PWRPAX Multi-Port Power Pack

Operation and Maintenance Manual

The PWRPAX-AIR Series Multi-Port Power Pack is built for durability, ensuring high performance even in demanding environments. The PWRPAX Series is a three stage pump that offer 2-port and 4-port manifolds with heavy duty roll cages. This manual applies only to the TorsionX PWRPAX-AIR Multi-Port Power Pack. TorsionX reserves the right to change this document at any time without notice.

TorsionX EXTREME BOLTING FORCE

304-744-9489 sales@torsionx.com TorsionX.com

Table of Contents

Carrier Damage Inspection

Upon receipt of this tool, inspect the package for damage.

Carefully inspect all components of tool for damage incurred during shipping. If any damage is found, notify the carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement costs resulting from damage in shipment.

Introduction to Safety Precautions

Use PWRPAX-AIR Multi-Port Power Pack with Hydraulic Torque Wrenches. Safety procedures and proper operating practices must be followed to avoid equipment damage, equipment failure, and personal injury or death.

Read and understand this Operation and Maintenance Manual prior to use. Replace worn or damaged parts with genuine TorsionX replacement parts. Use of other parts may result in safety hazards, decreased tool performance, increased maintenance and may invalidate warranty.

This document assumes that the operator of the PWRPAX-AIR Multi-Port Power Pack and associated products is trained and competent to do so. Only qualified operators should be allowed to operate equipment. This manual does not replace in-person training, nor does it cover every situation encountered while installing, operating, or maintaining the product. Training is imperative to safely handle and operate hydraulic torque tools.

TorsionX is not responsible for any damage to the equipment from improper use. Nor is TorsionX responsible for injury or death resulting from improper/unsafe use or a lack of equipment maintenance. For questions or concerns, contact TorsionX directly or a trained distributor of TorsionX products.

Warnings

Work Area Safety:

- Ensure work areas are clean and well-lit.
- Only trained operators or authorized persons should be near the task site.
- NEVER operate tools in the presence of flammable liquids, gases, or material.

PWRPAX-AIR Multi-Port Power Pack Safety:

Hydraulic Oil Maintenance Safety:

- Before replenishing the hydraulic oil, retract the system to prevent overfilling the pump reservoir.
    - Overfilling can cause personal injury due to excess reservoir pressure created when the wrenches are retracted.
- Only use a high-quality, non-foaming hydraulic oil, which meets the following requirements:
    - Cleanliness Level:
        i. **ISO 4406:** 17/15/12
        ii. **NAS 1638:** 6
        iii. **SAE 749:** 3
    - ISO Viscosity Grade:
        i. **Cold Climates:** 32
        ii. **Temperate Climates:** 46
        iii. **Tropical Climates:** 68
- Keep PWRPAX clean.
- Do not tamper with any internal high-pressure relief valve.
    - Creating pressure beyond rated capacities can result in serious personal injury.

Operating Safety:

- Confirm there is a hydraulic gauge before operating pump.
    - **Never** exceed the maximum operating pressure of 10,000 PSI (700 BAR).
- Use a stable air supply capable of **25-35 cfm** at **90-100 psi.**
    - If supply is unsteady, it may affect the performance and may damage the hydraulic power pack.
- Ensure FRL is adjusted correctly to less than 100PSI and contains sufficient lubricant-type detergent (sae#10 automotive engine oil or equivalent).
- Do **NOT** operate without oil.
    - **NOTE:** The power pack has been shipped **without** oil in the reservoir.
- Do **NOT** permit anyone to stand in front of open hydraulic couplers during operation.

- For multiple operators, always have a clear line of communication while operating pump.
- Always use proper safety equipment and clothing. Consult with your company's safety representative for this information.

Hydraulic Hose Safety:

Maintenance Safety:

- Never paint a hydraulic hose nor hydraulic couplers.
- Hose material and coupler seals must be compatible with the hydraulic fluid.

Before Operating:

- Ensure your hose is a twin line high-pressure hydraulic hoses rated for 10,000 PSI (700 BAR) with at least a 3:1 safety factor.
- Inspect hose for wear and damage prior to every use.

While Operating:

- Should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut off the hydraulic power pack.
- **NEVER** attempt to grasp a leaking pressurized hose with your hands.
    - The force of the escaping hydraulic fluid could cause serious injury.
- Do not let the hose kink, twist, curl or bend so that oil flow within the hose is blocked or reduced.
    - Too small of a bending radius will kink and destroy the high-pressure hydraulic hose.
- Shut off the motor before breaking any hydraulic connections in the system.
- Do not use the hose to move the attached hydraulic torque wrench(es) or pump.
- **Do not** subject the hose to potential hazards such as:
    - Fire
    - Sharp surfaces
    - Extreme heat or cold
    - Heavy impact
- Keep hoses away from contact with corrosive materials such as creosote-impregnated objects and some paints and solvents.
    - Hose deterioration due to corrosive materials can result in premature failure and serious personal injury.

Power Supply Safety:

Maintenance Safety:

- **Disconnect the hydraulic power pack from the power supply when performing maintenance or repairs.**
- If the power supply is damaged, replace or repair immediately.

While Operating:

- Use a stable air source.
    - If air supply is unsteady, it may affect the performance and may damage the hydraulic power pack.

Air Supply Maintenance:

- **Disconnect the hydraulic power pack from the air supply when performing maintenance or repairs.**
- Inspect tubing carefully. If the remote tubing is damaged in any way, replace immediately. Damaged tubing can cause irregular behavior.
- Ensure sufficient air flow available at pressure you will be using. Compromised air supply can cause irregular behavior.

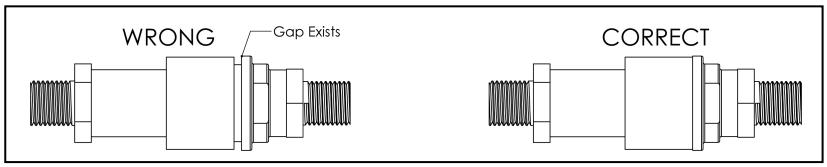
Hydraulic Coupler Safety:

Maintenance Safety:

- Immediately replace any worn or damaged hydraulic couplers.

Before Operating:

- Tighten all hydraulic hose connections with the proper tools.
    - Connections should be tightened securely and leak-free.
    - Do **NOT** over tighten as this can cause premature thread failure.



- Check for gaps in the hydraulic coupler.
    - **Gaps can cause a disruption in the flow of hydraulic fluid.**
    - **Gaps will cause the hydraulic torque wrench to not operate.**
- When only using one hydraulic torque wrench, cover the empty hydraulic couplings with dust caps

Features:

- PWRPAX-AIR Multi-Port Power Pack is a three-stage power pack. The pressure relief valve is assembled in the high-pressure port.
- Flow rates for the power pack by stage are:
    - 50in /min in high pressure stage
    - 110in /min in mid pressure stage
    - 625in /min in low pressure stage
- Maximum operating pressure: 10,000 PSI
- The PWRPAX-AIR Multi-Port Power Pack can simultaneously run two or four torque wrenches at the same time.
- **Ideal air supply requirements:**
    - **25-35 CFM @ 90-100 PSI**
- Acceptable working temperature: -20 F to 105 F (Select appropriate grade oil)
- Overall dimensions: 18” L x 15.5” W x 20” H
- Weight (without oil): 64lbs

Setting Up the PWRPAX-AIR

Hydraulic Oil:

Attention: The power pack has been shipped **without** oil in the reservoir. Only use a high-quality, non-foaming hydraulic oil, that meets the following requirements:

- Cleanliness Level:
  - **ISO 4406:** 17/15/12
  - **NAS 1638:** 6
  - **SAE 749:** 3
- ISO Viscosity Grade:
  - **Cold Climates:** 32
  - **Temperate Climates:** 46
  - **Tropical Climates:** 68

Filling the Reservoir:

1. Place PWRPAX on level surface.
2. Clean the area around the filler cap.
   a. Any dirt or grime in the hydraulic oil can damage the internal workings of the power pack.
3. Remove the filler cap and insert a clean funnel.
4. Fill with appropriate hydraulic oil until oil is above the red dot in sight-glass window.
5. Replace filler cap.
6. Cycle the power pack (with hydraulic torque wrench attached) several times.
7. Retract the hydraulic torque wrench and check the oil level in the power pack reservoir again.
   a. This will also help eliminate air from the system.

Hydraulic Connections:

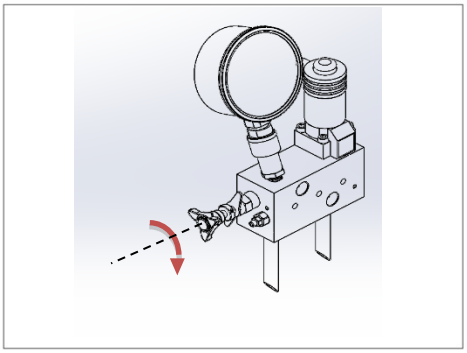
1. Inspect all hydraulic twin line hoses, threads and fittings for signs of wear or damage and replace as needed.
2. Clean all hose ends and hydraulic couplers.
3. Connect the twin line hydraulic hose to the hydraulic torque wrench and the power pack, making sure all hydraulic couplers are snug.
4. Jog the power pack several times.
   a. The power pack is now ready to be put into regular operation.

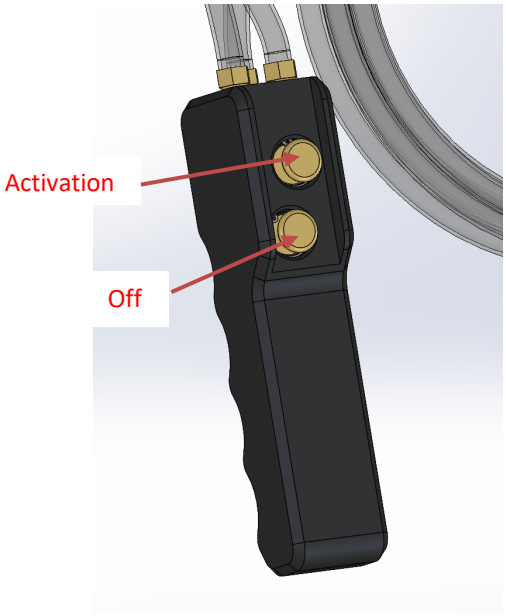
Adjusting the Hydraulic Pressure:

NOTE: For easy adjustment of the pressure regulating valve always adjust the pressure by increasing to the desired pressure setting.

ATTENTION: THE POWER PACK MUST BE COMPLETELY CONNECTED AND THE HYDRAULIC TORQUE WRENCH MUST NOT BE ON THE APPLICATION WHEN ADJUSTING THE PRESSURE.

IMPORTANT: NEVER EXCEED 10,000 PSI





1. Connect the air supply, adjust the FRL pressure on the 2” gauge to <100 psi and press the activation button momentarily until the pump turns on.
    a. The activation button the top button on the remote located closest to the hoses.
2. Loosen the locknut on the pressure regulating valve, and back the adjusting knob out a few turns.
    a. Do so by turning the adjusting knob in a counterclockwise direction.
    b. This will decrease the pressure setting to a pressure lower than the desired pressure.
3. Once you have momentarily pressed and released the top button the power pack should turn and remain on.
    a. In this condition the power pack will deliver hydraulic oil to the low-pressure port (Port B).
4. Press and hold the activation button (top) to change the power pack to the advance mode.
    a. The power pack will now deliver hydraulic oil to the high-pressure port (Port A).
5. While holding activation button, slowly turn the adjusting knob in a clockwise direction.
    a. This will gradually increase the pressure setting.
6. When the desired pressure is reached, release the activation button (top), and then press the off button (bottom) to turn off the power pack.

IMPORTANT: NEVER EXCEED 10,000 PSI (700 BAR)

Operation

1. Press and hold the activation button on the remote to advance the hydraulic torque wrench.
2. When you hear an audible “Click” from the hydraulic torque wrench, release the activation button.
    a. The hydraulic torque wrench will automatically retract.
3. When the hydraulic torque wrench is fully retracted, repeat the process until the desired pressure/torque rating is reached.
4. To disconnect tools and hoses from system, you must release system pressure.
    a. To release pressure from system, press both the activation and off buttons at the same time on remote pendant.

Attention: When using a hydraulic power pack for the first time, activate the hydraulic torque wrench prior to putting tool on an application; this will help remove any air from the system.

APPENDIX

I. Trouble Shooting Guide

Malfunction	Reason for malfunction	Solution
The power pack does not start.	No air connected.	Connect to air supply.
	Insufficient air supply.	Confirm air supply capability.
	Back pressure was not released.	Release system pressure.
The system has no hydraulic pressure.	The hydraulic couplers are not connected properly.	Tighten or re-install.
	No oil in the tank.	Fill oil.
	Not enough oil in tank.	Fill oil.
	Faulty pressure gauge.	Replace gauge.
The system still has no hydraulic pressure after checking the above.	The hydraulic couplers may have a vacuum lock.	Check hydraulic couplers to hydraulic torque wrench. Inspect couplers to ensure they are completely coupled. Occasionally couplers have to be replaced because the check ball does not stay open due to wear.
Hydraulic couplers are leaking.	The O-ring is worn or missing in the female hydraulic couplers.	Replace the hydraulic couplers.
The desired hydraulic pressure cannot be reached.	The pressure setting for high-pressure relief valve is adjusted too low.	Replace high pressure relief valve.
	Oil is mixed with water.	Replace the oil.
	Pressure relief valve broken.	Replace valve.
	Air may be in system.	Repeat operating the system with no load several times to eliminate air.
	High-pressure relief valve may be loose.	Tighten valve.
	The O-ring for high-pressure relief valve may be worn or missing.	Replace O-rings.
There is a loud noise when the power pack is operated.	The bearing(s) may be worn or broken.	Replace bearing(s).
	Air may be in system.	Repeat operating the system with no load several times to eliminate air.
High-pressure flow is reduced.	Piston or spring may be broken.	Replace piston assembly.
	Hydraulic couplers may be loose.	Tighten hydraulic couplers.
	Oil level may be low.	Fill with oil.
	Oil may be too cold.	Change hydraulic oil to a lighter grade.
	Contamination in oil.	Clean tank and replace oil.