

Design Notes

N20/P20/1.2311 clamp and manifold support plates are recommended.

Insulation board must be fitted to fixed clamp plate.

The manifold will expand away from the centre line. Provided that the centres are less than 150mm from the Feed bush, and that the manifold is fitted correctly, there is no need to allow for this expansion. The maximum centres from feed bush on a standard manifold is 125mm.

All "I-in line" manifolds are supplied without centreline location recess. This must be added if there is no feed on centreline, centreline feeds are not recommended, see fig. 1.

All thermocouple holes have to be machined as the following see fig 2. These should be placed in a position that will allow good temperature sensing.

Only 1 thermocouple is required for all "I" and "X" manifolds. It is recommended that two are fitted to the "H" manifolds. Location should be provided by using a M10 slot in end of manifold and/or adding an M10 reamed hole into the manifold over the standard manifold support spacers.

Installation of feed plugs.

The most important part of all manifold construction is getting the feed plugs in the correct position and providing a leak proof seal.

When the position of the down drop has been determined the feed plug should be cut to length see fig. 3. The feed plug needs to finish 0.5mm beyond the centreline of the drop see fig. 4.

Fit feed plug seal and tighten grub screw to a 150Nm torque setting.

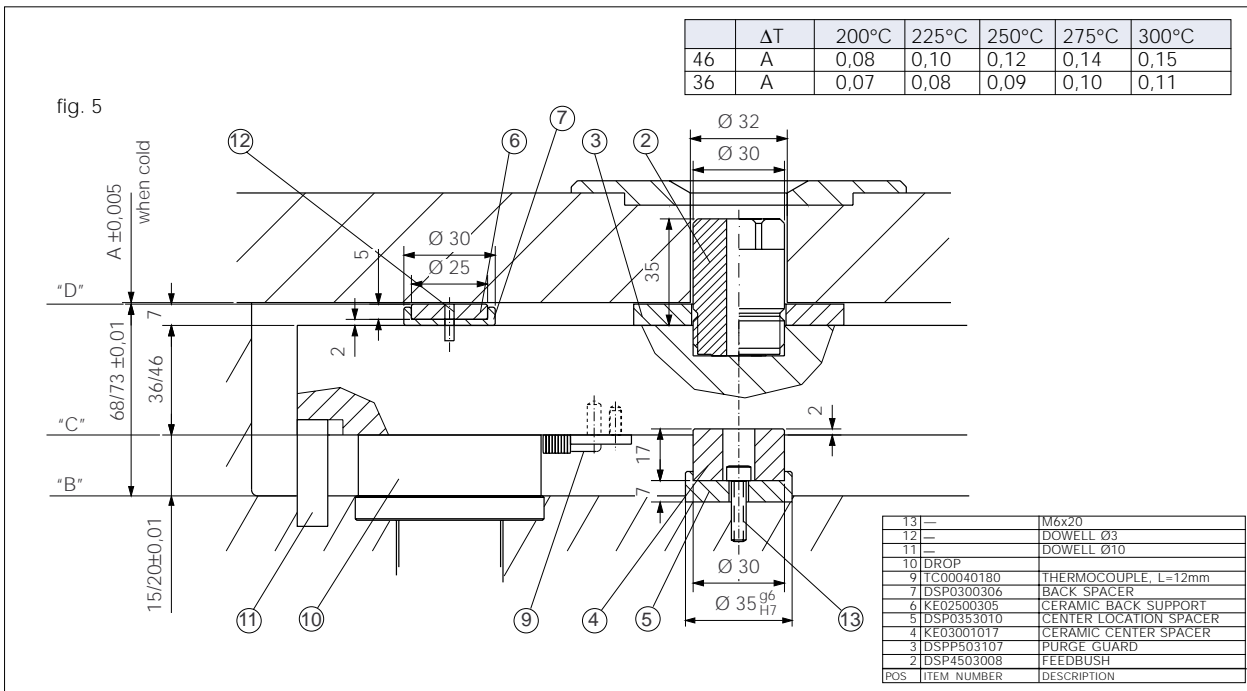
Using 8mm ballnose cutter machine down the feed. Stop machining when centre line of ballcutter is 0.5mm beyond centreline of cross feed hole.

Repeat this process until all down drops has been completed.

Feed exits should be machined to suit diameter of chosen drops, bush/torpedo, please check catalogue for selected "drop" info.

When manifold down feeds are required where there is no feed plug to fit again ensure that the cutter goes beyond the centreline of the main cross-feed hole.

It is imperative at this stage to clean the manifold. It is recommended that some kind of degrease and air blast is used to ensure that all the swarf if removed from the feed channels.



Manifold assembly.

1. Insert all ceramic ring, insulation rings, in their bore and ensure they are all within the same plane, datum face "B"
2. Install the bushes, heights of their back plane should be within 0.01mm. This we shall call the datum face "C" for all bottom spacers.
3. KE03001017 although 2mm higher (they go into a 2mm recess) should also be the same height when in the recess, located by a DSP0353010. If bolted, all spacers KE02001015/20 should be 0.05 below this level, "C".
4. Make sure all M10CS holes, if bolted down type is used, are machined and that Ø10 dowel location holes line up.
4. Fix back spacers, KE02500305+DSP0300306, with DW03X12.
5. Assemble manifold onto heads bushes and spacers without sealing rings fitted.
6. Screw Manifold down, if bolted. Ensure that all wires are free.
7. Check heights from top of back supports to surrounding packing blocks, adjust to within ± 0.005 mm providing the air gap in cold condition for heat expansion specified in fig. 5. Datum face "D".
8. Remove manifold fit feed bush assembly, seals reassemble making sure that there are no trapped wires or wires touching manifold.
9. Check to make sure that the manifold is back to the correct height from datum face "B". If the manifold is not bolted, mount clamp plate and tighten, to compress seals before doing this final check. Connect and heat the system to estimated working temperature prior to this last check of heights.

Bench testing is important. It proves the electrics and wiring. The more areas that you know are working 100% the better.

Prior to any assembly refer to page Manifold Assembly.
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