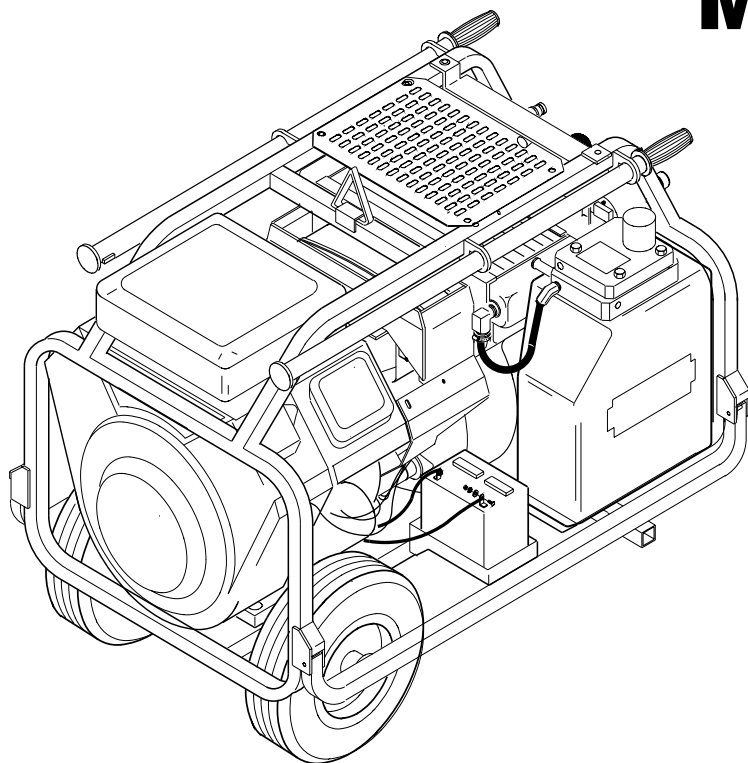




HP1

COMPACT POWER UNIT

Safety, Operation and Maintenance Manual



⚠ DANGER

**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.**

Copyright © 1998
The Stanley Works
All rights reserved

OPS/MAINT USA & CE VERSION
Printed in U.S.A.
24280 06/97 Ver 3



INDEX

Index (this page)	1
Hydraulic Hose Requirements	6
Operation	7 - 10
Preparation for Use	7
Hydraulic Connections	7 - 8
Startup	9 - 10
Cold Weather Startup	10
Tool Operation	10
Optional Equipment	28
Parts Lists	19 - 20
Parts Drawings	21 - 27
Engine Assembly (Fig. 1)	21
Frame Assemblies (Fig. 2)	22
Choke Cable Assembly (Fig. 3)	23
Actuator Assembly (Fig. 4)	23
Dash Panel & Valve Assembly (Fig. 5)	24
Hydraulic Tank & Filter Assembly (Fig. 6)	25
Hose & Fitting Connections (Fig. 7)	26
Wiring Diagram (Fig. 8)	27
Routine Maintenance	11
Engine	11
Hydraulic System	11
Storage	11
Safety Precautions	2 - 5
Local Safety Regulation	4
Safety Stickers & Tags	5
Sales & Service	Last Page
Service Instructions	12 - 14
Specification & Capacities	18
Testing & Troubleshooting	15 - 16
Troubleshooting Chart	17
Warranty	29



DANGER

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

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

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at one of the locations listed on the back of this manual.

SAFETY PRECAUTIONS

		⚠ DANGER Do not operate this equipment or associated equipment until the following safety instructions have been thoroughly read and understood! Read this manual before installing, operating or maintaining this equipment.
		

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 5.

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

GENERAL SAFETY PRECAUTIONS

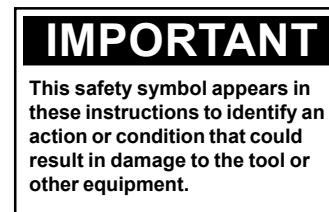
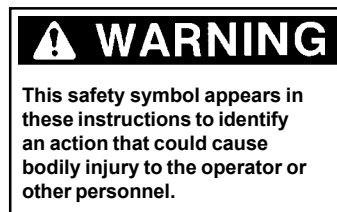
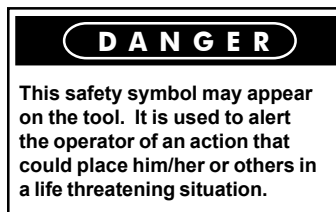
The HP1 Compact Hydraulic Power Unit will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the Power Unit. Failure to do so could result in personal injury or equipment damage.

- Operators 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 and 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 the unit is running.
- Always use hoses and fittings rated at 2500 psi/172 bar with a 4 to 1 safety factor. 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.
- Do not operate a damaged or 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.

- Always wear appropriate safety equipment such as goggles, ear protection, and toe guards. Certain tools used in conjunction with the power unit may require other safety equipment such as breathing filters.
- 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 grinding wheel rotation direction by changing fluid flow direction.
- Allow the engine to cool before storing the power unit in an enclosure.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

SAFETY SYMBOLS

Safety symbols 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.



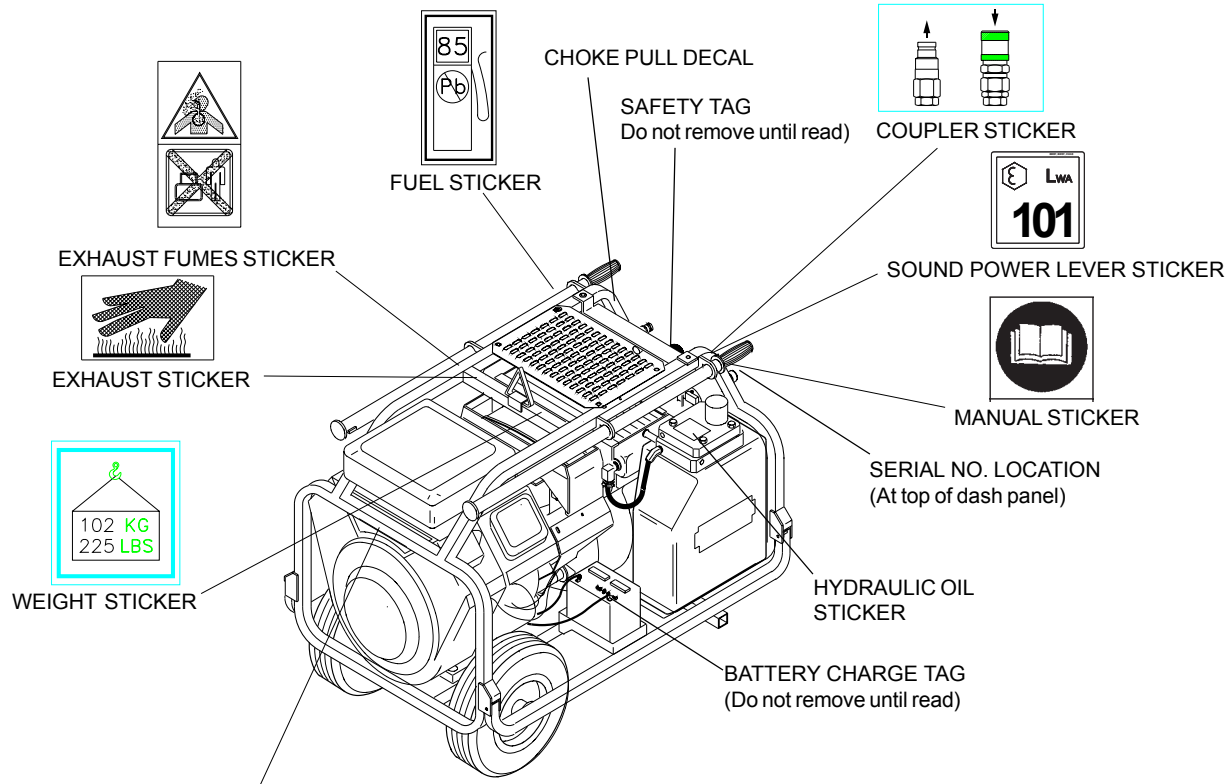
Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

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

[illegible]

SAFETY STICKERS & TAGS



CAUTION

DO NOT OPERATE THE PUMP WITHOUT WATER. OPERATING THE PUMP WITHOUT WATER WILL SEVERLY DAMAGE THE PUMP.

CAUTION STICKER
(If Equipped with Water Pump Kit)

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.

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 ELECTRICAL 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.

SEE OTHER SIDE

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.

SEE OTHER SIDE

15875

SAFETY TAG (shown smaller than actual size)

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.

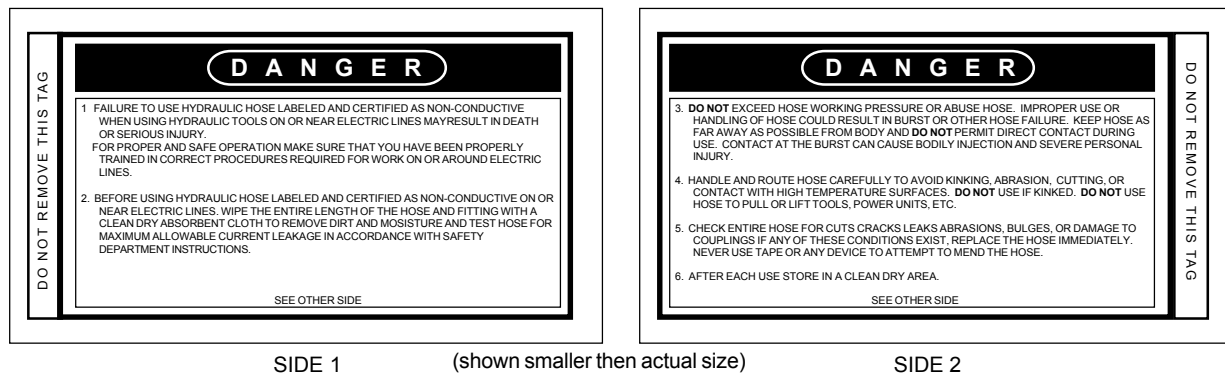
Hoses 2 and 3 listed above are **conductive** and **must never** be used near electrical conductors.

To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley. 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.

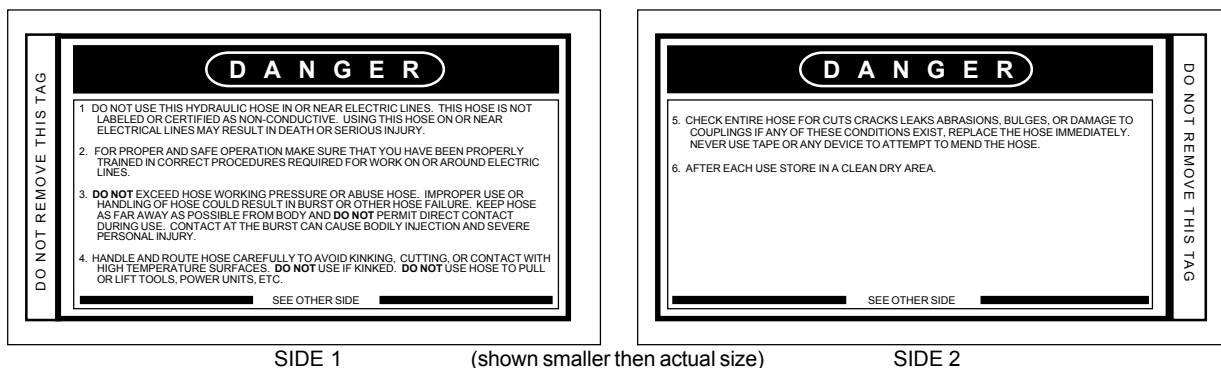
1 CERTIFIED NON-CONDUCTIVE HOSE

This tag is attached to all certified **non-conductive** hose.



2 AND 3 WIRE-BRAIDED AND FABRIC-BRAIDED (NOT CERTIFIED OR LABELED NON-CONDUCTIVE) HOSE

This tag is attached to all **conductive** hose.



HOSE PRESSURE RATING

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

OPERATING INSTRUCTIONS

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

IMPORTANT

Do not start the Engine with the throttle control set at 5 or 8 gpm/ 19 or 30 lpm.

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 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.	METRIC
50°F 450 SSU Maximum	10°C 95 Centistokes
100°F 130-200 SSU	38°C 27-42 C.S.
140°F 85 SSU Minimum	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, 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

4. HYDRAULIC CONNECTIONS

Facing the panel control valve, the far right-hand male quick disconnect fitting is the pressure (FLUID OUT) fitting. The left-hand female quick disconnect fitting is the return (FLUID IN) fitting.

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)

5. 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.

Also, make sure the battery cables are tight and charging circuit functions are operating properly.

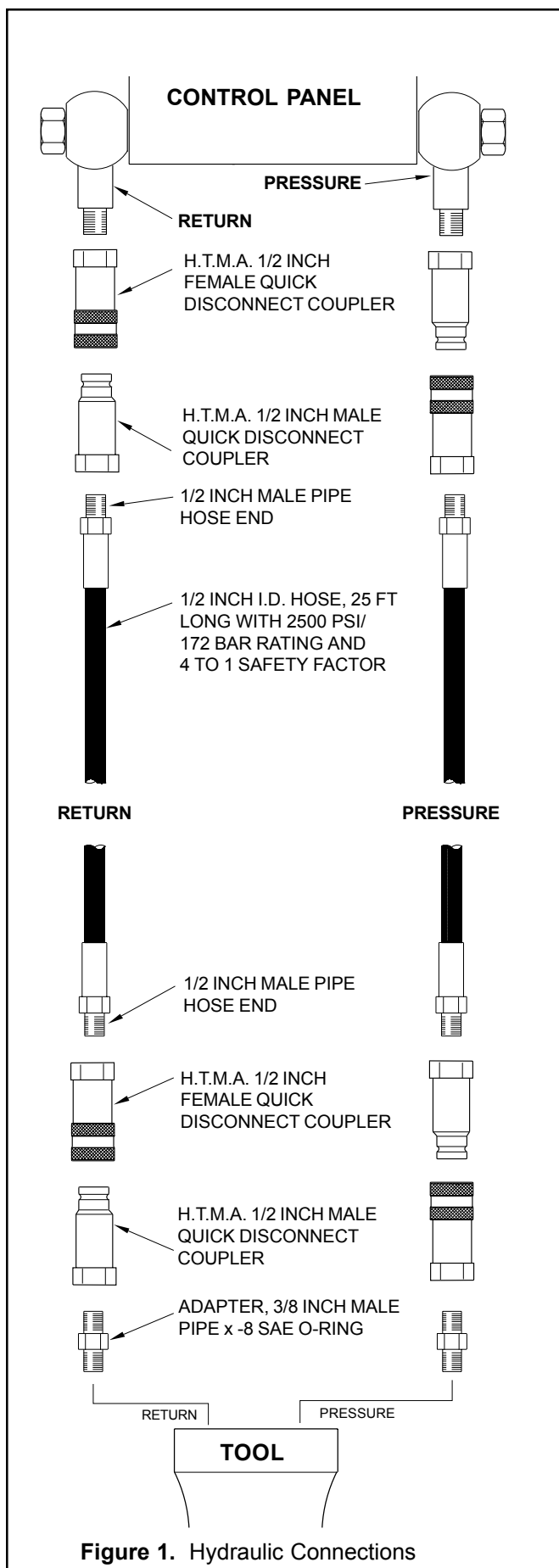


Figure 1. Hydraulic Connections

quick disconnect fittings (NPT type threads). (See Figure 1.)

Longer hoses may be used when necessary, but can effect the operation of the engine automatic throttle due to fluid resistance in the hose. If small diameter or long hoses are used, or if restrictive fittings are connected to the supply and return ports, the pressure required to push the fluid through the system and back to the hydraulic tank will be higher. If the pressure is too high, this will cause the engine RPM to remain at full load if "AUTO" is selected on the automatic throttle. Also see "HYDRAULIC HOSE REQUIREMENTS" earlier in this manual.

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 1. Quick disconnect couplings and hose fittings are selected so that additional fittings such as reducer or adapter fittings are not required.

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.**

CAUTION

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 with amperage higher than 2 amps will damage the battery.

6. THROTTLE CONTROL (See Figure 2)

The throttle control permits the operator to select one of 3 operating modes after the engine has warmed up. For startup, the throttle control should be set on "AUTO".

- a. **AUTO** - Engine speed varies with hydraulic circuit pressure to maintain a constant 8.5 gpm/32 lpm. When a tool is not being used the engine will return to idle automatically.
- b. **5** - Engine speed is held at part throttle to maintain 5 gpm/19 lpm. When a tool is not being used the engine will not return to idle until the faspin is removed.
- c. **8** - Engine speed is held at full throttle to maintain 8.5 gpm/32 lpm. When a tool is not being used the engine will not return to idle until the faspin is removed.

Typical conditions requiring the "8" position are:

- When operating an alternator, fluid flow must be constant to produce the required voltage and frequency, even when load requirements are light.
- When operating drills or grinders or diamond saws, tool rpm must be maintained even when load requirements are light.

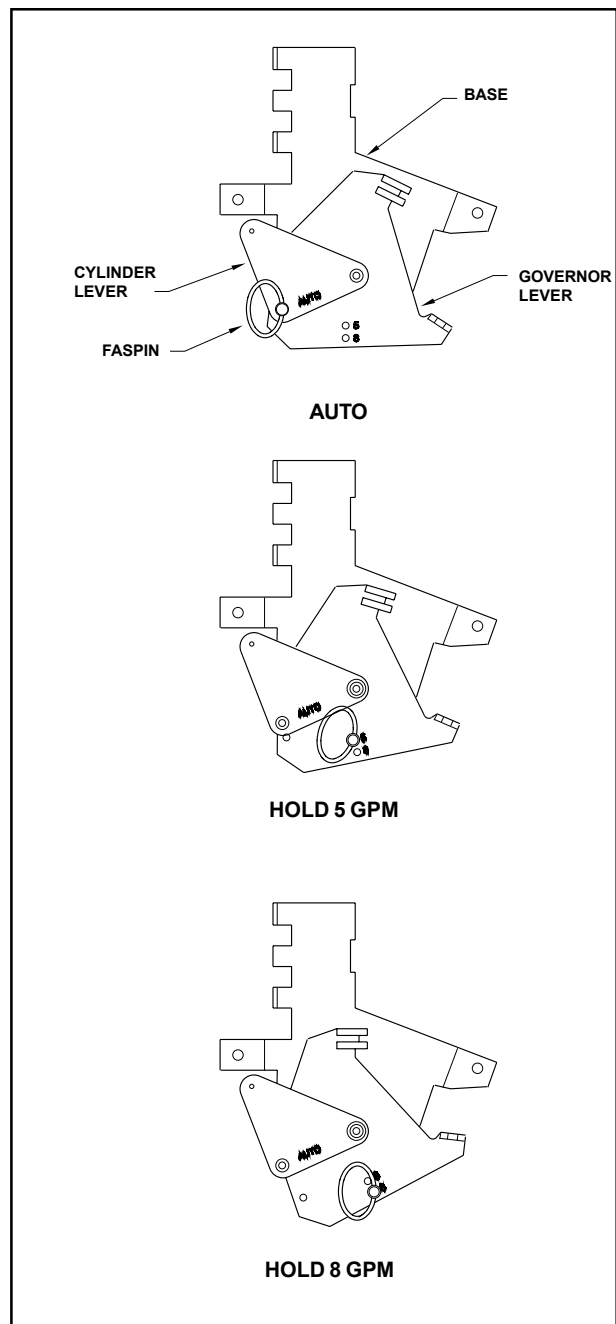


Figure 2. Throttle Control Settings

STARTUP - See "PANEL CONTROLS" - Figure 3

1. Assure the circuit control lever is in the "OFF" position.
2. Select the "AUTO" throttle operating mode by positioning the governor lever to the cylinder lever and inserting the faspin as shown in figure 2.

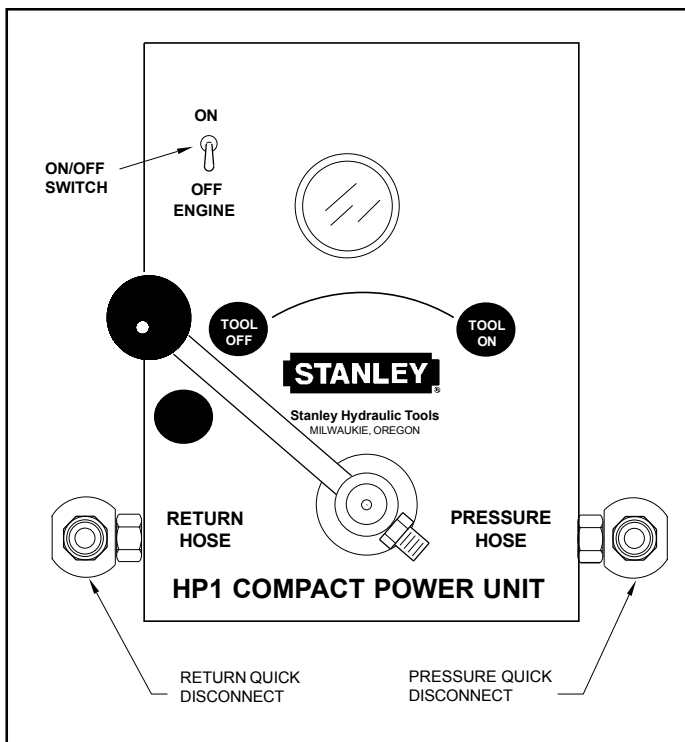


Figure 3. Control Panel

3. Position the ON/OFF switch to the "ON" position.
4. Pull the choke lever out.
5. Push the circuit control lever to the "START" position.
6. After the engine starts, allow the engine to warm up until it runs smoothly with the choke released.

IMPORTANT

Do not start the Engine with the throttle control set at 5 or 8 gpm/ 19 or 30 lpm.

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 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 tool.

TOOL OPERATION

1. With the engine running smoothly, move the control lever to the "ON" position.
2. Activate the tool. The automatic throttle will increase engine speed to permit proper tool operation. When the tool is deactivated, the automatic throttle allows the engine to return to idle.
3. If automatic throttle operation is not desired, change the throttle control to "5" or "8".

SHUTDOWN

1. Place the circuit control lever in the "OFF" position.
2. If the throttle control is in the "5" or "8" position, change it to the "AUTO" position.
3. Allow the engine to idle for approximately one minute and then switch the ON/OFF switch to the "OFF" position.

OPTIONAL WATER PUMP KIT

CAUTION

DO NOT OPERATE THE PUMP WITHOUT WATER. OPERATING THE PUMP WITHOUT WATER WILL SEVERLY DAMAGE THE PUMP.

If the power unit will be operated without need of the water pump, unpin the water pump and remove it.

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:

- Service foam air pre-cleaner every 25 hours of operation.
- Service air paper cartridge every 100 hours of operation.
- Replace in-line fuel filter every 100-300 hours or sooner if required.
- Replace spark plugs every 100 hours of operation.
- Change engine oil after first 5 hours of operation, then after every 50 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. The center of the sight pipe on the reservoir must be dark. If it is not dark, fluid must be added. 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 ltr 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.