

MODEL 3500 TWIN-LINE PLANTER OPERATOR MANUAL

M0240-01

Rev. 8/11

This manual applies to:

Model: 3500 Twin-Line Planters
Serial Number: 902498 on (EdgeVac)
902911 on (Mechanical)

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

Model Number 3500

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 planter frame as shown below. The serial number provides important information about your planter and is needed to obtain correct replacement parts. Always provide model number and serial number to your Kinze Dealer when ordering parts or when contacting Kinze Manufacturing, Inc.



Prior to 2009 production



2009 production and later

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Specification	6 Row 30"	8 Row 30"
Number of Rows	6 Row 30"	8 Row 30"
Weight Empty (Mechanical)*	5,187 lbs (2352.8 kg)	5,886 lbs (2669.8 kg)
Weight Empty (EdgeVac)*	5,443 lbs (2468.9 kg)	6,269 lbs (2843.6 kg)
Transport Height	10' 6" (3.2M)	10' 6" (3.2M)
Planting Length	19' 8" (6.0M)	19' 8" (6.0M)
Transport Length	23' 9" (7.3M)	26' 5" (8.4M)
Planting Width	16' 10" (5.2M)	21' 10" (6.7M)
Transport Width	11' 2" (3.5M)	11' 2" (3.5M)
Seed Capacity	1.75 bu. (EdgeVac / Hopper); 1.90 bu. (Mechanical / Hopper)	
Transport Tires	Four 7.50" x 20" 8 ply rib implement tires w/ center groove - Inflate to 40 psi (275.7 kPa)	
Contact Drive Tires	Two 4.10" x 6" spring-loaded contact drive tires. - Inflate to 50 psi (344.7 kPa)	
Field Lift	One center post lift cylinder. (Front or rear mount.)	
Row Markers	Two-fold low profile with 16" concave, solid blades and cast iron hubs.	
*Base machine weights include planter frame including row markers, hydraulic cylinders, hoses, fittings, tires, wheels, drive and drill shafts, sprockets, chains and required drive components, parking jack, safety/warning lights, SMV sign, transport safety chain, and Kinze pull row units (closing wheel arms less closing wheels) with seed hopper, lid, and dual quick adjustable down force springs option. EdgeVac includes additional weight of fan, manifolds, and hoses.		

Tractor Hydraulic Requirements

Configuration	Requirements		Description
Base machine with mechanical meters.	2 SCV	10 gpm	#1 SCV: Planter lift
			#2 SCV: Markers/fold (manual selector valve)
Base machine with EdgeVac meters.*	3 SCV	25 gpm	#1 SCV: Planter lift
			#2 SCV: Markers/fold (manual selector valve)
			#3 SCV: EdgeVac fan
Base machine with EdgeVac meters and tractor mounted PTO pump.*	2 SCV	15 gpm	#1 SCV: Planter lift
			#2 SCV: Markers/fold (manual selector valve)
*Seed meter/vacuum system - 13 GPM @ 2000- Zero PSI Case Drain Plus One SCV (Pressure And Return) for Vacuum Fan Hydraulic Motor.			

1. Read and understand instructions provided in this manual and warning labels. Review these instructions frequently!
2. This machine is designed and built with your safety in mind. Do not make any alterations or changes to this machine. Any alteration to design or construction may create safety hazards.
3. A large portion of farm accidents happen from fatigue or carelessness. Safe and careful operation of tractor and planter will help prevent accidents.
4. Never allow planter to be operated by anyone unfamiliar with operation of all functions of the unit. Operators must read and thoroughly understand all instructions given in this manual before operating or working on equipment.
5. Be aware of bystanders, particularly children! Always look around to make sure it is safe to start tow vehicle engine or move planter. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
6. Make sure planter weight does not exceed towing capacity of tractor, or bridge and road limits. This is critical to maintain safe control and prevent death or injury, or property and equipment damage.
7. Never ride or allow others to ride on planter.
8. Store planter in an area away from human activity. DO NOT permit children to play on or around the stored unit.
9. Keep hands, feet, and clothing away from moving parts. Do not wear loose-fitting clothing which may catch in moving parts.
10. Always wear protective clothing, shoes, gloves, hearing, and eye protection applicable for the situation.
11. Do not allow anyone to stand between tongue or hitch and towing vehicle when backing up to planter.
13. Prevent electrocution, other injuries, or property and equipment damage. Watch for obstructions such as wires, tree limbs, etc. when operating machine. Be aware of clearances during turns and when folding/unfolding planter.
14. Reinstall all guards removed for maintenance activities. Never leave guards off during operation.
15. Use of aftermarket hydraulic, electric, or PTO drives may create serious safety hazards to you and people nearby. If you install such drives, follow all appropriate safety standards and practices to protect you and others near this planter from injury.
16. Follow all federal, state/provincial, and local regulations when towing farm equipment on a public highway. Use safety chain (not an elastic or nylon/plastic tow strap) to retain connection between towing and towed machines in the event of primary attaching system separation.
17. Make sure all safety/warning lights, SMV sign, and reflective decals are in place and working properly before transporting the machine on public roads.
18. Limit towing speed to 15 MPH. Tow only with farm tractor of a minimum 90 HP. Allow for unit length when making turns.
19. Reduce speed prior to turns to avoid the risk of overturning. Always drive at a safe speed relative to local conditions and ensure your speed is slow enough for a safe emergency stop.
20. Chemical application is often an integral part of planting. Follow label instructions for proper chemical mixing, handling and container disposal methods.
21. Be familiar with safety procedures for immediate first aid should you accidentally contact chemical substances.
22. Use the proper protective clothing and safety equipment when handling chemicals.
23. Chemicals are supplied with Material Safety Data Sheets (MSDS) that provide full information about the chemical, its effects on exposure, and first aid needs in the event of an emergency. Keep your MSDS file up-to-date and available for first responders in case of emergency.
24. When servicing ground engaging components such as opening disks and firming points, use special care to avoid points and edges worn sharp during use.
25. Use professional help if you are unfamiliar with working on hydraulic systems. Pressurized hydraulic fluid can penetrate body tissue and result in death, serious infection, or other injuries.

Following are some common hazard warnings associated with this equipment. Pay close attention to all safety, operating, and maintenance information in this manual and decals applied to your equipment.

 **DANGER!**

Contacting or coming close to power lines or other high energy sources will cause death or serious injury. Keep away from power lines or high energy sources at all times.

 **WARNING**

Improperly operating or working on this equipment could result in death or serious injury. Read and follow all instructions in Operator Manual before operating or working on this equipment.

 **WARNING**

Falling equipment can cause death or serious injury. Install all lockup devices or lower planter to ground before working on equipment.

 **WARNING**

Explosive separation of rim and tire parts can cause death or serious injury. Overinflation, rim and tire servicing, improper use of rims and tires, or worn or improperly maintained tires could result in a tire explosion.

SAFETY SIGNS AND DECALS

 **WARNING**

All safety/warning lights, reflective decals, and SMV sign must be in place and visible before transporting machine on public roads or death, serious injury, and damage to property and equipment may result. Check federal, state/provincial, and local regulations before transporting equipment on public roads.

Safety signs and decals are placed on the machine to warn of hazards and provide important operating and maintenance instructions. Information on these signs are for your personal safety and the safety of those around you. FOLLOW ALL SAFETY INSTRUCTIONS!

- Keep signs clean so they can be easily seen. Wash with soap and water or cleaning solution as required.
- Replace safety signs if damaged, painted over, or missing.
- Check reflective decals and SMV sign periodically. Replace if they show any loss of reflective properties.
- When replacing decals, clean machine surface thoroughly with soap and water or cleaning solution to remove all dirt and grease.

NOTE: Safety sign and decal locations are shown in the Parts Manual for this machine.

NOTE: Style and locations of SMV sign, reflective decals, and safety/warning lights conform to ANSI/ASABE S279.14 JUL 2008 and ANSI/ASABE S276.6 JAN 2005.

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

WARNING

Improperly operating or working on this equipment could result in death or serious injury. Read and follow all instructions in Operator Manual before operating or working on this equipment.

INITIAL PREPARATION

WARNING

Loose transport wheel lug bolts can result in wheel separation from planter and cause death, serious injury, and damage to property and equipment. Torque transport wheel $\frac{9}{16}$ "- 18 lug bolts to 90 ft-lb (122 N-m) before operating planter for the first time and periodically after.

WARNING

Explosive separation of rim and tire parts can cause death or serious injury. Overinflation, rim and tire servicing, improper use of rims and tires, worn, or improperly maintained tires could result in a tire explosion.

1. Torque transport wheel $\frac{9}{16}$ "- 18 lug bolts to 90 ft-lb (122 N-m).
2. Inflate transport/ground drive tires to 40 psi (275.7 kPa).
3. Inflate contact drive tires to 50 psi (344.7 kPa).



TRACTOR REQUIREMENTS

Consult your dealer for information on horsepower requirements and tractor compatibility. Requirements vary with planter options, tillage, and terrain.

A 12 volt DC electrical system is required to operate planter safety/warning lights, digital vacuum gauge, and optional pneumatic down pressure system or work lights.

Two dual remote hydraulic outlets (SCV) are required on all models. An additional SCV and zero pressure case drain, or PTO pump is required for EdgeVac equipped planters.

Hydraulic maximum flow rate of 13 GPM @ 2000 PSI is required to operate Edgevac vacuum fan motor.

⚠ WARNING

Uncontrolled machine movement can crush or cause loss of control resulting in death, serious injury, or damage to property and equipment. Install all safety lockup devices before working under or transporting this equipment.

ROW MARKER SAFETY LOCKUP



Row marker lockup installed



Row marker lockup in storage location

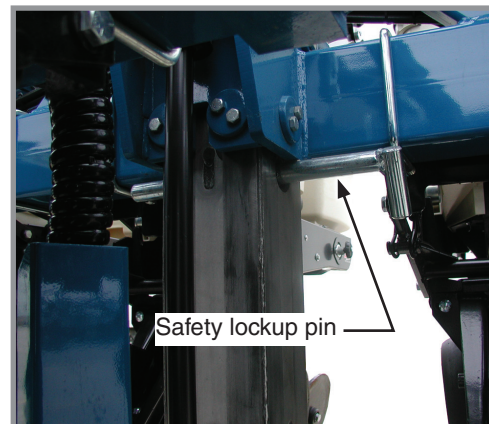
Install row marker safety lockup devices over marker cylinder rods whenever markers are not being used. Keep in storage position on front side of row marker arms when removed. Secure in either location with attached clevis pins.

SAFETY LOCKUP AND STROKE LIMITER PIN

Safety lockup and stroke limiter pin is inserted through the center post and kept in place by a hairpin clip.

Pin must be installed under planter frame during transport or when working on equipment when raised.

Pin must be installed above planter frame during normal operation to contact stroke limiter valve and prevent lift cylinder from overextending (Refer to hydraulic operation in this section).

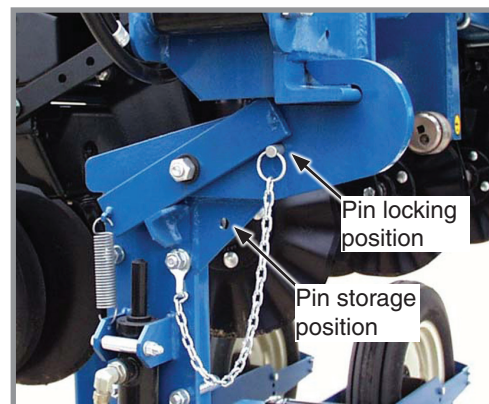


Safety lockup pin in safety position

TRANSPORT LATCH LOCKING PIN

Spring loaded transport latch on planter hitch locks in place under toolbar when planter is rotated to transport position.

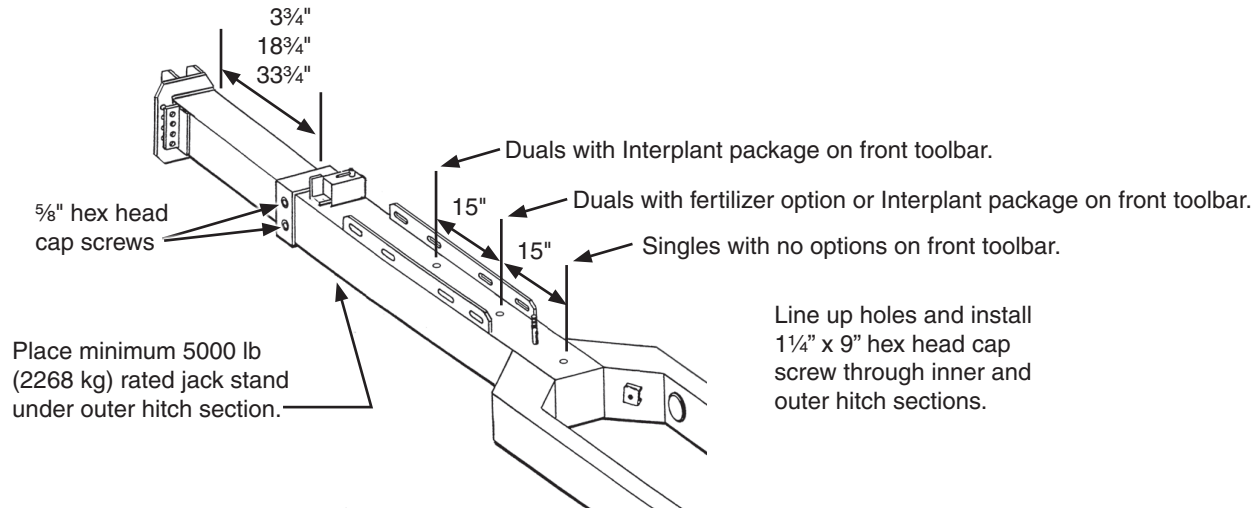
Always install transport latch locking pin to lock transport latch before transporting planter.



Transport latch locking pin locations

HITCH LENGTH ADJUSTMENT

The hitch consists of a telescoping outer and inner section. Hitch length can be adjusted to three locations to accommodate tractor tire options and attachments installed on planter.



1. Lower machine to field position and block transport wheels.
2. Support outer hitch section with a minimum 5000 lb (2268 kg) rated jack stand to take weight off inner section.

NOTE: Remove and reinstall hitch mounted brackets as needed to access hitch adjustment holes.

3. Remove 1 1/4" x 9" hex head cap screw, lock washer, and hex nut from hitch. Loosen two 5/8" hex head cap screws on front L.H. side of outer hitch section.

NOTICE

DO NOT set hitch length so turning is limited when machine is in road transport position or equipment may be damaged.

4. Reposition inner hitch section so hole lines up with hole in outer hitch section at desired length. Install 1 1/4" x 9" hex head cap screw, lock washer, and hex nut. Torque to 840 ft-lb (1138 N-m).
5. Torque two 5/8" hex head cap screws to 110 ft-lb (149 N-m).

JACK STAND

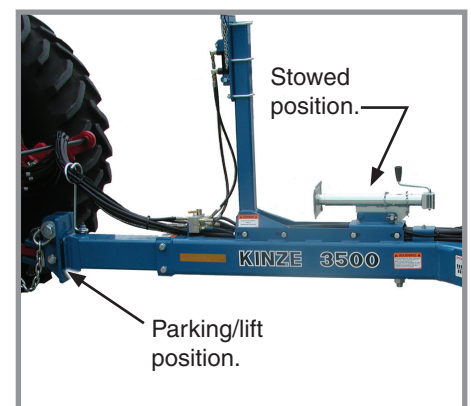
NOTICE

Install jack stand in stowed position during transport and field operation to prevent equipment damage.

An easily removeable jack stand is provided to aid in connecting and disconnecting planter from tractor.

Slide notched end of jack stand over mount round bar at parking/lift or stowed position.

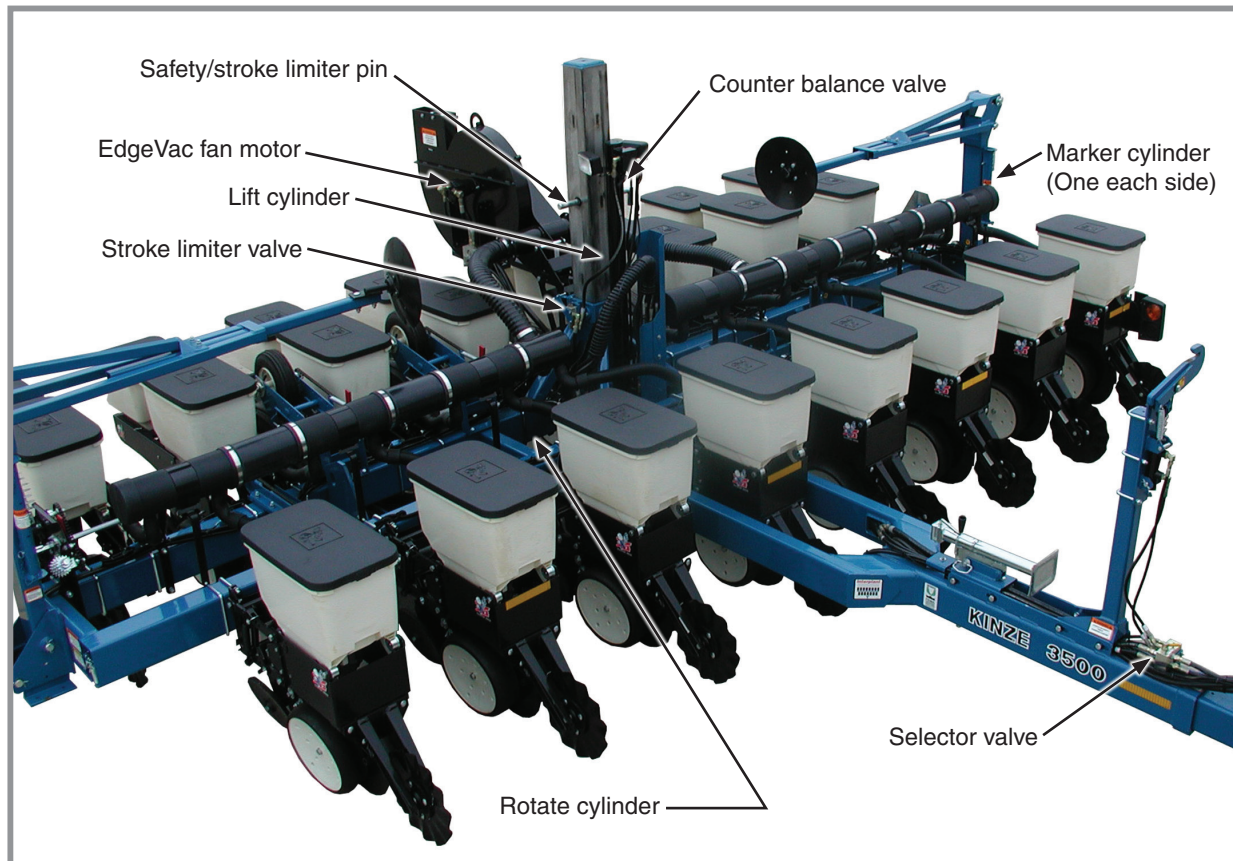
Install pin through mount and jack stand. Secure with lynch pin.



Jack stand locations

HYDRAULIC OPERATION

NOTE: PTO pump drive and oil cooler package is available from Kinze through your Kinze Dealer to increase your tractor's operating capabilities.



3500 hydraulic system (schematic located in Lubrication and Maintenance section)

PLANTER LIFT SYSTEM

Planter lift system consists of one lift cylinder located at center of machine. Cylinder mounts are located front and rear side of center post. Install cylinder in rear position for planters with rear mounted row units only. Cylinder must be installed in front position for planters with front mounted options (push row units, fertilizer, etc.). A stroke limiter valve shuts off hydraulic flow when the planter lifts to raised field position and contacts safety/stroke limiter pin. A counter balance valve holds planter in position until reverse pressure is applied.

NOTE: Planter lift cylinder is equipped with a counter balance valve. Hydraulic pressure is required to lower planter

SELECTOR VALVE, ROTATE and MARKER CYLINDERS

A hitch mounted, hand operated selector valve selects row marker or fold functions. Rotate cylinder is mounted on the frame and rotates planter to/from transport position. Row marker cylinders raise and lower row markers.

NOTE: Hydraulic pressure will prevent valve from moving. Release hydraulic pressure from system before attempting to move selector valve handle.

HYDRAULIC OPERATION (CONTINUED)

EDGEVAC FAN MOTOR AND VALVE BLOCK ASSEMBLY (If equipped)

Hydraulically operated motor requires maximum flow rate of 13 GPM @ 2000 PSI to operate properly. It must be connected to a zero pressure case drain and connected to the correct pressure and return SCV's or PTO fittings.

A pressure relief valve in the valve block assembly prevents build up of oil pressure over 35 PSI in case drain line when vacuum fan motor is in operation. This valve vents oil outside of valve block through a drain hole in the aluminum valve block. This can occur whenever the case drain is improperly connected or motor circuit pressure is too high.

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

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

NOTE: Fan turns at a reduced speed if reverse pressure is applied.

RAISED FIELD POSITION

Row units raise approximately 14 inches and toolbar approximately 40 inches off ground. This position is used in making turns or passing over waterways during field operation.

Install safety/stroke limiter pin above frame assembly to make contact with stroke limiter valve. Secure with hairpin clip.

RAISED TRANSPORT POSITION

Planter raises high enough to permit row units to clear transport wheels as planter is rotated.

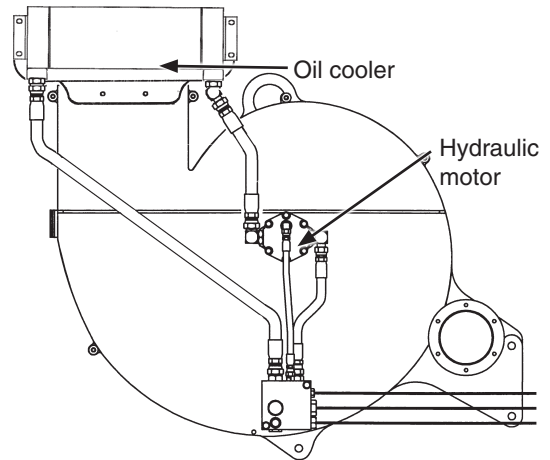
1. Remove hairpin clip and safety lockup pin.
2. Raise planter until lift cylinder is fully extended.
3. Reinstall safety lockup pin and hairpin clip in same hole which is now below frame assembly.
4. Lower planter onto safety lockup pin.

PTO PUMP DRIVE AND OIL COOLER OPTION

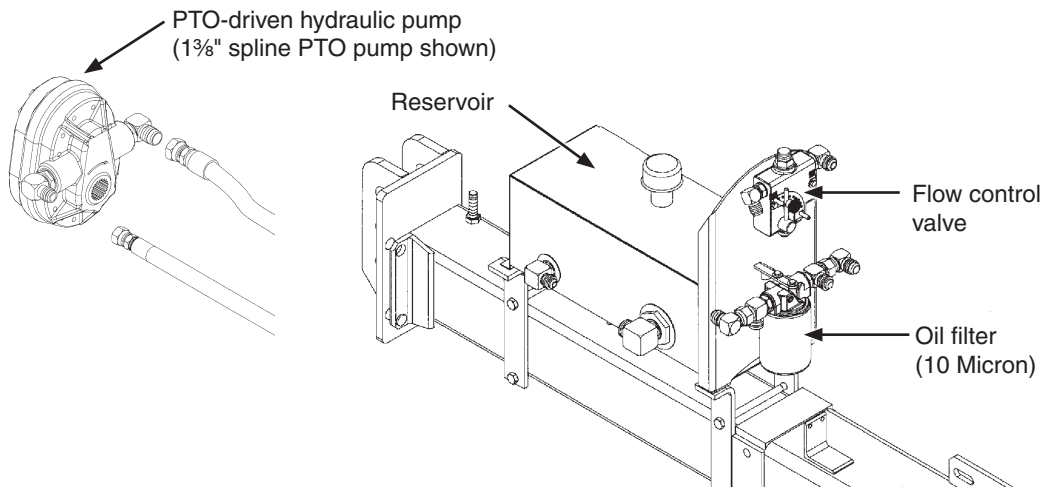
The PTO pump drive and oil cooler option is for tractors with less than required hydraulic output needed to operate hydraulic-driven vacuum fan and other planter hydraulic requirements.

A 1000 RPM PTO is required to operate the PTO-driven hydraulic pump.

PTO pump option consists of a 1 $\frac{3}{8}$ "-21 or 1 $\frac{3}{4}$ "-20 spline, 13.5 GPM 2000 PSI pump, 10 gallon capacity hydraulic reservoir, 15 GPM-rated oil cooler, spin-on 10-micron oil filter, and required hydraulic valves and fittings.



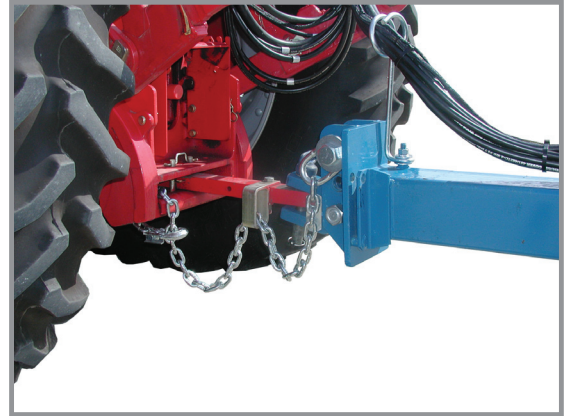
Vacuum fan assembly



TRACTOR PREPARATION AND HOOKUP

NOTE: A 2-Point Hitch option is available for use with Category 3N or 3 three-point hitch designs to convert planter from drawn to semi-mounted. Safety chain is not used with 2-point hitch.

1. Adjust tractor drawbar 13 to 17 inches above ground. Adjust drawbar so hitch pin hole is directly below center line of PTO shaft. Make sure drawbar is in a stationary position.
2. Back tractor to planter and connect with a minimum $\frac{3}{4}$ " diameter hitch pin. Secure with a locking or cotter pin.



Drawbar and safety chain connection

NOTE: DO NOT install safety chain using clevis mounting hardware. Safety chain MUST be installed separately.

3. Safety chain must be used to keep planter and tractor connected in case of a hitch pin/drawbar failure. Attach safety chain at an unused clevis mounting hole on the planter hitch. Torque hardware to 840 ft-lb (1138.8 N-m).

WARNING

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

NOTICE

Wipe hose ends to remove any dirt before connecting couplers to tractor ports or contamination may cause equipment failure.

4. Connect hydraulic hoses to tractor ports in a sequence familiar and comfortable to the operator.

NOTICE

EdgeVac fan motor hydraulic hoses and case drain must be installed correctly. Motor can be damaged or equipment will not operate properly.

$\frac{3}{8}$ " hose from motor - Case Drain (CD - Orange or CD - Green)

$\frac{3}{4}$ " hose from motor - Return

$\frac{1}{2}$ " hose to motor - Pressure

NOTE: If tractor is equipped with an adjustable flow outlet (SCV), set to full flow position. For tractors not equipped with a method for finite adjustment of hydraulic flow, Flow Control Needle Valve Kit G1K426 is available from Kinze Repair Parts through your Kinze Dealer.



G1K426 needle valve kit

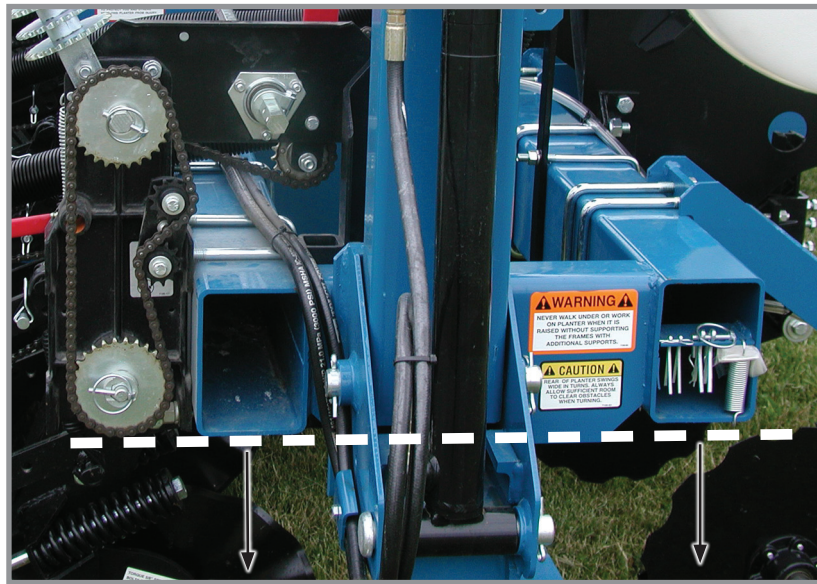
TRACTOR PREPARATION AND HOOKUP (CONTINUED)

5. Connect ASABE Standards 7 terminal connector for safety/warning lights on planter to ASABE Standards receptacle on tractor. If your tractor is not equipped with an ASABE Standards receptacle, check with your tractor manufacturer for availability. Check warning lights on planter work in conjunction with warning lights on tractor.

NOTE: A 12 volt battery connection is required to power the vacuum fan digital gauge. Connect “red” wire to positive (+) battery terminal and “black” wire to negative (-) battery terminal.

6. Raise jack stand and remount horizontally on storage bracket.

LEVEL PLANTER



Bottom of toolbars 20" - 22" from planting surface

Lateral adjustment is maintained by tire pressure. Check tires are inflated to specification.

Front and rear level adjustment is maintained by hitch clevis position unless tractor drawbar is adjustable for height. Planter frame and row unit parallel arms must be level for proper planter and row unit operation. Bottom of toolbar should be 20" to 22" from planting surface.

1. Lower planter to planting position and check planter is level front to rear. Go to step 2 if hitch is too high or low.

NOTE: DO NOT install safety chain using clevis hardware. Move safety chain location if necessary.

2. Remove clevis hitch hex head cap screw and lock nut using a torque wrench. Replace if off-torque is below 75 ft-lb (101.6 N-m) or there is corrosion or damage.

NOTE: Clevis must be free to move on hitch. DO NOT OVERTIGHTEN hardware.

3. Align clevis to hitch holes at new location and install hex head cap screw and lock nut. Tighten lock nut until threads are fully engaged and hex head cap screw and lock nut are firmly against hitch bracket.
4. Recheck with planter in field.

TOWING PLANTER

DANGER!

Contacting or coming close to power lines or other high energy sources will cause death or serious injury. Keep away from power lines or high energy sources at all times.

WARNING

All safety/warning lights, reflective decals, and SMV sign must be in place and visible before transporting machine on public roads or death, serious injury, and damage to property and equipment may result. Check federal, state/provincial, and local regulations before transporting equipment on public roads.

- Tow only with farm tractor rated and configured for equipment.
- Know your route and be aware of any obstructions.
- Follow all road and bridge load limit restrictions.
- Never exceed maximum transport towing speed of 20 mph (32 kph).

PLANTING SPEED

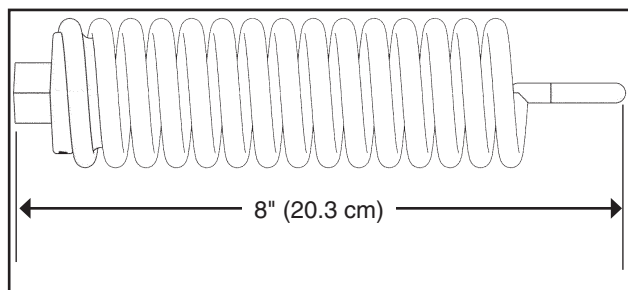
NOTICE

Raise planter out of ground when making sharp turns or backing up or damage to tractor and equipment can occur.

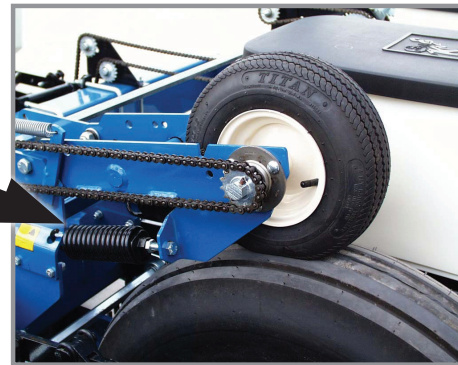
Planters are designed to operate within a speed range of 2 to 8 mph (3.2 - 12.8 kph). See "Rate Charts". Variations in ground speed produce variations in rates. Finger pickup seed meter populations tend to be disproportionately higher at high ground speeds.

NOTE: Seed spacing can be adversely affected at speeds above 5.5 mph (8.8 kph).

CONTACT DRIVE SPRING ADJUSTMENT



Spring length measurement (Factory setting)



Down pressure spring location

There are two down pressure springs on each contact drive wheel. Spring tension is factory preset and normally requires no adjustment.

Basic setting for spring tension is approximately 200 lb (90.72 kg) of down force at tire contact point.

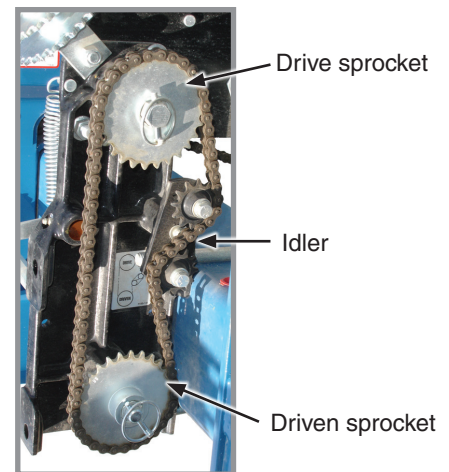
NOTE: Measurement must be taken in planting position with proper tire pressure.

SEED RATE TRANSMISSION ADJUSTMENT

Seed rate transmissions allow simple, rapid changes of sprockets to obtain desired planting population. By removing lynch pins on hexagon shafts, sprockets can be interchanged with those from the sprocket storage rod bolted to the transmission.

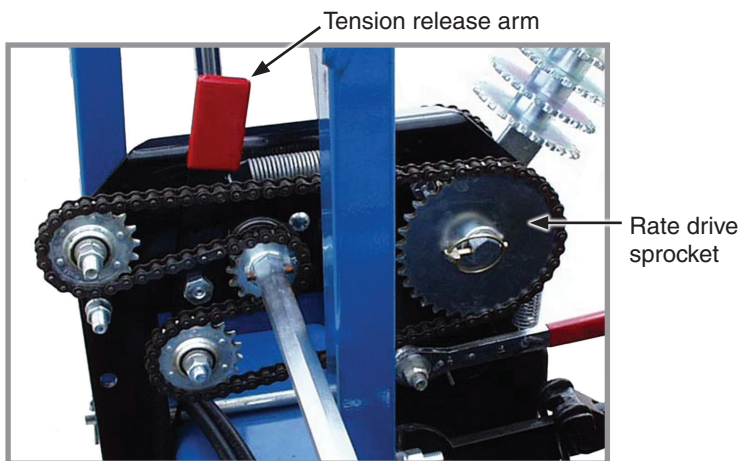
Chain tension is controlled by a spring-loaded dual-sprocket idler. The idler assembly is equipped with an easy-release idler arm to remove spring tension for replacing sprockets.

Planting rate charts in the Seed Meter Operation section will aid you in selecting correct sprocket combinations.

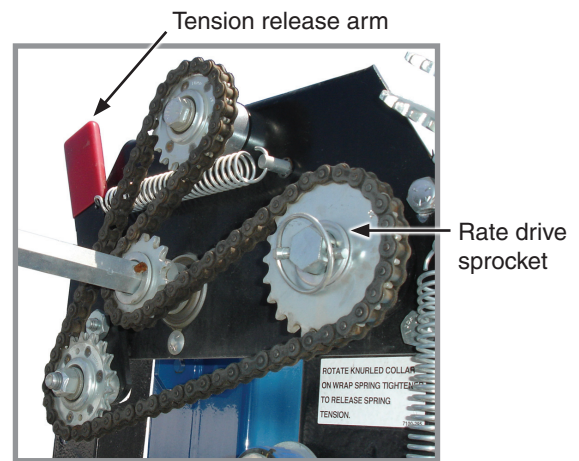


Seed rate transmission chain tension

STANDARD AND HALF RATE (2 TO 1) DRIVES



Old style transmission



New style transmission

Seed planting rate charts are based on the standard rate drive using a 17 tooth sprocket unless otherwise specified.

NOTE: Half rate (2 to 1) drive is recommended only when desired population falls below that on planting rate charts.

Replacing the standard 17 tooth drive sprocket located on the inner side of the top transmission shaft, with the 34 tooth half rate (2 to 1) drive reduction sprocket reduces planter transmission speed and planting and application rates by approximately 50%.

NOTE: Do a field check after each sprocket combination adjustment to make sure you are planting at the desired rate.

SHEAR PROTECTION

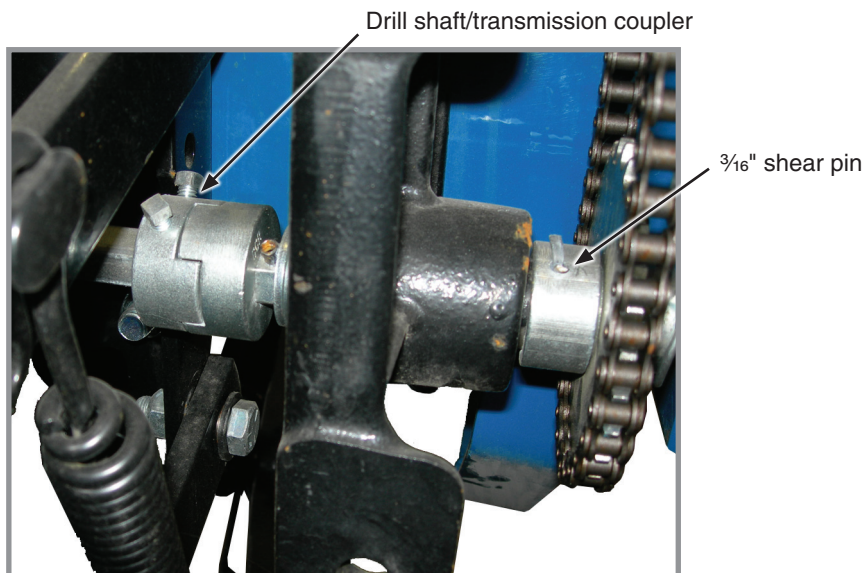
Shear pins protect the planter driveline and row unit components from damage.

1. Determine where binding has occurred before replacing a pin. Turn shaft by hand (with the aid of a wrench) and check for misalignment and seized parts.
2. When shaft can be turned by hand (with the aid of a wrench) replace shear pins with same size and type. Spare shear pins are in wheel module storage area.

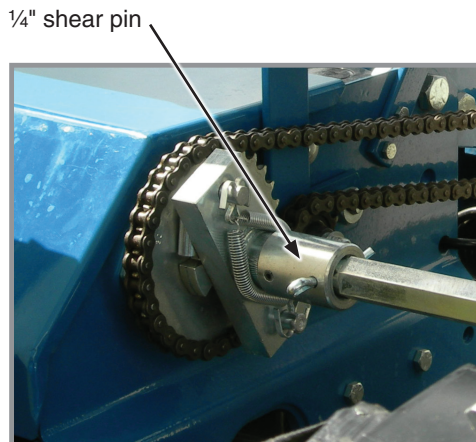
NOTICE

Misaligned drill shaft/transmission coupler can cause equipment damage.

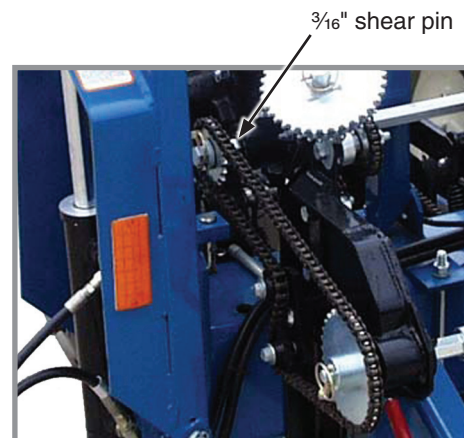
3. Check driveline alignment and follow prescribed lubrication schedules to prevent component binding or breakage.



Transmission shaft and drill shaft coupler



Liquid fertilizer driveline

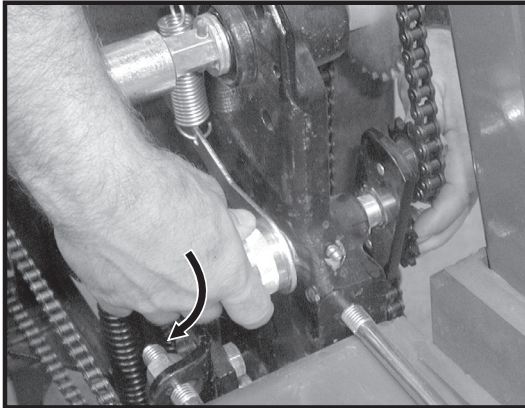


Dry fertilizer driveline

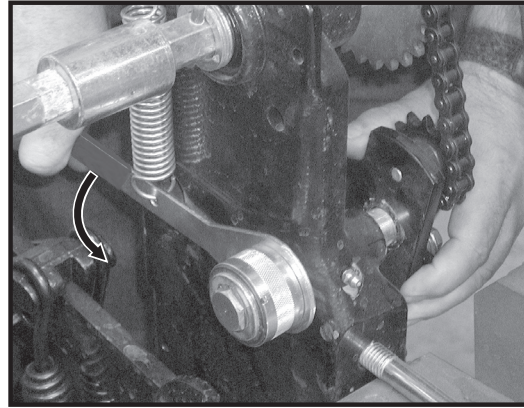
WRAP SPRING WRENCH

Chain idlers use wrap spring wrenches to release and adjust transmission chain tension.

NOTE: Wrap spring wrenches are L.H. and R.H. specific. L.H. styles have silver metal or grey plastic release collars. R.H. styles have gold metal or blue plastic release collars.



Release chain tension

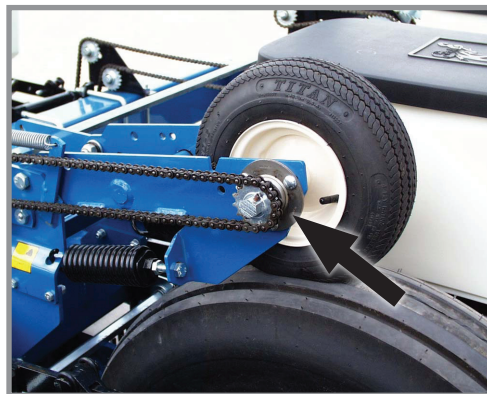


Increase chain tension

Rotate wrap spring wrench knurled collar while rotating chain idler away from chain to release chain tension.

Rotate chain idler into chain while rotating handle to tension idler spring.

CONTACT WHEEL DRIVE SPROCKETS



Contact wheel drive sprocket

NOTE: 15 tooth, 19 tooth or 30 tooth drive sprockets at each contact drive wheel can be interchanged from sprocket storage rod bolted to each transmission. 30 tooth sprockets require use of 124 pitch chains instead of standard 116 pitch No. 40 chains.

Chain tension is controlled by a spring-loaded sprocket idler. Amount of spring tension on chain is controlled by idler arm. Planting rate chart in Rate Chart section will aid you in selecting correct sprocket.

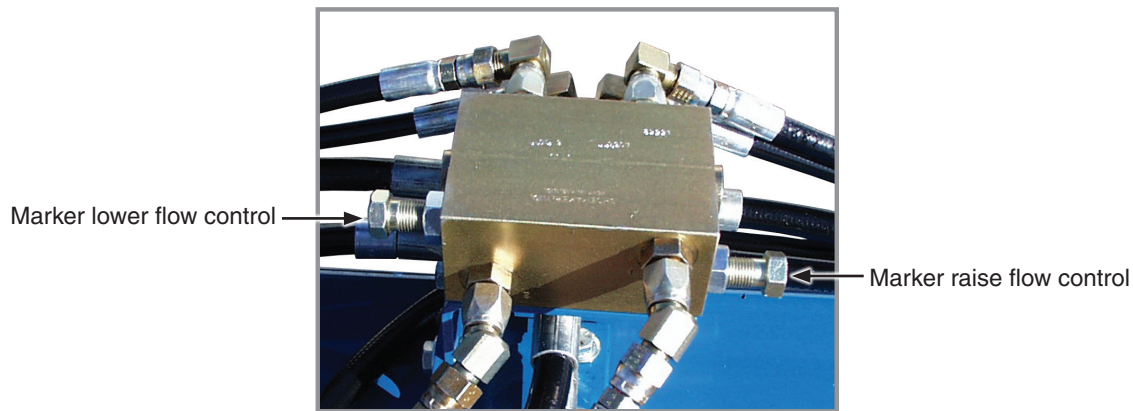
NOTE: 15, 19, and 30 tooth drive sprockets are NOT applicable to all rate charts. 23 tooth driven sprocket at reverser plate is changed to a 17 tooth sprocket when using 60 cell soybean seed disc. Check chart titles to ensure proper rate chart is selected.

NOTE: Make a field check after each sprocket combination adjustment to be sure you are planting at desired rate.

ROW MARKER SPEED ADJUSTMENT

NOTICE

Excessive row marker travel speed can damage row markers.
Adjust flow controls before row markers are first used.



Row marker flow control valves

Two flow control valves determine amount of oil flow restriction controlling row marker travel speeds. One flow control valve controls lowering speed and one controls raising speed of both markers.

NOTE 1: Hydraulics operate slowly when oil is cold. Make all adjustments with oil warm.

NOTE 2: On a tractor where oil flow cannot be controlled, tractor flow rate may be greater than rate marker cylinder can accept. Hold tractor hydraulic control lever until cylinder reaches end of its stroke. This occurs most often on tractors with an open center hydraulic system.

NOTE 3: On tractors with a closed center hydraulic system, set hydraulic flow control so detent functions properly.

1. Loosen jam nut and turn control clockwise (IN) to slow speed or counterclockwise (OUT) to increase speed.
2. Tighten jam nut after adjustments are made.

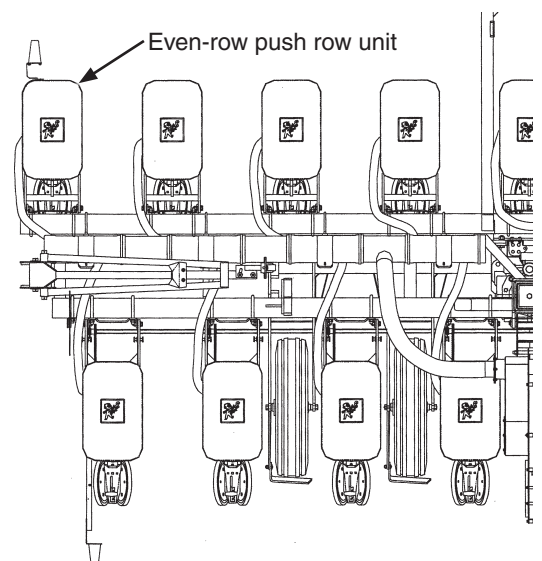
EVEN-ROW PUSH ROW UNIT

An Even-Row Push Row Unit Package is available to add one additional push row unit on outer L.H. side of front toolbar for use with Solid Row Interplant Package.

NOTE: See "Row Marker Adjustment" for determining correct length to set row marker assemblies when planting with even-row push row unit option.

An inner hitch with a 7½" offset mount is available from Kinze through your Kinze Dealer to plant two 15" rows between last year's 30" rows and avoid tire damage from stalks by driving off row

NOTE: install hitch onto 2-point hitch bar using R.H. hole If 2-Point Hitch Option is used. A 7½" offset mount is not needed. See "Offset Hitch Adjustment" for additional information.

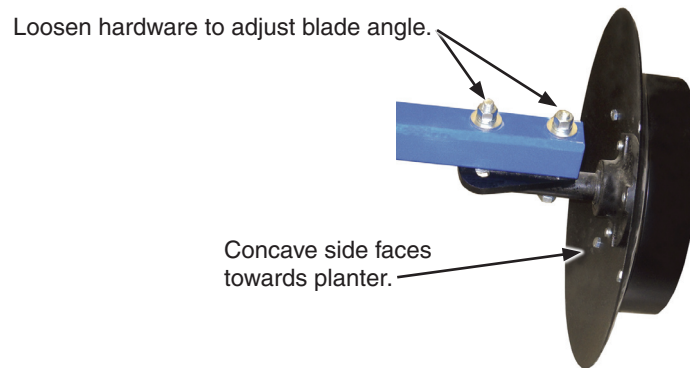


ROW MARKER ADJUSTMENTS

1. Multiply number of rows by the average row spacing in inches to determine total planting width.

Row Marker Lengths	
6 Row 30"	120" (304.8 cm)
8 Row 30"	240" (609.6 cm)

2. Lower planter and row marker assembly to ground.
3. Measure from planter center line to a point where blade contacts ground.
4. Adjust row marker extension so distance from marker disc blade to center line of planter is equal to total planting width. Adjust right and left row marker assemblies equally and securely tighten clamping bolts.



Row marker disc blade angle adjustment

NOTICE

Setting marker disc blade assembly at a sharper angle than needed adds stress to row marker assembly and shortens bearing and blade life. Set blade angle only as needed to leave a clear mark.

Marker disc blade is installed with concave side facing inward. Spindle assembly is slotted so hub and blade can be angled to throw more or less dirt.

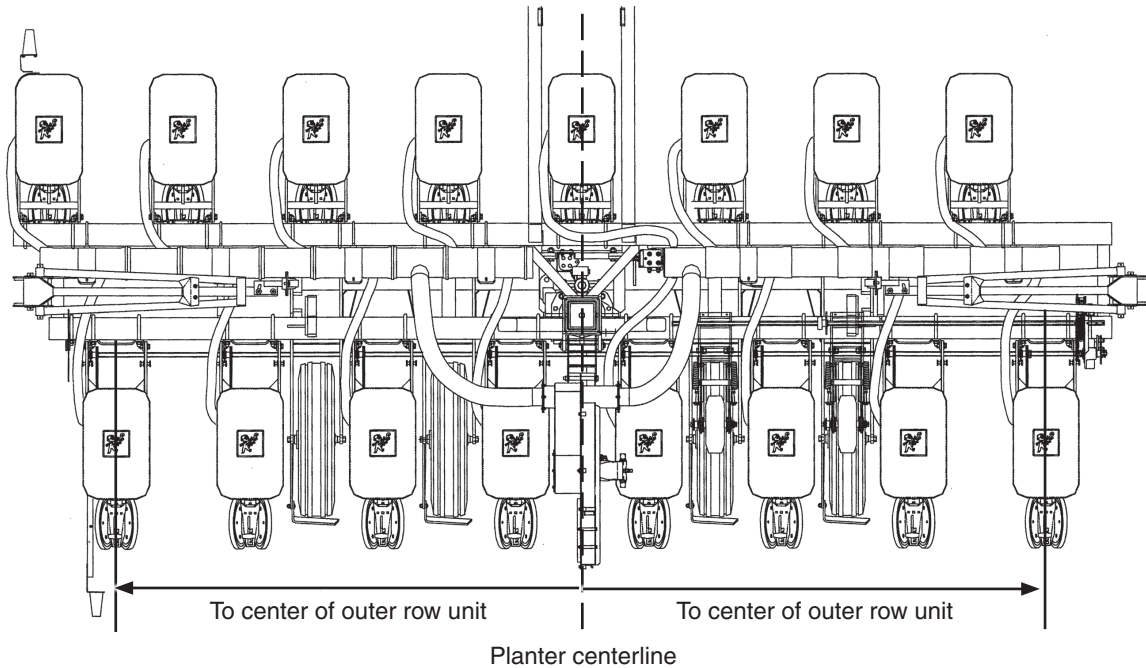
5. Loosen hardware and move assembly as required.
6. Tighten bolts to specified torque.
7. Do a field test to ensure markers are properly adjusted.

NOTE: A notched marker blade is available from Kinze through your Kinze Dealer for use in more severe no till conditions.

ROW MARKER EVEN-ROW LENGTH ADJUSTMENT

Replace L.H. marker extension tube with marker extension tube (55" for 6 Row 30"/65" for 8 Row 30") supplied with Even-Row Push Row Unit and Mounting Package.

Reinstall marker blade assembly onto new marker extension tube.



Center of planter to center of outer row unit. $\times 2 + 15"$ Row spacing. = Dimension between planter center line and marker blade.

- 6 Row 30" with 6 Interplant push row units.
(L.H. marker $90" \times 2 + 15" = 195"$)
(R.H. marker $75" \times 2 + 15" = 165"$)
- 8 Row 30" with 8 Interplant push row units.
(L.H. marker $120" \times 2 + 15" = 255"$)
(R.H. marker $105" \times 2 + 15" = 225"$)

NOTE: Readjust markers when planting 30" rows.

Number of rows \times row spacing (Inches)

=

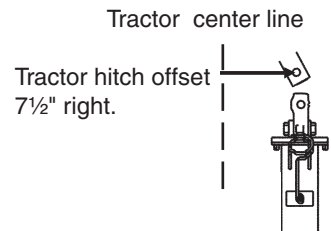
Dimension between planter center line and marker blade

6 Rows \times 30" Spacing = 180" Marker Dimension
8 Rows \times 30" Spacing = 240" Marker Dimension

OFFSET HITCH ADJUSTMENT

An offset hitch is available from Kinze through your Kinze Dealer. Offset hitch provides centered and offset mounting positions for hitch clevis.

If tractor hitch is offset 7½" right of tractor center line, add 7½" to marker dimension on R.H. side of planter and subtract 7½" from marker dimension on L.H. side of planter.



DIGITAL VACUUM GAUGE OPERATION



Digital vacuum gauge

The digital vacuum gauge console controls EdgeVac vacuum fan. Use “FAN 1” setting when planter is equipped with one vacuum fan.

NOTE: Toggle switch must be OFF when planter is not in use or tractor battery will drain.

The digital vacuum gauge is factory calibrated. However, vacuum varies throughout the manifold system and it may be necessary to adjust the digital readout so it agrees with actual vacuum at the meter. With the seed discs loaded with seed, compare digital vacuum gauge readout to reading taken from analog gauge or a hand held gauge at several meters along length of planter.

Elbows at seed meter covers allow testing of meter vacuum levels without removing vacuum hoses. If there is more than 1" or 2" (H₂O) difference, adjust gauge by inserting a small flat bladed screwdriver into opening on back of digital gauge housing and turning potentiometer until digital gauge displays meter vacuum reading.

Compare readings at 10" and 20" of vacuum.

ANALOG VACUUM GAUGE

The analog vacuum gauge connects directly to the manifold or is teed into the digital sending unit on newer models.

Only gauge adjustment is to “zero” needle with no vacuum present. If there is a significant difference between this gauge and a reading taken at meters, a different manifold location should be found to connect hose to gauge and digital sending unit.

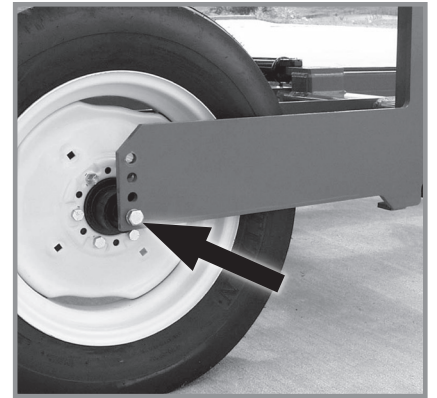


Analog vacuum gauge

RIDGE PLANTING

Planter toolbar height can be raised 3" for ridge planting.

Relocate 20" transport axles to lower holes in wheel arm.

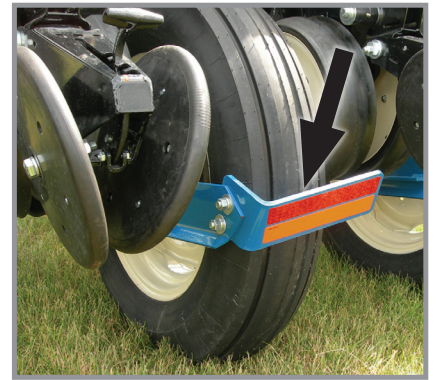


Transport axle in lowest position

TIRE SCRAPER

A tire scraper prevents buildup of dirt and mud between wheel arm assembly and tire.

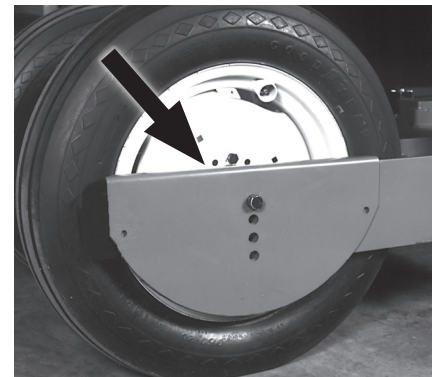
Adjust scraper so it does not contact tire.



Tire scraper

ROCK GUARDS

Transport wheel rock guards are used on both sides of each transport wheel when planter is used in rocky conditions. Rock guards help prevent rocks from being picked up by wheels and damaging adjoining row units.



Rock guard

AUXILIARY WORK LIGHTS PACKAGE

Optional Auxiliary Work Lights Package includes two 50 watt, 3" x 5" halogen flood lamps, brackets, and hardware to mount lights at top of lift cylinder and a wiring harness to plug into existing planter light harness.



Auxiliary work lights

REAR TRAILER HITCH

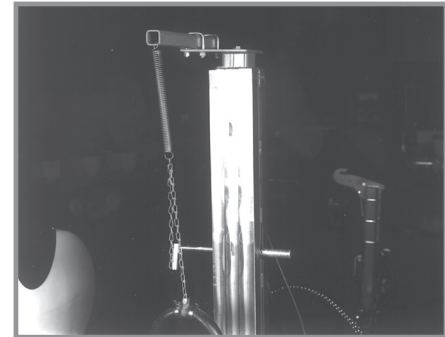
NOTICE

Rear trailer hitch is for use with piston pump only. Maximum hitch weight is 200 lbs. Gross towing weight should not exceed 6000 lbs. or equivalent of a loaded 500 gal. (1892.7 L) tank and running gear.

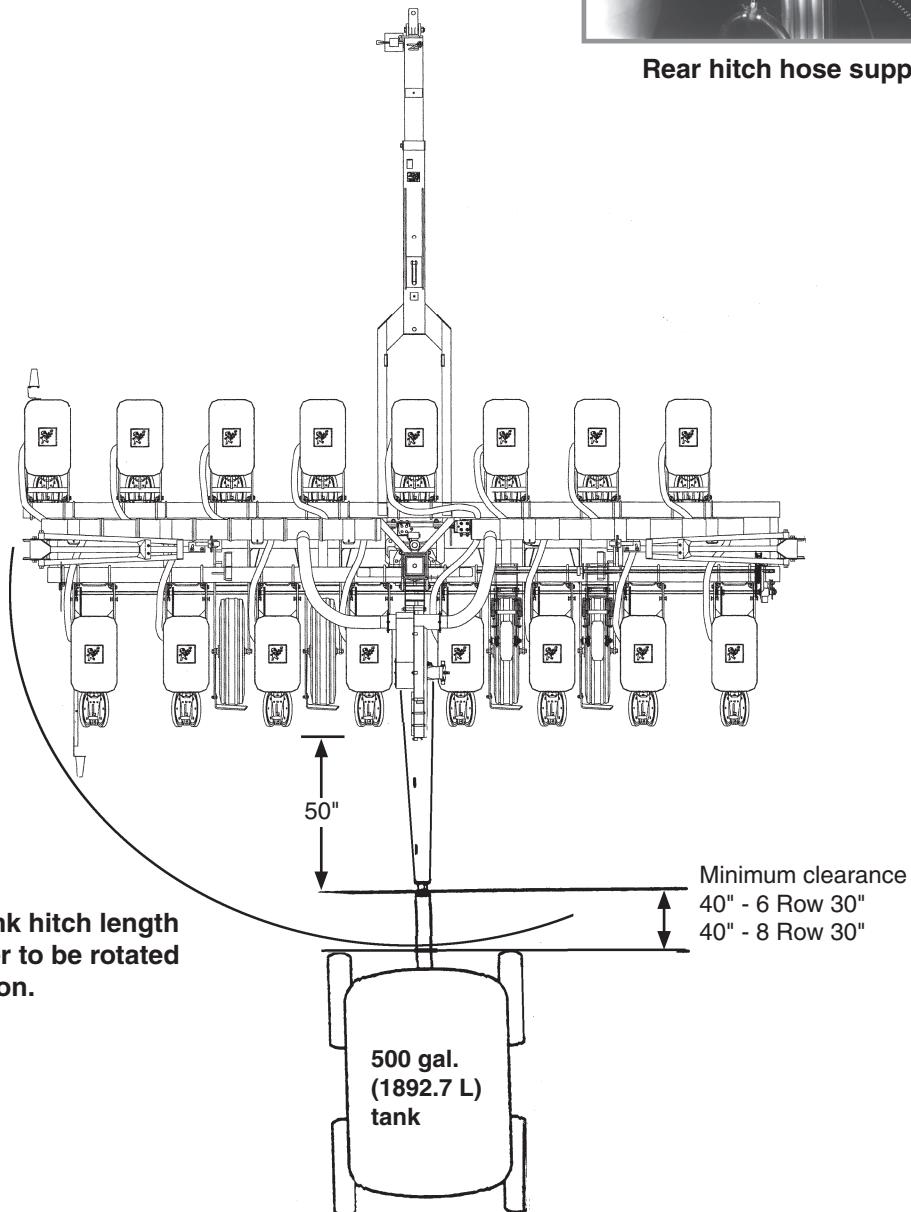
Rear Trailer Hitch is used to tow a 3 or 4 wheel wagon behind planter.

A spring, chain and mounting bracket are used to support the 1¼" feed hose from hitch to piston pump. This extra length or loop is required to allow planter to be moved into transport position without stretching or breaking hose.

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



Rear hitch hose support



Note: minimum tank hitch length 50" to allow planter to be rotated to transport position.

Minimum clearance
40" - 6 Row 30"
40" - 8 Row 30"

500 gal.
(1892.7 L)
tank

FIELD TEST

Perform a field test with any change of field and/or planting conditions, seed size or planter adjustment to ensure proper seed placement and operation of row units. See “Rate Charts”, “Check Seed Population” and “Granular Chemical Application Field Check”.

- Check planter for front to rear and lateral level operation. See “Level Planter”.
- Check **all** row units to be certain they are running level. Row unit parallel arms should be approximately parallel to the ground when planting.
- Check row markers for proper operation and adjustment. See “Row Marker Adjustments” and “Row Marker Speed Adjustment”.
- Check for proper application rates and placement of granular chemicals on **all** rows. See “Granular Chemical Application Field Check”.
- Check for desired depth placement and seed population on **all** rows. See “Check Seed Population”.
- Check for proper application rates of fertilizer on **all** rows. See proper “Fertilizer Application Rate Chart”.

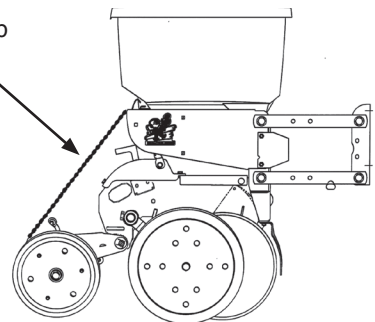
Reinspect machine after field testing.

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

CHECK SEED POPULATION

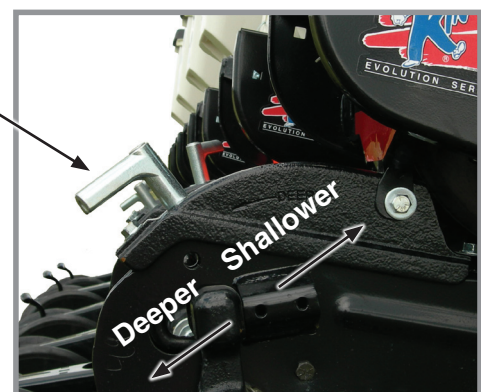
1. Tie up one or more sets of closing wheels by running a chain or rubber tarp strap between the hopper support panel and closing wheels. It may be necessary to decrease closing wheel arm spring tension.

Chain, rubber tarp strap, or similar.



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.

Planting depth adjustment handle



Planting depth adjustment

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".

$\frac{1}{1000}$ Acre Seed Population Count Row Width/Distance						
Row Width	15"	18"	19"	30"	36"	38"
Distance	34'10"	29'0"	27'8"	17'5"	14'6"	13'10"

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

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

EXAMPLE: 30" row spacing 17' 5" equals $\frac{1}{1000}$ acre.
 26 seeds counted x 1000 = 26,000 seeds per acre

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

1. If seed check shows average distance between seeds in inches is significantly different than 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.
2. Check for seed meter malfunction. 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 and not functioned properly. If two seeds are found within a short distance of each other, finger has metered two seeds instead of one.
3. See "Seed Meter (Finger Pickup) Troubleshooting" and/or "Seed Meter (Brush-Type) Troubleshooting" in Troubleshooting Section of this manual.

DETERMINING POUNDS PER ACRE (BRUSH-TYPE METER)

Seeds per acre ÷ Seeds per pound (from label) = Pounds per acre

If seeds per pound information is not available use the following averages:

- 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

DETERMINING BUSHELS PER ACRE

Pounds per acre ÷ Seed unit weight = Bushels per acre

Average Unit Weight of:

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

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 "Seed Meter (Brush-Type) Troubleshooting".

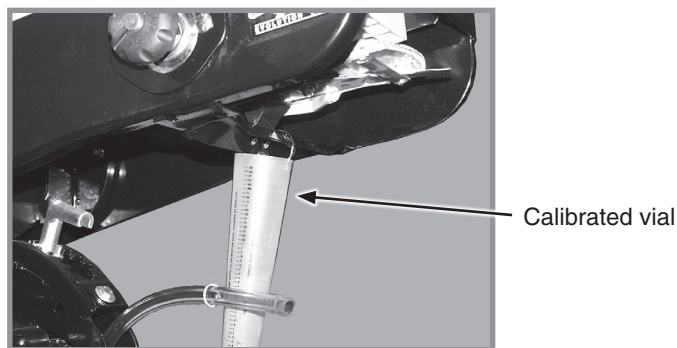
GRANULAR CHEMICAL APPLICATION FIELD CHECK

Temperature, humidity, speed, ground conditions, flowability of different material, or meter obstructions can affect granular chemical rate of delivery.

WARNING

Agricultural chemicals can cause death or serious injury to persons, animals, and plants or seriously damage soil, equipment, or property. Read and follow all chemical and equipment manufacturers labels and instructions.

Perform a field check to determine application rates.



Granular chemical field check

1. Fill insecticide and/or herbicide hoppers.
2. Attach a calibrated vial to each granular chemical meter.

NOTE: Disengage clutch to avoid dropping seed during test.

3. Lower planter and drive 1320 feet at planting speed.
4. Weigh chemical in ounces caught in one vial.
5. Multiply that amount by factor shown to determine pounds per acre.

Pounds Per Acre	
Row Width	Factor
30"	.83
36"	.69
38"	.65

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: Check calibration of all rows.

METERING GATE

Use metering gate setting as a starting point for distributing insecticide or herbicide. Charts are based on 5 mph (8 kph) planting speed. Use a higher gate setting for speeds faster than 5 mph (8 kph) and a lower setting for speeds slower than 5 mph (8 kph).

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GENERAL PLANTING RATE INFORMATION

These planting rate charts are applicable to KINZE Model 3500 Twin-Line Planters.

NOTICE

Sprocket combinations in these charts are for average conditions. Changes in sprocket combinations may be required for desired planting population. ALWAYS MAKE FIELD CHECKS TO BE SURE YOU ARE PLANTING AT THE DESIRED RATE.

NOTICE

Seed additives added in the hopper may affect finger pickup seed meter performance and accelerate wear.

NOTE: Seed size and shape may affect planting rate.

NOTE: Not all row spacings listed apply to all size planters.

NOTE: Speeds above 5.5 MPH (8.8 KPH) can adversely affect seed spacing.

MECHANICAL

Finger Pickup Corn Meter

Larger grades 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 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 finger pickup seed meters equipped with oil sunflower fingers. No. 1 and/or No. 2 size confectionery sunflower seeds are recommended for use in finger pickup seed meters equipped with corn fingers.

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. Smaller size seed pounds per acre may be below what was expected and large seed pounds per acre may appear above expectations. To determine pounds per acre, use the formula given in "Determining Pounds Per Acre (Brush-Type Seed Meter)" in "Check Seed Population" in Machine Operation section of this manual.

NOTE: Planting speed can affect actual seeding rate. Make a field check and adjust transmission setting to obtain desired seed drop.

Standard Rate (1 To 1) 17 Tooth Drive Sprocket

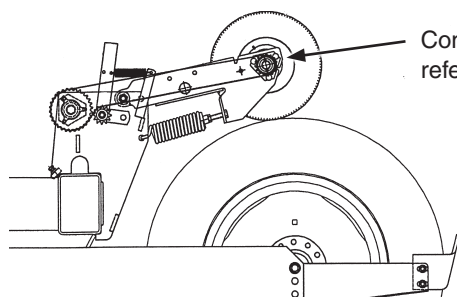
When planting 30"/36"/38" rows with brush-type seed meters using 17 tooth standard rate (1 to 1) sprocket, use charts on page 5-3, 5-5, and 5-6. When planting 15"/18"/19" rows using 17 tooth sprocket, use chart on page 5-4.

Half Rate (2 To 1) 34 Tooth Drive Sprocket

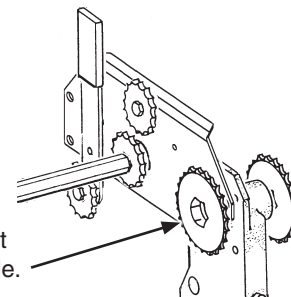
When using 34 tooth half rate (2 to 1) sprocket with brush-type seed meters, seeding rate is approximately 50% of chart readings. **Half rate (2 to 1) drive is recommended only when Interplant push units are used and desired population falls below that shown on planting rate charts.**

EDGEVAC

NOTE: 15, 19, and 30 tooth drive sprockets are NOT applicable to all rate charts. Check chart titles to ensure proper rate chart is selected. 15 and 19 tooth sprockets requires 116 pitch No. 40 chain and 30 tooth sprocket requires 124 pitch No. 40 chain.



Contact wheel drive sprocket
referenced in rate chart title.



Reverser driven sprocket
referenced in rate chart title.

**PLANTING RATES FOR FINGER PICKUP SEED METER (STANDARD DRIVE)
APPROXIMATE SEEDS/ACRE FOR 30" ROW WIDTH**

30" Rows	Transmission Sprockets		Recommended Speed Range (MPH)	Average Seed Spacing In Inches
	Drive	Driven		
16,186	17	28	4 to 6	12.9
16,785	17	27	4 to 6	12.5
17,431	17	26	4 to 6	12.0
18,090	19	28	4 to 6	11.6
18,128	17	25	4 to 6	11.5
18,760	19	27	4 to 6	11.1
18,883	17	24	4 to 6	11.1
19,481	19	26	4 to 6	10.7
19,704	17	23	4 to 6	10.6
20,261	19	25	4 to 6	10.3
21,104	19	24	4 to 6	9.9
21,898	23	28	4 to 6	9.5
22,022	19	23	4 to 6	9.5
22,709	23	27	4 to 6	9.2
22,850	24	28	4 to 6	9.2
23,583	23	26	4 to 6	8.9
23,697	24	27	4 to 6	8.8
23,802	25	28	4 to 6	8.8
23,853	17	19	4 to 6	8.8
24,526	23	25	4 to 6	8.5
24,608	24	26	4 to 6	8.5
24,684	25	27	4 to 6	8.5
24,755	26	28	4 to 6	8.4
25,548	23	24	4 to 6	8.2
25,592	24	25	4 to 6	8.2
25,633	25	26	4 to 6	8.2
25,671	26	27	4 to 6	8.1
25,707	27	28	4 to 6	8.1
26,659	23	23	4 to 6	7.8
27,646	28	27	4 to 6	7.6
27,684	27	26	4 to 6	7.6
27,770	25	24	4 to 6	7.5
27,818	24	23	4 to 6	7.5
28,709	28	26	4 to 6	7.3
28,791	27	25	4 to 6	7.3
28,977	25	23	4 to 6	7.2
29,795	19	17	4 to 6	7.0
29,858	28	25	4 to 6	7.0
29,991	27	24	4 to 6	7.0
30,136	26	23	4 to 6	7.0
31,102	28	24	3 to 6	6.7
31,295	27	23	3 to 6	6.7
32,271	23	19	3 to 5.5	6.5
32,454	28	23	3 to 5.5	6.5
33,674	24	19	3 to 5.5	6.2
35,077	25	19	3 to 5	6.0
36,068	23	17	3 to 5	5.8
36,480	26	19	3 to 5	5.7
37,636	24	17	3 to 5	5.6
37,883	27	19	3 to 5	5.5
39,204	25	17	3 to 4.5	5.3
39,287	28	19	3 to 4.5	5.3
40,772	26	17	3 to 4.5	5.1
42,340	27	17	3 to 4.5	4.9
43,908	28	17	3 to 4.5	4.8

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

PLANTING RATES FOR BRUSH-TYPE SEED METERS (STANDARD DRIVE) APPROXIMATE SEEDS/ACRE FOR 30" ROW WIDTH

Transmission Sprockets		60 Cell Soybean Or High-Rate Milo/Grain Sorghum 30" Rows	Average Seed Spacing In Inches	48 Cell Specialty Soybean Or High-Rate Acid-Delinted Cotton 30" Rows	Average Seed Spacing In Inches	Speed Range (MPH)
Drive	Driven					
17	28	80,928	2.6	64,742	3.2	2 to 8
17	27	83,926	2.5	67,141	3.1	2 to 8
17	26	87,154	2.4	69,723	3.0	2 to 8
19	28	90,449	2.3	72,359	2.9	2 to 8
19	27	93,799	2.2	75,039	2.8	2 to 8
17	24	94,416	2.2	75,533	2.8	2 to 8
17	23	98,521	2.1	78,817	2.7	2 to 8
19	25	101,303	2.1	81,042	2.6	2 to 8
19	24	105,524	2.0	84,419	2.5	2 to 8
23	28	109,491	1.9	87,593	2.4	2 to 8
19	23	110,112	1.9	88,090	2.4	2 to 8
24	28	114,252	1.8	91,402	2.3	2 to 8
24	27	118,483	1.8	94,786	2.2	2 to 8
17	19	119,263	1.8	95,410	2.2	2 to 8
24	26	123,040	1.7	98,432	2.1	2 to 8
26	28	123,773	1.7	99,018	2.1	2 to 8
24	25	127,962	1.6	102,370	2.0	2 to 8
26	27	128,357	1.6	102,686	2.0	2 to 8
23	23	133,294	1.6	106,635	2.0	2 to 8
27	26	138,420	1.5	110,736	1.9	2 to 8
24	23	139,089	1.5	111,271	1.9	2 to 8
25	23	144,884	1.4	115,907	1.8	2 to 8
19	17	148,975	1.4	119,180	1.8	2 to 8
27	24	149,955	1.4	119,964	1.7	2 to 8
28	24	155,509	1.3	124,407	1.7	2 to 8
23	19	161,355	1.3	129,084	1.6	2 to 8
28	23	162,270	1.3	129,816	1.6	2 to 8
24	19	168,371	1.2	134,696	1.6	2 to 8
25	19	175,386	1.2	140,309	1.5	2 to 8
23	17	180,338	1.2	144,270	1.5	2 to 8
26	19	182,402	1.1	145,922	1.4	2 to 7
27	19	189,417	1.1	151,534	1.4	2 to 7
28	19	196,433	1.1	157,146	1.3	2 to 7
26	17	203,861	1.0	163,089	1.3	2 to 7
27	17	211,702	0.9	169,362	1.2	2 to 7
28	17	219,542	0.9	175,634	1.2	2 to 7

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information.

NOTE: Rates are approximately 50% of given numbers when using the Half Rate (2 To 1) Drive Reduction Package.

NOTE: Always field check seed population to verify planting rates.

PLANTING RATES FOR BRUSH-TYPE SEED METERS (STANDARD DRIVE) APPROXIMATE SEEDS/ACRE FOR 15" ROW WIDTH

Transmission Sprockets		60 Cell Soybean Or High-Rate Milo/Grain Sorghum 15" Rows	Average Seed Spacing In Inches	48 Cell Specialty Soybean Or High-Rate Acid-Delinted Cotton 15" Rows	Average Seed Spacing In Inches	Speed Range (MPH)
Drive	Driven					
17	28	161,856	2.6	129,484	3.2	2 to 8
17	27	167,852	2.5	134,282	3.1	2 to 8
17	26	174,308	2.4	139,446	3.0	2 to 8
19	28	180,898	2.3	144,718	2.9	2 to 8
19	27	187,598	2.2	150,078	2.8	2 to 8
17	24	188,832	2.2	151,066	2.8	2 to 8
17	23	197,042	2.1	157,634	2.7	2 to 8
19	25	202,606	2.1	162,084	2.6	2 to 8
19	24	211,048	2.0	168,838	2.5	2 to 8
23	28	218,982	1.9	175,186	2.4	2 to 8
19	23	220,224	1.9	176,180	2.4	2 to 8
24	28	228,504	1.8	182,804	2.3	2 to 8
24	27	236,966	1.8	189,572	2.2	2 to 8
17	19	238,526	1.8	190,820	2.2	2 to 8
24	26	246,080	1.7	196,864	2.1	2 to 8
26	28	247,546	1.7	198,036	2.1	2 to 8
24	25	255,924	1.6	204,740	2.0	2 to 8
26	27	256,714	1.6	205,372	2.0	2 to 8
23	23	266,588	1.6	213,270	2.0	2 to 8
27	26	276,840	1.5	221,472	1.9	2 to 8
24	23	278,178	1.5	222,542	1.9	2 to 8
25	23	289,768	1.4	231,814	1.8	2 to 8
19	17	297,950	1.4	238,360	1.8	2 to 8
27	24	299,910	1.4	239,928	1.7	2 to 8
28	24	311,018	1.3	248,814	1.7	2 to 8
23	19	322,710	1.3	258,168	1.6	2 to 8
28	23	324,540	1.3	259,632	1.6	2 to 8
24	19	336,742	1.2	269,392	1.6	2 to 8
25	19	350,772	1.2	280,618	1.5	2 to 8
23	17	360,676	1.2	288,540	1.5	2 to 8
26	19	364,804	1.1	291,844	1.4	2 to 7
27	19	378,834	1.1	303,068	1.4	2 to 7
28	19	392,866	1.1	314,292	1.3	2 to 7
26	17	407,722	1.0	326,178	1.3	2 to 7
27	17	423,404	0.9	338,724	1.2	2 to 7
28	17	439,084	0.9	351,268	1.2	2 to 7

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information.

NOTE: Rates are approximately 50% of given numbers when using the Half Rate (2 To 1) Drive Reduction Package.

NOTE: Always field check seed population to verify planting rates.

PLANTING RATE FOR BRUSH-TYPE SEED METERS (STANDARD DRIVE) APPROXIMATE SEEDS/ACRE FOR 30" ROW WIDTH

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		
17	28	48,557	4.3	40,464	5.2	2 to 8
17	27	50,356	4.2	41,963	5.0	2 to 8
17	26	52,292	4.0	43,577	4.8	2 to 8
19	28	54,269	3.9	45,225	4.6	2 to 8
19	27	56,279	3.7	46,900	4.5	2 to 8
17	24	56,650	3.7	47,208	4.4	2 to 8
17	23	59,113	3.5	49,261	4.2	2 to 8
19	25	60,782	3.4	50,652	4.1	2 to 8
19	24	63,314	3.3	52,762	4.0	2 to 8
23	28	65,695	3.2	54,746	3.8	2 to 8
19	23	66,067	3.2	55,056	3.8	2 to 8
24	28	68,551	3.0	57,126	3.7	2 to 8
24	27	71,090	2.9	59,242	3.5	2 to 8
17	19	71,558	2.9	59,631	3.5	2 to 8
24	26	73,824	2.8	61,520	3.4	2 to 8
26	28	74,264	2.8	61,886	3.4	2 to 8
24	25	76,772	2.7	63,981	3.3	2 to 8
26	27	77,014	2.7	64,178	3.3	2 to 8
23	23	79,976	2.6	66,647	3.1	2 to 8
27	26	83,052	2.5	69,210	3.0	2 to 8
24	23	83,453	2.5	69,544	3.0	2 to 8
25	23	86,930	2.4	72,442	2.9	2 to 8
19	17	89,385	2.3	74,488	2.8	2 to 8
27	24	89,973	2.3	74,978	2.8	2 to 8
28	24	93,305	2.2	77,755	2.7	2 to 8
23	19	96,813	2.2	80,678	2.6	2 to 8
28	23	97,362	2.1	81,135	2.6	2 to 8
24	19	101,023	2.1	84,185	2.5	2 to 8
25	19	105,232	2.0	87,693	2.4	2 to 8
23	17	108,233	1.9	90,169	2.3	2 to 8
26	19	109,441	1.9	91,201	2.3	2 to 7
27	19	113,650	1.8	94,709	2.2	2 to 7
28	19	117,860	1.8	98,216	2.1	2 to 7
26	17	122,317	1.7	101,930	2.1	2 to 7
27	17	127,021	1.6	105,851	2.0	2 to 7
28	17	131,725	1.6	109,771	1.9	2 to 7

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information.

NOTE: Rates are approximately 50% of given numbers when using the Half Rate (2 To 1) Drive Reduction Package.

NOTE: Always field check seed population to verify planting rates.

PLANTING RATES FOR BRUSH-TYPE SEED METERS (STANDARD DRIVE) APPROXIMATE HILLS/ACRE FOR 30" ROW WIDTH

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

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

To determine population per acre, determine average seeds per hill and hills per acre by doing a field check. Measure 1/1000 of an acre (1/1000 acre = Length of row 17' 5" for 30" row width). 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		
17	28	16,186	12.9	2 to 8
17	27	16,785	12.5	2 to 8
17	26	17,431	12.0	2 to 8
19	28	18,090	11.6	2 to 8
19	27	18,760	11.1	2 to 8
17	24	18,883	11.1	2 to 8
17	23	19,704	10.6	2 to 8
19	25	20,261	10.3	2 to 8
19	24	21,105	9.9	2 to 8
23	28	21,898	9.5	2 to 8
19	23	22,022	9.5	2 to 8
24	28	22,850	9.2	2 to 8
24	27	23,697	8.8	2 to 8
17	19	23,853	8.8	2 to 8
24	26	24,608	8.5	2 to 8
26	28	24,755	8.4	2 to 8
24	25	25,592	8.2	2 to 8
26	27	25,671	8.1	2 to 8
23	23	26,659	7.8	2 to 8
27	26	27,684	7.6	2 to 8
24	23	27,818	7.5	2 to 8
25	23	28,977	7.2	2 to 8
19	17	29,795	7.0	2 to 8
27	24	29,991	7.0	2 to 8
28	24	31,102	6.7	2 to 8
23	19	32,271	6.5	2 to 8
28	23	32,454	6.5	2 to 8
24	19	33,674	6.2	2 to 8
25	19	35,077	6.0	2 to 8
23	17	36,068	5.8	2 to 8
26	19	36,480	5.7	2 to 7
27	19	37,883	5.5	2 to 7
28	19	39,287	5.3	2 to 7
26	17	40,772	5.1	2 to 7
27	17	42,340	4.9	2 to 7
28	17	43,908	4.8	2 to 7

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information.

NOTE: Rates are approximately 50% of given numbers when using the Half Rate (2 To 1) Drive Reduction Package.

NOTE: Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) CORN/POPCORN 39 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
46,414	23,207	15	28	4 to 6	9.0
48,133	24,066	15	27	4 to 6	8.7
49,984	24,992	15	26	4 to 6	8.4
51,983	25,992	15	25	4 to 6	8.0
52,602	26,301	17	28	4 to 6	7.9
54,149	27,075	15	24	4 to 6	7.7
54,550	27,275	17	27	4 to 6	7.7
56,503	28,252	15	23	4 to 6	7.4
56,648	28,324	17	26	4 to 6	7.4
58,791	29,395	19	28	4 to 6	7.1
58,914	29,457	17	25	4 to 6	7.1
60,968	30,484	19	27	4 to 6	6.9
61,369	30,685	17	24	4 to 6	6.8
63,313	31,656	19	26	4 to 6	6.6
64,037	32,019	17	23	4 to 6	6.5
65,845	32,923	19	25	4 to 6	6.4
68,399	34,199	15	19	4 to 6	6.1
68,589	34,294	19	24	4 to 6	6.1
71,167	35,584	23	28	4 to 6	5.9
71,571	35,786	19	23	4 to 6	5.8
73,803	36,902	23	27	4 to 6	5.7
74,262	37,131	24	28	4 to 6	5.6
76,446	38,223	15	17	4 to 6	5.5
77,012	38,506	24	27	4 to 6	5.4
77,519	38,759	17	19	4 to 6	5.4
79,708	39,854	23	25	4 to 6	5.2
80,450	40,225	26	28	4 to 6	5.2
83,029	41,514	23	24	4 to 6	5.0
83,173	41,587	24	25	4 to 6	5.0
83,544	41,772	27	28	4 to 6	5.0
86,639	43,319	23	23	4 to 6	4.8
89,848	44,924	28	27	4 to 6	4.7
89,971	44,985	27	26	4 to 6	4.6
90,406	45,203	24	23	4 to 6	4.6
93,303	46,652	28	26	4 to 6	4.5
93,570	46,785	27	25	4 to 6	4.5
94,172	47,086	25	23	4 to 6	4.4
96,831	48,416	19	17	4 to 6	4.3
97,469	48,734	27	24	4 to 6	4.3
97,939	48,970	26	23	4 to 6	4.3
101,078	50,539	28	24	4 to 6	4.1
101,706	50,853	27	23	4 to 6	4.1
104,878	52,439	23	19	4 to 6	4.0
105,473	52,737	28	23	4 to 6	4.0
109,438	54,719	24	19	4 to 6	3.8
113,998	56,999	25	19	4 to 6	3.7
117,217	58,609	23	17	4 to 6	3.6
118,558	59,279	26	19	4 to 6	3.5
122,313	61,157	24	17	4 to 6	3.4
123,118	61,559	27	19	4 to 6	3.4
127,410	63,705	25	17	4 to 6	3.3
127,678	63,839	28	19	4 to 6	3.3
132,506	66,253	26	17	4 to 6	3.2
132,846	66,423	23	15	4 to 6	3.1
137,603	68,801	27	17	4 to 6	3.0

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) CORN/POPCORN 39 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
58,791	29,395	15	28	4 to 6	7.1
60,968	30,484	15	27	4 to 6	6.9
63,313	31,656	15	26	4 to 6	6.6
65,845	32,923	15	25	4 to 6	6.4
66,629	33,315	17	28	4 to 6	6.3
68,589	34,294	15	24	4 to 6	6.1
69,097	34,549	17	27	4 to 6	6.1
71,571	35,786	15	23	4 to 6	5.8
71,755	35,877	17	26	4 to 6	5.8
74,468	37,234	19	28	4 to 6	5.6
74,625	37,312	17	25	4 to 6	5.6
77,226	38,613	19	27	4 to 6	5.4
77,734	38,867	17	24	4 to 6	5.4
80,196	40,098	19	26	4 to 6	5.2
81,114	40,557	17	23	4 to 6	5.2
83,404	41,702	19	25	4 to 6	5.0
86,639	43,319	15	19	4 to 6	4.8
86,879	43,440	19	24	4 to 6	4.8
90,145	45,073	23	28	4 to 6	4.6
90,657	45,328	19	23	4 to 6	4.6
93,484	46,742	23	27	4 to 6	4.5
94,065	47,032	24	28	4 to 6	4.4
96,831	48,416	15	17	4 to 6	4.3
97,549	48,774	24	27	4 to 6	4.3
98,191	49,095	17	19	4 to 6	4.3
100,963	50,481	23	25	4 to 6	4.1
101,904	50,952	26	28	4 to 6	4.1
105,170	52,585	23	24	4 to 6	4.0
105,353	52,676	24	25	4 to 6	4.0
105,823	52,911	27	28	4 to 6	4.0
109,742	54,871	23	23	4 to 6	3.8
113,807	56,903	28	27	4 to 6	3.7
113,963	56,982	27	26	4 to 6	3.7
114,514	57,257	24	23	4 to 6	3.7
118,184	59,092	28	26	4 to 6	3.5
118,522	59,261	27	25	4 to 6	3.5
119,285	59,643	25	23	4 to 6	3.5
122,653	61,327	19	17	4 to 6	3.4
123,460	61,730	27	24	4 to 6	3.4
124,057	62,028	26	23	4 to 6	3.4
128,033	64,016	28	24	4 to 6	3.3
128,828	64,414	27	23	4 to 6	3.2
132,846	66,423	23	19	4 to 6	3.1
133,599	66,800	28	23	4 to 6	3.1
138,622	69,311	24	19	4 to 6	3.0
144,398	72,199	25	19	4 to 6	2.9
148,475	74,237	23	17	4 to 6	2.8
150,174	75,087	26	19	4 to 6	2.8
154,930	77,465	24	17	4 to 6	2.7
155,950	77,975	27	19	4 to 6	2.7
161,386	80,693	25	17	4 to 6	2.6
161,726	80,863	28	19	4 to 6	2.6
167,841	83,921	26	17	4 to 6	2.5
168,272	84,136	23	15	4 to 6	2.5
174,297	87,148	27	17	4 to 6	2.4

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

PLANTING RATES FOR (EDGEVAC) LOW-RATE CORN/POPCORN 24 CELL DISC

15 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
28,562	14,281	15	28	4 to 6	14.6
29,620	14,810	15	27	4 to 6	14.1
30,759	15,380	15	26	4 to 6	13.6
31,990	15,995	15	25	4 to 6	13.1
32,370	16,185	17	28	4 to 6	12.9
33,323	16,661	15	24	4 to 6	12.5
33,569	16,785	17	27	4 to 6	12.5
34,771	17,386	15	23	4 to 6	12.0
34,861	17,430	17	26	4 to 6	12.0
36,179	18,089	19	28	4 to 6	11.6
36,255	18,127	17	25	4 to 6	11.5
37,519	18,759	19	27	4 to 6	11.1
37,766	18,883	17	24	4 to 6	11.1
38,962	19,481	19	26	4 to 6	10.7
39,408	19,704	17	23	4 to 6	10.6
40,520	20,260	19	25	4 to 6	10.3
42,092	21,046	15	19	4 to 6	9.9
42,209	21,104	19	24	4 to 6	9.9
43,795	21,898	23	28	4 to 6	9.5
44,044	22,022	19	23	4 to 6	9.5
45,417	22,709	23	27	4 to 6	9.2
45,700	22,850	24	28	4 to 6	9.2
47,044	23,522	15	17	4 to 6	8.9
47,392	23,696	24	27	4 to 6	8.8
47,704	23,852	17	19	4 to 6	8.8
49,051	24,525	23	25	4 to 6	8.5
49,508	24,754	26	28	4 to 6	8.4
51,095	25,547	23	24	4 to 6	8.2
51,183	25,592	24	25	4 to 6	8.2
51,412	25,706	27	28	4 to 6	8.1
53,316	26,658	23	23	4 to 6	7.8
55,291	27,645	28	27	4 to 6	7.6
55,367	27,683	27	26	4 to 6	7.6
55,634	27,817	24	23	4 to 6	7.5
57,417	28,709	28	26	4 to 6	7.3
57,581	28,791	27	25	4 to 6	7.3
57,952	28,976	25	23	4 to 6	7.2
59,589	29,794	19	17	4 to 6	7.0
59,981	29,990	27	24	4 to 6	7.0
60,270	30,135	26	23	4 to 6	6.9
62,202	31,101	28	24	4 to 6	6.7
62,588	31,294	27	23	4 to 6	6.7
64,541	32,270	23	19	4 to 6	6.5
64,907	32,453	28	23	4 to 6	6.4
67,347	33,673	24	19	4 to 6	6.2
70,153	35,076	25	19	4 to 6	6.0
72,134	36,067	23	17	4 to 6	5.8
72,959	36,479	26	19	4 to 6	5.7
75,270	37,635	24	17	4 to 6	5.6
75,765	37,883	27	19	4 to 6	5.5
78,406	39,203	25	17	4 to 6	5.3
78,571	39,286	28	19	4 to 6	5.3
81,542	40,771	26	17	4 to 6	5.1
81,751	40,876	23	15	4 to 6	5.1
84,679	42,339	27	17	4 to 6	4.9

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) LOW-RATE CORN/POPCORN 24 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
36,179	18,089	15	28	4 to 6	11.6
37,519	18,759	15	27	4 to 6	11.1
38,962	19,481	15	26	4 to 6	10.7
40,520	20,260	15	25	4 to 6	10.3
41,003	20,501	17	28	4 to 6	10.2
42,209	21,104	15	24	4 to 6	9.9
42,521	21,261	17	27	4 to 6	9.8
44,044	22,022	15	23	4 to 6	9.5
44,157	22,078	17	26	4 to 6	9.5
45,826	22,913	19	28	4 to 6	9.1
45,923	22,961	17	25	4 to 6	9.1
47,524	23,762	19	27	4 to 6	8.8
47,836	23,918	17	24	4 to 6	8.7
49,352	24,676	19	26	4 to 6	8.5
49,916	24,958	17	23	4 to 6	8.4
51,326	25,663	19	25	4 to 6	8.1
53,316	26,658	15	19	4 to 6	7.8
53,464	26,732	19	24	4 to 6	7.8
55,474	27,737	23	28	4 to 6	7.5
55,789	27,894	19	23	4 to 6	7.5
57,529	28,764	23	27	4 to 6	7.3
57,886	28,943	24	28	4 to 6	7.2
59,589	29,794	15	17	4 to 6	7.0
60,030	30,015	24	27	4 to 6	7.0
60,425	30,212	17	19	4 to 6	6.9
62,131	31,066	23	25	4 to 6	6.7
62,710	31,355	26	28	4 to 6	6.7
64,720	32,360	23	24	4 to 6	6.5
64,832	32,416	24	25	4 to 6	6.5
65,122	32,561	27	28	4 to 6	6.4
67,534	33,767	23	23	4 to 6	6.2
70,035	35,017	28	27	4 to 6	6.0
70,131	35,066	27	26	4 to 6	6.0
70,470	35,235	24	23	4 to 6	5.9
72,729	36,364	28	26	4 to 6	5.7
72,936	36,468	27	25	4 to 6	5.7
73,406	36,703	25	23	4 to 6	5.7
75,479	37,739	19	17	4 to 6	5.5
75,975	37,988	27	24	4 to 6	5.5
76,342	38,171	26	23	4 to 6	5.5
78,789	39,395	28	24	4 to 6	5.3
79,279	39,639	27	23	4 to 6	5.3
81,751	40,876	23	19	4 to 6	5.1
82,215	41,107	28	23	4 to 6	5.1
85,306	42,653	24	19	4 to 6	4.9
88,860	44,430	25	19	4 to 6	4.7
91,369	45,685	23	17	4 to 6	4.6
92,415	46,207	26	19	4 to 6	4.5
95,342	47,671	24	17	4 to 6	4.4
95,969	47,985	27	19	4 to 6	4.4
99,314	49,657	25	17	4 to 6	4.2
99,523	49,762	28	19	4 to 6	4.2
103,287	51,643	26	17	4 to 6	4.0
103,552	51,776	23	15	4 to 6	4.0
107,259	53,630	27	17	4 to 6	3.9

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) SOYBEAN AND MILO/GRAIN SORGHUM 60 CELL DISCS
15 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
71,406	35,703	15	28	4 to 6	5.9
74,050	37,025	15	27	4 to 6	5.6
76,898	38,449	15	26	4 to 6	5.4
79,974	39,987	15	25	4 to 6	5.2
80,926	40,463	17	28	4 to 6	5.2
83,306	41,653	15	24	4 to 6	5.0
83,924	41,962	17	27	4 to 6	5.0
86,928	43,464	15	23	4 to 6	4.8
87,151	43,576	17	26	4 to 6	4.8
90,447	45,223	19	28	4 to 6	4.6
90,637	45,319	17	25	4 to 6	4.6
93,797	46,898	19	27	4 to 6	4.5
94,414	47,207	17	24	4 to 6	4.4
97,404	48,702	19	26	4 to 6	4.3
98,519	49,259	17	23	4 to 6	4.2
101,301	50,650	19	25	4 to 6	4.1
105,229	52,615	15	19	4 to 6	4.0
105,521	52,761	19	24	4 to 6	4.0
109,488	54,744	23	28	4 to 6	3.8
110,109	55,055	19	23	4 to 6	3.8
113,544	56,772	23	27	4 to 6	3.7
114,249	57,124	24	28	4 to 6	3.7
117,609	58,805	15	17	4 to 6	3.6
118,480	59,240	24	27	4 to 6	3.5
119,260	59,630	17	19	4 to 6	3.5
122,627	61,314	23	25	4 to 6	3.4
123,770	61,885	26	28	4 to 6	3.4
127,737	63,868	23	24	4 to 6	3.3
127,959	63,979	24	25	4 to 6	3.3
128,530	64,265	27	28	4 to 6	3.3
133,290	66,645	23	23	4 to 6	3.1
138,227	69,113	28	27	4 to 6	3.0
138,417	69,208	27	26	4 to 6	3.0
139,086	69,543	24	23	4 to 6	3.0
143,543	71,772	28	26	4 to 6	2.9
143,954	71,977	27	25	4 to 6	2.9
144,881	72,440	25	23	4 to 6	2.9
148,971	74,486	19	17	4 to 6	2.8
149,952	74,976	27	24	4 to 6	2.8
150,676	75,338	26	23	4 to 6	2.8
155,505	77,753	28	24	4 to 6	2.7
156,471	78,236	27	23	4 to 6	2.7
161,351	80,676	23	19	4 to 6	2.6
162,266	81,133	28	23	4 to 6	2.6
168,367	84,183	24	19	4 to 6	2.5
175,382	87,691	25	19	4 to 6	2.4
180,334	90,167	23	17	4 to 6	2.3
182,397	91,199	26	19	4 to 6	2.3
188,175	94,087	24	17	4 to 6	2.2
189,413	94,706	27	19	4 to 6	2.2
196,015	98,008	25	17	4 to 6	2.1
196,428	98,214	28	19	4 to 6	2.1
203,856	101,928	26	17	4 to 6	2.1
204,378	102,189	23	15	4 to 6	2.0
211,696	105,848	27	17	4 to 6	2.0

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) SOYBEAN AND MILO/GRAIN SORGHUM 60 CELL DISCS
19 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
90,447	45,223	15	28	4 to 6	4.6
93,797	46,898	15	27	4 to 6	4.5
97,404	48,702	15	26	4 to 6	4.3
101,301	50,650	15	25	4 to 6	4.1
102,507	51,253	17	28	4 to 6	4.1
105,521	52,761	15	24	4 to 6	4.0
106,303	53,152	17	27	4 to 6	3.9
110,109	55,055	15	23	4 to 6	3.8
110,392	55,196	17	26	4 to 6	3.8
114,566	57,283	19	28	4 to 6	3.7
114,807	57,404	17	25	4 to 6	3.6
118,809	59,405	19	27	4 to 6	3.5
119,591	59,796	17	24	4 to 6	3.5
123,379	61,689	19	26	4 to 6	3.4
124,791	62,395	17	23	4 to 6	3.4
128,314	64,157	19	25	4 to 6	3.3
133,290	66,645	15	19	4 to 6	3.1
133,661	66,830	19	24	4 to 6	3.1
138,685	69,343	23	28	4 to 6	3.0
139,472	69,736	19	23	4 to 6	3.0
143,822	71,911	23	27	4 to 6	2.9
144,715	72,358	24	28	4 to 6	2.9
148,971	74,486	15	17	4 to 6	2.8
150,075	75,037	24	27	4 to 6	2.8
151,062	75,531	17	19	4 to 6	2.8
155,328	77,664	23	25	4 to 6	2.7
156,775	78,387	26	28	4 to 6	2.7
161,800	80,900	23	24	4 to 6	2.6
162,081	81,040	24	25	4 to 6	2.6
162,805	81,402	27	28	4 to 6	2.6
168,834	84,417	23	23	4 to 6	2.5
175,087	87,544	28	27	4 to 6	2.4
175,328	87,664	27	26	4 to 6	2.4
176,175	88,087	24	23	4 to 6	2.4
181,822	90,911	28	26	4 to 6	2.3
182,341	91,171	27	25	4 to 6	2.3
183,516	91,758	25	23	4 to 6	2.3
188,697	94,349	19	17	4 to 6	2.2
189,939	94,969	27	24	4 to 6	2.2
190,856	95,428	26	23	4 to 6	2.2
196,973	98,487	28	24	4 to 6	2.1
198,197	99,098	27	23	4 to 6	2.1
204,378	102,189	23	19	4 to 6	2.0
205,537	102,769	28	23	4 to 6	2.0
213,264	106,632	24	19	4 to 6	2.0
222,150	111,075	25	19	4 to 6	1.9
228,423	114,211	23	17	4 to 6	1.8
231,036	115,518	26	19	4 to 6	1.8
238,354	119,177	24	17	4 to 6	1.8
239,923	119,961	27	19	4 to 6	1.7
248,286	124,143	25	17	4 to 6	1.7
248,809	124,404	28	19	4 to 6	1.7
	129,109	26	17	4 to 6	1.6
	129,440	23	15	4 to 6	1.6
	134,074	27	17	4 to 6	1.6

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) SOYBEAN 60 CELL DISC
30 TOOTH CONTACT WHEEL DRIVE/17 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
193,217	96,608	15	28	4 to 6	2.2
200,373	100,186	15	27	4 to 6	2.1
208,079	104,040	15	26	4 to 6	2.0
216,403	108,201	15	25	4 to 6	1.9
218,979	109,489	17	28	4 to 6	1.9
225,419	112,710	15	24	4 to 6	1.9
227,089	113,545	17	27	4 to 6	1.8
235,220	117,610	15	23	4 to 6	1.8
235,823	117,912	17	26	4 to 6	1.8
244,741	122,371	19	28	4 to 6	1.7
245,256	122,628	17	25	4 to 6	1.7
NOTE: Planting rates over 250,000 seeds/acre are not recommended with subject seed disc and/or drive ratio.	126,903	19	27	4 to 6	1.6
	127,738	17	24	4 to 6	1.6
	131,784	19	26	4 to 6	1.6
	133,291	17	23	4 to 6	1.6
	137,055	19	25	4 to 6	1.5
	142,370	15	19	4 to 6	1.5
	142,766	19	24	4 to 6	1.5
	148,133	23	28	4 to 6	1.4
	148,973	19	23	4 to 6	1.4
	153,619	23	27	4 to 6	1.4
154,573	24	28	4 to 6	1.4	
159,120	15	17	4 to 6	1.3	
160,298	24	27	4 to 6	1.3	
161,353	17	19	4 to 6	1.3	
165,909	23	25	4 to 6	1.3	
167,454	26	28	4 to 6	1.2	
172,822	23	24	4 to 6	1.2	
173,122	24	25	4 to 6	1.2	
173,895	27	28	4 to 6	1.2	
180,336	23	23	4 to 6	1.2	
187,015	28	27	4 to 6	1.1	
187,272	27	26	4 to 6	1.1	
188,176	24	23	4 to 6	1.1	
194,207	28	26	4 to 6	1.1	
194,762	27	25	4 to 6	1.1	
196,017	25	23	4 to 6	1.1	
201,551	19	17	4 to 6	1.0	
202,877	27	24	4 to 6	1.0	
203,858	26	23	4 to 6	1.0	
210,391	28	24	4 to 6	1.0	
211,698	27	23	4 to 6	1.0	
218,301	23	19	4 to 6	1.0	
219,539	28	23	4 to 6	1.0	
227,792	24	19	4 to 6	0.9	
237,284	25	19	4 to 6	0.9	
243,983	23	17	4 to 6	0.9	
246,775	26	19	4 to 6	0.8	
		24	17	4 to 6	0.8
		27	19	4 to 6	0.8
		25	17	4 to 6	0.8
		28	19	4 to 6	0.8
		26	17	4 to 6	0.8
		23	15	4 to 6	0.8
		27	17	4 to 6	0.7

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) HIGH-RATE SOYBEAN 120 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
142,811	71,406	15	28	4 to 6	2.9
148,100	74,050	15	27	4 to 6	2.8
153,796	76,898	15	26	4 to 6	2.7
159,948	79,974	15	25	4 to 6	2.6
161,852	80,926	17	28	4 to 6	2.6
166,613	83,306	15	24	4 to 6	2.5
167,847	83,924	17	27	4 to 6	2.5
173,857	86,928	15	23	4 to 6	2.4
174,303	87,151	17	26	4 to 6	2.4
180,894	90,447	19	28	4 to 6	2.3
181,275	90,637	17	25	4 to 6	2.3
187,594	93,797	19	27	4 to 6	2.2
188,828	94,414	17	24	4 to 6	2.2
194,809	97,404	19	26	4 to 6	2.1
197,038	98,519	17	23	4 to 6	2.1
202,601	101,301	19	25	4 to 6	2.1
210,458	105,229	15	19	4 to 6	2.0
211,043	105,521	19	24	4 to 6	2.0
218,977	109,488	23	28	4 to 6	1.9
220,219	110,109	19	23	4 to 6	1.9
227,087	113,544	23	27	4 to 6	1.8
228,498	114,249	24	28	4 to 6	1.8
235,218	117,609	15	17	4 to 6	1.8
236,961	118,480	24	27	4 to 6	1.8
238,519	119,260	17	19	4 to 6	1.8
245,254	122,627	23	25	4 to 6	1.7
247,539	123,770	26	28	4 to 6	1.7
	127,737	23	24	4 to 6	1.6
NOTE: Planting rates over 250,000 seeds/acre are not recommended with subject seed disc and/or drive ratio.	127,959	24	25	4 to 6	1.6
	128,530	27	28	4 to 6	1.6
	133,290	23	23	4 to 6	1.6
	138,227	28	27	4 to 6	1.5
	138,417	27	26	4 to 6	1.5
	139,086	24	23	4 to 6	1.5
	143,543	28	26	4 to 6	1.5
	143,954	27	25	4 to 6	1.5
	144,881	25	23	4 to 6	1.4
	148,971	19	17	4 to 6	1.4
	149,952	27	24	4 to 6	1.4
	150,676	26	23	4 to 6	1.4
	155,505	28	24	4 to 6	1.3
	156,471	27	23	4 to 6	1.3
	161,351	23	19	4 to 6	1.3
	162,266	28	23	4 to 6	1.3
	168,367	24	19	4 to 6	1.2
	175,382	25	19	4 to 6	1.2
	180,334	23	17	4 to 6	1.2
	182,397	26	19	4 to 6	1.1
	188,175	24	17	4 to 6	1.1
	189,413	27	19	4 to 6	1.1
	196,015	25	17	4 to 6	1.1
	196,428	28	19	4 to 6	1.1
	203,856	26	17	4 to 6	1.0
	204,378	23	15	4 to 6	1.0
	211,696	27	17	4 to 6	1.0

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) HIGH-RATE SOYBEAN 120 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)
APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS**

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
180,894	90,447	15	28	4 to 6	2.3
187,594	93,797	15	27	4 to 6	2.2
194,809	97,404	15	26	4 to 6	2.1
202,601	101,301	15	25	4 to 6	2.1
205,013	102,507	17	28	4 to 6	2.0
211,043	105,521	15	24	4 to 6	2.0
212,606	106,303	17	27	4 to 6	2.0
220,219	110,109	15	23	4 to 6	1.9
220,783	110,392	17	26	4 to 6	1.9
229,132	114,566	19	28	4 to 6	1.8
229,615	114,807	17	25	4 to 6	1.8
237,619	118,809	19	27	4 to 6	1.8
239,182	119,591	17	24	4 to 6	1.7
246,758	123,379	19	26	4 to 6	1.7
249,581	124,791	17	23	4 to 6	1.7
NOTE: Planting rates over 250,000 seeds/acre are not recommended with subject seed disc and/or drive ratio.	128,314	19	25	4 to 6	1.6
	133,290	15	19	4 to 6	1.6
	133,661	19	24	4 to 6	1.6
	138,685	23	28	4 to 6	1.5
	139,472	19	23	4 to 6	1.5
	143,822	23	27	4 to 6	1.5
	144,715	24	28	4 to 6	1.4
	148,971	15	17	4 to 6	1.4
	150,075	24	27	4 to 6	1.4
	151,062	17	19	4 to 6	1.4
155,328	23	25	4 to 6	1.3	
156,775	26	28	4 to 6	1.3	
161,800	23	24	4 to 6	1.3	
162,081	24	25	4 to 6	1.3	
162,805	27	28	4 to 6	1.3	
168,834	23	23	4 to 6	1.2	
175,087	28	27	4 to 6	1.2	
175,328	27	26	4 to 6	1.2	
176,175	24	23	4 to 6	1.2	
181,822	28	26	4 to 6	1.1	
182,341	27	25	4 to 6	1.1	
183,516	25	23	4 to 6	1.1	
188,697	19	17	4 to 6	1.1	
189,939	27	24	4 to 6	1.1	
190,856	26	23	4 to 6	1.1	
196,973	28	24	4 to 6	1.1	
198,197	27	23	4 to 6	1.1	
204,378	23	19	4 to 6	1.0	
205,537	28	23	4 to 6	1.0	
213,264	24	19	4 to 6	1.0	
222,150	25	19	4 to 6	0.9	
228,423	23	17	4 to 6	0.9	
231,036	26	19	4 to 6	0.9	
238,354	24	17	4 to 6	0.9	
239,923	27	19	4 to 6	0.9	
248,286	25	17	4 to 6	0.8	
248,809	28	19	4 to 6	0.8	
		26	17	4 to 6	0.8
		23	15	4 to 6	0.8
		27	17	4 to 6	0.8

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) ACID-DELINTED HILL-DROP COTTON (3 SEEDS PER CELL) 20 CELL DISCS
15 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
23,802	11,901	15	28	4 to 6	17.6
24,683	12,342	15	27	4 to 6	16.9
25,633	12,816	15	26	4 to 6	16.3
26,658	13,329	15	25	4 to 6	15.7
26,975	13,488	17	28	4 to 6	15.5
27,769	13,884	15	24	4 to 6	15.1
27,975	13,987	17	27	4 to 6	14.9
28,976	14,488	15	23	4 to 6	14.4
29,050	14,525	17	26	4 to 6	14.4
30,149	15,074	19	28	4 to 6	13.9
30,212	15,106	17	25	4 to 6	13.8
31,266	15,633	19	27	4 to 6	13.4
31,471	15,736	17	24	4 to 6	13.3
32,468	16,234	19	26	4 to 6	12.9
32,840	16,420	17	23	4 to 6	12.7
33,767	16,883	19	25	4 to 6	12.4
35,076	17,538	15	19	4 to 6	11.9
35,174	17,587	19	24	4 to 6	11.9
36,496	18,248	23	28	4 to 6	11.5
36,703	18,352	19	23	4 to 6	11.4
37,848	18,924	23	27	4 to 6	11.0
38,083	19,041	24	28	4 to 6	11.0
39,203	19,602	15	17	4 to 6	10.7
39,304	19,652	23	26	4 to 6	10.6
39,493	19,747	24	27	4 to 6	10.6
39,670	19,835	25	28	4 to 6	10.5
39,753	19,877	17	19	4 to 6	10.5
40,876	20,438	23	25	4 to 6	10.2
41,012	20,506	24	26	4 to 6	10.2
41,139	20,569	25	27	4 to 6	10.2
41,257	20,628	26	28	4 to 6	10.1
42,579	21,289	23	24	4 to 6	9.8
42,653	21,326	24	25	4 to 6	9.8
42,721	21,361	25	26	4 to 6	9.8
42,785	21,392	26	27	4 to 6	9.8
42,843	21,422	27	28	4 to 6	9.8
44,430	22,215	23	23	4 to 6	9.4
46,076	23,038	28	27	4 to 6	9.1
46,139	23,069	27	26	4 to 6	9.1
46,281	23,141	25	24	4 to 6	9.0
46,362	23,181	24	23	4 to 6	9.0
47,848	23,924	28	26	4 to 6	8.7
47,985	23,992	27	25	4 to 6	8.7
48,294	24,147	25	23	4 to 6	8.7
49,657	24,829	19	17	4 to 6	8.4
49,762	24,881	28	25	4 to 6	8.4
49,984	24,992	27	24	4 to 6	8.4
50,225	25,113	26	23	4 to 6	8.3
51,835	25,918	28	24	4 to 6	8.1
52,157	26,079	27	23	4 to 6	8.0
53,784	26,892	23	19	4 to 6	7.8
54,089	27,044	28	23	4 to 6	7.7
56,122	28,061	24	19	4 to 6	7.5
58,461	29,230	25	19	4 to 6	7.2
60,111	30,056	23	17	4 to 6	7.0

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) ACID-DELINTED HILL-DROP COTTON (3 SEEDS PER CELL) 20 CELL DISCS
19 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
30,149	15,074	15	28	4 to 6	13.9
31,266	15,633	15	27	4 to 6	13.4
32,468	16,234	15	26	4 to 6	12.9
33,767	16,883	15	25	4 to 6	12.4
34,169	17,084	17	28	4 to 6	12.2
35,174	17,587	15	24	4 to 6	11.9
35,434	17,717	17	27	4 to 6	11.8
36,703	18,352	15	23	4 to 6	11.4
36,797	18,399	17	26	4 to 6	11.4
38,189	19,094	19	28	4 to 6	11.0
38,269	19,135	17	25	4 to 6	10.9
39,603	19,802	19	27	4 to 6	10.6
39,864	19,932	17	24	4 to 6	10.5
41,126	20,563	19	26	4 to 6	10.2
41,597	20,798	17	23	4 to 6	10.1
42,771	21,386	19	25	4 to 6	9.8
44,430	22,215	15	19	4 to 6	9.4
44,554	22,277	19	24	4 to 6	9.4
46,228	23,114	23	28	4 to 6	9.0
46,491	23,245	19	23	4 to 6	9.0
47,941	23,970	23	27	4 to 6	8.7
48,238	24,119	24	28	4 to 6	8.7
49,657	24,829	15	17	4 to 6	8.4
49,784	24,892	23	26	4 to 6	8.4
50,025	25,012	24	27	4 to 6	8.4
50,248	25,124	25	28	4 to 6	8.3
50,354	25,177	17	19	4 to 6	8.3
51,776	25,888	23	25	4 to 6	8.1
51,949	25,975	24	26	4 to 6	8.0
52,109	26,055	25	27	4 to 6	8.0
52,258	26,129	26	28	4 to 6	8.0
53,933	26,967	23	24	4 to 6	7.8
54,027	27,013	24	25	4 to 6	7.7
54,114	27,057	25	26	4 to 6	7.7
54,194	27,097	26	27	4 to 6	7.7
54,268	27,134	27	28	4 to 6	7.7
56,278	28,139	23	23	4 to 6	7.4
58,362	29,181	28	27	4 to 6	7.2
58,443	29,221	27	26	4 to 6	7.2
58,623	29,312	25	24	4 to 6	7.1
58,725	29,362	24	23	4 to 6	7.1
60,607	30,304	28	26	4 to 6	6.9
60,780	30,390	27	25	4 to 6	6.9
61,172	30,586	25	23	4 to 6	6.8
62,899	31,450	19	17	4 to 6	6.6
63,031	31,516	28	25	4 to 6	6.6
63,313	31,656	27	24	4 to 6	6.6
63,619	31,809	26	23	4 to 6	6.6
65,658	32,829	28	24	4 to 6	6.4
66,066	33,033	27	23	4 to 6	6.3
68,126	34,063	23	19	4 to 6	6.1
68,512	34,256	28	23	4 to 6	6.1
71,088	35,544	24	19	4 to 6	5.9
74,050	37,025	25	19	4 to 6	5.6
76,141	38,070	23	17	4 to 6	5.5

**NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information.
Always field check seed population to verify planting rates.**

**PLANTING RATES FOR (EDGEVAC) SMALL COTTON/SMALL DRY EDIBLE BEAN/SUNFLOWER 54 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
64,265	32,132	15	28	4 to 6	6.5
66,645	33,323	15	27	4 to 6	6.3
69,208	34,604	15	26	4 to 6	6.0
71,977	35,988	15	25	4 to 6	5.8
72,834	36,417	17	28	4 to 6	5.7
74,976	37,488	15	24	4 to 6	5.6
75,531	37,766	17	27	4 to 6	5.5
78,236	39,118	15	23	4 to 6	5.3
78,436	39,218	17	26	4 to 6	5.3
81,402	40,701	19	28	4 to 6	5.1
81,574	40,787	17	25	4 to 6	5.1
84,417	42,209	19	27	4 to 6	5.0
84,973	42,486	17	24	4 to 6	4.9
87,664	43,832	19	26	4 to 6	4.8
88,667	44,334	17	23	4 to 6	4.7
91,171	45,585	19	25	4 to 6	4.6
94,706	47,353	15	19	4 to 6	4.4
94,969	47,485	19	24	4 to 6	4.4
98,540	49,270	23	28	4 to 6	4.2
99,098	49,549	19	23	4 to 6	4.2
102,189	51,095	23	27	4 to 6	4.1
102,824	51,412	24	28	4 to 6	4.1
105,848	52,924	15	17	4 to 6	4.0
106,632	53,316	24	27	4 to 6	3.9
107,334	53,667	17	19	4 to 6	3.9
110,364	55,182	23	25	4 to 6	3.8
111,393	55,696	26	28	4 to 6	3.8
114,963	57,481	23	24	4 to 6	3.6
115,163	57,581	24	25	4 to 6	3.6
115,677	57,838	27	28	4 to 6	3.6
119,961	59,981	23	23	4 to 6	3.5
124,404	62,202	28	27	4 to 6	3.4
124,575	62,288	27	26	4 to 6	3.4
125,177	62,588	24	23	4 to 6	3.3
129,189	64,595	28	26	4 to 6	3.2
129,558	64,779	27	25	4 to 6	3.2
130,393	65,196	25	23	4 to 6	3.2
134,074	67,037	19	17	4 to 6	3.1
134,956	67,478	27	24	4 to 6	3.1
135,608	67,804	26	23	4 to 6	3.1
139,955	69,977	28	24	4 to 6	3.0
140,824	70,412	27	23	4 to 6	3.0
145,216	72,608	23	19	4 to 6	2.9
146,040	73,020	28	23	4 to 6	2.9
151,530	75,765	24	19	4 to 6	2.8
157,844	78,922	25	19	4 to 6	2.6
162,301	81,150	23	17	4 to 6	2.6
164,158	82,079	26	19	4 to 6	2.5
169,357	84,679	24	17	4 to 6	2.5
170,471	85,236	27	19	4 to 6	2.5
176,414	88,207	25	17	4 to 6	2.4
176,785	88,393	28	19	4 to 6	2.4
183,470	91,735	26	17	4 to 6	2.3
183,941	91,970	23	15	4 to 6	2.3
190,527	95,263	27	17	4 to 6	2.2

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) SMALL COTTON/SMALL DRY EDIBLE BEAN/SUNFLOWER 54 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
81,402	40,701	15	28	4 to 6	5.1
84,417	42,209	15	27	4 to 6	5.0
87,664	43,832	15	26	4 to 6	4.8
91,171	45,585	15	25	4 to 6	4.6
92,256	46,128	17	28	4 to 6	4.5
94,969	47,485	15	24	4 to 6	4.4
95,673	47,836	17	27	4 to 6	4.4
99,098	49,549	15	23	4 to 6	4.2
99,353	49,676	17	26	4 to 6	4.2
103,110	51,555	19	28	4 to 6	4.1
103,327	51,663	17	25	4 to 6	4.0
106,928	53,464	19	27	4 to 6	3.9
107,632	53,816	17	24	4 to 6	3.9
111,041	55,521	19	26	4 to 6	3.8
112,312	56,156	17	23	4 to 6	3.7
115,483	57,741	19	25	4 to 6	3.6
119,961	59,981	15	19	4 to 6	3.5
120,294	60,147	19	24	4 to 6	3.5
124,817	62,408	23	28	4 to 6	3.4
125,525	62,762	19	23	4 to 6	3.3
129,440	64,720	23	27	4 to 6	3.2
130,244	65,122	24	28	4 to 6	3.2
134,074	67,037	15	17	4 to 6	3.1
135,067	67,534	24	27	4 to 6	3.1
135,956	67,978	17	19	4 to 6	3.1
139,795	69,897	23	25	4 to 6	3.0
141,097	70,549	26	28	4 to 6	3.0
145,620	72,810	23	24	4 to 6	2.9
145,873	72,936	24	25	4 to 6	2.9
146,524	73,262	27	28	4 to 6	2.9
151,951	75,975	23	23	4 to 6	2.8
157,579	78,789	28	27	4 to 6	2.7
157,795	78,898	27	26	4 to 6	2.7
158,557	79,279	24	23	4 to 6	2.6
163,639	81,820	28	26	4 to 6	2.6
164,107	82,053	27	25	4 to 6	2.5
165,164	82,582	25	23	4 to 6	2.5
169,828	84,914	19	17	4 to 6	2.5
170,945	85,472	27	24	4 to 6	2.4
171,771	85,885	26	23	4 to 6	2.4
177,276	88,638	28	24	4 to 6	2.4
178,377	89,189	27	23	4 to 6	2.3
183,941	91,970	23	19	4 to 6	2.3
184,984	92,492	28	23	4 to 6	2.3
191,938	95,969	24	19	4 to 6	2.2
199,935	99,968	25	19	4 to 6	2.1
205,581	102,790	23	17	4 to 6	2.0
207,933	103,966	26	19	4 to 6	2.0
214,519	107,259	24	17	4 to 6	1.9
215,930	107,965	27	19	4 to 6	1.9
223,457	111,729	25	17	4 to 6	1.9
223,928	111,964	28	19	4 to 6	1.9
232,396	116,198	26	17	4 to 6	1.8
232,991	116,496	23	15	4 to 6	1.8
241,334	120,667	27	17	4 to 6	1.7

**NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information.
Always field check seed population to verify planting rates.**

**PLANTING RATES FOR (EDGEVAC) LARGE DRY EDIBLE BEAN 54 CELL DISC
15 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
64,265	32,132	15	28	4 to 6	6.5
66,645	33,323	15	27	4 to 6	6.3
69,208	34,604	15	26	4 to 6	6.0
71,977	35,988	15	25	4 to 6	5.8
72,834	36,417	17	28	4 to 6	5.7
74,976	37,488	15	24	4 to 6	5.6
75,531	37,766	17	27	4 to 6	5.5
78,236	39,118	15	23	4 to 6	5.3
78,436	39,218	17	26	4 to 6	5.3
81,402	40,701	19	28	4 to 6	5.1
81,574	40,787	17	25	4 to 6	5.1
84,417	42,209	19	27	4 to 6	5.0
84,973	42,486	17	24	4 to 6	4.9
87,664	43,832	19	26	4 to 6	4.8
88,667	44,334	17	23	4 to 6	4.7
91,171	45,585	19	25	4 to 6	4.6
94,706	47,353	15	19	4 to 6	4.4
94,969	47,485	19	24	4 to 6	4.4
98,540	49,270	23	28	4 to 6	4.2
99,098	49,549	19	23	4 to 6	4.2
102,189	51,095	23	27	4 to 6	4.1
102,824	51,412	24	28	4 to 6	4.1
105,848	52,924	15	17	4 to 6	4.0
106,632	53,316	24	27	4 to 6	3.9
107,334	53,667	17	19	4 to 6	3.9
110,364	55,182	23	25	4 to 6	3.8
111,393	55,696	26	28	4 to 6	3.8
114,963	57,481	23	24	4 to 6	3.6
115,163	57,581	24	25	4 to 6	3.6
115,677	57,838	27	28	4 to 6	3.6
119,961	59,981	23	23	4 to 6	3.5
124,404	62,202	28	27	4 to 6	3.4
124,575	62,288	27	26	4 to 6	3.4
125,177	62,588	24	23	4 to 6	3.3
129,189	64,595	28	26	4 to 6	3.2
129,558	64,779	27	25	4 to 6	3.2
130,393	65,196	25	23	4 to 6	3.2
134,074	67,037	19	17	4 to 6	3.1
134,956	67,478	27	24	4 to 6	3.1
135,608	67,804	26	23	4 to 6	3.1
139,955	69,977	28	24	4 to 6	3.0
140,824	70,412	27	23	4 to 6	3.0
145,216	72,608	23	19	4 to 6	2.9
146,040	73,020	28	23	4 to 6	2.9
151,530	75,765	24	19	4 to 6	2.8
157,844	78,922	25	19	4 to 6	2.6
162,301	81,150	23	17	4 to 6	2.6
164,158	82,079	26	19	4 to 6	2.5
169,357	84,679	24	17	4 to 6	2.5
170,471	85,236	27	19	4 to 6	2.5
176,414	88,207	25	17	4 to 6	2.4
176,785	88,393	28	19	4 to 6	2.4
183,470	91,735	26	17	4 to 6	2.3
183,941	91,970	23	15	4 to 6	2.3
190,527	95,263	27	17	4 to 6	2.2

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

**PLANTING RATES FOR (EDGEVAC) LARGE DRY EDIBLE BEAN 54 CELL DISC
19 TOOTH CONTACT WHEEL DRIVE/23 TOOTH REVERSER DRIVEN SPROCKETS (SEE PAGE 5-1)**

APPROXIMATE SEEDS/ACRE FOR VARIOUS ROW WIDTHS

15" Rows	30" Rows	Transmission Sprockets		Recomm. Speed (MPH)	Average Spacing In Inches
		Drive	Driven		
81,402	40,701	15	28	4 to 6	5.1
84,417	42,209	15	27	4 to 6	5.0
87,664	43,832	15	26	4 to 6	4.8
91,171	45,585	15	25	4 to 6	4.6
92,256	46,128	17	28	4 to 6	4.5
94,969	47,485	15	24	4 to 6	4.4
95,673	47,836	17	27	4 to 6	4.4
99,098	49,549	15	23	4 to 6	4.2
99,353	49,676	17	26	4 to 6	4.2
103,110	51,555	19	28	4 to 6	4.1
103,327	51,663	17	25	4 to 6	4.0
106,928	53,464	19	27	4 to 6	3.9
107,632	53,816	17	24	4 to 6	3.9
111,041	55,521	19	26	4 to 6	3.8
112,312	56,156	17	23	4 to 6	3.7
115,483	57,741	19	25	4 to 6	3.6
119,961	59,981	15	19	4 to 6	3.5
120,294	60,147	19	24	4 to 6	3.5
124,817	62,408	23	28	4 to 6	3.4
125,525	62,762	19	23	4 to 6	3.3
129,440	64,720	23	27	4 to 6	3.2
130,244	65,122	24	28	4 to 6	3.2
134,074	67,037	15	17	4 to 6	3.1
135,067	67,534	24	27	4 to 6	3.1
135,956	67,978	17	19	4 to 6	3.1
139,795	69,897	23	25	4 to 6	3.0
141,097	70,549	26	28	4 to 6	3.0
145,620	72,810	23	24	4 to 6	2.9
145,873	72,936	24	25	4 to 6	2.9
146,524	73,262	27	28	4 to 6	2.9
151,951	75,975	23	23	4 to 6	2.8
157,579	78,789	28	27	4 to 6	2.7
157,795	78,898	27	26	4 to 6	2.7
158,557	79,279	24	23	4 to 6	2.6
163,639	81,820	28	26	4 to 6	2.6
164,107	82,053	27	25	4 to 6	2.5
165,164	82,582	25	23	4 to 6	2.5
169,828	84,914	19	17	4 to 6	2.5
170,945	85,472	27	24	4 to 6	2.4
171,771	85,885	26	23	4 to 6	2.4
177,276	88,638	28	24	4 to 6	2.4
178,377	89,189	27	23	4 to 6	2.3
183,941	91,970	23	19	4 to 6	2.3
184,984	92,492	28	23	4 to 6	2.3
191,938	95,969	24	19	4 to 6	2.2
199,935	99,968	25	19	4 to 6	2.1
205,581	102,790	23	17	4 to 6	2.0
207,933	103,966	26	19	4 to 6	2.0
214,519	107,259	24	17	4 to 6	1.9
215,930	107,965	27	19	4 to 6	1.9
223,457	111,729	25	17	4 to 6	1.9
223,928	111,964	28	19	4 to 6	1.9
232,396	116,198	26	17	4 to 6	1.8
232,991	116,496	23	15	4 to 6	1.8
241,334	120,667	27	17	4 to 6	1.7

NOTE: See "General Planting Rate Information" and "Check Seed Population" pages for more information. Always field check seed population to verify planting rates.

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

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

NOTE: Chart represents average values and should be used only as a starting point. Granular chemical flows through meter opening at a nearly uniform rate regardless of roller speed. Your actual rate will vary depending on insecticide, planting speed, and plant population. Planting speed/ground speed has the greatest effect on application rate.

Field check your actual rate with insecticide you are using at speed and population you will be planting. See "Granular Chemical Application Field Check" page for more information.

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

Clay Granules

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

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

Field check your actual rate with herbicide you are using at speed and population you will be planting. See "Granular Chemical Application Field Check" page for more information.

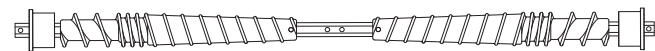
DRY FERTILIZER APPLICATION RATES

APPROXIMATE RATE IN POUNDS PER ACRE

Drive Sprocket	Driven Sprocket	Low Rate Position 30" Rows	High Rate Position 30" Rows
15	35	32	94
15	33	36	109
15	30	39	120
19	33	45	135
19	30	50	153
15	19	58	174
30	35	61	188
30	33	67	200
33	35	69	206
35	33	76	214
33	30	81	241
19	15	93	278
30	19	116	347
33	19	127	382
35	19	133	402
30	15	146	440
33	15	161	482
35	15	168	510



High rate setting



Low rate setting

NOTE: Uneven delivery may result from attempting to use lower rates than indicated by chart.

Chart is for planters equipped with contact drive. Check tires for correct operating pressure.

Chart calculated with a bulk density of 65 pounds per cubic foot.

NOTE: Fertilizer application rates can vary from weights calculated in above chart. Make field checks to be sure you are applying fertilizer at desired rate.

To check exact number of pounds your fertilizer attachment will actually deliver on a 30" row spacing:

1. Remove one spout from one fertilizer hopper and attach a container under opening.
2. Engage fertilizer attachment and drive forward 174'.
3. Weigh amount of fertilizer caught in container and multiply by 100. Result is pounds of fertilizer delivered per acre when planting in 30" rows.

LIQUID FERTILIZER SQUEEZE PUMP APPLICATION RATES**GALLONS PER ACRE**

Drive	Driven	30" Rows
15	*62	6.9
19	*62	8.8
15	46	9.3
19	46	11.8
15	34	12.6
15	32	13.4
32	*62	14.7
19	34	16.0
19	32	17.0
32	46	19.9
34	46	21.1
46	*62	21.2
15	19	22.5
32	34	26.9
34	32	30.3
19	15	36.2
46	34	38.6
46	32	41.0
32	19	48.1
34	19	51.1
*62	34	52.1

*Optional sprocket.

Chart is for planters equipped with contact drive. Check tires for correct operating pressure.

Chart calculated based on a solution weighing ten pounds per gallon.

NOTE: Fertilizer application rates can vary from weights calculated in above chart. Make field checks to be sure you are applying fertilizer at desired rate.

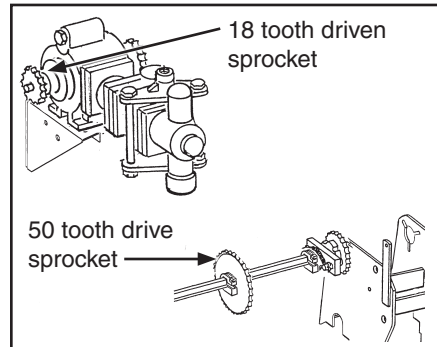
To check the exact number of gallons your fertilizer attachment will actually deliver on a 30" row spacing:

1. Remove hose from one fertilizer opener and insert it into a collection container secured planter frame.
2. Engage fertilizer attachment and drive forward for 174'.
3. Measure fluid ounces caught in container and multiply by 100. Divide that amount by 128. Result is gallons of fertilizer delivered per acre when planting in 30" rows.
4. Rinse collection container and repeat test on other rows if necessary.

LIQUID FERTILIZER PISTON PUMP APPLICATION RATES GALLONS PER ACRE

Applies to Model LM-2455-R And NGP-6055 Pumps With 50 Tooth Drive And 18 Tooth Driven Sprocket

Pump Setting	1	2	3	4	5	6	7	8	9	10
6 Row 30"	5.5	11.0	16.5	22.0	27.5	33.0	38.5	44.0	49.5	55.0
8 Row 30"	4.1	8.3	12.4	16.5	20.6	24.8	28.9	33.0	37.1	41.3



GA8069 (LM-2455-R) shown

Chart is for planters equipped with contact drive. Check tires for correct operating pressure. Chart based on average wheel slippage and liquid viscosities.

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

NOTE: Fertilizer application rates can vary from weights calculated in above chart. Make field checks to be sure you are applying fertilizer at desired rate.

NOTE: Periodically check flow to all rows. Desired rate is delivered to remaining rows keeping total application rate at desired rate if one or more lines are plugged.

To check exact number of gallons your fertilizer attachment delivers on a 30" row spacing:

1. Remove hose from one fertilizer opener and insert it into a collection container secured to planter frame.
2. Engage fertilizer attachment and drive forward for 174'.
3. Measure fluid ounces caught in container and multiply by 100. Divide that by 128. Result is gallons of fertilizer delivered per acre when planting in 30" rows.
4. Rinse collection container and repeat test on other rows if necessary.

LUBRICATION

Following pages show locations of all lubrication points. Proper lubrication of moving parts helps ensure efficient operation of your Kinze planter and prolongs the life of friction producing parts.

! WARNING

Uncontrolled machine movement can crush or cause loss of control resulting in death, serious injury, or damage to property and equipment. Install all safety lockup devices before working under or transporting this equipment.

LUBRICATION SYMBOLS

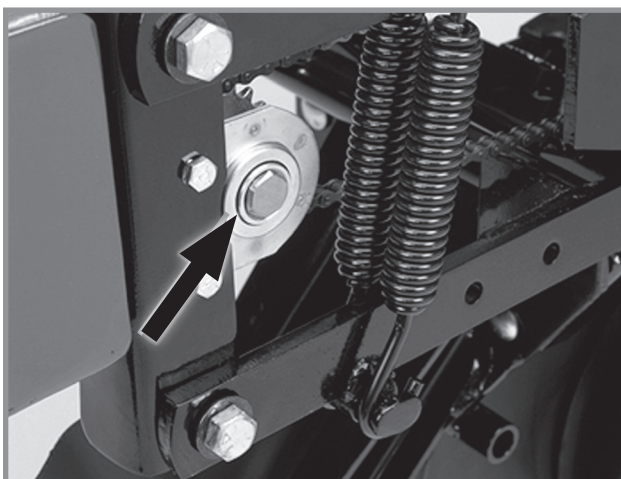


Lubricate at frequency indicated with an SAE multipurpose grease.



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

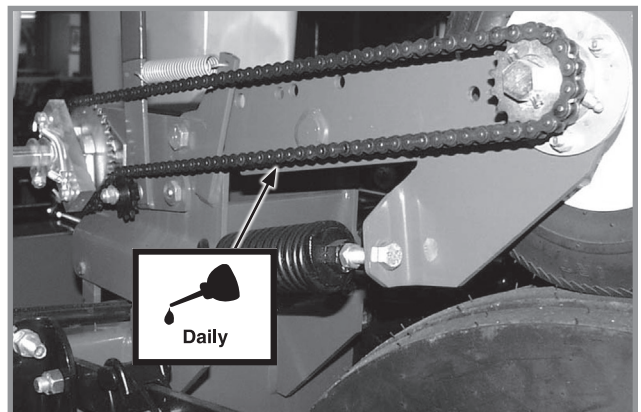
SEALED BEARINGS



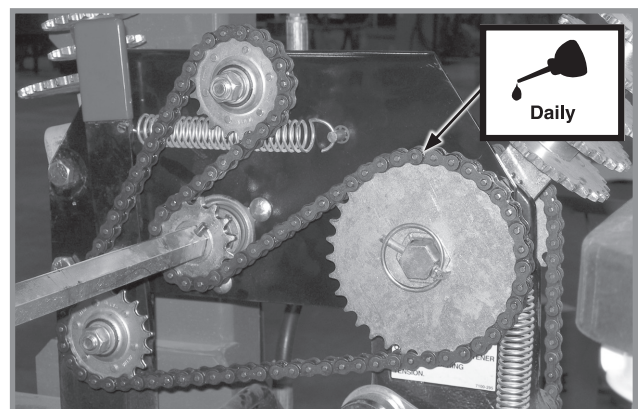
A number of sealed bearings are used on your Kinze planter to provide trouble free operation. These are located in such areas as the drive shaft, row units, and transmission bearings. Sealed bearings are lubricated for life and not serviceable.

DRIVE CHAINS

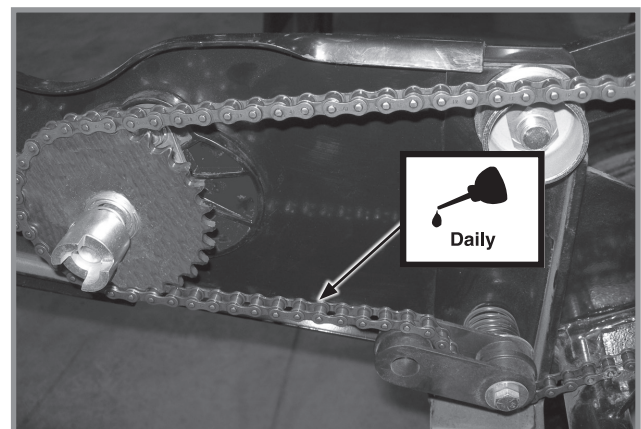
Lubricate all transmission and drive chains daily with a high quality chain lubricant. Extreme operating conditions such as dirt, temperature, or speed may require more frequent lubrication. If a chain becomes stiff, it should be removed, soaked, and washed in solvent to loosen and remove dirt from joints.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



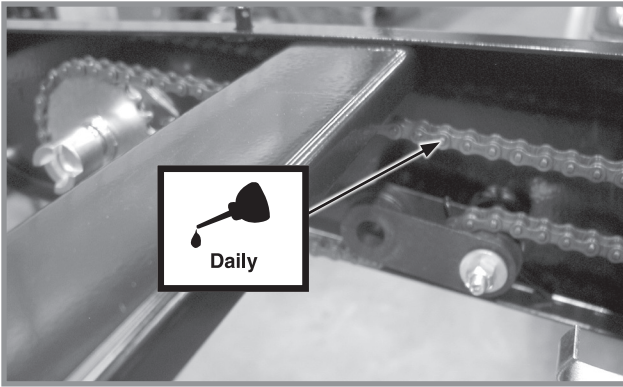
Contact Wheel Drive Chain



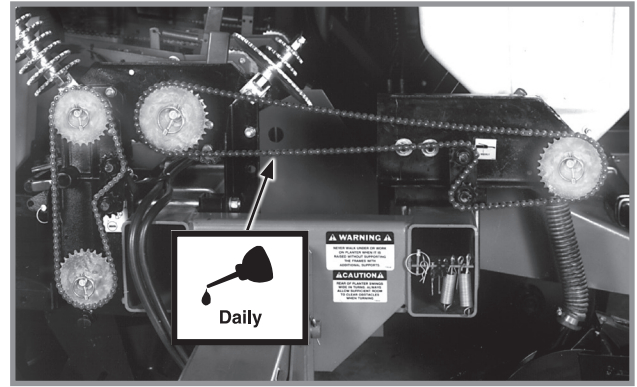
Reverser Plate Chain Drive



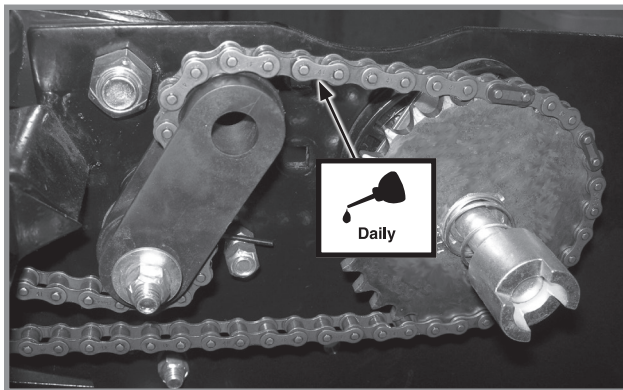
Pull Row Unit Drive Chain



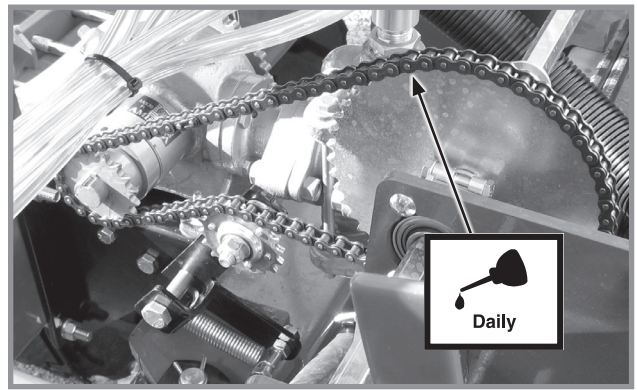
Row Unit Granular Chemical Drive Chains



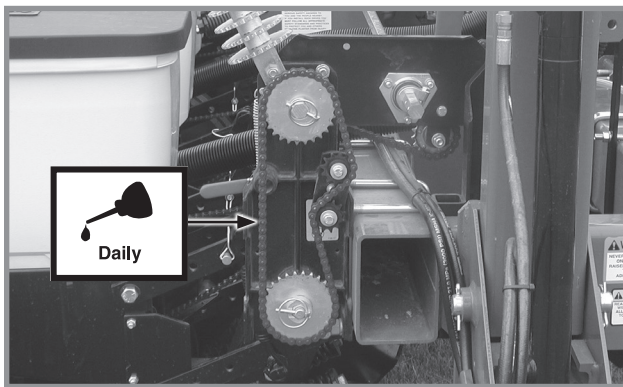
Dry Fertilizer Drive Chain



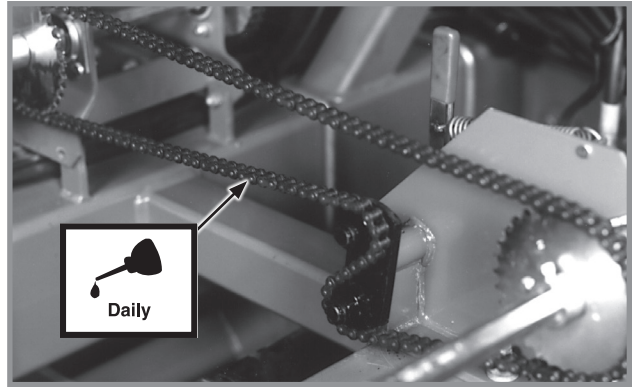
Push Row Unit Drive Chains



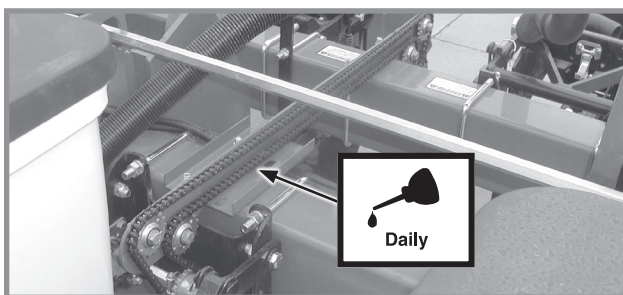
Liquid Fertilizer Piston Pump Drive Chain



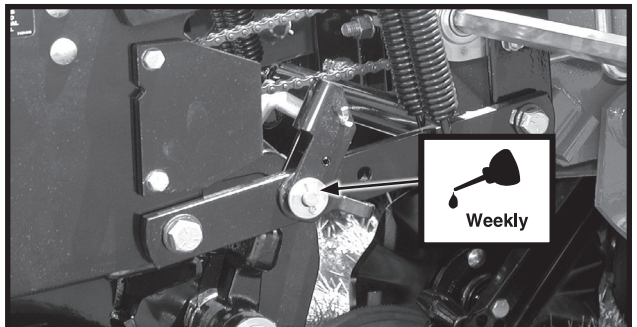
Planter Seed Rate Transmission Drive Chain



Liquid Fertilizer Squeeze Pump Drive Chain
INTERPLANT PUSH ROW UNIT LOCKUPS

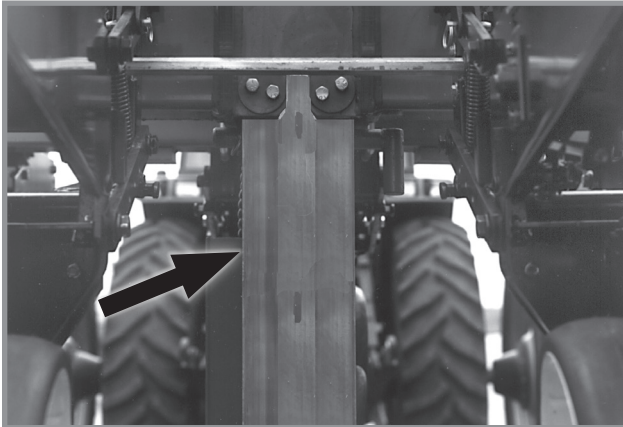


Interplant Package Drive Chain



2 Per Row

CENTER POST



Center post

The center post is clad with stainless steel. Keep stainless steel surface clean and free of any lubrication to prolong service life.

NOTICE

Any oil or grease on center post and poly wear pads will attract dirt and accelerate wear. Do not lubricate center post and poly wear pads.

See "Wear Pad Adjustment/Replacement" for more information.

WHEEL BEARINGS

All drive, transport, and marker hub wheel bearings should be repacked annually and checked for wear.

1. Raise wheel off ground.
2. Check for bearing endplay by moving wheel side to side.
3. Rotate wheel to check for bearing roughness. If bearings sound rough, remove hub and inspect bearings.

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

WRAP SPRING WRENCH ASSEMBLY

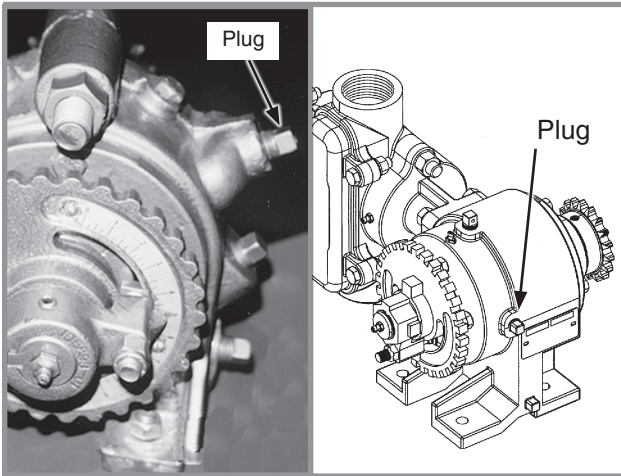


Wrap Spring Wrench Lubrication

Components may require occasional lubrication to operate correctly. Disassembly is required to lubricate.

1. Remove ¼"-20 x ½" cap screw that secures idler assembly to wrap spring wrench tightener shaft.
2. Remove wrap spring wrench from planter.
3. Tip wrap spring wrench on its side and lubricate with a high quality spray lubricant. Lubricant must be absorbed into wrap spring area.
4. Reinstall wrap spring wrench on planter.

**LIQUID FERTILIZER PISTON PUMP
CRANKCASE OIL LEVEL**

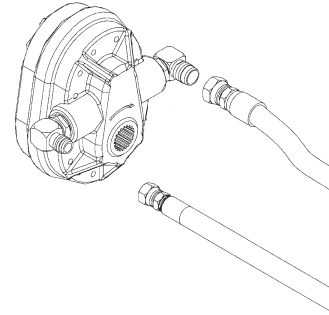


Piston pump oil fill plug location

Check crankcase oil daily and maintain at plug level. Fill as needed with EP 90 weight gear oil. Total oil capacity is approximately ¾ pint.

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

**PTO PUMP SHAFT COUPLING (PTO
PUMP DRIVE AND OIL COOLER
OPTION)**



1 3/8"-21 spline PTO pump shown

NOTE: Clean and grease PTO shaft coupling each time pump is installed.

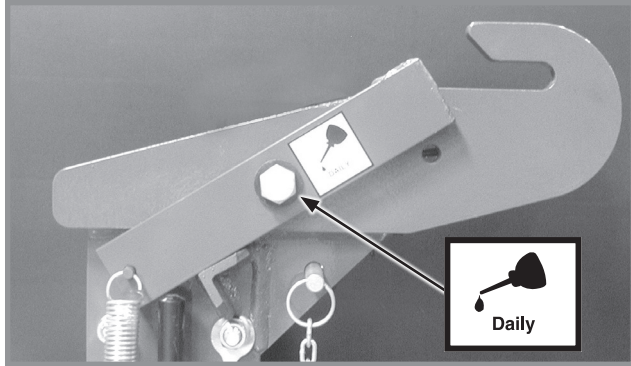
NOTE: Apply coating of high-speed industrial coupling grease, such as Chevron® Coupling Grease, that meets AGMA CG-1 and CG-2 Standards to extend shaft spline life.

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

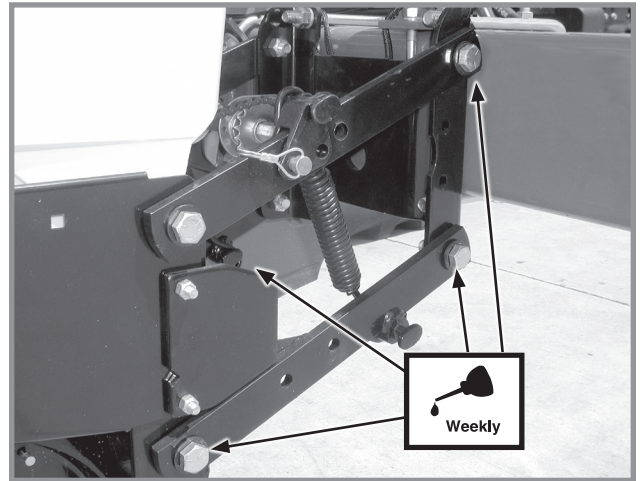
BUSHINGS

Lubricate bushings at frequency indicated.

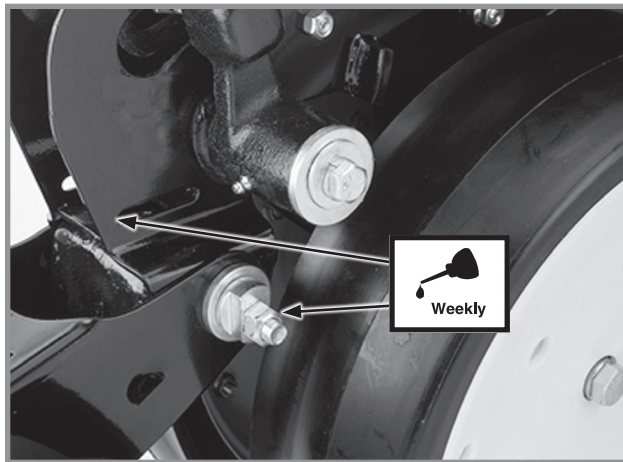
Check each bolt for proper torque. If bolt is loose, removed it and inspect bushing for cracks and wear. Replace bushing if necessary. Use **only hardened flat washers**. Replace damaged flat washers with proper part. Torque hardware to 130 ft-lb (176.2 N-m).



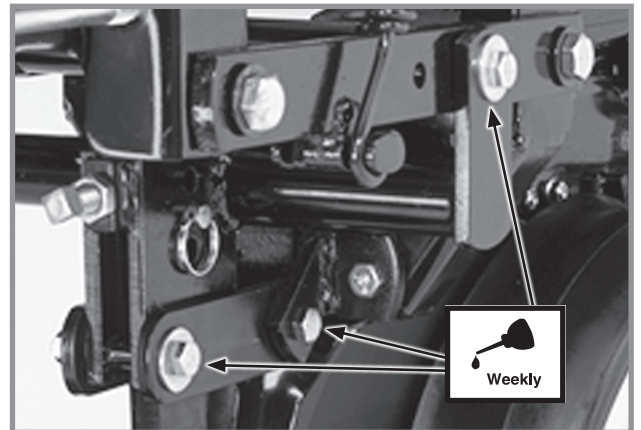
Transport Catch Pivot



Pull Row Unit And/Or Push Row Unit Parallel Linkages (8 Per Row)



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

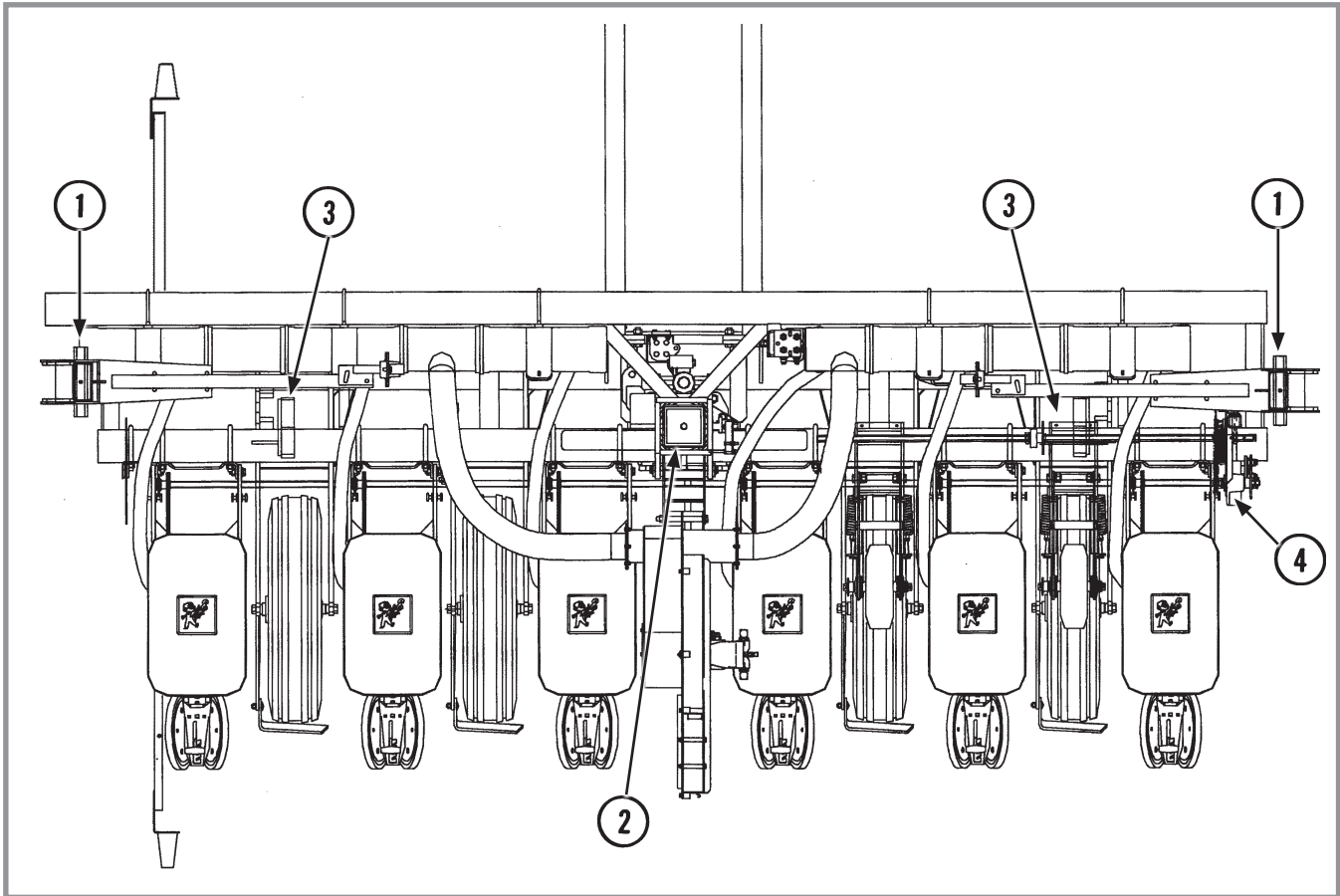


Row Unit Mounted Disc Furrower Parallel Linkages (6 Per Row)

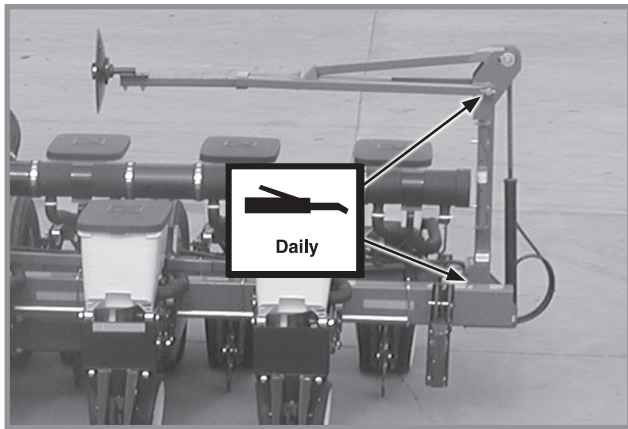
GREASE FITTINGS

Lubricate parts with grease fittings at frequency indicated with an SAE multipurpose grease. Clean fitting thoroughly before using grease gun. Frequency of lubrication recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent attention.

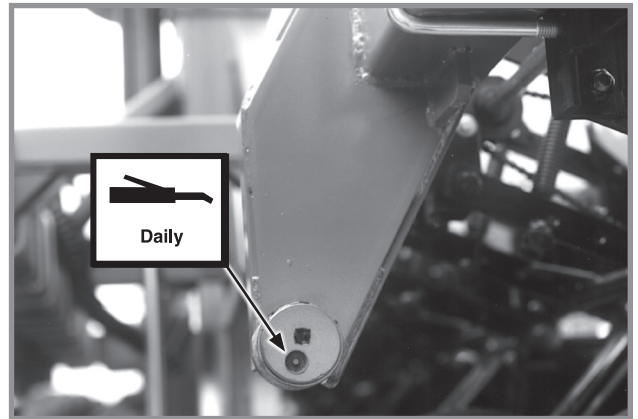
NOTE: Numbers on illustration below correspond to photos on following page showing lubrication frequencies.



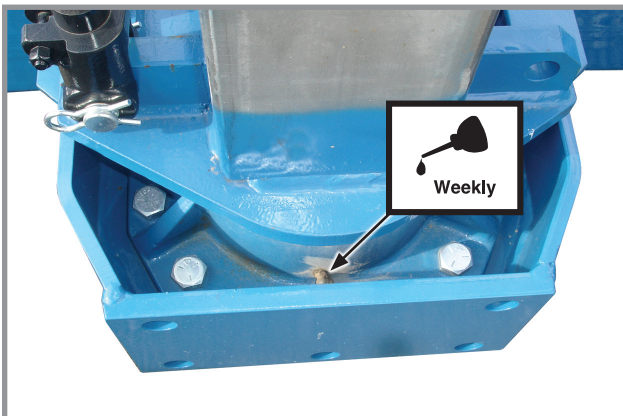
BASE MACHINE



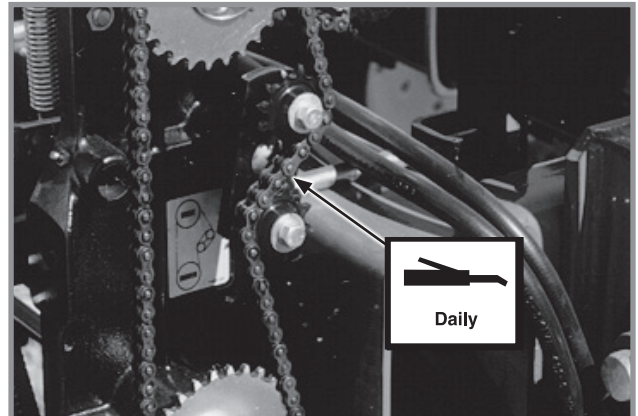
1. Row marker assembly - 2 per assembly



3. Cam follower - 1 per cam follower

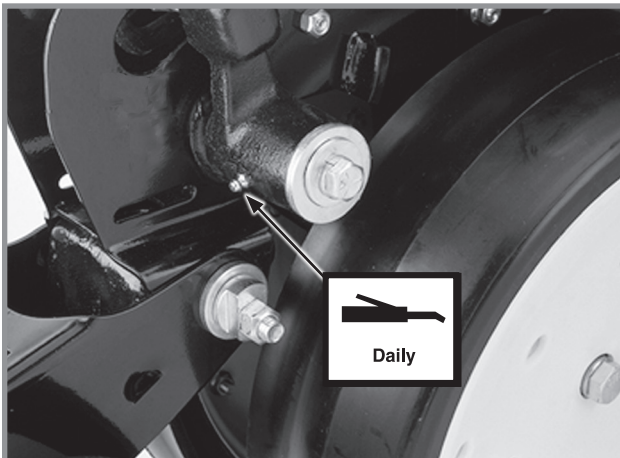


2. Center Pivot - 1

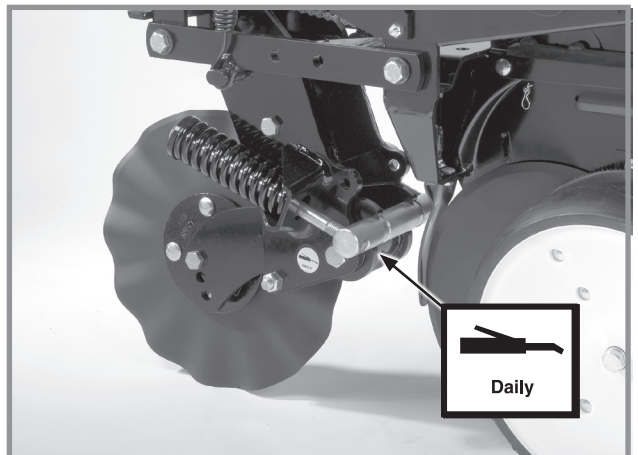


4. Seed rate transmission assembly - 1 (Idler)

ROW UNIT

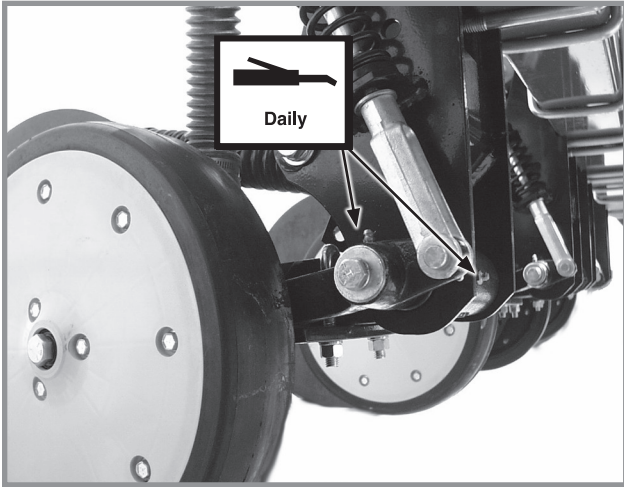


Gauge wheel arms - 1 per arm
 NOTE: Seals in gauge wheel arm are installed with lip facing out to allow grease to purge dirt away from seal. Pump grease into arm until fresh grease appears between washers and arm.)

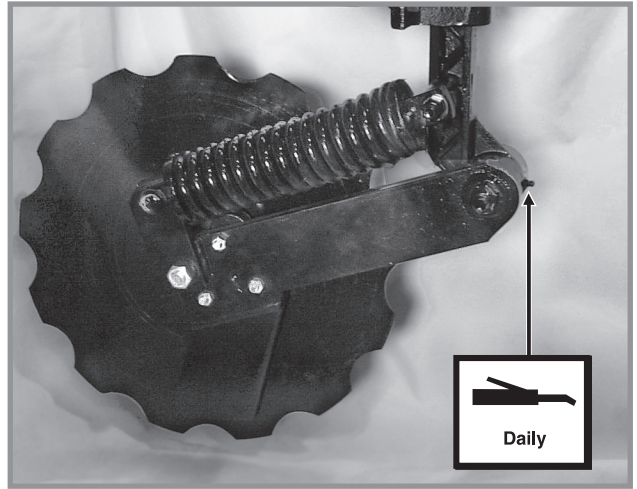


Frame mounted coulter - 1 per arm

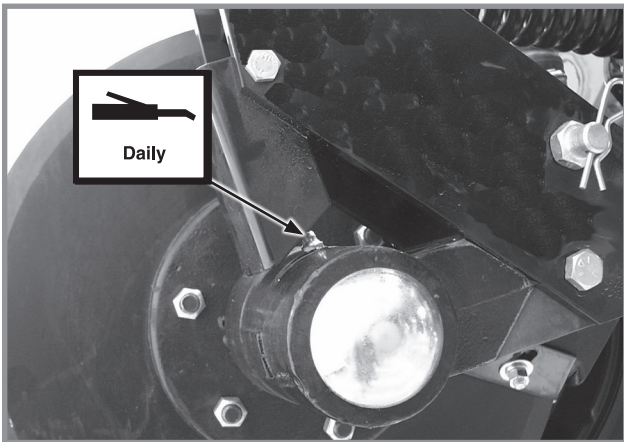
FERTILIZER OPENERS



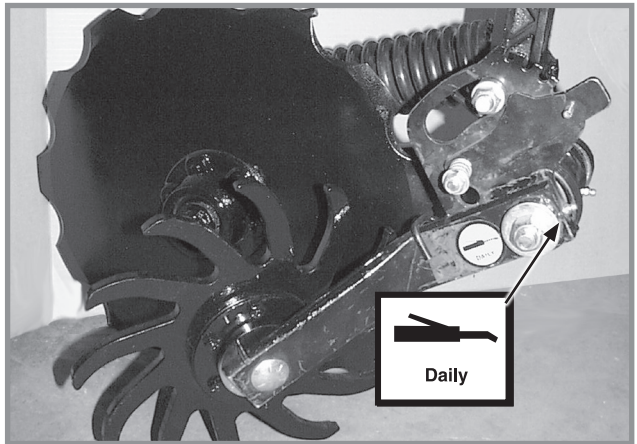
HD Single Disc Fertilizer Opener - 2
(Located On Wheel Arm And Opener Mount)



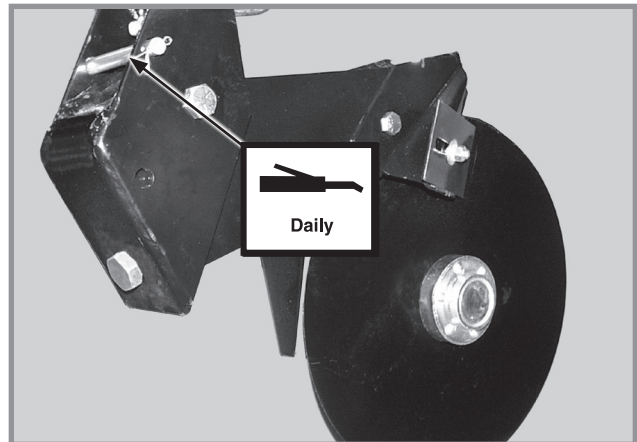
Notched Single Disc Fertilizer Opener - 1



HD Single Disc Fertilizer Opener - 1
(Located On Disc Opener Spindle Hub)

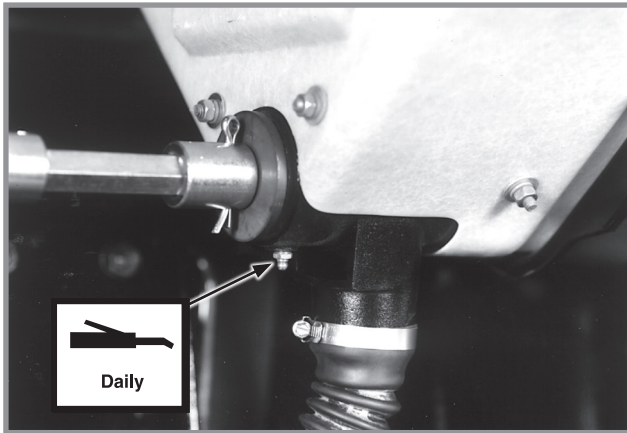


Residue Wheel Attachment For Use With
Notched Single Disc Fertilizer Opener - 1

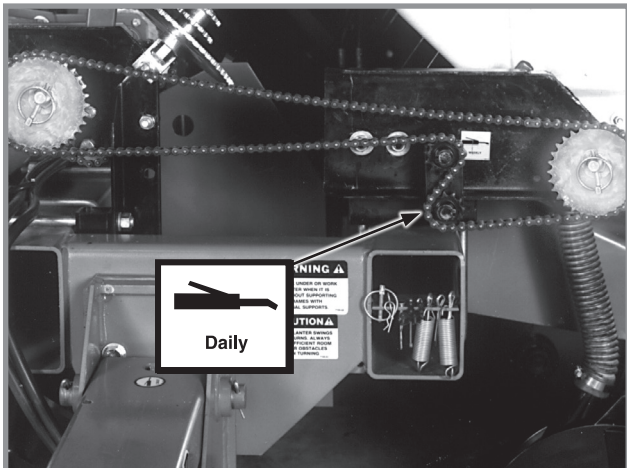


Double Disc Fertilizer Opener - 1

DRY FERTILIZER ATTACHMENT

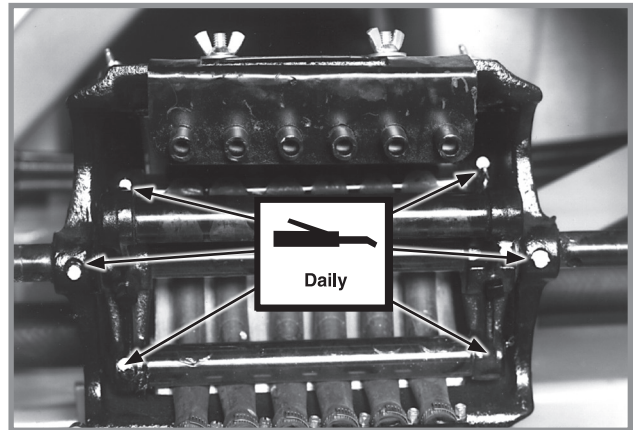


Fertilizer hopper - 2 per hopper

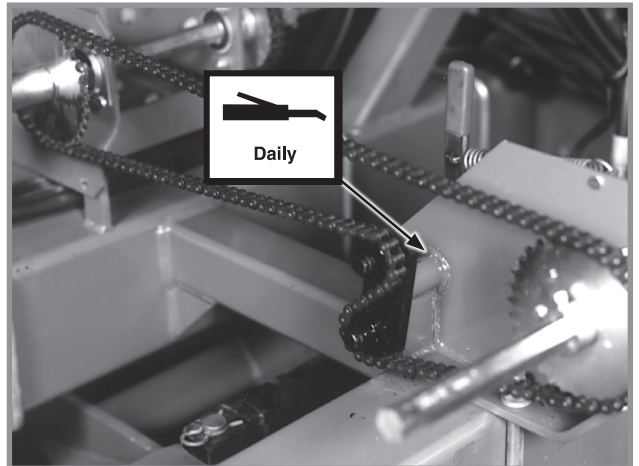


Fertilizer transmission - 1 per transmission (Idler)

LIQUID FERTILIZER SQUEEZE PUMP

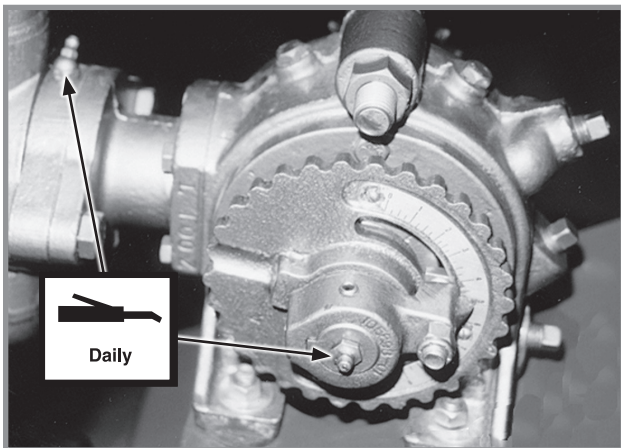


Squeeze pump - 8 per pump
NOTE: Grease fittings are on each end of roller assemblies. Rotate pump for access.

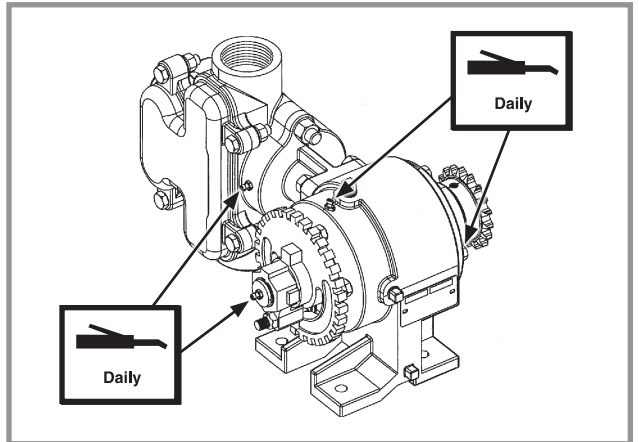


Squeeze pump drive plate - 1 per idler

LIQUID FERTILIZER PISTON PUMP



Piston Pump - 2
NOTE: Fill on outboard stuffing box until lubricant seeps out of drain hole in bottom.



Liquid Fertilizer Piston Pump - 4
NOTE: Fill on outboard stuffing box until lubricant seeps out of drain hole in bottom.

MOUNTING BOLTS AND HARDWARE

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

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. Hardware must be replaced with equal size, strength, and thread type.

! WARNING

Loose transport wheel lug nuts can result in wheel separation from planter and can result in death, serious injury, and damage to property and equipment. Check transport wheel lug nut torque before operating planter for the first time and periodically thereafter.

NOTICE

Over-tightening hardware can reduce its shock load capacity and cause equipment failure.



GRADE 2
No Marks



GRADE 5
3 Marks



GRADE 8
6 Marks

TORQUE VALUES CHART - PLATED HARDWARE

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

NOTE: Torque unplated hardware and bolts with lock nuts approximately 1/3 higher than above values. Torque bolts lubricated prior to installation to 70% of value shown in chart.

TORQUE VALUES- ALUMINUM

Diameter	Torque Value
1/8"	180-220 in-lb
3/8"	350-380 in-lb
1/2"	350-400 in-lb
3/4"	350-400 in-lb

NOTE: Use these torque values with pneumatic down pressure components.

Important torque values:

Transport/ground drive lug bolts 90 ft-lb (122 N-m).

5/8" No till coulter spindle hardware - 120 ft-lb (162.7 N-m)

Row unit parallel linkage bushing hardware 130 ft-lb (176.2 N-m).

EdgeVac fan impeller assembly to motor shaft 5/8"-18 hex jam nut 50 ft-lb (67.8 N-m).

TIRE PRESSURE

WARNING

Explosive separation of rim and tire parts can result in death or serious injury. Overinflation, rim and tire servicing, improper use of rims and tires, worn, or improperly maintained tires could result in a tire explosion and separation of tire and rim.

To prevent tire explosion:

- Maintain proper tire pressure. Inflating a tire above or below the recommended pressure can cause tire damage.
- Mount tires only by properly trained personnel using proper equipment.
- Replace any tire with cuts or bubbles. Replace any damaged rims. Replace missing lug bolts and nuts.
- Do not weld or heat wheel assembly. Heating increases tire pressure.

MODEL 3500 OPERATING TIRE PRESSURE

Transport/ground drive - 7.50" x 20" Inflate to 40 psi (275.7 kPa)

Contact drive - 4.10" x 6" Inflate to 50 psi (344.7 kPa)



Transport/ground drive

CHAIN TENSION ADJUSTMENT

Drive chains are equipped with spring loaded idlers and are self-adjusting. The only adjustment needed is to shorten the chains if wear stretches the chains 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 this section for more information.

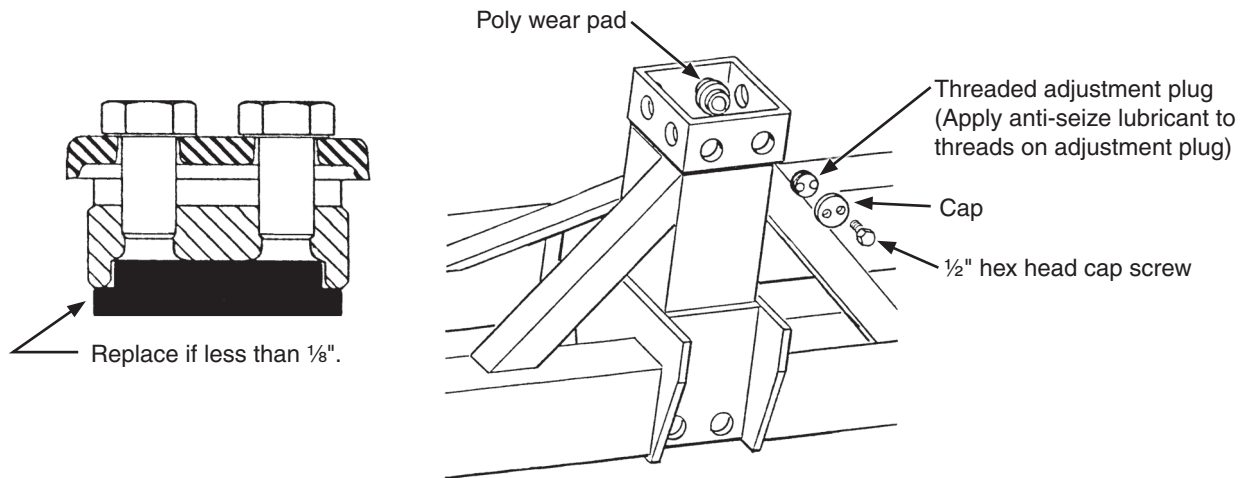
Additional chain links can be found in the storage area located inside the front planter frame.



Spare chain link storage

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WEAR PAD ADJUSTMENT/REPLACEMENT



Planter center section consists of a steel tubular frame and 16 adjustable wear pad assemblies that travel up and down against a stainless steel clad center post. Each adjustable wear pad assembly consists of a poly wear pad, threaded adjustment plug, and cap. Assembly is held in place by the threaded adjustment plug and locked in place by the cap and two ½" hex head cap screws.

Check pad adjustment and wear annually on all wear pad assemblies.

1. Support frame with appropriate weight-rated safety stands at a comfortable working height with all row units off ground.
2. Level planter frame side to side and front to rear. with planter axle.
3. Remove two ½" hex head cap screws and cap. Reinstall hex head cap screws into adjustment pad and remove threaded adjustment plug and poly wear pad using hex head cap screws as a handle.
4. Replace poly wear pad if worn to less than ⅛".

NOTICE

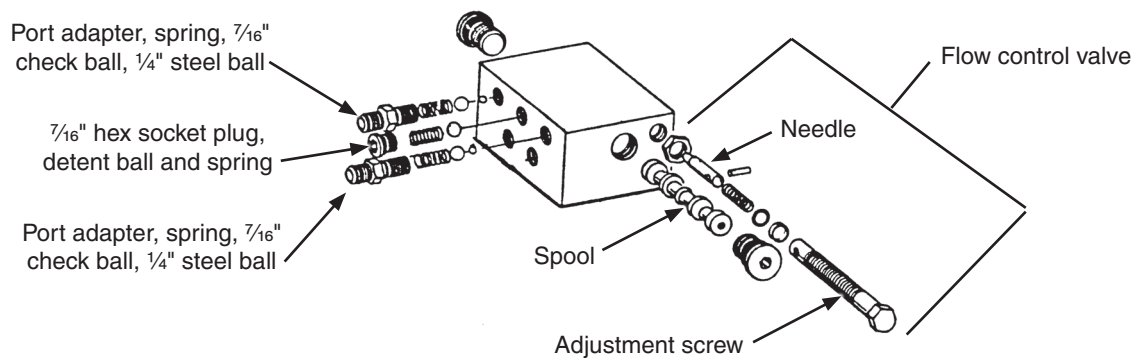
Over tightening wear pads will cause premature wear and could damage hydraulic system. Do not over tighten wear pads.

5. Apply anti-seize lubricant to threads of adjustment plug ONLY. Hand tighten poly wear pad and adjustment plug until poly wear pad lightly contacts stainless steel clad center post. Maximum allowable gap is no more than .060".
6. Install cap with two ½" cap screws. Torque cap screws to 25-30 ft-lb (33.9 - 40.6 N-m).

ROW MARKER SEQUENCING/FLOW CONTROL VALVE INSPECTION

WARNING

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



The valve block assembly consists of the row marker sequencing and flow control valves in one assembly. Sequencing valve portion consists of a chambered body containing a spool and series of check valves to direct hydraulic oil flow.

1. Remove valve block assembly from planter.
2. Remove detent assembly and port adapter assemblies from rear of valve block.

NOTICE

Damage to spool may occur if detent assembly and port adapter assemblies are not removed prior to removal of spool.

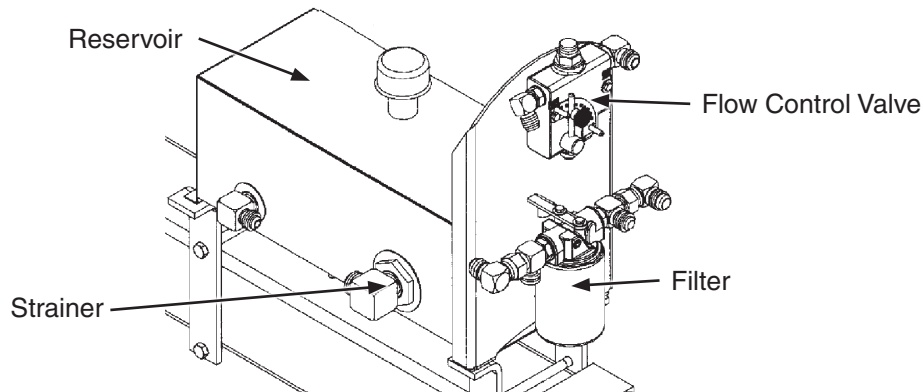
3. Remove plug from both sides of valve block and remove spool.
4. Inspect all parts for pitting, contamination, or foreign material. Check seating surfaces inside valve. Replace defective parts.
5. Lubricate spool with a light oil and reinstall. Check spool moves freely in valve body.

NOTE: Make sure correct check ball(s) and spring are installed in each valve bore upon reassembly.

A flow control valve is located on each side of block assembly. Adjust flow control valves for raise and lower speed as part of assembly procedure or upon initial operation. If valve fails to function properly or requires frequent adjustment, remove needle valve for inspection. Check for foreign material and contamination. Make sure needle moves freely in adjustment screw. Replace defective components.

NOTE: Hydraulics operate slowly when oil is cold. Make all adjustments with warm oil.

PTO PUMP DRIVE AND OIL COOLER OPTION



Drain reservoir, clean strainer and change filter annually.

1. Disconnect suction line (hose between reservoir and pump) from reservoir and drain. To fully drain tank, raise planter to field raised position.
2. Replace filter with good quality 10 micron filter.
3. Fill system with SAE 10W-20 multigrade wide temperature range transmission hydraulic fluid. Reservoir capacity is approximately 10 gallons.
4. Start system and run with tractor at idle and fan turned off for 1-2 minutes. Switch fan to full speed and run with tractor at idle for 1-2 minutes.
5. Check reservoir fluid level and fill as required. Hydraulic fluid level should be within 1"-2" from top of reservoir after pump has run and hydraulic hoses have been primed to allow fluid to expand when heated.
6. Bring tractor to PTO speed and adjust flow control to the desired vacuum level using the flow control valve lever.

CHECK VALVE INSPECTION (In valve block below vacuum fan motor assembly)

Check valve return prevents reverse operation of vacuum fan motor. Remove and check for foreign material or if O-ring is leaking internally. Clean or replace if defective.



RELIEF VALVE CARTRIDGE INSPECTION (In valve block below vacuum fan motor assembly)

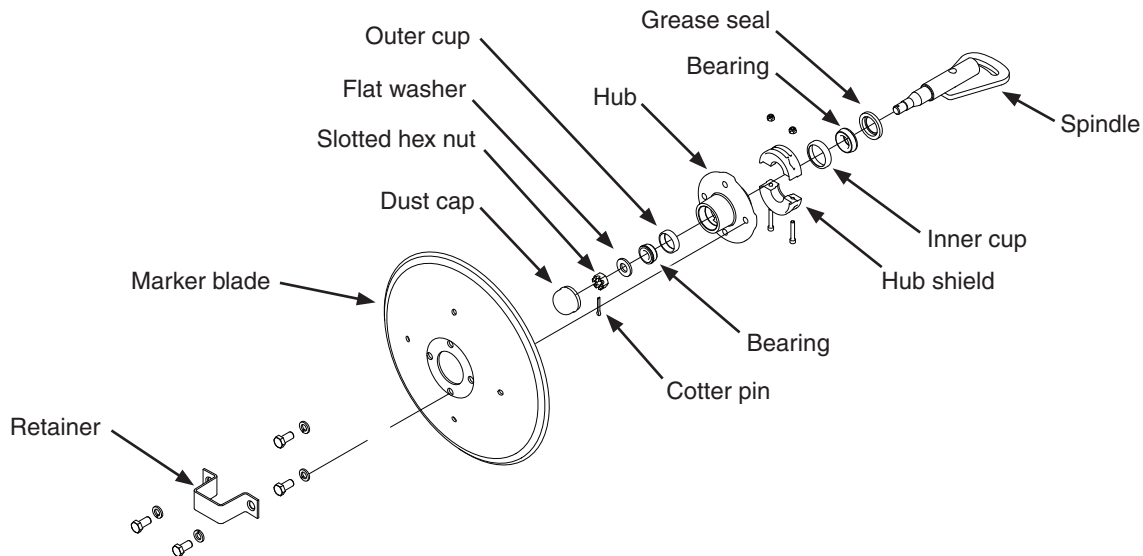
NOTICE

Connect hydraulic motor case drain to a case drain return line with zero pressure on tractor or hydraulic motor will be damaged. DO NOT connect hydraulic motor case drain to SCV outlet. Contact tractor manufacturer for specific details on "zero pressure return".



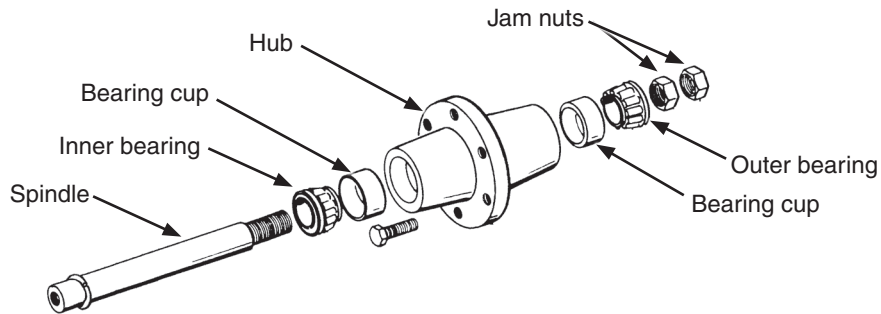
Pressure relief valve helps prevent damage to vacuum fan motor by limiting pressure in motor case drain line. It is set to open at 35 PSI (241.21 kPa). Remove and check for foreign material and contamination on valve or seating area of valve body. Clean or replace if defective.

ROW MARKER BEARING LUBRICATION OR REPLACEMENT



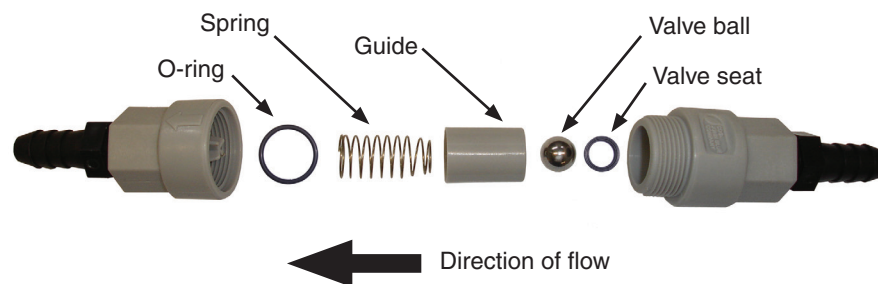
1. Remove retainer and marker blade.
2. Remove dust cap from hub.
2. Remove hub shield. Note direction of installation.
3. Remove cotter pin, slotted hex nut, and washer.
4. Slide hub from spindle.
5. Remove bearings and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings 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. 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 ensures 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 hub shield.
13. Install marker blade and retainer on hub. Tighten hardware evenly.

WHEEL BEARING REPACK OR REPLACEMENT

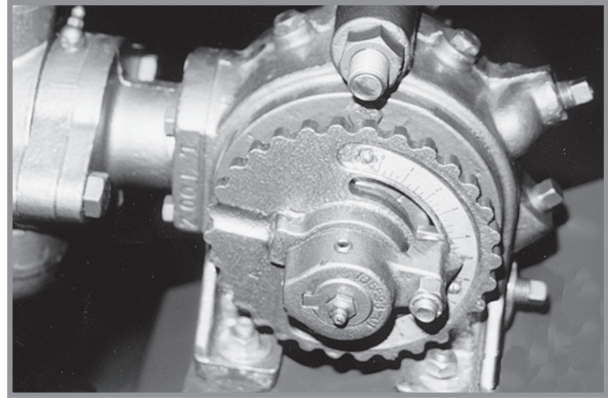
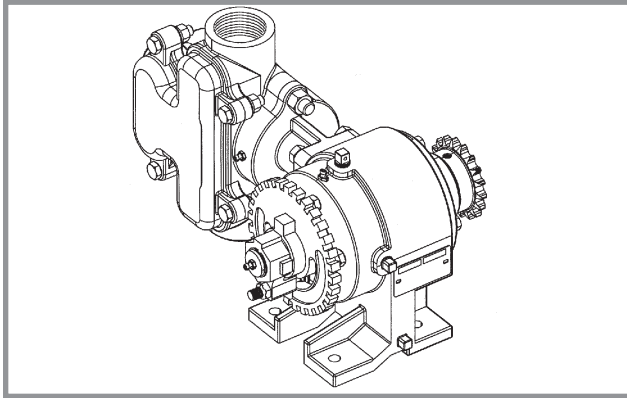


1. Raise tire clear of ground and remove wheel.
2. Remove double jam nuts and slide hub from spindle.
3. Remove bearings and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings only and not cups if repacking.
4. Press in new bearing cups with thickest edge facing in. (Bearing replacement procedure only.)
5. Pack bearings with heavy duty wheel bearing grease thoroughly forcing grease between roller cone and bearing cage. Fill space between bearing cups and hub with grease.
6. Place inner bearing in place.
7. Clean spindle and install hub.
8. Install outer bearing and jam nut. Tighten jam nut while rotating hub until there is some drag. This ensures all bearing surfaces are in contact. Back off jam nut $\frac{1}{4}$ turn or until there is only slight drag when rotating hub. Install second jam nut to lock against first.
9. Install wheel on hub. Tighten hardware evenly.

FERTILIZER CHECK VALVE CLEANING AND REPAIR



1. Unscrew valve body and separate halves. Note direction and location of parts.
2. Clean and inspect parts. Flush with clean water. Replace damaged parts.
3. Reassemble exactly as shown. O-ring and valve seat must be firmly in place inside each half of valve body.



Liquid fertilizer piston pump

PISTON PUMP STORAGE

NOTICE

**Entrance of air into pump will cause rapid and severe corrosion.
KEEP AIR OUT OF PUMP!**

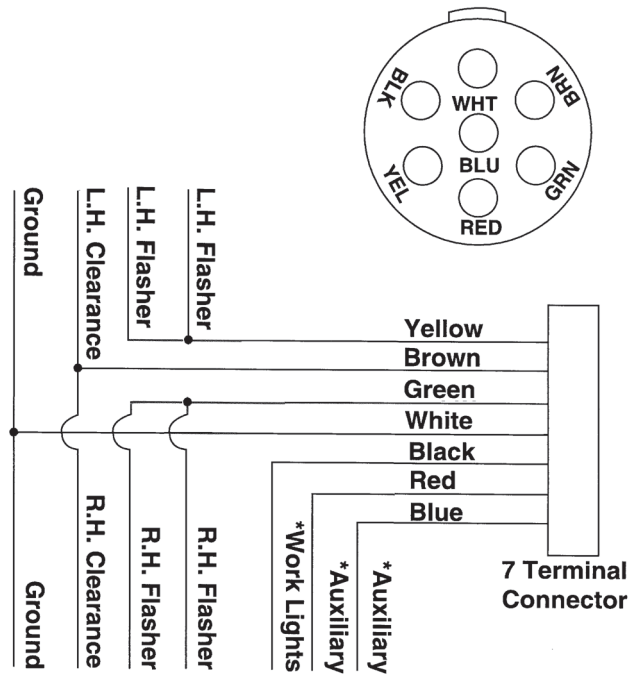
NOTE: SUSPENSION FERTILIZER must be flushed from pump for ANY storage period.

1. Flush pump with 5 to 10 gallons of fresh water and circulate until all corrosive salts are dissolved in pump.
2. Set pump on 10. Draw in a mixture of half diesel fuel and 10 weight oil until discharge is clean. Plug inlet and outlet.

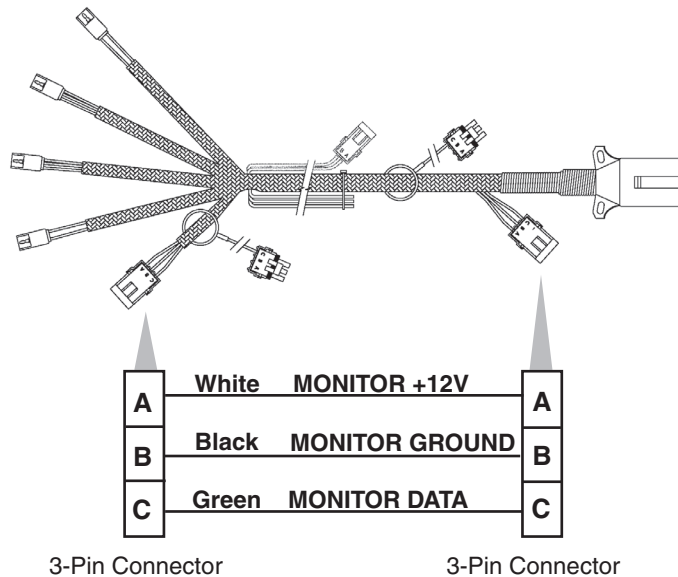
PREPARING PLANTER FOR STORAGE

- Store 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 planter for parts that are in need of replacement and order during “off” season.
- Make sure seed and granular chemical hoppers are empty and clean.
- Clean seed meters and store in a dry, rodent-free area.
- Remove seed discs from brush-type seed meters, clean and store meters with discs removed.
- Grease or paint disc openers/blades and row marker disc blades to prevent rust.
- Flush liquid fertilizer tanks, hoses and metering pump with clean water. See “Piston Pump Storage” if applicable.
- Empty and clean dry fertilizer hoppers. Disassemble and clean metering augers. Reassemble and coat all metal parts with rust preventative.

ELECTRICAL WIRING DIAGRAM FOR LIGHT PACKAGE

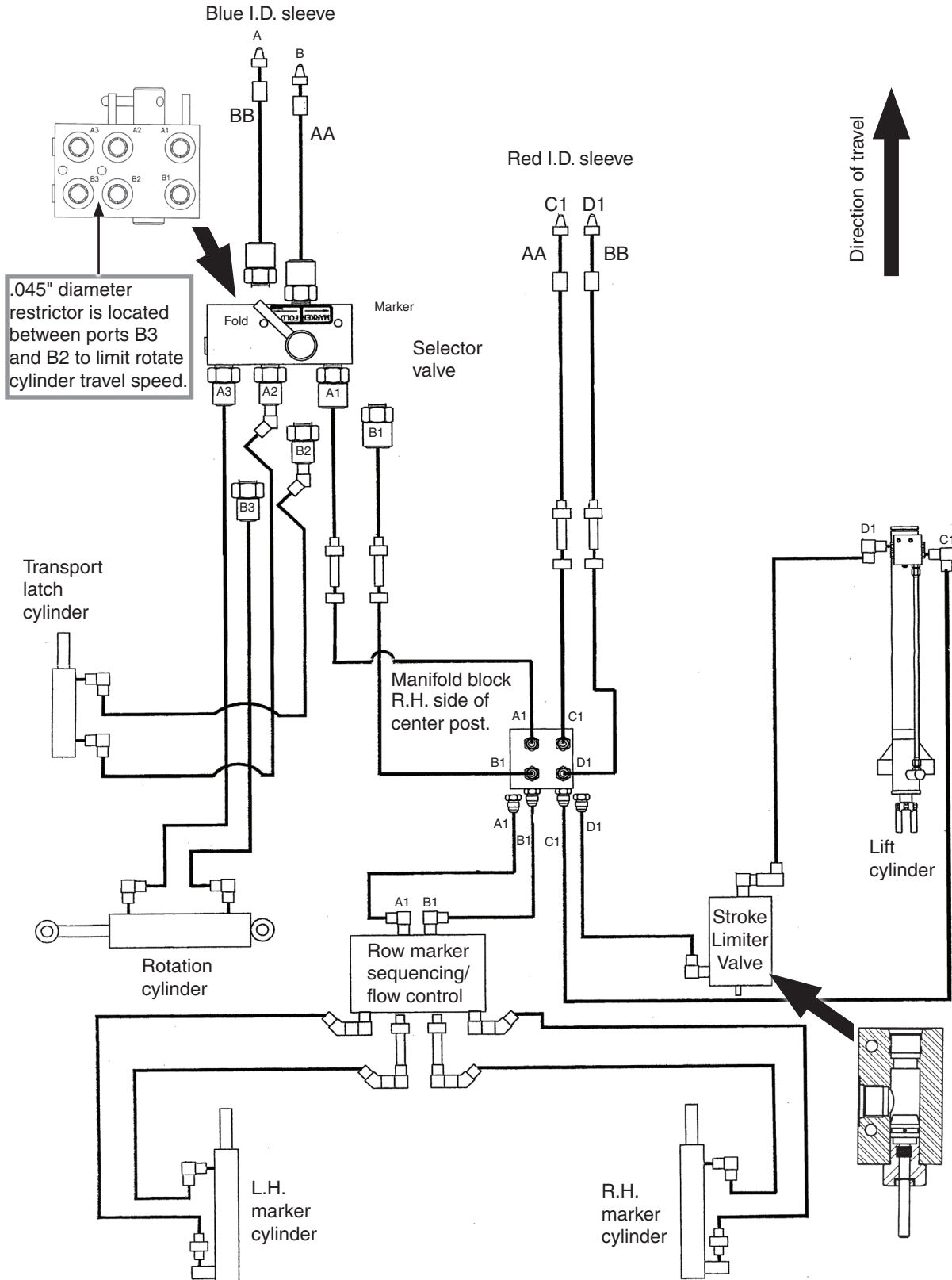


* Optional customer-supplied auxiliary lights and wires may be wired into existing plug terminals.

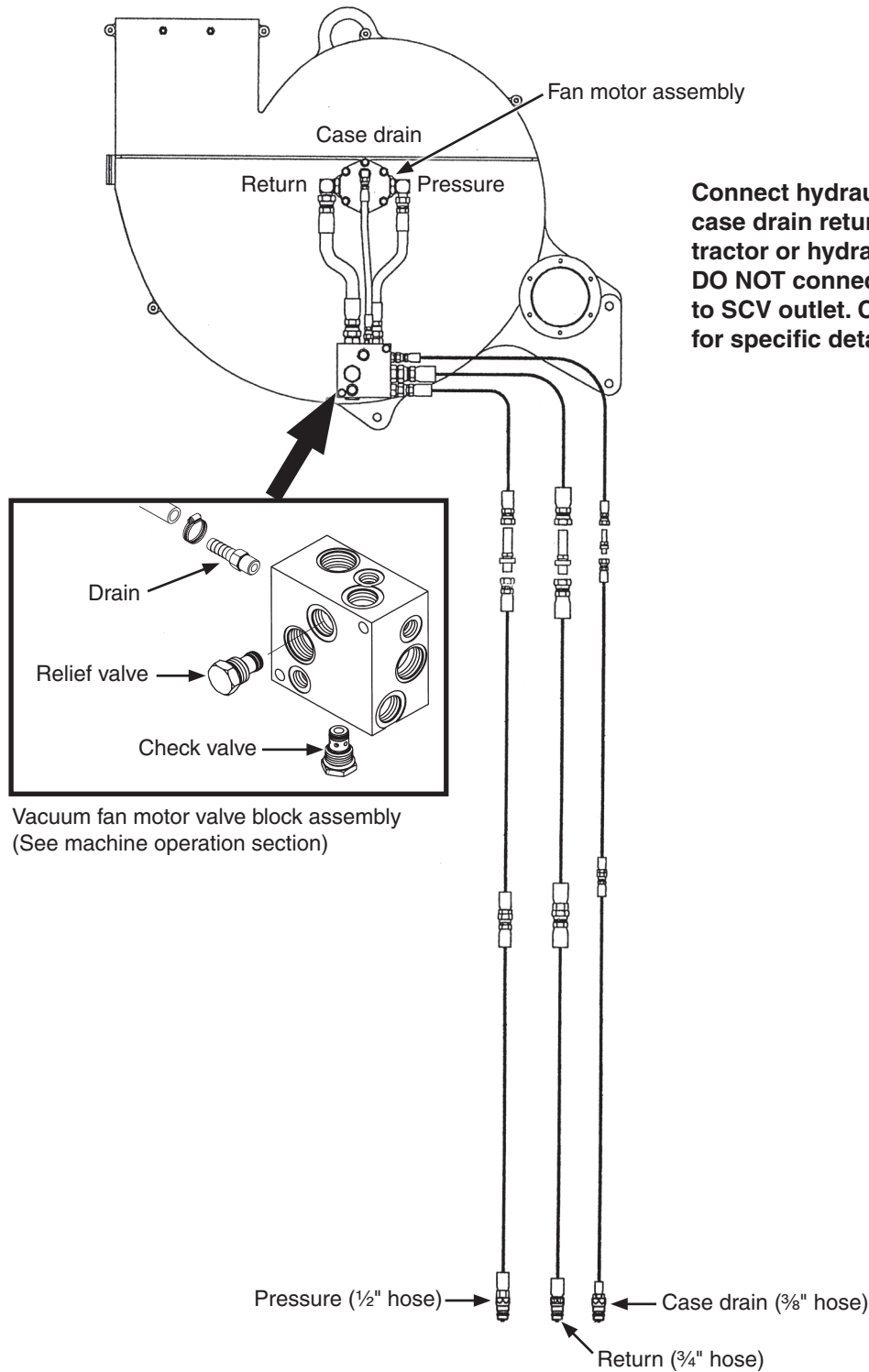


Light package meets ASABE Standards. For correct wiring harness to be wired into lights on your tractor, check with tractor manufacturer.

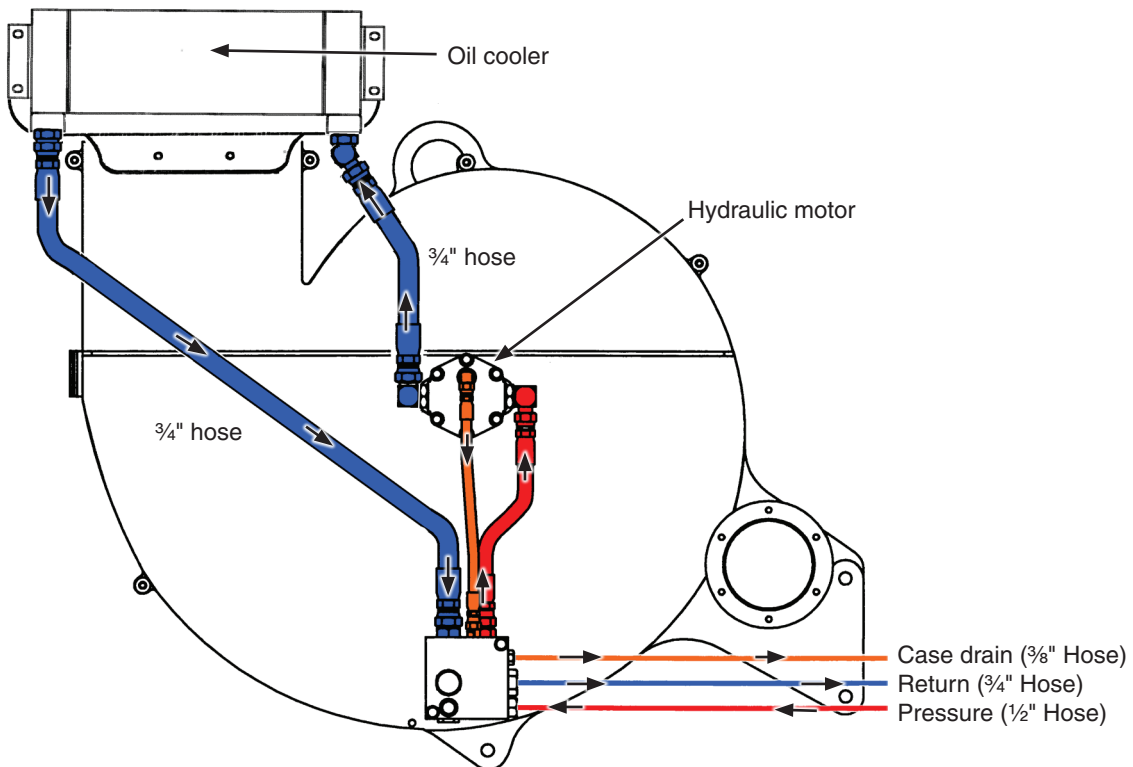
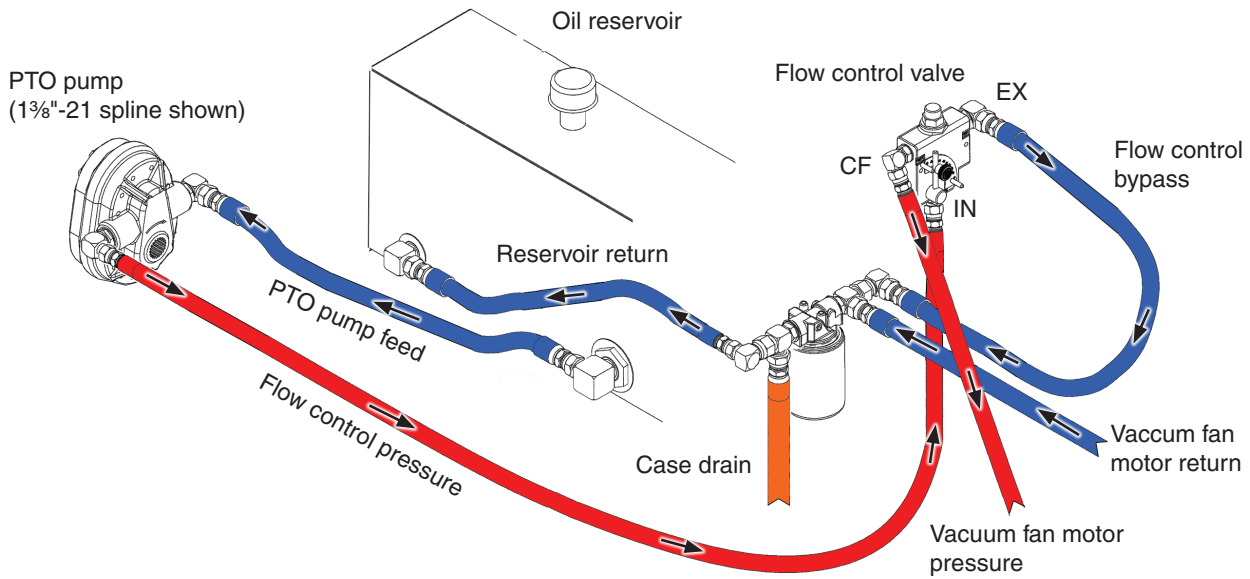
HYDRAULIC DIAGRAM - PLANTER



HYDRAULIC DIAGRAM - VACUUM FAN MOTOR SYSTEM



HYDRAULIC DIAGRAM - OPTIONAL PTO PUMP DRIVE AND OIL COOLER SYSTEM



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 metering.	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.

PTO PUMP DRIVE AND OIL COOLER OPTION TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump squealing.	Lack of oil to pump.	Check for plugged suction strainer.
	Air leak in suction line.	Check oil level.
Oil temperature is high.	Low oil level.	Check oil level and add as required.
Desired fan speed cannot be achieved.	Low oil level.	Check oil level and add as required.
	Plugged filter.	Check and change as required.
Vacuum level not displayed.	Digital vacuum gauge console power OFF.	Turn ON.
	Cable not plugged in.	Check connection.
	Digital vacuum gauge console has no power.	Check fuse.

ROW MARKER OPERATION TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Both markers lowering and only one raising at a time.	Hoses from cylinders to valve connected backwards.	Check hosing diagram in manual and correct.
Same marker always operating.	Spool in sequencing valve not shifting.	Remove spool, inspect for foreign material, making sure all ports in spool are open. Clean and reinstall.
Both markers lower and raise at same time.	Foreign material under check ball in sequencing valve.	Remove hose fitting, spring and balls and clean. May be desirable to remove spool and clean as well.
	Check ball missing or installed incorrectly in sequencing valve.	Disassemble and correct. Refer to Lubrication and Maintenance section of this manual.
Marker (in raised position) settling down.	Damaged O-ring in marker cylinder or cracked piston.	Disassemble cylinder, inspect for damage, and repair.
	Spool in sequencing valve not shifting completely because detent ball or spring is missing.	Check valve assembly and install parts as needed.
	Spool in sequencing valve shifting back toward center position.	Restrict flow of hydraulic oil from tractor to sequencing valve.
Neither marker moves.	Flow control closed too far.	Loosen locking nut and turn flow control adjustment bolt out or counterclockwise until desired speed is set.
Markers moving too fast.	Flow control open too far.	Loosen locking nut and turn flow control adjustment bolt in or out until desired speed is set.
Sporadic marker operation speed.	Needle sticking open in flow control valve.	Remove flow control, inspect and repair, or replace.

MODEL 3500 TWIN-LINE PLANTER PARTS MANUAL

M0240-02

6/11

This manual is applicable to: Model: 3500 Twin-Line Planters
 Serial Number: 902498 And On (EdgeVac)
 902911 And On (Mechanical)

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

Serial Number _____

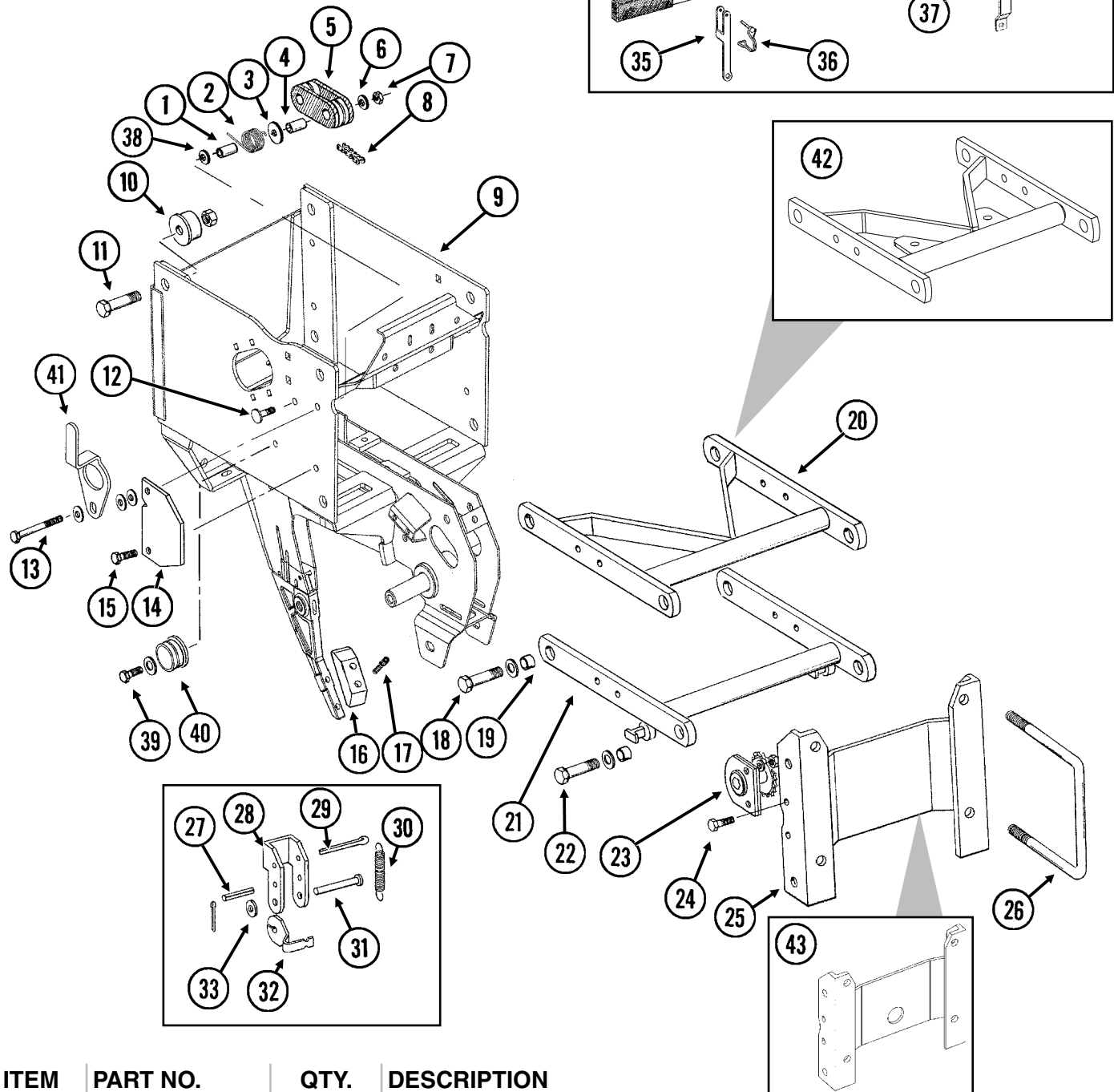
Date Purchased _____

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

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

(RU156a/RU150a/A11969/A11971)

NOTE: Push row units use the same seed tube, row unit depth adjustment components, quick adjustable down force springs, 15" opener disc blades, gauge wheels, closing wheels, meter drive and seed hopper as the pull row unit. See those pages for common parts.

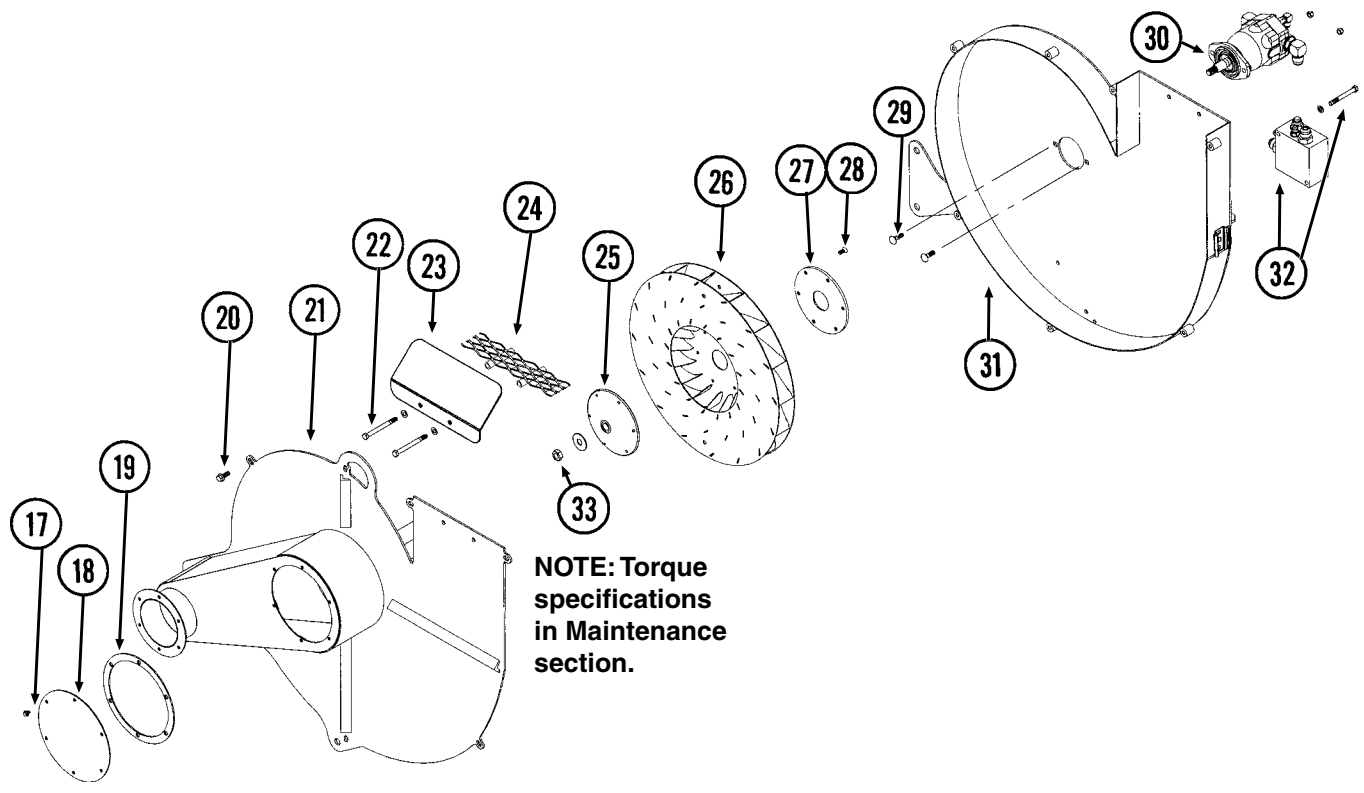
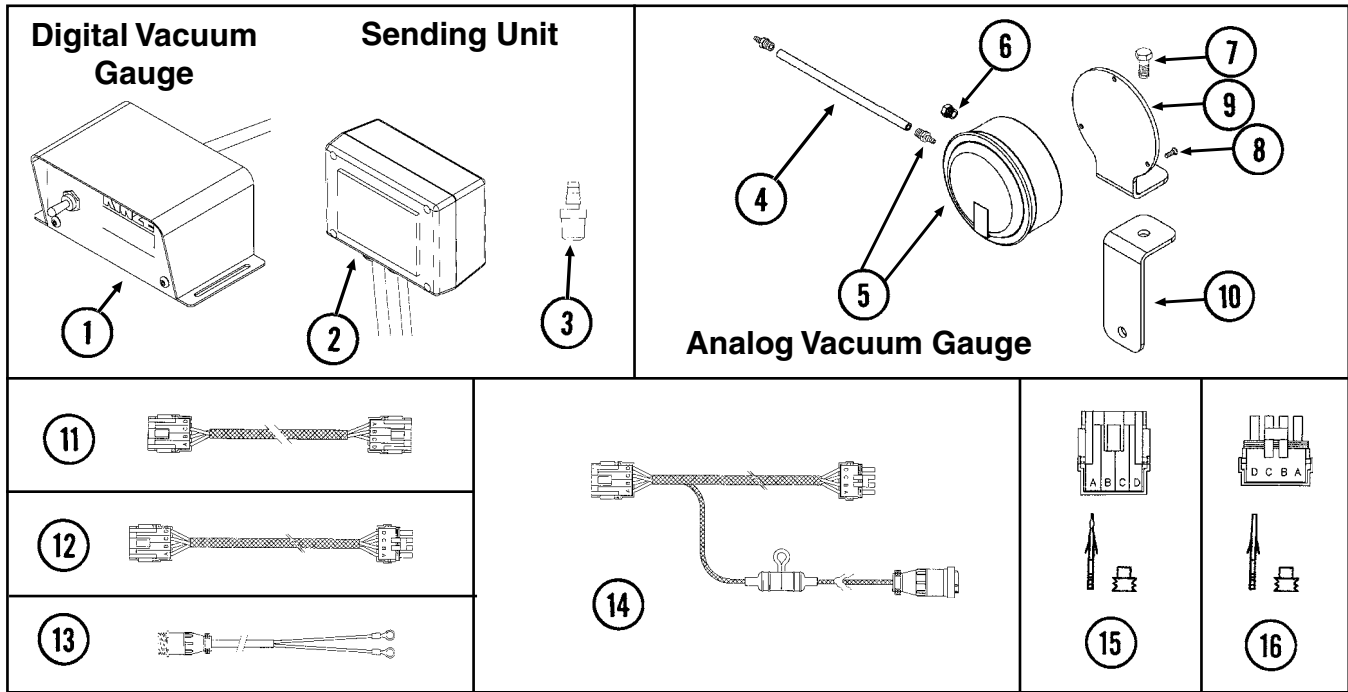


ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
1	GD1026	1	Sleeve, 1 $\frac{3}{16}$ " Long
2	GD11218	1	Spring
3	G10201	1	Special Washer, $\frac{3}{8}$ " x 1 $\frac{1}{2}$ " O.D.
4	GD8893-01	1	Sleeve, 1 $\frac{3}{8}$ " Long
5	GD11962	1	Idler

ITEM	PART NO.	QTY. (Per Row)	DESCRIPTION
6	G11387	1	Flat Washer, 3/8" SAE
7	G10108	1	Lock Nut, 3/8"-16
8	G3303-100	1	Chain, No. 41, 100 Pitch Including Connector Link (EdgeVac)
	G3303-96	1	Chain, No. 41, 96 Pitch Including Connector Link (Mechanical)
	GR0196	1	Connector Link, No. 41
	GR0202	-	Offset Link, No. 80
9	GA10161	-	Push Row Unit Shank
10	GB0314	2	Hopper Mount
11	G10751	2	Hex Head Cap Screw, 5/8"-18 x 1 3/4"
	G10412	2	Lock Nut, 5/8"-18
12	G10599	1	Carriage Bolt, 3/8"-16 x 1 1/4"
	G10101	1	Hex Nut, 3/8"-16
	G10108	1	Lock Nut, 3/8"-16
13	G10753	1	Hex Head Cap Screw, 3/8"-16 x 4 1/2"
	G11387	3	Flat Washer, 3/8" SAE
14	GD10867	2	Stop
15	G10004	3	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10108	3	Lock Nut, 3/8"-16
16	GB0301	1	Seed Tube Guard/Inner Scraper
17	G10912	2	Hex Socket Head Cap Screw, 5/16"-18 x 1", Grade 8
18	G10751	4	Hex Head Cap Screw, 5/8"-18 x 1 3/4"
	G11391	4	Flat Washer, 5/8" SAE
	G10412	4	Lock Nut, 5/8"-18
19	GB0218	8	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" Long
20	GA8930	-	Upper Arm
21	GA5787	1	Lower Arm
22	G10732	4	Hex Head Cap Screw, 5/8"-18 x 2"
	G11391	4	Flat Washer, 5/8" SAE
	G10412	4	Lock Nut, 5/8"-18
23	GA1720	1	Bearing/Sprocket, 7/8" Hex Bore
24	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G11091	2	Serrated Flange Nut, 3/8"-16
25	GA5786	1	Mounting Plate
26	GD1113	-	U-Bolt, 5" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
27	G10718	2	Spring Pin, 5/16" x 1 1/8"
28	GD11264	2	Lockup
29	G10463	2	Cotter Pin, 1/4" x 1 1/2"
30	GD11447	2	Spring
31	G10284	2	Clevis Pin, 1/2" x 1 1/2"
	G10456	2	Cotter Pin, 1/8" x 3/4"
32	GD11263	2	Spring Tab
33	G11389	2	Flat Washer, 1/2" SAE
34	GA12117	1	Lift Lever W/Boot
	GD11649	-	Boot
35	GD18073	1	Bracket
36	GD9695	1	Wire Lock Pin, 1/4" x 1 3/4"
37	GD18075	1	Mount
38	G11387	1	Flat Washer, 3/8" SAE
39	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G11387	-	Flat Washer, 3/8" SAE
	G10108	1	Lock Nut, 3/8"-16
40	GD17052	1	Vacuum Plug
41	GD17014	1	Hose Guide
42	GA11969	1	Upper Arm
43	GA11971	1	Mounting Plate

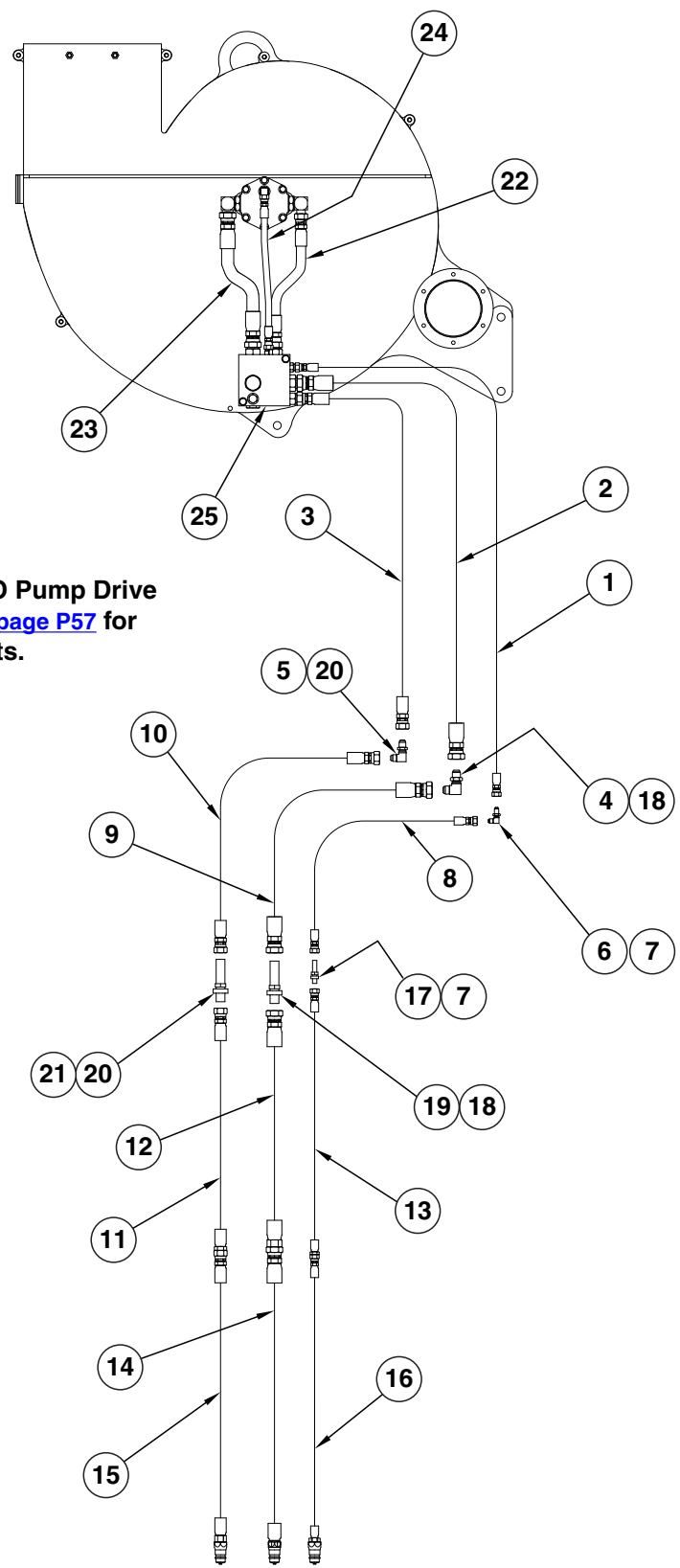
ITEM	PART NO.	QTY.	DESCRIPTION
1	GD0914-155	-	Hex Shaft, 7/8" x 155" (No Holes), 6 Row 30"
	GD0914-215	-	Hex Shaft, 7/8" x 215" (No Holes), 8 Row 30"
2	G10001	-	Hex Head Cap Screw, 3/8"-16 x 1"
	G11091	-	Serrated Flange Nut, 3/8"-16
3	GD11045	-	Lock Clamp
4	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
5	G10233	-	Machine Bushing, 1 1/2" x 1/32", 10 Gauge (As Required)
6	GA2180	-	Hanger Bearing, 7/8" Hex Bore
7	GA5107	2	Sprocket, 19 Tooth
8	GA9138	1	Mount
9	GD9229	4	Spacer, 1 1/4" O.D. x 1/2" Long (If Applicable)
10	GA7154	4	Sprocket W/Bearing, 18 Tooth
11	G10581	4	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10016	4	Hex Head Cap Screw, 1/2"-13 x 2"
	G11389	4-8	Flat Washer, 1/2" SAE
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
12	G3310-226	1	Chain, No. 40, 226 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
	GR0912	-	Connector Link, No. 40
13	GD8306	2	U-Bolt, 7" x 5" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	-	Hex Nut, 1/2"-13
14	G10496	2	External Inverted Snap Ring, 1 1/2"
15	GR1411	1	Shim
16	GR1407	1	Drive Shaft
17	GR1408	1	Compression Spring
18	GR1409	1	Knurled Collar
19	GR1410	1	Pin
20	GR1413	1	Spring
21	GR1405	1	Lock Collar
22	GR1406	1	Bushing
23	G10535	1	Hex Socket Set Screw, 3/8"-16 x 3/4"
24	GR1412	1	Sprocket, 19 Tooth
25	G10968	1	Spring Pin, 5/32" x 7/16"
26	GD14417	1	Hose Protector
27	GD18066	2	Plate
28	GD18067	1	Brace
29	G10016	2	Hex Head Cap Screw, 1/2"-13 x 2"
	G11389	2	Flat Washer, 1/2" SAE
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
A	GA8092	-	Clutch Sprocket Assembly, 19 Tooth (Items 14-25)
B	G1K269	-	Lock Clamp Kit (Items 3 And 4)
C	G1K331	-	Clutch Sprocket Kit (Items 22, 24 And 25)

(A11154/A11156/GR1736/A10765/A11158/A11699/A7856/A11155/A8329/METR68)



ITEM	PART NO.	QTY.	DESCRIPTION
1	GA11154	1	Digital Vacuum Gauge W/4-Pin Connector
2	GA11156	1	Sending Unit W/¼" Tubing And Harness W/4-Pin Male Connector
	GD16324-01	-	Clear Plastic Tubing, ¼" x 45"
	GA9964	-	Strain Relief
3	GR1736	1	Hose Barb, ⅛" Barb To ⅛" Male NPT
4	GD15849-02	1	Clear Plastic Tubing, ⅝" O.D. x ⅜" I.D. x 120"
5	GA10765	1	Analog Vacuum Gauge W/Hose Barb
	GR1777	-	Hose Barb, ⅛" Male NPT To ⅜" Barb
6	GA10799	1	Breather, ⅛" Male NPT
7	G10001	1	Hex Head Cap Screw, ⅜"-16 x 1"
	G10108	1	Lock Nut, ⅜"-16
8	G11215	3	Hex Socket Head Cap Screw, No. 6-32 x ⅜", Grade 8
9	GD15804	1	Mount
10	GD15803	1	Support
11	GA11158	1	Harness, 468"
12	GA11699	-	Extension Harness, 180"
13	GA7856	-	Power Lead Adapter
14	GA11155	1	Harness W/Fuse Holder And Fuse, 132"
	GD14258	-	Fuse Holder
	GD14660	-	Fuse, 2 Amp Delay Action
	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (1) Cable Clamp, (1) Lock Ring, (3) Female Terminal Pins
15	GA8328	-	4-Pin Female Connector Kit, 4 Seals And 4 Pin Contacts
16	GA8329	-	4-Pin Connector W/Male Housing, 4 Seals And 4 Socket Contacts
17	G11166	6	Whiz Lock Bolt, ¼"-20 x ¾"
18	GD16233	1	Manifold
19	GD16241	1	Gasket
20	G11124	7	Whiz Lock Bolt, ⅜"-16 x 1"
21	GA11086	1	Cover
22	G10063	2	Hex Head Cap Screw, ⅜"-16 x 4"
	G11387	2	Flat Washer, ⅜" SAE
	G10108	2	Lock Nut, ⅜"-16
23	GD15863	1	Discharge Deflector
24	GA11987	2	Screen
25	GD15790	1	Hub
26	GA10635	1	Impeller
27	GD15789	1	Backing Plate
28	G11133	6	Hex Socket Head Cap Screw, ⅝"-18 x ¾", Grade 8
29	G10599	2	Carriage Bolt, ⅜"-16 x 1¼"
	G10229	2	Lock Washer, ⅜"
	G10101	2	Hex Nut, ⅜"-16
30	---	-	See "Vacuum Fan Hydraulic Motor Assembly" on page P51
31	GA11085	1	Shroud
32	---	-	See "Vacuum Fan Motor Valve Block Assembly (Located Below Vacuum Fan Motor Assembly)" on page P53
33	G11391	1	Flat Washer, ⅝" SAE
	G10499	1	Hex Jam Nut, ⅝"-18, Grade 2
A	GA11087	-	Vacuum Fan Assembly (Items 17-22 and 24-33 on this page and Items 2, 3 and 8 on page P49)

(IP1269)

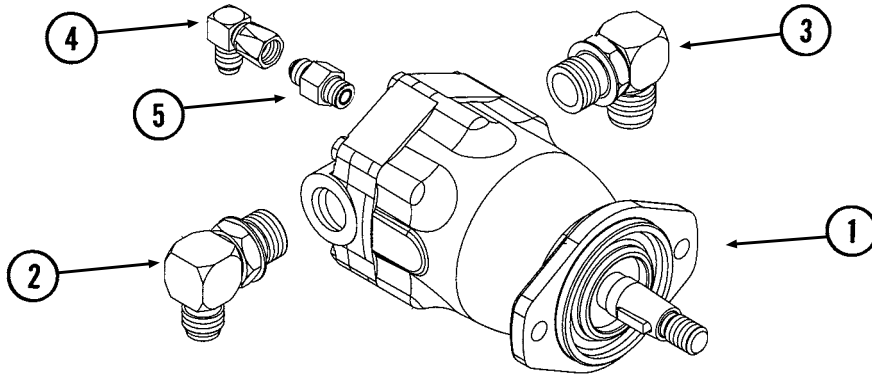


NOTE: If equipped with PTO Pump Drive And Oil Cooler Option see [page P57](#) for those hydraulic components.

ITEM	PART NO.	QTY.	DESCRIPTION
1	*A12081	1	Hose Assembly, 3/8" x 58"
2	*A12924	1	Hose Assembly, 3/4" x 54"
3	*A8280	1	Hose Assembly, 1/2" x 54"
4	G2701-12	1	Bulkhead Elbow, 90°, 1 1/16"-12 Male JIC
5	G2701-10	1	Bulkhead Elbow, 90°, 7/8"-14 Male JIC
6	G2701-06	1	Bulkhead Elbow, 90°, 9/16"-18 Male JIC
7	G306-06	2	Lock Nut, 9/16"-18
8	*A12080	1	Hose Assembly, 3/8" x 64"
9	*A12925	1	Hose Assembly, 3/4" x 62"
10	*A1460	1	Hose Assembly, 1/2" x 62"
11	*A8274	1	Hose Assembly, 1/2" x 86"
12	*A3368	1	Hose Assembly, 3/4" x 86"
13	*A12016	1	Hose Assembly, 3/8" x 86"
14	*A3345	1	Hose Assembly, 3/4" x 150"
15	*A8251	1	Hose Assembly, 1/2" x 150"
16	*A3166	1	Hose Assembly, 3/8" x 152"
17	G2700-06-06	1	Bulkhead Tube Union, 9/16"-18 Male JIC
18	G306-12	2	Lock Nut, 1 1/16"-12
19	G2700-12	1	Bulkhead Tube Union, 1 1/16"-12 Male JIC
20	G306-10	2	Lock Nut, 7/8"-14
21	G2700-10	1	Bulkhead Tube Union, 7/8"-14 Male JIC
22	*A8261	1	Hose Assembly, 1/2" x 13 1/2"
23	*A3352	1	Hose Assembly, 3/4" x 13 1/2"
24	*A12015	1	Hose Assembly, 3/8" x 17"
25	---	-	See "Vacuum Fan Motor Valve Block Assembly (Located Below Vacuum Fan Motor Assembly)" on page P53

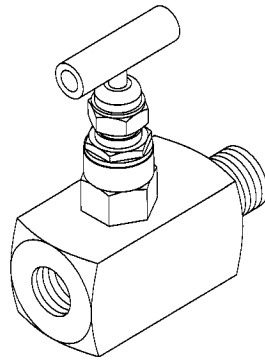
* Hydraulic hose is not stocked by Kinze Repair Parts, but can be made available on a special order basis. Call for quote.

(METR21a)



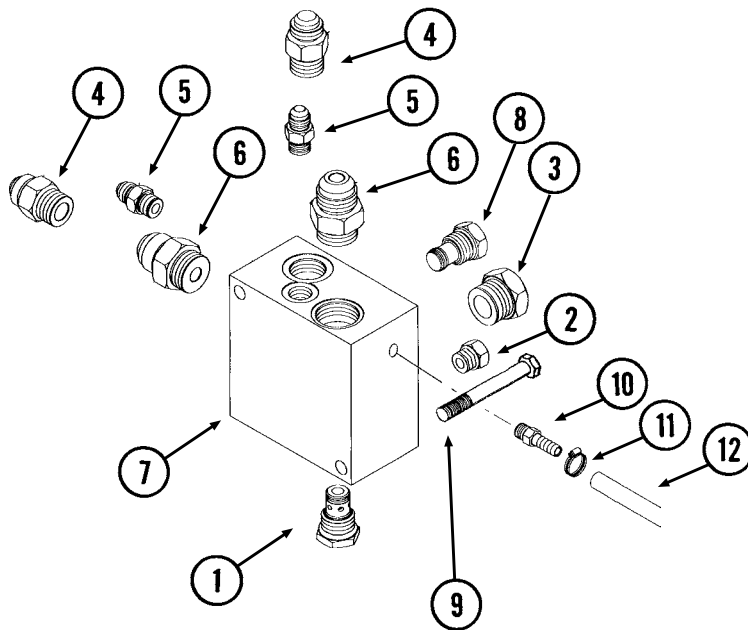
ITEM	PART NO.	QTY.	DESCRIPTION
1	GA10149 GR1734	1 -	Hydraulic Motor Seal Kit
2	G6801-10-12 GR1467	1 -	Elbow W/O-Ring, 90°, 7/8"-14 Male JIC To 1 1/16"-12 O-Ring O-Ring
3	G6801-12 GR1467	1 -	Elbow W/O-Ring, 90°, 1 1/16"-12 Male JIC To O-Ring O-Ring
4	G6500-06	1	Swivel Elbow, 90°, 9/16"-18 Male JIC To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

(A11650)



ITEM	PART NO.	QTY.	DESCRIPTION
1	G1K426	-	Needle Valve Kit W/Instructions

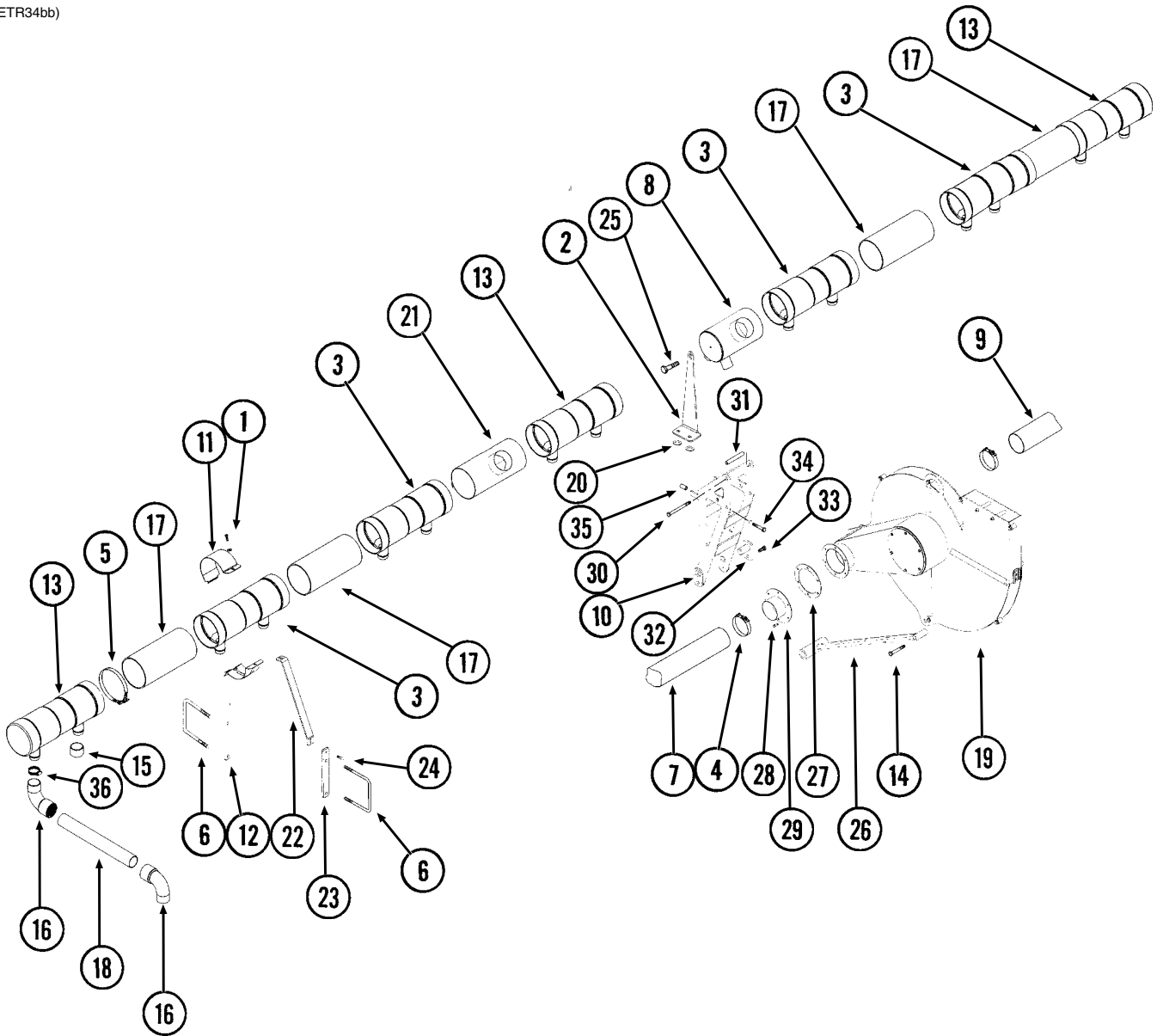
(A11068d)



ITEM	PART NO.	QTY.	DESCRIPTION
1	GA4293	1	Check Valve
2	G6408-06 GR1045	1 -	Plug W/O-Ring, 1/16"-18 O-Ring
3	G6408-12 GR1467	1 -	Plug W/O-Ring, 1 1/16"-12 O-Ring
4	G6400-10 GR1466	2 -	Connector W/O-Ring, 7/8"-14 Male JIC To O-Ring
5	G6400-06 GR1045	2 -	Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring
6	G6400-12 GR1467	2 -	Connector W/O-Ring, 1 1/16"-12 Male JIC To O-Ring
7	GD16188	1	Valve Block
8	GA11934	1	Relief Valve Cartridge
9	G10809 G10229	2 2	Hex Head Cap Screw, 3/8"-16 x 3/4" Lock Washer, 3/8"
10	GD11700	1	Adapter, 1/4" NPT To 3/8" Barb
11	G10681	1	Hose Clamp, No. 6
12	GD6279-05	1	Clear Plastic Tubing, 9/16" O.D. x 60"

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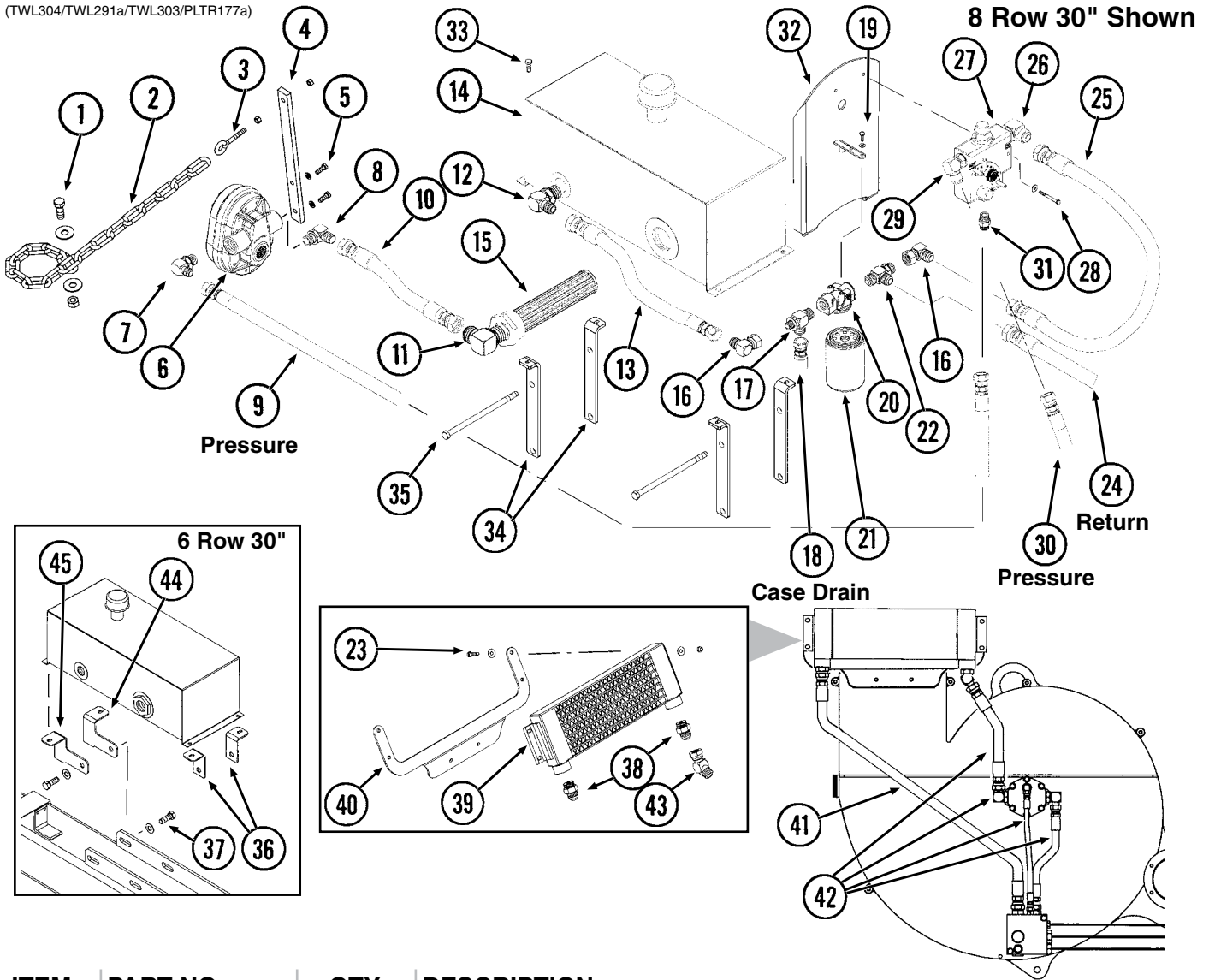
(METR34bb)



ITEM	PART NO.	QTY.	DESCRIPTION
1	G10338	-	Carriage Bolt, 5/16"-18 x 1 1/4"
	G10620	-	Serrated Flange Nut, 5/16"-18
2	GD16156	1	Bracket
3	GD15799	2-4	Manifold, 21" (Open Both Ends)
4	G11137	4	T-Bolt Clamp, 4 1/4", Stainless Steel
5	G11145	7-11	T-Bolt Clamp, 7"
6	GD11721	-	U-Bolt, 5" x 7" x 1/2"-13
	G10228	-	Lock Washer, 1/2"
	G10102	-	Hex Nut, 1/2"-13
7	GD15791-03	1	Hose, 4" x 46"
8	GA11298	1	Manifold, 11"
9	GD15791-06	1	Hose, 4" x 40"
10	GA11301	1	Fan Mount
11	GD15854	5-7	Clamp
12	GA11023	5-7	Manifold Stand

ITEM	PART NO.	QTY.	DESCRIPTION
13	GD15850	3	Manifold, 21" (Open One End)
14	G10036	1	Hex Head Cap Screw, 5/8"-11 x 4"
	G10107	1	Lock Nut, 5/8"-11
15	G11147	-	Cap, 2"
16	GD14626	12-16	Elbow, 90°, 2"
17	GD15856-01	2-4	Pipe, 6" x 14"
18	GD15792-06	-	Hose, 2" x 42" (Pull Row Units)
	GD15792-09	-	Hose, 2" x 30" (Push Row Units)
	GD15792-10	-	Hose, 2" x 60" (Push Row Units)
19	---	-	See "Digital Vacuum Gauge, Analog Vacuum Gauge, and Vacuum Fan Assembly" on page P47
20	G11387	2	Flat Washer, 3/8" SAE
21	GA10812	1	Manifold, 14"
22	GD16154	2	Stiffener
23	GD16155	2	Support
24	G10171	2	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G11386	2	Flat Washer, 5/16" SAE
	G10232	2	Lock Washer, 5/16"
	G10106	2	Hex Nut, 5/16"-18
25	G10001	1	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	1	Lock Washer, 3/8"
	G11387	1	Flat Washer, 3/8" SAE
26	GA11295	1	Fan Strut
27	GD16251	2	Gasket
28	G10023	12	Hex Head Cap Screw, 1/4"-20 x 3/4"
	G10110	12	Lock Nut, 1/4"-20, Grade B
29	GA11296	2	Outlet, 4"
30	G10830	2	Hex Head Cap Screw, 5/8"-11 x 7 1/2"
	G10107	2	Lock Nut, 5/8"-11
31	GD3180-27	2	Sleeve, 5/8" I.D. x 7/8" O.D. x 2 1/4" Long
	GD3777-10	2	Sleeve, 1 3/4" x 3 1/8"
	GD3777-11	2	Sleeve, 1 3/4" x 2 1/2"
32	GA5121	2	Pin, 2 1/8"
33	G10581	2	Hex Head Cap Screw, 1/2"-13 x 2 1/4"
	G10228	2	Lock Washer, 1/2"
34	G10862	1	Hex Head Cap Screw, 5/8"-11 x 3 1/4"
	G10230	1	Lock Washer, 5/8"
35	GD3180-28	1	Sleeve, 5/8" I.D. x 7/8" O.D. x 2 1/4" Long
36	G10676	-	Hose Clamp, No. 36, Stainless Steel

(TWL304/TWL291a/TWL303/PLTR177a)

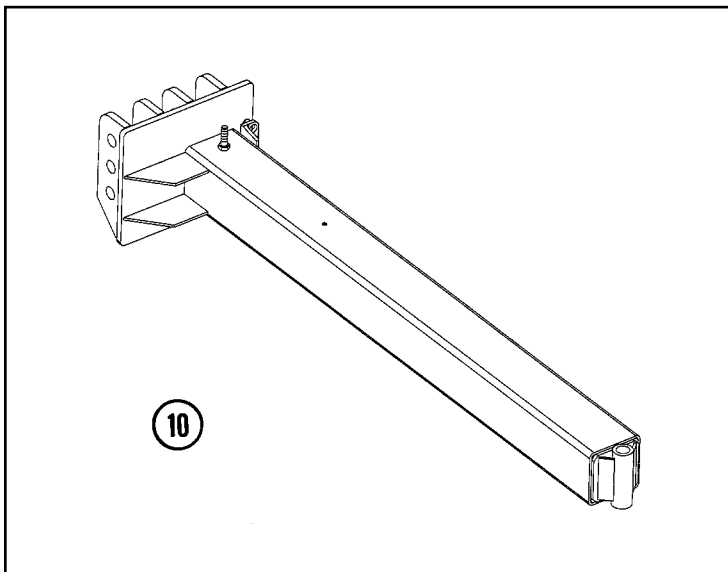
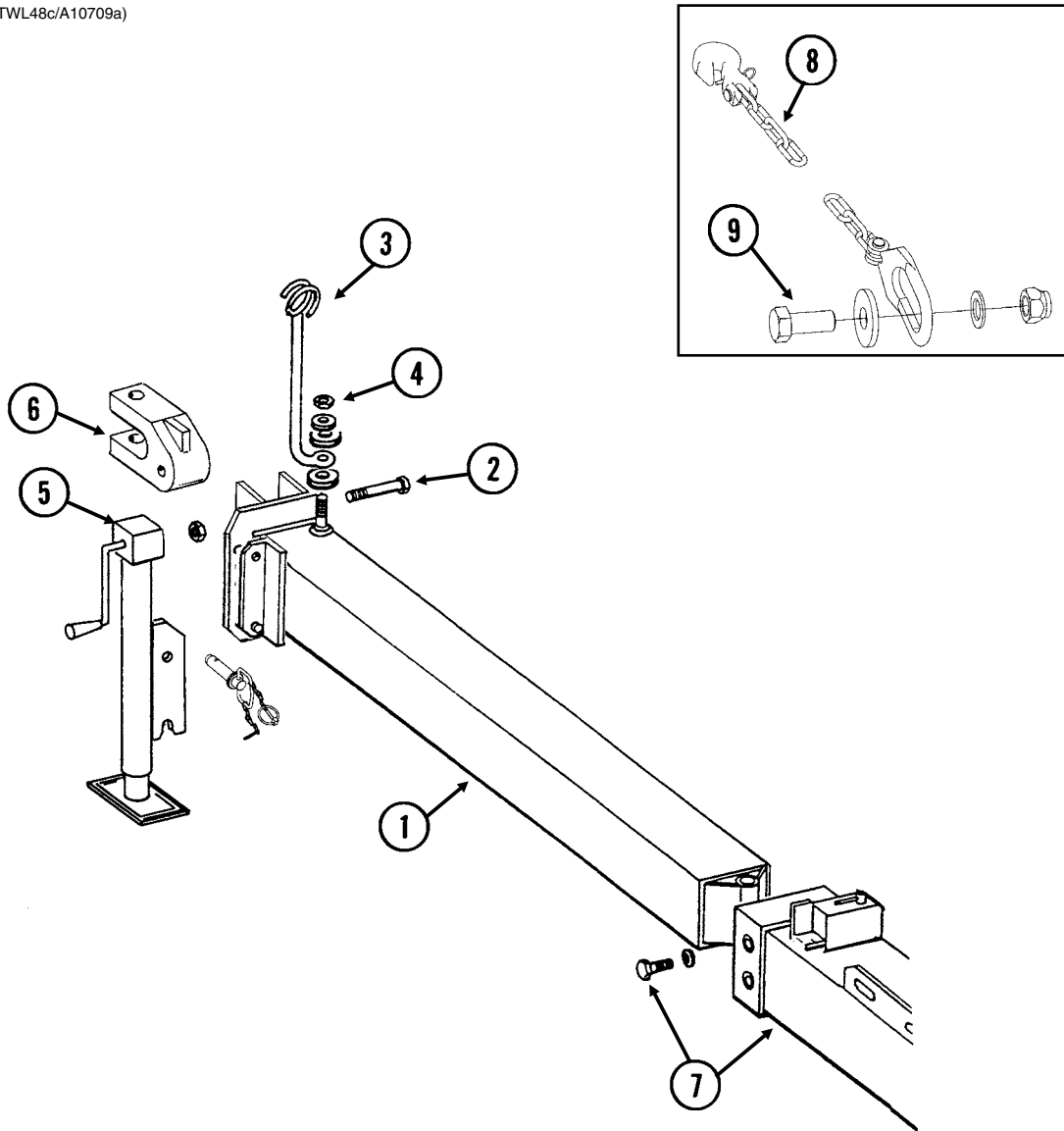


ITEM	PART NO.	QTY.	DESCRIPTION
1	G10005	1	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G10217	2	Washer, 5/8" USS
	G10107	1	Lock Nut, 5/8"-11
2	G3302-09	1	Coil Chain, No. 9/0, 17 Links
3	GD16035	1	Eyebolt, 3/8"-16 x 4"
4	G10101	2	Hex Nut, 3/8"-16
	GD16036	1	Anti-Rotation Bracket
5	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
6	GA10919	1	PTO Pump (1 3/8" spline)
	GA14446	-	PTO Pump (1 1/8" or 1 3/4" spline)
7	G6801-10-12	1	Elbow W/O-Ring, 90°, 7/8"-14 Male JIC To 1 1/16"-12 O-Ring
	GR1467	-	O-Ring
8	G6801-16	1	Elbow W/O-Ring, 90°, 1 1/16"-12 Female JIC To O-Ring (Used with GA10919 PTO Pump)
	G6801-16-20	1	Elbow W/O-Ring, 90°, 1 1/16"-12 Female JIC To O-Ring (Used with GA14446 PTO Pump)
	GR1786	-	O-Ring
9	*A1462	1	Hose Assembly, 1/2" x 78", 6 Row 30"
	*A1465	-	Hose Assembly, 1/2" x 84", 8 Row 30"
10	*A6201	1	Hose Assembly, 1" x 72", 6 Row 30"
	*A6206	-	Hose Assembly, 1" x 56", 8 Row 30"

ITEM	PART NO.	QTY.	DESCRIPTION
11	G2501-16-20	1	Elbow, 90°, 1 $\frac{5}{16}$ "-12 Male JIC To 1 $\frac{1}{4}$ " NPT
12	G2501-12-16	1	Elbow, 90°, 1 $\frac{1}{16}$ "-12 Male JIC To 1" NPT
13	*A3371	1	Hose Assembly, $\frac{3}{4}$ " x 25"
14	GA12802	1	Reservoir W/Breather, 10 Gallon
	GR1834	-	Breather
15	GD16040	1	Strainer
16	G6500-12	2	Swivel Elbow, 90°, 1 $\frac{1}{16}$ "-12 Male JIC To Female
17	G6804-12-12-08	1	Adjustable Tee W/O-Ring, 1 $\frac{1}{16}$ "-12 Male JIC To 1 $\frac{1}{16}$ "-12 Male O-Ring To $\frac{3}{4}$ "-16
	GR1467	-	O-Ring
18	*A3278	1	Hose Assembly, $\frac{3}{8}$ " x 70", 6 Row 30"
	*A3370	-	Hose Assembly, $\frac{3}{8}$ " x 80", 8 Row 30"
19	G10023	2	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x $\frac{3}{4}$ "
	G10227	2	Lock Washer, $\frac{1}{4}$ "
20	GD16038	1	Filter Head
21	GD16037	1	Oil Filter, 10 Micron
22	G6804-12	1	Adjustable Tee W/O-Ring, 1 $\frac{1}{16}$ "-12 Male JIC To O-Ring
	GR1467	-	O-Ring
23	G10171	4	Hex Head Cap Screw, $\frac{5}{16}$ "-18 x 1 $\frac{1}{4}$ "
	G11386	8	Flat Washer, $\frac{5}{16}$ " SAE
	G10109	4	Lock Nut, $\frac{5}{16}$ "-18, Grade 8
24	*A3372	1	Hose Assembly, $\frac{3}{4}$ " x 68", 6 Row 30"
	*A3377	-	Hose Assembly, $\frac{3}{4}$ " x 104", 8 Row 30"
25	*A3351	1	Hose Assembly, $\frac{3}{4}$ " x 20"
26	G6801-12-10	1	Elbow W/O-Ring, 90°, 1 $\frac{1}{16}$ "-12 Male JIC To $\frac{7}{8}$ "-14 O-Ring
	GR1466	-	O-Ring
27	GA10918	1	Flow Control Valve
28	G10403	2	Hex Head Cap Screw, $\frac{1}{4}$ "-20 x 2 $\frac{1}{2}$ "
	G11385	4	Flat Washer, $\frac{1}{4}$ " SAE
	G10110	2	Lock Nut, $\frac{1}{4}$ "-20, Grade B
29	G6801-10	1	Elbow W/O-Ring, 90°, $\frac{7}{8}$ "-14 Male JIC To O-Ring
	GR1466	-	O-Ring
30	*A8280	1	Hose Assembly, $\frac{1}{2}$ " x 54", 6 Row 30"
	*A8279	-	Hose Assembly, $\frac{1}{2}$ " x 80", 8 Row 30"
31	G6400-10	1	Connector W/O-Ring, $\frac{7}{8}$ "-14 Male JIC To O-Ring
	GR1466	-	O-Ring
32	GA11523	1	Mounting Bracket
33	G10001	2	Hex Head Cap Screw, $\frac{3}{8}$ "-16 x 1"
	G11387	4	Flat Washer, $\frac{3}{8}$ " SAE
	G10108	4	Lock Nut, $\frac{3}{8}$ "-16
34	GD16034	4	Bracket, 10 $\frac{1}{4}$ ", 8 Row 30"
35	G11109	4	Hex Head Cap Screw, $\frac{1}{2}$ "-13 x 7 $\frac{1}{2}$ "
	G10228	4	Lock Washer, $\frac{1}{2}$ "
	G10102	4	Hex Nut, $\frac{1}{2}$ "-13
36	GD16640	2	Bracket, 6 Row 30"
37	G10005	4	Hex Head Cap Screw, $\frac{5}{8}$ "-11 x 1 $\frac{3}{4}$ "
	G11391	4	Flat Washer, $\frac{5}{8}$ " SAE
	G10230	4	Lock Washer, $\frac{5}{8}$ "
	G10104	4	Hex Nut, $\frac{5}{8}$ "-11
38	G6400-12	2	Connector W/O-Ring, 1 $\frac{1}{16}$ "-12 Male JIC To O-Ring
	GR1467	-	O-Ring
39	GA10917	1	Oil Cooler
40	GD16608	1	Bracket
41	*A3369	1	Hose Assembly, $\frac{3}{4}$ " x 40"
42	---	-	See "Vacuum Fan Hydraulic Components" on page P49
43	G6502-12	1	Swivel Elbow, 45°, 1 $\frac{1}{16}$ "-12 Male JIC To Female
44	GD16612	1	Mount, R.H.
45	GD16613	1	Mount, L.H.

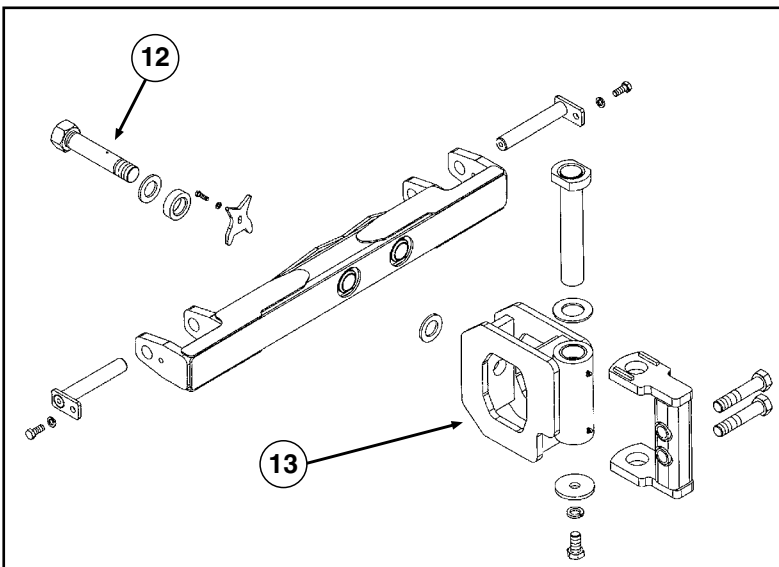
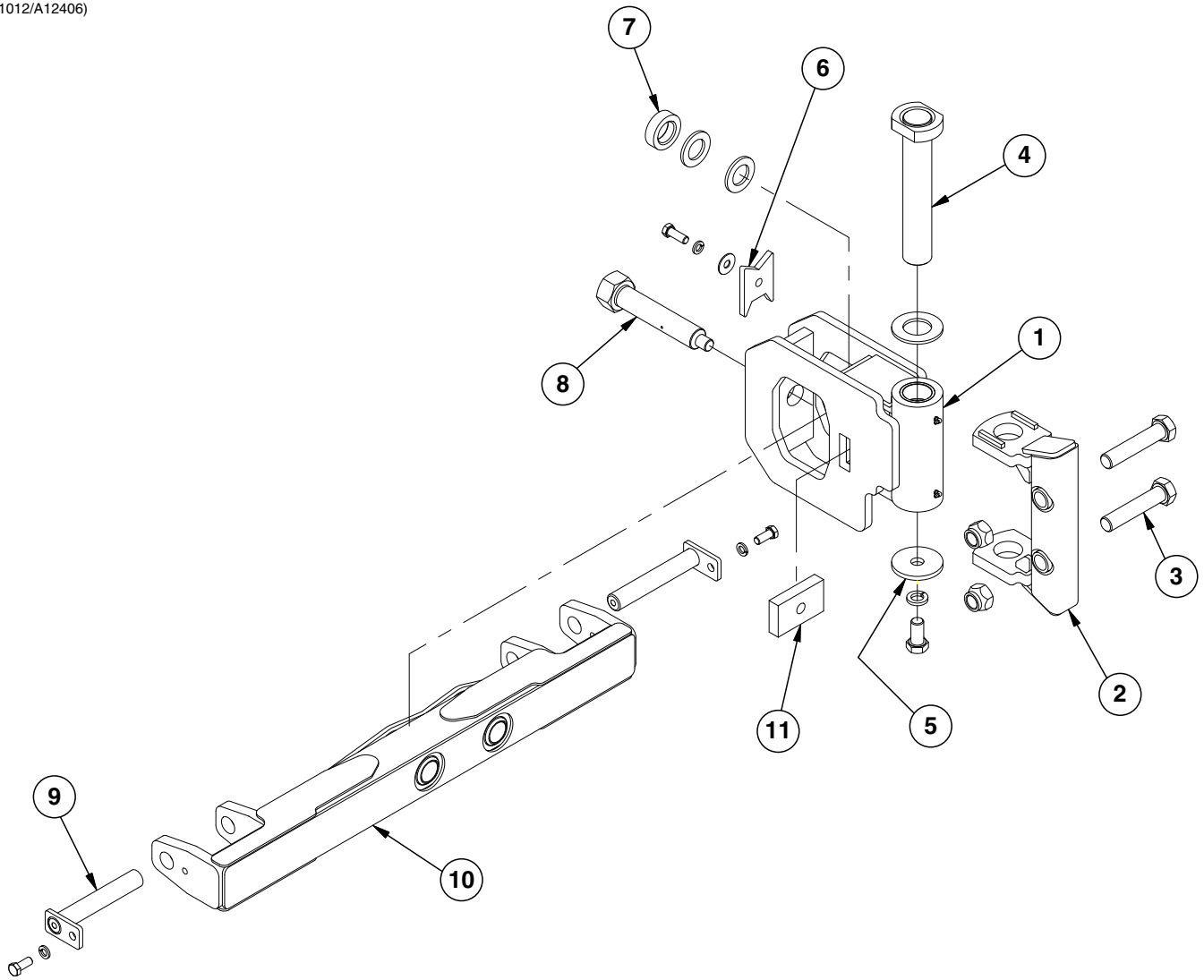
*Hydraulic hose is not stocked by Kinze Repair Parts, but can be made available on a special order basis. Call for quote.

PHA021/PHA025(A13595/TWL48c/A10709a)



ITEM	PART NO.	QTY.	DESCRIPTION
1	GA8699	1	Inner Hitch, 65¼"
2	G10169	1	Hex Head Cap Screw, 1¼"-7 x 6"
	G10157	1	Lock Nut, 1¼"-7
3	GD16328	1	Hose Holder
4	G10217	2	Washer, ⅝" USS
	G10230	1	Lock Washer, ⅝"
	G10104	1	Hex Nut, ⅝"-11
5	GA13986	1	Jack Assembly Complete
	GA4995	-	Detent Pin Assembly
	GR0516	-	Crank Assembly
	GR0515	-	Bevel Gear Set, Includes: (2) Bevel Gears, (1) Gear Pin, (1) Groove Pin
6	GB0156	1	Clevis
7	---	-	See "Outer Hitch" on page P63
8	GA13595	1	Safety Chain W/Hook, ⅜"
	G1K411	-	Safety Chain Repair Kit, Includes: Hook, Flat Washer, Latch Pin, Safety Latch, Spring And Retaining Ring
9	G10494	1	Hex Head Cap Screw, 1¼"-7 x 3½"
	GD10646	1	Special Washer
	G10157	1	Lock Nut, 1¼"-7
10	GA10709	1	Inner Hitch, 65¼", 7½" Offset

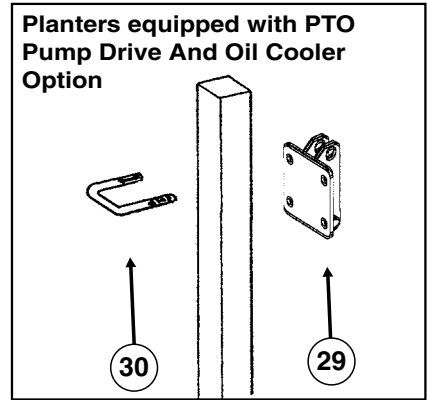
(IP1012/A12406)



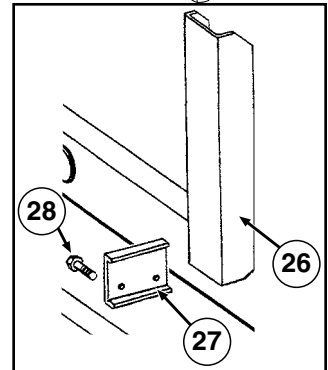
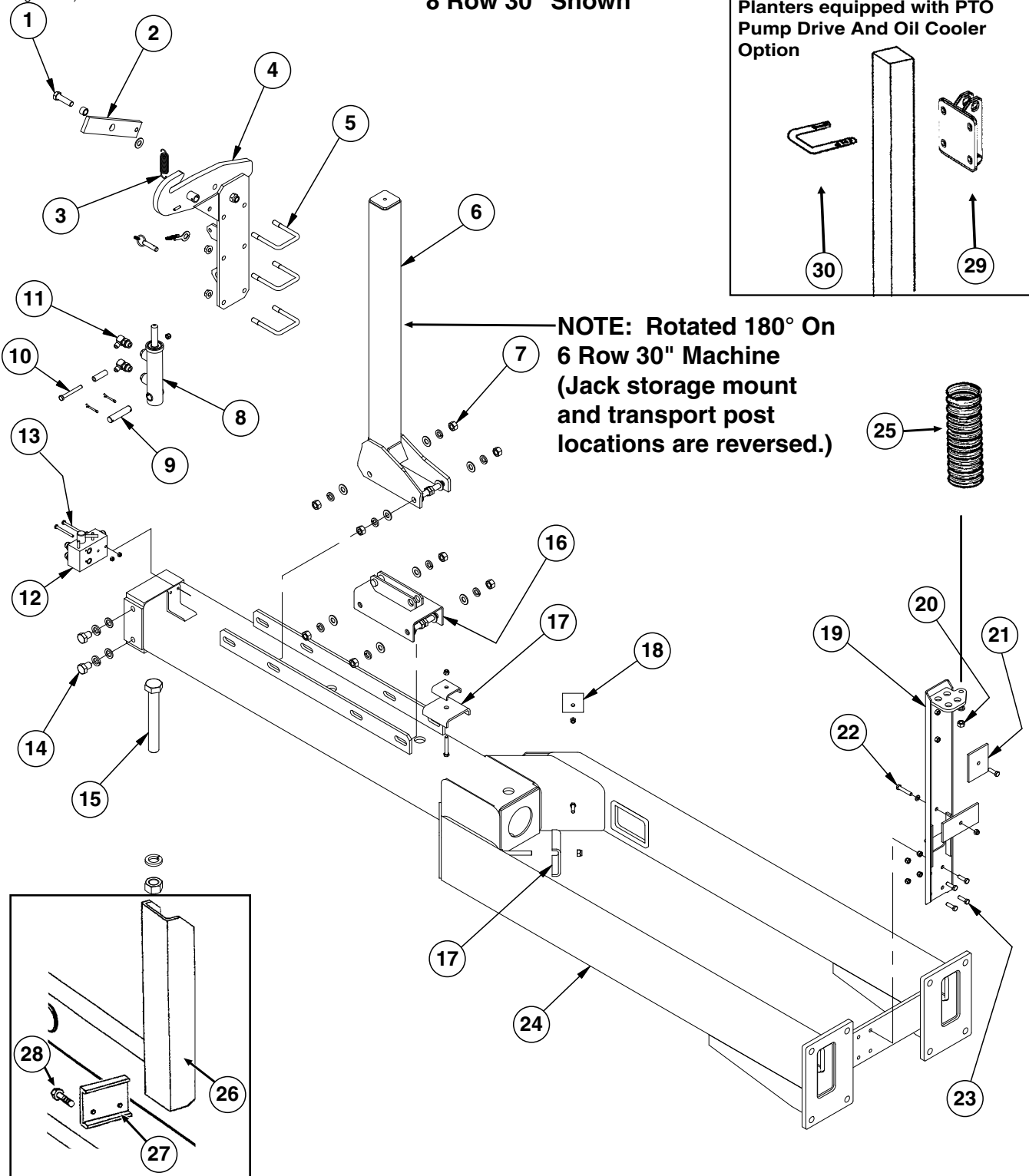
ITEM	PART NO.	QTY.	DESCRIPTION
1	GA13665	1	Hitch Pivot (March 1, 2009 and on)
2	GA13783	1	Pivot Mount
3	G10169	2	Hex Head Cap Screw, 1 1/4"-7 x 6"
	G10157	2	Lock Nut, 1 1/4"-7
4	GA12163	1	Pin, 13 3/8"
	GD15725	1	Washer, 4" O.D. x 2 1/4" I.D. x 1/4"
5	GD17245	1	Washer, 4" O.D. x 1 1/32" I.D. X 3/8"
	G11223	1	Hex Head Cap Screw, 1"-8 x 2"
	G10118	1	Lock Washer, 1"
6	GD15100	1	Pivot Lock
	G10230	1	Lock Washer, 5/8"
	G10217	1	Washer, 5/8" USS
	G10005	1	Hex Head Cap Screw, 7/8"-11 x 1 3/4"
7	GD16226	1	Sleeve, 3" O.D. x 1 25/32" x 29/32" Thick
	GD16303	2	Washer, 3" O.D. x 1 25/32" x 1/4" Thick
8	GA13673	1	Pivot Pin (March 1, 2009 and on)
9	GA11079	2	Hammer Strap, Category 3 And 3N
	G10007	2	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G10230	2	Lock Washer, 5/8"
10	GA12164	1	Hitch Bar
11	GD19468	1	Tapped Bar
12	GA11082	1	Pivot Bolt W/Grease Fitting, 1 3/4" x 10 3/8" (Total Length) (Prior to March 1, 2009)
	G10640	-	Grease Fitting, 1/4"-28
	GD16303	2	Washer, 3" O.D. x 1 25/32" x 1/4" Thick
	GD16226	1	Sleeve, 3" O.D. x 1 25/32" x 29/32" Thick
13	GA11083	1	Hitch Pivot W/Bushings And Grease Fittings (Prior to March 1, 2009)
	GD14562	2	Hardened Bushing, 2 3/4" O.D. x 2 1/4" I.D. x 3"
	G10779	2	Grease Fitting, 90°, 1/4"-28

(TWL49g/IP1119)

8 Row 30" Shown



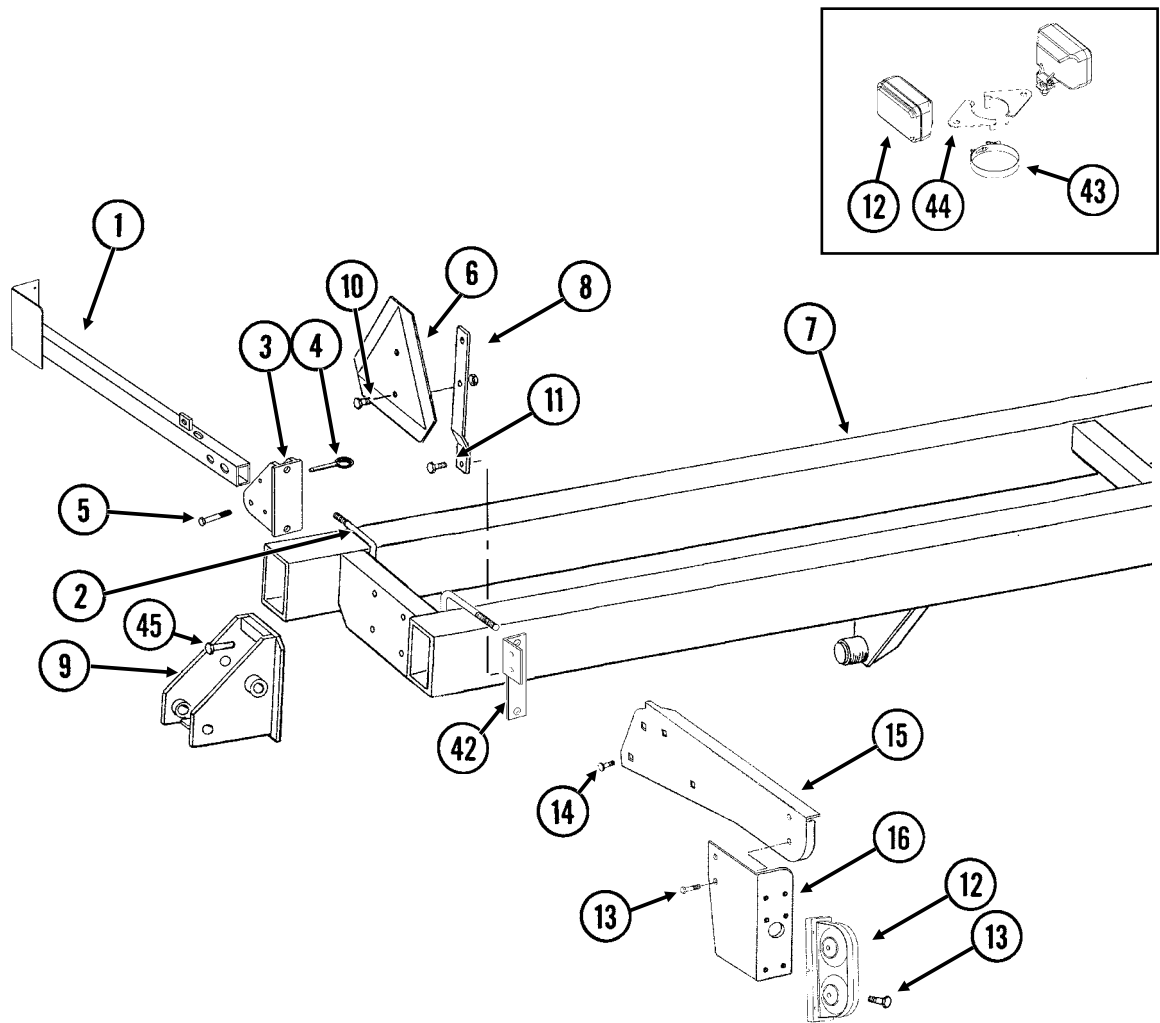
NOTE: Rotated 180° On 6 Row 30" Machine (Jack storage mount and transport post locations are reversed.)



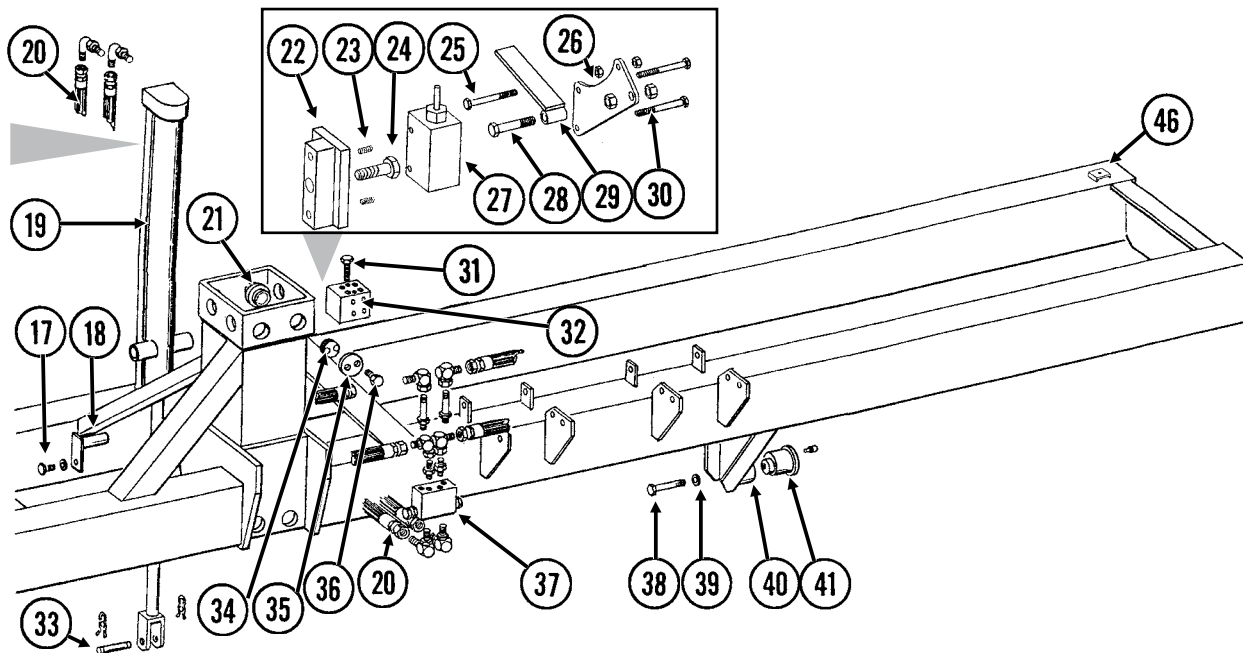
ITEM	PART NO.	QTY.	DESCRIPTION
1	G10006	1	Hex Head Cap Screw, 5/8"-11 x 2 1/4"
	GB0218	1	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" Long
	G10107	1	Lock Nut, 5/8"-11
2	GA6422	1	Catch Bar
	G11391	1	Flat Washer, 5/8" SAE

ITEM	PART NO.	QTY.	DESCRIPTION
3	GD5857	1	Spring
4	GA6420	1	Transport Catch
	G10765	1	Spring Pin, 1/4" x 1"
5	GD4743	3	U-Bolt, 3" x 3" x 1/2"-13
	GA7022	1	Detent Pin W/Chain
	G10071	6	Serrated Flange Nut, 1/2"-13
6	GA6623	-	Transport Post, 6 Row 30"
	GA6418	-	Transport Post, 8 Row 30" (Shown)
7	G10104	4	Hex Nut, 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10005	4	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G11391	8	Flat Washer, 5/8" SAE
8	GA9559	1	See "Transport Latch Cylinder, All Sizes" on page P87
9	GD7137	1	Pin, 3/4" x 3 3/8"
	G10457	2	Cotter Pin, 5/32" x 1 1/2"
10	G10809	1	Hex Head Cap Screw, 3/8"-16 x 3 1/4"
	GD2971-09	1	Sleeve, 2" Long
	GD3180-03	-	Sleeve, 5/8" I.D. x 7/8" O.D. x 1 15/16" Long (As Required)
	G10108	2	Lock Nut, 3/8"-16
11	G6801-06-08	2	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To 3/4"-16 O-Ring
	GR1037	-	O-Ring
12	GA6438	-	See "Selector Valve" on page P90
13	G10746	2	Hex Head Cap Screw, 1/4"-20 x 2 3/4"
	G10110	2	Lock Nut, 1/4"-20, Grade B
14	G10716	2	Hex Head Cap Screw, 3/4"-10 x 1"
	GD2169	2	Special Washer, 25/32" I.D. x 1 1/4" O.D., Hardened
	G10231	2	Lock Washer, 3/4"
15	G10717	1	Hex Head Cap Screw, 1 1/4"-7 x 9"
	G10239	1	Hex Nut, 1 1/4"-7
	G10236	1	Lock Washer, 1 1/4"
16	GA6404	1	Jack Storage Mount
	G10104	4	Hex Nut, 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10005	4	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
	G11391	8	Flat Washer, 5/8" SAE
17	GD0740	2	Hose Clamp, 3/4" x 4" x 3 1/2"
	G10111	1	Lock Nut, 1/2"-13
18	GD5875	2	Hose Clamp, 9/16" x 2 1/2" x 2"
	G10108	2	Lock Nut, 3/8"-16
19	GA6402	1	Hose Support
20	G10102	1	Hex Nut, 1/2"-13
	G10228	1	Lock Washer, 1/2"
	GA6608	1	Cable Assembly
21	GD9046	1	Hose Clamp, 3 1/4" x 4"
	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
22	G10048	1	Hex Head Cap Screw, 3/8"-16 x 2"
	GD16341	1	Hose Clamp, 3 3/4" x 6"
	G10229	1	Lock Washer, 3/8"
23	G10004	4	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10108	4	Lock Nut, 3/8"-16
24	GA6371	1	Outer Hitch, 125 1/2"
25	GD9129-01	1	Hose Protector, 48"
26	GD14106	1	Channel (If Applicable)
27	GD10731	1	Wire Clamp (If Applicable)
28	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4" (If Applicable)
	G10108	2	Lock Nut, 3/8"-16 (If Applicable)
29	GA11528	-	Bracket
30	GD16642	2	U-Bolt, 3" x 4" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13

(TWL50e/A9689b/TWL51bb)



ITEM	PART NO.	QTY.	DESCRIPTION
1	GA9840	1	Light Bracket
2	GD1113	2	U-Bolt, 5" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
3	GB0309	1	Light Mount Bracket
4	G10874	1	Detent Pin, 1/2" x 3 1/2" Grip
5	G10033	1	Hex Head Cap Screw, 1/2"-13 x 3 1/2"
	G10206	4	Washer, 1/2" SAE
	G10111	1	Lock Nut, 1/2"-13
6	---	-	See "Decals, Paint, and Miscellaneous" on page P143
7	A6401	-	Frame, 180", 6 Row 30" (Non-Stock Item)
	A9402	-	Frame, 188", 6 Row 30" (Non-Stock Item)
	A6364	-	Frame, 240", 8 Row 30" (Non-Stock Item)
	A9401	-	Frame, 248", 8 Row 30" (Non-Stock Item)
8	GD6783	1	Bracket
9	---	-	See "Row Marker Assembly, Two-Fold Low Profile, 6 Row 30" on page P81 See "Row Marker Assembly, Two-Fold Low Profile, 8 Row 30" on page P83
10	G10064	2	Hex Head Cap Screw, 1/4"-20 x 1"
	G10621	2	Serrated Flange Nut, 1/4"-20
11	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G11091	2	Serrated Flange Nut, 3/8"-16

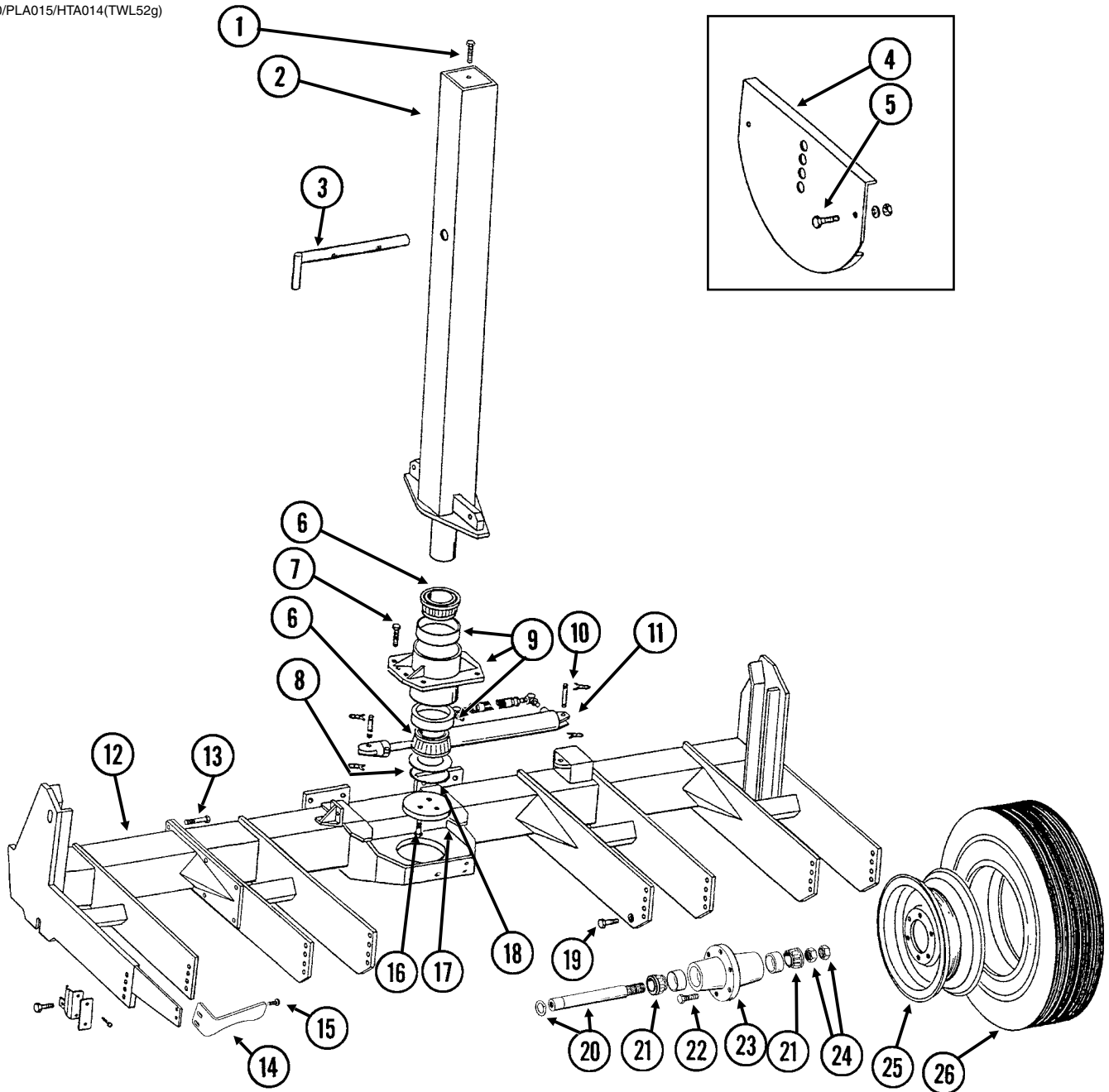


ITEM	PART NO.	QTY.	DESCRIPTION
12	---	-	See "Electrical Components" on page P95
13	G10064	-	Hex Head Cap Screw, 1/4"-20 x 1"
	G10227	-	Lock Washer, 1/4"
	G10103	-	Hex Nut, 1/4"-20
	G10110	-	Lock Nut, 1/4"-20, Grade B
14	G10305	2-4	Carriage Bolt, 3/8"-16 x 1"
	G11091	2-4	Serrated Flange Nut, 3/8"-16
15	GD15950	1	Light Mount Extension
16	GD12724	1	Bracket
17	G10037	2	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
18	GA5121	2	Pin, 2 1/8"
19	---	-	See "Lift Cylinder" on page P88
20	---	-	See "Planter Hydraulic System" on page P93
21	GD9093	16	Poly Wear Pad
22	GA6850	1	Valve Mount
23	G10120	2	Hex Socket Set Screw, 3/8"-16 x 1/2"
24	G10005	1	Hex Head Cap Screw, 5/8"-11 x 1 3/4"
25	G10638	1	Hex Head Cap Screw, 1/4"-20 x 2"
	G10103	2	Hex Nut, 1/4"-20
26	GD10129	1	Mounting Bracket
27	---	-	See "Stroke Limiter Valve" on page P90
28	G10048	1	Hex Head Cap Screw, 3/8"-16 x 2"
	G10101	2	Hex Nut, 3/8"-16
29	GA7153	1	Stroke Limiter Arm
30	G10403	2	Hex Head Cap Screw, 1/4"-20 x 2 1/2"
	G10227	2	Lock Washer, 1/4"
31	G10172	2	Hex Head Cap Screw, 3/8"-16 x 5"
	G10108	2	Lock Nut, 3/8"-16
32	GD9971	1	Manifold Block

ITEM	PART NO.	QTY.	DESCRIPTION
33	GR0375	1	Pin, 1" x 3½"
	GR0193	2	Hair Pin Clip
34	GB0234	16	Adjustment Plug
35	GB0230	16	Cap
36	G10014	32	Hex Head Cap Screw, ½"-13 x 1"
37	---	-	See "Row Marker Sequencing/Flow Control Valve" on page P91
38	G10026	2	Hex Head Cap Screw, ¾"-10 x 2"
	G10231	2	Lock Washer, ¾"
39	GB0409	2	Spring Washer
40	GD10532	2	Sleeve
41	GA6497	2	Cam Follower W/Grease Fitting
	G10640	-	Grease Fitting, ¼"-28
42	GD13250	1	SMV Bracket
43	G11159	1-2	T-Bolt Clamp, 3½" Stainless Steel
44	GD16046	2	Bracket, 4¼" x 4"
45	G10006	4	Hex Head Cap Screw, ⅝"-11 x 2¼"
	G10230	4	Lock Washer, ⅝"
	G10104	4	Hex Nut, ⅝"-11
46	GD5875	1	Hose Clamp, 9/16" x 2½" x 2"
	G10108	1	Lock Nut, ⅜"-16

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PFA040/PLA015/HTA014(TWL52g)

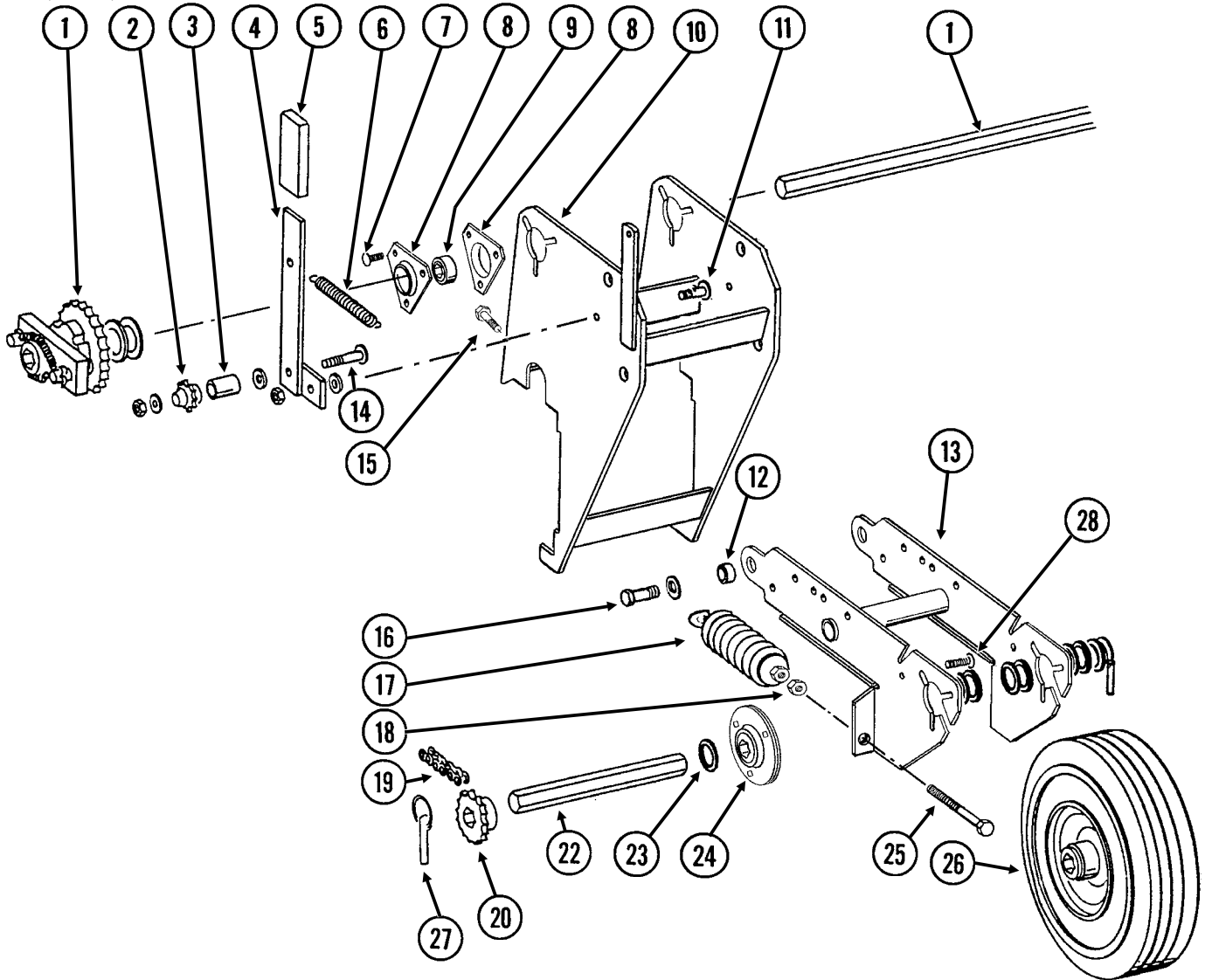


ITEM	PART NO.	QTY. (Per Planter)	DESCRIPTION
1	---	-	See "Rear Trailer Hitch" on page P141
2	GA7543	1	Center Post
3	GA6849	1	Safety Lockup Pin
	G10671	1	Slotted Spring Pin, 3/16" x 3 1/4"
	G10606	1	Spring Pin, 1/4" x 2"
4	GA6529	-	Rock Guard (Optional)
5	G10037	-	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	-	Lock Washer, 1/2"
	G10102	-	Hex Nut, 1/2"-13
6	GA6435	2	Bearing

ITEM	PART NO.	QTY. (Per Planter)	DESCRIPTION
7	G10028 GD2169 G10105	8 8 8	Hex Head Cap Screw, 3/4"-10 x 3" Special Washer, 25/32" I.D. x 1 1/4" O.D., Hardened Hex Nut, 3/4"-10
8	GD9122 GD9123 GD9124	- - -	Shim, .005" Thick (As Required) Shim, .007" Thick (As Required) Shim, .020" Thick (As Required)
9	GA6496 GD9121 G10779	1 - -	Bearing Housing W/Cups, Less Grease Fitting Cup Grease Fitting, 90°, 1/4"-28
10	GR0375 GR0193	2 4	Pin, 1" x 3 1/2" Hair Pin Clip
11	---	-	See "Rotation Cylinder" on page P87
12	A7380	1	Axle W/Stub And Scraper Mounts (Non-Stock Item)
13	G10027 G10231 G10105	6 6 6	Hex Head Cap Screw, 3/4"-10 x 2 1/2" Lock Washer, 3/4" Hex Nut, 3/4"-10
14	GD12543	4	Scraper
15	G10636 G11389 G10071	8 8 8	Carriage Bolt, 1/2"-13 x 1 1/2" Flat Washer, 1/2" SAE Serrated Flange Nut, 1/2"-13
16	G10008 G10230	3 3	Hex Head Cap Screw, 5/8"-11 x 2" Lock Washer, 5/8"
17	GD9051	1	Bearing Cap
18	GD9130	1	O-Ring
19	G10026 G10231	2 2	Hex Head Cap Screw, 3/4"-10 x 2" Lock Washer, 3/4"
20	GA4693 GD11490	1 -	Spindle, W/Round External Retaining Ring, 10 1/2" Round External Retaining Ring
21	GA0895	2	Bearing
22	GR0270	6	Lug Bolt, 9/16"-18
23	GA2148 GR0434	1 -	Hub W/Cups, 6 Bolt Cup
24	G11081	2	Hex Jam Nut, 1 1/2"-12, Grade 2
25	GA14413	1	Rim, 5.50" x 20"
26	GD13401 GA7434	- 1	Tire, 7.50" x 20", 8 Ply, Tubeless W/O Center Rib (Specify Brand*) Valve Stem
A	GA6428	-	Hub And Spindle Assembly (Items 20, 21, 23 And 24)
B	GA14412	-	Tire and Rim Assembly (Specify Brand*) (Items 25 And 26)

***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.**

PLA026(TWL5300)

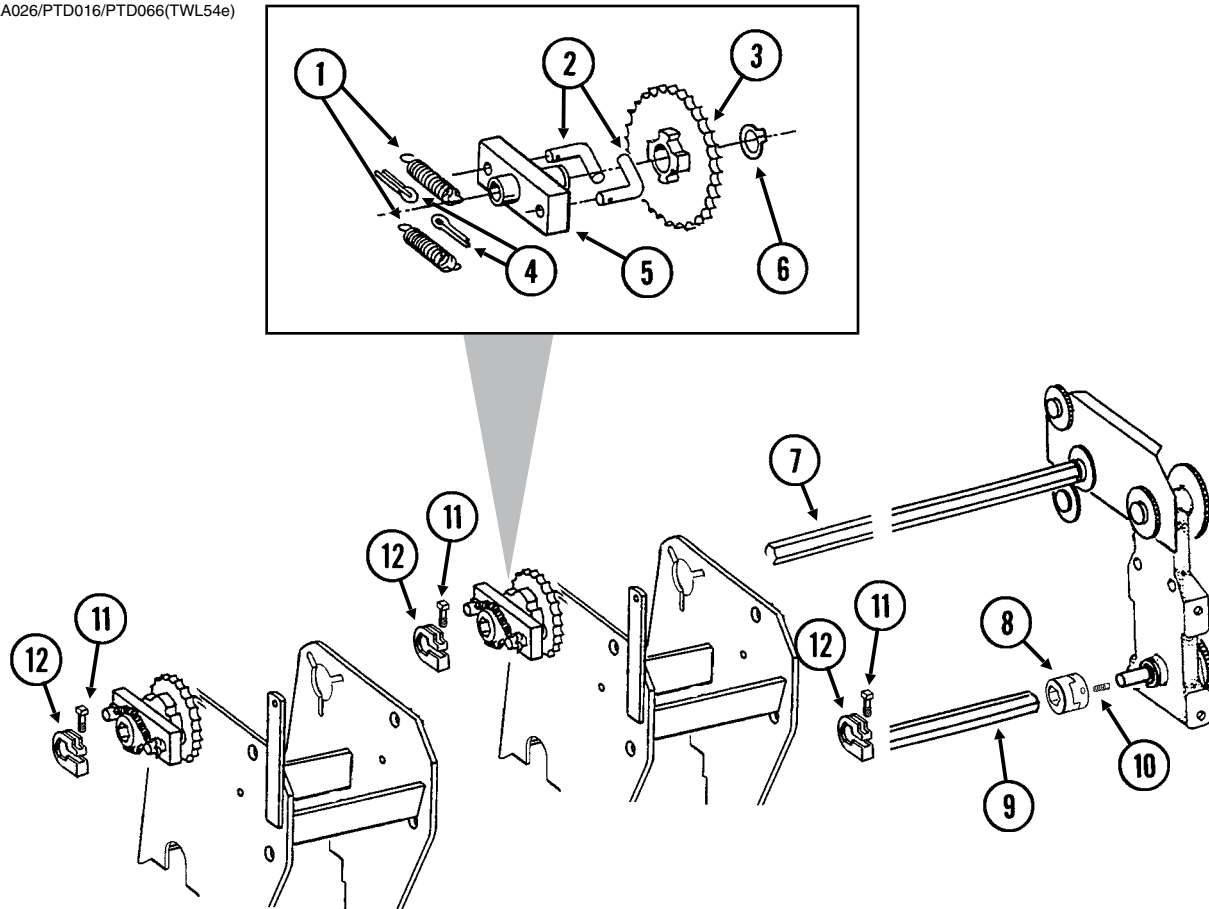


ITEM	PART NO.	QTY. (Per Wheel)	DESCRIPTION
1	---	-	See "Driveline" on page P73
2	GD7426	1	Sprocket, 12 Tooth
3	GD1026	1	Sleeve, 1 ³ / ₁₆ " Long
4	GA5157	1	Idler Arm, L.H.
5	GD5827	1	Cover
6	GD5857	1	Spring
7	G10303 G10620	3 3	Carriage Bolt, 5/16"-18 x 1" Serrated Flange Nut, 5/16"-18
8	G3400-01	4	Flangette
9	G2100-03	2	Bearing, 7/8" Hex Bore, Spherical
10	GA8925	1	Mount
11	G10004 G10229 G10370 GD5756	1 1 1 1	Hex Head Cap Screw, 3/8"-16 x 1 ¹ / ₄ " Lock Washer, 3/8" Machine Bushing, 3/8", 22 Gauge Special Nut, 3/8"-16
12	GB0218	2	Bushing, 2 ¹ / ₃₂ " I.D. x 7/8" O.D. x 1 ⁹ / ₃₂ " Long

ITEM	PART NO.	QTY. (Per Wheel)	DESCRIPTION
13	A7369	1	Wheel Arm (Non-Stock Item)(Sub G1K253)
14	G10306	1	Carriage Bolt, 3/8"-16 x 2"
	G11387	-	Flat Washer, 3/8" SAE (As Required)
	G10108	1	Lock Nut, 3/8"-16
15	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
16	G10751	2	Hex Head Cap Screw, 5/8"-18 x 1 3/4"
	G10235	6	Machine Bushing, 7/8", 14 Gauge
	G11391	2	Flat Washer, 5/8" SAE
	G10412	2	Lock Nut, 5/8"-18
17	GA2068	2	Spring W/Plug
18	G10501	2	Hex Jam Nut, 1/2"-13, Grade 2
19	G3310-116	1	Chain, No. 40, 116 Pitch Including Connector Link (Used With 15 And 19 Tooth Sprockets)
	G3310-124	1	Chain, No. 40, 124 Pitch Including Connector Link (Used With 30 Tooth Sprocket)
	GR0912	-	Connector Link, No. 40
20	GA5105	1	Sprocket, 15 Tooth
	GA5107	-	Sprocket, 19 Tooth
	GA5114	-	Sprocket, 30 Tooth
21	G10602	1	Spring Pin, 1/4" x 1 1/2"
22	GD6825-10.375	1	Hex Shaft, 7/8" x 10 3/8" (2 Holes)
23	G10233	6	Machine Bushing, 1 1/2" x 1/32", 10 Gauge
24	GA9846	-	Flanged Bearing, 7/8" Hex Bore
25	G10890	2	Hex Head Adjusting Bolt, 1/2"-13 x 4", Grade 2
26	GA5090	-	Tire And Rim Assembly (Specify Brand*)
	GD5753	1	Tire, 4.10" x 6" (Specify Brand*)
	GD5752	1	Inner Tube
27	GD2558	1	Lynch Pin, 1/4"
28	G10303	-	Carriage Bolt, 5/16"-18 x 1"
	G10232	-	Lock Washer, 5/16"
	G10106	6	Hex Nut, 5/16"-18
A	G1K253	-	Contact Wheel Arm Replacement Kit (Items 13, 18, 21, 22, 24, 25, 27 And 28)

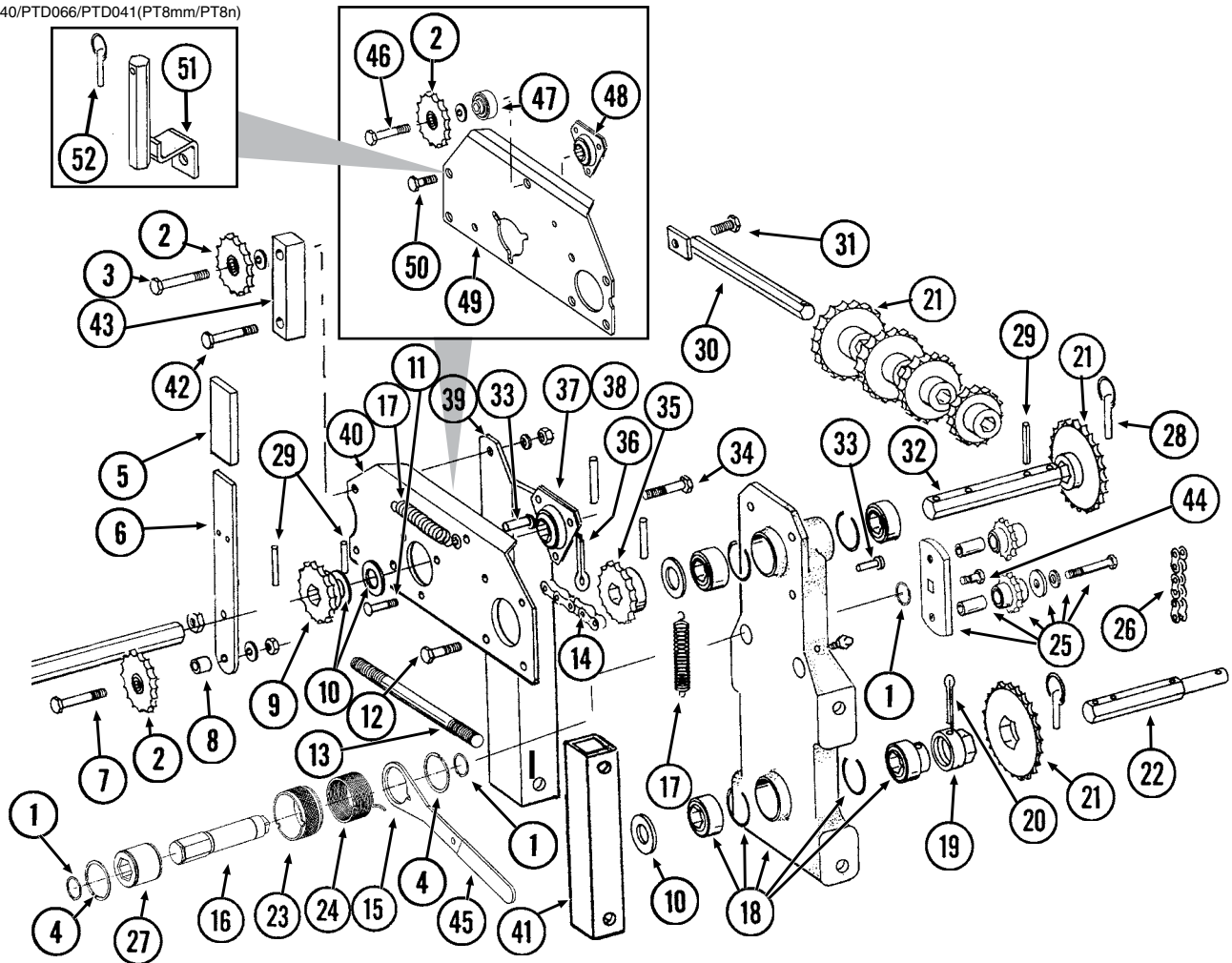
***Specific brand requests will be supplied only as available from current Kinze Repair Parts stock. If a specific brand requested is not in stock, the brand available will be supplied. Different brand tires may have different diameters. Change in tire brand may affect rates. Field checks are recommended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

PTD033/PLA026/PTD016/PTD066(TWL54e)



ITEM	PART NO.	QTY. (Per Planter)	DESCRIPTION
1	GD1256	4	Spring
2	GD1255	4	L-Pin
3	GA5165	2	Sprocket, 30 Tooth
4	G10453	4	Cotter Pin, 3/16" x 1"
5	GA0378	2	Block And Hub Assembly
6	G10430	2	External Retaining Ring, 1 1/4"
7	GD9078	-	Hex Shaft, 7/8" x 58" (4 Holes), 6 Row 30"
	GD9077	-	Hex Shaft, 7/8" x 98" (4 Holes), 8 Row 30"
8	GB0287	2	Coupler
9	GD0914-165	-	Hex Shaft, 7/8" x 165" (No Holes), 6 Row 30"
	GD0914-225	-	Hex Shaft, 7/8" x 225" (No Holes), 8 Row 30"
10	G10131	4	Square Head Set Screw, 5/16"-18 x 3/4"
11	G10130	-	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	-	Flange Nut, 5/16"-18, No Serration
12	GD11045	-	Lock Clamp
A	GA5164	-	Ratchet/Sprocket Assembly (Items 1-6)
B	G1K269	-	Lock Clamp Kit (Items 11 And 12)

PTD040/PTD066/PTD041(PT8mm/PT8n)

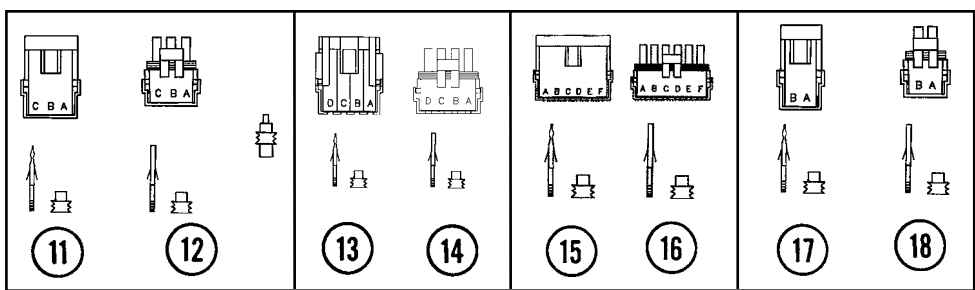
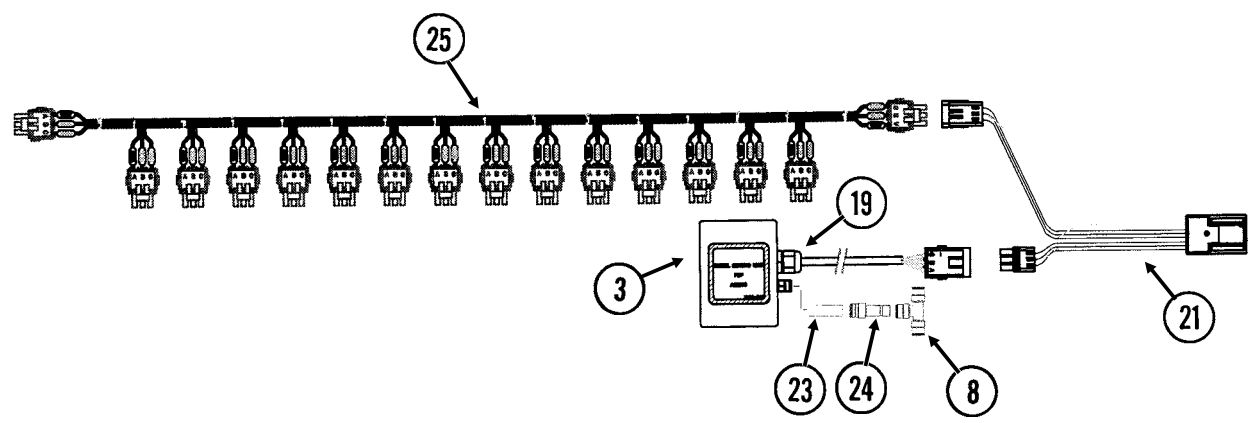
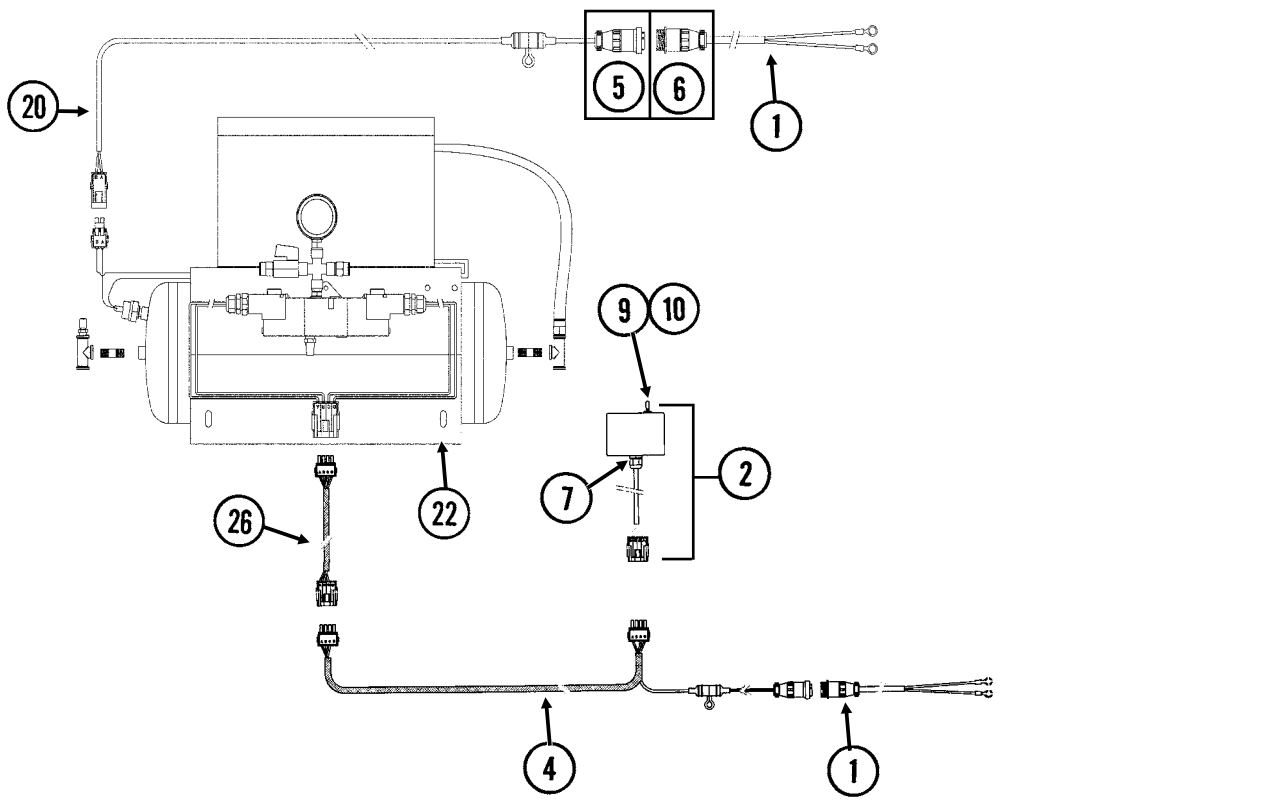


ITEM	PART NO.	QTY.	DESCRIPTION
1	G11075	3	Internal Inverted Snap Ring, 7/8"
2	GA7154	2	Sprocket W/Bearing, 18 Tooth
3	G10033	1	Hex Head Cap Screw, 1/2"-13 x 3 1/2"
	G10128	-	Machine Bushing, 1/2", 14 Gauge (As Required)
	G10111	1	Lock Nut, 1/2"-13
4	G10496	2	External Inverted Snap Ring, 1 1/2"
5	GD5827	1	Cover
6	GD5829	1	Arm
7	G10053	1	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	G10128	-	Machine Bushing, 1/2", 14 Gauge (As Required)
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
8	GD4887-01	1	Sleeve, 1/2" I.D. x 5/8" Long
9	GA5105	1	Sprocket, 15 Tooth
10	G10233	-	Machine Bushing, 1", 10 Gauge
11	G10303	3	Carriage Bolt, 5/16"-18 x 1"
	G10620	3	Serrated Flange Nut, 5/16"-18
12	G10037	3	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	3	Lock Washer, 1/2"
	G10102	3	Hex Nut, 1/2"-13

ITEM	PART NO.	QTY.	DESCRIPTION
13	G10177	2	Hex Head Cap Screw, 5/8"-11 x 9 1/2"
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
14	G3310-92	1	Chain, No. 40, 92 Pitch Including Connector Link
	G3310-100	-	Chain, No. 40, 100 Pitch Including Connector Link, Used With Half Rate (2 To 1) Drive Reduction (Mechanical only)
	GR0912	-	Connector Link, No. 40
15	GD14431	1	Handle
16	GD14427	1	Tightener Shaft, 4 7/8"
17	GD5857	2	Spring
18	GA5629	1	Transmission Plate W/Bearings, Grease Fittings And Retaining Rings
	GA5116	3	Bearing, 7/8" Hex Bore, Cylindrical
	GA5624	1	Special Bearing, 7/8" Hex Bore x 1.6"
	GD6551	4	Ring
	G10641	-	Grease Fitting, 1/8" NPT
19	GD7127	1	Shear Coupler
20	G10462	1	Cotter Pin, 3/16" x 2"
	G10641	-	Grease Fitting, 1/8" NPT
21	GA5106	1	Sprocket, 17 Tooth
	GA5107	1	Sprocket, 19 Tooth
	GA5108	2	Sprocket, 23 Tooth
	GA5109	1	Sprocket, 24 Tooth
	GA5110	1	Sprocket, 25 Tooth
	GA5111	1	Sprocket, 26 Tooth
	GA5112	1	Sprocket, 27 Tooth
	GA5113	1	Sprocket, 28 Tooth
22	GD7822	1	Shaft, 7/8" x 7"
23	GD19343	1	Release Collar, Gold, R.H.
24	GD14413	1	Torsion Spring, L.H. (Used On R.H. Wrap Spring Wrench)
25	GA7336	1	Idler W/Bolt-On Sprockets
	GD7426	-	Sprocket, 12 Tooth
	GD1026	-	Sleeve, 1 3/16" Long
	G10203	-	Washer, 3/8" SAE
	G10229	-	Lock Washer, 3/8"
	G10047	-	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
26	G3310-80	1	Chain, No. 40, 80 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
27	GD14432	1	Sleeve, 1 1/4"
28	GD2558	3	Lynch Pin, 1/4"
29	G10602	5	Spring Pin, 1/4" x 1 1/2"
30	GA5146	1	Sprocket Storage Rod
31	G10017	1	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10527	1	Lock Washer, 1/2" Internal/External
	G10111	1	Lock Nut, 1/2"-13
32	GD5835	1	Shaft, 7/8" x 7"
33	G10870	1	Clevis Pin, 3/8" x 1"
	G10860	1	Retaining Ring, 3/8"
34	G10004	1	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10229	1	Lock Washer, 3/8"
	G10203	-	Washer, 3/8" SAE (As Required)
	GD15538	-	Spacer, 3/8" I.D. x 7/8" O.D., 7 Gauge
	GD5756	1	Special Nut, 3/8"-16

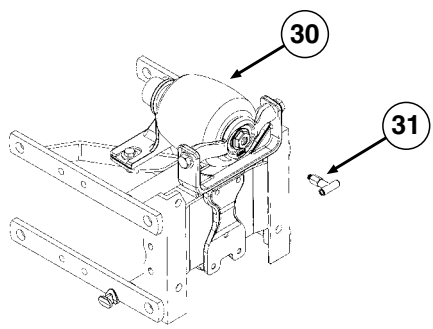
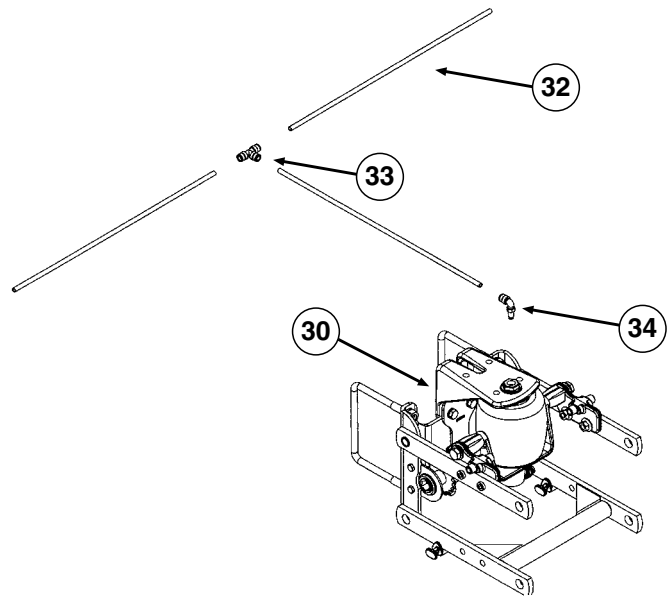
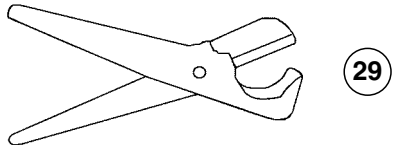
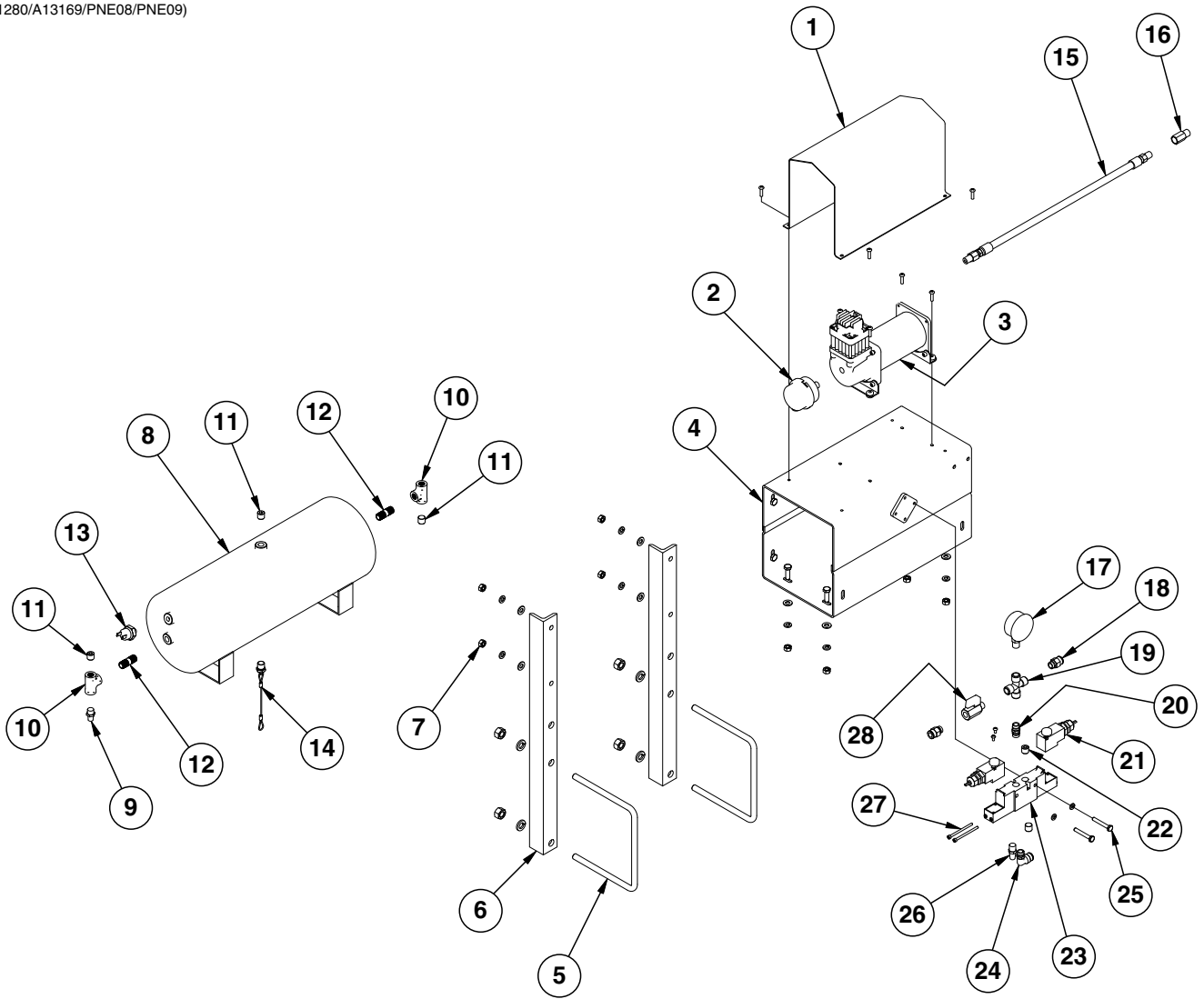
ITEM	PART NO.	QTY.	DESCRIPTION
35	GA5106	1	Sprocket, 17 Tooth, Standard Drive (Mechanical)
	GA5108	-	Sprocket, 23 Tooth, (EdgeVac)
	GA5202	-	Sprocket, 34 Tooth, Half Rate (2 To 1) Drive Reduction (Mechanical only)
36	G10460	1	Cotter Pin, 1/4" x 2"
37	GA7841	1	Bearing, 7/8" Hex Bore, Spherical
38	G3400-01	2	Flangette
39	GD5830	1	Angle Support, R.H.
40	GD5824	1	Plate, R.H.
41	GD9047	1	Spacer
42	G10053	1	Hex Head Cap Screw, 1/2"-13 x 2 1/2"
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
43	GD12571	1	Spacer, 1" x 4"
44	G11100	1	Hex Socket Button Head Cap Screw, 1/4"-20 x 1/2", Grade 8
	G10227	1	Lock Washer, 1/4"
	G10209	1	Washer, 1/4" USS
45	G11078	1	Vinyl Cap
46	G10038	1	Hex Head Cap Screw, 1/2"-13 x 3"
	G10128	-	Machine Bushing, 1/2", 14 Gauge (As Required)
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
47	GB0259	-	Spacer, 1"
48	GA7841	-	Bearing, 7/8" Hex Bore
49	GD16302	-	Reverser Plate
50	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
51	GA12178	1	Sprocket Storage Rod (EdgeVac) See Item No. 21 for Sprockets
52	GD2558	-	Lynch Pin, 1/4"
A	G1K378	1	Wrap Spring Wrench Replacement Kit, Gold Collar, R.H. (Items 1, 4, 15, 16, 23, 24, 27, 44 And 45)

(PNE01/MTR27a/ELC27b/MTR45/MTR27t)



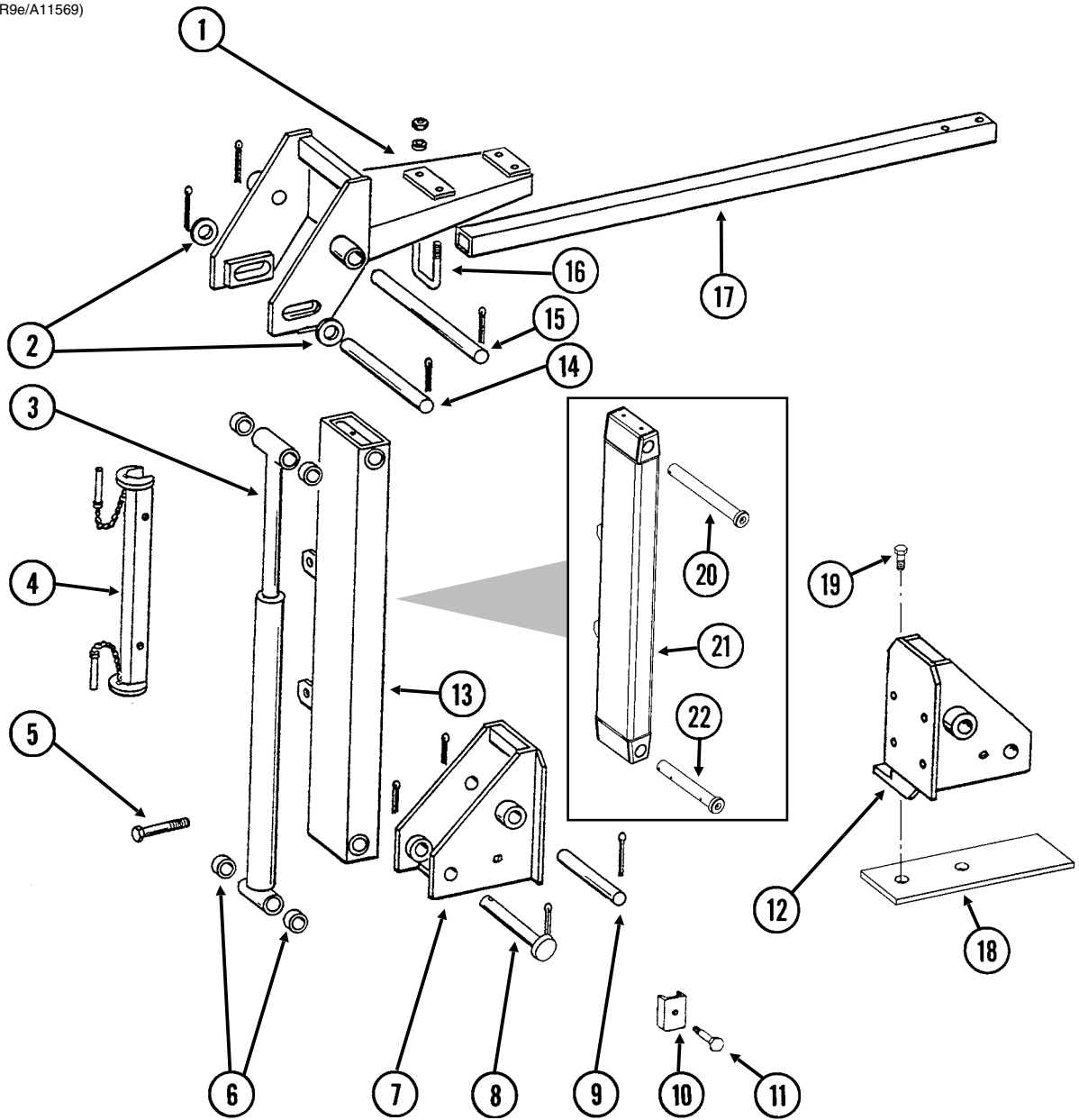
ITEM	PART NO.	QTY.	DESCRIPTION
1	GA7856	2	Power Lead Adapter
2	GA12644	1	Control Console Assembly
3	GA12646	1	Sending Unit
4	GA12645	1	Wiring Harness W/Fuse Holder And Fuse, 206"
	GD14258	-	Fuse Holder
	GD14660	-	Fuse, 2 Amp Delay Action
5	G1K268	-	Console Cable Connector Kit, Includes: (1) 3-Pin Connector, (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	GD18010	1	Tee, 3/8" Tube Union
9	GR1363	1	Hex Face Nut, 1 1/32"-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	GA12682	1	Wiring Harness W/Fuse Holder And Fuse, 40'
	GD14258	-	Fuse Holder
	GD18275	-	Fuse, 20 Amp
21	GA12812	1	Hall Effect Adapter
22	---	-	See "Pneumatic Down Pressure Air Compressor, Dual Solenoid Assembly, Tubing, and Fittings" on page P79
23	GD17151-06	1	Nylon Tubing, 1/4" O. D. x 1 1/2"
24	GD18796	1	Reducer, 3/8" To 1/4"
25	---	-	See "KPM I Electronic Seed Monitor" on page P97 See "KPM II Stack-Mode Electronic Seed Monitor" on page P99 See "KPM III Electronic Seed Monitor" on page P101
26	GA12858	1	Wiring Harness, 60'

(IP1280/A13169/PNE08/PNE09)



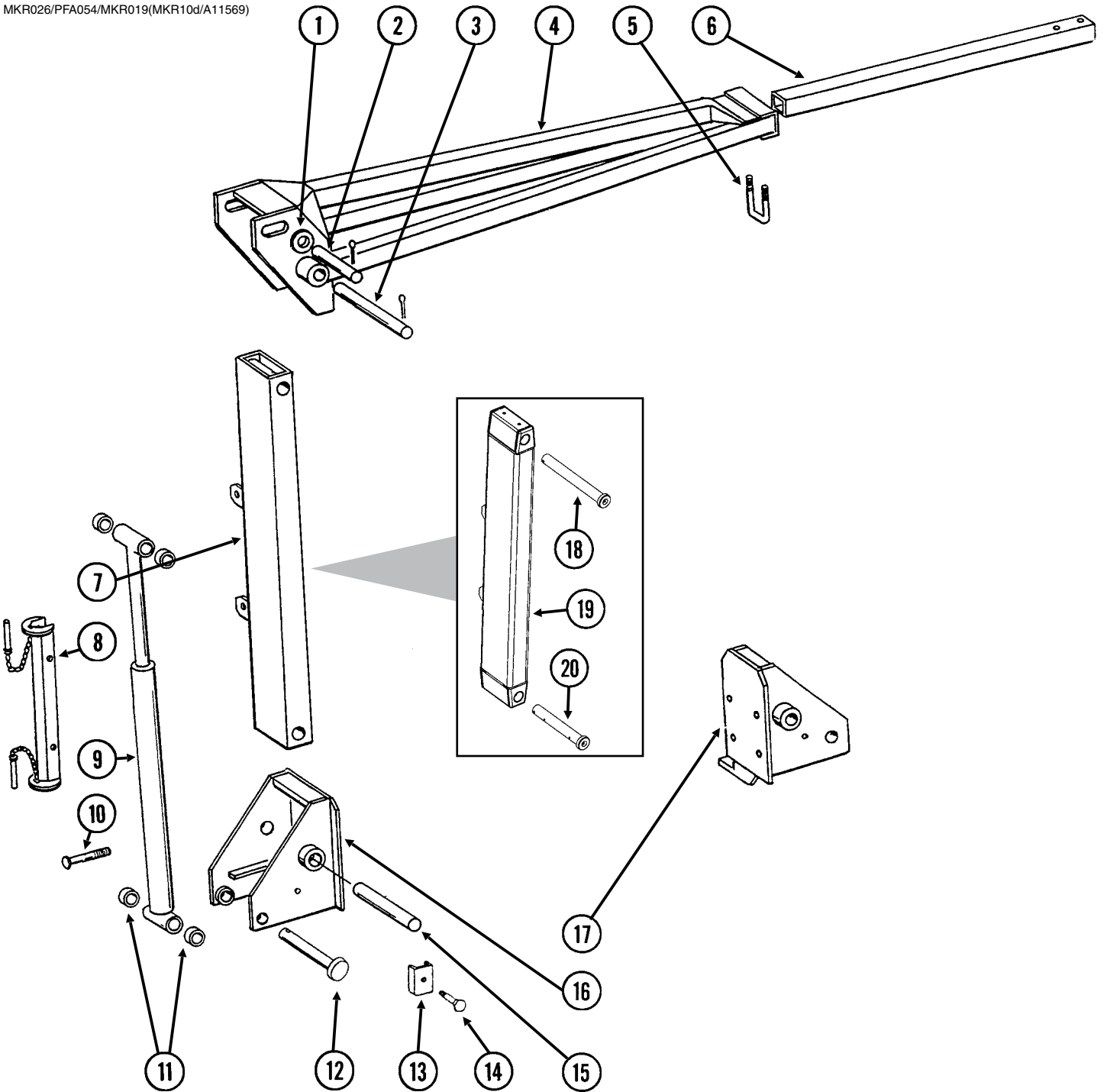
ITEM	PART NO.	QTY.	DESCRIPTION
1	GD18112	1	Cover
	G11066	4	Phillips Pan Head Machine Screw, No. 10-24 x ¾", Stainless Steel
	G10992	4	Serrated Flange Nut, No. 10-24
2	GA14127	1	Filter Assembly
	GR1943	1	Filter
3	GA12102	1	Air Compressor
	G11066	4	Phillips Pan Head Machine Screw, No. 10-24 x ¾", Stainless Steel
	G10992	4	Serrated Flange Nut, No. 10-24
4	GA12358	1	Mount
	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
	G10232	4	Lock Washer, 5/16"
	G11386	4	Flat Washer, 5/16" SAE
	G10106	4	Hex Nut, 5/16"-18
5	GD11721	2	U-Bolt, 5" x 7" x ½"-13
	G10228	4	Lock Washer, ½"
	G10102	4	Hex Nut, ½"-13
6	GD18119	2	Compressor Mount
7	G10106	4	Hex Nut, 5/16"-18
	G10232	4	Lock Washer, 5/16"
	G11386	4	Flat Washer, 5/16" SAE
	G10019	4	Hex Head Cap Screw, 5/16"-18 x 1"
8	GA11988	1	Tank, 3 Gallon
9	GA13512	1	Valve Stem, ¼" NPT
10	GD19237	2	Tee, ¼" NPT
11	GD17156	3	Plug, ¼" NPT
12	GD19238	2	Nipple, ¼" NPT
13	GR1778	1	Pressure Switch
14	GA11991	1	Drain, ¼" NPT
15	GR1951	1	Leader Hose without Check Valve
16	GR1921	1	Check Valve
17	GA12104	1	Pressure Gauge, ¼" NPT
18	GD17141	2	Connector, ¼" Male
19	GD18078	1	Female Cross, ¼" NPT
20	GD17154	1	Connector, ¼" Male
21	GA11994	2	Solenoid
	G11311	4	Slotted Pan Head Machine Screw, M4-.07 x 8mm
22	GD17156	2	Plug, ¼" NPT
23	GA11993	1	Block
24	GD17143	1	Swivel Elbow, ¼" NPT x ⅜"
25	G10040	2	Hex Head Cap Screw, ¼"-20 x 1¾"
	G10227	2	Lock Washer, ¼"
26	GA11997	1	Breather, ¼" NPT
27	GR1952	4	Socket Head Cap Screw, #8-32 x 2"
	GR1953	4	O-Ring
	G10256	4	Lock Washer, No. 8
28	GA11992	1	Shutoff Valve, ¼" NPT
29	GA13169	1	Tube Cutter W/Blade
	GR1843	-	Blade
30	---	-	See "Parallel Arms, Mounting Support Plate, and Pneumatic Down Pressure Package Option" on page P3
31	GD18274	-	Tee, ⅜" x ⅜" NPT Extended, Push Row Unit
32	GD17150-01	-	Nylon Tubing, ⅜" O.D. x 32', 6 Row Pull Row Units
	GD17150-02	-	Nylon Tubing, ⅜" O.D. x 44', 8 Row Pull Row Units
	GD17150-11	-	Nylon Tubing, ⅜" O.D. x 28', 5 Row Push Row Units
	GD17150-10	-	Nylon Tubing, ⅜" O.D. x 40', 7 Row Push Row Units
	GD17150-12	-	Nylon Tubing, ⅜" O.D. x 5', Even-Row Push Row Unit
33	GD18010	-	Tee, ⅜" Tube Union
34	GD18011	-	Elbow, ⅜" x ⅜" NPT Extended
A	GA12626	1	Air Compressor Assembly (Items 1-4, 8-14)
B	GA11995	1	Dual Solenoid Assembly (Items 17-19, 21-24, and 26-28)
C	GR1783	-	Valve Seal Kit

MKR025/PFA054(MKR9e/A11569)



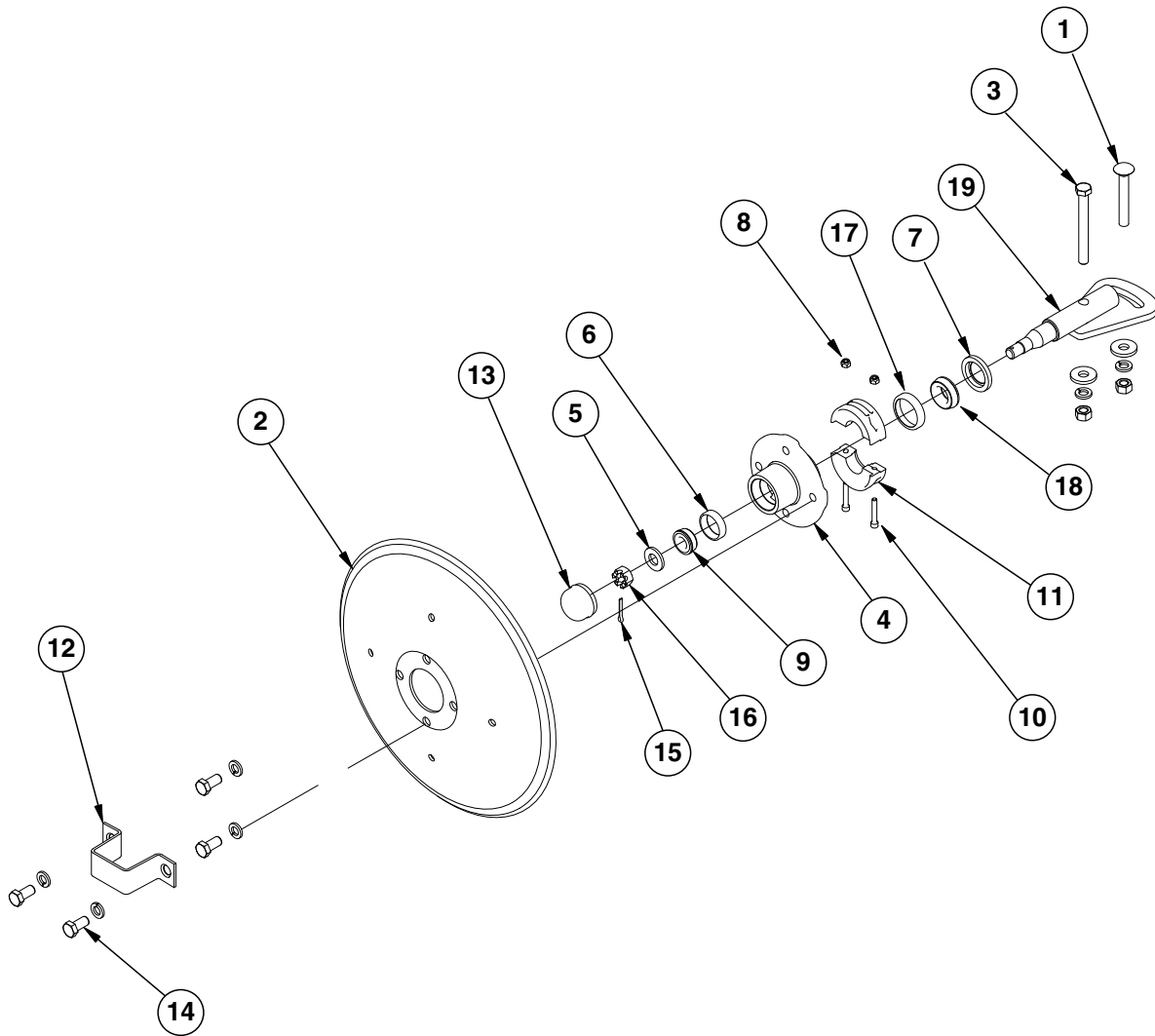
ITEM	PART NO.	QTY. (Per Marker)	DESCRIPTION
1	GA6442	1	Arm, Second Stage, 20"
2	G11396	2	Flat Washer, 1¼" SAE
3	---	-	See "Row Marker Cylinder" on page P89
4	GA5526	1	Safety Lockup W/Detent Pins (Sub GA8170)
	G10536	-	Detent Pin, ½" x 2½" Grip
5	G10008	4	Hex Head Cap Screw, ⅝"-11 x 2"
	G10230	4	Lock Washer, ⅝"
	G11391	4	Flat Washer, ⅝" SAE
	G10104	4	Hex Nut, ⅝"-11
6	GD0752-41	-	Sleeve, 1" (If Applicable)
7	GA6859	1	Mount, L.H.
8	GD15386	1	Pin, 1¼" x 7⅝"
	G10460	1	Cotter Pin, ¼" x 2"
9	GD0652	1	Pin, 1¼" x 9½"
	G10460	2	Cotter Pin, ¼" x 2"
10	GD5875	1	Hose Clamp, ⅞" x 2½" x 2"
11	G10003	1	Hex Head Cap Screw, ⅜"-16 x 1½"
	G10108	1	Lock Nut, ⅜"-16
12	GA6858	-	Mount, R.H.
13	GA6585	1	Arm W/Grease Fittings, First Stage, L.H. (Shown)
	GA6586	-	Arm W/Grease Fittings, First Stage, R.H.
	G10641	-	Grease Fitting, ⅛" NPT
14	GD2161	1	Pin, 1¼" x 8¼"
	G10159	1	Washer, 1⅞"
	G10460	2	Cotter Pin, ¼" x 2"
15	GD3214	1	Pin, 1¼" x 12¼"
	G10460	2	Cotter Pin, ¼" x 2"
16	GD2721	2	U-Bolt, 2" x 2" x ½"-13
	G10228	4	Lock Washer, ½"
	G10102	4	Hex Nut, ½"-13
17	GD0453-02	1	Extension Tube, 40"
	GD0453-06	-	Extension Tube, 30" (Used With Interplant Package Option)
	GD0453-05	-	Extension Tube, 55" (L.H. Side Only With Even-Row Push Row Unit)
18	GD13457	1	Extension Plate (If Applicable)
19	G10005	2	Hex Head Cap Screw, ⅝"-11 x 1¾"
	G10230	2	Lock Washer, ⅝"
	G10104	2	Hex Nut, ⅝"-11
20	GD21142	-	Marker Pin, 1¼" x 1⅜"
	G10159	-	Washer, 1⅞"
	G11400	-	Retaining Ring, 1¼"
	G10640	-	Grease Fitting, ¼"-28
	G10460	-	Cotter Pin, ¼" x 2"
21	GA13762	1	Arm, First Stage
22	GD21143	-	Marker Pin, 1¼" x 9½"
	G10159	-	Washer, 1⅞"
	G11400	-	Retaining Ring, 1¼"
	G10640	-	Grease Fitting, ¼"-28
	G10463	-	Cotter Pin, ¼" x 1½"

MKR026/PFA054/MKR019(MKR10d/A11569)



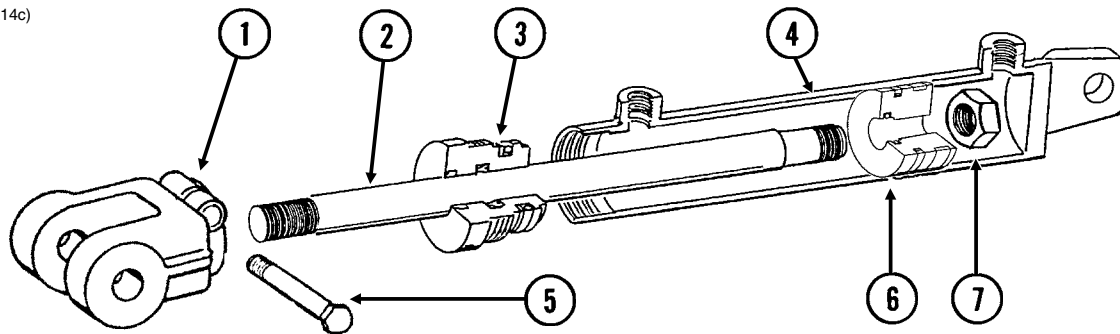
ITEM	PART NO.	QTY. (Per Marker)	DESCRIPTION
1	G11396	2	Flat Washer, 1¼" SAE
2	GD2161	1	Pin, 1¼" x 8¼"
	G10159	-	Washer, 1⅞"
	G10460	2	Cotter Pin, ¼" x 2"
3	GD3214	1	Pin, 1¼" x 12¼"
	G10460	2	Cotter Pin, ¼" x 2"
4	GA5188	1	Arm, Second Stage
5	GD2721	1	U-Bolt, 2" x 2" x ½"-13
	G10228	2	Lock Washer, ½"
	G10102	2	Hex Nut, ½"-13
6	GD0453-03	1	Extension Tube, 50"
	GD0453-08	-	Extension Tube, 65" (L.H. Side Only With Even-Row Push Row Unit)
7	GA6585	1	Arm W/Grease Fittings, First Stage, L.H. (Shown)
	GA6586	-	Arm W/Grease Fittings, First Stage, R.H.
	G10641	-	Grease Fitting, ⅙" NPT
8	GA5526	1	Safety Lockup W/Detent Pins (Sub GA8170)
	G10536	-	Detent Pin, ½" x 2½" Grip
9	---	-	See "Row Marker Cylinder" on page P89
10	G10008	4	Hex Head Cap Screw, ⅝"-11 x 2"
	G10230	4	Lock Washer, ⅝"
	G11391	4	Flat Washer, ⅝" SAE
	G10104	4	Hex Nut, ⅝"-11
11	GD0752-41	-	Sleeve, 1" (If Applicable)
12	GD15386	1	Pin, 1¼" x 7⅝"
	G10460	1	Cotter Pin, ¼" x 2"
13	GD5875	1	Hose Clamp, ⅑/16" x 2½" x 2"
14	G10003	1	Hex Head Cap Screw, ⅜"-16 x 1½"
	G10229	1	Lock Washer, ⅜"
	G10101	1	Hex Nut, ⅜"-16
15	GD0652	1	Pin, 1¼" x 9½"
	G10460	2	Cotter Pin, ¼" x 2"
16	GA6859	1	Mount, L.H.
17	GA6858	-	Mount, R.H.
18	GD21142	-	Marker Pin, 1¼" x 1⅜"
	G10159	-	Washer, 1⅞"
	G11400	-	Retaining Ring, 1¼"
	G10640	-	Grease Fitting, ¼"-28
	G10460	-	Cotter Pin, ¼" x 2"
19	GA13762	1	Arm, First Stage
20	GD21143	-	Pin W/Grease Fitting, 1¼" x 9½"
	G10159	-	Washer, 1⅞"
	G11400	-	Retaining Ring, 1¼"
	G10640	-	Grease Fitting, ¼"-28
	G10463	-	Cotter Pin, ¼" x 1½"

IP1035aa



ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1	G10844	1	Carriage Bolt, 1/2"-13 x 3 1/2"
	G10168	2	Machine Bushing, 1/2", 7 Gauge
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
2	GD0746	1	Disc Blade, Solid, 16" (Shown)
	GD10283	-	Disc Blade, Notched, 16" (Optional)
3	G10045	1	Hex Head Cap Screw, 1/2"-13 x 4 1/2"
	G10168	2	Machine Bushing, 1/2", 7 Gauge
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
4	GA0167	1	Hub W/Cups, 4 Bolt (Includes Items 6 and 17)
5	G11391	1	Flat Washer, 5/8" SAE
6	GR0151	1	Outer Cup
7	GD21540	1	Grease Seal
8	G10110	2	Lock Nut, 1/4"-20, Grade B
9	GA0257	1	Bearing
10	G11418	2	Hex Socket Head Cap Screw, 1/4" x 1 1/2"
11	GB0554	2	Hub Shield
12	GD2597	1	Retainer
13	GD0840	1	Dust Cap
14	G10722	4	Hex Head Cap Screw, 1/2"-20 x 1"
	G10228	4	Lock Washer, 1/2"
15	G10544	1	Cotter Pin, 5/32" x 1"
16	G10725	1	Slotted Hex Nut, 5/8"-18
17	GR0150	1	Inner Cup
18	GA0245	1	Bearing
19	GA15151	1	Spindle
A	GA13719	-	Hub And Spindle Assembly, (Items 11-19)

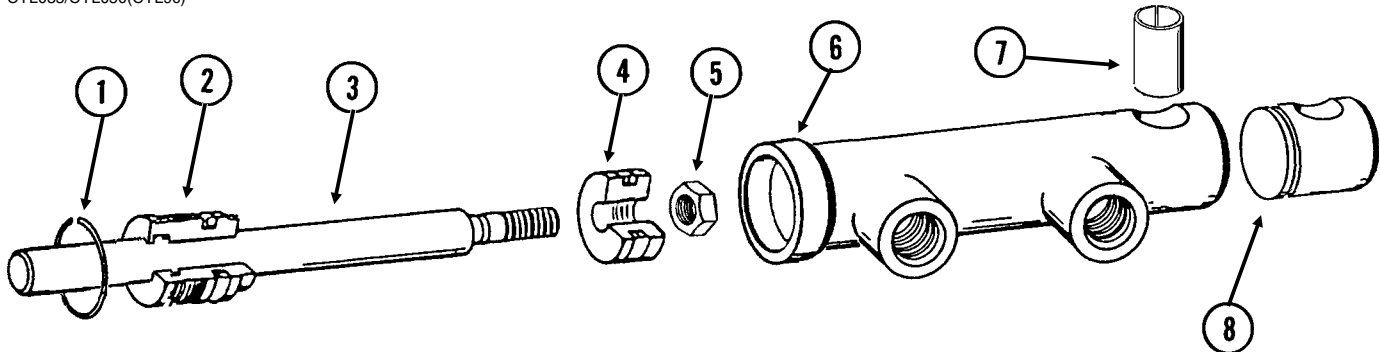
CYL032(CYL14c)



ITEM	PART NO.	QTY. (Per Cylinder)	DESCRIPTION
1	GD11950	1	Clevis
2	GD12501	1	Rod
3	GD11999	1	Gland
4	A6524	1	Barrel (Non-Stock Item)
5	G10939	1	Hex Head Cap Screw, 3/8"-16 x 2 1/4"
	G10108	1	Lock Nut, 3/8"-16
6	GD12502	1	Piston
7	G10958	1	Lock Nut, 1"-14
A	GA8911	-	Cylinder Complete, 3" x 16" <i>(Part Number Stamped On Barrel)</i>
B	GR1526	-	Seal Kit, Includes: (1) Wear Ring, (1) T-Seal, (2) O-Rings, (1) BU Ring, (1) U-Cup, (1) Wiper

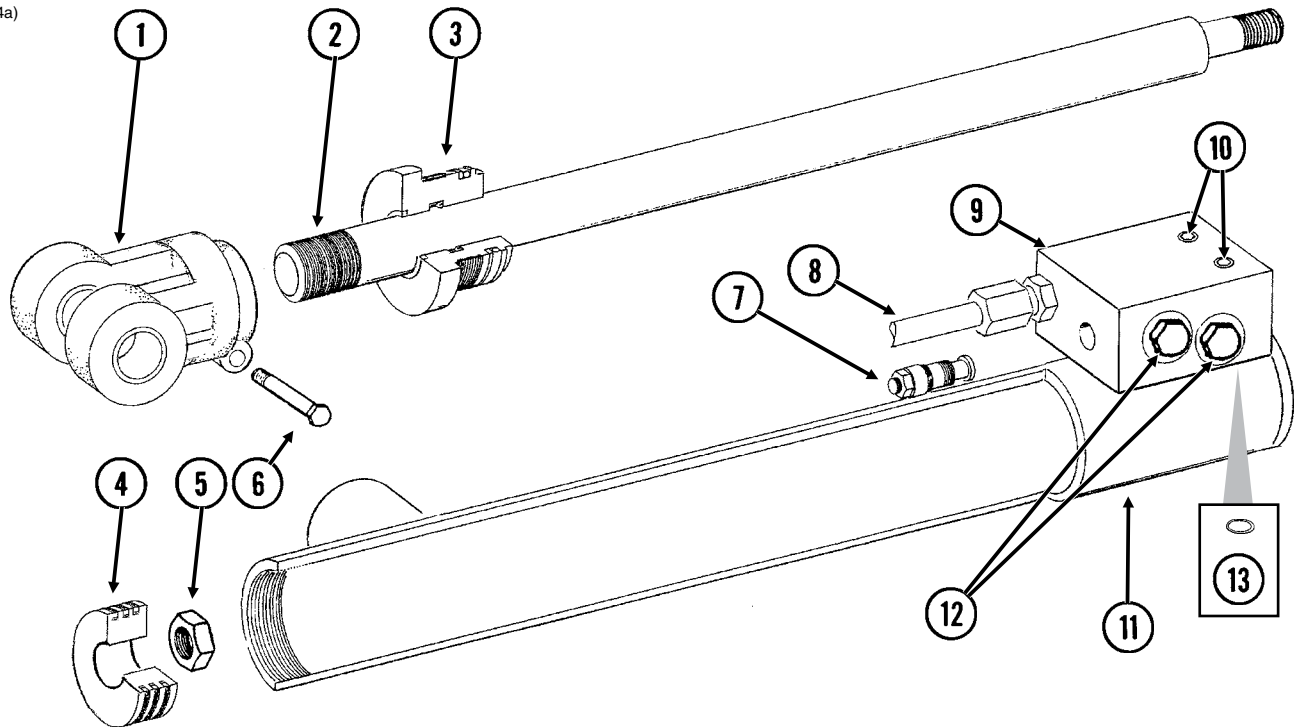
Transport Latch Cylinder, All Sizes

CYL035/CYL050(CYL9c)

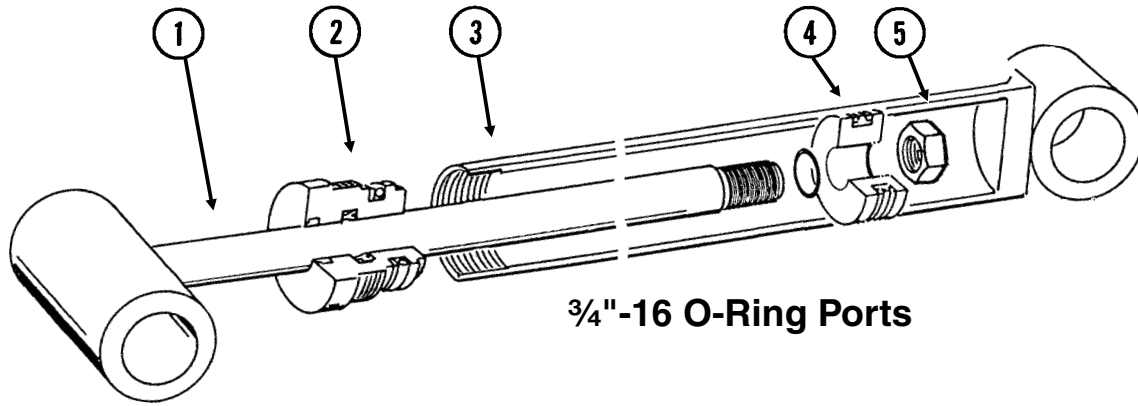


ITEM	PART NO.	QTY.	DESCRIPTION
1	G10770	1	Internal Retaining Ring, 1 1/16"
2	GD13170	1	Gland
3	GD13425	1	Rod
4	GD13172	1	Piston
5	G11016	1	Lock Nut, 1/2"-20
6	D13426	1	Barrel (Non-Stock Item)
7	GD13400	1	Tension Bushing, 1" x 2" Long
8	GD13173	1	End Cap
A	GA9559	-	Cylinder Complete, 1 1/2" x 2 1/2" <i>(Part Number Stamped On Barrel)</i>
B	GR1598	-	Seal Kit, Includes: (3) O-Rings, (2) BU Rings, (1) Rod Wiper, (1) T-Seal, (1) Bronze Bushing, (1) Seal, (1) U-Cup

(CYL54a)



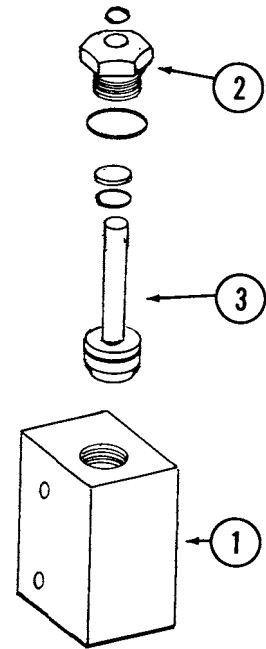
ITEM	PART NO.	QTY. (Per Cylinder)	DESCRIPTION
1	GD11950	1	Clevis
2	GD11957	1	Rod
3	GD12518	1	Gland
4	GD11253	1	Piston
5	G10958	1	Lock Nut, 1"-14
6	G10939	1	Hex Head Cap Screw, 3/8"-16 x 2 1/4"
	G10108	1	Lock Nut, 3/8"-16
7	GA8882	1	Counter Balance Valve
	GR1517	-	Seal Kit For Counter Balance Valve, Includes: (3) O-Rings, (3) BU Rings
8	GA8888	1	Steel Hydraulic Line, 43 1/16"
9	GD11579	1	Block
10	G10932	2	Hex Socket Head Cap Screw, 5/16"-18 x 2", Grade 8
11	GA8884	1	Barrel
12	G6408-08	2	Plug W/O-Ring, 3/4"-16 O-Ring
	GR1037	-	O-Ring
13	GD12239	1	O-Ring, No. 016
A	GA8885	-	Cylinder Complete, 3" x 48" (Part Number Stamped On Barrel)
B	GR1520	-	Seal Kit (For Cylinder And Counter Balance Valve), Includes: (1) Wiper, (1) U-Cup, (6) O-Rings, (4) BU Rings, (1) Seal, (1) Seal Expander, (2) Cast Iron Rings



ITEM	PART NO.	QTY. (Per Cylinder)	DESCRIPTION
1	GA9440	1	Rod Assembly
2	GD12510	1	Gland
3	A9442	1	Barrel (Non-Stock Item)
4	GD12511	1	Piston
5	G10967	1	Lock Nut, 3/4"-16
A	GA9443	-	Cylinder Complete, 2" x 20 ¹ / ₁₆ " (<i>Part Number Stamped On Barrel</i>)
B	GR1529	-	Seal Kit, Includes: (1) T-Seal, (2) O-Rings, (1) BU Ring, (1) U-Cup, (1) Wiper

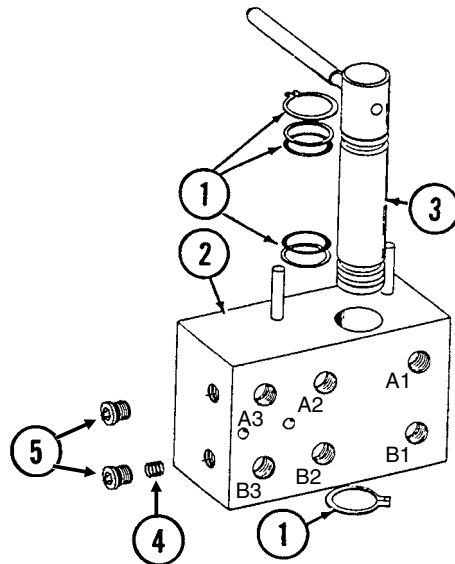
VVB027rev(TWL55)

ITEM	PART NO.	QTY.	DESCRIPTION
1	---	1	Block (Non-Stock Item)
2	GR1281	1	Adapter Plug
3	GR1282	1	Piston Rod And Poppet Assembly
A	GA6884	-	Stroke Limiter Valve Complete
B	GR1289	-	Seal Kit, Includes: (2) O-Rings, (1) BU Ring, (1) Seal



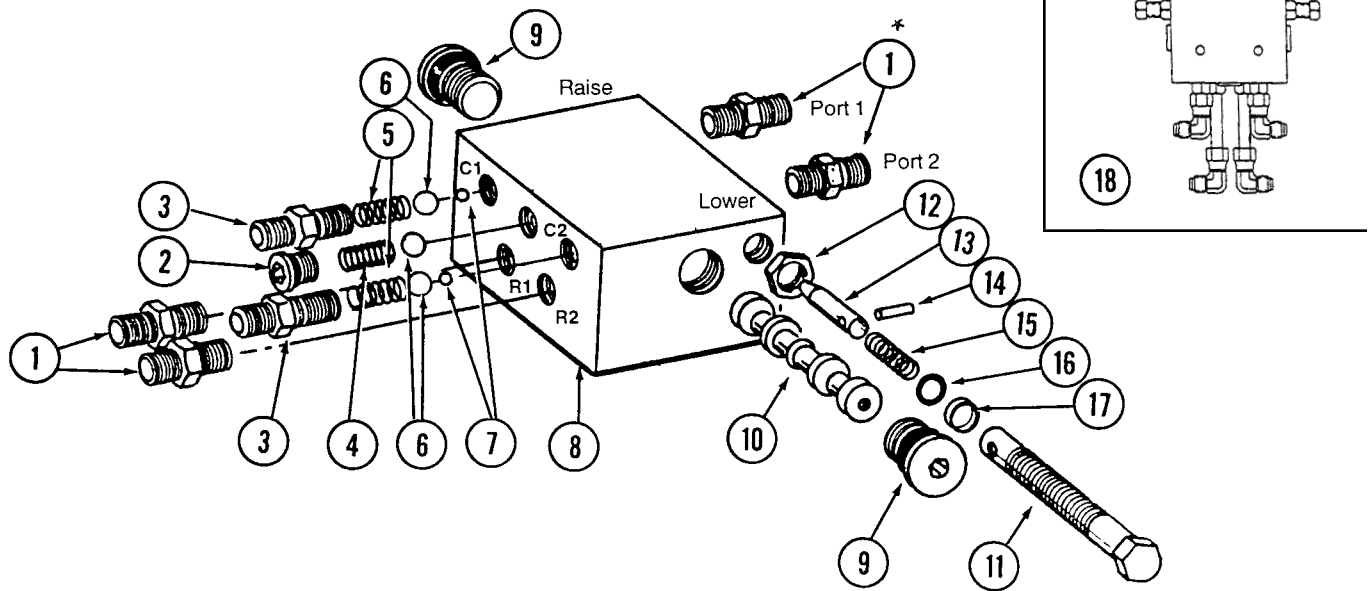
Selector Valve

VVB028(EF8a)



ITEM	PART NO.	QTY.	DESCRIPTION
1	GR1096	1	Seal Kit, Includes: (2) Retaining Rings, (2) O-Rings, (2) BU Rings
2	---	1	Block (Non-Stock Item)
3	GR1177	1	Spool W/Handle
4	GR1178	1	Restrictor
5	G6408-H06-O	2	Hex Socket Plug W/O-Ring
A	GA6438	-	Valve Assembly

VVB025(PT9a/TWL56)

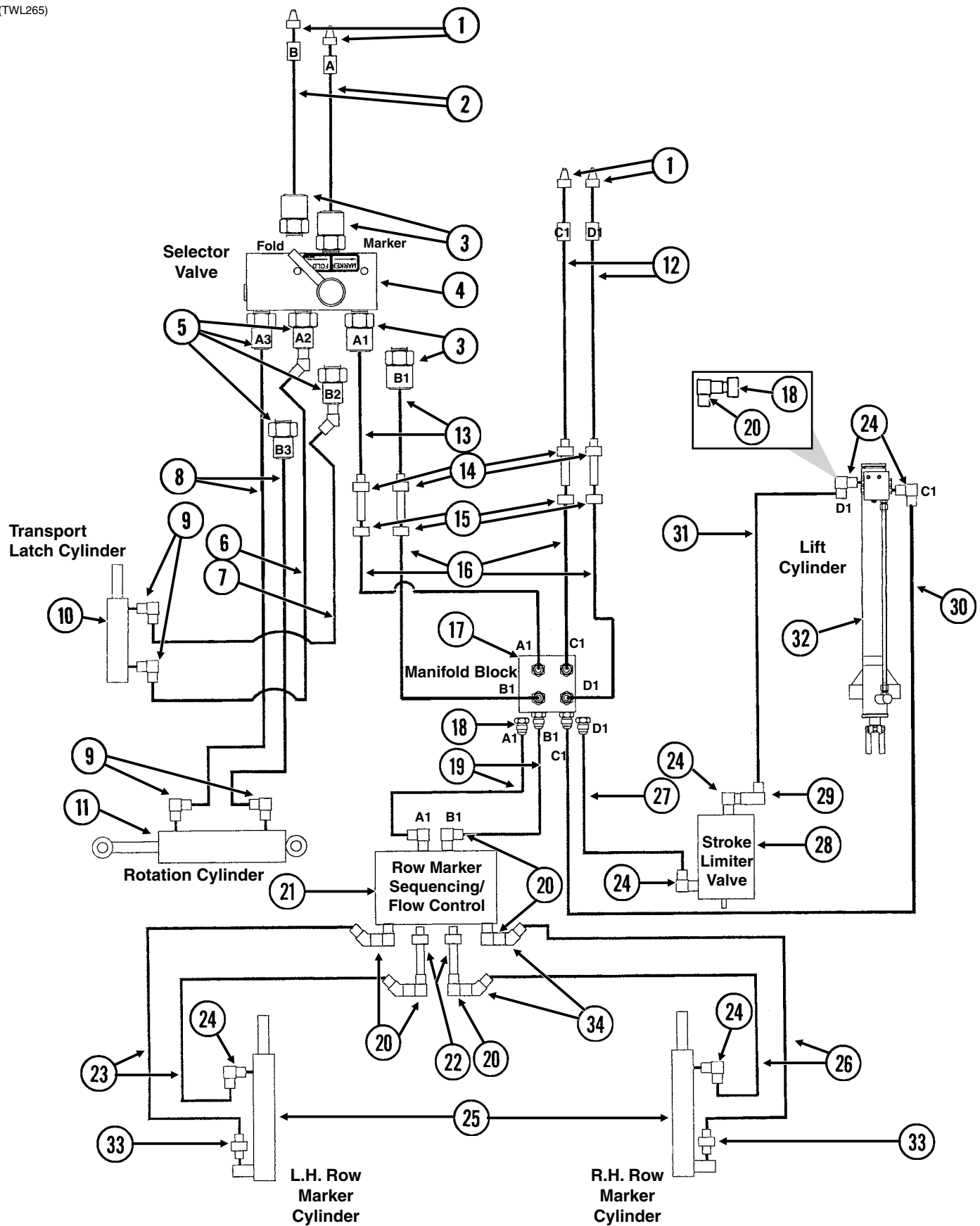


ITEM	PART NO.	QTY.	DESCRIPTION
1	*G6400-06 GR1045	4 -	Connector W/O-Ring, 1/16"-18 Male JIC To O-Ring O-Ring
2	GR1034 GR1035	2 -	Hex Socket Plug W/O-Ring O-Ring
3	GR1032 GR1045	2 -	Port Adapter W/O-Ring O-Ring
4	GR1033	1	Detent Spring
5	GR1036	2	Spring
6	GR1044	3	7/16" Check Ball
7	GR1043	2	1/4" Steel Ball
8	---	1	Valve Body (Non-Stock Item)
9	GR1047 GR1037	2 -	Hex Socket Plug W/O-Ring O-Ring
10	---	-	Spool (Non-Stock Item)
11	GR1042	2	Adjustment Screw
12	GR1048	2	Hex Jam Nut, 1/2"-20
13	GR1038	2	Needle
14	GR1039	2	Spring Pin
15	GR1046	2	Compression Spring
16	GR1040	2	O-Ring
17	GR1041	2	Teflon BU Ring
18	---	-	See "Planter Hydraulic System" on page P93
A	GA5552	-	Valve Assembly Complete (Items 1-17)
B	GA5572	-	Flow Control Portion Only (Items 11-17)

*Not used.

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(TWL265)



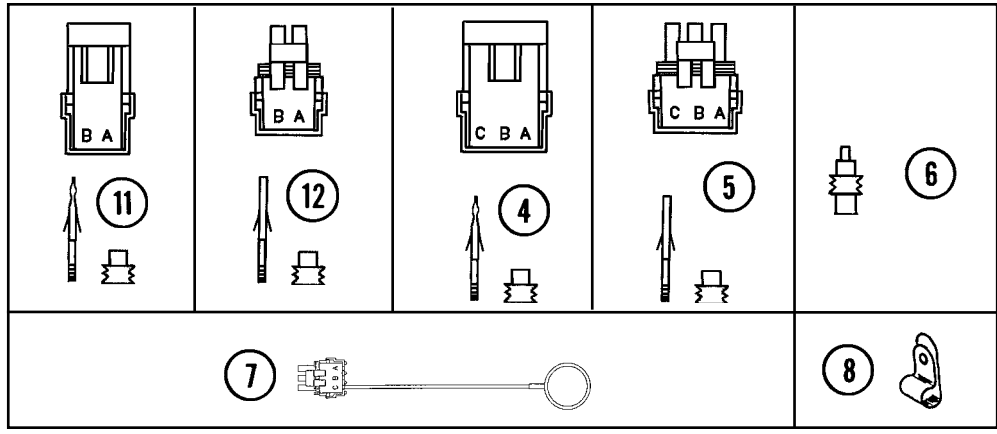
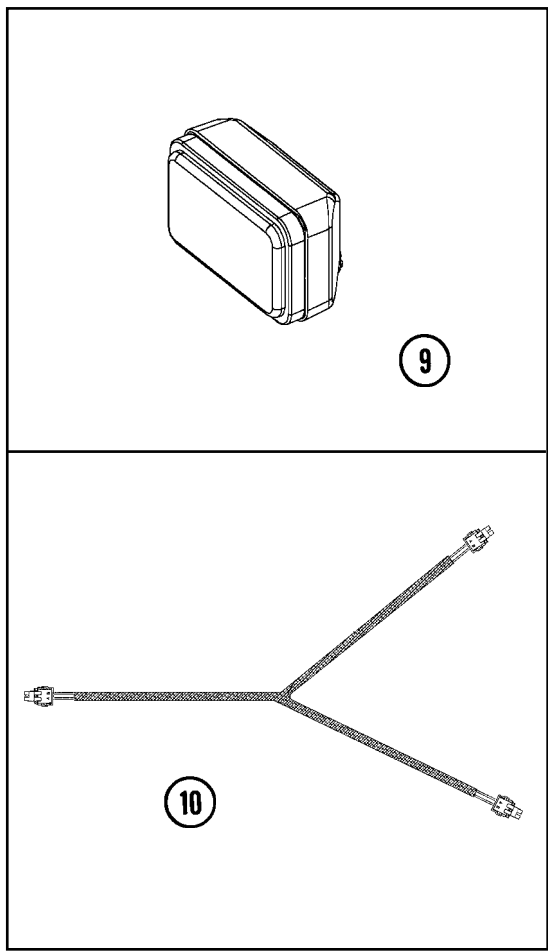
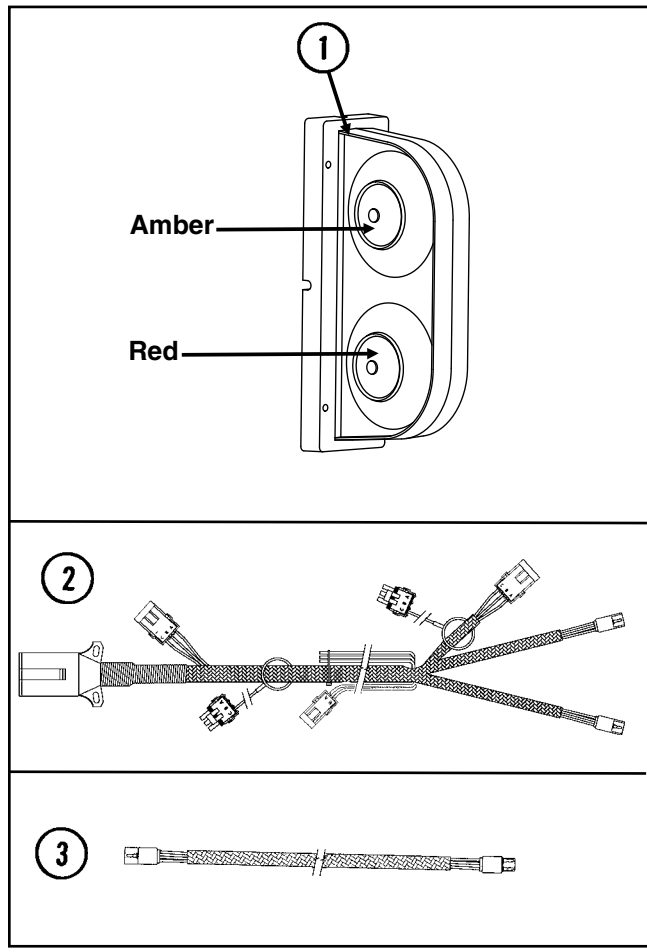
ITEM	PART NO.	QTY.	DESCRIPTION
1	GD4086	4	ISO Coupler
2	*A3210	2	Hose Assembly, 3/8" x 88"
3	G6400-08-06 GR1045	4 -	Connector W/O-Ring, 3/4"-16 Male JIC To 9/16"-18 O-Ring O-Ring
4	---	-	See "Selector Valve" on page P90
5	G6400-06 GR1045	4 -	Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring O-Ring
6	*A1153 *A1194	1 -	Hose Assembly, 1/4" x 56", 6 Row 30" Hose Assembly, 1/4" x 30", 8 Row 30"
7	*A1141 *A1195	1 -	Hose Assembly, 1/4" x 62", 6 Row 30" Hose Assembly, 1/4" x 34", 8 Row 30"
8	*A1109	2	Hose Assembly, 1/4" x 145"
9	G6801-06-08 GR1037	4 -	Elbow W/O-Ring, 90°, 9/16"-18 Male JIC To 3/4"-16 O-Ring O-Ring
10	---	-	See "Transport Latch Cylinder, All Sizes" on page P87
11	---	-	See "Rotation Cylinder" on page P87
12	*A3183	2	Hose Assembly, 3/8" x 246"
13	*A1026	2	Hose Assembly, 3/8" x 152"
14	G2700-08	4	Bulkhead Tube Union, 3/4"-16 Male JIC
15	G306-08	4	Lock Nut, 3/4"-16
16	*A1021	4	Hose Assembly, 3/8" x 56"
17	---	-	See "Frame Assembly" on page P65
18	G6400-08 GR1037	8 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring O-Ring
19	*A1002	2	Hose Assembly, 3/8" x 20"
20	G6500-08-06	6	Swivel Elbow, 90°, 3/4"-16 Male JIC To 9/16"-18 Female
21	---	-	See "Row Marker Sequencing/Flow Control Valve" on page P91
22	G6400-L-06 GR1045	2 -	Long Connector W/O-Ring, 9/16"-18 Male JIC To O-Ring O-Ring
23	*A3115 *A1078	2 -	Hose Assembly, 3/8" x 146", 6 Row 30" Hose Assembly, 3/8" x 174", 8 Row 30"
24	G6801-08 GR1037	6 -	Elbow W/O-Ring, 90°, 3/4"-16 Male JIC To O-Ring O-Ring
25	---	-	See "Row Marker Cylinder" on page P89
26	*A1041 *A1090	2 -	Hose Assembly, 3/8" x 130", 6 Row 30" Hose Assembly, 3/8" x 162", 8 Row 30"
27	*A1076	1	Hose Assembly, 3/8" x 30"
28	---	-	See "Stroke Limiter Valve" on page P90 and See "Frame Assembly" on page P65
29	G6500-08	1	Swivel Elbow, 90°, 3/4"-16 Male JIC To Female
30	*A1055	3	Hose Assembly, 3/8" x 66"
31	*A1018	1	Hose Assembly, 3/8" x 40"
32	---	-	See "Lift Cylinder" on page P88
33	G6400-08 GR1037 G6400-08-04 GR1465	2 - 2 -	Connector W/O-Ring, 3/4"-16 Male JIC To O-Ring O-Ring Connector W/O-Ring, 3/4"-16 Male JIC To 7/16"-20 O-Ring O-Ring
34	G6502-08	4	Swivel Elbow, 45°, 3/4"-16 Male JIC To Female

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

(TWL23/A9152a/ELC38/MTR27/MTR27a/ELC8/ELC39/A9689/A10924)

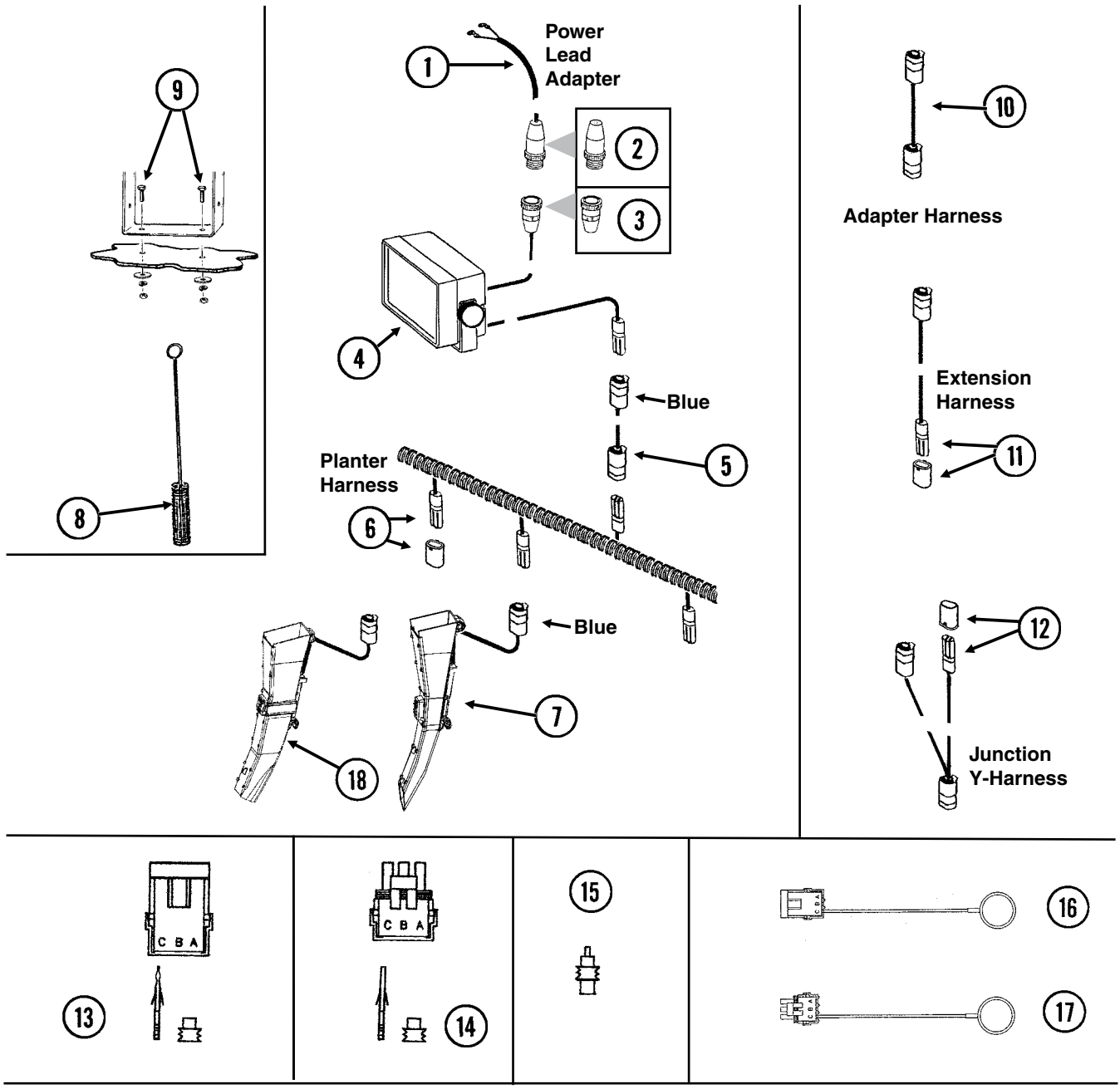
[See "Digital Vacuum Gauge, Analog Vacuum Gauge, and Vacuum Fan Assembly" on page P47 for vacuum gauge electrical components.](#)

[See "Frame Assembly" on page P65 for light brackets.](#)



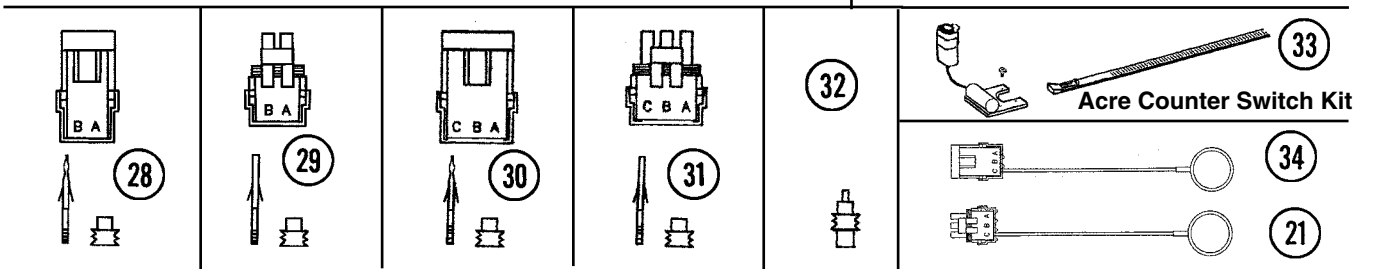
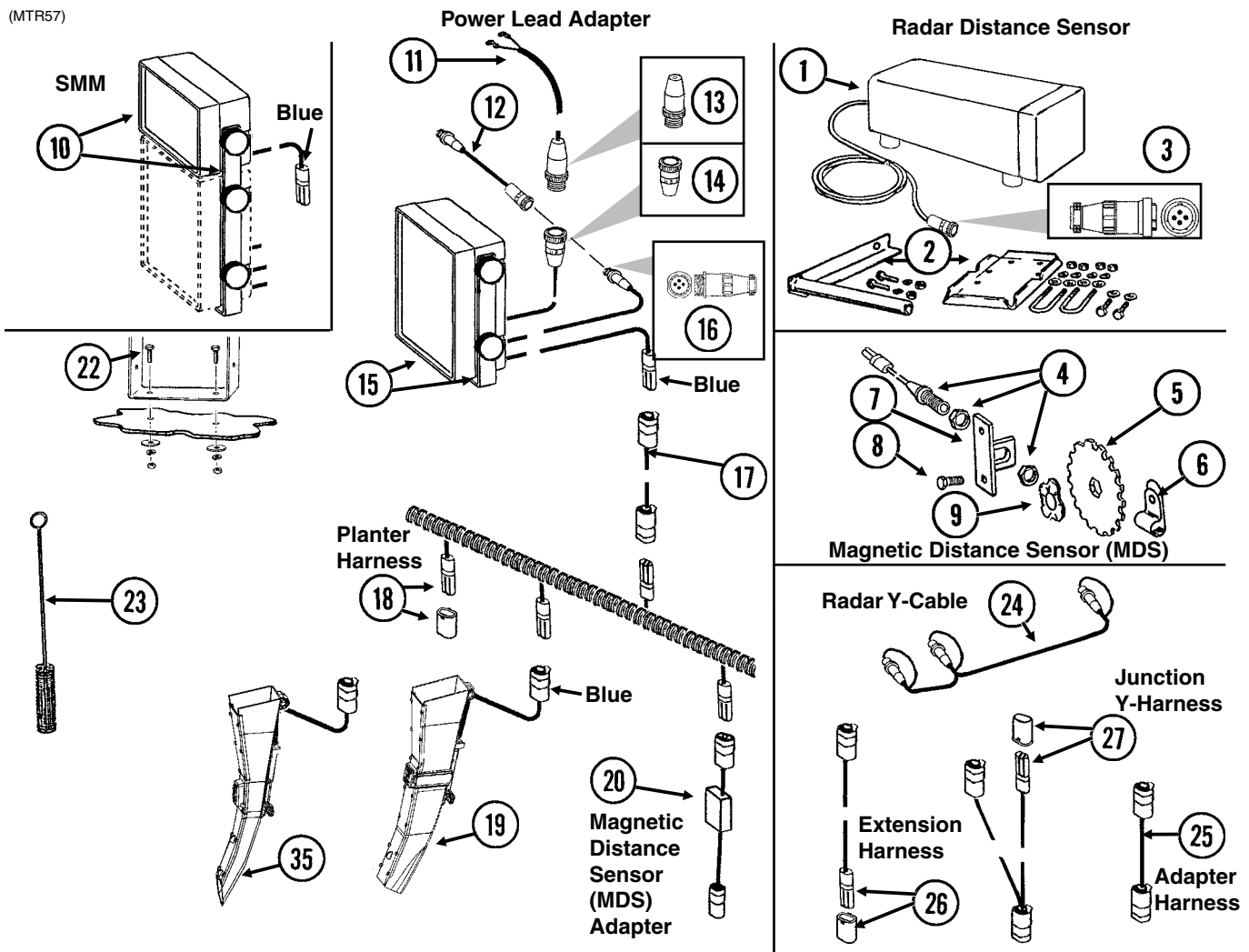
ITEM	PART NO.	QTY.	DESCRIPTION
1	GA6699	1	Double Light Assembly
	GA6700	1	Double Light Assembly (Shown)
	GR1956	-	Amber Lens Kit, Includes: (1) Amber Lens, (1) Gasket, and (3) Hex Head Cap Screws
	GR1957	-	Red Lens Kit, Includes: (1) Red Lens, (1) Gasket, and (3) Hex Head Cap Screws
	GR1958	-	Black Cover Kit, Includes: (1) Black Cover, (1) Gasket, and (3) Hex Head Cap Screws
	GR1208	-	Bulb
2	GA9152	-	Wiring Harness W/7 Terminal Female Connector, 516" (2 Light Connections), 6 Row 30"
	GA9153	-	Wiring Harness W/7 Terminal Female Connector, 564" (2 Light Connections), 8 Row 30"
	GA5385	-	7 Terminal Female Connector
3	GA9096	2	Harness Extension, 42"
4	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
5	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
6	GD11089	-	Sealing Plug
7	GA8047	-	Dust Plug (Black)
8	GD6291	1-2	Insulated Clamp, $\frac{3}{8}$ "
9	GA15101	2	Work Light Assembly
	GR1981	-	Bulb H3-55W
10	GA10924	1	Wiring Harness, 348"
11	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
12	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals

(MTR46b/A11948)



ITEM	PART NO.	QTY.	DESCRIPTION
1	GA7856	1	Power Lead Adapter
2	G1K267	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (3) Male Terminal Pins
3	G1K268	-	Console Cable Connector Kit, Includes: (1) Cable Clamp, (1) 3-Pin Connector, (1) Lock Ring, (3) Female Terminal Pins
4	GA10570	1	KPM I Backlit Console W/Mounting Bracket, Fuse Holder And Fuse, Power Lead Adapter (Item 11), Brush (Item 23) And Dust Plug (Item 34)
	GR1390	-	Mounting Bracket, KPM I
	GR1392	-	Console Mounting Bracket Hardware Package (Includes 2 Knobs And ¼" Hardware)
	GA10601	-	Fuse Holder
	GD7639	-	Fuse
5	---	-	Included In Light Wiring Harness, See Item 2, page P95
6	GA8021	-	Planter Harness W/Dust Caps, 4 Row (7 Connectors)
	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7850	-	Planter Harness W/Dust Caps, 8 Row (12 Connectors)
	GD11993	-	Dust Cap
7	GA11948	-	Seed Tube W/Computerized Sensor, EdgeVac
	GR1737	-	Sensor Only, EdgeVac
	GA11947	-	Seed Tube (With Holes For Sensor Installation), EdgeVac
8	GR0594	-	Brush
9	G10022	2	Hex Head Cap Screw, ¼"-20 x ½"
	G11385	2	Flat Washer, ¼" SAE
	G10227	2	Lock Washer, ¼"
	G10103	2	Hex Nut, ¼"-20
10	GA7857	-	Adapter Harness, 1'
11	GA7854	-	Extension Harness W/Dust Cap, 15'
	GA7855	-	Extension Harness W/Dust Cap, 30'
	GD11993	-	Dust Cap
12	GA7853	-	Junction Y-Harness W/Dust Cap
	GD11993	-	Dust Cap
13	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
14	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
15	GD11089	-	Sealing Plug
16	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
17	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
18	GA14214	-	Seed Tube W/Computerized Sensor, Mechanical
	GR1949	-	Sensor Only, Mechanical
	GR10940	-	Seed Tube (With Holes for Sensor Installation), Mechanical

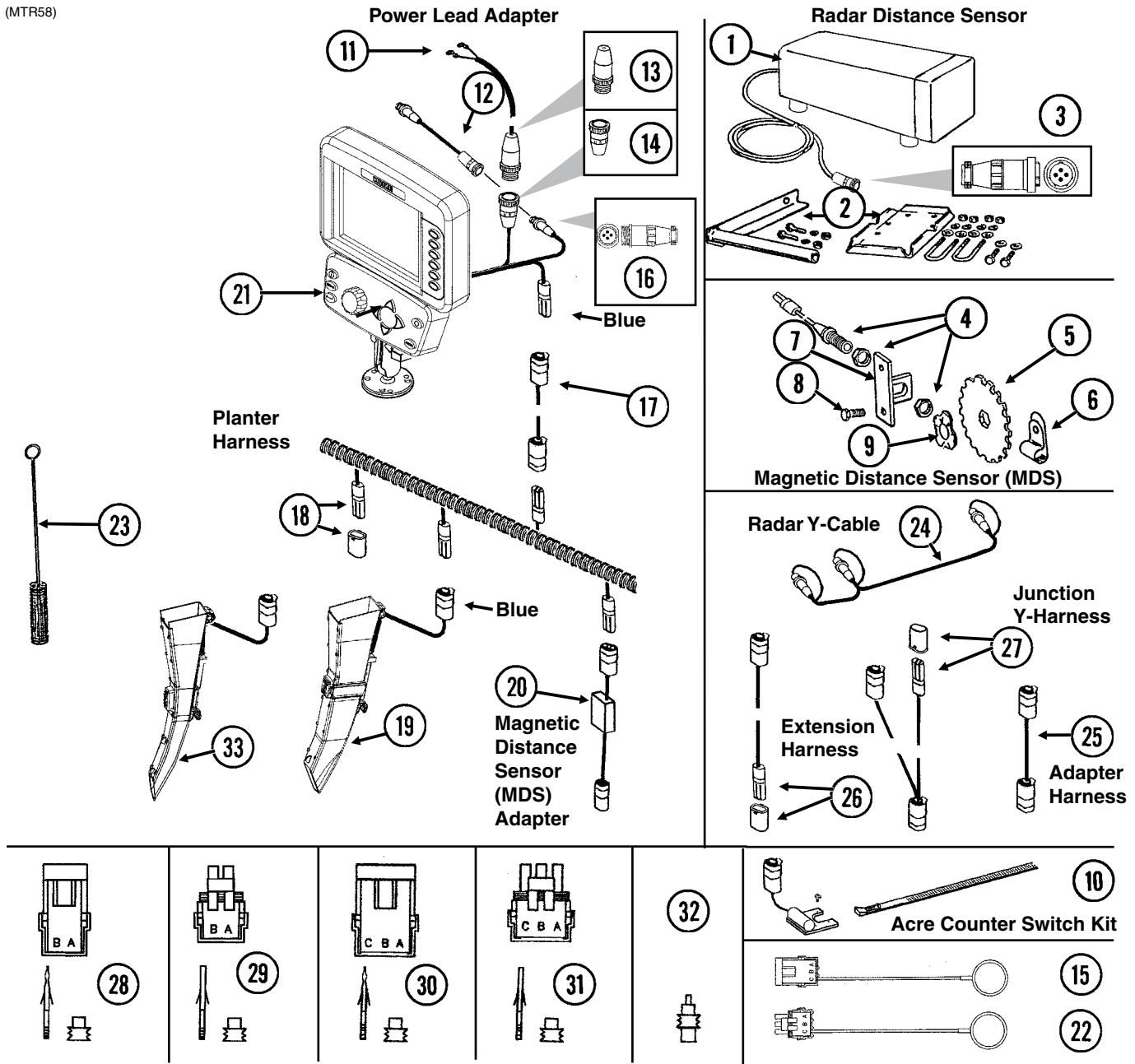
(MTR57)



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 And (1) Cable Clamp
4	GA5600	1	Magnetic Distance Sensor
5	GD8751	-	Magnetic Distance Sensor Pulse Wheel
6	GD6291	-	Insulated Clamp, 3/8"
7	GD8770	1	Bracket
8	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
9	GD8771	1	Spring Wave Washer
10	GA9857	1	SMM Backlit Console W/Mounting Bracket And Dust Plug (Item 36)
	GR1631	-	Mounting Bracket, KPM II Stack-Mode And SMM Consoles
	GR1632	-	Console Mounting Bracket Hardware Package (Includes 2 Knobs And 1/4" Hardware)

ITEM	PART NO.	QTY.	DESCRIPTION
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	GA10575	-	KPM II Backlit Console W/Mounting Bracket, Fuse Holder and Fuse, Power Lead Adapter (Item 11), Brush (Item 23), Dust Plug (Item 34) and Monitor/Radar Adapter, 10" (Item 12)
	GR1391	-	Mounting Bracket, KPM II
	GR1393	-	Console Mounting Bracket Hardware Package (Includes 4 Knobs And ¼" Hardware)
	GA10601	-	Fuse Holder
	GD7639	-	Fuse
16	G1K322	-	4-Pin Connector Kit W/Male Housing, Includes: (4) Female Socket Contacts And (1) Cable Clamp
17	---	-	Included In Light Wiring Harness, See Item 2, page P95
18	GA8021	-	Planter Harness W/Dust Caps, 4 Row (7 Connectors)
	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7850	-	Planter Harness W/Dust Caps, 8 Row (12 Connectors)
	GD11993	-	Dust Cap
19	GA11948	-	Seed Tube W/Computerized Sensor, EdgeVac
	GR1737	-	Sensor Only, EdgeVac
	GA11947	-	Seed Tube (With Holes For Sensor Installation), EdgeVac
20	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
21	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
22	G10022	2	Hex Head Cap Screw, ¼"-20 x ½"
	G11385	2	Flat Washer, ¼" SAE
	G10227	2	Lock Washer, ¼"
	G10103	2	Hex Nut, ¼"-20
23	GR0594	-	Brush
24	GR0586	1	Radar Y-Cable (Used To Connect Radar Distance Sensor For Multiple Functions)
25	GA7857	-	Adapter Harness, 1'
26	GA7854	-	Extension Harness W/Dust Cap, 15'
	GA7855	-	Extension Harness W/Dust Cap, 30'
	GD11993	-	Dust Cap
27	GA7853	-	Junction Y-Harness W/Dust Cap
	GD11993	-	Dust Cap
28	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
29	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
30	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
	G1K362	-	3-Pin Female Connector Kit (Blue), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
31	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
	G1K363	-	3-Pin Male Connector Kit (Blue), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
32	GD11089	-	Sealing Plug
33	G1K249	-	Acre Counter Switch Kit
34	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
35	GA14214	-	Seed Tube W/Computerized Sensor, Mechanical
	GR1949	-	Sensor Only, Mechanical
	GA10940	-	Seed Tube (With Hoses for Sensor Installation), Mechanical
A	GA6147	-	Magnetic Distance Sensor And Mounting Package (Items 4-9)

(MTR58)

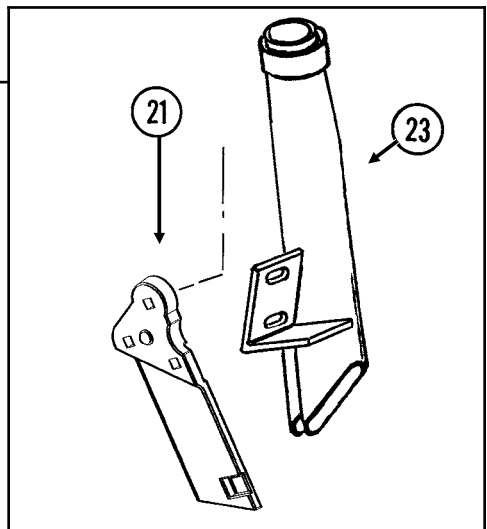
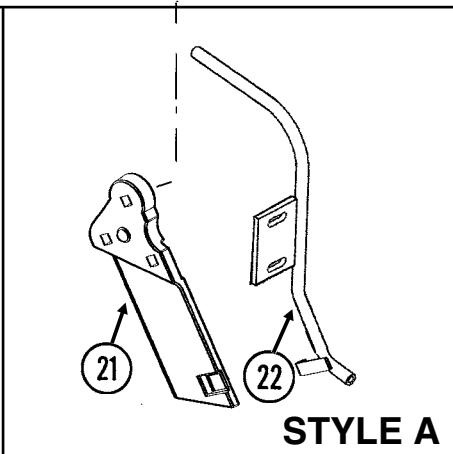
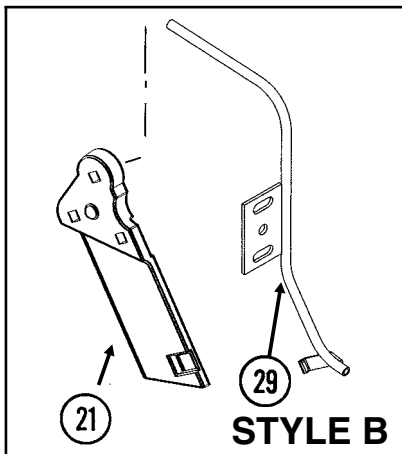
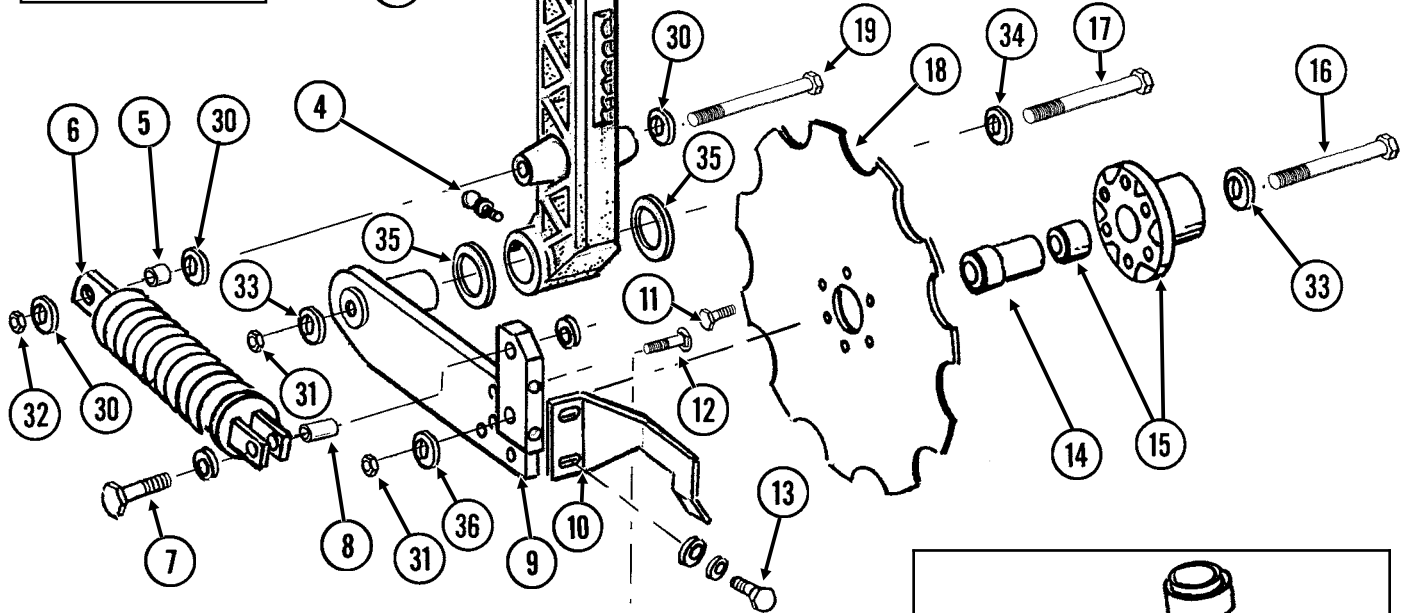
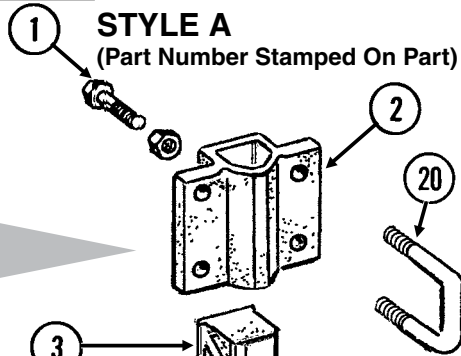
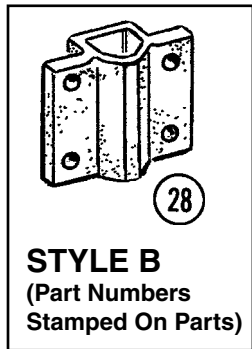
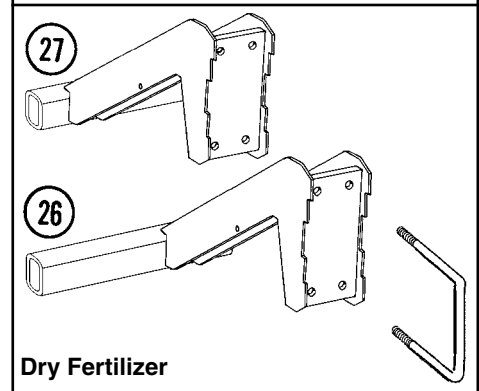
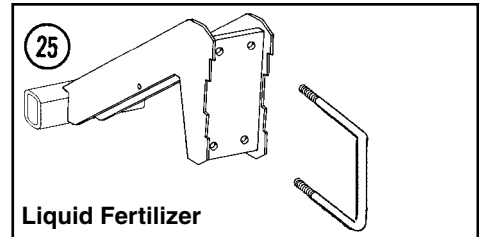
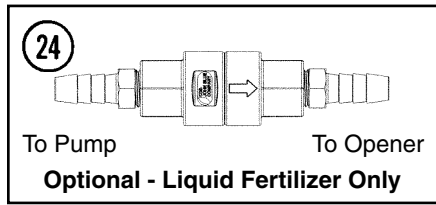


ITEM	PART NO.	QTY.	DESCRIPTION
1	GA7858	-	Radar Distance Sensor W/20' Cable
2	GA8026	-	Radar Sensor Pipe/Mounting Bracket Package
3	G1K323	-	4-Pin Connector Kit W/Female Housing, Includes: (4) Pins And (1) Cable Clamp
4	GA5600	1	Magnetic Distance Sensor
5	GD8751	-	Magnetic Distance Sensor Pulse Wheel
6	GD6291	-	Insulated Clamp, 3/8"
7	GD8770	1	Bracket
8	G10001	2	Hex Head Cap Screw, 3/8"-16 x 1"
	G10229	2	Lock Washer, 3/8"
	G10101	2	Hex Nut, 3/8"-16
9	GD8771	1	Spring Wave Washer
10	G1K249	-	Acre Counter Switch Kit

ITEM	PART NO.	QTY.	DESCRIPTION
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	GA8046	-	Dust Plug (Black)
	GA9978	-	Dust Plug (Blue)
16	G1K322	-	4-Pin Connector Kit W/Male Housing, Includes: (4) Female Socket Contacts And (1) Cable Clamp
17	---	-	Included In Light Wiring Harness, See Item 2, page P95
18	GA8021	-	Planter Harness W/Dust Caps, 4 Row (7 Connectors)
	GA8022	-	Planter Harness W/Dust Caps, 6 Row (9 Connectors)
	GA7850	-	Planter Harness W/Dust Caps, 8 Row (12 Connectors)
	GD11993	-	Dust Cap
19	GA12166	-	Seed Tube W/Computerized Sensor (Shown), EdgeVac
	GR1785	-	Sensor Only, EdgeVac
	GA12636	-	Seed Tube (With Holes For Sensor Installation), EdgeVac
20	GA7859	1	Magnetic Distance Sensor Adapter (Analog To Digital)
21	GA11039	1	KPM III Backlit Console W/Brush (Item 23), Dust Plug (Item 34), Mounting Bracket Assembly, Console Mounting Bracket Hardware And Power Harness
	GA12403	-	Mounting Bracket Assembly, Includes: (2) Mounting Brackets, (2) Connector Halves, (1) Compression Spring, (1) Tension Knob, (1) ¼"-20 x 1¾" Hex Head Cap Screw, (1) ¼" Plastic Washer, (1) ¼" Steel Washer
	GR1762	-	Console Mounting Bracket Hardware Package, Includes: (3) No. 10-32 x 5/8" Hex Socket Pan Head Plated Screws, (3) ¼" Plated Lock Washers
	GR1764	-	Power Harness
22	GA8047	-	Dust Plug (Black)
	GA9979	-	Dust Plug (Blue)
23	GR0594	-	Brush
24	GR0586	1	Radar Y-Cable (Used To Connect Radar Distance Sensor For Multiple Functions)
25	GA7857	-	Adapter Harness, 1'
26	GA7854	-	Extension Harness W/Dust Cap, 15'
	GA7855	-	Extension Harness W/Dust Cap, 30'
	GD11993	-	Dust Cap
27	GA7853	-	Junction Y-Harness W/Dust Cap
	GD11993	-	Dust Cap
28	G1K321	-	2-Pin Female Connector Kit (Black), Includes: (3) 2-Pin Female Housings, (6) Pin Contacts, (6) Seals
29	G1K320	-	2-Pin Male Connector Kit (Black), Includes: (3) 2-Pin Male Housings, (6) Socket Contacts, (6) Seals
30	G1K248	-	3-Pin Female Connector Kit (Black), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
	G1K362	-	3-Pin Female Connector Kit (Blue), Includes: (3) 3-Pin Female Housings, (9) Pin Contacts, (9) Seals
31	G1K252	-	3-Pin Male Connector Kit (Black), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
	G1K363	-	3-Pin Male Connector Kit (Blue), Includes: (3) 3-Pin Male Housings, (9) Socket Contacts, (9) Seals
32	GD11089	-	Sealing Plug
33	GA14214	-	Seed Tube W/Computerized Sensor, Mechanical
	GR1949	-	Sensor Only, Mechanical
	GA10940	-	Seed Tube (With Hoses for Sensor Installation), Mechanical
A	GA6147	-	Magnetic Distance Sensor And Mounting Package (Items 4-9)
B	GR1763	-	KPM III Loaner (Display Only)

FOC018(TWL34e/TWL34f/TWL34g/FRTZ268b/FRTZ208)

NOTE: R.H. and L.H. is determined by which side of blade it is on in the direction of travel.

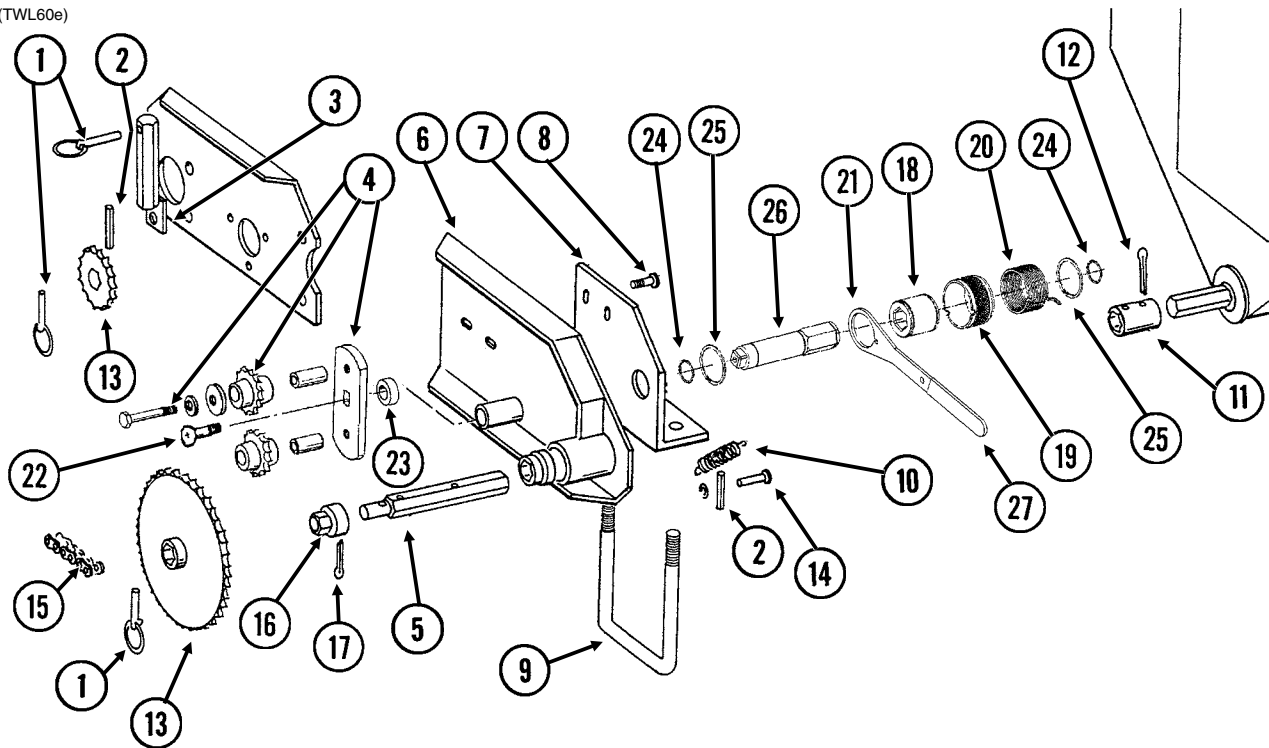


ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
1	G10017	3	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10102	3	Hex Nut, 1/2"-13
2	GB0297	1	Mount
3	GB0296	1	Arm, 13 1/2"
4	G10640	1	Grease Fitting, 1/4"-28
5	GD12685	1	Bushing, 3/4" O.D. x 1/2" Long
6	GA6966	1	Compression Spring Assembly
7	G10047	1	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	G11387	2	Flat Washer, 3/8" SAE
	G10108	1	Lock Nut, 3/8"-16
8	GD1026	1	Sleeve, 1 3/16" Long
9	GA9433	1	Pivot Arm, L.H. (Shown)
	GA9434	-	Pivot Arm, R.H.
10	GD11557	1	Scraper, L.H. (Shown)
	GD11558	-	Scraper, R.H.
11	G10002	6	Hex Head Cap Screw, 3/8"-16 x 3/4"
12	G10306	3	Carriage Bolt, 3/8"-16 x 2"
	G10108	3	Lock Nut, 3/8"-16
13	G10991	2	Hex Head Cap Screw, 5/16"-18 x 7/8"
	G10232	2	Lock Washer, 5/16"
	G11386	6	Flat Washer, 5/16" SAE
14	GD12679	1	Stepped Spacer, 3" Long
15	GA9437	1	Hub W/Bearing
	GA8603	-	Bearing, Double Row
16	G10011	1	Hex Head Cap Screw, 5/8"-11 x 5 1/2"
17	G10046	1	Hex Head Cap Screw, 5/8"-11 x 5"
18	GD12676	1	Disc Blade, Notched, 16 3/4"
19	G10871	1	Hex Head Cap Screw, 1/2"-13 x 6"
20	GD13287	2	U-Bolt, 1 1/2" x 2 1/2" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
21	GB0323	1	Knife, L.H. (Shown)
	GB0322	-	Knife, R.H.
22	GA11397	1	Drop Tube, L.H., Liquid Fertilizer
	GA11398	-	Drop Tube, R.H., Liquid Fertilizer (Shown)
23	GA10047	1	Drop Tube, L.H., Dry Fertilizer
	GA10048	-	Drop Tube, R.H., Dry Fertilizer (Shown)
24	GA15416	1	Check Valve Assembly
	GA15415	1	Check Valve
	G11436	2	Hose Barb, 1/4" Male NPT To 3/8" Barb
25	GA9565	1	Opener Mount Assembly, Liquid Fertilizer
	GA9564	1	Opener Mount
	GD1113	2	U-Bolt, 5" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
26	GA9821	-	Opener Mount Assembly, L.H., Dry Fertilizer
	GA9819	1	Opener Mount
	GD1113	2	U-Bolt, 5" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11

ITEM	PART NO.	QTY. (Per Assy.)	DESCRIPTION
27	GA9822	-	Opener Mount Assembly, R.H., Dry Fertilizer
	GA9820	1	Opener Mount
	GD1113	2	U-Bolt, 5" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
28	GB0405	1	Mount, L.H.
	GB0400	-	Mount, R.H. (Shown)
29	GA12108	1	Drop Tube, Liquid Fertilizer (Shown)
	GA12109	-	Drop Tube, Liquid Fertilizer
30	G11389	-	Flat Washer, 1/2" Plated SAE
31	G10107	-	Lock Nut, 5/8"-11
32	G10111	-	Lock Nut, 1/2"-13
33	G11391	-	Flat Washer, 5/8" SAE
34	G10217	-	Washer, 5/8" USS
35	G10450	-	Machine Bushing, 1 1/2", 18 Gauge (As Required)
36	GD12677	1	Washer, 1 1/2" O.D., 7 Gauge, Hardened

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PTD072(TWL60e)

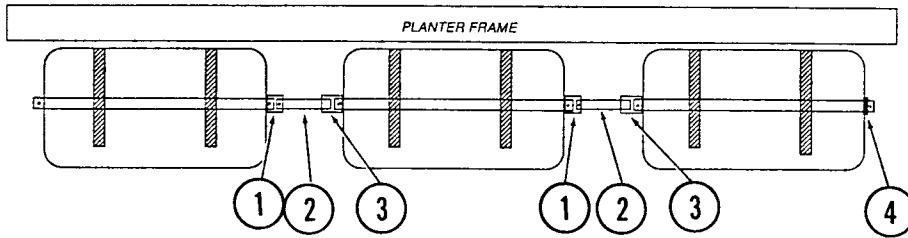


ITEM	PART NO.	QTY.	DESCRIPTION
1	GD2558	3	Lynch Pin, 1/4"
2	G10602	2	Spring Pin, 1/4" x 1 1/2"
3	GA5229	1	Sprocket Storage Rod
4	GA7336	1	Idler W/Bolt-On Sprockets
	GD7426	-	Sprocket, 12 Tooth
	GD1026	-	Sleeve, 1 3/16" Long
	G11387	-	Flat Washer, 3/8" SAE
	G10229	-	Lock Washer, 3/8"
	G10047	-	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
5	GD7870	1	Shaft, 7"
6	GA6579	1	Plate W/Bearings And Grease Fitting
	GA5116	-	Bearing, 7/8" Hex Bore, Cylindrical
	GA5624	-	Special Bearing, 7/8" Hex Bore x 1.6"
	G10643	-	Grease Fitting, 45°, 1/4"-28
7	GD9320	1	Mount
8	G10574	2	Carriage Bolt, 1/2"-13 x 1 1/4"
	G11389	4	Flat Washer, 1/2" SAE
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
9	GD1134	1	U-Bolt, 7" x 5" x 5/8"-11
	G10230	2	Lock Washer, 3/8"
	G10104	2	Hex Nut, 5/8"-11
10	GD5857	1	Spring
11	GD5886	-	Coupler, 1 3/4"
12	G10460	-	Cotter Pin, 1/4" x 2"

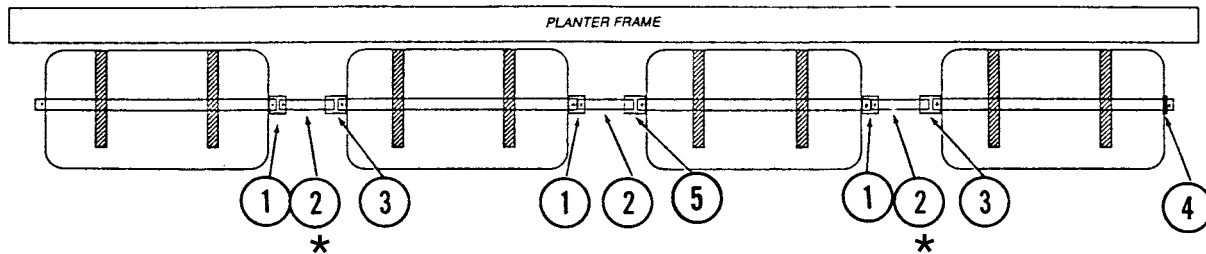
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13	GA5105	1	Sprocket, 15 Tooth
	GA5107	1	Sprocket, 19 Tooth
	GA5114	1	Sprocket, 30 Tooth
	GA5115	1	Sprocket, 33 Tooth
	GA6337	1	Sprocket, 35 Tooth
14	G10408	1	Clevis Pin, 5/16" x 3/4"
	G10409	1	Retaining Ring, 5/16"
15	G3310-155	1	Chain, No. 40, 155 Pitch Including Connector Link And Offset Link
	GR0912	-	Connector Link, No. 40
	GR0911	-	Offset Link, No. 40
16	GD7127	1	Shear Coupler
17	G10462	1	Cotter Pin, 3/16" x 2"
18	GD14432	1	Sleeve, 1 1/4"
19	GD19343	1	Release Collar, R.H.
20	GD14413	-	Torsion Spring, L.H. (Used In R.H. Wrap Spring Wrench)
21	GD14431	1	Handle
22	G11100	1	Hex Socket Button Head Cap Screw, 1/4"-20 x 1/2", Grade 8
	G10227	1	Lock Washer, 1/4"
	G11385	1	Flat Washer, 1/4" SAE
23	GD2734-18	1	Sleeve, 1 1/4" O.D. x 7/16" Long
24	G11075	2	External Inverted Snap Ring, 7/8"
25	G10496	2	External Inverted Snap Ring, 1 1/2"
26	GD14427	1	Tightener Shaft, 4 7/8"
27	G11078	1	Vinyl Cap
A	G1K269	-	Lock Clamp Kit (Items 2 And 3)
B	G1K378	1	Wrap Spring Wrench Replacement Kit, Gold Collar, R.H. (Items 18-27)

RH101190(PT33/PT35)

6 Row 30"



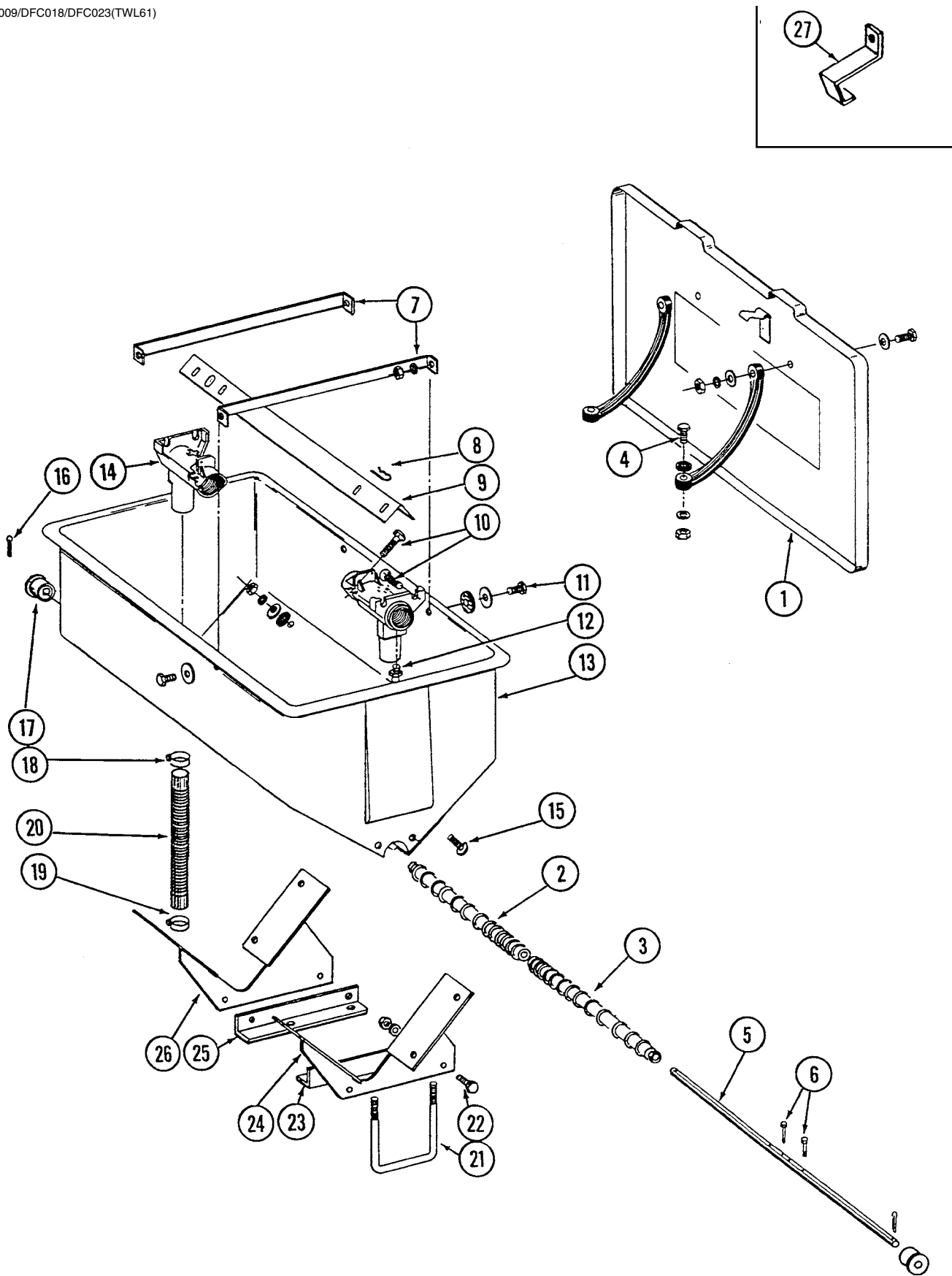
8 Row 30"



ITEM	PART NO.	QTY.	DESCRIPTION
1	GD5886	-	Coupler, 1 3/4"
2	GD2548-15.5	-	Hex Shaft, 7/8" x 15 1/2" (1 Hole) (*Trim 4" On 8 Row 30" Size With HD Single Disc Fertilizer Openers)
3	GD7867	-	Coupler, 3"
4	G10233	2	Machine Bushing, 1 1/2" x 1/32", 10 Gauge
5	GD9378	-	Coupler, 12"

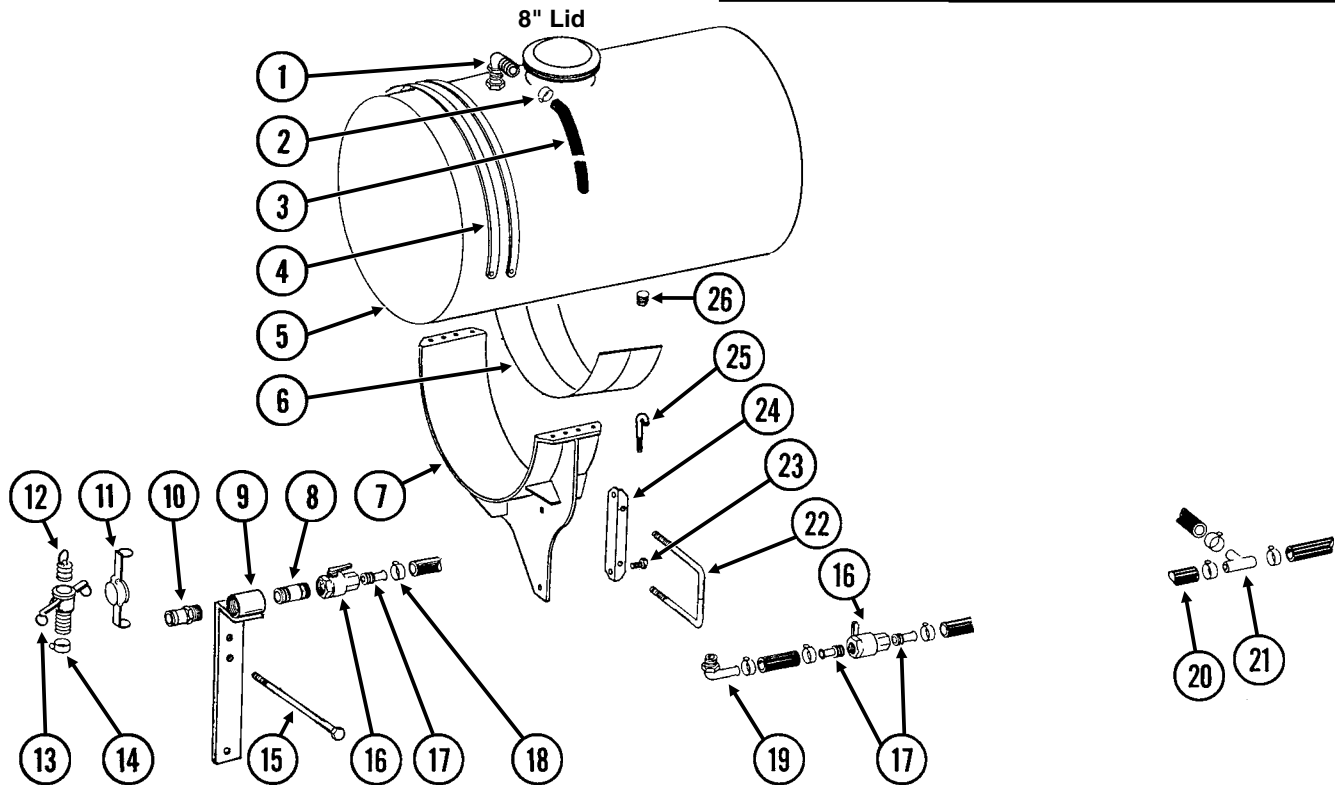
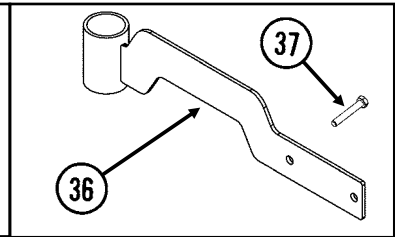
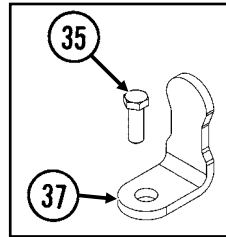
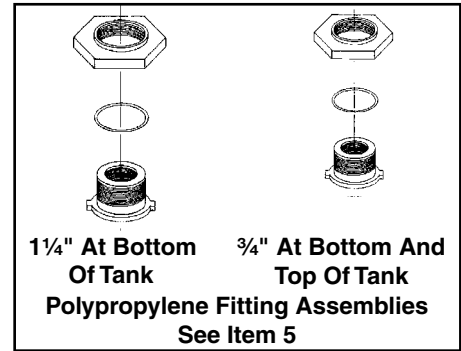
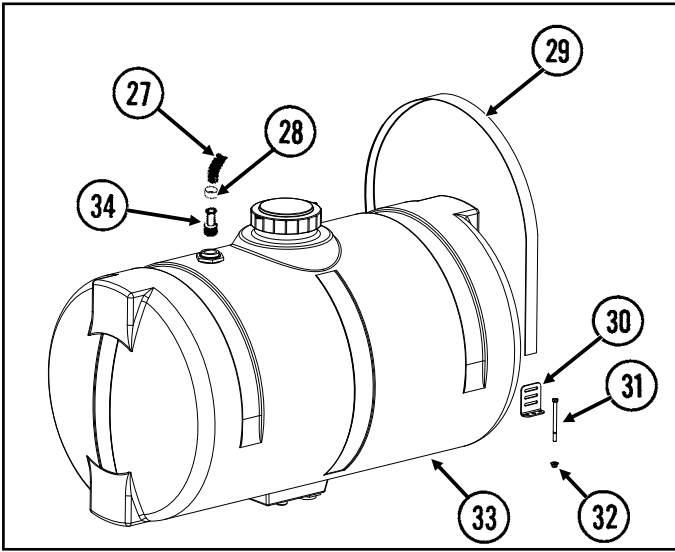
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DFC009/DFC018/DFC023(TWL61)



ITEM	PART NO.	QTY. (Per Hopper)	DESCRIPTION
1	GA0898	1	Lid W/Retainers, Clips, Rivets, Rubber Straps And Hardware
	GD1380	-	Front Clip
	GD2412	-	Rear Retainer
	G10655	-	Rivet, 3/16" x 1 3/32"
	GD1210	-	Rubber Strap
	G10171	-	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G11386	-	Flat Washer, 5/16" SAE
	G10232	-	Lock Washer, 5/16"
	G10106	-	Hex Nut, 5/16"-18
2	GB0198	1	Auger, R.H.
3	GB0199	1	Auger, L.H.
4	G10133	2	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	G11386	2	Flat Washer, 5/16" SAE
	G10232	2	Lock Washer, 5/16"
	G10106	2	Hex Nut, 5/16"-18
5	GD7848	1	Shaft
6	G10587	2	Hex Head Cap Screw, 1/4"-20 x 2", Stainless Steel
	G10588	2	Hex Nut, 1/4"-20, Stainless Steel
7	GD1209	2	Strap
8	G10670	2	Hair Pin Clip, No. 3
9	GD1207	1	Baffle
10	G10303	8	Carriage Bolt, 5/16"-18 x 1"
	G11386	8	Flat Washer, 5/16" SAE
	G10232	8	Lock Washer, 5/16"
	G10106	8	Hex Nut, 5/16"-18
11	G10171	4	Hex Head Cap Screw, 5/16"-18 x 1 1/4"
	G10201	4	Special Washer, 3/8" x 1 1/2" O.D.
	GD1213	4	Rubber Washer
	G10232	4	Lock Washer, 5/16"
	G10106	4	Hex Nut, 5/16"-18
12	G10641	2	Grease Fitting, 1/8" NPT
13	GD1379	1	Hopper
14	GD1200	2	Outlet Housing
15	G10303	8	Carriage Bolt, 5/16"-18 x 1"
	G10201	8	Special Washer, 3/8" x 1 1/2" O.D.
	GD1213	8	Rubber Washer
	G10232	8	Lock Washer, 5/16"
	G10106	8	Hex Nut, 5/16"-18
16	G10460	2	Cotter Pin, 1/4" x 2"
17	GB0200	2	Bearing
18	G10676	2	Hose Clamp, No. 36, Stainless Steel
19	G10672	2	Hose Clamp, No. 28
20	GD21398	2	Rubber Tube
21	GD1134	2	U-Bolt, 7" x 5" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
22	G10017	2	Hex Head Cap Screw, 1/2"-13 x 1 1/2"
	G10228	2	Lock Washer, 1/2"
	G10102	2	Hex Nut, 1/2"-13
23	GD9131	1	Angle, L.H.
24	GA6437	1	Mount, L.H.
25	GD9132	1	Angle, R.H.
26	GA6436	1	Mount, R.H.
27	GD8722	-	Holder, Rubber Tube (As Required)
A	GA6503	-	Hopper Sub-Assembly (Items 8,10 And 12-15)
B	GA5667	-	Hopper Hardware Box (Items 2-7, 9, 11, 16 And 17)

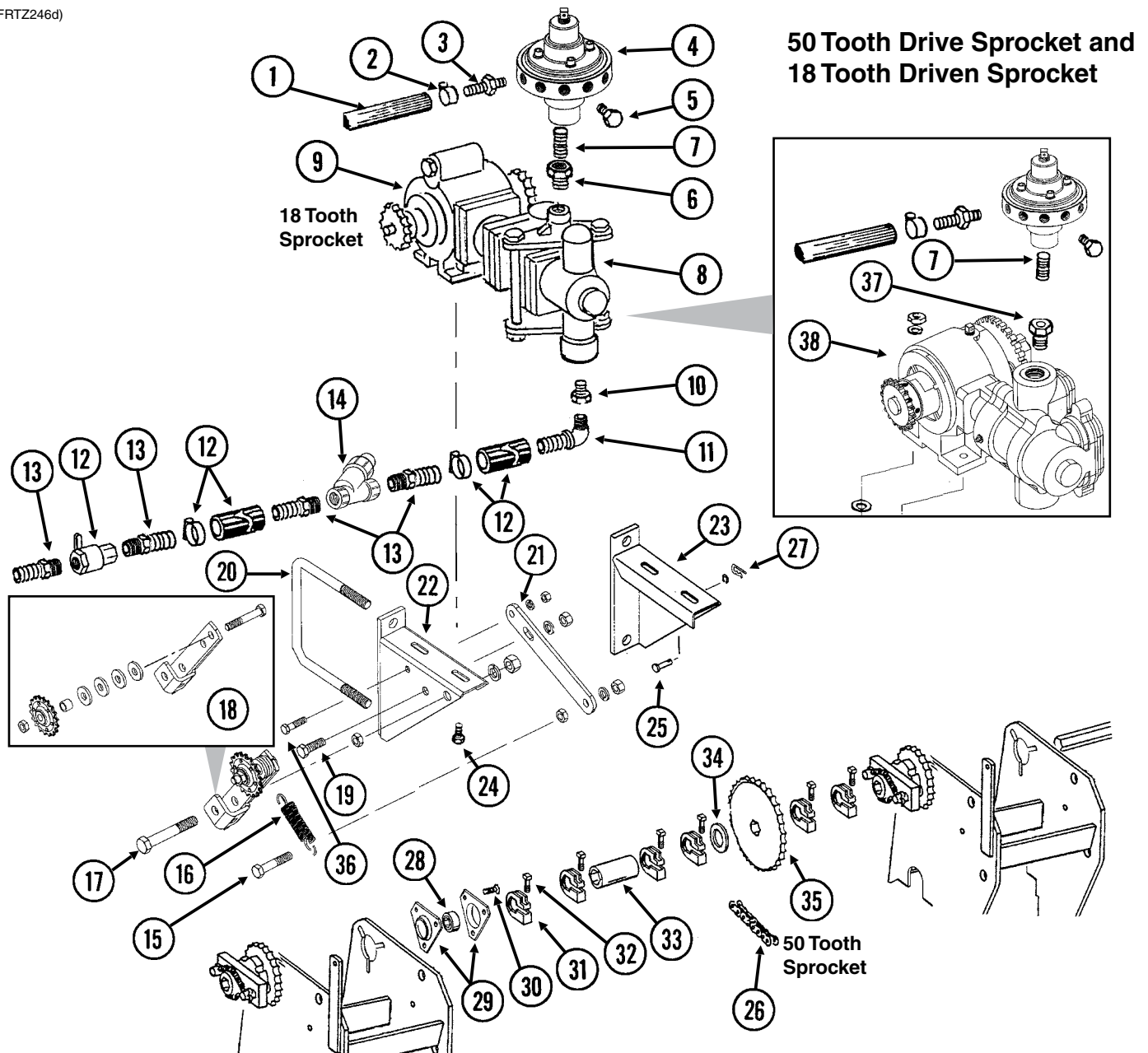
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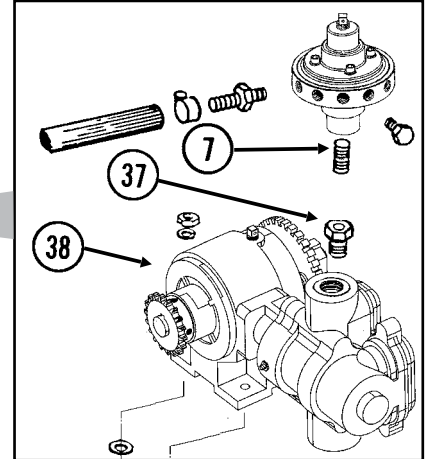
ITEM	PART NO.	QTY.	DESCRIPTION
1	G10917	2	Elbow, 90°, 3/4" NPT To Barb
2	G10278	2	Hose Clamp, No. 16
3	G4205-11	1	Hose, 3/4" x 72" (One Per Tank)
4	GD1520	8	Band, 30"
5	GA9905	-	Tank With Lid And Fittings, 30" x 150 Gallon
	GR1678	-	Lid W/Vent, 8" (Top Of Tank)
	GR0513	-	3/4" Polypropylene Fitting Assembly (Overflow Fitting, Nut, Bushing And O-Ring) (Top And Bottom Of Tank)
	GR1397	-	Overflow Fitting
	GR0508	-	1 1/4" Polypropylene Fitting Assembly (Nut, Bushing And O-Ring) (Bottom Of Tank)

ITEM	PART NO.	QTY.	DESCRIPTION
6	GD1862	1	Pad, 8" x 14' (For Two 30" Tanks)
7	GA7375	-	Tank Mount (2 Per Tank)
8	G10619	-	Close Nipple, 1¼" NPT
9	GA5917	1	Quick Fill Mount
10	GD1514	1	Adapter, 1¼" Male NPT To Cam Lock
11	GD1515	1	Dust Cap, 1¼" Cam Lock
12	GD1517	1	Dust Plug, 1¼" Male Cam Lock
13	GD1516	1	Adapter, 1¼" Barb To Female Cam Lock
14	G10672	1	Hose Clamp, No. 28
15	G10829	2	Hex Head Cap Screw, ½"-13 x 6½" (Used Between Light Assembly And Quick Fill Mount)
	G11389	2	Flat Washer, ½" SAE
	G10228	2	Lock Washer, ½"
	G10102	2	Hex Nut, ½"-13
16	GA4976	-	Shutoff Valve, 1¼" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
17	G10626	-	Adapter, 1¼" NPT To Barb
18	G10674	-	Hose Clamp, No. 24
19	G10629	2	Elbow, 90°, 1¼" NPT To Barb
20	G4200-02	1	Hose, 1¼" x 27', 6 Row 30"
	G4200-03	-	Hose, 1¼" x 32', 8 Row 30"
21	G10633	1	Tee, 1¼" Barb
22	GD1747	4	U-Bolt, 5" x 7" x ¾"-10
	G10231	8	Lock Washer, ¾"
	G10105	8	Hex Nut, ¾"-10
23	G10007	-	Hex Head Cap Screw, ⅝"-11 x 1½"
	G10230	-	Lock Washer, ⅝"
	G10104	-	Hex Nut, ⅝"-11
24	GD10110	-	Mounting Angle (2 Per Tank)
25	GD1337	16	J-Bolt, ⅝"-18
	G11182	16	Lock Nut W/Nylon Insert, ⅝"-18, Grade 8
26	G10096	2	Pipe Plug, ¾" NPT
27	G4602-01	1	Black Helix Hose, 1¼" x 18'
28	G10674	4	Hose Clamp, No. 24
29	GD11124	4	Strap, 84"
30	GD11123	8	Anchor (Sub GA8114)
31	G10485	16	Hex Head Tap Bolt, ⅜"-16 x 5"
32	G10901	16	Lock Nut, ⅜"-16
33	GA14049	2	Tank W/Sealed Lid and Fittings, 150 Gallon
34	G10626	-	Adapter, 1¼" NPT To Barb
35	GD20060	2	Hose Bracket
36	GA14112	2	Hose Guide
37	G10004	-	Hex Head Cap Screw, ⅜"-16 x 1¼"
	G11091	-	Serrated Flange Nut, ⅜"-16

(FRTZ246d)



50 Tooth Drive Sprocket and 18 Tooth Driven Sprocket

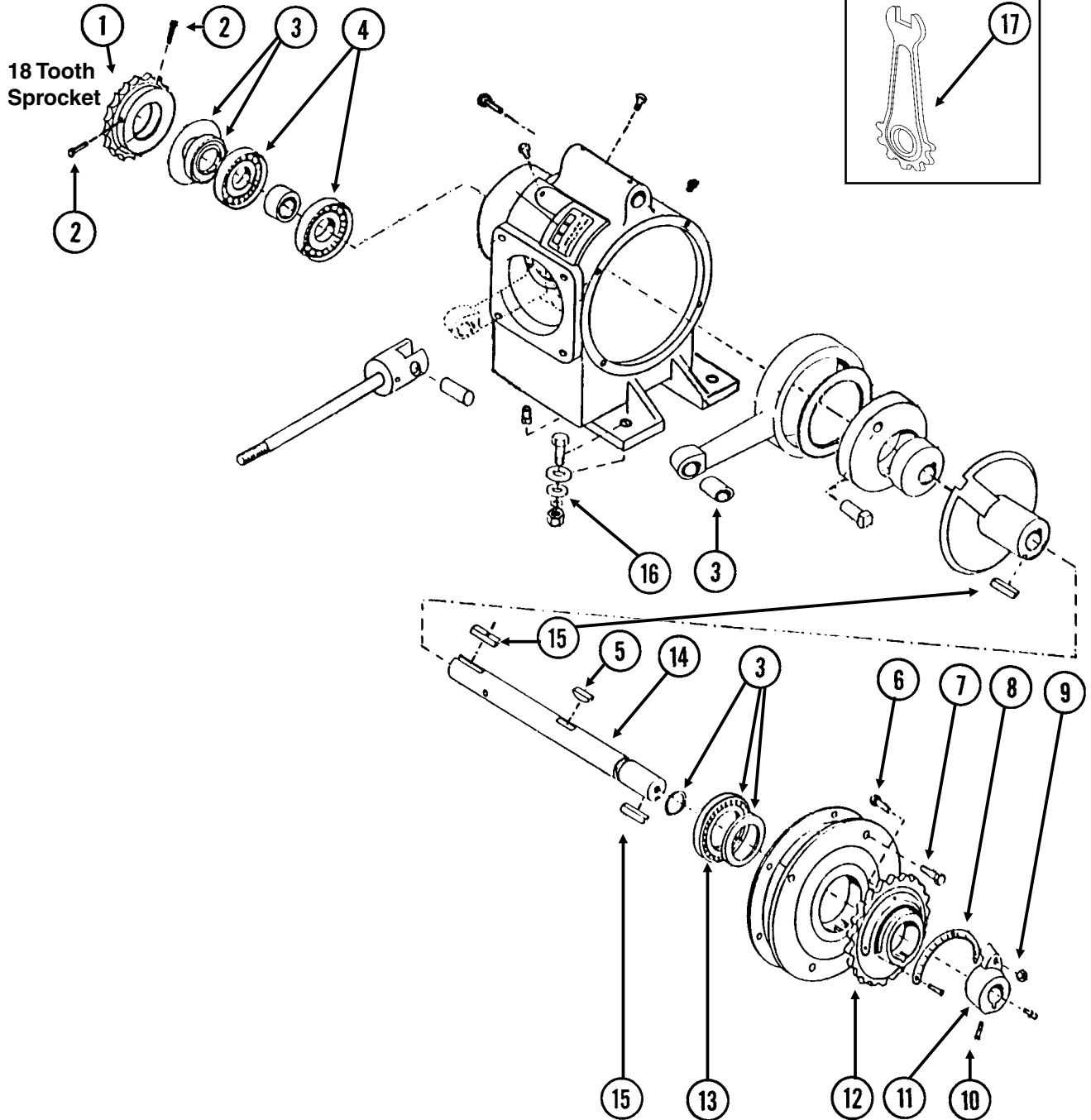


ITEM	PART NO.	QTY.	DESCRIPTION
1	G4301-02 G4301-04	-	Hose, 3/8" x 50', 6 Row 30"
2	G10681	8	Hose Clamp, No. 6 (As Required)
3	GD11700	-	Adapter, 1/4" NPT To 3/8" Barb (As Required)
4	---	-	See "Liquid Fertilizer Piston Pump Flow Divider" on page P134
5	G10292	-	Pipe Plug, 1/4" NPT (As Required)
6	G10995	1	Reducing Bushing, 1" Male NPT To 3/4" Female, Stainless Steel
7	G10994	1	Close Nipple, 3/4" NPT, Stainless Steel
8	---	-	See "Liquid Fertilizer Piston Pump (Cylinder Assembly) Uses 18 Tooth Sprocket" on page P129
9	---	-	See "Liquid Fertilizer Piston Pump (Crankcase Assembly) Uses 18 Tooth Sprocket" on page P127
10	G10615	1	Reducing Bushing, 1 1/2" Male NPT To 1 1/4" Female
11	G10629	1	Elbow, 90°, 1 1/4" NPT To Barb

ITEM	PART NO.	QTY.	DESCRIPTION
12	---	-	See "Liquid Fertilizer Tanks, Saddles, Mounts, Hoses, and Fittings" on page P123
13	G10626	4	Adapter, 1¼" NPT To Barb
14	GA3893	1	Strainer Complete
	GR0880	-	Screen, No. 40 Mesh
	GR0881	-	Gasket
	GR0882	-	Y-Body
	GR0883	-	End Cap
15	G10053	1	Hex Head Cap Screw, ½"-13 x 2½"
	G10228	1	Lock Washer, ½"
	G10501	1	Hex Jam Nut, ½"-13, Grade 2
	G10102	1	Hex Nut, ½"-13
16	GD5857	1	Spring
17	G10036	1	Hex Head Cap Screw, ⅝"-11 x 4"
	G10230	1	Lock Washer, ⅝"
	G10503	1	Hex Jam Nut, ⅝"-11, Grade 2
	G10104	1	Hex Nut, ⅝"-11
18	GA11024	1	Idler W/Sprocket And Hardware
	GA7154	1	Sprocket W/Bearing, 18 Tooth
	G10038	1	Hex Head Cap Screw, ½"-13 x 3"
	G10168	4	Machine Bushing, ½", 7 Gauge
	GD11158	1	Spacer, ¾" O.D. x ⅞" Long
	G10501	1	Hex Jam Nut, ½"-13, Grade 2
19	G10017	1	Hex Head Cap Screw, ½"-13 x 1½"
	G10228	1	Lock Washer, ½"
	G10102	1	Hex Nut, ½"-13
20	GD1113	2	U-Bolt, 5" x 7" x ⅝"-11
	G10230	4	Lock Washer, ⅝"
	G10104	4	Hex Nut, ⅝"-11
21	GD16157	1	Bracket
22	GA10603	1	Pump Mount, L.H.
23	GA4620	1	Pump Mount, R.H.
24	G10003	4	Hex Head Cap Screw, ⅜"-16 x 1½"
	GR1122	4	Mounting Pad
	G11387	4	Flat Washer, ⅜" SAE
	G10229	4	Lock Washer, ⅜"
	G10101	4	Hex Nut, ⅜"-16
25	G10478	1	Clevis Pin, ⅝" x 1"
	G10409	1	Retaining Ring, ⅝"
26	G3310-88	1	Chain, No. 40, 88 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
27	G10670	1	Hair Pin Clip, No. 3
28	G2100-03	1	Bearing, ⅞" Hex Bore, Spherical
29	G3400-01	2	Flangette
30	G10303	3	Carriage Bolt, ⅝"-18 x 1"
	G10232	3	Lock Washer, ⅝"
	G10106	3	Hex Nut, ⅝"-18
31	GD11045	5	Lock Clamp
32	G10130	5	Square Head Machine Bolt, ⅝"-18 x 1¾"
	G10923	5	Flange Nut, ⅝"-18, No Serration
33	GD1719	1	Coupler, 4"
34	G10233	1	Machine Bushing, 1½" x 1/32", 10 Gauge
35	GA5194	1	Sprocket, 50 Tooth
36	G10003	1	Hex Head Cap Screw, ⅜"-16 x 1½"
	G10229	1	Lock Washer, ⅜"
	G10101	1	Hex Nut, ⅜"-16
37	G11237	1	Reducing Bushing, 1½" Male NPT To ¾" Female
38	---	-	See "Liquid Fertilizer Piston Pump Uses 18 Tooth Sprocket" on page P131

JB-L4400-991/CCU077(FRTZ172a/GR1424)

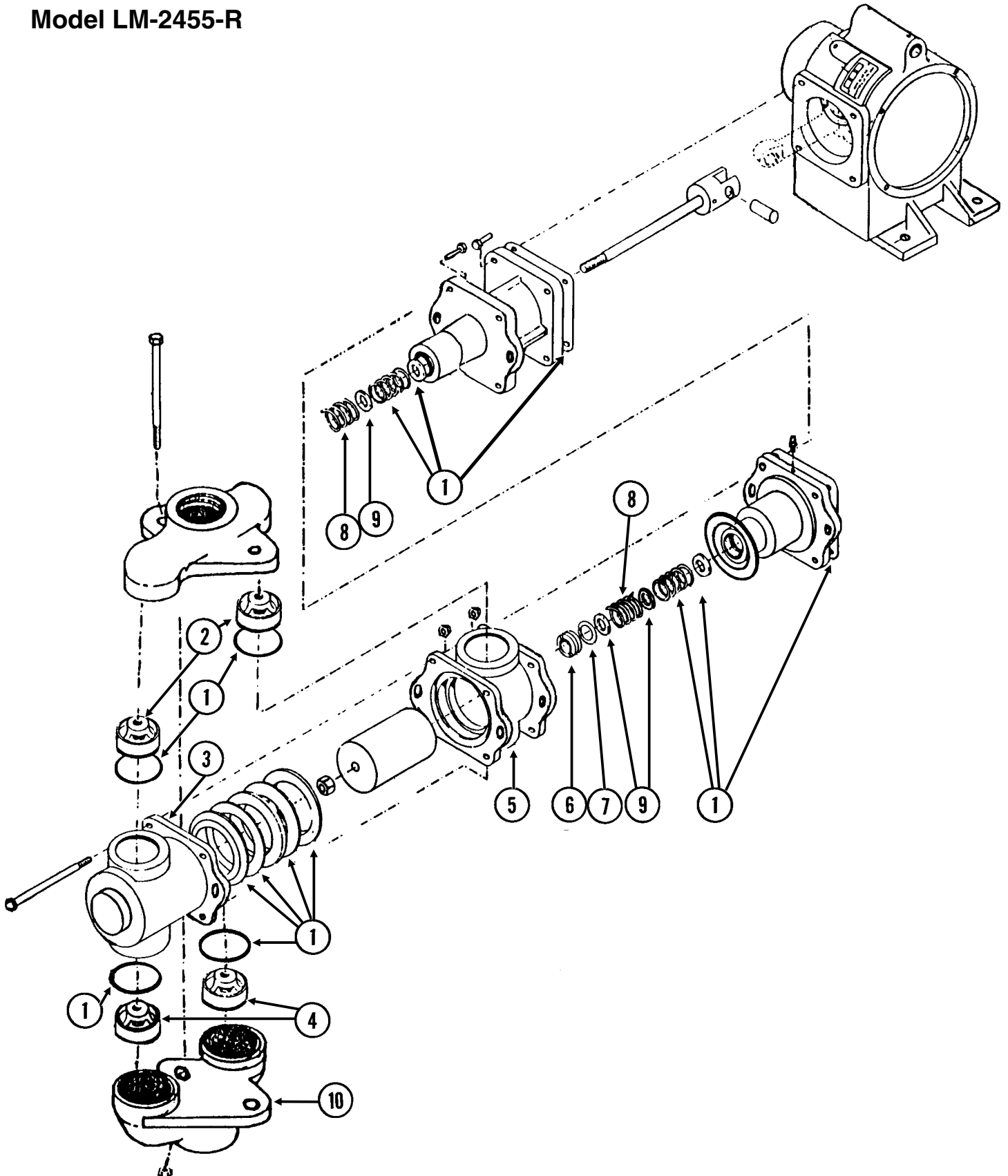
Model LM-2455-R



ITEM	PART NO.	QTY.	DESCRIPTION
1	GR1389	1	Sprocket, 18 Tooth
2	G10688	2	Square Head Set Screw, 3/8"-16 x 5/8"
3	GR1425	1	Repair Kit, Includes Item 1 on page P129
4	GR1427	2	Bearing
5	GR1420	1	Woodruff Key, 3/8"-16 x 1 3/4"
6	GR1167	1	Square Head Cap Screw, 3/8"-16 x 1 3/4"
7	G10043	4	Hex Head Cap Screw, 5/16"-18 x 3/4"
8	GR1168	1	Scale
9	G10108	1	Lock Nut, 3/8"-16
10	G10693	3	Hex Socket Head Set Screw, 5/16"-18 x 3/8"
11	GR1165	1	Arm
12	GR1114	1	Flange
13	GR1116	1	Bearing
14	GR1421	1	Crankshaft
15	GR1118	2	Setting Arm Key
16	---	-	See "Liquid Fertilizer Piston Pump Mounting Brackets and Driveline" on page P125
17	GR1424	1	Adjustment Wrench
A	GA8069	-	Piston Pump Complete W/18 Tooth Sprocket (Model LM-2455-R), Includes Crankcase Assembly On This Page And See "Liquid Fertilizer Piston Pump (Cylinder Assembly) Uses 18 Tooth Sprocket" on page P129

JB-L2190-991(FRTZ171)

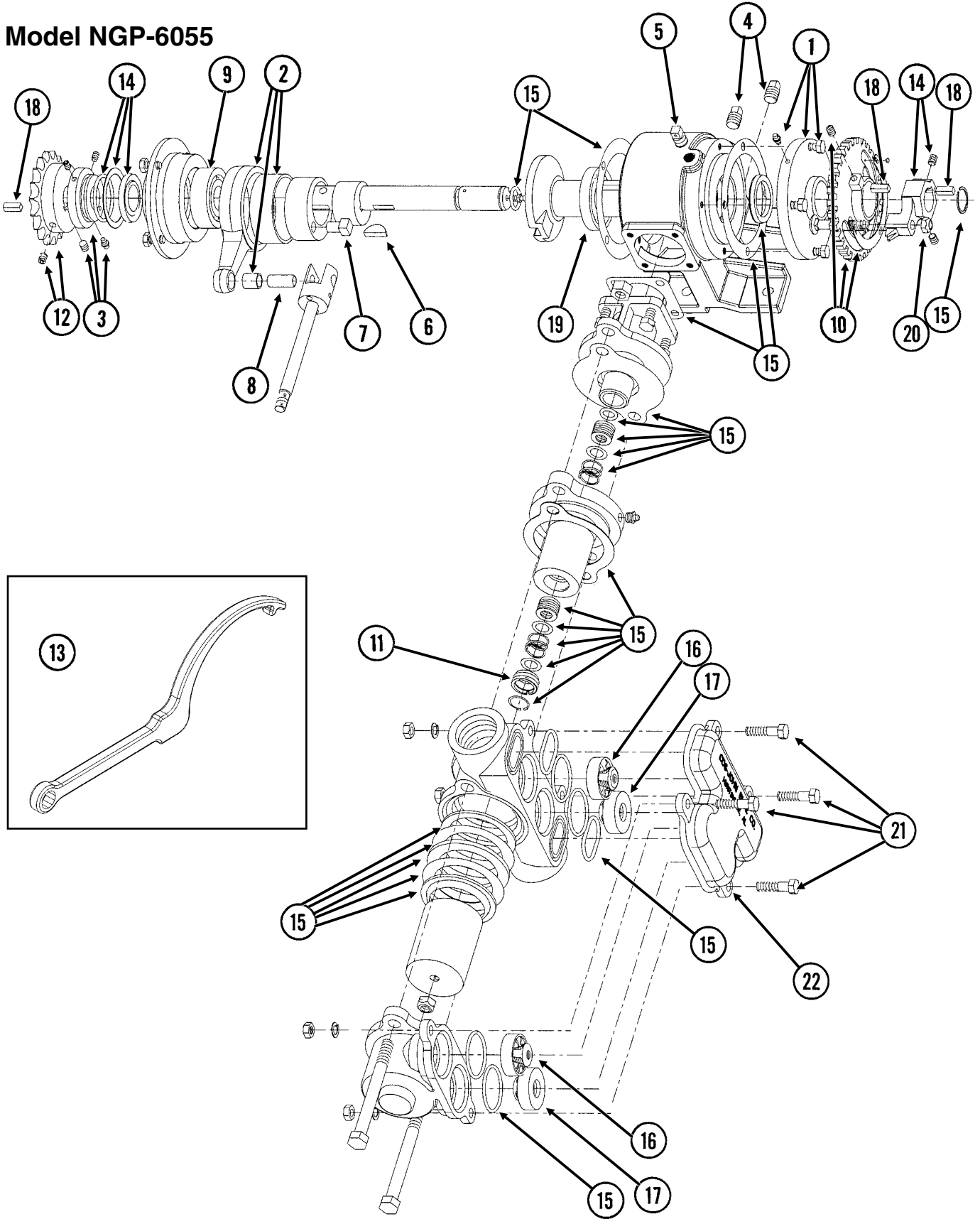
Model LM-2455-R



ITEM	PART NO.	QTY.	DESCRIPTION
1	GR1425	1	Repair Kit, Includes Item 3 page P127
2	GR1144	2	Discharge Valve
3	GR1423	1	Outboard Cylinder
4	GR1142	2	Suction Valve
5	GR1422	1	Inboard Cylinder
6	GR1134	1	Stuffing Box Insert
7	GR1133	1	Retaining Ring
8	GR1130	2	Packing Spring
9	GR1129	3	Washer
10	GR1451	1	Suction Manifold

(A12335a/GR1808)

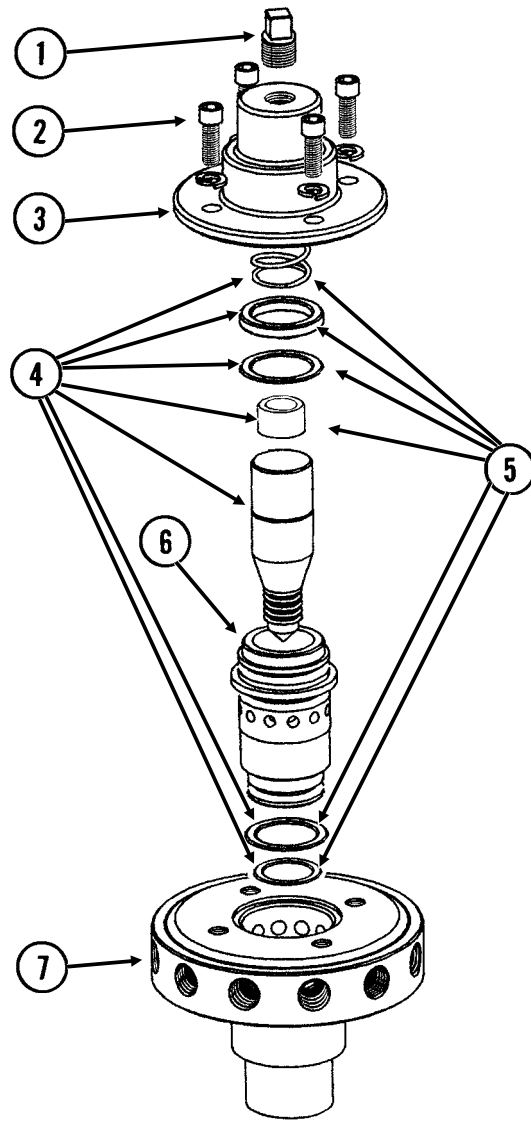
Model NGP-6055



ITEM	PART NO.	QTY.	DESCRIPTION
1	GR1804	1	Flange Cover Assembly
	G10991	4	Hex Head Cap Screw, 5/16"-18 x 7/8"
2	GR1802	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	GR1389	1	Sprocket, 18 Tooth
13	GR1808	1	Adjustment Wrench
14	GR1806	1	Setting Pointer Assembly
15	GR1795	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	GR1799	2	Discharge Valve Assembly
17	GR1797	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 Cap Screw, 3/8"-16 x 1 1/2"
	G11387	4	Flat Washer, 3/8" SAE
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
22	GR2003	1	Valve Cover
A	GA12330	-	Piston Pump Complete W/18 Tooth Sprocket (Model NGP-6055)

(FRTZ159/PT40a/FRTZ202c)

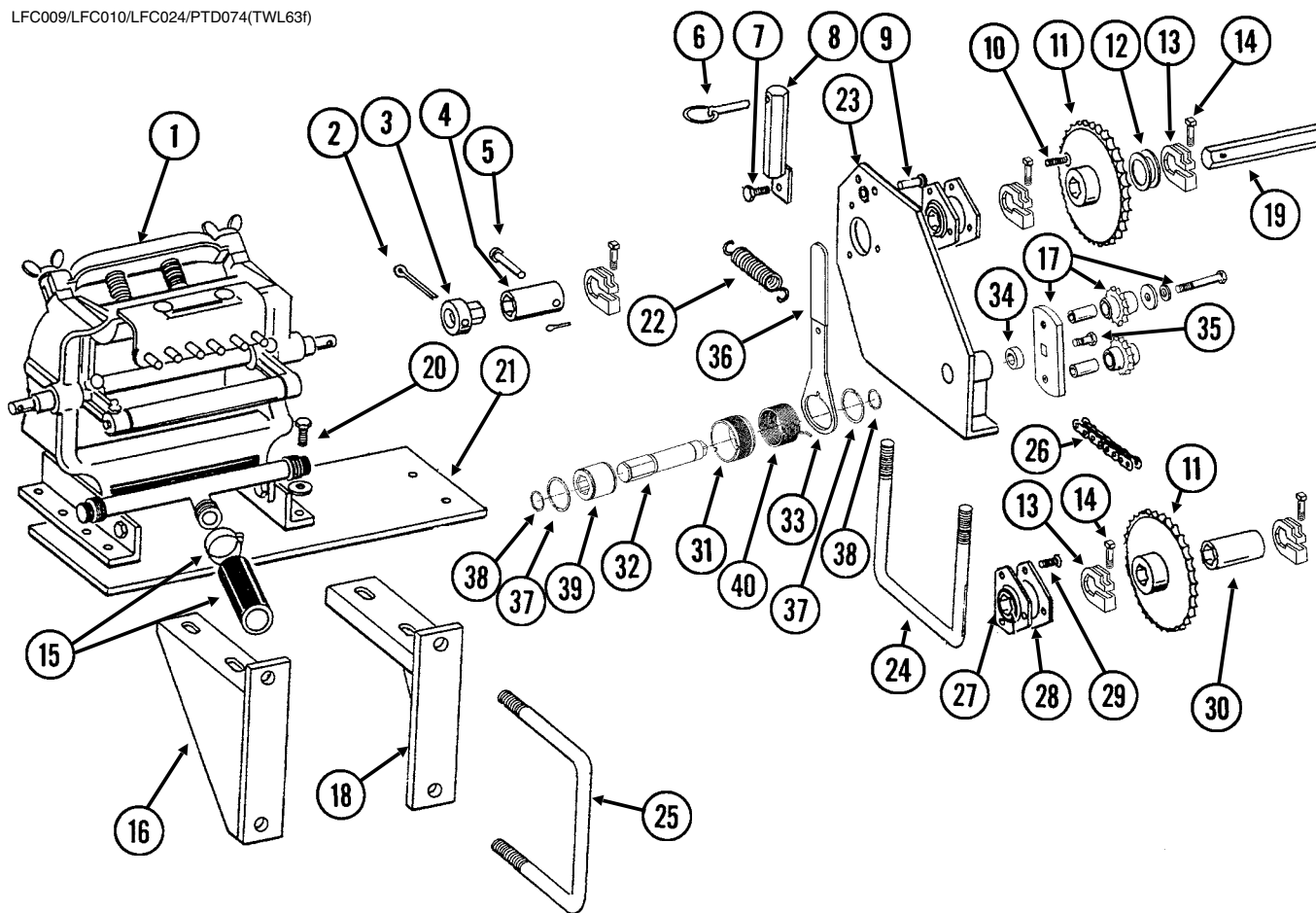
Model FD-1200 Flow Divider, 12 Outlet



3/4" NPT

ITEM	PART NO.	QTY.	DESCRIPTION
1	GR1543	1	Vent Plug
2	GR1542	4	Hex Socket Head Screw, 1/4"-20 x 3/4"
	GR1541	4	Lock Washer, 1/4", Stainless Steel
3	GR1540	1	Cap
4	GR1544	1	Needle Assembly W/Seal Kit (Item 22)
5	GR1545	1	Seal Kit, Includes: (3) O-Rings, (1) Seal, (1) Spring, (1) Stainless Steel Sleeve
6	GR1535	1	Sleeve
7	GR1533	1	Body (12 Outlets)
A	GA8931	1	Liquid Fertilizer Piston Pump Flow Divider Complete, 12 Outlet (Model FD-1200)

LFC009/LFC010/LFC024/PTD074(TWL63f)

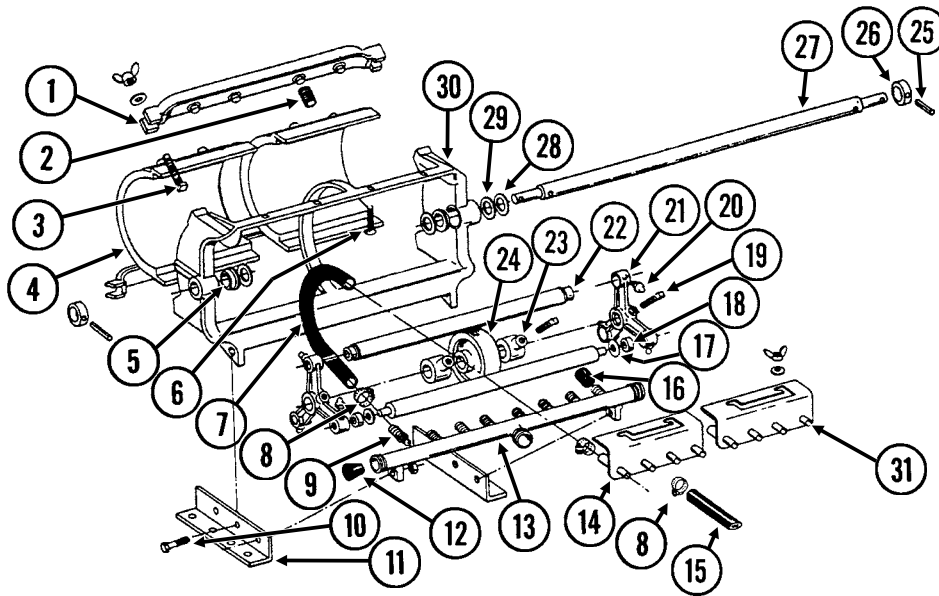


ITEM	PART NO.	QTY.	DESCRIPTION
1	---	-	See "Liquid Fertilizer Piston Squeeze Pump, 6 Row" on page P137 or See "Liquid Fertilizer Piston Squeeze Pump, 8 Row" on page P139
2	G10462	1	Cotter Pin, 3/16" x 2"
3	GD7127	1	Shear Coupler
4	GD9048	1	Coupler, 2 1/2"
5	G10558	1	Clevis Pin, 5/16" x 1 3/4"
	G10456	1	Cotter Pin, 1/8" x 3/4"
6	GD2558	1	Lynch Pin, 1/4"
7	G10037	1	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	G10228	1	Lock Washer, 1/2"
	G10102	1	Hex Nut, 1/2"-13
8	GA5229	1	Sprocket Storage Rod
9	G10478	1	Clevis Pin, 5/16" x 1"
10	G10312	3	Carriage Bolt, 5/16"-18 x 3/4"
	G10232	3	Lock Washer, 5/16"
	G10106	3	Hex Nut, 5/16"-18
11	GA5105	1	Sprocket, 15 Tooth
	GA5107	1	Sprocket, 19 Tooth
	GA6513	1	Sprocket, 32 Tooth
	GA5202	1	Sprocket, 34 Tooth
	GA6514	1	Sprocket, 46 Tooth
	GA6515	-	Sprocket, 62 Tooth (Optional)
12	G10233	2	Machine Bushing, 1 1/2" x 1/32", 10 Gauge

ITEM	PART NO.	QTY.	DESCRIPTION
13	GD11045	5	Lock Clamp
14	G10130	5	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G10923	5	Flange Nut, 5/16"-18, No Serration
15	---	-	See "Liquid Fertilizer Tanks, Saddles, Mounts, Hoses, and Fittings" on page P123
16	GA4619	1	Pump Mount, L.H.
17	GA7336	1	Idler W/Bolt-On Sprockets
	GD7426	-	Sprocket, 12 Tooth
	GD1026	-	Sleeve, 1 3/16" Long
	G11387	-	Flat Washer, 3/8" SAE
	G10229	-	Lock Washer, 3/8"
	G10047	-	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
18	GA4620	1	Pump Mount, R.H.
19	GD2548-30	1	Hex Shaft, 7/8" x 30" (1 Hole)
20	G10004	4	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G11387	4	Flat Washer, 3/8" SAE
	G10229	4	Lock Washer, 3/8"
	G10101	4	Hex Nut, 3/8"-16
21	GD6165	-	Plate (8 Row 30" Only)
22	GD5857	1	Spring
23	GA6403	1	Drive Plate W/Grease Fitting
	G10641	-	Grease Fitting, 1/8" NPT
	G10640	-	Grease Fitting, 1/4"-28
24	GD1134	1	U-Bolt, 7" x 5" x 5/8"-11
	G10230	2	Lock Washer, 5/8"
	G10104	2	Hex Nut, 5/8"-11
25	GD1113	2	U-Bolt, 5" x 7" x 5/8"-11
	G10230	4	Lock Washer, 5/8"
	G10104	4	Hex Nut, 5/8"-11
26	G3310-176	1	Chain, No. 40, 176 Pitch Including Connector Link
	GR0912	-	Connector Link, No. 40
27	G2100-03	2	Bearing, 7/8" Hex Bore, Spherical
28	G3400-01	4	Flangette
29	G10303	6	Carriage Bolt, 5/16"-18 x 1"
	G10232	6	Lock Washer, 5/16"
	G10106	6	Hex Nut, 5/16"-18
30	GD1719	1	Coupler, 4"
	G10409	1	Retaining Ring, 5/16"
31	GD19343	1	Release Collar, R.H. (Shown)
	GD19344	-	Release Collar, L.H.
32	GD14427	1	Tightener Shaft, 4 7/8"
33	GD14431	1	Handle
34	GD2734-08	1	Sleeve, 1 1/4" O.D. x 5/8" Long
35	G11100	1	Hex Socket Button Head Cap Screw, 1/4"-20 x 1/2", Grade 8
	G10227	1	Lock Washer, 1/4"
	G11385	1	Flat Washer, 1/4" SAE
36	G11078	1	Vinyl Cap
37	G10496	2	External Inverted Snap Ring, 1 1/2"
38	G11075	2	External Inverted Snap Ring, 7/8"
39	GD14432	1	Sleeve, 1 1/4"
40	GD14413	-	Torsion Spring, L.H. (Used In R.H. Wrap Spring Wrench)(Shown)
	GD14414	1	Torsion Spring, R.H. (Used In L.H. Wrap Spring Wrench)
A	G1K269	-	Lock Clamp Kit (Items 13 And 14)
B	G1K379	-	Wrap Spring Wrench Replacement Kit, Silver Collar, L.H. (Items 31-40)

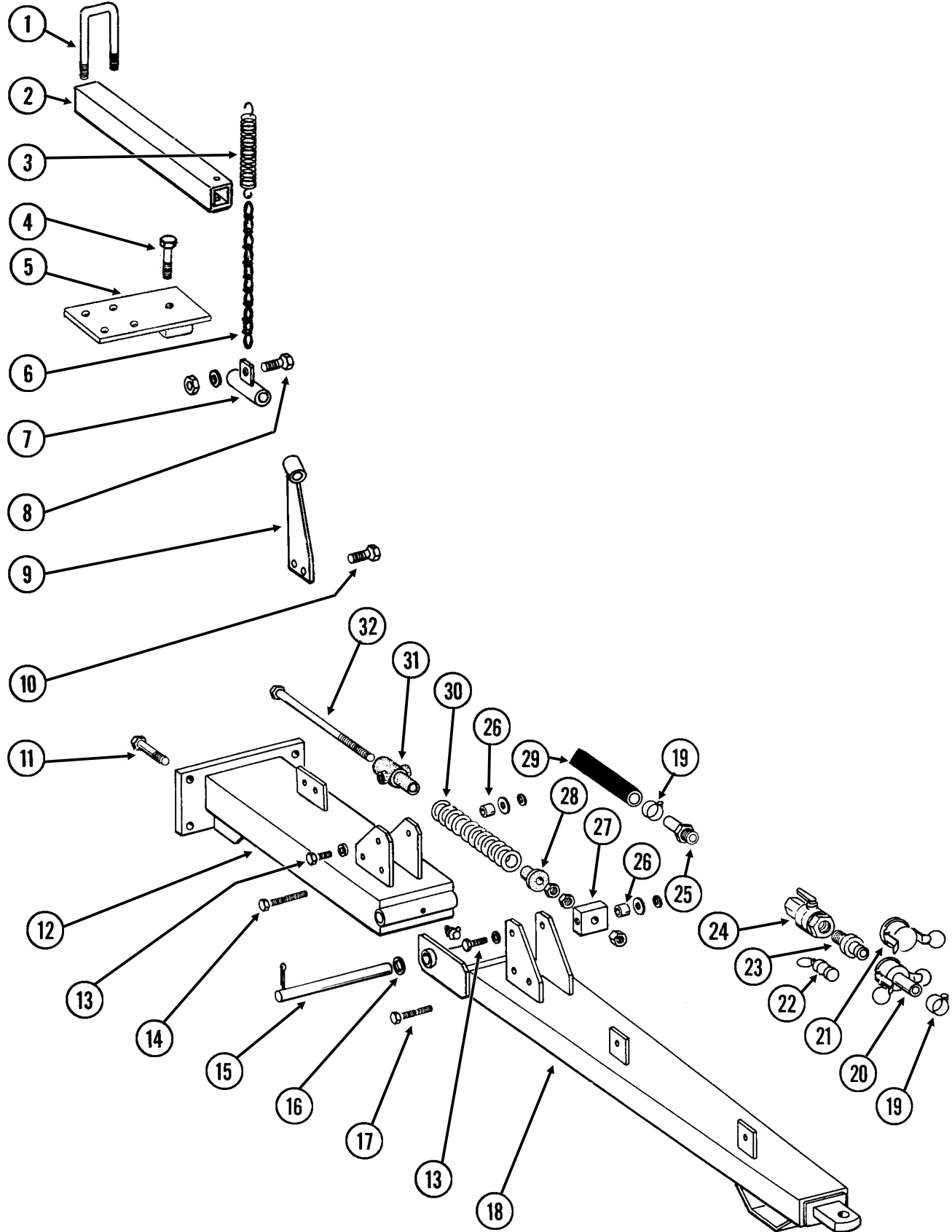
ITEM	PART NO.	QTY.	DESCRIPTION
1	GR0216	2	Spring Anchor Bar
2	GR0214	4	Spring
3	G10130	4	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G11386	4	Flat Washer, 5/16" SAE
	G10144	4	Wing Nut, 5/16"-18
4	GR0212	1	Plate
5	GR0207	2	Nylon Bushing
6	G10303	2	Carriage Bolt, 5/16"-18 x 1"
	G11386	2	Flat Washer, 5/16" SAE
	G10144	2	Wing Nut, 5/16"-18
7	GR0215	6	Metering Hose, 1/2" x 13"
8	G10681	-	Hose Clamp, No. 6
9	G10004	4	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10101	4	Hex Nut, 3/8"-16
10	GR0213	2	Angle
11	GR0217	2	Manifold Plug
12	GR0232	6	Adapter
13	GR0228	1	Intake Manifold
14	GR1484	1	Discharge Manifold Less Hose Barbs
15	G4301-02	1	Hose, 3/8" x 50'
16	GR0211	-	Rubber Cap
17	GR0229	6	Nylon Washer
18	GR1626	6	Bushing
19	G10131	2	Square Head Set Screw, 5/16"-18 x 3/4"
20	G10640	8	Grease Fitting, 1/4"-28
21	GR0231	2	Roller Arm
22	GR0233	3	Roller
23	G10718	2	Spring Pin, 5/16" x 1 1/8"
24	GD9109	2	Sleeve
25	GD9107	1	Shaft
26	GR0226	2	Shim, 3/64"
27	GR0225	2	Shim, 1/32"
28	GR0208	1	Frame
29	GR1577	6	Nylon Hose Barb, 1/2" x 3/8" (If Applicable)
A	GA8691	-	Squeeze Pump Complete, 6 Rows (Items 1-13, 15-22 And 25-29)

LFC010(PT48a)

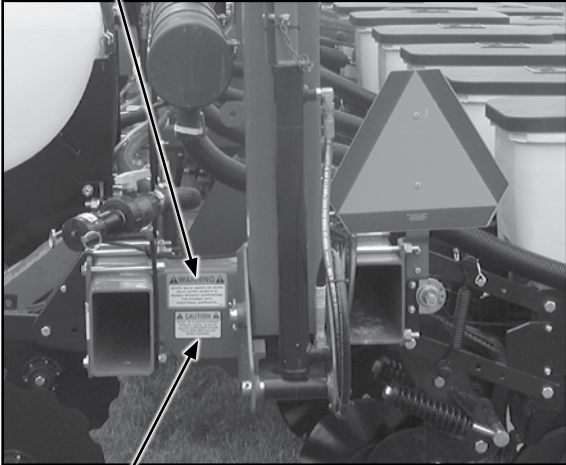
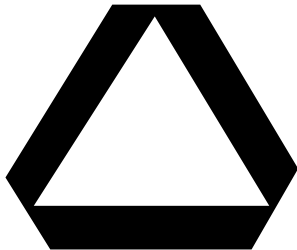
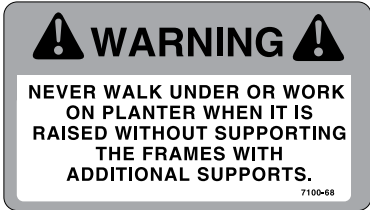
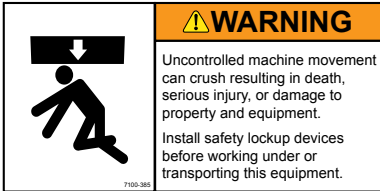






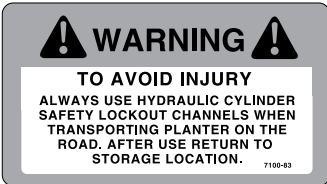
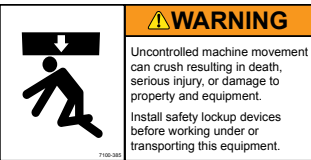
ITEM	PART NO.	QTY.	DESCRIPTION
1	GR0221	2	Spring Anchor Bar
2	GR0214	8	Spring
3	G10130	4	Square Head Machine Bolt, 5/16"-18 x 1 3/4"
	G11386	4	Flat Washer, 5/16" SAE
	G10144	4	Wing Nut, 5/16"-18
4	GR0212	2	Plate
5	GR0207	2	Nylon Bushing
6	G10303	4	Carriage Bolt, 5/16"-18 x 1"
	G11386	4	Flat Washer, 5/16" SAE
	G10144	4	Wing Nut, 5/16"-18
7	GR0215	8	Metering Hose, 1/2" x 13"
8	G10681	-	Hose Clamp, No. 6
9	GR0232	8	Adapter
10	G10004	4	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10101	4	Hex Nut, 3/8"-16
11	GR0279	1	Angle, L.H.
	GR0280	1	Angle, R.H.
12	GR0217	2	Manifold Plug
13	GR0284	1	Intake Manifold
14	GR1485	2	Discharge Manifold Less Hose Barbs
15	G4301-04	1	Hose, 3/8" x 100'
16	GR0211	-	Rubber Cap
17	GR0229	6	Nylon Washer
18	GR1626	6	Bushing
19	G10131	2	Square Head Set Screw, 5/16"-18 x 3/4"
20	G10640	8	Grease Fitting, 1/4"-28
21	GR0231	2	Roller Arm
22	GR0283	3	Roller
23	GR0282	2	Set Collar
24	GR0281	1	Back Up Roller
25	G10718	2	Spring Pin, 5/16" x 1 1/8"
26	GD9109	2	Sleeve
27	GD9108	1	Shaft
28	GR0226	4	Shim, 3/64"
29	GR0225	4	Shim, 1/32"
30	GR0222	1	Frame
31	GR1577	8	Nylon Hose Barb, 1/2" x 3/8" (If Applicable)
A	GA8692	-	Squeeze Pump Complete, 8 Rows (Items 1-14, 16-24 And 27-31)

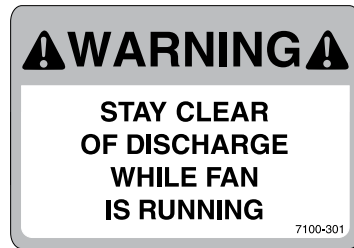
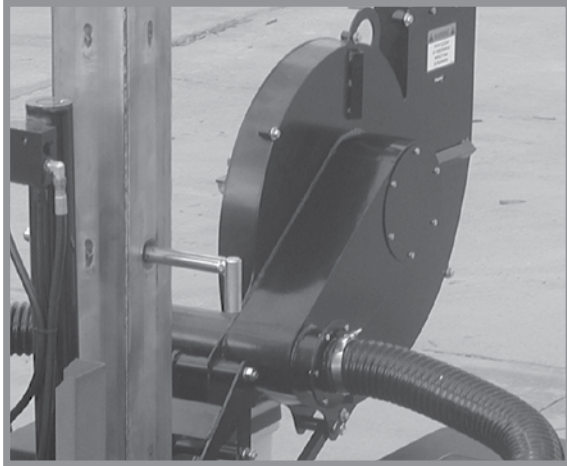
PHA032/LFC003(TWL47b)



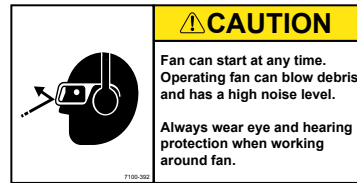
ITEM	PART NO.	QTY.	DESCRIPTION
1	GD2721	2	U-Bolt, 2" x 2" x 1/2"-13
	G10228	4	Lock Washer, 1/2"
	G10102	4	Hex Nut, 1/2"-13
2	GD10196	-	Hanger Tube
3	GD0829	-	Spring
4	G10013	1	Hex Head Cap Screw, 5/8"-11 x 3 1/2" (As Required)
	G11391	1	Flat Washer, 5/8" SAE (As Required)
	G10230	1	Lock Washer, 5/8" (As Required)
	G10056	-	Hex Head Cap Screw, 3/4"-10 x 3 1/2" (As Required)
	G11392	-	Flat Washer, 3/4" SAE (As Required)
	G10231	-	Lock Washer, 3/4" (As Required)
	5	GA7211	1
6	G3305-03	-	Twin Loop Chain, 15 Links
7	GA7209	-	Hose Support
8	G10064	1	Hex Head Cap Screw, 1/4"-20 x 1"
	G11385	2	Flat Washer, 1/4" SAE
	G10110	1	Lock Nut, 1/4"-20, Grade B
9	GA7208	-	Hose Support
10	G10004	2	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	G10108	2	Lock Nut, 3/8"-16
11	G10826	5	Hex Head Cap Screw, 1"-8 x 2 1/2"
	G10396	5	Lock Nut, 1"-8
12	GA6960	1	Hitch
13	G10007	4	Hex Head Cap Screw, 5/8"-11 x 1 1/2"
	G11391	4	Flat Washer, 5/8" SAE
	G10230	4	Lock Washer, 5/8"
14	G10756	1	Hex Head Cap Screw, 3/8"-16 x 6"
	G10229	1	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
15	GD3547	1	Pin, 1 1/4" x 12 3/4"
16	G11396	2	Flat Washer, 1 1/4" SAE
	G10460	2	Cotter Pin, 1/4" x 2"
17	G10172	1	Hex Head Cap Screw, 3/8"-16 x 5"
	G10229	1	Lock Washer, 3/8"
	G10101	1	Hex Nut, 3/8"-16
18	GA6961	1	Hitch
19	G10672	6	Hose Clamp, No. 28
20	GD1516	1	Adapter, 1 1/4" Barb To Female Cam Lock
21	GD1515	1	Dust Cap, 1 1/4" Cam Lock
22	GD1517	1	Dust Plug, 1 1/4" Male Cam Lock
23	GD1514	1	Adapter, 1 1/4" Male NPT To Cam Lock
24	GA4976	1	Shutoff Valve, 1 1/4" NPT
	GR1015	-	Body O-Ring
	GR1016	-	Stem O-Ring
	GR1017	-	Teflon Seat
	GR1018	-	Ball
	GR1019	-	Handle
25	G10626	1	Adapter, 1 1/4" NPT To Barb
26	GB0218	4	Bushing, 2 1/32" I.D. x 7/8" O.D. x 1 9/32" Long
27	GD7908	1	Tap Block
28	GB0213	1	Spring Seat
29	G4200-01	1	Hose, 1 1/4" x 22'
30	GD2115	1	Spring
31	GB0206	1	Rod Guide
32	GD7907	1	Special Bolt
	G10105	3	Hex Nut, 3/4"-10

<p>G7100-68 or G7100-385</p>  <p>GD7100-63</p>	
	<p>Part No.: GD2199 Description: SMV Sign Quantity: 1</p>
	
	<p>Part No.: G7100-68 Description: Decal, Warning (Prior to 2012 Production) Quantity: 2 (1 On Each End of Planter Frame)</p>
	
	<p>Part No.: G7100-385 Description: Decal, Warning (2012 Production and On) Quantity: 2 (1 On Each End of Planter Frame)</p>
	
<p>Part No.: G7100-63 Description: Decal, Caution Quantity: 2 (On Each End of Planter Frame)</p>	

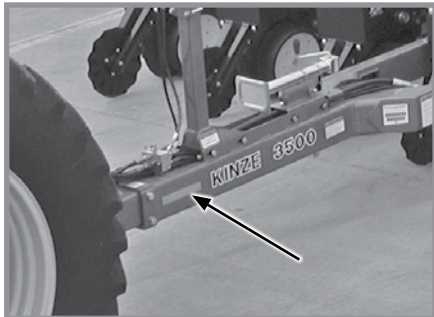
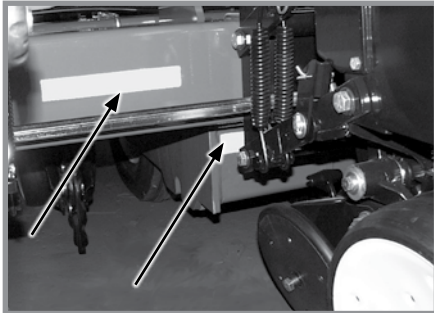
<p>G7100-42 or G7100-397</p>  <p>G7100-83 or G7100-385</p>	 <p>Part No.: G7100-42 Description: Decal, Warning (Prior to 2012 Production) Quantity: 4 (2 Per Row Marker)</p>
	 <p>Part No.: G7100-397 Description: Decal, Warning (2012 Production and on) Quantity: 1 (Per Row Marker Cylinder - Conventional) 4 (2 Per Row Marker)</p>
	 <p>Part No.: G7100-83 Description: Decal, Warning (Prior to 2012 Production) Quantity: 2 (1 Per Marker Lockup)</p>
	 <p>Part No.: G7100-385 Description: Decal, Warning (2012 Production and On) Quantity: 1 (Located On Interplant Lift Cylinder Lockup)</p>



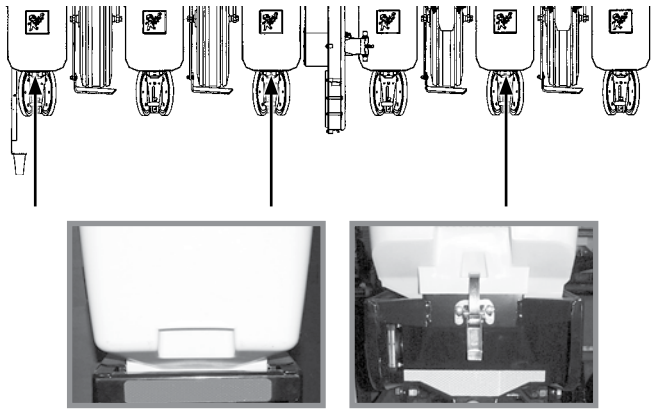




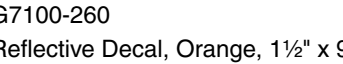
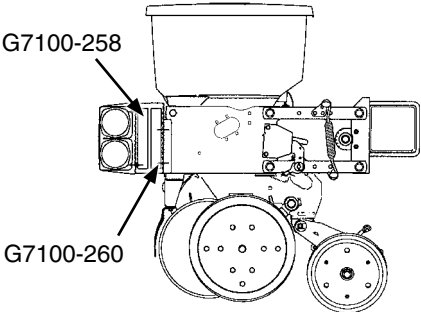
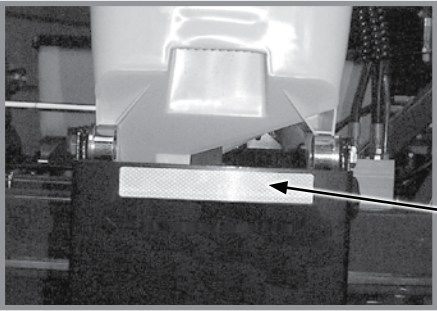

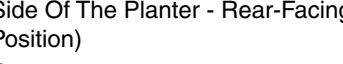
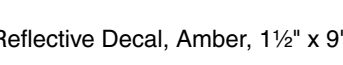
Part No.: G7100-301
 Description: Decal, Warning (Prior to 2012 Production)
 Quantity: 2 (Located On Each Side Of Fan)

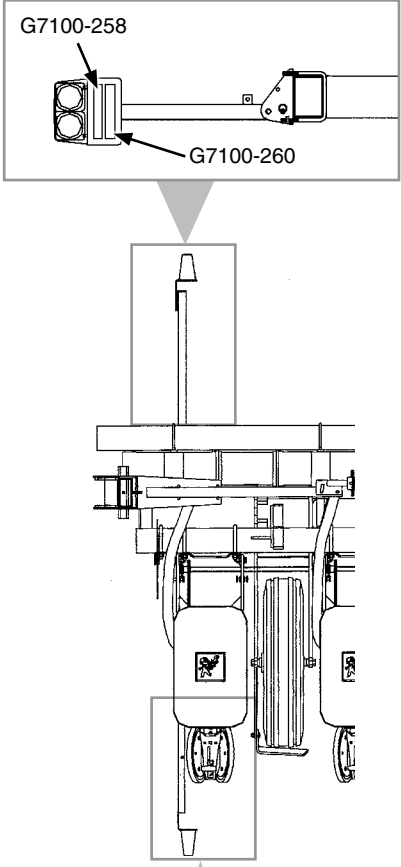
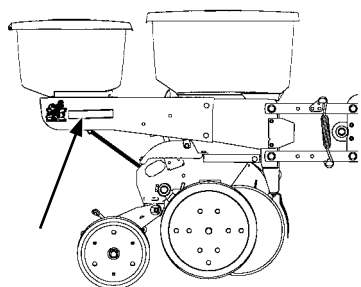





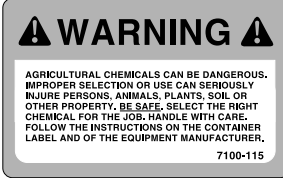


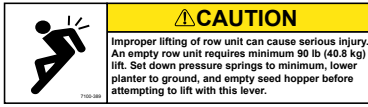
Part No.: G7100-392
 Description: Decal, Caution (2012 Production and on)
 Quantity: 2 (Located On Each Side Of Fan)



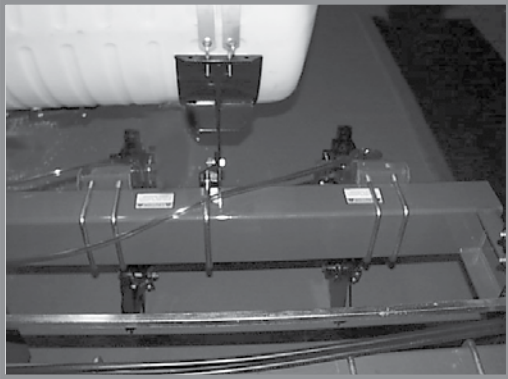

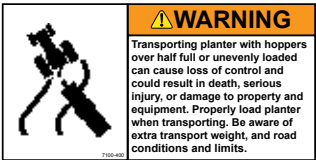
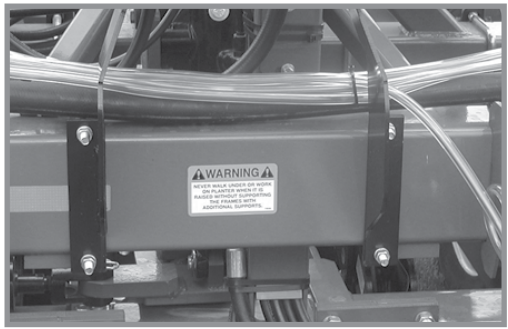
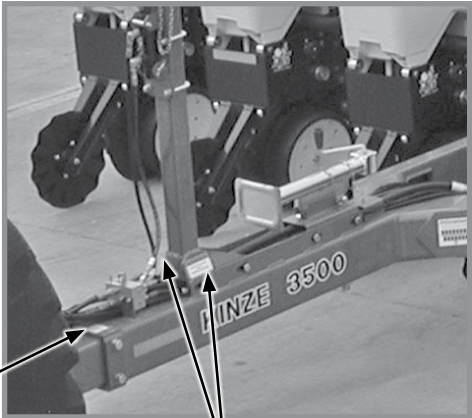


Part No.: G7100-259
 Description: Reflective Decal, Amber, 1½" x 9", Rectangular
 Quantity: 7 On 6 Row/Qty. 8 On 8 Row (Located on the front planter toolbar in front of every other row unit beginning on the L.H. side of the planter and forward-facing on the outer ends of The transport axle. One located on each side of hitch.)







	 <p>Part No.: G7100-259 Description: Reflective Decal, Amber, 1½" x 9", Rectangular Quantity: 2 (Per Row Unit - Located On The Granular Chemical Hopper Panel Extension Of Every Other Row Unit Beginning On The L.H. Side Of The Planter - Side-Facing In Transport Position)</p>  <p>Part No.: G7100-262 Description: Reflective Decal, Amber, 1¾" x 9", Die-Cut Quantity: 1 (Qty. 1 Per Row Unit - Located On The Hopper Support Of Every Other Row Unit Beginning On The L.H. Side Of The Planter - Side-Facing In Transport Position)</p>
	 <p>Part No.: G7100-258 Description: Reflective Decal, Red, 1½" x 9" Rectangular Quantity: 1 (Per Scraper - Located On Top)</p>  <p>Part No.: G7100-260 Description: Reflective Decal, Orange, 1½" x 9" Rectangular Quantity: 1 (Per Scraper - Located On Bottom)</p>
<p>With Even-Row Push Row Unit Option</p>  	 <p>Part No.: G7100-258 Description: Reflective Decal, Red, 1½" x 9" Rectangular Quantity: 1 (Located On The Light Bracket On The L.H. Side Of The Planter - Rear-Facing In Transport Position)</p>  <p>Part No.: G7100-260 Description: Reflective Decal, Orange, 1½" x 9" Rectangular Quantity: 1 (Located On The Light Bracket On The L.H. Side Of The Planter - Rear-Facing In Transport Position)</p>  <p>Part No.: G7100-259 Description: Reflective Decal, Amber, 1½" x 9", Rectangular Quantity: 2 On 6 Row And 3 On 8 Row (Located On The Front Of Every Other Push Row Unit Beginning On The Second Row In - Side-Facing In Transport Position)</p>



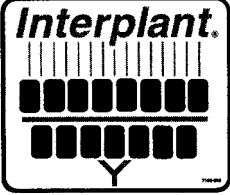



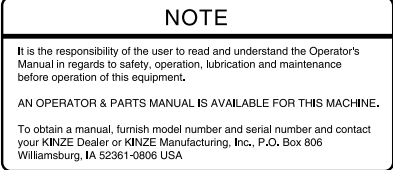
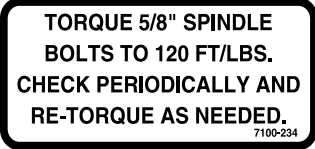
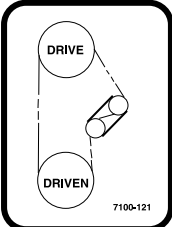
 <p>G7100-258</p> <p>G7100-260</p> <p>With Granular Chemical Option</p> <p>G7100-258</p> <p>G7100-260</p>	<div style="background-color: #cccccc; width: 100px; height: 20px; margin-bottom: 10px;"></div> <p>Part No.: G7100-258 Description: Reflective Decal, Red, 1½" x 9" Rectangular Quantity: 1 (Located On The Light Bracket On the L.H. Side Of The Planter - Rear-Facing In Transport Position)</p> <p>1 (Located On The Outer Row Unit On the L.H. Side Of The Planter - Rear-Facing In Transport Position)</p> <hr/> <p>Part No.: G7100-260 Description: Reflective Decal, Orange, 1½" x 9" Rectangular Quantity: 1 (Located On The Light Bracket On the L.H. Side Of The Planter - Rear-Facing In Transport Position)</p> <p>1 (Located On The Outer Row Unit On the L.H. Side Of The Planter - Rear-Facing In Transport Position)</p>
<p>With Granular Chemical Option</p> 	<div style="background-color: #cccccc; width: 100px; height: 20px; margin-bottom: 10px;"></div> <p>Part No.: G7100-259 Description: Reflective Decal, Amber, 1½" x 9", Rectangular Quantity: 1 (Located On The Outer Row Unit On The R.H. Side Of The Planter - Forward- Facing In Transport Position)</p>

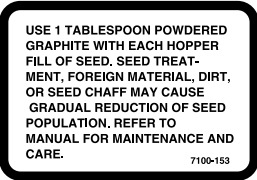


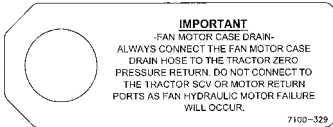




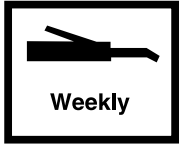
	
<p>Part No.: G7100-89 Description: Decal, Danger Quantity: 1 (Located on Wheel Modules On Both Ends Of Planter)</p>	
	
<p>Part No.: G7100-115 Description: Decal, Warning Quantity: 1 (1 Per Row Unit - Located On Underside Of Granular Chemical Hopper Lid)</p>	
	
<p>Part No.: G7100-249 Description: Decal, Caution Quantity: 1 (Located On Interplant Push Row Unit Lift Lever) (Prior to 2012 Production)</p>	
	<p>Part No.: G7100-389 Description: Decal, Caution Quantity: 1 (Located On Interplant Push Row Unit Lift Lever) (2012 Production and on)</p>



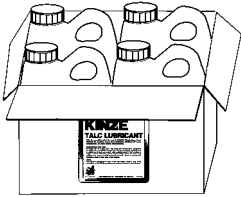
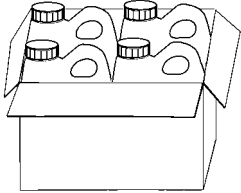


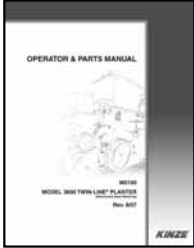
	
	<p>Part No.: G7100-215 Description: Decal, Danger Quantity: 1</p>
	 <p>Part No.: G7100-90 Description: Decal, Warning Quantity: 1</p>
	 <p>Part No.: G7100-46 Description: Decal, Warning Quantity: 1</p>

	
<p>Part No.: G7100-75 Description: Decal, Caution (Prior to 2012 Production) Quantity: 4 (Located On Top Of Toolbar 36" And 51" From L.H. End of Toolbar And 28" And 43" From R.H. End of Toolbar)</p>	
<p>Part No.: G7100-400 Description: Decal, Warning (2012 Production and On) Quantity: 4 (Located On Top Of Toolbar 36" And 51" From L.H. End of Toolbar And 28" And 43" From R.H. End of Toolbar)</p>	
<p>Part No.: G7100-68 Description: Decal, Warning Quantity: 1</p>	
	<p>Part No.: G7100-02 Description: Decal, Warning Quantity: 2</p>
	<p>Part No.: G7100-302 Description: Decal, Warning Quantity: 1</p>

	
	<p>Part No.: G7100-02 Description: Decal, Warning Quantity: 2 (Front and Rear)</p>
	
	<p>Part No.: G7100-68 Description: Decal, Warning (Prior to 2012 Production) Quantity: 1</p>
	
<p>Part No.: G7100-385 Description: Decal, Warning (2012 Production and On) Quantity: 1</p>	
	<p>Part No.: GD1162 Description: Tie Strap, 28"</p> <p>Part No.: GD1512 Description: Tie Strap, 7½"</p> <p>Part No.: GD2117 Description: Tie Strap, 14½"</p> <p>Part No.: GD2984 Description: Tie Strap, 34"</p>
	<p>Part No.: GD10057-01 Description: Hose Identification Sleeve, Red AA</p> <p>Part No.: GD10057-02 Description: Hose Identification Sleeve, Red BB</p> <p>Part No.: GD10057-03 Description: Hose Identification Sleeve, Blue AA</p> <p>Part No.: GD10057-04 Description: Hose Identification Sleeve, Blue BB</p>

	<p>Part No.: G7100-295 Description: Decal, Spring Tension Release Quantity: -</p>
	<p>Part No.: G7100-104 Description: Decal, KINZE, 3" x 12" Quantity: 1</p>
	<p>Part No.: G7100-208 Description: Decal, Interplant Quantity: 2</p>
	<p>Part No.: G7100-247 Description: Decal, Logo, 4³/₈" x 4¹/₂" Quantity: 2 (Per Row Unit)</p> <p>Part No.: G7100-252 Description: Decal, Logo, 3¹/₂" x 3⁵/₈" (Hopper Panel Extension) Quantity: -</p>
	<p>Part No.: G7100-244 Description: Decal, 3500 Quantity: 2</p>
	<p>Part No.: G7100-177 Description: Decal, Twin-Line®, 3/4" x 3" Quantity: 1</p>
	<p>Part No.: G7100-217 Description: Decal, Note Quantity: 1</p>
	<p>Part No.: G7100-234 Description: Decal, Bolt Torque Quantity: -</p>
	<p>Part No.: G7100-121 Description: Decal, Transmission Quantity: 1</p>

	<p>Part No.: G7100-153 Description: Decal, Information Quantity: 1 Per Brush-Type Seed Meter</p>
	<p>Part No.: G7100-337 Description: Decal, Instruction</p>
	<p>Part No.: G7100-311 Description: Decal, EdgeVac</p>
	<p>Part No.: G7100-329 Description: Tag, Fan Motor Case Drain</p>
	<p>Part No.: G7100-335 Description: Decal, Kinze Vision</p>
	<p>Part No.: G7100-352 Description: Decal, Tank Drain</p>
	<p>Part No.: G7100-111 Description: Decal, Oil Daily</p>
	<p>Part No.: G7100-116 Description: Decal, Grease Daily</p>
	<p>Part No.: G7100-110 Description: Decal, Grease Weekly</p>

	<p>Part No.: GR0155 Description: Blue Paint, Aerosol Can</p> <p>Part No.: GR0155MPP Description: Blue Paint, Twelve Aerosol Cans</p>
	<p>Part No.: GR0146 Description: Powdered Graphite, 1 Pound Container</p> <p>Part No.: GR0146MPP Description: Powdered Graphite, Twenty-Four 1 Pound Containers</p>
	<p>Part No.: GR1570MPP Description: Talc Lubricant, Four 8 Pound Containers</p> <p>Part No.: GR1828 Description: Talc Lubricant, 30 Pound Container</p>
	<p>Part No.: GR1842MPP Description: Graphite Lubricant, Four 5 Pound Containers</p>
	<p>Part No.: G7100-294 Description: Decal, KINZE 3500 (Prior to 2011 production) Quantity: 2 (1 On Each Side of Hitch)</p>
	<p>Part No.: G7100-365 Description: Decal, KINZE 3500 (2011 production and on) Quantity: 2 (1 On Each Side of Hitch)</p>
	<p>Part No.: GM0240-01 Description: Operator Manual, Model 3500</p> <p>Part No.: GM0240-02 Description: Parts Manual, Model 3500</p>

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