

HYDRAULIC POWER UNIT SAFETY PRECAUTIONS

Hydraulic Power Unit operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the power unit and hose. These safety precautions are given for your safety. Review them carefully before operating the pump 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 in this manual.

All Hydra-Tech hydraulic power units 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. 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, dangerous terrain conditions, and confined spaces.
- Establish a training program for all operators to ensure safe operations.
- Do not operate the power unit unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, head protection, hearing protection, and safety shoes at all times when operating the power unit.
- Do not inspect or clean the hydraulic pump or hydraulic tool while the hydraulic power source is engaged. Disconnect both hydraulic hoses before attempting to clean or inspect the pump or hydraulic tool. Accidental engagement of the power unit can cause serious injury.
- Always disconnect the battery cable before attempting any repair.
- Do not operate this power unit without first reading and understanding the Operating Instructions.
- Never operate the power unit near energized transmission lines. Know the location of buried or covered services before starting work.
- Do not wear loose fitting clothing when operating the power unit. Loose fitting clothing may get entangled with the power unit and cause serious injury.
- Supply hoses must have a minimum working pressure rating of 3000 psi/204 bar.
- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling the hydraulic hoses. Wipe all couplers clean before connecting. Failure to do so may result in damage to the quick couplers and cause overheating. Use only lint-free cloths.
- Be sure all hose connections are tight.
- Do not operate the power unit at oil temperatures above 140° F/60° C. Operation at higher oil temperatures can cause operator discomfort and may cause damage to the equipment.
- Do not operate a damaged, improperly adjusted, or incompletely assembled power unit.
- To avoid personal injury or equipment damage, all power unit repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Do not exceed the rated limits of the power unit or use the power unit for applications beyond its design capacity.
- Always keep critical power unit markings, such as labels and warning stickers legible.
- Always replace parts with replacement parts recommended by Hydra-Tech Pumps.
- Check fastener tightness often and before each daily use.
- **NEVER** put your hands or any other body part into the area near the cooling fan and belts while the power unit is running.
- Only lift the power unit by the lifting bracket and be sure the lifting equipment is suitable for the rated weight of the power unit. Do not lift with hydraulic hoses attached.
- Do not touch the engine, exhaust piping, or muffler – these surfaces are hot and will burn you. Keep any flammable material away from these surfaces.
- When moving power units mounted on trailers always insure that the towing vehicle is suitable for the weight of the power unit. Always insure that the safety chains are securely fastened to the tow vehicle and the trailer lights are operating properly.
- **DO NOT OPERATE THIS POWER UNIT NEAR FLAMMABLE LIQUIDS OR FLAMMABLE VAPORS OR GASES.**

POWER UNIT OPERATION

PREOPERATION PROCEDURES

CHECK HYDRAULIC EQUIPMENT BEING OPERATED

1. Make sure the power unit hydraulic flow and pressure are appropriate for the equipment being powered. Flow and/or pressure in excess of the maximum rated flow of the equipment will damage the equipment.

CONNECTING HYDRAULIC HOSES

1. Wipe all hose couplers with a clean lint free cloth before making connections. Do not connect pressure to the return port.
2. Connect the hoses from the power unit to the couplers on the equipment being operated. It is a good practice to connect return hose first and disconnect it last to minimize or avoid trapped pressure within the pump motor.

Note: If uncoupled hoses are left in the sun, pressure increase inside the hoses might make them difficult to connect. Whenever possible, connect the free ends of the hoses together.

3. Make sure the hydraulic hoses are connected to ensure that the flow is in the proper direction.

POWER UNIT OPERATION OVERVIEW

1. Observe all safety precautions.
2. Fill hydraulic reservoir to sight glass with specified hydraulic fluid. Use only biodegradable oil in any environmentally sensitive area.
3. Check engine fluid levels and fill engine fuel tank.
4. Connect hydraulic hoses from the power unit to the equipment being operated. **Be sure to completely connect the hydraulic couplings or damage will result to the hydraulic system.** Insure that the pressure and return hoses are connected to the correct port. Always be sure the connections are clean before assembling.
5. Turn hydraulic control valve counter-clockwise until the handle rotates freely. This de-energizes the hydraulic system to permit easy starting of the engine and also allows the operator to turn off the pump without stopping the engine.
6. Insure that any equipment being powered by the power unit is turned off so it will not start unexpectedly.
7. Start the engine and allow it to warm up for a few minutes before engaging the hydraulic system.
8. Turn the hydraulic control valve clockwise until it stops. This energizes the hydraulic system. **Do not attempt to use the hydraulic control valve to regulate hydraulic pressure – this valve is on/off only.**
9. Engine speed may be adjusted to provide appropriate flow to the equipment being operated. **Never exceed recommended operating pressure!**
10. To stop the power unit you must first de-energize the hydraulic system (turn hydraulic control valve counter-clockwise).
11. To stop the hydraulic power unit slow the engine down before stopping the engine.
12. Always recheck the level of the hydraulic fluid. Filling the hydraulic hoses during initial start-up will cause the hydraulic fluid level to drop slightly.

COLD WEATHER OPERATION

If the power unit is to be used during cold weather, preheat the hydraulic fluid by operating the power unit at low speed. When using the normally recommended fluids, fluid should be at or above 50°F/10° C (400 ssu/82 centistokes) before use. Damage to the hydraulic system or equipment seals can result from use with fluid that is too viscous or thick.

EQUIPMENT PROTECTION & CARE

- Make sure all couplers are wiped clean before connection.
- The hydraulic circuit control valve must be in the "OFF" position when coupling or uncoupling the hydraulic hoses. Failure to do so may result in damage to the quick couplers and cause overheating of the hydraulic system.
- Make sure the circuit PRESSURE hose and RETURN hose are connected correctly. Do not reverse circuit flow. This can cause damage to internal seals of equipment being powered.
- Always replace hoses, couplings and other parts with replacement parts recommended by Hydra-Tech Pumps. Supply hoses must have a minimum working pressure rating of 3000 psi/204 bar.
- Do not exceed the rated flow or pressure (refer to Specifications in this manual for correct flow rate and pressure). If specifications are exceeded, rapid failure of the internal seals may result.
- Always keep critical labels and markings, such as warning stickers and tags legible.
- Power Unit repair should be performed by experienced personnel only.
- Make certain that the recommended relief valves are installed in the pressure side of the system.