

Operation & Maintenance Manual



Power PackTM

Hydraulic Power Unit

HP15, HP20, HP24

For

Tractors with 30-75 PTO HP



Read this Manual Before Use

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REFERENCE INFORMATION

Write the correct information for your attachment in the spaces below. Always refer to this serial number when calling for service or parts.

Serial Number..... _____

YOUR ATTACHMENTS DEALER

ADDRESS: _____

PHONE: _____

CONTACT: _____

NOTE: *Quick Attach Attachments LLC reserves the right to make improvements in design or changes in specifications at any time without notice and without incurring any obligations to install them on units previously sold.*

SAFETY

DO NOT use or perform maintenance on this machine until this manual has been read and understood. In addition, read the Operation and Maintenance Manual(s) pertaining to the attachment and the attachment carrier (“Tractor”).

The user is responsible for inspecting the machine daily, and for having parts repaired or replaced when continued use of the machine would cause damage, excessive wear to other parts or make the machine unsafe for continued operation.

If an operating procedure, tool device, maintenance or work method not specifically recommended is used; you must satisfy yourself that it is safe for you and others. You must also ensure that the attachment will not be damaged or made unsafe by the procedures you choose.

Quick Attach Attachments LLC cannot anticipate every possible circumstance that might involve potential hazard. The safety messages found in this manual and on the machine are therefore not all inclusive.

The signal words **CAUTION**, **WARNING**, or **DANGER** are used to indicate hazards.

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

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ DANGER Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.

The word **IMPORTANT** is used in the text when immediate damage will occur due to improper technique or operation.

The word **NOTE** is used to convey information that is out of context with the manual text; special information such as specifications, techniques, reference information, and other information of a supplementary nature.

Improper operation can cause serious injury or death.

Pre-operation

- This attachment is designed to generate continuous hydraulic flow to run attachments mounted on the front of a tractor only. **NEVER** use this machine for any other purpose.
- Read the operators manual for the “Tractor”. **NEVER** allow untrained people to operate.
- Operating instructions must be given to everyone before operating this attachment and at least once a year thereafter in accordance with OSHA regulations.
- **NEVER** exceed the maximum recommended input power or speed specifications for the attachment. Over-powering or over-speeding the attachment may cause personal injury and/or machine damage.
- **NEVER** use machine with an attachment that is heavier than the rated lift capacity of the tractor. Instability can lead to serious injury or death.
- Keep all shields, guards, and covers in place.
- Do not modify equipment or add attachments that are not approved by Quick Attach Attachments LLC.
- Use adequate safety warning lights and devices as required by local regulations. Obey all local laws and regulations regarding machine operation on public property.
- Only use attachment with a tractor equipped with a Roll Over Protection System (ROPS) and seatbelt.

Operation

- Avoid loose fitting clothing. Clothing caught in moving parts may lead to serious injury or death.
- To protect the operator from hearing loss, ear protection is required unless the tractor is equipped with a noise reduction cab that meets OSHA 1910.95 standard.
- Hydraulic connections may be hot after use. Use gloves if connecting or disconnecting after use.

Operation

- Check and be sure all operating controls are in neutral before starting the engine.
- Keep people away from tractor and attachment when in use.
- **NEVER** operate near embankments or terrain that is so steep that rollover could occur.
- Always stay in the operator position with seatbelt fastened when using the attachment.
- Before leaving the operators position, disengage PTO drive, stop engine, set park brake, and wait for all motion to stop.
- **NEVER** place hands near attachment while engine is running.

Avoid High Pressure Fluids Hazard



- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving the pressure before disconnecting hydraulic lines.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks. Wear protective gloves and safety glasses or goggles when servicing or performing maintenance on hydraulic systems.
- If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

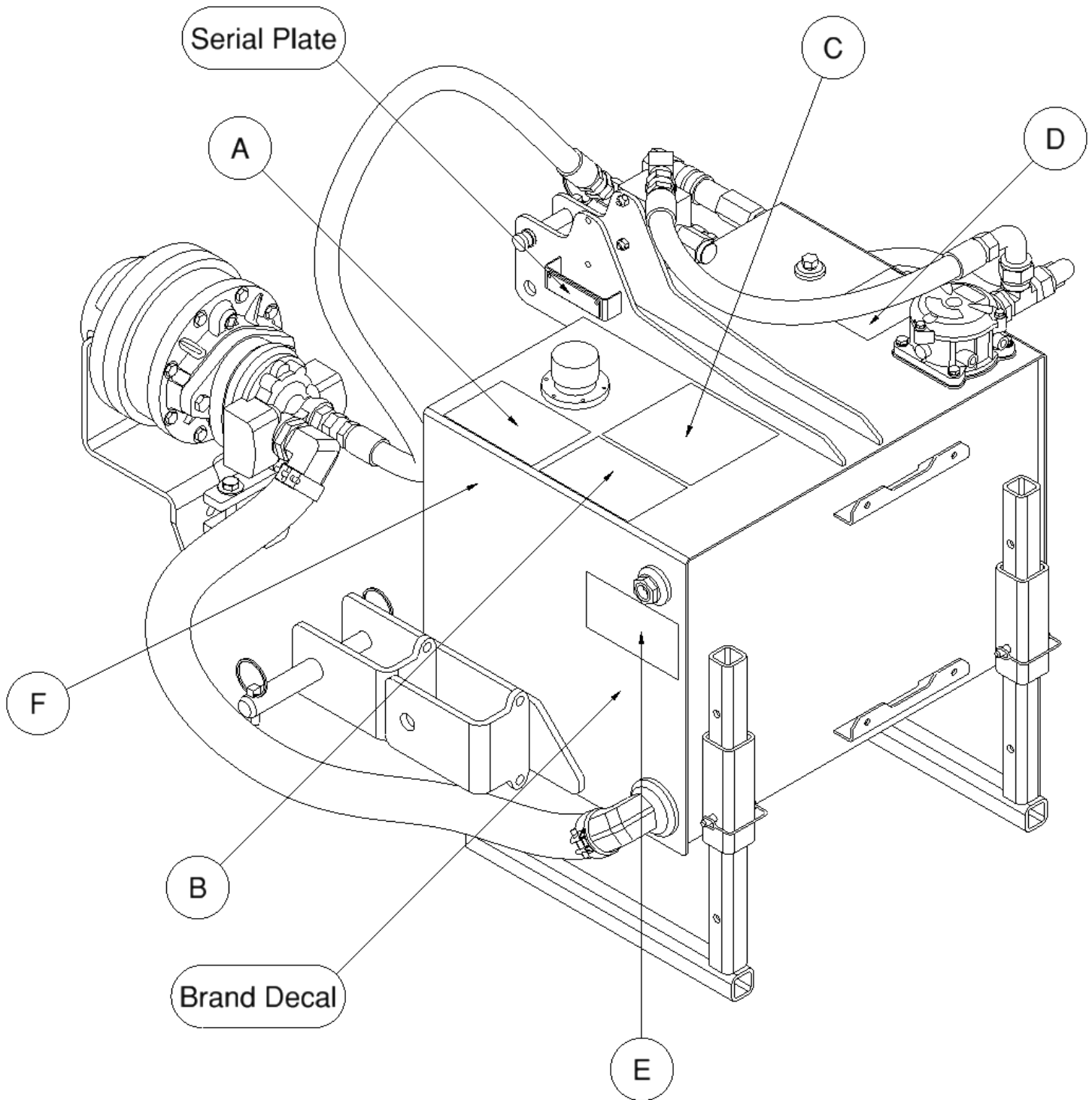
Maintenance

- **NEVER** make adjustments, lubricate, clean, or perform any service on the machine while it is in operation.
- Make sure the attachment is serviced on a daily basis. Improper maintenance can cause serious injury or death in addition to damage to the attachment and/or your equipment.

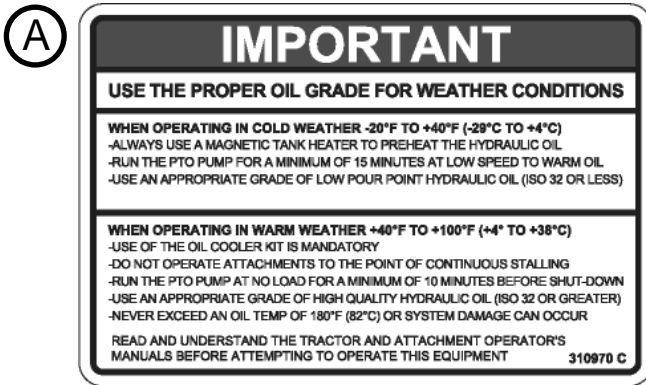
SERIAL NUMBER AND SAFETY DECAL LOCATIONS

Serial Number Location:

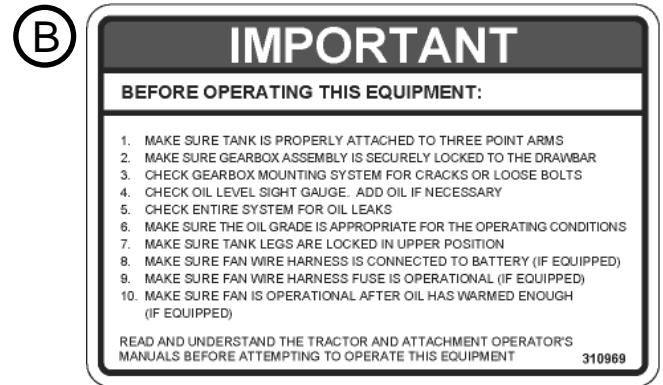
It is important to refer to the serial number of your attachment when making repairs or ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use different procedures in doing a specific operation.



SERIAL NUMBER AND SAFETY DECAL LOCATIONS



Part Number: 310970
Location: Top of tank
Quantity: 1



Part Number: 310969
Location: Top of tank
Quantity: 1



Part Number: 310959
Location: Top of tank
Quantity: 1



Part number: 200001
Location: Top of tank
Quantity: 1



Part Number: 300447
Location: Both sides of tank
Quantity: 2

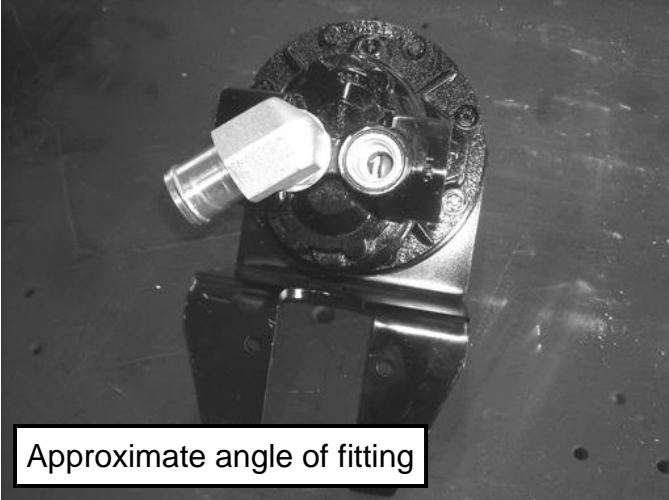
Model Number Decal
Part Number: 320765 (HP15)
320766 (HP20)
320767 (HP24)
Location: Both sides of tank
Quantity: 2

Small Brand Decal
Location: Both sides of tank
Quantity: 2

Safety Decal Locations:
 The locations of the safety decals are shown. If these decals are missing, damaged, or painted over they must be replaced. Call Quick Attach Attachments LLC (320-759-1551) for replacement decals.

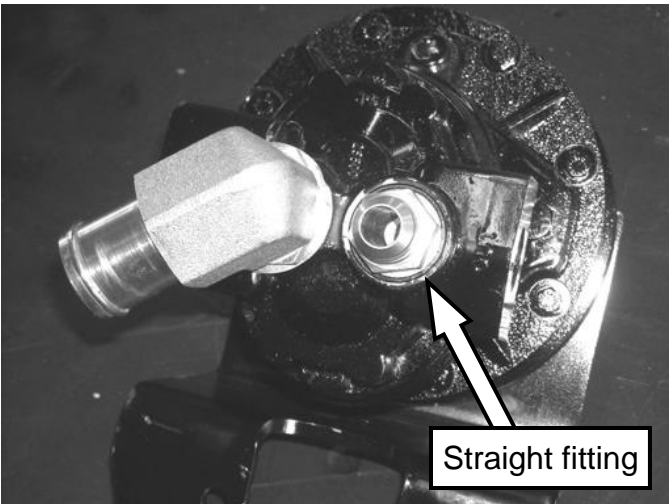
SET-UP ASSEMBLY

After uncrating the unit, use the following instructions to assemble to PTO power unit.



1. Install the #20MB elbow into the pump by hand until it is somewhat snug as shown. Do not tighten this fitting until after all hoses are connected and the pump unit is installed on the tractor PTO.

IMPORTANT: Take care not to introduce foreign material into the fittings, hoses, or pump ports when assembling. Dirt and debris can lead to system malfunctions or failure.



2. Install the 12MB-12MJ straight fitting as shown and tighten to maximum 80 ft-lb.

IMPORTANT: Confirm that there is oil in the gearbox by removing the plug and visually inspecting it. If no oil is found in the gearbox, fill it with 80W-90 gear lube through the top plug. Fill until 1/3 to 1/2 full (approximately 17 oz.). The gearbox is fully sealed so there is no need for a vent. Be sure to reinstall the plug when filling is complete.

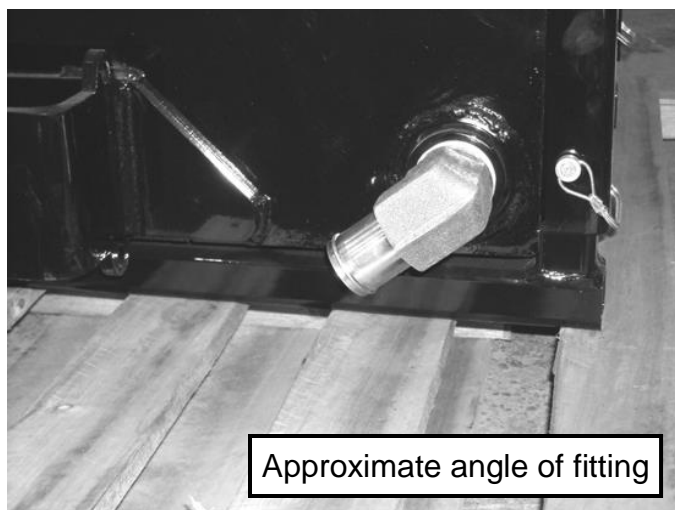


3. Apply Teflon thread tape to the #24 NPT elbow as shown.

SET-UP ASSEMBLY

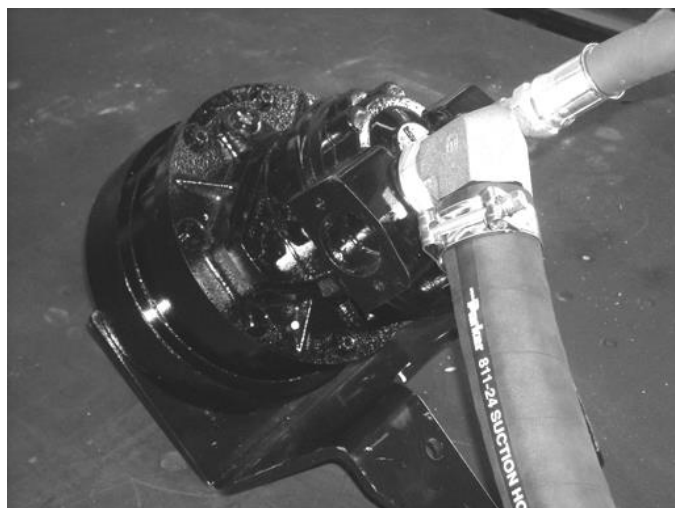
4. Install the #24 NPT elbow in the tank. Tighten to approximately the angle shown. Tighten to maximum 125 ft-lb.

IMPORTANT: It is best for this hose to hang at a downward angle so there is no chance of air in the inlet hose starving the pump of oil. Be sure to raise the tank fully before attempting to operate the pump. Oil starvation can lead to pump damage.

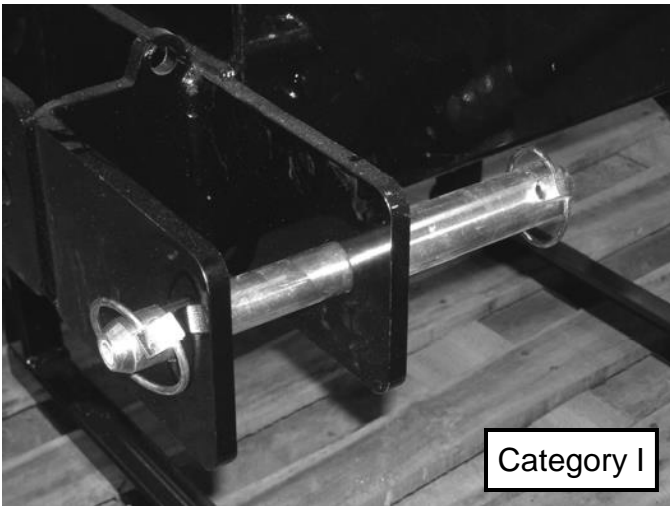


5. Connect the pressure hose and inlet hose to the pump assembly as shown. Use the supplied T-bolt clamps to secure the 1-1/2" inlet hose to the barbed fittings. The inlet hose can be shortened if needed, but it is best to test fit the pump on the tractor and move the tank through the full range of motion first.

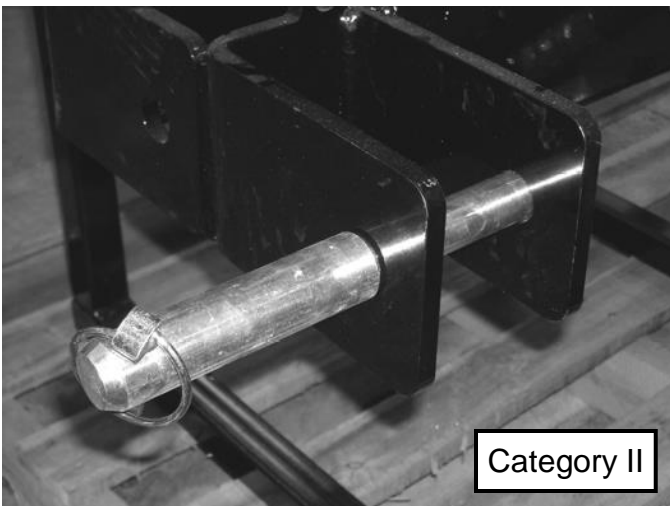
NOTE: Fitting angles can vary slightly depending on the intended hose routing and distance from the tractor.



SET-UP ASSEMBLY



6. Install the lower 3-point pins as shown. Category I arms will mount between the tank brackets, so the pins should be mounted to the inside as shown.



7. Category II arms will mount outside the tank brackets, so the pins should be mounted to the outside as shown.

8. The top pin has two positions. The pin should be mounted in the top hole when connecting the tractor top link directly to the tank. The pin should be mounted in the bottom hole when connecting to the tank using a quick-hitch system.

NOTE: Additional bushings may be needed on the upper and lower pins if using a quick-hitch system. These are not supplied with the power unit.



9. Set-up assembly of the pump is now complete. See "Mounting Instructions" on pages 12-13 for instructions on mounting the tank to the tractor for operation. Be sure to check that all fittings are tight after mounting the PTO pump for the first time.

SET-UP ASSEMBLY

Counterweight Brackets

The PTO tank has an extra set of brackets on each side that can be used to add counterweight.

Counterweight can be added to increase rear axle traction and counterbalance a portion of the front mounted attachment weight.

Counterweights and retaining pins are not supplied with the power unit or offered as optional equipment.

The two brackets are designed to each fit two John Deere 42 lb. or 70 lb. suitcase weights. Other brand suitcase weights may also be compatible with the brackets.

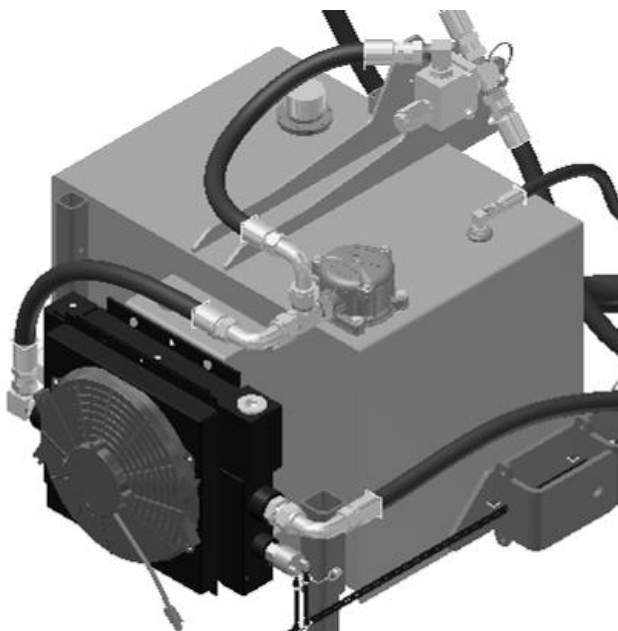
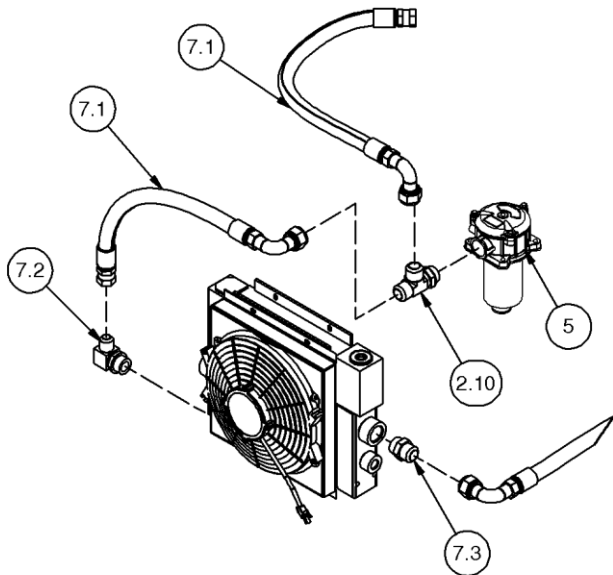
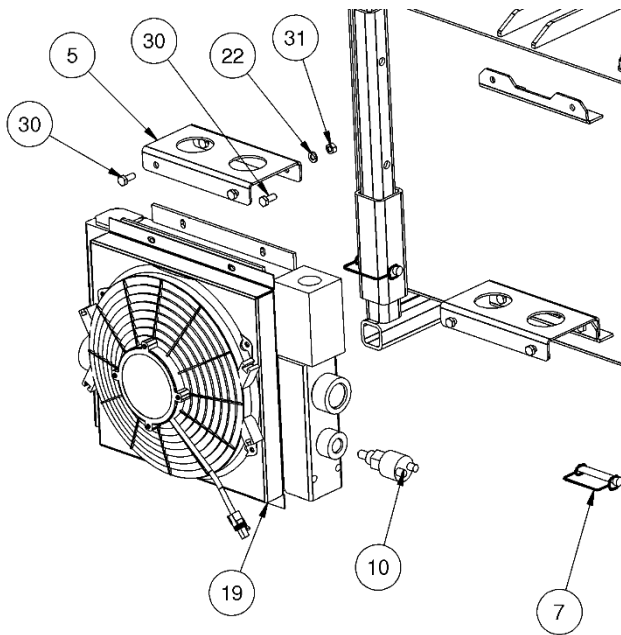
JD 42 lb. suitcase weight P/N R66949

JD 70 lb. suitcase weight P/N BM19780

IMPORTANT: The maximum allowable counterweight limit is 140 lbs. (63.5 kg) per side, and 280 lbs. (127 kg) total.



SET-UP ASSEMBLY



Optional Cooler Set-Up Assembly

The oil cooler is required when operating the PTO pump in ambient air temperatures above 40°F (4°C) to maintain the proper oil temperature.

IMPORTANT: Using the PTO pump above this temperature without the cooler will void all warranties.

IMPORTANT: The optional hydraulic oil cooler is designed to cool the oil under normal operating conditions. Care must still be taken not to overheat the oil.

1. Bolt the two cooler brackets (#5) to the cooler with the 5/16" bolts and nuts. Make sure brackets are positioned with flanges down, as shown.
2. Set the cooler on the tank brackets and bolt the cooler brackets to the tank brackets.
3. Install the 16MB-16MJ-16MJ Tee fitting (#2.10) in the tank filter and tighten.

NOTE: Make sure the in-tank filter is rotated so the inlet port faces the rear as shown.

4. Install the 16MB-12MJ elbow (#7.2) in the left side port of the cooler with the MJ end facing up and tighten.
5. Install the 16MB-16MJ straight fitting (#7.3) in the right side port of the cooler and tighten.
6. Install the three hoses as shown.
7. Install the thermostat (#10) in the lower port as shown.
8. Connect the cooler fan harness to the fan connector.
9. Connect the two female spade terminals of the cooler harness to the male terminals on the thermostat.

NOTE: It does not matter which wire goes to which spade of the thermostat.

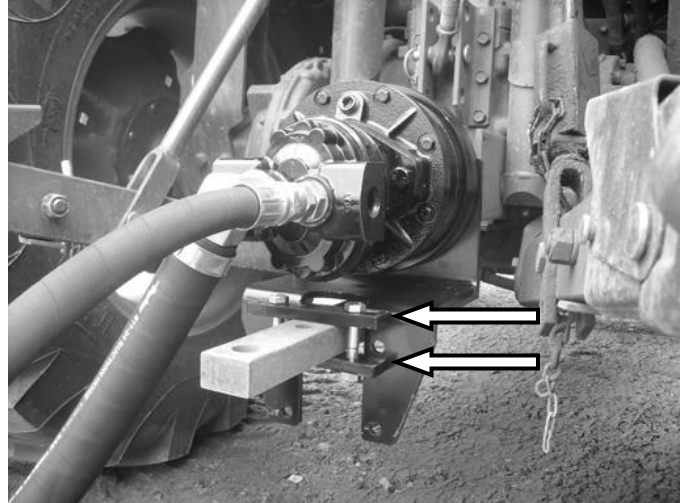
10. Use plastic cable ties to secure the cooler harness to the cooler return hose. Make sure the LED light is visible from the cab.
11. Make sure all connections are tight and the hoses are not going to rub on anything.

MOUNTING INSTRUCTIONS

After the initial set-up assembly is completed use the following procedure to mount the PTO pump to the tractor for user operation.

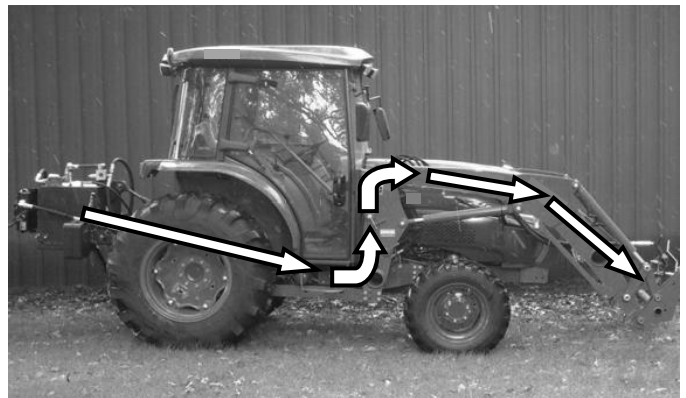
1. Mount the tank to the tractor 3-point arms (Category I or II). Be sure to install the lynch pins to secure the tank to the tractor.
2. Slide the gearbox assembly fully onto the tractor PTO shaft. Make sure there is at least 3" of engagement with the shaft. If the tractor PTO shield interferes with the installation, the shield may need to be removed.

⚠ WARNING Always reinstall the PTO shaft shield when the PTO pump is not connected to the tractor. See the tractor's operator's manual for instructions.



3. Bolt the two drawbar stop plates to the tractor drawbar to secure the gearbox assembly. Make sure to use locking nuts and/or lock washers to prevent the plates from coming loose. If the supplied 1/2" bolts are too long for the tractor's drawbar, use shorter bolts or shim them with extra flat washers.

NOTE: It may be necessary to reposition the drawbar to allow for full engagement with the pump bracket. See the tractor's operator's manual for instructions.



4. Route the lead hoses over the rear axle, under the tractor cab, and along the loader arms. Use plastic cable ties to mount the hoses to the tractor frame and loader arms.

IMPORTANT: Be sure to route the hoses near the loader pivot points to prevent the hoses from being stretched when the loader is raised.

NOTE: Make sure the hoses are properly routed to fit your specific tractor. If the hoses are not routed correctly, they may get pinched, stretched, pulled off, or rub on tires. Be sure to check hose routing through the full range of motion of the loader and attachment before operating. More than one routing may be acceptable depending on the tractor. Use the routing that best fits your tractor.

NOTE: Proper hose routing is the responsibility of the owner and/or operator. Pinched, rubbed, or stretched hoses are not covered under warranty.

MOUNTING INSTRUCTIONS

5. Route the cooler fan wire harness (if equipped) to the tractor battery. Connect the red (fused) wire to the positive (+) terminal of the battery and the black wire to the negative (-) terminal of the battery.

IMPORTANT: Make sure the fuse is operational and rated for a minimum of 20 amps.

6. Connect the rear set of hydraulic quick couplers to the lead hoses, and the cooler fan wire harness (if equipped) to the cooler fan connector.

IMPORTANT: Make sure the quick couplers are fully engaged. If couplers will not engage, do not force quick couplers together.

NOTE: Attachment is shipped with 12FJX (1-1/16" Female JIC Swivel) fittings on the ends of the lead hoses.

7. Check all fittings to make sure they are tight.
8. Fill the tank with the correct grade of NEW hydraulic oil (or other approved fluid) until the oil level is centered in the sight gauge on the left side of the tank. The tank capacity is 25 gallons (94 L), but an additional 2 gallons (7.5 L) may be needed to fill the hoses and attachment.

IMPORTANT: The optional hydraulic oil cooler must be used in ambient air temperatures above 40°F (4°C) to prevent overheating.

9. Connect the two lead hoses together at the front of the loader and test run the pump at low speed to check for leaks and flush the system. Do not flush the system with the lead hoses connected to an attachment. After warm-up, run the system at full throttle for at least 15 minutes to flush the system of any contamination.

IMPORTANT: Always engage the PTO drive with the engine at low speed. This is especially important during cold weather start-ups.

10. Mounting is now complete and the PTO pump is ready for operation.

Oil Grade Selection

Use the proper oil grade for the weather conditions anticipated during operation.

Cold: -20°F to 40°F (-29°C to 4°C)

Use ISO 32 (10W) hydraulic fluid (full synthetic strongly recommended). Alternate: 10W-30 motor oil or ATF.

Automotive type crankcase oils with American Petroleum Institute (API) letter designations SE, SF, SG, SH or higher (per SAE J183) classes of oils are acceptable. These types of oils generally exhibit less shear stability, which can result in higher loss of viscosity during service life.

IMPORTANT: In cold weather, always preheat the oil in the tank with a magnetic tank heater to prevent pump cavitation. Run the PTO pump at low speed for at least 15 minutes to warm the system up before operating under load.

Warm: 40°F to 100°F (4°C to 38°C)

Use ISO 32 (10W) or greater.

IMPORTANT: The oil cooler kit is mandatory in warm temperatures to ensure proper oil temperatures are maintained. Do not exceed oil temperatures of 180°F (82°C).

NOTE: See page 25 for oil viscosity information.

OPERATING INSTRUCTIONS

1. With the operator in the seat of the tractor and the seatbelt fastened, start the engine.

2. Fully raise the 3-point arms and retract the tank legs.

IMPORTANT: Always raise the tank fully before attempting to operate the pump. Oil starvation can lead to pump damage.

3. Connect the lead hoses together at the front of the tractor or connect the lead hoses to an attachment mounted on the front of the tractor.

4. With the engine at low speed, engage the tractor PTO drive.

IMPORTANT: Engine must be at idle speed when engaging PTO drive.

5. Run the PTO pump at low speed for at least 5 minutes (15 minutes in cold weather) to warm the oil and check the system for leaks.

6. Once the oil has been sufficiently warmed, throttle the tractor engine up to working RPM.

IMPORTANT: Never operate the PTO pump at a PTO speed exceeding 600 RPM. This will damage the PTO pump and void all warranties.

NOTE: The PTO pump will produce the rated flow rate and pressure when the tractor PTO is run at standard 540 RPM. Most tractor PTO's will run at a slightly higher RPM at full throttle. It is acceptable to run the tractor at full throttle.

7. Operate the attachment as described in the attachment's operator's manual.

IMPORTANT: Never operate the PTO pump with an attachment that is not rated for the oil flow rate and pressure specifications of the PTO pump.

8. **For PTO pump equipped with the optional hydraulic cooler:** There is a small LED light on the cooler wire harness that will light up when the thermostat turns on the cooler fan. This tells the operator that the cooler fan is operational. The thermostat is set at 115°F (46°C).

OPERATING INSTRUCTIONS

Things to DO while operating:

- Monitor the system for leaks.
- Monitor the cooler harness LED (if equipped) to ensure that the fan is operating.
- Monitor the system temperature if the cooler LED light stays lit continuously.
- Make sure the cooler is free of dirt and debris for maximum cooling capacity.

Things to AVOID while operating:

- Prolonged stalling of the attachment.
- Operating for extended periods of time at maximum power (such as when trenching).
- Operating with the cooler fan harness disconnected.
- Operating the power unit with a low oil level.

Oil Temperature and Duty Cycle Information

Heat is the enemy of every hydraulic system. Every hydraulic system is susceptible to overheating, even when operating in subzero temperatures.

While every precaution has been taken to ensure a reliable system, the operator still has a responsibility to operate the system within the design limits.

IMPORTANT: The maximum allowable oil temperature is 180°F (82°C).

Above this limit, the oil viscosity can be reduced to the point where it will not lubricate the pump and gearbox sufficiently, leading to system failure.

The oil temperature is a function of the amount of time the system is working, versus the “rest” time (running but not working). The ratio of work time compared to total run time is called the duty cycle.

Example: A machine with a duty cycle of 70% is meant to work 7 minutes out of every 10 minutes run.

The duty cycle for the HP15 is more than the HP24 because it is pumping a smaller volume of oil and the oil has more time to cool. The following duty cycles only apply to systems not equipped with the optional cooler, and in ambient air temperatures from 0°F (-18°C to 4°C).

HP15 – 70% duty cycle maximum
HP20 – 60% duty cycle maximum
HP24 – 50% duty cycle maximum

Even with the optional hydraulic cooler installed, it is recommended to monitor the oil temperature to ensure that it is not overheating. An infrared thermometer (like the one pictured) can be purchased to measure the tank temperature.



ROUTINE MAINTENANCE

⚠ WARNING Lower the attachment to rest on the ground, disengage the PTO, set the park brake, shut down the engine, remove the key, and wait for all motion to stop before leaving the operator's seat to perform service of any kind.

It is the operator's responsibility to make daily inspections of the attachment and tractor for damage, loose bolts, fluid leaks, or anything else that could cause a potential service or safety problem. Preventive maintenance is the easiest and least expensive type of maintenance.

IMPORTANT: Bolts and set screws can loosen after initial usage. After first hour of operation check all bolts and set screws.

IMPORTANT: The filter element (P/N 310972) should be replaced after the first 50 hours of operation or after 1 year, whichever comes first. Thereafter, it should be replaced after every 250 hours of operation or after every 3 years, whichever comes first. More frequent filter changes may be required based on operating conditions.

1. Remove the cover bolts with a 10mm socket and remove the cover.

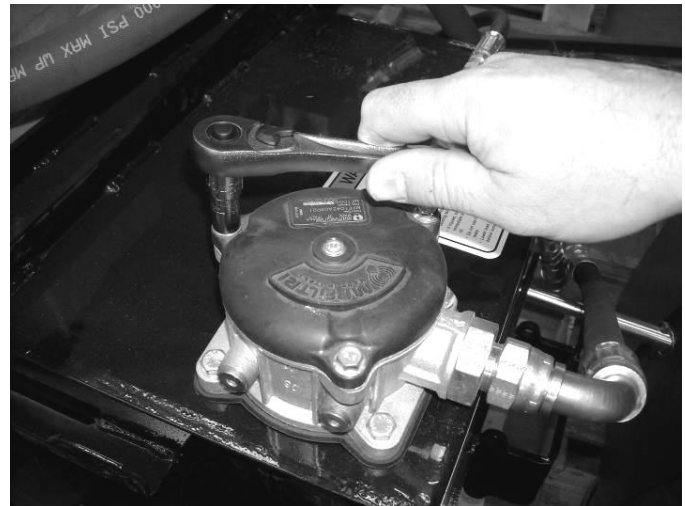
NOTE: To prevent contamination, wipe the area around the filter clean before removing the cover.

2. Remove the filter element from the plastic can.
3. Install the new filter element.
4. Reinstall the cover and bolts. Tighten bolts to maximum 7 ft-lbs. Do not overtighten.

IMPORTANT: Improper maintenance can cause extensive damage to the power unit, attachment, and your equipment.

Oil Change Interval

- Change the hydraulic oil every 250 hours or every 3 years, whichever comes first. More frequent changes may be required based on operating conditions. Be sure to replace with the correct grade and type of oil for the expected operating conditions.
- The drain plug is located on the bottom of the tank. Tighten the plug after the old oil is drained. Check for leaks after new oil has been added.
- Change the gearbox lube every 250 hours or every 3 years, whichever comes first. Fill to between 1/3 and 1/2 full (approximately 17 oz.) with 80W-90 gear lube.



Cooler Maintenance

If the power unit is equipped with the optional cooler, make sure it is clean and free of debris before operating the power unit. If dirty, clean the cooler fins by flushing them with clean water or blowing it out with compressed air.

⚠ CAUTION Wear safety glasses meeting ANSI z87.1 standard when cleaning with water pressure or compressed air.

BOLT TORQUE INFORMATION

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		Clamp Load (lbs)	Tightening Torque		Clamp Load (lbs)	Tightening Torque	
		K = .15	K = .20		K = .15	K = .20		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	4,700	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
1-12	16,410	205	273	42,270	528	704	59,670	745	995

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 $T = KDF$

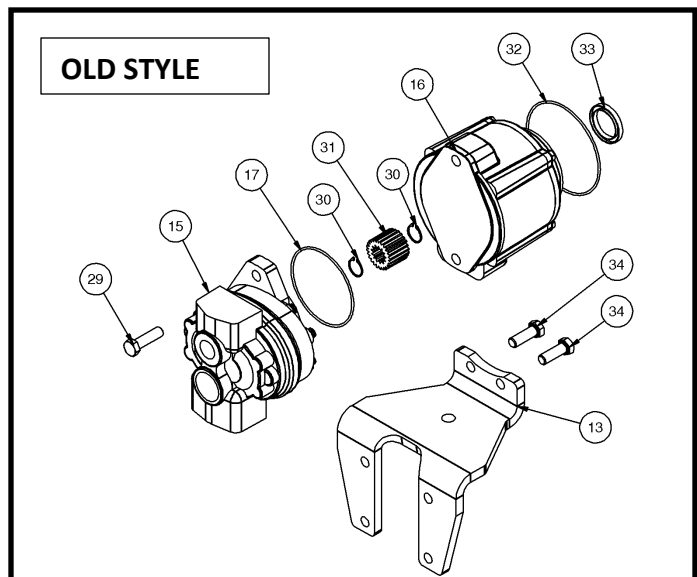
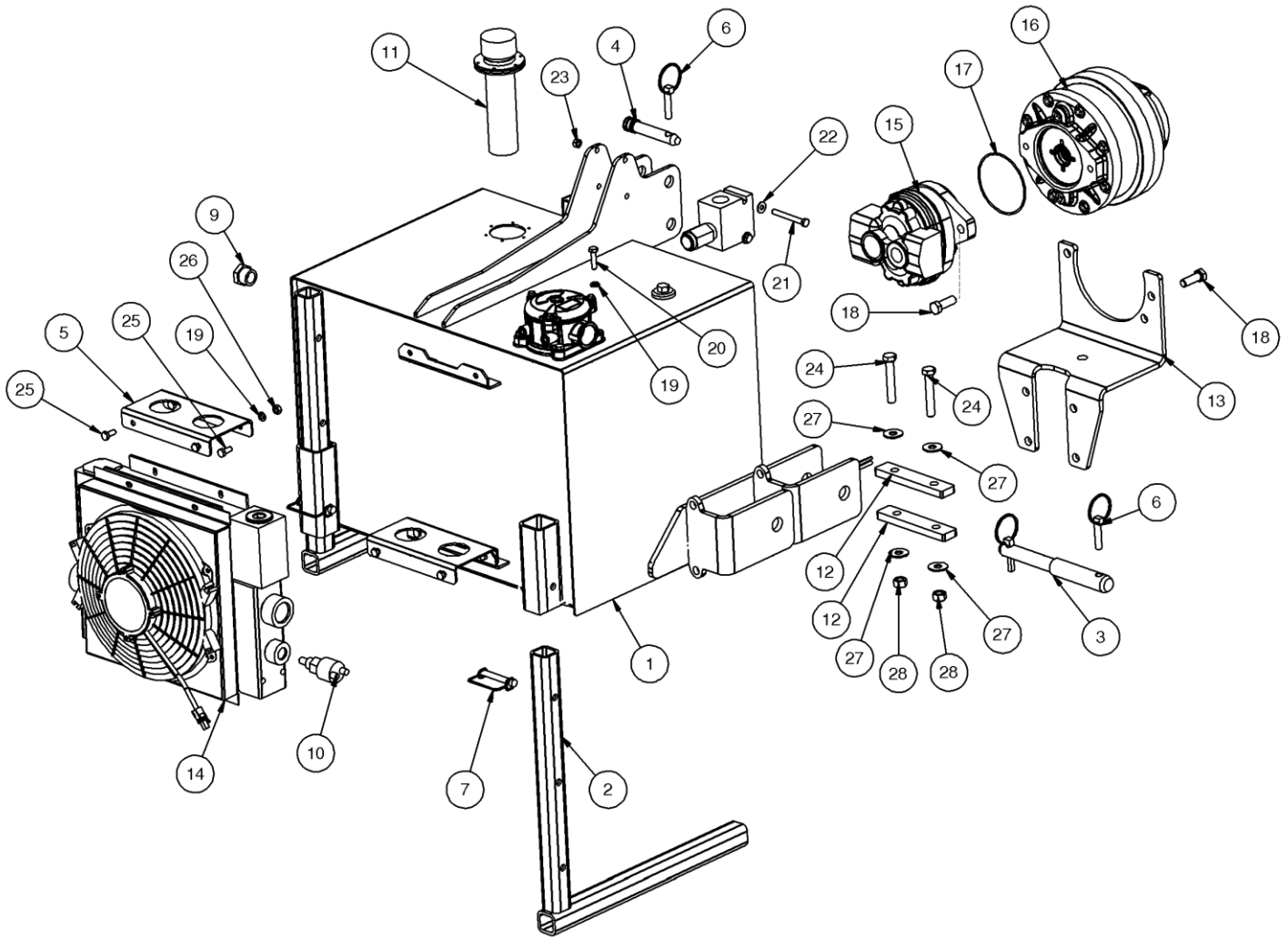
where: $K=0.15$ for "lubricated" conditions

$K=0.20$ for "dry" conditions

PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NUMBER
1	1	310900	TANK PTO 25 GAL W/A	
2	2	310928	STAND TANK W/A	
3	2	310917	PIN .875 X 1.125 SPECIAL	
4	1	104397	PIN 3-PT UPPER CAT #1	
5	2	310921	BRACKET BOLT-ON PAINTED	COOLER PKG ONLY
6	5	104432	PIN LYNCH 7/16	
7	2	300581	PIN SNAPPER 5/16" X 3"	
9	1	310931	GAUGE SIGHT 12MB	
10	1	310932	THERMOSTAT 115	COOLER PKG ONLY
11	1	310940	FILLER BREATHER TANK	
12	2	310956	FLAT DRAWBAR STOP PAINTED	
13	1	310987	BRACKET GEARBOX PAINTED	
	1	310987	BRKT GEARBOX AUBURN PNT	(AUBURN GEARBOX ONLY)
14	1	310910	COOLER HYDRAULIC W/FAN	COOLER PKG ONLY
15	1	310982	PUMP 1.78 CID 15 GPM	
	1	310902	PUMP 1.78 CID 15 GPM	OLD STYLE GEARBOX ONLY
	1	310983	PUMP 2.33 CID 20 GPM	
	1	310903	PUMP 2.33 CID 20 GPM	OLD STYLE GEARBOX ONLY
	1	310984	PUMP 2.85 CID 24 GPM	
	1	310904	PUMP 2.85 CID 24 GPM	OLD STYLE GEARBOX ONLY
16	1	310981	GEARBOX PLANETARY 1:3.75 PTO	(17OZ 80W-90)
		310988	SEAL KIT PTO AUBURN GEARBOX	
		310901	GEARBOX PLANETARY 1:4 PTO	OLD STYLE GEARBOX ONLY
		310976	SEAL KIT PTO GEARBOX	OLD STYLE GEARBOX ONLY
17	1	310974	O-RING 4 X 3/32 (-155)	
18	5	13207	BOLT HEX - 1/2 X 1.25 - UNC - GR5	USE REMOVABLE THREAD LOCKER
19	12	33620	WASHER LOCK - 0.3125 - GR5	QTY (12) WITH COOLER PKG
20	4	13057	BOLT HEX	5/16 X 1.25 - UNC - GR5
21	2	13064	BOLT HEX	5/16 X 2.75 - UNC - GR5
22	2	33004	WASHER FLAT	1/4 - GR5
23	2	37211	NUT HEX LOCK	5/16 NC GR5
24	2	13215	BOLT HEX	1/2 X 3 - UNC - GR5
25	8	13053	BOLT HEX - 5/16 X 3/4 - UNC - GR5	COOLER PKG ONLY
26	8	36304	NUT HEX REG - 5/16 NC GR5	COOLER PKG ONLY
27	4	33010	WASHER FLAT	7/16 - GR5
28	2	37214	NUT HEX LOCK	1/2 NC GR5
29	2	15210	BOLT HEX 1/2 X 1-3/4 NC GR 8	OLD STYLE GEARBOX ONLY
30	2	310978	SNAP RING SUN GEAR	OLD STYLE GEARBOX SEAL KIT
31	1	310977	GEAR SUN PTO GEARBOX	OLD STYLE GEARBOX SEAL KIT
32	2	310979	O-RING 4-3/4" ID X 3/32" (-158)	OLD STYLE GEARBOX SEAL KIT
33	1	310975	SEAL SHAFT PTO GEARBOX	OLD STYLE GEARBOX SEAL KIT
34	2	15209	BOLT HEX 1/2 X 1-1/2 NC GR 8	OLD STYLE GEARBOX ONLY
	1	310905	KIT PUMP MOUNTING	OLD STYLE GEARBOX ONLY

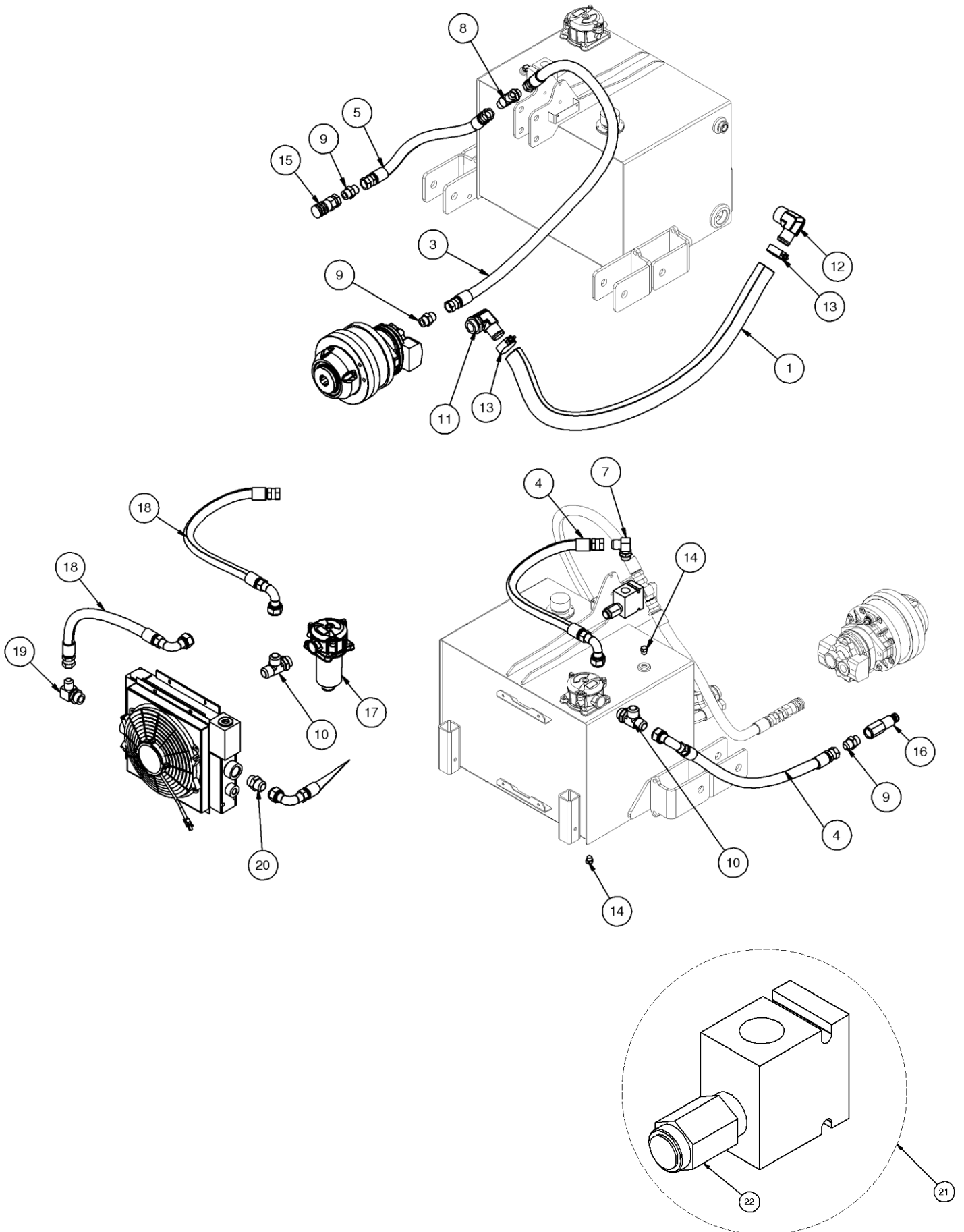
PARTS INFORMATION



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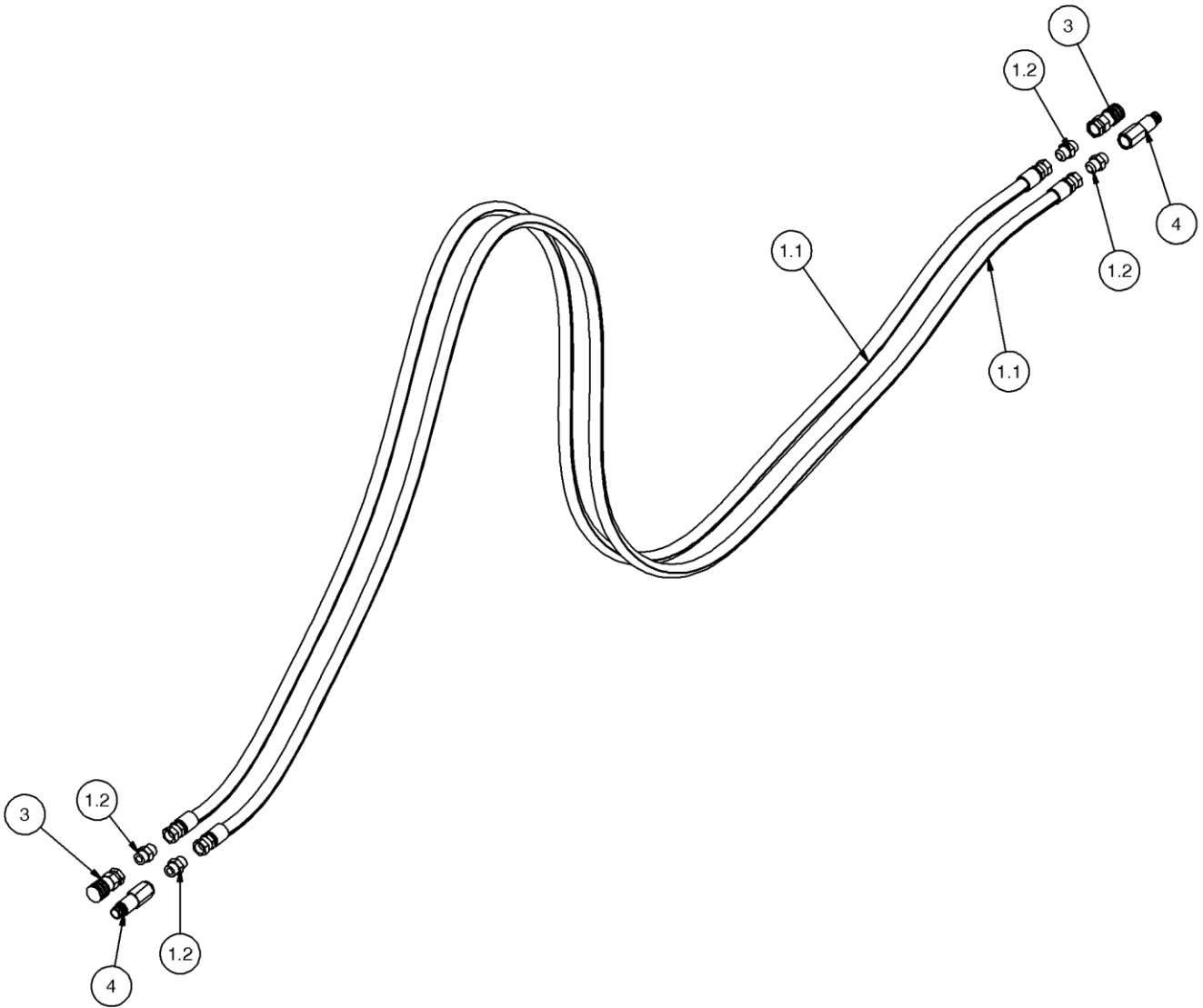
ITEM	QTY	PART NO.	DESCRIPTION	STOCK NUMBER
1	1	310941	HOSE 1-1/2 X 48 SUCTION	
3	1	310943	HOSE 3/4 X 57 12FJX-12FJX	PUMP TO RV
4	2	310944	HOSE 3/4 X 24 12FJX-16FJX90	TO FILTER
5	1	310945	HOSE 3/4 X 20 12FJX-12FJX	RV TO LEAD
7	1	300262	ADPT ELB 12MB-12MJ-90	RV
8	1	201588	ADPT TEE 12MJ-12MJ-12MB	RV
9	3	103431	ADPT STR 12MB-12MJ	PUMP/RV/COUP
10	1	300461	ADPT TEE 16MB-16MJ-16MJ	FILTER
11	1	310929	ADPT ELB 20MB-1-1/2 BARB-90	PUMP INLET
12	1	310930	ADPT ELB 24NPT-1/12 BARB-90	TANK FEED
13	2	310935	CLAMP T-BOLT 2"	SUCTION HOSE
14	2	320102	ADPT PLUG 6MB	DRAIN PLUG
15	1	200258	COUPLER HYD 3/4-12OR FM FF	
16	1	320059	COUPLER HYD 3/4-12OR M FF CUP	
17	1	310911	FILTER IN TANK INCL. ELEMENT	NOTE ROTATION IN COOLER PKG
	1	310972	FILTER ELEMENT	
	1	310980	GASKET FILTER ASSEMBLY	
18	2	310944	HOSE 3/4 X 24 12FJX-16FJX90	TO FILTER (COOLER PKG ONLY)
19	1	103442	ADPT ELB 16MB-12MJ-90	RETURN (COOLER PKG ONLY)
20	1	201528	ADPT STR 16MB-16MJ	RETURN (COOLER PKG ONLY)
21	1	310909	VALVE ASSY PRESSURE RELIEF	
22	1	310973	VALVE PRESSURE RELIEF FIXED	

PARTS INFORMATION



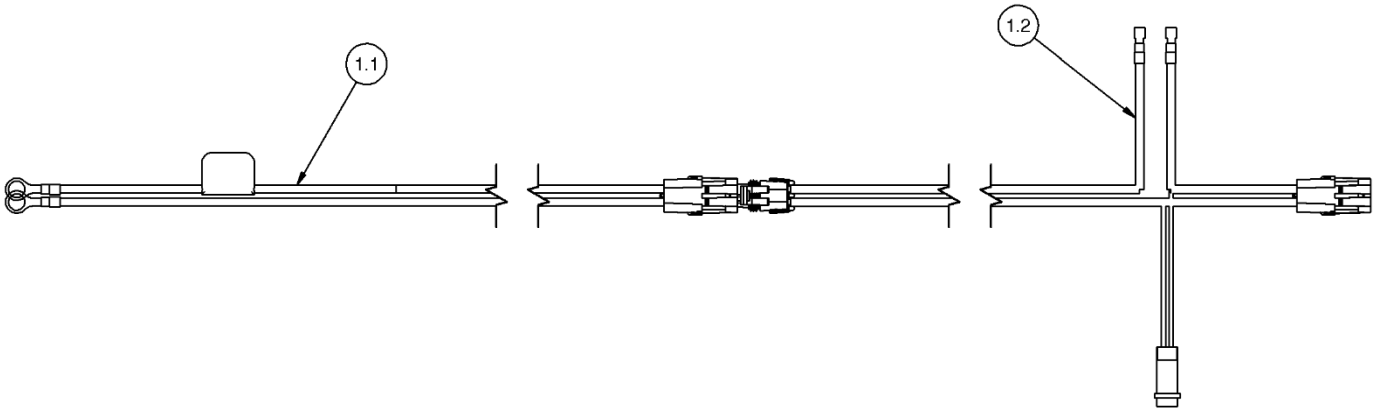
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NUMBER
1.1	2	310947	HOSE 3/4 X 180 12FJX-12FJX	LEAD (15 FOOT ONLY)
	2	310946	HOSE 3/4 X 216 12FJX-12FJX	LEAD (18 FOOT ONLY)
1.2	4	103431	ADPT STR 12MB-12MJ	COUPLERS
3	2	320059	COUPLER HYD 3/4-12OR M FF CUP	
4	2	200258	COUPLER HYD 3/4-12OR FM FF	



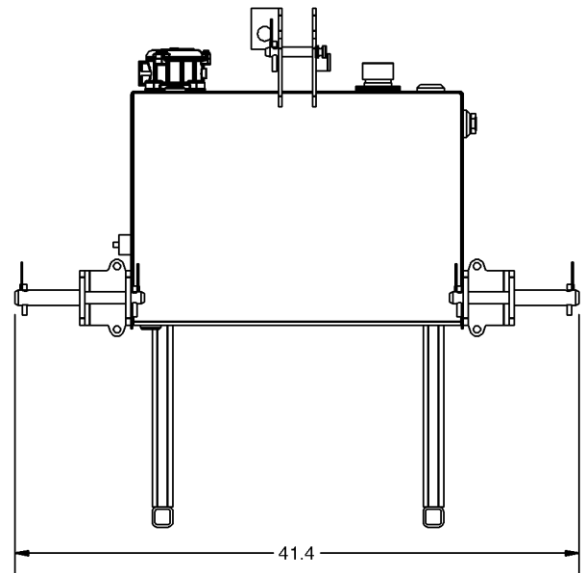
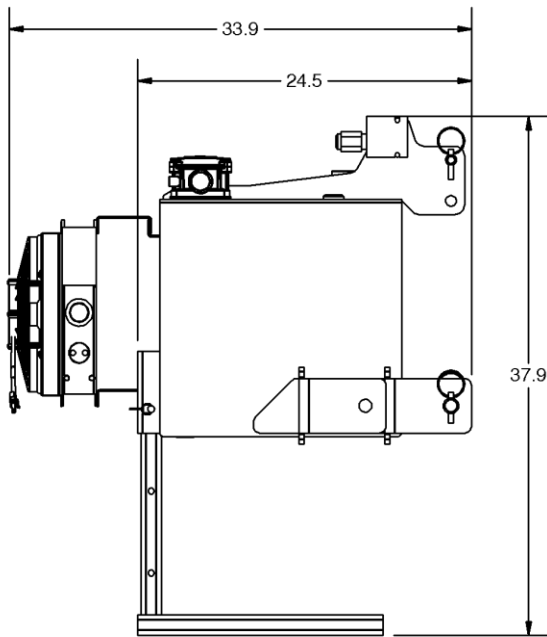
PARTS INFORMATION

ITEM	QTY	PART NO.	DESCRIPTION	STOCK NUMBER
1	1	310965	KIT WIRE HRN COOLER	COOLER PKG ONLY
1.1	1	310964	HRN WIRE COOLER TRACTOR SIDE	COOLER PKG ONLY
1.2	1	310960	HRN WIRE COOLER TANK SIDE	COOLER PKG ONLY



GENERAL SPECIFICATIONS

Model	HP15	HP20	HP24
Rated PTO Input Speed	540 RPM		
Minimum PTO Input Power	30	44	54
Operating Weight (w/out oil) (w/out cooler)	275 lbs.		
Overall Width	41.4" (Cat. II configuration)		
Overall Height	37.9" (legs fully extended)		
Overall Length (w/out cooler)	24.5"		
Overall Length (w/ cooler)	33.9"		
Tank Capacity	25 gallons		
Rated Pressure	3000 PSI		
Rated Flow @ 540 RPM	15 GPM	20 GPM	24 GPM
Hydraulic Cooler	Optional		
Tractor Mount	Cat. I or Cat. II		
Filter Type	In-Tank 10 Micron		

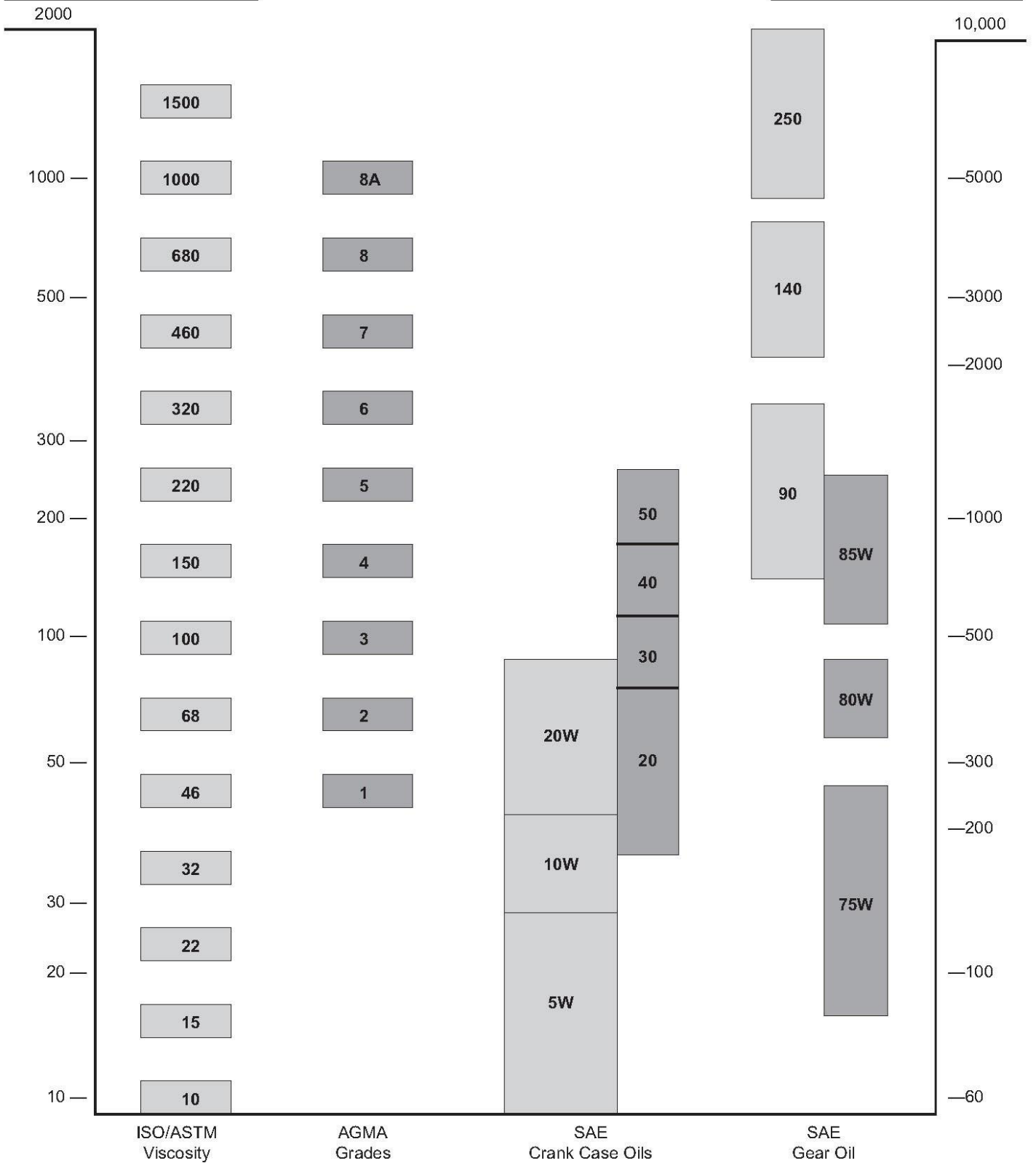


All dimensions are in INCHES.

OIL VISCOSITY CHART

Kinematic Viscosity
cSt @ 40°C

Saybolt Viscosity
Universal Seconds @ 100°F





LIMITED WARRANTY

Quick Attach Attachments LLC warrants each new machine manufactured by us to be free from defects in material and workmanship for a period of twenty-four (24) months from date of delivery to the original purchaser.

Our obligation under this warranty is to replace free of charge, at our factory or Direct Outlet locations, any part proven defective within the stated warranty time limit.

All parts must be returned freight prepaid and adequately packaged to prevent damage in transit.

This warranty does not cover:

1. New products which have been operated in excess of rated capacities or negligence
2. Misuse, abuse, accidents or damage due to improperly routed hoses
3. Machines which have been altered, modified or repaired in any manner not authorized by our company
4. Previously owned equipment
5. Any ground engaging tools in which natural wear is involved, i.e. tooth tips, cutting teeth, etc
6. Normal maintenance
7. Fork tines
8. Hydraulic motors that have been disassembled in any manner

In no event will the Sales Representative, Direct Outlet, Quick Attach Attachments LLC, or any other company affiliated with it or them be liable for incidental or consequential damages or injuries, including but not limited to the loss of profit, rental or substitute equipment or other commercial loss. Purchaser's sole and exclusive remedy being as provided here in above.

Quick Attach Attachments LLC must receive immediate notification of defect and no allowance will be made for repairs without our consent or approval.

This warranty is in lieu of all other warranties, express or implied by law or otherwise, and there is no warranty of merchantability or fitness purpose.

No agent, employee, or representative of Quick Attach Attachments LLC has any authority to bind Quick Attach Attachments LLC to any warranty except as specifically set forth herein. Any of these limitations excluded by local law shall be deemed deleted from this warranty; all other terms apply.

This warranty may not be enlarged or modified in any manner except in writing signed by an executive officer of Quick Attach Attachments LLC to improve its products whenever it is possible and practical to do so. Quick Attach Attachments LLC reserves the right to make changes and or add improvements at any time without incurring any obligation to make such changes or add such improvements to products previously sold.

Quick Attach Attachments LLC
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P/N 310971
Quick Attach Attachments LLC

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