



Production Support

ShopBot PRT Maintenance Schedule:

Daily before cutting:

- 1.) Warm up spindle for 6-9 minutes with [C][5] routine (preferred) or ½ RPM if you do not have spindle speed control. Confirm operation of spindle fan.
- 2.) Check bit, collet and collet nut for wear and debris. Collets are good for 400-500 hours *MAXIMUM* of use if they are kept clean and no “event” occurs such as a broken bit inside the collet or a plunge that bottoms out on the collet.
- 3.) Verify square gantry by pulling it against the stops at the end of the table prior to resetting motors. Hold in place and press reset.
- 4.) Check rack/pinion/motor/shaft relationship by rapidly pushing and pulling the carriages near each motor. X1, X2, Y and Z. Adjust motor mount spring (3 1/2 turns after slack is removed) and/or tighten set screws. A slight clicking sound could be heard, but no movement (over a few thousandths) should be present.
- 5.) Move the machine around in both move and jog speeds or use a short warm up routine.
- 6.) Run the [C][3] file to home the tool using the prox switches.
- 7.) Run the [C][2] (or other custom zero routine) to zero your bit.
- 8.) You should verify that your bit has been zeroed properly by using a "MZ,0" command over the surface you have zeroed the bit to. If bit location is not correct, run the appropriate file to zero the bit.
- 9.) Perform a visual inspection of the machine, wiring, dust collection hoses and table surface. Verify proper operation of vacuum pump and dust collector (if present).

Every 40 hrs of use:

- 1.) Clean rack and pinions for X,Y and Z (2nd Z if present) with small brush and re-grease. Add a BB size blob of light grease every 6” and run the tool to its extents in all axes about 10 times. Wipe off any excess grease and recheck X & Y with push/pull test.
- 2.) Clean the V bearing edges of the Z assembly with a Scotchbrite pad and WD-40. Wipe with light grease or machine oil. Clean and adjust V rollers as needed.
- 3.) Scrub X & Y V rails with Scotchbrite pad saturated with WD-40. Wipe with clean rag. Check V rollers for buildup and clean with small brass brush if needed.
- 4.) Check rack/pinion/motor/shaft relationship by rapid push-pull. X1, X2, Y and Z. Adjust motor mount springs (3 1/2 turns past contact) or tighten set screws as needed.



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Quarterly (40hrs/week) to Semi-Annual (20hrs/week)

All of the above weekly items PLUS:

- 1.) With motor springs removed to disengage pinion gears, move each axis thru its full extents of motion and check for looseness or binds.
- 2.) With motors dropped out, spin test each of the V rollers on the X and Y cars for free movement.
- 3.) Tighten all pinion set screws. Check for signs of movement. Replace pinions if movement or wear is apparent.
- 4.) Remove any burrs or nicks in the V rails with a file. (carefully)
- 5.) Check side clearance on Y car inner V rollers. Adjust as needed.
- 6.) Adjust side clearance on Z axis V rollers.
- 7.) Check spindle square and alignment.
- 8.) Update software and firmware
- 9.) If you have had a Production Support Visit a folder named "SB BKUP" has been installed on your C: drive. A copy of the SB3 software that is installed on your machine is located there in case you need to reinstall it. There is also a copy of your machine settings there that can be used to reset erroneous or unexpected machine actions after a software crash or electrical storm. Type command [U][R] and navigate to the C:\SB BKUP folder. Your machine settings will be visible there. If you have made any changes to your settings, Make your own backup of those settings by using the [U][S] command, navigating to the SB BKUP folder and overwrite the exiting file.

There is also a copy of your C:\SbParts\Custom folder copied there. This folder holds any custom files that have been modified for your machine or machining preferences and all the user modified settings peculiar to your machine. If needed, these can be copied and pasted into the active C:\SbParts\Custom folder using Windows Explorer. SB Link users have a copy of their Link settings installed in this folder. Use the [Import] command to bring in those settings.

Semi-Annual (40hrs/week) to Annual (20hrs/week)

All of the above weekly and Quarterly items PLUS:

- 1.) Confirm X and Y car V rollers are tracking properly on V rails.
- 2.) Remove complete Z assembly, clean rack gear, lube and adjust V rollers (4 or 8) and pinion lash.
- 3.) Replace all pinions.
- 4.) Replace Collets (and possibly collet nut(s) if damaged.
- 5.) Clean dust from inside of computer style control boxes.

Current ShopBot Production Support customers have a full set of software and electronics diagnostics, software upgrades, all of the above maintenance items plus operational testing, tuning and adjustments performed on their machines at each visit.
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