Aerospace Tooling

Portable Proof Load Kit Instruction Manual
GLOBAL MASTER DISTRIBUTOR:

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Part List

Figure 1 - Electronic Load Display
Figure 2 – DTI Assembly
Figure 3 - Load Cell
Figure 4 - Battery Charging Cable
Figure 5 - Charger Adaptors
Figure 6 - Spanner
Precautions Prior to Use

- Please charge electronic load display for 24 hours prior to initial use.
- Check battery life on digital display to ensure adequate life.
- Make sure all contact surfaces are clean and lube dry.
- Ensure the housing has suitable clearance for test to be performed.
- Perform an initial test by hand to ensure there is no notable free play with respect to the housing.

NOTE: IF NOTABLE FREE PLAY IS PRESENT THEN BEARING HAS ALREADY FAILED. THE ASSEMBLY SHOULD BE REJECTED AND THE BEARING REINSTALLED.

WARNING: IF YOUR KIT HAS MULTIPLE ADAPTER PUSHER CUPS, PLEASE ENSURE THE LOAD CELL IS REPLACED ENSURING THE RAISED BORE SIDE OF THE LOAD CELL IS IN CONTACT WITH THE NUT (EXAMPLE ORIENTATION SHOWN IN FIGURE 7 & FIGURE 8).
Instructions

Step 1 – Connect load cell to the electronic display

NOTE: LOAD CELL MUST BE CONNECTED BEFORE UNIT IS POWERED ON

- Unscrew port cap for Sensor/Load cell connector.
- Connect the load cell to the electronic load display ensuring to match the keyway with the slot.
- Secure the connector by turning the collar clockwise.
Step 2 – Turn on the electronic load display

- Turn on the display by holding the power button.
- The display will recognise the load cell serial number and will calibrate automatically.
- The initial load may show positive or negative figures at this point.

Step 3 – Tare the display to zero load

- Once powered on, use the Tare/Gross button to zero out the unit before connecting the load cell to the DTI assembly.

**NOTE: LOAD CELL WILL NOT REMAIN AT ZERO DUE TO HIGH SENSITIVITY**

Step 4 – Mount DTI assembly onto bearing and housing

- Mount the DTI assembly so that the draw rod goes through the bearing bore.
- Please note the load cell assembly features two sides:
  a) Pusher side (See Figure 18)
     - This will contact the v-groove of the bearing.
  b) Receiver side (See Figure 19)
     - This will contact the nut.
• Install the load cell assembly with the pusher side facing towards the bearing.

• Hold the cylinder assembly from the opposite side.

• Ensure the ridge of the pusher side is completely seated within the v-groove of the bearing.

• If there is an adaptor sleeve, this should sit between the draw rod and the load cell bore.

• Mount the nut onto the draw rod while holding the load cell in place.

• Push the cylinder flush with the housing as you tighten the nut up to the load cell.

• Finger tighten the nut. Allow all of the components to self-align, loosen the nut and then finger tighten the nut again.

**NOTE: OVER-TIGHTENING THE NUT AT THIS POINT WOULD APPLY PREMATURE PRESSURE ONTO THE LOAD CELL.**
Step 5 – Turn on and prepare indicator

- Turn on indicator with the button on the bottom right.
- Ensure the units of measurement are set as desired.

**NOTE:** CONSULT DTI MANUAL FOR INSTRUCTIONS ON CHANGING THE UNITS AND NAVIGATING THE DTI GAUGE.

Step 6 – Apply load and begin proof load test

**NOTE:** TARE ELECTRONIC LOAD DISPLAY BEFORE APPLYING TORQUE ON THE NUT.

- Apply initial load by turning the nut clockwise using the wrench.
- Monitor the electronic load display to ensure only the desired load is applied to the system.
- Once the desired load is achieved, take note of the linear displacement presented on the DTI gauge.

**NOTE:** THE LINEAR DISPLACEMENT OF THE BEARING UNDER THE REQUIRED LOAD DETERMINES WHETHER THE BEARING INSTALLATION WAS COMPLETED SUCCESSFULLY OR NOT.

Step 7 – Disassemble the proof load cell assembly

- Disassemble the proof load assembly by removing the nut, load cell and cylinder assembly.

Step 8 – Rotate device and mount from the opposite side.

- To test the bearing from the opposite side, reassemble the system on the reverse side and follow from Step 3.

**NOTE:** THE LINEAR DISPLACEMENT OF THE BEARING ON THE SECOND SIDE IS THE CRITICAL INFORMATION. THIS READING SHOWS THE FULL TRAVEL OF THE BEARING WITHIN THE HOUSING. ONLY PROOF LOAD TESTING IN ONE DIRECTION IS NOT SUFFICIENT.
Battery Maintenance

NOTE: CHARGE ELECTRONIC LOAD DISPLAY FOR 24 HOURS PRIOR TO FIRST USE AND CHECK BATTERY STRENGTH REGULARLY

- In order to check Battery Level, press the Battery/Enter Button
- The battery level will be displayed as bars on the screen
- In order to charge the battery, connect the charger power connector.
- The wall charger plug configuration can be easily changed by switching to suitable adaptors.
Notes
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