

**MODEL 3800 SDS
FORWARD FOLDING PLANTER
(Mechanical Seed Metering)**

**OPERATOR & PARTS
MANUAL**

M0229

4/09

This manual is applicable to: Model: 3800 SDS Forward Folding Planters
Serial Number: 755331 And On

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

Model Number _____

Serial Number _____

Date Purchased _____

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

SERIAL NUMBER

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

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

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PREDELIVERY/DELIVERY CHECKLIST

TO THE DEALER

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

PREDELIVERY CHECKLIST

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

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

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

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

OWNER REGISTER

Name _____ Delivery Date _____
Street Address _____ Model No. 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

TABLE OF CONTENTS

TO THE OWNER	1-1
WARRANTY	1-2
INTRODUCTION	2-1
SPECIFICATIONS	3-1
SAFETY PRECAUTIONS	4-1
SAFETY WARNING SIGNS	5-1
MACHINE OPERATION	
Checking Granular Chemical Application Rate	6-69
Checking Seed Population.....	6-68
Contact Wheel Idler Adjustment	6-5
Contact Wheel Spring Adjustment.....	6-5
Contact Wheel Drive Sprockets	6-6
Depth/Gauge Wheel Attachment For Notched Single Disc Fertilizer Opener.....	6-63
Electronic Seed Monitor System	
KPM III.....	6-19
Planter Monitor Module (PMM).....	6-60
Field Adjustments	
Planting And Application Rate Charts	6-70
Seed Rate Transmission Adjustment	6-6
Field Operation	6-12
Field Test.....	6-67
Field To Transport Sequence	6-13
General Planting Rate Information	6-70
Hydraulic/Electric Operation	6-9
Initial Preparation Of The Planter.....	6-1
Leveling The Planter	6-4
Liquid Fertilizer Attachment	6-64
Metric Conversion Table.....	6-67
Notched Single Disc Fertilizer Opener.....	6-61
Planting Speed	6-67
Point Row Clutches.....	6-18
Rear Trailer Hitch	6-68
Row Marker Length Adjustment	6-17
Row Marker Operation.....	6-16
Row Marker Speed Adjustment	6-17
Shear Protection.....	6-8
Tire Pressure	6-5
Tractor Preparation And Hookup	6-2
Tractor Requirements	6-2
Transport To Field Sequence	6-10
Transporting The Planter	6-67
Wing Latch Hook Safety Pin(s).....	6-1
U-Joint Shaft Assemblies.....	6-7
Wrap Spring Wrench Operation.....	6-7

TABLE OF CONTENTS

SDS SEED DELIVERY SYSTEM OPERATION

Adjustment Of Limit (Safety) Switches And Proximity Switches	7-2
Introduction	7-1
Mini-Hopper Latch	7-3
Operation	7-1
SDS Troubleshooting	7-4
Seed Lubrication.....	7-4

ROW UNIT OPERATION

Brush-Type Seed Meter	8-5
Closing Wheel Shield.....	8-2
Coulter Mounted Residue Wheels	8-15
Covering Discs/Single Press Wheel Adjustment	8-2
Drag Closing Attachment.....	8-3
Finger Pickup Seed Meter	8-4
Frame Mounted Coulter	8-12
Granular Chemical Bander Shield	8-17
Granular Chemical Banding Options	8-16
Granular Chemical Hopper And Drive	8-16
Planting Depth	8-1
Pneumatic Down Pressure Package	8-10
Quick Adjustable Down Force Springs	8-8
Residue Wheels (For Use With Frame Mounted Coulter).....	8-13
Row Unit Chain Routing	8-8
Row Unit Extension Brackets.....	8-7
Row Unit Mounted Disc Furrower	8-13
Row Unit Mounted No Till Coulter.....	8-15
Row Unit Mounted Residue Wheel.....	8-13
Seed Meter Cleanout (SDS Seed Delivery System).....	8-7
Seed Meter Drive Release.....	8-7
Spring Tooth Incorporator	8-17
“V” Closing Wheel Adjustment (Rubber And Cast Iron).....	8-1

TABLE OF CONTENTS

LUBRICATION

Bushings	9-3
Drive Chains	9-1
Grease Fittings	9-5
Hitch Slide Assembly (If Applicable)	9-4
Liquid Fertilizer Piston Pump Crankcase Oil Level	9-5
Lubrication Symbols	9-1
Sealed Bearings	9-1
Wheel Bearings	9-4
Wrap Spring Wrench Assembly	9-4

MAINTENANCE

15" Seed Opener Disc Blade/Bearing Assembly	10-11
Brush-Type Seed Meter Maintenance	10-6
Chain Tension Adjustment	10-2
Coulter Mounted Residue Wheels	10-13
Counter Balance Valve Inspection	10-18
Drag Closing Attachment.....	10-9
Electrical Control Console Schematic (Planter Functions)	10-28
Electrical Light Harness Schematics	10-26
Electrical Wiring Diagram For 7-Terminal Light Connector	10-24
Electrical Wiring Harness Schematic (On Tractor).....	10-29
Electrical Wiring Harness Schematics (On Planter)	10-30
Electrical Wiring Schematic (SDS)	10-34
Finger Pickup Seed Meter Cleaning	10-4
Finger Pickup Seed Meter Inspection/Adjustment.....	10-3
Flow Control Valve Inspection (If Applicable).....	10-18
Flow Regulator Valve Inspection.....	10-18
Frame Mounted Coulter	10-12
Gauge Wheel Adjustment.....	10-9
Gauge Wheel Arm Bushing And/Or Seal Replacement	10-10
Gauge Wheel Arm Pivot Spindle Replacement	10-10
Granular Chemical Attachment.....	10-14
Hydraulic System Schematics	10-36
Hydraulic Schematics (SDS)	10-35
Lift/Ground Drive Wheel Bearing Lubrication Or Replacement	10-21
Mounting Bolts And Hardware	10-1
Piston Pump Storage.....	10-23
Point Row Clutches.....	10-16
Preparation For Storage	10-24
Pressure Relief Valve Inspection (Located At Each Row Marker)	10-18
Pressure Relief Valve Inspection (Located On Center Of Rear H-Frame).....	10-18
Residue Wheels (For Use With Frame Mounted Coulter).....	10-12
Row Marker Bearing Lubrication Or Replacement	10-21
Row Unit Mounted Disc Furrower.....	10-13
Row Unit Mounted No Till Coulter.....	10-13
Row Unit Mounted Residue Wheel.....	10-13
Seed Tube Guard/Inner Scraper	10-12
Solenoid Valve Inspection.....	10-18
Spring Tooth Incorporator	10-14
Tire Pressure	10-2

(Continued On Following Page)

TABLE OF CONTENTS

MAINTENANCE (Continued)

Torque Values Chart 10-1

Transport Wheel Bearing Replacement 10-22

Troubleshooting

Brush-Type Seed Meter Troubleshooting 10-8

Closing Wheel Troubleshooting 10-9

Finger Pickup Seed Meter Troubleshooting 10-5

KPM III Electronic Seed Monitor Troubleshooting 10-15

Lift/Fold Circuit Troubleshooting 10-19

Piston Pump Troubleshooting 10-23

Point Row Clutch Troubleshooting 10-17

Row Marker Circuit Troubleshooting 10-20

Solenoid Valve Troubleshooting 10-19

PARTS LIST INDEX P1


PARTS SECTION NUMERICAL INDEX P137

TO THE OWNER

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

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

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

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

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

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



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



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



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



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

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

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

WARRANTY

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

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

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

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

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

INTRODUCTION

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

GENERAL INFORMATION

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

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

D03220615



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

INTRODUCTION

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

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

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

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

TRANSPORT TIRES - 445-50R 22.5R Radial Load Range H (Four On 3800 SDS 36 Row 30")

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

HYDRAULICS - Three SCV For Independent Operation Of Field Lift, Fold Functions And Optional Row Marker Functions With 12 VDC Control Console
- Master/Slave Lift
- Four 4" x 8" Master Cylinders, Four 3 3/4" x 8" Slave Cylinders, Four 3 1/2" x 8" Slave Cylinders And Four 2 1/2" x 8" Lift Assist Cylinders
- Transport Lift/Slide - One Slide Cylinder Under Tongue, Two Transport Axle Cylinders
- Wing Fold - Four Cylinders
- Latch Cylinders - One Slide Latch Cylinder And One Tongue Latch Cylinder

HITCH - Category 3N, 3 Or 4N

MACHINE OPTIONS

- Electronic Seed Monitor
 - KPM III With Magnetic Distance Sensor Or Radar Distance Sensor
 - Planter Monitor Module (PMM)
- Liquid Fertilizer Package
- Piston Pump Mount And Drive Package
- Notched Single Disc Fertilizer Openers
- Low Rate Check Valve Packages
- Rear Trailer Hitch

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 SDS DIMENSIONS/WEIGHTS

PLANTER SIZE	36 Row 30"
PLANTING WIDTH	92' 6"
PLANTING LENGTH	29' 9"
TANK HEIGHT (PLANTING POSITION ONLY)	9'4"
TRANSPORT WIDTH (See NOTE Below)	14' 7"
TRANSPORT LENGTH	56' 0"
TRANSPORT HEIGHT (With Markers)	13' 6"
WEIGHT* (Base Machine)	37,862 Lbs.

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


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


SPECIFICATIONS

SAFETY PRECAUTIONS


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


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


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


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


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


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


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


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

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


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


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

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


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


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

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

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

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

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

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

SAFETY PRECAUTIONS



Limit towing speed to 15 MPH.



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



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



Allow for unit length when making turns.



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



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



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



Avoid sudden uphill turns on steep slopes.



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



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



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



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



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



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

SAFETY WARNING SIGNS

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

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

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

D032404100



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

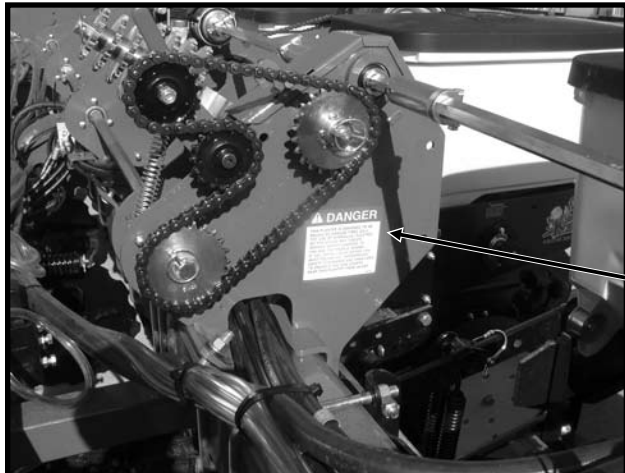
D032404114



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

SAFETY WARNING SIGNS

D081905105

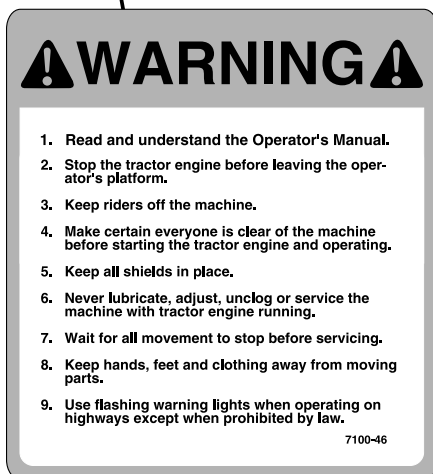


Part No. G7100-89 (Qty. 2 - Located At End Seed Rate Transmissions On Both Sides Of Planter)

D11300404



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



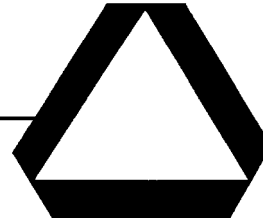
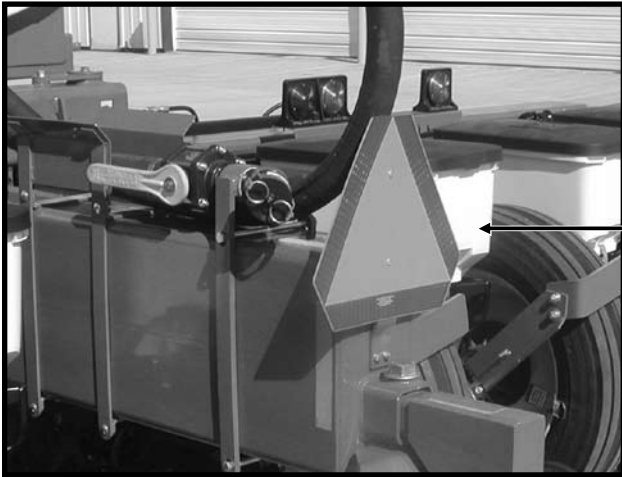
Part No. G7100-46 (Qty. 1 - Located On Planter Hitch)



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

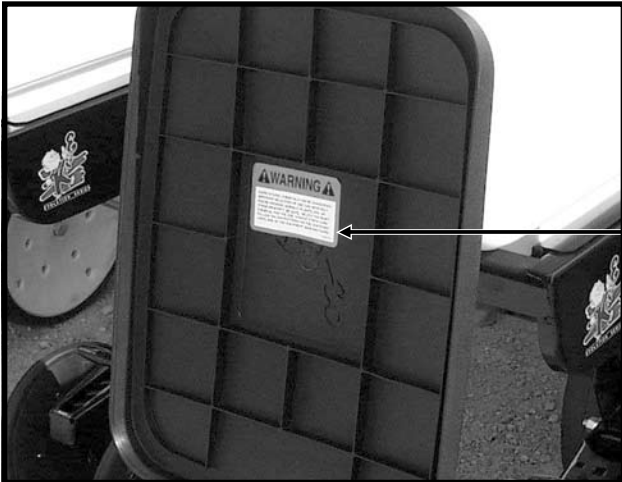
SAFETY WARNING SIGNS

D081905112



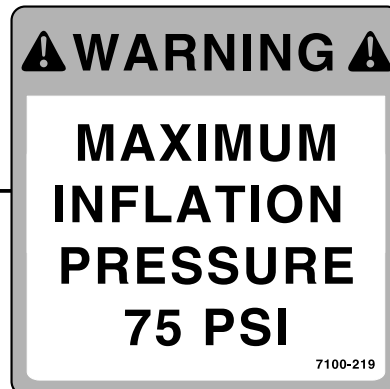
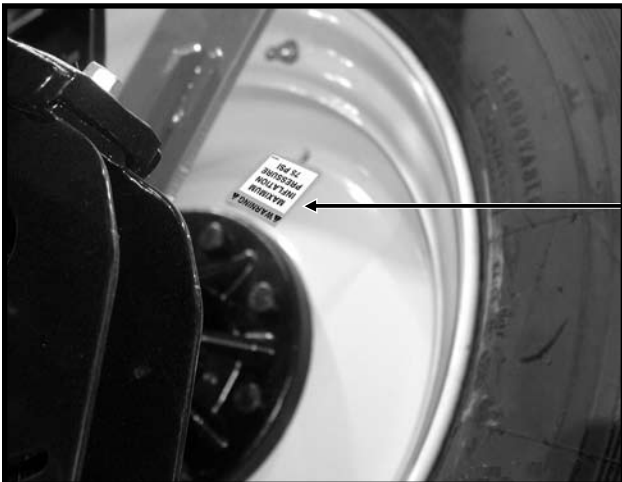
Part No. GD2199 (Qty. 1 - Located On Rear Center Section Of Planter)

D06039901



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

D040204101

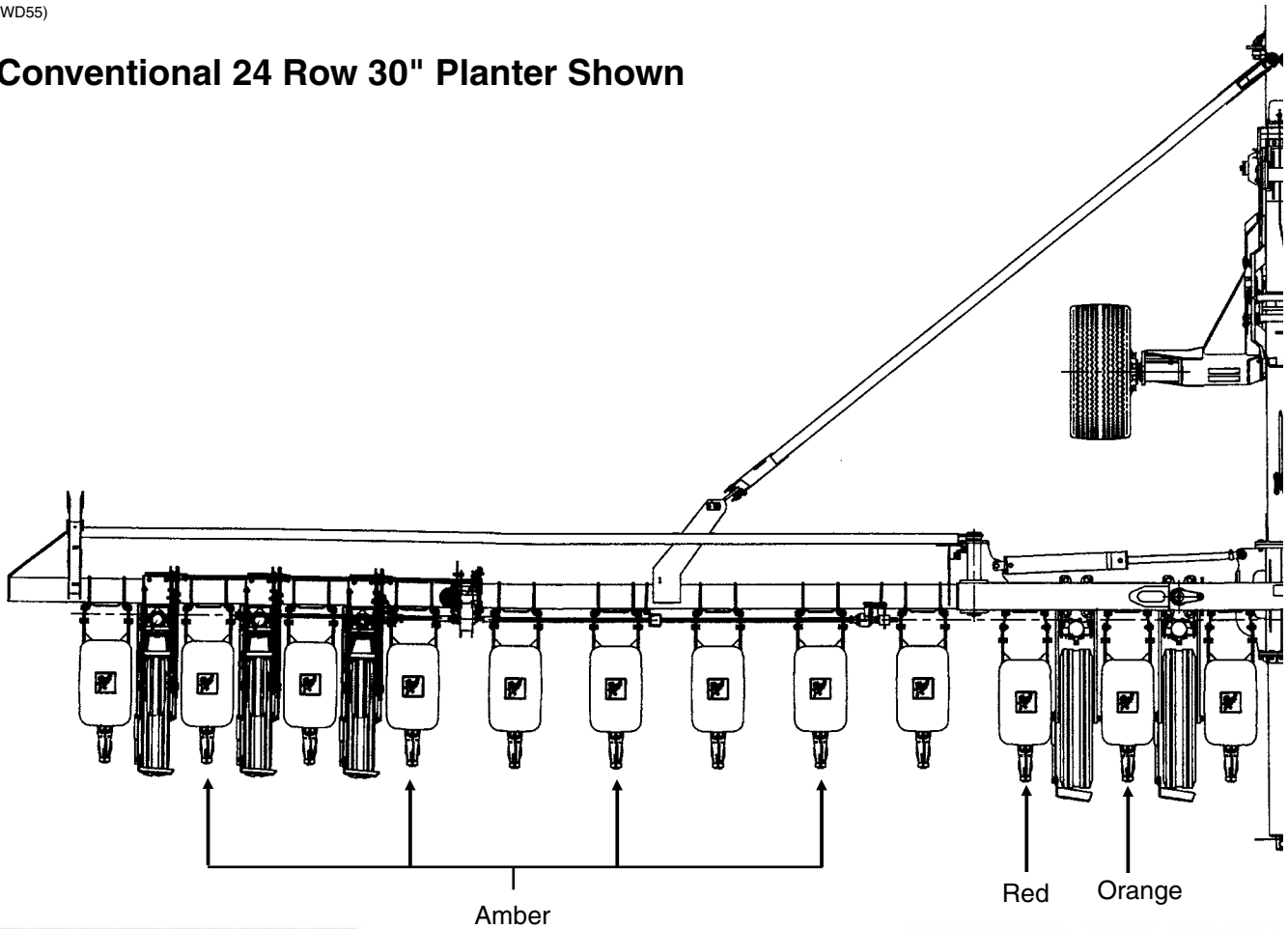


Part No. G7100-219 (Qty. 4 - One Per 41 x 11R22.5" Center Section Lift/Gauge Tire)

SAFETY WARNING SIGNS

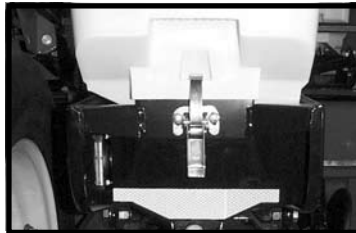
(FWD55)

Conventional 24 Row 30" Planter Shown



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

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)

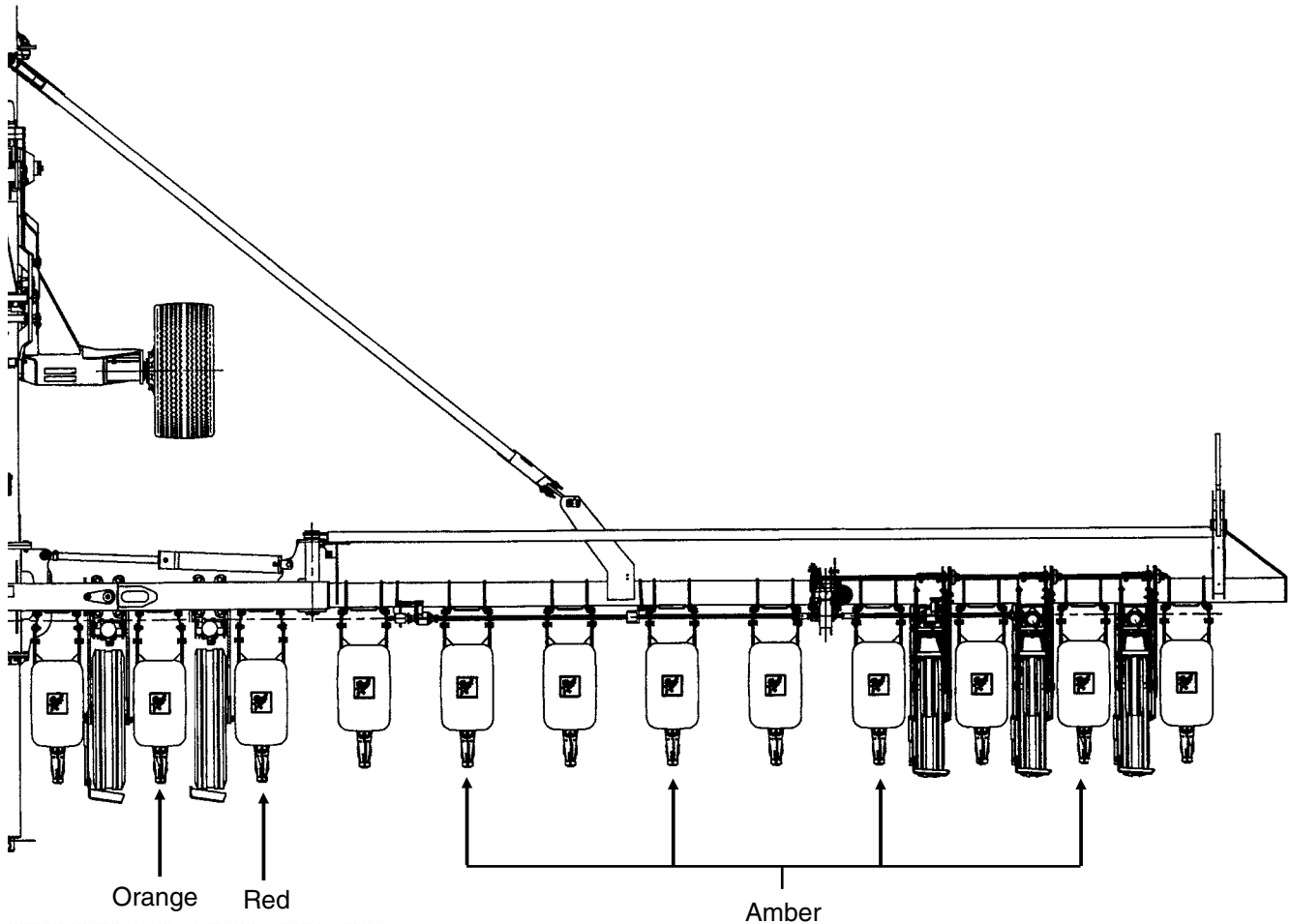
D062300102



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

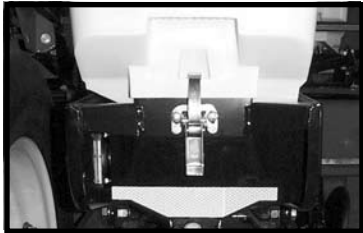
NOTE: Fourteen Decals Used On 36 Row 30"

SAFETY WARNING SIGNS



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

D060800114

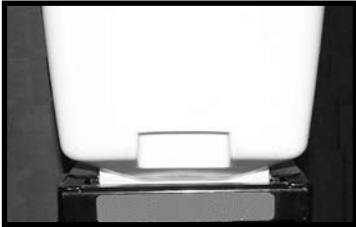


Part No. G7100-262 Amber Reflective Decal (Located On The Hopper Support On Every Other Row Unit Beginning On The 2nd Row Unit In On The R.H. End Of The Planter - Side-Facing In Transport Position)
(Standard) (If Applicable)



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

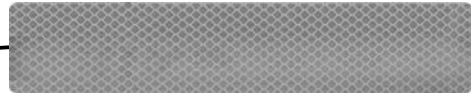
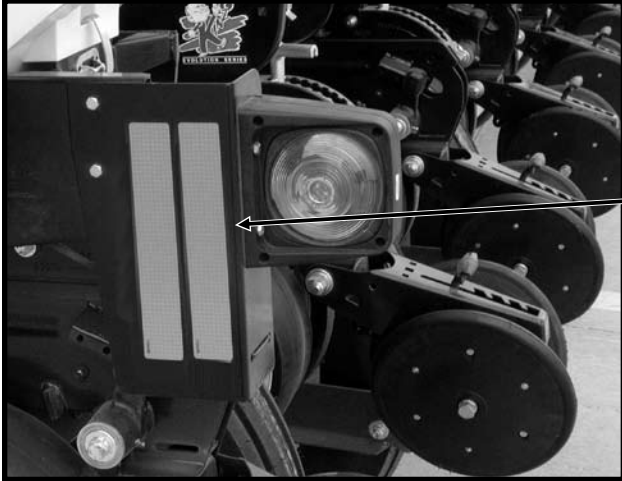
D062300102



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

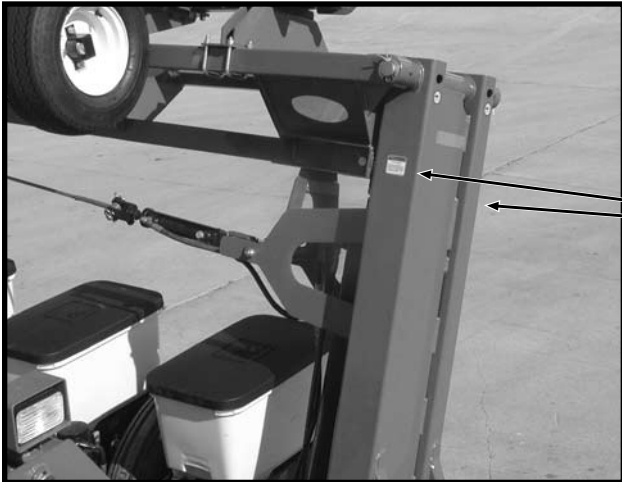
SAFETY WARNING SIGNS

D040604130a



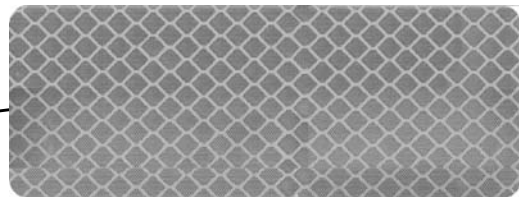
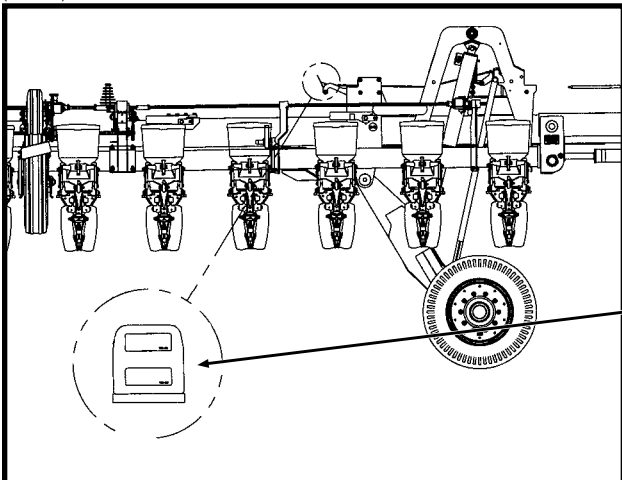
Part No. G7100-259 Amber Reflective Decal
(Qty. 2 - Located On Each End Row Unit - Forward-Facing In Transport Position)

D081905111



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

(FWD72)



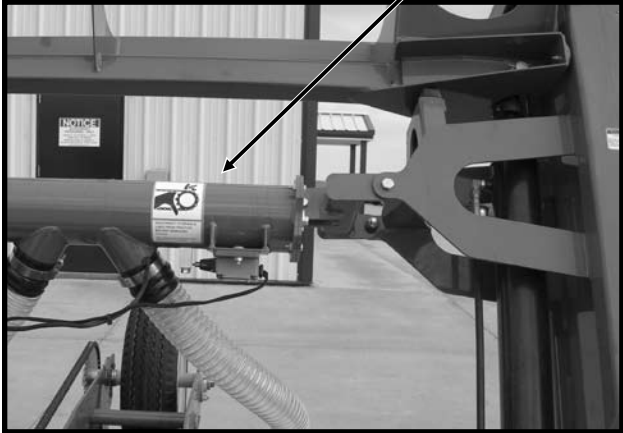
Part No. G7100-322 (Qty. 2 - Located On Slide Assembly Flap)

SAFETY WARNING SIGNS

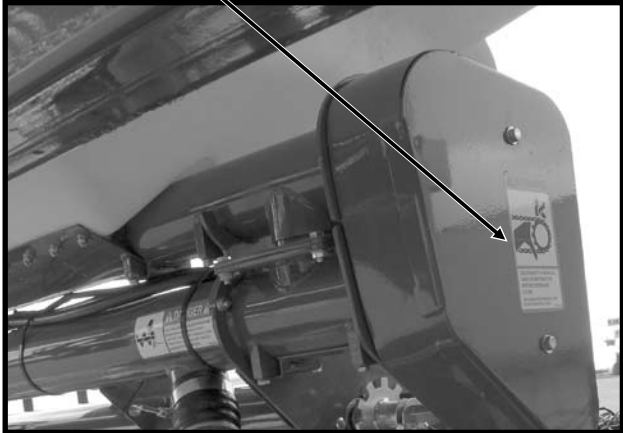


Part No. G7100-172 (Qty. 4)
(SDS Planters Only)

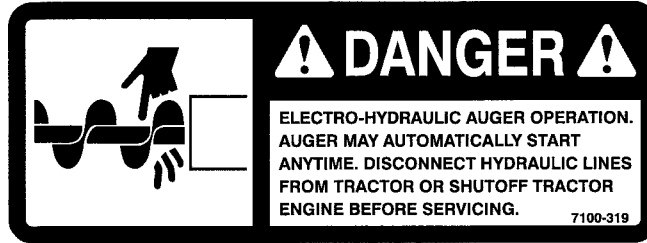
D03060601



D03060606

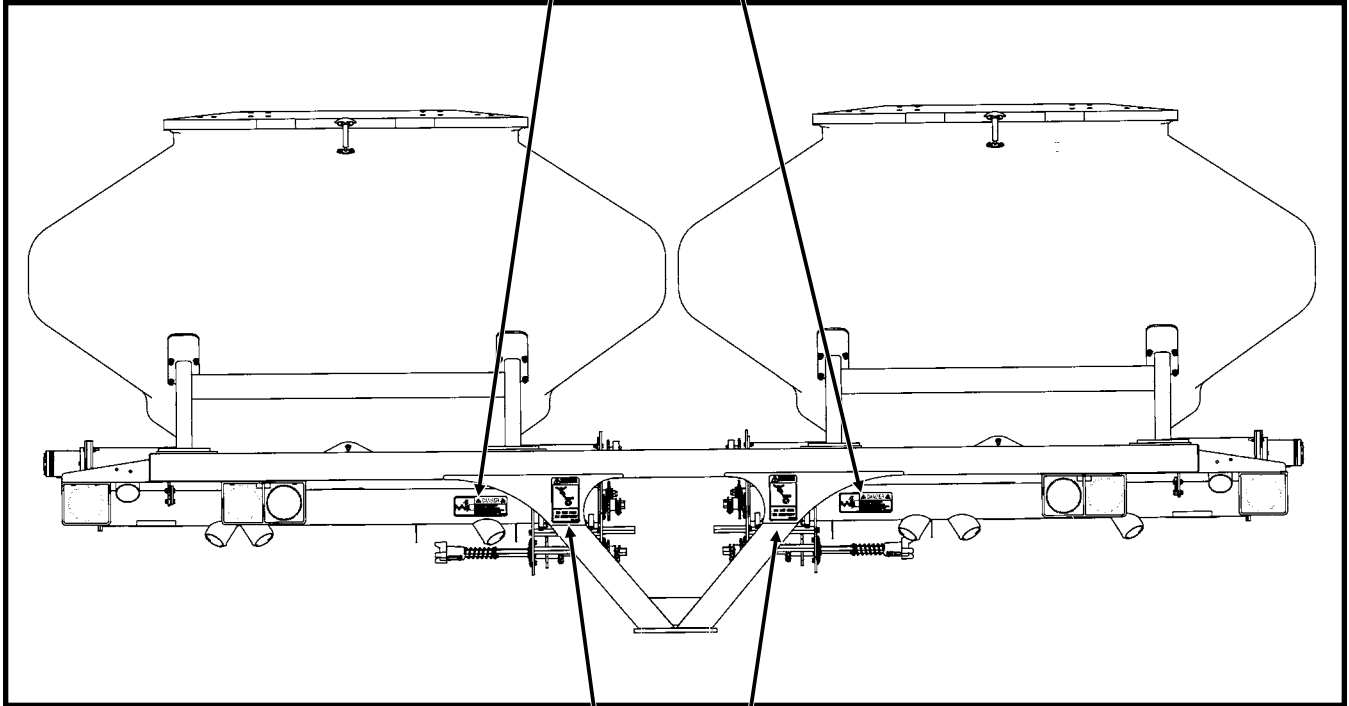


SAFETY WARNING SIGNS



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

(FWD104)



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

MACHINE OPERATION

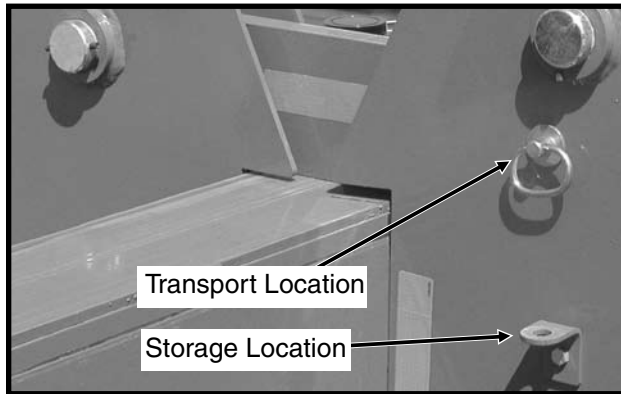
The following information is general in nature and was written to aid the operator in preparation of the tractor and planter for use, and to provide general operating procedures. The operator's experience, familiarity with the machine and the following information should combine for efficient planter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

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

WING LATCH HOOK SAFETY PIN(S)

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

D081905131



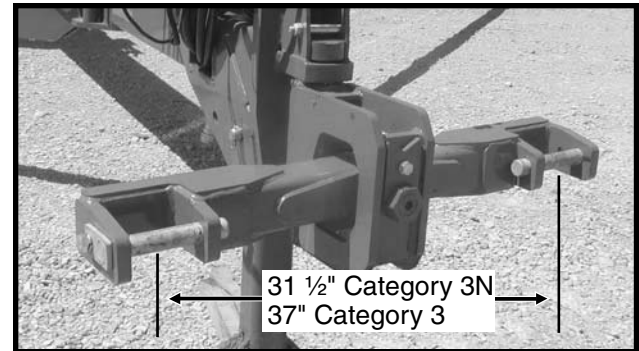
For field operation remove the wing latch hook safety pin(s) and store in the storage location(s) provided.

INITIAL PREPARATION OF THE PLANTER

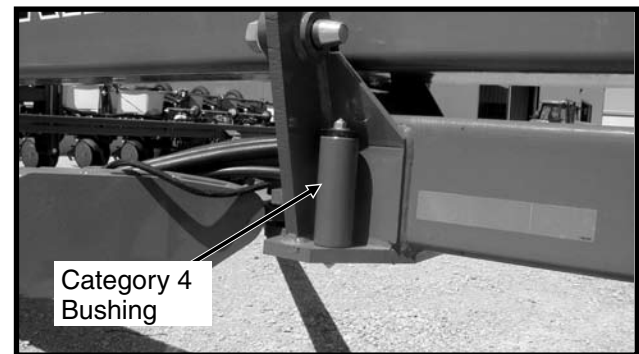
Lubricate the planter and row units per the lubrication information in this manual. Make sure all tires have been properly inflated. See "Tire Pressure". Check all drive chains for proper tension, alignment and lubrication.

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

D081605102



D081605102-3



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

MACHINE OPERATION

TRACTOR REQUIREMENTS

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

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

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

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



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

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.

D10060627



SDS Control Console (If Applicable)

MACHINE OPERATION

2. Set tractor rear wheel spacing at 60" or double the planter row spacing. Dual tires should center on 120". Check tractor operator's manual for correct front and rear tire pressures. (If Applicable)
3. Adjust lower lift links on tractor so planter will lift level from side to side and raise high enough for planter transport clearance. Set the sway blocks on the tractor in position to prevent side sway.
4. Back tractor up to planter and connect planter.
5. Connect hydraulic hoses to tractor ports in a sequence which is both familiar and comfortable to the operator.

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

The hydraulic hoses are color coded as follows:

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

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

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

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



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

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

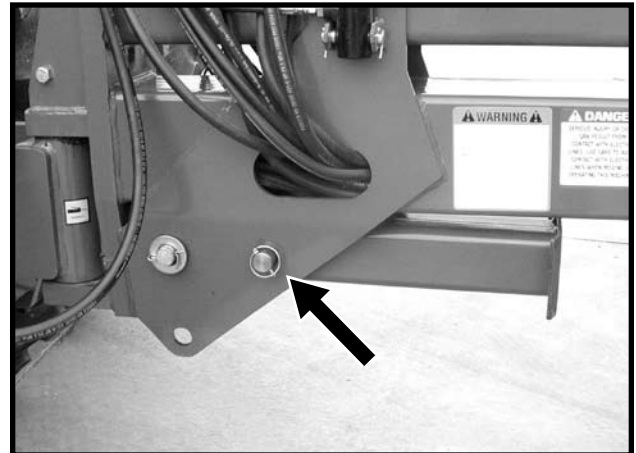
6. Connect cable on planter to planter control console cable on tractor. Connect cable on planter to SDS control console (If Applicable) on tractor. Connect ASAE Standards 7 terminal connector for safety/warning lights on planter to ASAE Standards receptacle on tractor. If your tractor is not equipped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

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

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D040604100



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 toolbars are level and at correct operating heights. See "Leveling The Planter".

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

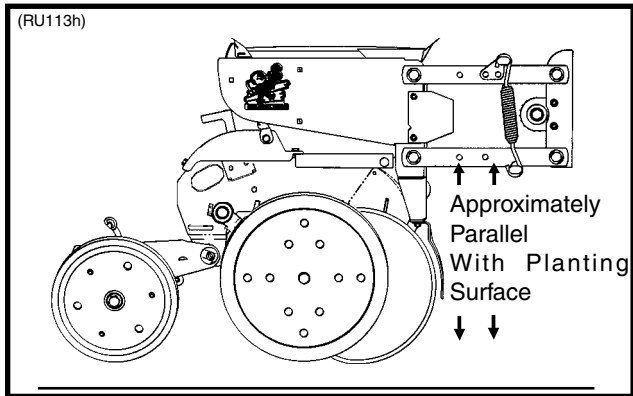
MACHINE OPERATION

LEVELING THE PLANTER

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

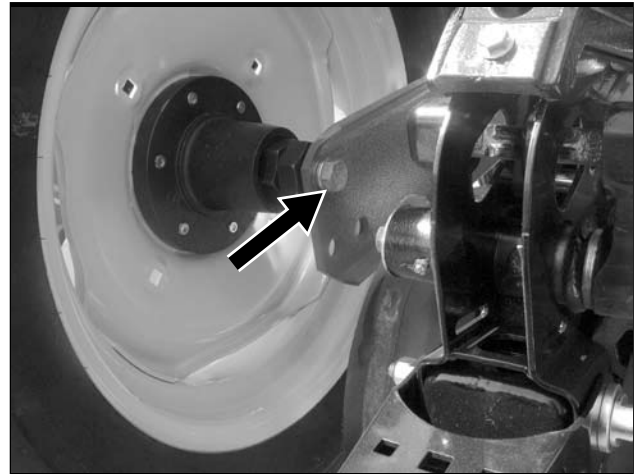
It is important for the planter to operate level laterally. Tire pressure must be maintained at pressures specified. See "Tire Pressure".

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



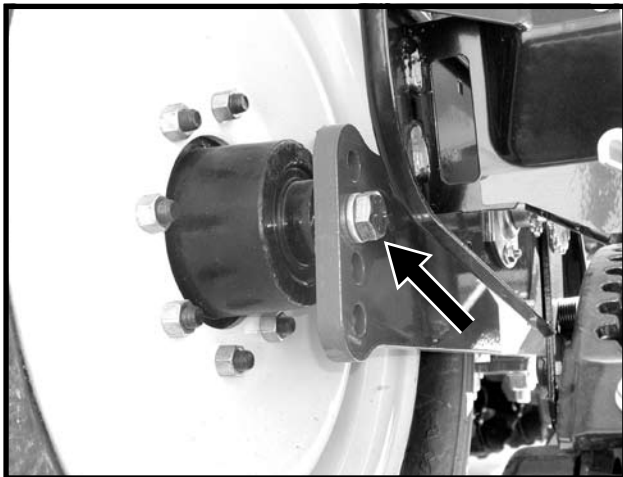
When the planter has been fully loaded with seed, granular chemicals, etc.; a field check should be made to be sure the wings are level with the center frame. If the wings are not level with the center frame, the lift/gauge wheels can be raised or lowered in the wheel arms to increase or decrease planter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

D033104202



Wing Lift/Gauge Wheel - Initial Setting Shown

D040604201

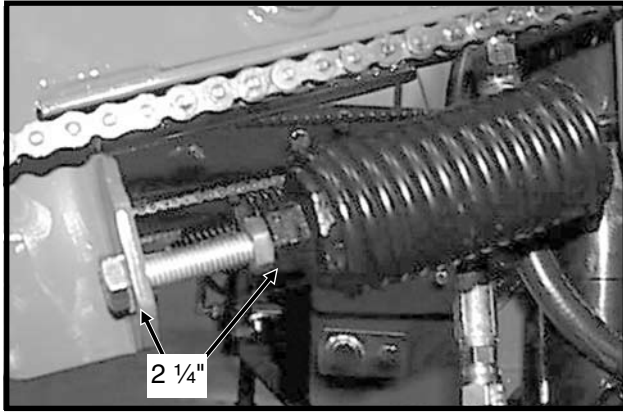


Center Section Lift/Gauge Wheel (Rock Shaft Axle) - Initial Setting Shown

MACHINE OPERATION

CONTACT WHEEL SPRING ADJUSTMENT

D102704100

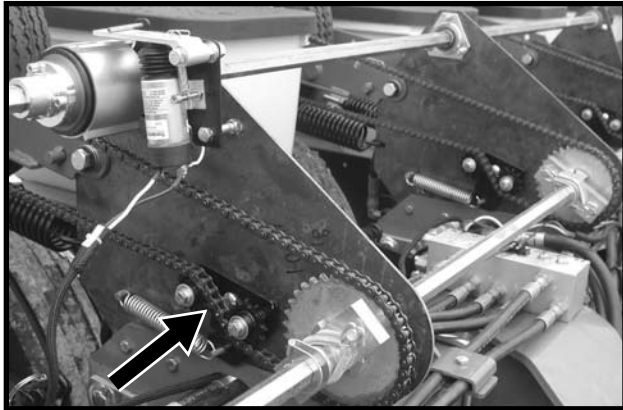


There are two down pressure springs on each contact drive wheel. The down pressure is factory preset and should need no further adjustment.

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

CONTACT WHEEL IDLER ADJUSTMENT

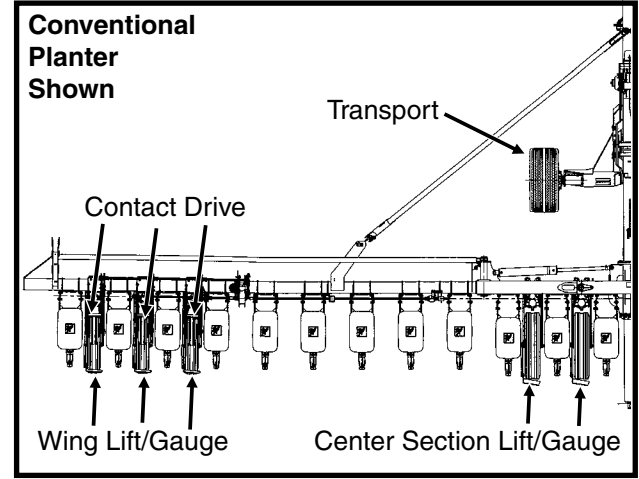
D08120523



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

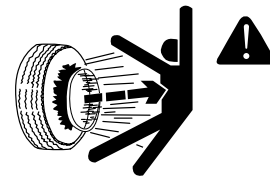
TIRE PRESSURE

(FWD55)



Tire pressure should be checked regularly and maintained as follows:

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



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

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

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

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

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

MACHINE OPERATION

SEED RATE TRANSMISSION ADJUSTMENT

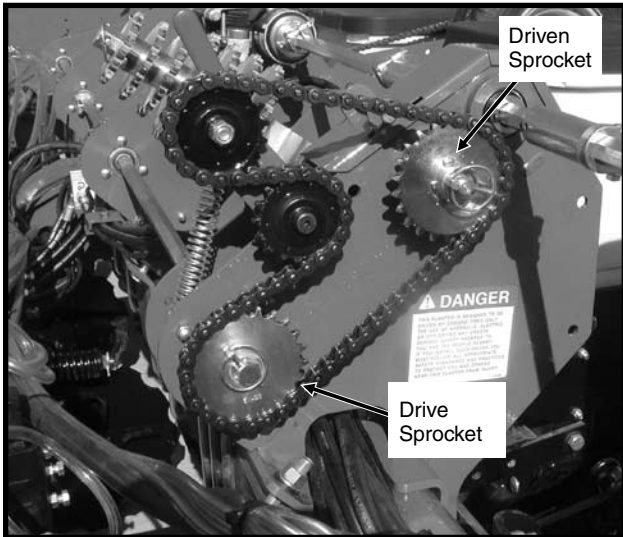
Planting population rate changes are made at the two transmission assemblies. The seed rate transmissions are designed to allow simple, rapid changes of sprockets to obtain the desired planting population. By removing the lynch pins on the hexagon shafts, sprockets can be interchanged with those from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

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

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

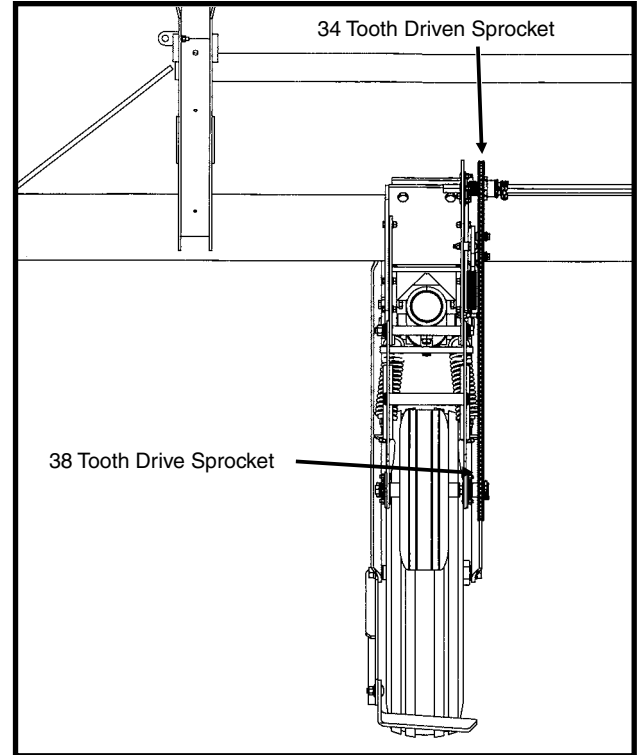
Seed rate transmissions should be set equally.

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CONTACT WHEEL SPROCKETS

(FWD56)



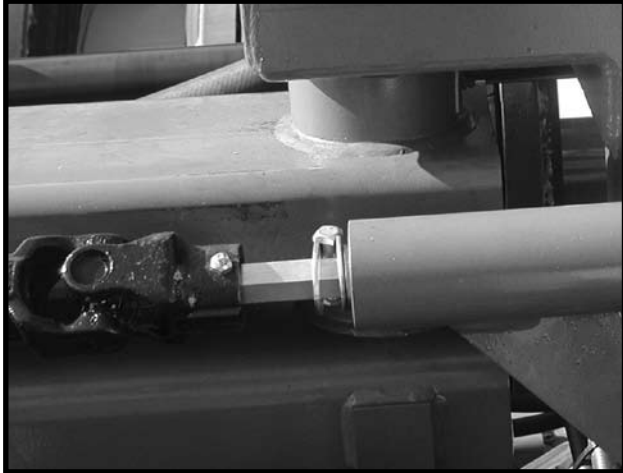
Seed planting rate charts are based on a 38 tooth contact drive wheel sprocket and a 34 tooth contact wheel driven sprocket.

MACHINE OPERATION

U-JOINT SHAFT ASSEMBLIES

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

D081905101



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

D020206109



36 Row 30" Planter Shown

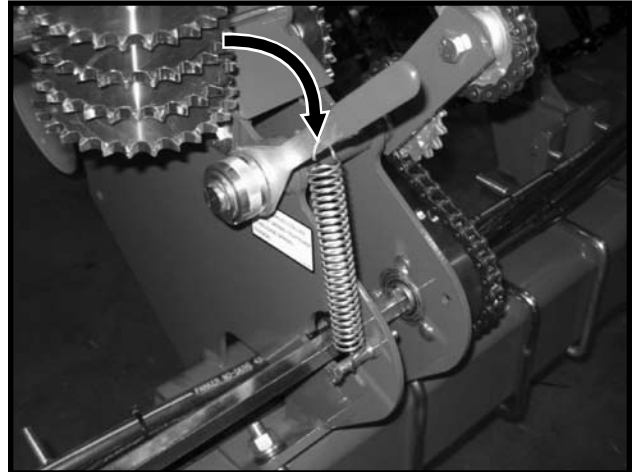
See "Grease Fittings" in the Lubrication Section of this manual.

WRAP SPRING WRENCH OPERATION

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

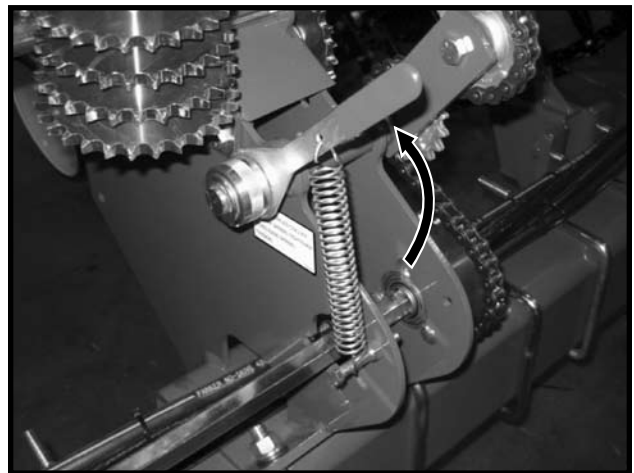
To release chain tension, rotate the knurled collar on the wrap spring wrench while rotating the chain idler away from the chain.

D021406101



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

D021406102



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

MACHINE OPERATION

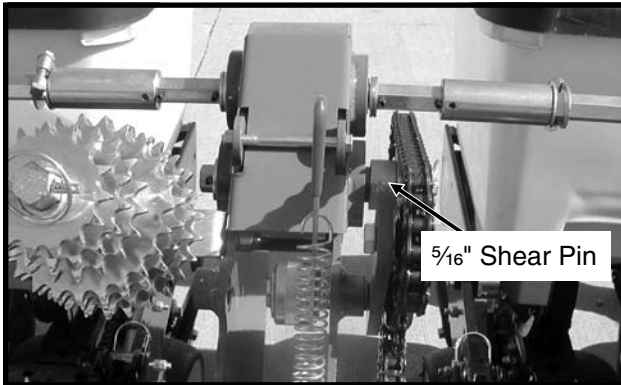
SHEAR PROTECTION

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

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

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

D081905108



Seed Rate Transmission Shaft

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

D022106202



MACHINE OPERATION

HYDRAULIC/ELECTRIC OPERATION

D10060624



Planter Control Console

D10060627



SDS Control Console

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

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

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

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

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

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

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

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

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

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

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

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

MACHINE OPERATION

TRANSPORT TO FIELD SEQUENCE

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

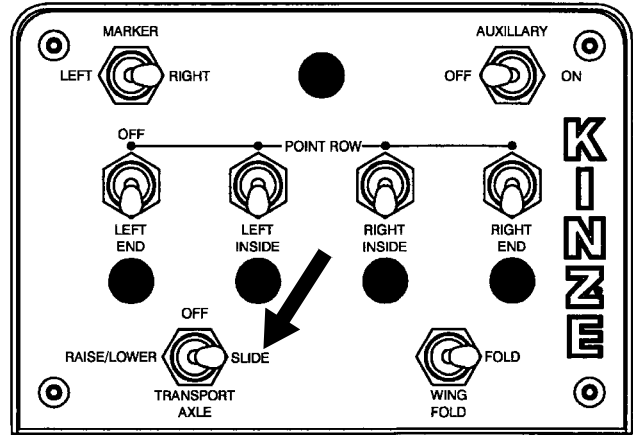
SUMMARIZED TRANSPORT TO FIELD SEQUENCE

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

2. Hold the control console switch labeled TRANSPORT AXLE in **SLIDE** and operate the fold/unfold functions hydraulic control to move the transport axle to the rear position.

(FWD30bb)

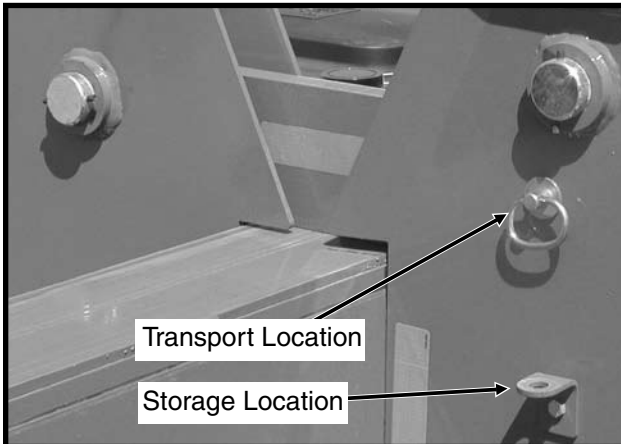


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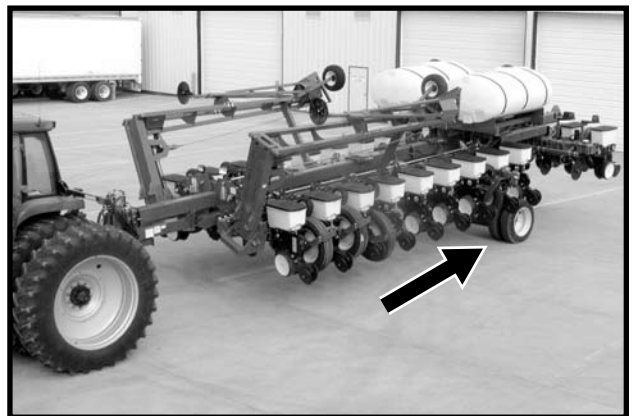


1. Remove wing latch hook safety pin(s) from transport positions and place in storage locations provided.

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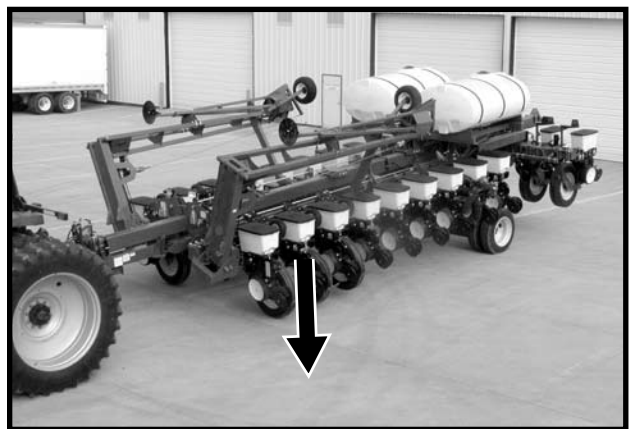


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3. Operate the field raise function hydraulic control to lower the field tires/wheels.

d040604106

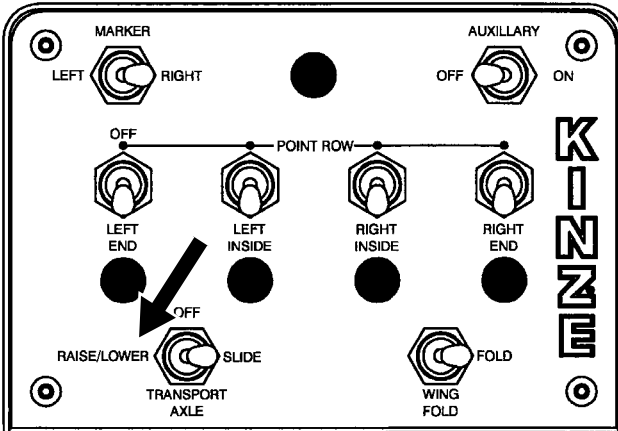


MACHINE OPERATION

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

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

(FWD30bb)



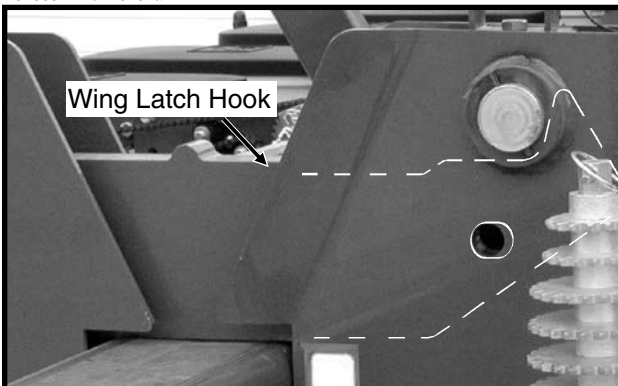
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5. Partially lower the tractor 3 point hitch to release the wing latch hooks.

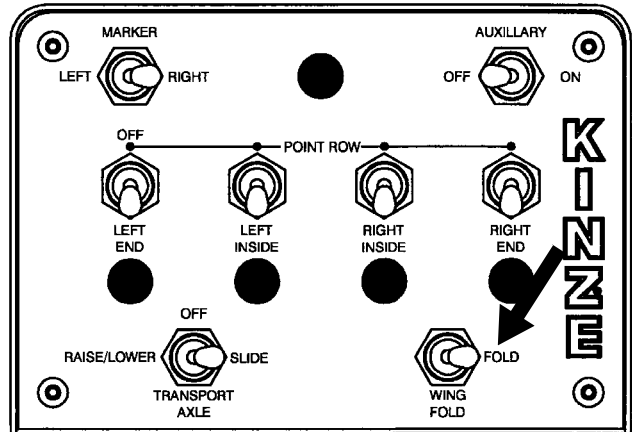
IMPORTANT: Only lower 3 point hitch until wing latch hooks release. DO NOT lower hitch further or damage will occur at the rear of the wing folding links.

D040604144/A10104a



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

(FWD30bb)



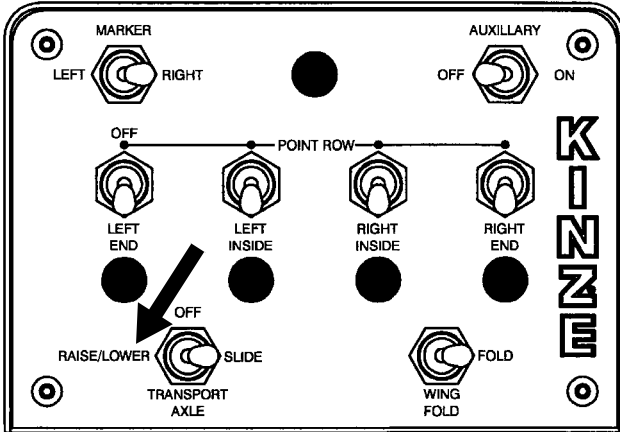
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MACHINE OPERATION

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

(FWD30bb)



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

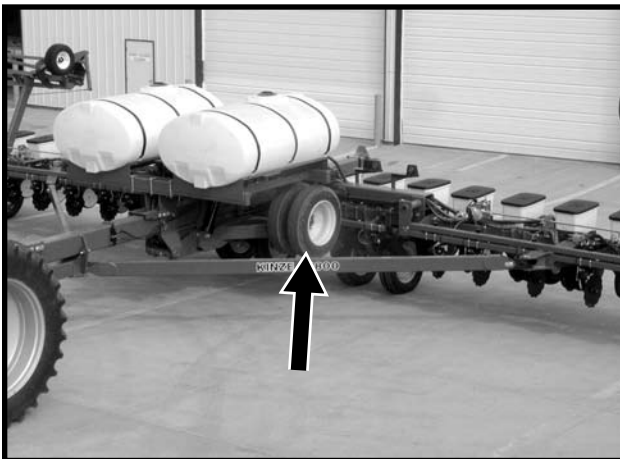
FIELD OPERATION

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

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

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

D040604111

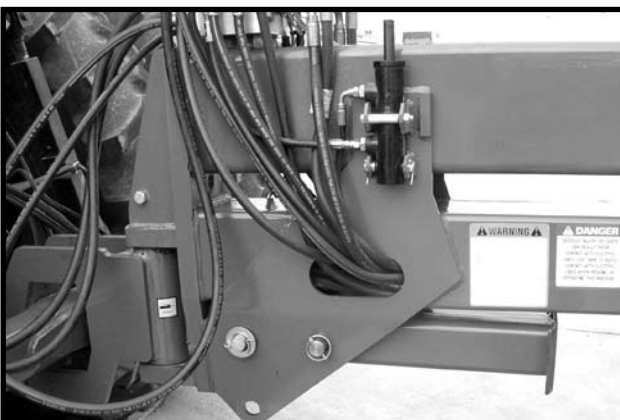


D040604111



- Lower the 3 point to level hitch position.

D040604100



MACHINE OPERATION

FIELD TO TRANSPORT SEQUENCE

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

SUMMARIZED FIELD TO TRANSPORT SEQUENCE

- Raise planter to field turn height.
- Lower transport axle to the ground.
- Fold planter to transport position.
- Raise front of planter using tractor 3 point hitch.
- Raise rear of planter using transport axle.
- Slide transport axle forward into transport position.
- 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.

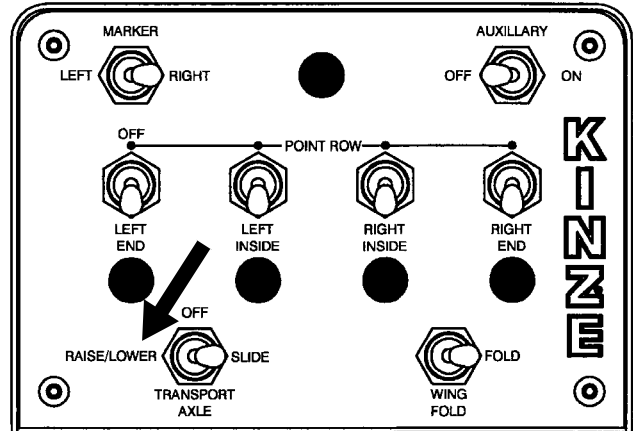
D040604111



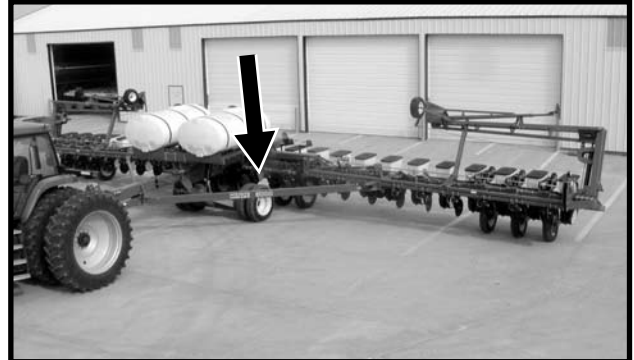
2. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to lower the transport axle wheels until they touch the ground.

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)



D040604109



MACHINE OPERATION

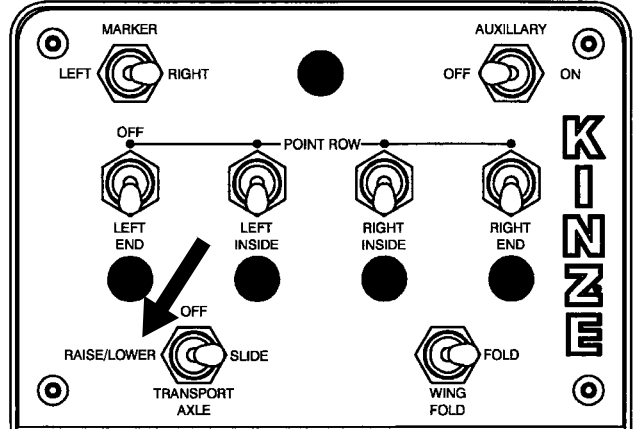
3. Hold the control console switch labeled WING FOLD in **FOLD** and operate the fold/unfold functions hydraulic control to fold the planter to transport position. It is necessary to **slowly** idle the tractor forward as you fold the planter, allowing the center axle tires to remain stationary and the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

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

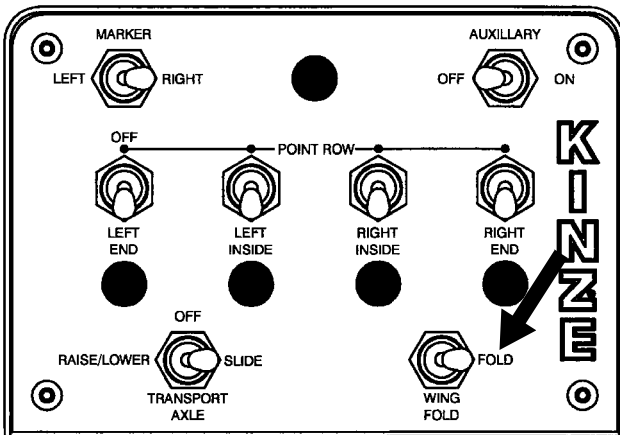
NOTE: In soft soil conditions the wings may not fold completely into position against the tongue. If this occurs, retract the wing wheels slightly to allow the wings to fold into latching position.

4. Raise the front of the planter using the tractor 3 point hitch.
5. Hold the control console switch labeled TRANSPORT AXLE in **RAISE/LOWER** and operate the fold/unfold functions hydraulic control to fully lower the transport axle tires, raising the rear of the planters.

(FWD30bb)



(FWD30bb)



D040604107



D040604108

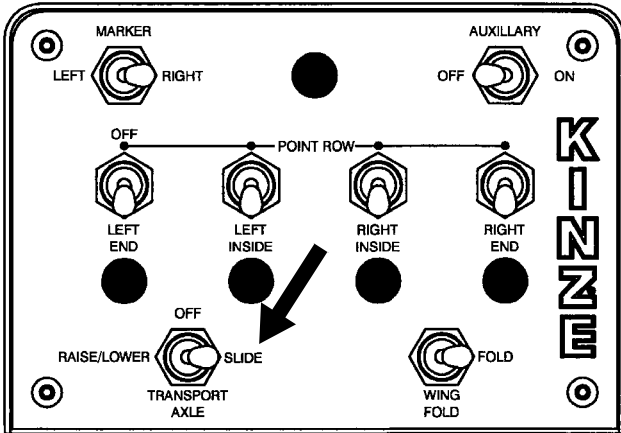


NOTE: The transport axle cylinder circuit is equipped with counter balance valves which hydraulically lock the cylinders. The cylinders will not extend or retract until hydraulic pressure/flow is applied.

MACHINE OPERATION

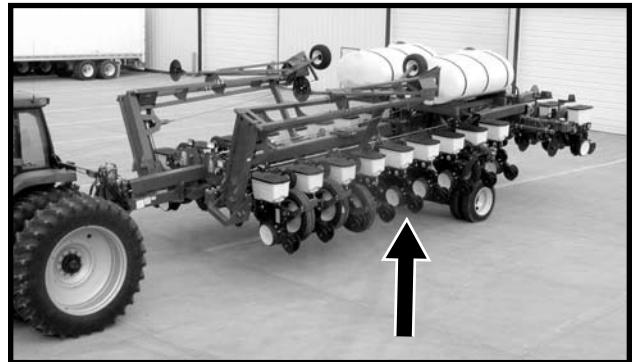
6. Hold the control console switch labeled **TRANSPORT AXLE** in **SLIDE** and operate the fold/unfold functions hydraulic control to slide the transport axle fully forward into transport position.

(FWD30bb)



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

D040604102

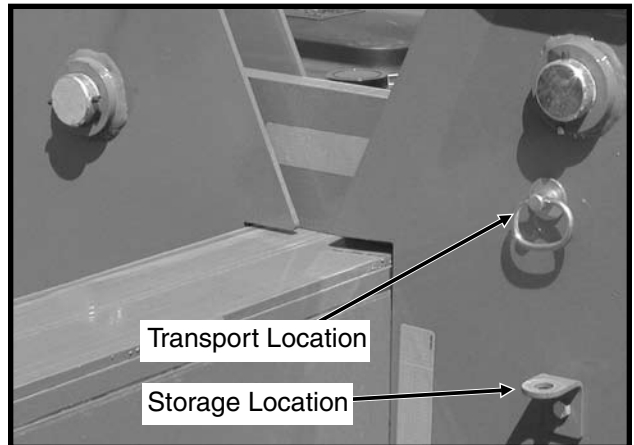


8. Remove wing latch hook safety pin(s) from their storage location(s) and install in locked position(s).

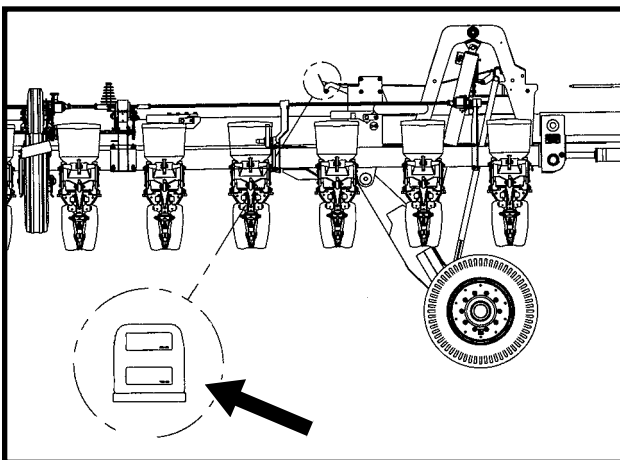
D040604103



D081905131



(FWD72)

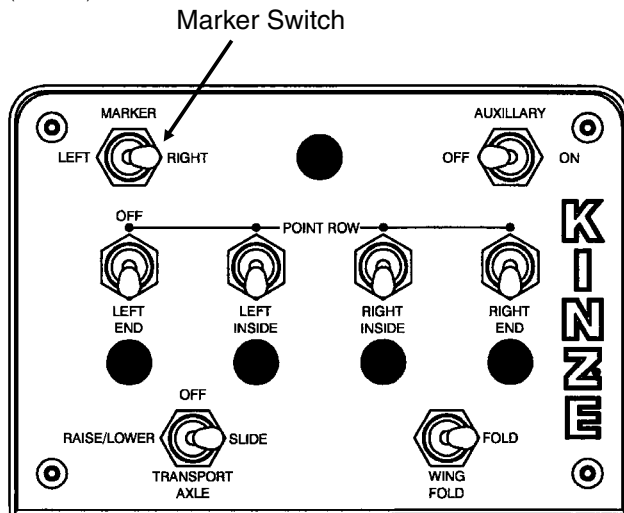


IMPORTANT: Indicator flap will be in raised position when the transport axle is fully forward into the transport position.

MACHINE OPERATION

ROW MARKER OPERATION

(FWD30bb)



Three Position Selector Switch On Control Console

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

See “Row Marker Speed Adjustment”.

1. On the control console, select the row marker you want to lower.
2. Operate hydraulic control to lower marker.
3. If opposite marker is to be used next, change switch to 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.

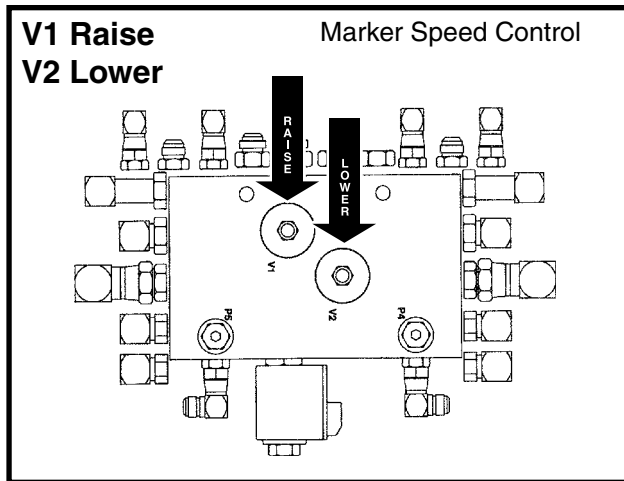
IMPORTANT: Row markers must be operated with hydraulic circuit in float position to prevent damage to marker assemblies.

MACHINE OPERATION

ROW MARKER SPEED ADJUSTMENT

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

(FWD161)



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

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

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

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

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

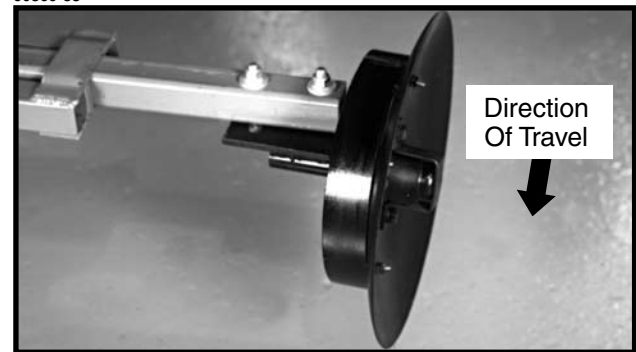
ROW MARKER LENGTH ADJUSTMENT

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

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

24 Rows x 30" Spacing = 720" Marker Dimension

60569-53



Row Marker Disc Blade Shown With Depth Band.

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

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

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

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

MACHINE OPERATION

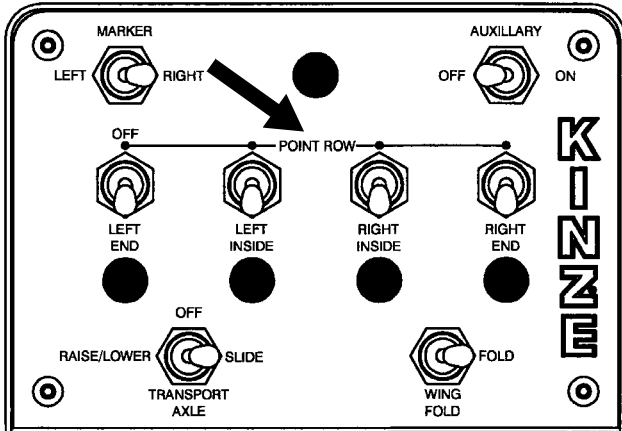
POINT ROW CLUTCHES

D081905107



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

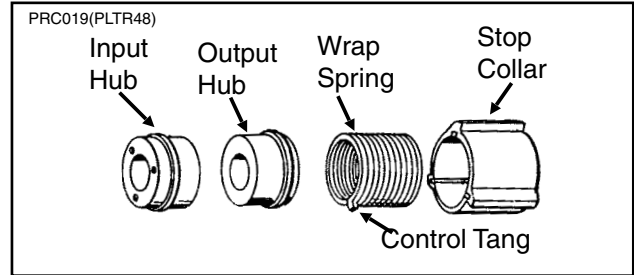
(FWD30bb)



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

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

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



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

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

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

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

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

INTRODUCTION

MTR66



The KPM III electronic seed monitor system consists of

- A KPM III console, which is mounted on the tractor
- Seed tubes with sensors, one of which is installed in each planter row unit
- A magnetic distance sensor, which is installed on the planter, or a radar distance sensor, which is installed on the tractor
- Shaft rotation sensors (if applicable), which are installed on the planter drill shafts
- Vacuum, pneumatic down pressure, SDS and hydraulic level/temperature (If applicable), which are installed on the planter.
- Planter harnesses (junction Y-harness and/or extension harness where applicable), to which the individual seed tube sensors connect. The primary harness, which connects the monitor console to the planter harness, is hard-wired into the safety/warning light harness or control console harness included as standard equipment with the planter.

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

The monitor system is powered by the tractor battery. It requires 12 volts DC.

The console receives information from each of the sensors and displays this information.

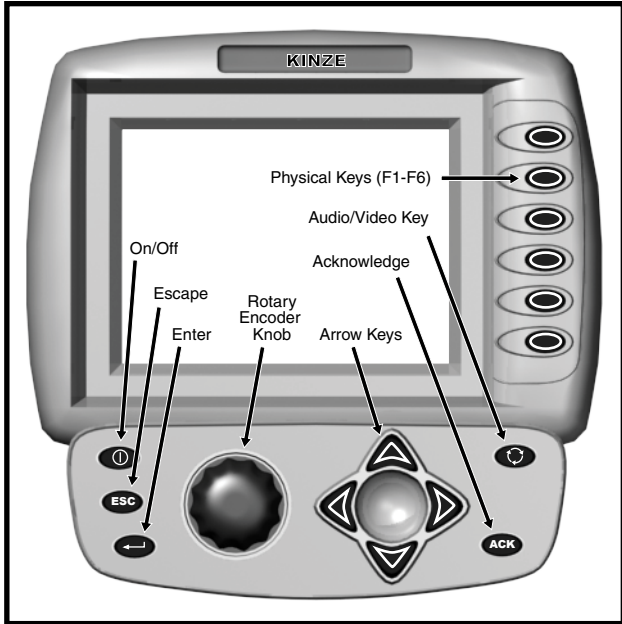
The KPM III console uses a single backlit Liquid Crystal Display (LCD) to show; the number of monitored rows, the relative seed rate for each row (using bargraph displays) and displays various alarm and warning messages when an alarm condition exists. A continuous audible alarm will sound upon system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

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

Monitor Key Functions	6-20
Changing Volume, Contrast And Backlighting	6-21
Configuring Planter Monitor	6-22
Programming Interplant® Condition, Row Spacing And Units (Metric Or English)	6-25
Seed Meter Settings	6-26
Programming Row Unit Alarms Levels	6-28
Data Logging	6-29
Adding Interplant® Rows (If Rear Rows Have Previously Been Programmed)	6-31
Adding Even-Row Package (If Front Rows Have Previously Been Programmed)	6-33
Reprogramming Speed Sensor	6-34
Programming/Connecting Seed Tubes, Shaft Rotation Sensors And/Or Radar/Magnetic Distance Sensors	6-36
Speed Sensor Calibration/Programming	6-38
Acre Count Mode	6-41
Enabling/Disabling Interplant® Rows	6-43
Test Mode	6-44
Warnings And Alarms	6-49
Field Operation	6-53
Area Management	6-54
Area Counters	6-57
Clearing Field Area	6-58
Replacing Faulty Sensor(s)	6-59

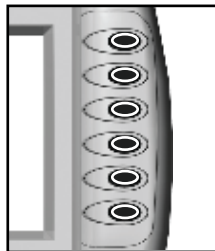
MONITOR KEY FUNCTIONS

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



PHYSICAL KEYS

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



ON/OFF KEY

- Powers the unit on and off.



ESC KEY

- Used as the CANCEL (escape) key.



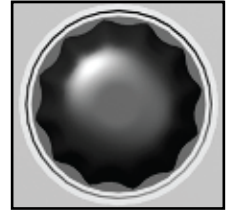
ENTER KEY

- Confirms or accepts the highlighted selection.



ROTARY ENCODER KNOB

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



AV (AUDIO/VIDEO) KEY

- Set alarm volume.
- Adjust the contrast.
- Adjust backlighting of the LCD display. Can be used at any time.



ACK (ACKNOWLEDGE) KEY

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

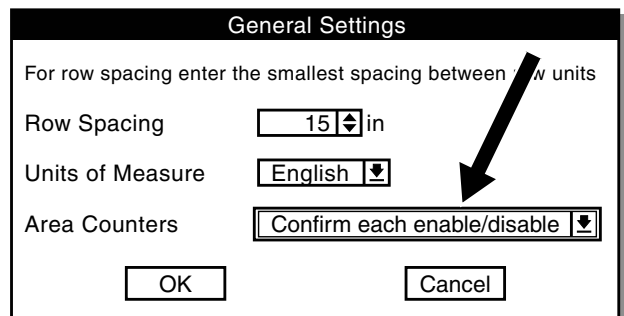


ARROW KEYS

- UP arrow key is used to move up.
- DOWN arrow key is used to move down.
- LEFT arrow key is used to move to the left.
- RIGHT arrow key is used to move to the right.



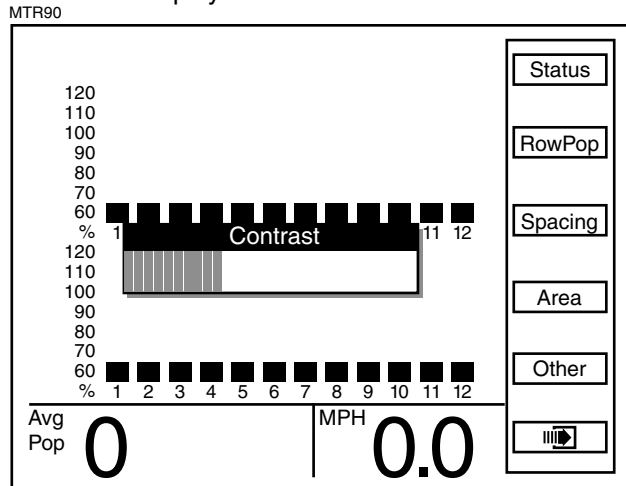
NOTE: Within the LCD, the black box around the smaller box as shown below indicates which field is selected/highlighted. Turning the rotary encoder knob or pressing the UP or DOWN arrow keys moves the black box. When the black box is positioned on a programmable item, such as Shaft Sensors, Speed Sensor,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



CHANGING VOLUME, CONTRAST AND BACKLIGHTING WITH THE AV KEY

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

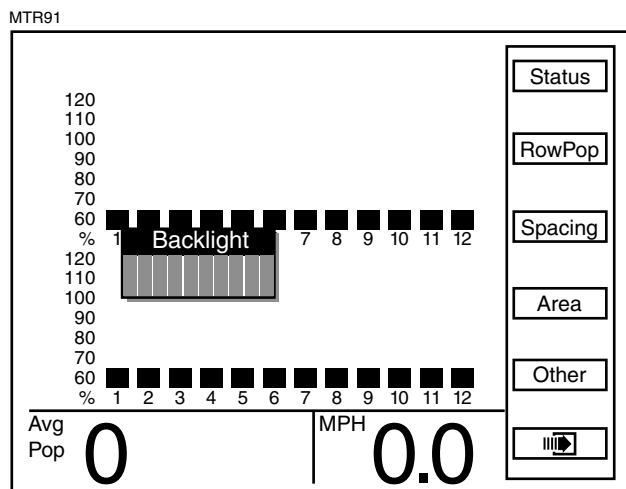
STEP 1 Press the AV key. The Contrast adjustment dialog box will appear in the center of the display.



STEP 2 Use the arrow keys or turn the rotary encoder knob to adjust contrast. The adjustment will be visible on the screen.

STEP 3 To adjust speaker or backlight, go to STEP 4. If finished press the Enter key to save and exit.

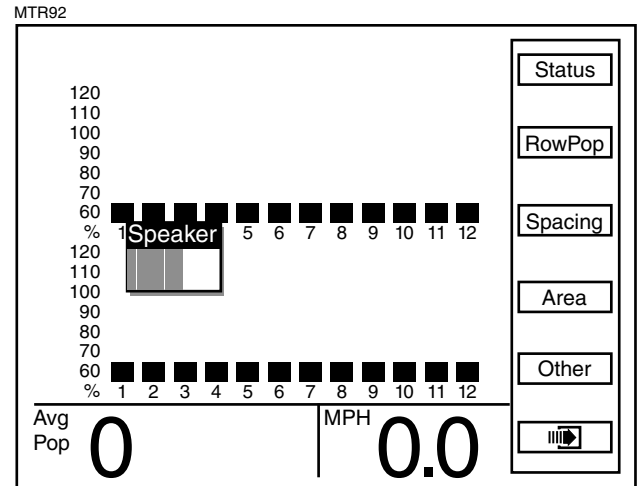
STEP 4 Press the AV button a second time. The Backlight adjustment dialog box will appear in the center of the display.



STEP 5 Use the arrow keys or turn the knob to adjust backlighting. The effect of the adjustment will be visible on the display.

STEP 6 To adjust speaker go to STEP 7. If finished press the Enter key to save and exit.

STEP 7 Press the AV button a third time. The Speaker adjustment dialog box will appear in the center of the display.



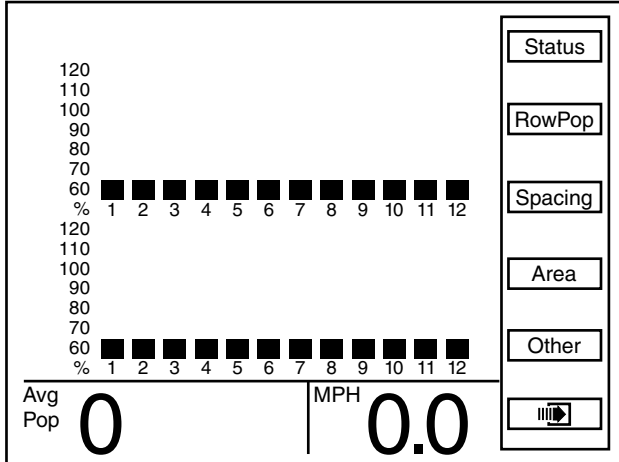
STEP 8 Use the arrow keys or turn the knob to adjust speaker volume. The volume of sound emitted from the speaker will change as adjustment is made.

STEP 9 Press the knob, Enter key or press the AV button a fourth time to save the volume, contrast and backlight settings.

CONFIGURING PLANTER MONITOR

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

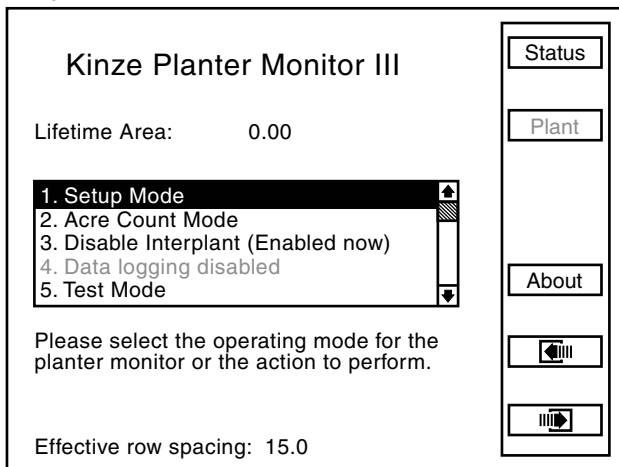
MTR77



NOTE: The Planter Configuration screen displays the planter rows as programmed into the KPM III software. The above screen shows 12 front (Interplant®) rows and 12 rear rows. If the KPM III were programmed for 8 front (Interplant®) rows and 8 rear rows the screen would display 8 front and 8 rear rows.

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

MTR78



NOTE: There are 5 choices on the Mode Selection screen;

1. Setup mode
2. Acre count mode
3. Disable Interplant® (Enabled now) mode
4. Data logging mode
5. Test mode

STEP 2 Select "1. Setup Mode" by turning the rotary encoder knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

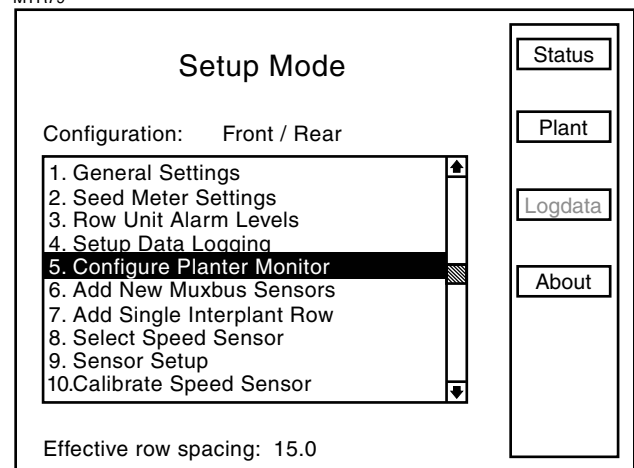
NOTE: There are 10 choices on the Setup Mode screen;

1. General Settings
2. Seed Meter Settings
3. Row Unit Alarm Levels
4. Setup Data Logging
5. Configure Planter Monitor
6. Add New Muxbus Sensors
7. Add Single Interplant® Row
8. Select Speed Sensor
9. Sensor Setup
10. Calibrate Speed Sensor

STEP 3 Select "5. Configure Planter Monitor" by turning the knob or using the arrow keys. Press the knob or the Enter key to display the highlighted item.

NOTE: Press the F2 key next to Plant any time the Plant option is available to return to the Planter Configuration screen.

MTR79



NOTE: The planter monitor cannot be reconfigured while planting.

STEP 4 If there are front rows (Interplant) on the planter, press the knob or Enter key to highlight the “Front Rows” field. A drop down number pad will appear. Turn the knob or use the arrow keys to highlight the correct value then press the knob to select the number, for numbers containing more than one digit select one digit at a time. When the desired quantity is displayed above the number pad press the Enter key to return to the “Kinze Planter Configuration” screen. If the planter has no front rows turn the knob or press the arrow keys to advance to “Rear Rows”.

MTR80

Kinze Planter Configuration																	
Planter Type	Sensors Installed																
Front Rows 0 ▾	Speed Radars ▾																
Rear Rows <table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>C</td></tr> <tr><td>4</td><td>5</td><td>6</td><td></td></tr> <tr><td>7</td><td>8</td><td>9</td><td>→</td></tr> <tr><td>.</td><td>0</td><td>-</td><td></td></tr> </table>	1	2	3	C	4	5	6		7	8	9	→	.	0	-		Vacuum 0 ▾
1	2	3	C														
4	5	6															
7	8	9	→														
.	0	-															
Shafts <table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>C</td></tr> <tr><td>4</td><td>5</td><td>6</td><td></td></tr> <tr><td>7</td><td>8</td><td>9</td><td>→</td></tr> <tr><td>.</td><td>0</td><td>-</td><td></td></tr> </table>	1	2	3	C	4	5	6		7	8	9	→	.	0	-		SDS 0 ▾
1	2	3	C														
4	5	6															
7	8	9	→														
.	0	-															
There should be one sensor for each Row and each Shaft.	<input type="checkbox"/> Hydraulic Level/Temp <input type="checkbox"/> Downpressure Level SDS = Seed Delivery System																
OK	Cancel																

STEP 5 Press the knob or Enter key to select the “Rear Rows” field. A drop down number pad will appear. Turn the knob or use the arrow keys to highlight the correct value then press the knob to select the number, for numbers containing more than one digit select one digit at a time. When the desired quantity is displayed above the number pad, press the Enter key to return to the “Kinze Planter Configuration” screen.

MTR81

Kinze Planter Configuration																	
Planter Type	Sensors Installed																
Front Rows 11 ▾	Speed Radars ▾																
Rear Rows 0 ▾	Vacuum 0 ▾																
Shafts <table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>C</td></tr> <tr><td>4</td><td>5</td><td>6</td><td></td></tr> <tr><td>7</td><td>8</td><td>9</td><td>→</td></tr> <tr><td>.</td><td>0</td><td>-</td><td></td></tr> </table>	1	2	3	C	4	5	6		7	8	9	→	.	0	-		SDS 0 ▾
1	2	3	C														
4	5	6															
7	8	9	→														
.	0	-															
There should be one sensor for each Row and each Shaft.	<input type="checkbox"/> Hydraulic Level/Temp <input type="checkbox"/> Downpressure Level SDS = Seed Delivery System																
OK	Cancel																

STEP 6 Rotate the knob or use the arrow keys to advance to “Shafts” field. Press the knob or Enter key to select the “Shaft” field. A drop down menu will appear. Turn the knob or use the arrow keys to highlight the number of “Shafts” on the planter. When the correct value is displayed, press the knob or Enter key to return to the “Kinze Planter Configuration” screen.

MTR82

Kinze Planter Configuration	
Planter Type	Sensors Installed
Front Rows 11 ▾	Speed Radars ▾
Rear Rows 12 ▾	Vacuum 0 ▾
Shafts 2 ▾	SDS 0 ▾
There should be one sensor for each Row and each Shaft.	<input type="checkbox"/> Hydraulic Level/Temp <input type="checkbox"/> Downpressure Level SDS = Seed Delivery System
OK	Cancel

STEP 7 Turn the knob or use the arrow keys to advance to the “Speed” field. Press the knob or Enter key and a drop down menu will appear; select either “Radars” or “Coil Pick-Up” (MDS) by turning the knob or using the arrow keys. When the desired selection is highlighted press the knob or Enter key.

MTR83

Kinze Planter Configuration	
Planter Type	Sensors Installed
Front Rows 11 ▾	Speed Radars ▾
Rear Rows 12 ▾	Vacuum Coil Pick-Up
Shafts 2 ▾	SDS 0 ▾
There should be one sensor for each Row and each Shaft.	<input type="checkbox"/> Hydraulic Level/Temp <input type="checkbox"/> Downpressure Level SDS = Seed Delivery System
OK	Cancel

STEP 8 If applicable, turn the knob or use the arrow keys to advance to “Vacuum”. Press the knob or Enter key and a drop down menu will appear. Select the correct number of vacuum sensors by turning the knob or using the arrow keys. Confirm the selection by pressing the knob or Enter key.

STEP 9 If applicable, turn the knob or use the arrow keys to advance to “SDS” (Seed Delivery System), Press the knob or Enter key. A drop down menu will appear. Select the correct number of SDS Sensors by turning the knob or using the arrow keys. Press the knob or Enter key to confirm selection.

STEP 10 If applicable, turn the knob or use the arrow keys to advance to “Hydraulic Level/Temp”. Press the knob or Enter key to select or deselect. When selected, a check mark will appear in the box.

STEP 11 If applicable, turn the knob or use the arrow keys to advance to “Downpressure Level”. Press the knob or Enter key to select or deselect. When selected, a check mark will appear in the box.

STEP 12 Advance to “OK” by using the knob or arrow keys. Press the knob or the Enter key to save the information.

MTR84

Kinze Planter Configuration	
Planter Type	Sensors Installed
Front Rows <input type="text" value="11"/>	Speed <input type="text" value="Radar"/>
Rear Rows <input type="text" value="12"/>	Vacuum <input type="text" value="0"/>
Shafts <input type="text" value="2"/>	SDS <input type="text" value="0"/>
There should be one sensor for each Row and each Shaft.	<input type="checkbox"/> Hydraulic Level/Temp <input type="checkbox"/> Downpressure Level SDS = Seed Delivery System
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

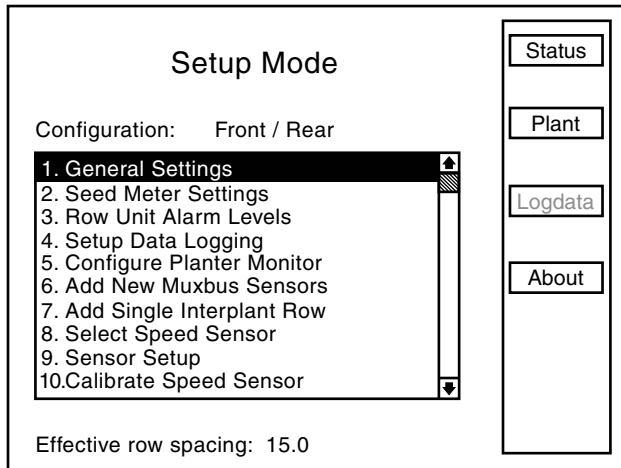
NOTE: To prevent the configuration from being saved select “Cancel” and press the rotary encoder knob or Enter key. The display will return to the “Setup Mode” screen without saving any changes.

NOTE: When OK is selected the monitor automatically advances to the Sensor Setup screen. Sensor Setup can also be selected from the Setup Mode screen. See pages 45-46 (PROGRAMMING/CONNECTING SEED TUBES, SHAFT ROTATION SENSORS AND/OR RADAR/MAGNETIC DISTANCE SENSORS)

GENERAL SETTINGS
(Programming Interplant® condition, row spacing and units) (Metric or English)

STEP 1 Turn the knob or use the arrow keys to highlight “1. General Settings”. Press the knob or the Enter key to display the highlighted item.

MTR94



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

STEP 2 Press the knob or Enter key to enter the correct value for “Row Spacing”. A drop down number pad will appear. Turn the knob or use the arrow keys to highlight the first digit of the desired number and press the knob. The number will appear in the “Row Spacing” line. Turn the knob or use the arrow keys to highlight the next digit of the number and press the knob. The number will appear in the “Row Spacing” line. When the correct number is displayed in the “Row Spacing” line, press the Enter key to return to the “General Settings” screen.

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

STEP 3 Turn the knob or use the arrow keys to highlight the “Units of Measure” field. Select the “Units of Measure” field by pressing the knob or Enter key, a drop down menu will appear. Highlight either “English” or “Metric” by turning the knob or using the arrow keys. When the correct entry is highlighted, press the knob or Enter key to accept the unit of measure entry and return to the “General Settings” screen.

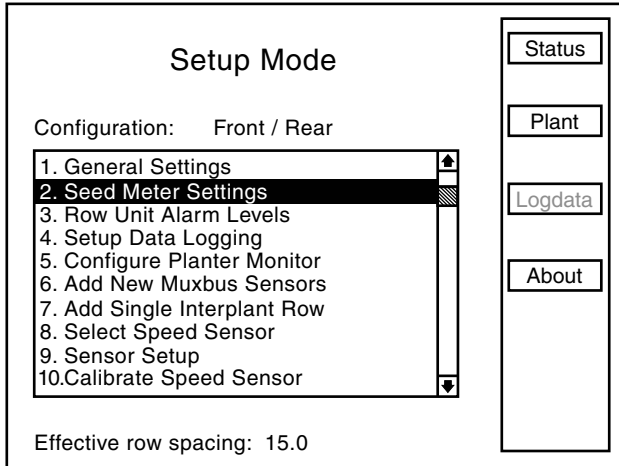
STEP 4 Turn the knob or use the arrow keys to highlight the “Area Counters” field. Select the “Area Counters” field by pressing the knob or Enter key, a drop down menu will appear. Turn the knob or use the arrow keys to highlight either “Confirm each enable/disable”, “Don’t confirm again today”, or “Don’t confirm enable/disable”. When the desired selection is highlighted, press the knob or Enter key to accept the selection and return to the “General Settings” screen.

STEP 5 Once the correct values have been inputted into the “General Settings” screen the “OK” button can be selected to save the changes, or the “Cancel” button can be selected to discard the changes that have been made. Turn the knob or use the arrow keys to highlight either “OK” or “Cancel” and press the knob or Enter key to return to the “Setup Mode” screen.

SEED METER SETTINGS

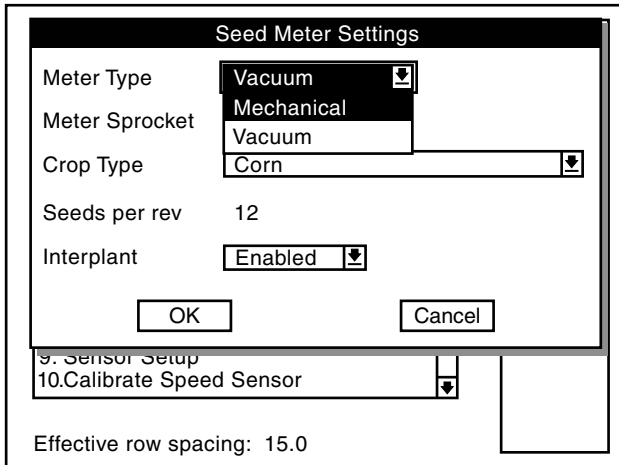
STEP 1 Scroll to “2. Seed Meter Settings” by turning the rotary encoder knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

MTR159

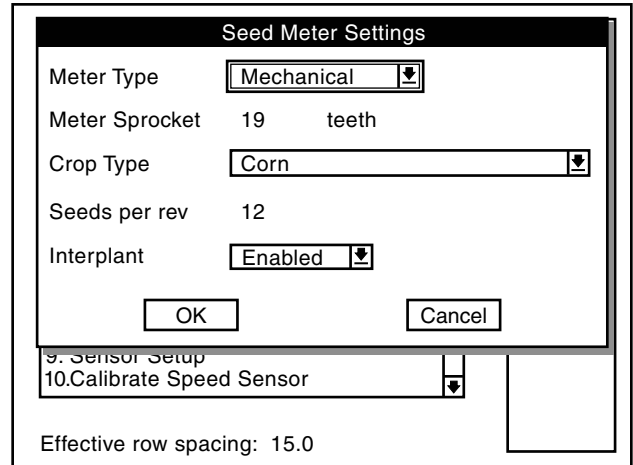


STEP 2 Select meter type by highlighting “Meter Type” and pressing the knob or Enter key, then highlight “Mechanical” or “Vacuum” and press the knob or enter key.

MTR212

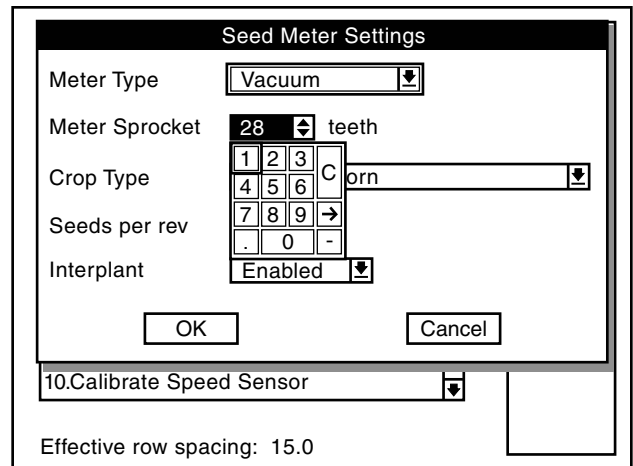


MTR210



NOTE: When Mechanical “Meter Type” is selected “Meter Sprocket” automatically sets.

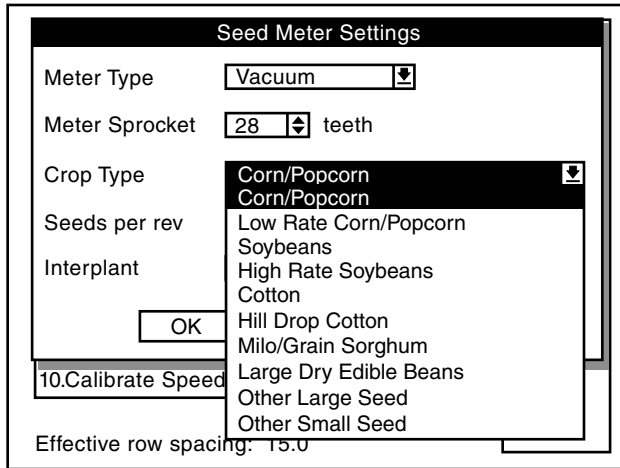
MTR206



NOTE: When Vacuum “Meter Type” is selected “Meter Sprocket” automatically defaults to 28 teeth. To change “Meter Sprocket” select “Meter Sprocket” by turning the knob or using the arrow keys. Press the knob or enter key, a drop down number pad will appear. Turn the knob or use the arrow keys to highlight the first digit of the desired number and press the knob. When the correct number is obtained press the knob or enter key.

STEP 3 Turn the knob or use the arrow keys to highlight “Crop Type”. Press the knob or Enter key to display the crop drop down menu.

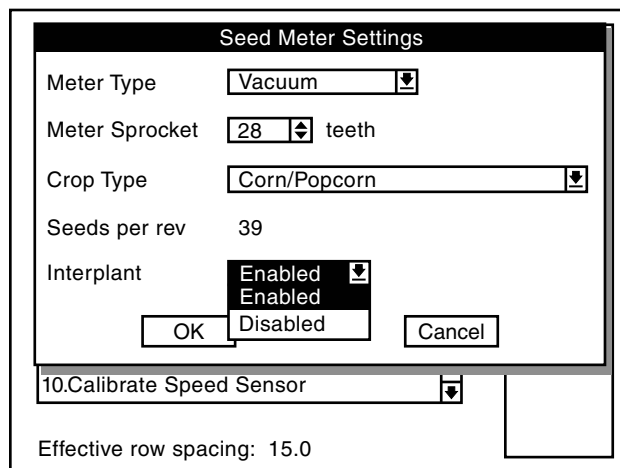
MTR207



STEP 4 Turn the knob or use the arrows keys to highlight a crop for planting then press the knob or Enter key. Once crop type is entered, the “Seeds per rev” is set automatically.

STEP 5 (If Applicable) Turn the knob or use the arrow keys to highlight “Interplant”. Press the knob or Enter key to display the Interplant® drop down menu.

MTR208



STEP 6 Turn the knob or use the arrow keys to highlight either “enable” or “disable” and press the knob or Enter key.

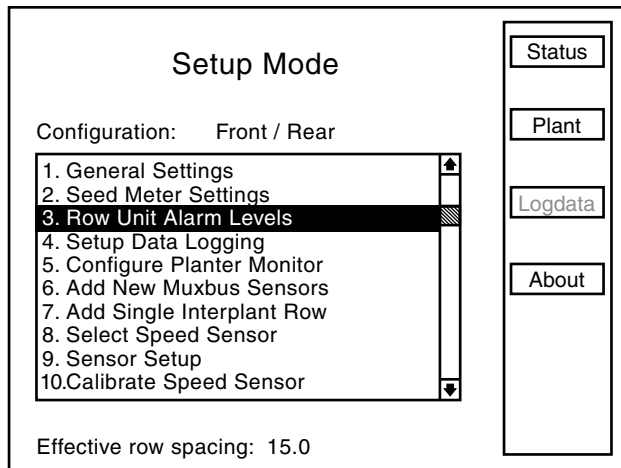
STEP 7 When all changes have been made, highlight “OK” and press the knob or Enter key to return to the “Set Mode” screen.

PROGRAMMING ROW UNIT ALARM LEVELS

The Row Unit Alarm Levels allow the thresholds for the seed rate alarms to be set. The default is 50% or Average. If the average population drops below 50% for a given row a seed rate alarm will be generated for that row unit. The alarm threshold can be set to 70%, 50%, 0% or disabled, or any custom percentage desired for any row.

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

MTR96

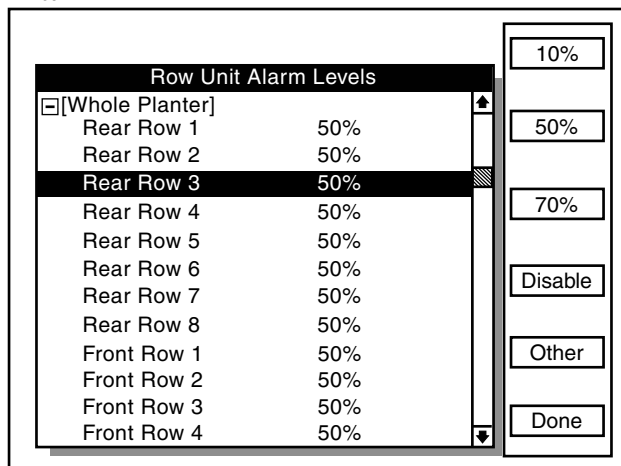


The alarm thresholds can be set for the whole planter, any planter section or individual rows.

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

STEP 1 Select “3. Row Unit Alarm Levels” by turning the knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

MTR98



STEP 2 To set the alarm thresholds for the whole planter, turn the knob or use the arrow keys to highlight the “[Whole Planter]” line. Press the key next to the desired threshold. When the desired threshold has been specified for all row units, press the F6 key next to “Done”.

NOTE: Only configured rows will appear on the screen.

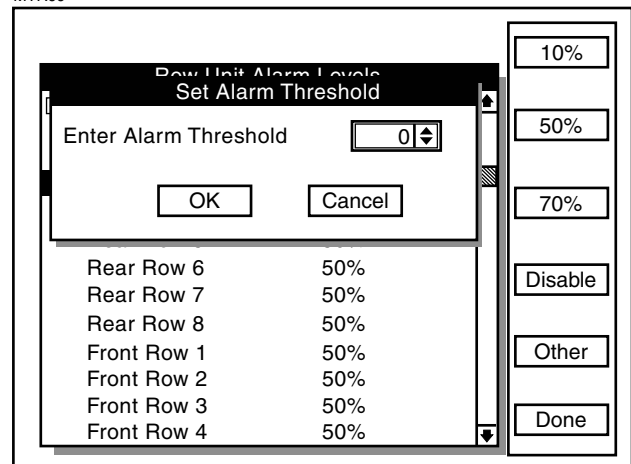
To set the alarm thresholds for all the rows in one section, highlight the desired section. Press the key next to the desired threshold. When the desired threshold has been specified for all row units, press the F6 key next to “Done”.

To set the alarm thresholds for individual rows, highlight the desired row. Press the key next to the desired threshold. When the desired threshold has been specified for all row units, press the F6 key next to “Done”.

To disable the row unit alarm, highlight the desired section or individual row. Press the F4 key next to “Disable”. When the alarm is desired again highlight the disabled section or row. Press the key next to the desired threshold.

To enter a threshold not listed, highlight the desired section or individual row. Press the F5 key next to “Other”. Press the knob or Enter key and a drop down key pad will appear. Turn the knob or use the arrow keys to highlight the first digit of the desired number and press the knob. The number will appear in the “Enter Alarm Threshold” line. Highlight the next digit of the number and press the knob. The number will appear in the line. When the correct number is displayed, press the Enter key to return to the “Set Alarm Threshold” screen. Turn the knob or use the arrow keys to advance to “OK”. Press the knob or Enter key to accept the threshold levels.

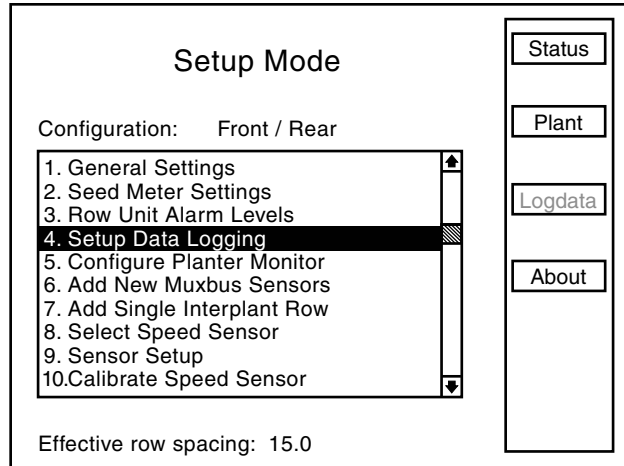
MTR99



DATA LOGGING MODE

STEP 1 Scroll to “4. Setup Data Logging” by turning the rotary encoder knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

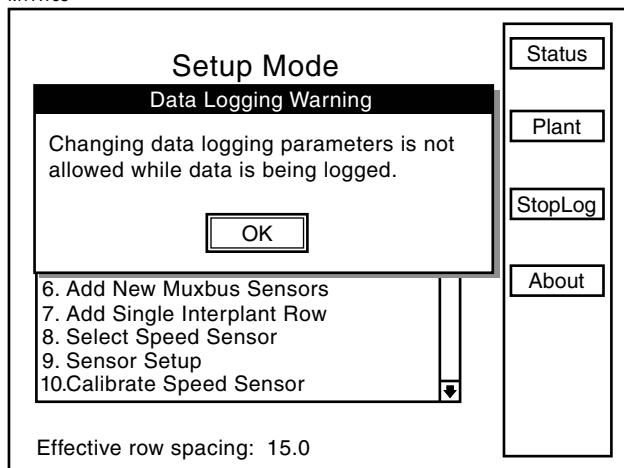
MTR164



NOTE: Data logging changes cannot be made while data is being logged. If the monitor is logging data the following warning will appear. To stop data logging and continue.

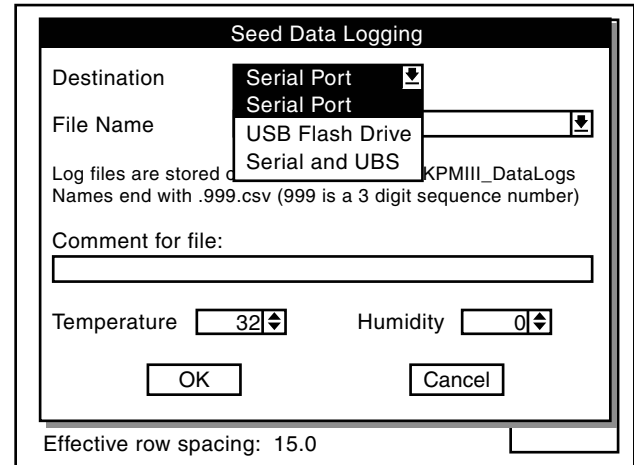
- Press the knob or Enter key to close the warning.
- Then in the “Setup Mode” press the F3 key next to “StopLog”.

MTR165



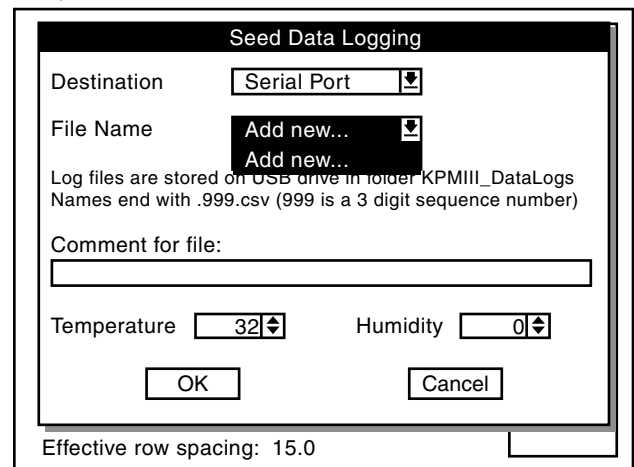
STEP 2 Turn the knob or use the arrow keys to highlight the “Destination” box then press the knob or Enter key. Highlight the desired option either “Serial Port”, “USB Flash Drive”, or “Serial and USB” and press the knob or Enter key.

MTR166



STEP 3 Use the knob or arrow keys to highlight the “File Name” box. Press the knob or Enter key and a drop down list of the files will be displayed. Select “Add new...” to enter a file name and press the knob or enter key to display a keyboard.

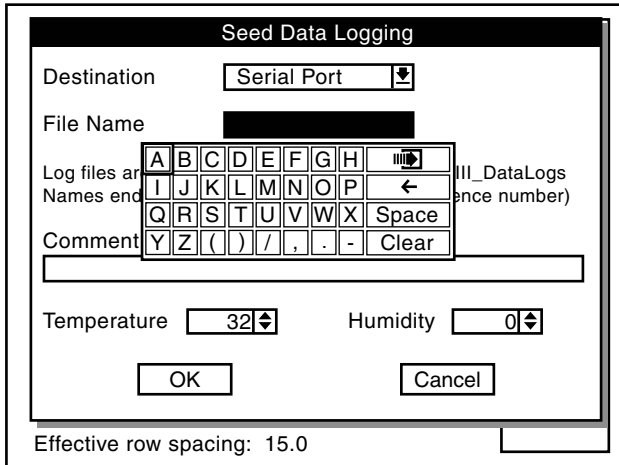
MTR167



STEP 4 Select “Add new...” to enter a file name and press the knob or enter key to display a keyboard.

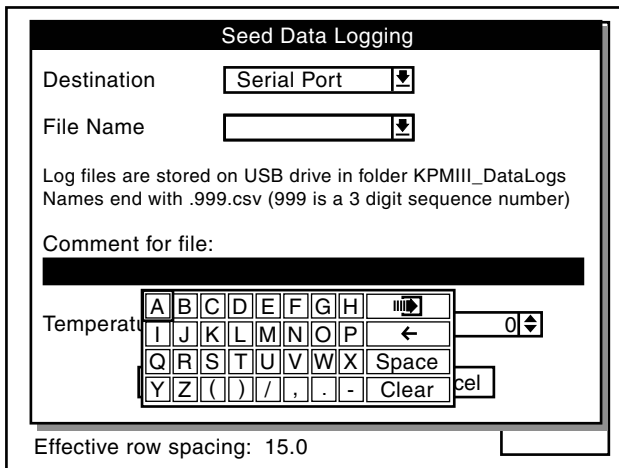
STEP 5 Add a new file name by using the drop down keyboard. Spell out the file name by highlighting each letter and pressing the knob or Enter key.

MTR168



STEP 6 Use the knob or arrow keys to scroll to the “Comment for file” box. Press the knob or Enter key to display the drop down keyboard. Use the keyboard to enter a Comment for the file then press the Enter key.

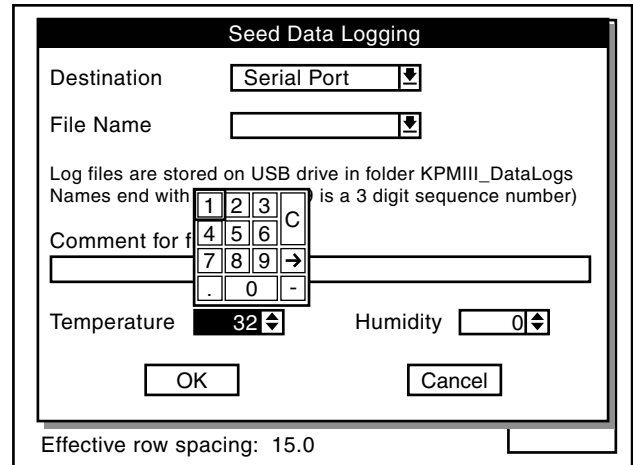
MTR169



STEP 7 Use the knob or arrow keys to scroll to the Temperature box. Press the knob or Enter key to display the drop down keyboard. Use the keyboard to enter the temperature then press the Enter key.

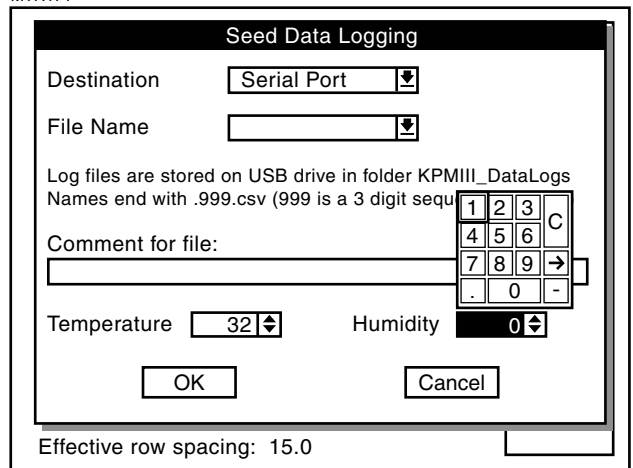
STEP 8 Use the knob or arrow keys to scroll to the Humidity box. Press the knob or Enter key to display the drop down keyboard. Use the keyboard to enter the humidity then press the Enter key.

MTR170



STEP 9 Use the knob or arrow keys to scroll to the “OK” button and press the knob or Enter key. The display will return to the Setup Mode screen.

MTR171



STEP 10 Press the F2 key next to Plant to return to Planter configuration screen.

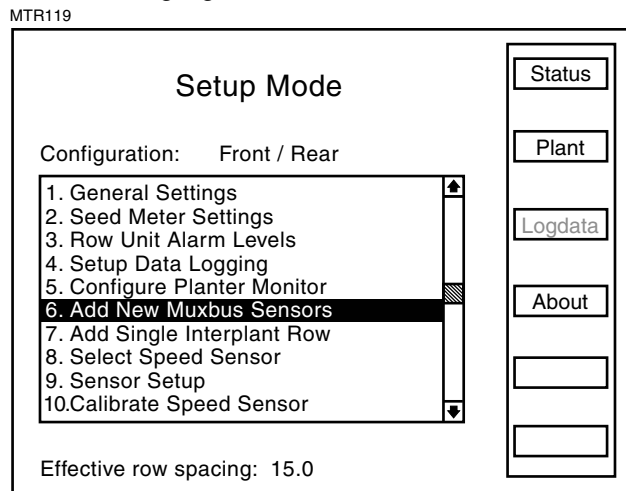
STEP 11 Press the F3 key next to “Logdata” to begin logging.

STEP 12 Press the F3 key next to “Stoplog” to end logging.

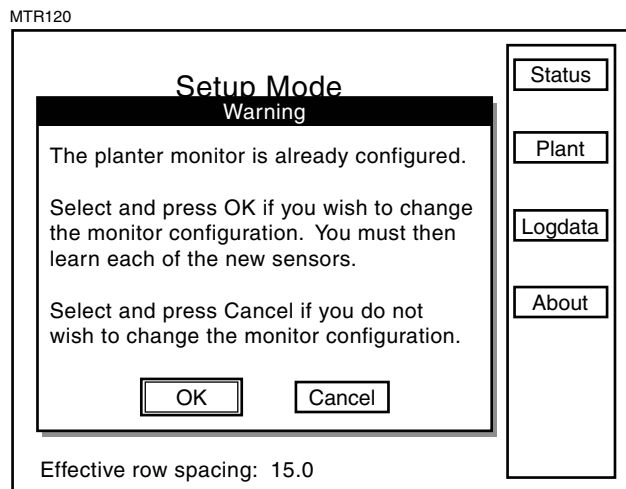
**ADDING INTERPLANT® ROWS
(If only Rear Rows Have Previously Been Programmed)**

NOTE: The planter monitor configuration must contain an odd number of front rows before the single Interplant® row unit can be added.

STEP 1 Highlight “6. Add New Muxbus Sensors” by turning the knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.



STEP 2 The note shown below will appear. Highlight “OK” by turning the knob or using the arrow keys. Press the knob or Enter key to make the selection.

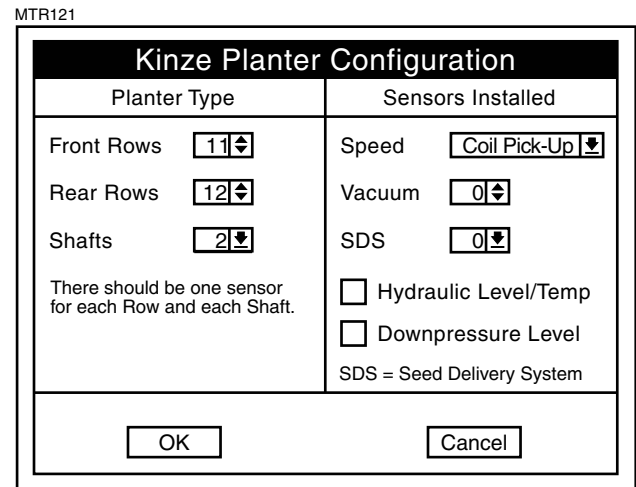


NOTE: To prevent the configuration from being changed, select Cancel, then press the knob, Enter key or ESC key.

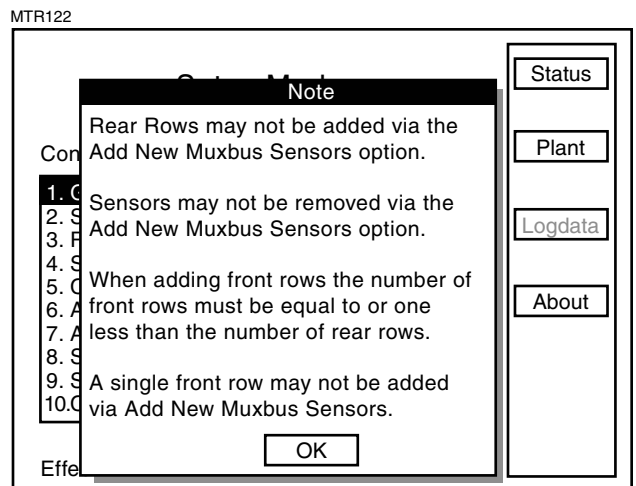
STEP 3 Turn the knob or use the arrow keys to highlight the “Front Rows” field and press the knob or Enter key and a drop down number pad will appear.

STEP 4 Turn the knob or use the arrow keys to highlight the first digit of the desired number and press the knob to select the number, for numbers containing more than one digit select one digit at a time. The number will appear in the “Front Rows” line. When the correct number is displayed on the “Front Rows” line, press the Enter key to return to the “Kinze Planter Configuration” screen.

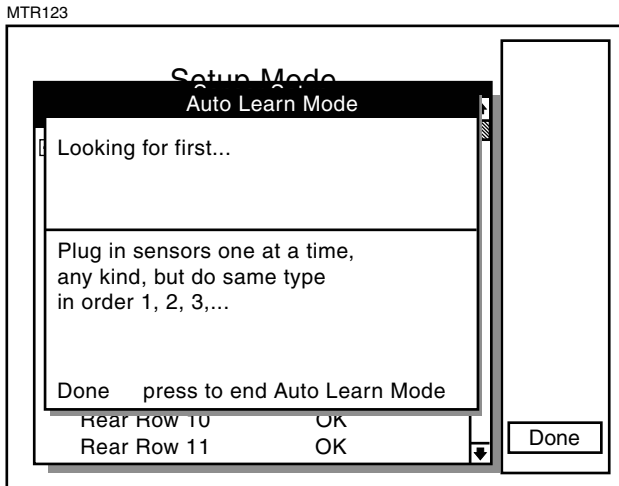
NOTE: To prevent the configuration from being changed select Cancel, then press the knob, Enter key or ESC key.



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



STEP 5 The sensor configuration screen will appear. With “[Auto Detect]” highlighted press the F1 key next to “Install”. Install sensors from left to right in the same way rear unit sensors were installed.

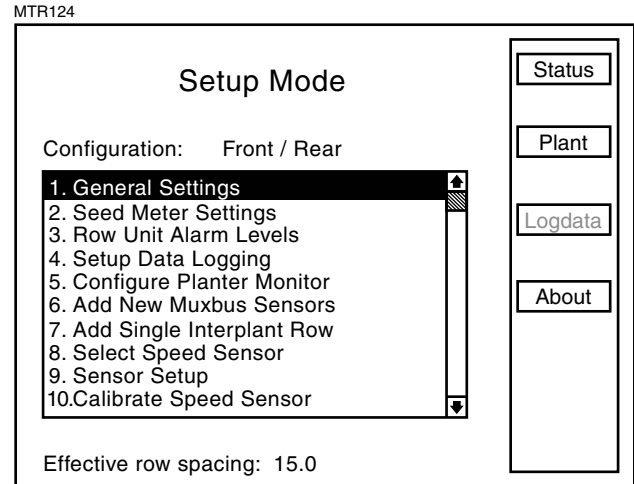


STEP 6 When all sensors are learned select F1 to end installation. The “Auto Learn Mode” box will appear. Press the F6 key next to “Done”.

STEP 7 Scroll down to verify the front rows are learned. Select “OK” by pressing the knob or the Enter key. Press the F6 key next to “Done”. The display will return to the “Setup Mode Screen”.

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

STEP 8 Turn the knob or use the arrow keys to highlight “1. General Settings”. Press the knob or use the Enter key to make the selection.



STEP 9 Turn the knob or use the arrow keys to highlight the “Row Spacing” field. Press the knob or Enter key to make the selection. A drop down number pad will appear. Adjust the row spacing to Interplant spacing by turning the knob or use the arrow keys to highlight the correct value then press the knob to select the number, for numbers containing more than one digit select one digit at a time.

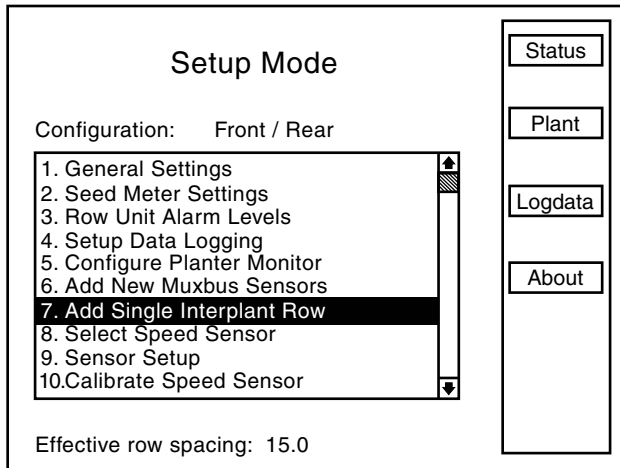
NOTE: To prevent the configuration from being changed select Cancel, then press the knob, Enter key or ESC key.

STEP 10 Turn the knob or use the arrow keys to advance to the “OK” button. Press the knob or Enter key to save the row spacing and return to the “Setup Mode” screen.

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

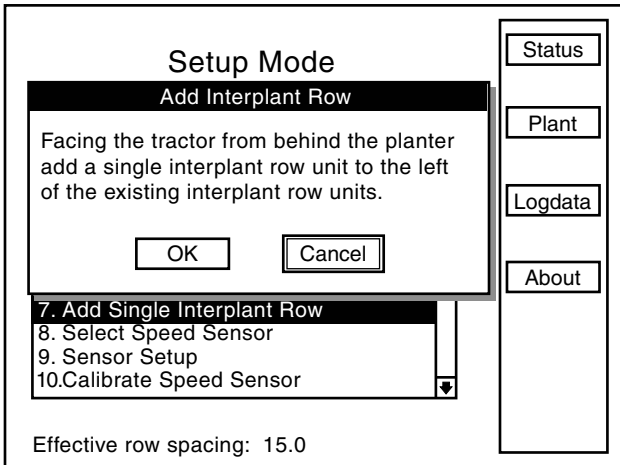
STEP 1 Turn the knob or use the arrow keys to highlight “7. Add Single Interplant® Row”. Press the knob or the Enter key to display the highlighted item.

MTR126



STEP 2 To confirm the note below turn the knob or use the arrow keys to highlight the “OK” button, then press the knob or Enter key to confirm. If the single Interplant® row is not to be added select the “Cancel” key and press the knob or Enter key to cancel or press the ESC key.

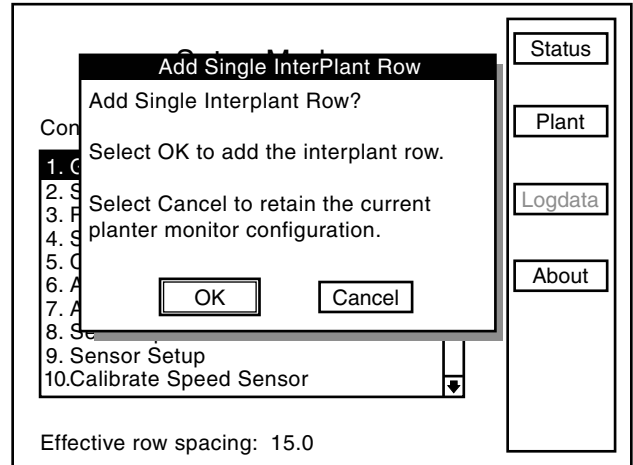
MTR127



STEP 3 To “Add Single Interplant® Row” the following screen will appear.

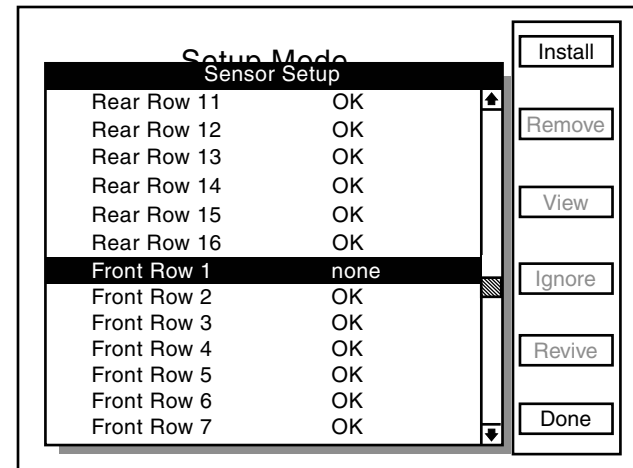
If the single Interplant® row is to be added turn the knob or use the arrow keys to highlight the “OK” button and then press the knob or Enter key to add the Interplant® row. If the single Interplant® row is not to be added select the Cancel key and press the knob or Enter key to cancel or press the ESC key.

MTR128



STEP 4 The “Sensor Setup” screen will appear. Plug in the new sensor then scroll down to highlight “Front Row 1” by turning the knob or using the arrow keys. Press the F1 key next to Install to learn the new sensor.

MTR129



REPROGRAMMING SPEED SENSOR

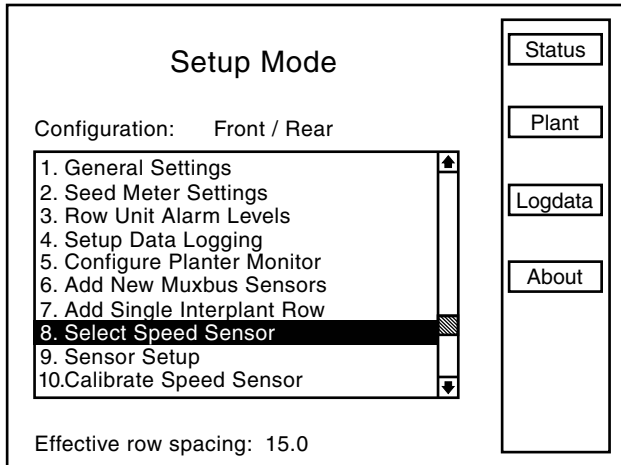
This setting must be specified when the monitor is first configured. It will be necessary to reprogram to use an alternate speed sensor.

NOTE: Speed sensors may not be changed while planting.

RADAR TO MAGNETIC DISTANCE SENSOR

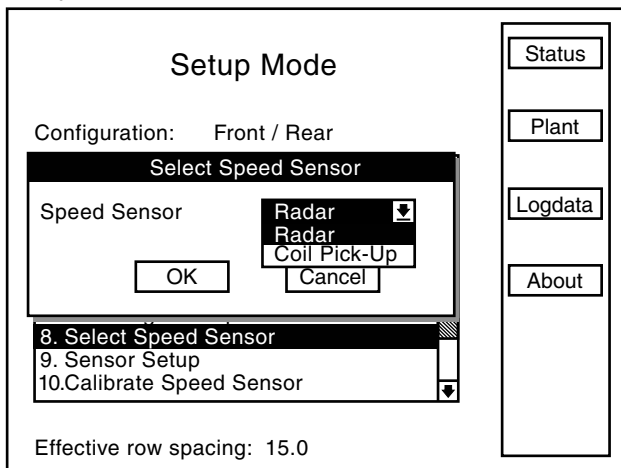
STEP 1 Turn the knob or use the arrow keys to highlight “8. Select Speed Sensor”. Press the knob or Enter key to display the highlighted item.

MTR109



STEP 2 Press the knob or Enter key, a drop down menu will appear. Turn the knob or use the arrow keys to highlight “Coil Pick-Up” and press the knob or Enter key.

MTR110



STEP 3 Turn the knob or use the arrow keys to highlight the “OK” button and press the knob or Enter key to return to the “Setup Mode” screen.

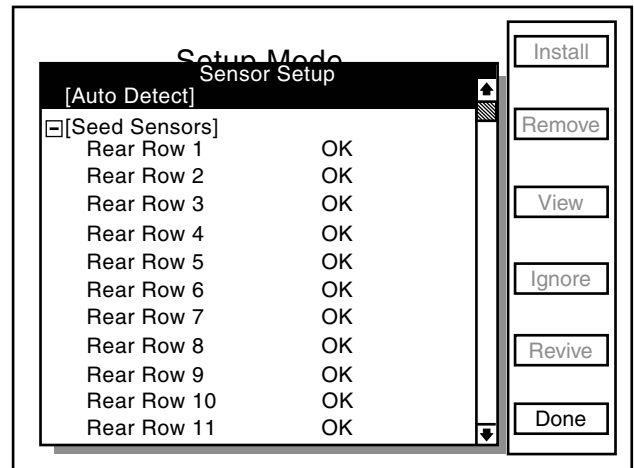
STEP 4 Turn the knob or use the arrow keys to highlight “9. Sensor Setup” and press the knob or Enter key.

STEP 5 Unplug the radar from the tractor.

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

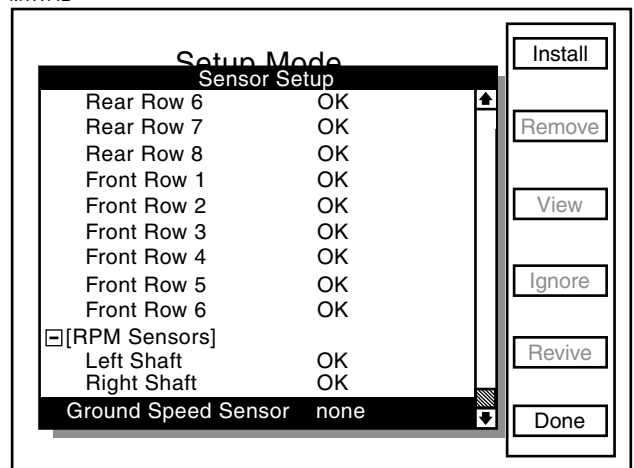
STEP 6 Plug in Magnetic Distance Sensor (MDS) and press the F1 key next to Install. Press the knob or Enter key to save information. The Sensor Setup screen will appear.

MTR111



STEP 7 Turn the knob or use the arrow keys to scroll down to “Ground Speed Sensor”.

MTR112



STEP 8 Press the F1 key next to Install. The monitor will beep twice to confirm selection.

STEP 9 Press the F6 key next to Done. The display will return to the Setup Mode screen.

STEP 10 Press the F2 key by “Plant” to return to the Planter Configuration screen.

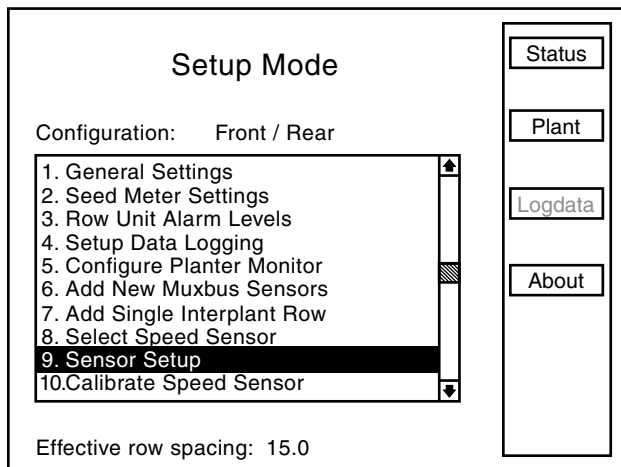
NOTE: When switching between speed sensors, verify the distance pulse count is correct for the chosen sensor. There will be significant distance pulse count variation between radar and coil pick-up sensors.

MAGNETIC DISTANCE SENSOR (MDS) TO RADAR

STEP 1 Turn the knob or use the arrow keys to choose “9. Sensor Setup”. Turn the knob or use the arrow keys to highlight “Ground Speed Sensor”. Press the F2 key next to Remove to remove the Ground speed Sensor.

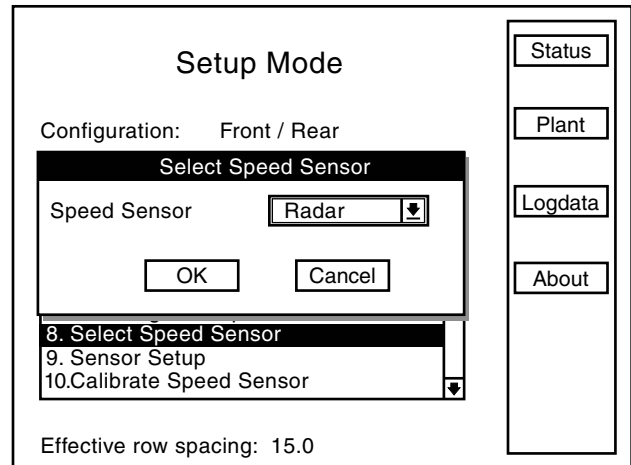
STEP 2 Press the F6 key next to Done. The display will return to the Setup Mode screen.

MTR114



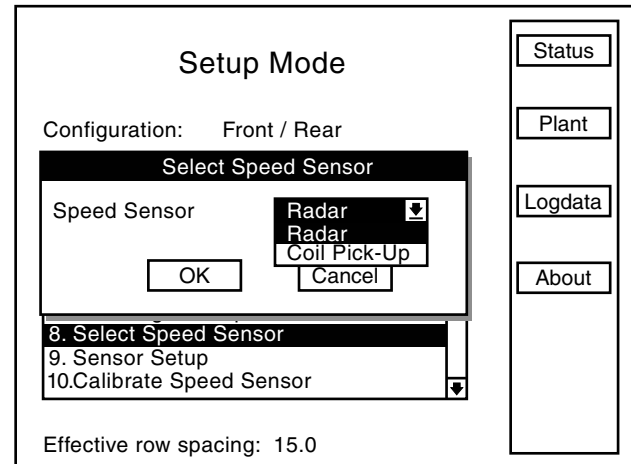
STEP 3 Turn the knob or use the arrow keys to highlight “8. Select Speed Sensor” and press the knob or Enter key.

MTR116



STEP 4 Press the knob or Enter key to select the “Speed Sensor” field and a drop down menu will appear.

MTR117



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

STEP 5 Turn the knob or use the arrow keys to highlight “Radar” and press the knob or Enter key.

STEP 6 Turn the knob or use the arrow keys to highlight the “OK” button and press the knob or Enter key.

STEP 7 Plug in Radar, turn the knob or use arrow keys to advance to “OK”. Press the knob or Enter key to save the information. The display will return to the Setup Mode screen.

STEP 8 Press the F2 key next to Plant to return to Planter Configuration screen.

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

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

NOTE: The **Sensor Setup** screen automatically appears after the **Planter Monitor** is configured in the **Configure Planter Monitor** selection in the **Setup Mode** screen.

IMPORTANT: All sensors **MUST** be unplugged before programming begins.

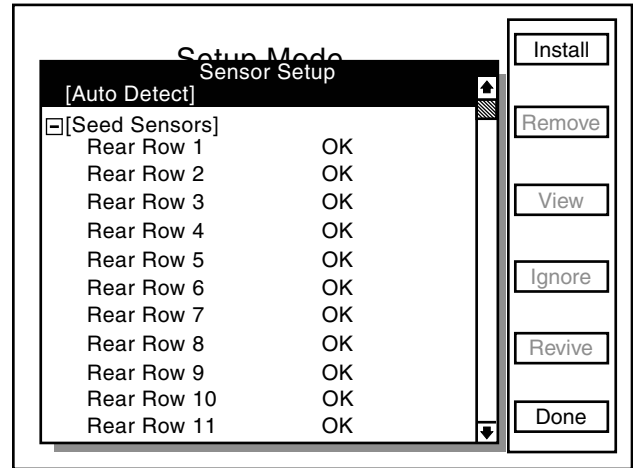
STEP 1 To access Mode Selection, press F6 key until the Mode Selection screen appears.

STEP 2 Select "1. Setup Mode" by turning the rotary encoder knob or press the arrow keys. Press the knob or Enter key to display the highlighted item.

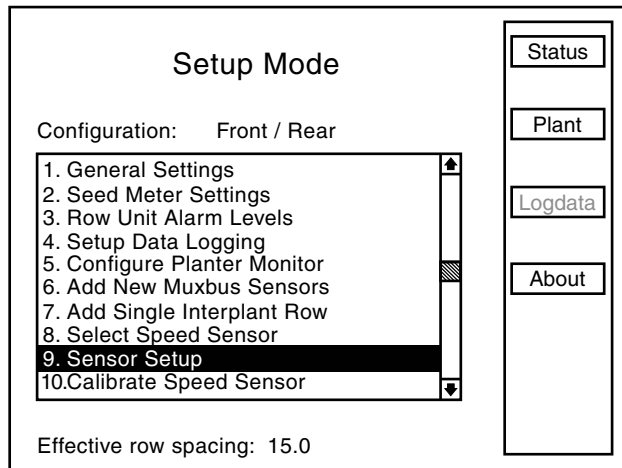
STEP 3 Select "9. Sensor Setup" by turning the knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

STEP 4 Attach the planter harness to the KPM III. Do NOT connect any of the sensors to the planter harness. With [Auto Detect] selected press the F1 key next to Install.

MTR86



MTR85



STEP 5 Plug in the first pull row unit seed sensor (row 1), working from left to right across the planter. Once all pull row unit sensors have been connected, if applicable, interplant unit sensors should be connected following the same pattern. When a sensor is connected to the planter harness wait for the monitor to acknowledge the sensor with two beeps.

NOTE: If the monitor fails to acknowledge a sensor disconnect the sensor temporarily then reconnect the sensor and wait for the monitor to acknowledge the sensor with two beeps. If the monitor still fails to acknowledge the sensor try connecting a different sensor in this location.

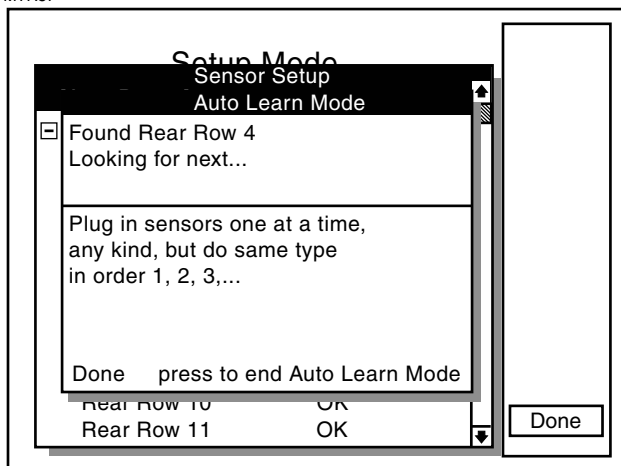
Connect shaft rotation sensors or speed sensors in the same way seed sensors were connected, making sure to work from left to right across the planter.

(If applicable) plug in SDS, vacuum or PDP (pneumatic down pressure) sensors in the same way seed sensors were connected.

Progress is displayed on the LCD screen as sensors are connected. The example below indicates that the last seed sensor found was Rear Row 4 and the monitor is looking for the next sensor.

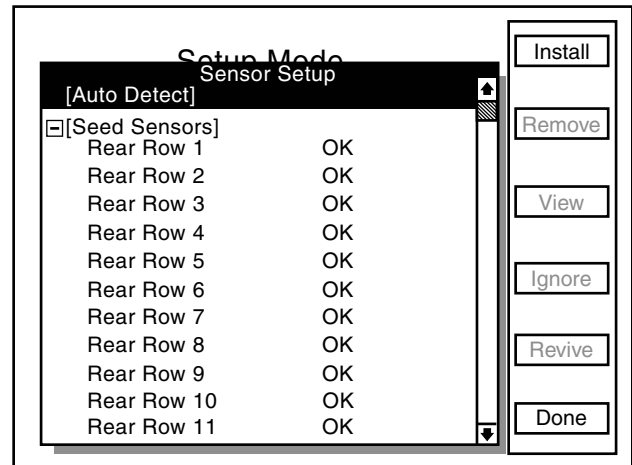
When all sensors are installed press the F6 key to end the installation and return to the "Setup Mode" screen.

MTR87



NOTE: After each sensor has been installed "OK" will appear after the sensor name on the LCD screen.

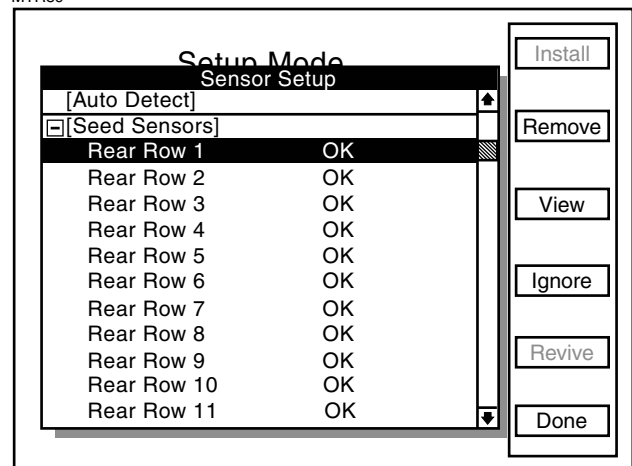
MTR86



STEP 6 When "OK" appears behind ALL sensors, press the F6 key next to Done. The "Setup Mode" menu will then appear.

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

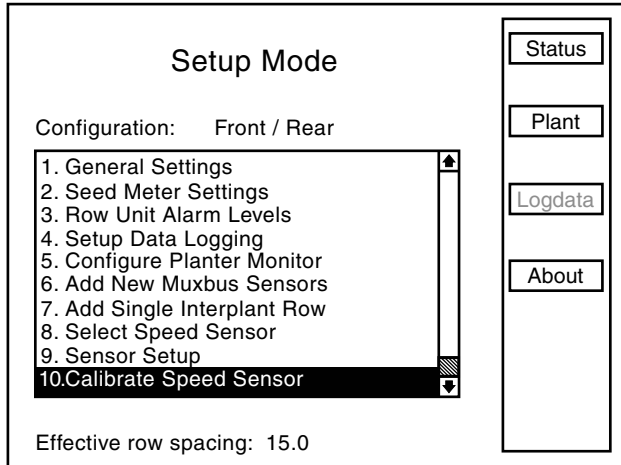
MTR89



SPEED SENSOR CALIBRATION/PROGRAMMING

- STEP 1** Turn the knob or use the arrow keys to highlight "10. Calibrate Speed Sensor" and press the knob or Enter key.

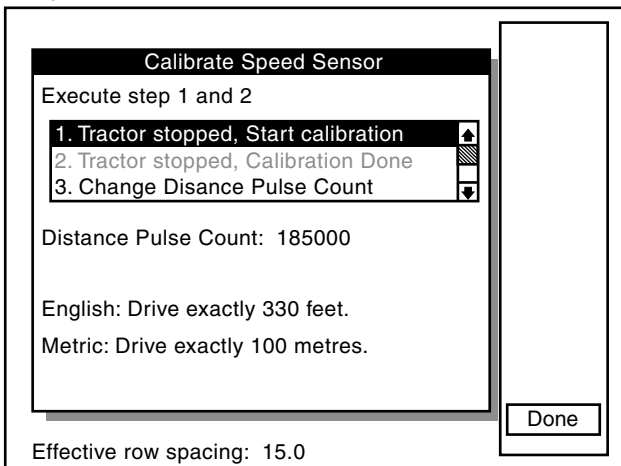
MTR100



The Distance Pulse Count is used to record how many pulses are generated per mile/kilometer from the ground speed sensor.

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

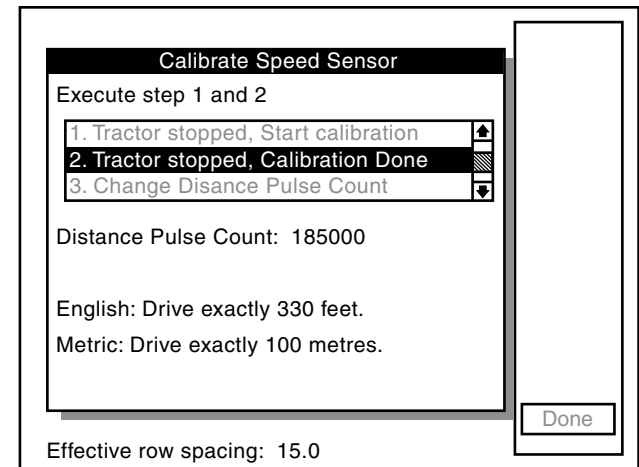
MTR101



- In field conditions, measure 330 feet or 100 meters, depending on the unit of measurement selected. Place a marker at the start point and end point.

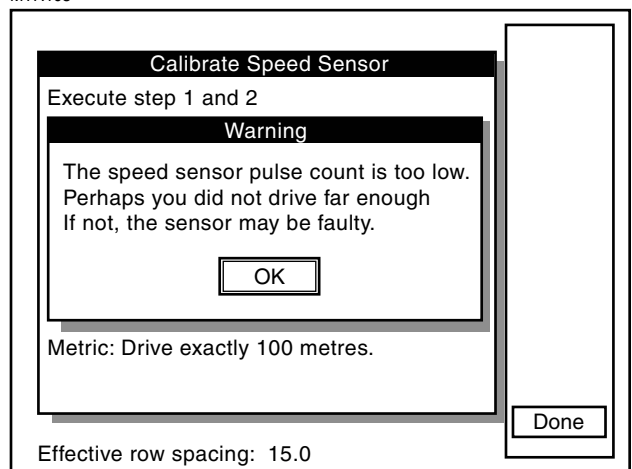
- Pull the tractor up to the starting point.
- Turn the knob or use the arrow keys to highlight "1. Tractor stopped, Start calibration" and press the knob or Enter key.
- Drive the tractor for 330 feet or 100 meters.
- The Monitor will count the number of pulses and display them.
- Stop the tractor at the end point.
- Turn the knob or use the arrow keys to highlight "2. Tractor stopped, Calibration Done" and press the knob or Enter key.

MTR104



NOTE: If the warning box below appears, click OK and repeat the procedure.

MTR105



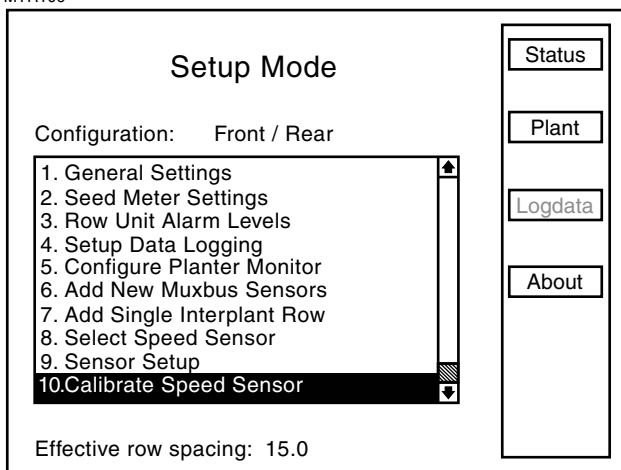
NOTE: Repeat the above steps multiple times. Record and average the values. Use this average for the Distance Pulse Count number constant.

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

When the correct distance pulse count is known, calibration is not needed and the following steps may be used.

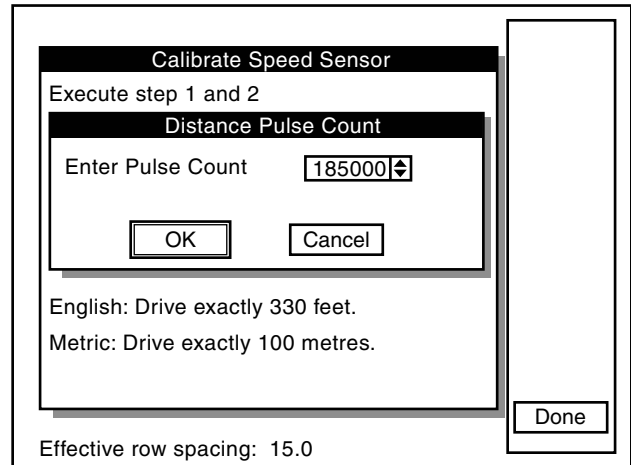
STEP 1 Turn the knob or use the arrow keys to highlight “10. Calibrate Speed Sensor” and press the knob or Enter key

MTR106



STEP 2 Turn the knob or use the arrow keys to highlight “3. Change Distance Pulse Count” and press the knob or Enter key. Highlight the “Enter Pulse Count” line and press the knob or Enter key and a drop down key pad will appear.

MTR107



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

STEP 3 Turn the knob or use the arrow keys to highlight the first digit of the average pulse count and press the knob. The number will appear in the “Enter Pulse Count” line. Highlight the next digit of the number and press the knob. Repeat this procedure until the entire number is entered then press the Enter key.

STEP 4 Turn the knob or use the arrow keys to highlight “OK” then press the knob or Enter key to return to the “Calibrate Speed Sensor” screen.

STEP 5 Press F6 key next to “Done” to return to “Setup Mode” screen.

The monitor will display the current pulses per mile/kilometer using a 6 digit, no decimal place format labeled "Distance Pulse Count". Turn the knob or use the arrow keys to highlight "Change Pulse Count" then press the knob or Enter key. The "Distance Pulse Count" box will appear.

MTR102

The screenshot shows a monitor display with the following elements:

- Header: **Calibrate Speed Sensor**
- Instruction: Execute step 1 and 2
- Section Header: **Distance Pulse Count**
- Input Field: Enter Pulse Count
- Buttons:
- Text: English: Drive exactly 330 feet.
Metric: Drive exactly 100 metres.
- Bottom Right:
- Footer: Effective row spacing: 15.0

- When the "Enter Pulse Count" value is highlighted press the knob or Enter key and a drop down keypad will appear. Turn the knob or use the arrow keys to highlight "0", zero, and press the knob or Enter key. Turn the knob or use the arrow keys to highlight "OK" and press the knob or Enter key to return to the "Calibrate Speed Sensor" screen.

MTR103

The screenshot shows the same monitor display as MTR102, but with a keypad overlay over the input field. The keypad has the following layout:

1	2	3	C
4	5	6	
7	8	9	→
.	0	-	

The input field now displays "0". The "OK" button is highlighted.

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

ACRE COUNT MODE

NOTE: When a tractor is equipped with a radar distance sensor, accumulating area without a planter attached is possible.

STEP 1 Install an “Acre Count Switch Kit”.

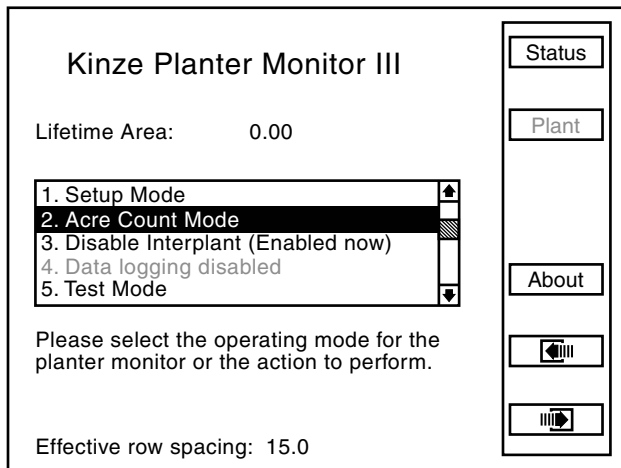
STEP 2 Enter into “Acre Count Mode”.

Acre Count Switch Kit

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

STEP 2 Press the F6 key until the Mode Selection screen appears. Turn the rotary encoder knob or use the arrow keys to highlight “2. Acre Count Mode”. Press the knob or Enter key.

MTR196



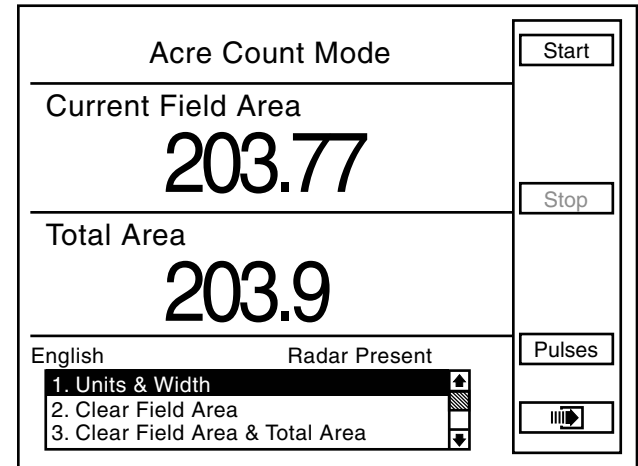
NOTE: If the radar unit is not detected a warning will appear.

NOTE: When using the acre count mode option, area (acres or hectares) is accumulated in “Lifetime Area Counter”.

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

STEP 3 Turn the knob or use the arrow keys to highlight “Units & Width” and press the knob or Enter key.

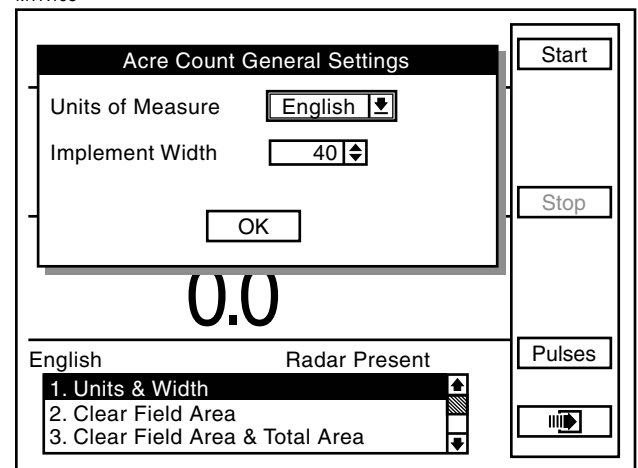
MTR197



STEP 4 A box named “Acre Count General Settings” will appear. Highlight the correct units of measure “English” or “Metric” by turning the knob or using the arrow keys. Press the knob or Enter key to make the selection.

STEP 5 Turn the knob or use the arrow keys to highlight the “Implement Width” box and press the knob or Enter key and a drop down number pad will appear.

MTR198



STEP 6 Turn the knob or use the arrow keys to highlight the correct value then press the knob to select the number, for numbers containing more than one digit select one digit at a time. When the desired quantity is displayed above the number pad, press the Enter key.

STEP 7 Turn the knob or use the arrow keys to highlight the “OK” button. Then press the knob or Enter key to save the changes that have been made.

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

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

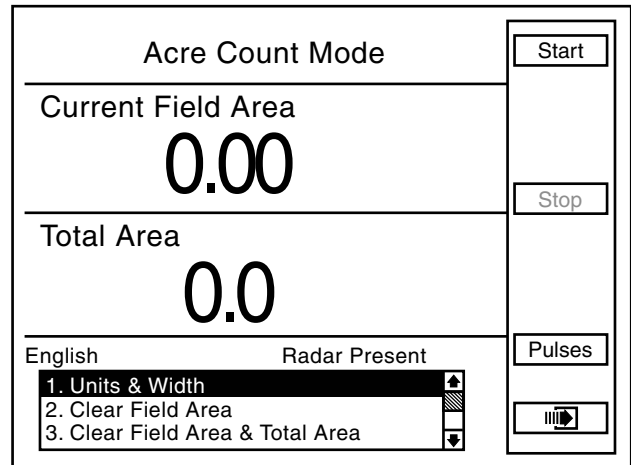
STEP 8 To begin accumulating area press the F1 key next to Start.

STEP 9 To stop accumulating area or to move to a different location, press the F3 key next to Stop.

There are two counters in the Acre Count Mode (Field Area Counter and Total Area Counter). The “Field Area” counter can be cleared independent of the “Total Area” counter, however clearing the “Total Area” counter also clears the “Field Area” counter.

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

MTR199



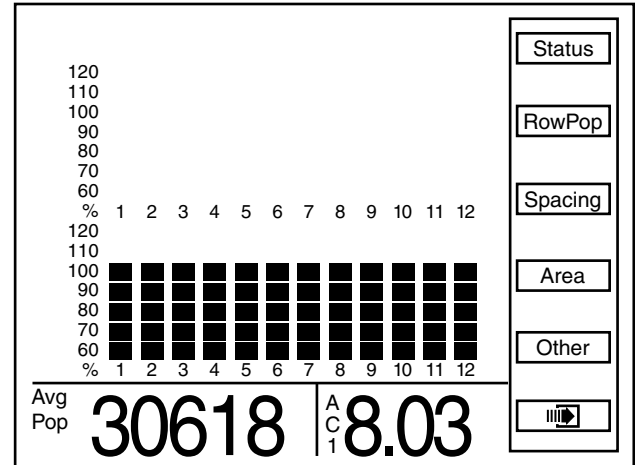
- To Clear Both Field Area And Total Area. Highlight “Clear Field Area & Total Area” and press the knob or Enter key. A note will appear to verify the decision to reset the field area and the total area to zero. Highlight “OK” and press the knob or Enter key to clear the field. Highlight “Cancel” and press the knob or Enter key to retain the current field values.

ENABLING/DISABLING INTERPLANT® ROWS

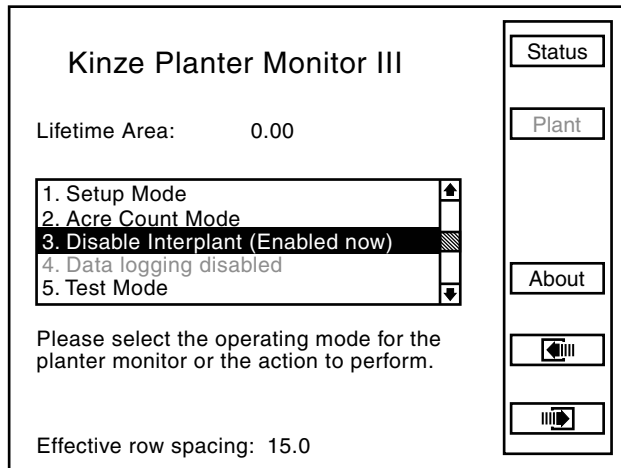
To Enable or Disable Interplant®

- STEP 1** Return to the “Planter Configuration” screen by pressing the F2 key next to “Plant”.
- STEP 2** Press the F6 key until the “Kinze Planter Monitor III” screen appears.
- STEP 3** Turn the rotary encoder knob or use the arrow keys to highlight “3. Disable Interplant (Enabled now) or Enable Interplant (Disabled now).
- STEP 4** Press the knob or Enter key to “Disable” or “Enable” Interplant®. To verify selection, the row spacing is displayed on the bottom of the screen.

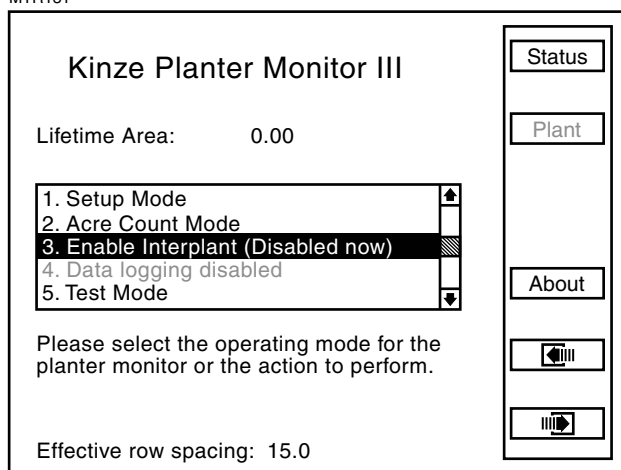
MTR132



MTR130



MTR131



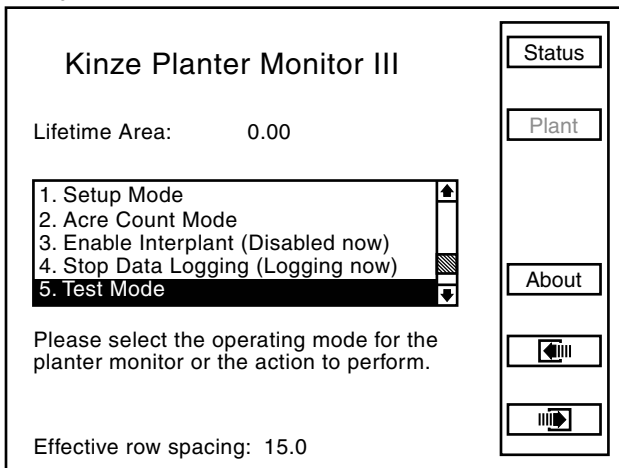
Press F6 to return to the Plant screen.

TEST MODE

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

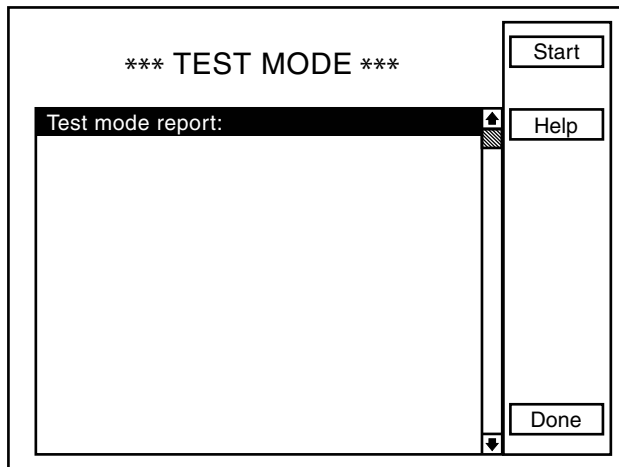
STEP 2 Select "5. Test Mode" by turning the rotary encoder knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

MTR173



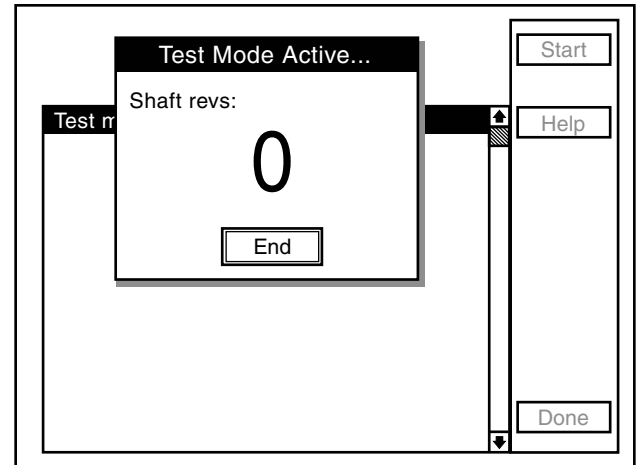
STEP 3 Press the F1 key next to Start.

MTR174



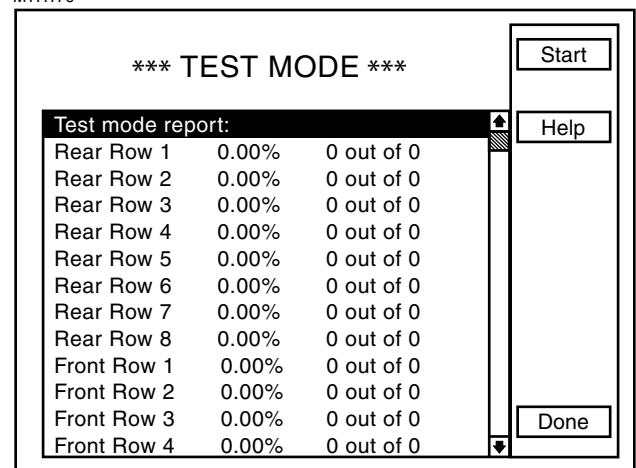
STEP 4 The "Test Mode Active" box will appear showing the number of shaft revolutions. The "End" box will be highlighted. Press the knob or Enter key. The "Test Mode Active" box will appear displaying the drill shaft revolutions.

MTR173



STEP 5 The TEST MODE screen displays test run data (seed count) for each row.

MTR176

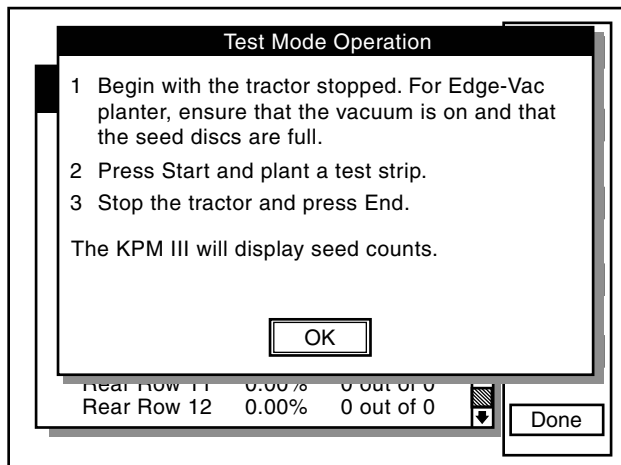


STEP 6 Begin the test with the tractor stopped. For EdgeVac planters, ensure the vacuum is on and that the seed discs are full.

STEP 7 Press the F1 key next to Start and plant a test strip.

STEP 8 Stop the tractor and press "End". The KPM III will display seed counts by row and percentage.

MTR177



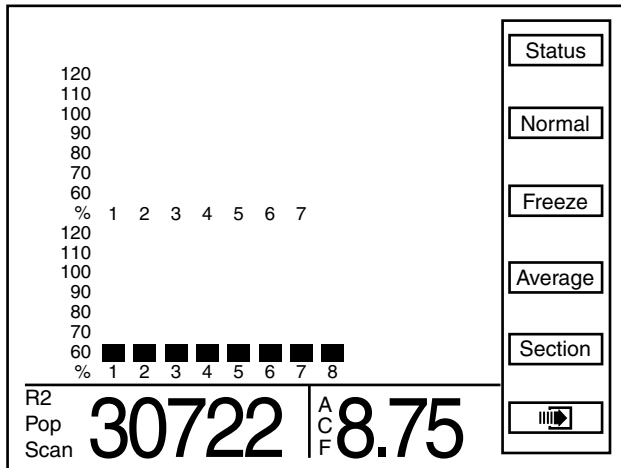
NOTE: The above instructions will display on the screen when the F2 key next to “Help” is pressed.

STEP 9 Press the F6 key next to Done. The display returns to the Mode Selection screen.

ROW POPULATION

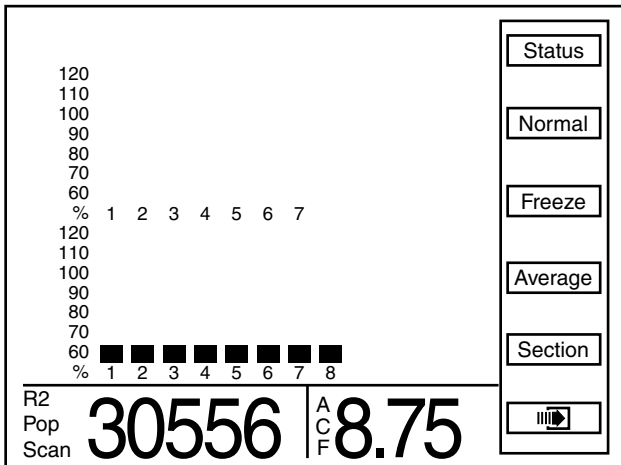
Press the F2 key next to “RowPop” to display row population. Average planter population will be shown in the lower L.H. corner of the display.

MTR133



- Press the F3 key next to Scan and the monitor will scan through each row in ascending order displaying the average seed population for each row. After all rows have been scanned the average population is displayed and scan function will continue with the first rear row.

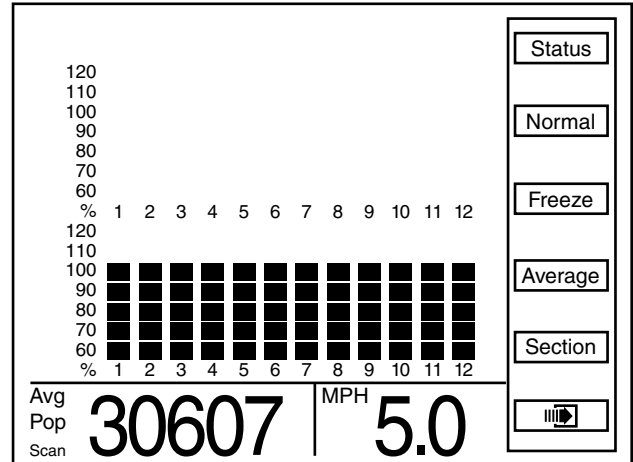
MTR134



- Press the F3 key next to Freeze to stop scanning, the left display item will be frozen on a particular row. “Frzn” appears in the lower L.H. corner to indicate the display is frozen. To resume scan press the F3 key next to Scan.

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

MTR135



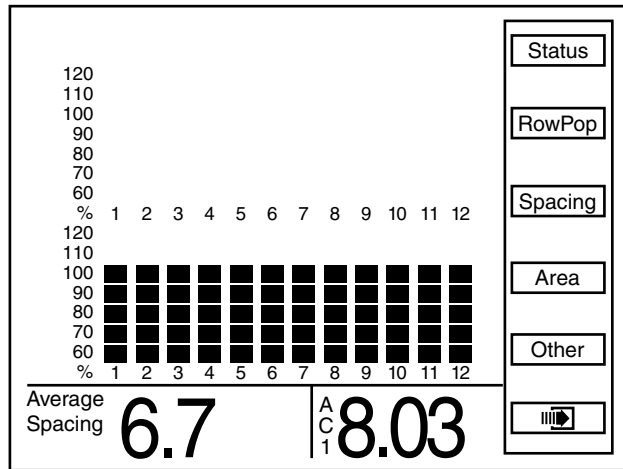
- When either “Scan” or “Frzn” is displayed in the L.H. corner, the Section and arrow keys function as follows:
 - Section, Right arrow key, or Left arrow key advances to the first rear row.
 - The Up arrow key moves forward to the next row of the planter, wrapping around to the first row when moving past the last row.
 - Down arrow key moves backward to the previous row of the planter, wrapping around to the last row of the planter when moving past the first row.
- Press the F4 key next to Average to display the average population in the bottom L.H. corner.
- Press the F2 key next to Normal to display the normal screen for the Planter Configuration screen.

NOTE: If the rows are being scanned and the F4 key next to Average is pressed the scan function will stop.

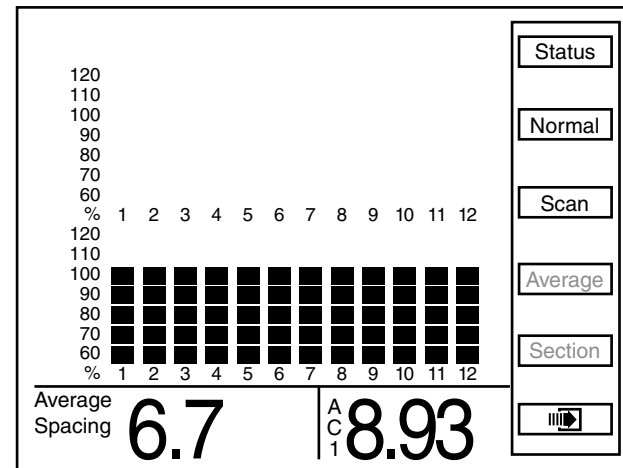
ROW SPACING

- Press the F3 key next to Spacing to display seed spacing keys. "Average Spacing" will appear in the bottom L.H. corner of the display.

MTR136



MTR137



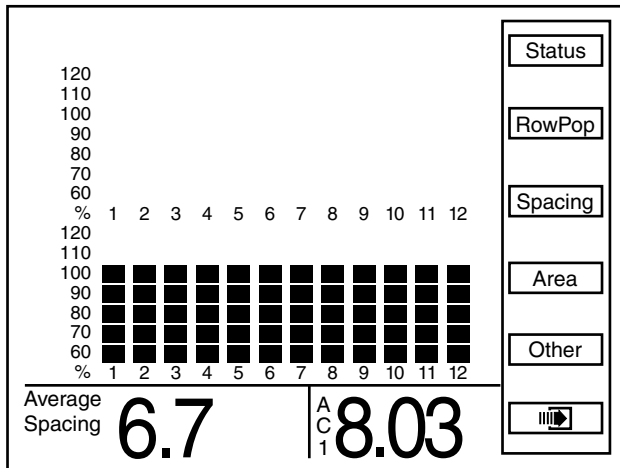
- Press the F3 key next to Scan and the monitor will scan through each row in ascending order displaying the average seed spacing for each row. Scan appears in the L.H. corner to indicate the display is scanning. After all rows have been scanned the average population is displayed and scanning will continue with the first rear row.

- Press the F3 key next to Freeze to stop scanning, the left display item will be frozen on a particular row. "Frzn" appears in the lower L.H. corner to indicate the display is frozen. To resume scan press the F3 key next to Scan.
- When either "Scan" or "Frzn" is displayed in the left display item, the Section and arrow keys function as follows:
 - Section, Right arrow key, or Left arrow key advance to the first rear row.
 - The Up arrow key moves forward to the next row of the planter, wrapping around to the first row when moving past the last row.
 - Down arrow key moves backward to the previous row of the planter, wrapping around to the last row when moving past the first row.
- Press the F4 key next to Average to display the average seed spacing in the bottom L.H. corner.
- Press the F2 key next to Normal to display the Planter Configuration screen.

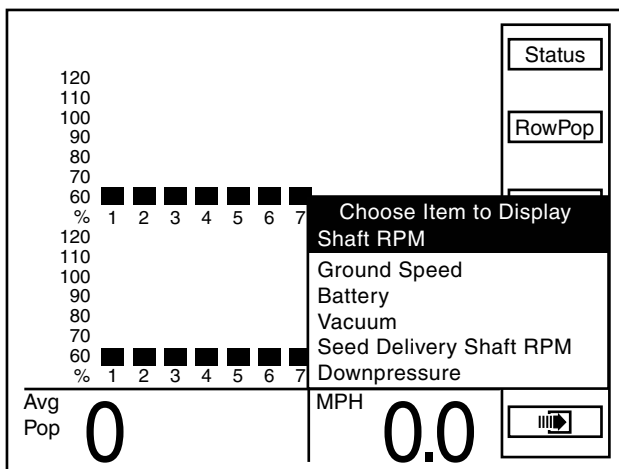
NOTE: If the rows are being scanned and the F4 key next to Average is selected the scan function will stop.

SPEED/SHAFT ROTATION

MTR138



MTR209



- Press the F5 key next to “Other” to display items available to display in the bottom R.H. corner. Turn the knob or use the arrows keys to advance to “Battery” to view battery condition. The value will appear in the bottom R.H. corner of the display as “Bat V”.
- Press the F5 key next to “Other” to display items available to display in the bottom R.H. corner. Turn the knob or use the arrows keys to advance to “Vacuum” to view vacuum. The inches of vacuum will appear in the bottom R.H. corner of the display as “VAC”.
- Press the F5 key next to “Other” to display items available to display in the bottom R.H. corner. Turn the knob or use the arrows keys to advance to “Seed Delivery Shaft RPM” to view shaft RPM. The shaft RPM will appear in the bottom R.H. corner of the display as “RPM SDS”.
- Press the F5 key next to “Other” to display items available to display in the bottom R.H. corner. Turn the knob or use the arrows keys to advance to “Downpressure” to view lbs. of down pressure. The lbs. of down pressure will appear in the bottom R.H. corner of the display as “LBS”.

- Press the F5 key next to Other to display items available to display in the bottom R.H. corner. Turn the knob or use the arrow keys to highlight “Shaft RPM”. The value will appear in the bottom R.H. corner of the display as “RPM”.

NOTE: Applicable to planters with shaft rotation sensors installed.

- Press the F5 key next to “Other” to display items available to display in the bottom R.H. corner. Turn the knob or use the arrow keys to select “Ground Speed”. The value will appear in the bottom R.H. corner of the display as “MPH” or “Km Per Hr”.

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

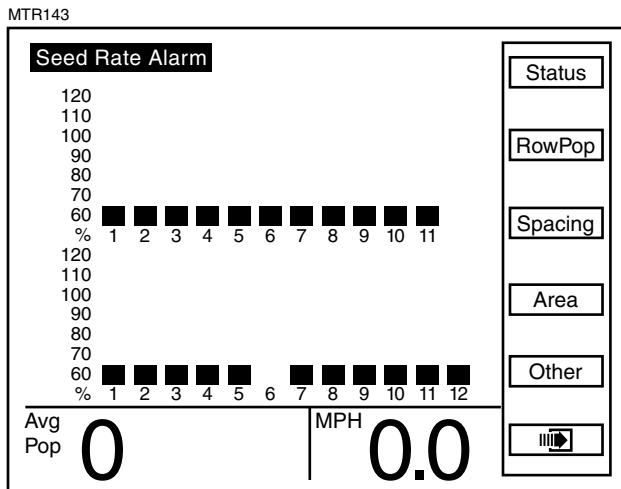
WARNINGS AND ALARMS

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

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

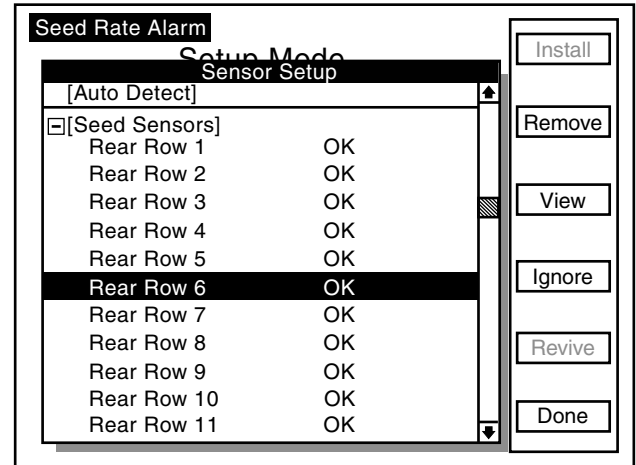
EXAMPLE: If the threshold is 70% the lower two bargraph segments are shown. If the threshold is 50% or 10% the lowest bargraph segment is shown.

The status message associated with an alarm contains more information about the alarm. To view the "Status Message" for a seed rate alarm, press the F1 key next to Status.



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

MTR144

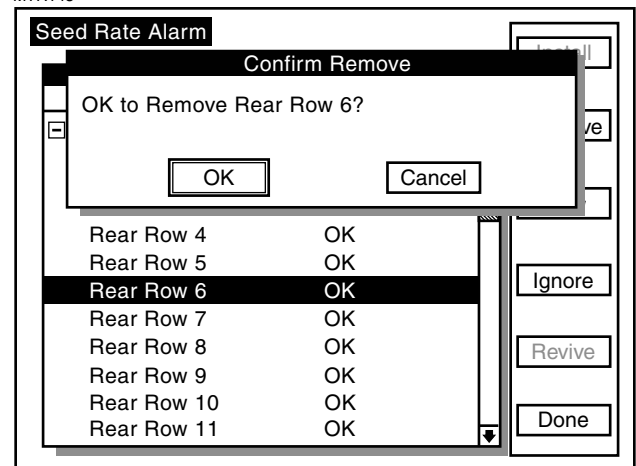


NOTE: The only way to remove an alarm is to find the problem and correct it. Alarms are not reported for rows with the seed rate alarm thresholds disabled.

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

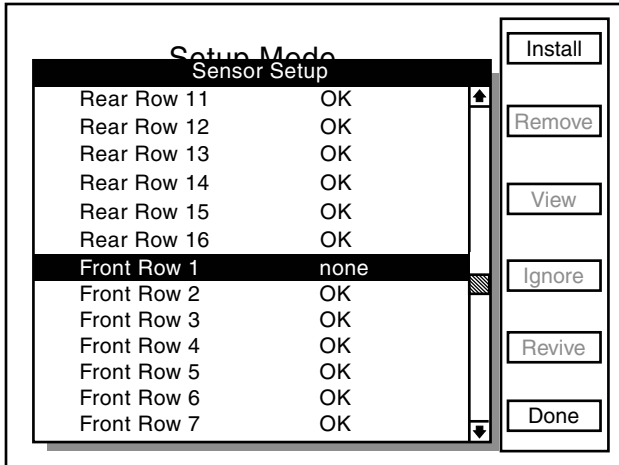
The row can be removed by pressing the F2 key next to Remove. A box will appear asking for confirmation to remove the row. The "OK" box will be highlighted in the box.

MTR145



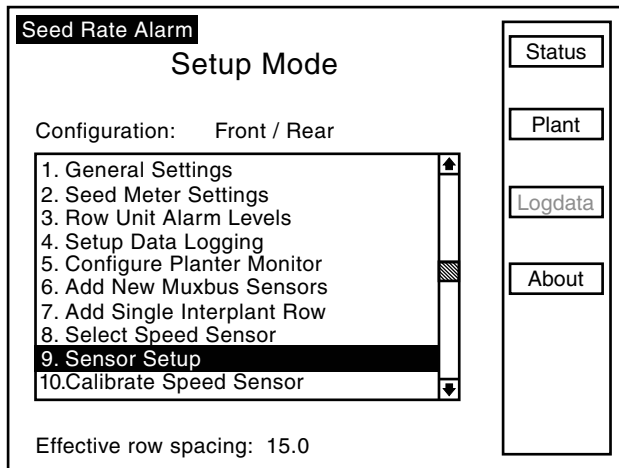
Press the knob or Enter key to confirm removal. The Sensor Setup screen will display "none" next to the row that was removed. Press the F6 key next to "Done". The setup mode screen will appear.

MTR146

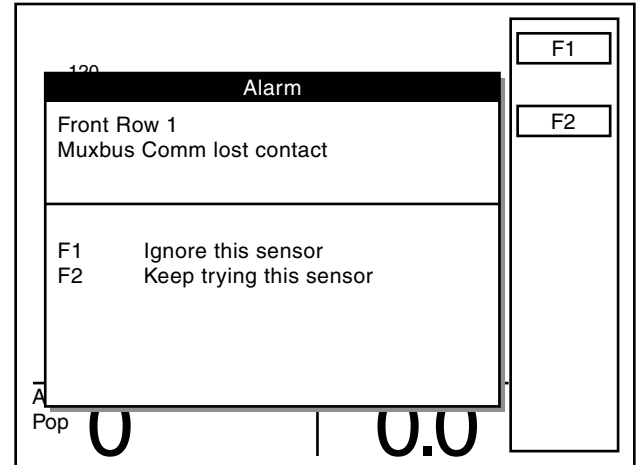


Press the F2 key next to Plant to return to the Planter Configuration screen.

MTR147

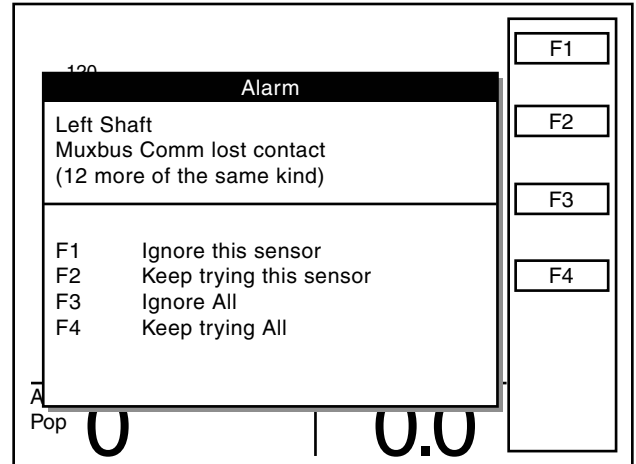


MTR148



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

MTR149



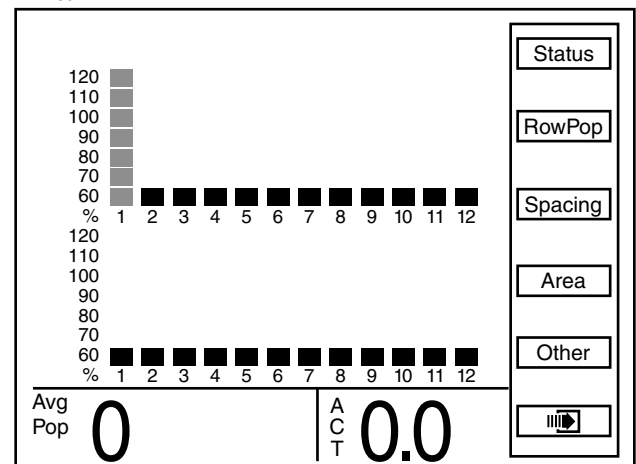
STEP 2 Section Not Planting - When the monitor detects an entire section not planting, three beeps will sound to alert the user. The bargraph for the affected section flashes and is reduced to the lowest segment. An alarm message is added to the list of "Status Messages". Press the F1 key next to Status to view the alarm message.

STEP 3 Seed Counting Sensors Not Communicating With Monitor - When the monitor detects a communication error between the sensor and the monitor, the monitor will beep twice to alert the user.

- Try to reestablish communication with sensor(s) by pressing F2.
- If the monitor is unable to establish communication there may be a faulty sensor, poor electrical connection, or a cut or pinched wire harness.

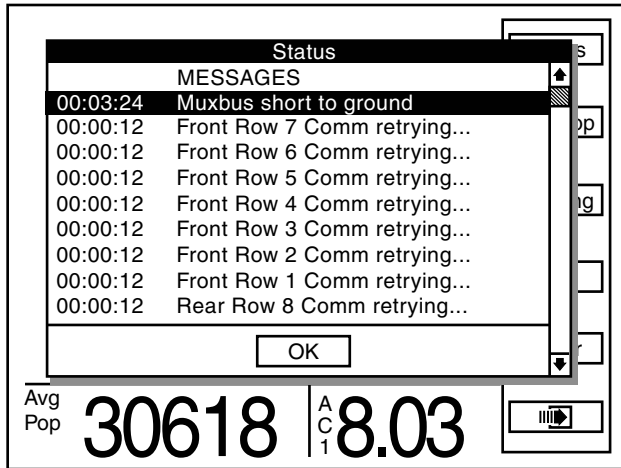
NOTE: When a known sensor or group of sensors are faulty, F1 or F3 should be pressed. The monitor will stop communication with the sensor(s) and the corresponding bargraphs will be grayed out on the main "Planter Configuration" screen as shown below.

MTR150



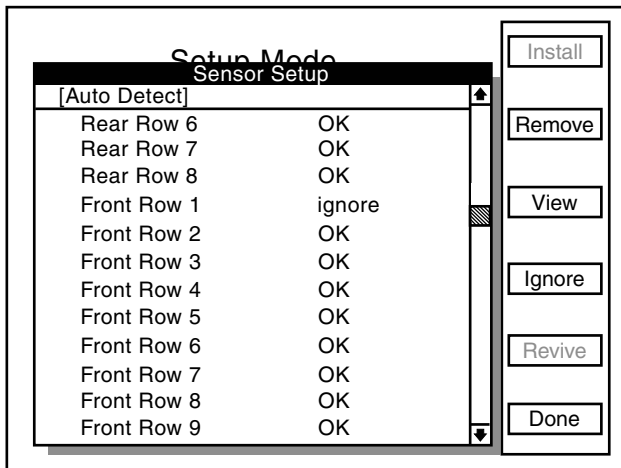
NOTE: If sensors are not faulty, F2 or F4 should be pressed. After pressing F2 or F4 a message similar to the one below will appear when the “Status” button F1 is pressed.

MTR151



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

MTR152

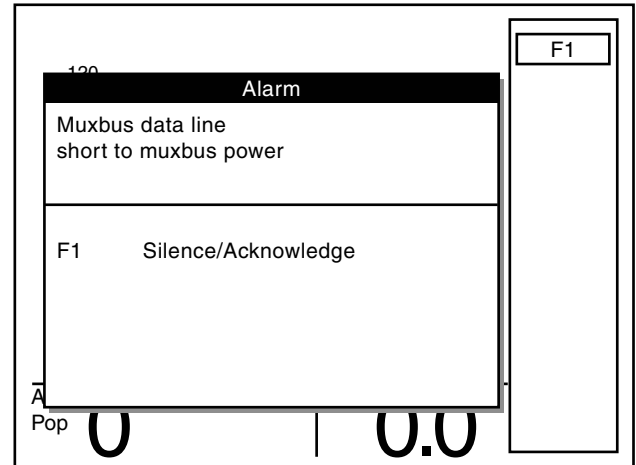


STEP 4 Seed Counting Sensors Too Dirty Warning - When powering on the KPM III, each of the seed sensors will do a self check. If a seed tube is too dirty, the message “Clean Or Replace Sensor As Necessary” will be displayed and the bargraph for that row will flash.. The sensor will not function until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

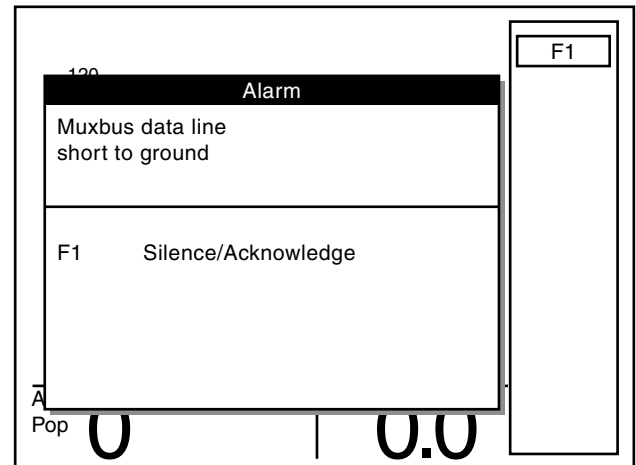
NOTE: After the alarms have been acknowledged and the alarm condition still present, the LCD screen will continue to display the alarm condition.

STEP 5 Wire Shorts - When a wire is shorted, one of the messages below will appear, indicating which wires are shorted. The short must be located and repaired to continue planting. Turn off the monitor and restart it to clear the alarm.

MTR153

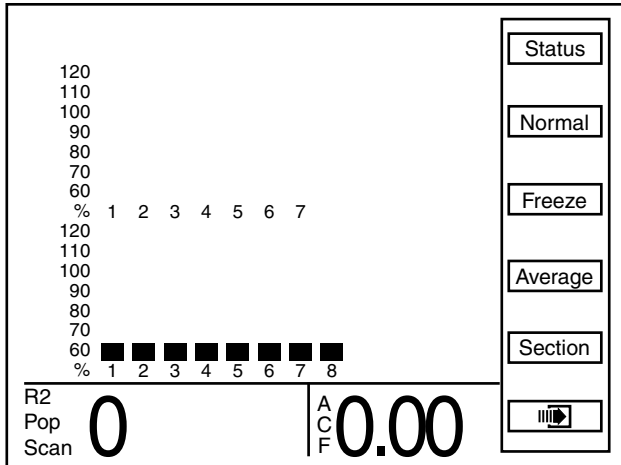


MTR154



STEP 6 Add Interplant® Row Error – The planter monitor configuration must contain an odd number of front rows before the single Interplant® row unit can be added.

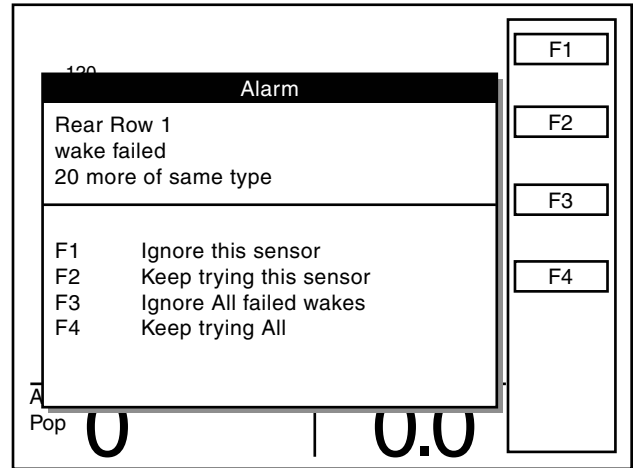
MTR155



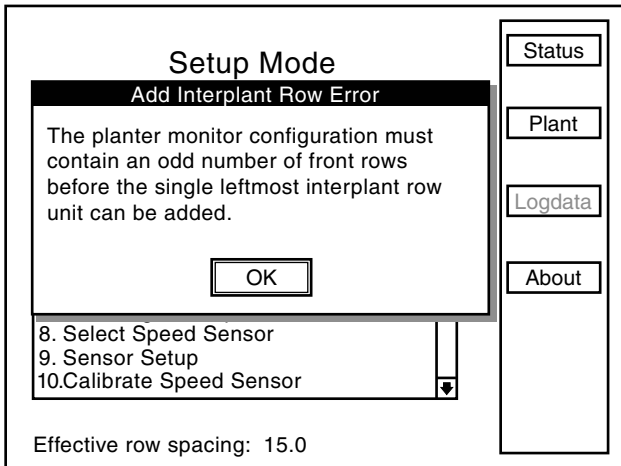
NOTE: The planter monitor configuration above has an even number of front (Interplant®) rows (8).

STEP 8 Alarm: Rear Row 1 wake failed – Select an option from the warning box and press the key next to the selection.

MTR158

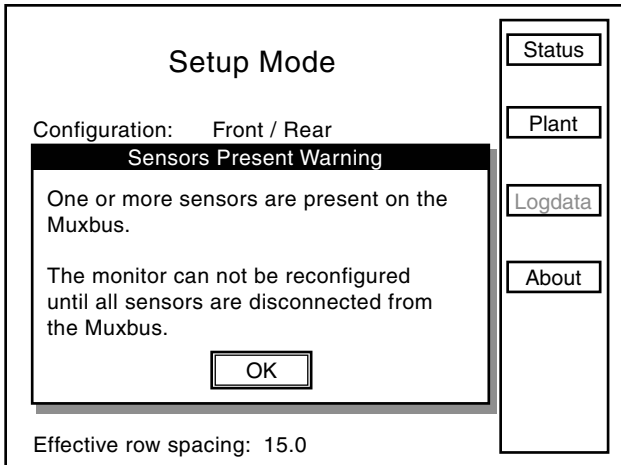


MTR156



STEP 7 Sensor Present Warning – One or more sensors are present on the Muxbus.

MTR157

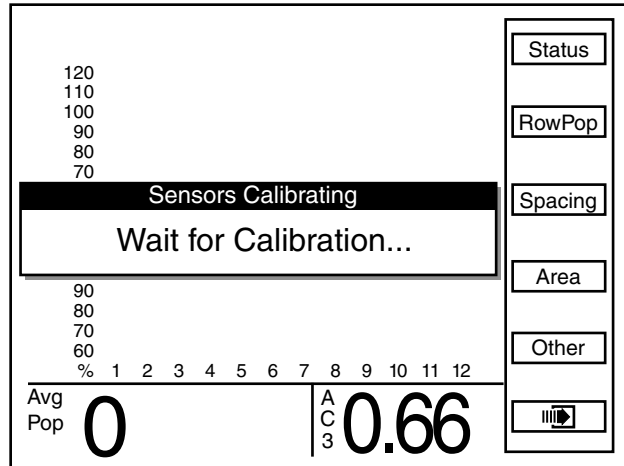


FIELD OPERATION

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

If the monitor has been configured, it will show the Planter Configuration screen and attempt to communicate with the seed sensors.

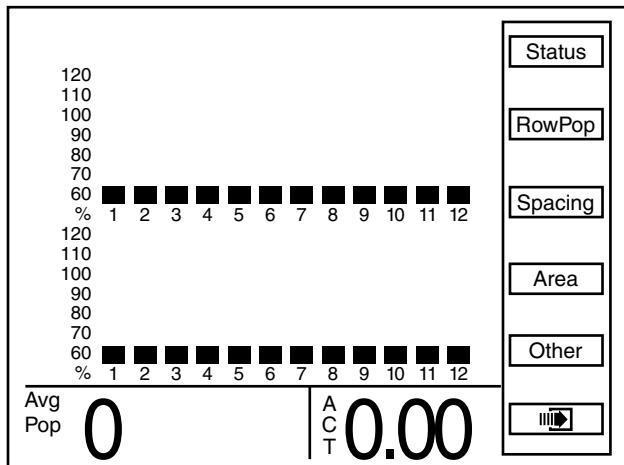
MTR179



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

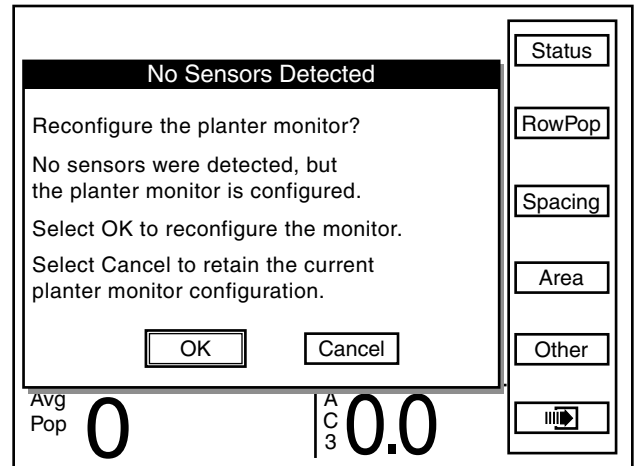
NOTE: If the monitor can communicate with the sensors the Planter Configuration screen will be displayed.

MTR180



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

MTR181



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

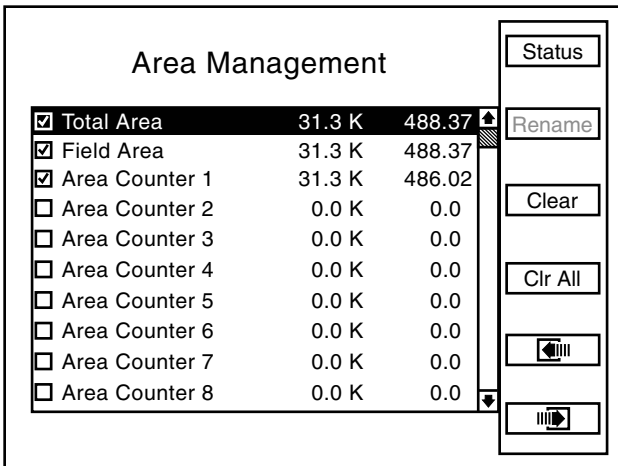
AREA MANAGEMENT

There are 42 area counters: Total Area, Field Area and Area Counters 1 through 40. The Total Area is always active but may be cleared. If it is cleared, the Field Area is also cleared. Field Area and Area Counters 1 through 40 may be cleared, started or stopped separate from each other.

In addition, there is a Lifetime Area Counter (located on the Mode Selection Screen) which can not be disabled or cleared by the user.

To display the "Area Management" screen, press the F6 key until the "Area Management" screen appears.

MTR182



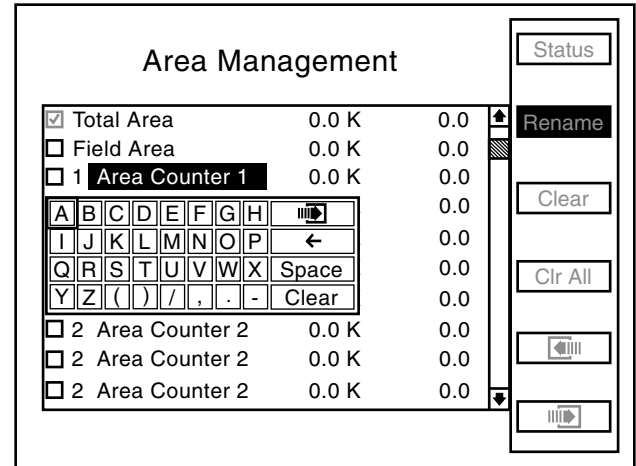
NOTE: Total Area counter can never be disabled, but can be reset to zero (cleared).

- The check mark (✓) in the box next to the name of the area counter indicates the area counter is enabled and accumulating area.

EXAMPLE: In the above illustration, 31.3K indicates average seed population per unit area (either acre or hectare). This number has been rounded off. The actual seed population ranges anywhere from 30,500 to 31,499 per unit area. The last column of numbers is the area accumulated (acre or hectare).

- Turn the knob or use the arrow keys to highlight the desired area counter.
- Press the F2 key next to Rename to name the area. A drop down keyboard will appear. Use the keyboard to enter area name, then press the knob or enter key to save information.

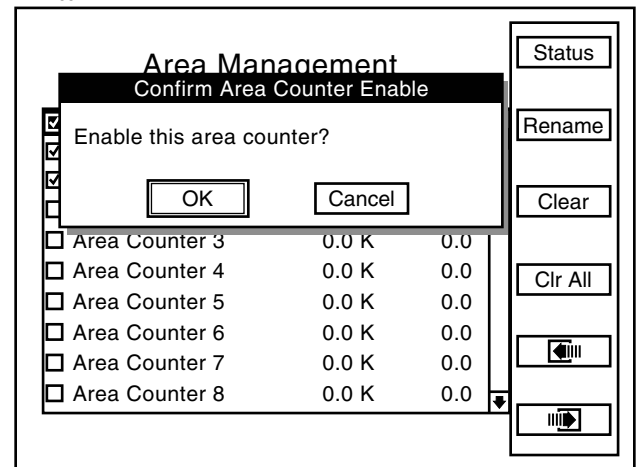
MTR202



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

ENABLE AREA COUNTER

MTR183



To Enable a disabled area counter:

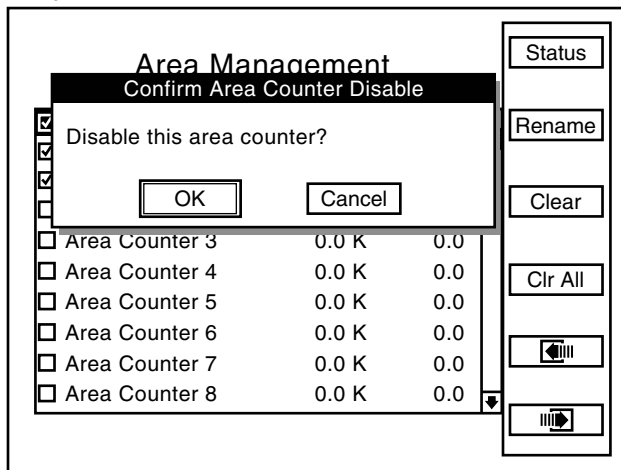
- Highlight the desired "Area Counter" by turning the rotary encoder knob or using the arrow keys.
- Press the knob or Enter key. A "Confirm Area Counter Enable" box will appear.
- Use the knob or arrow keys to highlight the "OK" button and press the knob or Enter key. The enabled "Area Counter" will then start accumulating area.

DISABLE AREA COUNTER

All area counters may be disabled, except the Total Area Counter. To disable an enabled area counter:

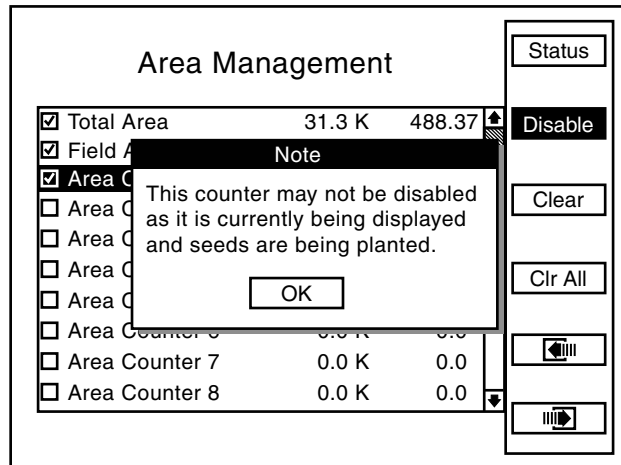
- Highlight the desired “Area Counter” by turning the rotary encoder knob or using the arrow keys.
- Press the knob or Enter key. A “Confirm Area Counter Disable” box will appear.
- Use the knob or arrow keys to highlight the “OK” button and press the knob or Enter key. The disabled “Area Counter” will no longer accumulate area.

MTR184

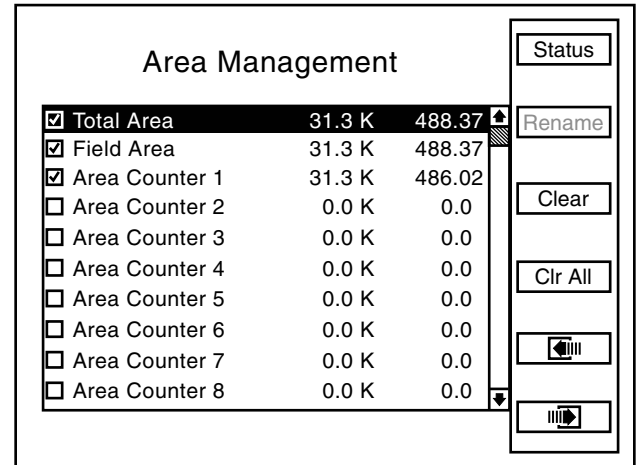


NOTE: Attempts to disable an Area Counter that is planting will cause the following alarm.

MTR185

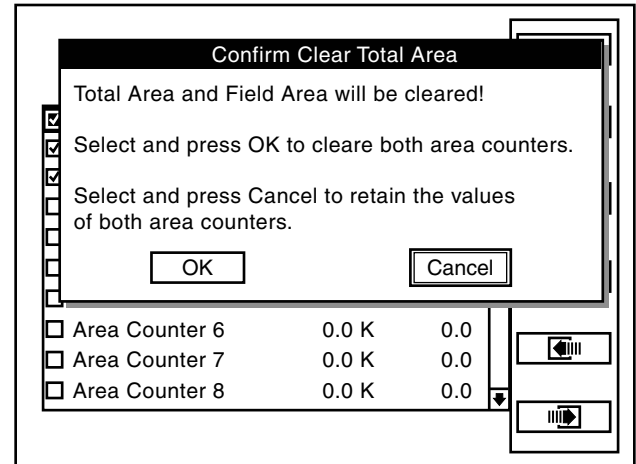


MTR186



NOTE: If “Total area” is highlighted and the F3 key next to Clear is pressed the following request for confirmation will appear.

MTR187



CLEAR AREA COUNTER

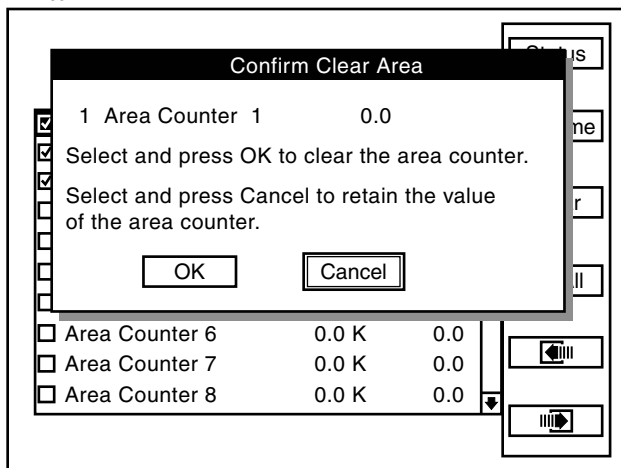
Total Area, Field Area and Area Counters 1 through 40 can be cleared, whether enabled or disabled. Clearing the “Total Area” counter forces the “Field Area” counter to be cleared. However, clearing an “Area Counter” including the “Field Area” clears only that individual counter.

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

Clearing an Area Counter

- STEP 1** Turn the knob or use the arrow keys to highlight the desired area counter.
- STEP 2** Press the F3 key next to “Clear”. The request for confirmation shown below will appear.
- STEP 3** Turn the knob or use the arrow keys to highlight “OK” or “Cancel” and press the knob or Enter key to confirm the selection.

MTR188

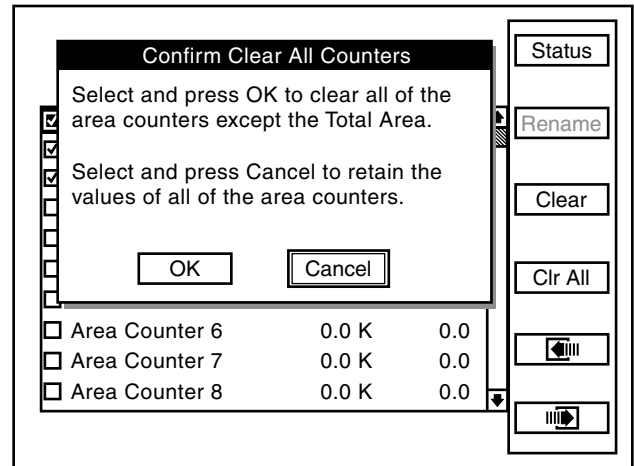


Clearing All the Area Counters

NOTE: This will clear all the area counters except the “Total Area Counter”

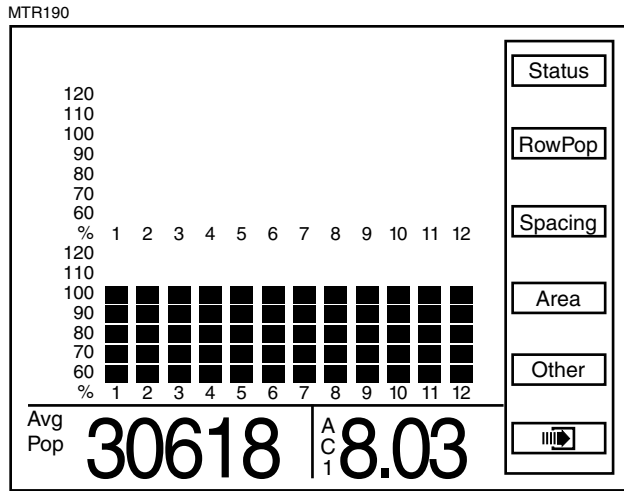
- STEP 1** Press the F4 key next to “CLR All”. A request for confirmation will appear.
- STEP 2** Turn the knob or use the arrow keys to select either “OK” or “Cancel” and press the knob or Enter key to make confirm the selection.

MTR189

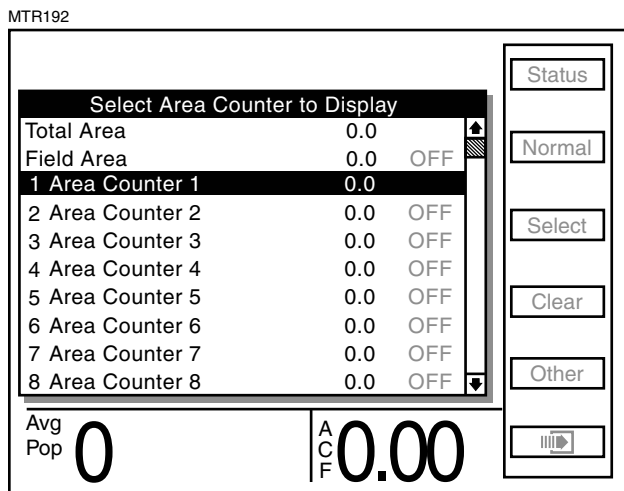


AREA COUNTERS

STEP 1 On the Planter Configuration screen press the F4 key next to “Area”.

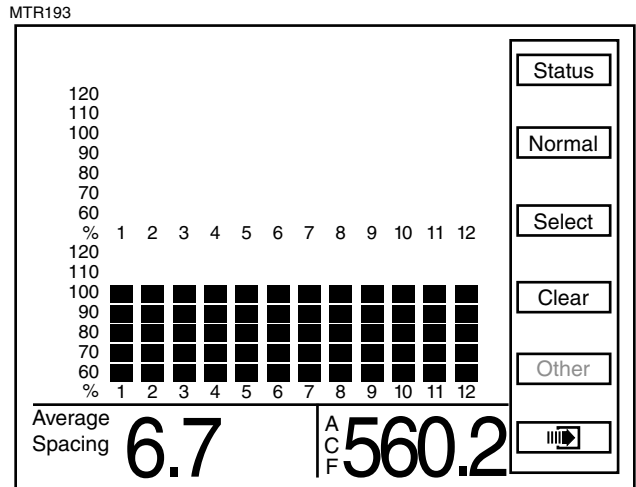


STEP 2 Press the F3 key next to “Select” to display the list of area counters.



STEP 3 Use the arrow keys to highlight the desired area counter to be displayed.

STEP 4 Press the knob or Enter key and the “Planter Configuration” screen will be displayed.



NOTE: The abbreviation for the selected area counter will appear in the bottom R.H. corner of the screen. In the above illustration “ACF” stands for Area Counter Field.

CLEARING FIELD AREA

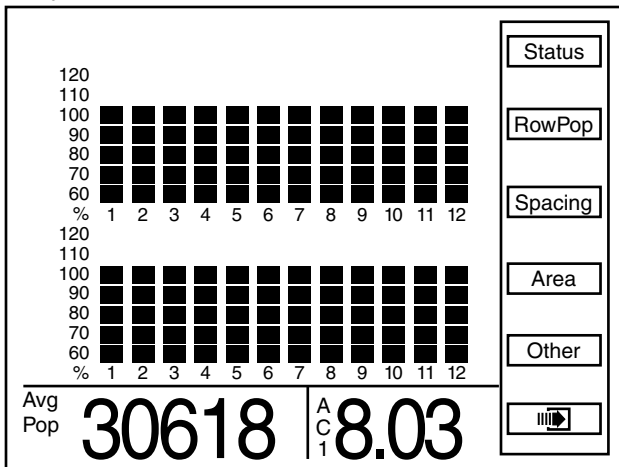
STEP 1 To reset the counter, display the Plant screen.

NOTE: If “Area” is not displayed next to F4, press F2 next to “Normal”.

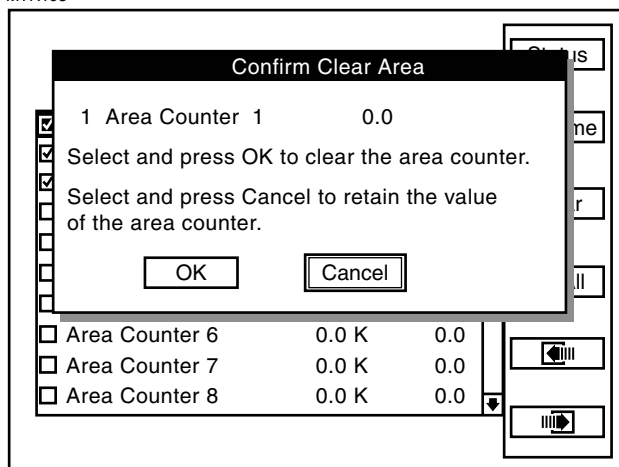
STEP 2 Press the F4 key next to Area then press the F4 key next to Clear, a dialog box will appear requesting confirmation to clear.

STEP 3 Highlight “OK” or “Cancel” by turning the knob or using the arrow keys. Press the knob or Enter key to verify the selection.

MTR194



MTR195



NOTE: Only the displayed area counter can be cleared.

REPLACING FAULTY SENSOR(S)

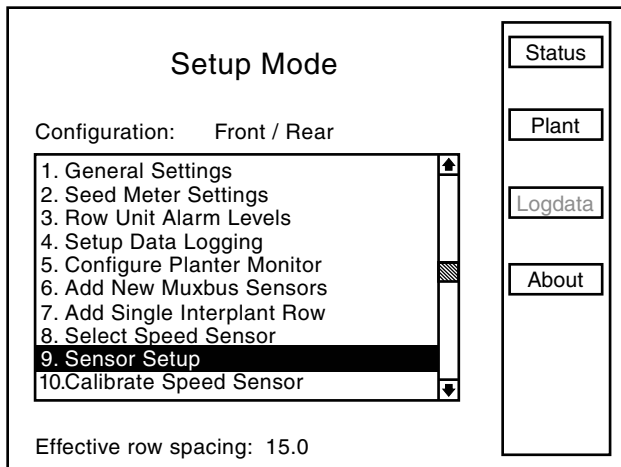
NOTE: The monitor will beep twice when the new sensor(s) is learned.

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

STEP 2 Highlight "1. Setup Mode" by turning the knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

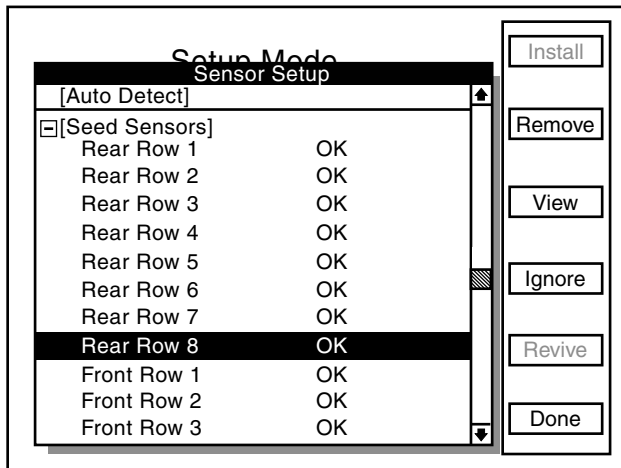
STEP 3 Highlight "9. Sensor Setup" by turning the knob or using the arrow keys. Press the knob or Enter key to display the highlighted item.

MTR200



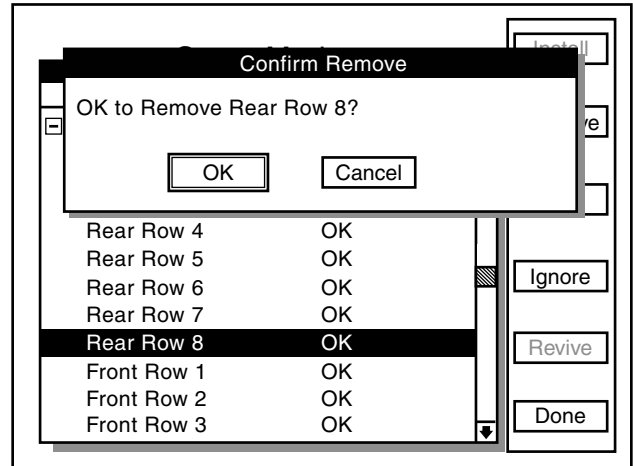
STEP 4 Turn the knob or use the arrow keys to highlight the faulty sensor and press the F2 key next to Remove.

MTR203

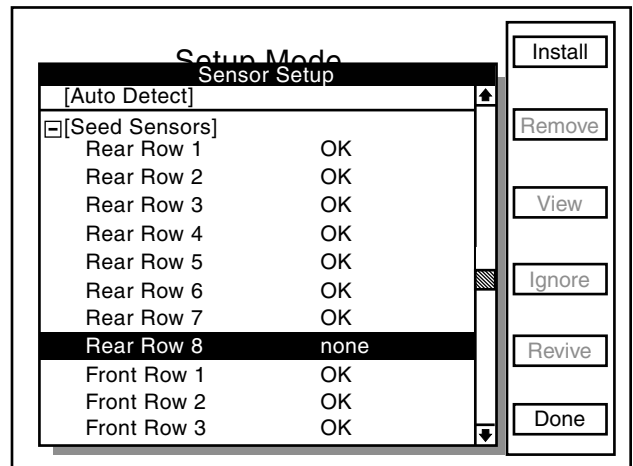


STEP 5 The following message will appear. Select OK to confirm by pressing the knob or ENTER key. Select Cancel to exit.

MTR204



MTR205



STEP 6 Unplug the sensor and plug in a new sensor. Press F1 key next to Install.

NOTE: The monitor will beep twice when the new sensor(s) is learned.

Repeat STEPS 1 through 6 for each faulty sensor being replaced.

NOTE: Highlighting a sensor and pressing the F4 key next to View displays additional information for troubleshooting a problem. If a faulty sensor has been ignored it may be highlighted in the list of sensors, press the F3 key next to Revive. The monitor will try to communicate with the sensor. If successful, "OK" will appear next to the sensor.

PLANTER MONITOR MODULE (PMM)

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

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

D11200710a



MACHINE OPERATION

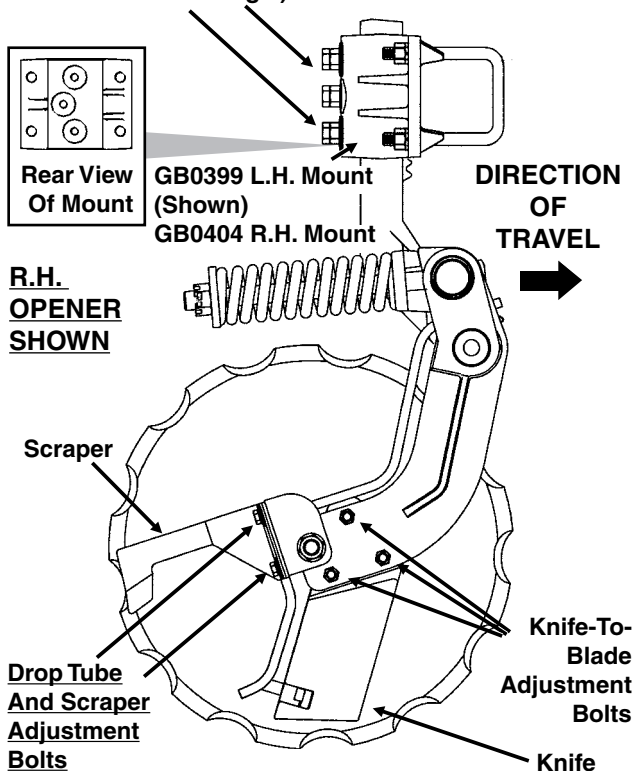
NOTCHED SINGLE DISC FERTILIZER OPENER

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

⚠ WARNING: Spring under pressure. DO NOT disassemble.

(B0297/A12422)

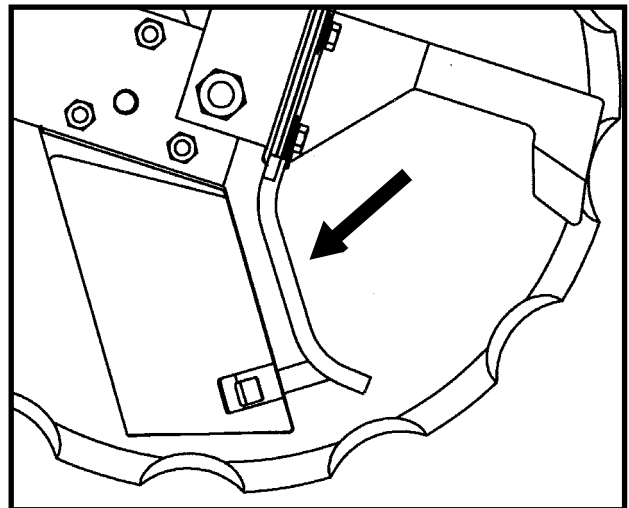
Depth Adjustment Cap Screws - Recommended Maximum Operating Depth 4" (Middle Cap Screw Holds Blade Angle But Must Be Loosened To Adjust Depth And Tightened First To Set Blade Angle)



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

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

D01040702



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

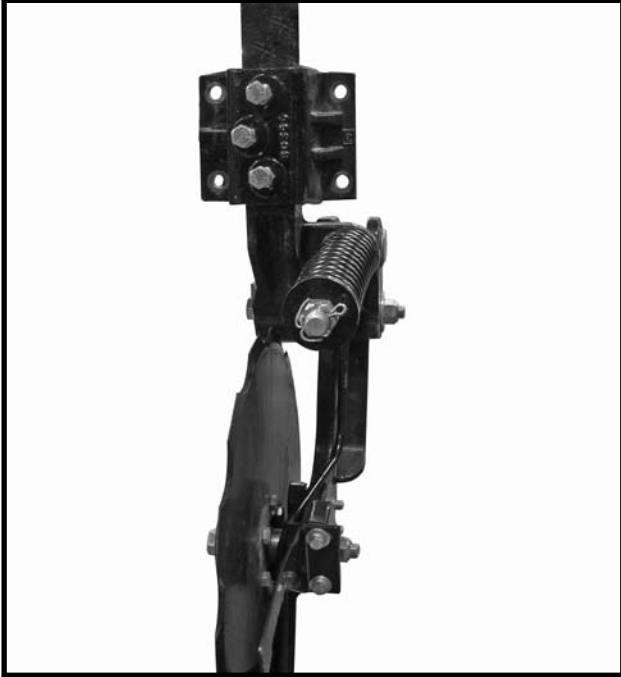
Adjust scraper to just touch the opener blade. As the mounting hardware is tightened, the scraper is drawn tighter to the blade. After adjustment, rotate opener blade to be sure blade will turn by hand with slight resistance, but will not coast or freewheel.

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

MACHINE OPERATION

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)

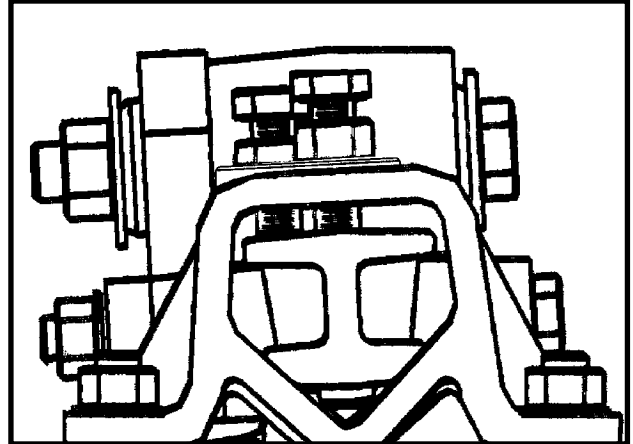
D11200808a



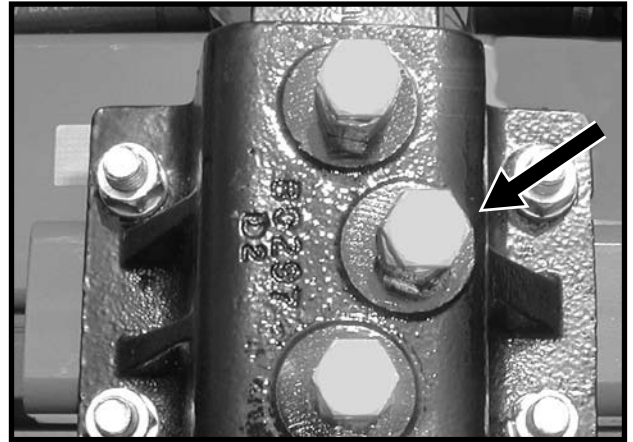
R.H. Opener (B0404)

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



D070103100



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

MACHINE OPERATION

DEPTH/GAUGE WHEEL ATTACHMENT FOR NOTCHED SINGLE DISC FERTILIZER OPENER

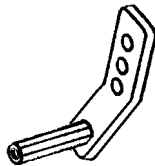
D061101202a



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

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

(FRTZ256a)



MACHINE OPERATION

LIQUID FERTILIZER ATTACHMENT

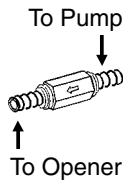
D03220615



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

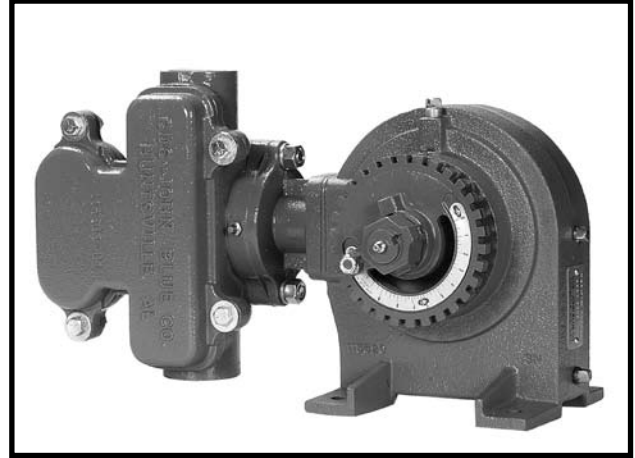
NOTE: An optional low rate check valve is available for installation in-line between the liquid fertilizer piston pump and the liquid fertilizer openers to ensure equal distribution of product at low rates. The check valves also eliminate the need for anti-siphon loops if the valves are installed as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

(FRTZ208)



OPTIONAL PISTON PUMP

NGP7055

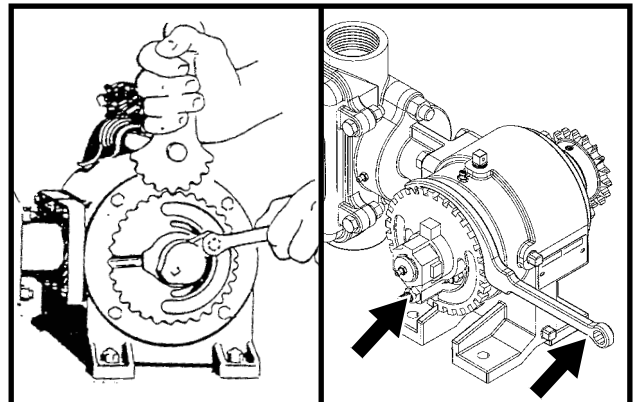


If the machine is equipped with the piston pump option, the rate of liquid fertilizer application is determined by the piston pump settings.

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 $\frac{3}{8}$ " lock nut that secures the arm with the pointer and rotate the scale flange until the pointer is over the desired scale setting. The adjustment wrench will facilitate rotation of the scale flange. Tighten the $\frac{3}{8}$ " lock nut being careful not to over tighten.

(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.

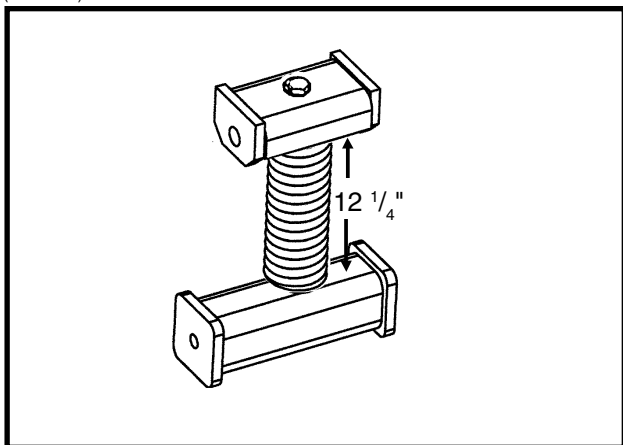
NOTE: Periodically check flow to all rows. If one or more lines are plugged, set rate will be delivered to remaining rows.

MACHINE OPERATION

PISTON PUMP GROUND DRIVE WHEEL SPRING ADJUSTMENT

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

(TWL219tt)



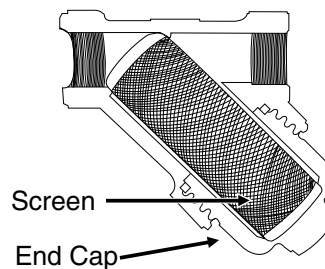
NOTE: The piston pump ground drive wheel assembly is designed to allow the assembly to be locked in raised position when not in use. Remove the two cap screws that attach the upper end of the spring to the spring mount. Reattach the spring using the upper holes in the spring mount. Reverse procedure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

CLEANING

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

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

(INS220)



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

MACHINE OPERATION

REAR TRAILER HITCH

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

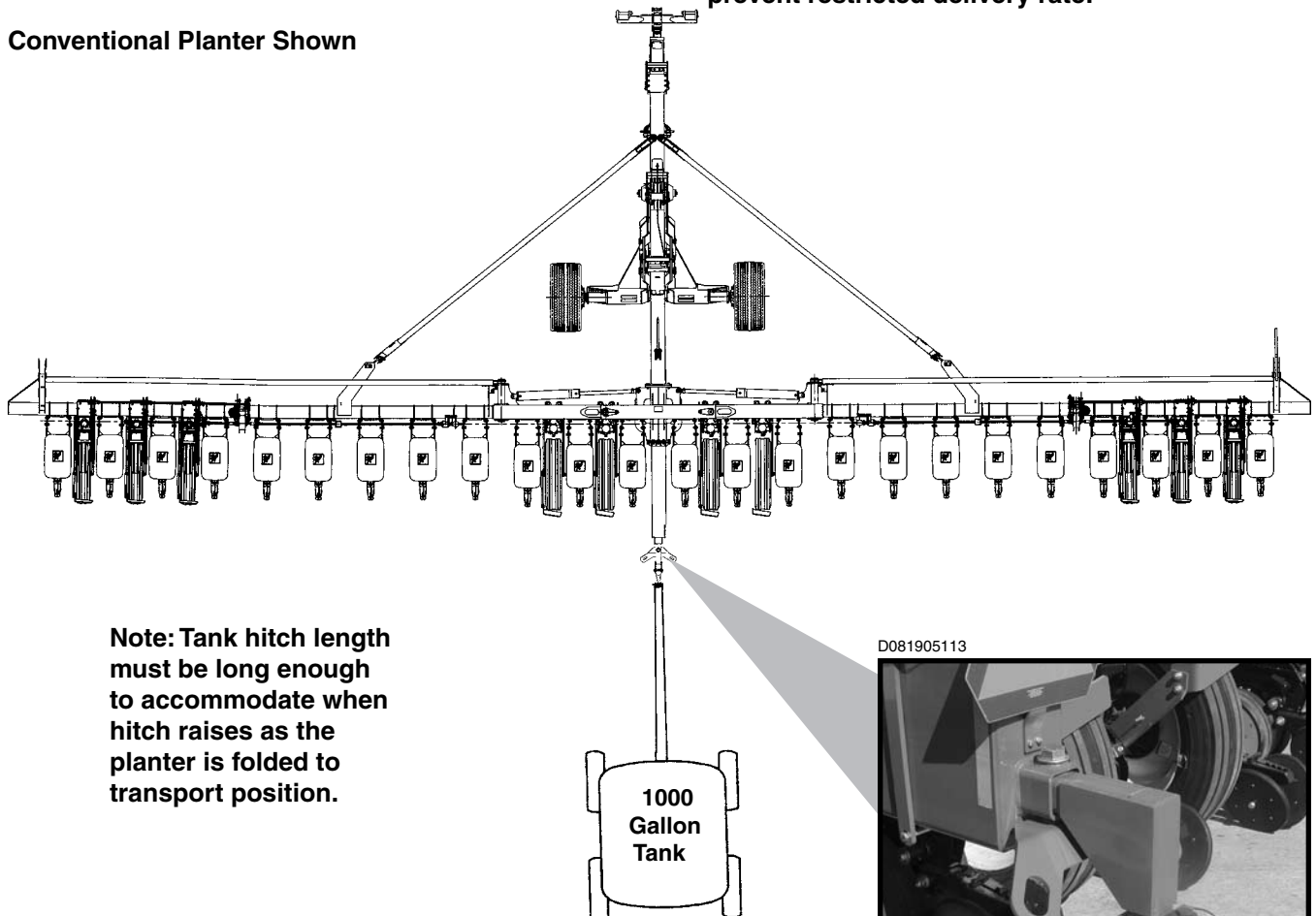
(FWD55a)

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

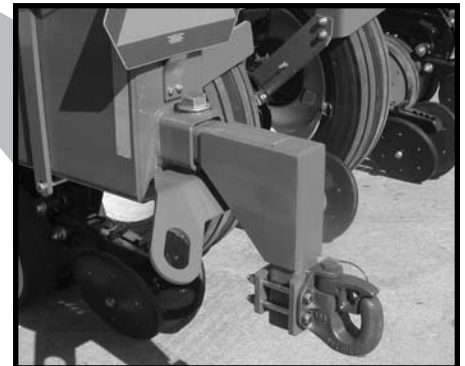
IMPORTANT: Connection points are provided on the rear trailer hitch for connection of customer-supplied transport safety chains.

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

Conventional Planter Shown



D081905113



MACHINE OPERATION

TRANSPORTING THE PLANTER



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

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

METRIC CONVERSION TABLE

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

PLANTING SPEED

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

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

FIELD TEST

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

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

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

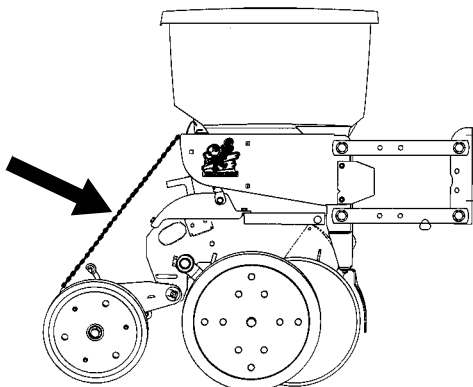
- Hoses And Fittings
- Bolts And Nuts
- Cotter Pins And Spring Pins
- Drive Chain Alignment

MACHINE OPERATION

CHECKING SEED POPULATION

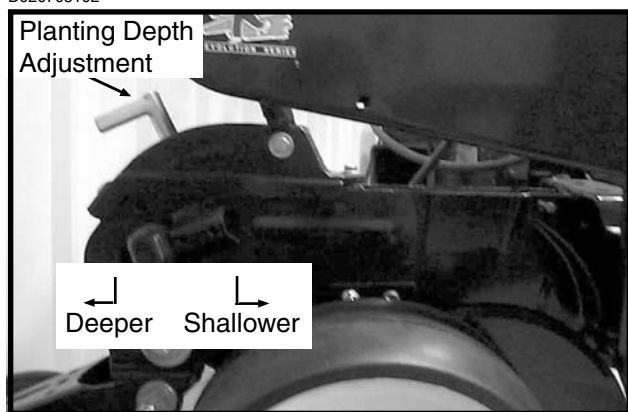
1. Tie up one or more sets of closing wheels by running a chain or rubber tarp strap between the hopper support panel and closing wheels. It may be necessary to decrease closing wheel arm spring tension.

(RU113b)



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

D020705102



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

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

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

4. Count seeds in measured distance.
5. Multiply the number of seeds placed in $\frac{1}{1000}$ of an acre by 1000. This will give you total population.

EXAMPLE: With 30" row spacing 17' 5" equals $\frac{1}{1000}$ acre.

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

MACHINE OPERATION

Determining Pounds Per Acre (Brush-Type Seed Meter)

To determine pounds per acre:

Seeds Per Acre On Chart	÷	Seeds Per Pound From Seed Tag On Bag	=	Pounds Per Acre
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To determine bushels per acre:

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

MACHINE OPERATION

GENERAL PLANTING RATE INFORMATION

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

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

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

Finger Pickup Corn Meter

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

Finger Pickup Oil Sunflower Meter

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

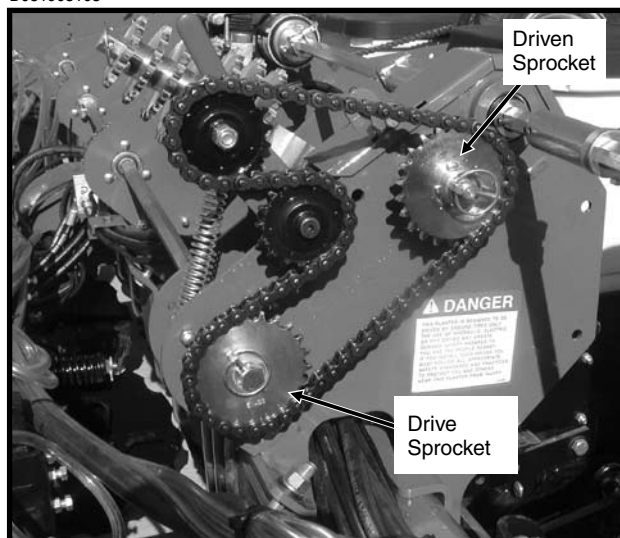
NOTE: Seed additives, added to the seed in the hopper, may adversely affect performance of the finger pickup seed meter and accelerate wear. See “Finger Pickup Seed Meter” in the Row Unit Operation section.

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

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

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

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MACHINE OPERATION

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

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

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

MACHINE OPERATION

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

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

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

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

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

MACHINE OPERATION

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

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

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

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

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

MACHINE OPERATION

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

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

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

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

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

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

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

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

MACHINE OPERATION

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.

MACHINE OPERATION

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.

MACHINE OPERATION

LIQUID FERTILIZER PISTON PUMP APPLICATION RATES GALLONS PER ACRE

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

Pump Setting	1	2	3	4	5	6	7	8	9	10
36 Row 30"	2.5	4.9	7.3	9.8	12.2	14.6	17.0	19.5	21.9	24.4

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

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

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

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

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

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

MACHINE OPERATION

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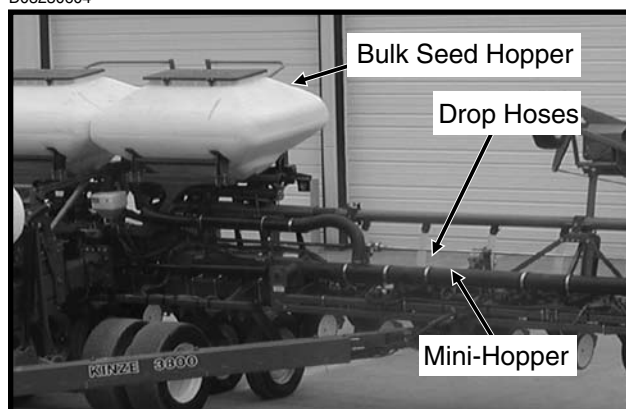
SDS SEED DELIVERY SYSTEM OPERATION

INTRODUCTION

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

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

D03230604



D10060627



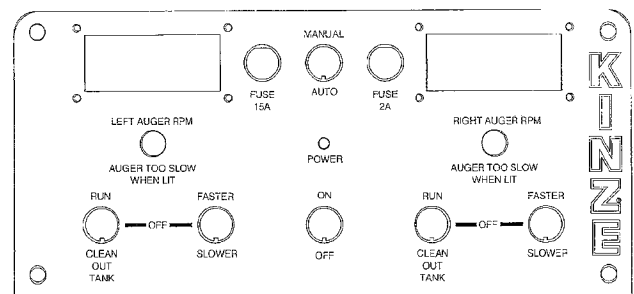
NOTE: After all row outlets are filled to capacity, seed will continue to be evenly distributed to all rows until the bulk seed hopper is empty. When the bulk seed hopper is empty or the auger system is shut off, all drop hoses will “plant out” equally and all rows should run out of seed at approximately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



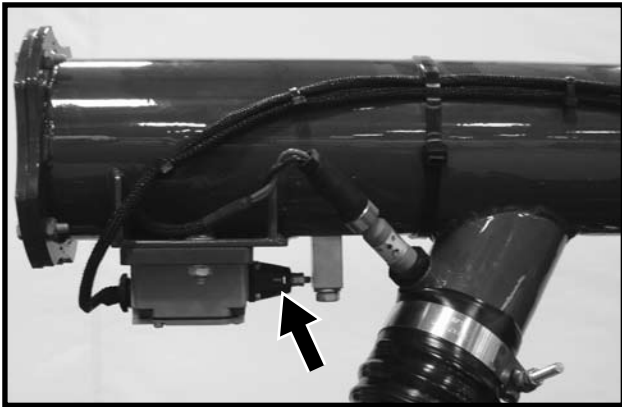
WARNING: ALWAYS use master power switch to turn the system OFF when leaving the tractor operator platform, as the system can start and run at any time if seed demand occurs. Always turn the system OFF before transport. A limit switch on each half of the system at the center of the planter disables the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

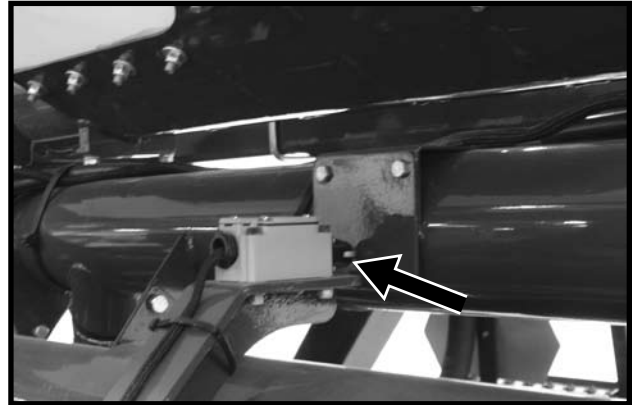
D12200683



The limit (secondary overload) switches on the outer ends of the tubes are connected as normally CLOSED switches. When relaxed (no pressure applied to the roller), they allow current to flow through the switches. A 1/8" air gap should be maintained between the switch roller and the actuator arm when all components are in a relaxed state to allow current to pass through the switches. This function can be tested by turning the system ON. While the system is running, carefully pull back the actuator arm until it makes contact with the switch roller. Continue to pull the actuator arm back another 1/4". The system should shut off and then restart when the actuator arm is released. To adjust for 1/8" air gap, reposition the switch by loosening the bolts holding the retainer plate.

LIMIT SWITCHES - LOCATED NEAR CENTER OF PLANTER

D12200684

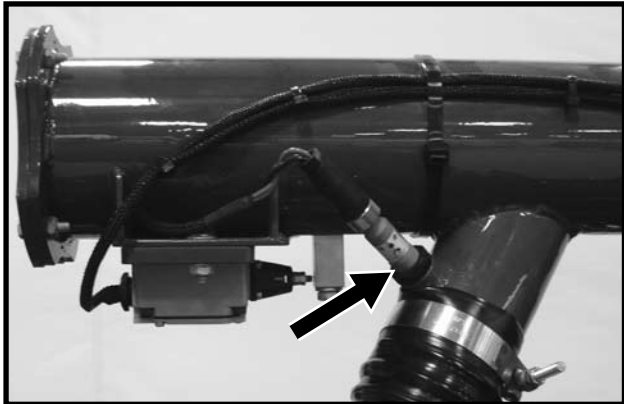


Two limit (transport safety) switches are located near the center of the machine on both sides. These switches are connected as normally OPEN switches. When relaxed (no pressure applied to the roller), they do not allow current to flow through the switch. These switches shut off the power when the planter is folded to avoid accidental operation of the system during transport. The system can be run in CLEANOUT mode while the planter is folded to allow easier access to the hopper unload nipples. These switches must be depressed when the planter is in field operation position to allow electrical current to pass through the switches to other components of the seed delivery system. To adjust the switch with planter in field operation position, loosen the nuts holding the switch to the mount. Move the switch toward the striking plate an additional 1/8" after a click is heard. Tighten mounting hardware and test system.

SDS SEED DELIVERY SYSTEM OPERATION

PROXIMITY SENSORS

D12200683



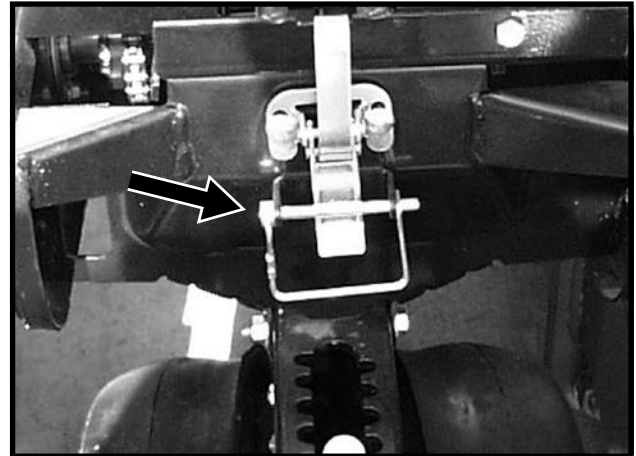
The proximity sensor screws into the outer drop tube at each end of the planter. The tip of the sensor should be approximately 1/2" up from the bottom of the deflector pad in the drop tube. When replacing a sensor draw a line on the sensor 1 1/2" up from the sensing tip. Screw the sensor into the drop tube until the line is just below the surface. Rotate the sensor so the indicator light is visible. Tighten the plastic jam nut to prevent the sensor from rotating and vibrating. Be careful not to over tighten the jam nut.

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

MINI-HOPPER LATCH

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

D041801101



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 switch.	Check to be sure the main power switch and RUN switch are both ON. Check all fuses.
	Limit switches incorrectly positioned.	Check to make sure limit switches are adjusted correctly.
	Faulty proximity sensor.	Check if proximity sensors are working correctly. Replace if necessary.
	Built-in 2 minute delay.	Wait 2-3 minutes after cycling proximity sensors to determine if system is in TIME DELAY mode.
	No hydraulic flow.	Check to determine tractor hydraulic valve is detented ON (in the correct position) and set for proper flow.
	Auger speed set too low.	Increase auger speed. If set too slow system will stall.

ROW UNIT OPERATION

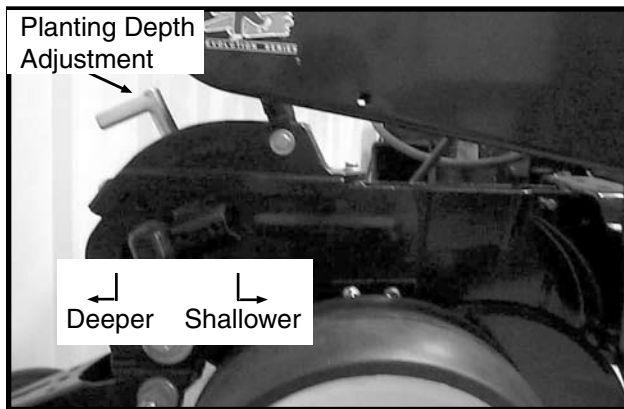
PLANTING DEPTH

Planting depth is maintained by the row unit gauge wheels. To increase or decrease the planting depth, first raise the planter to remove weight from the wheels. Then push down on the depth adjustment handle and reposition it forward to decrease depth or rearward to increase planting depth. Adjust all units to the same setting initially. Then lower the planter and check operation and planting depth of all row units. It may be necessary to readjust some rows to obtain uniform operation. Available depth adjustment range is approximately 1/2" to 3 1/2".



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

D020705102



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

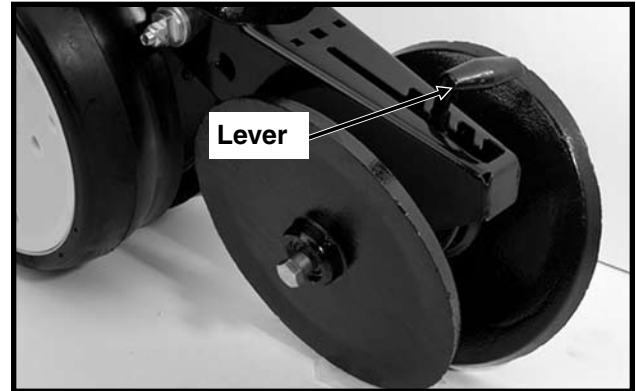


WARNING: Raise planter and install safety lockup devices before making closing wheel adjustments.

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.

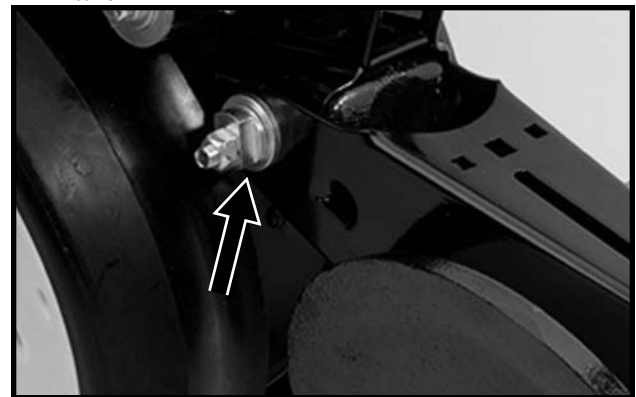
LF212299-15



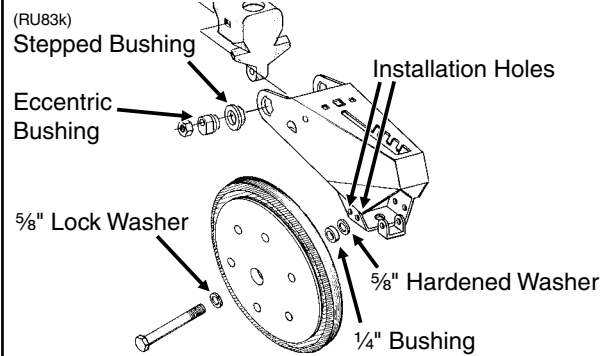
Light soil usually requires less down force at average depth (approximately 2") while heavy soil requires increased down force.

Eccentric bushings in the wheel arm stop allow for lateral adjustment of the "V" closing wheel assembly. Using a 3/4" wrench, loosen the hardware which attaches the closing wheel arm to the wheel arm stop. Using another 3/4" wrench turn the eccentric bushings until the **closing wheels are aligned with the seed trench**. Tighten hardware.

LF212299-15



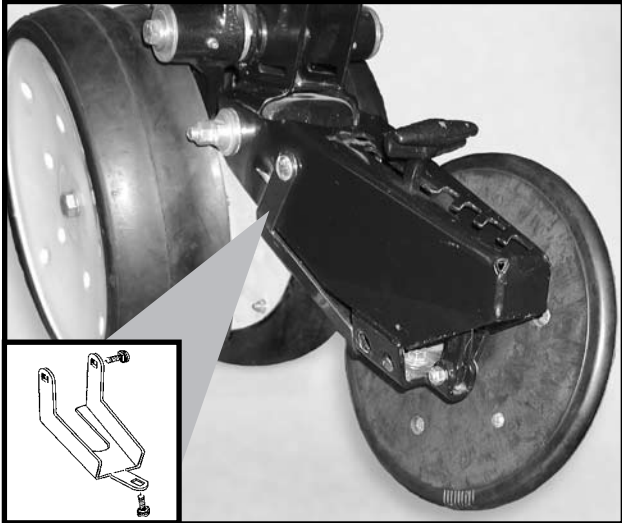
The closing wheels can be installed in two locations either "offset" (to improve residue flow) or "directly" opposite. If set "directly" opposite, the forward installation holes should be used.



ROW UNIT OPERATION

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

D11090208a



Shown With Closing Wheel Removed For Visual Clarity

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

COVERING DISCS/SINGLE PRESS WHEEL ADJUSTMENT



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

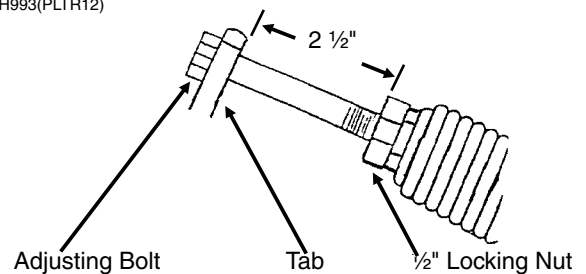
72359-31



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

Initial press wheel down force setting should be with 2 1/2" between mounting arm tab and locking nut. To adjust down force spring, loosen 1/2" locking nut and turn adjusting bolt in to increase down force or out to decrease down force. Tighten locking nut against spring plug. Adjust all row units to a similar setting.

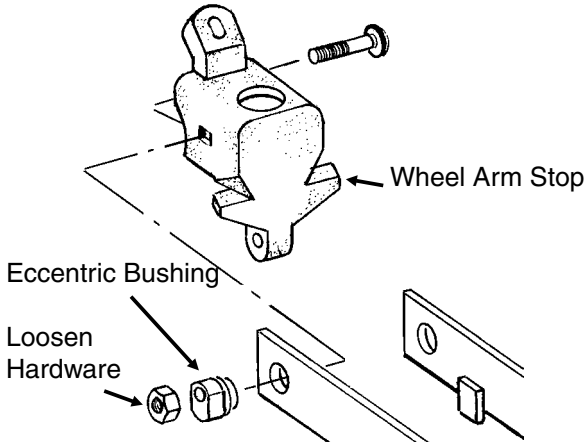
RH993(PLTR12)



ROW UNIT OPERATION

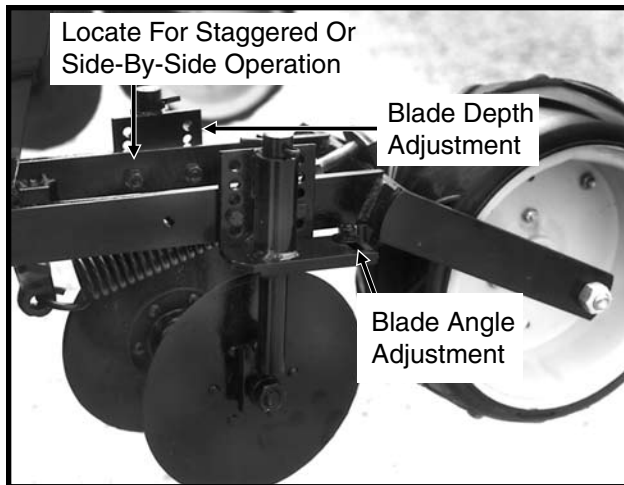
Eccentric bushings in the wheel arm stop allow for lateral adjustment of the covering discs/single press wheel assembly. Using a 3/4" wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another 3/4" wrench, turn the eccentric bushings until the press wheel is aligned with the seed trench.

(RU94b)



Two sets of holes in the mounting arm allow the covering discs to be located for staggered or side-by-side operation as desired.

72359-35



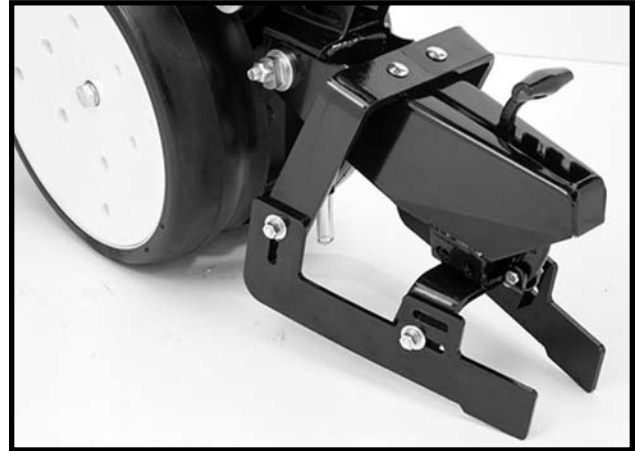
Five sets of holes in each disc bracket allow for 1/2" incremental blade depth adjustment.

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

Adjust covering discs on all row units to similar settings.

DRAG CLOSING ATTACHMENT

LF212299-18



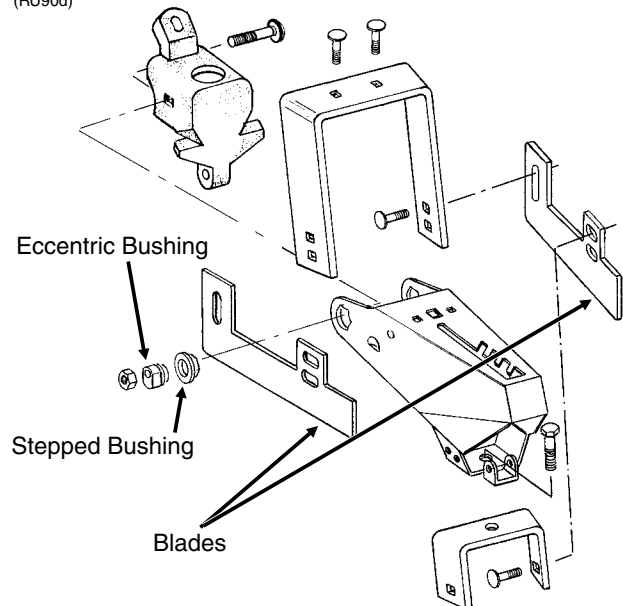
The drag closing attachment is designed to pull loose soil over the seed trench.

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

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

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

(RU90d)



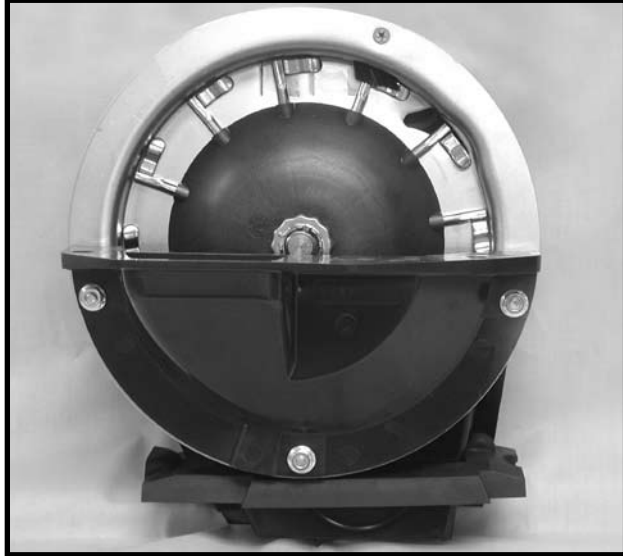
Eccentric bushings allow for lateral adjustment of the drag closing attachment. Using a 3/4" wrench, loosen the hardware which attaches the assembly to the wheel arm stop. Using another 3/4" wrench, turn the eccentric bushings until the drag closing attachment is aligned with the seed trench.

ROW UNIT OPERATION

FINGER PICKUP SEED METER

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

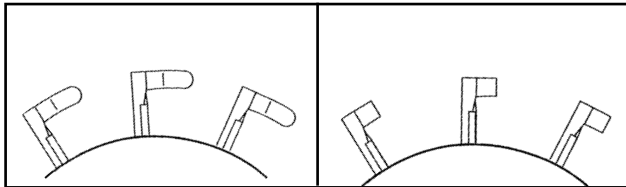
D12220401



Shown With Corn Fingers Installed

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

(PLTR91/PLTR92/PLTR91a)

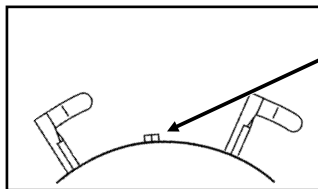


Corn Fingers

Oil Sunflower Fingers

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

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



Half Rate Blank Finger

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

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

SDS SEED DELIVERY SYSTEM

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

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

82354-1e



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

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

ROW UNIT OPERATION

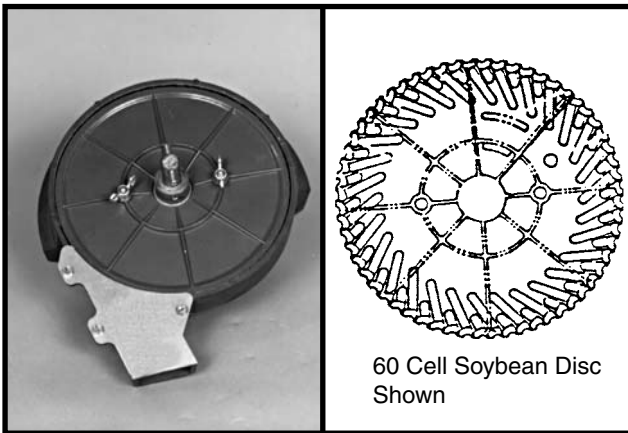
BRUSH-TYPE SEED METER

D12220403



Shown Without Seed Disc Installed

60607-40a(PLTR13)

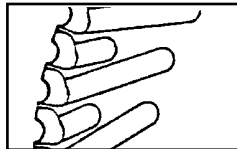


60 Cell Soybean Disc Shown

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

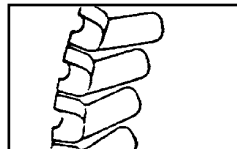
Soybean: 60 cells to meter seed sizes from 2200 to 4000 seeds per pound (Black color-coded).

(PLTR14)



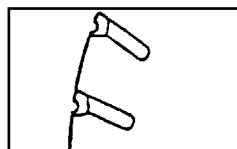
Specialty soybean: 48 cells to meter seed sizes from 1400 to 2200 seeds per pound (Dark blue color-coded).

(PLTR15)



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

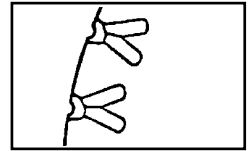
(PLTR16)



Large milo/grain sorghum:

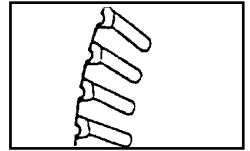
30 cells to meter seed sizes from 10,000 to 16,000 seeds per pound (Light blue color-coded).

(PLTR17)



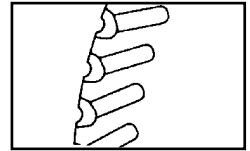
High-rate small milo/grain sorghum:

60 cells to meter seed sizes from 12,000 to 18,000 seeds per pound (Red color-coded). (PLTR18)



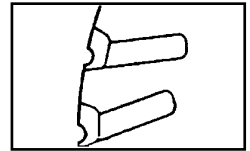
High-rate large milo/grain sorghum:

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).

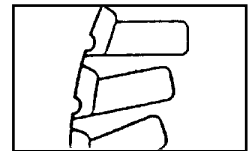
(PLTR20)



Large cotton, acid-delinted:

36 cells to meter seed sizes from 3800 to 4400 seeds per pound (Tan color-coded).

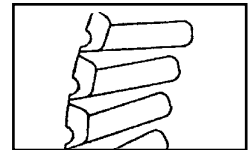
(PLTR21)



High-rate cotton, acid-delinted:

48 cells to meter seed sizes from 4200 to 5200 seeds per pound (Light green color-coded).

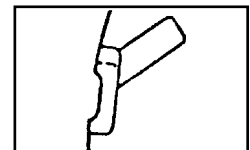
(PLTR22)



Hill-drop cotton, acid-delinted:

12 cells, 3 to 6 seeds/cell, to meter seed sizes from 4000 to 5200 seeds per pound

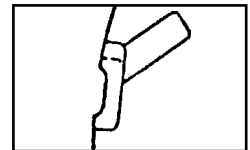
(Brown color-coded). (PLTR23)



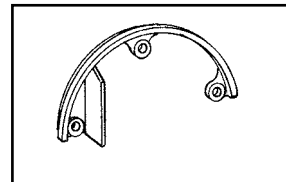
Small hill-drop cotton, acid-delinted:

12 cells, 3 to 6 seeds/cell, to meter seed sizes from 5000 to 6200 seeds per pound (Dark green color-coded).

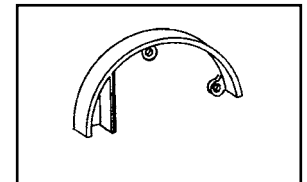
(PLTR23)



(RU14c)



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



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

ROW UNIT OPERATION

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 $\frac{5}{16}$ " 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 $\frac{1}{2}$ full of seed, add 4 $\frac{1}{2}$ cups of talc and mix thoroughly. Finish filling bulk seed hopper, add another 4 $\frac{1}{2}$ cups of talc. Adjust rate of talc use as needed so all seeds are coated, while avoiding a buildup of talc in the bottom of the hopper. Humid conditions and/or small sized seeds with extra seed treatment may require additional talc to prevent seed treatment buildup on auger bristles, seed discs and/or meter brushes.

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

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

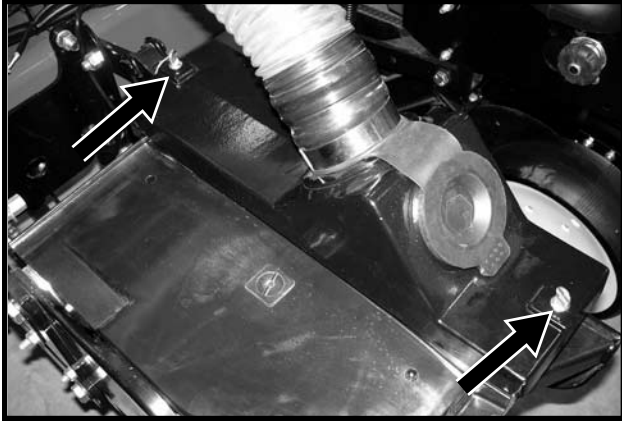
NOTE: See "Seed Lubrication" in SDS Seed Delivery System Operation section for additional information.

ROW UNIT OPERATION

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

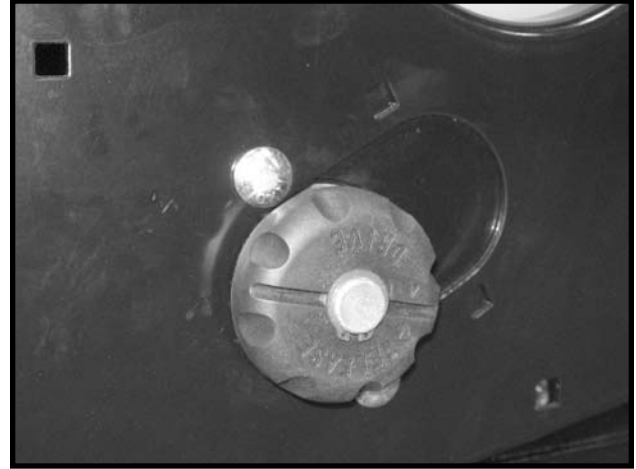


Disassemble seed meter and thoroughly clean and inspect the meter to ensure all seed is removed.

SEED 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.

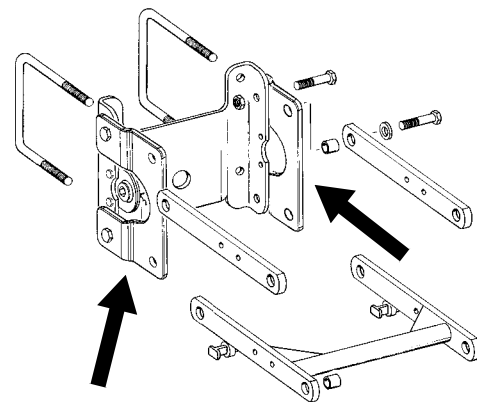
D011006100



To disengage the drive, turn the knob ¼ turn counter-clockwise. 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 OPERATION

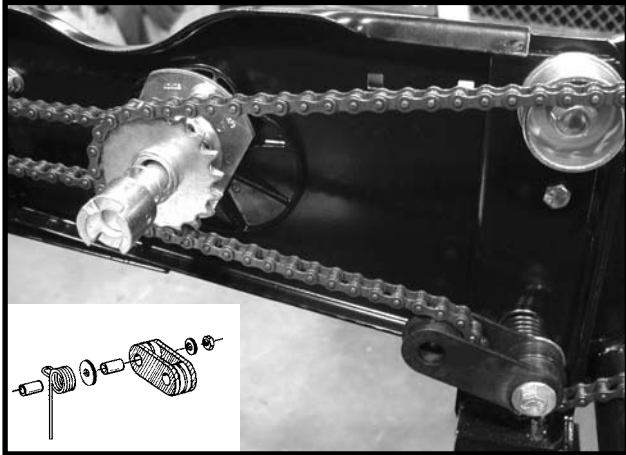
ROW UNIT CHAIN ROUTING

For proper operation and to minimize wear, the row unit drive chains must be properly tensioned and aligned.

Inspect and replace weak, worn or broken springs and/or idlers and idler bushings.

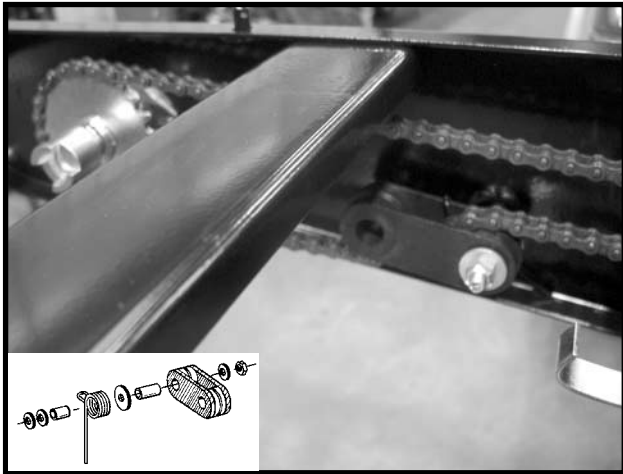
NOTE: When idler shows signs of wear, it can be reversed for prolonged use.

D051705103



Pull Row Unit Meter Drive

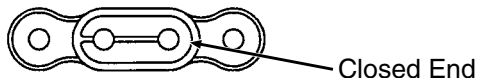
D051705102



Row Unit Granular Chemical Drive

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

(PLTR24)

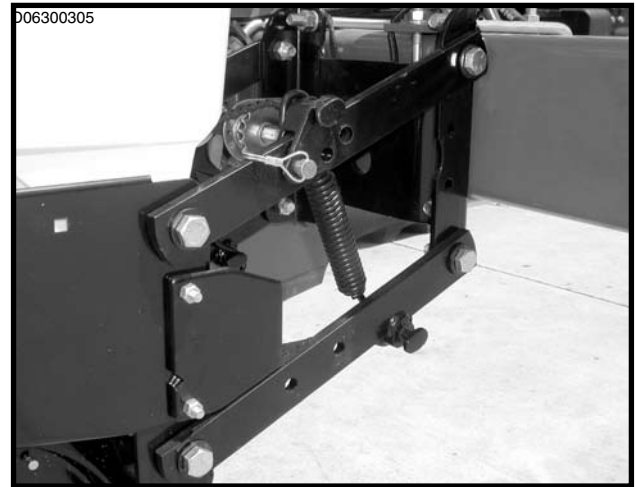


Direction Of Chain Travel →

QUICK ADJUSTABLE DOWN FORCE SPRINGS

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

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



Two Springs Per Row (Dual)

D07010301



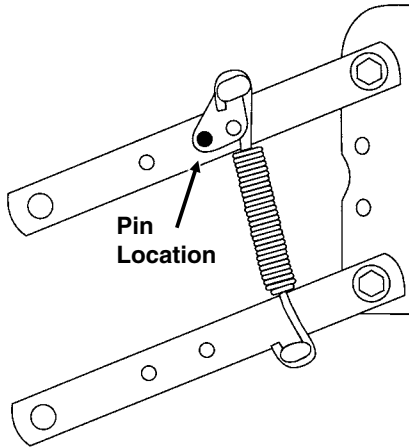
**Four Springs Per Row (Quad)
(Used Only In Conjunction With Row Unit Mounted No Till Coulters)**

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

ROW UNIT OPERATION

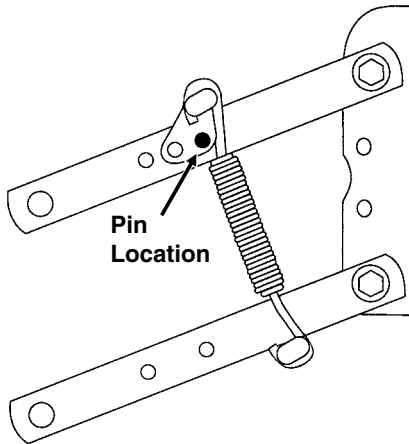
There are four positions for spring tension adjustment. Position 1 allows for minimum down pressure and position 4 for maximum down pressure.

L0096(PLTR27e)



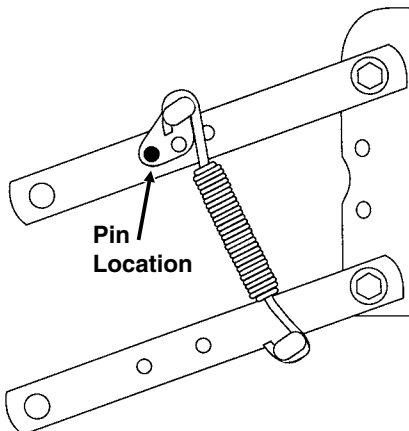
Position 1 (Minimum)

(PLTR28e)



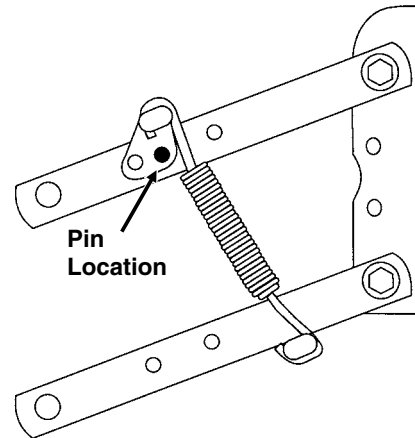
Position 2

(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.

ROW UNIT OPERATION

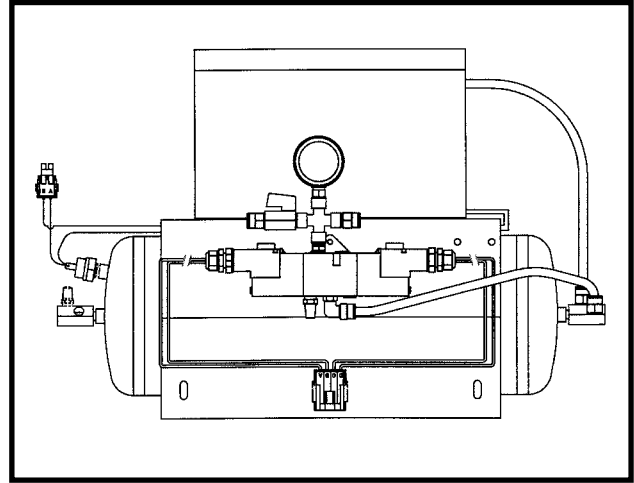
PNEUMATIC DOWN PRESSURE PACKAGE

With pneumatic down pressure option, the operator can vary row unit down pressure on-the-go as field conditions change. A cab-mounted digital readout displays down force (lbs.) applied. A planter-mounted 12 VDC air compressor, with 3 gallon capacity air tank, supplies air for the down pressure system.

Packages also include upper and lower air spring mounting castings for pull row units, 150 psi rated air springs, $\frac{3}{8}$ " O.D. nylon hoses, dual solenoid air valve and stainless steel, 160 psi, 2" liquid-filled gauge and planter wiring harness.

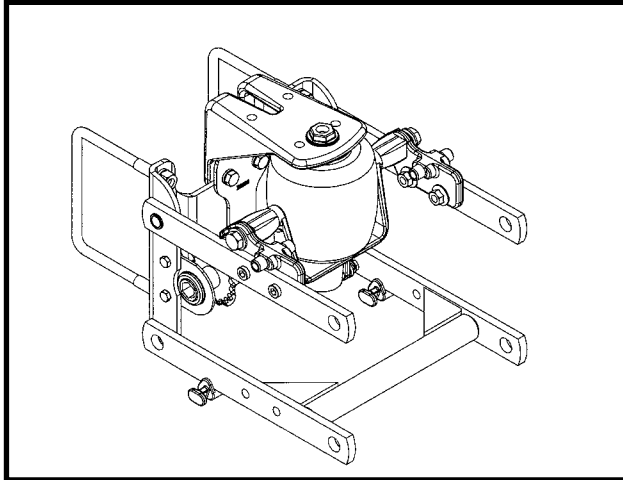
Pneumatic down pressure row unit extension brackets are required in some applications.

(PNE01)



Air Compressor With Dual Solenoid Assembly

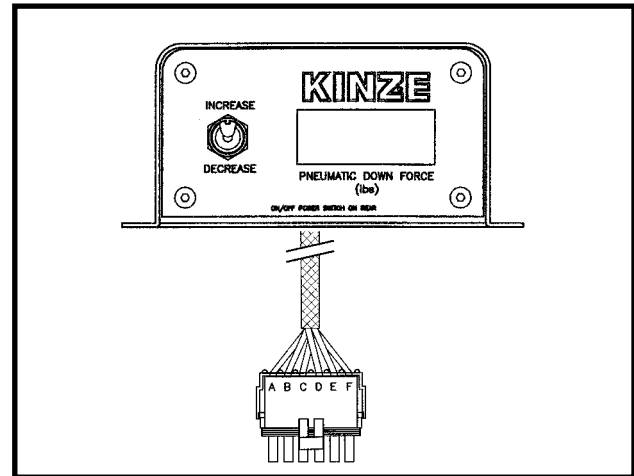
(PNE07)



Pull Row Unit Air Spring

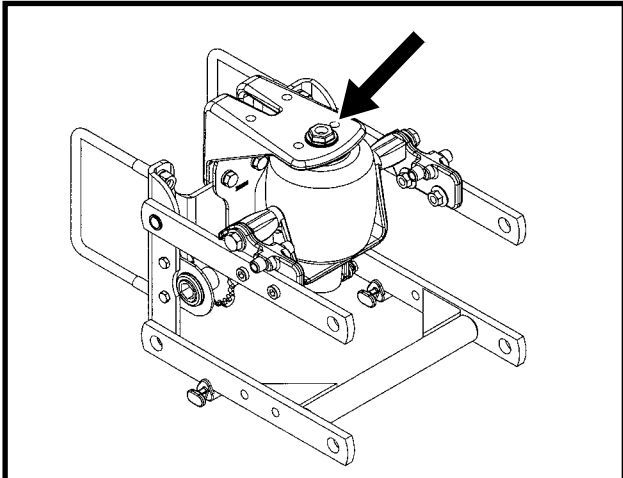
NOTE: Shoulder nut(s) should be torqued to 350 in. lbs. Refer to page 10-1 for additional torque values.

(A12644a)



Control Console Assembly

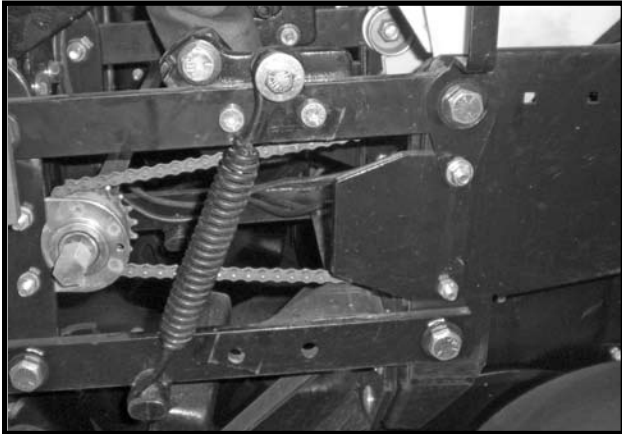
(PNE07)



ROW UNIT OPERATION

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

D11280153a

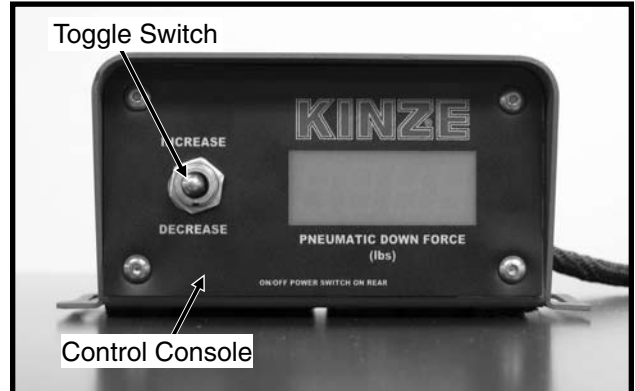


Pull Row Unit Assist Springs

FIELD OPERATION

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

D112907101



To adjust down pressure from cab:

To INCREASE pressure, push toggle switch up.

To DECREASE pressure, push toggle switch down.

The readout value on the control console is pounds of down pressure force.

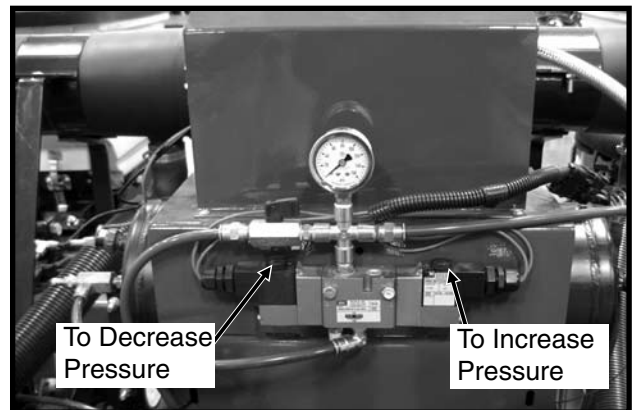
To adjust down pressure from planter:

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

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

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

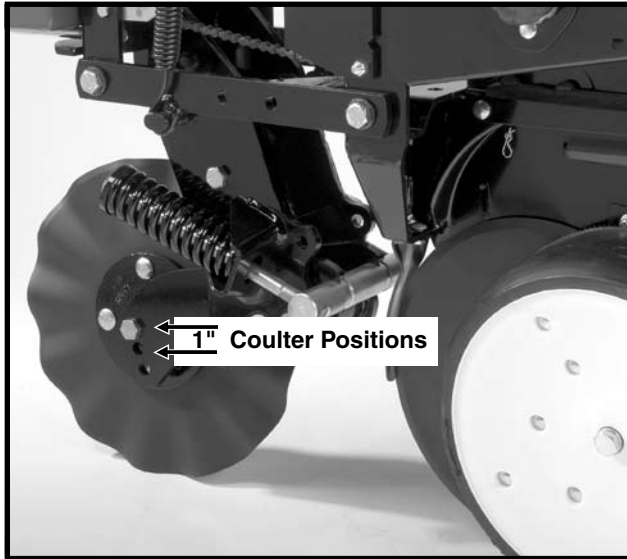
D112907100



ROW UNIT OPERATION

FRAME MOUNTED COULTER

LF083002101

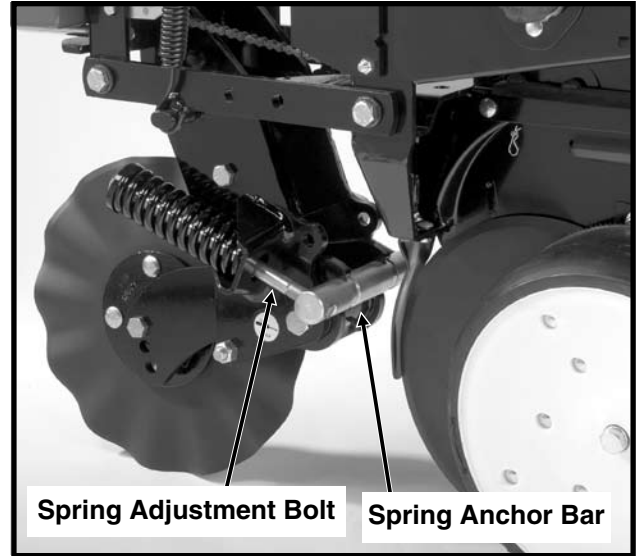


Frame mounted coulters with 1" bubbled, 1" fluted (8 flutes) or 3/4" fluted (13 flutes) blades may be used on pull row units only. (Not compatible with push row units.)

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

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

LF083002101



DOWN PRESSURE ADJUSTMENT

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

Down force on the blade is shown below in lbs.

End Of Spring Adjustment Bolt Flush With Spring Anchor Bar (Shown Above)	End Of Spring Adjustment Bolt Extended 1/2" Through Spring Anchor Bar	All Threads Used (Maximum)
275 lbs.	400 lbs.	500 lbs.

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

ROW UNIT OPERATION

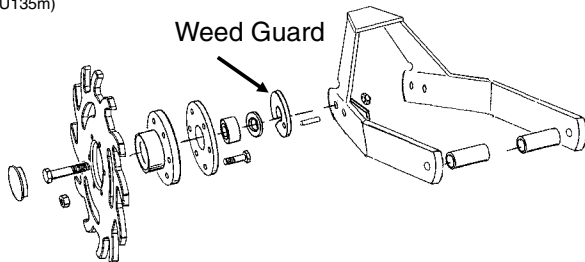
RESIDUE WHEELS

(For Use With Frame Mounted Coulter)

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

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 $\frac{1}{4}$ " increments. A high point on the cam allows the wheels to be locked up so they do not contact the ground. A weed guard, located on the inboard side of each wheel, aids in the prevention of weed wrap which can cause premature bearing failure.

(RU135m)

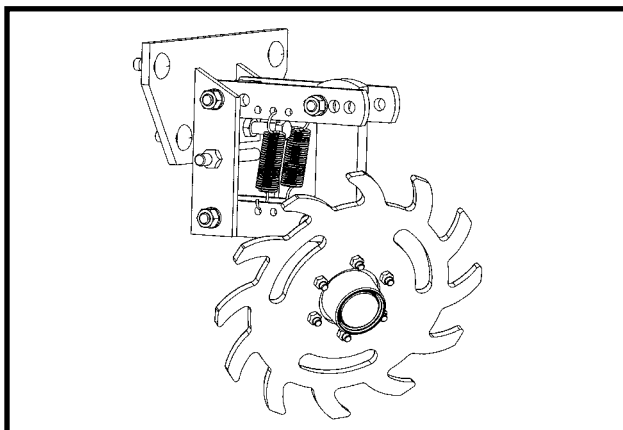


NOTE: Opening in weed guard must point down.

ROW UNIT MOUNTED RESIDUE WHEEL

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

(A12685)

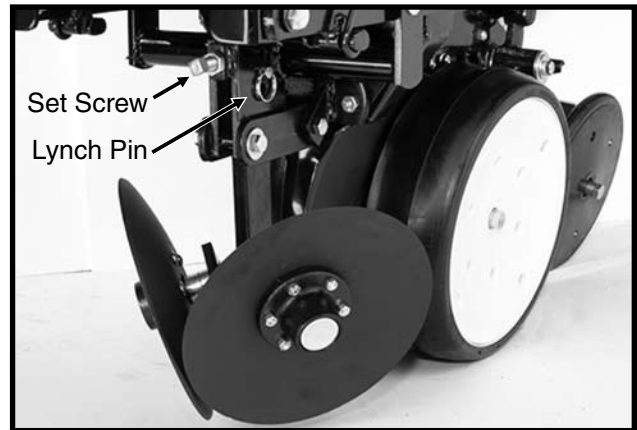


ROW UNIT MOUNTED DISC FURROWER

The row unit mounted disc furrower is for use on pull row units only (not compatible with Interplant® push row units). The disc furrower may be equipped with either 12" solid blades or 12" notched blades.

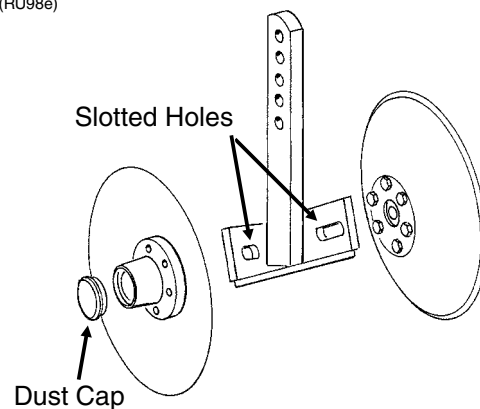
Disc furrowers are used to clear crop residue, dirt clods and dry soil from in front of the row units for a clean and smooth seed bed. Notched blades are used for heavier residue conditions. The notched blades cut crop residue and move it aside to prevent plugging or pushing.

LF212299-22



Vertical adjustment in $\frac{1}{8}$ " increments is possible by removing the lynch pin which secures the vertical support arm and moving the support arm up or down as required. Reinstall lynch pin. Finer adjustment can be attained by removing the lynch pin and using the $\frac{5}{8}$ " x $2 \frac{1}{4}$ " set screw to clamp the support arm in the required position.

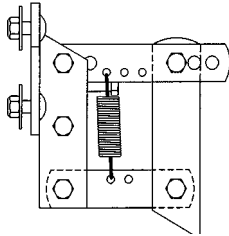
(RU98e)



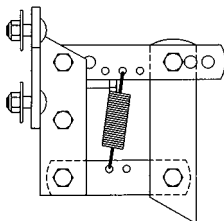
Slotted holes in the support arm where the blades are mounted allow fore and aft adjustment of the disc blades. Blades can be adjusted so the front edges meet or one blade can be moved to the rear and the other to the front of the slot so the cutting edge of one blade overlaps the edge of the other blade.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

ROW UNIT OPERATION

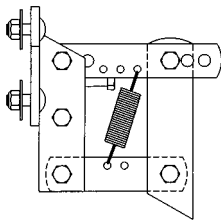
Two adjustable springs on the parallel links on each residue wheel allow for down force adjustment. Position 1 as shown below provides minimum down pressure and position 3 maximum down pressure.



Position 1 (Minimum) (PLTR31a)



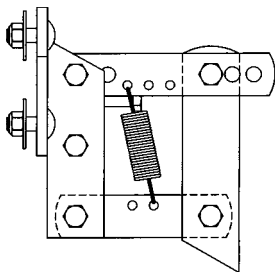
Position 2 (PLTR32a)



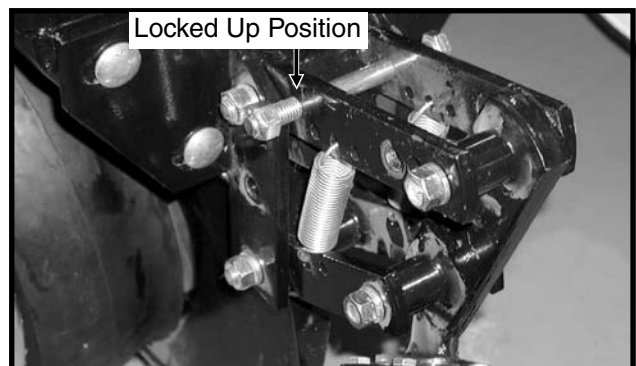
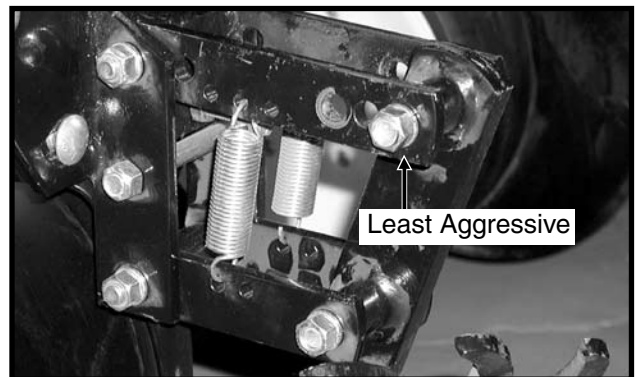
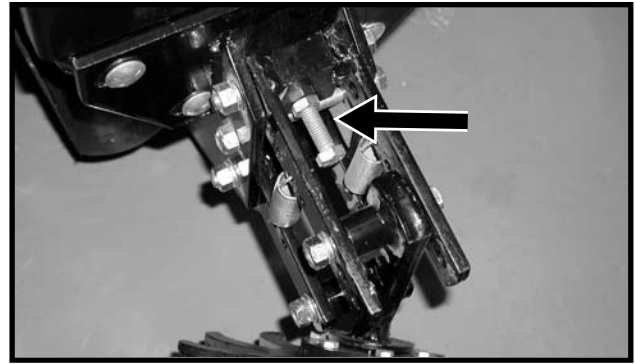
Position 3 (Maximum) (PLTR33a)

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 OPERATION

ROW UNIT MOUNTED NO TILL COULTER

D05170706a



Row unit mounted no till coulters with 1" bubbled, 1" fluted (8 flutes) or 3/4" fluted (13 flutes) blades may be used on pull row units and push row units. (3/4" fluted shown)

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

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

The coulters blade can be adjusted to one of four 1/2" incremental settings in the forked arm. Initial location of the coulters is in the top hole. As the coulters blade wears, the blade should be adjusted downward to one of the three lower settings to maintain the coulters blade at or slightly below the opener discs. In very hard soil conditions such as compacted wheel tracks, opener penetration and cutting of surface residue may be improved by adjusting the coulters to operate below the depth of the double disc opener blades.

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

NOTE: Torque 5/8" spindle hardware to 120 ft. lbs.

COULTER MOUNTED RESIDUE WHEELS

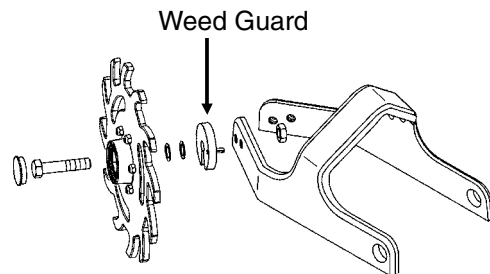
D05170708a



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

The coulters mounted residue wheels are attached to the row unit mounted no till coulters with one cap screw and sleeve allowing the unit to free-float. A 2-position spindle bolt mounting allows the tined wheels to be mounted interlocked or staggered. A lock nut on the inside of the mount locks the spindle cap screw. Depth adjustment is made using a spring-loaded cam and pin with 11 positions in 1/4" increments. A high point on the cam allows the wheels to be locked up so they do not contact the ground. A weed guard, located on the inboard side of each wheel, aids in the prevention of weed wrap which can cause premature bearing failure.

(RU153a)



NOTE: Opening in weed guard must point down.

ROW UNIT OPERATION

GRANULAR CHEMICAL HOPPER AND DRIVE

LF212299-6



The granular chemical hopper has a 1.4 cubic feet capacity.

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

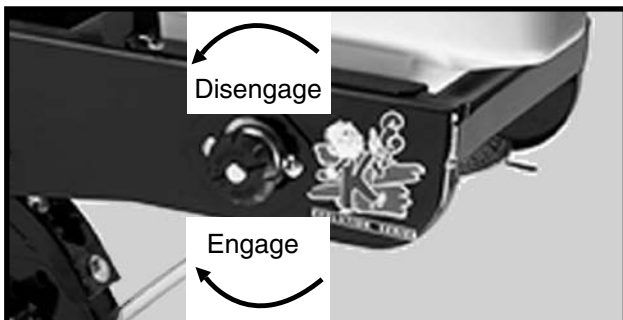
The metering gate located on the bottom of the hopper regulates the application rate. See “Dry Insecticide And Dry Herbicide Application Rate Charts” in this manual. Calibrate using the chemical manufacturers’ instructions.



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

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

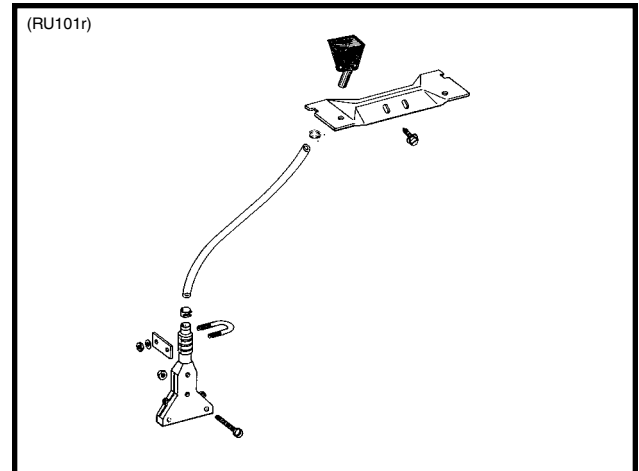
LF212299-4



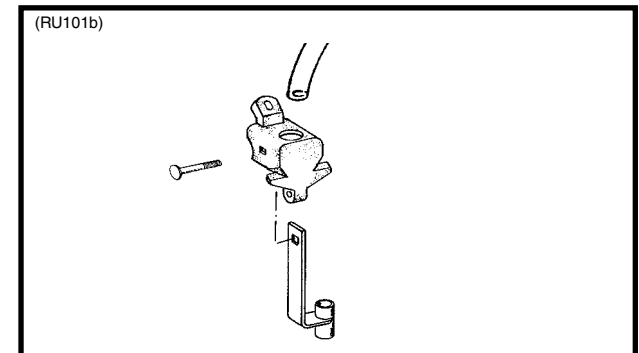
GRANULAR CHEMICAL BANDING OPTIONS

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

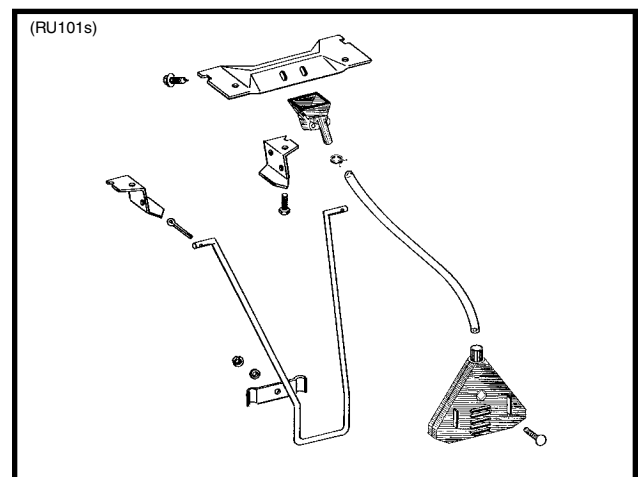
NOTE: The granular chemical rear bander is not compatible with the covering discs/single press wheel option.



4 ½" Slope-Compensating Bander



Straight Drop In-Furrow Placement



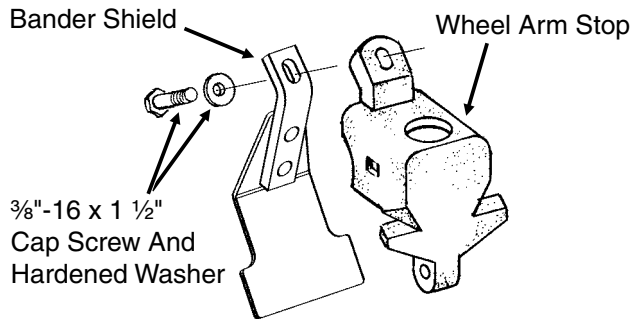
14" Rear Banding

ROW UNIT OPERATION

GRANULAR CHEMICAL BANDER SHIELD

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

(RU83m)

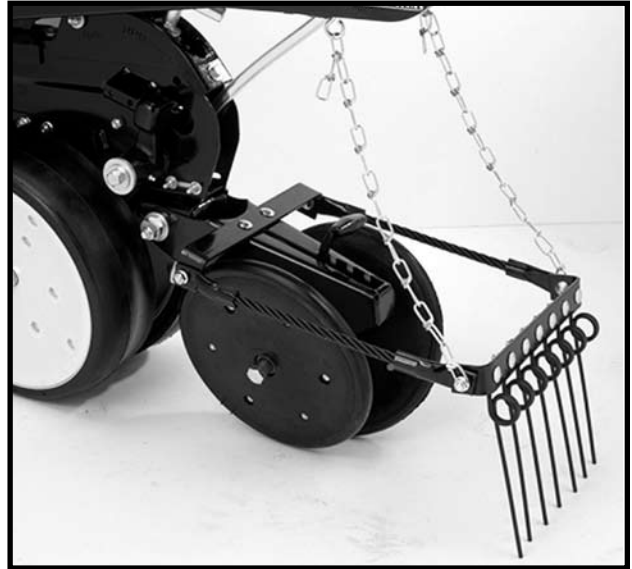


SPRING TOOTH INCORPORATOR

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 $\frac{1}{8}$ " slack in the chain when the unit is lowered to planting position.

NOTE: The spring tooth incorporator is not compatible with the covering discs/single press wheel option.

LF212299-26



ROW UNIT OPERATION

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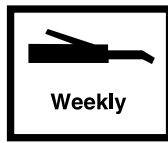
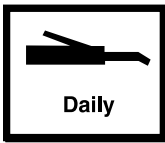
LUBRICATION

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.

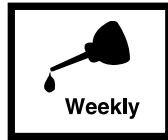


WARNING: Always install safety lockup devices or lower the planter to the ground before working under or around the machine.

LUBRICATION SYMBOLS



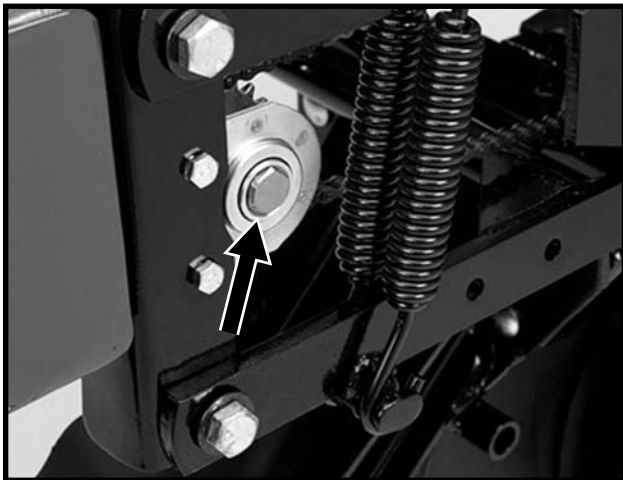
Lubricate at frequency indicated with an SAE multipurpose grease.



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

SEALED BEARINGS

LF212199-3

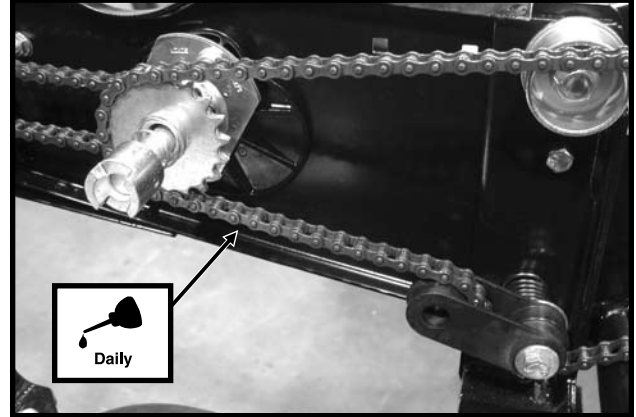


A number of sealed bearings are used on your KINZE® planter to provide trouble free operation. These are located in such areas as the drive shaft, row units and transmission bearings. Sealed bearings are lubricated for life. Due to the seals, relubrication is not practical.

DRIVE CHAINS

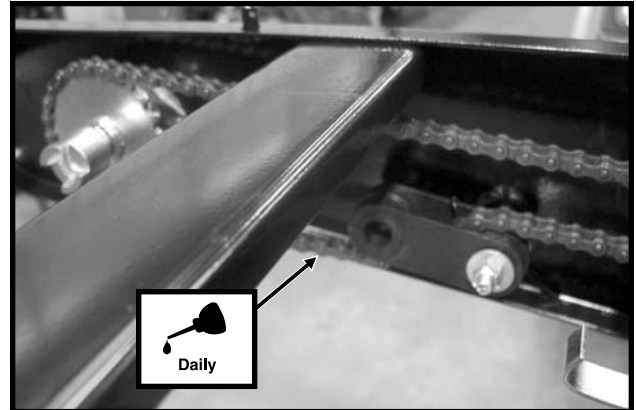
All transmission and drive chains should be lubricated daily with a high quality chain lubricant. Extreme operating conditions such as dirt, temperature or speed may require more frequent lubrication. If a chain becomes stiff, it should be removed, soaked and washed in solvent to loosen and remove dirt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

D051705103



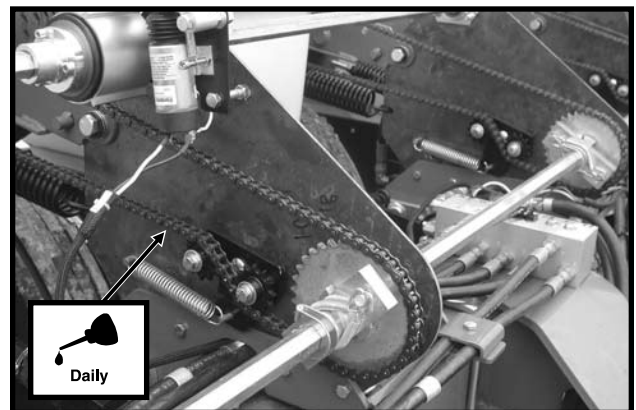
Pull Row Unit Drive Chains

D051705102



Row Unit Granular Chemical Drive Chains

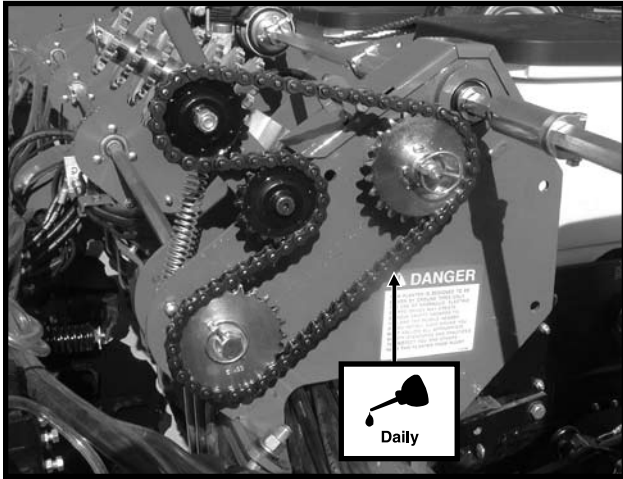
D08120523



Contact Drive Wheel Chains

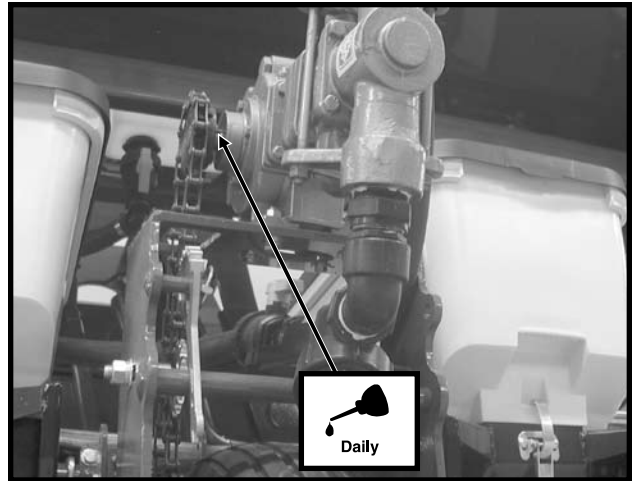
LUBRICATION

D081905105



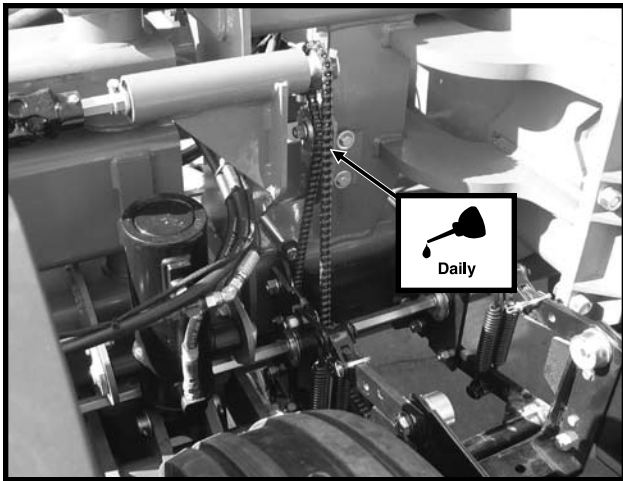
Seed Rate Transmission Drive Chains

D11240401



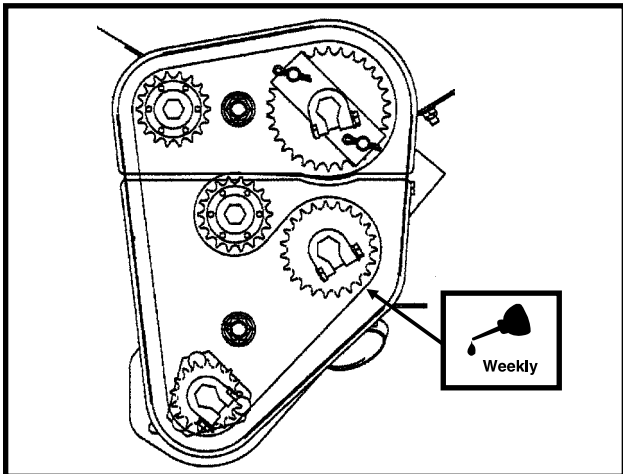
Liquid Fertilizer Drive Chain (Piston Pump)

D081905103



Row Unit Drill Shaft Drive Chains

(FWD149)



SDS Drive Chains

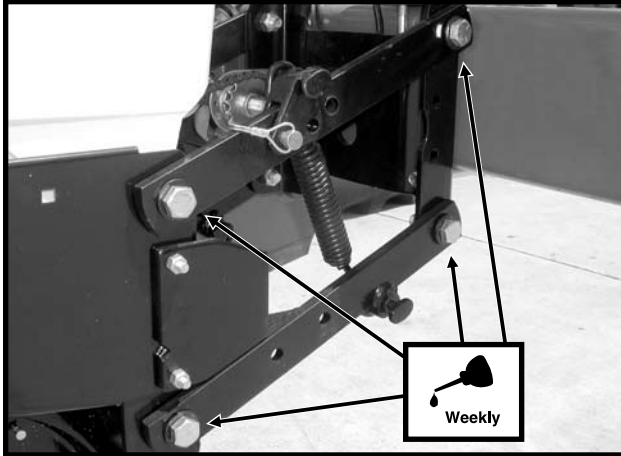
LUBRICATION

BUSHINGS

Lubricate bushings at the frequency indicated.

Using a torque wrench, check each bolt for proper torque. If bolt is loose, it should be removed and the bushing inspected for cracks and wear. Replace bushing if necessary. **Only hardened flat washers should be used. Replace damaged flat washers with proper part. Torque hardware to 130 ft. lbs.**

D06300305



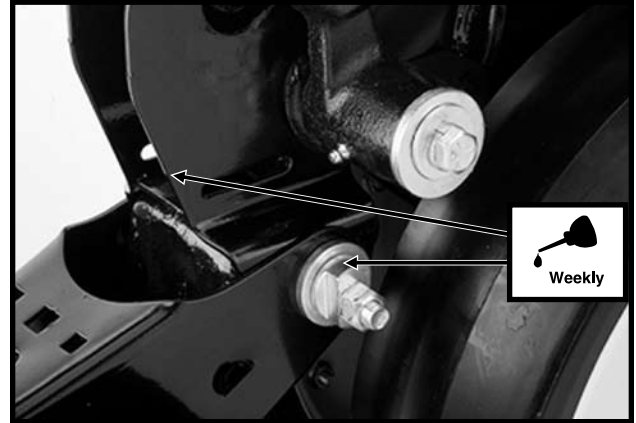
Pull Row Unit Parallel Linkages (8 Per Row)

LF212299-22



Row Unit Mounted Disc Furrower Parallel Linkages (6 Per Row)

LF212199-2



**Row Unit "V" Closing Wheel, Covering Discs/
Single Press Wheel And/Or Drag Closing Wheel
Eccentric Bushings (2 Per Row)**

LUBRICATION

WRAP SPRING WRENCH ASSEMBLY

The chain idler is equipped with a wrap spring wrench. The wrench components may require occasional lubrication to operate correctly. Disassembly is required to lubricate. (a) Remove the cap screw that secures the idler with sprockets to the wrench tightener shaft. (b) Remove the wrap spring wrench from the planter. (c) Tip the wrap spring wrench on its side and lubricate using a high quality spray lubricant. Lubricant must be absorbed into the wrap spring area. (d) Reinstall wrench on planter.

D101303102



WHEEL BEARINGS

The transport wheel hubs are equipped with grease fittings. Pump grease into the hub until grease comes out around the seals. See “Grease Fittings” for lubrication frequency.

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

To check for wear, lift the wheel off the ground. Check for endplay in the bearings by moving the tire in and out. Rotate the tire to check for roughness in the bearings. If bearings sound rough, the hub should be removed and the bearings inspected and replaced if necessary. See “Wheel Bearing Lubrication Or Replacement”.

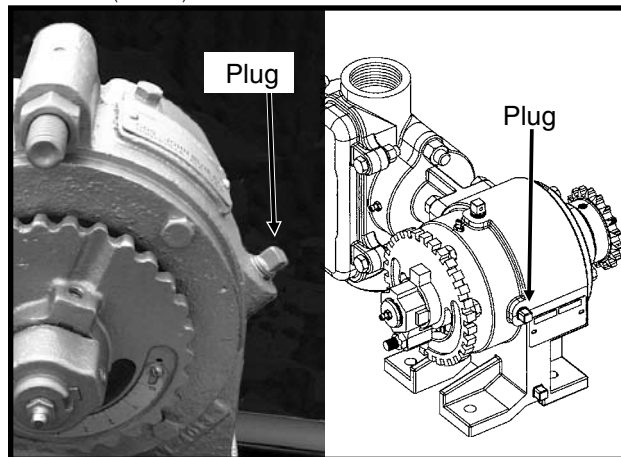
To repack wheel hubs, follow the procedure outlined for wheel bearing replacement with the exception that bearings and bearing cups are reused.

HITCH SLIDE ASSEMBLY (If Applicable)

If the hitch does not extend or retract smoothly, extend the hitch and spray the inner slide area using a heavy duty aerosol grease lubricant.

LIQUID FERTILIZER PISTON PUMP CRANKCASE OIL LEVEL

D071504102a/(A12330a)



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

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

LUBRICATION

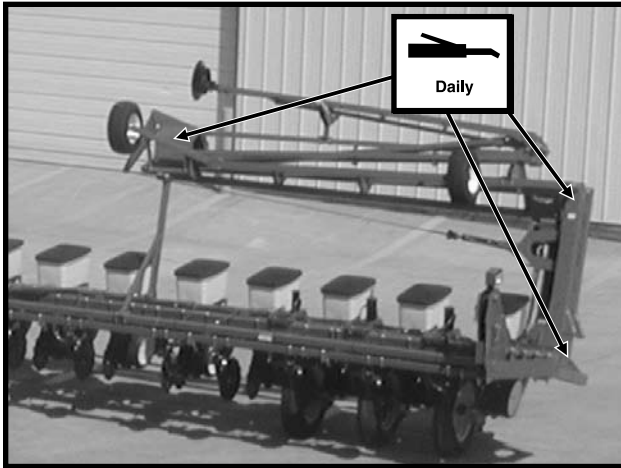
GREASE FITTINGS

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.



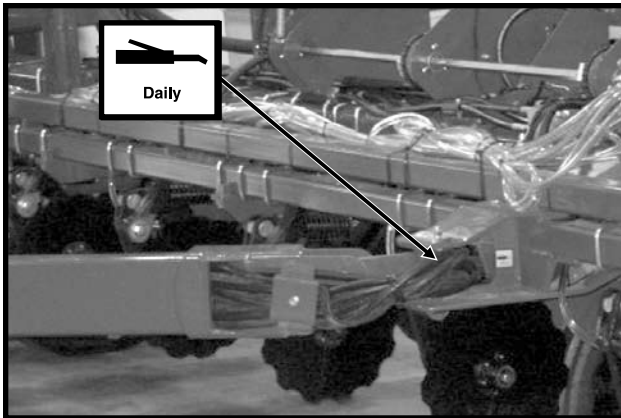
WARNING: Always install safety lockup devices or lower the planter to the ground before working under or around the machine.

D081905124



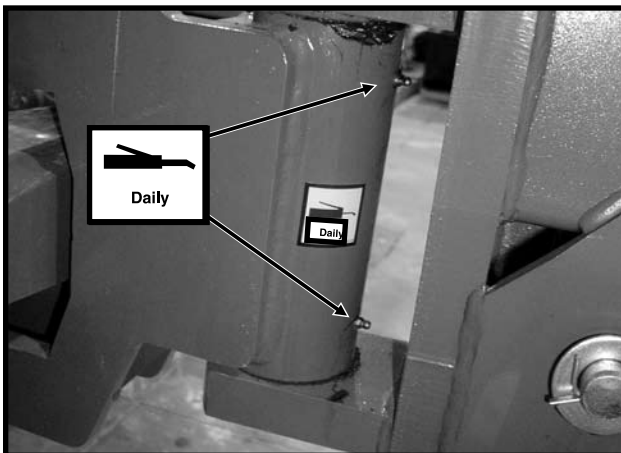
1. Row Marker Assemblies - 15 Zerks Per Assembly

D081705295



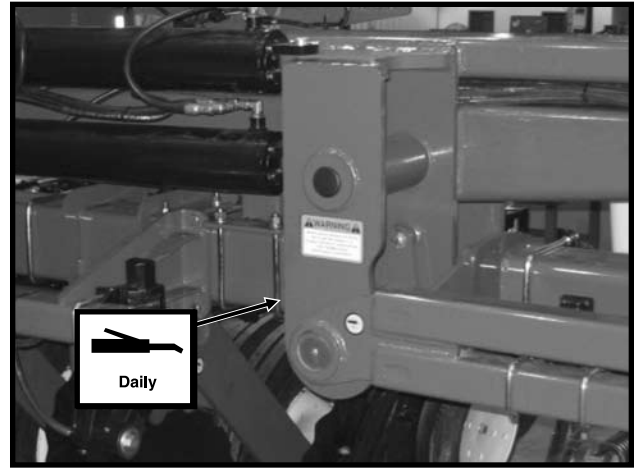
2. Wing Linkage Pivot - 1 Zerk Per Wing

D033104100



3. Hitch Pivot - 2 Zerks

D081705291



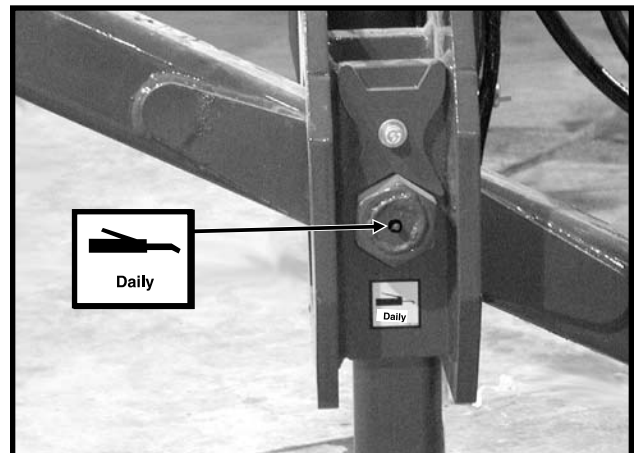
4. Outer End Of Stub Wing - 3 Zerks Per Assembly

D081905101



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

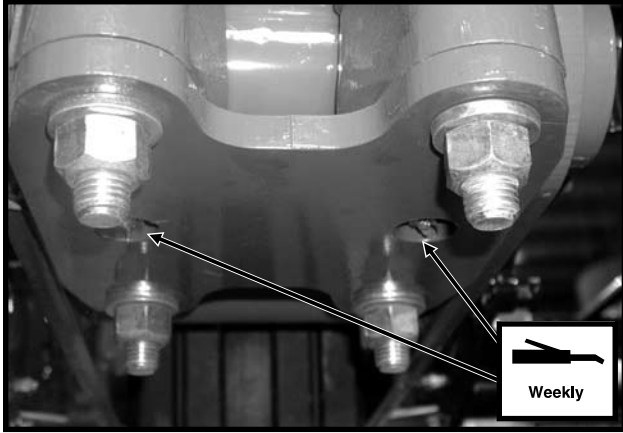
D032404143



6. Hitch Pivot Pin - 1 Zerk

LUBRICATION

D040204102



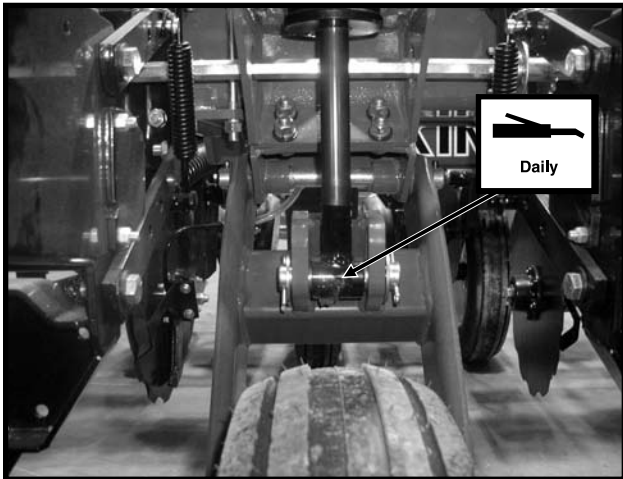
7. Center Section Lift Axle Pivot - 2 Zerks Per Wheel Assembly

72495-5



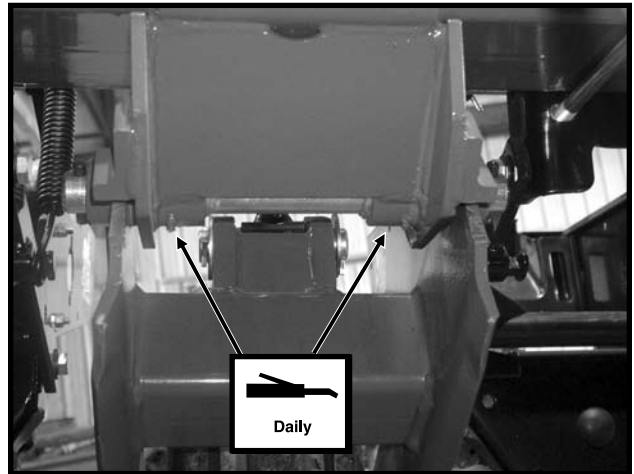
10. Transport Wheel Bearings - 1 Zerk Per Hub

D033104113



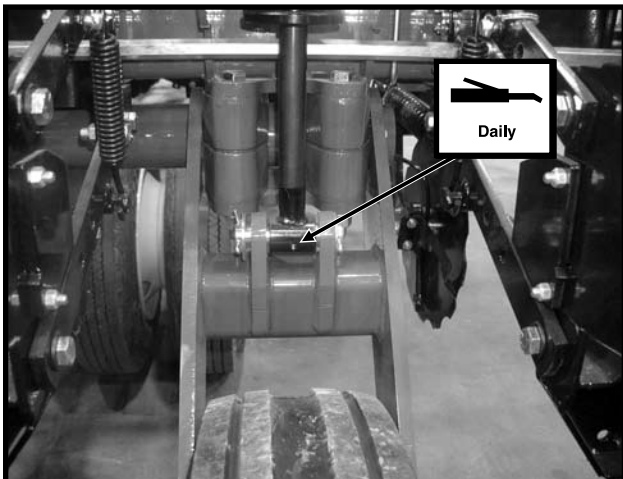
8. Wing Lift Cylinders - 1 Zerk Per Cylinder

D040204105



11. Wing Wheel Pivot - 2 Zerks Per Wheel Module

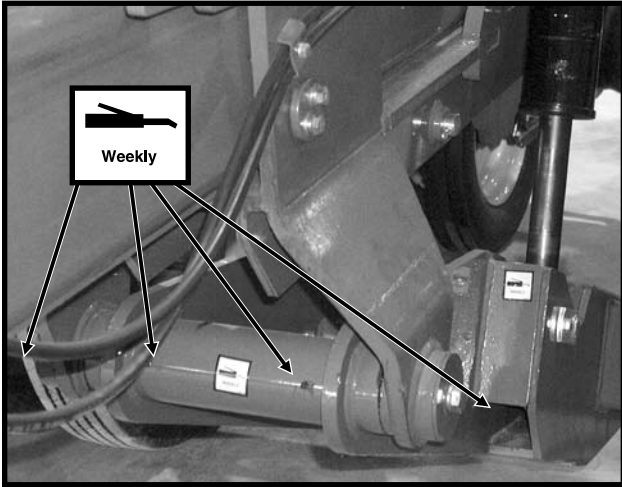
D033104112



9. Center Section Lift Cylinders - 1 Zerk Per Cylinder

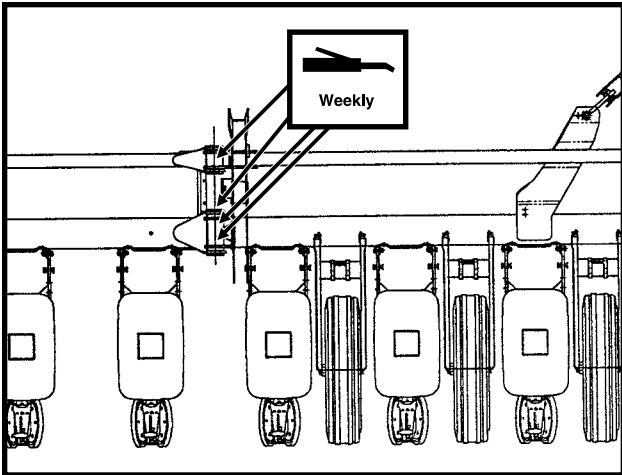
LUBRICATION

D032404124



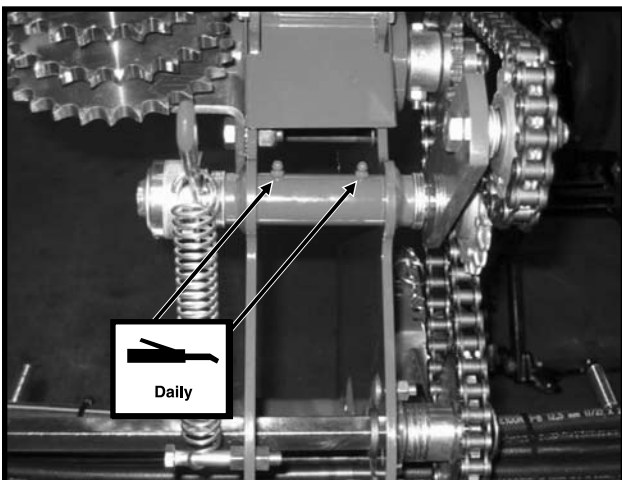
12. Transport Axle Pivot - 4 Zerks

(FWD52)



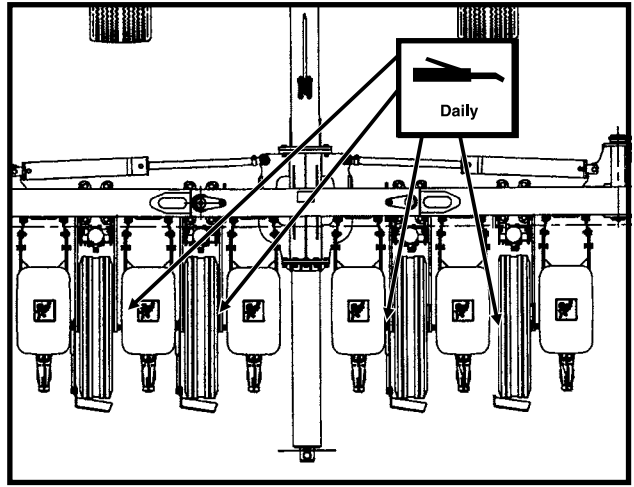
13. Outer Wing Hinge - 3 Zerks Per Assembly (32 Row 30" And 36 Row 30" Only)

D021406100



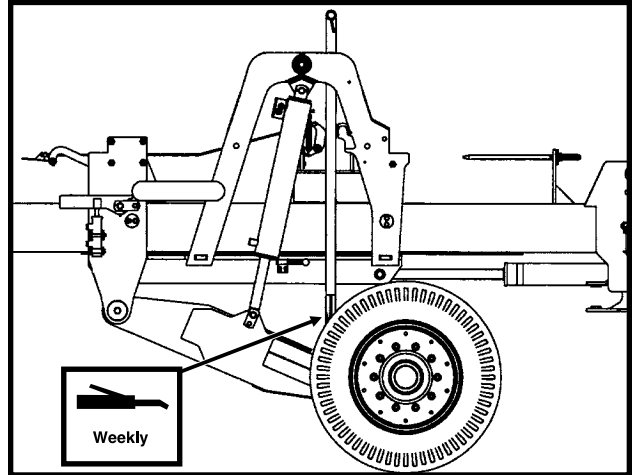
14. Seed Rate Transmission Assembly - 2 Zerks Per Transmission

(FWD55)



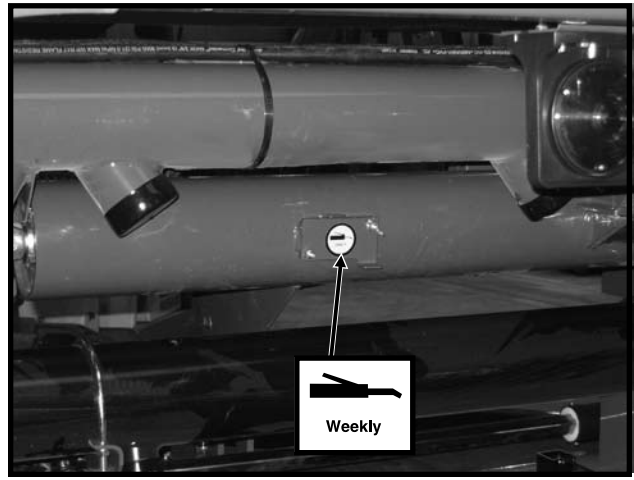
15. Rock Shaft Wheel Hub Assembly - 1 Zerk Per Hub

(FWD57)



16. Slide Assembly Lockup Stand - 2 Zerks (If Applicable)

D02808101



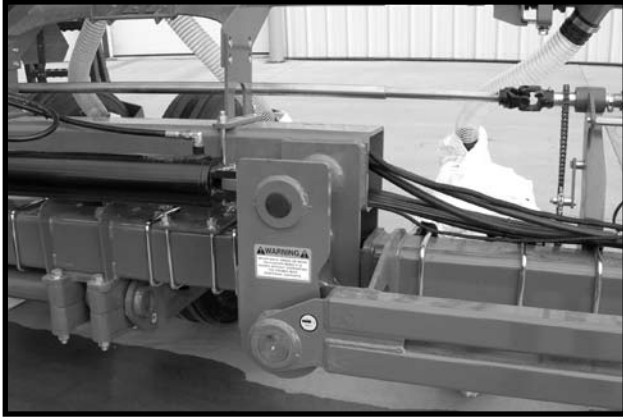
17. SDS Auger Shaft - 1 Zerk On Each Side Of Planter

LUBRICATION

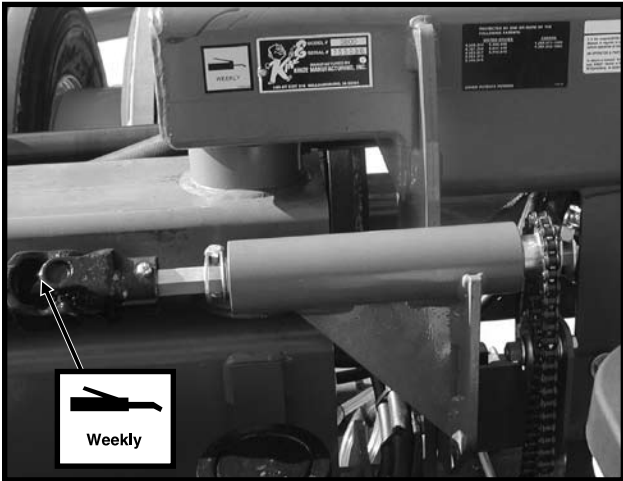
U-Joint Slides

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

D03060602

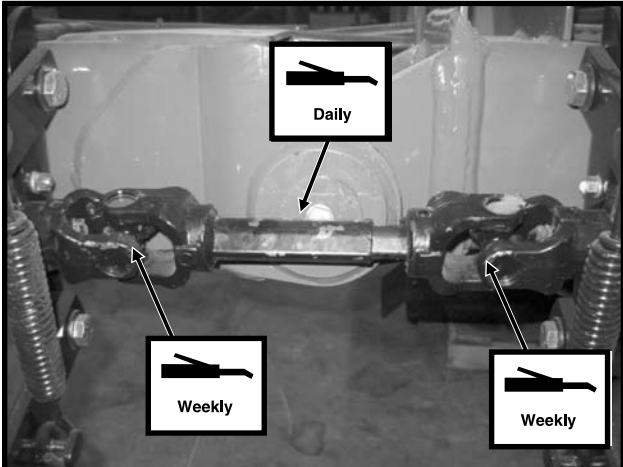


D081905101



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

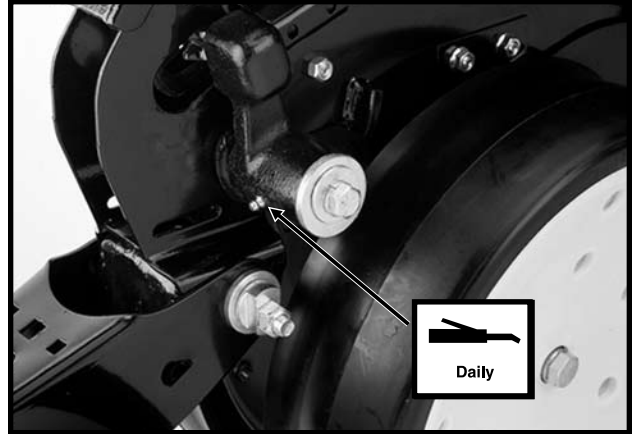
D020206109



U-Joint Shaft Between Inner And Outer Wings - 1 Zerk On Each End Of U-Joint Shaft (2 Per U-Joint Shaft)

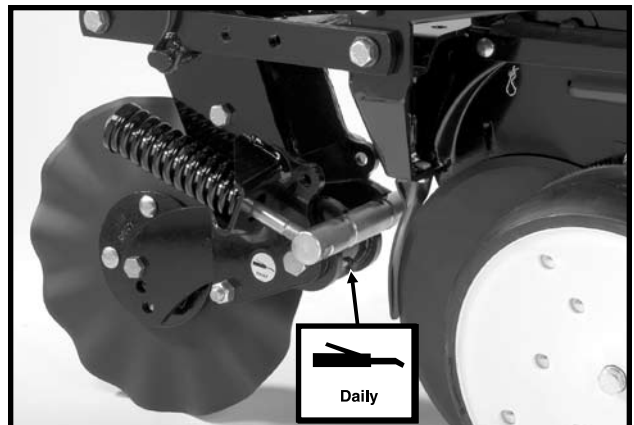
Row Unit

LF212199-2



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

LF083002101

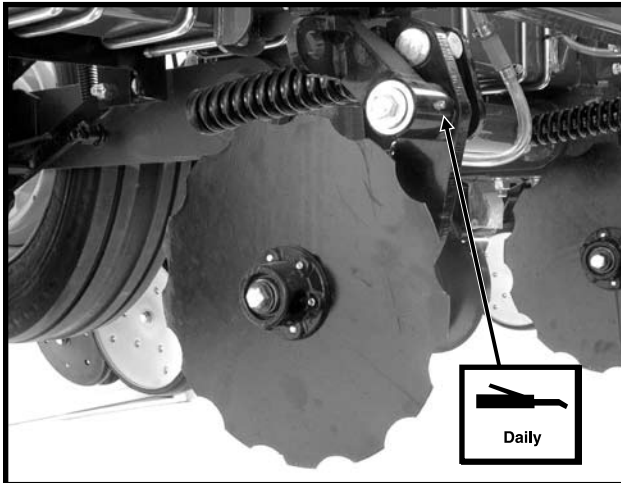


Frame Mounted Coulter - 1 Zerk Per Arm

LUBRICATION

Fertilizer Openers

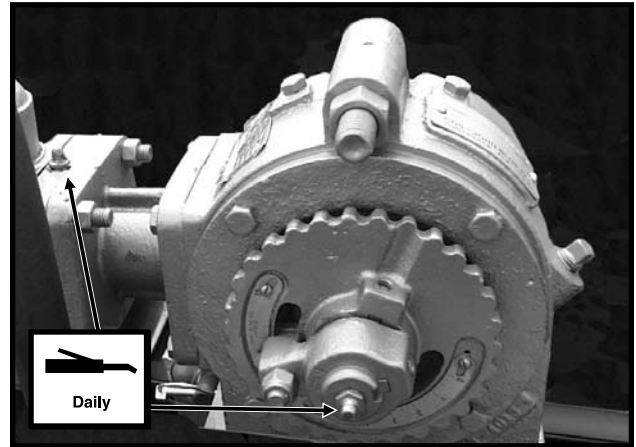
D040704104



Notched Single Disc Fertilizer Opener - 1 Zerk

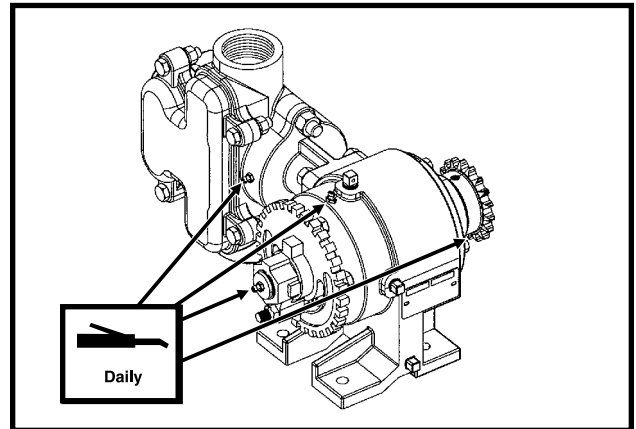
Liquid Fertilizer Piston Pump

D071504102a



Piston Pump - 2 Zerks (**Fill zerk on outboard stuffing box until lubricant seeps out of drain hole in bottom.**)

(A12330a)



Liquid Fertilizer Piston Pump - 4 Zerks (**Fill zerk on outboard stuffing box until lubricant seeps out of drain hole in bottom.**)

LUBRICATION

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MAINTENANCE

MOUNTING BOLTS AND HARDWARE

Before operating the planter for the first time, check to be sure all hardware is tight. Check all hardware again after approximately the first 50 hours of operation and at the beginning of each planting season thereafter.

All hardware used on the KINZE® planter is Grade 5 (high strength), unless otherwise noted. Grade 5 cap screws are marked with three radial lines on the head. If hardware must be replaced, be sure to replace it with hardware of equal size, strength and thread type. Refer to the torque values chart when tightening hardware.

Row Unit Parallel Linkage Bushing Hardware - 130 Ft. Lbs. (See “Bushings” in the Lubrication section of this manual.)

5/8" No Till Coulter Spindle Hardware - 120 Ft. Lbs.

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



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

Transport Tire Flange Nuts - 350 Ft. Lbs.

Transport Tire (W/Duals) Cap Screws - 125 Ft. Lbs.

Center Section Lift/Gauge Tire Lug Nuts - 90 Ft. Lbs.

Wing Lift/Gauge Tire Lug Bolts - 125 Ft. Lbs.

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

TORQUE VALUES CHART - PLATED HARDWARE

Bolt Diameter	Grade 2		Grade 5		Grade 8	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
1/4"	50 In. Lbs.	56 In. Lbs.	76 In. Lbs.	87 In. Lbs.	9 Ft. Lbs.	10 Ft. Lbs.
5/16"	8 Ft. Lbs.	9 Ft. Lbs.	13 Ft. Lbs.	14 Ft. Lbs.	18 Ft. Lbs.	20 Ft. Lbs.
3/8"	15 Ft. Lbs.	17 Ft. Lbs.	23 Ft. Lbs.	26 Ft. Lbs.	33 Ft. Lbs.	37 Ft. Lbs.
7/16"	25 Ft. Lbs.	27 Ft. Lbs.	37 Ft. Lbs.	41 Ft. Lbs.	52 Ft. Lbs.	58 Ft. Lbs.
1/2"	35 Ft. Lbs.	40 Ft. Lbs.	57 Ft. Lbs.	64 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.
9/16"	50 Ft. Lbs.	60 Ft. Lbs.	80 Ft. Lbs.	90 Ft. Lbs.	115 Ft. Lbs.	130 Ft. Lbs.
5/8"	70 Ft. Lbs.	80 Ft. Lbs.	110 Ft. Lbs.	125 Ft. Lbs.	160 Ft. Lbs.	180 Ft. Lbs.
3/4"	130 Ft. Lbs.	145 Ft. Lbs.	200 Ft. Lbs.	220 Ft. Lbs.	280 Ft. Lbs.	315 Ft. Lbs.
7/8"	125 Ft. Lbs.	140 Ft. Lbs.	320 Ft. Lbs.	350 Ft. Lbs.	450 Ft. Lbs.	500 Ft. Lbs.
1"	190 Ft. Lbs.	205 Ft. Lbs.	480 Ft. Lbs.	530 Ft. Lbs.	675 Ft. Lbs.	750 Ft. Lbs.
1 1/8"	265 Ft. Lbs.	300 Ft. Lbs.	600 Ft. Lbs.	670 Ft. Lbs.	960 Ft. Lbs.	1075 Ft. Lbs.
1 1/4"	375 Ft. Lbs.	415 Ft. Lbs.	840 Ft. Lbs.	930 Ft. Lbs.	1360 Ft. Lbs.	1500 Ft. Lbs.
1 3/8"	490 Ft. Lbs.	560 Ft. Lbs.	1100 Ft. Lbs.	1250 Ft. Lbs.	1780 Ft. Lbs.	2030 Ft. Lbs.
1 1/2"	650 Ft. Lbs.	730 Ft. Lbs.	1450 Ft. Lbs.	1650 Ft. Lbs.	2307 Ft. Lbs.	2670 Ft. Lbs.

NOTE: Unplated hardware and bolts with lock nuts should be torqued approximately 1/3 higher than the above values. Bolts lubricated prior to installation should be torqued to 70% of value shown in chart.



GRADE 2
No Marks



GRADE 5
3 Marks



GRADE 8
6 Marks

TORQUE VALUES- ALUMINUM

Bolt Diameter	Torque Value
1/8"	180-220 In. Lbs.
3/8"	350-380 In. Lbs.
1/2"	350-400 In. Lbs.
3/4"	350-400 In. Lbs.

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

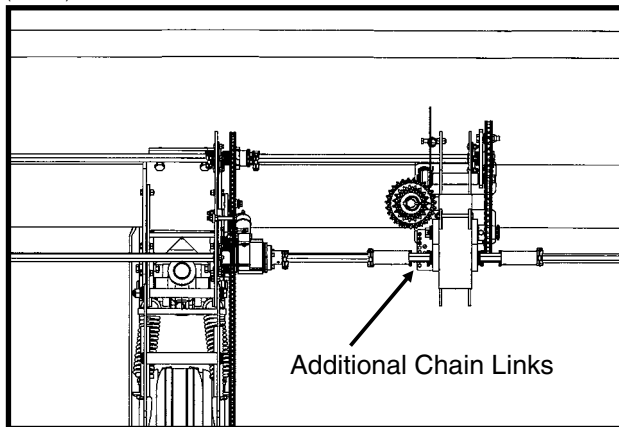
MAINTENANCE

CHAIN TENSION ADJUSTMENT

The drive chains have spring loaded idlers and therefore are self-adjusting. The only adjustment needed is to shorten the chain if wear stretches the chain and reduces spring tension. The pivot point of these idlers should be checked periodically to ensure they rotate freely. See "Wrap Spring Wrench Assembly" in Lubrication Section for additional information.

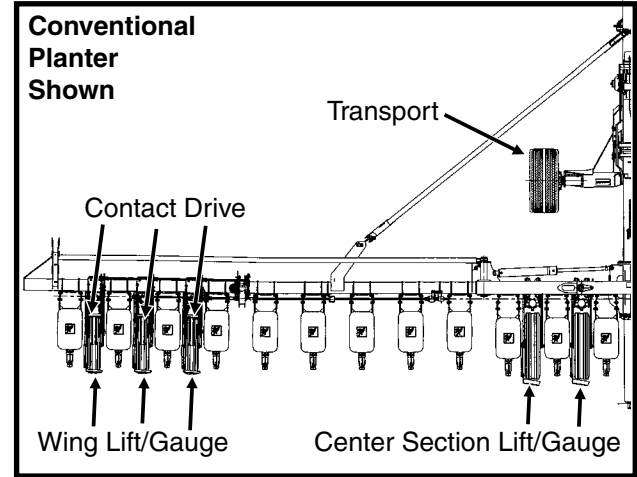
Additional chain links can be found in the storage areas located at each planter transmission assembly.

(FWD56)



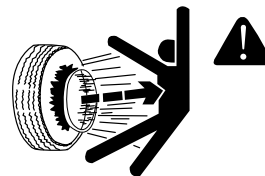
TIRE PRESSURE

(FWD55)



Tire pressure should be checked regularly and maintained as follows:

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



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

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

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

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

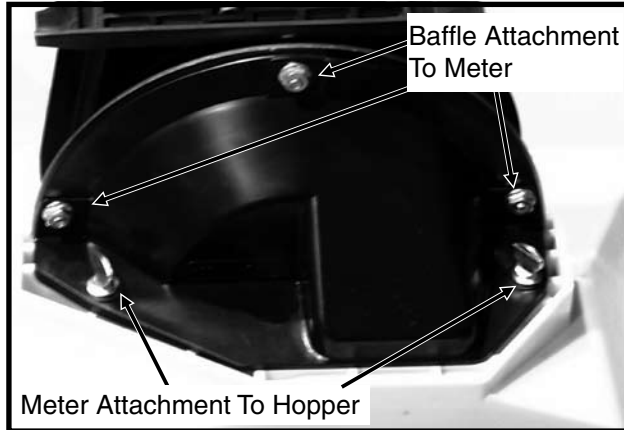
Inspect tires and wheels daily. Do not operate with low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

MAINTENANCE

FINGER PICKUP SEED METER INSPECTION/ADJUSTMENT

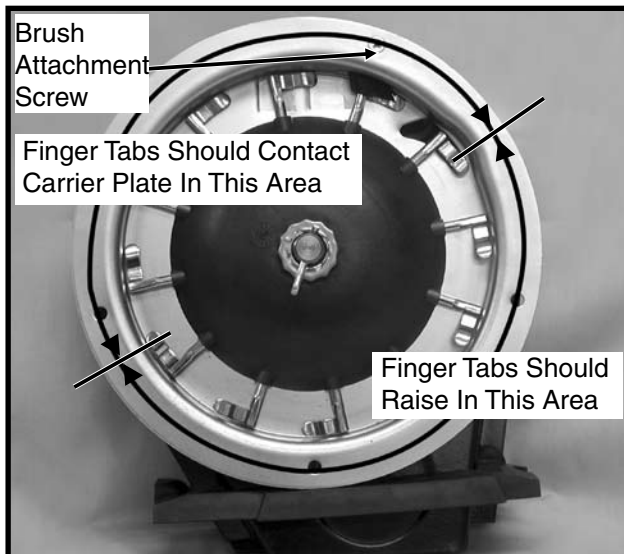
To inspect or service the finger pickup seed meter, remove the meter from the seed hopper by removing the two thumbscrews which secure the mechanism to the hopper. Remove the baffle from the meter assembly by removing three cap screws. This will permit access to the finger pickup.

D04229901



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.

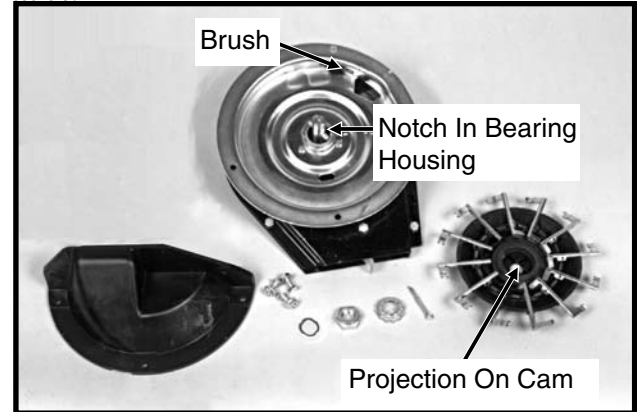
D12220402a



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



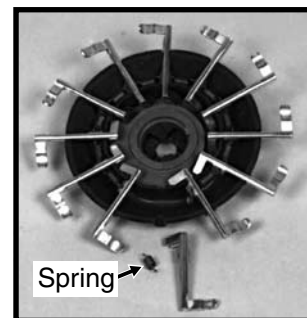
3. Check brush for wear and replace if necessary or following every 100 acres per row of operation.

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.

60620-22



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.

MAINTENANCE

D021506100

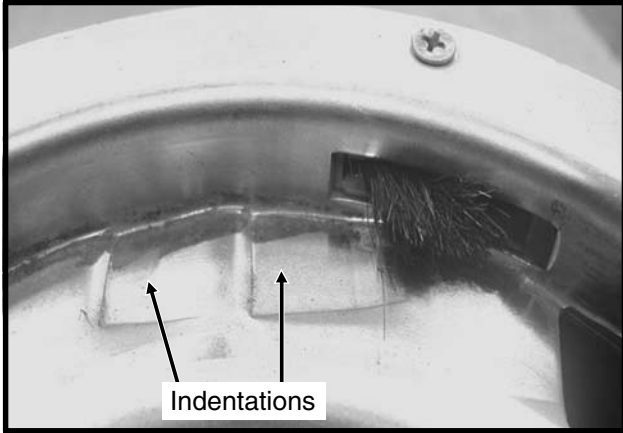


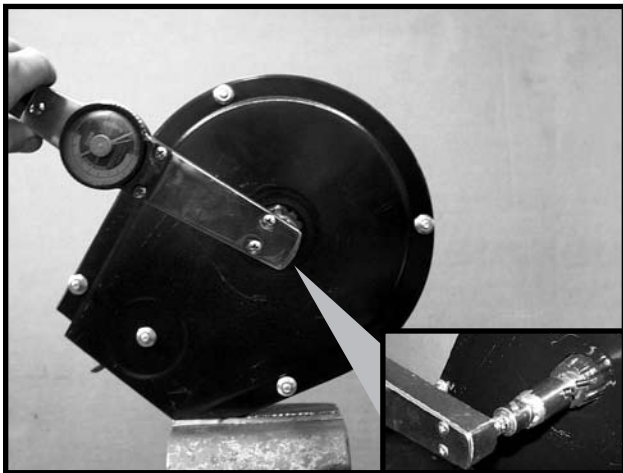
Photo Shows Worn Carrier Plate

- 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.

- 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 $\frac{1}{2}$ to 2 flats ($\frac{1}{12}$ to $\frac{1}{3}$ turn) to obtain rolling torque of 22 to 25 inch pounds.

D07299903/D07309912

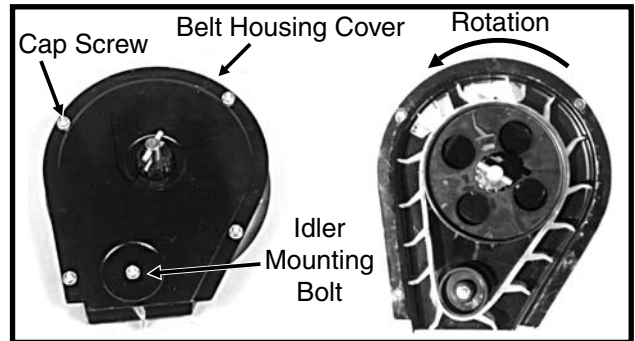


- Turn finger holder by hand to make sure it is positioned firmly against the carrier plate, but is not over tightened and can be rotated with moderate force.
- Install cover nut and cotter pin and reinstall baffle.

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.

60620-13a/60887-97



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

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

MAINTENANCE

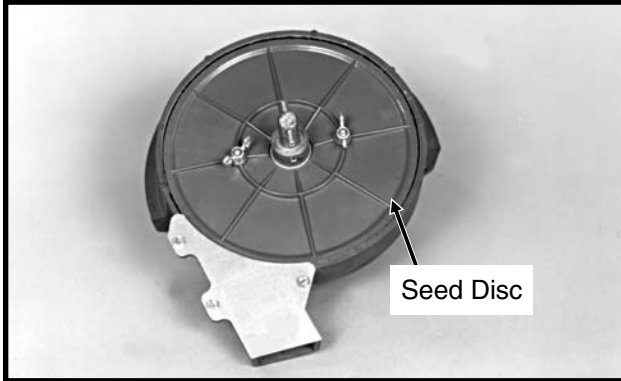
FINGER PICKUP SEED METER TROUBLESHOOTING

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.

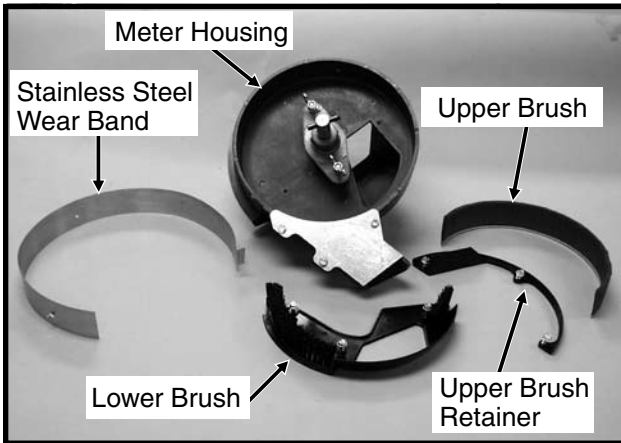
MAINTENANCE

BRUSH-TYPE SEED METER MAINTENANCE

60607-10a



D04239911



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



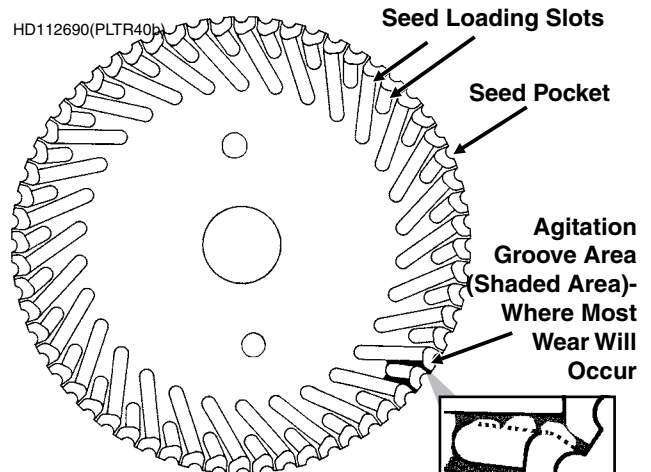
IMPORTANT: Replace hopper lids after hoppers are filled to prevent accumulation of dust or dirt in the seed meter which will cause premature wear.

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(PLTR40P)



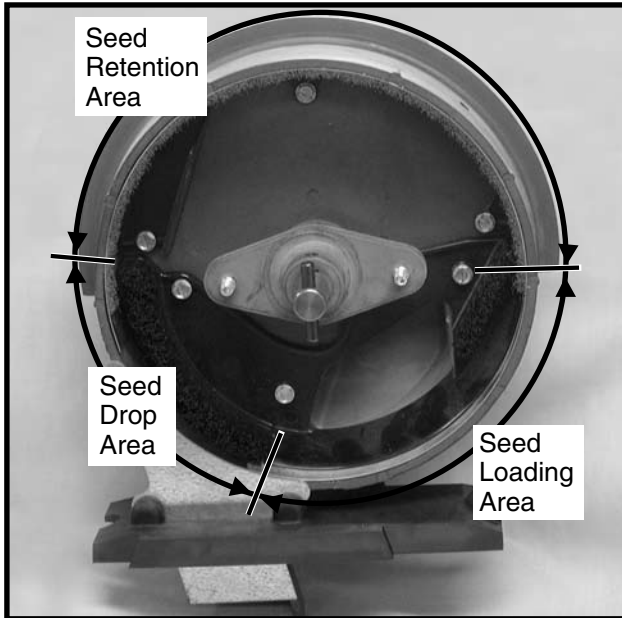
Most wear on the seed disc will be found in the agitation groove area (area between the seed loading slots). Wear will affect planting accuracy at high RPM. To measure for wear, lay a straight edge across the surface of the disc and measure the gap between the disc (at the agitation groove area) and 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.

MAINTENANCE

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.

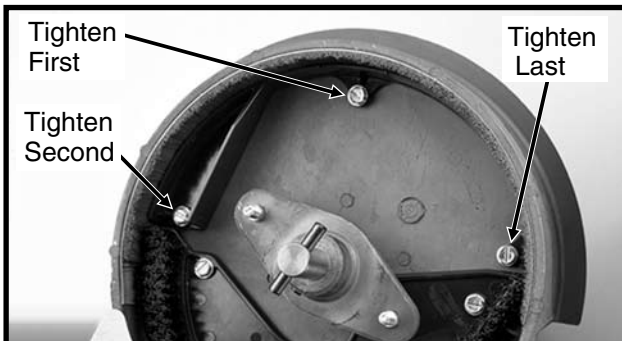
The upper brush should be replaced at approximately 120-400 acres per row of use or sooner if damage or excessive wear is found.

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.

LF212299-13a



Stainless Steel Wear Band

D04239917a

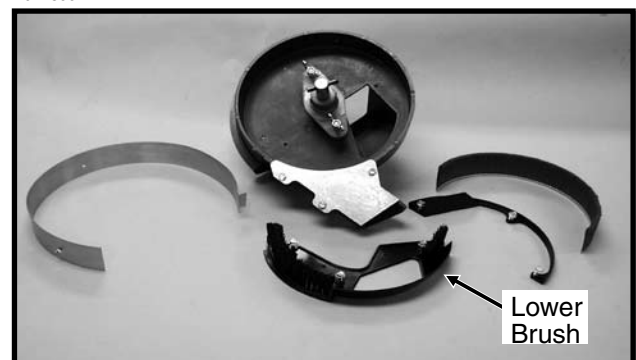


The purpose of the stainless steel wear band is to protect the meter housing from wear. The band is .030" thick and should be replaced when approximately .020" of wear is found in the primary area of wear. If the wear band is allowed to wear through or if the meter is used without the wear band in place,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

MAINTENANCE

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.

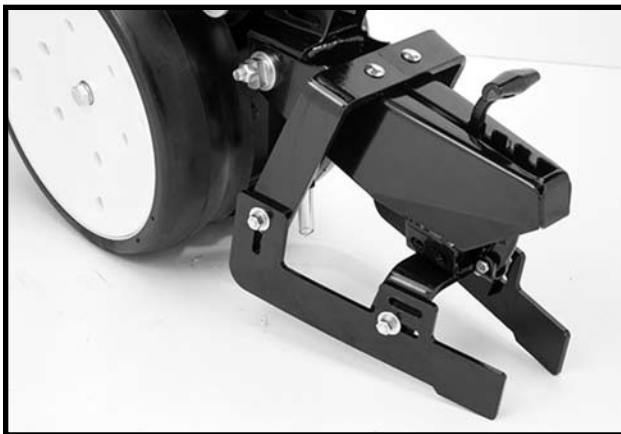
MAINTENANCE

CLOSING WHEEL TROUBLESHOOTING

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

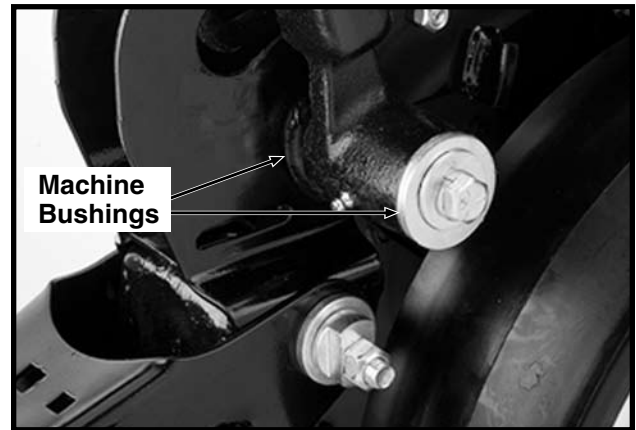
DRAG CLOSING ATTACHMENT

LF212299-18



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

LF212199-2



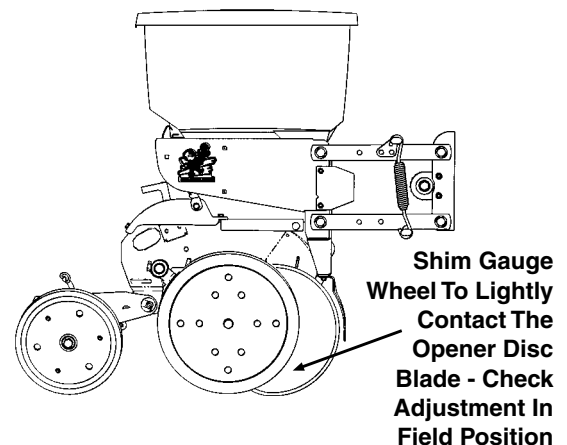
(RU113g)

GAUGE WHEEL ADJUSTMENT

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

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

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

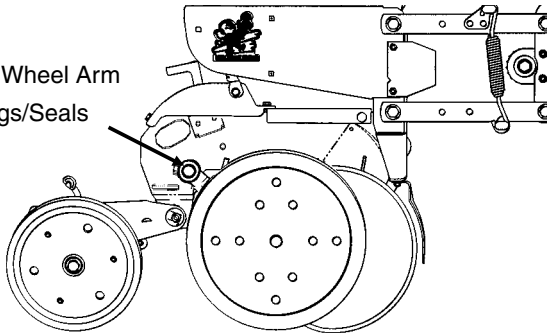


MAINTENANCE

GAUGE WHEEL ARM BUSHING AND/OR SEAL REPLACEMENT

(RU113g)

Gauge Wheel Arm Bushings/Seals

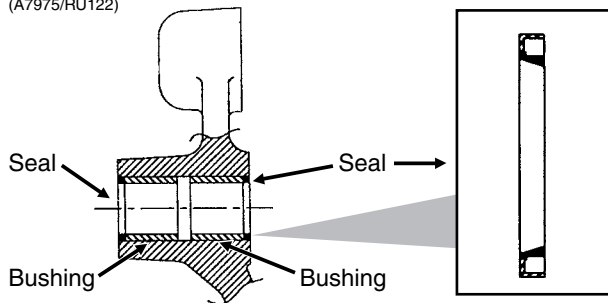


NOTE: A Gauge Wheel Arm Bushing And Seal Driver Kit (G1K296), for use in bushing and seal replacement, is available through your KINZE® Dealer.

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

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

(A7975/RU122)



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

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

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

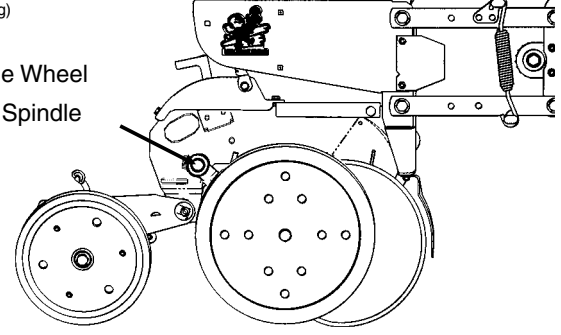
NOTE: Special machine bushing between gauge wheel arm and gauge wheel.

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

GAUGE WHEEL ARM PIVOT SPINDLE REPLACEMENT

(RU113g)

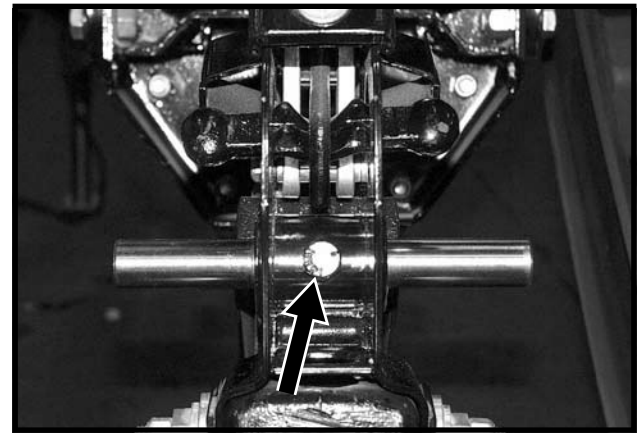
Gauge Wheel Pivot Spindle



To replace gauge wheel pivot spindle:

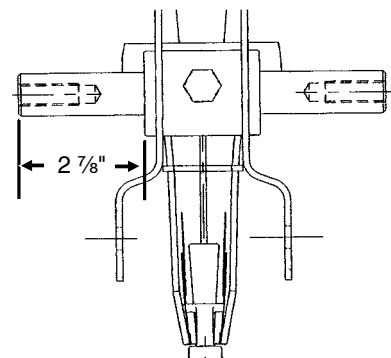
1. Remove the gauge wheel and arm assemblies from the shank assembly.
2. Remove 1/2" x 3/4" cap screw that locks the pivot spindle in place and remove the spindle.

D06189902



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

(A7966)



4. Install 1/2" x 3/4" cap screw and torque to lock pivot spindle in place.
5. Install gauge wheel and arm assemblies. Shim for proper gauge wheel tire/disc blade clearance.

MAINTENANCE

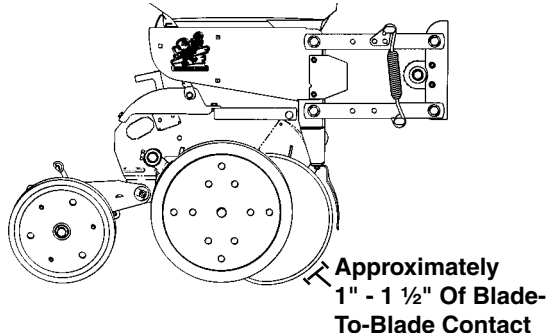
15" SEED OPENER DISC BLADE/ BEARING ASSEMBLY

Approximately 1" - 1 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)



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.

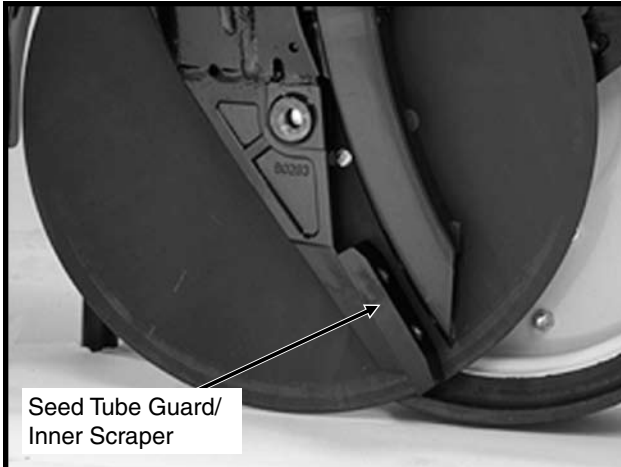
MAINTENANCE

SEED TUBE GUARD/INNER SCRAPER

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

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

LF212199-12



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

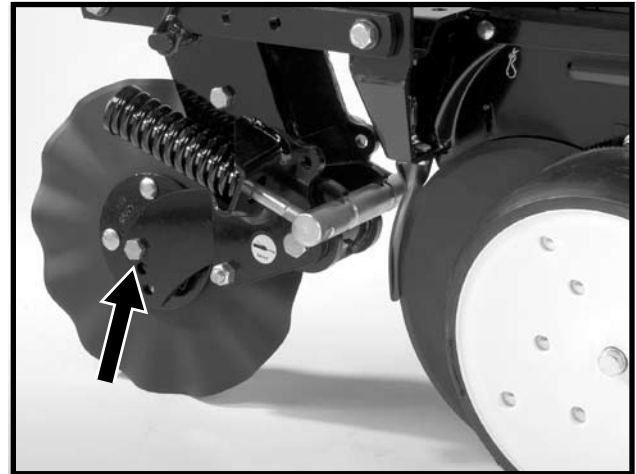
IMPORTANT: No till planting or planting in hard ground conditions, especially when the planter is not equipped with no till coulters, and/or excessive blade-to-blade contact will increase seed tube guard wear and necessitate more frequent inspection and/or replacement.

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

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

FRAME MOUNTED COULTER

LF083002101



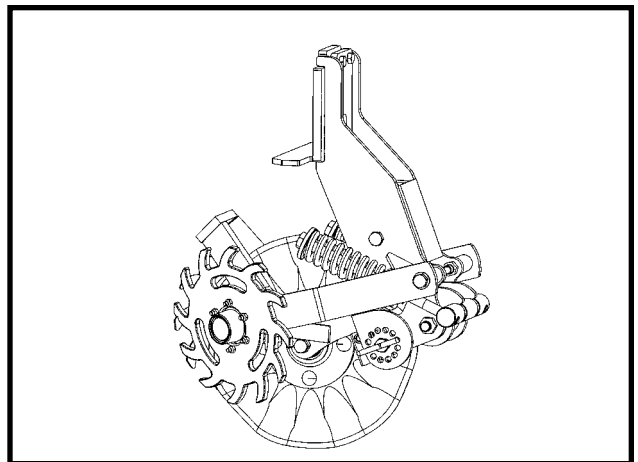
NOTE: Torque $\frac{5}{8}$ " spindle hardware to 120 ft. lbs.

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

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

RESIDUE WHEELS (For Use With Frame Mounted Coulters)

(RU154)

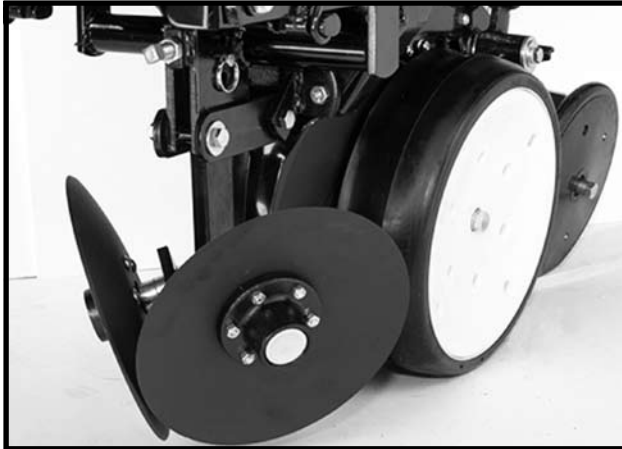


The wheel hub is equipped with sealed bearings. If a bearing sounds or feels rough when the wheel is rotated, replace the bearings.

MAINTENANCE

ROW UNIT MOUNTED DISC FURROWER

LF212299-22



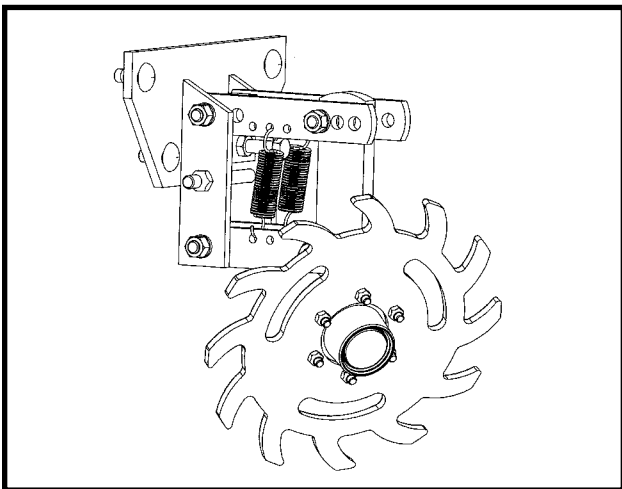
Lubricate the bushings in the support arm and mounting bracket at the frequency indicated in the Lubrication Section of this manual. Using a torque wrench, check each bolt for proper torque. If the bolt is loose, it should be removed and the bushing inspected for cracks and wear. Replace bushings as necessary. **Only hardened flat washers should be used. Replace damaged flat washers with proper part. Torque cap screws to 57 ft. lbs.**

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

When the 12" diameter blades (solid or notched) are worn to 11", they should be replaced.

ROW UNIT MOUNTED RESIDUE WHEEL

(A12685)



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 NO TILL COULTER

D05170706a



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

NOTE: Torque 5/8" spindle hardware to 120 ft. lbs.

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

The couler 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 Couler" in Row Unit Operation section of this manual.

When the 16" diameter couler blade is worn to 14 1/2" (maximum allowable wear), it should be replaced.

COULTER MOUNTED RESIDUE WHEELS

D05170708a



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

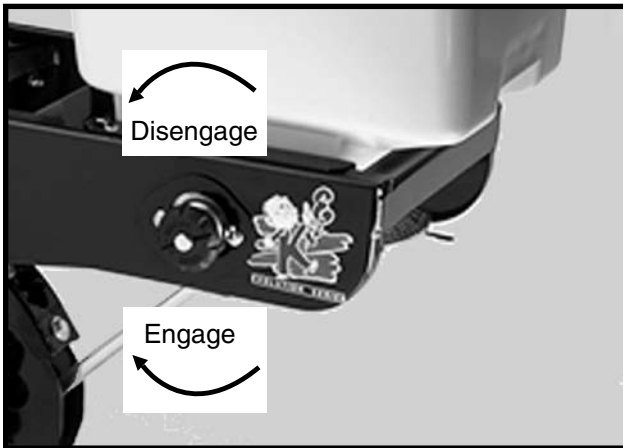
MAINTENANCE

GRANULAR CHEMICAL ATTACHMENT

Prior to storage of the planter, disengage the granular chemical drive by rotating the throwout knob $\frac{1}{4}$ turn counterclockwise. Remove the drive chain and empty and clean all granular chemical hoppers. Clean the drive chains and coat them with a rust preventive spray or submerge chains in oil. Inspect and replace any worn or broken parts.

Install hoppers and chains. Check chain alignment.

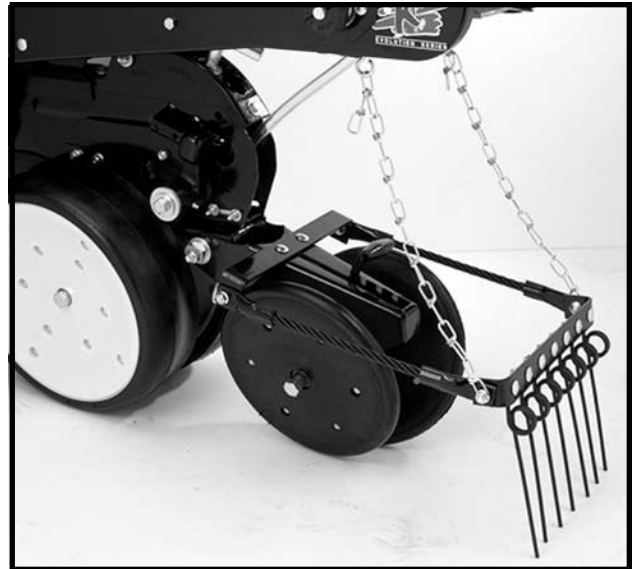
LF212299-4



SPRING TOOTH INCORPORATOR

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

LF212299-26



MAINTENANCE

KPM III ELECTRONIC SEED MONITOR TROUBLESHOOTING

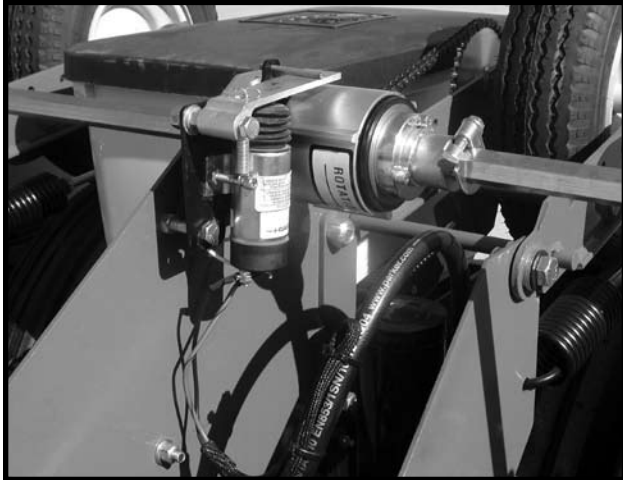
PROBLEM	POSSIBLE CAUSE	SOLUTION
Single sensor communication alarm comes on.	Faulty seed tube sensor.	Replace sensor.
	Break in the harness just before the seed tube sensor.	Inspect for break in harness and repair. If break can't be found, replace harness section.
	Dirty or corroded connector.	Clean connector.
Sensor communication alarms come on for all sensors.	Faulty monitor.	Replace/repair monitor.
	Break in the harness just after the monitor.	Inspect for break in harness and repair. If break can't be found, replace harness section.
	Dirty or corroded connector.	Clean connector.
Sensor communication alarms come on for some sensors.	Break in the harness.	Inspect for break in harness and repair. If break can't be found, replace harness section corresponding with the alarming sensors.
	Dirty or corroded connector.	Clean connector.
Faulty monitor values (such as speed, area, etc.) being displayed.	Incorrect monitor settings.	Change settings to properly correspond to the system.
	Faulty radar/magnetic distance sensor.	Replace sensor.
	Improperly mounted radar sensor.	Properly mount sensor.
Underplanting or no planting alarm on a single sensor when planting (alarm on with a single bargraph segment on and a flashing row number on a single row).	Seed tube sensor is blocked.	Clean sensor.
	Faulty seed tube sensor.	Replace sensor.
	Meter not planting or underplanting.	Repair/replace meter.
	Chain broken or off sprocket.	Repair as necessary.
Seed tube sensor dirty or blocked warning comes on.	Seed tube sensor is dirty.	Clean sensor.
	Faulty seed tube sensor.	Replace sensor.
LED on the seed tube sensor will not come on.	Faulty seed tube sensor.	Replace sensor.
	Dirty or corroded connector.	Clean connector.
	Break in the harness just before the sensor.	Repair harness.
Erroneous MPH readings at idle. (Radar Distance Sensor Only)	Radar sensor not located in a stable location.	Relocate to a more stable location.

MAINTENANCE

POINT ROW CLUTCHES

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

D081905107

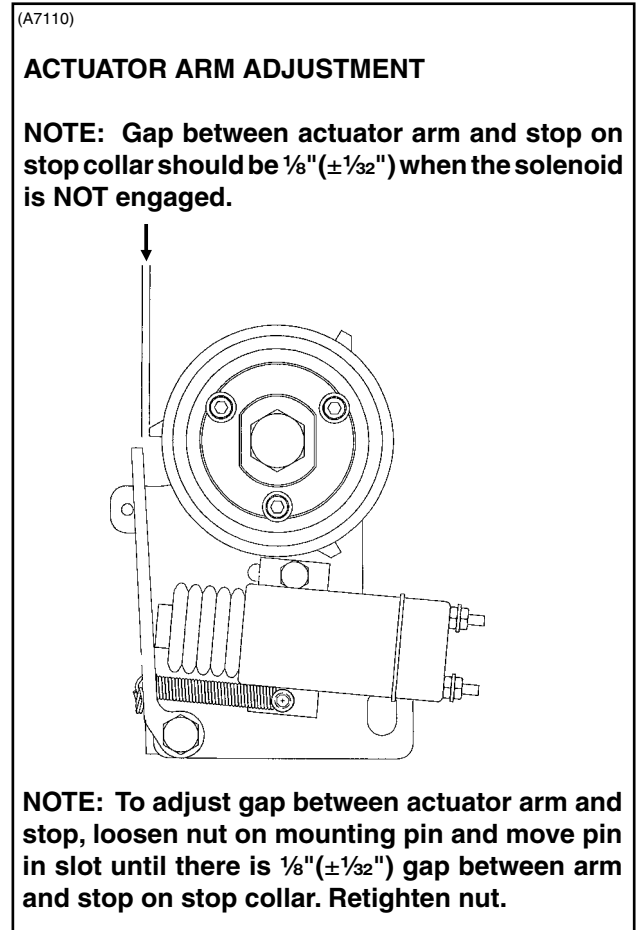
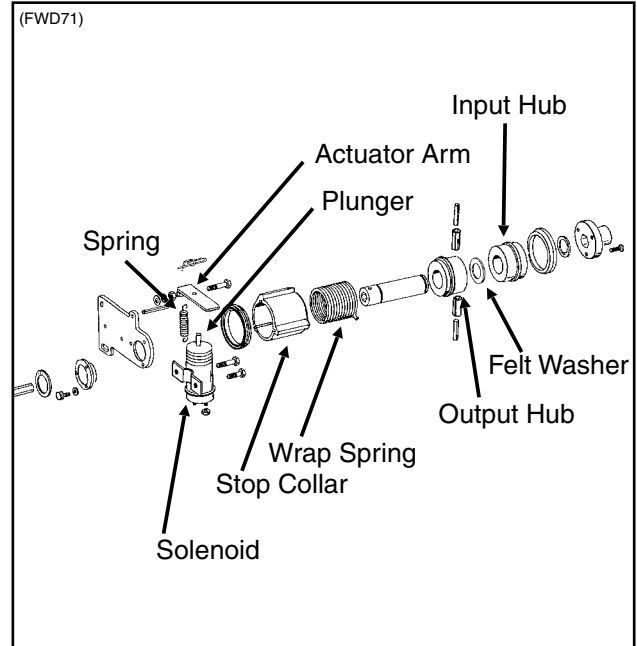


The clutches on the outer L.H. and inner R.H. sections operate clockwise and the clutches on the outer R.H. and inner L.H. sections operate counterclockwise. Therefore, some of the parts of the clutches such as the wrap springs differ from one location on the planter to another. Be sure to use the correct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

Outer L.H. Section	Uses R.H. (CW) Point Row Clutch
Inner L.H. Section	Uses L.H. (CCW) Point Row Clutch
Inner R.H. Section	Uses R.H. (CW) Point Row Clutch
Outer R.H. Section	Uses L.H. (CCW) Point Row Clutch

If the clutch or clutches fail to operate, first determine if the problem is electrical or mechanical. Place the operational switch in the RIGHT INSIDE, RIGHT END, LEFT INSIDE or LEFT END position. When the switch is in the RIGHT INSIDE, RIGHT END, LEFT INSIDE or LEFT END position and the fuse on the rear of the control console is in working condition, the red indicator light on the control console should be lighted. If light does not come on, check the fuses on the front of the control console. See "Point Row Clutch Troubleshooting" chart. If fuses are not blown, check the clutch and wiring harness for power with a test light or volt meter. If the solenoid is operating properly, the plunger on the solenoid will retract causing a clicking sound. The plunger will also be magnetized which can be checked by touching the plunger with a metal object.

NOTE: Always replace fuse with proper size and type when replacing fuse. Use MDL 10 amp slow blow fuse on front of control console.



MAINTENANCE

POINT ROW CLUTCH TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
None of the clutches will disengage.	Main fuse blown in control console.	Replace defective fuse.
	Poor terminal connection in wiring harness.	Repair or replace.
	Wiring damage in wiring harness.	Repair or replace.
	Low voltage at coil. (12 volts required)	Check battery connections.
One section of planter will not re-engage.	Shear pin at seed drive transmission(s) sheared.	Replace pin with one of equal size and grade.
One clutch will not engage.	Fuses blown.	Replace defective fuses.
	Actuator arm and plunger stuck in disengaged position.	Remove, free up and reinstall.
	Actuator arm out of adjustment.	Adjust actuator arm mounting pin in slot so that actuator arm clears stop on stop collar by approximately 1/8" when clutch is rotated.
	Wrap spring broken or stretched.	Disassemble clutch and replace spring.
	Something touching the stop collar.	Check to ensure collar is free to turn with clutch.
	Clutch assembled incorrectly.	Check clutch and diagram for correct assembly.
Clutch slipping.	Wrap spring stretched.	"Lock" clutch output shaft from turning. Place torque wrench on input shaft and rotate in direction of drive. After input shaft has rotated a short distance the wrap spring should tighten onto the input hub. If slippage occurs at less than 100 ft. lbs. replace spring. If spring still slips after installing new spring, replace input hub.
Planter section will not re-engage while planter is moving forward.	Spring in actuator arm not strong enough to push arm away from stop collar when operational switch is turned to the ON position.	Remove spring from inside solenoid and stretch spring slightly or replace. Reinstall spring. If that fails, file the stop on the stop collar slightly so that the stop is not as aggressive.
Frequent solenoid burnout.	Fuses too large.	Replace fuses on front panel with 10 amp slow blow fuses.
Frequent fuse burnout.	Low voltage (12 volts required).	Check power source voltage for partially discharged battery, etc.
	Damage to wiring harness.	Locate damage and repair or replace harness.
Clutch or clutches will not disengage.	Input and output shafts out of alignment.	Align input and output shafts to prevent drag.
	Input or output shaft is pushed in too far creating a coupler.	Reposition input and output shafts.

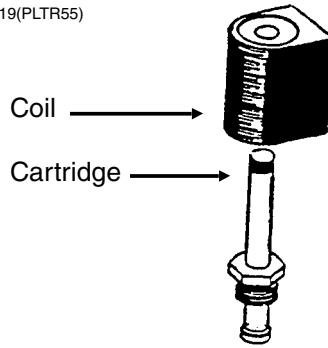
MAINTENANCE

SOLENOID VALVE INSPECTION

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

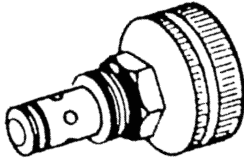
If the solenoid or solenoids fail to operate, first determine if the problem is electrical or hydraulic. If the valve is working properly, a click will be heard when the solenoid coil is energized. This will be the valve stem opening up. If no sound is heard, check the solenoid coil by touching the top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

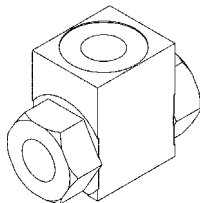
VVB020(TWL28)



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.

FLOW REGULATOR VALVE INSPECTION (Located At Each Row Marker)

(A10645)



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

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

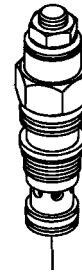
(FWD23)



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

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

(FWD21)



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

PRESSURE RELIEF VALVE INSPECTION (Located At Each Row Marker)

(FWD26)



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

MAINTENANCE

SOLENOID VALVE TROUBLESHOOTING

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

LIFT/FOLD CIRCUIT TROUBLESHOOTING

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

* Operate hydraulics slowly to accentuate the problem.

MAINTENANCE

ROW MARKER CIRCUIT TROUBLESHOOTING

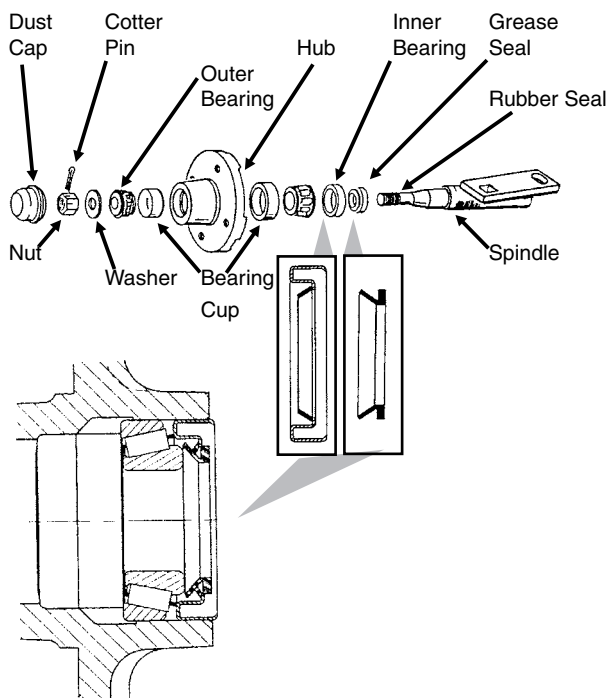
PROBLEM	POSSIBLE CAUSE	SOLUTION
Right marker lowering slower than left marker.	Solenoid valve cartridge in port V3 not opening completely.	Switch cartridge with one in port V4. If problem follows cartridge, replace cartridge.
	Hose pinched or collapsed.	Inspect hose routing. Replace or repair hoses as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

MAINTENANCE

ROW MARKER BEARING LUBRICATION OR REPLACEMENT

1. Remove row marker blade.
2. Remove dust cap from hub.
3. Remove cotter pin, nut and washer.
4. Slide hub from spindle.
5. Remove bearings and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings only and not cups if repacking.
6. Press in new bearing cups with thickest edge facing in. (Bearing replacement procedure only.)
7. Pack bearings with heavy duty wheel bearing grease thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.
8. Install rubber seal into grease seal. Place inner bearing in place and press in new rubber seal/grease seal.
9. Clean spindle and install hub.
10. Install outer bearing, washer and slotted hex nut. Tighten slotted hex nut while rotating hub until there is some drag. This assures that all bearing surfaces are in contact. Back off slotted nut to nearest locking slot and install cotter pin.
11. Fill dust caps approximately $\frac{3}{4}$ full of wheel bearing grease and install on hub.
12. Install blade and dust cap retainer on hub and tighten evenly and securely.

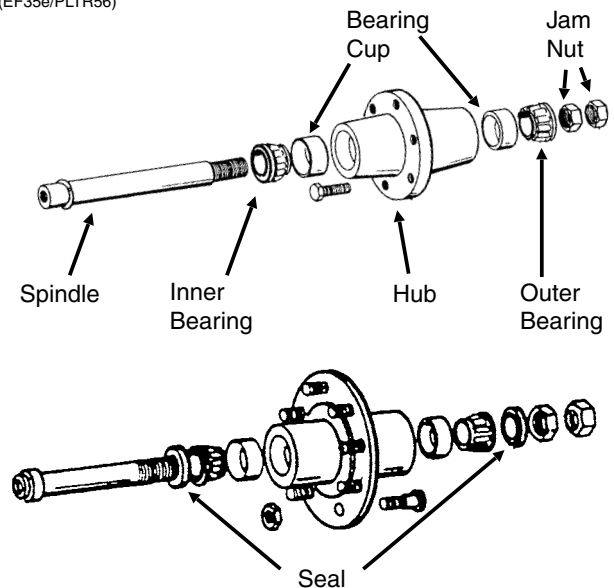
(PLTR45/PLTR99/PLTR98/PLTR102)



LIFT/GROUND DRIVE WHEEL BEARING LUBRICATION OR REPLACEMENT

1. Raise tire clear of ground and remove wheel.
2. Remove double jam nuts and slide hub from spindle.
3. Remove bearings, seals (Where Applicable) and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings only and not cups if repacking.
4. Press in new bearing cups with thickest edge facing in. (Bearing replacement procedure only.)
5. Pack bearings with heavy duty wheel bearing grease thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.
6. Place inner bearing and seal (If Applicable) in place.
7. Clean spindle and install hub.
8. Install outer bearing, seal (If Applicable) and stepped nut. Tighten jam nut while rotating hub until there is some drag. This assures that all bearing surfaces are in contact. Back off jam nut $\frac{1}{4}$ turn or until there is only slight drag when rotating the hub. Install second jam nut to lock against first.
9. Install wheel on hub and tighten evenly and securely. Torque lug bolts or nuts to specified torque.

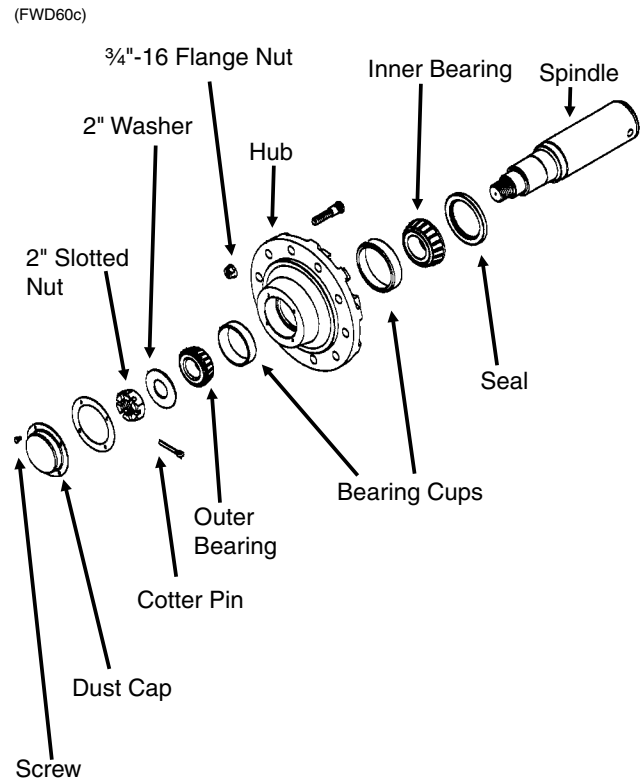
(EF35e/PLTR56)



MAINTENANCE

TRANSPORT WHEEL BEARING REPLACEMENT

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



MAINTENANCE

PISTON PUMP STORAGE

IMPORTANT: KEEP AIR OUT OF PUMP! This is the only way to prevent corrosion. Even for short periods of storage, the entrance of air into the pump, will cause RAPID AND SEVERE CORROSION.

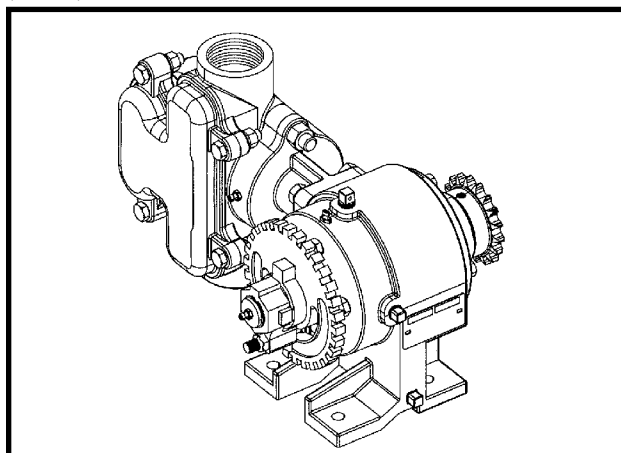
Overnight Storage

SUSPENSION FERTILIZER must be flushed from the pump for ANY storage period.

Winter Storage

1. Flush pump thoroughly with 5 to 10 gallons of fresh water and circulate until all corrosive salts are dissolved in the pump.
2. With the pump set on 10, draw in a mixture of half diesel fuel and half 10 weight oil until the discharge is clean. Then plug inlet and outlet.

(A12330a)



PISTON PUMP TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump hard or impossible to prime.	Valves fouled or in wrong place.	Inspect and clean valves.
	Air leak in suction line.	Repair leak.
	Pump set too low.	Adjust pump setting.
	Packing washers worn out.	Replace.
Low metering.	Valves fouled or in wrong place.	Inspect and clean valves.
	Air leak in suction line.	Repair leak.
	Pump set too low.	Adjust pump setting.
	Broken valve spring.	Replace spring.
Over meters.	Broken discharge valve spring.	Replace spring.
	Trash under valves.	Inspect and clean valves.
	Improper rate setting.	Adjust pump setting.
Leaks through when stopped.	Broken discharge valve spring.	Replace spring.
	Trash under valves.	Inspect and clean valves.
Fertilizer solution leaking under stuffing box.	Packing washers worn out.	Replace.
Pump using excessive oil.	Oil seals or o-ring worn and leaking.	Replace.
Pump operates noisily.	Crankcase components worn excessively.	Inspect and replace if necessary.

MAINTENANCE

PREPARATION FOR STORAGE

Store the planter in a dry sheltered area if possible.

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

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

Lubricate planter and row units at all lubrication points.

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

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

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.

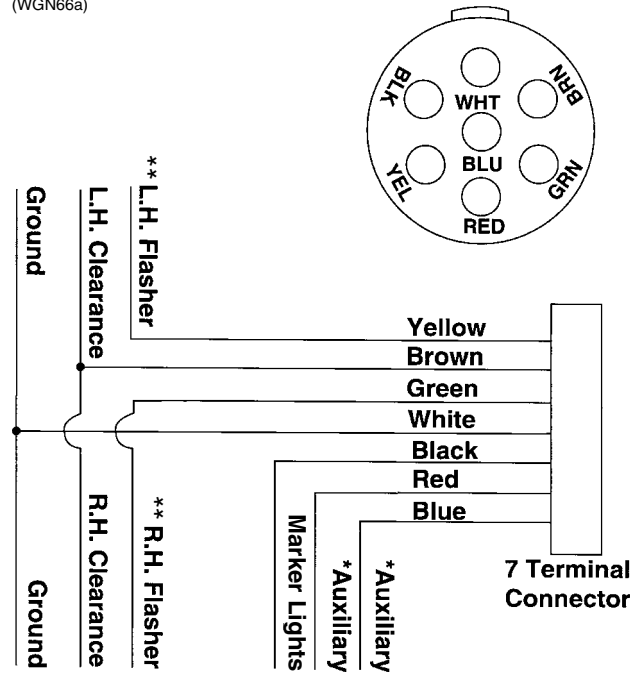
Grease or paint disc openers/blades and row marker disc blades to prevent rust.

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



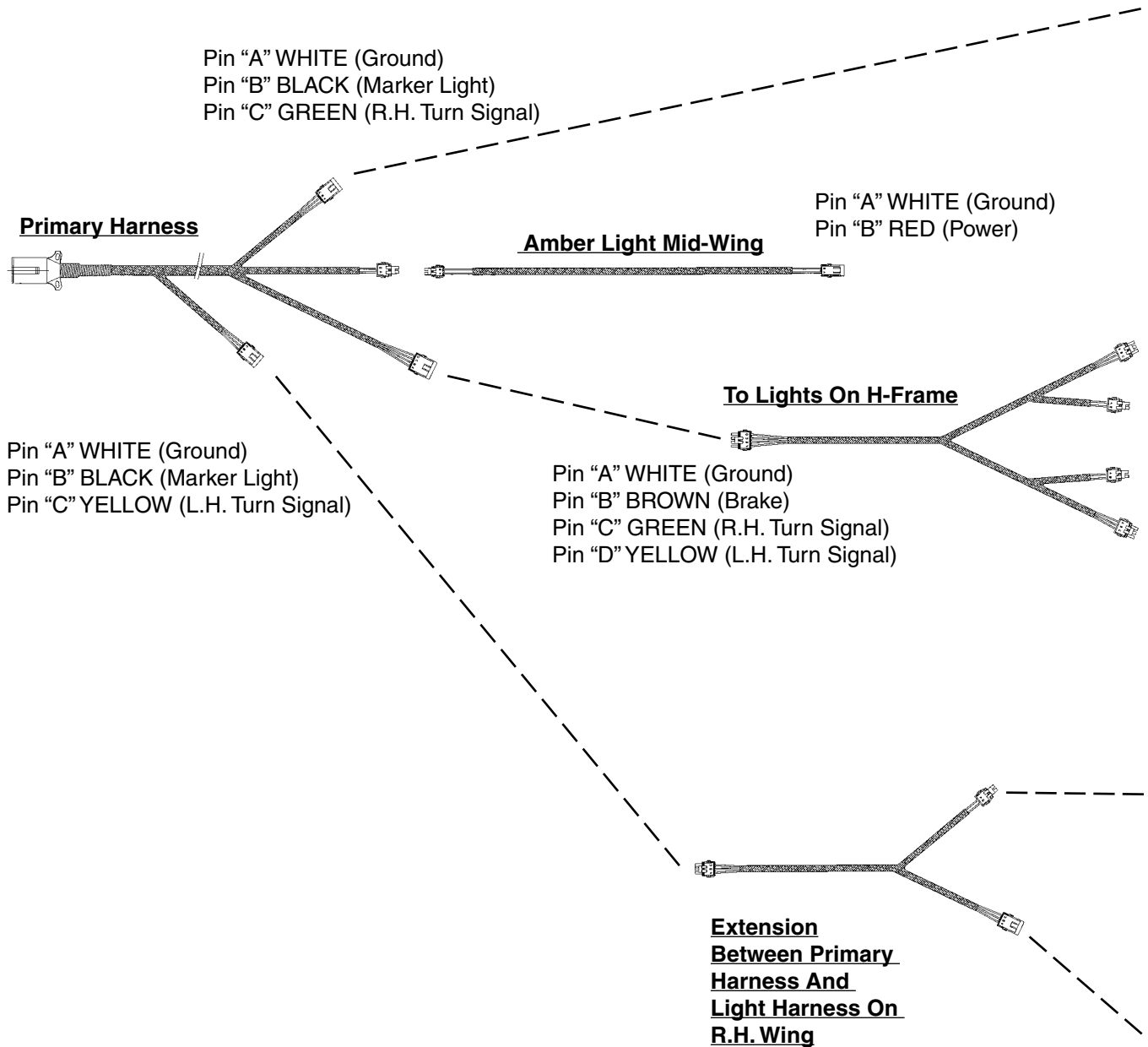
MAINTENANCE

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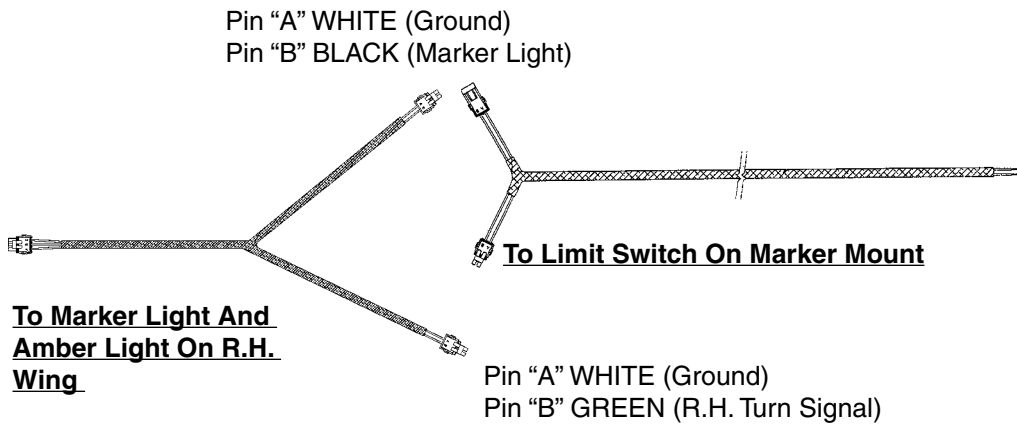
MAINTENANCE

ELECTRICAL LIGHT HARNESS SCHEMATIC

(A10315/A10316/A10317/A10318/A10319)



MAINTENANCE

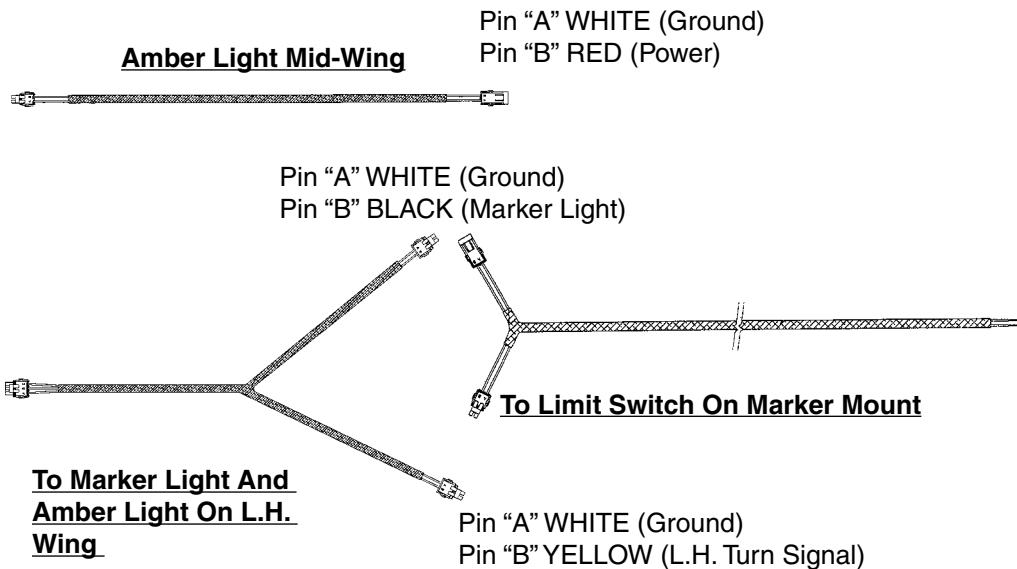


Pin "A" WHITE (Ground)
Pin "B" BROWN (Brake)
Pin "C" GREEN (R.H. Turn Signal)

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

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

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

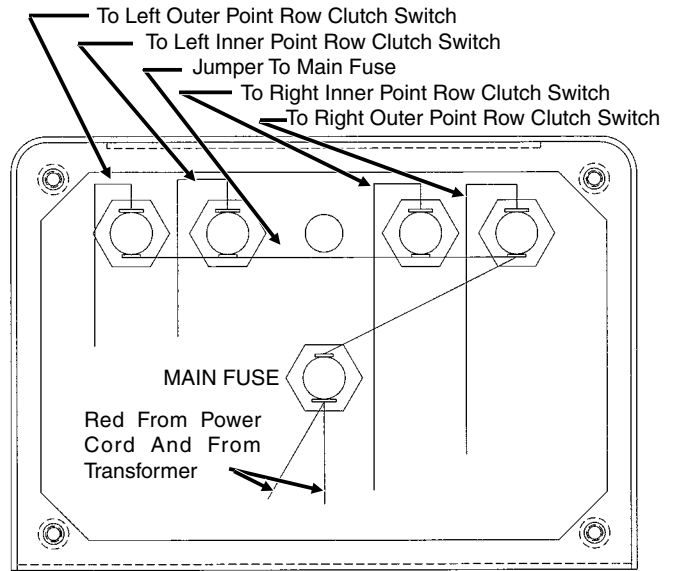
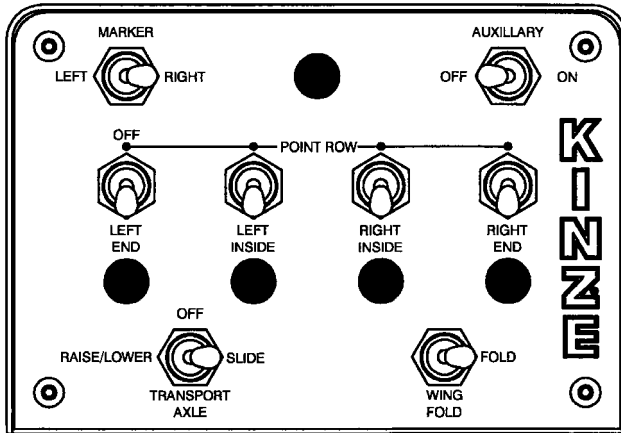


MAINTENANCE

ELECTRICAL CONTROL CONSOLE SCHEMATIC (Planter Functions)

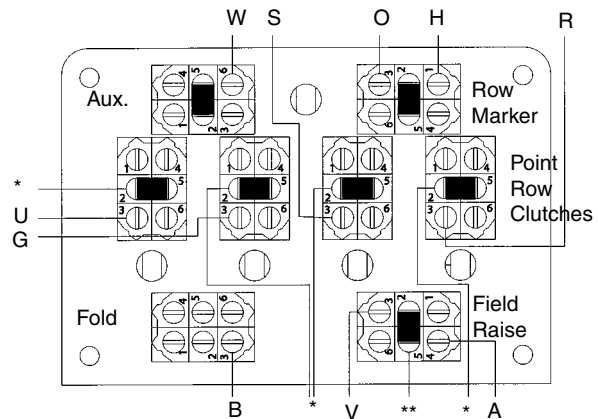
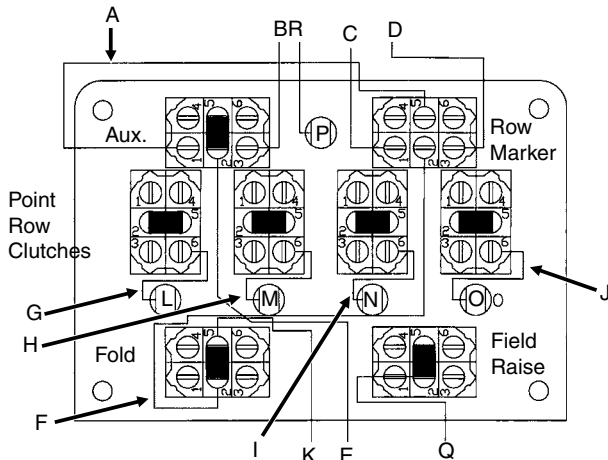
IMPORTANT: Before doing any electrical work, disconnect the control console from the tractor battery. Keep wiring harnesses away from high temperature areas or sharp edges. **DO NOT** route the wiring harnesses along battery cables. Use tie straps to keep wire harnesses away from moving parts on tractor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

(FWD30bb/FWD36a/FWD30c/FWD36)



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

- Pin "A" ORANGE/RED (Slide)
- Pin "R" BROWN (L.H. Outer Point Row Clutch)
- Pin "G" ORANGE (R.H. Inner Point Row Clutch)
- Pin "H" BLUE (L.H. Marker)
- Pin "B" BLUE/RED (Fold)
- Pin "U" RED/BLACK (R.H. Outer Point Row Clutch)
- Pin "S" YELLOW (L.H. Inner Point Row Clutch)
- Pin "O" RED (R.H. Marker)
- Pin "V" BLUE/BLACK (Raise To Transport)
- Pin "T" BLACK (Ground)(12 Gauge)
- Pin "C" BLACK/RED (Ground)
- Pin "W" ORANGE/BLACK (Auxiliary)
- * To Point Row Clutch Fuses
- ** To Main Fuse



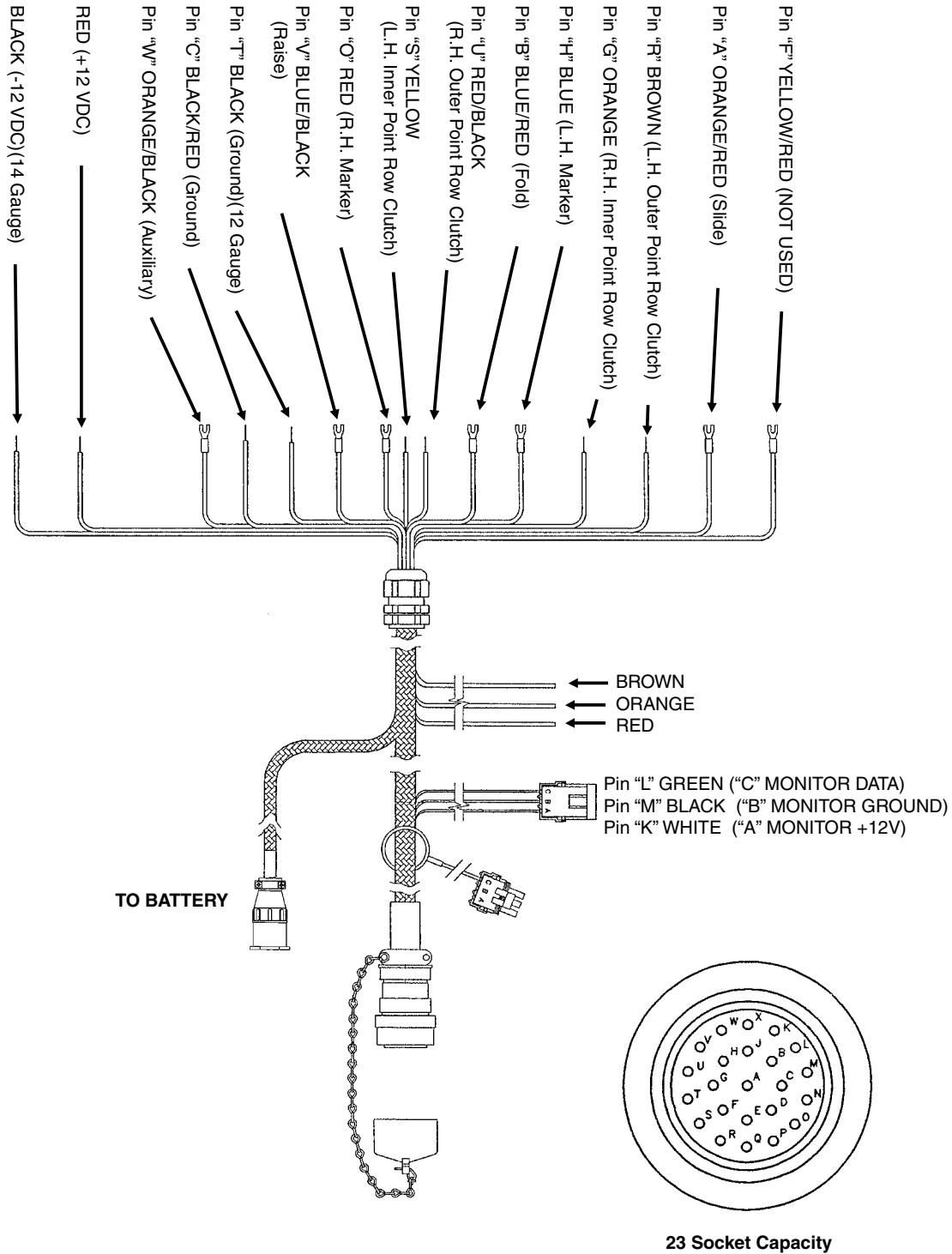
NOTE:

1. Operating marker or point row switches in either direction lights panel light.
2. Point row clutch switches operate independently of the rest of the control box.
3. Power to the marker switch is fed through the auxiliary switch and the two transport function switches. Operating any of the switches in the lower row disables the marker function and turns off the panel light. (If the point row clutch switches are in the "OFF" position.)

MAINTENANCE

ELECTRICAL WIRING HARNESS SCHEMATIC (On Tractor)

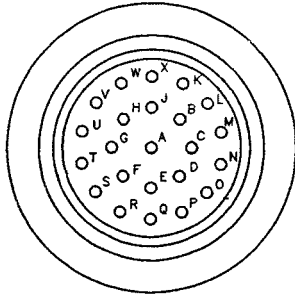
(ELC10c/ELC13)



MAINTENANCE

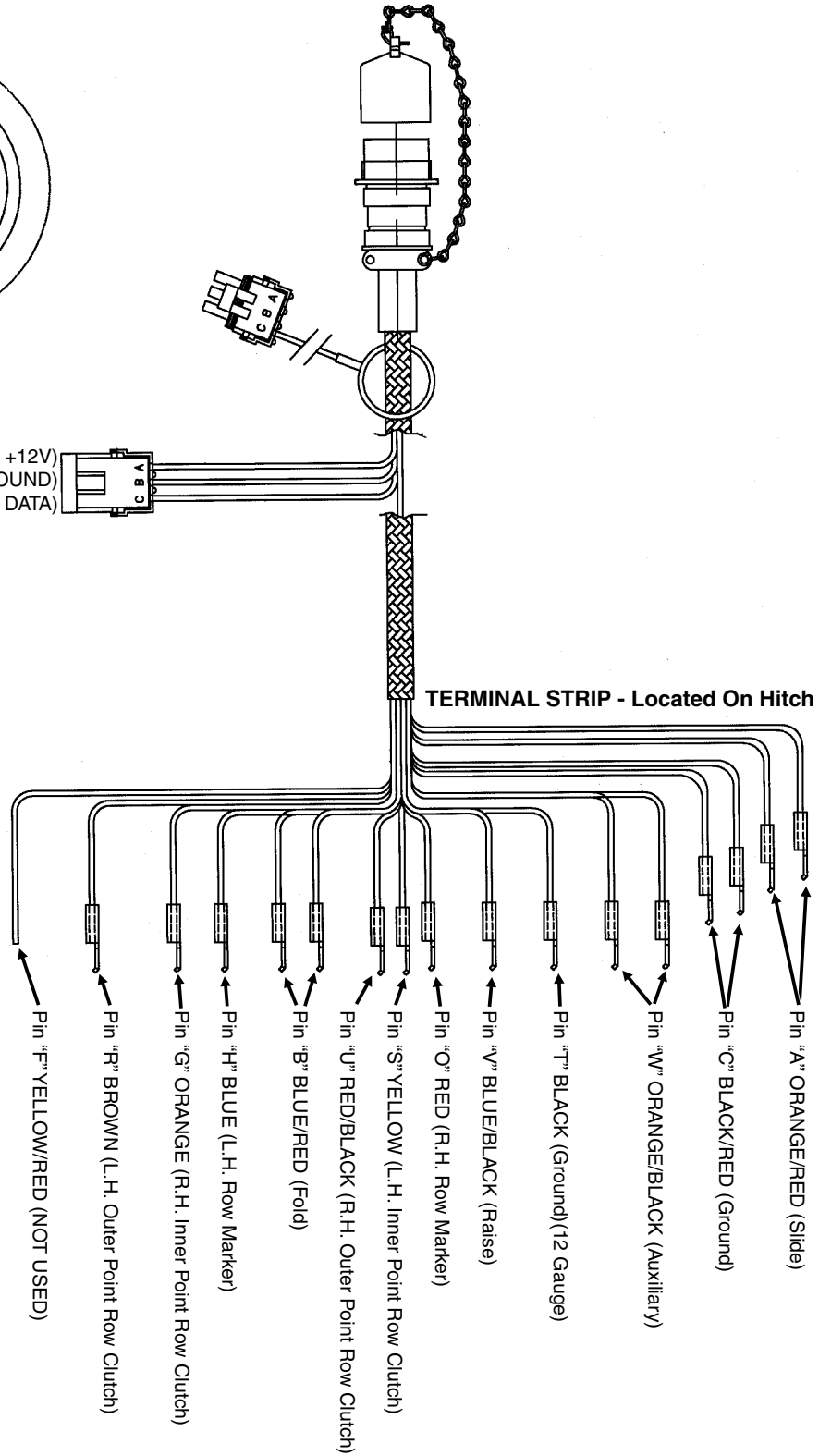
ELECTRICAL WIRING HARNESSES SCHEMATIC (On Planter)

(ELC13/A10308)



23 Pin Capacity

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



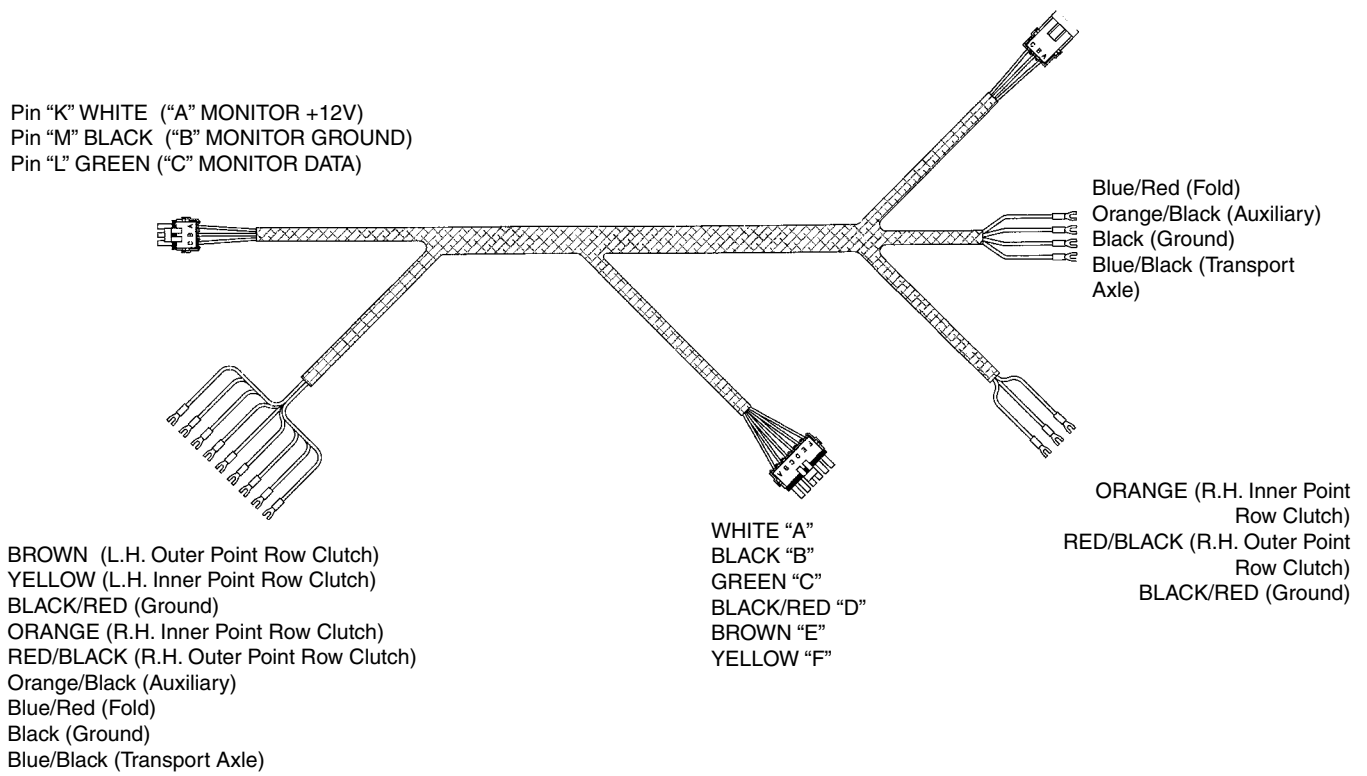
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MAINTENANCE

ELECTRICAL WIRING HARNESSES SCHEMATIC (Continued) (On Planter)

(A10309/A12652)

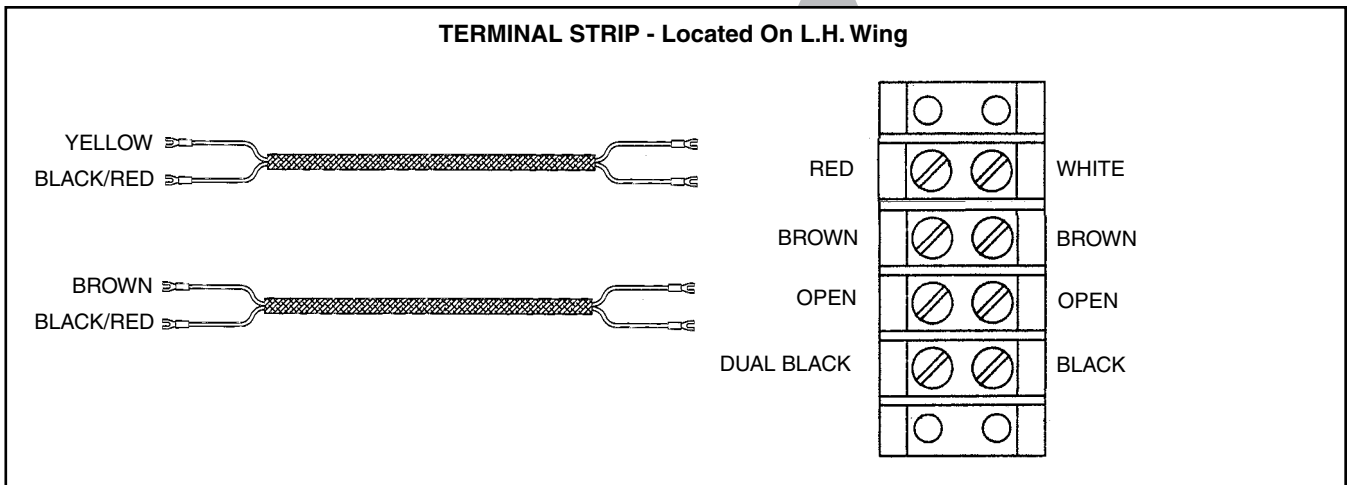
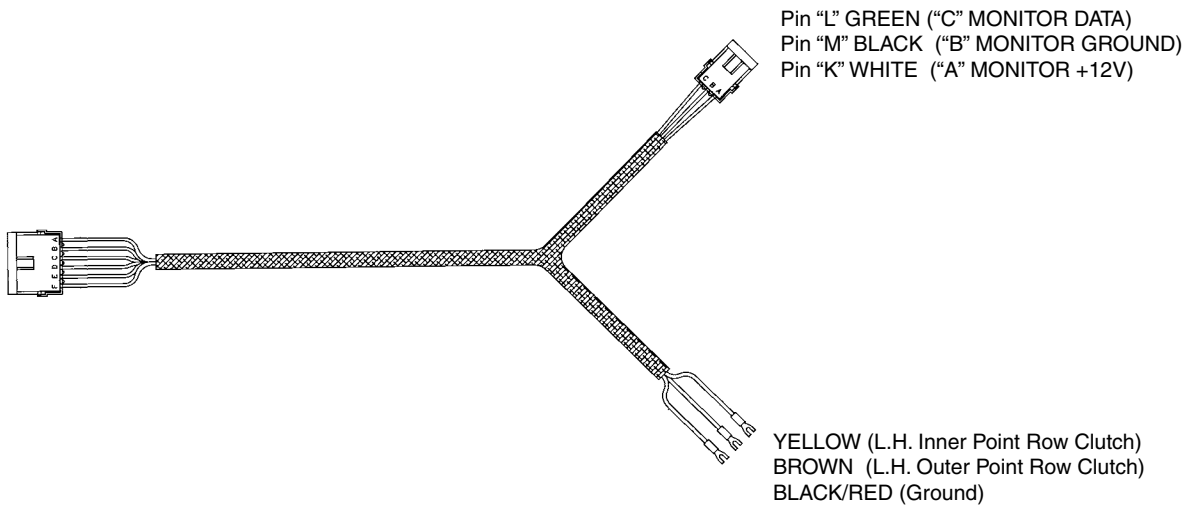
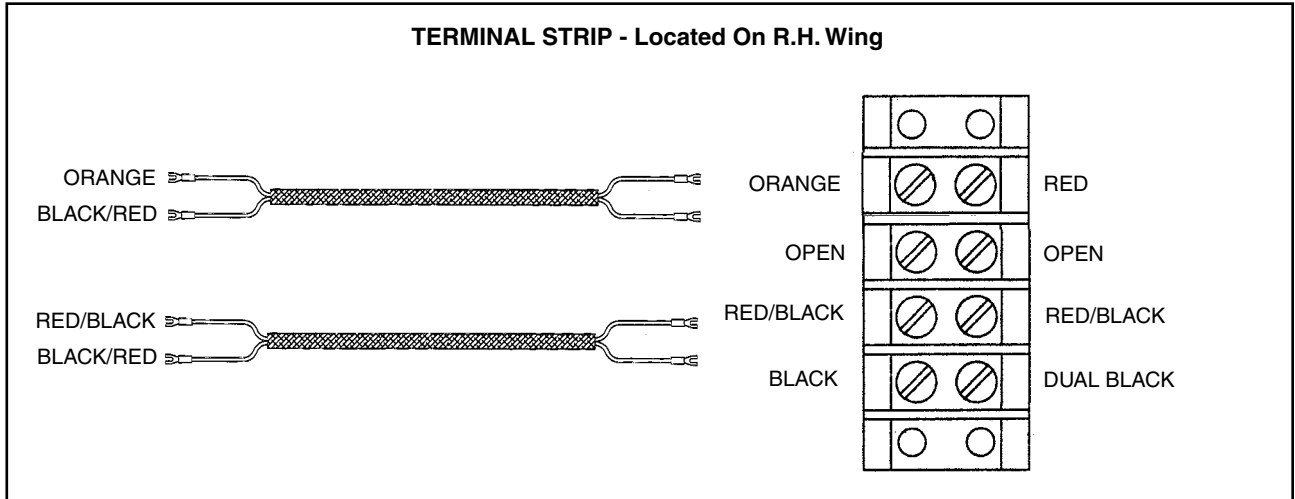


TERMINAL STRIP - Located On Hitch

MAINTENANCE

ELECTRICAL WIRING HARNESSES SCHEMATIC (Continued) (On Planter)

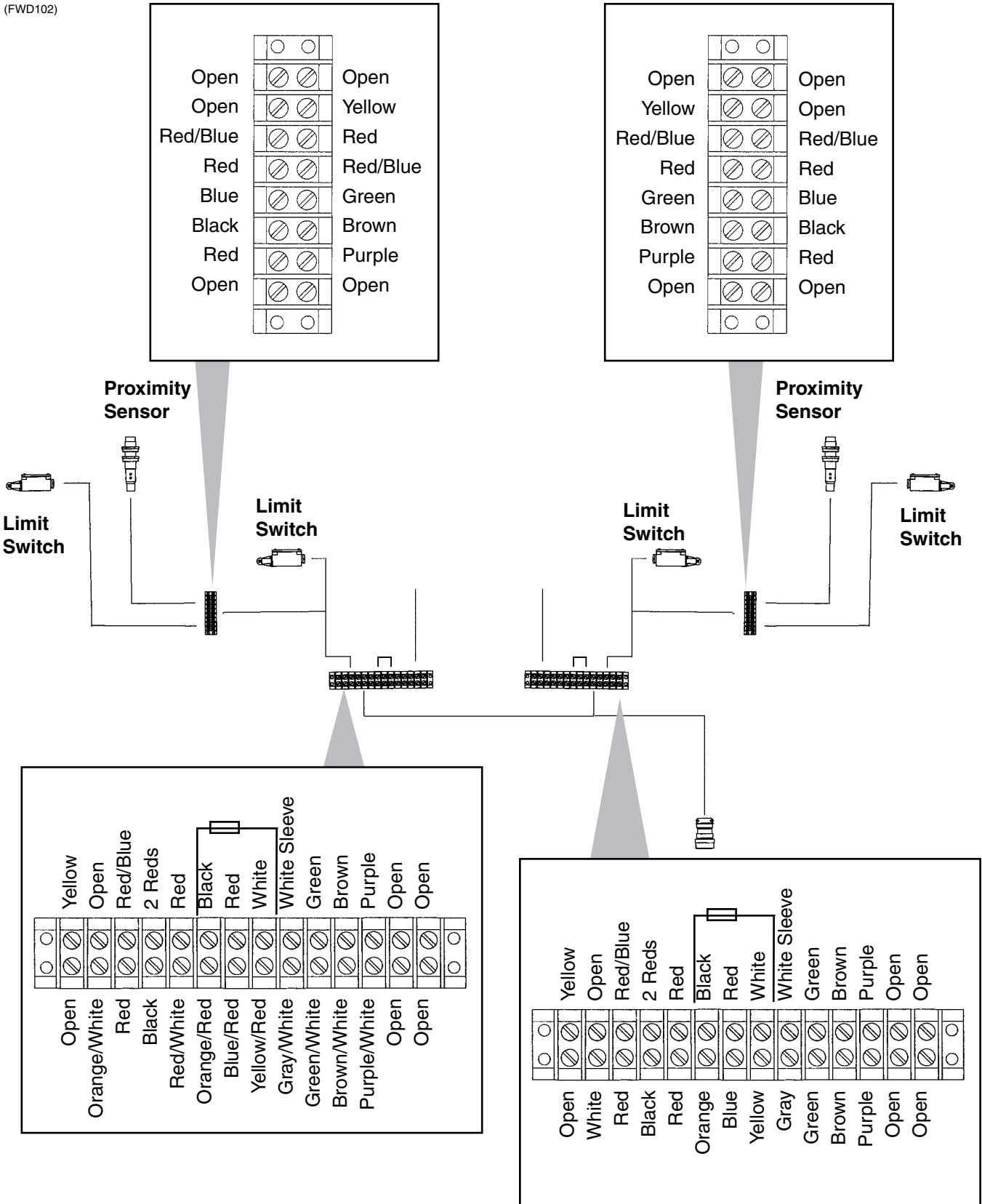
(A10311/A9510/A10310)



MAINTENANCE

ELECTRICAL WIRING SCHEMATIC (SDS)

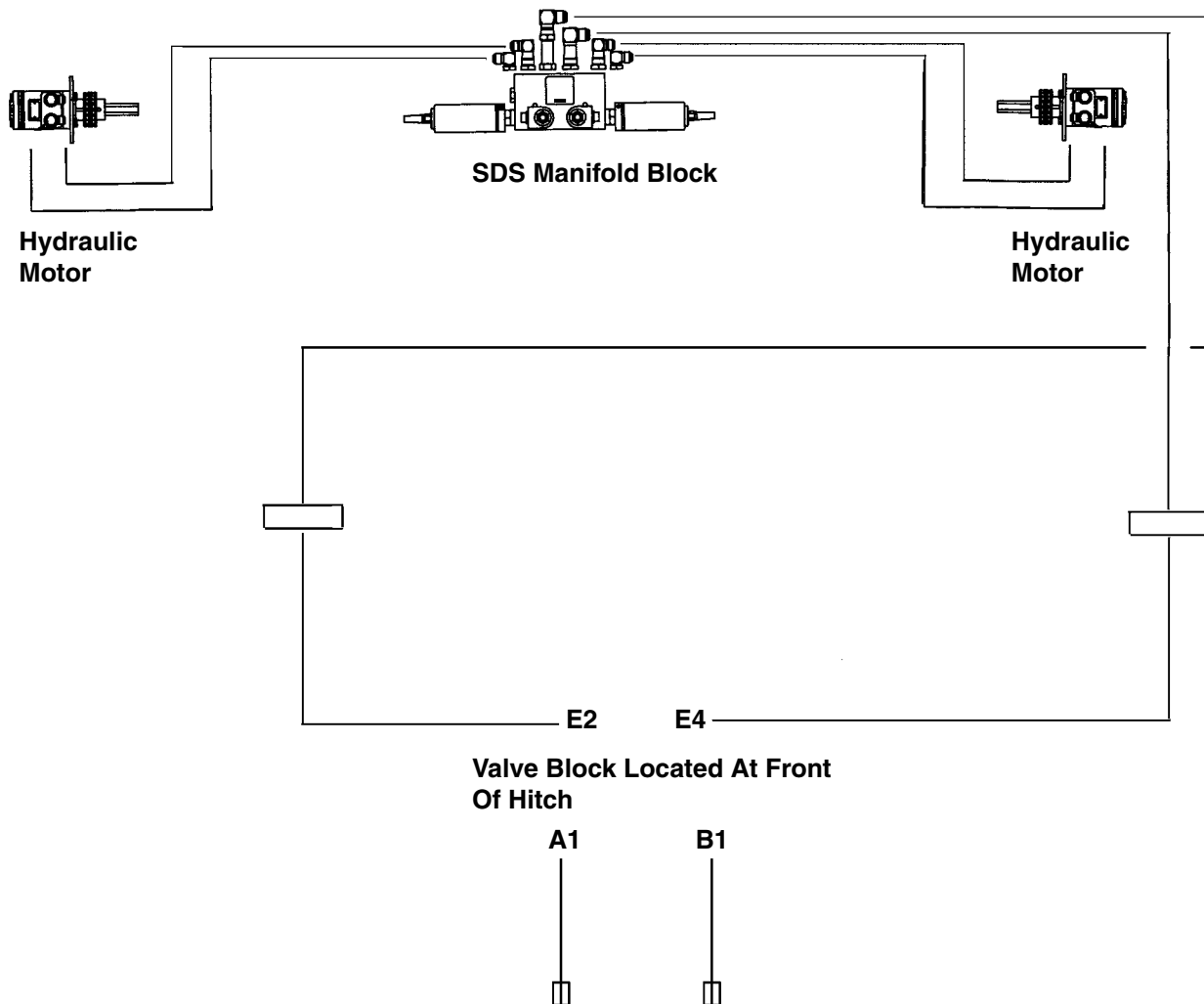
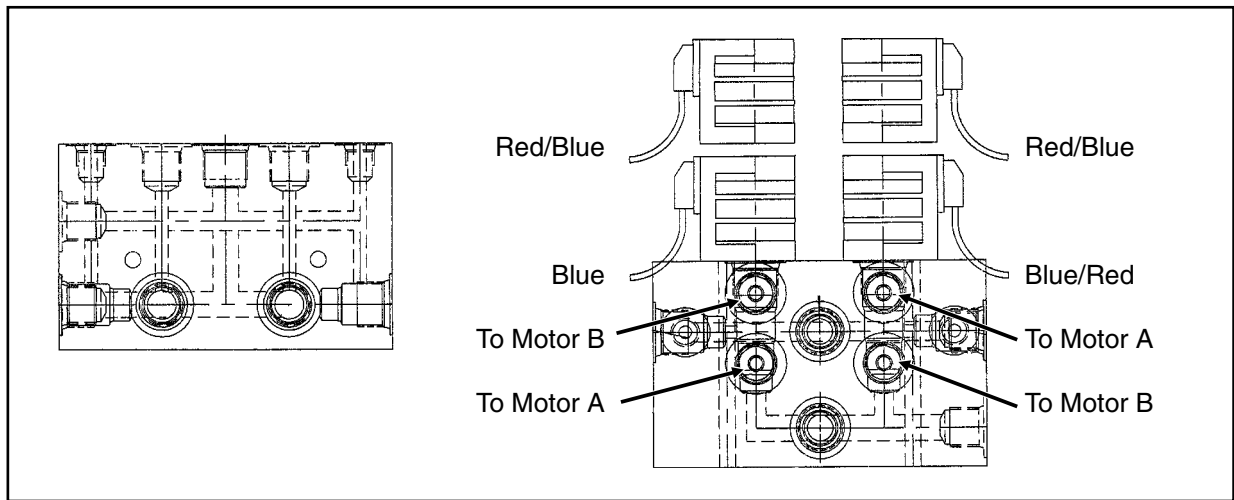
(FWD102)



MAINTENANCE

HYDRAULIC SCHEMATIC (SDS)

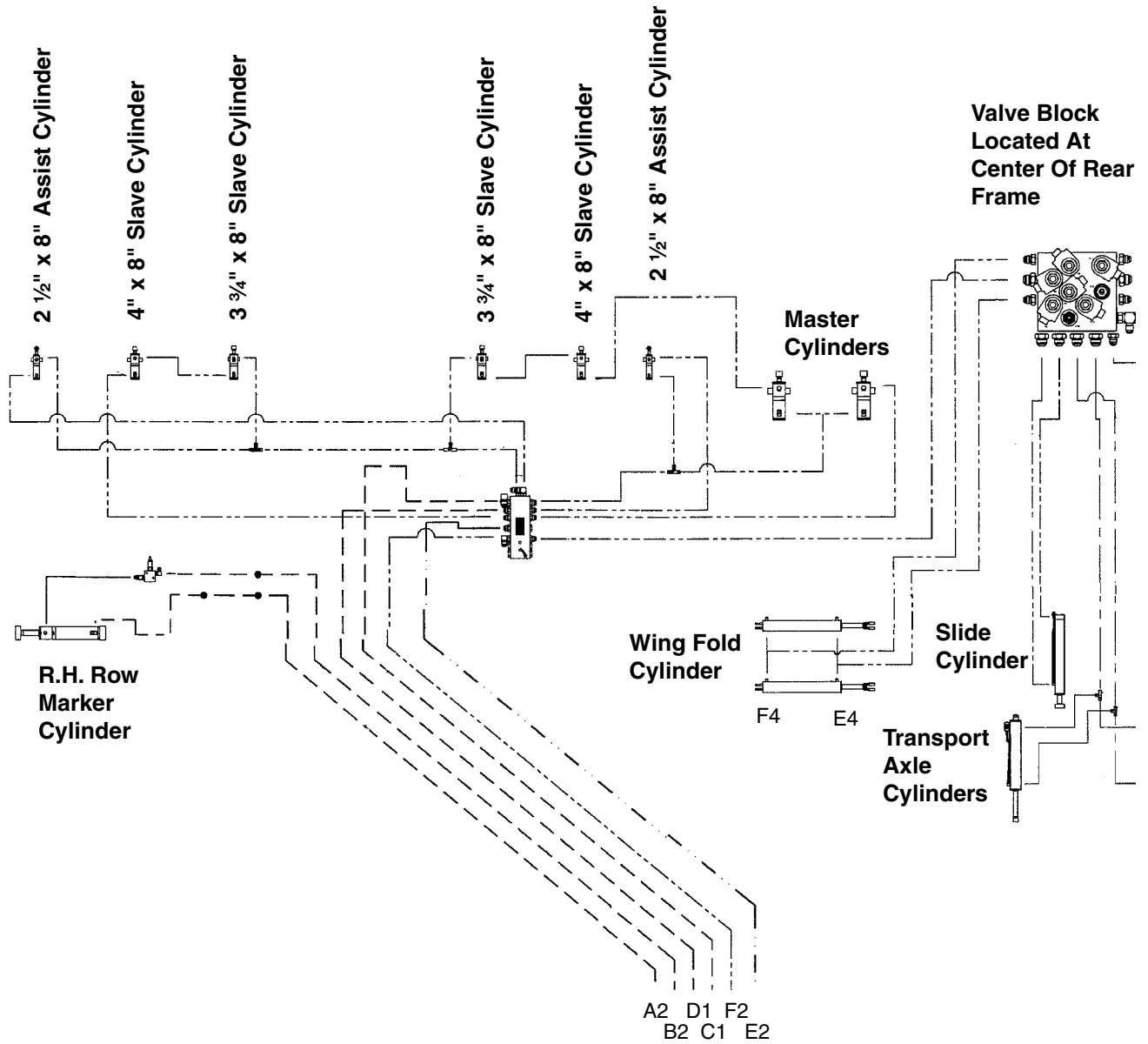
(FWD103/FWD101a)



MAINTENANCE

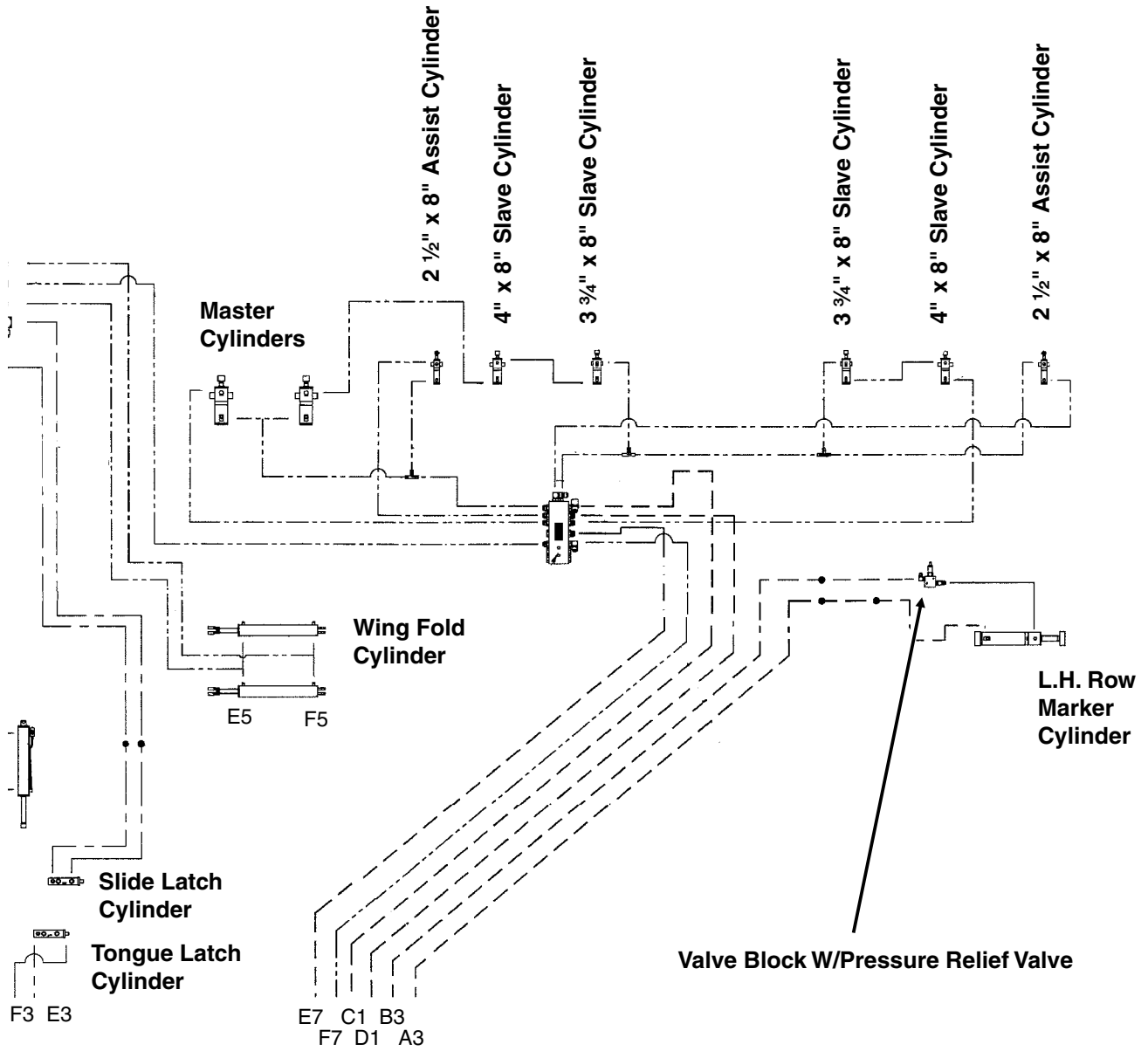
HYDRAULIC SYSTEM SCHEMATIC

(FWD156)



Valve Blocks Located At Front Of Hitch

MAINTENANCE



MAINTENANCE

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PARTS LIST INDEX

ROW UNIT

15" Seed Opener Disc Blade/Bearing Assembly And Scrapers.....	P13
Brush-Type Seed Meter.....	P33
Coulter Mounted Residue Wheels	P43
Covering Discs/Single Press Wheel.....	P16
Drag Closing Attachment	P19
Finger Pickup Seed Meter.....	P32
Frame Mounted Coulter W/Residue Wheels	P44
Gauge Wheels.....	P14
Granular Chemical Banding Options.....	P37
Granular Chemical Hopper And Hopper Panel Extension.....	P34
Granular Chemical Meter And Meter Drive	P36
Hopper Support And Meter Drive.....	P20
Parallel Arms, Mounting Support Plate And Pneumatic Down Pressure Package.....	P6
Parallel Arms, Mounting Support Plate And Quick Adjustable Down Force Springs.....	P12
Pneumatic Down Pressure Air Compressor, Dual Solenoid Assembly, Tubing And Fittings	P10
Pneumatic Down Pressure Control Console, Sending Unit And Harnesses.....	P8
Row Unit Mounted Disc Furrower	P40
Row Unit Mounted No Till Coulter	P39
Row Unit Mounted Residue Wheel	P42
Seed Hopper And Lid (Conventional Planters).....	P20
Shank Assembly, Seed Tube And Depth Adjustment.....	P4
Spring Tooth Incorporator.....	P38
"V" Closing Wheels.....	P18

BASE MACHINE

Center Toolbar/Rear H-Frame Assembly.....	P50
Contact Wheel, Arm And Tower Assemblies	P68

Cylinders

Axle Slide Cylinder.....	P92
Lift Assist / Slave Cylinders.....	P90
Master Cylinder.....	P89
Row Marker Cylinder	P94
Slave Cylinders.....	P91
Tongue Latch and Slide Latch Cylinder	P89
Transport Axle Cylinder	P93
Wing Fold Cylinder	P91
Draft Link.....	P64
Driven And Drill Shafts On Wings.....	P72
Driven And Drill Shafts On Center Section.....	P76

Electrical Components

Electrical Components (Planter Control Console).....	P108
Electrical Components (SDS Control Console)	P110
Electrical Components (Lights).....	P112

Hitch Assemblies

Inner Slide Hitch	P46
Outer Slide Hitch.....	P48
Hydraulic Hoses And Fittings	P104
Inner Wing, 32 Row 30" And 36 Row 30"	P60
Lift/Gauge Wheel.....	P66
Light Assemblies And Brackets	P114
Outer Wing	P62
Point Row Clutches	P78
Rock Shaft Axle Assembly And Wheels	P52

Continued on following page.

PARTS LIST INDEX

Row Marker Assemblies

Row Marker Assembly (Mount and First Stage)	P82
Row Marker Assembly (Second Stage).....	P84
Row Marker Assembly (Third and Fourth Stages).....	P86
Row Marker Stand	P88
Row Marker Spindle/Hub/Blade	P80
SDS Hydraulic System	P106
Seed Rate Transmission	P70
Slide Assembly.....	P54
Stub Wing.....	P58
Transport Axle Assembly And Wheels.....	P56

Valve/Junction Blocks And Valves

Junction Blocks - Located on Each Wing.....	P99
SDS Manifold Block	P100
Solenoid Valve (G1K275).....	P102
Solenoid Valve (G1K276).....	P103
Valve Blocks - Located at Center of Rear H-Frame	P98
Valve Block - Located at Each Row Marker on Outer Wing.....	P101
Valve Blocks - Located on Hitch	P96

SDS SEED DELIVERY SYSTEM

Auger Assemblies

Center Auger Assembly (SDS)	P22
Wing Auger Assembly (SDS).....	P24
Mini-Hopper and Drop Hoses.....	P21
Bulk Seed Hopper Assembly.....	P28
Bulk Seed Hopper Catwalk	P30

ELECTRONIC SEED MONITOR

KPM III Electronic Seed Monitor	P116
Planter Monitor Module (PMM)	P118

FERTILIZER

Depth/Gauge Wheel Attachment For Notched Single Disc Fertilizer Opener	P122
Fertilizer Opener Mounts.....	P123

Liquid Fertilizer

Liquid Fertilizer Tanks, Saddles, Saddle Mounts and Hoses (SDS)	P124
Liquid Fertilizer Piston Pump Mount and Ground Drive Wheel.....	P126
Liquid Fertilizer Flow Divider Mount and Hoses	P128
Liquid Fertilizer Piston Pump	P130
Liquid Fertilizer Pistom Pump Flow Divider	P132
Notched Single Disc Fertilizer Opener	P120
Rear Trailer Hitch.....	P133

Decals, Paint And Miscellaneous	P134
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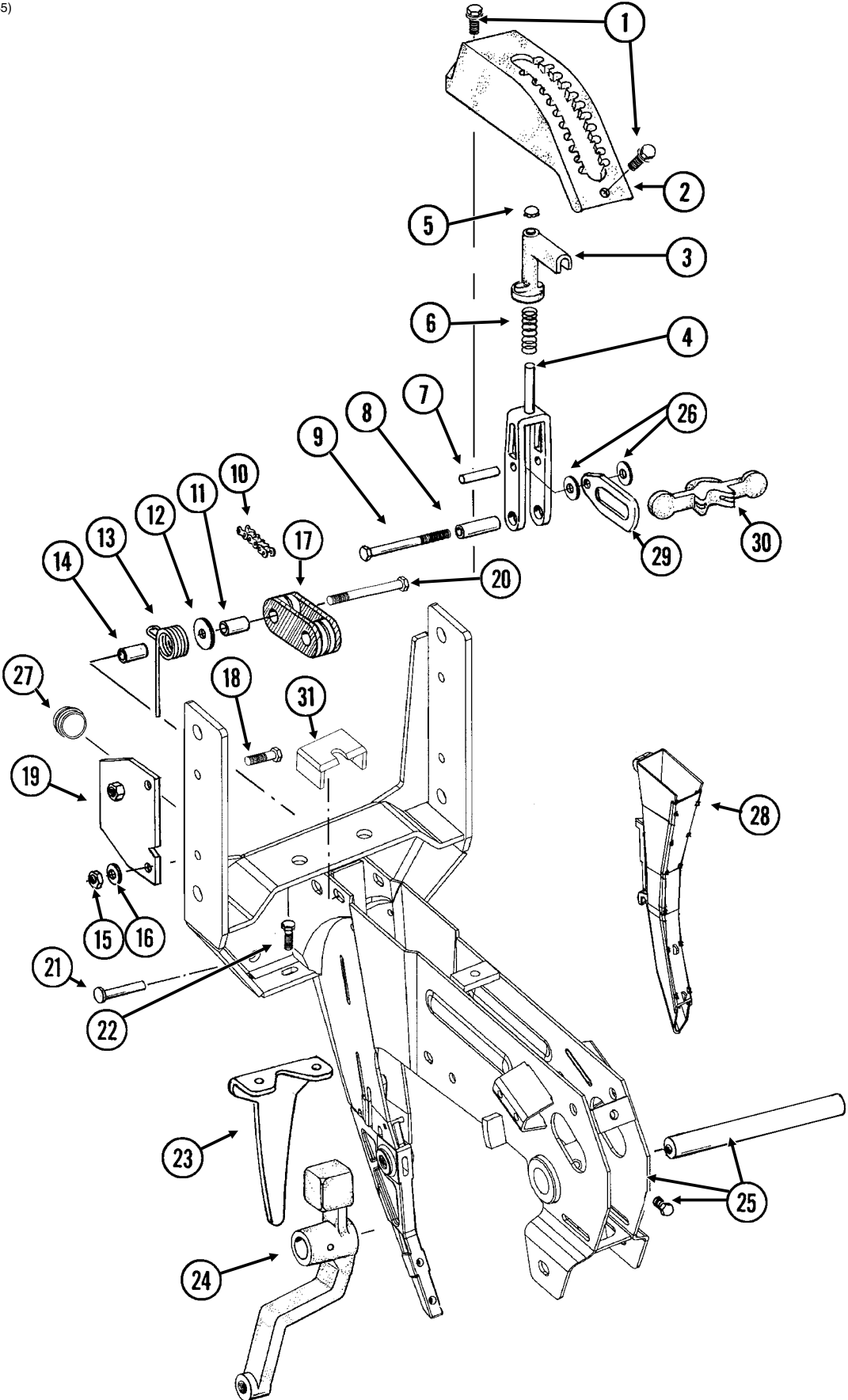
Numerical Index	P137
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PARTS LIST INDEX

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SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

(METR29cc/D16245)

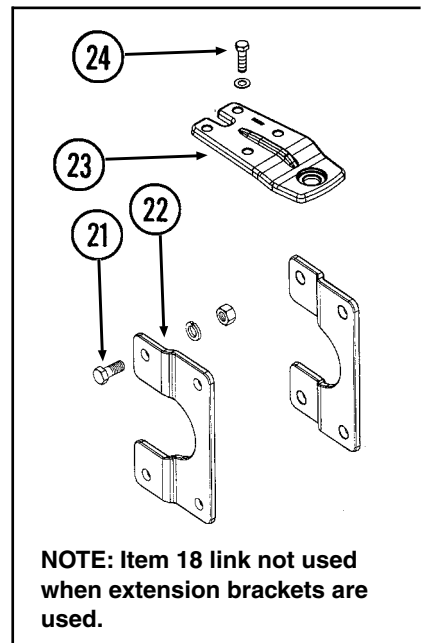
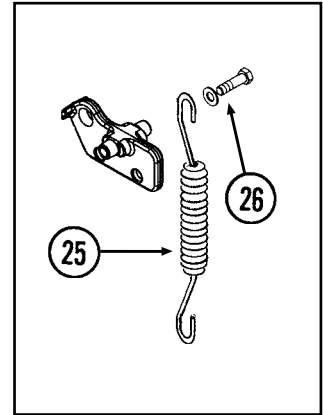
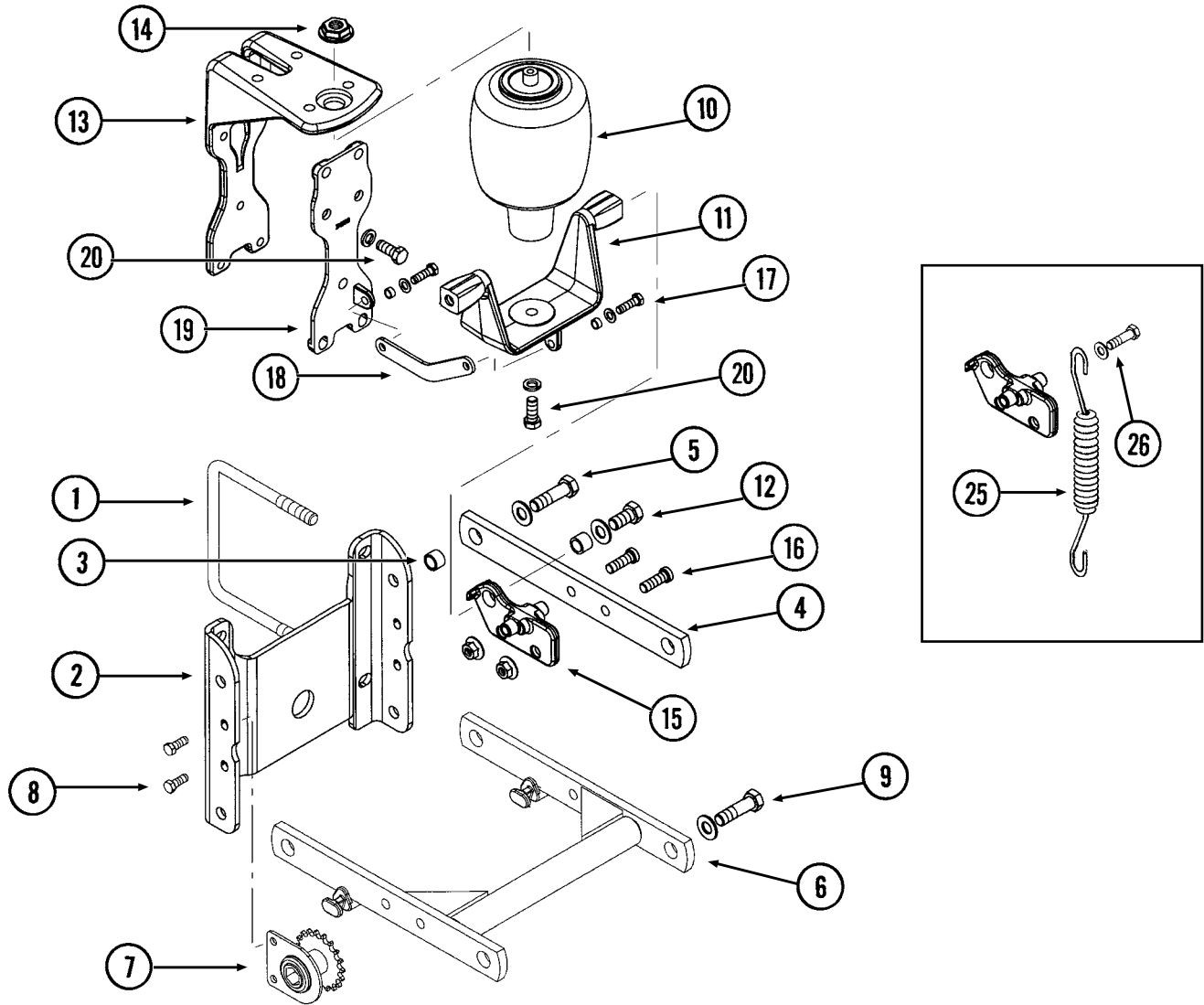


SHANK ASSEMBLY, SEED TUBE AND DEPTH ADJUSTMENT

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G11015	2	Hex Washer Head Cap Screw, 3/8"-16 x 1 1/4"
2.	GB0274	1	Cover, Depth Adjustment
3.	GB0266	1	Handle, Depth Adjustment
4.	GB0267	1	Lever, Depth Adjustment
5.	GD3612	1	Cap Plug
6.	GD10993	1	Spring
7.	GD13361	1	Pin, 3/8" x 1 2/3"
8.	GD11259	1	Sleeve, 3/8" I.D. x 5/8" O.D. x 1 25/32" Long
9.	G11008	1	Hex Head Cap Screw, 3/8"-24 x 2 1/2", Grade 8
	G11007	1	Lock Nut, 3/8"-24, Grade C
10.	G3303-98	1	Chain, No. 41, 98 Pitch Including Connector Link
	G3303-114	1	Chain, No. 41, 114 Pitch Including Connector Link
	G3303-16	1	Chain, No. 41, 16 Pitch Including Connector Link (Used W/Row Unit Extension Brackets)
	GR0196	1	Connector Link, No. 41
11.	GD1026	1	Sleeve, 1 3/16" Long
12.	G10201	1	Special Washer, 3/8" x 1 1/2" O.D.
13.	GD1065	1	Idler Spring
14.	GD7318	1	Sleeve, 1" Long
15.	G10108	1	Lock Nut, 3/8"-16
16.	G10210	1	Washer, 3/8" USS
17.	GD11962	1	Idler
18.	G10003	3	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10108	3	Lock Nut, 3/8"-16
19.	GD10867	2	Stop
20.	G10326	1	Hex Head Cap Screw, 3/8"-16 x 3 3/4"
21.	G10551	1	Clevis Pin, 1/4" x 2 1/2"
	G10669	1	Hair Pin Clip, No. 22
22.	G10312	2	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	2	Serrated Flange Nut, 5/16"-18
23.	GD1033	1	Shield
24.		-	Wheel Arm, See "Gauge Wheels", Pages 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 1 3/32" I.D. x .134" (If Applicable)
27.	GD11845	1	Dust Cap
28.			See "KPM III Electronic Seed Monitors" And "Planter Monitor Module (PMM)", Pages P116-P119
29.	GB0285	1	Collar, Depth Adjustment
30.	GB0265	1	Pivot Link, Depth Adjustment
31.	GD16245	-	Sun Shade (Rubber)

PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

(RU157a/RU159/RU157aa)

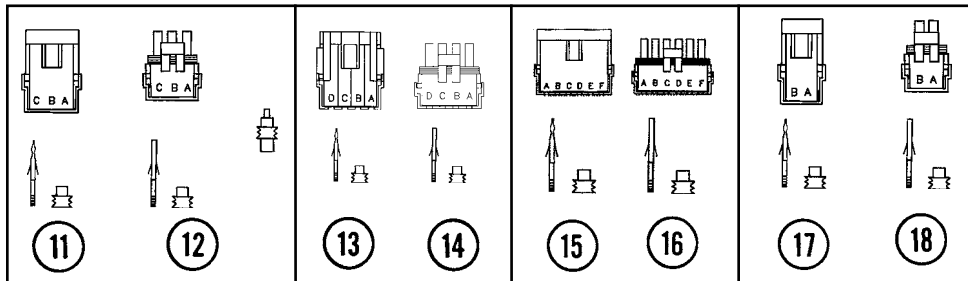
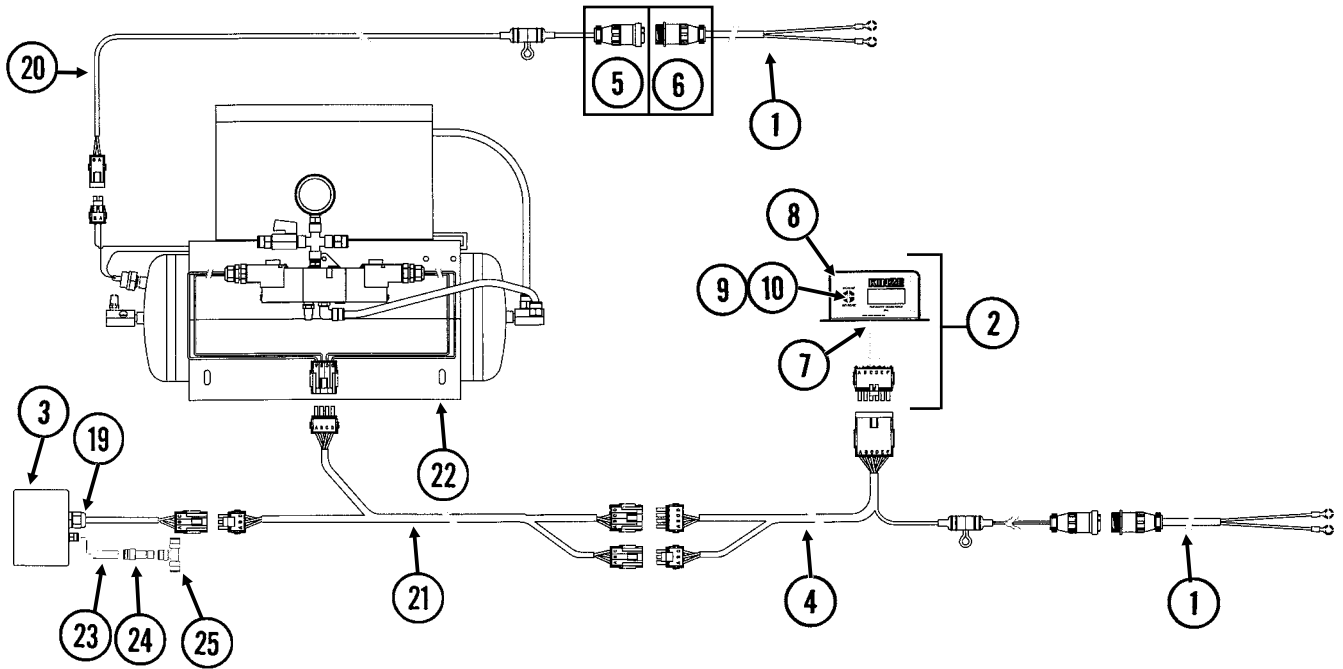


PARALLEL ARMS, MOUNTING SUPPORT PLATE AND PNEUMATIC DOWN PRESSURE PACKAGE

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
2.	GD10036	1	Mounting Support Plate
3.	GB0218	4	Bushing, 2 1/32" I.D. x 7/8" O.D. x 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.	GA5651	1	Lower Parallel Arm
7.	GA1720	1	Bearing/Sprocket, 7/8" Hex Bore
8.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
9.		-	See "Hopper Support And Meter Drive", Page P20
10.	GA11982	1	Air Spring Assembly
11.	GB0394	1	Saddle
12.	G11018	2	Hex Head Cap Screw, 5/8"-18 x 1 1/4"
	GD7805	2	Special Washer, 5/8", Hardened
	GD3180-30	2	Sleeve, 7/8" O.D. x 5/8" I.D. x 2 1/32"
13.	GB0396	1	Head Mount
14.	GB0397	1	Shoulder Nut, 3/4"-16
15.	GB0395	2	Bracket
16.	G11220	4	Hex Socket Cap Screw, 1/2"-13 x 1 1/2"
	G10071	4	Serrated Flange Nut, 1/2"-13
17.	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10203	2	Washer, 3/8" SAE
	GD11963-04	2	Spacer, 1/4"
	G10108	2	Lock Nut, 3/8"-16
18.	GD17794	1	Link
19.	GB0393	1	Plate
20.	G10037	7	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10206	2	Washer, 1/2" SAE (Lower Two Holes Only)
	G10228	7	Lock Washer, 1/2"
21.	G10007	4	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
22.	GB0366	2	Extension Bracket
23.	GB0398	1	Extension
24.	G10039	4	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	G10206	4	Washer, 1/2" SAE
	G10111	4	Lock Nut, 1/2"-13
25.	GD8249	2	Spring
26.	G10438	2	Hex Head Cap Screw, 1/2"-13 x 3/4"
	G10216	2	Washer, 1/2" USS
A.	G6326X	-	U-Bolt Package For 7" x 7" Toolbar, Includes: (2) GD1114, (4) G10230, (4) G10104
B.	G1K465	-	Pull Row Unit Assist Springs Package, Includes: (2) G10438, (2) G10216 And (2) GD8249

PNEUMATIC DOWN PRESSURE CONTROL CONSOLE, SENDING UNIT AND HARNESSES

(PNE01a/MTR27a/ELC27b/MTR45/MTR27i)

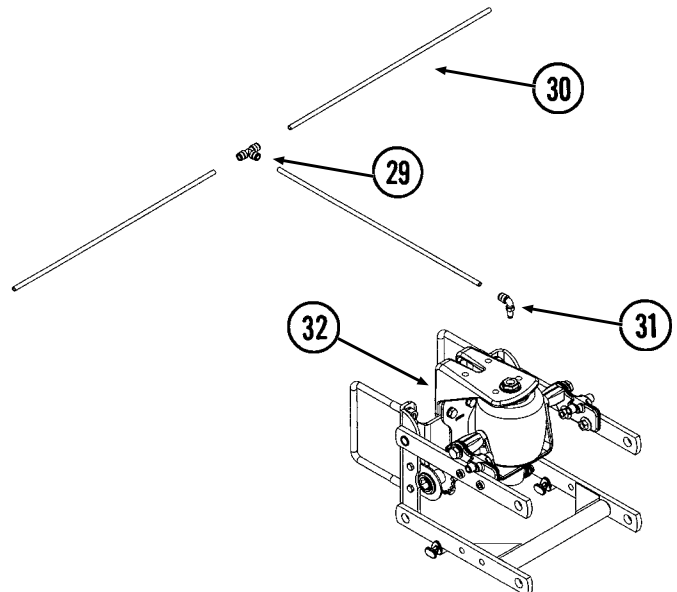
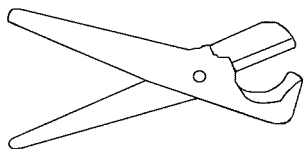
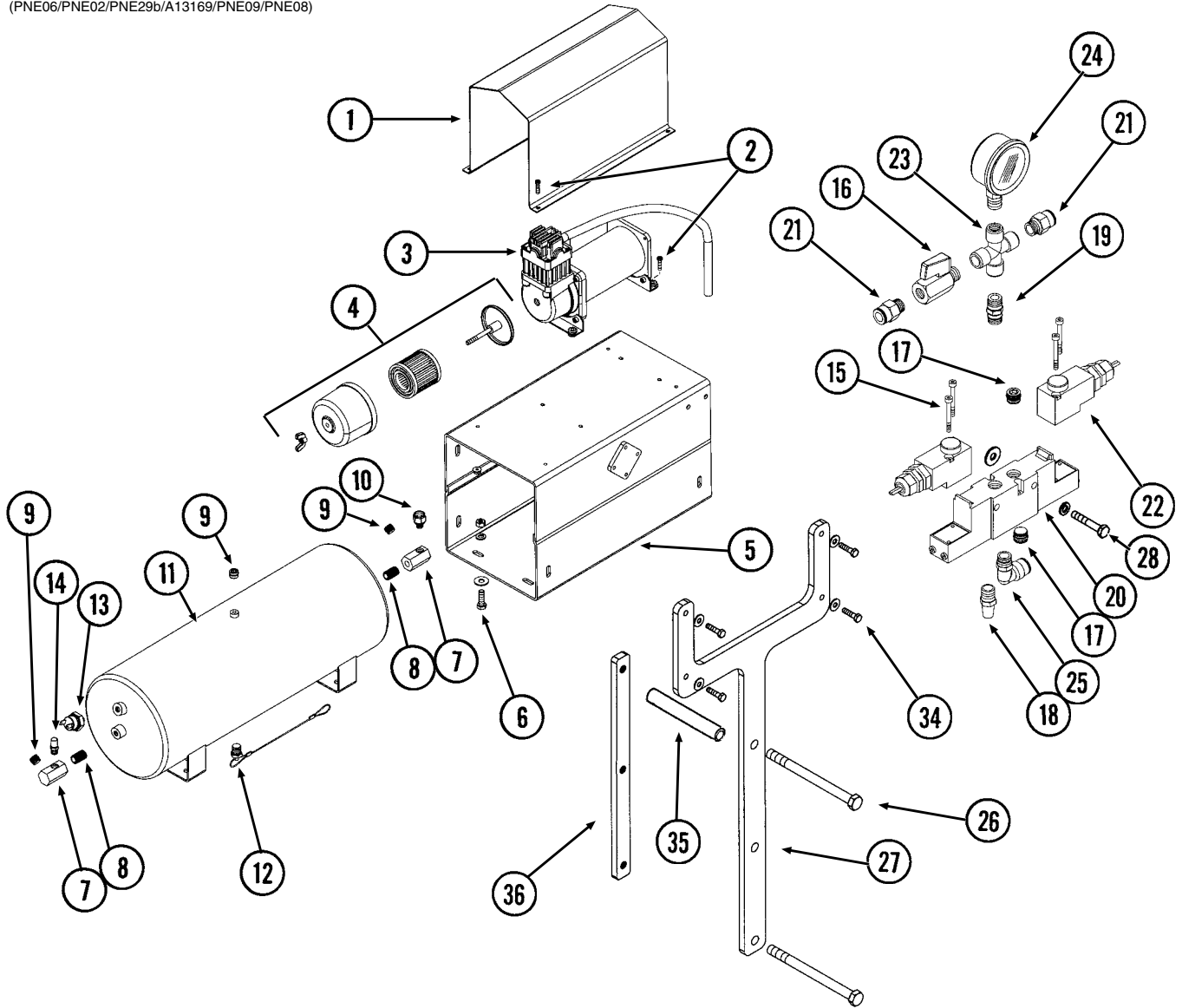


PNEUMATIC DOWN PRESSURE CONTROL CONSOLE, SENDING UNIT AND HARNESSSES

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA7856	2	Power Lead Adapter
2.	GA12644	1	Control Console Assembly
3.	GA12646	1	Sending Unit
4.	GA12645	1	Wiring Harness W/Fuse Holder And Fuse, 206"
	GD14258	-	Fuse Holder
	GD14660	-	Fuse, 2 Amp Delay Action
5.	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (1) Lock Ring, (3) Female Terminal Pins
6.	G1K267	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (3) Male Terminal Pins
7.	GA9963	1	Strain Relief
8.	GR1292	4	Hex Socket Button Head Cap Screw, No. 8-32 x 1/2"
9.	GR1363	1	Hex Face Nut, 15/32"-32
10.	GA6978	1	Switch, 3 Position Toggle, On-Off-On
11.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
12.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
13.	GA8328	-	4-Pin Female Connector Kit, Includes: (1) 4-Pin Female Housing, (4) Pin Contacts, (4) Seals
14.	GA8329	-	4-Pin Male Connector Kit, Includes: (1) 4-Pin Male Housing, (4) Socket Contacts, (4) Seals
15.	G1K396	-	6-Pin Female Connector Kit (Black), Includes: (3) 6-Pin Female Housings, (18) Pin Contacts, (18) Seals
16.	G1K395	-	6-Pin Male Connector Kit (Black), Includes: (3) 6-Pin Male Housings, (18) Socket Contacts, (18) Seals
17.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
18.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
19.	GA9964	2	Strain Relief
20.	GA12683	1	Wiring Harness W/Fuse Holder And Fuse, 50'
	GD14258	-	Fuse Holder
	GD18275	-	Fuse, 20 Amp
21.	GA12671	1	Wiring Harness, 50'
22.		-	See "Pneumatic Down Pressure Air Compressor, Dual Solenoid Assembly, Tubing And Fittings", Pages P10 And P11
23.	GD17151-06	1	Nylon Tubing, 1/4" O. D. x 1 1/2'
24.	GD18796	1	Reducer, 3/8" To 1/4"
25.	GD18010	1	Tee, 3/8" Tube Union

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

(PNE06/PNE02/PNE29b/A13169/PNE09/PNE08)

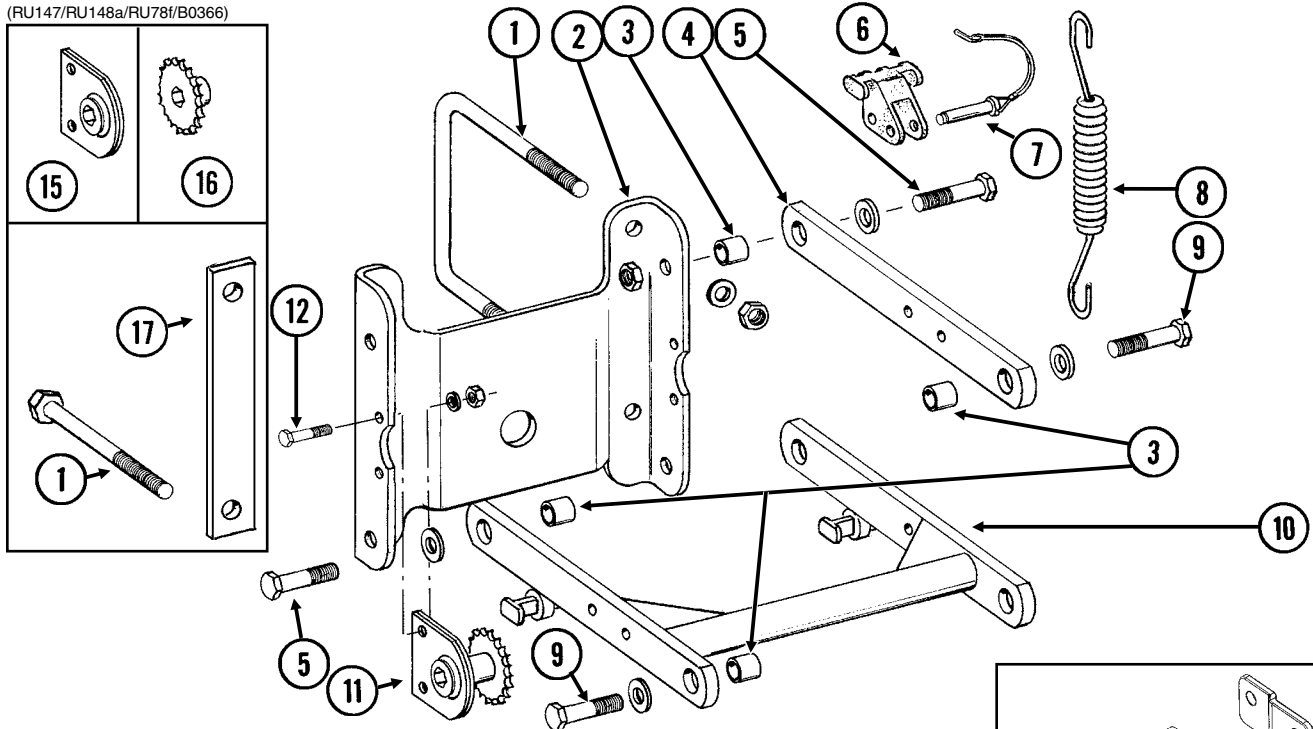


PNEUMATIC DOWN PRESSURE AIR COMPRESSOR, DUAL SOLENOID ASSEMBLY, TUBING AND FITTINGS

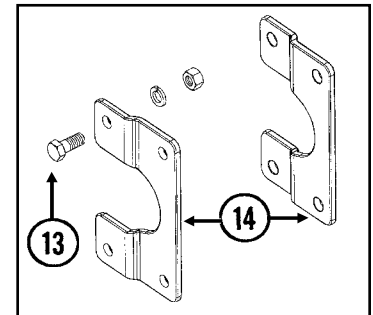
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18112	1	Cover
2.	G11066	8	Phillips Pan Head Machine Screw, No. 10-24 x 3/4", Stainless Steel
	G10992	8	Serrated Flange Nut, No. 10-24
3.	GA12102	1	Air Compressor
4.	GA12404	1	Filter Assembly
	GR1809	-	Filter
5.	GA12358	1	Compressor Mount
6.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10219	8	Washer, 5/16" USS
	G10232	8	Lock Washer, 5/16"
	G10106	8	Hex Nut, 5/16"-18
7.	GD17298	2	Manifold, 1/4" NPT
8.	GD18081	2	Close Nipple, 1/4" NPT
9.	GD17156	3	Plug, 1/4" NPT
10.	GD17144	1	Reducer, 1/8" Male To 1/4" Female
11.	GA11988	1	Tank, 3 Gallon
12.	GA11991	1	Drain, 1/4" NPT
13.	GR1778	1	Pressure Switch
14.	GA11989	1	Valve Stem, 1/8" NPT
15.	G11247	4	Slotted Pan Head Machine Screw, M4-0.7 x 8
16.	GA11992	1	Shutoff Valve, 1/4" NPT
17.	GD17156	2	Plug, 1/4" NPT
18.	GA11997	1	Breather, 1/4" NPT
19.	GD17154	1	Connector, 1/4" Male NPT
20.	GA11993	1	Block
21.	GD17141	3	Connector, 1/4" Male NPT
22.	GA11994	2	Solenoid
23.	GD18078	1	Female Cross, 1/4" NPT
24.	GA12104	1	Pressure Gauge, 1/4" NPT
25.	GD17143	1	Swivel Elbow, 1/4" NPT x 3/8"
26.	G10341	3	Hex Head Cap Screw, 5/8"-11 x 8"
27.	GD18173	2	Bracket
28.	G10021	2	Hex Head Cap Screw, 1/4"-20 x 1 1/2"
	G10227	2	Lock Washer, 1/4"
	G10209	2	Washer, 1/4" USS
29.	GD18010	-	Tee, 3/8" Tube Union
30.	GD17150-07	-	Nylon Tubing, 3/8" O.D. x 168', 36 Row
31.	GD18011	-	Elbow, 3/8" x 1/8" NPT Extended
32.		-	See "Parallel Arms, Mounting Support Plate And Pneumatic Down Pressure Package", Pages P6 And P7
33.	GA13169	1	Tube Cutter W/Blade
	GR1843	-	Blade
34.	G10171	4	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10219	4	Washer, 5/16" USS
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
35.	GD3180-33	1	Sleeve, 7"
36.	GD18901	1	Tap Block, Long
A.	GA12626	-	Air Compressor Assembly (Items 1-14)
B.	GA11995	-	Dual Solenoid Assembly (Items 15-25)

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

(RU147/RU148a/RU78f/B0366)

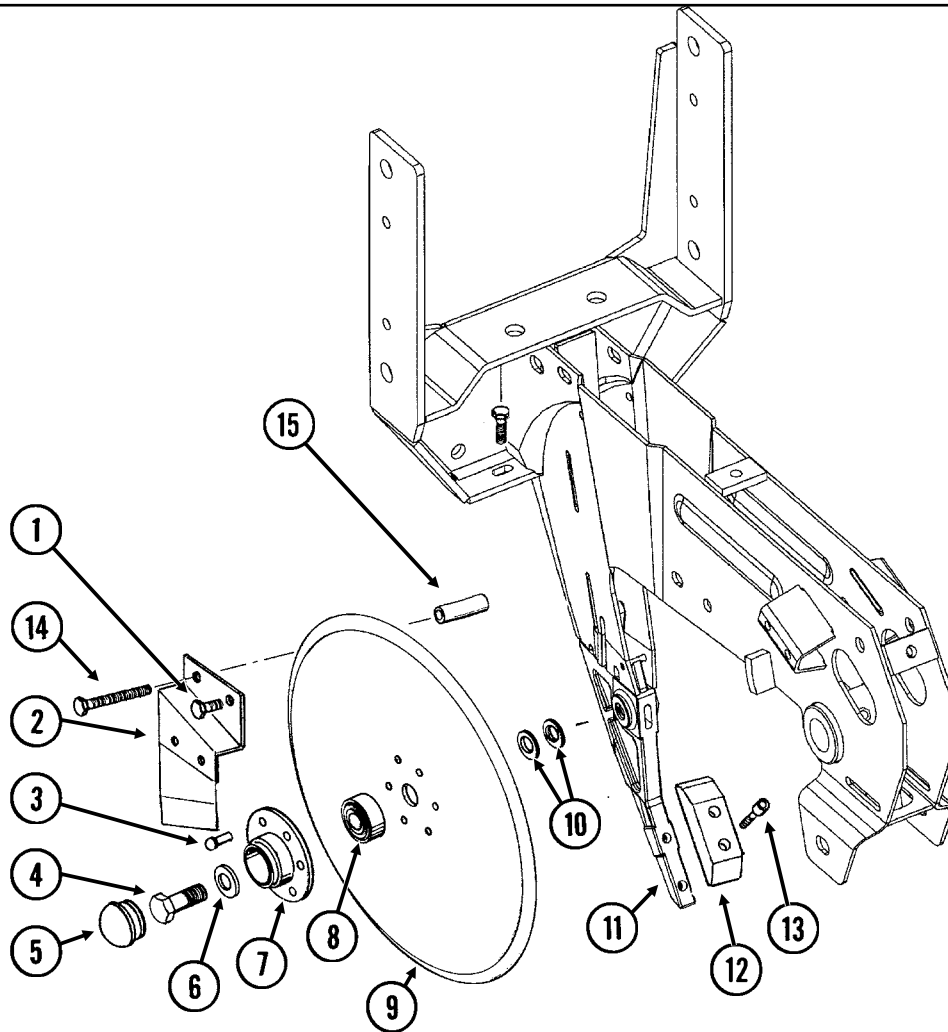


ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10152	-	Hex Head Cap Screw, 5/8"-11 x 9"
	G10217	-	Washer, 5/8" USS
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
2.	GD10036	1	Mounting Support Plate
3.	GB0218	4	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" Long
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.	GA1720	1	Bearing/Sprocket, 7/8" Hex Bore
12.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
13.	G10007	4	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
14.	GB0366	2	Extension Bracket
15.	GA2180	-	Hanger Bearing, 7/8" Hex Bore
16.	GA11255	-	Sprocket, 19 Tooth
17.	GD1908	-	Mounting Bracket
A.	G6326X	-	U-Bolt Package For 7" x 7" Toolbar, Includes: (2) GD1114, (4) G10230, (4) G10104



15" SEED OPENER DISC BLADE/BEARING ASSEMBLY AND SCRAPERS

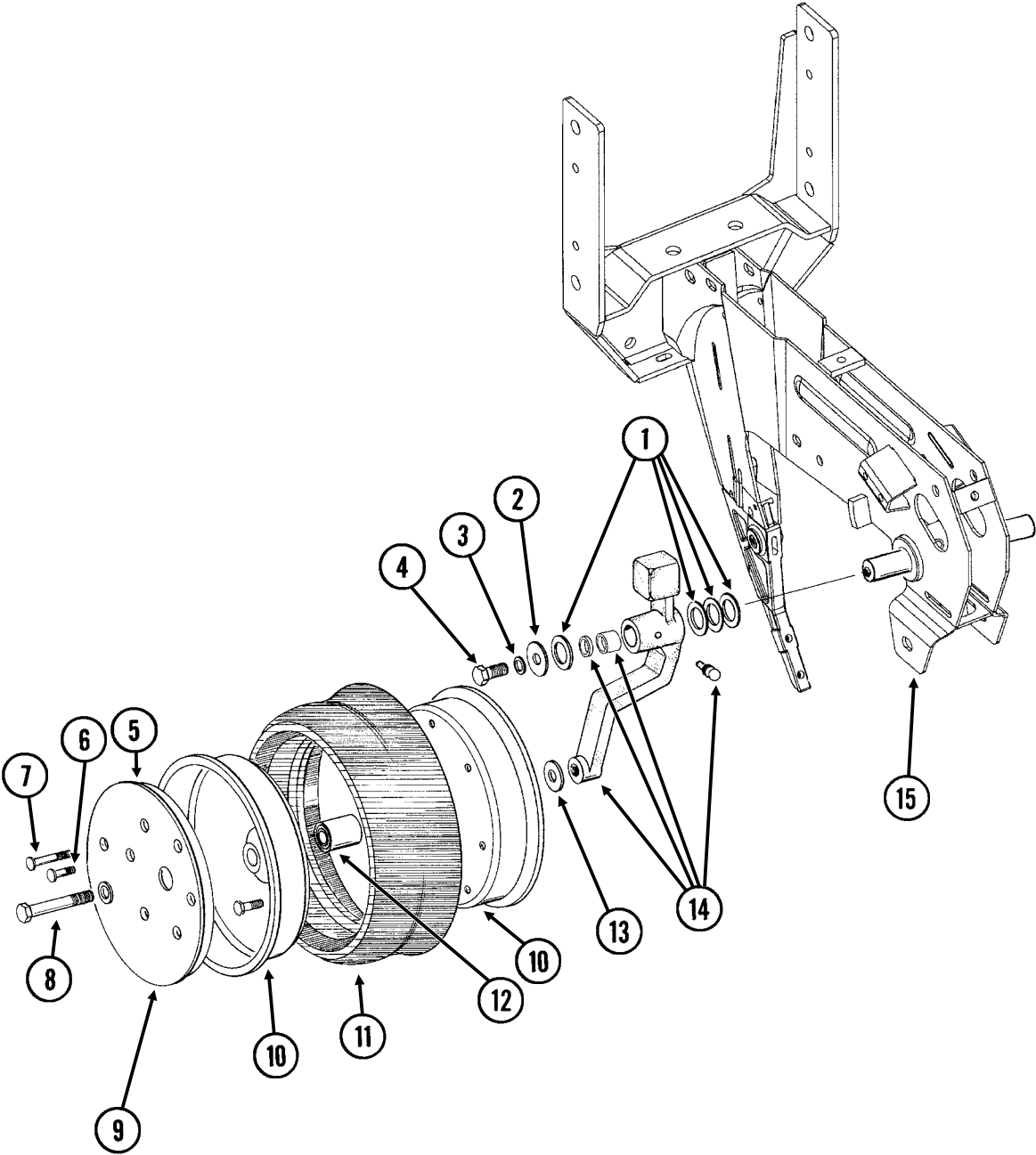
(RU139)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10328	2	Hex Head Cap Screw, 3/8"-16 x 5/8"
	G10622	2	Serrated Flange Nut, 3/8"-16
2.	GA2012R	1	Disc Scraper, R.H.
	GA2012L	-	Disc Scraper, L.H. (Shown)
3.	G10427	12	Rivet, 1/4" x 1/2"
4.	GD11017	1	Special Hex Head Cap Screw, 5/8"-11 x 1 1/2", L.H. Threads
	G10007	1	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
5.	GD11845	2	Dust Cap
6.	G10204	2	Special Machine Bushing, 5/8" x 1" O.D.
7.	GD10473	2	Bearing Housing
8.	GA2014	2	Bearing
9.	GD11306	2	Disc Blade, 3.5 mm x 15"
10.	G10213	-	Machine Bushing, 5/8" (.030" Thick)(As Required)
11.		-	See "Shank Assembly", Pages P4 And P5
12.	GB0301	1	Seed Tube Guard/Inner Scraper
13.	G10912	2	Hex Socket Head Cap Screw, 5/16"-18 x 1", Grade 8
14.	G10325	1	Hex Head Cap Screw, 3/8"-16 x 2 3/4"
	G10622	1	Serrated Flange Nut, 3/8"-16
15.	GD11259	1	Sleeve, 3/8" I.D. x 5/8" O.D. x 1 25/32" Long
A.	GA8324	-	Disc Blade/Bearing Assembly, Less Dust Cap (Items 3 And 7-9)

GAUGE WHEELS

(RU140)

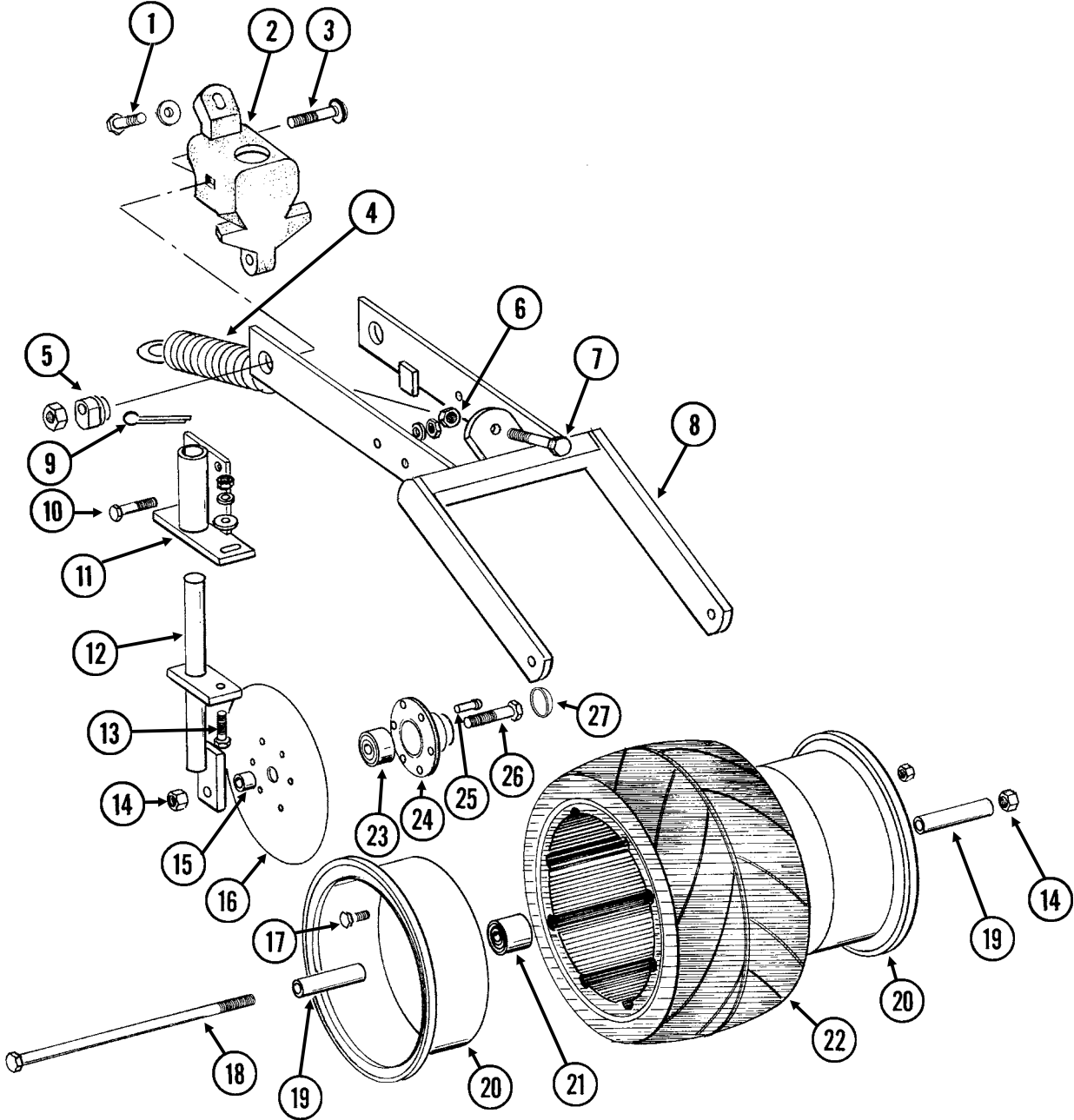


GAUGE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10940	-	Machine Bushing, 1" (.048" Thick)
2.	G10216	2	Washer, 1/2" USS
3.	G10228	2	Lock Washer, 1/2"
4.	G10014	1	Hex Head Cap Screw, 1/2"-13 x 1"
5.	GD11453	2	Cover
6.	G10338	12	Carriage Bolt, 5/16"-18 x 1 1/4"
	G10620	12	Serrated Flange Nut, 5/16"-18
7.	G10924	8	Carriage Bolt, 5/16"-18 x 1 3/4"
	G10620	8	Serrated Flange Nut, 5/16"-18
8.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
	G10230	2	Lock Washer, 5/8"
9.	G10018	14	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10109	14	Lock Nut, 5/16"-18, Grade 8
10.	GD11423	4	Half Wheel
11.	GD1086	2	Tire
12.	GA6171	2	Bearing
13.	G10204	2	Special Machine Bushing, 5/8" x 1" O.D.
14.	GA7975	1	Wheel Arm W/Grease Fitting, Bushings And Seals, L.H. (Shown)
	GA7976	1	Wheel Arm W/Grease Fitting, Bushings And Seals, R.H.
	G10640	1	Grease Fitting, 1/4"-28 (Per Arm)
	GB0276	2	Bushing, 1" I.D. x 1 1/4" O.D. x 1" Long (Per Arm)
	GD10991	2	Seal (Per Arm)
15.		-	See "Shank Assembly", Pages P4 And P5
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)

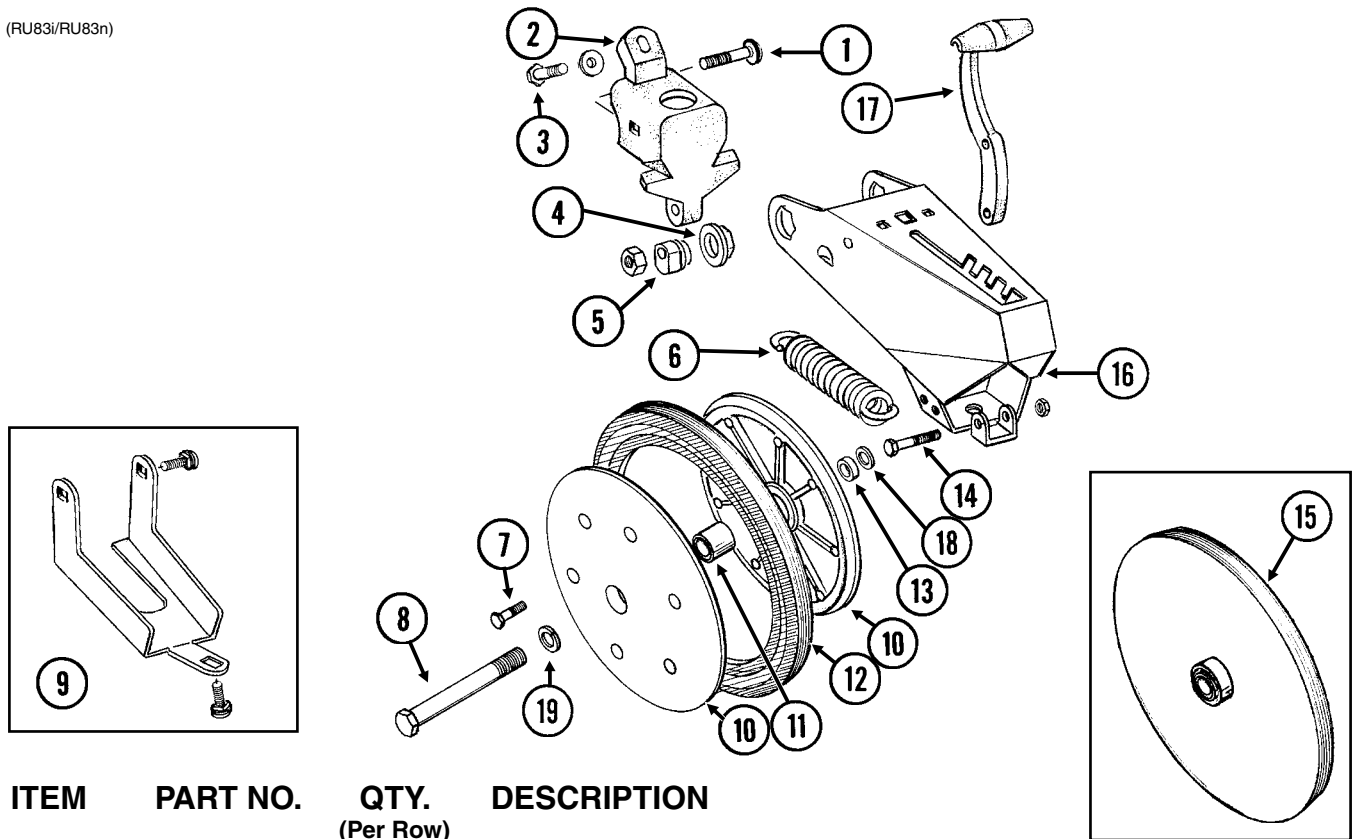


COVERING DISCS/SINGLE PRESS WHEEL

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Row)	
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, 4 1/64" I.D. x 7/8" O.D. x 1/4" Long
16.	GD9290	2	Disc Blade, 8"
17.	G10018	7	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10109	7	Lock Nut, 5/16"-18, Grade 8
18.	G10152	1	Hex Head Cap Screw, 5/8"-11 x 9"
19.	GD3180-12	2	Sleeve, 5/8" I.D. x 7/8" O.D. x 2 7/8" Long
20.	GD9562	2	Half Wheel
21.	GA6171	1	Bearing
22.	GD9305	1	Tire
23.	GA2014	2	Bearing
24.	GD10473	2	Bearing Housing
25.	G10427	12	Rivet, 1/4" x 1/2"
26.	G10006	2	Hex Head Cap Screw, 5/8"-11 x 2 1/4"
27.	GD11845	2	Dust Cap
A.	GA6733	-	Single Press Wheel Complete W/Bearing (Items 17 And 20-22)
B.	GA6801	-	Covering Disc Blade Complete W/Bearing (Items 16 And 23-25)

"V" CLOSING WHEELS

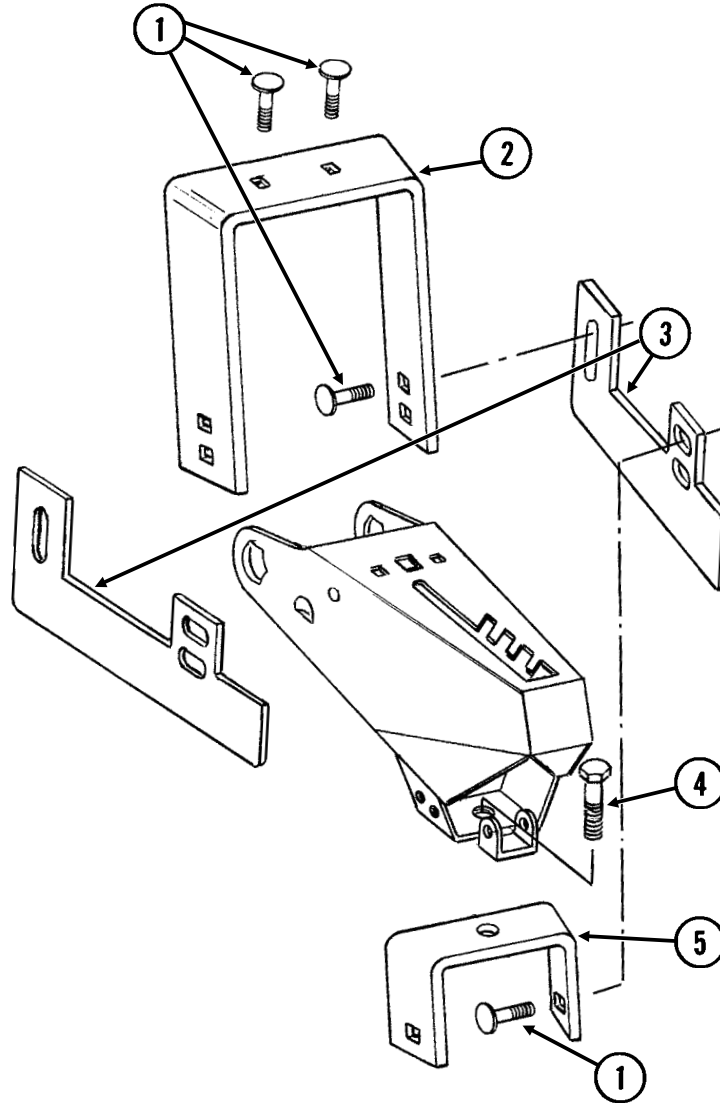
(RU83i/RU83n)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10801	2	Carriage Bolt, 1/2"-13 x 2 1/4"
	G10315	-	Carriage Bolt, 1/2"-13 x 2 1/2" (Used W/Straight Drop In-Furrow Granular Chemical Bracket)
	G10111	2	Lock Nut, 1/2"-13
2.	GB0268	1	Wheel Arm Stop
3.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10210	1	Washer, 3/8" USS
4.	GB0282	2	Stepped Bushing
5.	GB0239	2	Eccentric Bushing
6.	GD8460	1	Spring
7.	G10064	6	Hex Head Cap Screw, 1/4"-20 x 1"
8.	G10013	2	Hex Head Cap Screw, 5/8"-11 x 3 1/2"
	G10107	2	Lock Nut, 5/8"-11
9.	G1K345	-	Closing Wheel Shield Kit W/Hardware And Instruction
	G10308	2	Carriage Bolt, 3/8"-16 x 3/4"
	G10599	1	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10210	1	Washer, 3/8" USS
	G10229	3	Lock Washer, 3/8"
	G10101	3	Hex Nut, 3/8"-16
10.	GD9120	4	Nylon Half Wheel
11.	GA6171	2	Bearing
12.	GD1085	2	Rubber Tire, 1" x 12"
13.	GD1109	2	Bushing, 4 1/64" I.D. x 7/8" O.D. x 1/4" Long
14.	G10133	1	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G10109	1	Lock Nut, 5/16"-18, Grade 8
15.	GA6597	-	Cast Iron Closing Wheel W/Bearing
	GA6171	-	Bearing
16.	GA8322	1	Arm
17.	GB0254	1	Lever
18.	GD7805	2	Special Washer, 5/8", Hardened
19.	G10230	2	Lock Washer, 5/8"
A.	GA6434	-	Rubber Closing Wheel Complete W/Bearing (Items 7 And 10-12)

DRAG CLOSING ATTACHMENT

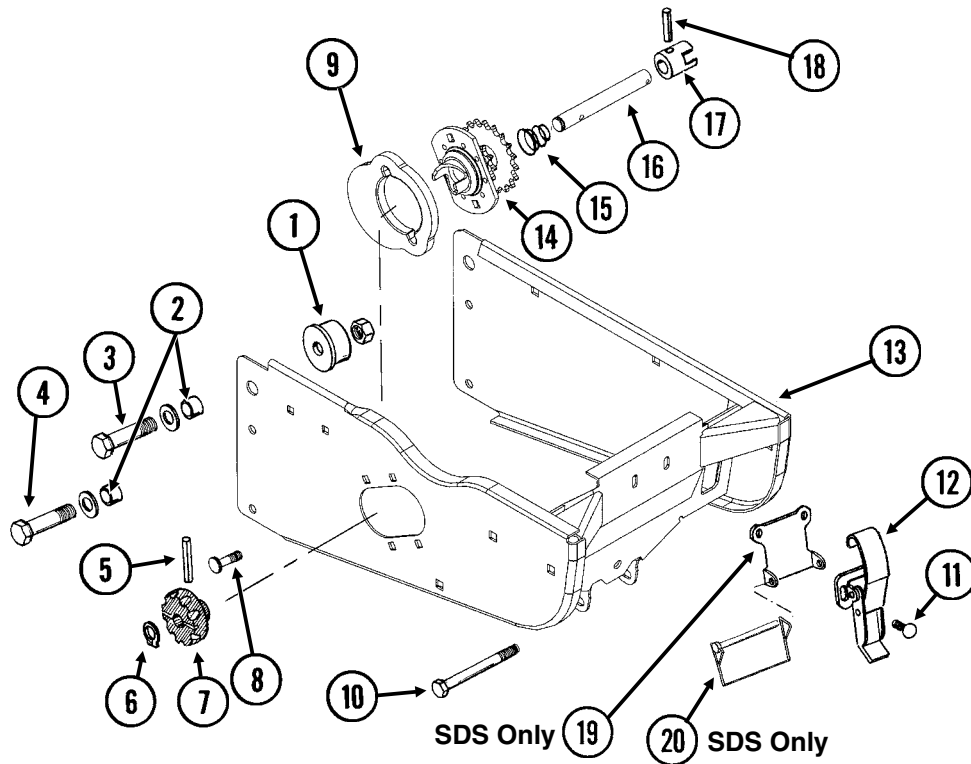
RUB050(RU90c)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10599	6	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10210	6	Washer, 3/8" USS
	G10229	6	Lock Washer, 3/8"
	G10101	6	Hex Nut, 3/8"-16
2.	GD11508	1	Front Bracket
3.	GD11313	2	Blade
4.	G10007	1	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	1	Lock Washer, 5/8"
	G10104	1	Hex Nut, 5/8"-11
5.	GD11509	1	Rear Bracket
A.	G7566X	-	Drag Closing Attachment Complete (Items 1-5)

HOPPER SUPPORT AND METER DRIVE

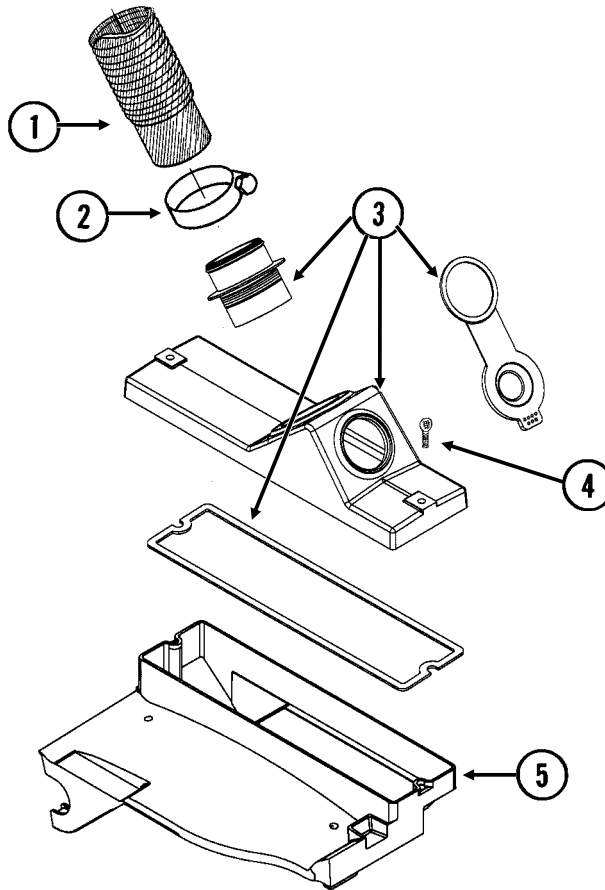
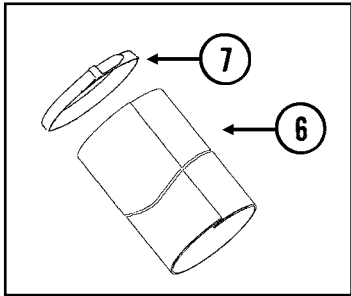
(METR22f)



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 1 ⁹ / 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 Complete, 11/19 Tooth (Items 5-7 And 14-18)

MINI-HOPPER AND DROP HOSES (SDS)

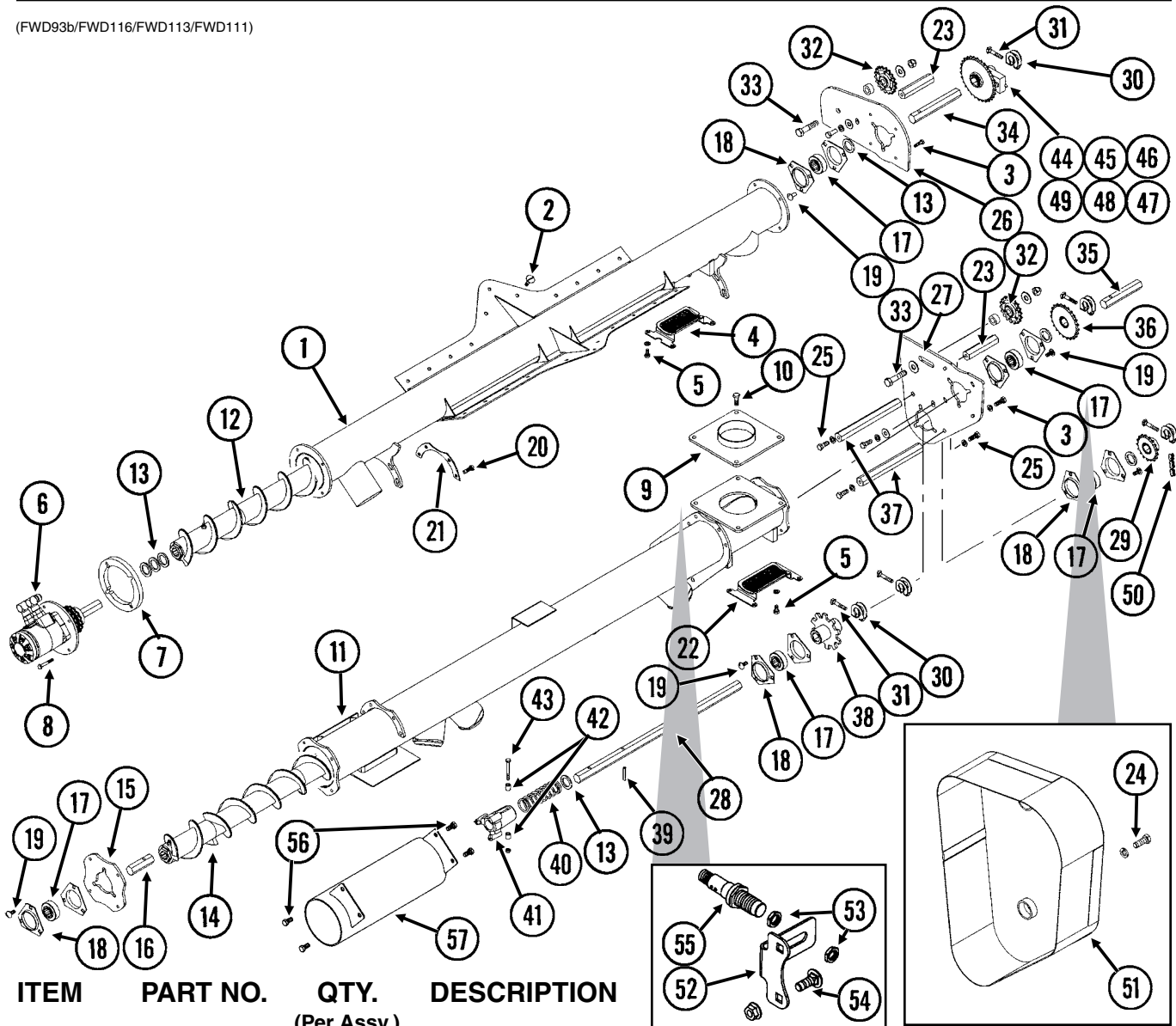
(D16399/FWD94)



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

CENTER AUGER ASSEMBLY (SDS)

(FWD93b/FWD116/FWD113/FWD111)



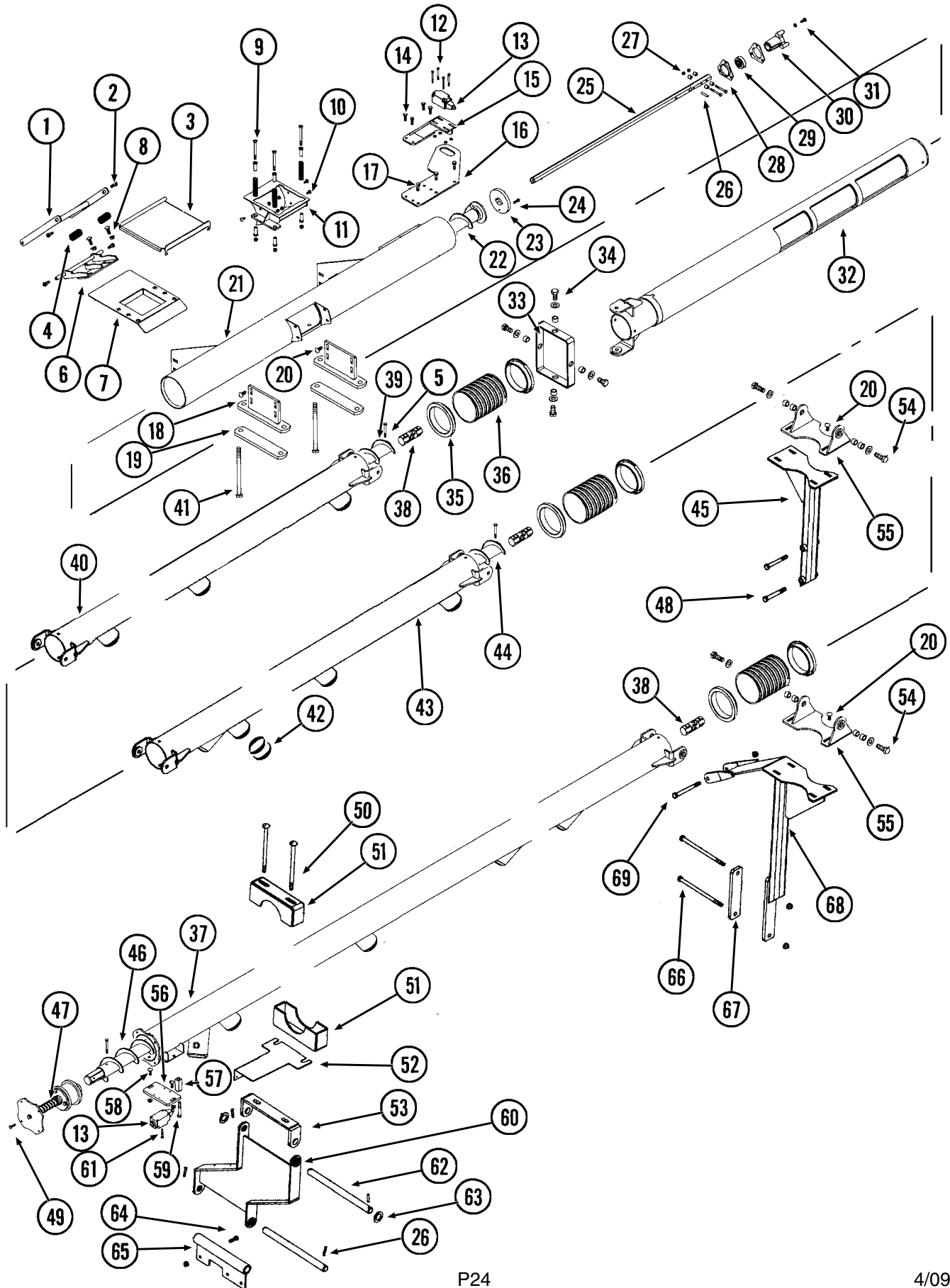
ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA11395	1	Upper Tube, L.H. (Shown)
	GA11396	-	Upper Tube, R.H.
2.	G11192	22	Bolt, 5/16"-18 x 1"
	G10221	22	Washer, 5/16" SAE
	G11182	22	Lock Nut W/Nylon Insert, 5/16"-18
3.	G10064	10	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	10	Lock Nut, 1/4"-20, Grade B
4.	GA11623	1	Screen
5.	G10018	8	Hex Head Cap Screw, 5/16"-18 x 5/8"
	G10232	8	Lock Washer, 5/16"
6.		-	See "SDS Hydraulic System", Pages P106 And P107
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 ASSEMBLY (SDS)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
13.	G10233	3	Machine Bushing, 1", 10 Gauge
14.	GA11627	1	Auger Assembly, 63 3/8", L.H. (Shown)
	GA11626	1	Auger Assembly, 63 3/8", R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11585	-	Hex Tube, 63 3/8"
15.	GD16547	1	Bearing Plate
16.	GD16707	1	Shaft
17.	G2100-03	5	Bearing, 7/8" Hex Bore, Spherical
18.	G3400-01	-	Flangette
19.	G10312	-	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	-	Serrated Flange Nut, 5/16"-18
20.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10620	8	Serrated Flange Nut, 5/16"-18
21.	GD16550	1	Shim
22.	GA11763	1	Screen
23.	GD16542	2	Guard
24.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10210	-	Washer, 3/8" USS
	G10229	-	Lock Washer, 3/8"
25.	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	-	Lock Washer, 3/8"
26.	GD16539	1	Plate
27.	GD16540	1	Lower Plate
28.	GD11394-23	1	Hex Shaft, 7/8" x 23" (2 Holes)
29.	GA5106	1	Sprocket, 17 Tooth
30.	GD11045	5	Lock Clamp
31.	G10130	5	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	5	Flange Nut, 5/16"-18, No Serration
32.	GA7154	2	Sprocket W/Bearing, 18 Tooth
33.	G10581	2	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	GD4887-10	2	Sleeve
	G10216	3	Washer, 1/2" USS
	G10111	2	Lock Nut, 1/2"-13
34.	GD16705	1	Hex Shaft
35.	GD16706	1	Shaft
36.	GA5108	1	Sprocket, 23 Tooth
37.	GD17002	2	Hex Shaft, 7/8" x 8 1/2"
38.	GA11375	1	Sensor Wheel
39.	G10602	1	Spring Pin, 1/4" x 1 1/2"
40.	GD2962	1	Spring
41.	GB0283	1	Coupler
42.	GD11395	2	Bushing, 1/2"
43.	G10880	1	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	1	Lock Nut, 1/4"-20, Grade B
44.	G10464	2	Cotter Pin, 3/16" x 1"
45.	GD1256	2	Spring
46.	GA0378	1	Block And Hub Assembly
47.	GD1255	2	L-Pin
48.	GA5165	1	Sprocket, 30 Tooth
49.	G10430	1	External Retaining Ring, 1 1/4"
50.	G3310-112	1	Chain, No. 40, 112 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
51.	GA11515	1	Guard, L.H.
	GA11513	-	Guard, R.H. (Shown)
52.	GD16535	1	Sensor Mount
53.	GD14257	2	Nut, M12 x 1"
54.	G10305	2	Carriage Bolt, 3/8"-16 x 1"
	G10622	2	Serrated Flange Nut, 3/8"-16
55.		-	Proximity Sensor, See "Electrical Components (SDS Control Console)", Pages P110 And P111
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 ASSEMBLY (SDS)

(FWD100a)



WING AUGER ASSEMBLY (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 P110 And P111
14.	G10019	8	Hex Head Cap Screw, 5/16"-18 x 1"
	G10620	8	Serrated Flange Nut, 5/16"-18
15.	GA11548	2	Mount
16.	GD16672	2	Plate
17.	G10001	6	Hex Head Cap Screw, 3/8"-16 x 1"
	G10622	6	Serrated Flange Nut, 3/8"-16
18.	GA11532	4	Mount
19.	GD16620	4	Plate
20.	G10305	8	Carriage Bolt, 3/8"-16 x 1"
	G10622	8	Serrated Flange Nut, 3/8"-16
21.	GA11563	1	Outer Auger Tube, L.H.
	GA11562	-	Outer Auger Tube, R.H.
22.	GA12673	1	Auger Assembly, L.H. (Shown)
	GA12672	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16674	-	Spacer
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11581	-	Hex Tube, 64"
23.	GD16675	2	Pad
24.	G11180	2	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	2	Lock Nut, 1/4"-20, Grade B
25.	GA11580	2	Shaft
26.	G10602	2	Spring Pin, 1/4" x 1 1/2"
27.	G10880	4	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	GD11395	8	Bushing, 1/2"
	G10110	4	Lock Nut, 1/4"-20, Grade B
28.	G3400-01	4	Flangette
29.	G2100-03	2	Bearing, 7/8" Hex Bore, Spherical

(Continued On Following Page)

WING AUGER ASSEMBLY (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
30.	GB0283	2	Coupler
31.	G10043	6	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	6	Lock Washer, 5/16"
32.	GA11705	1	Inner Auger Tube, L.H. (Shown)
	GA11706	-	Inner Auger Tube, R.H.
33.	GD16556	2	Pivot Tube
34.	G10055	8	Hex Head Cap Screw, 5/8"-11 x 1 1/4"
	GD7805	8	Special Washer, 5/8", Hardened
	GB0218	8	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" Long
35.	GD16788	8	Hose Keeper
36.	GD16913	4	Hose, 5"
37.	GA11715	1	Auger Tube, L.H., 36 Row 30" (Shown)
	GA11714	-	Auger Tube, R.H., 36 Row 30"
38.	GA11575	4	U-Joint
39.	GA11723	1	Auger Assembly, L.H. (Shown)
	GA11724	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GD16385-07	-	Hex Tube, 67 1/4"
40.	GA11709	1	Auger Tube, L.H. (Shown)
	GA11708	-	Auger Tube, R.H.
41.	G10046	8	Hex Head Cap Screw, 5/8"-11 x 5"
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
42.	G11000	-	Cap, 3"
43.	GA11711	1	Auger Tube, L.H. (Shown)
	GA11710	-	Auger Tube, R.H.
44.	GA11721	1	Auger Assembly, L.H. (Shown)
	GA11722	-	Auger Assembly, R.H.
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GD16385-08	-	Hex Tube, 112"
45.	GA11729	2	Support
46.	GA11717	1	Auger Assembly, L.H., 36 Row 30" (Shown)
	GA11718	-	Auger Assembly, R.H., 36 Row 30"
	G10403	-	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	-	Lock Nut, 1/4"-20, Grade B
	GD16401	-	Auger Section, L.H.
	GD16400	-	Auger Section, R.H.
	GA11728	-	Hex Tube, 222 3/8", 36 Row 30"
	GA11727	-	Hex Tube, 215 3/8", 36 Row 30"
47.	GA11778	2	Auger Stop
48.	G10035	4	Hex Head Cap Screw, 1/2"-13 x 4"
	G10111	4	Lock Nut, 1/2"-13
49.	G10064	8	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	8	Lock Nut, 1/4"-20, Grade B
50.	G11207	8	Carriage Bolt, 1/2"-13 x 8 1/2"
	G10216	8	Washer, 1/2" USS
	G10111	8	Lock Nut, 1/2"-13

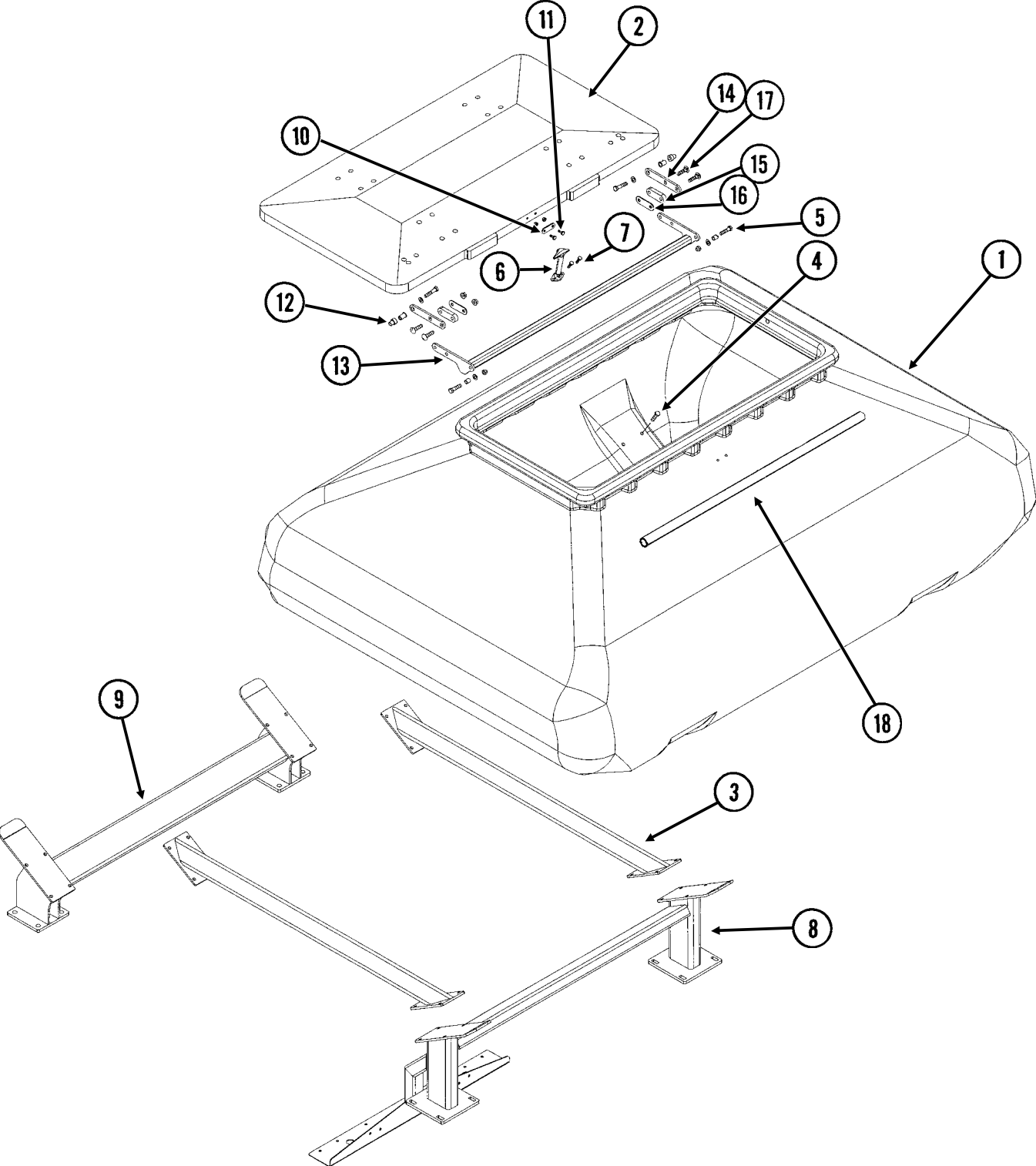
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WING AUGER ASSEMBLY (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
51.	GA11733	4	Clamp
52.	GD16972	1	Mount, L.H. Only
53.	GA11731	2	Support
54.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	GD3180-29	4	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 5/16"
55.	GA11684	2	Pivot Mount
56.	GD16680	2	Mount
57.	GD16701	2	Arm, 3/4" x 3/4" x 2"
58.	G10303	2	Carriage Bolt, 5/16"-18 x 1"
	G10620	2	Serrated Flange Nut, 5/16"-18
59.	G10049	2	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10229	2	Lock Washer, 3/8"
60.	GA11732	2	Support
61.	G11167	4	Hex Socket Head Cap Screw, No. 10-32 x 1 1/2", Grade 8
62.	GD16973	4	Pin, 1" x 13 1/2"
63.	G10082	8	Washer, 1" SAE
64.	G10004	-	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10622	-	Serrated Flange Nut, 3/8"-16
65.	GA11730	2	Support
66.	G10909	4	Hex Head Cap Screw, 1/2"-13 x 9"
	G10111	4	Lock Nut, 1/2"-13
67.	GD16957	2	Bracket
68.	GA11716	2	Hook Plate Mount
69.	G10348	2	Hex Head Cap Screw, 1/2"-13 x 5"
	G10111	2	Lock Nut, 1/2"-13

BULK SEED HOPPER ASSEMBLY (SDS)

(FWD93a)

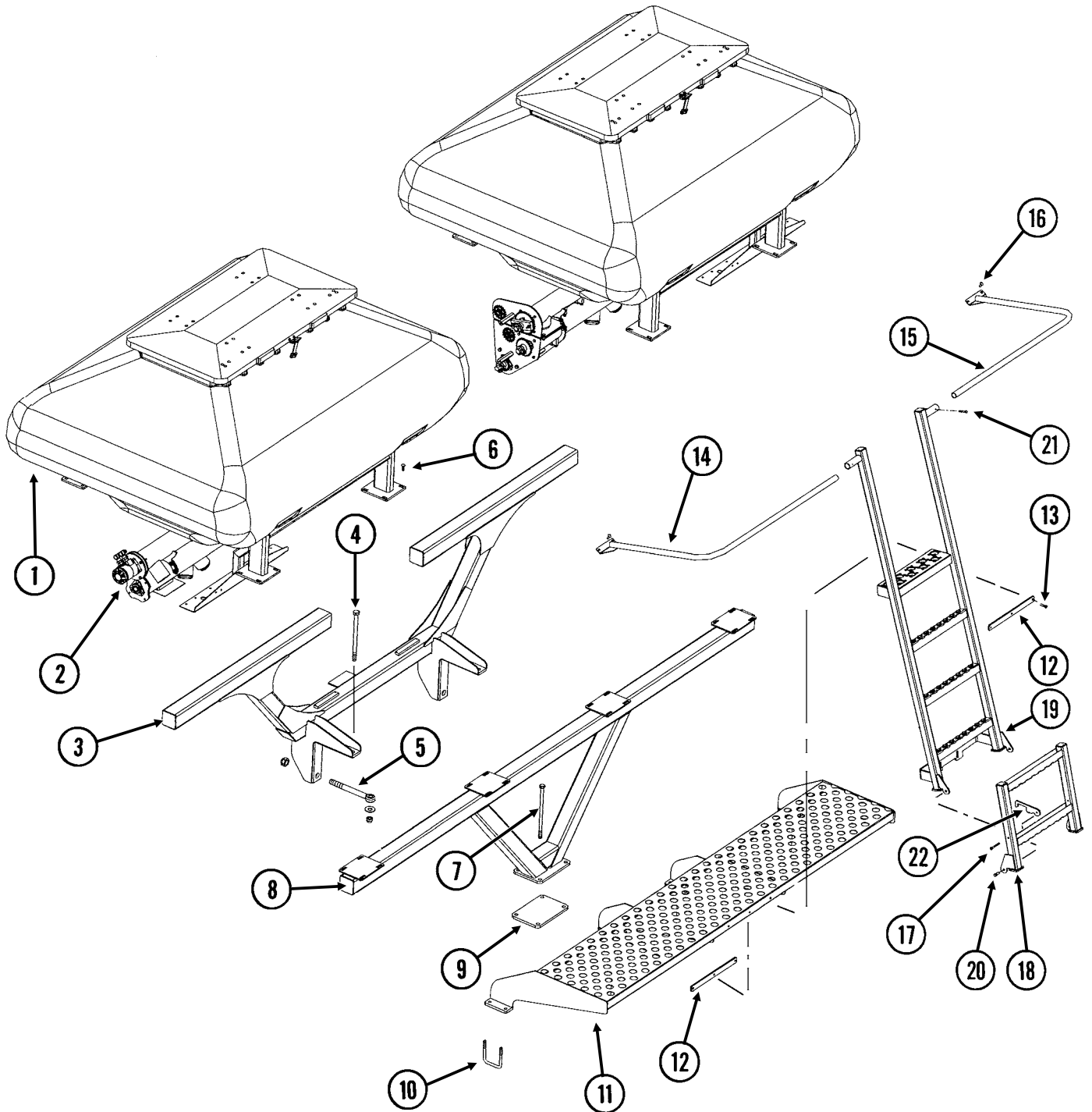


BULK SEED HOPPER ASSEMBLY (SDS)

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GD17308	1	Hopper, R.H.
	GD17309	-	Hopper, L.H.
2.	GA11579	1	Lid
3.	GA11381	2	Hopper Stiffener
4.	G10003	16	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10203	16	Washer, 3/8" SAE
	G10108	16	Lock Nut, 3/8"-16
5.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	GD11963-03	2	Tube, 1/2" O.D. x 25/64" I.D. x 9/16"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
6.	GA11635	1	Latch Cover
7.	G10064	2	Hex Head Cap Screw, 1/4"-20 x 1"
	G10211	2	Washer, 1/4" SAE
	G10110	2	Lock Nut, 1/4"-20, Grade B
8.	GA11617	1	Rear Mount, L.H.
	GA11616	-	Rear Mount, R.H.
9.	GA11615	1	Front Mount
10.	GD16979	1	Latch
11.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10110	2	Lock Nut, 1/4"-20, Grade B
12.	G10047	2	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10203	2	Washer, 3/8" SAE
	GD16694	2	Bushing
	G11226	2	Tee Nut, 3/8"-16
13.	GA11587	1	Hinge
14.	GD16692	2	Bar
15.	GD16693	2	Spacer
16.	GD16691	2	Shim
17.	G10301	4	Carriage Bolt, 3/8"-16 x 1 1/2"
	G10622	4	Serrated Flange Nut, 3/8"-16
18.	GD13575-05	-	Tube, 1" x 43" (If Applicable)

BULK SEED HOPPER CATWALK (SDS)

(FWD97)

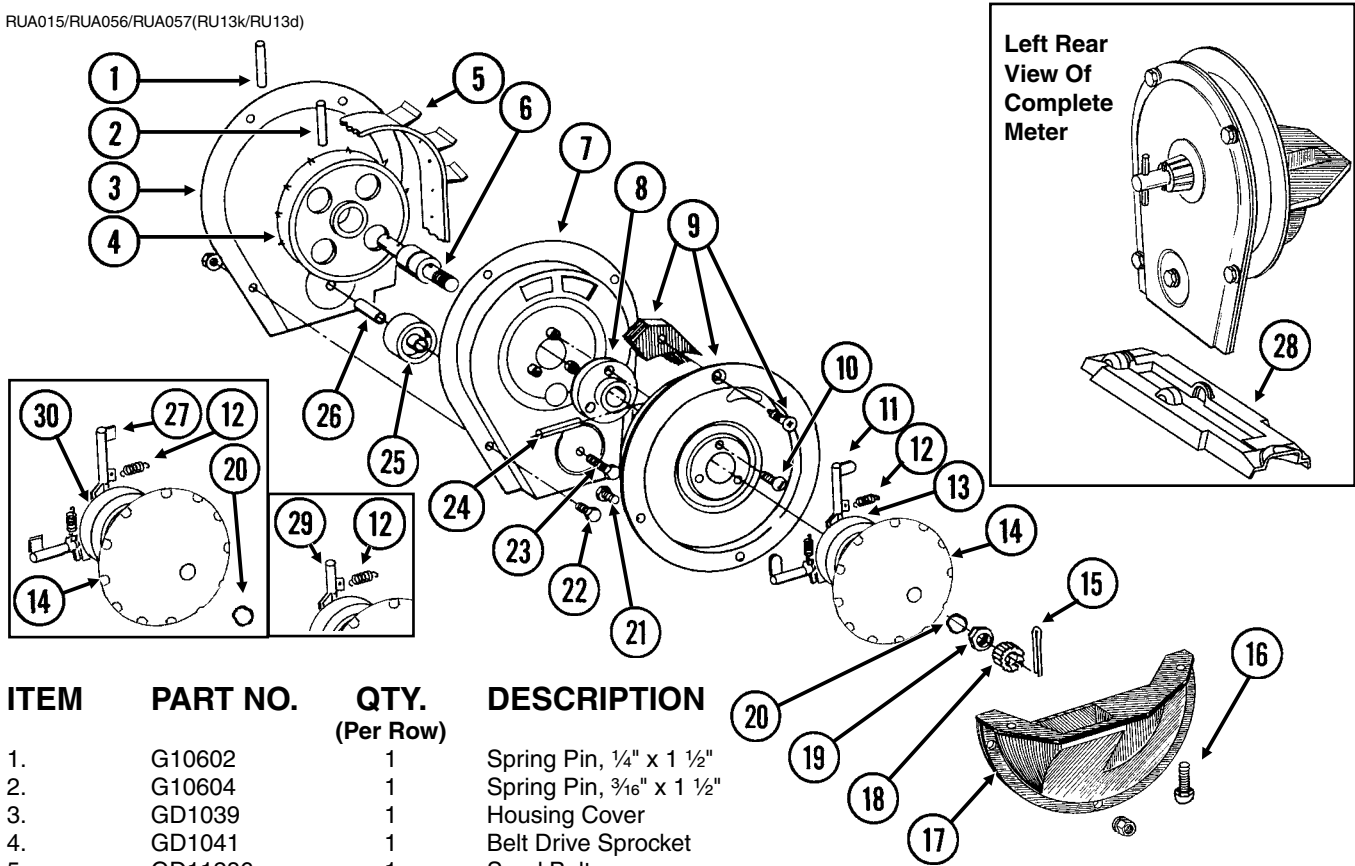


BULK SEED HOPPER CATWALK (SDS)

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See "Bulk Seed Hopper Assembly (SDS)", Pages P28 And P29
2.		-	See "Center Auger Assemblies (SDS)", Pages P22 And P23
3.	GA11536	-	Hopper Mount, Front, 36 Row 30"
4.	G10541	1	Hex Head Cap Screw, 3/4"-10 x 11"
	G10218	1	Washer, 3/4" USS
	G10112	1	Lock Nut, 3/4"-10
5.	GD15283	1	Eyebolt, 1"-14 x 10"
	G11108	1	Lock Nut, 1"-14
6.	G10301	-	Carriage Bolt, 3/8"-16 x 1 1/2", 36 Row 30"
	G10622	4	Serrated Flange Nut, 3/8"-16
7.	GA11775	-	Special Bolt, 5/8"-11 x 18 1/2", 36 Row 30"
	G10205	4	Washer, 5/8" SAE
	G10107	4	Lock Nut, 5/8"-11
8.	GA11537	-	Hopper Mount, Rear, 36 Row 30"
9.	GD16530	1	Plate
10.	GD16356	4	U-Bolt, 3 1/2" x 3 1/2" x 1/2"-13
	G10228	8	Lock Washer, 1/2"
	G10102	8	Hex Nut, 1/2"-13
11.	GA11638	1	Catwalk
12.	GD16778	2	Bracket
13.	G10171	3	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10109	3	Lock Nut, 5/16"-18, Grade 8
14.	GA11639	1	Railing, L.H.
15.	GA11640	1	Railing, R.H.
16.	G10303	4	Carriage Bolt, 5/16"-18 x 1"
	G10219	4	Washer, 5/16" USS
	G10109	4	Lock Nut, 5/16"-18, Grade 8
17.	G10403	1	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10110	1	Lock Nut, 1/4"-20, Grade B
18.	GA11637	1	Lower Ladder
19.	GA11636	1	Ladder
20.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10108	2	Lock Nut, 3/8"-16
21.	G10040	2	Hex Head Cap Screw, 1/4"-20 x 1 3/4"
	G10110	2	Lock Nut, 1/4"-20, Grade B
22.	GD16779	1	Hook

FINGER PICKUP SEED METER

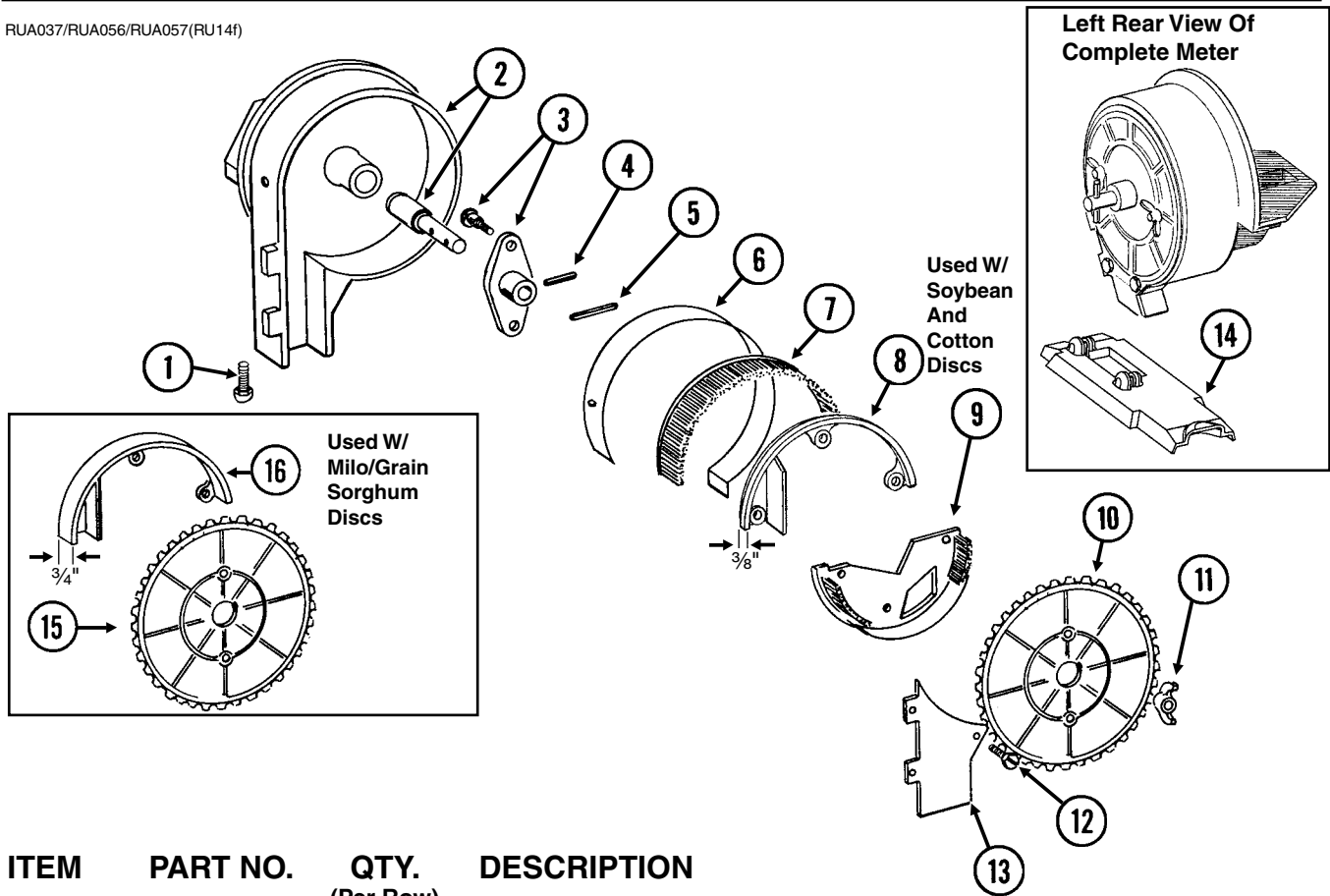
RUA015/RUA056/RUA057(RU13k/RU13d)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10602	1	Spring Pin, 1/4" x 1 1/2"
2.	G10604	1	Spring Pin, 3/16" x 1 1/2"
3.	GD1039	1	Housing Cover
4.	GD1041	1	Belt Drive Sprocket
5.	GD11286	1	Seed Belt
6.	GA2019	1	Bearing
7.	GA2018	1	Conveyor Housing
8.	GB0110	1	Bearing Housing
9.	GR1569	-	Carrier Plate W/Brush And Screw (Corn)
	GR0664	-	Carrier Plate W/Brush And Screw (Sunflower)
	GA2020	-	Brush
	G10690	-	Rolling Thread Screw, No. 10 x 3/4"
10.	G10401	3	Slotted Hex Washer Head Screw, No. 10-32 x 5/8"
11.	GD18704	12	Finger, Corn
12.	GD6501	12	Spring
13.	GB0410	1	Cam (Corn)
14.	GD11528	1	Finger Holder
15.	G10470	1	Cotter Pin, 5/32" x 1"
16.	G11009	2	Locking Thumbscrew, 5/16"-18 x 3/4"
17.	GD11311	1	Seed Baffle
18.	GD1083	1	Cover Nut
19.	G10500	1	Jam Nut, 5/8"-18 UNF
20.	GA8343	1	Wave Washer, 5/8" (Triple Wave)
21.	G10020	3	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10323	3	Hex Flange Nut, 1/4"-20, No Serrations
22.	G10022	4	Hex Head Cap Screw, 1/4"-20 x 1/2"
	G10621	4	Serrated Flange Nut, 1/4"-20
23.	G10021	1	Hex Head Cap Screw, 1/4"-20 x 1 1/2"
	G10621	1	Serrated Flange Nut, 1/4"-20
24.	G10603	1	Spring Pin, 1/4" x 1 1/4"
25.	GD1042	1	Idler
26.	GB0120	1	Bushing, 17/64" I.D. x 1 1/32" Long
27.	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)
A.	GR1848	-	Finger Assembly, Corn (Items 11-14 And 20)
B.	GR1897	-	Finger Assembly, Oil Sunflower (Items 12, 14, 20, 27 And 30)

BRUSH-TYPE SEED METER

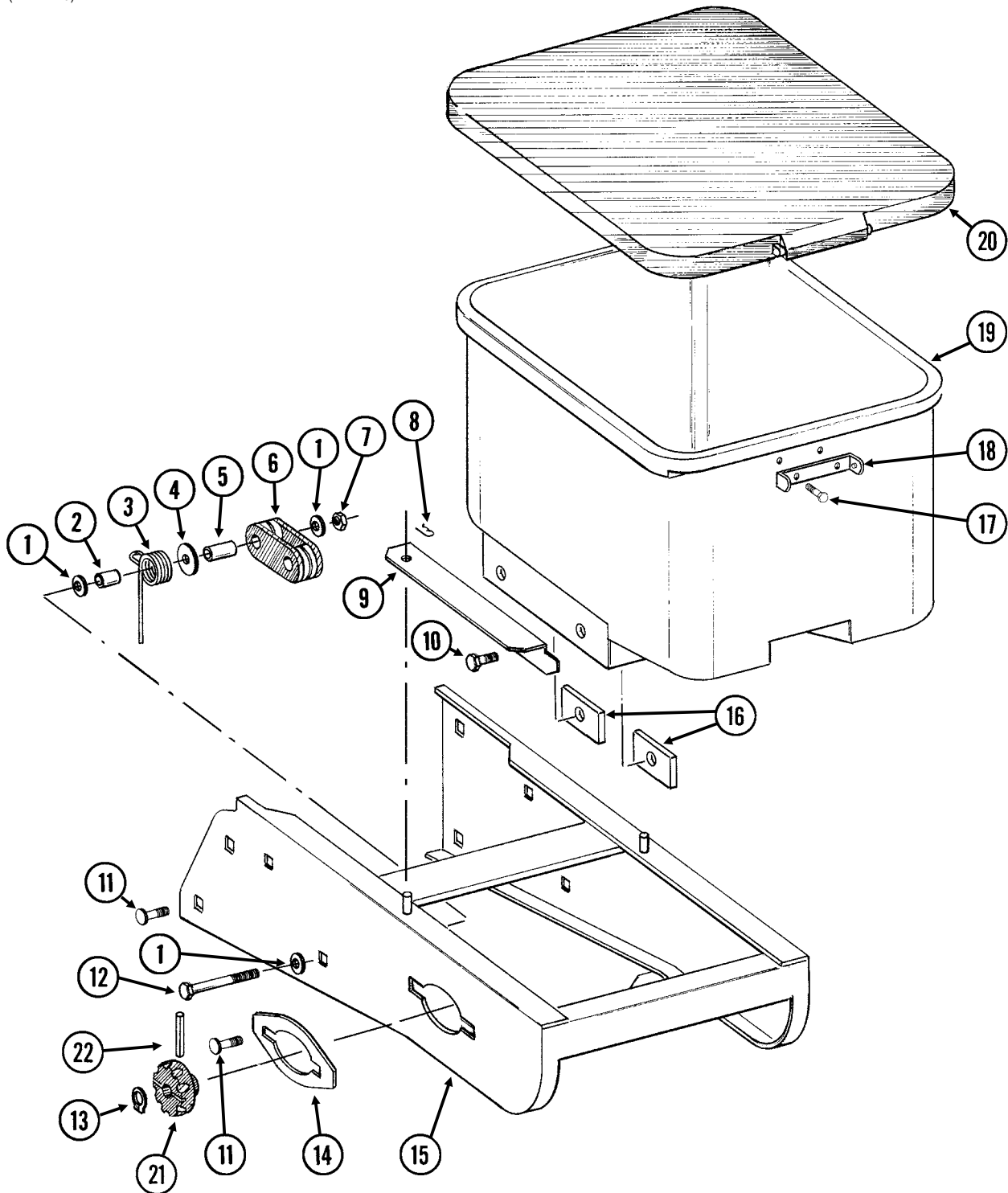
RUA037/RUA056/RUA057(RU14f)



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

GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

(METR14d)

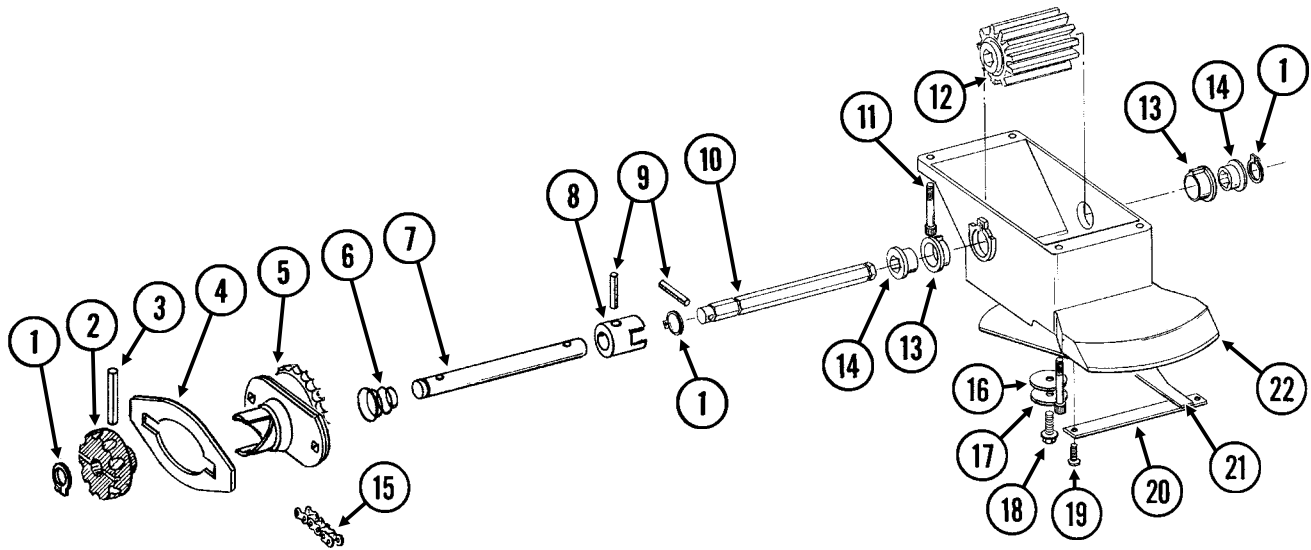


GRANULAR CHEMICAL HOPPER AND HOPPER PANEL EXTENSION

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10210	3	Washer, 3/8" USS
2.	GD2971-10	1	Sleeve, 9/16" Long
3.	GD11219	1	Spring
4.	G10201	1	Special Washer, 3/8" x 1 1/2" O.D.
5.	GD1026	1	Sleeve, 1 3/16" Long
6.	GD11962	1	Idler
7.	G10108	1	Lock Nut, 3/8"-16
8.	G10670	2	Hair Pin Clip, No. 3
9.	GD1059L	1	Support, L.H. (Shown)
	GD1059R	1	Support, R.H.
10.	G10002	4	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10229	4	Lock Washer, 3/8"
11.	G10312	8	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	8	Serrated Flange Nut, 5/16"-18
12.	G10325	1	Hex Head Cap Screw, 3/8"-16 x 2 3/4"
13.	G10567	3	External Retaining Ring, 5/8"
14.	GD11305	1	Plate
15.	A10759	1	Hopper Panel Extension (Non-Stock Item) (Sub Wholegoods Order Code 700-01099)
16.	GD11424	4	Block
17.	G10023	2	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10621	2	Serrated Flange Nut, 1/4"-20
18.	GD1060	1	Hinge
19.	GA8371	1	Hopper
20.	GA4444	1	Lid
21.	GD11239	1	Knob
22.	G10602	1	Spring Pin, 1/4" x 1 1/2"

GRANULAR CHEMICAL METER AND METER DRIVE

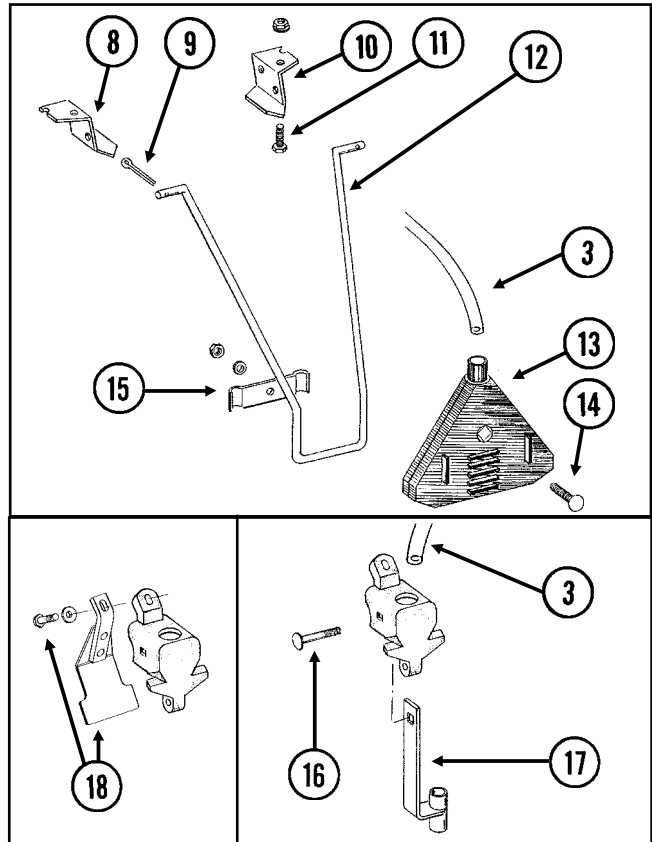
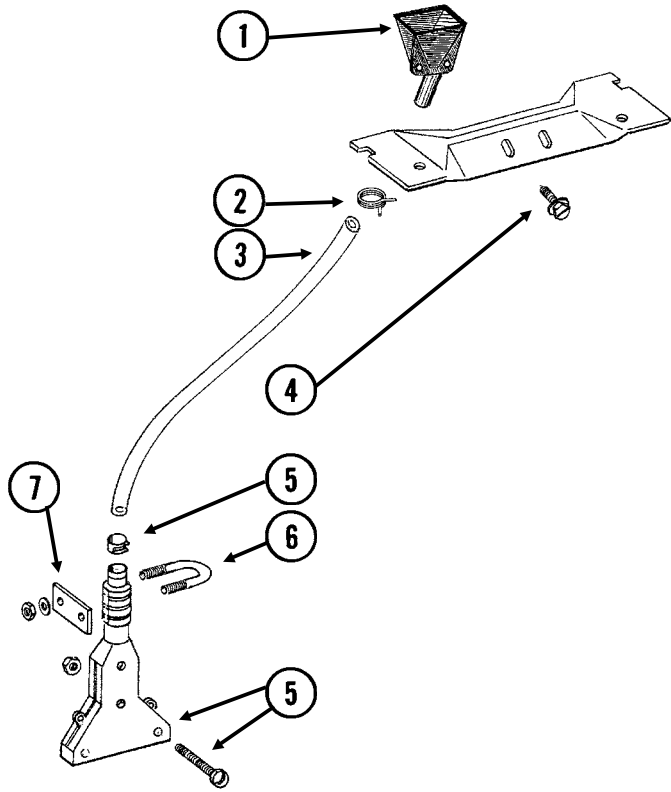
RUA051/RUB028(RU91a)



ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1.	G10567	3	External Retaining Ring, 5/8"
2.	GD11239	1	Knob
3.	G10602	1	Spring Pin, 1/4" x 1 1/2"
4.		-	See "Granular Chemical Hopper And Hopper Panel Extension", Pages P34 And P35
5.	GA8364	1	Sprocket And Bearing, Drive Clutch, 24 Tooth
6.	GD11413	1	Spring
7.	GD11240	1	Shaft
8.	GB0278	1	Coupler
9.	G10546	2	Spring Pin, 3/16" x 1 1/4"
10.	GD11297	1	Shaft
11.	G10921	4	Hex Socket Head Cap Screw, No. 10-24 x 7/8"
	G10257	4	Lock Washer, No. 10
12.	GD7148	1	Feed Roller, Hex Bore
13.	GB0115	2	Bearing
14.	GD7258	2	Hex Bushing
15.	G3303-114	1	Chain, No. 41, 114 Pitch Including Connector Link
	GR0196	1	Connector Link, No. 41
16.	G10660	1	Wave Washer, 1/2"
17.	G10209	1	Washer, 1/4" USS
18.	G10570	1	Slotted Hex Self-Tapping Screw, 1/4"-20 x 3/4"
19.	G11073	2	Slotted Hex Self-Tapping Screw, No. 10 x 3/8"
20.	GD1061	1	Support Strap
21.	GD1063	1	Metering Gate
22.	GB0116	1	Granular Housing
A.	GA8326	-	Granular Chemical Meter Complete (Items 1, 9, 10, 12-14 And 16-22)

GRANULAR CHEMICAL BANDING OPTIONS

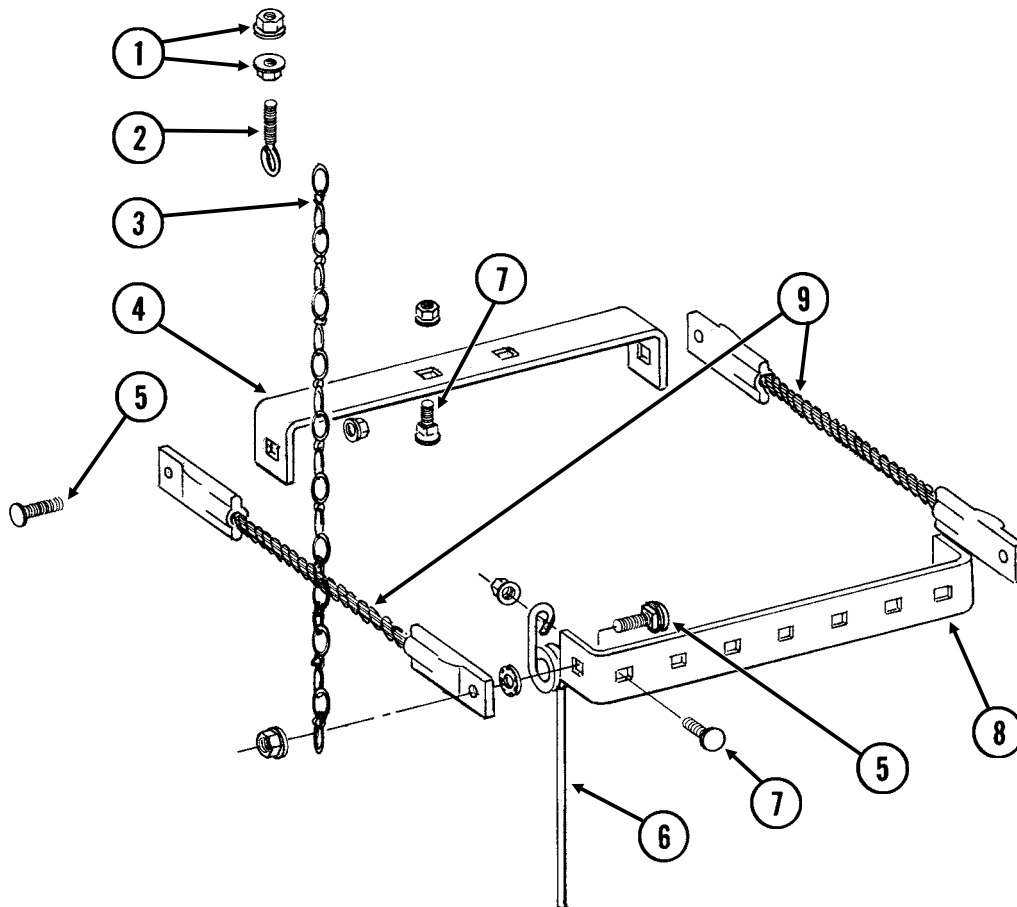
RUA061/RUA073(RU101mm/RU83m)



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

SPRING TOOTH INCORPORATOR

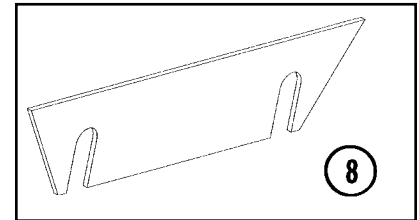
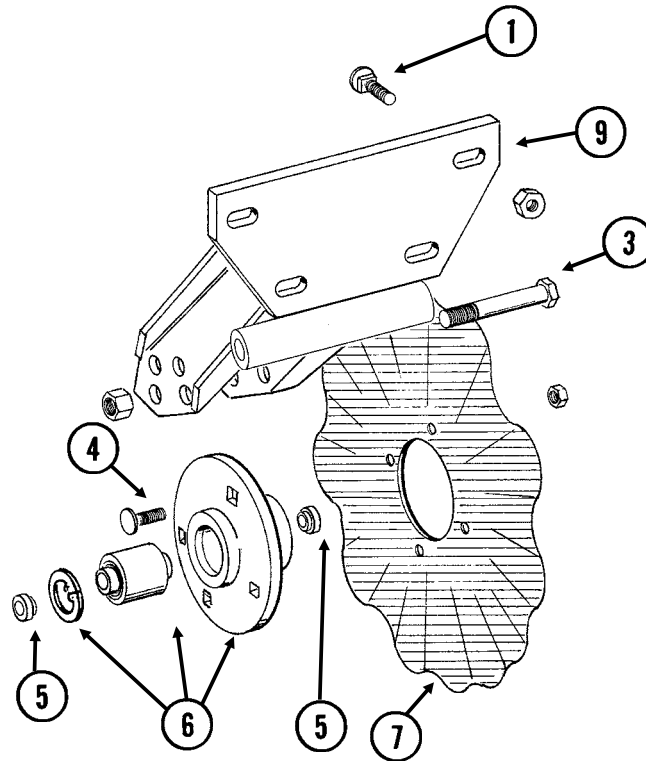
RUA055(RU95)



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

ROW UNIT MOUNTED NO TILL COULTER

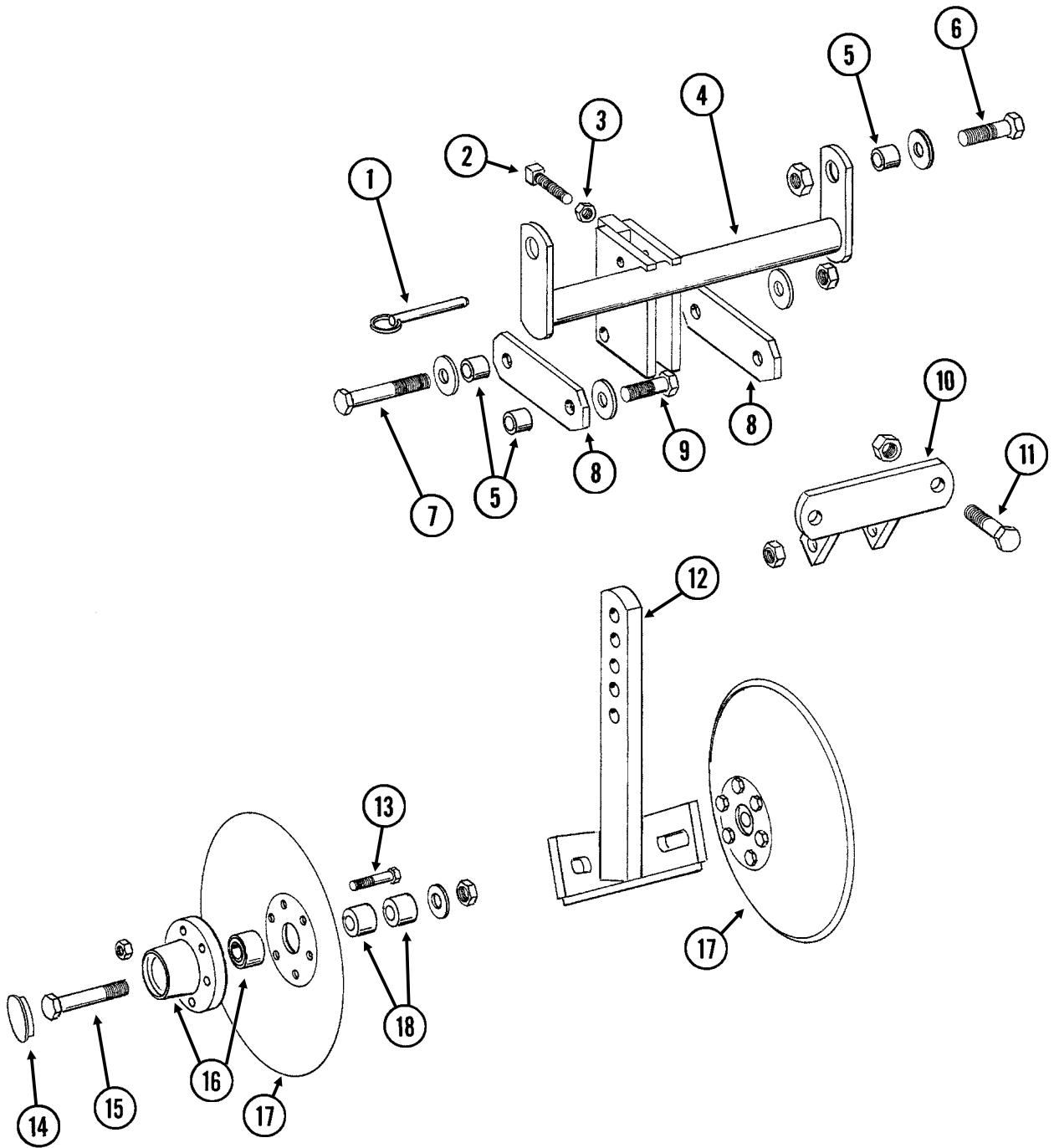
(D14398/RU102c/RU152)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Row)	
1.	G10574	4	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10111	4	Lock Nut, 1/2"-13
2.	GA11520	1	Arm
3.	G10036	1	Hex Head Cap Screw, 5/8"-11 x 4"
	G10107	1	Lock Nut, 5/8"-11
4.	G10574	4	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10111	4	Lock Nut, 1/2"-13
5.	GD11677	2	Adapter
6.	GA8641	1	Hub W/Bearing And Retaining Ring
	GA8603	-	Bearing, Double Row
	GD11652	-	Retaining Ring, 2 7/16"
7.	GD7803	-	Disc Blade, Fluted, 1", 8 Flutes (Shown)
	GD7804	-	Disc Blade, Bubbled, 1"
	GD9254	-	Disc Blade, Fluted, 3/4", 13 Flutes
8.	GD14398	-	Spacer

ROW UNIT MOUNTED DISC FURROWER

RUA059/RUA058(RU99/RU98g)

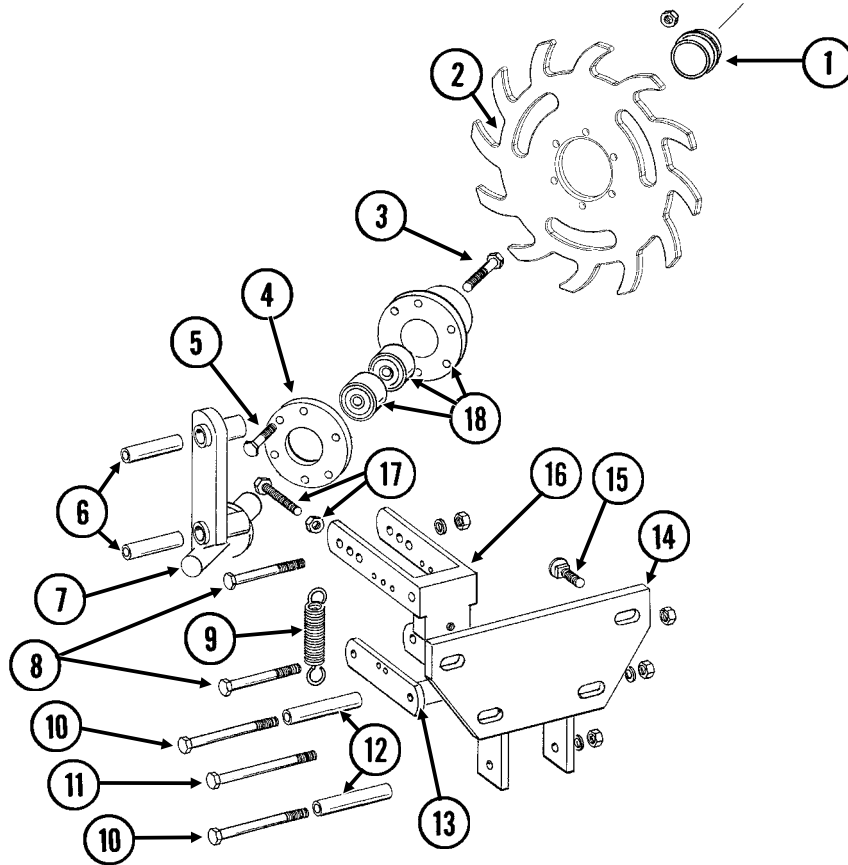


ROW UNIT MOUNTED DISC FURROWER

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Row)	
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

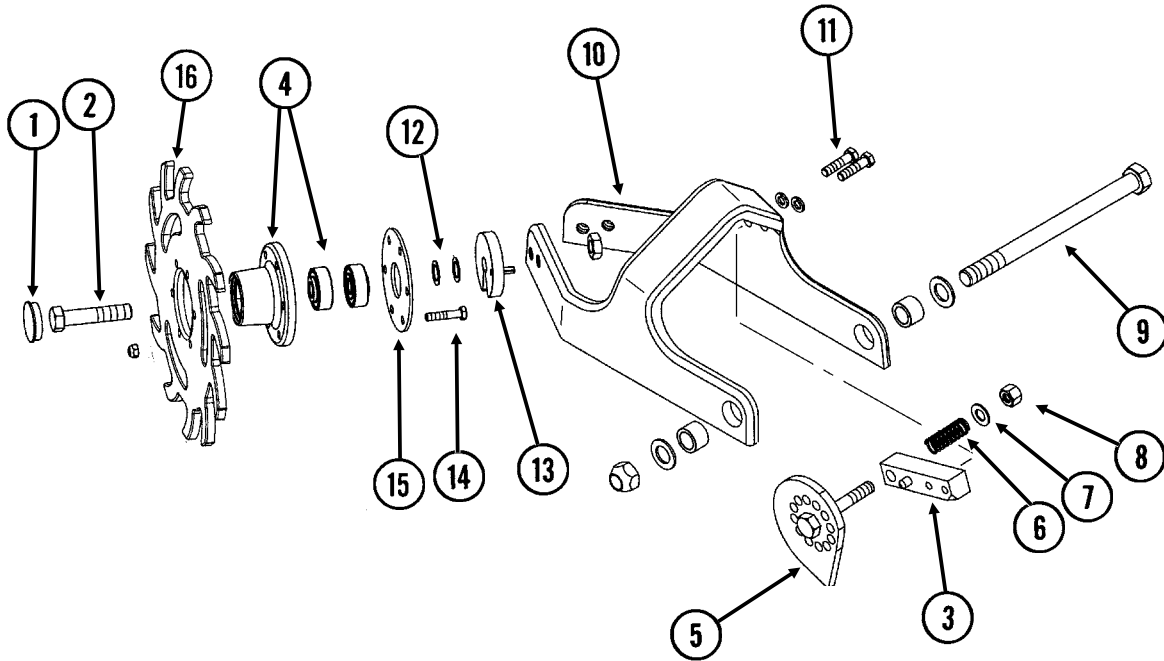
(RU103dd)



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

COULTER MOUNTED RESIDUE WHEELS

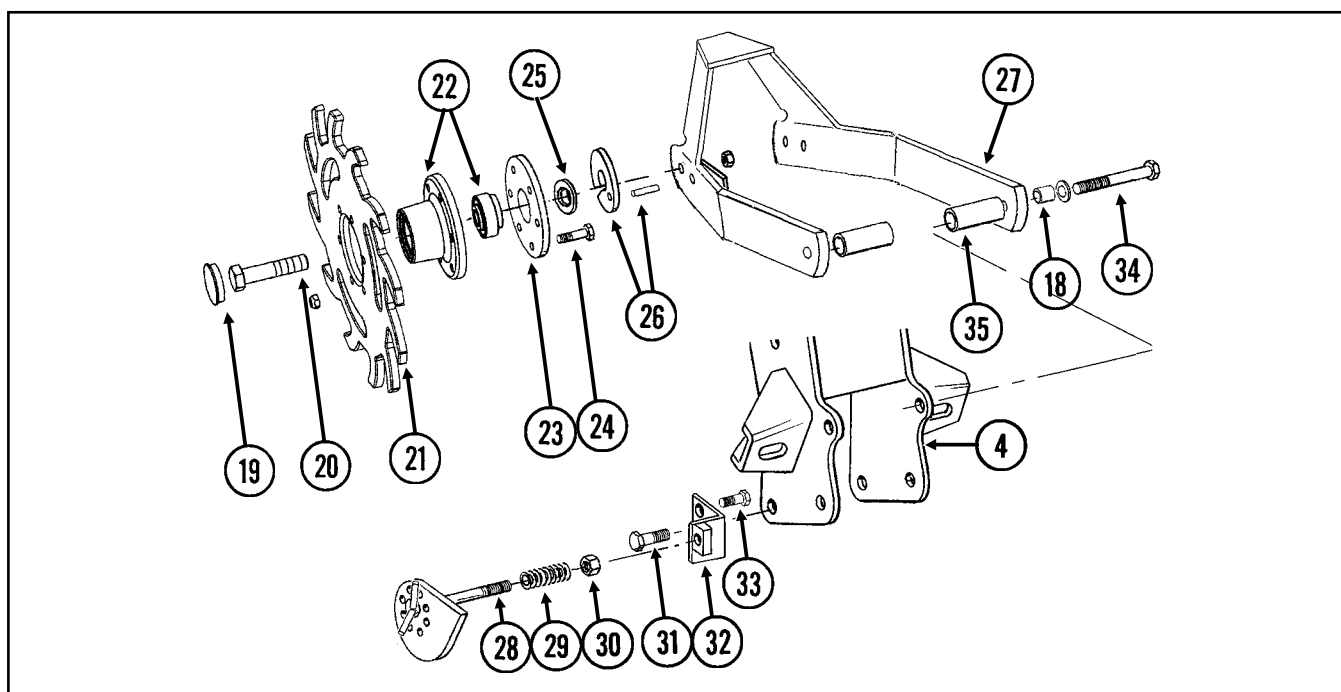
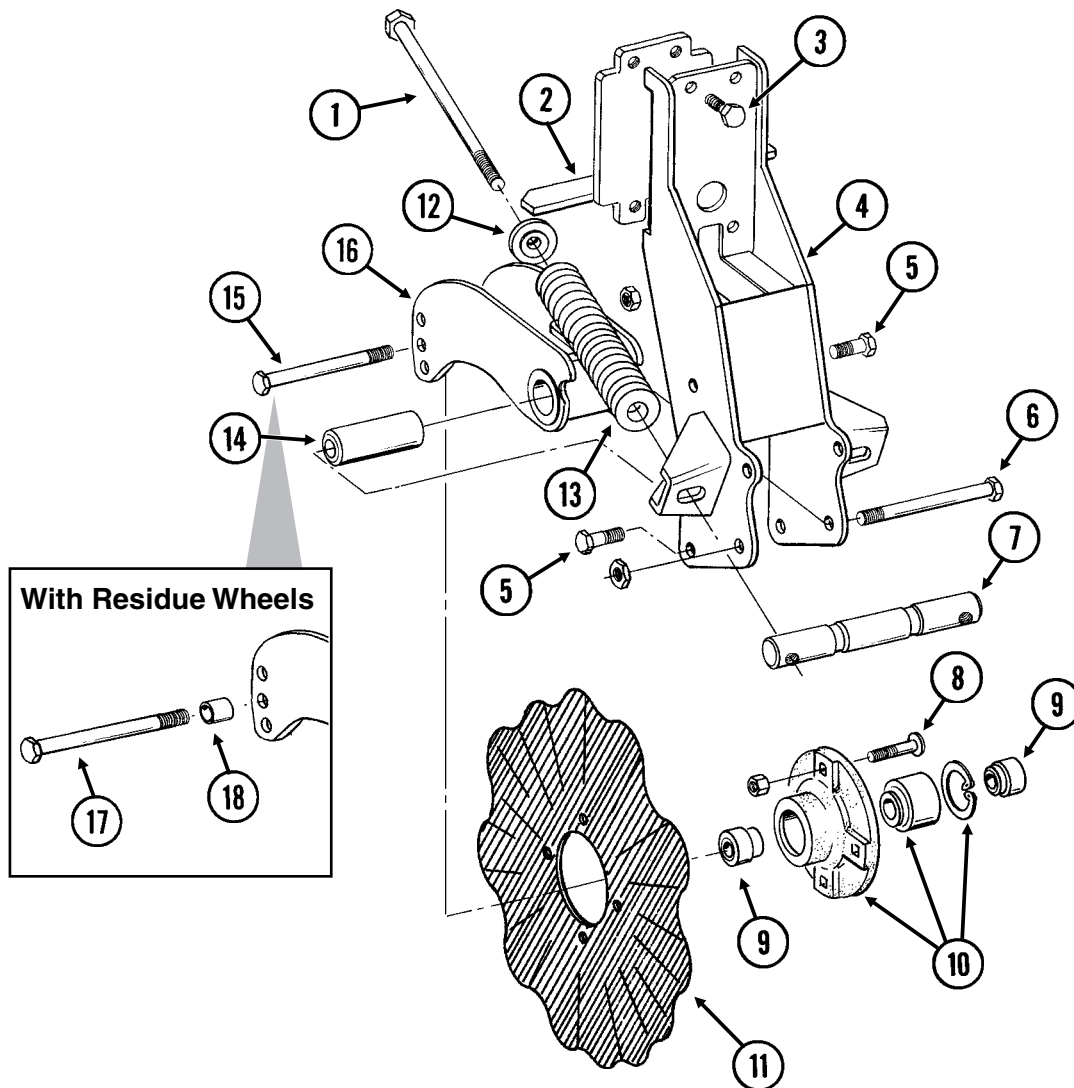
(RU153)



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)

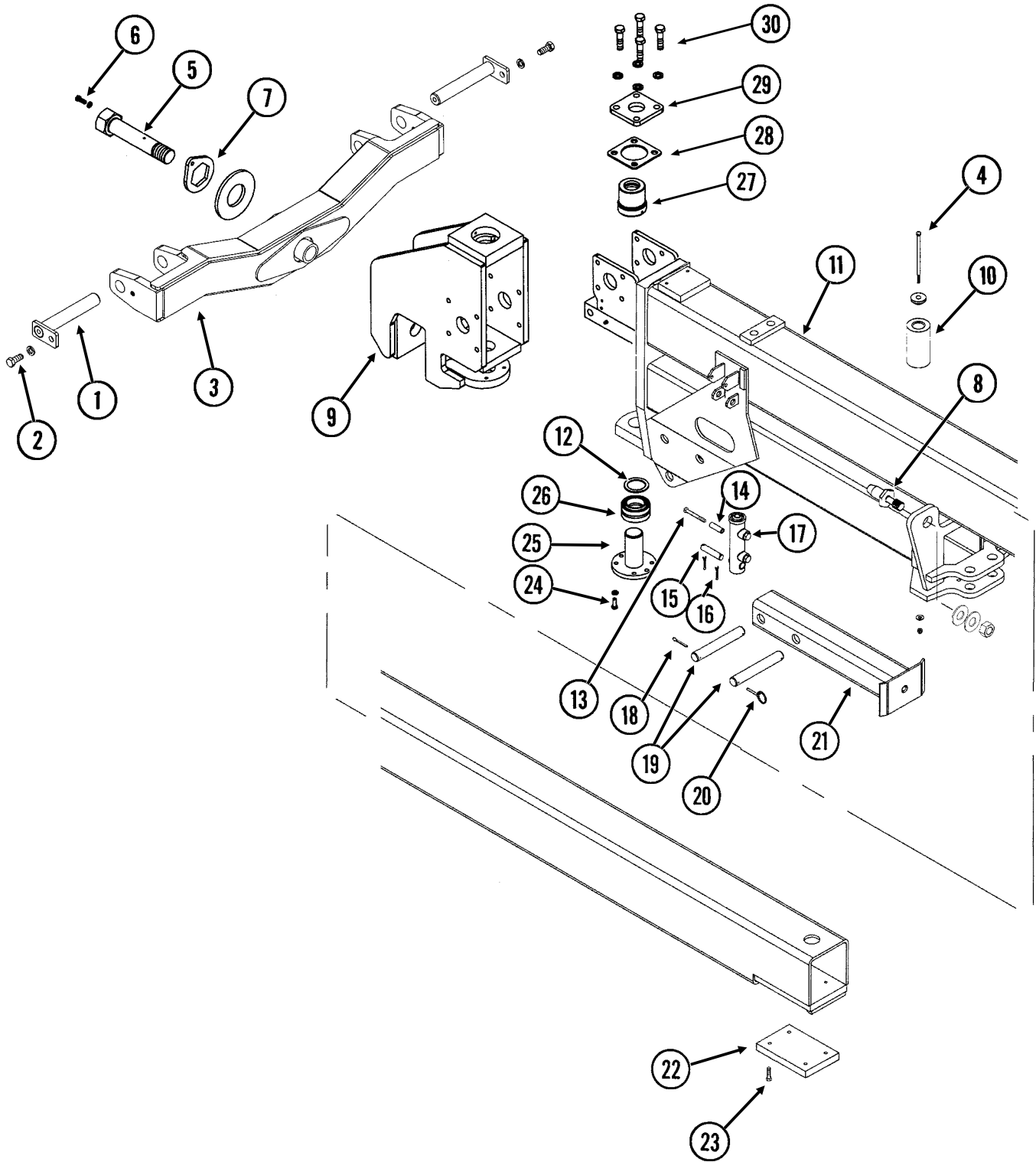


FRAME MOUNTED COULTER W/RESIDUE WHEELS

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1	G11010	2	Hex Head Cap Screw, 3/4"-10 x 12"
2	GA9844	1	Plate W/Angle
3	G10039	4	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
4	GA9131	1	Coulter Frame
5	G10007	4	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10107	4	Lock Nut, 5/8"-11
6	G10400	1	Hex Head Cap Screw, 3/4"-10 x 6 1/2"
	G10112	1	Lock Nut, 3/4"-10
7	GD12826	1	Spring Anchor Bar
8	G10574	4	Carriage Bolt, 1/2"-13 x 1 1/4"
	G10111	4	Lock Nut, 1/2"-13
9	GD12827	2	Adapter
10	GA8641	1	Hub W/Bearing And Retaining Ring
	GA8603	1	Bearing, Double Row
	GD11652	1	Retaining Ring, 2 7/16"
11	GD7803	1	Disc Blade, Fluted, 1", 8 Flutes (Shown)
	GD7804	-	Disc Blade, Bubbled, 1"
	GD9254	-	Disc Blade, Fluted, 3/4", 13 Flutes
12	GB0213	2	Spring Seat
13	GD12817	2	Compression Spring
14	GD12829	1	Sleeve
15	G10046	1	Hex Head Cap Screw, 5/8"-11 x 5"
	G10107	1	Lock Nut, 5/8"-11
16	GA9845	1	Coulter Arm W/Grease Fitting
	G10643	-	Grease Fitting, 45°, 1/4"-28
17	G10011	1	Hex Head Cap Screw, 5/8"-11 x 5 1/2"
	G10107	1	Lock Nut, 5/8"-11
18	GB0218	3	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" Long
19	GD1132	2	Dust Cap
20	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
	G10503	2	Hex Jam Nut, 5/8"-11, Grade 2
21	GB0386	2	Wheel, 12 Tine, 3/8" x 12"
22	GA5654	2	Hub W/Bearings
	GA2014	-	Bearing
23	GD9724	2	Backing Plate
24	G10133	12	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G10109	12	Lock Nut, 5/16"-18, Grade 8
25	G10213	2	Machine Bushing, 5/8" (.030" Thick)
26	GA9862	2	Weed Guard W/Spring Pin
	G10765	-	Spring Pin, 1/4" x 1"
27	GA9865	1	Mount
28	GA9861	1	Cam
29	GD10519	1	Spring
30	G10974	1	Lock Nut W/Nylon Insert, 1/2"-13
31	G10005	1	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G10107	4	Lock Nut, 5/8"-11
32	GA9864	1	Support
33	G10014	1	Hex Head Cap Screw, 1/2"-13 x 1"
	G10102	1	Hex Nut, 1/2"-13
34	G10011	2	Hex Head Cap Screw, 5/8"-11 x 5 1/2"
	G10205	2	Washer, 5/8" SAE
	G10730	2	Lock Nut W/Nylon Insert, 5/8"-11
35	GD14170	2	Sleeve, 3"
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 SLIDE HITCH

(FWD58a)

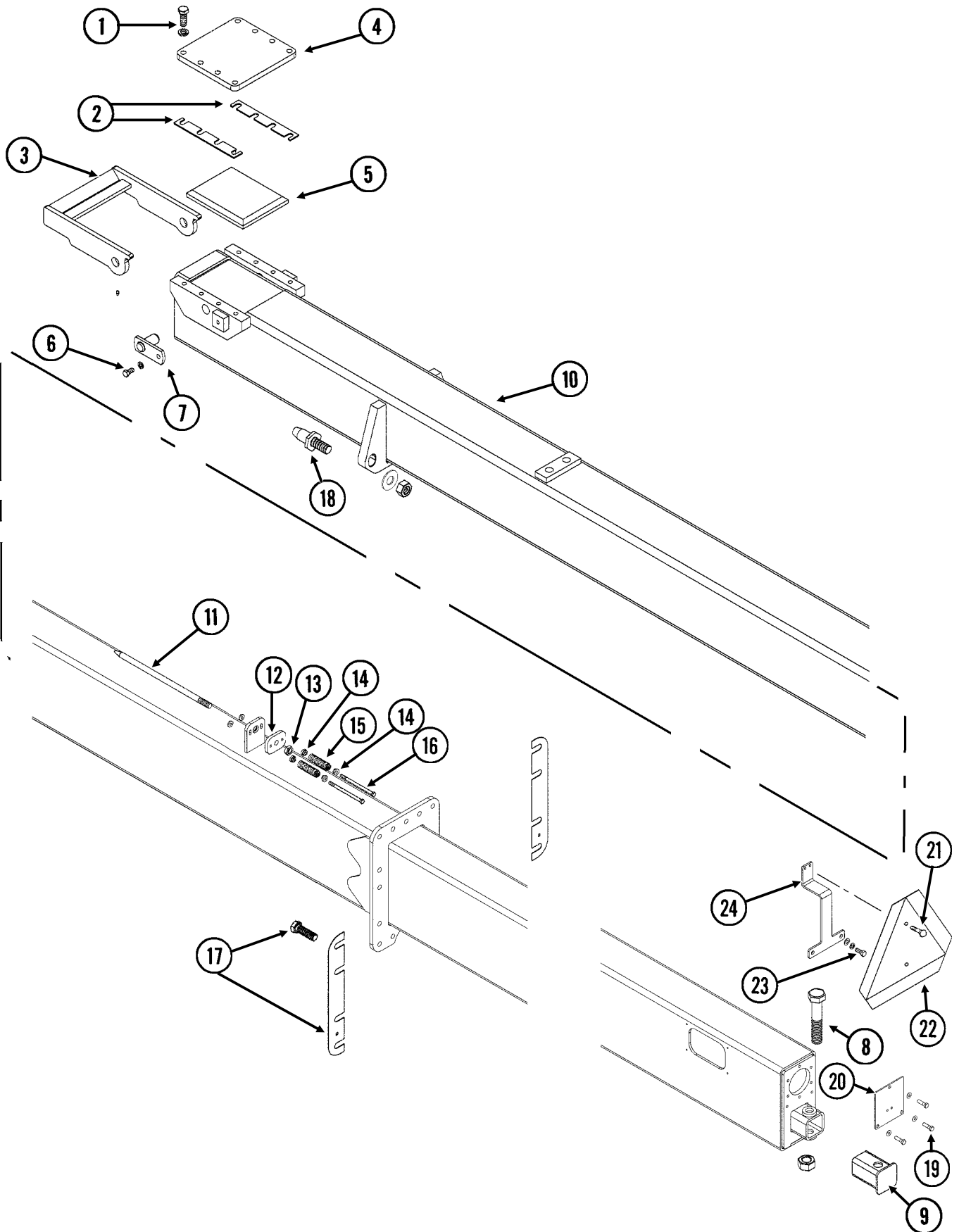


INNER SLIDE HITCH

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.	G10686	2	Hex Head Cap Screw, 3/8"-16 x 8"
	GB0212	2	Spring Washer
	G10210	2	Washer, 3/8" USS
	G10108	2	Lock Nut, 3/8"-16
5.	GA11082	1	Pivot Bolt W/Grease Fitting, 1 3/4" x 10 3/8" (Total Length)
	G10640	-	Grease Fitting, 1/4"-28
	GD18170	1	Spacer
6.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
7.	GD18143	1	Pivot Lock Nut
8.		-	See "Outer Slide Hitch", Pages P48 And P49
9.	GA12679	1	Hitch Pivot
10.	GD16227	2	Bushing, 2" O.D. x 1 29/64" I.D. x 5 5/8", Category 4
11.	GA13007	-	Inner Hitch, 373 1/2", 36 Row 30"
12.	GD18175	1	Shim
13.	G10809	1	Hex Head Cap Screw, 3/8"-16 x 3 1/4"
	G10108	1	Lock Nut, 3/8"-16
14.	GD7137	1	Pin, 3/4" x 3 3/8"
15.	GD2971-09	1	Sleeve, 2" Long
16.	G10457	2	Cotter Pin, 5/32" x 1 1/2"
17.		1	See "Tongue Latch Cylinder", Page P89
18.	G10460	3	Cotter Pin, 1/4" x 2"
19.	GD3737	2	Pin, 1 1/4" x 8 1/2"
20.	GD2558	1	Lynch Pin, 1/4"
21.	GA10280	1	Hitch Stand
22.	G11099	4	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
23.	GD14812	1	Wear Pad, 5 7/8" x 6 1/2" x 1"
24.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	4	Lock Washer, 3/8"
25.	GA12681	1	Pivot Pin
26.	GA12689	1	Spherical Bearing
27.	GA12688	1	Special Spherical Bearing
28.	GD18151	1	Spacer
29.	GD18152	1	Cap
30.	G10009	4	Hex Head Cap Screw, 5/8"-11 x 2 1/2"
	G10239	4	Hex Nut, 1 1/4"-7

OUTER SLIDE HITCH

(FWD9e/FWD112a)

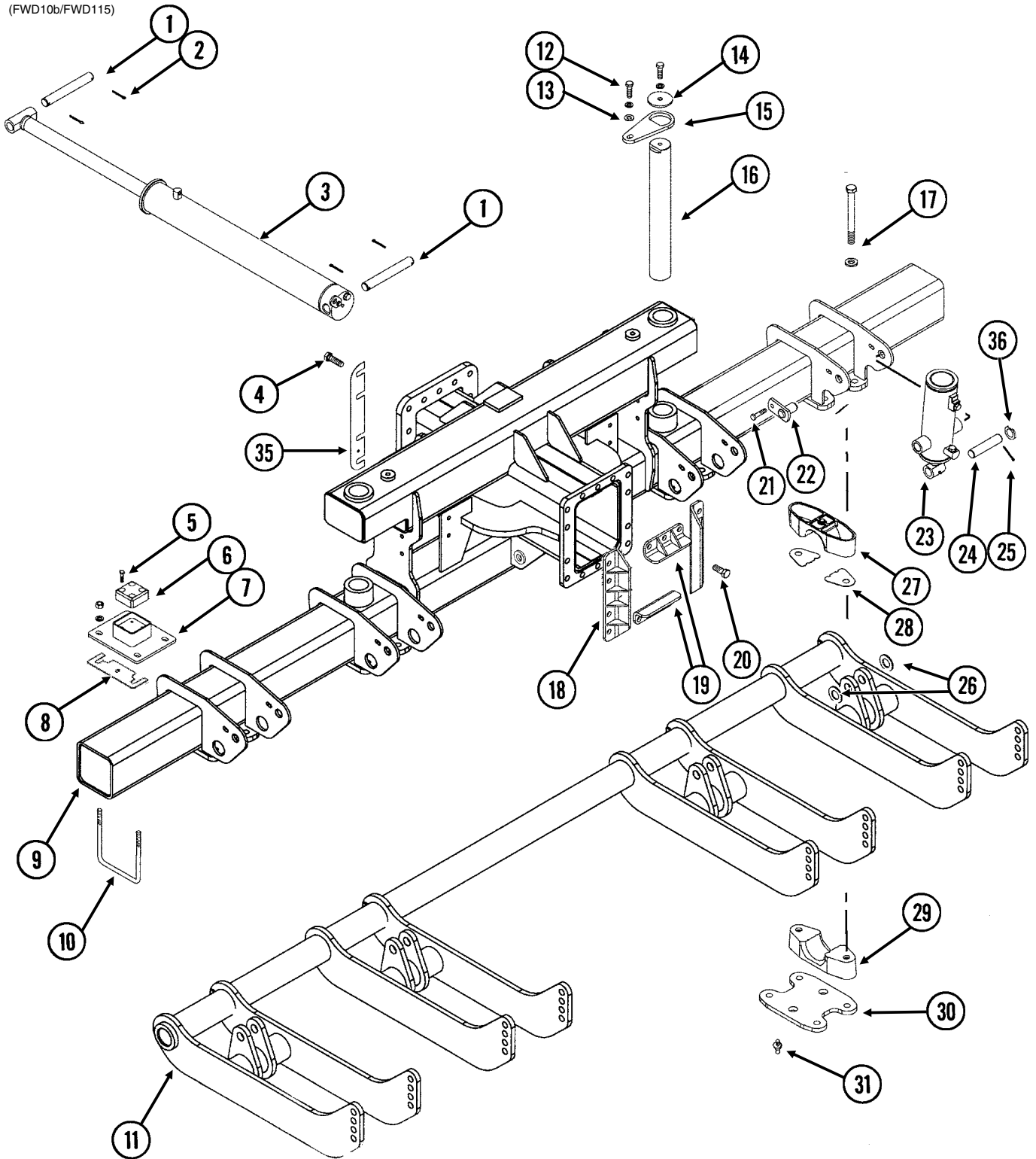


OUTER SLIDE HITCH

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10008	8	Hex Head Cap Screw, 5/8"-10 x 2"
	G10230	8	Lock Washer, 5/8"
2.	GD14842	4	Shim, 1 1/2" x 10 1/2", 10 Gauge
3.	GA10281	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
4.	GD14841	1	Cover, 10 1/2" x 11" x 3/4"
5.	GD14843	1	Wear Pad
6.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
7.	GA10282	2	Pin, 2 1/4"
8.	G10042	1	Hex Head Cap Screw, 1 1/4"-7 x 6 1/2"
	G10157	1	Lock Nut, 1 1/4"-7
9.	GA10483	1	Hitch Endcap
10.	GA10269	1	Outer Hitch, 355 5/8", 36 Row 30"
11.	GD15669	1	Rod, 7/8" x 21"
12.	GD15668	1	Tap Block, 4" x 3" x 1/2"
13.	G10189	1	Hex Jam Nut, 7/8"-14
14.	GD15674	4	Spring Seat
15.	GD15675	2	Compression Spring
16.	G10756	2	Hex Head Cap Screw, 3/8"-16 x 6"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
17.		-	See "Center Toolbar/Rear H-Frame Assembly", Pages P50 And P51
18.	GD18004	2	Hitch Lock Pin
	G11132	2	Washer, 1 1/8" SAE
	G11097	2	Hex Nut, 1 1/8"-12
19.	G10039	3	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	G10228	3	Lock Washer, 1/2"
20.	GD18601	1	Cap Plate
21.	G10020	2	Hex Head Cap Screw, 1/4"-20 x 5/8"
	G10227	2	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
22.	GD2199	1	SMV Sign
23.	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	2	Lock Washer, 1/2"
	G10206	2	Washer, 1/2" SAE
24.	GD16787	-	SMV Extension Bracket, 15 3/4", SDS

CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

(FWD10b/FWD115)

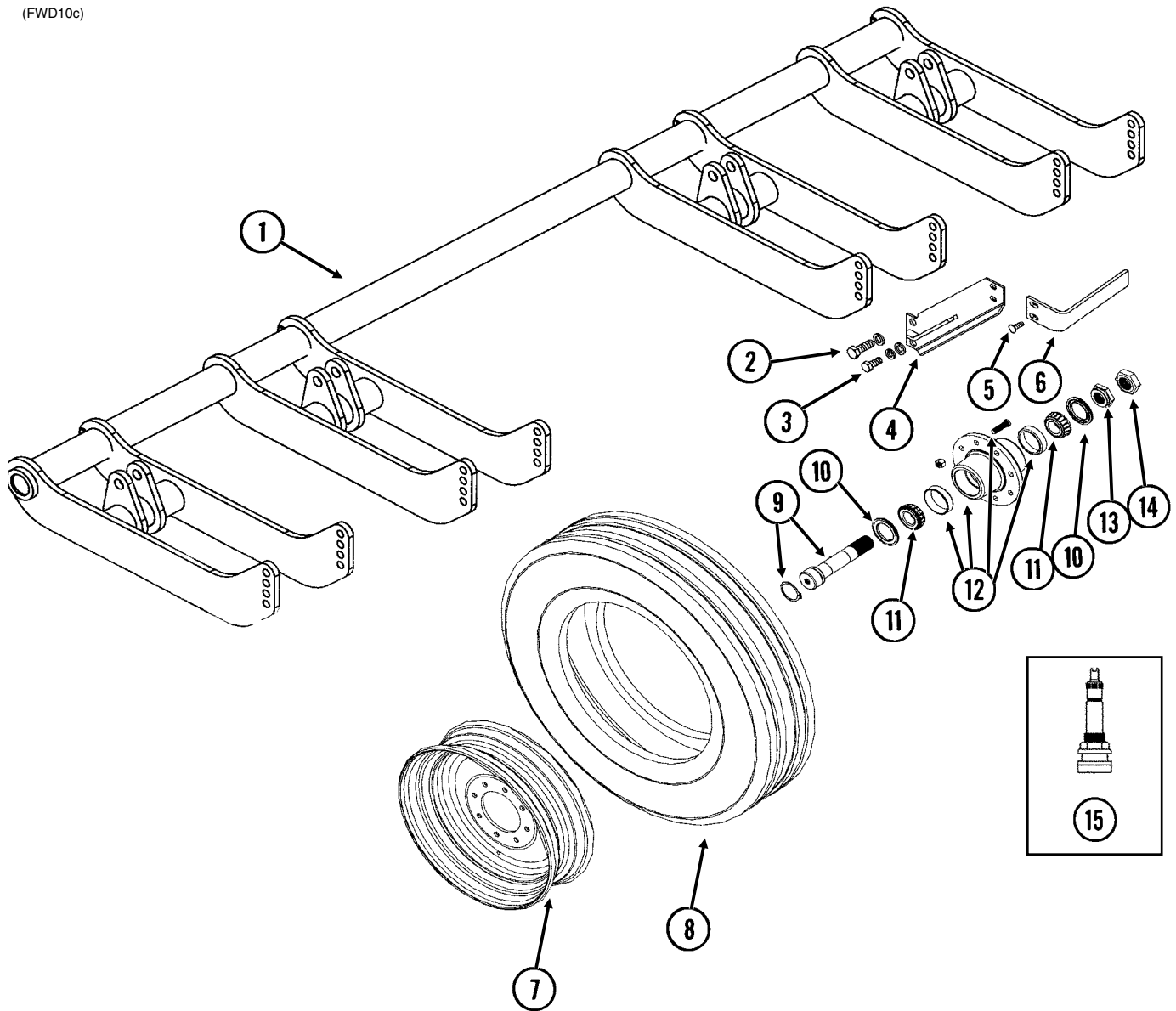


CENTER TOOLBAR/REAR H-FRAME ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15051	2	Pin, 1 1/4" x 9 1/4"
2.	G10460	4	Cotter Pin, 1/4" x 2"
3.		-	See "Axle Slide Cylinder", Page P92
4.	G10027	8	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
	G10026	-	Hex Head Cap Screw, 3/4"-10 x 2"
	G10025	-	Hex Head Cap Screw, 3/4"-10 x 1 1/2"
	G10231	8	Lock Washer, 3/4"
	G10105	8	Hex Nut, 3/4"-10
5.	G11099	8	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
6.	GD15169	2	Wear Block
7.	GA10343	2	Mount, 8" x 10"
8.	GD15170	-	Shim, 3 1/4" x 10", 16 Gauge (As Required)
9.	GA11215	-	H-Frame Assembly, 36 Row 30"
10.	GD17039	4	U-Bolt, 7" x 7" x 5/8"-11
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
11.			See "Rock Shaft Axle Assembly And Wheels", Pages P52 And P53
12.	G10008	4	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	4	Lock Washer, 5/8"
13.	G10217	2	Washer, 5/8" USS
14.	GD15046	2	Washer, 2 1/32" I.D. x 4" O.D. x 1/4"
15.	GD15045	2	Capture Plate
16.	GD15047	2	Pivot Pin, 3" x 28 1/2", 36 Row 30"
17.	G11095	16	Hex Head Cap Screw, 7/8"-9 x 9"
	GD10063	16	Hardened Washer, 7/8"
	G10418	16	Lock Nut, 7/8"-9
18.	GB0356	-	Keeper
19.	GB0355	2	Keeper
20.	G10026	16	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	16	Lock Washer, 3/4"
	G10105	16	Hex Nut, 3/4"-10
21.	G10016	8	Hex Head Cap Screw, 1/2"-13 x 2"
	G10216	8	Washer, 1/2" USS
	G10111	8	Lock Nut, 1/2"-13
22.	GA6761	8	Pin, 1 3/4"
	GA5121	-	Pin, 2 1/8"
23.		-	See "Master Cylinder", Page P89
24.	GD5841	4	Pin, 1 1/4" x 5 5/8"
25.	G10460	8	Cotter Pin, 1/4" x 2"
26.	G10226	8	Washer, 1 1/4" SAE
27.	GB0332	8	Bearing
28.	GD15172	16	Shim
29.	GD14941	8	Bearing
30.	GD14926	4	Clamp Plate
31.	G10640	8	Grease Fitting, 1/4"-28
32.	GD14842	-	Shim, 1 1/2" x 10 1/2", 10 Gauge, 36 Row 30"
	GD15450	-	Shim, 2 3/4" x 24", 16 Gauge, 36 Row 30"
	GD15796	-	Shim, 2 3/4" x 24", 22 Gauge, 36 Row 30"
33.	G10139	8	Washer, 1 1/4" USS

ROCK SHAFT AXLE ASSEMBLY AND WHEELS

(FWD10c)



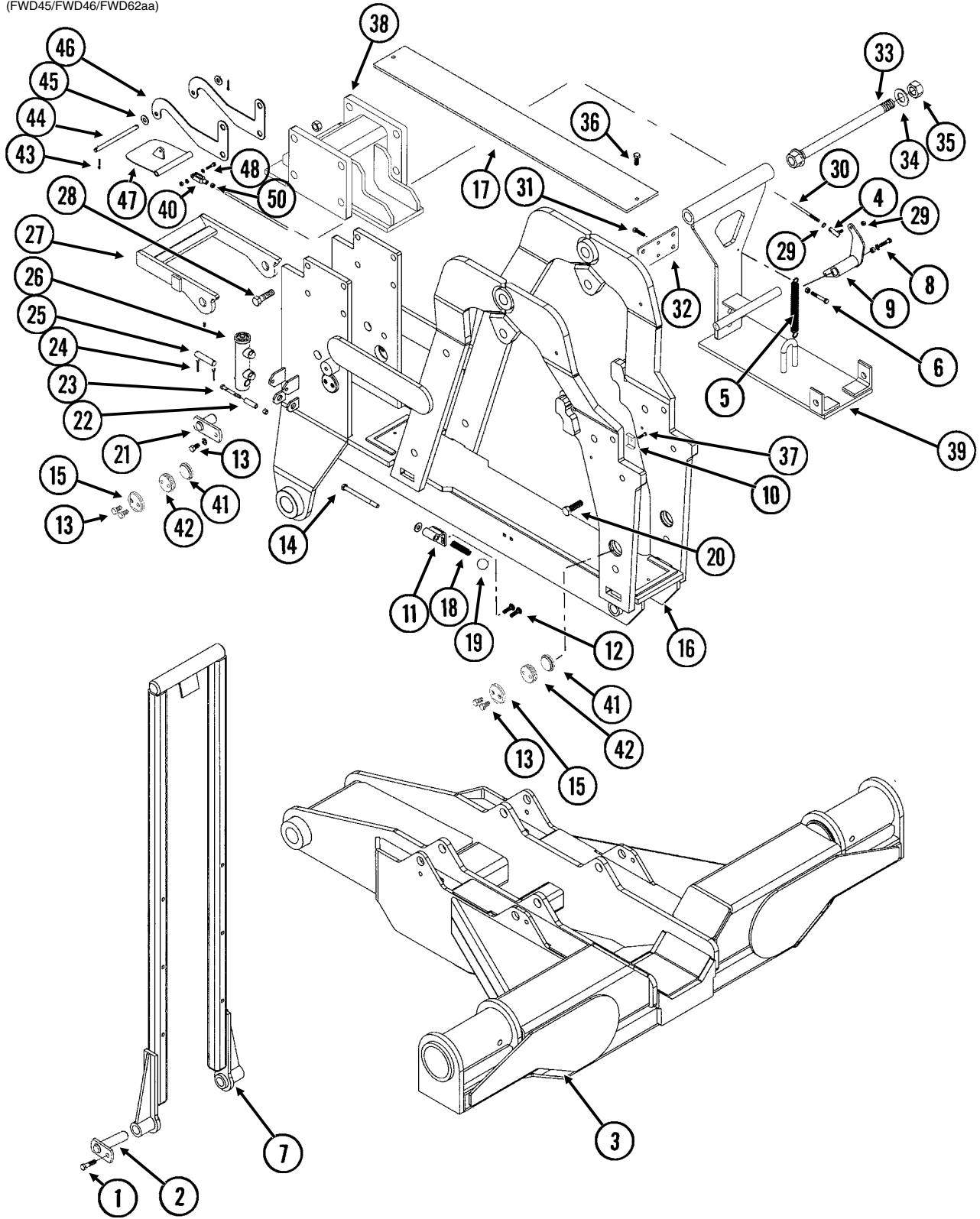
ROCK SHAFT AXLE ASSEMBLY AND WHEELS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11174	1	Rock Shaft Axle, 133 1/2"
2.	G10448	8	Hex Head Cap Screw, 7/8"-9 x 2 1/2", Grade 8
	G10330	8	Lock Washer, 7/8"
3.	G11071	4	Hex Head Cap Screw, 3/4"-10 x 2 1/4"
	G10194	8	Washer, 3/4" SAE
	G10231	4	Lock Washer, 3/4"
	G10105	4	Hex Nut, 3/4"-10
4.	GA11227	4	Scraper Mount
5.	G10636	8	Carriage Bolt, 1/2"-13 x 1 1/2"
	G10216	8	Washer, 1/2" USS
	G10228	8	Lock Washer, 1/2"
	G10102	8	Hex Nut, 1/2"-13
6.	GD12543	4	Scraper
7.	GA9544	4	Rim, 5.5" x 22.5"
8.	GD15406	4	Tire, 41 x 11 R22.5" W/O Center Rib (Specify Brand*)
9.	GA10139	4	Spindle W/Retaining Ring, 1 3/4"
	G10913	-	External Retaining Ring, 2 1/2"
10.	GA4722	8	Seal
11.	GA4723	8	Bearing
12.	GA4729	4	Hub W/Cups, Bolts, Nuts And Grease Fitting, 8 Bolt, 1 3/4" Bore
	G10640	-	Grease Fitting, 1/4"-28
	GD7079	-	Cup
	GR0528	-	Stud, 5/8"-12 x 2 1/4", Grade 8
	GR0531	-	Lug Nut, 5/8"-18 UNF
13.	GD7089	4	Special Nut, 1 3/4"-12 UNF
14.	GD7864	4	Special Hex Nut, 1 3/4"-12 UNF
15.	GA7434	4	Valve Stem
A.	GA10553	-	Tire And Rim Assembly (Items 7, 8 And 15) (Specify Brand*)

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

SLIDE ASSEMBLY

(FWD45/FWD46/FWD62aa)

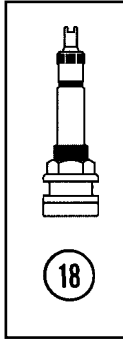
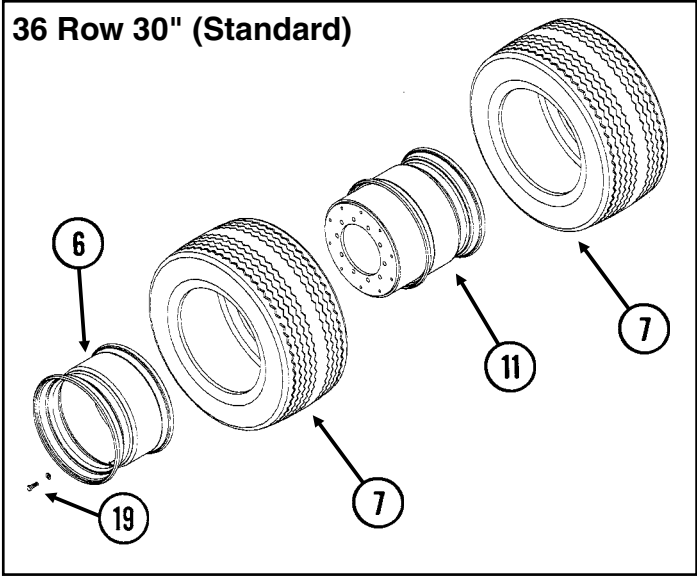
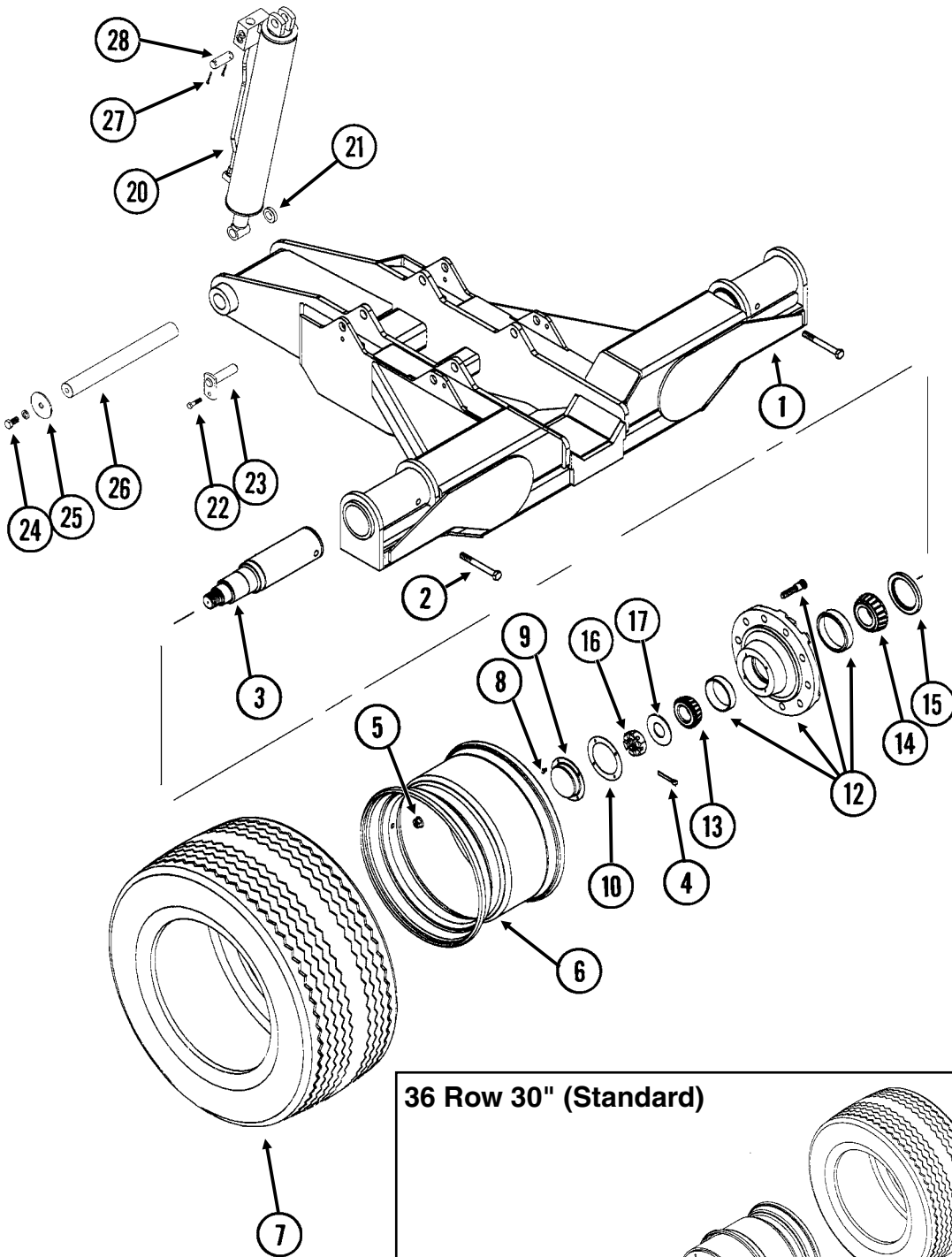


SLIDE ASSEMBLY

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10017	4	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10111	4	Lock Nut, 1/2"-13
2.	GA10279	4	Pin, 5 1/4"
3.		-	See "Transport Axle Assembly And Wheels", Pages P56 And P57
4.	GA11264	1	Link
5.	GD5857	1	Spring
6.	G10049	1	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10101	1	Hex Nut, 3/8"-16
	GD2971-15	1	Sleeve, 5/16" Long
7.	GA10503	1	Lockup, 68 3/8"
8.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10203	1	Washer, 3/8" SAE
9.	GA11263	1	Arm
10.	GD5892	2	Hose Clamp, 5/8" x 1 1/2" x 1 1/2"
11.	GA10504	2	Support
12.	G10301	4	Carriage Bolt, 3/8"-16 x 1 1/2"
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
13.	G10014	10	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	10	Lock Washer, 1/2"
14.	G10871	2	Hex Head Cap Screw, 1/2"-13 x 6"
	G10216	2	Washer, 1/2" USS
	G10111	2	Lock Nut, 1/2"-13
15.	GB0230	4	Cap
16.	GA11206	-	Slide Assembly, 36 Row 30"
17.	GD15492	1	Wear Pad, 6" x 48"
18.	GD15677	2	Compression Spring
19.	GD15679	2	Ball Knob
20.	G10027	2	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
	G10112	2	Lock Nut, 3/4"-10
21.	GA10282	2	Pin, 2 1/4"
22.	GD2971-09	1	Sleeve, 2" Long
23.	G10809	1	Hex Head Cap Screw, 3/8"-16 x 3 1/4"
	G10108	1	Lock Nut, 3/8"-16
24.	G10457	2	Cotter Pin, 5/32" x 1 1/2"
25.	GD7137	1	Pin, 3/4" x 3 3/8"
26.		-	See "Slide Latch Cylinder", Page P89
27.	GA10466	1	Catch W/Grease Fittings
	G10640	-	Grease Fitting, 1/4"-28
28.	G10802	8	Hex Head Cap Screw, 3/4"-10 x 2 3/4"
	G10112	8	Lock Nut, 3/4"-10
29.	G11179	3	Hex Nut, 5/16"-24
30.	GD16393	1	Rod
31.	G10003	8	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	8	Lock Washer, 3/8"
	G10101	8	Hex Nut, 3/8"-16
32.	GD15664	1	Plate, 3 9/16" x 7 1/4"
33.	GA10455	1	Cross Pin, 19"
34.	G10226	1	Washer, 1 1/4" SAE
35.	G10157	1	Lock Nut, 1 1/4"-7
36.	G11130	2	Hex Socket Head Cap Screw, 5/16"-18 x 1 1/2", Grade 8
	G10109	2	Lock Nut, 5/16"-18, Grade 8
37.	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	2	Lock Washer, 3/8"
38.	GA10584	1	Slide Bracket, 36 Row 30"
39.	GA11634	1	Rear Bracket, 36 Row 30"
40.	GD16392	1	Clevis
41.	GD9093	4	Poly Wear Pad
42.	GB0234	4	Adjustment Plug
43.	G10470	2	Cotter Pin, 5/32" x 1"
44.	GD16394	1	Pin, 1/2" x 7 1/2"
45.	G10216	2	Washer, 1/2" USS
46.	GD16388	2	Mount
47.	GA11262	1	Flap
48.	G10857	1	Hex Head Cap Screw, 1/4"-20 x 1 1/4"
	G10211	2	Washer, 1/4" SAE
	G10103	1	Hex Nut, 1/4"-20

TRANSPORT AXLE ASSEMBLY AND WHEELS

(A12501/FWD60d/FWD61/A7434)



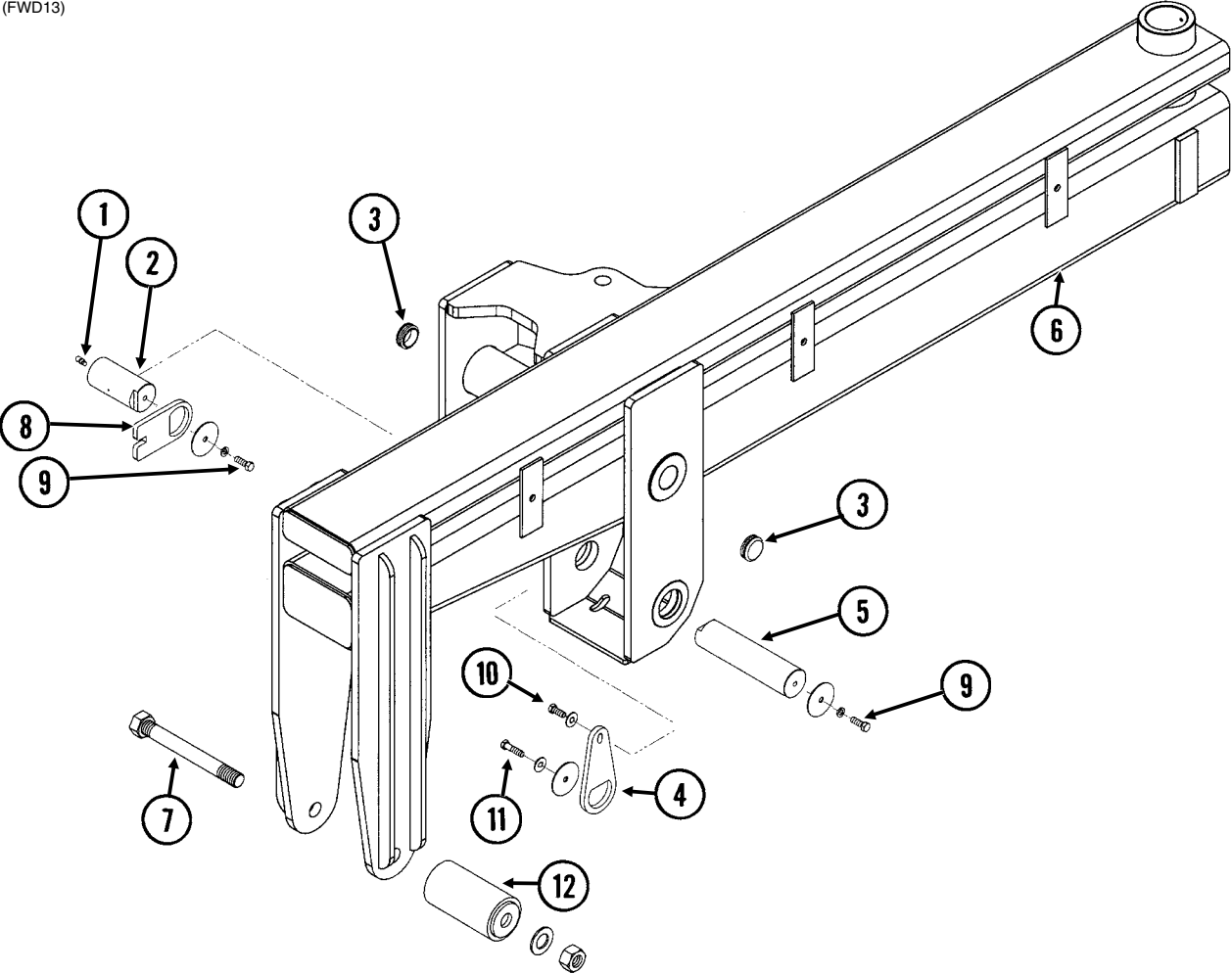
TRANSPORT AXLE ASSEMBLY AND WHEELS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11112	1	Axle W/Grease Fittings, 36 Row 30"
	G10640	2	Grease Fitting, 1/4"-28
2.	G10400	2	Hex Head Cap Screw, 3/4"-10 x 6 1/2"
	G10112	2	Lock Nut, 3/4"-10
3.	GD13740	2	Spindle, 4 1/2"
4.	G10471	2	Cotter Pin, 3/8" x 2 1/2"
5.	G10625	20	Flange Nut, 3/4"-16
6.	GA11277	2	Rim, 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 1/2"
9.	GD1360	2	Dust Cap
10.	GD1359	2	Seal
11.	GA11265	2	Rim, 22.5" x 14", Offset
12.	GA9306	2	Hub W/Cups, Grease Fitting And Stud Bolts (10 Bolt High Strength)
	GR0192	-	Outer Cup
	GR0191	-	Inner Cup
	G10373	-	Grease Fitting, 45°, 1/8"-27
	GR1681	-	Stud Bolt, 3/4"-16 x 3 7/8"
13.	GA0530	2	Outer Bearing
14.	GA0531	2	Inner Bearing
15.	GA0532	2	Seal
16.	G10726	2	Slotted Hex Nut, 2"-12
17.	G10198	2	Washer, 2" USS
18.	GA7434	-	Valve Stem
19.	G11174	10	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	10	Special Washer, 5/8", Hardened
20.	GA12501	2	Cylinder Lockup
21.	GA6189	2	Hitch Pin W/Lynch Pin
22.	G10017	4	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10111	4	Lock Nut, 1/2"-13
23.	GA10279	4	Pin, 5 1/4"
24.	G10025	2	Hex Head Cap Screw, 3/4"-10 x 1 1/2"
	G10231	2	Lock Washer, 3/4"
25.	GD15041	2	Washer, 13/16" I.D. x 4" O.D., 7 Gauge
26.	GD15042	1	Pin, 2 1/4" x 20 1/16"
27.	G10460	4	Cotter Pin, 1/4" x 2"
28.	GD12790	2	Pin, 1 1/4" x 3 1/2"
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)



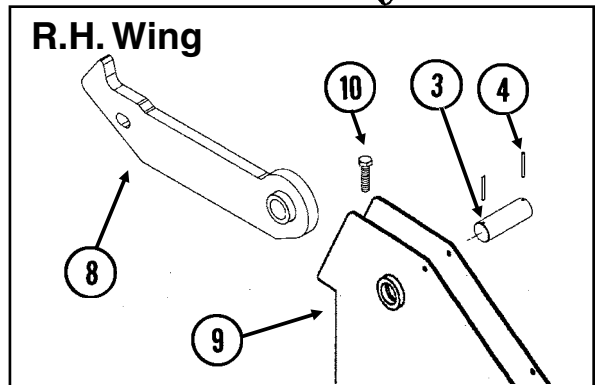
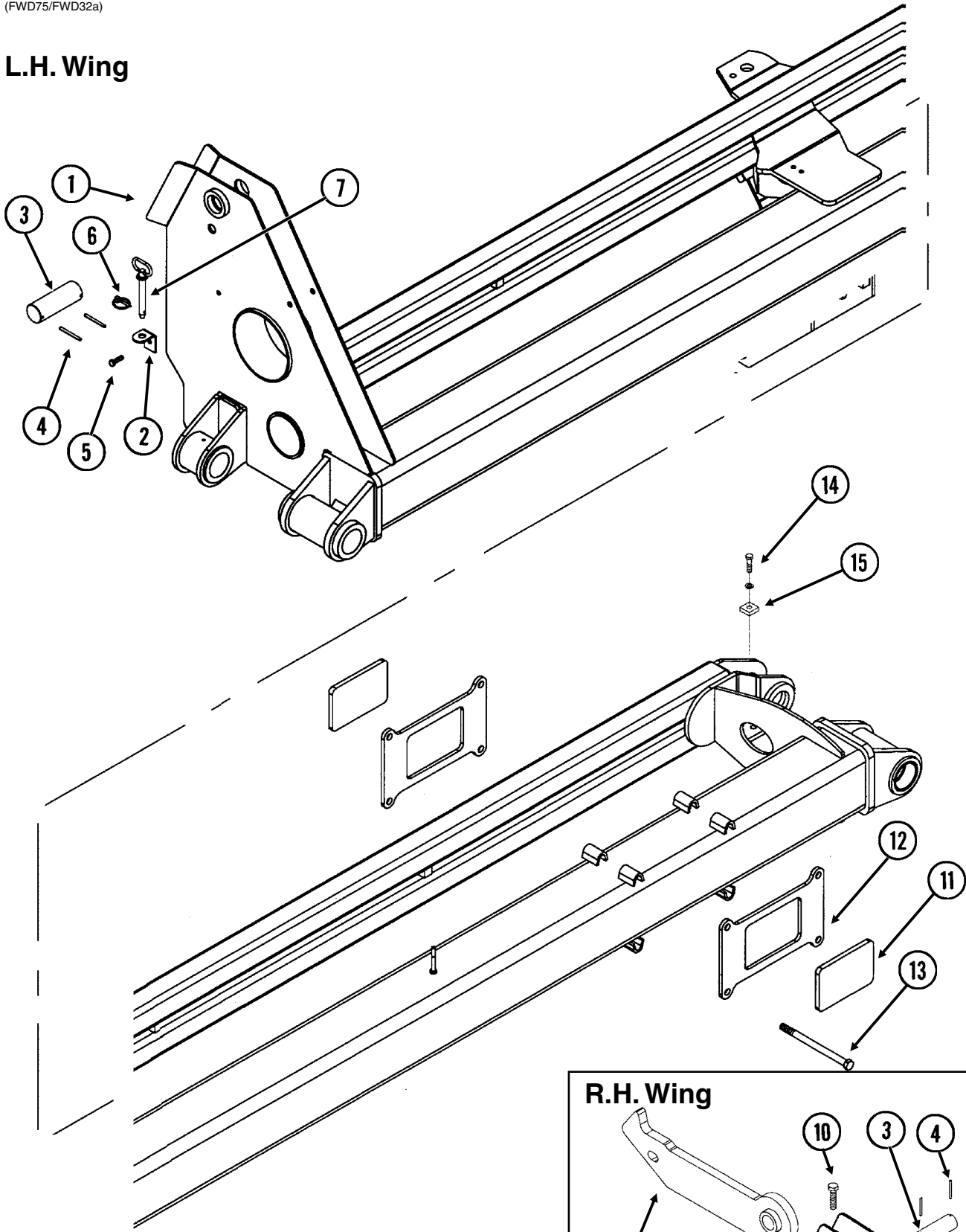
STUB WING

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	G10640	1	Grease Fitting, 1/4"-28
2.	GD15067	1	Pin, 2 3/4" x 5 13/16"
3.	G11105	2	Cap
4.	GD15072	1	Capture Plate
5.	GD15070	1	Pin, 2 3/4" x 11 1/4"
6.	GA11249	1	Stub Wing W/Bushings And Grease Fittings, L.H., 36 Row 30" (Shown)
	GA11250	-	Stub Wing W/Bushings And Grease Fittings, R.H., 36 Row 30"
	GD14565	-	Hardened Bushing, 3 1/2" O.D. x 3" I.D. x 4"
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	G10640	-	Grease Fitting, 1/4"-28
7.	GA10456	1	Roller Pin, 1 1/4"-7 x 12"
	G10226	1	Washer, 1 1/4" SAE
	G10239	1	Hex Nut, 1 1/4"-7
8.	GD15069	1	Capture Plate
9.	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10228	2	Lock Washer, 1/2"
	GD15068	2	Washer, 3 3/4" O.D. x 1/2" I.D. x 1/4"
10.	G10037	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10216	1	Washer, 1/2" USS
11.	G10016	1	Hex Head Cap Screw, 1/2"-13 x 2"
	G10216	1	Washer, 1/2" USS
	GD15068	1	Washer, 3 3/4" O.D. x 1/2" I.D. x 1/4"
12.	GA10287	1	Roller

INNER WING

(FWD75/FWD32a)

L.H. Wing



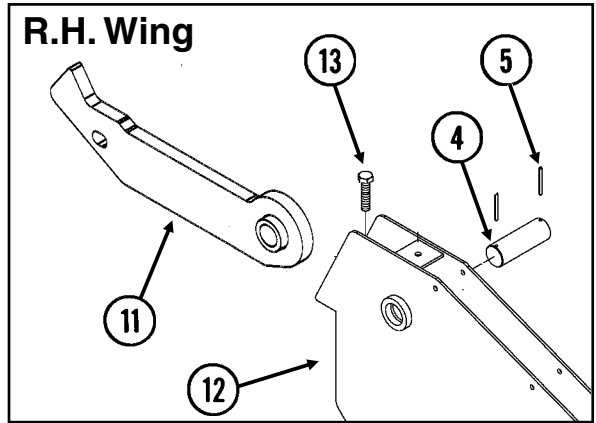
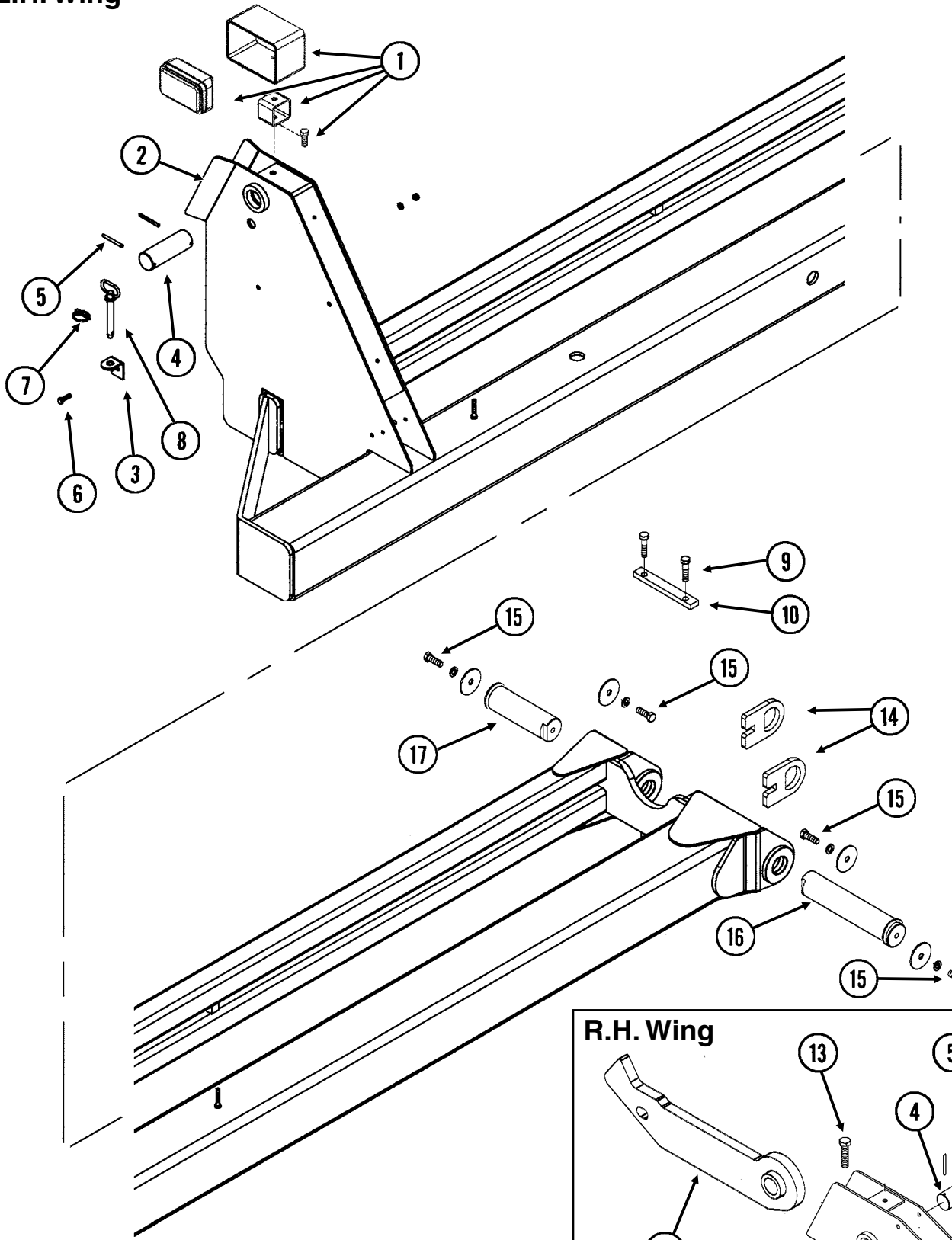
INNER WING

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA11323	-	Inner Wing W/Grease Fittings, Bushings, Spacer And Sleeve, L.H., 209 5/8"
	G10640	-	Grease Fitting, 1/4"-28
	GD14564	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 4 1/2"
	GD15109	-	Spacer, 2 3/4" O.D. x 2 3/8" I.D. x 2 3/8"
	GD14562	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8", Long
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
2.	GD15285	1	Storage Bracket
3.	GD15074	1	Pin, 2" x 5 3/4"
4.	G10191	2	Spring Pin, 1/4" x 2 3/4"
5.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	1	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
6.	GD5625	1	Lynch Pin, 3/16"
7.	GD15282	1	Pin, 5/8" x 4"
8.	GA10378	1	Inner Hook, 29 1/4" Long
9.	GA11324	-	Inner Wing W/Grease Fittings, Bushings, Spacer And Sleeve, R.H., 209 5/8"
	G10640	-	Grease Fitting, 1/4"-28
	GD14564	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 4 1/2"
	GD15109	-	Spacer, 2 3/4" O.D. x 2 3/8" I.D. x 2 3/8" (If Applicable)
	GD14562	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 3" (If Applicable)
	GD17450	-	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 4 3/16" (If Applicable)
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8", Long
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
10.	G10543	1	Hex Head Cap Screw, 3/4"-10 x 3", Full Thread
	G10105	1	Hex Nut, 3/4"-10
11.	GD15720	2	Bronze Pad, 5" x 7 1/2"
12.	GD15719	2	Capture Plate
13.	G10152	4	Hex Head Cap Screw, 5/8"-11 x 9"
	G10217	4	Washer, 5/8" USS
	G10107	4	Lock Nut, 5/8"-11
14.	G10016	1	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	1	Lock Washer, 1/2"
	G10111	1	Lock Nut, 1/2"-13
15.	GD15066	1	Stop

OUTER WING

(FWD48aa/FWD49)

L.H. Wing

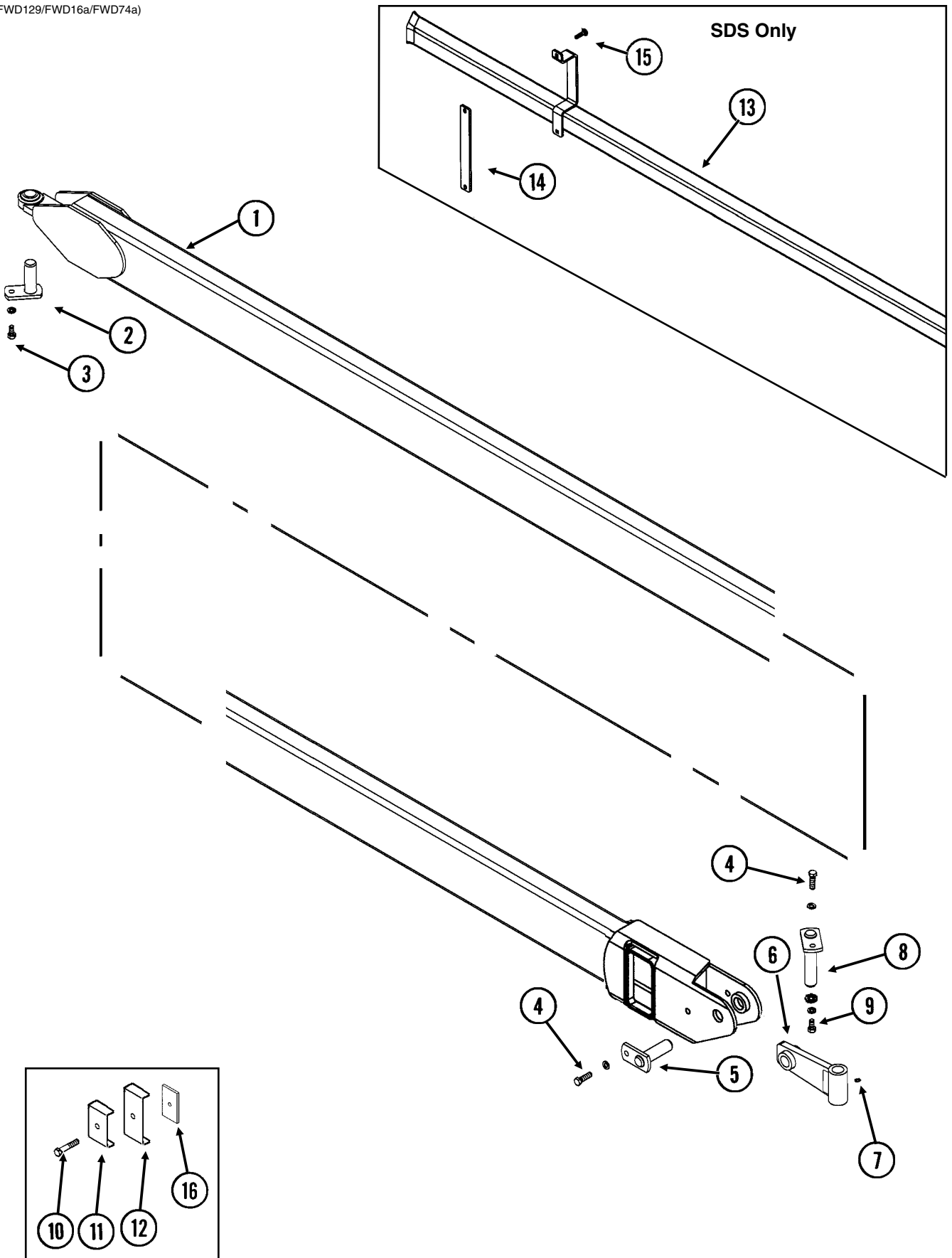


OUTER WING

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.		-	See "Light Assemblies And Brackets", Pages P114 And P115
2.	GA10413	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, L.H., 254 1/2"
	G10640	-	Grease Fitting, 1/4"-28
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8" Long
3.	GD15285	1	Storage Bracket
4.	GD15074	1	Pin, 2" x 5 3/4"
5.	G10191	2	Spring Pin, 1/4" x 2 3/4"
6.	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	1	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
7.	GD5625	1	Lynch Pin, 3/16"
8.	GD15282	1	Pin, 5/8" x 4"
9.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	2	Lock Washer, 1/2"
	G10111	2	Lock Nut, 1/2"-13
10.	GD15065	1	Capture Plate
11.	GA10743	-	Outer Hook, 29 15/16" Long
12.	GA10414	1	Outer Wing W/Grease Fittings, Bushings And Sleeve, R.H., 254 1/2"
	G10640	-	Grease Fitting, 1/4"-28
	GD14563	-	Hardened Bushing, 3 1/4" O.D. x 2 3/4" I.D. x 3"
	GD15110	-	Sleeve, 3 1/4" O.D. x 2 7/8" I.D. x 1 7/8" Long
13.	G10543	1	Hex Head Cap Screw, 3/4"-10 x 3", Full Thread
	G10105	1	Hex Nut, 3/4"-10
14.	GD15064	2	Capture Plate
15.	G10026	4	Hex Head Cap Screw, 3/4"-10 x 2"
	G10231	4	Lock Washer, 3/4"
	GD17180	4	Washer, 3 1/2" O.D. x 13/16" I.D. x 3/8"
16.	GA12128	1	Pin, 2 1/4" x 11 1/8"
17.	GA12127	1	Pin, 2 1/4" x 7 1/8"

DRAFT LINK

(FWD129/FWD16a/FWD74a)

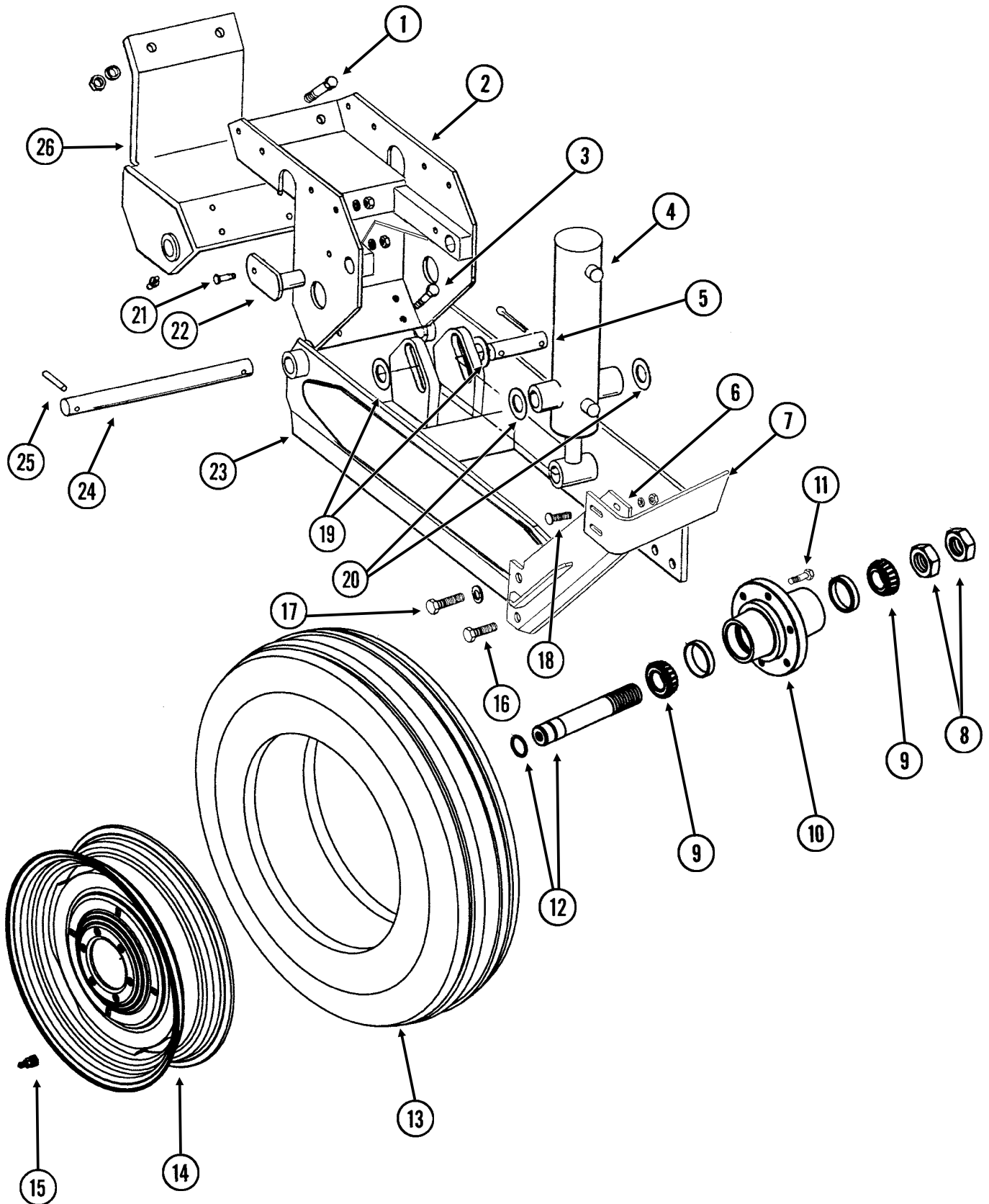


DRAFT LINK

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA11027	1	Draft Link, L.H., 314 1/8", 36 Row 30"
	GA11028	1	Draft Link, R.H., 314 1/8", 36 Row 30"
2.	GA10276	1	Pin, 3 5/8"
3.	G10014	1	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	1	Lock Washer, 1/2"
4.	G10039	1	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
5.	GA10277	1	Pin, 4"
6.	GA10275	1	Link Yoke
7.	G10640	1	Grease Fitting, 1/4"-28
8.	GA10278	1	Pin, 6"
9.	G10039	1	Hex Head Cap Screw, 1/2"-13 x 1 3/4"
	G10228	1	Lock Washer, 1/2"
	GD15235	1	Washer, 2 1/4" O.D. x 1/2" I.D. x 1/4"
10.	G10585	-	Hex Head Cap Screw, 1/2"-13 x 3 1/4"
	G10111	-	Lock Nut, 1/2"-13
11.	GD0740	-	Hose Clamp, 3/4" x 4" x 3 1/2"
12.	GD8188	-	Hose Clamp, 7/8" x 3" x 5 3/8"
13.	GA11670	1	Hose Tube, 287 3/4", 36 Row 30" SDS
14.	GD16887	2-4	Support
15.	G10301	8	Carriage Bolt, 3/8"-16 x 1 1/2"
	G10210	8	Washer, 3/8" USS
	G10108	8	Lock Nut, 3/8"-16
16.	GD8189	-	Rubber Strip, 3/8"

LIFT/GAUGE WHEEL

(FWD64)



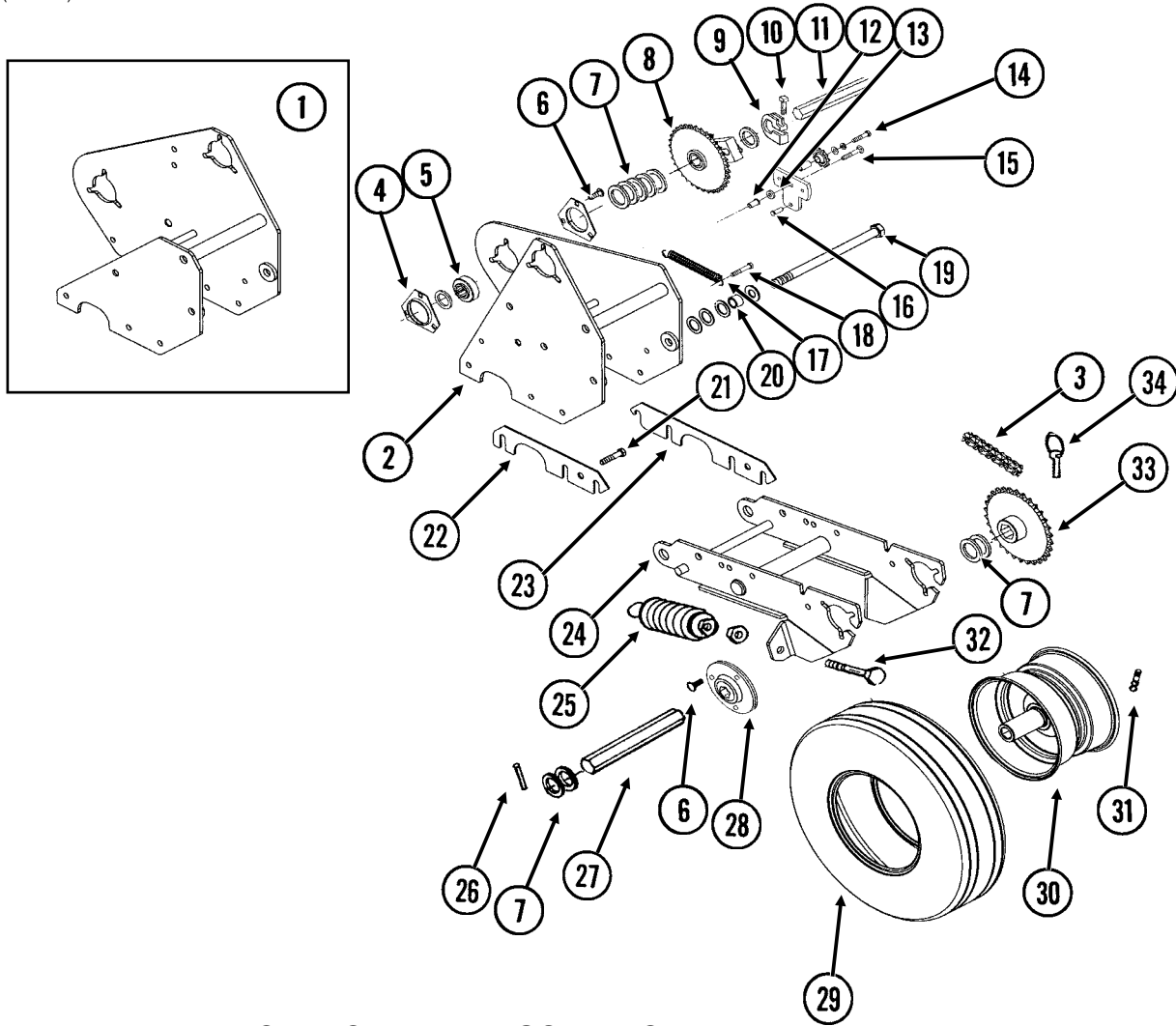
LIFT/GAUGE WHEEL

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
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 P89-P91
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"
	G10071	-	Serrated Flange Nut, 1/2"-13
19.	G10139	2	Washer, 1 1/4" USS
20.	G10159	-	Machine Bushing, 1 1/4", 10 Gauge (As Required)
21.	G10581	2	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10111	2	Lock Nut, 1/2"-13
22.	GA5121	2	Pin, 2 1/8"
23.	GA11276	1	Arm
24.	GD11695	1	Pin, 1 1/4" x 13 1/4"
25.	G10610	2	Spring Pin, 3/8" x 2"
26.	GA9877	1	Clamp W/Grease Fittings
	G10640	2	Grease Fitting, 1/4"-28
A.	GA2147	-	Hub And Spindle Assembly (Items 8-10 And 12)
B.	GA7409	-	Scraper Assembly (Items 6, 7, 16 And 18)

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

CONTACT DRIVE WHEEL, ARM AND TOWER ASSEMBLIES

(FWD65c)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA11281	1	Inner And Center Module On 36 Row 30"
2.	GA11280	1	Outer Module On 36 Row 30"
3.	G3310-168	1	Chain, No. 40, 168 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
4.	G3400-01	-	Flangette
5.	G2100-03	-	Bearing, 7/8" Hex Bore, Spherical
6.	G10303	-	Carriage Bolt, 5/16"-18 x 1"
	G10232	-	Lock Washer, 5/16"
	G10106	-	Hex Nut, 5/16"-18
7.	G10233	-	Machine Bushing, 1", 10 Gauge
8.	GA10173	3	Ratchet/Sprocket Assembly, L.H.
	GD1256	2	Spring
	G10453	2	Cotter Pin, 3/16" x 1"
	GA0378	1	Block And Hub Assembly
	GD1255	2	L-Pin
	GA7572	1	Sprocket, 34 Tooth
	G10430	1	External Retaining Ring, 1 1/4"
9.	GD11045	-	Lock Clamp
10.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration

CONTACT DRIVE WHEEL, ARM AND TOWER ASSEMBLIES

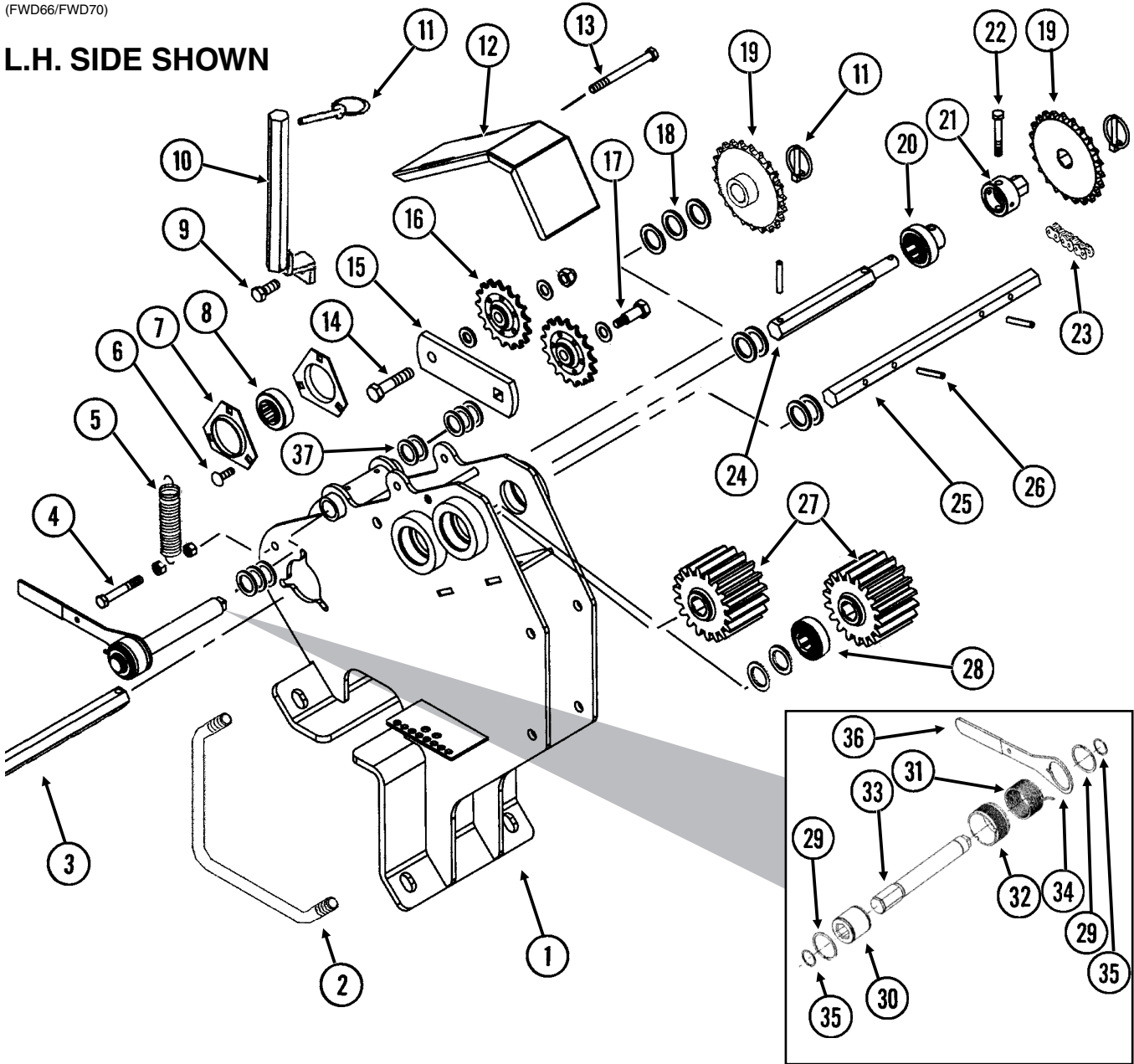
ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
11.	GD2548-93	1	Hex Shaft, 7/8" x 93", L.H. Side (1 Hole)
	GD2548-104	-	Hex Shaft, 7/8" x 104", R.H. Side (1 Hole)
12.	GD15532	1	Bronze Bushing, 1"
13.	GD15538	1	Spacer, 3/8" I.D. x 7/8" O.D., 7 Gauge
14.	GA11287	1	Idler W/Sprockets, Sleeves And Hardware
	GD7426	2	Sprocket, 12 Tooth
	GD1026	2	Sleeve, 1 3/16" Long
	G10047	2	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10210	2	Washer, 3/8" USS
	G10229	2	Lock Washer, 3/8"
15.	G11119	1	Carriage Bolt, 3/8"-16 x 2 1/4"
	G10203	1	Washer, 3/8" SAE
	G10108	1	Lock Nut, 3/8"-16
16.	G11118	1	Clevis Pin, 3/8" x 3/4"
	G10860	1	Retaining Ring, 3/8"
17.	GD5857	1	Spring
18.	G10939	1	Hex Head Cap Screw, 3/8"-16 x 2 1/4"
	G10210	1	Washer, 3/8" USS
	G10101	1	Hex Nut, 3/8"-16
	G10108	1	Lock Nut, 3/8"-16
19.	G10953	1	Hex Head Cap Screw, 5/8"-11 x 10"
	G10235	6	Machine Bushing, 7/8", 14 Gauge
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	1	Lock Nut, 5/8"-11
20.	GB0218	2	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" Long
21.	G10004	7	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	7	Lock Washer, 3/8"
	G10101	7	Hex Nut, 3/8"-16
22.	GD16438	1	Shim
23.	GD16437	1	Shim
24.	GA7372	1	Wheel Arm
25.	GA2068	2	Spring W/Plug
26.	G10602	2	Spring Pin, 1/4" x 1 1/2"
27.	GD6775	1	Hex Shaft, 7/8" x 11 3/4" (2 Holes)
28.	GA9846	-	Flanged Bearing, 7/8" Hex Bore
29.	GD4700	1	Tire, 4.80" x 8", 4 Ply, Rib Implement (Specify Brand*)
30.	GA3553	1	Rim, 3.75" x 8"
31.	GD4701	-	Valve Stem
32.	G10890	2	Hex Head Adjusting Bolt, 1/2"-13 x 4", Grade 2
	G10501	2	Hex Jam Nut, 1/2"-13, Grade 2
33.	GA11285	1	Sprocket, 38 Tooth
34.	GD2558	1	Lynch Pin, 1/4"
A.	G1K324	-	Contact Wheel Arm Replacement Kit, (Items 6, 7, 24, 26-28, 32 And 34)
B.	GA3552	-	Tire And Rim Assembly (Items 29-31)

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

SEED RATE TRANSMISSION

(FWD66/FWD70)

L.H. SIDE SHOWN



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	GA11297	1	Transmission Plate W/Grease Fittings
	G10640	2	Grease Fitting, 1/4"-28
2.	GD8175	2	U-Bolt, 7" x 7" (Diamond) x 5/8"-11
	GD7805	4	Special Washer, 5/8", Hardened
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
3.		-	See "Contact Drive Wheel, Arm And Tower Assemblies", Pages P68 And P69
4.	G10049	1	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10101	2	Hex Nut, 3/8"-16
5.	GD5857	1	Spring
6.	G10303	3	Carriage Bolt, 5/16"-18 x 1"
	G10232	3	Lock Washer, 5/16"
	G10106	3	Hex Nut, 5/16"-18

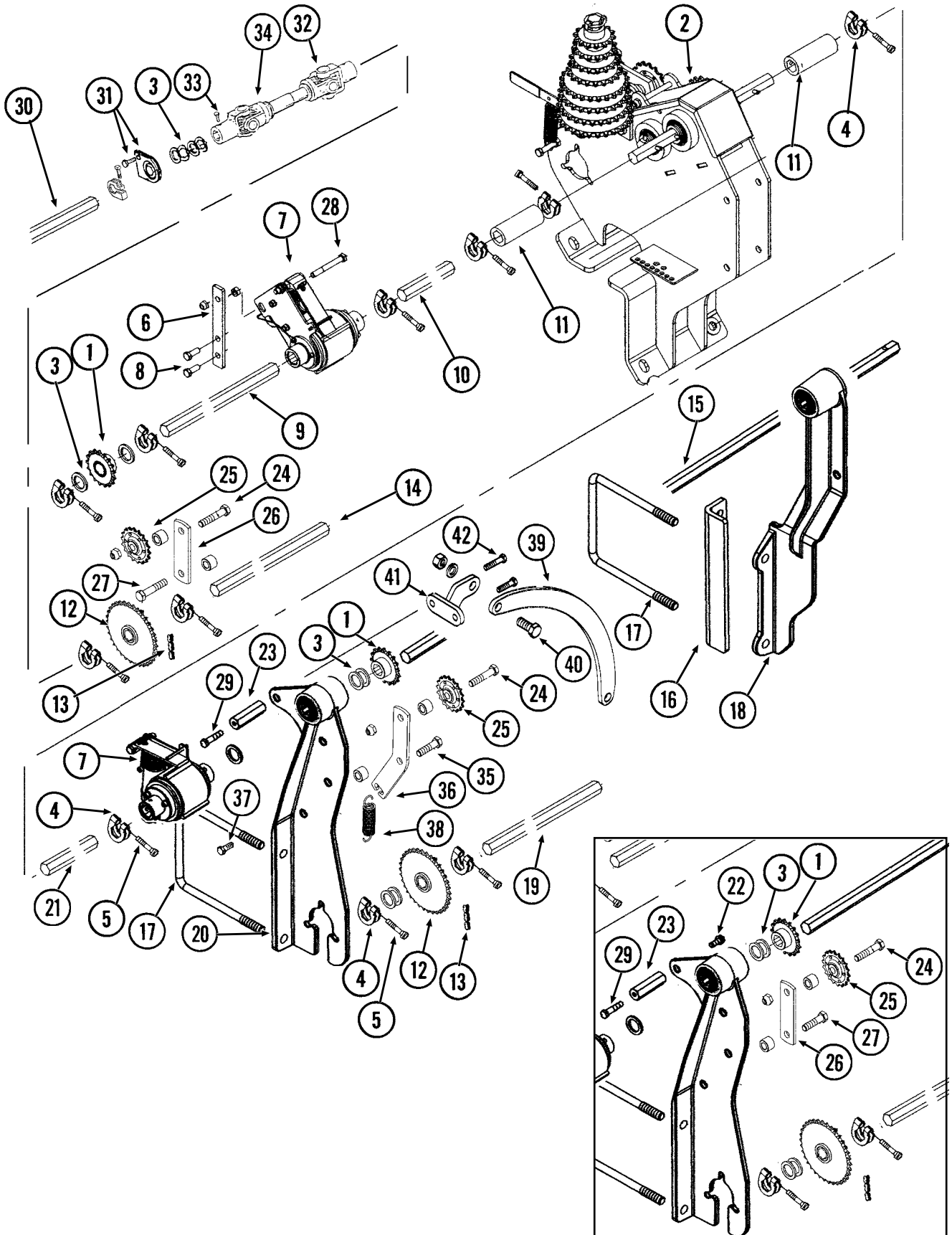
SEED RATE TRANSMISSION

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
7.	G3400-01	2	Flangette
8.	G2100-03	1	Bearing, 7/8" Hex Bore, Spherical
9.	G10581	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10527	2	Lock Washer, 1/2", Internal/External
	GD10356	1	Bushing, 3/4" Long
	G10111	1	Lock Nut, 1/2"-13
10.	GA11245	1	Sprocket Storage Rod
11.	GD2558	3	Lynch Pin, 1/4"
12.	GD16449	1	Cover
13.	G10063	1	Hex Head Cap Screw, 3/8"-16 x 4"
	G10108	1	Lock Nut, 3/8"-16
14.	G10581	1	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10206	3	Washer, 1/2" SAE
	G10111	1	Lock Nut, 1/2"-13
15.	GD16446	1	Idler Plate
16.	GA11244	2	Idler Sprocket, 17 Tooth
17.	GD16440	1	Shoulder Bolt, 1/2" x 3/8"-16 x 1"
18.	G10233	-	Machine Bushing, 1", 10 Gauge (As Required)
19.	GA11235	1	Sprocket, 14 Tooth
	GA11236	1	Sprocket, 15 Tooth
	GA11237	1	Sprocket, 17 Tooth
	GA11238	1	Sprocket, 19 Tooth
	GA11239	2	Sprocket, 23 Tooth
	GA11240	1	Sprocket, 24 Tooth
	GA11241	1	Sprocket, 25 Tooth
	GA11242	1	Sprocket, 26 Tooth
	GA11243	1	Sprocket, 27 Tooth
20.	GA11394	1	Cylindrical Bearing
21.	GD7127	1	Shear Coupler
22.	G10069	1	Hex Head Cap Screw, 5/16"-18 x 2 1/4"
	G10109	1	Lock Nut, 5/16"-18, Grade 8
23.	G3316-80	1	Chain, No. 50, 80 Pitch Including Connector Link
	GR1743	-	Connector Link, No. 50
24.	GD16448	1	Shaft, 8 1/4"
25.	GD16447	1	Shaft, 14"
26.	G11103	1	Spring Pin, 1/4" x 1 3/4"
27.	GD16370	2	Gear, 18 Tooth
28.	GA5116	3	Bearing, 7/8" Hex Bore, Cylindrical
29.	G11075	2	External Inverted Snap Ring, 7/8"
30.	GD14432	1	Sleeve, 1 1/4"
31.	GD14414	1	Torsion Spring, R.H. (Used On L.H. Wrap Spring Wrench)
	GD14413	-	Torsion Spring, L.H. (Used On R.H. Wrap Spring Wrench) (Shown)
32.	GD14429	-	Release Collar, Silver, L.H.
	GD14430	1	Release Collar, Gold, R.H. (Shown)
33.	GD16439	1	Tightener Shaft, 7 5/16"
34.	GD14431	1	Handle
35.	G10496	2	External Inverted Snap Ring, 1 1/2"
36.	G11078	1	Vinyl Cap
37.	G10235	8	Machine Bushing, 7/8", 14 Gauge
A.	GA11311	-	Wrap Spring Wrench Assembly, Silver Collar, L.H. (Items 29-35)
	GA11312	1	Wrap Spring Wrench Assembly, Gold Collar, R.H. (Items 29-35) (Shown)

DRIVEN AND DRILL SHAFTS ON WINGS

(FWD67aaFWD67a)

L.H. SIDE SHOWN



DRIVEN AND DRILL SHAFTS ON WINGS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA5106	4	Sprocket, 17 Tooth
2.		-	See "Seed Rate Transmission", Pages P70 And P71
3.	G10233	-	Machine Bushing, 1", 10 Gauge
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
6.	GD16417	2	Bracket
7.		-	See "Point Row Clutches", Pages P78 And P79
8.	G10001	4	Hex Head Cap Screw, 3/8"-16 x 1"
	G10108	4	Lock Nut, 3/8"-16
9.	GD0914-76	1	Hex Shaft, 7/8" x 76" (No Holes), L.H. Side
	GD0914-60	-	Hex Shaft, 7/8" x 60" (No Holes), R.H. Side
10.	GD0914-13.5	1	Hex Shaft, 7/8" x 13 1/2" (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, 7/8" x 21" (No Holes), R.H. Side
11.	GD10126	4	Coupler, 4"
12.	GA5202	4	Sprocket, 34 Tooth
13.	G3310-108	4	Chain, No. 40, 108 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
14.	GD0914-20	-	Hex Shaft, 7/8" x 20" (No Holes), L.H. Side, 36 Row 30"
	GD0914-36	-	Hex Shaft, 7/8" x 36" (No Holes), R.H. Side, 36 Row 30"
15.	GD16451	1	Shaft, 7/8" x 56" (1 Hole), L.H. Side
	GD16450	1	Shaft, 7/8" x 44" (1 Hole), R.H. Side
16.	GD16467	1	Bracket, L.H. Side
	GD16466	-	Bracket, R.H. Side
17.	GD1114	8	U-Bolt, 7" x 7" x 5/8"-11
	G10230	8	Lock Washer, 5/8"
	G10104	8	Hex Nut, 5/8"-11
18.	GA11257	1	Support W/Bearings And Rings, L.H. Side
	GA11256	-	Support W/Bearings And Rings, R.H. Side
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
19.	GD0914-156	-	Hex Shaft, 7/8" x 156" (No Holes), 36 Row 30"
20.	GA11258	2	Chain Mount W/Bearings And Rings
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
21.	GD0914-10.5	1	Hex Shaft, 7/8" x 10 1/2" (No Holes), L.H. Side
	GD0914-21	-	Hex Shaft, 7/8" x 21" (No Holes), R.H. Side
22.	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
23.	GD15114	1	Hex Shaft Spacer
24.	G10053	2	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	GD10356	2	Bushing, 3/4" Long
	G10111	2	Lock Nut, 1/2"-13
25.	GA7154	2	Sprocket W/Bearing, 18 Tooth
26.	GD16362	2	Plate
27.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10527	4	Lock Washer, 1/2", Internal/External
	G10111	2	Lock Nut, 1/2"-13
28.	G10062	2	Hex Head Cap Screw, 3/8"-16 x 3"
	G10108	2	Lock Nut, 3/8"-16
	G10101	2	Hex Nut, 3/8"-16

(Continued On Following Page)

DRIVEN AND DRILL SHAFTS ON WINGS

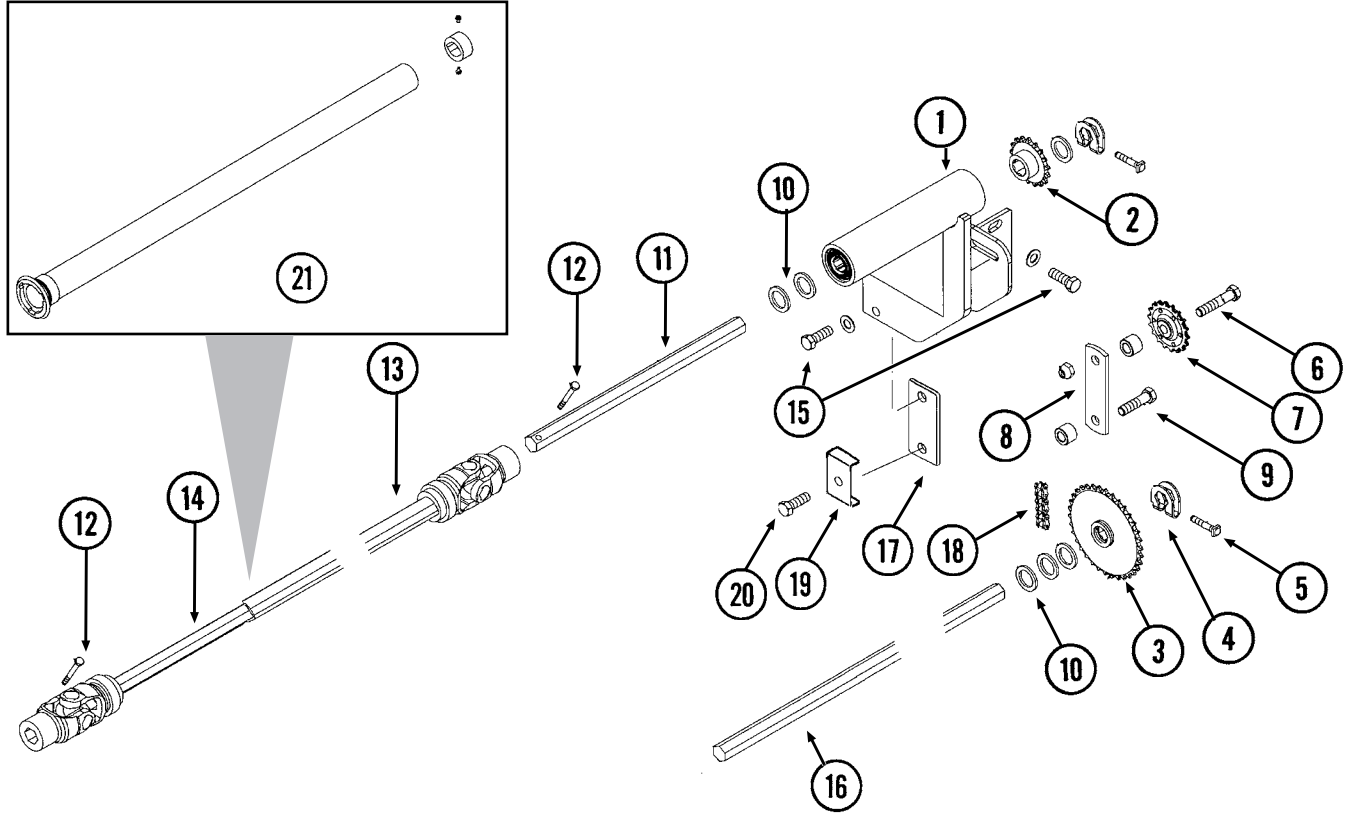
ITEM	PART NO.	QTY.	DESCRIPTION
29.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10101	1	Hex Nut, 3/8"-16
30.	GD0914-228	-	Hex Shaft, 7/8" x 228" (No Holes), L.H. Side, 36 Row 30"
	GD0914-218	-	Hex Shaft, 7/8" x 218" (No Holes), R.H. Side, 36 Row 30"
31.		-	See "Parallel Arms, Mounting Support Plate And Quick Adjustable Down Force Springs", Page P10
32.	GA7051	2	U-Joint W/Grease Fitting, Male, 12 1/4" Long
	GR1557	-	Grease Fitting, 45°, Metric
	GR1296	-	Inner Profile
	GR1295	-	Inboard Yoke
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1294	-	Cross And Bearing Kit
	GR1293	-	Yoke, 7/8" Hex
33.	G10688	4	Square Head Set Screw, 3/8"-16 x 5/8"
34.	GA7052	2	U-Joint W/Grease Fitting, Female, 10 1/4" Long
	GR1557	-	Grease Fitting, 45°, Metric
	GR1298	-	Inboard Yoke And Outer Profile (18 1/4" U-Joint)
	GR1297	-	Inboard Yoke And Outer Profile (10 1/4" U-Joint)
	GR1294	-	Cross And Bearing Kit
	GR1293	-	Yoke, 7/8" Hex
35.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10206	4	Washer, 1/2" SAE
	G10111	2	Lock Nut, 1/2"-13
36.	GD17051	2	Idler
37.	G10560	2	Clevis Pin, 1/2" x 1 3/4"
38.	GD5857	2	Spring
39.	GD17095	-	Brace Bar, 21", L.H.
	GD17094	1	Brace Bar, 19 3/4", R.H.
40.	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
41.	GA11964	2	Brace Mount
42.	G10003	2	Hex Head Cap Screw, 3/8"-16 x 1 1/2"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16

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DRIVEN AND DRILL SHAFTS ON CENTER SECTION

(A12114/FWD73c)

L.H. SIDE SHOWN



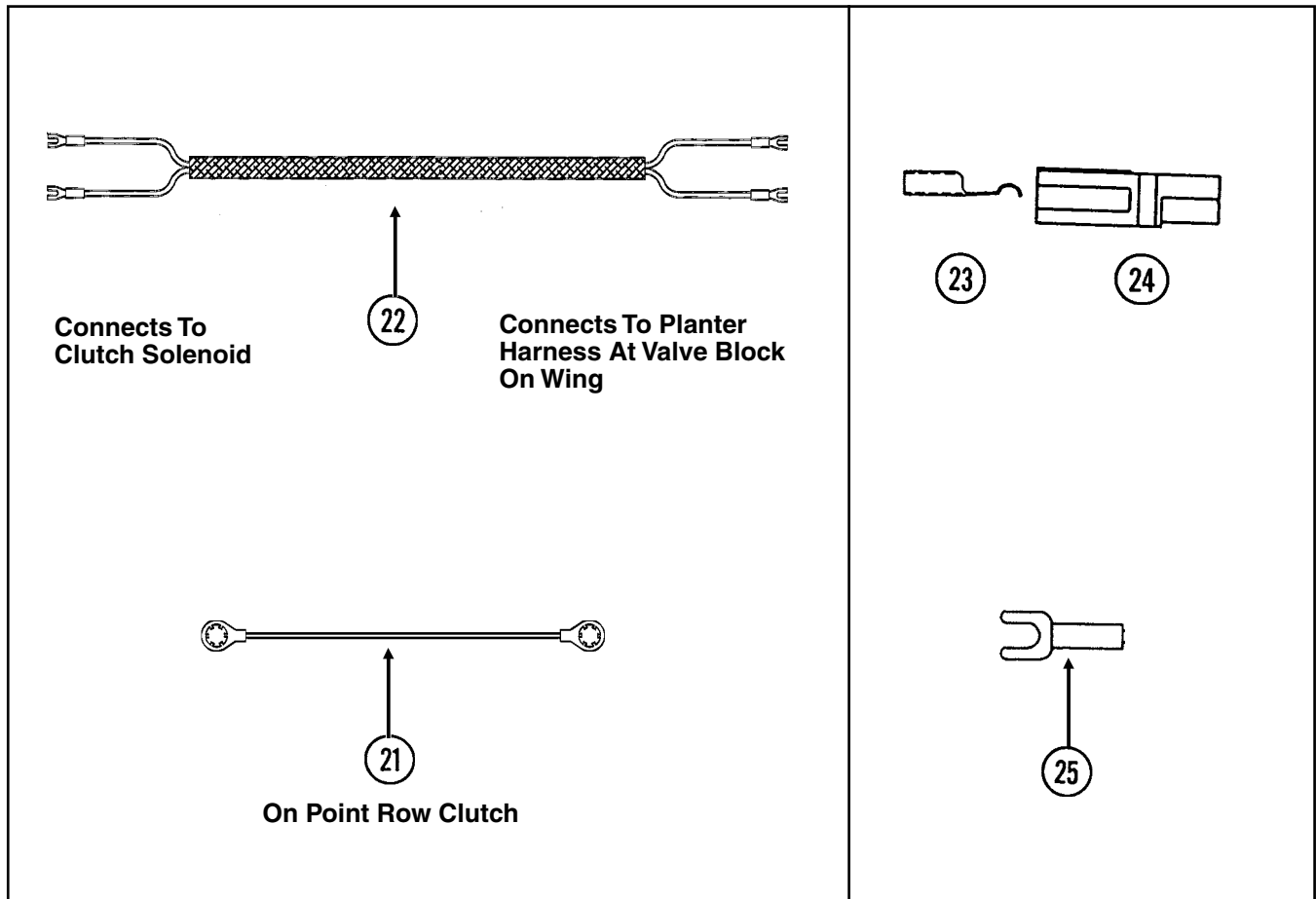
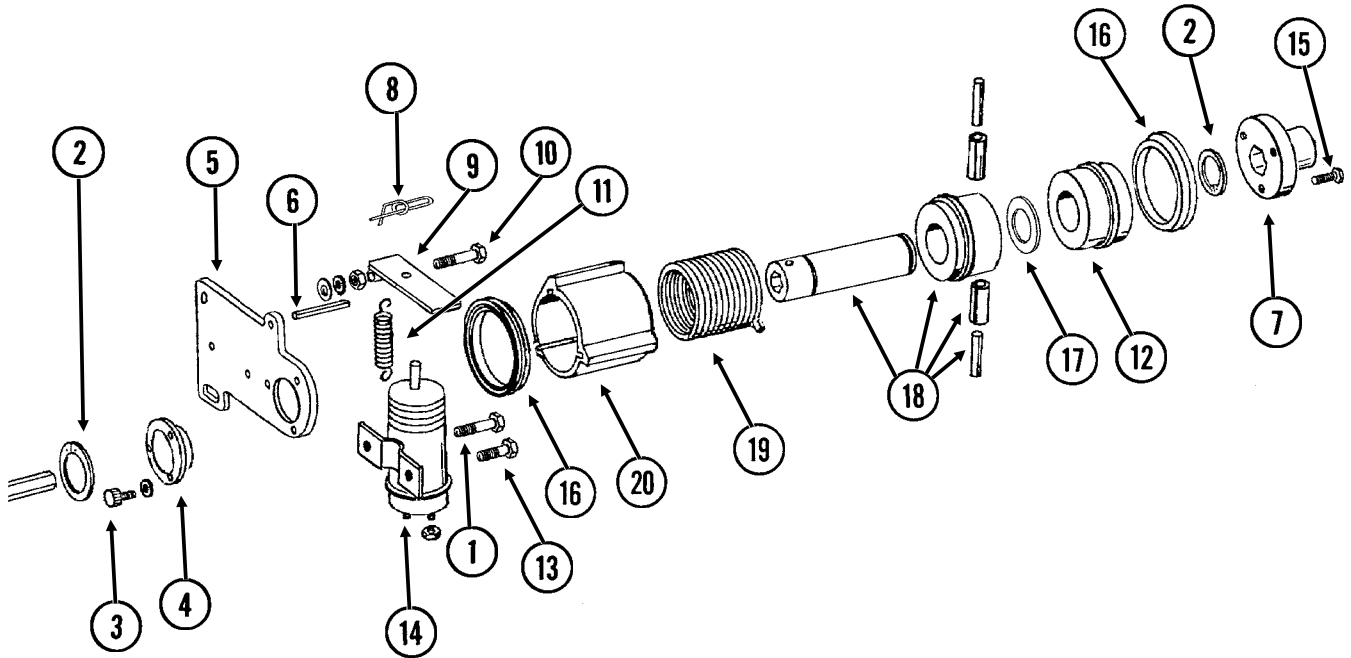
DRIVEN AND DRILL SHAFTS ON CENTER SECTION

ITEM	PART NO.	QTY. (Per Side)	DESCRIPTION
1.	GA11187	1	Mount W/Bearings And Rings, L.H. Side (Shown)
	GA11186	-	Mount W/Bearings And Rings, R.H. Side
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GD6551	-	Ring
2.	GA5106	2	Sprocket, 17 Tooth
3.	GA5202	4	Sprocket, 34 Tooth
4.	GD11045	-	Lock Clamp
5.	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
6.	G10053	2	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	GD10356	2	Bushing, 3/4" Long
	G10111	2	Lock Nut, 1/2"-13
7.	GA7154	2	Sprocket W/Bearing, 18 Tooth
8.	GD16362	2	Plate
9.	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	GD10356	4	Bushing, 3/4" Long
	G10527	4	Lock Washer, 1/2", Internal/External
	G10111	2	Lock Nut, 1/2"-13
10.	G10233	-	Machine Bushing, 1", 10 Gauge
11.	GD2548-16	2	Hex Shaft, 7/8" x 16" (1 Hole)
12.	G10880	4	Hex Head Cap Screw, 1/4"-20 x 2 1/4"
	G10110	4	Lock Nut, 1/4"-20, Grade B
13.	GA11169	2	U-Joint W/Grease Fitting, Female, 61 15/32"
	GR1294	-	Cross And Bearing Kit
	GR1352	-	Inboard Yoke
	GR1300	-	Grease Fitting, 67.5°, Metric
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1365	-	Yoke, 7/8" Hex
	GR1741	-	Outer Profile
14.	GA8001	2	U-Joint W/Grease Fitting, Male, 40 13/32"
	GR1294	-	Cross And Bearing Kit
	GR1295	-	Inboard Yoke
	GR1300	-	Grease Fitting, 67.5°, Metric
	GR1301	-	Spring Pin, 8 mm x 50 mm
	GR1365	-	Yoke, 7/8" Hex
	GR1377	-	Inner Profile
15.	G10017	8	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10206	8	Washer, 1/2" SAE
	G10228	8	Lock Washer, 1/2"
	G10102	8	Hex Nut, 1/2"-13
16.	GD0914-78	1	Hex Shaft, 7/8" x 78" (No Holes), L.H. Side
	GD0914-68	-	Hex Shaft, 7/8" x 68" (No Holes), R.H. Side
17.	GD16355-01	-	Shim, 2" x 4" x 16 Gauge
	GD16355-02	-	Shim, 2" x 4" x 10 Gauge
	GD16355-03	-	Shim, 2" x 4" x 1/4"
18.	G3310-108	1	Chain, No. 40, 108 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
19.	GD0740	1	Hose Clamp, 3/4" x 4" x 3 1/2"
20.	G10585	1	Hex Head Cap Screw, 1/2"-13 x 3 1/4"
	G10206	1	Washer, 1/2" SAE
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
21.	GA12114	1	Cover W/Plug And Screws
	GD17100	-	Plug
	G11073	-	Slotted Hex Self-Tapping Screw, No. 10 x 3/8"

POINT ROW CLUTCHES

(FWD71/TWL71d/TWL71/TWL18/A10054)

L.H. POINT ROW CLUTCH SHOWN

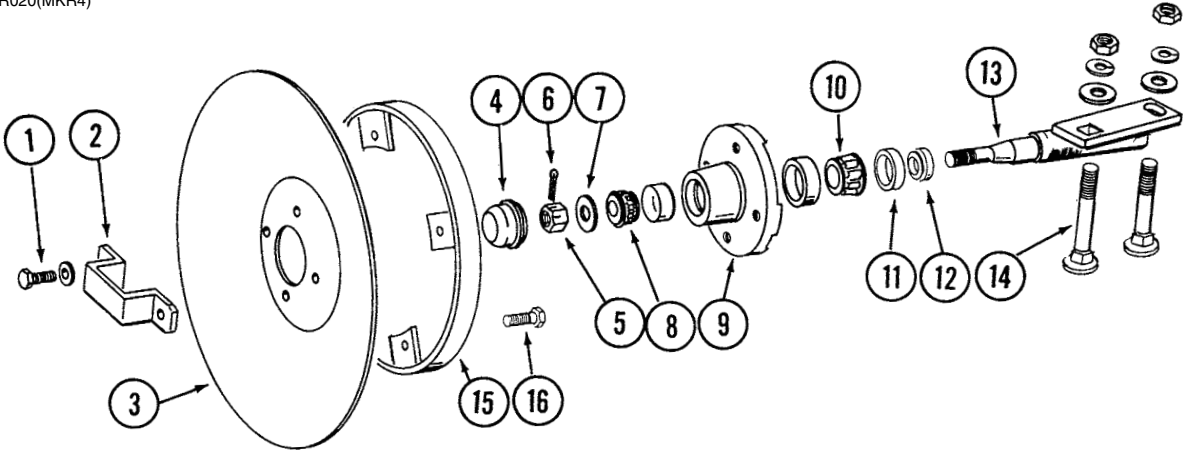


POINT ROW CLUTCHES

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1.	G10900	1	Hex Socket Head Cap Screw, 1/4"-20 x 1 3/4", Grade 8
	G10227	1	Lock Washer, 1/4"
	G10103	2	Hex Nut, 1/4"-20
2.	G10496	2	External Inverted Snap Ring, 1 1/2"
3.	G10253	3	Hex Socket Head Screw, No. 10-32 x 1/2"
	G10257	3	Lock Washer, No. 10
4.	GD9667	1	Bushing
5.	GD10103	1	Mounting Plate
6.	G10859	1	Spring Pin, 3/16" x 2 1/4"
7.	GA9068	1	Hex Coupler
8.	GD11120	1	Rue Ring Cotter, 5/16"
9.	GD10510	1	Actuator Arm
10.	G10049	1	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	G10101	1	Hex Nut, 3/8"-16
	G10203	1	Washer, 3/8" SAE
	G10229	2	Lock Washer, 3/8"
	G10497	1	Hex Jam Nut, 3/8"-16, Grade 2
11.	GD10123	1	Spring
12.	GD10104	1	Input Hub
13.	G10023	1	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10227	1	Lock Washer, 1/4"
	G10103	1	Hex Nut, 1/4"-20
14.	GA8393	1	Solenoid Complete
	GR1306	1	Snap Ring
	GR1303	1	Spring
	GR1304	1	Boot
	GR1305	1	Plunger
15.	G10374	3	Hex Socket Head Cap Screw, 1/4"-20 x 1"
	G10227	3	Lock Washer, 1/4"
16.	GD14512	2	V-Ring Seal
17.	GD14513	1	Felt Washer
18.	GA7137	1	Hub/Sleeve Assembly W/Spring Pins
	G10804	-	Spring Pin, 5/32" x 7/8"
	G10765	-	Spring Pin, 1/4" x 1"
19.	GD9672	1	Spring, R.H. (Used In GA11268)
	GD9671	-	Spring, L.H. (Used In GA11267)
20.	GD10102	1	Stop Collar
21.	GA10054	-	Ground Cable, Green
22.	GA11362	1	Wiring Harness, 96" (Yellow-Black/Red Ends) (L.H. Inner PRC)
	GA11363	1	Wiring Harness, 96" (Orange-Black/Red Ends) (R.H. Inner PRC)
	GA11619	1	Wiring Harness, 42" (Brown-Black/Red Ends) (L.H. Outer PRC)
	GA11620	1	Wiring Harness, 36" (Red/Black-Black/Red Ends) (R.H. Outer PRC)
23.	GD9530	-	Contact
24.	GD9529	-	Housing, Black
	GD12726	-	Housing, Red
25.	G10996	-	Fork Terminal
A.	GA11267	-	Point Row Clutch Assembly, L.H. (Used On Outer R.H. Wing And Inner) (Items 1-21)
	GA11268	-	Point Row Clutch Assembly, R.H. (Used On Outer L.H. Wing And Inner) (Items 1-21)

ROW MARKER SPINDLE/HUB/BLADE

MKR020(MKR4)

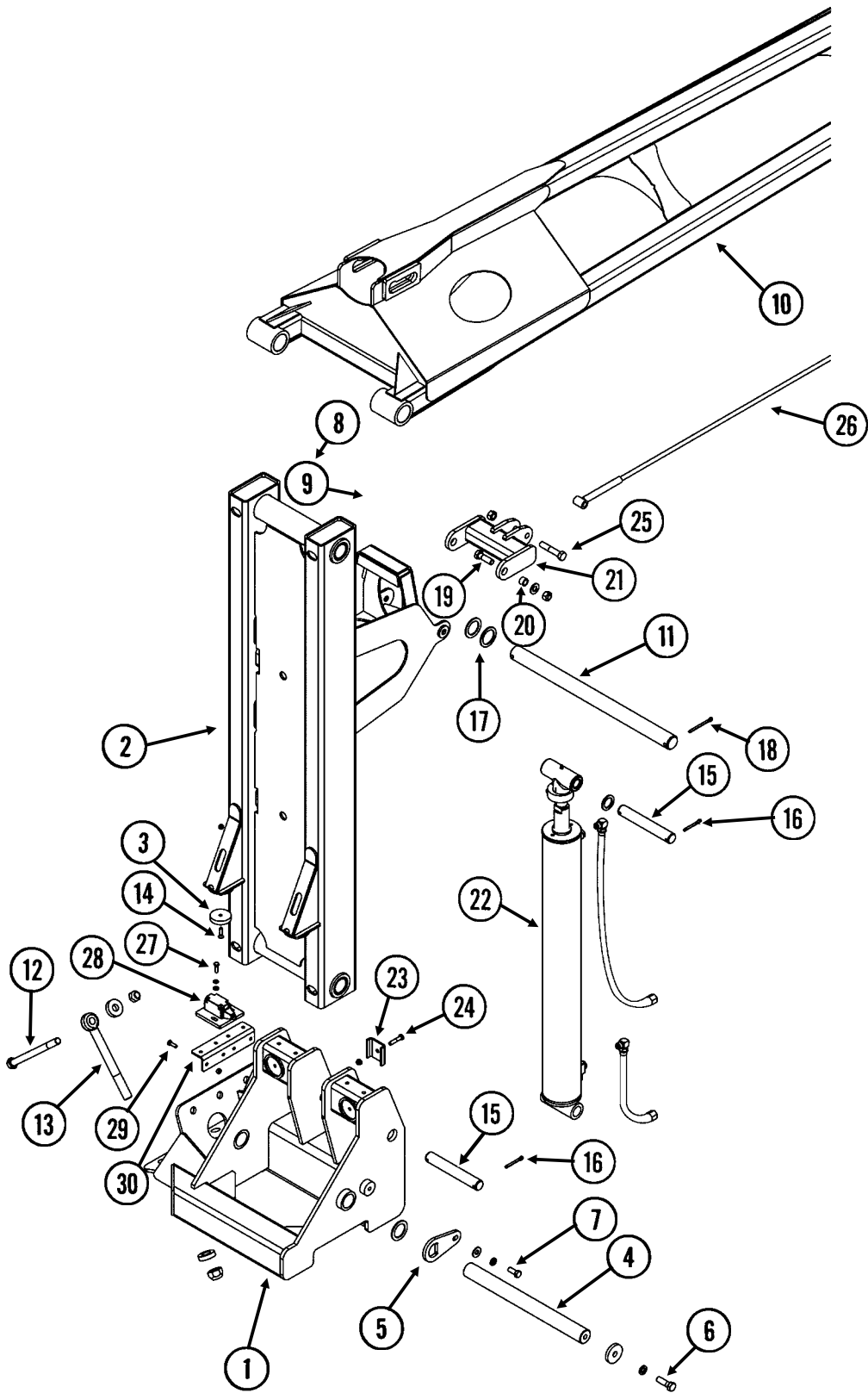


ROW MARKER SPINDLE/HUB/BLADE

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
2.	GD2597	1	Retainer
3.	GD0746	1	Disc Blade, Solid, 16" (Shown)
	GD10283	-	Disc Blade, Notched, 16" (Optional)
4.	GD0840	1	Dust Cap
5.	G10725	1	Slotted Hex Nut, 5/8"-18
6.	G10544	1	Cotter Pin, 5/32" x 1"
7.	G10724	1	Washer, 5/8" SAE
8.	GA0257	1	Bearing
9.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
10.	GA0245	1	Bearing
11.	GA0243	1	Grease Seal
12.	GA0899	1	Rubber Seal
13.	GA1676	1	Spindle, R.H.
	GA1677	-	Spindle, L.H. (Shown)
14.	G10844	2	Carriage Bolt, 1/2"-13 x 3 1/2"
	G11162	-	Carriage Bolt, 1/2"-13 x 1 3/4"
	G10168	2	Machine Bushing, 1/2", 7 Gauge
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
15.	GA5853	1	Depth Band
16.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10109	4	Lock Nut, 5/16"-18, Grade 8
A.	GA1679	-	Hub And Spindle Assembly, L.H. (Items 1, 2 And 4-13)
	GA1678	-	Hub And Spindle Assembly, R.H. (Items 1, 2 And 4-13)

ROW MARKER ASSEMBLY (Mount And First Stage)

(FWD167)

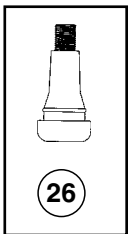
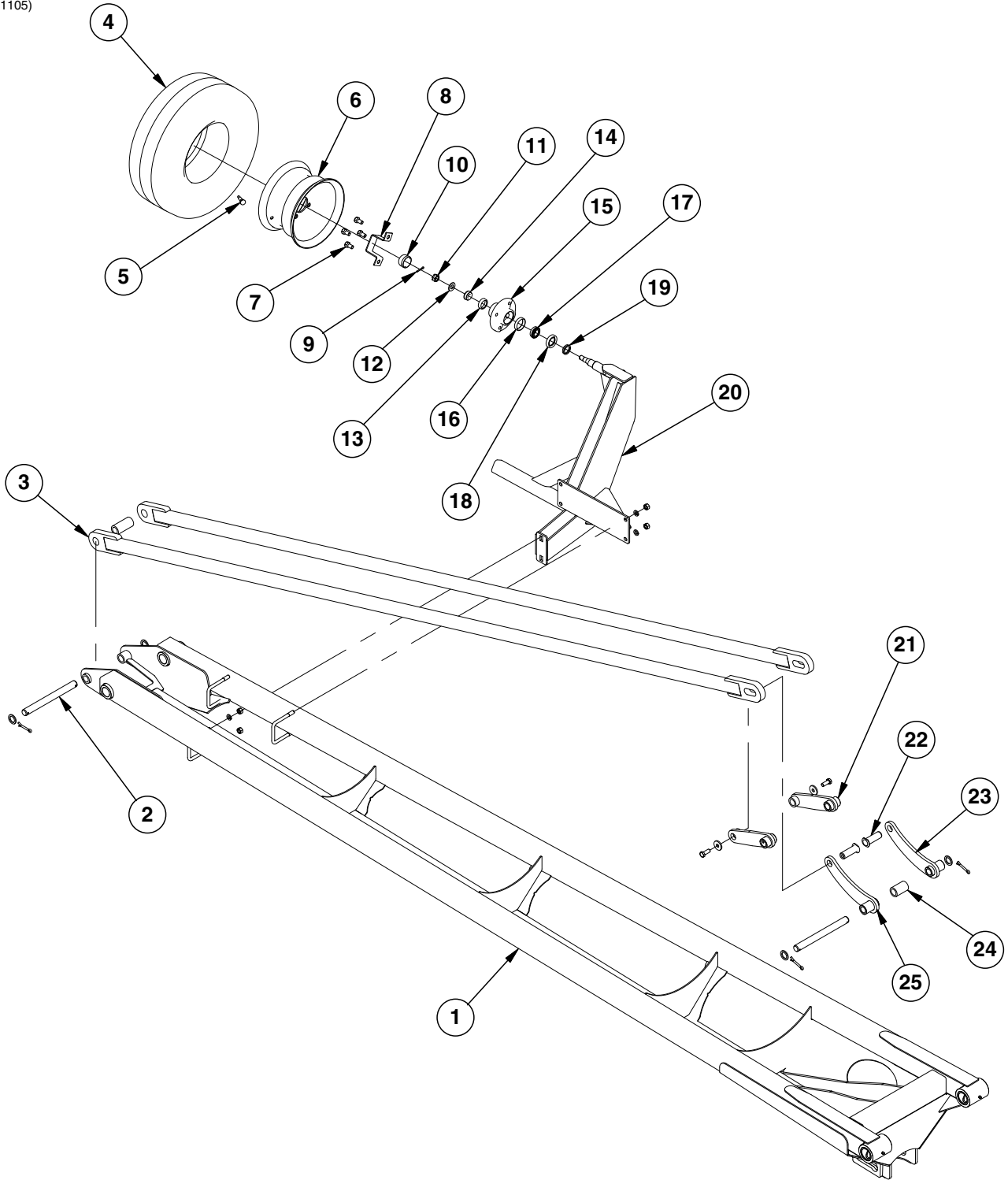


ROW MARKER ASSEMBLY (Mount And First Stage)

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA10395	1	Mount, L.H. (Shown)
	GA10394	-	Mount, R.H.
2.	GA10493	1	Arm W/Grease Fittings And Bushings, 66", First Stage
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
3.	GD15140	2	Bumper Pad
4.	GD15194	1	Pin, 1 3/4" x 19 1/4"
5.	GD15192	1	Capture Plate
6.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	G10230	2	Lock Washer, 5/8"
	GD15193	2	Washer, 2 3/8" O.D. x 2 1/32" I.D. x 3/8"
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
7.	G10037	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	1	Lock Washer, 1/2"
	G10216	1	Washer, 1/2" USS
8.	GA9145	1	Molded Stop, 6 1/4" Long
9.	G10644	2	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10199	2	Washer, 7/16" SAE
	G10113	2	Lock Nut, 7/16"-14
10.		-	See "Row Marker Assembly (Second Stage), Pages P84 And P85
11.	GD15228	1	Pin, 1 3/4" x 26"
12.	G10477	4	Hex Head Cap Screw, 3/4"-10 x 10"
	G10112	4	Lock Nut, 3/4"-10
13.	GD15283	4	Eyebolt, 1"-14 x 10"
	G11108	4	Lock Nut, 1"-14
14.	G11110	2	Hex Socket Cap Screw, 5/16"-18 x 1 1/4", Grade 8
	G10109	2	Lock Nut, 5/16"-18, Grade 8
15.	GD15227	2	Pin, 1 1/4" x 8 3/8"
16.	G10460	4	Cotter Pin, 1/4" x 2"
17.	G10356	2	Machine Bushing, 1 3/4", 10 Gauge
	GD15742	2	Thrust Washer, 2 1/2" O.D. x 1 3/4" I.D. x 1/8"
18.	G10362	2	Cotter Pin, 1/4" x 3"
19.	G10008	2	Hex Head Cap Screw, 5/8"-11 x 2"
	GD7805	2	Special Washer, 5/8", Hardened
	G10107	2	Lock Nut, 5/8"-11
20.	GB0218	2	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 19/32" Long
21.	GA10401	1	Mount
22.		-	See "Row Marker Cylinder", Pages P94
23.	GD5875	1	Hose Clamp, 9/16" x 2 1/2" x 2"
24.	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G10108	1	Lock Nut, 3/8"-16
25.	G10862	1	Hex Head Cap Screw, 5/8"-11 x 3 1/4"
	D3180-35	1	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 1/2"
	G10107	1	Lock Nut, 5/8"-11
26.		-	See "Row Marker Assembly (Third And Fourth Stages), Pages P86 And P87
27.	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10232	4	Lock Washer, 5/16"
	G10221	4	Washer, 5/16" SAE
28.	GA13474	1	Limit Switch
29.	G10019	2	Hex Head Cap Screw, 5/16"-18 x 1"
	G10106	2	Lock Nut, 5/16"-18
30.	GD18957	1	Mount

ROW MARKER ASSEMBLY (Second Stage)

(IP1105)



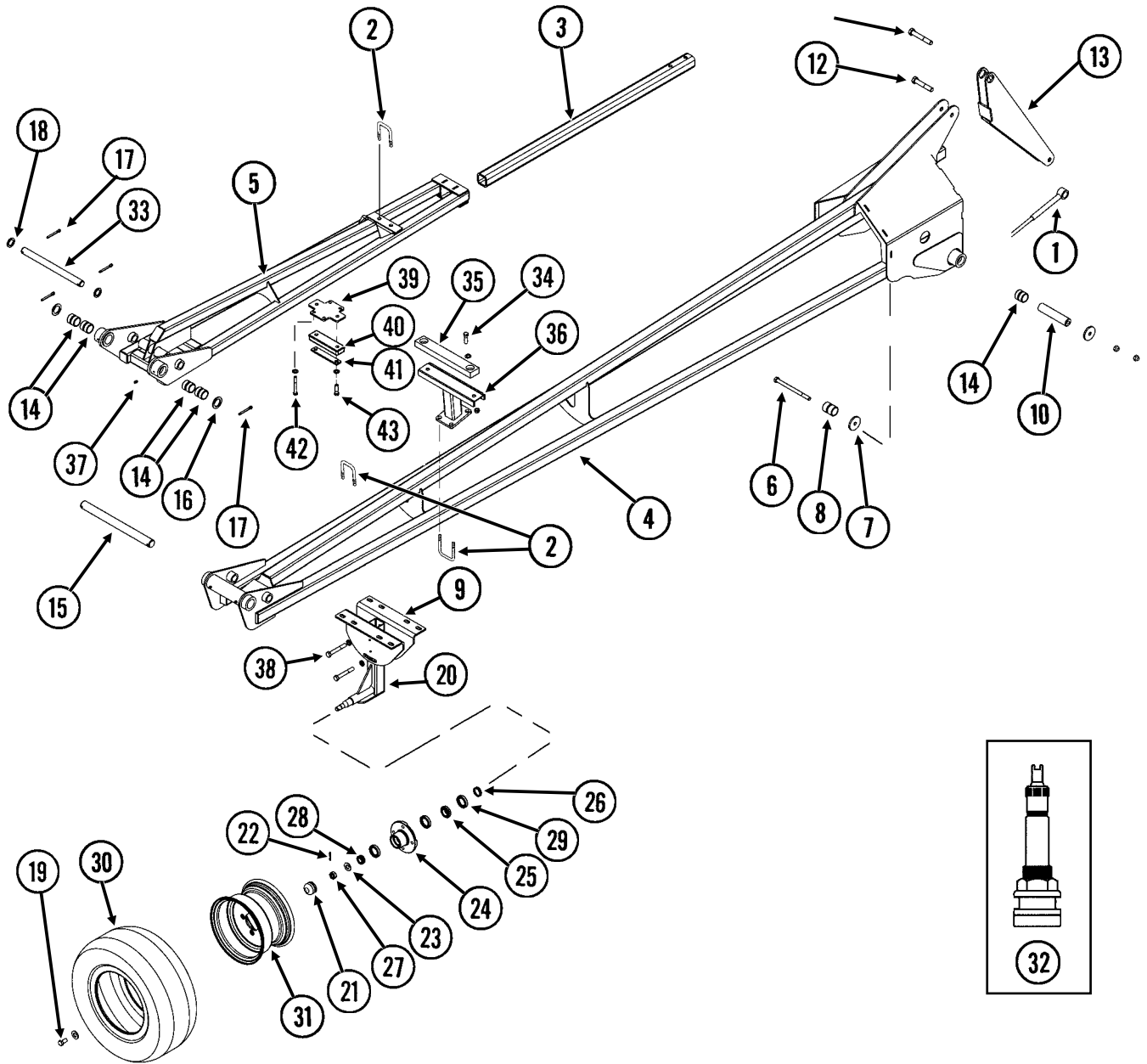
ROW MARKER ASSEMBLY (Second Stage)

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GA13329	1	Arm W/Grease Fittings And Bushings, Second Stage, 164"
	GD15131	-	Bushing, 2 1/4" O.D. x 1 3/4" I.D. x 4"
	G10640	-	Grease Fitting, 1/4"-28
2.	GD15230	2	Pin, 1" x 10 3/4"
	G10460	4	Cotter Pin, 1/4" x 2"
	G10233	4	Machine Bushing, 1", 10 Gauge
3.	GA10386	2	Link, 143 3/4"
	GD5900-20	1	Sleeve, 3 3/16"
4.	GD15489	1	Tire, 20.5" x 8.0-10 (Specify Brand*)
5.	GA10458	1	Valve Stem
6.	GA10457	1	Rim, 6" x 10"
7.	GD3248	4	Lug Bolt, 1/2"-20 x 1 1/4"
8.	GD2597	1	Retainer
9.	G10544	1	Cotter Pin, 5/32" x 1"
10.	GD0840	1	Dust Cap
11.	G10725	1	Slotted Hex Nut, 5/8"-18
12.	G10724	1	Washer, 5/8" SAE
13.	GR0151	1	Outer Cup
14.	GA0257	1	Bearing
15.	GA0167	1	Hub W/Cups, 4 Bolt
	GB0165	1	Hub Casting, 4 Bolt
16.	GR0150	-	Inner Cup
17.	GA0245	1	Bearing
18.	GA0243	1	Grease Seal
19.	GA0899	1	Rubber Seal
20.	GA13333		Wheel Mount, L.H. (Shown)
	GA13334	1	Wheel Mount, R.H.
	G10228	6	Lock Washer, 1/2"
	G10102	6	Hex Nut, 1/2"-13
	GD4743	3	U-Bolt, 3" x 3" x 1/2"-13
21.	GA10383	2	Short Link
	GD15234	2	Washer, 1 1/2" O.D. x 1/2" I.D. x 7 Gauge
	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
22.	GD15233	2	Pin, 1 1/2" x 2 19/64"
23.	GA10385	1	Long Link
24.	GD5900-21	1	Sleeve, 2 3/8"
25.	GA10384	1	Long Link
26.	GA10458	-	Valve Stem
A.	GA10409	-	Tire And Rim Assembly (Items 26-28)
B.	GA0173	-	Hub Assembly, 4 Bolt W/Out Spindle (Items 14, 15, 17, 18, And 19)
C.	GA13478	-	Wheel Mount Assembly, R.H. (Items 7-12, 14, 15, And 17-20)
D.	GA13477	-	Wheel Mount Assembly, L.H. (Shown) (Items 7-12, 14, 15, And 17-20)

* 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.

ROW MARKER ASSEMBLY (Third And Fourth Stages)

(FWD169)



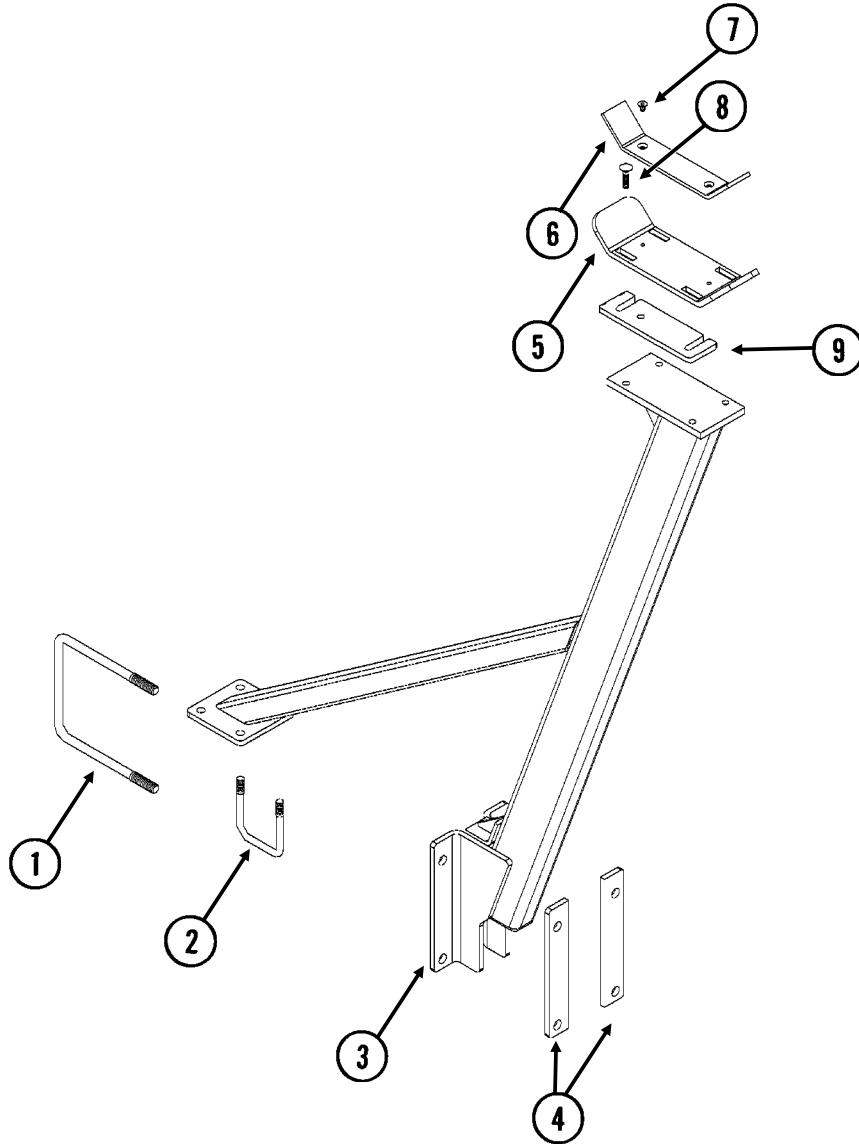
ITEM	PART NO.	QTY.	DESCRIPTION
(Per Assy.)			
1.	GA10507	1	Cable, 132 1/2"
2.	GD2721	7	U-Bolt, 2" x 2" x 1/2"-13
	G10228	14	Lock Washer, 1/2"
	G10102	14	Hex Nut, 1/2"-13
3.	GD0453-07	1	Extension Tube, 45"
4.	GA10375	1	Arm W/Grease Fittings, Third Stage, 148 1/2"
	G10640	-	Grease Fitting, 1/4"-28
5.	GA10426	-	Arm, Fourth Stage, 130", 36 Row 30"
6.	G11034	2	Hex Head Cap Screw, 1/2"-13 x 7"
	G10111	2	Lock Nut, 1/2"-13
7.	GD15235	4	Washer, 2 1/4" O.D. x 1/2" I.D. x 1/4"

ROW MARKER ASSEMBLY (Third And Fourth Stages)

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
8.	GD12613	4	Spring Bushing, 1 1/2" O.D. x 1 1/4" I.D. x 2"
9.	GD18934	1	Marker Wheel Mount Plate, R.H.
	GD18935		Marker Wheel Mount Plate, L.H.
10.	GD15229	2	Sleeve, 1 1/4" O.D. x 1/2" I.D. x 5 15/16"
11.	G10036	1	Hex Head Cap Screw, 5/8"-11 x 4"
	G10107	1	Lock Nut, 5/8"-11
	GD3180-36	1	Sleeve, 7/8" O.D. x 5/8" I.D. x 2"
12.	G10013	1	Hex Head Cap Screw, 5/8"-11 x 3 1/2"
	G10107	1	Lock Nut, 5/8"-11
	GD3180-35	1	Sleeve, 7/8" O.D. x 5/8" I.D. x 1 1/2"
13.	GA10382	1	Swing Link
14.	GD15290	6	Spring Bushing, 1 1/2" Long
15.	GD15231	1	Pin, 1 1/4" x 14 7/8"
16.	G10159	2	Machine Bushing, 1 1/4", 10 Gauge
17.	G10460	4	Cotter Pin, 1/4" x 2"
18.	G10233	2	Machine Bushing, 1", 10 Gauge
19.	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
20.	GA13476	1	Gauge Wheel Mount
21.	GD0840	1	Dust Cap
22.	G10544	1	Cotter Pin, 5/32" x 1"
23.	G10724	1	Washer, 5/8" SAE
24.	GA0167	1	Hub W/Cups, 4 Bolt
	GR0151	-	Outer Cup
	GR0150	-	Inner Cup
25.	GA0245	1	Bearing
26.	GA0899	1	Rubber Seal
27.	G10725	1	Slotted Hex Nut, 5/8"-18
28.	GA0257	1	Bearing
29.	GA0243	1	Grease Seal
30.	GD15489	1	Tire, 20.5" x 8.0-10 (Specify Brand*)
31.	GA10457	1	Rim, 6" x 10"
32.	GA10458	-	Valve Stem
33.	GD15232	1	Pin, 1" x 12 3/4"
34.	G10644	4	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10199	4	Washer, 7/16" SAE
	G10113	4	Lock Nut, 7/16"-14
35.	GD15649	2	Wear Pad
36.	GA10496	1	Support
37.	G10640	1	Grease Fitting, 1/4"-28
38.	G10033	2	Hex Head Cap Screw, 1/2"-13 x 3 1/2"
	GD18939	2	Marker Wheel Washer
	G10111	2	Lock Nut, 1/2"-13
39.	GD18904	1	Plate Mount
40.	GD18905	1	Pad Mount
41.	GA9145	1	Molded Stop, 6 1/4" Long
42.	G10062	4	Hex Head Cap Screw, 3/8"-16 x 3"
	G10101	4	Hex Nut, 3/8"-16
	G10299	4	Washer, 3/8"
43.	G10644	2	Hex Head Cap Screw, 7/16"-14 x 1 1/2"
	G10113	2	Lock Nut, 7/16"-14
	G10199	2	Washer, 7/16" SAE
A.	GA10409	-	Tire And Rim Assembly (Items 30-32)

ROW MARKER STAND

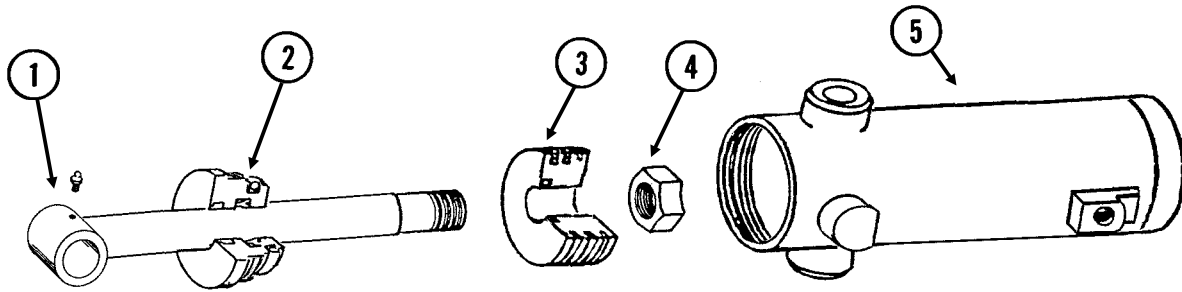
(FWD18a)



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GD1114	2	U-Bolt, 7" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
2.	GD4743	2	U-Bolt, 3" x 3" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
3.	GA10468	1	Stand
4.	GD15545	2	Bar, 1 3/4" x 10"
5.	GD15552	1	Plate
6.	GD15560	1	Pad
7.	G11133	2	Hex Socket Head Cap Screw, 5/16"-18 x 3/4", Grade 8
8.	G11134	4	Carriage Bolt, 3/8"-16 x 1 3/4"
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
9.	GD15784	-	Shim (As Required)

MASTER CYLINDER

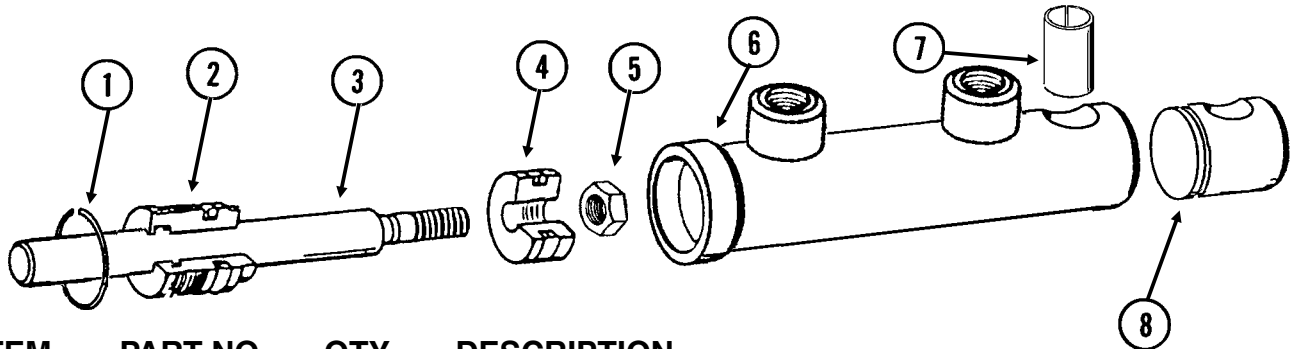
(CYL58)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11370	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD12522	1	Gland
3.	GA11374	1	Piston W/Rephasing Valve
	GR1169	-	Rephasing Valve Replacement Kit (Set Screw, Guide, 2 Springs And Ball)
4.	G10958	1	Lock Nut, 1"-14
5.	A11368	1	Barrel (Non-Stock Item)
A.	GA11367	-	Cylinder Complete, 4 1/2" x 8" <i>(Part Number Stamped On Barrel)</i>
B.	GR1757	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) BU Ring, (1) Wear Ring, (1) T-Seal

TONGUE LATCH AND SLIDE LATCH CYLINDER

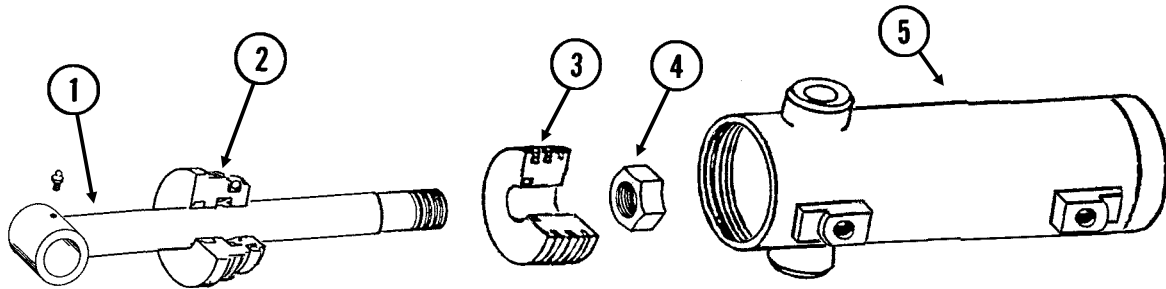
CYL035(CYL9d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10770	1	Internal Retaining Ring, 1 11/16"
2.	GD13170	1	Gland
3.	GD13171	1	Rod
4.	GD13172	1	Piston
5.	G11016	1	Lock Nut, 1/2"-20
6.	D13169	1	Barrel (Non-Stock Item)
7.	GD13400	1	Tension Bushing, 1" x 2" Long
8.	GD13173	1	End Cap
A.	GA9205	-	Cylinder Complete, 1 1/2" x 2 1/2" <i>(Part Number Stamped On Barrel)</i>
B.	GR1598	-	Seal Kit, Includes: (3) O-Rings, (2) BU Rings, (1) Wiper, (1) T-Seal, (1) Bronze Bushing, (1) U-Cup

LIFT ASSIST / SLAVE CYLINDERS

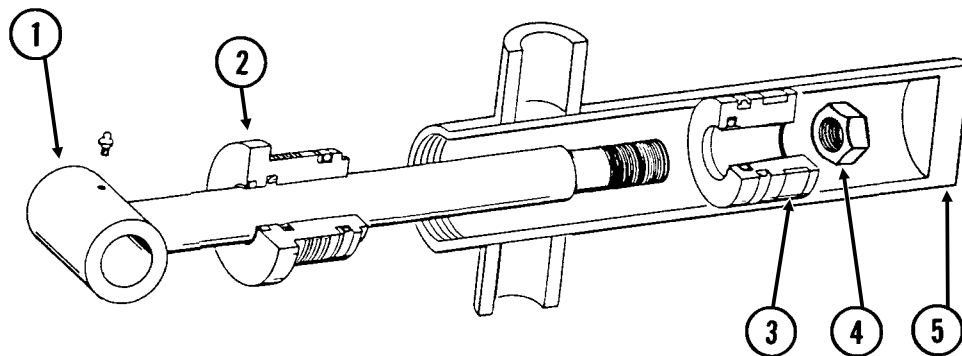
(CYL59)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10363	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD14902	1	Gland
3.	GD14901	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A10365	1	Barrel (Non-Stock Item)
A.	GA10366	-	Cylinder Complete, 3 3/4" x 8" <i>(Part Number Stamped On Barrel)</i>
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

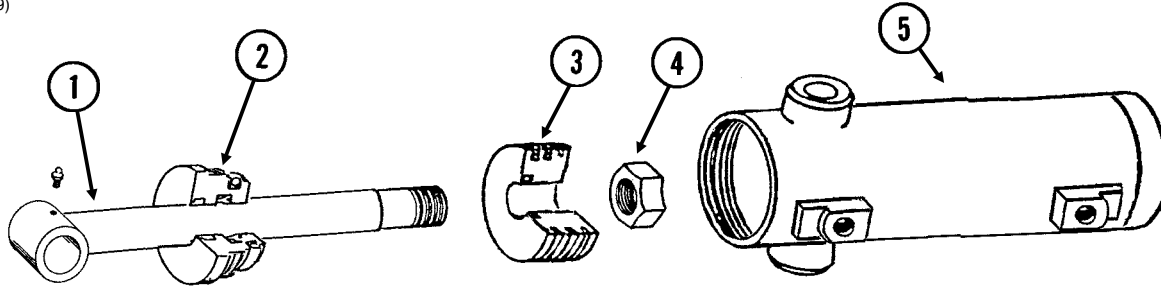
CYL026(CYL4d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA8831	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD11985	1	Gland
3.	GD11986	1	Piston
4.	G10969	1	Lock Nut, 7/8"-14
5.	A8827	1	Barrel (Non-Stock Item)
A.	GA8828	-	Cylinder Complete, 2 1/2" x 8" <i>(Part Number Stamped On Barrel)</i>
B.	GR1522	-	Seal Kit, Includes: (1) T-Seal, (2) O-Rings, (1) BU Ring, (1) U-Cup, (1) Wiper

SLAVE CYLINDER

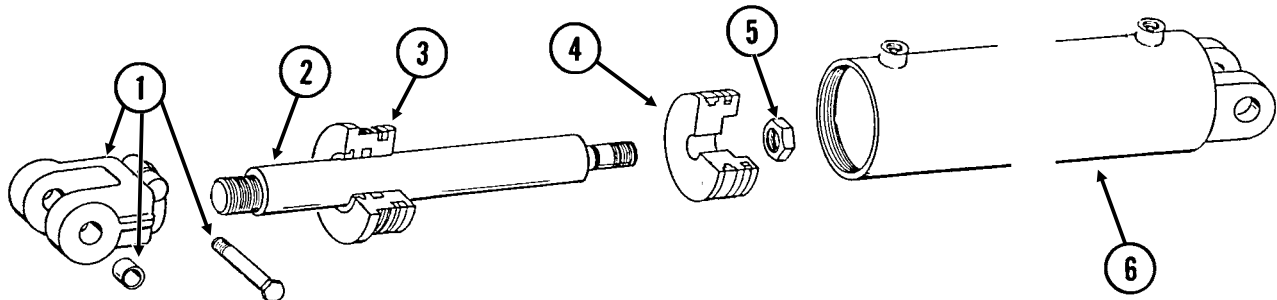
(CYL59)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10359	1	Rod Assembly W/Grease Fitting
	G10640	-	Grease Fitting, 1/4"-28
2.	GD14898	1	Gland
3.	GD14897	1	Piston
4.	G10958	1	Lock Nut, 1"-14
5.	A11372	1	Barrel (Non-Stock Item)
A.	GA11371	-	Cylinder Complete, 4" x 8" <i>(Part Number Stamped On Barrel)</i>
B.	GR1688	-	Seal Kit, Includes: (2) O-Rings, (1) U-Cup, (1) Wiper, (1) Seal, (2) Cast Iron Rings, (1) BU Ring, (1) Expander

WING FOLD CYLINDER

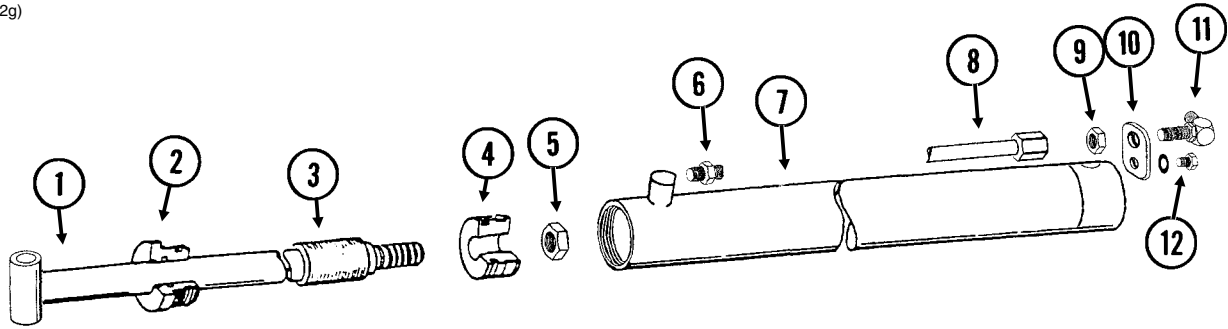
(CYL15e)



ITEM	PART NO.	QTY	DESCRIPTION
1.	GA8130	1	Clevis W/Bushings, Hex Head Cap Screw And Hex Nut
	GD11751	2	Steel Bushing, 1" Wide
	G10939	1	Hex Head Cap Screw, 3/8"-16 x 2 1/4"
	G10101	1	Hex Nut, 3/8"-16
2.	GD14908	1	Rod
3.	GD12522	1	Gland
4.	GD14910	1	Piston
5.	G10972	1	Lock Nut, 1 1/4"-12
6.	A10372	1	Barrel (Non-Stock Item)
A.	GA10373	-	Cylinder Complete, 4 1/2" x 30" <i>(Part Number Stamped On Barrel)</i>
B.	GR1691	-	Seal Kit (For Cylinder And Counter Balance Valve), Includes: (1) Wiper, (1) U-Cup, (3) O-Rings, (1) BU Ring, (1) T-Seal, (1) Wear Ring

AXLE SLIDE CYLINDER

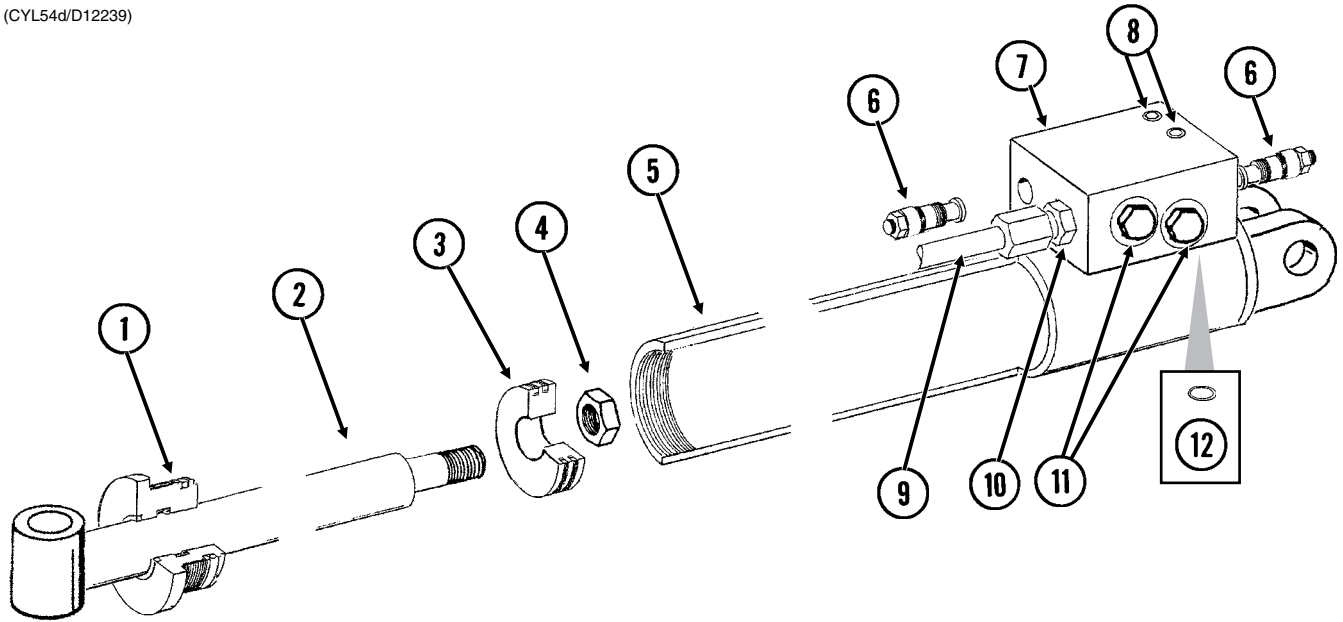
(CYL12g)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA10243	1	Rod Assembly
2.	GD12670	1	Gland
3.	GD14915	1	Sleeve, 6 1/2"
4.	GD12672	1	Piston
5.	G10972	1	Lock Nut, 1 1/4"-12
6.	G6400-08-04	1	Connector W/O-Ring, 3/4"-16 Male JIC To 7/16"-20 O-Ring
	GR1465	-	O-Ring
7.	GA10245	1	Barrel
8.	GA10242	1	Steel Hydraulic Line, 66 7/16"
9.	G306-08	1	Lock Nut, 3/4"-16
10.	GD12597	1	Bracket
11.	G2701-08	1	Bulkhead Elbow, 90°, 3/4"-16 Male JIC
12.	G10328	1	Hex Head Cap Screw, 3/8"-16 x 5/8"
	G10229	1	Lock Washer, 3/8"
A.	GA10246	-	Cylinder Complete, 4" x 60" (Part Number Stamped On Barrel)
B.	GR1552	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wear Ring, (1) Wiper, (1) U-Cup, (1) T-Seal

TRANSPORT AXLE CYLINDER

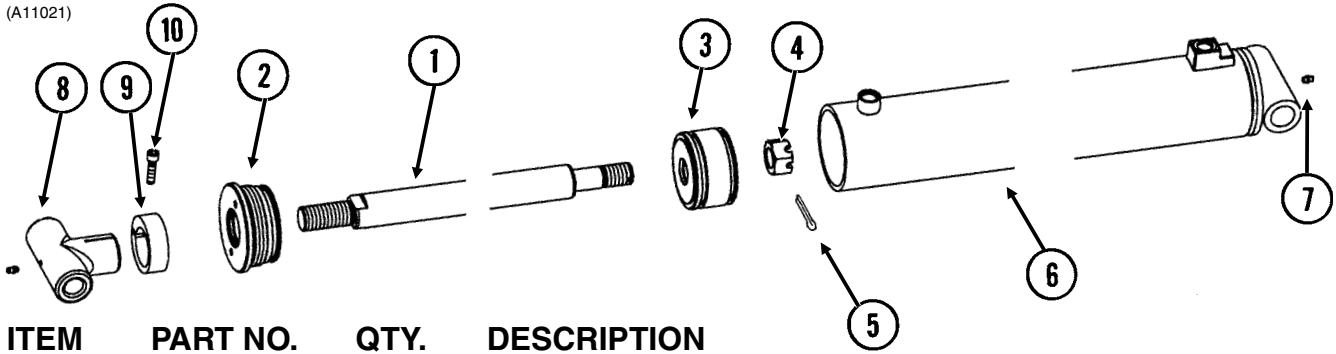
(CYL54d/D12239)



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

ROW MARKER CYLINDER (If Applicable)

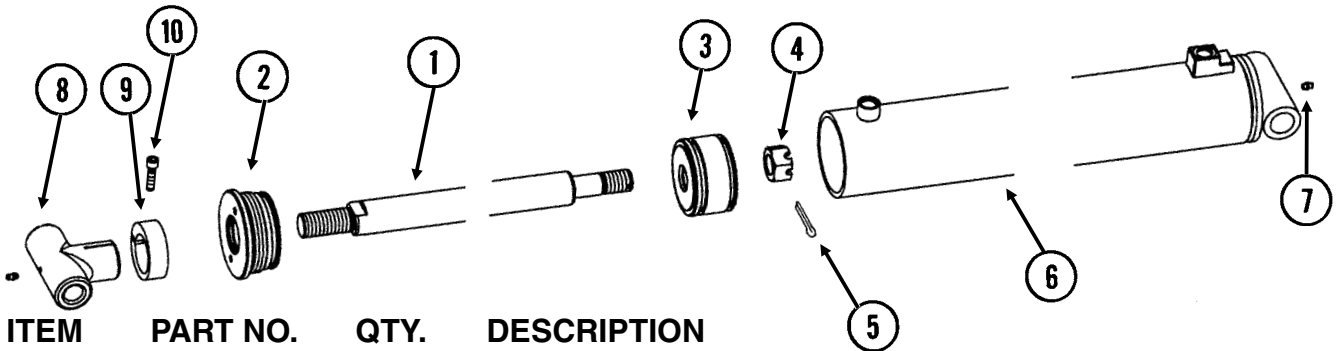
(A11021)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16147	1	Rod
2.	GD12539	1	Gland
3.	GD14089	1	Piston
4.	G10983	1	Slotted Hex Nut, 1 1/8"-12
5.	G10984	1	Cotter Pin, 3/16" x 2 1/2"
6.	A11020	1	Barrel (Non-Stock Item)
7.	G10640	2	Grease Fitting, 1/4"-28
8.	GD16184	1	Clamp
9.	GD16060	1	Sleeve
10.	G11099	1	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
A.	GA11021	-	Cylinder Complete, 4" x 32" (<i>Part Number Stamped On Barrel</i>)
B.	GR1630	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wiper, (1) T-Seal, (1) Cast Iron Ring, (1) U-Cup Seal

ROW MARKER CYLINDER (If Applicable)

(A11021)

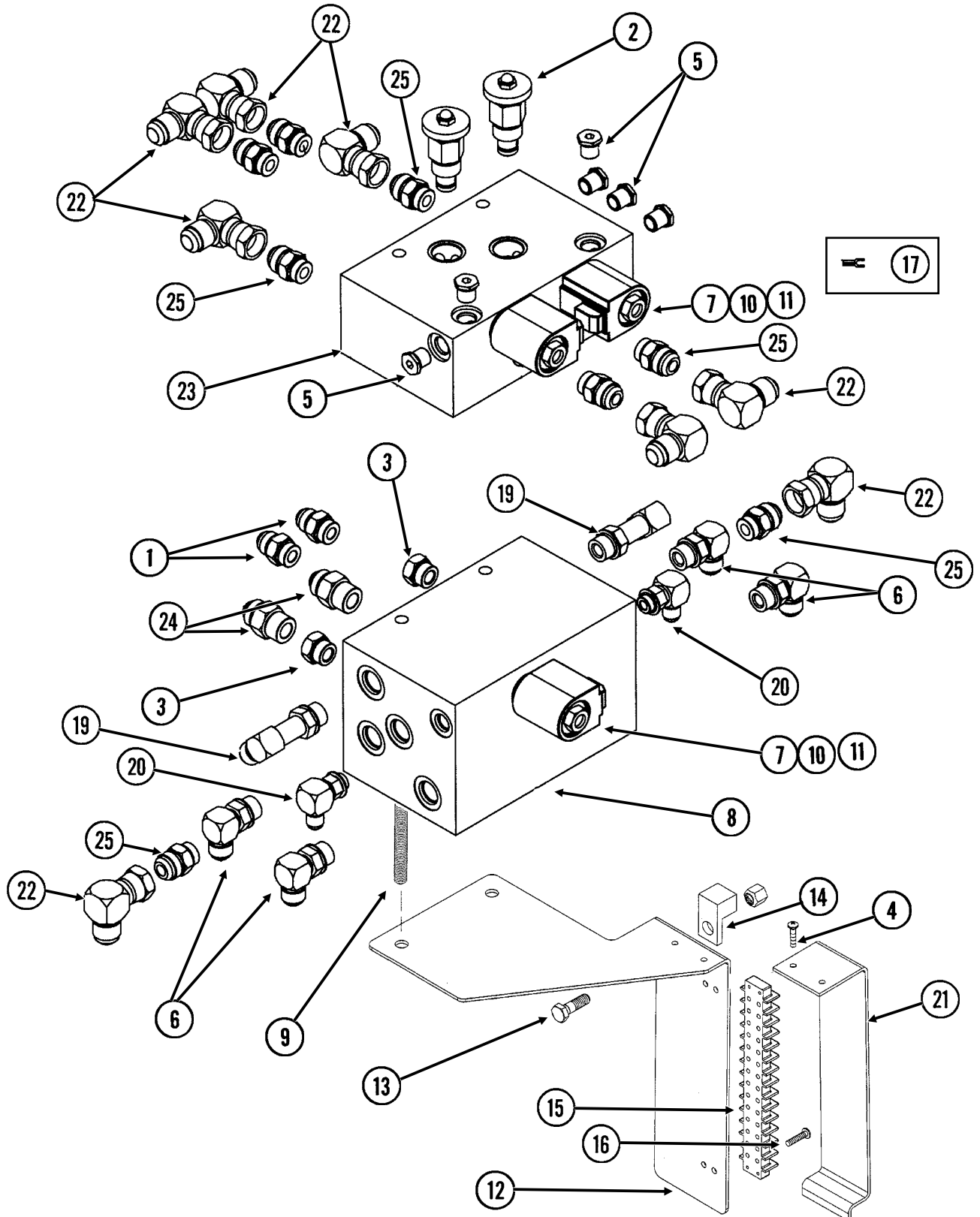


ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16147	1	Rod
2.	GD12539	1	Gland
3.	GD14089	1	Piston
4.	G10983	1	Slotted Hex Nut, 1 1/8"-12
5.	G10984	1	Cotter Pin, 3/16" x 2 1/2"
6.	A11020	1	Barrel (Non-Stock Item)
7.	G10640	2	Grease Fitting, 1/4"-28
8.	GD16184	1	Clamp
9.	GD16060	1	Sleeve
10.	G11099	1	Hex Socket Head Cap Screw, 3/8"-16 x 1 1/2", Grade 8
A.	GA11021	-	Cylinder Complete, 4" x 32" (<i>Part Number Stamped On Barrel</i>)
B.	GR1630	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Wiper, (1) T-Seal, (1) Cast Iron Ring, (1) U-Cup Seal

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VALVE BLOCKS - LOCATED ON HITCH

(FWD158)

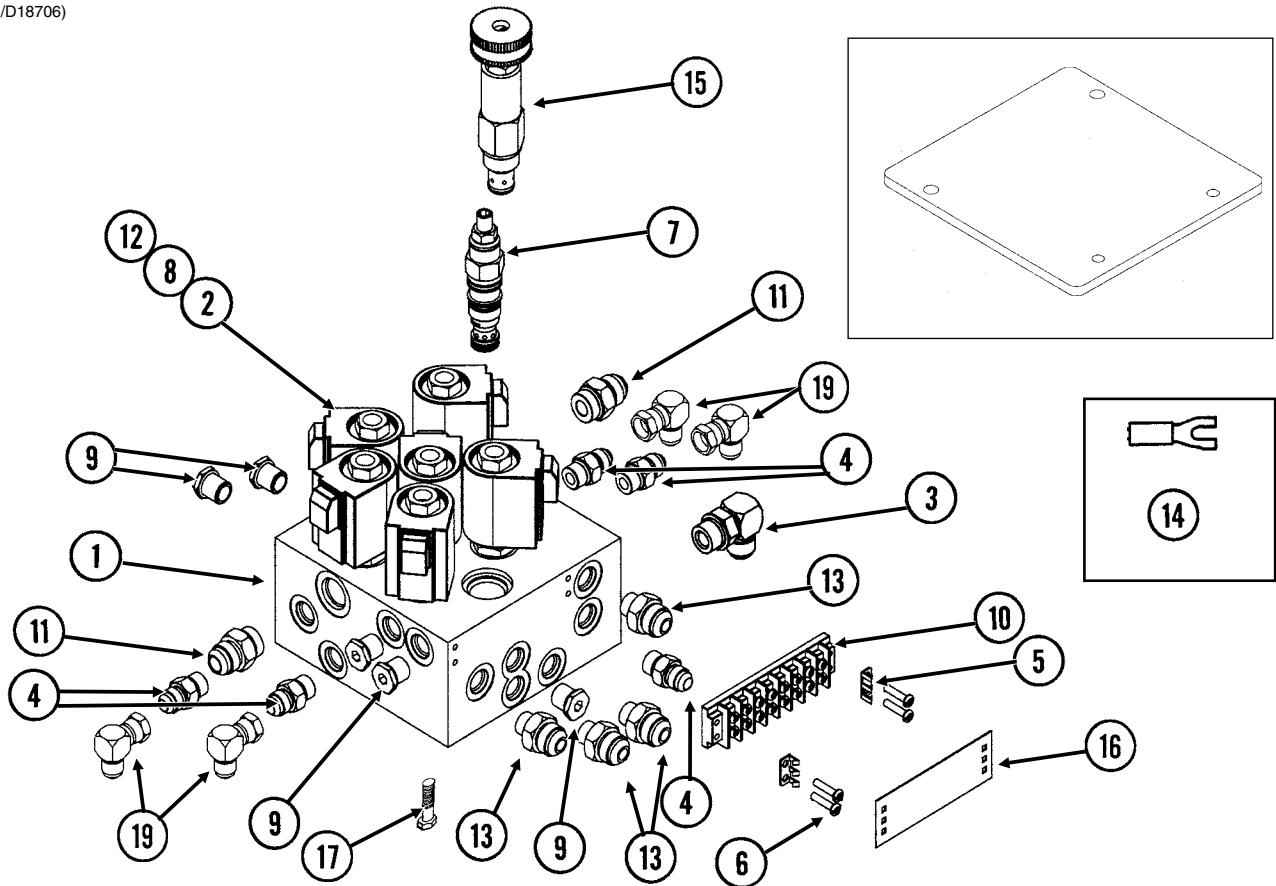


VALVE BLOCKS - LOCATED ON HITCH

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
2.	GA3413	2	Flow Control Valve
	GR0764	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
3.	G6408-08	2	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
4.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
	G10928	2	Hex Nut, No. 8-32, Stainless Steel
5.	G6408-H06-0	6	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
6.	G6801-08	4	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	GR0761	3	Special Hex Nut, 1/2"-20
8.	GD18096	1	Block
9.	GD15187-01	2	Threaded Rod, 3/8"-16 x 13"
	G10203	2	Washer, 3/8" SAE
	G10108	2	Lock Nut, 3/8"-16
10.	GR0763	3	Cartridge
11.	GR1445	3	Coil
12.	GD15634	1	Mount
13.	G10002	1	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10622	1	Serrated Flange Nut, 3/8"-16
14.	GA3584	1	Ground Clamp
15.	GA9097	1	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
16.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
17.	G10996	3	Fork Terminal
18.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
19.	G6400-L-08	2	Long Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
20.	G6801-06	2	ElbowW/O-Ring, 90°, 9/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
21.	GD16146	1	Cover
22.	G6500-10	4	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
23.	GD14923	1	Block
24.	G6400-10	2	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
25.	G6400-10-08	6	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring

VALVE BLOCK - LOCATED AT CENTER OF REAR H-FRAME

(A13233b/D18706)

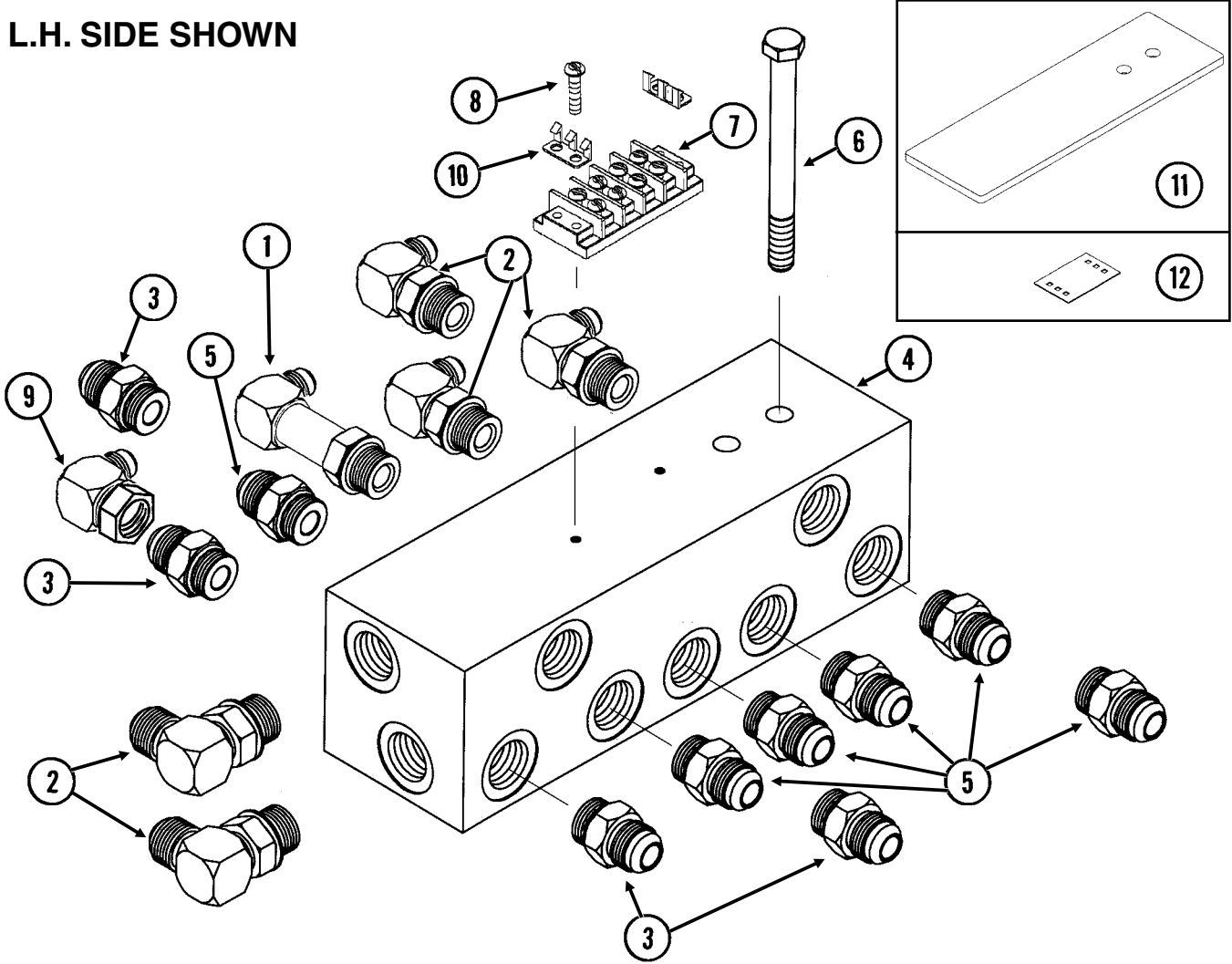


ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD18631	1	Block
2.	GR1445	6	Coil
3.	G6801-08-06	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To 1/16"-18 O-Ring
	GR1045	-	O-Ring
4.	G6400-06	5	Connector W/O-Ring, 1/16"-18 Male JIC To O-Ring
	GR1045	-	O-Ring
5.	GD18100	2	Clip
6.	G11067	4	Phillips Pan Head Machine Screw, No. 8-32 x 1/4", Stainless Steel
7.	GA10632	1	Counter Balance Valve
8.	GR0761	6	Special Hex Nut, 1/2"-20
9.	G6408-H06-0	5	Hex Socket Head Plug W/O-Ring, 1/16"-18 O-Ring
	GR1045	-	O-Ring
10.	GA9098	1	Terminal Strip W/Screws, No. 6, 8 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
11.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
12.	GR0763	6	Cartridge
13.	G6400-08-06	4	Connector W/O-Ring, 3/4"-16 Male JIC To 1/16"-18 O-Ring
	GR1045	-	O-Ring
14.	G10996	12	Fork Terminal
15.	GA3407	1	Pressure Relief Valve, 1000 PSI
16.	GD18102	1	Cover, 1 3/8" x 4"
17.	G10171	2	Hex Head Cap Screw, 1/16"-18 x 1 1/4"
	G10232	2	Lock Washer, 5/16"
	G10221	2	Washer, 5/16" SAE
18.	GD18706	1	Plate, 5 1/4" x 6 1/4"
19.	G6502-06	4	Swivel Elbow, 45°, 1/16"-18 Male JIC To Female
A.	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings

JUNCTION BLOCK - LOCATED ON EACH WING

(A11197a)

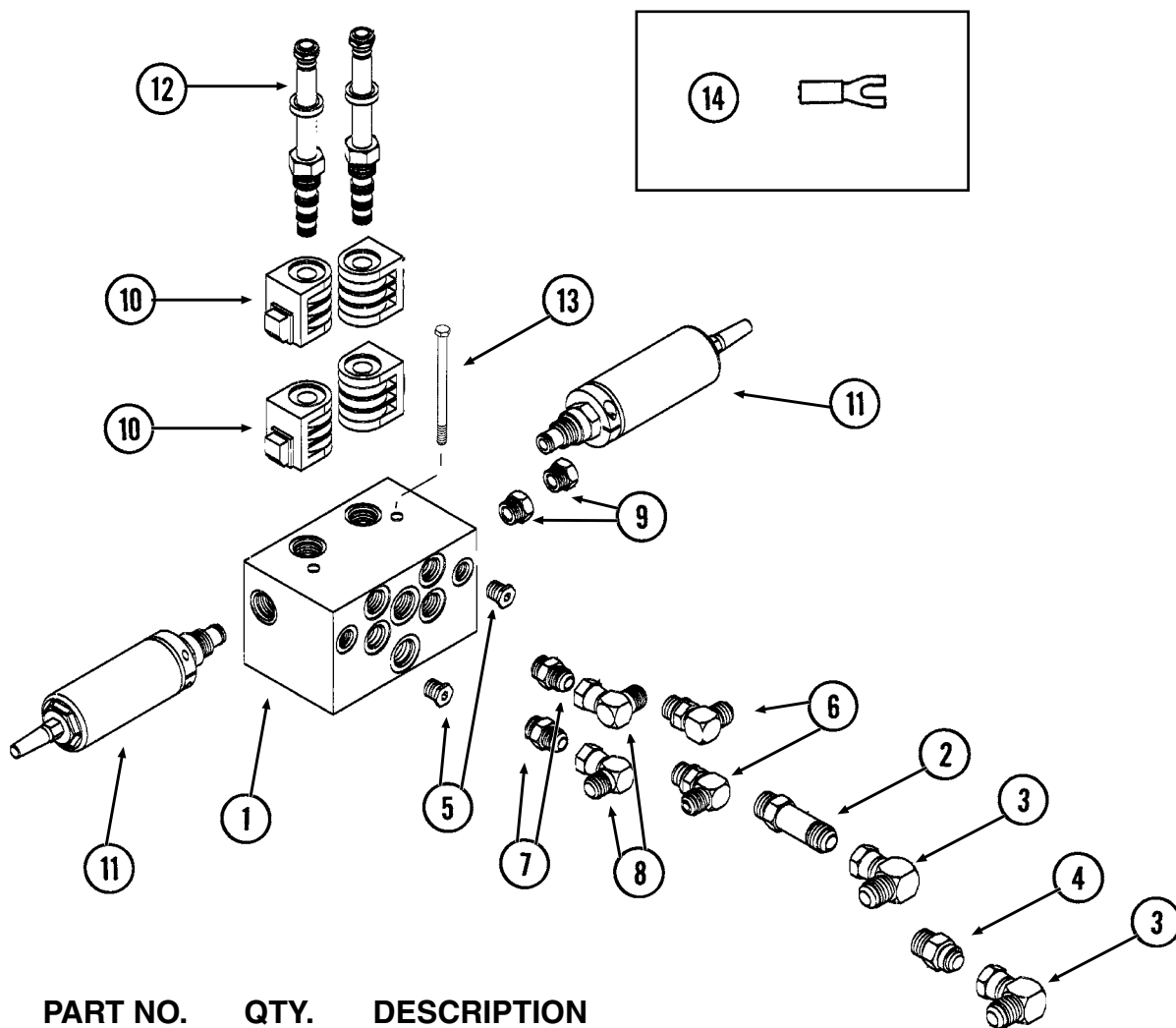
L.H. SIDE SHOWN



ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	G6801-LL-08 GR1037	1 -	X-Long Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring O-Ring
2.	G6801-08 GR1037	5 -	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring O-Ring
3.	G6400-10-08 GR1037	4 -	Connector W/O-Ring, 7/8"-14 Male JIC To 3/4"-16 O-Ring O-Ring
4.	GD14925	1	Block
5.	G6400-08 GR1037	6 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring O-Ring
6.	G10063 G10203 G10108	2 2 2	Hex Head Cap Screw, 3/8"-16 x 4" Washer, 3/8" SAE Lock Nut, 3/8"-16
7.	GA9510 GR1635	1 -	Terminal Strip W/Screws, No. 6, 4 Terminal Screw, No. 6-32 x 1/4"
8.	G11067	2	Phillips Pan Head Machine Screw, No. 8-32 x 3/4", Stainless Steel
9.	G6500-10	1	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
10.	GD18100	2	Clip
11.	GD18099	1	Spacer Plate
12.	GD18101	1	Cover

SDS MANIFOLD BLOCK

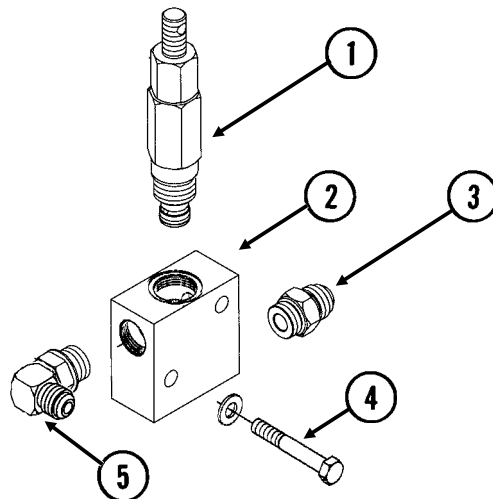
(FWD96/A9481)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD16500	1	Block
2.	G6400-L-10	1	Long Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
	GR1466	-	O-Ring
3.	G6500-10	2	Swivel Elbow, 90°, 7/8"-14 Male JIC To Female
4.	GA11360	1	Check Valve
5.	G6408-H06-0	2	Hex Socket Head Plug W/O-Ring, 9/16"-18 O-Ring
	GR1045	-	O-Ring
6.	G6801-08	2	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
7.	G6400-08	2	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
8.	G6500-08	2	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
9.	G6408-08	2	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
10.	GR1748	4	Coil
11.	GA10987	2	Flow Control Cartridge
12.	GA11365	2	Spool Valve
13.	G11203	2	Hex Head Cap Screw, 1/4"-20 x 4 1/2"
	G10227	2	Lock Washer, 1/4"
14.	G10996	-	Fork Terminal
A.	GR1756	-	Seal Kit For Coil, Includes: (6) BU Rings, (4) O-Rings

VALVE BLOCK - LOCATED AT EACH ROW MARKER ON OUTER WING

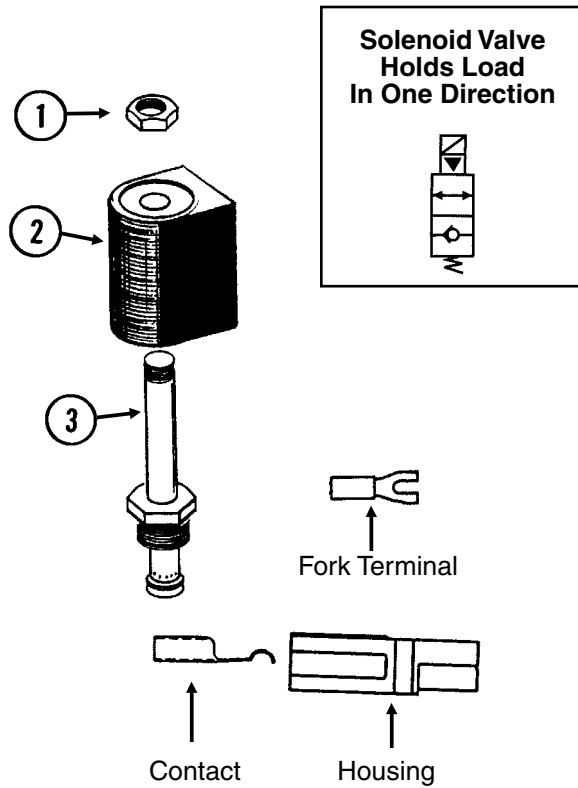
(FWD26a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA3407	-	Pressure Relief Valve, 1000 PSI
	GR1515	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring
2.	GD14528	1	Valve Block
3.	G6400-08	1	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring
4.	G10069	2	Hex Head Cap Screw, 5/16"-18 x 2 1/4"
	G10221	2	Washer, 5/16" SAE
	G10109	2	Lock Nut, 5/16"-18, Grade 8
5.	G6801-08	1	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring
	GR1037	-	O-Ring

SOLENOID VALVE (G1K275)

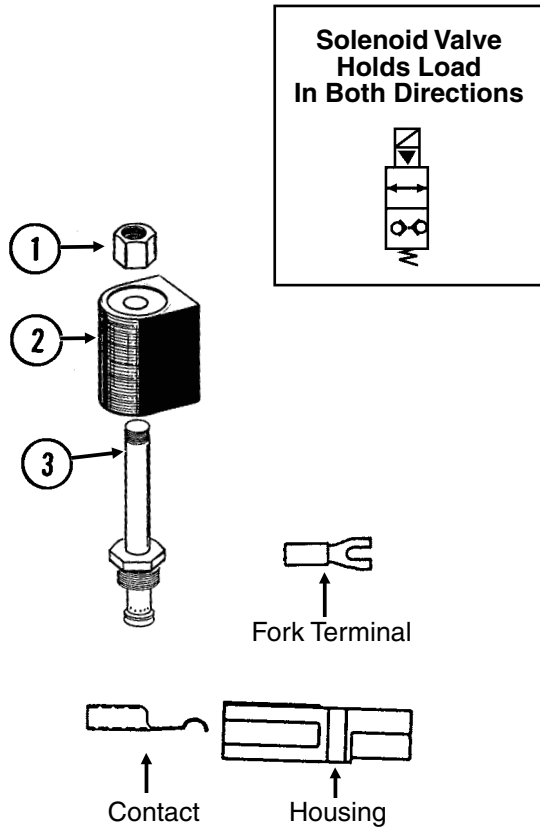
VVB019(TWL27c/TWL18/PLTR75c/A9481)



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

SOLENOID VALVE (G1K276)

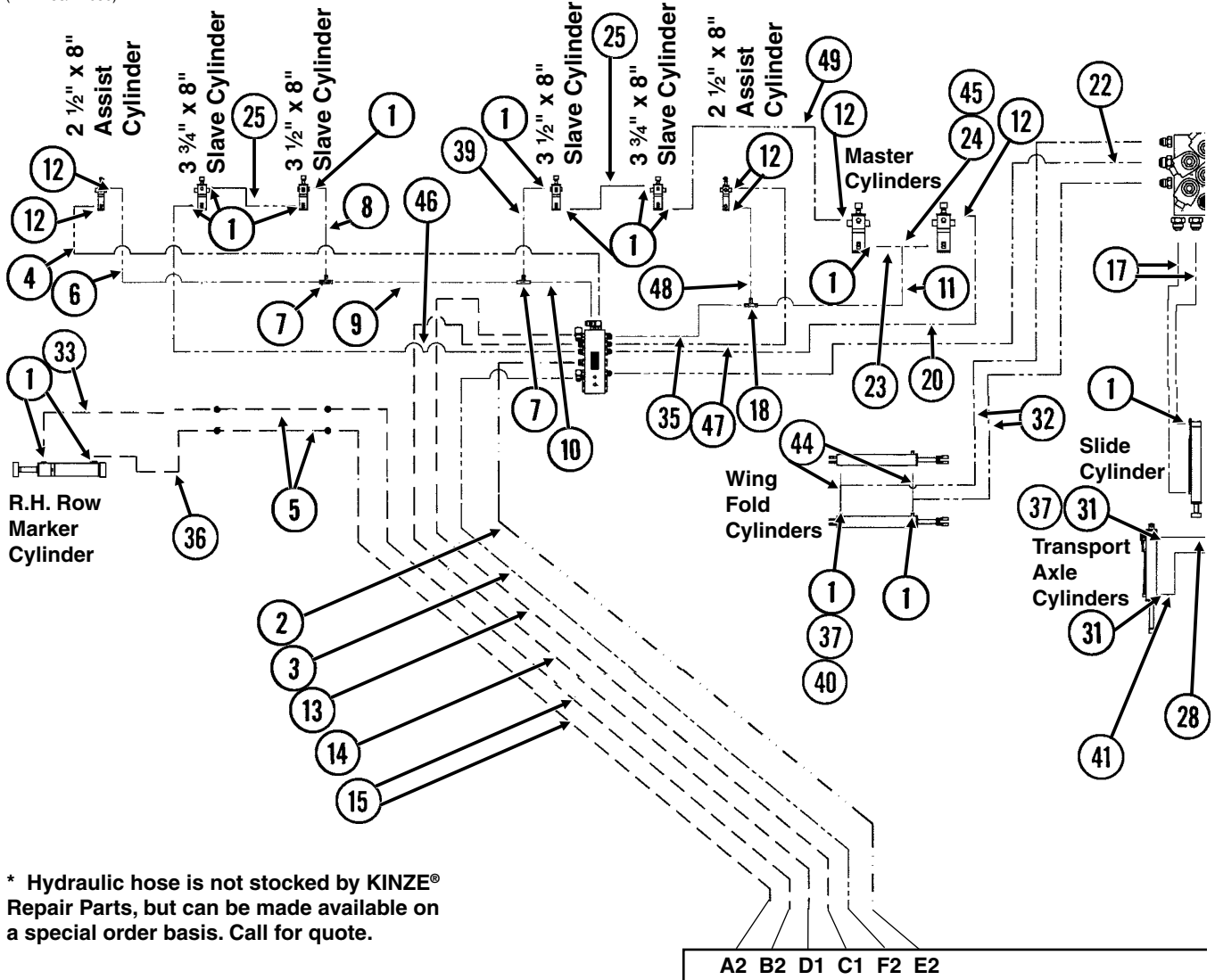
VVB019(FF25/TWL18/PLTR75c)



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

HYDRAULIC HOSES AND FITTINGS

(FWD155/D4086)



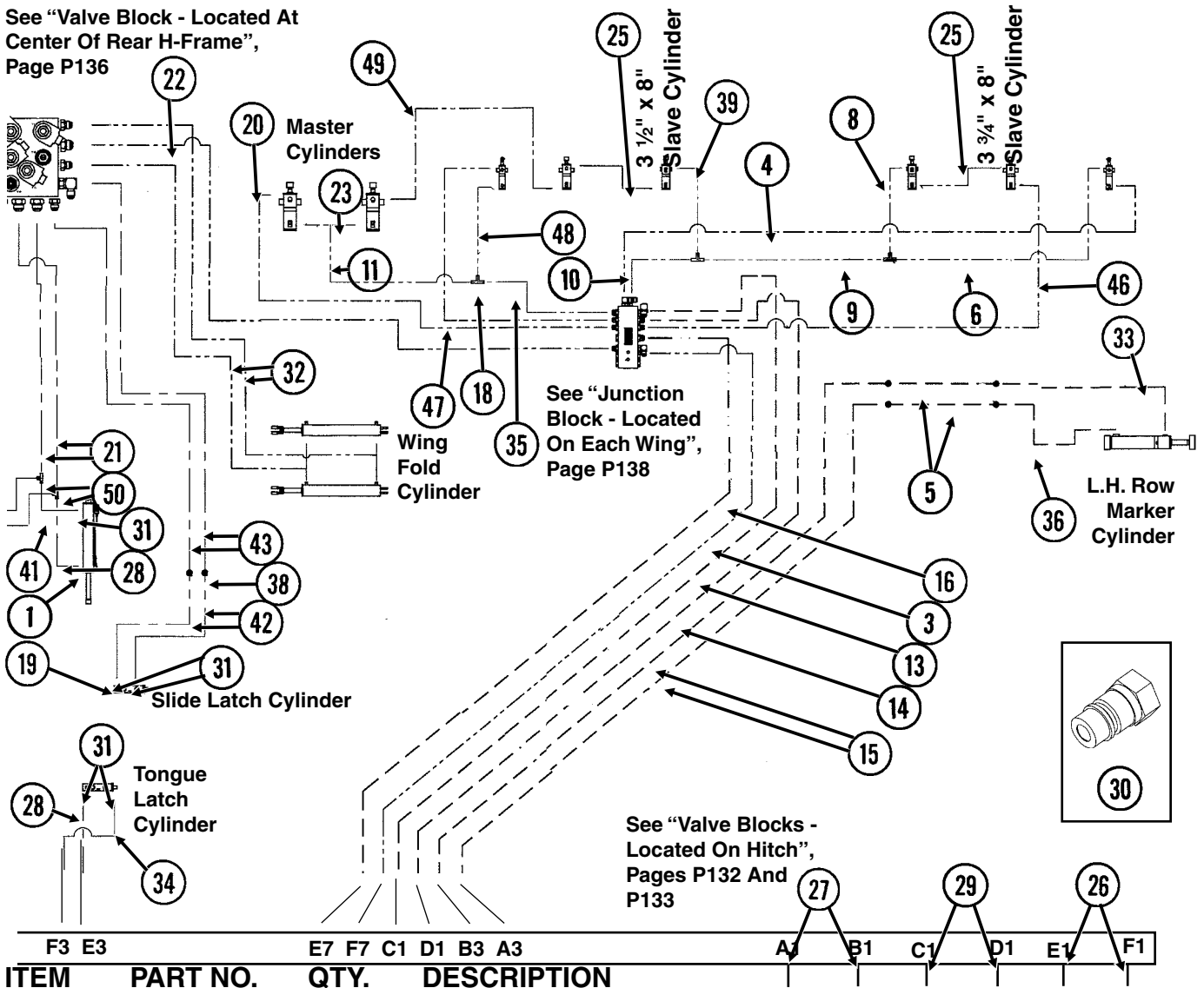
* Hydraulic hose is not stocked by KINZE® Repair Parts, but can be made available on a special order basis. Call for quote.

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G6801-08 GR1037	29 -	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring O-Ring
2.	*A11438	1	Hose Assembly, 5/8" x 410"
3.	*A12064	2	Hose Assembly, 3/8" x 410"
4.	*A12067	2	Hose Assembly, 3/8" x 237"
5.	*A8225	4	Hose Assembly, 1/2" x 209"
6.	*A1039	2	Hose Assembly, 3/8" x 76"
7.	G2603-08	4	Tee, 3/4"-16 Male JIC
8.	*A1082	2	Hose Assembly, 3/8" x 19"
9.	*A3199	2	Hose Assembly, 3/8" x 132"
10.	*A1018	2	Hose Assembly, 3/8" x 40"
11.	*A8226	2	Hose Assembly, 1/2" x 208"
12.	G6400-08 GR1037	12 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring O-Ring
13.	*A12724	2	Hose Assembly, 1/2" x 410"
14.	*A12725	2	Hose Assembly, 1/2" x 410"
15.	*A8260	4	Hose Assembly, 1/2" x 424"
16.	*A12723	1	Hose Assembly, 1/2" x 410"
17.	*A3225	2	Hose Assembly, 3/8" x 56"
18.	G2603-10	2	Tee, 7/8"-14 Male JIC
19.	G6502-06	1	Swivel Elbow, 45°, 9/16"-18 Male JIC To Female
20.	*A1031	2	Hose Assembly, 3/8" x 234"
21.	*A3259	2	Hose Assembly, 3/8" x 122"
22.	*A1033	2	Hose Assembly, 3/8" x 250"
23.	*A3158	2	Hose Assembly, 3/8" x 46"
24.	G6803-08 GR1037	2 -	Tee, 3/4"-16 Male NPT To O-Ring O-Ring
25.	*A1055	4	Hose Assembly, 3/8" x 66"

P104

HYDRAULIC HOSES AND FITTINGS

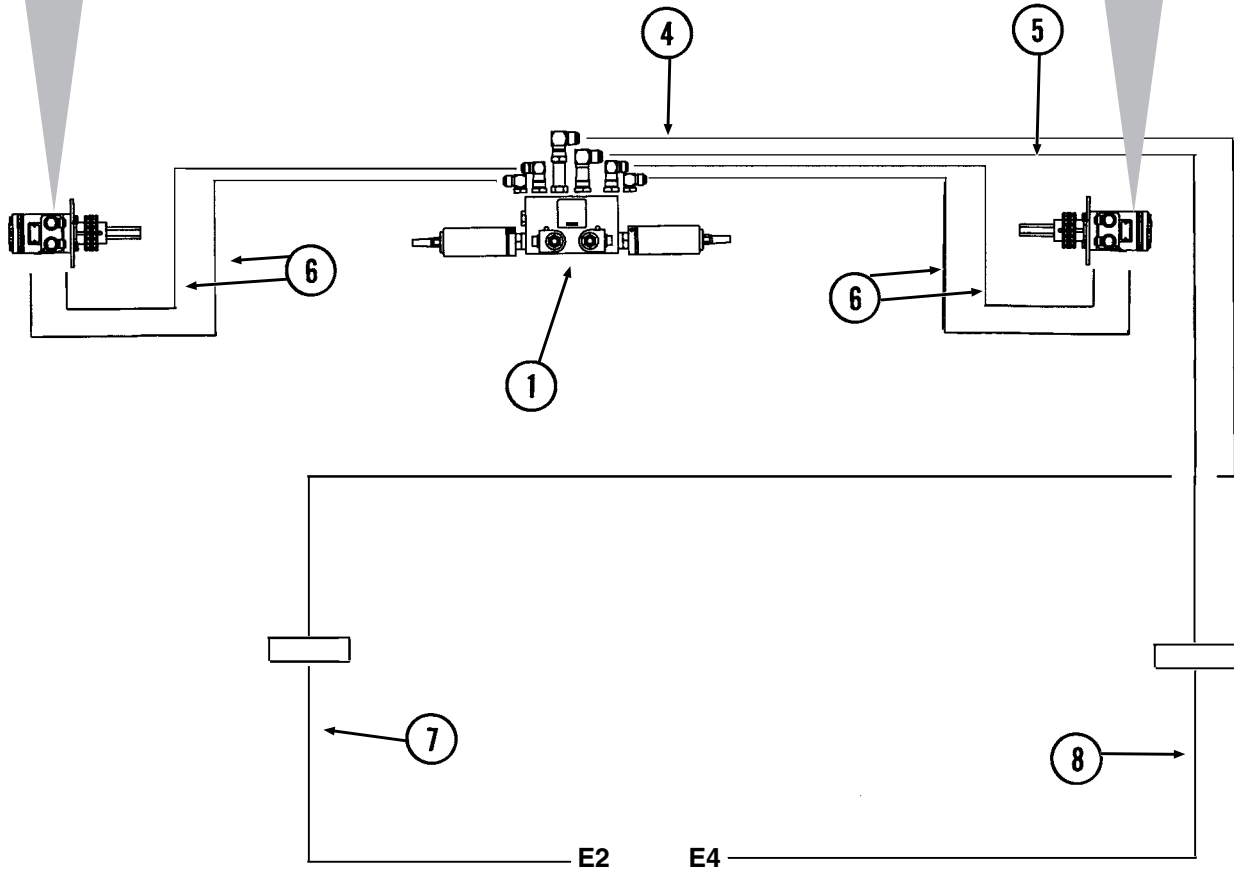
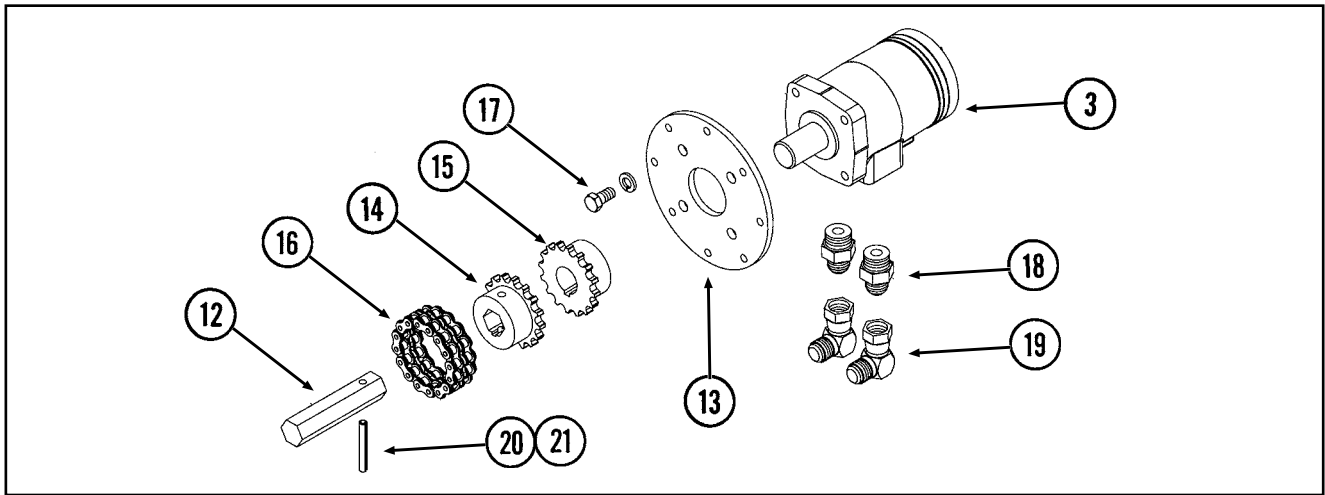
See "Valve Block - Located At Center Of Rear H-Frame", Page P136



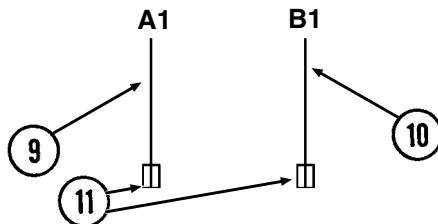
ITEM	PART NO.	QTY.	DESCRIPTION
26.	*A3236	2	Hose Assembly, 3/8" x 72"
27.	*A8230	2	Hose Assembly, 1/2" x 84"
28.	*A1192	3	Hose Assembly, 1/4" x 20"
29.	*A8231	2	Hose Assembly, 1/2" x 72"
30.	GD4086	6	ISO Coupler
31.	G6400-06-08 GR1037	7 -	Connector W/O-Ring, 9/16"-18 Male JIC To 3/4"-16 O-Ring O-Ring
32.	*A12053	4	Hose Assembly, 3/8" x 46"
33.	*A12729	2	Hose Assembly, 1/2" x 82"
34.	*A7613	1	Hose Assembly, 1/4" x 44"
35.	*A8229	2	Hose Assembly, 1/2" x 15"
36.	*A12730	2	Hose Assembly, 1/2" x 52"
37.	G6500-08	4	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
38.	G2700-06-06 G306-06	2 4	Bulkhead Tube Union, 9/16"-18 Male JIC Lock Nut, 9/16"-18
39.	*A1098	2	Hose Assembly, 3/8" x 26"
40.	G6602-08	4	Swivel Tee, 3/4"-16 JIC
41.	*A7614	2	Hose Assembly, 1/4" x 17"
42.	*A1132	2	Hose Assembly, 1/4" x 44"
43.	*A7615	2	Hose Assembly, 1/4" x 122"
44.	*A3153	4	Hose Assembly, 3/8" x 22"
45.	G6502-08	2	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female
46.	*A1057	2	Hose Assembly, 3/8" x 216"
47.	*A1076	2	Hose Assembly, 3/8" x 30"
48.	*A3223	2	Hose Assembly, 3/8" x 24"
49.	*A3228	2	Hose Assembly, 3/8" x 306"
50.	G2704-06	2	Bulkhead Tee, 9/16"-18 JIC
51.	*A12041	1	Hose Assembly, 3/8" x 244"

SDS HYDRAULIC SYSTEM

(FWD105/FWD101a)



② Valve Block Located At Front Of Hitch

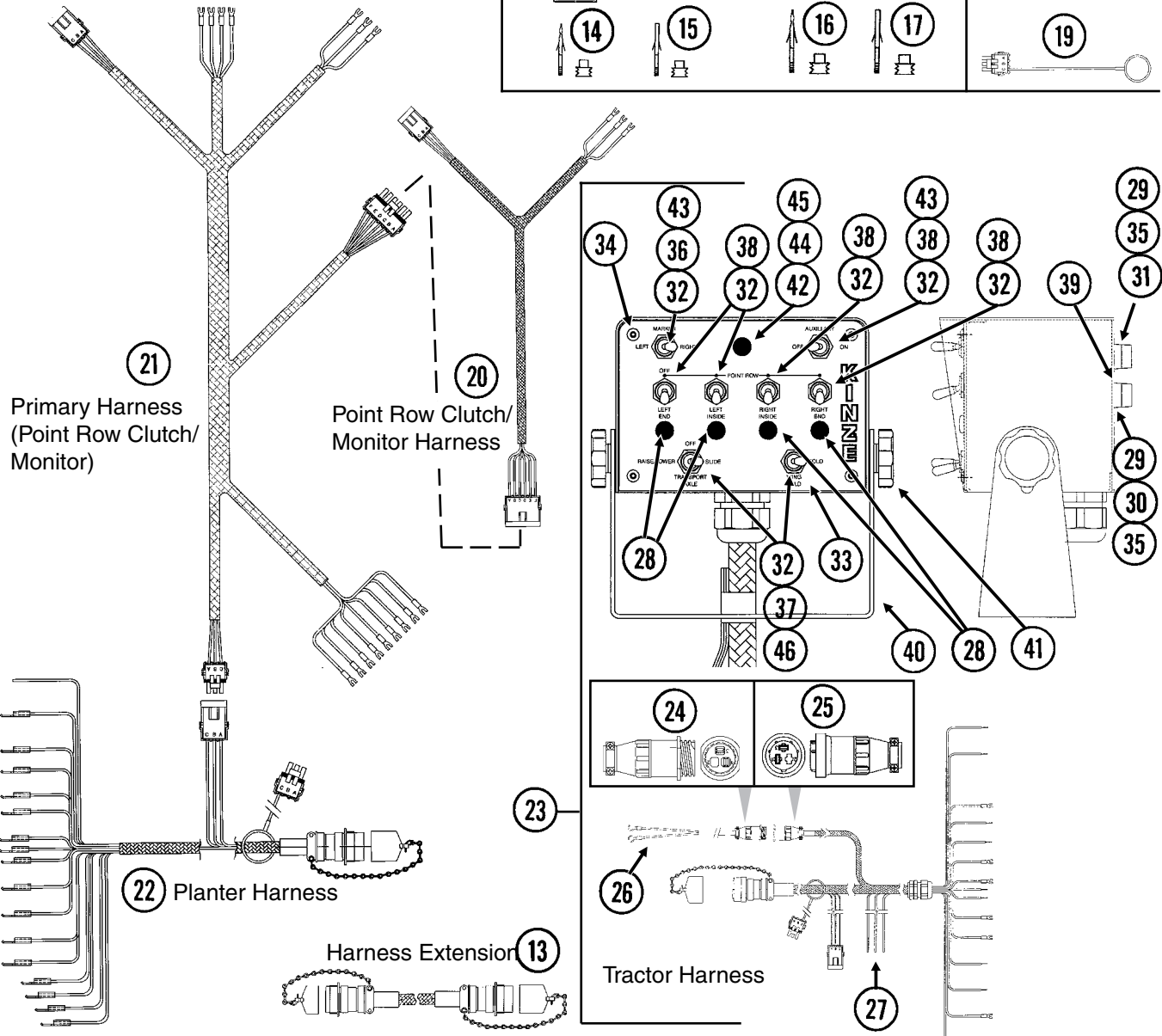
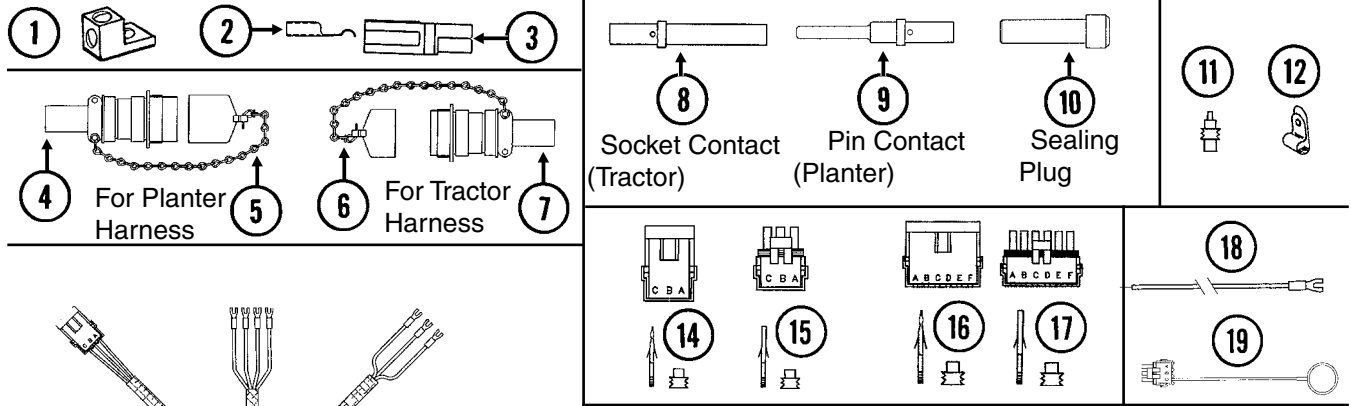


SDS HYDRAULIC SYSTEM

ITEM	PART NO.	QTY.	DESCRIPTION
1.		-	See "SDS Manifold Block", Page P100
2.		-	See "Valve Blocks - Located On Hitch (SDS)", Pages P96 and P97
3.	GA11774	2	Hydraulic Motor
4.	*A11425	1	Hose Assembly, 5/8" x 194"
5.	*A12703	1	Hose Assembly, 1/2" x 194"
6.	*A3159	4	Hose Assembly, 3/8" x 97"
7.	*A11434	-	Hose Assembly, 5/8" x 431", 36 Row 30"
8.	*A12710	-	Hose Assembly, 1/2" x 431", 36 Row 30"
9.	*A8231	1	Hose Assembly, 1/2" x 72"
10.	*A11400	1	Hose Assembly, 5/8" x 72"
11.	GD4086	2	ISO Coupler
12.	GD16538	1	Shaft
13.	GD16537	1	Plate
14.	GD16489	1	Coupler, 7/8" Hex
15.	GD16490	1	Coupler, 1" I.D.
16.	G3317-16	1	Chain, Double No. 40, 16 Pitches
	GR1790	-	Connector Link, Double No. 40
17.	G10002	4	Hex Head Cap Screw, 3/8"-16 x 3/4"
	G10229	4	Lock Washer, 3/8"
18.	G6400-08-10	2	Connector W/O-Ring, 3/4"-16 Male JIC To 7/8"-14 O-Ring
	GR1466	-	O-Ring
19.	G6500-08	2	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
20.	G10606	1	Spring Pin, 1/4" x 2"
21.	GD13524-01	1	Lock Wire, 10", Stainless Steel

ELECTRICAL COMPONENTS (Planter Control Console)

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

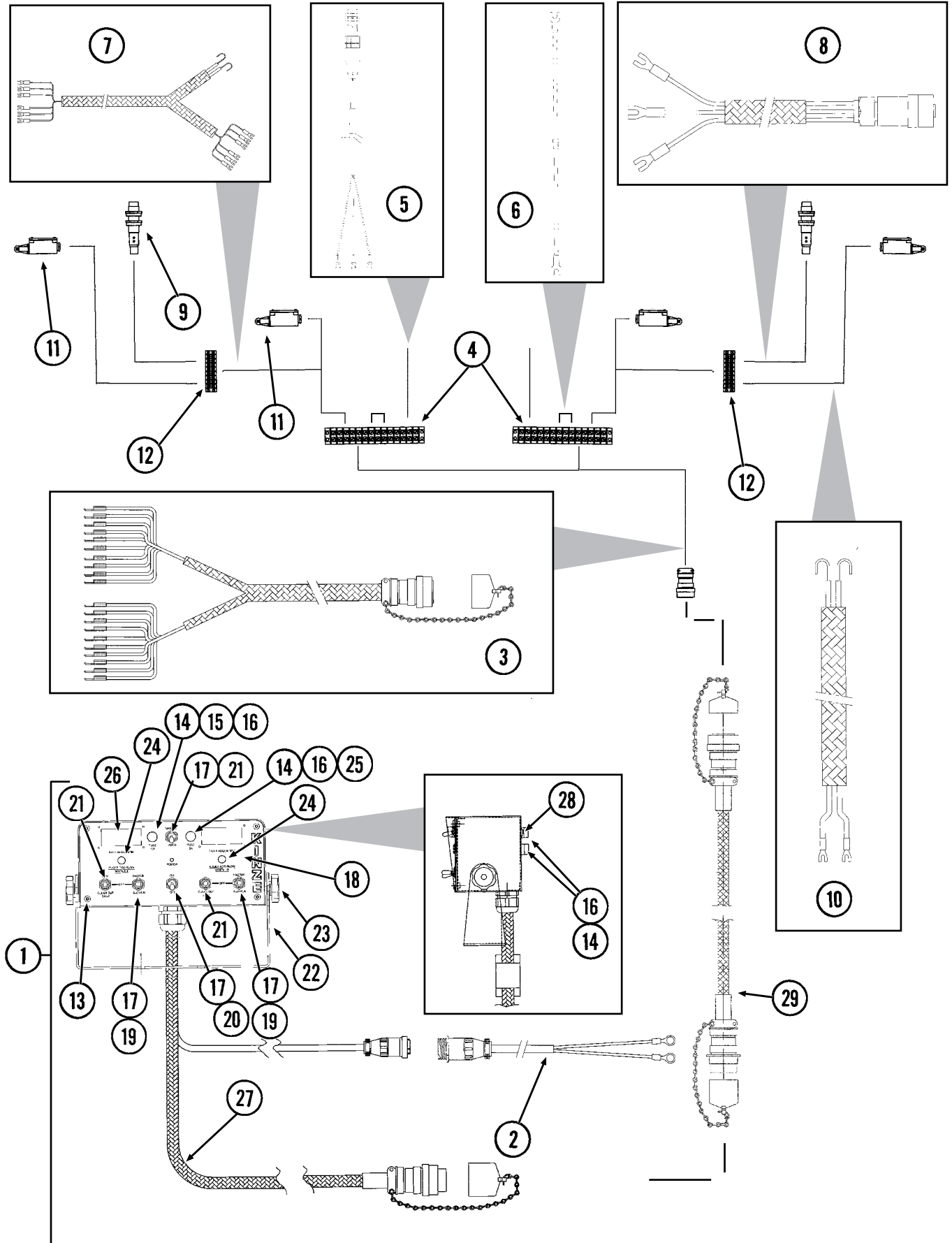


ELECTRICAL COMPONENTS (Planter Control Console)

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, 3/8"
13.	GA7399	-	Harness Extension W/Dust Caps, 180"
14.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
15.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
16.	G1K396	-	6-Pin Female Connector Kit (Black), Includes: (3) 6-Pin Female Housings, (18) Pin Contacts, (18) Seals
17.	G1K395	-	6-Pin Male Connector Kit (Black), Includes: (3) 6-Pin Male Housings, (18) Socket Contacts, (18) Seals
18.	GA9481	-	Jumper Wire W/Fork Terminal, 13"
	G10996	-	Fork Terminal
19.	GA8047	-	Dust Plug (Black)
20.	GA10329	1	Wiring Harness, 359", 36 Row 30"
21.	GA13198	1	Wiring Harness, 497", 36 Row 30"
22.	GA10308	1	Wiring Harness W/Dust Cap, 96"
23.	G7848X	-	Backlit Control Console Assembly W/Mounting Brackets, Short Harness W/Dust Cap And Power Cable
24.	G1K267	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (3) Male Terminal Pins
25.	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (1) Lock Ring, (3) Female Terminal Pins
26.	GA7856	1	Power Lead Adapter
27.	GA10307	1	Wiring Harness W/Dust Cap And Power Cable
28.	GA10194	4	Indicator Light, Red
29.	GA2612	5	Fuse Holder W/Spade, 1 33/50"
30.	GD2829	1	Fuse, 15 Amp, Type AGC
31.	GD10243	4	Fuse, MDL 10 Amp Delay Action
32.	GR1363	8	Hex Face Nut, 15/32"-32
	GR1364	8	Internal Tooth Lock Washer, 15/32"
33.	GA10686	1	Cover Plate
34.	GR1292	4	Hex Socket Button Head Cap Screw, No. 8-32 x 1/2"
35.	GD3860	5	O-Ring (If Applicable)
36.	GA2528	1	Switch, 3 Position Toggle, On-Off-On
37.	GA6978	2	Switch, 3 Position Toggle, Momentary On-Off-Momentary On
38.	GA6977	5	Switch, 2 Position Toggle, On-Off
39.	GA8731	1	Switch, Push Button W/Transformer
40.	GD9896	1	Mounting Bracket
41.	GA6975	2	Knob
	G10211	4	Washer, 1/4" SAE
	GR1290	2	Cage Nut, 1/4"-20
42.	GA10206	1	Indicator Light, Green
43.	GA10682	2	Jumper Wire, 3", Gray
44.	GA10683	1	Jumper Wire, 5", White
45.	GA10684	1	Jumper Wire, 3", Red
46.	GA10685	4	Jumper Wire, 5", White

ELECTRICAL COMPONENTS (SDS Control Console)

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

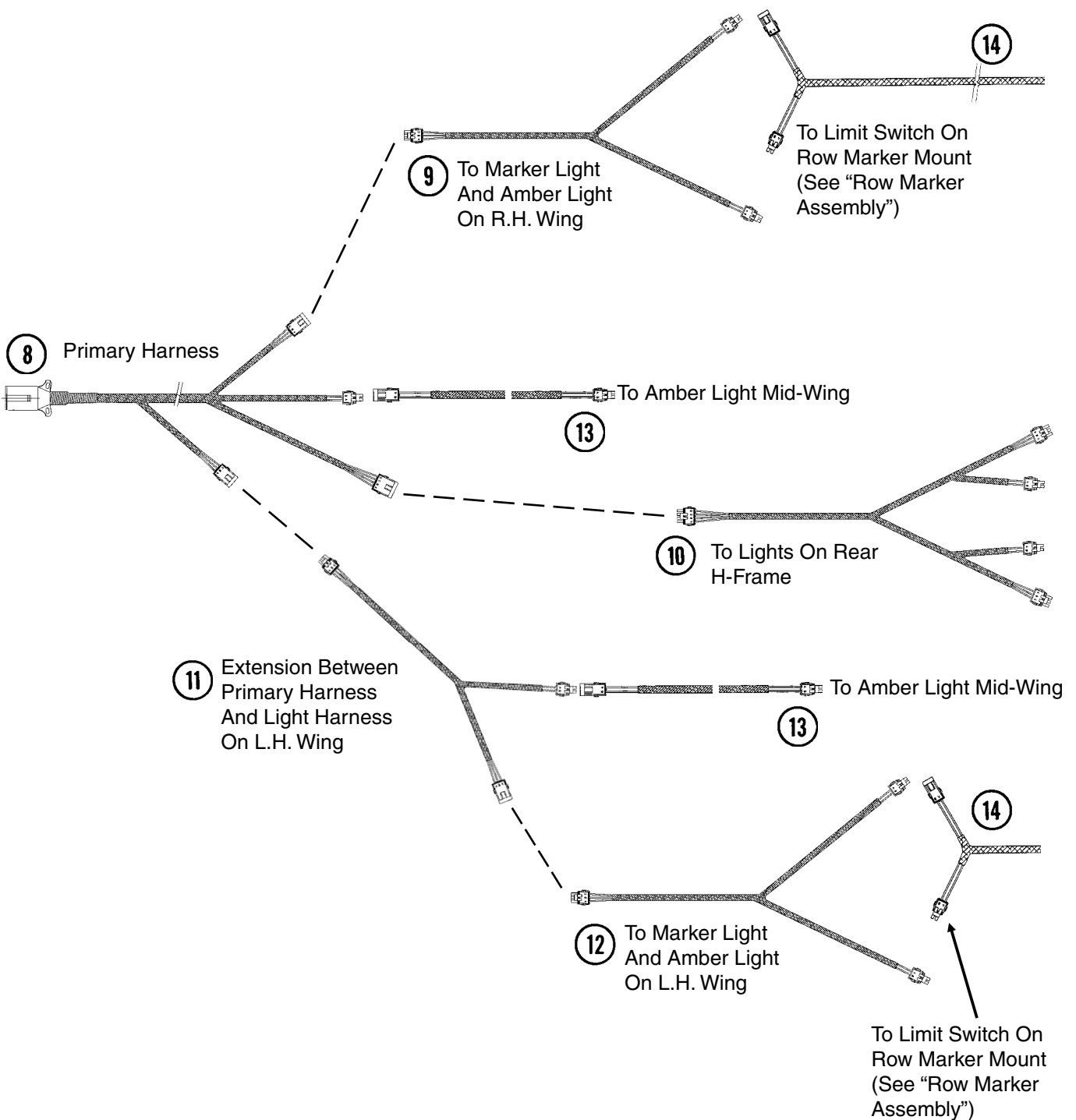
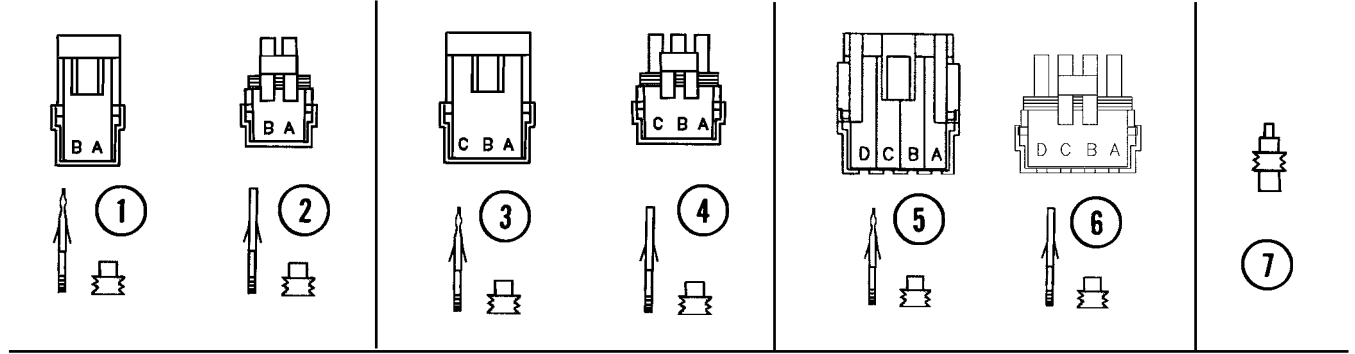


ELECTRICAL COMPONENTS (SDS Control Console)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA11348	1	SDS Control Console Assembly
2.	GA7856	1	Power Lead Adapter
3.	GA11506	-	Wiring Harness, 756", 36 Row 30"
4.	GA9097	2	Terminal Strip W/Screws, No. 6, 14 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
5.	GA9954	2	Speed Sensor Assembly
6.	GA11502	2	Voltage Stabilizer, 8 1/2"
7.	GA11507	-	Wiring Harness, 576", 36 Row 30"
8.	GA11906	2	4-Pin Connector, 48"
9.	GA11387	2	Proximity Sensor
10.	GA11378	2	Wiring Harness, 48"
11.	GA11066	4	Limit Switch
12.	GA9098	2	Terminal Strip W/Screws, No. 6, 8 Terminal
	GR1635	-	Screw, No. 6-32 x 1/4"
13.	GR1292	4	Hex Socket Button Head Cap Screw, No. 8-32 x 1/2"
14.	GA2612	3	Fuse Holder W/Spade, 1 33/50"
15.	GD2829	1	Fuse, 15 Amp, Type AGC
16.	GD3860	3	O-Ring
17.	GR1363	4	Hex Face Nut, 15/32"-32
	GR1364	4	Internal Tooth Lock Washer, 15/32"
18.	GA12171	1	Cover Plate
19.	GA6978	2	Switch, 3 Position Toggle, Momentary On-Off-Momentary On
20.	GA6977	1	Switch, 2 Position Toggle, On-Off
21.	GA12173	2	Switch, 3 Position Locking Toggle
22.	GD14640	1	Mounting Bracket
23.	GA6975	2	Knob
	G10211	4	Washer, 1/4" SAE
	GR1290	2	Cage Nut, 1/4"-20
24.	GA10195	2	Indicator Light, Amber
25.	GA12174	1	Switch, 2 Position Toggle, Momentary-On
26.	GA9965	2	Tachometer
27.	GA12180	1	Wiring Harness W/Dust Cap And Power Cable
28.	G11112	1	Plug, 3/8"
29.	GA11736	-	Harness Extension W/Dust Caps, 180"

ELECTRICAL COMPONENTS (Lights)

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

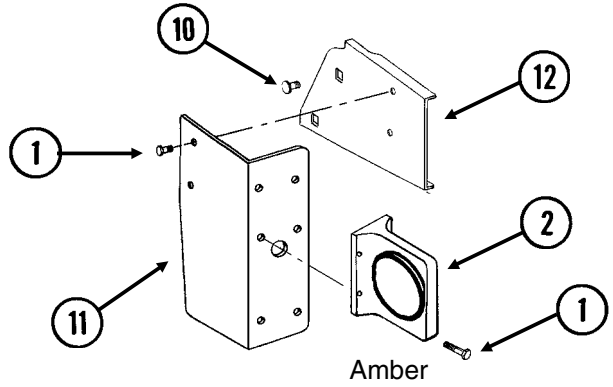
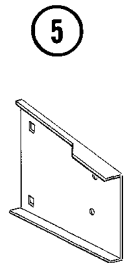
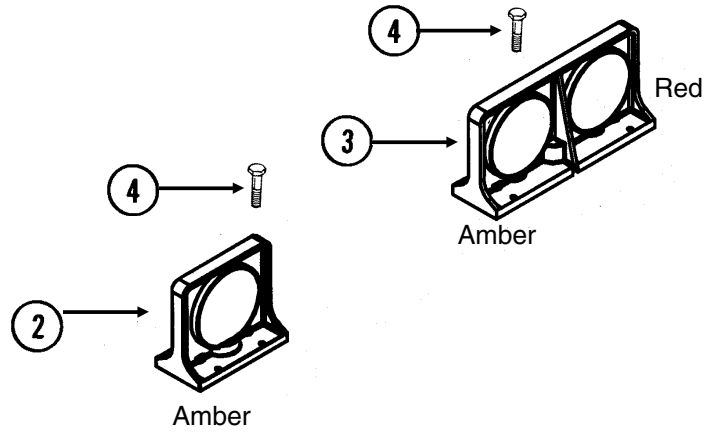
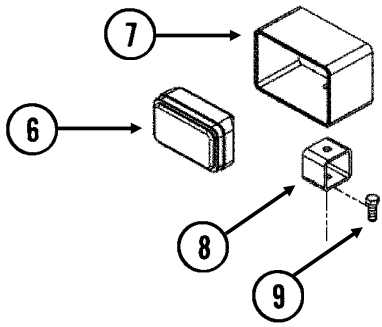


ELECTRICAL COMPONENTS (Lights)

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
2.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
3.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
4.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
5.	GA8328	-	4-Pin Female Connector Kit, Includes: (1) 4-Pin Female Housing, (4) Pin Contacts, (4) Seals
6.	GA8329	-	4-Pin Male Connector Kit, Includes: (1) 4-Pin Male Housing, (4) Socket Contacts, (4) Seals
7.	GD11089	-	Sealing Plug
8.	GA10334	1	Wiring Harness, 543", 36 Row 30"
9.	GA10338	1	Wiring Harness, 276", 36 Row 30"
10.	GA10336	1	Wiring Harness, 258", 36 Row 30"
11.	GA10335	1	Wiring Harness, 359", 36 Row 30"
12.	GA10337	1	Wiring Harness, 276", 36 Row 30"
13.	GA10452	2	Wiring Harness, 63", 36 Row 30"
14.	GA11299	2	Wiring Harness, 63"

LIGHT ASSEMBLIES

(FWD24a/FWD14/RU130b/RU131f)



See "Bulk Seed Hopper Assembly (SDS)", Pages P28 and P29 for Light Brackets for SDS Planters.

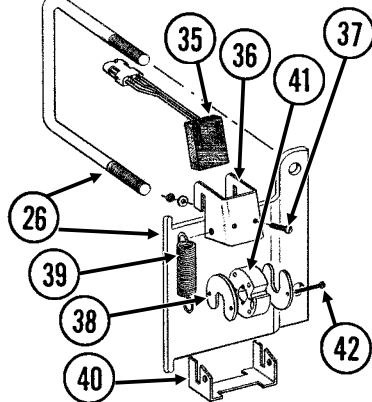
LIGHT ASSEMBLIES AND BRACKETS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10064	-	Hex Head Cap Screw, 1/4"-20 x 1"
	G10227	-	Lock Washer, 1/4"
	G10103	-	Hex Nut, 1/4"-20
2.	GA10576	4	Single Amber Light Assembly
	GR1731	-	Amber Lens
	GR1208	-	Bulb
3.	GA10571	1	Double Light Assembly
	GA10572	-	Double Light Assembly (Shown)
	GR1733	-	Red Lens
	GR1731	-	Amber Lens
	GR1732	-	Cover
	GR1208	-	Bulb
4.	G10064	8	Hex Head Cap Screw, 1/4"-20 x 1"
	G10110	8	Hex Lock Nut, 1/4"-20
5.	GD12723	1	Light Mount Extension
6.	GA10297	2	Work Light Assembly W/Halogen Lamp
	GR1707	-	Halogen Lamp, 3" x 5"
7.	GD15582	1	Light Protector
8.	GD14987	1	Light Bracket
9.	G10017	1	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
10.	G10312	-	Carriage Bolt, 5/16"-18 x 3/4"
	G10620	-	Serrated Flange Nut, 5/16"-18
11.	GD12725	1	Bracket (Shown)
	GD12724	1	Bracket
12.	GD15968	1	Light Mount Extension

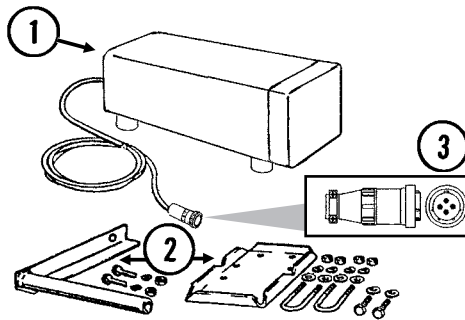
KPM III ELECTRONIC SEED MONITOR

(MTR59)

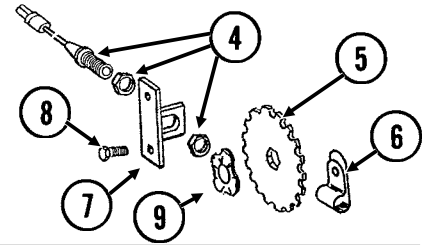
Shaft Rotation Sensor



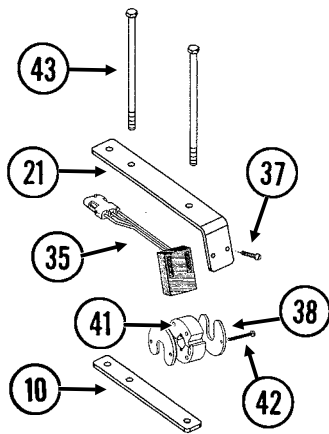
Radar Distance Sensor



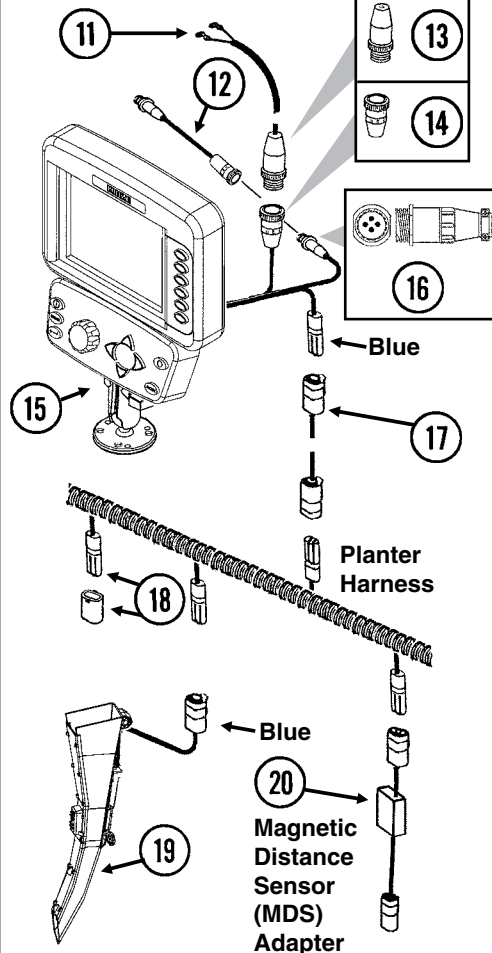
Magnetic Distance Sensor (MDS)



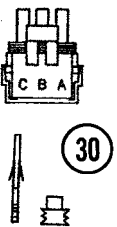
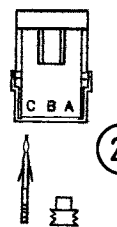
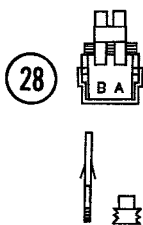
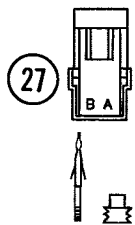
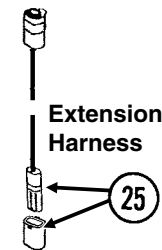
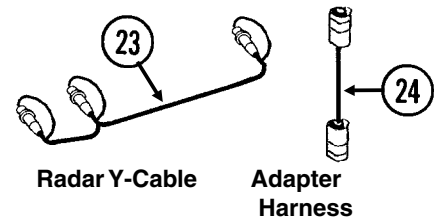
Shaft Rotation Sensor



Power Lead Adapter



22



31

ITEM	PART NO.	QTY.	DESCRIPTION
1.	GA7858	-	Radar Distance Sensor W/20' Cable
2.	GA8026	-	Radar Sensor Pipe/Mounting Bracket Package
3.	G1K323	-	4-Pin Connector Kit W/Female Housing, Includes: (4) Pins, (1) Cable Clamp
4.	GA5600	1	Magnetic Distance Sensor
5.	GD8751	-	Magnetic Distance Sensor Pulse Wheel
6.	GD6291	-	Insulated Clamp, 3/8"
7.	GD8770	1	Bracket
8.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16

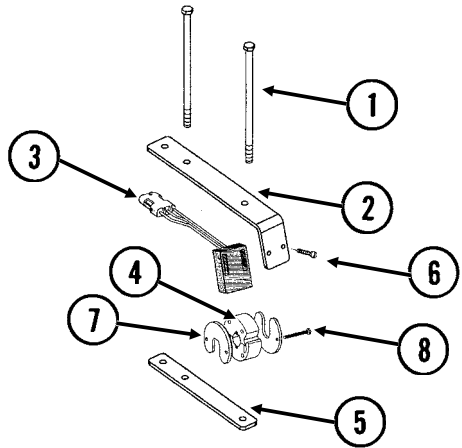
KPM III ELECTRONIC SEED MONITOR

ITEM	PART NO.	QTY.	DESCRIPTION
9.	GD8771	1	Spring Wave Washer
10.	GD18168	2	Mount
11.	GA7856	1	Power Lead Adapter
12.	GA9144	-	Monitor/Radar Adapter Cable, 10"
13.	G1K267	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (3) Male Terminal Pins
14.	G1K268	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (1) Lock Ring, (3) Female Terminal Pins
15.	GA11039	-	KPM III Backlit Console W/Brush (Item 22), Dust Plug (Item 33), Mounting Bracket Assembly, Console Mounting Bracket Hardware And Power Harness
	GA12403	-	Mounting Bracket Assembly, Includes: (2) Mounting Brackets, (2) Connector Halves, (1) Compression Spring, (1) Tension Knob, (1) 1/4"-20 x 1 3/4" Hex Head Cap Screw, (1) 1/4" Plastic Washer, (1) 1/4" Steel Washer
	GR1762	-	Console Mounting Bracket Hardware Package, Includes: (3) No. 10-32 x 5/8" Hex Socket Pan Head Screws, (3) No. 10 Lock Washers
	GR1764	-	Power Harness
16.	G1K322	-	4-Pin Connector Kit W/Male Housing, Includes: (4) Female Socket Contacts And (1) Cable Clamp
17.		-	See Tractor/Planter Wiring Harness, Items 18 And 39 On Pages P104 And P105
18.	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7851	-	Planter Harness W/Dust Caps, 12 Row (16 Connectors)
	GA7852	-	Planter Harness W/Dust Caps, 16 Row (20 Connectors)
	GD11993	-	Dust Cap
19.	GA10901	-	Seed Tube W/Computerized Sensor
	GR1629	-	Sensor Only
	GA10940	-	Seed Tube (With Holes For Sensor Installation)
20.	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
21.	GD18118	2	Shaft Sensor Mount
22.	GR0594	-	Brush
23.	GR0586	1	Radar Y-Cable (Used To Connect Radar Distance Sensor For Multiple Functions)
24.	GA7857	-	Adapter Harness, 1'
25.	GA7854	-	Extension Harness W/Dust Cap, 15'
	GA7855	-	Extension Harness W/Dust Cap, 30'
	GD11993	-	Dust Cap
26.	G1K364	-	Rotation Sensor Mount Kit, Includes: (2) Mounts, (2) GD11721 5" x 7" U-Bolts, (4) G10228 Lock Washers, (4) G10102 Hex Nuts, (1) Instruction
27.	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
28.	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
29.	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
30.	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
31.	GD11089	-	Sealing Plug
32.	G1K249	-	Acre Counter Switch Kit
33.	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
34.	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
35.	GR1415	1	Rotation Sensor
36.	GD11169	1	Mount
37.	G10757	2	Pan Head Screw, No. 10-32 x 1 1/4"
	G10243	2	Washer, No. 10 SAE
	G10758	2	Hex Nut, No. 10-32
38.	GD11474	2	Cover
39.	GD5857	2	Spring
40.	GD11170	1	Spring Mount
41.	GR1414	1	Actuator
42.	G10927	2	Pan Head Machine Screw, No. 8-32 x 1 1/4", Stainless Steel
	G10931	2	Lock Washer, No. 8, Internal/External, Stainless Steel
	G10928	2	Hex Nut, No. 8-32, Stainless Steel
43.	G10686	4	Hex Head Cap Screw, 3/8"-16 x 8"
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
A.	GA6147	-	Magnetic Distance Sensor And Mounting Package (Items 4-9)

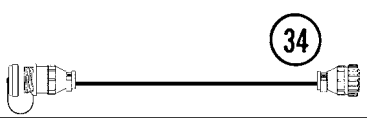
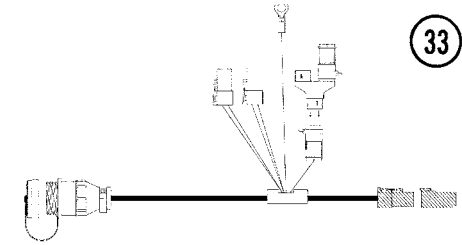
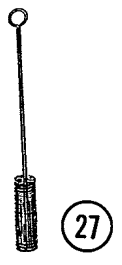
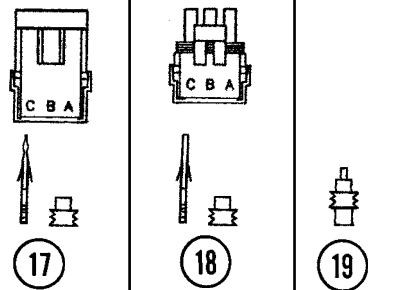
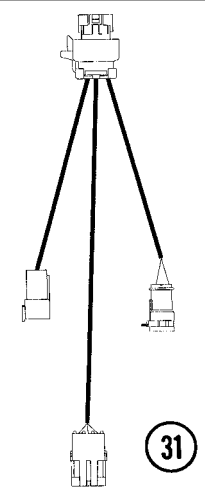
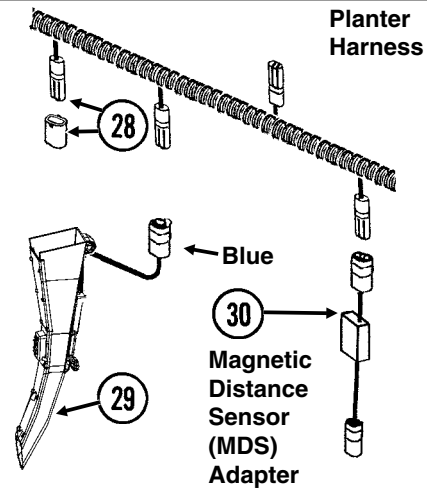
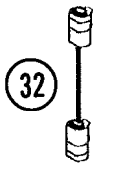
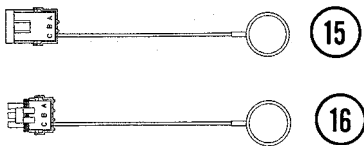
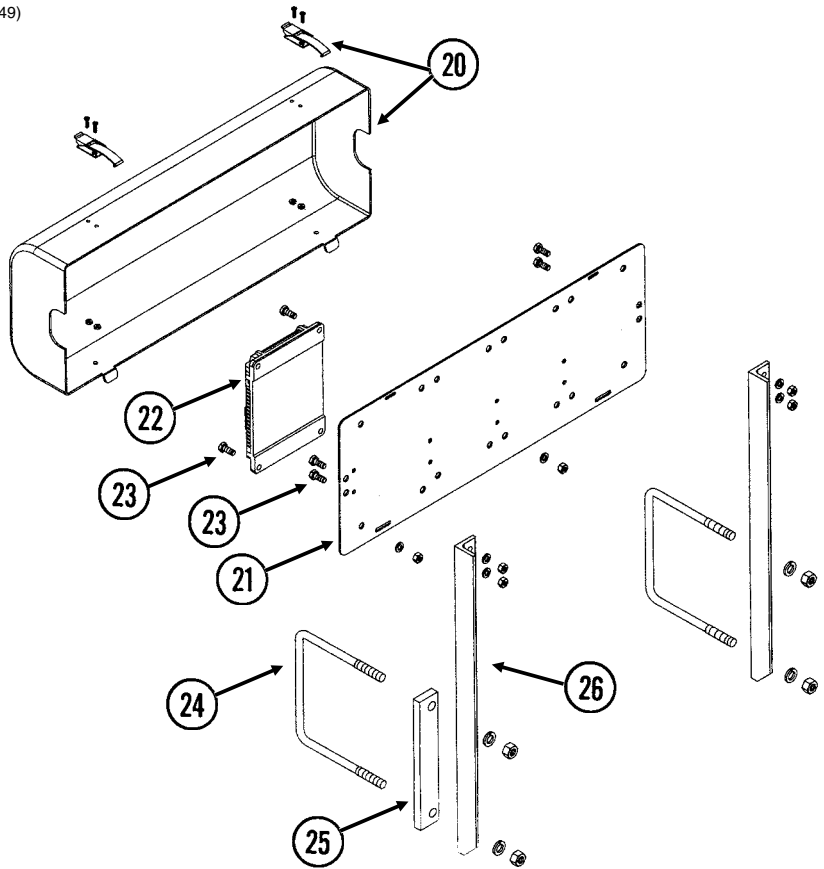
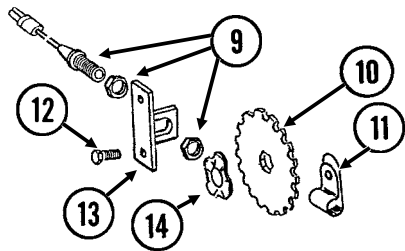
PLANTER MONITOR MODULE (PMM)

(MTR60/MTR63/PMM01/MTR65/MTR61/MTR64/MTR62/PMM02/A7849)

Shaft Rotation Sensor



Magnetic Distance Sensor (MDS)

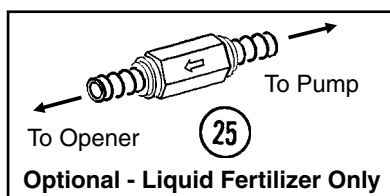
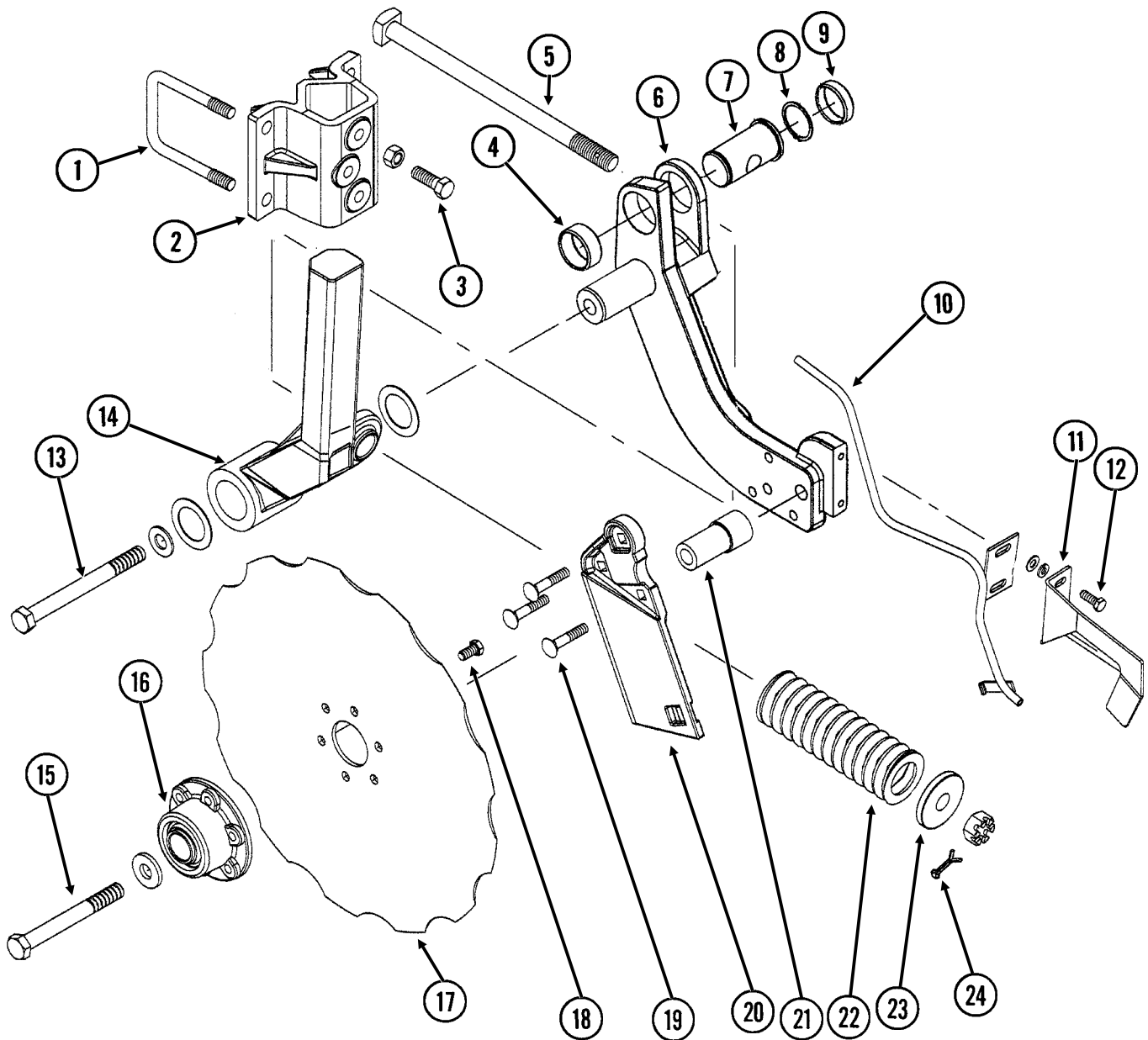


PLANTER MONITOR MODULE (PMM)

ITEM	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.	G10757	2	Pan Head Screw, No. 10-32 x 1 1/4"
	G10243	2	Washer, No. 10 SAE
	G10758	2	Hex Nut, No. 10-32
7.	GD11474	4	Cover
8.	G10927	4	Pan Head Machine Screw, No. 8-32 x 1 1/4", Stainless Steel
	G10931	4	Lock Washer, No. 8, Internal/External, Stainless Steel
	G10928	4	Hex Nut, No. 8-32, Stainless Steel
9.	GA5600	1	Magnetic Distance Sensor
10.	GD8751	-	Magnetic Distance Sensor Pulse Wheel
11.	GD6291	-	Insulated Clamp, 3/8"
12.	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
13.	GD8770	1	Bracket
14.	GD8771	1	Spring Wave Washer
15.	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
16.	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
17.	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
	G1K362	-	3-Pin Female Connector Kit (Blue), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
18.	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
	G1K363	-	3-Pin Male Connector Kit (Blue), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
19.	GD11089	-	Sealing Plug
20.	GA12563	1	Module Cover Assembly W/Lock Clamps
	GA12641	-	Lock Clamp
	G11065	-	Phillips Pan Head Machine Screw, No. 8-32 x 5/8", Stainless Steel
	G11202	-	Lock Nut W/Nylon Insert, No. 8-32, Stainless Steel
21.	GD18013	1	Bracket
22.	GA12538	1	Planter Monitor Module
23.	G10043	4	Hex Head Cap Screw, 5/16"-18 x 3/4"
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
24.	GD7145	2	U-Bolt, 7" x 7" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
25.	GD16316	2	Spacer, 1 1/2" x 9"
26.	GD16315	2	Support, 21 1/2"
27.	GR0594	-	Brush
28.	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7851	-	Planter Harness W/Dust Caps, 12 Row (16 Connectors)
	GA7852	-	Planter Harness W/Dust Caps, 16 Row (20 Connectors)
	GD11993	-	Dust Cap
29.	GA10901	-	Seed Tube W/Computerized Sensor
	GR1629	-	Sensor Only
	GA10940	-	Seed Tube (With Holes For sensor Installation)
30.	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
31.	GA12557	1	Planter Monitor Module Cable
32.	GA7849	1	Extension Harness, 15'
33.	GA12655	-	Implement Cable
34.	GA13562	-	Cable Extension, 15'
A.	GA6147	-	Magnetic Distance Sensor And Mounting Package (Items 9-14)

NOTCHED SINGLE DISC FERTILIZER OPENER

(A10216aa)

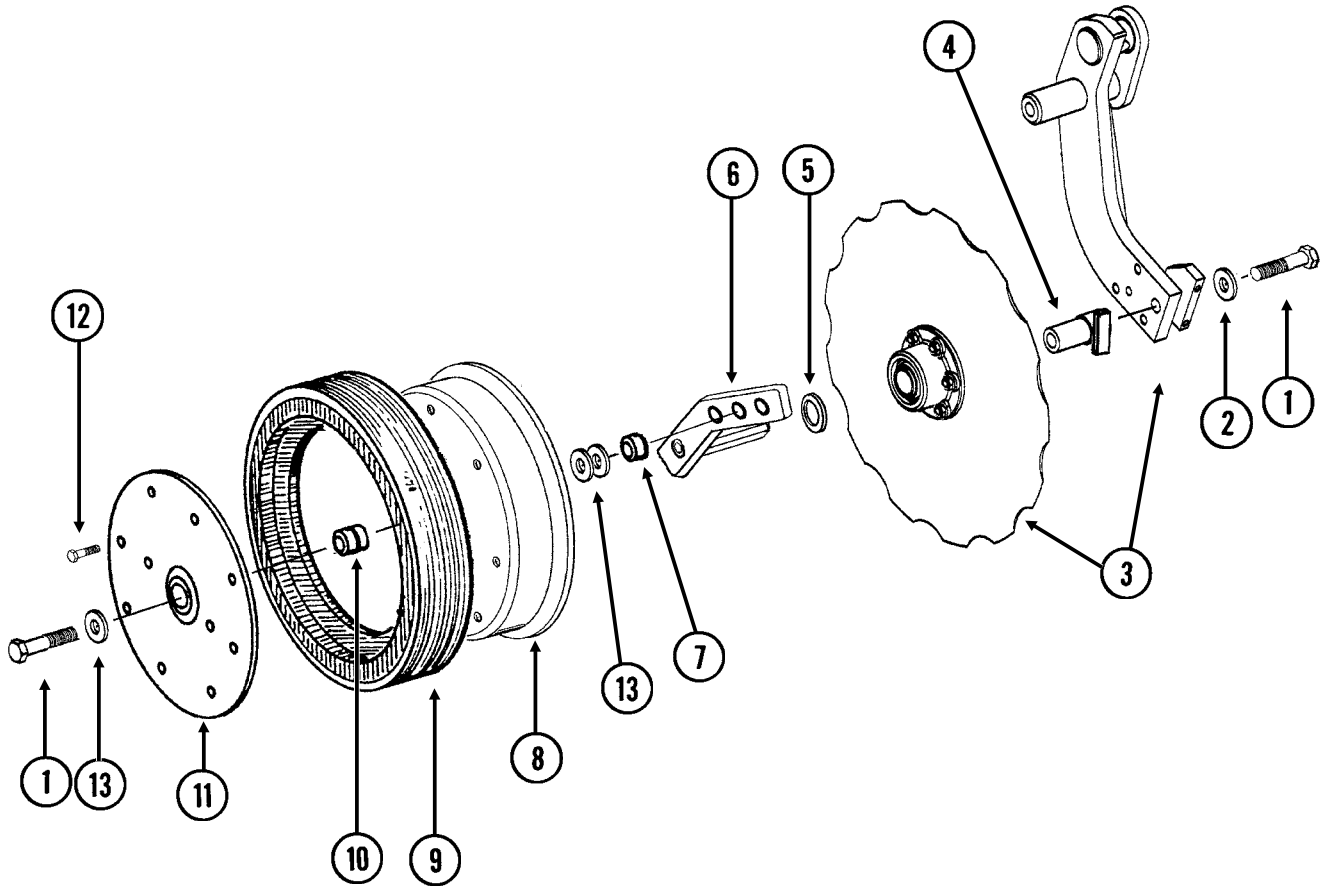


NOTCHED SINGLE DISC FERTILIZER OPENER

ITEM	PART NO.	QTY.	DESCRIPTION
		(Per Assy.)	
1.	GD17006	2	U-Bolt, 3" x 3" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
2.	GB0343	1	Mount
3.	G10017	3	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10102	3	Hex Nut, 1/2"-13
4.	GD14672	1	Spring Bushing, 3/4"
5.	GD15226	1	Special Bolt, 3/4"-10 x 12"
	G11116	1	Slotted Hex Nut, 3/4"-10
6.	GA10704	1	Pivot Arm W/Shaft, R.H. (Shown)
	GA10705	-	Pivot Arm W/Shaft, L.H.
	GD14651	-	Shaft
7.	GD14649	-	Pin
8.	G10283	1	External Retaining Ring, 1 1/2"
9.	GD14673	1	Spring Bushing, 1/2"
10.	GA11760	1	Drop Tube, R.H., Liquid Fertilizer (Shown)
	GA11759	-	Drop Tube, L.H., Liquid Fertilizer
11.	GD11558	-	Scraper, R.H. (Shown)
	GD11557	1	Scraper, L.H.
12.	G10991	2	Hex Head Cap Screw, 5/16"-18 x 7/8"
	G10232	2	Lock Washer, 5/16"
	G10219	2	Washer, 5/16" USS
13.	G10012	1	Hex Head Cap Screw, 5/8"-11 x 6 1/2"
	G10450	2	Machine Bushing, 1 1/2", 18 Gauge
	G10217	1	Washer, 5/8" USS
	G10107	1	Lock Nut, 5/8"-11
14.	GA10646	1	Arm Mount W/Grease Fitting, Bushing And Seal, R.H. (Shown)
	GA10647	-	Arm Mount W/Grease Fitting, Bushing And Seal, L.H.
	G10640	-	Grease Fitting, 1/4"-28
	GD15600	-	Bushing
	GD15568	-	Seal
15.	G10011	1	Hex Head Cap Screw, 5/8"-11 x 5 1/2"
	GD12677	1	Washer, 1 1/2" O.D., 7 Gauge, Hardened
	G10107	1	Lock Nut, 5/8"-11
16.	GA9437	1	Hub W/Bearing
	GA8603	-	Bearing, Double Row
17.	GD12676	1	Disc Blade, Notched, 16 3/4"
18.	G10002	6	Hex Head Cap Screw, 3/8"-16 x 3/4"
19.	G10306	3	Carriage Bolt, 3/8"-16 x 2"
	G10108	3	Lock Nut, 3/8"-16
20.	GB0322	-	Knife, R.H. (Shown)
	GB0323	1	Knife, L.H.
21.	GD12679	1	Stepped Spacer, 3" Long
22.	GD12817	1	Compression Spring
23.	GB0213	1	Spring Seat
24.	G10462	1	Cotter Pin, 3/16" x 2"
25.	GA8983	-	Check Valve, Low Rate

DEPTH/GAUGE WHEEL ATTACHMENT FOR NOTCHED SINGLE DISC FERTILIZER OPENER

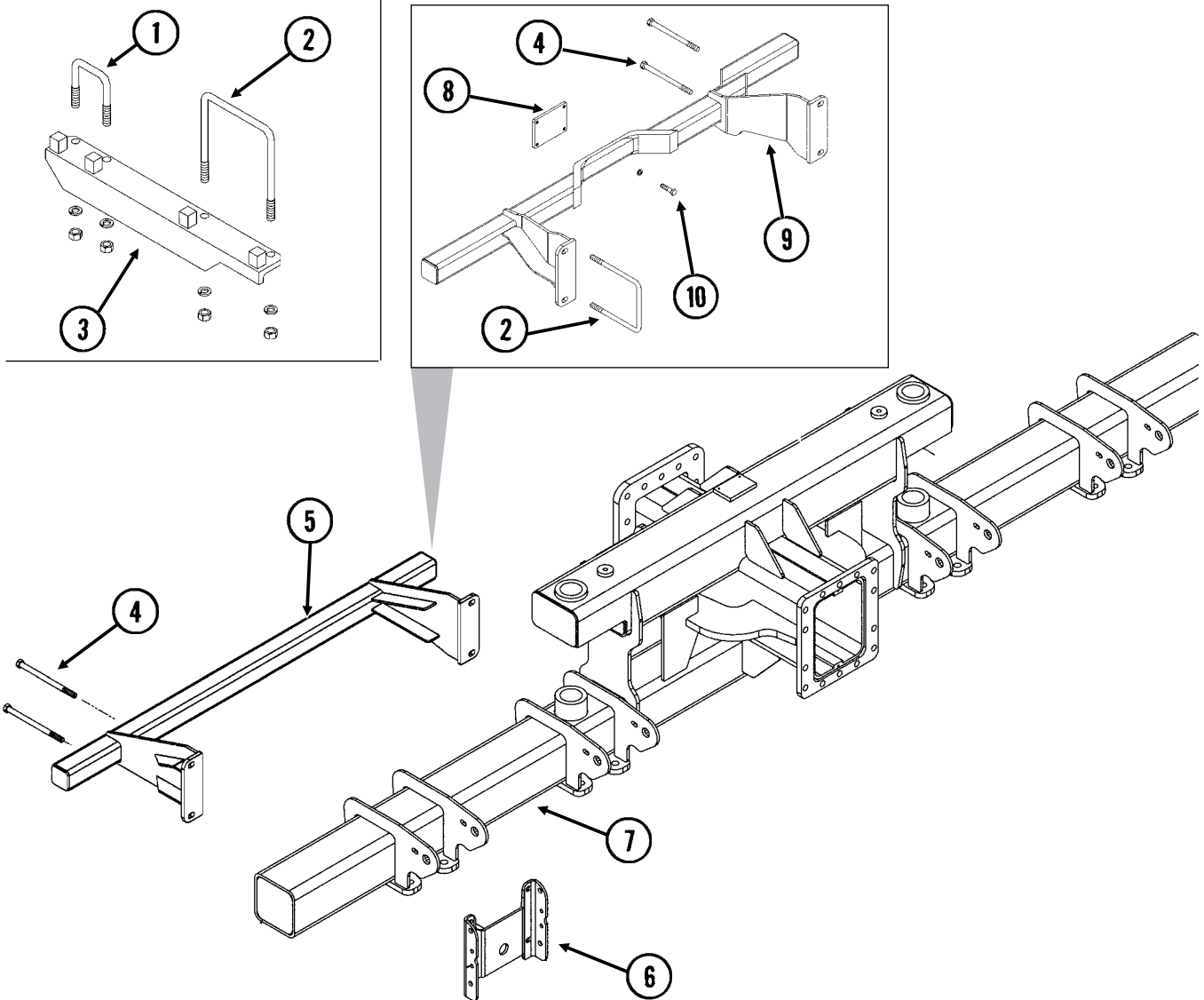
(FRTZ257)



ITEM	PART NO.	QTY.	DESCRIPTION
(Per Assy.)			
1.	G10010	2	Hex Head Cap Screw, 5/8"-11 x 3"
2.	GD7805	1	Special Washer, 5/8", Hardened
3.		-	See "Notched Single Disc Fertilizer Opener", Pages P120 And P121
4.	GA9472	1	Blade Mount
5.	G10233	1	Machine Bushing, 1", 10 Gauge
6.	GA10037	1	Wheel Mount, L.H.
	GA10036	1	Wheel Mount, R.H. (Shown)
7.	GD13309	1	Spacer
8.	GD11423	1	Half Wheel
9.	GD11953	1	Offset Tire
10.	GA6171	1	Bearing
11.	GD11954	1	Half Wheel Cover, Nylon
12.	G10961	11	Flanged Whiz-Lock Screw, 5/16"-18 x 3/4", No Serration
	G10620	11	Serrated Flange Nut, 5/16"-18
13.	G10204	-	Special Machine Bushing, 5/8" x 1" O.D. (As Required)
A.	GA8877	-	Gauge Wheel Complete (Items 8-12)

FERTILIZER OPENER MOUNTS

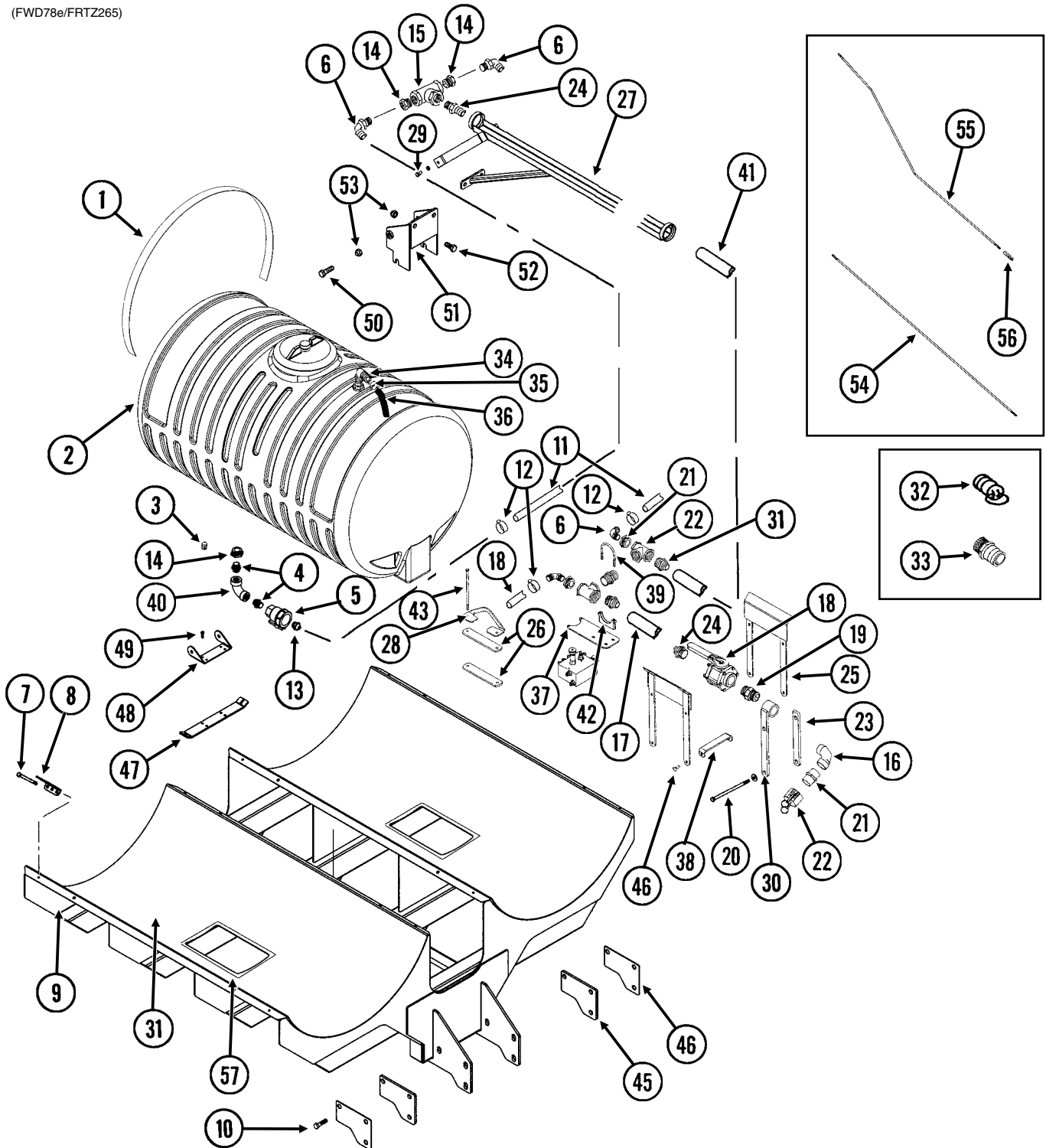
(FWD28/FWD138/FWD29a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD14671	-	U-Bolt, 3" x 3" x 5/8"-11
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 5/8"-11
2.	GD17039	-	U-Bolt, 7" x 7" x 5/8"-11
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 5/8"-11
3.	GB0365	-	Brace, L.H. (Shown)
	GB0370	-	Brace, R.H.
4.	G10177	-	Hex Head Cap Screw, 5/8"-11 x 9 1/2"
	G10230	-	Lock Washer, 5/8"
	G10104	-	Hex Nut, 5/8"-11
5.	GA10923	2	Mount
6.		-	See "Parallel Arms, Mounting Support Plate And Quick Adjustable Down Force Springs", Page P12
7.		-	See "Center Toolbar/Rear H-Frame Assembly", Pages P50 And P51
8.	GD17973	2	Tap Block
9.	GA12487	1	Opener Mount, L.H. (Shown)
	GA12488	-	Opener Mount, R.H.
10.	G10016	8	Hex Head Cap Screw, 1/2"-13 x 2"
	G10228	8	Lock Washer, 1/2"

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

(FWD78e/FRTZ265)



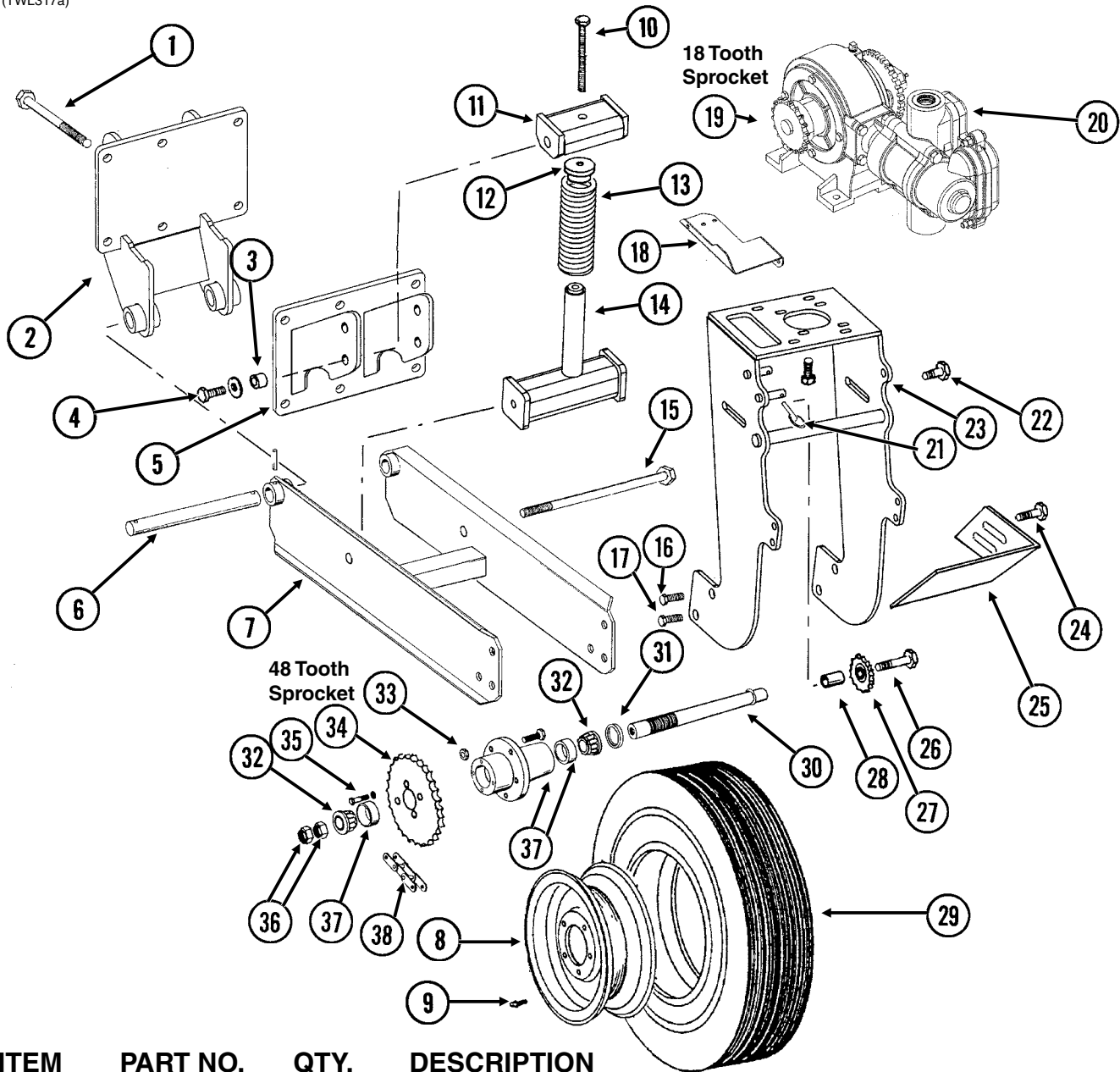
ITEM	PART NO.	QTY.	DESCRIPTION
1.	GD15605	3	Band (3 Per Tank)
2.	GA11743	2	Tank W/Lid And Fittings, 300 Gallon
	GR1006	-	Lid W/Removable Vent, 10" (Top Of Tank)
	GR1005	-	Fillwell, 10" (Top Of Tank)
	GR0508	-	1 1/4" Polypropylene Fitting Assembly (Nut, Bushing, And O-Ring) (Bottom Of Tank)
	GR1435	-	1 1/4" Anti-Vortex Fitting Assembly (Nut, Bushing And O-Ring)
	GR0513	-	3/4" Polypropylene Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring)
	GR1571	-	Strap W/Cap Rivet
3.	G10739	2	Plug, 1 1/4" NPT

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

ITEM	PART NO.	QTY.	DESCRIPTION
4.	G10619	4	Close Nipple, 1 1/4" NPT
5.	GA4976	2	Shutoff Valve, 1 1/4" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
6.	G10629	4	Elbow, 90°, 1 1/4" NPT To Barb
7.	G10485	6	Hex Head Tap Bolt, 3/8"-16 x 5" (6 Per Tank)
	G10901	6	Lock Nut W/Nylon Insert, 3/8"-16 (6 Per Tank)
8.	GD11123	6	Anchor (Sub GA8114)
9.	GA11607	1	Tank Mount W/Wheels, Sleeve, Bushings And Hardware
	GD16714	-	Wheel
	GD5900-28	-	Sleeve, 1 1/2" O.D. x 1" I.D. x 2 1/8"
	GD16717	-	Bronze Bushing
	GD16718	-	Flanged Bronze Bushing
	GD16716	-	Special Bolt, 1"-8 x 12"
	G10640	-	Grease Fitting, 1/4"-28
10.	G10044	6	Hex Head Cap Screw, 3/4"-10 x 4"
	G10112	6	Lock Nut, 3/4"-10
11.	G4200-13	2	Hose, 1 1/4" x 50'
12.	G10674	48	Hose Clamp, No. 24
13.	G10626	2	Adapter, 1 1/4" NPT To Barb
14.	G10616	6	Reducing Bushing, 2" Male NPT To 1 1/4" Female
15.	G10888	3	Tee, 2" Female NPT
16.	G10287	1	Elbow, 90°, 2" Male NPT To Female
17.	G4201-02	1	Hose, 2" x 12'
18.	GA2660	1	Shutoff Valve, 2" NPT
19.	G10623	3	Close Nipple, 2" NPT
20.	G10148	2	Hex Head Cap Screw, 1/2"-13 x 9 1/2"
	G10216	2	Washer, 1/2" USS
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
21.	GD3622	2	Adapter, 2" Female NPT To Cam Lock
22.	GD3951	1	Dust Cap, 2" Cam Lock
23.	GD15706	-	Bracket, 1 1/2" x 18 1/2", 36 Row 30"
24.	G10628	4	Adapter, 2" NPT To Barb
25.	GA11063	-	Hose Support, 36 Row 30"
26.	GD16478	4	Bracket
27.	GA10663	1	Hose Support
28.	GD16479	4	Mount
29.	G10014	2	Hex Head Cap Screw, 1/2"-13 x 1"
	G10228	2	Lock Washer, 1/2"
30.	GA10510	-	Straight Mount, Quick Fill, 20 19/32", 36 Row 30"
31.	GD1862	2	Pad, 8" x 14"
32.	GD10777	2	Dust Plug, 2" Male Cam Lock
33.	GD3623	1	Adapter, 2" Male NPT To Cam Lock
34.	G10917	2	Elbow, 90°, 3/4" NPT To Barb
35.	G10278	10	Hose Clamp. No. 16
36.	G4205-10	1	Hose, 3/4" x 200" (100" Per Tank)
37.	GD16210	1	Bracket
38.	GD16189	4	Tie Bracket
39.	G11165	2	T-Bolt Clamp, 2 1/2", Stainless Steel
40.	G10897	2	Elbow, 90°, 1 1/4" Female NPT
41.	G4206-01	1	Hose, 2" x 18'
42.	GA8768	2	Clamp, 3"
43.	G10753	-	Hex Head Cap Screw, 3/8"-16 x 4 1/2", 36 Row 30"
	G10108	8	Lock Nut, 3/8"-16
44.	G10599	8	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10203	8	Washer, 3/8" SAE
	G10108	8	Lock Nut, 3/8"-16
45.	GD16733	2	Shim, 3/8"
46.	GD16731	4	Shim, 12 Gauge
47.	GD16943	1	Mounting Plate
	G10599	-	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10227	-	Lock Washer, 1/4"
	G10103	-	Hex Nut, 1/4"-20
48.	GD16942	1	Flapper
49.	G10064	6	Hex Head Cap Screw, 1/4"-20 x 1"
50.	G10027	2	Hex Head Cap Screw, 3/4"-10 x 2 1/2"
51.	GA11608	-	Hose Support Mount
52.	G11042	2	Hex Head Cap Screw, 3/4"-10 x 1 3/4"
53.	G10112	12	Lock Nut, 3/4"-10
54.	GD16751	1	Extension Rod
55.	GD16944	1	Flapper Rod
56.	GD16572	1	Flapper Pivot Mount
57.	G4427-01	-	Edge Molding, 1/8" x 12"
	G4427-02	-	Edge Molding, 1/8" x 7"

LIQUID FERTILIZER PISTON PUMP MOUNT AND GROUND DRIVE WHEEL

(TWL317a)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	G10152	6	Hex Head Cap Screw, 5/8"-11 x 9"
	G10230	6	Lock Washer, 5/8"
	G10104	6	Hex Nut, 5/8"-11
2.	GA10355	1	Wheel Arm Mount
3.	GB0218	2	Bushing, 2 1/2" I.D. x 7/8" O.D. x 1 9/32" 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

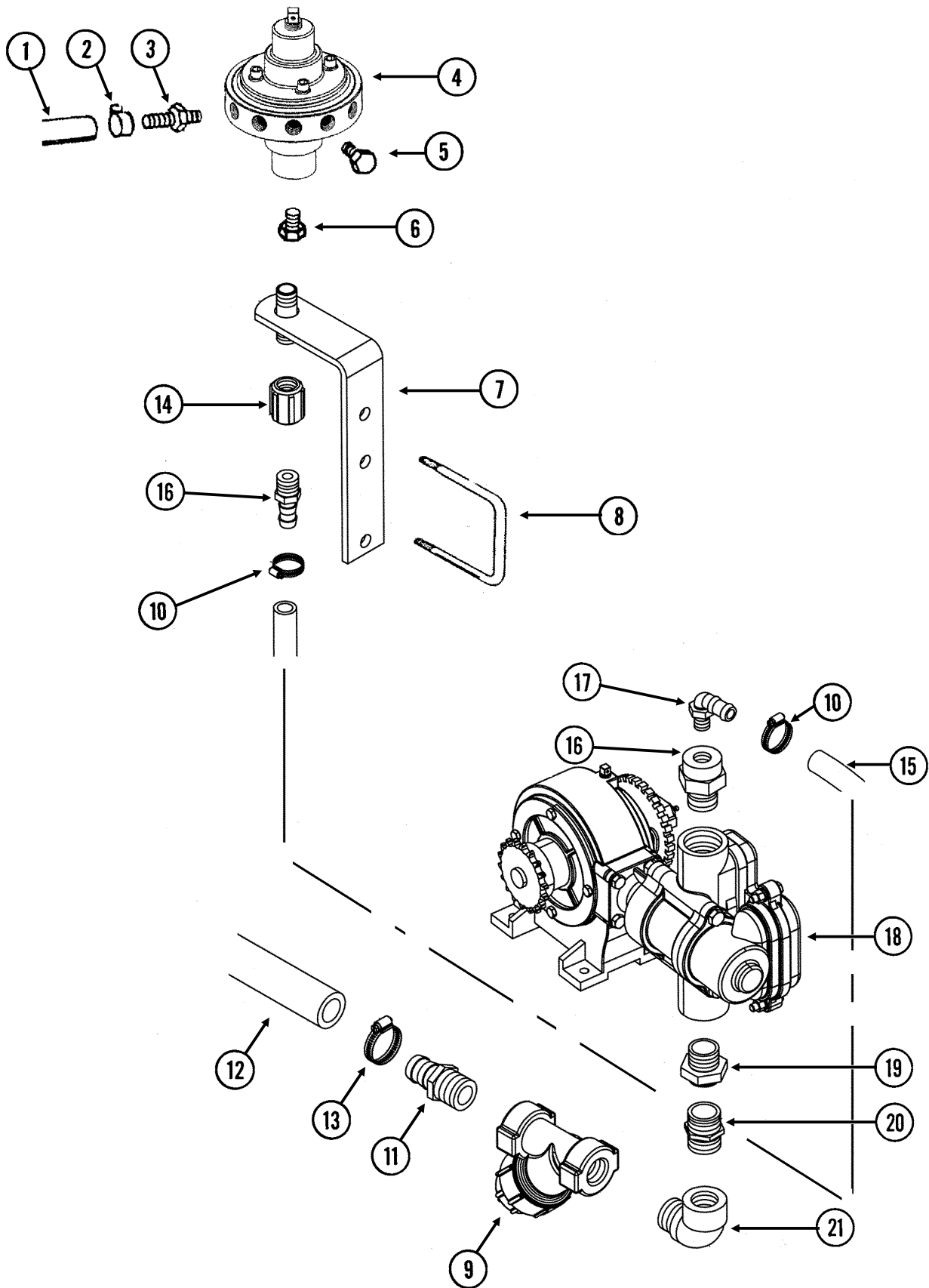
LIQUID FERTILIZER PISTON PUMP MOUNT AND GROUND DRIVE WHEEL

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 P130 and P131
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, 1 1/16" 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

(FRTZ280/FRTZ298)



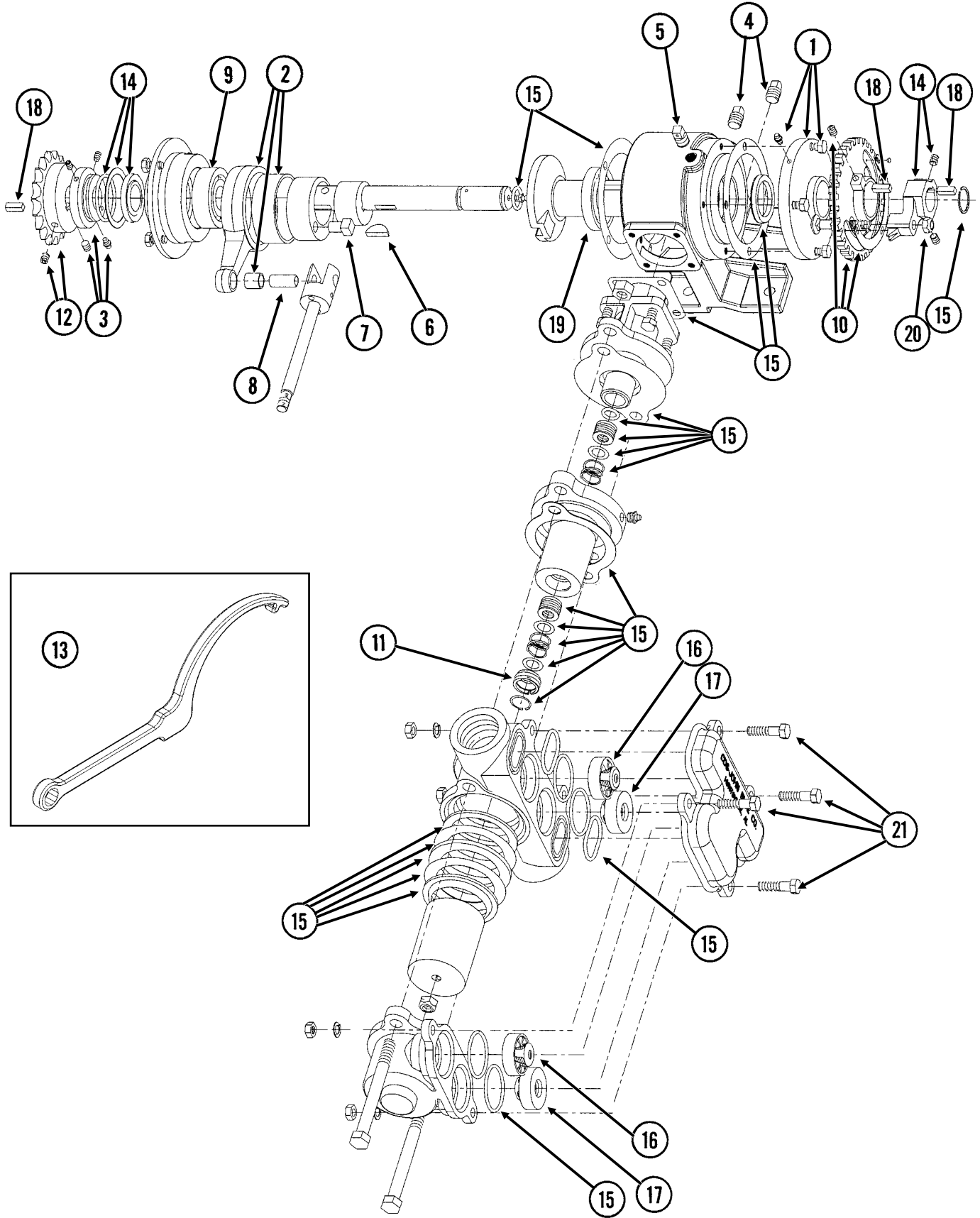
LIQUID FERTILIZER FLOW DIVIDER MOUNT AND HOSES

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G4301-06	1	Hose, 3/8" x 160', 12 Row
	G4301-05	1-2	Hose, 3/8" x 120', 16 Row
2.	G10681	-	Hose Clamp, No. 6
3.	GD11700	-	Adapter, 1/4" NPT To 3/8" Barb
4.		-	See "Liquid Fertilizer Piston Pump Flow Divider", Page P132
5.	G10292	-	Pipe Plug, 1/4" NPT
6.	G10995	1	Reducing Bushing, 1" Male NPT To 3/4" Female, Stainless Steel (If Applicable)
7.	GA6527	1	Mount, 3/4" NPT
8.	GD1113	1	U-Bolt, 5" x 7" x 5/8"-11
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
9.	GA3893	1	Strainer Complete
	GR0880	-	Screen, No. 40 Mesh
	GR0881	-	Gasket
	GR0882	-	Y-Body
	GR0883	-	End Cap
10.	G10278	-	Hose Clamp, No. 16
11.	G10626	2	Adapter, 1 1/4" NPT To Barb
12.		-	See "Liquid Fertilizer Tanks, Saddles, Saddle Mounts And Hoses (SDS)", Pages P124 And P125
13.	G10674	2	Hose Clamp, No. 24
14.	G11083	1	Coupler, 3/4" Female NPT
15.	G4205-10	-	Hose, 3/4" x 200"
16.	G11237	1	Reducing Bushing, 1 1/2" Male NPT To 3/4" Female
17.	G10917	1	Elbow, 90°, 3/4" NPT To Barb
18.		-	See "Liquid Fertilizer Piston Pump", Pages P130 And P131
19.	G10615	1	Reducing Bushing, 1 1/2" Male NPT To 1 1/4" Female
20.	G10619	1	Close Nipple, 1 1/4" NPT
21.	G10887	1	Elbow, 90°, 1 1/4" Male NPT To Female

LIQUID FERTILIZER PISTON PUMP (Uses 18 Tooth Sprocket)

(A12335a/GR1808)

Model NGP-7055

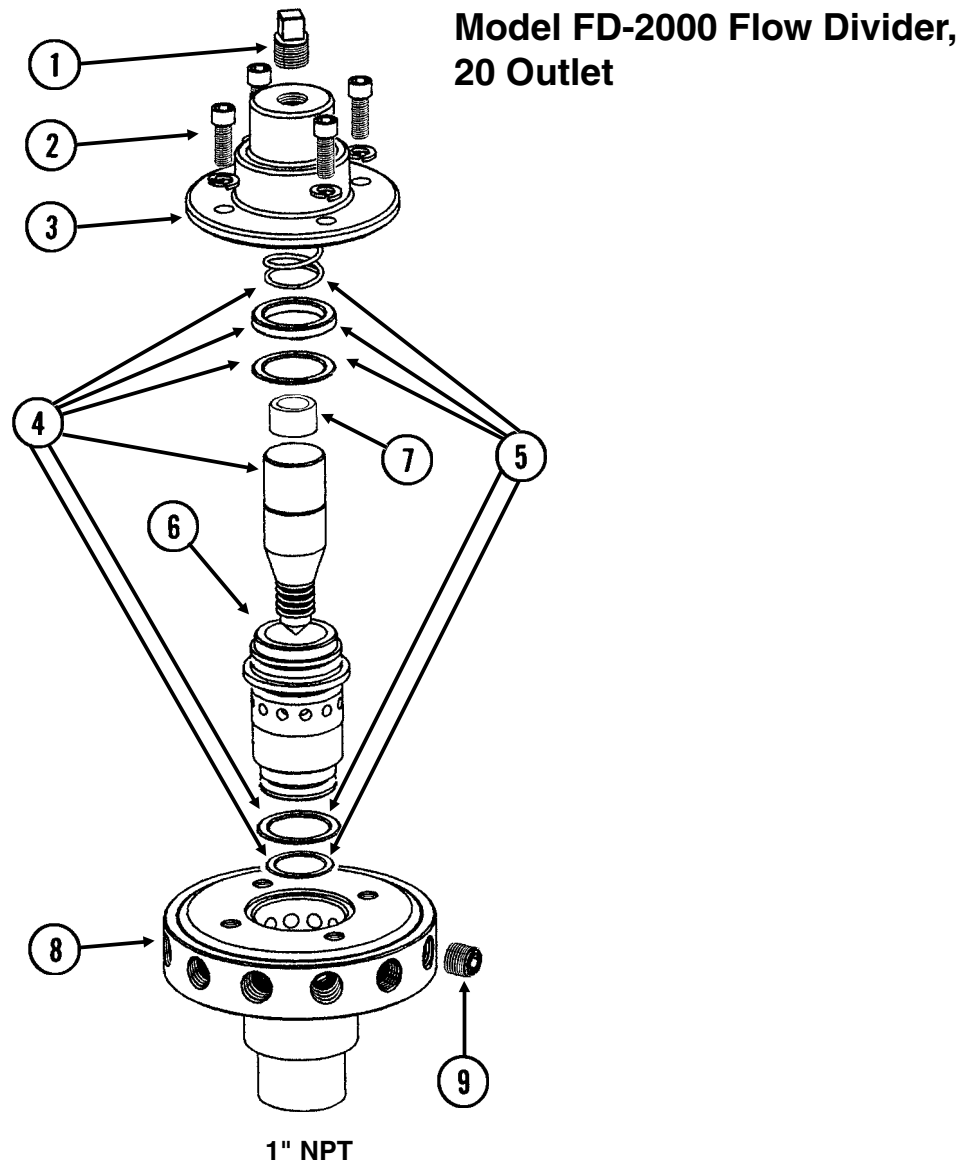


LIQUID FERTILIZER PISTON PUMP (Uses 18 Tooth Sprocket)

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

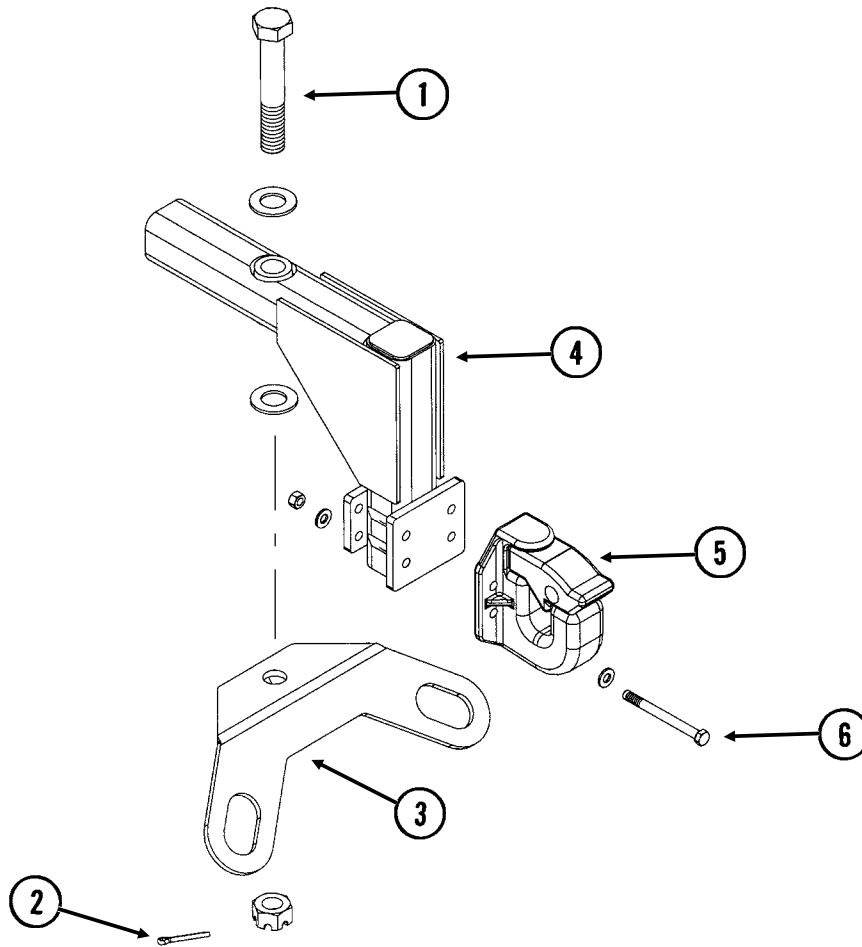
(FRTZ202d)



ITEM	PART NO.	QTY.	DESCRIPTION
1.	GR1543	1	Vent Plug
2.	GR1542	4	Hex Socket Head Screw, 1/4"-20 x 3/4"
	GR1541	4	Lock Washer, 1/4", Stainless Steel
3.	GR1566	1	Cap
4.	GR1567	1	Needle Assembly W/Seal Kit (Item 5)
5.	GR1568	1	Seal Kit, Includes: (3) O-Rings, (1) Seal, (1) Spring
6.	GR1561	1	Sleeve
7.	GR1574	1	Sleeve, 1" O.D. x 1/2" Long, Stainless Steel
8.	GR1559	1	Body, 20 Outlets
9.	G10350	4	Hex Socket Head Plug, 1/4" NPT, Stainless Steel
A.	GA9407	1	Liquid Fertilizer Piston Pump Flow Divider Complete, 20 Outlet (Model FD-2000)

REAR TRAILER HITCH

(FWD53)



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

DECALS, PAINT AND MISCELLANEOUS

⚠ WARNING

TO AVOID INJURY -- STAND CLEAR--KEEP OTHERS AWAY WHEN RAISING OR LOWERING MARKERS. BEFORE TRANSPORTING PLANTER FULLY EXTEND HYDRAULIC CYLINDERS AND INSTALL LOCKING PINS WHERE PROVIDED.

7100-42

1

⚠ WARNING

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

7100-46

2

⚠ WARNING

TOW ONLY WITH FARM TRACTOR

7100-56

3

⚠ WARNING

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

7100-68

4

⚠ DANGER

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

7100-89

5

⚠ WARNING

THIS MACHINE HAS BEEN DESIGNED AND BUILT WITH YOUR SAFETY IN MIND. DO NOT MAKE ANY ALTERATIONS OR CHANGES TO THIS MACHINE. ANY ALTERATION TO THE DESIGN OR CONSTRUCTION MAY CREATE SAFETY HAZARDS.

7100-90

6

 WEEKLY

7

 DAILY

8

⚠ WARNING

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

7100-115

9

 DAILY

7100-116

10

⚠ DANGER

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

7100-117


11

USE 1 TABLESPOON POWDERED GRAPHITE WITH EACH HOPPER FILL OF SEED. SEED TREATMENT, FOREIGN MATERIAL, DIRT, OR SEED CHAFF MAY CAUSE GRADUAL REDUCTION OF SEED POPULATION. REFER TO MANUAL FOR MAINTENANCE AND CARE.

7100-153

12

ROTATION



7100-192

13

NOTE

It is the responsibility of the user to read and understand the Operator's Manual in regards to safety, operation, lubrication and maintenance before operation of this equipment.

AN OPERATOR & PARTS MANUAL IS AVAILABLE FOR THIS MACHINE.

To obtain a manual, furnish model number and serial number and contact your KINZE Dealer or KINZE Manufacturing, Inc., P.O. Box 806 Williamsburg, IA 52361-0806 USA

14

⚠ WARNING

MAXIMUM INFLATION PRESSURE

75 PSI

7100-219

15

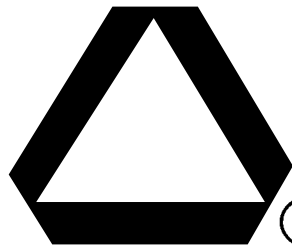
TORQUE 5/8" SPINDLE BOLTS TO 120 FT/LBS. CHECK PERIODICALLY AND RE-TORQUE AS NEEDED.

7100-234

16



17



18

⚠ CAUTION

SET DOWN PRESSURE SPRINGS TO MINIMUM. LOWER PLANTER TO GROUND AND EMPTY SEED HOPPERS. REQUIRES 90 LB MIN TO LIFT.

7100-249

19



20



21

 ANNUALLY

22

DECALS, PAINT AND MISCELLANEOUS

ROTATE KNURLED COLLAR
ON WRAP SPRING TIGHTENER
TO RELEASE SPRING
TENSION

7100-295

23

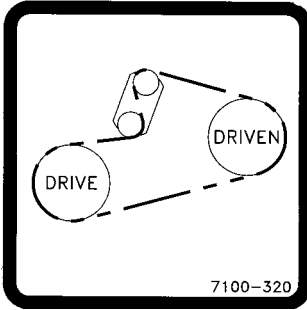
KINZE

3800

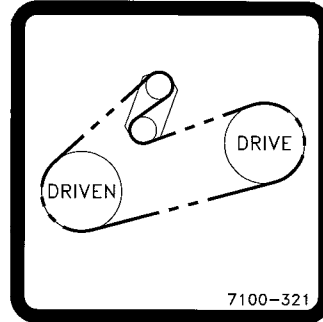
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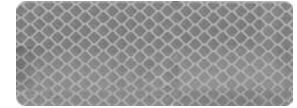
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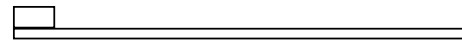
TRANSPORT

7100-217

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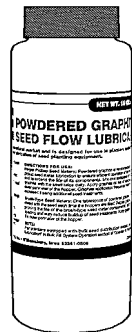
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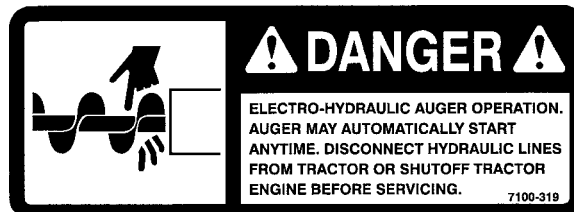
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38

DECALS, PAINT AND MISCELLANEOUS

ITEM	PART NO.	QTY.	DESCRIPTION
1.	G7100-42	4	Decal, Warning
2.	G7100-46	1	Decal, Warning
3.	G7100-56	1	Decal, Warning
4.	G7100-68	3	Decal, Warning
5.	G7100-89	2	Decal, Danger
6.	G7100-90	1	Decal, Warning
7.	G7100-110	-	Decal, Grease Weekly
8.	G7100-111	-	Decal, Oil Daily
9.	G7100-115	-	Decal, Warning (1 Per Granular Chemical Hopper)
10.	G7100-116	-	Decal, Grease Daily
11.	G7100-117	1	Decal, Danger
12.	G7100-153	-	Decal, Information (1 Per Brush-Type Seed Meter)
13.	G7100-192	-	Decal, Point Row Clutch Rotation
14.	G7100-217	-	Decal, Note
15.	G7100-219	-	Decal, Warning
16.	G7100-234	-	Decal, Bolt Torque
17.	G7100-247	-	Decal, Logo, 4 3/8" x 4 1/2" (2 Per Row Unit)
	G7100-252	-	Decal, Logo, 3 1/2" x 3 5/8" (Hopper Panel Extension)
18.	GD2199	1	SMV Sign
19.	G7100-249	-	Decal, Caution
20.	G7100-258	-	Reflective Decal, Red, 1 1/2" x 9", Rectangular (If Applicable)
	G7100-259	-	Reflective Decal, Amber, 1 1/2" x 9", Rectangular (If Applicable)
	G7100-260	-	Reflective Decal, Orange, 1 1/2" x 9", Rectangular (If Applicable)
21.	G7100-261	-	Reflective Decal, Red, 1 3/4" x 9", Die-Cut (If Applicable)
	G7100-262	-	Reflective Decal, Amber, 1 3/4" x 9", Die-Cut (If Applicable)
	G7100-263	-	Reflective Decal, Orange, 1 3/4" x 9", Die-Cut (If Applicable)
22.	G7100-277	-	Decal, Grease Annually
23.	G7100-295	-	Decal, Spring Tension Release
24.	G7100-300	2	Decal, KINZE® 3800
25.	GD10057-01	-	Hose Identification Sleeve, Red AA
	GD10057-02	-	Hose Identification Sleeve, Red BB
	GD10057-03	-	Hose Identification Sleeve, Blue AA
	GD10057-04	-	Hose Identification Sleeve, Blue BB
	GD10057-05	-	Hose Identification Sleeve, Black AA
	GD10057-06	-	Hose Identification Sleeve, Black BB
	GD10057-09	-	Hose Identification Sleeve, White AA
	GD10057-10	-	Hose Identification Sleeve, White BB
26.	G7100-320	-	Decal, Transmission, R.H.
27.	G7100-321	-	Decal, Transmission, L.H.
28.	G7100-322	-	Reflective Decal, Orange-Red, 1 1/2" x 4"
29.	G7100-266	-	Decal, Danger
30.	G7100-317	-	Decal, Transport
31.	G7100-310	-	Decal, KINZE®, 6 11/16" x 28 5/16"
32.	GD1512	-	Tie Strap, 7 1/2"
	GD2117	-	Tie Strap, 14 1/2"
	GD1162	-	Tie Strap, 28"
	GD2984	-	Tie Strap, 34"
33.	GM0229	-	Operator & Parts Manual, Model 3800 (Mechanical Seed Metering)
34.	GR0146MPP	-	Powdered Graphite, Twenty-Four 1 Pound Containers
35.	GR0155MPP	-	Blue Paint, Twelve Aerosol Cans
36.	GR1570MPP	-	Talc Lubricant, Four 8 Pound Containers
37.	G7100-172	-	Decal, Warning
38.	G7100-319	-	Decal, Danger

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
*A1018.....	P104	D3180-35.....	P83	G10053.....	P73, P77
*A1031.....	P104	G10001.....	P7, P12, P17, P18,	G10054.....	P57
*A1033.....	P104	.....	P22, P23, P25, P31,	G10055.....	P26
*A1039.....	P104	.....	P47, P73,	G10061.....	P20
*A1055.....	P104	.....	P116, P119	G10062.....	P73, P87
*A1057.....	P105	G10002.....	P23, P35, P97,	G10063.....	P71, P99
*A1076.....	P105	.....	P107, P121	G10064.....	P18, P22, P26, P29,
*A1082.....	P104	G10003.....	P5, P29, P37, P43,	.....	P115, P125
*A1098.....	P105	.....	P55, P74, P131	G10069.....	P71, P101
*A1132.....	P105	G10004.....	P7, P27, P55, P61,	G10071.....	P7, P67
*A11400.....	P107	.....	P63, P69	G10082.....	P27
*A11425.....	P107	G10005.....	P45, P126	G10101.....	P7, P12, P18, P19,
*A11434.....	P107	G10006.....	P17, P42	.....	P37, P55, P61, P63,
*A11438.....	P104	G10007.....	P7, P12, P13, P19,	.....	P69, P70, P73, P74,
*A1192.....	P105	.....	P45, P47, P74, P127	.....	P79, P87, P88, P91,
*A12041.....	P105	G10008.....	P27, P49, P51,	.....	P116, P117,
*A12053.....	P105	.....	P67, P83	.....	P119, P131
*A12064.....	P104	G10009.....	P47, P67	G10102.....	P17, P31, P42, P45,
*A12067.....	P104	G10010.....	P15, P43, P45, P122	.....	P53, P65, P77, P81,
*A12703.....	P107	G10011.....	P45, P121	.....	P85, P86, P88, P115,
*A12710.....	P107	G10012.....	P121, P127	.....	P119, P121,
*A12723.....	P104	G10013.....	P18, P87, P127	.....	P125, P127
*A12724.....	P104	G10014.....	P15, P45, P49, P55,	G10103.....	P37, P49, P55,
*A12725.....	P104	.....	P65, P125	.....	P79, P115, P125
*A12729.....	P105	G10015.....	P17	G10104.....	P7, P12, P19, P26,
*A12730.....	P105	G10016.....	P51, P59, P61, P63,	.....	P51, P67, P70, P73,
*A3153.....	P105	.....	P73, P74, P77, P123	.....	P74, P88, P123,
*A3158.....	P104	G10017.....	P41, P55, P57,	.....	P126, P127, P129
*A3159.....	P107	.....	P59, P77, P115,	G10105.....	P51, P53, P61,
*A3199.....	P104	.....	P121, P127	.....	P63, P67, P127
*A3223.....	P105	G10018.....	P15, P17, P22	G10106.....	P11, P17, P41, P68,
*A3225.....	P104	G10019.....	P11, P23, P25, P81,	.....	P70, P83, P119
*A3228.....	P105	.....	P83, P127	G10107.....	P17, P18, P31, P39,
*A3236.....	P105	G10020.....	P29, P32, P49	.....	P41, P45, P61, P69,
*A3259.....	P104	G10021.....	P11, P22, P32	.....	P83, P87, P121,
*A7613.....	P105	G10022.....	P32	.....	P126, P127
*A7614.....	P105	G10023.....	P35, P79	G10108.....	P5, P7, P20, P23,
*A7615.....	P105	G10025.....	P51, P57, P67	.....	P29, P31, P35, P47,
*A8225.....	P104	G10026.....	P51, P63, P67, P127	.....	P49, P55, P65, P69,
*A8226.....	P104	G10027.....	P51, P55, P125	.....	P71, P73, P83, P97,
*A8229.....	P105	G10033.....	P42, P87	.....	P99, P121, P125, P131
*A8230.....	P105	G10035.....	P26	G10109.....	P15, P17, P18, P31,
*A8231.....	P105, P107	G10036.....	P39, P87	.....	P42, P43, P45, P55,
*A8260.....	P104	G10037.....	P7, P49, P59, P83, P85	.....	P71, P81, P83, P101
A10255.....	P93	G10039.....	P7, P41, P45, P49, P65	G10110.....	P22, P23, P25, P26,
A10365.....	P90	G10040.....	P31	.....	P29, P31, P37,
A10372.....	P91	G10042.....	P49	.....	P77, P115
A10759.....	P35	G10043.....	P26, P119	G10111.....	P7, P18, P23, P26,
A11020.....	P94	G10044.....	P125	.....	P27, P39, P41, P42,
A11368.....	P89	G10045.....	P42	.....	P45, P51, P55, P57,
A11372.....	P91	G10046.....	P26, P45	.....	P61, P63, P65, P67,
A8827.....	P90	G10047.....	P29, P69, P74, P83	.....	P71, P73, P74, P77,
D13169.....	P89	G10049.....	P27, P55, P70, P79	.....	P86, P87

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
G10112.....	P31, P45, P55, P57, P83, P125	G10229.....	P7, P12, P18, P19, P23, P27, P35, P37, P43, P47, P55, P61, P63, P69, P73, P74, P79, P88, P92, P107, P116, P117, P119, P131	G10400.....	P45, P57
G10113.....	P83, P87	G10230.....	P7, P12, P15, P18, P19, P26, P47, P49, P51, P67, P70, P73, P74, P83, P88, P123, P126, P127, P129	G10401.....	P32
G10130.....	P23, P68, P73, P77	G10231.....	P51, P53, P57, P63, P67, P127	G10403... P22, P23, P25, P26, P31	
G10133.....	P18, P42, P43, P45	G10232.....	P11, P17, P22, P26, P68, P70, P83, P98, P119, P121, P127	G10412.....	P7, P12, P20
G10139.....	P51, P67	G10233.....	P23, P68, P71, P73, P77, P85, P87, P122	G10418.....	P51
G10148.....	P125	G10235.....	P69, P71	G10427.....	P13, P17
G10152.....	P12, P17, P61, P126	G10239.....	P47, P59	G10430.....	P23, P68
G10157.....	P49, P55	G10243.....	P25, P117, P119	G10438.....	P5, P7
G10159.....	P67, P87	G10253.....	P79	G10448.....	P53
G10168.....	P81	G10257.....	P36, P79	G10450.....	P121
G10171.....	P11, P17, P31, P98	G10278.....	P125, P129	G10452.....	P37
G10177.....	P123	G10283.....	P121	G10453.....	P68
G10183.....	P25	G10287.....	P125	G10457.....	P47, P55
G10189.....	P49	G10292.....	P129	G10460.....	P47, P51, P57, P67, P83, P85, P87, P126, P133
G10191.....	P61, P63	G10299.....	P87	G10462.....	P121
G10194.....	P43, P53	G10301.....	P29, P31, P55, P65	G10463.....	P17
G10198.....	P57	G10303... P17, P27, P31, P68, P70		G10464.....	P23
G10199.....	P83, P87	G10305.....	P23, P25, P38	G10470.....	P32, P55
G10201.....	P5, P35	G10306.....	P37, P121, P131	G10471.....	P57
G10203.....	P7, P29, P49, P55, P69, P79, P97, P99, P125	G10308.....	P18, P38	G10477.....	P83
G10204.....	P13, P15, P122	G10309.....	P20, P25	G10485.....	P125
G10205.....	P31, P45, P127	G10310.....	P37	G10496.....	P71, P79
G10206.....	P7, P43, P49, P71, P74, P77	G10312.....	P5, P23, P35, P115	G10497.....	P79
G10207.....	P5	G10315.....	P17, P18, P37	G10500.....	P32
G10209.....	P11, P36, P37	G10318.....	P41	G10501.....	P42, P69
G10210.....	P5, P17, P18, P19, P20, P23, P35, P47, P65, P69, P131	G10323.....	P32	G10503.....	P41, P43, P45
G10211.....	P29, P55, P109, P111	G10325.....	P13, P35	G10506.....	P133
G10213.....	P13, P43, P45	G10326.....	P5	G10523.....	P37
G10216.....	P7, P15, P23, P26, P41, P51, P53, P55, P59, P83, P125, P127	G10328.....	P13, P92	G10527.....	P71, P73, P77
G10217.....	P12, P51, P61, P121, P127	G10330.....	P53	G10529.....	P38
G10218.....	P31	G10338.....	P15, P20	G10531.....	P33
G10219.....	P11, P17, P31, P121	G10341.....	P11	G10536.....	P41
G10221.....	P22, P83, P98, P101	G10348.....	P27, P42	G10541.....	P31
G10226.....	P51, P55, P59, P133	G10350.....	P132	G10543.....	P61, P63
G10227.....	P11, P37, P49, P79, P100, P115, P125	G10356.....	P83	G10544.....	P81, P85, P87
G10228.....	P7, P15, P31, P42, P49, P53, P55, P59, P61, P63, P65, P77, P81, P83, P85, P86, P87, P88, P115, P119, P121, P123, P125, P127	G10362.....	P83	G10546.....	P20, P36
		G10371.....	P42	G10551.....	P5
		G10373.....	P57	G10560.....	P74
		G10374.....	P79	G10567.....	P20, P35, P36
				G10570.....	P36
				G10572.....	P41
				G10574.....	P39, P42, P45
				G10581.....	P23, P67, P71
				G10585.....	P41, P65, P77
				G10597.....	P41
				G10599.....	P18, P19, P125
				G10602.....	P20, P23, P25, P32, P33, P35, P36, P69
				G10603.....	P32, P33
				G10604.....	P32
				G10606.....	P107

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
G10610.....	P67	G10804.....	P79	G11042.....	P125, P127
G10615.....	P129	G10809.....	P47, P55	G11065.....	P119
G10616.....	P125	G10844.....	P81	G11066.....	P11
G10619.....	P125, P129	G10857.....	P55	G11067.....	P97, P98, P99
G10620.....	P5, P15, P20, P23, P25, P27, P35, P115, P122	G10859.....	P79	G11071.....	P53
G10621.....	P20, P25, P32, P35, P38	G10860.....	P69	G11073.....	P36, P77
G10622.....	P13, P22, P23, P25, P27, P29, P31, P38, P97	G10862.....	P83	G11075.....	P71
G10623.....	P125	G10864.....	P37	G11078.....	P71
G10625.....	P57	G10871.....	P55	G11081.....	P67
G10626.....	P125, P129	G10880.....	P23, P25, P77	G11083.....	P129
G10628.....	P125	G10887.....	P129	G11095.....	P51
G10629.....	P125	G10888.....	P125	G11097.....	P49
G10634.....	P33	G10890.....	P69	G11099.....	P47, P51, P94
G10636.....	P53, P67	G10897.....	P125	G11103.....	P71
G10640.....	P15, P47, P49, P51, P53, P55, P57, P59, P61, P63, P65, P67, P70, P83, P85, P86, P87, P89, P90, P91, P94, P121, P125	G10900.....	P79	G11105.....	P59
G10641.....	P126	G10901.....	P125	G11108.....	P31, P83
G10643.....	P45	G10909.....	P27	G11110.....	P83
G10644.....	P83, P87	G10912.....	P13	G11112.....	P111
G10660.....	P36	G10913.....	P53	G11116.....	P121
G10669.....	P5	G10917.....	P125, P129	G11118.....	P69
G10670.....	P35	G10921.....	P36	G11119.....	P69
G10674.....	P125, P129	G10923.....	P23, P68, P73, P77	G11122.....	P127
G10681.....	P129	G10924.....	P15	G11130.....	P55
G10686.....	P47, P117, P119	G10927.....	P117, P119	G11132.....	P49
G10688.....	P74	G10928.....	P97, P117, P119	G11133.....	P88
G10690.....	P32	G10931.....	P117, P119	G11134.....	P88
G10693.....	P131	G10932.....	P93	G11151.....	P33
G10722.....	P81, P87	G10939.....	P69, P91	G11153.....	P133
G10724.....	P81, P85, P87	G10940.....	P15	G11154.....	P133
G10725.....	P81, P85, P87	G10953.....	P69	G11162.....	P81
G10726.....	P57	G10958.....	P90, P91	G11165.....	P125
G10732.....	P7, P12	G10961.....	P122	G11167.....	P27
G10739.....	P124	G10969.....	P90	G11174.....	P57
G10751.....	P20	G10972.....	P91, P92, P93	G11179.....	P55
G10752.....	P20	G10974.....	P43, P45	G11180.....	P25
G10753.....	P125	G10983.....	P94	G11182.....	P22, P25
G10756.....	P49	G10984.....	P94	G11192.....	P22
G10757.....	P37, P117, P119	G10991.....	P121, P131	G11197.....	P25
G10758.....	P37, P117, P119	G10992.....	P11	G11202.....	P119
G10765.....	P43, P45, P79	G10995.....	P129	G11203.....	P100
G10770.....	P89	G10996.....	P79, P97, P98, P100, P102, P103, P109	G11205.....	P25
G10801.....	P17, P18	G10999.....	P21	G11206.....	P25
G10802.....	P55	G11000.....	P26	G11207.....	P26
		G11007.....	P5	G11209.....	P37
		G11008.....	P5	G11220.....	P7
		G11009.....	P32, P33	G11226.....	P29
		G11010.....	P45	G11228.....	P43
		G11015.....	P5	G11236.....	P43
		G11016.....	P89	G11237.....	P129
		G11018.....	P7	G11247.....	P11
		G11033.....	P21	G10229.....	P119
		G11034.....	P86	G1K248.....	P9, P109, P113, P117, P119

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
G1K249	P117	G6400-06-08	P105	G7100-46.....	P136
G1K252	P9, P109, P113, .....P117, P119	G6400-08.....	P93, P97, P98, P99, P100, P101, P104	G7100-56.....	P136
G1K267	P9, P109, P117	G6400-08-04	P92	G7100-68.....	P136
G1K268	P9, P109, P117	G6400-08-06	P98	G7100-89.....	P136
G1K274	P102, P103	G6400-08-10	P107	G7100-90.....	P136
G1K275	P102	G6400-10.....	P97	G7566X	P19
G1K276	P103	G6400-10-08	P97, P99	G7848X	P109
G1K296	P15	G6400-L-08	P97	GA0167	P81, P85, P87
G1K320	P9, P113, P117	G6400-L-10	P100	GA0173	P85
G1K321	P9, P113, P117	G6408-08.....	P93, P97, P100	GA0241	P126
G1K322	P117	G6408-H06-0.....	P97, P98, P100	GA0243	P81, P85, P87
G1K323	P116	G6500-08...P97, P100, P105, P107		GA0245	P81, P85, P87
G1K324	P69	G6500-10.....	P97, P99, P100	GA0251	P127
G1K345	P18	G6502-06.....	P98, P104	GA0252	P127
G1K362	P117, P119	G6502-08.....	P105	GA0257	P81, P85, P87
G1K363	P117, P119	G6801-06.....	P97	GA0262	P127
G1K364	P117	G6801-08.....	P97, P99, P100, .....P101, P104	GA0378	P23, P68
G1K385	P37	G6801-08-06	P98	GA0530	P57
G1K395	P9, P109	G6801-LL-08	P99	GA0531	P57
G1K396	P9, P109	G6803-08.....	P104	GA0532	P57
G1K465	P7	G7100-110.....	P136	GA0547	P127
G1K467	P43	G7100-111.....	P136	GA0895	P67
G2100-03.....	P23, P25, P68, P71	G7100-115.....	P136	GA0899	P81, P85, P87
G2500-84.....	P127	G7100-116.....	P136	GA10036	P122
G2603-08.....	P104	G7100-117.....	P136	GA10037	P122
G2603-10.....	P104	G7100-153.....	P136	GA10054	P79
G2700-06-06	P105	G7100-172.....	P136	GA10137	P20
G2701-08.....	P92	G7100-192.....	P136	GA10139	P53
G2704-06.....	P105	G7100-217.....	P136	GA10151	P20
G306-06.....	P105	G7100-219.....	P136	GA10155	P20
G306-08.....	P92	G7100-234.....	P136	GA10157	P5
G3200-63.....	P127	G7100-247.....	P136	GA10173	P68
G3303-114.....	P5, P36	G7100-249.....	P136	GA10194	P109
G3303-16.....	P5	G7100-252.....	P136	GA10195	P111
G3303-98.....	P5	G7100-258.....	P136	GA10206	P109
G3305-01.....	P38	G7100-259.....	P136	GA10242	P92
G3310-108.....	P73, P77	G7100-260.....	P136	GA10243	P92
G3310-112.....	P23	G7100-261.....	P136	GA10245	P92
G3310-168.....	P68	G7100-262.....	P136	GA10246	P92
G3316-80.....	P71	G7100-263.....	P136	GA10253	P93
G3317-16.....	P107	G7100-266.....	P136	GA10256	P93
G3400-01.....	P23, P25, P68, P71	G7100-277.....	P136	GA10269	P49
G4200-13.....	P125	G7100-295.....	P136	GA10275	P65
G4201-02.....	P125	G7100-300.....	P136	GA10276	P65
G4205-10.....	P125, P129	G7100-310.....	P136	GA10277	P65
G4206-01.....	P125	G7100-317.....	P136	GA10278	P65
G4301-05.....	P129	G7100-319.....	P136	GA10279	P55, P57
G4301-06.....	P129	G7100-320.....	P136	GA10280	P47
G4427-01.....	P125	G7100-321.....	P136	GA10281	P49
G4427-02.....	P125	G7100-322.....	P136	GA10282	P49, P55
G6326X	P7, P12	G7100-42.....	P136	GA10287	P59
G6400-06.....	P98			GA10297	P115
				GA10307	P109

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GA10308	P109	GA10682	P109	GA11264	P55
GA10329	P109	GA10683	P109	GA11265	P57
GA10334	P113	GA10684	P109	GA11266	P57
GA10335	P113	GA10685	P109	GA11267	P79
GA10336	P113	GA10686	P109	GA11268	P79
GA10337	P113	GA10704	P121	GA11276	P67
GA10338	P113	GA10705	P121	GA11277	P57
GA10343	P51	GA10714	P93	GA11278	P57
GA10355	P126	GA10743	P63	GA11280	P68
GA10359	P91	GA10858	P133	GA11281	P68
GA10363	P90	GA10859	P133	GA11285	P69
GA10366	P90	GA10894	P127	GA11287	P69
GA10373	P91	GA10901	P117, P119	GA11297	P70
GA10375	P86	GA10907	P127	GA11299	P113
GA10376	P86	GA10908	P127	GA11311	P71
GA10378	P61	GA10923	P123	GA11312	P71
GA10382	P87	GA10940	P117, P119	GA11323	P61
GA10383	P85	GA10987	P100	GA11324	P61
GA10384	P85	GA11021	P94	GA11348	P111
GA10385	P85	GA11027	P65	GA11360	P100
GA10386	P85	GA11028	P65	GA11362	P79
GA10394	P83	GA11039	P117	GA11363	P79
GA10395	P83	GA11063	P125	GA11365	P100
GA10401	P83	GA11066	P111	GA11367	P89
GA10409	P85, P87	GA11079	P47	GA11370	P89
GA10413	P63	GA11082	P47	GA11371	P91
GA10414	P63	GA11112	P57	GA11374	P89
GA10426	P86	GA11169	P77	GA11375	P23
GA10452	P113	GA11174	P53	GA11378	P111
GA10455	P55	GA11186	P77	GA11381	P29
GA10456	P59	GA11187	P77	GA11387	P111
GA10457	P85, P87	GA11206	P55	GA11389	P22
GA10458	P85, P87	GA11215	P51	GA11390	P22
GA10466	P55	GA11227	P53	GA11391	P22
GA10468	P88	GA11235	P71	GA11393	P23
GA10483	P49	GA11236	P71	GA11394	P71
GA10493	P83	GA11237	P71	GA11395	P22
GA10496	P87	GA11238	P71	GA11396	P22
GA10503	P55	GA11239	P71	GA11502	P111
GA10504	P55	GA11240	P71	GA11506	P111
GA10507	P86	GA11241	P71	GA11507	P111
GA10510	P125	GA11242	P71	GA11513	P23
GA10553	P53	GA11243	P71	GA11515	P23
GA10571	P115	GA11244	P71	GA11520	P39
GA10572	P115	GA11245	P71	GA11532	P25
GA10576	P115	GA11249	P59	GA11536	P31
GA10584	P55	GA11250	P59	GA11537	P31
GA10621	P126	GA11255	P12	GA11538	P25
GA10623	P93	GA11256	P73	GA11539	P25
GA10632	P98	GA11257	P73	GA11540	P25
GA10646	P121	GA11258	P73	GA11541	P25
GA10647	P121	GA11262	P55	GA11548	P25
GA10663	P125	GA11263	P55	GA11555	P25

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GA11556	P25	GA11733	P27	GA12679	P47
GA11562	P25	GA11736	P111	GA12681	P47
GA11563	P25	GA11743	P124	GA12683	P9
GA11575	P26	GA11759	P121	GA12688	P47
GA11579	P29	GA11760	P121	GA12689	P47
GA11580	P25	GA11763	P23	GA13007	P47
GA11581	P25	GA11774	P107	GA13169	P11
GA11584	P22	GA11775	P31	GA13198	P109
GA11585	P23	GA11778	P26	GA13329	P85
GA11587	P29	GA11906	P111	GA13333	P85
GA11607	P125	GA11964	P74	GA13334	P85
GA11608	P125	GA11982	P7	GA13474	P83
GA11613	P21	GA11988	P11	GA13476	P87
GA11615	P29	GA11989	P11	GA13477	P85
GA11616	P29	GA11991	P11	GA13478	P85
GA11617	P29	GA11992	P11	GA13562	P119
GA11619	P79	GA11993	P11	GA1676	P81
GA11620	P79	GA11994	P11	GA1677	P81
GA11623	P22	GA11995	P11	GA1678	P81
GA11624	P22	GA11997	P11	GA1679	P81
GA11625	P22	GA12102	P11	GA1720	P7, P12
GA11626	P23	GA12104	P11	GA2007	P20
GA11627	P23	GA12114	P77	GA2012L	P13
GA11634	P55	GA12127	P63	GA2012R	P13
GA11635	P29	GA12128	P63	GA2014	P13, P17, P41, P42, P43, P45
GA11636	P31	GA12171	P111	GA2018	P32
GA11637	P31	GA12173	P111	GA2019	P32
GA11638	P31	GA12174	P111	GA2020	P32
GA11639	P31	GA12180	P111	GA2054	P17
GA11640	P31	GA12235	P43	GA2068	P69
GA11670	P65	GA12235	P45	GA2075	P37
GA11684	P27	GA12236	P42, P43, P45	GA2094	P38
GA11705	P26	GA12256	P43	GA2142	P67
GA11706	P26	GA12335	P131	GA2147	P67
GA11708	P26	GA12358	P11	GA2148	P67
GA11709	P26	GA12403	P117	GA2180	P12
GA11710	P26	GA12404	P11	GA2528	P109
GA11711	P26	GA12487	P123	GA2558	P67
GA11714	P26	GA12488	P123	GA2559	P127
GA11715	P26	GA12501	P57	GA2612	P109, P111
GA11716	P27	GA12538	P119	GA2660	P125
GA11717	P26	GA12557	P119	GA3407	P98, P101
GA11718	P26	GA12563	P119	GA3413	P97
GA11721	P26	GA12626	P11	GA3552	P69
GA11722	P26	GA12641	P119	GA3553	P69
GA11723	P26	GA12644	P9	GA3584	P97, P109
GA11724	P26	GA12645	P9	GA3893	P129
GA11727	P26	GA12646	P9	GA4444	P35
GA11728	P26	GA12655	P119	GA4722	P53
GA11729	P26	GA12657	P47	GA4723	P53
GA11730	P27	GA12671	P9	GA4729	P53
GA11731	P27	GA12672	P25	GA4976	P125
GA11732	P27	GA12673	P25		

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GA5106	P23, P73, P77	GA7051	P74	GA9131	P45
GA5108	P23	GA7052	P74	GA9144	P117
GA5116	P71, P73, P77	GA7137	P79	GA9145	P83, P87
GA5121	P51, P67	GA7154	P23, P73, P77	GA9205	P89
GA5122	P67	GA7255	P33	GA9306	P57
GA5164	P23	GA7372	P69	GA9315	P57
GA5165	P23	GA7376	P67	GA9407	P132
GA5202	P73, P77	GA7399	P109	GA9437	P121
GA5600	P116, P119	GA7409	P67	GA9472	P122
GA5651	P7, P12	GA7412	P43	GA9481	P109
GA5654	P41, P42, P43, P45	GA7434	P53, P57, P67	GA9510	P99
GA5698	P33	GA7572	P68	GA9544	P53
GA5699	P33	GA7849	P119	GA9547	P21
GA5715	P41	GA7851	P117, P119	GA9712	P126
GA5718	P41	GA7852	P117, P119	GA9843	P23
GA5719	P41	GA7854	P117	GA9844	P45
GA5794	P33	GA7855	P117	GA9845	P45
GA5795	P33	GA7856	P9, P109, P111, P117	GA9846	P69
GA5796	P33	GA7857	P117	GA9861	P45
GA5834	P33	GA7858	P116	GA9862	P45
GA5853	P81	GA7859	P117, P119	GA9864	P45
GA5982	P33	GA7862	P109	GA9865	P45
GA6027	P33	GA7863	P109	GA9877	P67
GA6038	P33	GA7949	P15	GA9954	P111
GA6108	P109	GA7975	P15	GA9963	P9
GA6109	P109	GA7976	P15	GA9964	P9
GA6147	P117, P119	GA8001	P77	GA9965	P111
GA6168	P33	GA8022	P117, P119	GA9978	P117, P119
GA6171	P15, P17, P18, P122	GA8026	P116	GA9979	P117, P119
GA6182	P33	GA8046	P117, P119	GB0110	P32
GA6184	P33	GA8047	P109, P117, P119	GB0111	P32
GA6187	P33	GA8130	P91	GB0115	P36
GA6189	P57	GA8322	P18	GB0116	P36
GA6434	P18	GA8324	P13	GB0120	P32
GA6478	P33	GA8326	P36	GB0165	P85
GA6527	P129	GA8328	P9, P113	GB0186	P12
GA6597	P18	GA8329	P9, P113	GB0196	P127
GA6618	P17	GA8343	P32	GB0212	P47
GA6619	P17	GA8364	P36	GB0213	P121
GA6620	P17	GA8371	P35	GB0218	P7, P12, P20, P26, P45, P69, P83, P126
GA6633	P33	GA8393	P79	GB0230	P55
GA6733	P17	GA8603	P39, P45, P121	GB0234	P55
GA6741	P37	GA8641	P39, P45	GB0239	P17, P18
GA6761	P51	GA8731	P109	GB0254	P18
GA6801	P17	GA8760	P43	GB0265	P5
GA6832	P42	GA8768	P125	GB0266	P5
GA6833	P42	GA8828	P90	GB0267	P5
GA6834	P42	GA8831	P90	GB0268	P17, P18
GA6838	P42	GA8877	P122	GB0274	P5
GA6907	P37	GA8983	P121	GB0276	P15
GA6975	P109, P111	GA9068	P79	GB0278	P20, P36
GA6977	P109, P111	GA9097	P97, P111	GB0282	P18
GA6978	P9, P109, P111	GA9098	P98, P111		

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GB0283	P23, P26	GD10063	P51	GD11259	P5, P13
GB0285	P5	GD10102	P79	GD11286	P32
GB0301	P13	GD10103	P79	GD11297	P36
GB0312	P21	GD10104	P79	GD11305	P35
GB0314	P20	GD10123	P79	GD11306	P13
GB0322	P121	GD10126	P73	GD11311	P32
GB0323	P121	GD10243	P109	GD11313	P19
GB0331	P20	GD1026	P5, P35, P69	GD1132	P41, P42, P43, P45
GB0332	P51	GD10283	P81	GD11394-23	P23
GB0343	P121	GD1033	P5	GD11395	P23, P25
GB0355	P51	GD10356	P71, P73, P74, P77	GD11413	P20, P36
GB0356	P51	GD1039	P32	GD11422	P7, P12
GB0365	P123	GD1041	P32	GD11423	P15, P122
GB0366	P7, P12	GD1042	P32	GD11424	P35
GB0370	P123	GD10473	P13, P17	GD1143	P38
GB0383	P43	GD10510	P79	GD1144	P38
GB0386	P45	GD10519	P43, P45	GD1145	P38
GB0387	P42, P43	GD1059L	P35	GD11453	P15
GB0393	P7	GD1059R	P35	GD11474	P117, P119
GB0394	P7	GD1060	P35	GD11490	P67
GB0395	P7	GD1061	P36	GD11508	P19
GB0396	P7	GD1063	P36	GD11509	P19
GB0397	P7	GD1065	P5	GD11528	P32
GB0398	P7	GD10705	P20	GD11557	P121
GB0401	P43	GD10777	P125	GD11558	P121
GB0410	P32	GD1083	P32	GD1162	P136
GD0453-07	P86	GD1085	P18	GD11652	P39, P45
GD0740	P65, P77	GD1086	P15	GD1166	P126
GD0746	P81	GD10867	P5	GD11677	P39
GD0831	P127	GD10963	P37	GD11695	P67
GD0840	P81, P85, P87	GD10984	P37	GD11700	P129
GD0844	P127	GD10991	P15	GD11751	P91
GD0914-10.5	P73	GD10993	P5	GD11787	P32
GD0914-13.5	P73	GD11001	P5	GD11845	P5, P13, P17
GD0914-156	P73	GD11017	P13	GD11953	P122
GD0914-20	P73	GD11045	P23, P68, P73, P77	GD11954	P122
GD0914-21	P73	GD11089	P109, P113, P117, P119	GD11962	P5, P35
GD0914-218	P74	GD1109	P17, P18	GD11963-03	P29
GD0914-228	P74	GD11120	P79	GD11963-04	P7
GD0914-36	P73	GD11122	P33	GD11985	P90
GD0914-60	P73	GD11123	P125	GD11986	P90
GD0914-68	P77	GD1113	P129	GD11993	P117, P119
GD0914-76	P73	GD1114	P7, P12, P73, P88	GD12132	P21
GD0914-78	P77	GD1115L	P37	GD12239	P93
GD10036	P7, P12	GD1115R	P37	GD12522	P89, P91, P93
GD10057-01	P136	GD1116	P37	GD12539	P94
GD10057-02	P136	GD11169	P117	GD12543	P53, P67
GD10057-03	P136	GD11170	P117	GD1255	P23, P68
GD10057-04	P136	GD1118	P37	GD1256	P23, P68
GD10057-05	P136	GD11219	P35	GD12597	P92
GD10057-06	P136	GD11239	P20, P35, P36	GD12613	P87
GD10057-09	P136	GD11240	P36	GD12670	P92
GD10057-10	P136			GD12672	P92

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GD12676	P121	GD14640	P111	GD15226	P121
GD12677	P121	GD14649	P121	GD15227	P83
GD12679	P121	GD14651	P121	GD15228	P83
GD12723	P115	GD14659	P37	GD15229	P87
GD12724	P115	GD14660	P9	GD15230	P85
GD12725	P115	GD14671	P123	GD15231	P87
GD12726	P79, P109	GD14672	P121	GD15232	P87
GD12790	P57	GD14673	P121	GD15233	P85
GD12797-01	P21	GD14674	P41, P133	GD15234	P85
GD12797-04	P21	GD14812	P47	GD15235	P65, P86
GD12797-07	P21	GD14841	P49	GD15282	P61, P63
GD12797-11	P21	GD14842	P49, P51	GD15283	P31, P83
GD12817	P45, P121	GD14843	P49	GD15285	P61, P63
GD12826	P45	GD14897	P91	GD15290	P87
GD12827	P45	GD14898	P91	GD15406	P53
GD12829	P45	GD14901	P90	GD15450	P51
GD13110	P20	GD14902	P90	GD15489	P85, P87
GD13170	P89	GD14908	P91	GD15492	P55
GD13171	P89	GD14910	P91	GD15532	P69
GD13172	P89	GD14915	P92	GD15538	P69
GD13173	P89	GD14923	P97	GD15545	P88
GD13309	P122	GD14925	P99	GD15552	P88
GD13328	P127	GD14926	P51	GD15560	P88
GD13361	P5	GD14941	P51	GD15568	P121
GD13400	P89	GD14987	P115	GD15582	P115
GD13401	P67	GD15041	P57	GD15600	P121
GD13412	P21	GD15042	P57	GD15605	P124
GD13524-01	P107	GD15045	P51	GD15623	P93
GD13530	P21	GD15046	P51	GD15634	P97
GD13575-05	P29	GD15047	P51	GD15649	P87
GD1359	P57	GD15051	P51	GD15664	P55
GD1360	P57	GD15064	P63	GD15668	P49
GD13740	P57	GD15065	P63	GD15669	P49
GD13744	P127	GD15066	P61	GD15674	P49
GD14089	P94	GD15067	P59	GD15675	P49
GD14170	P45	GD15068	P59	GD15677	P55
GD14217	P12	GD15069	P59	GD15679	P55
GD14257	P23	GD15070	P59	GD15698	P32
GD14258	P9	GD15072	P59	GD15699	P33
GD14398	P39	GD15074	P61, P63	GD15706	P125
GD14413	P71	GD15109	P61	GD15719	P61
GD14414	P71	GD15110	P61, P63	GD15720	P61
GD14429	P71	GD15114	P73	GD15742	P83
GD14430	P71	GD1512	P136	GD15747	P20
GD14431	P71	GD15131	P83, P85	GD15774	P93
GD14432	P71	GD15140	P83	GD15784	P88
GD14512	P79	GD15169	P51	GD15796	P51
GD14513	P79	GD15170	P51	GD15929	P133
GD14528	P101	GD15172	P51	GD15939	P133
GD14562	P61	GD15187-01	P97	GD15968	P115
GD14563	P59, P61, P63	GD15192	P83	GD16058	P57
GD14564	P61	GD15193	P83	GD16060	P94
GD14565	P59	GD15194	P83	GD16146	P97

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GD16147	P94	GD16634	P25	GD17309	P29
GD16184	P94	GD16672	P25	GD17450	P61
GD16189	P125	GD16674	P25	GD1755	P33
GD16210	P125	GD16675	P25	GD17794	P7
GD16227	P47	GD16680	P27	GD17973	P123
GD16245	P5	GD16691	P29	GD18004	P49
GD16315	P119	GD16692	P29	GD18010	P9, P11
GD16316	P119	GD16693	P29	GD18011	P11
GD16355-01	P77	GD16694	P29	GD18013	P119
GD16355-02	P77	GD16701	P27	GD18078	P11
GD16355-03	P77	GD16705	P23	GD18081	P11
GD16356	P31	GD16706	P23	GD18096	P97
GD16362	P73, P77	GD16707	P23	GD18099	P99
GD16370	P71	GD16714	P125	GD18100	P98, P99
GD16385-07	P26	GD16716	P125	GD18101	P99
GD16385-08	P26	GD16717	P125	GD18102	P98
GD16388	P55	GD16718	P125	GD18112	P11
GD16392	P55	GD16731	P125	GD18118	P117, P119
GD16393	P55	GD16733	P125	GD18143	P47
GD16394	P55	GD16751	P125	GD18151	P47
GD16399-01	P21	GD16766	P22	GD18152	P47
GD16400	P22, P23, P25, P26	GD16778	P31	GD18168	P117, P119
GD16401	P22, P23, P25, P26	GD16779	P31	GD18170	P47
GD16417	P73	GD16787	P49	GD18173	P11
GD16437	P69	GD16788	P26	GD18175	P47
GD16438	P69	GD16887	P65	GD18275	P9
GD16439	P71	GD16913	P26	GD18601	P49
GD16440	P71	GD16942	P125	GD1862	P125
GD16446	P71	GD16943	P125	GD18631	P98
GD16447	P71	GD16944	P125	GD18704	P32
GD16448	P71	GD16957	P27	GD18706	P98
GD16449	P71	GD16972	P27	GD18796	P9
GD16450	P73	GD16973	P27	GD18901	P11
GD16451	P73	GD16979	P29	GD18904	P87
GD16466	P73	GD16982	P25	GD18905	P87
GD16467	P73	GD16983	P25	GD18934	P87
GD16478	P125	GD17002	P23	GD18935	P87
GD16479	P125	GD17006	P121	GD18939	P87
GD16489	P107	GD17039	P51, P123	GD18957	P83
GD16490	P107	GD17051	P74	GD1908	P12
GD16500	P100	GD17094	P74	GD19333	P32
GD16530	P31	GD17095	P74	GD2117	P21, P136
GD16535	P23	GD17100	P77	GD2199	P49, P136
GD16537	P107	GD17141	P11	GD2423	P37
GD16538	P107	GD17143	P11	GD2460	P38
GD16539	P23	GD17144	P11	GD2548-104	P69
GD16540	P23	GD17150-07	P11	GD2548-16	P77
GD16542	P23	GD17151-06	P9	GD2548-93	P69
GD16547	P23	GD17154	P11	GD2558	P47, P69, P71, P127
GD16550	P23	GD17156	P11	GD2597	P81, P85
GD16556	P26	GD17180	P63	GD2681	P126
GD16572	P125	GD17298	P11	GD2721	P86
GD16620	P25	GD17308	P29	GD2829	P109, P111

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GD2947	P37	GD7817-04	P41	GR0513	P124
GD2962	P23	GD7817-05	P127	GR0528	P53
GD2971-09	P47, P55	GD7823	P41	GR0531	P53
GD2971-10	P35	GD7831	P127	GR0586	P117
GD2971-15	P55	GD7864	P53	GR0594	P117, P119
GD2984	P136	GD7878	P33	GR0664	P32
GD3180-12	P17	GD7889	P41	GR0761	P97, P98, P102
GD3180-29	P27	GD7890	P41	GR0763	P97, P98, P102
GD3180-30	P7	GD8175	P70	GR0764	P97, P102, P103
GD3180-33	P11	GD8188	P65	GR0880	P129
GD3180-35	P87	GD8189	P65	GR0881	P129
GD3180-36	P87	GD8237	P33	GR0882	P129
GD3248	P85	GD8249	P7, P12	GR0883	P129
GD3612	P5	GD8307	P41	GR0912	P23, P68, P73, P77
GD3622	P125	GD8460	P18	GR1005	P124
GD3623	P125	GD8739	P109	GR1006	P124
GD3737	P47	GD8740	P109	GR1015	P125
GD3860	P109, P111	GD8741	P109	GR1016	P125
GD3951	P125	GD8751	P116, P119	GR1017	P125
GD4086	P105, P107	GD8770	P116, P119	GR1018	P125
GD4700	P69	GD8771	P117, P119	GR1019	P125
GD4701	P69	GD8778	P33	GR1037	P93, P97, P98, P99, P100, P101, P104, P105
GD4743	P85, P88	GD9093	P55	GR1045	P97, P98, P100
GD4887-10	P23	GD9120	P18	GR1104	P131
GD5625	P61, P63	GD9254	P39, P45	GR1112	P131
GD5841	P51, P67	GD9290	P17	GR1116	P131
GD5857	P42, P55, P69, P70, P74, P117	GD9305	P17	GR1118	P131
GD5875	P83	GD9529	P79, P102, P103, P109	GR1120	P131
GD5892	P55	GD9530	P79, P102, P103, P109	GR1123	P131
GD5900-20	P85	GD9562	P17	GR1124	P131
GD5900-21	P85	GD9667	P79	GR1134	P131
GD5900-28	P125	GD9671	P79	GR1146	P127, P131
GD6291	P109, P116, P119	GD9672	P79	GR1169	P89
GD6501	P32	GD9715	P42	GR1208	P115
GD6551	P73, P77	GD9720	P42	GR1290	P109, P111
GD6775	P69	GD9724	P42, P43, P45	GR1292	P9, P109, P111
GD7079	P53	GD9896	P109	GR1293	P74
GD7089	P53	GM0229	P136	GR1294	P74, P77
GD7127	P71	GR0146MPP	P136	GR1295	P74, P77
GD7137	P47, P55	GR0150	P81, P85, P87	GR1296	P74
GD7145	P119	GR0151	P81, P85, P87	GR1297	P74
GD7148	P36	GR0155MPP	P136	GR1298	P74
GD7258	P36	GR0190	P127	GR1300	P77
GD7318	P5	GR0191	P57	GR1301	P74, P77
GD7426	P69	GR0192	P57	GR1303	P79
GD7803	P39, P45	GR0195	P127	GR1304	P79
GD7804	P39, P45	GR0196	P5, P36	GR1305	P79
GD7805	P7, P12, P18, P20, P26, P41, P57, P67, P69, P70, P83, P122, P126, P127	GR0200	P127	GR1306	P79
GD7817-01	P41	GR0204	P127	GR1321	P103
		GR0267	P127	GR1322	P103
		GR0270	P67	GR1352	P77
		GR0434	P67		
		GR0508	P124		

NUMERICAL INDEX

Part No.	Page	Part No.	Page	Part No.	Page
GR1363	P9, P109, P111	GR1803	P131		
GR1364	P109, P111	GR1804	P131		
GR1365	P77	GR1805	P131		
GR1377	P77	GR1806	P131		
GR1414	P117, P119	GR1808	P131		
GR1415	P117, P119	GR1809	P11		
GR1435	P124	GR1843	P11		
GR1445	P97, P98	GR1848	P32		
GR1465	P92	GR1897	P32		
GR1466	P97, P100, P107				
GR1466	P100, P107				
GR1515	P101				
GR1517	P93, P98				
GR1522	P90				
GR1541	P132				
GR1542	P132				
GR1543	P131, P132				
GR1552	P92				
GR1557	P74				
GR1559	P132				
GR1561	P132				
GR1566	P132				
GR1567	P132				
GR1568	P132				
GR1569	P32				
GR1570MPP	P136				
GR1571	P124				
GR1574	P132				
GR1598	P89				
GR1629	P117, P119				
GR1630	P94				
GR1635	P97, P98, P99, P111				
GR1681	P57				
GR1688	P91				
GR1689	P90				
GR1691	P91, P93				
GR1707	P115				
GR1731	P115				
GR1732	P115				
GR1733	P115				
GR1741	P77				
GR1743	P71				
GR1748	P100				
GR1756	P100				
GR1757	P89				
GR1762	P117				
GR1764	P117				
GR1778	P11				
GR1790	P107				
GR1796	P131				
GR1798	P131				
GR1800	P131				
GR1801	P131				