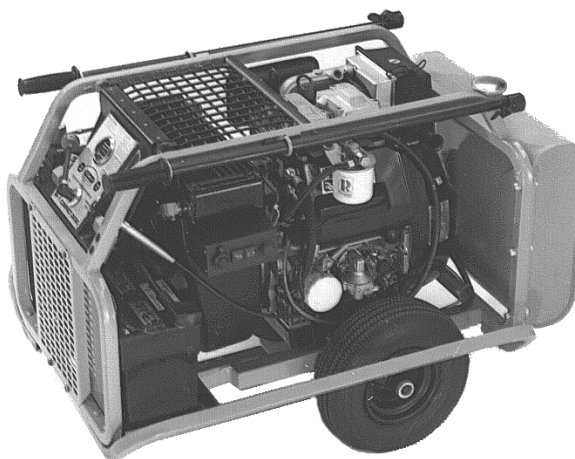


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# **HP20271 HP20271A HPR20271**

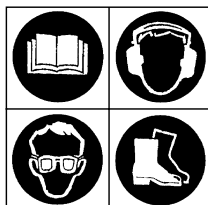
## **Hydraulic Power Unit**

### **Twin Circuit, Diesel Engine Driven**



 <b>DANGER</b>
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.

## **Safety, Operation and Maintenance Service Manual**



Accessories .....	14
General Maintenance .....	11
Hydraulic Hose Requirements .....	6
Operation .....	7 - 10
Safety Precautions .....	2 - 3
Service Instructions .....	15 - 18
Parts Illustrations .....	19 - 28
Specifications .....	14
Tool Stickers and Tags .....	4 - 5
Troubleshooting .....	12 - 13
Warranty .....	30

**SERVICING THE POWER UNIT:** This manual contains safety, operation, and detailed 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.



**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.**



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 tool and hose.

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 3.

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## GENERAL SAFETY PRECAUTIONS

---

The HPR Compact 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 and hoses before operation. Read and understand the engine manual furnished with the 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 tool.
- Do not inspect or clean the power unit while it is running.
- Supply hoses and fittings must have a minimum working pressure rating of 2500 psi/175 bar.
- Be sure all hose connections are tight.
- Make 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.
- 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.
- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling a tool. Wipe all couplers clean before connecting. Use only lint-free cloths. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
- 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 diesel odor is present indicating a fuel leak.

- ## SAFETY SYMBOLS

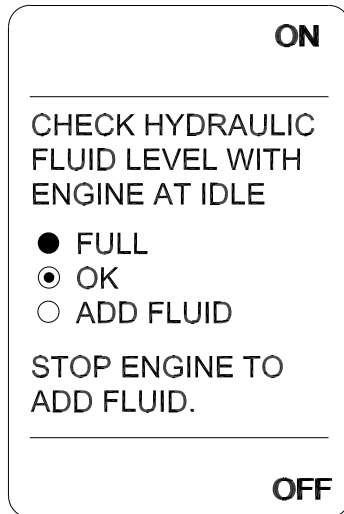
**CAUTION**

This safety symbol appears in these instructions to identify an action or condition that could result in damage to the tool or other equipment.

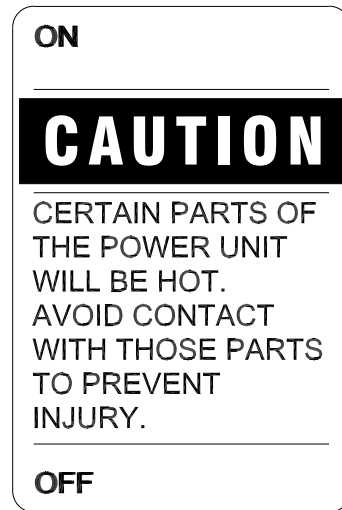
## LOCAL SAFETY REGULATIONS

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## TOOL STICKERS & TAGS

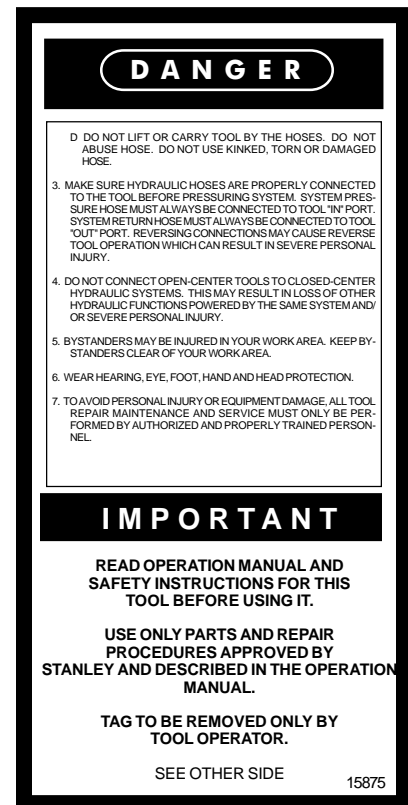
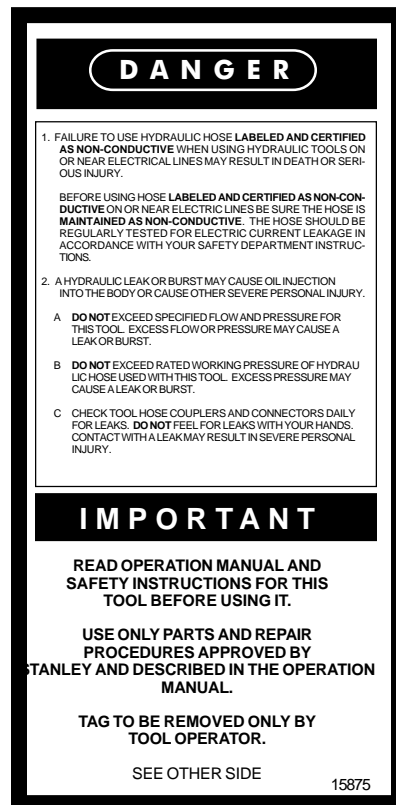


28044 Decal - located  
on dash panel



28047 Decal - located on  
dash panel

The safety tag (p/n 15875) at right is attached to the tool 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.



SAFETY TAG P/N 15875 (shown smaller than actual size)

## TOOL STICKERS & TAGS CONTINUED

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 Decal - located on dash panel

CALIFORNIA  
PROPOSITION 65 WARNING  
ENGINE EXHAUST CONTAINS CHEMICALS KNOWN TO  
THE STATE OF CALIFORNIA TO CAUSE CANCER,  
BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM.

29133 Decal - located on frame below dash panel

**HYDRAULIC  
FLUID**

35686 Decal - located on  
hydraulic tank filter  
block

**DIESEL FUEL ONLY**

32231 Decal - located on fuel tank

TO START:  
BOTH HYDRAULIC VALVES OFF  
TURN KEY TO START, HOLD  
TO CRANK ENGINE.  
RELEASE KEY TO RUN.  
NOTE: FOR COLD STARTS,  
TURN KEY TO ON, PRESS  
AND HOLD GLOW PLUG  
BUTTON FOR 10-15 SEC  
BEFORE CRANKING.

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

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

35677 Decal - located on dash panel

**DANGER**

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

28046 Decal - located on dash panel

# HYDRAULIC HOSE REQUIREMENTS

## HOSE TYPES

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

- ① Certified non-conductive
- ② Wire-braided (conductive)
- ③ Fabric-braided (not certified or labeled non-conductive)

Hose ① listed above is the only hose authorized for use near electrical conductors.

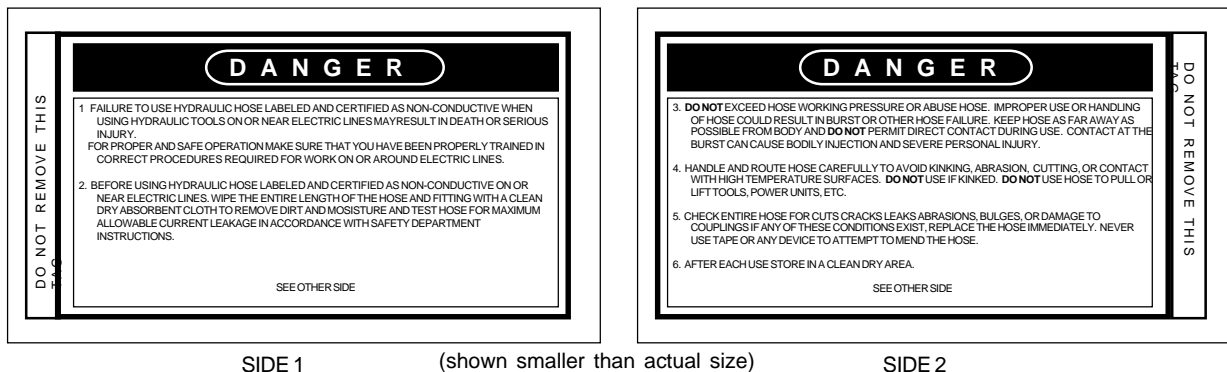
Hoses ② and ③ listed above are **conductive** and **must never** be used near electrical conductors.

## HOSE SAFETY TAGS

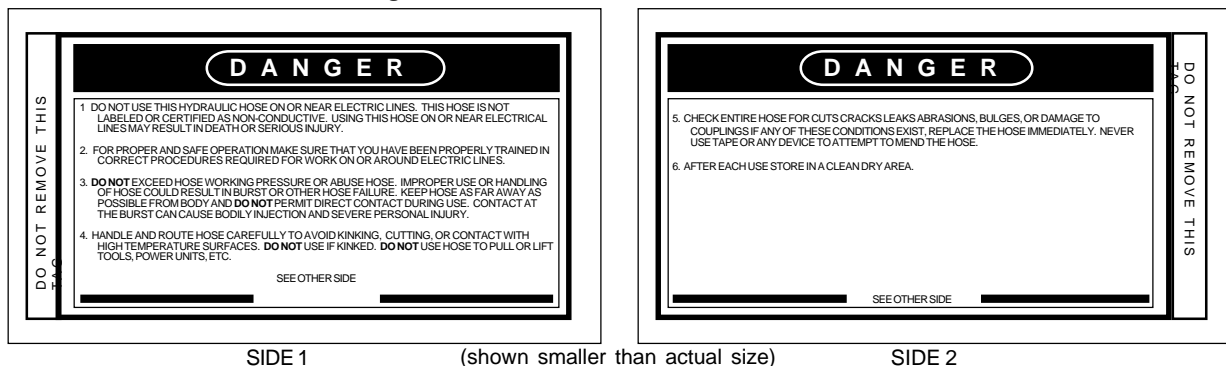
To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley Hydraulic Tools. **DO NOT REMOVE THESE TAGS.**

If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained at no charge from your Stanley Distributor.

The tag shown below is attached to "certified non-conductive" hose.



The tag shown below is attached to "conductive" hose.



## 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.

# OPERATING INSTRUCTIONS

## PREPARATION FOR USE

### ENGINE



**Do not operate the power unit until you have read the engine operating and maintenance instructions manual furnished in addition to this manual.**

#### 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 oil as specified in the engine operating and maintenance manual.



**The engine oil sump must never be overfilled. Overfilling can cause the to engine to overheat and cause crankshaft seal damage.**

#### 2. Engine Fuel Level

Check the fuel level. If low, fill with DF-1 or DF-2 diesel fuel (A.S.T.M. D975-66T No. 1 or no. 2 dark).



**Shut the engine off before attempting to add fuel to the fuel tank. Do not remove the fuel cap while the engine is running. Do not add fuel to the tank while the engine is hot. Do not fill the fuel tank to a point of overflowing.**

### HYDRAULIC FLUID

Check the sight pipe in the hydraulic fluid reservoir for the proper fluid level. Proper fluid level is indicated when the center section of the sight pipe is dark. If the center section of the sight pipe is not dark, add hydraulic fluid.

Use fluids meeting the following specifications.

#### Viscosity (Fluid Thickness)

##### U.S.

50°F 450 SSU Maximum  
100°F 130-200 SSU  
140°F 85 SSU Minimum

##### METRIC

10°C 95 Centistokes  
38°C 27-42 C.S.  
60°C 16.5 C.S. Minimum

**PourPoint** -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 at startup, allow moisture to settle out and resist biological growth that may occur in cool operating hydraulic circuits. These fluids are recommended by Stanley Hydraulic Tools. 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

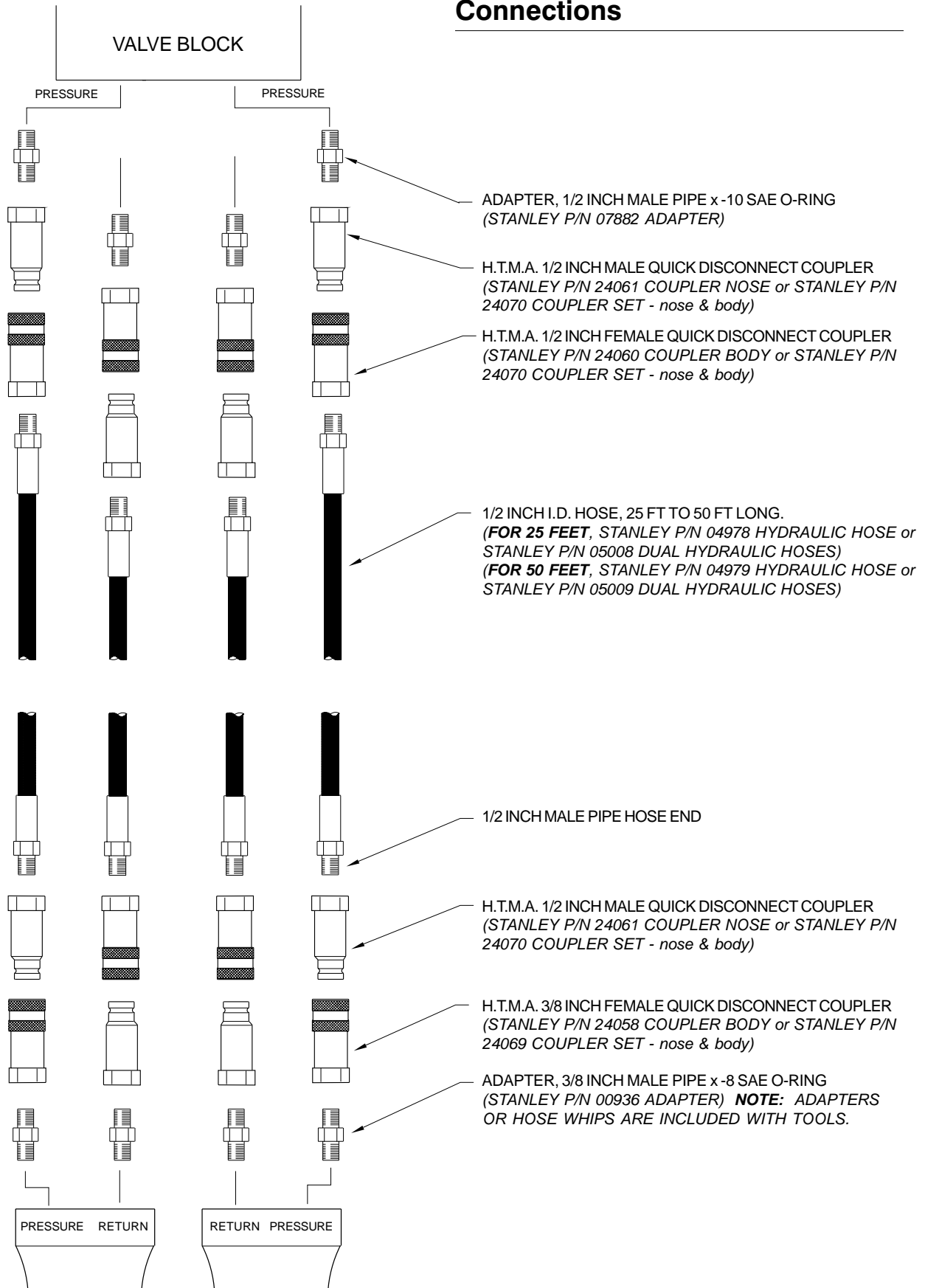
Union "Unax" AW-WR-32

### BATTERY

The supplied 12 Volt DC battery has been partially dry charged. Before using, it must first be filled with battery electrolyte at a specific density of 1.240 to 1.260. Fill each cell to its upper level indicator and then charge at a 2 Amp rate for at least 12 to 15 hours. After charging, check the electrolyte level and fill as required.



## Hydraulic Hose & Fitting Connections



## Hydraulic Circuit Controls

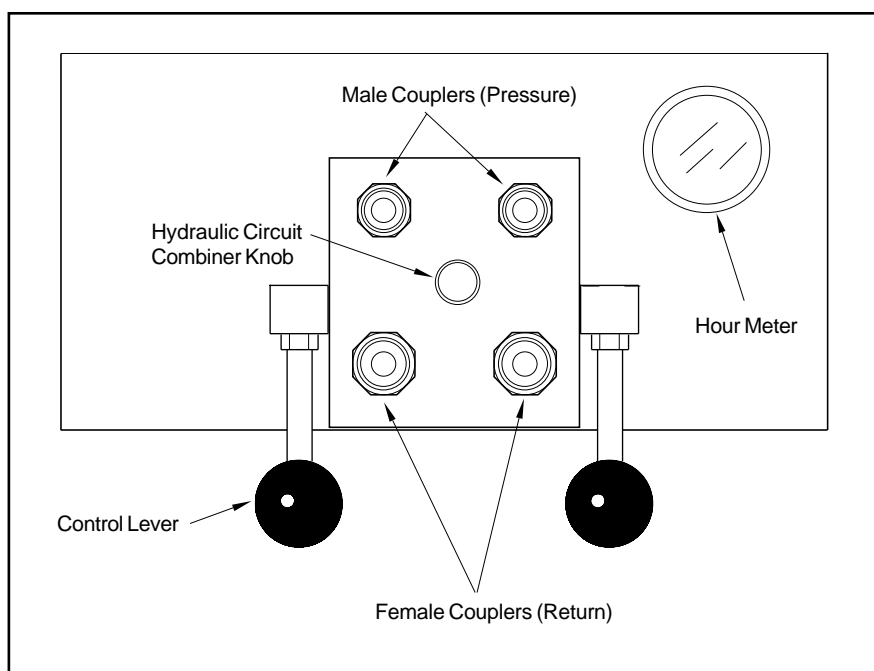
The HPR Diesel Power Unit provides two circuits, each with an oil flow of 5 gpm/19 lpm up to 2000 psi /140 bar. Or, - the two circuits may be combined into one circuit providing 10 gpm/38 lpm up to 2000 psi/140 bar.

The HPR Diesel Power Unit contains a hydraulic pump with two sections. Each pump section will provide 5 gpm/19 lpm at the maximum, governed engine throttle. The output (5 gpm/19 lpm) 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.

When the hydraulic circuit combiner knob is pulled **out**, the two circuits are combined into **one 10 gpm/38 lpm circuit**. One hydraulic tool may be connected to one circuit. The other circuit must not have a tool connected to it or have the hoses connected. The circuit is activated by pushing **both** circuit 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 may be connected to each circuit. Each circuit is activated by pushing the circuit lever up.

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



**Panel Control Valve for the HPR Diesel Power Unit**

1. Before starting the engine make sure the hydraulic circuit control levers are in the "OFF" position.
2. Turn the key clockwise until the engine begins to crank. When the engine starts, release the key.

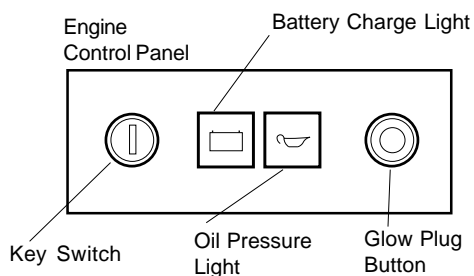
For cold starts, turn the key until the battery charge light comes on and then press and hold the glow plug button for 10-15 seconds. Release the glow plug button and then turn the key to crank the engine.

3. When the engine is warmed up the throttle may be advanced and the hydraulic tool circuits may be used.

## Engine Shutdown

Place the circuit control levers in the "OFF" position. Push the throttle control completely in. Allow the engine to idle for approximately one minute and then turn the key to "OFF".

## STARTING & STOPPING



## INSTRUMENTS

### Battery Charge Light

A problem with the charging circuit exists if the battery charge light remains on after the engine has started.

Shutdown the engine and then have the charging circuit serviced by a qualified technician.

### Oil Pressure Light

A problem with the engine oil lubricating system exists if the oil pressure light remains on after the engine has started. Shutdown the engine and then have the lubricating system serviced by a qualified technician.

---

## COLD WEATHER STARTUP

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1. Use the procedures described under "Starting The Engine" and then follow the procedures 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 top of the hydraulic filter feels 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 tools.

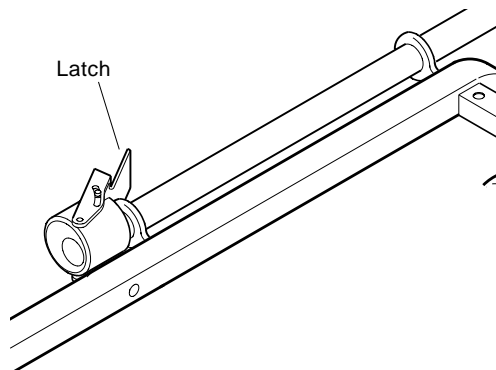
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## USING HANDLE BARS

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The power unit is equipped with retractable handle bars so it can easily be moved at the job site.

1. To use the handle bars, pull each handle bar straight out until the bar locking mechanism engages. The power unit may now be pushed about in a wheelbarrow fashion.
2. To retract the handle bar, push the latch away from the handle bar to release the lock. Then push the handle bar in.



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## STORAGE

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- 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 and up to 6 months), replace the fuel filter then add diesel fuel preservative to the fuel tank. Follow the directions provided with the fuel preservative.
- 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" later in this section).
- Disconnect tool hoses.

### 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:

- Inspect the air filter daily. Clean if necessary.
- Replace dry air filter every 200 hours of operation.
- Replace fuel filter every 100 hours of operation.
- Change engine oil after first 50 hours of operation, then after every 200 hours of operation. Change more often if cold, moist or dusty conditions exist.
- Change oil filter when engine oil is changed.
- Check oil level daily.
- Each day, remove dirt and debris from engine with a cloth or brush. Do not use water spray.

### HYDRAULIC SYSTEM MAINTENANCE

Observe the following for maximum performance and service life from the hydraulic system.

- Always keep hydraulic system and fluids clean.
- Keep water out of fluid.
- Check hydraulic lines and fittings daily for leaks, kinks, etc. Do not use your hand to perform this check.
- Make sure the suction hose (from the hydraulic tank to the inlet manifold) is clamped securely. This reduces the risk of pump cavitation. All pump fittings should be tight.
- 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.
- Keep air out of hydraulic lines. Hydraulic system overheating and foam at the hydraulic tank breather

indicate air is present in the lines. Keep all suction line fittings and clamps tight.

- Hydraulic system wear is noted by increased heat during tool operation, reduced tool performance and eventual system breakdown.
- Operate with the fluid temperature at 50° - 140° F/10° - 60° C for improved seal and hose life, and maximum efficiency.

#### Filling The Reservoir

1. Make sure the engine is stopped before opening the filler cap. Fill slowly with the recommended fluid as listed in the "Operation" section of this manual.
2. Add fluid as needed. Stop filling when the sight pipe changes from center dark to full dark. Fluid must be visible in the sight pipe gauge at all times.
3. Secure the filler cap before restarting the engine.

#### Removing Condensed Moisture From Hydraulic Fluid

Condensation is a frequent problem with cool hydraulic circuits. This condition occurs in moist or cold climates. When warm air in the hydraulic tank draws moisture from the cooler air outside, water accumulates in the tank.

1. To remove water from the hydraulic system, use the "PRESSURE" hose without the quick-disconnect coupler attached. Start the engine and let it run at the idle speed. Pump the fluid into a clean 5 gal./20 ltr container.
2. Turn the engine "OFF" as soon as the hydraulic tank (reservoir) is empty. DO NOT operate the engine with an empty hydraulic tank as pump damage may occur.
3. 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.

### 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 sure the engine is warm and operating smoothly. If test results are not as specified, refer to the troubleshooting table given 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 (counter clockwise).
4. Start the engine and allow it to run until warm.
5. Pull the engine throttle control completely "OUT" 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 begins 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 reset 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 an 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 Circuit

The 10 gpm circuit is formed when the combiner knob is pulled 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 the 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 engine at high speed, the test flow gauge should read 9-10 gpm/34-38 lpm as the pressure gauge reaches 2100-2200 psi/148-155 bar.
5. Perform step 9 under "Testing The 5 gpm EHTMA Type C Circuits".

## TROUBLE SHOOTING

PROBLEM	CAUSE	REMEDY
Engine will not run.	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.
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 goes from pressure fitting to tool and back to the return fitting. 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 coupling between pump and blower. The coupler should slide only .03-.06 in./1.60 mm inches between blower and pump.
	Relief valve stuck open.	Adjust or replace valve.
	Incorrect throttle setting	Pull throttle completely out so that engine runs at full rpm.

## SPECIFICATIONS

Capacity ..... Two 19 lpm / 5 gpm circuits **or** One 38 lpm / 10 gpm circuit  
 Pressure Range ..... 70-140 bar / 1000-2000 psi  
 Couplers ..... HTMA Flush Face Type Male & Female



### Weight

Model HP20271 ..... 152 kg / 335 lbs  
 Model HP20271A ..... 169 kg / 372 lbs

### Overall Length

Model HP20271 ..... 99 cm / 39 in.  
 Model HP20271A ..... 90 cm / 35.5 in.

### Overall Width

Model HP20271 ..... 76.2 cm / 30 in.  
 Model HP20271A ..... 61 cm / 24 in.

### Overall Height

Model HP20271 ..... 73.6 cm / 29 in.  
 Model HP20271A ..... 74 cm / 29 in.

Engine ..... Duetz Ruggerini MD191, 2 cylinder, diesel, 19 hp

### Fuel Tank Capacity

Model HP20271 ..... 18.9 ltr / 5 gal  
 Model HP20271A ..... 16 ltr / 4.2 gal

Oil Reservoir Capacity ..... 11 ltr / 2.7 gal



**or**



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

## ACCESSORIES

P/N	Description
31848	50 ft. Dual Hydraulic Hose, 1/2 in. ID, Wire Braid, with Couplers
31972	25 ft. Dual Hydraulic Hose, 1/2 in. ID, Wire Braid, with Couplers
24070	Aeroquip Flush Face Coupler Set, 1/2 in. NPT
03974	Bruning Flush Face Coupler Set, 1/2 in. NPT
04182	Flow and Pressure Tester
00936	Adapter, 1/2 SAE to 3/8 in. Male Pipe
02151	Bushing, 1/2 in. to 3/4 in.
04192	Hex Nipple, 1/2 in. Male Pipe
03044	Hex Nipple, 3/8 in. Male Pipe

## GENERAL

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

### ENGINE

Duetz Ruggerini, 19 hp  
Model MD191

The engine should be serviced only by *Ruggerini Dealers*. It is recommended to contact the Deutz Corporation for the nearest authorized Ruggerini dealer at 1-770-564-7100.

### HYDRAULIC PUMP

Casappa  
PLP20.6,3-31SI-LOC/OC/20.6,3-LOC/OC-D-N-EL

## Engine Removal

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

1. Remove both battery connections. Remove the battery strap or battery hold down. Remove the battery.
2. Remove the wheels by first removing one retaining ring, slide one washer and wheel off of the axle, then pull the other wheel and axle out of the axle brackets.

### Fuel Lines and Fuel Tank

3. Follow the applicable instructions below to disconnect engine fuel lines.

**Model HP20271:** The hoses at the fuel tank must be disconnected. Obtain the following materials for plugging the fuel tank ports and the fuel hoses.

- a. Two short lengths (2 to 3 inches) of fuel hose one with 1/4 inch inside diameter and one with 1/8 inch inside diameter.

- b. Four plug fittings or wood dowels to plug one end of each of the short hoses and also the ends of the hoses disconnected from the fuel tank.

Using the fittings or the wood dowels, plug one end of each of the short hoses.

- c. Thoroughly clean the exterior of the connections of the fuel supply line (16, fig 5) and the fuel return line (12, fig 5) where they are connected to the fuel tank. Disconnect one fuel line at a time, quickly plugging the fuel line and the tank port with the wood dowels or fittings and the short hose lengths to minimize spillage. Wipe up any spillage using appropriate disposal methods.

**Model HP20271A:** The fuel tank must be removed in order to remove the engine.

- a. Disconnect the hoses (13 & 14, fig 5A) and plug them with a plug fittings or wood dowels.
  - b. Remove the 3 capscrews (23, fig 2A) that secure the tank to the frame. Remove the fuel tank.
4. Remove the air cleaner cover and air cleaner.
  5. Remove the top grille (8, fig 2 or 47, fig 2A).
  6. Remove the fasteners that retain the cooler mounts (6 & 10, fig 1 & fig 1A) and the cooler brace (12, fig 1 and fig 1A) and remove the mounts and brace. The switch box (7, fig 1) and wiring will be loose after this procedure and can then be removed with the engine (this does not apply to model HP20271A).
  7. Tie the cooler (8, fig 1 and fig 1A) to the frame rails of the frame (55, fig 2 or 39 fig 2A) so that it will not interfere with removal of the engine.
  8. Disconnect the two wires leading to the hour meter.
  9. Disconnect the throttle cable (6, fig 2 or fig 2A) at the engine. On model HP20271A, disconnect the stop cable (1, fig 2A) at the engine.
  10. Using an Allen wrench, loosen the setscrews on the coupling assy (27 & 28, fig 2 or 16, fig 2A).
  11. Unscrew and remove the nuts (37, fig 2 or 35, fig 2A)



- and capscrews (20, fig 1 & fig 1A) and washers.
12. Slide the engine forward being careful not to entangle the electrical wiring and not to damage other components.
  13. Remove the coupling sleeve (28, fig 2 or 17, fig 2A).
  14. Slide the engine, with blower housing attached, out the battery side of the frame for the HP20271 model. For the HP20271A model, slide the engine out the fuel tank side of the frame.

### To Reinstall Engine

1. Reverse the above procedures to reinstall the engine.
2. Install the capscrews (20, fig 1 & fig 1A) so that one washer (21, fig 1 or 36 fig 1A) is installed next to the head of the capscrew, one washer is installed between the engine mounting bracket and the frame and one washer is installed between the nut (37, fig 2 or 35, fig 2A) and the frame. Tighten the capscrews and nuts to 20 ft. lb torque.
3. After installing the engine, adjust the coupling sleeve as follows:
  - a. Move the coupling flange forward or backwards on the engine drive shaft until the drive shaft is recessed into the coupling flange bore .435 inches. Tighten the setscrews.
  - b. Adjust the coupling flange on the pump until the coupling sleeve has 1/32-1/16 inch end play.

---

## BLOWER HUB, BLOWER WHEEL, INLET RING, & BLOWER HOUSING

---

1. Remove the engine as described earlier in this section.
2. To remove the blower wheel, remove the five screws (31, fig 1 or fig 1A) around the housing inlet ring (30, fig 1 or 1A) and remove the ring.

3. Remove the blower wheel (26, fig 1 or 24, fig 1A) with the blower hub (25, fig 1 or 1A) by loosening the set screws on the coupler flange (28, fig 1 or 1A).
4. Remove the four capscrews (14, fig 1 or 1A) holding the blower housing (16, fig 1 or 1A) to the engine. Remove the housing.

### Re-assembly

1. Reverse the above procedure to reinstall the above components and observe the following added procedures.
  - a. Install capscrews which hold the blower housing to the engine using Loctite™ 242.
  - b. Install capscrews which hold the blower wheel to the blower hub using Loctite™ 680 and torque to 80-100 lb. in.

---

## OIL COOLER

---

1. Remove the top grille (8, fig 2 or 47, fig 2A).
2. Remove the hoses (3 & 11, fig 5 or 5A).
3. Remove the fasteners that retain the cooler mounts (6 & 10, fig 1 or 1A) and the cooler brace (12, fig 1 or 1A) and remove the mounts and brace. The switch box (7, fig 1) and wiring will be loose after this procedure (this does not apply to model HP20271A).
4. Lift the cooler out.

### Re-assembly

1. Reverse the above procedure to reinstall the cooler.

---

## HYDRAULIC PUMP

---

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 grille (19, fig 2 or 5, fig 2A).
3. Disconnect the pressure hoses and inlet manifold at

the pump.

3. Remove the 2 capscrews (21, fig 2 or 10, fig 2A) and then remove the pump.

### Re-assembly

1. Reverse the above procedure to reinstall the pump and observe the following step.
  - a. Insure the coupling sleeve is installed correctly (see REINSTALL ENGINE).

---

## FUEL TANK

---

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 unexpectedly or in shop areas where grinding or welding is present, all of which can ignite the fuel vapors.

2. Follow step 3 under "ENGINE REMOVAL" to disconnect and plug the fuel lines.

To remove the tank on the model HP20271, remove the capscrews (47, fig 2) and brackets (44, fig 2) at the top of the fuel tank only. Lift the fuel tank out of the lower brackets.

To remove the tank on the model HP20271A, remove 3 capscrews (23, fig 2A) and bracket 37, fig 2A). Slide the tank out.

### Re-assembly

1. Reverse the above procedures to reinstall the fuel tank.

---

## HYDRAULIC TANK

---

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 grille (19, fig. 2 or 5, fig 2A) by removing the 4 capscrews (9, fig. 2 or 3, fig 2A).

3. Remove the hoses (7 & 11, fig. 5 or 5A) by loosening the hose clamps.
4. The hydraulic tank can now be removed by removing the 2 capscrews (32, fig. 2 or 23, fig 2A) and the tank support tab (29, fig. 2 or 26, fig 2A).
5. The filter can be removed from the filter head (6, fig. 4) by spinning it off counter clockwise (this does not apply to model HP20271A).
6. On model HP20271, the filter block (4, fig. 4) is removed by first removing the capscrews (2, fig. 4). Hold the grip plate in place with your fingers to prevent it from falling into the tank. For the model HP20271A, the filter assembly is removed by first removing the breather (6, fig 4A) and the dipstick bolt (12, fig 4A).

### Re-assembly

1. Reinstall the components and complete assembly to the frame by reversing the above procedures.

---

## DASH PANEL & VALVE ASSY

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1. If it is necessary to remove the valve assembly, the battery must first be removed in order to gain access to the hose fittings and wiring located on the back of the panel.
2. After the hoses are removed, the valve assembly may be removed by first removing the capscrews (15, fig. 2 or 3, fig 2A and 27, fig. 3). Then remove the capscrews (27, fig 3) holding the valve to the dash panel.

### Valve Spools & Combiner Spool

1. To remove the valve spools, remove the retaining rings (14, fig. 3) and pull the valve spools out of the valve body.
2. The combiner spool is removed by first unscrewing the knob (24, fig. 3) 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).

## **Relief Valves**

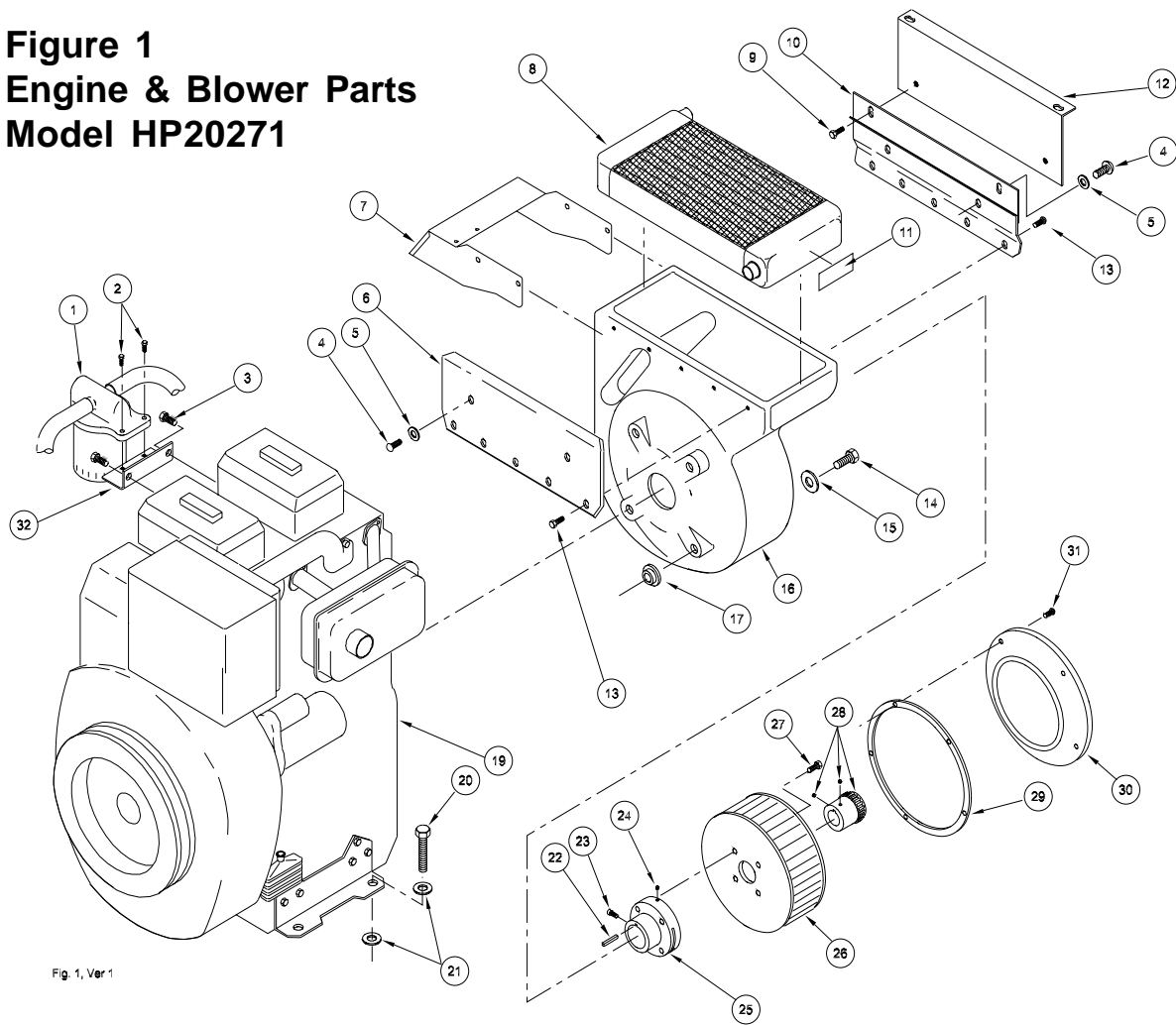
**DESCRIPTION:** The relief valves allow oil to by-pass to the reservoir when the system pressure reaches a pre-set value. The relief valves are set to by-pass at a "cracking" pressure of 2100-2200 psi/148-155 bar.

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

## **Re-assembly**

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

**Figure 1**  
**Engine & Blower Parts**  
**Model HP20271**



ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	-----	--	Fuel Filter Assy	17	21681	4	Spacer
2	02073	2	Capscrew	18	-----	--	No Item
3		2	Capscrew	19	21675	1	Engine, Ruggerini MD191
4	31241	4	Capscrew	20	14876	4	Capscrew
5	03031	4	Lockwasher	21	04585	AR	Washer
6	07752	1	Cooler Mount	22	07818	1	Square Key
7	31918	1	Switch Box	23	01521	1	Capscrew
8	07802	1	Oil Cooler	24	00720	1	Setscrew
9	27931	2	Capscrew	25	32217	1	Blower Hub
10	21724	1	Cooler Mount	26	32216	1	Blower Wheel
11	25610	1	Sticker, "Help Desk"	27	32232	4	Capscrew
12	21709	1	Cooler Brace	28	21687	1	Coupler Assy
13	08668	10	Sheet Metal Screw	29	08669	1	Gasket
14	02474	4	Capscrew	30	07809	1	Inlet Ring
15	02477	4	Washer	31	08667	5	Tapping Screw
16	07783	1	Blower Housing	32	21683	1	Bracket

AR = As Required

**Figure 1A**  
**Engine & Blower Parts**  
**Model HP20271A**

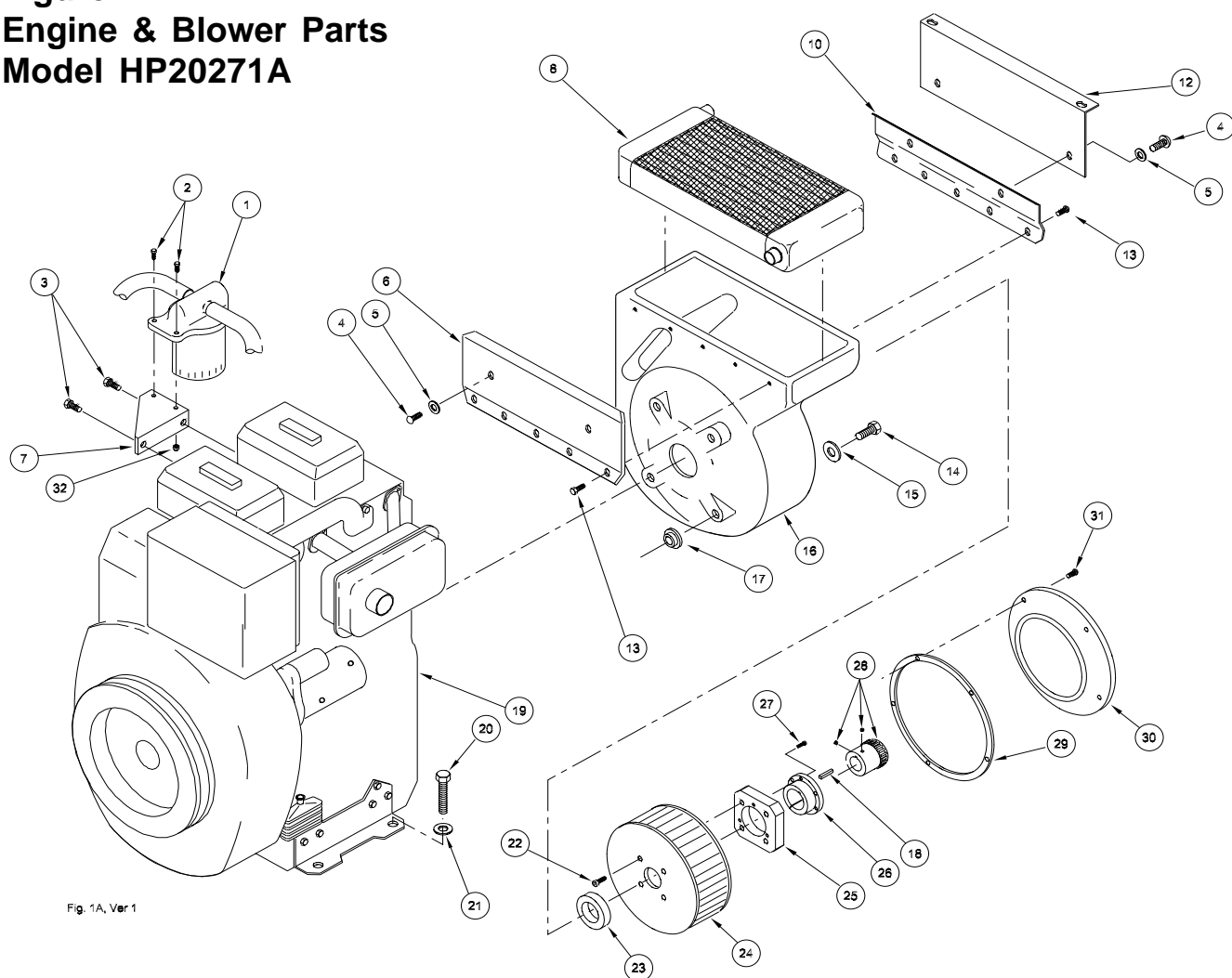


Fig. 1A, Ver 1

ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	----	1	Filter Bracket (Supplied with Item 19)	17	21681	4	Spacer
2	370508	2	Capscrew	18	07818	1	Key
3	----	2	Capscrew (Supplied with Item 19)	19	56641	1	Engine, Ruggerini MD191
4	31241	7	Capscrew	20	14876	4	Capscrew
5	03031	10	Lock Washer	21	04585	22	Washer
6	40053	1	Cooler Mount	22	32232	4	Capscrew
7	56670	1	Fuel Filter Bracket	23	38878	1	Spacer
8	40078	1	Cooler	24	56640	1	Blower Wheel
9	----	--	NO ITEM	25	38877	1	Blower Hub
10	40054	1	Cooler Mount	26	39057	1	QD Bushing
11	----	--	NO ITEM	27	----	4	Capscrew (Supplied with Item 26)
12	56637	1	Cooler Brace	28	21687	1	Coupling Assy
13	08668	10	Sheet Metal Screw	29	08669	1	Gasket
14	02474	4	Capscrew	30	56643	1	Inlet Ring
15	02477	8	Washer	31	08667	5	Tapping Screw
16	07783	1	Blower Housing	32	03906	2	Locknut

**Figure 2**  
**Frame Parts**  
**Model HP20271**

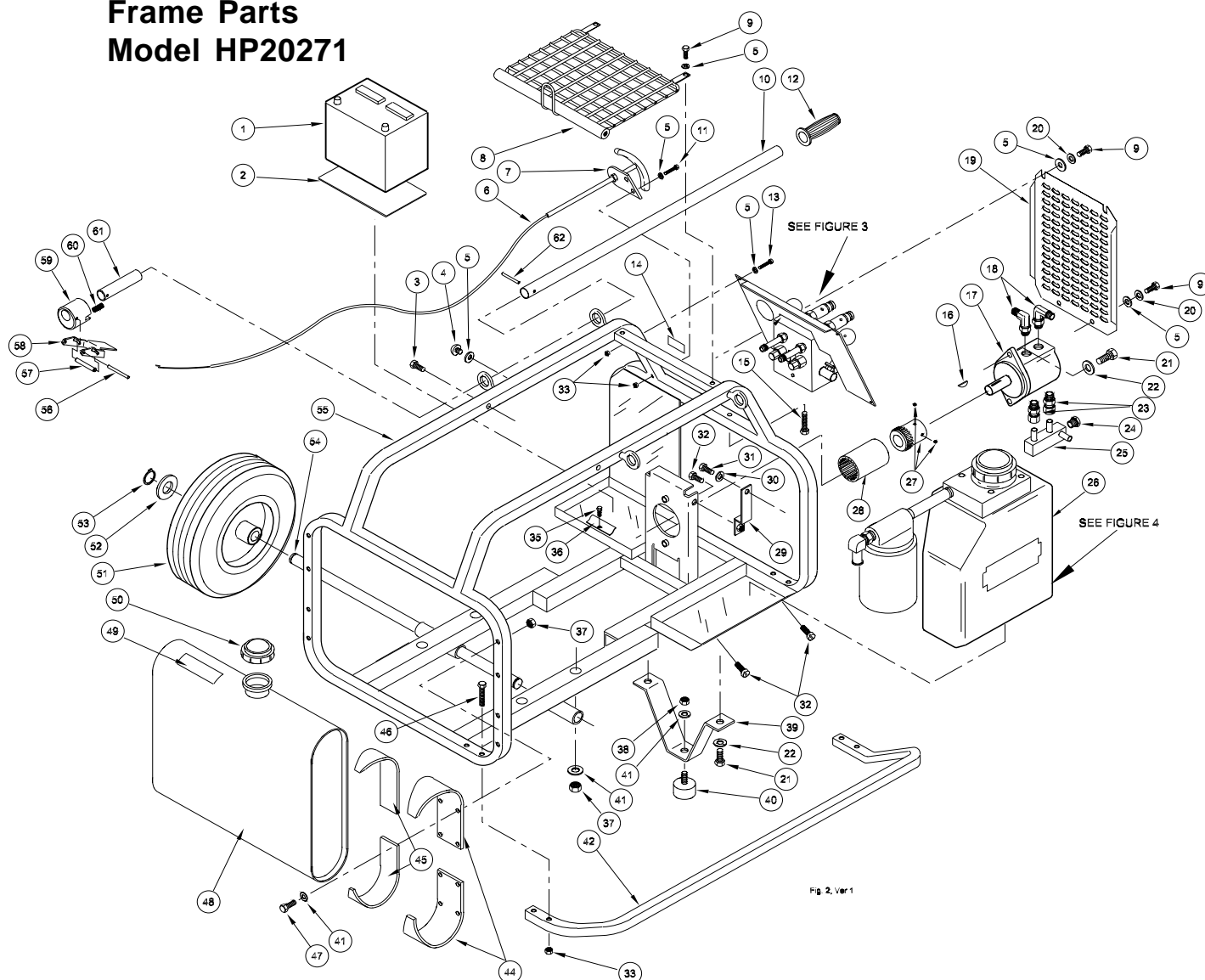


Fig. 2, Var 1

ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	21695	1	Battery	22	01459	2	Lockwasher	42	21701	2	Carry Handle
2	10499	1	Battery Pad	23	35346	2	Tube Fitting	43	----	-	No Item
3	15479	2	Capscrew	24	350237	1	SAE Plug	44	31553	4	Fuel Tank Bracket
4	21714	2	Bumper	25	35106	1	Inlet Manifold	45	31554	4	Bracket Liner
5	04539	14	Washer	26	----	-	Hydraulic Tank	46	16251	8	Capscrew
6	21715	1	Throttle Cable	27	----	-	Assy (See Fig. 6)	47	15479	8	Capscrew
7	35133	1	Throttle Bracket	28	21687	1	Coupler Assy	48	31552	1	Fuel Tank
8	21716	1	Top Grille	29	08669	1	Gasket	49	32231	1	Decal
9	21319	6	Capscrew	30	07809	1	Inlet Ring	50	----	-	Cap( Incld w/tank)
10	08076	2	Handle Tube	31	08667	5	Tapping Screw	51	16310	2	Wheel
11	370101	2	Capscrew	32	04416	3	Capscrew	52	21318	2	Washer
12	08080	2	Handle Grip	33	00719	14	Locknut	53	31240	2	Retaining Ring
13	21319	4	Capscrew	34	----	-	No Item	54	33372	1	Axle
14	29133	1	Sticker, "Warning"	35	03760	1	Capscrew	55	35194	1	Frame
15	21319	2	Capscrew	36	21696	1	Battery Clamp	56	10762	2	Roll Pin
16	----	-	Key (Included w/pump)	37	04353	12	Locknut	57	10759	2	Latch Pin
17	35345	1	Pump	38	00147	1	Nut	58	10760	2	Handle Latch
18	27767	2	90° Elbow	39	21700	1	Foot	59	10757	2	Handle Stop
19	27759	1	Grille	40	21713	1	Vibration Mount	60	10750	2	Spring
20	01298	4	Lockwasher	41	04585	12	Washer	61	10760	2	Bar
21	12116	2	Capscrew					62	03047	2	Roll Pin

**Figure 2A**  
**Frame Parts**  
**Model HP20271A**

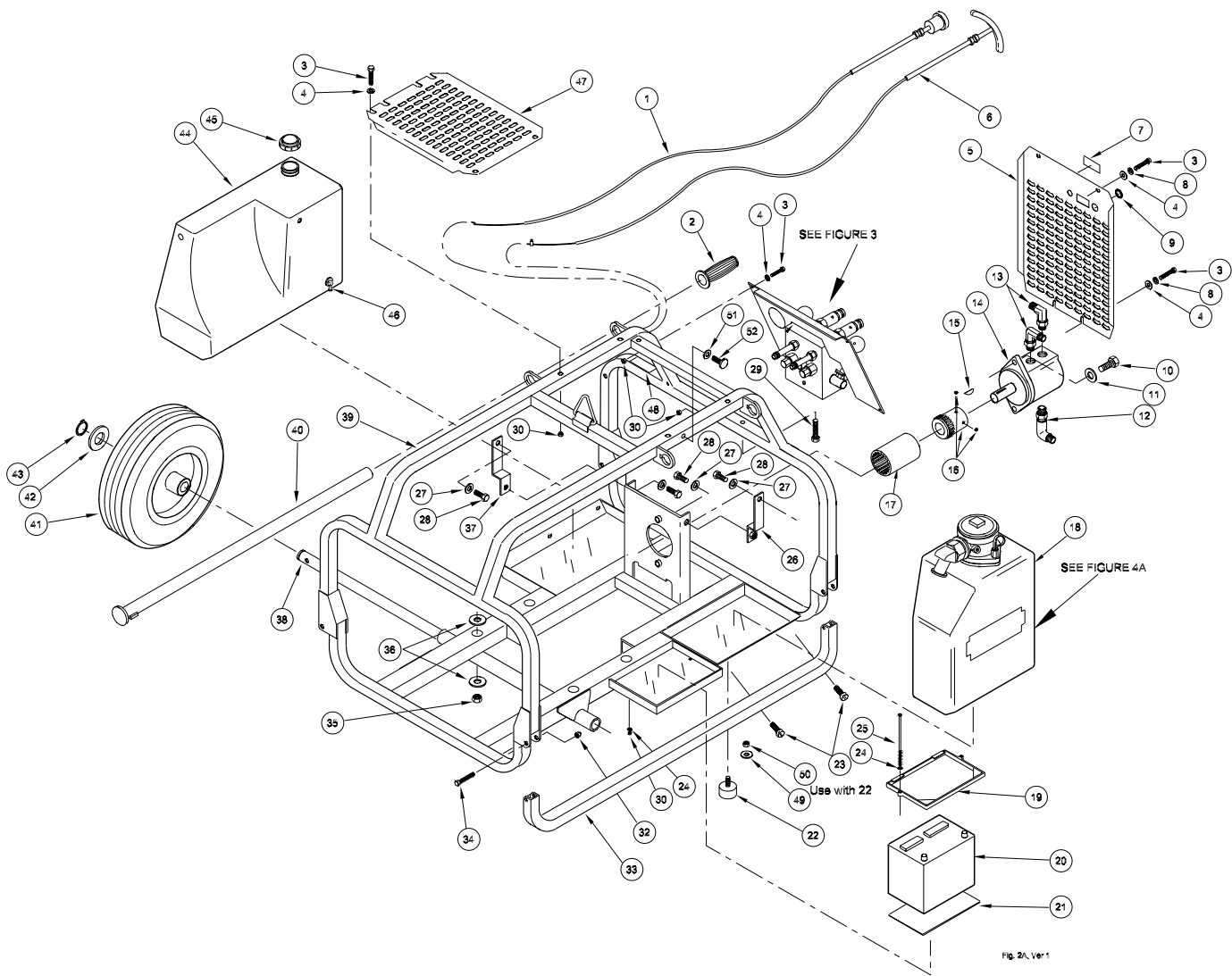


Fig. 2A, Ver 1

ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	56634	1	Stop Cable	20	04303	1	Battery	42	21318	2	Washer
2	08080	2	Handle Grip	21	10499	1	Battery Pad	43	31240	2	Retaining Ring
3	21319	11	Capscrew	22	21713	2	Vibration Mount	44	56635	1	Fuel Tank
4	04539	15	Washer	23	31241	5	Capscrew	45	56636	1	Fuel Tank Cap
5	56632	1	Grille	24	04539	4	Washer	46	-----	-	Supplied with Item 44
6	21715	1	Throttle Cable	25	56671	2	Capscrew	47	27759	1	Top Grille
7	29133	1	Warning Sticker	26	56644	1	Tank Support	48	35686	1	Decal, Hyd. Fluid
8	01219	4	Lockwasher	27	03031	10	Washer	49	04585	2	Washer
9	56672	1	Plug	28	04416	3	Capscrew	50	00147	2	Nut
10	02116	2	Capscrew	29	21319	1	Capscrew	51	26831	2	Washer
11	01459	2	Lock Washer	30	00719	10	Locknut	52	21714	2	Bumper
12	21335	1	Elbow	31	-----	-	NO ITEM				
13	27767	2	Elbow	32	03906	4	ESNA Nut				
14	56659	1	Pump	33	31699	2	Carry Handle				
15	-----	1	Key (Included with pump)	34	370513	4	Capscrew				
16	21687	1	Coupling Assy (Incl items 17)	35	04353	12	Locknut				
17	-----	1	Part of Item 16	36	04585	22	Washer				
18	52754	1	Hydraulic Tank	37	56645	1	Tank Support				
19	56669	1	Battery Hold Down	38	56631	1	Axle				
				39	56619	1	Frame Weldment				
				40	28089	1	Handle Tube				
				41	56653	2	Wheel, Foam Filled				

**Figure 3**  
**Valve & Dash Parts**  
**Model HP20271 & HP20271A**

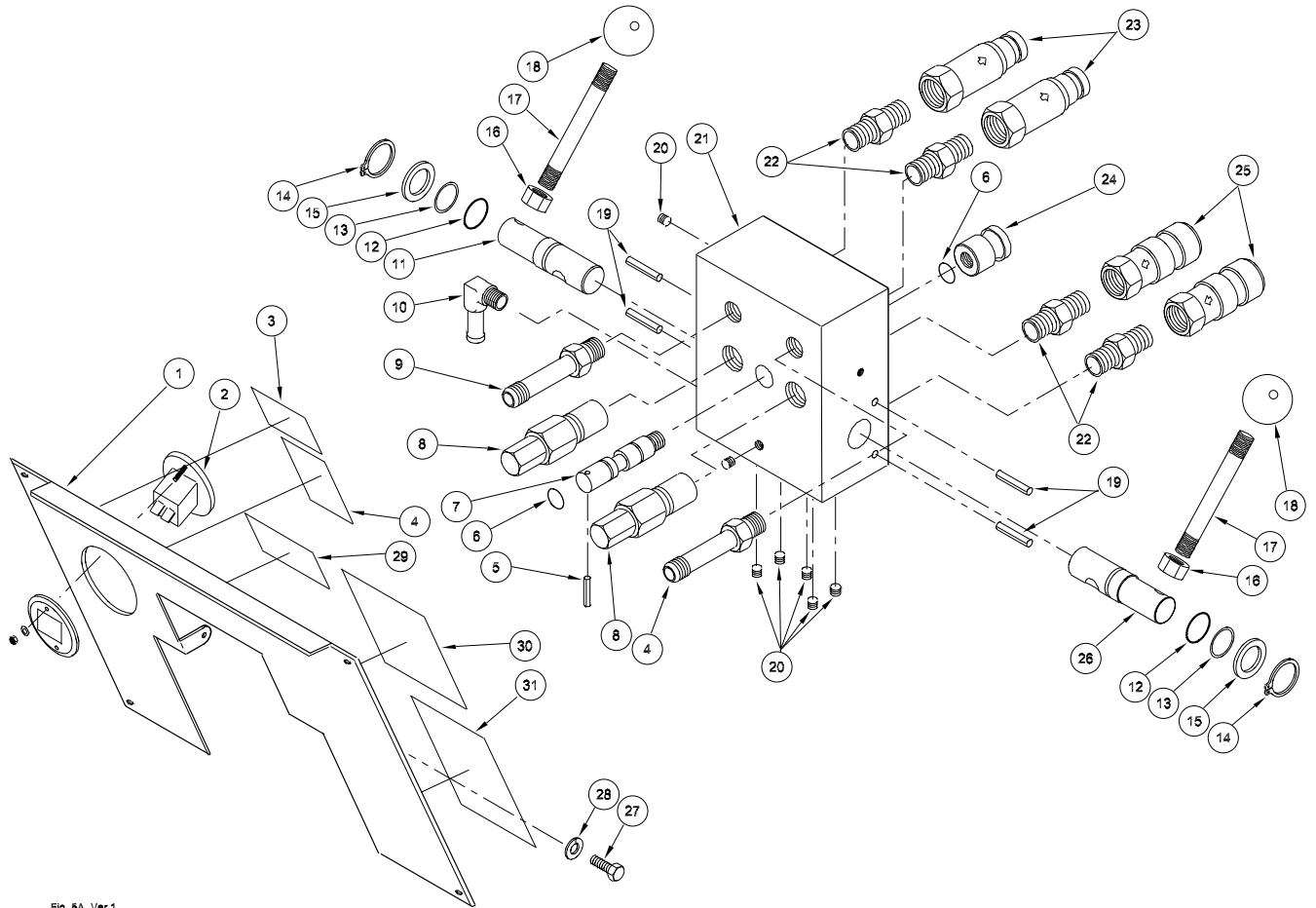


Fig. 3A, Ver 1

ITEM	P/N	QTY	DESCRIPTION	ITEM	P/N	QTY	DESCRIPTION
1	35112	1	Dash Panel	18	02633	2	Knob
2	20606	1	Hour Meter	19	07492	4	Spirol Pin
3	28046	1	Decal, Carbon Monoxide	20	01545	7	Pipe Plug
4	28047	1	Decal, Hot Parts	21	27661	1	Control Block
5	07492	4	Spirol Pin	22	07882	2	Adapter
6	00016	2	O-ring				-10 SAE x 1/2 Male NPT
7	05848	1	Combiner Spool	23	24061	2	Male Coupler Body
8	05043	2	Relief Valve	24	05847	1	Combiner Knob
9	07161	2	Adapter, Long	25	24060	2	Female Coupler Body
10	07821	1	Elbow, Hose Barb	26	05843	1	ON/OFF Spool, RH
11	05844	1	ON/OFF Spool, LH	27	27931	2	Capscrew
12	06989	2	O-ring	28	04532	2	Washer
13	06988	2	Back-up Ring	29	28045	1	Decal, Circuit 1 or 2
14	04313	2	Retaining Ring	30	35677	1	Decal, To Start
15	04216	2	Washer	31	51297	1	Decal, Check Hydraulics
16	00147	2	Nut				
17	05849	2	Rod				



**Figure 4**  
**Hydraulic Tank Parts**  
**Model HP20271**

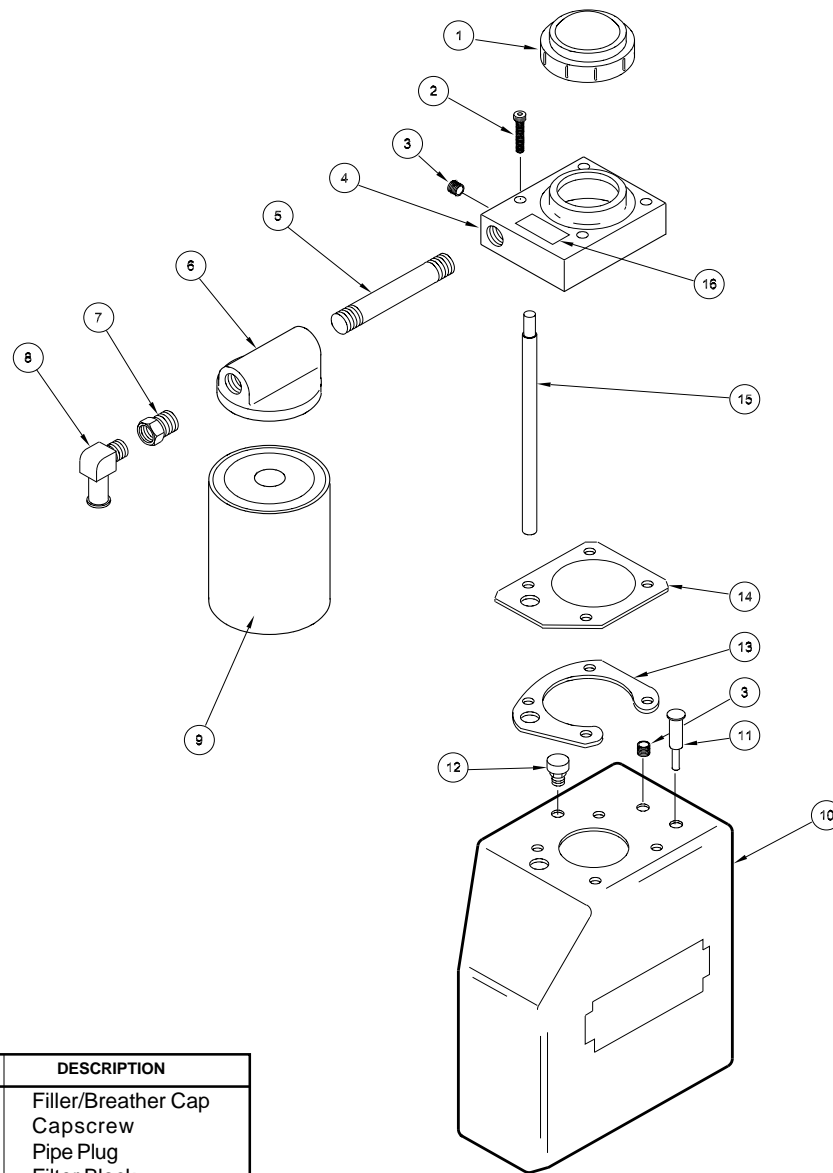
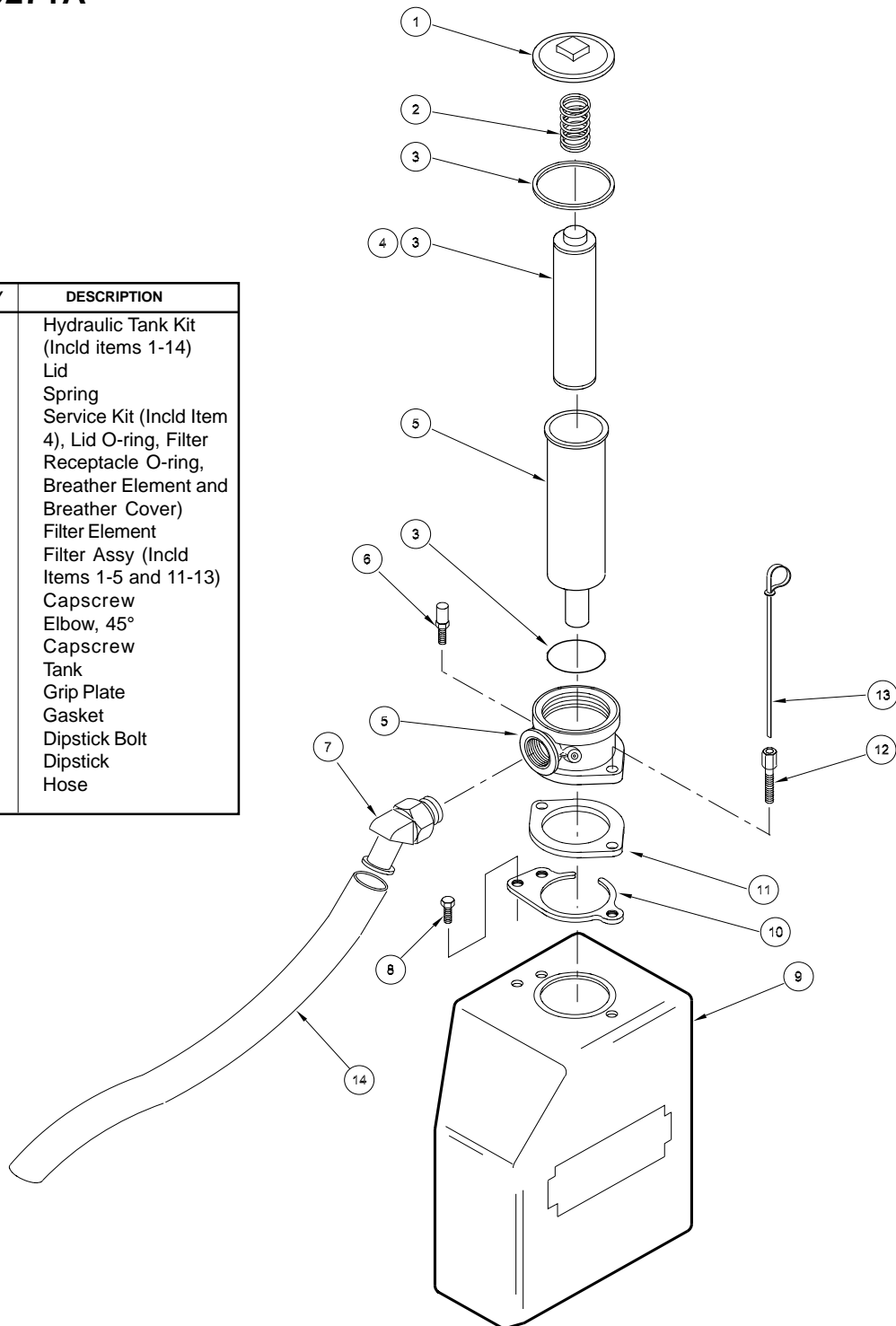


Fig.3, Ver 1, Ver 1

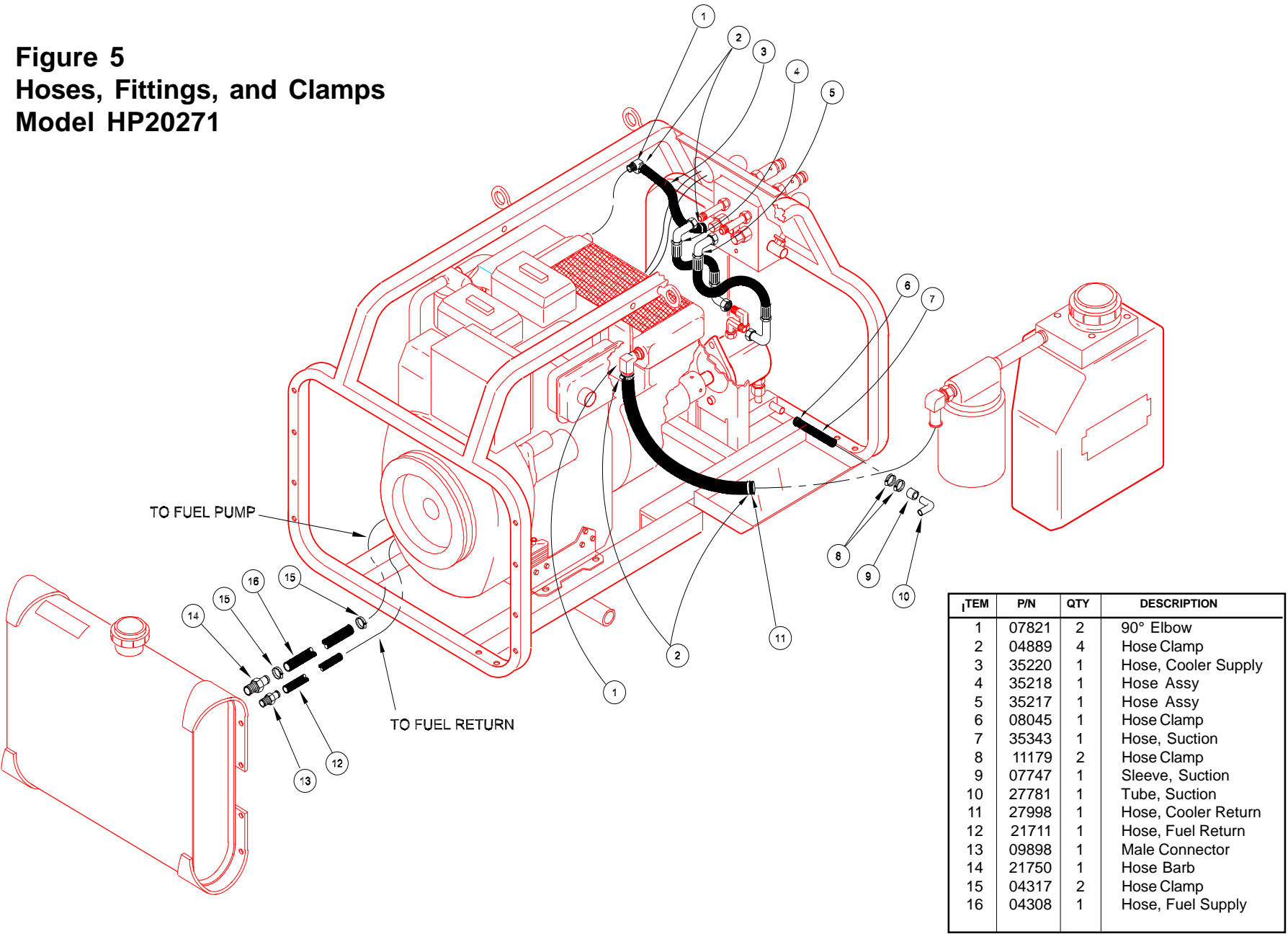
ITEM	P/N	QTY	DESCRIPTION
1	21323	1	Filler/Breather Cap
2	08253	4	Capscrew
3	01271	2	Pipe Plug
4	35238	1	Filter Block
5	27654	1	Pipe Nipple
6	21326	1	Spin-on Filter Head
7	350219	1	Reducer
8	07821	1	Elbow
9	25417	1	Filter, Zinga AE-25
10	07784	1	Hydraulic Tank
11	07748	1	Sight Pipe
12	34361	1	Relief Vent
13	09591	1	Filter Grip Plate
14	09590	1	Gasket
15	27655	1	Oil Tube
16	35686	1	Decal

**Figure 4**  
**Hydraulic Tank Parts**  
**Model HP20271A**

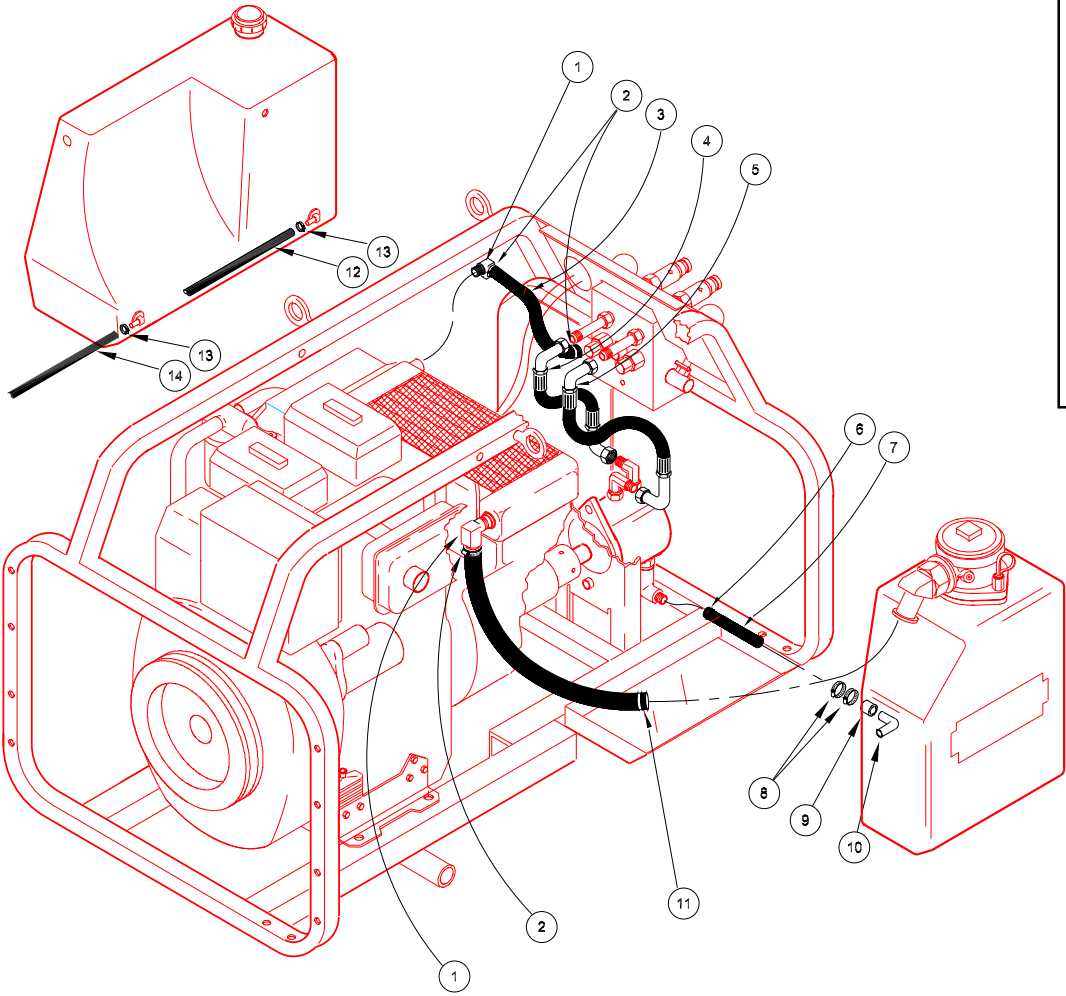
ITEM	P/N	QTY	DESCRIPTION
	52754	1	Hydraulic Tank Kit (Inclcd items 1-14)
1	52774	1	Lid
2	52775	1	Spring
3	43592	1	Service Kit (Inclcd Item 4), Lid O-ring, Filter Receptacle O-ring, Breather Element and Breather Cover)
4	40408	1	Filter Element
5	40080	1	Filter Assy (Inclcd Items 1-5 and 11-13)
6		1	Capscrew
7	40364	1	Elbow, 45°
8		1	Capscrew
9	40389	1	Tank
10	40133	1	Grip Plate
11	52782	1	Gasket
12	52773	1	Dipstick Bolt
13	52772	1	Dipstick
14	04306	1	Hose



**Figure 5**  
**Hoses, Fittings, and Clamps**  
**Model HP20271**

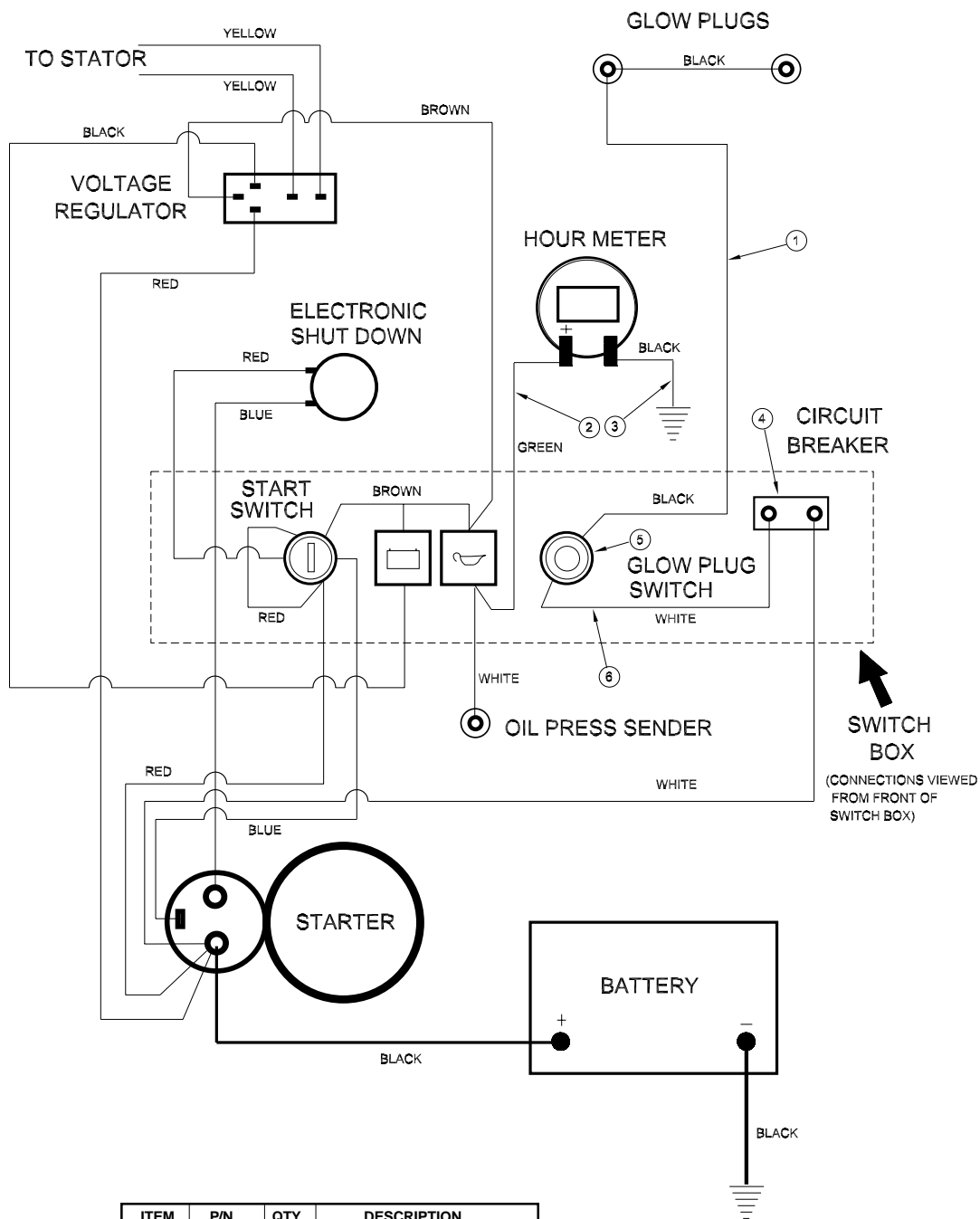


27 **Figure 5A**  
**Hoses, Fittings, and Clamps**  
**Model HP20271A**



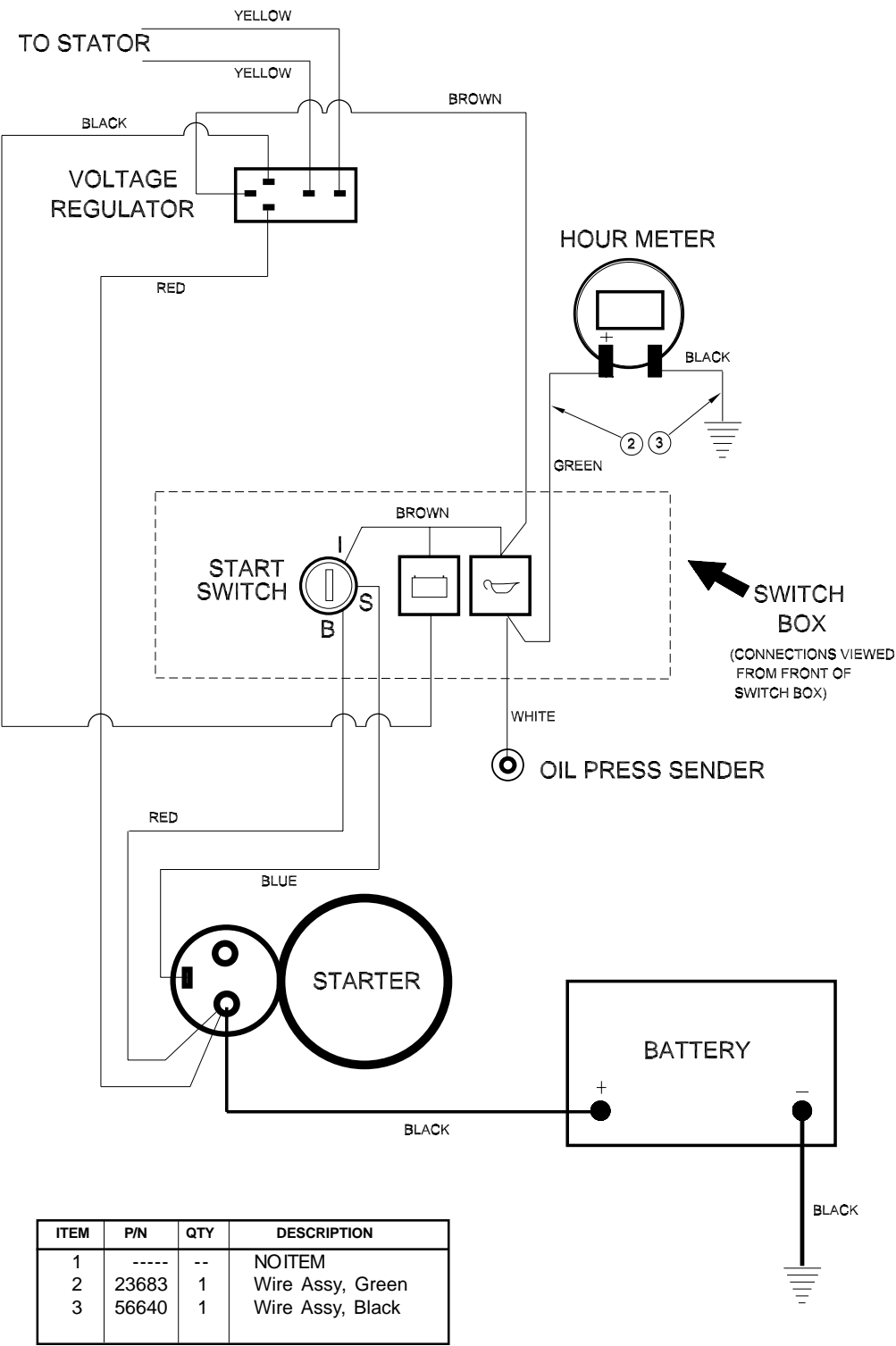
ITEM	P/N	QTY	DESCRIPTION
1	07821	2	90° Elbow
2	04889	4	Hose Clamp
3	35220	1	Hose, Cooler Supply
4	35218	1	Hose Assy
5	35217	1	Hose Assy
6	08045	1	Hose Clamp
7	35343	1	Hose, Suction
8	11179	2	Hose Clamp
9	07747	1	Sleeve, Suction
10	27781	1	Tube, Suction
11	04306	1	Hose
12	56696	1	Hose
13	04317	2	Hose Clamp
14	04308	1	Hose

**Figure 6**  
**Wiring Diagram**  
**Model HP20271**



ITEM	P/N	QTY	DESCRIPTION
1	21815	1	Wire Assy, Black
2	23683	1	Wire Assy, Green
3	08725	1	Wire Assy, Black
4	21776	1	Circuit Breaker
5	21775	1	Glow Plug Switch
6	21812	1	Wire Assy, White

**Figure 6A**  
**Wiring Diagram**  
**Model HP20271A**



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 manner 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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