R0000164 Spindle Disassemble for Required parts

This dokit details the method of disassembly and list of parts that can be salvaged from a faulty R0000164 spindle assembly

Difficulty **Medium** | Duration **1 hour(s)**

Contents

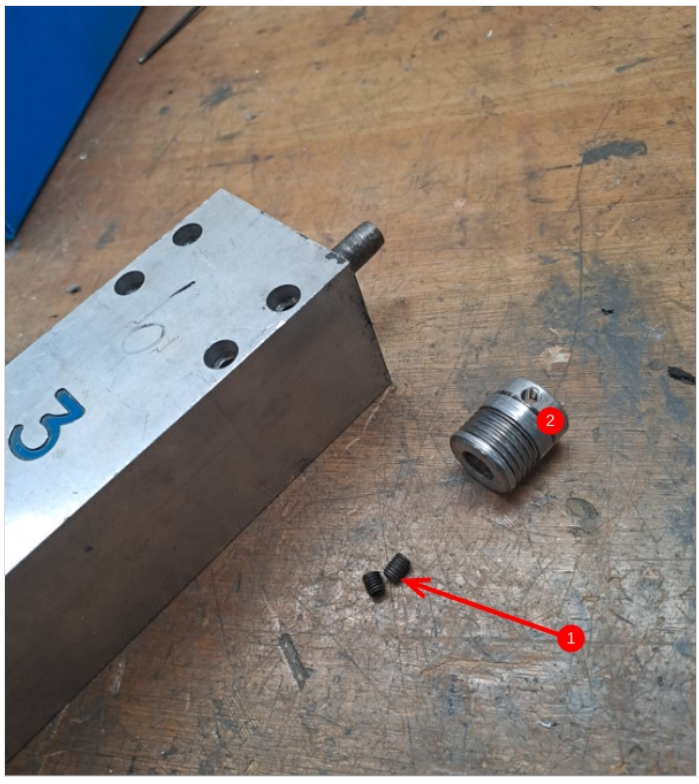
Introduction

Obsoletion of main pcb tooling holder shaft has created inability to supply replacement spindle units that have failed on site. This procedure will extract required parts from failed units to provide a supply of parts required to create exchange units for R0000164 spindles

Step 1 - Remove drive pulley

1. Remove 2 off M6 grubscrew from pulley
2. Remove pulley from shaft

> ...If pulley is tight to remove, use lever bars to prise pulley off



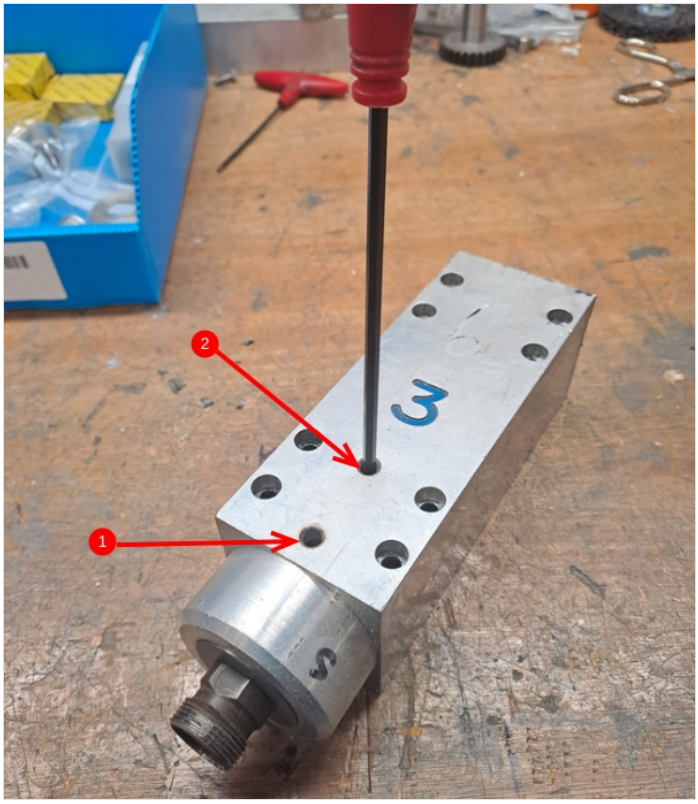
Step 2 - Remove Grubscrew and extract internal assembly

1. Remove locating grubscrew
2. Remove blanking grubscrew
3. Apply heat to spindle housing to swell bores

> ...The housing needs to be heated just enough to allow the internal assembly to be pressed out. To check when the correct temperature is obtained, use a hide hammer to gently hit the end of the spindle. If the spindle moves in the direction shown the correct temperature has been reached

4. Use tool press to push internals out of housing in direction shown
5. Use a drift to remove remaining bearing from housing

> ...Caution should be used when using a drift to remove bearing as damage can easily be caused to internal side wall of housing



Step 3 - remove quill coupling

1. Remove 2 off M6 grubscrews from Quill
2. Apply heat with heat gun to area indicated 2 to melt adhesive holding the quill on to the tooling spindle

> ...Use an M6 bolt in the m6 grubscrew hole to stop the quill rotating in the vice when rotational force is used

3. Change spindle to a vertical position and use a 22mm spanner to undo the quill housing from the probe

> ...This will be extremely tight, so controlled rotational force will be required to separate the two parts

4. The two parts shown separated. M6 studding visible is the mechanical connection between the two parts.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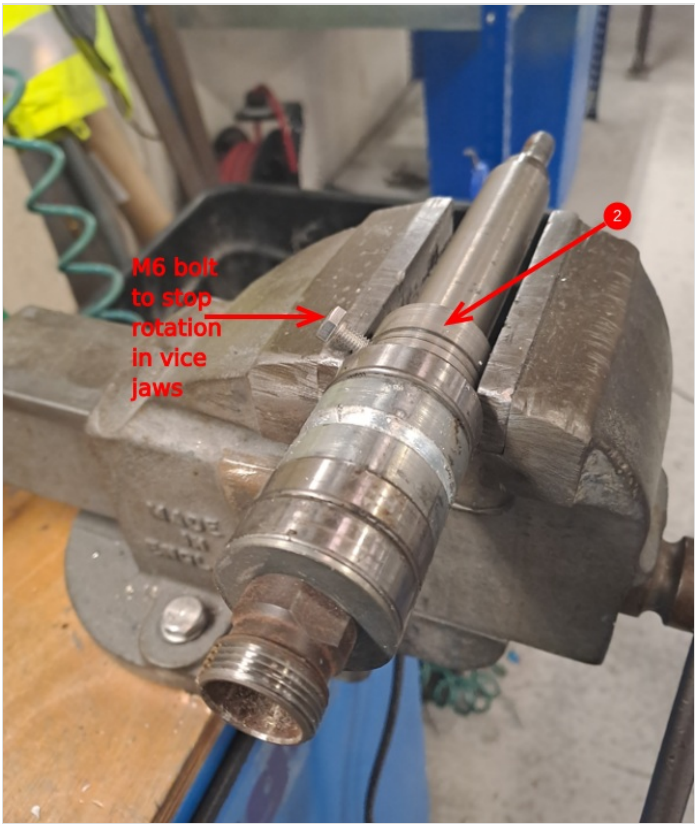
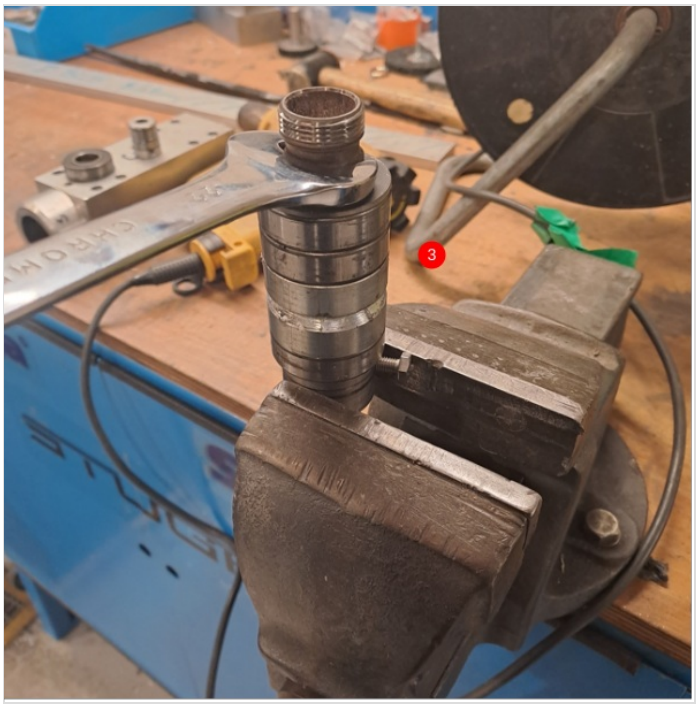

M6 bolt
to stop
rotation
in vice
jaws
2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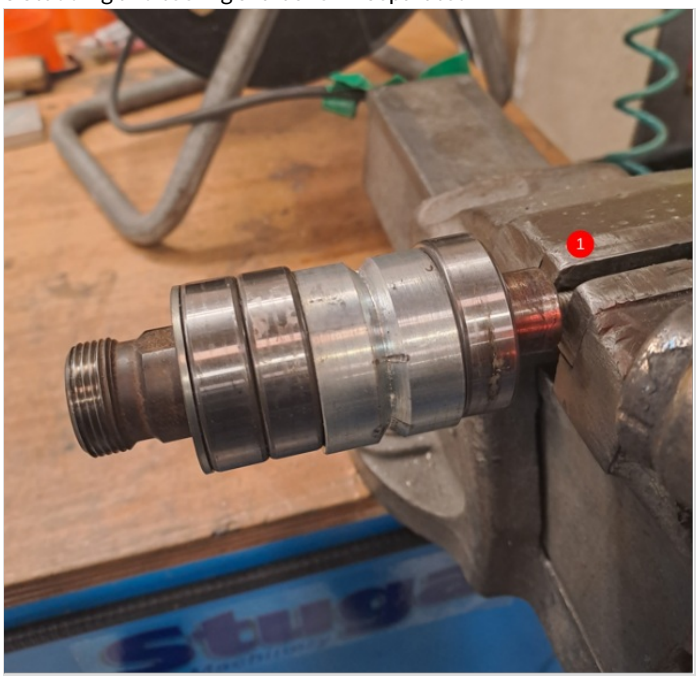
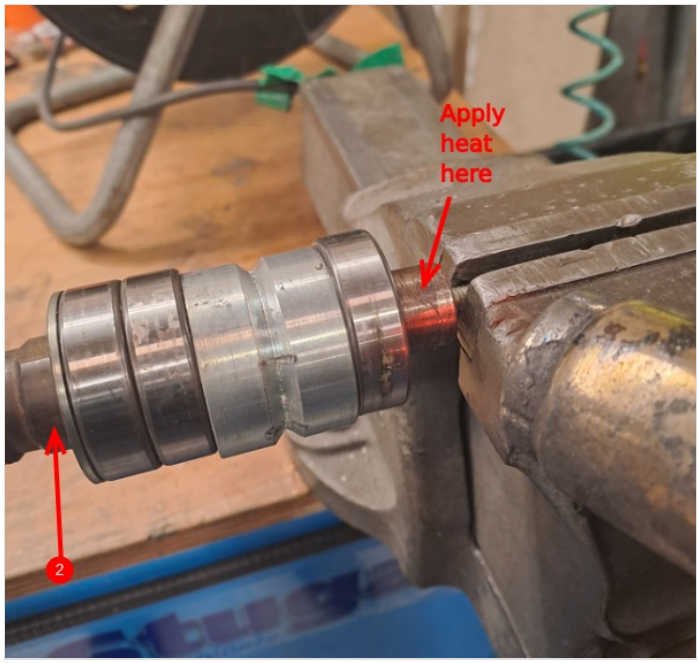
Step 4 - Remove m6 stud from tooling spindle

1. Clamp M6 studding in vice to hold in position

> ...If M6 studding slips in vice when rotation the tooling spindle, file 2 small opposing flats onto the M6 studding to stop rotation in the vice jaws

2. Apply heat with a heat gun in the area indicated to melt and break the stud lock that will have been applied. Use a 22mm spanner on the flats indicated to rotate the tooling shaft off the m6 studding
3 Studding and tooling shaft shown separated





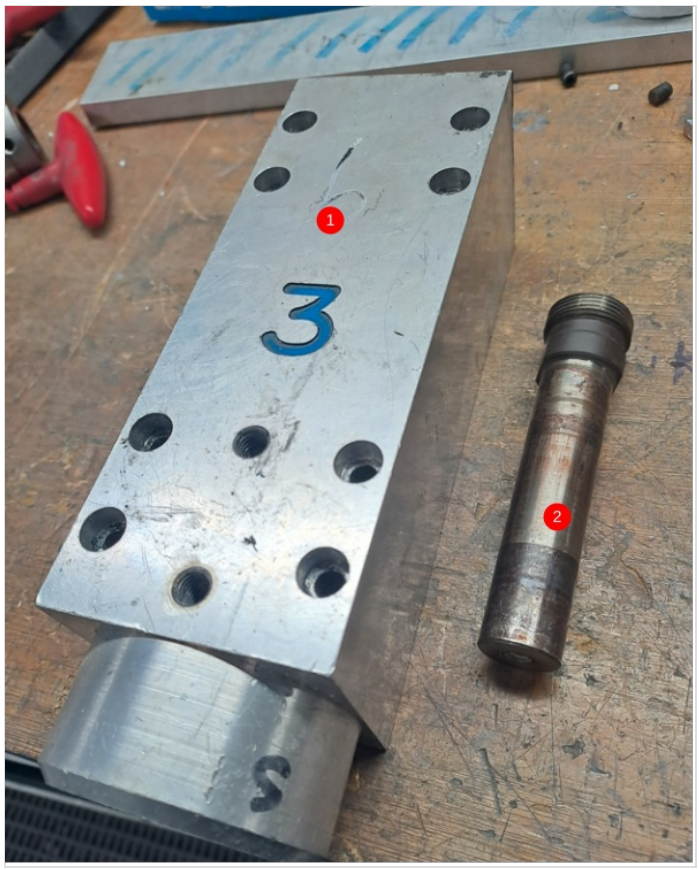
Step 5 - Remove components from tooling shaft

1. Use tool press to push tooling shaft through bearings
2. If tooling press is unable to split bearings from shaft , impact must be used.
To do this, add a m6 set bolt to the hole shown. This will act as protection for the tooling shaft from the impact
Hold the assembly in the vice as shown and impact the set bolt with a hammer in the direction shown to break the seating of the bearings on the shaft
3. components shown removed from the tooling shaft

Step 6 - Parts Required to be reused

IF requested, the following parts will require refurbishing and reusing for a new spindle rebuild.

1. Spindle Housing D0006018
2. Tooling spindle and Nut H0006011



Step 7 - Refurbishing D0006018

Check internal bores for signs of wear from bearings. Generally due to the nature of the assembly, this is unlikely to occur but has to be checked. Any ridges, grooves or deformities in the areas where the bearings are seated should be reported to a supervisor

> ...When dressing the aluminium, always polish in the same direction on a face , as this will stop cross hatching occurring and make the polishing process a lot easier

1. Use 120 grit emery tape and a flat file to 1st stage dress the housing on all faces
2. Use a fine polishing block to 2nd stage dress all faces on the spindle housing
3. Use green scotch bright to final polish all faces of the spindle housing
4. Clean the entire spindle housing inside and out with FE10 solvent , then compressed air
5. Wipe external faces with duck oil and then dry with rag/paper towel to protect polished finish from marks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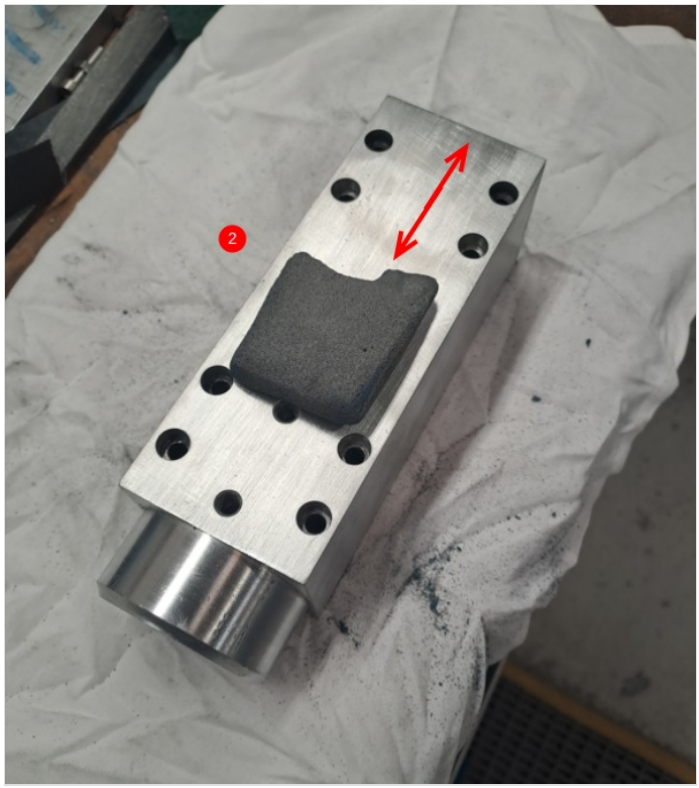
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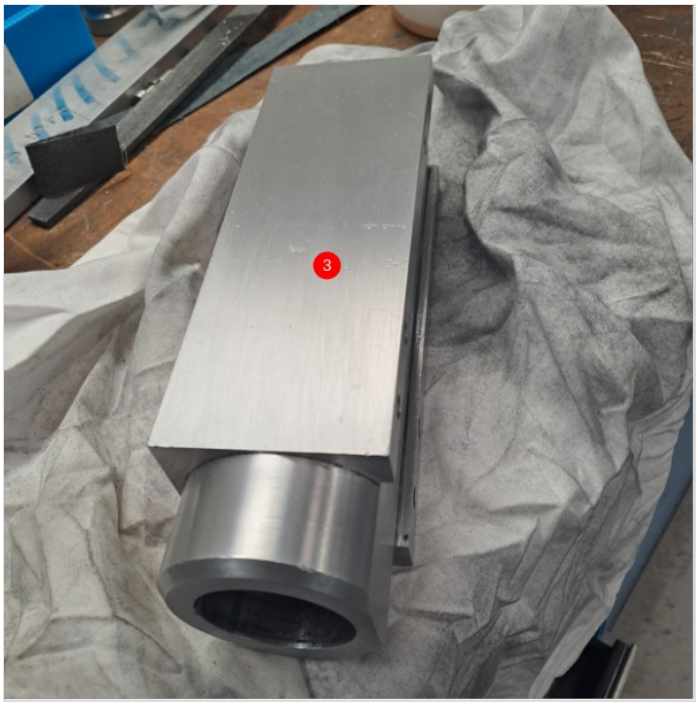
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Step 8 - Refurbishing H0006011

1. Use an M6 x 25 cap head bolt and m6 nut and secure to end of spindle as shown
2. Use M6 bolt to hold tooling shaft in drill and polish with green scotch bright to remove any surface contamination on all areas of shaft and thread areas
3. inspect shaft for any signs of wear, such as witnesses, burrs or marks. Report any discrepancies to supervisor