µGrind Automatic Chuck

µGrind HPS 20 on
Reinecker WZS machines

Setup **guideline**

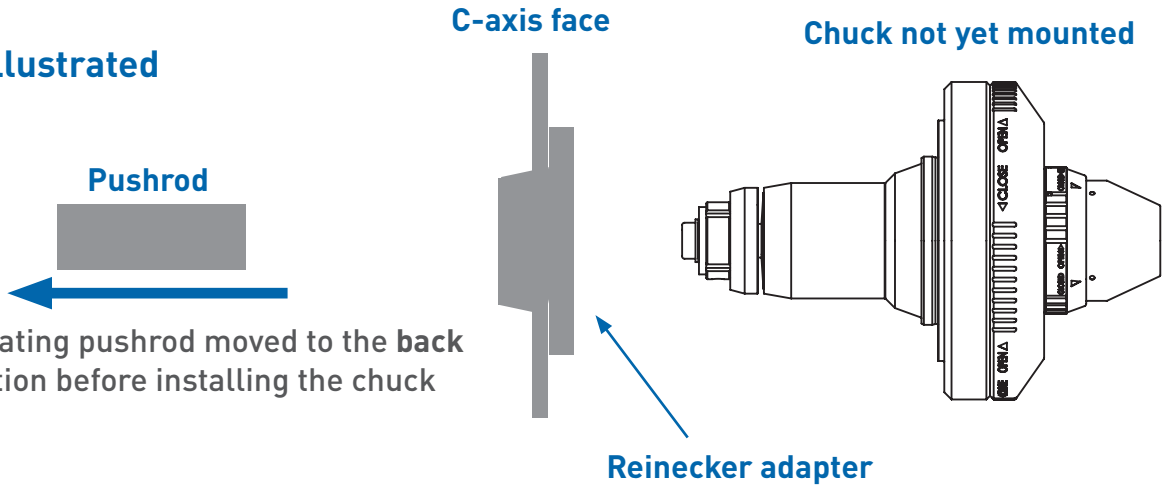
(to be used in conjunction with GDS µGrind Einstell Video.mp4)

Step 1: Remove the drawbar/berg in the C-axis (if applicable) and install the µGrind's Reinecker actuating pushrod using the 27 mm hex driver.

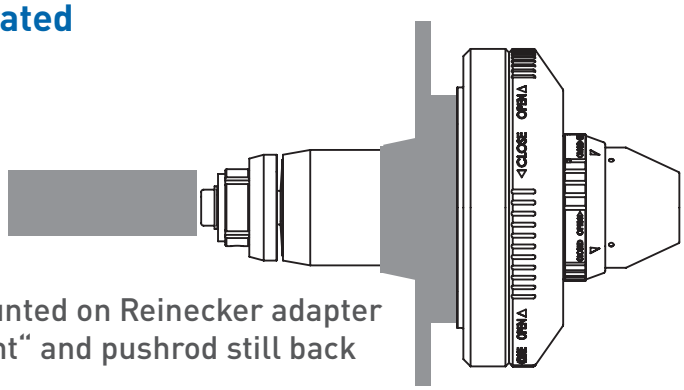
Step 2: Ensure that the C-axis mounting face is flat and clean and that the taper is clean. Bolt the Reinecker adapter flange to the C-axis face "finger tight" using the bolts that come with the adapter and the T-handle wrench that comes with the chuck. Then use the plastic tipped mallet supplied with the chuck to "tap down" the runout to within about 5 microns and tighten the bolts. The screws around the periphery of the flange can also help this process but are not necessary.

Step 3: Move the pushrod to the rear ("clamped") position. Ensure that the face of the Reinecker adapter is flat and clean and that the µGrind is at ambient temperature. Bolt the µGrind to the face of the Reinecker adapter using the T-handle wrench provided. Secure the bolts "finger tight." **NOTE**: Use the ANSI M8 x 20 mm bolts (normally in the chuck when shipped). The M8 x 15 bolts are for WALTER machines with shorter thread depths.

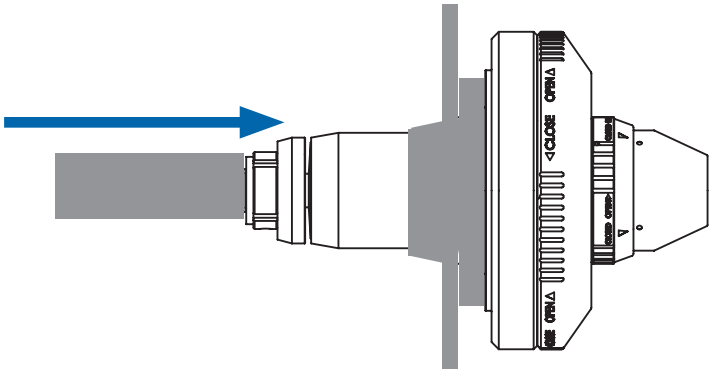
Step 2 illustrated



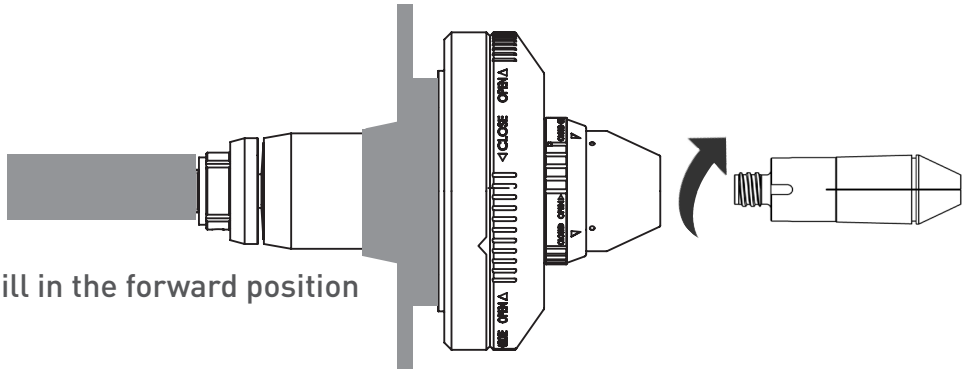
Step 3 illustrated



Step 4: Use the machine control to move the actuating pushrod into the forward position. This "opens" the chuck.

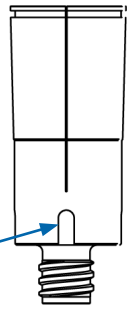


Step 5: Screw in the desired collet as shown in the video. Turn the collet clockwise until you feel resistance but do NOT tighten! Then turn the collet counterclockwise roughly 1/4 turn until the next slot aligns with the dimple on the chuck's nose. Turn the blue sleeve counterclockwise until the two "Close" indicators align with the dimples at the rear of the chuck's nosecone. Check that you are now **unable** to turn the collet more than a tiny bit in either direction.



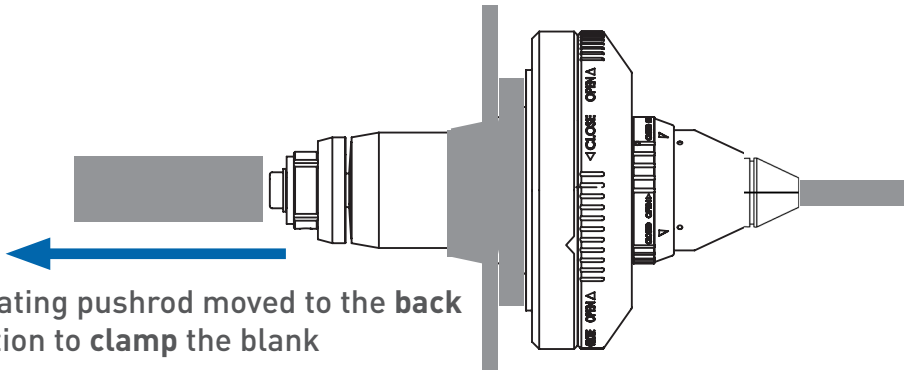
Pushrod still in the forward position

NOTE: Turning the blue sleeve from "Open" to "Close" moves a pin into one of the notches at the base of the collet, locking it in place. If you are unable to turn the blue sleeve fully to the "Close" position, you may have to turn the collet slightly. Conversely, if the blue sleeve is in the "Close" position but you are able to turn the collet, the pin is behind the collet and **you will damage it** when clamping your first tool blank.



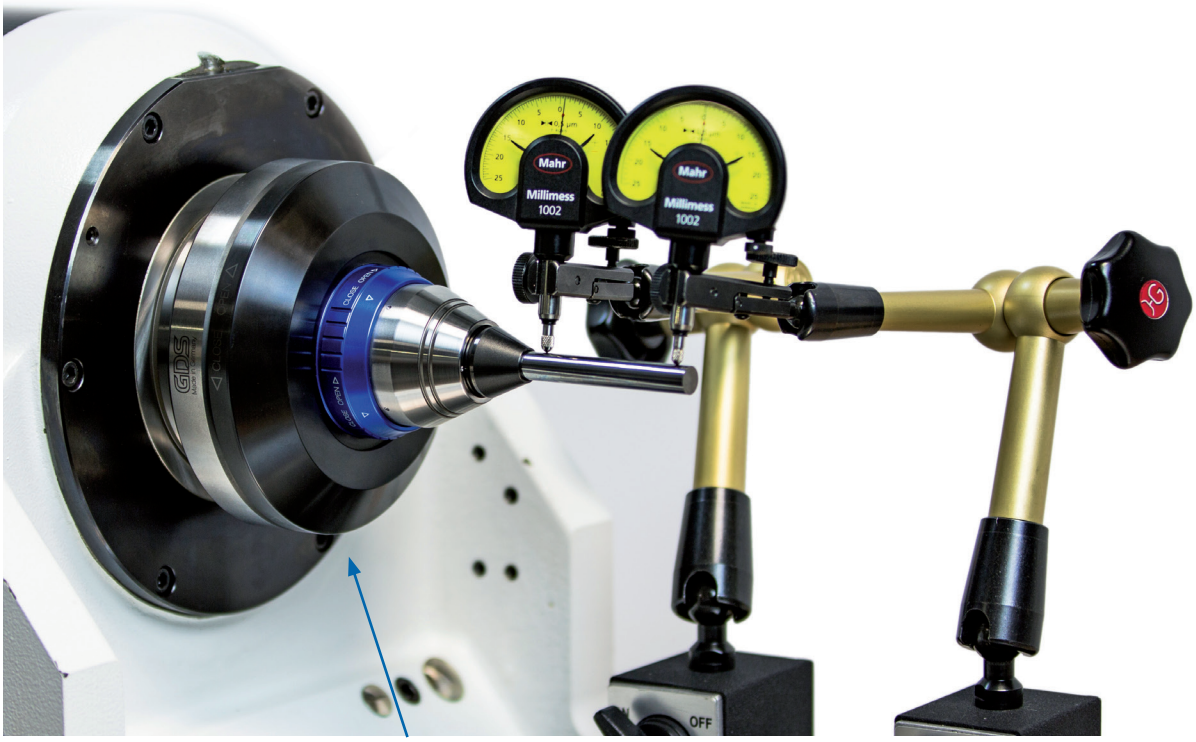
A "lock notch" at the base of an HPS collet

Step 6: Insert a perfect blank of the appropriate size all the way into the collet. Use the machine control to move the pushrod back. This **clamps** the blank. Un-clamp and clamp the blank roughly 20 times to ensure the collet is "settled in." **NOTE**: Do **not** move the pushrod back without a blank in the collet.

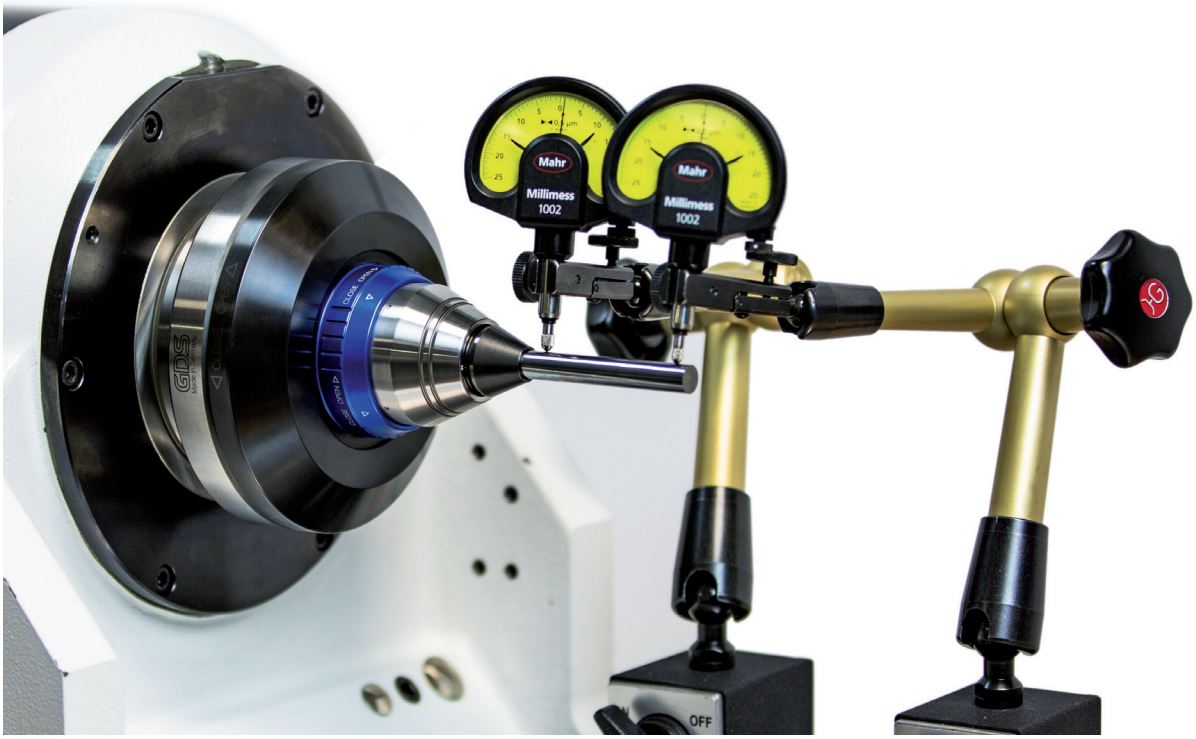


Actuating pushrod moved to the **back** position to **clamp** the blank

Step 7: Setup two gauges as shown below and in the video and rotate the C-axis until you reach the "high spot" as indicated on the rear gauge.



The swarf shield would **not** be on while adjusting the chuck



Step 8: As shown in the video, use the plastic tipped mallet supplied with the chuck to "tap down" the runout. Rotate the C-axis periodically to ensure that you have achieved the desired precision. Tighten the face bolts when satisfied.

Step 9: As shown in the video, rotate the C-axis until you reach the "high point" as indicated by the forward gauge. Then, using the T-handle wrench supplied with the chuck, rotate the nearest jack screw clockwise until it aligns with the gauge. Tighten the screw **slightly** to eliminate axial runout ("weeble-wobble"). Repeat this process until satisfied and snug down all four jack screws (do not tighten).

Step 10: Unclamp and re-clamp the blank three times and re-check the runout. (Ensure that the blank is against the backstop so you are measuring at the same point.) Make any final adjustments and attach the swarf shield as shown in the video. You are ready to grind!

Step X: Check the runout after grinding roughly 20 tools as temperature changes may have affected things. Depending on your operation, you may find it helpful to check periodically after 1,000 to 5,000 tools.

Changing collets

Step 1: Move the actuating pushrod forward to "open" the chuck and remove the last tool from the first run.

Step 2: Turn the blue sleeve from "Close" to "Open" and unscrew the collet.

Step 3: Screw in the new collet and secure it as per **Step 5** above.

Step 4: Insert a new blank and clamp it as per **Step 6** above. You do NOT have to re-measure the chuck. It will repeat within 2 microns from collet to collet.

Removing the chuck

Step 1: Move the actuating pushrod forward to "open" the chuck and remove the last tool.

Step 2: Turn the blue sleeve from "Close" to "Open" and unscrew the collet.
Never leave a collet in the chuck when not in use!

Step 3: Remove the swarf shield and use the chuck's T-handle wrench to loosen the four "weeble-wobble" jack screws.

Step 4: Move the actuating pushrod to the **back** position

Step 5: Loosen the four mounting bolts and remove the chuck. Place it in its original plastic bag (which is impregnated with oil) and secure the chuck in its case. Remove and pack the Reinecker adapter. Remove the actuating pushrod, wrap it in its oil paper, and secure it in the case.

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