HCM-2G Hydraulic Power Unit

User's Manual

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Lincolnshire, IL 60069
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Power Unit Part No. 14-000-08
Manual Part No. 14-MAN-08
Revision 2, September 2015

IMPORTANT: Read this manual carefully before starting and operating the power unit.

WACHS HCM-2G POWER UNIT

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WACHS HCM-2G POWER UNIT

SECTION I STANDARD EQUIPMENT

The HCM-2G is capable of powering one, type 1 class hydraulic tool.

HCM-2G Standard features:

- Low-tone muffler for noise level reduction
- Collapsible handle
- Large diameter, 10” OD pneumatic tires for ease of transport
- Electric start
- Hydraulic oil-level sight gauge
- Low engine oil-level shut-down
- Hour meter
- HTMA hydraulic quick couplers (flat faced)
- Large capacity hydraulic cooler, meets or exceeds HTMA specifications

WACHS HCM-2G POWER UNIT

SECTION II MACHINE SPECIFICATIONS

GENERAL INFORMATION

INTRODUCTION

The **E.H. WACHS HCM-2G** Gas series power unit is designed to provide hydraulic flow and pressure for operation of H.T.M.A. type 1 hydraulic tools. The unit provides power for operation of type 1 open center tools (10 GPM 37.9 LPM @ 1500 PSI/103 BAR. If equipped with the optional combiner kit, the two circuits can be combined into one 10 GPM-38 LPM circuit for operation of H.T.M.A. type III tools.
All engine compartments are open for easy maintenance and repair of the engine.

The fuel and hydraulic systems are self-contained with the required reservoir, filtration and level indicators.

NOTE: Not all power units can be equipped with the optional dual circuits or combiner kit. Check with your local Wachs dealer for details.

Model:	**HCM-2G**
Hydraulic system:	Open Center
Frame Type:	Cart Mount
Length:	26.5 in. /67.3 cm
Width:	20 in. /50.8 cm
Height:	27.5 in. /69.8 cm
Weight (dry)	143 lbs. /64.9 kg
Filtration:	10 micron return line canister type.
Oil Cooler:	None
Engine:	11hp gas
Fuel:	1.6 gallon/6.1 litres
Hyd. oil (useable):	5.0 gallons 18.9 litres
Hyd. relief Pressure	1500psi/103bar
GPM/LPM	10 GPM/37.9 LPM

NOTE: *Cooling to HTMA specifications will not exceed 40º above ambient.*

SECTION III SAFETY INSTRUCTIONS

Since 1883, EHWachs has built a reputation for quality and a commitment to consumer satisfaction. In accordance with this, Wachs must take on the added responsibility of doing our best to assure the safest use of our equipment.

We have assembled a list of safety reminders to aid in creating the safest possible working environment. We recommend that the precautionary steps listed there be closely observed.

Read the Following thoroughly before proceeding

1. **READ THE OPERATING MANUAL!!**
Reading the setup and operating instructions prior to beginning the setup procedures can save valuable time and help prevent injury to operators or damage to machines.

2. **INSPECT MACHINE & ACCESSORIES!**
Prior to machine setup physically inspect the machine and it's accessories. Look for worn tool slides, loose bolts or nuts, lubricant leakage, excessive rust, etc. A properly maintained machine can greatly decrease the chances for injury.

3. **ALWAYS READ PLACARDS & LABELS!**
All placards, labels and stickers must be clearly legible and in good condition. Replacement labels can be purchased from the manufacturer.

4. **KEEP CLEAR OF ROTATING PARTS!**
Keep hands, arms and fingers clear of all rotating or moving parts. Always turn machine off before attempting any adjustments requiring contact with the machine or it's accessories.

5. **SECURE LOOSE CLOTHING & JEWELRY!**
Loose fitting clothing, jewelry; long, unbound hair can get caught in the rotating parts on machines. By keeping these things secure or removing them you can greatly reduce the chance for injury.

6. **KEEP WORK AREA CLEAR!**
Be sure to keep the work area free of clutter and nonessential materials. Only allow those personnel directly associated with the work being performed to have access to the area if possible.

CAUTION

Personal hearing protection is required at all times when operating or working near this tool.

CAUTION

Do not attempt to locate hydraulic leaks by feeling around hoses and fittings with bare hands. Pin-hole leaks can penetrate the skin.

CAUTION

Never operate the power unit in a closed space. Inhalation of engine exhaust can be fatal!

Make sure hoses and fittings are undamaged and tight before starting the power unit.

Keep clear of hot engine exhaust.

Unauthorized modification to the power unit may impair the function and/or safety and impair machine life. Use only approved service parts or accessories.

Keep power unit 3.3 feet/ 1m away from all obstructions and flammable objects. DO NOT aim engine exhaust at flammable objects.

SECTION IV

SET UP
&
OPERATING
PROCEDURES

WACHS HCM-2G POWER UNIT

SECTION IV SET-UP AND OPERATION

HYDRAULIC SYSTEM DESCRIPTION

The hydraulic system consists of a hydraulic fluid reservoir, filter assembly, single or optional tandem pump, and a wide variety of flow controls. The filter element is a" spin on" type element for easy replacement. The filter housing has a pressure bypass valve to divert fluid directly to the tank in the event of a restricted filter.
Hydraulic pumps will vary depending upon the capabilities of the specific power unit. The hydraulic pump(s) will be illustrated and called out in the parts section of this manual.
Pressure hoses from the pump are connected directly to a control module which contains a relief valve, a flow control valve, and a pressure and return port. Optional control modules may contain additional valves and ports.

HYDRAULIC FLUID REQUIREMENTS

NEVER START THE ENGINE ON A NEW POWER UNIT WITHOUT FIRST CHECKING THE OIL LEVEL IN THE HYDRAULIC TANK. SEVERE PUMP DAMAGE CAN RESULT IF THE OIL LEVEL IS TOO LOW.

The power unit is shipped from the factory **WITHOUT** the necessary operating fluids. Fluids meeting the specifications below, however, will provide good all-season operation if normal maintenance is performed (I.E. periodic filter changes, draining of condensate, etc.)
The following fluids work well over a wide temperature range at start-up, allow moisture to settle out, and resist biological growth likely in cool operating hydraulic circuits. These fluids are recommended by the E.H. WACHS CO. Other fluids that meet or exceed the specifications of these fluids may also be used:

Ams-Oil: hydraulic fluid NW 150 ssu, 100 vi.
Chevron: AW-MV-32
Exxon: Univis', J-26
Mobil: DTE 13
Gulf: Harmony AW-HVI-150-32
Shell: Tellus T-32
Sun: Sunvis 805 MG
Texaco: Rando HD-AZ
Union: Unax AW-WR-32

Viscosity (fluid thickness)

USA	METRIC
50º F 450 SSU Max.	10º C 95 Centistrokes
100º F 130-200 SSU	38º C 27-42 C.S.
140º F 85 SSU Min.	60º C 16.5 C.S. Min.

Pour Point:	-10º F/-23º C Min. (for cold startup)
Viscosity Index:	(ASTM D 2220) 140 minimum
Demulsibility:	(ASTM D-1401) 30 Minutes Max.
Flash Point:	(ASTM D-92) 340ºF/171ºC Min.
Rust Inhibition:	(ASTM D-665 A&B) Pass
Oxidation:	(ASTM D943) 1000 Hours Min.
Pump Wear Test:	(ASTM D2882) 60 mg Max.

FUEL SYSTEM DESCRIPTION

The fuel system consists of a fuel tank, fuel pump, and a filter.
Fuel is pumped from the tank by an engine-mounted fuel pump. Fuel leaving the pump passes through a canister-type, engine mounted fuel filter. The fuel filter element is removable. The output side of the lifter housing is connected, via a hose.

FUEL REQUIREMENT

The WACHS HCM-1G uses unleaded fuel for its operation.

ENGINE DESCRIPTION

An engine owner's manual is provided with the power unit. This manual lists the recommended service intervals. It should be followed to ensure proper power unit maintenance.

TOOL HOSE RECOMMENDATIONS

The hoses in the chart (TABLE 1) are recommended for the hydraulic fluids specified in the HYDRAULIC FLUID REQUIREMENTS section in the preceeding column.

PREPARATION FOR USE

The following checks must be made prior to operating the power unit.

SECTION IV SET-UP AND OPERATION

TABLE 1. HYDRAULIC HOSE RECOMMENDATIONS

FLOW PER CIRCUIT		LENGTH EACH HOSE			INSIDE DIAMETER		SAE SPEC (WIRE BRAID)	SAE SPEC (FIBER BRAID)
GPM	LPM	FEET	METERS	USE	INCH	MM		
5 to 8	19 to 30	to 50	to 15	Both	1/2	13	SAE100R1-8	SAE100R7-8
5 to 8	19 to 30	51-100	15 to 30	Both	5/8	16	SAE100R2-10	SAEI00R8-10
5 to 8	19 to 30	100-300	30 to 90	Pressure Return	5/8 3/4	16 19	SAE100R2-10 SAE100R1-12	SAE100R7-12 SAE100R7-12
9 to12	34 to 45	to 50	to 15	Both	5/8	16	SAE100R2-10	SAE100R8-10
9 to12	34 to 45	51-100	15 to 30	Pressure Return	5/8 3/4	16 19	SAE100R2-10 SAE100R2-12	SAE100R8-10 SAE100R7-12
9 to12	34 to 45	100-200	30 to 60	Pressure Return	3/4 1	19 25.4	SAEI00R2-12 SAE100R1-16	SAE100R8-12 SAE100R7-16
13to16	49 to 60	to 25	to 8	Pressure Return	5/8 3/4	16 19	SAE100R2-10 SAE100R1-12	SAEI00R8-10 SAE100R7-12
13to16	49 to 60	26 to 100	8 to 30	Pressure Return	3/4 1	19 25.4	SAE100R2-12 SAE100R1-16	SAE100R8-12 SAE100R7-16

ENGINE CRANKCASE

ALWAYS CHECK THE OIL LEVEL IN THE ENGINE CRANKCASE BEFORE STARTING THE ENGINE.

Check that the crankcase oil level is at the “FULL” mark on the dipstick.

HYDRAULIC OIL

The hydraulic tank is empty prior to shipment from the factory. Add 5 gallons (18.9 litres) of oil prior to operating power unit.The oil must appear at the perforated basket at the bottom of the inlet pipe. Add oil as needed. Refer to HYDRAULIC FLUID REQUIREMENTS for choosing proper fluid.

FUEL LEVEL

The power unit is shipped with only a small amount of fuel for safety purposes. The engine has been run at the factory to purge all air from the fuel system. To prevent air from entering the system, always fill the fuel tank before starting the engine.

TIRES

Check the air pressure in the tires. See recommended air pressures on the sides of tires.

IMPORTANT

WHEN USING COUPLERS, OIL SHOULD ALWAYS FLOW FROM THE MALE COUPLER TO THE FEMALE COUPLER.

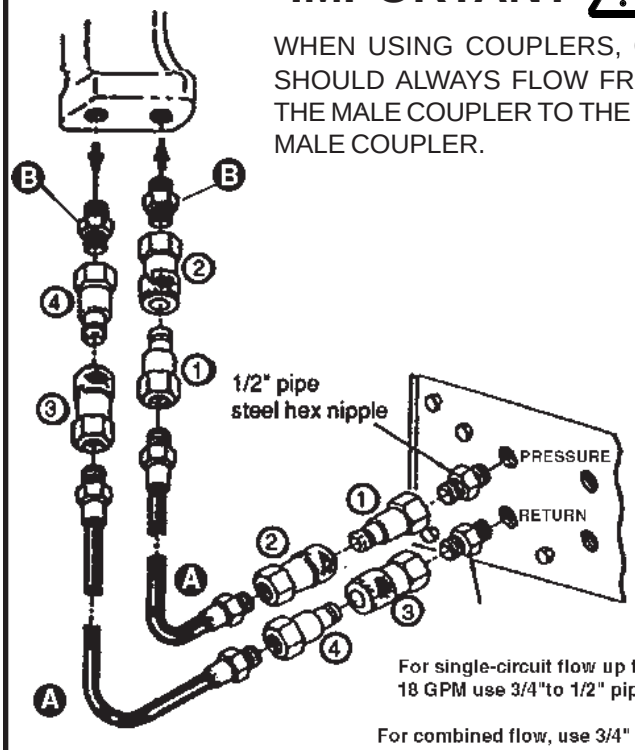


Illustration A

SECTION IV SET-UP AND OPERATING PROCEDURES

LOOSE ITEMS SHIPPED WITH NEW UNITS

Keep the engine reference manual in an area that is accessible to the operator and maintenance personnel.

- Engine tool kit (If required)
- Engine owner's manual

HYDRAULIC CONNECTIONS

Pressure and return hoses are connected to the ports at the control panel as shown on the following column in illustration A on page 11.

The pressure and return ports are marked with a decal. When installing couplers, the pressure port receives the male coupler and the return port receives the female coupler.

The hoses can then be connected directly to the couplers. Couplers are available through your local WACHS dealer.

1. H.T.M.A. 3/8" male quick acting coupler with 1/2" npt thread.

2. H.T.M.A. 3/8" female quick acting coupler with 1/2" npt thread. At the tool this may be H.TM.A. 3/8" female quick acting coupler with 3/8" npt thread.

***FOR SINGLE CIRCUIT FLOW UP TO 10 GPM ***

3. H.T.M.A. 3/8" female quick acting coupler with 1/2" npt thread.

4. H.T.M.A. 3/8" male quick acting coupler with 1/2" npt thread. At the tool this may be H.TM.A. 3/8" male quick acting coupler with 3/8" npt thread.

Refer to table 1 for hose recommendations.
Use adapters with threads that match tool part.

OPERATING INSTRUCTIONS

BEFORE START-UP

Perform the checks specified on pages 9-10, before operating the power unit. Make certain the following conditions are met.

Engine oil level is at the "FULL" mark on the dipstick. Add oil as required. Refer to the section 1 for fuel requirements.

Hydraulic tank must be full.

·Check that fuel level is adequate for estimated operating time. On diesels, allowing the fuel tank to run dry will cause air to enter the injection system. The system must then be bled.

·All hoses are to be free of damage. All hose and coupler fittings must be tight.

·The front section of the engine must be free of leaves, dirt, and other debris that may inhibit cooling or create a fire hazard.

START-UP

Make sure the flow control circuit is set at 0 or off.

Connect the hydraulic hoses to the applicable couplers on the control panel. Male couplers are pressure ports. Female couplers are return ports.

Check that the hoses are properly connected to the tool and that the tool is in the oft or deactivated mode.

Pull the throttle knob out slightly, then turn the ignition key to start the engine. Allow the engine to run at a low speed until the engine and the hydraulic circuits are warm.

COLD WEATHER START-UP

DO NOT CONTINUOUSLY CRANK THE ENGINE FOR LONGER THAN 15 SECONDS AT ONE TIME. ALLOW AT LEAST ONE MINUTE FOR THE STARTER TO COOL BETWEEN START ATTEMPTS.

Some power units may be equipped with an optional cold start kit. To use the optional cold start kit, proceed as follows:

Press the cold start button for 15 to 20 seconds.

Turn the ignition key to start the engine.

If the engine fails to start, turn the ignition key to off and press the cold start button for an additional 15 to 20 seconds. Turn the ignition key to start the engine.

SECTION IV SET-UP AND OPERATING PROCEDURES

TOOL OPERATION

Start the engine as described in the previous section.

NOTE: Both 5 GPM /19 LPM circuits remain in the off position for 10 GPM /38 LPM flow.

After start-up, turn the hydraulic circuit to the ON position or a flow setting to start fluid flowing to the tool.

For units having an optional flow combiner kit, the two 14 GPM/ 52.9 LPM circuits combined into one 28 GPM/ 105.8 LPM circuit for operation of H.T.M.A. type 3 tools.

To obtain 10 GPM/ 38 LPM, attach the pressure hose to the center port with all flow circuits in the off position. The return hose may be attached to either return port. Turn on the 10 GPM/ 38 LPM circuit to start the flow.

SHUT DOWN

Push throttle knob in.

Return the hydraulic circuit to the off position or 0 flow.

Turn the ignition key to off. If the power unit is equipped with a diesel engine you must also pull out the stop knob.

Disconnect the hydraulic hoses and store in a suitable area.

WHEN STORING HOSES, THE COUPLERS AT THE HOSE ENDS SHOULD BE CONNECTED TOGETHER TO PREVENT CONTAMINANTS FROM ENTERING THE HYDRAULIC SYSTEM.

DO NOT STORE THE HOSES IN DIRECT SUNLIGHT OR IN EXCEPTIONALLY WARM SPACES. EXPANSION OF THE FLUID CAN CAUSE A PRESSURE BUILDUP INSIDE THE HOSES.

SECTION V

MAINTENANCE

SECTION V MAINTENANCE

MAINTENANCE INSTRUCTIONS

Hydraulic System Maintenance

ALWAYS SHUT DOWN POWER UNIT PRIOR TO PERFORMING ANY MAINTENANCE OR ADJUSTMENTS.

Observe the following suggestions for maximum performance and service life from your **WACHS HCM-2G Power Unit.**

Use the correct hydraulic fluid at all times.

Keep the hydraulic system and fluids clean at all times.

Keep water out of the fluid.

WATER IN THE FLUID REDUCES LUBRICATION AND CAUSES PREMATURE PARTS WEAR. PUMP CAVITATION MAY ALSO OCCUR.

Keep air out of the lines. Air is indicated by the hydraulic system overheating and foam at the hydraulic tank breather. Tighten all suction line fittings and clamps.

Hydraulic system wear is noted by increased heat during tool operation, reduced tool performance and eventual system breakdown.

Remove condensed moisture from the hydraulic fluid. Condensation is a frequent problem with cool mobile hydraulic circuits. This condition occurs in moist or cold climates when warm air in the reservoir tank draws moisture from the cooler outside air. Water will then accumulate in the tank.

Approximately once each week (less often in hot dry weather) take a small sample from the bottom of the hydraulic tank by removing the 1/2" npt drain plug. If clear water appears, drain the tank until clean oil starts to show.

If fluid is milky allow it to settle for about 48 hours before draining. 1% water in a 2000 psi/ 40 bar system can cause a 25% increase in wear rate.

Check suction hose. Check hose from the hydraulic tank to the pump inlet to see that it is not kinked and that the clamps are secure. This will reduce the risk of pump cavitation and sucking air into the system. All -pump fittings must be tight.

Check hydraulic lines and fittings. Check for loose fittings, leaks, etc., through out the entire hydraulic circuit.

Change the hydraulic filter. If the operator consistently connects the hose ends together when detached from the tool and wipes off contaminants before connecting quick disconnects, the filter element should provide maximum performance.
Fill the hydraulic tank by removing the filler cap at the top center of the tank. The tank is full when oil appears in the perforated basket at the bottom of the filler pipe.

ENGINE MAINTENANCE

See engine manual for maintenance requirements.

NOTE: See dealer for hydraulic filter replacement specifications.

NOTE: Do not use fluids other than those specified with in this manual.

SECTION VI

TROUBLE SHOOTING

SECTION VI **TROUBLE SHOOTING**

TESTING AND TROUBLE SHOOTING

The hydraulic system and engine should be tested periodically to insure that the power unit is operating at peak efficiency. Performing the recommended tests will help to isolate problems that may exist in the engine and hydraulic system.

The following pages list some of the more frequently encountered problems that may arise and the possible solutions.

WACHS HCM-2G POWER UNIT

SECTION VI TROUBLE SHOOTING

PROBLEM:	CAUSE:	REMEDY:
STARTER WILL NOT CRANK ENGINE:	ENGINE WORKING AGAINST THE HYDRAULIC PUMP PRESSURE.	BE SURE THE CIRCUIT SWITCHES ARE OFF.
	BATTERY DISCHARGED OR NOT PROPERLY CONNECTED.	CHECK CONDITION OF BATTERY CABLE CONNECTIONS, ETC. REPLACE AS NECESSARY.
	STARTER DEFECTIVE.	INSPECT STARTER. REPLACE AS NECESSARY.
	IGNITION SWITCH OR SOLENOID SWITCH (ES) DEFECTIVE.	REPLACE AS NECESSARY.
ENGINE CRANKS BUT WILL NOT START:	AIR INJECTORS AND/OR INJECTOR PUMP.	BLEED INJECTORS. REFER TO ENGINE MANUAL.
	WATER IN FUEL	EMPTY WATER SEDIMENT TRAP. BLEED INJECTORS PER MANUAL.
	COLD START NOT FUNCTIONING	CHECK CURRENT TO GLOW PLUGS ON COLD START UNITS. REPAIR CIRCUIT OR REPLACE GLOW PLUG AS NECESSARY.
	INADEQUATE COMPRESSION	CHECK FOR CLOGGED AIR CLEANER, VALVES SEATED, CYLINDER COMPRESSION LOSS, REPAIR AS REQUIRED.
ENGINE RUNS BUT HYDRAULIC CIRCUIT WILL NOT DRIVE TOOLS.	CIRCUIT SOLENOID SWITCHES OFF OR DEFECTIVE.	SET SWITCHES TO ON. REPLACE IF SWITCH DEFECTIVE.
	TOOL NOT CONNECTED TO POWER UNIT.	CONNECT TOOL, CHECK COUPLERS.
	HYDRAULIC FLUID RESERVOIR LOW.	CHECK AND FILL AS REQUIRED.
	TOOL HOSES BLOCKED.	REMOVE OBSTRUCTION.

WACHS HCM-2G POWER UNIT

SECTION VI TROUBLE SHOOTING

PROBLEM:	CAUSE:	REMEDY:
ENGINE RUNS BUT HYDRAULIC CIRCUIT WILL NOT DRIVE TOOLS.	TOOL HOSES INCORRECTLY CONNECTED TO CIRCUIT FITTINGS.	CHECK THAT TOOL HOSE GOES FROM TOP PORT TO TOOL PRESSURE OR IN PORT, AND FROM TOOL RETURN OR OUT PORT TO LOWER PORT, BOTH PORTS ARE ON THE SAME SIDE OF MANIFOLD.
	RELIEF VALVE(S) STUCK OPEN	ADJUST OR REPLACE.
	TOOL IS DEFECTIVE	REPAIR AS NECESSARY.
TOOL RUNS TOO HOT.	RELIEF VALVE SET TOO LOW.	ADJUST FOR 2100 PSI/ 48 BAR CRACKING PRESSURE.
	HOSES TOO SMALL	INCREASE HOSE DIAMETER (REFER TO SECTION 1.)
	IMPROPER FLUID	REPLACE FLUID (REFER TO SECTION 1.)
	COOLER CLOGGED, BLOCKED AIR FLOW.	CLEAN COOLER, STRAIGHTEN FINS AS NECESSARY.
	AIR INJECTORS AND/OR INJECTOR PUMP.	BLEED INJECTORS. REFER TO ENGINE MANUAL.
	THERMAL DIVERTER VALVE* DEFECTIVE.	CHECK THAT VALVE IS DIRECTING HOT OIL TO THE COOLER BY FEELING THE TUBING AT THE COOLER. REPLACE VALVE IF DEFECTIVE.
	COLD START NOT FUNCTIONING	CHECK CURRENT TO GLOW PLUGS ON COLD START UNITS. REPAIR CIRCUIT OR REPLACE GLOW PLUG AS NECESSARY.
	HYDRAULIC PUMP DAMAGED.	REPLACE PUMP.
	AIR FLOW THROUGH POWER UNIT BLOCKED.	REMOVE OBSTRUCTION.

**if machine is equipped with this feature.*

WACHS HCM-2G POWER UNIT

SECTION VI TROUBLE SHOOTING

PROBLEM:	CAUSE:	REMEDY:
TOOL RUNS TOO HOT	FAN BELT LOOSE OR BROKEN.	REPLACE OR ADJUST AS REQUIRED.
	FLOW CONTROL VALVES OR PRIORITY VALVES HAVE BEEN ADDED TO THE CIRCUIT.	SOME ROTARY TOOLS MUST HAVE FLOW CONTROLS. ADJUST FLOW TO MATCH TOOL GPM TO AVOID FORCING EXCESS FLOW OVER THE RELIEF.
	CLOSED CENTER TOOLS IN USE.	USE ONLY OPEN CENTER TOOLS

If a problem persists or is not listed in the above chart, cease operation and consult the manufacturer for additional instructions.

Parts List and Assembly

The following table lists the parts for the HCM-2G power unit. See the drawing after the list for assembly and parts identification.

Table 1: Parts List

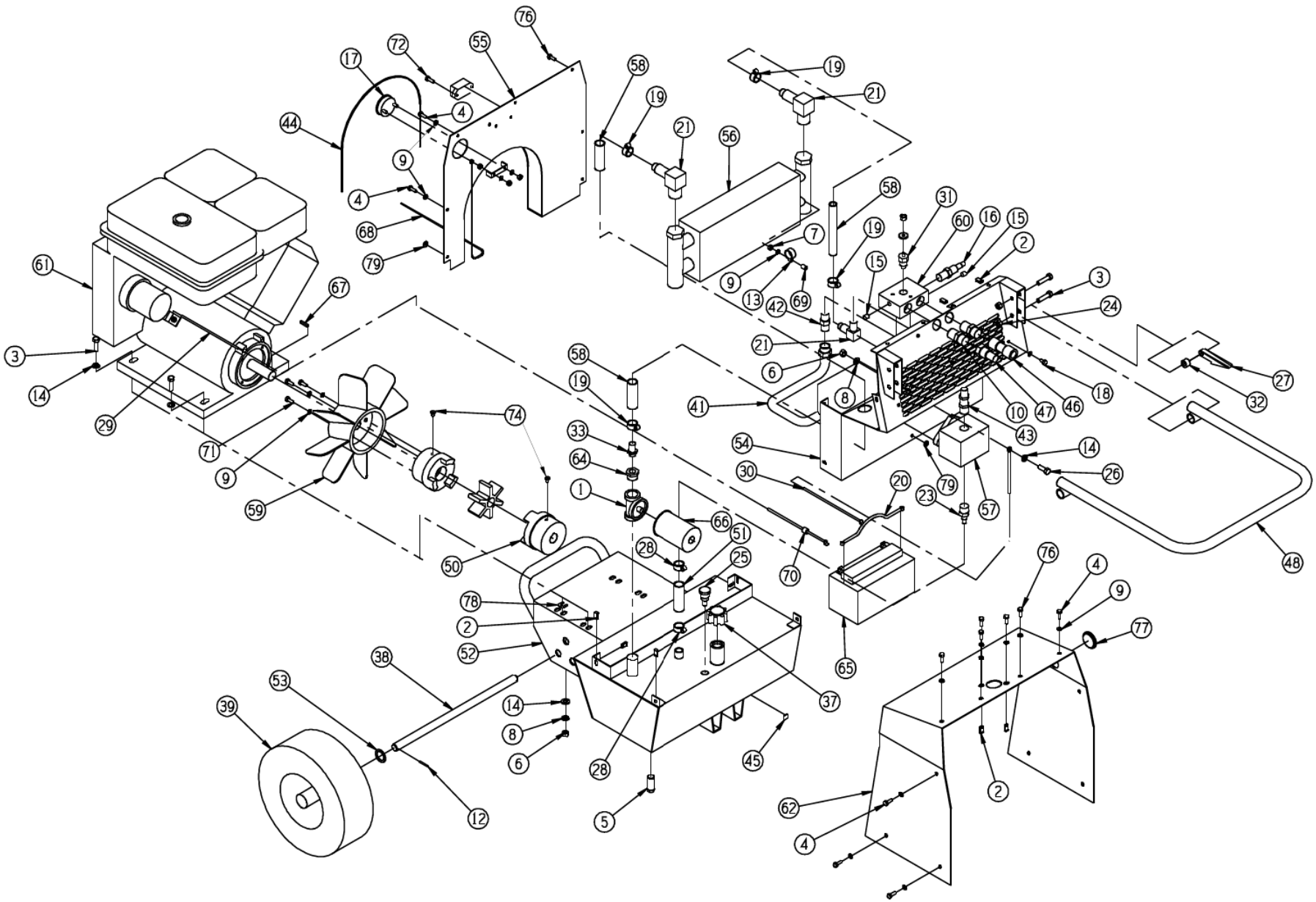
ITEM	P/N	DESCRIPTION	QTY
1	1013-OOP	FILTER	1
2	1041-OOP	NUT JAM	17
3	1042-OOP	BOLT 3/8	8
4	1044-OOP	BOLT ¼	21
5	1048-OOP	PLUG MAGNET	1
6	1061-OOP	NUT 3/8	6
7	1062-OOP	NUT ¼	11
8	1063-OOP	WASHER LOCK 3/8	6
9	1064-OOP	WASHER LOCK ¼	31
10	1068-OOP	FITTING	2
12	1080-OOP	PIN COTTER 1/8	2
13	1085-OOP	CLAMP	2
14	1093-OOP	WASHER FLAT 3/8	6
15	1132-OOP	FITTING	2
16	1146-OOP	VALVE RELIEF	1
17	1285-OOP	GAUGE HOUR METER	1
18	2057-OOP	BOLT ¼	2
19	1416-OOP	CLAMP HOSE	4
20	1423-OOP	STRAP	1
21	1444-OOP	FITTING	3
22	1457-OOP	TIE 8”	8
23	1505-OOP	FITTING	1
24	1631-OOP	NUT 3/8	4
25	1768-OOD	GAUGE SIGHT	1

Table 1: Parts List

ITEM	P/N	DESCRIPTION	QTY
26	1871-OOP	BOLT 3/8	2
27	1895-OOD	LATCH HANDLE	2
28	1926-OOP	CLAMP HOSE	2
29	1930-OOP	CABLE POS. RED	1
30	1931-OOP	CABLE NEG. BLACK	1
31	1940-OOP	VALVE	1
32	1960-OOD	SPACER HANDLE	2
33	2531-OOP	FITTING	1
37	2187-OOP	CAP	1
38	2368-OOD	AXLE	1
39	2443-OOP	WHEEL	2
40	2466-OOD	CONTAINER	1
41	4366-OOP	HOSE PRESSURE	1
42	2476-OOP	FITTING	1
43	2490-OOP	FITTING	1
44	2498-OOP	TRIM	1
45	2651-OOP	BUMPER HOOD	1
46	2701-OOP	COUPLER HYD	1
47	2702-OOP	COUPLER HYD	1
48	2780-OOP	HANDLE	1
49	2781-OOD	GRAPHIC SET	1
50	2782-OOD	COUPLER PUMP DRIVE	1
51	2783-OOP	HOSE SUCTION	1
52	2784-OOW	TANK HYDRAULIC	1
53	2785-OOD	SPACER AXLE	2
54	2786-OOW	GRILL	1
55	2787-OOP	GUARD FAN	1
56	2788-OOP	COOLER HYDRAULIC	1
57	2789-OOP	PUMP 9HP & 11 HP HONDA	1
58	2790-OOP	HOSE HYDRAULIC RETURN	2
59	2791-OOP	FAN	1

Table 1: Parts List

ITEM	P/N	DESCRIPTION	QTY
60	2792-OOD	MANIFOLD HYDRAULIC	1
61	2793-OOP	ENGINE HONDA 9 HP	1
	2886-OOP	ENGINE HONDA 11 HP	
62	2794-OOW	HOOD	1
64	2796-OOP	FITTING BUSHING	1
65	1929-OOP	BATTERY	1
66	1083-OOP	ELEMENT HYDRAULIC FILTER	1
67		KEY ENGINE/FAN	1
68		WIRE HOUR METER	1
69	2445-OOD	SPACER	2
70	3496-OOP	GROMMET	1
71	1733-OOP	BOLT	3
72	2304-OOP	BOLT	2
73	1099-OOP	WASHER FLAT ¼	2
74	2752-OOP	SET SCREW	2
76	1221-OOP	BOLT ¼	3
77	3012-OOP	CAP / PLUG	1
78	1544-OOP	SHIM	AS REQ'D
79	1656-OOP	WASHER FLAT 3/16	5
	3612-OOD	FAN GUARD	1
	3613-OOW	LIFTING EYE	1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SECTION VIII ORDERING INFORMATION

To place an order or to get more detailed information on any E.H. Wachs products, call us at: 1-800-323-8185.

ORDERING REPLACEMENT PARTS

Please use parts list provided in manual. Have part description and part number of required replacement part or parts to help expedite order and insure proper parts are being ordered.

REPAIR INFORMATION

Please call E.H. Wachs Company prior to returning any equipment for repair. We will advise you of shipping and handling. Please enclose with equipment to be repaired your name, address, phone number and a brief description of problem or work to be done or estimated.

All repair work done at our plant will be estimated and the customer advised of cost and time required to complete repair.

WARRANTY INFORMATION

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

RETURN GOODS ADDRESS

E.H. Wachs
600 Knightsbridge Parkway
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