



OPERATING INSTRUCTIONS & PARTS MANUAL
**1-5 HP AC HYDRAULIC
 POWER UNITS**
 MODELS 10591, 10592 AND 10593

BARNES OIPM P/N _____ 2690161 _____

**READ CAREFULLY BEFORE ATTEMPTING TO ASSEMBLE, INSTALL, OPERATE OR MAINTAIN THE PRODUCT DESCRIBED. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE!
 RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.**

Description

Haldex hydraulic power units are designed specifically to operate on AC electric power. Each power unit is a custom selected assembly consisting of a high performance hydraulic pump, reservoir, motor, manifold interface block, relief valve, pressure gauge and oil level sight gauge with thermometer. They are controlled with NFPA D03 (D01) directional control valves. Manifold and valve sold separately. The power units can be coupled via suitable hydraulic lines to a wide range of operating mechanisms. They normally operate hydraulic cylinders, but can be used with any other hydraulic actuating device.

Unpacking

Check unit for any shipping damage. The contents of the carton will include (1) AC hydraulic power unit fully assembled and tested. If there is any noticeable damage, please contact the office where item was purchased.

Specifications

All units have:

- Totally enclosed fan cooled motors
- Motors have continuous horsepower ratings (see chart)
- Adjustable relief valve preset at factory
- Reservoirs plumbed for vertical mount
- 5 & 15 gallon rectangular reservoir
- 100 mesh inlet strainer

AC HYDRAULIC POWER UNIT PERFORMANCE

STOCK NO.	NOMINAL GPM	MAXIMUM OPERATING		MOTOR HP	VOLTS 60 HZ	RPM
		PSI	HP			
10591	1 1/2	2000	2	1	115/230	1725
10592	2	1500	2	3	230/460	1725
10593	3.5	2000	5	3	230/460	1725

Figure 2 — Dimensions

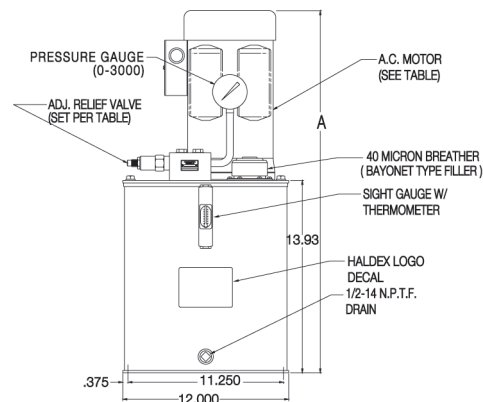
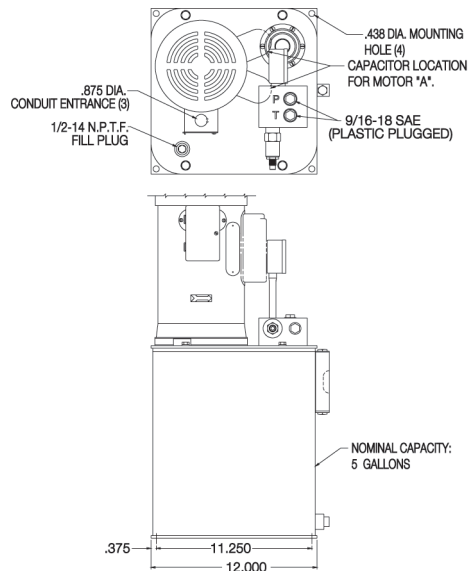
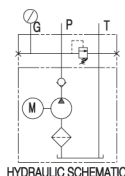
General Safety Information

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
2. For Single Phase Motors use 3-wire cords with 3-prong grounding type plugs.
3. Make certain that wire size is adequate for horsepower requirements.

NOTE: Voltage drop increases with the length of power cord. Larger wire diameter may be required.



Figure 1



General Safety Information (Continued)

4. Nameplate voltage must be available at the motor when it is operating under load. Avoid voltage drop by using adequate wiring.
5. Replace or repair damaged or worn power cord immediately.
6. The use of 3-prong single phase adapters in Canada is prohibited by the Canadian Electrical Code.
7. **DOUBLE CHECK ROTATION!** Motor rotation is clockwise facing fan end of motor.
8. On start-up, jog the motor to prime the pump to insure adequate lubrication. After inlet line is full, motor may be operated at full speed.

⚠ CAUTION**Never run the pump dry.**

9. Keep all lines as short as practical.
10. Never exceed the maximum operating pressure.
11. Do not overtighten fittings, bolts, etc., as this can damage the units.
12. Provide adequate cooling for the hydraulic oil so as not to allow oil and/or component damage due to excessive temperatures. Excessively high operating temperatures can be hazardous and may cause property damage and/or personal injury.

Installation

1. Select a good location to mount the hydraulic power unit. It should be in a clean, dry area with adequate ventilation and preferably near the electric power source.

NOTE: Although the units have totally enclosed fan cooled motors, they still need free air circulation to displace heat.

⚠ CAUTION

Avoid dusty conditions that could clog the reservoir breather.

2. This hydraulic power unit is designed for vertical mount with reservoir feet down and reservoir breather up. Choose a flat mounting surface to bolt reservoir base to. See unit dimensions for reservoir base bolt pattern.

⚠ CAUTION

The reservoir for this family of units is internally plumbed for vertical mounting as noted above. Mounting the unit in an inclined plane or any other position will greatly reduce available usable oil in the reservoir. This can cause oil foaming, erratic movement of hydraulic components, and pump failure.

⚠ CAUTION

To minimize contamination problems, do not remove plastic shipping plugs from hydraulic unit until you are ready to install hoses and fittings.

3. HYDRAULIC INSTALLATION – Make sure that work area and hydraulic components are clean and free from dirt, lint, etc.
4. Fill the hydraulic unit reservoir with a good quality automatic transmission fluid (ATF). Use a clean funnel fitted with a fine mesh wire screen.
5. Remove (2) 9/16-18 SAE #6 shipping plugs from power unit and install appropriate hoses or fittings.

⚠ CAUTION

Do not use teflon tape on NPTF Ports! This unit is equipped with both SAE O-ring and NPTF type ports.

⚠ CAUTION

Do not overtighten fittings.

6. ELECTRICAL INSTALLATION – Motor nameplate voltage must be available at the motor when it is operating. Choose a site that avoids long power cord runs. Voltage drop increases with the length of power cord. Larger wire diameter may be required.
7. When wiring the motor, follow all local electrical and safety codes as well as the National Electric Code (NEC) and Occupational Safety and Health Act (OSHA).
8. For Three Phase Motors use 4-wire cords with grounding type plugs.

▲ WARNING ▲

REPLACE OR REPAIR DAMAGED OR WORN POWER CORDS IMMEDIATELY.

▲ WARNING ▲

DO NOT OPERATE UNITS WITHOUT PROPER GROUNDING.

9. DOUBLE CHECK ROTATION! Motor rotation is clockwise facing fan end of motor.

▲ CAUTION

Do not run hydraulic unit dry; Severe pump damage may result.

Operation**▲ CAUTION****Prior to operation:**

1. Double check all hydraulic and electric connections.
2. Confirm that reservoir is filled with hydraulic fluid.
3. Put all equipment guards in place.
4. Clear all persons from work area.
5. Check for loose tools, equipment, or anything that might interfere with operation of equipment.

OPERATION:

1. *Start Up* – When initially starting unit up, be sure to jog the unit (intermittently run unit) several times. This will prime the pump and fill the hydraulic lines.

▲ CAUTION

Check motor fan rotation at this time to avoid damaging pump or pump shaft seal.

▲ WARNING ▲

IF MOTOR IS RUNNING WRONG ROTATION, SHUT OFF ELECTRICAL POWER BEFORE ATTEMPTING TO CHECK OUT MOTOR WIRING!

2. After hydraulic lines have been filled, check reservoir for sufficient oil level. Replenish oil level if necessary.

▲ CAUTION

Do not overfill.

Maintenance

1. Keep the reservoir filled with hydraulic fluid. Use a good quality automatic transmission fluid (ATF). To fill the reservoir with clean oil, use a clean funnel fitted with a fine mesh wire screen. Do not use a cloth strainer. Most pump/fluid motor failures, valve malfunctions, and short unit life can be traced directly or indirectly to dirt or other foreign materials (water, chips, lint, etc.) entering or already in the hydraulic system.
2. Make frequent inspection of hydraulic fluid and change if contaminated.
3. Regularly inspect hydraulic hoses and fittings for wear or leakage.
4. Keep the unit clear of dirt and foreign materials.
5. Keep electrical connections clean.

Troubleshooting Chart

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Motor won't start	<ol style="list-style-type: none"> 1. Loose connection 2. Circuit breaker tripped 3. Voltage drop 4. Seized pump 	<ol style="list-style-type: none"> 1. Check wiring 2. Reset circuit breaker 3. Use heavier gauge wire 4. Replace pump
Will not pump oil (Motor runs but cylinder does not move, or moves slowly)	<ol style="list-style-type: none"> 1. No oil in reservoir 2. Motor rotation 3. Oil level low 4. Suction strainer is clogged 5. Cylinder piston seals are cut or worn out 6. Reservoir breather is dirty or clogged 7. Pump to motor coupling disengaged 	<ol style="list-style-type: none"> 1. Check oil level, refill 2. Rewire 3. Add oil as needed 4. Clean suction strainer 5. Replace cylinder or repair seals 6. Clean reservoir breather and reinstall 7. Inspect coupling for proper engagement
Pump motor unit is noisy	<ol style="list-style-type: none"> 1. Low oil level 2. Air in system 3. Suction strainer or inlet filter is clogged 	<ol style="list-style-type: none"> 1. Add oil as needed 2. Bleed air from highest fitting in system by loosening fitting very slightly and operating unit until bubbling of air stops, then tighten 3. Clean suction strainer or inlet filter
Unit does not develop full pressure	<ol style="list-style-type: none"> 1. System relief valve set too low, or leaking 2. Pump worn out 3. Air in system 4. Oil temperature is too high 	<ol style="list-style-type: none"> 1. Check system relief valve for proper setting with pressure gauge in outlet line 2. Replace worn parts or pump 3. Bleed air from systems 4. Let oil cool below 160°F