HCM-OD Offshore Hydraulic Power Unit

User's Manual

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Chapter 1

About the Offshore Hydraulic Power Unit

The HCM-OD is a rugged, skid-mounted hydraulic power unit designed to operate Wachs offshore cutting machinery and other hydraulic equipment. It features a diesel engine with air starter and disk-type spark arrestor, and provides 15 gallons per minute (gpm) flow output at 1500 psi (57 lpm at 103 bar). The unit has adjustable flow control with built-in relief valve and flow meter.

In This Manual

SYSTEM SPECIFICATIONS

- Kubota D905 diesel engine (23 HP @ 3600 rpm)
- Air start
- Dry air cleaner
- 7.5 gallon diesel fuel tank
- Disc-type spark arrestor
- 40 gallon hydraulic tank
- 3/4” NPT female pipe ports fitted with quick disconnects (matched at factory with purchased accessories)
- 20 gpm @ 1250 psi (76 lpm @ 86 bar) hydraulic output at 3000 rpm (recommended operating speed)
- Inline flow meter
- 0-3000 psi (207 bar) pressure gauge
- Steel tubular frame with drip pan
- Centralized lifting eyes
- Approximate dimensions:
  height: 46” (1168 mm)
  length: 60.5 (1537 mm)
  width: 32” (813 mm)

- Approximate weight: 1200 lbs (545 kg) with fuel and hydraulic oil.

For detailed information on the diesel engine, see the manufacturer's manual that is supplied with it.

SYSTEM COMPONENTS

The following figures illustrate the components of the power unit.

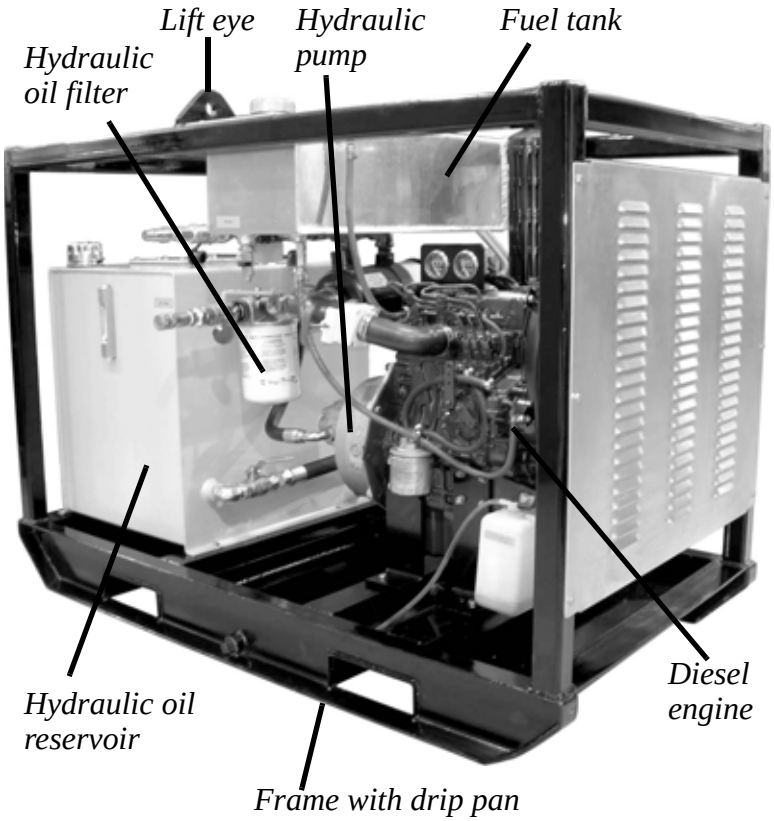


Figure 1-1. Major components of the hydraulic power unit.

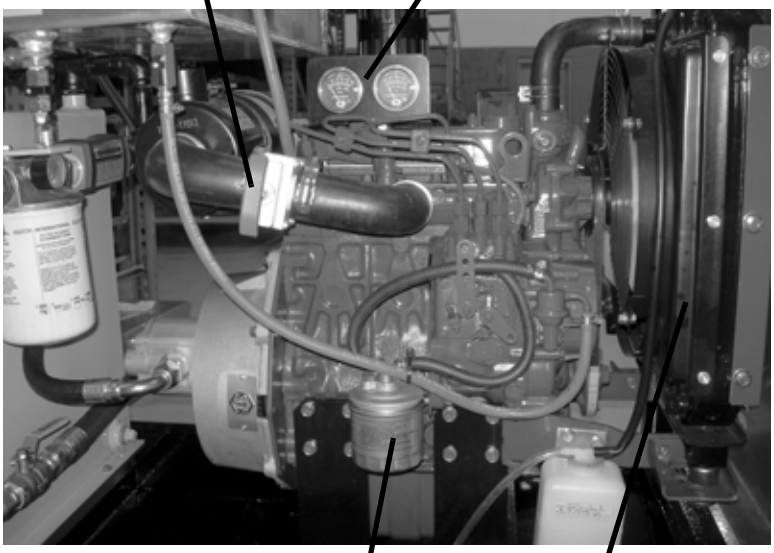


Figure 1-2. Major components on the front side of the diesel engine.

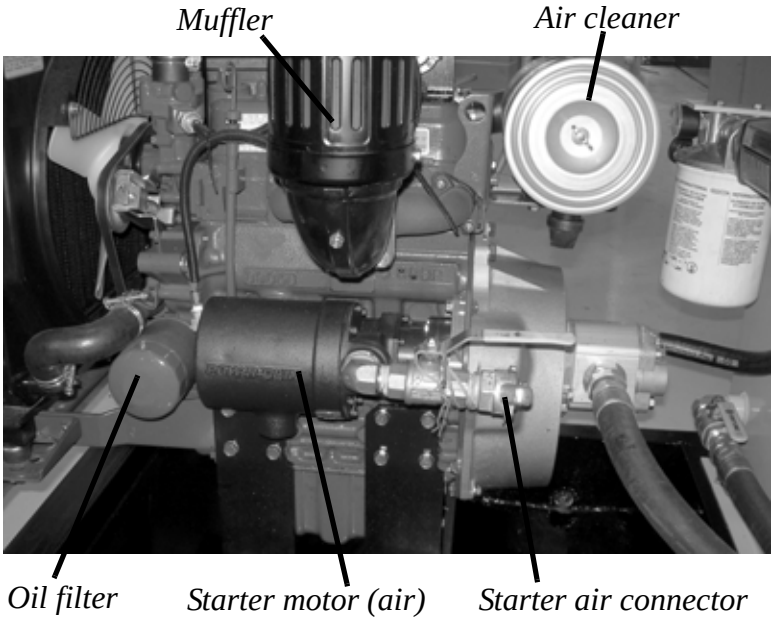


Figure 1-3. Major components on the back of the diesel engine. Some configurations have the air connector coming straight out rather than on a 90° elbow.

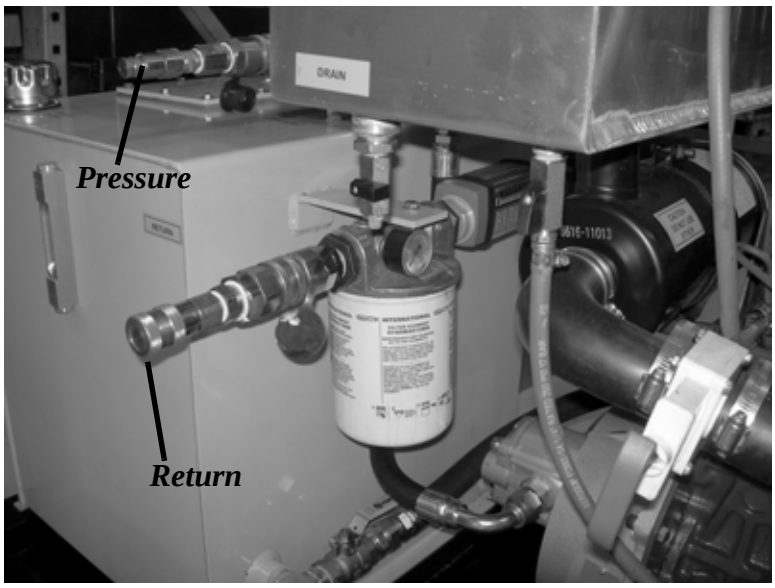


Figure 1-4. Hydraulic fittings on the HPU. (Quick disconnects shown; units can also be fitted with wing connectors.)

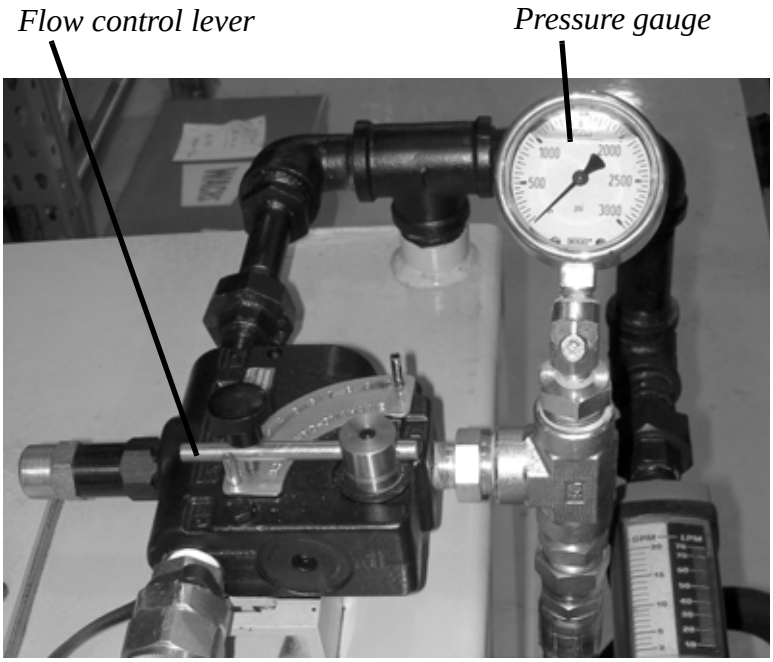


Figure 1-5. Hydraulic controls on the HPU. The flow control lever is adjustable on a scale of 0 to 10.

Figure 1-6. Hydraulic suction shut-off valve (shown in the open position). Turn the lever perpendicular to the fitting to shut off hydraulic oil supply to the pump.

Figure 1-7. The hydraulic oil temperature/fill level gauge is on the front of the reservoir.

Chapter 2
Safety

The E.H. Wachs Company takes great pride in designing and manufacturing safe, high-quality products. We make user safety a top priority in the design of all our products.

Read this chapter carefully before operating the hydraulic power unit. It contains important safety instructions and recommendations.

In This Chapter

OPERATOR SAFETY

Follow these guidelines for safe operation of the equipment.

- **READ THE OPERATING MANUAL.** Make sure you understand all setup and operating instructions before you begin.
- **INSPECT MACHINE AND ACCESSORIES.** Before starting the machine, look for loose bolts or nuts, leaking lubricant, rusted components, and any other physical conditions that may affect operation. Properly maintaining the machine can greatly decrease the chances for injury.
- **ALWAYS READ PLACARDS AND LABELS.** Make sure all placards, labels, and stickers are clearly legible and in good condition. You can purchase replacement labels from E.H. Wachs Company.
- **KEEP CLEAR OF MOVING PARTS.** Keep hands, arms, and fingers clear of all rotating or moving parts.

Look for this symbol throughout the manual. It indicates a personal injury hazard.

Always turn machine off before doing any adjustments or service.

- **SECURE LOOSE CLOTHING AND JEWELRY.** Secure or remove loose-fitting clothing and jewelry, and securely bind long hair, to prevent them from getting caught in moving parts of the machine.
- **KEEP WORK AREA CLEAR.** Keep all clutter and nonessential materials out of the work area. Only people directly involved with the work being performed should have access to the area.

Safety Symbols

This icon is displayed with any safety alert that indicates a personal injury hazard.

⚠ WARNING

This safety alert indicates a potentially hazardous situation that, if not avoided, **could** result in **death or serious injury**.

⚠ CAUTION

This safety alert, with the personal injury hazard symbol, indicates a potentially hazardous situation that, if not avoided, **could** result in **minor or moderate injury**.

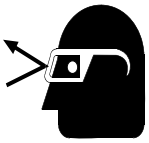
NOTICE

This alert indicates a situation that, if not avoided, **will** result in **damage to the equipment**.

IMPORTANT

This alert indicates a situation that, if not avoided, **may** result in **damage to the equipment**.

Protective Equipment Requirements



WARNING

Always wear impact resistant eye protection while operating or working near this equipment.

For additional information on eye and face protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.133., Eye and Face Protection and American National Standards Institute, ANSI Z87.1, Occupational and Educational Eye and Face Protection. Z87.1 is available from the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

CAUTION

Personal hearing protection is recommended when operating or working near this equipment.

Hearing protectors are required in high noise areas, 85 dBA or greater. The operation of other tools and equipment in the area, reflective surfaces, process noises, and resonant structures can increase the noise level in the area. For additional information on hearing protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.95, Occupational Noise Exposure and ANSI S12.6 Hearing Protectors.

Safety Procedures

All safety requirements listed below are those generally applicable to hydraulically-powered machinery but are not intended to be an all-inclusive list. They are intended as guidelines only and will assist in avoiding risk of injury when followed by qualified, experienced personnel. These

precautions should be included in the comprehensive safety program for the particular machinery, equipment, plant or process and overseen by personnel capable of analyzing any hazards associated with operating and maintaining the equipment.

WARNING

Many types of machinery have parts that may start moving as soon as the hydraulic circuit is filled and pressurized. This could result in injury to personnel or damage to machinery.

1. Return all movable parts of the machinery being operated to their normal startup condition, if possible, before starting unit.

2. Be sure all personnel, product, etc. are clear of machinery before starting hydraulic unit.

3. Check to make sure any hydraulic connections which may have been removed, replaced or disconnected during shut down have been reconnected securely before starting hydraulic unit.

4. Before starting the unit, perform all equipment checks described at the beginning of the operating instructions in Chapter 3.

5. If there are tools or machinery being operated by the HPU that may move when hydraulic flow or pressure are turned off, block or lock these parts in position before shutting down the hydraulic unit.

WARNING

Make sure all personnel are clear from the machinery being operated before shutting down the HPU.

6. Shut down the hydraulic unit and relieve pressure from all pressurized accumulators, actuators and lines before removing, tearing down or performing maintenance on any remotely-located actuators, hoses, filters, valves, piping, etc.

7. Any personnel observing or working on or adjacent to hydraulically-powered equipment must never place themselves in a location or position that could produce an injury in the event of:

- a hydraulic line failure either with the unit running or shut down;
- pump or motor failure or;
- movement of machine components during normal operation or resulting from a component malfunction or failure.

8. Avoid locating equipment in any environment for which it was not designed and which may create a dangerous operating condition such as an explosive

atmosphere (e.g., gas, dust), high heat (e.g., molten metal, furnace), chemicals, extreme moisture, etc.

9. Avoid bodily contact with such fluids. Some hydraulic fluids may be irritating or injurious to the eyes and skin. Check with your fluid suppliers to obtain this information.

10. Use only E.H. Wachs parts and materials when servicing the equipment. Substitute parts or materials could produce a hazardous operating condition.

11. When piping your equipment, use only materials of adequate size and strength to suit the flows and pressures of the system. Consider all safety factors when selecting the strength of materials to allow for shock and over-pressure conditions which could occur.

SAFETY LABELS

There is no safety labeling on the hydraulic power unit.

Chapter 3

Operating Instructions

Perform the following checks before starting the HPU:

- Make sure the flow control lever is set to 0.
- Make sure the engine oil is filled to the correct level.
- Make sure the engine coolant is filled to the correct level.
- Make sure the hydraulic tank is filled to the correct level.
- Make sure the suction shut-off valve at the bottom of the tank is open.
- Make sure hydraulic hoses are securely connected to the HPU and to the tool you are operating.
- Make sure there is adequate fuel for the estimated operating time.
- Make sure the emergency shut-off is pulled out.

1. Attach a compressed air hose to the starter motor. Be sure that the air supply is turned off.

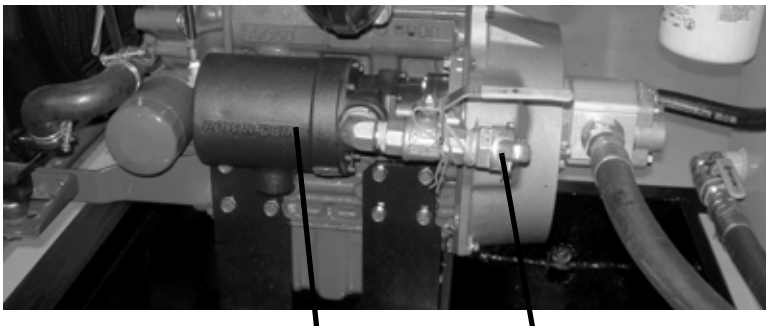


Figure 3-1. Connect the air hose to the starter motor.

2. Insert the safety locking pin to hold the air connector in place. Activate air supply pressure.

3. Put the flow control valve in the closed position, and open the bypass valve on the pressure output to bypass the hydraulic circuit to the tank.

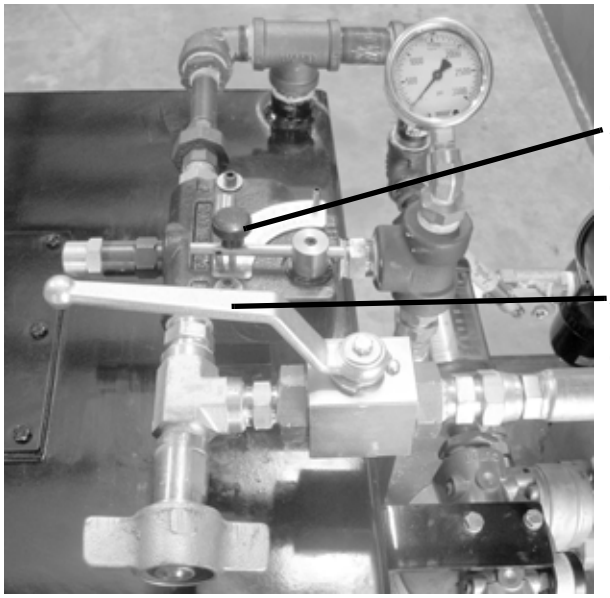


Figure 3-2. The photo shows the flow control valve in the closed position, and the bypass valve in the open position. This is the configuration for starting the engine.

4. Pull the starter air supply handle to operate the starter and turn over the engine. Release the handle as soon as the engine starts.

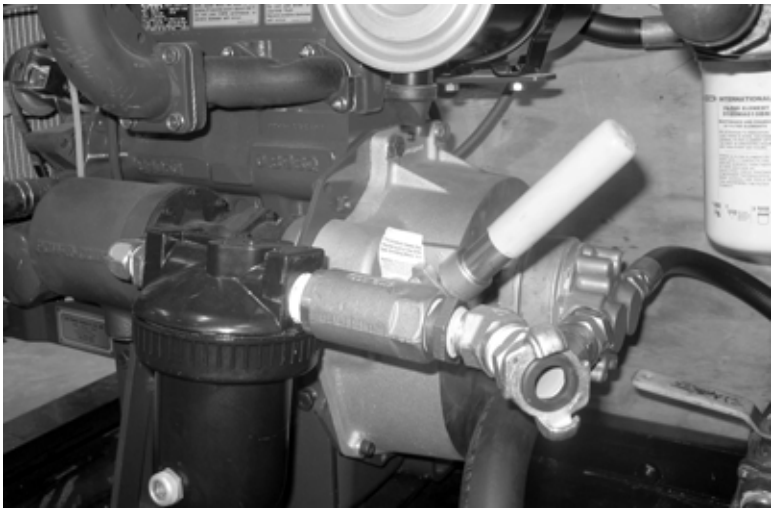


Figure 3-3. Pull the starter handle to engage the starter motor. When the engine starts, release the handle.

5. Adjust the throttle on the engine for the desired working RPM.

6. To operate the tool, close the bypass valve on the pressure output, as shown in Figure 3-4.

7. Move the flow control lever to the desired gpm.

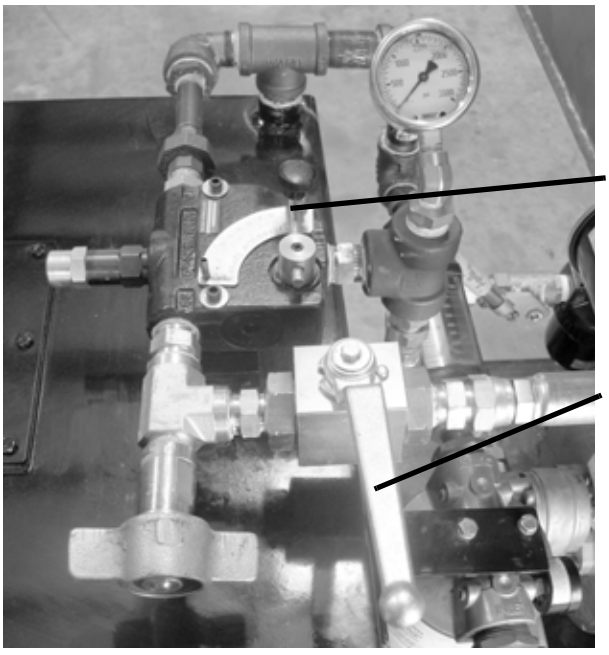


Figure 3-4. The photo shows the controls positioned for operating the HPU. The bypass lever is closed and

NOTE

The recommended continuous engine speed is 3000 rpm maximum.

the flow control lever is set to the desired flow level (shown fully open in the photo).

8. If you need to stop the tool immediately, push in the emergency shut-off on the engine.

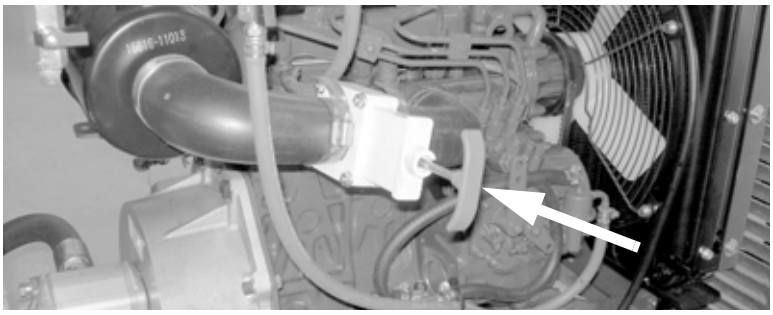


Figure 3-5. Use the emergency shut-off if you need to shut the engine off immediately.

9. When you have completed the operation, move the flow control lever back to 0. Shut the engine off using the stop lever under the throttle.

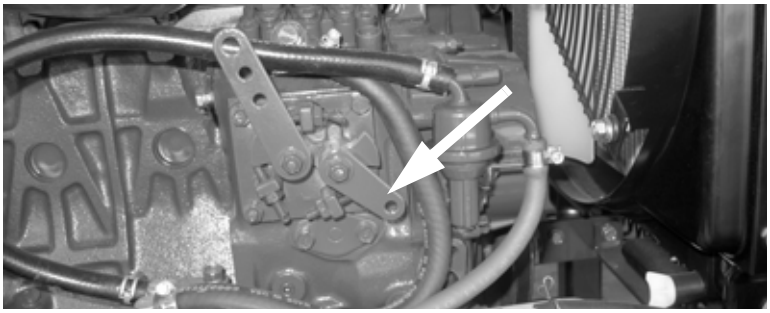


Figure 3-6. Push the stop lever to the left to shut off the engine.

Chapter 4

Parts List and Ordering Information

In This Chapter

ORDERING INFORMATION

To place an order, request service, or get more detailed information on any E.H. Wachs Company products, call us at one of the following numbers:

U.S. and Canada	800-323-8185
International:	01-847-537-8800

Ordering Replacement Parts

When ordering parts, refer to the parts list in this chapter. Please provide the part description and part number for all parts you are ordering. Specify your machine model number when ordering.

Repair Information

Please call us for an RMA (Return Material Authorization) number before returning any equipment for repair or factory service. We will advise you of shipping and handling. When you send the equipment, please include the following information:

- Your name/company name
- Your address
- Your phone number
- A description of the problem or the work to be done.

Before we perform any repair, we will estimate the work and inform you of the cost and the time required to complete it.

Warranty Information

Enclosed with the manual is a warranty card. Please fill out the registration card and return to E.H. Wachs Company. Retain the owner's registration record and warranty card for your information.

Return Goods Address

Return equipment for repair to the following address.

E.H. Wachs Company
600 Knightsbridge Parkway
Lincolnshire, Illinois 60069 USA

PARTS LIST

The following table lists recommended service parts for the offshore HPU.

QTY	DESCRIPTION
1	Belt, engine fan
1	Cap, dust, hydraulic quick disconnect, to fit male coupler
1	Controller, hydraulic flow
1	Coupler, hydraulic, quick disconnect, female (wing)
1	Coupler, hydraulic, quick disconnect, male (no wing)
1	Coupler, pneumatic, crowfoot (on starter)
1	Filter, air, engine intake
1	Filter, diesel fuel, engine
1	Filter, oil, engine
1	Filter, oil, hydraulic
1	Gasket, water pump
1	Gauge, engine oil pressure
1	Gauge, engine water temperature
1	Gauge, hydraulic flow volume
1	Gauge, hydraulic pressure, 3 kpsi
1	Gauge/thermometer, hydraulic oil tank
1	Hose, air intake, engine (set of 2 w/ 4 clamps)
1	Hose, fuel line, out to engine
1	Hose, fuel line, return
1	Hose, hydraulic, bypass return
1	Hose, hydraulic, pump discharge
1	Hose, hydraulic, pump suction (tank to pump)
1	Muffler
1	Oiler, pneumatic (on starter)
1	Pin, crowfoot connector, w/lanyard
1	Plug, dust, hydraulic quick disconnect, to fit female coupler
1	Pully, fan idler
1	Pump, hydraulic
1	Pump, water, engine
1	Spark arrester body, engine exhaust
7	Spark arrester disc, engine exhaust
1	Starter, pneumatic
1	Valve, emergency shutoff (engine air intake)
1	Valve, hydraulic bypass, HP, 3/4" ball, lever
1	Valve, pneumatic, auto-close, starter