



PNEUTORQUE® SHUT-OFF SYSTEM USING TTT

MODEL NO. 60244 (Q1124)

OPERATORS HANDBOOK (PART NO. 34291) Issue 1

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INTRODUCTION

The system has been designed to tighten fasteners by means of torque, monitoring this process and then shutting the tool off automatically when the required setting is achieved. Operation of the system is by means of a start trigger on the tool handle.

The system comprises of:

The tool which utilises a Norbar Pneutorque fitted with an annular transducer which is connected to an epicyclic gearbox.

The control box (Part No. Q1124) is the heart of the system. All signals from the annular transducer at the tool are passed to the TTT incorporated in the control box. Eight sets of limits are used in the TTT, which in conjunction with a PLC an solenoid, a torque shut off system is achieved. Pass/Fail lights are on the front panel, and an RS232C signal to output all results is supplied on the side of the control box.

Cables supplied, for tools with an internal solenoid, a 19 pin to 19 pin connector lead is supplied. For tools with an external solenoid, the 19 pin to 6 pin connector lead and also the 3 pin to solenoid connector lead should be used.

TTT, for information on the TTT refer to the TTT handbook.

Calibration and repair, where necessary, should be carried out by Norbar or by a Norbar approved agent, where all the facilities to ensure the system is functioning at maximum accuracy are available.

Mains power. Mains power should be connected as follows:

BROWN – LIVE

BLUE – NEUTRAL

GREEN/YELLOW – EARTH

WARNING – It is important that live, neutral and earth are all connected between the control box and mains supply. If no earth is available (2-wire mains supply) it is recommended that a separate earth be connected between the control box and a suitable earth.

A 5 amp, 100 – 240 volt supply is required.

Cleaning. Do not use abrasives or solvent cleaners. We recommend a propriety brand of foam based fabric/vinyl cleaner. Use a soft cloth to avoid scratches.

SPECIFICATIONS

AC Power Requirements	100 - 240 Volts +/- 10% 50/60 Hz
Power Requirements	10 W
Input fuse required	5 Amp
Internal Fuses	TTT - 1 Amp PLC Supply - 2 Amp
Torque Accuracy	+/- 1%
Operating Temperature	0 degrees C to 50 degrees C
Storage Temperature	-20 degrees C to +70 degrees C
Maximum Operating Humidity	80% Relative humidity @ 30 degrees C
Module Size	Control box - Height 300mm - Width 300mm - Depth 150mm
Weight	Control box - Tool - 6.5 Kg
Environment	Indoor use within a light industrial environment
Electromagnetic Compatibility (EMC) Directive	In conformance with BS EN 61326-1:1997
Low Voltage Directive	In conformance with EN 61010-1 : 2001. To environmental conditions pollution degree 2 & installation category (overvoltage category) II.

Note : If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment could be impaired.

SETTING

TTT Instrument _____

The TTT instrument has been set for this application, the settings are as follows:-

Current Settings _____

1. Language – English. May be changed if required.
2. Password – Set to 000000. May be changed if required.
3. Date & time – Set to GMT.
4. Mode frequency – Set to 500 Hz on track and stall tool.
5. Serial port – No parity
9600 Baud
8 Data bits
2 Stop bits
No first character
Output units
No output of date/time
Output line feed
No handshake
0.5 second line delay
6. First peak sensitivity – Low
Auto reset hold time – 3 seconds
Trigger from – 5%
7. Units enable/disable – N.M. and Lbf.Ft enabled only. Others may be enabled if required.
8. Modes enable/disable – Stall tool enabled only.
9. Power down time – 0 seconds
10. Print defaults – If required.

To change settings please refer to the TTT handbook.

Limit Settings _____

Set as per TTT handbook

Note:- The low limit percentage requires setting to allow overshoot to allow the tool to end at the target value.

Air Pressure Setting _____

The ideal air pressure set on the lubro unit should be 10% above the stall torque required on the air pressure graph. If more pressure is applied it will lead to an increase in overshoot, this could be compensated by increasing the percentage of the target value, but would create a scattering of results.

OPERATION

1. Power up the control box and ensure all settings, limits and air pressure are set as required.
2. Press 0 (ZERO) on the TTT and ensure the instrument reads Zero.
3. Press 6 (STALL TOOL) on the TTT and the instrument will go into the stall tool mode

Note:- Steps 2 and 3 must be carried out every time power is reapplied to the control box.

4. Select the units required (N.m or lbf.ft), the last setting will remain as the default when power is restored.
5. By using the up/down arrows select the required limit (Limits 1 – 8). If no limit is selected both red and green lights will flash and the solenoid will not energise causing the tool to be inoperative
6. Apply the PT to the application, ensuring the reaction is placed correctly, the forward/reverse switch is in the forward position and press the trigger.
7. The tool will run to the preset torque and stop. As torque is applied, the red light will illuminate as the tool goes through the low limit and will extinguish when the green light illuminates, indicating that the target level is achieved. If the red light is flashing the tool has overrun the desired target. To achieve the target either increase the percentage on the low limit or lower the air pressure. If the red light is permanently illuminated the tool has not achieved the torque, so the air pressure requires to be increased.
8. To unfasten an application, reposition the reaction arm and place the tool in reverse. Both lights should be extinguished. Place the tool on the fastener and press the trigger
9. The tool should unfasten the application and the red light will illuminate.
10. Before the tool will be ready for another tightening sequence, after an untightening application, both the lights require to be extinguished. This is achieved by either pressing the 0 (ZERO) button on the TTT, or wait for 10 seconds and it will be done automatically.
11. An RS232C signal is sent every time the display is reset to zero, either automatically in a cycle or manually by pressing 0. Pressing 8 will just output data. If no data is required to be sent press 9 on the TTT switch panel.