HYDRA-TECH PUMPS

Operation and Maintenance Instructions
Parts List

HT50DYS Power Unit

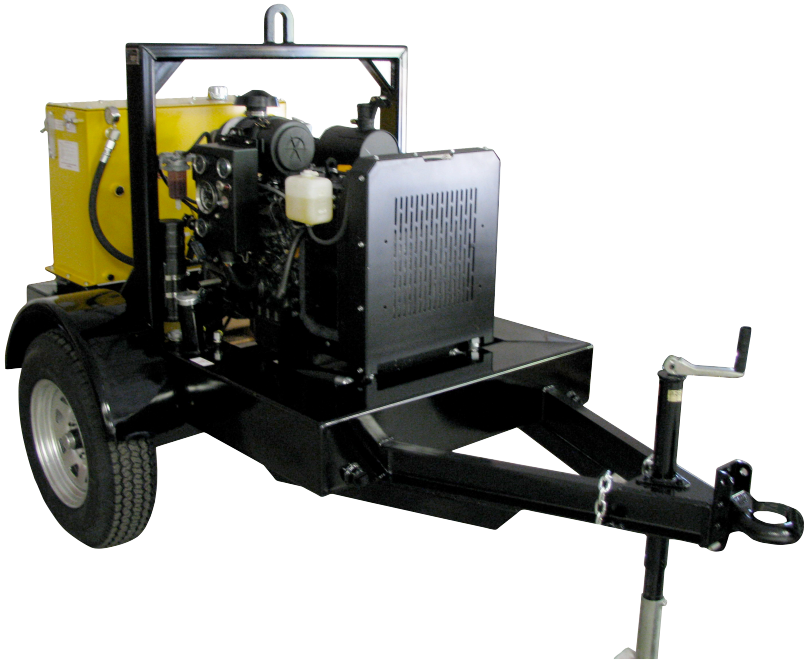
HYDRA-TECH PUMPS
167 Stock Street, Nesquehoning, PA 18240 **Phone:** 570-645-3779 **Fax:** 570-645-4061
Website: www.hydra-tech.com **E-Mail:** htpump@hydra-tech.com

HYDRA-TECH PUMPS

PORTABLE HYDRAULIC POWER UNIT

MODEL HT50DYS

This hydraulic power unit is powered by a Yanmar diesel engine and is designed to drive several of our pump models including the S6CSL, S6TC and S12M. Other hydraulic tools and equipment that require flows to 25 GPM can also operate from this power unit.



FEATURES

- Highway Trailer Chassis with Built-In Fuel Tank and Independent Suspension
- Single Point Lifting Bracket
- Engine Safety Shutdown Package
- Gear-Type Hydraulic Pump
- Hydraulic Oil Cooler
- Variable Speed Control
- Spin-On Return Filter W/ Indicator
- Tank Top Filler/ Strainer
- Made in USA
- System Relief Valve
- Pressure Control Valve
- Liquid Filled Pressure Gauge
- Fluid Level/ Temperature Gauge

OPTIONS

- Skid Frame
- Multiple Hydraulic Circuits
- Other Flow and Pressure Combinations
- Float Switch Operation

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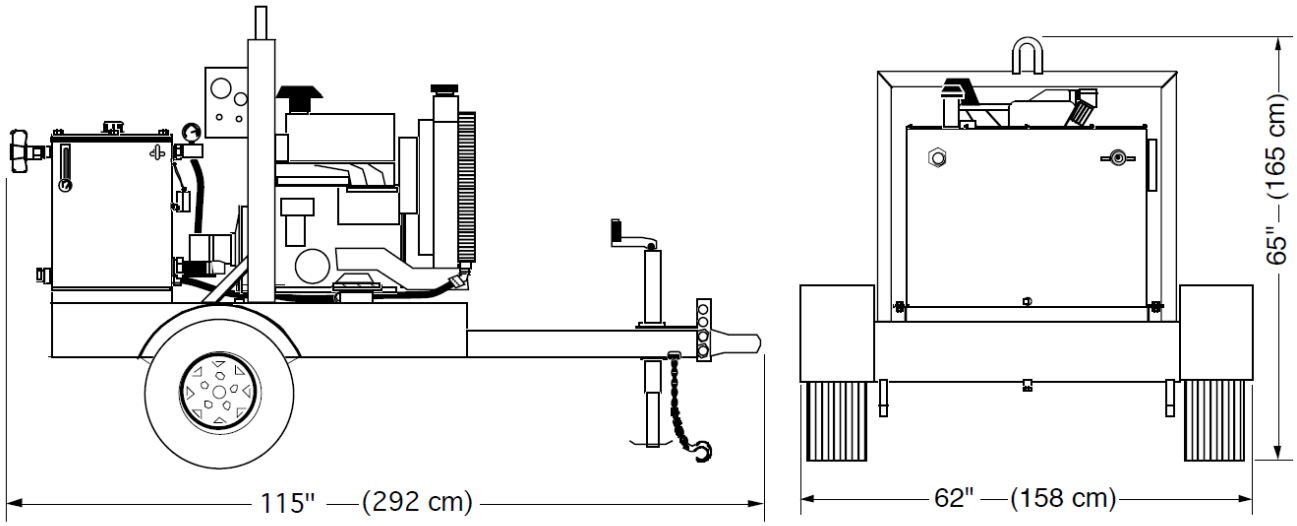
Model HT50DYS Overall Dimensions



SPECIFICATIONS

ENGINE:..... Yanmar 4TNV84T Liquid Cooled Diesel (Tier 4 Int.)
POWER:..... 55 HP(41 KW) @ 3000 RPM
HYDRAULIC OUTPUT*:..... Variable, Max. 25 GPM (95 LPM)
OPERATING PRESSURE*:..... Maximum 2800 PSI (193 Bar)
HOSE PORT SIZE:..... 1" NPT
HYDRAULIC OIL:..... SAE 10W or 20W (ISO 32 or 46) Type AW
..... also: Biodegradable oil (Consult Factory)
OIL FILTRATION:..... 10 Micron (Standard)
OIL RESERVOIR CAPACITY:..... 50 U.S. Gallons (189 Liters)
FUEL TANK CAPACITY:..... 48 U.S. Gallons (182 Liters)
FUEL CONSUMPTION:..... Approx. 4 U.S. Gal/Hr (15 Liters/Hr)
DIMENSIONS:..... H 65" (166 cm) x W 62" (158 cm) x L 115" (292 cm)
WEIGHT (Dry):..... 1900 lbs. (860 kg)

* For Flows and Pressures Other Than Standard, Consult Factory

Since we are constantly working to improve our products, specifications are subject to change without notice.

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Specifications:

Dimensions: (Standard Trailer) OAL: 112”, OAW: 63”
OAH: 68” to Lifting Bracket

Weight: 1815 lbs. (825 Kg)

Engine: Yanmar 4TNV84T-ZDSAD liquid cooled diesel. (Interim Tier 4)

Horsepower: 55 (41 Kw) @ 3000 RPM.

Fuel Capacity: 47 gallons (178 Liters)

Fuel Consumption: Approx 3 gal (11 L)/hour @ full load

Engine Controls: (Controls Inc. C3-4000)

- Variable speed throttle (Electronic)
- Emergency shutdown system for high engine temp., low oil pressure, low hyd. oil level.
- RPM, oil pressure, temp, and volts on display

Hydraulic Output: Variable maximum 25 GPM

Operating Pressure: Maximum 2600 PSI.

Hose Ports: 1" valved quick-disconnect couplers, wing nut style.
1/2” NPT case drain port (optional)

Hyd. Oil Capacity: 50-gallon (190 L) reservoir holds approx. 45 gallons oil

Filters:
Fuel: (Yanmar) 119802-55801
Engine Oil: (Yanmar) 129150-35153
Air: (Donaldson) P822768, (Yanmar) 129687-12510
Hydraulic Oil: (Zinga) SE10, (NAPA) 1759, (Donaldson) P550388

IMPORTANT SAFETY INFORMATION

SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠DANGER

Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.

⚠WARNING

Before operating this tool, see the safety information and operating instructions in the Operation Manual.

⚠WARNING

Do not operate the pump if the impeller blades are exposed. After assembly, install the inlet screen before operating the pump.

Failure to observe this warning could result in severe injury or death.

⚠WARNING

Do not inspect, adjust, or clean tool when it is connected to a power source. Accidental startup could result in serious injury.

⚠WARNING

Skin injection hazard:

Oil under pressure easily punctures skin causing serious injury, gangrene or death. If you are injured by escaping oil, seek medical attention immediately.

- Do not use fingers or hands to check for leaks.
- Do not hold hose or couplers while operating the power source.
- Depressurize the hydraulic system before servicing.

IMPORTANT SAFETY INFORMATION

⚠WARNING

Wear eye protection when operating or servicing this tool.

Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.

⚠WARNING

Do not exceed the maximum hydraulic flow, pressure relief or back pressure listed in the Specifications and Parts manual.

Failure to observe this warning could result in severe injury or death.

⚠WARNING

Do not disconnect tool, hoses, or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid could cause serious burns.

⚠CAUTION

Hydraulic oil can cause skin irritation.

- Handle the tool and hoses with care to prevent skin contact with hydraulic oil.
- In case of accidental skin contact with hydraulic oil, wash the affected area immediately to remove the oil.

Failure to observe these precautions may result in injury.

IMPORTANT

Do not reverse hydraulic flow. Operation with hydraulic flow reversed can cause tool malfunction. Connect the supply (pressure) hose and return (tank) hose to the proper tool ports.

IMPORTANT

Procedure for disconnecting hydraulic hoses, fittings or components:

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the power source.
3. Follow the sequence under Disconnecting Hoses to prevent pressure buildup. In case some pressure has built up, loosen hoses, fittings or components slowly.

HYDRAULIC POWER UNIT SAFETY PRECAUTIONS

Hydraulic Power Unit operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the power unit and hose. These safety precautions are given for your safety. Review them carefully before operating the pump and before performing general maintenance or repairs. Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided in this manual.

All Hydra-Tech hydraulic power units will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the power unit and hoses before operation. Failure to do so could result in personal injury or equipment damage.

• Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes, dangerous terrain conditions, and confined spaces.
• Establish a training program for all operators to ensure safe operations.
• Do not operate the power unit unless thoroughly trained or under the supervision of an instructor.
• Always wear safety equipment such as goggles, head protection, hearing protection, and safety shoes at all times when operating the power unit.
• Do not inspect or clean the hydraulic pump or hydraulic tool while the hydraulic power source is engaged. Disconnect both hydraulic hoses before attempting to clean or inspect the pump or hydraulic tool. Accidental engagement of the power unit can cause serious injury.
• Always disconnect the battery cable before attempting any repair.
• Do not operate this power unit without first reading and understanding the Operating Instructions.
• Never operate the power unit near energized transmission lines. Know the location of buried or covered services before starting work.
• Do not wear loose fitting clothing when operating the power unit. Loose fitting clothing may get entangled with the power unit and cause serious injury.
• Supply hoses must have a minimum working pressure rating of 3000 psi/204 bar.
• The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling the hydraulic hoses. Wipe all couplers clean before connecting. Failure to do so may result in damage to the quick couplers and cause overheating. Use only lint-free cloths.
• Be sure all hose connections are tight.
• Do not operate the power unit at oil temperatures above 140° F/60° C. Operation at higher oil temperatures can cause operator discomfort and may cause damage to the equipment.
• Do not operate a damaged, improperly adjusted, or incompletely assembled power unit.
• To avoid personal injury or equipment damage, all power unit repair, maintenance and service must only be performed by authorized and properly trained personnel.
• Do not exceed the rated limits of the power unit or use the power unit for applications beyond its design capacity.
• Always keep critical power unit markings, such as labels and warning stickers legible.
• Always replace parts with replacement parts recommended by Hydra-Tech Pumps.
• Check fastener tightness often and before each daily use.
• **NEVER** put your hands or any other body part into the area near the cooling fan and belts while the power unit is running.
• Only lift the power unit by the lifting bracket and be sure the lifting equipment is suitable for the rated weight of the power unit. Do not lift with hydraulic hoses attached.
• Do not touch the engine, exhaust piping, or muffler – these surfaces are hot and will burn you. Keep any flammable material away from these surfaces.
• When moving power units mounted on trailers always insure that the towing vehicle is suitable for the weight of the power unit. Always insure that the safety chains are securely fastened to the tow vehicle and the trailer lights are operating properly.
• DO NOT OPERATE THIS POWER UNIT NEAR FLAMMABLE LIQUIDS OR FLAMMABLE VAPORS OR GASES.

POWER UNIT OPERATION

PREOPERATION PROCEDURES

CHECK HYDRAULIC EQUIPMENT BEING OPERATED

1. Make sure the power unit hydraulic flow and pressure are appropriate for the equipment being powered. Flow and/or pressure in excess of the maximum rated flow of the equipment will damage the equipment.

CONNECTING HYDRAULIC HOSES

1. Wipe all hose couplers with a clean lint free cloth before making connections. Do not connect pressure to the return port.
2. Connect the hoses from the power unit to the couplers on the equipment being operated. It is a good practice to connect return hose first and disconnect it last to minimize or avoid trapped pressure within the pump motor.

    Note: If uncoupled hoses are left in the sun, pressure increase inside the hoses might make them difficult to connect. Whenever possible, connect the free ends of the hoses together.

3. Make sure the hydraulic hoses are connected to ensure that the flow is in the proper direction.

POWER UNIT OPERATION OVERVIEW

1. Observe all safety precautions.
2. Fill hydraulic reservoir to sight glass with specified hydraulic fluid. Use only biodegradable oil in any environmentally sensitive area.
3. Check engine fluid levels and fill engine fuel tank.
4. Connect hydraulic hoses from the power unit to the equipment being operated. **Be sure to completely connect the hydraulic couplings or damage will result to the hydraulic system.** Insure that the pressure and return hoses are connected to the correct port. Always be sure the connections are clean before assembling.
5. Turn hydraulic control valve counter-clockwise until the handle rotates freely. This de-energizes the hydraulic system to permit easy starting of the engine and also allows the operator to turn off the pump without stopping the engine.
6. Insure that any equipment being powered by the power unit is turned off so it will not start unexpectedly.
7. Start the engine and allow it to warm up for a few minutes before engaging the hydraulic system.
8. Turn the hydraulic control valve clockwise until it stops. This energizes the hydraulic system. **Do not attempt to use the hydraulic control valve to regulate hydraulic pressure – this valve is on/off only.**
9. Engine speed may be adjusted to provide appropriate flow to the equipment being operated. **Never exceed recommended operating pressure!**
10. To stop the power unit you must first de-energize the hydraulic system (turn hydraulic control valve counter-clockwise).
11. To stop the hydraulic power unit slow the engine down before stopping the engine.
12. Always recheck the level of the hydraulic fluid. Filling the hydraulic hoses during initial start-up will cause the hydraulic fluid level to drop slightly.

COLD WEATHER OPERATION

If the power unit is to be used during cold weather, preheat the hydraulic fluid by operating the power unit at low speed. When using the normally recommended fluids, fluid should be at or above 50°F/10° C (400 ssu/82 centistokes) before use. Damage to the hydraulic system or equipment seals can result from use with fluid that is too viscous or thick.

EQUIPMENT PROTECTION & CARE

• Make sure all couplers are wiped clean before connection.
• The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling the hydraulic hoses. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
• Make sure the circuit PRESSURE hose and RETURN hose are connected correctly. Do not reverse circuit flow. This can cause damage to internal seals of equipment being powered.
• Always replace hoses, couplings and other parts with replacement parts recommended by Hydra-Tech Pumps. Supply hoses must have a minimum working pressure rating of 3000 psi/204 bar.
• Do not exceed the rated flow or pressure (refer to Specifications in this manual for correct flow rate and pressure). If specifications are exceeded, rapid failure of the internal seals may result.
• Always keep critical labels and markings, such as warning stickers and tags legible.
• Power Unit repair should be performed by experienced personnel only.
• Make certain that the recommended relief valves are installed in the pressure side of the system.

Operating Instructions

HT50DYS Power Unit

BEFORE STARTING:

1. Fill oil reservoir to the top of the sight glass with a good grade of hydraulic oil with anti-wear additives.

a. New oil should be run through a 10 micron filter before use.

b. For Hydraulic Power Units of less than 15 horsepower, use Dexron ATF, or Chevron Clarity AW-46 (bio-oil) or another brand of AW-46 bio-oil (see list below).

c. For Hydraulic Power Units of more than 15 horsepower, use AW-46 hydraulic oil, or Chevron Clarity AW-46 (bio-oil) or another brand of AW-46 bio-oil (see list below).

Note: If you will be "charging" hydraulic hoses with hydraulic oil, keep in mind that the hydraulic oil reservoir will need topped off after the hoses are charged.

Mineral Based AW-46		Bio Friendly AW-46	
Pennzoil	AW 46 Gold	Chevron	Clarity/Clarity EA
Chevron	Rando HD	Sunoco	Sunvis 600+ Ashless
Shell	Tellus S2 MX	Terresolve	Envirologic
Mobil	D.T.E. 25 Ultra	Phillips 66	Powerflow NZ HE

* Select weight of oil based on operating conditions and average ambient temperatures. For example, if the unit will be operating in colder climates, AW-32 hydraulic oil can be used instead of AW-46.

**In above normal temperature conditions where mineral based fuels are , Dextron Automatic Transmission Fluid can be used.

Consult Product Data and MSDS sheets prior to selecting hydraulic oil.

2. Fill fuel tank with clean diesel fuel.

3. Check engine oil (See engine instruction manual for correct oil for each climate).

4. Connect hydraulic hoses from power unit to submersible pump. **Be sure to completely connect the hydraulic couplings or damage will result to the hydraulic system and the submersible pump.** Pressure and return hoses cannot be connected incorrectly because the couplings are incompatible. **Always be sure the connections are clean before assembling.**

5. **Turn the Hydraulic Control Valve (H.C. Valve #30) on side of reservoir counter-clockwise until handle rotates freely. This de-energizes the hydraulic system** to permit easy starting of engine and also allows you to turn off the pump without stopping the engine.

STARTING PROCEDURE:

1. Place submersible pump away from the power unit for a dry test on land.

2. Start engine (on some models equipped with engine-shutdown system, hold red reset button in until engine starts and engine oil pressure is maintained) and let warm up for one or two minutes. Throttle the engine to 1500 RPM.

3. Slowly rotate the **Hydraulic Control valve (H.C. Valve)** clockwise until it stops. This energizes the hydraulic system. **Do not use this valve to regulate hydraulic pressure. This valve is <u>on/off</u> only.**

4. Check submersible pump to be sure it is operating.

5. De-energize the hydraulic system (turn the control valve counter-clockwise until it spins freely), connect the discharge hose to the pump and lower into the water.

6 Energize the hydraulic system again and adjust engine speed to achieve the desired pump output. **<u>NOTE:</u> If maximum pump performance is not required, it is best to slow engine speed to meet the needed flow. This saves fuel and extends the life of the equipment.**

   NOTE: DO NOT INCREASE ENGINE SPEED ONCE YOU REACH 2600 PSI OPERATING PRESSURE.

STOPPING PROCEDURE:

1. To stop pump, de-energize the system (turn control valve counter-clockwise).

2. To stop engine, slow down 1000 RPM or less and turn off engine key switch.

3. After initial start, check the hydraulic oil level in the reservoir. Filling the hydraulic hoses initially will cause the level to drop slightly.

MAINTENANCE INSTRUCTIONS

HT50DYS Power Unit

ENGINE:

Maintain engine as per Yanmar Diesel instruction booklet provided with each unit.

HYDRAULIC PUMP: (#13)

1. The hydraulic pump is a Muncie gear unit capable of giving a long and dependable service life as long as the hydraulic oil is kept clean and the filters are changed at regular intervals.

2. To check the hydraulic output, energize the system with the hydraulic pump high-pressure port plugged. If equipped with valved quick-disconnect couplers, simply disconnect the hydraulic hoses (on the rear of the hydraulic tank) and read the pressure gauge supplied on the unit. This reading should always be above 2000 PSI at full throttle. The reading will normally be between 2300-2600 PSI depending on the actual relief valve pressure setting.

3. Pump is not field-serviceable. If pump failure is suspected, be sure to check suction strainer, oil level in the reservoir and the relief valve before determining the hydraulic pump is bad.

4. If service is required, consult nearest Muncie Hydraulics Dealer or Hydra-Tech Pumps.

SUCTION STRAINER: (#14)

1. The suction strainer is mounted inside the reservoir and may be removed for cleaning by draining the oil from the reservoir and removing the top cover. Strainer may then be removed and cleaned.

2. Clean the strainer with solvent or kerosene and dry with compressed air, then re-install, making sure dirt does not enter the reservoir. Make certain the pipe connection is tight.

3. The strainer should be removed and cleaned when cleaning the reservoir (every 1000 hours).

SIGHT GLASS/TEMPERATURE GAUGE: (#29)

1. Always maintain the hydraulic oil level to the top of the sight glass

2. Be sure the operating temperature never exceeds 170 degrees F (77 degrees C). **If the temperature becomes excessive**, shut down the system and let cool. Check for insufficient oil in reservoir, kinked hydraulic hoses, inadequate ventilation of the reservoir or oil cooler, clogged return line filter (gauge on filter will read above 50 PSI), or blocked hydraulic circuit **(e.g. submersible pump impeller jammed or hydraulic hose couplings improperly connected)** causing excess pressure to open the relief valve and dump hot oil into the reservoir.

HYDRAULIC CONTROL VALVE (H.C. Valve): (#30)

1. The hydraulic control valve is mounted on the side of the reservoir along side the sight glass.

2. The function of the control valve is to energize the relief valve by means of closing off the vent port, in turn, creating pressure in the hydraulic system.

3. The control valve should be almost maintenance free.

4. When checking the relief valve, check the control valve and tubing for leaks. Replace valve, tubing or tube fittings at the first sign of leakage.

FILLER CAP AND STRAINER: (#21)

1. The filler cap is mounted on top of the reservoir and is used to vent air in and out of the reservoir.

2. It is equipped with a strainer to prevent debris from entering the reservoir when filling. Keep this clean.

RELIEF VALVE: (#41)

1. The relief valve is mounted inside the reservoir and is the "remote vent" type.

2. The valve is preset at 2600 PSI to prevent damage to any hydraulic components in the system. Do NOT set valve above this pressure!!!

3. This valve is energized by the hydraulic control valve and re-circulates oil back to the reservoir when it is de-energized or subjected to pressures over 2600 PSI.

4. The relief valve pressure can be tested by energizing the power unit without being connected to the submersible pump. (Hydraulic hoses disconnected from the power unit)

5. If reading is below 2000 PSI, remove cartridge from relief valve body and inspect for damage or debris caught between valve seats inside cartridge. If debris is found, remove it and re-install cartridge in valve body and check pressure reading again. If any visual damage is present (e.g. cracks, excessive wear, etc.), replace the cartridge. The valve body should not need replacement unless visible damage such as cracks or damaged threads occurs.

6. If the relief valve is suspected to be faulty and cannot be adjusted or cleaned to correct the problem, a replacement cartridge should be installed.

COLD OIL BY-PASS VALVE: (#43)

1. The cold oil by-pass valve allows cold oil to re-circulate into the reservoir until the oil is warm enough to pass through the cooler. No maintenance should be required on this valve.

RETURN LINE FILTER: (#26)

1. The return line filter is located on the front of the oil reservoir. It has an indicator gauge mounted on the side that lets you know when to change the filter cartridge (or every 250 Hours).

2. When the system is in operation, notice the needle on the indicator. This should remain below 50 PSI when oil is warm. If this reading is above 50 PSI, the filter cartridge must be replaced. The cartridge is the "spin on" type.

3. Use only the exact replacement filter cartridge with 10-micron filtration.

4. The filter cartridge must be replaced when changing hydraulic oil in the reservoir.

5. If the hydraulic oil becomes emulsified or visibly dirty, change the oil and filter regardless of the indicator reading or service interval.

RESERVOIR:

1. The hydraulic oil reservoir is designed for maximum cooling characteristics and ease of maintenance.

2. The oil in the reservoir should be changed every 1000 hours of running time for maximum component life. The reservoir should be cleaned every 1000 hours.

3. The reservoir capacity is 50-gallon (190 L). Holds approx. 45 gallons of oil

4. A drain located at the lower rear of the reservoir allows easy removal of the hydraulic oil.

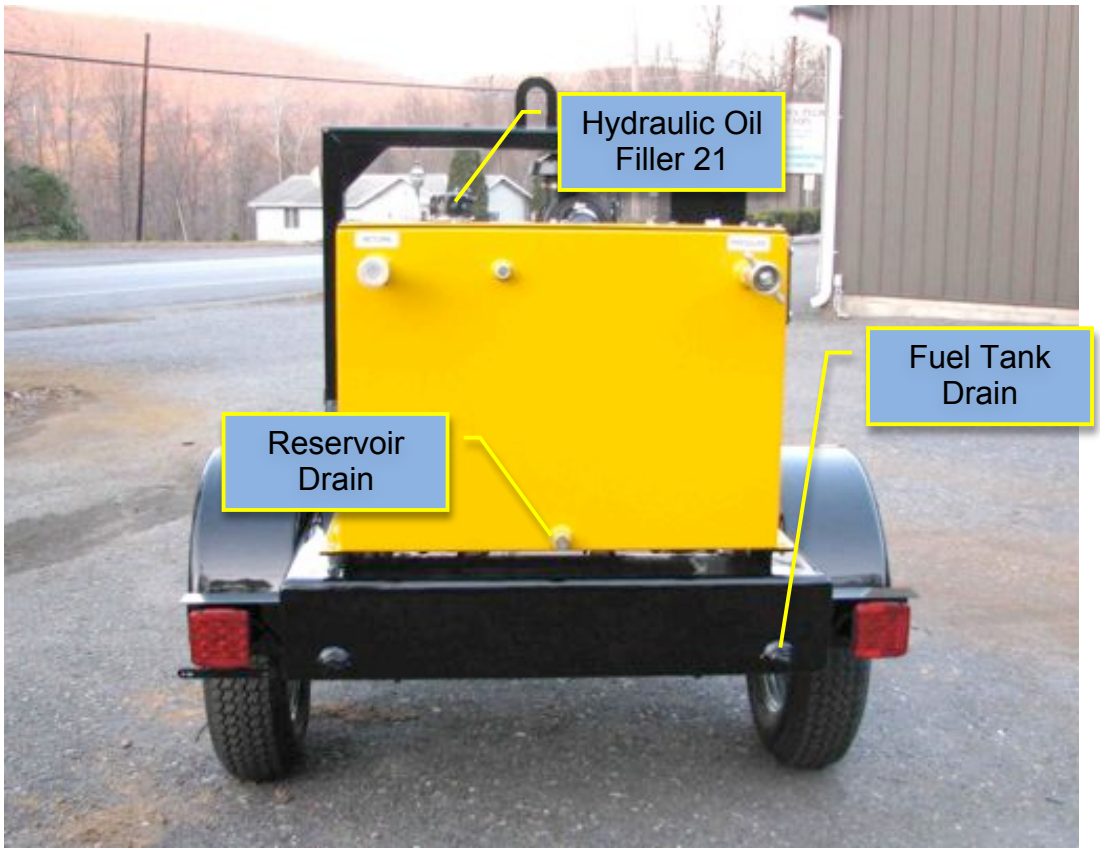
5. As always, keep dirt from entering the hydraulic system.

LOW OIL SHUTDOWN SWITCH: (#31)

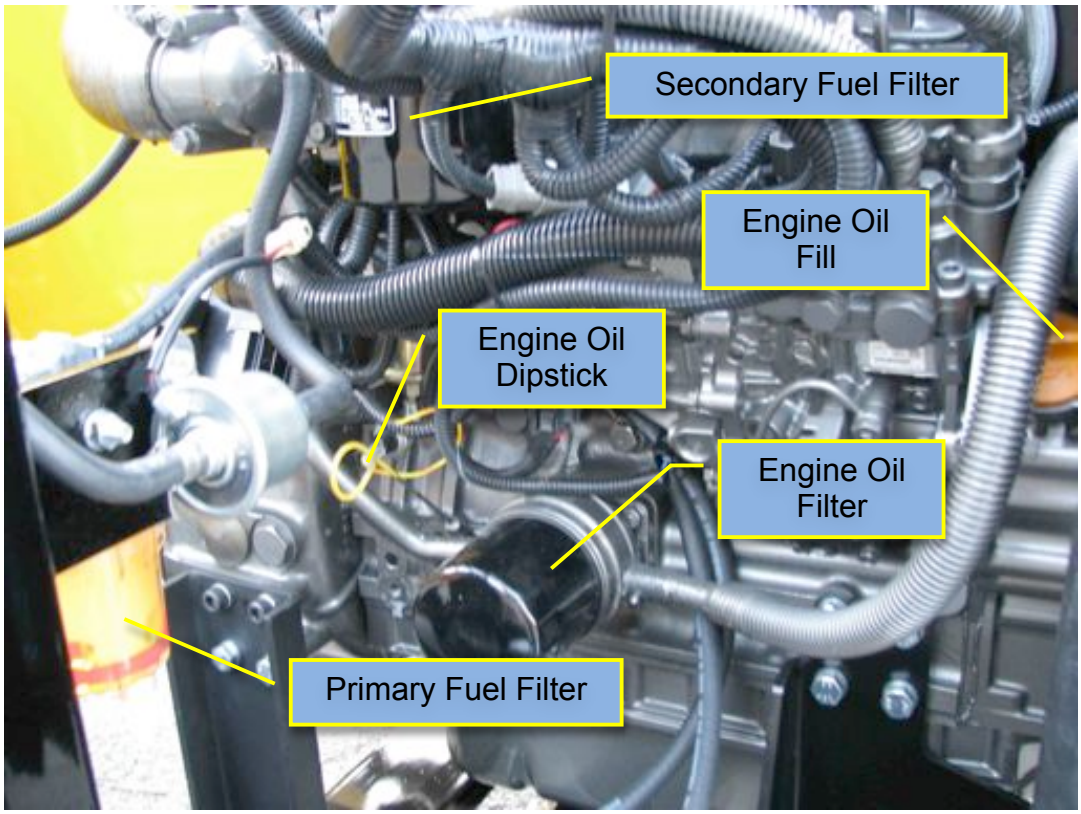
The low oil shutdown switch is mounted on the front of the hydraulic oil reservoir (on units equipped with emergency shutdown packages). It will shut down the engine in the event of loss of hydraulic oil to protect against damage to the system.

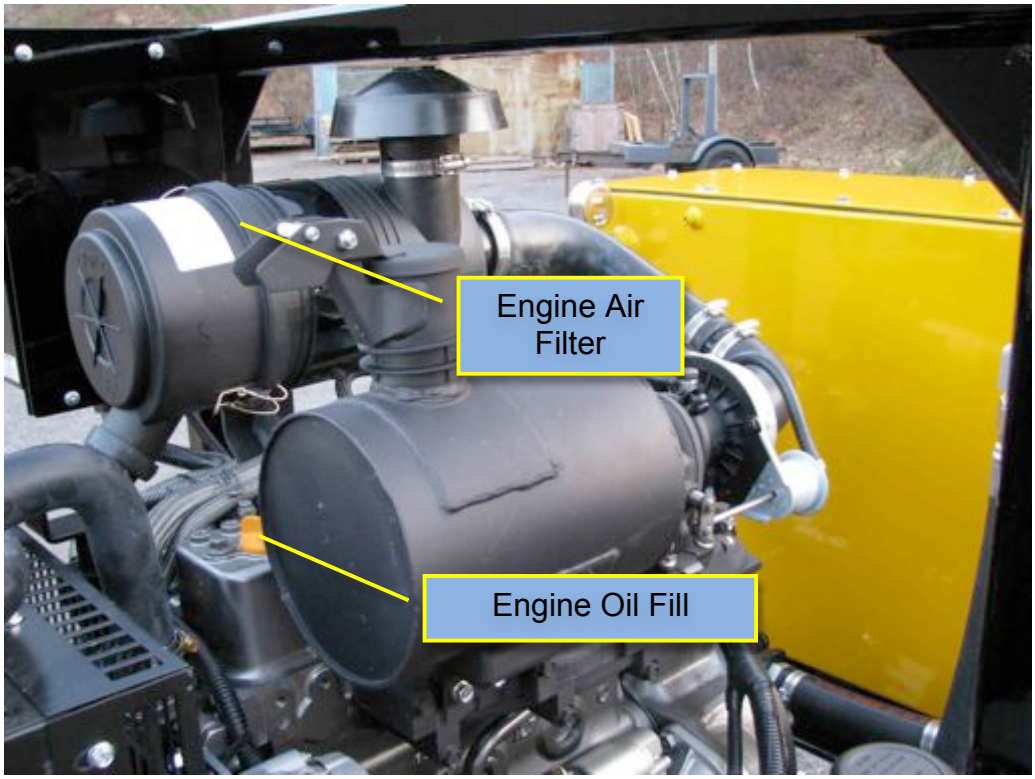
HYDRAULIC OIL COOLER: (#3)

1. The hydraulic oil cooler is mounted on the front of the engine. The oil is cooled by the flow of air pulled through it by the engine fan. Be sure the cooler fins are kept clean at all times.

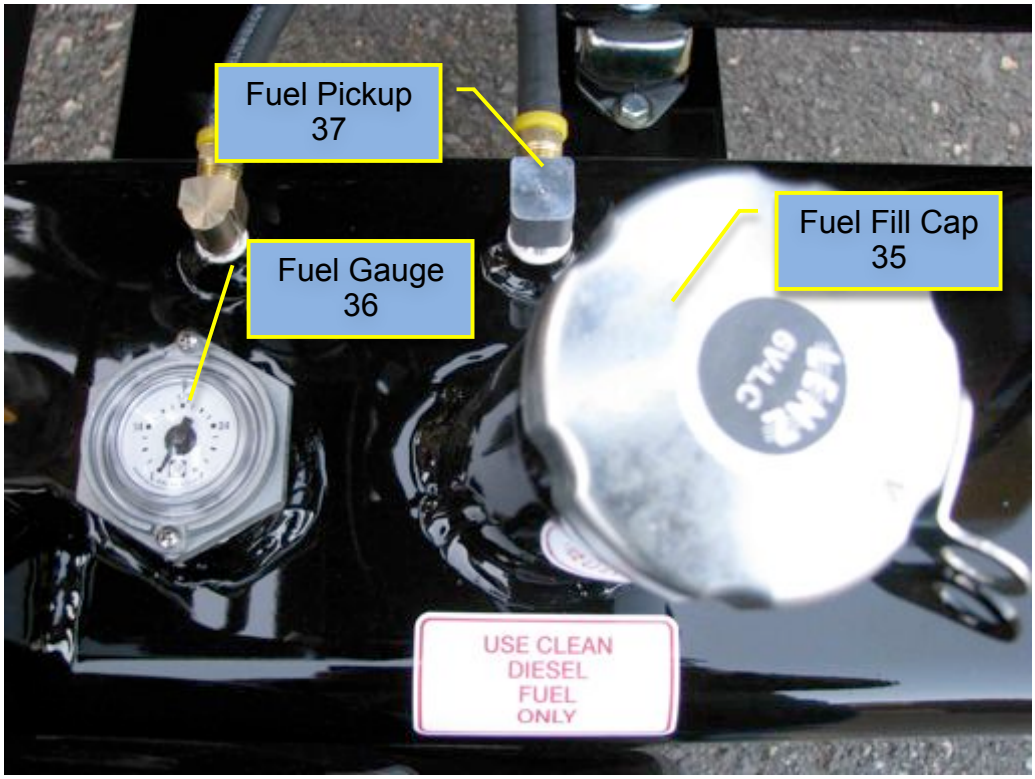


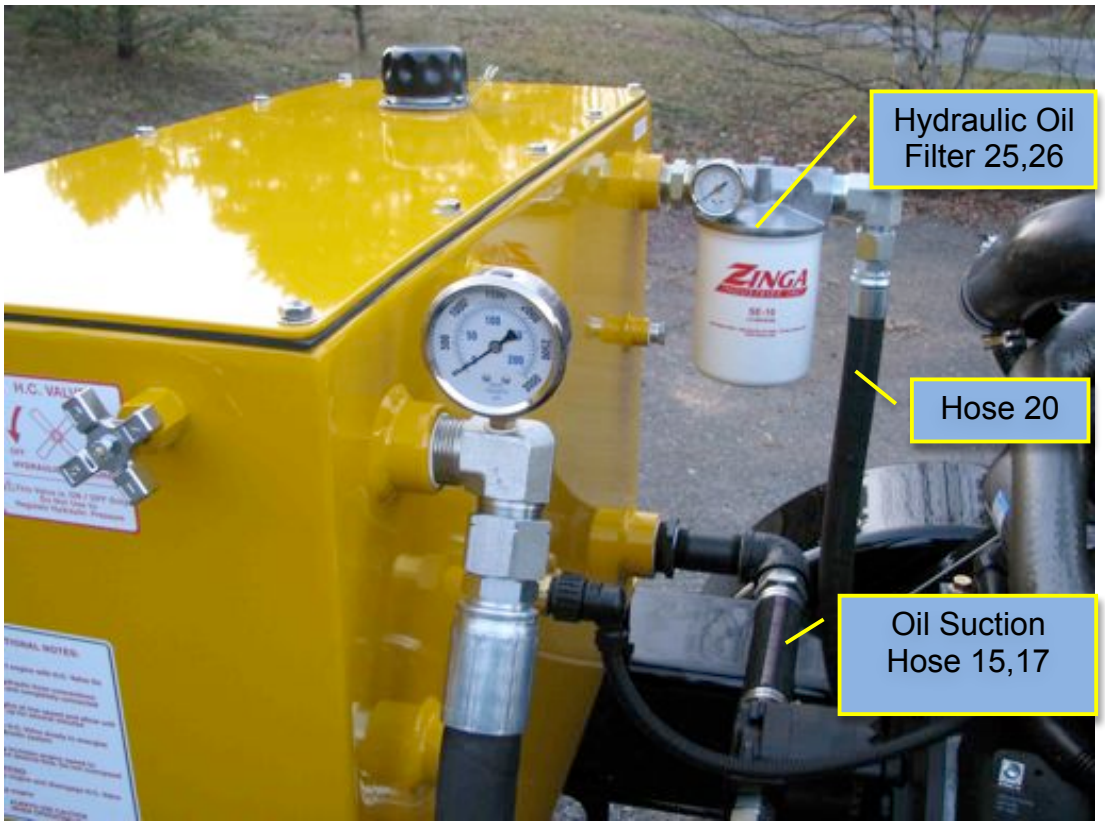
Service Points

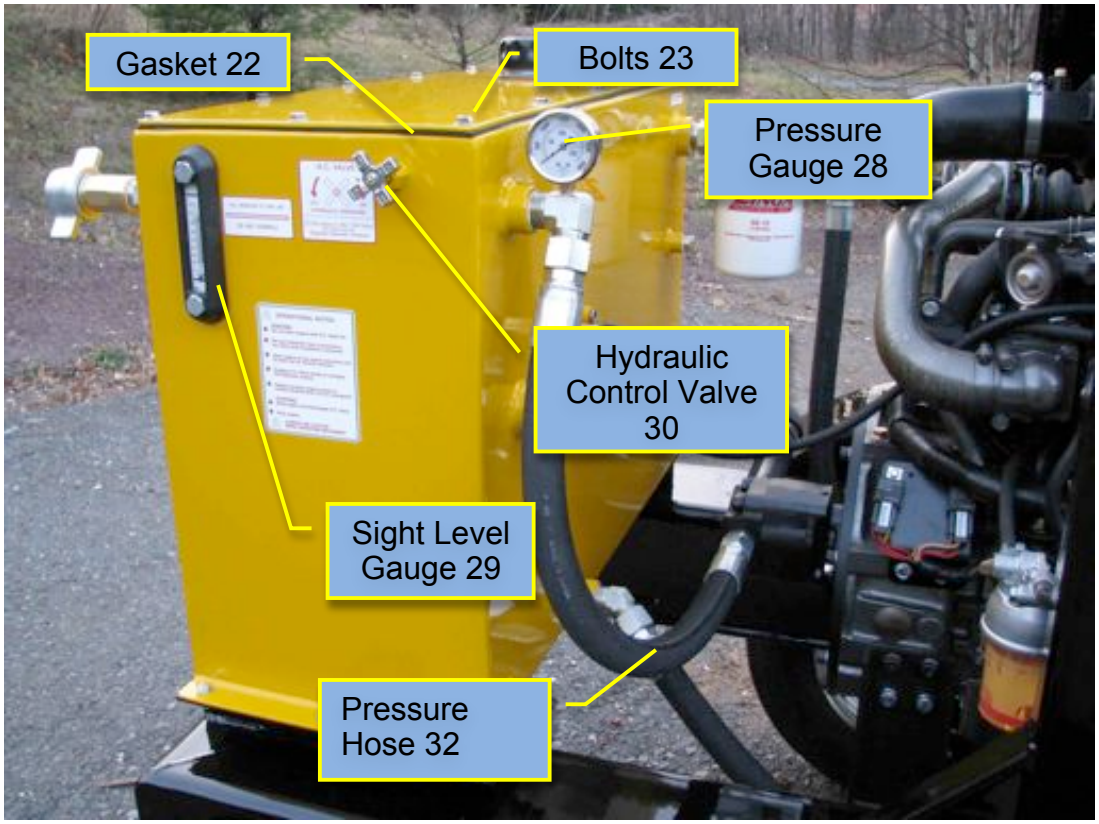




Service Points




Hydraulic Oil Filter 25,26
Hose 20
Oil Suction Hose 15,17


Gasket 22
Bolts 23
Pressure Gauge 28
Hydraulic Control Valve 30
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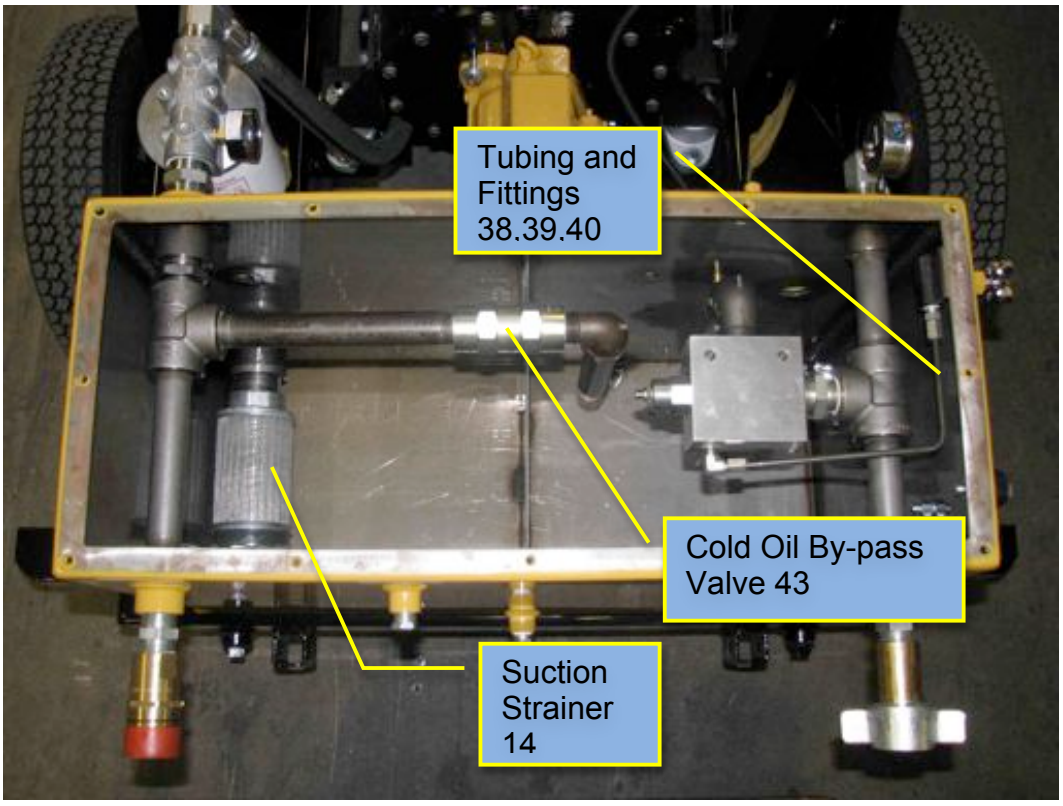
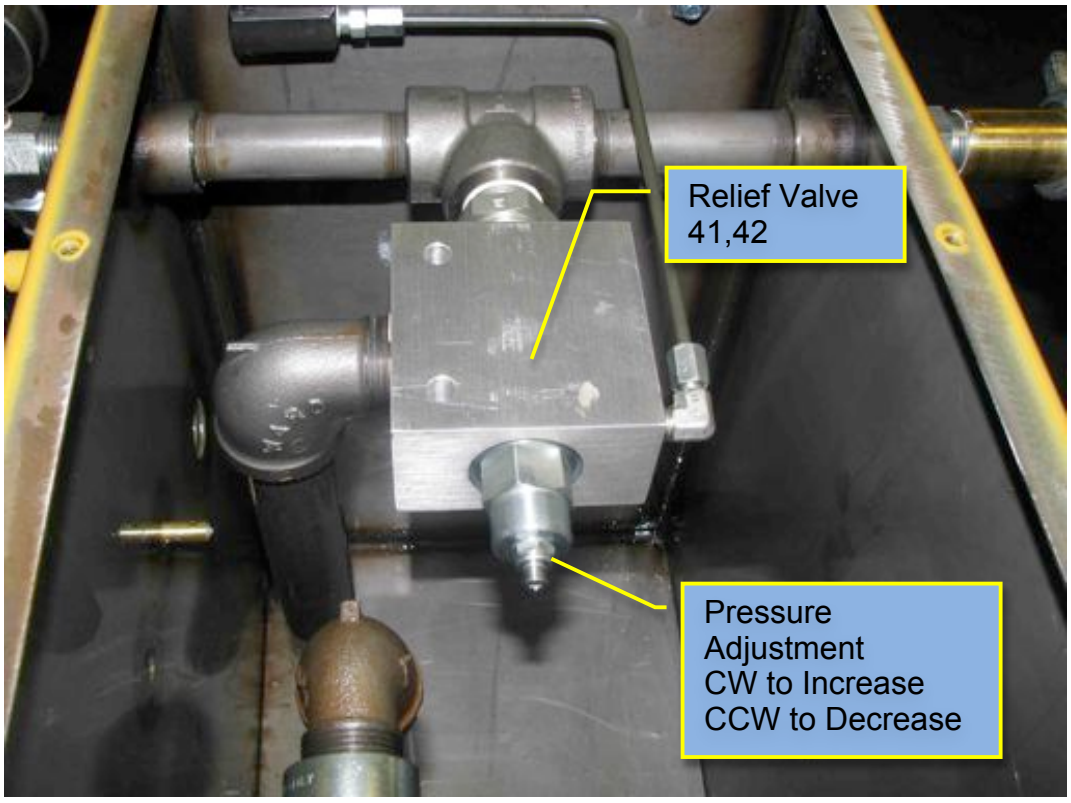
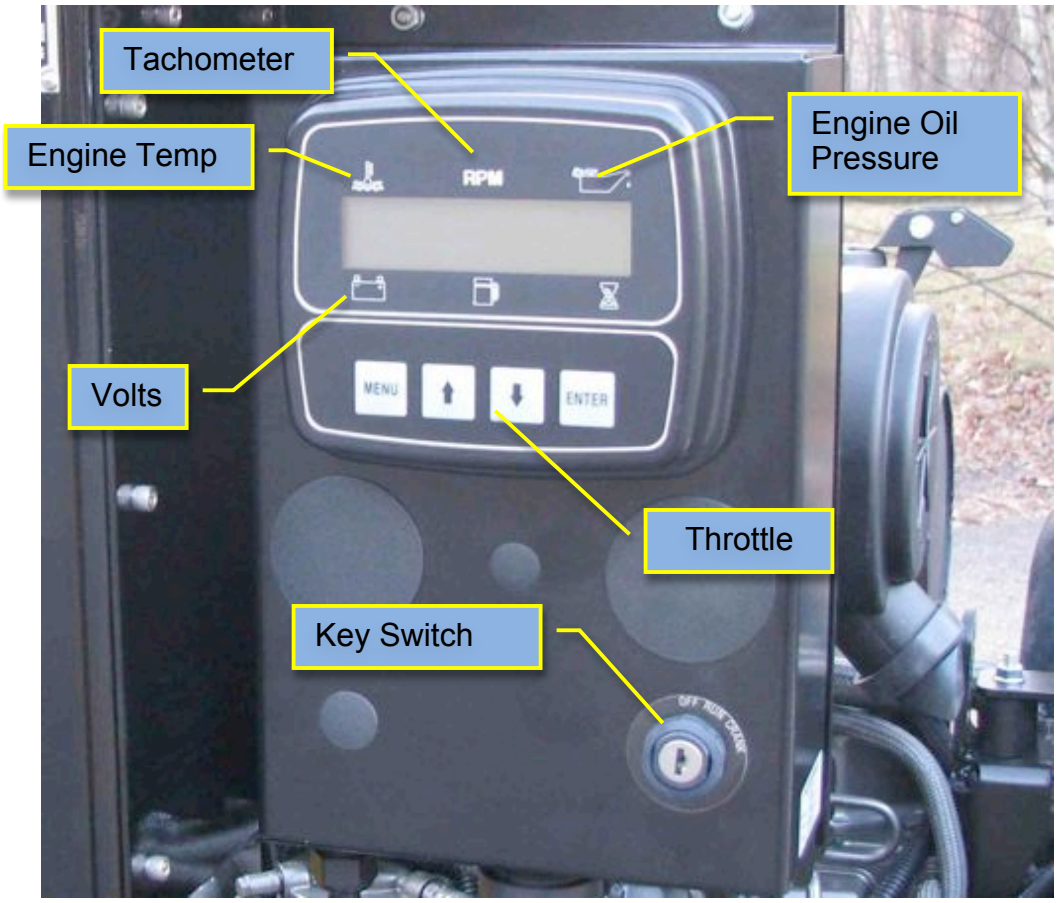
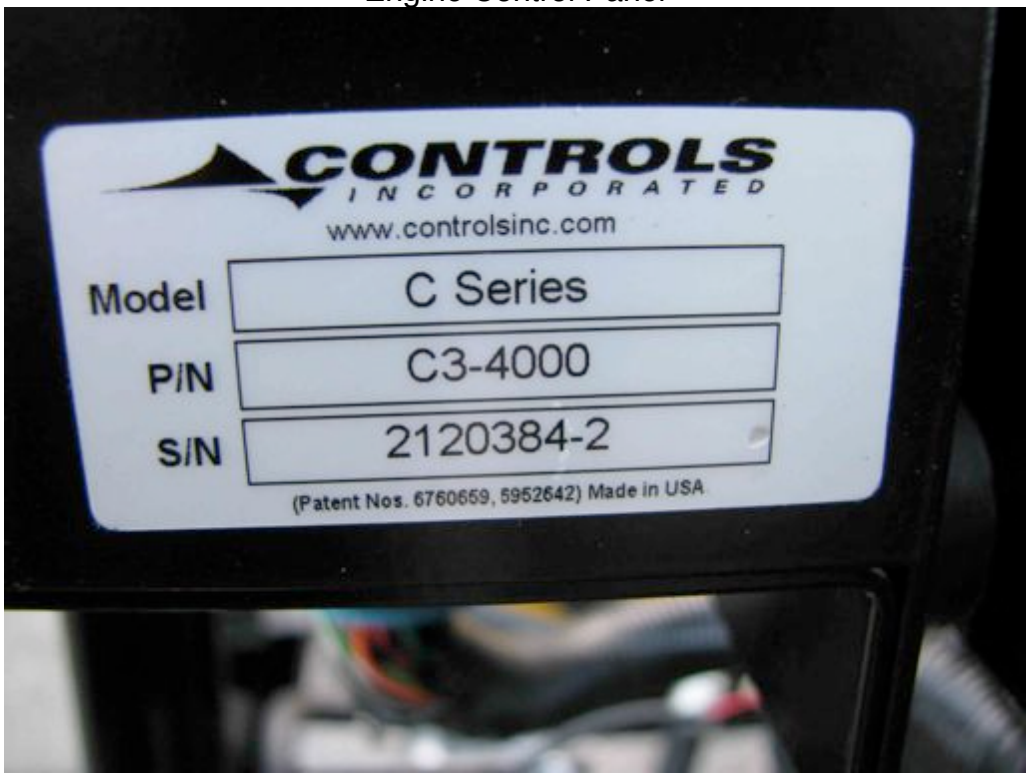
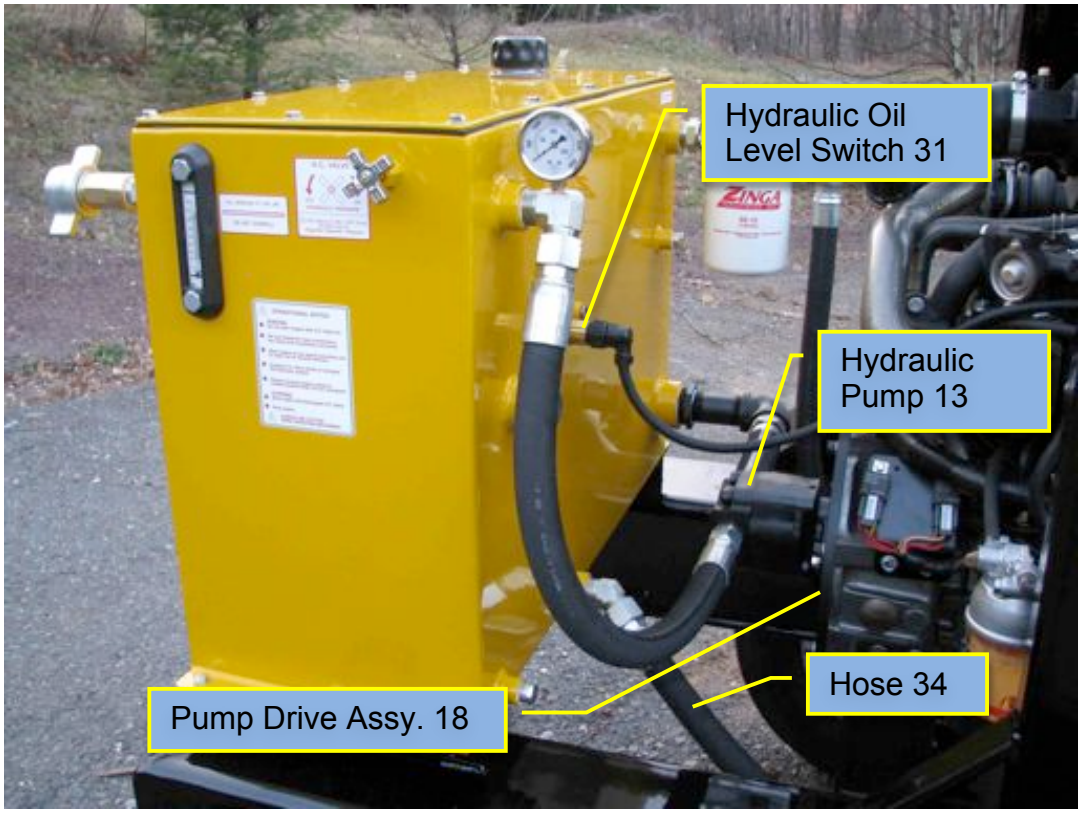

Tubing and Fittings 38.39.40
Cold Oil By-pass Valve 43
Suction Strainer 14

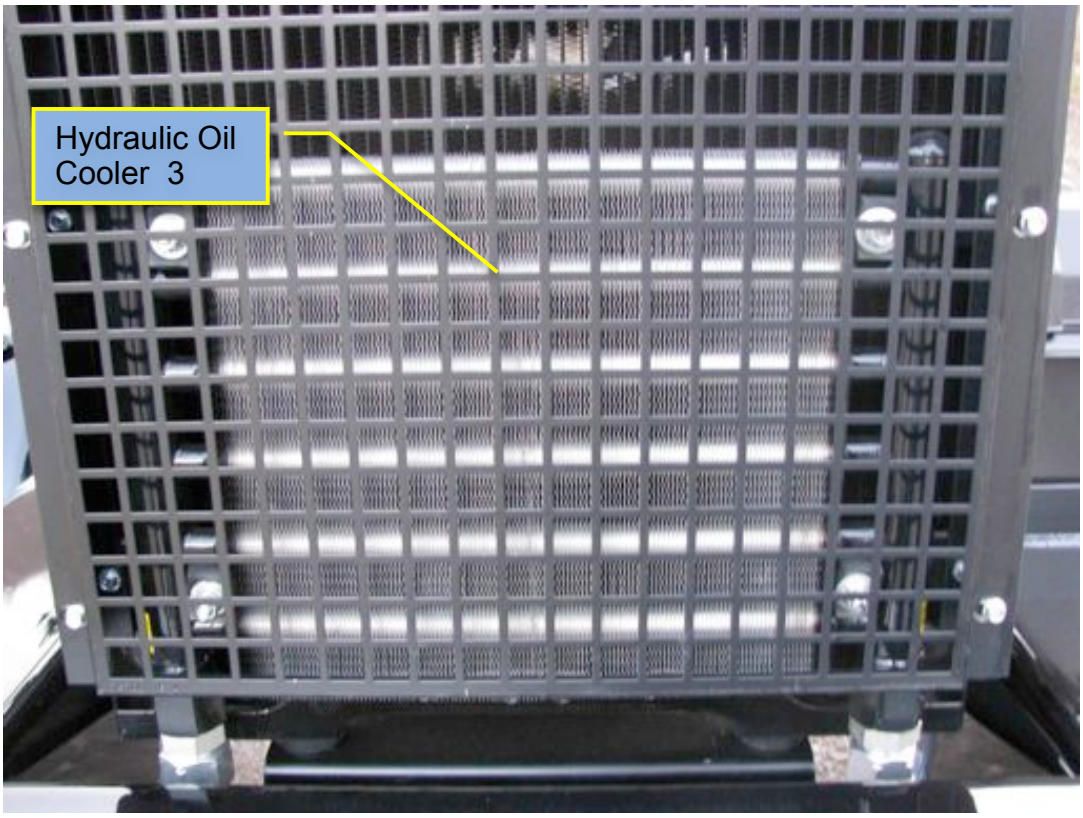

Relief Valve 41,42
Pressure Adjustment CW to Increase CCW to Decrease

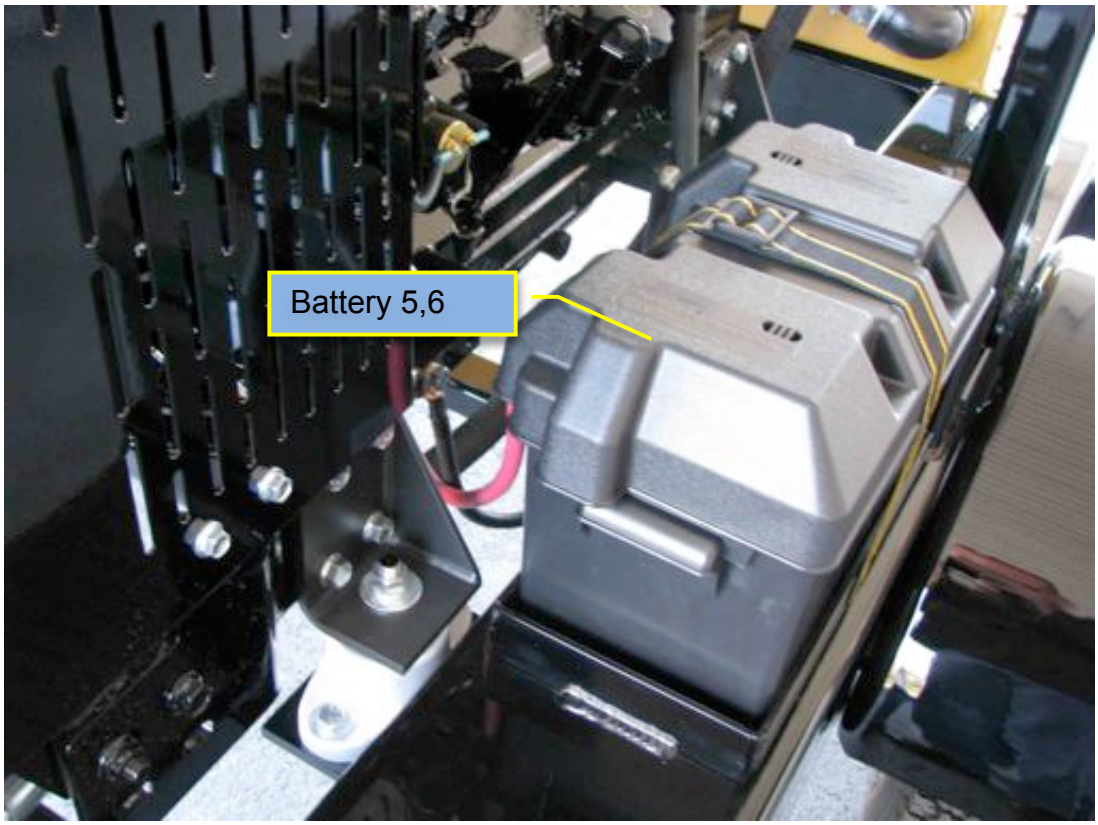


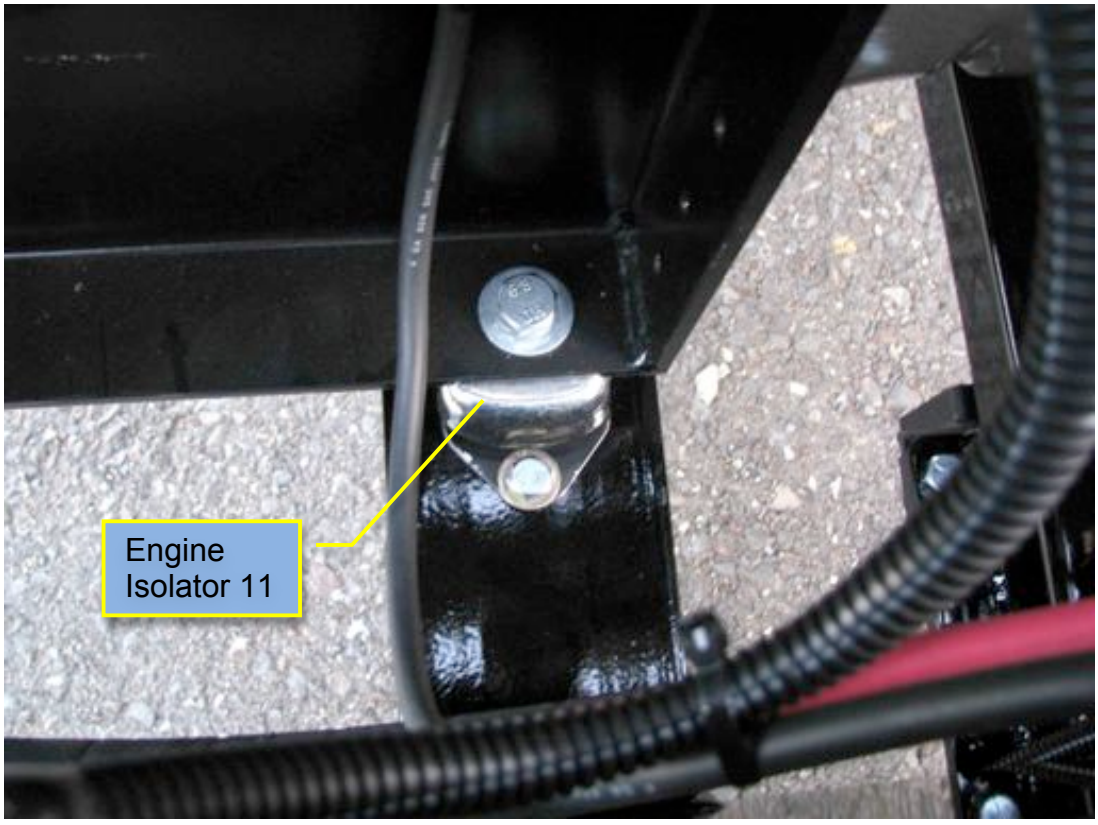
Engine Control Panel

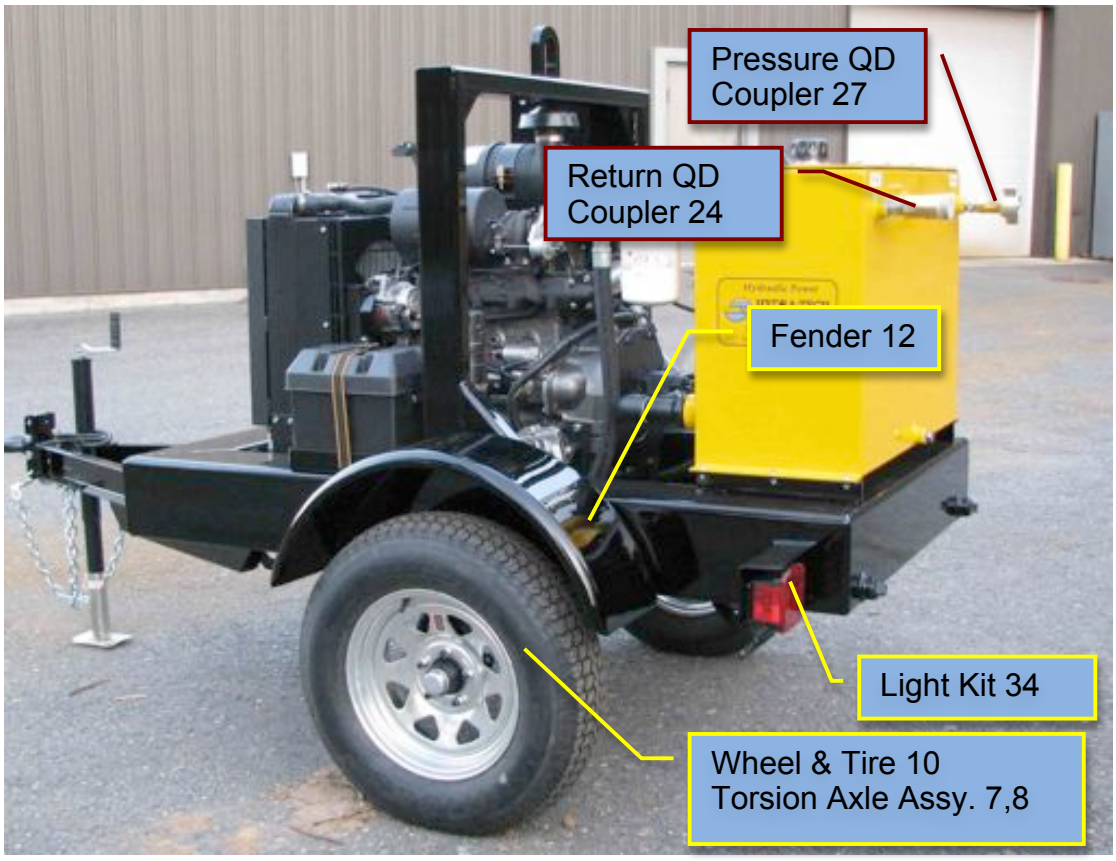


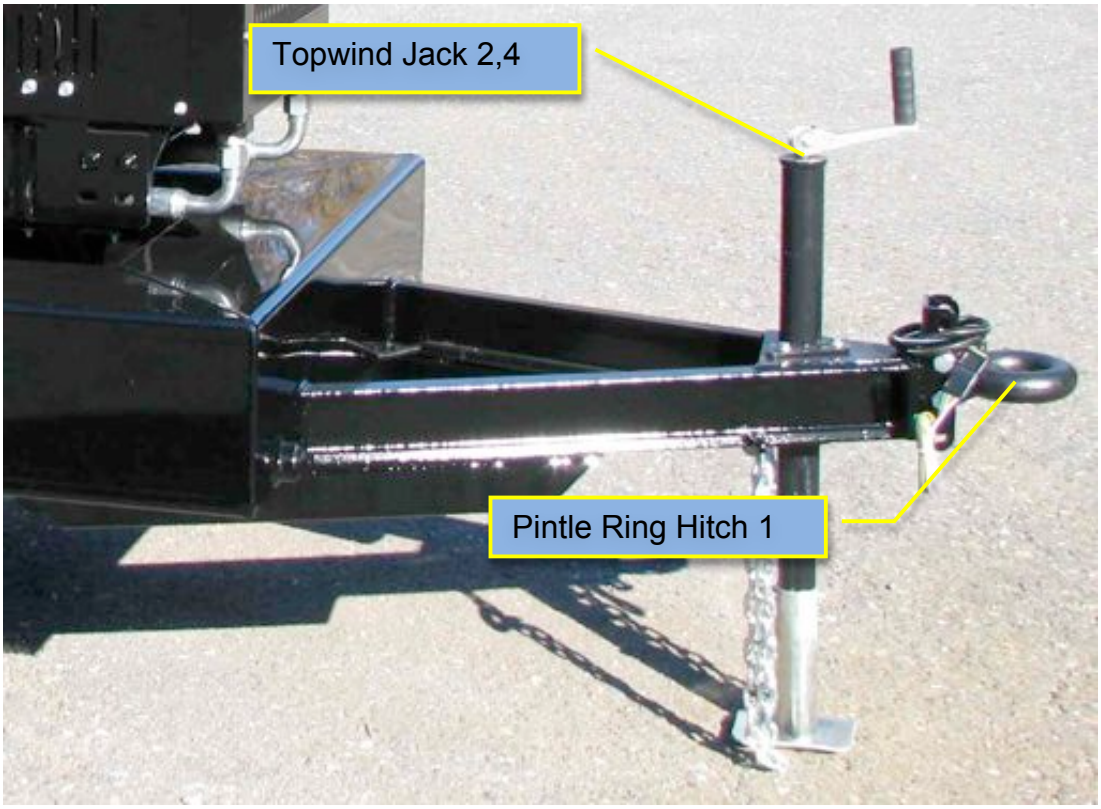

Hydraulic Oil
Level Switch 31
Hydraulic
Pump 13
Hose 34
Pump Drive Assy. 18


Hydraulic Oil
Cooler 3


Battery 5,6


Engine
Isolator 11


Pressure QD
Coupler 27
Return QD
Coupler 24
Fender 12
Light Kit 34
Wheel & Tire 10
Torsion Axle Assy. 7,8


Topwind Jack 2,4
Pintle Ring Hitch 1

PARTS LIST

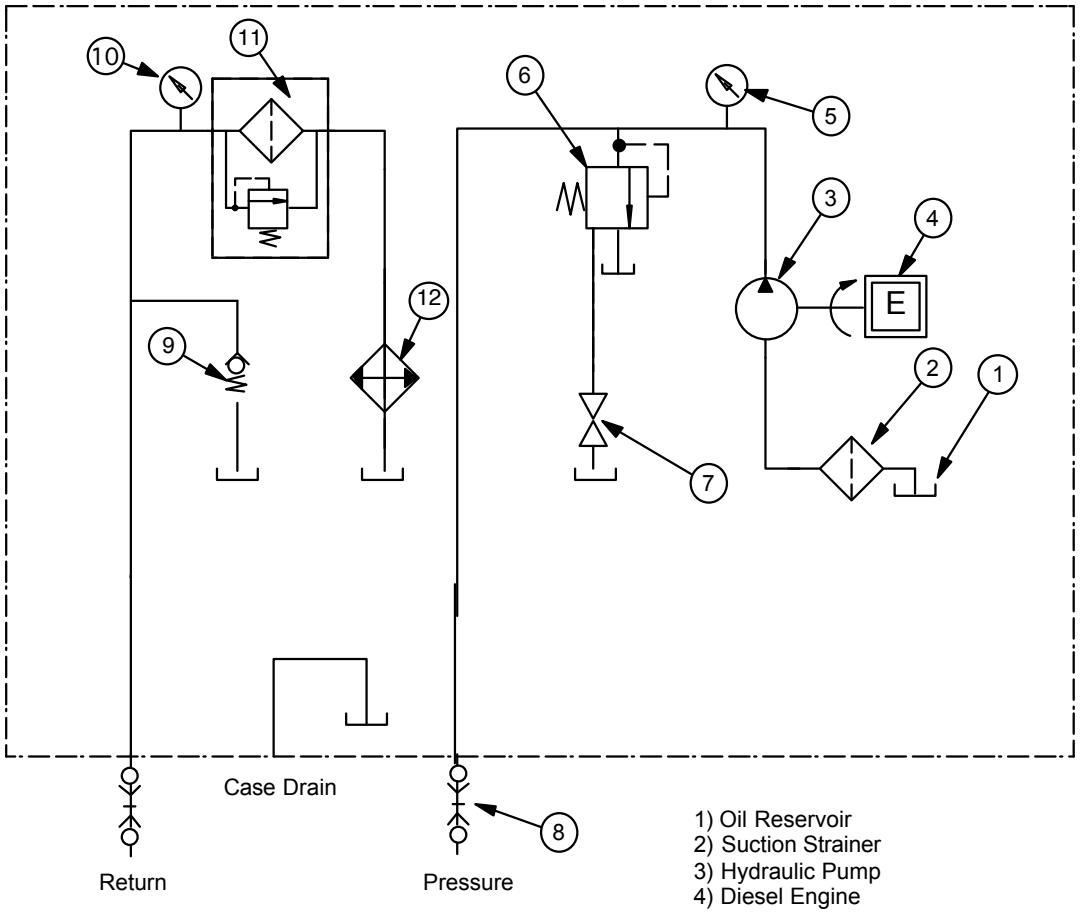
HT50DYS POWER UNIT

Always mention serial # of unit when ordering parts

Item	Part #	Description
1.	0508250	Pintle ring hitch
	0508251	Ball hitch, 2-5/16" (optional)
2.	0508070	Topwind jack
3.	8328298A	Oil Cooler
4.	0508071	Jack foot
5.	8328166	Battery (12 volt)
6.	8329140	Battery Box
7.	0508253	Torsion Axle Assy. (Left Side)
8.	0508254	Torsion Axle Assy. (Right Side)
9.	----------	N/A
10.	0506252	Wheel & tire assy. (2 req)
11.	8329635	Engine Isolator Mount (4 req)
12.	0508088	Fender (2 req)
13.	4908111A	Hydraulic pump
14.	0408048	Suction strainer
15.	8328143	Oil suction hose
16.	----------	N/A
17.	8328142	Hose clamp (2 req)
18.	8328831	Hyd. pump drive assy.
19.	----------	N/A
20.	83210960	Hyd. hose assy. (filter to cooler) 63”
21.	0401526	Filler cap/Strainer
22.	4908029	Gasket, oil reservoir
23.	00010465 00010581	Hex head bolt (12 req) Seal Washer
24.	0800182	1" male Q.D. coupler
25.	0408052	Gauge, filter wear
26.	0408051 0408050	Return filter assy. (complete) Return filter (cartridge only)
27.	0800184	1" female Q.D. coupler
28.	0408030	Pressure gauge, 3000 PSI
29.	0401529	Sight level/Temperature gauge
30.	8321521	Hydraulic control valve
	8321706	Gasket for control valve
31.	8328040A	Oil level shutdown switch
32.	83210958	High pressure hose assy. 30”

33.	---------	N/A
34.	83210959	Hyd. hose assy. (cooler to reservoir) 51”
35.	8328061	Fuel filler cap
36.	8321902	Fuel gauge assy.
37.	8326187	Fuel pickup tube
38.	0209385	Tube fitting
39.	0208159	1/4" tubing
40.	0201522	Tube fitting, 90°
41.	8321524	Relief valve (complete)
42.	8321734	Relief valve (cartridge only)
43.	8321311	Cold Oil By-Pass Valve

HYDRAULIC SCHEMATIC
HT50DYS Power Unit



1) Oil Reservoir
2) Suction Strainer
3) Hydraulic Pump
4) Diesel Engine
5) Pressure Gauge
6) Pilot Controlled System Relief Valve
7) Vent Valve (On/Off)
8) Quick-Disconnect Couplings
9) Cold Oil By-Pass Valve
10) Return Filter Wear Indicator Gauge
11) Return Filter w/ By-Pass Valve
12) Hydraulic Oil Cooler

HYDRA-TECH PUMPS

WHO GIVES AND WHO RECEIVES THIS WARRANTY

YANMAR DIESEL ENGINE CO., LTD. ("YANMAR") warrants to the original retail purchaser only that each new YANMAR distributor, dealer, or other manufacturer (OEM, and their distributors and dealers) shall be free from defects in materials and workmanship under normal use and service during the Warranty Period set forth below.

This warranty gives you specific legal rights, and you may also have other rights which vary by country or from state to state.

WARRANTY PERIOD

The Warranty Period begins on the date of delivery to the original retail purchaser. The date of delivery and all other relevant information must be recorded on a Delivery Report.

The following table lists the warranted duration or total operation hours, whichever comes first, for each YANMAR industrial diesel engine and associated product.

ITEM	RENTAL USE	PERSONAL USE
Industrial diesel engines and/or Associated products	24 months/2,000 hours	24 months/2,000 hours

NOTE: Electric parts, such as starter motor, alternator, dynamo or turbochargers are covered for the first 12 months or 1000 hours, whichever occurs first.

The above warranties (by duration or operation hours) begin on the date of delivery recorded on the Delivery Report and are valid only for the original retail purchaser.

YANMAR shall honor a claim filed during the Warranty Period, duration of operation hours, whichever comes first; provided however, that operation hours shall apply only to YANMAR products equipped with an hour meter.

YANMAR HEREBY DISCLAIMS ALL IMPLIED WARRANTIES AFTER THE APPLICABLE EXPIRATION DATE OF THE EXPRESS LIMITED WARRANTY. Some states or countries do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

WHAT IS COVERED BY THIS WARRANTY

YANMAR will replace or repair, at its option, without charge for the parts or labor, at a place designed by YANMAR, any parts of a YANMAR engine/product covered by this Warranty found to be defective in material or workmanship.

WHAT IS NOT COVERED BY THIS WARRANTY

This Warranty does not cover parts affected, damaged or depreciated by misuse, abuse, improper maintenance, neglect, use of unsuitable attachments or non-genuine parts, ordinary wear, rust or corrosion, inadequate transportation, accident, or service by an unauthorized facility.

Expendable parts, such as all kinds of filters, belts, gaskets, rubber hoses, fuses, brushes, etc., and lubricants are excluded from this Warranty.

This Warranty does not obligate YANMAR to bear any fees for transportation of any YANMAR engine/product to and from the place designated by YANMAR for Warranty Service.

YANMAR MAKES NO OTHER EXPRESS WARRANTIES OTHER THAN SET FORTH ABOVE, AND ALL OTHER OBLIGATIONS OR LIABILITIES, INCLUDING SPECIAL OR CONSEQUENTIAL DAMAGES OR CONTINGENT LIABILITIES ARISING OUT OF THE FAILURE OF ANY YANMAR ENGINE/PRODUCT TO OPERATE PROPERLY, ARE HEREBY EXCLUDED.

No person is authorized to give any other Warranty or to assume any additional obligation on YANMAR's behalf.

Some states or countries do not allow the exclusion or limitation of incidental or consequential or special damages, so the above limitation or exclusion may not apply to you.

PROCEDURE FOR MAKING A WARRANTY CLAIM

For any defect covered by this Warranty, contact any authorized YANMAR distributor or dealer bo obtain the name, address, and telephone number of the nearest authorized Service and Repair Facility within thirty (30) days after discovery of such defect.

The YANMAR Warranty shall apply to YANMAR engines/products operated in any state or country regardless of the state or province in which the YANMAR engine/product was purchases, provided, however, that the YANMAR Warranty Handbook shall be presented and that Warranty service is provided by the YANMAR Service Network.

167 Stock Street, Nesquehoning PA 18240
Phone: (570) 645-3779 Fax: (570) 645-4061
Email: htpump@hydra-tech.com
Website: www.hydra-tech.com

Hydra-Tech Pumps Limited Warranty

Hydraulic Power Units Only

Hydra-Tech Pumps warrants to the original purchaser only that this product is free from defects in material and workmanship, and agrees to repair or replace, at Hydra-Tech's option, any part found to be defective within **12 months or 500 hours of use (whichever comes first) from the date of purchase.** This warranty is not transferable.

THIS WARRANTY DOES NOT COVER DAMAGES RESULTING FROM NORMAL WEAR, ABUSE, CARELESS HANDLING, IMPROPER INSTALLATION, LACK OF SERVICE / PROPER PREVENTATIVE MAINTENANCE, IMPROPER FUELING, IMPROPER APPLICATION AND IMPROPER OPERATION. WARRANTY COVERAGE IS NORMALLY NOT AVAILABLE FOR SUCH ITEMS AS: Tires, hoses, (fuel, oil, hydraulic oil) filters, batteries, and paint.

Hydra-Tech **does not** warranty engines – warranty claims on engines must be handled through your local engine distributor.

Any modification or alteration of this equipment will void the warranty. Any claim for warranty damage must be accompanied by digital photos of the defective part or parts, the serial number from the equipment, and a detailed description of the defect and possible causes. All warranty claims should be emailed to htpump@hydra-tech.com or mailed to Hydra-Tech Pumps, 167 Stock Street, Nesquehoning, Pennsylvania 18240 USA.

Power Units judged by Hydra-Tech Pumps to have been defective in workmanship or materials when shipped from the factory and within the warranty period will be either repaired or replaced at Hydra-Tech's option free of charge including motor freight both ways, within the continental United States.

HYDRA-TECH MAKES NO WARRANTY EXPRESSED OR IMPLIED INCLUDING WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE EXCEPT AS STATED ABOVE. HYDRA-TECH SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING CONSEQUENTIAL DAMAGES ARISING OUT OF ANY BREACH OF WARRANTY AND WHETHER OR NOT ARISING OUT OF OR BASED ON HYDRA-TECH'S NEGLIGENCE, WHETHER ACTUAL OR IMPLIED, AND FOR DAMAGES TO ANY PROPERTY OR PERSON ARISING OUT OF THE PURCHASE OR THE USE, OPERATION OR MAINTENANCE OF THE EQUIPMENT. HYDRA-TECH SHALL NOT BE RESPONSIBLE FOR REPAIRS OR ALTERATIONS MADE BY OTHERS.

No person is authorized to make any representations or warranties on behalf of Hydra-Tech and no other person is authorized to alter or extend any of the conditions contained in this warranty.

Jan 2017