HYDRA-TECH PUMPS

Operation and Maintenance Instructions
Parts List

HT35DYS Power Unit

Read and **understand** all of the instructions and safety information in this manual before operating or servicing this tool.

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

HT35DYS Power Unit Specifications:

Dimensions: OAL: 99” (252 cm), OAW: 60” (152 cm), OAH: 58” (147 cm)

Weight: 1430 lbs. (650 Kg)

Engine: Yanmar 3TNV88BDSA liquid cooled diesel

Horsepower: 35 @ 2800 RPM (26.9 Kw)

Fuel Capacity: 42 gallons (159L)

Fuel Consumption: Approx 2 gal. (7.6 L) /hour @ full load

Engine Controls:

- Variable speed throttle
- Emergency shutdown system for high engine temp., low oil pressure, low hyd. oil level.
- Tachometer, Hour Meter. Preheat, Oil pressure, Temperature, and Volt L.E.D.’s.

Hydraulic Output: Variable maximum 20 GPM (76 LPM)

Operating Pressure: Maximum 2500 PSI (170 Bar)

Hose Ports: 3/4" quick-disconnect couplers, wing-nut style

Hyd. Oil Capacity: 30 gallons (113 Liters)

Tire Size: B78-13

Filters:

Fuel: (Yanmar) 119802-55801

Engine Oil: (Yanmar129150-35153

Air: (Donaldson) P821575

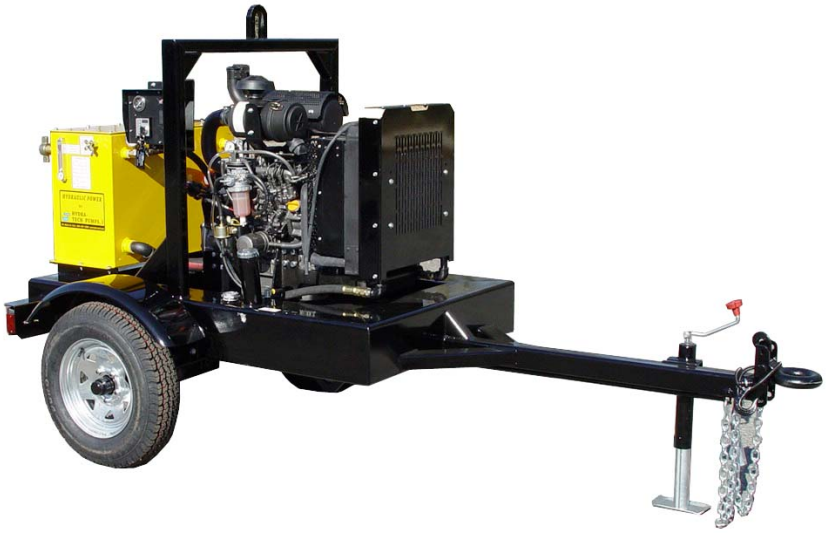
Hydraulic Oil: (Zinga) AE10, (Donaldson) P551551

HYDRA-TECH PUMPS

PORTABLE HYDRAULIC POWER UNIT

MODEL HT35DYS

This diesel power unit is powered by a Yanmar diesel engine and is designed to drive several of our pump models including the S4VHL and S6TC. A large, built-in fuel tank allows this unit to run up to 24 hours between refills. Other equipment that require flows to 20 GPM may also operate from this power unit.



FEATURES

- Highway Trailer Chassis with built-In Fuel Tank and Independent Suspention
- 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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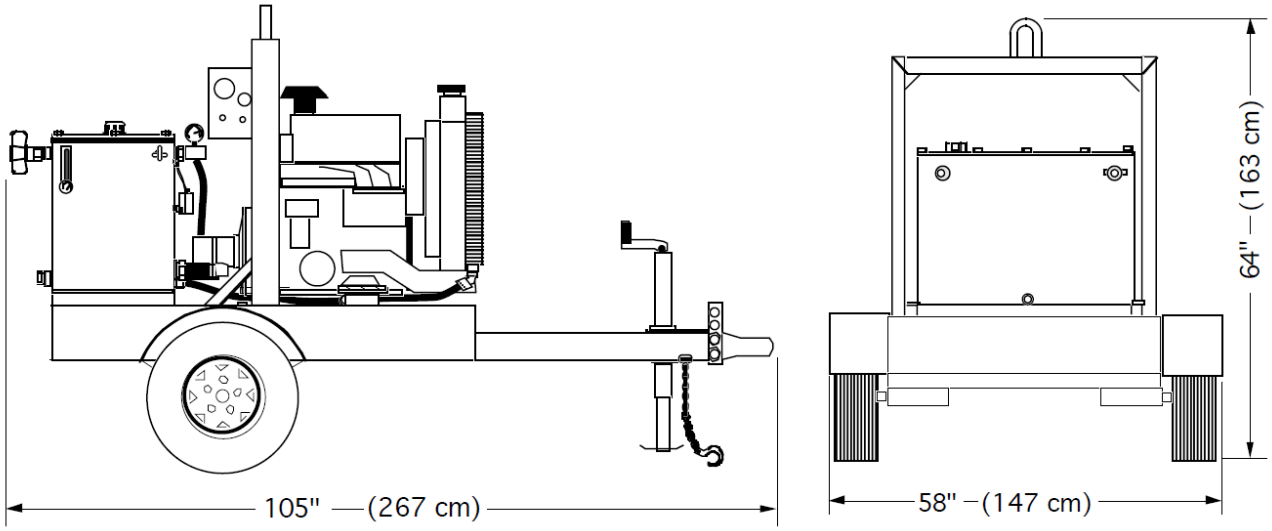
Model HT35DYS Overall Dimensions



SPECIFICATIONS

ENGINE:..... Yanmar 3TNV88 Liquid Cooled Diesel (Tier 4 Int.)
POWER:..... 35 HP(26 KW) @ 3000 RPM
HYDRAULIC OUTPUT*:..... Variable, Max. 20 GPM (76 LPM)
OPERATING PRESSURE*:..... Maximum 2500 PSI (170 Bar)
HOSE PORT SIZE:..... 3/4" 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:..... 30 U.S. Gallons (113 Liters)
FUEL TANK CAPACITY:..... 42 U.S. Gallons (159 Liters)
FUEL CONSUMPTION:..... Approx. 2.5 U.S. Gal/Hr (9.5 Liters/Hr)
DIMENSIONS:..... H 64" (163 cm) x W 58" (147 cm) x L 105" (267 cm)
WEIGHT (Dry):..... 1420 lbs. (643 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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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

HT35DYS 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 equipment being driven. **Be sure to completely connect the hydraulic couplings or damage will result to the hydraulic system. Always be sure the connections are clean before assembling.**

5. Rotate the Hydraulic Control Valve (H.C. Valve #32) on side of reservoir counter-clockwise until the handle rotates freely. This de-energizes the hydraulic system to permit easy starting of engine and also allows you to de-pressurize the hydraulic system without stopping the engine.

STARTING PROCEDURE:

1. If powering other hydraulic equipment, make sure proper connections are made before starting.

2. Start engine and let warm up for one or two minutes. Throttle the engine to 1500 RPM.

3. 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>Off / On</u> only).**

4. Check to make sure the equipment being driven is operating properly and there are no oil leaks present**. If there are any problems shut down the unit and make necessary repairs before continuing.**

5. Adjust engine speed to achieve the desired hydraulic output.
   <u>NOTE:</u> If maximum 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.

   <u>NOTE:</u> DO NOT INCREASE ENGINE SPEED ONCE YOU REACH MAXIMUM OPERATING PRESSURE.

Maintenance Instructions

HT35DYS Power Unit

ENGINE:

Maintain engine as per "Yanmar Instruction Booklet" provided with each unit.

HYDRAULIC PUMP: (#19)

1. The hydraulic pump is a Bucher gear pump 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 hose) and read the pressure gauge supplied on the unit. This reading should always be above 1900 PSI at full throttle (the reading will normally be between 2000-2500 PSI).

3. If hydraulic pump failure is suspected, be sure to check operation of the relief valve. (See Relief Valve section below). If pump is still not functioning properly, replace pump cartridge, replace pump or have it serviced by an authorized Bucher service center.

SUCTION STRAINER: (#35)

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.

SIGHT GLASS/TEMPERATURE GAUGE: (#34)

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

2. Be sure the operating temperature never exceeds 140 degrees F (60 degrees C). If the oil gets too hot, shut down the system and let cool. Check for insufficient oil in reservoir, kinked hydraulic hoses, inadequate ventilation of the reservoir or oil cooler, or blocked hydraulic circuit **(e.g. hydraulic hose couplings improperly connected)** causing excess pressure to open the relief valve and dump hot oil into the reservoir.

RETURN FILTER: (#27)

1. The return filter is located on the front of the reservoir. It has a gauge indicator for monitoring filter backpressure.

2. When the system is energized, notice the needle on the indicator. This should remain below 50 PSI <u>when oil is warm</u>. If the reading is 50 PSI or above, the filter cartridge must be replaced. The cartridge is the "spin-on" type.

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

4. For maximum hydraulic component life, filter cartridges should be replaced every 250 hours of operation and must be replaced when changing the oil in the reservoir.

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

RESERVOIR:

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

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

3. The reservoir should be cleaned every 1000 hours.

4. To clean the reservoir, simply drain the oil, remove the top cover and clean the inside with solvent or kerosene and then dry.

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

RELIEF VALVE: (#44)

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

2. The valve is preset at 2500 PSI. To prevent damage to any hydraulic components in the system, do not set valve above 2500 PSI.

3. The valve is activated by the hydraulic control valve and re-circulates oil back to the reservoir when it is de-energized or subjected to pressures over the relief valve setting.

4. If a faulty relief valve is suspected, first, check pressure gauge reading at full throttle with control valve energized and high-pressure ports blocked off. On models equipped with valved quick-disconnect couplers, simply disconnect the high-pressure hose. If reading is below 1000 PSI, remove cartridge from relief valve body and inspect for damage or debris caught between valve seats inside cartridge.

5. 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 cartridge. Valve body itself should not need replacement unless visible damage such as cracks or damage threads occur.

6. To set relief valve, loosen locking nut on the adjusting screw end of cartridge, back off adjusting screw with hex wrench several turns. Energize system the same as in testing procedure. Slowly turn adjusting screw until pressure reading reaches 2500 PSI. Tighten locking nut and test again. Refit gasket and top cover on reservoir and check oil level.

HYDRAULIC CONTROL VALVE (H.C. Valve): (#32)

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

2. The function of the control valve is to energize the relief valve by means of closing off the vent port and, 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 fitting at the first sign of leakage.

FILLER CAP AND STRAINER: (#25)

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. Do not attempt to defeat the purpose of this strainer by poking holes in it or removing it.

HYDRAULIC OIL COOLER: (#2)

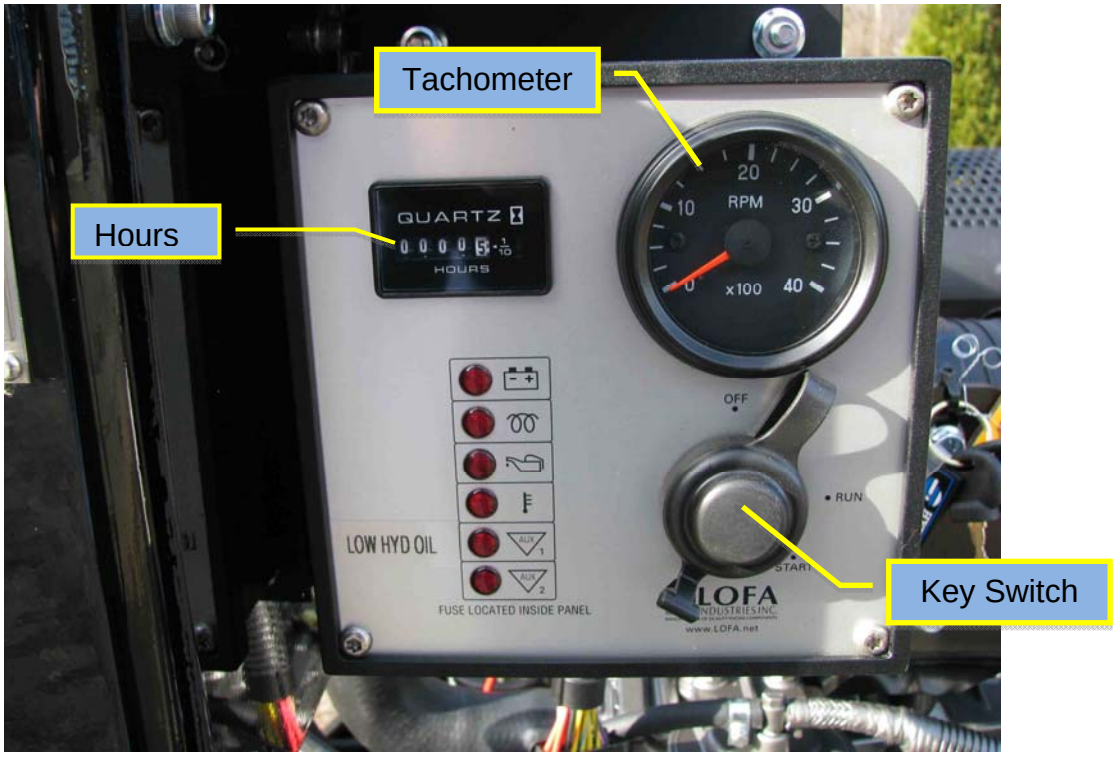
1. The hydraulic oil cooler is mounted on the front of the engine. The oil is cooled by the flow of air pulled through it by the engine fan. Be sure the cooler fins are kept clean at all times.

LOW OIL SHUTDOWN: (#33)

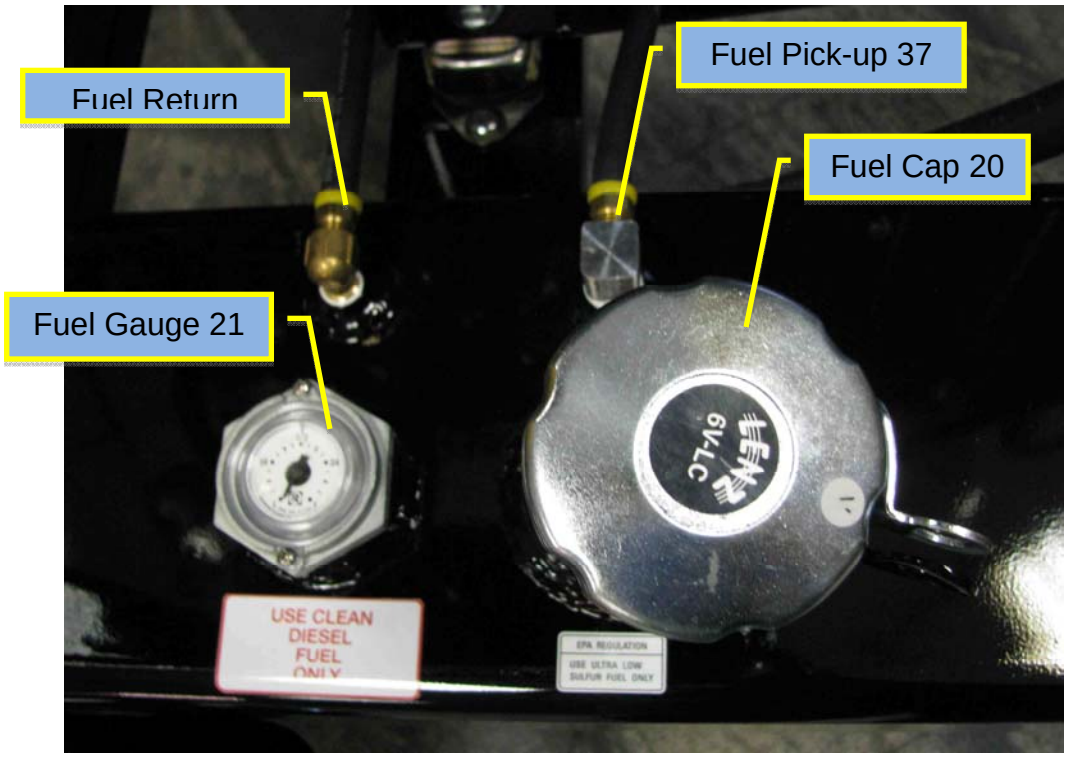
1. The low oil shutdown switch is mounted on the front of the hydraulic oil reservoir (on units equipped with emergency shutdown packages). It will shut down the engine in the event of loss of hydraulic oil to protect against damage to the system.

COLD OIL BY-PASS VALVE: (#45)

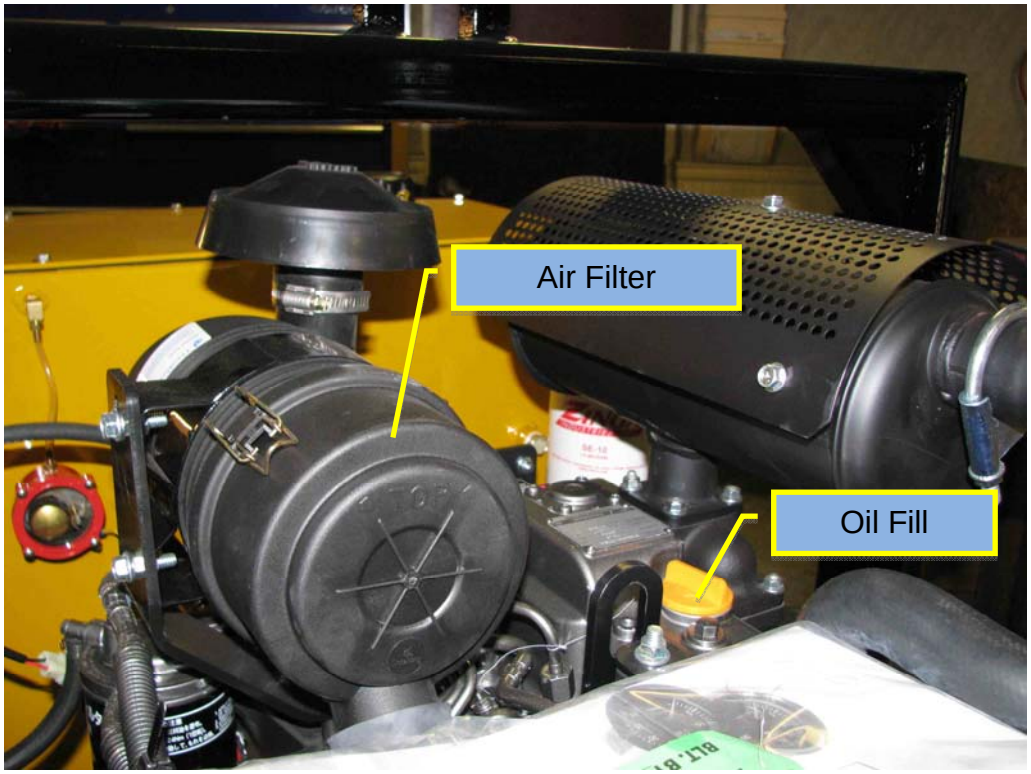
1. The cold oil by-pass valve allows cold oil to re-circulate into the reservoir until the oil is warm enough to pass through the cooler. No maintenance should be required on this valve.



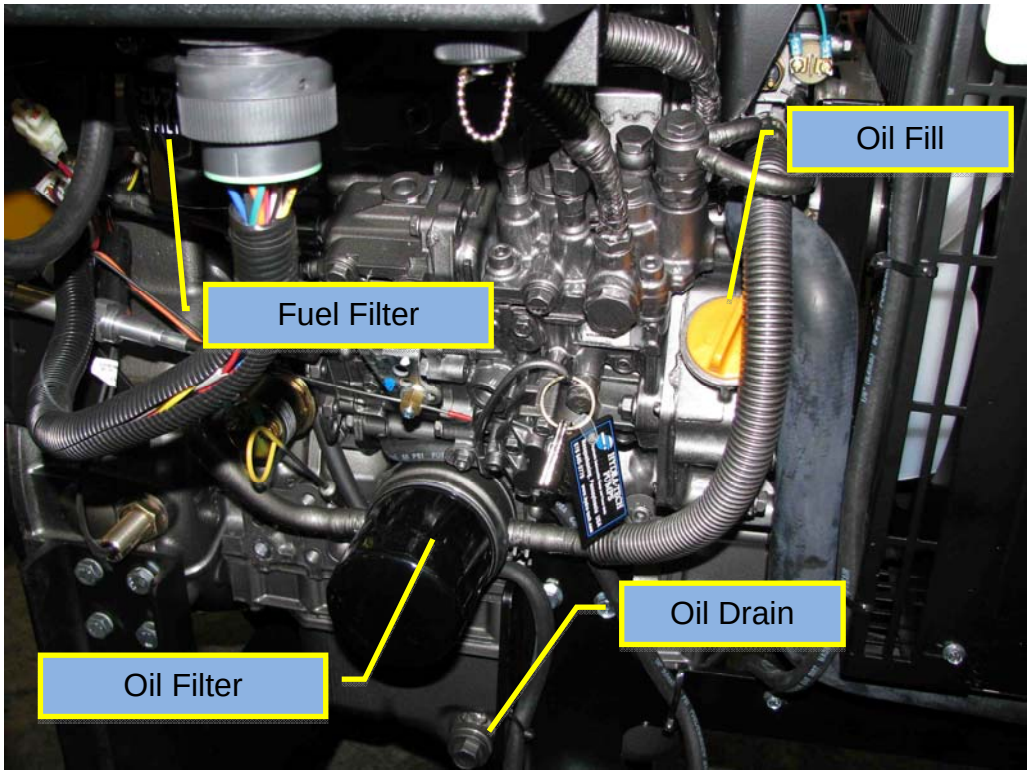
Engine Panel



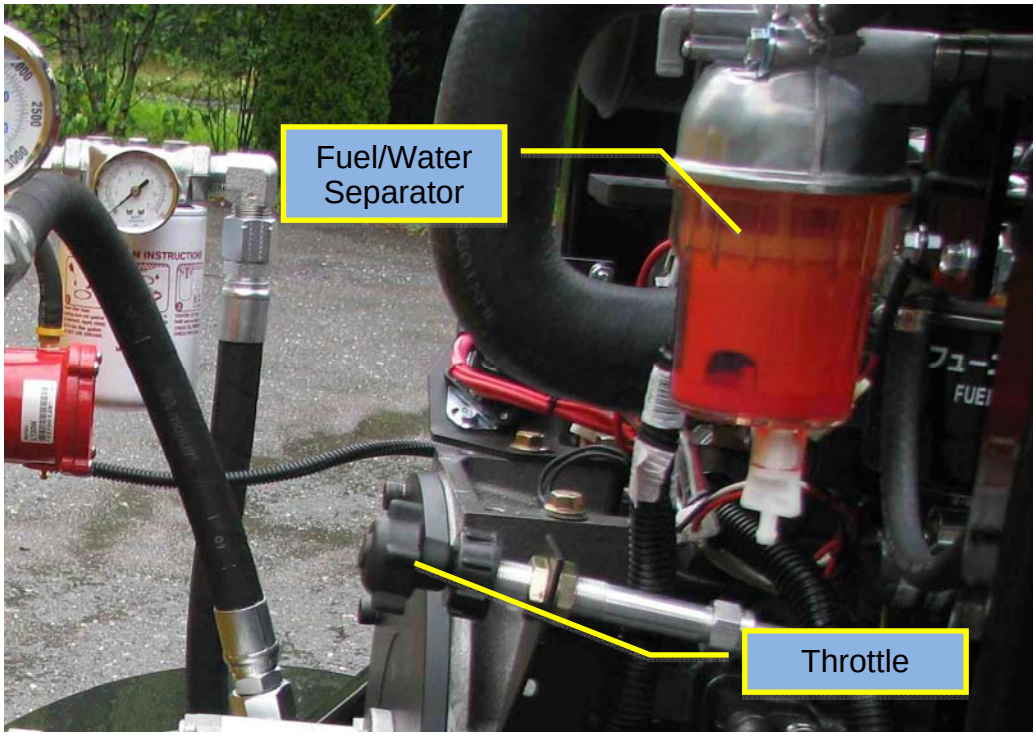
Fuel Fill and Gauge

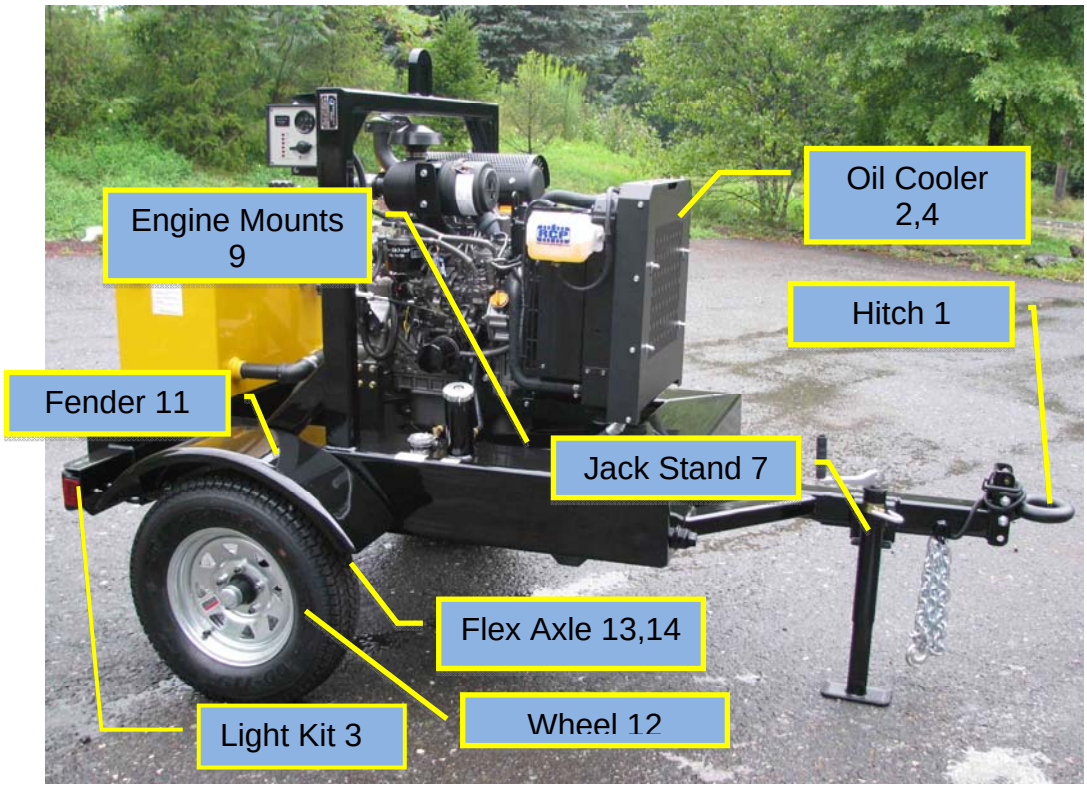


Service Points

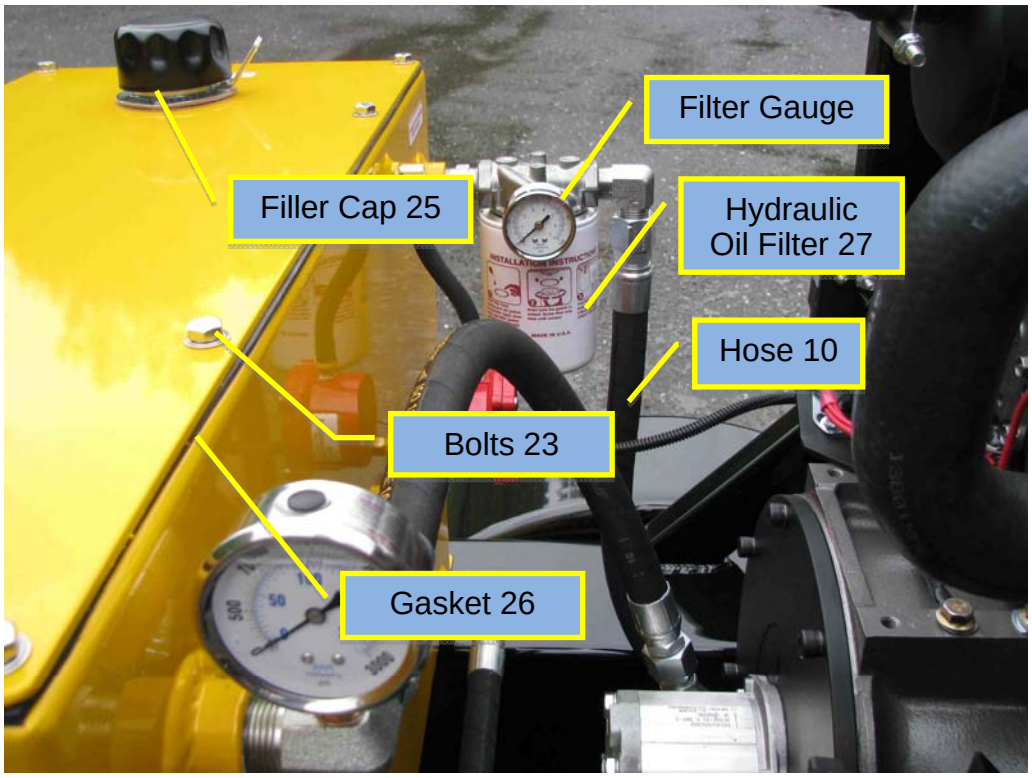


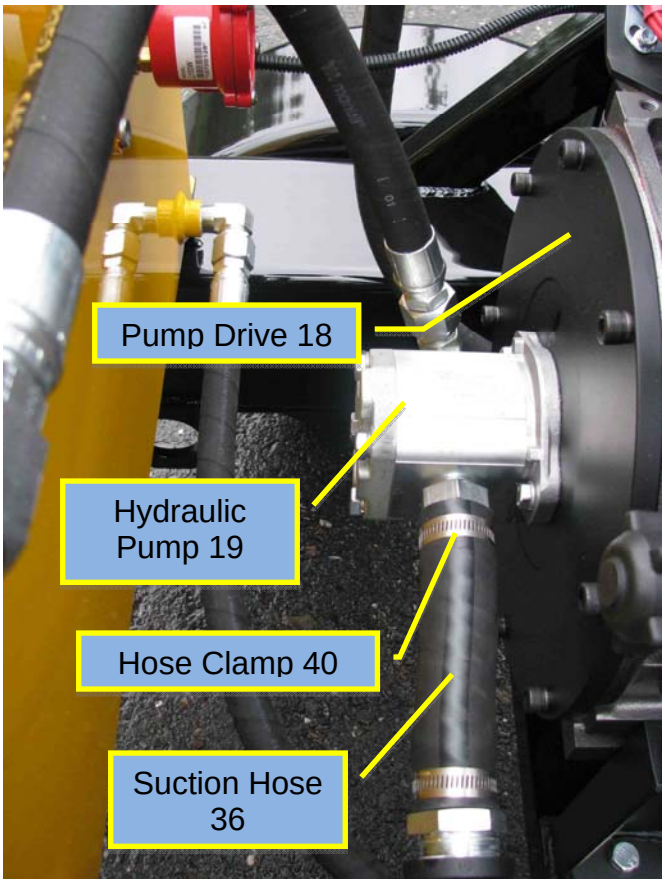
Service Points

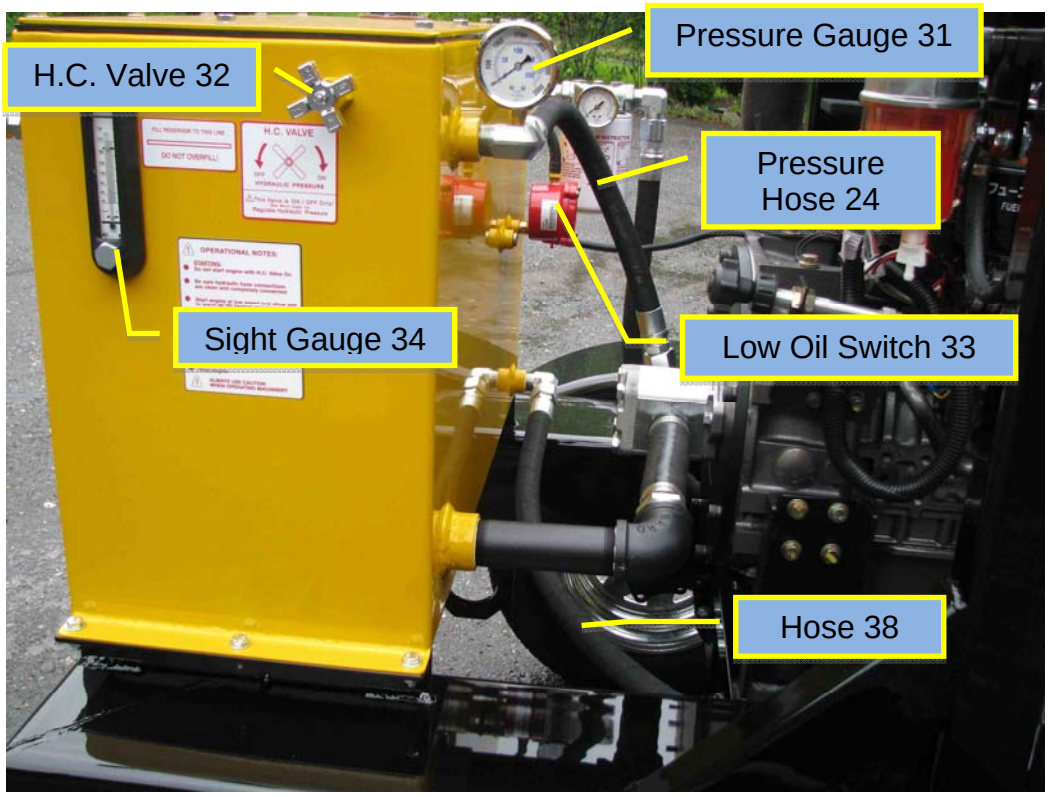


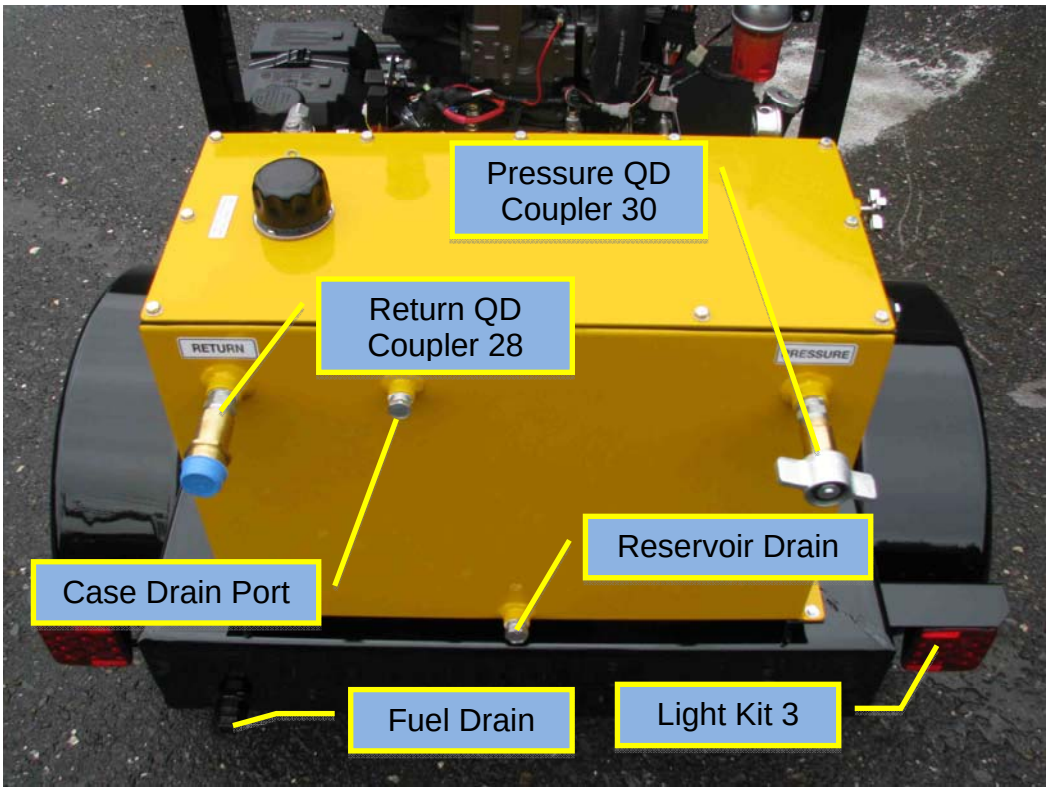


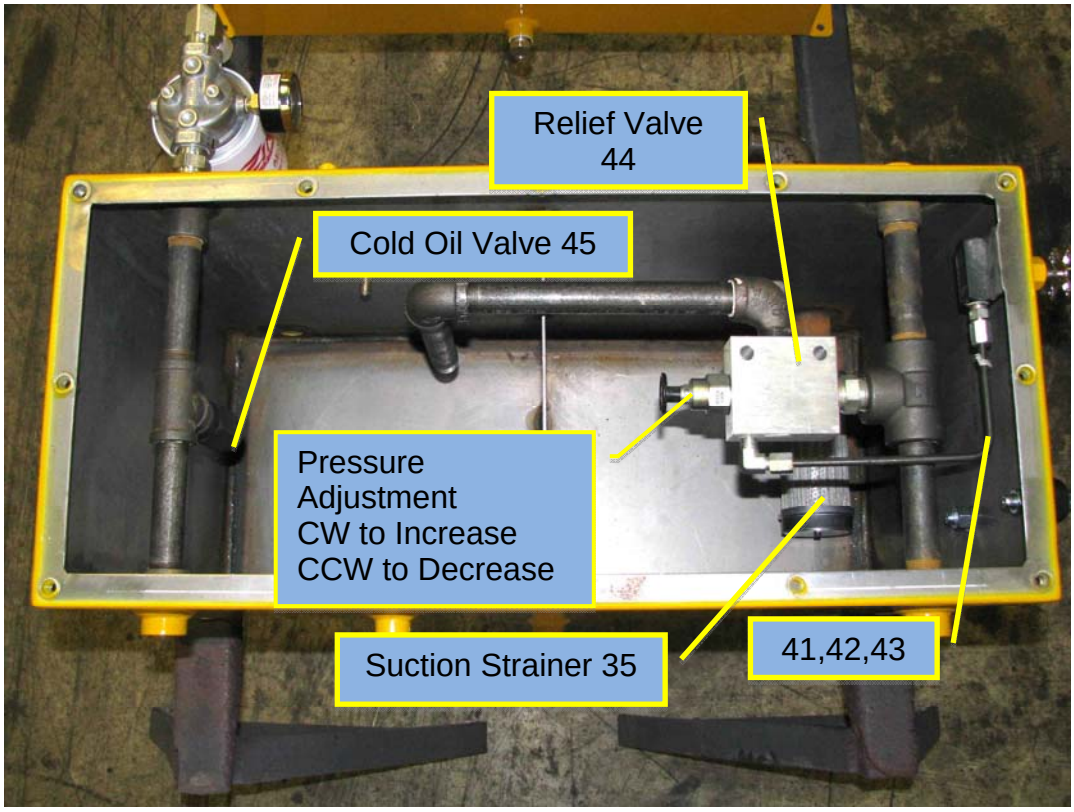
Trailer Parts


Filter Gauge
Filler Cap 25
Hydraulic
Oil Filter 27
Hose 10
Bolts 23
Gasket 26

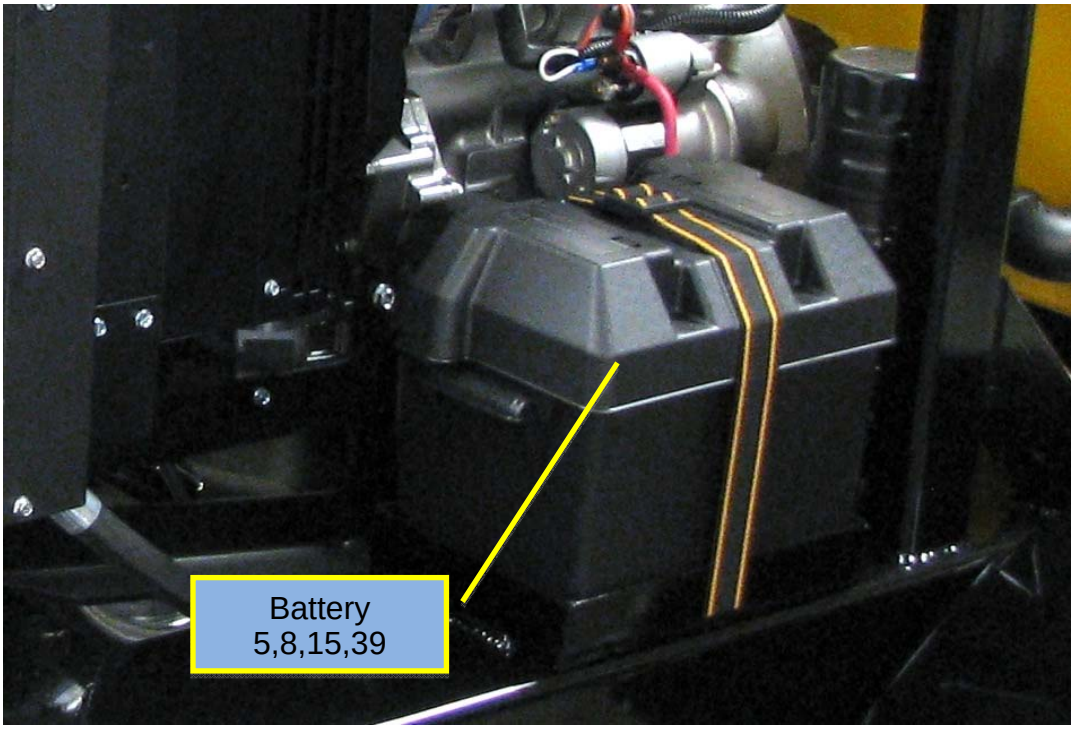

Pump Drive 18
Hydraulic
Pump 19
Hose Clamp 40
Suction Hose
36


H.C. Valve 32
Pressure Gauge 31
Pressure Hose 24
Sight Gauge 34
Low Oil Switch 33
Hose 38


Pressure QD Coupler 30
Return QD Coupler 28
RETURN
Reservoir Drain
Case Drain Port
Fuel Drain
Light Kit 3



Parts Inside Reservoir



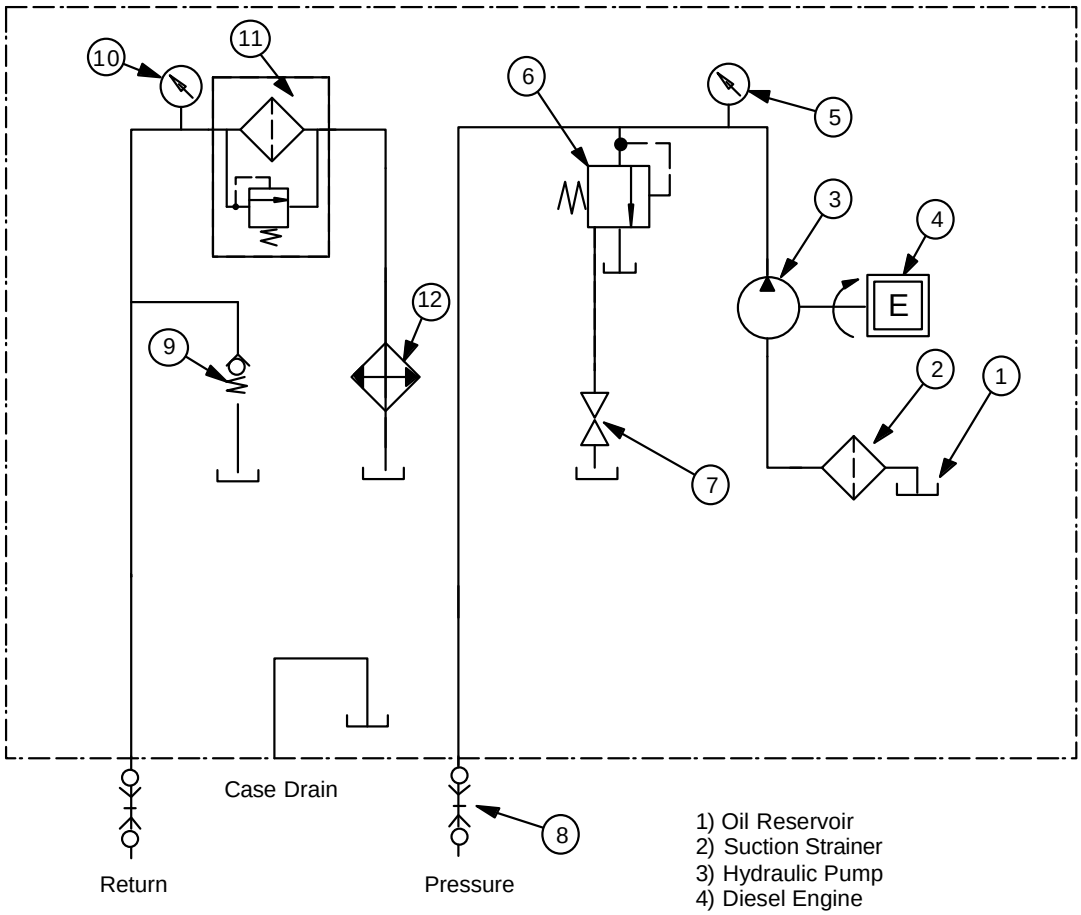
HT35DYS Power Unit

(When ordering parts always mention serial # of unit)

Item	Part #	Description
1.	0508250	Pintle Ring Hitch
2.	6808298A	Oil Cooler
3.	0500283	Trailer Lighting Kit
4.	6808101	Cooler Mount (4 req)
5.	0601742	Battery
6.	----------	N/A
7.	0501746	Swing-up Jack-stand
8.	0602530	Battery Cable (Positive)
9.	6809635	Engine Mount (4 req)
10.	6802527A	Hose Assy. (Filter to cooler)
11.	0501817	Fender (2 req)
12.	0507252	13" Wheel & Tire Assy (2 req)
13.	0508291	Torsion axle assy (Left side)
14.	0508292	Torsion axle assy (Right side)
15.	0501826	Battery Box
16.	----------	N/A
17.	----------	N/A
18.	6808631	Pump Drive Adapter
19.	68010924	Hydraulic Pump
20.	0508341	Fuel Filler Cap
21.	0501902	Fuel Gauge Assy.
22.	----------	N/A
23.	00010465 00010581	Reservoir Cover Bolt (12 req) Sealing Washer (12 req)
24.	6808297	H.P. Hose Assy
25.	0401526	Filler/Strainer Assy.
26.	6808029	Gasket
27.	0408050	Return Filter Assembly
27a.	0408051	Return Filter Cartridge (10 micron element only)
27b.	0408052	Wear Indicator (Gauge)
28.	0802175	3/4" Q.D. Coupling (Male)
29.	0301518	Drain Plug
30.	08002174	3/4" Q.D. Coupling (Female)
31.	0408030	Pressure Gauge (3000 PSI)
32.	6801521	Control Valve Assy.
33.	0608040	Low Oil Shutdown Switch
34.	0401529	Sight/Level Gauge
35.	6801528	Suction Strainer
36.	6806824	Oil Suction Hose
37.	6806127	Fuel Pickup Tube

38.	6802528A	Hose Assy. (Cooler to reservoir)
39.	0602529	Battery Cable (Negative)
40.	6808142	Hose Clamp (2 req)
41.	0209385	Tube Fitting
42.	0201707	1/4" Steel Tubing
43.	0201522	Tube Fitting 90°
44.	6801524	Relief Valve Assy.
44a.	6801734	Relief Valve (Cartridge only)
45.	6808528	Cold Oil By-Pass Valve

HYDRAULIC SCHEMATIC
HT35DYS 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