

# SAFETY INSTRUCTIONS

## P SERIES PUMP/MOTOR ASSEMBLIES

1. Follow these instructions before installation, operation or repair.
2. Gear pumps can produce high differential pressures that may cause system damage and expose personnel to hazards associated with an unintentional release of fluid. Exceeding design limits may cause pump to burst or motor to overheat.
3. Pumphead and motor/drive are designed to be operated together. Before any disassembly, disconnect power to motor and do not allow pumphead to be pressurized.
4. Do not pressurize or operate pump unless the pump/motor assembly contains a complete set of correctly installed fasteners in good condition. Each threaded hole must contain a fastener.
5. Do not operate pump/motor unless it is secured in its desired location.
6. Do not modify any part of pump/motor assembly. Modification may weaken pressure-containing parts and create hazards to personnel. Use only factory-authorized replacement or repair parts.

## P SERIES PUMPHEADS

1. Do not allow pump to be subjected to an internal pressure approaching its burst pressure of 600 psig at room temperature. Internal pressure (measured at either suction or discharge ports) should not exceed 300 psig (safety factor of 2.0). Specific codes, standards, operating practices and conditions may dictate a lower internal pressure (higher safety factor).
2. Apply a paste-type thread sealant to fittings before assembling to pump ports (1/8 NPT). The use of Teflon tape is not recommended. Tighten fittings no more than 5 total turns, and no more than 2 turns beyond finger-tight, whichever is less. The use of plastic fittings is strongly recommended to reduce the likelihood of cracked ports. Verify leak-tight installation of fluid connections prior to operation where leakage could be hazardous.
3. Do not exceed a fluid temperature of 150°F. Fluid temperatures above 100°F reduce the strength of pressure-containing parts. At 150°F pump burst pressure is 500 psig.
4. The pump should not be used where the pumped fluid causes corrosion to metal pressure-containing parts or attacks the pump seals or plastic body. These conditions will cause a significant reduction in the ability of the pump to contain pressurized fluid and may cause hazardous leakage.

## MOTOR/DRIVE ASSEMBLIES

1. In normal operation electric motors may develop surface temperatures that will burn the skin.
2. Electric motors produce waste heat that must not be allowed to accumulate in the surrounding air. Unless otherwise specified, an electric motor will operate continuously, without overheating, at its published performance limit at an ambient (air) temperature not exceeding 40°C (104°F).
3. Electric motors are not liquid tight and should not be exposed to sprays, splashes, drips or immersion, nor should they be exposed to the weather.
4. Do not block motor ventilation openings (if present). Do not allow objects to enter motor openings.
5. Motor must be disconnected from power supply immediately if any condition prevents motor rotation.

(continued from other side)

### AC MOTORS

1. AC motors must be operated only from the power source(s) (voltage and frequency) specified on the motor nameplate.
2. Connect dual voltage motors to power source according to connection diagram on motor nameplate.
3. Thermally protected motors (see motor nameplate) automatically turn themselves off when winding temperature exceeds allowable limits; however, motor will restart without warning when winding temperature drops, unless power source is disconnected from motor. Thermal overload protection must not be relied upon to control motor under any but abnormal or unexpected conditions.

### PERMANENT MAGNET (brush-type) DC (PMDC) MOTORS [including AC/DC series-wound (universal) motors\*]

#### Continuous Duty Limits

<u>Motor Model</u>	<u>Voltage (VDC)</u>	<u>Current (Amps)</u>	<u>Reference</u>
5527	0 - 130	3.1	Scott
5528	0 - 180	2.3	Scott
5734	0 - 12	1.3	Pittman
6089	0 - 12	7.5	MPO
6347*	0 - 115 VAC/DC	1.3	Bodine
6729	0 - 24	1.2	Barber-Colman
6840	0 - 24	0.7	Merkle-Korff
7428*	0 - 230 VAC/DC	0.7	Bodine
7729	0 - 24	0.7	Pittman

1. PMDC motors are designed to operate over a range of speeds by varying the input voltage; unless otherwise specified, a PMDC motor may be operated at input voltages in the range specified above.
2. Regardless of input voltage, motor current may exceed the value listed above only for intermittent duty applications. Operation with excessive motor current may result in motor overheating.
3. Continuous duty current limits for PMDC motors (above) are based upon a power supply form factor of 1.0 (ripple-free).
4. PMDC motors are not thermally protected (motor will not automatically turn itself off when overheated).

### BRUSHLESS DC (BLDC) MOTORS

#### Continuous Duty Limits

<u>Motor Model</u>	<u>Voltage (VDC)</u>	<u>Current (Amps)</u>	<u>Reference</u>
6706	10 - 28	1.5	Manger
6974	10 - 28	5.0	Fasco
7737	10 - 28	5.0	Fasco

1. BLDC motors are designed to operate over a range of speeds by varying the input voltage; do not operate motor beyond input voltage range specified above.
2. Regardless of input voltage, motor current must never exceed the value specified above; even momentary operation with excessive motor current may cause permanent damage to motor.
3. Power supply ripple and noise (peak-to-peak) must never exceed 10% of the input voltage supplied; otherwise, permanent damage to motor may result.