3 POINT MOUNTED II PLANTER

OPERATOR & PARTS MANUAL

M0139 Rev. 4/90

This manual is applicable to: Model: MT 3 Point Mounted II Planters
Serial Number: 16057 and on

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

Model Number MT

Serial Number _____

Date Purchased _____

PREDELIVERY/DELIVERY CHECK LIST

TO THE DEALER

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

PREDELIVERY CHECK LIST

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

- ❑ Recheck to be sure row units and optional attachments are properly spaced and assembled.
- ❑ Be sure all grease fittings are in place and lubricated.
- ❑ Check planter and make sure all working parts are moving freely, bolts are tight and cotter pins are spread.
- ❑ Check for oil leaks, proper hydraulic operation and proper chain alignment.
- ❑ Inflate tires to specified PSI air pressure. Tighten wheel bolts to specified torque.
- ❑ Check to be sure all safety decals are correctly located and legible. Replace if damaged.
- ❑ Check to be sure the red reflectors and amber reflectors are correctly located and visible when the planter is in transport position.
- ❑ Check to be sure SMV sign is in place.
- ❑ Check to be sure flashing warning lights are installed correctly and working properly.
- ❑ Paint all parts scratched in shipment or assembly.
- ❑ Be sure all safety lockups are on the planter and correctly located.

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

_____

(Signature of Set-up Person/Date)

Tear Along Perforation

OWNER REGISTER

Name _____ Date Sold _____

Street Address _____ Model _____

City & State _____ Serial Number _____

DELIVERY CHECK LIST

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

❑ Advise the customer that the life expectancy of this or any other machine is dependent on regular lubrication as directed in the operator's manual.

❑ Tell the customer about all safety precautions.

❑ Along with the customer, check to be sure the red and amber reflectors and SMV sign are clearly visible with the planter in transport position and attached to the tractor. Check to be sure flashing warning lights are in working condition. Tell the customer to check federal, state and local regulations before towing or transporting on a road or highway.

❑ Give the operator's manual to the customer and explain all operating adjustments.

❑ Read warranty to customer.

❑ Complete Warranty And Delivery Report Form.

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

_____

(Signature of Delivery Person/Date)

AFTER DELIVERY CHECK LIST

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

❑ Check with the customer as to the performance of the planter.

❑ Review with the customer the importance of proper maintenance and safety precautions.

❑ Check for parts that may need to be adjusted or replaced.

❑ Check to be sure all safety decals, SMV sign and reflectors are correctly located and legible. Replace if damaged or missing.

❑ Check to be sure safety warning lights are working properly.

_____

(Signature of Follow-up Person/Date)

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

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PARTS SECTION NUMERICAL INDEX ..... a

TO THE OWNER

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

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

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

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

NOTE: Indicates a special point of information.

CAUTION: Indicates that a failure to observe can cause damage to the machine or equipment.

⚠ **WARNING: Indicates that a failure to observe can cause damage to the machine or equipment and/ or personal injury.**

⚠ **DANGER: Indicates that a failure to observe can cause most serious damage to the machine or equipment and/or most serious personal injury.**

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

NOTE: Some photos in this manual may have been taken of prototype machines. Production machines may vary in appearance.

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

This manual is applicable to: 3 Point Mounted II Planter
Model Number MT
Serial Number 16057 and on

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

Model Number_____

Serial Number_____

Date Purchased_____

WARRANTY

The KINZE Limited Warranty for your new machine is stated on the back of the retail purchaser's copy of the Warranty And Delivery Report form.

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

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

Additional copies of the Limited Warranty can be obtained through your KINZE Dealer.

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

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

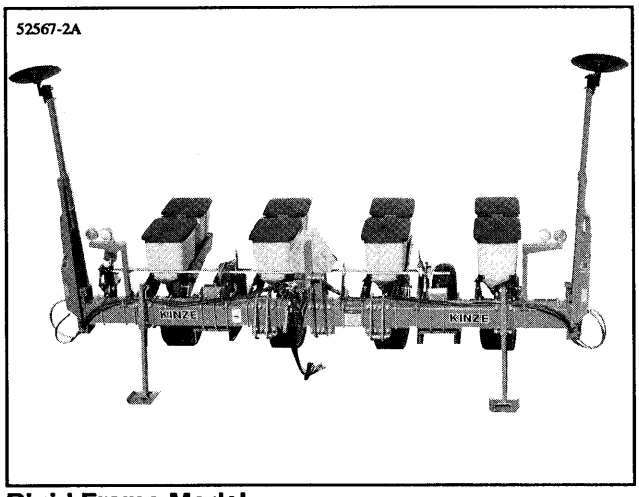
INTRODUCTION

The 3 Point Mounted planter is available with a choice of 30", 36", 38" or 40" row spacings, plateless or plate-type seed metering, granular chemical application equipment and heavy duty coulters.

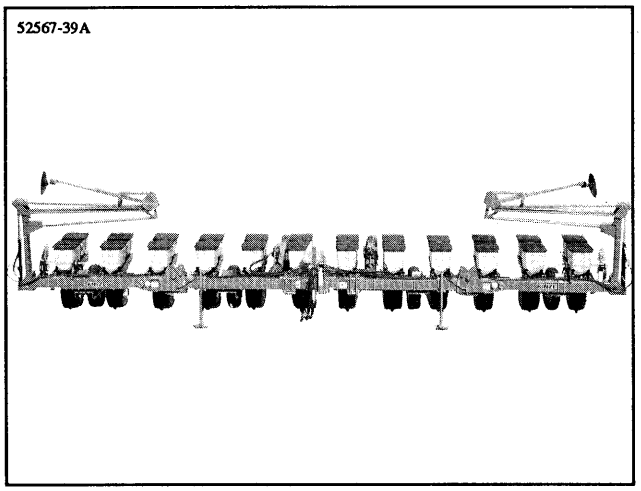
GENERAL INFORMATION

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

Right hand and left hand as used throughout this manual is determined by facing in the direction the machine will travel when in use unless otherwise stated.



Rigid Frame Model

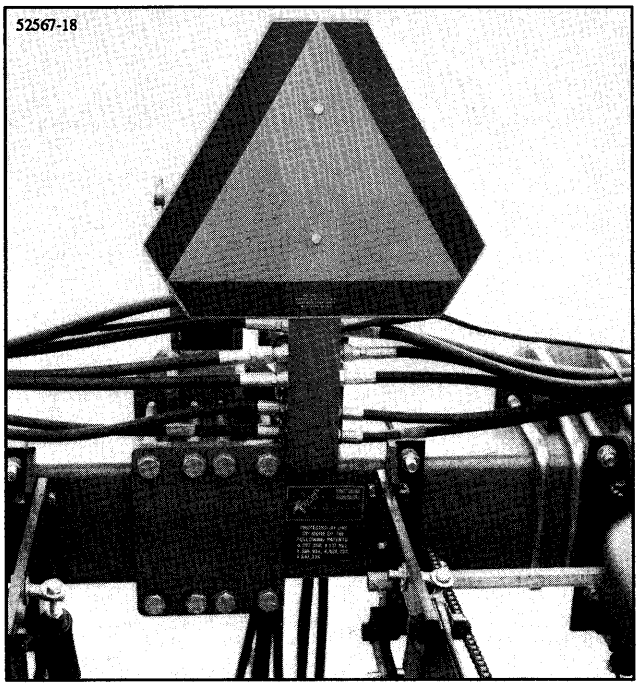


Folding Frame Model

SERIAL NUMBER

The serial number plate is located on the planter frame to be readily available. It is suggested that the serial number and purchase date also be recorded in the space provided on page 1-1 of this manual.

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



SPECIFICATIONS

TYPE - 3 Point Mounted

PLANTING UNIT TYPE - Pull Type Row Units

ROW SPACING - 2 Row 30, 36, 38 and 40 (Rigid Frame)
4 Row Narrow - 30" rows (Rigid Frame)
4 Row Wide - 36", 38" and 40" rows (Rigid Frame)
6 Row Narrow - 30" rows (Rigid Frame)
6 Row Wide - 36", 38" and 40" rows (Rigid Frame)
8 Row Narrow - 30" rows (Rigid Frame)
8 Row Wide - 40" rows (Rigid Frame)
8 Row Wide - 36" and 38" rows (Hydraulic Fold Frame)
12 Row Narrow - 30" rows (Hydraulic Fold Frame)

DRIVE SYSTEM
Ground drive
7.60 x 15, 4 ply tires
Four drive/gauge used on 12 row folding model
Two drive/gauge on rigid models and 8 row folding model
No. 2050 roller chain with spring/ratchet idlers

TRANSMISSION
End mounted, quick adjusting sprockets
No. 40 chain with spring/ratchet idlers
One on rigid. Two on folding models

HYDRAULICS

Rigid Models	Vertical Fold Models
Standard - Dual remote	Standard - Dual remote with alternating sequencing valve.
Optional - Single remote with alternating sequencing valve.	

Additional remote required for dual lift assist wheel option.

HITCH - Category 2, 3, 3N. Modular. Bolt-on.

MARKERS
4 Row 30/Wide and 6 Row 30 - Conventional design
6 Row Wide and 8 Row 30/Wide (Rigid Toolbar) - Double fold design
8 Row Wide and 12 Row 30 (Hydraulic Fold Toolbar) - Triple fold design

SPECIFICATIONS

DIMENSIONS & WEIGHTS

PLANTER SIZE	OPERATING WIDTH	TRANSPORT WIDTH	OPERATING & TRANSPORT LENGTH	WEIGHT
2 Row 30-40"(76-102 cm)	8' 10" (2.69 m)	8' 10" (2.69 m)	5' 7" (1.70 m)	1270 lbs. (577 kg)
4 Row Narrow 30" (76 cm)	12' 8" (3.86 m)	12' 8" (3.86 m)	5' 7" (1.70 m)	1975 lbs. (798 kg)
4 Row Wide 36-40" (76-102 cm)	15' 2" (4.62 m)	15' 2" (4.62 m)	5' 7" (1.70 m)	2070 lbs. (940 kg)
6 Row Narrow 30" (76 cm)	17' 8" (5.38 m)	17' 8" (5.38 m)	5' 7" (1.70 m)	2555 lbs. (1160 kg)
6 Row Wide 36-40" (76-102 cm)	21' 0" (6.40 m)	21' 0" (6.40 m)	5' 7" 1.70 m)	2820 lbs. (1280 kg)
8 Row Narrow 30" (76 cm)	21' 10" (6.65 m)	21' 10" (6.65 m)	5' 7" (1.70 m)	3270 lbs. (1485 kg)
8 Row Wide 36-38" (76-97 cm)	26' 8" (8.12 m)	18' 6" (5.64 m)	9' 5" * (2.87 m)	4250 lbs. (1930 kg)
12 Row Narrow 30" (76 cm)	32' 0" (9.75 m)	21' 8" (6.60 m)	9' 5" * (2.87 m)	5310 lbs. (2411 kg)

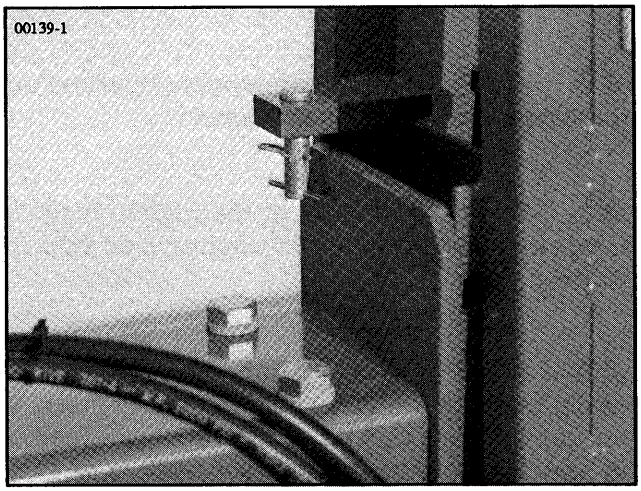
* With dual lift assist wheel package.

(Shipping weights for planter equipped with corn and soybean meters, dry insecticide with band spreader and standard down pressure springs.)

SAFETY PRECAUTIONS ⚠

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

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



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

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

⚠ **Limit transport speed to 15 MPH. Transport only with farm tractor of sufficient size and horse power. (See Operation Section)**

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

⚠ **Always make sure flashing safety lights, SMV sign and reflectors are in place and visible prior to transporting the machine on public roads. In this regard, check federal, state and local regulations.**

⚠ **Never work under the planter while in raised position.**

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

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

⚠ **Install lockups on markers, as provided, prior to transporting the planter or working around the unit.**

⚠ **Lower the planter when not in use and cycle the hydraulic control lever to relieve pressure in hoses.**

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

⚠ **This planter is designed to be DRIVEN BY GROUND TIRES ONLY. The use of hydraulic, electric or PTO drives may create serious safety hazards to you and the people near by. If you install such drives you must follow all appropriate safety standards and practices to protect you and others near this planter from injury.**

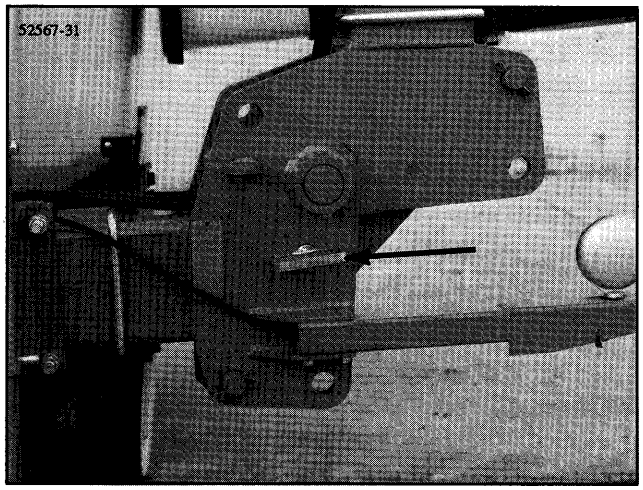
⚠ **This machine has been designed and built with your safety in mind. Any alteration to the design or construction may create safety hazards. Do not make any alterations or changes to the equipment, but if any alterations or changes are made you must follow all appropriate safety standards and practices to protect you and others near this machine from injury.**

SAFETY PRECAUTIONS ⚠

⚠ **Always empty or remove all hoppers before folding planter wings. (If applicable)**

⚠ **Due to the height of the folding model's wings in transport, watch for obstructions such as wires, tree limbs, etc.**

⚠ **Never transport folding models with lift assist wheels without the floating link in place. If not in place a sudden stop could allow the toolbar to rotate forward causing personal injury or damage to the equipment.**



⚠ **Install wing safety-lock pins in transport position before transporting the planter or working around the unit. Install wing safety-lock pins in service position when servicing wing fold cylinders and/or wing fold linkage. (If applicable)**

⚠ **Always make sure there are no persons near the planter when planter wings are being lowered from transport position. (If applicable)**

⚠ **If a marker or wing lift cylinder has been removed for any reason, do not attach the rod end of the cylinder until the cylinder is cyled several times to remove any air that may be trapped in the system.**

⚠ **Wings must be unfolded before detaching machine from tractor. (If applicable)**

SAFETY WARNING SIGNS ⚠

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

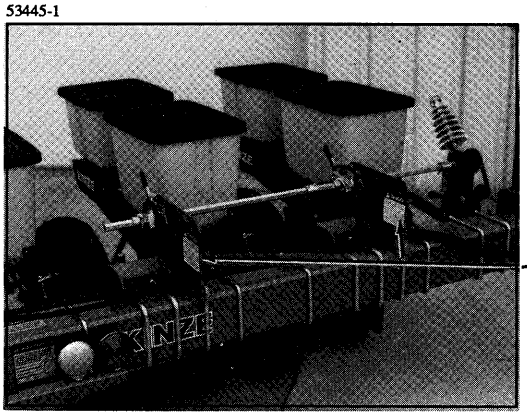
•Keep these signs clean so they can be readily observed. Wash with soap and water or cleaning solution as required.

•Replace "WARNING" signs should they become damaged, painted over or if they are missing.

•Check SMV sign periodically. Replace if it shows loss of any of its reflective property.

•When replacing decals, clean the machine surface thoroughly using soap and water or cleaning solution to remove all dirt and grease.

53445-1

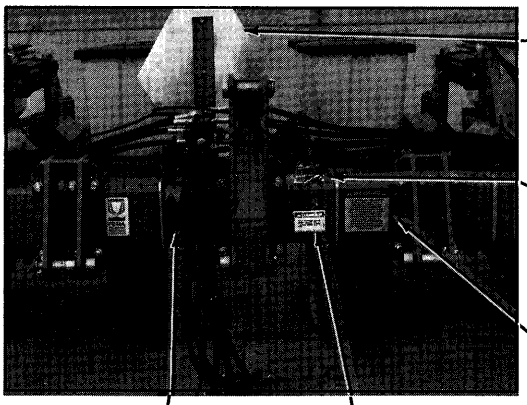


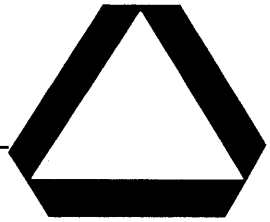
⚠ DANGER

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

Part No. 7100-89

52567-8





Part No. D2199

⚠ DANGER

NEVER TRANSPORT FOLDING MODELS EQUIPPED WITH LIFT ASSIST WHEELS WITHOUT FLOATING CENTER MAST IN PLACE.

Part No. 7100-132
Folding Models Only

⚠ CAUTION

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

Part No. 7100-46

⚠ WARNING ⚠

WINGS MUST BE UNFOLDED BEFORE DETACHING MACHINE FROM TRACTOR.

7100-148

Part No. 7100-140
Folding Models Only

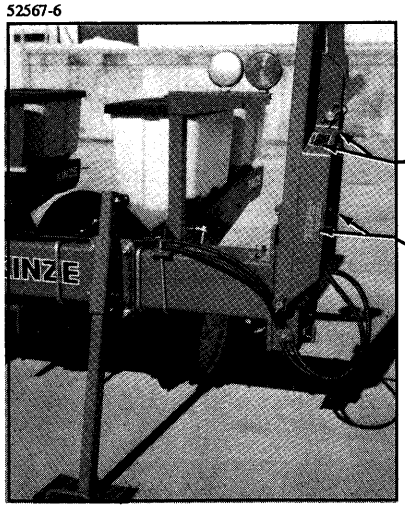
⚠ WARNING ⚠

THIS MACHINE HAS BEEN DESIGNED AND BUILT WITH YOUR SAFETY IN MIND. ANY ALTERATION TO THE DESIGN OR CONSTRUCTION MAY CREATE SAFETY HAZARDS. DO NOT MAKE ANY ALTERATIONS OR CHANGES TO THE EQUIPMENT. BUT IF ANY ALTERATIONS OR CHANGES ARE MADE YOU MUST FOLLOW ALL APPROPRIATE SAFETY STANDARDS AND PRACTICE TO PROTECT YOU AND OTHERS NEAR THIS MACHINE FROM INJURY.

Part No. 7100-90

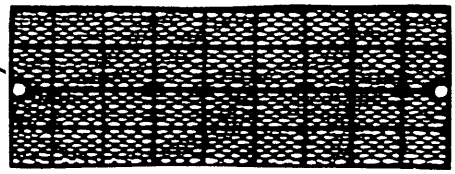
SAFETY WARNING SIGNS ⚠

52567-6



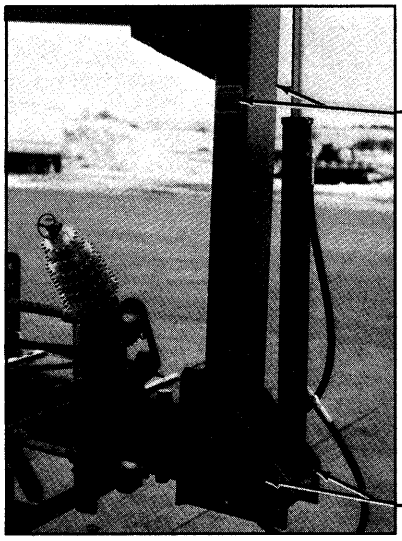
Conventional Marker

Part No. 7100-42



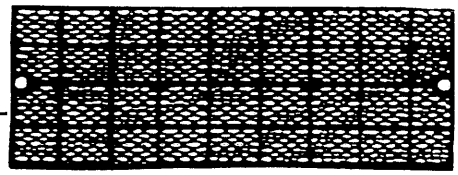
Part No. 7200-03
Red Reflector (Rear of Machine)
Part No. 7200-04
Amber Reflector (Front of Machine)

52567-1



Double Fold and Triple
Fold (Shown) Markers

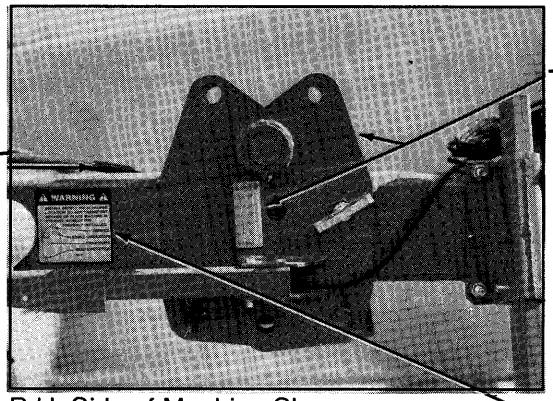
Part No. 7100-42



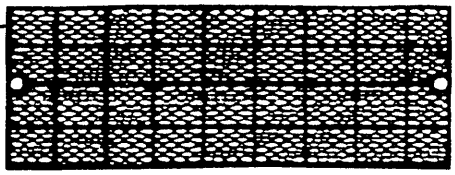
Part No. 7200-03
Red Reflector (Rear of Machine)
Part No. 7200-04
Amber Reflector (Front of Machine)

SAFETY WARNING SIGNS ⚠

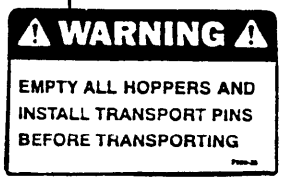
555702-20



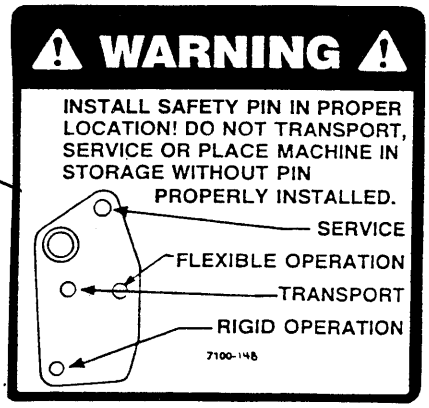
R.H. Side of Machine Shown
Folding Models Only



Part No. 7200-03
Red Reflector (Rear)
Part No. 7200-04
Amber Reflector (Front)



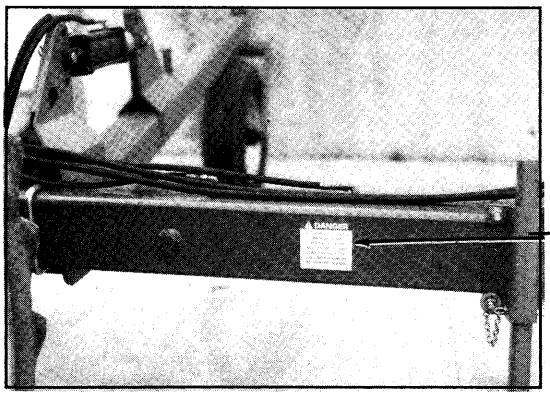
Part No. 7100-25



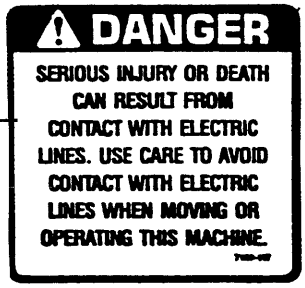
Part No. 7100-128 Right Side
Part No. 7100-127 Left Side
Serial No. XXXXX-16219

Part No. 7100-148 Right Side(Shown)
Part No. 7100-149 Left Side
Serial No. 16220-XXXXX

55712-10



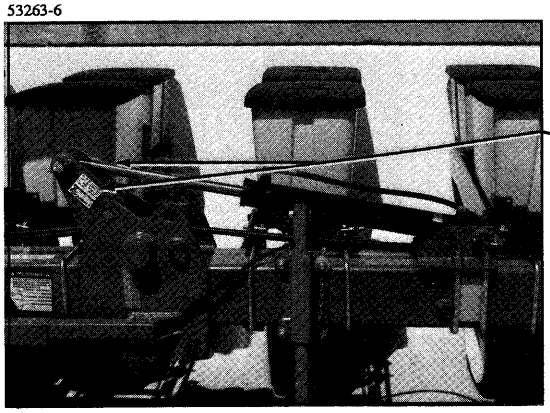
Folding Models Only



Part No. 7100-117

SAFETY WARNING SIGNS ⚠

53263-6



⚠ WARNING ⚠

LOCK UP PIN SERVICE LOCATION IS BLOCKED BY EXTERNAL FOLD OPTION. USE ALTERNATE MEANS TO SUPPORT WING WHEN SERVICING WING FOLD HYDRAULICS.

7100-141

Part No. 7100-141

Optional External Wing Lift Assist Link

⚠ WARNING ⚠

FLOATING CENTER MAST MUST BE USED ON PLANTERS EQUIPPED WITH LIFT ASSIST WHEELS.

SEE OPERATION SECTION OF OPERATOR'S MANUAL FOR PROPER ADJUSTMENT.

Part No. 7100-133

51803-2

Optional Dual Lift Assist Wheel Attachment - Floating Top Mast

53761-6

Optional Dual Lift Assist Wheel Attachment - Wheel Tower

OPERATION

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

INITIAL PREPARATION OF THE PLANTER

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

TRACTOR REQUIREMENTS

Approximate required minimum tractor horse power(H.P.) required for field work is listed below:

2 Row Models - 40-50 H.P.
4 Row Models - 50-65 H.P.
6 Row Models - 55-85 H.P.
8 Row Models - 75-110 H.P.
12 Row Models - 140 & up H.P.

NOTE: Tractor must have adequate 3 point hitch lift capacity to lift weight of machine, attachments, seed and dry chemicals. Shipping weights do not include seed, dry chemicals or additional attachments.

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

The optional Dual Lift Assist Wheel Package is recommended on some sizes of planters and also depending on size of tractor being used with planter. Optional dual lift assist wheels are recommended on all folding 3 Point Mounted planters.

12 Row models require minimum tractor hydraulic pressures of 2200-2300 PSI to fold the wings to the vertical transport position when fully equipped with Kinze's heaviest attachments. If the tractor to be used with this planter is rated with hydraulic output of less than 2250 PSI, installation of the optional External Wing Lift Assist Package is recommended.

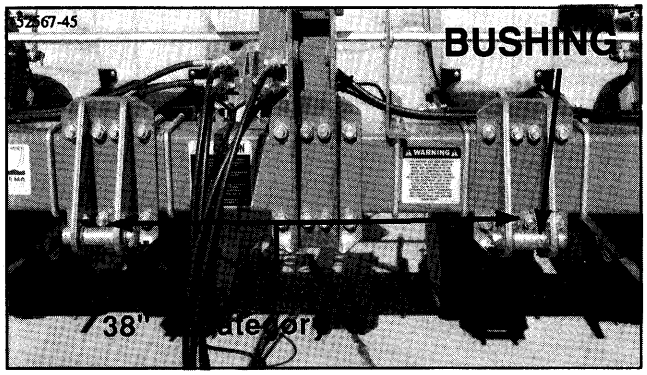
TRACTOR PREPARATION AND HOOKUP

1. Set tractor rear wheel spacing at double the planter row spacing. For example: On a planter set for 36" rows, set the tractor wheel spacing at 72". On wide front end tractors have front wheel spacing equal to rear wheel spacing. Check tractor operator's manual for correct front and rear tire pressure.

2. Adjust lift links on tractor so planter will lift level from side to side and raise high enough for planter transport clearance. Set the sway blocks on the tractor in the down position to prevent side sway. Be sure the individual lift link arms are in the float position.

3. Back tractor up to planter. Position lower link hitch pins and spacers as shown in the following diagrams for your type of tractor hitch. Line up holes and insert hitch pins and lock in place with pins provided. It may be necessary to change the length of the upper link with the adjusting handle.

Lower Link Pins

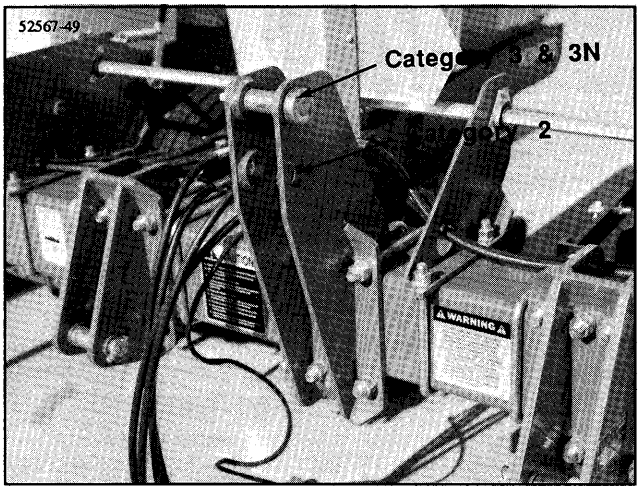


Category 2 requires pin only.
Category 3 and 3N requires pin and bushing.

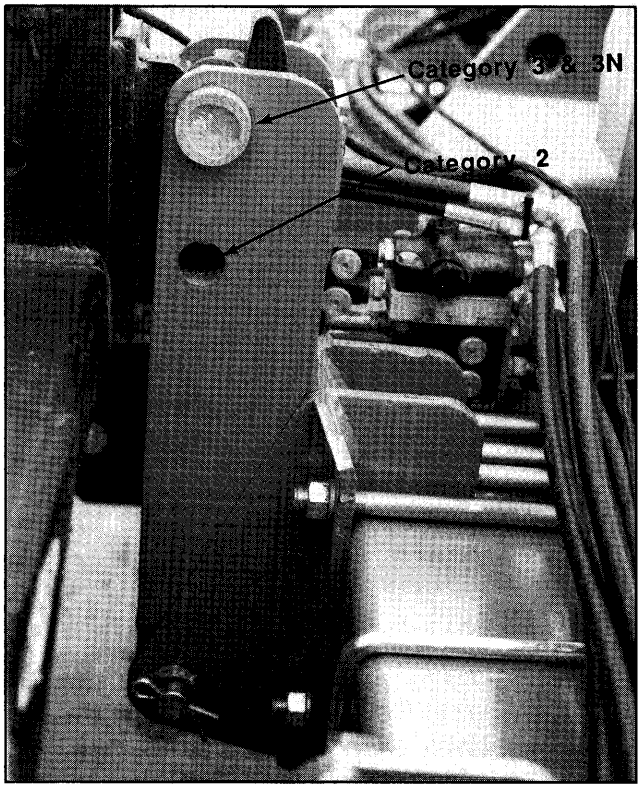
Upper Link Pin

The upper hitch point has two holes. The hitch pin must be positioned in the lower hole for use with tractors equipped with Category 2 quick-attaching coupler and is recommended for use on tractors without quick-attaching coupler. Some Category 2 tractors without quick-attaching coupler are designed to accommodate the upper attaching holes. Check with the tractor's manufacturer.

The hitch pin must be positioned in the upper hole for use with tractors equipped with Category 3 and 3N.

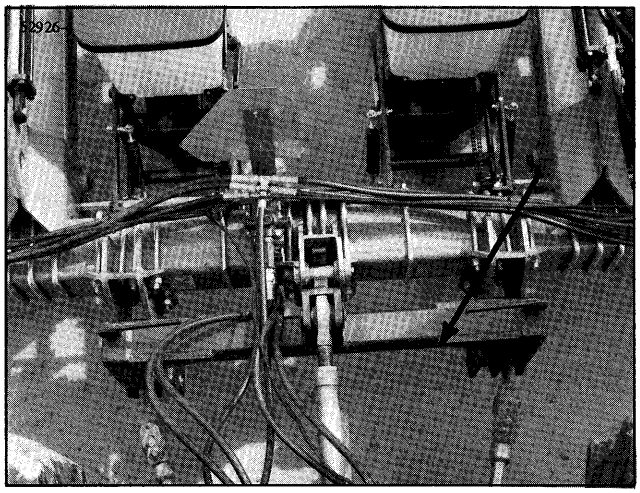


Standard Lift Link



Floating Lift Link (Used with lift assist wheels)

NOTE: In planting position, maintain 1" or less clearance between floating top mast and the stop. If the tractor has an adjustable center link, using the lowest adjustment hole will provide maximum clearance in the raised position and yet maintain planter levelness during field operation.



When using quick-attaching coupler (customer supplied), match pin location to pin spacing in quick-coupler. Adjust the tractor's center link until the quick-coupler is vertical when in the planting position.

DANGER: Never transport folding models with lift assist wheels without floating link in place. If not in place a sudden stop could allow the toolbar to rotate forward causing most serious personal injury or damage to the equipment.

4. The planter is equipped with safety lights which should be used whenever the planter is being transported. The connector is a 7 terminal breakaway conforming to ASAE standards. If your tractor is not equipped for safety lights, check with your tractor dealer.

5. Connect hydraulic hoses to tractor ports in a sequence that is both familiar and comfortable to the operator. See "Hydraulic Operation".

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

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

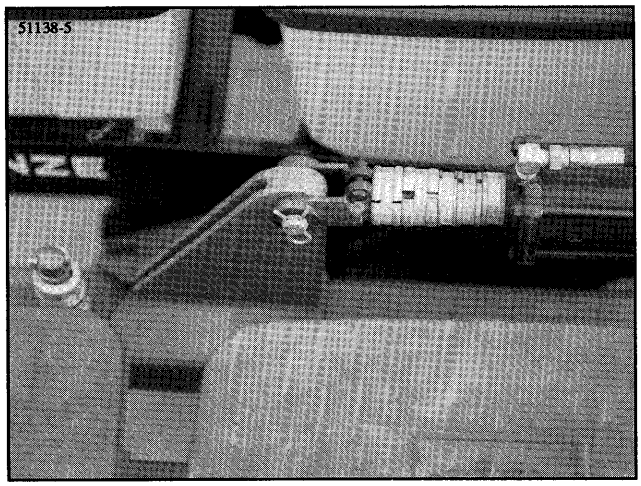
CAUTION: Before the markers are operated, make sure all marker lockups are in working position.

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

6. Raise planter slowly and watch for any interference. Remove pin from each support stand and raise each to the transport position. Secure stands in raised position with pin in lowest hole.

7. Lower planter so drive wheels rest on ground and check to be sure planter is level. Readjust top link as required to level row units. See "Leveling The Planter".

CAUTION: As a general safety practice and to avoid damage to the tractor hydraulic system, always lower the planter when not in use.



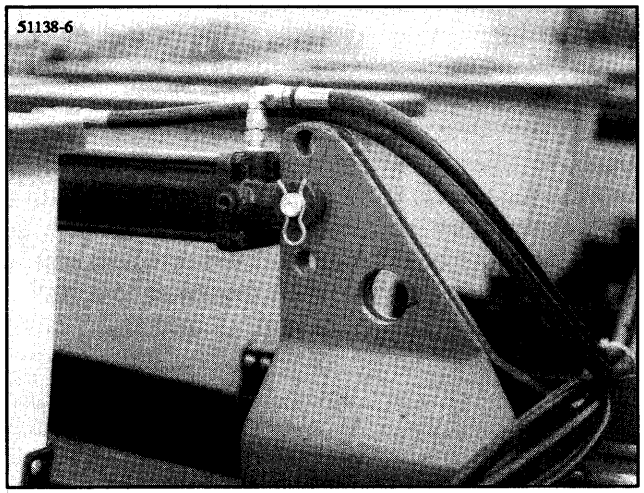
LEVELING THE PLANTER

For proper operation of the planter and row units, it is important that the unit operate level.

When operating the mounted planter, make sure the right and left arms are adjusted equally before attaching the planter unit. After the planter has been lowered to the correct operating depth, stop the tractor and stand beside the planter to check fore and aft levelness. If the row units angle up or downward, adjust the center link on the tractor accordingly.

In order to maintain lateral levelness, it is important that tire pressure be maintained at pressures specified and that drive wheel height is adjusted equally. See "Wheel Module Height Adjustment".

On planters equipped with lift assist wheels, adjustment holes on the lift assist cylinder mounts allow for adjustment for lift height and adjustment for leveling the planter frame. Also depth stops on the lift assist cylinders can be added or removed for additional adjustment.



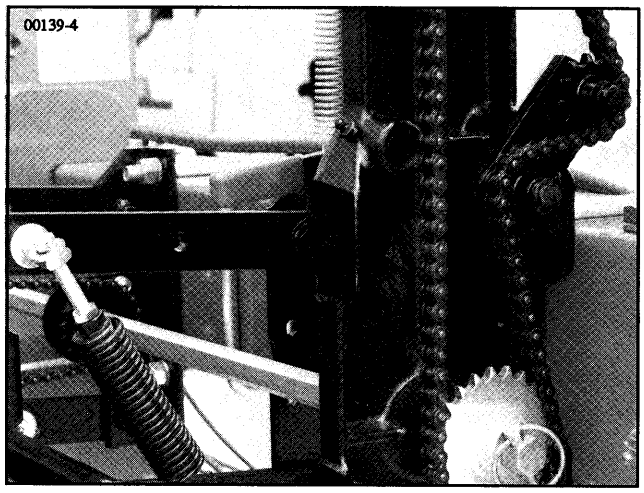
PARKING STAND ADJUSTMENT

Two parking stands, located on the front side of the main frame, are standard on all 3 Point Mounted planters. The stands must be positioned so they are not directly behind the tractor tire or they will hit when the planter is raised.

On planters equipped with front mounted drive wheels, parking stands are not required.

Each parking stand has six positioning holes. By using these positioning holes, you can set the main frame height from 19" to 25".

TRANSMISSION ADJUSTMENT



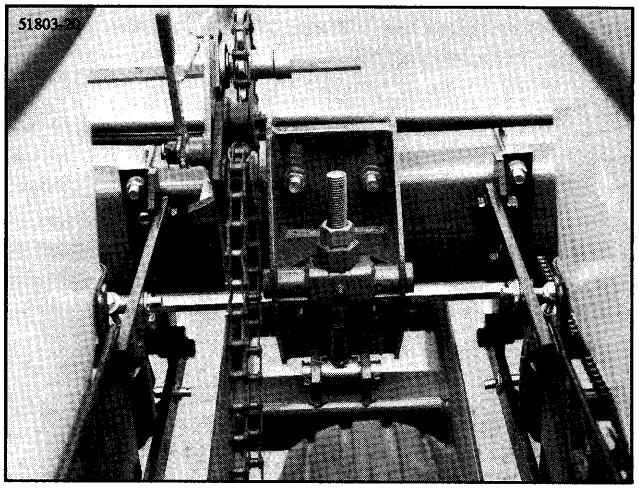
Planting population rate changes are made at the seed transmission(s). The planter is designed to allow simple, rapid changes in sprockets to obtain the desired planting population. By removing the lynch pins on the hexagon shafts, sprockets can be interchanged with those from the sprocket storage rod bolted to the transmission.

Chain tension is controlled by a spring-loaded dual-sprocket idler. The idler assembly is adjusted with a ratchet arm. This arm has a release position to remove spring tension for replacing sprockets. The amount of spring tension on the chain can be controlled by the ratchet arm.

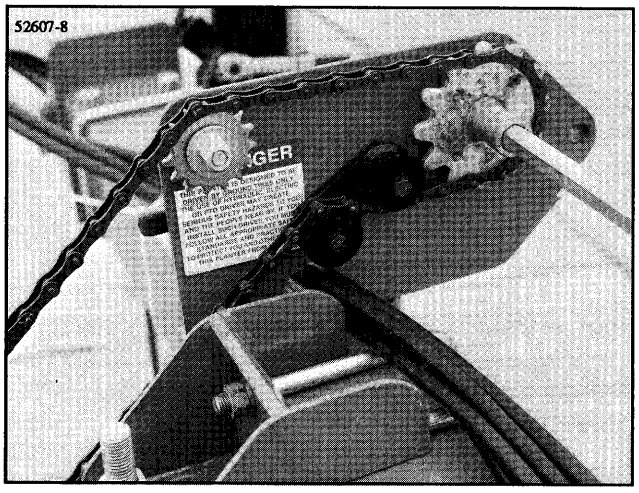
A decal positioned near transmission module provides proper chain routing. The planting rate charts found in the Operation Section of this manual will aid you in selecting the correct sprocket combinations.

NOTE: Use of the 2 to 1 drive reduction package will reduce drive line speed and application rates to approximately 50% of standard.

WHEEL MODULE HEIGHT ADJUSTMENT



Standard Rear Mounted Wheel Module



Optional Front Mounted Wheel Module

The wheel module assembly is designed so the drive wheel height can be adjusted to maintain a frame height of 20 1/2" in all planting situations. This is particularly useful when the planter is used for ridge planting or planting on beds. The wheel module assembly has an adjustment range of 7". Offset No. 2050 chain links which are included with the planter will need to be added when the upper end of the range is used. To adjust the wheel assembly, first release chain tension, loosen the jam nut using a 1 1/2" wrench or a 15" adjustable wrench and turn the adjusting nut using a 1 7/8" wrench or 15" adjustable wrench(clockwise to decrease frame height/counter clockwise to increase frame height). Tighten the jam nut and adjust chain tension.

OPERATION

SHEAR PROTECTION

The planter drive line and row unit components are protected from damage by shear pins.

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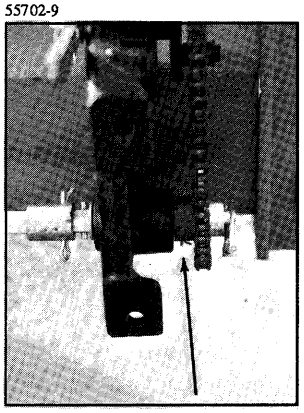

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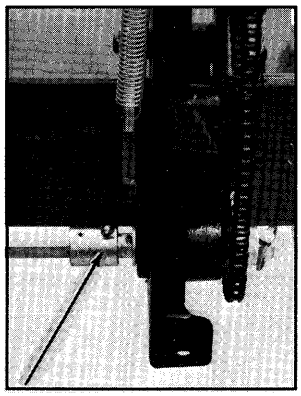


If excessive load should cause a pin to shear, it is important to determine where binding has occurred before replacing the pin. Replace shear pins with same size and type.

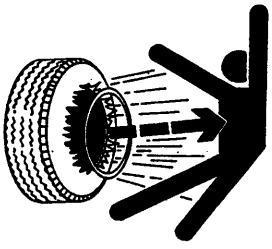
To prevent future binding or breakage of components, follow prescribed lubrication schedules.

TIRE PRESSURE

Tire pressure should be checked regularly and maintained as follows:

7.60 x 15" 4 Ply - 40 PSI

IMPORTANT: Tire pressure must be correctly maintained in all drive wheel tires to insure level and proper operation of planter. All rate charts are based on rolling radius of 7.60 x 15" tires inflated to 40 PSI.

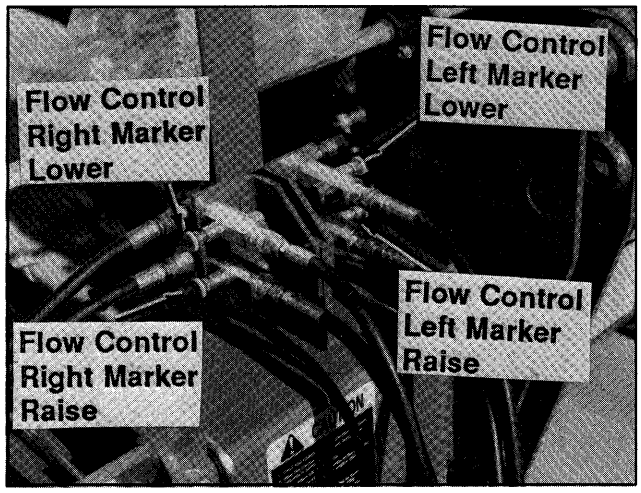


DANGER: Rim and tire servicing can be dangerous. Explosive separation of a tire and rim parts can cause serious injury or death.

MARKER SPEED ADJUSTMENT

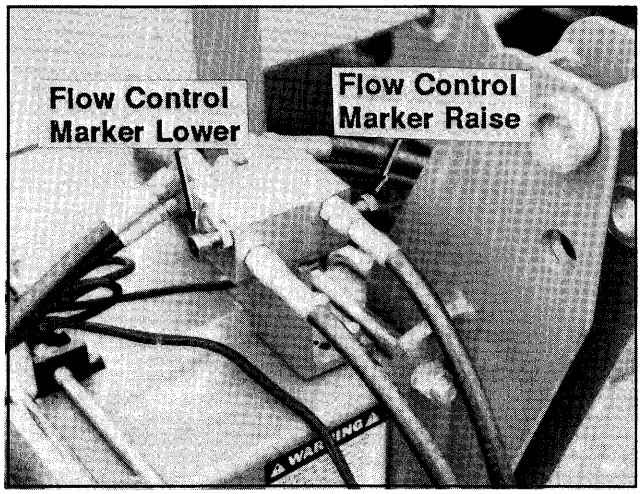
Rigid frame models with dual valve hydraulic system have four flow control valves or two flow control valves if equipped with the optional single valve system. Folding frame models have two flow control valves. Flow control valves control the lowering and raising speed of the markers. To adjust marker speed, loosen the jam nut and turn the control clockwise or "in" to slow the travel speed and counterclockwise or "out" to increase the travel speed. The adjusting bolt determines the amount of oil flow restriction through the valve, therefore determining travel speed of the markers.

52567-50



Rigid Frame Model With Dual Valve Hydraulic System

55398-3



Rigid Frame Model With Optional Single Valve Hydraulic System
(Also used on Folding Frame Model with Dual Valve Hydraulic System.)

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

NOTE: When oil is cold, hydraulics operate slowly. Make sure all adjustments are made with warm oil. Do not overtighten lock nut.

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

MARKER ADJUSTMENT

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

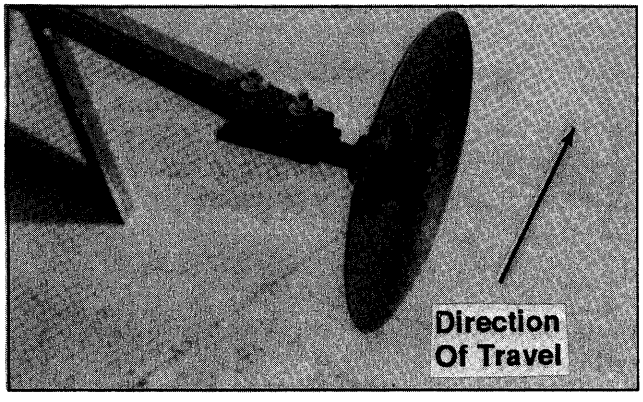
Number of rows	x	Row spacing (Inches)	=	Dimension between planter center line and marker blade.
4 Rows	x	30" Row Spacing	=	120" Marker Dimension

The marker blade is installed so the concave side of the blade is outward to throw dirt away from the grease seals. The spindle bracket is slotted so the hub and blade can be angled to throw more or less dirt. To adjust the hub and spindle, loosen the 1/2" x 3 1/2" cap screws and move the bracket as required. Tighten bolts to the specified torque.

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

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

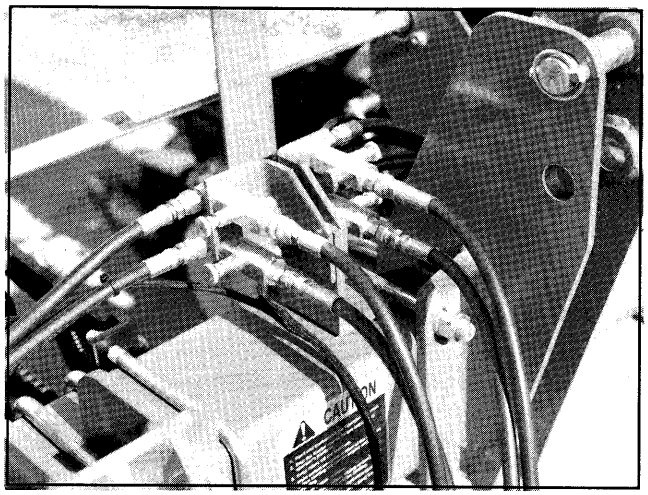
10-8



HYDRAULIC OPERATION

One, two or three control valves systems may be required depending on the model and how the planter is equipped.

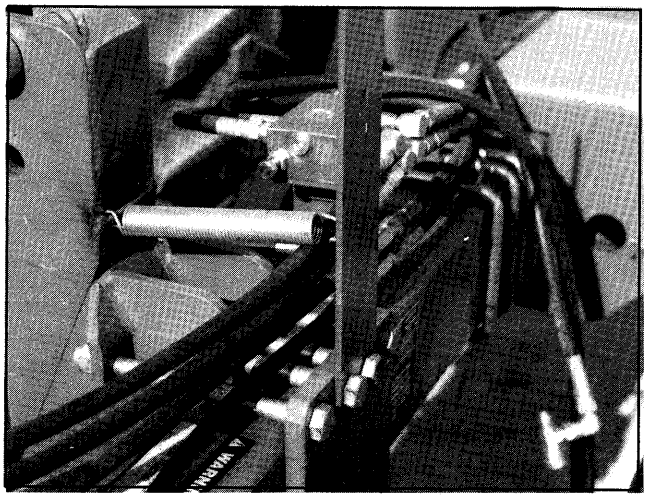
52567-51



Rigid Model With Dual Control Valve Marker System

Folding frame models are equipped with a single control valve marker system plus another control valve for folding the wings.

55702-11



Folding Model With Single Control Valve Marker System (Shown with SMV sign removed for visual clarity.)

An additional control is required for the optional lift assist package unless it is tied into the tractors 3 point lift system. Check with your tractor implement dealer for parts required.

Marker Hydraulic Operation

The dual valve marker system allows each marker to be operated independently. The single valve marker system uses a sequencing valve which directs hydraulic flow to operate the markers alternately.

With the dual valve marker system both markers can be used at the same time by using both hydraulic control levers simultaneously. With the single valve marker system both markers can be used at the same time by first lowering the marker and moving the hydraulic control lever to the raise position and immediately returning it to the lower position. This will shift the marker control valve spool and the remaining marker will be lowered. This is useful in planting contours and terraces.

WARNING: Always stand clear of marker assemblies and blades when planter is operating.

WARNING: Always position lockups in "Safety" position when transporting or storing planter. See Safety Precautions.

DANGER: If a marker or wing lift cylinder has been removed for any reason, do not attach the rod end of the cylinder until the cylinder is cycled several times to remove any air that may be trapped in the system.

DANGER: Serious injury or death can result from contact with electric lines. Use care to avoid contact with electric lines when moving or operating this machine.

Folding Frame Hydraulic Operation

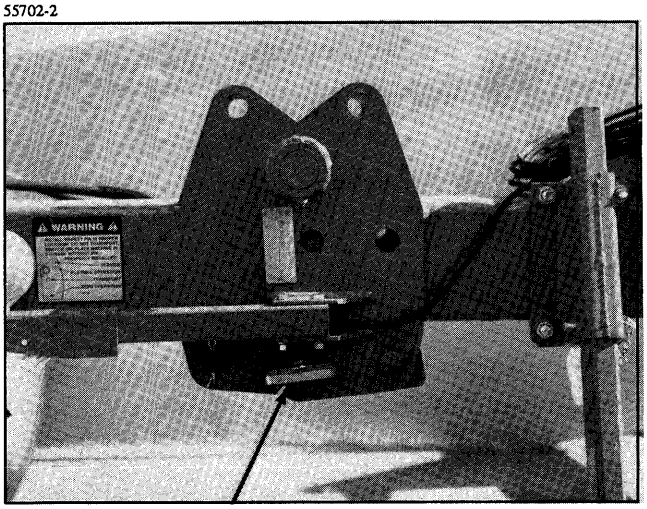
Folding frame models have the capability of folding the outer portion or wings of the planter toolbar vertically for narrower transport width. These models can be operated in the field with the wings either in the rigid position or flexed position.

WARNING: Always make sure there are no persons near the planter when planter wings are being lowered from transport position.

DANGER: Serious injury or death can result from contact with electric lines. Use care to avoid contact with electric lines when moving or operating this machine.

The rigid position is required on tractors which don't have a float position capability and is also recommended in conditions where flex in the frame is not required for proper row unit operation. When the planter is being operated in this position the wings should be pinned rigid.

55702-2

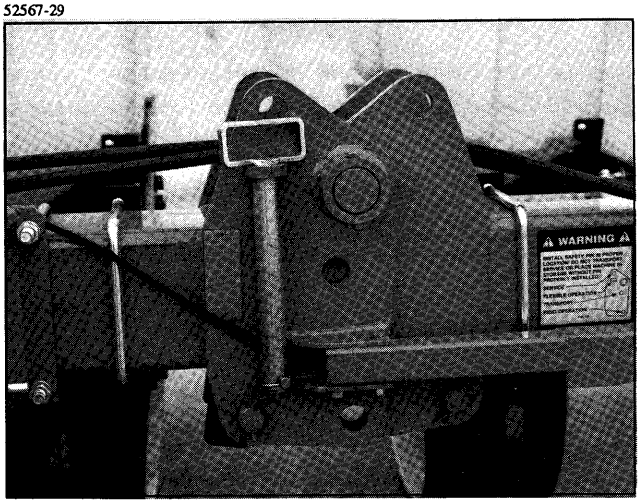


Rigid Position Shown

When planting in uneven terrain or anytime additional flex is needed and if the tractor hydraulic system has the float capability, the wings can be left unpinned to allow the wings to flex when the tractor hydraulic lever is in the float position.

It may be desirable to take the lever out of the float position to prevent the wings from sagging downward when the planter is raised.

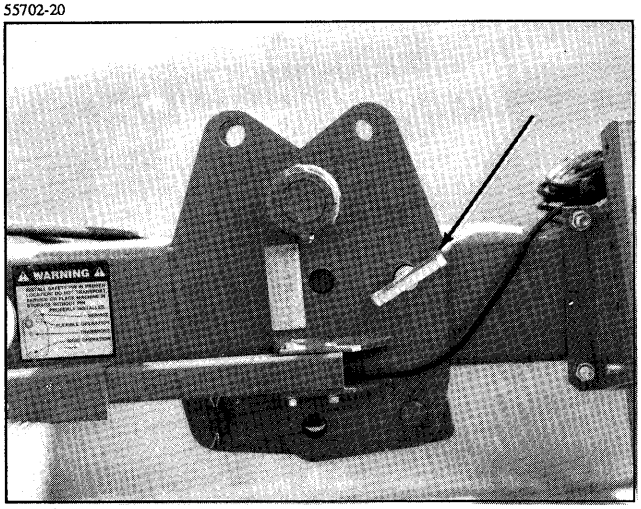
52567-29



Flexible Operation Position Shown (Prior to SN 16220)

NOTE: On models prior to serial number 16220, when operating with the wings in the flexed position, an upward flex of more than 5° could temporarily disengage the drive line to the center units.

55702-20



Flexible Operation Position Shown (SN 16220 and on)

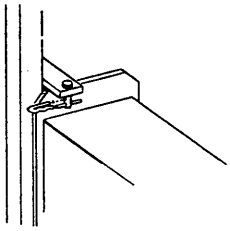
NOTE: On models serial number 16220 and on, when operating with the wings in the flexed position, install the wing safety pins as shown. This will limit the flex up and down to 5° and prevent the wings from flexing up far enough to disengage the drill shaft to the center units. The wing safety pins must be removed to fold the wings into the transport position.

CAUTION: Prior to folding the wings for transport, the markers must be folded and all hoppers located on the planter's wings emptied or removed.

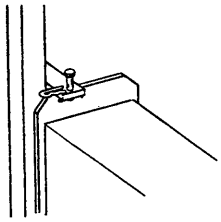
DANGER: Wings must be unfolded before detaching machine from tractor.

MARKER LOCKUPS (If Applicable)

APO041



Marker locked up for transport or working around the machine

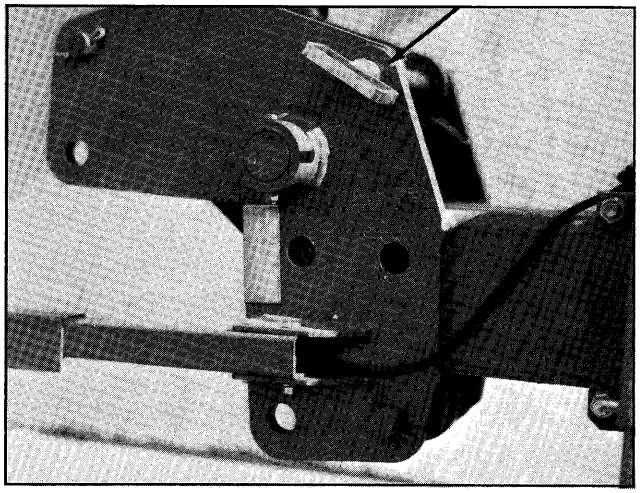


Pin stored in raised position for marker operation

Install marker lockups when transporting the planter or working around the planter. When not in use, store lockup pin in raised position with hair pin clip on upper side of tab.

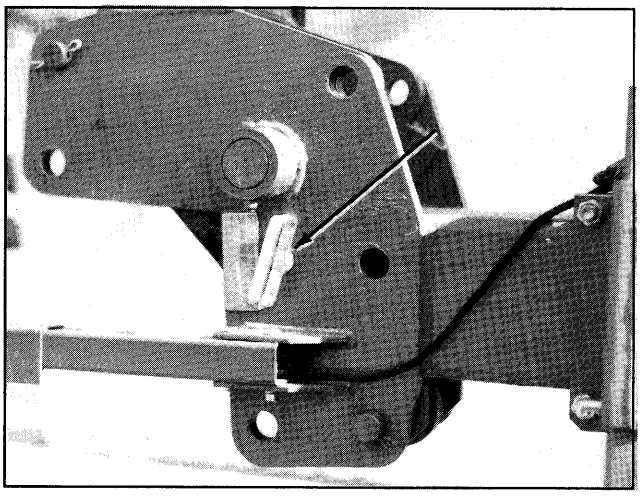
WING SAFETY PINS (If Applicable)

55702-7



Service Position

55702-5



Transport Position

The wing safety pins located in the hinge area are an added safety device. Always install the wing safety pins in the "transport" position before transporting the planter or working around the unit. Always install the wing safety pins in the "service" position when servicing the wing fold cylinder or wing fold linkage.

Install wing safety pin in "rigid" position for rigid toolbar operation and "flexible" position for wing flex operation. See "Hydraulic Operation".

Refer to decal located near each hinge for proper safety pin position for flexible operation, rigid operation, transport and service.

TRANSPORTING THE PLANTER

WARNING: Always make sure flashing lights, reflectors and SMV emblem are in place and visible prior to transporting the machine on public roads. In this regard, check and comply with all federal, state and local regulations.

DANGER: Always install all safety lockups before transporting the planter.

TRACTOR SPEED

Planters are designed to operate within a speed range of 2 to 8 MPH. Variations in ground speed will produce variations in rates. Corn meter populations will tend to be disproportionately higher at high ground speeds. Soybean and milo seed cup populations will tend to be disproportionately lower at high speeds.

FIELD TEST

A field test of the planter should be made prior to initial operation and periodically thereafter to ensure proper planter operation.

❑ Check the planter for fore and aft and lateral level operation. See "Leveling The Planter".

❑ Check **all** row units to be certain they are running level. When planting, the row unit parallel arms should be parallel to the ground.

❑ Check row markers for proper operation and adjustment. See "Marker Adjustment", "Marker Speed Adjustment" and "Marker Operation".

❑ Check for proper application rates and placement of granular chemicals on **all** rows. See "Checking Chemical Application Rates".

❑ Check for desired depth placement and seed population on **all** rows. Consult your row unit manual and "Checking Seed Population".

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

•Hoses And Fittings

•Bolts And Nuts

•Cotter Pins And Roll Pins

•Drive Chain Alignment And Tension

CHECKING SEED POPULATION

1. Tie up one or more sets of closing wheels by running a light chain between the hopper support panel and closing wheels.

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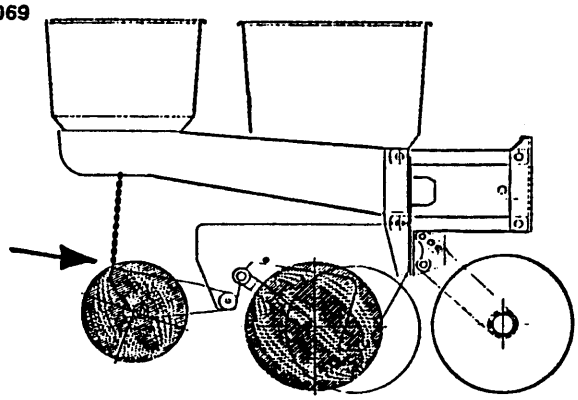
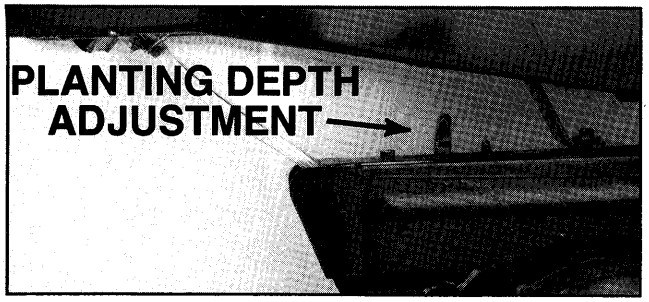


2. Plant a short distance and check to see if seed is visible in the seed trench. Adjust planting depth to a shallower setting if seed is not visible and recheck.



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

LENGTH OF ROW IN FEET AND INCHES				
Fraction Of Acre	Row Width			
	30"	36"	38"	40"
1/1000	17'5"	14'6"	13'10"	13' 1"

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

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

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

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

Corn Meter

Seed count can be affected by two things; drive ratio between drive wheel and corn meter, and/or corn meter malfunction.

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

Second check for corn meter malfunction. FOR EXAMPLE, if spacing between kernels 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. Seed population will be less than the desired amount. If two seeds are found within a few inches of each other, the finger has metered two seeds instead of one.

See "Plateless Corn Meter Trouble Shooting" in your Kinze Row Unit Manual.

Soybean Feed Cup Meter

1. Check seeds per pound on seed bag.

2. Use seed rate chart closest to seed count per pound listed on bag. Use small seeds chart for 2700 or more seeds per pound, medium seeds chart for 2200 to 2700 seeds per pound and large seeds chart for 2200 and less seeds per pound.

3. To determine seeds per foot:

Seeds Per Lb.	x	Desired Lbs. Per Acre	=	Seeds Per Acre

Seeds Per Acre	÷	Ft. Of Row Per Acre	=	Seeds Per Ft.

34,800 Ft. = 1 Acre/15" Rows
29,000 Ft. = 1 Acre/18" Rows
27,600 Ft. = 1 Acre/19" Rows
17,400 Ft. = 1 Acre/30" Rows
14,500 Ft. = 1 Acre/36" Rows
13,800 Ft. = 1 Acre/38" Rows
13,100 Ft. = 1 Acre/40" Rows

4. To determine seeds per acre, count seeds in 1/1000 of an acre and multiply by 1000.

If seed check shows planting rate is significantly different than seed rate chart shows, see "Feed Cup Meter Trouble Shooting" in your Kinze Row Unit Manual.

Milo Feed Cup Meter

1. Check seeds per pound on seed bag.

2. Use seed rate chart for the medium or low rate milo meter being used and the desired pounds per acre. Use medium rate chart and medium rate milo meter for 4.3 lbs. per acre through 45.6 lbs. per acre. Use low rate chart and low rate milo meter for 1.3 lbs. per acre through 13.9 lbs. per acre.

3. To determine seeds per foot:

Seeds Per Lb.	x	Desired Lbs. Per Acre	=	Seeds Per Acre

Seeds Per Acre	÷	Ft. Of Row Per Acre	=	Seeds Per Ft.

34,800 Ft. = 1 Acre/15" Rows
29,000 Ft. = 1 Acre/18" Rows
27,600 Ft. = 1 Acre/19" Rows
17,400 Ft. = 1 Acre/30" Rows
14,500 Ft. = 1 Acre/36" Rows
13,800 Ft. = 1 Acre/38" Rows
13,100 Ft. = 1 Acre/40" Rows

4. To determine seeds per acre, count seeds in 1/1000 of an acre and multiply by 1000.

5. To determine pounds per acre, multiply seeds per acre planted by seeds per pound as stated on seed bag.

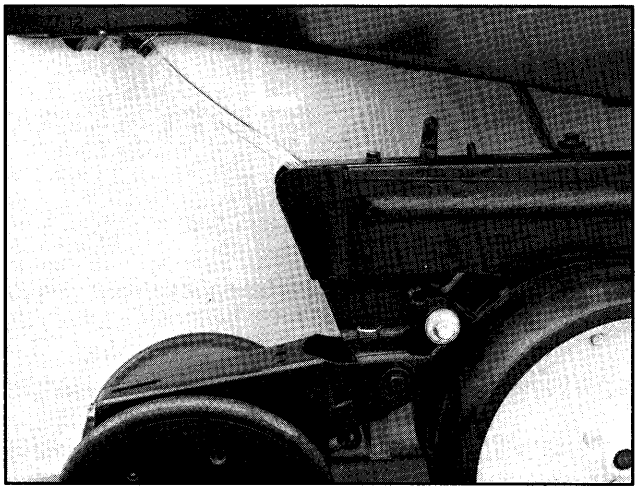
If seed check shows planting rate is significantly different than seed chart shows, see "Feed Cup Meter Trouble Shooting" in your Kinze Row Unit Manual.

NOTE: The milo meter is a volume type meter and the rate chart is a starting point only and actual rate may vary because of seed size, planting speed, meter wear, etc.

CHECKING GRANULAR CHEMICAL APPLICATION RATE

Many things can affect the rate of delivery. Temperature, humidity, speed, ground conditions, flow-ability of different material or any obstruction in the metering.

A field check is important for correct application rates.



To check, fill insecticide and/or herbicide hoppers. Attach a cloth bag to each granular diffuser. Lower the planter and proceed as follows.

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

LBS. PER ACRE FACTOR FOR GIVEN WIDTH	
Row Width	Factor
30 Inch	0.83
36 Inch	0.69
38 Inch	0.65
40 Inch	0.62

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 bag. 12.0 ounces times 0.83 equals 9.96 pounds per acre.

Metering Gate

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

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

GENERAL PLANTING RATE INFORMATION

These planting rate charts are for Kinze Series II 3 Point Mounted planters. See "Tire Pressure" for recommended tire pressures.

Not all row spacings listed are applicable to all model planters.

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

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

Corn
Larger grades will generally plant more accurately at the high end of the ground speed range than small grades. Higher than optimum speeds may result in population rate increase or higher incidence of doubles, particularly with small seed.

Soybeans
Soybeans vary in size from about 1800 seeds/lb. to approximately 3500 seeds/lb. The size marked on each bag is an average. Seeds within each bag may vary in size by as much as 50% greater or 50% smaller than the average. These charts are based on uniformly sized soybeans. Your actual planting rate will vary somewhat from the chart. Generally, larger beans will give lower rates and smaller beans will give higher rates.

Use small seed chart for 2700 or more seeds per pound, medium seed chart for 2200 to 2700 seeds per pound and large seed chart for 2200 and less seeds per pound.

Milo
Milo seeds vary in size from about 12,000 seeds/lb. to about 25,000 seeds/lb. The size marked on each bag is an average. Seeds within each bag may vary in size by as much as 50% greater or 50% smaller than average.

Use medium rate chart and medium rate milo meter for 4.3 pounds per acre through 15.6 pounds per acre. Use low rate chart and low rate milo meter for 1.4 pounds per acre through 4.8 pounds per acre.

NOTE: Use of the 2 to 1 drive reduction package will reduce the planter transmission speed. The seeding rate will be approximately 1/2 of the chart reading when using the 2 to 1 drive reduction package. Planting speed can affect actual seeding rate, so make a field check and adjust setting in the transmissions as needed to obtain the desired seed drop.

PLANTING RATES FOR PLATELESS CORN METERS
SEED POPULATIONS/ACRE FOR VARIOUS ROW WIDTHS

30 Inch	36 Inch	38 Inch	40 Inch	Transmission Sprockets Drive	Transmission Sprockets Driven	Recomm. Speed Range (MPH)	Average Seed Spacing In Inches
16,862	14,051	13,312	12,646	17	28	4 to 8	12.4
17,486	14,572	13,805	13,115	17	27	4 to 8	12.0
18,159	15,132	14,336	13,619	17	26	4 to 8	11.5
18,845	15,704	14,878	14,134	19	28	4 to 8	11.1
18,885	15,737	14,909	14,164	17	25	4 to 8	11.1
19,543	16,286	15,429	14,657	19	27	4 to 8	10.7
19,672	16,393	15,530	14,754	17	24	4 to 8	10.6
20,295	16,912	16,022	15,221	19	26	4 to 8	10.3
20,527	17,106	16,206	15,395	17	23	4 to 8	10.2
21,107	17,589	16,663	15,830	19	25	4 to 8	9.9
21,986	18,322	17,357	16,490	19	24	4 to 8	9.5
22,813	19,011	18,010	17,110	23	28	4 to 8	9.2
22,942	19,118	18,112	17,207	19	23	4 to 8	9.1
23,658	19,715	18,677	17,743	23	27	4 to 8	8.8
23,805	19,837	18,793	17,853	24	28	4 to 8	8.8
24,568	20,473	19,395	18,426	23	26	4 to 8	8.5
24,686	20,572	19,489	18,515	24	27	4 to 8	8.5
24,796	20,664	19,576	18,597	25	28	4 to 8	8.4
24,849	20,707	19,617	18,636	17	19	4 to 7.5	8.4
25,550	21,292	20,171	19,163	23	25	4 to 7.5	8.2
25,636	21,363	20,239	19,227	24	26	4 to 7.5	8.2
25,715	21,429	20,301	19,286	25	27	4 to 7.5	8.1
25,788	21,490	20,359	19,341	26	28	4 to 7.5	8.1
26,615	22,179	21,012	19,961	23	24	4 to 7.5	7.9
26,661	22,218	21,048	19,996	24	25	4 to 7.5	7.8
26,704	22,253	21,082	20,028	25	26	4 to 7.5	7.8
26,743	22,286	21,113	20,058	26	27	4 to 7.5	7.8
26,780	22,317	21,142	20,085	27	28	4 to 7.5	7.8
27,772	23,143	21,925	20,829	23	23	4 to 7	7.5
28,800	24,000	22,737	21,600	28	27	4 to 7	7.3
28,840	24,033	22,769	21,630	27	26	4 to 7	7.3
28,929	24,108	22,839	21,697	25	24	4 to 7	7.2
28,979	24,150	22,879	21,735	24	23	4 to 7	7.2
29,908	24,924	23,612	22,431	28	26	4 to 6.5	7.0
29,994	24,995	23,679	22,495	27	25	4 to 6.5	7.0
30,187	25,156	23,832	22,640	25	23	4 to 6.5	6.9
31,039	25,866	24,505	23,279	19	17	4 to 6.5	6.7
31,105	25,920	24,556	23,328	28	25	4 to 6.5	6.7
31,243	26,036	24,666	23,433	27	24	4 to 6.5	6.7
31,394	26,162	24,785	23,546	26	23	4 to 6.5	6.7
32,401	27,001	25,579	24,300	28	24	3 to 6	6.5
32,602	27,168	25,738	24,451	27	23	3 to 6	6.4
33,619	28,016	26,541	25,214	23	19	3 to 5.5	6.2
33,809	28,174	26,692	25,357	28	23	3 to 5.5	6.2
35,080	29,234	27,695	26,310	24	19	3 to 5.5	6.0
36,542	30,452	28,849	27,407	25	19	3 to 5	5.7
37,574	31,312	29,664	28,180	23	17	3 to 5	5.6
38,004	31,670	30,003	28,503	26	19	3 to 5	5.5
39,207	32,673	30,953	29,406	24	17	3 to 5	5.3
39,465	32,888	31,157	29,599	27	19	3 to 5	5.3
40,841	34,034	32,243	30,631	25	17	3 to 4.5	5.1
40,927	34,106	32,311	30,695	28	19	3 to 4.5	5.1
42,475	35,396	33,533	31,856	26	17	3 to 4.5	4.9
44,108	36,757	34,822	33,081	27	17	3 to 4.5	4.7
45,742	38,118	36,112	34,307	28	17	3 to 4.5	4.6

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

PLANTING RATES FOR PLATELESS SOYBEAN METERS
APPROXIMATE POUNDS/ACRE FOR VARIOUS ROW WIDTH - MEDIUM SEEDS

30 Inch	36 Inch	38 Inch	40 Inch	Transmission Sprockets Drive	Driven	Recomm. Speed Range (MPH)
40	33	32	30	17	28	4 to 8
41	34	33	31	17	27	4 to 8
43	36	34	32	17	26	4 to 8
45	37	35	33	19	28	4 to 8
46	39	37	35	19	27	4 to 8
47	39	37	35	17	24	4 to 8
49	40	38	36	17	23	4 to 8
50	42	39	37	19	25	4 to 8
52	43	41	39	19	24	4 to 8
54	45	43	40	23	28	4 to 8
54	45	43	41	19	23	4 to 8
56	47	44	42	24	28	4 to 8
58	49	46	44	24	27	4 to 8
59	49	46	44	17	19	4 to 7.5
61	51	48	45	24	26	4 to 7.5
61	51	48	46	26	28	4 to 7.5
63	53	50	47	24	25	4 to 7.5
63	53	50	47	26	27	4 to 7.5
66	55	52	49	23	23	4 to 7
68	57	54	51	27	26	4 to 7
69	57	54	51	24	23	4 to 7
71	60	56	54	25	23	4 to 6.5
73	61	58	55	19	17	4 to 6.5
74	62	58	55	27	24	4 to 6.5
77	64	61	58	28	24	3 to 6
80	66	63	60	23	19	3 to 5.5
80	67	63	60	28	23	3 to 5.5
83	69	66	62	24	19	3 to 5.5
86	72	68	65	25	19	3 to 5
89	74	70	67	23	17	3 to 5
90	75	71	67	26	19	3 to 5
93	78	74	70	27	19	3 to 5
97	81	76	73	28	19	3 to 4.5
101	84	79	75	26	17	3 to 4.5
104	87	82	78	27	17	3 to 4.5
108	90	85	81	28	17	3 to 4.5

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

NOTE: When using the 2 to 1 Drive Reduction Package, rates will be approximately 1/2 of given numbers.

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

PLANTING RATES FOR PLATELESS SOYBEAN METERS
APPROXIMATE BEANS/ACRE FOR VARIOUS ROW WIDTHS - SMALL SEEDS

30 Inch	36 Inch	38 Inch	40 Inch	Transmission Sprockets Drive	Transmission Sprockets Driven	Recomm. Speed Range (MPH)	Seed Spacing (Inches)	Seeds/ Foot
150,853	125,711	119,095	113,140	17	28	4 to 8	1.4	9
156,440	130,367	123,506	117,330	17	27	4 to 8	1.3	9
162,457	135,381	128,256	121,843	17	26	4 to 8	1.3	9
168,601	140,501	133,106	126,451	19	28	4 to 8	1.2	9
174,845	145,704	138,036	131,134	19	27	4 to 8	1.2	10
175,995	146,663	138,944	131,997	17	24	4 to 8	1.2	10
183,647	153,040	144,985	137,736	17	23	4 to 8	1.1	11
188,833	157,361	149,078	141,625	19	25	4 to 8	1.1	11
196,701	163,917	155,290	147,526	19	24	4 to 8	1.1	11
204,095	170,080	161,128	153,072	23	28	4 to 8	1.0	12
205,253	171,044	162,042	153,940	19	23	4 to 8	1.0	12
212,969	177,474	168,134	159,727	24	28	4 to 8	1.0	12
220,857	184,048	174,361	165,643	24	27	4 to 8	0.9	13
222,310	185,258	175,508	166,733	17	19	4 to 7.5	0.9	13
229,352	191,126	181,067	172,014	24	26	4 to 7.5	0.9	13
230,717	192,264	182,145	173,038	26	28	4 to 7.5	0.9	13
238,526	198,771	188,310	178,894	24	25	4 to 7.5	0.9	14
239,262	199,385	188,891	179,446	26	27	4 to 7.5	0.9	14
248,464	207,053	196,156	186,348	23	23	4 to 7	0.8	14
258,020	215,017	203,700	193,515	27	26	4 to 7	0.8	15
259,267	216,056	204,684	194,450	24	23	4 to 7	0.8	15
270,070	225,058	213,213	202,552	25	23	4 to 6.5	0.8	16
277,695	231,413	219,233	208,271	19	17	4 to 6.5	0.8	16
279,522	232,935	220,675	209,642	27	24	4 to 6.5	0.7	16
289,875	241,562	228,849	217,406	28	24	3 to 6	0.7	17
300,772	250,644	237,452	225,579	23	19	3 to 5.5	0.7	17
302,478	252,065	238,799	226,859	28	23	3 to 5.5	0.7	17
313,849	261,541	247,776	235,387	24	19	3 to 5.5	0.7	18
326,927	272,439	258,100	245,195	25	19	3 to 5	0.6	19
336,157	280,131	265,387	252,118	23	17	3 to 5	0.6	19
340,004	283,336	268,424	255,003	26	19	3 to 5	0.6	20
353,081	294,234	278,748	264,810	27	19	3 to 5	0.6	20
366,158	305,131	289,072	274,618	28	19	3 to 4.5	0.6	21
380,004	316,670	300,003	285,003	26	17	3 to 4.5	0.6	22
394,620	328,850	311,542	295,965	27	17	3 to 4.5	0.5	23
409,235	341,029	323,080	306,926	28	17	3 to 4.5	0.5	23

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

NOTE: When using the 2 to 1 Drive Reduction Package, rates will be approximately 1/2 of given numbers.

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

PLANTING RATES FOR PLATELESS SOYBEAN METERS
APPROXIMATE BEANS/ACRE FOR VARIOUS ROW WIDTHS - MEDIUM SEEDS

30 Inch	36 Inch	38 Inch	40 Inch	Transmission Sprockets Drive	Driven	Recomm. Speed Range (MPH)	Seed Spacing (Inches)	Seeds/ Foot
99,754	83,128	78,753	74,815	17	28	4 to 8	2.1	6
103,448	86,207	81,670	77,586	17	27	4 to 8	2.0	6
107,427	89,522	84,811	80,570	17	26	4 to 8	1.9	6
111,489	92,908	88,018	83,617	19	28	4 to 8	1.9	6
115,619	96,349	91,278	86,714	19	27	4 to 8	1.8	7
116,379	96,983	91,878	87,284	17	24	4 to 8	1.8	7
121,439	101,199	95,873	91,079	17	23	4 to 8	1.7	7
124,868	104,057	98,580	93,651	19	25	4 to 8	1.7	7
130,071	108,392	102,688	97,553	19	24	4 to 8	1.6	7
134,961	112,467	106,548	101,221	23	28	4 to 8	1.5	8
135,726	113,105	107,152	101,795	19	23	4 to 8	1.5	8
140,829	117,357	111,181	105,621	24	28	4 to 8	1.5	8
146,045	121,704	115,298	109,533	24	27	4 to 8	1.4	8
147,005	122,504	116,057	110,254	17	19	4 to 7.5	1.4	8
151,662	126,385	119,733	113,746	24	26	4 to 7.5	1.4	9
152,564	127,137	120,446	114,423	26	28	4 to 7.5	1.4	9
157,728	131,440	124,522	118,296	24	25	4 to 7.5	1.3	9
158,215	131,846	124,906	118,661	26	27	4 to 7.5	1.3	9
164,300	136,917	129,711	123,225	23	23	4 to 7	1.3	9
170,619	142,183	134,699	127,964	27	26	4 to 7	1.2	10
171,444	142,870	135,350	128,583	24	23	4 to 7	1.2	10
178,587	148,823	140,990	133,940	25	23	4 to 6.5	1.2	10
183,629	153,025	144,971	137,722	19	17	4 to 6.5	1.1	11
184,838	154,031	145,924	138,628	27	24	4 to 6.5	1.1	11
191,683	159,736	151,329	143,763	28	24	3 to 6	1.1	11
198,890	165,741	157,018	149,167	23	19	3 to 5.5	1.1	11
200,017	166,681	157,909	150,013	28	23	3 to 5.5	1.0	11
207,537	172,947	163,845	155,653	24	19	3 to 5.5	1.0	12
216,184	180,154	170,672	162,138	25	19	3 to 5	1.0	12
222,288	185,240	175,491	166,716	23	17	3 to 5	0.9	13
224,832	187,360	177,499	168,624	26	19	3 to 5	0.9	13
233,479	194,566	184,326	175,109	27	19	3 to 5	0.9	13
242,126	201,772	191,152	181,595	28	19	3 to 4.5	0.9	14
251,282	209,402	198,381	188,462	26	17	3 to 4.5	0.8	14
260,947	217,456	206,011	195,710	27	17	3 to 4.5	0.8	15
270,612	225,510	213,641	202,959	28	17	3 to 4.5	0.8	16

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

NOTE: When using the 2 to 1 Drive Reduction Package, rates will be approximately 1/2 of given numbers.

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

PLANTING RATES FOR PLATELESS SOYBEAN METERS
APPROXIMATE BEANS/ACRE FOR VARIOUS ROW WIDTHS - LARGE SEEDS

30 Inch	36 Inch	38 Inch	40 Inch	Transmission Sprockets Drive	Driven	Recomm. Speed Range (MPH)	Seeds Spacing (Inches)	Seeds/ Foot
66,803	55,669	52,739	50,102	17	28	4 to 8	3.1	4
69,277	57,731	54,692	51,958	17	27	4 to 8	3.0	4
71,941	59,951	56,796	53,956	17	26	4 to 8	2.9	4
74,662	62,218	58,944	55,996	19	28	4 to 8	2.8	4
77,427	64,523	61,127	58,070	19	27	4 to 8	2.7	4
77,937	64,947	61,529	58,452	17	24	4 to 8	2.7	4
81,325	67,771	64,204	60,994	17	23	4 to 8	2.6	5
83,621	69,684	66,017	62,716	19	25	4 to 8	2.5	5
87,106	72,588	68,768	65,329	19	24	4 to 8	2.4	5
90,380	75,317	71,353	67,785	23	28	4 to 8	2.3	5
90,893	75,744	71,757	68,170	19	23	4 to 8	2.3	5
94,310	78,592	74,455	70,732	24	28	4 to 8	2.2	5
97,803	81,502	77,213	73,352	24	27	4 to 8	2.1	6
98,446	82,039	77,721	73,835	17	19	4 to 7.5	2.1	6
101,564	84,637	80,182	76,173	24	26	4 to 7.5	2.1	6
102,169	85,141	80,660	76,627	26	28	4 to 7.5	2.0	6
105,627	88,022	83,390	79,220	24	25	4 to 7.5	2.0	6
105,953	88,294	83,647	79,465	26	27	4 to 7.5	2.0	6
110,028	91,690	86,864	82,521	23	23	4 to 7	1.9	6
114,260	95,217	90,205	85,695	27	26	4 to 7	1.8	7
114,812	95,677	90,641	86,109	24	23	4 to 7	1.8	7
119,596	99,663	94,418	89,697	25	23	4 to 6.5	1.7	7
122,973	102,477	97,084	92,229	19	17	4 to 6.5	1.7	7
123,782	103,151	97,722	92,836	27	24	4 to 6.5	1.7	7
128,366	106,972	101,342	96,275	28	24	3 to 6	1.6	7
133,192	110,993	105,152	99,894	23	19	3 to 5.5	1.6	8
133,947	111,623	105,748	100,460	28	23	3 to 5.5	1.6	8
138,983	115,819	109,723	104,237	24	19	3 to 5.5	1.5	8
144,774	120,645	114,295	108,580	25	19	3 to 5	1.4	8
148,862	124,051	117,522	111,646	23	17	3 to 5	1.4	9
150,565	125,471	118,867	112,924	26	19	3 to 5	1.4	9
156,356	130,296	123,439	117,267	27	19	3 to 5	1.3	9
162,147	135,122	128,011	121,610	28	19	3 to 4.5	1.3	9
168,278	140,232	132,851	126,209	26	17	3 to 4.5	1.2	10
174,750	145,625	137,961	131,063	27	17	3 to 4.5	1.2	10
181,223	151,019	143,071	135,917	28	17	3 to 4.5	1.2	10

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

NOTE: When using the 2 to 1 Drive Reduction Package, rates will be approximately 1/2 of given numbers.

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

PLANTING RATES FOR PLATELESS MEDIUM RATE MILO METERS
APPROXIMATE POUNDS/ACRE FOR VARIOUS ROW WIDTHS - MEDIUM SEEDS

30 Inch	36 Inch	38 Inch	40 Inch	Transmission Sprockets Drive	Transmission Sprockets Driven	Recomm. Speed Range (MPH)
6.1	5.1	4.8	4.6	17	28	4 to 8
6.3	5.3	5.0	4.8	17	27	4 to 8
6.6	5.5	5.2	4.9	17	26	4 to 8
6.8	5.7	5.4	5.1	19	28	4 to 8
7.1	5.9	5.6	5.3	19	27	4 to 8
7.1	5.9	5.6	5.3	17	24	4 to 8
7.4	6.2	5.9	5.6	17	23	4 to 8
7.7	6.4	6.0	5.7	19	25	4 to 8
8.0	6.6	6.3	6.0	19	24	4 to 8
8.3	6.9	6.5	6.2	23	28	4 to 8
8.3	6.9	6.6	6.2	19	23	4 to 8
8.6	7.2	6.8	6.5	24	28	4 to 8
9.0	7.5	7.1	6.7	24	27	4 to 8
9.0	7.5	7.1	6.8	17	19	4 to 7.5
9.3	7.7	7.3	7.0	24	26	4 to 7.5
9.4	7.8	7.4	7.0	26	28	4 to 7.5
9.7	8.1	7.6	7.3	24	25	4 to 7.5
9.7	8.1	7.7	7.3	26	27	4 to 7.5
10.0	8.4	8.0	7.6	23	23	4 to 7
10.5	8.7	8.3	7.8	27	26	4 to 7
10.5	8.8	8.3	7.9	24	23	4 to 7
11.0	9.1	8.6	8.2	25	23	4 to 6.5
11.3	9.4	8.9	8.4	19	17	4 to 6.5
11.3	9.4	8.9	8.5	27	24	4 to 6.5
11.8	9.8	9.3	8.8	28	24	3 to 6
12.2	10.2	9.6	9.1	23	19	3 to 5.5
12.3	10.2	9.7	9.2	28	23	3 to 5.5
12.7	10.6	10.0	9.5	24	19	3 to 5.5
13.3	11.0	10.5	9.9	25	19	3 to 5
13.6	11.4	10.8	10.2	23	17	3 to 5
13.8	11.5	10.9	10.3	26	19	3 to 5
14.3	11.9	11.3	10.7	27	19	3 to 5
14.8	12.4	11.7	11.1	28	19	3 to 4.5
15.4	12.8	12.2	11.6	26	17	3 to 4.5
16.0	13.3	12.6	12.0	27	17	3 to 4.5
16.6	13.8	13.1	12.4	28	17	3 to 4.5

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

NOTE: When using the 2 to 1 Drive Reduction Package, rates will be approximately 1/2 of given numbers.

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

PLANTING RATES FOR PLATELESS LOW RATE MILO METERS
APPROXIMATE POUNDS/ACRE FOR VARIOUS ROW WIDTHS - MEDIUM SEEDS

30 Inch	36 Inch	38 Inch	40 Inch	Transmission Sprockets Drive	Transmission Sprockets Driven	Recomm. Speed Range (MPH)
1.9	1.6	1.5	1.4	17	28	4 to 8
1.9	1.6	1.5	1.5	17	27	4 to 8
2.0	1.7	1.6	1.5	17	26	4 to 8
2.1	1.7	1.6	1.6	19	28	4 to 8
2.2	1.8	1.7	1.6	19	27	4 to 8
2.2	1.8	1.7	1.6	17	24	4 to 8
2.3	1.9	1.8	1.7	17	23	4 to 8
2.3	1.9	1.8	1.8	19	25	4 to 8
2.4	2.0	1.9	1.8	19	24	4 to 8
2.5	2.1	2.0	1.9	23	28	4 to 8
2.5	2.1	2.0	1.9	19	23	4 to 8
2.6	2.2	2.1	2.0	24	28	4 to 8
2.7	2.3	2.2	2.0	24	27	4 to 8
2.8	2.3	2.2	2.1	17	19	4 to 7.5
2.8	2.4	2.2	2.1	24	26	4 to 7.5
2.9	2.4	2.3	2.1	26	28	4 to 7.5
3.0	2.5	2.3	2.2	24	25	4 to 7.5
3.0	2.5	2.3	2.2	26	27	4 to 7.5
3.1	2.6	2.4	2.3	23	23	4 to 7
3.2	2.7	2.5	2.4	27	26	4 to 7
3.2	2.7	2.5	2.4	24	23	4 to 7
3.3	2.8	2.6	2.5	25	23	4 to 6.5
3.4	2.9	2.7	2.6	19	17	4 to 6.5
3.5	2.9	2.7	2.6	27	24	4 to 6.5
3.6	3.0	2.8	2.7	28	24	3 to 6
3.7	3.1	2.9	2.8	23	19	3 to 5.5
3.7	3.1	3.0	2.8	28	23	3 to 5.5
3.9	3.2	3.1	2.9	24	19	3 to 5.5
4.0	3.4	3.2	3.0	25	19	3 to 5
4.2	3.5	3.3	3.1	23	17	3 to 5
4.2	3.5	3.3	3.2	26	19	3 to 5
4.4	3.6	3.4	3.3	27	19	3 to 5
4.5	3.8	3.6	3.4	28	19	3 to 4.5
4.7	3.9	3.7	3.5	26	17	3 to 4.5
4.9	4.1	3.9	3.7	27	17	3 to 4.5
5.1	4.2	4.0	3.8	28	17	3 to 4.5

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

NOTE: When using the 2 to 1 Drive Reduction Package, rates will be approximately 1/2 of given numbers.

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

DRY INSECTICIDE APPLICATION RATES
APPROXIMATE POUNDS/ACRE AT 5 MPH FOR VARIOUS ROW WIDTHS

Meter Setting	30 Inch	36 Inch	38 Inch	40 Inch
CLAY GRANULES				
10	5.1	4.3	4.0	3.8
11	5.6	4.7	4.4	4.2
12	6.3	5.3	5.0	4.7
13	7.1	5.9	5.6	5.3
14	7.9	6.6	6.2	5.9
15	8.8	7.3	6.9	6.6
16	9.9	8.3	7.8	7.4
17	11.0	9.2	8.7	8.3
18	11.8	9.8	9.3	8.9
19	13.5	11.3	10.7	10.1
20	14.6	12.2	11.5	11.0
21	16.0	13.3	12.6	12.0
22	16.9	14.1	13.3	12.7
23	17.7	14.8	14.0	13.3
24	19.4	16.2	15.3	14.6
25	21.5	17.9	17.0	16.1
26	23.7	19.8	18.7	17.8
27	24.8	20.7	19.6	18.6
28	26.2	21.8	20.7	19.7
29	28.7	23.9	22.7	21.5
30	30.5	25.4	24.1	22.9
SAND GRANULES				
5	3.0	2.5	2.4	2.3
6	5.0	4.2	3.9	3.8
7	5.5	4.6	4.3	4.1
8	6.5	5.4	5.1	4.9
9	8.0	6.7	6.3	6.0
10	9.2	7.7	7.3	6.9
11	10.5	8.8	8.3	7.9
12	11.5	9.6	9.1	8.6
13	13.0	10.8	10.3	9.8
14	14.5	12.1	11.4	10.9
15	16.0	13.3	12.6	12.0
16	18.0	15.0	14.2	13.5
17	20.0	16.7	15.8	15.0
18	22.5	18.8	17.8	16.9
19	25.0	20.8	19.7	18.8
20	26.5	22.1	20.9	19.9
21	28.5	23.8	22.5	21.4
22	30.5	25.4	24.1	22.9
23	33.0	27.5	26.1	24.8
24	35.5	29.6	28.0	26.6
25	38.0	31.7	30.0	28.5

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

Your actual rate must be checked in the field with the actual insecticide that you are using and at the speed and population at which you will be planting.

DRY HERBICIDE APPLICATION RATES
APPROXIMATE POUNDS/ACRE AT 5 MPH FOR DIFFERENT ROW WIDTHS

CLAY GRANULES

Meter Setting	30 Inch	36 Inch	38 Inch	40 Inch
10	4.8	4.0	3.8	3.6
11	5.4	4.5	4.3	4.1
12	6.0	5.0	4.7	4.5
13	6.7	5.6	5.3	5.0
14	7.5	6.3	5.9	5.6
15	8.5	7.1	6.7	6.4
16	9.3	7.8	7.3	7.0
17	10.2	8.5	8.1	7.7
18	11.0	9.2	8.7	8.3
19	12.0	10.0	9.5	9.0
20	13.0	10.8	10.3	9.8
21	14.0	11.7	11.1	10.5
22	15.0	12.5	11.8	11.3
23	16.2	13.5	12.8	12.2
24	17.5	14.6	13.8	13.1
25	18.7	15.6	14.8	14.0
26	20.0	16.7	15.8	15.0
27	21.5	17.9	17.0	16.1
28	23.3	19.4	18.4	17.5
29	25.0	20.8	19.7	18.8
30	27.5	22.9	21.7	20.6

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

Your actual rate must be checked in the field with the actual herbicide that you are using and at the speed and population at which you will be planting.

LUBRICATION

The following pages show the locations of all lubrication points. Proper lubrication of all moving parts will help ensure efficient operation of your Kinze planter and prolong the life of friction producing parts.

Refer to the Kinze Row Unit Manual for lubrication of Kinze row units.

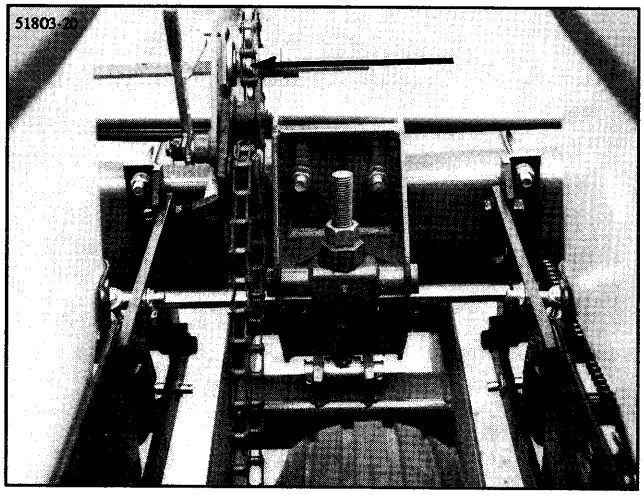
DANGER: Always install safety lockups or lower to the ground before working under the machine.

LUBRICATION SYMBOLS

Lubricate at frequency indicated with an SAE multipurpose type 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 due to the seals, relubrication is not practical.

DRIVE CHAINS

All transmission and drive chains should be lubricated daily with a high quality SAE 10 weight oil or a quality spray lubricant. Extreme operating conditions such as dirt, temperature or speed may require more frequent lubrication. If a chain becomes stiff, it should be removed, soaked and washed in solvent to loosen and remove dirt from the joints. Then soak the chain in oil so the lubricant can penetrate between the rollers and bushings.

WHEEL BEARINGS

Wheel bearings should be checked annually. Inspect for lubrication. Pump grease into the hub until grease comes out around the seals.

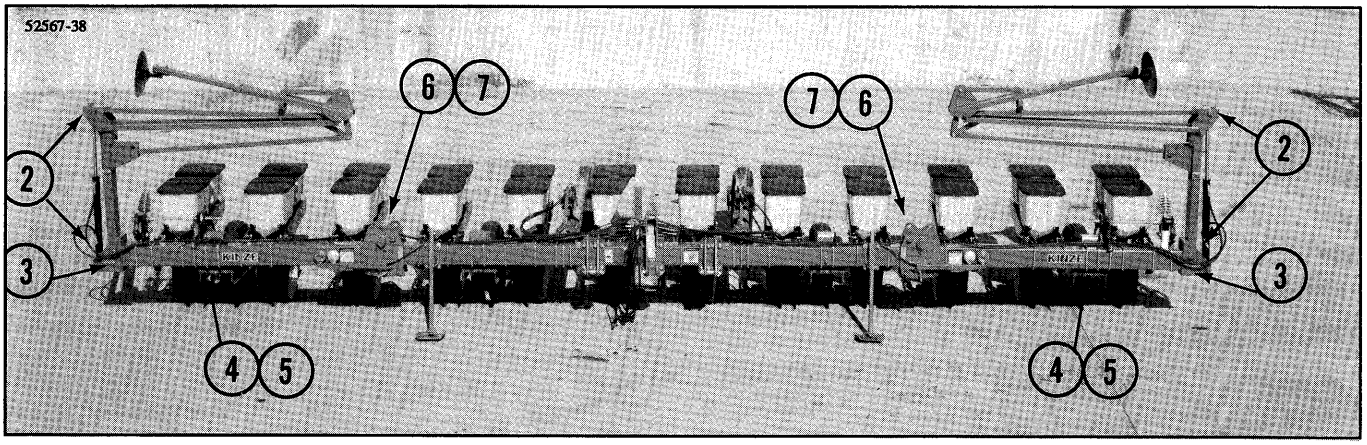
Lift wheel off the ground. Check for endplay in the bearings by moving the tire in and out. Rotate the tire to check for roughness in the bearings. If bearings sound rough, the hub should be removed and the bearings inspected and replaced if necessary. See "Wheel Bearing Packing Or Replacement".

GREASE FITTINGS

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

LUBRICATION

12 Row Folding Model With Low Profile Markers Shown

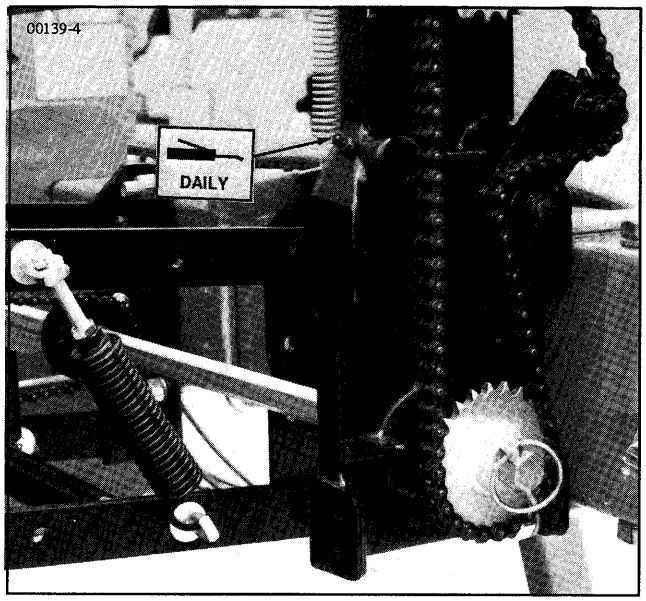


DANGER: Always install safety blocks or lower to the ground before working under or around the machine.

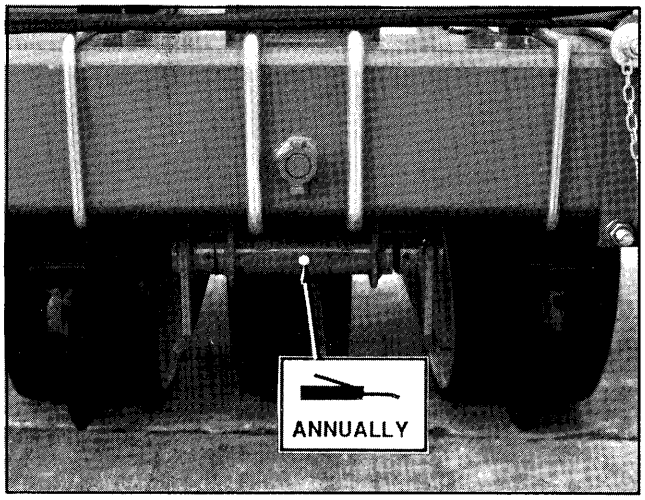
1. Conventional Markers - 4 Zerks Per Assembly

2. Low Profile Markers - 2 Zerks Per Assembly

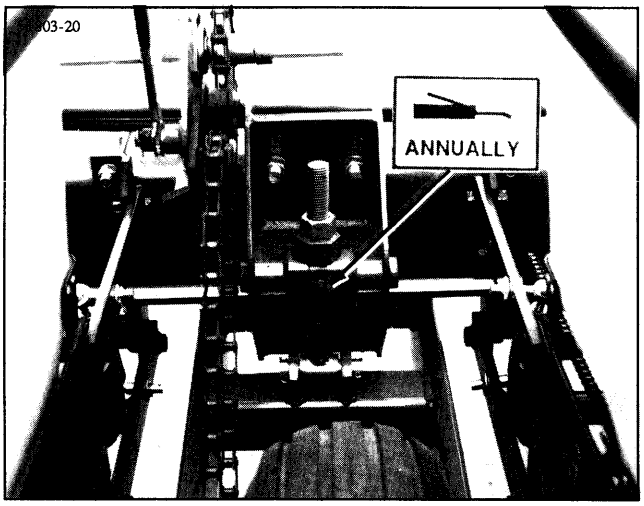
LUBRICATION



3. Transmission Assembly - 1 Zerk Per Assembly(Idler)

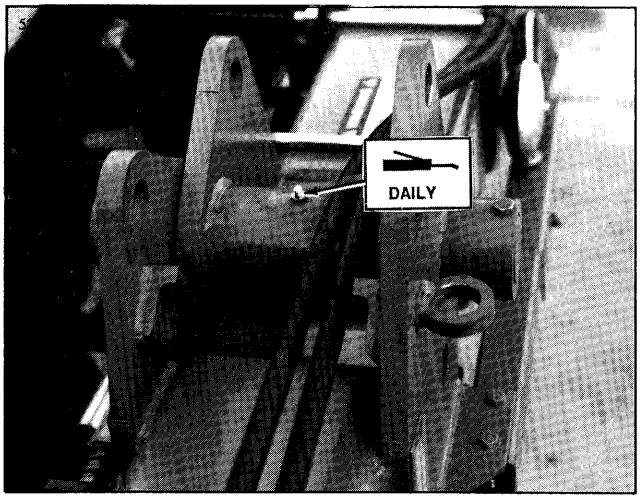


4. Wheel Module Shaft - 1 Zerk Per Module

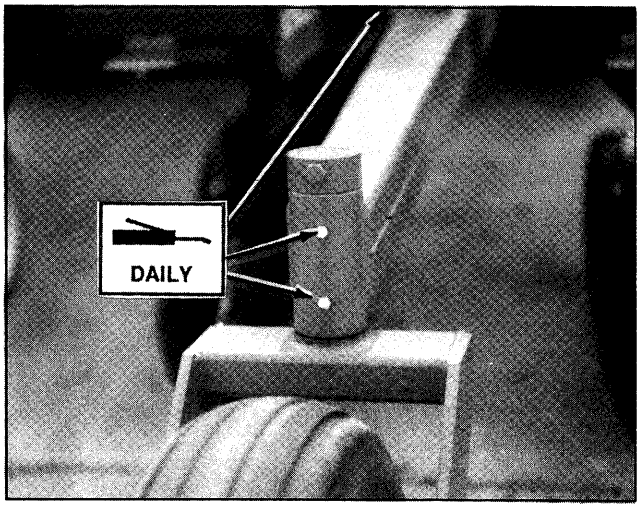


5. Wheel Module Jack Screw - 1 Zerk Per Module

6. Wing Hinge Linkage(Folding Model) - 3 Zerks Per Hinge

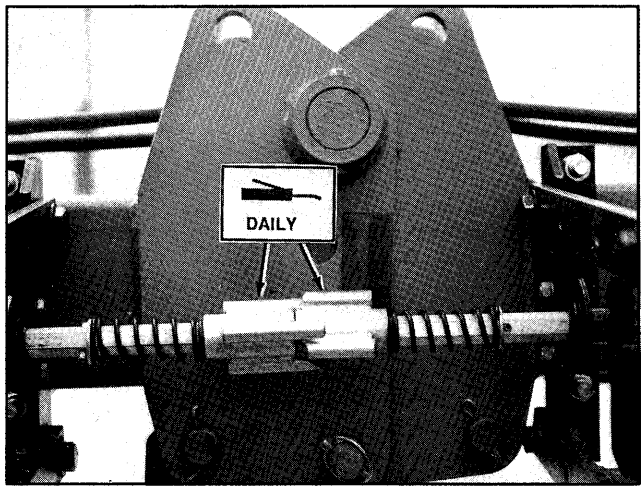


7. Wing Hinge Pin (Folding Model) - 1 Zerk Per Hinge



8. Lift Assist Wheel Arm (Applicable Model) - 3 Zerks Per Arm Assembly(One at wheel tower pivot-Not Shown)

53704-2



9. Drill Shaft Coupler (Folding Model-Where Applicable) - 2 Zerks Per Hinge Area

MAINTENANCE

MOUNTING BOLTS AND HARDWARE

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

All bolts used on the Kinze planter are Grade 5(high strength) unless otherwise noted. Refer to the torque values chart when tightening bolts.

NOTE: Over tightening bolts can cause as much damage as under tightening. Tightening a bolt beyond the recommended range can reduce its shock load capacity.

TORQUE VALUES CHART - PLATED HARDWARE

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

NOTE: Unplated bolts should be torqued aproximately 1/3 higher than the above values. Bolts having lock nuts should be tightened to approximately 50% of amounts shown in chart. Bolts lubricated prior to installation should be torqued to 70% of value shown on chart.

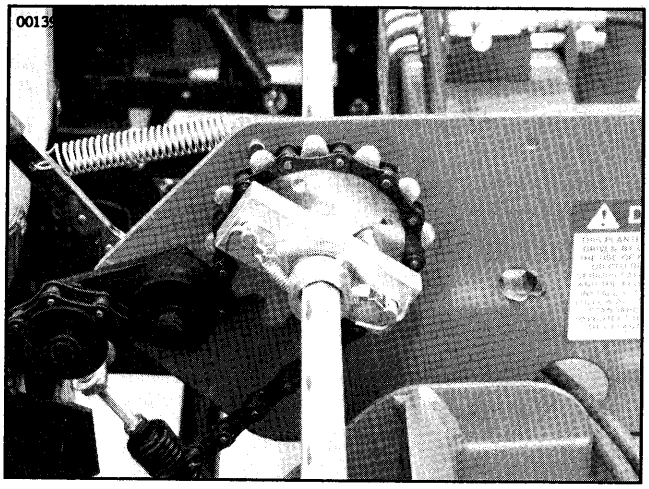
GRADE 2
No Marks

GRADE 5
3 Marks

GRADE 8
6 Marks

CHAIN TENSION ADJUSTMENT

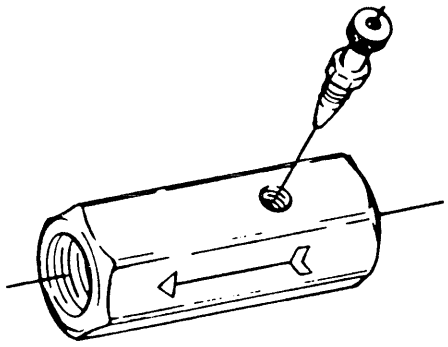
The drive chains are spring loaded and chain tension is adjustable with the use of the ratchet idler arm. The pivot point of these idlers should be checked periodically to ensure they will rotate freely.



FLOW CONTROL VALVE INSPECTION

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

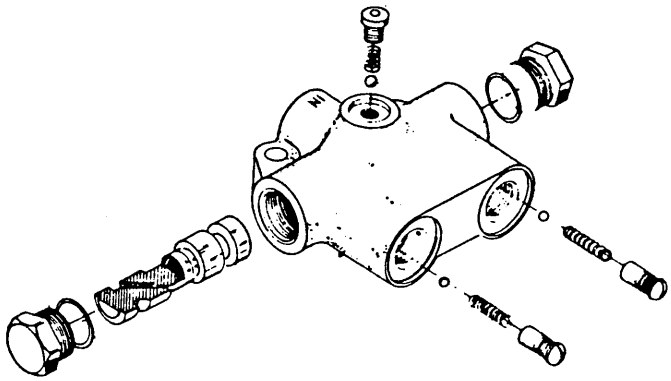
NOTE: The flow control valve must be installed with the arrow pointed toward the tractor.



SEQUENCING VALVE INSPECTION

The sequencing valve consists of a chambered body containing a spool and a series of check valves to direct hydraulic flow. Should the valve malfunction, the components may be removed for inspection. The spool is accessible by removing either side plug and one check valve is accessible from the top of the valve body. It is necessary to disconnect the outlet hoses from the back of the valve to gain access to the remaining retainers and check valves. Inspect all parts for pitting, contamination or foreign material. Also check seating surfaces inside the valve. Replace any parts found to be defective.

IMPORTANT: Make sure correct check ball and spring are installed in each check valve bore upon reassembly.



VALVE BLOCK ASSEMBLY INSPECTION
(Marker Sequencing & Flow Control Valves)

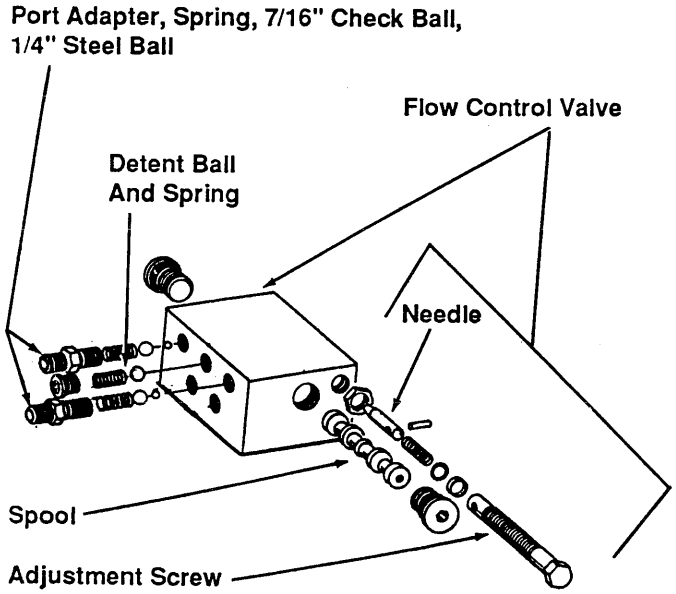
The valve block assembly consists of the marker sequencing and flow control valves in one assembly.

The sequencing valve portion consists of a chambered body containing a spool and series of check valves to direct hydraulic flow. Should the valve malfunction, the components may be removed for inspection.

1. Remove valve block assembly from planter.
2. Remove detent assembly and port adapter assemblies from rear of valve block.
3. Remove plug from both sides of valve block and remove spool.
4. Inspect all parts for pitting, contamination or foreign material. Also check seating surfaces inside the valve. Replace any parts found to be defective.
5. Lubricate spool with a light oil and re-install. Check to be sure spool moves freely in valve body.

IMPORTANT: 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 the block assembly. The flow control valves should be adjusted for raise and lower speed as part of the assembly procedure or upon initial operation. If the valve fails to function properly or requires frequent adjustment, the needle valve should be removed for inspection. Check for foreign material and contamination. Be sure needle moves freely in adjustment screw. Replace any components found to be defective.



MARKER OPERATION TROUBLE SHOOTING		
PROBLEM	**POSSIBLE CAUSE**	**POSSIBLE 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 re-install.
Both markers lower and raise at same time.	Foreign material under check ball in sequencing valve. Check ball missing or installed incorrectly in sequencing valve.	Remove hose fitting, spring and balls and clean. May be desirable to remove spool and clean as well. Disassemble and correct. See illustration in Parts Section.
Marker (in raised position) settling down.	Damaged o-ring in marker cylinder or cracked piston. Spool in sequencing valve not shifting completely because detent ball or spring is missing. Spool in sequencing valve shifting back toward center position.	Disassemble cylinder and inspect for damage and repair. Check valve assembly and install parts as needed. Restrict flow of hydraulic oil from tractor to sequencing valve.
Neither marker will move.	Flow control closed too far.	Loosen locking nut and turn flow control adjustment bolt out or counterclockwise until desired speed is set.
Markers moving to fast.	Flow control open too far.	Loosen locking nut and turn flow control adjustment bolt in or clockwise until desired speed is set.
Sporadic marker operation speed. (Machines equipped with valve block assembly only.)	Needle sticking open in flow control valve.	Remove flow control, inspect and repair or replace.

MARKER BEARING LUBRICATION OR REPLACEMENT

1. Remove marker blade.

2. Remove hub cap from hub.

3. Remove cotter pin, nut and washer.

4. Slide hub from spindle.

5. Remove bearings and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings only and not cups if repacking.

6. Press in new bearing cups with thickest edge facing in. (Bearing replacement procedure only.)

7. Pack bearings with heavy duty wheel bearing grease thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.

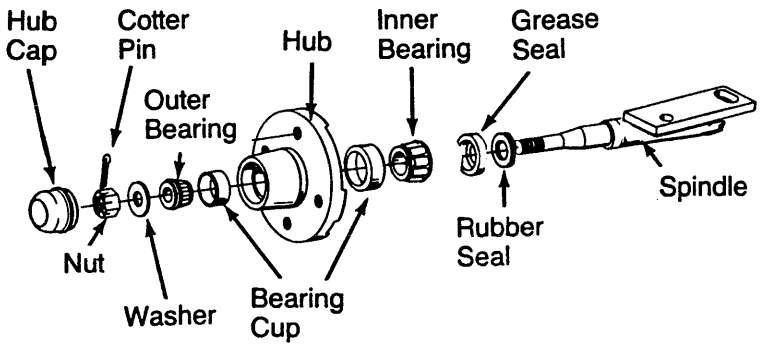
8. Place inner bearing in place and press in new rubber seal and grease seal.

9. Clean spindle and install hub.

10. Install outer bearing, washer or outer seal and slotted hex nut. Tighten slotted hex nut while rotating hub until there is some drag. This assures that all bearing surfaces are in contact. Back off slotted nut to nearest locking slot and install cotter pin.

11. Fill hub caps approximately 3/4 full of wheel bearing grease and install on hub.

12. Install blade and hub cap retainer on hub and tighten evenly and securely.



WHEEL BEARING LUBRICATION OR REPLACEMENT

1. Raise tire clear of ground and remove wheel.

2. Remove double jam nuts and slide hub from spindle.

3. Remove bearings and cups and discard if bearings are being replaced. Clean hub and dry. Remove bearings only and not cups if repacking.

4. Press in new bearing cups with thickest edge facing in. (Bearing replacement procedure only.)

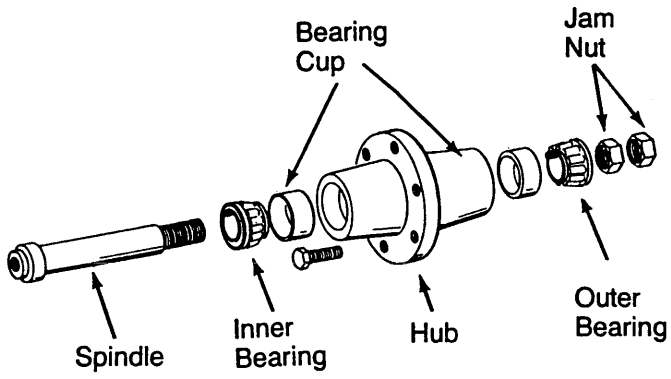
5. Pack bearings with heavy duty wheel bearing grease thoroughly forcing grease between roller cone and bearing cage. Also fill the space between the bearing cups in the hub with grease.

6. Place inner bearing 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 assures that all bearing surfaces are in contact. Back off jam nut 1/4 turn or until there is only slight drag when rotating the hub. Install second jam nut to lock against first.

9. Install wheel on hub and tighten evenly and securely.



PREPARATION FOR STORAGE

Store the planter in a dry sheltered area if possible.

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

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

Lubricate planter and row units at all lubrication points.

If possible, remove weight from all tires particularly if the unit is stored outdoor, in which case it is best to remove wheels and tires for storage in a cool dry area.

Inspect the planter and row units for parts that are in need of replacement and order during the "off" season.

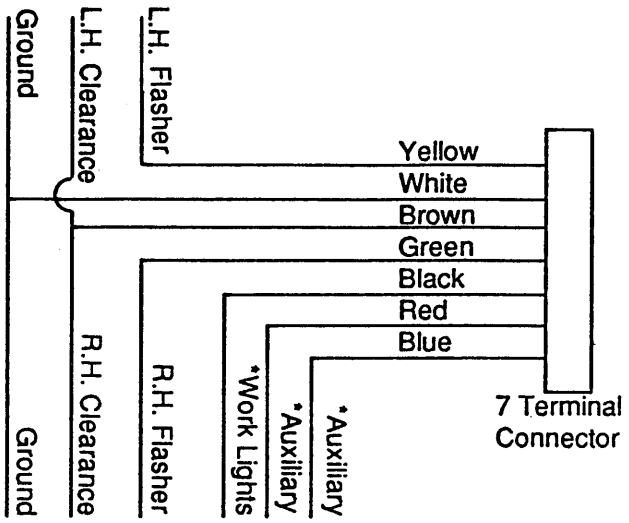
Make sure all seed, herbicide and insecticide hoppers are empty and clean.

Clean seed meters and store in a dry area. (Refer to row unit manual for proper procedures)

Grease exposed areas of cylinder rods before storing planter.

Grease or paint disc openers to prevent rust.

WIRING DIAGRAM



*Optional lights and wires (to be supplied by customer) may be wired into existing plug terminals.

Light package supplied on the 3 Point Mounted II planter meets ASAE standards. For the correct wiring harness to be wired into the lights on you tractor, check with the tractor manufacturer.

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Wing And Hinge Assembly (Hydraulic Fold Toolbar). P6/P7
Drive Wheel Assembly. P8
Front Mounted Drive Wheel (Optional) P9
Dual Lift Assist W/Floating Center Mast (Optional). P10/P11
Drive Line (Rigid Toolbar) P12/P13
Drive Line (Hydraulic Fold Toolbar). P14/P14a
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Flow Control Valve P29
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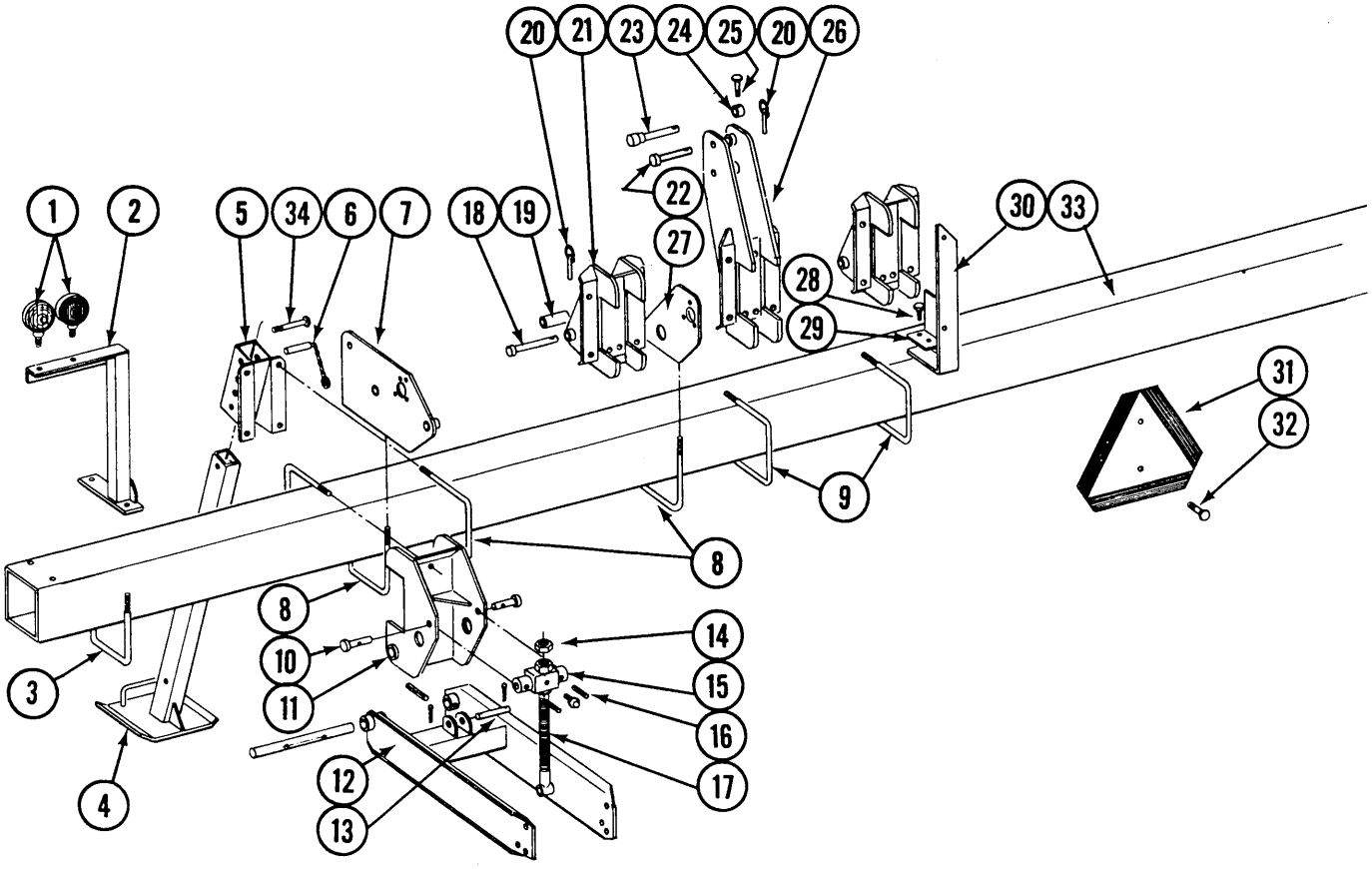
Part Section Numerical Index . . . . . a

RIGID TOOLBAR ASSEMBLY

PFA043



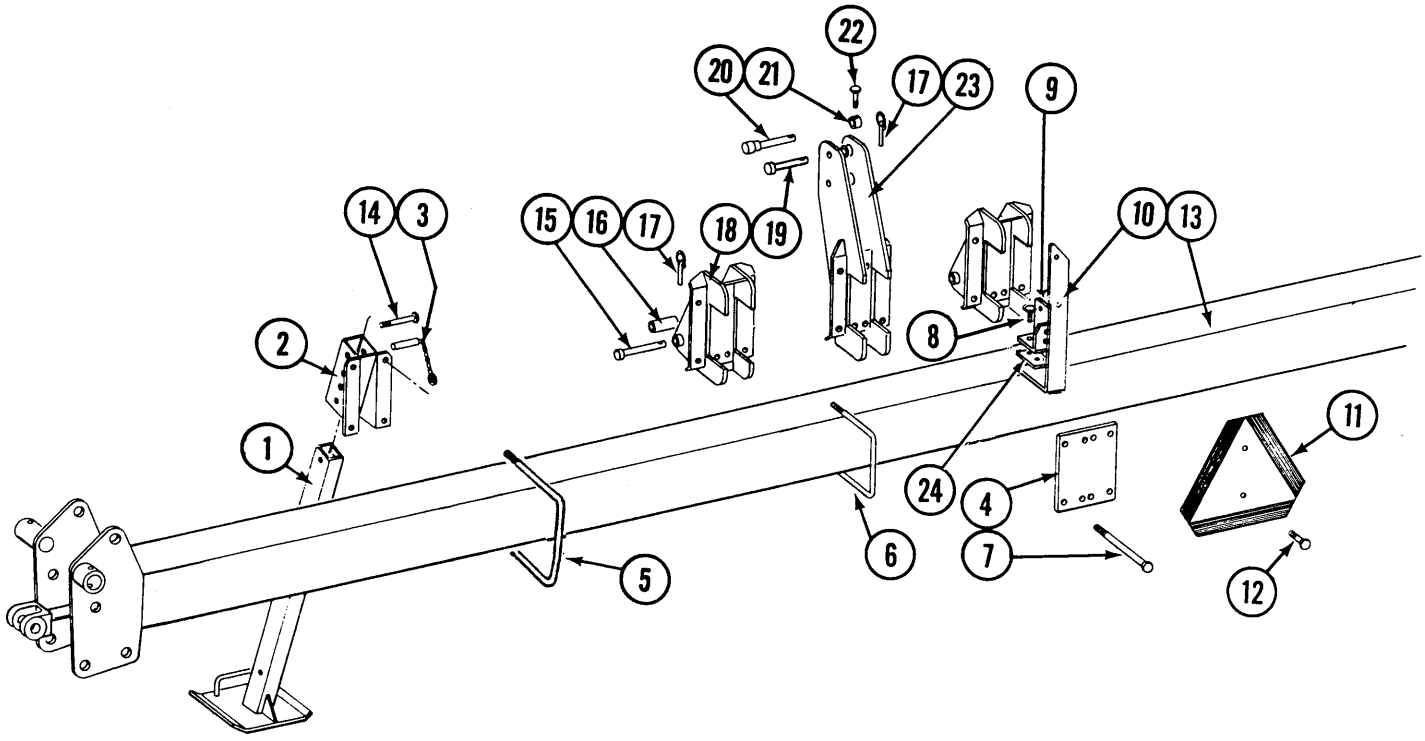
ITEM	PART NO.	DESCRIPTION
1.	A4122	Single Red Light Assembly Complete W/Female Terminal
	A4123	Double Amber Light Assembly Complete W/Male Terminal
	R0968	Bulb, No. 1156
	R0970	Red Lens
	R0969	Amber Lens
	10289	Hex Nut, 1/2"-20
	10525	Star Washer, 1/2"
	10266	Female Terminal
	10269	Male Terminal
2.	A4775	Bracket, L.H. (Shown)
	A4776	Bracket, R.H.
3.	D7145	U-Bolt, 7" x 7" x 1/2"-13
	10228	Lock Washer, 1/2"
	10102	Hex Nut, 1/2"-13

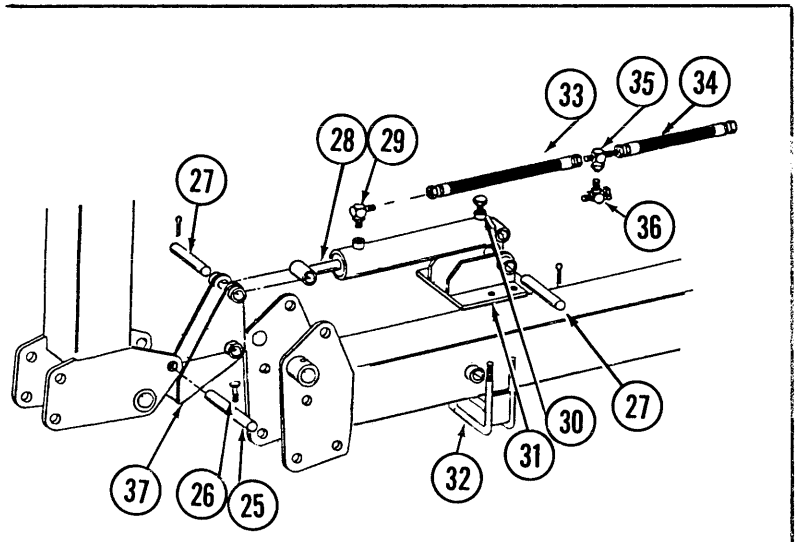
RIGID TOOLBAR ASSEMBLY

ITEM	PART NO.	DESCRIPTION
4.	A4732	Jack Stand
5.	A4707	Mount
6.	A4733	Detent Pin W/Chain
7.	A4699	Drive Plate, L.H. (Shown)
	A4700	Drive Plate, R.H.
8.	D1114	U-Bolt, 7" x 7" x 5/8"-11
	10230	Lock Washer, 5/8"
	10104	Hex Nut, 5/8"-11
9.	D1748	U-Bolt, 7" x 7" x 3/4"-10
	10231	Lock Washer, 3/4"
	10105	Hex Nut, 3/4"-10
10.	A4704	Pin
11.	*	Module W/Grease Fitting
	10641	Grease Fitting, 1/8" NPT
12.	*	Arm W/Shaft And Spring Pin
	D7042	Shaft, 1 1/4" x 12 1/8"
	10610	Spring Pin, 3/8" x 2"
13.	D7041	Pin, 1" x 4"
	10459	Cotter Pin, 3/16" x 1 1/2"
14.	10117	Hex Nut, 1"-8, Grade 2
15.	A4711	Jack Screw Mount W/Grease Fitting
	10641	Grease Fitting, 1/8" NPT
16.	10489	Spring Pin, 3/8" x 1 1/2"
17.	A4705	Adjuster Screw
18.	A4665	Lower Link Pin
19.	D7090	Adapter Bushing, Category 3
20.	D2557	Lynch Pin, 7/16"
21.	*	Lower Link
22.	A4666	Link Pin, Category 3, 1 1/4"
23.	A4938	Link Pin, Optional Category 2, 1"
24.	D7338	Sleeve, Optional Category 2
25.	10048	Hex Head Cap Screw, 3/8"-16 x 2"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
26.	A4702	Center Mast
27.	A4709	Carrier Bearing Mount, L.H. (Shown), 4 Row Wide through 8 Row Wide
	A5466	Carrier Bearing Mount, R.H., 8 Row 40 Only
28.	10001	Hex Head Cap Screw, 3/8"-16 x 1"
	10229	Lock Washer, 3/8"
29.	D5807	Valve Mounting Bracket
30.	D7152	SMV Mounting Bracket
31.	D2199	SMV Emblem
32.	10023	Hex Head Cap Screw, 1/4"-20 x 3/4"
	10110	Lock Nut, 1/4"-20
33.	*	Toolbar, 7" x 7" x 106", 2 Row 30/36/38/40
	*	Toolbar, 7" x 7" x 120", 4 Row 30
	*	Toolbar, 7" x 7" x 150", 4 Row 36/38/40
	*	Toolbar, 7" x 7" x 180", 6 Row 30
	*	Toolbar, 7" x 7" x 230", 6 Row 36/38/40
	*	Toolbar, 7" x 7" x 240", 8 Row 30
	*	Toolbar, 7" x 7" x 310", 8 Row 40
34.	10016	Hex Head Cap Screw, 1/2"-13 x 2"
	10111	Lock Nut, 1/2"-13
A.	A4783	Light Wiring Harness, 180" (Not Shown) 2 Row 30 through 6 Row 30
	A4784	Light Wiring Harness, 246" (Not Shown) 6 Row Wide through 8 Row Wide

CENTER FRAME ASSEMBLY (HYDRAULIC FOLD TOOLBAR)

PFA043/PFA048





Optional External Wing Lift Assist

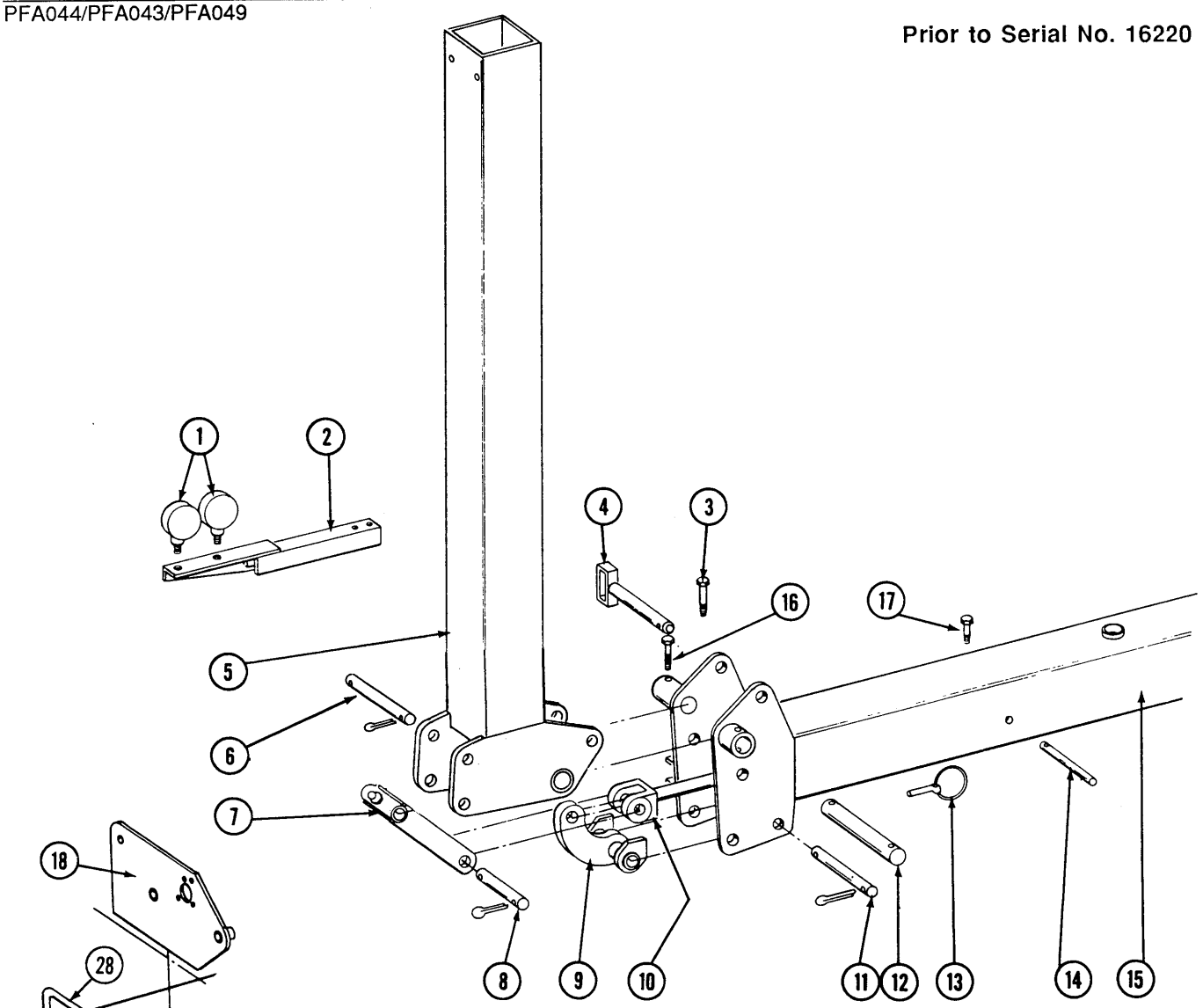
CENTER FRAME ASSEMBLY (HYDRAULIC FOLD TOOLBAR)

ITEM	PART NO.	DESCRIPTION
1.	A4732	Jack Stand
2.	A4707	Mount
3.	A4733	Detent Pin W/Chain
4.	*	Mounting Bar
5.	D1114	U-Bolt, 7" x 7" x 5/8"-11
	10230	Lock Washer, 5/8"
	10104	Hex Nut, 5/8"-11
6.	D1748	U-Bolt, 7" x 7" x 3/4"-10
	10231	Lock Washer, 3/4"
	10105	Hex Nut, 3/4"-10
7.	10059	Hex Head Cap Screw, 3/4"-10 x 9 1/2"
	10231	Lock Washer, 3/4"
	10105	Hex Nut, 3/4"-10
8.	10001	Hex Head Cap Screw, 3/8"-16 x 1"
	10047	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	10229	Lock Nut, 3/8"-16
9.	A5141	Valve Mounting Bracket
10.	D7152	SMV Mounting Bracket
11.	D2199	SMV Emblem
12.	10023	Hex Head Cap Screw, 1/4"-13 x 3/4"
	10110	Lock Nut, 1/4"-13
13.	*	Center Toolbar, 7" x 7" x 144", 8 Row 36/38
	*	Center Toolbar, 7" x 7" x 183", 12 Row 30
14.	10016	Hex Head Cap Screw, 1/2"-13 x 2"
	10111	Lock Nut, 1/2"-13
15.	A4665	Lower Link Pin
16.	D7090	Adapter Bushing, Category 3
17.	D2557	Lynch Pin, 7/16"
18.	*	Lower Link
19.	A4666	Link Pin, Category 3, 1 1/4"
20.	A4938	Link Pin, Optional Category 2, 1"
21.	D7338	Sleeve, Optional Category 2
22.	10048	Hex Head Cap Screw, 3/8"-16 x 2"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
23.	A4702	Center Mast
24.	D7628	Spacer
25.	D7582	Pin, 1 1/4" x 6 5/8"
26.	10049	Hex Head Cap Screw, 3/8"-16 x 2 1/2"
	10108	Lock Nut, 3/8"-16
27.	D4230	Shaft, 1 1/4" x 7 1/2"
	10460	Cotter Pin, 1/4" x 2"
28.		See "External Wing Lift Assist Cylinder"
29.	6801-06-08	Elbow, 3/4"-16 O-Ring To 9/16"-18 JIC
30.	A5531	Breather Plug
31.	A5529	Cylinder Anchor
32.	A5530	U-Bolt Assembly
	10231	Lock Washer, 3/4"
	10105	Hex Nut, 3/4"-10
33.	A1114	Hose Assembly, 1/4" x 85"
34.	A1185	Hose Assembly, 1/4" x 74"
35.	6600-06	Outlet Tee, 9/16"-18 JIC
36.	6602-06	Run Tee, 9/16"-18 JIC
37.	A5540	Assist Link

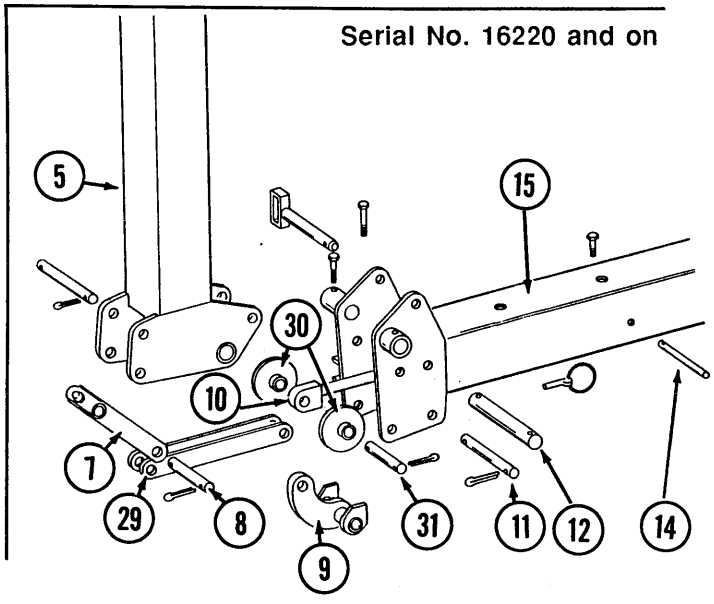
WING AND HINGE ASSEMBLY (HYDRAULIC FOLD TOOLBAR)

PFA044/PFA043/PFA049

Prior to Serial No. 16220



Serial No. 16220 and on

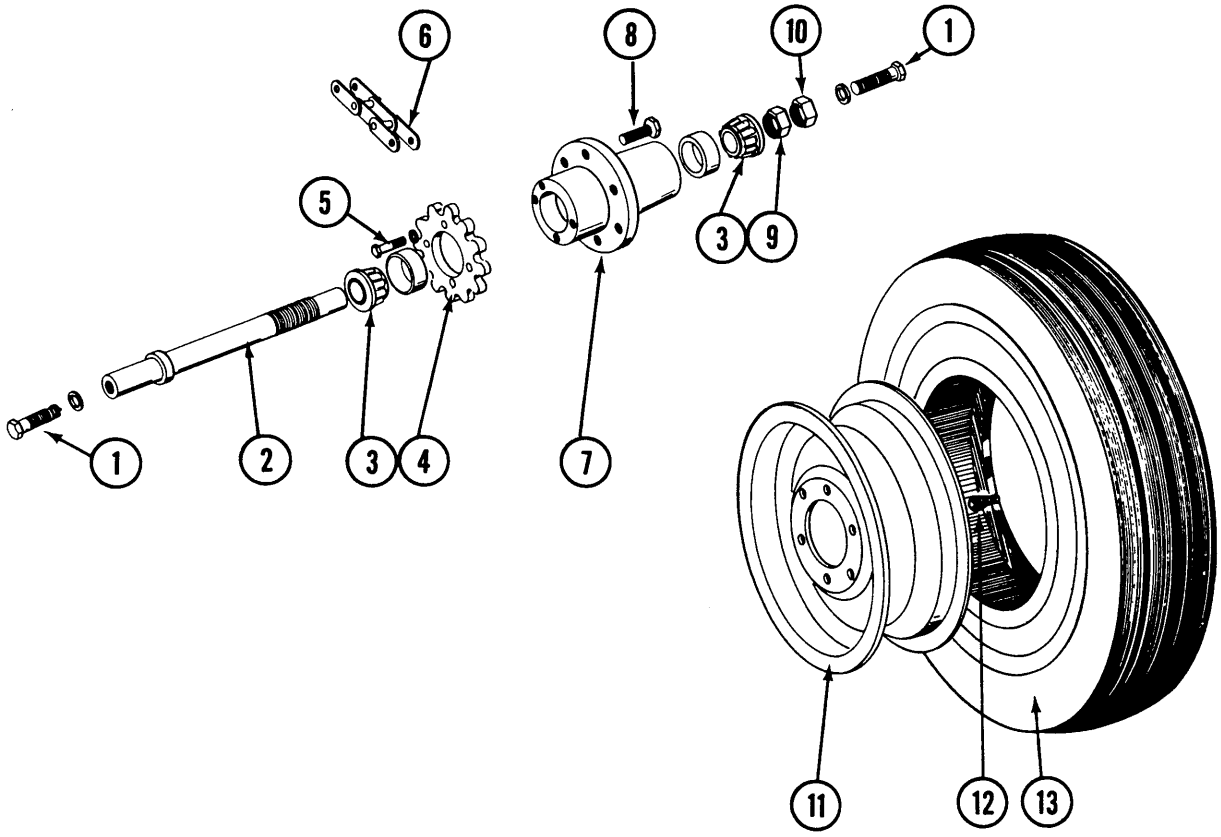


WING AND HINGE ASSEMBLY (HYDRAULIC FOLD TOOLBAR)

ITEM	PART NO.	DESCRIPTION
1.	A4122	Single Red Light Complete W/Female Terminal
	A4123	Double Amber Light Assembly Complete W/Male Terminal
	R0968	Bulb, No. 1156
	R0970	Red Lens
	R0969	Amber Lens
	10289	Hex Nut, 1/2"-20
	10525	Star Washer, 1/2"
	10266	Female Terminal
	10269	Male Terminal
2.	A4901	Bracket, L.H. (Shown)
	A4900	Bracket, R.H.
3.	10325	Hex Head Cap Screw, 3/8"-16 x 2 3/4"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
4.	A4402	Safety Pin
5.	*	Wing W/Grease Fitting, 76", 8 Row 36/38
	*	Wing W/Grease Fitting, 88 1/2", 12 Row 30
	10641	Grease Fitting, 1/8" NPT
6.	D3737	Pin, 1 1/4" x 8 1/2"
	10460	Cotter Pin, 1/4" x 2"
7.	A4881	Link
8.	D5841	Pin, 1 1/4" x 5 5/8"
	10460	Cotter Pin, 1/4" x 2"
9.	A4883	Link
10.		See "Wing Lift Cylinder (3 1/2" x 11" or 4" x 11")
11.	D4724	Pin, 1 1/4" x 10"
	10460	Cotter Pin, 1/4" x 2"
12.	D7282	Hinge Pin, 2 1/8" x 13"
13.	D2558	Lynch Pin, 1/4"
	D2557	Lynch Pin, 7/16"
14.	D7302	Cylinder Pin, 1" x 6"
15.		See "Center Frame Assembly
16.	10061	Hex Head Cap Screw, 3/8"-16 x 3 1/2"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
17.	10048	Hex Head Cap Screw, 3/8"-16 x 2"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
18.	A4699	Drive Plate, L.H. (Shown)
	A4700	Drive Plate, R.H.
19.	A4704	Pin
20.	*	Module W/Grease Fitting
	10641	Grease Fitting, 1/8" NPT
21.	*	Arm W/Shaft And Spring Pin
	D7042	Shaft, 1 1/4" x 12 1/8"
	10610	Spring Pin, 3/8" x 2"
22.	D7041	Pin, 1" x 4"
	10459	Cotter Pin, 3/16" x 1 1/2"
23.	10117	Hex Nut, 1"-8, Grade 2
24.	A4711	Jack Screw Mount W/Grease Fitting
	10641	Grease Fitting, 1/8" NPT
25.	10489	Spring Pin, 3/8" x 1 1/2"
26.	A4705	Adjuster Screw
27.	D1114	U-Bolt, 7" x 7" x 5/8"-11
	10230	Lock Washer, 5/8"
	10104	Hex Nut, 5/8"-11
28.	D1748	U-Bolt, 7" x 7" x 3/4"-10
	10231	Lock Washer, 3/4"
	10105	Hex Nut, 3/4"-10
29.	A5660	Link
30.	A5659	Wheel
31.	D7861	Pin, 1 1/4" x 6 1/8"
	10460	Cotter Pin, 1/4" x 2"
A.	A4783	Light Wiring Harness, 180" (Not Shown)

DRIVE WHEEL ASSEMBLY

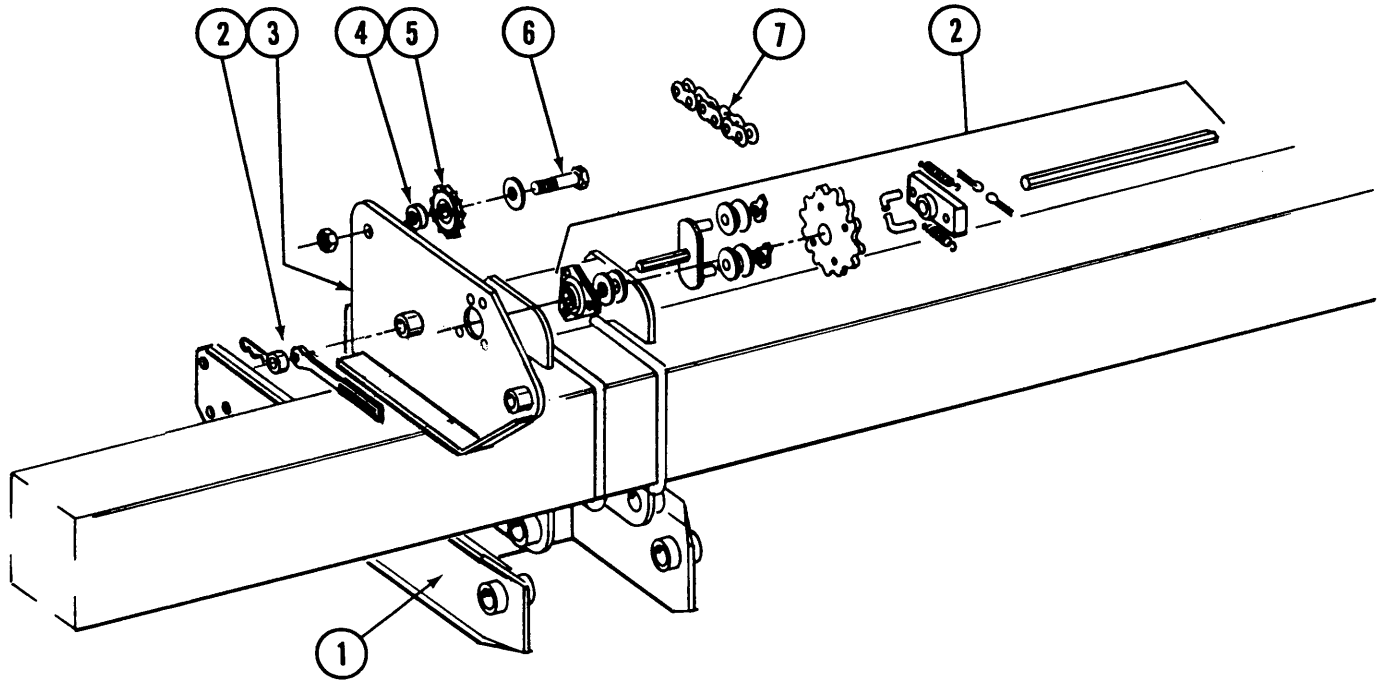
PLA025



ITEM	PART NO.	DESCRIPTION
1.	10026	Hex Head Cap Screw, 3/4"-10 x 2"
	10231	Lock Washer, 3/4"
2.	A4693	Spindle
3.	A0895	Bearing
4.	2500-17	Sprocket, 12 Tooth
5.	10019	Hex Head Cap Screw, 5/16"-18 x 1"
	10232	Lock Washer, 5/16"
6.	3200-62	Chain, No. 2050, 62 Pitch Including Connector Link
	3200-06	Chain, No. 2050 (Add to chain when using 2 to 1 reduction sprockets.)
	R0195	Connector Link, No. 2050
7.	A0926	Hub W/Cups, 6 Bolt
	R0434	Cup
8.	R0270	Bolt, 9/16"-18
9.	10092	Hex Nut, 1 1/2"-12, Grade 2
10.	10087	Jam Nut, 1 1/2"-12, Grade 2
11.	A4696	Wheel, 15" x 5"
12.	D1166	Valve Stem
13.	D0844	Tire, 7.60 x 15, 4 Ply

FRONT MOUNTED DRIVE WHEEL (OPTIONAL)

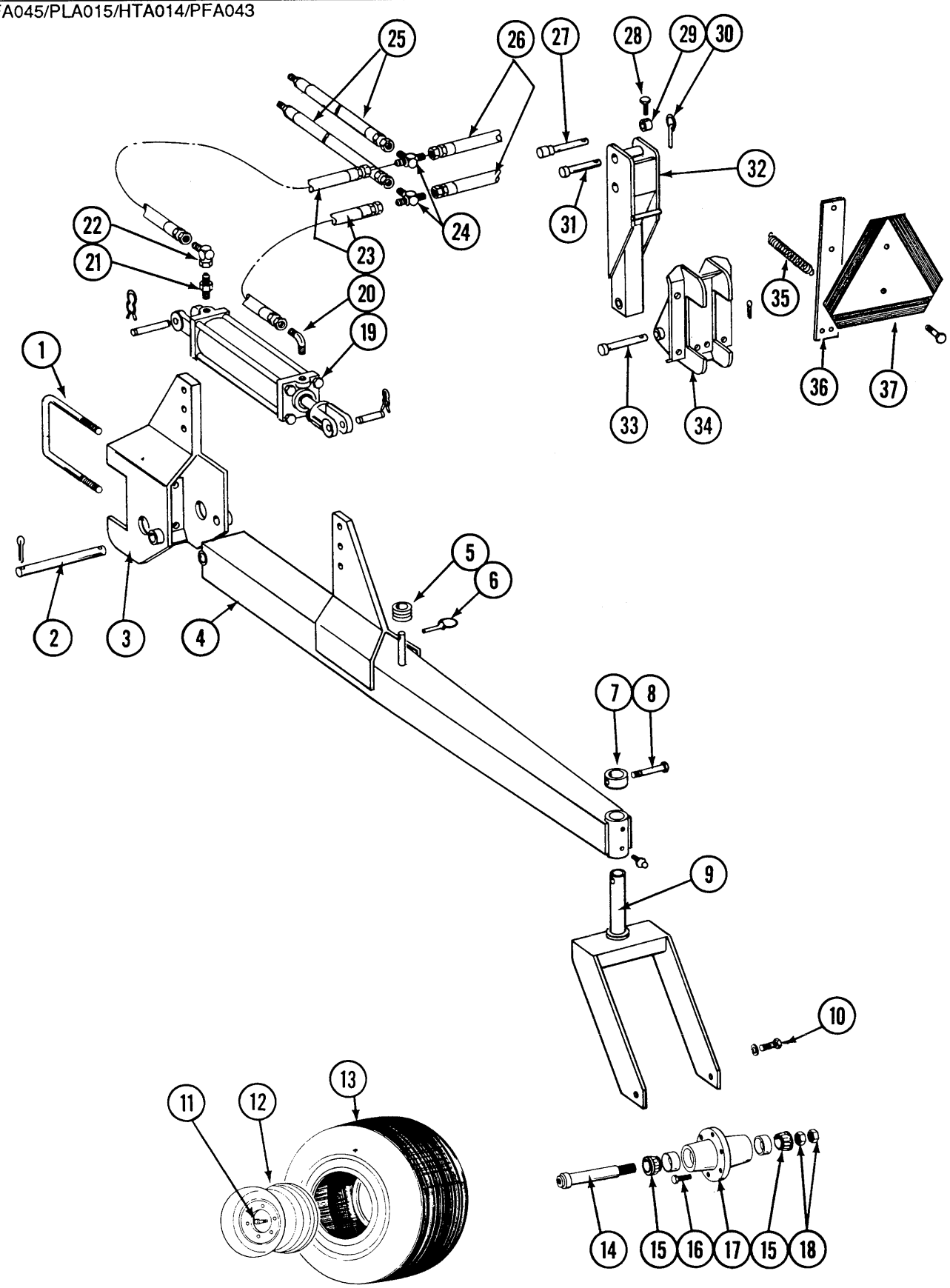
PTD064



ITEM	PART NO.	DESCRIPTION
1.		See "Rigid Toolbar Assembly" or "Wing And Hinge Assembly, Hydraulic Fold Toolbar"
2.		See "Drive Line, Rigid Toolbar" or "Drive Line, Hydraulic Fold Toolbar"
3.		See "Rigid Toolbar Assembly" or "Wing And Hinge Assembly, Hydraulic Fold Toolbar"
4.	D7101	Sleeve
5.	A0262	Idler Sprocket W/Bearing, 15 Tooth
6.	10009	Hex Head Cap Screw, 5/8"-11 x 2 1/2"
	10217	Washer, 5/8" USS (As Required)
	10107	Lock Nut, 5/8"-11
7.	3200-18	Chain, No. 2050, 18 Pitch Including Connector Link (Add to chain when using front mounted drive. See "Drive Wheel Assembly".)
	R0195	Connector Link, No. 2050

DUAL LIFT ASSIST W/FLOATING CENTER MAST (OPTIONAL)

PFA045/PLA015/HTA014/PFA043

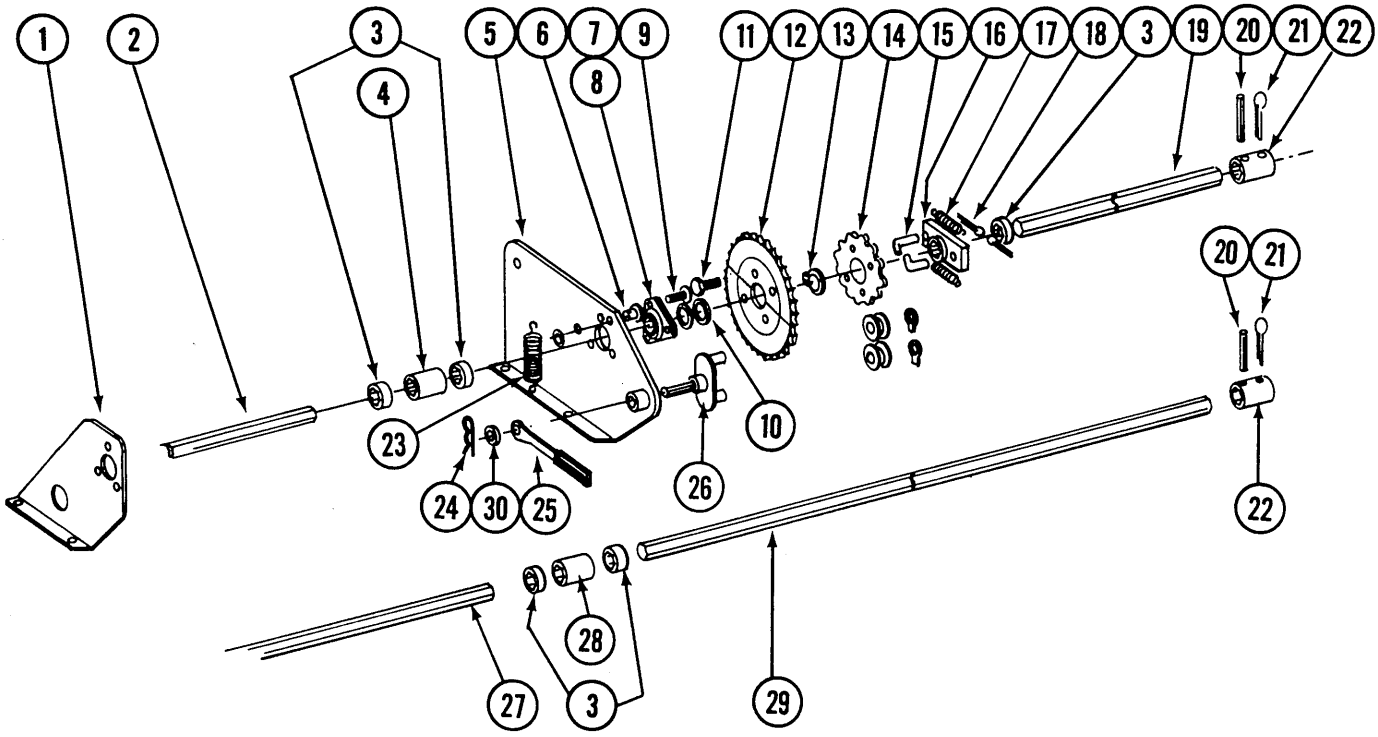


DUAL LIFT ASSIST W/FLOATING CENTER MAST (OPTIONAL)

ITEM	PART NO.	DESCRIPTION
1.	D1748	U-Bolt, 7" x 7" x 3/4"-10
	10231	Lock Washer, 3/4"
	10105	Hex Nut, 3/4"-10
2.	D1702	Pin, 1 1/4" x 10 1/4"
	10460	Cotter Pin, 1/4" x 2"
3.	*	Wheel Tower
4.	*	Tube W/Grease Fittings
	10641	Grease Fitting, 1/8" NPT
5.	A4743	Stroke Control Collar Kit, Includes: (1)3/4", (1)1", (1)1 1/4", (1)1 1/2"
6.	D2558	Lynch Pin, 1/4"
7.	D7068	Cap
8.	10032	Hex Head Cap Screw, 1/2"-13 x 3 3/4"
	10228	Lock Washer, 1/2"
	10102	Hex Nut, 1/2"-13
9.	A4715	Caster Wheel
10.	10026	Hex Head Cap Screw, 3/4"-10 x 2"
	10231	Lock Washer, 3/4"
11.	D1166	Valve Stem
12.	A5196	Wheel W/Valve Protector, 15" x 5"
13.	D0844	Tire, 7.60 x 15, 4 Ply
14.	A2558	Spindle
15.	A0895	Bearing
16.	R0270	Bolt, 9/16"-12
17.	A2148	Hub W/Cups, 6 Bolt
	R0434	Cup
18.	10087	Jam Nut, 1 1/2"-10, Grade 2
19.		See "Dual Lift Assist Cylinder"
20.	2501-08-08	Elbow, 3/4"-16 JIC To 1/2" NPT
21.	2404-08-08	Adapter, 3/4"-16 JIC To 1/2" NPT
22.	6500-08	Elbow, 3/4"-16 JIC Male To Female
23.	A1039	Hose Assembly, 3/8" x 76"
24.	2603-08	Tee, 3/4"-16 JIC
25.	A1005	Hose Assembly, 3/8" x 48"
26.	A1055	Hose Assembly, 3/8" x 66"
27.	A4938	Link Pin, Optional Category 2, 1 1/4"
28.	10048	Hex Head Cap Screw, 3/8"-16 x 2"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
29.	D7338	Sleeve, Category 2, 1"
30.	D2557	Lynch Pin, 7/16"
31.	A4666	Link Pin, Category 3, 1 1/4"
32.	A4972	Floating Top Mast
33.	A4665	Lower Link Pin
	10468	Cotter Pin, 3/8" x 2"
34.	*	Lower Link
35.	D0829	Spring
36.	A5714	SMV/Spring Anchor
37.		See "Center Frame Assembly (Hydraulic Fold Toolbar)"

DRIVE LINE (RIGID TOOLBAR)

PTD062

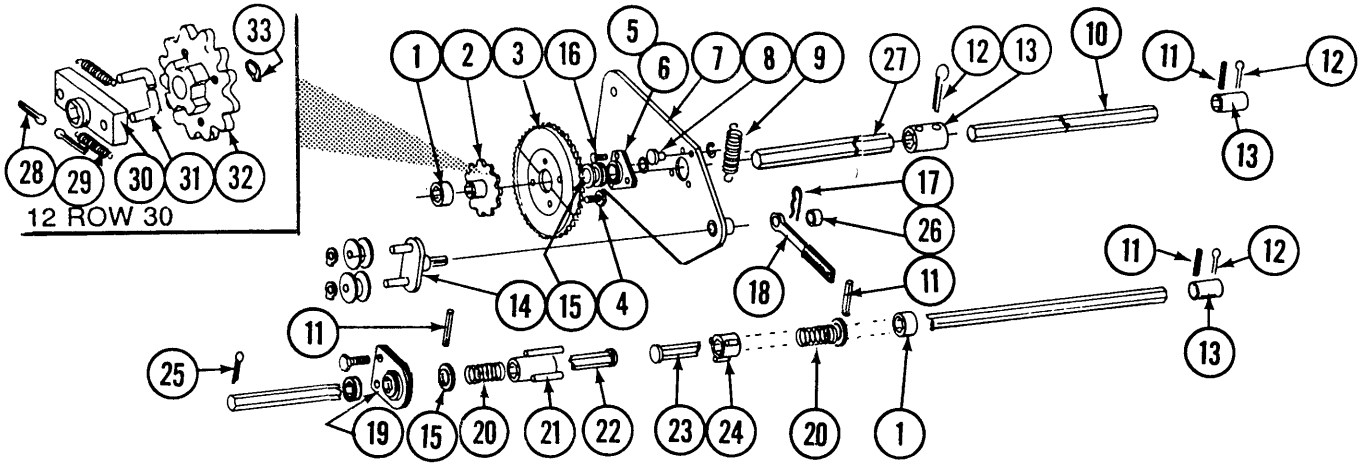


DRIVE LINE (RIGID TOOLBAR)

ITEM	PART NO.	DESCRIPTION
1.		See "Rigid Toolbar Assembly"
2.	D0914-120	Drive Shaft, 8 Row 40 Only
3.	D0917	Lock Collar, 7/8 Hex, Less Set Screws
	10145	Set Screw, 5/16"-18 x 1/2"
4.	D1719	Coupler, 4", 8 Row 40 Only
5.		See "Rigid Toolbar Assembly"
6.	10478	Clevis Pin, 5/16" x 1"
	10409	Retaining Ring
7.	2100-03	Bearing, 7/8 Hex Bore, Spherical
8.	3400-01	Flangette
9.	10312	Carriage Bolt, 5/16"-18 x 3/4"
	10232	Lock Washer, 5/16"
	10106	Hex Nut, 5/16"-18
10.	10233	Machine Bushing
11.	10002	Hex Head Cap Screw, 3/8"-16 x 3/4"
	10229	Lock Washer, 3/8"
12.	A2359	Sprocket, 48 Tooth, 2 To 1 Reduction
13.	10430	Ring
14.	A0376	Sprocket, 12 Tooth Ratchet
15.	D1255	"L" Pin
16.	A0378	Block
17.	D1256	Spring
18.	10464	Cotter Pin, 3/16" x 1"
19.	D5887-90	Drive Shaft, 2 Row 30/36/38/40
	D5887-82	Drive Shaft, 4 Row 30
	D5887-106	Drive Shaft, 4 Row 36/38/40
	D5887-142	Drive Shaft, 6 Row 30
	D5887-186	Drive Shaft, 6 Row 36/38/40
	D5887-202	Drive Shaft, 8 Row 30
	D5887-144	Drive Shaft, 8 Row 40
20.	10602	Spring Pin, 1/4" x 1 1/2"
21.	10460	Cotter Pin, 1/4" x 2"
22.	D5886	Coupler
23.	D5857	Spring
24.	10670	Hair Pin Clip, No.3
25.	A4235	Ratchet Wrench W/Protective Closure
	10445	Protective Closure
26.	A0901	Idler W/Spools And Rings (Shown)
	A5545	Idler W/Spools And Rings, For use with reduction sprocket.
	D0916	Spool
	10435	Ring
27.	D5887-148	Drill Shaft, 8 Row 40 Only
28.	D7153	Coupler, 12", 8 Row 40 Only
	D1719	Coupler, 4", 8 Row 40 Only
29.	D5887-75	Drill Shaft, 2 Row 30/36/38/40
	D5887-105	Drill Shaft, 4 Row 30
	D5887-135	Drill Shaft, 4 Row 36/38/40
	D5887-165	Drill Shaft, 6 Row 30
	D5887-215	Drill Shaft, 6 Row 36/38/40
	D5887-225	Drill Shaft, 8 Row 30
	D5887-148	Drill Shaft, 8 Row 40
30.	D6819	Sleeve
A.	A0261R	Ratchet Sprocket Assembly, R.H. (Items 13-18)
	A0261L	Ratchet Sprocket Assembly, L.H. (Items 13-18)

DRIVE LINE (HYDRAULIC FOLD TOOLBAR)

PTD063/PLA008



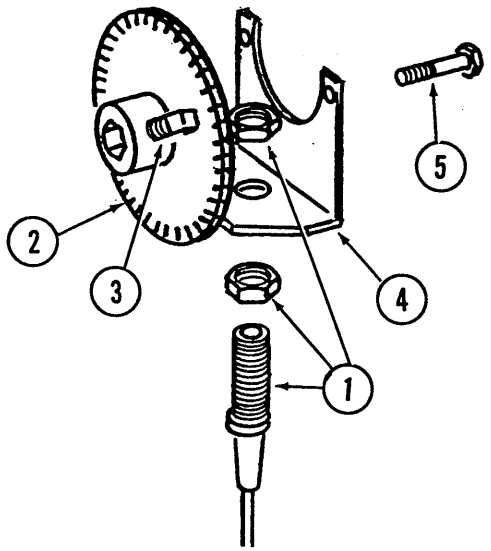
ITEM	PART NO.	DESCRIPTION
1.	D0917	Lock Collar, 7/8 Hex, Less Set Screws
	10145	Set Screw, 5/16"-18 x 1/2"
2.	2500-18	Sprocket, 12 Tooth
3.	A2359	Sprocket, 48 Tooth, 2 To 1 Reduction
4.	10002	Hex Head Cap Screw, 3/8"-16 x 3/4"
	10229	Lock Washer, 3/8"
5.	2100-03	Bearing, 7/8 Hex Bore, Spherical
6.	3400-01	Flangette
7.		See "Wing And Hinge Assembly, Hydraulic Fold Toolbar"
8.	10478	Clevis Pin, 5/16" x 1"
	10409	Retaining Ring
9.	D5857	Spring
10.	D5887-36	Drive Shaft, 8 Row 36/38
	D6825-24	Drive Shaft, 12 Row 30
11.	10602	Spring Pin, 1/4" x 1 1/2"
12.	10460	Cotter Pin, 1/4" x 2"
13.	D5886	Coupler
14.	A0901	Idler W/Spools And Rings (Shown)
	A5545	Idler W/Spools And Rings, For use with reduction sprocket.
	D0916	Spool
	10435	Ring
15.	10233	Machine Bushing
16.	10312	Carriage Bolt, 5/16"-18 x 3/4"
	10232	Lock Washer, 5/16"
	10106	Hex Nut, 5/16"-18
17.	10670	Hair Pin Clip, No. 3
18.	A1235	Ratchet Wrench W/Protective Closure
	10445	Protective Closure
19.	A2180	Bearing Hanger, 7/8 Hex
20.	D2962	Spring
21.	A4918	*Coupler W/Grease Fitting, 4"
	A5713	**Coupler W/Grease Fitting, 6"
	10641	Grease Fitting, 1/8" NPT

DRIVE LINE (HYDRAULIC FOLD TOOLBAR)

ITEM	PART NO.	DESCRIPTION
22.	A4912	*Center Section Drill Shaft, 60", R.H., 8 Row 36/38
	A4913	*Center Section Drill Shaft, 50", L.H., 8 Row 36/38
	A4915	*Center Section Drill Shaft, 82", R.H., 12 Row 30
	A4916	*Center Section Drill Shaft, 72", L.H., 12 Row 30
	A5705	**Center Section Drill Shaft, 60", R.H., 8 Row 36/38
	A5706	**Center Section Drill Shaft, 50", L.H., 8 Row 36/38
	A5708	**Center Section Drill Shaft, 82", R.H., 12 Row 30
	A5709	**Center Section Drill Shaft, 72", L.H., 12 Row 30
23.	A4911	*Wing Drill Shaft, 68 1/2", 8 Row 36/38
	A4914	*Wing Drill Shaft, 81", 12 Row 30
	A5704	**Wing Drill Shaft, 68 1/2", 8 Row 36/38
	A5707	**Wing Drill Shaft, 81", 12 Row 30
24.	A4917	*Coupler W/Grease Fitting, 3"
	A5712	**Coupler W/Grease Fitting, 5"
	10641	Grease Fitting, 1/8" NPT
25.	10463	Cotter Pin, 1/4" x 1 1/2"
26.	D6819	Sleeve
27.	D5887-30	Drive Shaft, 12 Row 30 Only
28.	10464	Cotter Pin, 3/16" x 1"
29.	D1256	Spring
30.	A0378	Block
31.	D1255	"L" Pin
32.	A0376	Sprocket, 12 Tooth Ratchet
33.	10430	Ring
A.	A0261R	Ratchet Sprocket Assembly, R.H. (Items 28-33)
	A0261L	Ratchet Sprocket Assembly, L.H.

MAGNETIC DISTANCE SENSOR

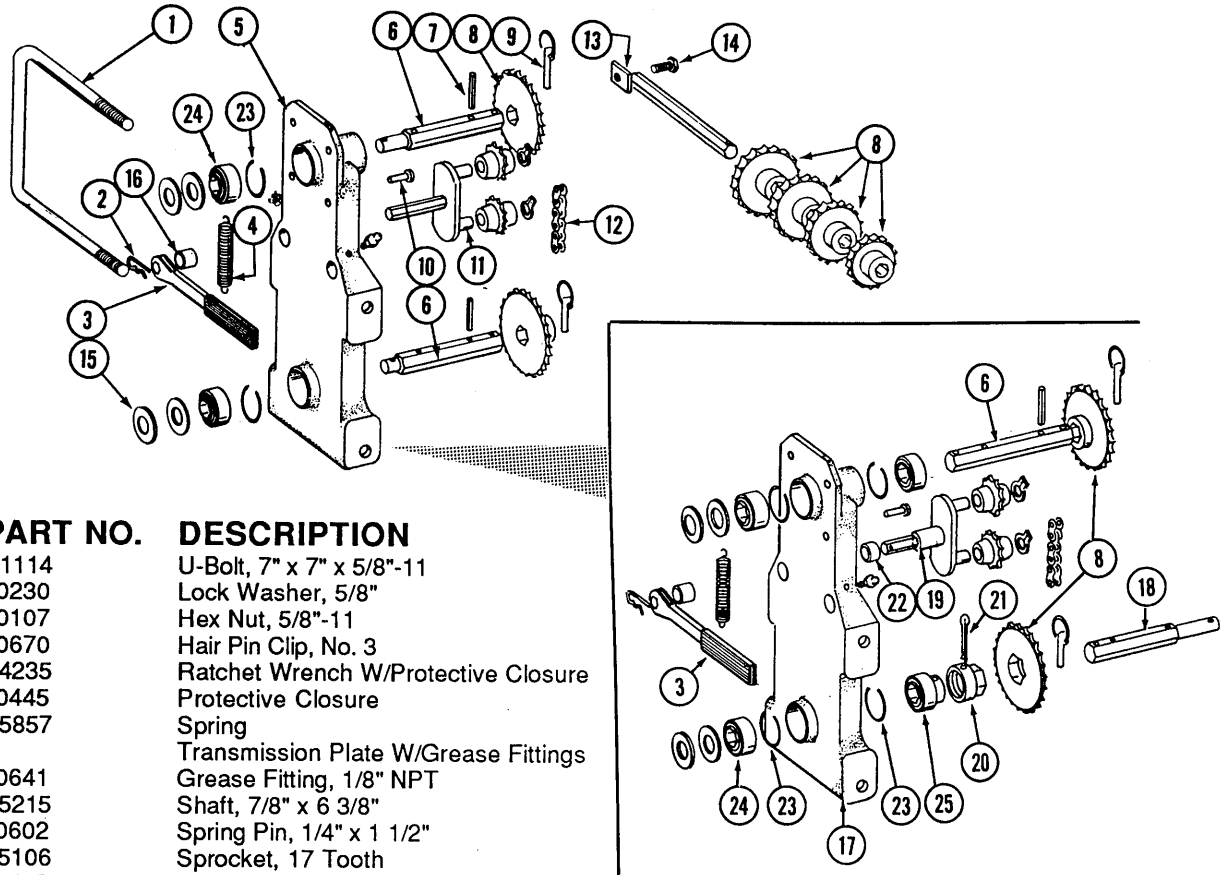
ECP017



ITEM	PART NO.	DESCRIPTION
1.	A5600	Sensor
2.	A5549	Pulse Wheel
3.	10145	Set Screw, 5/16"-18 x 1/2"
4.	D7632	Bracket
5.	10043	Hex Head Cap Screw, 5/16"-18 x 3/4"
	10232	Lock Washer, 5/16"
	10106	Hex Nut, 5/16"-18

TRANSMISSION ASSEMBLY

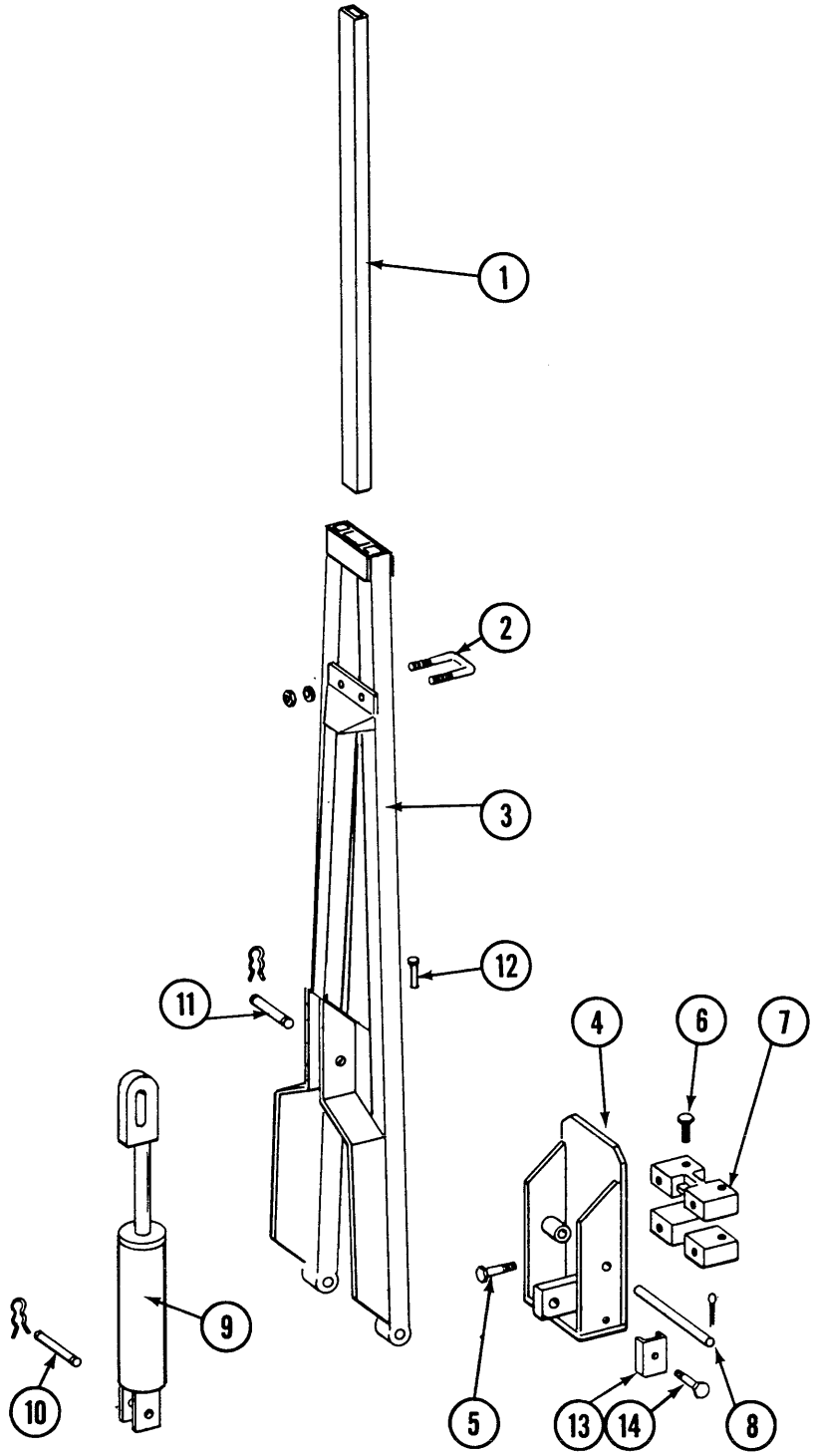
PTD041/PTD066



ITEM	PART NO.	DESCRIPTION
1.	D1114	U-Bolt, 7" x 7" x 5/8"-11
	10230	Lock Washer, 5/8"
	10107	Hex Nut, 5/8"-11
2.	10670	Hair Pin Clip, No. 3
3.	A4235	Ratchet Wrench W/Protective Closure
	10445	Protective Closure
4.	D5857	Spring
5.	*	Transmission Plate W/Grease Fittings
	10641	Grease Fitting, 1/8" NPT
6.	D5215	Shaft, 7/8" x 6 3/8"
7.	10602	Spring Pin, 1/4" x 1 1/2"
8.	A5106	Sprocket, 17 Tooth
	A5107	Sprocket, 19 Tooth
	A5108	Sprocket, 23 Tooth (Qty. 2)
	A5109	Sprocket, 24 Tooth
	A5110	Sprocket, 25 Tooth
	A5111	Sprocket, 26 Tooth
	A5112	Sprocket, 27 Tooth
	A5113	Sprocket, 28 Tooth
9.	D2558	Lynch Pin, 1/4"
10.	10478	Clevis Pin, 5/16" x 1"
	10409	Retaining Ring, 5/16"
11.	A5136	Idler W/Sprockets And Rings
	D7426	Sprocket
	10435	Ring
12.	3310-80	Chain, No. 40, 80 Pitch Including Connector Link
	R0912	Connector Link, No. 40
13.	A5146	Sprocket Storage Rod
14.	10037	Hex Head Cap Screw, 1/2"-13 x 1 1/4"
	10228	Lock Washer, 1/2"
	10102	Hex Nut, 1/2"-13
15.	10233	Machine Bushing
16.	D6819	Sleeve
17.	*	Transmission Plate W/Grease Fittings
	10641	Grease Fitting, 1/8" NPT
18.	D7822	Shaft, 7/8" x 7"
19.	A5628	Idler W/Sprockets And Rings
	D7426	Sprocket
	10435	Ring
20.	D7127	Shear Coupler
21.	10462	Cotter Pin, 3/16" x 2"
22.	D2734-01	Sleeve, 1/2"
23.	D6551	Ring
24.	A5116	Bearing, 7/8 Hex Bore, Cylindrical
25.	A5624	Special Bearing, 7/8 Hex Bore x 1.6"

CONVENTIONAL MARKER
4 ROW 30/WIDE AND 6 ROW 30 (RIGID TOOLBAR)

MKR010

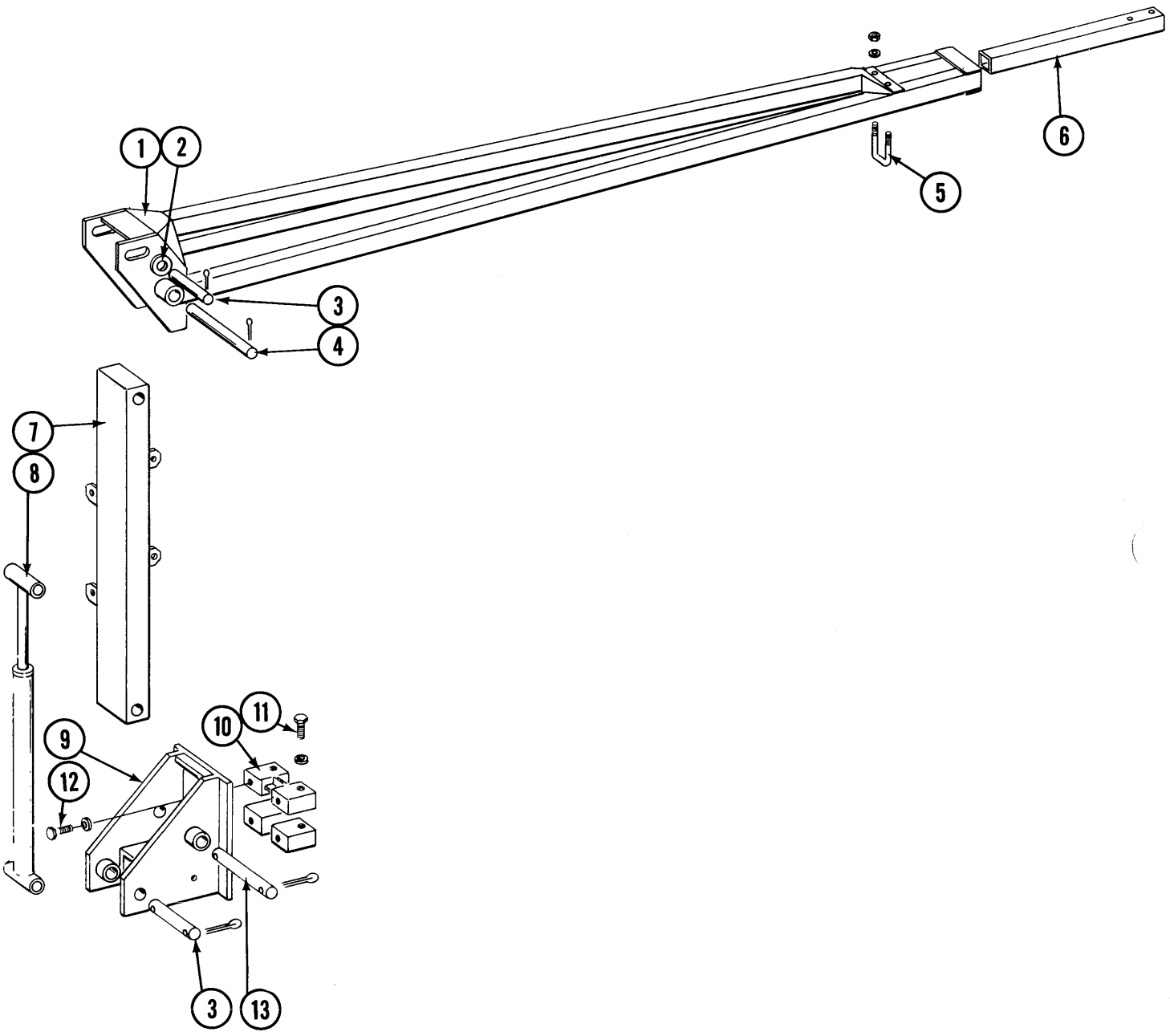


CONVENTIONAL MARKER
4 ROW 30/WIDE AND 6 ROW 30 (RIGID TOOLBAR)

ITEM	PART NO.	DESCRIPTION
1.	D0453-02	Extension Tube, 40", 4 Row 30 And 6 Row 30
	D0453-03	Extension Tube, 50", 4 Row 36/38/40
2.	D2721	U-Bolt, 2" x 2" x 1/2"-13
	10228	Lock Washer, 1/2"
	10102	Hex Nut, 1/2"-13
3.	A5175	Arm, 31 1/2", 4 Row 30
	A5184	Arm W/Grease Fittings, 44 1/2", 4 Row 36/38/40
	A5183	Arm W/Grease Fittings, 58 1/2", 6 Row 30
	10640	Grease Fitting, 1/4"-28
4.	A5177	Mount W/Grease Fittings, 4 Row 30
	A5178	Mount, 4 Row 36/38/40 And 6 Row 30
	10640	Grease Fitting, 1/4"-28
5.	10008	Hex Head Cap Screw, 5/8"-11 x 2", Grade 2
	10230	Lock Washer, 5/8"
6.	10026	Hex Head Cap Screw, 3/4"-10 x 2"
	10231	Lock Washer, 3/4"
7.	B0177	Tap Block
8.	D0438	Pin, 13 1/2"
	10460	Cotter Pin, 1/4" x 2"
9.		See "Conventional Marker Cylinder"
10.	R0367	Pin, 2 7/8"
	R0193	Clip
11.	R0375	Pin, 3 1/2"
	R0193	Clip
12.	D0462	Lockup Pin
	10670	Hair Pin Clip, No. 3
	10187	Spring Pin, 5/32" x 2"
13.	D5892	Hose Clamp
14.	10133	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	10232	Lock Washer, 5/16"
	10106	Hex Nut, 5/16"-18

DOUBLE FOLD MARKER
6 ROW WIDE AND 8 ROW 30/WIDE (RIGID TOOLBAR)

MKR019/MKR008

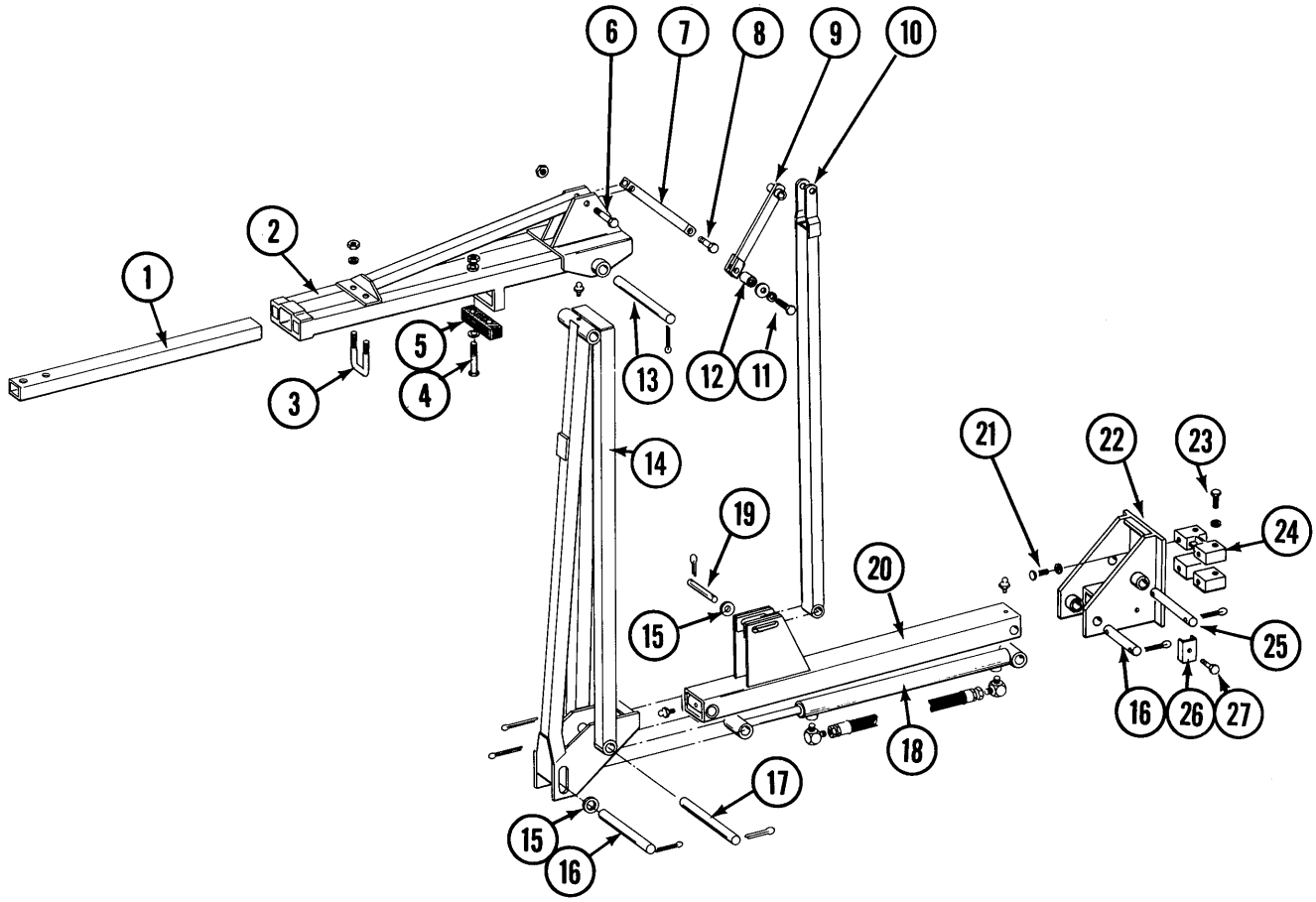


DOUBLE FOLD MARKER
6 ROW WIDE AND 8 ROW 30/WIDE (RIGID TOOLBAR)

ITEM	PART NO.	DESCRIPTION
1.	A5190	Arm, Second Stage, 41 1/2", 6 Row 36/38/40
	A5188	Arm, Second Stage, 52 1/2", 8 Row 30
	A5192	Arm, Second Stage, 73 1/8", 8 Row 40
2.	10226	Washer, 1 1/4" SAE
3.	D2161	Pin, 1 1/4" x 8 1/2"
	10460	Cotter Pin, 1/4" x 2"
4.	D3214	Pin, 1 1/4" x 12 1/4"
	10460	Cotter Pin, 1/4" x 2"
5.	D2721	U-Bolt, 2" x 2" x 1/2"-13
	10228	Lock Washer, 1/2"
	10102	Hex Nut, 1/2"-13
6.	D0453-04	Extension Tube, 60", 6 Row 36/38/40
	D0453-03	Extension Tube, 50", 8 Row 30
	D0453-08	Extension Tube, 65", 8 Row 40
7.	A5173	Arm W/Grease Fittings, First Stage
	10641	Grease Fitting, 1/8" NPT
8.		See "Double Fold Marker Cylinder"
9.	A5130	Mount
10.	B0177	Tap Block
11.	10026	Hex Head Cap Screw, 3/4"-10 x 2"
	10231	Lock Washer, 3/4"
12.	10008	Hex Head Cap Screw, 5/8"-11 x 2", Grade 2
	10230	Lock Washer, 5/8"
13.	D0652	Pin, 1 1/4" x 9 1/2"
	10460	Cotter Pin, 1/4" x 2"

TRIPLE FOLD MARKER, 8 ROW WIDE AND 12 ROW 30 (HYDRAULIC FOLD TOOLBAR)

MKR021/MKR012/MKR008

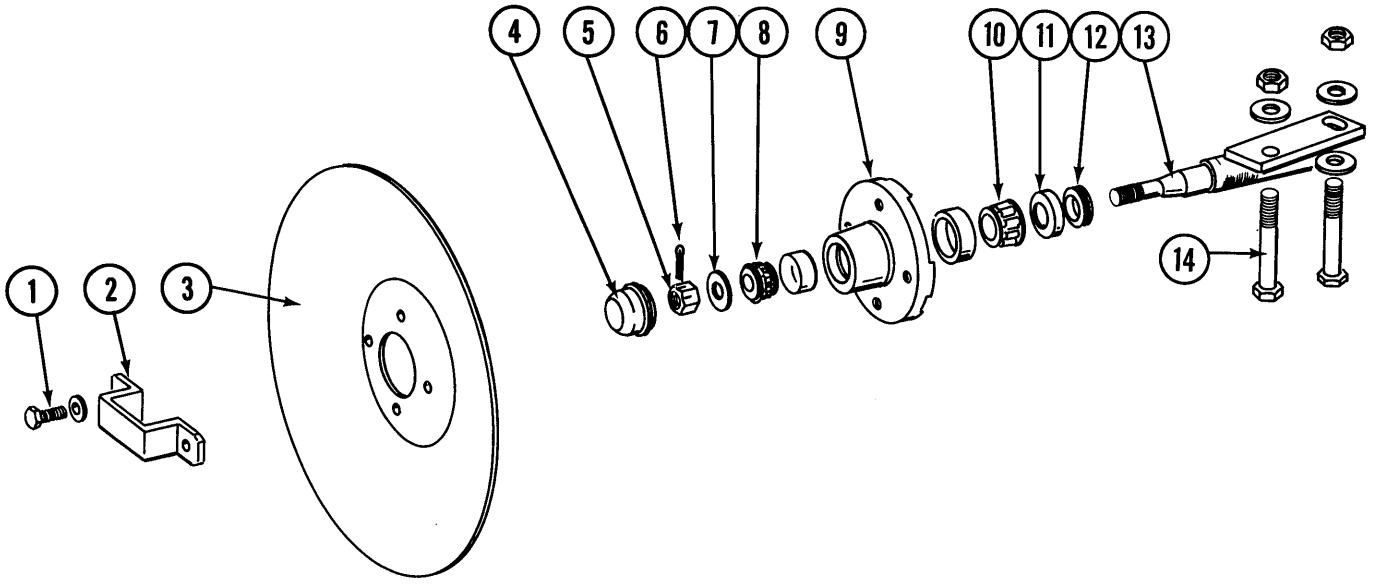


TRIPLE FOLD MARKER, 8 ROW WIDE AND 12 ROW 30 (HYDRAULIC FOLD TOOLBAR)

ITEM	PART NO.	DESCRIPTION
1.	D0453-02	Extension Tube, 40", 8 Row 36/38
	D0453-03	Extension Tube, 50", 12 Row 30
2.	A4905	Arm, Third Stage, 19 1/2", 8 Row 36/38
	A4887	Arm, Third Stage, 35",12 Row 30
3.	D2721	U-Bolt, 2" x 2" x 1/2"-13
	10228	Lock Washer, 1/2"
	10102	Hex Nut, 1/2"-13
4.	10047	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	10210	Washer, 3/8" USS
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
5.	D2698	Rubber Stop
6.	10010	Hex Head Cap Screw, 5/8"-11 x 3"
	10107	Lock Nut, 5/8"-11
7.	A4894	Linkage, 15 1/4"
8.	10013	Hex Head Cap Screw, 5/8"-11 x 3 1/2"
	10107	Lock Nut, 5/8"-11
9.	A4891	Linkage, 11"
10.	A4910	Linkage Tube, 54 3/4", 8 Row 36/38
	A4893	Linkage Tube, 72 3/4", 12 Row 30
11.	10002	Hex Head Cap Screw, 3/8"-16 x 3/4"
	10229	Lock Washer, 3/8"
	10210	Washer, 3/8" USS
12.	D7398	Pin
13.	D2697	Pin, 7/8" x 11"
	10463	Cotter Pin, 1/2" x 1 1/2"
14.	A4903	Arm, Second Stage, 60", 8 Row 36/38
	A4885	Arm, Second Stage, 78", 12 Row 30
15.	10226	Washer, 1 1/4" SAE
16.	D2161	Pin, 1 1/4" x 8 1/2"
	10460	Cotter Pin, 1/4" x 2"
17.	D3214	Pin, 1 1/4" x 12 1/4"
	10460	Cotter Pin, 1/4" x 2"
18.		See "Triple Fold Marker Cylinder"
19.	D6136	Pin, 1 1/4" x 5"
	10460	Cotter Pin, 1/4" x 2"
20.	A4884	Arm W/Grease Fittings, First Stage
	10641	Grease Fitting, 1/8" NPT
21.	10008	Hex Head Cap Screw, 5/8"-11 x 2", Grade 2
	10230	Lock Washer, 5/8"
22.	A5130	Mount
23.	10026	Hex Head Cap Screw, 3/4"-10 x 2"
	10231	Lock Washer, 3/4"
24.	B0177	Tap Block
25.	D0652	Pin, 1 1/4" x 9 1/2"
	10460	Cotter Pin, 1/4" x 2"
26.	D5875	Hose Clamp
27.	10133	Hex Head Cap Screw, 5/16"-18 x 1 1/2"
	10232	Lock Washer, 5/16"
	10106	Hex Nut, 5/16"-18

MARKER SPINDLE/HUB/BLADE

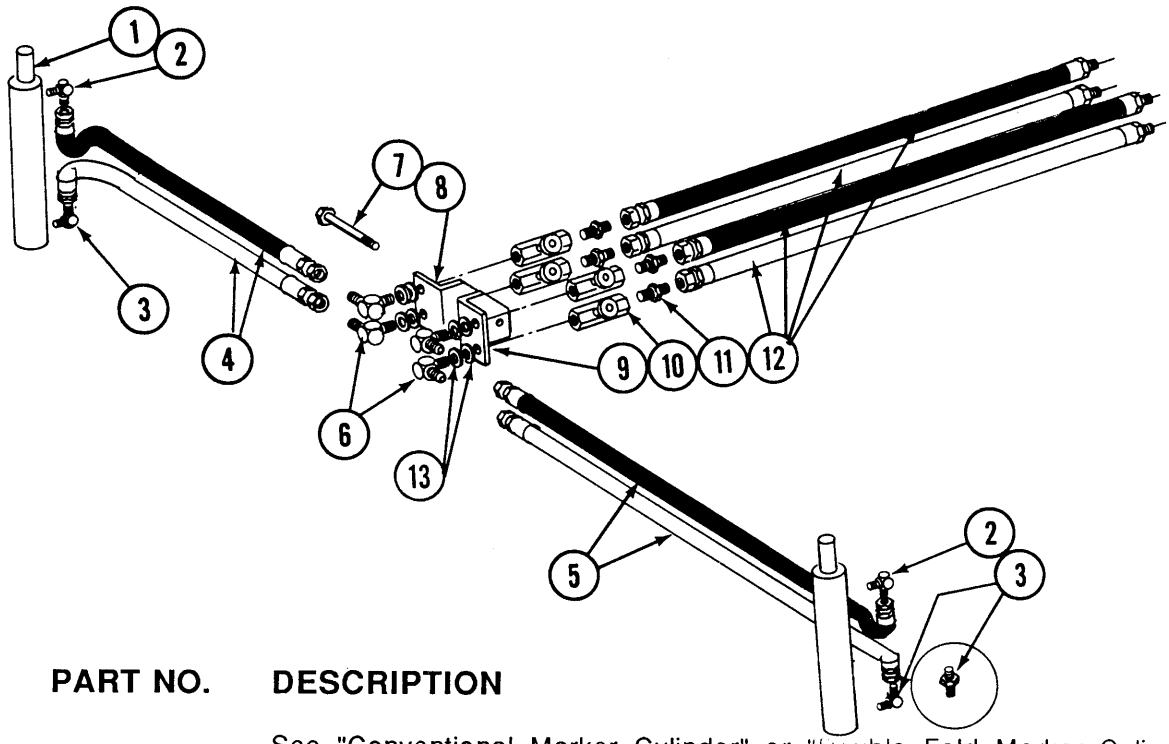
MKR020



ITEM	PART NO.	DESCRIPTION
1.	10722	Hex Head Cap Screw, 1/2"-20 x 1"
	10228	Lock Washer, 1/2"
2.	D2597	Retainer
3.	D0746	Blade, 16"
4.	D0840	Cap
5.	10725	Hex Slotted Nut, 5/8"-18
6.	10470	Cotter Pin, 5/32" x 1"
7.	10724	Washer, 5/8"
8.	A0257	Outer Bearing
9.	A0167	Hub With Cups
	R0151	Outer Cup
	R0150	Inner Cup
10.	A0245	Inner Bearing
11.	A0243	Grease Seal
12.	A0899	Rubber Seal
13.	A1677	Spindle, L.H.
	A1676	Spindle, R.H.
14.	10033	Hex Head Cap Screw, 1/2"-13 x 3 1/2"
	10168	Machine Bushing, 1/2", 7 Gauge
	10102	Hex Nut, 1/2"-13
A.	A1679	Hub And Spindle Assembly, L.H. (Items 1 And 4-13)
	A1678	Hub And Spindle Assembly, R.H. (Items 1 And 4-13)

HYDRAULIC SYSTEM (RIGID TOOLBAR), DUAL VALVE

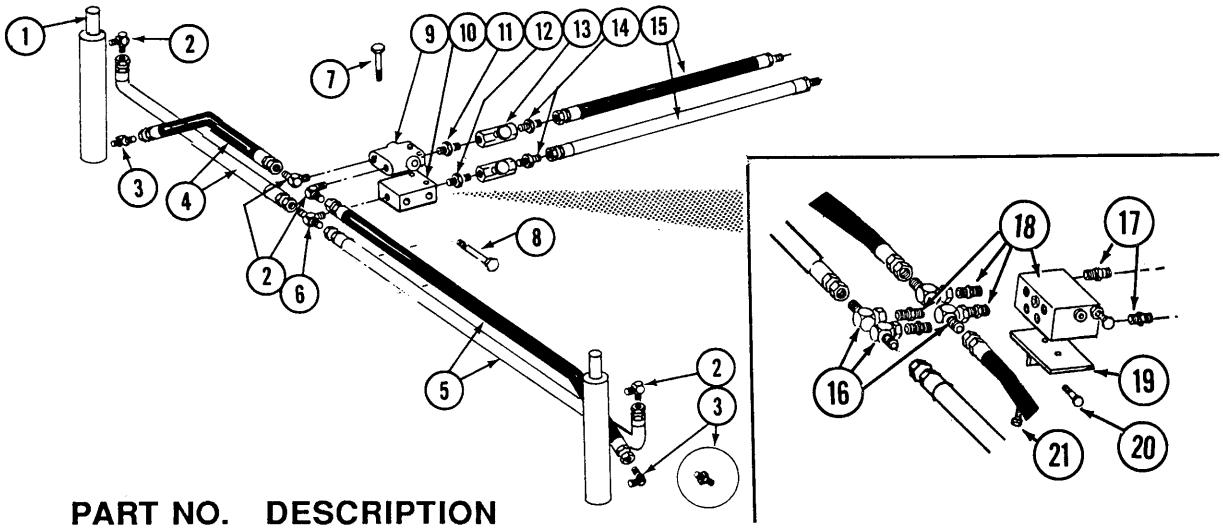
PHS033



ITEM	PART NO.	DESCRIPTION
1.		See "Conventional Marker Cylinder" or "Double Fold Marker Cylinder"
2.	6801-06-08	Elbow, 9/16"-18 Male JIC To 3/4"-16 O-Ring, 4 Row 30/Wide And 6 Row 30
	6801-08	Elbow, 3/4"-16 Male JIC To 3/4"-16 O-Ring, 6 Row Wide And 8 Row 30/Wide
3.	6801-06-08	Elbow, 9/16"-18 Male JIC To 3/4"-16 O-Ring, 4 Row 30/Wide And 6 Row 30
	6400-08	Connector, 3/4"-16 Male O-Ring To JIC, 6 Row Wide And 8 Row 30/Wide
4.	A1150	Hose Assembly, 1/4" x 103", 4 Row 30
	A1134	Hose Assembly, 1/4" x 116", 4 Row Wide
	A1106	Hose Assembly, 1/4" x 130", 6 Row 30
	A3114	Hose Assembly, 3/8" x 156", 6 Row Wide
	A1049	Hose Assembly, 3/8" x 160", 8 Row 30
	A3154	Hose Assembly, 3/8" x 196", 8 Row Wide
5.	A1170	Hose Assembly, 1/4" x 90", 4 Row 30
	A1172	Hose Assembly, 1/4" x 105", 4 Row Wide
	A1168	Hose Assembly, 1/4" x 120", 6 Row 30
	A3115	Hose Assembly, 3/8" x 146", 6 Row Wide
	A1013	Hose Assembly, 3/8" x 150", 8 Row 30
	A1028	Hose Assembly, 3/8" x 186", 8 Row Wide
6.	2501-06-06	Elbow, 90°, 9/16"-18 Male JIC To 3/8" NPT, 4 Row 30/Wide And 6 Row 30
	2501-08-06	Elbow, 90°, 3/4"-16 Male JIC To 3/8" NPT, 6 Row Wide And 8 Row 30/Wide
7.	10004	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
8.	*	Mounting Bracket, L.H.
9.	*	Mounting Bracket, R.H.
10.		See "Flow Control Valve"
11.	2404-06-06	Adapter, 9/16"-18 Male JIC To 3/8" NPT, 4 Row 30/Wide And 6 Row 30
	2404-08-06	Adapter, 3/4"-16 Male JIC To 3/8" NPT, 6 Row Wide And 8 Row 30/Wide
12.	A1101	Hose Assembly, 1/4" x 48", 4 Row 30/Wide And 6 Row 30
	A1005	Hose Assembly, 3/8" x 48", 6 Row Wide And 8 Row 30/Wide
13.	10215	Machine Bushing, 1 1/4" O.D.
	10213	Special Bushing

HYDRAULIC SYSTEM (RIGID TOOLBAR), OPTIONAL SINGLE VALVE

PHS034

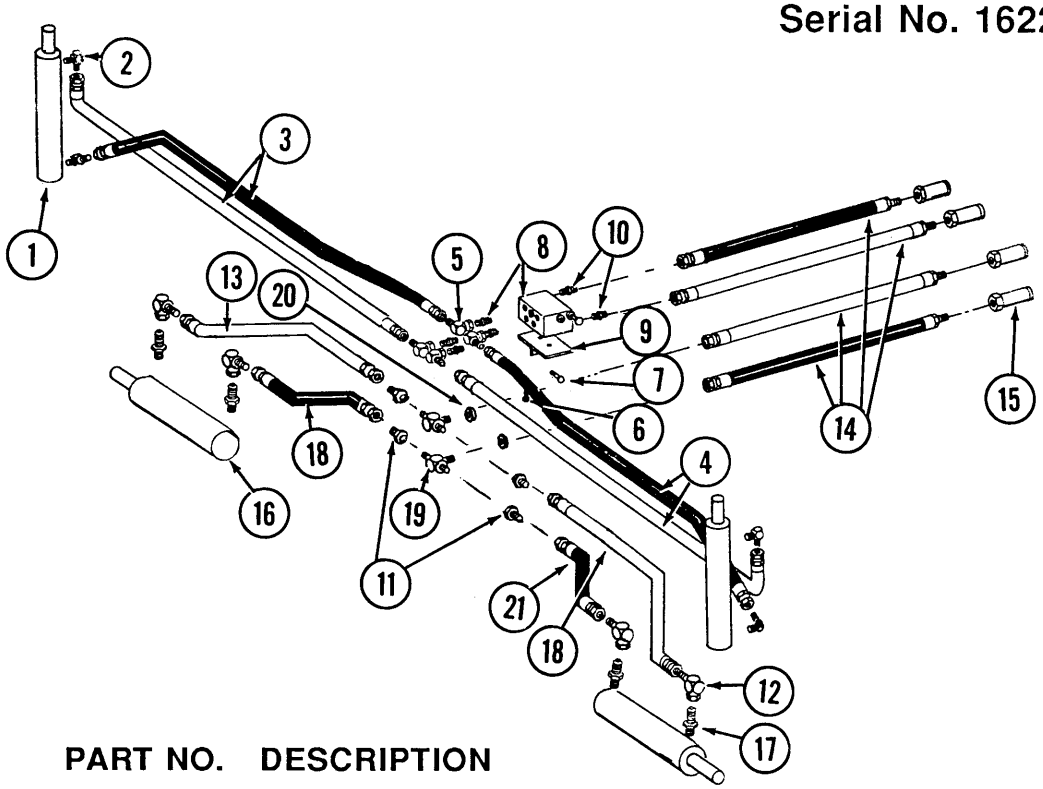


ITEM	PART NO.	DESCRIPTION
1.		See "Conventional Marker Cylinder" or "Double Fold Marker Cylinder"
2.	6801-06-08	Elbow, 9/16"-18 Male JIC To 3/4"-16 O-Ring, 4 Row 30/Wide And 6 Row 30
	6801-08	Elbow, 3/4"-16 Male JIC To 3/4"-16 O-Ring, 6 Row Wide And 8 Row 30/Wide
3.	6801-06-08	Elbow, 9/16"-18 Male JIC To 3/4"-16 O-Ring, 4 Row 30/Wide And 6 Row 30
	6400-08	Connector, 3/4"-16 Male O-Ring To JIC, 6 Row Wide And 8 Row 30/Wide
4.	A1150	Hose Assembly, 1/4" x 103", 4 Row 30
	A1134	Hose Assembly, 1/4" x 116", 4 Row Wide
	A1106	Hose Assembly, 1/4" x 130", 6 Row 30
	A3114	Hose Assembly, 3/8"" x 156", 6 Row Wide
	A1049	Hose Assembly, 3/8" x 160", 8 Row 30
	A3154	Hose Assembly, 3/8" x 196", 8 Row Wide
5.	A1170	Hose Assembly, 1/4" x 90", 4 Row 30
	A1172	Hose Assembly, 1/4" x 105", 4 Row Wide
	A1168	Hose Assembly, 1/4" x 120", 6 Row 30
	A3115	Hose Assembly, 3/8" x 146", 6 Row Wide
	A1013	Hose Assembly, 3/8" x 150", 8 Row 30
	A1028	Hose Assembly, 3/8" x 186", 8 Row Wide
6.	2601-06-06	Tee, 9/16"-18 Male JIC To 3/8" NPT, 4 Row 30/Wide And 6 Row 30
	2601-08-06	Tee, 3/4"-16 Male JIC To 3/8" NPT, 6 Row Wide And 8 Row 30/Wide
7.	10325	Hex Head Cap Screw, 3/8"-16 x 2 3/4"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
8.	10004	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	10229	Lock Washer, 3/8"
9.		See "Sequencing Valve"
10.	D5861	Block
11.	6401-08-06	Adapter, 3/4"-16 Male O-Ring To 3/8" NPT
12.	5404-06-06	Coupling, 3/8" Male NPT
13.		See "Flow Control Valve"
14.	2404-06-06	Adapter, 9/16"-18 Male JIC To 3/8" NPT, 4 Row 30/Wide And 6 Row 30
	2404-08-06	Adapter, 3/4"-16 Male JIC To 3/8" NPT, 6 Row Wide And 8 Row 30/Wide
15.	A1101	Hose Assembly, 1/4" x 48", 4 Row 30/Wide And 6 Row 30
	A1005	Hose Assembly, 3/8" x 48", 6 Row Wide And 8 Row 30/Wide
16.	6500-06	Elbow, 9/16"-18 Male JIC To Female, 4 Row 30/Wide And 6 Row 30
	6500-08-06	Elbow, 3/4"-16 Male JIC To 9/16"-18 Female JIC, 6 Row Wide And 8 Row 30/Wide
17.	6400-06	Connector, 9/16"-18 Male JIC To 9/16"-18 O-Ring, 4 Row 30/Wide And 6 Row 30
	6400-08-06	Connector, 3/4"-16 Male JIC To 9/16"-18 O-Ring, 6 Row Wide And 8 Row 30/Wide
18.		See "Marker Sequencing/Flow Control Valve"
19.	A5632	Mounting Angle
20.	10004	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	10210	Washer, 3/8" USS
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
21.	10001	Hex Head Cap Screw, 3/8"-16 x 1"
	10229	Lock Washer, 3/8"

HYDRAULIC SYSTEM (HYDRAULIC FOLD TOOLBAR), DUAL VALVE

PHS034/PHS002

Serial No. 16220 and on

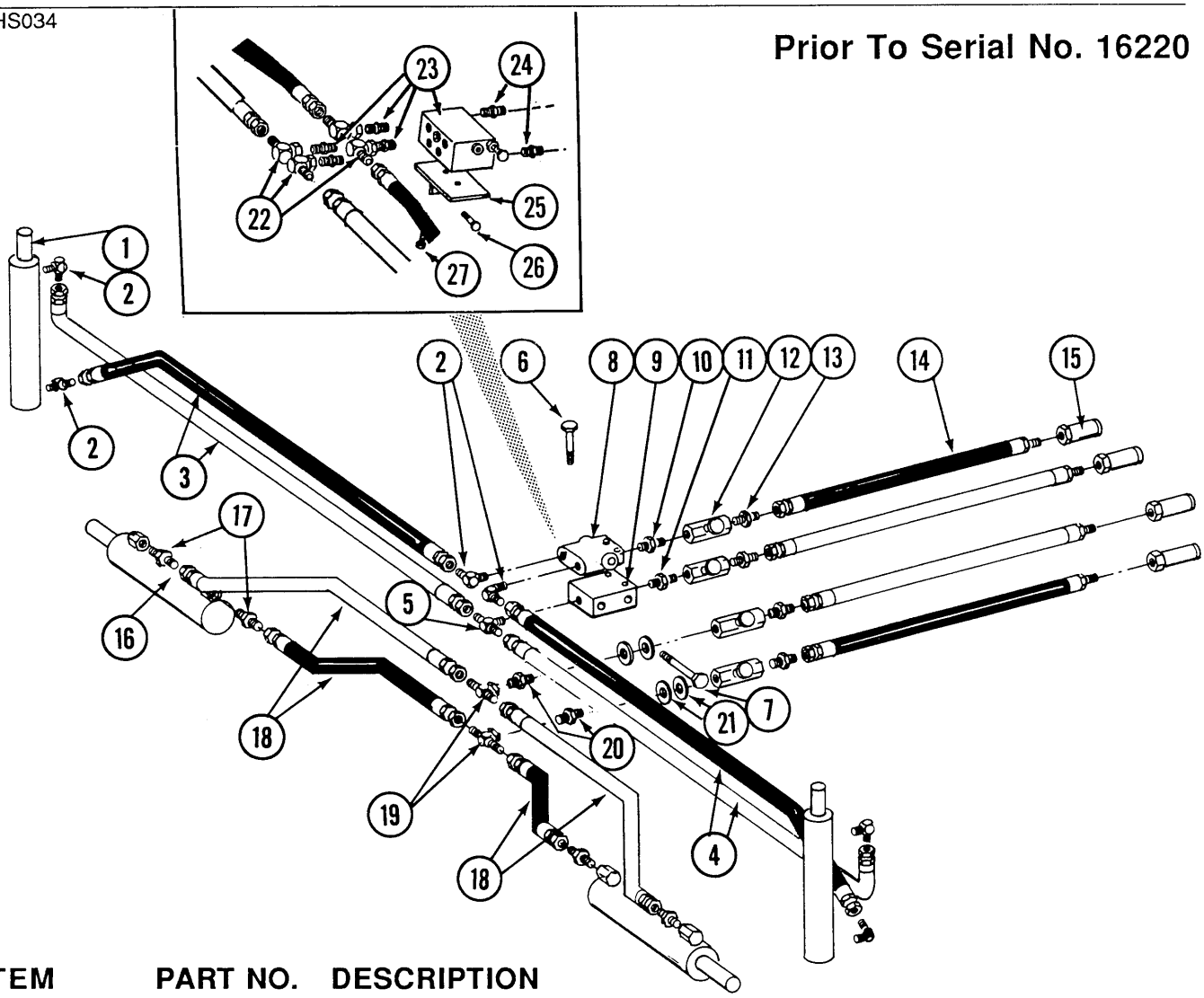


ITEM	PART NO.	DESCRIPTION
1.		See "Triple Fold Marker Cylinder"
2.	6801-08	Elbow, 3/4"-16 Male JIC To 3/4"-16 O-Ring
3.	A3100	Hose Assembly, 3/8" x 196", 8 Row Wide
	A1093	Hose Assembly, 3/8" x 230", 12 Row 30
4.	A1028	Hose Assembly, 3/8" x 186", 8 Row Wide
	A1057	Hose Assembly, 3/8" x 216", 12 Row 30
5.	6500-08-06	Elbow, 3/4"-16 Male JIC To 9/16"-18 Female JIC
6.	10001	Hex Head Cap Screw, 3/8"-16 x 1"
	10229	Lock Washer, 3/8"
7.	10004	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	10210	Washer, 3/8" USS
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
8.		See "Marker Sequencing/Flow Control Valve"
9.	A5632	Mounting Angle
10.	6401-08-06	Adapter, 3/4"-16 Male O-Ring To 3/8" NPT
11.	2406-08-06	Reducer, 3/4"-16 Female JIC To 9/16"-18 Male JIC
12.	6500-06	Elbow, 9/16"-18 Male JIC To Female
13.	A1155	Hose Assembly, 1/4" x 48", 8 Row Wide
	A1188	Hose Assembly, 1/4" x 66", 12 Row 30
14.	A3164	Hose Assembly, 3/8" x 52"
15.	D4086	Pioneer Tip
16.		See "Wing Lift Cylinder(4" x 11")"
17.	6400-06-08	Adapter, 9/16"-18 Male JIC To 3/4"-16 O-Ring
18.	A1189	Hose Assembly, 1/4" x 36", 8 Row Wide
	A1144	Hose Assembly, 1/4" x 54", 12 Row 30
19.	2703-08	Bulkhead Tee, 3/4"-16 Male JIC
20.	306-08	Nut, 3/4"-16
21.	A1169	Hose Assembly, 1/4" x 24", 8 Row Wide
	A1132	Hose Assembly, 1/4" x 44", 12 Row 30

HYDRAULIC SYSTEM (HYDRAULIC FOLD TOOLBAR), DUAL VALVE

PHS034

Prior To Serial No. 16220



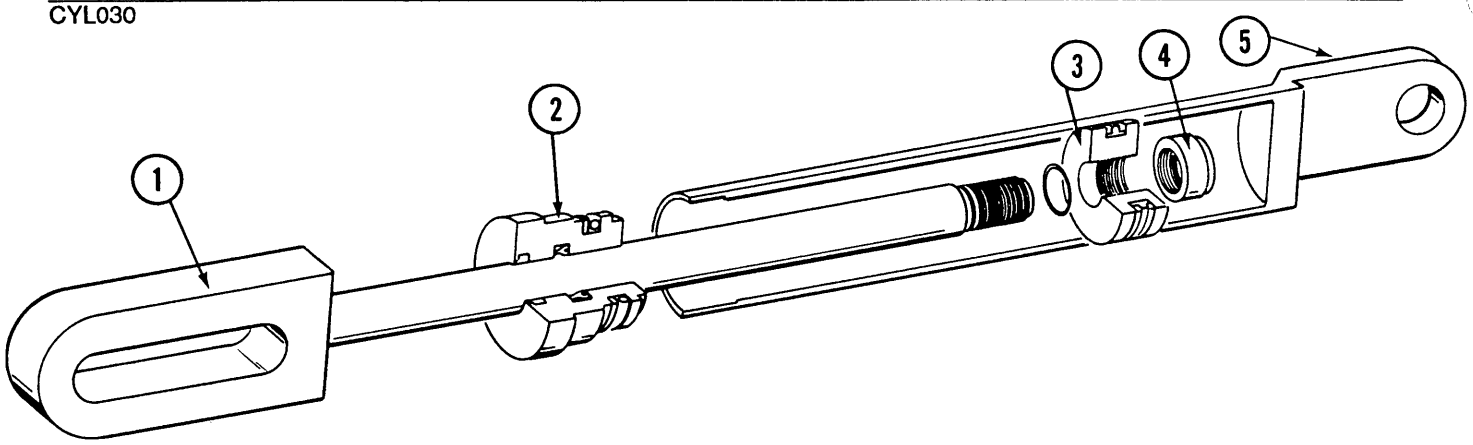
ITEM	PART NO.	DESCRIPTION
1.		See "Triple Fold Marker Cylinder"
2.	6801-08	Elbow, 3/4"-16 Male JIC To 3/4"-16 O-Ring
3.	A3100	Hose Assembly, 3/8" x 196", 8 Row Wide
	A1093	Hose Assembly, 3/8" x 230", 12 Row 30
4.	A1028	Hose Assembly, 3/8" x 186", 8 Row Wide
	A1057	Hose Assembly, 3/8" x 216", 12 Row 30
5.	2601-08-06	Tee, 3/4"-16 Male JIC To 3/8" NPT
6.	10325	Hex Head Cap Screw, 3/8"-16 x 2 3/4"
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
7.	10004	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	10229	Lock Washer, 3/8"
8.		See "Sequencing Valve"
9.	D5861	Block
10.	6401-08-06	Adapter, 3/4"-16 Male O-Ring To 3/8" NPT
11.	5404-06-06	Coupling, 3/8" Male NPT
12.		See "Flow Control Valve"
13.	2404-08-06	Adapter, 3/4"-16 Male JIC To 3/8" NPT
	2501-08-06	Elbow, 3/4"-16 Male JIC To 3/8" NPT
14.	A3164	Hose Assembly, 3/8" x 52"
15.	D4086	Pioneer Tip

HYDRAULIC SYSTEM (HYDRAULIC FOLD TOOLBAR), DUAL VALVE

ITEM	PART NO.	DESCRIPTION
16.		See "Wing Lift Cylinder(3 1/2" x 11")"
17.	6400-06	Adapter, 9/16"-18 Male JIC To O-Ring
18.	A1154	Hose Assembly, 1/4" x 72", 8 Row Wide
	A1170	Hose Assembly, 1/4" x 90", 12 Row 30
19.	6600-06	Tee, 9/16"-18 Male JIC To Female
20.	2404-06-06	Adapter, 9/16"-18 Male JIC To 3/8" NPT
21.	10204	Machine Bushing
	10213	Special Bushing
22.	6500-08-06	Elbow, 3/4"-16 Male JIC To 9/16"-18 Female JIC
23.		See "Marker Sequencing/Flow Control Valve"
24.	6400-08-06	Connector, 3/4"-16 Male JIC To 9/16"-18 O-Ring
25.	A5632	Mounting Angle
26.	10004	Hex Head Cap Screw, 3/8"-16 x 1 1/4"
	10210	Washer, 3/8" USS
	10229	Lock Washer, 3/8"
	10101	Hex Nut, 3/8"-16
27.	10001	Hex Head Cap Screw, 3/8"-16 x 1"
	10229	Lock Washer, 3/8"

CONVENTIONAL MARKER CYLINDER
4 ROW 30/WIDE AND 6 ROW 30 (RIGID TOOLBAR)

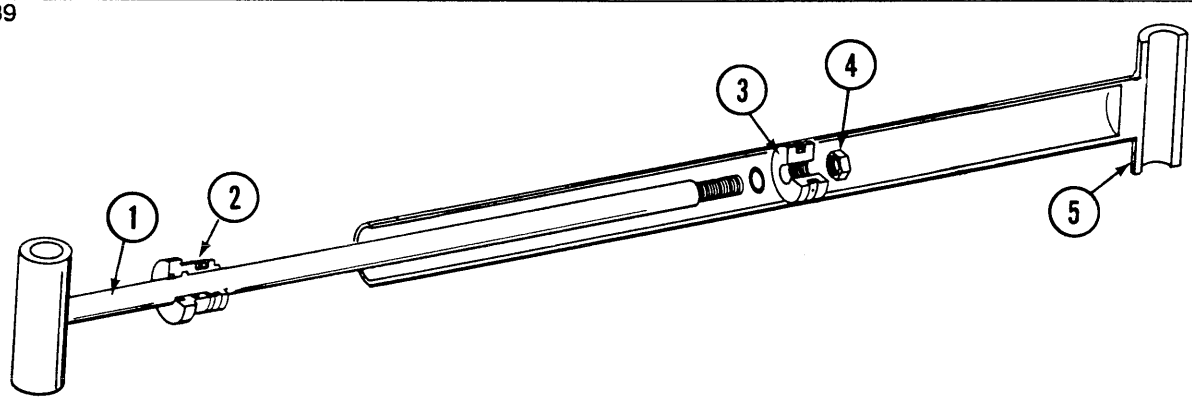
CYL030



ITEM	PART NO.	DESCRIPTION
1.	A5453	Rod Assembly
2.	D5949	Gland
3.	D4632	Piston
4.	R0959	Lock Nut, 3/4"-16
5.	A5454	Barrel
A.	A5095	Cylinder Complete, 2" x 8"
B.	R0927	Seal Kit, Includes: (1) T Seal, (2) O-Rings, (1) BU Ring, (1) U-Cup, (1) Wiper

DOUBLE FOLD MARKER CYLINDER
6 ROW WIDE AND 8 ROW 30/WIDE (RIGID TOOLBAR)

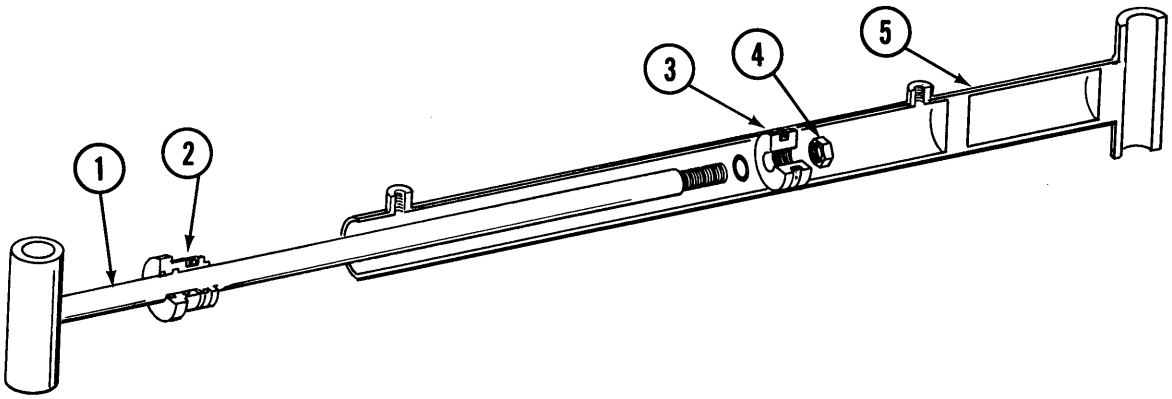
CYL039



ITEM	PART NO.	DESCRIPTION
1.	A5459	Rod Assembly
2.	D5949	Gland
3.	D4632	Piston
4.	R0959	Lock Nut, 3/4"-16
5.	A5460	Barrel
A.	A5097	Cylinder Complete, 2" x 20"
B.	R0927	Seal Kit, Includes: (1) T Seal, (2) O-Rings, (1) BU Ring, (1) U-Cup, (1) Wiper

TRIPLE FOLD MARKER CYLINDER 8 ROW WIDE AND 12 ROW 30, (HYDRAULIC FOLD TOOLBAR)

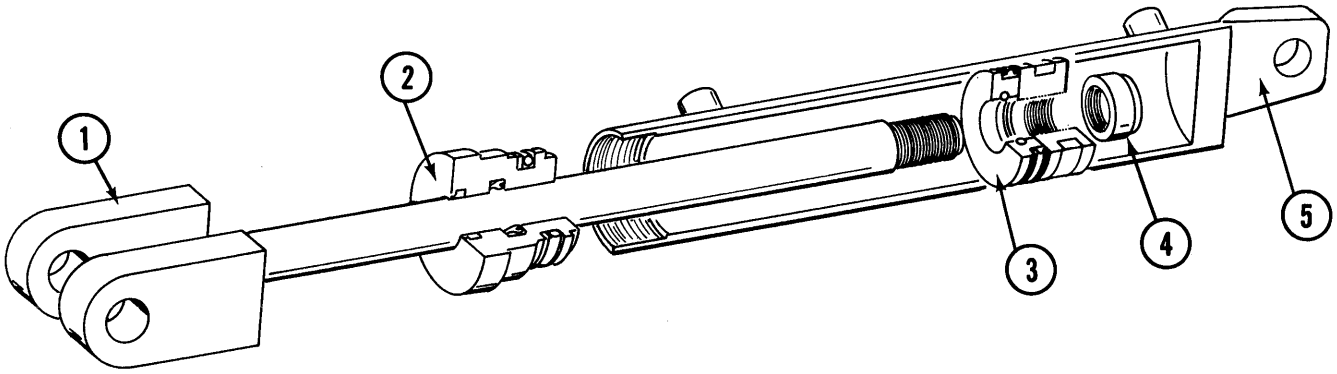
CYL039



ITEM	PART NO.	DESCRIPTION
1.	A5459	Rod Assembly
2.	D5949	Gland
3.	D4632	Piston
4.	R0959	Lock Nut, 3/4"-16
5.	A5458	Barrel
A.	A5096	Cylinder Complete, 2" x 20 1/16"
B.	R0927	Seal Kit, Includes: (1) T Seal, (2) O-Ring, (1) BU Ring, (1) U-Cup, (1) Wiper

WING LIFT CYLINDER (HYDRAULIC FOLD TOOLBAR)

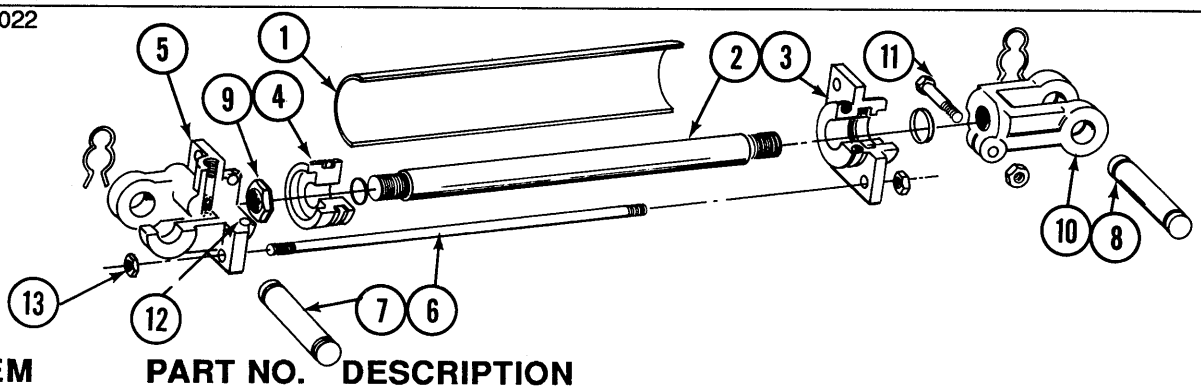
CYL047



ITEM	PART NO.	DESCRIPTION
1.	A4985	Rod Assembly
2.	D6569	Gland
3.	D4510	Piston
4.	R0987	Lock Nut, 1 1/4"-12
5.	A4984	Barrel
A.	A4823	Cylinder Complete, 3 1/2" x 11"
B.	R0996	Seal Kit, Includes: (1) T Seal, (2) O-Rings, (1) BU Ring, (1) U-Cup, (1) Wiper, (1) Wear Ring

DUAL LIFT ASSIST CYLINDER

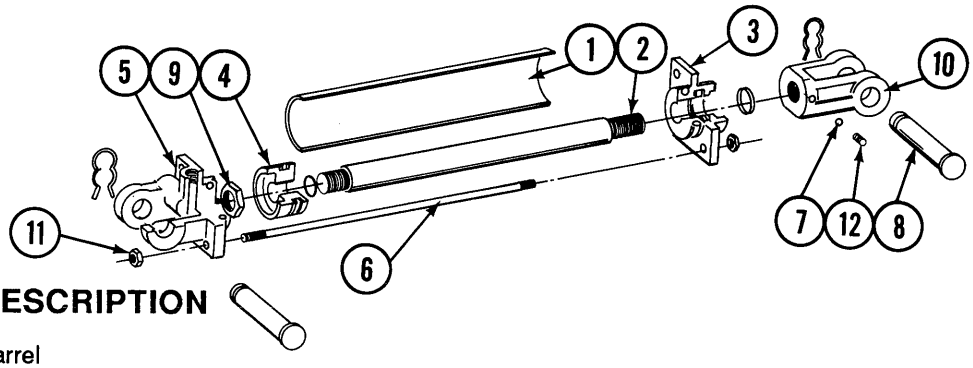
CYL022



ITEM	PART NO.	DESCRIPTION
1.	*	Barrel
2.	R0174	Shaft
3.	R0175	Gland
4.	R0176	Piston
5.	R0177	Clevis
6.	R0178	Tie Rod
7.	R0179	Pin W/Clips, 3 5/8"
	R0193	Clip
8.	R0180	Pin W/Clips, 3 1/2"
	R0193	Clip
9.	R0203	Lock Nut, 1"-14
10.	R0456	Clevis
11.	10047	Hex Head Cap Screw, 3/8"-16 x 1 3/4"
	10101	Hex Nut, 3/8"-16
12.	10170	Pipe Plug, 1/2"
13.	R0181	Hex Nut, 1/2"-13
A.	A1803	Cylinder Complete W/Pins And Clips, 3 1/2" x 8"
B.	R0153	Seal Kit, Includes: (1) Wiper, (3) BU Washers, (5) O-Rings

DUAL LIFT ASSIST CYLINDER

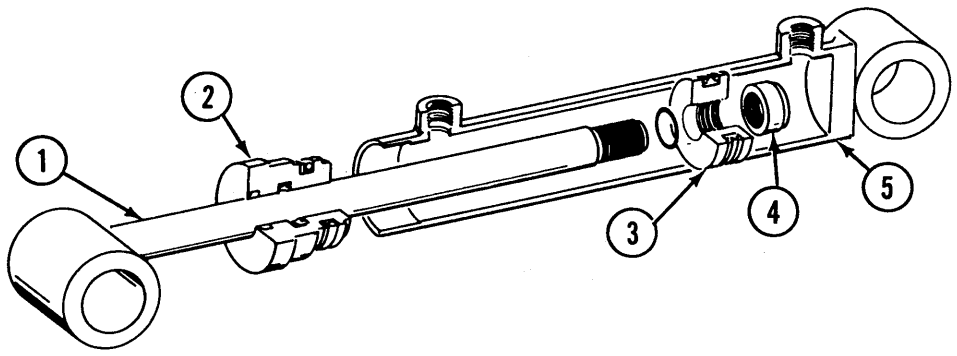
CYL048



ITEM	PART NO.	DESCRIPTION
1.	*	Barrel
2.	R0709	Shaft
3.	R1025	Gland
4.	R1026	Piston
5.	R1027	Clevis
6.	R1024	Tie Rod
7.	R0716	Nylon Ball
8.	R0717	Pin W/Clip
9.	R0663	Nut
10.	R0714	Clevis
11.	R0181	Hex Nut, 1/2"-13
12.	10210	Set Screw, 3/8"-16 x 3/8"
A.	A5482	Cylinder Complete W/Pins And Clips, 3 1/2" x 8"
B.	R1028	Seal Kit, Includes: (1) Wiper, (4) BU Rings, (5) O-Rings, (1) U-Cup

EXTERNAL WING LIFT ASSIST CYLINDER (HYDRAULIC FOLD TOOLBAR)

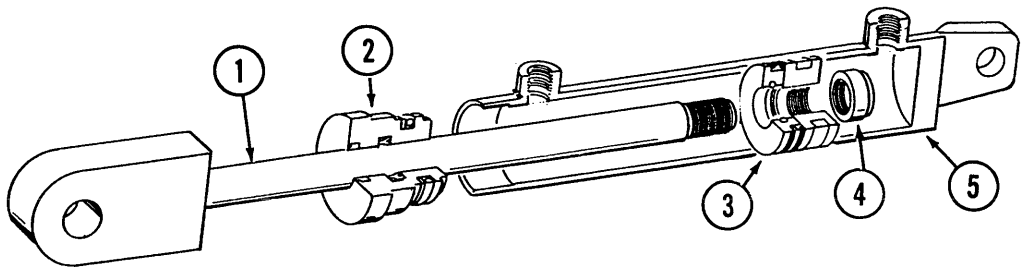
CYL032



ITEM	PART NO.	DESCRIPTION
1.	A4193	Rod Assembly
2.	D5954	Gland
3.	D4525	Piston
4.	R0964	Special Jam Nut
5.	A4192	Barrel
A.	A4115	Cylinder Complete, 2 1/2" x 20 1/16"
B.	R0963	Seal Kit, Includes: (1)T Seal, (2)O-Rings, (1)BU Ring, (1)U-Cup, (1)Wiper

WING LIFT CYLINDER (HYDRAULIC FOLD TOOLBAR)

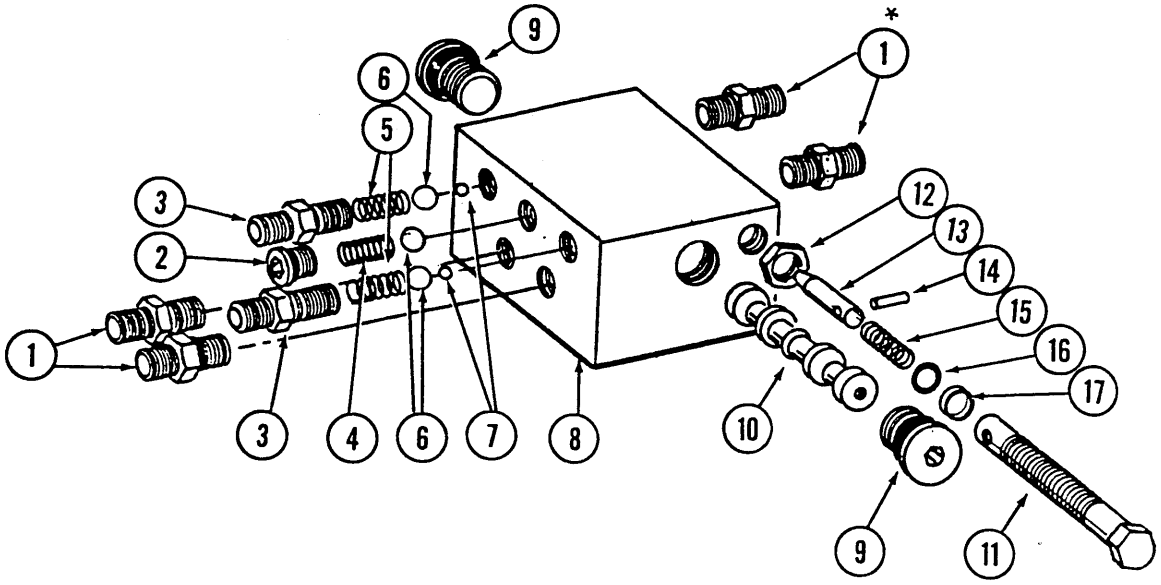
CYL032/CYL047



ITEM	PART NO.	DESCRIPTION
1.	A5702	Rod Assembly
2.	D6576	Gland
3.	D7884	Piston
4.	R0987	Lock Nut, 1 1/4"-12
5.	A5703	Barrel
A.	A5662	Cylinder Complete, 4" x 11"
B.	R1057	Seal Kit, Includes: (1)T Seal, (2)O-Rings, (1)BU Ring, (1)U-Cup, (1)Wiper, (1)Wear Ring

MARKER SEQUENCING/FLOW CONTROL VALVE

VVB025



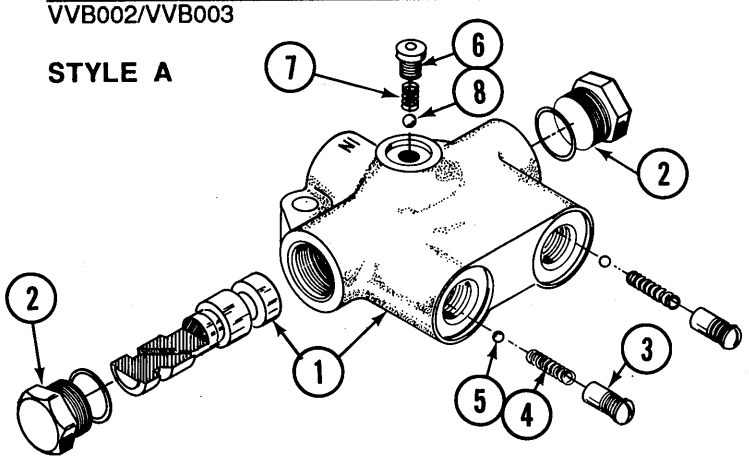
ITEM	PART NO.	DESCRIPTION
1.	6400-06	Connector, 9/16"-18 Male 37° JIC to 9/16"-18 O-Ring
	R1045	O-Ring
2.	R1034	Hex Socket O-Ring Plug
	R1035	O-Ring
3.	R1032	Port Adapter
	R1045	O-Ring
4.	R1033	Detent Spring
5.	R1036	Spring
6.	R1044	7/16" Check Ball
7.	R1043	1/4" Steel Ball
8.		Valve Body (None Stock Item)
9.	R1047	Hex Socket Plug
	R1037	O-Ring
10.		Spool (None Stock Item)
11.	R1042	Adjustment Screw
12.	R1048	Hex Jam Nut, 1/2"-20
13.	R1038	Needle
14.	R1039	Spring Pin
15.	R1046	Compression Spring
16.	R1040	O-Ring
17.	R1041	Teflon BU Ring
A.	A5552	Valve Assembly Complete (Items 1-17)
B.	A5572	Flow Control Portion Only (Items 11-17)

*Not used on models with 3/8" hoses.

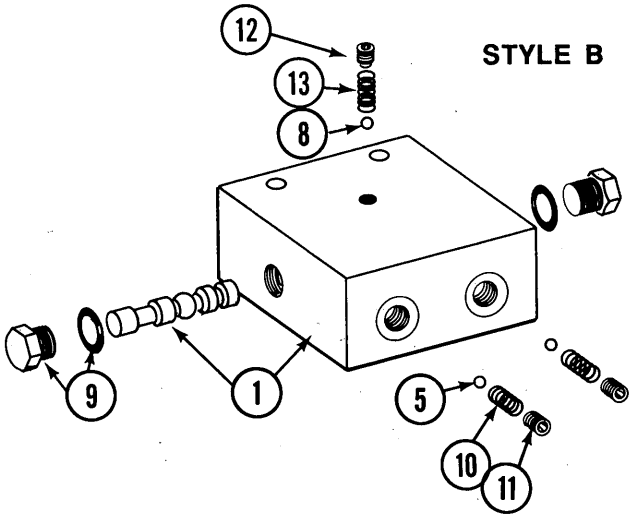
SEQUENCING VALVE

VVB002/VVB003

STYLE A



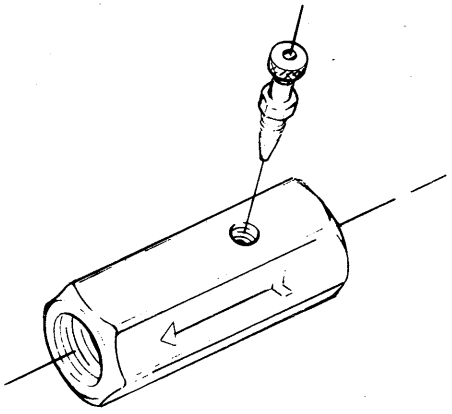
STYLE B



ITEM	PART NO.	DESCRIPTION
1.		Valve Body And Spool
2.	R0271	Plug Assembly, O-Ring Boss
3.	R0273	Retainer
4.	R0277	Spring
5.	R0275	Ball, 3/16"
6.	R0274	Plug
7.	R0278	Spring
8.	R0276	Ball, 1/4"
9.	R0811	Plug
10.	R0812	Spring
11.	R0813	Set Screw
12.	10334	Hex Socket Pipe Plug, 1/16"
13.	R0814	Spring
A.	A0282A	Sequencing Valve Complete, Style A
B.	A0282B	Sequencing Valve Complete, Style B

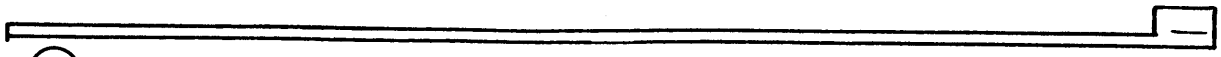
FLOW CONTROL VALVE

VVB001



ITEM	PART NO.	DESCRIPTION
A.	A0270A	Flow Control Valve (To identify-Rego KLF375 stamped on body)
	R0103	Needle Valve Only
B.	A0270B	Flow Control Valve (To identify-Deltrol stamped on valve body)
	R0642	Needle Valve Only
C.	A0270C	Flow Control Valve (To identify-Partrol stamped on valve body)
	R0767	Needle Valve Only

DECALS, REFLECTORS AND TIE STRAPS



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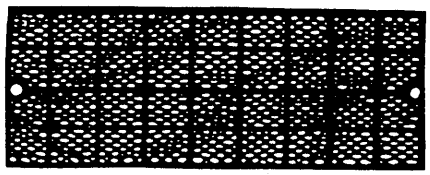


(3)

⚠ WARNING ⚠

EMPTY ALL HOPPERS AND
INSTALL TRANSPORT PINS
BEFORE TRANSPORTING

7100-25

(4)

⚠ WARNING

TO AVOID INJURY- -
Stand clear- - Keep others away when raising or lowering ***markers.*** Before transporting planter fully extend hydraulic cylinders and install ***locking pins*** where provided.

7100-42 017188

(5)

⚠ CAUTION

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

(6)

⚠ DANGER

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

(7)

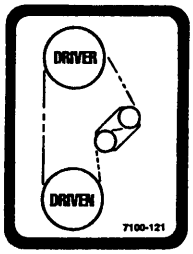
⚠ WARNING ⚠

THIS MACHINE HAS BEEN DESIGNED AND BUILT WITH YOUR SAFETY IN MIND. ANY ALTERATION TO THE DESIGN OR CONSTRUCTION MAY CREATE SAFETY HAZARDS. DO NOT MAKE ANY ALTERATIONS OR CHANGES TO THE EQUIPMENT. BUT IF ANY ALTERATIONS OR CHANGES ARE MADE YOU MUST FOLLOW ALL APPROPRIATE SAFETY STANDARDS AND PRACTICE TO PROTECT YOU AND OTHERS NEAR THIS MACHINE FROM INJURY.

(8)

KINZE®

(9)



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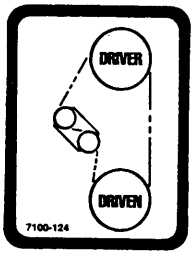
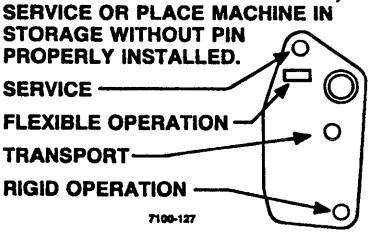


(11)

⚠ WARNING ⚠

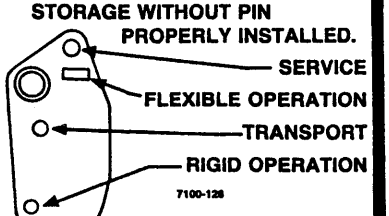
INSTALL SAFETY PIN IN PROPER LOCATION! DO NOT TRANSPORT, SERVICE OR PLACE MACHINE IN STORAGE WITHOUT PIN PROPERLY INSTALLED.



(12)

⚠ WARNING ⚠

INSTALL SAFETY PIN IN PROPER LOCATION! DO NOT TRANSPORT, SERVICE OR PLACE MACHINE IN STORAGE WITHOUT PIN PROPERLY INSTALLED.



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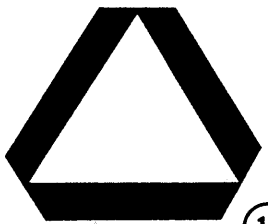
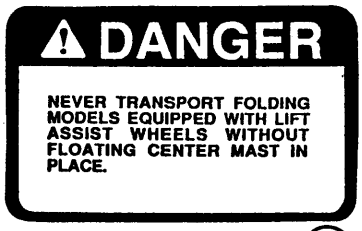


(14)

DECALS, REFLECTORS AND TIE STRAPS



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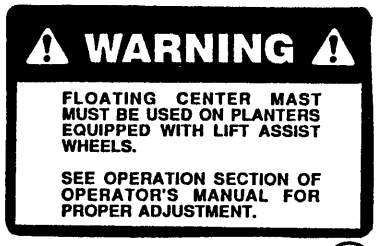

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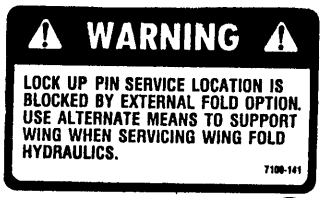

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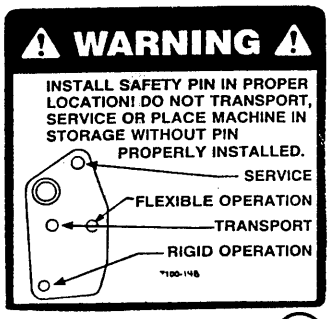

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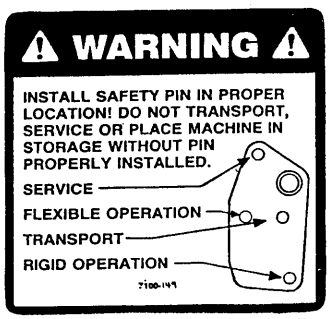

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ITEM	PART NO.	DESCRIPTION
1.	R0155	Blue Paint, Aerosol (Not Shown)
	R0439	Blue Paint, Quart (Not Shown)
	R0440	Blue Paint, Gallon (Not Shown)
2.	D1512	Tie Strap, 6"
	D2117	Tie Strap, 14 1/2"
3.	7200-03	Reflector, Red
	7200-04	Reflector, Amber
4.	7100-25	Decal, Warning
5.	7100-42	Decal, Warning
6.	7100-46	Decal, Caution
7.	7100-89	Decal, Danger
8.	7100-90	Decal, Warning
9.	7100-104	Decal, KINZE, 3" x 12"
10.	7100-121	Decal, Transmission
11.	7100-124	Decal, Transmission
12.	7100-127	Decal, Warning (Prior to Serial No. 16220)
13.	7100-128	Decal, Warning (Prior to Serial No. 16220)
14.	D2199	SMV Sign
15.	7100-132	Decal, Danger
16.	7100-133	Decal, Warning
17.	7100-140	Decal, Warning
18.	7100-141	Decal, Warning
19.	7100-148	Decal, Warning (Serial No. 16220 and on)
20.	7100-149	Decal, Warning (Serial No. 16220 and on)
21.	7100-117	Decal, Danger

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* None stock items.