

# NORTHFIELD

## *PRECISION INSTRUMENT CORP.*

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### METHOD OF ACCURATE CHUCK MOUNTING

Ensure that all critical surfaces are clean ! This equipment should be handled more like instrumentation than machinery (especially ground surfaces ).

Skim the annular surface on the face of the adapter plate mounted to your spindle nose such that the face runout is .0001" or less. Then mount the chuck and tighten its mounting bolts (around the periphery) hand-snug.

First, true up the chuck by placing a dial indicator (.0001" graduations) on the OD of the chuck and "true it in" to less than .0001" TIR. Use either a rubber hammer or plastic-faced mallet to tap down the "high spots" as they approach the dial indicator. Once this runout tolerance has been achieved, tighten the mounting bolts on the chuck.

Next, if necessary, you can bore out a set of jaws to the size of a plug gage and re-check the runout of your setup by gripping on the plug gage and keeping a dial indicator on the plug gage OD near the top of the jaws. If there is a discrepancy, you can now re-true the chuck with respect to the plug gage gripped in the jaws – this will eliminate any deviation from the OD of the plug gage to the center of your spindle (even though the chuck OD may be running slightly out; that is not what is critical in this method; you simply want the bore of the jaws running concentric with the center of your spindle). Check repeatability by clamping / unclamping and rotating the plug gage.

Make sure that your jaws are always in the "loaded" position to ensure accuracy and repeatability. This simply means that when mounting the jaws (with a thin film of grease underneath), tighten all mounting bolts fully to seat the jaw, then back off until barely finger-snug, then grip on something (at clamping line pressure): a dowel pin, etc. down near the base of the jaws to eliminate the gaps between the pins on the master jaws and the pinholes under the jaws; if you do this every time, you are ensuring repeatability. Also make sure that you remount the jaws on the same master jaws they were cut on otherwise you will need to re-skim the jaws.