

TM TOOLMASTER



TM-3DT UNIVERSAL 3D TASTER OPERATING INSTRUCTIONS

IDENTIFICATION



SAFETY PRECAUTION

To ensure operator safety and to avoid any damage to 3D-Tester, use this instrument in conformance with the directions and specifications outlined in this users manual.

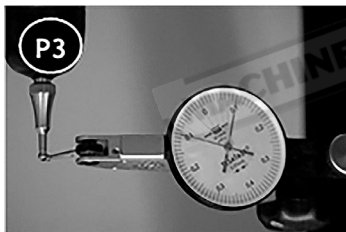
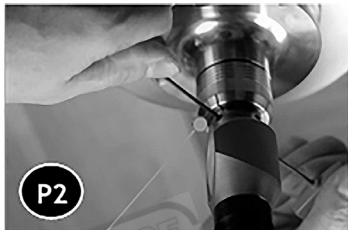
SETUP BEFORE USE

1. Remove the white transportation lock
2. Turn the zero on the scale to 12 o'clock
3. Check the position of the small indicator. Should be at -1.5
4. Check the position of the large indicator. Should be at 0 tolerance +/-1
5. Check the probe tip is fastened securely.
6. Check the run out in the spindle of the machine (Refer page 3)
7. Determine the reference length of the 3D-Tester (Refer page 5)



ADJUSTING THE RADIAL RUNOUT

1. Clamp the 3D Tester into a toolholder.
2. Move the dial gauge to the probe sphere. (Fig. P1)
3. Find the highest and lowest measuring point. (Fig. P3)
4. Adjust the 3D Tester with 2 adjustment screws to the centre position. (Fig. P2)
5. Repeat the procedure until the desired runout is achieved.
6. Make sure that all 4 adjustment screws are tightened with a maximum torque of 4Nm.



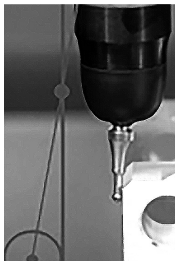
Adjustable screws (4 pcs.)

RADIAL PROBING

1. Insert the 3D-Tester into the spindle. Cut off the coolant supply and turn off the spindle.
2. Please make sure that probing is exactly perpendicular. Otherwise, measurement failure may occur.
3. Move the 3D-Tester carefully to the edge of the work piece until the large indicator starts moving. Continue until both indicators (large and small) show exactly "0".
4. In this position, the symmetry axis of the spindle is exactly positioned to the work piece edge.

Note:

It is not a problem to overpass the edge of the work piece up 1.5mm (small pointer in the red area). After 1.5mm, there are mechanical limit stops which lead to the probe tip halting at the predetermined breaking point to protect the 3D-Tester.



IMPORTANT: correct measurements are only possible by probing forwards!
(backwards = reverse fault)

AXIAL PROBING

1. Determine the 3D-Tester reference length with a pre set ting device. Please note that 1.5mm must be subtracted from this length.
2. Insert the 3D-Tester into the spindle. Cut off coolant supply and turn off the spindle.
3. Please make sure that the probing is exactly perpendicular. Otherwise, measurement failures may occur.
4. Move the 3D-Tester carefully towards the work piece surface until the large indicator starts moving. Continue until both indicators (large and small) show exactly "0".
5. Now the spindle is located at the height of the determined reference length above the work piece.

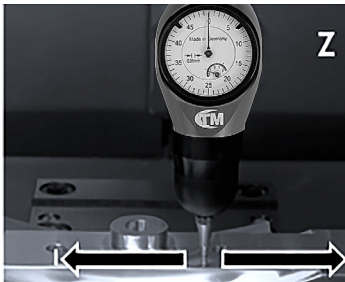
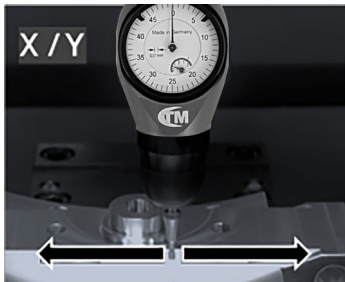
Note:

It is not a problem to overpass the edge of the work piece up 1.5mm (small pointer in the red area). After 1.5mm, there are mechanical limit stops which lead to the probe tip halting at the predetermined breaking point to protect the 3D-Tester.

IMPORTANT: correct measurements are only possible by probing forwards! (backwards = reverse fault) Reference Length, Less 1.5mm



PARALLEL RUNNING X / Y / Z



1. Insert the 3D-Tester into the spindle. Cut off coolant supply and turn off the spindle.
2. Move the 3D_Tester carefully to the edge of the work piece until the large indicator starts moving. Continue until your requested position is reached.
3. Now you can start moving along the edge of the workpiece to check parallelism in all axis X, Y or Z.

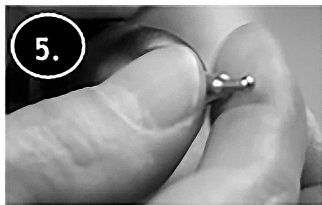
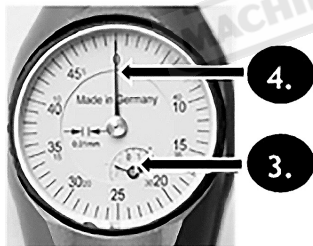
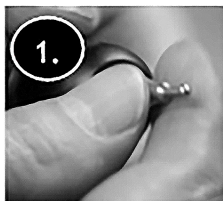
Note:

It is not a problem to overpass the edge of the work piece up to 1.5mm (small pointer in the red area). After 1.5mm, there are mechanical limit stops which lead to the probe tip halting at the predetermined breaking point to protect the 3D-Tester

AFTER CRASH

1. Check correct function and movement of the probing unit.
2. Check correct function and movement of the measuring unit.
3. Check the position of the small indicator. Should be -1.5
4. Check the position of the large indicator. Should be at 50 tolerance +/-1
5. Check if the probe tip is fastened securely.
6. Check and if necessary adjust the run out in.

ATTENTION: if you experience any technical difficulties please contact your local dealer.



REPLACEMENT PROBE TIP

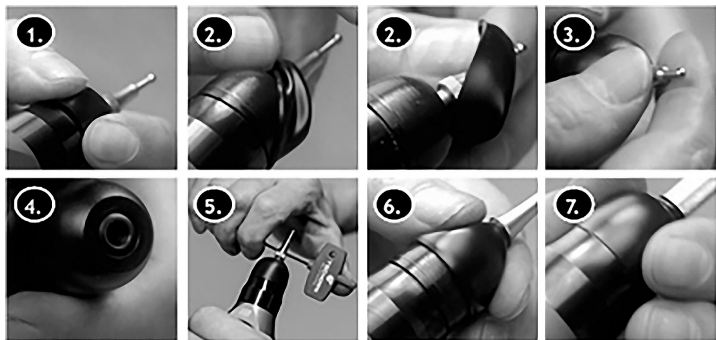
Re Order Code: M695B
62mm Long Probe Tip



Re Order Code: M695B
27mm Standard Probe Tip



REPLACING PROBE TIP / SEAL



1. Open the seal and remove out of the groove.
2. Move up the seal and pull it off.
3. Unscrew the probe tip manually (if needed, the probe tip can be released with the included key).
4. Unscrew the probe tip entirely and make sure that the threaded pin is unscrewed as well.
5. Screw in the new probe tip and tighten with key.
6. Put the seal onto the probe tip.
7. Slip the seal over the probing unit and secure it into the groove.

ATTENTION: Please check runnout!

WARNING

- ☐ Protect your 3D-Tester against water and oil.
- ☐ Protect your 3D-Tester against strong shocks.
- ☐ Warranty will be void if you open the 3D-Tester.
- ☐ For cleaning use solvent free detergents

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