Stepper Mount Spindle:

The stepper for the spindle is mounted on top of the spindle. It is driving the spindle using a gear and an idler gear. Using a lever, the stepper can be engaged. When engaged, the stepper is also driving the original lathe motor.
The stepper and gearbox slide in a holder. The leaver, mounted a-centric, is either pressing the stepper (gear) on the spindle gear or lifting the stepper of the spindle gear. The original (steel) lathe T20 gear is driving the original (POM) lathe T50 idler gear that is driving the original T45 gear on the spindle. The holder is mounted on a bracket that is 1.5 mm adjustable in height. The screw holes for the cover are used to mount the bracket.
It is a lot easier to mount the stepper below the spindle, using the tumbler assembly to engage the stepper.

Gears:

T50 gear (POM) between the spindle and the stepper (idler gear)
T20 gear (Steel) on the stepper

Power supply:

20 V

Stepper:

The Nema 24 stepper has more torque for threading large diameters in tough steel like M40 Cr42Mo4

Nema 23 57BYGH627	Nema 24 24HS39-3008D
4 wires, 2 phase	8 wires, 2 phase
200 steps	200 steps
1.9 Nm at 3A	4 Nm at 4.24A

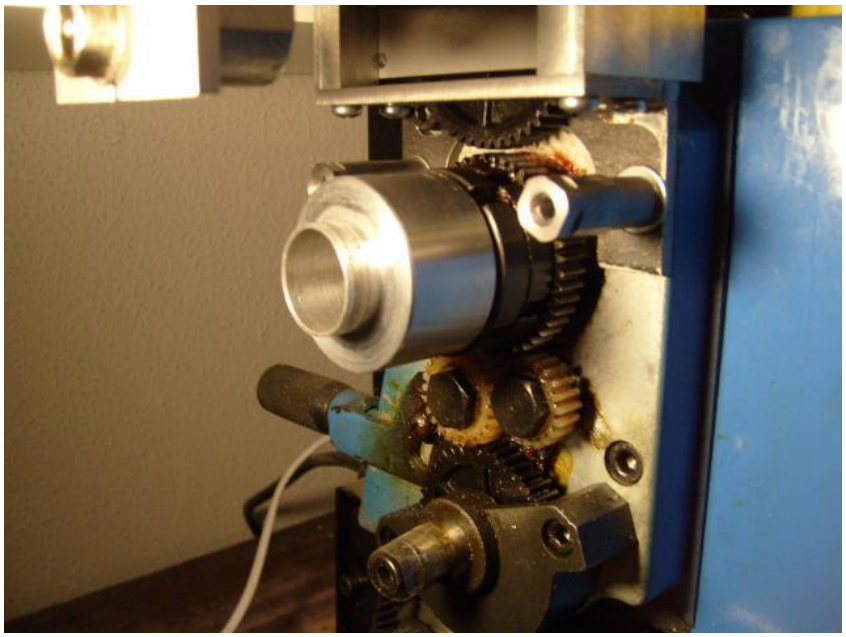
TB6600 settings

Nema 23 57BYGH627	Excitation 8	(1 for threading large diameter)
Nema 24 24HS39-3008D	Excitation 8	(1 for threading large diameter)

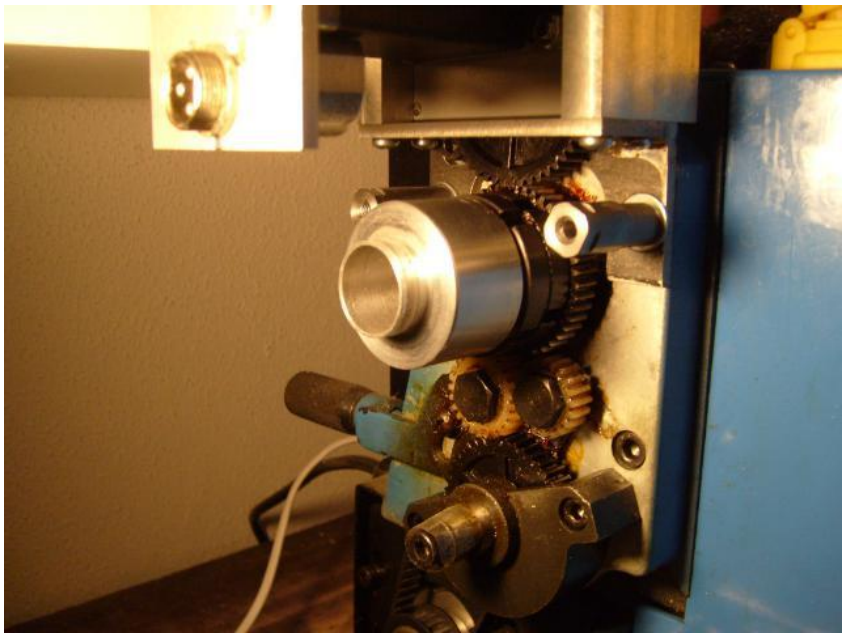
GRBL settings:

$101	C-axis resolution	120	steps/mm = steps/°
$112	C-axis max rate	30000	mm/min = °/min
$122	Z-axis acceleration	1.250	$mm/s^{2} = °/s^{2}$

Stepper lifted, gears disengaged:

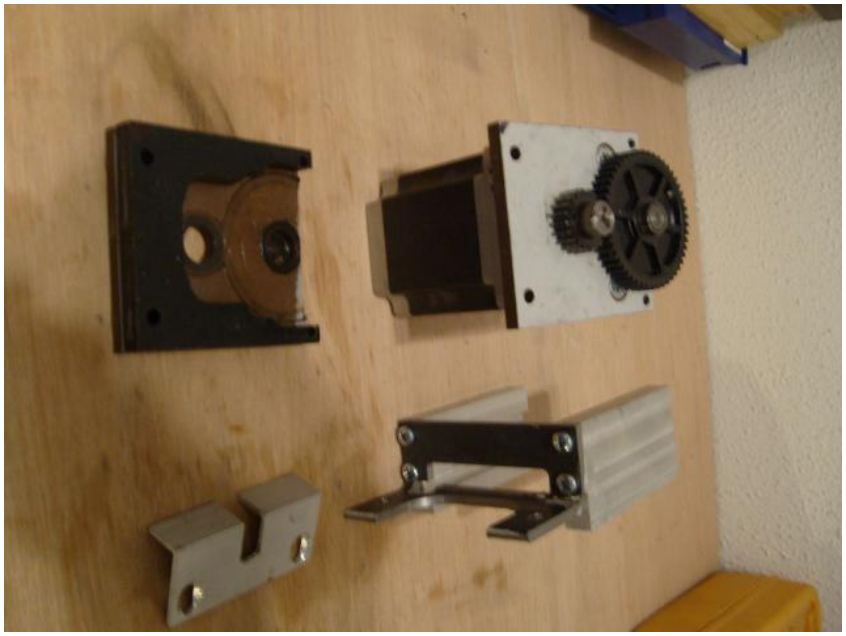


Stepper lowered gears engaged:

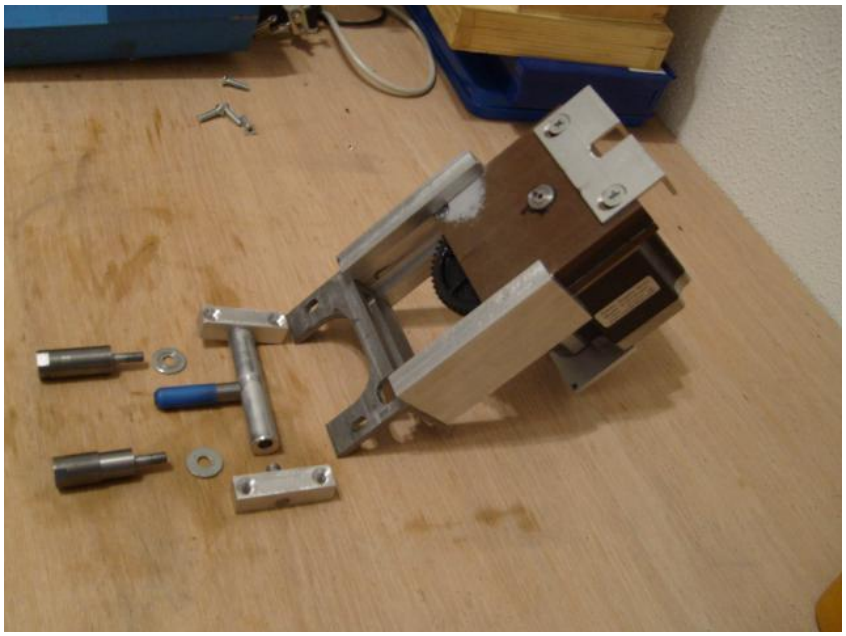


Stepper Holder disassembled:

Stepper gearbox disassembled:



Stepper gearbox and holder assembled:



Stepper assembly mounted on top of lathe spindle: