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4100 Series Land Roller

20', 18', 16', 14' & 12' Widths

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Thank you for making the decision to purchase a RITE WAY

We are pleased to welcome you as an owner of a product from **RITE WAY MFG**. This machinery is the culmination of years of agricultural and engineering experience and has been designed to deliver you with many years of successful operation service.

For the most efficient operation of your **Fixed Hitch Roller** we have provided this owner's manual. In this manual we have included proper maintenance and functional procedures to offer maximum longevity for your new equipment. Before operating we urge a careful study of this manual to provide a thorough understanding of your new **Fixed Hitch Land Roller**. We also recommend that you take care of this manual so it will be available for future reference. Should your manual become lost or destroyed a new copy can be obtained from your **Rite Way Manufacturing** dealer. We will also be happy to answer any questions you might have concerning the use or care of this product.

MANUAL DETAILS

Unit Model Number	**20', 18', 16', 14' and 12' Fixed Hitch Land Roller**
Manual Revision Number	**0.0**
Manual Revision Date	
Manual Serial Number Range	**15-41-2276 +**

The area below is provided for the owner / end-user to make notes regarding the equipment.

OWNER / EQUIPMENT DETAILS

Serial Number of Unit	
Date of Purchase	
Dealer Name	
Dealer Address	
Dealer Phone Number	
Salesman Name	
Salesman Phone Number	
Notes	

SPECIFICATIONS

- Working width of 20’ (6.10 m) with a working length of 16’-7” (5.05 m)
- Working width of 18’ (5.49 m) with a working length of 16’-7” (5.05 m)
- Working width of 16’ (4.88 m) with a working length of 16’-7” (5.05 m)
- Working width of 14’ (4.27 m) with a working length of 16’-7” (5.05 m)
- Working width of 12’ (3.66 m) with a working length of 16’-7” (5.05 m)

- Transport width of 21’-2” (6.46 m) with a transport length of 16’-4” (4.98m)
- Transport width of 19’-2” (5.85 m) with a transport length of 16’-4” (4.98 m)
- Transport width of 17-2” (5.22 m) with a transport length of 16’-4” (4.98 m)
- Transport width of 15-1” (4.58 m) with a transport length of 16’-4” (4.98 m)
- Transport width of 13’-1-1/4”(3.99 m) with a transport length of 16’-4” (4.98 m)

- Approximate working weight of the 20’ frame is 6,700 lbs. (3045 kg)
- Approximate working weight of the 18’ frame is 6,300 lbs. (2858 kg)
- Approximate working weight of the 16’ frame is 5,900 lbs. (2680 kg)
- Approximate working weight of the 14’ frame is 5,400 lbs. (2455 kg)
- Approximate working weight of the 12’ frame is 4,900 lbs. (2222 kg)

- Heavy duty Ø2-7/16” drum shaft
- Heavy duty Ø2-7/16” self-align greaseless roller bearing
- Ø42” Drum (.528 to .625 wall thickness)
- Two – 11 L x 15 – 8 Ply (“D”) Highway Service tires
- Slow moving sign kit
- One - 20,000 lbs safety chain
- Light kit

Main Frame

- High profile frame design
- 8 x 4” x 0.25w tube

Hydraulic System

- Heavy duty hydraulic cylinders.
- Zinc plated steel hydraulic lines

Options

- Acre meter kit

PRE-DELIVERY INSPECTION CHECK LIST

General

- ☐ Remove wrapping and wash unit, removing all road debris. (Road salt, mud, snow, etc.)
- ☐ Inspect paint, decals and general appearance of unit.
- ☐ Verify that the owners' manual is in the manual storage tube.
- ☐ Verify 'SLOW MOVING VEHICLE' sign (SMV) is on unit (if applicable)
- ☐ Verify that jacks are with the unit and function properly.
- ☐ Check wheel bolts for proper torque.
- ☐ Check for proper tire pressure (PSI).
- ☐ Verify that the wheel hubs are lubricated.
- ☐ Verify that locking pins and / or ram locks are in place.
- ☐ Lubricate all components as per operators' manual recommendation.
- ☐ Check that all bolts and fasteners are at the proper torque specifications.

  (NOTE: All cap screws that have lock nuts join moving pieces should not be tightened completely, they must allow movement. i.e. Spring pressure kits, rock shaft connector, draft arm, etc.

- ☐ Check sprocket alignment and chain tension. (If applicable)
- ☐ Check locking collars and set screws for proper tension. (If applicable)
- ☐ Verify operation of lights. (If applicable)
- ☐ Verify the unit moves 'IN' and 'OUT' of transport without any binding.
- ☐ Verify that tires are tracking properly when in transport mode.

Hydraulics

- ☐ Insure that all hydraulic hoses and lines are routed properly and secured.
- ☐ Verify that all hydraulic fittings / hoses are secure and there are no oil leaks.
- ☐ Inspect all cylinders for leakage and the cylinder shaft for rust, pits, or scratches.
- ☐ Verify operation of all hydraulic functions - cycle hydraulic cylinders to remove air from the system.

Delivery

- ☐ Verify that the customer is aware of warning decals and proper jack placement for transport.
- ☐ Verify that the customer is aware of proper operation and transportation of the unit.
- ☐ Verify that the customer has received an operators manual.
- ☐ Explain all maintenance and service intervals to the customer (From operators manual).
- ☐ Advise the customer of grease zerk locations and maintenance schedules.
- ☐ Level the unit per operators manual and instruct the customer on the proper procedures.

SERVICE AND WARRANTY POLICY

Rite Way Manufacturing Co. Ltd. (hereafter referred to as Rite Way) warrants each new machine to be free from defects in materials and workmanship for a period of one (1) year from date of purchase under normal agricultural use and service. In addition, Rite Way will supply at no charge, (F.O.B Rite Way Factory) any part that has failed within the 2nd year. Rite Way's obligation under this warranty is limited to the repair or replacement of any defective parts of the equipment at its own discretion.

***Any** alterations, modifications or additions done to a finished product will **void this warranty** unless prior written permission from Rite Way is obtained.*

Items that are not manufactured by Rite Way are covered by the warranty of the supplier of these items. We will therefore extend, without assuming any responsibility, any warranty given to us by our suppliers.

This warranty shall-not apply to any machine, that in the company's judgment has been subjected to misuse, negligence or accident. In no event shall the owner be entitled to recover costs for incidental, special or consequential damages such as, but not limited to; Loss of crop, loss of profit or revenue, other commercial losses, inconvenience or rental costs.

This warranty shall not apply unless Rite Way or its designated dealer is promptly notified of claimed defects and the allegedly defective part is held for inspection.

Repair parts purchased for machines 'Out of Warranty', are warranted to be free from defects in material and workmanship under normal use and service for a period of ninety (90) days from the date of delivery to the customer.

The warranty shall only become valid when delivery notification for warranty is received by Rite Way within 20 days of the completion of sale.

OWNER'S / USERS OBLIGATION: It is the responsibility of the user to read the Operators Manual and understand the safe and correct operating procedures as it pertains to the operation of the product, and to lubricate and maintain the product according to the maintenance schedule in the Manual.

The user is responsible for inspecting the machine, and for having parts repaired or replaced when continued use of the product could cause damage or excessive wear to any other parts. It is the user's responsibility to deliver their machine to a Rite Way dealer for service or replacement of defective parts which are covered by the standard warranty.

*Rite Way **will not** be held responsible for charges such as transportation, fuel, lodging when a dealer / dealer representative travels to a customer location for warranty or inspection.*

SERVICE AND WARRANTY CLAIM PROCEDURES

1. *All claims must be handled through a dealer / distributor. All claims must be submitted on a properly completed claim form within 30 days of the date of repair.*
2. *A warranty registration claim form must be on file at Rite Way Mfg. to validate a warranty claim.*
3. *Defective parts are to be held at the dealer / distributor's place of business until the warranty claim form has been processed. Rite Way will advise when parts can be released.*
4. *Parts that require inspection by Rite Way personnel must be accompanied by a Return Goods Form number, and must be sent by pre-paid freight. Rite Way will refund pre-paid freight charges on any items determined to be defective.*
5. *Rite Way will not assume responsibility for repairs or expenses incurred without authorization. Warranty labour in excess of $150.00 must be authorized before such work is performed and photographs before and after repairs are required.*
6. *Warranty labour is to be claimed on the warranty claim form, only if the warranty labour was performed by the dealer. Travel time is not covered by warranty and should not be included. Rite Way reserves the right to adjust or allocate labour times and values based on its experience.*
7. *It is the responsibility of the dealer to ensure that the warranty registration forms are properly completed and returned to Rite Way Mfg., Imperial, SK.*

BLANK INTENSIONALLY

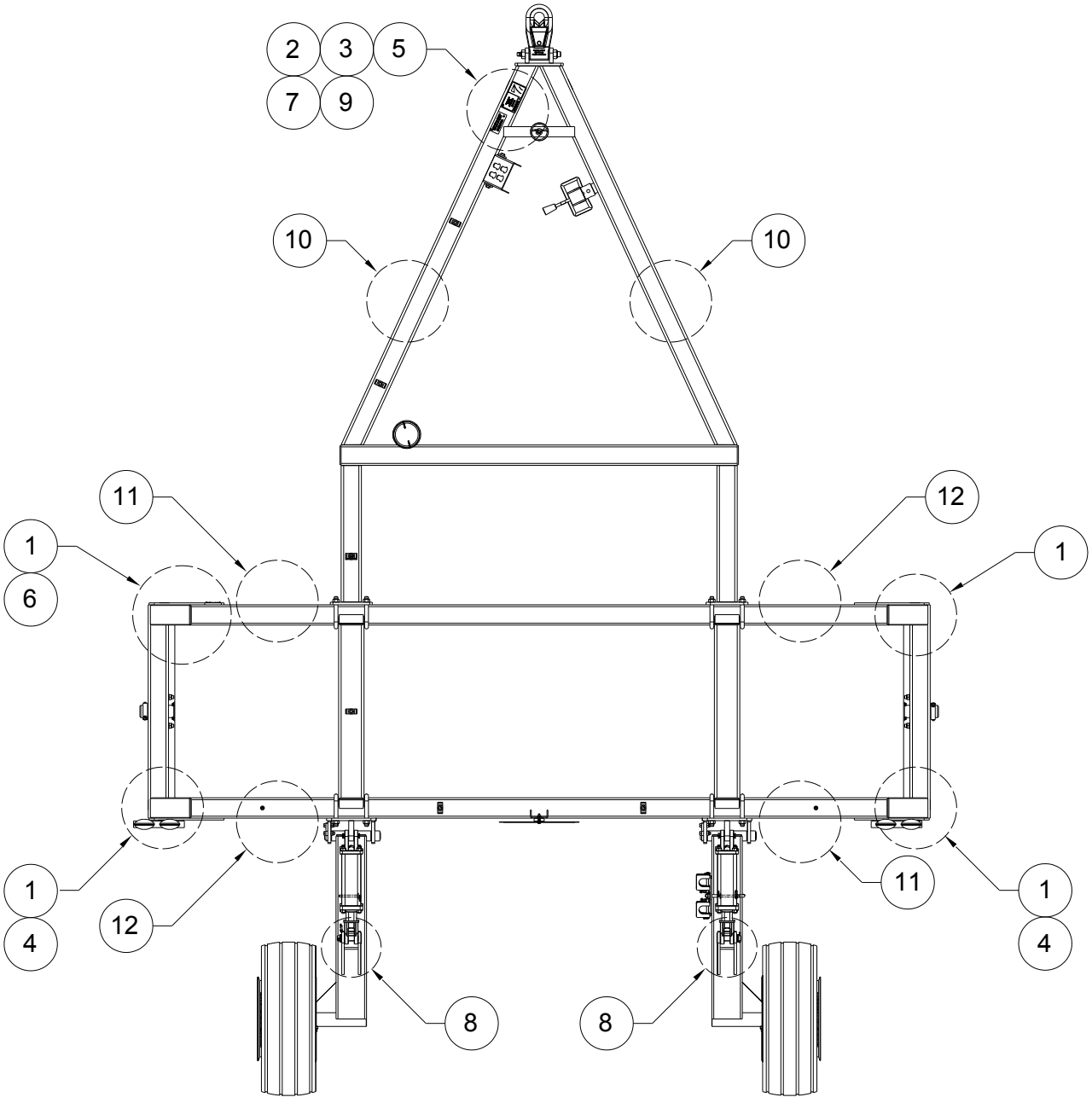
SAFETY RECOMMENDATIONS

1. Read manual thoroughly before operating machine.
2. Study all warning decals on implement.
3. Most accidents occur because of ***neglect*** or ***carelessness.***
4. Only the operator should be on the tractor during operation.
5. Connect the ***LAND ROLLER*** to the tractor before operating hydraulics. Be cautious of hydraulic oil leaks.
6. Always throttle the tractor down and use caution in attaching the ***LAND ROLLER*** to the tractor. Never stand between the implement and the tractor.
7. Be very cautious when unhooking the tractor from the ***LAND ROLLER***. The parking jack must be lowered on firm ground, plus the front and back of the tires in the centre frame should be blocked to prevent it from rolling.
8. Exercise extra caution when working on hillsides or near ditches.
9. The tractor drawbar should be pinned during transport. The maximum speed while transporting the ***LAND ROLLER*** should be no more than 18 MPH (29 KPH).
10. Proceed carefully when performing maintenance on the ***LAND ROLLER.*** The roller should be on the ground in **FIELD POSITION**; however, if the nature of the work requires that the ***LAND ROLLER*** is in the raised position, being sure to lock cylinders into position.
11. Keep hands and feet from underneath the ***LAND ROLLER*** during adjusting procedures.
12. Leave the ***LAND ROLLER*** lowered to the ground in **FIELD POSITION** when not in use.

    DO NOT LOWER ON TO GROUND IN TRANSPORT POSITION.

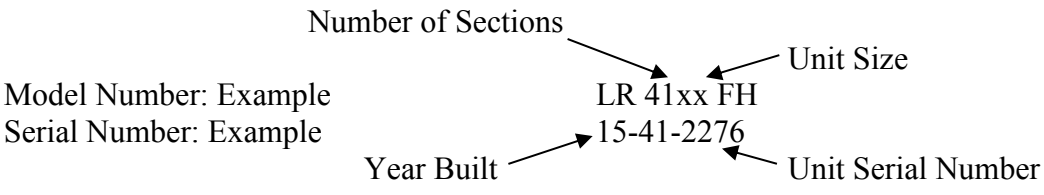
13. Observe all laws and regulations while transporting on public roads.

DECAL LOCATIONS



DECAL LOCATIONS

ITEM	QTY	PART#	DESCRIPTION
1	6	060-0009	**Amber** - Reflector Decal (3" x 2")
2	1	060-0011	**Caution** - Escaping fluid hazard ….
3	1	060-0015	**Important** - Block wheel ….
4	2	060-0022	**Red** - Reflector Decal (3" x 2")
5	1	060-0028	**Warning** - Lower or block elevated ….
6	1	060-0034	**Serial number plate** - c/w rivet, part # 510-0001
7	1	060-0038	**Attention** – Insure that all cylinders ….
8	2	060-0046	**Grease every 8 hours**
9	1	060-0067	**Warning** - Check and tighten hubs ….
10	2	060-0072	**Rite Way Mfg. Co. Ltd.** - white, large, (31" x 5")
11	2	060-0083	**4100** – white
12	2	060-0092	**Rite Way Mfg. Co. Ltd.** – white, medium, (9" x 3")



MAINTENANCE

General

- *Repack the wheel hubs after the first 500 kilometers of travel ; then yearly thereafter.*
- *Visually inspect the wheel bolts for tightness each day. Torque to 110 lbs ft (149 Nm) after the first few hours of operation and frequently thereafter. (Manufacturer's torque recommendations: 90 to 131 lbs ft (122 Nm to 178 Nm)).*
- *After first eight hours of operation in the field check the roller drum bearing locking collar then check it annually and tighten as necessary.*

Figure 1

Every 8 Hours (Daily)

- Grease all pins. (See decals locations)

Every 100 Hours (Monthly)

- Visually inspect hydraulic hoses & fittings for leaks or damage.

Annually

- Inspect wheel bearings / hubs for tightness and grease.
- Check wheel bolts for tightness and re-torque.
- Check tire pressure. Recommended pressure: 60 psi (12', 14′ & 16′); 90 psi (18′ & 20′).
- Visually inspect unit for loose, worn or damaged components.

Storage

- Coat any exposed cylinder shafts with thick oil or grease.
- Ensure that parking jacks are situated on firm ground. Failure to do so may cause the hitch to rise sharply as the jack pads sink into the ground.
- Lock all applicable safety pins into place.

NOTE: All fasteners with locknuts that are used to join moving pieces should not be tightened completely to allow for movement.

Grease Locations

Figure 2

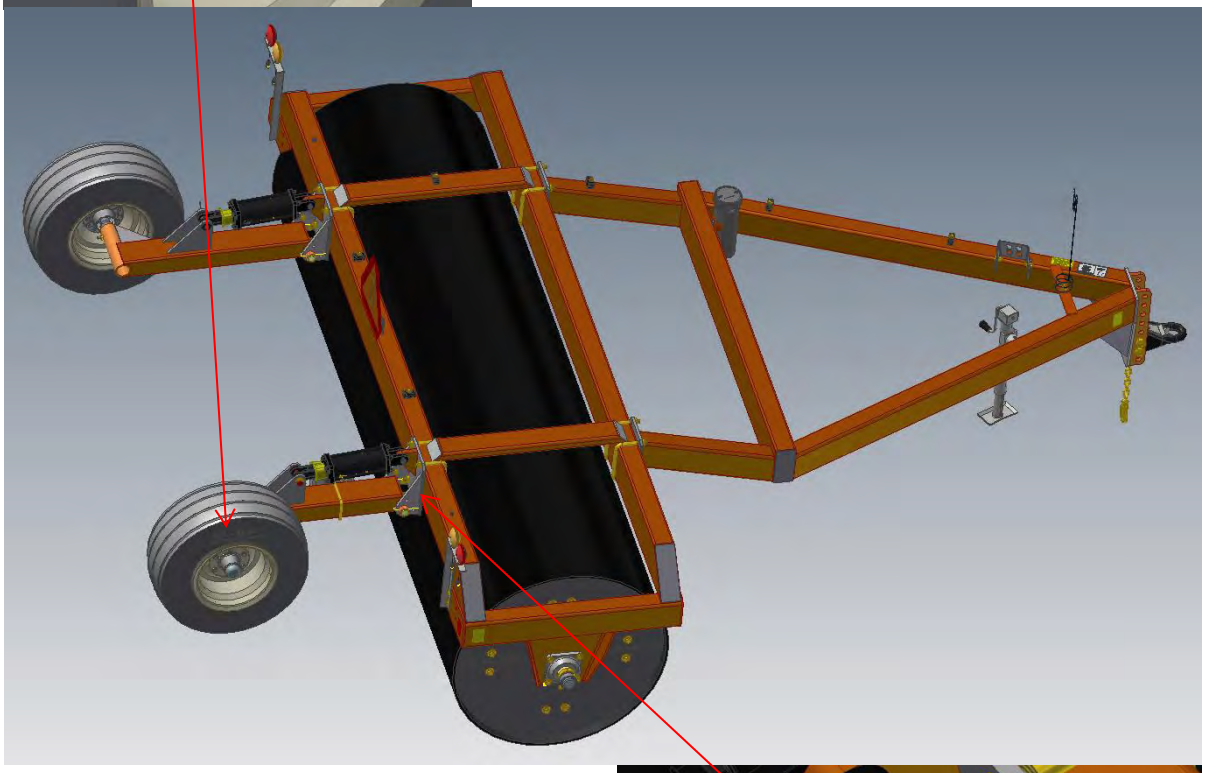


Figure 3

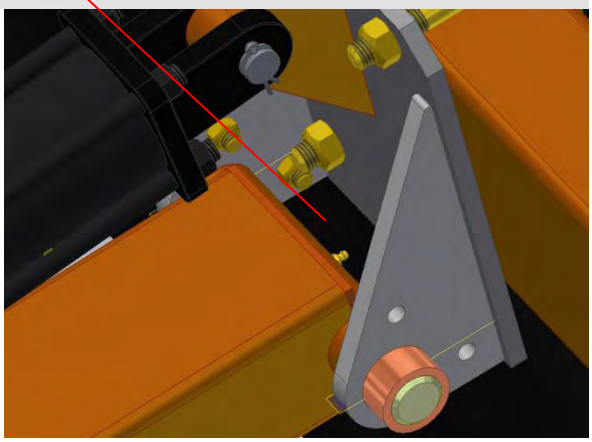


Figure 4

OPERATING INSTRUCTIONS

General Information

NOTE: Always choose a level area when lifting and lowering unit into or from transport position.

NOTE: Lubricate all pins, axles and bearings regularly to prevent premature failure of components.

Tractor Hook-Up

- Move tractor into position where pin can be dropped in place through draw bar hitch.

NOTE: Use a clevis type tractor hitch with a retained type of hitch pin.

Retract parking jack and secure in transport position prior to moving machine.
NOTE: Ensure that parking jack handle is secured by chain prior to moving the machine (Failure to do so will destroy the jack handle).

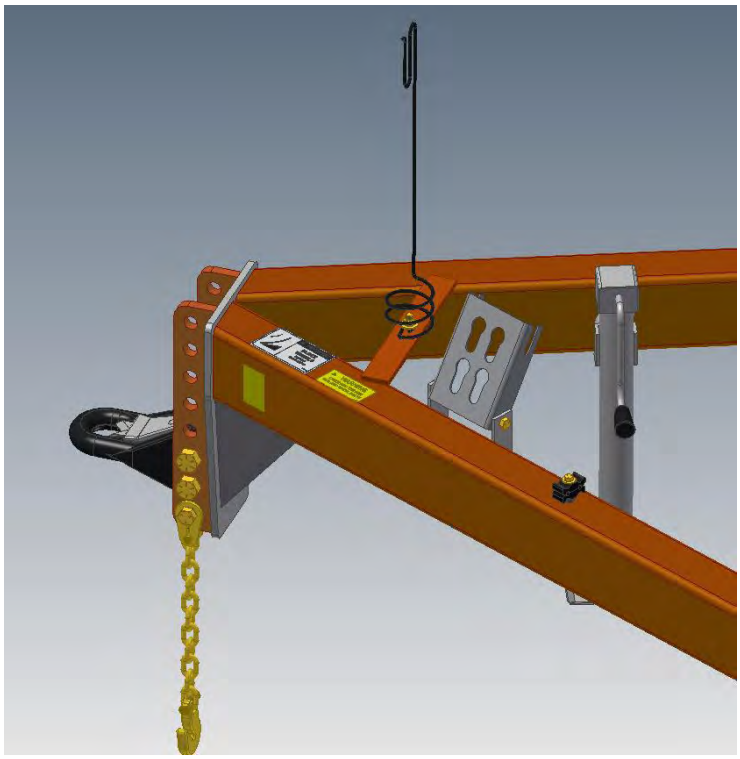


Figure 5

TRANSPORT TO FIELD POSITION

1. Park on level ground.
2. Remove each transport frame cylinder lock up from cylinder and pin into bracket.
3. **FROM INSIDE THE TRACTOR,** lower the unit until the drum and frame are parallel to the ground and just off the ground surface.
4. Retract the transport frame cylinder completely to raise the transport frame.

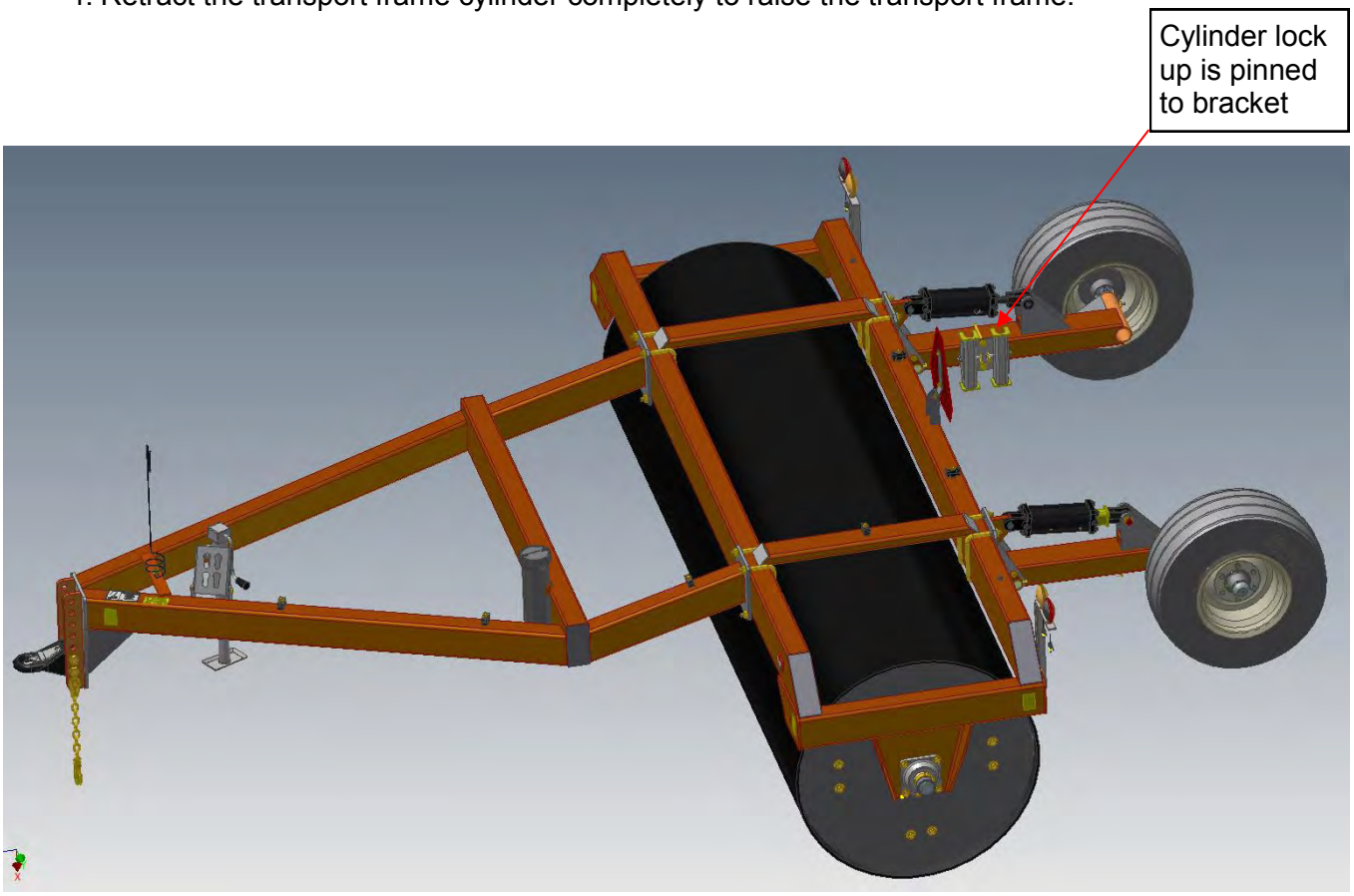


Figure 6

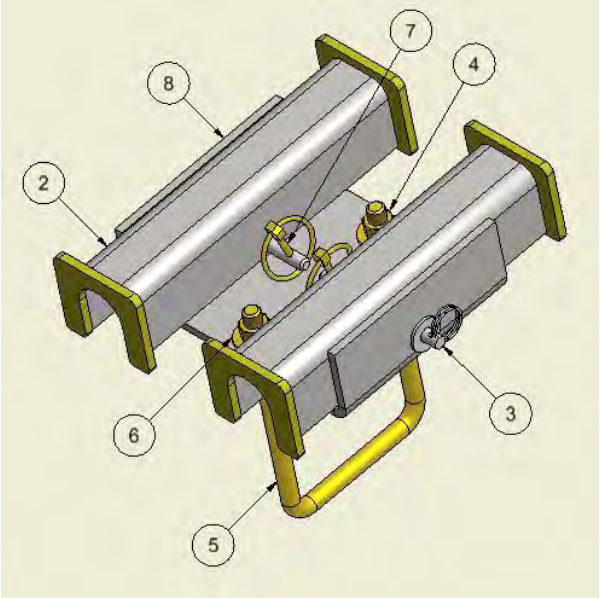


Figure 7

ITEM #	PART #	DESCRIPTION
1	105-0465	TRANSPORT ARM WELDMENT, RIGHT (not shown)
2	105-0485	CYLINDER LOCK UP, PAINTED
3	422-0007	3/8" X 3" HITCH PIN, PLTD.
4	526-6105	1/2" STOVER LOCK NUT, NC, Gr.5, PLTD.
5	546-5155	1/2" X 4" X 7-1/4" U-BOLT, NC, Gr.5, PLTD.
6	550-5208	1/2" FLAT WASHER, PLTD.
7	559-1501	3/16" X 1-9/16" LYNCH PIN, PLTD.
8	839-0646	CYLINDERLOCK UP MOUNT, PAINTED

Steps to fit the cylinder lock up to Transport Arm Weldment:

Step 1: Fit the cylinder lock up mount (ITEM #5) to transport arm weldment, right (ITEM #1) with U-bolt (ITEM #5), stover lock nut (ITEM #4) and flat washer (ITEM #8). The right side of cylinder lock up mount is about 3" from the lug on transport arm weldment.

Step 2: Place cylinder lock up (ITEM #2) inside cylinder lock up mount (ITEM #8) and align their holes and fit them with the two hitch pins (ITEM #3) and lynch pins (ITEM #7).

FIELD TO TRANSPORT POSITION

1. **STOP** the tractor before trying to lift up the **LAND ROLLER**
2. Lift the unit slowly just off the ground.
3. Extend the transport frame cylinders completely.
4. Place each transport frame cylinder lock up in place.
5. Unit is now ready for transportation.

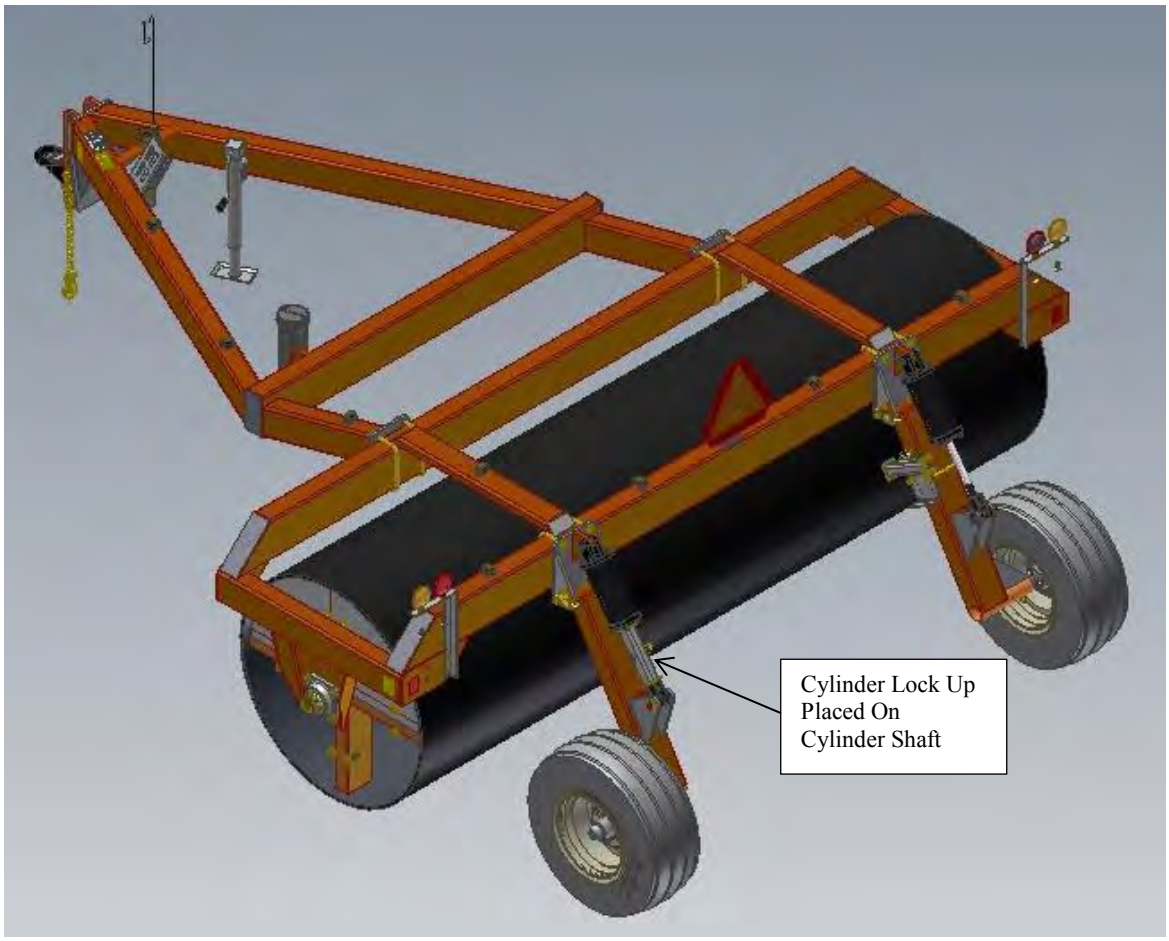


Figure 8

ASSEMBLY INSTRUCTIONS

General Information

1. Study the general layout of the machine.
2. Assemble the unit in a large open area free of obstacles.
3. Reference to "Left", "Right", "Forward" and "Rear" are always determined from the rear of the machine facing the direction of forward travel.
4. Removal of paint from inside bushings and pivot points eases installation.
5. Grease all points either during assembly or immediately after.
6. Double check wheel bolts.
7. Use thread sealant on all hydraulic connections that are not flared.

Drum & Frame Assembly

8. With drum (item 1, page 22) blocked in place (make sure ½ section end caps are installed), raise drum frame (item 1, page 22) over the drum and lower it while lining up the drum shaft with the slots in the bearing mount plates.
9. Centre the drum in the drum frame so the gap at both ends of the drum is equal. Place the bearing (item 5, Page 9) over the shaft and lift drum frame to align the bearing bolt holes. Bolt bearing into place using 5/8 x 2-1/4" capscrew, 5/8" stover lock nut and washers. Install eccentric locking collar on the bearing by turning the ***SAME DIRECTION OF FORWARD TRAVEL*** of the drum. Fully tighten collar with punch and hammer, then tighten set screw. Use the required spacers (item 17, 18, 19, page 9) and place them over the shaft. Insert 1/2" x 4" capscrew c/w 1/2" lock nut and washer through drum shaft, use spacers as required.

Hitch to Frame Assembly

10. Block up drum frame (item 2, page 24).
11. Mount hitch (item 1, page 22) to drum frame using 3/4" x 8-1/16" x 5-1/2" U-Bolt c/w 3/4" stover lock nut and 3/4" flat washer. Centre hitch on cross members.
12. Attach 3000 lb. 20" side wind parking jack (item 5, page 22) to mount tube on the side of the fixed hitch. Using 1" x 3" capscrew and 1" stover lock nut, mount the safety chain (item 5, page 24) to fixed hitch.
13. Attach the perfect hitch (item 8, page 24) using 1" x 7" capscrews and 1" stover lock nuts. For perfect hitch details refer to page 20.
14. Attach the shepherds hook (item 4, page 22) to the hitch using 1/2" stover lock nut and 1/2" flat washer.
15. Attach the tip and chain holder (item 30, page 24) to hitch using 1/2" x 1-1/4" capscrew, ½" stover lock nut and 1/2" flat washer.
16. Attach the manual tube and cap (item 9, 10, page 24) to hitch using 3/8" x 1-1/4" capscrew, 3/8" flat washer, 3/8" stover lock nut.
17. Attach the serial number plate (item 1, page 24) using 1/8" rivets and decals. Refer to page 10 for decal details.

Towers and Wheel Pivot to Frame Assembly

18. Mount bolt-on towers (item 6, page 26) and wheel mount weldment (item 5, page 26) to the frame using 3/4" x 8-1/16" x 6" U-bolt, 3/4" stover lock nut and 3/4" flat washer.

19. Using transport axle pin (item 7, page 26) attach transport weldment to mount weldment with 1/2" x 1-3/4" capscrew, 1/2" flat washer and 1/2" stover lock nut.
20. Mount the tire assembly (items 13, 14, page 26) to the hub assembly with the wheel bolts.
21. Attach the hydraulic cylinder (item 2, page 26) use the cylinder pin on the stroke clevis end and stroke pin (item 4, page 26) on stroke clevis end. Place the safety lock (item 10, page 26) on the shaft of the cylinder and hold in place with the 3/8" x 3" hitch pin and lynch pin.
22. The safety mount (item 36, page 26) can be mounted to the transport weldment using 1/2" x 4-1/8" x 7-1/4" U-bolt, 1/2" flat washer and 1/2" stover lock nut, the edge of the cylinder mount should be approximately 3" up from the edge of cylinder lug.

Decal Assembly

23. For decal placement follow pages 9 and 10.

Hydraulic Assembly

24. Follow the schematic provided on pages 27 and 28.

Acre Meter Assembly

25. For acre meter placement follow page 33.

Slow Moving Vehicle Sign Assembly

26. For slow moving vehicle sign placement follow page 31 and 32.

PERFECT HITCH ASSEMBLY

20', 18', 16', 14' AND 12' MODELS

This implement is equipped with a "**PERFECT HITCH.**'

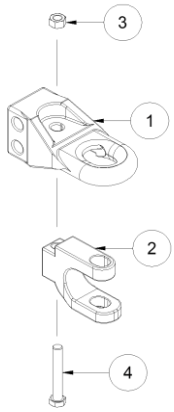
If using a clevis, bolt onto the bottom of the base hitch using a grade 8 bolt and stover lock nut, to ensure the vertical loads are taken by the base hitch. If **no clevis** is used the perfect hitch base should be used with the clevis slot facing up on the base hitch. The purpose of the "Perfect Hitch" is to allow the operator to always use the tractor draw pin and maintain a tight, flexible connection.

The sliding V-block has a polyurethane cushion which is made to flex. The cushion also acts as a shock absorber to reduce driveline stress, giving driveline components longer life. **Do not remove all the cushions!**

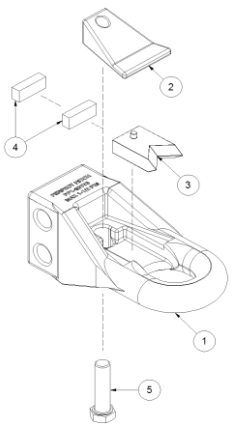
NOTE: INSTALL THE PERFECT HITCH COMPONENTS WITH BOLT HEAD ON THE BOTTOM AND THE TOP PLATE ON TOP.

Always adjust the V-block to your tractor draw pin size.

Figure 9



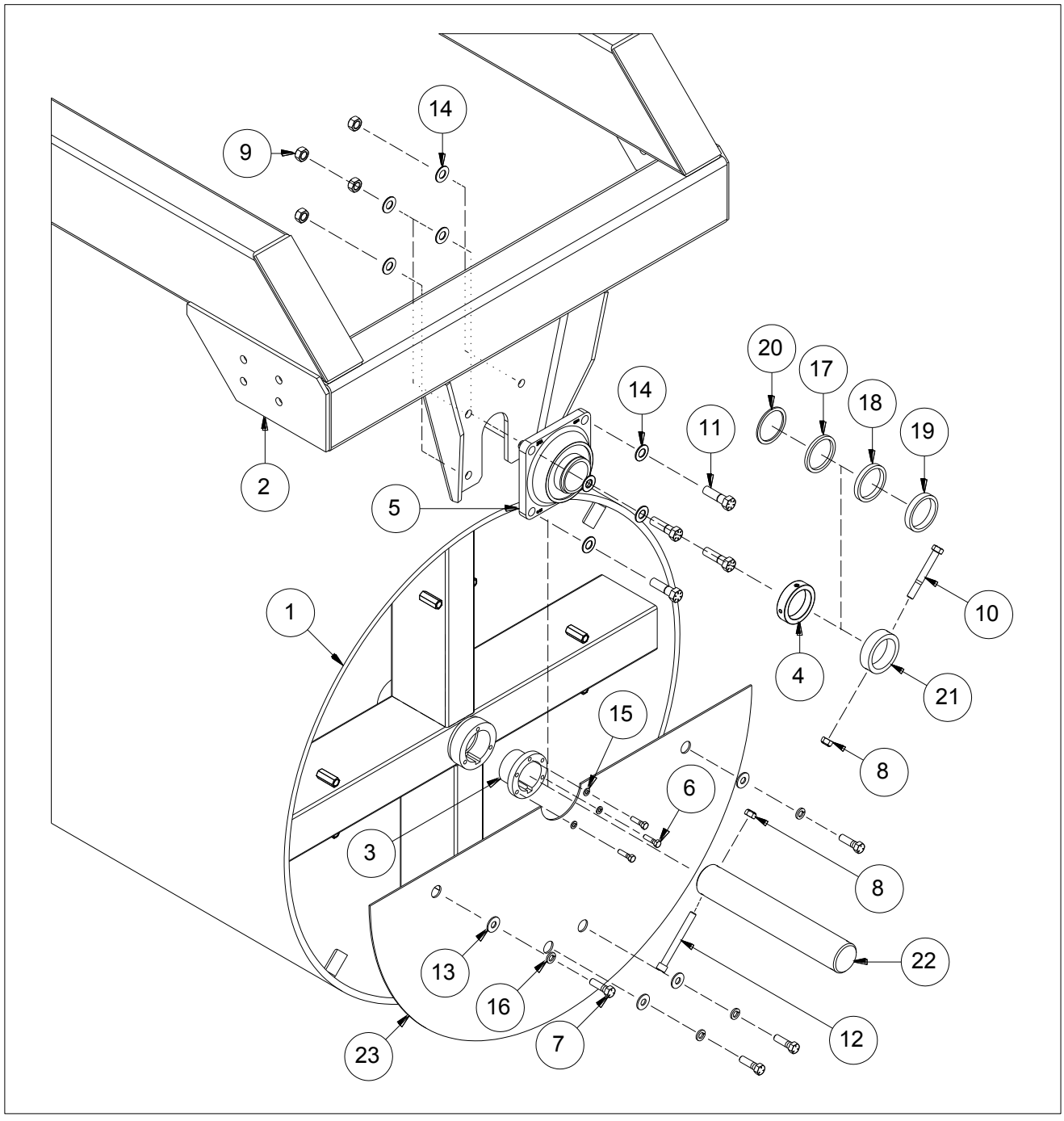
ITEM #	QTY	PART #	DESCRIPTION
1.	1	423-0005	Perfect Hitch (PPI-301VH)
2.	1	423-0006	Clevis Option, Slotted (PPI-208VR)
3.	1	526-7312	3/4" Stover Lock Nut, NC, Gr.8, Pltd.
4.	1	530-1263	3/4" x 5 -1/2" Capscrew, NC, Gr.8, Pltd



ITEM #	QTY	PART #	DESCRIPTION
1.	1	423-0005	Perfect Hitch (PPI-301VH)
2.	1	423-0017	PP1-302V Top Plate Perfect Hitch
3.	1	423-0018	PP1-203VR V-Block
4.	1	423-0019	PP1-205H Neoprene Cushion
5.	1	526-1224	¾" x 3" Capscrew, NC, Gr.5, Pltd.

DRUM END CAP ASSEMBLY

20', 18', 16', 14' AND 12' MODELS

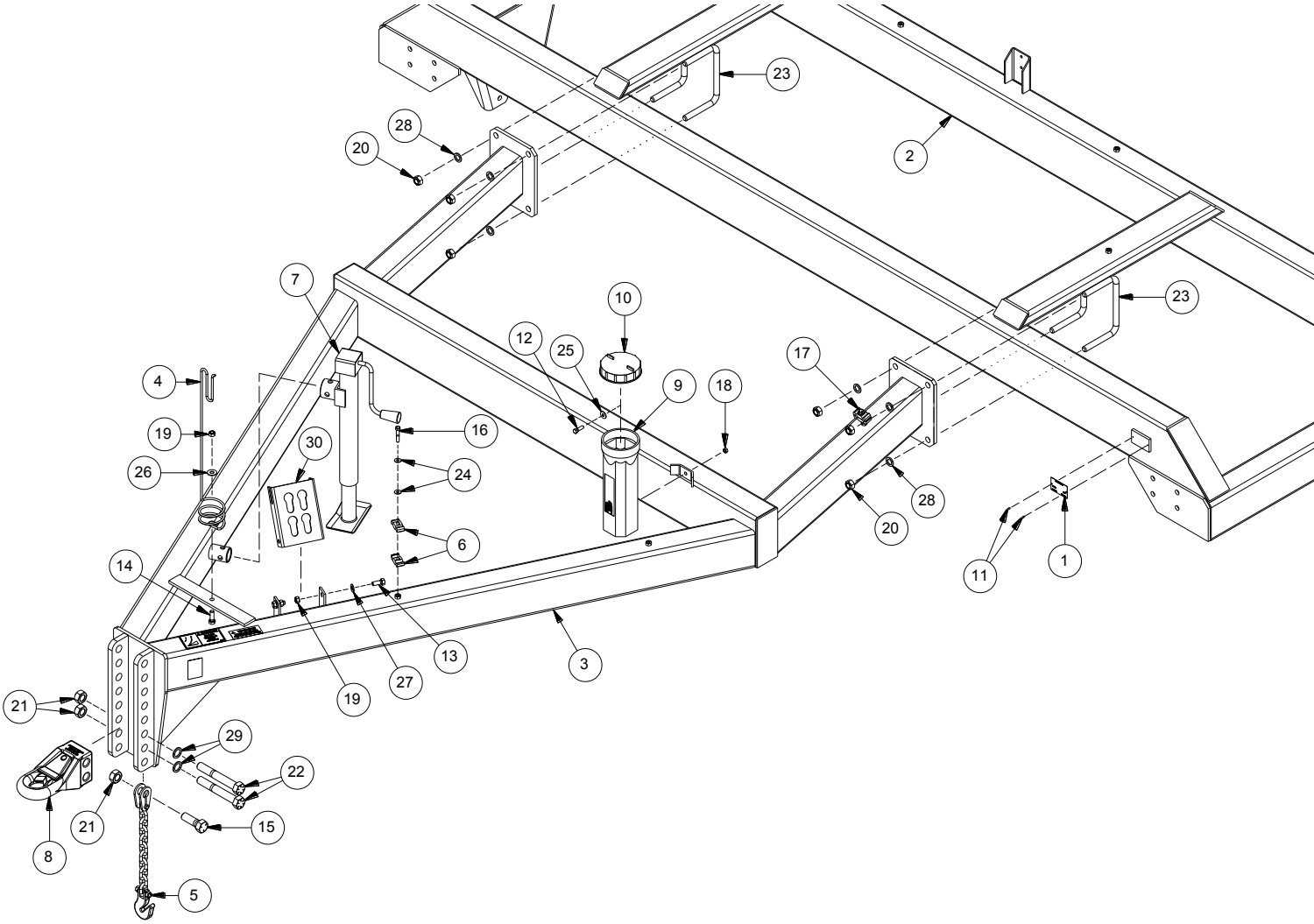


DRUM END CAP ASSEMBLY

20', 18', 16', 14' AND 12' MODELS

ITEM #	PART #	DESCRIPTION
1	160-0045	20' Drum Assembly c/w End Caps and Drum Shaft
*	160-0046	18' Drum Assembly c/w End Caps and Drum Shaft
*	160-0260	16' Drum Assembly c/w End Caps and Drum Shaft
*	160-0057	14' Drum Assembly c/w End Caps and Drum Shaft
*	160-0042	12' Drum Assembly c/w End Caps and Drum Shaft
2	105-0462	20' Main Frame Weldment
*	105-0469	18' Main Frame Weldment
*	105-0470	16' Main Frame Weldment
*	105-0472	14' Main Frame Weldment
*	105-0502	12' Main Frame Weldment
3	261-6001	Ø3-11/16" x 1-5/16" Split Taper Bearing c/w Lock Collar
4	292-4018	Ø2-7/16" Eccentric Lock Collar
5	292-4022	Ø2-7/16", 4 - Bolt Flange Bearing, Ina
6	526-0510	5/16" x 1-1/4" Capscrew, NC, Gr.5, Black
7	526-0814	1/2" x 1-3/4" Capscrew, NC, Gr.5, Pltd.
8	526-7308	1/2" Stover Lock Nut, NC, Gr.8, Pltd.
9	526-7610	5/8" Stover Lock Nut, **NF**, Gr.8, Pltd.
10	530-0754	1/2" x 4" Capscrew, NC, Gr.8, Pltd.
11	538-1018	5/8" x 2-1/4" Capscrew, **NF,** Gr.8, Pltd.
12	540-0836	1/2" x 4-1/2" Socket Head Capscrew, NC, Gr.5, Pltd.
13	550-5208	1/2" Flat Washer, Pltd.
14	550-5617	5/8" SAE Flat Washer, Pltd.
15	551-4905	5/16" Spring Lock Washer, Black
16	551-5008	1/2" Spring Lock Washer, Pltd.
17	805-7017	Spacer, 3" OD x .250w CDSM - 1/4"
18	805-7018	Spacer, 3" OD x .250w CDSM - 3/8"
19	805-7019	Spacer, 3" OD x .240w CDSM - 1/2"
20	805-7041	Spacer, 3" OD x .240w CDSM - 1/8"
21	805-8023	Drum Collar, Offset, Ø3-1/4" OD x .375w CDSM - 7/8"
22	827-0017r1	Drum Shaft, Ø2-7/16" OD x 14-3/4" Long
23	835-1044	Half Section End Cap, Ø40-1/4". Painted
*	805-8013	Back Bushing, Ø3-1/3" OD x .4375x CDSM—1-3/4" Long (Not Labelled)
*	200-9002	Weld-on Bushing, Ø3-7/8" x 1-5/16" Machined Steel Hub (Not Labelled)
*	112-0590	Offset Drum Cross Weldment c/w Coupling Nuts & No Drum Shaft (Not Labelled)

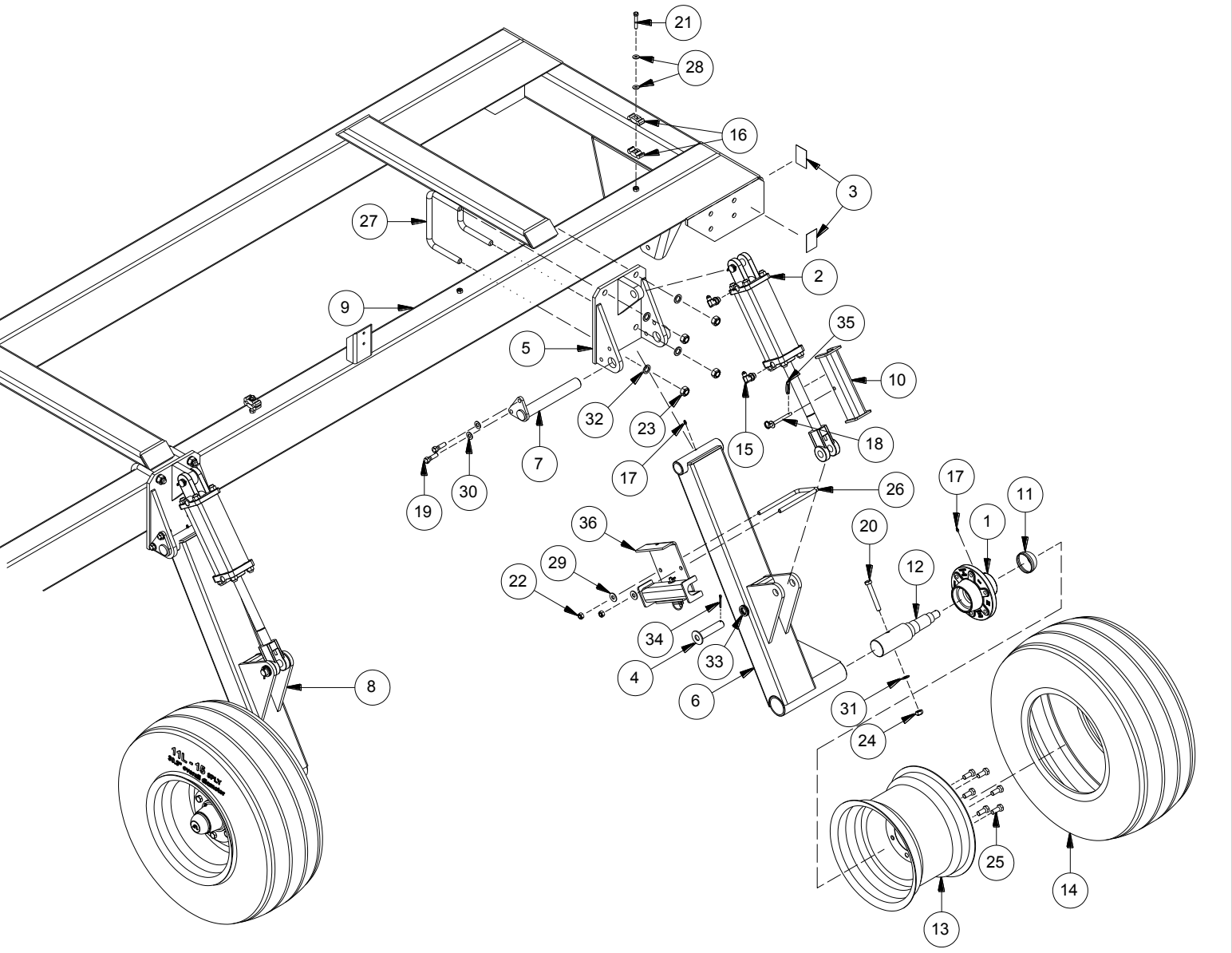
CENTRE FRAME & HITCH ASSEMBLY



CENTRE FRAME & HITCH ASSEMBLY

ITEM #	***PART #***	***DESCRIPTION***
1	060-0034	Serial Number Plate
2	105-0502	12’ Main Frame Weldment
*	105-0472	14’ Main Frame Weldment
*	105-0470	16’ Main Frame Weldment
*	105-0469	18’ Main Frame Weldment
*	105-0462	20’ Main Frame Weldment
3	105-0590	Fixed Hitch A-Frame Weldment (Old Style Hitch Part # 105-0463)
4	407-0003	24” Shepherd Hook Hose Standoff
5	409-9050	20,000 lbs. Safety Chain Assembly, Pltd.
6	413-0008	Hydraulic Clamp, Black Plastic
7	420-0145	20” (15” + 5”) Side Winder Parking Jack, Lift King
8	423-0001	Perfect Hitch Assembly, Refer to Page 21
9	426-0001	Storage Tube Body, (Both Tube & Cap Assembly Part # 426-0003)
10	426-0002	Storage Tube Cap
11	525-0001	1/8” Rivet x 1/8” x 1/4”
12	526-0610	3/8” x 1-1/4” Capscrew, NC, Gr.5, Pltd.
13	526-0810	1/2” x 1-1/4” Capscrew, NC, Gr.5, Pltd.
14	526-0812	1/2” x 1-1/2” Capscrew, NC, Gr.5, Pltd.
15	526-1624	1”x 3” Capscrew, NC, Gr.5, Pltd.
16	526-2032	3/8” x 2” Capscrew, NC, Gr.5, Pltd. (Scotch Grip)
17	526-2036	3/8” x 2-1/4” Capscrew, NC, Gr.5, Pltd. (Scotch Grip)
18	526-6103	3/8” Stover Lock Nut, NC, Gr.5, Pltd.
19	526-6105	1/2” Stover Lock Nut, NC, Gr.5, Pltd.
20	526-6107	3/4” Stover Lock Nut, NC, Gr.5, Pltd.
21	526-7316	1” Stover Lock Nut, NC, Gr. C, Pltd.
22	530-1656	1” x 7” Capscrew, NC, Gr.8, Pltd.
23	546-5170	Ø3/4” U-Bolt – 8-1/16” x 6” Inside Leg, NC, Gr.8, Pltd.
24	550-5205	5/16” Flat Washer, Pltd.
25	550-5206	3/8” Flat Washer, Pltd.
26	550-5208	1/2” Flat Washer, Pltd.
27	550-5308	1/2" SAE Flat Washer, Pltd.
28	550-5312	3/4” SAE Flat Washer, Pltd.
29	550-5316	1” SAE Flat Washer, Pltd.
30	835-1011	Tip And Chain Holder, Painted

CENTRE AXLE ASSEMBLY

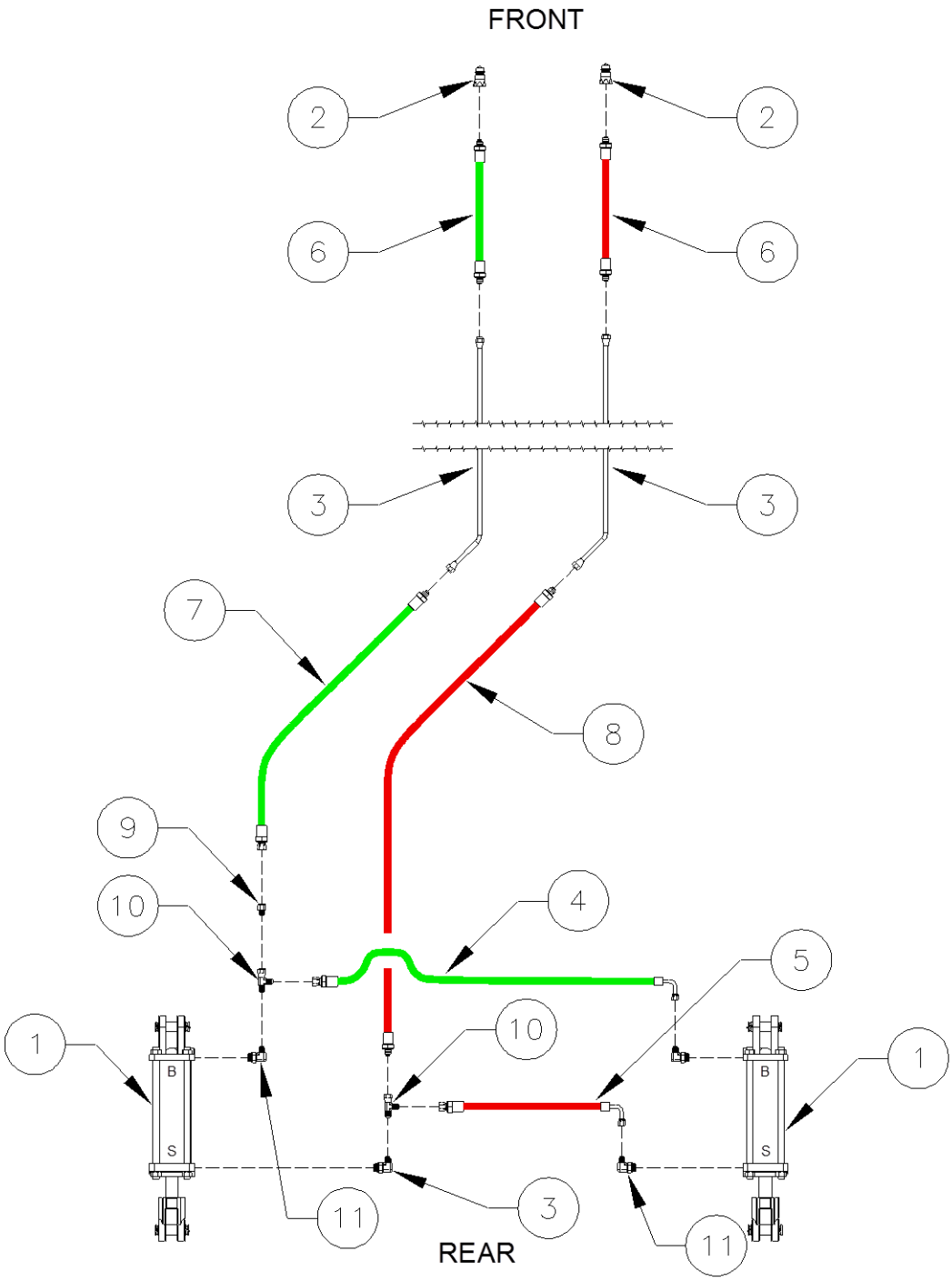


CENTRE AXLE ASSEMBLY

ITEM #	***PART #***	***DESCRIPTION***
1	020-6007	618 Hub Assembly c/w Cups
2	030-5989	3-1/2" x 8" – 1-1/4" Hydraulic Cylinder, 3/4" ORB Ports Inline
3	060-0022	Red Reflector, 3" x 2"
4	105-0087	Cylinder Pin, Ø1" OD x 4-1/4, Pltd.
5	105-0464	Transport Mount Weldment
6	105-0465	Transport Weldment, Right Side
7	105-0466	Transport Axle Pin Weldment
8	105-0467	Transport Weldment, Left Side
9	105-0502	12' Main Frame Weldment
*	105-0472	14' Main Frame Weldment, not shown
*	105-0470	16' Main Frame Weldment, not shown
*	105-0469	18' Main Frame Weldment, not shown
*	105-0462	20' Main Frame Weldment, not shown
10	105-0740	Safety Lock Up, for 1-1/4" Cylinder Shaft
11	202-6005	Dust Cap, CTD DC15
12	203-6046	618 Spindle, Ø2-1/2" x 11-3/4" c/w one 9/16" hole @ 2-3/4"
13	204-5565	Wheel Rim, 15" x 8 – 6 Bolt, 1-1/8" Offset
14	205-1180	11L – 15" x 6 – Ply Tire (Load Range D)
*	020-0119	Tire and Wheel Assembly
15	319-5710	Elbow, 1/2" ORB M x 3/8" JIC M - 90°
16	413-0008	Hose Clamp, Black Plastic
17	419-0004	1/4" Grease Zerk, Straight, NF, Pltd
18	422-0007	3/8" x 3" Hitch Pin, Pltd.
19	526-0814	1/2" x 1-3/4" Capscrew, NC, Gr.5, Pltd.
20	526-0932	9/16" x 4" Capscrew, NC, Gr.5, Pltd.
21	526-2036	3/8" x 2-1/4" Capscrew, NC, Gr.5, Pltd. (Scotch Grip)
22	526-6105	1/2" Stover Lock Nut, NC, Gr.5, Pltd.
23	526-6107	3/4" Stover Lock Nut, NC, Gr.5, Pltd.
24	526-6112	9/16" Stover Lock Nut, NC, Gr.5, Pltd.
25	543-5562	9/16" x 1-1/4" Wheel Bolt, NF, Gr.5, Pltd.
26	546-5155	Ø1/2" U-Bolt 4-1/8" x 7-1/4" Inside Leg, NC, Gr.5, Pltd.
27	546-5170	Ø3/4" U-Bolt 8-1/16" x 6" Inside Leg, NC, Gr.8, Pltd.
28	550-5205	5/16" Flat Washer, Pltd.
29	550-5208	1/2" Flat Washer, Pltd.
30	550-5308	1/2" SAE Flat Washer, Pltd.
31	550-5309	9/16" SAE Flat Washer, Pltd.
32	550-5312	3/4" SAE Flat Washer, Pltd.
33	550-5316	1" SAE Flat Washer, Pltd.
34	556-0906	3/16" x 1-3/4" Cotter Pin, Pltd.
35	559-1501	3/16" x 1-9/16" Lynch Pin, Pltd.
36	839-0646	Cylinder Lock Up Mount, Painted

HYDRAULIC ASSEMBLY

20', 18', 16', 14' AND 12' MODELS



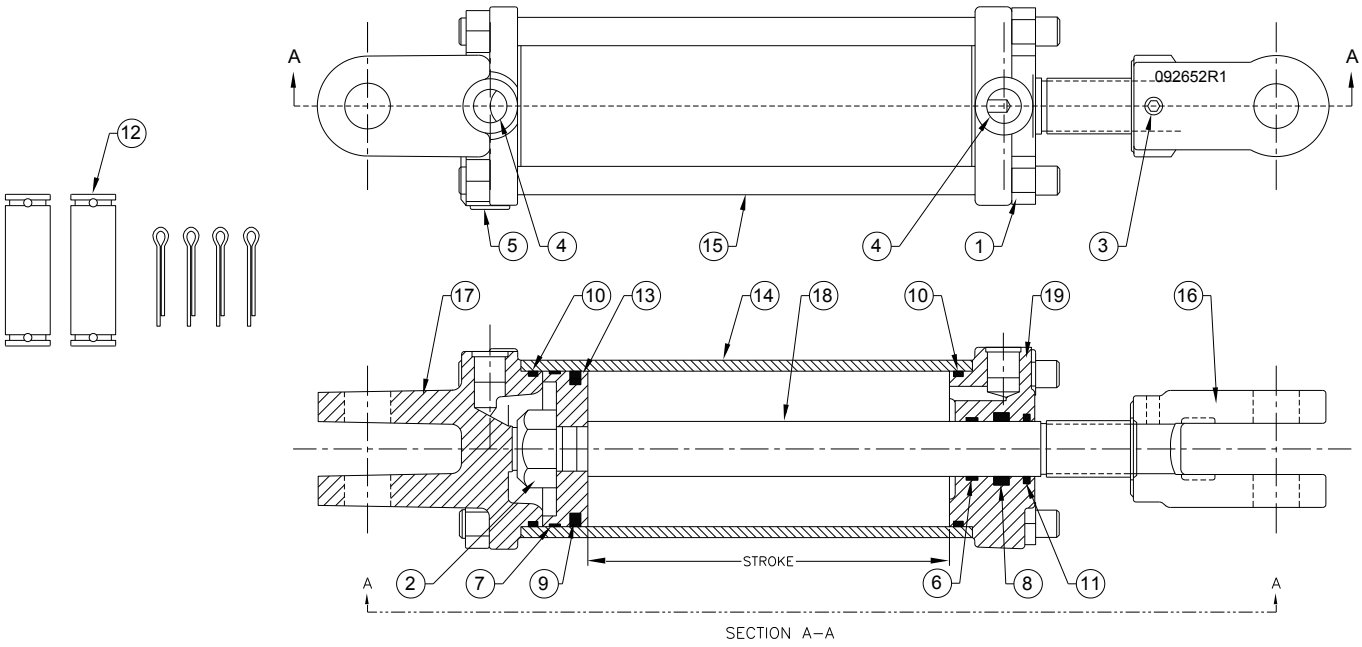
HYDRAULIC ASSEMBLY

20', 18', 16', 14' AND 12' MODELS

ITEM #	***PART #***	***DESCRIPTION***
1	030-5989	3-1/2" x 8" x 1-1/4" Hydraulic Cylinder, 3/4" ORB Ports Inline, (old part # 030-5935)
2	308-0001	Pioneer Coupling - Poppet Type, 1/2" NPT Female
3	311-2066*	3/8" Bent Hydraulic Steel Line, JIC Sw. Female - 66" (Bend 45° @ 4")
4	313-4081	3/8" Hydraulic Hose, 3/8" JIC Sw. Female x 3/8" JIC Sw. Female - 90° Elbow - 81"
5	313-4100	3/8" Hydraulic Hose, 3/8" JIC Sw. Female x 3/8" JIC Sw. Female - 90° Elbow - 100"
6	313-5096	3/8" Hydraulic Hose, 3/8" JIC Male x 1/2" NPT Male - 96"
7	313-7876	3/8" Hydraulic Hose, 3/8" JIC Sw. Female x 3/8" JIC Male - 76"
8	313-7886	3/8" Hydraulic Hose, 3/8" JIC Sw. Female x 3/8" JIC Male - 86"
9	317-5679	3/8" JIC Female x 3/8" JIC Male - Restricted Union
10	318-5705	3/8" JIC Sw. Female (x1 Run) x 3/8" JIC Male (x2, Run & Branch)
11	319-5710	1/2" ORB Male x 3/8" JIC Male - 90° Elbow

MONARCH 3-1/2" X 8" HYDRAULIC

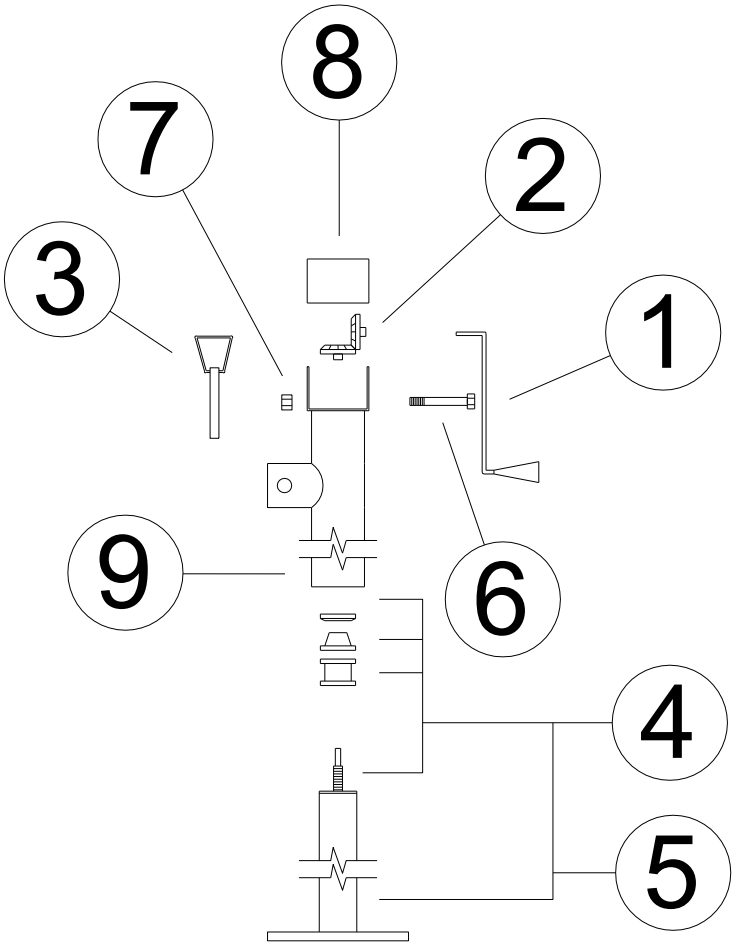
CYLINDER 35TH08-125 ASAE (3/4" ORB Inline)
RITE WAY PART # - 030-5989 (662367)



ITEM#	PART#	DESCRIPTION
1.	128271	Hex Nut, 5/8" NF, Gr.B
2.	130560	Hex Nut, 1" NC, Gr.B
3.	148000	Set Screw, NC, 3/8"
4.	174136	3/4" ORB Thread Port
5.	186562	3/4" ORB Fitting Plug, Socket Head
6.	190131	Wear Ring, 1.37 – 1.25 - .250
7.	190188	Wear Ring, 3.50 – 3.38 - .250
8.	194016	Seal Zurcon U-Cup RU9 1.25
9.	197066	Seal Zurcon Wynseal 3.50" - IS
10.	199141	Seal Dual 3.50
11.	199157	Seal Wiper 1.25 WNUC TSS
12.	235005	Pin Kit, 1.00 c/w cotter pins
13.	258827	Piston 3.50 - 1.00-TSS-ISO-WR
14.	491798	Tube Cylinder, 3.50 x 08.00
15.	492338	Tie Rod, Ø5/8 x 08
16.	492652	Rod Clevis, 1.25 x 1.00
17.	492676	Clevis Cap, 3.50 x 3/4" ORB – 1.00
18.	492700	Rod Shaft, 1.25 x 08 – 1.00 – 1.25
19.	494286	Rod Cap, 3.50-1.00 – 3/4" ORB-TSS
20.	649216	Repair Kit

20" – 3000 lb SIDE WIND PARKING JACK

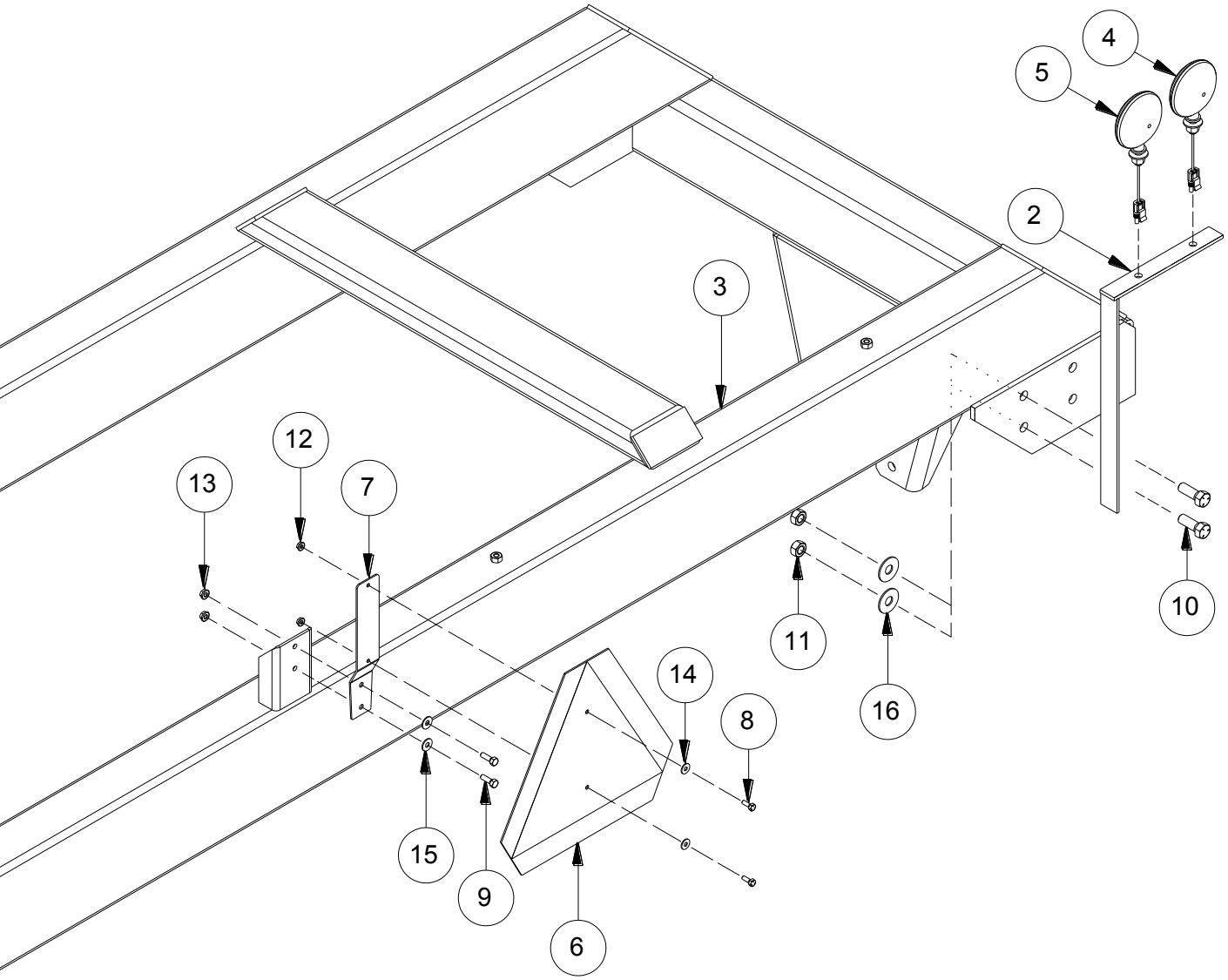
RITE WAY PART NUMBER 420-014, Lift King



ITEM#	***PART#***	***DESCRIPTION***
1.	420-0117	Side Wind Crank Kit
2.	420-0118	Gear Set
3.	420-0119	Hitch Pin c/w Chain
4.	420-0120	Screw Replacement
5.	420-0146	Inner Ram Assembly
6.	526-0435	1/4" x 3" Capscrew, UNC
7.	526-7004	1/4 Nylon Lock Nut, UNC
8.	420-0124	Cover
9.	420-0125	Body

SMV SIGN & LIGHT KIT PLACEMENT

RITE WAY LIGHT PART # 424-0003



SMV SIGN & LIGHT KIT PLACEMENT

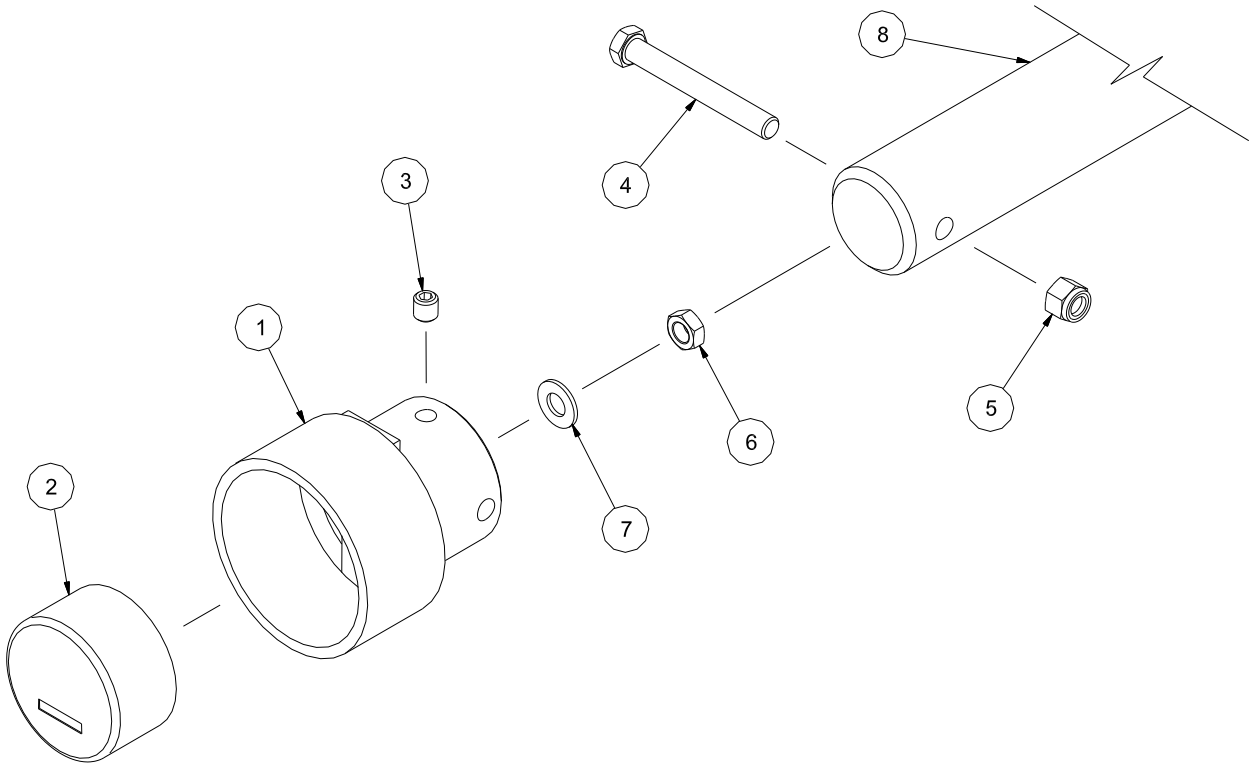
RITE WAY LIGHT PART # 424-0003

ITEM #	*PART #*	*DESCRIPTION*
1	105-0487	Light Bracket Weldment, Left
2	105-0488	Light Bracket Weldment, Right
3	105-0502	12’ Main Frame Weldment
*	105-0472	14’ Main Frame Weldment, not shown
*	105-0470	16’ Main Frame Weldment, not shown
*	105-0469	18’ Main Frame Weldment, not shown
*	105-0462	20’ Main Frame Weldment, not shown
4	4170018	Amber Warning Light c/w Hardware
5	417-0019	Red Warning Light c/w Hardware
6	424-0001	Slow Moving Sign
7	424-0002	Slow Moving Sign Spade
8	526-0406	1/4" x 3/4" Capscrew, NC, Gr.5, Pltd.
9	526-0508	5/16” x 1” Capscrew, NC, Gr.5, Pltd.
10	526-1014	5/8” x 1-3/4” Capscrew, NC, Gr.5, Pltd.
11	526-6106	5/8” Stover Lock Nut, NC, Gr.5, Pltd.
12	526-7104	1/4" Flange Hex Nut, NC, Gr.B, Pltd.
13	526-7105	5/16” Flange Hex Nut, NC, Gr.B, Pltd.
14	550-5204	1/4” Flat Washer, Pltd.
15	550-5205	5/16” Flat Washer, Pltd.
16	550-5210	5/8” Flat Washer, Pltd.

ACRE METER PLACEMENT

4100 ACRE METER KIT – RITE WAY PART NUMBER SEE BELOW

Note: Serial # required before acre meter can be ordered



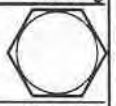
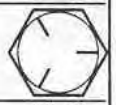
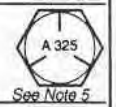
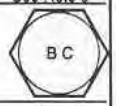
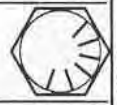
ITEM#	PART#	DESCRITION
1.	112-0258	4” ID Acre Meter Housing
2.	Varies	Acre Meter
3.	518-0808	1/2” x 1/2” Set Screw, NC, Black
4.	526-0832	1/2” x 4” Capscrew, NC, Gr. 5, Pltd.
5.	526-7008	1/2” Nylon Lock Nut, NC, Gr.5, Pltd.
6.	525-6108	1/2” Jam Nut, NC, Gr.5, Pltd.
7.	550-5208	1/2” Flat Washer, Pltd.
8.	827-0017	2-7/16” x 14-3/4” Replaceable Drum Shaft

NOTE: Use *Loc-Tite* with jam nut when assembling to housing. **DO NOT OVER TIGHTEN.**

GRADE CHART

Mechanical Specifications for Externally Threaded Fasteners with Grade Markings, ASTM A36 Material Specification, SAE J429 Bolt and Nut Compatibility

Mechanical Specifications for Externally Threaded Fasteners with Grade Markings

Specification	Material	Size Range (Inches)	Min. Proof Strength (psi)	Min. Tensile Strength (psi)	Core Hardness Rockwell Min.	Core Hardness Rockwell Max.	Min. Yield Strength (psi)	Grade Identification Marking
SAE J429-Grade 1	Low or medium carbon steel	1/4–1-1/2	33,000	60,000	B70	B100	36,000	
SAE J429-Grade 2		1/4–3/4 7/8–1-1/2	55,000 33,000	74,000 60,000	B80 B70	B100 B100	57,000 36,000	
ASTM A307-Grade A	Low or medium carbon steel	1/4–4		60,000	B69 *See Note 1*	B100		
ASTM A307-Grade B	Low or medium carbon steel	1/4–4		60,000(min) 100,000(max)	B69 *See Note 1*	B95		
SAE J429-Grade 5 ASTM A449-Type1	Medium carbon steel: quenched & tempered	1/4–1 1-1/8–1-1/2	85,000 74,000	120,000 105,000	C25 C19	C34 C30	92,000 81,000	
ASTM A449-Type 1 *See Note 2*		1-3/4–3	55,000	90,000			58,000	
ASTM A325-Type 1	Medium carbon steel: quenched & tempered	1/2–1 1-1/8–1-1/2	85,000 74,000	120,000 105,000	C25 C19 *See Note 3*	C34 C30	92,000 81,000	 *See Note 5*
ASTM A354 Grade BC	Medium carbon alloy steel: quenched & tempered	1/4–2-1/2 2-1/2–4	105,000 95,000	125,000 115,000 *See Note 2*	C26 C22	C36 C33	109,000 99,000	
ASTM A354 Grade BD	Medium carbon alloy steel: quenched & tempered	1/4–2-1/2 2-1/2–4	120,000 105,000	150,000 140,000	C33 C31 *See Note 2*	C39 C39	130,000 115,000	 *See Note 4*
SAE J429-Grade 8	Medium carbon alloy steel: quenched & tempered	1/4–1-1/2	120,000	150,000	C33	C39	130,000	
SAE J429-Grade 8.2	Low carbon boron steel: quenched & tempered	1/4–1	120,000	150,000	C33	C39	130,000	
ASTM A490-Type 1	Medium carbon alloy steel: quenched & tempered	1/2–1-1/2	120,000	150,000(min) 170,000(max)	C33 *See Note 3*	C38	130,000	
ASTM A574 Socket Head Cap Screw	Low alloy steel: quenched & tempered	#0–1/2 over 1/2–2	140,000 135,000	180,000 170,000	C39 C37	C45 C45		

Note 1: No minimum hardness is required on bolts and studs 3 times the diameter and longer.

Note 2: Bolts less than 3 times the diameter in length and studs less than 4 times the diameter in length shall have hardness values not less than minimum and not more than maximum.

Note 3: Bolts 3 times the diameter in length and over are not required to meet minimum hardness requirements.

Note 4: ASTM A354-Grade BD with diameters 1/4" through 2-1/2" shall be marked with the grade symbol "BD" and, in addition may be marked with six radial lines .

Note 5: Radial line markings 120 degrees apart are optional.

TORQUE CHART

Caution: All torque values included in these charts are advisory only, and their use by anyone is entirely voluntary. Reliance on the contents for any purpose by anyone is the sole risk of that person and Fastenal is not responsible for any loss, claim or damages arising therefrom. In developing this information, Fastenal has made a determined effort to present its contents accurately. **Extreme caution should always be used when using a formula for torque-tension relationships. Torque is only an indirect indication of tension.**

Torque-Tension Relationships for SAE J429 Grade Bolts

Nominal Thread Size	SAE J429 Grade 2			SAE J429 Grade 5			SAE J429 Grade 8		
	Clamp Load (lbs.)	Tightening Torque K = .15	K = .20	Clamp Load (lbs.)	Tightening Torque K = .15	K = .20	Clamp Load (lbs.)	Tightening Torque K = .15	K = .20
Unified Coarse Thread Series									
1/4-20	1,300	49 in-lbs	65 in-lbs	2,000	75 in-lbs	100 in-lbs	2,850	107 in-lbs	143 in-lbs
5/16-18	2,150	101	134	3,350	157	210	4700	220	305
3/8-16	3,200	15 ft-lbs	20 ft-lbs	4,950	23 ft-lbs	31 ft-lbs	6,950	32.5 ft-lbs	44 ft-lbs
7/16-14	4,400	24	30	6,800	37	50	9,600	53	70
1/2-13	5,850	36.5	49	9,050	57	75	12,800	80	107
9/16-12	7,500	53	70	11,600	82	109	16,400	115	154
5/8-11	9,300	73	97	14,500	113	151	20,300	159	211
3/4-10	13,800	129	173	21,300	200	266	30,100	282	376
7/8-9	11,425	125	166	29,435	321	430	41,550	454	606
1-8	15,000	187.5	250	38,600	482.5	640	54,540	680	900
Unified Fine Thread Series									
1/4-28	1,500	55 in-lbs	75 in-lbs	2,300	85 in-lbs	115 in-lbs	3,250	120 in-lbs	163 in-lbs
5/16-24	2,400	112	150	3,700	173	230	5,200	245	325
3/8-24	3,600	17 ft-lbs	22.5 ft-lbs	5,600	26 ft-lbs	35 ft-lbs	7,900	37 ft-lbs	50 ft-lbs
7/16-20	4,900	27	36	7,550	42	55	10,700	59	78
1/2-20	6,600	41	55	10,200	64	85	14,400	90	120
9/16-18	8,400	59	79	13,000	92	122	18,300	129	172
5/8-18	10,600	83	110	16,300	128	170	23,000	180	240
3/4-16	15,400	144	193	23,800	223	298	33,600	315	420
7/8-14	12,610	138	184	32,480	355	473	45,855	500	668

Clamp load estimated as 75% of proof load for specified bolts.

Torque values for 1/4 and 5/16 inch series are in inch-pounds. All other torque values are in foot-pounds.

Torque values calculated from formula T = KDF where: K = 0.15 for "lubricated" conditions and K = 0.20 for "dry" conditions.

Torque-Tension Relationships for Cadmium Plated Prevailing Torque Lock Nuts

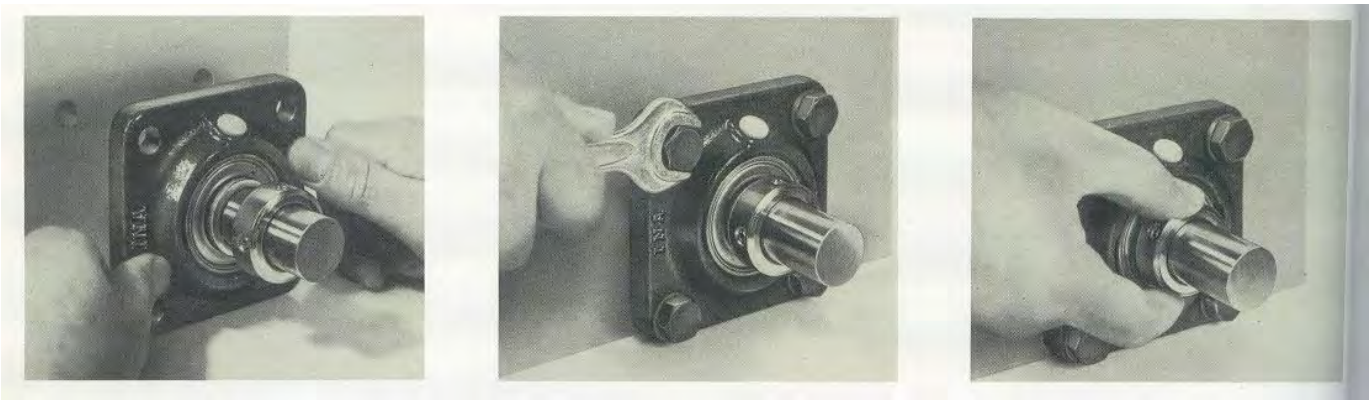
Locknut Size	Steel Hex Locknut Grade C Locknut			Steel Hex Flange Locknut Grade F Locknut			Steel Hex Flange Locknut Grade G Locknut		
	Clamp Load (lbs.)	Tightening Torque Maximum	Minimum	Clamp Load (lbs.)	Tightening Torque Maximum	Minimum	Clamp Load (lbs)	Tightening Torque Maximum	Minimum
Unified Coarse Thread Series									
1/4 - 20	2850	125 in-lbs	85 in-lbs	2000	95 in-lbs	65 in-lbs	2850	150 in-lbs	100 in-lbs
5/16 - 18	4700	19	130	3350	180	120	4700	240	155
3/8 - 16	6950	28 ft-lbs	20 ft-lbs	4950	26 ft-lbs	16 ft-lbs	6950	32 ft-lbs	21 ft-lbs
7/16 - 14	9600	43	31	6800	42	28	9600	51	34
1/2 - 13	12,800	62.5	45	9050	57	38	12,800	85	55
9/16 - 12	16,400	95	70	11,600	85	55	16,400	120	80
5/8 - 11	20,300	122.5	90	14,500	112	75	20,300	143	95
3/4 - 10	30,100	210	155	21,300	195	135	30,100	240	160
7/8 - 9	41,600	312.5	225						
1 - 8	54,600	462.5	360						

Clamp loads for Grades C and G nuts equal 75% of the proof loads specified for SAE J429 Grade 8.

Clamp loads for Grade F nuts equal 75% of the proof load specified for SAE J429 Grade 5.

Torque values for 1/4 and 5/16 inch series are in inch-pounds. All other torque values are in foot-pounds.

BEARING INSTALATION



1. Slide the housing and bearing unit onto the shaft

2. Tighten the housing fixing screws.

3. Tighten the eccentric collar by hand, preferably in the DIRECTION OF SHAFT FORWARD ROTAION.

4. Fully tighten the eccentric collar with drift & hammer.

5. Tighten set screw.

6. For bearings with 2 set screws in the inner ring, tighten both screws.

NOTES