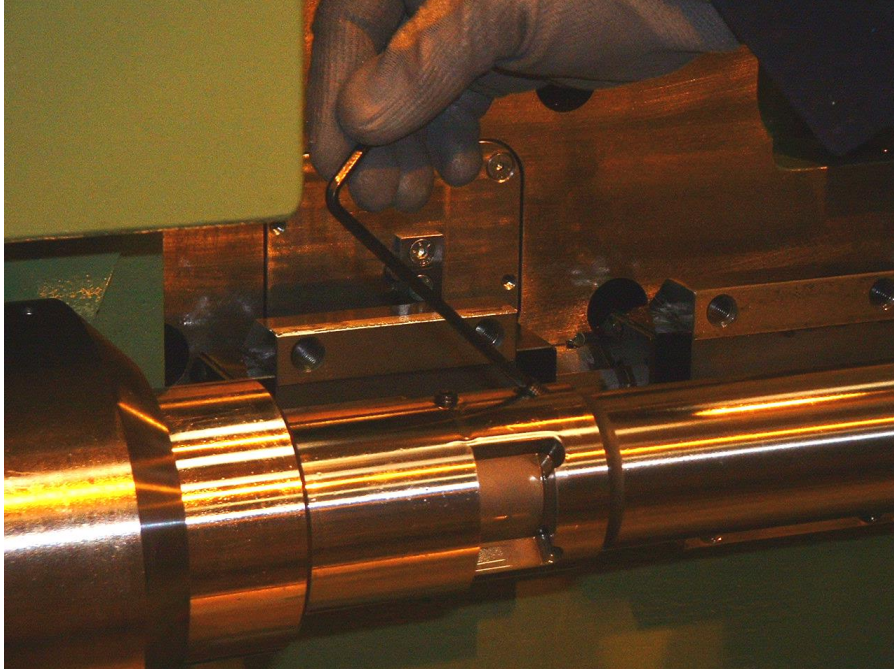
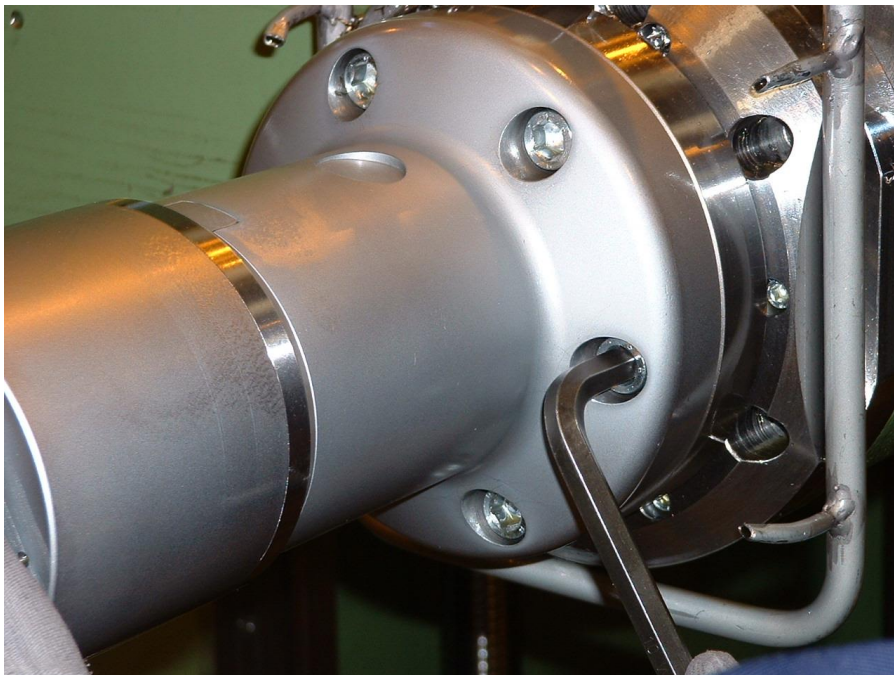


- **Remove the two grub screws from the driver.**



- **Remove the I.T.S. bar from the spindle. (6 – off cap screws)**







➤ **Re – locate the active spindle tool (I.T.S. bar) to the magazine.**

1. Machine.
2. Menu Select.
3. Parameter.
4. Tool Management.
5. Buffer Location.
6. Tab (goes to spindle tool)
7. Tool Management.
8. Re-locate.
9. Automatic selection of empty pocket.
10. Start if okay.

➤ **Release ‘W’ axis docking position.**

1. Machine.
2. Menu Select.
3. T.B.T.
4. Machine Setup.
5. Auto.
6. Semi functions.
7. ‘W’ axis docking position
8. – Action. (Unlocks tool).
9. Re-tooling position.
10. + Action.

➤ **Remove cover from spindle.**





➤ **Index Revolver.**

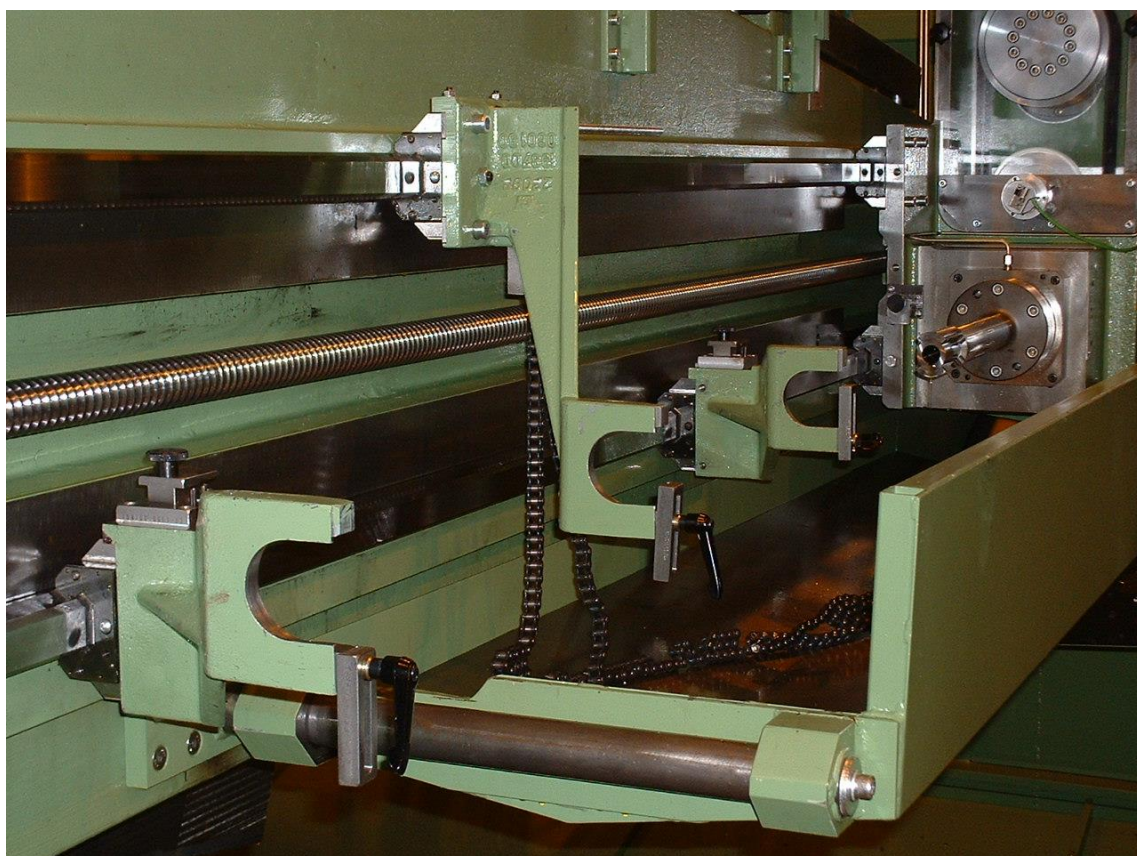
1. Check revolver has clearance.
2. Close doors.
3. Collision is possible if gun drill steadies have been left on.
4. Machine.
5. Menu Select.
6. T.B.T.
7. Auto.
8. Semi functions.
9. Revolver.
10. Drilling.
11. – Action and rapid together to initiate movement.
12. Jog.
13. Unlock safety doors P.B.
14. Open doors.

➤ **Assemble the gun drill steadies. (3-off)**

1. When fitting steadies if there is an alignment problem :-

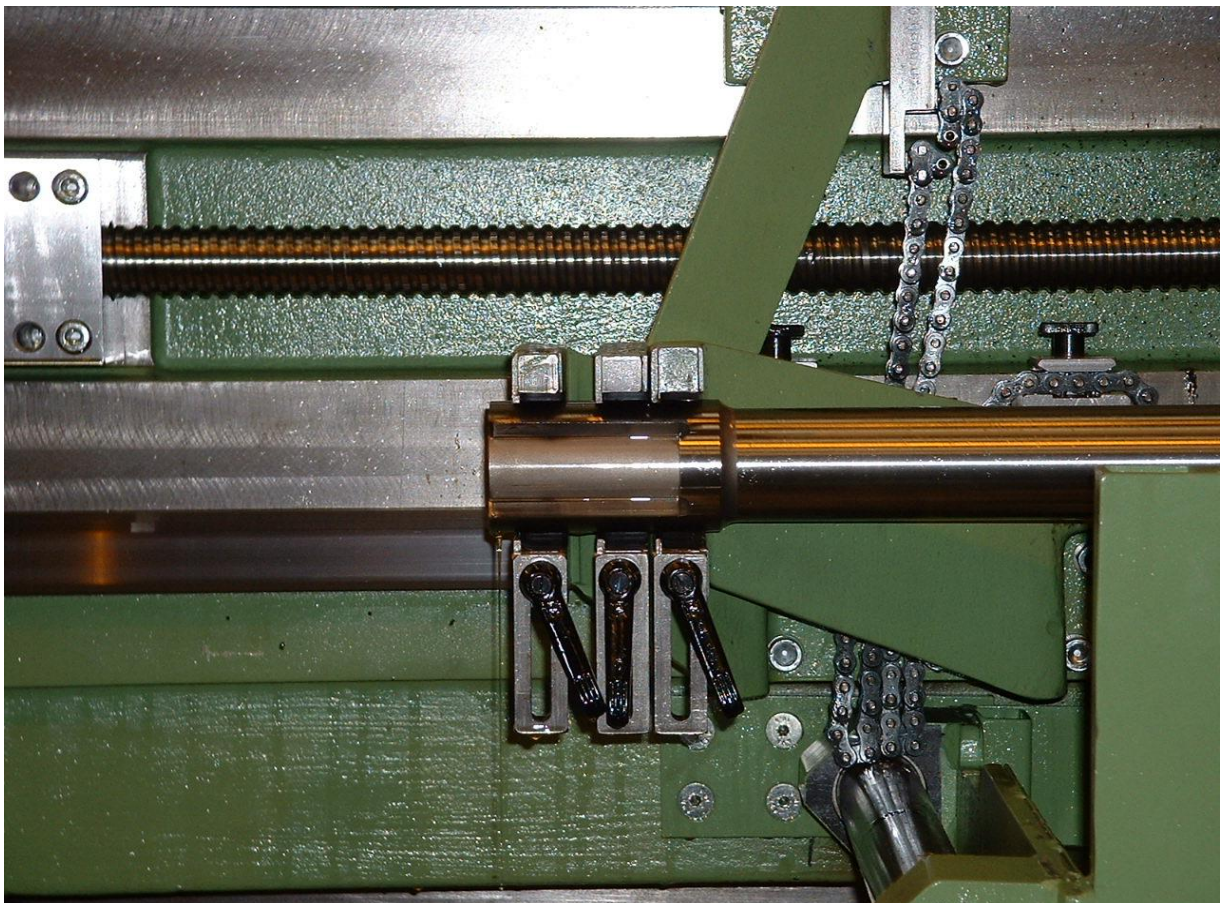
- a) Use the adjustment screws found on top to re-align.
- b) Make sure that the etched numbers match on the mating parts.
- c) Remove the screwed rod from the steadies.





➤ **Check the driver is clear of the gun drill steadies.**

1. Use the remote.
2. Switch the key on.
3. W1.
4. Hand wheel. P.B.
5. Rapid P.B.
6. Hold in one of the safety buttons.
7. The two green lights on the remote must be on.
8. -W.



1. Jog driver back. (+W.)
2. Replace remote.
3. Ensure that the key is switched off.
4. Replace the screwed rod to the steadies.
5. Longer piece to the top.

- Assemble the housing for the sealing unit



- Assemble drill bush holder to the spindle housing. (4-off cap screws)

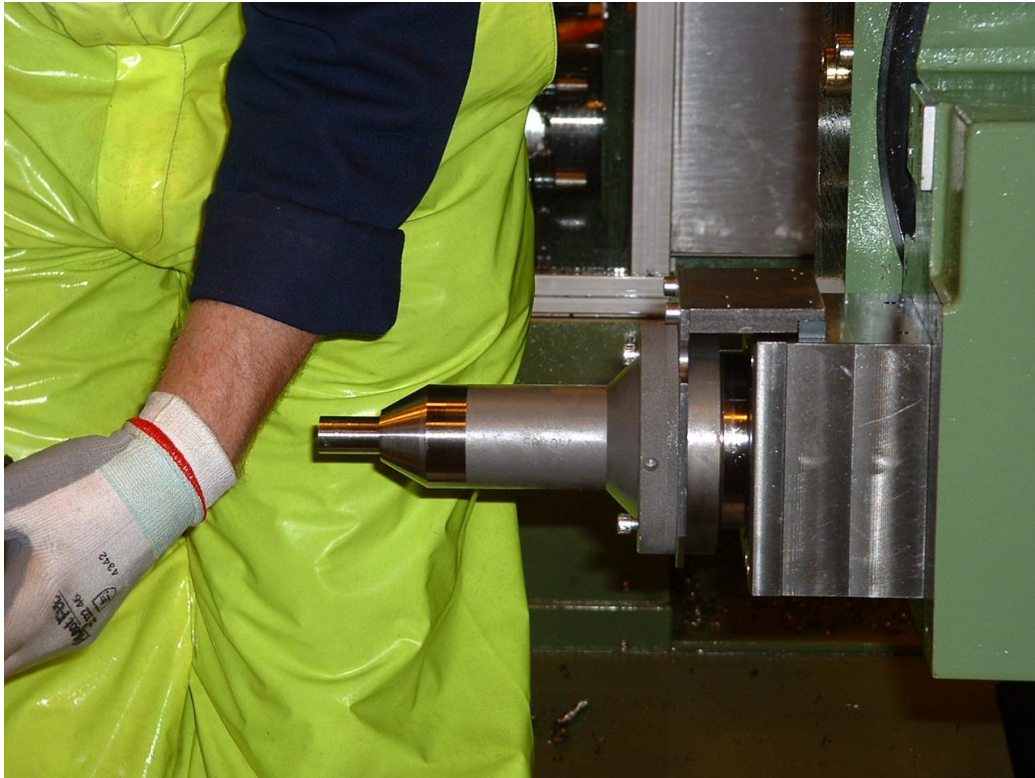




➤ **Fit new drill bush if required. Align, turn and lock. (2-off cap screws).**

1. Check length in scope if not already known.
2. Enter dimension into R100 in program.





- Load gun drill support bearings. (3-off)



T.B.T. Operator Instructions Changing from I.T.S. to Gun Drilling



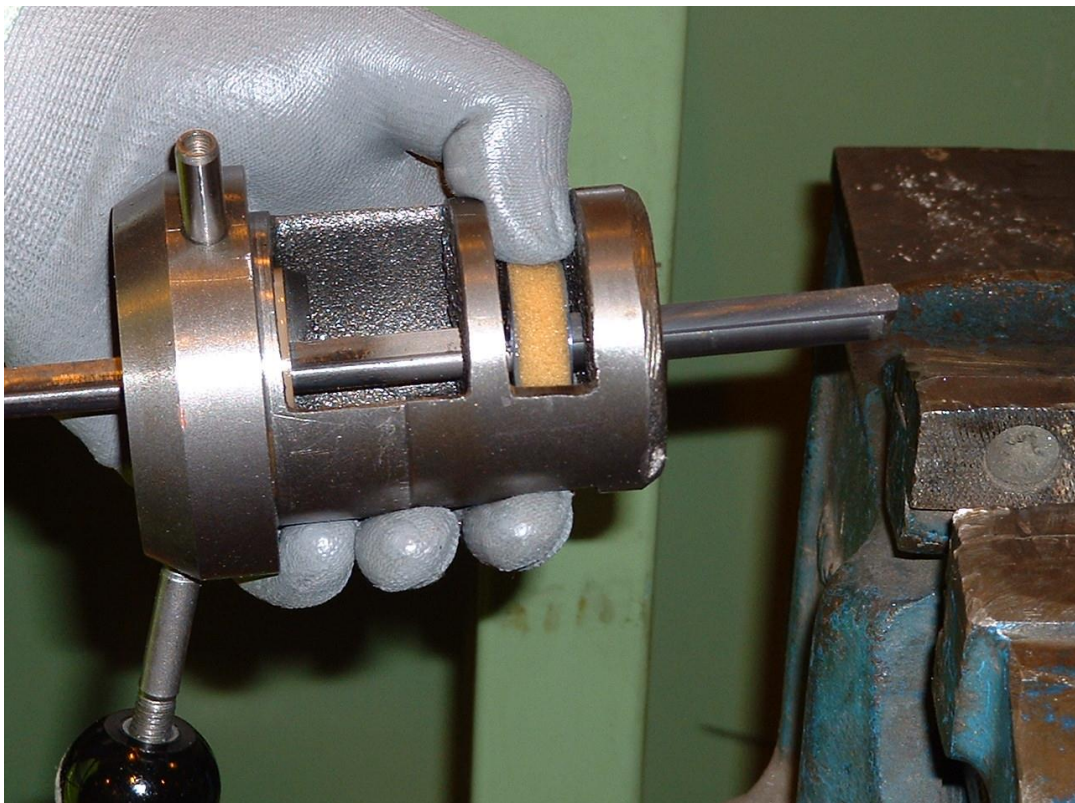
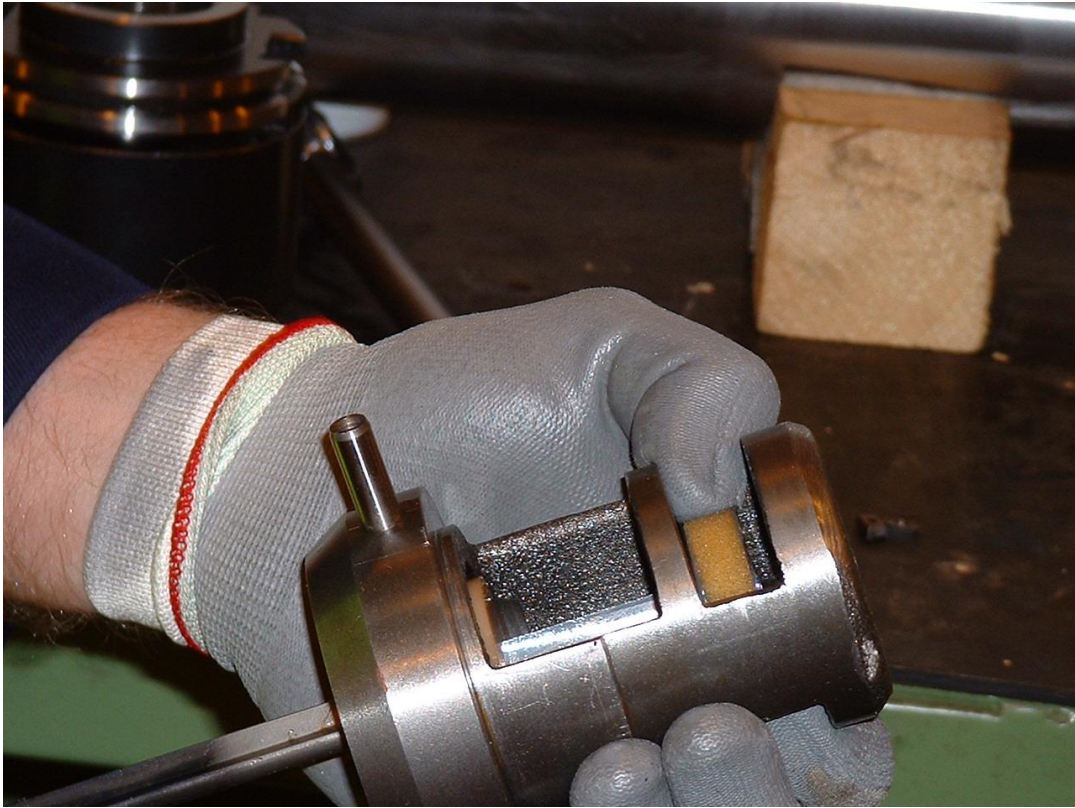


- Load sealing unit to the front of gun drill.



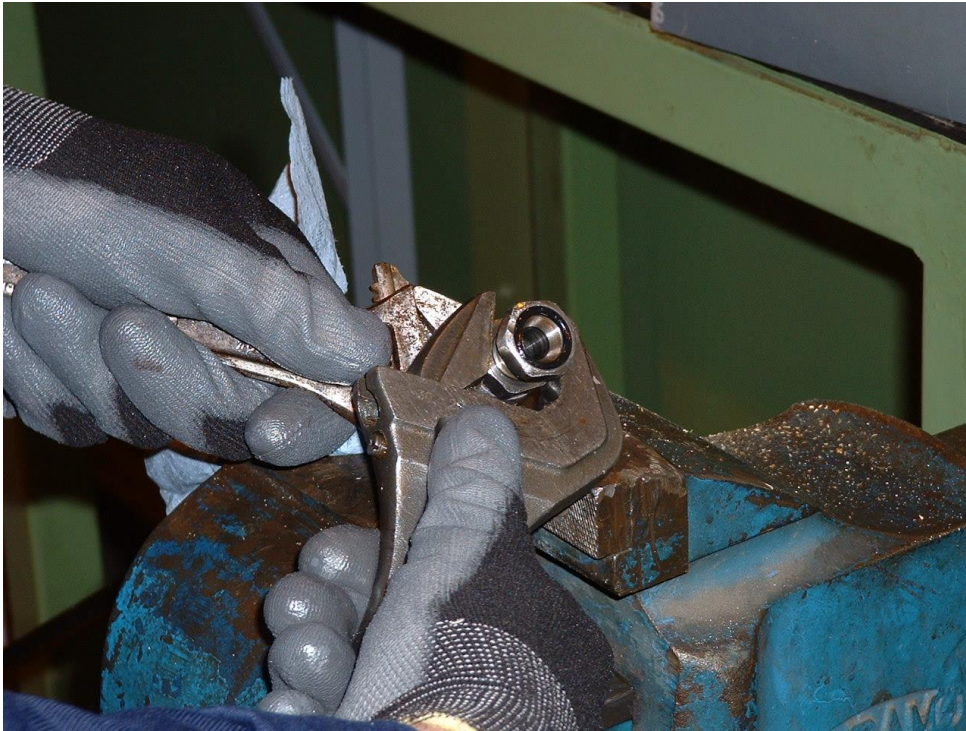


- **Locate the primary seal in the front part of the sealing unit.**



- **Attach / check the pull stud is attached to the back of the gun drill and that the 'O' ring is in the pull stud.**





➤ **Before loading the gun drill :-**

1. Measure the point of the gun drill to the full cutting diameter.
2. Input this value into R114 in the program.
3. Remember to put your oil proof suit back on before re-entering the machine.



- Load gun drill with support bearings and sealing unit to the machine.



- Insert the back of the gun drill into the drive unit (flat facing grub screws). And locate guide bearings into the support guides.



➤ **Tighten the two off grub screws into the driver unit.**

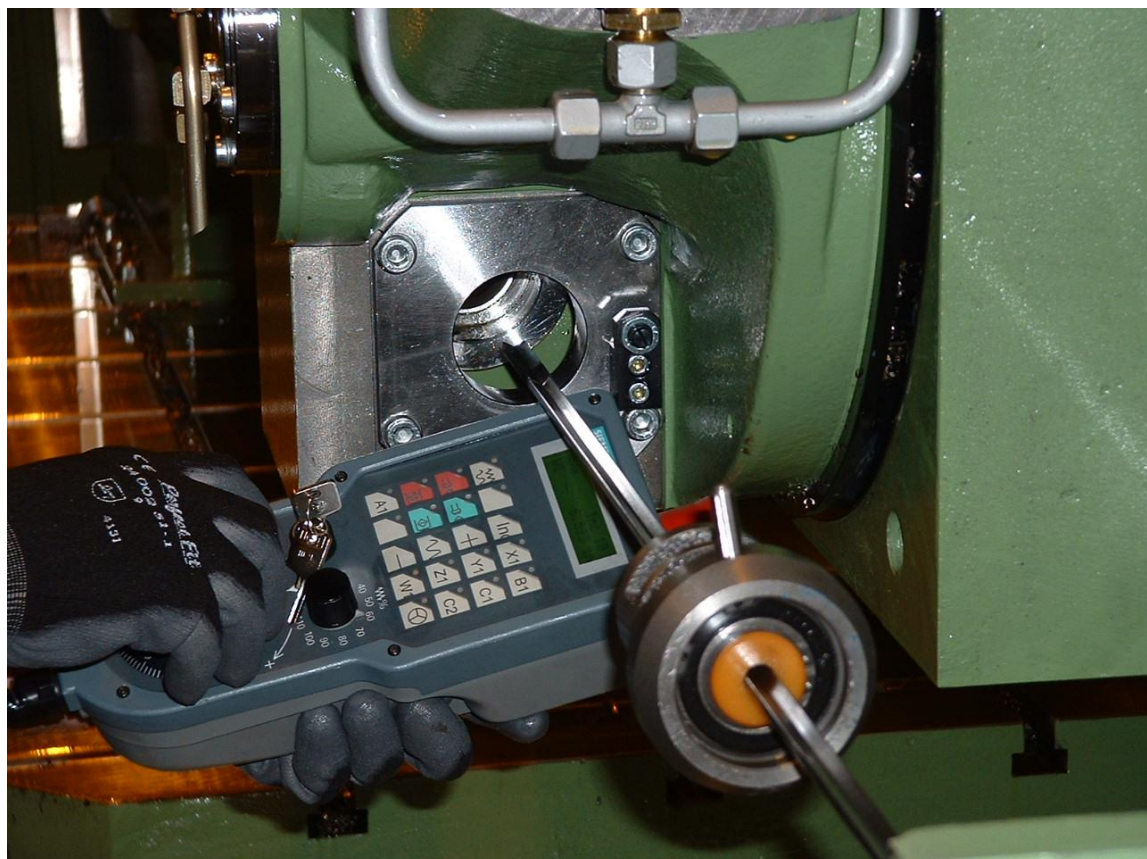
1. Align gun drill using the left hand grub screw. (Nip up only)
2. Fully tighten the right hand grub screw, then the left hand one.
3. Note: the longer grub screw goes to the right.



➤ **Use the remote control to guide the gun drill thru' the drill bush carrier.**

1. Look thru' from the housing end.

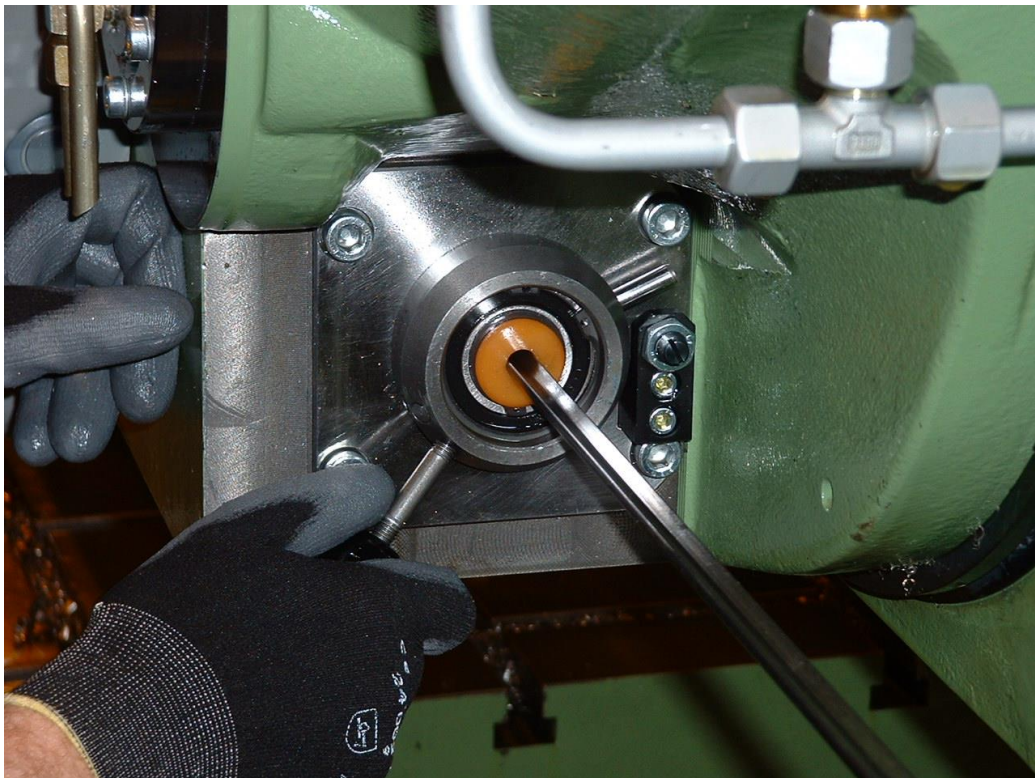




- When the gun drill has entered the drill bush ensure it is taken all the way through.

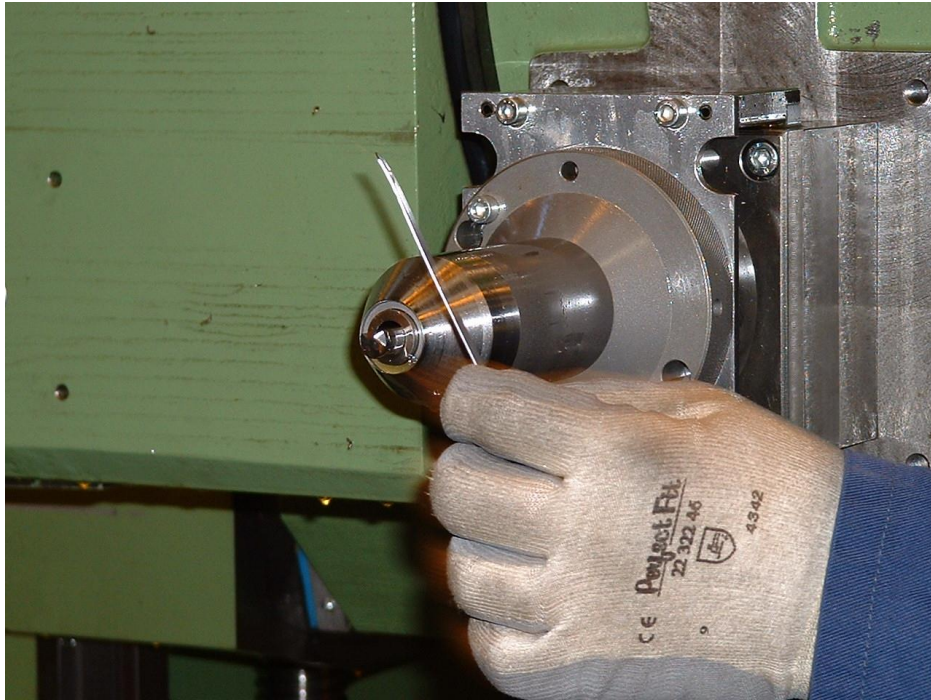


- Guide the sealing unit into the housing and lock in position.



- **Using the remote control move the gun drill flush with the nose of the drill bush.**

1. Record the W1 position and input into parameter R111 in the program.

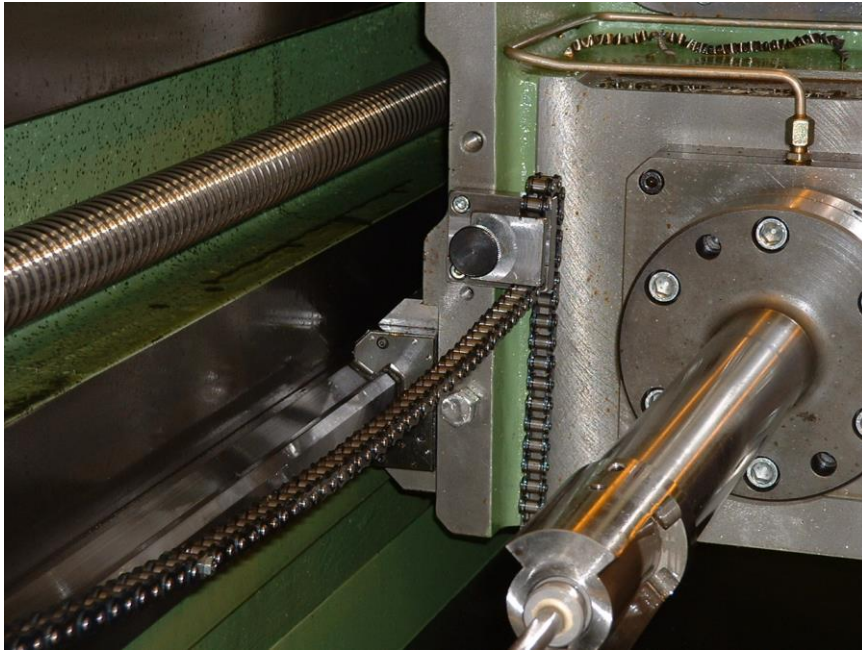


- **Place the bearing support steadies equidistantly.**



➤ **Take care, to ensure that:-**

1. The chain slack has been taken up.
2. The support steadies have been placed equidistantly.
3. The handles for locating the support bracket bearings are offset to one another.
4. Screwed rod is fitted to the support brackets to avoid collisions.
5. The longer piece to the top and the shorter piece to the lower left.



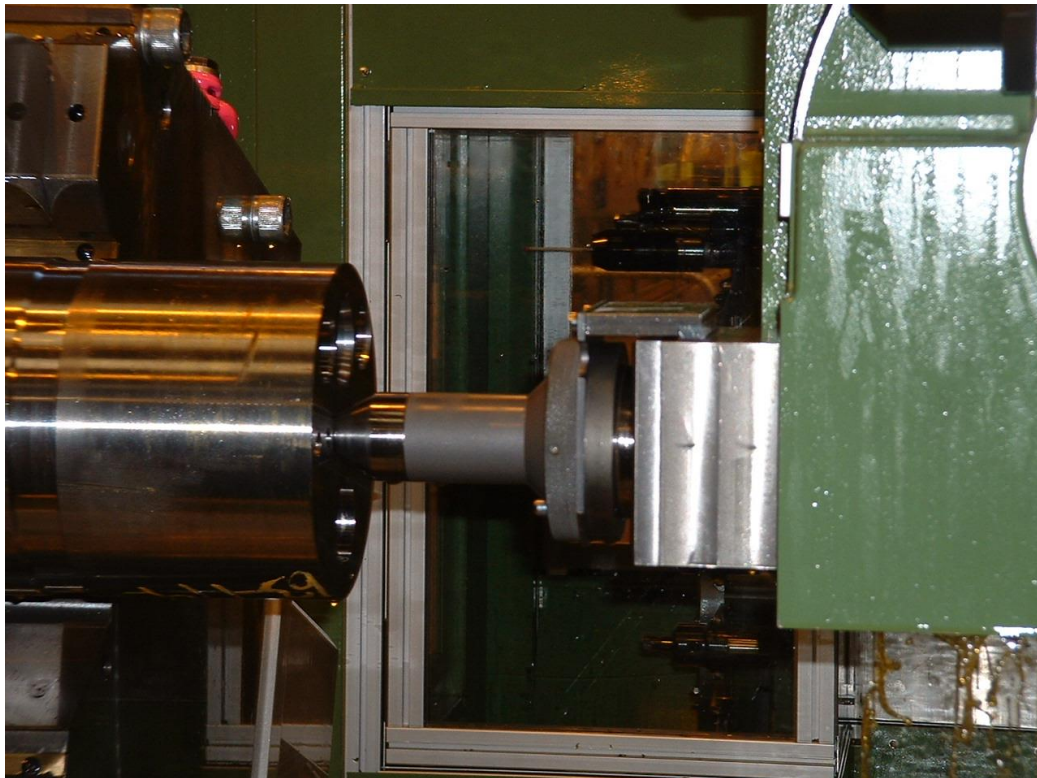
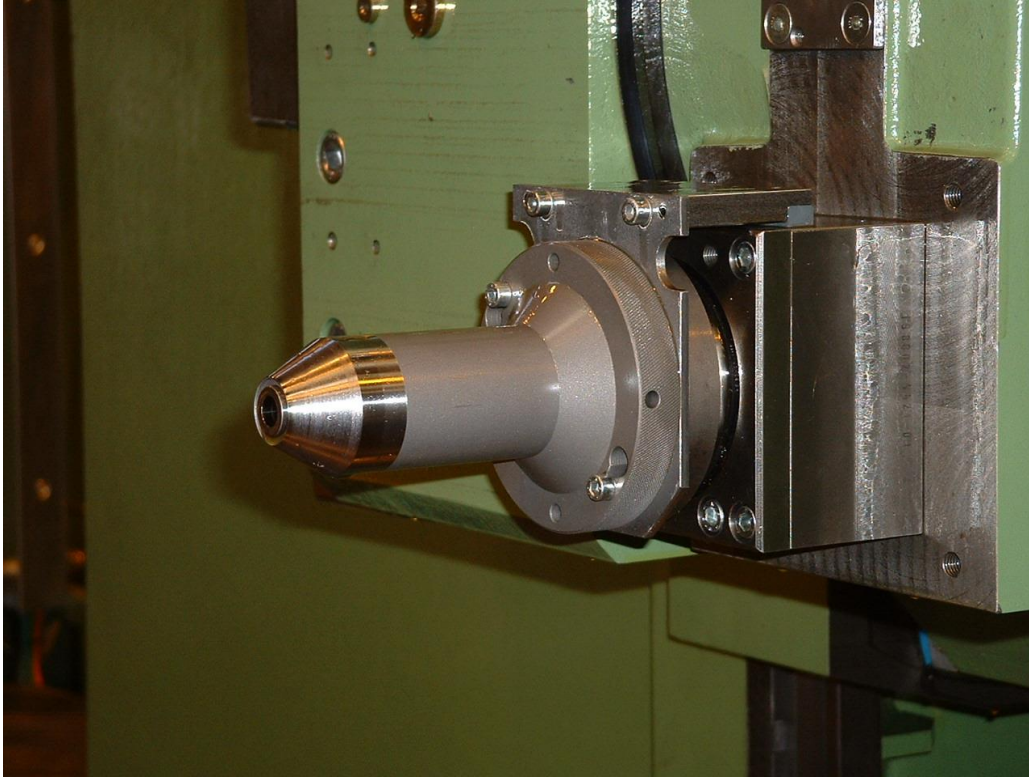
➤ **Load program.**

1. Machine.
2. Menu Select.
3. Program
4. Cursor to program required.
5. Select.
6. Input.

➤ **Set coolant volume / spindle load monitors.**

1. Small diameter drills – high pressure / low volume.
2. Large diameter drills – low pressure / high volume.

- **Start Program (auto / cycle start.)**





➤ **To restart drilling on 2nd or subsequent holes :-**

1. Change R1 parameter to R2 ,or,
2. Block search to 2nd hole with calculation.

➤ **To stop during the drilling cycle press the yellow P.B.**

➤ **To restart at the interrupt position :-**

1. Machine.
2. Menu Select.
3. T.B.T.
4. Machine Setup.
5. Jog.
6. Reset.
7. Cursor to drilling start interrupts position.
8. + Action.
9. Auto.
10. Cycle start.
11. Change back to – Action, once drilling has restarted.
12. This is necessary as drilling a subsequent hole will cause a rapid in movement to the interrupt position.