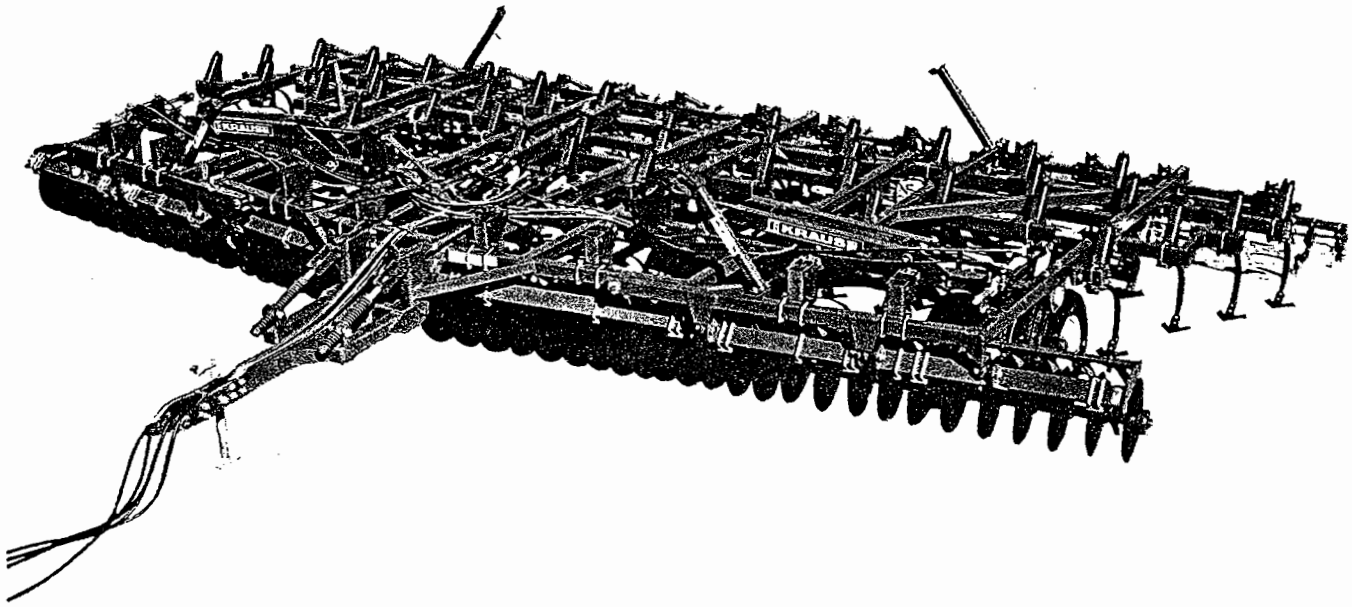
OWNER'S MANUAL

3100

With Serial
№ 1765 On



LANDSMAN

MODELS

3112, 3115, 3118, 3121,
3124, 3127, 3131, 3136.

KRAUSE

305 SOUTH MONROE STREET HUTCHINSON, KANSAS 67501

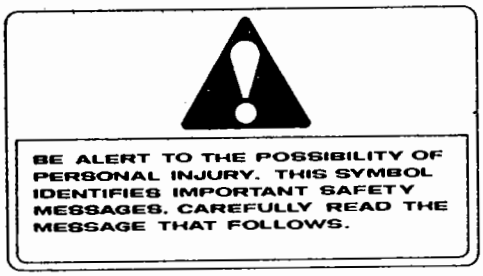
2/85

CONGRATULATIONS

You have just purchased a quality designed and manufactured Krause tillage tool. Advanced features have been designed into the implement for modern farming operations. As with any investment, a return is expected, and the return received from this investment will be in the form of maximum tillage performance during many years of dependable service.

In order to maintain quality performance of the new Krause implement, it is important that all the information in the manual be reviewed and studied carefully before operation. The contents provide operating instructions, maintenance instructions and how to make adjustments.

SAFETY ALERT SYMBOL



MODEL NUMBER_____ SERIAL NUMBER_____

PURCHASE RECORD--DATE_____

Krause Plow Corporation reserves the right to change any design or specifications without notice or obligations.

Warranty

KRAUSE PLOW CORPORATION

HUTCHINSON, KANSAS

THE KRAUSE PLOW CORPORATION, HUTCHINSON, KANSAS, EXPRESSLY WARRANTS EACH NEW PRODUCT MANUFACTURED BY IT TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE FOR A PERIOD OF ONE YEAR AFTER DELIVERY TO THE ORIGINAL RETAIL PURCHASER OR FIRST USER OF THE PRODUCT.

KRAUSE'S OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPAIRING AND/OR REPLACING, AT ITS OPTION, ANY PART OR PARTS WITHIN THE APPLICABLE ONE YEAR PERIOD, AS SET OUT ABOVE, WHICH SHALL BE RETURNED BY THE OWNER OR ANY KRAUSE AUTHORIZED DEALER TO THE FACTORY AND WHICH UPON EXAMINATION SHALL DISCLOSE TO KRAUSE'S SATISFACTION TO BE DEFECTIVE.

KRAUSE MAY, AT ITS OPTION, ELECT TO GRANT ADJUSTMENTS IN THE FIELD THROUGH AN AUTHORIZED REPRESENTATIVE AND MAY THEREBY ELECT TO WAIVE THE REQUIREMENT THAT PARTS BE RETURNED TO KRAUSE'S FACTORY.

A NEW WARRANTY PERIOD IS NOT ESTABLISHED FOR REPLACEMENTS. REPLACEMENTS ARE WARRANTED FOR THE REMAINING PORTION OF THE ONE YEAR ORIGINAL WARRANTY PERIOD. THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS UNDER THIS WARRANTY WILL BE MADE WITHOUT CHARGE TO THE OWNER EXCEPT FOR TRANSPORTATION.

KRAUSE DOES NOT WARRANT DISC BLADES, TIRES, CHISEL SHANKS, HYDRAULIC CYLINDERS, ACCESSORIES AND OTHER PARTS NOT MANUFACTURED BY IT BUT SUPPLIED WITH OR AS A PART OF ITS PRODUCTS. KRAUSE WILL, HOWEVER, OBTAIN AND PASS ON ANY ADJUSTMENTS PROVIDED BY THE MANUFACTURERS OF SUCH PARTS UNDER THESE MANUFACTURER'S WARRANTIES.

THE PROVISIONS OF THIS WARRANTY DO NOT APPLY TO ANY PRODUCT OR PARTS WHICH HAVE BEEN SUBJECT TO MISUSE, NEGLIGENCE OR ACCIDENT, OR WHICH HAVE BEEN REPAIRED OR ALTERED OUTSIDE OF KRAUSE'S FACTORY IN ANY WAY SO AS IN THE JUDGEMENT OF KRAUSE TO AFFECT ADVERSELY ITS PERFORMANCE OR RELIABILITY. NEITHER DOES THIS WARRANTY APPLY TO NORMAL MAINTENANCE SERVICE AND PARTS, OR TO NORMAL DETERIORATION DUE TO WEAR AND EXPOSURE.

TO THE EXTENT ALLOWED BY APPLICABLE LAW, THIS WARRANTY IS EXPRESSLY IN LIEU OF OTHER WARRANTIES, EXPRESSED OR IMPLIED, IN FACT OR BY LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES OF REPAIR OR REPLACEMENT AS SET FORTH ARE THE ONLY REMEDIES UNDER THIS WARRANTY. KRAUSE DISCLAIMS ANY OBLIGATIONS OR LIABILITY FOR LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS OR DIRECT, CONSEQUENTIAL, SPECIAL OR INCIDENTAL DAMAGES. THIS WARRANTY IS IN LIEU OF ANY OTHER OBLIGATION OR LIABILITY OF KRAUSE OF ANY NATURE WHATSOEVER BY REASON OF THE MANUFACTURE, SALE , LEASE OR USE OF SUCH PRODUCTS AND KRAUSE NEITHER ASSUMES, NOR AUTHORIZES ANYONE TO ASSUME FOR IT, ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH PRODUCTS.

3100 SERIES LANDSMAN
DEALER PREDELIVERY CHECK
TO BE CHECKED BY DEALER

CUSTOMER_____ DATE_____

ADDRESS_____ COUNTY_____

DEALER_____

ADDRESS_____ COUNTY_____

MODEL NUMBER_____ SERIAL NUMBER_____

DEALER CHECK:

1._____Check to see that all rocker shaft bolts are tight and pins are in place.

2._____Check to see that hydraulic cylinders are full of oil (air bled out of cylinders). Clevis pins with hair pin clips should be in place. Hydraulic system requires 3 Quarts / 2.8 Liters of oil for Models 3112 and 3115; and 20 Quarts / 19 Liters of oil for Models 3118 and 3124. Models 3121, 3127, 3131 and 3136 require 28 Quarts / 26.5 Liters of oil.

3._____Examine hydraulic hoses to see that they are protected from damage.

4._____Bolts attaching the walking tandem to the wheel arms should be tight. Check to see that bearings have been adjusted and greased.

5._____Check lug bolts holding wheels to the hubs to see that they are torqued from 90 to 95 Ft. Lbs. / 120 N · m.

6._____See Placement pages A30 through A37 for correct size tires and their locations. Inflate all tires to 36 P.S.I. / 248 kPa.

7._____Check to see that bolts and pins attaching hitch to frame and clevis weldment to hitch are in place and tightened.

8._____Jack should be operational for support of tongue when implement is not attached to the tractor.

9._____Wings are attached with special pins and wear washers. Make sure they are in their proper place.

10._____Road lock and wing lock are correctly installed and operate satisfactorily.

11._____Restrictors are installed in wing lift cylinder rod end ports.

12._____All decals are in place. See decal placement page.

13._____Customer review sheet is filled out and signed.

DELIVERED BY_____ DATE_____

3100 SERIES LANDSMAN
CUSTOMER REVIEW SHEET

CUSTOMER_____ DATE_____

ADDRESS_____ COUNTY_____

DEALER_____

ADDRESS_____ COUNTY_____

MODEL NUMBER_____ SERIAL NUMBER_____

1._____Owner's manual provided.

2._____Warranty card filled out and mailed.

3._____Review safety warnings and cautions as listed in this owner's manual.

4._____Review recommended maximum road speed, width, and height for implement.

5._____Review field operational speeds, horsepower, depth, and rock conditions.

6._____Demonstrate the proper use of road locks.

7._____Explain the hydraulic depth control system including how to set the hydraulic stroke control.

8._____Review limitations of additional weight.

9._____Explain the importance of maintaining the tools through lubrication, checking that bolts are kept tight, and through the replacement of worn or broken parts.

10._____Recommend that a safety chain be used with the tool.

11._____Check wheel lug bolts frequently until they become set.

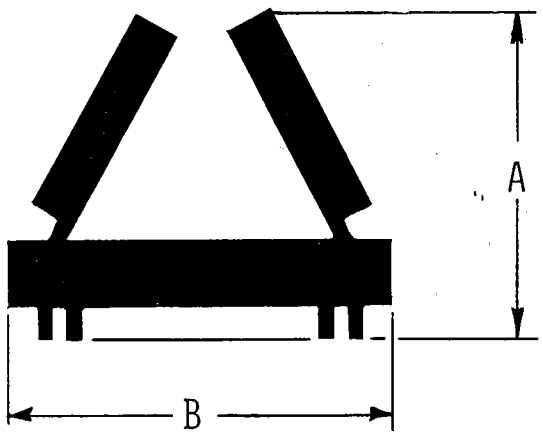
DEALER_____ DATE_____

CUSTOMER_____ DATE_____

CONTENTS

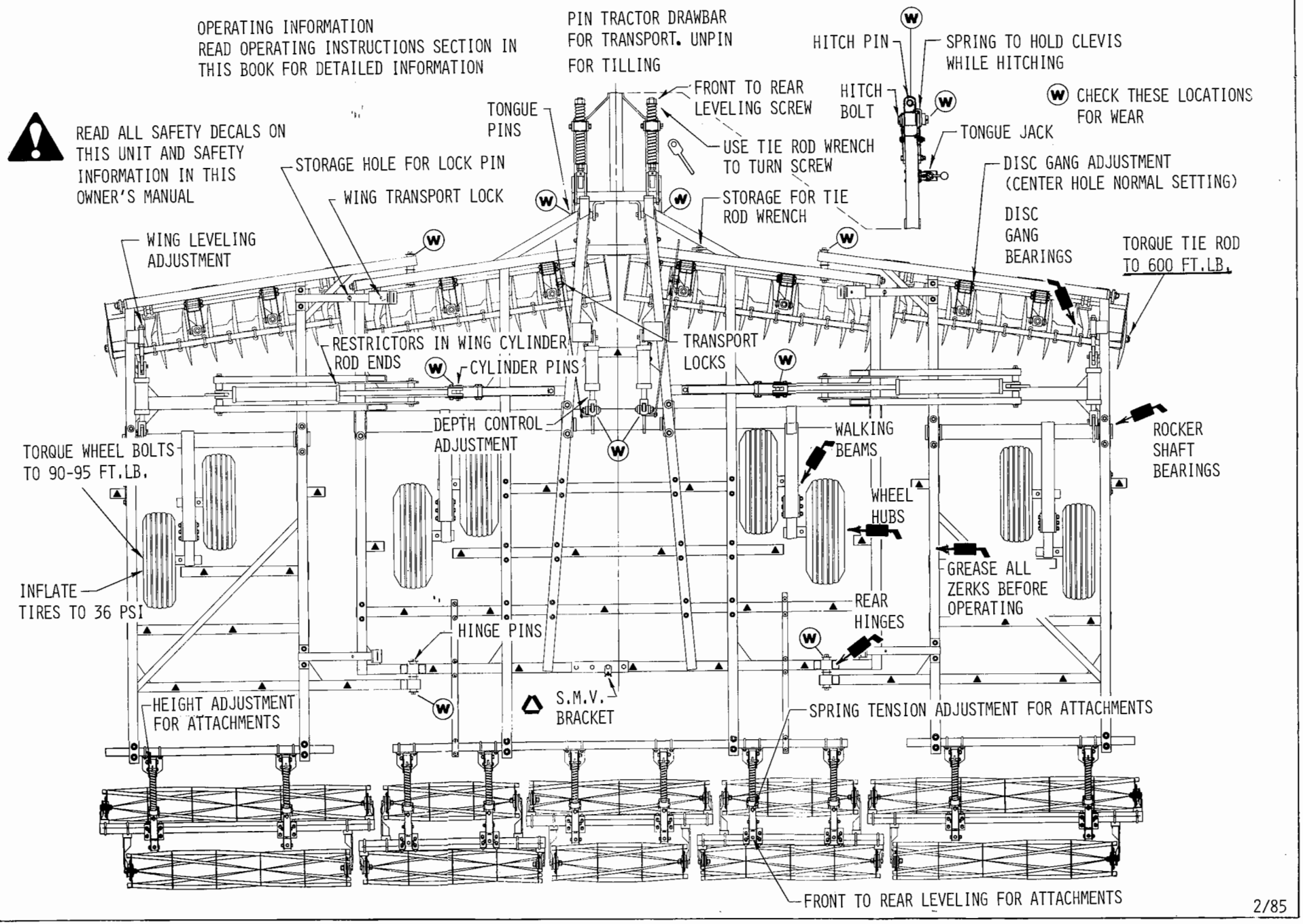
3100 LANDSMAN SPECIFICATIONS

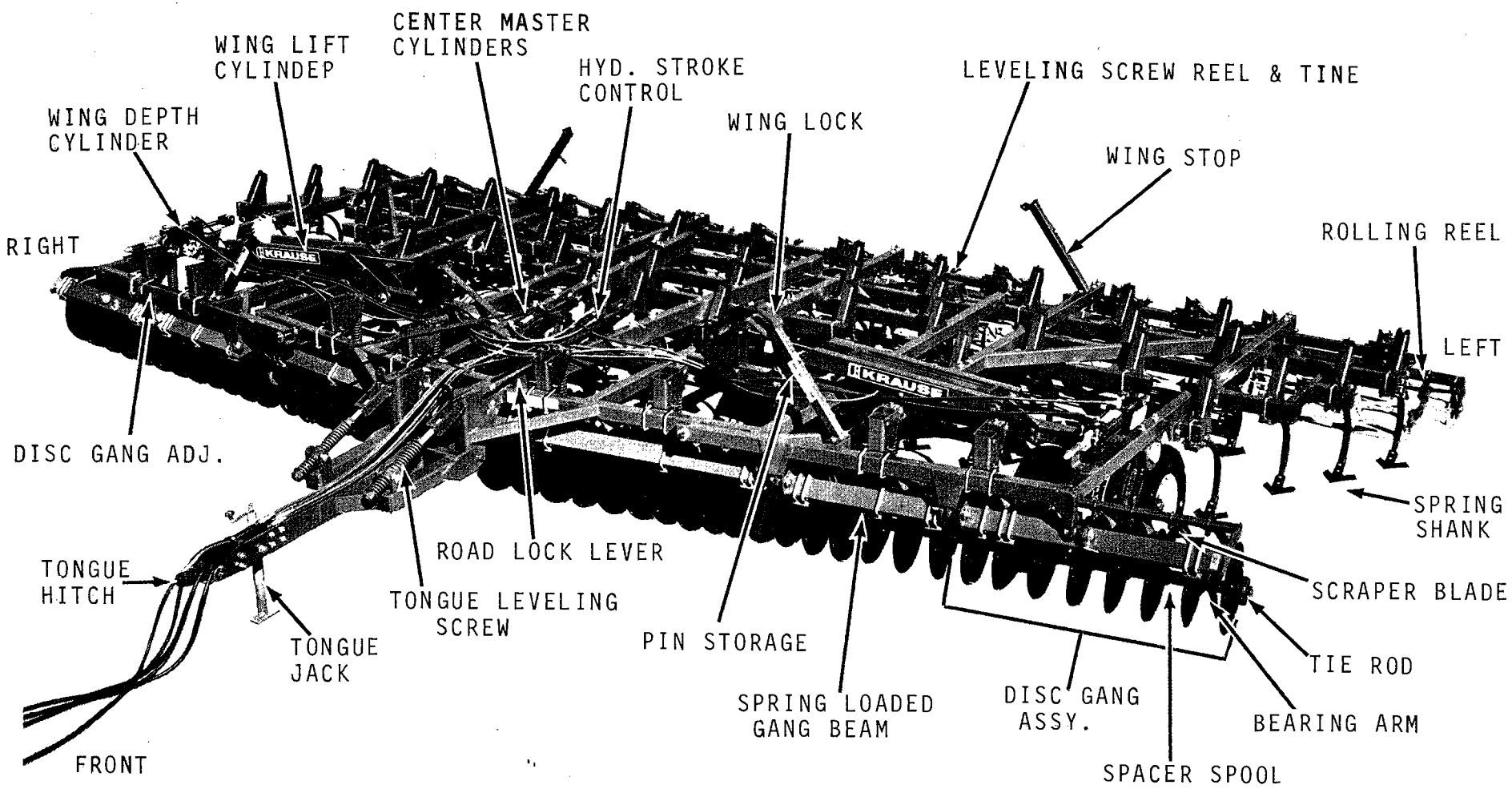
MODEL	CUT WIDTH FEET	CUT WIDTH METRES	NUMBER DISC	DISC SPACING	DISC SIZE	NUMBER SHANKS	SHANK SPACING
3112	12'0"	3.66	18	8"	20"	17	9"
3115	15'0"	4.57	22	8"	20"	21	9"
3118	18'0"	5.49	26	8"	20"	25	9"
3121	21'0"	6.40	32	8"	20"	31	9"
3124	24'0"	7.32	36	8"	20"	33	9"
3127	27'0"	8.23	40	8"	20"	37	9"
3131	31'6"	9.60	46	8"	20"	43	9"
3136	36'0"	10.97	52	8"	20"	49	9"

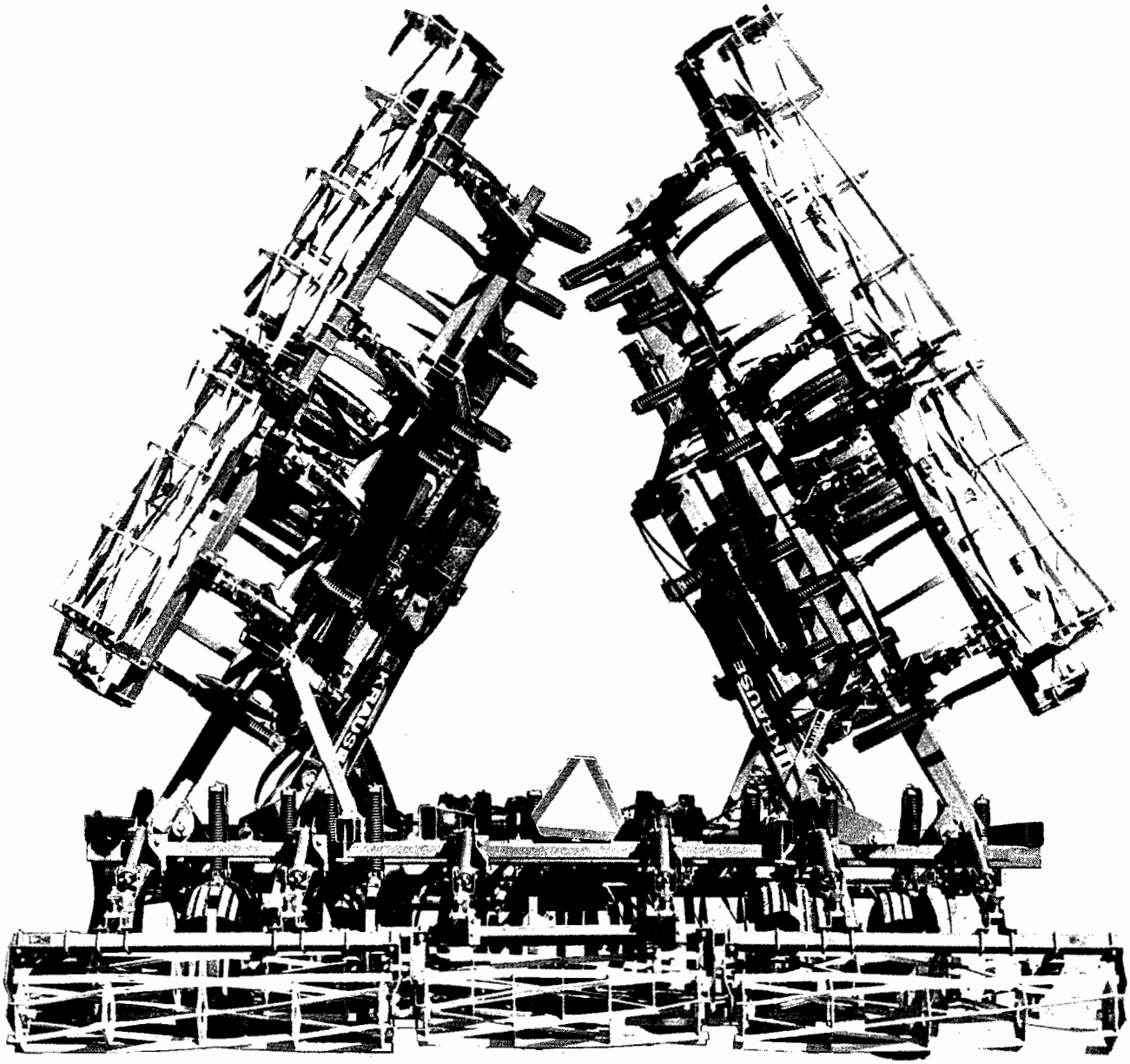


TRANSPORT HEIGHT & WIDTH

MODEL NUMBER	A	B
3112	----	12'4"
3115	----	16'0"
3118	11'6"	9'6"
3121	13'6"	9'10"
3124	12'0"	14'0"
3127	13'6"	15'4"
3131	15'3"	14'0"
3136	17'9"	15'4"

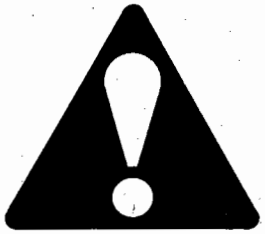

OPERATING INFORMATION
READ OPERATING INSTRUCTIONS SECTION IN THIS BOOK FOR DETAILED INFORMATION
PIN TRACTOR DRAWBAR FOR TRANSPORT. UNPIN FOR TILLING
HITCH PIN
SPRING TO HOLD CLEVIS WHILE HITCHING
FRONT TO REAR LEVELING SCREW
HITCH BOLT
CHECK THESE LOCATIONS FOR WEAR
TONGUE PINS
TONGUE JACK
READ ALL SAFETY DECALS ON THIS UNIT AND SAFETY INFORMATION IN THIS OWNER'S MANUAL
USE TIE ROD WRENCH TO TURN SCREW
STORAGE HOLE FOR LOCK PIN
DISC GANG ADJUSTMENT (CENTER HOLE NORMAL SETTING)
WING TRANSPORT LOCK
STORAGE FOR TIE ROD WRENCH
DISC GANG BEARINGS
WING LEVELING ADJUSTMENT
TORQUE TIE ROD TO 600 FT.LB.
RESTRICTORS IN WING CYLINDER ROD ENDS
CYLINDER PINS
TRANSPORT LOCKS
DEPTH CONTROL ADJUSTMENT
WALKING BEAMS
ROCKER SHAFT BEARINGS
TORQUE WHEEL BOLTS TO 90-95 FT.LB.
WHEEL HUBS
GREASE ALL ZERKS BEFORE OPERATING
INFLATE TIRES TO 36 PSI
REAR HINGES
HINGE PINS
S.M.V. BRACKET
HEIGHT ADJUSTMENT FOR ATTACHMENTS
SPRING TENSION ADJUSTMENT FOR ATTACHMENTS
FRONT TO REAR LEVELING FOR ATTACHMENTS


CENTER MASTER CYLINDERS
WING LIFT CYLINDEP
HYD. STROKE CONTROL
LEVELING SCREW REEL & TINE
WING DEPTH CYLINDER
WING LOCK
WING STOP
ROLLING REEL
RIGHT
LEFT
DISC GANG ADJ.
SPRING SHANK
ROAD LOCK LEVER
TONGUE HITCH
SCRAPER BLADE
TONGUE LEVELING SCREW
PIN STORAGE
TONGUE JACK
TIE ROD
SPRING LOADED GANG BEAM
DISC GANG ASSY.
BEARING ARM
SPACER SPOOL
FRONT



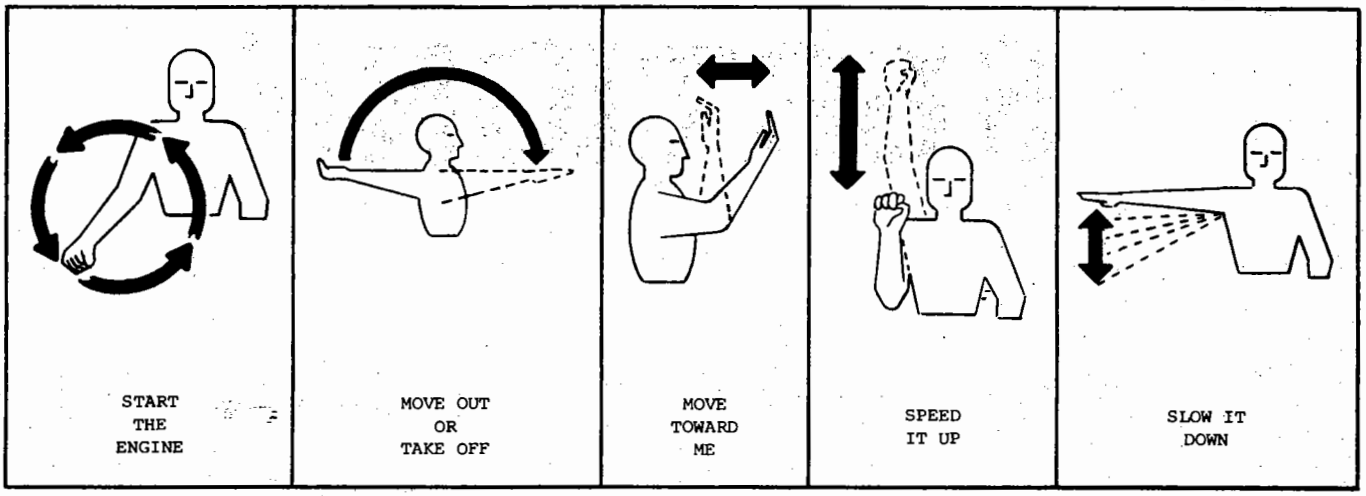
OPERATING SECTION

SAFETY ALERT SYMBOL



BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY. THIS SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES. CAREFULLY READ THE MESSAGE THAT FOLLOWS.

TEN MOST COMMON HAND SIGNALS USED IN THE FIELD



PROTECT YOURSELF FROM CHEMICALS AND PESTICIDES

SUGGESTED PROTECTIVE GEAR

1. HARD HAT. Should be washable, have brim to collect chemicals. Replace headband if contaminated. Wash entire unit daily.

2. GOGGLES, FACE SHIELD. Protect eyes, face. Goggles should fit snugly, comfortably. Shield should cover entire face.

3. RESPIRATOR. To prevent inhaling chemical dust vapors. Use canisters specified for chemical. Replace canisters as specified.

4. GLOVES. Rubber with long sleeves so cuff can be made. Unlined is best--cloth linings are hard to wash and decontaminate.

5. APRON/SMOCK. Protects clothing from splashes, spills. Smock gives more body protection. Wash or replace as needed.

6. COVERALLS. Wear as outer layer for easy removal, if contaminated. Tight knit, closable at neck, wrists. Wash when contaminated.

7. RUBBER BOOTS. Protect against spills on your regular boots or shoes. Important because leather is hard to decontaminate.

NOTE: DIRTY, CONTAMINATED OR IMPROPERLY WORN PROTECTIVE CLOTHING AND EQUIPMENT MAY BE AS BAD AS NO SAFETY GEAR AT ALL. FOLLOW THESE LAUNDERING SUGGESTIONS.

Change all clothing daily.

Keep contaminated clothing (worn while handling, applying) with pesticides separate from other family laundry. Keep it in a plastic bag if its not washed immediately.

Use hot water (140 degrees) and fill machine to normal full level. Do not overload with clothing.

Use recommended amount of a heavy-duty phosphate-type detergent.

Dry clothing immediately after washing preferably in an automatic clothes dryer.

Pesticides & chemicals, can enter your body several ways, so it's essential to wear protective barrier when handling them. The most critical areas needing protection are your eyes, skin and lungs.

Don't smoke or eat until after thoroughly washing with soap and water.

USE COMMON SENSE

SAFETY FIRST

WATCH FOR THIS SYMBOL AND CAREFULLY READ THE MESSAGE.

1. Read and understand this owner's manual before operating the machine.
2. Be sure safety decals and reflectors are clean and in place.
3. Do not climb or walk on gangs, frames, tires, or rolling reels.
4. Never position yourself under any portion of implement unless the transport locks are engaged or entire unit is lowered to the ground.
5. Stop engine and set parking break before leaving operator's position to adjust, lubricate, clean or unclog the machine.
6. Do not stand between the implement and tractor unless tractor brakes are locked and engine is shut off.
7. Do not stand on or straddle a tongue when unhitching.
8. Always store this implement with the wings down.
9. Never operate unit until hydraulic cylinders and lines are full of oil and free of air. See operating instructions.
10. Use a slow-moving vehicle emblem when roading.
11. Always use a safety chain of tensile strength equal to the gross weight of the implement and attachments when roading.
12. Check wheel bolts before and during transport.
13. Always use wing locks and road locks to hold raised positions.
14. Do not road an implement over 15 miles per hour on the best surface conditions. Reduce speed when going up or down hills and approaching ditches or corners.

OPERATING INSTRUCTIONS

READ ALL THE SAFETY DECALS ON THE IMPLEMENT AND REVIEW THE SAFETY FIRST SUGGESTIONS ON THE BACK COVER OF THE MANUAL TO REFRESH YOUR MEMORY. WATCH FOR THE SAFETY SYMBOL AND READ THE INFORMATION. THIS IS FOR YOUR OWN PROTECTION.

ABOUT YOUR LANDSMAN

This Landsman Tillage Tool has been designed for one-trip secondary tillage. Hinged wing sections, spring loading of disc gangs, shanks and rolling reels make it flexible enough to follow the contour of most field conditions. Wings will float down 6° and up 20°. It is designed to be used for seed bed preparation and chemical incorporation, with a maximum working depth of 6 inches. The Landsman works best at field speeds of 5 to 7-1/2 M.P.H., however rocky conditions may require a slower field speed. Horsepower requirements, will generally be 6 to 8 drawbar horsepower per foot of cut. Krause offers three different attachments for finish tillage: five rows of spike harrows, or one row of folling reels followed by three rows of tine harrows, or four rows of tine harrow. Caution should be used in adding any other attachment that will add weight to the unit.

CAUTION: ADDING OF EXCESS ADDITIONAL WEIGHT COULD CAUSE FRAME OR AXLE FAILURES RESULTING IN LOSS OF CONTROL DURING TRANSPORT.

PREPARING THE LANDSMAN FOR OPERATION

1. The wings should be down and implement lowered to the ground. All hydraulic cylinders should be pinned and full of oil.

   CAUTION: LOWER IMPLEMENT TO THE GROUND BEFORE MAKING THE FOLLOWING INSPECTIONS. WITH IMPLEMENT LOWERED, ENTER THE FRAMEWORK BY STEPPING OVER, DO NOT CRAWL UNDER THE FRAMEWORK. IF IMPLEMENT IS NOT LOWERED, ANY HYDRAULIC FAILURE COULD CAUSE THE UNIT TO DROP SUDDENLY, CAUSING PERSONAL INJURY.

2. The wing lock pins should be stored in their storage holes and the road lock stops pinned with the stops in a vertical position.

3. Check for loose bolts and tighten if needed. Check again for loose bolts after the first half day of operation.

4. Check disc gangs for tight tie rod nuts and clinched cotter pins.

5. Check the shank locations, and attachment locations with the placement diagram to be sure unit has been set up properly.

6. Make sure that all grease zerk locations have been sufficiently greased.

7. Check tire pressure. Inflate all tires to 36 P.S.I. / 248 kPa.

⚠ CAUTION: FREQUENTLY CHECK TO SEE THAT THE WHEEL LUG BOLTS ARE TORQUED 90 TO 95 FT. LBS. PARTICULARLY DURING THE INITIAL TRANSPORT AND OPERATION OF THE TILLAGE TOOL. THE BOLTS MAY WORK LOOSE, RESULTING IN THE LOSS OF A WHEEL AND SUBSEQUENT LOSS OF THE TOOL AND / OR TRACTOR.

PREPARING THE TRACTOR

Read your tractor owner's manual. It will describe safe methods of operation. Make sure your tractor has proper added ballast, and that its hydraulic system is full of oil and working properly. Check tractor brakes and warning lights, make sure they are in working order.

HYDRAULIC SYSTEM

The Landsman is equipped with two separate hydraulic systems, one to control the wheels and the other to raise and lower the wings for transport.

WHEELS

Two master cylinders are mounted in the center on the main rocker shaft and they in turn are connected to a slave cylinder on each wing. Each cylinder in this system is a rephasing cylinder. This means there is an internal valve in each cylinder that will let oil bypass when the cylinder is extended to its maximum stroke. All four cylinders should work together. If cylinders are out of phase, hold tractor valve open to extend rod. Hold valve open until all cylinders reach their maximum stroke, then continue to hold valve open for an additional 20 to 30 seconds.

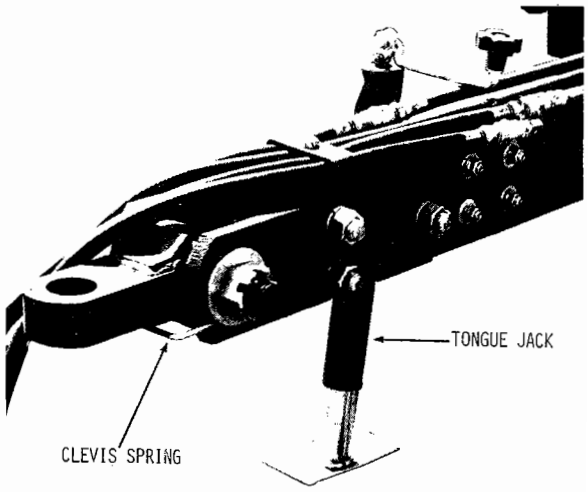
WINGS

Both wing lift cylinders are plumbed together. In some situations one wing may lift before the other, this is normal. The wings will fold and unfold slowly, because of the restrictor in the rod end of each wing cylinder. Make sure these restrictors are installed in the rod end port of the wing cylinders. See page 3. If not previously filled, your hydraulic system will require approximately 20 Quarts / 19 Liters for models 3118 and 3124, and 28 Quarts / 26.5 Liters for models 3131, 3127, 3131 and 3136. Models 3112 and 3115 require 3 Quarts / 2.8 Liters of oil. Use oil recommended by your tractor manufacturer. Read service section "HYDRAULIC SAFETY" on page 015, before filling the system. See "Hydraulic Cylinders Service Manual" for additional information.

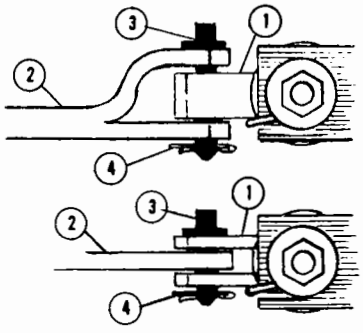
HITCHING AND UNHITCHING

CAUTION: DO NOT ALLOW ANY PERSON TO STAND BETWEEN THE TRACTOR AND IMPLEMENT WHILE BACKING INTO POSITION. SUDDEN LOSS OF CONTROL COULD CAUSE SERIOUS INJURY OR DEATH TO A PERSON CAUGHT BETWEEN THE TRACTOR AND IMPLEMENT. TELL YOUR HELPER TO WAIT UNTIL YOU GIVE HIM THE SIGNAL THAT THE TRACTOR IS IN PARK OR NEUTRAL AND THE HAND BRAKE IS SET AND THE ENGINE SHUT OFF.

1. The implement must be in a raised position and road lock in place before hitching to tractor. The clevis spring will hold the tongue or clevis up for hitching.
2. Unpin the tractor drawbar so it can be moved from side to side.
3. Adjust tongue jack to height of tractor drawbar.
4. Back the tractor to the implement.
5. Attach clevis or tongue hitch (1) to tractor drawbar (2) with a clevis pin (3) that fits the hole size in the tractor drawbar and the clevis. Make sure pin is locked or bolted in place to prevent loss (4).
6. Connect hydraulic hose to tractor.
7. Place tongue jack in storage position.

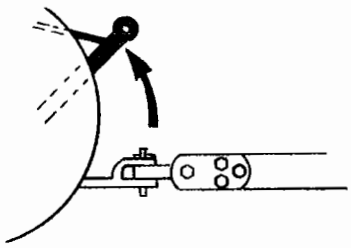


IMPORTANT: RE-PIN TRACTOR DRAWBAR FOR TRANSPORT. DO NOT PIN TRACTOR DRAWBAR FOR FIELD WORK.



CAUTION: AIR IN HYDRAULIC SYSTEM WILL ALLOW IMPLEMENT OR WING TO DROP SUDDENLY. DO NOT OPERATE THE WING HYDRAULICS UNTIL YOU HAVE READ THE "WING LIFT AND LOCK OPERATIONS UNDER "TRANSPORTING".

IMPORTANT: BEFORE MOVING THE IMPLEMENT BE SURE THE LOWER ARMS OF THE THREE POINT HITCH HAVE BEEN RAISED TO THE TOP AND SECURED TO PREVENT DAMAGE TO THE HARROW CLEVIS AND TONGUE WHEN MAKING TURNS.



UNHITCHING LANDSMAN FROM THE TRACTOR

If the implement is not to be used for the remainder of the day, select a good parking place that will permit the lowering of the wings. The implement should be parked in the storage position, with the exception of unpinning the rod ends of the wing cylinders. If the implement is to remain parked for storage over a long period of time, be sure to read storage suggestions.

1. To unhitch from the implement, extend the wheel cylinders and place road locks in place.

2. Place the tractor in park or neutral and set hand brake. If tractor and implement are on an incline, block the center implement wheels.

3. Unpin the wing locks and place pins in storage hole.

4. Have all personnel stand clear and lower wing. Extend wing lift cylinders to their maximum.

5. With tractor in park, turn off tractor engine and relieve any pressure that might be in the implement hydraulic system by moving the tractor control levers back and forth.

6. Lower tongue jack and adjust until hitch pin is free.

7. Disconnect the hydraulic hoses and remove hitch pin. The tractor may be moved away from the parked implement.

⚠ CAUTION: DO NOT STAND ON OR STRADDLE A TONGUE WHEN UNHITCHING. IF ATTACHMENTS HAVE BEEN ADDED TO THE REAR OF THE UNIT, IT MAY AFFECT THE BALANCE OF THE IMPLEMENT, CAUSING THE TONGUE TO COME UP SUDDENLY WHEN UNHITCHING.

ROAD LOCK OPERATION

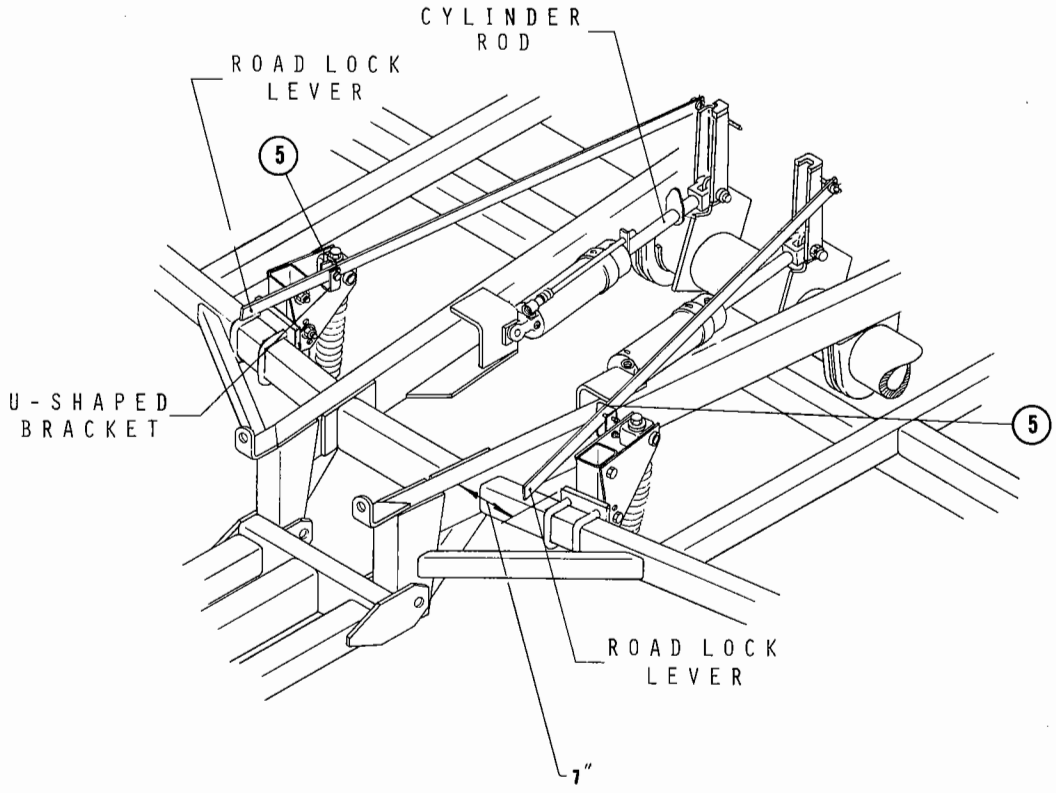
1. Extend wheel cylinders to their maximum.

2. Remove pin from road lock lever 5 and allow road lock stops to swing forward against cylinder heads.

3. Allow the road lock lever to rest in the bottom of U-shaped bracket and replace pin above bar on models 3115, 3124, 3127, 3131 and 3136. Repin lock lever in center hole position for models 3112, 3118 and 3121.

4. For field work extend wheel cylinders to their maximum.

5. Raise road lock stops by pushing down on lever handle. Swing road lock stops to vertical position.



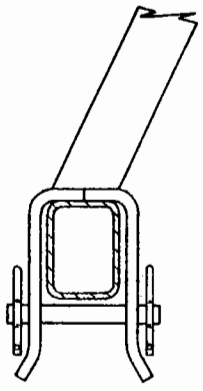
6. Pin road lock lever to U-shaped bracket through hole near handle end. 5

WING LOCK OPERATION

1. Before raising wings, raise implement and place road locks in transport position. Make sure wing lock pins are in storage hole. Not in clevis.

2. Retract wing lift cylinders. Cylinders will move slowly, because of restrictors in hydraulic lines.

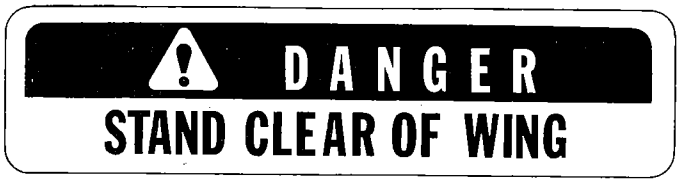
3. After wings have folded, place lock pin through hole in clevis under frame beam. Secure with hair pin cotter.



4. To lower the wings, be sure the cylinders are retracted to the minimum stroke, then remove the wing lock pins and place in storage hole provided. Be sure you unlock both wings, then with all persons standing at a safe distance, lower the wings.

IMPORTANT: NEVER EXTEND WING LIFT CYLINDERS UNTIL THE LOCK PINS HAVE BEEN REMOVED OR DAMAGE WILL OCCUR TO THE FRAME OR HYDRAULIC CYLINDER.

WARNING: ALWAYS STAND CLEAR OF WING WHEN IT IS IN THE RAISED POSITION. A HYDRAULIC FAILURE OR ACTIVATION OF HYDRAULIC CONTROLS BY SOMEONE COULD RESULT IN SERIOUS INJURY TO ANYONE UNDER THE WING.

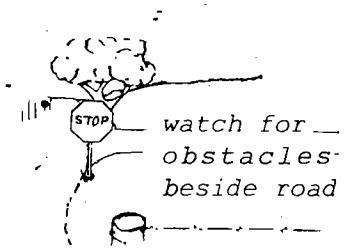


IMPORTANT: KEEP WING WARNING DECAL CLEAN AND IN PLACE AT ALL TIMES. DECALS MUST BE REPLACED IF THEY ARE DESTROYED, MISSING, PAINTED OVER, OR CAN NO LONGER BE READ.

TRANSPORTING

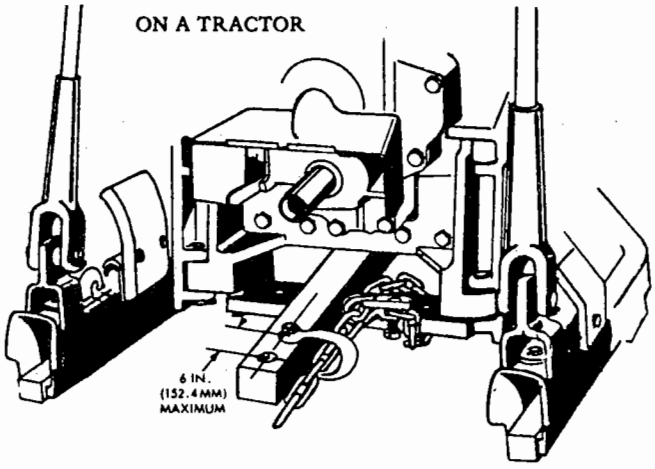
Check specification pages and be aware of transport height and width of your model Landsman. Page no. 2.

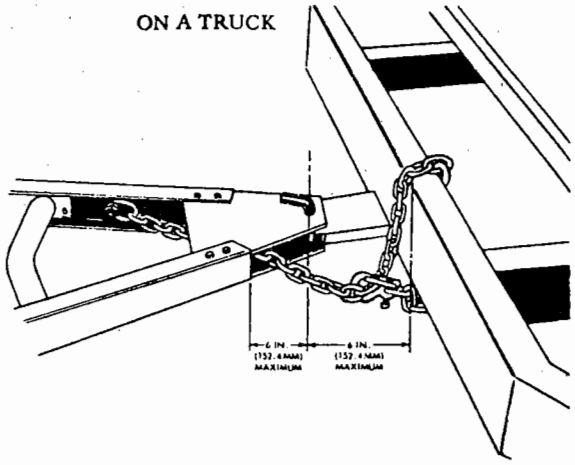
WARNING: ALWAYS USE TRANSPORT ROAD LOCKS WHEN TRANSPORTING IMPLEMENTS TO PREVENT UNIT FROM FALLING DUE TO HYDRAULIC FAILURE, OR ACCIDENTAL ACTIVATION OF THE OPERATOR'S CONTROL. LOWERING OF IMPLEMENT DURING TRANSPORT, COULD RESULT IN LOSS OF CONTROL.



Comply with state and local laws pertaining to lighting and road widths. Transport during daylight hours only. Watch your clearance. Be aware of obstacles on the side of the road that might be caught by the implement when passing by. Pull over to the side of the road to permit safe clearance for on-coming vehicles. Keep the red and yellow reflectors clean and visible. Replace the reflectors if they become faded or damaged. Watch for narrow bridges and re-route if necessary. Watch for pedestrians on the side of the roadway that need to be warned of your presence. Use the ASAE slow-moving vehicle (SMV) emblem. The SMV is to be mounted, point up, in a plane perpendicular to the direction of travel ± 10 degrees. It shall be placed centrally at the rear of the vehicle, unobscured, and 2' to 6' (0.61 to 1.8m) above the ground, measured from the lower edge of the emblem. The SMV emblem should be wiped clean before entering the road or highways. A bracket has been provided.

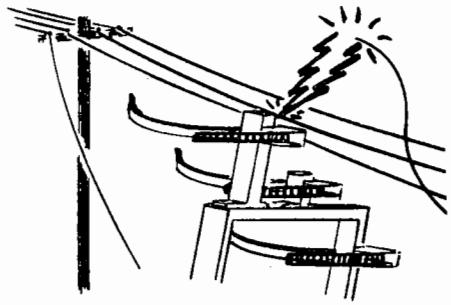
WARNING: ALWAYS USE A SAFETY CHAIN WITH TENSILE STRENGTH EQUAL TO THE GROSS WEIGHT OF THE UNIT, PLUS ANY ATTACHMENTS, WHEN TRANSPORTING.





Be aware of the transport height as well as the width of your implement. Care should be taken not to snag low hanging telephone lines or electrical service lines.

WARNING: MEASURE OVERALL TRANSPORT HEIGHT. TINE AND ROLLING REELS MAY ADD TO THE TRANSPORT HEIGHT.



It is best to use a tractor to transport the Landsman to another location. Never exceed 15 M.P.H., because implement tires are not constructed to be operated at higher speeds. The towing vehicle should always equal or exceed the gross weight of the implement. Always check the tire pressure before transporting and look for damaged tires. All tires 36 P.S.I. - 248 kPa. Move the tires from side to side, if excessive play is noted, adjust the hub spindle nut before roading to prevent damage to the hub or bearings.

CAUTION: IT IS VERY IMPORTANT TO CHECK WHEEL LUG BOLTS AFTER THE FIRST 1/2 MILE OF INITIAL TRANSPORT (DELIVERY). IF LOOSE, TIGHTEN TO 90 TO 95 FT. LBS. TORQUE. CONTINUE TO CHECK FREQUENTLY UNTIL THEY REMAIN FIRMLY SEATED.

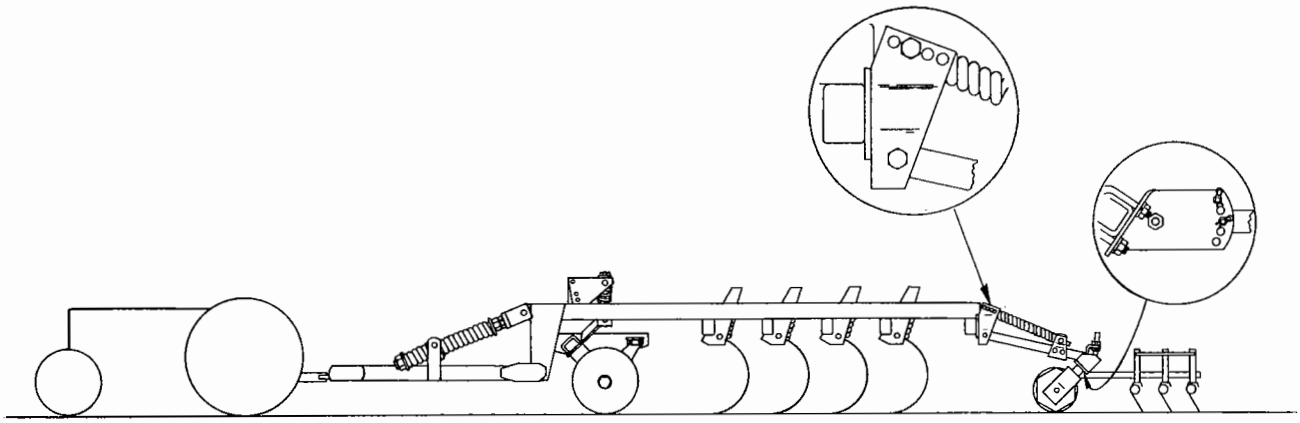
To change tire on center section pull the 5/8NC X 4" bolt on the wheel spindle and push the hub and spindle back into the walking beam for clearance to remove the wheel and tire.

HITCH PIN

Use the proper size hitch pin with a means for holding it in place so it cannot work itself out during transport. The hitch pin should be inspected for cracks before using it it transport your Landsman.

FIELD ADJUSTMENTS

For preliminary setting of the Landsman adjustments: Set the unit on level ground with the disc blades and spring shanks touching the ground. Disc gang adjustment should be in center hole. Adjust the tongue leveling screws to fit the tractor drawbar height. Adjust the leveling screws for each section of rolling reel or other attachment. Rolling reels, reel and tine, and tine harrows should be level front to back.



In some cases it may be necessary to readjust the tongue leveling screws for disc blade clearance in transport. Note: Turn screw in to lower front; Turn screw out to raise front.

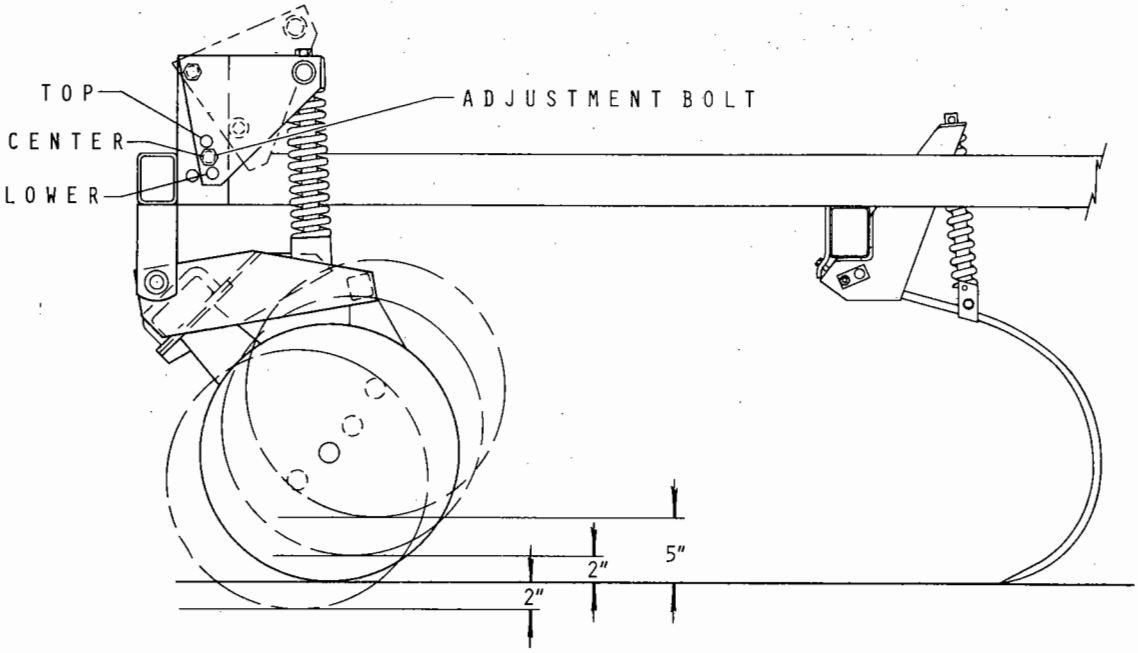
IMPORTANT: MAKE SURE BOTH LEVELING SCREWS ARE ADJUSTED EQUALLY.

To lower wings side to side with the center section, adjust the screw at the base of each wing cylinder. This adjustment must be made in the field at the desired working depth. For complete flexibility of the wing, wing lift cylinders must be fully extended. This will allow wings to flex down about 6° and up 20°.

IMPORTANT: ALWAYS WORK WITH THE WINGS DOWN. MAJOR DAMAGE MAY OCCUR TO SHANKS AND FRAME MEMBERS IF USED WITH THE WINGS UP.

DEPTH OF DISC BLADES

Use center hole for normal work. In this hole the blades are level with the cultivator sweeps. The lower hole will position the disc blades 2 inches below the cultivator sweeps. This hole is used for more disc blade depth or to adjust for disc blade wear.

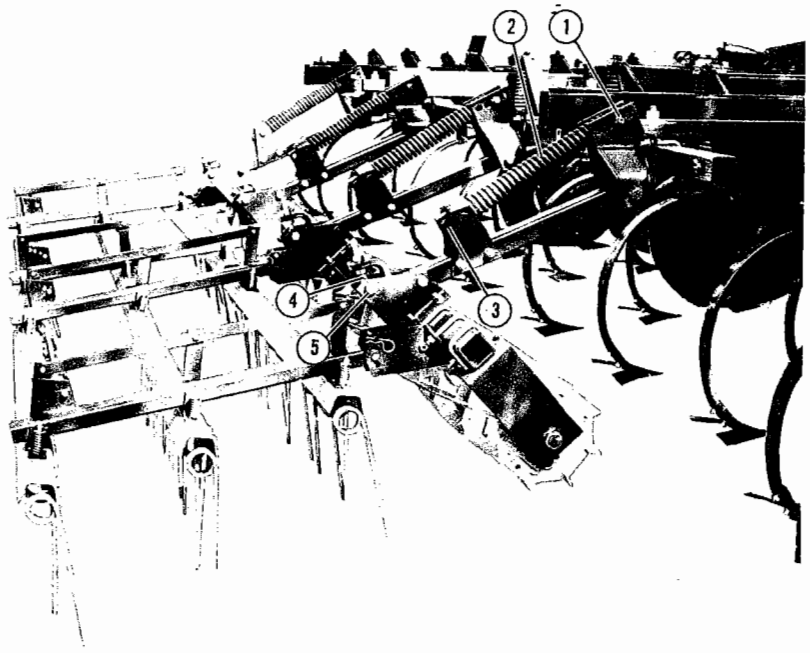


The top hole will raise the disc blades 2 inches above the cultivator sweeps for lighter tillage. NOTE: Disc gang adjustment requires some lifting equipment or jacks. Disc gangs may be moved 5 inches above the cultivator sweeps by removing the adjustment bolt and raising disc gangs until scraper bar hits bottom of main frame. Replace bolt in top hole of the adjustment plates, but outside of frame box.

ADJUSTMENT OF ATTACHMENTS - ROLLING BASKET AND TINE OR 4-ROW TINE

1. Height of the assembly may be adjusted by changing the spring guide at the four holes in the beam mounting bracket.

2. Increasing or decreasing the down pressure on the attachment is accomplished by moving the U-Clip on the lower end of the spring guide, or by moving the bolt in the four hole adjustment on the beam mounting bracket. See photograph below.

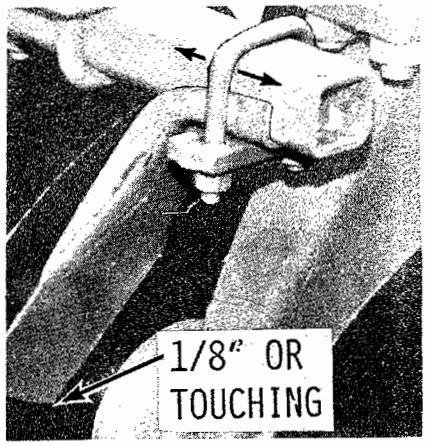


3. To adjust front-to-rear leveling, loosen the two clamp bolts and adjust at threaded rod. Retighten clamp bolts.

4. For more road clearance on the reel and tine attachment, adjust by lifting up on the tines and moving the pin in the fan adjustment plates on the carrier arms. See photo at right on page O11.

SCRAPERS

Each scraper can be adjusted. For most conditions the scraper blade should be positioned 1/8" to touching the surface of the disc blade.



SWEEPS

Ten inch sweeps with 47° stem angles are furnished as standard. 41° sweeps are optional. They are used on K-Tine shanks when working in loose soil.

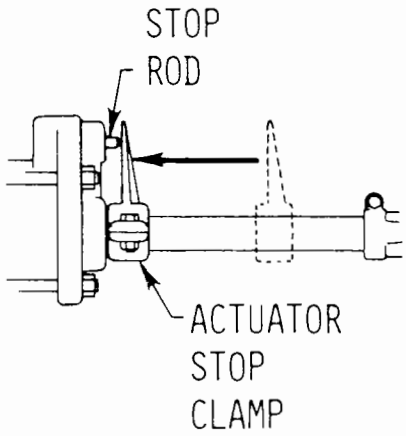
WORKING DEPTH

The working depth of your Landsman is controlled by the remote cylinder control lever of the tractor. The wheels will act as gauge wheels to regulate working depth. For uniform working depth of the soil, carry some weight on the wheels at all times. Maximum working depth is 6 inches. Incorporating chemicals may require high field speeds, but high speed may make it difficult to attain desired depth. Disc gangs, cultivator shanks, and rear attachments are spring protected; however, when working in extremely rocky conditions, field speeds should be reduced.

HYDRAULIC DEPTH CONTROL

Lower the Landsman and plow to the desired working depth. Stop your tractor with disc and sweeps still in the ground, adjust the actuator stop clamp on the left hand master cylinder. This one stop will control both master and slave cylinders. Move stop to the rear to increase working depth or forward to decrease working depth.

⚠ WARNING: LOWER IMPLEMENT TO THE GROUND BEFORE ENTERING FRAMEWORK TO MAKE ADJUSTMENTS.



TURNING IN THE FIELD

Short turns at working depth may result in driving the outside shanks deeper in the ground, causing damage to shanks, disc blades or frame members. If short turns must be executed, raise the Landsman out of the ground and clmplete the turn before engaging the tool for further tilling.

When lifting the Landsman completely out of the ground, it is well to hold the tractor hydraulic valve open for a second or two to resynchronize the slave cylinders thereby keeping both wings level with the center section.

IMPORTANT: 4-WHEEL DRIVE TRACTORS CAUSE SEVERE SIDE STRAIN ON TONGUE AND CLEVIS UNLESS THE DRAWBAR IS FREE TO SWING DURING FIELD OPERATION. DRAWBAR MUST BE PINNED FOR TRANSPORT.

GENERAL INFORMATION

If problems are encountered in the field, and the operator requires aid or a possible remedy for the problem, a special section has been added at the end of the operating section called "Suggested Remedies For Possible Field Problems".

SERVICING

GENERAL MAINTENANCE

All bolts should be checked and tightened after the first half day's operation and periodically thereafter. Torque wheel bolts to 90 - 95 ft. lbs.

Check disc gang tie rod frequently. To tighten, attach six foot pipe over tie rod wrench handle. Tighten nut to 600 ft. lbs. by applying approximately 100 lbs. weight to the end of the six foot pipe.

⚠ CAUTION: BE SURE GANG IS LOCKED WITH A TIE ROD WRENCH ON THE OPPOSITE END BEFORE FORCE IS APPLIED.

LUBRICATION

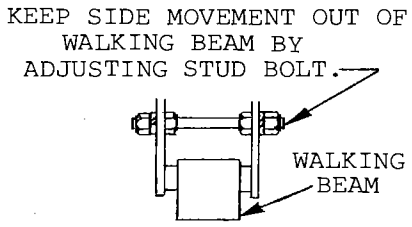
The initial lubricaton of all grease fittings will assure long life and satisfactory performance from the implement. Use a multi-purpose type grease at all grease zerk locations after each 24 hours of operation. Rocker shaft bearing clamps will accept grease more efficiently if the whole unit is lowered to the ground with the weight of the unit removed from the wheels. Other points of lubrication are:rear wing hinges;walking tandem bearings;and wheel hubs. Disc gang bearings should be greased with a high quality multi-purpose type grease after each use and after long periods of storage.

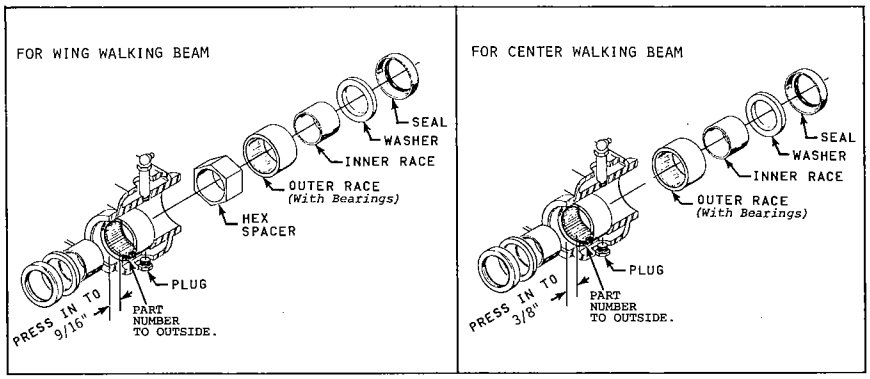
⚠ DANGER: THE WING-MOUNTED SWEEPS AND DISC BLADES CAN CAUSE SERIOUS INJURY. NEVER UNDER ANY CIRCUMSTANCES SHOULD ANYONE BE ALLOWED TO WALK OR WORK UNDER A WING THAT IS IN THE RAISED TRANSPORT POSITION. LOWER IMPLEMENT WINGS TO THE GROUND AND ENTER FRAMEWORK BY STEPPING OVER.

Grease wheel bearings every 24 hours of use. Check for excessive end play each time bearings are greased. Once a year, clean and repack wheel bearings with EP#2 grease. Replace seals each time bearings are removed. Replace any worn or damaged parts. After repacking, replace hub with seal and rear bearings already assembled. Use light oil on seal surface and use extreme care when pushing seal over the spindle. Install outer bearings, flat washer, and slotted nut. Tighten nut while turning hub until there is resistance to rotation. Then back off nut from 1 to 2 slots until hub turns freely without end play. Secure nut with clinched cotter pin.

WALKING BEAM MAINTENANCE

After removing walking beams from wheel arms, remove all old parts.



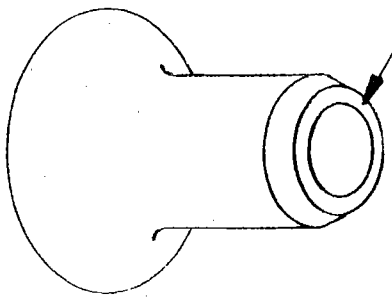


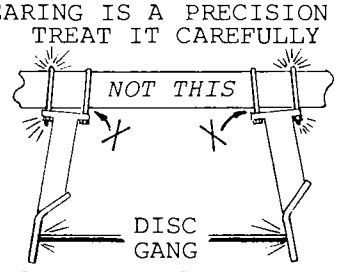
Press in new bearing outer race as shown. Turn housing, add hex spacer (on wing walking beams only) and press second outer race. Next add inner races, flat washers and press in seals. Note: Before inserting beam pin, add oil to the pin and seals. Add grease to the bearings through the zerk on top and reassemble the beam to the wheel arm.

DISC GANGS

DANGER: DISC BLADES ARE VERY SHARP AND HEAVY. TO PREVENT INJURY, USE EXTREME CAUTION WHEN REPLACING OR WORKING AROUND DISC BLADES.

Check disc gang assemblies periodically for worn or damaged parts. When replacing disc blades or broken parts, check all spools, bearings, bolts and tie rods for wear or damage, and replace if needed.

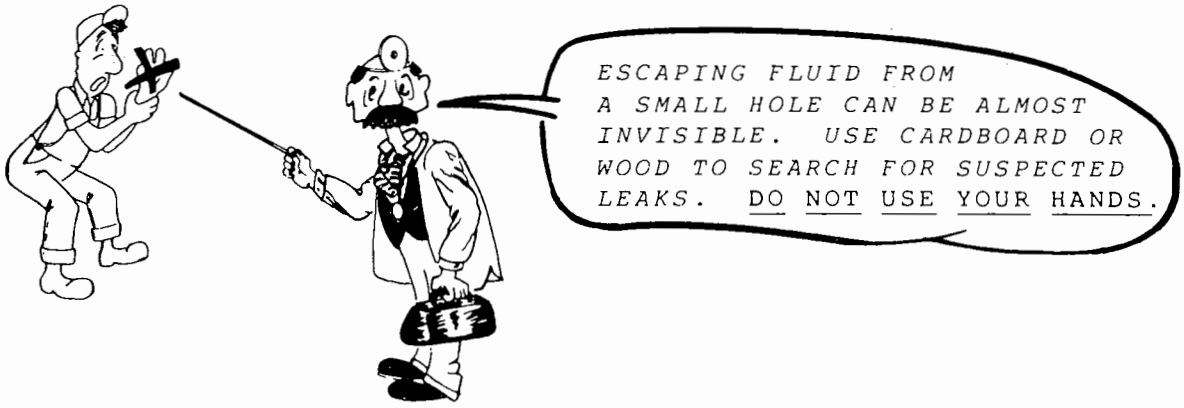




BE SURE THE BEARING ARM FITS FLAT AGAINST THE GANG BEAM BEFORE TIGHTENING THE U-BOLTS.

HYDRAULIC SAFETY

High pressure fluid flow can penetrate skin. If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper treatment is not administered immediately.



If replacing hydraulic hose, use only hose that meets or exceeds 2,500 P.S.I. working pressure.

Before removing any hydraulic parts, always relieve hydraulic pressure by turning off tractor engine and moving tractor control lever(s) back and forth.

Air in the hydraulic system will allow the implement or wings to drop suddenly. Fill the hydraulic system by extending and retracting the cylinders. Hold the control lever open and pause at the end of each stroke of the cycles to bleed the air from the system. Continue the cycles until the cylinders respond with immediate solid actuation.

IMPORTANT: REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER.

STORAGE

Select a level area, lower the wings and set the implement down on blocks to prevent sweeps and disc from settling into the ground, retract the wheel hydraulic cylinders. Coat sweeps, disc blades, and wing lift cylinder rods with rust preventative. Inspect for worn or damaged parts and replace as needed to avoid delays the next season. Check to be sure hydraulic hose couplers are stored on top of the tongue and not left laying on the ground.

REPAIR PARTS

Refer to the assembly section of this book when repairing or replacing parts, and follow the same procedure as used when assembling a new unit. Reverse this procedure for disassembly. The parts section of this book will show a breakdown of assemblies, locations of parts, and part numbers. Krause parts were developed and tested for these units, therefore, it is recommended that Krause replacement parts be used.

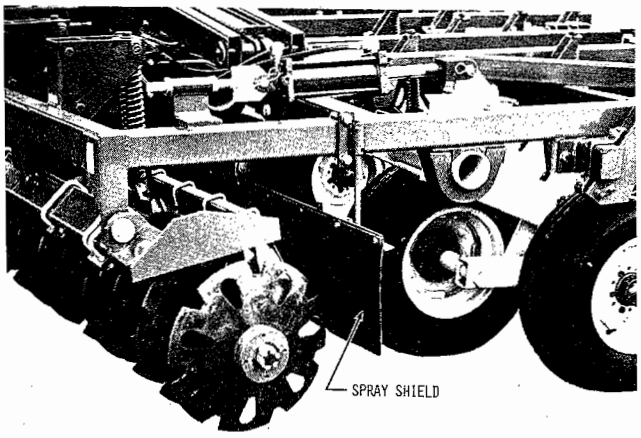
⚠ CAUTION: IF REPLACING HYDRAULIC HOSE, USE ONLY HOSE THAT MEETS OR EXCEEDS 2,500 P.S.I. WORKING PRESSURE.

⚠ CAUTION: REPLACEMENT TIRES FOR THE CENTER SECTION MUST HAVE A MINIMUM CAPACITY OF 3,450 LBS. AT 20 M.P.H. FOR MODELS 3118, 3121, 3124, 3127, 3131 & 3136. MODELS 3112 & 3115 SHOULD HAVE A CAPACITY OF 2,220 LBS. AT 20 M.P.H.

IMPORTANT: REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER.

SPRAY SHIELDS

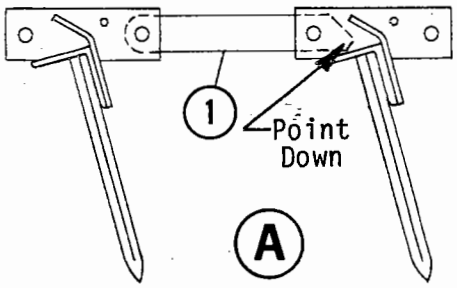
Adjustable spray shields are now available for all models. The shields are to be mounted behind the disc gangs. The shields will keep the soil from the disc blades from interfering with the chemical spray pattern.

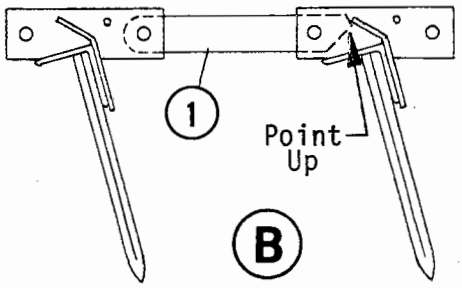


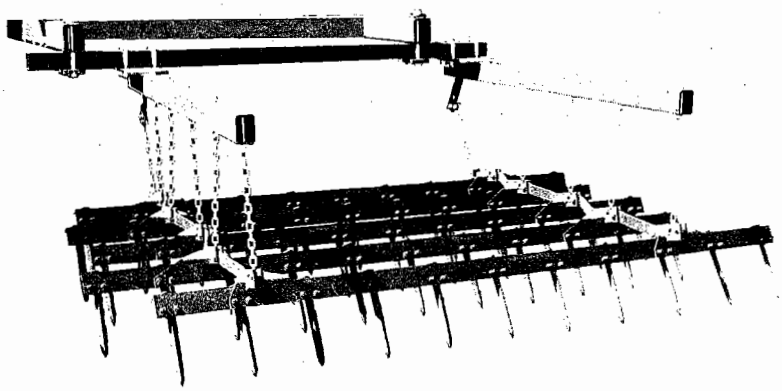
5-ROW SPIKES

Links ① are factory installed in position Ⓐ which will hold the spikes at approximately 25 degrees from vertical position.

Links in position Ⓑ will hold the spikes at approximately a 45 degree angle.







SPRING SHANK REPAIR

Check shanks periodically for loose bolts and nuts, at this time check for broken springs.

To replace a broken spring, first attach a (Part # 4122-0-14) Winch Bracket to the upper sweep bolt, attach a chain or cable winch to this bracket and around the cultivator frame. Pull up on shank until roll pin is free. See Figure 1.

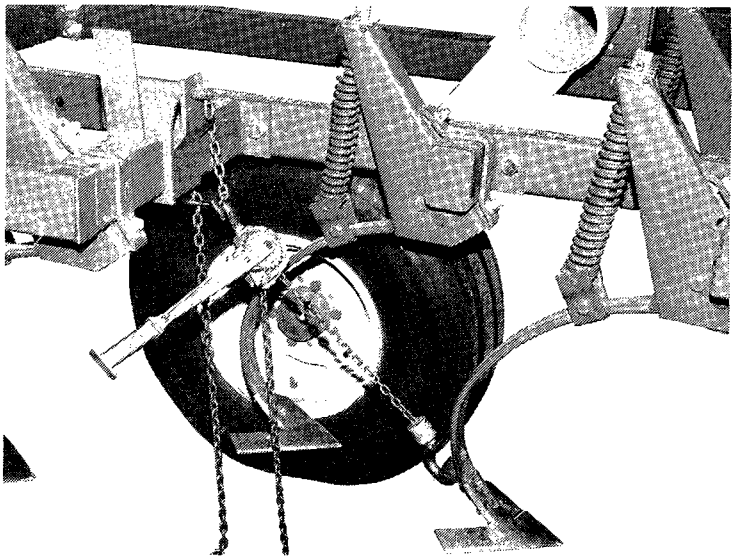


FIGURE 1 ▶

Remove roll pin, lower shank and replace broken spring. See Figure 2.

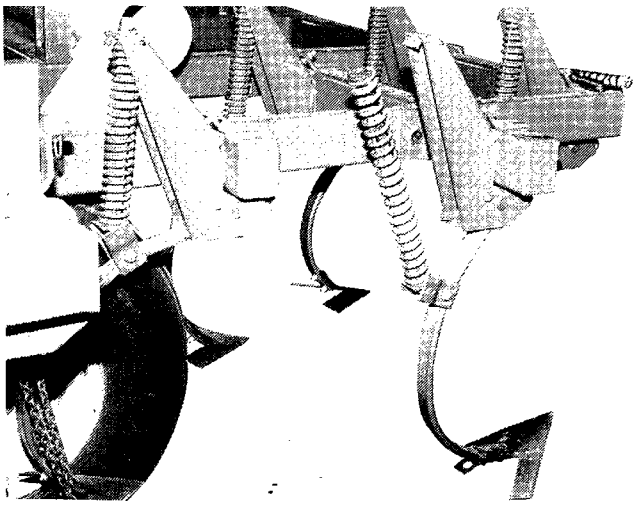


FIGURE 2 ▶

Guide spring rod through slot in the mounting channel with a screwdriver. See Figure 3.

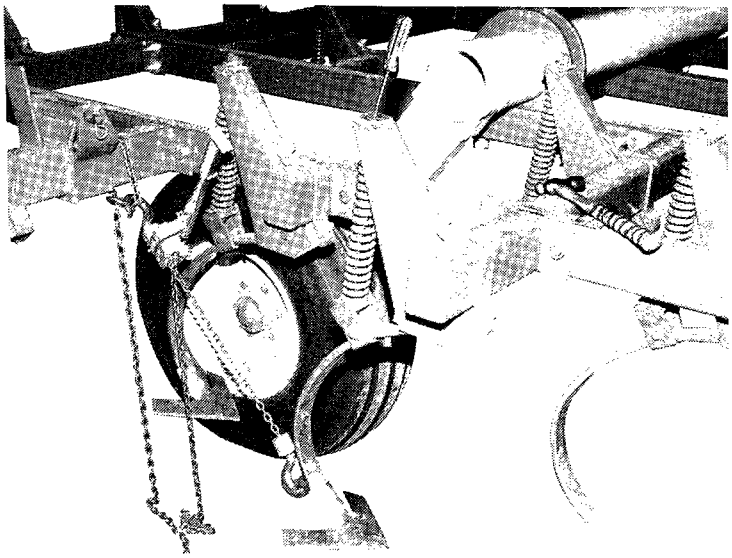


FIGURE 3 ▶

Replace square washer and roll pin. Remove the winch and the 4122-0-14 winch bracket; store bracket on a spring shock clamp bolt.

POSSIBLE REMEDIES FOR FIELD PROBLEMS

PROBLEM	POSSIBLE CAUSES	POSSIBLE REMEDY
Leaving Center Ridge	*Excessive Speed*	Reduce Speed
	Front Of Unit Not Level	Adjust Tongue
	Disc Too Close in Center	Spread Apart. Reduce Disc Size 20" to 18." More Down Pressure On Rolling Reel Or Tines
	Center Cultivator Shank Missing	Replace
Furrow On Outside	*Outside of Wing too Low*	Readjust At Cylinder To Level Wing
	Some Cultivator Shanks Out Of Place Or Missing	Readjust Position or Replace
	Wing Wheels Out Of Phase With Center Wheels	Rephase
Outside To Shallow	*Outside of Wing too High*	Readjust At Cylinder To Level Wing
	Wing Will Not Flex Down	Wing Lift Cylinder Not Completely Extended
	Wing Wheels Out of Phase With Center Wheels	Rephase
Not Level Front To Back With Uneven Sweep Penetration	*Tongue Not Adjusted Properly*	Readjust Tongue Levleing
	Not Using Wheels For Gauge	Use Wheels To Gauge Depth And Adjust Tongue With Unit In Working Position

Center Section Not Level, Side to Side	*Uneven Tire PSI*	Check Tire PSI Inflate to 36 PSI
	Tire Not Same Size	Replace With Same Size and Ply Tire
Plugging (Disc)	*Wet Conditions*	Allow To Dry If Possible
	Worn Or Improper Adjustment Of Scraper Blade	Readjust Scraper
Plugging (Shanks)	*Wet Condtiions*	Allow To Dry If Possible
	Straw Is Dragging	Work Deeper
	Shanks Positioned Wrong	Recheck Shank Spacing
Plugging (Rolling Reel Tine)	*Wet Conditions*	Allow To Dry If Possible
	Front Reel Running Deeper Than Rear Reel	Readjust Level Front To Rear
	Reel Not Turning	Check Bearing;Rock,or Trash Lodged In Reel
	Front Row Tines Too Low	Readjust Front To Rear Leveling
Excessive Ridges	*Loose Sweep Bolts*	Tighten Bolts Or Replace if Missing
	Improper Shank Spacing Or Wrong Position	Check Placement Page And Relocate Shanks
	Bent Or Lost Sweep	Replace Sweep
	Frame Not Level	Check Front To Back Level And Side To Side Level, See Operating Instructions
	Bent Shank	Straighten Or Replace
	Sweeps With Old Residue Will Cause Soil Build-Up And Prevent Necessary Scouring For Even Flow	Remove Trash And Residue. Clean Landsman After Operation. Use Rust Preventative Before Storage.

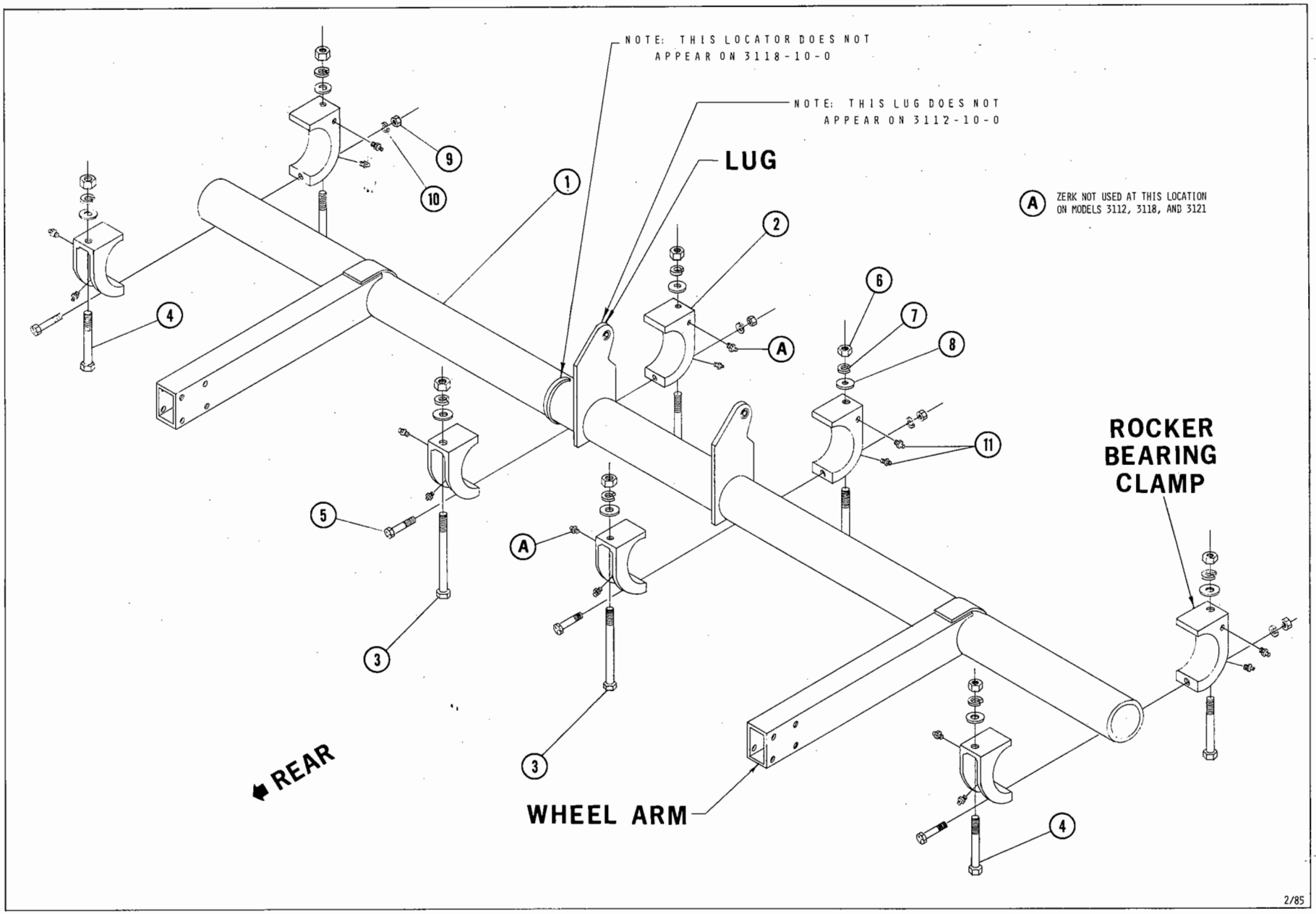
Implement Will Not Penetrate	*Incorrect Setting On Actuator Stop on Wheel Control Cylinder*	Readjust Actuator Stop For Depth Desired
	Ground Too Hard	Wait For Better Conditions
IMPORTANT: DO NOT REMOVE SHANKS OR WORK WITH WINGS UP.	*Disc Blade Dull*	Replace or Sharpen
	Sweeps Have Wrong Angle	Use Correct Stem Angle See Page O12
	Excessive Field Speed	Slow Down
Disc Gang Does Not Revolve	*Obstruction In Disc Gang*	Check for Rocks, Mud, Roots, Etc.
	Scrapers	Adjusted Too Tight Against Disc Blade
	Seized Bearing	Replace
	Plugging At Bearing Arm	Try Removing Scraper Blade At This Location
Disc Have Excessive Wobble	*Tie Rod Nut Loose*	Retorque Nut on Tie Rod To 600 Ft. Lbs.
Wheels Have Excessive Wobble	*Loose Wheel Bolts*	Immediately Stop And Torque Wheel Bolts To 90 - 95 Ft. Lbs.
	Loose Spindle Nut	Tighten Nut Until Tight Then Back Off One Slot
	Walking Beam Loose	Readjust Stud Between Walking Beam and Wheel Arm
		Replace Bearings In Walking Beam

Inadequate Transport Clearance	*Low Tractor Drawbar Height*	Tractor With Unusually Low Drawbar, Adjust Tongue Leveling Screws For Clearance
Wings Will Not Raise To Field Position	*Plugged Restrictor*	Relieve Hydraulic Pressure. Remove Restrictor From Rod End And Check The Orifice For Foreign Material. Replace The Restrictor.
	Insufficient Hydraulic Pressure	Check Tractor Hydraulic System
Wings Will Not Lower To Field Position	*Plugged Restrictor*	See Above
	Wings Are Locked With Pins	Remove Both Wing Pins
	Hose Couplers Not Locked In Tractor Disconnect Socket	Check Hydraulic Hose Connector
Implement Will Not Lower To Field Position	*Road Locks Engaged*	Disengage Both Road Locks
	Hose Couplers Not Locked In Tractor Disconnect Socket	Check Hydraulic Hose Connector
	Oil Not Flowing Through System	Plugged Line Of Cylinder Port. Depth Control Poppet Valve Not Open
	Actuator Stop Clamp In Wrong Position	Readjust Actuator Stop Clamp
Settling Or Continually Going Deeper While Working	*Hydraulic System*	Reset Actuator Stop. Replace Poppet Valve. Check For Leaks In System. Install New Cylinder Seal Kit In Faulty Cylinder. See Cylinder Page In Parts Section.

PARTS SECTION

THE FOLLOWING ILLUSTRATED PARTS SECTION HAS BEEN COMPILED TO REFLECT PART NUMBERS REQUIRED TO ORDER PARTS, AND TO SUPPORT THE ASSEMBLY SECTION FOR DIMENSIONS AND DESCRIPTIONS OF ALL PARTS, BOLTS, PINS, ETC. THE OPERATOR CAN ALSO IDENTIFY PART NAMES TO CLARIFY PROPER OPERATIONAL STEPS.

NOTES


NOTE: THIS LOCATOR DOES NOT APPEAR ON 3118-10-0
NOTE: THIS LUG DOES NOT APPEAR ON 3112-10-0
LUG
A ZERK NOT USED AT THIS LOCATION ON MODELS 3112, 3118, AND 3121
ROCKER BEARING CLAMP
REAR
WHEEL ARM
1
2
3
4
5
6
7
8
9
10
11
A
2/85

P1

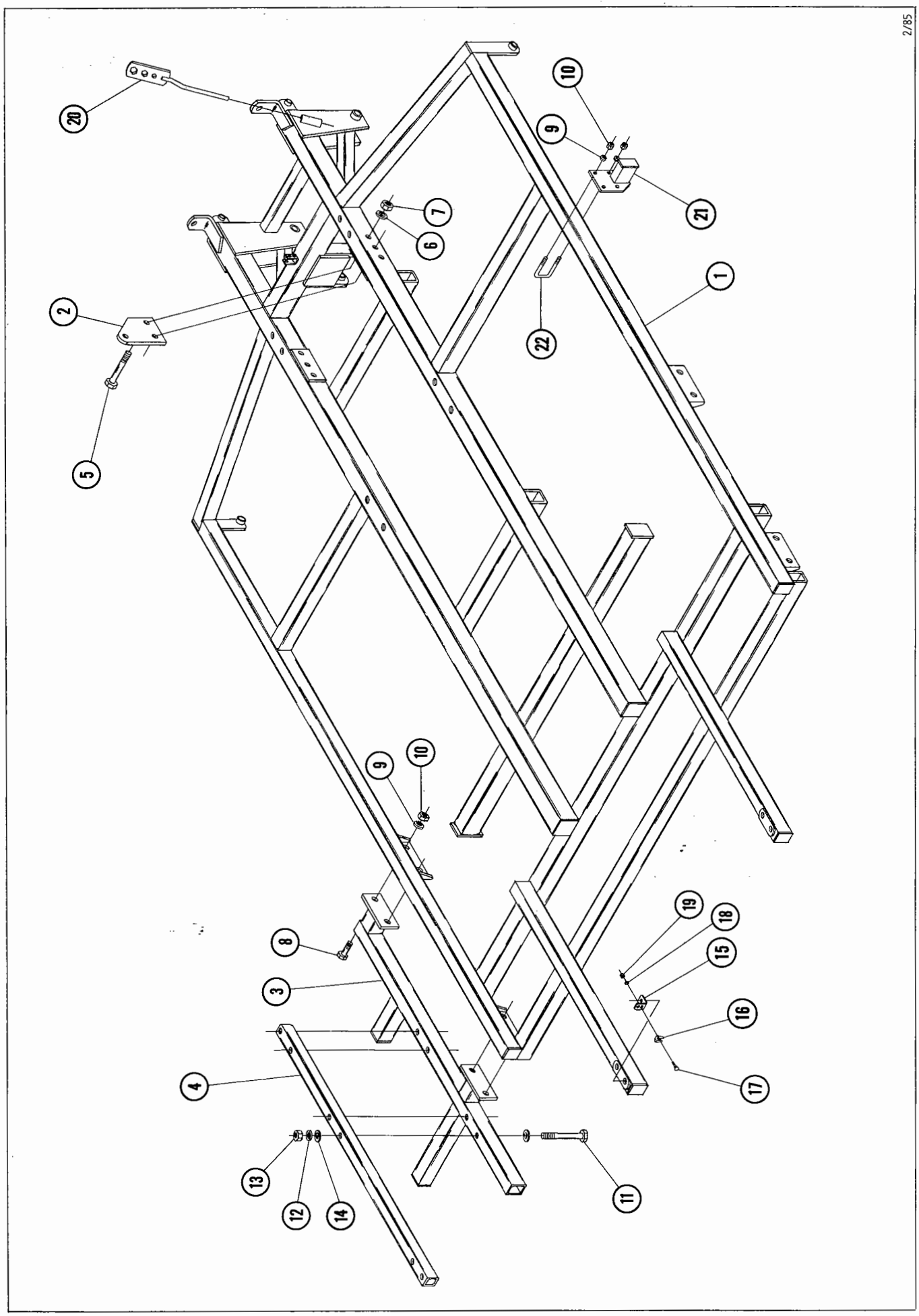
CENTER SECTION ROCKER SHAFT

FOR MODELS - ALL

11/84

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	3112-10-0	Center Rocker Shaft (Model 3112)	1
	3113-22-0	Center Rocker Shaft (Model 3115)	1
	3118-10-0	Center Rocker Shaft (Models 3118 & 3121)	
	3127-22-0A	Center Rocker Shaft (Models 3124, 3127, 3131 –	
		and 3136)	1
2	2145-0-16	Rocker Shaft Clamp Half	8
3	62-258	1NC X 8-1/2" Cap Screw	4
▲4	62-250	1NC X 6-1/2" Cap Screw	4
5	62-195	3/4NC X 2-1/2" GRADE 5 Cap Screw	4
6	63-117	1NC Hex Nut	8
7	64-118	1" STD. Lock Washer	8
8	64-119	1" STD. Flat Washer	8
9	63-112	3/4NC Hex Nut	4
10	64-112	3/4" STD. Lock Washer	4
11	65-101	1/8NPT Zerk	16

▲NOTE: For Models 3112 and 3118 quantity of (8) required.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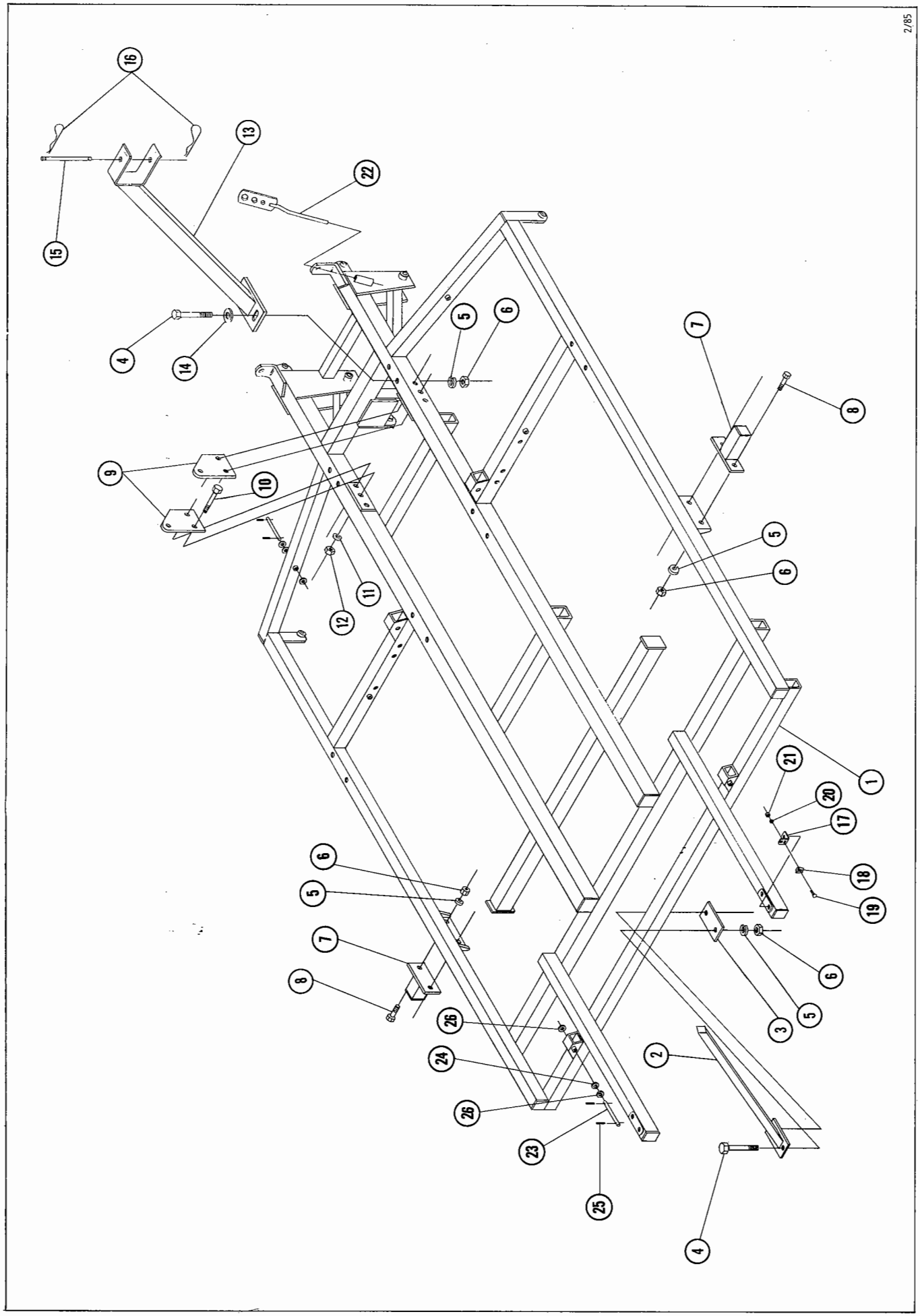
MAIN FRAME

FOR MODELS - 3112 2/85

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	3112-1-0	Main Frame	1
2	3118-0-1	Cylinder Lug	1
3	3112-64-0	3 Shank Extension	2
4	3127-0-19	Brace	2
5	62-251	1NC X 6-1/2" GRADE 5 Cap Screw	2
6	64-118	1" STD. Lock Washer	2
7	63-117	1NC Hex Nut	2
8	62-192	3/4NC X 2" Cap Screw	8
9	64-112	3/4" STD. Lock Washer	16
10	63-112	3/4NC Hex Nut	16
11	62-188	5/8NC X 7-1/2" Cap Screw	8
12	64-109	5/8" STD. Lock Washer	8
13	63-109	5/8NC Hex Nut	8
14	64-110	5/8" STD. Flat Washer	16
15	1067-59-1	Lamp Bracket	1
16	74-144	Socket Lamp Bracket	1
17	62-131	7/16NC X 1" Carriage Bolt	1
18	64-105	7/16" STD. Lock Washer	1
19	63-104	7/16NC Hex Nut	1
20	1740-20-0	Tie Rod Wrench	1
21	3116-5-0	One Shank Extension Weldment	2
22	61-149	3/4" DIA. U-Bolt	4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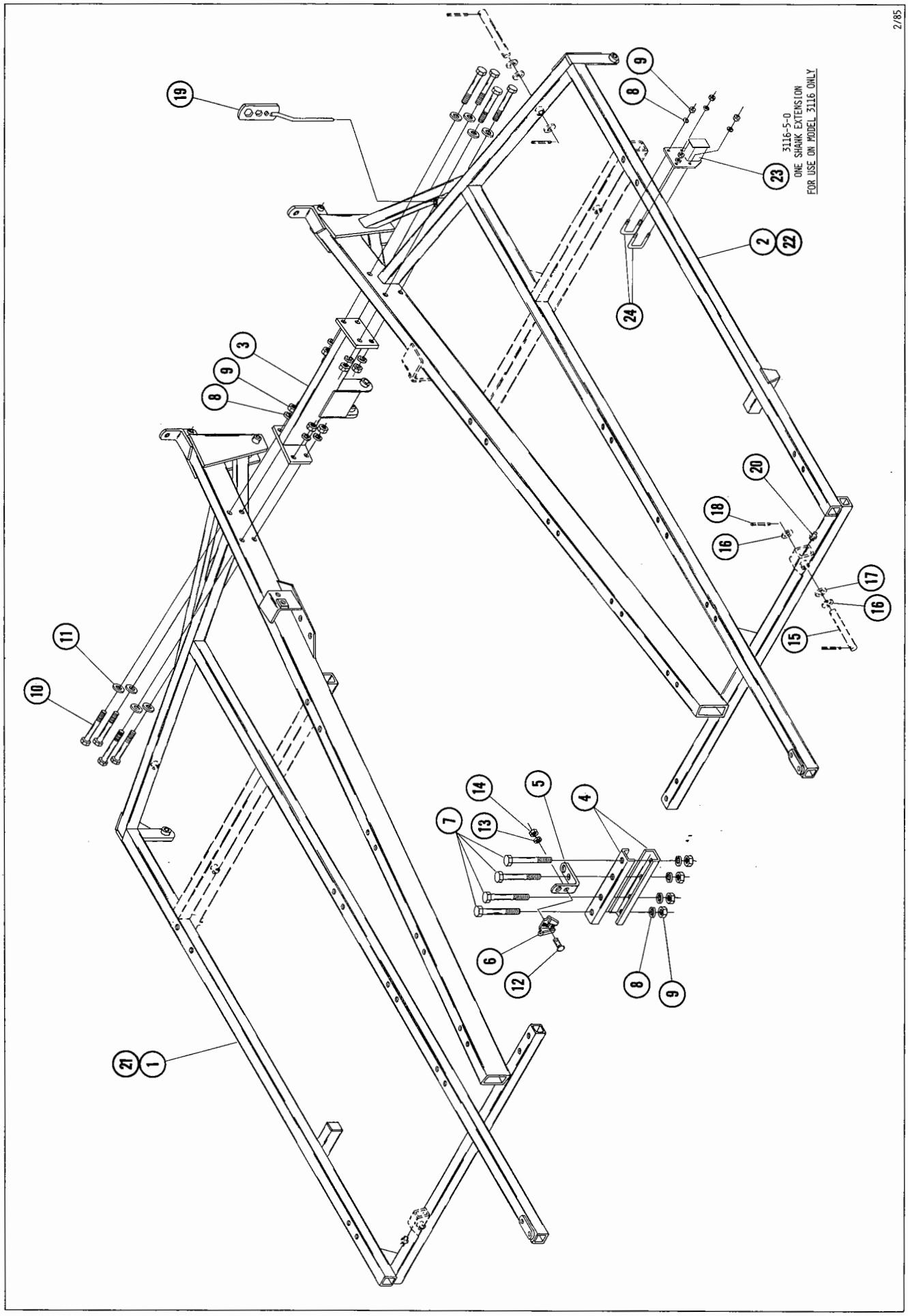
MAIN FRAME

FOR MODELS - 3118, 3121 2/85

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	3118-1-0	Center Frame	1
2	3118-59-0	Wing Stop	2
3	3118-59-2	Bolt Plate	2
4	62-209	3/4NC X 6" Cap Screw	8
5	64-112	3/4" STD. Lock Washer	12
6	63-112	3/4NC Hex Nut	12
7	4122-60-0	One Shank Extension	2
8	62-192	3/4NC X 2" Cap Screw	4
9	3118-0-1	Cylinder Lug	2
10	62-251	1NC X 6-1/2" GRADE 5 Cap Screw	4
11	64-118	1" STD. Lock Washer	4
12	63-117	1NC Hex Nut	4
13	3118-58-0	Wing Lock	2
14	64-113	3/4" STD. Flat Washer	4
15	3844-0-6	Wing Lock Pin	2
16	60-717	#4 Hair Pin Cotter	4
17	1067-59-1	Lamp Bracket	1
18	74-144	Socket Lamp Bracket	1
19	62-131	7/16NC X 1" Carriage Bolt	1
20	64-105	7/16" STD. Lock Washer	1
21	63-104	7/16NC Hex Nut	1
22	1740-20-0	Tie Rod Wrench	1
23	3127-0-12	Wing Hinge Pin	4
24	64-138	Special Washer	4
25	60-617	3/8" DIA. X 2-1/2" Roll Pin	8
26	64-126	1-1/4" STD. Flat Washer	8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3116-5-0
ONE SHANK EXTENSION
FOR USE ON MODEL 3116 ONLY

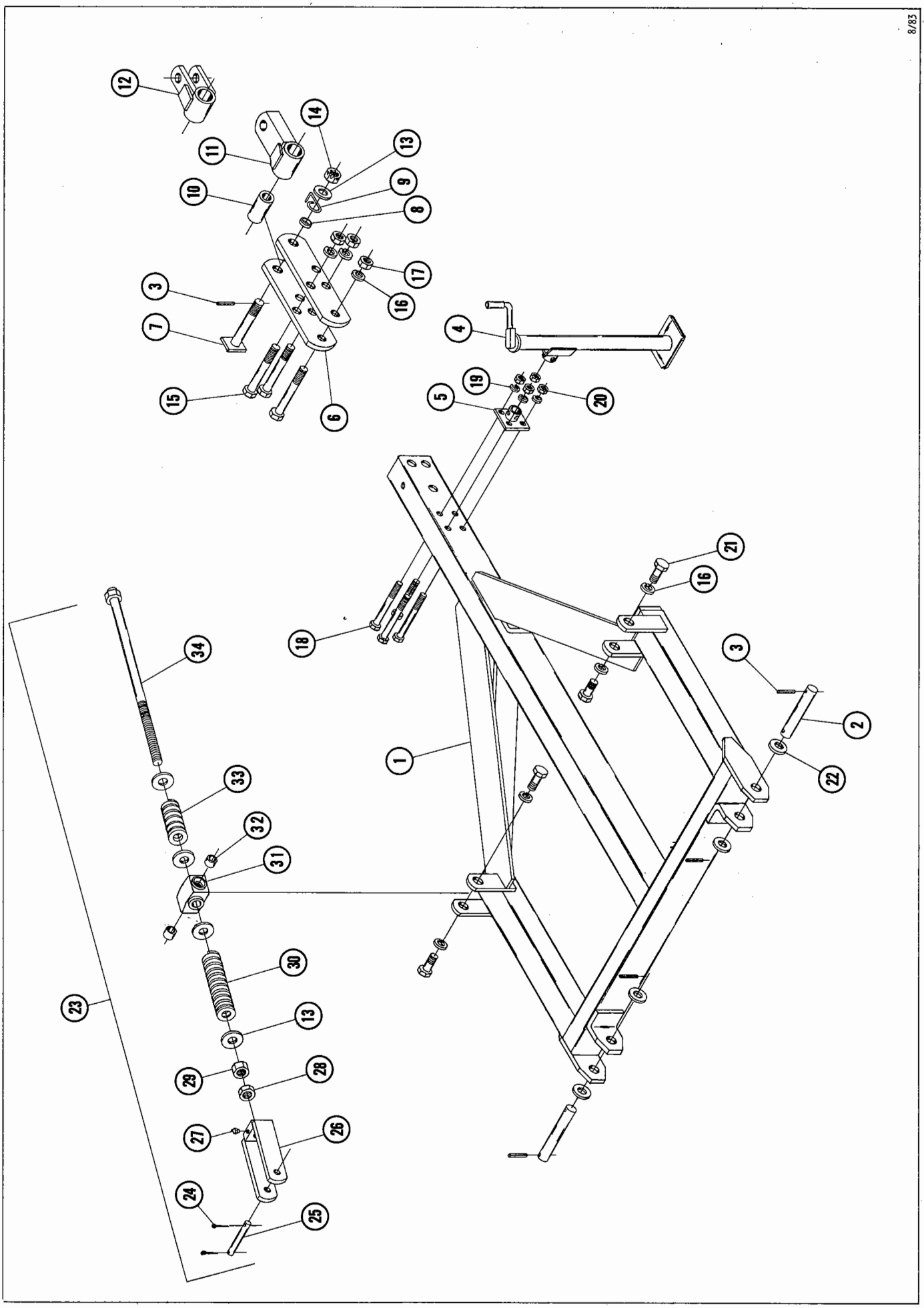
MAIN FRAMES

FOR MODELS - 3115, 3124, 3127, 3131, 3136 11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	3127-1-0	Left Main Frame	1
2	3127-6-0	Right Main Frame	1
3	3127-40-0	Center Gang Hinge	1
4	3127-0-6	Connector	2
5	1067-59-1	Lamp Bracket	1
6	74-144	Socket Lamp Bracket	1
7	62-206	3/4NC X 5-1/2" Cap Screw	4
8	64-112	3/4" STD. Lock Washer	20
9	63-112	3/4NC Hex Nut	20
10	62-204	3/4NC X 5" Cap Screw	8
11	64-113	3/4" STD. Flat Washer	8
12	62-131	7/16NC X 1" Carriage Bolt	1
13	64-105	7/16" STD. Lock Washer	1
14	63-104	7/16NC Hex Nut	1
15	3127-0-12	Wing Hinge Pin	4
16	64-126	1-1/4" STD. Flat Washer	8
17	64-138	Special Washer	4
18	60-617	3/8" DIA. X 2-1/2" Roll Pin	8
19	1740-20-0	Tie Rod Wrench	1
20	65-101	1/8NPT STD. Zerk	2
*21	3113-1-0	Left Main Frame (Model 3115 Only)	1
*22	3113-6-0	Right Main Frame (Model 3115 Only)	1
23	3116-5-0	One Shank Extension (Model 3115 Only)	2
24	61-149	U-Bolt	4

Phantom Lines Part Of Unit

* Phantom Lines Not Part Of Unit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TONGUE & LEVELING SCREW

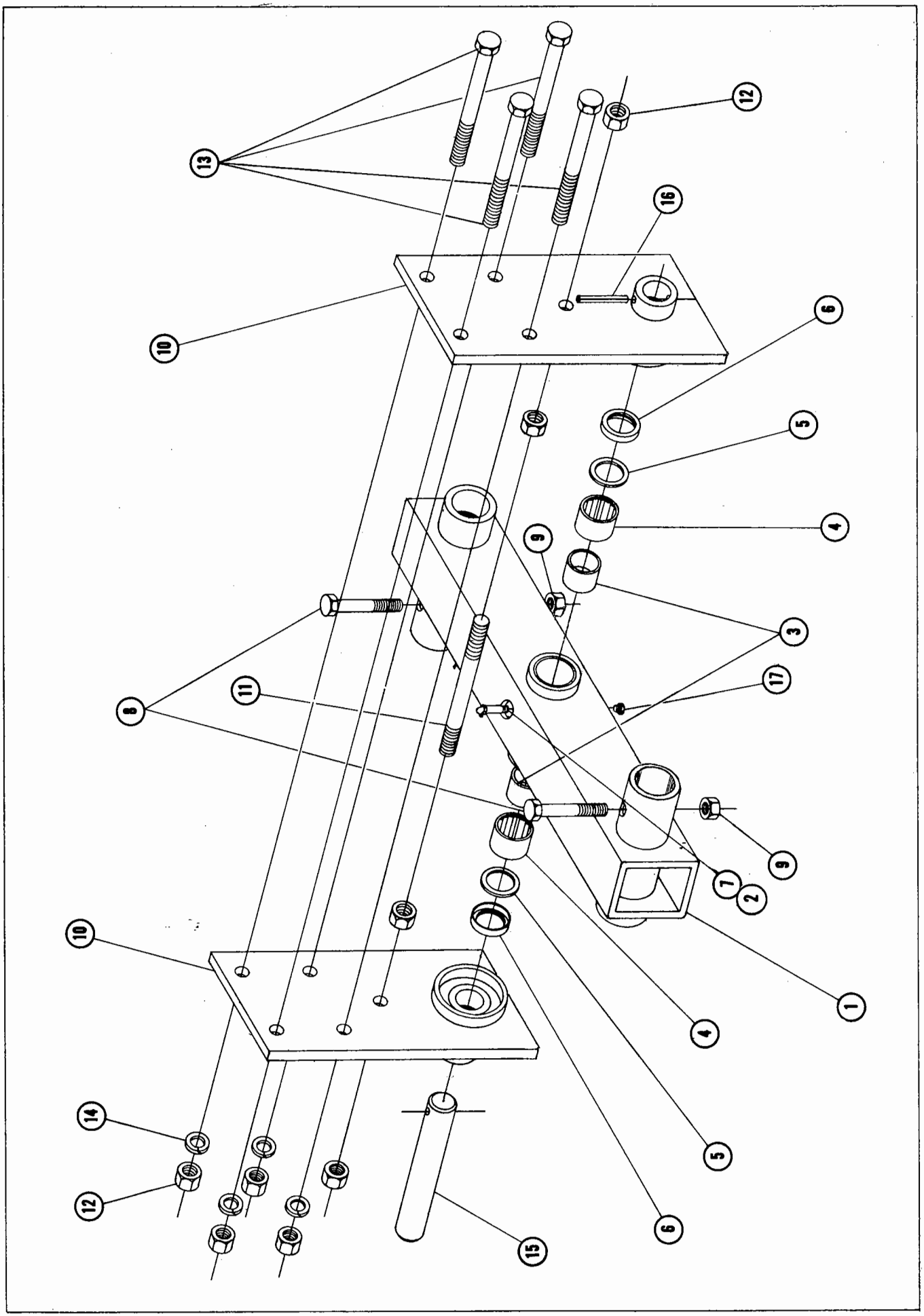
FOR MODELS - ALL

11/84

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	3127-56-0	Tongue Weldment (Models 3112, 3115, 3118, 3121, 3124)	1
	3136-56-0	Tongue Weldment (Models 3127, 3131 & 3136)	1
2	3127-0-11	Tongue Pivot Pin	2
3	60-617	3/8" DIA. X 2-1/2" Roll Pin	5
4	73-100	Tongue Jack	1
5	1480-90-0	Jack Mounting Plate	1
6	3127-0-8	Hitch Strap	2
7	2145-115-0A	Clevis Bolt Weldment	1
8	2145-0-21	Bushing	1
9	76-119	Clevis Spring	1
10	2135-55-1	Hitch Tube	1
11	2135-54-0	Clevis (Crawler Type) 2"DIA. Hole	1
	3113-54-0	Clevis (Crawler Type) 1-1/2"DIA. Hole	1
12	2420-56-0	Clevis Weldment 1-1/2"DIA. Hole	1
	3113-56-0	Clevis Weldment 1-1/4"DIA. Hole	1
*13	64-129	1-1/2" STD. Flat Washer	5
14	63-128	1-1/2NC Slotted Hex Nut	1
15	62-252	1NC X 7" Cap Screw	3
16	64-118	1" STD. Lock Washer	7
17	63-117	1NC Hex Nut	3
18	62-157	1/2NC X 5" Cap Screw	4
19	64-107	1/2" STD. Lock Washer	4
20	63-106	1/2NC Hex Nut	4
21	62-234	1NC X 2" Cap Screw	4
22	64-126	1-1/4" STD. Flat Washer	4
23	2426-35-0	Tongue Adjustment Screw Assembly	2
24	60-706	7/32" DIA. X 2" Cotter Pin	2
25	960-35-2	Pin	1
26	2426-34-0	Adjustment Screw Clevis	1
27	65-101	#1610 1/8NPT Zerk	1
28	63-129	1-1/2NC Jam Nut	1
29	63-127	1-1/2NC Hex Nut	1
30	76-116	Spring	1
31	2426-35-1	Trunnion	1
▲32	2426-0-17	Bushing	2
33	76-121	Spring	1
34	2426-33-0	Adjustment Screw	1

* NOTE: (4) 64-129 Included In Adjustment Screw Assembly

▲ NOTE: Not Part Of Assembly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CENTER SECTION WALKING BEAM

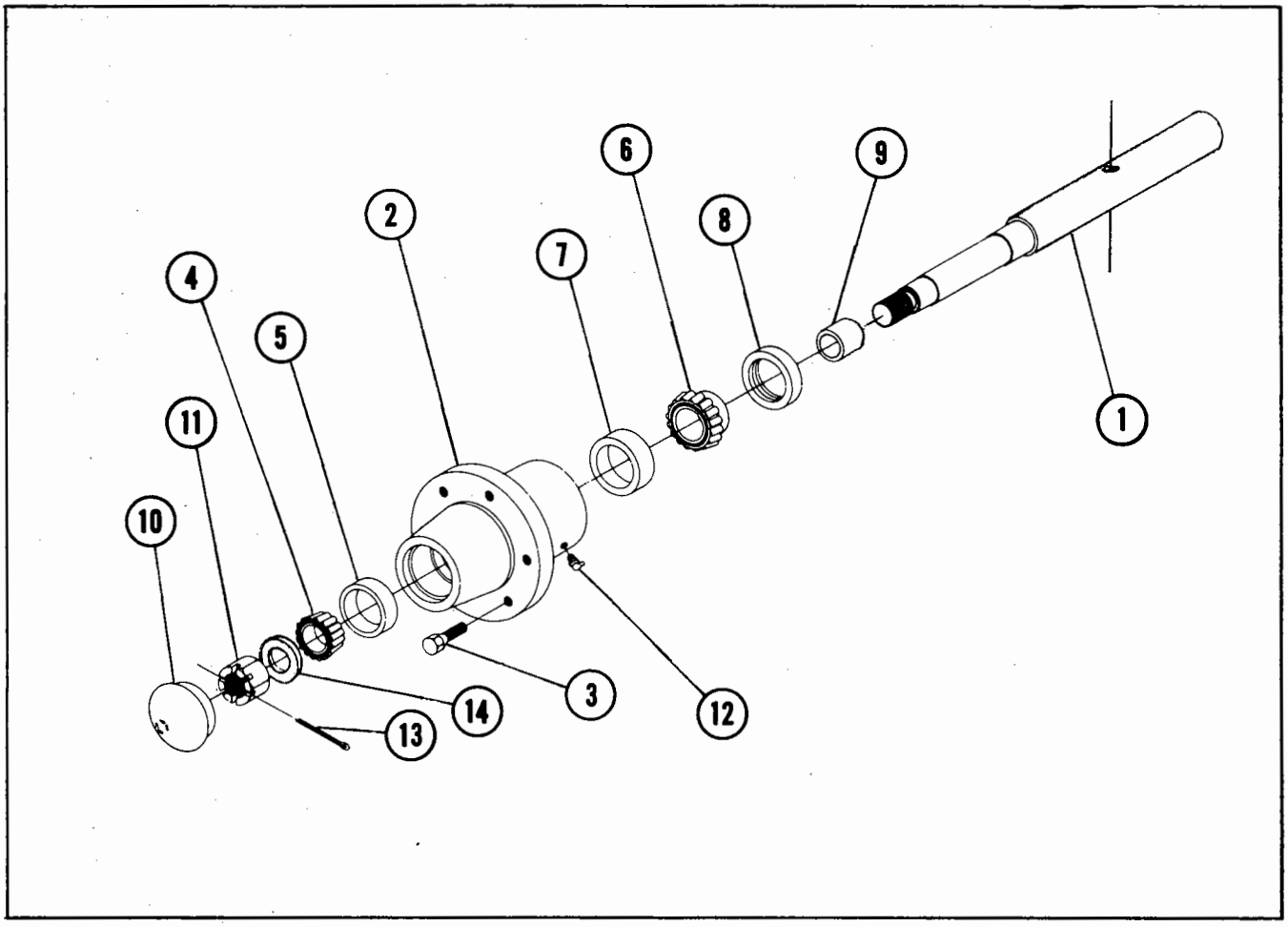
FOR MODELS - 3124, 3127, 3131, 3136

11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	3127-60-0A	Left Walking Beam Assembly	
	3127-65-0A	Right Walking Beam Assembly	
1	3127-62-0	Walking Beam Weldment	1
2	65-107	90° Zerk	1
▲ 3	40-127	Inner Race	2
▲ 4	40-126	Bearing	2
▲ 5	64-134	Washer	2
▲ 6	42-110	Seal	2
7	65-111	Extension (For 65-107)	1
* 8	62-177	5/8NC X 4" Cap Screw	2
* 9	63-110	5/8NC Self Locking Nut	2
10	3127-63-0A	Lug Weldment	2
11	62-296	3/4NC X 7" Stud	1
12	63-112	3/4NC Hex Nut	8
*13	62-209	3/4NC X 6" Cap Screw	4
*14	64-112	3/4" STD. Lock Washer	4
15	4122-54-1	Pin	1
16	60-617	3/8" DIA. X 2-1/2" Roll Pin	1
17	65-108	Relief Valve	1
	3127-64-0	Bearing Repair Kit (▲ Items Included)	

* Not Part Of Assembly.

CENTER SECTION HUB ASSEMBLY



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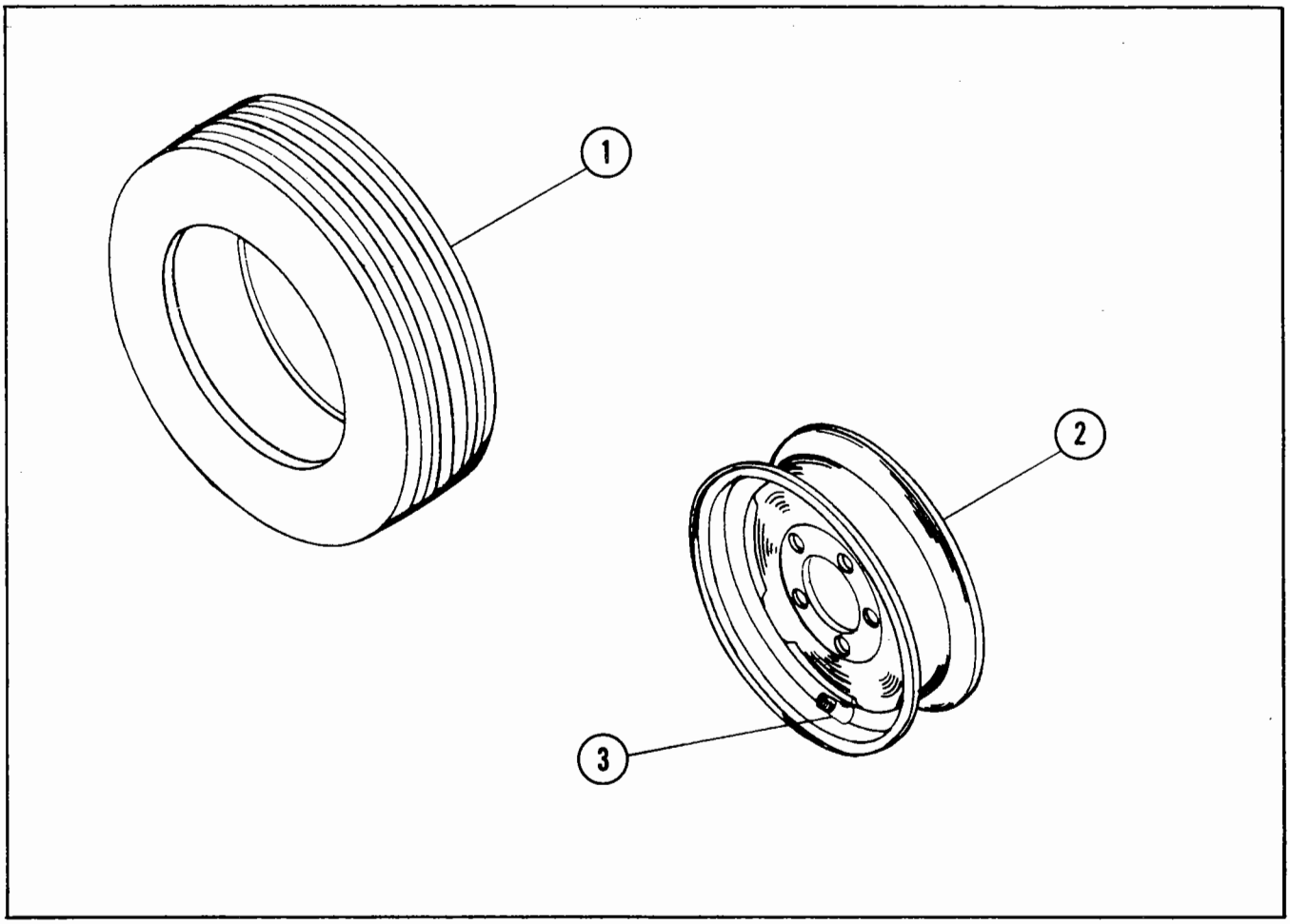
FOR MODELS - 3124, 3127, 3131, 3136

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	3127-70-0	Hub & Axle Assembly	
1	50-105	Spindle	1
2	2135-8-1	Hub Casting	1
3	62-295	Wheel Bolt	6
4	41-112	Front Cone	1
5	41-208	Front Cup	1
6	41-114	Rear Cone	1
7	41-210	Rear Cup	1
8	42-109	Seal	1
9	53-108	Wear Ring	1
10	52-302	Hub Cap	1
11	63-204	1NF Slotted Hex Nut	1
12	65-104	1/4NPT X 67-1/2° Zerk	1
13	60-702	3/16"DIA. x 1-1/2" Cotter Key	1
14	64-120	1" S.A.E. Flat Washer	1

WHEELS & TIRES



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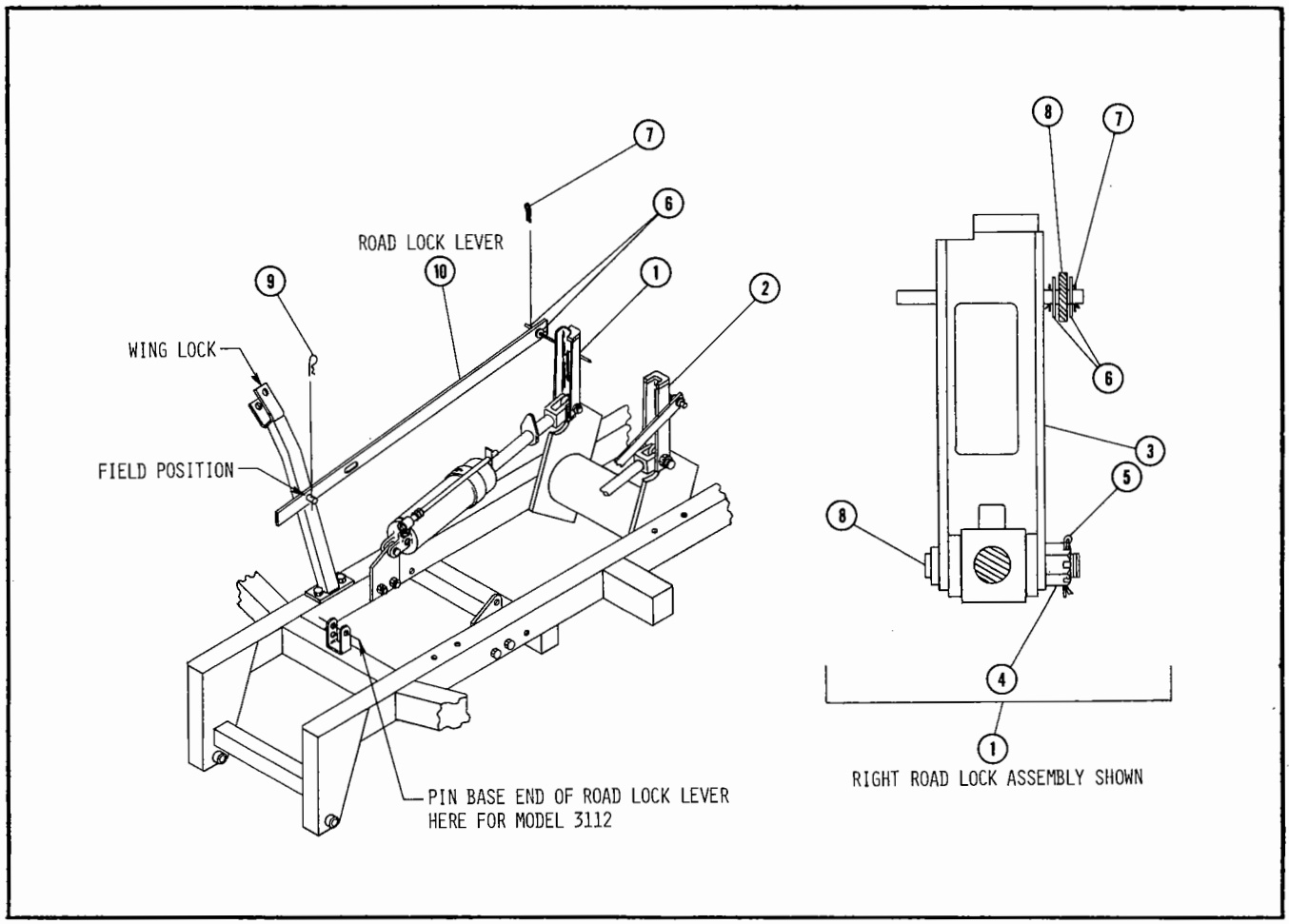
FOR MODELS - ALL

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	1000-95568-0	Wheel Assembly	Specify
1	51-101	Tire 9.5L X 15, 6-Ply	1
2	52-102	Wheel 15" X 8"	1
3	51-107	Valve Stem	1
	1000-10580-0	Wheel Assembly	Specify
1	51-103	Tire 10:00 X 15, 8-Ply	1
2	52-103	Wheel 15" X 10"	1
3	51-107	Valve Stem	1
	1000-11560-0	Wheel Assembly	Specify
1	51-105	Tire 11L X 15, 6-Ply	1
2	52-103	Wheel 15" X 10"	1
3	51-107	Valve Stem	1
	1000-95588-0	Wheel Assembly	Specify
1	51-102	Tire 9.5L X 15, 8-Ply	1
2	52-102	Wheel 15" X 8"	1
3	51-107	Valve Stem	1

ROAD LOCK ASSEMBLY



FOR MODELS - 3112, 3118, 3121

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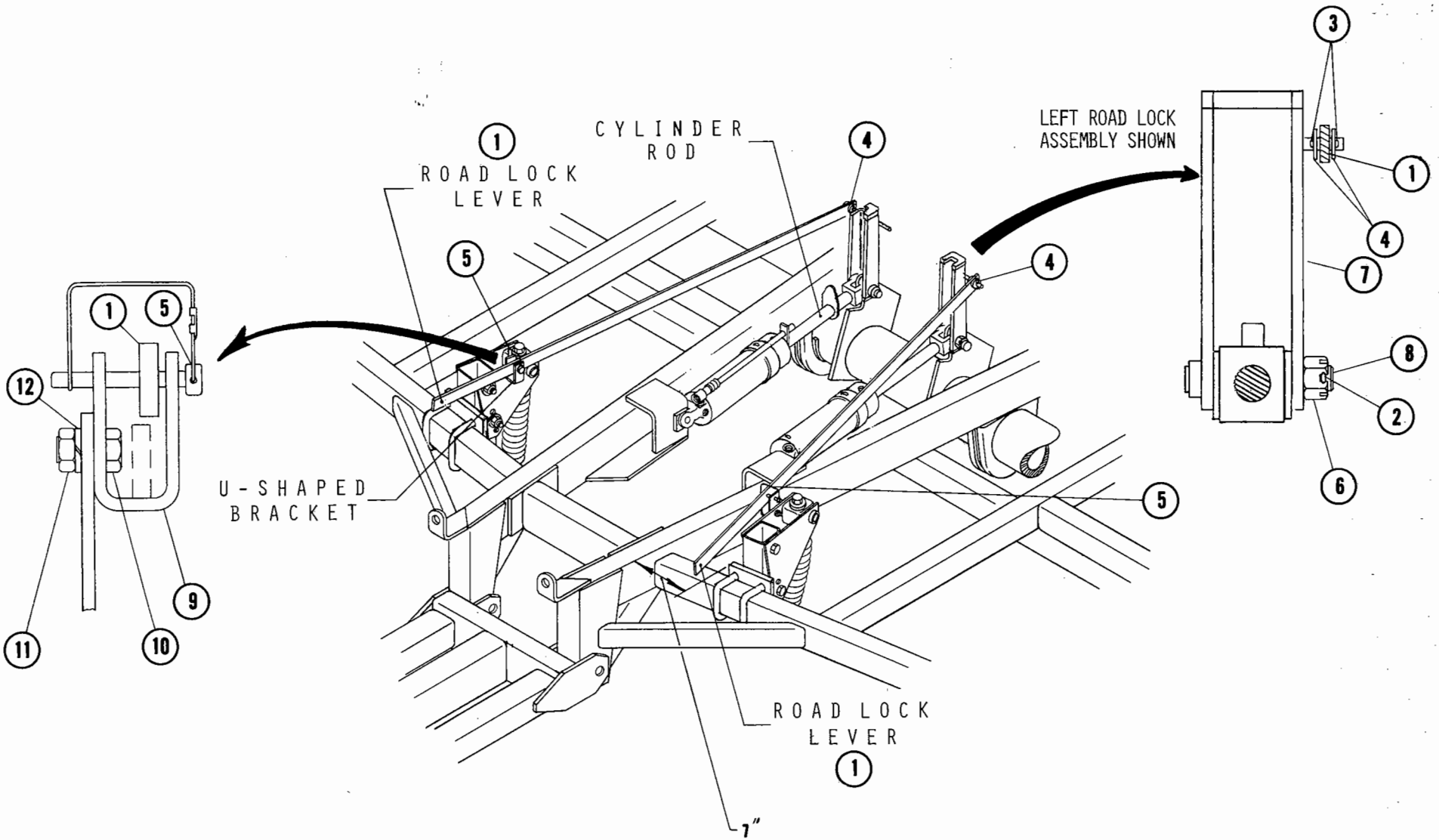
ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	3127-77-0	Right Road Lock Assembly	1
2	3127-78-0	Left Road Lock Assembly	1
3	3127-80-0	Right Road Lock Weldment	1
	3127-81-0	Left Road Lock Weldment	1
4	63-120	1NC Slotted Hex Nut	2
5	60-704	3/16" DIA. X 2" Cotter Pin	2
6	64-108	1/2" STD. Flat Washer	4
7	60-701	5/32" DIA. X 1-1/4" Cotter Pin	4
8	3127-43-0	Road Lock Bolt	2
*9	60-715	#2 Hair Pin Cotter	4
*10	3118-0-18	Road Lock Lever	2

* Not part of road lock assemblies

NOTE: Model 3112 uses (1) 3127-77-0 Right Road Lock Assembly. Models 3118 & 3121 use (1) 3127-77-0 Right Road Lock Assembly and (1) 3127-78-0 Left Road Lock Assembly.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ROAD LOCK ASSEMBLIES

FOR MODELS - 3115, 3124, 3127, 3131, 3136

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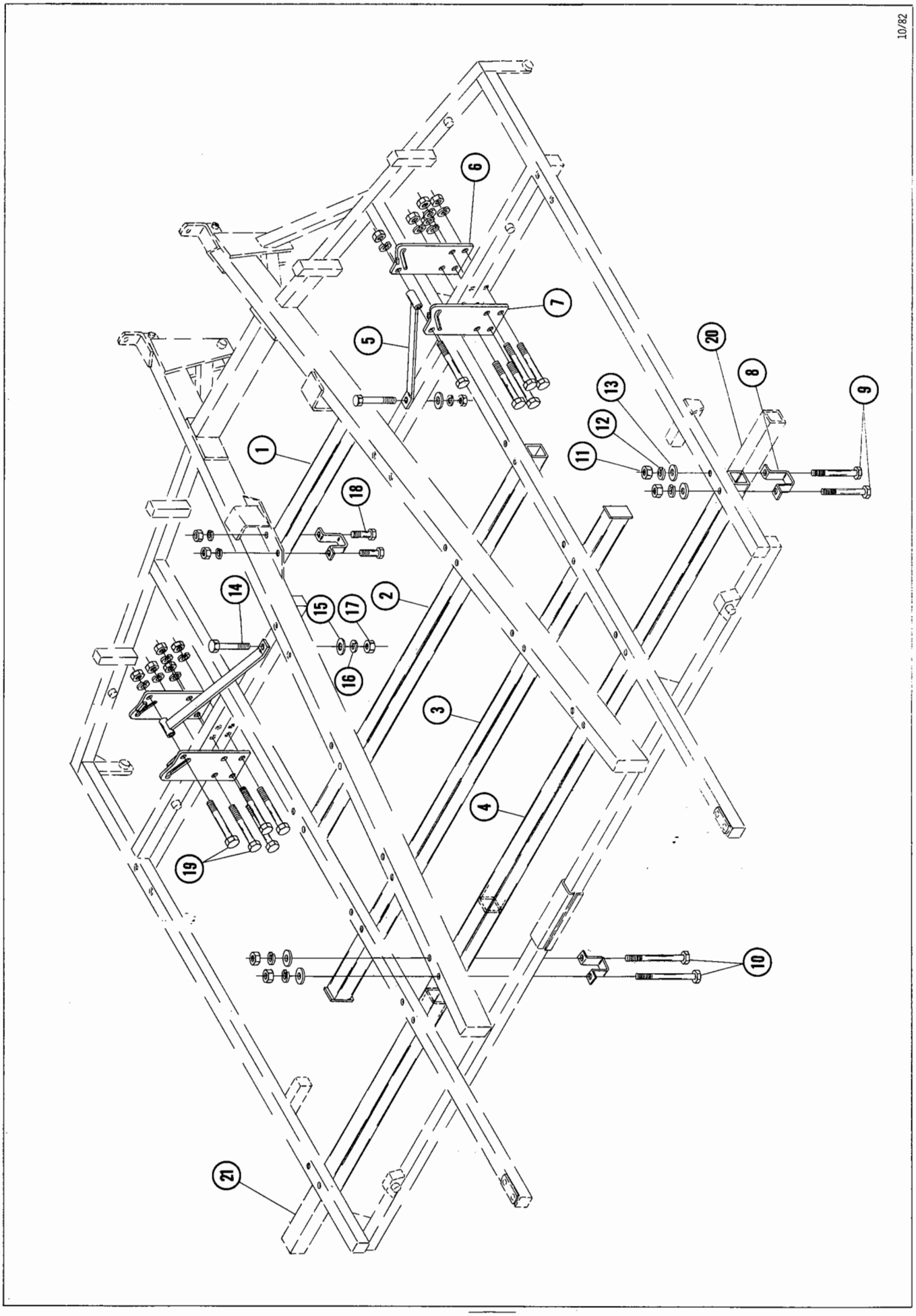
ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	3127-77-0	Right Road Lock Assembly	1
	3127-78-0	Left Road Lock Assembly	1
*1	3127-0-18	Road Lock Lever	2
2	60-704	3/16" DIA. X 2" Cotter Pin	1
3	60-701	5/32" DIA. X 1-1/4" Cotter Pin	2
4	64-108	1/2" STD. Flat Washer	2
*5	60-103	P.T.O. Pin	2
6	63-120	1NC Slotted Hex Nut	1
7	3127-80-0	Right Road Lock Weldment	1
	3127-81-0	Left Road Lock Weldment	1
8	3127-43-0	Road Lock Bolt	1
*9	3127-0-17	Strap Hanger	2
*10	62-134	1/2NC X 1-1/4" Cap Screw	2
*11	63-106	1/2NC Hex Nut	2
*12	64-107	1/2" STD. Lock Washer	2

* Not Part Of Right and Left Road Lock Assemblies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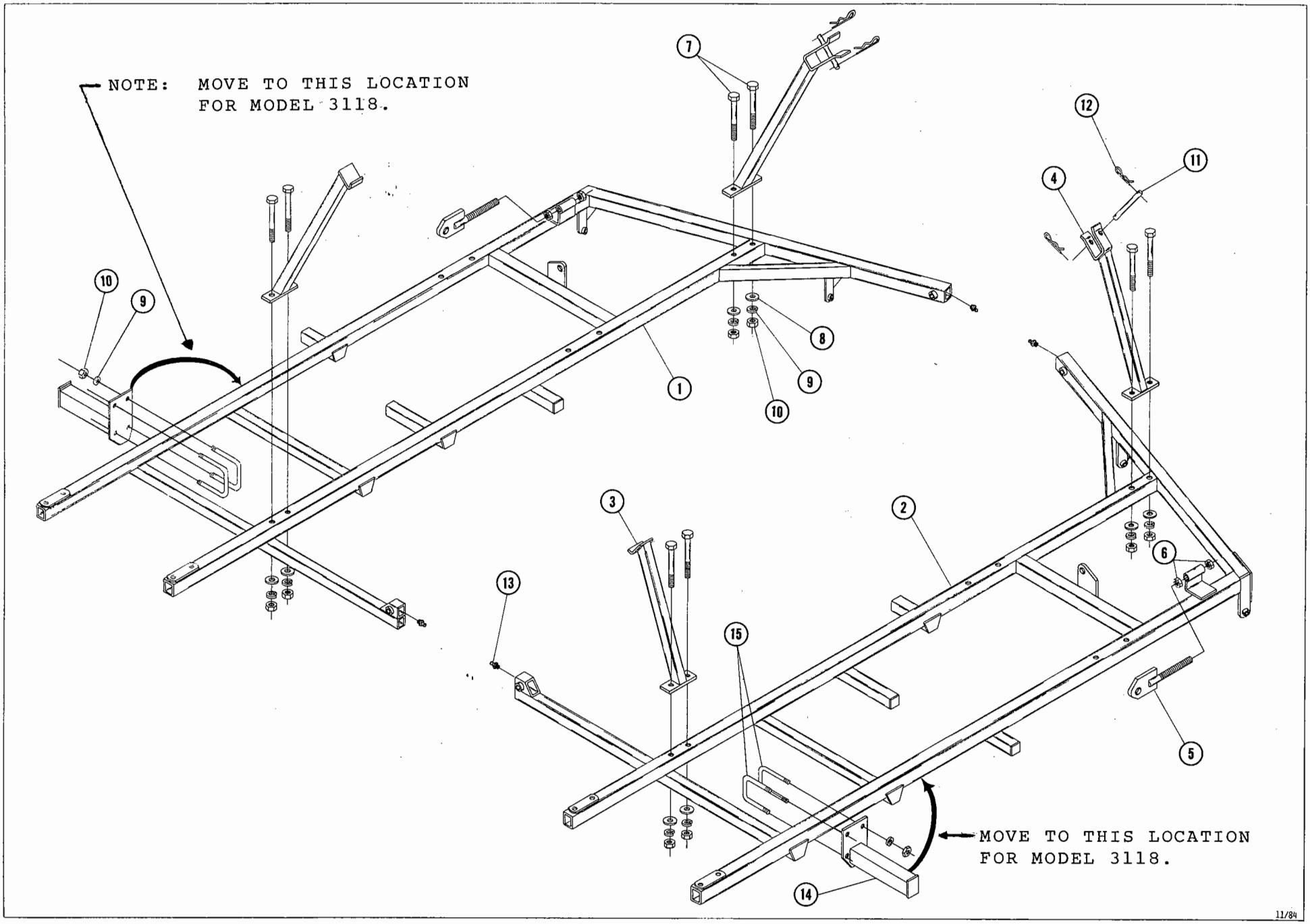
CENTER FRAME BEAMS & WING LIFT LUGS

FOR MODELS - 3115, 3124, 3127, 3131, 3136 11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	3127-0-2	Center Shank Box (23" Long)	1
2	3127-0-3	Cross Box (73" Long)	1
3	3127-29-0	Cross Box Weldment (104-3/8" Long)	1
4	3127-0-5	Cross Box (166" Long)	1
5	3122-35-0	Lift Lug Brace (Model 3124)	1
	3127-35-0	Lift Lug Brace (Models 3127 & 3131)	1
	3136-35-0	Lift Lug Brace (Model 3136)	1
6	3122-42-0	Left Side Plate (Model 3124)	1
	3127-42-0	Left Side Plate (Models 3127 & 3131)	1
	3136-42-0	Left Side Plate (Model 3136)	1
7	3122-41-0	Right Side Plate (Model 3124)	1
	3127-41-0	Right Side Plate (Models 3127 & 3131)	1
	3136-41-0	Right Side Plate (Model 3136)	1
8	3127-0-10A	Box Clamp	16
9	62-182	5/8NC X 5-1/2" Cap Screw	16
10	62-188	5/8NC X 7-1/2" Cap Screw	12
11	63-109	5/8NC Hex Nut	32
12	64-109	5/8" STD. Lock Washer	32
13	64-110	5/8" STD. Flat Washer	28
*14	62-206	3/4NC X 5-1/2" Cap Screw	2
*15	64-113	3/4" STD. Flat Washer	2
*16	64-112	3/4" STD. Lock Washer	12
*17	63-112	3/4NC Hex Nut	12
18	62-168	5/8NC X 2" Cap Screw	4
*19	62-204	3/4NC X 5" Cap Screw	10
20	3115-0-6	Square Tubing (168" Long) Model 3115	1

* Items are used for items 5, 6, 7 only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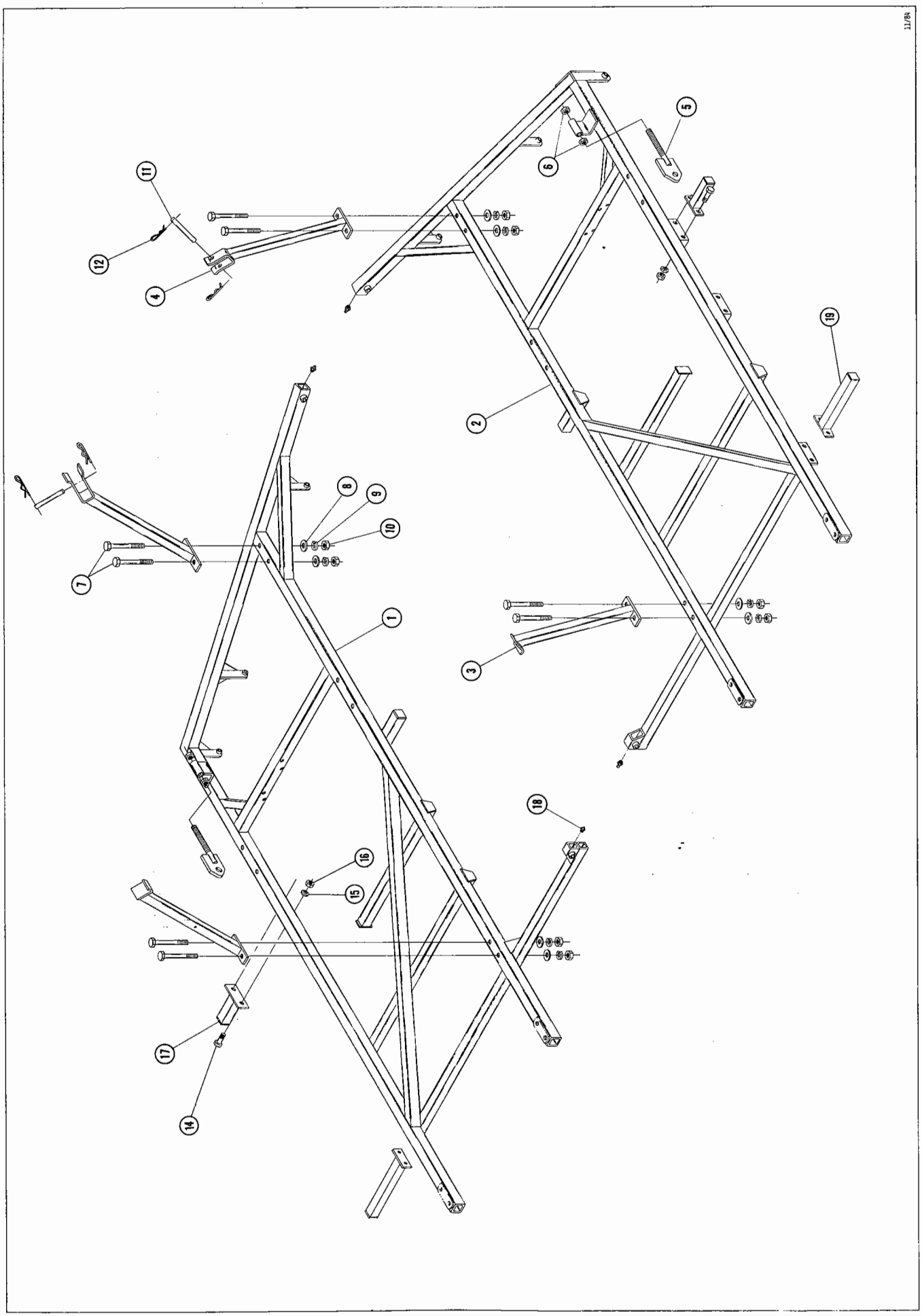
WING FRAMES

FOR MODELS - 3118 and 3124 2/85

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	3122-13-0A	Left Wing Frame	1
2	3122-16-0A	Right Wing Frame	1
3	3127-59-0	Rear Wing Stop (For Model 3124 ONLY)	2
4	3127-58-0	Wing Lock (For Model 3124 ONLY)	2
5	1844-51-0	Cylinder Adjustor	2
6	63-124	1-1/4NC Hex Jam Nut	4
7	62-209	3/4NC X 6" Cap Screw (For Model 3124 ONLY)	8
8	64-113	3/4" STD. Flat Washer	8
9	64-112	3/4" STD. Lock Washer	12
10	63-112	3/4NC Hex Nut	12
11	1505-0-5	Wing Lock Pin (For Model 3124 ONLY)	2
12	60-717	#4 Hair Pin Cotter	4
13	65-101	1/8NPT STD. Zerk	4
14	3118-35-0	Two Shank Extension	2
15	61-149	U-Bolt	4

NOTE: See page P6 for wing locks and wing stops for MODEL 3118.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WING FRAMES

FOR MODELS - 3121, 3127, 3131, 3136

2/85

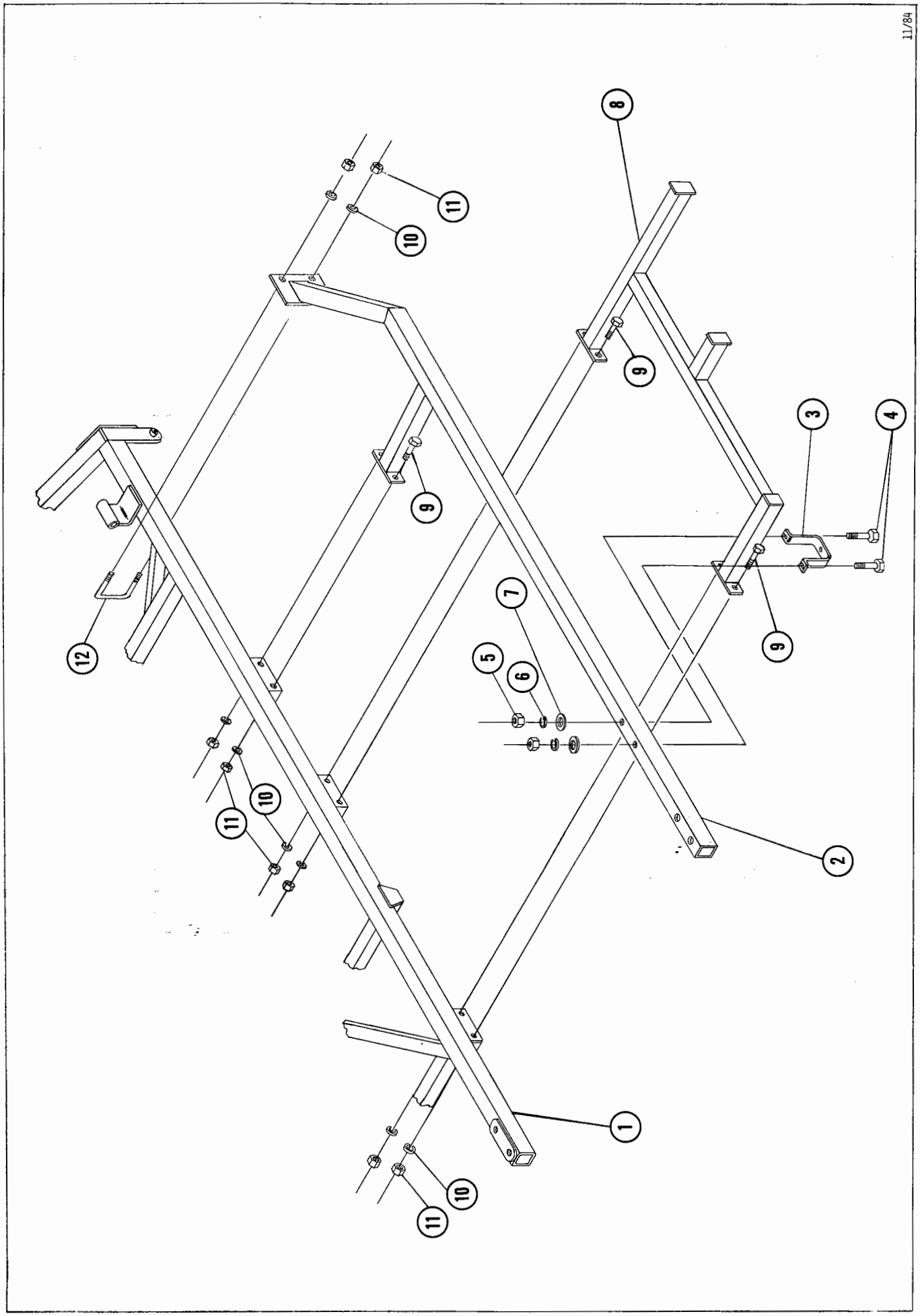
ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	3127-13-0A	Left Wing Frame	1
2	3127-16-0A	Right Wing Frame	1
3	3127-59-0	Rear Wing Stop (MODEL 3127 & 3131)	2
	3136-59-0	Rear Wing Stop (MODEL 3136 ONLY)	2
4	3127-58-0	Wing Lock (MODELS 3127 & 3131)	2
	3136-58-0	Wing Lock (MODEL 3136 ONLY)	2
5	1844-51-0	Cylinder Adjustor	2
6	63-124	1-1/4NC Jam Nut	4
■7	62-209	3/4NC X 6" Cap Screw	8
8	64-113	3/4" STD. Flat Washer	8
9	64-112	3/4" STD. Lock Washer	8
10	63-112	3/4NC Hex Nut	8
11	3844-0-6	Wing Lock Pin	2
12	60-717	#4 Hair Pin Cotter	4
▲14	62-192	3/4NC X 2" Cap Screw	8
▲15	64-112	3/4" STD. Lock Washer	8
▲16	63-112	3/4NC Hex Nut	8
●17	4122-60-0	One Shank Extension	2
18	65-101	1/8NPT STD. Zerk	4
19	4122-64-0	Two Shank Extension (MODEL 3121 ONLY)	2

▲NOTE: 4 Required for Models 3127 and 3136.

NOTE: See page P6 for Wing Locks & Wing Stops For MODEL 3121.

●For Models 3127 and 3136 ONLY

■For Models 3121 and 3127 ONLY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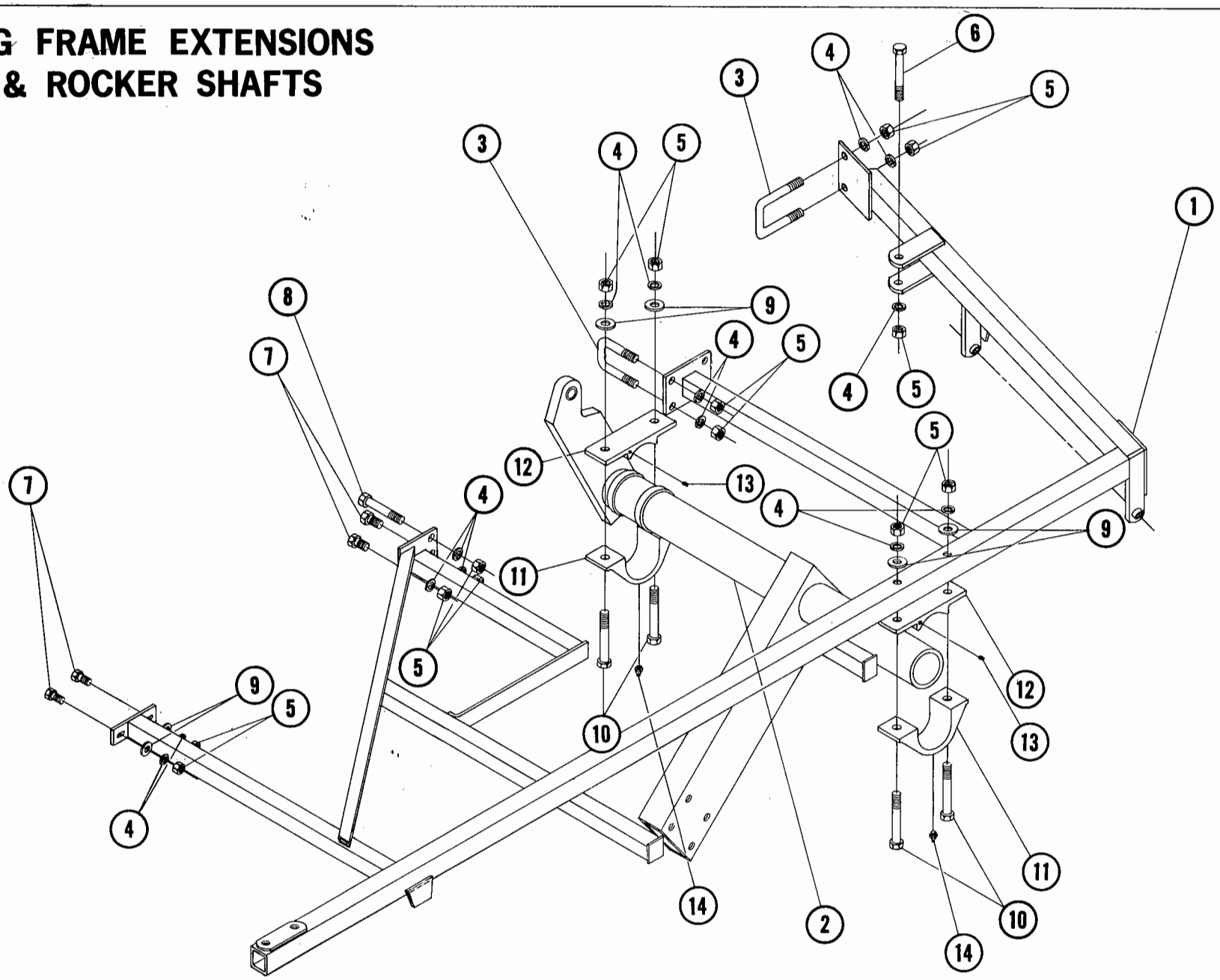
EXTENSION & SUPPORT WELDMENT

FOR MODELS - 3131 ONLY 11/84

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	3127-16-0A	Right Wing Frame	1
2	3131-15-0	Right Wing Support Weldment (SHOWN)	1
	3131-14-0	Left Wing Support Weldment	1
3	3127-0-10A	Box Clamp	2
4	62-185	5/8NC X 6" Cap Screw	4
5	63-109	5/8NC Hex Nut	4
6	64-109	5/8" STD. Lock Washer	4
7	64-110	5/8" STD. Flat Washer	4
8	3131-64-0	Four Shank Extension	2
9	62-192	3/4NC X 2" Cap Screw	12
10	64-112	3/4" STD. Lock Washer	16
11	63-112	3/4NC Hex Nut	16
12	61-149	U-Bolt	2

WING FRAME EXTENSIONS & ROCKER SHAFTS



10/82

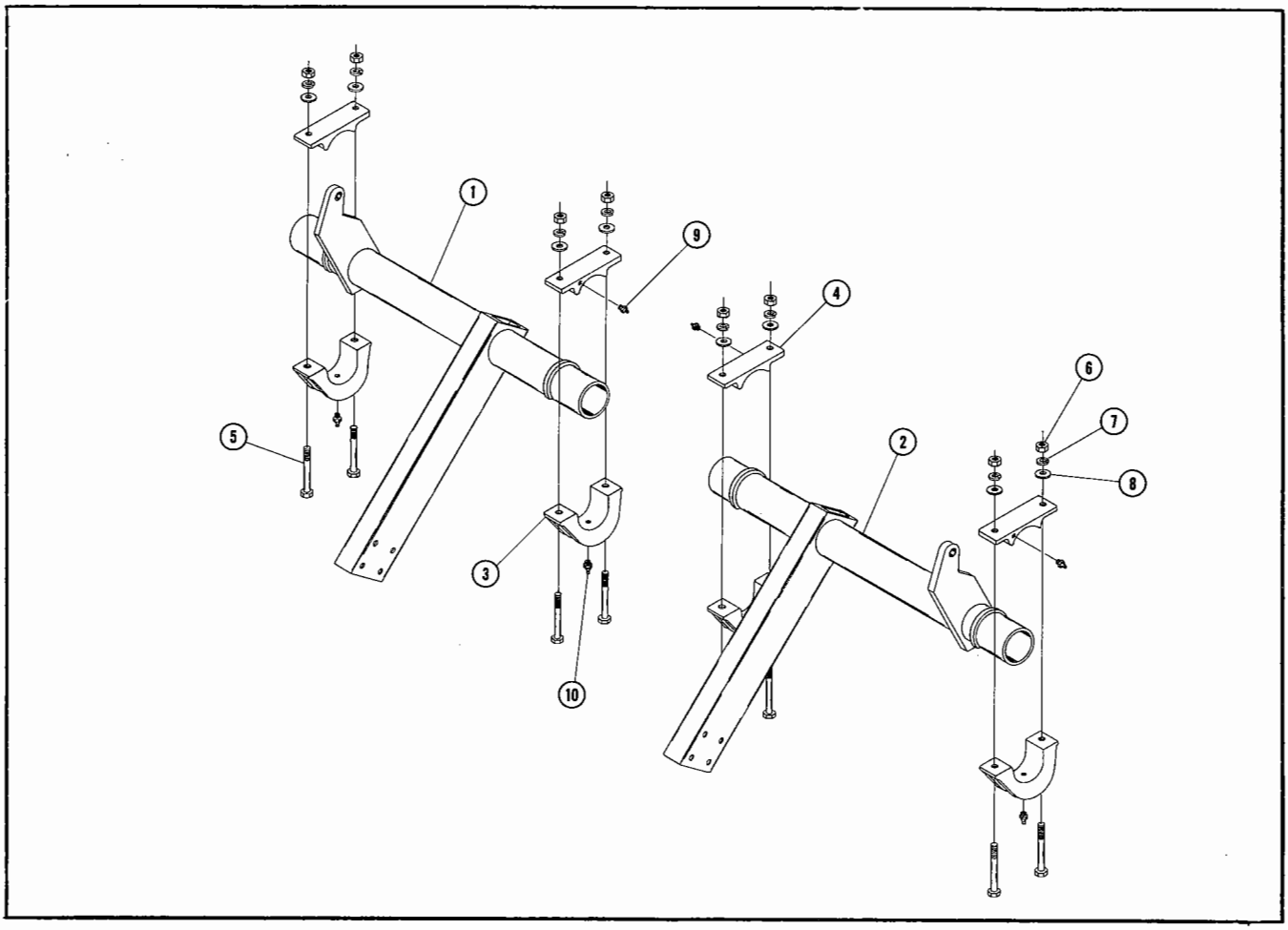
WING FRAME EXTENSIONS & ROCKER SHAFTS

FOR MODELS - 3136

10/82

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	3136-16-0A	Right Wing Frame Extension (Shown)	1
	3136-13-0A	Left Wing Frame Extension (Opposite)	1
2	3136-28-0	Right Wing Extension Rocker Shaft (Shown)	1
	3136-26-0	Left Wing Extension Rocker Shaft (Opposite)	1
3	61-149	U-Bolt	3
4	64-112	3/4" STD. Lock Washer	16
5	63-112	3/4NC Hex Nut	16
6	62-209	3/4NC X 6" Cap Screw	1
7	62-192	3/4NC X 2" Cap Screw	4
8	62-202	3/4NC X 4-1/2" Cap Screw	1
9	64-113	3/4" STD. Flat Washer	6
10	62-209	3/4NC X 6" Cap Screw	4
11	1112-0-7A	Rocker Shaft Clamp	2
12	595-0-11	Rocker Bearing Clamp	2
13	65-101	1/8NPT Zerk	2
14	65-103	1/4NPT Zerk	2

WING ROCKER SHAFTS



FOR MODELS - 3121, 3124, 3127, 3131

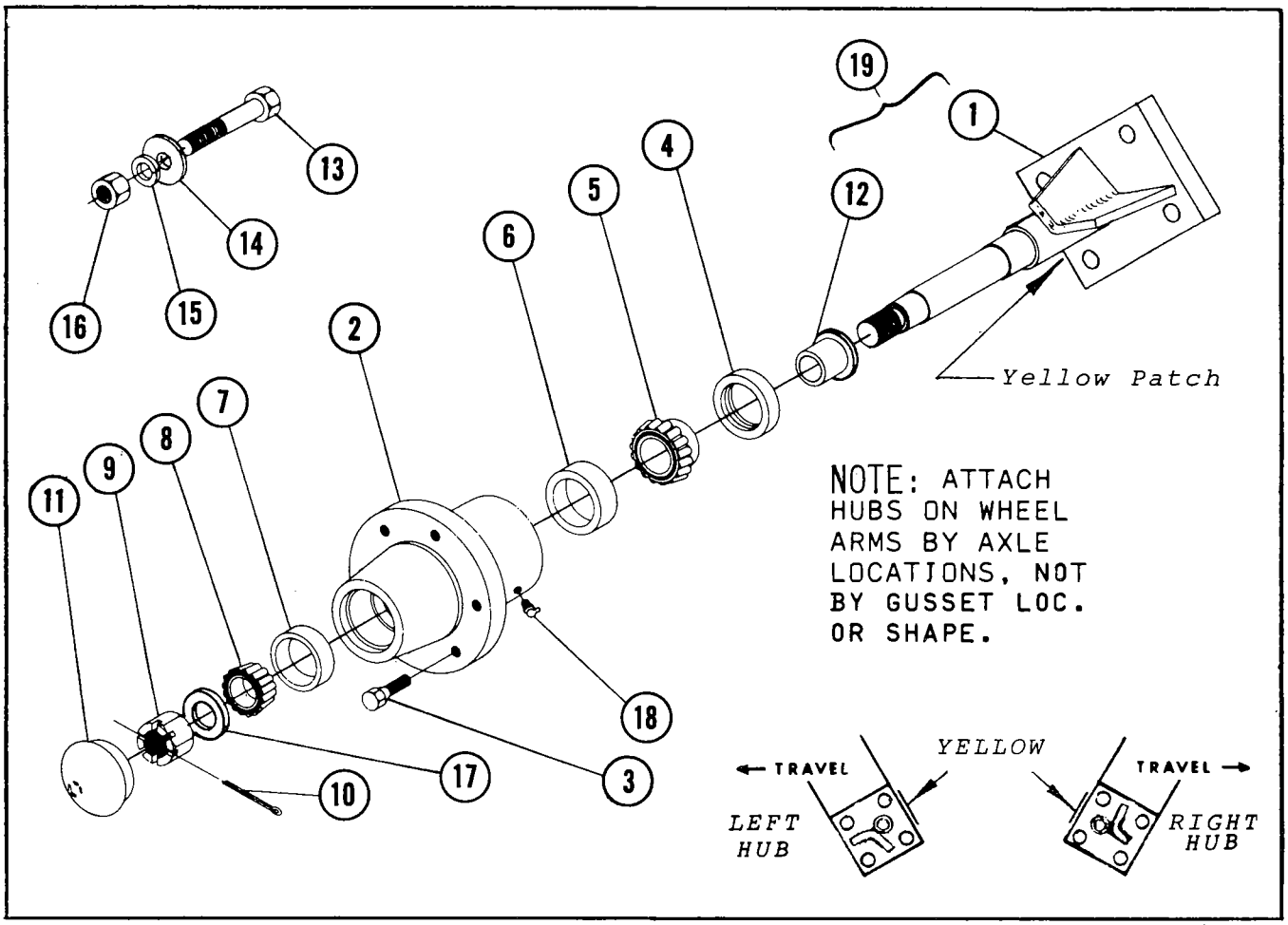
11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
*1	3122-26-0A	Left Wing Rocker Shaft (Single Wheel)	1
+	3127-26-0	Left Wing Rocker Shaft (For Walking Beam)	1
			1
*2	3122-28-0A	Right Wing Rocker Shaft (Single Wheel)	1
+	3127-28-0	Right Wing Rocker Shaft (For Walking Beam)	1
			1
3	1112-0-7A	Rocker Shaft Clamp	4
4	595-0-11	Rocker Bearing Plate	4
5	62-209	3/4NC X 6" Cap Screw	8
6	63-112	3/4NC Hex Nut	8
7	64-112	3/4" STD. Lock Washer	8
8	64-113	3/4" STD. Flat Washer	8
9	65-101	1/8NPT Zerk	4
10	65-103	1/4NPT Zerk	4
			1
			1

* For Model 3124 ONLY

\+ For Models 3127 & 3131 ONLY

WING SECTION SINGLE TIRE HUB ASSEMBLY

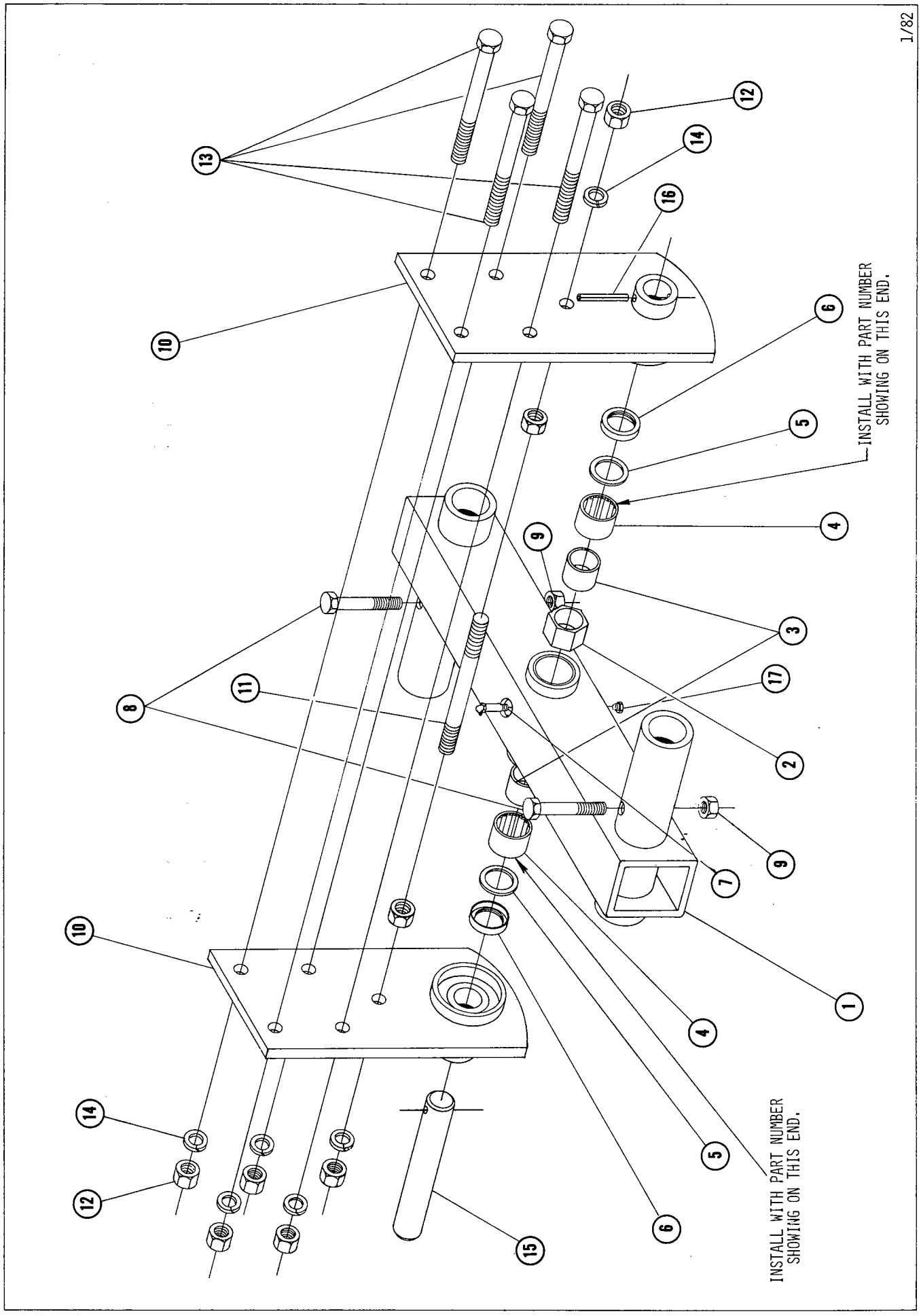


11/84

FOR MODELS - 3121, 3124, 3127 WING OPTION

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	1918-17-0	Hub & Axle Assembly	Specify
1	1918-12-0	Stub Axle Weldment	1
2	1918-8-1	Hub Casting	1
3	62-295	Wheel Bolt	6
4	42-108	Seal	1
5	41-113	Rear Cone	1
6	41-209	Rear Cup	1
7	41-208	Front Cup	1
8	41-112	Front Cone	1
9	63-204	1NF Slotted Hex Nut	1
10	60-702	3/16" DIA. X 1-1/2" Cotter Key	1
11	52-302	Hub Cap	1
12	53-105	Wear Ring	1
*13	62-209	3/4NC X 5" Cap Screw (Models 3122 & 3127)	4 per hub
	62-214	3/4NC X 7" Cap Screw (Model 3119 Only)	4 per hub
*14	64-113	3/4" STD. Flat Washer	4 per hub
*15	64-112	3/4" STD. Lock Washer	4 per hub
*16	63-112	3/4NC Hex Nut	4 per hub
17	64-120	1" SAE Flat Washer	1
18	65-104	1/4NPT X 67-1/2° Zerk	1
19	1918-15-0	Repair Spindle & Sleeve Assembly	

* Not Part Of Assembly


1/82
INSTALL WITH PART NUMBER SHOWING ON THIS END.
INSTALL WITH PART NUMBER SHOWING ON THIS END.

WALKING BEAM ASSEMBLY

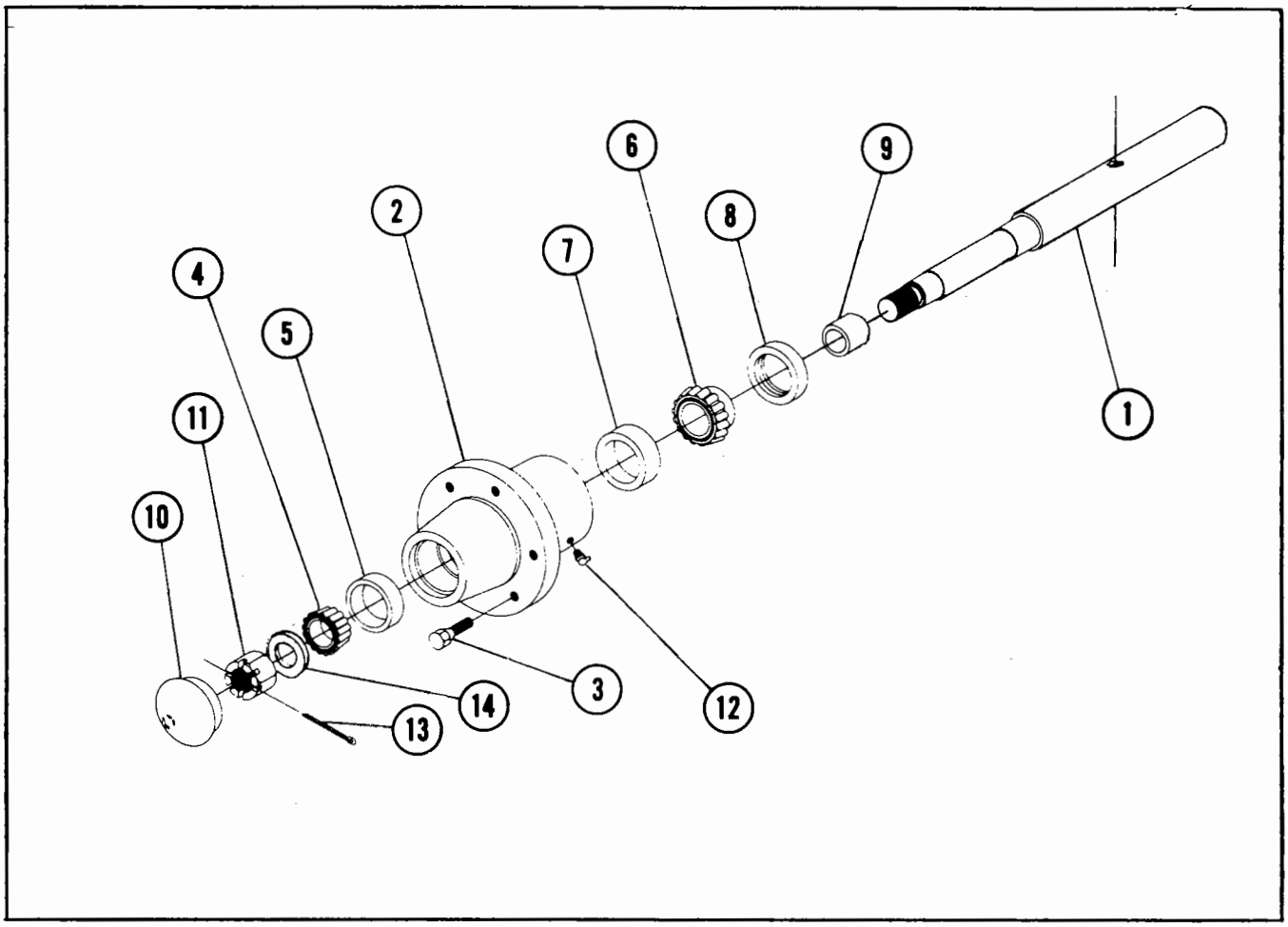
FOR MODELS - 3112, 3115, 3118, 3121 CENTER SECTION
3127, 3131, 3136 WING SECTION

2/85

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
	3127-49-0	Right Walking Beam Assembly (Shown)	
	3127-47-0	Left Walking Beam Assembly	
1	4122-55-0	Walking Beam Weldment	1
▲2	53-122	Hex Spacer	1
▲3	40-116	Inner Race	2
▲4	40-115	Bearing	2
▲5	64-135	Washer	2
▲6	42-110	Seal	2
7	65-107	90° Zerk	1
* 8	62-175	5/8NC X 3-1/2" Cap Screw	2
* 9	63-110	5/8NC Self Locking Nut	2
10	3127-48-0	Lug Weldment	2
11	62-296	3/4NC X 7" Stud Bolt	1
12	63-112	3/4NC Hex Nut	8
*13	62-209	3/4NC X 6" Cap Screw	4
*14	64-112	3/4" STD. Lock Washer	6
15	4122-54-1	Pin	1
16	60-617	3/8" DIA. X 2-1/2" Roll Pin	1
▲17	65-108	Relief Valve	1
	4122-84-0	Bearing Repair Kit (▲ Items Included)	

* Not Part Of Assembly

WING SECTION HUB ASSEMBLY

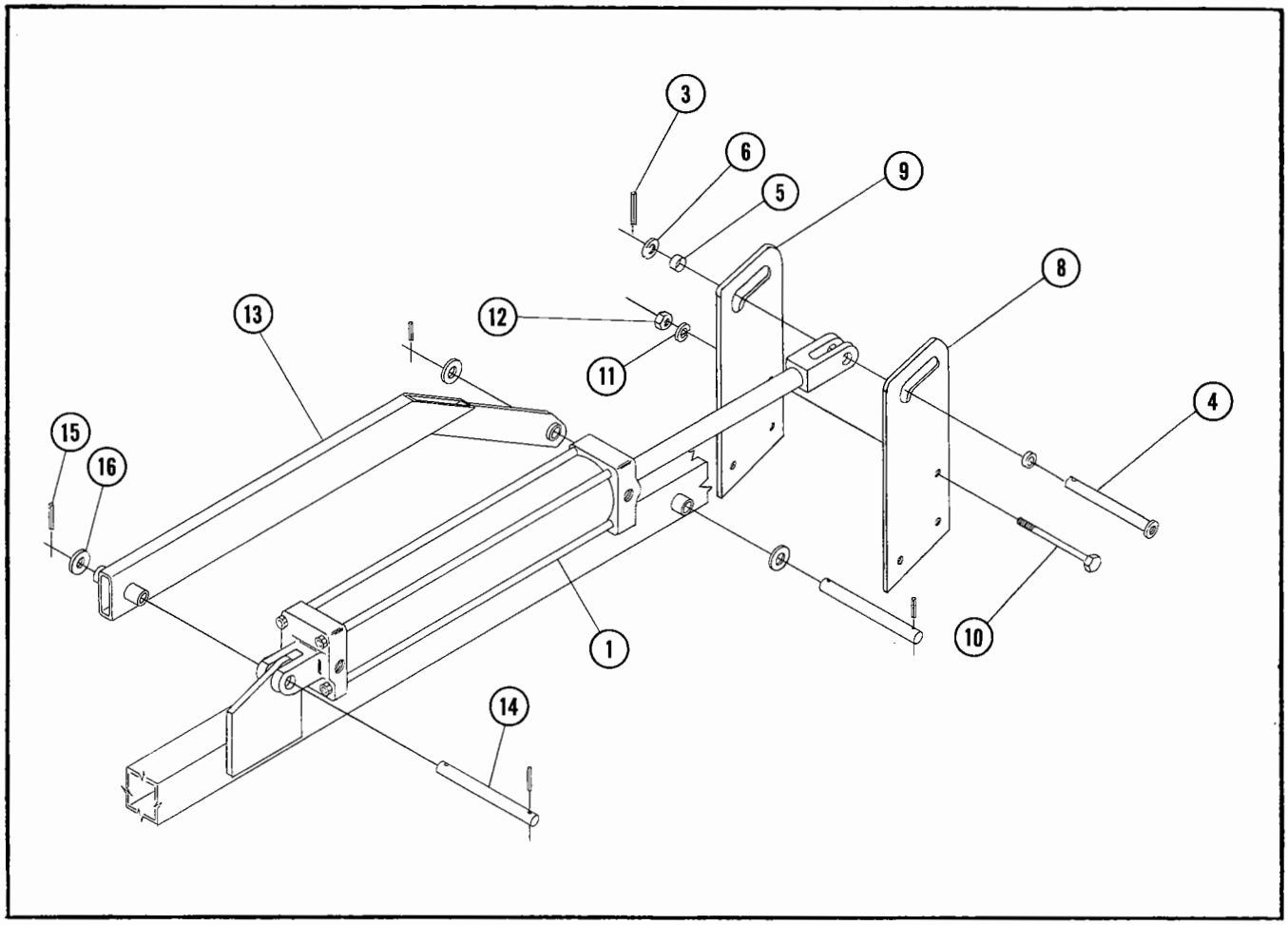


FOR MODELS - ALL

11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	4122-17-0	Hub & Axle Assembly	
1	50-104	Spindle	1
2	1918-8-1	Hub Casting	1
3	62-295	Wheel Bolt	6
4	41-112	Front Cone	1
5	41-208	Front Cup	1
6	41-113	Rear Cone	1
7	41-209	Rear Cup	1
8	42-108	Seal	1
9	53-105	Wear Ring	1
10	52-302	Hub Cap	1
11	63-204	1NF Slotted Hex Nut	1
12	65-104	1/4NPT 67-1/2° Zerk	1
13	60-702	3/16"Dia. X 1-1/2" Cotter Key	1
14	64-120	1" S.A.E. Flat Washer	1

WING LIFT LUGS

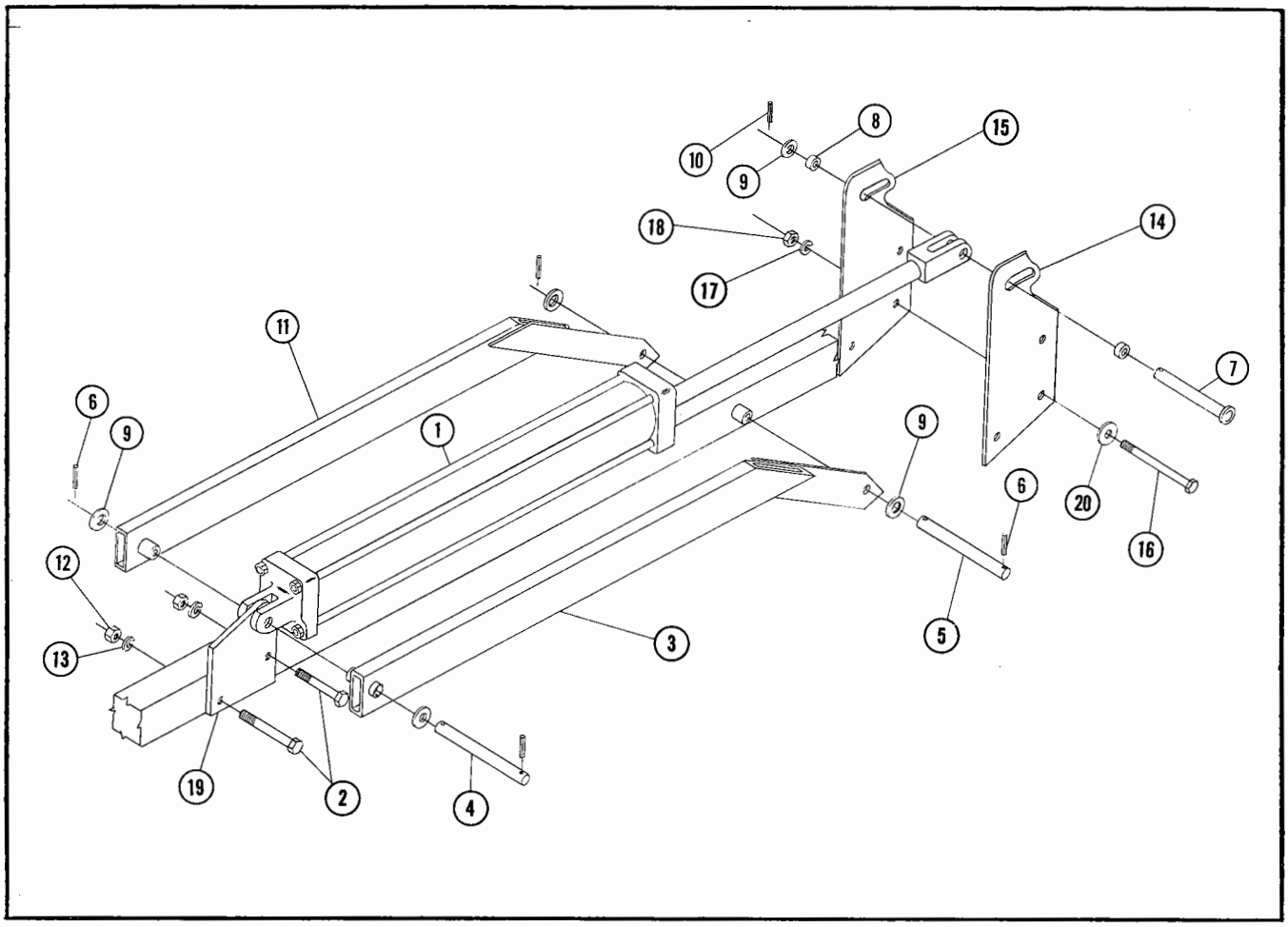


2/85

FOR MODELS - 3118

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	21-102	4" X 24" Hydraulic Cylinder	2
2	21-296	Clevis Pin	2
3	60-606	1/4" DIA. X 2" Roll Pin	1
4	3131-77-0	Cylinder Clevis Pin	2
5	53-109	Wear Sleeve	4
6	64-126	1-1/4" STD. Flat Washer	2
8	3118-42-0	Left Side Plate	2
9	3118-41-0	Right Side Plate	2
10	62-204	3/4NC X 5" Cap Screw	6
11	64-112	3/4" STD. Lock Washer	6
12	63-112	3/4NC Hex Nut	6
13	3124-78-0	Center Hinge Weldment	2
14	4517-0-5	Pivot Pin	4
15	60-617	3/8" DIA. X 2-1/2" Roll Pin	8
16	64-126	1-1/4" STD. Flat Washer	8

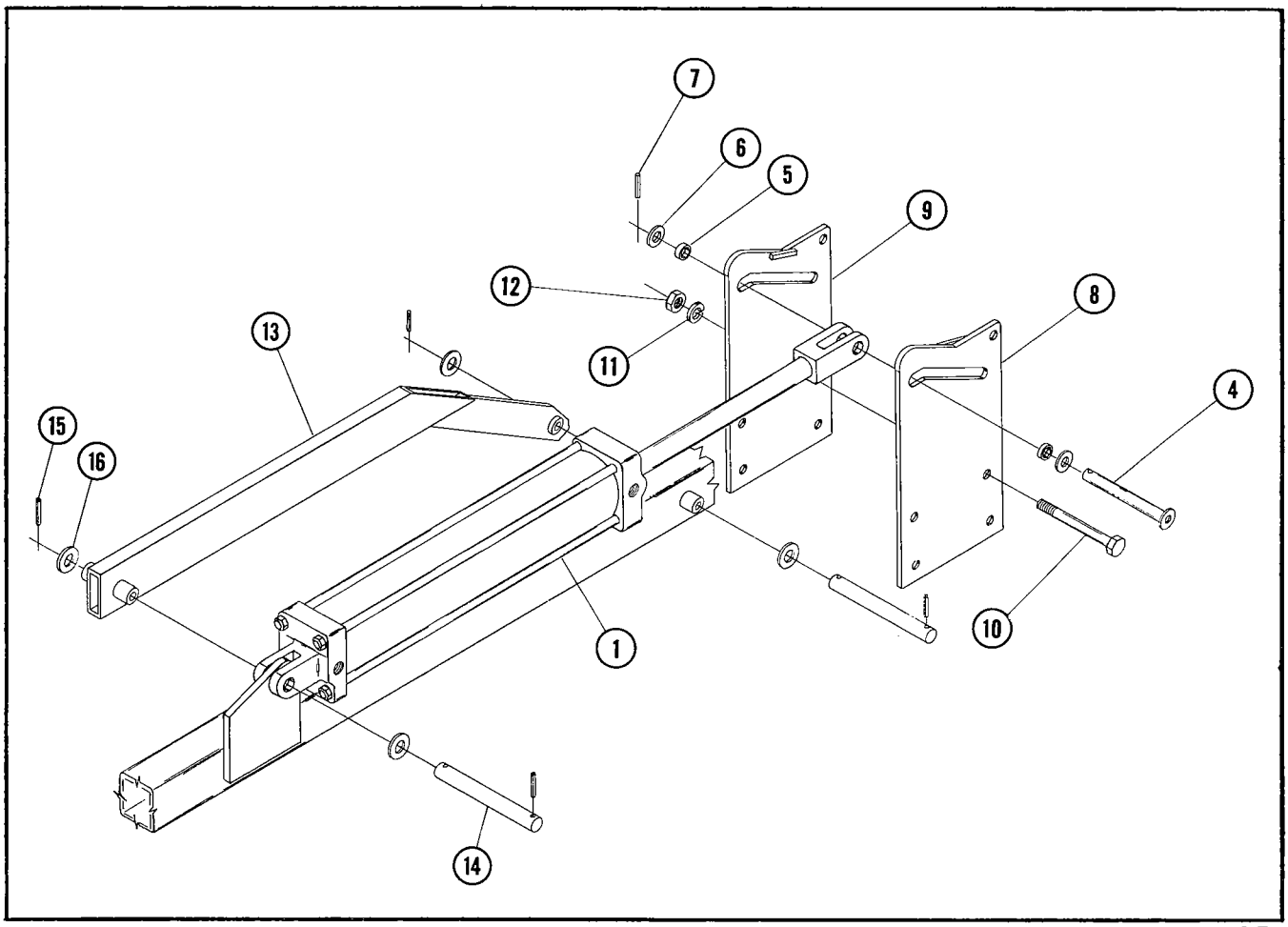
WING LIFT LUGS



FOR MODELS - 3121 11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	21-117	4" X 32" Hydraulic Cylinder	2
2	62-251	1NC X 6-1/2" GRADE 5 Cap Screw	4
3	3131-79-0	Right Cylinder Center Hinge	2
4	3131-0-16	Lift Pin	2
5	3127-0-11	Center Hinge Pin	2
6	60-617	3/8" DIA. X 2-1/2" Roll Pin	8
7	3131-77-0	Cylinder Clevis Pin	2
8	53-109	Wear Sleeve	4
9	64-126	1-1/4" STD. Flat Washer	10
10	60-606	1/4" DIA. X 2" Roll Pin	2
11	3131-78-0	Left Cylinder Center Hinge	2
12	63-117	1NC Hex Nut	4
13	64-118	1" STD. Lock Washer	4
14	3121-42-0	Left Lift Lug	2
15	3121-41-0	Right Lift Lug	2
16	62-204	3/4NC X 5" Cap Screw	8
17	64-112	3/4" STD. Lock Washer	8
18	63-112	3/4NC Hex Nut	8
19	3127-0-13	Wing Lift Lug	2
20	64-113	3/4" STD. Flat Washer	6

WING LIFT LUGS

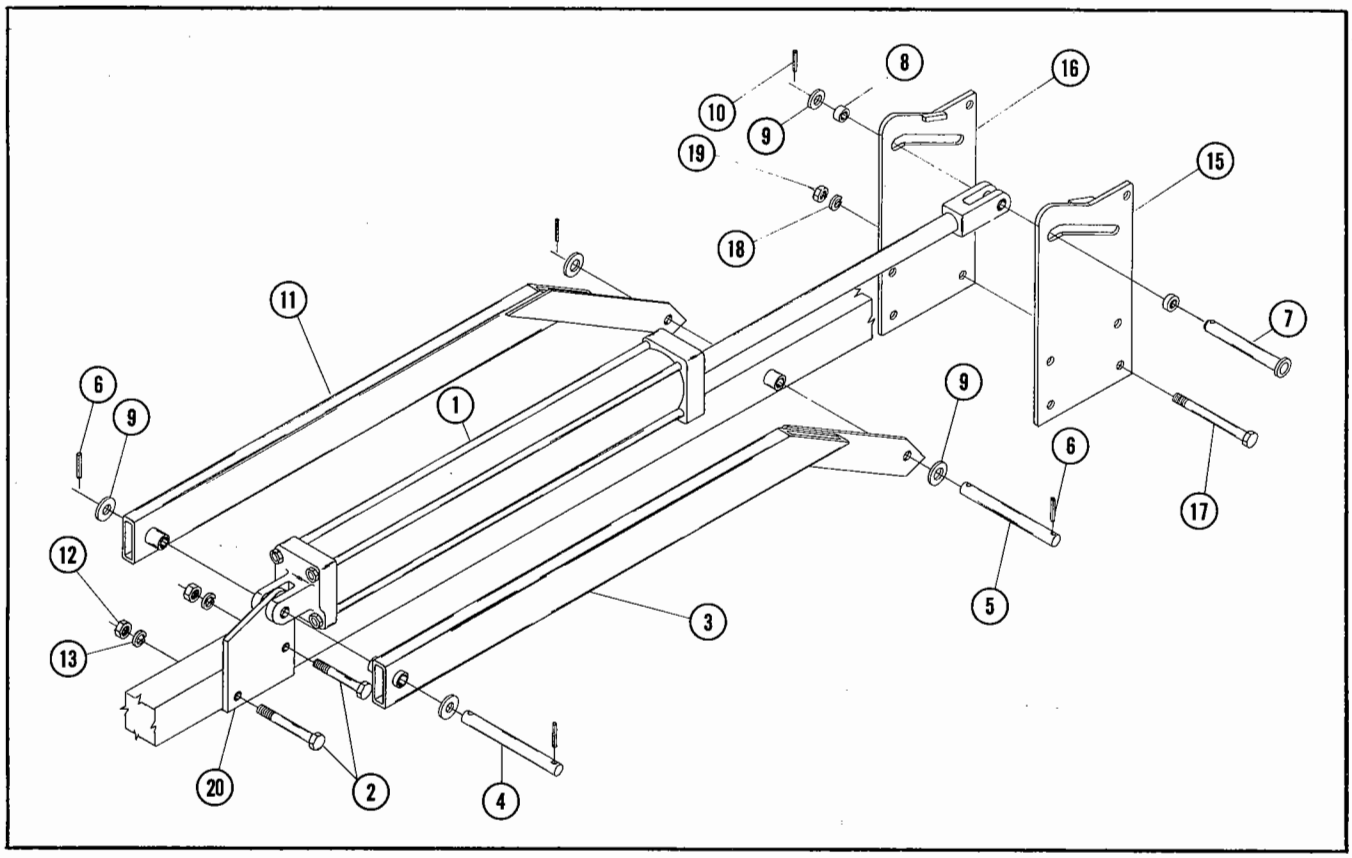


2/85

FOR MODELS - 3124

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	21-102	4" X 24" Hydraulic Cylinder	2
4	3131-77-0	Wing Cylinder Pin	2
5	53-109	Wear Sleeve	4
6	64-126	1-1/4" STD. Flat Washer	2
7	60-606	1/4" DIA. X 2" Roll Pin	1
8	3122-42-0	Left Side Plate	2
9	3122-41-0	Right Side Plate	2
10	62-204	3/4NC X 5" Cap Screw	8
11	64-112	3/4" STD. Lock Washer	8
12	63-112	3/4NC Hex Nut	8
13	3124-78-0	Cylinder Center Hinge	2
14	4517-0-5	Pivot Pin	4
15	60-617	3/8" DIA. X 2-1/2" Roll Pin	8
16	64-126	1-1/4" STD. Flat Washer	8

WING LIFT & CENTER HINGE

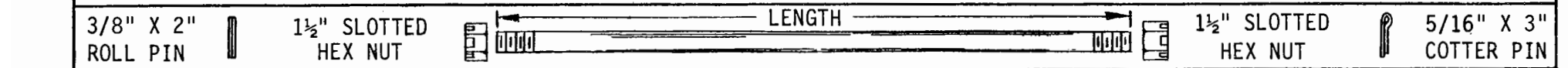


FOR MODELS - 3127, 3131 AND 3136 10/82

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	COMMON PARTS FOR MODELS 3127, 3131 AND 3136		
2	62-248	1NC X 6" Cap Screw	4
4	3131-0-16	Lift Pin	2
5	3127-0-11	Center Hinge Pin	2
6	60-617	3/8" DIA. X 2-1/2" Roll Pin	8
7	3131-77-0	Cylinder Clevis Pin	2
8	53-109	Wear Sleeve	4
9	64-126	1-1/4" STD. Flat Washer	10
10	60-606	1/4" DIA. X 2" Roll Pin	2
12	63-117	1NC Hex Nut	4
13	64-118	1" STD. Lock Washer	4
17	62-204	3/4NC X 5" Cap Screw	8
18	64-112	3/4" STD. Lock Washer	8
19	63-112	3/4NC Hex Nut	8
20	3127-0-13	Wing Lift Lug	2
	PARTS USED FOR MODELS 3127 AND 3131		
1	21-117	4" X 32" Hydraulic Cylinder	2
3	3131-79-0	Right Cylinder Center Hinge	2
11	3131-78-0	Left Cylinder Center Hinge	2
15	3127-42-0	Left Lift Lug	2
16	3127-41-0	Right Lift Lug	2
	PARTS USED FOR MODEL 3136		
1	21-112	4" X 40" Hydraulic Cylinder	2
3	3136-79-0	Right Cylinder Center Hinge	2
11	3136-78-0	Left Cylinder Center Hinge	2
15	3136-42-0	Left Side Plate	2
16	3136-41-0	Right Side Plate	2

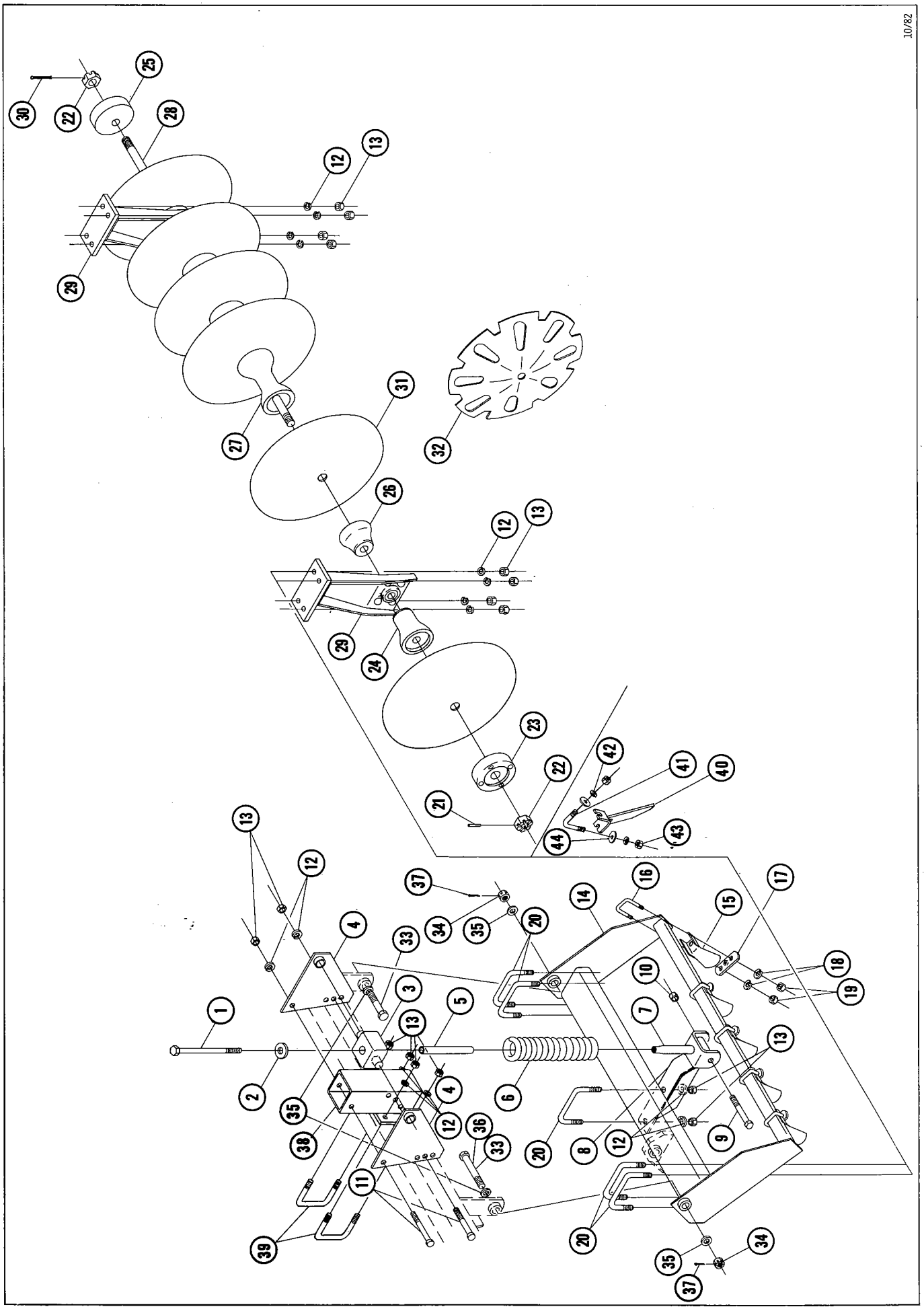
1-1/2" TIE RODS

2/85



MODEL	LOCATION		LENGTH	DISC SPACING	NO. OF DISC	ALLOY TIE ROD
3112	CENTER	Left Front	70-3/8"	8"	8	2212-18-1
		Right Front	70-3/8"	8"	8	2212-18-1
3115	CENTER	Left Front	86-1/2"	8"	11	2215-18-1
		Right Front	86-1/2"	8"	11	2215-18-1
3118	CENTER	Left Front	46-1/4"	8"	6	1912-18-1
		Right Front	46-1/4"	8"	6	1912-18-1
	WING	Left Front	54-3/8"	8"	7	2135-82-1
		Right Front	54-3/8"	8"	7	2135-82-1
3121	CENTER	Left Front	78-3/8"	8"	10	2214-18-1
		Right Front	78-3/8"	8"	10	2214-18-1
	WING	Left Front	46-1/4"	8"	6	1912-18-1
		Right Front	46-1/4"	8"	6	1912-18-1
3124	CENTER	Left Front	78-3/8"	8"	10	2214-18-1
		Right Front	78-3/8"	8"	10	2214-18-1
	WING	Left Front	62-3/8"	8"	8	2138-82-1
		Right Front	62-3/8"	8"	8	2138-82-1
3127	CENTER	Left Front	78-3/8"	8"	10	2214-18-1
		Right Front	78-3/8"	8"	10	2214-18-1
	WING	Left Front	78-3/8"	8"	10	2214-18-1
		Right Front	78-3/8"	8"	10	2214-18-1
3131	CENTER	Left Front	78-3/8"	8"	10	2214-18-1
		Right Front	78-3/8"	8"	10	2214-18-1
	WING	Left Front Inside	46-1/4"	8"	6	1912-18-1
		Right Front Inside	46-1/4"	8"	6	1912-18-1
		Left Front Inside	54-3/8"	8"	7	2135-82-1
		Right Front Inside	54-3/8"	8"	7	2135-82-1
3136	CENTER	Left Front	78-3/8"	8"	10	2214-18-1
		Right Front	78-3/8"	8"	10	2214-18-1
	WING	Left Front Inside	78-3/8"	8"	10	2214-18-1
		Right Front Inside	78-3/8"	8"	10	2214-18-1
		Left Front Inside	46-1/4"	8"	6	1912-18-1
		Right Front Inside	46-1/4"	8"	6	1912-18-1

Tie rod number does not include nuts or pins.


10/82

DISC GANG & SCRAPER ASSEMBLY

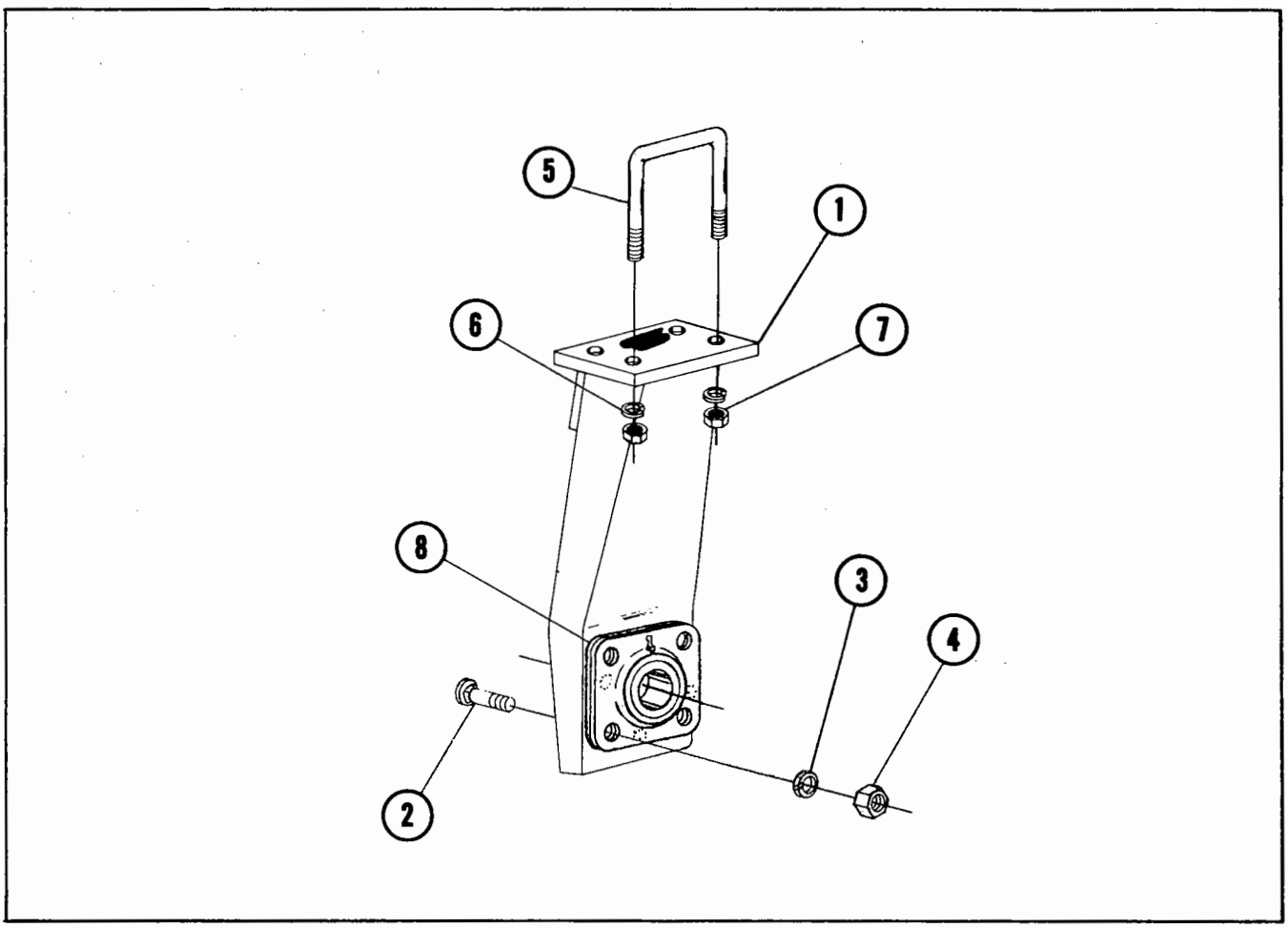
FOR MODELS - ALL

2/85

ITEM	PART NUMBER	PART DESCRIPTION	QTY.
	3127-30-0	Spring Support Assembly	
1	62-306	3/4NC X 11" Machine Bolt	
2	64-113	3/4" STD. Flat Washer	
3	3127-30-1	Trunnion	
4	3127-32-0	Adjustment Plate	
5	3127-30-2	Spacer	
6	76-132	Compression Spring	
7	3127-31-0	Spring Tube Assembly	
8	3127-33-0	Arm Weldment	
9	62-204	3/4NC X 5" Cap Screw	
10	63-114	3/4NC Self Locking Nut	
11	62-206	3/4NC X 5-1/2" Cap Screw	
12	64-112	3/4" STD. Lock Washer	
13	63-112	3/4NC Hex Nut	
14	3112-46-0	Right Gang Beam (68" Lg.)	
	3112-47-0	Left Gang Beam (68" Lg.)	
	3115-50-0	Right Gang Beam (86" Lg.)	
	3115-52-0	Left Gang Beam (86" Lg.)	
	3118-46-0	Center Gang Beam (44" Lg.)	
	3118-48-0	Right Gang Beam (53" Lg.)	
	3118-49-0	Left Gang Beam (53" Lg.)	
	3121-50-0	Right Gang Beam (76-1/2" Lg.)	
	3121-51-0	Left Gang Beam (76-1/2" Lg.)	
	3122-48-0	Wing Gang Beam (38-7/8" Lg.)	
	3124-48-0	Right Gang Beam (56" Lg.)	
	3124-49-0	Left Gang Beam (56" Lg.)	
	3127-44-0	Center Gang Beam (76-1/2" Lg.)	
	3127-50-0	Left Wing Gang Beam (72" Lg.)	
	3127-52-0	Right Wing Gang Beam (72" Lg)	
	3131-50-0	Outside Left Wing Gang Beam(53"Lg.)	
	3131-52-0	Outside Right Wing Gang Beam(53"Lg)	
	3136-50-0	Outside Left Wing Gang Beam(43" Lg)	
	3136-52-0	Outside Rt. Wing Gang Beam (43" Lg)	
15	32-101	Right Hand Scraper Blade	
	32-103	Left Hand Scraper Blade	

ITEM	PART NUMBER	PART DESCRIPTION	QTY.
16	61-115	1/2" DIA. U-Bolt	
17	1483-286-1	Clamp	
18	64-107	1/2" STD. Lock Washer	
19	63-106	1/2NC Hex Nut	
20	61-143	3/4" DIA. U-Bolt	
21	60-615	3/8" DIA. X 2" Roll Pin	
22	63-128	1-1/2NC Slotted Hex Nut	
23	2212-18-3	End Washer	
24	412-19-1	Long Half Spool	
25	2212-18-2	End Washer	
26	1918-0-4	Short Half Spool	
27	1295-0-7	Spacer Spool	
28		Tie Rod (For Lengths See P38)	
29	1918-10-0	Bearing Arm Assembly	
30	60-713	5/16" DIA. X 3" Cotter Key	
31	30-165	Disc Blade (Standard)	
32	30-167	Incorporator Disc Blade (Opt)	
33	62-318	1NC X 4-1/2" Pivot Bolt	
34	63-120	1NC Slotted Hex Nut	
35	64-141	Hardened Flat Washer	
36	3131-84-1	Pivot Bolt (For Model 3131 Only)	
37	60-703	3/16" DIA. X 1-1/2" Cotter Pin	
38	3127-67-0	Trunnion Adjustment Weldment	
39	61-149	U-Bolt	
40	3131-157-0	Right Trash Bar	
	3131-158-0	Left Trash Bar	
41	950-20-4	"L" Bolt	
42	64-109	5/8" STD. Lock Washer	
43	63-109	5/8NC Hex Nut	
44	64-110	5/8" STD. Flat Washer	

BEARING ARM ASSEMBLY

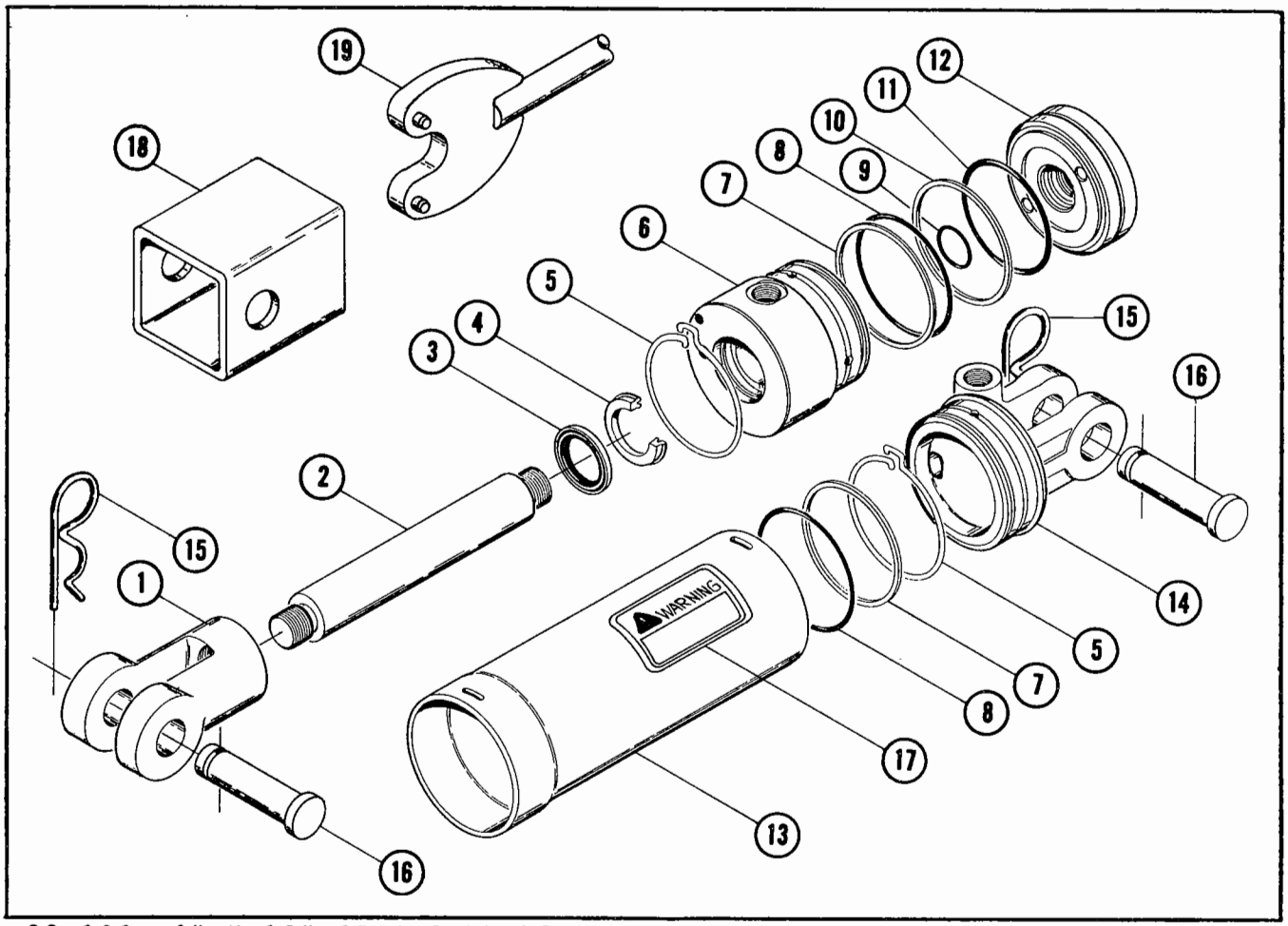


FOR MODELS - ALL 11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	1918-10-0	Regreaseable Bearing Arm Assembly	
1	1963-9-0	Bearing Arm	1
2	62-137	1/2NC X 1-1/2" Carriage Bolt	4
3	64-107	1/2" STD. Lock Washer	4
4	63-106	1/2NC Hex Nut	4
*5	61-143	U-Bolt	2
*6	64-112	3/4" STD. Lock Washer	4
*7	63-112	3/4NC Hex Nut	4
8	40-109	Bearing Assembly	1

* Not Part Of Assembly

CESSNA HYDRAULIC CYLINDER



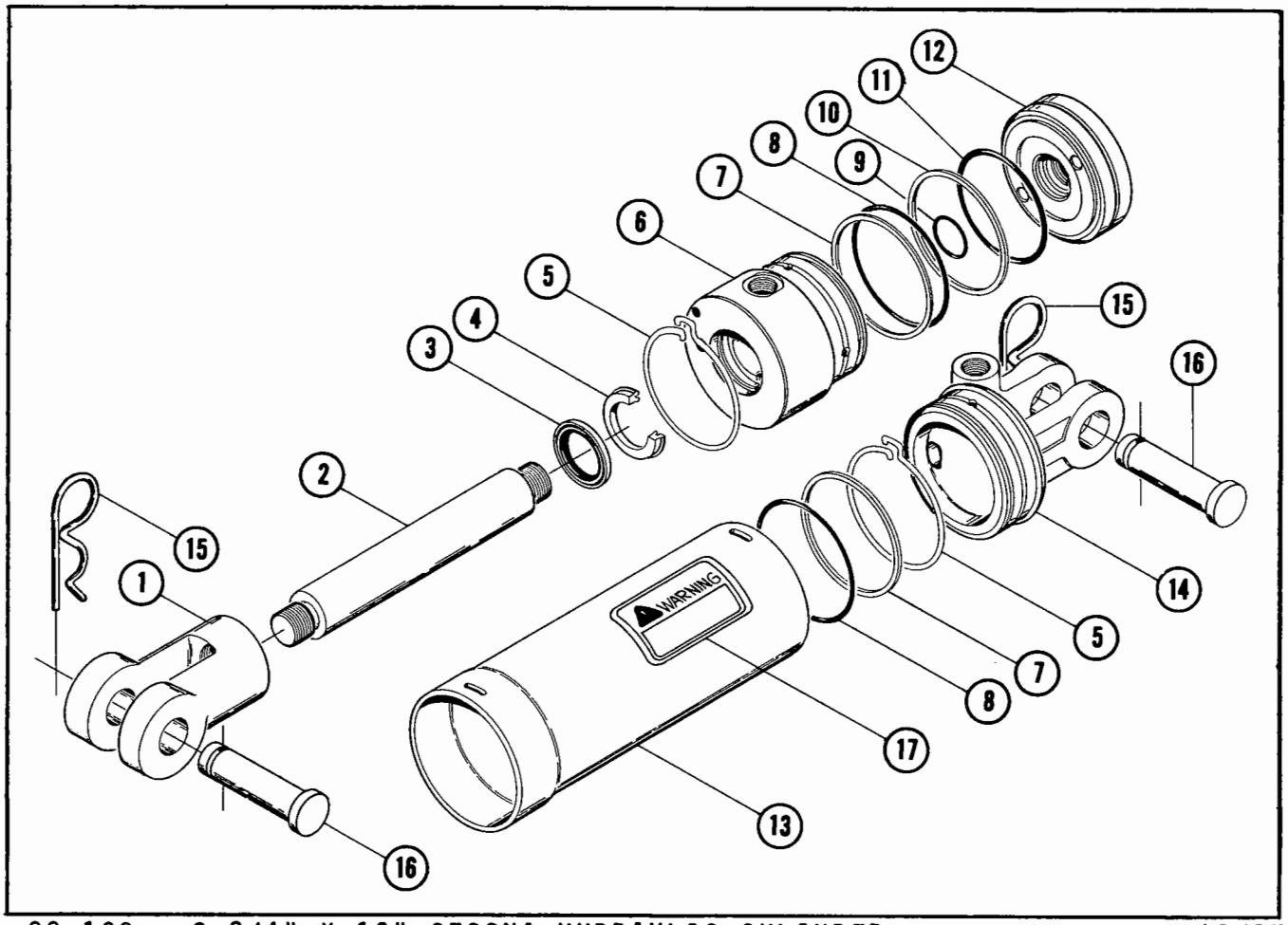
22-109 4" X 10" CESSNA HYDRAULIC CYLINDER ASSEMBLY 12/84

Retracted - 22-1/4" Extended - 32-1/4" Stroke - 10" Rod Diameter - 1-3/8"

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	22-288	Rod End	1
2	22-297	Piston Rod	1
*3	22-276	Wiper Seal	1
*4	22-277	U-Cup Seal	1
*5	22-217	Lock Ring	2
6	22-290	Bearing	1
*7	22-215	Back-Up Washer	2
*8	22-213	O-Ring	2
*9	22-282	O-Ring	1
*10	22-291	Slipper Ring	1
*11	22-214	O-Ring	1
12	22-292	Piston	1
13	22-298	Barrel	1
14	22-226	Head	1
15	22-234	Spring Lock Pin	2
16	22-273	U-Set Clevis Pin	2
17	74-113	Cylinder Warning Decal	1
▲	22-250	Seal Kit (* Items Included In Kit)	
▲	4901-79-0	Cessna Cylinder Tool Kit (For Repairs Only)	1
18	4901-79-1	Clevis Stop	1
19	4901-80-0	Spanner Wrench	1

▲Not Included In Hydraulic Cylinder Assembly

CESSNA HYDRAULIC CYLINDER



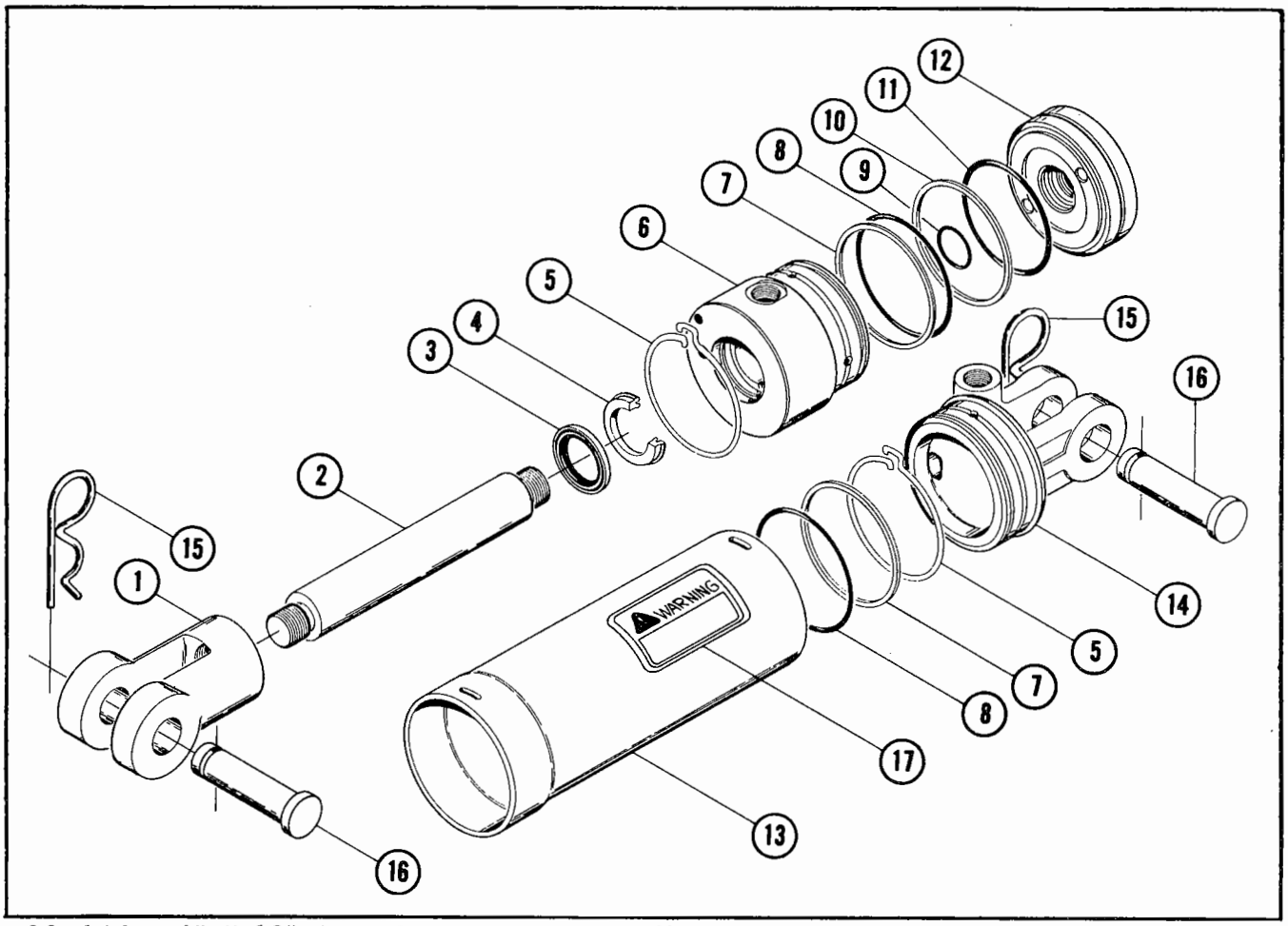
22-108 3-3/4" X 10" CESSNA HYDRAULIC CYLINDER 12/85

Retracted - 22-1/4" Extended - 32-1/4" Stroke - 10" Rod Diameter - 1-3/8"

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	22-274	Rod End	1
2	22-296	Piston Rod	1
*3	22-276	Wiper Seal	1
*4	22-277	U-Cup Seal	1
*5	22-278	Lock Ring	2
6	22-279	Bearing	1
*7	22-280	Back-Up Washer	2
*8	22-281	O-Ring	2
*9	22-282	O-Ring	1
*10	22-283	Slipper Ring	1
*11	22-284	O-Ring	1
12	22-285	Piston	1
13	22-295	Barrel	1
14	22-287	Head	1
15	22-234	Spring Lock Pin	2
16	22-273	U-Set Clevis Pin	2
17	74-113	Cylinder Warning Decal	1
▲	22-249	Seal Kit (* Items Included In Kit)	

▲Not Included In Cylinder Assembly.

CESSNA HYDRAULIC CYLINDER



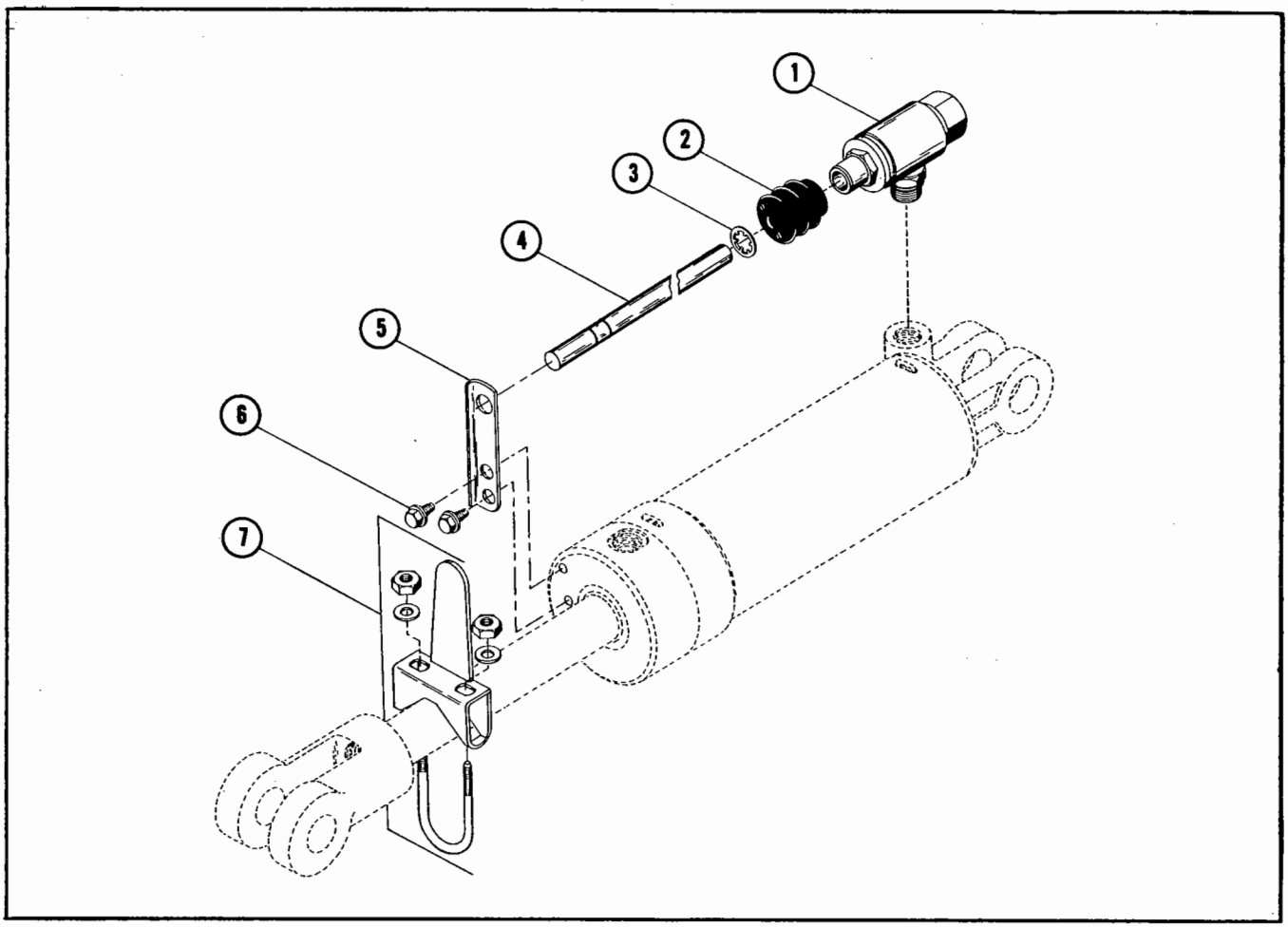
22-110 4" X 10" CESSNA STROKE CONTROL CYLINDER 12/84

Retracted - 22-1/4" Extended - 32-1/4" Stroke - 10" Rod Diameter - 1-3/8"

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	22-288	Rod End	1
2	22-297	Piston Rod	1
*3	22-276	Wiper Seal	1
*4	22-277	U-Cup Seal	1
*5	22-217	Lock Ring	2
6	22-290	Bearing	1
*7	22-215	Back-Up Washer	2
*8	22-213	O-Ring	2
*9	22-282	O-Ring	1
*10	22-291	Slipper Ring	1
*11	22-214	O-Ring	1
12	22-292	Piston	1
13	22-298	Barrel	1
14	22-301	Head	1
15	22-234	Spring Lock Pin	2
16	22-273	U-Set Clevis Pin	2
17	74-113	Cylinder Warning Decal	1
	22-304	Stroke Control Kit (See Page P45)	1
▲	22-303	Seal Kit (* Items Included In Kit)	
▲	4901-79-0	Cessna Cylinder Tool Kit (For Repairs Only)	1
18	4901-79-1	Clevis Stop	1
19	4901-80-0	Spanner Wrench	1

▲Not Included In Hydraulic Cylinder Assembly

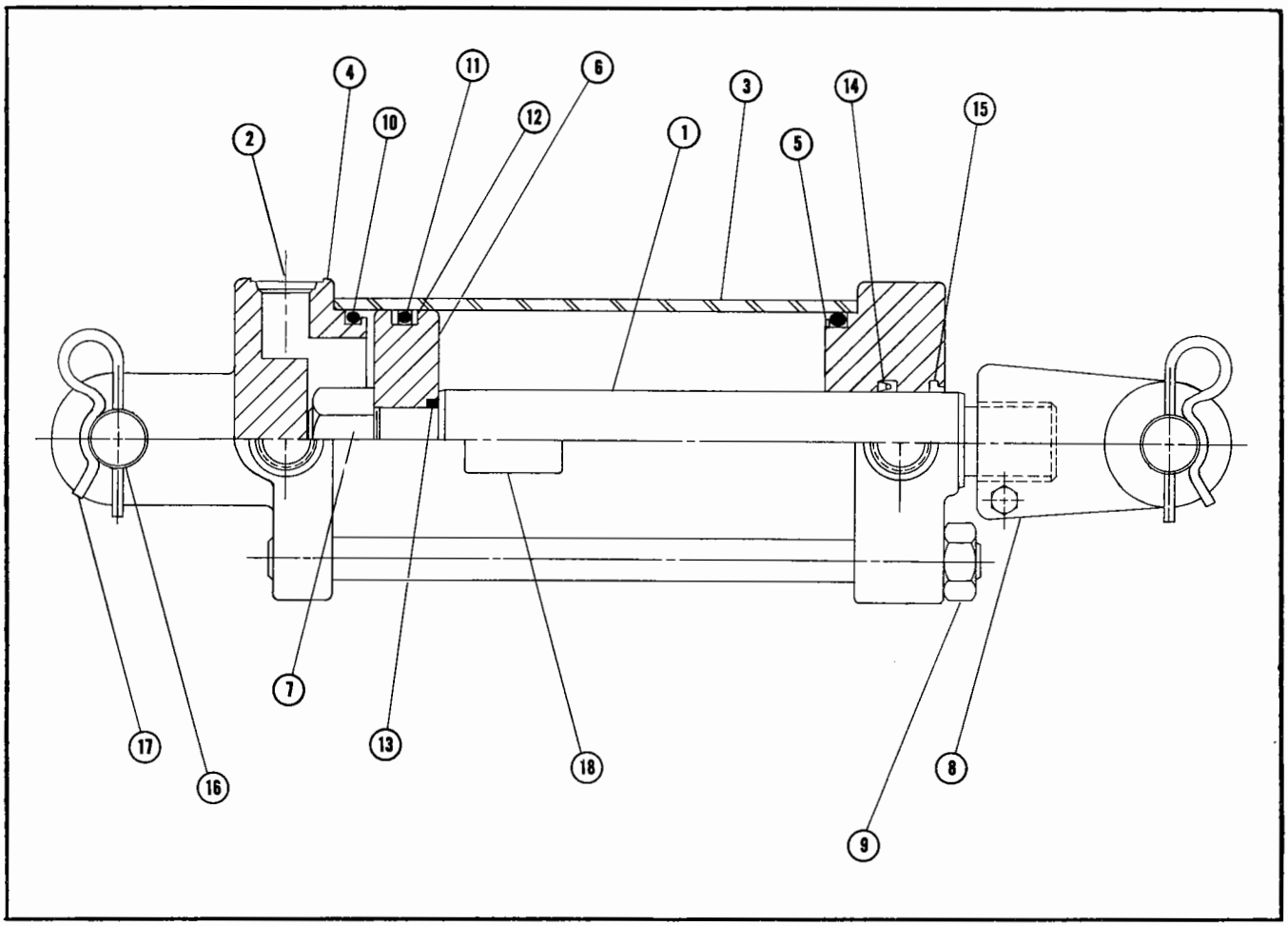
STROKE CONTROL KIT



For Use on 22-110 Cessna 4" X 10" Hydraulic Cylinder 12/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	22-304	Cessna Stroke Control Kit	1
▲1	22-221	Stop Housing	1
2	22-220	Dust Seal	1
4	22-300	Push Rod	1
5	22-224	Guide	1
6	22-222	Self Tapping Screw	2
7	22-299	Stop Clamp Assembly	1
▲	22-236	Seal Kit (For Item 1 Stop Housing)	
	22-211	Retaining Ring	1
	22-220	Dust Seal	1
	22-237	O-Ring	2
	22-238	O-Ring	1
	22-239	O-Ring	1
	22-240	Plunger	1

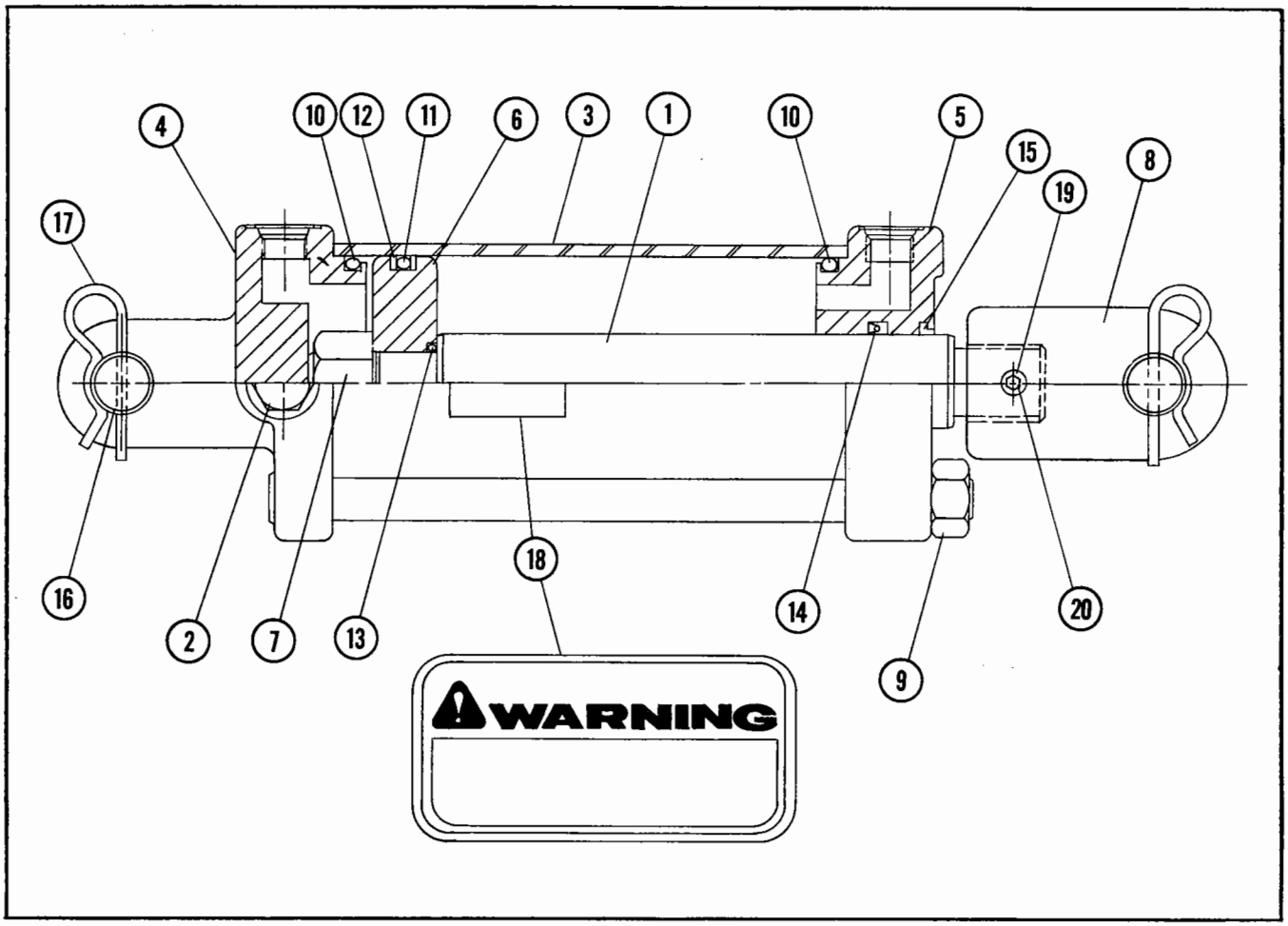
PRINCE HYDRAULIC CYLINDER



21-102 4" X 24" PRINCE HYDRAULIC CYLINDER 5/83
Retracted - 36-3/4" Stroke - 24" Extended - 60-3/4" Rod - 1-1/2"

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	21-221	Piston Rod	1
2	21-404	#8 SAE Plug	1
3	21-222	Tube	1
4	21-283	Butt	1
5	21-223	Gland	1
6	21-224	Piston	1
7	21-225	Lock Nut	1
8	21-226	Clevis Assembly	1
9	21-227	Tie Rod	4
*10	21-289	O-Ring	2
*11	21-290	O-Ring	1
*12	21-291	Back-Up Washer	2
*13	21-228	O-Ring	1
*14	21-350	U-Cup	1
*15	21-231	Wiper	1
16	21-296	Clevis Pin	2
17	21-219	Hair Pin Clip	4
18	74-113	Cylinder Warning Decal	1
	21-232	Seal Kit (* Items Contained In Kit)	

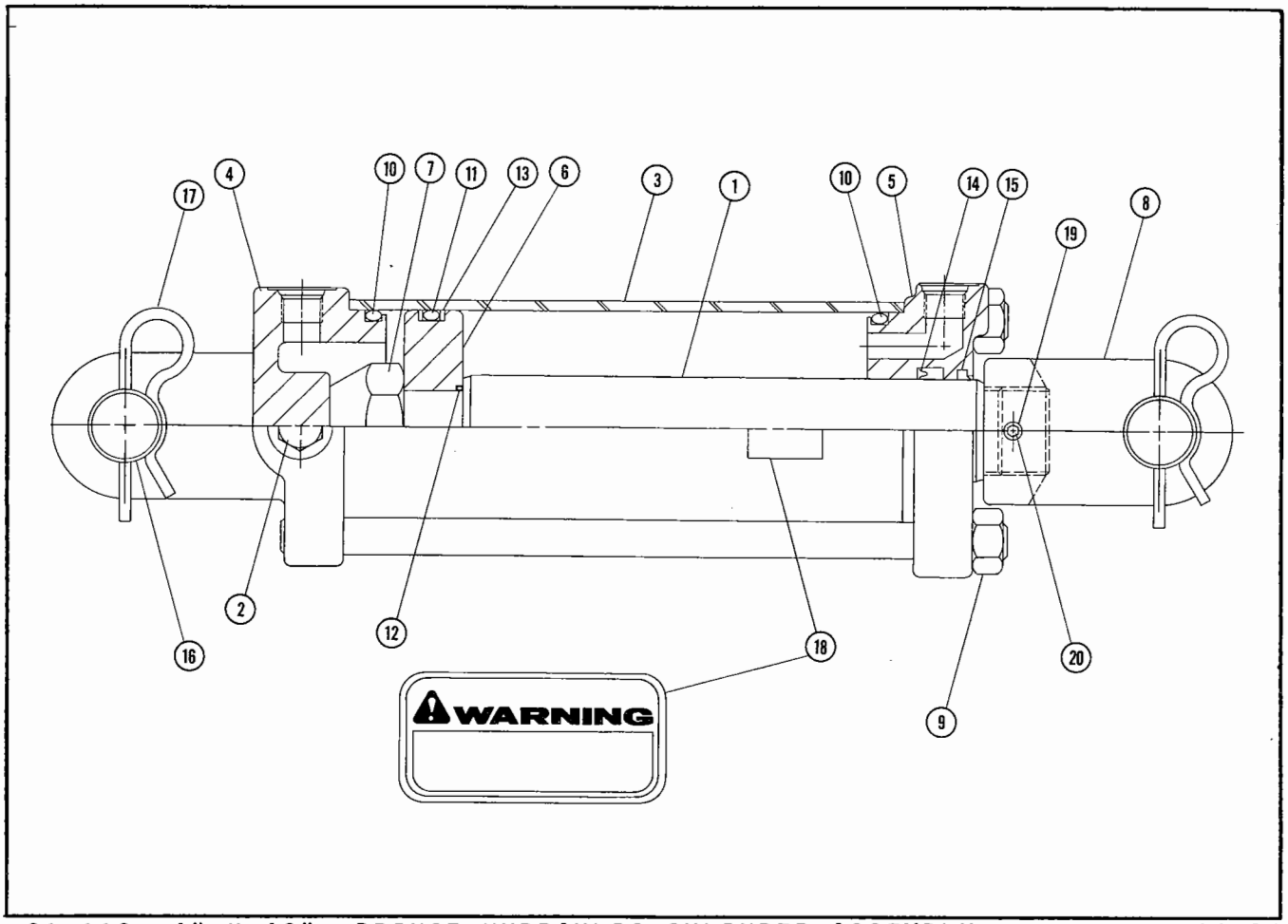
PRINCE HYDRAULIC CYLINDER



21-117 4" X 32" PRINCE HYDRAULIC CYLINDER Rod - 1-1/2" DIA. 8/83
Retracted - 42-3/4" Stroke - 32" Extended - 74-3/4"

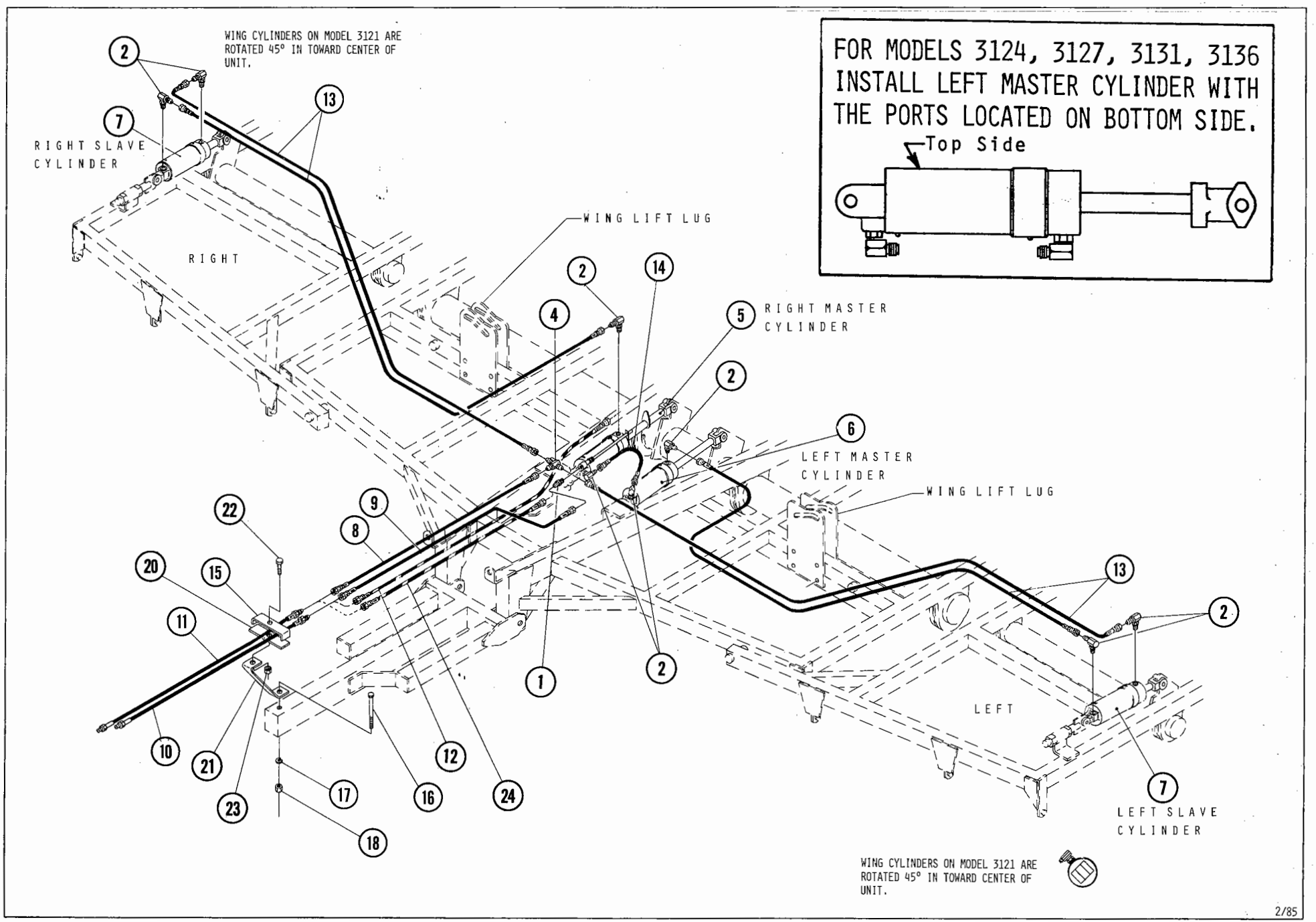
ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	21-265	Piston Rod	1
2	21-404	#8 SAE Plug	1
3	21-266	Tube	1
4	21-283	Butt	1
5	21-223	Gland	1
6	21-224	Piston	1
7	21-225	Lock Nut	1
8	21-267	Clevis Assembly	1
9	21-268	Tie Rod	4
*10	21-289	O-Ring	2
*11	21-290	O-Ring	1
*12	21-291	Back-Up Washer	2
*13	21-228	O-Ring	1
*14	21-350	U-Cup	1
*15	21-231	Wiper	1
16	21-296	Clevis Pin	2
17	21-219	Hair Pin Clip	4
18	74-113	Cylinder Warning Decal	1
19	21-407	Clevis Lock Plug	1
20	62-310	3/8NF X 3/8" Allen Head Set Screw	1
	21-232	Seal Kit (* Items Included In Seal Kit)	

PRINCE HYDRAULIC CYLINDER



21-112 4" X 40" PRINCE HYDRAULIC CYLINDER ASSEMBLY 11/84
Retracted - 50-3/4" Stroke - 40" Extended - 90-3/4" Rod - 1-3/4"

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	21-432	Piston Rod	1
2	21-404	#8 SAE Plug	1
3	21-371	Tube	1
4	21-283	Butt Casting	1
5	21-372	Gland Casting	1
6	21-285	Piston	1
7	21-286	Lock Nut	1
8	21-226	Clevis Assembly	1
9	21-440	Tie Rod	4
*10	21-289	O-Ring	2
*11	21-290	O-Ring	1
*12	21-292	O-Ring	1
*13	21-291	Back-Up Washer	2
*14	21-349	U-Cup	1
*15	21-250	Wiper	1
16	21-296	Clevis Pin	2
17	21-219	Hair Pin Clip	4
18	74-113	Cylinder Warning Decal	1
19	21-407	Nylon Clevis Lock Plug	1
20	62-310	3/8NF X 3/8" Allen Head Set Screw	1
	21-439	Seal Kit (* Items Included In Seal Kit)	


WING CYLINDERS ON MODEL 3121 ARE ROTATED 45° IN TOWARD CENTER OF UNIT.
FOR MODELS 3124, 3127, 3131, 3136 INSTALL LEFT MASTER CYLINDER WITH THE PORTS LOCATED ON BOTTOM SIDE.
Top Side
RIGHT SLAVE CYLINDER
RIGHT
WING LIFT LUG
RIGHT MASTER CYLINDER
LEFT MASTER CYLINDER
WING LIFT LUG
LEFT
LEFT SLAVE CYLINDER
WING CYLINDERS ON MODEL 3121 ARE ROTATED 45° IN TOWARD CENTER OF UNIT.
2/85

HYDRAULIC HOSE KIT FOR DEPTH CONTROL

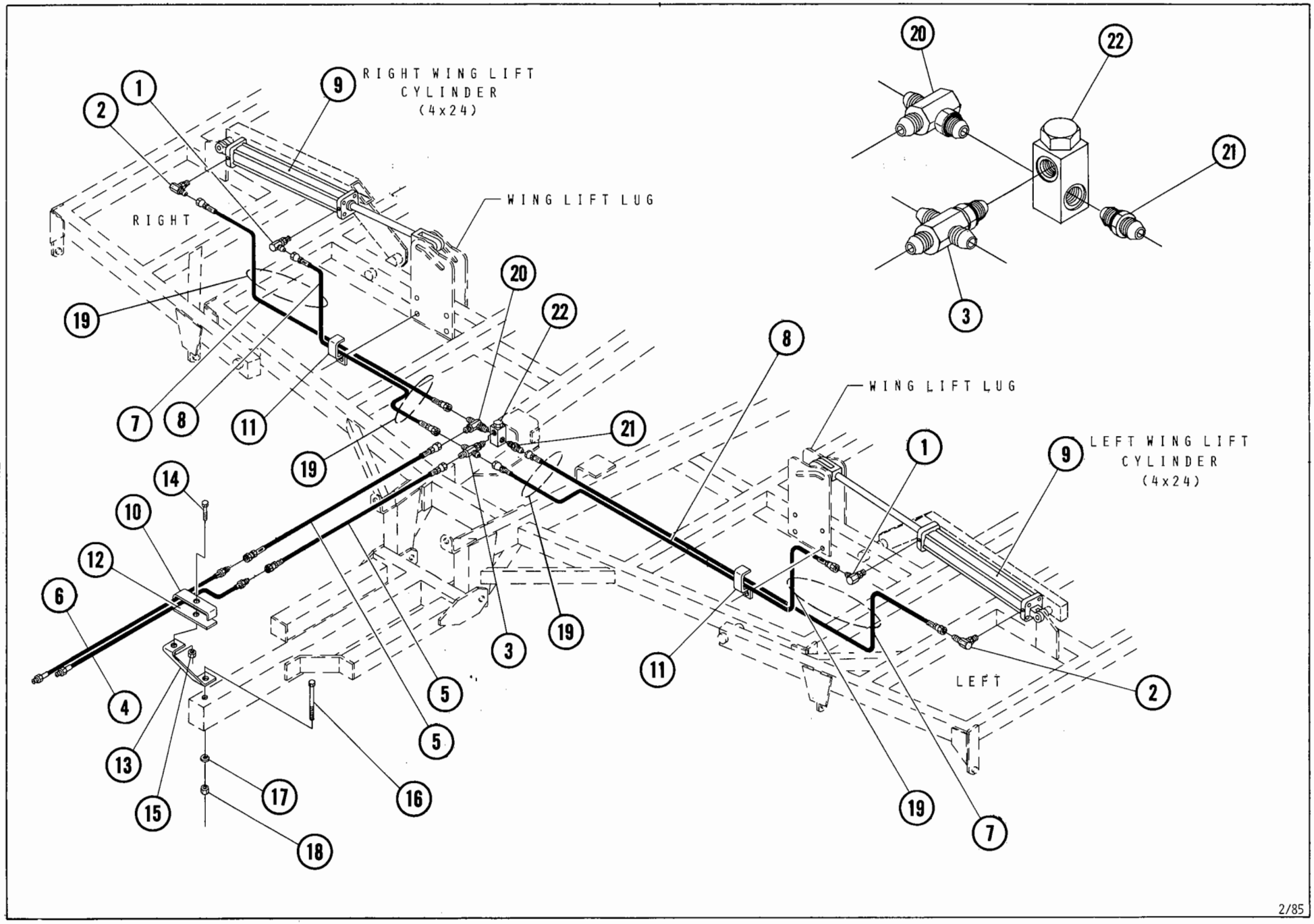
FOR MODELS - ALL

2/85

ITEM	PART NUMBER	PART DESCRIPTION	QTY.
	PARTS FOR MODELS 3112 AND 3115		
1	25-300	O-Ring 37° Flare Adapter	1
2	25-301	O-Ring 37° Flare 90° Adapter	1
6	22-110	4 X 10 Cessna Stroke Control Cylinder	1
▲10	24-315	Hose 1/2" X 92" (RED WIRE BRAID)	1
●11	24-316	Hose 1/2" X 92" (YELLOW WIRE BRAID)	1
12	24-213	Hose 86" (3/4" Swivel Both Ends)	1
15	2426-170-5	Hose Clamp	1
16	62-162	1/2NC X 7-1/2" Cap Screw	1
17	64-107	1/2" STD. Lock Washer	1
18	63-106	1/2NC Hex Nut	1
20	2145-170-5	Plate	1
21	4901-0-12	Hose Stand	1
22	62-142	1/2NC X 2" Cap Screw	1
23	63-107	1/2NC Self Locking Nut	1
24	24-210	Hose 74" (3/4" Swivel Both Ends)	1
	PARTS FOR MODEL 3118		
1	25-300	O-Ring 37° Flare Adapter	1
2	25-301	O-Ring 37° Flare 90° Adapter	8
4	25-303	37° Flare Male Tee	1
5	22-109	4" X 10" Cessna Cylinder	1
6	22-110	4 X 10 Cessna Stroke Control Cylinder	1
7	22-108	3-3/4" X 10" Cessna Slave Cylinder	2
8	24-209	Hose 68" (3/4" Swivel Both Ends)	1
9	24-210	Hose 74" (3/4" Swivel Both Ends)	1
▲10	24-315	Hose 1/2" X 92" (RED WIRE BRAID)	1
●11	24-316	Hose 1/2" X 92" (YELLOW WIRE BRAID)	1
13	24-240	Hose 107" (3/4" Swivel Both Ends)	4
14	24-243	Hose 32" (3/4" Swivel Both Ends)	1
15	2426-170-5	Hose Clamp	1
16	62-162	1/2NC X 7-1/2" Cap Screw	1
17	64-107	1/2" STD. Lock Washer	1
18	63-106	1/2NC Hex Nut	1
19	3127-83-1	Hose Clamp	2
20	2145-170-5	Plate	1
21	4901-0-12	Hose Stand	1
22	62-142	1/2NC X 2" Cap Screw	1
23	63-107	1/2NC Self Locking Nut	1
	PARTS FOR MODELS 3121 AND 3124		
1	25-300	O-Ring 37° Flare Adapter	1
2	25-301	O-Ring 37° Flare 90° Adapter	8
4	25-303	37° Flare Male Tee	1
5	21-132	4" X 10" Master Cylinder	1
6	21-133	4"X10" 3-Port Master Cylinder	1
7	21-131	3-3/4"X10" Slave Cylinder	2
8	24-209	Hose 68" (3/4" Swivel Both Ends)	1
9	24-210	Hose 74" (3/4" Swivel Both Ends)	1
▲10	24-315	Hose 1/2"X92" (RED WIRE BRAID)	1
●11	24-316	Hose 1/2"X92" (YELLOW WIRE BRAID)	1
*13	24-224	Hose 130" (3/4" Swivel Both Ends)	4
■	24-225	Hose 140" (3/4" Swivel Both Ends)	4
14	24-243	Hose 32" (3/4" Swivel Both Ends)	1
15	2426-170-5	Hose Clamp	1
16	62-162	1/2NC X 7-1/2" Cap Screw	1
17	74-107	1/2" STD. Lock Washer	1
18	63-106	1/2NC Hex Nut	1
19	3127-83-1	Hose Clamp	2
20	2145-170-5	Plate	1
21	4901-0-12	Hose Stand	1
22	62-142	1/2NC X 2" Cap Screw	1
23	63-107	1/2NC Lock Nut	1
	PARTS FOR MODELS 3127, 3131, AND 3136		
1	25-300	O-Ring 37° Flare Adapter	1
2	25-301	O-Ring 37° Flare 90° Adapter	7
4	25-303	37° Flare Male Tee	1
5	21-132	4" X 10" Master Cylinder	1
6	21-133	4"X10" 3-Port Master Cylinder	1
7	21-131	3-3/4" X 10" Slave Cylinder	2
8	24-209	Hose 68" (3/4" Swivel Both Ends)	1
9	24-210	Hose 74" (3/4" Swivel Both Ends)	1
▲10	24-315	Hose 1/2"X92" (RED WIRE BRAID)	1
●11	24-316	Hose 1/2"X92" (YELLOW WIRE BRAID)	1
13	24-242	Hose 161" (3/4" Swivel Both Ends)	4
14	24-243	Hose 32" (3/4" Swivel Both Ends)	1
15	2426-170-5	Hose Clamp	1
16	62-162	1/2NC X 7-1/2" Cap Screw	1
17	64-107	1/2" STD. Lock Washer	1
18	63-106	1/2NC Hex Nut	1
19	3127-83-1	Hose Clamp	2
20	2145-170-5	Plate	1
21	4901-0-12	Hose Stand	1
22	62-142	1/2NC X 2" Cap Screw	1
23	63-107	1/2NC Lock Nut	1

▲ To Extend Port
● To Retract Port

* For Model 3121 Only
■ For Model 3124 Only


RIGHT WING LIFT CYLINDER (4x24)
WING LIFT LUG
RIGHT
WING LIFT LUG
LEFT WING LIFT CYLINDER (4x24)
LEFT
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2/85

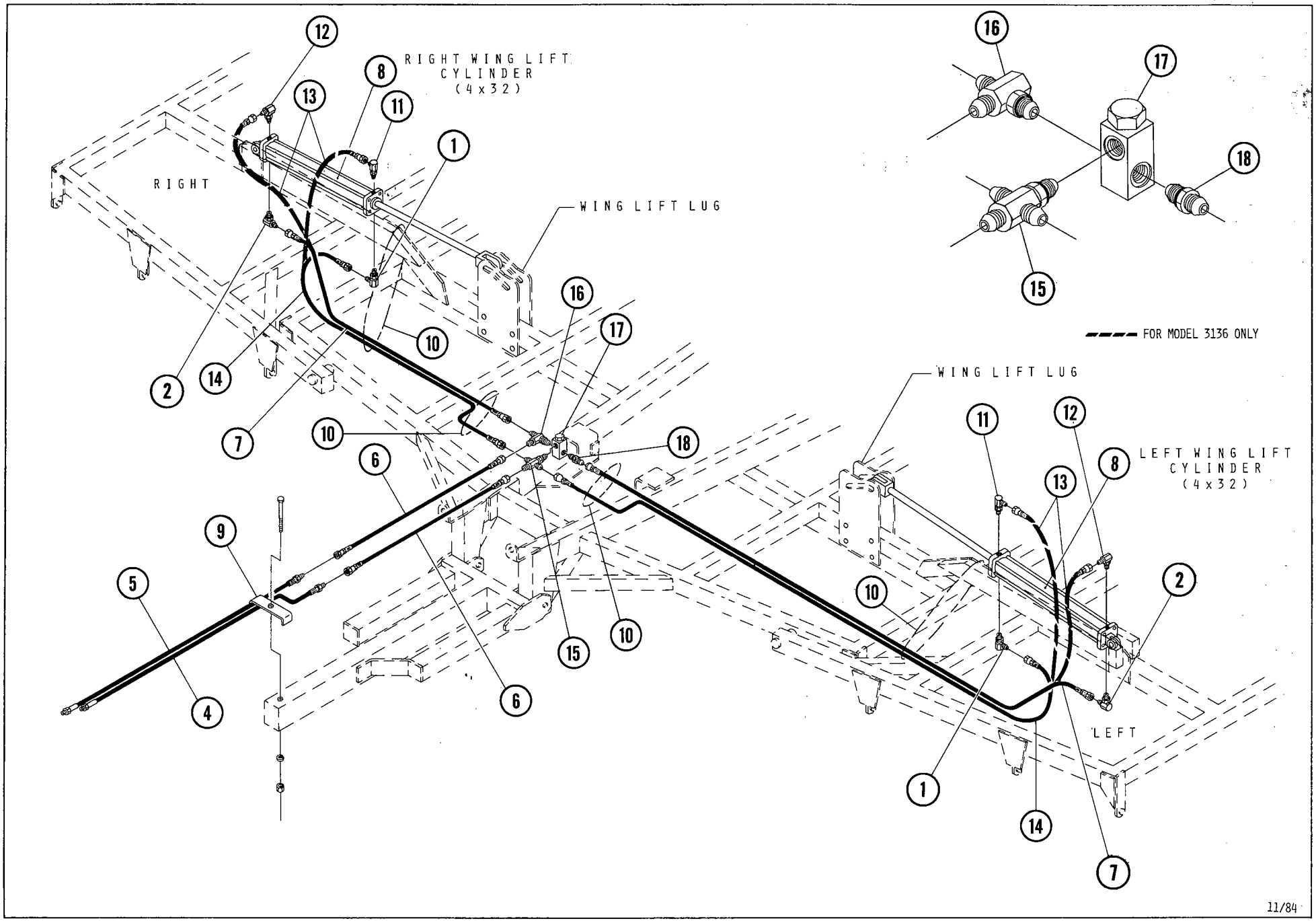
HYDRAULIC HOSE KIT FOR WING LIFT SYSTEM

FOR MODELS - 3118 and 3124 2/85

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	4956-75-0	O-Ring 37° Flare 90° Restrictor (YELLOW COLOR)	2
2	25-301	O-Ring 37° Flare 90° Adaptor	2
3	25-308	O-Ring 37° Flare Cross	1
4	24-316	Hose 1/2" X 92" (YELLOW WIRE BRAID) To Retract Port	1
5	24-209	Hose 68" (3/4" Swivel Both Ends)	2
6	24-315	Hose 1/2" X 92" (RED WIRE BRAID) To Extend Port	1
7	24-213	Hose 86" (3/4" Swivel Both Ends) Model 3118	2
	24-237	Hose 122" (3/4" Swivel Both Ends) Model 3124	2
8	24-208	Hose 65" (3/4" Swivel Both Ends) Model 3118	2
	24-217	Hose 92" (3/4" Swivel Both Ends) Model 3124	2
* 9	21-102	4" X 24" Hydraulic Cylinder	2
10	2426-170-5	Hose Clamp	1
11	3127-83-1	Hose Clamp	2
+12	2145-170-5	Plate	1
+13	4901-0-12	Hose Stand	1
+14	62-142	1/2NC X 2" Cap Screw	1
+15	63-107	1/2NC Self Locking Nut	1
+16	62-162	1/2NC X 7-1/2" Cap Screw	1
+17	64-107	1/2" STD. Lock Washer	1
+18	63-106	1/2NC Hex Nut	1
19	25-128	Hose Wrap Lock	4
20	25-302	O-Ring 37° Flare Tee Adaptor	1
21	25-300	O-Ring 37° Flare Adaptor	1
22	25-146	700 P.S.I. Relief Valve (YELLOW COLOR) 3118	1
	25-147	1400 P.S.I. Relief Valve (BLACK COLOR) 3124	

* Not Part of Hydraulic Hose Kit

\+ Same part used for both depth and wing lift systems.

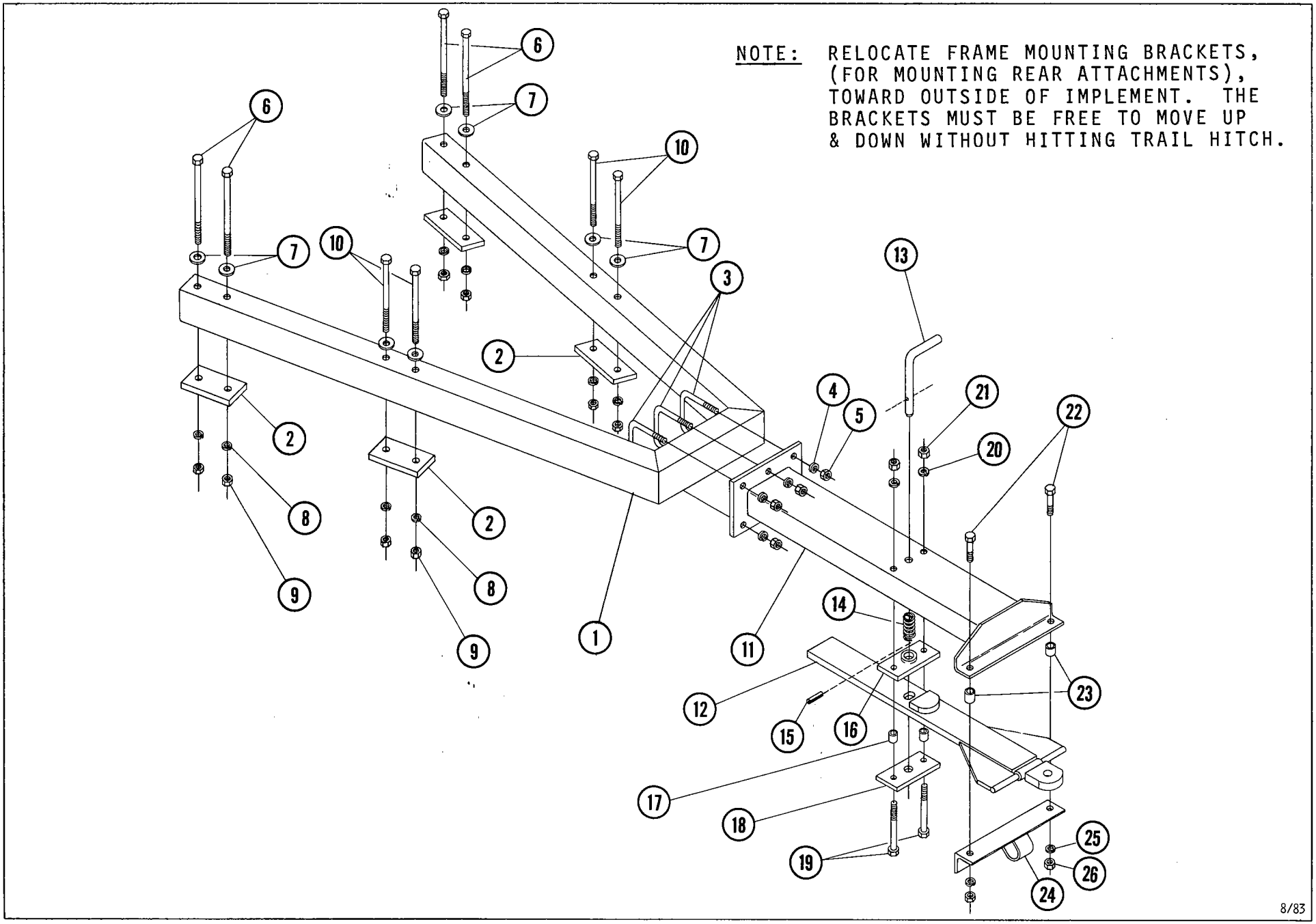

RIGHT WING LIFT CYLINDER (4x32)
RIGHT
WING LIFT LUG
WING LIFT LUG
LEFT WING LIFT CYLINDER (4x32)
LEFT
FOR MODEL 3136 ONLY
11/84

HYDRAULIC HOSE KIT FOR WING LIFT SYSTEM

FOR MODELS - 3121, 3127, 3131, 3136 11/84

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
	PARTS FOR MODEL 3121		
1	4956-75-0	O-Ring 37° Flare 90° Restrictor (YELLOW COLOR)	2
2	25-301	O-Ring 37° Flare 90° Adapter	2
4	24-316	Hose 1/2" X 92" (YELLOW WIRE BRAID) To Retract Port	1
5	24-315	Hose 1/2" X 92" (RED WIRE BRAID) To Extend Port	1
6	24-209	Hose 68" (3/4" Swivel Both Ends)	2
7	24-219	Hose 102" (3/4" Swivel Both Ends)	2
*8	21-102	4" X 24" Wing Lift Cylinder	2
9	2426-170-5	Hose Clamp	1
10	25-128	Hose Wraplock	4
14	24-210	Hose 75" (3/4" Swivel Both Ends)	2
15	25-308	O-Ring 37° Flare Cross	1
16	25-302	O-Ring 37° Flare Tee Adapter	1
17	25-146	700 P.S.I. Relief Valve (YELLOW COLOR)	1
18	25-300	O-Ring 37° Flare Adapter	1
	PARTS FOR MODELS 3127 AND 3131		
1	4956-75-0	O-Ring 37° Flare 90° Restrictor (YELLOW COLOR)	2
2	25-301	O-Ring 37° Flare 90° Adapter	2
4	24-316	Hose 1/2" X 92" (YELLOW WIRE BRAID) To Retract Port	1
5	24-315	Hose 1/2" X 92" (RED WIRE BRAID) To Extend Port	1
6	24-209	Hose 68" (3/4" Swivel Both Ends)	2
7	24-223	Hose 128" (3/4" Swivel Both Ends)	2
*8	21-107	4" X 32" Wing Lift Cylinder	2
9	2426-170-5	Hose Clamp	1
10	25-128	Hose WrapLock	4
14	24-223	Hose 128" (3/4" Swivel Both Ends)	2
15	25-308	O-Ring 37° Flare Cross	1
16	25-302	O-Ring 37° Flare Tee Adapter	1
17	25-147	1400 P.S.I. Relief Valve (BLACK COLOR)	1
18	25-300	O-Ring 37° Flare Adapter	1
	PARTS FOR MODEL 3136		
4	24-316	Hose 1/2" X 92" (YELLOW WIRE BRAID) To Retract Port	1
5	24-315	Hose 1/2" X 92" (RED WIRE BRAID) To Extend Port	1
6	24-209	Hose 68" (3/4" Swivel Both Ends)	2
*8	21-112	4" X 40" Wing Lift Cylinder	2
9	2426-170-5	Hose Clamp	1
10	25-128	Hose WrapLock	4
11	4956-75-0	O-Ring 37° Flare 90° Restrictor (YELLOW COLOR)	2
12	25-301	O-Ring 37° Flare 90° Adapter	2
13	24-242	Hose 161" (3/4" Swivel Both Ends)	4
15	25-308	O-Ring 37° Flare Cross	1
16	25-302	O-Ring 37° Flare Tee Adapter	1
17	25-147	1400 P.S.I. Relief Valve (BLACK COLOR)	1
18	25-300	O-Ring 37° Flare Adapter	1

* Not part of hydraulic hose kit.


NOTE: RELOCATE FRAME MOUNTING BRACKETS, (FOR MOUNTING REAR ATTACHMENTS), TOWARD OUTSIDE OF IMPLEMENT. THE BRACKETS MUST BE FREE TO MOVE UP & DOWN WITHOUT HITTING TRAIL HITCH.
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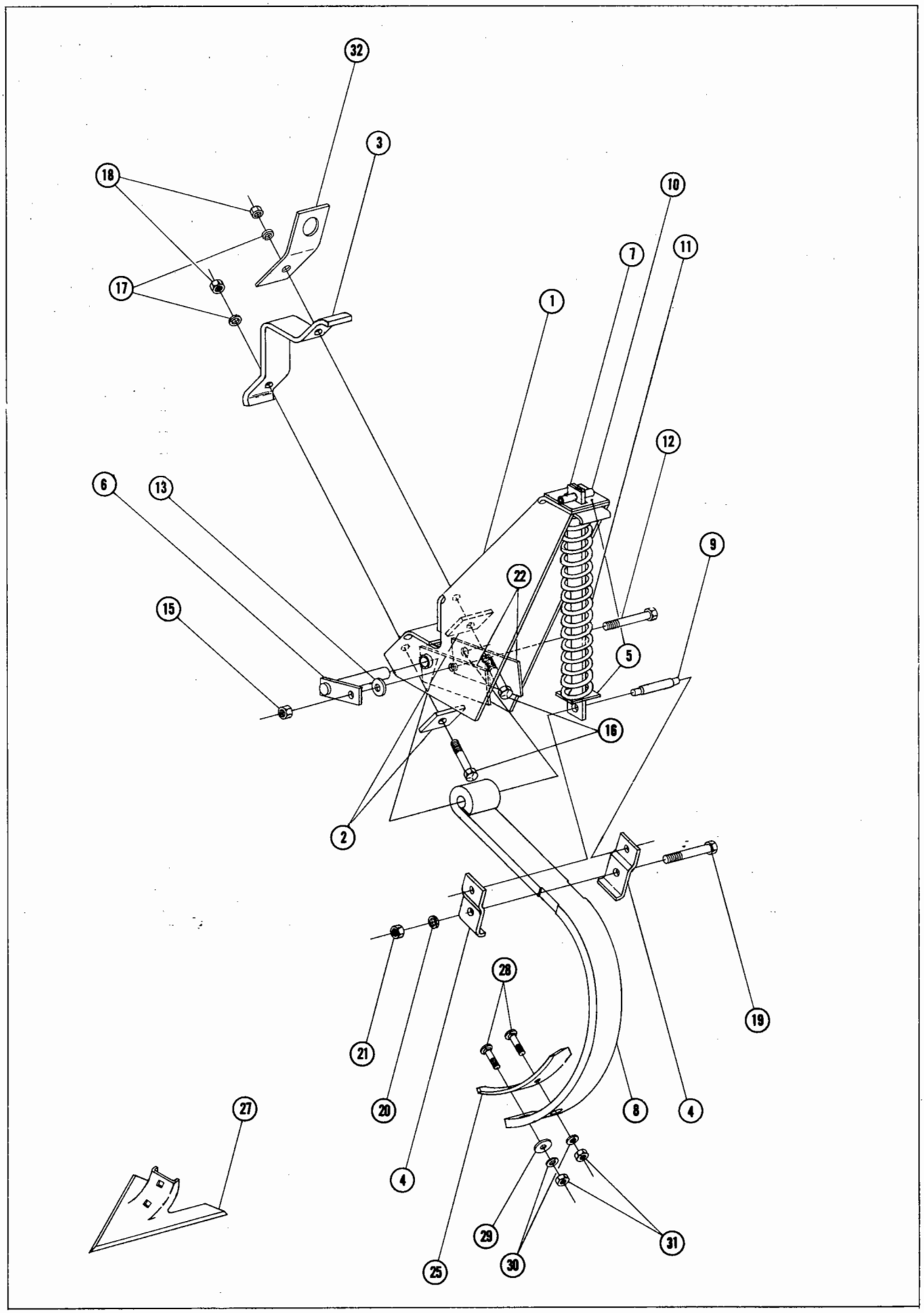
8/83

TRAIL HITCH ASSEMBLY

FOR MODELS - ALL

8/83

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
	3127-571-0	Trail Hitch Shipping Group	1
1	3127-572-0	Hitch Extension Weldment	1
2	3127-571-1	Bolt Plate	4
3	61-126	U-Bolt	3
4	64-109	5/8" STD. Lock Washer	6
5	63-109	5/8NC Hex Nut	6
6	62-224	3/4NC X 10" Machine Bolt	4
7	64-113	3/4" STD. Flat Washer	8
8	64-112	3/4" STD. Lock Washer	8
9	63-112	3/4NC Hex Nut	8
10	62-219	3/4NC X 8-1/2" Cap Screw	4
	3755-302-0	Hitch Assembly	1
11	3755-303-0	Hitch Frame Weldment	1
12	3755-304-0	Swing Tongue	1
13	3755-302-1	Spring Pin	1
14	76-137	Spring	1
15	60-606	1/4" DIA. X 2" Roll Pin	1
16	3755-305-0	Pin Guide Weldment	1
17	3755-302-3	Spacer	2
18	3755-302-2	Pin Guide	1
19	62-185	5/8NC X 6" Cap Screw	2
20	64-109	5/8" STD. Lock Washer	2
21	63-109	5/8NC Hex Nut	2
22	62-194	3/4NC X 2-1/2" Cap Screw	2
23	3755-302-4	Spacer	2
24	3755-307-0	Angle Support Weldment	1
25	64-112	3/4" STD. Lock Washer	2
26	63-112	3/4NC Hex Nut	2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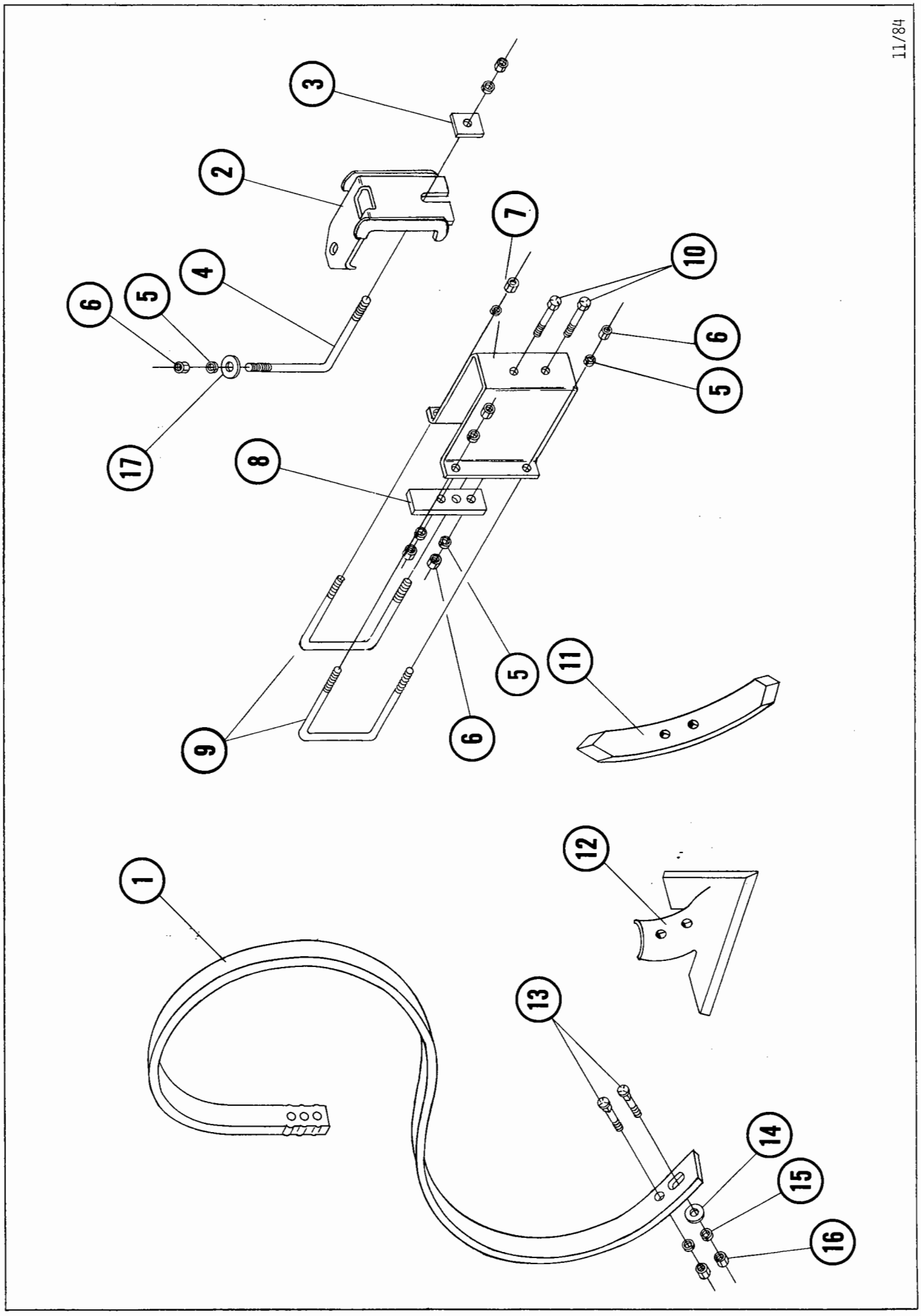
SPRING SHANK ASSEMBLY

FOR MODELS - ALL

11/84

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
	3127-25-0A	Spring Shank Assembly	
1	3127-24-0	Mounting Channel	1
*2	3127-25-3	Doubler	2
*3	3127-25-5	Mounting Strap	1
4	3127-25-8	Shank Clamp	2
5	3127-39-2	Slotted Washer	2
6	3127-37-0A	Pin Assembly	1
7	3127-39-1A	Guide Bar	1
8	31-139	Shank	1
9	60-105	Pivot Pin	1
10	60-624	1/2" DIA. X 2" Roll Pin	1
11	76-134	Spring	1
12	62-153	1/2NC X 3-1/2" Cap Screw	1
13	64-108	1/2" STD. Flat Washer	1
15	63-107	1/2NC Self Locking Nut	1
*16	62-343	1/2NC X 2" GRADE 5 Cap Screw	2
*17	64-107	1/2" STD. Lock Washer	2
*18	63-106	1/2NC Hex Nut	2
19	62-148	1/2NC X 2-3/4" Cap Screw	1
20	64-107	1/2" STD. Lock Washer	1
21	63-106	1/2NC Hex Nut	1
22	3127-25-7	Shank Guide	2
*25	33-100	Point	Specify
*26	33-101	9" Sweep (Not Shown) 47° Stem	Specify
*27	33-119	10" Sweep 47° Stem	Specify
	33-136	10" Sweep 41° Stem	Specify
*28	62-112	#3 Plow Bolt (GRADE 5)	2
*29	64-104	3/8" STD. Flat Washer	1
*30	64-103	3/8" STD. Lock Washer	2
*31	63-102	3/8NC Hex Nut	2
*32	4122-0-14	Winch Bracket (SHOWN IN STORAGE POSITION)	1

* Not Part Of Assembly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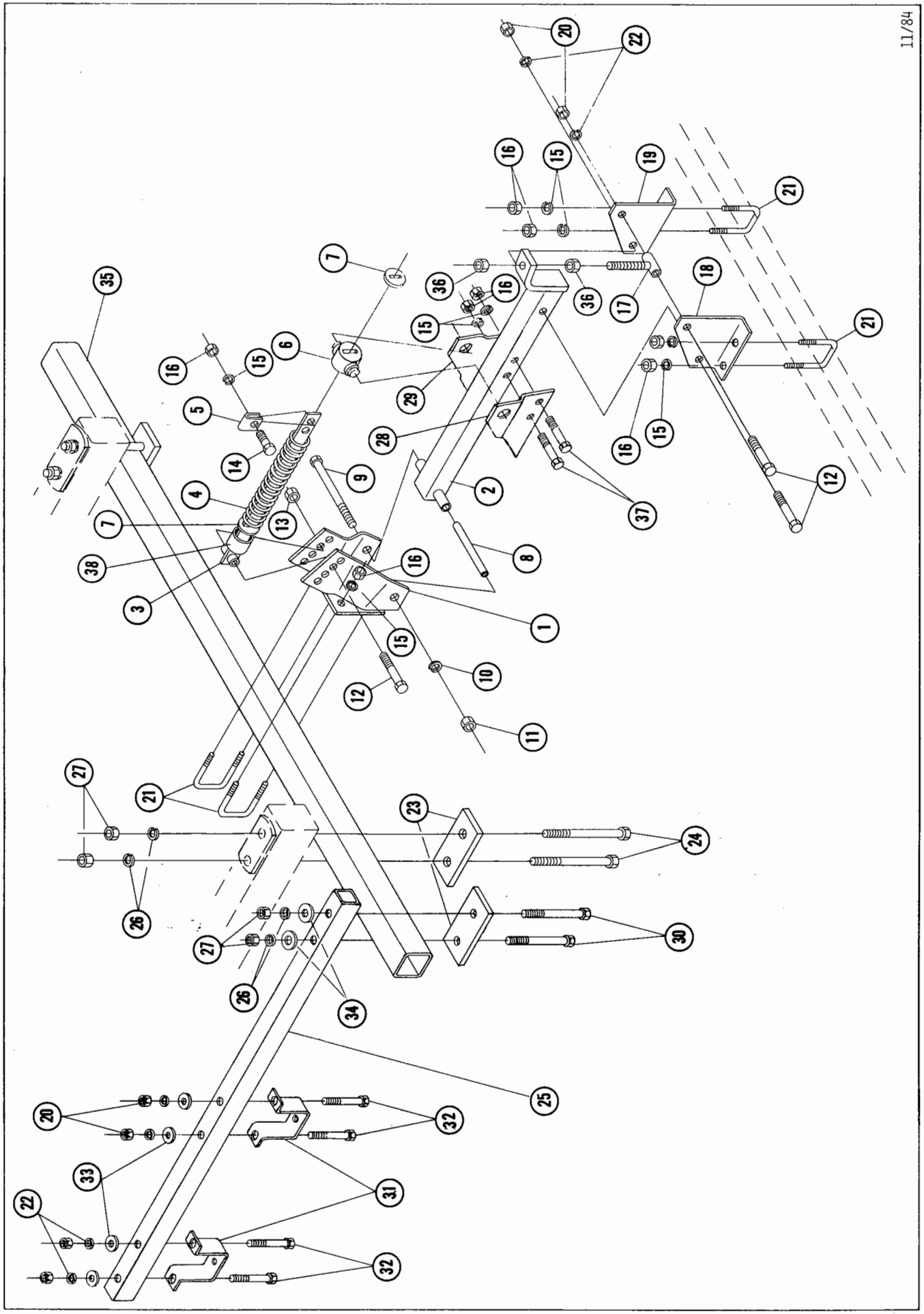
K-TINE SHANK ASSEMBLY

FOR MODELS - ALL

11/84

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	31-145	K-Tine Shank	1
2	4122-39-0	Shank Clamp	1
3	3127-25-3	Doubler	1
4	61-159	L-Bolt	1
5	64-107	1/2" STD. Lock Washer	8
6	63-106	1/2NC Hex Nut	8
7	3127-0-21	Extended Bracket	1
8	31-151	Reinforcement Plate	1
9	61-160	U-Bolt	2
10	62-343	1/2NC X 2" GRADE 5 Cap Screw	2
11	33-100	Point	1
12	33-119	10" Sweep (Standard) 47° Stem	1
	33-136	10" Sweep (Optional) 41° Stem	1
	33-101	9" Sweep (Optional) 47° Stem	1
13	62-112	3/8NC X 1-1/2" GRADE 5 Plow Bolt	2
14	64-104	3/8" STD. Flat Washer	1
15	64-103	3/8" STD. Lock Washer	2
16	63-102	3/8NC Hex Nut	2
17	64-108	1/2" STD. Flat Washer	1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CARRIER ARM ASSEMBLY

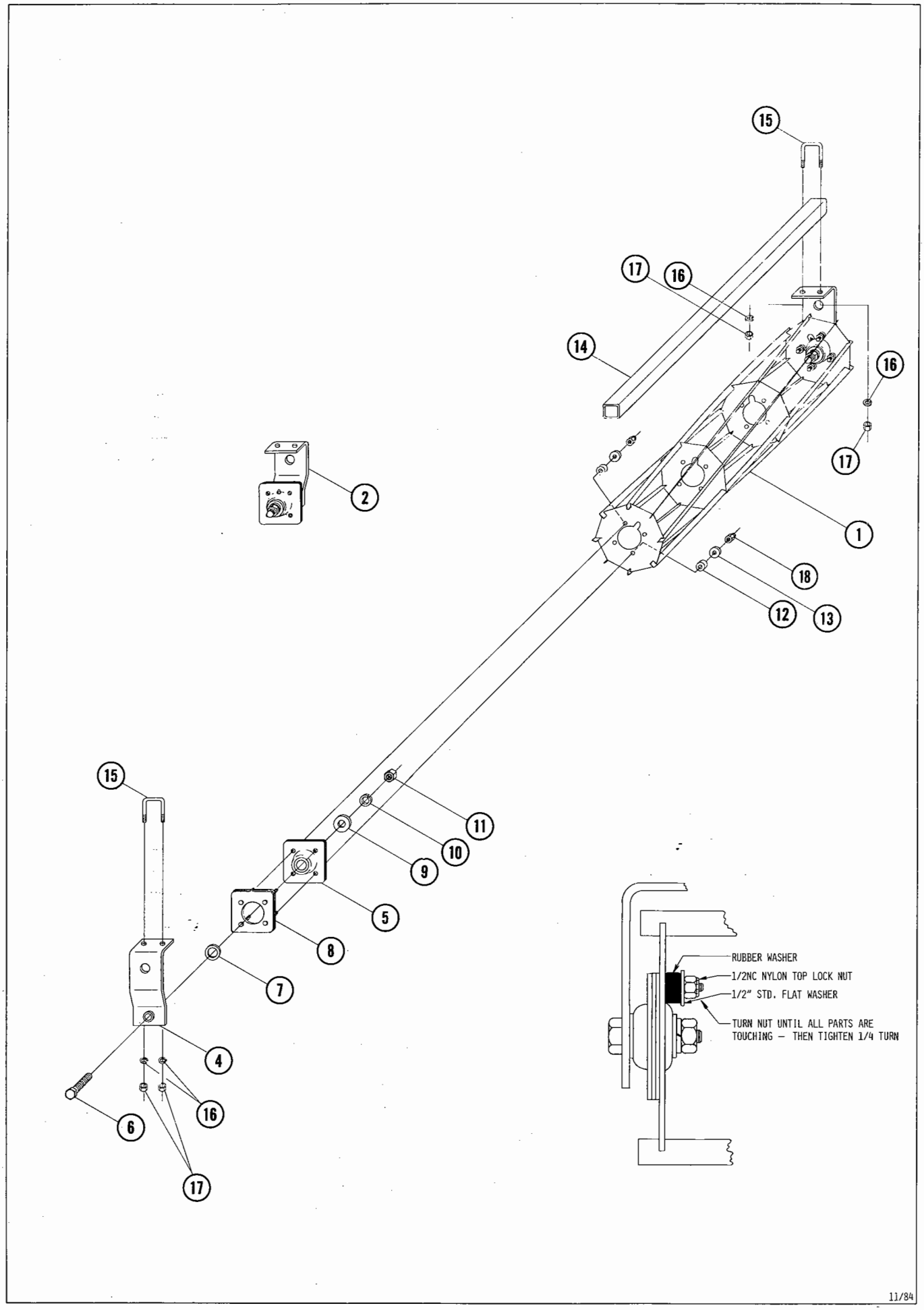
FOR MODELS - ALL

11/84

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
	3127-221-0B	Frame Mounting Bracket Assembly	1
	3127-421-0	Frame Mounting Bracket Assembly (4-Row Tines)	1
1	3127-223-0	Mounting Bracket Weldment	1
2	3127-222-0A	Carrier Arm Weldment	1
3	3127-224-0A	Spring Arm Weldment	1
4	76-136	Compression Spring	1
	76-115	Compression Spring (Use For 3127-421-0)	1
5	3127-221-1	Stop Clip	1
6	3127-221-3	Trunnion Casting	1
▲7	1501-23-3	Washer	1
8	3127-221-2	Carrier Bushing	1
9	62-216	3/4NC X 7-1/2" Cap Screw	1
10	64-112	3/4" STD. Lock Washer	1
11	63-112	3/4NC Hex Nut	1
12	62-175	5/8NC X 3-1/2" Cap Screw	1
13	63-110	5/8NC Self Locking Nut	1
14	62-136	1/2NC X 1-1/2" Cap Screw	1
15	64-107	1/2" STD. Lock Washer	1
16	63-106	1/2NC Hex Nut	1
17	3127-205-0	Adjustment Rod Weldment	1
18	3127-210-1	Left Mounting Bracket	1
19	3127-210-2	Right Mounting Bracket	1
20	63-109	5/8NC Hex Nut	6
21	61-141	1/2" DIA. U-Bolt	4
22	64-109	5/8" STD. Lock Washer	6
23	3127-206-1	Plate	8 per unit
24	62-220	3/4NC X 8-1/2" GRADE 5 Machine Bolt	12 per unit
25	3127-0-19	Brace	
26	64-112	3/4" STD. Lock Washer	16 per unit
27	63-112	3/4NC Hex Nut	16 per unit
28	3127-221-5	Left Lug	1
29	3127-221-6	Right Lug	1
30	63-213	3/4NC X 6-1/2" GRADE 5 Cap Screw	2
31	3127-0-10A	Box Clamp	2
32	62-177	5/8NC X 4" Cap Screw	4
33	64-110	5/8" STD. Flat Washer	4
34	64-113	3/4" STD. Flat Washer	4
*35	3119-199-1	Mounting Beam (44-3/4" Long)	
	3122-199-1	Mounting Beam (48" Long)	
	3127-201-1	Mounting Beam (72-3/4" Long)	
	3131-199-2	Mounting Beam (96" Long)	
	3136-199-2	Mounting Beam (120" Long)	
	3131-199-1	Mounting Beam (144" Long)	
36	63-145	5/8NC GRADE 8 Hex Nut	2
37	62-153	1/2NC X 3-1/2" Cap Screw	2
38	3127-422-1	Spacer (Used for 3127-421-0 Only)	1

* See placement drawing for lengths and quantities of mounting beams required for implement being assembled.

▲ NOTE: A quantity of (2) washers is used on the 3127-421-0 Frame Mounting Bracket Assembly.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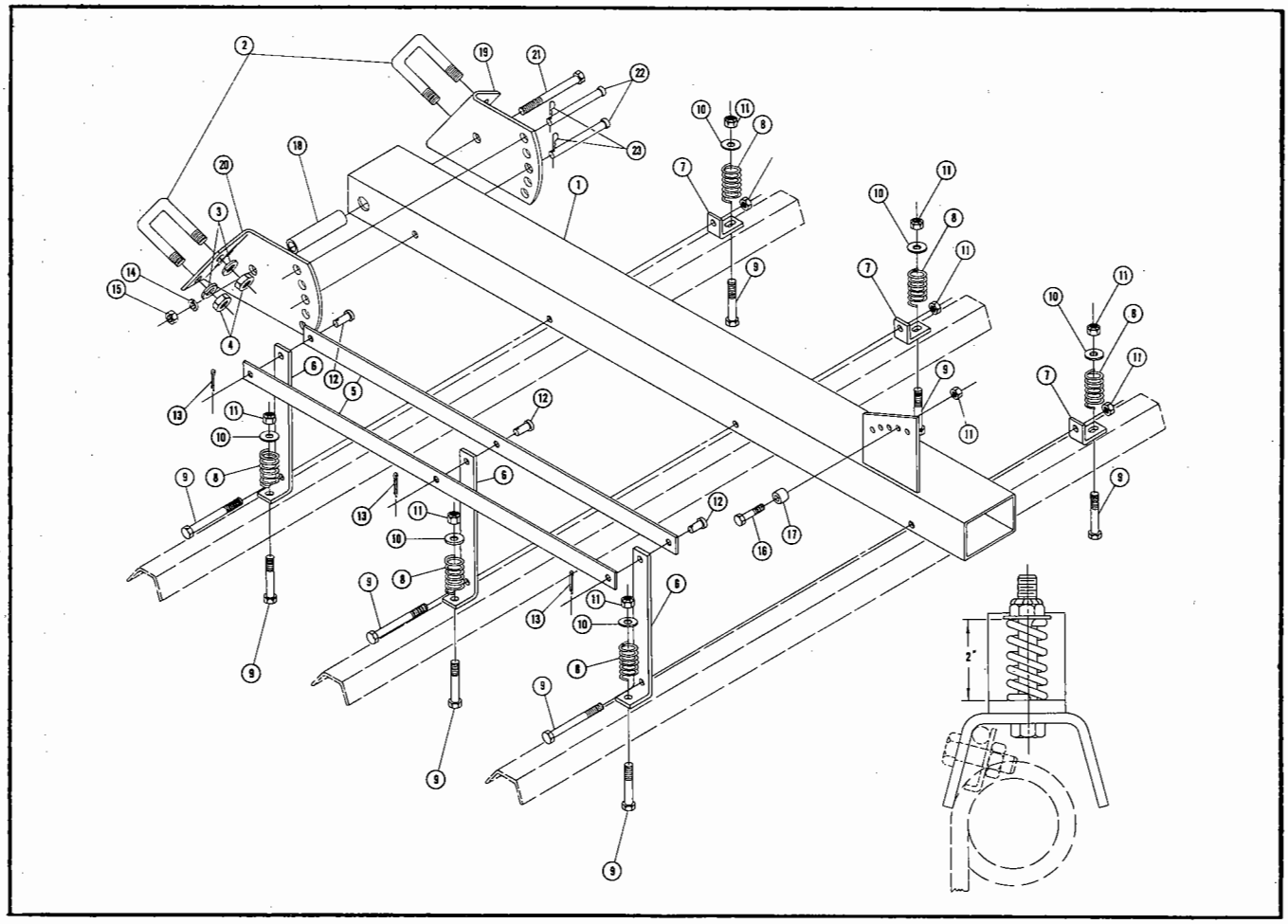
RUBBER WASHER
1/2NC NYLON TOP LOCK NUT
1/2" STD. FLAT WASHER
TURN NUT UNTIL ALL PARTS ARE
TOUCHING – THEN TIGHTEN 1/4 TURN
11/84

ROLLING BASKET ASSEMBLY

FOR MODELS - ALL 11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	3127-212-0B	Rolling Basket Weldment (42-3/4" Long)	1
	3127-213-0B	Rolling Basket Weldment (56-3/4" Long)	1
	3127-214-0B	Rolling Basket Weldment (70-3/4" Long)	1
2	3127-211-0A	Short Bearing Arm Assembly	2
	3127-207-0	Short Bearing Arm	1
5	40-109	Bearing Assembly	1
6	62-241	1NC X 4" Cap Screw	1
7	64-135	Spacer Washer	1
8	3112-364-0	Basket Mounting Plate	1
9	64-137	Washer	1
10	64-118	1" STD. Lock Washer	1
11	63-117	1NC Hex Nut	1
12	44-108	Rubber Washer	4
13	64-108	1/2" STD. Flat Washer	4
14	3127-200-1	Mounting Beam (58-3/4" Long)	1
	3127-201-1	Mounting Beam (72-3/4" Long)	1
	3113-198-1	Mounting Beam (89-3/4" Long)	1
15	61-141	1/2" DIA. U-Bolt	2
16	64-107	1/2" STD. Lock Washer	2
17	63-106	1/2NC Hex Nut	2
18	63-108	1/2NC Nylon Top Lock Nut	4

3-ROW TINE CARRIER

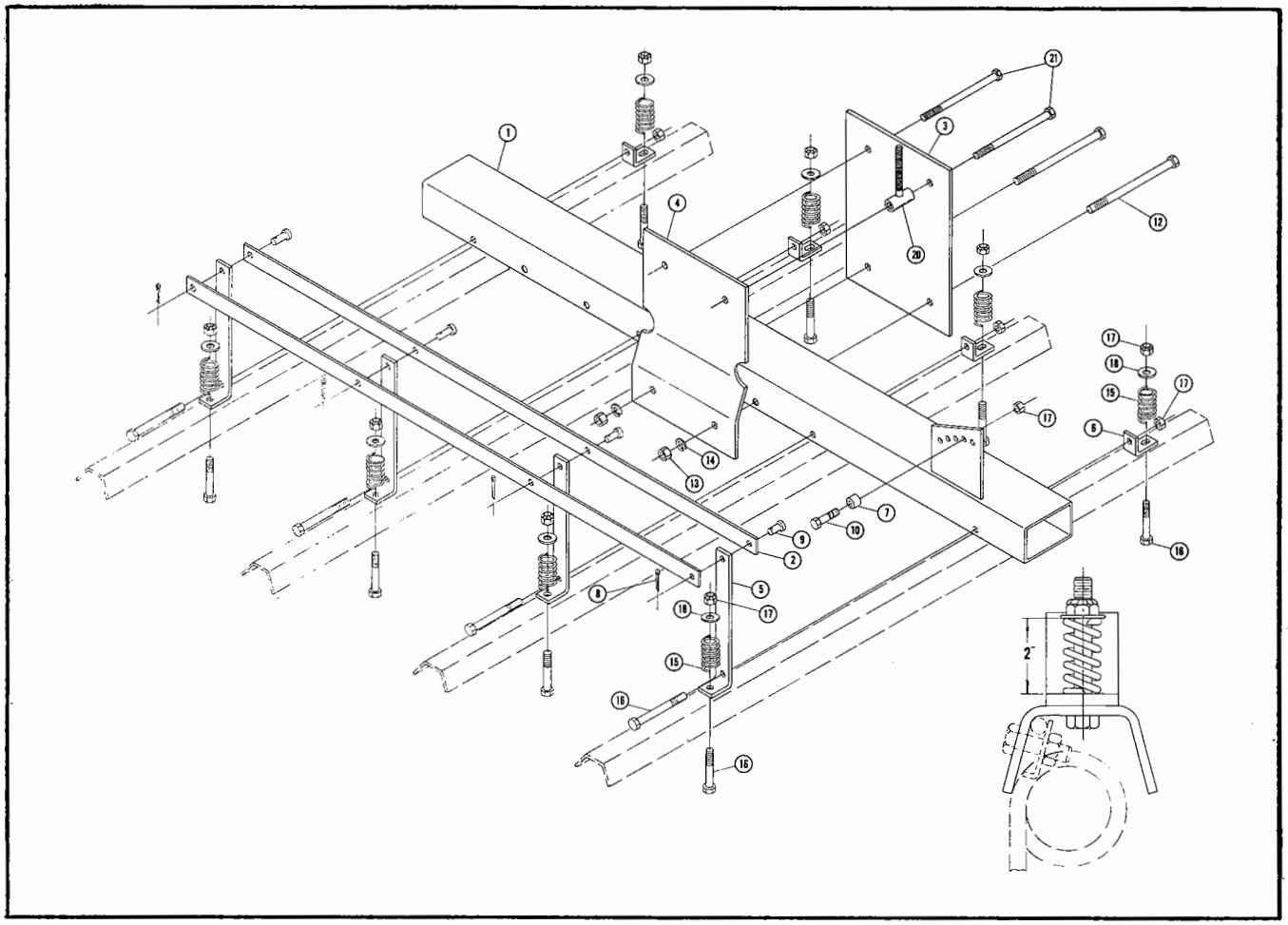


FOR MODELS - ALL

11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	3127-243-0A	Tine Carrier (3-Row)	Specify
1	3127-241-0A	Tine Carrier Weldment	1
2	61-141	U-Bolt	2
3	64-107	1/2" STD. Lock Washer	4
4	63-106	1/2NC Hex Nut	4
5	3127-243-1	Link	2
6	4100-673-1A	Pivot Arm	3
7	4100-673-3A	Pivot	3
8	76-127	Spring	6
9	62-389	3/8NC X 3-1/2" GRADE 8 Cap Screw	9
10	64-104	3/8" STD. Flat Washer	6
11	63-134	3/8NC Self Locking Nut	10
12	60-207	3/8" DIA. X 3/4" Clevis Pin	3
13	60-700	1/8" DIA. X 1" Cotter Pin	3
14	64-107	1/2" STD. Lock Washer	1
15	63-106	1/2NC Hex Nut	1
16	62-110	3/8NC X 1-1/2" Cap Screw	1
17	4100-673-5	Tube	1
18	3127-243-4	Spacer	1
19	3127-243-2	Right Mounting Bracket	1
20	3127-243-3	Left Mounting Bracket	1
21	62-155	1/2NC X 4" Cap Screw	1
22	60-231	1/2" DIA. X 3-1/2" Clevis Pin	2
23	60-716	#3 Hair Pin Cotter	2

4-ROW TINE CARRIER



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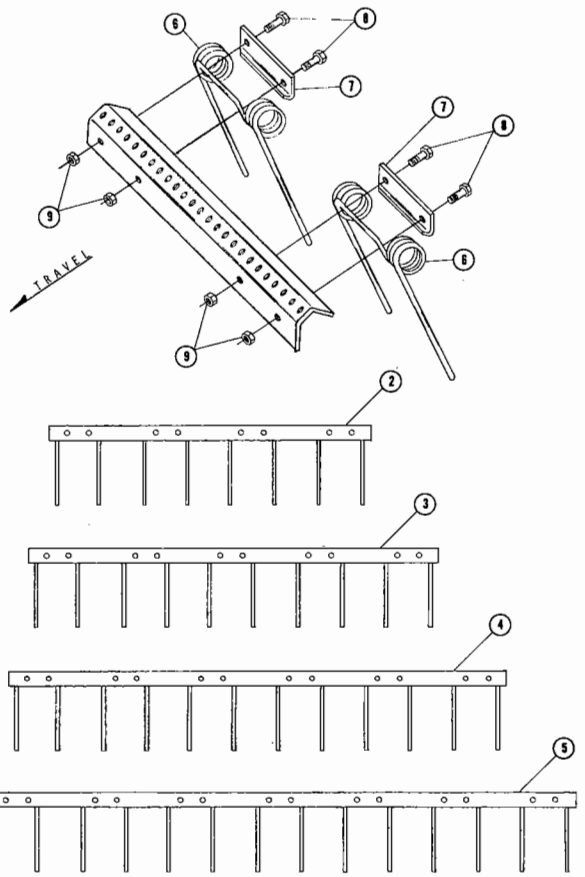
FOR MODELS - ALL

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	3127-443-0	4-Row Tine Carrier	Specify
1	3127-441-0	Tine Carrier Weldment	1
2	3127-443-1	Link	2
3	3127-443-2	Right Mounting Bracket	1
4	3127-443-3	Left Mounting Bracket	1
5	4100-673-1A	Pivot Arm	4
6	4100-673-3A	Pivot	4
7	4100-673-5	Tube	1
8	60-700	1-1/8" DIA. X 1" Cotter Pin	4
9	60-207	Leitzke Pin	4
10	62-110	3/8NC X 1-1/2" Cap Screw	1
11			
12	62-177	5/8NC X 4" Cap Screw	2
13	63-109	5/8NC Hex Nut	6
14	64-109	5/8" STD. Lock Washer	4
15	76-127	Spring	8
16	62-389	3/8NC X 3-1/2" GRADE 8 Cap Screw	8
17	63-134	3/8NC Nylon Top Lock Nut	12
18	64-104	3/8" STD. Flat Washer	8
19			
20	3127-206-0	Adjustment Rod	1
21	62-175	5/8NC X 3-1/2" Cap Screw	2
	3127-453-0	Bolt Sack	

TINE BARS

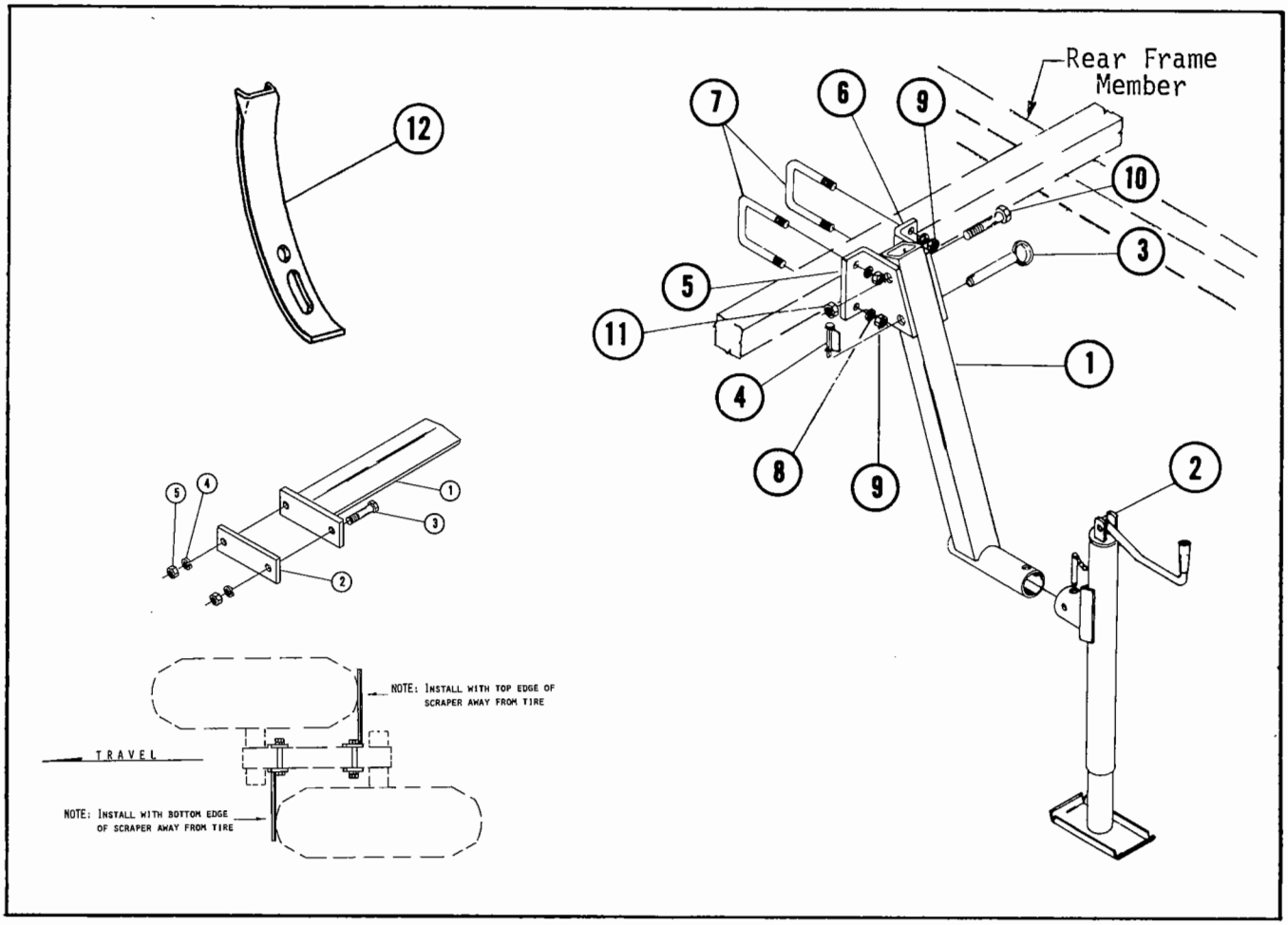


FOR MODELS - ALL

11/84

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1			
2	4100-624-1	Tine Bar (4' Long)	
3	4100-625-1	Tine Bar (5-1/2' Long)	
4	4100-626-1	Tine Bar (7' Long)	
5	4100-627-1	Tine Bar (8' Long)	
6	76-126	Spring Tine	
7	4100-624-3	Tine Clamp	
8	62-109	3/8NC X 1-1/4" Cap Screw	
9	63-103	3/8NC Self Locking Nut	

REAR JACK MOUNTING & TIRE SCRAPER

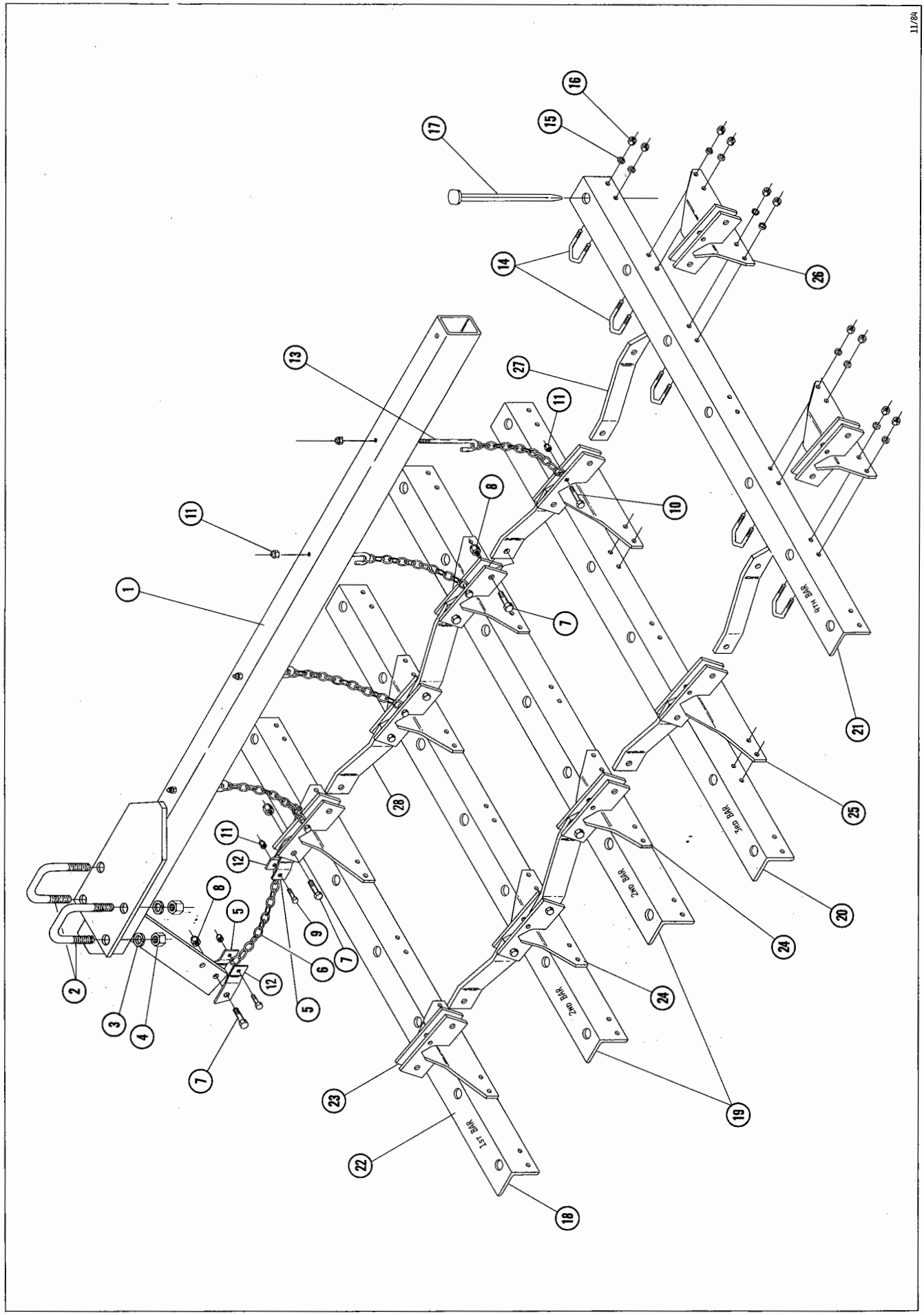


FOR MODELS - ALL

2/85

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
	4122-28-0	Rear Jack Mount	
1	4122-29-0	Post Weldment	1
*2	73-100	Jack Assembly	1
3	2330-87-0	Pin Assembly	1
4	60-103	P.T.O. Pin	1
5	2330-85-3	Left Bracket	1
6	2330-85-2	Right Bracket	1
7	61-126	U-Bolt	2
8	64-109	5/8" STD. Lock Washer	4
9	63-109	5/8NC Hex Nut	4
10	62-202	3/4NC X 4-1/2" Cap Screw	1
11	63-114	3/4NC Self Locking Nut	1
	4133-105-0	Tire Scraper Assembly (Wing Wheels ONLY on Models 3127-3136)	
1	4901-106-0	Tire Scraper	1
2	4901-106-1	Bolt Plate	1
3	62-180	5/8NC X 4-1/2" Cap Screw	2
4	64-109	5/8" STD. Lock Washer	2
5	63-109	5/8NC Hex Nut	2
12	31-149	Wear Shield	Specify

* Not part of assembly.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1ST BAR
2ND BAR
2ND BAR
3RD BAR
4TH BAR

5 ROW SPIKE BAR ASSEMBLY

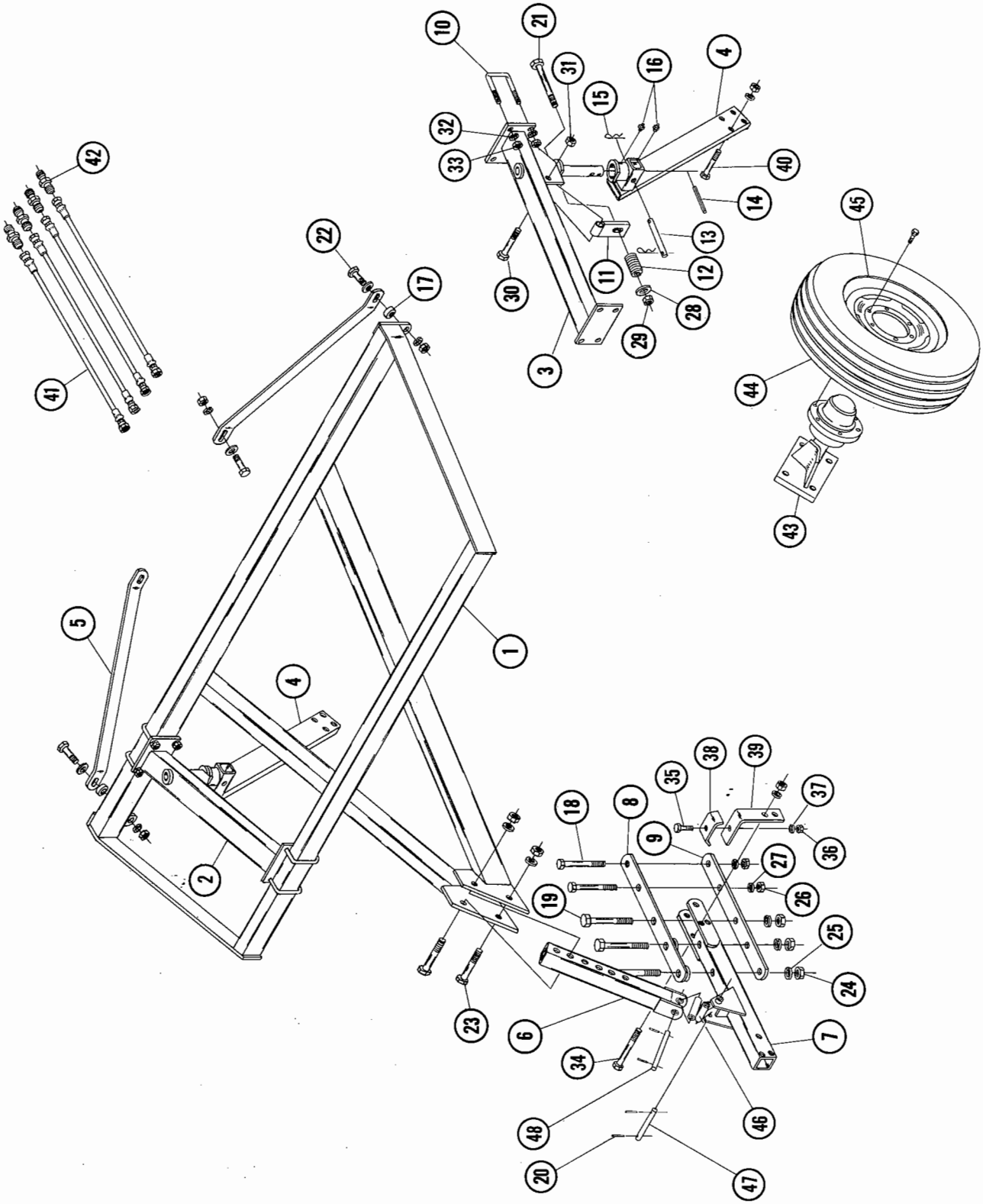
FOR MODELS - ALL

11/84

ITEM	PART NUMBER	PART DESCRIPTION	QTY.
1	3127-482-0	Carrier Weldment (1 SHOWN)	2
2	61-148	3/4" DIA. U-Bolt (2 SHOWN)	4
3	64-112	3/4" STD. Lock Washer	8
4	63-112	3/4NC Hex Nut	8
5	3127-476-1A	Right Connector	4
6	3127-476-3	5/16" Chain	12
7	62-138	1/2NC X 1-3/4" Cap Screw	20
8	63-108	1/2NC Nylon Top Lock Nut	20
9	62-110	3/8NC X 1-1/2" Cap Screw	4
10	62-113	3/8NC X 1-3/4" Cap Screw	10
11	63-134	3/8NC Nylon Top Lock Nut	24
12	3127-476-4	Left Connector	4
13	61-146	J-Bolt	8
*14	61-169	Clamp Bolt	1 per Spike
*15	64-103	3/8" STD. Lock Washer	2 per Spike
*16	63-102	3/8NC Hex Nut	2 per Spike
*17	33-135	Spike	Specify
18	3127-467-01	1st Bar Spike Ass'y (7 Spike)	1
	3127-468-01	1st Bar Spike Ass'y (8 Spike)	1
	3127-469-01	1st Bar Spike Ass'y (9 Spike)	1
	3127-470-01	1st Bar Spike Ass'y (10 Spike)	1
	3127-471-01	1st Bar Spike Ass'y (11 Spike)	1
+	3136-470-01	1st Bar Spike Ass'y (10 Spike)	1
+	3136-471-01	1st Bar Spike Ass'y (11 Spike)	1
19	3127-467-02	2nd Bar Spike Ass'y (7 Spike)	2
	3127-468-02	2nd Bar Spike Ass'y (8 Spike)	2
	3127-469-02	2nd Bar Spike Ass'y (9 Spike)	2
	3127-470-02	2nd Bar Spike Ass'y (10 Spike)	2
	3127-471-02	2nd Bar Spike Ass'y (11 Spike)	2
+	3136-470-02	2nd Bar Spike Ass'y (10 Spike)	2
+	3136-471-02	2nd Bar Spike Ass'y (11 Spike)	2
20	3127-467-03	3rd Bar Spike Ass'y (7 Spike)	1
	3127-468-03	3rd Bar Spike Ass'y (8 Spike)	1
	3127-469-03	3rd Bar Spike Ass'y (9 Spike)	1
	3127-470-03	3rd Bar Spike Ass'y (10 Spike)	1
	3127-471-03	3rd Bar Spike Ass'y (11 Spike)	1
+	3136-470-03	3rd Bar Spike Ass'y (10 Spike)	1
+	3136-471-03	3rd Bar Spike Ass'y (11 Spike)	1
21	3127-467-04	4th Bar Spike Ass'y (7 Spike)	1
	3127-468-04	4th Bar Spike Ass'y (8 Spike)	1
	3127-469-04	4th Bar Spike Ass'y (9 Spike)	1
	3127-470-04	4th Bar Spike Ass'y (10 Spike)	1
	3127-471-04	4th Bar Spike Ass'y (11 Spike)	1
+	3136-470-04	4th Bar Spike Ass'y (10 Spike)	1
+	3136-471-04	4th Bar Spike Ass'y (11 Spike)	1
*22	3127-467-1	Spike Bar (For 7 Spikes)	5
	3127-468-1	Spike Bar (For 8 Spikes)	5
	3127-469-1	Spike Bar (For 9 Spikes)	5
	3127-470-1	Spike Bar (For 10 Spikes)	5
	3127-471-1	Spike Bar (For 11 Spikes)	5
*23	3127-483-0	Left Pivot Weldment (For 1st Bar)	2
*24	3127-484-0	Right Pivot Weldment (For 2nd Bar)	4
*25	3127-485-0	Right Pivot Weldment (For 3rd Bar)	2
*26	3127-486-0	Left Pivot Weldment (For 4th Bar)	2
27	3127-477-2	Right Link	4
28	3127-477-3	Left Link	4

* Item Included In Spike Bar Assembly

\+ Used For Model 3136 ONLY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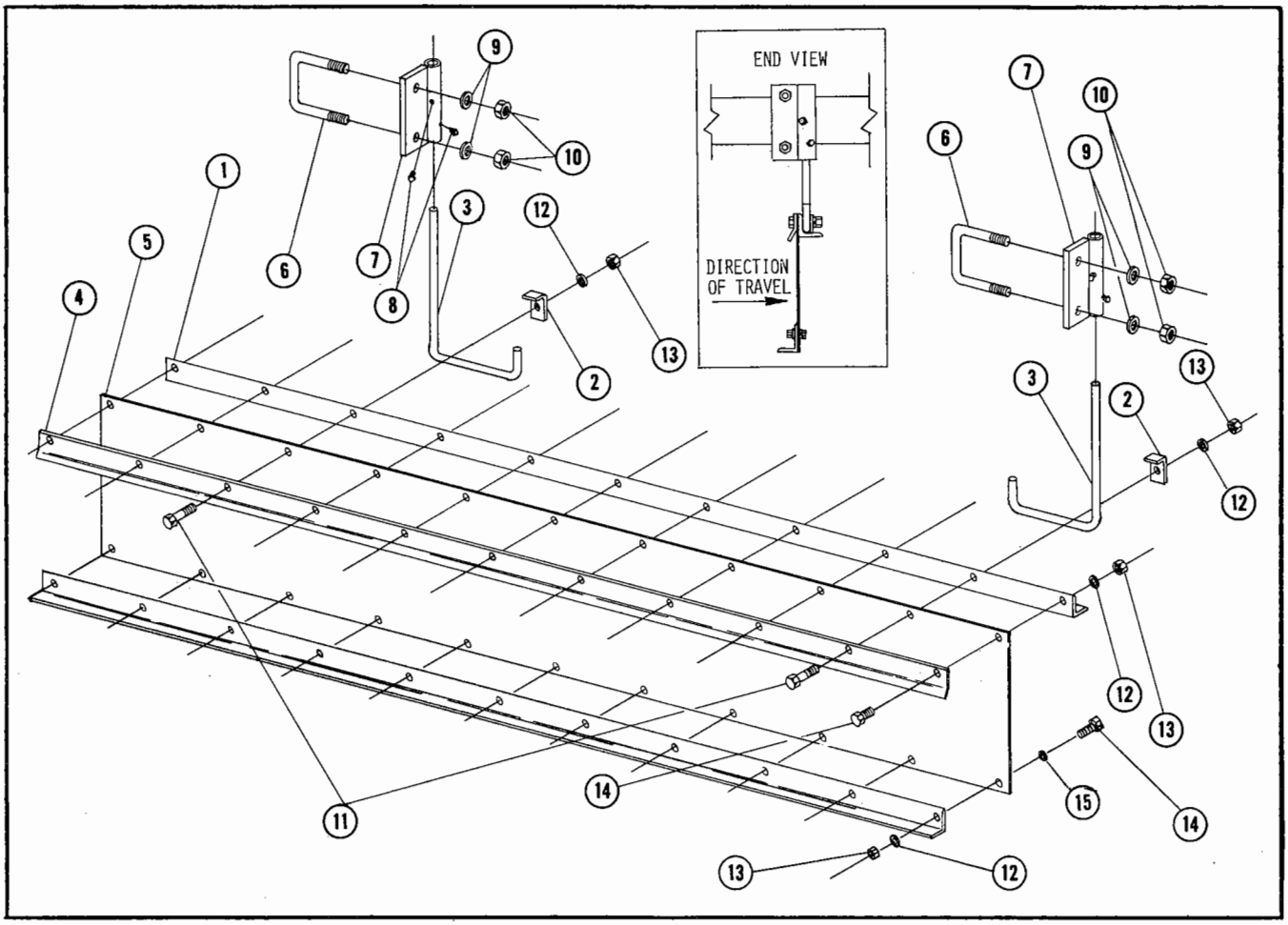
TANK TRAILER GROUP

FOR MODELS - ALL

2/85

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
	3127-500-0	Tank Trailer Group	1
1	3127-501-0	Tank Frame Weldment	1
2	3127-504-0	Right Castor Pivot Post	1
3	3127-503-0	Left Castor Pivot Post	1
4	3127-508-0	Castor Wheel Arm	2
5	3127-515-1	Guide Link	2
6	3127-519-0	Connecting Arm Weldment	1
7	3127-518-0	Hitch Extension Weldment	1
8	3127-514-0	Extension Bracket Weldment	1
9	3127-514-1	Hitch Extension Brace Plate	1
10	61-126	U-Bolt	8
11	3127-505-0	Wheel Stabilizer	2
12	76-138	Spring	2
13	3127-566-1	Wheel Lock Pin	2
14	60-625	1/2" DIA. X 4" Roll Pin	2
15	60-717	#4 Hair Pin Cotter	4
16	65-110	1/8NPT Zerk	4
17	3127-565-1	Spacer	4
18	62-219	3/4NC X 8-1/2" Machine Bolt	2
19	62-258	1NC X 8-1/2" Machine Bolt	3
20	60-617	3/8" DIA. X 2-1/2" Roll Pin	4
21	62-224	3/4NC X 10" Machine Bolt	2
22	62-194	3/4NC X 2-1/2" Cap Screw	4
23	62-247	1NC X 5-1/2" Cap Screw	2
24	63-117	1NC Hex Nut	8
25	64-118	1" STD. Lock Washer	8
26	63-112	3/4NC Hex Nut	14
27	64-112	3/4" STD. Lock Washer	14
28	64-113	3/4" STD. Flat Washer	6
29	63-114	3/4NC Self Locking Nut	3
30	62-180	5/8NC X 4-1/2" Cap Screw	2
31	63-110	5/8NC Self Locking Nut	2
32	64-109	5/8" STD. Lock Washer	16
33	63-109	5/8NC Hex Nut	16
34	62-253	1NC X 7" GRADE 5 Cap Screw	3
35	62-142	1/2NC X 2" Cap Screw	1
36	63-106	1/2NC Hex Nut	1
37	64-107	1/2" STD. Lock Washer	1
38	2426-170-5	Hose Clamp	1
39	3127-0-20	Hose Stand	1
40	62-200	3/4NC X 4" Cap Screw	8
41	24-243	Hydraulic Hose Assembly 32" Long	4
42	25-304	37° Flare Male Coupling	4
43	1918-17-0	Hub and Axle Assembly	2
44	51-101	Tire (9.5L - 6-Ply)	2
45	52-102	Wheel (15" X 8")	2
46	3127-517-0	Trunnion Weldment	1
47	3127-0-31	Pin (8-1/4" Long)	1
48	3127-0-30	Pin (9-1/2" Long)	1

SPRAY SHIELD ASSEMBLY

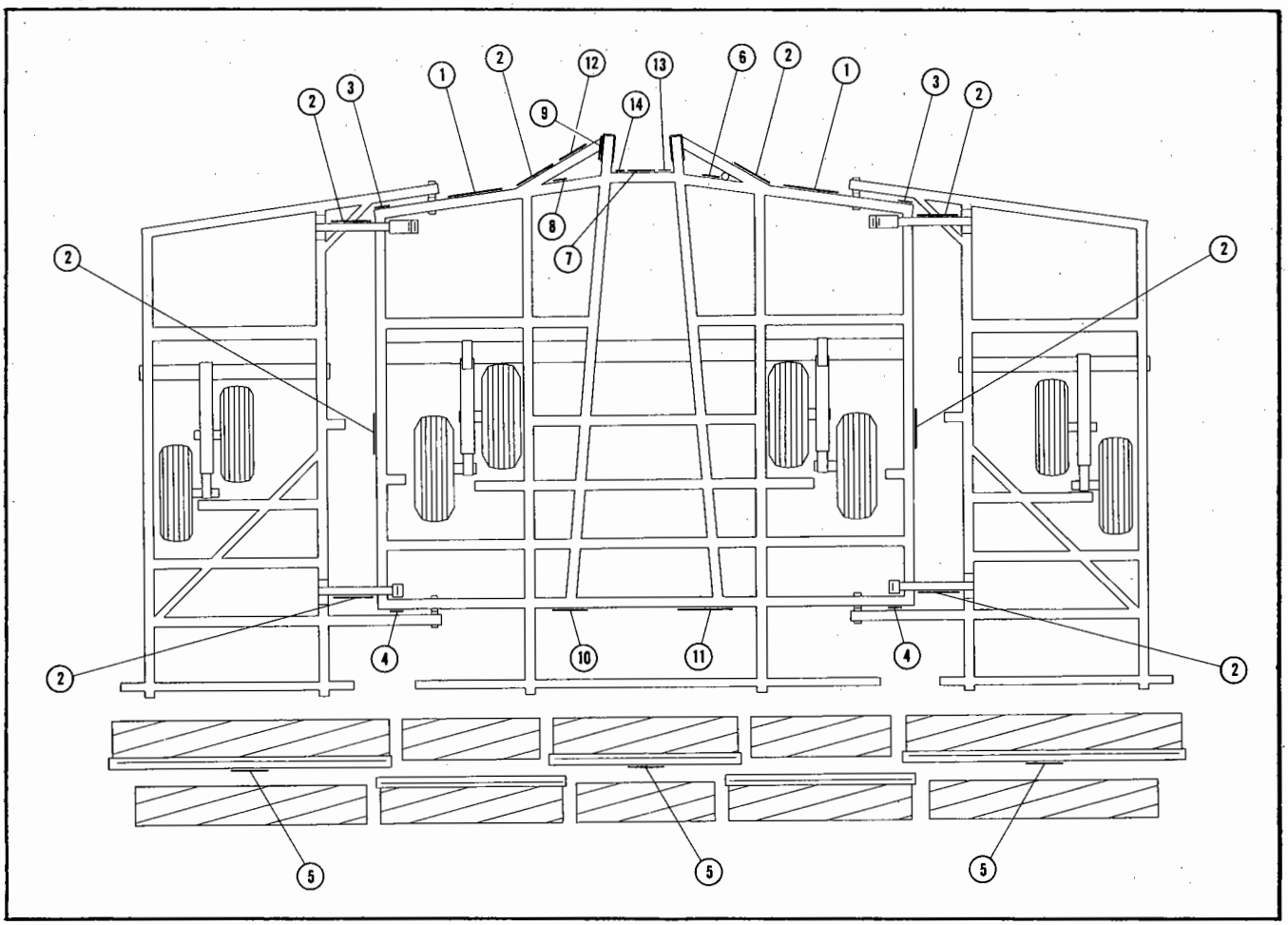


FOR MODELS - ALL

2/85

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	3122-281-1	Angle (50" Long)	2
	3127-281-1	Angle (82" Long)	2
	3112-281-1	Angle (66" Long)	2
	3131-281-1	Angle (106" Long)	2
2	3127-281-2	Toe Clamp	2
3	3127-281-3	Hanger	2
4	3122-281-6	Clamp Bar (50" Long)	1
	3127-281-6	Clamp Bar (82" Long)	1
	3112-281-3	Clamp Bar (66" Long)	1
	3131-281-6	Clamp Bar (106" Long)	1
5	3122-281-5A	Shield (50" Long)	1
	3127-281-5A	Shield (82" Long)	1
	3112-281-4	Shield (66" Long)	1
	3131-281-5A	Shield (106" Long)	1
6	61-123	U-Bolt (For Models 3112, 3118 & 3121)	2
	61-126	U-Bolt (For Models 3115, 3124, 3127, 3131, 3136)	2
7	3127-286-0	Mounting Bracket	2
8	62-313	Square Head Set Screw	4
9	64-109	5/8" STD. Lock Washer	4
10	63-109	5/8NC Hex Nut	4
11	62-116	3/8NC X 2" Cap Screw	2
12	64-103	3/8" STD. Lock Washer	Specify
13	63-102	3/8NC Hex Nut	Specify
14	62-108	3/8NC X 1" Cap Screw	Specify
15	64-104	3/8" STD. Flat Washer	Specify

DECALS



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FOR MODELS - ALL

ITEM	*PART NUMBER*	*PART DESCRIPTION*	*QUANTITY*
1	74-100	Krause Decal	2
2	74-102	Danger (Stand Clear Of Wing Decal)	8
3	74-107	Amber Reflector	2
4	74-108	Red Reflector	2
5	74-110	Krause Decal	3
6	74-115	Name Plate	1
7	74-117	Implement Safety Decal	1
8	74-121	Caution (Width / Height Decal)	1
9	74-145	Spike - Tine Transport Decal	1
10	74-150	3100 Series Decal	1
11	74-151	Landsman Decal	1
12	74-161	Striker Plate Decal	1
13	74-155	Adjustment Screw Decal	1
14	74-162	K-Tine Decal	1

ASSEMBLY SECTION

THE FOLLOWING SECTION ILLUSTRATES A GENERAL METHOD FOR THE ASSEMBLY OF THIS SERIES KRAUSE TILLAGE TOOL. YOU MUST KNOW THE MODEL NUMBER OF THE UNIT BEING ASSEMBLED WHENEVER MAKING REFERENCE TO THIS SECTION. THE FOLLOWING PICTURES AND DRAWINGS WILL SHOW BOLTS, PINS, NUTS AND ETC., WITH THE DESCRIPTIVE SIZE AND LENGTHS IN THE ACCOMPANYING PARAGRAPH AND A PARTS LISTING REFERENCE PAGE NUMBER. IF ANY DIFFICULTY SHOULD BE ENCOUNTERED DURING THE ASSEMBLY, RECHECK THE ILLUSTRATIONS, ASSEMBLY STEPS AND PART LIST DRAWINGS.

PROPER BOLT USE

OVER TORQUED BOLTS is probably one of the most frequent causes for bolt breakages. MAXIMUM TIGHTNESS DOES NOT MEAN MAXIMUM STRENGTH. A bolt in a stretched condition due to over torsioning is more subject to failure under a heavy load or shock than a bolt that is correctly tightened. Torque hand wrench or torque adjustable impact wrenches should be used. If standard wrenches are used, try to refrain from using "cheater bars." Cheater bars increase the risk of over torsioning. When torqued properly, bolts and their joining members will give longer, more satisfying service.

The following table lists the torque requirements for bolts with coarse threads. Torque values for plated or oiled bolts are unpredictable due to the lubricating effect and require slightly less torque than black bolts.

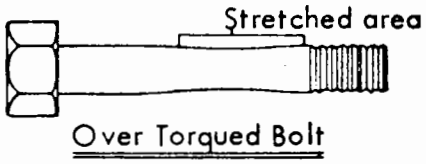
RECOMMENDED TORQUE VALUES IN FOOT POUNDS

For S.A.E. Grade 2 and Grade 5 coarse thread cap screws and bolts shown are suggested MAXIMUM for fasteners, carrying only the residue oil of the manufacturer.

BOLT SIZE	BLACK BOLTS GRADE 2	BLACK BOLTS GRADE 5	PLATED or OILED BOLTS GRADE 2	PLATED or OILED BOLTS GRADE 5
3/8"	19	32	16	24
7/16"	30	50	24	40
1/2"	45	72	34	58
5/8"	86	150	68	118
3/4"	150	250	120	200
7/8"	140	360	105	280
1"	220	560	175	450
1-1/8"	260	700	205	560
1-1/4"	380	980	300	780
1-1/2"	580	1200	460	960

TIE ROD TIGHTENING TORQUE

1-1/2" Dia. Rods	600 Ft. Lbs
1-3/4" Dia. Rods	800 Ft. Lbs
2" Dia. Rods	1200 Ft. Lbs



Over Torqued Bolt

SAE GRADE 2


SAE GRADE 5

Incorrect use of GRADED bolts is another problem. Generally two grades are used on Krause tools, Grade 2 and Grade 5. Grade 2 bolts are used in low stress areas or for shear bolts to protect more expensive parts. Grade 5 bolts are approximately 60-150% stronger than Grade 2 and are used in higher stress areas. It is very important that these bolts are used in the proper locations as recommended

ASSEMBLY

STUDY THE NAMES AND LOCATIONS OF THE PARTS AND FAMILIARIZE YOURSELF WITH THE LANDSMAN BEFORE STARTING THE ASSEMBLY. READING THE STEP BY STEP INSTRUCTIONS THAT FOLLOW WILL BE HELPFUL.

SAFETY

READ ALL THE SAFETY NOTATIONS IN THE ASSEMBLY INSTRUCTIONS FOR YOUR PROTECTION. ACCIDENTS CAN BE PREVENTED BY RECOGNIZING THE CAUSE OF AN ACCIDENT BEFORE IT CAN HAPPEN.

ASSEMBLY

Select an area for assembly that will be large enough to accommodate the completed unit. The surface of the work area should be as level as possible. Leave room in front of Landsman to hook a tractor to charge hydraulics and fold unit. Use the proper hand tools to insure proper bolt tightness. Refer to the page titled "Proper Bolt Use" for recommended torque values for different size bolts. Weights of major parts are: MAIN FRAME HALVES - 700 LBS., MAIN ROCKER SHAFT - 670 LBS., TONGUE - 430 LBS., therefore stands will have to support the combined weight of 2,500 LBS. Make sure chains and handling equipment are adequate for this weight.

PART LOCATIONS

FRONT - The front of the frame can be determined by the location of the name plate that has been attached to the right front frame member.

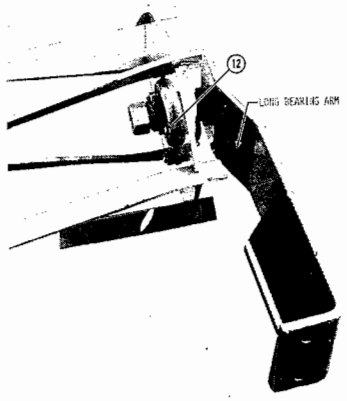
RIGHT and LEFT sides can be established by standing behind the frame and looking toward the front, or the direction of travel.
TOP - To be sure the frame is right side up, position the front hitch members of the frame pointing down.

ASSEMBLY STEPS

Assemble the Landsman following the steps shown in this section. Each step for part attachment is reflected by a matching number on the accompanying drawing or photograph.

EXAMPLE:

12. Mount Bearing Arm to each end of proper basket with 1/2NC Carriage Bolt assembled in bearing. Assemble 1/2NC Hex Nut inside Rolling Basket. Make sure Bearing Grease Zerk is in cut out provided.



MODEL NUMBER

Know the model number of the Landsman being assembled. Use the model number whenever referring to the assembly, parts listing pages or placement drawings. The number is stamped on the Name Plate located on the right front frame member.

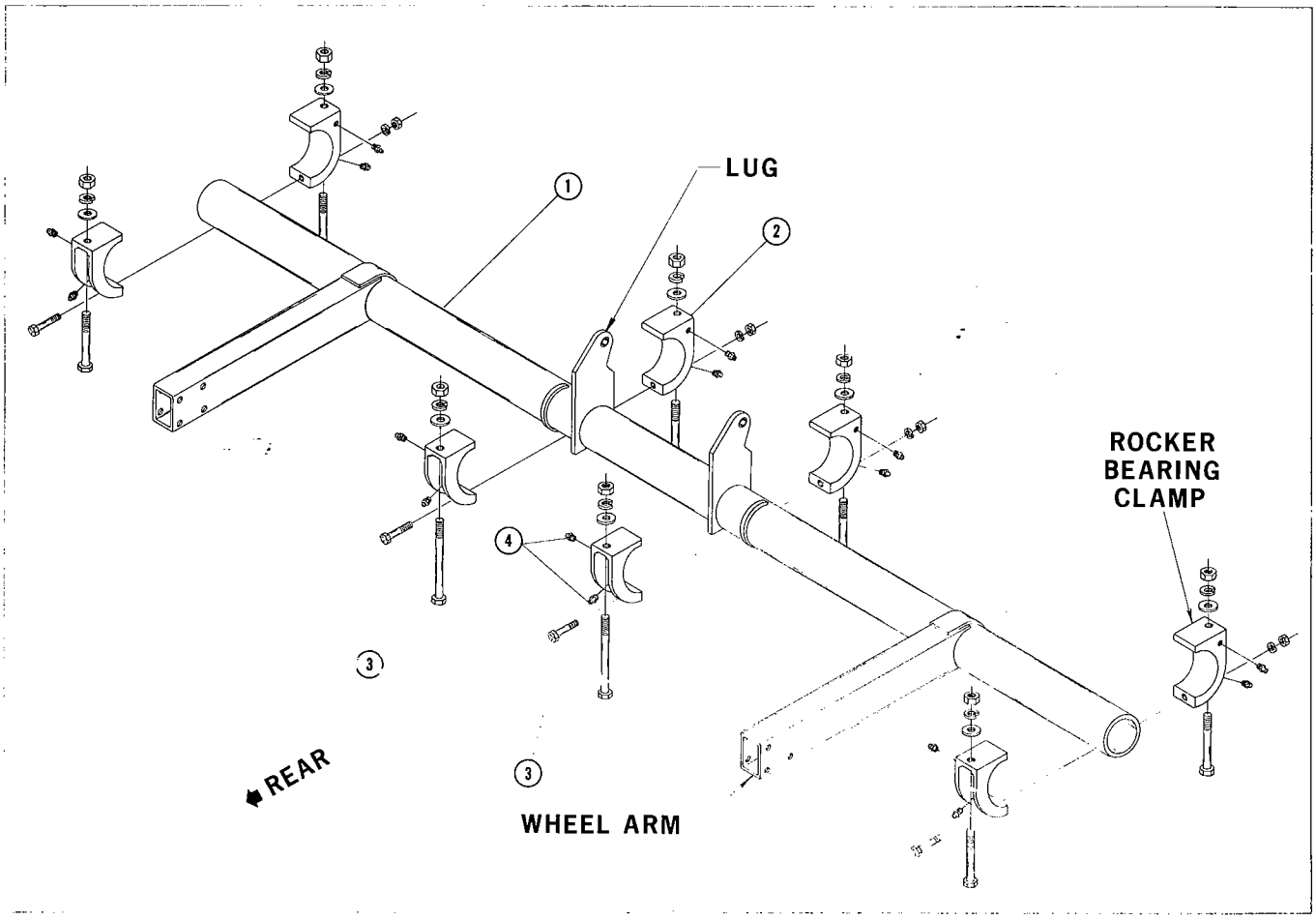
I. MAIN ROCKER SHAFT

1. Lay main rocker shaft on ground in center of assembly area with wheel arms pointed to rear of set up area. Cylinder lugs will be pointing up.

2. Remove any dirt or paint from grease channels in the rocker shaft half bearings. Coat bearing area with grease.

3. Assemble rocker shaft bearings around rocker shaft at four locations and secure with a 3/4NC X 2-1/2" GRADE 5 Cap Screw, Lock Washer and Hex Nut. DO NOT TIGHTEN AT THIS TIME.

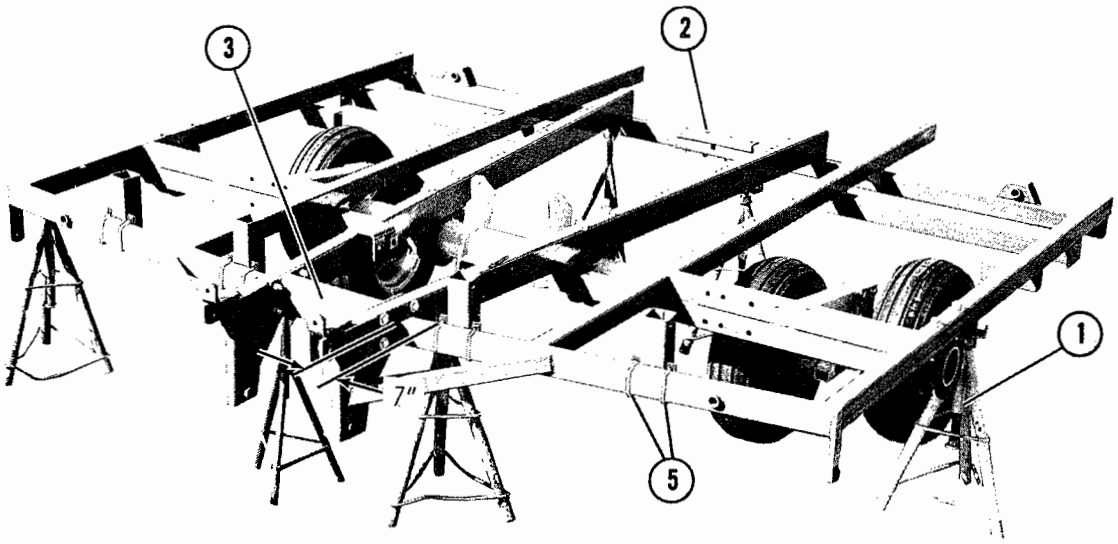
4. Place (2) Grease Zerks into tapped holes in each rocker shaft bearing. Weight of rocker shaft and bearings is 670 Lbs.



I. CENTER FRAME HALVES - FOR MODELS 3115, 3124, 3127, 3131 AND 3136

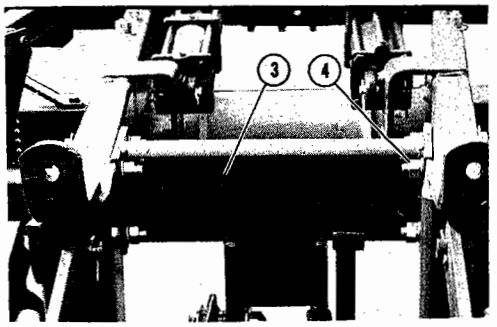
1. Directly over the rocker shaft place the right and left main frames on suitable stands approximately 42" high. The hitch horseheads will point down and the spring brackets up. Stands will need to support the combined weight of frames, rocker shaft, and tongue, about 2,500 LBS.

2. Place connector channels on top and bottom of rear frame members. Bolt loosely with (4) 3/4NC X 5-1/2" Cap Screws, Lock Washers and Hex Nuts. Under the head of right center bolt place the Lamp Bracket. DO NOT TIGHTEN BOLTS.



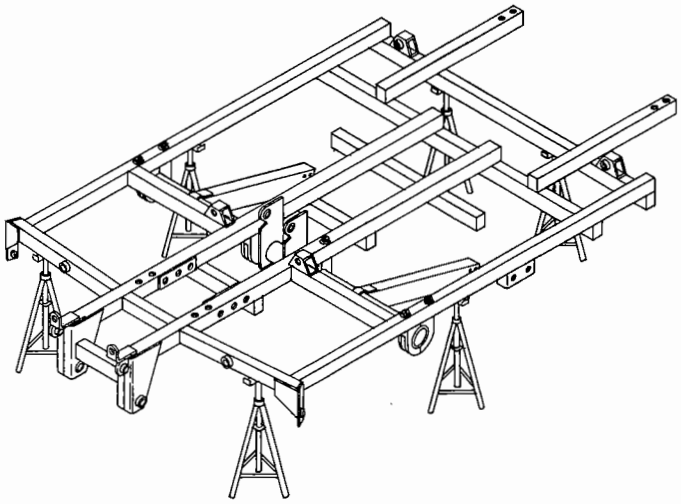
3. At the front of frames, position the gang hinge spacer bracket, with hinge pivots pointing down.

4. Bolt with (8) 3/4NC X 5" Cap Screws, Flat Washer (on outside of beam), Lock Washer and Hex Nut. DO NOT TIGHTEN BOLTS.

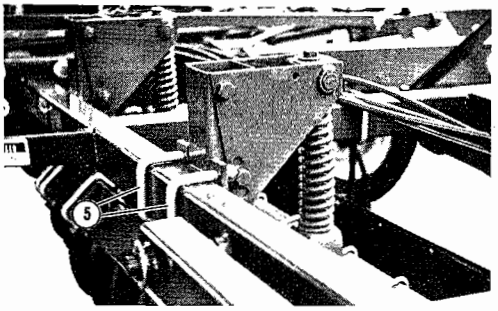


CENTER FRAME FOR MODELS 3112, 3118, 3121

1. Directly over the main rocker shaft place the center frame weldment on suitable stands approximately 42" high. The hitch horseheads should point down and the spring brackets up. These stands will need to support the combined weight the rocker shaft, frame and tongue about 2,500 LBS.



5. FOR ALL MODELS: Bolt on (4) spring support assemblies at position shown with (8) 61-149 U-Bolts and secure with 3/4NC Hex Nuts and Lock Washers.



III. TONGUE - ADJUSTING SCREWS - HITCH

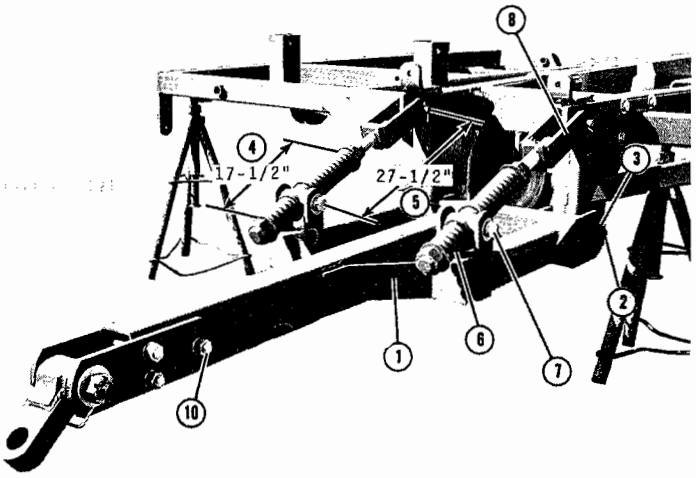
1. Position the tongue in front of the frames with the trunnion pivots facing up.

2. Attach the tongue to the frame with (2) 1-1/4" DIA. Pins. (Part # 3127-0-11).

3. Secure the pins with (4) 3/8" DIA. X 2-1/2" Roll pins with Flat Washers under each roll pin.

4. Check both Adjusting Screws for 17-1/2" dimension between Flat Washers. Correct if necessary.

5. Remove tape from threads and adjust clevis to 27-1/2" from the center of the threaded trunnion holes to center of clevis pin holes.



6. Position the trunnion between the brackets on the tongue.

7. Place bushings in bracket holes and tighten 1NC X 2" Cap Screw, with Lock Washer under bolt head, into trunnion casting.

8. Pin the Clevis ends to the lugs on the front of the frame, with the zerks up. (Pin part # 960-35-2)

9. Secure the pins with 7/32" DIA. X 2" Cotter Pins.

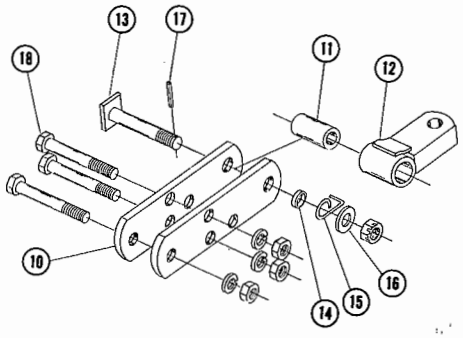
10. Assemble two Side Plates to front of tongue with (3) 1NC X 7" Cap Screws, Lock Washer and Hex Nuts.

11. Place hitch tube inside hitch tongue.

12. Position hitch tongue between side plates.

13. Secure hitch tongue with bolt weldment. (Part # 2145-115-0A)

14. Place Bushing over threaded end of bolt weldment.



15. Position Clevis Spring around bushing with formed leg of spring under the hitch tongue.

16. Secure the assembly with a 1-1/2" STD. Flat Washer and 1-1/2NC Slotted Hex Nut.

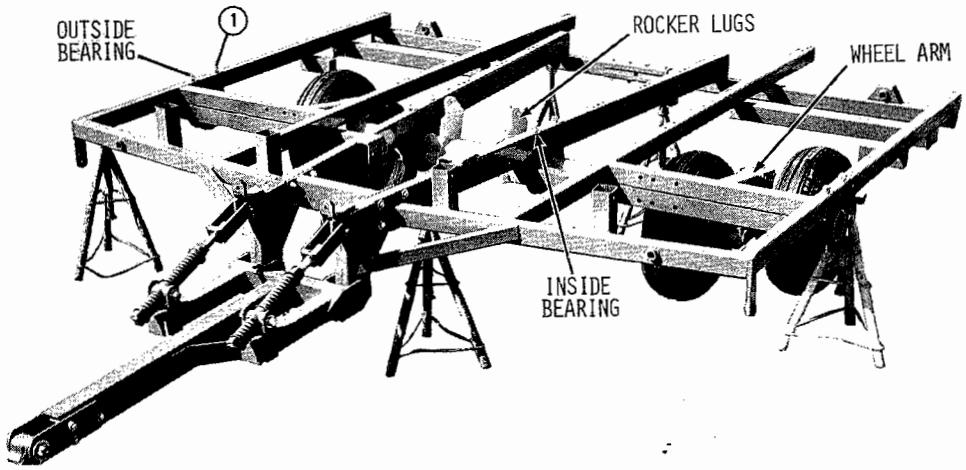
17. Lock the Slotted Nut with a 3/8" DIA. X 2-1/2" Roll Pin.

18. Bolt the Tongue Jack Mounting Plate on the right side of the tongue with (4) 1/2NC X 5" Cap Screw, Lock Washer and Hex Nut. Place head of 1/2NC Bolts on LEFT SIDE of tongue member.

IV. ROCKER SHAFT

1. Lift Main Rocker Shaft under frame section and secure with (4) 1NC X 8-1/2" Machine Bolts on the two center bearings, and (4) 1NC X 6-1/2" Cap Screws on the two outside bearings for Models 3115, 3124, 3127, 3131 and 3136. Use (8) 1NC X 6-1/2" Machine Bolts for Models 3112, 3118 and 3121. Insert bolts from the bottom, with a Flat Washer, Lock Washer and Hex Nut on top. Make sure rocker lugs are pointing up and the wheel arms are to the rear.

2. Tighten rocker shaft bearing bolts at this time. TIGHTEN ALL BOLTS INCLUDING CLAMP ON REAR FRAME AND THE GANG HINGE AT THE FRONT OF FRAME FOR MODELS 3113, 3115, 3124, 3127, 3131 and 3136. After all bolts are tight the rocker shaft should be free to pivot in the bearings.



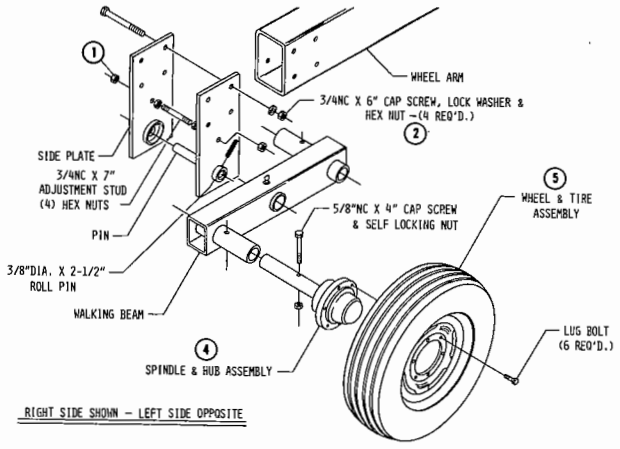
V. WALKING BEAMS - WHEEL ASSEMBLIES - CENTER SECTION

Walking beams are assembled in right and left hand assemblies. When mounted in their proper position the grease zerk will be on top and the outside wheel will be to the rear.

1. Loosen nuts on adjustment stud so side plates can be mounted on wheel arms.

2. Slide the Walking Beam into position under the wheel arms and bolt to the arms at a 90° angle with (4) 3/4NC X 6" Cap Screws, Lock Washers and Nuts.

3. Adjust Stud 1 and tighten bolts so walking beam is free to swing, but with no slack.



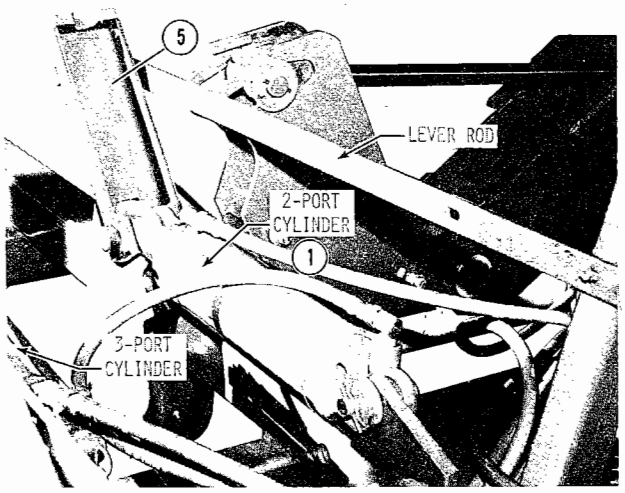
4. Insert wheel hubs into the long side of tube and secure with 5/8NC X 4" Cap Screw and Self Locking Nut.

5. Remove Wheel Bolts from hubs and mount 10.00 X 15, 8-Ply tire and wheel. TORQUE THE WHEEL BOLTS FROM 90 TO 95 FOOT POUNDS. Check and inflate tires to proper pressure.

VI. ROAD LOCKS - MASTER CYLINDERS

1. Mount the two 4" X 10" Master Cylinders to the frame mounting lugs with the cylinder pins for Models 3118, 3121, 3124, 3127, 3131 and 3136. Models 3112 and 3115 use a single 4" X 10" 3-Port Cylinder. NOTE: On two cylinder models, mount the 3-Port Cylinder on the right side with the ports up, and the 2-Port Cylinder on the left side with the ports up.

2. Remove the port plugs and extend the cylinder rods to their limit. The PIN-TO-PIN CENTER DISTANCE SHOULD BE 32-1/4".

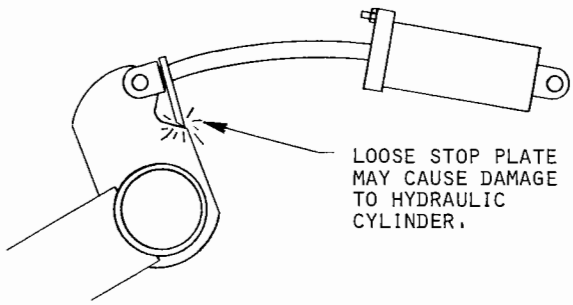


3. With a jack or other means, raise the wheels until the rocker shaft lugs will fit the fully extended cylinder rods.

4. Remove pins from clevis end and install Road Lock Assembly on each cylinder. The 3127-77-0 Right Road Lock Assembly will mount on the RIGHT SIDE with the lever rod on top. The Actuator Stop will be located inside the slot in the road lock weldment. Secure the Road Lock and cylinder clevis to rocker lug with pin (Part # 3127-43-0) and Slotted Hex Nut. Tighten Slotted Hex Nut snug; road lock must be free to swing. Lock Slotted Hex Nut with 3/16" DIA. X 2" Cotter Pin.

5. Mount the 3127-78-0 Left Road Lock Assembly on the left hydraulic cylinder in the same manner.

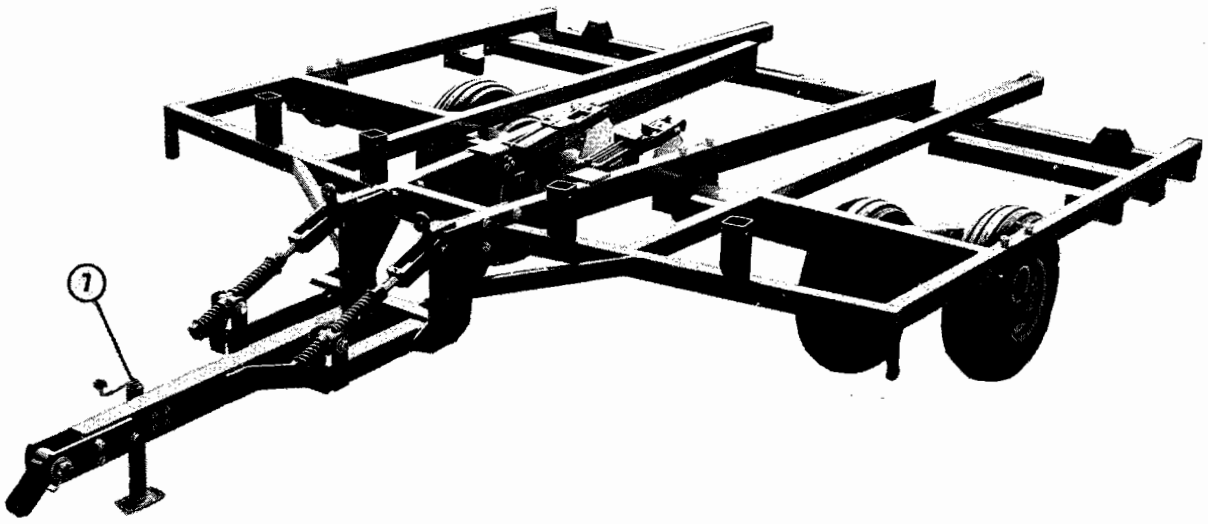
IMPORTANT: MAKE SURE THAT THE ACTUATOR STOP IS TIGHTENED IN THE UPRIGHT POSITION. WHEN LOOSE, STOP MAY SWING TO THE UNDERSIDE CAUSING DAMAGE TO HYDRAULIC CYLINDER WHEN IT IS FULLY EXTENDED.



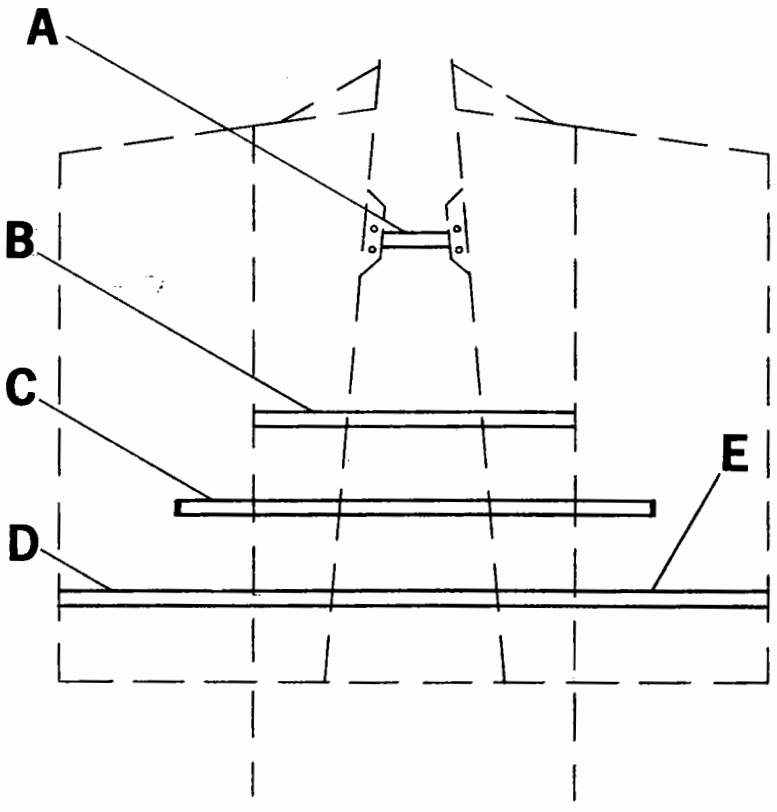
6. Remove the jack or lifting means from rocker shaft wheels.

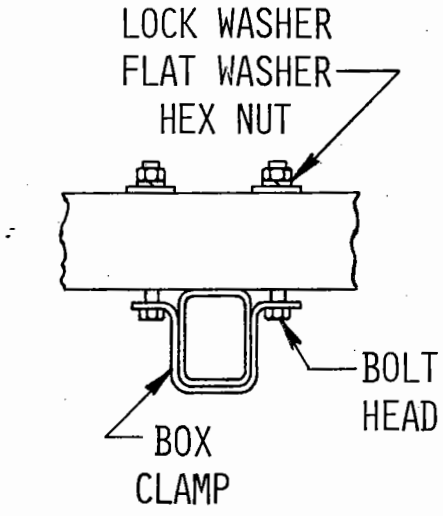
7. Attach Tongue Jack to right side of tongue.

8. With a jack or other means raise one side of main frame and remove frame stands. Lower frame so that wheels are on ground. Remove stands from other side in a like manner. Center section will now stand self supported on its wheels and tongue jack.



VII. FRAME CROSS BEAMS





BOX	LENGTH	FOR MODELS
A	23"	3115 - 3136
B	73"	3115 - 3136
C	104-3/8"	3115 - 3136
D	166"	3118 - 3136
E	168"	3115

1. Bolt Cross Beam under main frame members with Box Clamp and (2) 5/8" DIA., Bolts at each intersection.

   Box "A" will use (4) 5/8NC X 2" Cap Screws, Flat & Lock Washers and Hex Nuts.

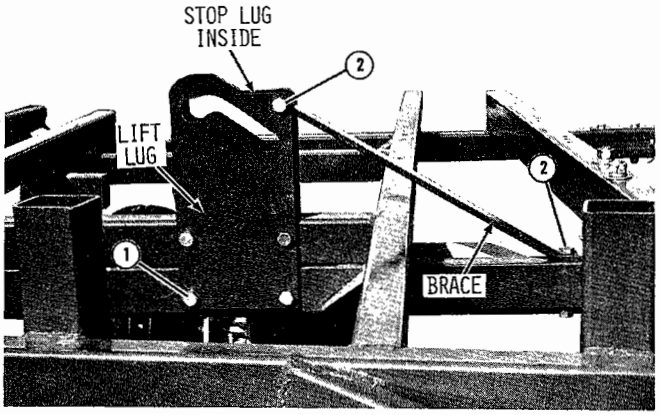
   Box "B" will use (4) 5/8NC X 5-1/2" and (5) 5/8NC X 7-1/2" Cap Screws, Flat & Lock Washers and Hex Nuts.

   Box "C" will use (4) 5/8NC X 5-1/2" and (4) 5/8NC X 7-1/2" Cap Screws, Flat & Lock Washers and Hex Nuts.

   Box "D" OR Boxes "E" & "F" will use (8) 5/8NC X 5-1/2" and (4) 5/8NC X 7-1/2" Cap Screws, Flat & Lock Washers and Hex Nuts.

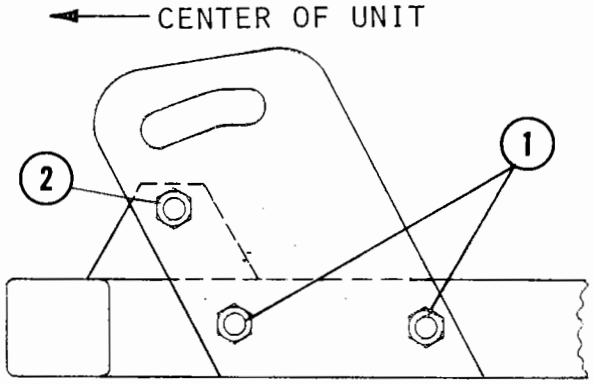
   NOTE: Place bolt head on bottom with flat washer, lock washer and hex nut on top.

VIII. WING LIFT LUGS



FOR MODELS 3124, 3127, 3131 and 3136:

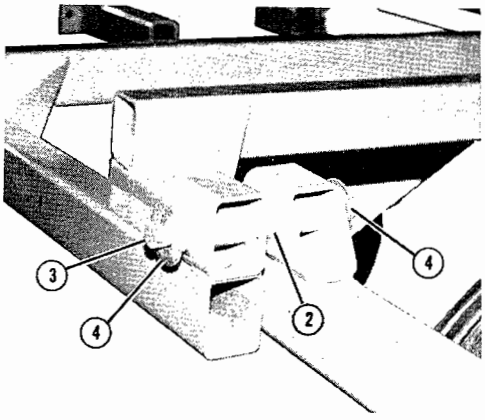
1. Bolt two Lift Lug Plates to main frame with (4) 3/4NC X 5" Cap Screws, Lock Washers, and Hex Nuts. DO NOT TIGHTEN. Note: Square stop lugs are located inside between plates.
2. Assemble Brace with 3/4NC X 5-1/2" Cap Screw vertically through frame. Use Flat Washer, Lock Washer and Hex Nut on bottom of frame.
3. After all bolts are in place TIGHTEN ALL BOLTS.



FOR MODELS 3118 and 3121:

1. Bolt two Lift Lug Plates to main frame with (2) 3/4NC X 5" Cap Screws, Lock Washers, and Hex Nuts. DO NOT TIGHTEN. Note: Cylinder Stop lug is located between the plates.
2. Insert (1) 3/4NC X 5" Cap Screw through plates and through the brace welded to main frame. Secure with 3/4" Lock Washer and Hex Nut. TIGHTEN ALL BOLTS.

IX. WING FRAMES

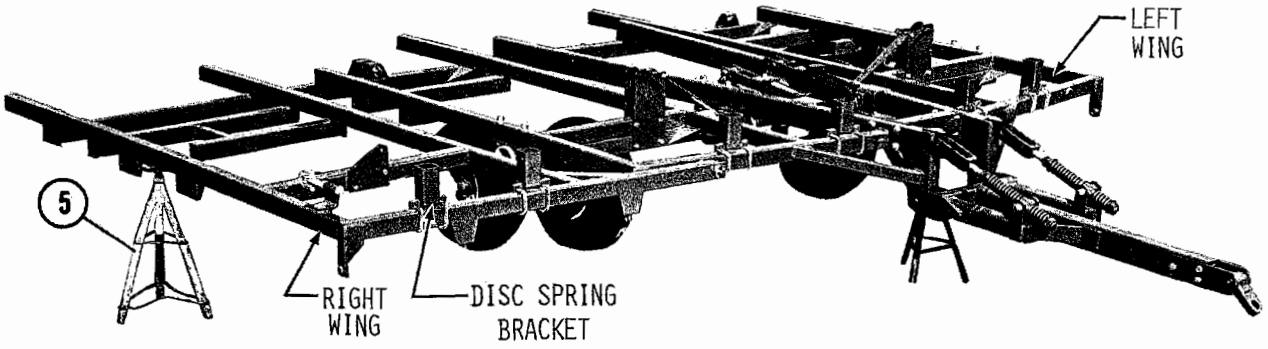


1. Position the left and right wing frames so that the two hinge tubes align. Note: The disc gang pivots on front beam point down. Weight of wings: 3122 - 420 LBS., 3127 - 625 LBS.
2. Place hardened wear washer (Part # 64-138) between the hinge tube, front and rear.

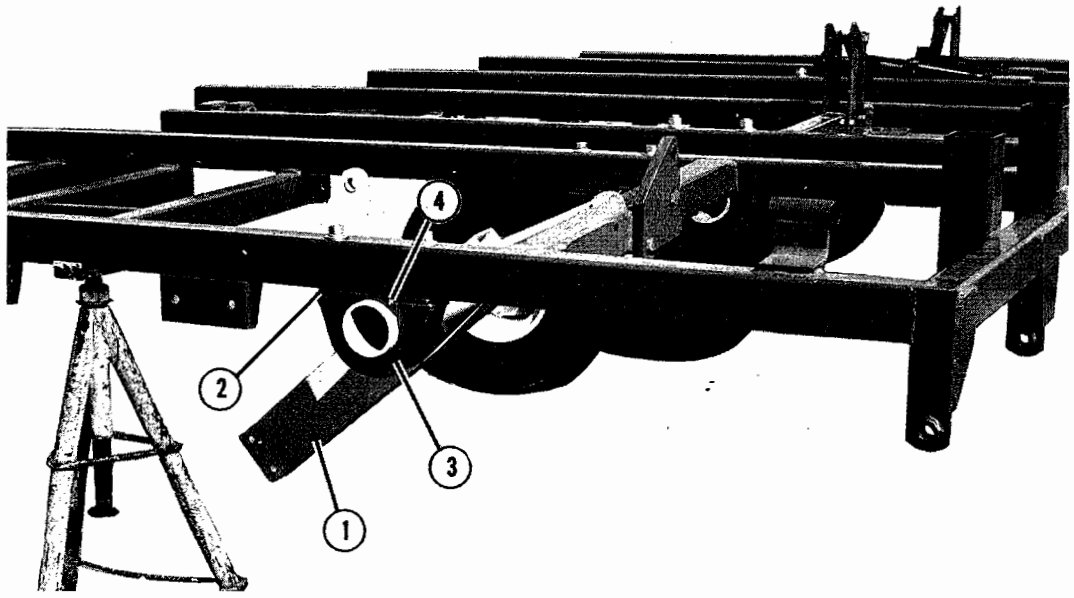
3. Place the Hinge Pin (Part # 3127-0-12) through the tube.

4. Secure pins with 1-1/4" STD. Flat Washer on each end of pin and drive in (2) 3/8" DIA. X 2-1/2" Roll Pins.

5. Place support stands under outer wing frame members. Stands will need to support about 600 lbs., until hydraulic cylinders are plumbed and activated.



X. WING ROCKER SHAFTS



1. Position Wing Rocker Shaft under the correct wing. Wheel arms and cylinder lug will be near outside frame member. The Wheel Arm will point to the rear.

2. Place Bearing Plate Casting between rocker and frame at each end.

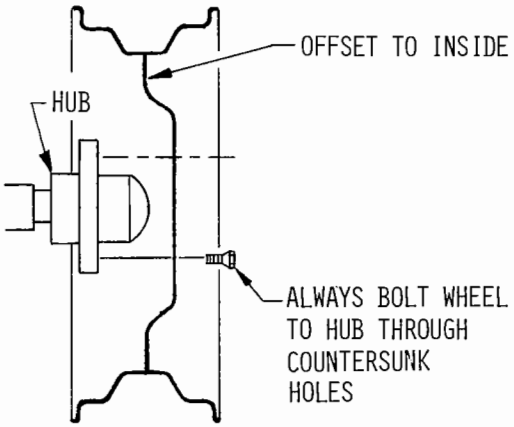
3. Position Rocker Shaft Clamp around rocker pipe and secure to frame with (4) 3/4NC X 6" Cap Screws. Bolts are inserted from Bottom with Flat Washer, Lock Washer and Hex Nut on top of frame

4. Install Grease Zerk in both castings. Bearing Plate Casting will take 1/8NPT Zerk. Rocker Shaft Clamp will take 1/4NPT Zerk

XI. WALKING TANDEM BEAM

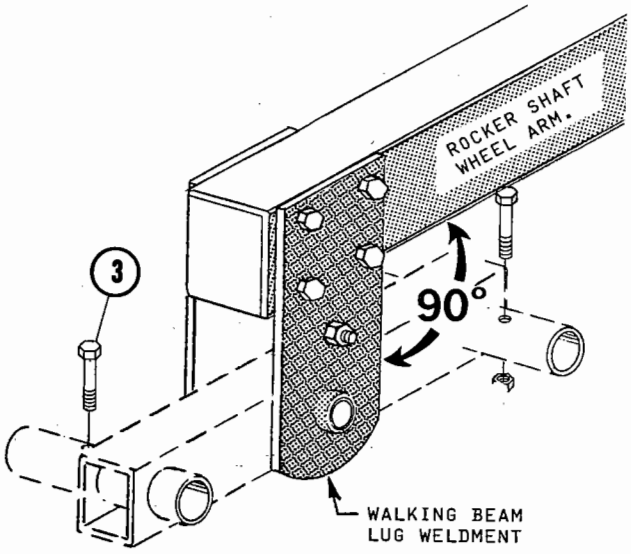
1. Loosen nuts on Adjustment Stud so plates can be mounted to wheel arm.

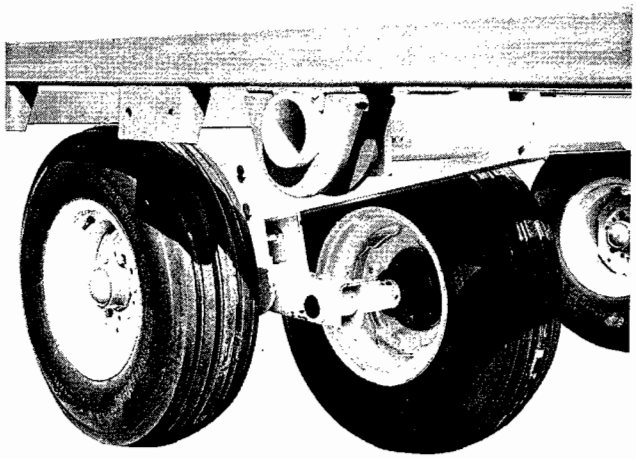
2. Slide the Walking Tandem Beams into position under the rocker shaft wheel arms and bolt the lugs to the arms at a 90° angle with 3/4NC x 6" Cap Screw, Lock Washers and Hex Nuts. Tighten Adjustment Stud at this time.



3. Insert the Hub axles into the long side of the tubes and secure with 5/8NC x 3-1/2" Cap Screw and Self Locking Nut.

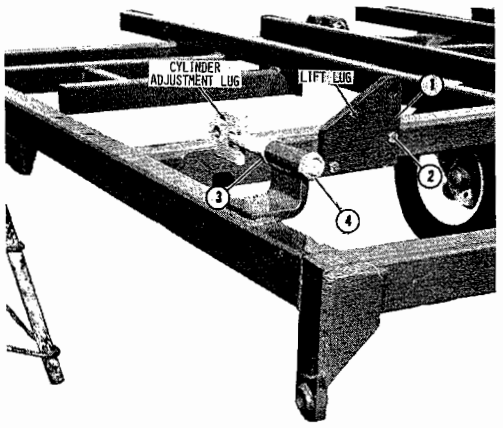
4. Remove the Wheel Bolts from the hubs and attach the Wheel and Tire Assemblies to the hubs. TORQUE ALL WHEEL BOLTS FROM 90 to 95 FOOT POUNDS. NOTE: Leave stands under frame to support wings.





NOTE: MODELS 3118, 3121 AND 3124 USE 11L X 15 SINGLE TIRES ON WINGS.

XII. LIFT LUG AND CYLINDER ADJUSTMENT



1. Place Lift Lug on front side of cross beam. Lift Lug on 3122 Model will be welded to frame.

2. Bolt with (2) 1NC X 6" Cap Screws with bolt HEADS ON LUG SIDE. Secure bolts on opposite side with Flat Washer, Lock Washer and Hex Nut. DO NOT TIGHTEN AT THIS TIME.

3. Assemble 1-1/4NC Jam Nut on cylinder adjusting lug and insert into tube at outer front corner of wing.

4. Secure other end with 1-1/4NC Jam N t. Flat part of adjusting lug will stand vertical.

XIII. 3131 WING EXTENSION

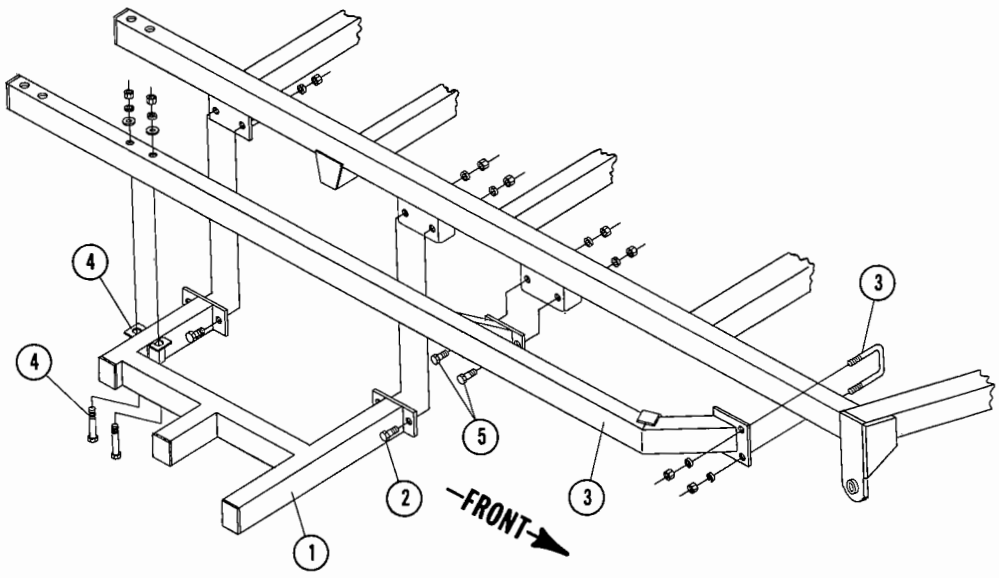
1. If assembling model 3131, position the 4 Shank Extension on each wing with the long beam in front.

2. Bolt to frame with (4) 3/4NC X 2" Cap Screws, Lock Washers and Hex Nuts.

3. Place Wing Support Weldment over four shank extension on each wing, and loosely secure in place with 61-149 U-Bolt, 3/4" STD. Lock Washer and Hex Nuts. DO NOT TIGHTEN.

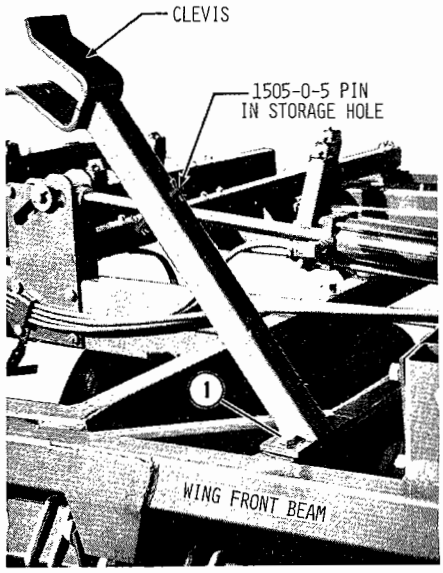
4. Attach wing support weldment to four shank extension with box clamp, and (2) 5/8NC X 6" Cap Screws, Flat Washer, Lock Washer and Hex Nut. DO NOT TIGHTEN.

5. Insert (2) 3/4NC X 2" Cap Screws, Lock Washers and Hex Nuts through lug shown in drawing below. TIGHTEN ALL BOLTS.



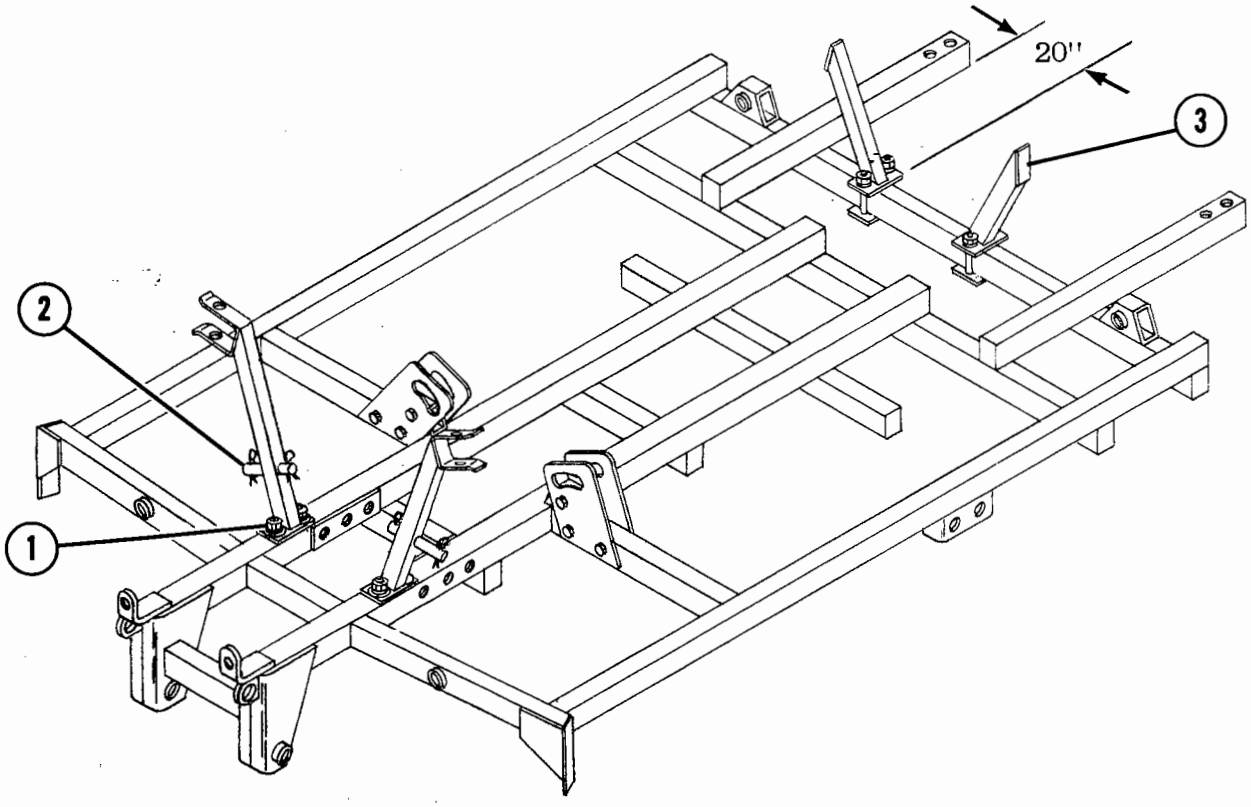
XV. WING LOCKS

1. Position Wing Locks with clevis at the front of each wing section. Wing lock will lean toward center of unit. Bolt to frame with (2) 3/4NC X 6" Cap Screws with the bolt head on top and Flat Washer and Hex Nut on bottom of frame.
2. Insert Lock Pin (Part # 1505-0-5) into storage hole and secure with (2) #4 Hair Pin Cotters.
3. At the rear of the wing frames, and on the same beam, position the rear wing stops. Bolt with (2) 3/4NC X 6" Cap Screws, bolt head on top and Hex Nut on bottom. Wing Stop will lean toward center, same as wing locks on front.



FOR MODELS 3118 and 3121 ONLY:

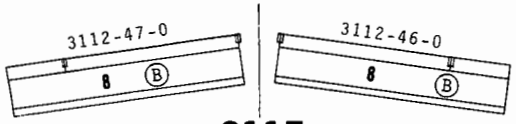
1. Position Wing Locks with clevis at the front of the center frame. Wing lock will lean toward the outside of the unit. Bolt to frame with (2) 3/4NC X 6" Cap Screws, with bolt head on bottom and Flat Washer, Lock Washer and Hex Nut on top.
2. Insert Wing Lock Pin (Part # 3844-0-6) into the storage hole in the wing lock arm and secure with (2) #4 Hair Pin Cotters.
3. Position rear wing stops on rear beam approximately 20" from side beams as shown below. Bolt in place with (2) 3/4NC X 6" Cap Screws and 3118-59-2 bolt plate. Leave bolts loose until wings are raised. With wings in raised position, adjust wing stops tightly against wings and tighten bolts.



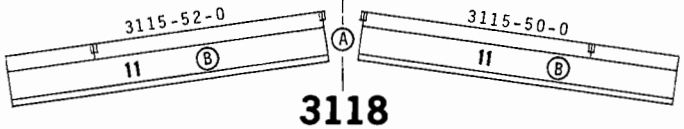
GANG BEAM PLACEMENT

FOR MODELS

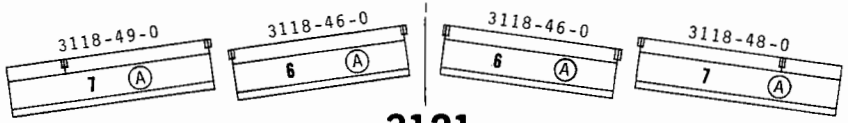
3112



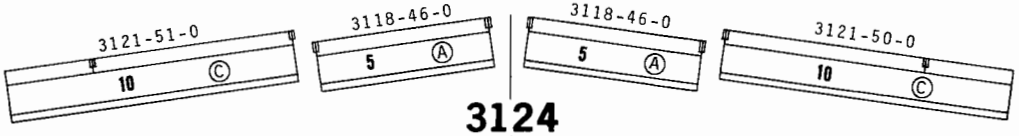
3115



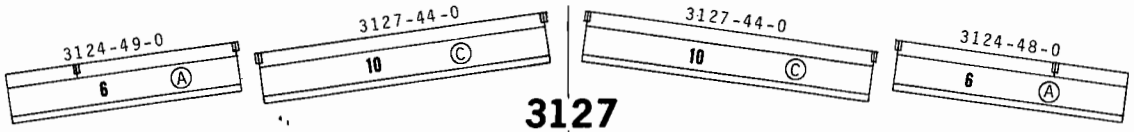
3118



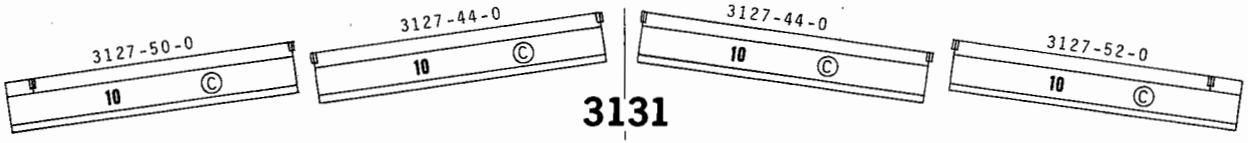
3121



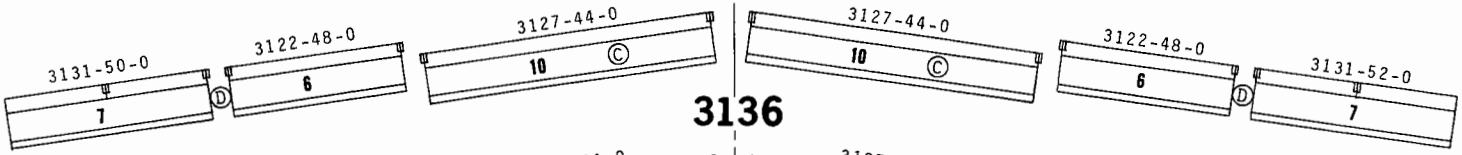
3124



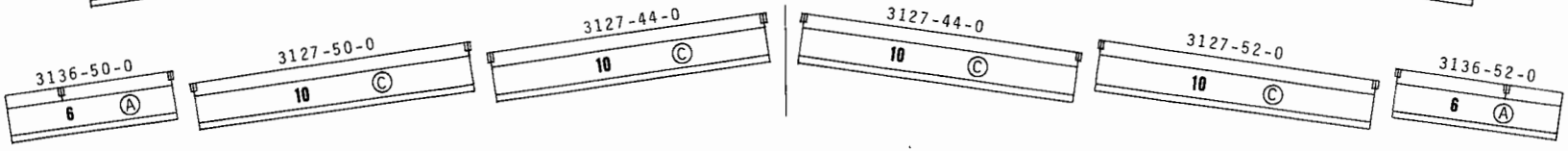
3127



3131



3136



NOTE: BOLD FACE NUMBERS REPRESENT NUMBER OF DISC BLADES PER GANG.

SPRAY SHIELD PLACEMENT

4 SHIELD LENGTHS

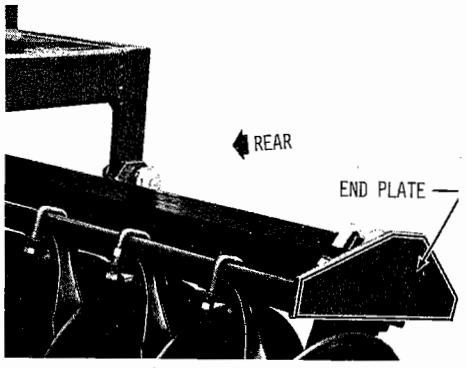
(A) = 50"
(B) = 66"
(C) = 82"
(D) = 106"

A13

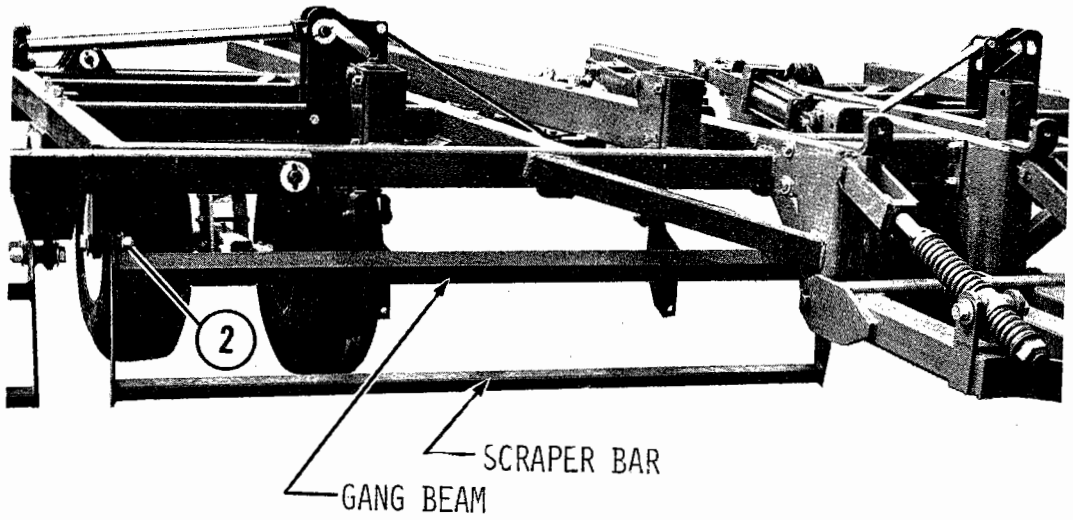
2/85

XVI. GANG BEAMS - SCRAPER BAR

1. Position Center Gang Beam - Scraper Bar Weldment under the center section. The same weldment fits right or left side and will be 77" long. Position so that the long flat side of End Plate is down and the scraper bar to the rear. Center Gang Beam is the same for all models.



2. Raise gang beam until Pivot Tubes line up and bolt with (2) 1NC X 4-1/2" Cap Screws. Use Heat Treated Flat Washers on both sides of hinge and secure with Slotted Hex Nut. Tighten slotted nut snug but leave gang beams free to swing.

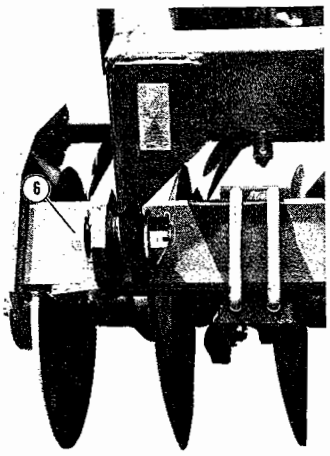


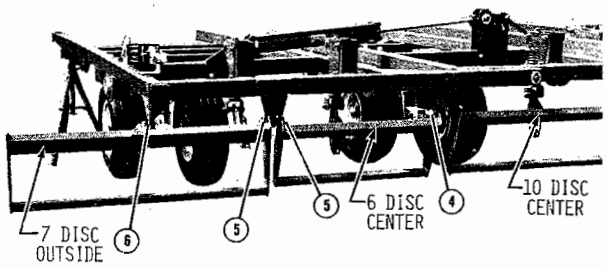
3. Refer to the Gang Beam Placement for position of wing gang beams. 10 Disc Wing Gang is 73" long. 7 Disc Wing Gang is 54" long. 6 Disc Wing Gang is 40" long. Place under wings same as center section.

4. Raise Wing Gang and pin inside pivot with 1NC X 4-1/2" Cap Screw, (2) heat treated Flat Washers and Slotted Hex Nut, and 3/16"DIA. X 1-3/4" Cotter Pin.

5. In the opposite end start a 1NC X 6" Cap Screw with a Heat Treated Flat Washer under the head. Insert just far enough to hold center gang. Raise outside 7 disc gang to position and push 1NC X 6" Cap Screw through.

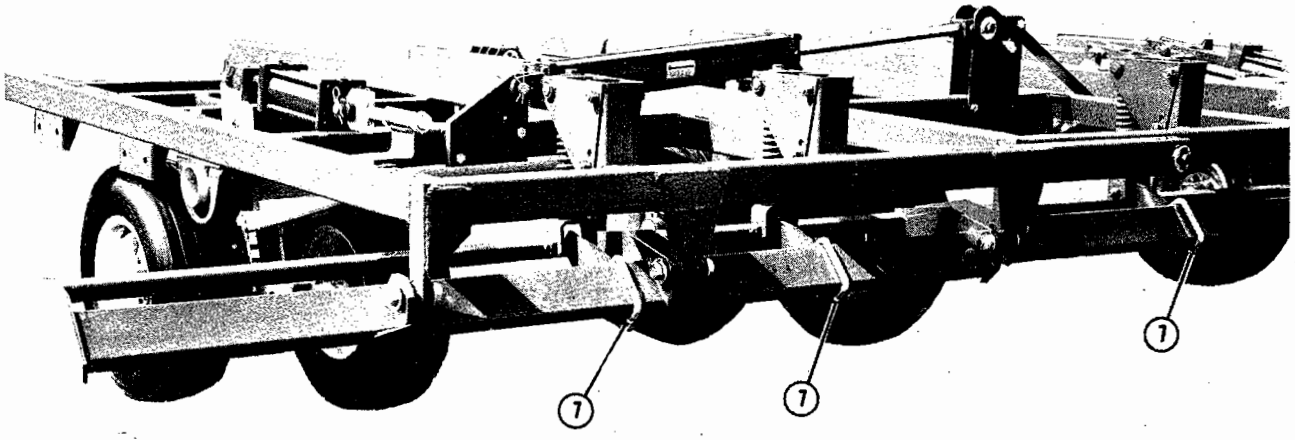
6. Secure outer end with 1NC X 4-1/2" Cap Screw, Heat Treated Flat Washer on each side and Slotted Hex Nut and 3/16" DIA. X 1-3/4" Cotter Pin. Tighten all bolts so gangs will be free to swing. Note: Model 3127 will not use hinge point at ⑤. Model 3131 is shown below.





7. Swing Gang Beams so Scraper Bar is to the rear and bolt to Gang Spring Supports with U-Bolt (Part #61-143). Secure U-Bolt and bracket with 3/4NC Hex Nut and Lock Washers.

NOTE: Gangs of 10 discs and larger will have two spring supports ⑦.



XVII. DISC GANG ASSEMBLY AND ATTACHMENT

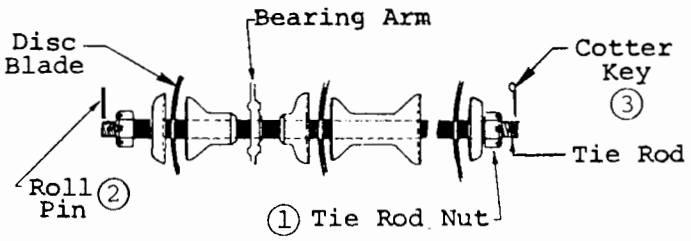
DANGER: SERIOUS INJURY CAN BE INFLICTED BY DISC BLADES AND DISC GANGS IF NOT HANDLED SAFELY. WATCH FOR UNSAFE CONDITIONS AND BE AWARE OF THE UNEXPECTED. KEEP YOUR CO-WORKERS SAFETY IN MIND. SHOULD PERSONAL INJURY OCCUR, HAVE MEDICAL TREATMENT ADMINISTERED IMMEDIATELY.

Select a pattern for assembly. Whether you assemble all gangs before before attachment, or assemble and attach each gang, the center section must be attached and adjusted first on all models. A few general steps to follow during disc gang assembly will insure correct gang attachment to the frame, and prevent future tear-down due to improper assembly. Study the placement drawing for each gang and determine the following information.

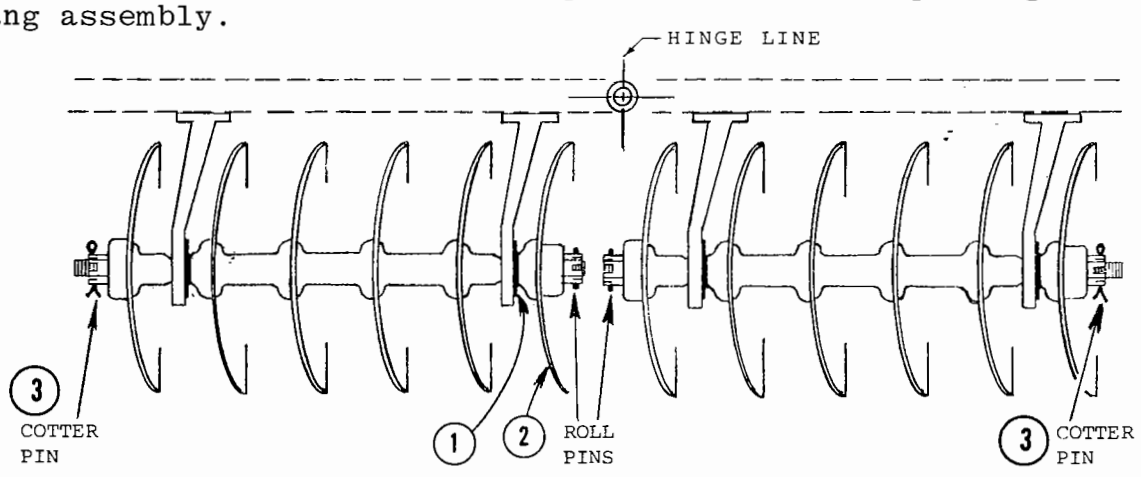
A. The correct tie rod and spacer spools.

B. Note the direction of travel in relation to disc blade position on the tie rod, and the location of the tie rod roll pin if at the hinge line.

The first tie rod shipping group selected for assembly will have washers, half spools and spacer spools on the tie rod with a 1-1/2NC Slotted hex nut ① on each end. One nut is secured with a roll pin ② on one end of the tie rod and the nut on the opposite end is secured with a 3/8" DIA. X 3-1/2" Cotter Pin ③. The nut and cotter pin will be used at the end of the completed gang assembly. The shipping spacer tube can be discarded.

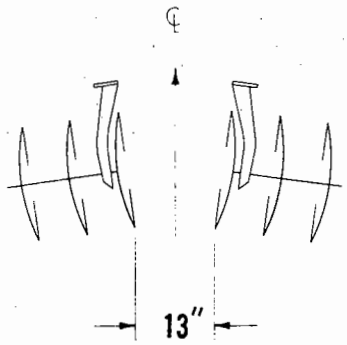


Using the preceding information and the placement drawings on A28 and A29, assemble the disc gangs. Note that all contact surfaces of the castings have been machined to fit the contour of the disc blades. ALWAYS place the bearing arm on the tie rod so the bearings ① are located on the thrust side or, on the convex side ② of the disc blades. Loosen (4) carriage bolts in bearing flange before gang assembly.



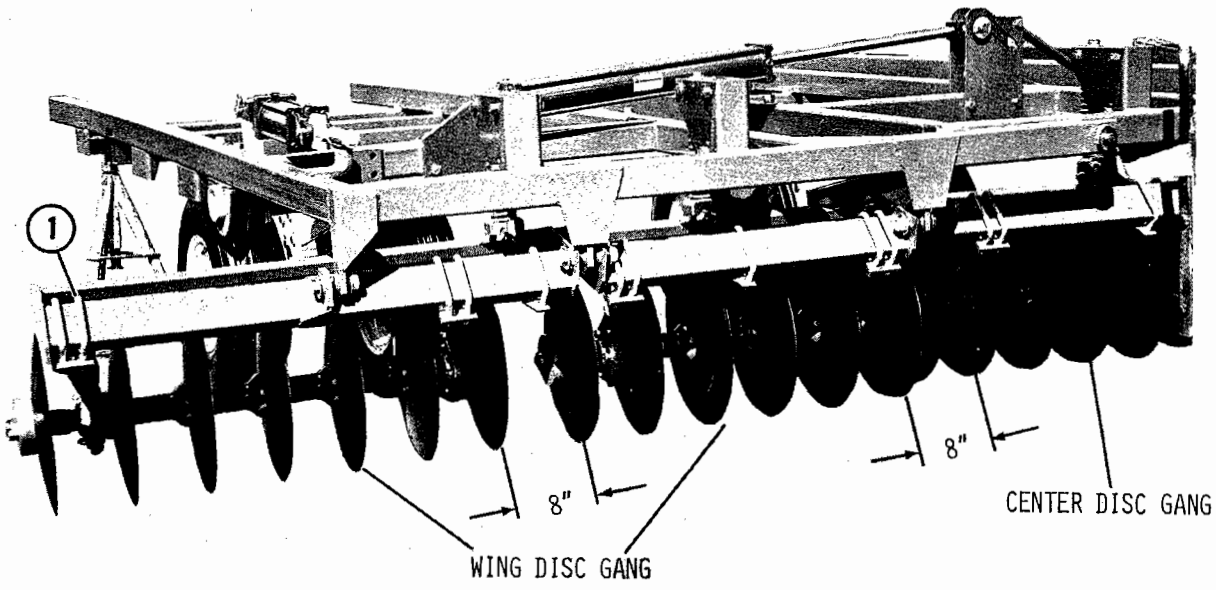
When the gang has been assembled, replace the slotted hex nut and torque to approximately 600 Ft. Lbs. Secure the nut with the 3/8" DIA. X 3-1/2" Cotter pin ③. Clinch or spread the cotter pin to prevent loss.

1. Starting with the center gang assemblies, roll the completed gang assemblies under the gang beams at their specific locations. Loop a length of chain under the center spacer spool and raise the gang until the bearing arm top plates touch the bottom of the gang beam. Secure each bearing arm with (2) U-Bolts (Part # 61-143) Lock Washers and Hex Nuts.

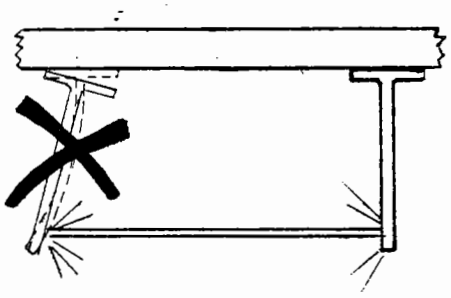


2. Slide the gang along beam until they are centered and 13" apart at the back edge. DO NOT TIGHTEN U-BOLTS UNTIL ALL GANGS ARE ASSEMBLED.

3. Attach Wing Disc Gangs in the same manner. Slide gang until there is an 8" Space between the disc blades.

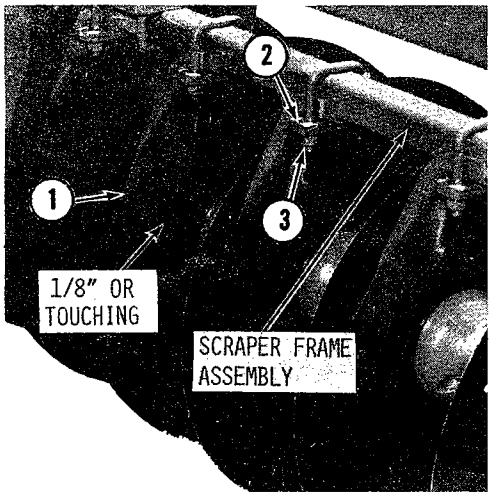


4. Tighten all U-Bolts. As the U-Bolts are drawn up tight, be sure the top plate raises flat against the frame and not tilted to one side, causing a lever action that preloads the bearings.



5. Tighten carriage bolts in the bearing flange.

XVIII. DISC SCRAPERS



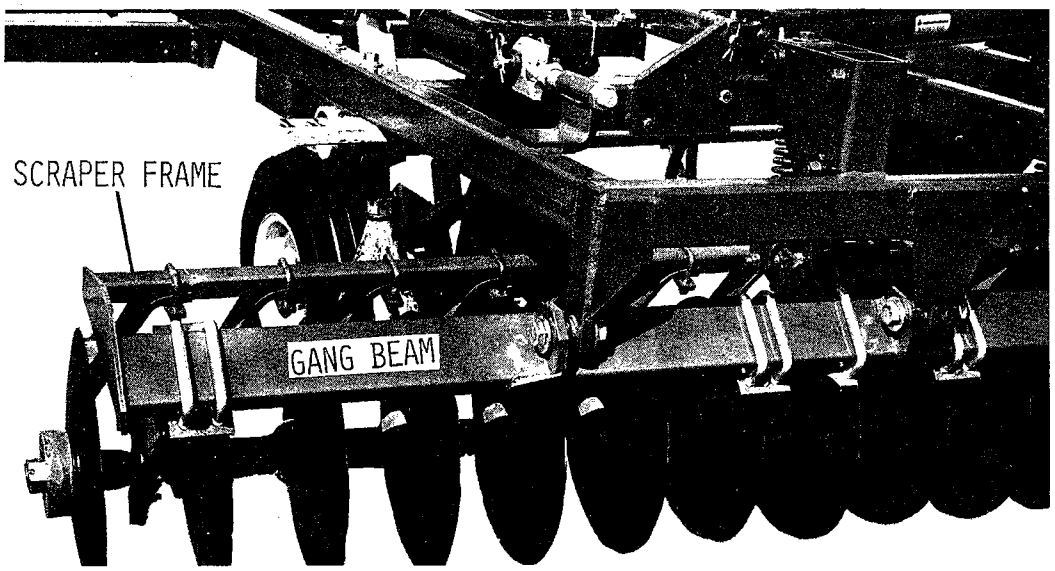
1. Position each scraper blade under scraper frame. NOTE : Check the placement drawing on page A30 or A31 for location of each scraper. There will be right and left blades, position so long point of blade is next to bell of spool.

2. Place U-Bolt over scraper frame and clamp bar under blade with dimple up to engage hole in scraper blade.

3. Adjust each scraper blade within 1/8" of the disc blade.

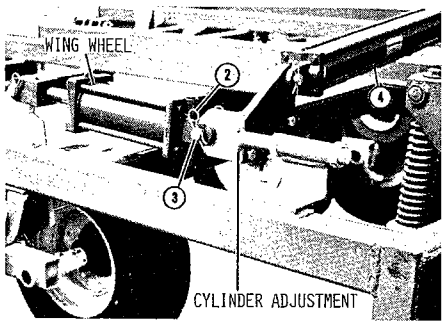
4. Model 3131 will use a 3131-157-0 Left Trash Bar and a 3131-158-0 Right Trash Bar between the 6 Disc Gang and the 7 Disc Gang. Mount the trash bars with "L" Bolt (Part # 950-20-4) and 5/8NC Hex Nuts and Lock Washers. (See Placement Drawing on page A30-31 for trash bar locations)

IMPORTANT: DO NOT RESTRICT THE ROTATION OF THE GANG BY FORCING THE SCRAPER BLADES AGAINST THE DISC BLADES.



XVIX. HYDRAULICS

Wheel Cylinders:



1. The (2) Master Cylinders for wheel lift have already been installed and used as road locks.

2. Install wing wheel cylinders (3-3/4" X 10" Slave) on each wing with the ports up, and the base on the cylinder adjustment.

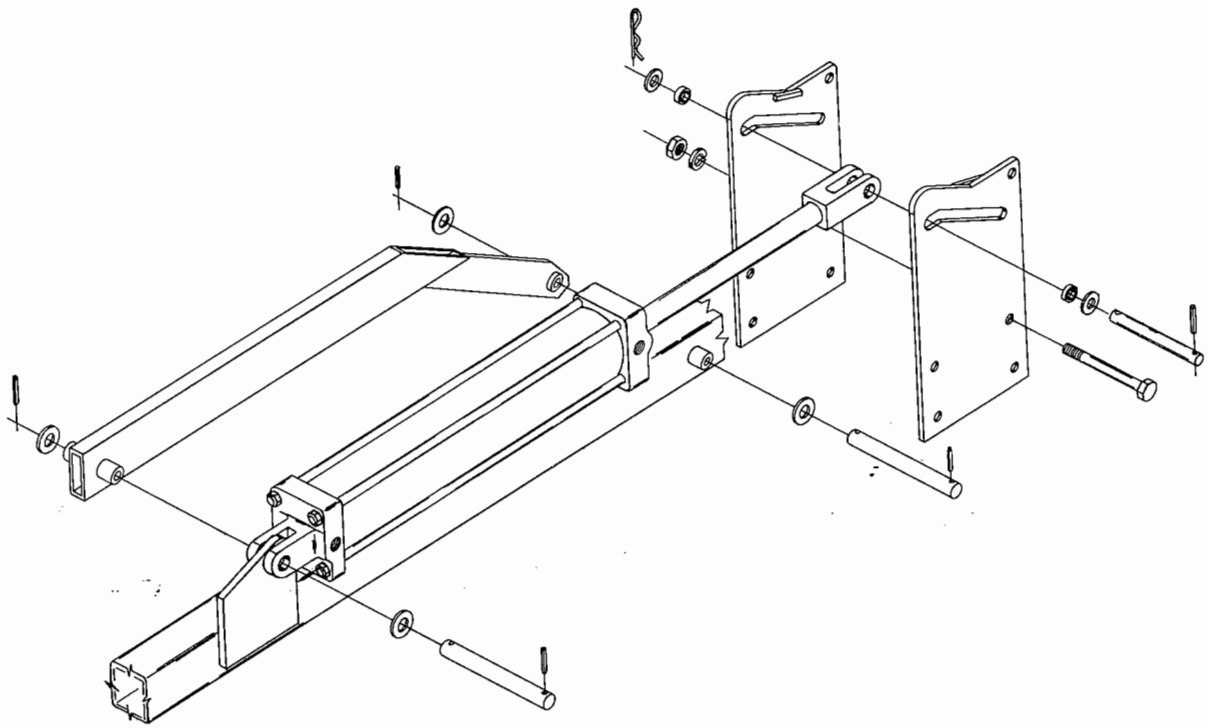
3. Secure with the pins and hair pin cotters.

Wing Lift Cylinders Models 3118 & 3124:

1. Mount 4" x 24" Hydraulic Cylinder base to wing lugs, with ports on the side and facing the front.

2. Secure base end of cylinder with pin furnished in the cylinder.

IMPORTANT: Do not pin the rod ends of the wing lift cylinder lugs until all plumbing is complete and the entire system is full of oil and purged of air.
Before filling the system, place blocks of wood under each wing cylinder that will cause the rod end of the cylinder to extend up and over the attaching lugs to prevent damage to the cylinder as they are extended and retracted for filling and purging of air.



Drawing 19A

Wing Cylinders For Models 3121, 3127, 3131 & 3136:

1. Position 4" X 32" Hydraulic Cylinder base to bolt on wing lug with ports on bottom side.

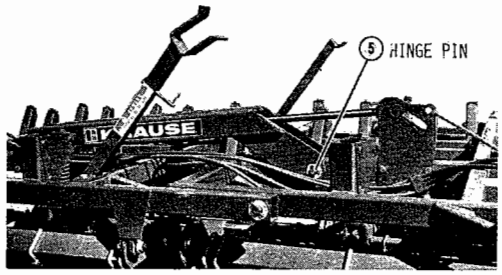
2. Wing lug bolts should be loose.

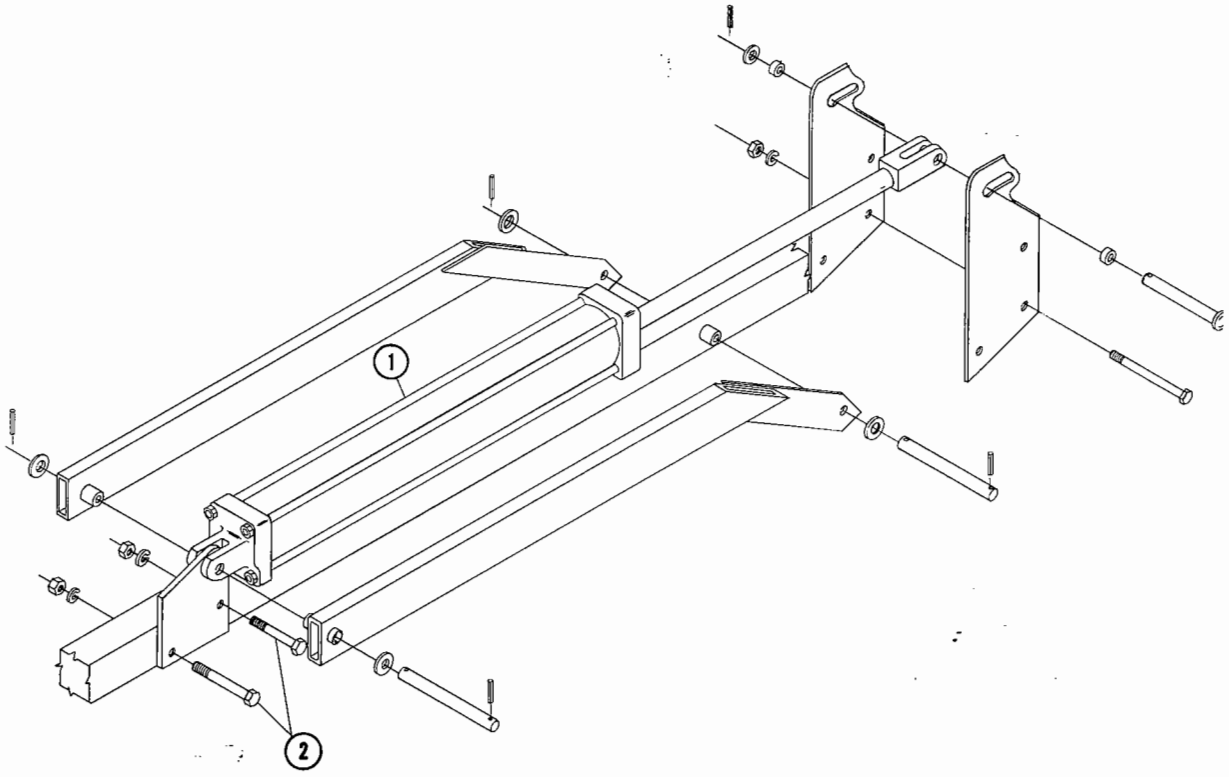
3. Place Right and Left Hinge Arms on each side of cylinder. Flat diagonal Hinge Plates will be inside.

4. Secure base end with pin (Part #3131-0-16), Flat Washer on each side and 3/8"DIA. x 2-1/2" Roll Pin.

5. Secure Hinge Arms at hinge point on main frame with (Part #3131-0-15) Hinge Pin, Flat Washers on each side and 3/8"DIA. x 2-1/2" Roll Pin.

6. Tighten Lug Bolts at ② .





Drawing 19B

IMPORTANT: Do not pin rod ends at this time. See above note "IMPORTANT".

PLUMBING

The following illustrations and the part listings will show the correct hydraulic attachment to the harrow.

⚠ CAUTION: USE ONLY HOSES THAT MEET OR EXCEED 2,500 P.S.I. WORKING PRESSURE.

CHARGING WHEEL CYLINDERS

1. After all hose fittings are assembled, place blocks under the two wing fold cylinders so that the cylinder rods will not interfere with any attaching lugs.

2. Attach hydraulic hoses to the tractor.

3. First operate the valve to push wheel cylinders open. Hold valve open until master and slave cylinders open to their maximum. At this point road locks on the master cylinders should be loose.

4. Assemble Road Lock Levers as shown. Position lever between washers on rod and secure with cotter pin. Assemble both sides.

5. Swing Road Lock Stop to vertical position and pin to U-shapced bracket with P.T.O. Pin. This will keep road locks in place for field work.

6. Remove support stands from under each wing.

7. Operate the Wheel Cylinders through the complete stroke several times until the system is purged of air. Hold tractor valve open at the end of the extend stroke for 15 to 30 seconds each time. If all four wheel cylinders do not fully extend, hold tractor valve open for longer periods.

8. Actuate tractor lever and extend wheel cylinders to their maximum. Unpin road lock lever and let road lock fall forward around the cylinder rod. Place lever in U-shaped bracket on Models 3112, 3115, 3124, 3127, 3131 and 3136; or over pin on wing lock on Models 3118 and 3121.

CHARGING WING LIFT CYLINDERS

1. With Road Locks in Transport Position, and wing lift cylinders blocked up to clear lift lugs, activate the wing cylinders.

2. Extend and retract cylinders several times to fill with oil and purge air from lines.

3. After cylinders are full extend to maximum and pin to wing lift lugs. Refer to drawings 19A and 19B on pages A18 and A19.

4. Remove cylinder blocks and place Wear Sleeve 3 over Pin 4 Insert pin through wing lift lugs and cylinder clevis.

5. Over the Pin place Wear Sleeve 5 and Flat Washer 6 .

6. Secure assembly with 1/4" DIA. X 2" Roll Pin 7 .

7. Wings may now be folded to check function of cylinders. Hose clearance and wing locks should be checked at this time also.

SHANK ASSEMBLY - SPRING SHANK AND K-TINE

Refer to placement drawings for shank location and number required. If you know if you will be using sweeps or points at this time, it may be easier to assemble the sweeps / points to the shanks before attaching the shanks to the frame.

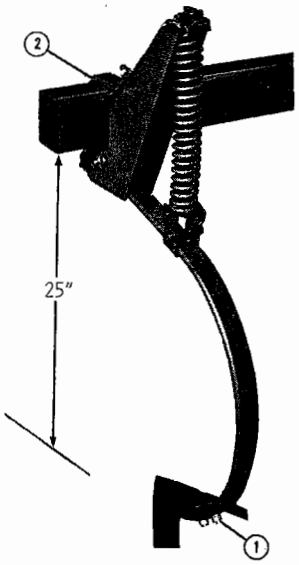
1. Bolt Sweep / Point to shank with (2) 3/8NC X 1-1/2" GRADE 5 Plow Bolt. Secure bolts with (1) Flat Washer over slotted hole, (2) Lock Washers and Hex Nuts.

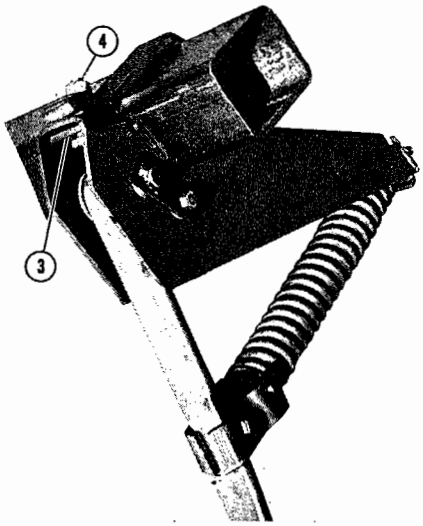
SPRING SHANKS

2. Secure Spring Shank Assembly to the frame with clamp strap 2 and 1/2NC X 2" Cap Screws.

3. Place Square Flat Washer Plate under head of each bolt inside of shank channel 3 .

4. Secure bolts with 1/2" STD. Lock Washer and 1/2NC Hex Nut.





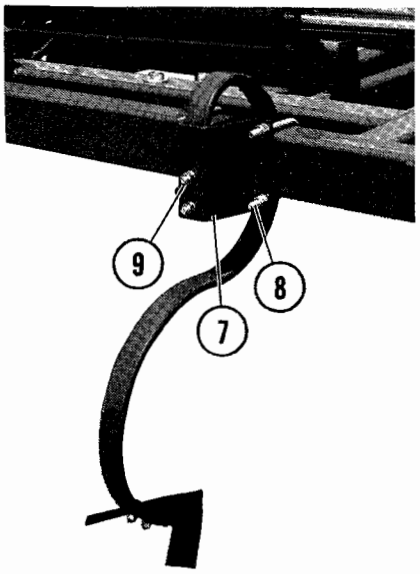
K-TINE SHANKS

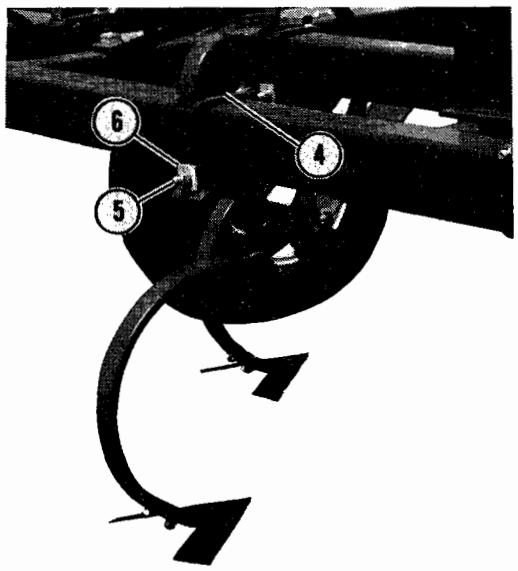
2. Secure Standard K-Tine Mounting to the rear side of frame with the L-shaped strap 4 and the 1/2" L-Bolt 5 .

3. Place Square Flat Washer over slot on rear side 6 Lock Washer and Hex Nut. Use 1/2" STD. Flat Washer, Lock Washer and Hex Nut on the other end of the L-Bolt.

4. At the locations marked with a circle mount the K-Tine with the Extended Mounting Bracket 7 . Secure to back side of frame with (2) 1/2NC U-Bolts 8 , Lock Washers and Hex Nut.

5. Mount shank inside of extension with reinforcing plate in front of shank. Secure with (2) 1/2NC X 2" Bolt, Nut and Lock Washer 9 .

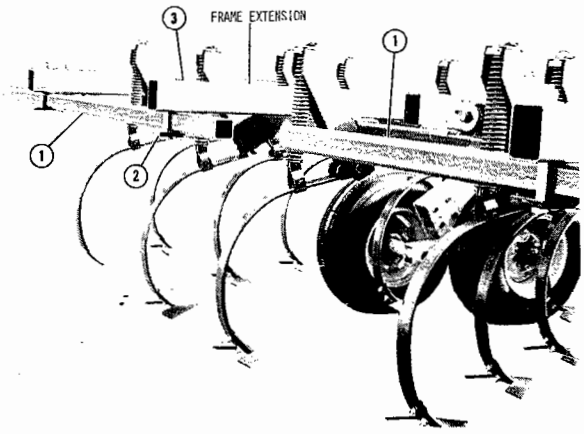




XX. ROLLING BASKET - TINE ATTACHMENT

Refer to Placement Pages A30 through A37 for location and lengths of beams and baskets, for the model being assembled.

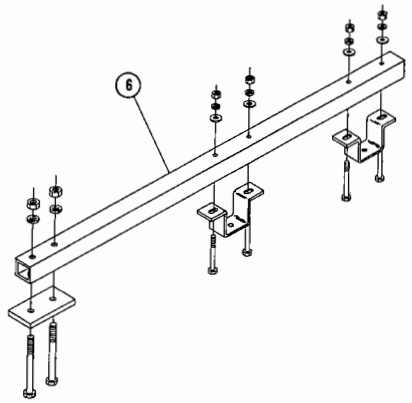
1. Locate one 2-1/2" Square beam behind the center section, and one behind the wing section.



2. Bolt on bottom side of frame extension with clamp plate 2 and 3/4NC X 8-1/2" GRADE 5 Bolt.

3. Place Flat Washer 3 on top of frame extension beam and secure with Lock Washer and Hex Nuts.

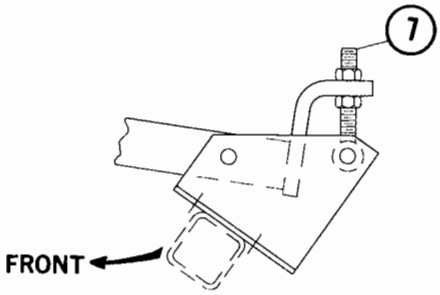
4. From Placement Page locate and position the (4) frame mounting bracket assemblies.

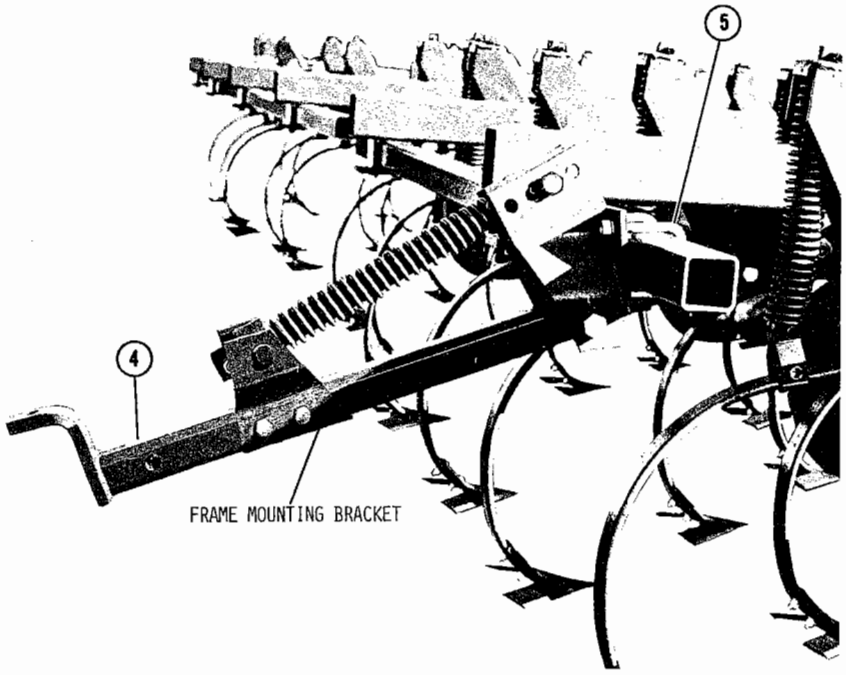


5. Secure to beam with two U-Bolts 5 and 1/2NC Hex Nuts and Lock Washers. Do not tighten at this time.

6. Bolt on two Extension Braces 6 on center section. Refer to Placement Pages for locations.

7. Thread 5/8NC Hex Nut onto Adjustment Rod Weldment 7 and insert into angle bracket at end of frame mounting bracket.



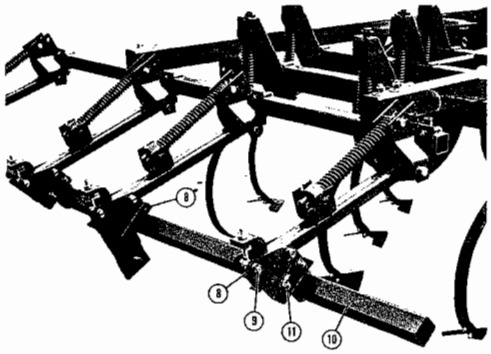


8. Position Right and Left Mounting Brackets 8 . All brackets will be assembled in the same direction with the beam facing forward.

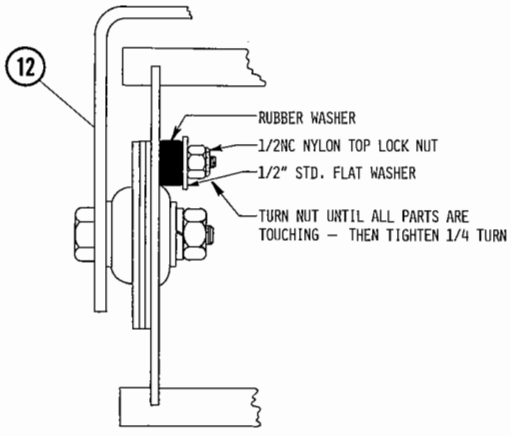
9. Secure right and left brackets with two 5/8NC X 3-1/2" Cap Screws 9 , Lock Washers and Hex Nuts.

10. Refer to Placement page and determine location and position of basket carrier beam 10 .

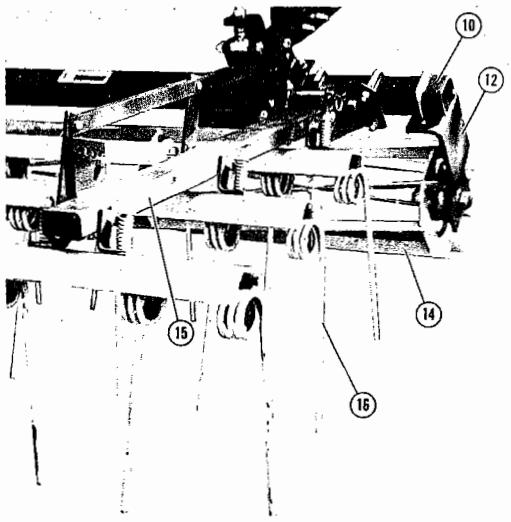
11. Mount Beam under brackets with four U-Bolts 11 and secure with 1/2NC Hex Nuts and Lock Washers. DO NOT TIGHTEN U-BOLTS.



12. Mount Bearing Arm 12 to each end of Rolling Basket Assembly. Assemble with 1/2NC Hex Nuts, Flat Washers and Rubber Bushings. Make sure bearing grease zerk is in cut-out provided.



13. Position each Rolling Basket 14 Assembly centered under the carrier beam 10 in its proper position.



14. Fasten Bearing Arm to carrier beam with U-Bolt, 1/2NC Hex Nuts and Lock Washers.

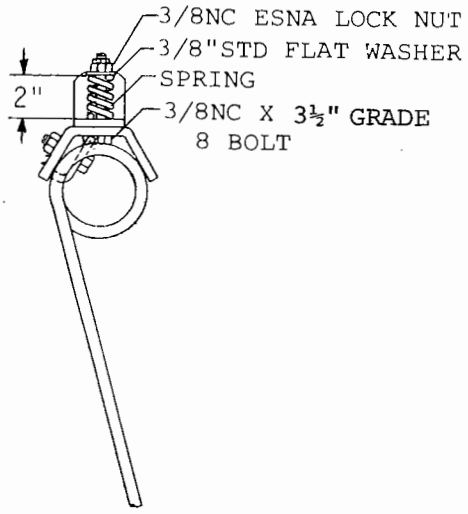
15. Check all basket locations for 4" dimension between each section. If not correct, shift at frame mounting brackets. TIGHTEN ALL BOLTS.

16. Position the Tine Carrier Assembly 15 behind the Rolling Basket (two for each section). Check Placement pages A30 and A37 for location. Dimensions given are approximate and to the center of the line of each carrier arm assembly.

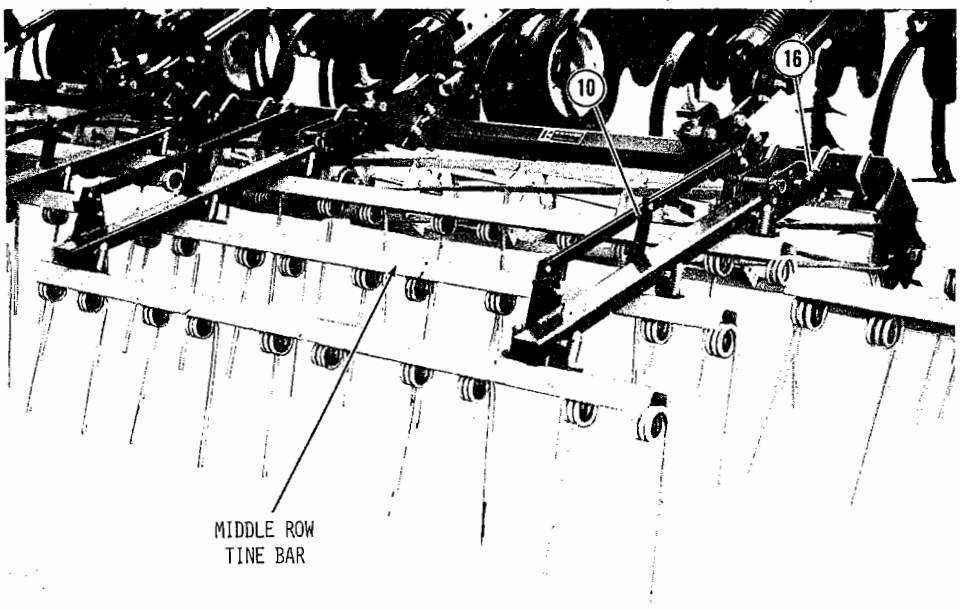
17. Bolt Tine Carrier Assembly to bottom of basket carrier beam 10 with a U-Bolt 16 1/2NC Hex Nuts and Lock Washers. DO NOT TIGHTEN U-BOLTS.

18. Lay out middle row of Tine Bars on the ground behind unit 16 . Space each section 7-1/2" apart.

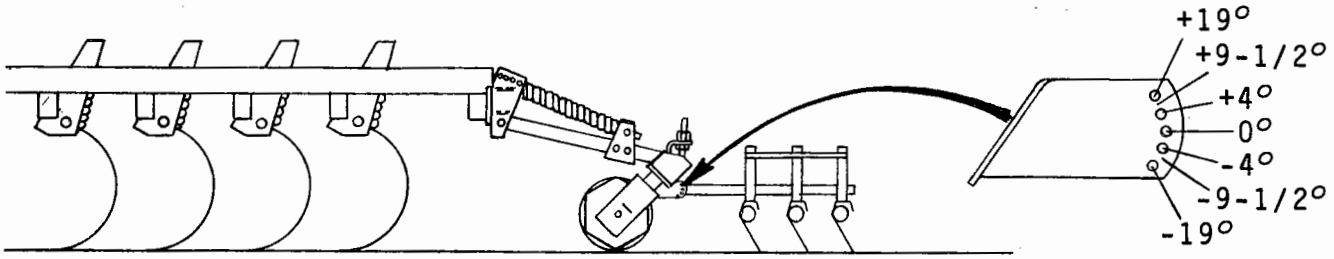
19. Starting in the center, assemble the middle row of tine bars as laid out on the ground. It may be necessary to move the carrier right ot left to match holes in the tine bars. In some areas it will be necessary to loosen the spring tine to assemble the GRADE 8 from the under side. Mount all bars of middle row with one bolt at each carrier. CHECK FOR PLACEMENT AND CUT WIDTH OF TINE HARROW. Assemble first row of tine bars offset 2 holes (2-1/2") to the left of middle row. Offset third row of tine bars 2 holes to the right of middle row.



20. Assemble remaining bolts and springs and tighten spring to 2 inches as shown at right.



21. After all Tine Bars are assembled and spacing checks out, tighten all bolts.



XXI. 4-ROW TINE ATTACHMENT

Refer to XX. ROLLING BASKET-TINE ATTACHMENT for location and lengths of 2-1/2" Square Beams, and location of frame mounting brackets. Use steps 1 through 6 to assemble beams and mounting brackets.

1. Position 4-Row Tine Carriers under each frame mounting bracket. The tine pitch adjusting lug will be to the rear.

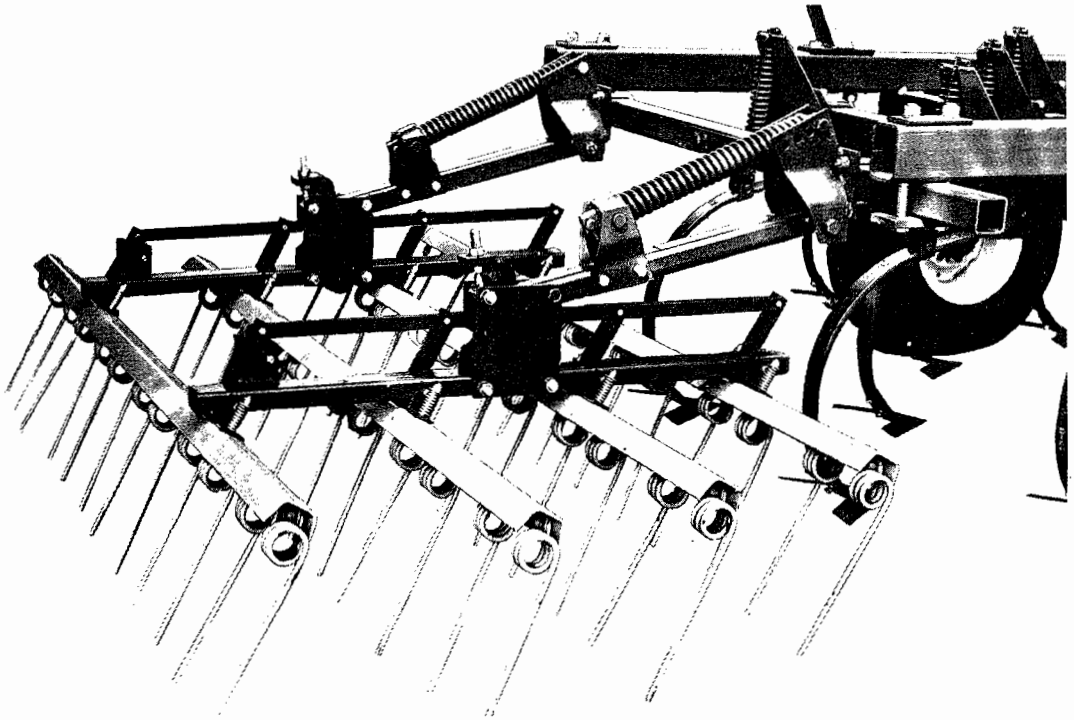
2. Secure brackets to mounting bracket with two 5/8NC X 3-1/2" Cap Screws, Lock Washer and Hex Nuts.

3. Lay out second row of tine bars on the ground behind the unit. Space each section 7-1/2" apart. Four row tine bars are the same as 3 row tine bars with 4th row added.

4. Starting in the center, assemble the second row of tine bars as laid out on the ground. It may be necessary to move the carrier right or left to match holes in the tine bars. In some areas it will be necessary to loosen the spring tine to assemble the GRADE 8 bolt from the underside. Mount all bars to second row with one bolt at each carrier. CHECK FOR PLACEMENT AND CUT WIDTH OF TINE HARROW. Assemble first row of tine bars offset 2 holes (2-1/2") to left of second row. Offset third row of tine bars 2 holes to right of second row. Offset fourth row in line with the first row.

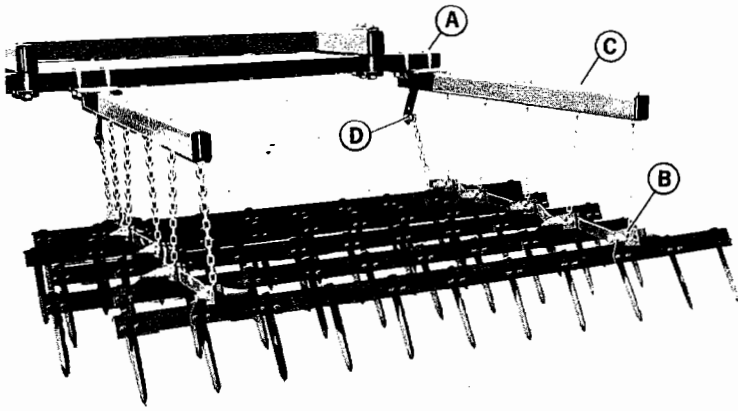
5. Assemble remaining bolts and springs and tighten spring to 2 inches as shown in drawing on preceding page.

6. After all tine bars are assembled and spacing checks out, tighten all bolts.



XXII. 5-ROW SPIKE BAR ATTACHMENT

1. Loosely attach carrier arm weldment Ⓐ to rear frame member, with two #61-148 U-Bolts, and 3/4" Lock Washer and Hex Nuts.

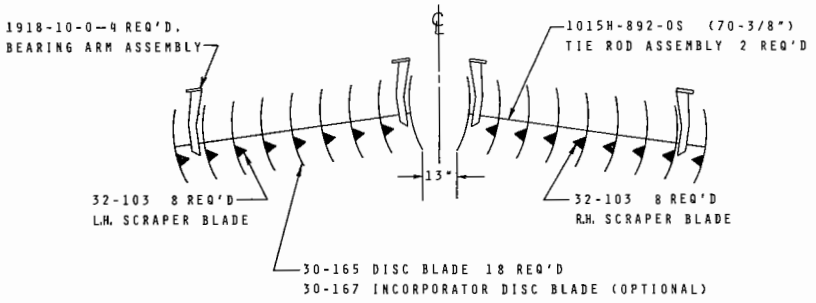


2. Attach mounting chain to spike bar assembly at location Ⓑ, with 3/8NC X 1-1/4" Cap Screw, and Nylon Top Lock Nut.

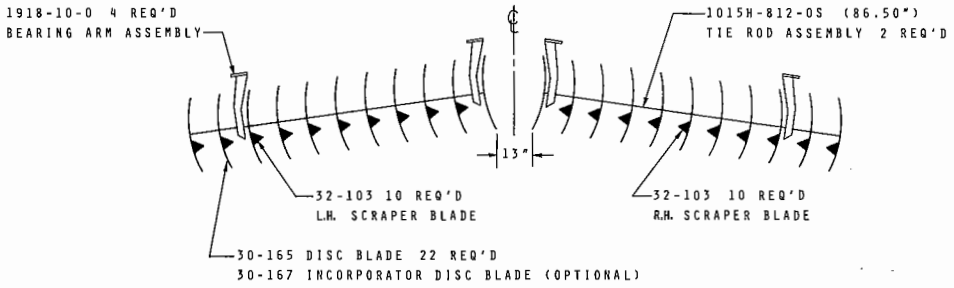
3. Insert J-Bolt through the other end of the mounting chain, then through carrier arm Ⓒ and secure with 3/8NC Nylon Top Lock Nut. As you begin tightening the lock nut, make sure the J-Bolt is aligned with the hole in the bottom of the carrier arm weldment.

4. Attach chain at location Ⓓ, to the spike bar assembly with a 3/8NC X 1-1/2" Cap Screw, and Nylon Top Lock Nut. The chain will assemble to the carrier arm weldment in the lowest hole.

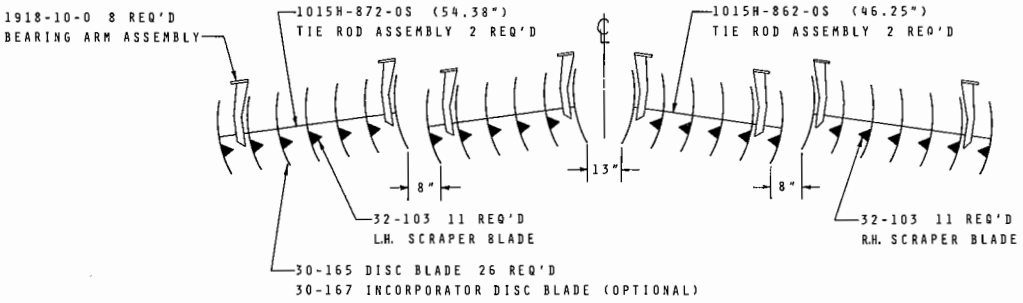
MODEL 3112



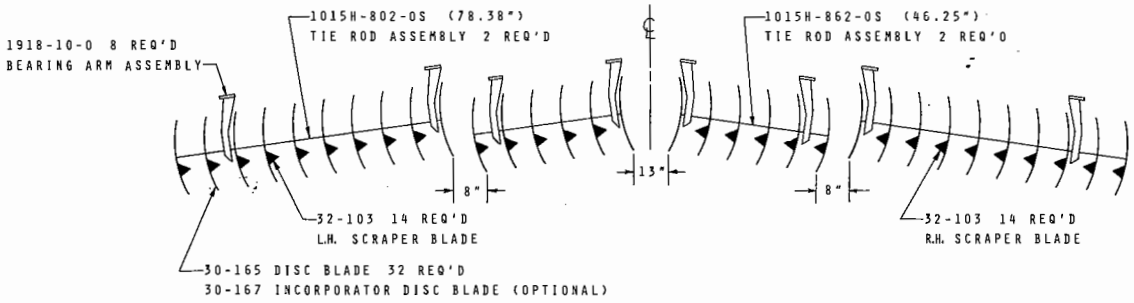
MODEL 3115



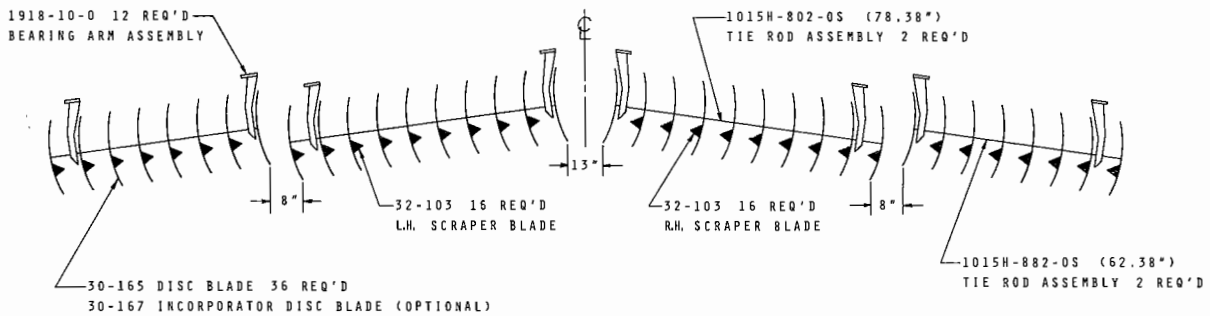
MODEL 3118



MODEL 3121



MODEL 3124



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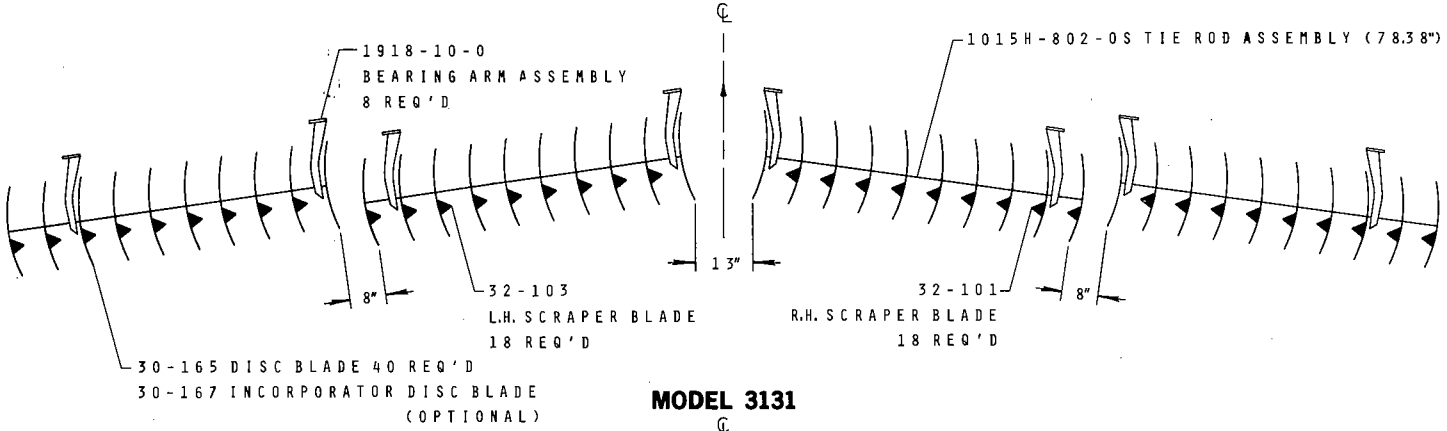
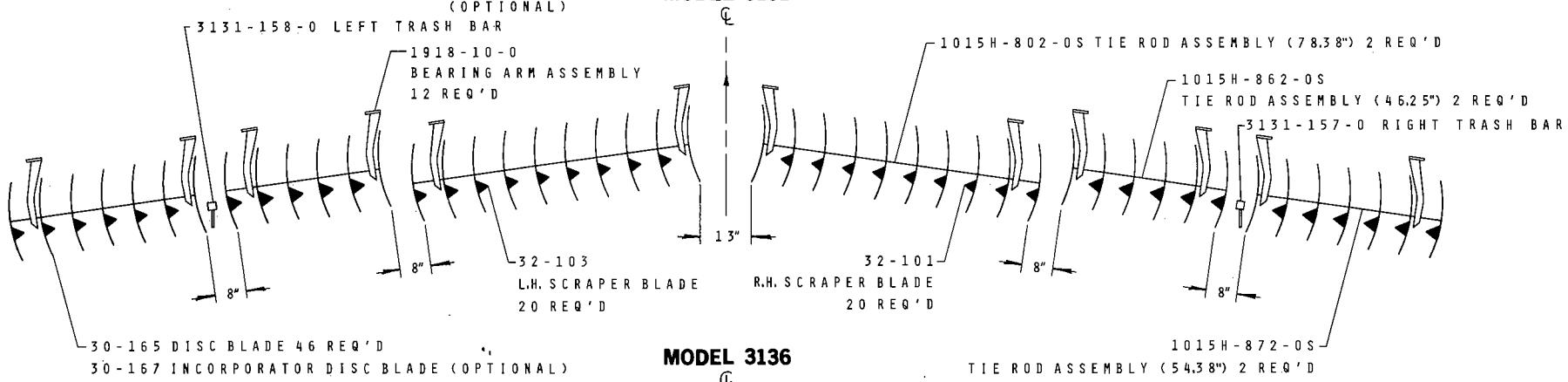
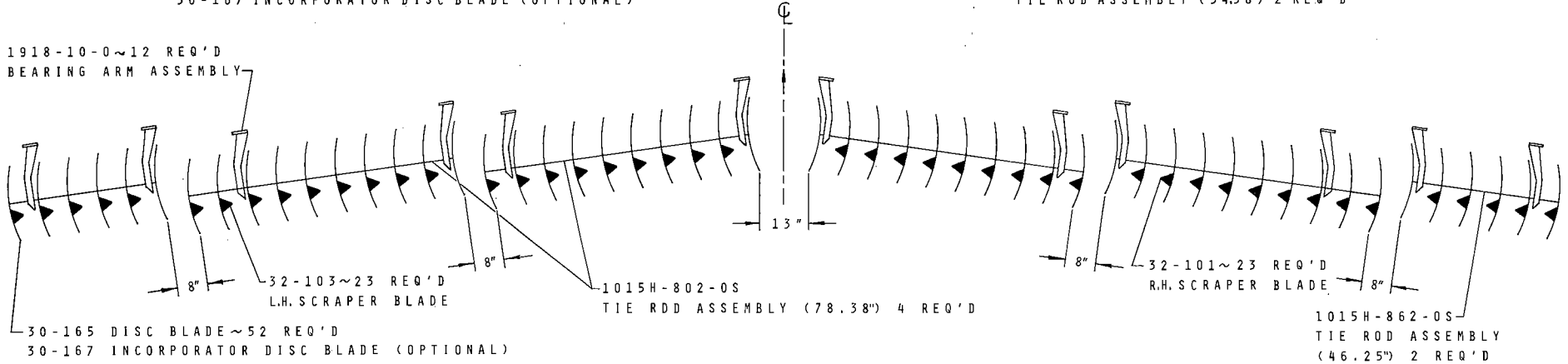
MODEL 3127



MODEL 3131



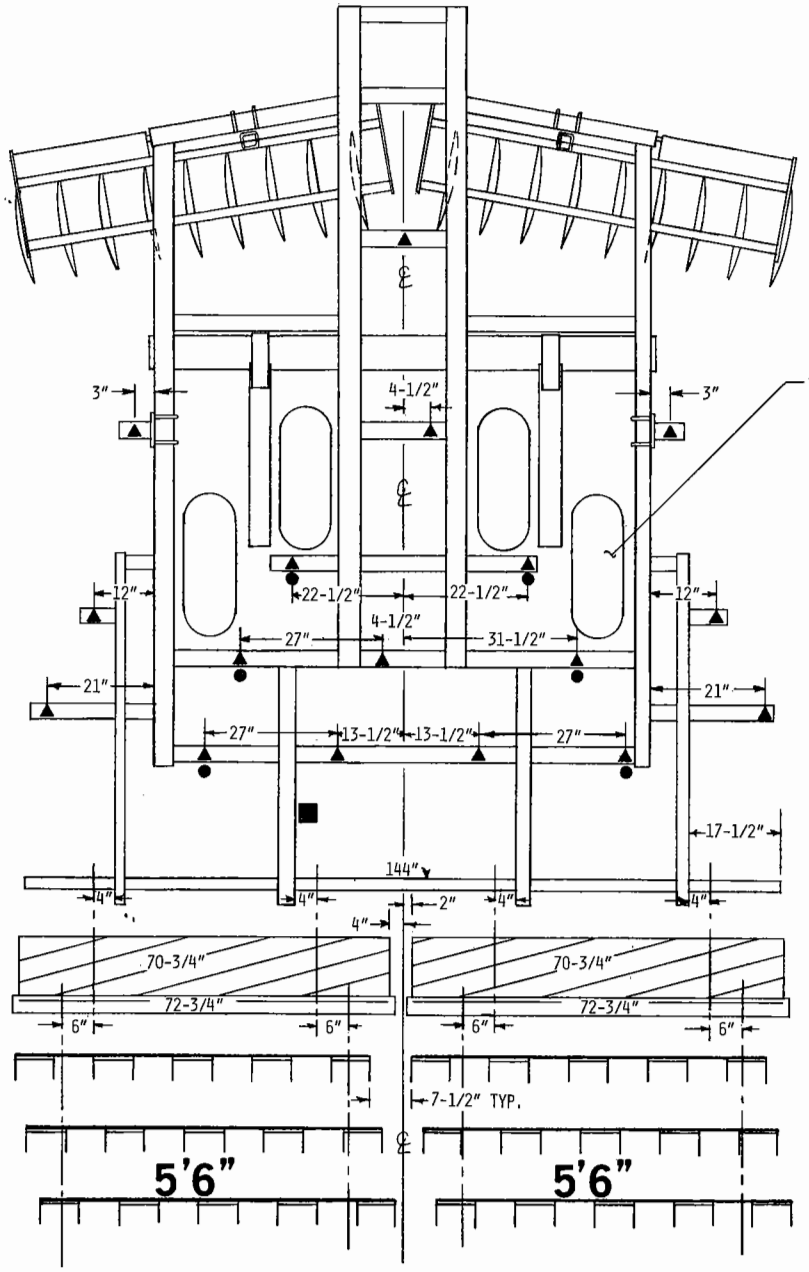
MODEL 3136

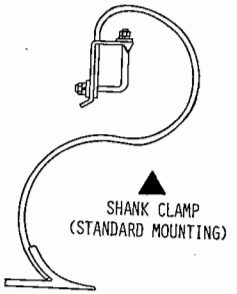


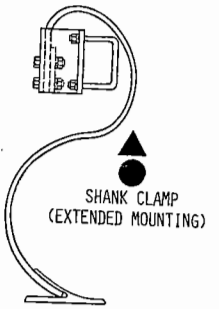
MODEL 3112

NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS SHOWN.

■ REAR JACK LOCATION



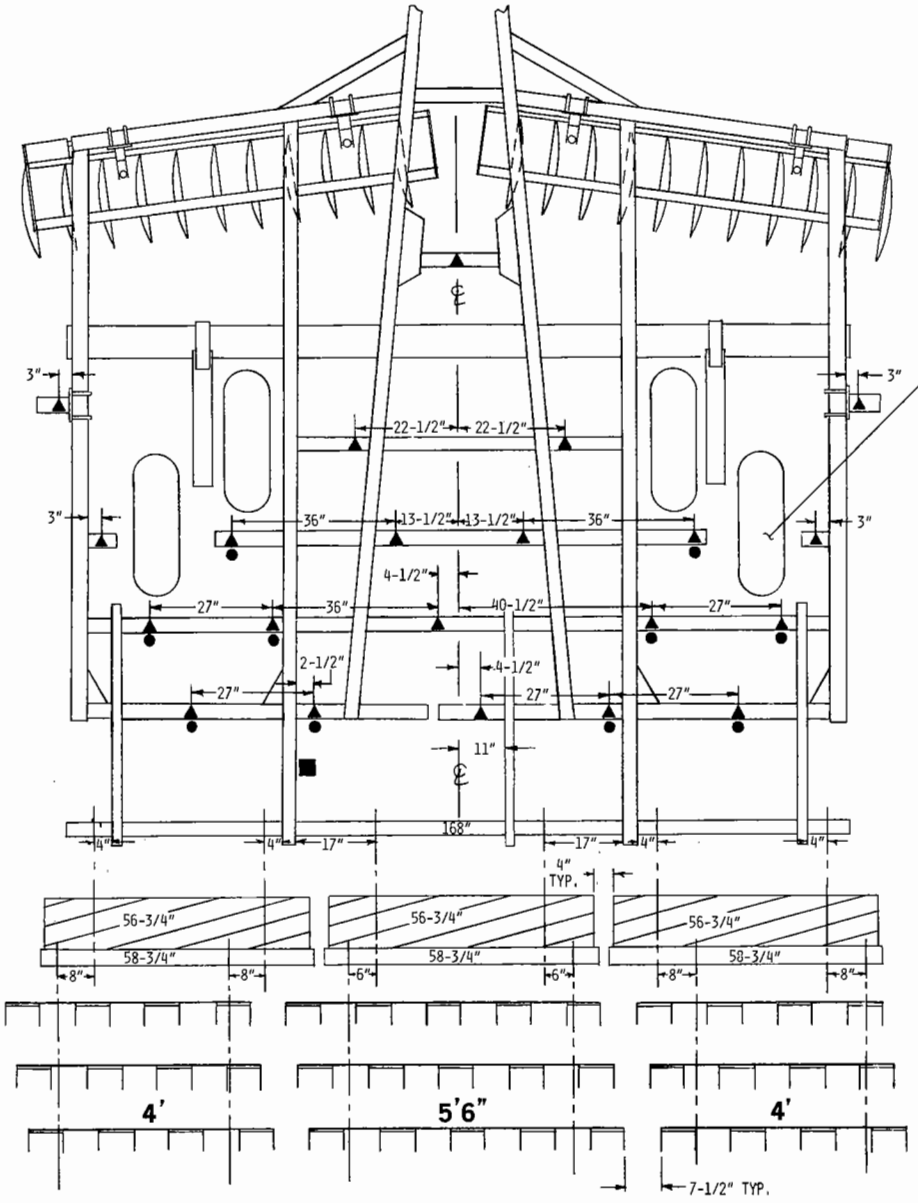




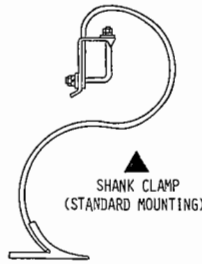
MODEL 3115

NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS SHOWN.

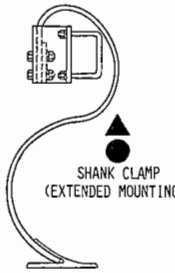
■ NOTE: REAR JACK LOCATION



9.5L X 15 TIRES ALL LOCATIONS



SHANK CLAMP
(STANDARD MOUNTING)

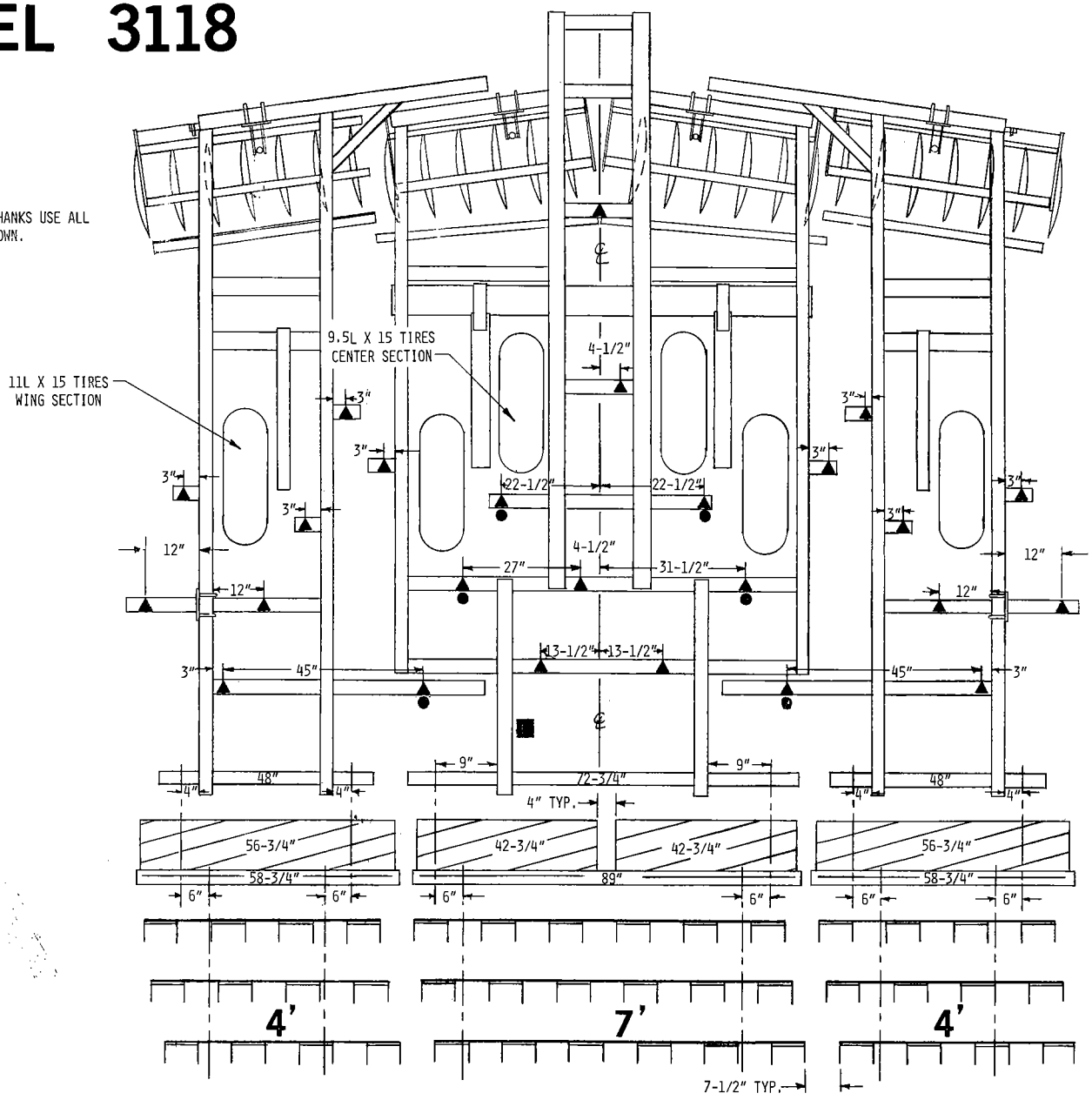


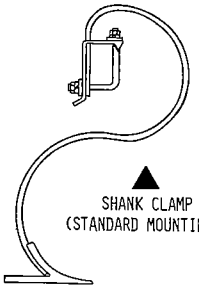
SHANK CLAMP
(EXTENDED MOUNTING)

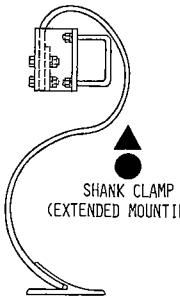
MODEL 3118

NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS SHOWN.

REAR JACK LOCATION







A32

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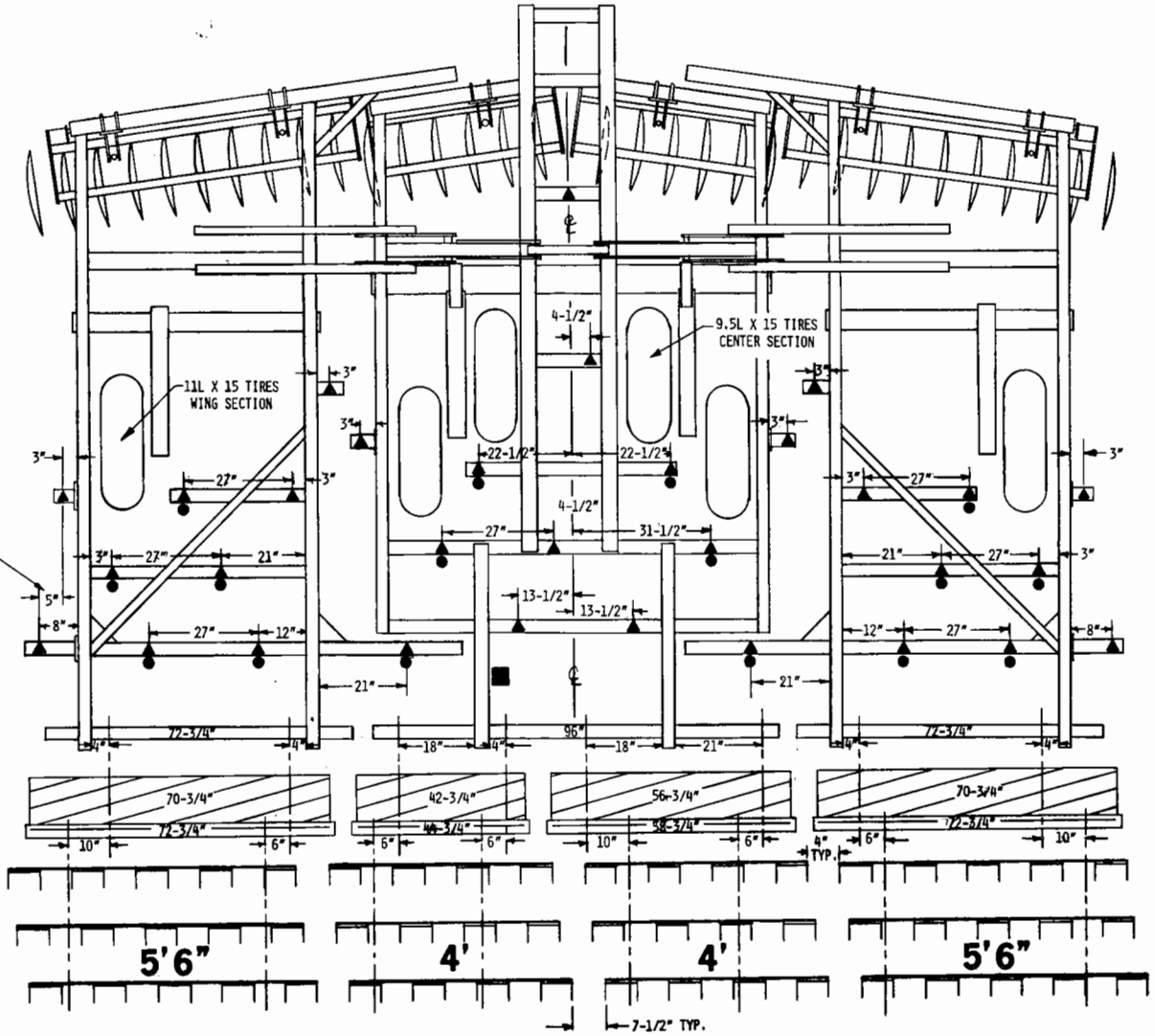
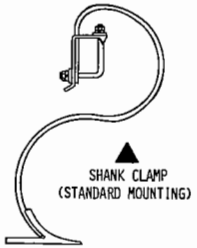
MODEL 3121

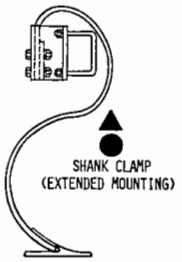
NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS

■ REAR JACK LOCATION

NOTE: 5" SPACING THIS LOCATION ONLY - TYP. BOTH SIDES



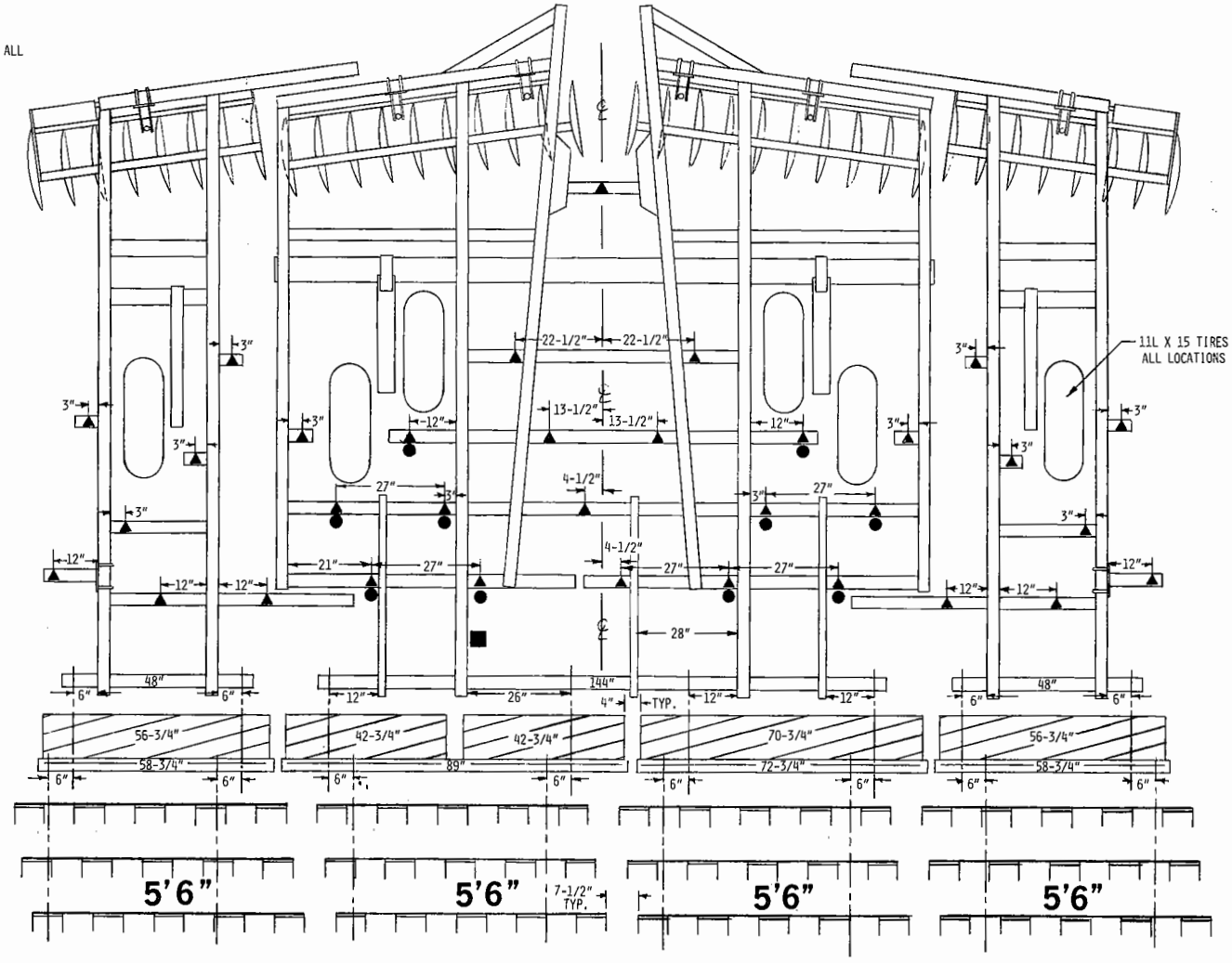


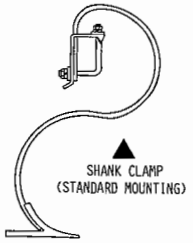


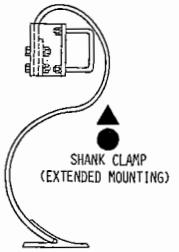
MODEL 3124

NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS SHOWN.

■ REAR JACK LOCATION







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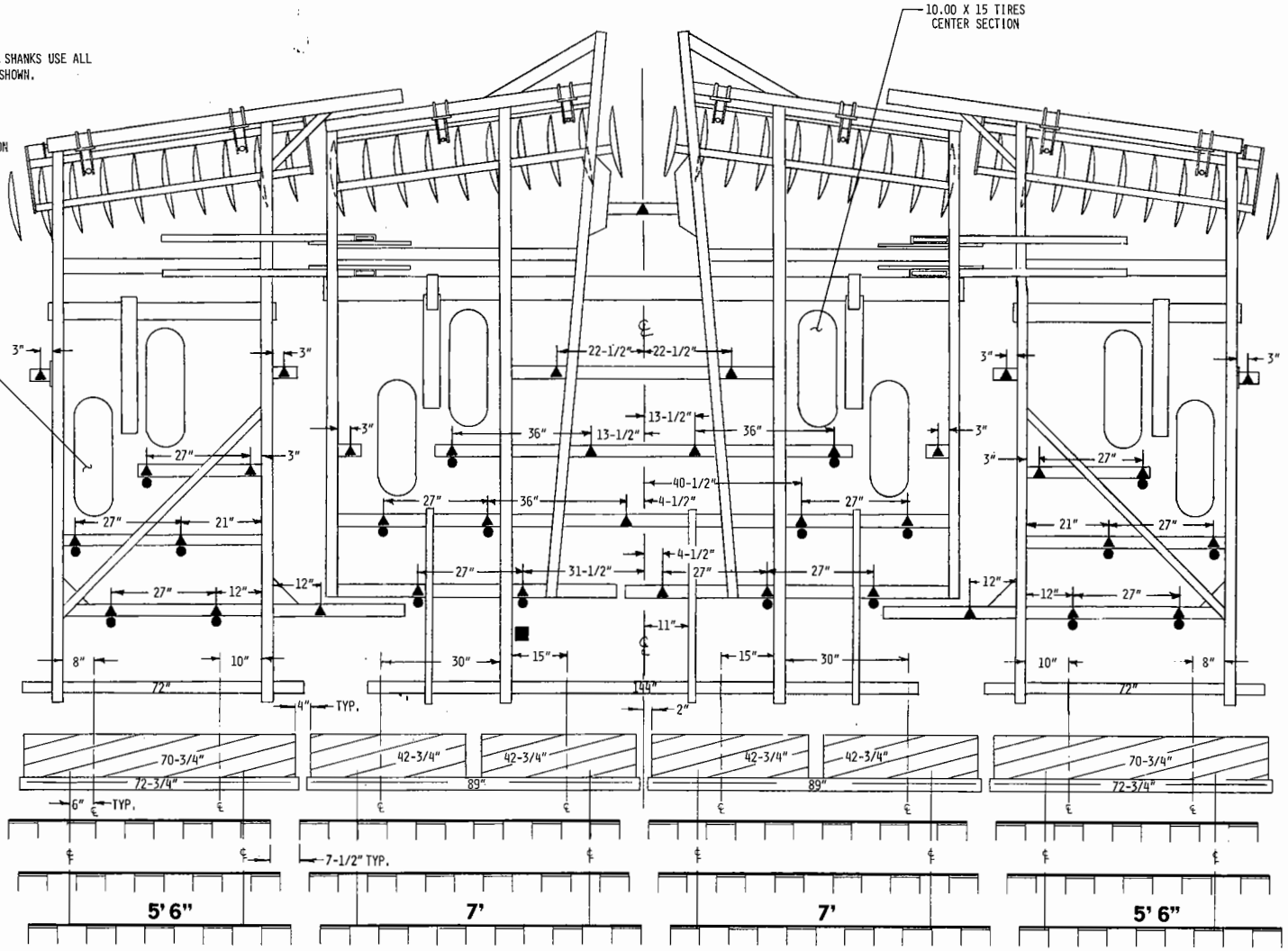
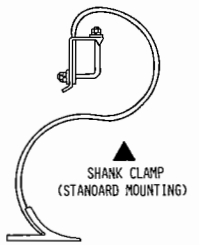
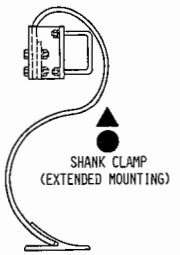
MODEL 3127

NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS SHOWN.

■ NOTE: REAR JACK LOCATION



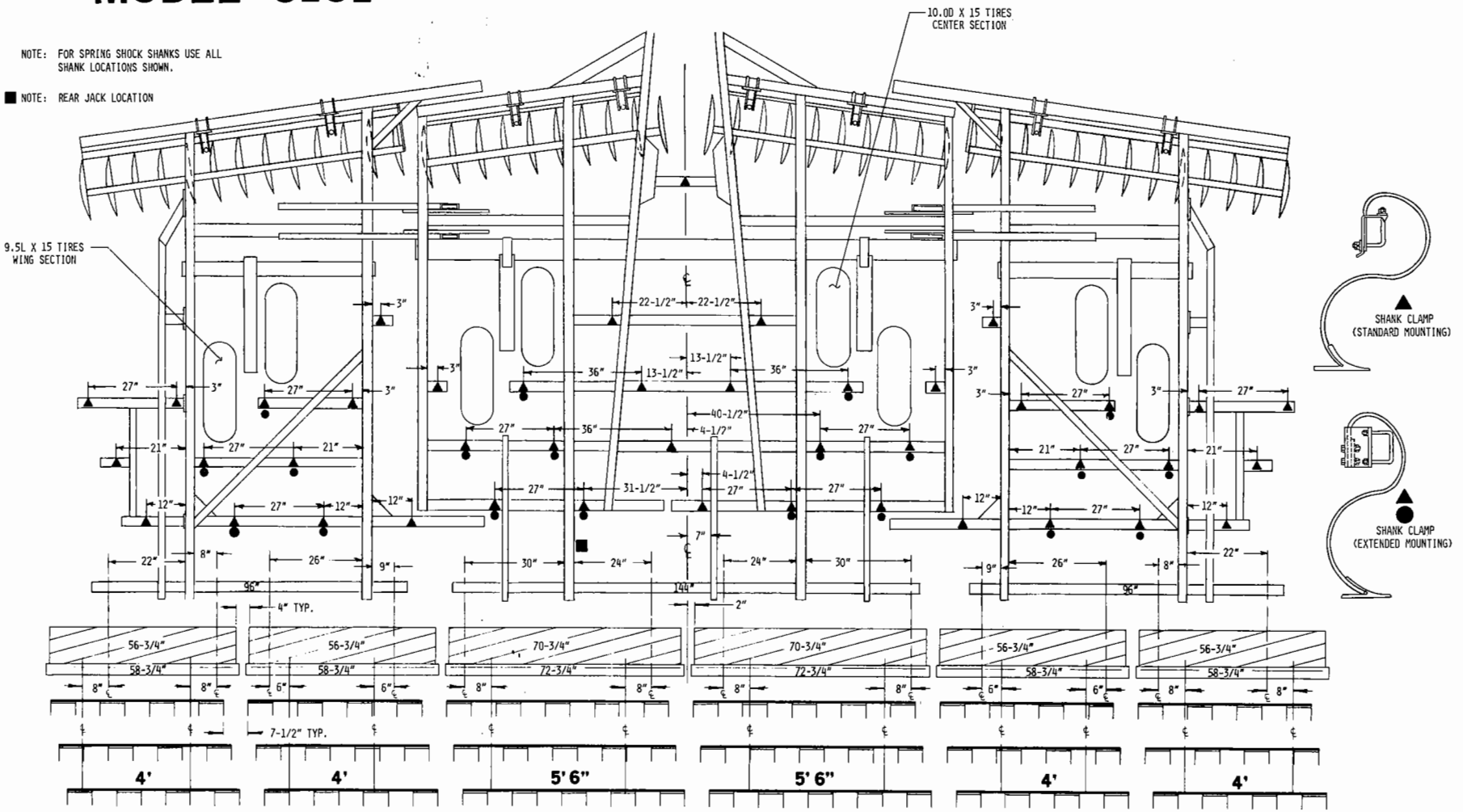




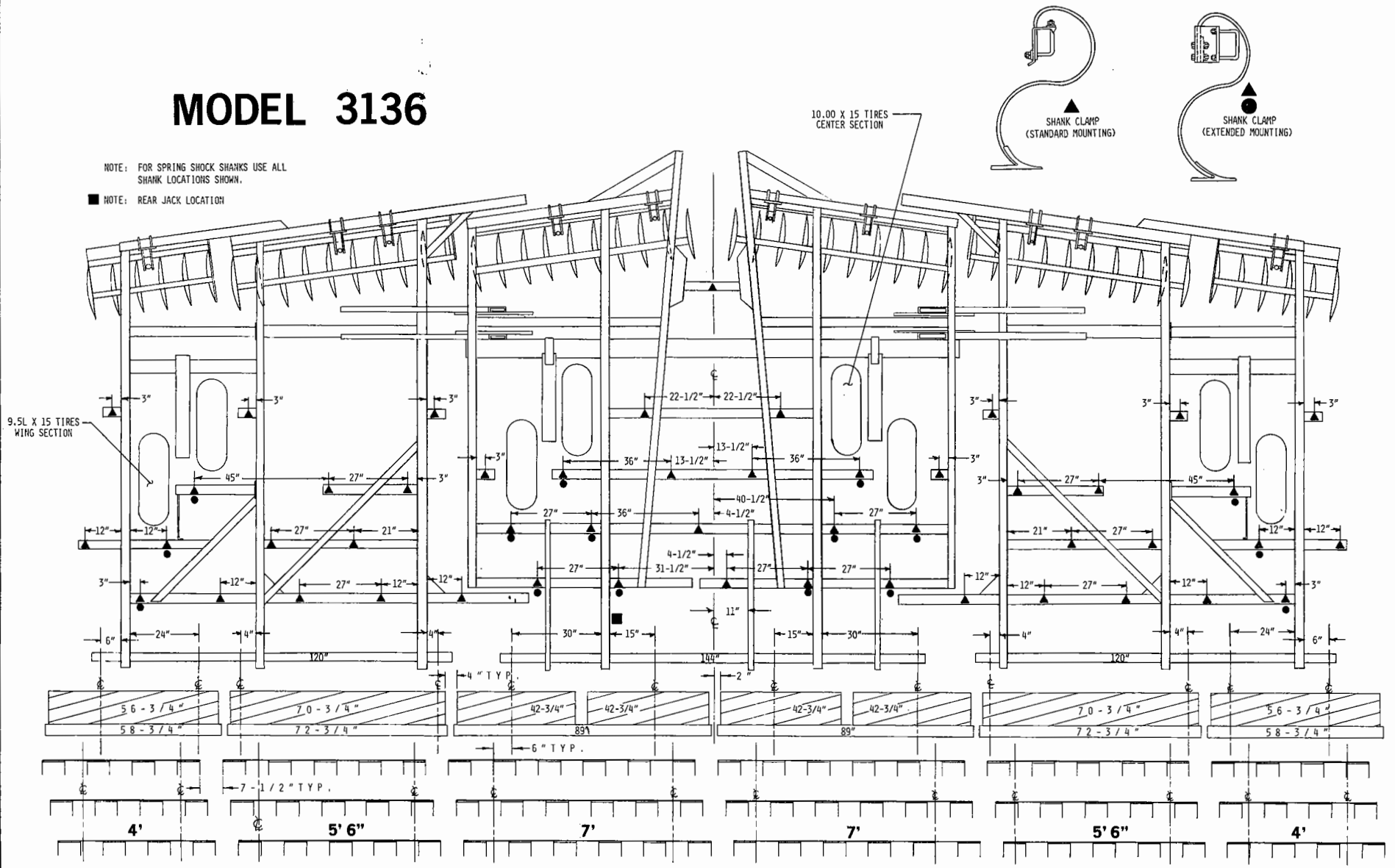
MODEL 3131

NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS SHOWN.

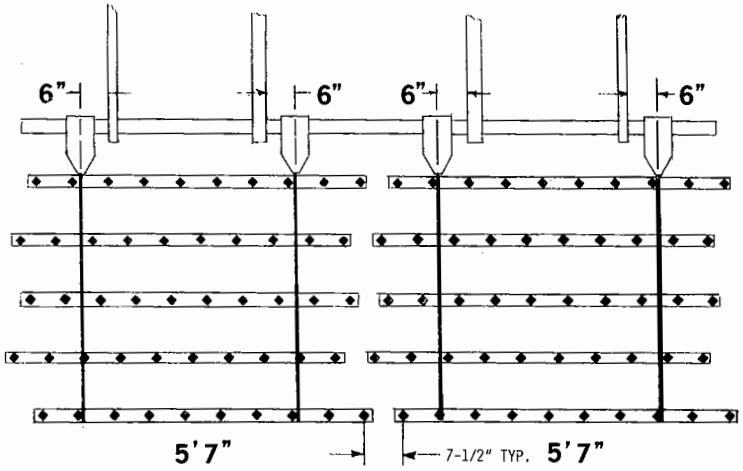
■ NOTE: REAR JACK LOCATION



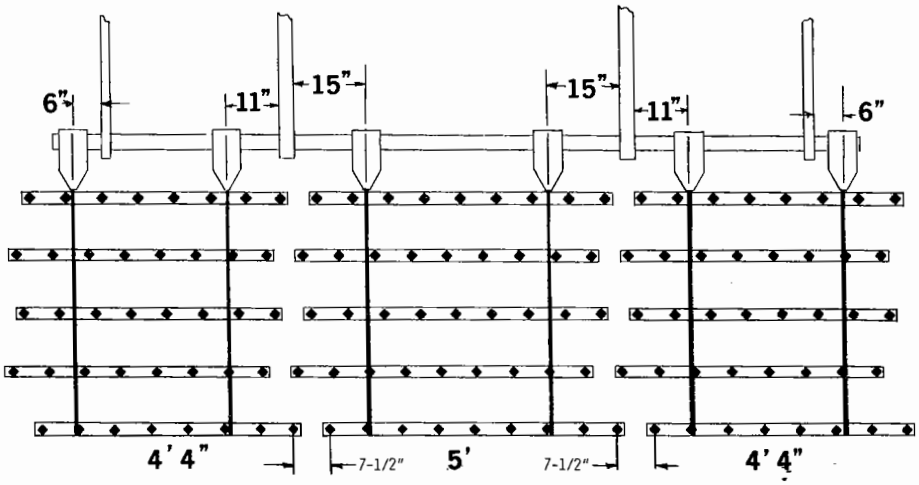
MODEL 3136


NOTE: FOR SPRING SHOCK SHANKS USE ALL SHANK LOCATIONS SHOWN.
■ NOTE: REAR JACK LOCATION
10.00 X 15 TIRES CENTER SECTION
SHANK CLAMP (STANDARD MOUNTING)
SHANK CLAMP (EXTENDED MOUNTING)
9.5L X 15 TIRES WING SECTION
3" 3" 3" 22-1/2" 22-1/2" 3" 3" 3"
45" 27" 3" 3" 36" 13-1/2" 13-1/2" 36" 3" 3" 27" 45"
40-1/2"
12" 12" 27" 21" 27" 36" 4-1/2" 27" 21" 27" 12" 12"
4-1/2"
3" 12" 27" 12" 12" 27" 31-1/2" 27" 27" 12" 12" 27" 12" 3"
11"
6" 24" 4" 4" 30" 15" 15" 30" 4" 4" 24" 6"
120" 144" 120"
4 " TYP. 2 "
56 - 3/4" 70 - 3/4" 42-3/4" 42-3/4" 42-3/4" 42-3/4" 70 - 3/4" 56 - 3/4"
58 - 3/4" 72 - 3/4" 89" 89" 72 - 3/4" 58 - 3/4"
6 " TYP.
7 - 1/2 " TYP.
4' 5' 6" 7' 7' 5' 6" 4'

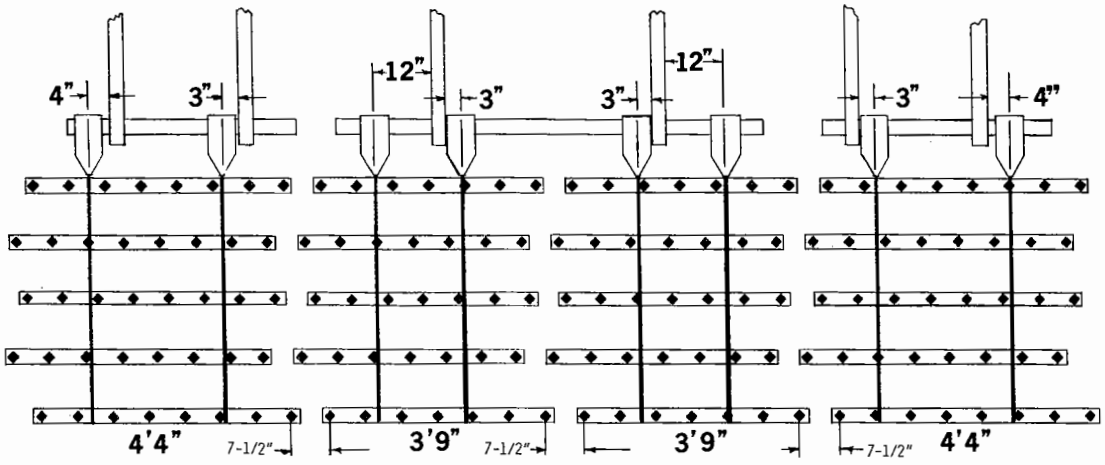
MODEL 3112



MODEL 3115



MODEL 3118



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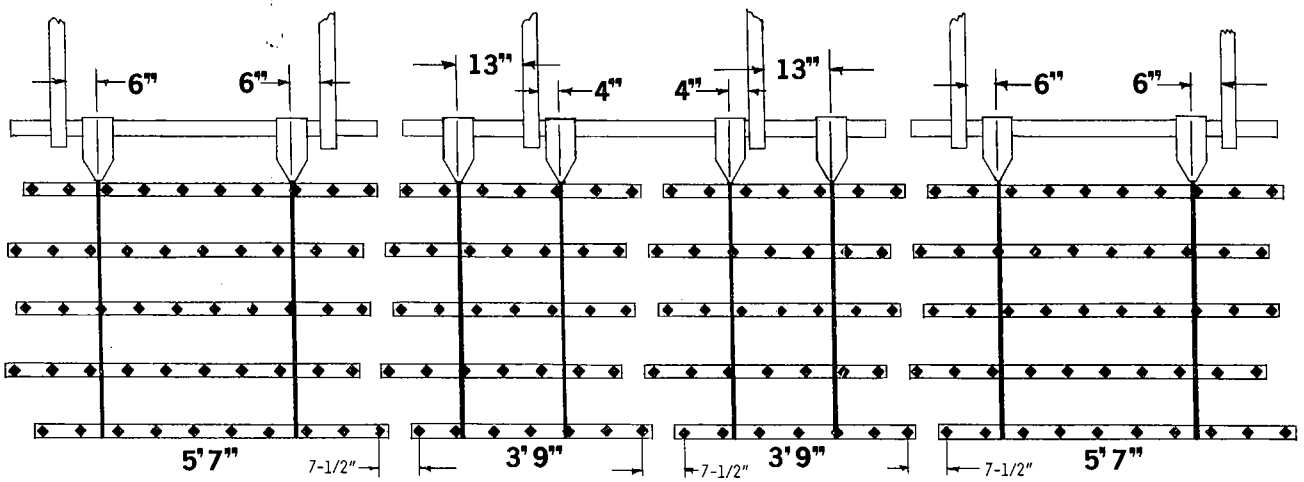
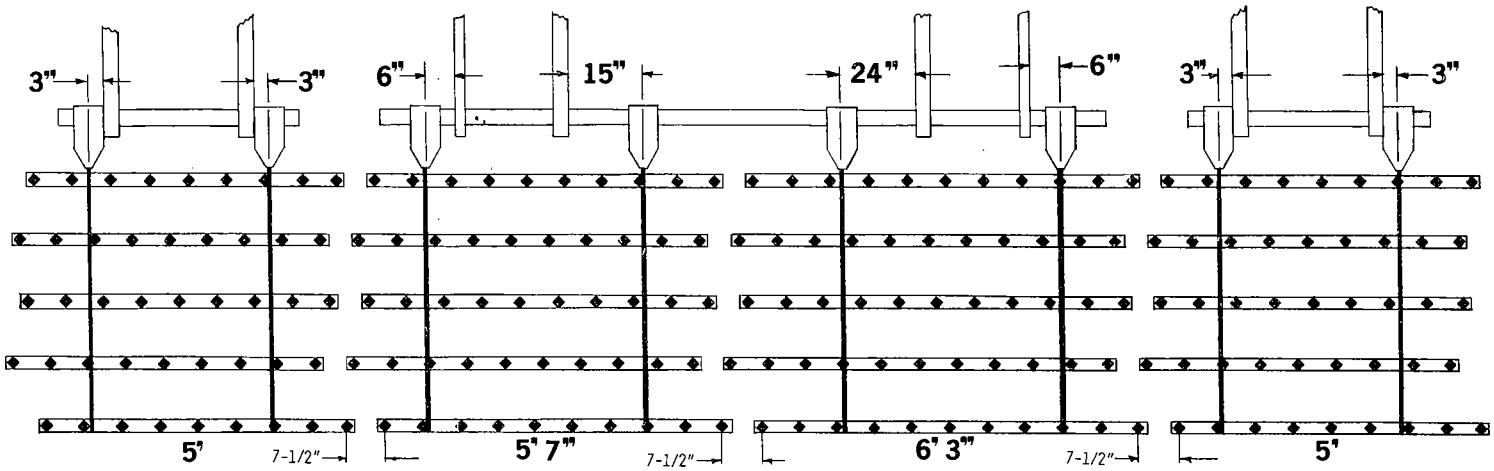
MODEL 3121

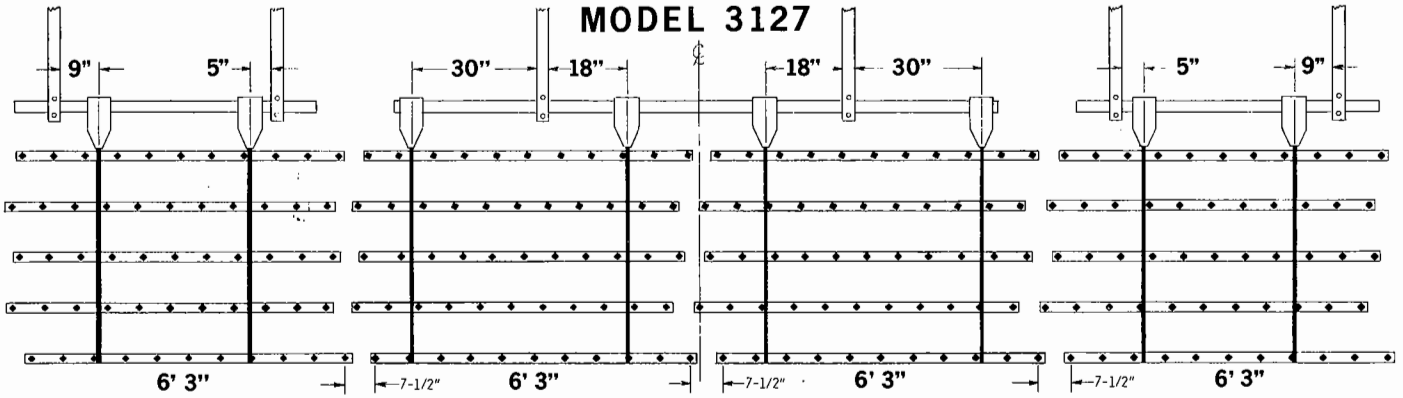


MODEL 3124

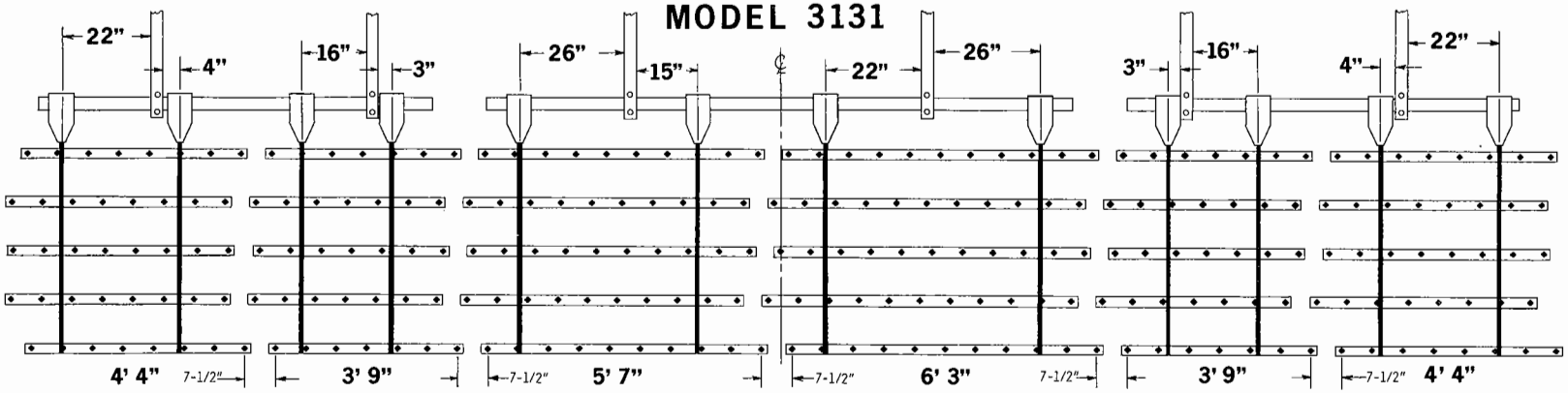


5-ROW SPIKE BAR PLACEMENT

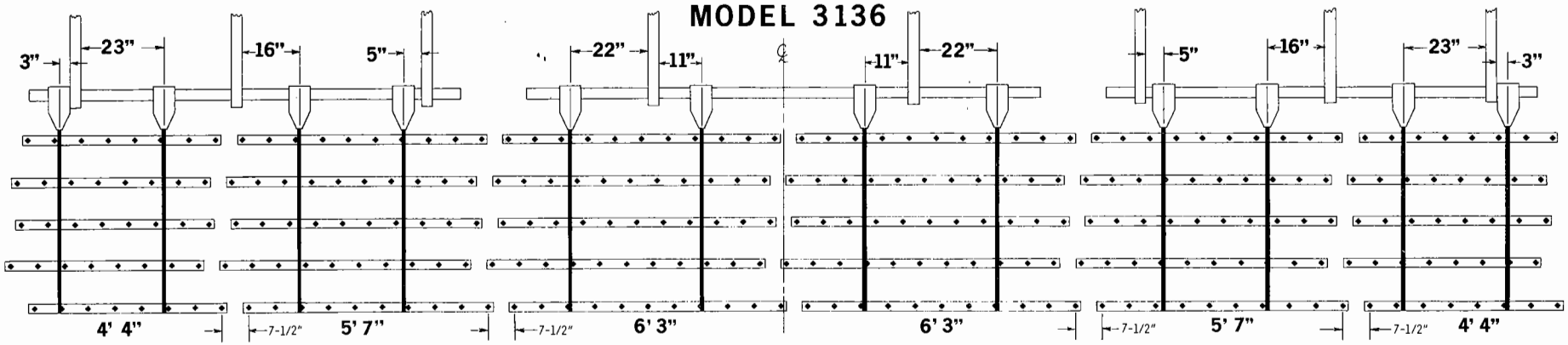
MODEL 3127



MODEL 3131



MODEL 3136



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⚠ SAFETY FIRST

Be observant and safety minded. Recognize and correct or avoid hazardous conditions before an accident can happen. Most accidents can be prevented by practicing simple fundamental safety rules.

1. Read and understand the implement and tractor owner's manuals before operating.
2. Be sure safety decals and reflectors are clean and in place.
3. Do not climb or walk on gangs or frames or tires.
4. Never position yourself under any portion of implement unless the transport lock is engaged or entire unit is lowered to the ground.
5. Stop engine before leaving operator's position to adjust, lubricate, clean or unclog the machine.
6. Do not stand between the implement and tractor unless tractor brakes are locked and engine is shut off.
7. Do not stand on or straddle a tongue when unhitching.
8. Always store a winged implement with the wings down.
9. Never remove locking pins until hydraulic cylinders and lines are full of oil and free of air. See operating instructions for proper method of removing air.
10. Never use machinery until all safety devices are in place.
11. Release all hydraulic pressure before shutdown periods.
12. Comply with Federal, State and local laws.
13. Use a Slow-Moving-Vehicle emblem when roading.
14. Always use a safety chain of tensile strength equal to the gross weight of the implement and attachments when roading.
15. Towing vehicle weight must exceed weight of towed implement.
16. Check wheel bolts before and during transport.
17. Always use wing locks and road locks to hold raised positions.
18. Never permit riders on implement.
19. Do not road an implement over 15 miles per hour on the best surface conditions. Reduce speed when going up or down hills and approaching ditches or corners.
20. Keep small children away from farm equipment.
21. Never modify an implement without permission from the Krause Engineering Department.
22. Always use authorized Krause parts.

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