BB
	GD10057-05	-	Hose Identification Sleeve, Black AA
	GD10057-06	-	Hose Identification Sleeve, Black BB
	GD10057-09	-	Hose Identification Sleeve, White AA
	GD10057-10	-	Hose Identification Sleeve, White BB
26.	GR0155MPP	-	Blue Paint, Twelve Aerosol Cans
27.	GR1570MPP	-	Talc Lubricant, Four 8 Pound Containers
28.	G7100-322	-	Reflective Decal, Orange-Red, 1 1/2" x 4"
29.	G7100-266	-	Decal, Danger
30.	G7100-317	-	Decal, Transport
31.	G7100-310	-	Decal, KINZE®, 6 11/16" x 28 5/16"
32.	GD1512	-	Tie Strap, 7 1/2"
	GD2117	-	Tie Strap, 14 1/2"
	GD1162	-	Tie Strap, 28"
	GD2984	-	Tie Strap, 34"
33.	GM0219	-	Operator & Parts Manual, Model 3800 (Mechanical Seed Metering W/ Hydraulic Drive)
34.	GR0146MPP	-	Powdered Graphite, Twenty-Four 1 Pound Containers

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