

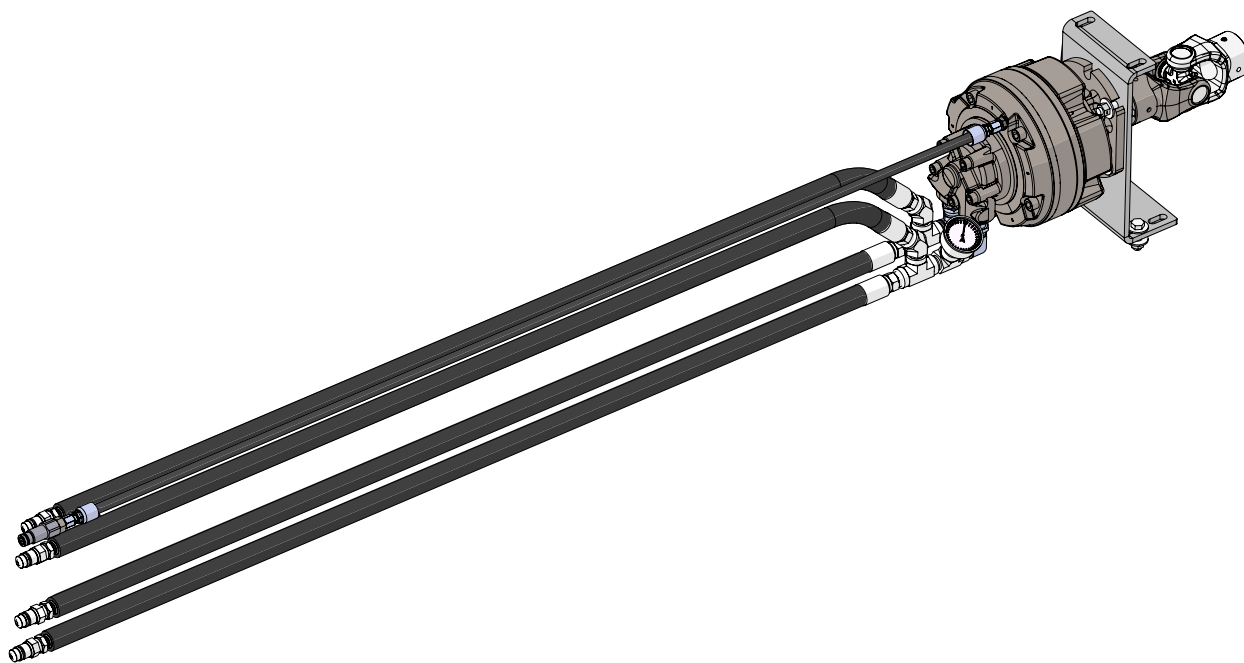


Service Manual

GRAIN CART

Hydraulic Drive Kit

70 Gallon Radial Piston Hydraulic Motor



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General Information

TO THE OWNER:

The purpose of this manual is to assist you in operating and maintaining your Hydraulic Motor in a safe manner. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance and help maintain safe operating conditions. If this machine is used by an employee or is loaned or rented, make certain that the operator(s), prior to operating:

1. Is instructed in safe and proper use.
2. Reviews and understands the manual(s) pertaining to this machine.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol (a triangle with an exclamation mark) to indicate the degree of hazard for items of personal safety. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.



This Safety-Alert symbol indicates a hazard and means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed.



CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

IMPORTANT

Indicates that failure to observe can cause damage to equipment.

NOTE

Indicates helpful information.

Bolt Torque Chart

Always tighten hardware to these values unless a different torque or tightening procedure is listed for specific application. Fasteners must always be replaced with the same grade as specified in the manual parts list. Always use the proper tool for tightening hardware. Make sure fastener threads are clean and you start thread engagement properly. **Use these values when tightening all bolts and nuts with the exception of wheel nuts.**

SAE Fasteners

Coarse Thread Series				
	Grade 5		Grade 8	
<i>Diameter and Pitch (Inches)</i>	<i>Dry</i>	<i>Oiled</i>	<i>Dry</i>	<i>Oiled</i>
1/4"-20	8 ft-lbs	6 ft-lbs	12 ft-lbs	9 ft-lbs
5/16"-18	17	13	25	18
3/8"-16	30	23	45	35
7/16"-14	50	35	70	55
1/2"-13	75	55	110	80
9/16"-12	110	80	150	110
5/8"-11	150	110	220	170
3/4"-10	260	200	380	280
7/8"-9	430	320	600	460
1"-8	640	480	900	680
Fine Thread Series				
<i>Diameter and Pitch (Inches)</i>	<i>Clamp Load (Lbs.)</i>	<i>Tightening Torque</i>	<i>Clamp Load (Lbs.)</i>	<i>Tightening Torque</i>
1/4"-28	10 ft-lbs	7 ft-lbs	14 ft-lbs	10 ft-lbs
5/16"-24	19	14	29	20
3/8"-24	35	25	50	40
7/16"-20	55	40	80	60
1/2"-20	90	65	120	90
9/16"-18	120	90	170	130
5/8"-18	180	130	240	180
3/4"-16	300	220	420	320
7/8"-14	470	360	660	500

Safety Information



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be erased by an operator's single careless act. In addition, hazard control and accident prevention are dependent upon the awareness, concern, judgment, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Make certain that the operator(s), prior to operating is instructed in safe and proper use and reviews and understands the manual(s) pertaining to this machine.

Read this manual before you operate this machine. If you do not understand any part of this manual, or need more information, contact the manufacturer or your authorized dealer.

SAFETY

IMPORTANT - Make sure that all power is shut off before installing the hydraulic drive.

Installation work to be performed by qualified servicemen only. Please refer to your operator's manual for additional safety information.

Understand that your safety and the safety of other persons is measured by how you service, and operate this machine. Know the positions and functions of all controls before you try to operate them. Make sure to check all controls in a safe area before starting your work.

Never adjust, service, clean, or lubricate Hydraulic Drive Motor until all power is shut off.

Keep all safety shields in place.

Keep hands, feet, hair and clothing away from moving parts while unit is in operation.

Make sure that everyone is clear of equipment before applying power or moving the machine.

Make sure that the implement is fastened securely to the tractor by using the proper hitch pin, clip and safety chains.

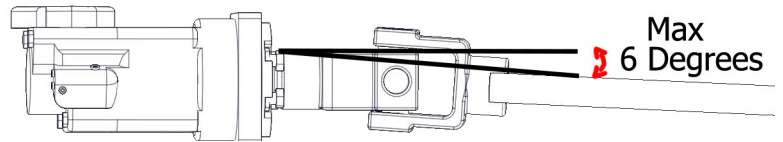
Avoid high pressure fluids. Escaping fluid under pressure can penetrate the skin causing serious injury. Always relieve pressure before disconnecting hydraulic lines. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands. Keep all components in good repair.

 **CAUTION - The maximum pressure on the hydraulic motor is not to exceed 3,000 psi.**

Mounting the Hydraulic Motor

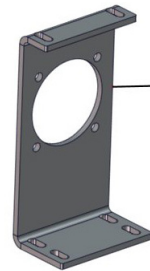
1. Remove the driveline shield
2. Remove the PTO from the driveline. Keep half-moon key.
3. Decide which orientation of the universal motor mount is needed.

NOTE - Use the orientation of the motor mount that will give the hydraulic motor drive-shaft, and the grain cart's driveline a less than 6° difference.



4. Using (2) 1/2" x 1" hex bolts and (2) 1/2" lock nuts attach the motor mounts to the grain cart.
NOTE - Bends on universal motor mount needs to go to the inside. Picture shown on page 8.
5. Attach the motor to the driveline using the 1/2" key and set screws provided in the kit and half-moon key on the drive shaft. Tighten the two set screws on the U-joint.
6. Attach the motor to the motor mounts. Use (4) 1/2" x 1-3/4" hex bolts and (4) 1/2" lock nuts.
7. Double check all of the hardware used to install the hydraulic motor. Make sure all the hardware is tightened.
8. Reinstall the driveline shield.
9. Remove plastic plugs from the supply ports, return ports, and case drain ports.
10. Assemble and install all supply port hoses and fittings. Use pipe tape on all pipe thread fittings.
11. Assemble and install all return port hoses and fittings. Use pipe tape on all pipe thread fittings.
12. Fill motor with hydraulic oil through the case drain port, failure to do so will result in motor damage.
13. Assemble and install all case drain port hoses and fittings.

*The universal mount can be rotated 180° to fit your hydraulic motor.



Hydraulic Drive Kit Information

ALWAYS CONNECT
Case Drain First
Motor Return Second
Supply Pressure Last

ALWAYS DISCONNECT
Supply Pressure First
Motor Return Second
Case Drain Last

IMPORTANT

- The warranty will be voided if the case drain is teed into the motor return, the case drain must be connected to a zero pressure coupler on the tractor.
- Standard case pressure is 15psi continuous, 75psi peak.
- Prior to initial startup, remove the case drain hose from the motor and fill with hydraulic oil; failure to do so will result in motor damage.
- Always install the motor as shown on page 8 with the case drain hose oriented to the top of the motor, to ensure sufficient oil in the casing for lubrication of the shaft bearing.

NOTE - Running the motor at a lower Gallons Per Minute Rate than the minimum GPM from above will NOT hurt the motor. It will only slow the unload rate.

Operation

Be sure to use SAE 10W40 or SAE 5W30 oil or tractor hydraulic fluid with high levels of zinc anti-wear additives (reference the owner's manual for your tractor).

IMPORTANT - Type A, F, or Dextron transmission fluid must NOT be used. Hydraulic oil must never exceed 180° Fahrenheit. For optimum performance use 5 to 25 micron filtration on system.

Break In Period - Before placing the hydraulic motor into service, run the system at 1/2 speed under no load for 15 minutes.

See page 6 for initial set-up instructions specific to the SAI Hydraulic Motor.

 **CAUTION - Before operating the hydraulic drive, ensure everyone is clear of the equipment before applying power. Operate the hydraulic drive from a safe distance. Keep hands, feet, and clothing away from moving parts while the unit is in operation.**

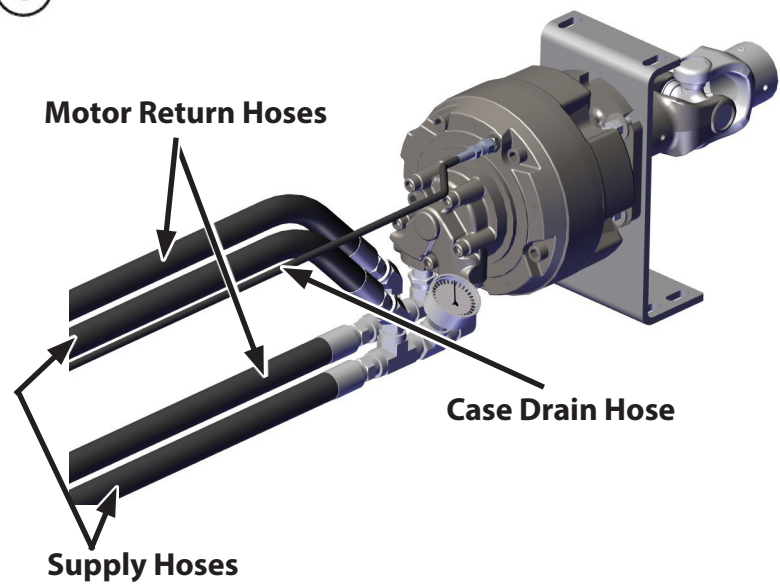
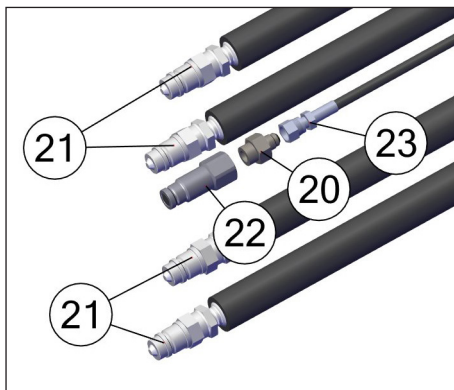
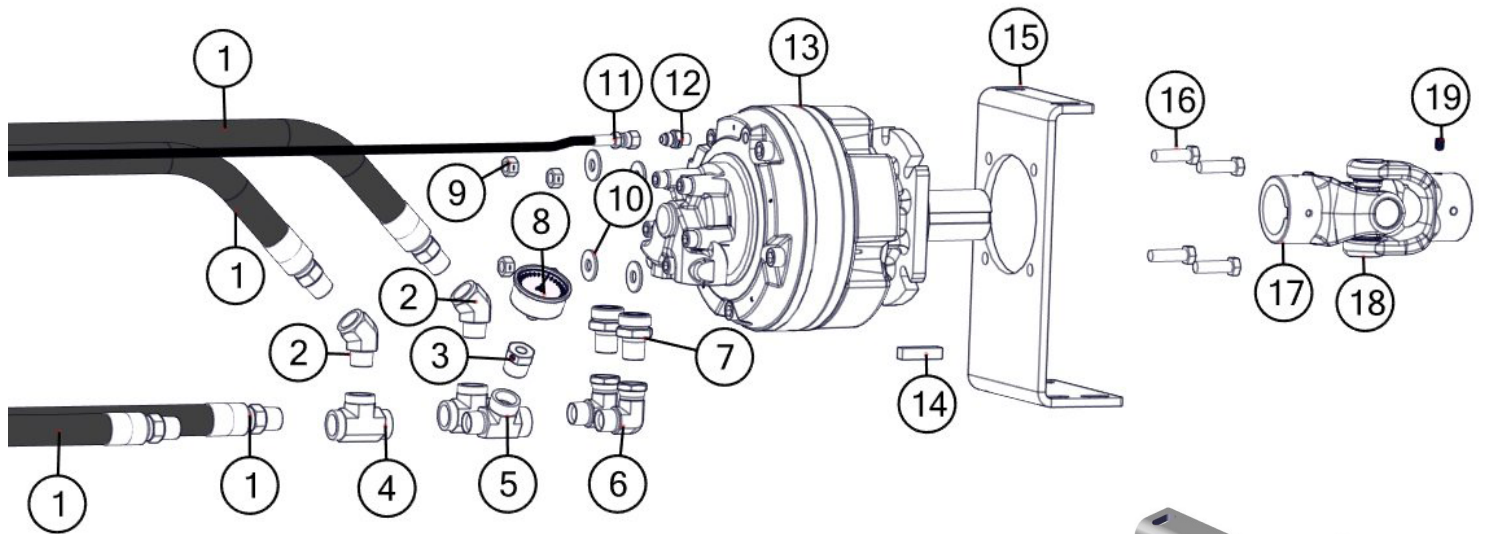
Loading and Unloading

- Before filling the grain cart, make certain the gate indicator is in the closed position.
- Fill the grain cart with grain.
- After the cart is filled and ready for unload, position the auger to the upright position (follow the instructions in the grain cart owner's manual).
- Engage the hydraulic drive (start at idle speed and increase to operating speed).
- Slowly open the inner gate while checking the pressure gauge on the hydraulic motor. Once the pressure gauge reading is between 1800 and 1900 psi, discontinue opening the gate (pressure is low under no load).

NOTE - The size of the gate opening allowed and the unloading time will vary depending on the type of grain, moisture content, quality of the grain and the GPM delivery of the tractor.

- Follow your grain cart owner's manual for details on complete clean out. Once the grain has been unloaded from the tank of the grain cart, disengage the hydraulic drive and return the auger to the lowered position.

Parts List for Radial Piston Hydraulic Motor



Parts List for Radial Piston Hydraulic Motor

#	Description	Part. No.	Qty.
1	3/4" x 66" Hydraulic Hose 66inch12G2-12G-8MP-12G-12MP	JM0020521	4
2	3/4" Male NPT x 3/4" Female NPT x 45 deg el	JM0010139	2
3	3/4" Male NPT x 1/4" Female NPT Reducer	JM0010136	1
4	3/4" Tee	JM0010138	2
5	3/4" Male Run Tee	JM0010140	1
6	3/4" Male NPT x #12 Female JIC x 90 Deg	JM0010135	2
7	#12 Male JIC x #16 Male O-Ring Straight	JM0010144	2
8	PSI Gauge 4000	JM0010158	1
9	1/2"-13 Gr5 Z Centerlock Hex Nut	JM0001511	6
10	1/2" USS Flat Washer	JM0003082	8
11	3/8" x 72" Hydraulic Hose 72inch6M3K-6G-6FJX-6G-6FJX	JM0049157	1
12	3/8" Male JIC x 1/4" Male BSPP; Straight	JM0041137	1
13	SAI Radial Piston Hyd Motor	JM0041132	1
14	1/2" x 1/2" SQ x 2" LG Key	JM0047378	1
15	Universal Hydraulic Motor Mount 13-19/32" x 7"	JM0029820	1
16	1/2"-13 X 1-3/4" Gr5 Z Hex Bolt	JM0002101	6
17	44R U-Joint 2-1/4" to 1-3/4"	JM0026840	1
18	Cross Kit (U-Joint) (44R) (CK-44R)	JM0017958	1
19	3/8"-16 x 1/2" Hex Head Set Screw	JM0019044	1
20	3/8" Male JIC x 1/2" Male O-ring; Straight	JM0010302	1
21	1/2" Female NPT Pioneer (PQC-1)	JM0018254	4
22	FF-372-8FO Parker Nipple Coupler	JM0041156	1
23	1/4" Hose x #6 Female JIC Swivel; Straight, Crimp	JM0041145	1