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PARKER MODEL 1150

Double-Auger Grain Cart



MODEL 1150 DOUBLE AUGER GRAIN CART MAINTENANCE

Unverferth
Manufacturing Company, Inc.

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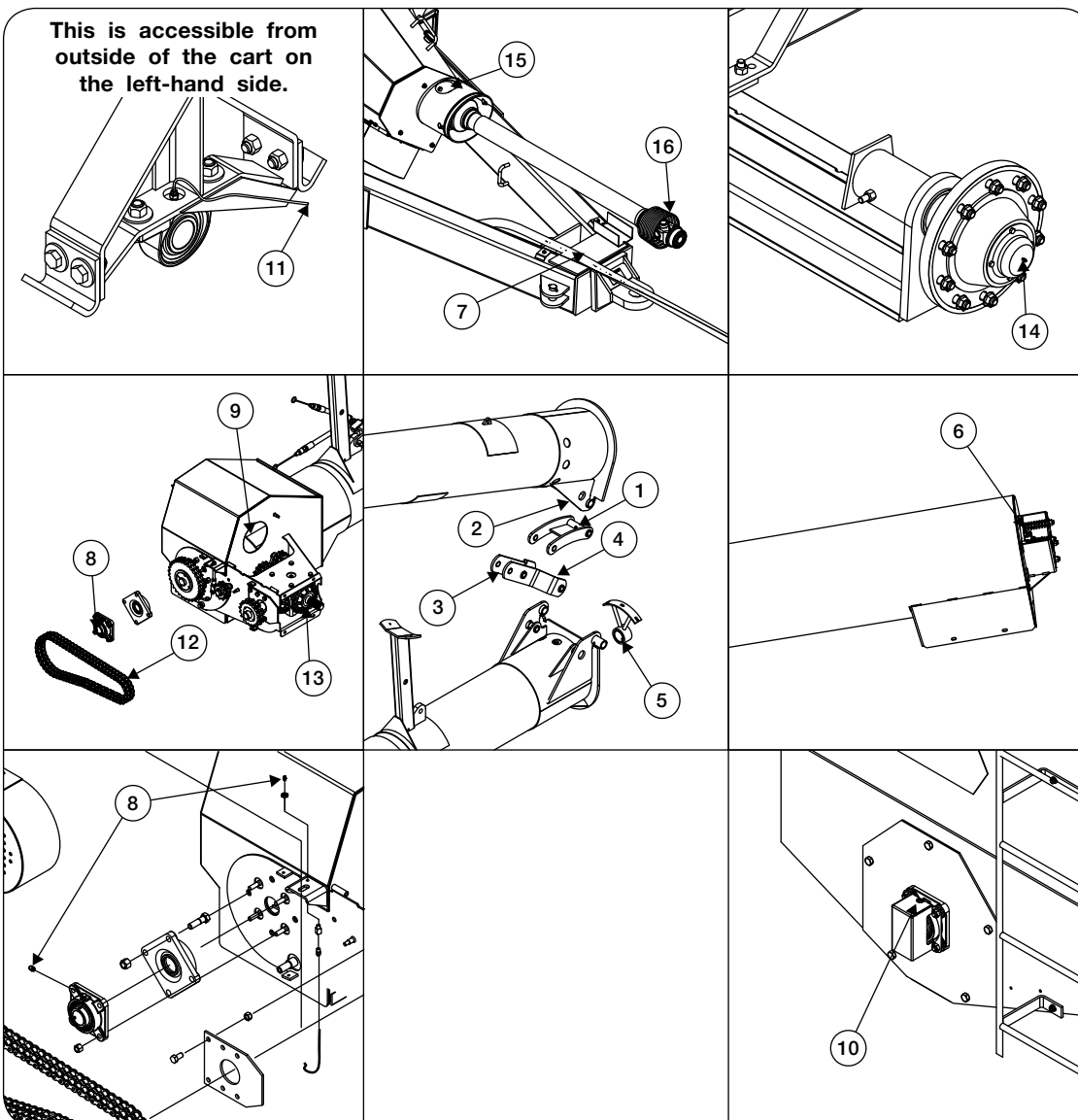
FOR TARP INFORMATION, PLEASE REFER TO YOUR TARP MANUAL.
 FOR SCALE INFORMATION, PLEASE REFER TO YOUR SCALE MANUAL.
 FOR UHARVEST PRO INFORMATION, PLEASE REFER TO YOUR UHARVEST MANUAL.
 FOR TRACKS INFORMATION, PLEASE REFER TO YOUR TRACKS MANUAL.

Lubrication

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

ITEM	DESCRIPTION
1	Linkage Pivot
2	Hinge Tube
3	Linkage Pivot
4	Linkage Pivot
5	Vertical Auger Hanger Bearing (1 Shot Daily)
6	Vertical Auger Top End Bearing (1 Shot Daily)
7	Hitch Point (5 Shots/Seasonal)
8	Vertical Auger Lower Bearing (Inside/Outside - 1 Shot Daily)
9	Horizontal Auger Front Bearing (1 Shot Season)

ITEM	DESCRIPTION
10	Horizontal Auger Rear Bearing (1 Shot Season)
11	Horizontal Auger Center Bearing (1 Shot Season)
12	Chain - without oiler (Twice Daily SAE 80W90) Chain - with oiler (30W)
13	Gearbox (Check weekly, replace once a year 2-2 1/2 Pints 85W140 EP)
14	Hubs (2) (Repack every 2 years)
15	PTO Universal Joint (2) (Refer to PTO Section)
16	PTO Safety Shield (2) (Refer to PTO Section)



U-Joints & Gearbox

The U-joint will give you many years of service if grease is applied to each joint and spline weekly.

For maximum gearbox life:

- Check oil level every 2 weeks
- Replace oil every season, fill to fluid level or 2 pints with 90 weight oil

Drivetrain Inspection

To insure long life and dependable service from your grain cart, the drivetrain should be inspected after the first 5 loads, at the beginning of each season and after every 25 loads or annually thereafter, whichever comes first.

Remove inspection cover and proceed as follows:

- Make a general inspection of drivetrain looking for loose hardware.
- Inspect chain tension.
- Inspect for wear on the side of the sprockets which may indicate poor chain alignment.
- Inspect chain connectors making sure they are properly secured.
- Inspect 3 setscrews in each sprocket bushing and tighten evenly to torque specifications.
- Inspect sprocket drive keys making sure they are properly located and tight.
- Inspect all grease hoses for damage and proper routing.
- Lubricate all grease fittings.
- Inspect bearings and seals in gearbox.
- Inspect PTO attaching hardware and safety shields.
- Repair or replace worn or damaged parts.

Drive Sprockets

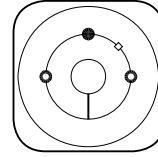
The drivetrain components should be checked periodically for tightness. Loose sprockets or chains could result in excessive wear or damage to the drivetrain.

Use the following chart for reference during servicing.

Auger	Bushing	Bushing	Bushing
Horizontal	102246	102246	102246
Vertical	102247	102247	102247
Both	102248	102248	102248

Drive Sprockets (Continued)

Hole Configuration of Drive Sprocket



REMOVAL

1. Remove all set or cap screws.
2. Insert set or cap screw in hole indicated by on diagram. Loosen bushing by tightening set or cap screw.

INSTALLATION

1. Clean shaft, bore of bushing, outside of bushing and hub bore of all oil, paint and dirt. File away burrs.
2. Insert bushing in hub. Match the hole pattern, not the threaded holes, (each hole will be threaded on one side only.)
3. Lightly oil setscrews and thread into those half-threaded holes indicated by on above diagram. **DO NOT** lubricate the bushing taper, bushing bore, hub taper or the shaft. Doing so could result in breakage of the product.
4. Alternately torque setscrews or capscrews to recommended torque setting, see chart.
5. To increase gripping force, hammer face of bushing using block, or sleeve. (Do not hit bushing directly with hammer.)
6. Re-torque screws after hammering.
7. Recheck screw torques after initial run-in, and periodically thereafter. Repeat steps 4, 5 and 6 if loose.

Indicator Arm

The Indicator Arm lets the operator know the position of the flow control gates, open or closed. This arm is connected to the flow control gate. If the indicator arm is not working properly see that the hardware is securely connecting the indicator arm to the gate. See flow control gates for further adjustments.

Flow Control Gates

The Flow Control Gates are designed to prevent grain from putting an excess load on the horizontal auger during initial start-up. If gates are not working properly check:

- each pivot, on each end of gate, for wear or tightness.
- the hydraulic cylinder, making sure hoses are attached properly, clevis pins are secure, and fluid level in hydraulic oil reservoir is at its recommended level.
- for any debris that may have wedged between gates.
- hardware connecting gates are secure.

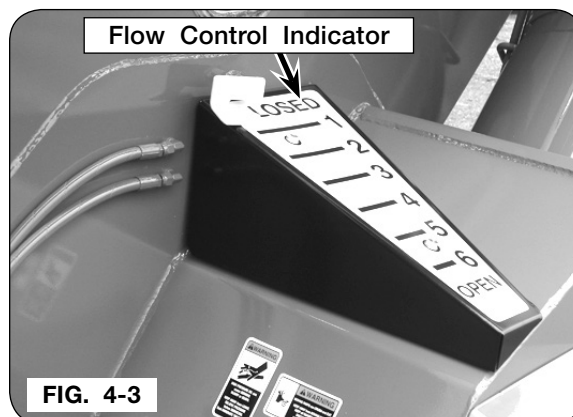


FIG. 4-3

Chain Tightener Bracket

Due to prolonged use, gear wear may be evident causing slack in chains. To correct this, follow these steps:

1. Adjust horizontal tightener to 2.75" in spring shown.
2. Adjust vertical auger tightener to 3" in spring shown.
3. Clear work area and test run drivetrain for 3 minutes at no greater than 1000 R.P.M.
4. Disengage P.T.O. and turn tractor off. Check slack in chain. If more adjustment is needed repeat steps 1-3.

IMPORTANT

- *Improper chain tensioning can cause premature wear on chains and sprockets. Too tight can cause heat and lubrication to dissipate, or too loose could cause chain slap and excess vibration. Both contribute to chain elongation and/or sprocket wear. It is recommended to check chain tension daily and always replace both sprockets and chain when installing new components.*

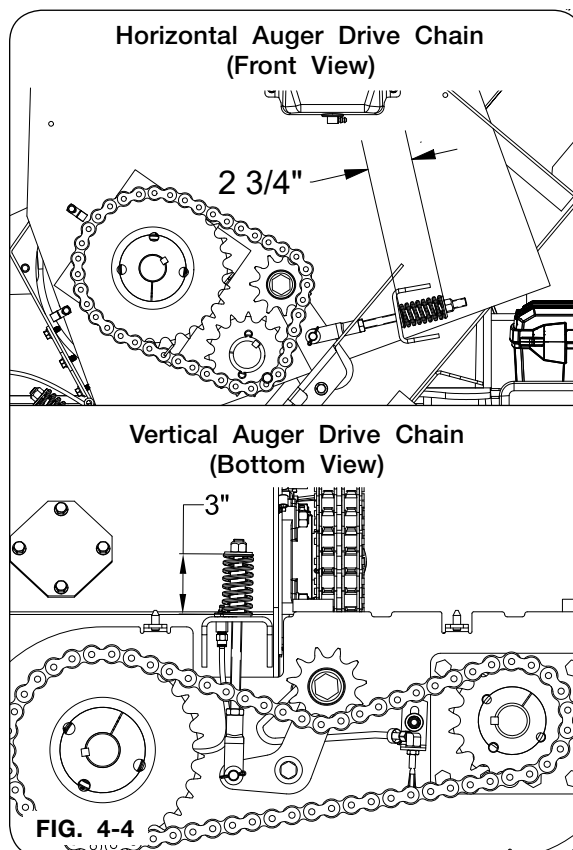


FIG. 4-4

PTO Shear Bolt

IMPORTANT

- Use a genuine OEM replacement shear bolt to ensure that the shear function does not occur too soon causing inconvenience or too late resulting in damage to driveline and auger components, see “Driveline Components”.

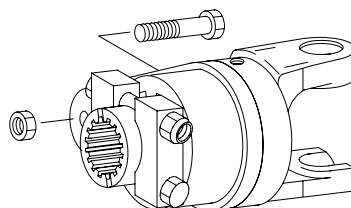
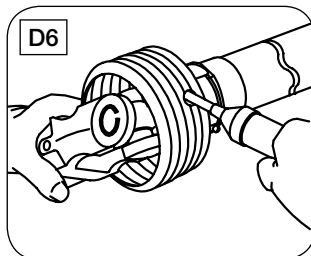
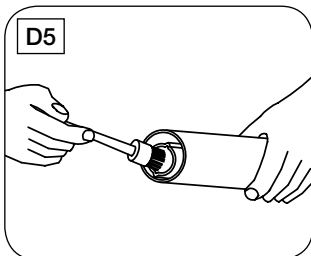
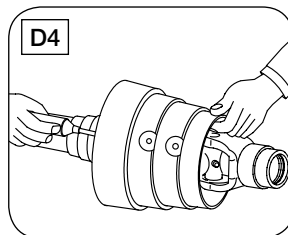
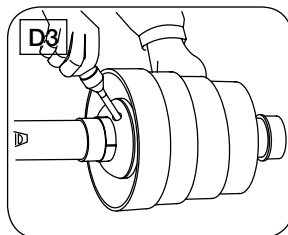
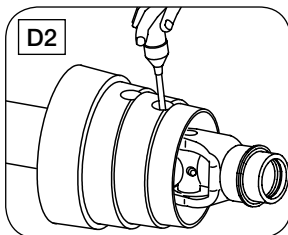
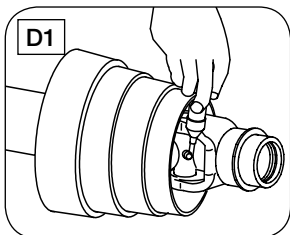
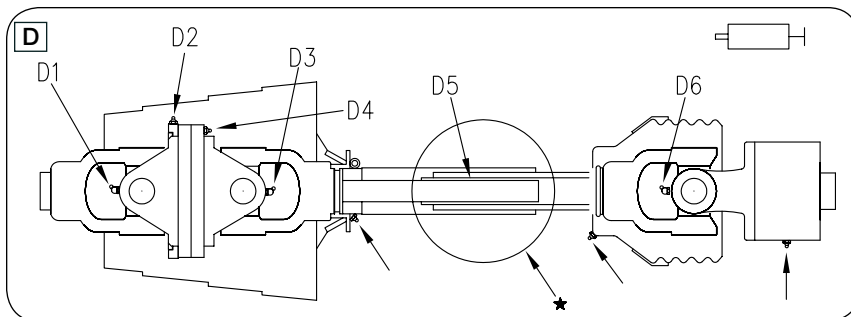


FIG. 4-5

PTO Shaft & 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 & Clutch (Continued)

Coupling The PTO Driveshaft (Figs. E1-E2)

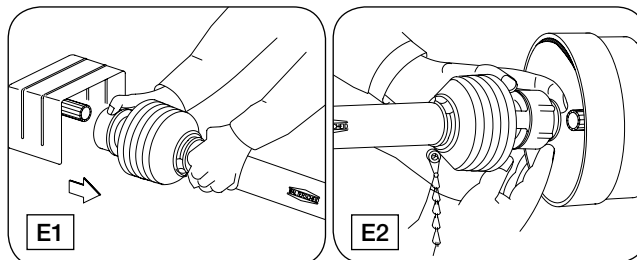
Clean and grease the PTO and implement input connection (IIC)

AS-Lock

1. Pull locking collar and simultaneously push PTO driveshaft onto PTO shaft until the locking device engages.

Push-Pull Lock

2. Pull locking collar and simultaneously push PTO driveshaft onto PTO shaft until the locking device engages.



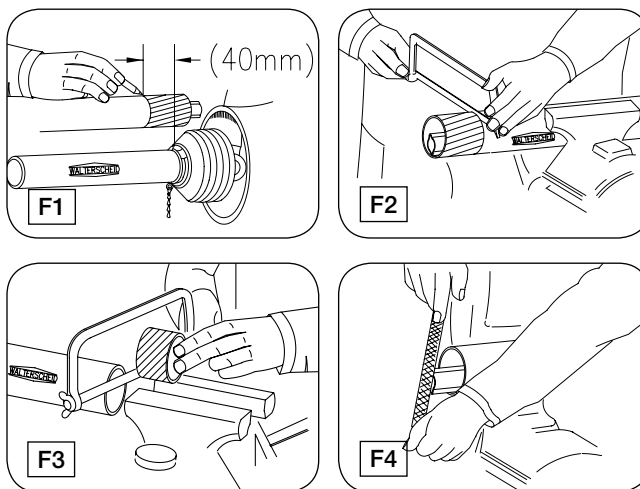
⚠ WARNING

- CHECK TO INSURE ALL THE LOCKS ARE SECURELY ENGAGED BEFORE STARTING WORK WITH THE PTO DRIVESHAFT.

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.



⚠ WARNING

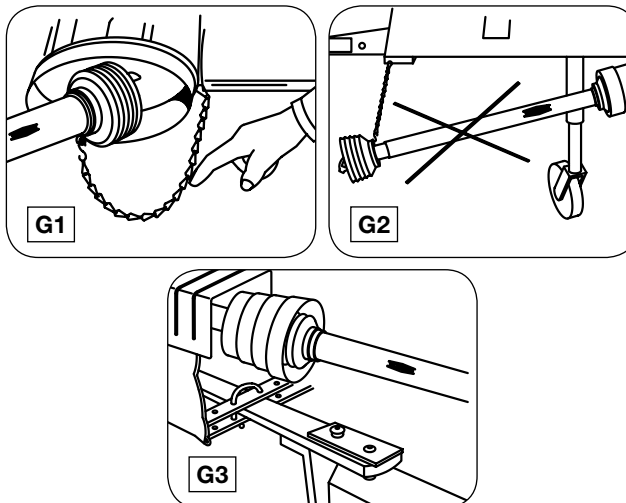
- CHECK THE LENGTH OF THE TELESCOPING MEMBERS TO INSURE THE DRIVELINE WILL NOT BOTTOM OUT OR SEPARATE WHEN TURNING AND/OR GOING OVER ROUGH TERRAIN.

PTO Shaft & Clutch (Continued)

Chains (Figs. G1-G3)

NOTE: The chain is intended to prevent the shield from rotating against non-moving parts and thereby preventing shield damage. A properly installed chain will increase the service life of the shield.

1. Chains must be fitted so as to allow sufficient articulation of the shaft in all working positions. Care must be taken to be sure that chain does not become entangled with drawbar hitch or other restrictions during operation or transport of machine.
2. The PTO driveshaft must not be suspended from the chain.



Shear Bolt & Friction Clutches (Figs. H1-H2)

1. Shear bolt clutches:

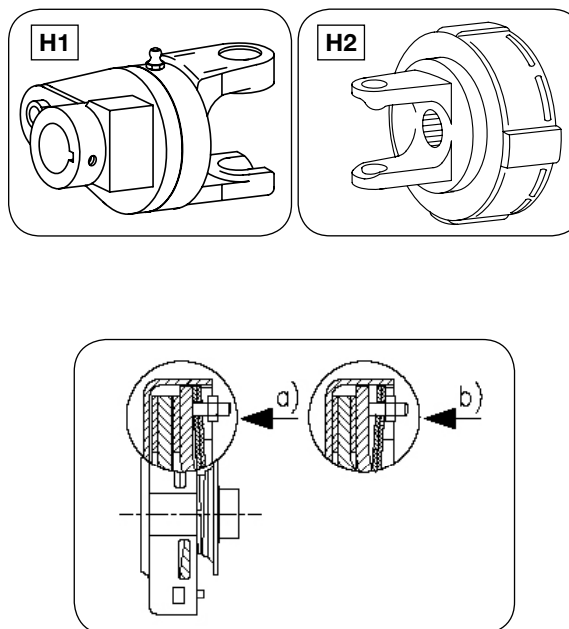
When the torque is exceeded, power flow is interrupted due to the bolt shearing. The torque is re-established by replacing the broken shear bolt. Use only the bolt specified in the Operator's Manual for replacement. Remove locking screw.

2. Friction clutches:

When overload occurs, the torque is limited and transmitted constantly during the period of slipping. Short-duration torque peaks are limited.

Prior to first utilization and after long periods out of use, check working of disk clutch.

- a. Tighten nuts until friction disks are released. Rotate clutch fully.
- b. Turn nuts fully back. Now the clutch is ready for use.



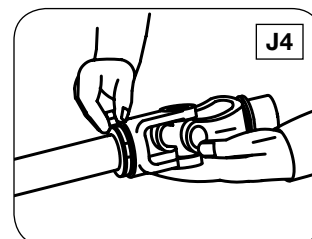
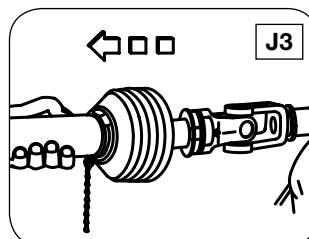
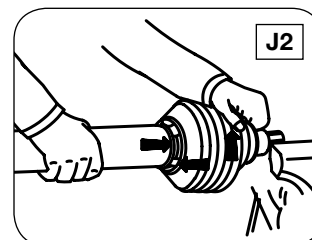
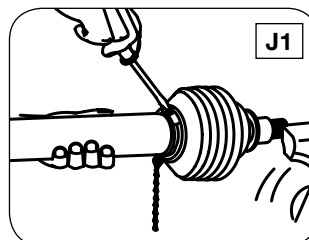
WARNING

- AVOID EXTENDED AND FREQUENT SLIPPAGE OR OVER-LOAD CLUTCHES.

PTO Shaft & Clutch (Continued)

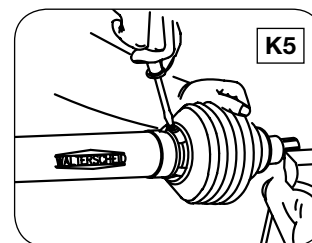
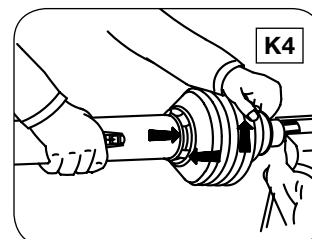
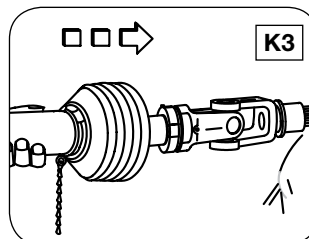
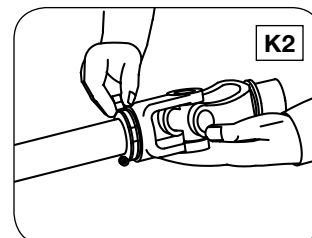
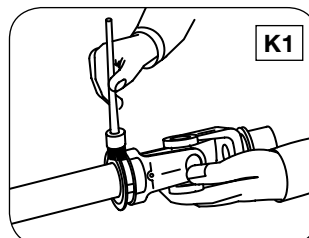
To Dismantle Guard Figs. (J1-J4)

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



To Assemble Guards Figs. (K1-K5)

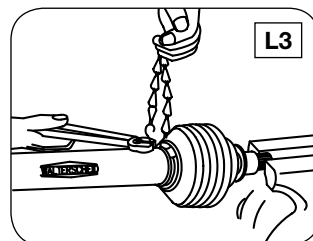
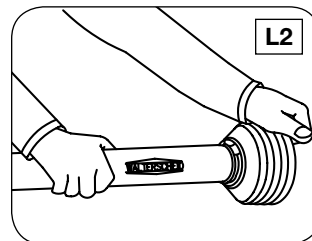
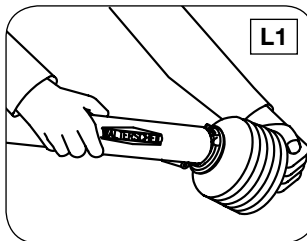
1. Grease yoke groove and inner profile tube.
2. Fit bearing ring in groove with recesses facing profile tube.
3. Slip on half-guard.
4. Turn cone until it engages correctly.
5. Install locking screw.



PTO Shaft & Clutch (Continued)

To Assemble Cone Figs. (L1-L3)

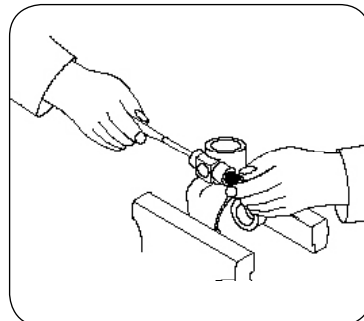
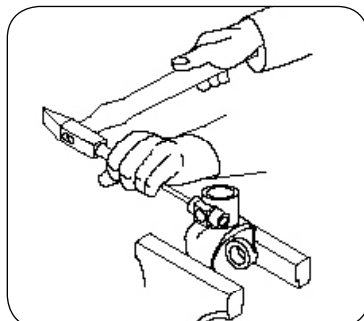
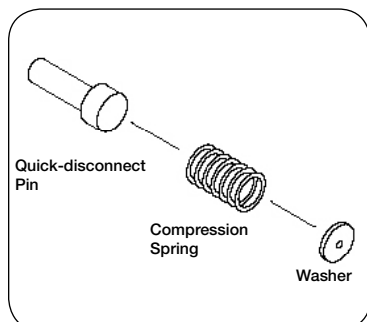
1. Dismantle guard (Figs. J1 - J3). Remove old cone (e.g. cut open with knife). Take off chain. Place neck of new cone in hot water (approx 80° C /180° F) and pull onto bearing housing (Fig. L1).
2. Turn guard cone into assembly position (Fig. L2). Further assembly instructions for guard (Figs. K1 - K5).
3. Reconnect chain if required (Fig. L3).



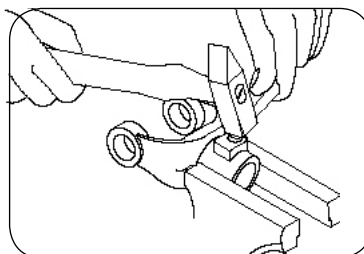
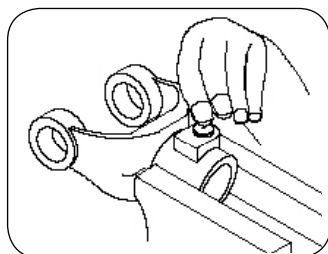
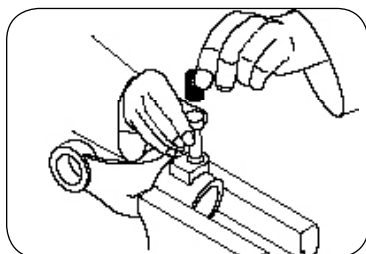
PTO Quick Disconnect

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.



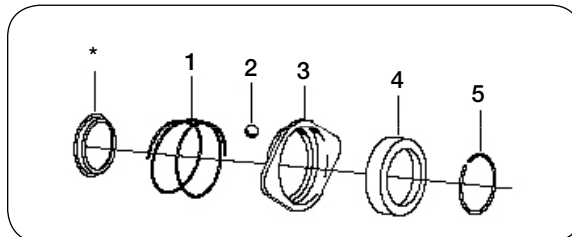
Insert quick-disconnect pin, compression spring and washer into hole, Holding the washer in place, peen the edges of the pore seat to retain the washer, spring and pin.



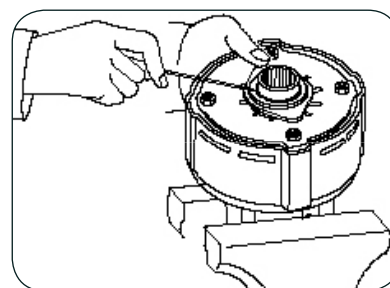
PTO Quick Disconnect (Continued)

Quick Disconnect Disassembly

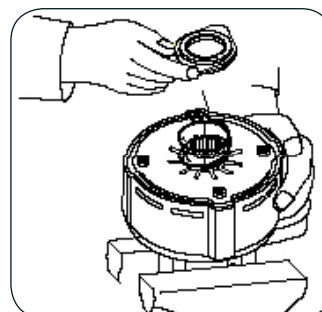
1. Compression Spring
2. Ball
3. Lock Collar
4. Back-up ring
5. Snap ring
 - * Back-up ring
 - * (For some clutch types, place additional back up ring first).



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

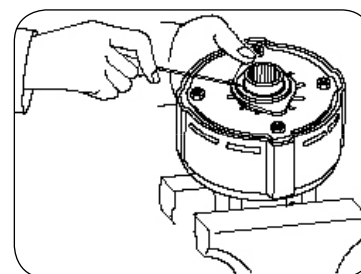
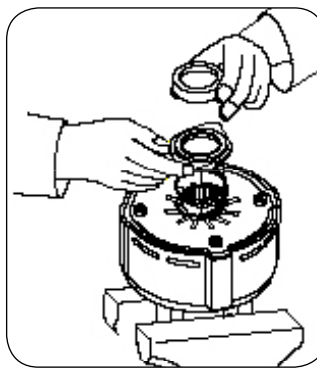
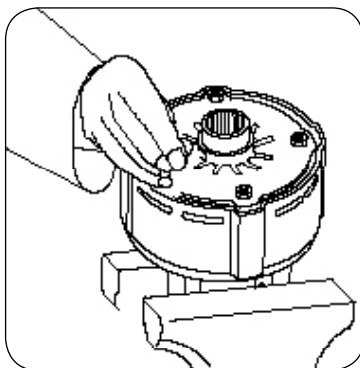


Remove back-up ring, lock collar, compression spring and balls.



Quick Disconnect Assembly

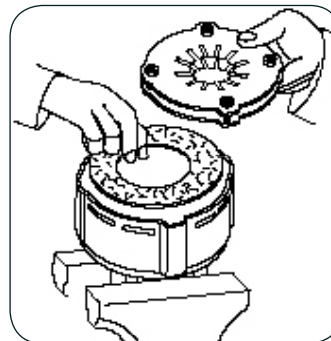
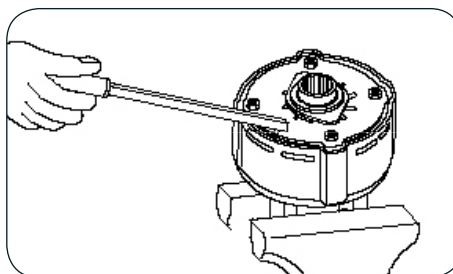
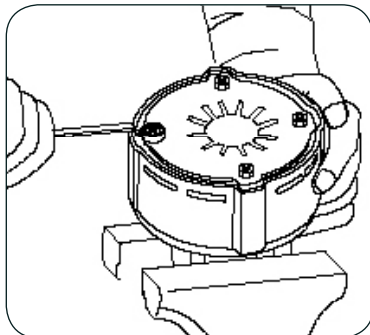
Insert balls. Place compression spring, lock collar and back-up ring onto the hub. Remove back-up ring, lock collar, compression spring and balls.



PTO Quick Disconnect (Continued)

Clutch Disassembly

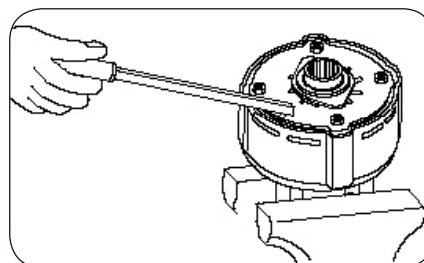
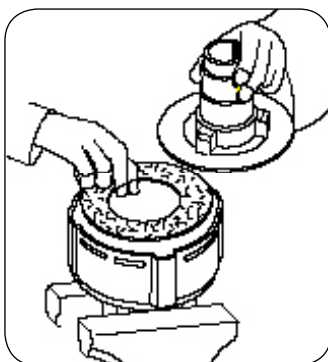
Tighten the four hex nuts (12) uniformly until the clutch pack and hub are loose. Use special tool 9002007 to bend all four retaining lugs back on the edge of the clutch housing. Remove the thrust plate with Belleville springs to get at the friction disks, drive plates and hub for inspection and service.



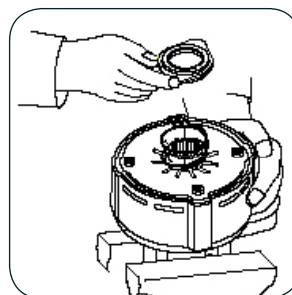
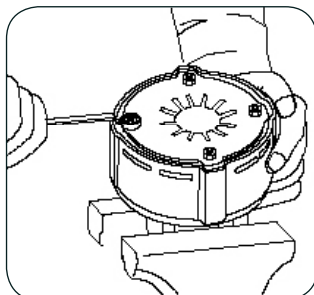
Clutch Assembly

Place hub and friction disks into the clutch housing. Note that items 8 and 9 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.



Auger Maintenance

Vertical Auger

Annually check all bolts, nuts and set screws. Perform lubrication as specified.

NOTE: The lower auger position is indexed from the drive dog/tube flange hinge surface, as shown.

Annually check all bolts, nuts and set screws. Perform lubrication as specified.

Annually check all bolts, nuts, and set screws. Perform lubrication as specified in Lubrication chart.

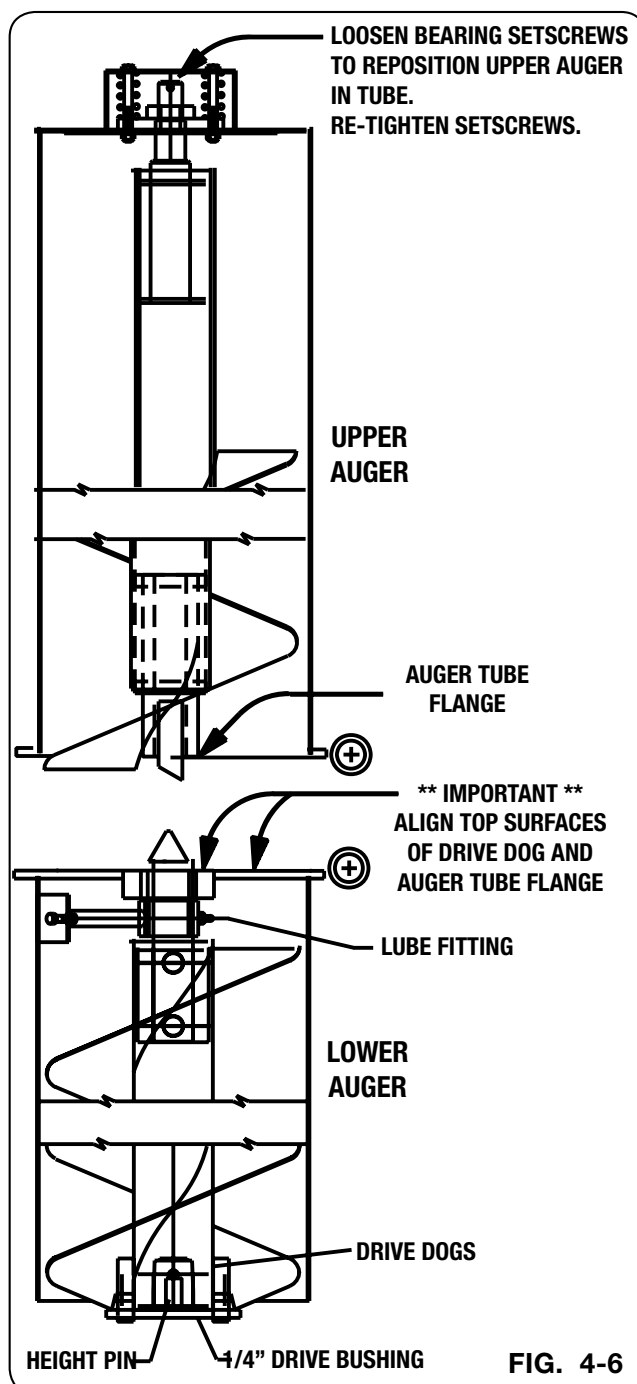


FIG. 4-6

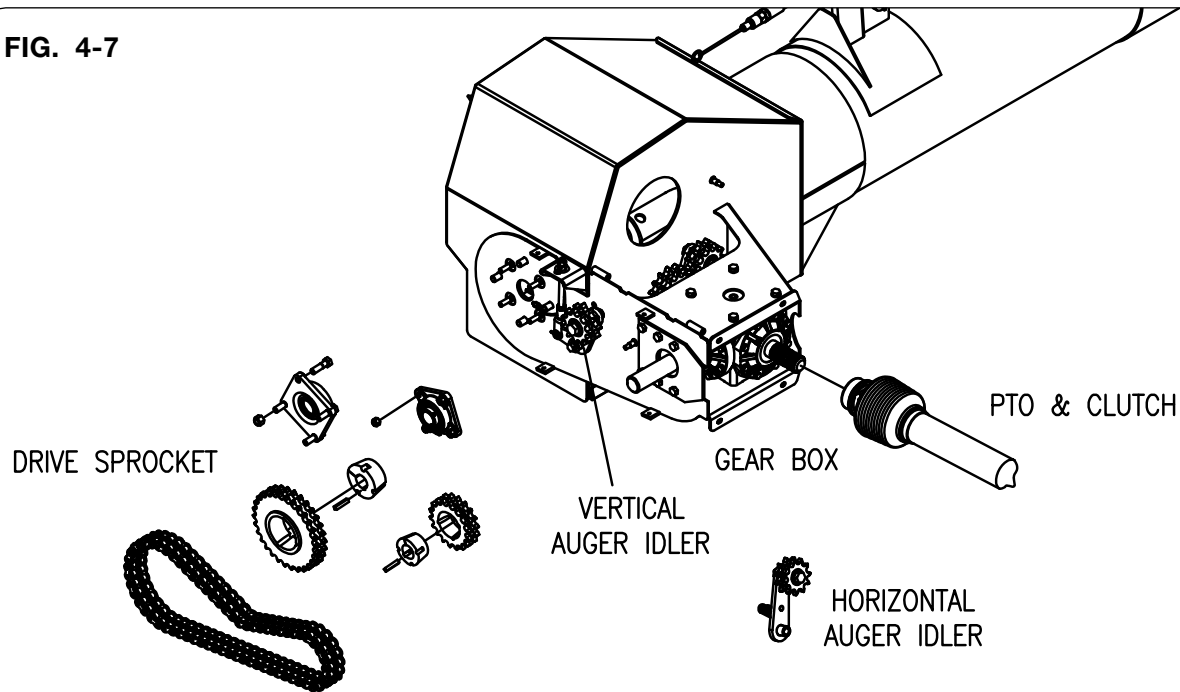
Auger Maintenance (continued)

Horizontal Auger

Annually check all bolts, nuts, and set screws. Perform lubrication as specified.

Auger Chain Drive

FIG. 4-7



Wheel, Hub and Spindle Disassembly and Assembly

WARNING

- TIPPING OR MOVEMENT OF THE MACHINE CAN CAUSE SERIOUS INJURY OR DEATH. BE SURE MACHINE IS SECURELY BLOCKED.
- 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 20,000 LBS. SPECIFIC LOAD RATINGS FOR INDIVIDUAL LOADS WILL BE GIVEN AT THE APPROPRIATE TIME IN THE INSTRUCTIONS.

CAUTION

- IMPROPERLY TORQUED WHEEL NUTS/BOLTS CAN CAUSE A LOSS OF IMPLEMENT CONTROL AND MACHINE DAMAGE. WHEEL NUTS/BOLTS MUST BE CHECKED REGULARLY. SEE TORQUE PAGE IN THE “MAINTENANCE” SECTION FOR PROPER WHEEL NUT/BOLT SPECIFICATIONS. WARRANTY DOES NOT COVER FAILURES CAUSED BY IMPROPERLY TORQUED WHEEL NUTS/BOLTS.

IMPORTANT

- *Remove only one wheel and tire from a side at any given time in the following procedure.*
1. Hitch cart to tractor. Park the empty cart on a firm, level surface. Set the tractor's parking brake, shut off engine and remove key. 
 2. With cart empty, use safe lifting device rated at 10 ton to support the weight of your grain cart. Place the safe lifting device under the axle closest to the tire.
 3. Use a 1 1/2 ton lifting device to support the wheel and tire during removal.
 4. Remove the hardware retaining the hubcap. Next, remove the hubcap, gasket, cotter pin, castle nut and spindle washer. Remove hub with bearings from old spindle using a 250 lb. lifting device.

Wheel, Hub and Spindle Disassembly and Assembly (cont)

5. Inspect the spindle and replace if necessary. If spindle does not need to be replaced, skip to Step 6; otherwise continue with Step 5.

Remove the bolt and lock nut that retains the spindle to the axle. Using a lifting device rated for 200 lbs, replace the old spindle with a new spindle. Coat axle contact length of spindle shaft (scale or non-scale) with anti-seize lubricant prior to installation. If installing scale spindle, install with 'top' decal facing upwards. Reuse bolt and lock nut to retain spindle to axle. Tighten as outlined in Maintenance Section.

6. Remove seal and inspect bearings, spindle washer, castle nut and cotter pin. Replace if necessary. Pack both bearings with approved grease and reinstall inner bearing. Install new seal in hub with garter spring facing the hub by tapping on flat plate that completely covers seal while driving it square to hub. Install until flush with back face of hub. Using a 250 lb rated lifting device, install hub assembly onto spindle. Install outer bearing, spindle washer and castle nut.
7. Slowly tighten castle nut while spinning the hub until hub stops rotating. Do not use an impact! Turn castle nut counterclockwise until the hole in the spindle aligns with the next notch in castle nut. Hub should spin smoothly with little drag and no end play. If play exists, tighten to next notch of castle nut. If drag exists, then back castle nut to next notch of castle nut. Spin and check again. Install cotter pin. Clean face for hub cap gasket and install gasket, grease filled hub cap and retain hubcap with hardware removed. Tighten hubcap hardware in alternating pattern.
8. Attach the wheel(s) and tire(s) to the hub using the same rated lifting device for removal. Tighten wheel nuts to appropriate requirements and recheck as outlined in the Wheel and Tire section of this manual.
9. Raise cart, remove safe lifting device and lower tire to the ground.

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
7/8-14 (UNF)	440 ft.-lbs.
M22x1.5	475 ft.-lbs.

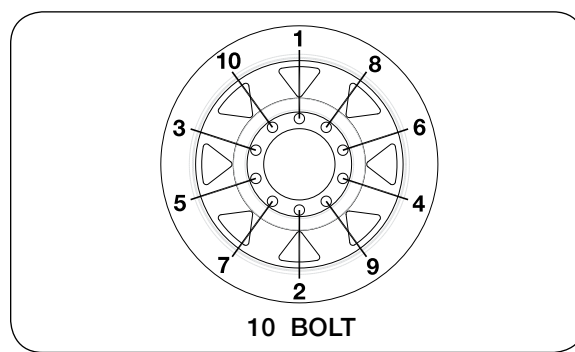


DIAGRAM 1

Wheels and Tires (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

Wheels and Tires (continued)

Tire Pressure (continued)

Tire Pressure for Grain Carts			
Tire Make	Tire Size	Load Index / Ply Rating	Max. PSI
Titan/Goodyear	23.1x26 R-3	10	26
	23.1x26 R-1	10	26
	24.5R32 R-1	169A8/B (5-Star)	48
	24.5x32 R-3	12	32
	24.5x32 R-1	12	32
	30.5x32 R-3	16	26
	30.5x32 R-3	14	22
	30.5x32 R-1	14	22
	480/80x42 R-1	166A8	23
	1100/45R46 F-1W	195D	35
Mitas	650/75R32 R-1W	172A8	58
	900/60x32 R-1W	176A8	41
	900/70R32 R-1W	188A8	53
	1050/50x32 R-1W	178A8	41
	1250/50R32 R-1W	188A8	41
	900/60x38 R-1W	181A8	44
	520/85x42 R-1W	162A8	44
	650/65x42 R-1W	168A8	44
Alliance	35.5LR32	193A8	44
	900/60R32 R-1W	192D	46
	1050/50R32 R-1W	185A8	63
	1250/50R32 R-1W	201B	46
Trelleborg	VF1050/50R32 R-1	198D	52
	900/50R32 R-1W	181A8	55
	900/60x32	176LI	44
	850/55R42 R-1W	161A8	32

*Each tire must be inflated to 35 PSI max to set the beads, deflated to 5-10 PSI and reinflated to the tire's max PSI.

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

Seasonal Storage

Always open flow door and auger cleanout doors to remove any remaining grain and to allow moisture to dry.

Wash machine inside and out before storing to remove dirt and debris that can draw and collect moisture. When using pressure washers maintain an adequate distance so not to force water into bearings.

Lubricate machine at all points outlined.

Repaint all areas where paint has been removed to keep from rust developing. Rust will affect grain flow.

Coat exposed cylinder piston rods with rust preventative material if applicable.

Inspect machine for parts that may need to be replaced so they may be ordered in the off season.

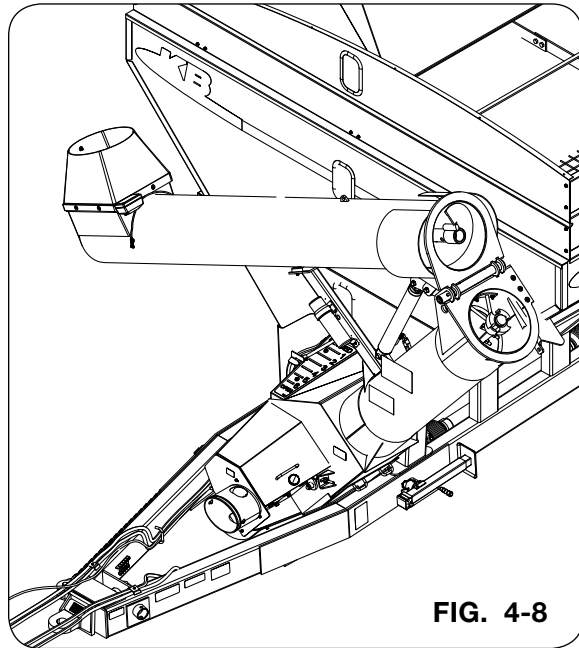
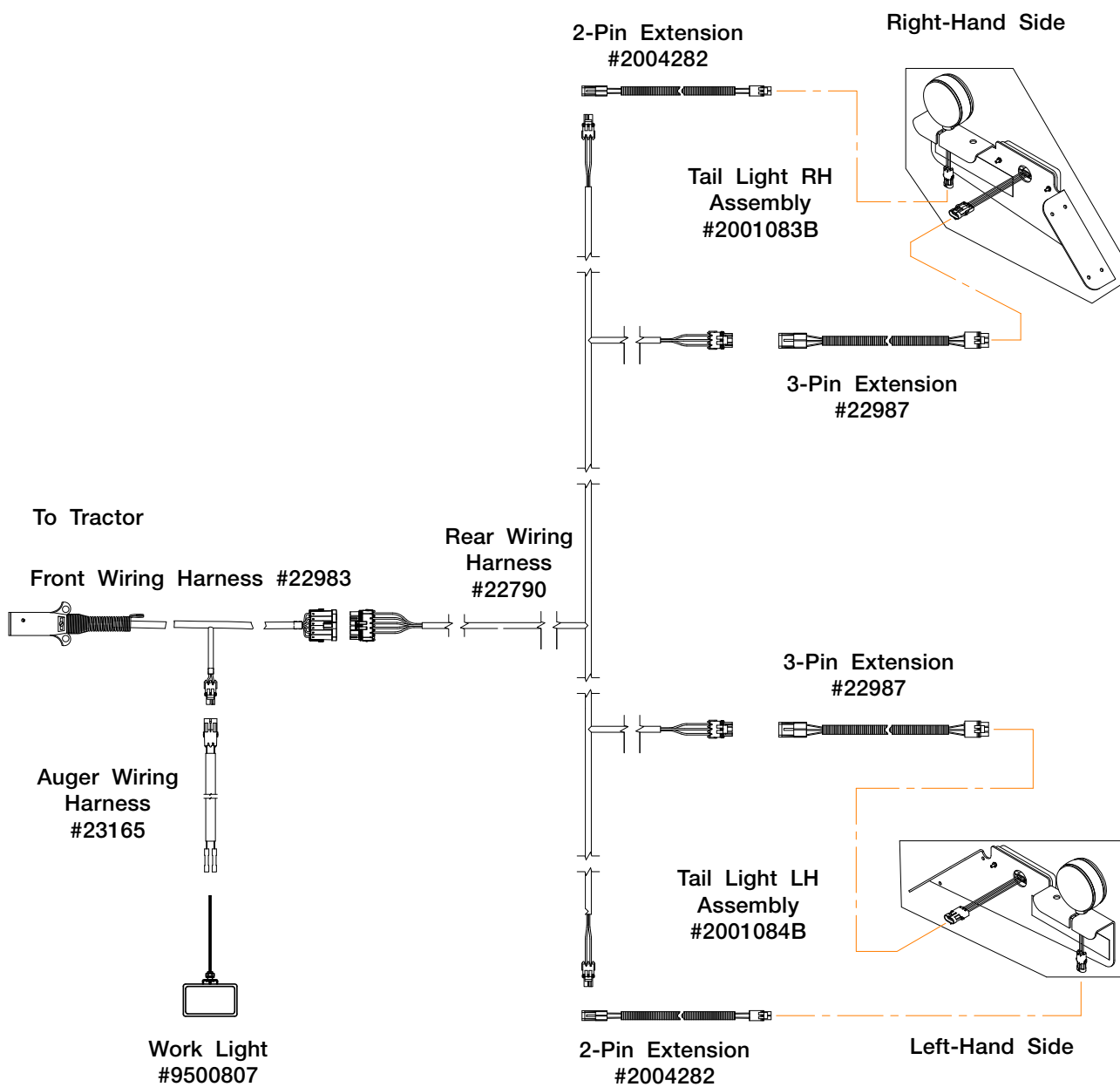
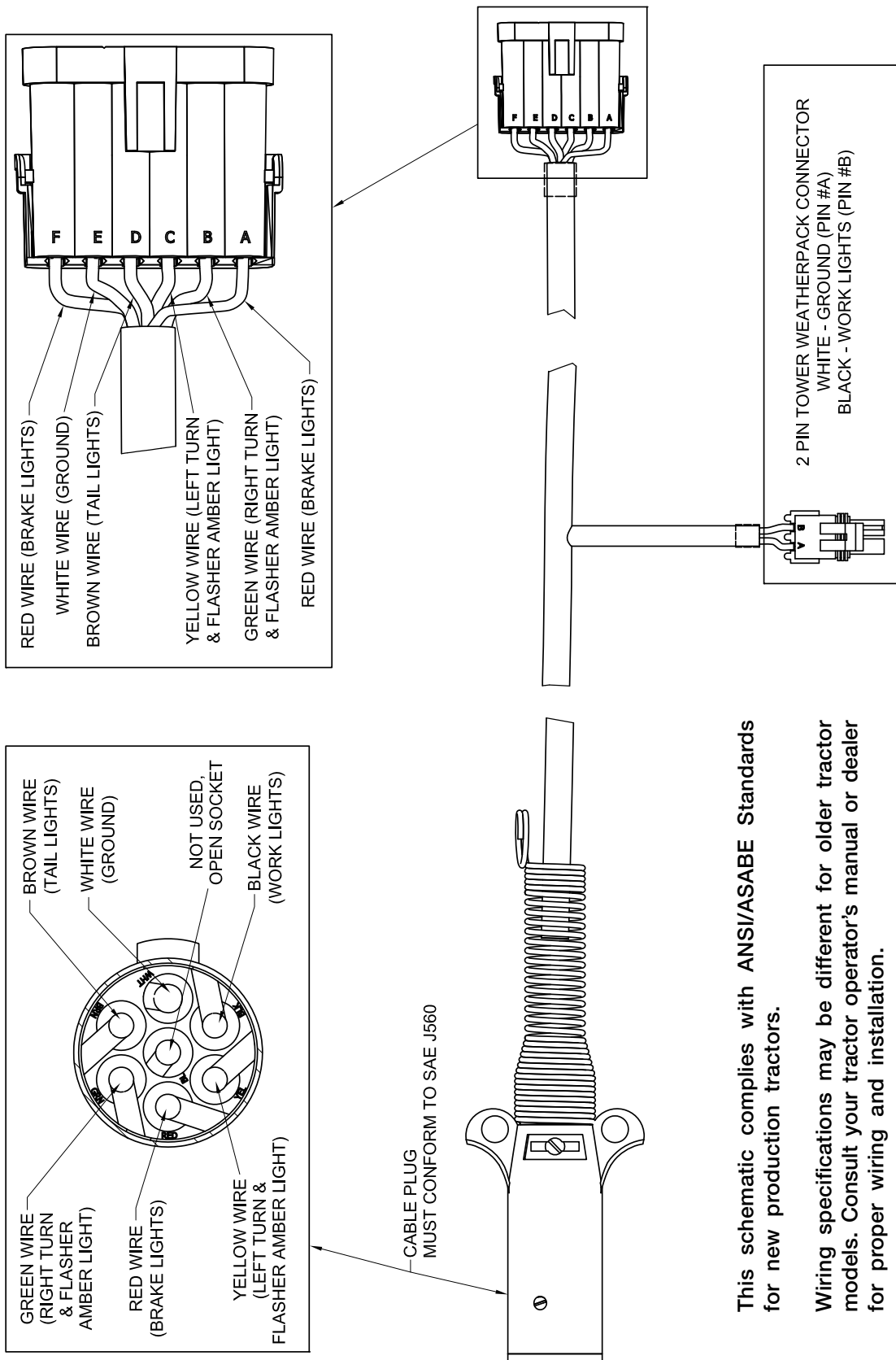


FIG. 4-8

Electrical Diagram — Lights



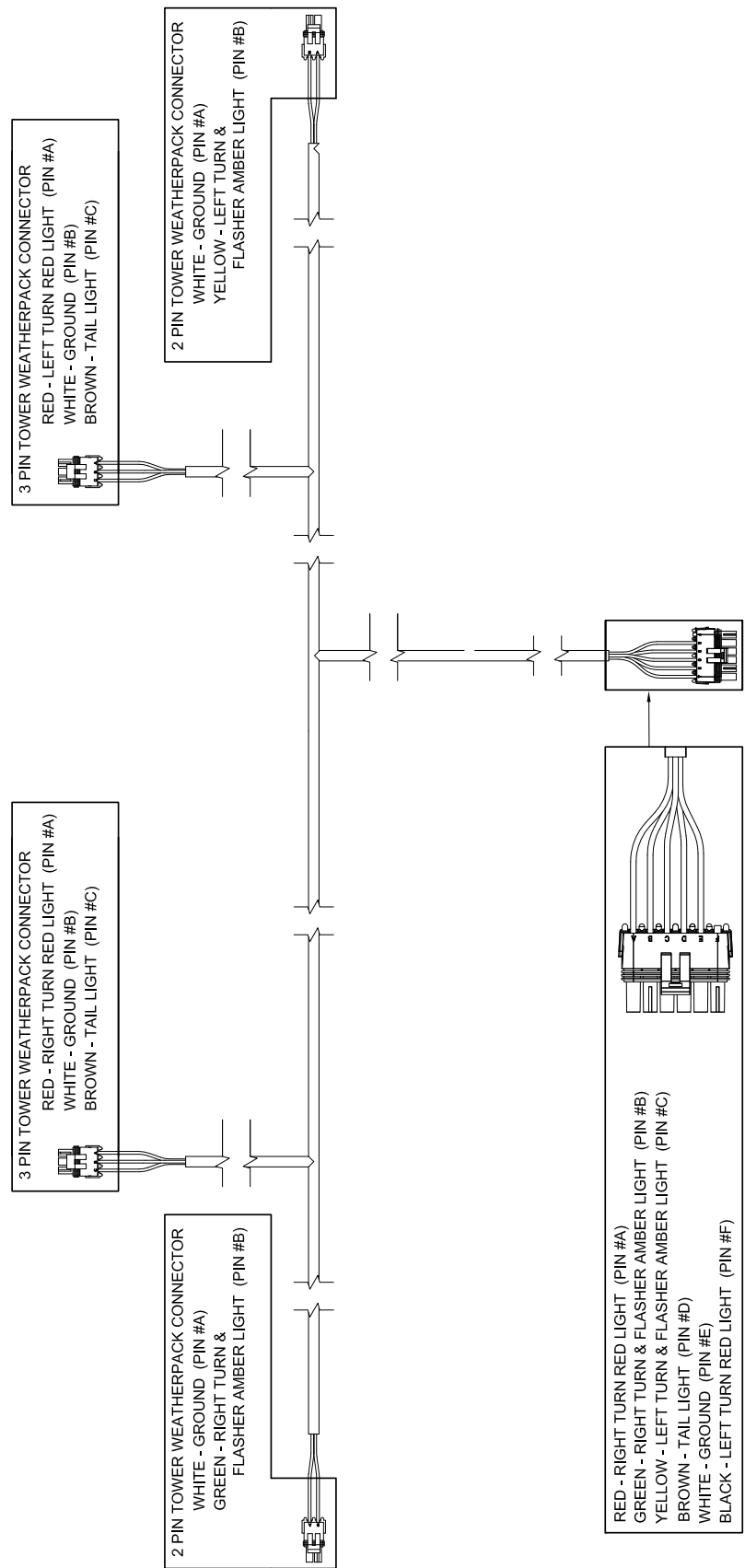
Electrical Diagram — Front Wiring Harness #22983



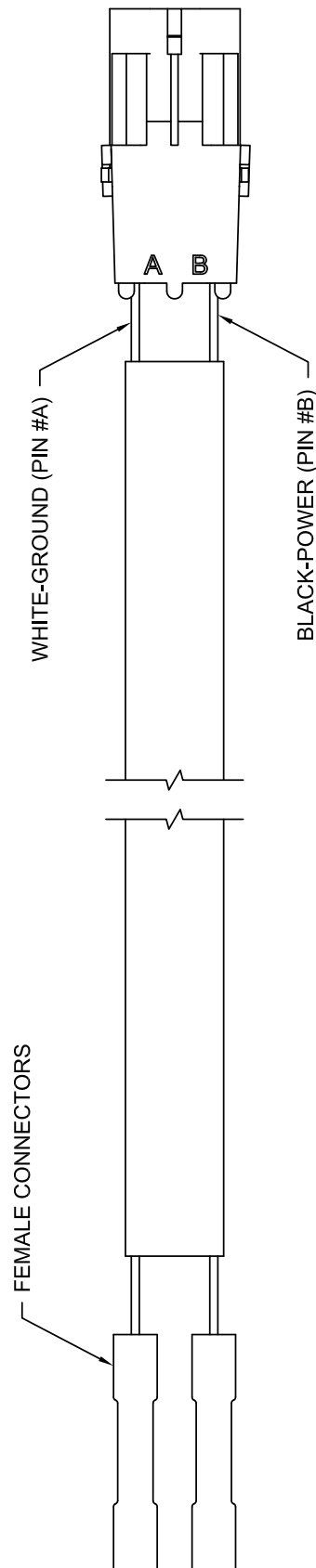
This schematic complies with ANSI/ASABE Standards for new production tractors.

Wiring specifications may be different for older tractor models. Consult your tractor operator's manual or dealer for proper wiring and installation.

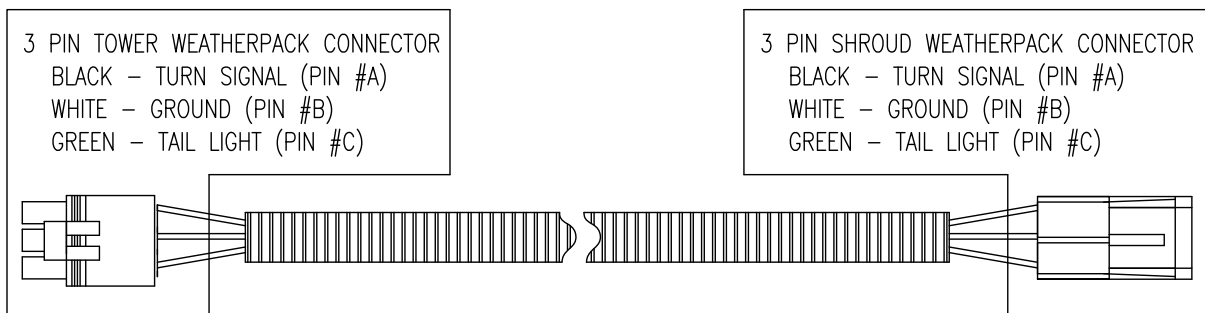
Electrical Diagram — Rear Wiring Harness #22790



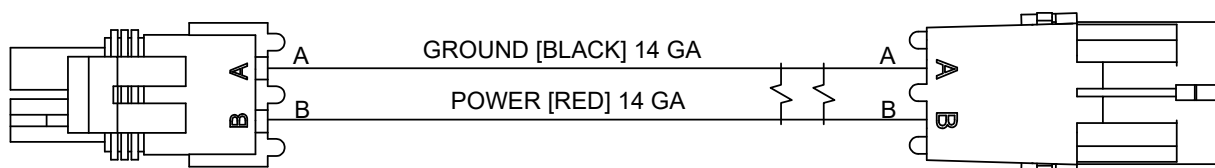
Electrical Diagram — Auger Light Wiring Harness #23165



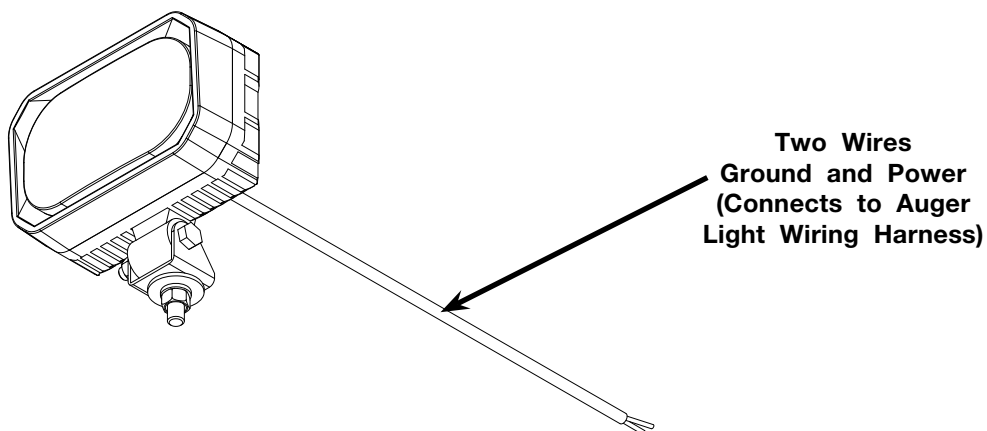
Electrical Diagram — 3 Pin Wiring Harness #22987



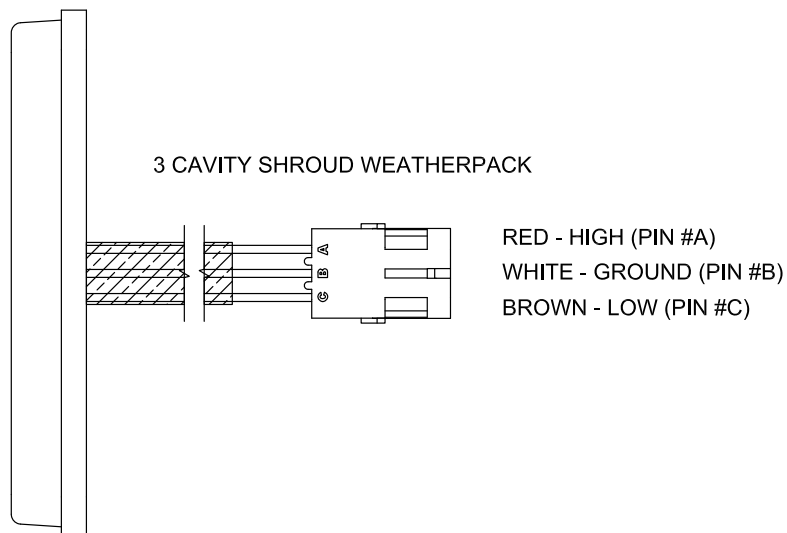
Electrical Diagram — Wiring Harness Extension #2004282



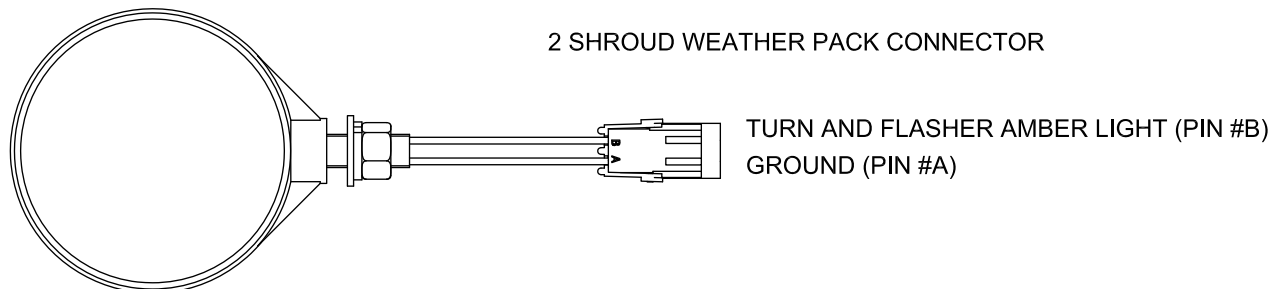
Electrical Diagram — Work Light #9500807



Electrical Diagram — Red Tail/Turn Light #9006282



Electrical Diagram — Amber Lamp Double Face #9005142



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	8-10	11-13
1/4-28	9-11	12-15
5/16-18	15-17	20-23
5/16-24	17-19	23-26
3/8-16	25-28	34-38
3/8-24	28-31	38-42
7/16-14	40-45	54-61
7/16-20	45-50	61-68
1/2-13	62-68	84-92
1/2-20	68-75	92-102
9/16-12	90-98	122-133
9/16-18	100-110	134-148
5/8-11	120-135	162-183
5/8-18	124-137	168-186
3/4-10	200-220	270-300
3/4-16	210-230	285-310
7/8-9	330-350	425-475
7/8-14	360-380	460-515
1-8	500-525	675-710
1-14	540-560	730-760
1 1/8-7	600-635	815-860
1 1/8-12	665-700	920-950
1 1/4-7	850-895	1150-1215
1 1/4-12	940-990	1275-1340
1 3/8-6	1125-1175	1525-1590
1 3/8-12	1280-1335	1735-1810
1 1/2-6	1500-1560	2035-2115
1 1/2-12	1685-1755	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	20-22	27-30
5/16-24	21-23	28-31
3/8-16	35-39	47-53
3/8-24	36-41	49-55
7/16-14	54-58	73-78
7/16-20	55-60	75-80
1/2-13	82-88	110-120
1/2-20	94-99	125-135
9/16-12	127-134	170-180
9/16-18	147-155	199-210
5/8-11	160-170	215-230
5/8-18	165-175	225-235
3/4-10	280-295	380-400
3/4-16	330-365	445-495
7/8-9	410-430	555-580
7/8-14	420-440	570-595
1-8	630-650	850-880
1-14	680-700	920-950
1 1/8-7	900-930	1220-1260
1 1/8-12	930-950	1260-1290
1 1/4-7	1250-1300	1695-1760
1 1/4-12	1280-1320	1735-1790

IMPORTANT

- Follow these torque recommendations except when specified in text.

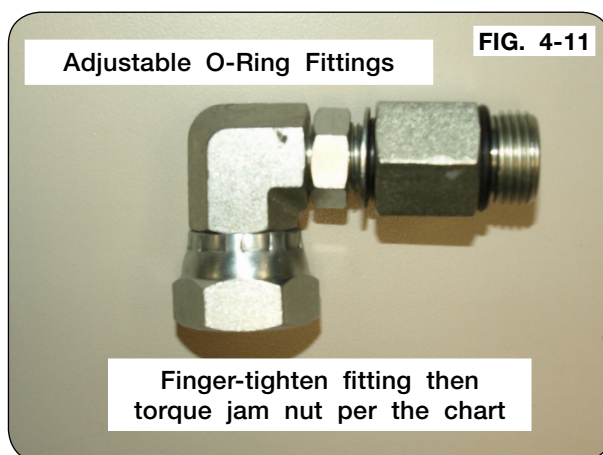
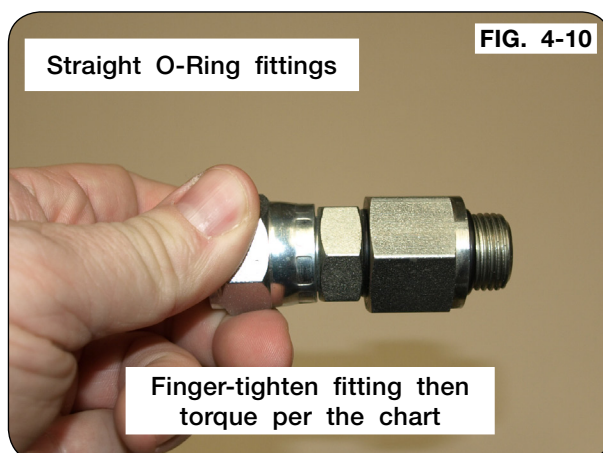
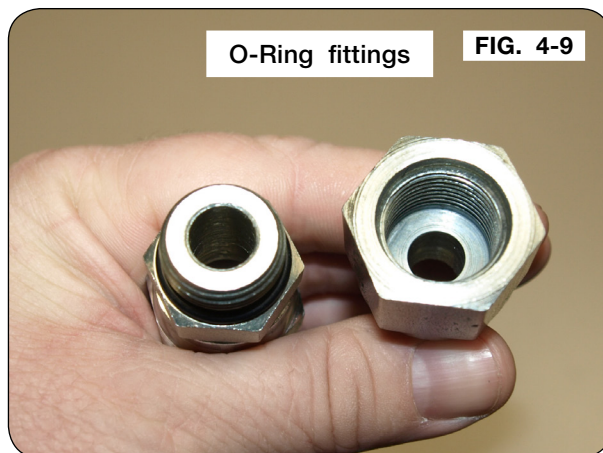
Hydraulic Fittings - Torque and Installation

Tightening O-Ring Fittings

1. Inspect components for damage or contamination. Do not connect any other type of fitting to an O-ring fitting.
2. For adjustable fittings, insure the jam nut and washer are fully backed up.
3. Lubricate the O-ring and threads on the fitting.
4. Turn the fitting into the port until it is finger tight.
5. For adjustable fittings, set in the desired position.
6. Using a wrench, torque the fitting to the value in the below table. For adjustable fittings the jam nut will be tightened.

NOTE: Never use a power tool to install a fitting.

Dash Size	Thread Size	Straight Stud Torque (Ft-Lbs)	Adjust-able Stud Torque (Ft-Lbs)
-5	1/2-20	14-19	10-14
-6	9/16-18	18-24	12-16
-8	3/4-16	27-43	20-30
-10	7/8-14	36-48	30-36
-12	1-1/16-12	65-75	44-54
-14	1-3/16-12	75-99	53-70
-16	1-5/16-12	85-123	59-80
-20	1-5/8"-12	115-161	75-100
-24	1-7/8"-12	125-170	105-125



Hydraulic Fittings - Torque and Installation (continued)

Tightening JIC Fittings

1. Inspect all components for damage or contamination. Do not connect any other type of fitting to a JIC fitting.
2. Lubricate the threads.
3. Turn the fitting into the port until it bottoms out.
4. Use one wrench on the fixed hex on the hose to prevent twisting and a second on the swivel. Tighten the fitting another 60 degrees (or one flat)

NOTE: Never use a power tool to install a fitting.

