STANLEY®

HPR20261

HYDRAULIC POWER UNIT

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND/OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

SAFETY, OPERATION AND MAINTENANCE SERVICE MANUAL

Stanley Hydraulic Tools
3810 SE Naef Road
Milwaukie OR 97267-5698
503-659-5660
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www.stanley-hydraulic-tools.com

OPS/SVCE USA
62256 12/2003 Ver 1

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SERVICING THE STANLEY POWER UNIT: This manual contains safety, operation, and routine maintenance instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at the number listed on the back of this manual and ask for a Customer Service Representative.

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER — **This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

⚠ WARNING — **This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION — **This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

CAUTION — **This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.**

NOTICE — **This signal word indicates a situation which, if not avoided, will result in damage to the equipment.**

IMPORTANT — **This signal word indicates a situation which, if not avoided, may result in damage to the equipment.**

Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the equipment.

These safety precautions are given for your safety. Review them carefully before operating the tool 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 on page 4.

In addition to this manual, read and understand safety and operating instructions in the Engine Operation Manual furnished with the power unit.

The HPR20261 Hydraulic Power Unit 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. 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 and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the power unit unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, ear, head protection, and safety shoes at all times when operating the power unit and a hydraulic tool.
- Do not inspect or clean the power unit while it is running. Accidental engagement of the unit can cause serious injury.
- Always us hoses and fittings rated at 2500 psi/172 bar with a 4 to 1 safety factor. Be sure all hose connections are tight.
- Be sure all hoses are connected for correct flow direction to and from the tool being used.
- Do not inspect hoses and fittings for leaks by using bare hands. “Pin-hole” leaks can penetrate the skin.
- NEVER OPERATE THE POWER UNIT IN A CLOSED SPACE. Inhalation of engine exhaust can be fatal.
- Do not operate a damaged, improperly adjusted power unit.
- Never wear loose clothing that can get entangled in the working parts of the power unit.
- Keep all parts of your body away from the working parts of the power unit.
- Keep clear of hot engine exhaust.
- Do not add fuel to the power unit while the power unit is running or is still hot.
- Do not operate the power unit if gasoline odor is present.
- Do not use flammable solvents around the power unit engine.
- Do not operate the power unit within 3.3 ft/1 m of buildings, obstructions or flammable objects.
- Do not reverse tool rotation direction by changing fluid flow direction.
- Allow power unit engine to cool before storing in an enclosed space.
- Always keep critical tool markings, such as lables and warning stickers legible.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

TOOL STICKERS & TAGS

STANLEY RAILROAD HELP DESK
1-800-549-0517
FOR CUSTOMER SERVICE OR TECHNICAL QUESTIONS

25610

CHOKE

07764

CALIFORNIA
PROPOSITION 65 WARNING

ENGINE EXHAUST CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM.

29133

SLOW FAST

29432

OFF ON
HYDRAULIC

CHECK HYDRAULIC FLUID LEEL WITH ENGINE

51297

28985

TO START:
BOTH HYDRAULIC VALVES OFF
ENGINE THROTTLE TO SLOW
PULL CHOKE IF NECESSARY
TURN SWITCH KEY TO START
RELEASE KEY TO RUN

TO STOP:
BOTH HYDRAULIC VALVES OFF
ENGINE THROTTLE TO SLOW
TURN SWITCH KEY OFF

TO OPERATE TOOLS:
CONNECT TOOL(S)
TURN VALVE(S) ON

28008

FOR ONE OR TWO 5 GPM TOOLS, PUSH THE COMBINER KNOB IN. FOR ONE 10 GPM TOOL, PULL THE COMBINER KNOB OUT AND TURN BOTH TOOL VALVES ON.

28045

HYDRAULIC FLUID

35686

OFF RUN START

29433

ON

CAUTION

CERTAIN PARTS OF THE POWER UNIT WILL BE HOT. AVOID CONTACT WITH THOSE PARTS TO PREVENT INJURY.

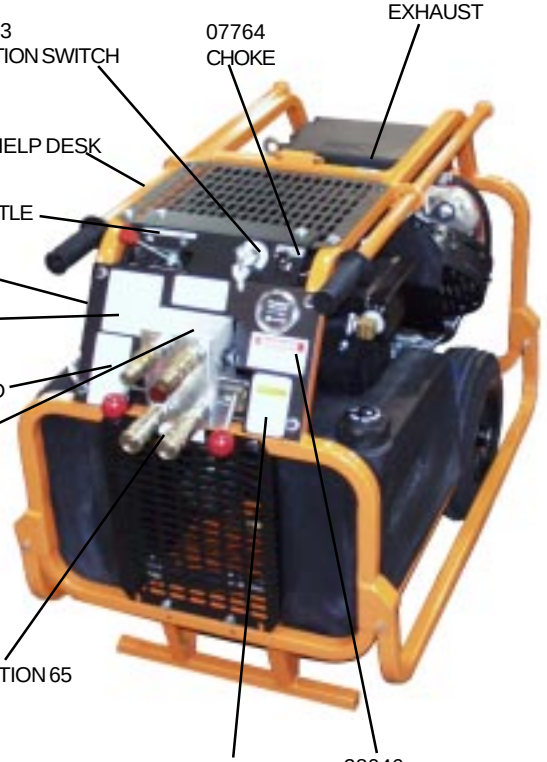
OFF

28047

DANGER

OPERATE UNIT ONLY IN A WELL VENTILATED AREA. ENGINES PRODUCE CARBON MONOXIDE WHICH IS AN ODORLESS DEADLY POISON.

28046



DANGER

1. FAILURE TO USE HYDRAULIC HOSE **LABELED AND CERTIFIED AS NON-CONDUCTIVE** WHEN USING HYDRAULIC TOOLS ON OR NEAR ELECTRICAL LINES MAY RESULT IN DEATH OR SERIOUS INJURY.

   BEFORE USING HOSE **LABELED AND CERTIFIED AS NON-CONDUCTIVE** ON OR NEAR ELECTRIC LINES BE SURE THE HOSE IS **MAINTAINED AS NON-CONDUCTIVE**. THE HOSE SHOULD BE REGULARLY TESTED FOR ELECTRIC CURRENT LEAKAGE IN ACCORDANCE WITH YOUR SAFETY DEPARTMENT INSTRUCTIONS.

2. A HYDRAULIC LEAK OR BURST MAY CAUSE OIL INJECTION INTO THE BODY OR CAUSE OTHER SEVERE PERSONAL INJURY.

   A **DO NOT** EXCEED SPECIFIED FLOW AND PRESSURE FOR THIS TOOL. EXCESS FLOW OR PRESSURE MAY CAUSE A LEAK OR BURST.

   B **DO NOT** EXCEED RATED WORKING PRESSURE OF HYDRAULIC HOSE USED WITH THIS TOOL. EXCESS PRESSURE MAY CAUSE A LEAK OR BURST.

   C CHECK TOOL HOSE COUPLERS AND CONNECTORS DAILY FOR LEAKS. **DO NOT** FEEL FOR LEAKS WITH YOUR HANDS. CONTACT WITH A LEAK MAY RESULT IN SEVERE PERSONAL INJURY.

IMPORTANT

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

15875

DANGER

D DO NOT LIFT OR CARRY TOOL BY THE HOSES. DO NOT ABUSE HOSE. DO NOT USE KINKED, TORN OR DAMAGED HOSE.

3. MAKE SURE HYDRAULIC HOSES ARE PROPERLY CONNECTED TO THE TOOL BEFORE PRESSURING SYSTEM. SYSTEM PRESSURE HOSE MUST ALWAYS BE CONNECTED TO TOOL "IN" PORT. SYSTEM RETURN HOSE MUST ALWAYS BE CONNECTED TO TOOL "OUT" PORT. REVERSING CONNECTIONS MAY CAUSE REVERSE TOOL OPERATION WHICH CAN RESULT IN SEVERE PERSONAL INJURY.

4. DO NOT CONNECT OPEN-CENTER TOOLS TO CLOSED-CENTER HYDRAULIC SYSTEMS. THIS MAY RESULT IN LOSS OF OTHER HYDRAULIC FUNCTIONS POWERED BY THE SAME SYSTEM AND/OR SEVERE PERSONAL INJURY.

5. BYSTANDERS MAY BE INJURED IN YOUR WORK AREA. KEEP BYSTANDERS CLEAR OF YOUR WORK AREA.

6. WEAR HEARING, EYE, FOOT, HAND AND HEAD PROTECTION.

7. TO AVOID PERSONAL INJURY OR EQUIPMENT DAMAGE, ALL TOOL REPAIR MAINTENANCE AND SERVICE MUST ONLY BE PERFORMED BY AUTHORIZED AND PROPERLY TRAINED PERSONNEL.

IMPORTANT

READ OPERATION MANUAL AND SAFETY INSTRUCTIONS FOR THIS TOOL BEFORE USING IT.

USE ONLY PARTS AND REPAIR PROCEDURES APPROVED BY STANLEY AND DESCRIBED IN THE OPERATION MANUAL.

TAG TO BE REMOVED ONLY BY TOOL OPERATOR.

15875

SAFETY TAG (shown smaller then actual size)

The safety tag at right is attached to the power unit when shipped from the factory. Read and understand the safety instructions listed on this tag before removal. We suggest you retain this tag and attach it to the tool when not in use.

HYDRAULIC HOSE REQUIREMENTS

HOSE TYPES

Hydraulic hose types authorized for use with Stanley Hydraulic Tools are as follows:

❶ Certified non-conductive

❷ Wire-braided (conductive)

❸ Fabric-braided (not certified or labeled non-conductive)

Hose ❶ listed above is the only hose authorized for use near electrical conductors.

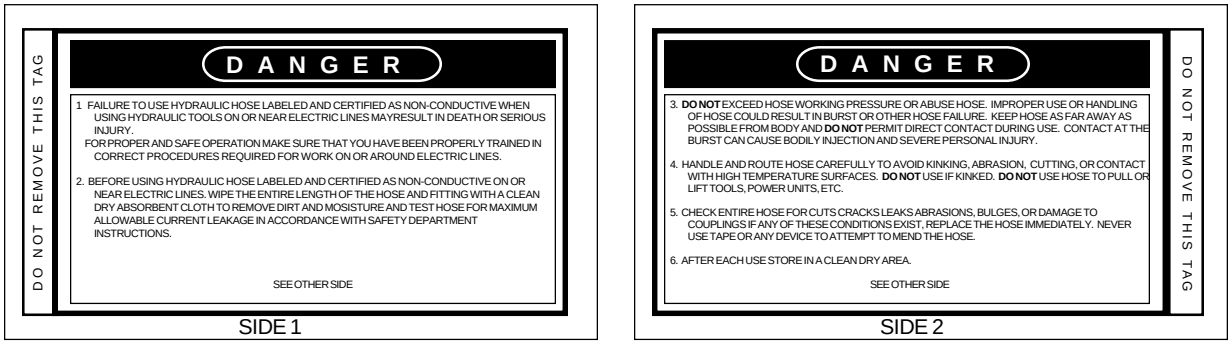
Hoses ❷ and ❸ listed above are **conductive** and **must never** be used near electrical conductors.

HOSE SAFETY TAGS

To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley Hydraulic Tools. DO NOT REMOVE THESE TAGS.

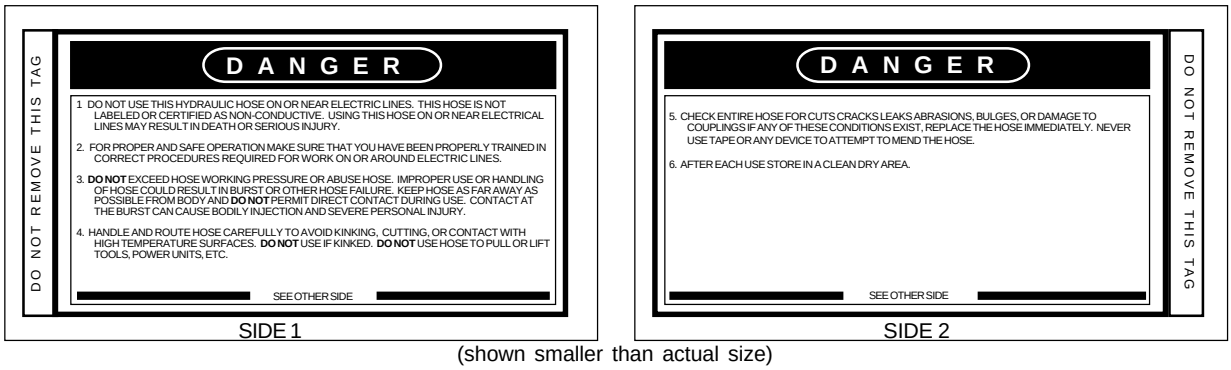
If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley Distributor.

THE TAG SHOWN BELOW IS ATTACHED TO "CERTIFIED NON-CONDUCTIVE" HOSE



(shown smaller than actual size)

THE TAG SHOWN BELOW IS ATTACHED TO "CONDUCTIVE" HOSE.



(shown smaller than actual size)

HOSE PRESSURE RATING

The rated working pressure of the hydraulic hose **must be equal to or higher than** the relief valve setting on the hydraulic system.

HTMA REQUIREMENTS

HYDRAULIC SYSTEM REQUIREMENTS	TOOL CATEGORY  TYPE 1	 TYPEII	TYPEIII	TYPE RR
FLOW RATE	4-6 gpm (15-23 lpm)	7-9 gpm (26-34 lpm)	11-13 gpm (42-49 lpm)	9-10.5 gpm (34-40 lpm)
TOOL OPERATING PRESSURE (at the power supply outlet)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)
SYSTEM RELIEF VALVE SETTING (at the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2300 psi (152-159 bar)
MAXIMUM BACK PRESSURE (at tool end of the return hose)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)
Measured at a max. fluid viscosity of: (at min. operating temperature)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)
TEMPERATURE Sufficient heat rejection capacity to limit max. fluid temperature to: (at max. expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Min. cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW) 40° F (22° C)	5 hp (3.73 kW) 40° F (22° C)	7 hp (4.47 kW) 40° F (22° C)	6 hp (5.22 kW) 40° F (22° C)
NOTE: Do not operate the tool at oil temperatures above 140° F (60° C). Operation at higher temperatures can cause operator discomfort at the tool.				
FILTER Min. full-flow filtration Sized for flow of at least: (For cold temp. startup and max. dirt-holding capacity)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)	25 microns 30 gpm (114 lpm)
HYDRAULIC FLUID Petroleum based (premium grade, anti-wear, non-conductive) VISCOSITY (at min. and max. operating temps)	100-400 ssu*	100-400 ssu* (20-82 centistokes)	100-400 ssu*	100-400 ssu*
NOTE: When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.				

*SSU = Saybolt Seconds Universal

NOTE:

These are general hydraulic system requirements. See tool Specification page for tool specific requirements.

OPERATION

PREPARATION FOR USE

Do not operate the power unit until you have read the *engine* operating and maintenance instructions manual furnished with the unit.

1. ENGINE CRANKCASE OIL LEVEL

Always check the oil level before starting the engine. Make sure the oil level is at the FULL MARK on the dipstick. Do not overfill. Use detergent oil classified "For Service SE, SF, SG" as specified in the engine operating and maintenance manual.

2. ENGINE FUEL LEVEL

Check the fuel level. If low, fill with un-leaded gasoline with a minimum of 85 octane.

3. HYDRAULIC FLUID

Check the dip stick in the hydraulic fluid reservoir for the proper fiuid level. Use fluids meeting the following specifications.

Viscosity (Fluid Thickness)

U.S.	**METRIC**
50°F 450 SSU Maximum	10°C 95 C.S.
100°F 130-200 SSU	38°C 27-42 C.S.
140°F 85 SSU Minimum	60°C 16.5 C.S. Min

Pour Point -10°F/-23°C Minimum (for cold startup)

Viscosity Index (ASTM D-2220) 140 Minimum

Demulsibility (ASTM D-1401) 30 Minutes Maximum

Flash Point (ASTM D-92) 340°F/171°C Minimum

Rust Inhibition (ASTM D-665 A & B) Pass

Oxidation (ASTM D-943) 1000 Hours Minimum

Pump Wear Test (ASTM D-2882) 60 mg Maximum
The following fluids work well over a wide temperature range, allow moisture to settle out and resist biological growth that may occur in cool operating hydraulic circuits. These fluids are recommended by Stanley. Other fluids that meet or exceed the specifications of these fluids may also be used.

Chevron AW-MV-32
Exxon "Univis" J-26
Mobil D.T.E. 13
Gulf "Harmony" AW-HVI-150-32
Shell "Tellus" T-32
Texaco "Rando" HD-AZ
Union "Unax" AW-WR-32
Terresolve EnviroLogic 132

4. HYDRAULIC CONNECTIONS

The recommended hose length is 25 ft/8 m with a 1/2 inch/ 12.7 mm inside diameter. The hoses must have a working pressure rating of at least 2500 psi/175 bar. Each hose end must have male thread ends compatible with H.T.M.A. (HYDRAULIC TOOL MANUFACTURERS ASSOCIATION) quick disconnect fittings (NPT type threads). (See Figure 2.)

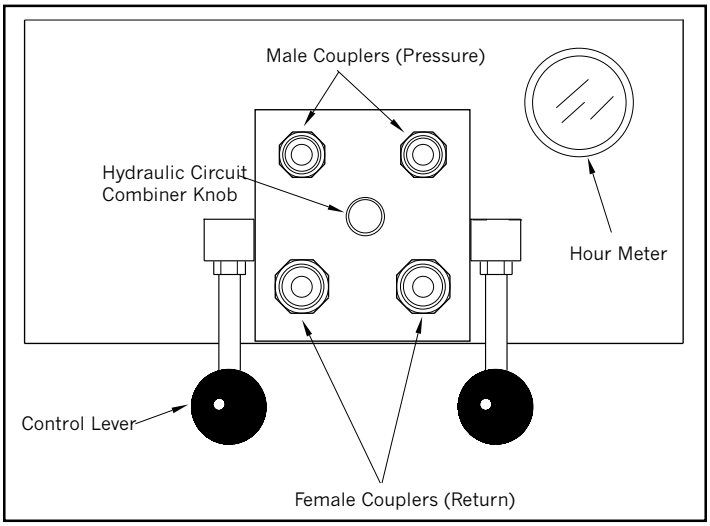


Figure 1. Panel Control Valve

Facing the panel control valve, the top male quick disconnect fittings are the PRESSURE FLUID OUT fittings. The bottom female quick disconnect fittings are the RETURN FLUID IN fittings.

QUICK DISCONNECT COUPLERS

H.T.M.A. approved quick disconnect couplings are installed to hydraulic hoses so that the direction of oil flow is always from the male to the female quick disconnect as shown in figure 2. Quick disconnect couplings and hose fittings are selected so that additional fittings such as reducer or adapter fittings are not required.

OPERATION

If adapter fittings are used, they must be approved steel hydraulic fittings meeting a minimum operating pressure rating of 2500 psi/172 bar. Do not use galvanized pipe fittings or black pipe fittings.

Use thread tape or pipe joint compound when installing quick disconnect couplings to hose or tool fittings. Follow the instructions furnished with the selected thread sealant. DO NOT OVERTIGHTEN THE FITTINGS.

5. BATTERY

The supplied 12 Volt DC battery is fully charged.

Make sure the battery cables are tight and charging circuit functions are operating properly.

NOTICE

Do not charge the battery with a standard automotive battery charger. This type of charger produces a charging amperage higher than 2 amps. Charging the battery at higher than 2 amps will damage the battery.

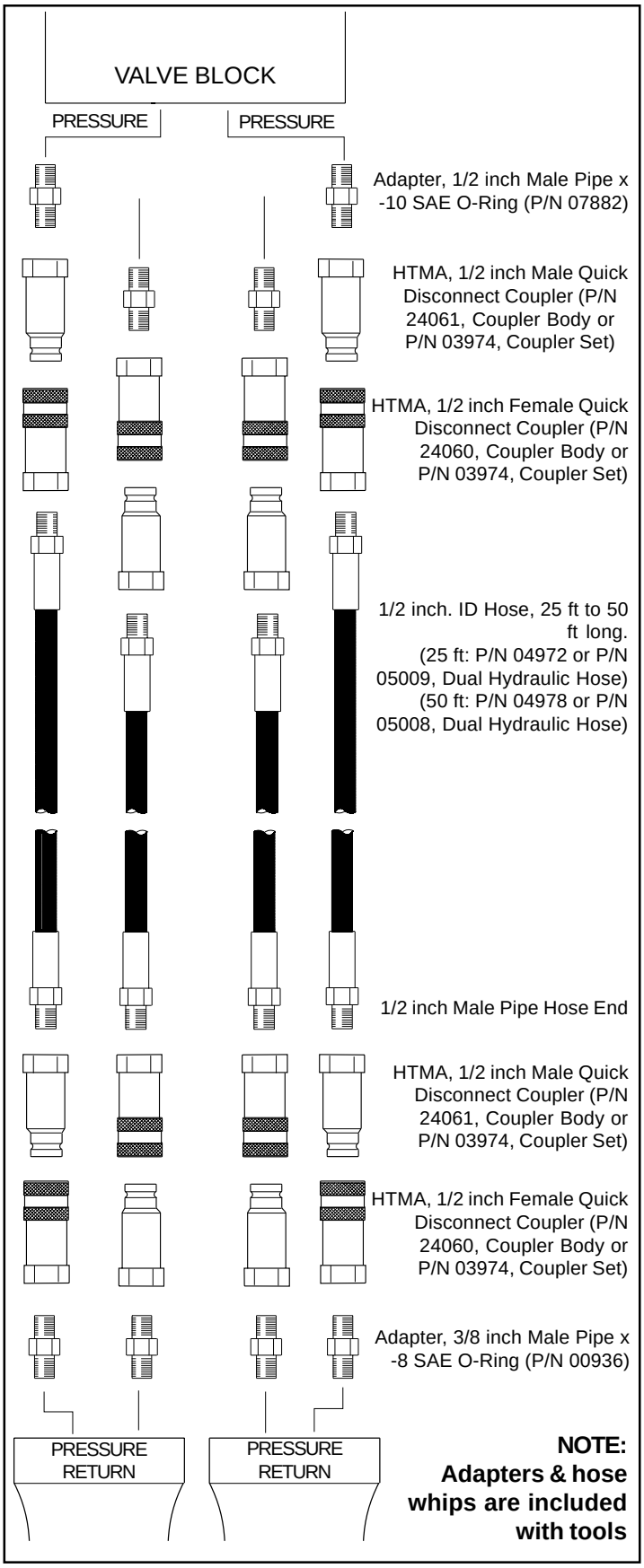


Figure 2. Hydraulic Connections

OPERATION

CONTROLS

The HPR20261 Power Unit provides two circuits, each with an oil flow of 5 gpm/19 lpm up to 2000 psi/140 bar. The two circuits can be combined into one circuit providing 10 gpm/ 38 lpm up to 2000 psi/140 bar.

The HPR20261 contains a hydraulic pump with two sections. Each pump section will provide a maximum 5 gpm/19 lpm with a governed engine throttle. The 5 gpm/19 lpm output of each pump section is directed to the panel control valve assembly. It is the position of the hydraulic circuit combiner knob on the panel control valve assembly which keeps the output of each pump section separated or combined.

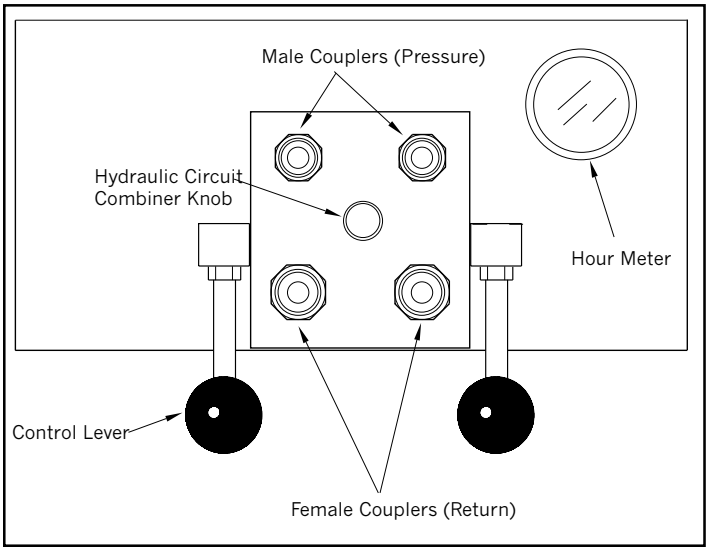


Figure 3. Panel Control Valve

When the hydraulic circuit combiner knob is pulled OUT, the two circuits are combined into ONE 10gpm/38 lpm circuit. One hydraulic tool can be connected to one circuit. The other circuit must not have a tool or hoses connected to it. The circuit is activated by pushing BOTH control levers UP.

When the hydraulic circuit combiner knob is pushed IN, the two circuits are NOT combined and each circuit provides 5 gpm/19 lpm. One hydraulic tool can be connected to each circuit. Each circuit is activated by pushing the control lever UP.

Oil flow is regulated by sliding the throttle lever to the full throttle position. This setting will produce 10 gpm/38 lpm up to 2000 psi/140 bgar.

STARTUP

Before starting the engine make sure the hydraulic control levers are in the OFF position. Move the choke control to the CHOKE position and turn the key to START. When the engine starts, open the choke gradually. When the engine is warmed up the throttle may be advanced.

COLD WEATHER STARTUP

1. Use the procedures described under "STARTUP" and then follow the procedure below.

2. Hydraulic fluids are thicker in cold weather. Therefore, it is recommended that the engine be run at low idle long enough to bring the fluid temperature up to a minimum of 50°F/10°C or until the hose fitting between the cooler and hydraulic oil reservoir is warm.

3. If the tools and tool hoses are cold, it is recommended to allow hydraulic fluid to circulate through the tool hoses until warm before using the tool.

SHUTDOWN

1. Place the circuit control lever in the "OFF" position.

2. Return the throttle control to the idle position.

3. Allow the engine to idle for approximately one minute and then switch the ON/OFF switch to the "OFF" position.

ROUTINE MAINTENANCE

ENGINE MAINTENANCE

Follow the maintenance schedule and general maintenance instructions in the engine maintenance and operation manual furnished with the power unit. Normal maintenance includes:

- Clean foam air cleaner every 3 months or 50 hours.
- Replace air paper cartridge every 300 hours or every year.
- Replace in-line fuel filter every 300 hours or every year.
- Replace spark plugs every 300 hours or every year.
- Change engine oil after first 20 hours of operation, then after every 100 hours of operation. If engine has been operating under heavy load or in high ambient temperature, change the oil every 25 hours of operation.
- Change oil filter when engine oil is changed.
- Check oil level daily.
- Remove dirt and debris from engine with a cloth or brush daily. Do not use water spray.
- Clean air cooling system every 100 hours of operation.

HYDRAULIC SYSTEM MAINTENANCE

- Check hydraulic fluid level daily. Add fluid per specifications in this manual. (See "HYDRAULIC FLUID" under the section titled "OPERATING INSTRUCTIONS".
- Remove condensed moisture from the hydraulic fluid by pumping the hydraulic fluid into a 5 gal / 20 l container through the pressure hose. Make sure the engine is at idle when performing this procedure. When the hydraulic reservoir is empty turn the engine off immediately.
- Allow the fluid to sit long enough for the water to settle to the bottom of the container. Slowly pour the fluid back into the hydraulic tank, avoiding the water at the bottom of the container.
- Each day, check hydraulic lines and fittings for leaks, kinks, etc. Do not use your hand to perform this check.
- Change the hydraulic filter element every 200 hours of operation. Change more often if cold, moist or dusty conditions exist.
- Check oil cooler for debris. Remove debris with air pressure.

STORAGE

- Clean the unit thoroughly before storage. Do not use water pressure.
- Always store the unit in a clean and dry facility.
- If the unit will be stored for a prolonged period (over 30 days), add a fuel additive to the fuel tank to prevent the fuel from gumming. Run engine for a short period to circulate the additive.
- Replace crankcase oil with new oil.
- Remove spark plugs and pour approximately 1 ounce (30 ml) of engine oil into each cylinder. Replace spark plugs and crank the engine slowly to distribute the oil.
- Check hydraulic reservoir for water. If water is found, change the oil and circulate it through the tool hose and tool. (See "HYDRAULIC SYSTEM MAINTENANCE" earlier in this section).
- Disconnect tool hoses.

TESTING & TROUBLESHOOTING

GENERAL

Tests and adjustments should be performed periodically to ensure the power unit is operating at maximum efficiency. Stanley Circuit Tester (part number 04182) is recommended. This tester can be used to isolate problems in both the engine and hydraulic system prior to any power unit disassembly.

TESTING THE HYDRAULIC CIRCUIT

The following tests can be performed to ensure that the hydraulic pump is supplying the correct flow and pressure and that the system relief valve is operating properly.

During these tests, make wure the engine is warm and operating smoothly. If test results are not as specified, refer to the troubleshooting table in this section for possible causes.

TESTING THE 5 GPM EHTMA TYPE C CIRCUITS

To test either of the two circuits, proceed as follows:

1. Set both Circuit Control Levers to the "OFF" (down) position. Push the Combiner Knob in to separate the two circuits.

2. Connect the Stanley Circuit Tester across two hose ends (where the tool would normally be connected) of one circuit.

3. Fully open the tester restrictor valve (counterclockwise).

4. Start the engine and allow it to run until warm.

5. Move the engine throttle control all the way to the right so that the engine is running at full RPM.

6. Move the Circuit Control Lever for the circuit to be tested to the "ON" (up) position.

7. With the engine at high speed, the test flow gauge should read 4-5 gpm/15-19 lpm.

8. Slowly turn the restrictor valve clockwise while watching the pressure gauge. The flow rate should stay at 4-5 gpm/ 15-19 lpm as the pressure gauge reaches 2100-2200 psi/ 148-155 bar.

9. At 2100-2200 psi/148-155 bar, the relief valve should begin to open. The pressure at which the relief valve just beinges to open is commonly referred to as the "cracking pressure". At the "cracking pressure," the flow rate should start to drop because the relief valve is allowing fluid to bypass to the hydraulic reservoir. The "cracking pressure" is preset at the factory and if it is not within the above range, the relief valve must be rewset as follows:

a. Access to the relief valves can be gained through the top of the power unit between the dash panel and top grille, If more room is required, remove the dash panel. Use a open end or box end wrench to remove the cap on the relief valve.

b. Use an Allen wrench to adjust the relief valve. Turn clockwise to raise the pressure and counterclockwise to reduce the pressure.

c. Replace the cap and test for 2100-2200 psi/148-155 bar as described above.

d. Repeat the above test with the hoses and tester connected to the other circuit.

TESTING THE 10 GPM EHTMA TYPE D CIRCUITS

The 10 gpm circuit is formed when the Combiner Knob is out and both Circuit Control Levers are set to the ON (up) position. This allows the output of both pump sections to be combined at one set of fittings to provide 10 gpm/38 lpm flow to a single tool. To test circuit, proceed as follows:

1. Perform steps 1 through 5 under "Testing the 5 gpm EHTMA Type C Circuits". Make sure a tool and hoses are NOT connected to the other tool circuit.

2. Pull the Combiner Knob OUT to combine the two circuits.

3. Raise both control levers to the ON position.

4. With the eingine at high speed, the test flow gauge should read 9-10 gpm/34-38 lpm as the pressure guage reaches 2100-2200 psi/148-155 bar.

5. Perform step 9 under "Testing the 5 gpm EHTMA Type C Circuits".

TROUBLESHOOTING

PROBLEM	CAUSE	REMEDY
Engine will not run.	Ignition switch off.	Set the switch to "ON" before pushing control lever to the left.
	Battery not connected.	Attach battery cables, check wires.
	Weak battery.	Test battery, charge or replace.
	No fuel.	Add Fuel.
	Fuel filter plugged.	Replace fuel filter.
	Defective spark plugs.	Remove plugs, check gap, clean or replace.
Fluid blowing out of fluid reservoir vent.	Defective pump seal.	Replace pump seal.
	Hydraulic tank overfilled.	Correct the fluid level.
Hydraulic tool won't operate.	Control lever setting incorrect.	Set control lever to "TOOL ON".
	Incorrect hose connection to tool.	Make sure the tool hose circuit goes from right (pressure) fitting to tool and back to the left fitting (return). Fluid always flows from the male to female fittings.
	Quick disconnect fittings defective.	Detach from hose, connect set together and check for free flow.
	Hydraulic fluid level low.	Check for correct fluid level. Fill using the recommended fluid.
	Pump coupling defective.	Check power unit between pump and cooler. The coupler should slide only .150 inches between blower and pump.
	Relief valve stuck open.	Adjust or replace valve.
	Suction hose kinked.	Make sure suction hose from fluid reservoir to pump inlet has a smooth curve.
	Tool is defective.	Refer to tool manual.

SPECIFICATIONS

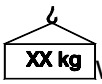
Engine: ..... 20 hp Honda

Capacity ..... Two 5 gpm/19 lpm Circuits or One 10 gpm/38 lpm Circuit

Length: ..... 35 in. / 89 cm

Width: ..... 21 in: / 53.3 cm

Height: ..... 29.75 in. / 75.5 cm



Weight (Wet): ..... 239 lbs / 108 kg

Fuel Tank Capacity: ..... 4.2 gal. / 15 ltr

Estimated Gas Consumption Per Hour ..... 1.3 gal / 4 ltr

Hydraulic Reservor Capacity: ..... 2.7 gal. / 11 ltr

Relief Valve "crack" setting ..... 2100 psi / 145 bar

Full relief setting ..... 2500 psi / 172 bar

EHTMA Category ..... "C" (20 lpm @ 138 bar) or "D" (30 lpm @ 138 bar)

Noise Level ..... 81 dBA

Vibration Level ..... N/A

SERVICE INSTRUCTIONS

GENERAL

Service instructions in this section are limited to parts and components other than the engine and hydraulic pump. Other major components should be serviced by representatives of the respective manufacturers as follows:

ENGINE
Honda 20 HP
Model GX620K1QAB

The engine should be serviced only by *Honda Certified dealers*. *Lawn and Garden Dealers* may not be able to offer warranty work for this application. It is recommended to contact a *Regional Engine Distributor* for the nearest authorized Honda representative or contact Honda at 1-770-497-6400.

HYDRAULIC PUMP
Parker Hannifin Corporation
331-9120-001

DASH PANEL & CONTROL BLOCK ASSEMBLY

If it is necessary to remove the valve assembly, the fuel tank must first be removed in order to gain access to the hose fittings and wiring located on the back of the panel. Otherwise, many components of the panel and valve can be serviced by removing the front grille (16, fig. 2).

NOTE:
Disconnect the battery terminals before servicing the control block assembly or any dash panel components.

2. After the hoses are removed, the valve assembly may be removed by first removing the capscrews (7, fig. 2 and 27, fig. 4).

VALVE SPOOL & COMBINER SPOOL
(see figure 4)

1. To remove the valve spools, remove the two retaining rings (14, fig. 4) and pull the valve spools out of the valve body.

2. The combiner spool (7, fig. 4) is removed by first unscrewing the knob (24, fig. 4) and then pushing the valve spool out.

3. Inspect the finish of the valve spools and bores of the valve block. If scored or scratched, replace the part(s).

4. Reverse the above procedure to reinstall the above components.

RELIEF VALVE (see figure 4).

DESCRIPTION: The relief valve allows oil to by-pass to the reservoir when the system pressure reaches a pre-set setting. The relief valve is set to by-pass at a "cracking" pressure of 2100-2300 psi/145-158 bar.

While adjustments can be made to the relief setting (see TESTING and TROUBLESHOOTING), the parts of the relief valve are not serviceable.

ENGINE & RELATED COMPONENTS

ENGINE (see figure 1 and 2).

Most engine servicing can be performed without removing the engine. Consult with your Honda Dealer regarding engine repairs.

1. Remove both battery connections and the battery box (62, fig. 2) and remove the battery.

2. To remove the engine, the fuel tank and wheels must first be removed. See instructions in this section for removing the fuel tank.

3. Remove the five sheet metal screws (14, fig. 1) holding the cooler mount (19, fig. 1) to the blower housing (17, fig.1).

4. Remove the throttle cable connection (59, fig. 2) at the engine.

5. Remove the choke cable (63, fig. 2) connection at the engine.

6. Label wires removed from the engine and move them away from the engine.

7. Detach the fuel line from the fuel filter.

8. Remove the four capscrews (23, fig. 1 & 46, fig. 2) holding the engine to the frame and then push the engine forward.

9. Remove the coupling sleeve (32, fig. 2).

10. Slide the engine, with exhaust and blower housing attached, out the fuel tank side of the frame.

11. Reverse the procedure to reinstall the above components.

12. After installing the engine, adjust the coupling so the sleeve has 1/32 to 1/16-inch end play.

IMPORTANT

Switch connections must not be changed. The Ignition system will be damaged if wires are not connected correctly. Refer to the wiring diagram in this manual.

EXHAUST SYSTEM (see figure 1).

The muffler (2) cannot be removed without first detaching the shield (4).

ELECTRICAL

Refer to the wiring diagram for the correct connections, wire sizes and colors.

BLOWER HUB & SHAFT EXTENSION, BLOWER WHEEL, INLET RING, & BLOWER HOUSING (see figure 1).

1. Remove the engine as described earlier in this section.

2. To remove the blower wheel, remove the four capscrews (29) around the housing inlet ring (31) and remove the ring.

3. Remove the blower wheel (28) with the blower hub and shaft extension (26) by loosening the two set screws (25).

4. Remove the four nuts (15) holding the blower housing (17) to the engine. Remove the housing.

5. Reverse the procedure to reinstall the above components and observe the following added procedures.

• Install nuts (15) which hold the blower housing to the engine using Loctite™ 242.

• Install the four capscrews (29) which hold the blower wheel to the blower hub and shaft extension using Loctite™ 680 and torque to 80-100 lb. in.

OIL COOLER (See figure 1, 2 and 6).

1. Remove the top grille (8, fig. 2).

2. Remove the clamps and hoses (2 & 3, fig 5).

3. Remove the sheet metal screws (14, fig. 1) and lift the cooler out.

4. Reverse the procedure to reinstall the above components.

HYDRAULIC PUMP (See figure 2).

1. Remove the front grille (16).

2. Disconnect the pressure and supply hoses at the pump and tie them in a position to minimize fluid loss.

3. Remove the 2 capscrews (25) and then remove the pump.

4. Reverse the above procedure to reinstall the pump and observe the following step.

• Insure the coupling sleeve has 1/32-1/16 inch end play.

FRAME ASSY & RELATED COMPONENTS

FUEL TANK (see figure 2).

1. If the fuel tank contains fuel, take extreme precautions to remove the fuel into approved containers. Do not attempt to service the fuel tank in unventilated areas or in areas containing electric or natural gas appliances which may start-up unexpectantly or in shop areas where grinding or welding is present, all of which can ignite the fuel vapors.

1. Remove the front grille (16) by removing the 4 capscrews (7).

2. Remove the fuel line from the tank by pulling it out.

3. The fuel tank can now be removed by removing the 3 capscrews (1) and the tank support tab (4) and capscrew (5).

4. Thoroughly clean the tank and replace the fuel filter.

5. Use the reverse procedure to reinstall the fuel tank.

HYDRAULIC TANK (see figure 2, 3 & 5).

1. First remove the hydraulic fluid from the tank by either pumping it out with a portable drill pump or draining it into a container.

2. Remove the front grille (16, fig. 2) by removing the four capscrews (7, fig. 2).

3. Remove the hoses (7 & 11, fig. 5) by loosening the hose clamps.

4. The hydraulic tank can now be removed by removing the 3 capscrews (1 & 5, fig. 2) and the tank support tab (35, fig. 2).

HYDRAULIC FILTER (see figure 3).

5. The filter can be removed from the filter container by unscrewing the cap and lifting out the filter.

6. The gasket (1) can be serviced by removing 2 capscrews (1) and then lifting off the filter assembly. Lift out the filter grip plate after removing the capscrew (4).

7. Reinstall the grip plate, gasket, filter assembly, oil filter and filter top by reversing the removal procedure.

8. Reinstall the hydraulic tank by reversing the removal procedure.

TESTING & SETTING THE RELIEF VALVE

Tests and adjustments should be performed periodically to ensure the power unit is operating at maximum efficiency. A hydraulic circuit tester is recommended for use in isolating problems in both the engine and hydraulic system prior to any power unit disassembly.

The relief valve is set to "crack" open at approximately 2100-2300 psi/145-158 bar and should be fully open at 2500 psi/172 bar. These settings are tested as follows:

1. Set the circuit control lever to the OFF position.

2. Connect the circuit tester across the tool hose ends.

3. Set the engine Throttle Control to the "AUTO" position.
4. Fully open the tester restrictor valve.

5. Start the engine and allow it to run until warm.

6. Place the circuit control lever to the ON position.

7. Slowly close the restrictor valve while watching the pressure gauge. When the gauge reaches 2000 psi, continue to close the restrictor and watch closely for a small drop in pressure. This small drop in pressure should occur between 2100-2300 psi/145-158 bar and indicates the pressure at which the relief valve "cracks" open. Continue to close the restrictor. The pressure should not exceed 2500 psi/172 bar when the restrictor is fully closed. If the above settings are incorrect, the relief valve requires adjustment or replacement as follows:

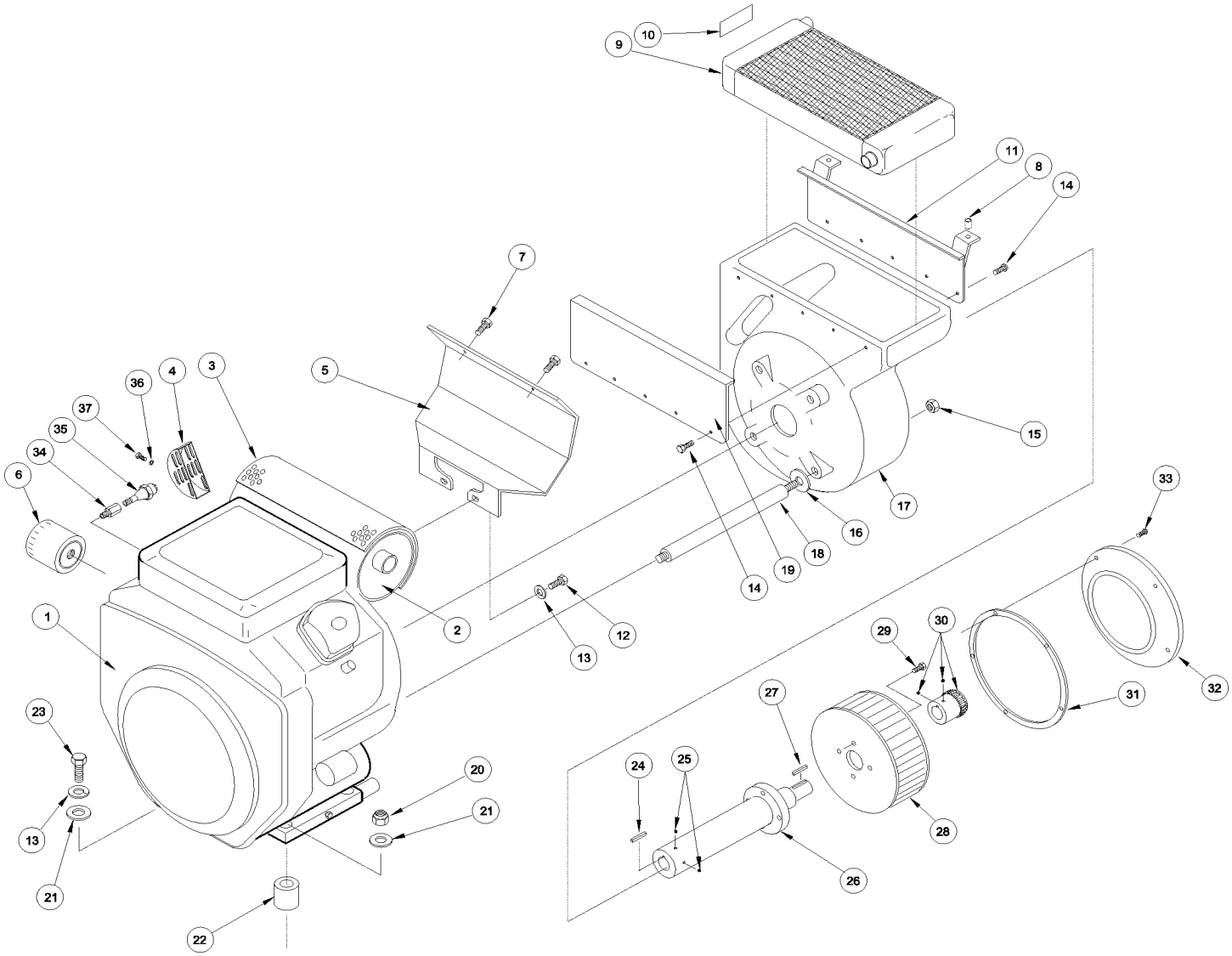
a. Remove the top grille.

b. Remove the capscrews holding the dash panel in place and tilt the dash panel forward to gain access to the relief valve.

c. Remove the cap to the relief valve and note the screw slot. The relief valve is adjusted by turning the screw clockwise to increase pressure or counter-clockwise to decrease pressure. Adjust the relief valve until a cracking pressure of approximately 2100-2300 psi/145-158 bar is achieved and then repeat the test.

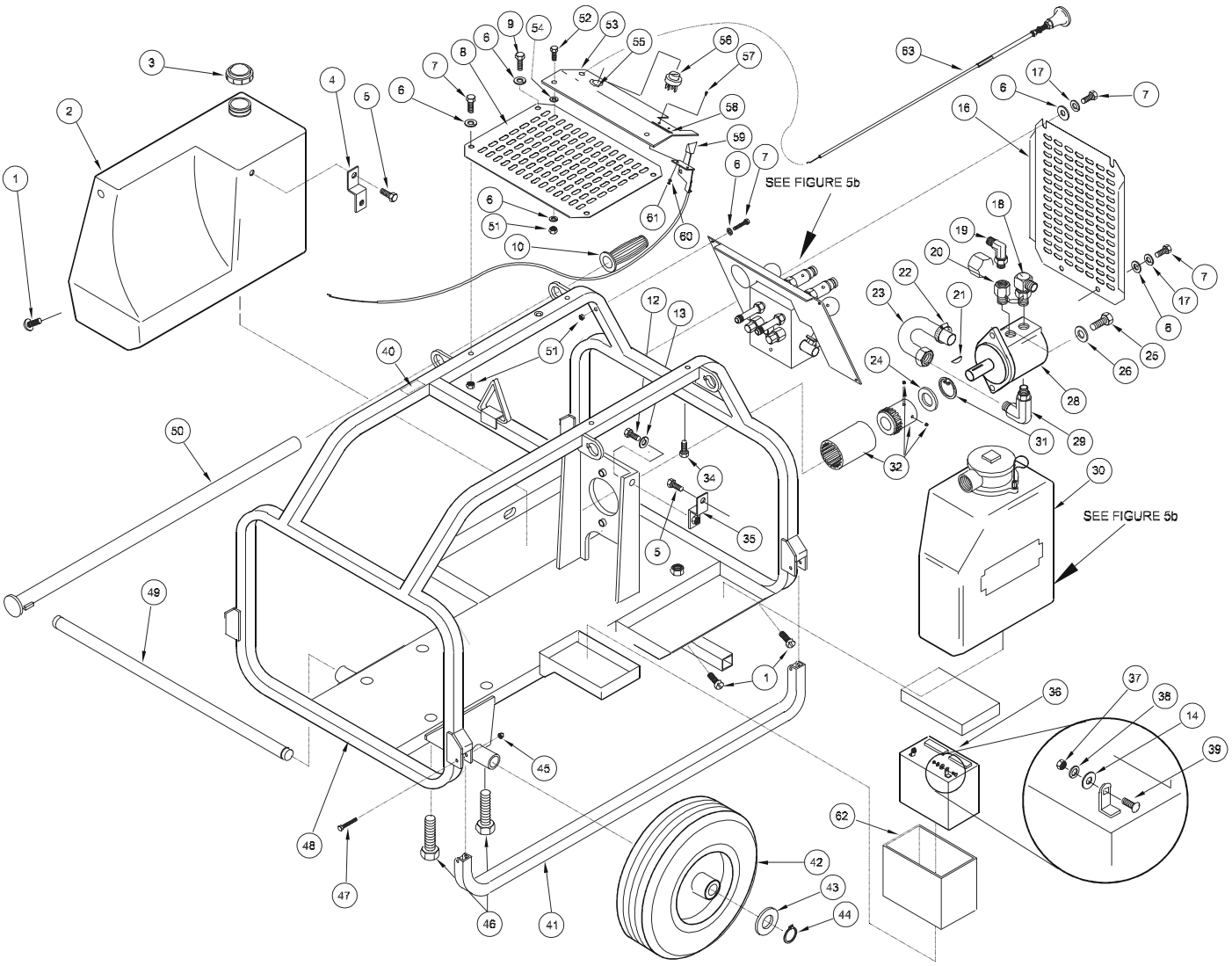
d. If "cracking" pressure between 2100-2300 psi/145-158 bar cannot be achieved, and/or if a maximum pressure of 2500 psi/172 bar cannot be achieved, replace the relief valve and repeat the test.

FIGURE 1. ENGINE ASSEMBLY



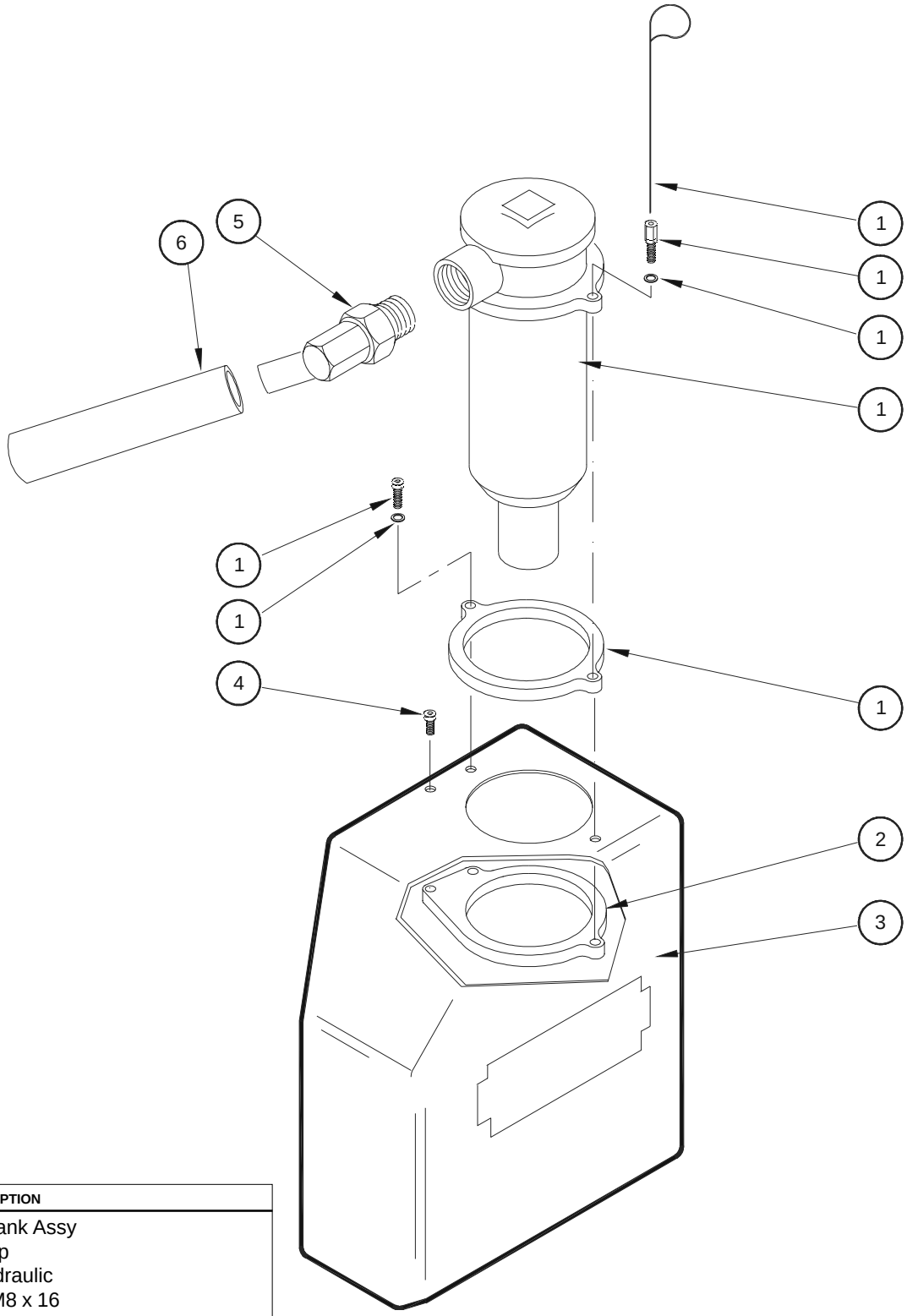
ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	36918	1	Engine, Honda 20 hp				
2	39059	1	Muffler	20	03906	2	ESNA Nut, 5/16 in. -18
3	37285	1	Protector	21	12175	--	Washer, 5/16 in. (as req'd)
4	37222	1	Exhaust Shield	22	23788	4	Spacer
5	43658	1	Heat Shield	23	04637	2	Capscrew, 5/16 in. -18 x 2-1/2 in.
6	18384	1	Oil Filter	24	07818	1	Key
7	37290	6	Flange Bolt	25	22674	2	Setscrew
8	37242	2	Spacer	26	23781	1	Blower Hub & Shaft Extension
9	40078	1	Oil Cooler	27	07819	1	Key
10	25610	1	Railroad Help Desk Decal	28	08035	1	Blower Wheel
11	40056	1	Cooler Mount Weldment `	29	00899	4	Capscrew
12	03877	2	Capscrew	30	23199	1	Coupling Assy (incl items 29 & 30)
13	03031	4	Lockwasher	31	08669	1	Inlet Ring Gasket
14	08668	10	Sheet Metal Screw	32	56690	1	Inlet Ring
15	31242	4	Locknut	33	08667	5	Screw, Self Tapping
16	05694	4	Washer, 7/16 in.	34	37237	1	Adapter
17	07783	1	Blower Housing	35	31765	1	Oil Pressure Switch
18	23778	4	Standoff	36	01298	3	Lockwasher
19	40053	1	Cooler Mount	37	00899	3	Capscrew

FIGURE 2. FRAME PARTS



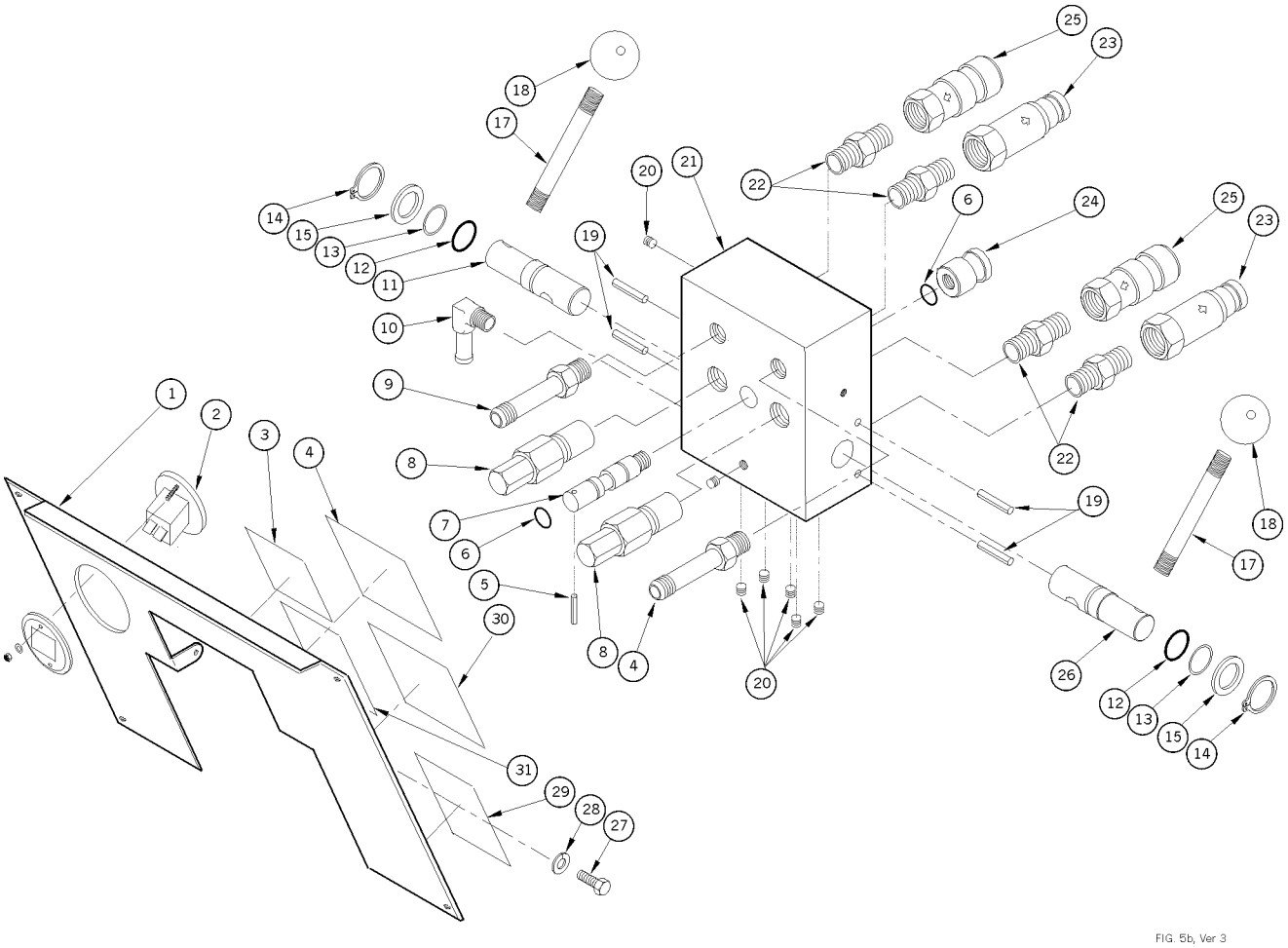
ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	31241	5	Screw, 5/16 -18 Sltd Pan Hd	23	27782	1	Inlet Tube Assy	45	03906	4	Nut
2	23401	1	Fuel Tank	24	---	1	Washer (incl with item 28)	46	370504	2	Capscrew, 5/16-18 x 2-3/4
3	07810	1	Fuel Tank Cap	25	07860	2	Capscrew, 3/8-16 x 1-1/4	47	370513	4	Capscrew
4	21688	1	Tank Support	26	01459	2	Lockwasher, 3/8	48	37233	1	Frame Weldment
5	04416	2	Capscrew, 5/16-18 x 1/2	27	---	-	NO ITEM	49	16363	1	Axle
6	04539	21	Washer, 1/4	28	27695	1	Hydraulic Pump	50	28093	2	Handle
7	03907	10	Capscrew, 1/4-20 x 1-1/2	29	21335	1	90° Elbow, Adjustable Long	51	00719	5	Nut, ESNA, 1/4-20
8	27759	1	Top Grille	30	40389	1	Hydraulic Tank	52	14903	2	Capscrew
9	16251	2	Capscrew, 1/4-20 x 2-1/2	31	---	-	Retaining Ring (incl w/ #32)	53	29390	1	Control Panel
10	08080	2	Handle Grip	32	23719	1	Coupling Assy	54	26831	2	Washer
11	---	-	NO ITEM	33	---	-	NO ITEM	55	29433	1	Sticker, Ignition Switch
12	02072	2	Capscrew, 5/16-18 x 3/4	34	03907	2	Capscrew, 1/4-20 x 1-1/2	56	37733	1	Ignition Switch
13	03031	9	Lockwasher, 5/16	35	07758	1	Tank Support Tab	57	29427	2	Machine Screw
14	12175	1	Flat Washer	36	04303	1	Battery	58	29432	1	Throttle Decal
15	---	-	NO ITEM	37	00429	2	Nut	59	37223	1	Throttle Control
16	27759	1	Front Grille	38	03031	2	Lockwasher, 5/16	60	29429	2	Washer
17	01298	5	Lockwasher	39	3025	2	Carriage Bolt, 5/16 x 1	61	29428	2	Nut
18	27767	1	90° Elbow, Adjustable	40	28985	1	Hot Exhaust Decal	62	39444	1	Battery Box
19	04860	1	90° Elbow, Adjustable	41	31699	2	Lift Handle	63	39721	1	Choke Cable Assy
20	27997	1	Adapter	42	16310	2	Wheel				
21	---	1	Key (incl with item 28)	43	01918	2	Washer				
22	08045	1	Hose Clamp	44	31240	2	Retaining Ring				

FIGURE 3. HYDRAULIC TANK PARTS



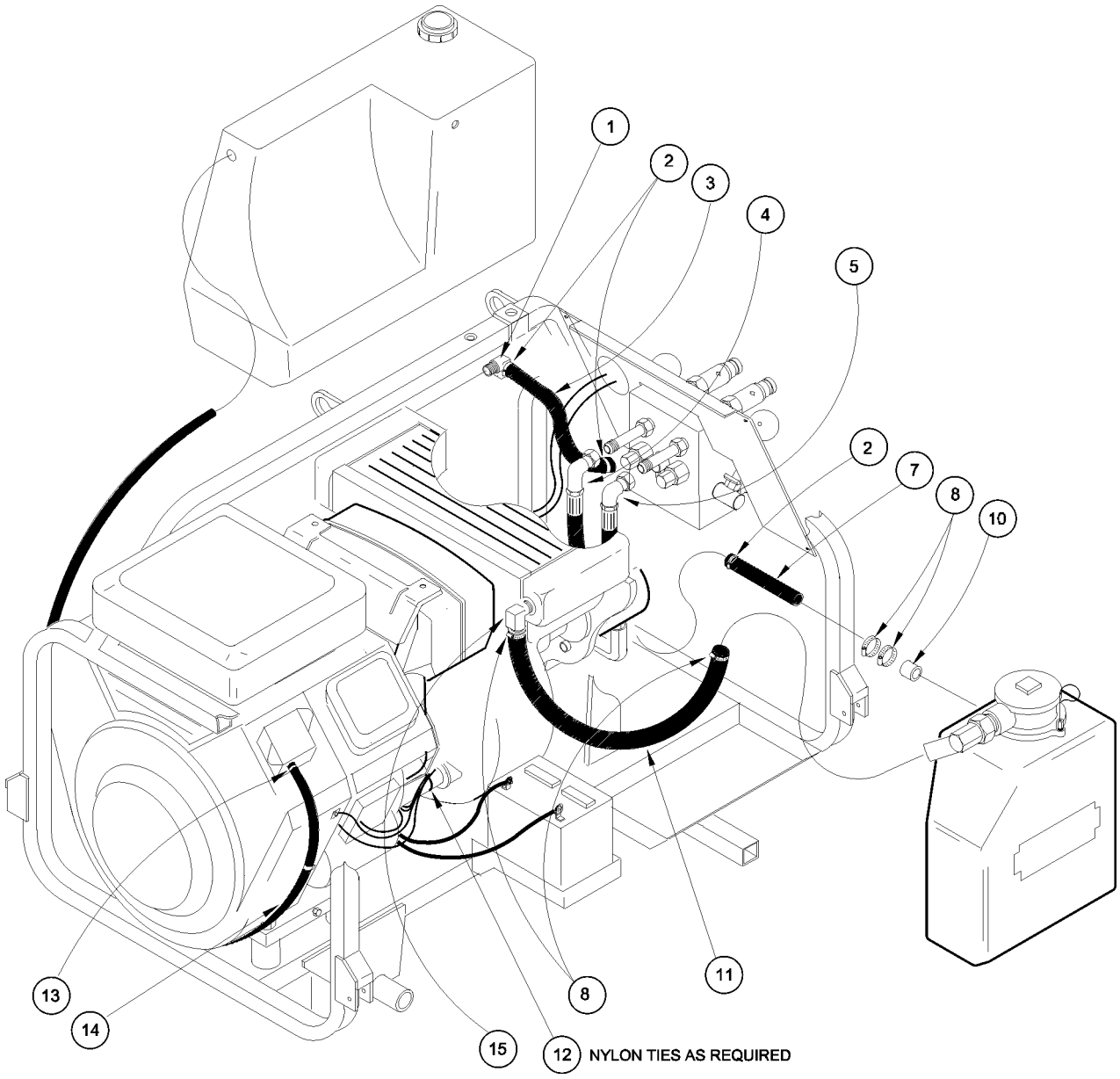
ITEM	P/N	QTY	DESCRIPTION
1	40080	1	Filter in Tank Assy
2	40133	1	Plate, Grip
3	40389	1	Tank, Hydraulic
4	43687	1	HSHCS M8 x 16
5	40364	1	Elbow, 45° -12 SAE
6	04306	1	Hose, 3/4 in. x 11 in. Long ID Low Pressure
	40408	1	Filter Element (Not Shown)

FIGURE 4. DASH PANEL & VALVE ASSEMBLY



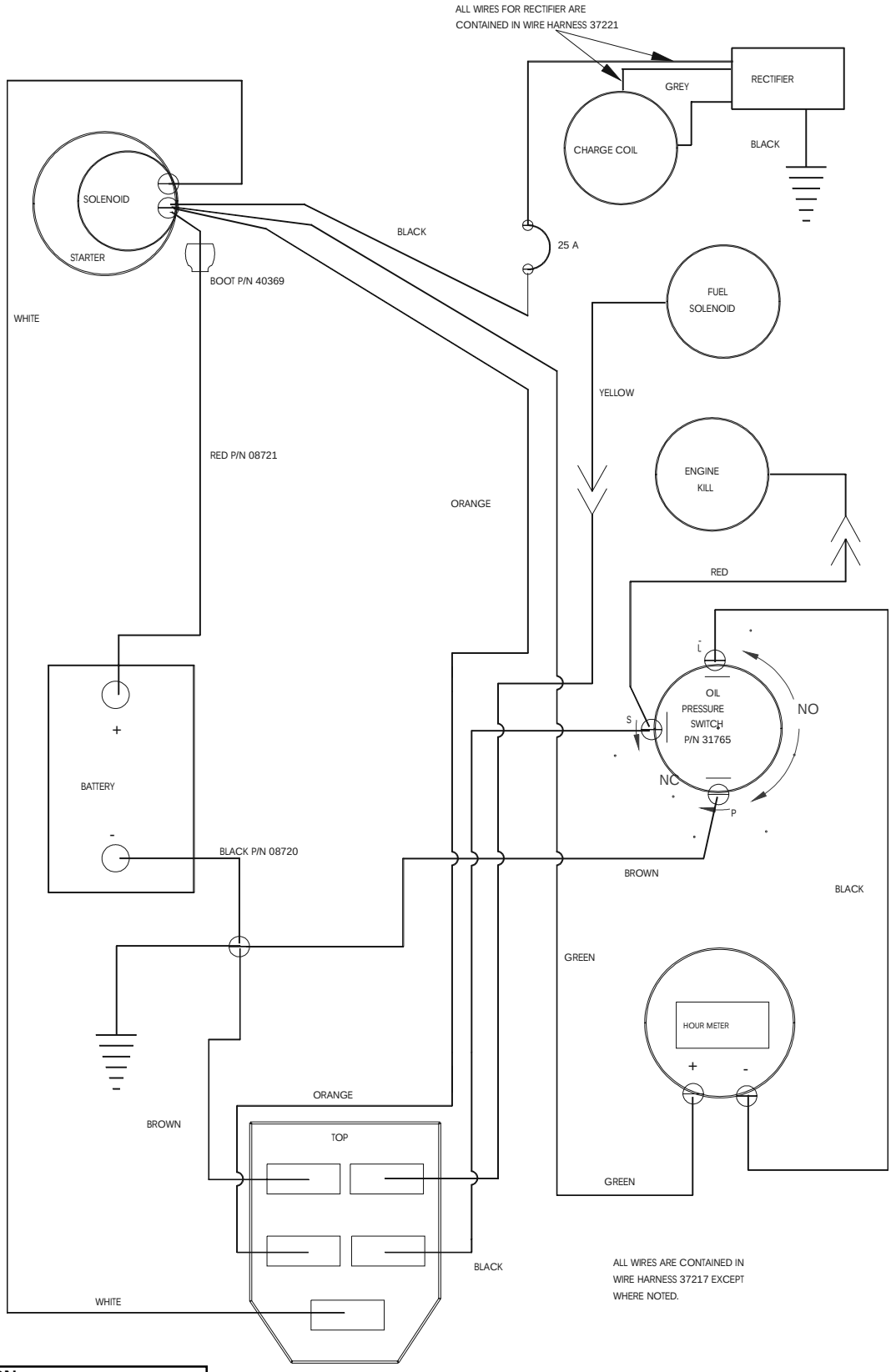
ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	27660	1	Dash Panel	23	24061	2	Male Coupler Nose
2	20606	1	Hour Meter	24	05847	1	Combiner Knob
3	28046	1	"Danger-Carbon Monoxide" Decal	25	24060	2	Female Coupler Body
4	28045	1	"For One or Two" Decal	26	05843	1	On/Off Spool, RH
5	05965	4	Spirol Pin	27	27931	2	Capscrew
6	00016	2	O-Ring	28	01298	2	Lockwasher
7	05848	1	Combiner Spool	29	51297	1	"Check Hydraulic" Decal
8	05043	2	Relief Valve	30	28008	1	"To Start" Decal
9	07167	2	Adapter, Long	31	28047	1	"Caution Hot Parts" Decal
10	07821	1	Elbow, Hose Barb				
11	05844	1	On/Off Spool, LH				
12	06989	2	O-Ring				
13	06988	2	Backup Ring				
14	04313	2	Retaining Ring				
15	04216	2	Washer				
16	---	-	NO ITEM				
17	24291	2	Rod				
18	02633	2	Knob				
19	05965	4	Spirol Pin				
20	01545	7	Pipe Plug				
21	27661	1	Control Block				
22	07882	2	Adapter, -10 SAE x 1/2 Male NPT				

FIGURE 5. HOSES, FITTINGS & CLAMPS



ITEM	P/N	QTY	DESCRIPTION
1	07821	2	90° Elbow
2	08045	3	Hose Clamp
3	04875	1	Hose
4	37236	1	Hose Assy
5	37235	1	Hose Assy
6	---		NO ITEM
7	27783	1	Suction Hose
8	11179	4	Hose Clamp
9	---		NO ITEM
10	27781	1	Suction Tube
11	04306	1	Hose
12	---	A/R	Wire Tie
13	04317	3	Tube Clamp
14	04308	1	Fuel Hose
15	40413	1	90° Elbow

FIGURE 6. WIRING DIAGRAM



ITEM	P/N	QTY	DESCRIPTION
	37217	1	Wire Harness, All Other Electrical
	37221	1	Wire Harness, Engine to Rectifier

WARRANTY

Stanley Hydraulic Tools (hereinafter called “Stanley”), subject to the exceptions contained below, warrants new hydraulic tools for a period of one year from the date of sale to the first retail purchaser, or for a period of 2 years from the shipping date from Stanley, whichever period expires first, to be free of defects in material and/or workmanship at the time of delivery, and will, at its option, repair or replace any tool or part of a tool, or new part, which is found upon examination by a Stanley authorized service outlet or by Stanley’s factory in Milwaukie, Oregon to be DEFECTIVE IN MATERIAL AND/OR WORKMANSHIP.

EXCEPTIONS FROM WARRANTY

NEW PARTS: New parts which are obtained individually are warranted, subject to the exceptions herein, to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage. Seals and diaphragms are warranted to be free of defects in material and/or workmanship at the time of delivery and for a period of 6 months after the date of first usage or 2 years after the date of delivery, whichever period expires first. Warranty for new parts is limited to replacement of defective parts only. Labor is not covered.

FREIGHT COSTS: Freight costs to return parts to Stanley, if requested by Stanley for the purpose of evaluating a warranty claim for warranty credit, are covered under this policy if the claimed part or parts are approved for warranty credit. Freight costs for any part or parts which are not approved for warranty credit will be the responsibility of the individual.

SEALS & DIAPHRAGMS: Seals and diaphragms installed in new tools are warranted to be free of defects in material and/or workmanship for a period of 6 months after the date of first usage, or for a period of 2 years from the shipping date from Stanley, whichever period expires first.

CUTTING ACCESSORIES: Cutting accessories such as breaker tool bits are warranted to be free of defects in material and or workmanship at the time of delivery only.

ITEMS PRODUCED BY OTHER MANUFACTURERS: Components which are not manufactured by Stanley and are warranted by their respective manufacturers.

a. Costs incurred to remove a Stanley manufactured component in order to service an item manufactured by other manufacturers.

ALTERATIONS & MODIFICATIONS: Alterations or modifications to any tool or part. All obligations under this warranty shall be terminated if the new tool or part is altered or modified in any way.

NORMAL WEAR: any failure or performance deficiency attributable to normal wear and tear such as tool bushings, retaining pins, wear plates, bumpers, retaining rings and plugs, rubber bushings, recoil springs, etc.

INCIDENTAL/CONSEQUENTIAL DAMAGES: To the fullest extent permitted by applicable law, in no event will STANLEY be liable for any incidental, consequential or special damages and/or expenses.

FREIGHT DAMAGE: Damage caused by improper storage or freight handling.

LOSS TIME: Loss of operating time to the user while the tool(s) is out of service.

IMPROPER OPERATION: Any failure or performance deficiency attributable to a failure to follow the guidelines and/or procedures as outlined in the tool’s operation and maintenance manual.

MAINTENANCE: Any failure or performance deficiency attributable to not maintaining the tool(s) in good operating condition as outlined in the Operation and Maintenance Manual.

HYDRAULIC PRESSURE & FLOW, HEAT, TYPE OF FLUID: Any failure or performance deficiency attributable to excess hydraulic pressure, excess hydraulic back-pressure, excess hydraulic flow, excessive heat, or incorrect hydraulic fluid.

REPAIRS OR ALTERATIONS: Any failure or performance deficiency attributable to repairs by anyone which in Stanley’s sole judgement caused or contributed to the failure or deficiency.

MIS-APPLICATION: Any failure or performance deficiency attributable to mis-application. “Mis-application” is defined as usage of products for which they were not originally intended or usage of products in such a matter which exposes them to abuse or accident, without first obtaining the written consent of Stanley. PERMISSION TO APPLY ANY PRODUCT FOR WHICH IT WAS NOT ORIGINALLY INTENDED CAN ONLY BE OBTAINED FROM STANLEY ENGINEERING.

WARRANTY REGISTRATION: STANLEY ASSUMES NO LIABILITY FOR WARRANTY CLAIMS SUBMITTED FOR WHICH NO TOOL REGISTRATION IS ON RECORD. In the event a warranty claim is submitted and no tool registration is on record, no warranty credit will be issued without first receiving documentation which proves the sale of the tool or the tools’ first date of usage. The term “DOCUMENTATION” as used in this paragraph is defined as a bill of sale, or letter of intent from the first retail customer. A WARRANTY REGISTRATION FORM THAT IS NOT ALSO ON RECORD WITH STANLEY WILL NOT BE ACCEPTED AS “DOCUMENTATION”.

NO ADDITIONAL WARRANTIES OR REPRESENTATIONS

This limited warranty and the obligation of Stanley thereunder is in lieu of all other warranties, expressed or implied including merchantability or fitness for a particular purpose except for that provided herein. There is no other warranty. This warranty gives the purchaser specific legal rights and other rights may be available which might vary depending upon applicable law.

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