



GENERAL SAFETY PRECAUTIONS

WARNING: Do not operate power unit without reading this entire manual and the engine operation manual first. Keep manuals with power unit at all times for reference.

This manual describes the operating procedures, care, maintenance, adjustments, and safety precautions for proper use of this machine. This equipment is intended for industrial applications by experienced operators. It is to be operated in conformance with applicable federal, state, and local codes or regulations pertaining to safety, air pollution, noise, etc.

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.

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

- 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.
- Do not inspect or clean the power unit while it is running.
- Always use hoses and fittings rated at a minimum 3000 p.s.i. (206.9 bar) with a 4 to 1 safety factor for pressure lines.
- 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" pressure leaks can penetrate the skin.
- **Never operate the gas 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, head protection and safety shoes. 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 still running or is still hot.
- Do not operate the power unit if a gasoline odor is present.
- Do not use flammable solvents around the power unit engine.
- Do not operate the power unit within 3 ft. (1 meter) of buildings or flammable objects.
- Allow the engine to cool before storing the unit in an enclosed area.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.

IMPORTANT: The red stop button at the front panel will immediately stop the engine and radiator fan. Hydraulic pressure and flow will go to zero. This button must be in the out position to start the engine.

DANGER: Improper use or alteration of this equipment may be extremely hazardous.

SAFETY SYMBOLS

Safety symbols are used to emphasize actions which 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.

! DANGER !

This safety symbol may appear on the tool. It is used to alert the operator of an action that could place him/her or others in a life threatening situation.

! WARNING: !

This safety symbol appears in these instructions to identify an action that could cause bodily injury to the operator or to other threatening situation.

! IMPORTANT!

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

DESCRIPTION AND SPECIFICATIONS

Pump: Gear, pump rotation is clockwise (motor is CCW).

Maximum GPM: 17.2 GPM (65.1L/M) at no load, 4000 RPM. Flow will decrease as pressure approaches the relief setting and as engine RPM drops under load.

Hydraulic Fluid Tank Capacity: 11 gallons (41.6Liters)

Hose Couplings: Bruning quick disconnect, 3/4 inch & 1/2 inch

Relief Pressure: Factory set at 3000 PSI /206.9 Bar (at valve outlet port). Do not exceed 3000 PSI. Adjustable to 1200 PSI / 83Bar. At relief setting, all flow is to tank and none to tool.

Engine: Briggs & Stratton 35 hp (Gross), Air-cooled, gasoline fueled, no load RPM: 4000.

Fuel Tank Capacity: 5 gallons.

This unit is compatible with most hydraulically driven sawing and drilling components. The system may not be compatible with components of some manufacturers.

The power unit was inspected and operated before shipment and should not require any additional adjustments prior to its initial use.

Hydraulic Fluid: The reservoir of the hydraulic power unit must be full prior to start-up. The use of high quality petroleum based hydraulic oil with the following properties is recommended:

- Anti-wear
- Low foaming
- Rust and oxidation inhibitors
- Wide temperature range
- Fluid viscosity: 8-1000 Centistokes (52-4600 SUS). The unit is shipped with an ISO 46 Viscosity grade (8Cs/52SUS @ 212F/100C and 46Cs/210SUS @ 104F/40C).

The oil must be kept free of contamination to avoid damage to system components. The strainer in the fill cap must always be in place when adding oil. Quick disconnects must be cleaned before connections are made.

Control Valve: The pressure compensated flow control valve on this unit allows full flow control while the gas engine remains at its most efficient wide-open throttle. This allows a higher operating pressure at all flows.

Flow settings: CCW, all flow routed to tank. Flow to tool increases as valve rotates clockwise.

Relief Valve: Relief pressure can be adjusted by using an Allen wrench at the relief cartridge, which is mounted just below the front panel. The relief can be set as low as 1200 psi; do not exceed 3000 psi. To adjust, the flow control must be set at MAX and no tool should be attached. This will force all flow over relief. The relief should rarely need adjustment. Higher relief may cause the engine to stall.

Hydraulic Oil Cooler and Radiator: The power unit is equipped with a brazed plate style oil cooler and a radiator option is available. Whenever possible, water should be passed through the cooler before being used for dust control or blade & bit cooling. Some tools will automatically shut off water flow when not actively cutting, drilling, etc. This may result in higher oil temperatures if the power unit continues to run for long periods without cooling water. The optional radiator fan will come on automatically when the oil temperature reaches ~ 120 F. (49 C.) and continue to run until the oil cools, even if the engine is shut off. The fan *will* stop whenever the emergency stop switch is used.

IMPORTANT: If there is a risk of frost the water must be drained from the cooler to prevent damage by freezing.

HOSES: Large diameters and short lengths are preferred and offer the highest system efficiency. If one is operating 50 ft (15.2M) from the power source, there is also a 50 ft (15.2M) return for a 100 ft (35.5M) total hose length. With 15 GPM and oil at 100 deg. F (37.8C), this could result in a 400 psi (27.5 Bar) pressure loss with ½” hose and a 140 psi (9.6 Bar) loss with 5/8” hose. Pressure loss will change dramatically with oil temperature.

OPERATING INSTRUCTIONS

Operator Responsibilities

It is the operator’s responsibility to use this unit and any attached tools under safe working conditions and to follow proper safety procedures for themselves, co-workers, observers, and the public at large. The operator must be aware of the machine’s capabilities and limitations and follow the safety precautions in each section of this manual. Periodic maintenance is required, in accordance with the instructions herein, to promote safe and reliable operations.

WARNING: Keep bystanders out of the immediate work area.

Wear approved:

- Safety glasses
- Ear protection
- Hard hat
- Gloves
- Safety shoes
- Any other protective equipment required for compliance with standard safety practices or federal, state, and local codes and regulations

HOSE CONNECTIONS: It is best to connect the hoses to the unit before starting as even very low residual pressure can make hose installation more difficult. Push couplings together until you hear it

click. Turn locking ring of coupling to the secured position.

ENGINE: Make sure that the engine crankcase is filled with oil to the proper level! Refer to your engine manual for oil checking and changing procedures, along with oil specifications, etc.

IMPORTANT: Operating the engine without oil will ruin the engine.

FUEL: Use regular grade unleaded gasoline to fuel the engine. Premium grade may be used if necessary. Fill the tank when the engine is off and has been allowed to cool. Care should be taken to prevent spilling fuel. **Do not overfill the fuel tank.** Always leave enough space for expansion due to environmental heating.

WARNING: In the event of fuel spillage, do not start the engine or operate any nearby electrical component until the spilled fuel has been removed.

Starting Procedure:

- Set the flow control valve to zero.
- Open the fuel shut off valve below the gas tank.
- Be certain the emergency off switch has been pulled out.
- Set throttle to maximum, set choke if necessary (cold engine). Turn key to start and release. Refer to engine manual for details of control functions.
- Let engine warm and gradually open the choke.

DANGER: Exhaust from the engine contains carbon monoxide, a poisonous, odorless, invisible gas, which can cause serious illness or death. Do not operate the engine where ventilation is restricted. Open windows and doors may not be sufficient to prevent this hazard.

OPERATING DRIVEN EQUIPMENT

Heating Cold Oil: Forcing the oil over relief will quickly increase the oil temperature. With no tool connected to the unit, move the valve setting toward 10. This will force an increasing percentage of oil over relief. Heat cold oil to room temperature or ~100F/38C maximum. Cold oil greatly increases pressure loss in hoses and fittings and may affect tool operation.

Maintaining Oil Temperature: With an ample water supply and the radiator, it is unlikely overheating will be an issue except in the most extreme ambient temperatures. To force high oil temperatures down, run the unit with the flow control set to zero. This unloads the unit yet circulates oil through the cooling system. The rate of cooling will depend on the ambient temperature and how much water is being passed through the cooler.

Some control valves at the external tool may create backpressure and heat even when off. It is best to set the flow control to zero or shut the power unit down to avoid heating and conserve energy.

IMPORTANT: Monitor the thermometer at the top of the hydraulic tank. Maximum recommended oil temperature is 180 degrees Fahrenheit (82 deg C).

Shutting Down:

- Shift the flow control valve to zero to unload the system.
- Throttle the engine back to a low RPM.
- Turn the key to the off position.

IMPORTANT: The red stop button at the front panel will immediately stop the engine and radiator fan. Hydraulic pressure and flow will go to zero. This button must be in the out position to start the engine.

The operator must know the hydraulic requirements and limitations of the driven equipment and the appropriate adjustments must be made on the controls. The introduction of other control devices may cause system heating or may render the system inoperative.

IMPORTANT: This power unit is equipped with a positive displacement gear pump. All tools must be equipped with a control valve that allows flow directly to return ports when not in use. Blocking oil flow or abruptly disconnecting the tool can send flow over relief and potentially overheat the system.

Instructions supplied with the driven equipment must be followed to ensure correct connection and operation of each individual piece of equipment. Equipment supplied by Diamond Products will be capable of being connected correctly and will be compatible with this power unit, providing neither has been modified from original factory configuration. With equipment of other manufacturers, it will be necessary to determine the following:

- Correct direction of flow through the equipment.
- Correct pressure and flow required by the equipment.
- Compatibility of any valves or circuitry and quick disconnects. Some hand-held equipment uses a trigger control, which is operated frequently. These valves must be of the open center type for correct operation.

IMPORTANT: The quick disconnects must be clean when connecting hoses and devices. Failure to thoroughly clean may result in contamination and premature failure of system or tool components.

MAINTENANCE INSTRUCTIONS

- Oil Filter: change the filter when indicated by the gage at the filter.
- Oil Change: establishing an oil analysis program is the preferred method of determining oil condition and when to change it. If the oil is kept clean, dry, and operated at moderate temperatures, it can last for several years. With no analysis program an oil change every 200 hours is recommended. See the section Hydraulic Fluid for specifications. A ½" pipe thread oil drain port is at the bottom of the hydraulic tank.
- Engine Oil: Change engine oil and filter and perform other routine maintenance as recommended in the engine operation manual.
- Inspect hoses, couplings, and fittings daily for leaks, tighten as required. Clean quick disconnects frequently. Replace any leaking or defective components immediately.
- Check hydraulic oil level daily. Fill tank to upper end of sight tube with unit off.

TROUBLESHOOTING

PROBLEM	POSSIBLE SOLUTIONS
Engine will not start.	<ol style="list-style-type: none"> 1) Pull out emergency stop button. 2) Open gas line valve below gas tank. 3) Dead battery? 4) Low engine oil?
Radiator fan does not run (Optional on gas units).	<ol style="list-style-type: none"> 1) Oil must be >120 F. (49C.) 2) Check fuse at front panel. 3) Electrical connectors firmly attached? 4) Dead Battery?
Low oil flow.	Check engine RPM at tachometer on front panel. Adjust governor to 4000 RPM, at no load, if required. See engine manual.
System builds high pressure with flow control valve set to zero.	Contamination may have plugged an orifice in the CF port of the flow valve. Detach the valve from the front panel and remove the fitting from the CF port. A .015" orifice should be visible at the bottom of the port. Push a fine wire through the orifice and re-install.

Keep this manual and the engine manual readily available at all times for reference.