DURAPAC
ENGINEERED FOR RELIABILITY

Instruction Manual

Air Torque Wrench Power Unit
Model – DAT-1114

Maximum Operating Pressure – 700 bar

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This is a safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid injury or death

1.0 Product Information

DURAPAC – Air Torque Wrench Power Units are engineered to meet Industrial Standards for Performance and Safety. The DAT Series Torque Wrench Power Units are perfectly designed for operating the TW and LPC Series Hydraulic Torque Wrenches.

- Liquid filled pressure gauge has 1% accuracy and can be recalibrated. Scale is mpa/psi
- Roll cage for portability and protection
- Air motor 2.7kW Ingersoll Rand®
- 6 metre remote pendant incorporates motor ON/OFF button and ADVANCE/AUTO RETRACT button
- Adjustable torque control for accurate torque settings
- Oil cooler keeps oil cool during heavy duty operation
- Multiple tool outlets for operating one or two tools simultaneously
- 3 stage pump for increased speed under load
- Air filter/lubricator for efficient operation

Special skill, knowledge and training may be required for a specific task and the product may not be suitable for all jobs. The user must ultimately make the decision regarding suitability of the product for any given task and assume the responsibility of safety for all in the work area. Contact a Durapac representative if you are unsure of your power unit's suitability for a particular application.

2.0 Receiving Instructions

It is recommended prior to use that an inspection be done by qualified personnel and that any missing or damaged parts, decals, warning/safety labels or signs are replaced with Durapac authorised replacement parts only. Any power unit that appears to be damaged in any way, is worn, leaking or operates abnormally should be removed from service immediately until such time as repairs can be made. Any power unit that has been or suspected to have been subject to a shock load should be removed from service immediately until inspected by a Durapac authorised service centre. Owners and operators of this equipment should be aware that the use and subsequent repair of this equipment may require specialised training and knowledge.

3.0 Safety

Save these instructions. For your safety, read and understand the information contained within. The owner and operator should understand this product and safe operating procedures before attempting to use this product. Instructions and safety information should be conveyed in the operator's native language before use of this product is authorised. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorised manual, remove from service immediately.

DANGER:

- To avoid personal injury keep hands and feet away from work area during operation
- **Do NOT** handle pressurised hoses. Escaping oil under pressure can penetrate the skin causing serious injury. If oil is injected under the skin, see a doctor immediately
- Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be supported mechanically

WARNING:

- The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system
- Always wear appropriate personal protective equipment (PPE) when operating hydraulic equipment. The operator must take precaution against injury due to failure of the tool or work piece(s)
- **Do NOT** hold or stand directly in line with any hydraulic connections while pressurising
- **Do NOT** attempt to disconnect hydraulic connections under pressure. Release all line pressure before disconnecting hoses
- All personnel must be clear before lowering load or depressurising the system
- **Do NOT** attempt to lift a load weighing more than the capacity of the cylinder

IMPORTANT:

- If at any stage, the safety related decals become hard to read, these must be replaced
- Minimum age of the operator must be 18 years. The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the equipment. The operator is responsible for this activity towards other persons
- **Do NOT** lift hydraulic equipment by the hoses or couplers. Use the carrying handle or other means of safe transport
- Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Durapac authorised service centre in your area. To protect your warranty, use only high-quality hydraulic oil

CAUTION:

- **KEEP HYDRAULIC EQUIPMENT AWAY FROM FLAMES AND HEAT.** Hydraulic fluid can ignite and burn. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65°C (150°F) or higher. Protect all equipment from weld spatter
- No alteration should be made to this device

3.1 Hydraulic Power Units

- Ensure that the air source is **SWITCHED OFF** prior to connection of hoses and other hydraulic equipment or prior to any repairs being undertaken
- **Do** use a gauge or other load measuring instrument to verify load
- **Do NOT** exceed the rated capacity of the power unit or any equipment in the system. Burst hazard exists if connection pressure exceeds rated pressure
- Regularly inspect power unit, hoses and connections before each use to prevent unsafe conditions from developing. **Do NOT** use if they are damaged, altered or in poor condition. **Do NOT** operate the system with bent or damaged coupler or damaged threads
- **Do NOT** subject the power unit and its components to shock loads
- Use only Durapac approved accessories and components
- Ensure that the chosen application is stable to work on and around
- **Do NOT** connect to an application which can return more oil to the reservoir than the power unit reservoir can hold
- **Do NOT** connect power unit to a hydraulic system that is powered by another pump

3.2 Hydraulic Hoses & Fluid Transmission Lines

- Avoid short runs of straight-line tubing. Straight line runs do not provide for expansion and contraction due to pressure and/or temperature changes
- Ensure that the minimum bending radius is greater than 120 mm
- Reduce stress in tube lines. Long tubing runs should be supported by brackets or clips. Before operating the power unit, connections should be tightened securely and leak-free. Over tightening can cause premature thread failure or high-pressure fittings to burst
- Should a hydraulic hose ever rupture, burst or need to be disconnected, immediately shut off the power unit and release all pressure. Never attempt to grasp a leaking pressurised hose with your hands. The force of escaping hydraulic fluid can inflict injury
- **Do NOT** subject the hose to potential hazard such as fire, sharp objects, extreme heat or cold or heavy impact
- **Do NOT** allow the hose to kink, twist, curl, crush, cut or bend so tightly that the fluid flow within the hose is blocked or reduced. Periodically inspect the hose for wear
- **Do NOT** pull, position or move setup by the hose
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive materials such as battery acid, creosote-impregnated objects and wet paint. Never paint a coupler or hose

FAILURE TO HEED THESE WARNINGS MAY RESULT IN PERSONAL INJURY AS WELL AS PROPERTY DAMAGE.

4.0 Installation

⚠ **IMPORTANT:** Always secure threaded port connections with high grade, non-hardening pipe thread sealant. Teflon tape can be used if only one layer of tape is used and it is applied carefully, two threads back, to prevent the tape from being introduced into hydraulic system, which could cause jamming of precision-fit parts

4.1 Familiarise yourself with the specifications and illustrations in this owner's manual. Know your power unit, its limitations and how it operates before attempting to use. Refer to the specification chart below or if in doubt, contact a Durapac representative.

Model Number	Pressure Rating (bar)	Motor	Flow (Lpm)			Oil Capacity (L)	Dry Weight (kg)
			1st Stage 0-100 bar	2nd Stage 100-250 bar	3rd Stage 250-700 bar		
DAT-1114	700	2.7 kW Air	7.0	1.6	0.8	7.0	31.5

4.2 Ensure that there is adequate oil in the reservoir to perform the required function. Ideally the gauge should not read less than 1/3. If this is the case, see section 6.1 Adding Hydraulic Fluid.

4.3 Hydraulic connections – check all system fittings and connections to be sure they are tight and leak free.

The wrench and power unit are connected by a 700-bar operating pressure, twin-line hose assembly. Each end of the hose will have one male and one female connector to ensure proper connection between the power unit and the wrench.

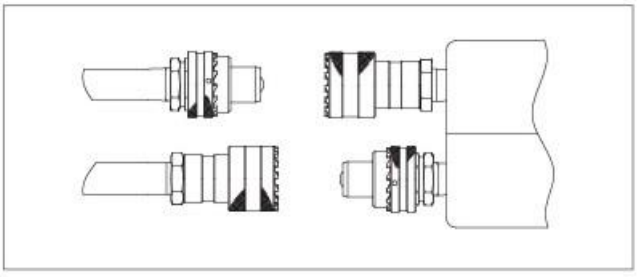

Figure 1 – Hydraulic Connectors

4.4 Air connection - connect suitable air supply to air input port. Ensure that your air source can dedicate 1,400 Lpm @ 6.2-bar to each power unit being operated.

4.5 Remove air from the system – Air can accumulate in the hydraulic system during the initial setup or after prolonged use, causing the cylinder to respond slowly or in an unstable manner. Should removal of air from pump be required, please follow the steps in 6.2 – Bleeding Air from the System in the Maintenance Section.

5.0 Operation

IMPORTANT:

- To reduce the risk of personal injury and/or property damage, Hydraulic connections must be securely fastened before building pressure in the system. Release all system pressure before loosening any hydraulic connection in the system
- When only using one hydraulic torque wrench, cover the unused hydraulic coupling with a metal dust cap or plug the unused port
- Always monitor pressure, load or position using suitable equipment. Pressure may be monitored by means of an optional manifold and gauge. Correct application position can only be determined by the operator of the equipment
- **Do NOT** operate a power unit that is disconnected from the application. If operated in this condition, the hose and connections will become pressurised. This increases the chance of a burst hazard. Damage may also occur to the pump and its components
- The power unit is designed for indoor use, please protect from the rain if used outside

Durapac Air Torque Wrench Power Units have been specifically designed to integrate seamlessly with Durapac TW and LPC-Series Torque Wrenches. There is a 2-way, 4 position air control valve on the pump. Port A is a high-pressure port - it delivers the oil at a high pressure. Whereas Port B is a low-pressure port that delivers the oil at a low pressure.

5.1 Prior to operation, loosen the high-pressure valve for adjusting pressure.

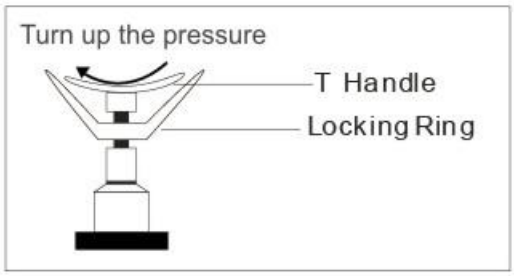

Figure 2 – Adjust Pressure

5.2 Connect the air supply.

5.3 Press the motor ON/OFF button on the remote-control pendant to start the power unit. The power unit directional valve will automatically be in retract mode at this stage.

5.4 Press the ON button on the remote-control pendant to advance the tool. At this stage the high-pressure adjusting valve can be increased to the operator's predetermined pressure setting.

When the desired pressure is reached, the motor will stop and the pressure will be maintained. When the pressure drops, the motor will automatically restart.

5.5 When the motor is operating, press the OFF button on the remote-control pendant to stop the motor. The piston and pressure will also be stopped at the position when the motor stopped working. When the pressure drops, the motor will **not** automatically restart.

5.6 After completion, press the rubber button on top of the air control valve to release the pressure in the hoses and equipment. Disassemble components as required and replace safety caps on the couplers.

6.0 Maintenance

IMPORTANT:

- Check oil level regularly
- Use only good quality hydraulic fluid. **Do NOT** use brake fluid, transmission fluid, turbine oil, motor oil, alcohol, glycerine etc. Use of anything other than good quality hydraulic oil will void warranty and damage the pump, hose, and application. We recommend Durapac Hydraulic Oil or equivalent
- Equipment must only be serviced by a qualified hydraulic technician. For repair service, contact your local Durapac authorised service centre
- Tighten connections as needed. Use non-hardening pipe thread compound when servicing connections
- Damage to hydraulic hoses may not be detected during visual inspections. For this reason, Durapac recommends that hydraulic hoses be replaced on a regular basis
- Ensure that the air source of the pump is shut off before beginning any maintenance or repairs

Dirt, sand, etc. will quickly ruin any hydraulic system. Ensure that couplings are clean and free of foreign matter. After each use, clean couplings and attach dust caps.

Maintenance is required when wear or leakage is noticed. Periodically inspect all components to detect any problem that may require service and maintenance.

6.1 Adding Hydraulic Fluid

⚠ WARNING: Always add oil with cylinders fully retracted (or extended, if pull cylinders) or the system will contain more oil than the reservoir can hold

⚠ WARNING: Disconnect equipment before adding oil and never over fill the reservoir

6.1.1 Depressurise and disconnect hydraulic hose from application/cylinder.

6.1.2 Clean the area around the filler cap. Any dirt or grime in the hydraulic oil can damage the internal workings of the power unit.

6.1.3 Remove the filler cap located on the top plate of the reservoir.

6.1.4 Use a small funnel to fill the reservoir to within 25mm (1") from the top of the filler hole.

6.1.5 Bleed air from system if necessary.

6.1.6 Wipe up any spilled fluid and reinstall the filler cap.

6.2 Bleeding Air from the System

6.2.1 Repeat Steps 6.1.1 to 6.1.4 (above), if required.

6.2.2 Cycle the power unit (with hydraulic torque wrench attached) several times.

6.2.3 Retract the hydraulic torque wrench. Air will be released into the pump reservoir.

6.2.4 Recheck oil level after removing air.

6.3 Changing Hydraulic Fluid

⚠ For best results, change fluid once a year or every 300 hours of use

6.3.1 Repeat Steps 6.1.1 to 6.1.3 (above).

6.3.2 Pour used fluid into a sealable container.

6.3.3 Repeat Steps 6.1.4 to 6.1.6 (above).

6.3.4 Dispose of fluid in accordance with local regulations.

6.4 Storage

6.4.1 When not in use, depressurise and disconnect the hydraulic pump from the application.

6.4.2 Wipe clean thoroughly and store in a clean, dry environment. Avoid temperature extremes.

6.4.3 For transportation or long storage, replace the air vent plug with shipping plug.

6.4.4 Shield pump with a protective cover.

7.0 Troubleshooting

Problem	Cause	Solution
Power unit cannot be started	Unsuitable air source	• Ensure the air supply meets the power unit's specifications
	Air source is not connected	• Connect air source
Power unit has no pressure	Loose couplers	• Tighten couplers
	Faulty couplers	• Replace couplers
	Oil level too low	• Refer to 6.1 – Adding Hydraulic Fluid
	Faulty pressure gauge	• Replace gauge
	Hydraulic couplers have a vacuum lock	• Check hydraulic couplers to hydraulic torque wrench • Inspect couplers to ensure they are completely coupled • Replace couplers if damaged
Leaking couplers	O-ring is worn or missing in the female couplers	• Replace the couplers
Power unit cannot reach the rated pressure	Pressure is adjusted too low for the high-pressure valve	• Check the gauge • Adjust to rated value
	Oil is mixed with water	• Refer to 6.3 – Changing Hydraulic Fluid
	Malfunctioning pressure relief valve	• Replace pressure relief valve
	Loose high-pressure valve	• Tighten valve
	Air in system	• Refer to 6.2 – Bleeding Air from the System
Power unit emits a loud noise while operating	Bearings worn or broken	• Replace bearing(s)
	Air in system	• Refer to 6.2 – Bleeding Air from the System
High pressure flow is reduced	Piston or springs may be broken	• Replace piston assembly
	Loose couplers	• Tighten couplers
	Oil level too low	• Refer to 6.1 – Adding Hydraulic Fluid
	Oil too cold	• Control the temperature to at least -10°C
	Dirt in pump or filter is clogged	• Replace filter and clean tank