



Operation and Maintenance Manual

Enerpac LUBP Lightweight Electric Torque Pump

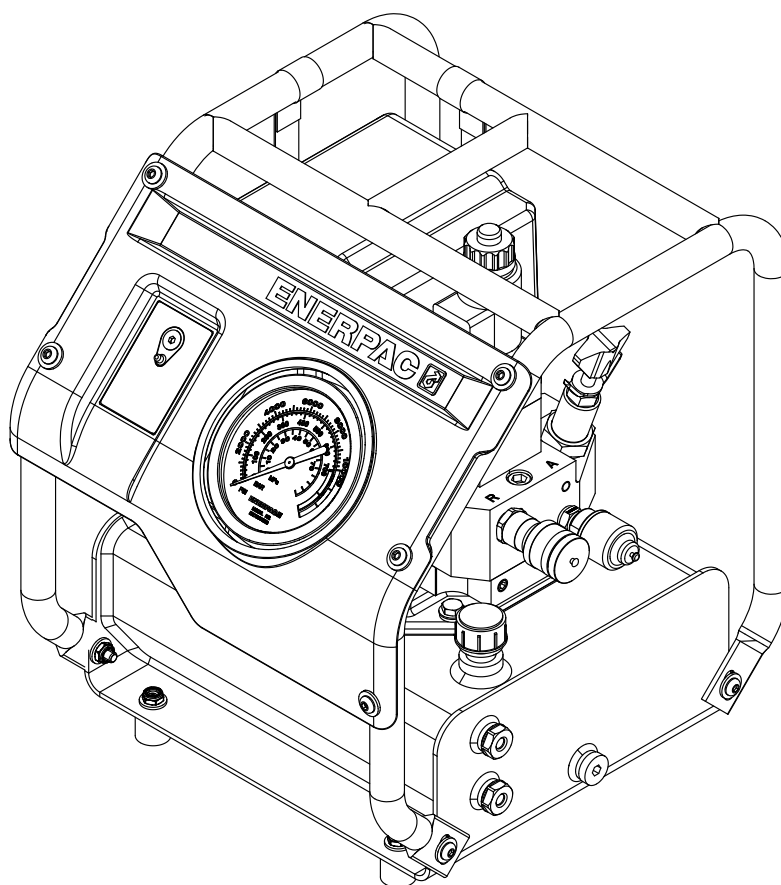
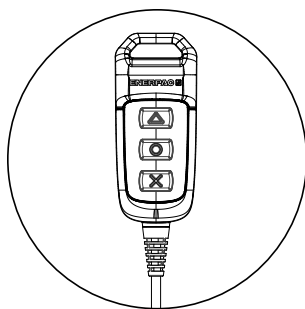
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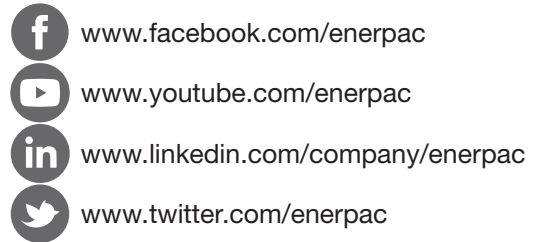
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To reduce the risk of injury, users must read and understand this document before use.

ABOUT US

Enerpac is a global market leader in high pressure hydraulic tools, controlled force products, portable machining, on-site services and solutions for precise positioning of heavy loads. As a leading innovator with a 110-year legacy, Enerpac has helped move and maintain some of the largest structures on earth. When safety and precision matters, elite professionals in industries such as aerospace, infrastructure, manufacturing, mining, oil & gas and power generation rely on Enerpac for quality tools, services and solutions. For additional information, visit www.enerpac.com.



WARRANTY

Refer to the Enerpac Global Warranty document for terms and conditions of the product warranty. Such warranty information can be found at www.enerpac.com.

NAMEPLATE



AVAILABLE LANGUAGES

L4991 is available in the following languages, visit www.enerpac.com for a copy.

- Weitere Sprachen finden Sie unter www.enerpac.com.
- Para otros idiomas visite www.enerpac.com.
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- Pour toutes les autres langues, rendez-vous sur www.enerpac.com.
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- 如需其他语言, 请前往 www.enerpac.com.

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1. Safety

Read all instructions carefully. Follow all recommended safety precautions to avoid personal injury as well as damage to the product and / or damage to other property. Enerpac cannot be responsible for any damage or injury from unsafe use, lack of maintenance, or incorrect operation. Do not remove warning labels, tags, or decals. In the event that any questions or concerns arise, contact Enerpac or a local Enerpac distributor for clarification.

Save these instructions for future use.

If you have never been trained on high-pressure hydraulic safety, consult your distributor or service center for information about Enerpac Hydraulic Safety Courses.

This manual follows a system of safety alert symbols, signals, words, and safety messages to warn the user of specific hazards. Failure to comply with these warnings could result in death or serious personal injury, as well as damage to the equipment or other property.



The Safety Alert Symbol appears throughout this manual. It is used to alert you to potential physical injury hazards. Pay close attention to Safety Alert Symbols and obey all safety messages that follow this symbol to avoid the possibility of death or serious injury.

Safety Alert Symbols are used in conjunction with certain Signal Words that call attention to safety messages or property damage messages and designate a degree or level of hazard seriousness. The Signal Words used in this manual are DANGER, WARNING, CAUTION, and NOTICE.

⚠ DANGER Indicates a hazardous situation that, if not avoided, will result in death or serious personal injury.

⚠ WARNING Indicates a hazardous situation that, if not avoided, could result in death or serious personal injury.

⚠ CAUTION Indicates a hazardous situation that, if not avoided, could result in minor or moderate personal injury.

NOTICE Indicates information considered important, but not hazard related (e.g. messages related to property damage). Please note that the Safety Alert Symbol will not be used with the signal word.

1.1 Safety Precautions



Failure to observe and comply with the following precautions could result in death or serious personal injury. Property damage could also occur.

- Read and completely understand the safety precautions and instructions in this manual before operating the pump or preparing it for use. Always follow all safety precautions and instructions, including those that are contained within the procedures of this manual.
- Operating procedures will vary, depending on the system arrangement. Always read, follow, and completely understand all manufacturer's instructions when operating the powerpack and all other devices used with it. Follow all safety precautions contained in the manufacturer's manuals.
- Always wear appropriate personal protective equipment (P.P.E.) when operating hydraulic equipment. Be sure to wear eye protection, work gloves and protective clothing. Use of additional P.P.E. safety items such as dust mask, non-skid safety shoes, hard hat, and hearing protection (used as appropriate for the conditions) will reduce the chance of personal injuries. The use of these items may also be required by local regulations or laws.
- Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin. If oil is injected under the skin, see a doctor immediately.
- Do not pressurize disconnected couplers.
- Use hydraulic torque wrench only in a coupled system. Never use a torque wrench with uncoupled couplers.
- Do not remove or disable the pump relief valve.
- Never set a relief valve to a higher pressure than the maximum rated pressure of the pump and torque wrench. If ratings are different, relief valve setting should not exceed the setting of the lowest rated component (pump or torque wrench). Higher settings may result in equipment damage and/or personal injury.
- Ensure all hydraulic components (torque wrench, hoses, fittings, couplers, etc.) are rated to a safe working pressure of 10,000 psi [700 bar].
- Always perform a visual inspection of the equipment before placing it into operation. If any problems are found, do not use it. Have the equipment repaired and tested by an Enerpac Authorized Service Center before it is returned to service.
- Allow only trained and experienced personnel to supervise and perform procedures.

- To minimize risk of personal injury keep hands and feet away from the equipment and workpiece during operation.
- Always be certain that hydraulic pressure is fully relieved and that the load is fully removed from the torque wrench(es) before disconnecting hydraulic hoses, loosening hydraulic fittings, or performing any torque wrench disassembly or repair procedures.
- Do not use electric pumps in an explosive atmosphere. Adhere to all local and national electrical codes. A qualified electrician must do installation and modification.
- Wear hearing protection. Sound level from motor may exceed 85 db(A).
- Be certain that hydraulic circuit is at zero (0) pressure before couplers are disconnected.
- On pumps with user-calibrated gauges, check the date of the calibration certification. If the recalibration date has passed, the gauge must be re-calibrated.
- These pumps have internal factory adjusted relief valves, which must not be repaired or adjusted except by an Authorized Enerpac Service Center.
- To prevent damage to pump electric motor, check specifications. Use of incorrect power source will damage the motor.

CAUTION

Failure to observe and comply with the following precautions could result in minor or moderate personal injury. Property damage could also occur.

- Be careful to avoid damaging hydraulic hoses. Avoid sharp bends and kinks when routing hydraulic hoses. Do not exceed the minimum bend radius specified by the hose manufacturer. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose, leading to premature hose failure.
- Do not drop heavy objects on hoses. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.
- Do not lift hydraulic equipment by the hoses or couplers. Use only the designated carrying handles or lifting points.
- Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings.
- For optimum performance, do not expose hydraulic equipment to temperatures of 150°F [65°C] or higher. Protect all hydraulic equipment from weld spatter.
- To prevent damage to pump electric motor, check specifications. Use of incorrect power source will damage the motor

NOTICE

Failure to observe and comply with the following precautions could result in property damage and/or void the product warranty.

- Immediately replace worn or damaged parts with genuine Enerpac parts. Enerpac parts are designed to fit properly and to withstand high loads. Non-Enerpac parts may break or cause the product to malfunction.
- Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Enerpac Authorized Service Center in your area.
- To help ensure proper operation and best performance, use of Enerpac oil is strongly recommended.

1.2 Electrical Safety Precautions

1.2.1 Avoiding Electrical Shock

WARNING



Risk of electric shock! Failure to observe the following instructions and precautions may result in serious personal injury or death.

- Connect the pump power cord only to a grounded electrical outlet. Use only a power cord with a ground pin.
- Unplug pump power cord from outlet before performing cleaning, maintenance or repairs.

1.2.2 Electrical Safety

WARNING

Failure to observe and comply with the following precautions may result in death or serious personal injury. Property damage could also occur.

- High voltage is present inside the pump even when motor is off. Before opening the pump housing or performing any maintenance or repairs, be sure that the pump power cord is disconnected from the electrical outlet or other electrical power source (refer to additional safety information in Section 1.2.6 of this manual).
- Always be certain that the pump is stopped and disconnected from AC power supply before performing any inspection, maintenance or repair procedures.
- Do not leave the pump unattended in the workplace when connected to AC power supply. Take all reasonable precautions to avoid unauthorized use.
- Take precautions so that the pump is not switched on accidentally.
- If it is not possible to unplug the pump power cord from the AC power outlet, the power must be turned off and locked out at the AC power supply.
- Always disconnect the pump from AC power supply before transporting it.

- Do not use the pump if it cannot be switched on and off using the pendant buttons. Pump must be repaired before use.
- Be sure the pump shroud air vents are unobstructed and free of dirt or dust.
- Do not service or clean the pump while the pump is operating or if pump is idle, but is connected to AC power supply.
- Keep the pump out of the reach of children. Do not allow inexperienced users or users who have not read the instructions to operate them.

1.2.3 Use and Care

WARNING

Failure to observe the following instructions and precautions may result in serious personal injury or death.

- Do not service or clean the pump while it is operating or if it is connected to AC power supply.
- Store the pump indoors. Keep in a secured area to prevent use by unauthorized personnel.
- Do not clean the pump with a water spray or the like.
- Do not operate the pump with a damaged cord or plug, or after the pump malfunctions or is dropped or damaged in any manner. Return the pump to the nearest Simplex authorized service center for examination, repair, or electrical or mechanical adjustment.

1.2.4 Grounding Instructions

WARNING

Failure to observe the following instructions and precautions may result in serious personal injury or death.

- The pump must be properly grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. The pump is equipped with a cord having an equipment grounding conductor.
- A grounding plug is included with the cord. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.
- Improper connection of the pump grounding conductor can result in electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the pump grounding conductor.
- If the cord and/or plug are damaged, do not connect the pump to a live electrical outlet. Repair or replace the damaged items as required and be sure the grounding conductor is properly wired before reconnecting the pump to the outlet. Consult a qualified electrician if grounding conductor wiring procedures are not completely understood or if there is any doubt as to whether the pump is properly grounded.

- Do not modify the plug provided with the pump. If the plug will not fit in the outlet, have a proper outlet installed by a qualified electrician.
- A qualified electrician should be consulted if there is any doubt as to whether an outlet box is properly grounded.
- The pump is equipped with an electric power cord and plug specific to its rated single-phase voltage. No adapter should be used with the plug.
- If the pump must be reconnected for use on a different type of electric circuit, the reconnection should be made by a qualified electrician. After the reconnection, the pump should comply with all local codes and ordinances.

1.2.5 Use of Extension Cords

WARNING

Failure to observe the following instructions and precautions may result in serious personal injury or death.

- Use the proper size extension cord with the pump power cord when use of an extension cord is necessary. A qualified electrician should be consulted to help specify and select the proper size extension cord. The marked electrical rating of the extension cord should be at least as great as the electrical rating of the pump.
- The extension cord should be a grounding-type 3-wire cord for single-phase power.
- A long extension cord should be arranged so that it will not drape over any working area where it can be tripped over, snagged, or pulled on unintentionally.
- If the pump is to be operated outdoors and an extension cord is needed, use only an outdoor-use extension cord. An outdoor-use extension cord will be clearly marked with the suffix letter "W" and the statement "Suitable for Use with Outdoor Appliances."

1.2.6 Disconnecting Power

WARNING

Failure to observe and comply with the following precautions could result in death or serious personal injury. Property damage could also occur.

- Be sure that the pump is off before removing plug from electrical outlet.
- Do not unplug the pump by pulling on the cord. To unplug, grasp the plug, not the cord.
- Remove plug from electrical outlet when the pump is not in use and before servicing or cleaning the pump.

1.3 Additional Precautions

 **WARNING** Do not use electric pumps in an explosive atmosphere. Sparks and electrical arcing could ignite combustible vapors or airborne dust

 **CAUTION** Check electrical power requirements on pump data plate. Power of incorrect specifications may damage the motor.

2. Compliance Statement(s)

2.1 Canadian Standards Association (CSA)

This product has been certified by a nationally recognized certification body and complies with the applicable Canadian safety requirements.

Certified to: CAN/CSA-C22.2 No. 68:2009/R:2015 - Motor Operated Appliances (Household and Commercial)

2.2 United States Compliance

This product has been evaluated and certified by a Nationally Recognized Testing Laboratory (NRTL).

Certified to: UL 73:2011 (R2018-08) - Standard for Motor-Operated Appliances

2.3 State of California Proposition 65 Warning

The LUPD Series of electric hydraulic pumps use hydraulic oil as the fluid medium. Hydraulic oils contain ethylbenzene, which may cause cancer and reproductive harm. Hydraulic oils need to be handled carefully, so that contact is avoided.

A warning decal is affixed to each pump, informing the operator of these risks. For additional details, go to www.P65Warnings.ca.gov.

2.4 Conformité Européene (CE)

This product has been designed and manufactured in accordance with the essential requirements of applicable European Union legislation.

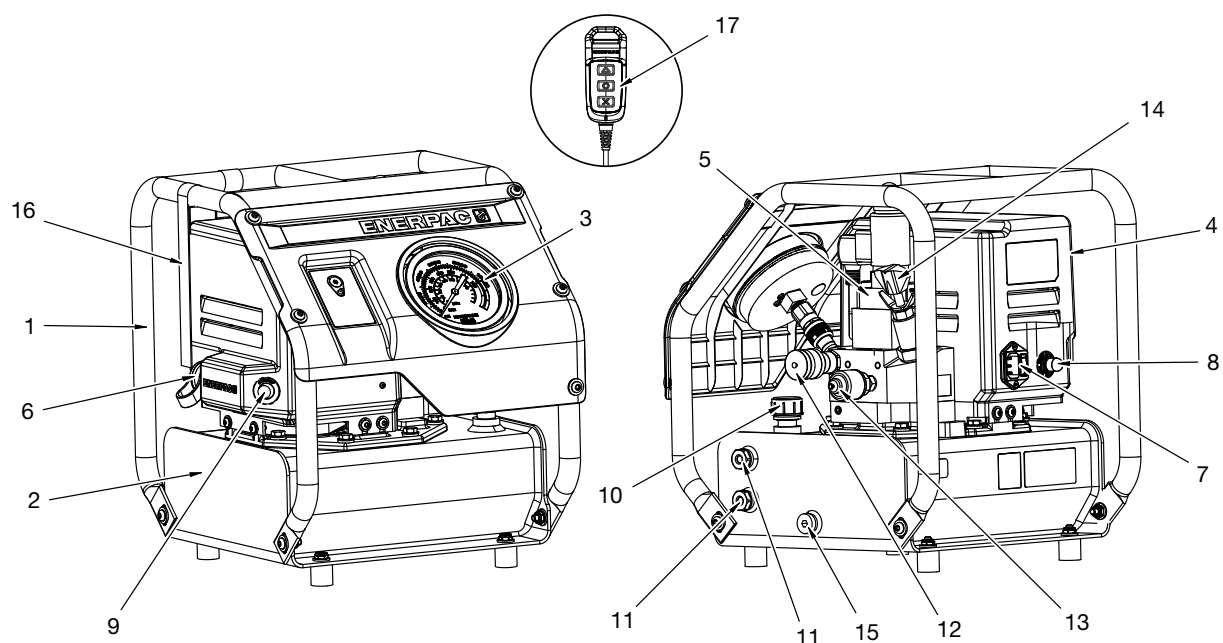
Compliance with the relevant requirements has been demonstrated through the application of the following EU Directives and harmonised standards:

- Machinery Directive 2006/42/EC
- Outdoor Noise Directive 2000/14/EC
- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility Directive 2014/30/EU
- Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended.

A copy of the EU Declaration of Conformity is available upon request from the manufacturer.

3. Features & Components

3.1 LUBP Feature and Components

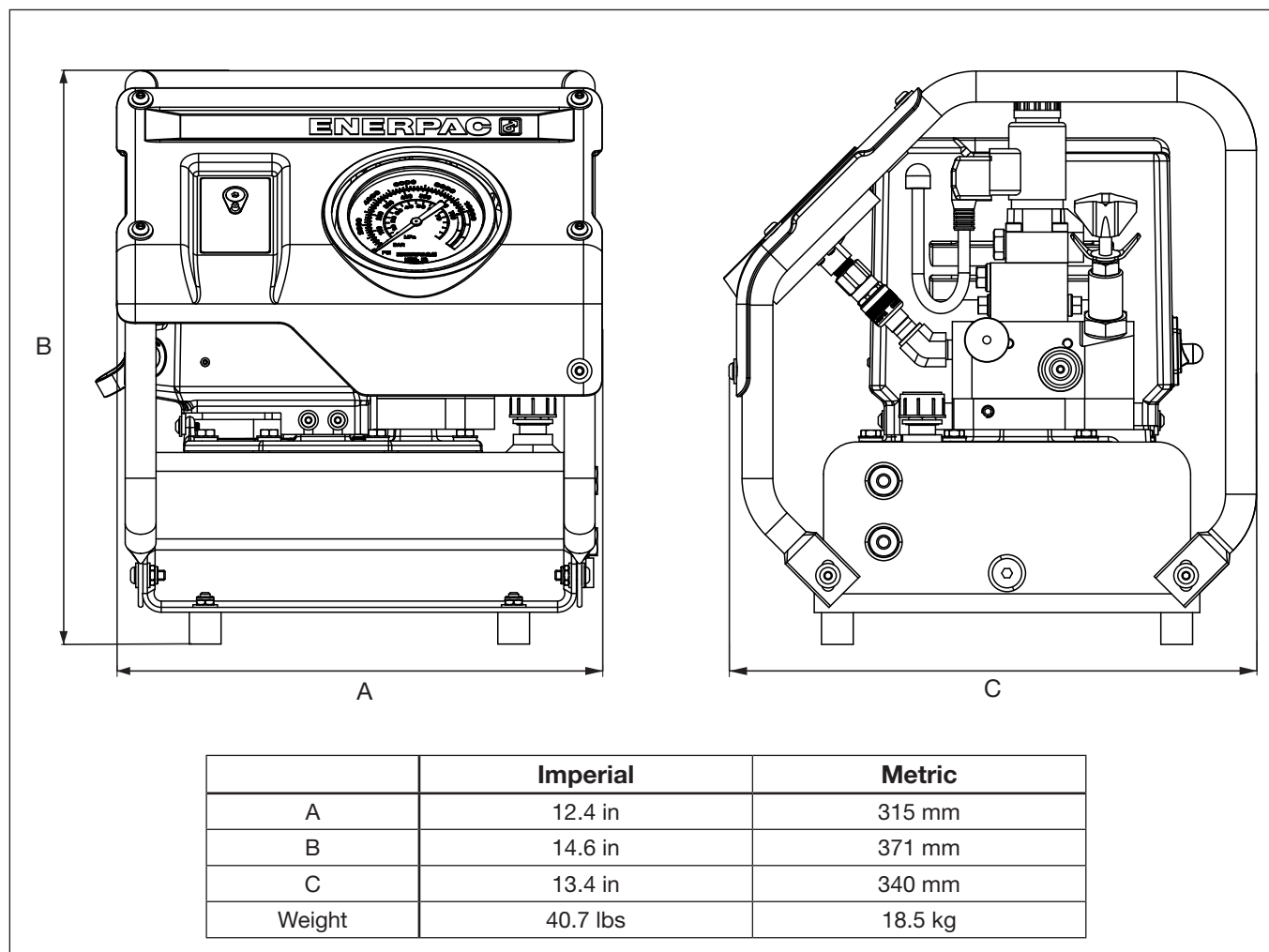


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|------------------|----------------------------------|-------------------------|----------------|
| 1. Frame | 6. Pendant Connector | 11. Oil Level Indicator | 16. Cord Strap |
| 2. Reservoir | 7. On/Off Switch, plug socket | 12. Female Coupler | 17. Pendant* |
| 3. Gauge | 8. Circuit Breaker | 13. Male Coupler | |
| 4. Pump Shroud | 9. Warning Indicator "Over Temp" | 14. Relief Valve* | |
| 5. Control Valve | 10. Vent/ Fill Plug | 15. Drain Plug | |

*** DO NOT TAMPER WITH**

4. Technical Product Data

4.1 LUBP Dimensions



4.2 LUBP Specification Table

Model	LU2504TB-QR	LU2504TE-QR
Electrical Power Source	115 V, 1-phase, 50/60 HZ	230 V, 1-phase, 50/60 HZ
Motor Rating	0.73 HP [0.54 kW] Universal, 9 Amps	0.73 HP [0.54 kW] Universal, 4.5 Amps
Operating Pressure	1,400 - 10,000 psi [97 - 700 bar]	
Flow vs. Pressure	200in ³ /min @ 0-200 psi L/ 20 in ³ /min. @ 10,000 psi 3.3 L/min. @ 0-14 bar / 0.3 L/ min. @ 700 bar	
Max. Temperature of Oil	150° F [65° C]	
Sound Level*	86 dBA	
Operating Temp Range**	0 to 122 F [-18 to 50 C]	

*Typical. Actual sound level will vary depending on pump speed and load.

** At 85% relative humidity.

5. Installation

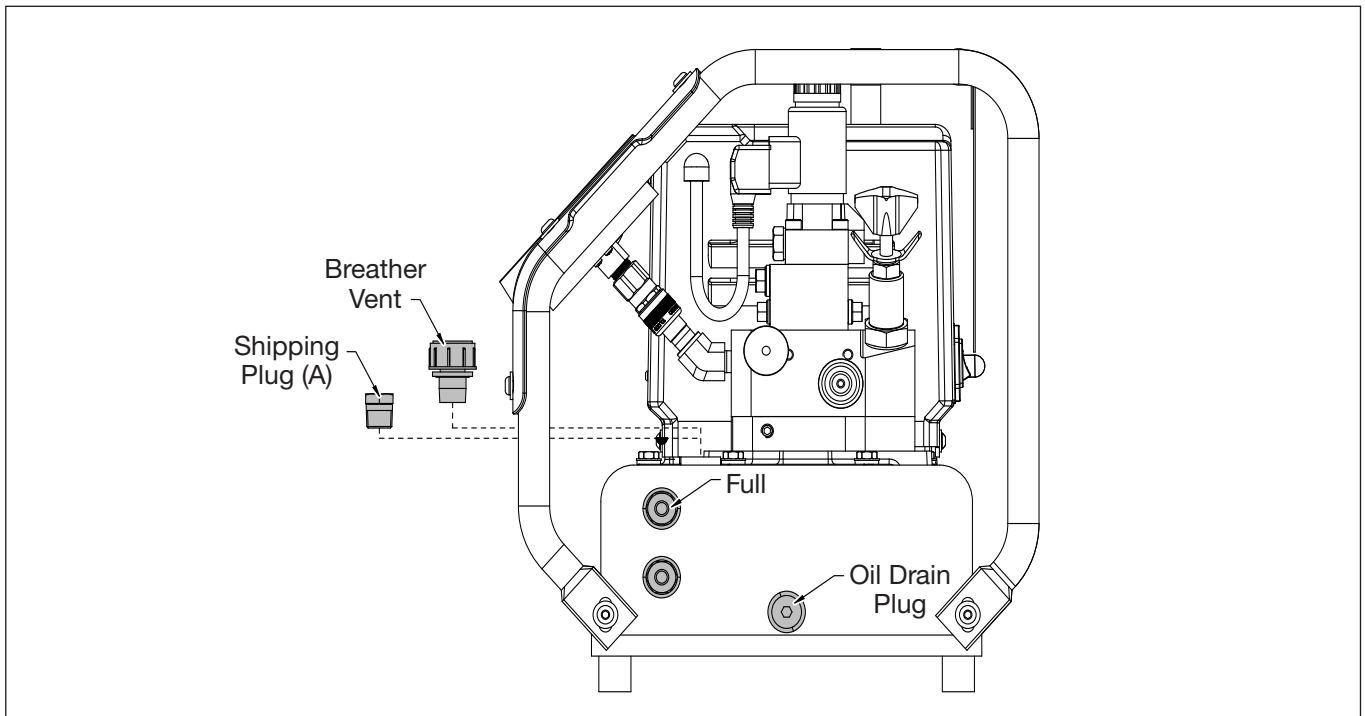


Figure 1: Reservoir Vent and Oil Level

5.1 Reservoir Air Breather

The reservoir air breather parts are included separately in the shipment. They must be installed prior to pump use as described in the following steps. See Figure 1.

1. Remove the metal shipping plug (A) from the reservoir (save for future use).
2. Install and tighten breather by hand to prevent damage.

5.2 Reservoir Oil Level

The hydraulic reservoir is pre-filled with oil at the factory. However, the oil level should always be checked as a precaution before running the pump. See Figure 1 and refer to the following steps:

1. If previously connected, ensure that the torque wrench is fully retracted prior to checking the oil level.
2. If previously connected, be certain that power is unplugged. Be sure that the hydraulic pressure gauge indicates zero (0) psi/bar.
3. With the pump on a level surface, check the oil level. The reservoir is full when the oil level is up to - but not above - the top oil level sight glass.
4. If oil level is low, loosen and remove the reservoir oil vent. Slowly add additional hydraulic oil until the oil level is up to - but not above - the oil level sight glass. **DO NOT OVERFILL.**

NOTICE For optimum performance and to prevent possible invalidation of the product warranty, use only Enerpac HF hydraulic oil.

5. Reinstall the reservoir oil vent.

6. Additional oil may need to be added after wrench and hoses are connected and pump is run. Always check oil level with pump off and hydraulic pressure relieved.

5.3 Electrical Connections

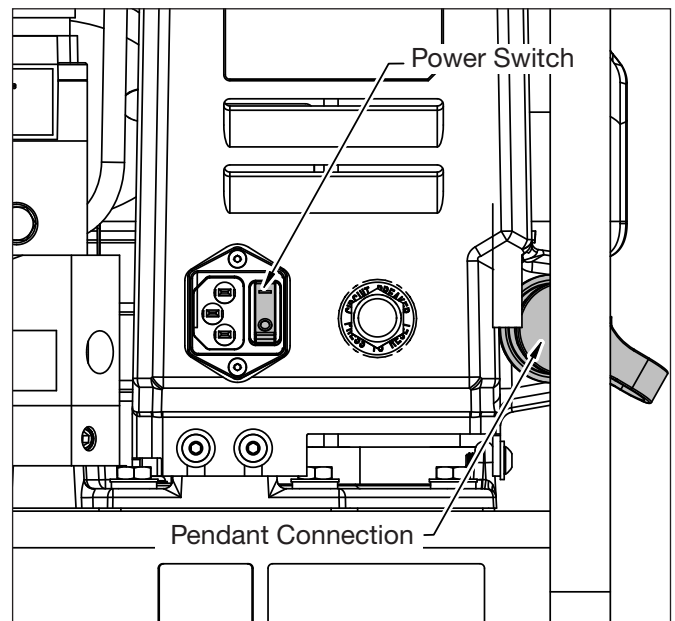


Figure 2: Power Cord & Pendant Connection

1. Be sure the electrical power source is the correct one for your pump. See section 4.2 Specification Table, for electrical power source specification.
2. Install proper power cord into socket shown in Figure 2.

3. Remove the dust cap from the connector at the front of the pump and connect the pendant cable. See Figure 2.
4. Hand tighten the threaded collar to secure the pendant cable to the connector

5.4 Hose Connections

1. Loosen locknut and back out (turn counter-clockwise) relief valve to prevent unintended pressure build-up. No tools are needed to adjust the relief valve. See Figure 3.
2. Couple hoses to torque wrench as shown in Figure 4. Hand tighten coupler lock rings. When using the Enerpac pump and torque wrench combination, 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.
3. Couple hoses to pump outlet manifold shown in Figure 3. BE SURE to use hose rated to 10,000 PSI [700 bar]. Hand tighten coupler lock rings

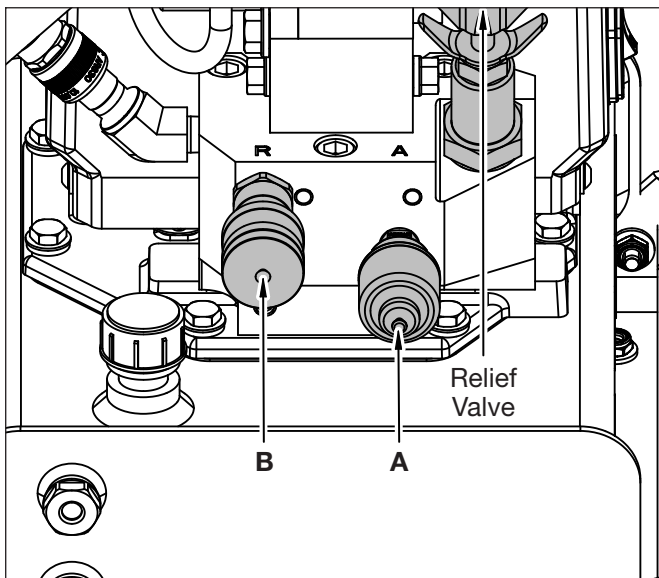


Figure 3: Pump Outlet

“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.

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

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

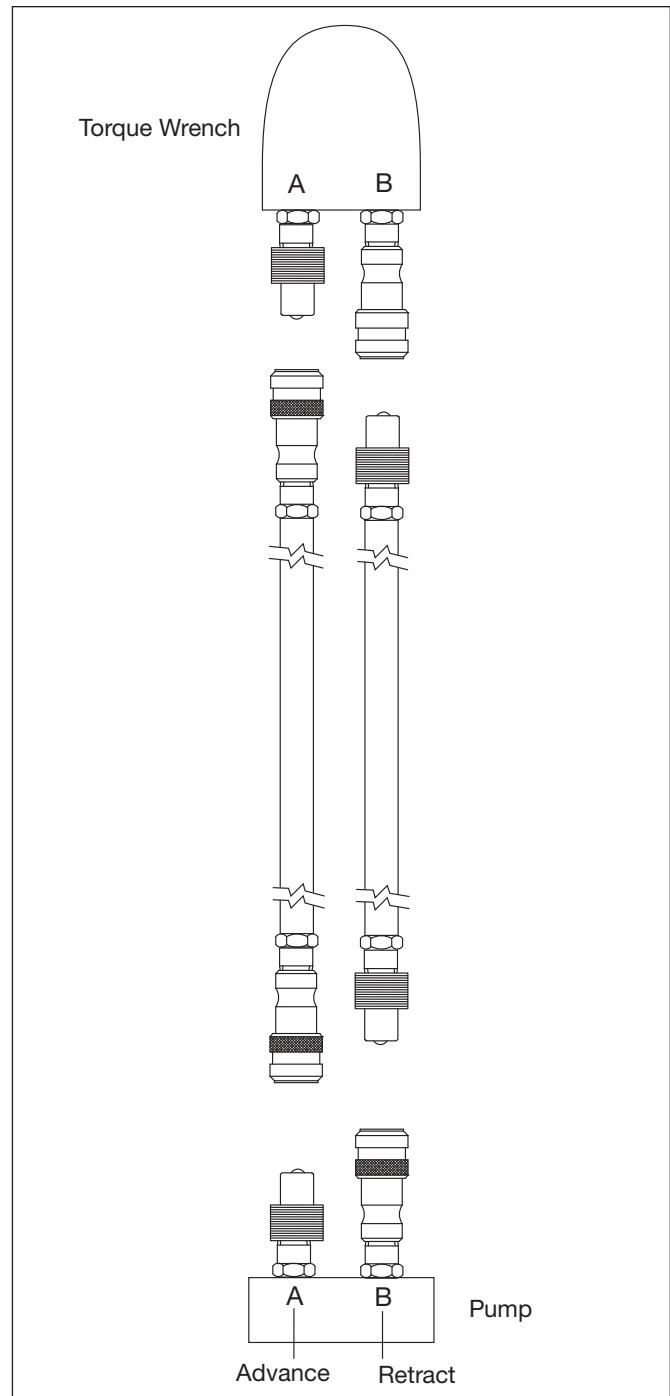


Figure 4: Connections to Torque Wrench

6. Operation

6.1 Pump Operation

1. Check all system fittings and connections to be sure they are tight and leak free.
2. Check oil level in reservoir. Refer to Section 5.2 for 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 the pump reservoir can hold.

3. Check that breather vent has been installed.
4. Be sure the pump switch is "OFF" (O). See Figure 2.
5. Plug power cord into outlet. Use correct power source. See section 4.2 Specification Table 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 and motor may become damaged.

NOTICE If the supply cord becomes damaged, it must be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard.

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 pendant switch activates the pump motor.

NOTICE LUBP Series pumps are designed for intermittent duty cycle operation of 6 minutes at 8,000 psi [552 bar] and rest for eight hours to prevent pump overheating.

6.2 Relieving Pressure

To relieve hydraulic pressure on the wrench and hoses:

- Firmly depress the manual override button at the top of the valve assembly. This will manually shift the valve spool, relieving trapped pressure.

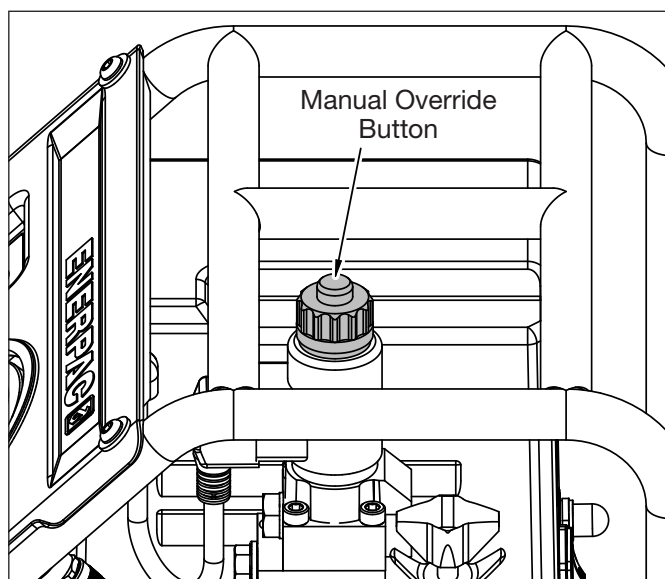


Figure 5: Relieve Pressure

6.3 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.

Check oil level before operation.

NOTICE Perform "Air Removal" and "Pressure (Torque) Adjustment":

- During initial operation or start-up.
- When connecting a different wrench to the pump.
- When changing torque value (relief valve adjustment only).

6.4 Pendant Operation

The pump motor and solenoid operated control valve are operated by a corded remote pendant which is included with the pump.

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

Before using the pendant, be sure the pump power switch is in the ON ("I") position and that the pump is plugged in.

Pendant operation is as follows. See Figure 6:

- Press and hold the ON-ADVANCE button to start the motor and advance the torque wrench. The pressure gauge will display the pressure in the advance circuit.
- Release the ON-ADVANCE button to retract the torque wrench. The pressure gauge will display the pressure in the retract circuit and the motor will continue running.
- Press and hold the ON-ADVANCE button at any time while the motor is running to repeat torque wrench advance.
- Press either MOTOR OFF button to stop the motor.
- If the motor runs for 20 seconds without any pendant buttons being pressed, automatic motor stop will occur.

NOTICE The MOTOR OFF buttons and function in an identical manner. Either button can be used to stop the motor

NOTICE The electric motor keeps running after the pendant is released. Within 20 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

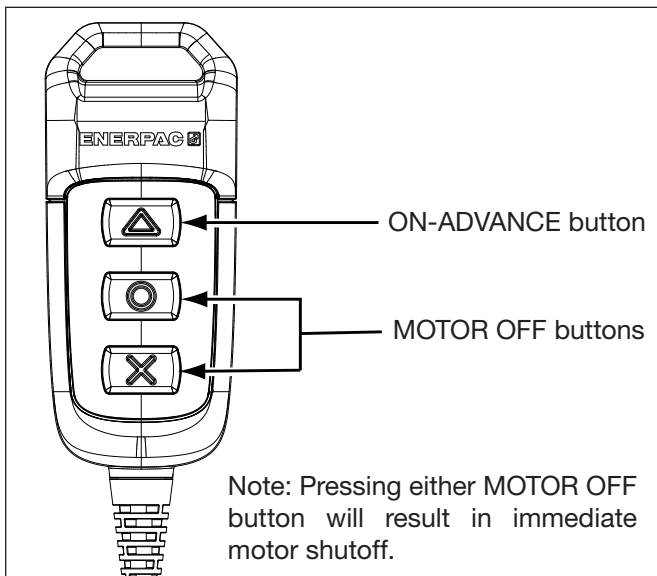


Figure 6: Pendant Operation

6.5 Pressure (Torque) Adjustment

CAUTION 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. The pump is supplied with a pressure gauge installed. See torque wrench instructions for amount of pressure required to produce desired torque. Note that the maximum pressure varies for different wrenches and accessories.
2. Loosen locknut and back out relief valve to prevent unintended pressure build-up. See Figure 3.
3. Turn the pump on.
4. Press and hold the ON/ADV button and read pressure gauge.
5. While holding the ON/ADV button, turn relief valve in (clockwise) to increase pressure or out (counter-clockwise) to decrease maximum pressure. Repeat until correct pressure is obtained.
6. Tighten locknut on relief valve to maintain setting.
7. Run the pump several times to test the pressure setting.

6.6 Pump Priming Procedure

If the pump operates sluggishly or if wrench operation is erratic, first perform the air removal procedure as described in Section 6.3. If problems persist, then perform the pump priming procedure as described in the following steps.

NOTICE As needed during this procedure, refer to previous sections of this manual for detailed information regarding the hydraulic reservoir, remote pendant buttons and user-adjustable relief valve.

1. Be sure that hydraulic reservoir is full. Oil level should be up to - but not above - the top oil sight glass. If oil level is low, add additional oil as described in the procedure in Section 5.2.
2. Turn the user-adjustable relief valve counter-clockwise until it is slack. Verify that the pump hydraulic pressure gauge indicates zero (0) psi/bar.
3. On the remote pendant, press and release the ON/ADV button.
4. Allow the pump to run for about 10-15 seconds. This will expel trapped air in the hydraulic system.
5. Press and hold the ON/ADV button. As the button remains depressed, allow the pump to run for an additional 5 to 10 seconds to expel air from the system.
6. Observe the pump hydraulic pressure gauge. Turn the user-adjustable relief valve clockwise until hydraulic pressure increases to 10,000 psi [700 bar].
7. Release the ON/ADV button and observe the pump hydraulic pressure gauge. The gauge should indicate 2500-2600 psi [172-180 bar].
8. Press and hold the ON/ADV button and confirm pressure builds to 10,000 psi [700 bar].
9. Press the OFF button to stop the pump.
10. Press manual override button to relieve trapped pressure as described in section 6.2. Verify that the pump hydraulic pressure gauge indicates zero (0) psi/bar.

7. Maintenance and Storage

7.1 Adding Oil to the Pump

Check reservoir hydraulic oil level every 40 hours of operation. Add Enerpac HF hydraulic oil when necessary to bring oil level up to the correct level. See Figure 1.

7.2 Changing the Oil

Completely drain the reservoir after every 100 hours of operation. If pump is operated in very dusty areas or at high temperatures, drain and refill after 50 hours of operation.

1. Place the pump on a workbench or other suitable surface. Place a pan or container under the oil drain plug. Oil reservoir capacity is approximately 1 gallons [3.9 litres].
2. Slowly loosen the oil drain plug and remove it. Allow all used oil to drain from the reservoir into the pan or container.

NOTICE Dispose of hydraulic oil in accordance with all applicable laws and regulations.

NOTICE If the used oil is dirty, or if pump performance has been sluggish, clean the interior of the hydraulic reservoir after oil is drained, as described in Section 7.3.

NOTICE When adding oil or refilling the hydraulic reservoir, use only Enerpac HF hydraulic oil. Use of other oils may result in damage to pump components and may void the Enerpac product warranty.

3. Clean and reinstall the reservoir oil drain plug.
4. Remove the reservoir oil vent plug. Slowly add hydraulic oil through the fill hole until oil level is up to - but not above - the top oil level sight glass.
DO NOT OVERFILL. Refer to Section 5.2.
5. Clean and reinstall the reservoir oil vent plug.

7.3 Cleaning the Reservoir

This procedure is mandatory if it is suspected that the oil is contaminated or if pump performance is sluggish

1. Completely drain all oil from reservoir. Follow steps 1 through 2 of Section 7.2.
2. **DISPOSE OF USED OIL PROPERLY.**
3. Remove 2 screws, washers and nuts that mount the roll cage to the reservoir. Loosen the other 2 sets of mounting screw. Pivot the roll cage as shown. See Figure 7
4. You will need to remove the shroud to get at the screws that hold the pump to the reservoir. Use an Allen wrench to loosen the six screws securing shroud to the reservoir.
5. Lift shroud from reservoir. Use care to avoid damaging wires or pulling wire connections off terminals.
6. Remove 8 screws holding pump to reservoir.
7. Lift pump from reservoir using care to avoid damaging pick-up screens.

8. Thoroughly clean the reservoir with solvent. Never use water.
9. Use a soft bristle brush to clean piston block intake screens. Rinse with solvent.
10. Inspect the reservoir gasket. Replace it with a new gasket if worn or damaged.
11. Position the cover-plate on the reservoir. Make certain that the gasket is visible all the way around the cover-plate.
12. Secure pump to reservoir.
13. Place shroud over motor.
14. Secure the six mounting screws.
15. Clean and reinstall the reservoir oil drain plug.
16. Remove the reservoir oil vent plug. Slowly add hydraulic oil through the fill hole until oil level is up to - but not above - the top oil level sight glass.
DO NOT OVERFILL.

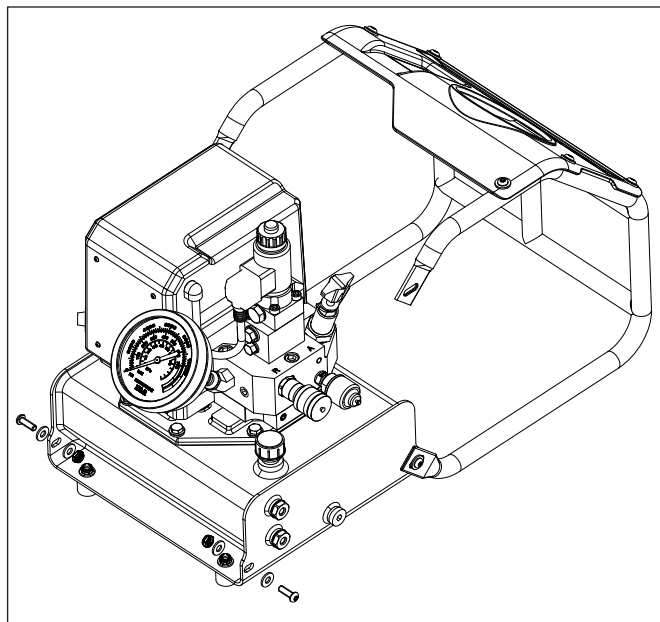


Figure 7: Cleaning Reservoir

7.4 Motor Brushes

Check the electric motor brushes at least once every two years. For pumps in heavy usage applications, check the brushes at least once every six months.

DANGER To avoid possible electrocution, pump must be completely disconnected from electrical power before brush servicing is attempted.

7.5 Storage & Transportation

Enerpac Pumps should be stored in a cool, dry place. Tools should always be cleaned, serviced and lubricated prior to storage. Ensure that tools are stored in their designated packing cases.

8. Troubleshooting

The Troubleshooting Chart is intended as a guide to help you diagnose and correct various possible pump problems. Only qualified hydraulic technicians should troubleshoot and service the pump. For repair service, contact the Enerpac Authorized Service Center in your area.

8.1 Circuit Breaker

In the event of an electrical overload, the pump circuit breaker will trip. After investigating and correcting the source of the overload, push the circuit breaker button to reset.

8.2 Troubleshooting Chart

Fault	Possible Cause	Corrective Action
1. Pump will not start.	a. No power.	Be sure that the pump AC power cord is connected to the electrical outlet and power switch is turned on (I).
	b. Oil over temperature fault.	Allow oil to cool off.
2. Pump stops under load.	a. Oil over temperature fault.	Allow oil to cool off.
	b. Pump jammed due to obstruction.	Contact Enerpac Authorized Service Center.
	c. Pump bypass valve out of adjustment or malfunctioning.	Contact Enerpac Authorized Service Center.
	d. Internal damage to pump and/or motor.	Contact Enerpac Authorized Service Center.
3. Pump fails to build pressure or builds less than full pressure.	a. Low oil level.	Add oil to reservoir as required. Refer to Section 5.2. Follow priming procedure in Section 6.6 if pump reservoir was emptied during operation or while pump was being serviced.
	b. User adjustable relief valve open or set too low.	Raise relief valve pressure setting. Refer to Section 6.5.
	c. Oil needs changing.	Completely drain and refill reservoir per instructions in Section 7.2. NOTICE Use only Enerpac HF hydraulic oil. Use of other oils may result in damage to pump components and will void the Enerpac product warranty.
	d. Piston oil intake screen is dirty.	Clean intake screen per Section 7.3.9.
	e. Pump bypass valve out of adjustment or malfunctioning.	Contact Enerpac Authorized Service Center.
	f. Internal leak in hydraulic control valve or pump element. Worn or damaged internal components.	Contact Enerpac Authorized Service Center.
	g. Internal damage to pump and/or motor.	Contact Enerpac Authorized Service Center.
4. Low oil flow.	a. Low oil level.	Add oil to reservoir as required. Refer to Section 5.2. Follow priming procedure in Section 6.6 if pump reservoir was emptied during operation or while pump was being serviced.
	b. Oil needs changing.	Completely drain and refill reservoir per instructions in Section 7.2. NOTICE Use only Enerpac HF hydraulic oil. Use of other oils may result in damage to pump components and will void the Enerpac product warranty.
	c. Piston oil intake screen is dirty.	Clean intake screen per Section 7.3.9.
	d. Internal leak in hydraulic control valve or pump element. Worn or damaged internal components.	Contact Enerpac Authorized Service Center.

Fault	Possible Cause	Corrective Action
5. Torque wrench advances and retracts erratically.	a. Air in the system.	Advance and retract the torque wrench until operation is smooth. Refer to Section 6.3.
	b. External hydraulic leak.	Tighten connections. Replace damaged components.
	c. Pump bypass valve out of adjustment or malfunctioning.	Contact Enerpac Authorized Service Center.
	d. Internal leak in hydraulic control valve or pump element. Worn or damaged internal components.	Contact Enerpac Authorized Service Center.
	e. Internal damage to pump and/or motor.	Contact Enerpac Authorized Service Center.
6. Noisy pump operation.	a. Pump needs priming.	Refer to Section 6.6 for priming procedure
	b. User adjustable relief pressure setting too close to pump bypass valve setting.	Avoid setting relief valve at the pump bypass setting of 1,800 psi [124 bar] whenever possible.
	c. Stuck piston in piston block.	Contact Enerpac Authorized Service Center.
	d. Damaged and/or loose components inside pump, vibrating and/or making contact.	Contact Enerpac Authorized Service Center.
	e. Pump elements worn or damaged.	Contact Enerpac Authorized Service Center.
	f. Motor worn or damaged	Contact Enerpac Authorized Service Center.
6. Pump over heating.	a. Low oil level.	Add oil to reservoir as required. Refer to Section 5.2. Follow priming procedure in Section 6.6 if pump reservoir was emptied during operation or while pump was being serviced.
	b. Flow is restricted or blocked.	Check hydraulic couplers for full engagement. Check hoses for blockage or kinks
	c. Oil flowing over the relief valve for long periods of time.	Reduce the amount of motor running time while oil is flowing over the relief valve.
	d. Low voltage.	Check AC line voltage. Pump can operate during a limited low voltage condition but overheating may result.

NOTICE Refer to torque wrench manual or instruction sheet for wrench operating procedure.

9. Parts List

9.1 Main Assembly

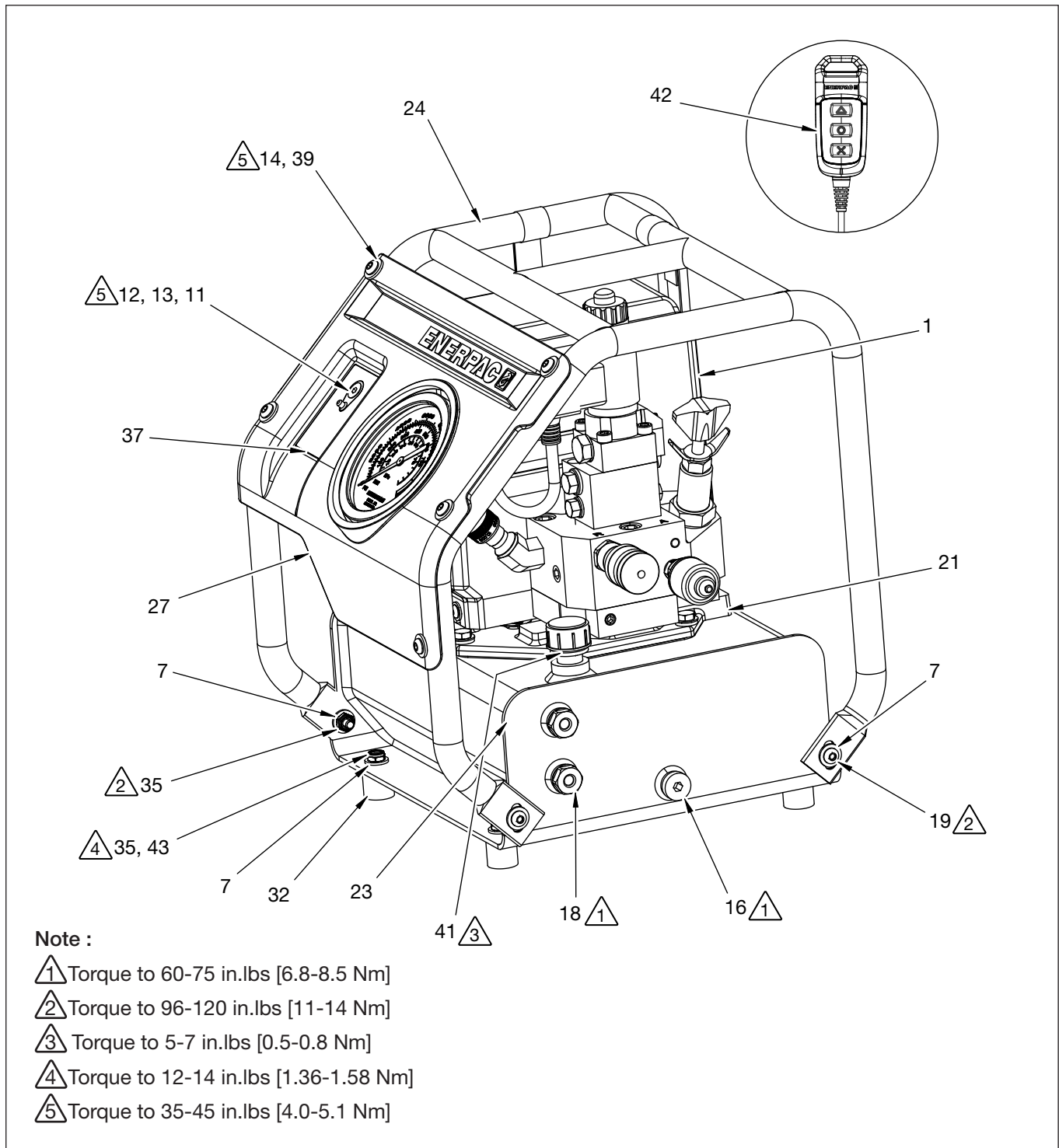


Figure 8: Exploded View

Repair Parts List for Main Assembly				
Item	Description	Qty	Part Numbers	
			LU2504TB-QR 115V	LU2504TE-QR 230V
1	Cord Strap	2	✚ DA7570217	✚ DA7570217
7	Washer - Flat	12	✚♦ B1019108X	✚♦ B1019108X
11	Washer - Flat	1	* CAE1060108-1A	* CAE1060108-1A
12	Screw - FHS	1	* CBA619028-1B	* CBA619028-1B
13	Lock Nut	1	* CBE1060120-2A	* CBE1060120-2A
14	Screw - BHCS	5	* CBA619028-1E	* CBA619028-1E
16	Plug - BSPP	1	♦ CS235006	♦ CS235006
18	Oil Level Indicator	2	♦ DB4519022	♦ DB4519022
19	Screw - BHCS	4	✚ DC2038028	✚ DC2038028
21	Pump Sub-Assembly	1	DF1244900SR	DF1304900SR
23	Reservoir	1	♦ DD9961500	♦ DD9961500
24	Rollbar	1	✚ DF1093500	✚ DF1093500
27	Front Panel	1	* DF1156411	* DF1156411
32	Rubber Insolation Foot	4	♦ DF1277636	♦ DF1277636
35	Lock Nut	8	✚♦ DF1289123	✚♦ DF1289123
37	Pendant Location Decal	1	❖* DF1298026	❖* DF1298026
39	Washer - Flat	5	♦* DF1360108	♦* DF1360108
41	Breather Plug	1	♦ DC8250006	♦ DC8250006
42	Pendant	1	CC132	CC132
43	Screw - SHCS	4	♦ B1009028X	♦ B1009028X
✚ Items included in Roll Bar Kit - LUBPRBK		♦ Items included in Reservoir Kit - LUBPRK		
★ Items included in Service Kit - LUBPSK		❖ Items included in Decal Kit - LUBPDK		
* Items included in Front Panel Kit - LUBPFPK		IMPORTANT: Shaded items are available only in kit (not sold separately)		
PRODUCT DESIGN VERSION A				

9.2 Pump Assembly

Note :

- 1 Torque to 60-75 in.lbs [6.8-8.5 Nm]
- 2 Torque to 16-19 ft.lbs [22-26 Nm]
- 3 Apply Teflon Tape. Leave 1-2 lead threads exposed.
- 4 Torque to 32-39 ft.lbs [43-53 Nm]
- 5 Torque to 120-144 in.lbs.[13.6-16.3 Nm]
- 6 Torque to 9-11 in.lbs [1.02-1.24 Nm]
- 7 Torque to 14-16 ft.lbs [19.0-21.7 Nm]
- 8 Torque to 12-14 in.lbs [1.36-1.58 Nm]
- 9 Push together the white electrical plugs from the Shroud Assembly and Pump/Motor Assembly.

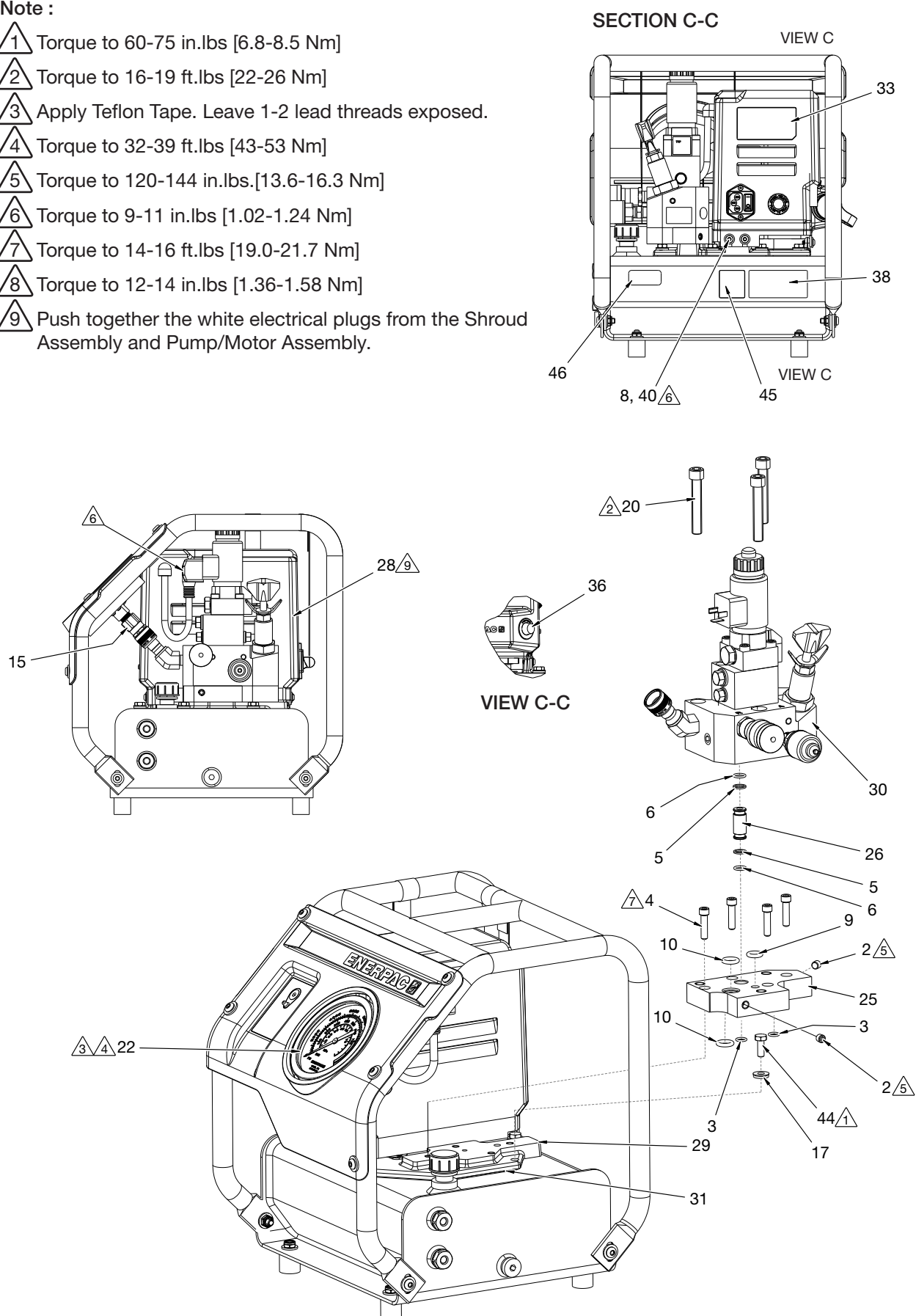
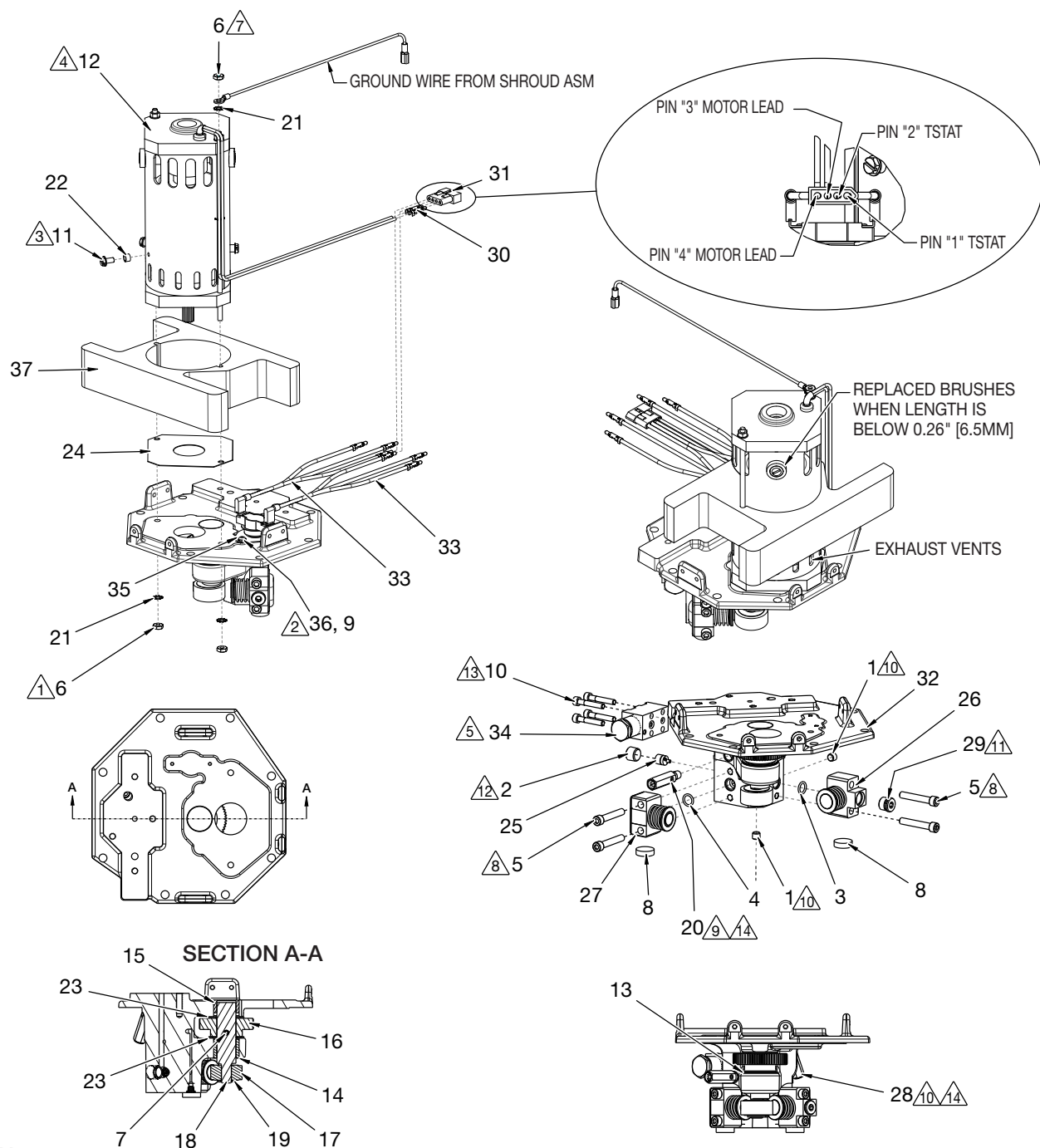


Figure 9: Exploded View

Repair Parts List for Pump Assembly				
Item	Description	Qty	Part Numbers	
			LU2504TB-QR 115V	LU2504TE-QR 230V
2	Hex Flush Plug	2	● A1006245	● A1006245
3	O-Ring - 011 Urethane	2	★● B1011803	★● B1011803
4	Screw - SHCS	4	● B1012028	● B1012028
5	Back-Up - 012 Teflon	2	★+ B1012566	★+ B1012566
6	O-Ring - 012 Urethane	2	★+ B1012803	★+ B1012803
8	Washer - Flat	6	■ B1086108	■ B1086108
9	O-Ring - 204 Buna	1	★▲ B1204503	★▲ B1204503
10	O-Ring - 205 Buna	2	★● B1205503	★● B1205503
15	Half Coupler, Hose End	1	AH630	AH630
17	Sealing Washer	8	◆★ 65892	◆★ 65892
20	Screw - SHC	3	▲ 93598	▲ 93598
22	Gauge	1	DD7397223SR	DD7397223SR
25	Manifold Adaptor	1	DF1123840SR	DF1123840SR
26	Connector	1	DF1154270SR	DF1154270SR
28	Shroud Assembly	1	■ DF1237900	‡ DF1386900
29	Pump Sub-Assembly	1	DF1244900SR	DF1304900SR
30	Solenoid Valve Assembly	1	DF1247900SR	DF1247900SR
31	Reservoir Gasket	1	◆★ DF1275167	◆★ DF1275167
33	Product Specification Decal	1	❖■ DF1279026	❖‡ DF1306026
36	Over Temp Decal	1	❖■ DF1297026	❖‡ DF1297026
38	Electrical Safety Decal	1	◆❖ DF1311026	◆❖ DF1311026
40	Machine Screw	6	■ F866028	‡ F866028
44	Screw - HHCS	8	◆ B1005046X	◆ B1005046X
45	Sound Level 85 dB Decal	1	❖ DF1402026	❖ DF1402026
46	Cal Prop 65 Generic Ethylbenzene Warning Decal	1	❖ DD9065026	❖ DD9065026
✚ Items included in Roll Bar Kit - LUBPRBK		◆ Items included in Reservoir Kit - LUBPRK		
★ Items included in Service Kit - LUBPSK		❖ Items included in Decal Kit - LUBPDK		
■ Items included in Shroud Kit - LUBPSHK1		‡ Items included in Shroud Kit - LUBPSHK2		
✱ Items included in Front Panel Kit - LUBPFPK		▲ Items included in Solenoid Valve - DF1247900SR		
● Items included in Manifold Assembly - DF1123840SR		+ Items included in Connector Assembly - DF1154270SR		
IMPORTANT: Shaded items are available only in kit (not sold separately)				
PRODUCT DESIGN VERSION A				

9.3 Pump Sub Assembly



Note :

- | | |
|--|---|
| ① Torque to 27-33 in.lbs [3.1-3.7 Nm] | ⑧ Torque to 14-16 ft.lbs dry [19.0-21.7 Nm] |
| ② Torque to 9-12 in.lbs [1.0-1.3 Nm] | ⑨ Torque to 16-19 ft.lbs dry [21.7-25.8 Nm] |
| ③ Torque to 30-35 in.lbs [3.4-4.0 Nm] | ⑩ Torque to 84-108 in.lbs [9.5-12.2 Nm] |
| ④ Orient Motor as shown | ⑪ Torque to 100-108 in.lbs [11.4-12.2 Nm] |
| ⑤ Set height of end cap to 0.85 in. ± 0.01 [21.6 mm ± 0.2] | ⑫ Torque to 32-39 ft.lbs [43-53 Nm] |
| ⑥ Assemble motor leads and thermostat leads in the position shown to connector DD9518380 | ⑬ Torque to 30-35 in.lb [3.4-4.0 Nm] |
| ⑦ Torque to 20-25 in.lbs [2.3-2.8 Nm] | ⑭ Apply Teflon tape |

Figure 10: Exploded View

Repair Parts List for Pump Sub Assembly				
Item	Description	Qty	Part Numbers	
			LU2504TB-QR 115V DF1244900	LU2504TE-QR 230V DF1304900
1	Flush Plug - 1/16 NPTF	2	▲ DC6792245	▲ DC6792245
2	Flush Plug - 1/4 NPTF	1	▲ DC6794245	▲ DC6794245
3	O-Ring - 012 Buna	1	★ □ B1007503	★ □ B1007503
4	O-Ring - 012 Urethane	1	★ ◇ B1012803	★ ◇ B1012803
5	Screw-SHCS	4	□ ◇ B1016028	□ ◇ B1016028
6	Hex Nut	3	♣ B1018121	◆ B1018121
7	Spring Pin	1	▲ B1097057	▲ B1097057
8	Magnet	2	□ ◇ C187018	□ ◇ C187018
9	Lock Washer	2	※ C701222	※ C701222
10	M5x30 Screw-SHCS	4	△ CCA525028-1A	△ CCA525028-1A
11	Screw	3	♣ CU876028	◆ CU876028
12	Motor Universal Economy	1	□ ♣ CW179259	● ◆ DC1415259
13	Bearing	1	▲ CW199107	▲ CW199107
14	Bearing	1	▲ CW251107	▲ CW251107
15	Bearing	1	▲ CW252107	▲ CW252107
16	Driven Gear	1	▲ CW301228	▲ CW301228
17	Bearing	1	▲ CW302107	▲ CW302107
18	Shaft	1	▲ CW303104	▲ CW303104
19	Retaining Ring	1	▲ CW467044	▲ CW467044
20	Relief Valve (Factory preset to 10,650-10,950 psi)	1	DA5999900SR	DA5999900SR
21	Lockwasher	4	♣ DA15066	◆ DA15066
22	Spacer	3	♣ DA3585186	◆ DA3585186
★ Items included in Service Kit - LUBPSK		❖ Items included in Decal Kit - LUBPDK		
♣ Items included in Motor Kit 115V - LUBPMK1		◆ Items included in Motor Kit 230V - LUBPMK2		
▲ Items included in Pump Manifold Kit - LUBPPMK		◆ Items included in Reservoir Kit - LUBPRK		
□ Items included in 14mm Piston Block - DD1449051SR		◇ Items included in 6mm Piston Block - DD1450051SR		
■ Brush Kit 115V - DA9655380		● Brush Kit 230V - DA9656380		
△ Items included in Bypass Valve - DF1296900SR		※ Items included in Thermostat Kit - LUBPTK		
IMPORTANT: Shaded items are available only in kit (not sold separately)				
PRODUCT DESIGN VERSION A				

Repair Parts List for Pump Sub Assembly (continued)				
Item	Description	Qty	Part Numbers	
			LU2504TB-QR 115V DF1244900	LU2504TE-QR 230V DF1304900
23	Bearing	2	▲ DA445107	▲ DA445107
24	Gasket, Motor	1	★ ♣ DC1947167	★ ♦ DC1947167
25	Outlet Check Sub-Assembly	1	▲ DC7904900	▲ DC7904900
26	Piston Block 14mm	1	DD1449051SR	DD1449051SR
27	Piston Block 6mm	1	DD1450051SR	DD1450051SR
28	Relief Valve (Factory preset to 2500-2700 psi)	1	DD6109900SR	DD6109900SR
29	Plug Zero Leak	1	▣ DD7911006	▣ DD7911006
30	Contact Pin	2	♣ DD9515006	♦ DD9515006
31	Pump End Female Plug Housing	1	♣ DD9518380	♦ DD9518380
32	Pump Manifold	1	N/A	N/A
33	Wire Assembly to Female Connector	2	♣ DF1215960	♦ DF1215960
34	By-Pass Valve Assembly	1	DF1296900SR	DF1296900SR
35	Thermostat	1	※ E1100004	※ E1100004
36	Screw	2	※ M642028	※ M642028
37	Motor Housing Baffle	1	♣ DF1288398	♦ DF1288398
★ Items included in Service Kit - LUBPSK		❖ Items included in Decal Kit - LUBPDK		
♣ Items included in Motor Kit 115V - LUBPMK1		♦ Items included in Motor Kit 230V - LUBPMK2		
▲ Items included in Pump Manifold Kit - LUBPPMK		◆ Items included in Reservoir Kit - LUBPRK		
▣ Items included in 14mm Piston Block - DD1449051SR		◇ Items included in 6mm Piston Block - DD1450051SR		
▣ Brush Kit 115V - DA9655380		● Brush Kit 230V - DA9656380		
△ Items included in Bypass Valve - DF1296900SR		※ Items included in Thermostat Kit - LUBPTK		
IMPORTANT: Shaded items are available only in kit (not sold separately)				
PRODUCT DESIGN VERSION A				

9.4 Solenoid Valve Assembly DF1247900SR

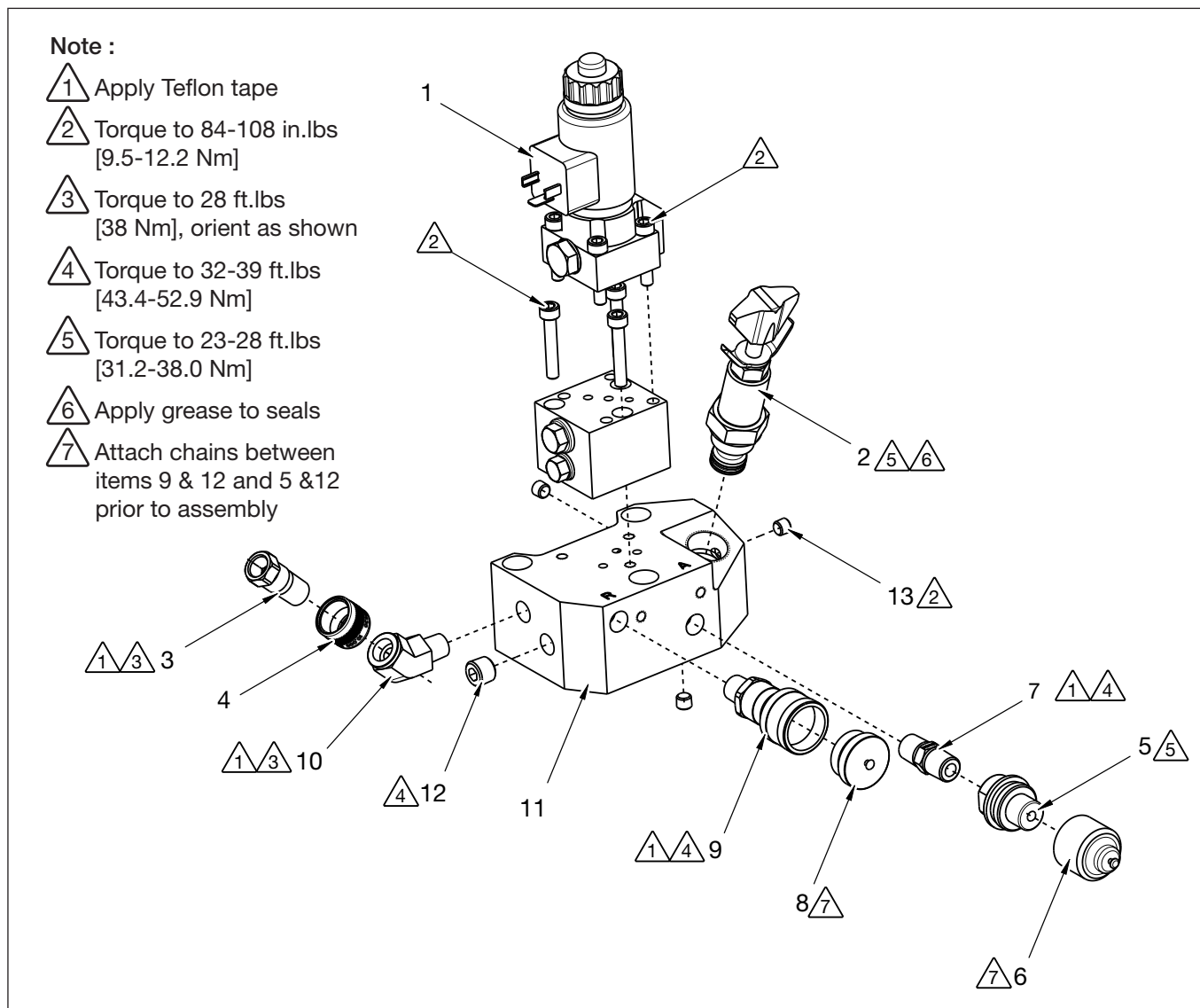


Figure 11: Exploded View

Repair Parts List for Solenoid Valve Assembly DF1247900SR								
Item	Description	Qty	Part Numbers		Qty	Decsription	Qty	Part Numbers
1	4/2 Solenoid Valve	1	U180576660		8	Dust Cap - Female	1	CT201
2	Relief Valve	1	⌘ 45423SR		9	Coupler - Female	1	
3	Ram Coupler	1	AR630		10	Elbow Fitting	1	FZ1618
4	Collar	1			11	Manifold	1	▲ DD3846190
5	Coupler - Male	1	CT202		12	Flush Plug - 1/4 NPTF	1	▲ DC6794245
6	Dust cap - Male	1			13	Flush Plug - 1/16 NPTF	3	▲ DC6792245
7	Adapter	1	FZ1608					
⌘ Seal Kit Relief Valve - LATUARVSK				▲ Items included in Solenoid Valve - DF1247900SR				
IMPORTANT: Shaded items are available only in kit (not sold separately)								
PRODUCT DESIGN VERSION A								

9.5 Shroud Assembly

Note :

- ① Torque to 3-4 in.lbs
[0.33-0.45 Nm]
- ② Torque to 8-10 in.lbs
[0.9-1.1 Nm]
- ③ Press in after connecting
the wires to the PCB

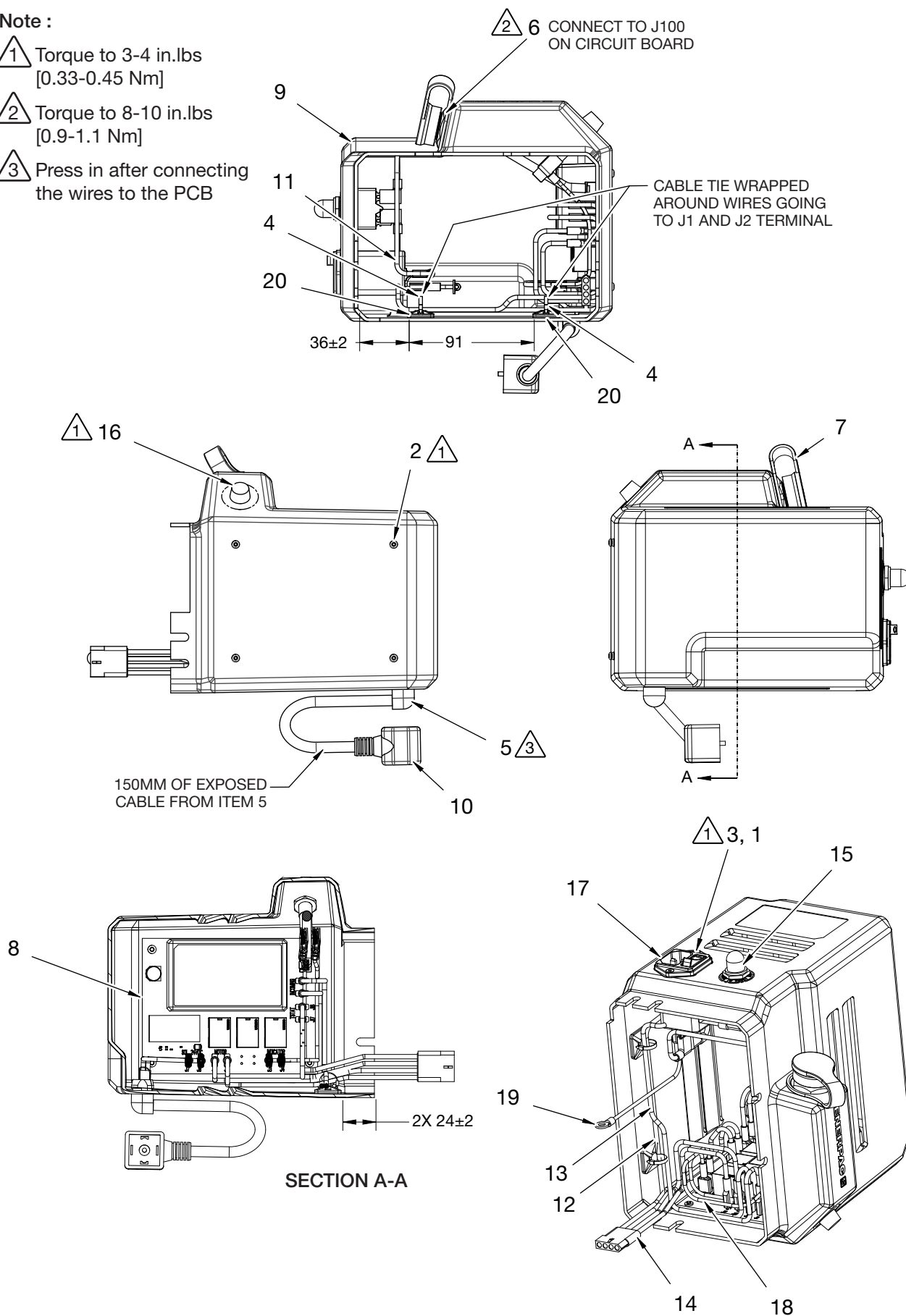


Figure 12: Exploded View

Note :

1 Torque to 3-4 in.lbs
[0.33-0.45 Nm]

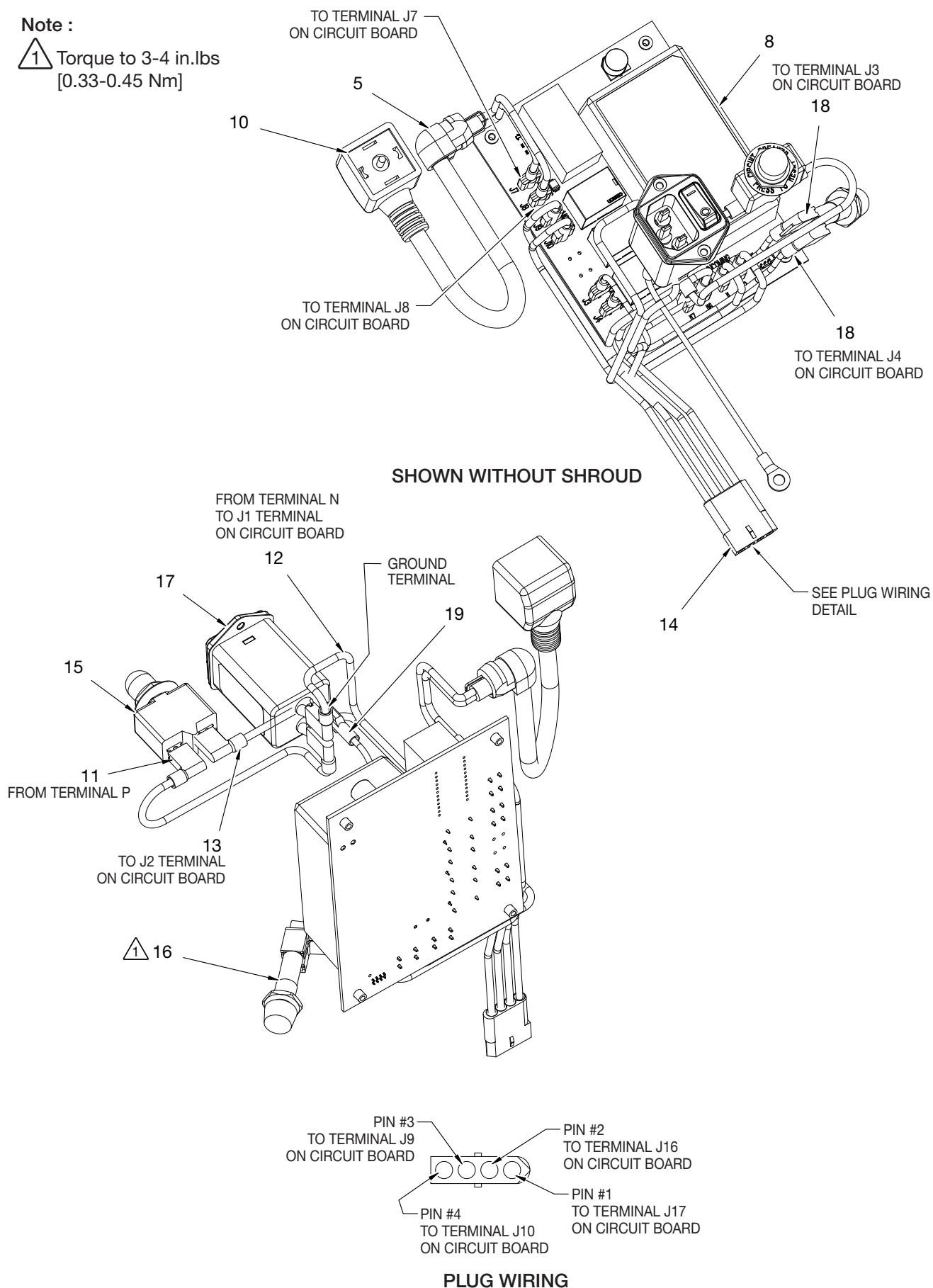


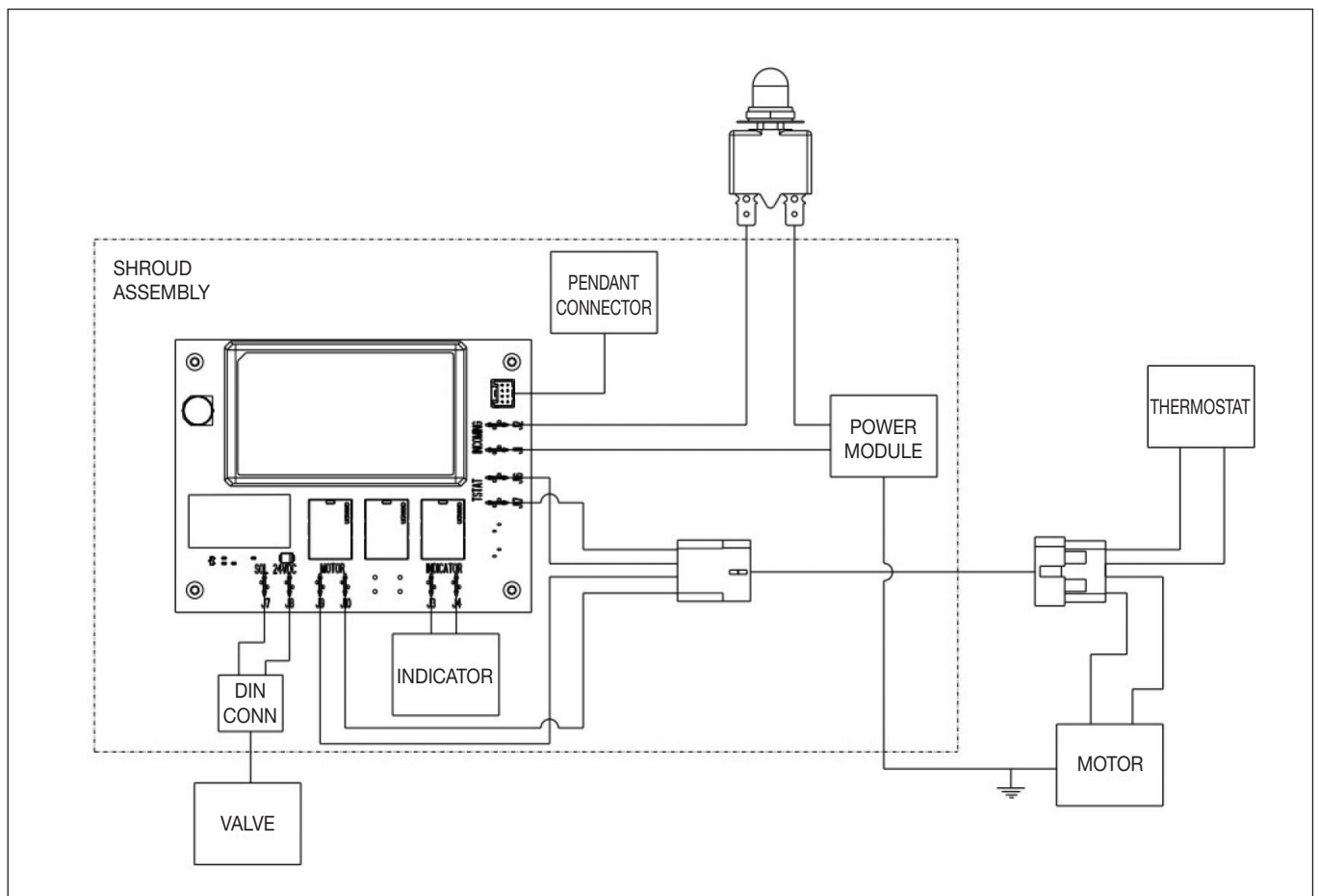
Figure 13: Internal View

Repair Parts List for Shroud Assembly				
Item	Description	Qty	Part Numbers	
			115V DF1237900	230V DF1386900
1	M3 Hex Lock Nut	2	\$ CBE1030120-2A	⊗ CBE1030120-2A
2	M3 x 0.5 Hex BHCS Screw	4	∑ CBE315028-1E	∑ CBE315028-1E
3	M3 x 0.5 Hex FHS Screw	2	\$ CCA319028-1B	⊗ CCA319028-1B
4	Cable Tie	2	■ DA3131217	‡ DA3131217
5	Right Angle Strain Relief Bushing	1	▣ DA9521380	▣ DA9521380
6	Pendant Connector Cord	1	& DD8667960	& DD8667960
7	Pendant Connector Dust Cap	1	& DD8729020	& DD8729020
8	Circuit Board	1	∑ DF1094827	∑ DF1094827
9	Shroud	1	■ DF1155098	‡ DF1155098
10	24 VDC Solenoid Cable ASM	1	▣ DF1160960	▣ DF1160960
11	CBR to PWR Module Wire ASM	1	% DF1207960	% DF1207960
12	PWR Module to PCB J1 Wire ASM	1	% DF1208960	% DF1208960
13	CBR to PCB J2 Wire ASM	1	% DF1209960	% DF1209960
14	Wire Harness ASM	1	% DF1210910	% DF1210910
15	Circuit Breaker	1	DC8366380	DC8367380
16	LED Light, High Temp	1	DF1239376SR	DF1239376SR
17	Power Switch	1	\$ DF1384372	⊗ DF1385372
18	LED to PCB J3/J4 Wire ASM	2	% DF1285900	% DF1285900
19	PWR Module to Motor Wire ASM	1	% DF1287900	% DF1287900
20	Tie Down Self Adhesive	2	■ EHC3901075	‡ EHC3901075
∑ Items included in Circuit Board Kit - LUBPCK		% Items included in Wire Kit - LUBPWK		
\$ Items included in Power Switch Kit 115V - LUBPPK1		⊗ Items included in Power Switch Kit 230V - LUBPPK2		
& Items included in Pendant Cord Kit - LUBPPCK		▣ Items included in Solenoid Cord Kit - LUBPSCK		
■ Items included in Shroud Kit - LUBPSHK1		‡ Items included in Shroud Kit - LUBPSHK2		
IMPORTANT: Shaded items are available only in kit (not sold separately)				
PRODUCT DESIGN VERSION A				

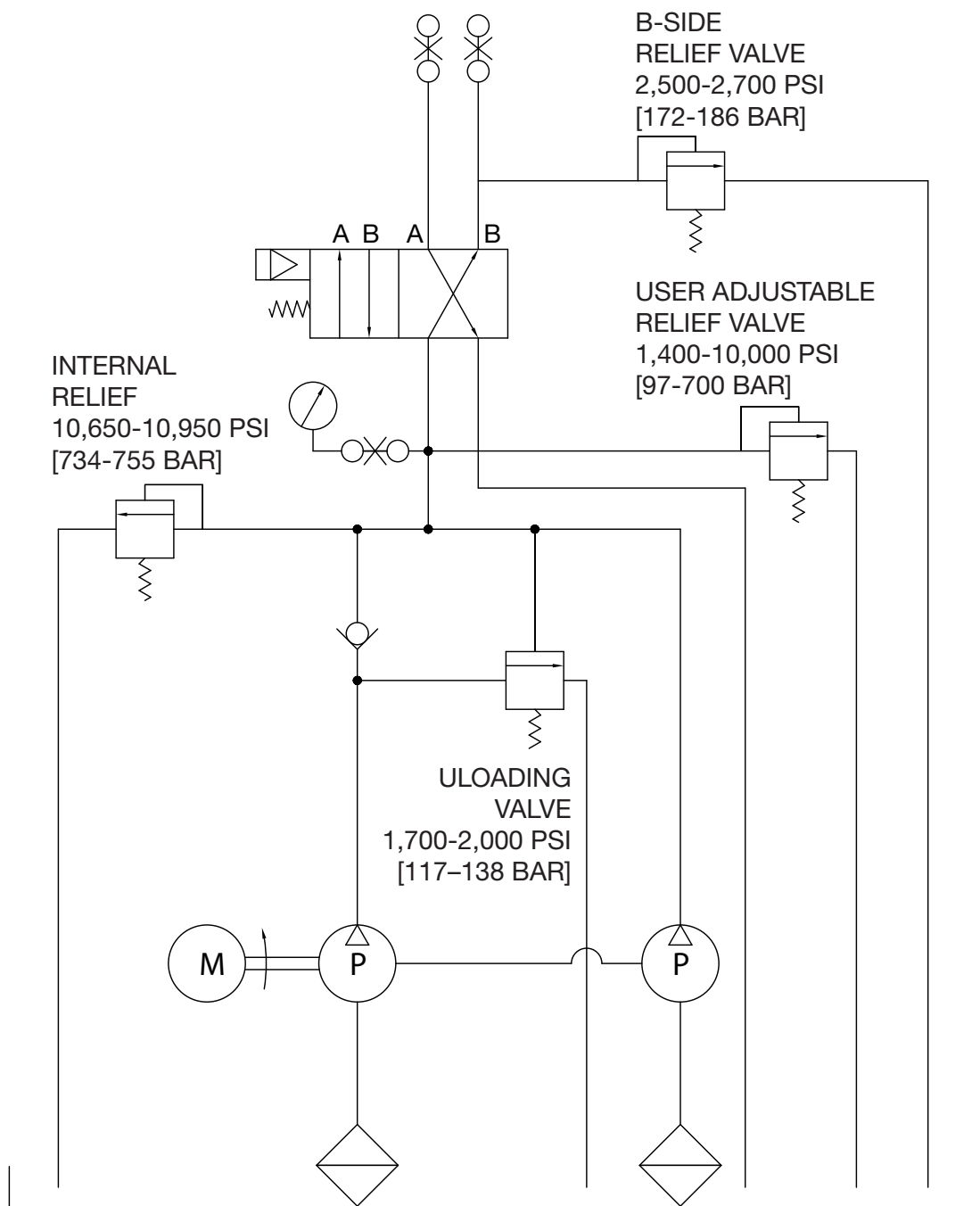
9.6 LUBP Power Cords

Description	Part Numbers
Power Cord 115V, US	DF1204052SR
Power Cord 230V, EU	DF1203052SR
Power Cord 230V, US/CAN	DF1205052SR
Power Cord 230V, AUS/NZ	DF1206052SR
Power Cord 230V, UK	DF1361052SR

10. Wiring Diagram



11. Hydraulic Schematic



NOTES

[illegible]

