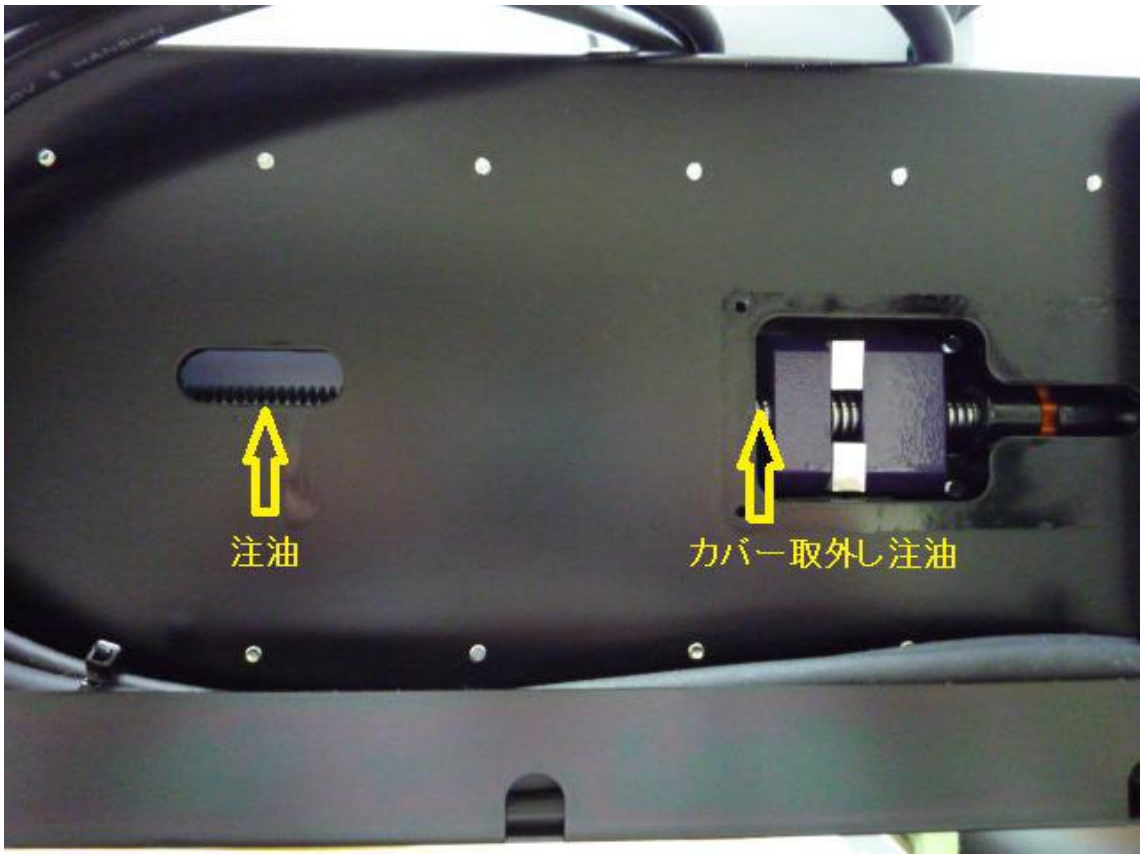
Version 1.1 – 9/30/2012

Maintenance Manual for Eleven Lab

Lubricate

X axis:

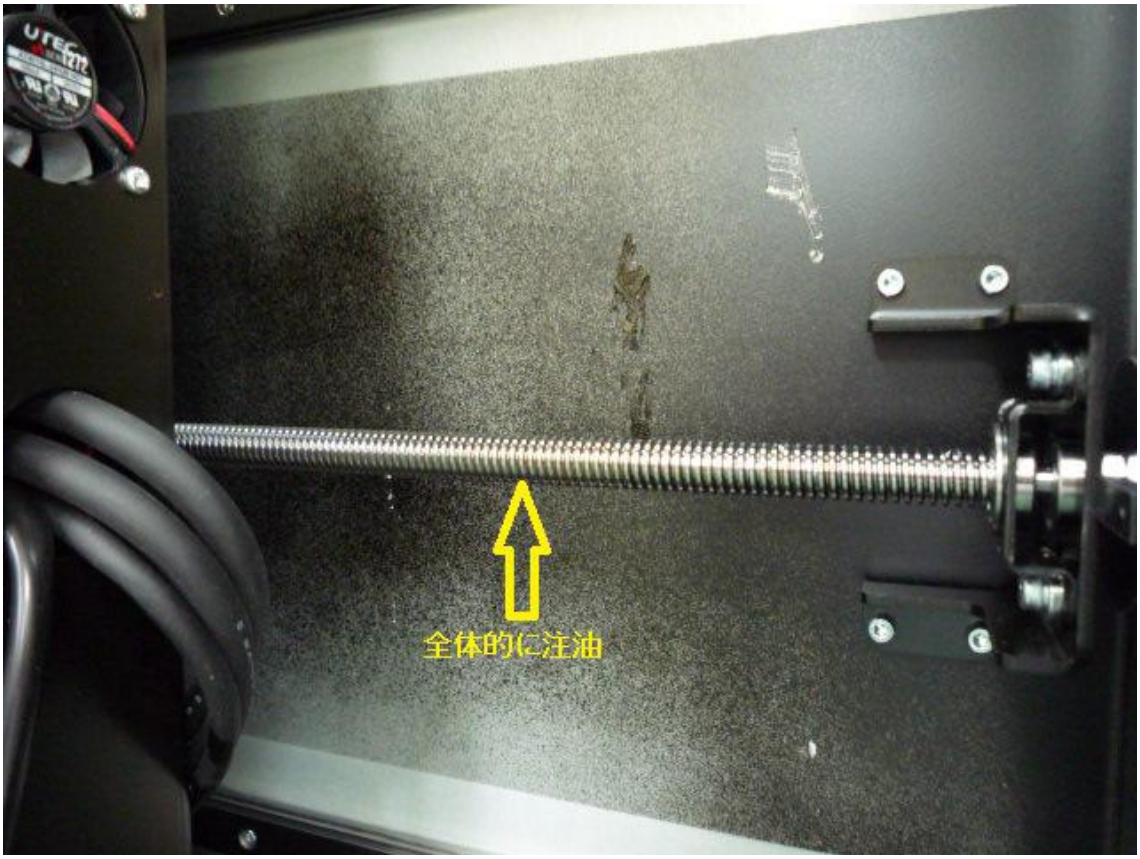
There are two locations for lubrication at the back side of the gantry as shown in the below picture. The left one (from the backside view) is a slot. You will reach X axis from this slot. At the right side of the gantry, you will see the service panel. When the panel is removed, you can reach the X axis also. Put the oil on X axis at either location.



Y axis:

There are two ways for reaching Y axis.

One is that you can lay the machine so that you will see the Y axis lead screw from the bottom side of the machine. Put the oil on Y axis lead screw.

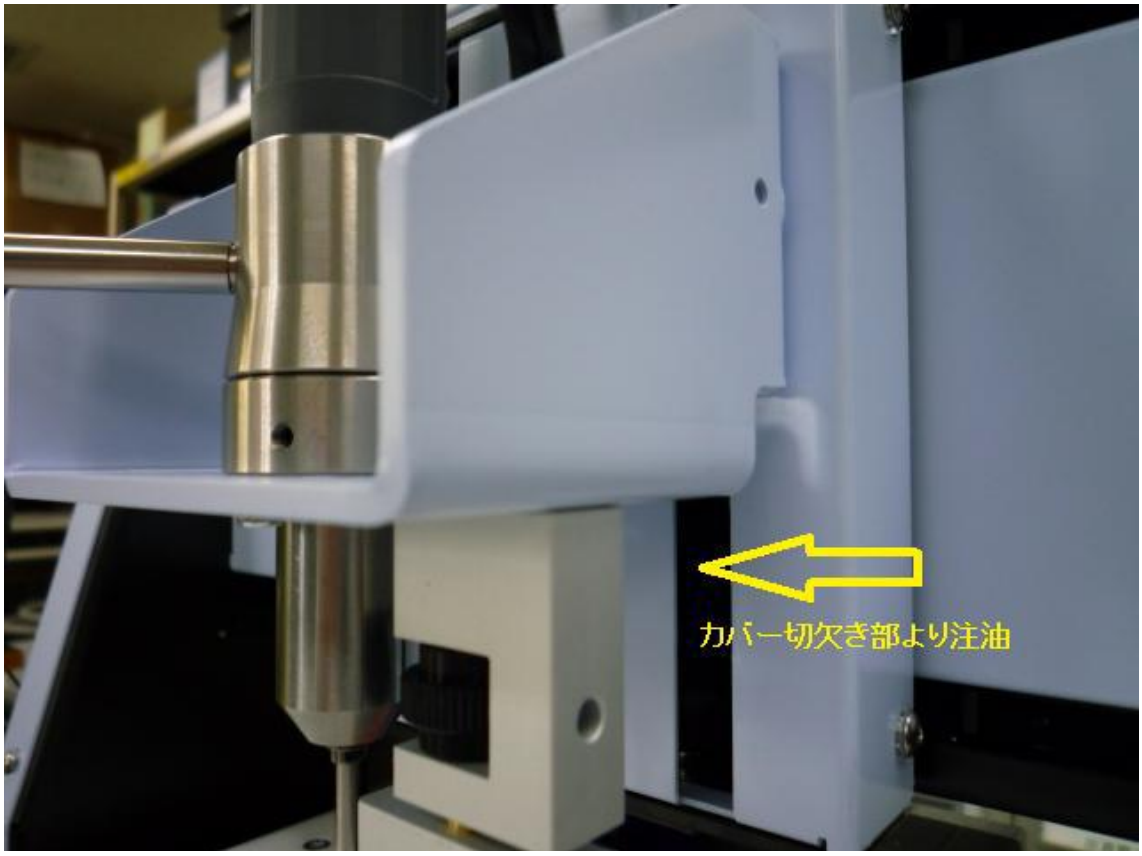


Another way is that you will put the oil from the slit of the left side or right side of the machine. Long stick is necessary to reach Y axis lead screw.

Z axis:

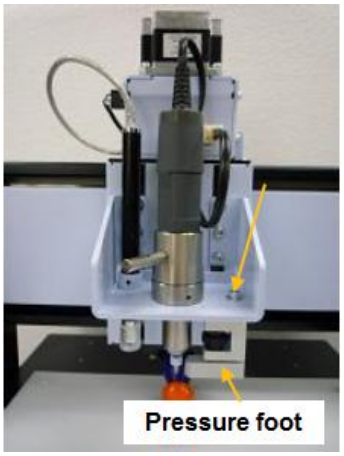
You can reach Z axis lead screw from the slit at the left side or right side of the cover panel as shown in the below picture. It's not easy to remove this panel.
So put the oil on the cotton swab and then put the oil on the lead screw from either slit.

The yellow arrow in the below picture indicates the lower position of the slit.
It may be easier, however, that you move the milling head down to the lower position and then put the oil from the upper position of the slit.



Cleaning spindle motor and collet chuck

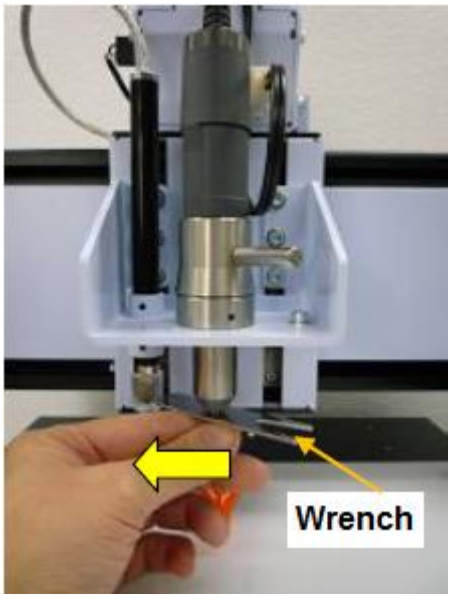
Loosen the screw fixing the pressure foot ant then remove the pressure foot.



Then set the tool change lever at the release position. (Open position) so that you can remove the tool.

Insert the tool without ring instead of the tool with ring.

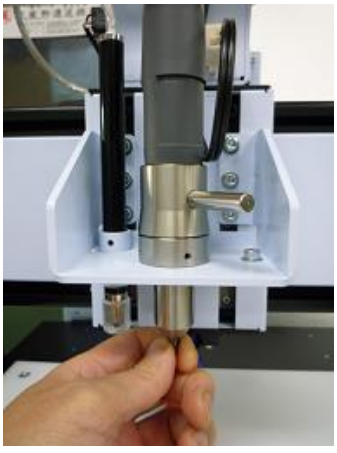
We will use the special wrench which comes with the machine.
The tool without ring makes it easier to work with the wrench and also it protects the collet from the irregular strength while working with the collet.



Using the special wrenches, apply the triangular hole to the bottom of the collet chuck as shown in the right picture.

Turn the wrench clockwise in a way of arrow as shown in the right picture.
The collet chuck is going to be loosened.

Once it is loosened, the collet chuck can be easily rotated with your fingers.

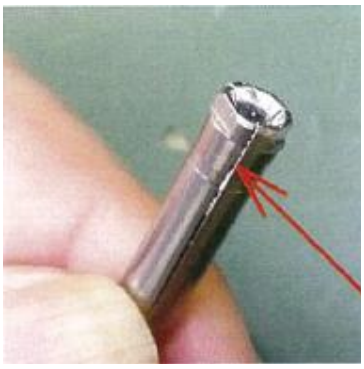


Loosen the collet further. Finally you will remove the collet chuck from the spindle motor.

With small brush, clean the chips and particles
from the inner surface of the collet chuck.

Apply small amount of alcohol on the cotton swab.
Wipe with it and remove the oil and grease
from the inner and outer surface of the collet chuck.

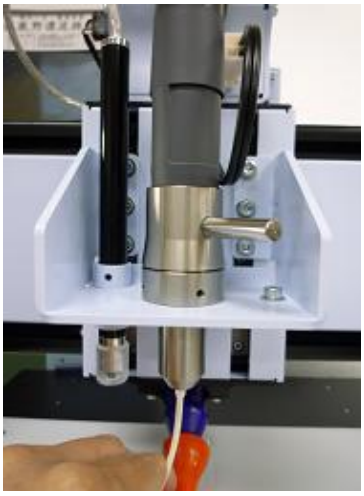
Make sure that no chips and particles are left behind
in the slit of the collet chuck.



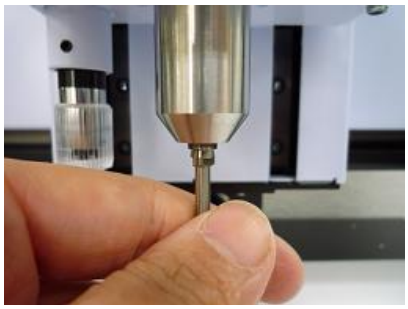
Also, you need to clean the inner side of the spindle
motor housing using brush and cotton swab with
small amount of alcohol.

! CAUTION!
Never blow air at the spindle motor.

Now you will see everything is clean.

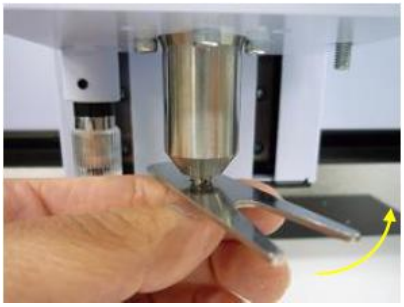


Install the collet chuck:
Insert the collet chuck into the spindle motor
and then insert the tool without ring into the collet.



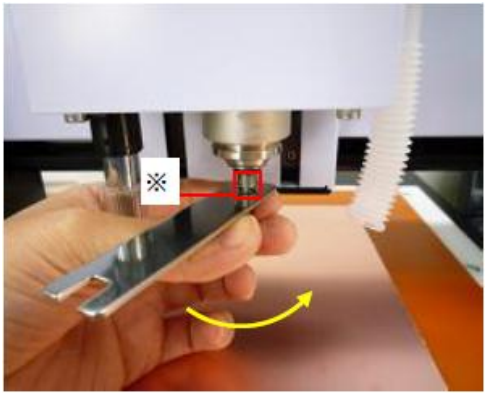
Turn the collet counter clockwise by your finger.
It's going to be installed in the spindle motor.

When it becomes tight for hand tightening,
use the triangular hole of the special wrench
to rotate further.



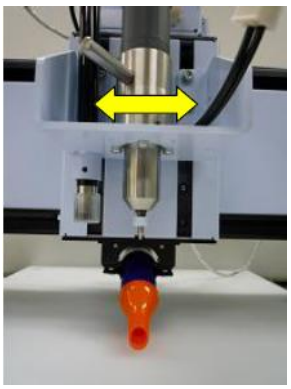
Please keep the dummy tool inside the chuck during this work.

You will feel it become heavier and you will see
the section as shown with asterisk in the right
picture starts rotating together with the collet
chuck turning.



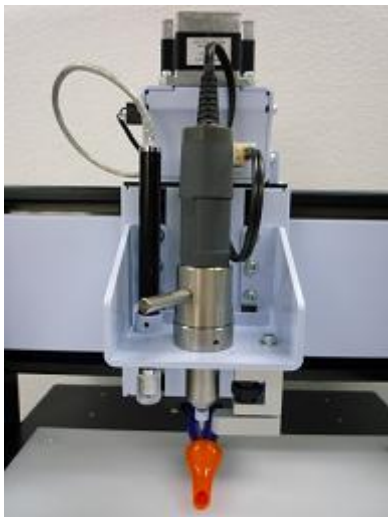
From this point, turn the collet chuck together with the part of asterisk 180 degree more.

Try to change the tool change lever position
at open and close several times to make sure
the tool change is done properly.



Install the pressure foot:
Put the pressure foot back to the milling head.
Then secure it with screw.

Adjust the angle of the pressure foot properly.



The picture at the right side shows the good example of the pressure foot location.

Looking from the left side of the machine, the center line of pressure foot looks on the same line with the tool bit.
This is the proper location of the pressure foot.

The picture at the right side shows the bad example of the pressure foot location.

The pressure foot is not aligned with the tool bit.