

P Maintenance instructions ProtoMat S-Serie

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1. Maintenance of the transport spindles and linear guides for the X and Y axes:

Tools required:	Torx 27
Maintenance kit Art. Nr.:	126891 für S100; 126892 für S42/S62
Accessory pack ProtoMat	Supplied as standard

Required:



Brush

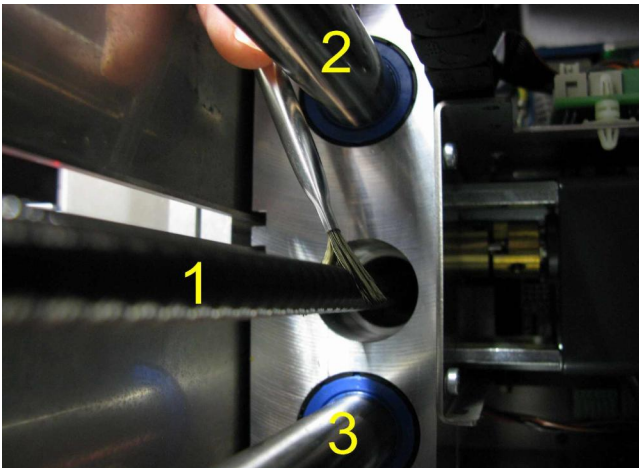
Ball bearing grease
Depth limiter grease
Plastic nut grease

- Switch on the ProtoMat and start the BoardMaster software
- Move the head of the miller into the center and open the hatch in the cover
- Pull the two black pins on the right and left hand side upwards and out of the cross member

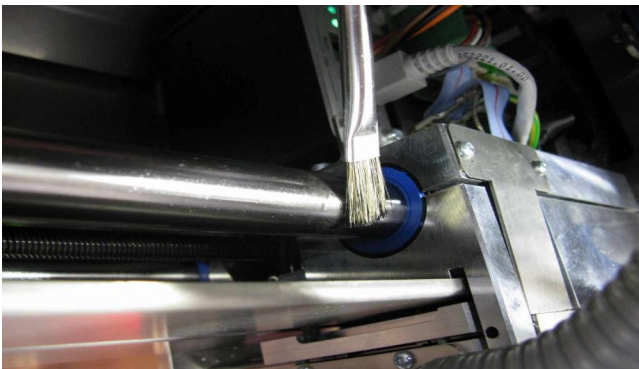


- Close the hatch in the cover and run the ProtoMat to the 0 position. The milling head is now on the left hand side, and the workpiece holder is at the back of the machine
- Open the hatch in the cover, and fold the cowling of the cross member to the back
- Use the brush supplied with the maintenance kit to pick up some plastic nut grease (ISOFLEX plastic lubricant #102244), and then brush grease onto the transport spindle (1) next to the head of the miller (spindle nut).





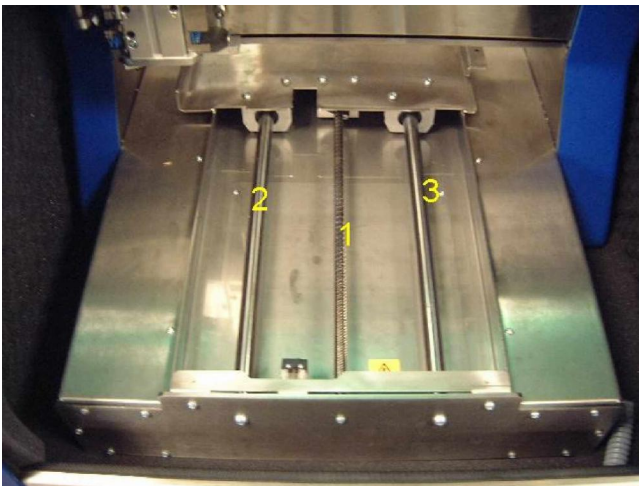
- Close the cowling of the cross member and the hatch in the cover, and run the head of the miller 310 mm to the right with the BoardMaster.
- Open the hatch and use the brush to smear some plastic nut grease onto the transport spindle to the left of the spindle nut.
- Clean the brush thoroughly.
- Now pick up some ball bearing grease with the cleaned brush, and brush it onto the upper linear guide (2) and the lower linear guide (3).



- Close the cowling of the cross member and the hatch in the cover, and run the machine to the 0 position.
- Reopen the hatch in the cover and the cowling around the cross member, and use the brush again to apply some ball bearing grease to this side of the linear guides (2 and 3).
- Close the cowling around the cross member again and fix back in place with the pins. Close the cover, and run the milling head 310 mm back to the right, and then return it to the 0 position. This spreads the grease uniformly over the transport spindle and the linear guides.
- Make sure that the head is in the 0 position.
- Open the hatch in the cover, and remove the cover on the front of the machine (A).



- Remove the two marked screws (Torx 27), and pull the cover plate to the front and out of the machine.
- Use the brush once more to pick up some ball bearing grease, and apply grease to the linear guides (2 and 3).



- Clean the brush thoroughly. Then use the same brush to pick up some plastic nut grease, and smear some grease onto the transport spindle in the vicinity of the spindle nut.
- Replace the cover plate and make sure that the two positioning tabs sit properly in the back of the machine housing. The two positioning tabs are visible when you look through the opening at the back of the housing. Once properly in place, screw in the two screws again.
- Now run the table to and fro a few times to spread the grease properly.

2. Maintenance of the Z axis guide:

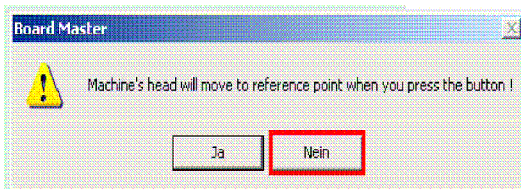
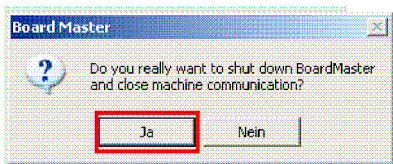
Tools required: none
 Maintenance kit Art-Nr. 126891 für S100,
 126892 für S42/S62
 Accessory pack ProtoMat Supplied as standard

Required:

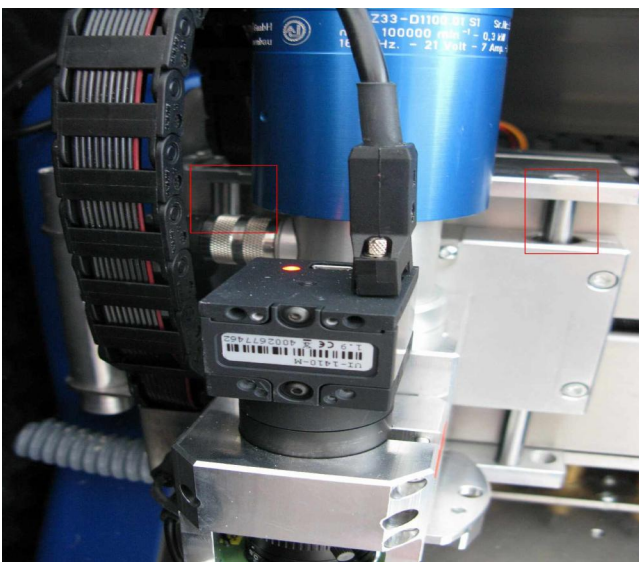


Machine oil

- Run the head of the miller into the middle of the operating area, and stop the BoardMaster. Do not run the machine to the reference point.



- Switch of the machine and use your hand to press the milling head approx. 50 mm downwards - you will feel a slight resistance.
- The two guides for the Z axis can now be seen to the left and right, behind the motor spindle (red marked areas). This picture shows the PM S100 with the camera option.

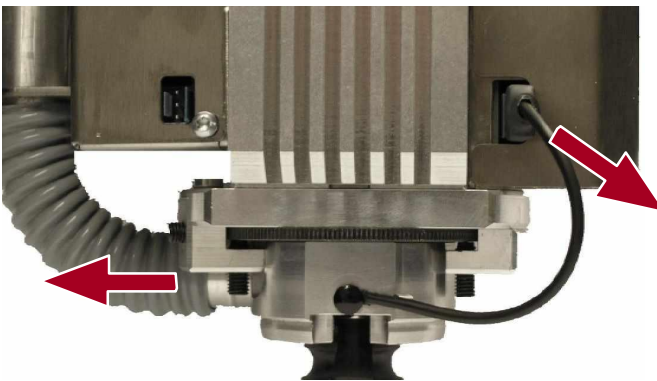


- The gray tip must be fitted onto the syringe. Use the syringe to apply a few drops of machine oil to the guides.
- Switch the machine back on, and start the BoardMaster software. The machine will lift the head of the miller back up again, and run it slowly to the reference point.
- The oil will be spread along the guides during normal operation.

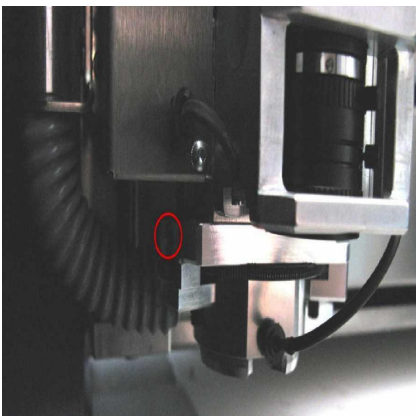
3. Maintenance of the working depth limiter and the collet

Tools required: Torx10; Torx 20
 Maintenance kit Art-Nr. 126891 for S100,
 126892 for S42/S62
 Accessory pack ProtoMat Supplied as standard

- Make sure that the collet is not holding any tools. Run the milling head 150 mm to the right of the 0 position. The milling head is now positioned in the middle, above the front edge of the table.
- Remove the extractor hose, and the plug for the head lighting. Now remove the plastic foot. Press it together and pull the foot out of the working depth limiter.



- Loosen the fastening screws and the aluminum brackets. Remove the brackets.



left-hand side TX10 key



right-hand side TX20 key

- The working depth limiter can now be moved downwards and removed for cleaning. Do this by screwing off the adjustment wheel for the milling depth, and cleaning all of the parts with a brush or a lint-free cloth.
- Smear a small amount of gray graphite grease onto the thread of the adjustment wheel, and screw it half way back onto the working depth limiter.
- If the collet also needs cleaning, do this before reinstalling the working depth limiter. If the collet does not need cleaning, fix the working depth limiter back into place on the milling head by using the two aluminum brackets.

4. Maintenance of the collet

Tools required: Collet key, collet brush, any drill or milling tool with an 1/8" shaft

Accessory pack ProtoMat Supplied as standard

- The inside of the collet can be cleaned at any time without having to dismantle it first. Do this by opening the collet in Service mode, and pushing the collet brush into the opened collet. Turn and push the brush backwards and forwards several times. This removes dust particles from the collet.

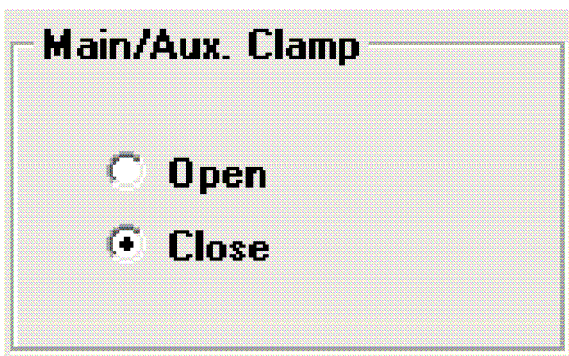


Collet key S62 and collet brush

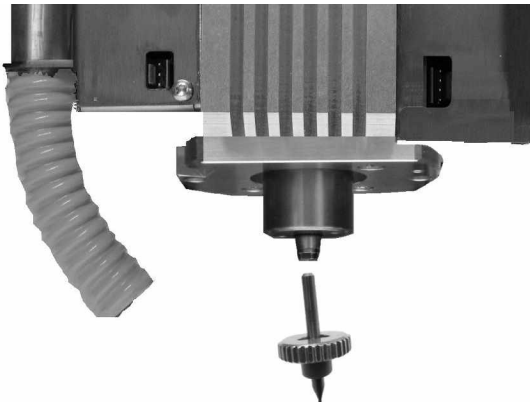


Collet key S100 from the machine accessory pack

- The collet must be removed from the milling head before it can be completely cleaned. This is done by first dismantling the working depth limiter, and opening the Service menu in BoardMaster as follows:
- Press **Configuration** button, and open the tool magazin [B1] dialog. Now press the **Service** button in the tool dialog, and enter the password [B2]"bmaster". Confirm with **OK**.
- Open the collet by clicking on the **Open** function



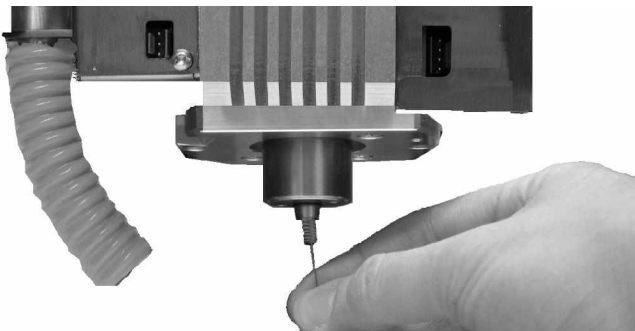
- To prevent damage to the collet when screwing it off, put the collet key on the shaft of a tool. Place the tool into the opened collet. Make sure that the collet key is securely fixed around the collet.



- Turn the collet key to the left to loosen the collet. After turning a few times, the tool with the collet can be pulled downwards, and out of the milling head.
- Remove the tool from the collet, and clean the inside of the collet with the collet brush.



- The outside of the collet is cleaned with the brush which is supplied as standard.
- Clean the collet holder with the collet cleaner. This is done by pushing the brush into the holder, and rotating it and pushing it backwards and forwards a few times to remove dust particles. **DO NOT** clean the holder with cleaning products or degreasers!



- The cleaning process has now been completed. Place the tool and the collet key into the collet, and tighten it in the collet holder by hand. Then remove the tool and the key.
- Re-install the working depth limiter, and screw tight the two aluminum brackets. Make sure that the adjustment wheel lies planar on the aluminum block.