

Pneumatic Installation Guidelines

Appendix J

Machining the Hub Bore

The *Ortlinghaus* 0-420, 0-406, 0-400, 0-440, and 0-450 Series clutch/brakes, clutches and brakes are available with pilot bore so that the finished bore may be machined by the customer. The pilot bore stated in the catalogs and data sheets is a rough unfinished or semi finished bore. The minimum finish bore must be from .20 to .40 inch [5 to 10 mm] larger than the pilot bore, depending on the size of the clutch/brake, clutch, or brake.

The recommended tolerance for the finished bore is the H7 tolerance as shown in Table 1b of the Pneumatic Installation Guidelines and Tables G1 & G2 in Appendix G.

Interference fits, and finished bores larger than the listed maximum bore are prohibited unless specifically approved by Orttech in advance.

In most applications the clutch/brake, clutch, or brake is bored with a counterbore for use with an internal shaft locking device or bored and keyed for use with keys. If an internal shaft locking device is to be used please refer to Orttech Bulletin 688 for the allowable maximum bores, counterbores, and depth of counterbore. The Bulletin 688 also shows the dimensions to be used if o-rings are used to seal the hub/shaft interface. If keys are to be used, please refer to Appendix A of the Orttech Pneumatic Installation Guidelines for information on recommended key sizes and maximum keyway dimensions allowed.

The surface finish of the bore is to be between 63 and 125 microinches for normal applications. For special applications, such as with o-rings in the shaft, a smoother surface finish may be required. If there are any questions on the finish required or tolerances such as cylindricity or true position of the bore the designer of the installation must be consulted.

Orttech recommends that the clutch/brake, clutch, or brake be disassembled before it is bored, then thoroughly cleaned and reassembled. To facilitate this, units shipped in the pilot bored condition do not have the recommended thread locking compound applied to the hub bolts of the 420, 400, 440, and 450 Series. Also, the sealant between the hub and cylinder is usually not applied. For instructions on disassembly please refer to the TPI [Technical Product Information] that is shipped with the unit.

If the unit is not disassembled for boring it is the responsibility of installer to verify that there are no metal chips in the unit and that all fasteners are properly tightened and secured.

Table J1 lists the pilot bore and the maximum allowable bores with keyways and bore & counterbore for the various sizes of clutch/brakes in the 420, 406, and 400 Series.

Table J
Pilot Bores and Maximum Bores for the 420, 406, & 400 Series Clutch/Brake

| C/B Series/Size | Pilot Bore | | Max. Bore w/Keys | | Max. Bore w/C'Bore | |
|-----------------|------------|--------|------------------|--------|--------------------|--------|
| | mm | inches | mm | inches | mm | inches |
| 420 / 23 | 15 | 0.59 | 35 | 1.38 | --- | --- |
| 420 / 29 | 15 | 0.59 | 35 | 1.38 | --- | --- |
| 420 / 40 | 25 | 0.98 | 45 | 1.77 | --- | --- |
| 420 / 50 | 35 | 1.38 | 65 | 2.56 | 55 | 2.17 |
| 420 / 61 | 45 | 1.77 | 80 | 3.15 | 65 | 2.56 |
| 420 / 62 | 45 | 1.77 | 90 | 3.54 | 70 | 2.76 |
| 420 / 67 | 45 | 1.77 | 95 | 3.74 | 85 | 3.35 |
| 420 / 72 | 45 | 1.77 | 105 | 4.13 | 95 | 3.74 |
| 420 / 77 | 65 | 2.56 | 125 | 4.92 | 120 | 4.72 |
| 420 / 80 | 90 | 3.54 | 145 | 5.71 | 130 | 5.12 |
| 420 / 83 | 100 | 3.94 | 160 | 6.30 | 150 | 5.91 |
| 420 / 87 | 125 | 4.92 | 180 | 7.09 | 170 | 6.69 |
| 420 / 90 | 125 | 4.92 | 200 | 7.87 | 190 | 7.48 |
| 420 / 91 | 140 | 5.51 | 220 | 8.66 | 200 | 7.87 |
| 420 / 92 | 150 | 5.91 | 240 | 9.45 | 220 | 8.66 |
| 420 / 93 | 170 | 6.69 | 270 | 10.63 | 260 | 10.24 |
| | | | | | | |
| 406 / 29 | 28 | 1.10 | 48 | 1.89 | 40 | 1.57 |
| 406 / 40 | 35 | 1.38 | 65 | 2.56 | 50 | 1.97 |
| 406 / 50 | 45 | 1.77 | 80 | 3.15 | 70 | 2.76 |
| 406 / 61 | 55 | 2.17 | 95 | 3.74 | 90 | 3.54 |
| 406 / 71 | 70 | 2.76 | 125 | 4.92 | 120 | 4.72 |
| 406 / 76 | 80 | 3.15 | 145 | 5.71 | 140 | 5.51 |
| 406 / 79 | 90 | 3.54 | 160 | 6.30 | 150 | 5.91 |
| 406 / 82 | 100 | 3.94 | 180 | 7.09 | 170 | 6.69 |
| 406 / 90 | 115 | 4.53 | 220 | 8.66 | 200 | 7.87 |
| | | | | | | |
| 400 / 71 | 45 | 1.77 | 95 | 3.74 | 85 | 3.35 |
| 400 / 74 | 55 | 2.17 | 105 | 4.13 | 90 | 3.54 |
| 400 / 76 | 60 | 2.36 | 110 | 4.33 | 100 | 3.94 |
| 400 / 79 | 70 | 2.76 | 125 | 4.92 | 120 | 4.72 |
| 400 / 82 | 90 | 3.54 | 145 | 5.71 | 130 | 5.12 |
| 400 / 85 | 100 | 3.94 | 160 | 6.30 | 150 | 5.91 |