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ENERPAC
A UNIT OF APPLIED POWER INC.

Instruction Sheet

Portable Electric Torque Wrench Pumps

PME10022 / PME10027 / PME10422 / PME10427

L- 1750 Rev. A 03/94

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 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. To avoid personal injury or property damage during the system operation, read and follow all CAUTIONS, WARNINGS, and INSTRUCTIONS included with, or attached to, each product. ENERPAC CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE, OR INCORRECT PRODUCT AND SYSTEM APPLICATION.

Contact Enerpac when in doubt as to safety precautions or applications.

DESCRIPTION

PME10022 / PME10027

- For single-acting torque wrenches.
- Remote pendant operation.
- Glycerine-filled pressure gauge.
- Adjustable pressure relief valve.

PME10422 / PME10427

- For double-acting torque wrenches.
- Remote pendant operation.
- Time out circuit stops motor after 15 seconds of idles to prevent heat build up.
- Glycerine-filled pressure gauge.
- Adjustable pressure relief valve.

⚠ WARNING

Use only with equipment designed for 800 BAR/11,60(

Equipment with inadequate pressure rating can fail and cause p

B529/20422

Single-Acting Pump (left) and Double-Acting Pump (rigl Hydr.Aggregat 230V/800bar Enerpac

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ENERPAC
WORLD STANDARD GUARANTEE

All Enerpac products are guaranteed against defects in workmanship and materials for as long as you own them. Under this guarantee, free repair or replacement will be made to your satisfaction.

For prompt service, contact your Authorized Enerpac Service Center or call toll free:

In U.S.A. 1-800-558-0530
In Canada 1-800-426-2284

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DESCRIPTION (continued)

SPECIFICATIONS	PUMPS FOR SINGLE-ACTING TORQUE WRENCHES	
Model	**PME10022**	**PME10027**
Electrical Power Source	220V, 1-phase, 50/60 Hz	115V, 1-phase, 50/60 Hz
Motor Rating	0.37 kW Universal, 4 Amps @10,000 PSI (700 Bar) / 85-89 dBA	½ HP Universal, 9 Amps @10,000 PSI (700 Bar) / 85-89 dBA
Shipping Weight	19 kg (42 lbs) includes packaging	
Operating Pressure	Up to 800 Bar/11,600 PSI	
Flow vs. Pressure	3.3 L/min @0-50 Bar / 0.3 L/min @800 Bar 200 In^3/min @0-700 PSI / 18 In^3/min @11,600 PSI	
Max. Temperature of Oil	65° C (150° F)	
Reservoir Capacity		

SPECIFICATIONS	PUMPS FOR DOUBLE-ACTING TORQUE WRENCHES	
Model	**PME10422**	**PME10427**
Electrical Power Source	220V, 1-phase, 50/60 Hz	115V, 1-phase, 50/60 Hz
Motor Rating	0.37 kW Universal, 4 Amps @10,000 PSI (700 Bar) / 85-89 dBA	½ HP Universal, 9 Amps @10,000 PSI (700 Bar) / 85-89 dBA
Shipping Weight	22 kg (48 lbs) includes packaging	
Operating Pressure	Up to 800 Bar/11,600 PSI	
Flow vs. Pressure	3.3 L/min @0-50 Bar / 0.3 L/min @800 Bar 200 In^3/min @0-700 PSI / 18 In^3/min @11,600 PSI	
Max. Temperature of Oil	65° C (150° F)	
Reservoir Capacity	2.8 L (0.75 Gal) total / 1.9 L (0.50 Gal) usable	

⚠ WARNING

To avoid personal injury, do not use electric pumps in an explosive atmosphere. Adhere to all local and national electrical codes.

CAUTION

To help prevent pump failure, check reservoir fluid level prior to pump operation. Add oil to maintain level 1 inch below fill plug opening. Use only Enerpac hydraulic oil. Use of any other oils or fluids will void the warranty on your pump.

⚠ WARNING

To avoid injuries, do not use hoses, fittings, or couplers with pressure ratings below 800 Bar /11,600 PSI.

CAUTION

To prevent damage to pump electric motor, check specifications above and motor data plate. Use of incorrect power source will damage the motor.

FAILURE TO COMPLY WITH THE WARNINGS AND CAUTIONS COULD CAUSE PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

TROUBLESHOOTING GUIDE

Problem	Probable Cause	Remedy
Motor current draw is excessive.	Defective motor.	Remove the motor. Test and replace if necessary.
	By-pass valve malfunction.	Inspect and test the by-pass valve if required. Valve is preset. If damaged or incorrectly set, replace.
	Damaged or worn piston blocks.	Test and inspect the piston blocks. Replace if necessary.
Noisy pump operation.	Piston block piston sticking. Springs or balls damaged, or missing springs.	Remove the piston blocks. Inspect and replace as required. Each piston block is non-serviceable.
Pump fails to maintain pressure.	Oil leaking from one or more components within the reservoir.	Remove the pump from the reservoir and perform the back pressure test. Contact Enerpac for test procedure.
Low oil output.	Pump component parts leaking.	Perform the back pressure test to isolate leaks.
	By-pass valve may be malfunctioning.	Test and inspect by-pass valve. Replace and set if necessary.
	Oil intake screens on piston blocks may be clogged with debris.	Inspect intake screens. Flush all components of contamination. Replace damaged components.
	Low oil level.	Fill reservoir to proper level.
Pump builds pressure slowly or erratically.	Internal leakage in valve.	Disassemble valve and replace worn or failed parts.

If your pump requires repair work,
contact your Authorized Enerpac Service Center

MAINTENANCE

Adding Oil to the Pump

Check reservoir hydraulic oil level every 40 hours of operation. Add Enerpac hydraulic oil when necessary to bring oil level up to 1 inch below the vent/fill opening.

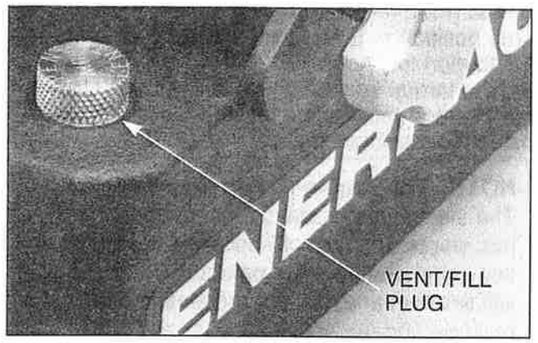

Figure 6 - Vent/Fill Plug

Changing the Oil

Completely drain the reservoir after every 100 hours of operation. If pump is operated in very dusty areas, drain and refill after 50 hours of operation. If pump is operated at high temperatures, oil must be changed more frequently.

1. Remove the vent/fill plug from reservoir.
2. Tip the pump until all old oil has drained out.
3. Add new Enerpac hydraulic oil through vent/fill opening until the oil level is 1 inch below the vent/fill opening.
4. Replace the fill plug.
5. DISPOSE OF USED OIL PROPERLY.

Cleaning the Reservoir

The reservoir can be removed for cleaning. If the pump is used in a dusty environment, the reservoir should be cleaned once a year. Install a new gasket when you clean the reservoir.

1. Remove vent/fill plug from reservoir.
2. Tip the pump until all old oil has drained out.
3. DISPOSE OF USED OIL PROPERLY.
4. You will need to remove the yellow shroud to get at the screws that hold the pump to the reservoir. Use an Allen wrench to remove the six screws securing shroud to the reservoir.
5. Disconnect wire(s) from solenoid valve. Mark wires before disconnecting from 4-way valve.
6. Lift shroud from reservoir. The electric motor is wrapped in foam to help keep it cool and quiet. DO NOT remove the foam insulation. Use care to avoid damaging wires or pulling wire connections off terminals.
7. Remove 8 screws holding pump to reservoir.
8. Lift pump from reservoir using care to avoid damaging pick-up screens.
9. Remove gasket and discard.
10. Thoroughly clean the reservoir with solvent. Never use water.
11. Use a soft bristle brush to clean intake screens. Rinse with solvent.
12. Install a new gasket.
13. Secure pump to reservoir. Torque bolts to 36 - 42 in-lbs. [4,1 - 4,7 Nm].
14. Place shroud over motor with shroud handle facing valve side of pump.
15. Install the six mounting screws.
16. Reconnect wire(s) to solenoid valve.
17. Fill reservoir with new Enerpac hydraulic oil until oil level is 1 inch below the vent/fill opening. Reservoir capacity is 0.75 gallon (2.8 liters).

INSTALLATION

1. Check oil level in reservoir. Oil level should be 1 inch below vent/fill plug opening. See page 6 for filling instructions.
2. Vent reservoir by turning vent/fill plug 1 to 2 turns counter-clockwise from fully closed position.

CAUTION

Reservoir must be vented whenever pump is running. If not, vacuum may develop in reservoir preventing the flow of oil through the pump.

3. Be sure electrical power source is the correct one for your pump. See page 2 for electrical power source specification.
4. Loosen lock nut and back out (turn counter-clockwise) relief valve to prevent unintended pressure build-up. No tools are needed to adjust relief valve. See Figure 1.

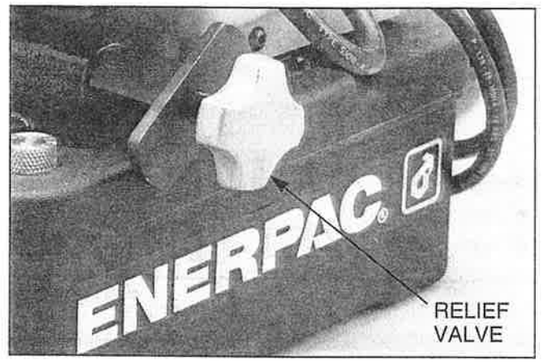

Figure 1 - Pump Relief Valve

Hose Connections for Single-Acting

1. Couple hose to pump outlet shown in Figure 2. BE SURE to use hose marked "ENERPAC 800 SERIES - 800 BAR/11,600 PSI MAX".
2. Connect other end of hose to coupler on wrench as shown in Figure 4 on page 4.

Hose Connections for Double-Acting

1. Couple hoses to pump outlet manifold shown in Figure 3. BE SURE to use hose marked "ENERPAC 800 SERIES - 800 BAR/11,600 PSI MAX".

   "A" port is for advancing and "B" port is for retracting the piston in the torque wrench. Pumps are supplied with the specified coupling halves already connected to the pump ports to prevent incorrect coupling of hoses to wrench.

2. Couple hoses to torque wrench as shown in Figure 4 on page 4. When using the Enerpac pump and torque wrench combination, Series 800 hoses and couplers are designed so that the pump advance port can only be connected to the wrench advance port, and the pump retract port can only be connected to the wrench retract port.

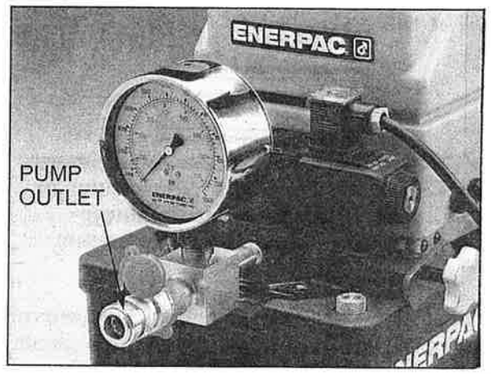

Figure 2 - Pump Outlet

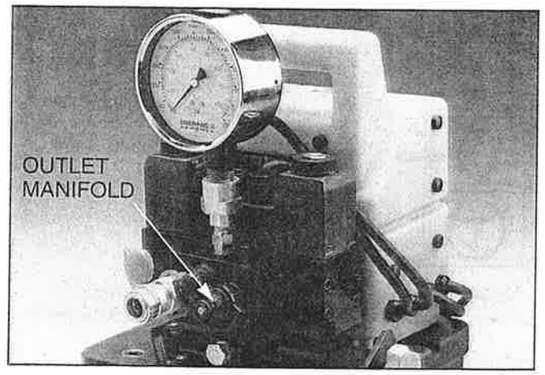

Figure 3 - Pump Outlet Manifold

INSTALLATION (continued)

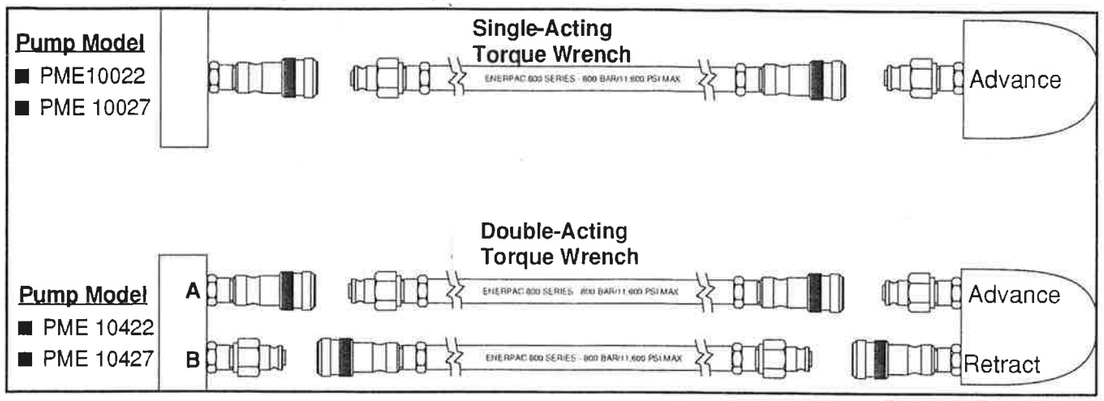

Figure 4 - Coupling Diagram

OPERATION

When possible, a single user should operate the torque wrench and pump. This can prevent accidental activation of the pump while the operator is positioning the wrench.

1. Check all system fittings and connections to be sure they are tight and leak free.
2. Check oil level in reservoir. Oil level should be 1 inch below vent/fill plug opening. See page 6 for filling instructions.

CAUTION

Operating pump without a sufficient amount of oil will damage pump. Add oil only when system components are retracted or system will contain more oil than pump reservoir can hold.

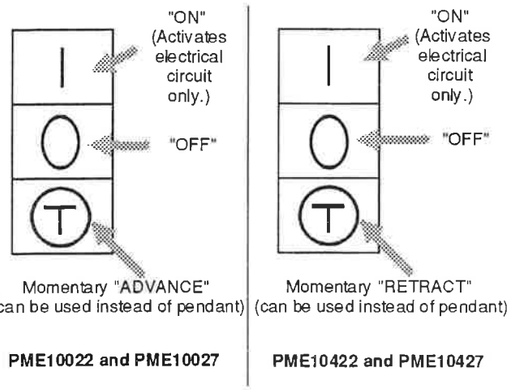

Figure 5 - Pump Switch Positions

3. Vent reservoir by turning vent/fill plug 1 to 2 turns counter-clockwise from fully closed position.

CAUTION

Reservoir must be vented whenever pump is running. If not, vacuum may develop in reservoir preventing the flow of oil through the pump.

4. Be sure the pump switch is "OFF". See Fig. 5.
5. Plug power cord into outlet. Use correct power source. See page 2 for specifications.

   Keep power cords short to avoid power losses. The pump motor may function at lower voltage, but motor speed and oil flow will be reduced.

CAUTION

DO NOT attempt to operate pump on less than 95 volts (190 volts for 220 volt models). Lower voltages will cause pump malfunctions and damage the motor.

6. Press "I" on the pump switch to turn power on. Pressing the "I" activates the electrical circuit, but does not turn the pump motor on. The pump motor is activated by the pendant switch.

OPERATION (continued)

WARNING

Attempting to couple a hose to the pump or torque wrench while coupler is under pressure can result in personal injury or fluid leakage.

WARNING

To ensure proper operation, avoid kinking or tightly bending hoses. If hose becomes kinked or otherwise damaged, it MUST BE replaced. Damaged hoses may rupture at high pressure causing personal injury.

Pendant Operation

Pendants supplied with the Single-Acting Pumps (PME10022 and PME 10027) have a momentary pushbutton for "Advance". The torque wrench piston will "Retract" after the "Advance" button is released.

Pendants supplied with the Double-Acting Pumps (PME10422 and PME 10427) have a three position switch. Press bottom momentary pushbutton for "Advance". Release "Advance" and the torque wrench piston will retract. Use the "Retract" pushbutton if you need to start the unit in the retract mode.

NOTE: For Double-Acting Pumps
The electric motor stays running after pump has stopped. Within 15 seconds of your last command from the pendant, the motor will time-out and turn off, preventing heat build-up and unnecessary wear and tear.

Air Removal

When the wrench is first connected to the pump, air will be trapped in the components. To ensure smooth and safe operation, remove air by cycling wrench several times without load. Cycle until wrench advances and retracts without hesitation.

CAUTION

DO NOT exceed maximum rated pressure of torque wrench. See wrench nameplate for rating. Watch pressure gauge.

CAUTION

Check oil level after removing air. Operating pump without a sufficient amount of oil will damage pump.

NOTE: Perform "Air Removal" and "Relief Valve Adjustment" :

1. during initial operation or start-up
2. when connecting a different wrench to the pump
3. when changing torque value (relief valve adjustment only)

Pressure (Torque) Setting

WARNING

Make these adjustments BEFORE putting torque wrench on nut or bolt head. The pump pressure setting may be above the pressure needed to provide the required torque for your application. Exceeding required torque will cause equipment damage and may lead to serious personal injury.

1. See torque wrench instructions for amount of pressure required to produce desired torque.
2. Loosen lock nut and back out relief valve to prevent unintended pressure build-up. See Figure 1 on page 3 .
3. Turn pump on. Press and hold the "Advance" pushbutton, and read pressure gauge.
4. While holding the push button, turn relief valve in (clockwise) to increase pressure or out (counter-clockwise) to decrease maximum pressure. Repeat until correct pressure is obtained.
5. Tighten lock nut on relief valve to maintain setting.
6. Run pump several times to test this pressure setting.

REFER TO TORQUE WRENCH INSTRUCTIONS FOR WRENCH OPERATING PROCEDURE.