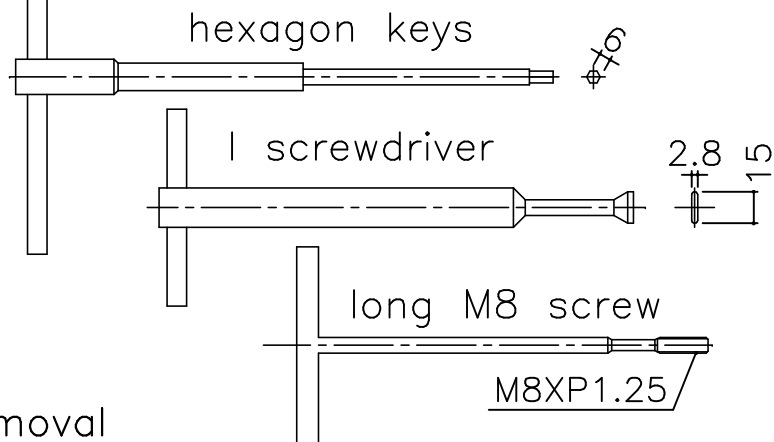


M4-AP_ Grippers Reassemble Procedure

Tooling Equipment

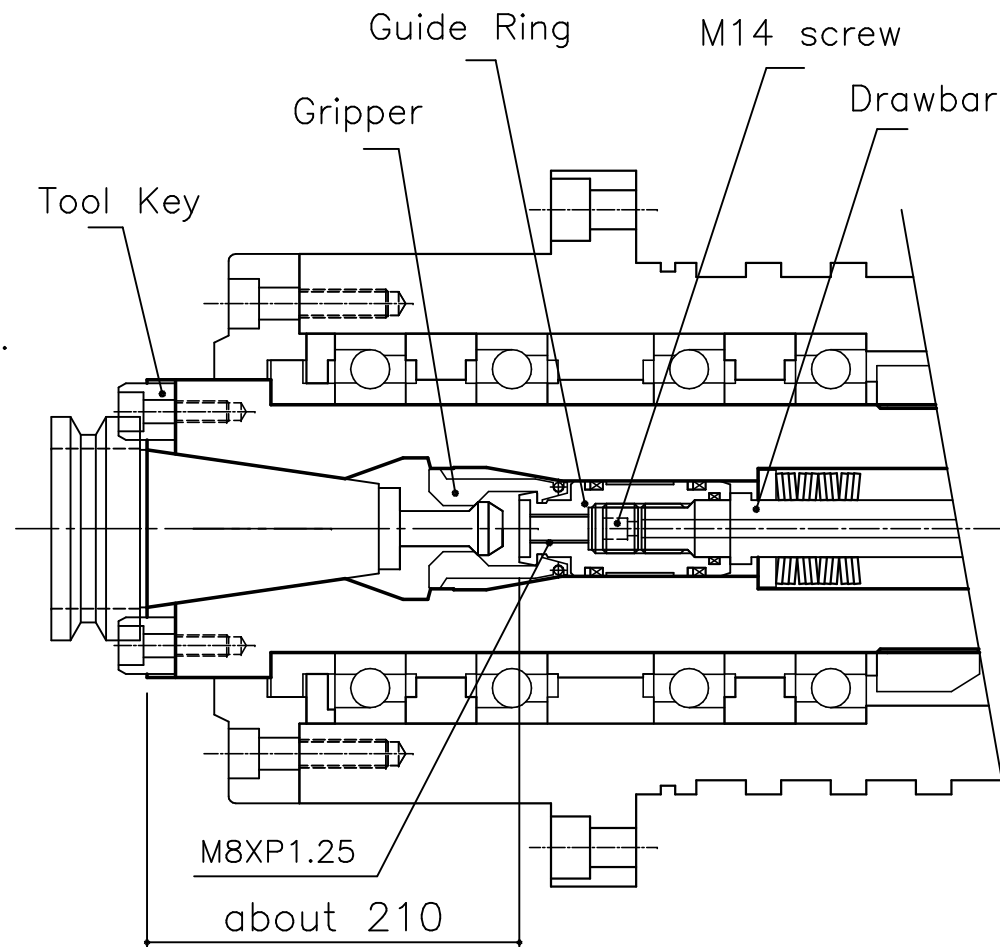


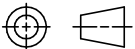
- Removal

1. Push down tool unclamping cylinder, or lock the tool key on the spindle nose, then carry on the followings. (When tool unclamping cylinder can't work, please refer Procedure A)
2. Unscrew M14 with hexagon keys (anti-clockwise)
3. Unscrew guide ring with I screwdriver (anti-clockwise)
4. Pull out whole gripper with long M8 screw. (In old design, there's no M8 thread, please refer procedure B)

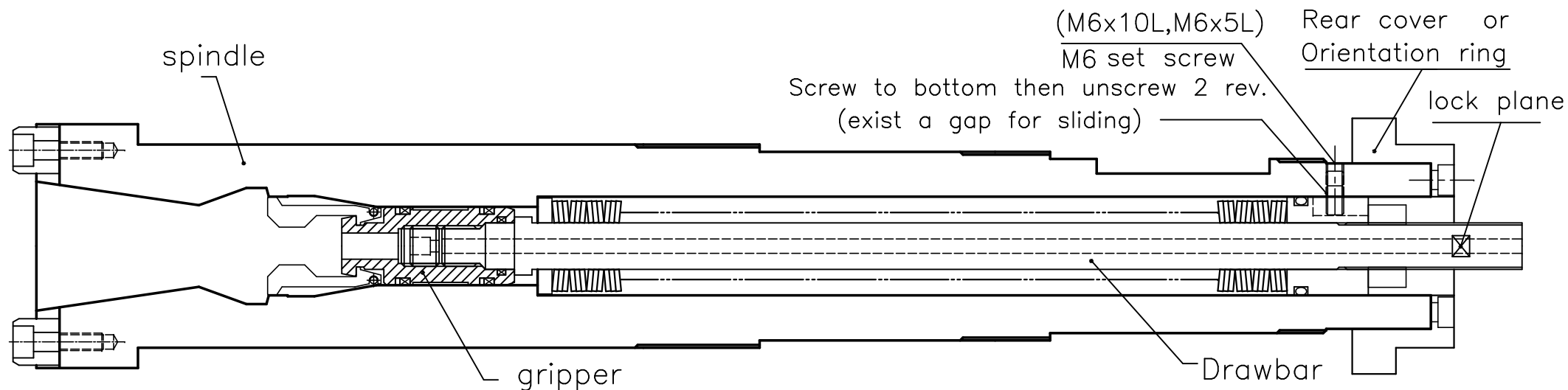
= Assemble

1. Turn M14 of new gripper to left as possible.
2. Push the gripper up into spindle with hexagon keys.
3. Tighten gripper with I screwdriver.
4. Screw M14 tightly as possible.
5. Finally, please adjust the tool push down displacement.



頁次	4/6	TYPE
第三角法		M4-APR, M4-APS

M4-AP_ Grippers Reassemble Procedure

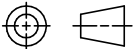


Procedure A

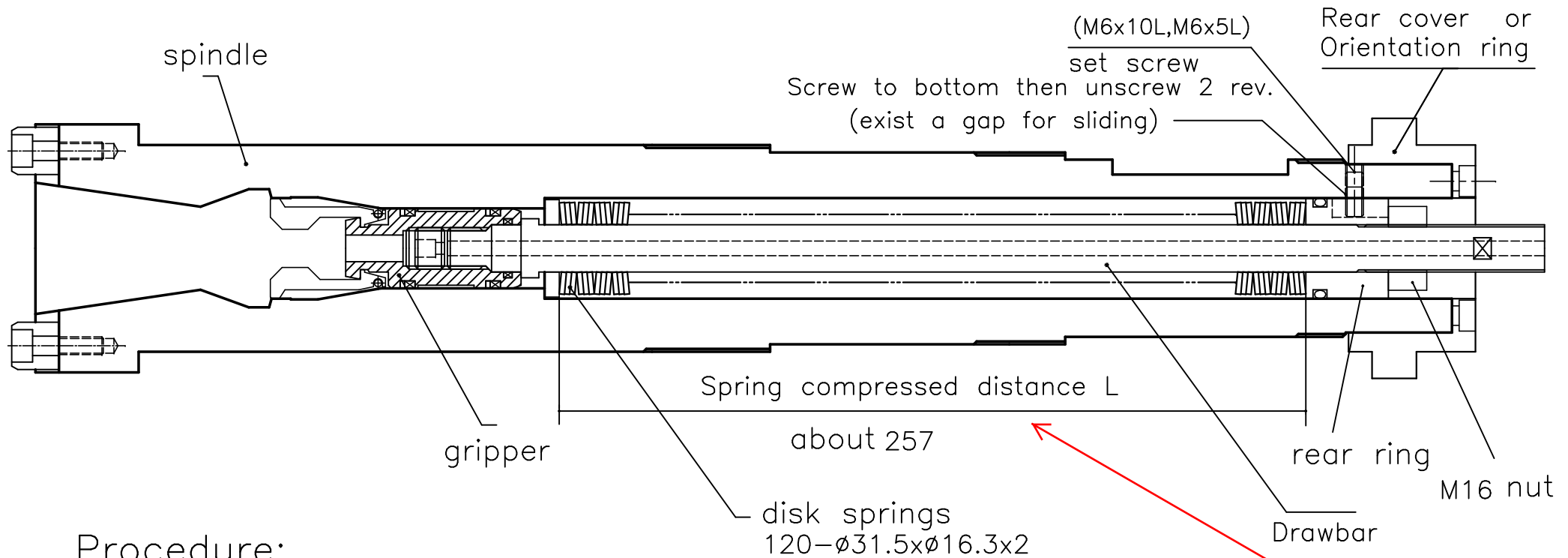
- 1.Refer figure above,when tool unclamping cylinder can not work.
- 2.Lock the end of drawbar with open-ended spanner.

Procedure B

- 1.Remove rear cover or orientation ring at the end of spindle.
- 2.Unscrew the M6 screws in the radial direction(2 screws a hole) (M6x10L,M6x5L)
- 3.Pull out the drawbar.
- 4.Push the gripper down with a bar which diameter is less than $\phi 26$.
- 5.Assemble the rear parts in the opposite operation of item 1.

頁次	5/6	TYPE
第三角法		M4-APR,M4-APS

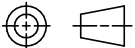
M4-AP_ Disk Spring Reassemble Procedure



Procedure:

1. Firstly, remove grippers according Grippers Reassemble Procedure.
2. Remove rear cover or orientation ring, and remove the set screws M6, then pull up the drawbar assemblage.
3. Unlock the set screw of nut M16, then unscrew nut M16.
4. Remove rear ring and damaged disk springs.
5. Reload disk springs rear ring and then screw nut M16 to the distance L.
(L is proportional to tool clamping force, in experience, L is about 257mm when force is 1000kgf)
(But every disk spring's stiffness is different, so adjust L by using tool clamping force gage)
6. Push down drawbar and assemble the other parts back.

Get this distance first, before unscrew M16 Nut

頁次	6/6	TYPE
第三角法		M4-APR, M4-APS