

MTS Dial Torque Analyzer Operation & Calibration Instructions

Rev 2.1 (11/27/2012)

MTS Dial Torque Analyzer

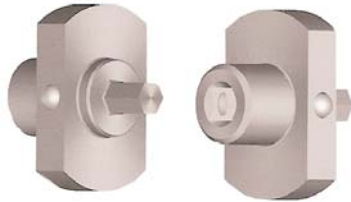
This torque analyzer is designed only for hand torque wrenches and screwdrivers. This torque tester is not suitable for power tools.

Mounting MTS Dial Torque Analyzer

The Dial Torque Analyzer needs to be mounted securely on a level surface before operating. Immobilizing the torque tester is critical for the safety of the operator as well as for the accuracy of torque measurements during operation. A loose torque tester during utilization can impact the validity of torque readings.

MTS Models are supplied with a Reversible Adapters

Reversible Adapter
(1/4 M/Hex. & 1/4 F/Sq.)



For models:
MTS 35
MTS 130
MTS 400

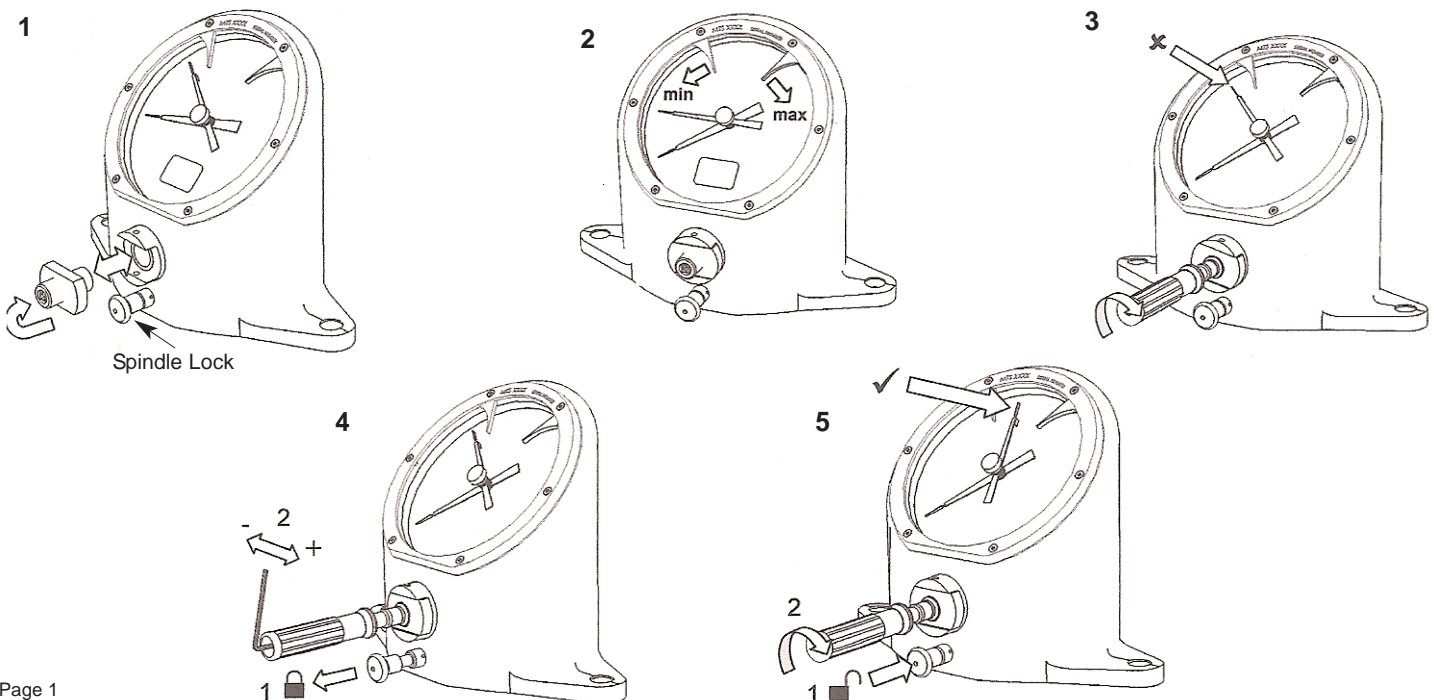
Reversible Adapter
(1/4 F/Sq. & 3/8 F/Sq.)



For models:
MTS 1200
MTS 2500

Operating MTS Torque Analyzer

1. Attach appropriate adapter into the drive opening of the MTS.
2. Set the Min and Max torque range.
3. Insert hand tool onto the drive and slowly apply torque clockwise and note reading when screwdriver reaches maximum torque. (Note - MTS model can only be used in clockwise direction).
4. Adjust the torque setting of the hand tool (if needed). The Spindle Lock eliminates the need to remove tool from the drive during torque adjustment. First, pull out the Spindle Lock to lock the drive. Secondly, adjust the torque setting of hand tool.
5. Push the Spindle Lock back in to unlock the drive. Re-check torque setting of the hand tool.



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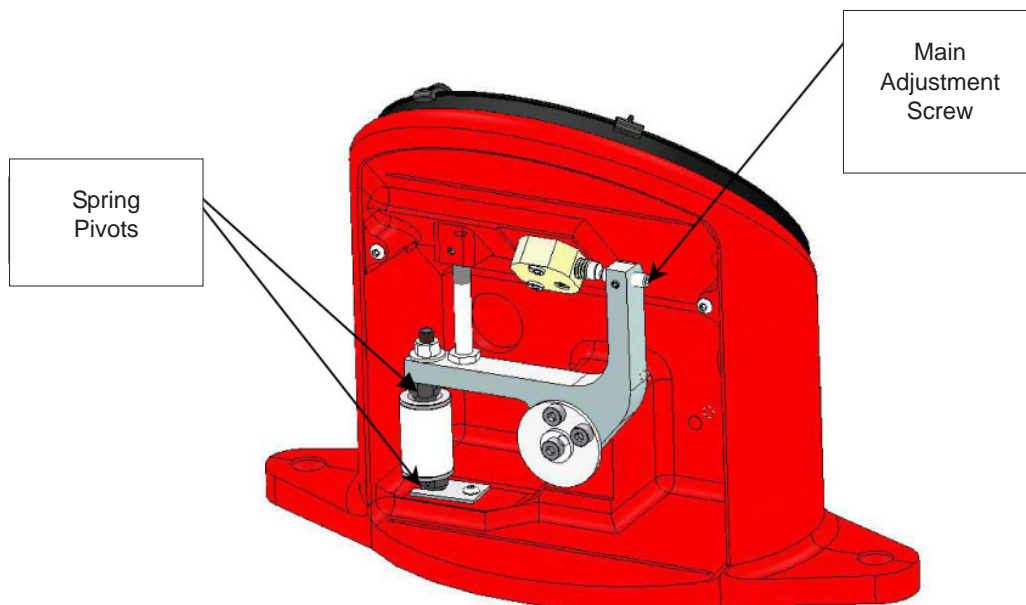
Calibration Procedures

1. The accuracy of the dial torque analyzer should only be verified using an appropriate Calibration Arm or Wheel and Weight Set traceable to national standards.
2. Mount the Dial Torque Analyzer on a suitable, level bench surface.
3. Load the analyzer using the Arm or Wheel and Weight Set to give a torque equivalent to 20% of the full scale range and compare with indication on the analyzer dial. **Do not use the memory pointer during verification.**
4. Check the Dial Analyzer at all major graduations and adjust, if need, as described below until all values are within +/- 2% of reading or 1 graduation, whichever is greater.

Adjustments for MTS models

If the MTS model doesn't indicate the true torque applied within the stated tolerance, then calibration adjustments are required and performed as described.

1. Remove rear cover (not shown).
2. Check position of dial indicator for zero with out any torque / weight applied. If adjustment is required then use the main adjustment screw to align the indicator with the zero position.
3. Apply the maximum load to the unit, to establish if adjustment is required to align the indicator with the top reading. Use the main adjustment screw as required.
4. Apply the determined loads at the positions in the MTS calibration weight, see page 3. This should be completed for each position.
5. If adjustment is required then turn the spring pivots, both spring pivots need to be turned together and by the same amount. While viewing the unit from the back, there is a reference dot on the spring pivots. If the value on the dial needs to be decreased then turn the spring pivots clockwise (reference dot to the left). If the value on the dial needs to be increased then turn the spring pivots anti-clockwise (reference dot to the right).
6. Repeat step 4 to ensure the readings match the torque/weight applied.
7. Replace rear cover (not shown).





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Calibration Weights for MTS

Use Calibration Wheel

MTS35		MTS 130	
Cal point	Weight (Nm)	Cal point	Weight (Nm)
0.5	0.5	20	2
1	1	40	4
1.5	1.5	60	6
2	2	80	8
2.5	2.5	100	10
3	3	120	12

Calibration Equipment for MTS

Use Calibration Arm

MT400		MTS 1200	
Cal point	Weight (Nm)	Cal point	Weight (Nm)
0.5	2	1	4
1	4	2	8
1.5	6	3	12
2	8	4	16
2.5	10	5	20
3	12	6	24
3.5	14	7	28
4	16	8	32
		9	36
		10	40
		11	44
		12	48

MTS 2500	
Cal point	Weight (Nm)
5	20
10	40
15	60
20	80
25	100