



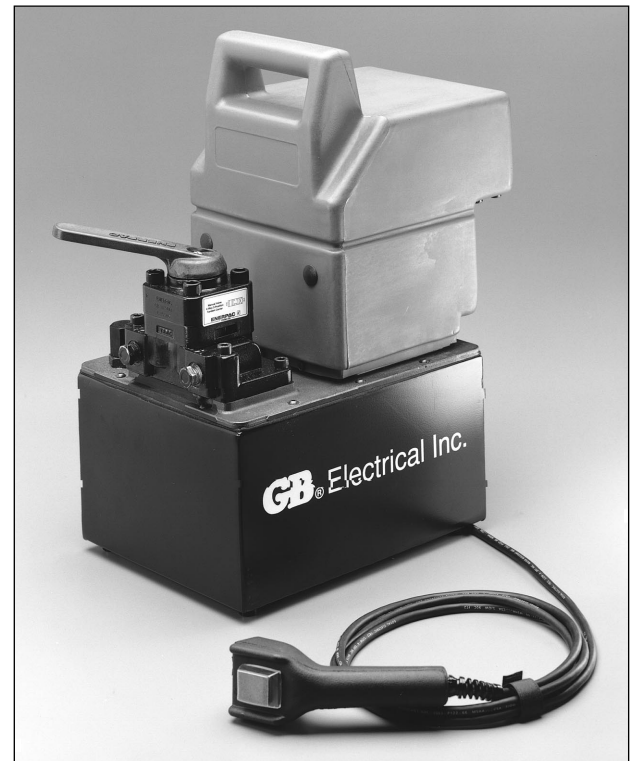
Instruction Sheet

1 1/8 HP
Titan Pumps

IMPORTANT RECEIVING INSTRUCTIONS: Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement cost resulting from damage in shipment.

SAFETY FIRST

Carefully plan your system by selecting components designed to perform the intended operation and which will adequately perform with existing equipment. Always check the product limitations regarding pressure ranges, load capacities and set-up requirements. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Read all **CAUTIONS, WARNINGS, and INSTRUCTIONS** included with, or attached to, each product. Follow all safety precautions to avoid personal injury or property damage during the system operation. **GB ELECTRICAL CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE, OR INCORRECT PRODUCT AND SYSTEM APPLICATION.** Contact GB ELECTRICAL when in doubt as to safety precautions or applications.



■ SPECIFICATIONS

| Specification | “B” Version | “E” Version |
|-----------------------------------|---|--|
| Operating | 0-10,000 psi (700 bar) maximum | |
| Electrical Power Source | 30 Amp/115 Volt Grounded single-phase, 50-60 Hz | 15 Amp/230 Volt single-phase, 50-60 Hz |
| Motor Rating | 1 1/8 HP Universal Motor, 25 Amp @ 10,000 psi (700 Bar) and 12,000 RPM operates at 60-125 Volts, 82-89 dbA | 0.84 kW Universal Motor, 12.5 Amp @ 10,000 psi (700 Bar) and 12,000 RPM operates at 115-240 Volts, 82-89 dbA |
| Flow Rate | 640 in ³ /min (10,51/min) @ 0 psi (0 bar) 60 in ³ /min (1,01/min) @ 10,000 psi (700 bar) | |
| Unloading (or Bypass) Pressure | 1600 psi | |
| Operating Oil Temperature | 150° F (65.5° C) maximum for operation below 32° (0° C), change oil to MIL-H-5606 (see page 8 for procedure) | |
| Reservoir Capacity | 1.3, 2.4, 10.4 gallon (5, 9, 20, 40 liter) | |
| Shipping Weight | 53 lbs to 165 lbs (116,6 kg to 363 kg) depending on valve and reservoir configuration | |

■ SAFETY INFORMATION

FAILURE TO COMPLY WITH WARNINGS AND CAUTIONS MAY CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

WARNING

Do not use electric pumps in an explosive atmosphere. Adhere to all local and national electrical codes.

WARNING

Do not use hoses, fittings, or couplers with pressure ratings below 10,000 psi (700 bar). Install pressure gauges in the system to monitor operating pressure.

WARNING

Titan pumps have an internal relief valve installed under the pump cover. This relief valve is factory adjusted and must not be repaired or adjusted except by qualified hydraulic technicians.

CAUTION

To help prevent pump failure, check hydraulic reservoir fluid level prior to pump operation. When gauge reads low, add oil. Always be sure cylinders are fully retracted before adding fluid to the reservoir. Use only GB Electrical hydraulic oil. Use of any other oils or fluids may void your pump warranty.

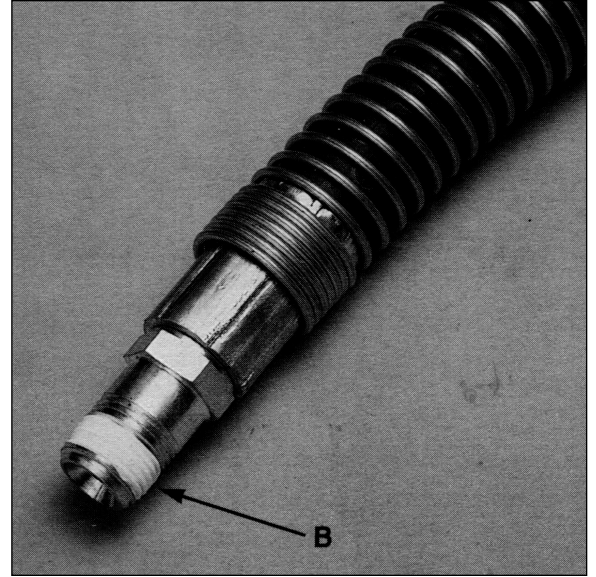
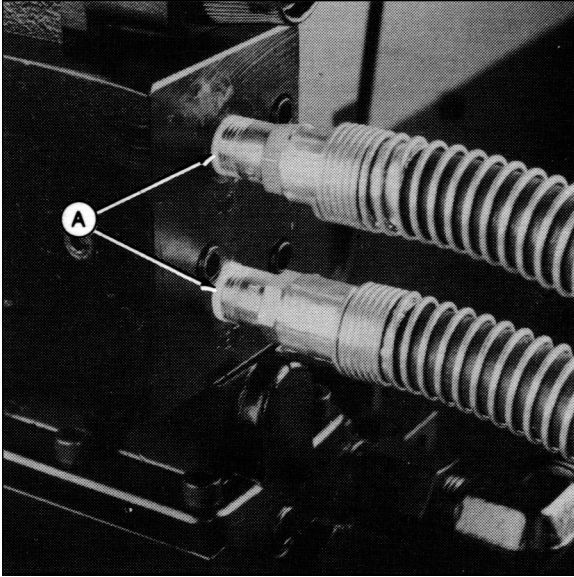
CAUTION

To prevent damage to pump electric motor, check specifications. Using incorrect power source will damage the motor.

■ INSTALLATION

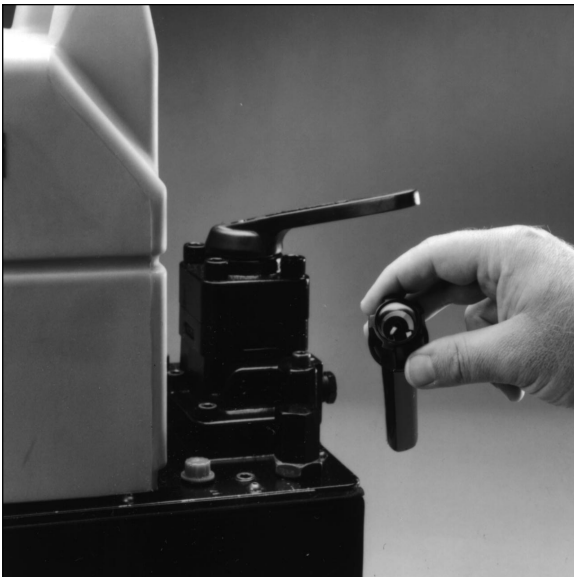
■ Attach Hydraulic Hoses

Thread hose(s) or coupler(s) into outlet port(s) of the valve (A). Use 1 1/2 wraps of teflon tape on the hose fittings, leaving the first complete thread free of tape (B). Pumps with 3-way valves have 1 outlet port; pumps with 4-way valves have 2 outlet ports. All hoses and components used with this pump must have a working pressure rating higher than, or equal to, the maximum pressure rating of the pump.



■ Install Oil Level Gauge

For shipping purposes, a plug is installed in the fill hole on the top of the reservoir. Remove this plug and install the oil level gauge that was shipped with the pump. **NEVER RUN THE PUMP WITH THE SHIPPING PLUG INSTALLED. THIS WILL CAUSE DAMAGE TO THE PUMPING MECHANISM.**

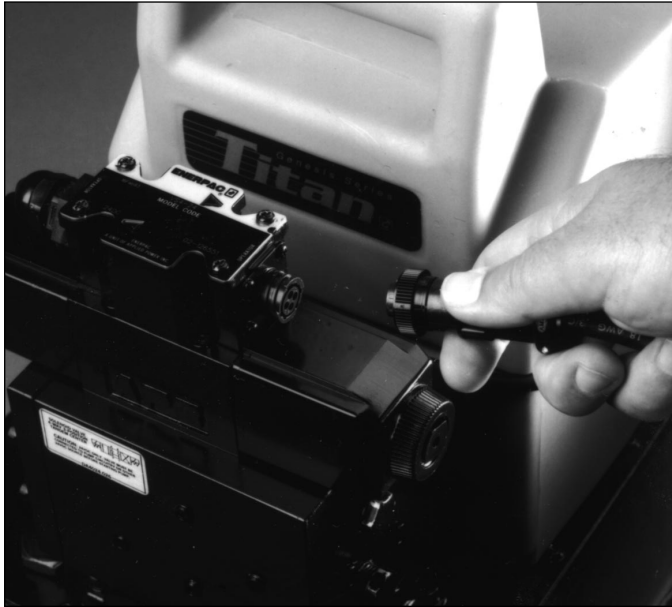


... "Installation" continued on next page

■ INSTALLATION (continued)

■ Attached Control Switch

If your pump has a solenoid valve, attach a solenoid valve pendant or foot switch to control the valve using the connector as shown.



Set the Relief Valve (if necessary)

The external relief valve is located under a hex cap on top of the pump. It is adjustable from 10,000 psi (700 bar) down to 2000 psi (140 bar). Operating pressure cannot be adjusted to above 10,000 psi (700 bar).

To get the most accurate relief valve setting, start at a lower pressure and adjust up to the desired relief valve setting.

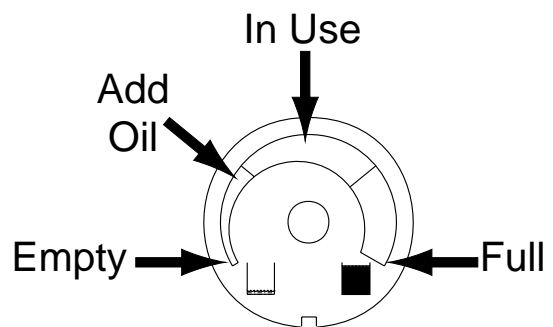
1. Install a pressure gauge in the pump outlet port.
2. Remove the hex cap covering the relief valve adjustment screw. Loosen locknut. Using an allen wrench, turn the adjustment screw counter-clockwise one full turn.
3. Turn the pump on and run the pump motor, watching the pressure gauge reading. Stop the pump and adjust the relief setting until it is at the desired pressure.
4. Verify the setting by running the pump several times.
5. Tighten lock nut to secure setting on relief valve.
6. Replace the hex cap to cover the adjusting screw.

■ Check Oil Level

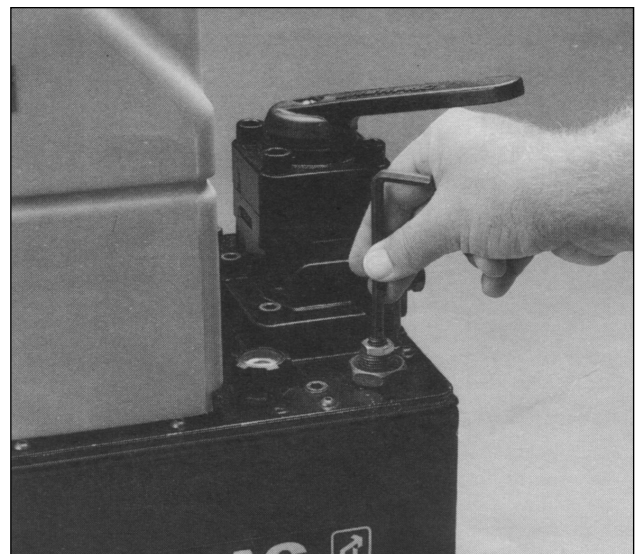
Check the oil level prior to start-up and add GB Electrical Hydraulic Oil, If necessary. Remove the oil level gauge and add oil through the opening in the top of the reservoir.

IMPORTANT: Add oil only when all system components are in the fully retracted position. If oil is added when plungers are advanced, there will be more oil in the system than the pump can hold. When cylinders are retracted, oil in the hoses and cylinders will be returned and the reservoir will be over filled.

OIL LEVEL GAUGE



Be sure to monitor oil level while pump is running. If the oil level is full before running the pump, but becomes low during operation, the reservoir is too small for your application.



■ OPERATION

Always check oil level gauge before operating pump. See instructions on Page 4. Refer to section below or on page 6 that applies to your pump. Operation is explained for manual valves; dump, dump and hold, and jog pendants; and solenoid valve pendants and foot switches.

■ Manual Valves

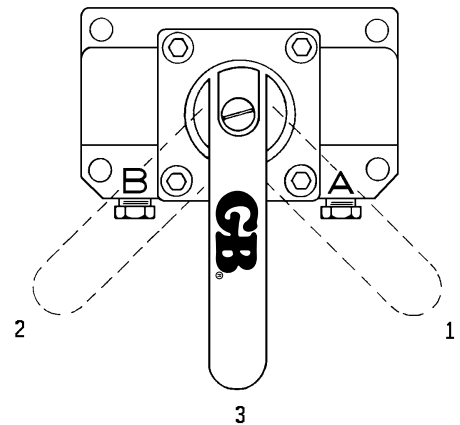
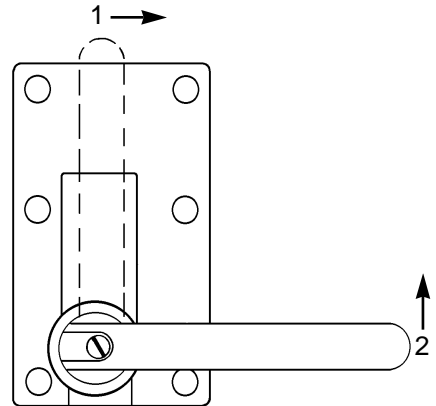
Use the pump mounted manual valve to control the direction of the oil flow. Use 2 and 3-way valves with single-acting, and 4-way valves with double-acting cylinders or tools. Put valve in the neutral or retract position before starting pump. See diagrams at right for valve positions.

VM-2 (3-way) Valves:

1. advance
2. retract

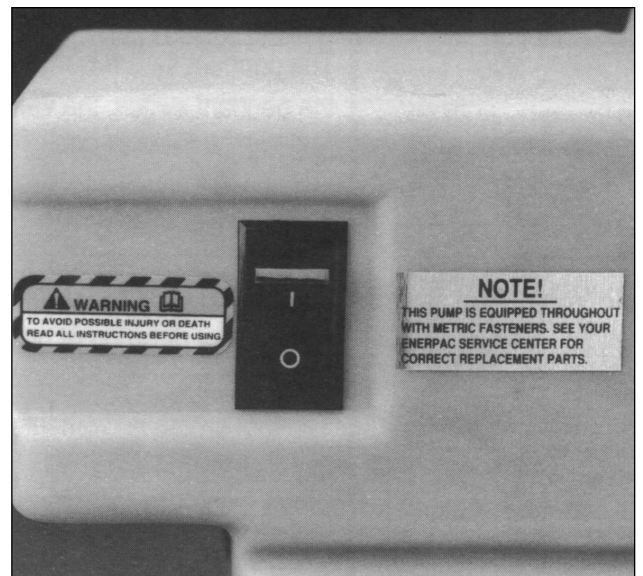
VM-3, VM-3L (3-way), VM-4, VM-4L (4-way) Valves:

1. advance
2. retract
3. neutral

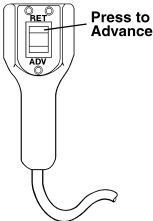
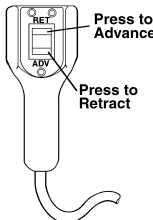
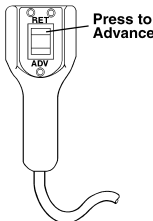
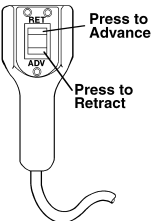
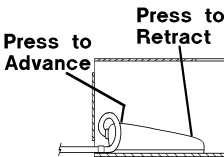


■ On/Off Switch Operation

The on/off switch is located on the side of the pump shroud. For dump and jog versions, the motor is started by the pendant switch. See page 6 for more operating information.



■ OPERATION (continued)

| Control Type | How It Works |
|--|--|
| Manual Valve (see page 5) | <p>The shroud On/Off switch activates the motor and pump. Oil will flow according to position of manual valve. See page 5 for valve positions.</p> |
| Dump Pendant  | <p>The shroud On/Off switch activates the pendant. The pendant controls the motor and the dump valve.</p> <p>The pendant switch is momentary. Pressing “Adv” will start the motor and shift the valve causing the cylinder to advance. When the pendant switch is released, the motor will stop, the dump valve will shift to retract, and the cylinder will retract.</p> |
| Dump and Hold Pendant  | <p>The shroud On/Off switch activates the pendant. The pendant controls the motor and the dump valve.</p> <p>The pendant switch is momentary. Pressing “Adv” will start the motor and the cylinder will advance. When the switch is released, the motor will stop and the valve will hold the load in its current position. Pressing “Ret” will shift the valve, allowing the cylinder to retract. (The motor will not run.)</p> |
| Jog Pendant  | <p>The shroud On/Off switch activates the pendant. The pendant controls only the motor.</p> <p>The pendant switch is momentary. Pressing “Adv” will start the motor and oil will flow from the pump. The direction of oil flow is controlled by the manual valve position. (See page 5 for valve positions.) When the switch is released, the motor will stop.</p> |
| Solenoid Valve Pendant  | <p>The shroud On/Off switch activates the pendant and starts the motor. The pendant controls the direction of oil flow.</p> <p>The pendant switch is momentary. Press “Adv” to advance cylinder. When you release the pendant switch, the valve will shift to the neutral position. Press “Ret” to retract the cylinder.</p> |
| Solenoid Valve Foot Switch  | <p>The shroud On/Off switch activates the foot switch and starts the motor. The foot switch controls the direction of oil flow.</p> <p>The foot switch is momentary. Press “Adv” to advance cylinder. When you release the foot switch, the valve will shift to the neutral position. Press “Ret” to retract the cylinder.</p> |

■ TROUBLESHOOTING

Only qualified hydraulic technicians should service the pump or system components. A system failure may or may not be the result of a pump malfunction. To determine the cause of the problem, evaluate the complete system as part of the diagnostic procedure.

The following information is intended to be used only as an aid in determining if a problem exists. For repair service, contact your local service center. For the location of an Authorized GB Electrical Service Center in your area, use phone number listed on back cover.

| Symptom | Possible Cause | Solution |
|---|--|--|
| Pump will not start | 1. no power 2. wrong voltage | 1. check electrical power source 2. see voltage specifications on page 2 |
| Motor stalls under load | 1. low voltage | 1. check electrical power source; see voltage specifications on page 2 2. use shorter power cord |
| Electrical valve will not operate | 1. no power or wrong voltage 2. valve out of adjustment | 1. check valve power connection to pump 2. contact your local Authorized GB Service Center |
| Pumps fails to build pressure | 1. external leak in system 2. internal leak in pump 3. internal leak in valve 4. internal leak in system component | 1. trace circuit, checking all connections and components 2. contact your local Authorized GB Service Center 3. contact your local Authorized GB Service Center 4. repair or replace leaking system component |
| Pump does not reach full pressure | 1. relief valve setting too low 2. external leak in system 3. internal leak in pump 4. internal leak in valve 5. internal leak in system component | 1. reset relief valve (see page 4) 2. trace circuit, checking all connections and components 3. contact your local Authorized GB Service Center 4. contact your local Authorized GB Service Center 5. repair or replace leaking system component |
| Pump builds full pressure, but load does not move | 1. load exceeds cylinder rating 2. flow to cylinder blocked | 1. decrease load or use higher capacity (tonnage) cylinder 2. loose coupler connection; check that all couplers are completely connected and hand tightened |
| Cylinder drifts back when it should be holding load | 1. external system leak 2. internal leak in system component | 1. trace circuit, checking all connections and components 2. repair or replace leaking system component |
| Single-acting cylinder will not return | 1. no load on a "load return" cylinder 2. return flow restricted or blocked 3. return spring damaged or broken 4. valve malfunction | 1. load cylinder with enough weight to make it retract 2. loose coupler connection; check that all couplers are completely connected and hand tightened 3. test circuit using a cylinder known to work; repair or replace damaged cylinder 4. contact your local Authorized GB Service Center |
| Double-acting cylinder will not | 1. return flow restricted or blocked 2. valve malfunction | 1. loose coupler connection; check that all couplers are completely connected and hand tightened 2. contact your local Authorized GB Service Center |

■ MAINTENANCE

■ Check Oil Level

Check reservoir hydraulic oil level before every use. Remove the oil level gauge and add oil through the opening in the top of the reservoir. **IMPORTANT:** Add oil only when all system components are in the fully retracted position. If oil is added when plungers are advanced, there will be more oil in the system than the pump can hold. When cylinders are retracted, oil in the hoses and cylinders will be returned and the reservoir will be over filled.

■ Change Oil and Clean Reservoir

IMPORTANT: You will need a new reservoir gasket to reassemble the pump after changing the oil.

1. Completely drain and clean the reservoir after every 100 hours of operation. Refill with new GB Electrical hydraulic oil. If pump is used infrequently, clean the reservoir once a year.

NOTE: This procedure requires that you remove the pump from the reservoir. Work on a clean bench and use proper oil disposal methods.

2. Remove the 10 screws holding the pump to the reservoir. After these screws are removed, one of the shroud brackets will be loose. It is best to lift the pump off of the reservoir by holding the cover plate.

3. Carefully set the pump down without damaging filter screens.
4. Remove the reservoir gasket and discard it.
5. Pour all oil out of reservoir. Thoroughly clean the reservoir by wiping and rinsing with a suitable solvent.
6. Use a soft bristle brush and solvent to clean the three filter screens.
7. Reassemble the pump and reservoir, installing a new gasket.
8. Fill the reservoir with new GB Electrical hydraulic oil.

If the pump requires repair work, contact your local Authorized GB Electrical Service Center.

REPAIR AND SERVICE INSTRUCTIONS: For repair service and parts, contact your nearest GB ELECTRICAL Service Center. The GB ELECTRICAL Service Center will provide complete and prompt service on all GB ELECTRICAL products.

PARTS AND SERVICE: For quality workmanship and genuine GB ELECTRICAL parts, select an Authorized GB Service Center for your repair needs. Only repairs performed by an Authorized Service Center displaying the official GB Authorized sign are backed with full factory warranty. Contact GB Electrical (414) 352-4160 for the name of the nearest GB Authorized Service Center.

WARRANTY: GB ELECTRICAL, INC. warrants its product against defects in workmanship and materials for 1 year from date of delivery to user. Chain is not warranted. Warranty does not cover ordinary wear and tear, abuse, misuse, overloading, altered products or use of improper fluid.

WARRANTY RETURN PROCEDURE: When question of warranty claim arises, send the unit to the nearest GB Authorized Service Center for inspection, transportation prepaid. Furnish evidence of purchase date. If the claim comes under the terms of our warranty the Authorized Service Center will REPAIR OR REPLACE PARTS AFFECTED and return the unit prepaid.



GB Electrical, Inc.
An Applied Power Company

6101 N. Baker Road, Milwaukee, WI 53209
Phone: (414) 352-4160 FAX (414) 352-2377

RPS-0103 9/95