Section IV
Maintenance

FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.

Lubrication

To keep your grain cart in top operating condition and to assure its proper performance and reliability for a long period of time, periodic inspection and lubrication is a must.

Fig. 1

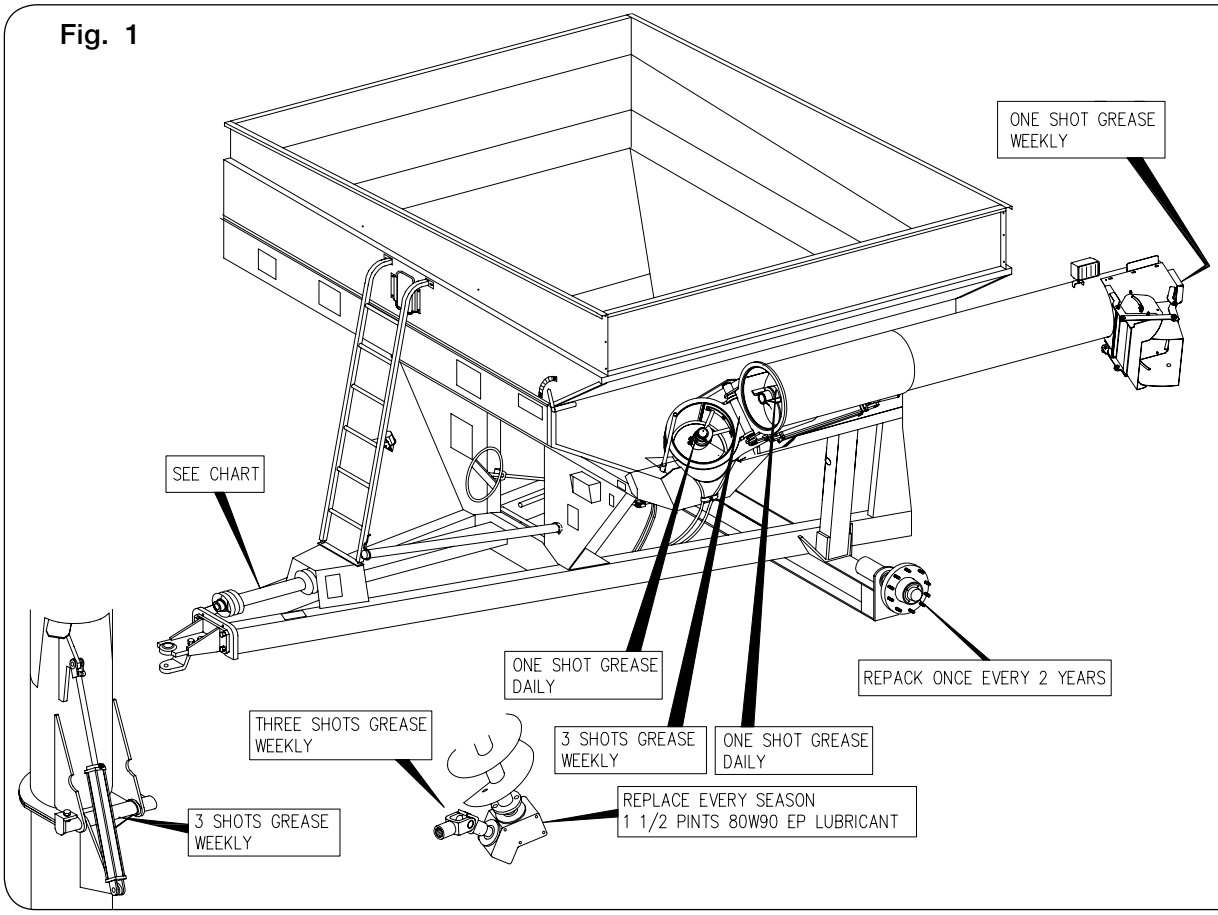
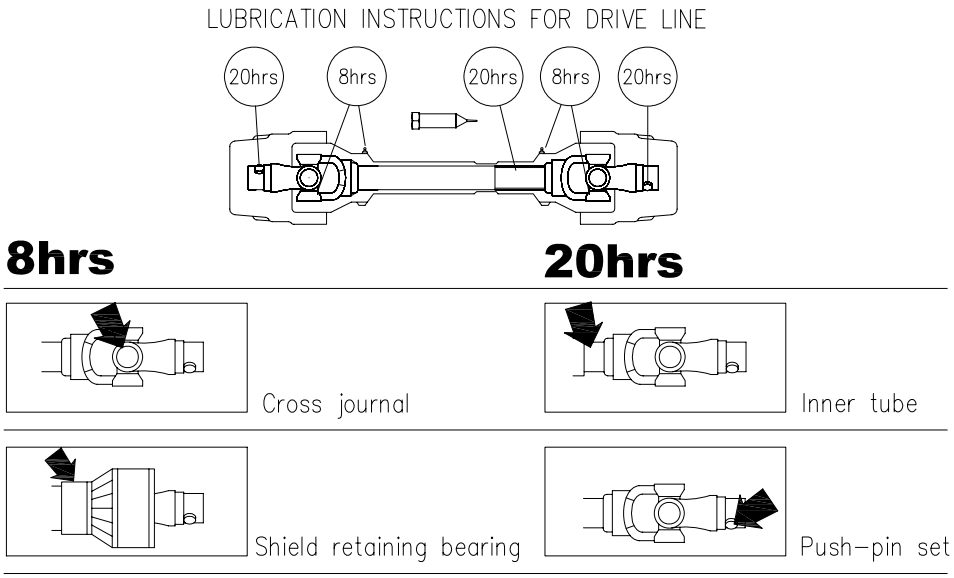


Fig. 2



Seasonal Storage

Your cart is an important investment. Spend a little time to protect it from destructive rust and corrosion, You will be repaid in longer service life and better performance.

Do the following before placing the cart in storage:

1. Remove dirt and trash which could cause rusting.
2. Repaint any chipped or scraped areas.
3. Lubricate points on pages 4-2.
4. Inspect for damage or worn parts, replace before next season.
5. Store cart inside, away from livestock.
6. Replace all worn, torn or faded decals and reflectors.
7. Fully open flow door and auger cleanout door to remove any remaining grain and to allow moisture to drain (Fig. 17).

Fig. 17

Hub Assembly

1. Pack the bearings with approved grease and assemble the inner bearing into the hub. Install the seal. Garter spring to the inside.
2. Assemble the hub on the spindle, install the outer bearing and retain using the spindle washer and nut.
3. Tighten the spindle nut with a wrench to remove any play between the bearing cone and cups. Do not use an impact!
4. Back off the castle nut and then hand tighten without a wrench.
5. Spin the hub and tighten the spindle nut slowly by wrench until the tightening of the spindle nut stops the rotation.
6. Back off the spindle nut to the closest next slot of the nut that aligns with the cross hole in the spindle. Install the cotter pin. Do not bend the ends.
7. Spin the hub while checking for drag and/or play. If play exists, tighten the castle nut. Back off and then repeat the above steps. If drag exists, back off the spindle nut to the next hole. Spin and check again.
8. Once set, bend the cotter pin ends around the nut and fill the hub cap with approved grease. Attach the new gasket maker to the bottom of the hub cap and attach with hardware. Tighten in an alternating manner.

Auger System

WARNING

- **TURNING AUGER AND OTHER MOVING PARTS CAN CRUSH AND CUT. DISENGAGE PTO AND SHUT-OFF ENGINE BEFORE SERVICING MACHINE OR ENTERING GRAIN TANK, OR OPENING CLEAN-OUT DOOR(S).**

- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. DO NOT WORK UNDER THE MACHINE AT ANY TIME WHILE BEING HOISTED. BE SURE ALL LIFTING DEVICES AND SUPPORTS ARE RATED FOR THE LOADS BEING HOISTED. THESE ASSEMBLY INSTRUCTIONS WILL REQUIRE SAFE LIFTING DEVICES UP TO 1,600 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.**

- **NEVER ENTER CART WITH AUGER OR TRACTOR RUNNING . SERIOUS OR FATAL INJURY CAN OCCUR DUE TO ENTANGLEMENT WITH ROTATING COMPONENTS. ALWAYS STOP ENGINE AND REMOVE KEY BEFORE ENTERING CART.**

- **TO PREVENT PERSONAL INJURY OR DEATH, ALWAYS ENSURE THAT THERE ARE PEOPLE WHO REMAIN OUTSIDE THE CART TO ASSIST THE PERSON WORKING INSIDE THE CART, AND THAT ALL SAFE WORKPLACE PRACTICES ARE FOLLOWED. THERE IS RESTRICTED MOBILITY AND LIMITED EXIT PATHS WHEN WORKING INSIDE THE CART.**

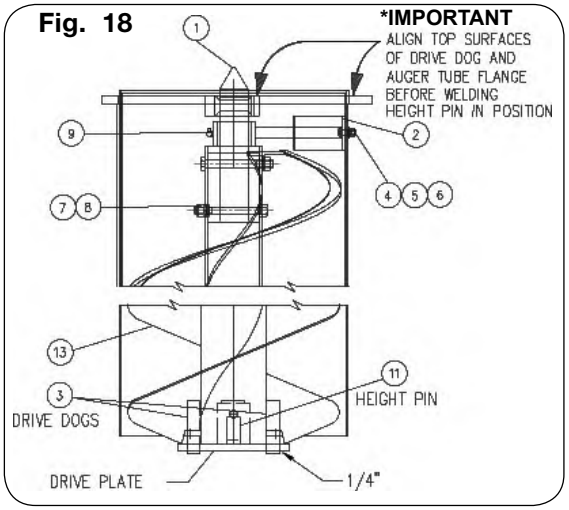
- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

Lower Auger Disassembly

1. Remove three 3/8" x 1 1/4" capscrews (4), lock washers (5) and nuts (6) which secure hanger bearing to auger tube.
2. Using a safe lifting device rated for 500 lbs., remove auger from auger tube and perform required repair or replacement.
3. Remove two 5/8" x 6" capscrews (7) and locknuts (8) which trap hanger bearing and secure drive dog to auger. Missile shaft/coupler sleeve bolt and nut should be at 180 degs apart from opposite bolt to neutralize their effect on auger balance.

Fig. 18



Auger System (continued)

Lower Auger Assembly

1. Assemble drive dog (1) and hanger bearing (2) to auger and secure with two 5/8" x 6" capscrews (7), lock washers and nuts (8).

2. Install auger, drive dog, and hanger bearing into lower housing and secure with three 3/8" x 1 1/4" capscrews (4), lock washers (5) and nuts (6). Do not tighten.

3. Align the top surfaces of drive dog and auger tube flange. Do not align with tube sleeve. Tighten hanger bearing fasteners (4, 5 & 6).

4. Rotate and align center auger tube until drive plate holes are centered between flightings.

IMPORTANT

- *Disconnect the cart completely from the tractor before welding on the equipment. Damage may occur to the electrical system.*

5. Position height pin against top of drive plate and weld to auger tube.

NOTE: Height pin can be located adjacent to one of drive pins and both pins welded together in Step 6.

6. Insert two lower drive dogs 1/4" through drive bushing and weld to auger center tube (and to height pin if applicable).

7. Using a safe lifting device rated for 1,200 lbs., raise upper auger into position, checking upper drive dog engagement with lower auger drive dog.

8. Lower upper auger. Lubricate hanger bearing. Check and remove any loose parts in auger tube interior prior to start-up.

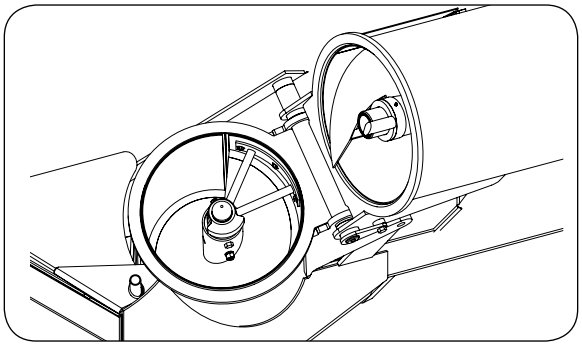
NOTE: If replacing lower auger, rotate flighting 360°, checking for interference or binding. A portion of flighting may have to be removed from the lower end of auger.

9. Re-attach PTO to tractor and slowly rotate auger to ensure engagement and operation.

Auger System (continued)

Upper Auger Disassembly

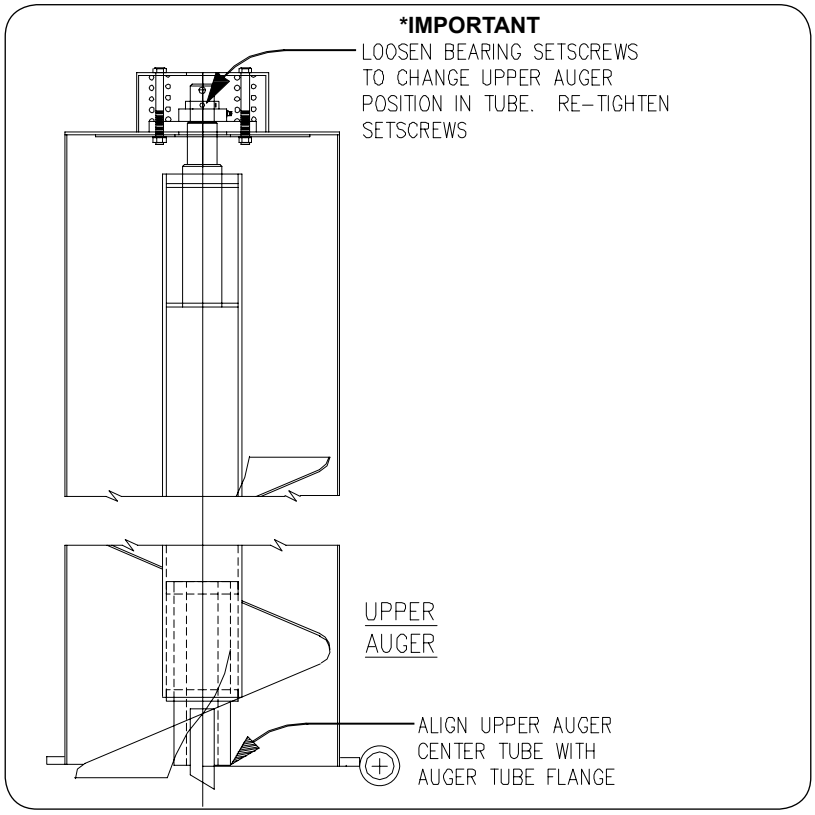
1. Support the upper auger assembly with a 2 ton hoist and two 1000 lb. straps.
2. Remove auger tube cylinder pin and carefully swing cylinder down without breaking hose connections.
3. Disconnect auger and chute light.
4. Remove chute assembly.
5. Remove auger indicator hose and extension shaft from pivot pin, located on inside of cart. With auger tube fully supported, remove pivot pin, retainer bolt\nut and hinge pin. Hinge pin end is center threaded to allow attachment of removal tool (ie: slide hammer).
6. Lift upper auger assembly from unit. Repair or replace as required.
7. To remove auger from tube, loosen two bearing setscrews and remove 5/16" x 2" machine screw retainer.
8. Inspect upper auger bearing, springs and four 1/2" x 5 1/2" capscrews and locknuts. Replace if necessary.



Auger System (continued)

Upper Auger Assembly

1. Install upper bearing and spring assembly if previously removed.
2. Using a safe lifting device rated for 600 lbs., insert auger in auger tube. Back out bearing setscrews and insert auger stub shaft through bearing. Retain auger with 5/16" x 2" machine screw and nut.
3. Position opposite auger end flush with auger tube flange and tighten bearing setscrews and 5/16" x 2" machine screw
4. Lift upper auger assembly into position using a 2 ton hoist and two 1000 lb. straps to support the upper auger. Install pivot pin. Align retainer holes and install bolt and nut.
5. Install chute assembly.
6. Reattach indicator hose and extension shaft.
7. Connect auger and chute light.
8. Reinstall hydraulic cylinder and pivot pins. Clamp hoses into position and recheck connector tightness.



Auger System (continued)

Upper Auger Assembly Timing

Fully extend the upper auger and rotate the auger assembly to ensure both lower & upper augers are engaged. allow the auger assembly to stop completely, then lower the upper auger approximately 45 degrees, shut off the tractor, remove the keys from the ignition. View the positions of the lower auger flighting trailing edge and upper auger flighting leading edge. After noting each flighting position, lower the upper auger assembly to its rest position. Again, shut off the tractor and remove the keys from the ignition.

When the lower & upper augers are coupled together correctly, the leading edge of the upper auger flighting is to be indexed approximately 180 degrees from the trailing edge of the lower auger flighting. If these trailing/leading flighting edges are out of position then the lower auger drive dog must be indexed 180 degrees. Do not remove or index the hanger bearing or lower auger. Index only the drive dog in the lower auger by partially removing the two 5/8" capscrews from the drive dog shaft, turning the drive dog 180 degrees, and reassembling the capscrews. Partial removal of the capscrews will retain the drive collar from dropping down inside the auger tube.

Auger System (continued)

Auger Flow Door Cylinder Replacement

⚠ WARNING

- **NEVER ENTER CART WITH AUGER OR TRACTOR RUNNING. SERIOUS OR FATAL INJURY CAN OCCUR DUE TO ENTANGLEMENT WITH ROTATING COMPONENTS. ALWAYS STOP ENGINE AND REMOVE KEY BEFORE ENTERING CART.**

- **TO PREVENT PERSONAL INJURY OR DEATH, ALWAYS ENSURE THAT THERE ARE PEOPLE WHO REMAIN OUTSIDE THE CART TO ASSIST THE PERSON WORKING INSIDE, AND THAT ALL SAFE WORKPLACE PRACTICES ARE FOLLOWED. THERE IS RESTRICTED MOBILITY AND LIMITED EXIT PATHS WHEN WORKING INSIDE THE IMPLEMENT.**

- **EYE PROTECTION AND OTHER APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHILE SERVICING IMPLEMENT.**

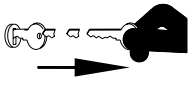
- **KEEP HANDS CLEAR OF PINCH POINT AREAS.**

- **RELIEVE HYDRAULIC SYSTEM OF ALL PRESSURE BEFORE ADJUSTING OR SERVICING. SEE TRACTOR OPERATOR'S MANUAL FOR PROPER PROCEDURES.**

- **HIGH-PRESSURE FLUIDS CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY OR DEATH. USE CARDBOARD OR WOOD TO DETECT LEAKS IN THE HYDRAULIC SYSTEM. SEEK MEDICAL TREATMENT IMMEDIATELY IF INJURED BY HIGH-PRESSURE FLUIDS.**

- **HYDRAULIC SYSTEM MUST BE PURGED OF AIR BEFORE OPERATING TO PREVENT SERIOUS INJURY OR DEATH.**

1. Park the empty grain cart on a firm, level surface and extend auger. Block the tires on the machine to keep it from moving. Unfold upper auger to make the flow door cylinder easier to access. If possible, close the flow door at least 8" from the fully open position. Set the tractor's parking brake, shut-off the engine, remove the ignition key, disconnect the PTO shaft and relieve hydraulic pressure from the tractor and cart.



Auger System (continued)

Auger Flow Door Cylinder Replacement (continued)

2. On the inside of the cart, open the screen service access panel shown in Fig. 21.

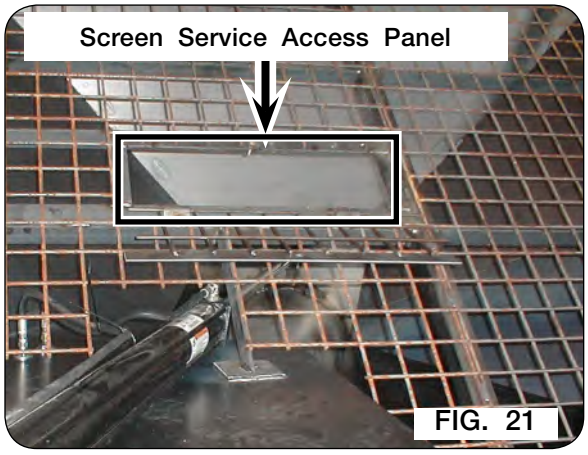


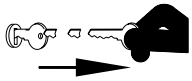
FIG. 21

3. Remove the cotter pins from the lower cylinder pin then remove the pin, shown in Fig. 22.


FIG. 22

4. Remove all tools and extra hardware from the grain cart. Make sure all personnel are outside of the hopper. Then, retract the cylinder so that there is about 8" of clearance between the cylinder clevis and the lug.

5. Shut-off the engine, remove the ignition key, and relieve and disconnect the hydraulic hoses from the tractor and cart.

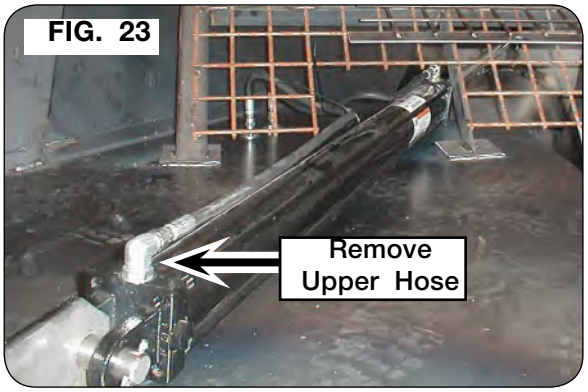


Auger System (continued)

Auger Flow Door Cylinder Replacement (continued)

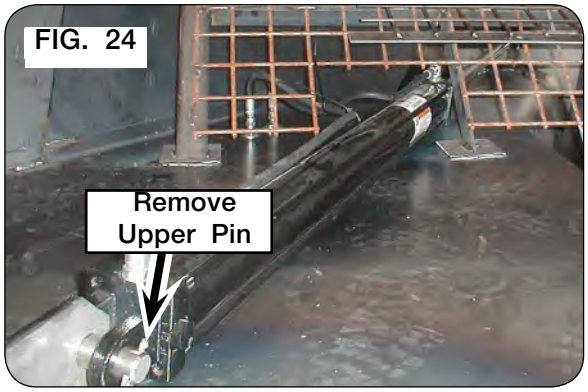
6. Label the hydraulic hoses to indicate upper and lower. Disconnect them from the cylinder (Fig. 23).

FIG. 23



7. Remove the cotter pins from the upper cylinder pin and remove pin (Fig. 24).

FIG. 24



8. Remove the cylinder.
9. Replace with the new cylinder and insert the upper cylinder pin. Remove the cylinder port plugs. Manually extend the cylinder until the lower clevis lines up with the door lug and assemble the pin and cotter pins. Assemble hydraulic fittings and attach hoses. Tighten connections according to directions in the Torque Specifications at the end of the maintenance section.
10. Shut and secure the screen service access panel.
11. Remove all tools and extra hardware from the grain cart. Make sure all personnel are outside of the hopper. **After the hydraulic components have been tightened**, purge air from system as follows:

    A. Pressurize the system and maintain system at full pressure for at least 5 seconds after cylinder rods stop moving. Check that all cylinders have fully extended or retracted.
    B. Check oil reservoir in hydraulic power source and re-fill as needed.
    C. Pressurize system again to reverse the motion of step A. Maintain pressure on system for at least 5 seconds after cylinder rods stop moving. Check that cylinders have fully extended or retracted.
    D. Check for hydraulic leaks using cardboard or wood. Tighten connections according to directions in the Torque Specifications in at the end of the MAINTENANCE section.
    E. Repeat steps A, B, C and D three or four times.

Verify Telescoping PTO Shaft Length

⚠ WARNING

- **PROPERLY EXTENDED AND COLLAPSED LENGTHS OF THE TELESCOPING PTO SHAFT MUST BE VERIFIED BEFORE FIRST OPERATION WITH EACH AND EVERY DIFFERENT TRACTOR. IF THE EXTENDED LENGTH OF THE PTO SHAFT IS NOT SUFFICIENT, IT MAY BECOME UNCOUPLED IN OPERATION AND CAUSE SERIOUS INJURY OR DEATH FROM CONTACT WITH UNCONTROLLED FLAILING OF PTO SHAFT ASSEMBLY COMPONENTS.**

An excessive collapsed length can result in damage to the PTO driveline and attached components. This is most likely to occur during extreme turning angles and/or travel over rough terrain. Conditions are amplified on tractors with tracks operating in uneven terrain, particularly rice levies. Damaged driveline components can result in unsafe operation and severely reduced driveline component life.

NOTE: Do not exceed 10 degrees beyond a straight pull line while operating the PTO.

To verify proper extended and collapsed lengths, use the following procedure:

1. Fully collapse PTO shaft and measure length "L" (FIG. 4-13).

   Enter here:_____(1)
   (Verify that outer tube does not bottom out on surrounding plastic shield components).

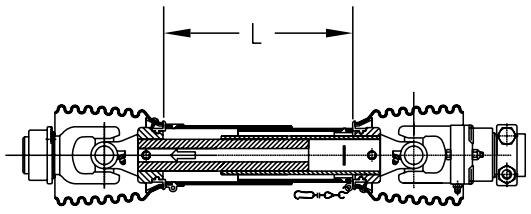


FIG. 4-13

2. Pull apart PTO telescoping shaft ends and measure lengths "T" & "C" (FIG. 4-14).

   Add "T" &"C" measurements together
   Enter total here:_____(2)

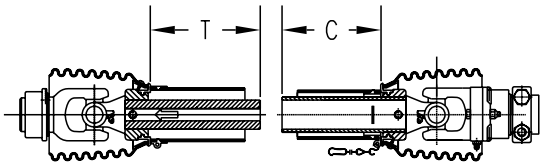


FIG. 4-14

3. Calculate maximum recommended extended length:
   a. Subtract line 1 from line 2. Enter here:_____(a)
   b. Divide line (a) by 2. Enter here:_____(b)
   c. Add line (b) to line 1. Enter here:_____(c)
   d. Subtract 3 inches from line (c). Enter here:_____(d)

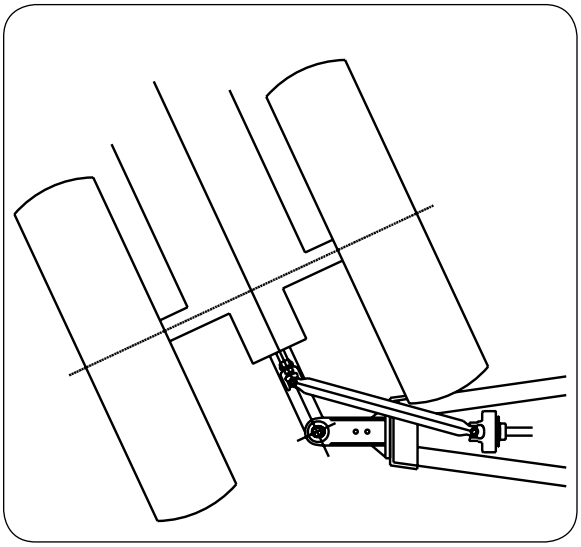
This is the maximum recommended extended length (LB).

Verify Telescoping PTO Shaft Length (continued)

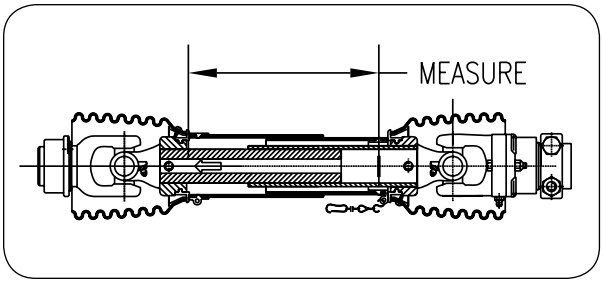
4. Hitch tractor drawbar to cart, ensuring that tractor and cart are on level ground and coupled as straight as practical.

5. Connect PTO shaft to tractor, and measure length "L" from same points as used in step 1. **Ensure that this measurement does not exceed the maximum recommended extended length calculated in step 3 above.** If necessary, choose a shorter drawbar position, or obtain a longer PTO shaft assembly before operating cart.

6. Position the tractor to obtain tightest turning angle, relative to the cart.



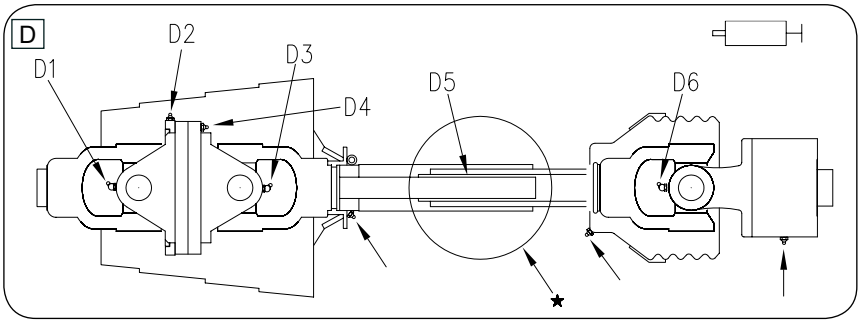
7. Measure length "L" from same points as used in step 1. This distance must be at least 1.5 inches greater than the distance measured in step 1. If necessary, adjust length of PTO shaft by cutting inner and outer plastic guard tubes and inner and outer sliding profiles by the same length. Round off all sharp edges and remove burrs before greasing and reassembling shaft halves.

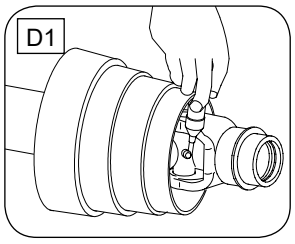


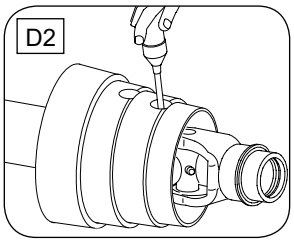
PTO Shaft and Clutch

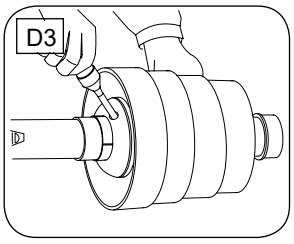
Lubrication (Figs. D1 - D6)

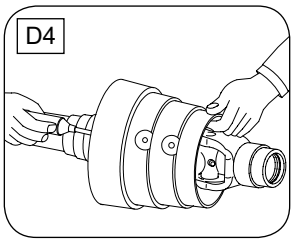
Lubricate with quality grease before starting work and every 8 operating hours. Clean and grease PTO driveshaft before each prolonged period of non-use. Molded nipples on the shield near each shield bearing are intended as grease fittings and should be lubricated every 8 hours of operation! Telescoping members must have lubrication to operate successfully regardless of whether a grease fitting is provided for that purpose! Telescoping members without fittings should be pulled apart and grease should be added manually. Check and grease the guard tubes in winter to prevent freezing.

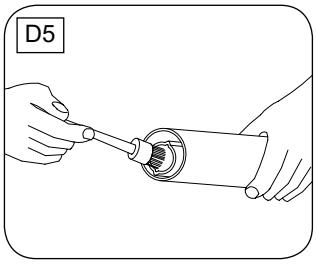


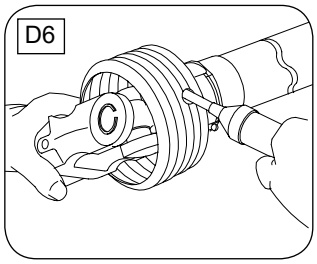










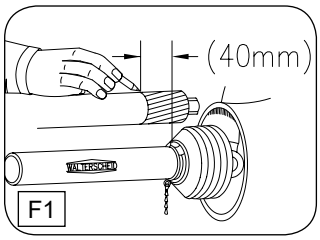


PTO Shaft and Clutch (continued)

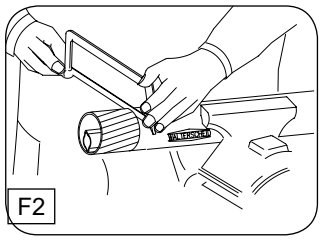
Length Adjustment (Figs. F1 - F4)

NOTE: Maximum operating length LB.

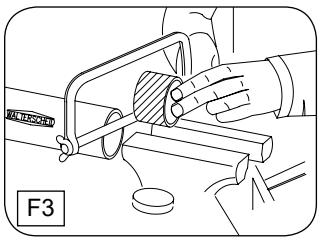
1. To adjust length, hold the half-shafts next to each other in the shortest working position and mark them.
2. Shorten inner and outer guard tubes equally.
3. Shorten inner and outer sliding profiles by the same length as the guard tubes.
4. Round off all sharp edges and remove burrs. Grease sliding profiles.



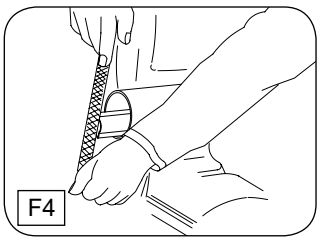
F1



F2



F3


F4

⚠ WARNING

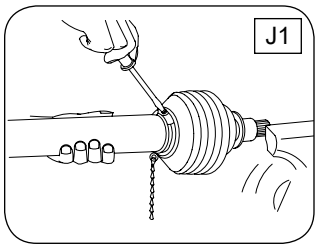
- **CHECK THE LENGTH OF THE TELESCOPING MEMBERS TO INSURE THE DRIVELINE WILL NOT BOTTOM OUT OR SEPARATE WHEN TURNING AND/OR GOING OVER ROUGH TERRAIN.**

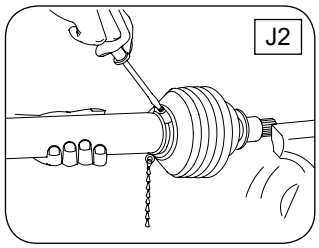
- **PROPER EXTENDED AND COLLAPSED LENGTHS OF THE TELESCOPING PTO SHAFT MUST BE VERIFIED BEFORE THE FIRST OPERATION WITH EACH AND EVERY TRACTOR. IF THE EXTENDED LENGTH OF THE PTO SHAFT IS INSUFFICIENT, IT MAY BECOME UNCOUPLED DURING OPERATION AND CAUSE SERIOUS INJURY OR DEATH FROM CONTACT WITH UNCONTROLLED FLAILING OF THE PTO SHAFT ASSEMBLY COMPONENTS.**

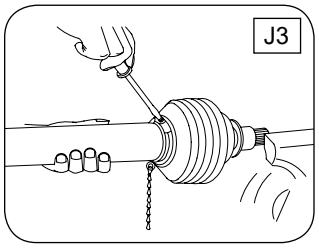
PTO Shaft and Clutch (continued)

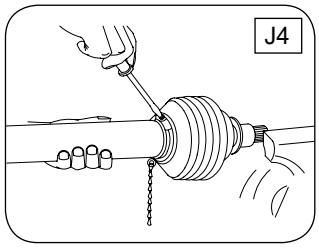
To Dismantle Guard (Figs. J1 - J4)

1. Remove locking screw.
2. Align bearing tabs with cone pockets.
3. Remove half-guard.
4. Remove bearing ring.



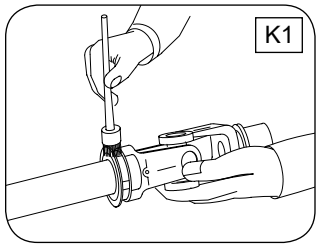


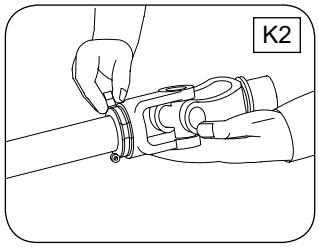


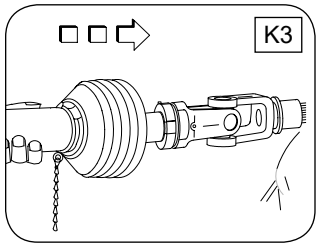


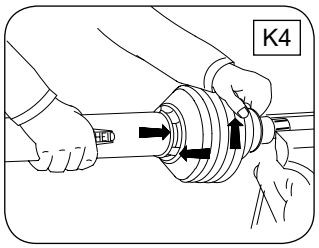
To Assemble Guard (Figs. K1 - K5)

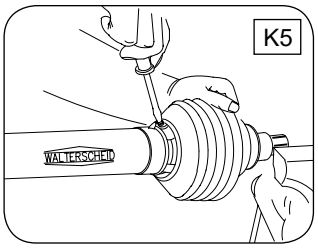
1. Grease yoke groove and inner profile tube.
2. Fit bearing ring in groove with recesses facing profile tube.
3. Slip on half-guard.
4. Turn cone until it engages correctly.
5. Install locking screw.











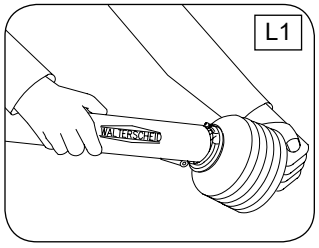
PTO Shaft and Clutch (continued)

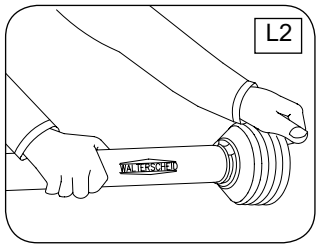
To Assemble Cone (Figs. L1 - L3)

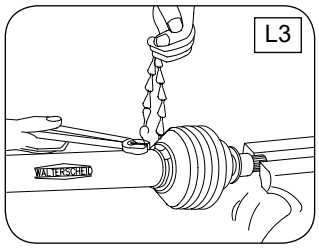
1. Dismantle guard (Fig. L1 - L3). Remove the old cone (e.g. cut open with knife). Take off chain. Place the neck of the new cone in hot water (approx. 80°C/180°F) and pull onto the bearing housing (Fig. L1).

2. Turn guard cone into assembly position (Fig. L2). Further assembly instructions for guard (Figs. K1 - K5).

3. Reconnect chain if required (Fig. L3).



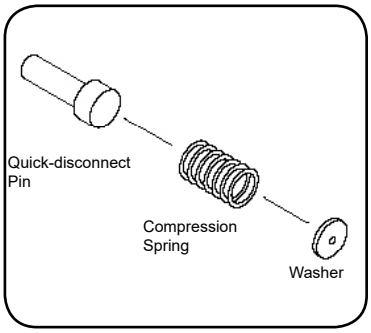


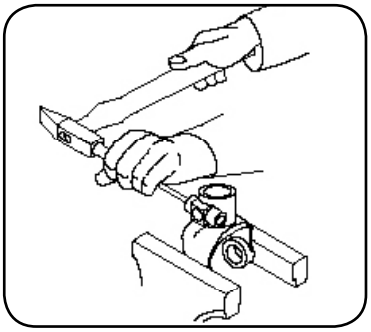


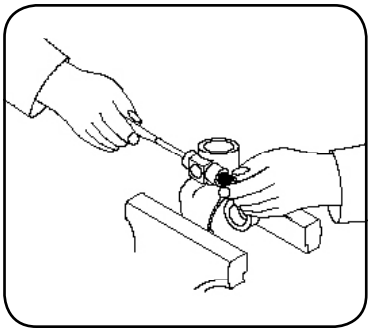
PTO Quick Disconnect

Quick Disconnect Pin

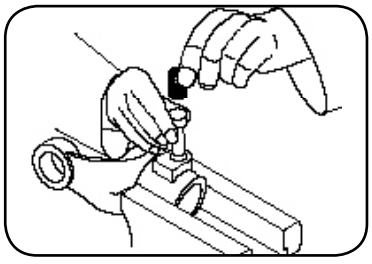
Using a drift punch and hammer, drive the pin towards the retaining washer to force the complete assembly out. Clear the edges of the retaining washer bore to accept the new one by removing the deformed metal from the last peening operation to hold the washer in place.

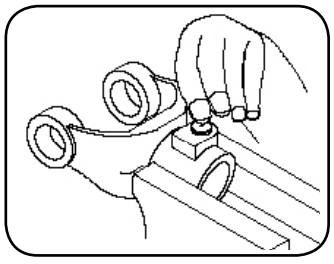


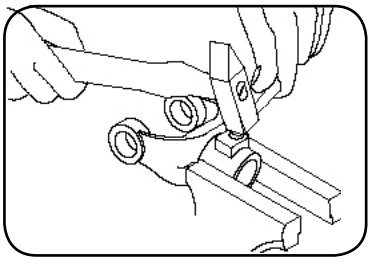




Insert quick-disconnect pin, compression spring and washer into hole, Holding the washer in place, peen the edges of the pore seat to retain the washer, spring and pin.



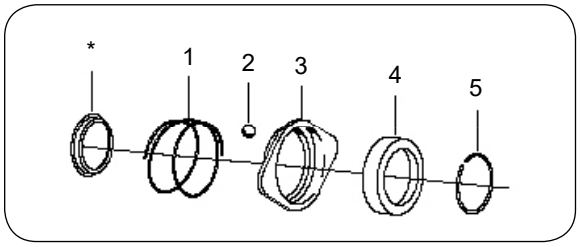




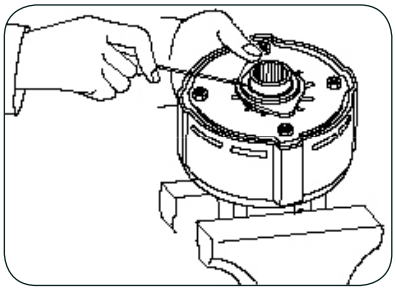
PTO Quick Disconnect (continued)

Quick Disconnect Disassembly

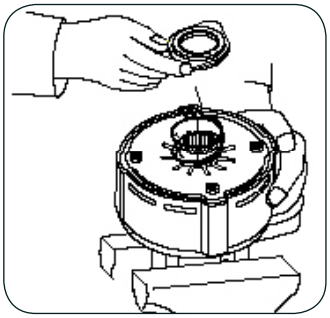
1. Compression Spring
2. Ball
3. Lock Collar
4. Back-up ring
5. Snap ring
   * Back-up ring
   * For some clutch types, place additional back up ring first.



Compress lock collar (#3) and remove snap ring (#5).

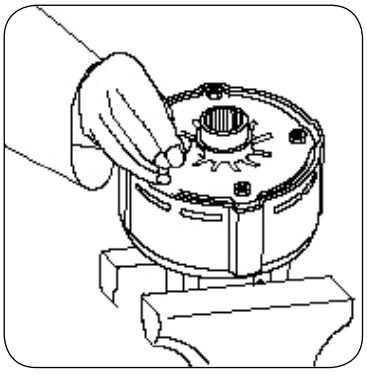


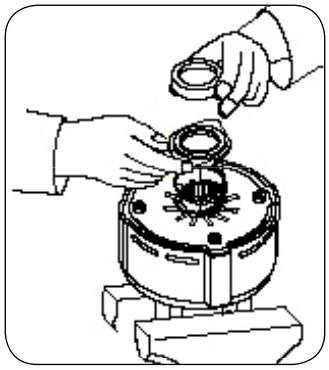
Remove back-up ring, lock collar, compression spring and balls.

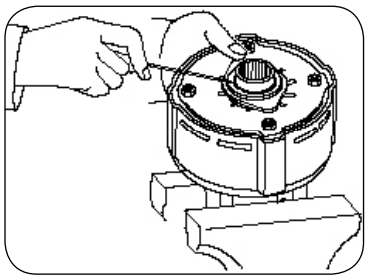


Quick Disconnect Assembly

Insert balls. Place compression spring, lock collar and back-up ring onto the hub. Remove back-up ring, lock collar, compression spring and balls.



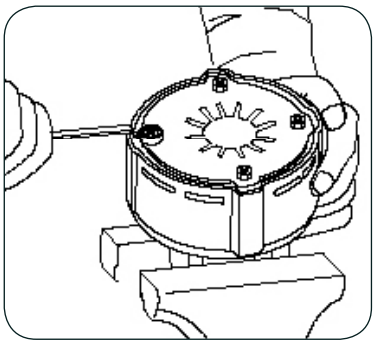
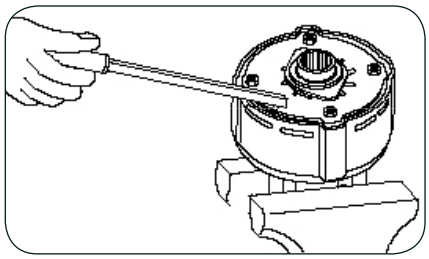
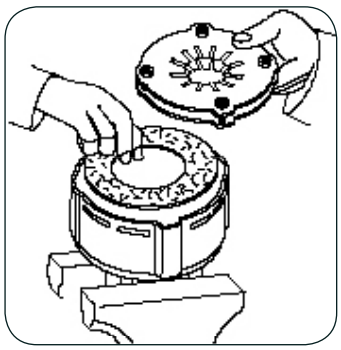




PTO Quick Disconnect (continued)

Clutch Disassembly

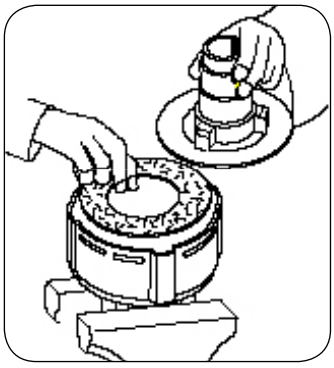
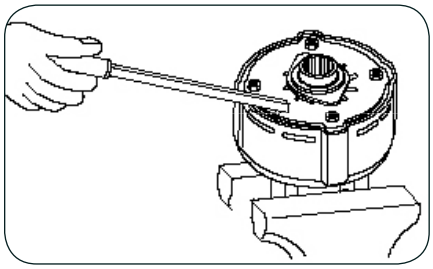
Tighten the four hex nuts (12) uniformly until the clutch pack and hub are loose. Use special tool 9002007 to bend all four retaining lugs back on the edge of the clutch housing. Remove the thrust plate with Belleville springs to get at the friction disks, drive plates and hub for inspection and service.

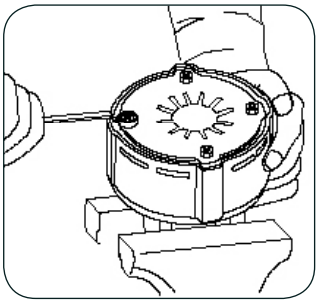
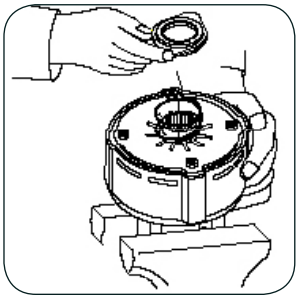
Clutch Assembly

Place hub and friction disks into the clutch housing. Note that items #8 and (are only used in the four plate clutch. Next, compress the Belleville spring(s) to the pressure plate by tightening the four hex nuts and placing them into the clutch housing as illustrated.

Use special tool #9002007 to bend the retaining lugs inward over the Belleville spring edges to secure the springs when you back the four hex nuts off. (Note: Wide lugs for one (1) Belleville spring, narrow lugs for two (2) Belleville springs).

With the lugs in place, loosen the four hex nuts completely to the end of the threaded studs. Replace the quick-disconnect assembly.

Weather Guard Tarp Troubleshooting

PROBABLE CAUSE	CORRECTION
Tarp sags in middle areas	1. Bows may be bent or adjusted too low.
	2. Missing or loose ridge strap. Replace or retighten.
	3. U-joint may need to be adjusted on splinded shaft to provide more tension.
Holes or tears in tarp	1. Consult your local dealer for repairs.
	2. Order tarp repart kit from dealer.
	3. When new tarp or parts are needed always replace with original parts.

Inspection and Maintenance

⚠ WARNING

- **TO PREVENT PERSONAL INJURY OR DEATH, DO NOT ALLOW ANYONE ON A CLOSED TARP. TARP SYSTEM IS NOT DESIGNED TO SUPPORT A PERSON.**

- **FALLING OBJECTS CAN CAUSE SERIOUS INJURY OR DEATH. REMOVE ACCUMULATED WATER/SNOW/ICE OR ANY OTHER OBJECTS FROM TARP BEFORE OPENING TARP.**

IMPORTANT

- *Do not open or close tarp while moving or in high wind conditions. Damage to the tarp may occur.*
- *Tarp should not be used if it is torn or the bungee cords are frayed or show damage. If water pools on the tarp adjust tension of tarp cables and/or arm springs as required.*

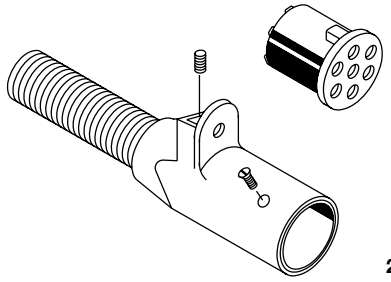
Periodic preventive maintenance should be practiced. Inspect tarp and hardware often for abrasions or loosened bolts that may need adjustment and/or repair. Check bungee cords for wear and adjust tension at the beginning of the season and again half way through the season.

Tears in tarp should addressed before further tarp operation. If water pools on tarp, adjust tension of tarp cables and/or arm springs.

If installed correctly, tarp should always operate as well as when first installed. If tarp does not pass this simple inspection, make all appropriate repairs or adjustments immediately before serious damage occurs.

Electrical System Schematic

GRAIN CART WIRES
White -- Ground
Green -- Right amber flashing lamp
Yellow -- Left amber flashing lamp
Brown -- Tail light
Black -- Interior & Auger Lights
Red -- Brake Lights



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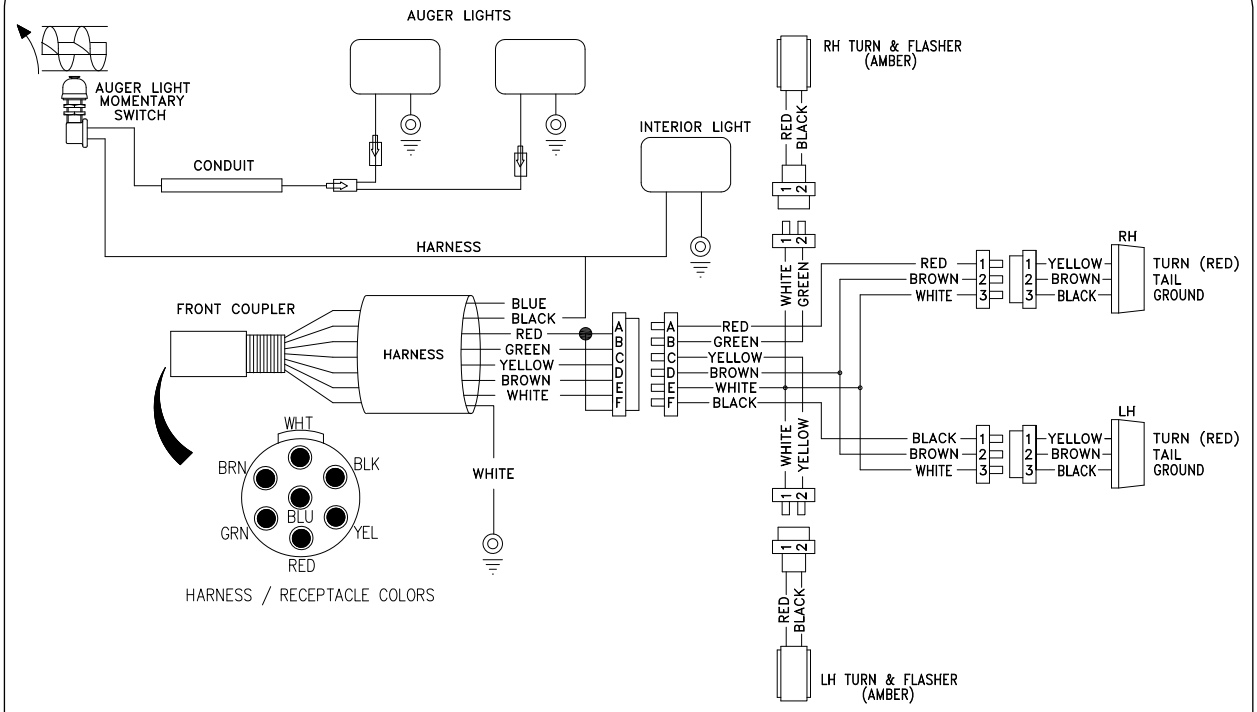
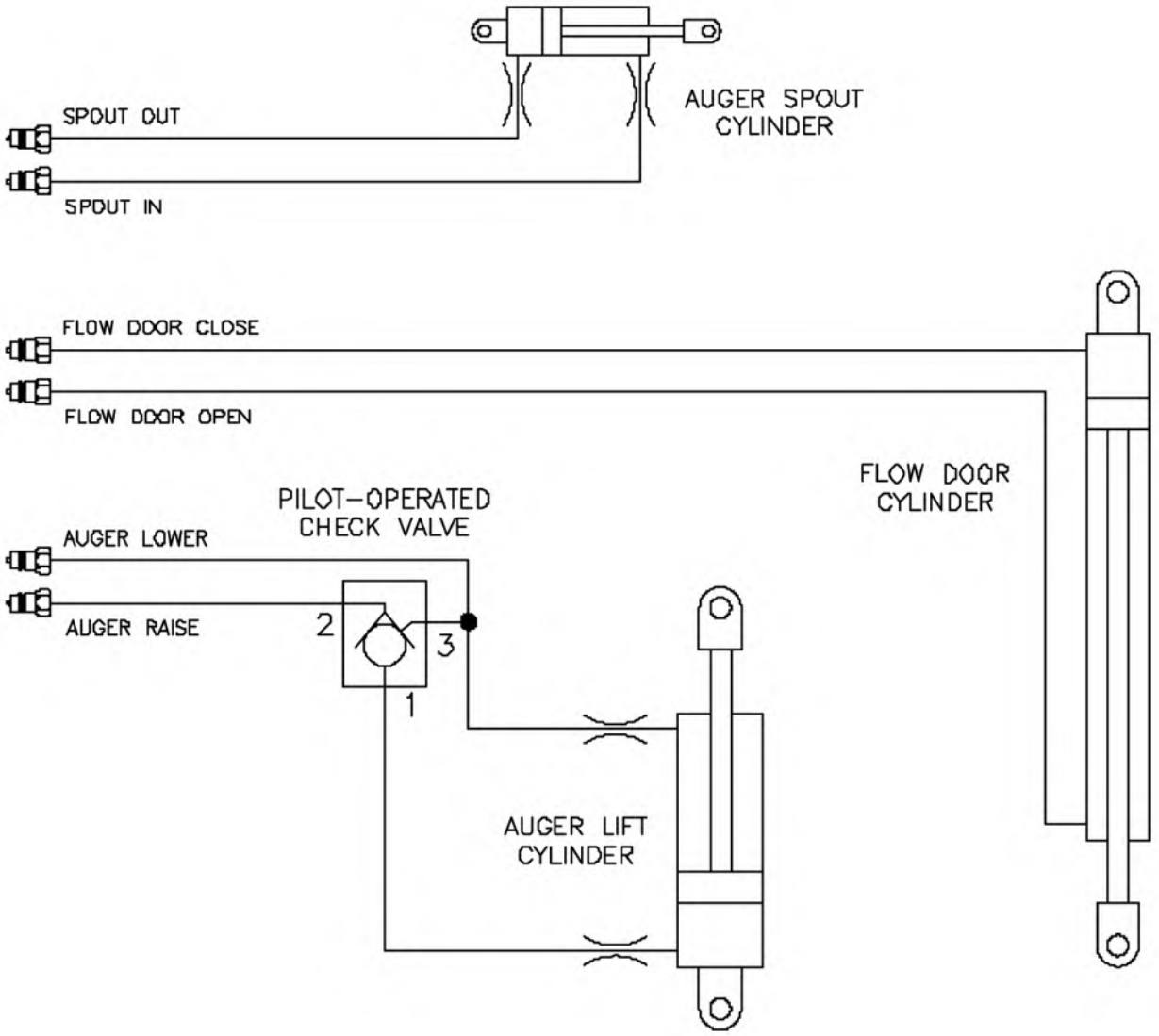


Hydraulic System Schematic



Wheels and Tires

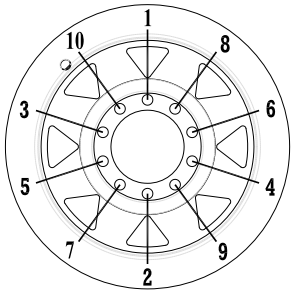
Wheel Nut Torque Requirements

⚠ CAUTION

- **IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. TORQUE WHEEL NUTS/BOLTS TO VALUES IN TABLE. CHECK TORQUE BEFORE USE, AFTER ONE HOUR OF UNLOADED USE OR AFTER FIRST LOAD, AND EACH LOAD UNTIL WHEEL NUTS/BOLTS MAINTAIN TORQUE VALUE. CHECK TORQUE EVERY 10 HOURS OF USE THERE-AFTER. AFTER EACH WHEEL REMOVAL START TORQUE PROCESS FROM BEGINNING. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.**

Failure to check torque before first load may damage wheel nut/bolt seats. Once seats are damaged, it will become impossible to keep nuts/bolts tight. Tighten nuts/bolts to applicable torque value shown in table. Start all nuts/bolts by hand to prevent cross threading. Torque nuts/bolts in the recommended sequence as shown in Diagram 1.

WHEEL HARDWARE	
SIZE	FOOT-POUNDS
3/4”-16 (UNF)	365 ft.-lbs.
7/8”-14 (UNF)	440 ft.-lbs.



10 BOLT

DIAGRAM 1

Nut/Bolt Location:	
3/4”-16 (UNF)	Single Wheels
7/8”-14 (UNF)	Dual Wheels

Wheel Torque Chart & Tire Specifications (Continued)

Tire Pressure

The following is to be used as a general guide for tire inflation and figures can vary depending on specific brand of tire used. **It is important that tires are inspected after unit is loaded.** Start with minimum pressure indicated. The tire should stand up with no side-wall buckling or distress as tire rolls. Record the pressure needed to support the full load and maintain this pressure to achieve proper tire life. **Do not exceed maximum recommended tire pressure.** Each tire must be inflated to 35 PSI max to seat the beads, deflated to 5-10 PSI, then reinflated to the tire's max PSI when mounting.

Tire Pressure for Grain Carts

Tire Make	Tire Size	Load Index / Ply Rating	Max. PSI
Firestone	23.1x26 R-3	12	32
	23.1x26 R-1	12	32
	28Lx26 R-3	12	26
	24.5x32 R-3	12	32
	24.5x32 R-1	12	32
	30.5x32 R-1	14	28
	30.5x32 R-3	14	28
	30.5x32 R-3	16	34
	30.5x32 R-1	16	26
	35.5x32 R-3	20	36
	76x50.00x32 HF-3	16	40
	76x50.00x32 HF-3	20	50
	800/65R32 R-1W	172A8	44
	800/60R32 R-3	181B	46
	900/65R32 R-3	191B	46
	900/60R32 R-1	176A8	44
	1250/50R32F IF/CFO R-1WNP	201D	46
	1250/50R32F IF/CFO R-1W	188B	30
	520/85R38 R-1	155A8	29
	520/85R38 R-1	173A8	64
	480/80R42 R-1	151A8	36
	520/85R42 R-1	157A8	29
	520/85R42 R-1	165A8	51
	520/85R42 IF/CFO R-1	169A8/B	35
	520/85R42 R-1W	169B	35
	420/80R46 R-1	151A8	44
	480/80R46 R-1	158A8	44
	380/90R46 R-1	152B	51

Wheel Torque Chart & Tire Specifications (Continued)

Tire Pressure (continued)

Tire Pressure for Grain Carts

Tire Make	Part Number	Tire Size	Load Index / Ply Rating	Max. PSI
Titan/Goodyear	94286	23.1x26 R-3	10	26
	99364	23.1x26 R-1	10	26
	99307	24.5R32 R-1	169A8/B (5-Star)	48
	94289	24.5x32 R-3	12	32
	94495	24.5x32 R-1	12	32
	99078	30.5x32 R-3	16	26
	99383	30.5x32 R-3	14	22
	99382	30.5x32 R-1	14	22
	99453	480/80x42 R-1	166A8	23
	9502739	1100/45R46 F-1W	195D	35
Mitas	9501523	650/75R32 R-1W	172A8	58
	99498	900/60x32 R-1W	176A8	41
	902564	900/70R32 R-1W	188A8	53
	99478	1050/50x32 R-1W	178A8	41
	9500992	1250/50R32 R-1W	188A8	41
	99497	900/60x38 R-1W	181A8	44
	902509	520/85x42 R-1W	162A8	44
	902506	650/65x42 R-1W	168A8	44
Alliance	9500848	35.5LR32	193A8	44
	9502011	900/60R32 R-1W	192D	46
	9501887	1050/50R32 R-1W	185A8	63
	9502743	1250/50R32 R-1W	201B	46
Trelleborg	9502019	VF1050/50R32 R-1	198D	52
	99360	900/50R32 R-1W	181A8	55
	96484	900/60x32	176LI	44
	99289	850/55R42 R-1W	161A8	32

*__Each__ tire __must__ be inflated to 35 PSI max to seat the beads, deflated to 5-10 PSI, then reinflated to the tire's max PSI.

(All tire pressures in psi)

Wheels and Tires (continued)

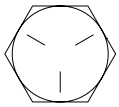
Tire Warranty

For questions regarding new tire warranty, please contact your local original equipment tire dealer. **USED TIRES CARRY NO WARRANTY.** Following are phone numbers and Websites for your convenience:

Firestone	www.firestoneag.com Phone 800-847-3364
Titan or Goodyear	www.titan-intl.com Phone 800-USA-BEAR Fax 515-265-9301
Trelleborg	www.trelleborg.com Phone 866-633-8473
Continental/Mitas	www.mitas-tires.com Phone 704-542-3422 Fax 704-542-3474
Alliance	www.atgtire.com Phone 781-325-3801

Complete Torque Chart

Capscrews - Grade 5



NOTE:

- Grade 5 capscrews can be identified by three radial dashes on the head.
- For wheel torque requirements, refer to Wheels and Tires.
- Tighten U-bolts evenly and equally to have the same number of threads exposed on each end.

SIZE	FOOT POUNDS	NEWTON METERS
1/4-20 1/4-28	8-10 9-11	11-13 12-15
5/16-18 5/16-24	15-17 17-19	20-23 23-26
3/8-16 3/8-24	25-28 28-31	34-38 38-42
7/16-14 7/16-20	40-45 45-50	54-61 61-68
1/2-13 1/2-20	62-68 68-75	84-92 92-102
9/16-12 9/16-18	90-98 100-110	122-133 134-148
5/8-11 5/8-18	120-135 124-137	162-183 168-186
3/4-10 3/4-16	200-220 210-230	270-300 285-310
7/8-9 7/8-14	330-350 360-380	425-475 460-515
1-8 1-14	500-525 540-560	675-710 730-760
1 1/8-7 1 1/8-12	600-635 665-700	815-860 920-950
1 1/4-7 1 1/4-12	850-895 940-990	1150-1215 1275-1340
1 3/8-6 1 3/8-12	1125-1175 1280-1335	1525-1590 1735-1810
1 1/2-6 1 1/2-12	1500-1560 1685-1755	2035-2115 2285-2380

IMPORTANT

- *Follow these torque recommendations except when specified in text.*

Complete Torque Chart

Capscrews - Grade 8

NOTE:

- Grade 8 capscrews can be identified by six radial dashes on the head.
- For wheel torque requirements, refer to Wheels and Tires.
- Tighten U-bolts evenly and equally to have the same number of threads exposed on each end.

SIZE	FOOT POUNDS	NEWTON METERS
5/16-18 5/16-24	20-22 21-23	27-30 28-31
3/8-16 3/8-24	35-39 36-41	47-53 49-55
7/16-14 7/16-20	54-58 55-60	73-78 75-80
1/2-13 1/2-20	82-88 94-99	110-120 125-135
9/16-12 9/16-18	127-134 147-155	170-180 199-210
5/8-11 5/8-18	160-170 165-175	215-230 225-235
3/4-10 3/4-16	280-295 330-365	380-400 445-495
7/8-9 7/8-14	410-430 420-440	555-580 570-595
1-8 1-14	630-650 680-700	850-880 920-950
1 1/8-7 1 1/8-12	900-930 930-950	1220-1260 1260-1290
1 1/4-7 1 1/4-12	1250-1300 1280-1320	1695-1760 1735-1790

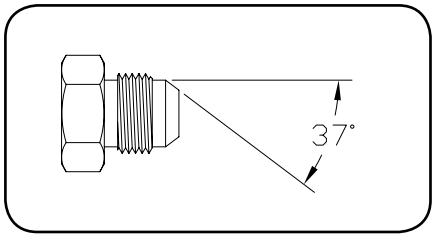
IMPORTANT

- *Follow these torque recommendations except when specified in text.*

Hydraulic Fittings - Torque and Installation

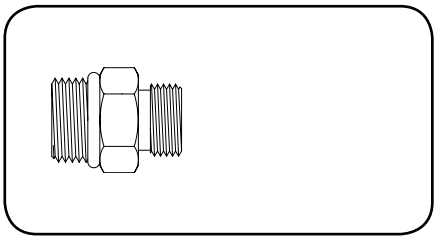
SAE FLARE CONNECTION (J. I. C.)

1. Tighten nut with finger until it bottoms the seat.
2. Using a wrench, rotate nut to tighten. Turn nut 1/3 turn to apply proper torque.



SAE STRAIGHT THREAD O-RING SEAL

1. Insure jam nut and washer are backed up to the back side of smooth portion of elbow adapter.
2. Lubricate o-ring -- VERY IMPORTANT!
3. Thread into port until washer bottoms onto spot face.
4. Position elbows by backing up adapter.
5. Tighten jam nut.



Notes