Tuning GAS-blade compression

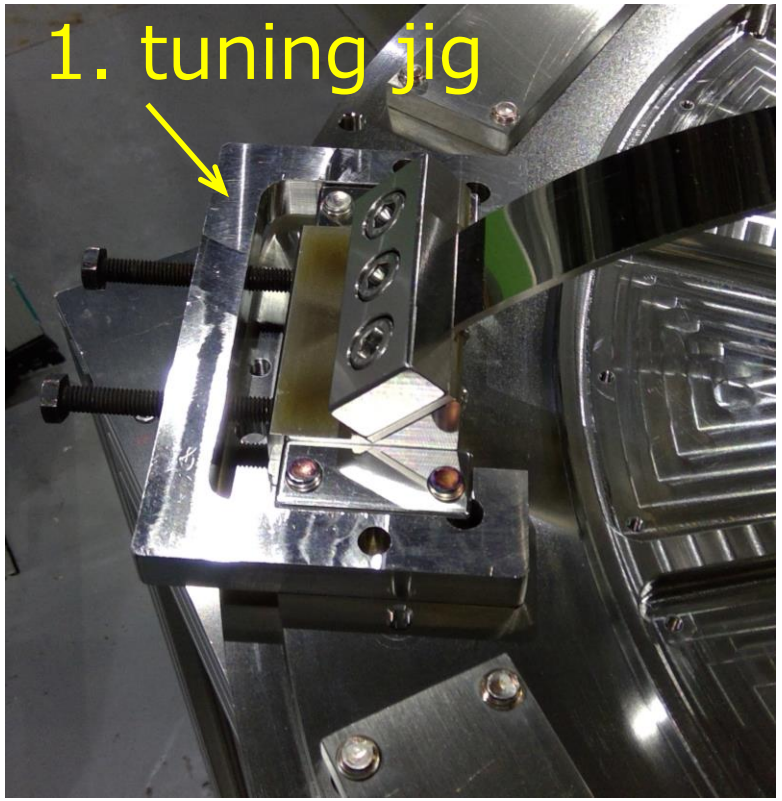
Overview

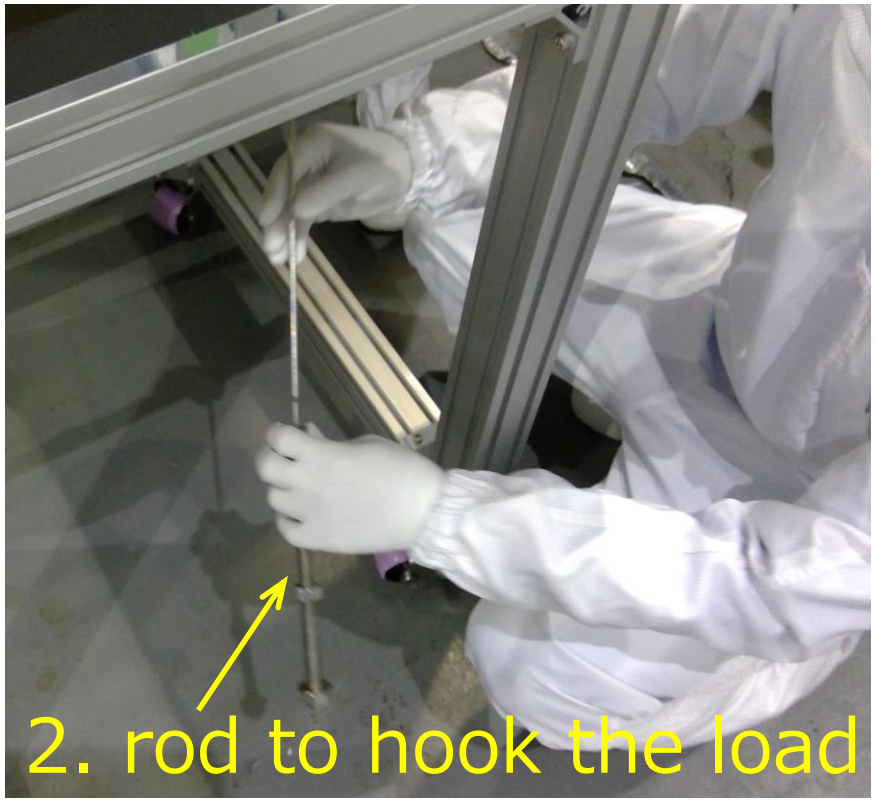
-Necessary tools

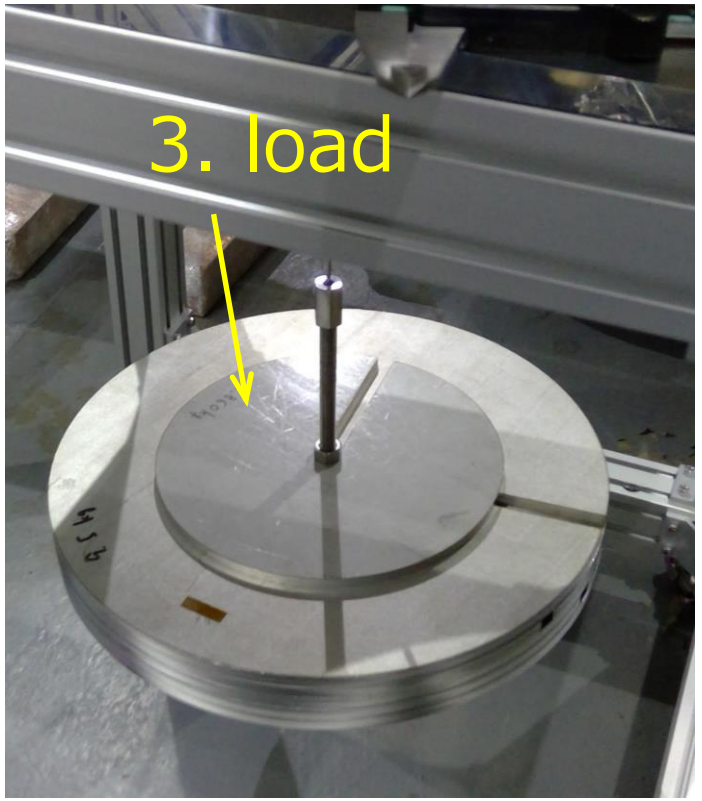
-Step1: change the compression
-Step2: check the key-stone tilt
-Setp3: measure resonant frequency with some load

Necessary tools

1. tuning jig
2. rod to hook the load
3. Load
(4. leveler)

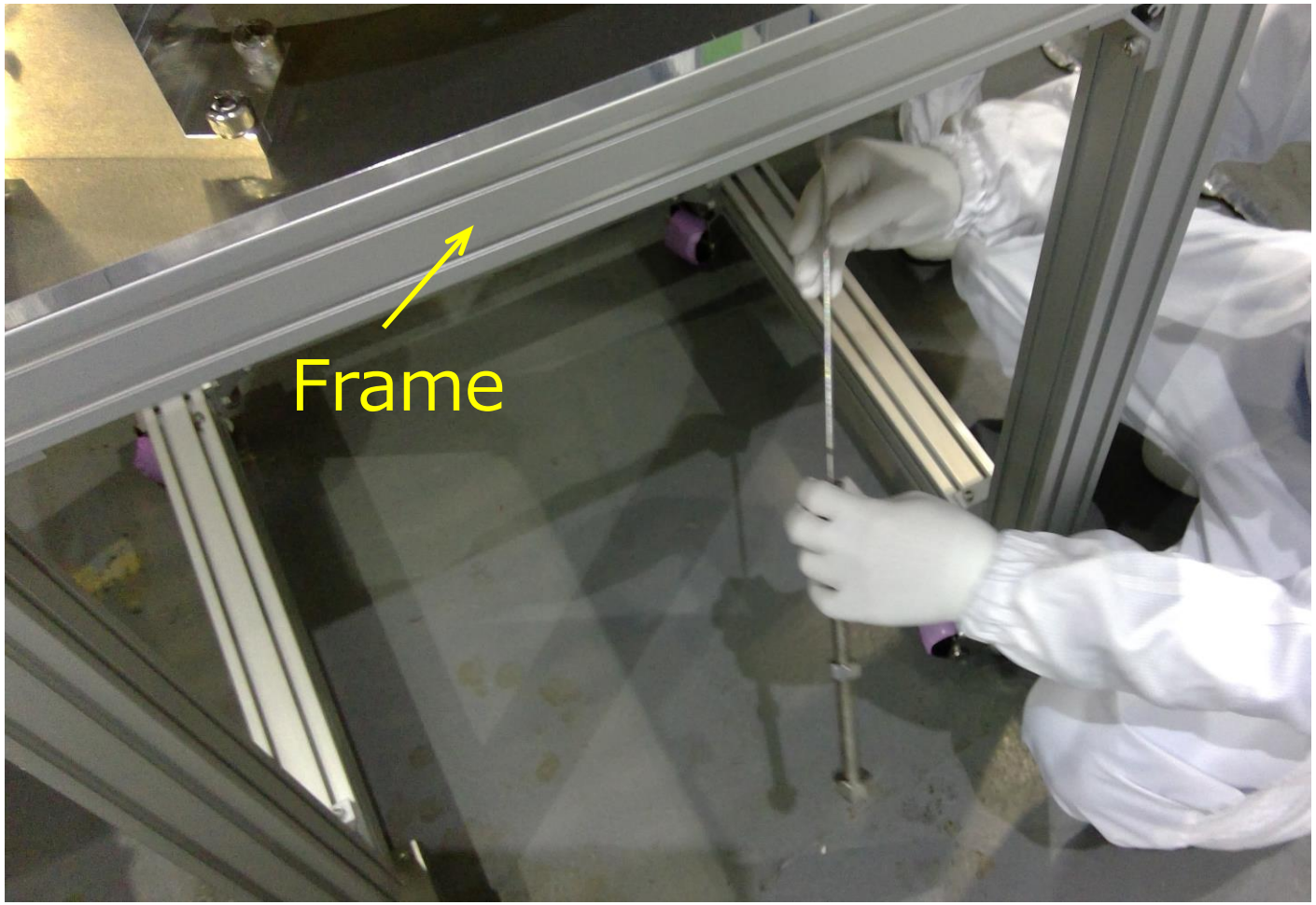


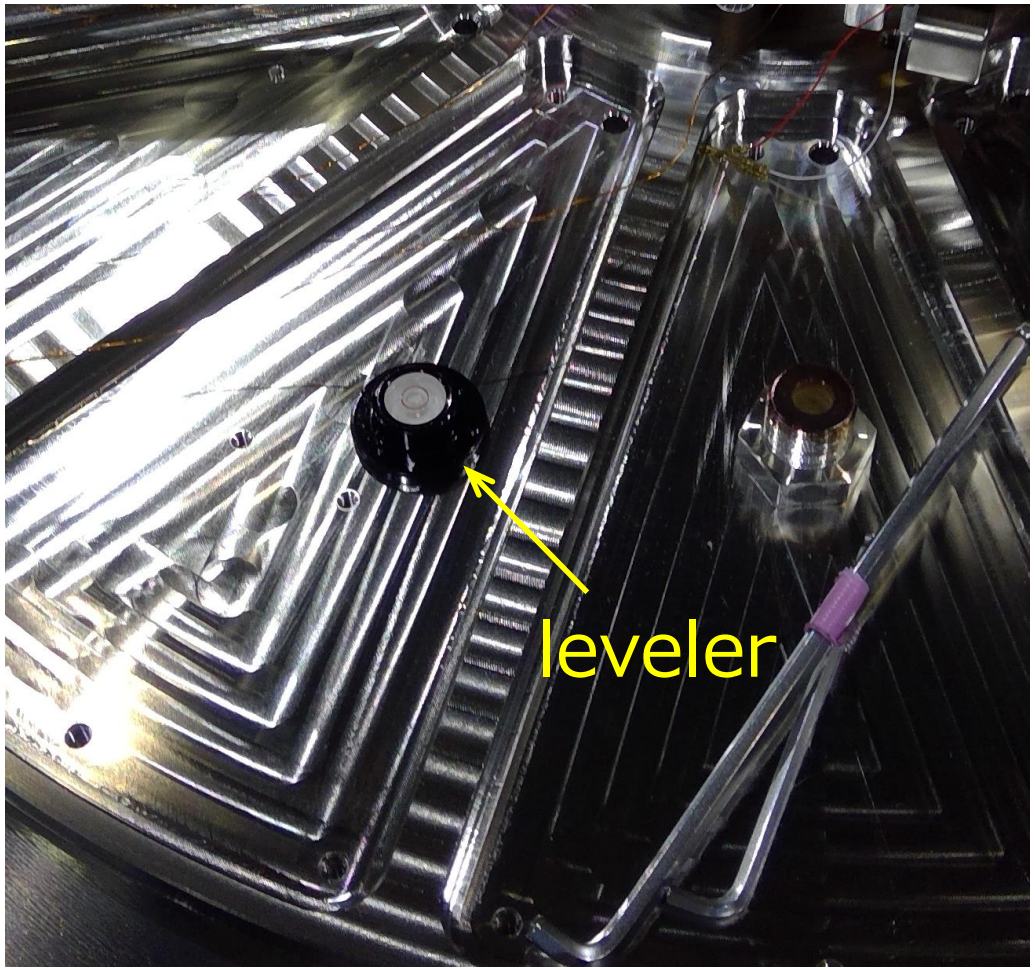




Preparation

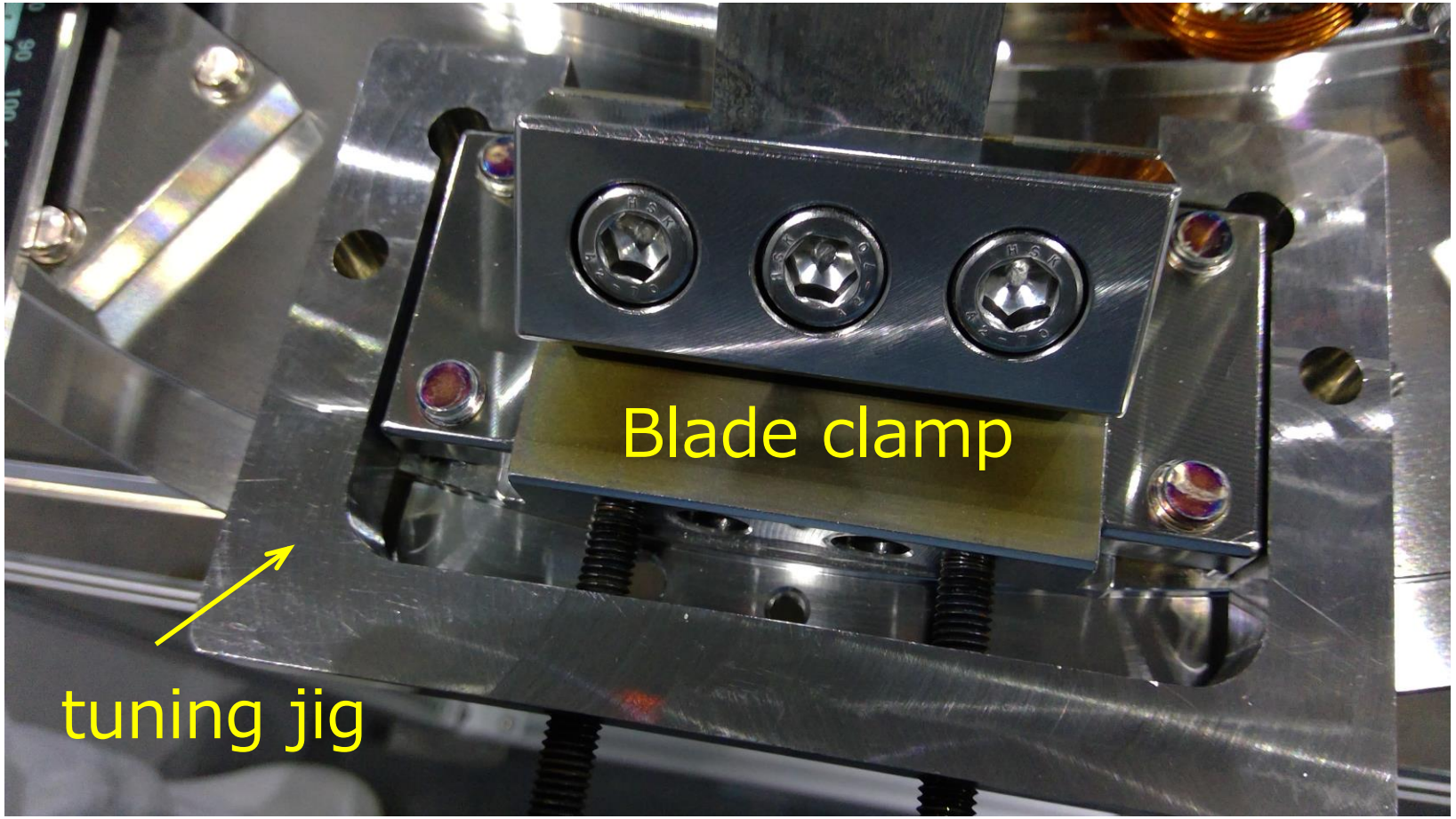
1. Set a frame for this tuning and level it.





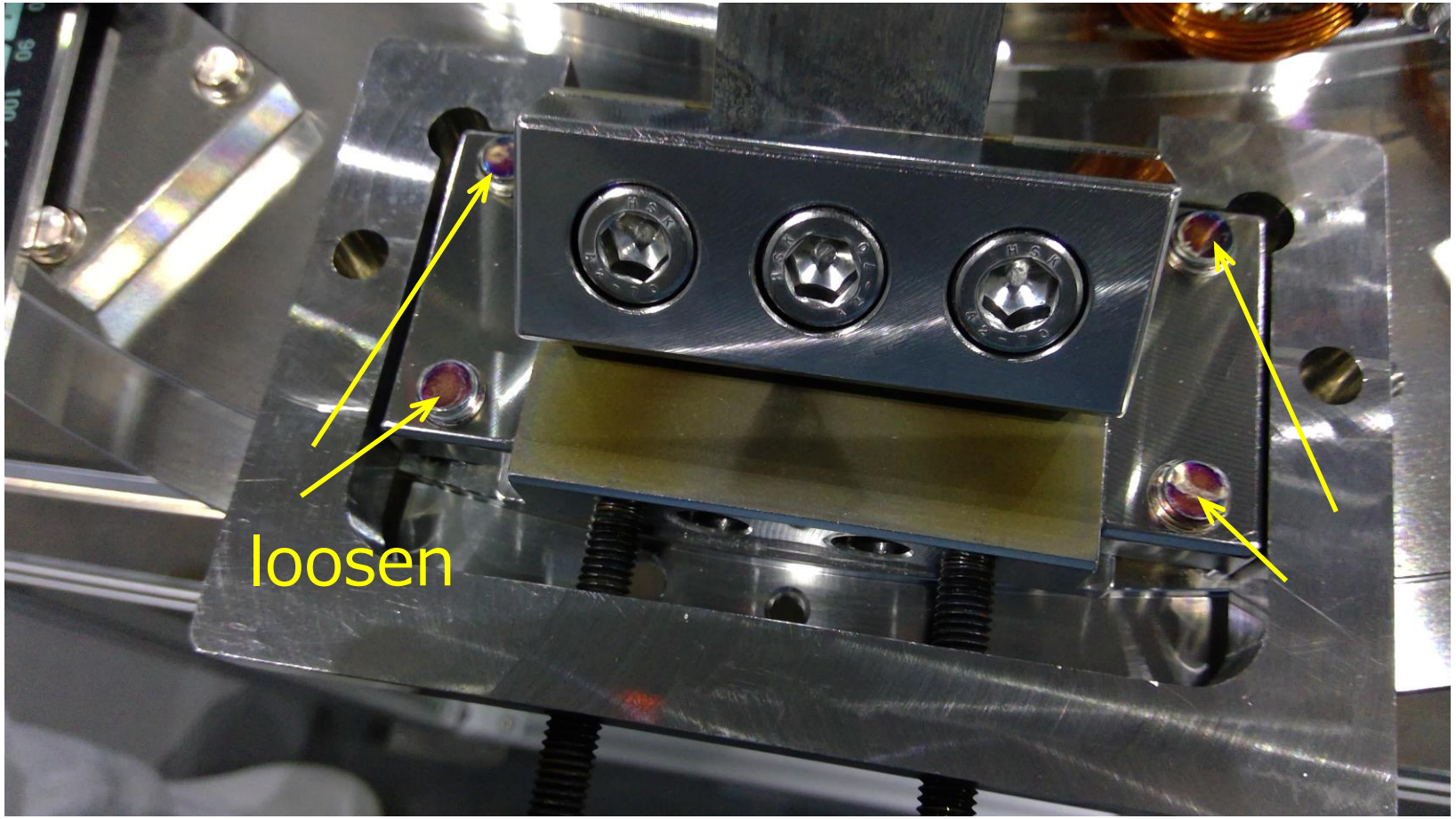
Step1: change the compression

1. Put the tuning jig on the blade clamp.



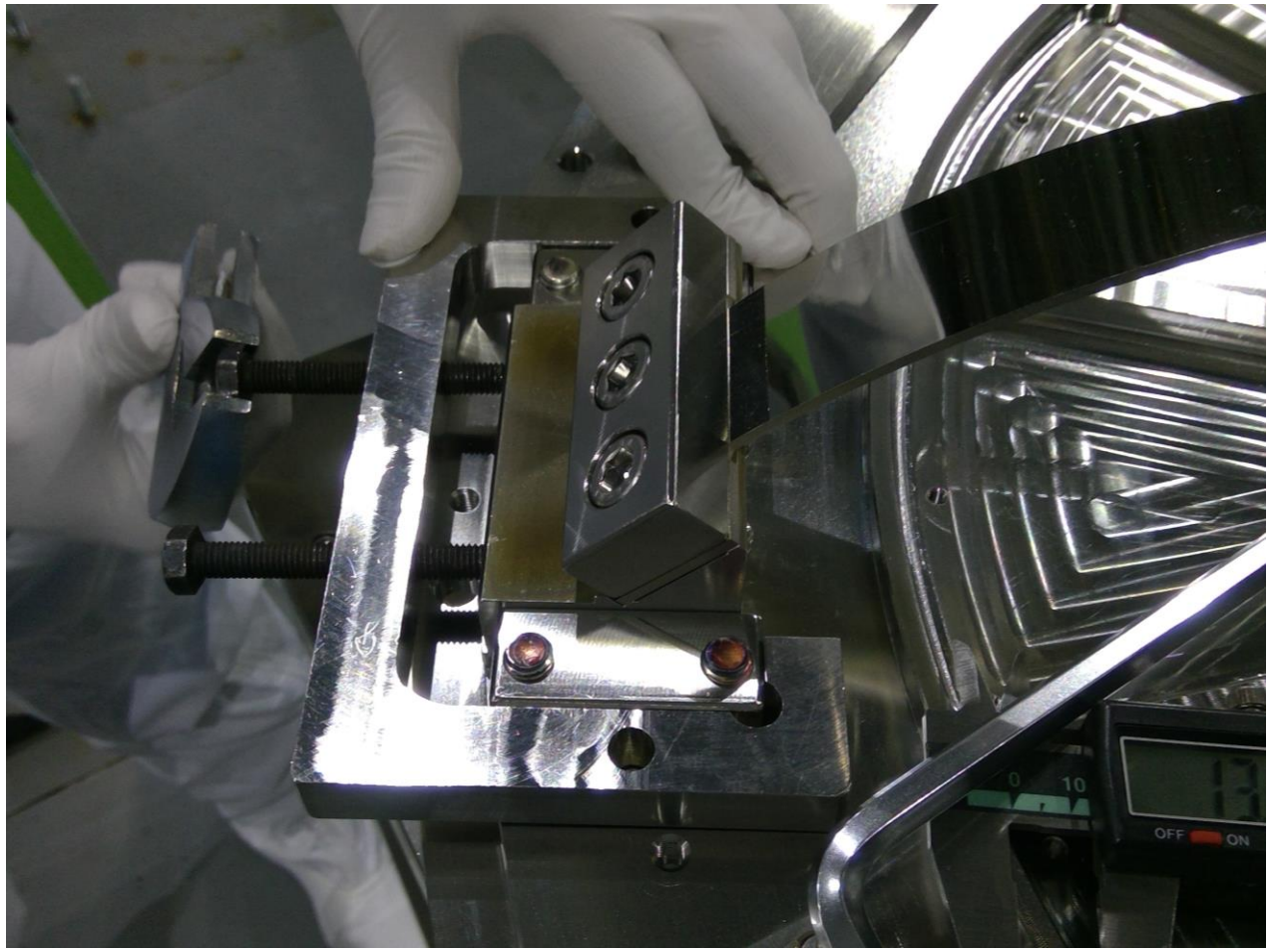
Step1: change the compression

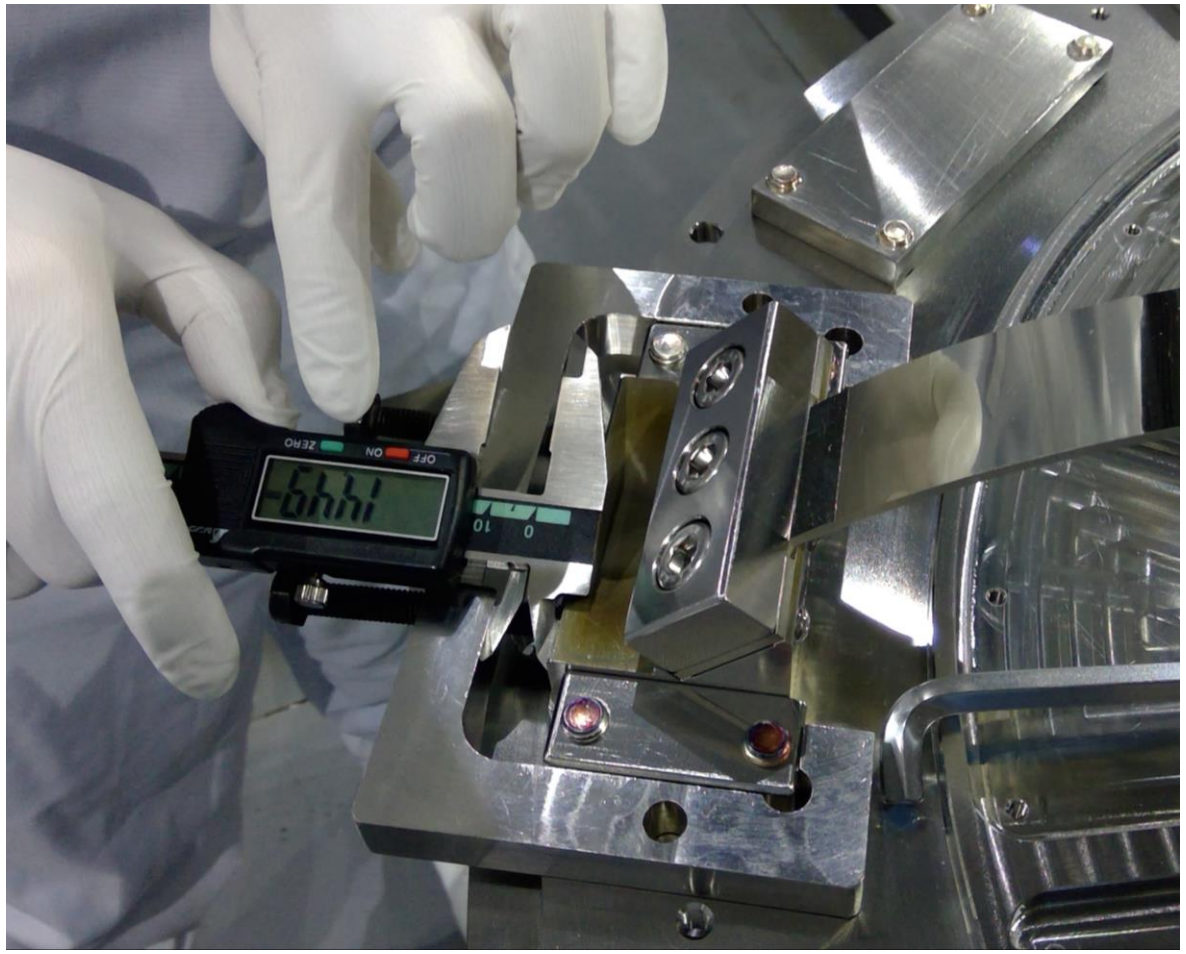
2. Loosen 4 screws.



Step1: change the compression

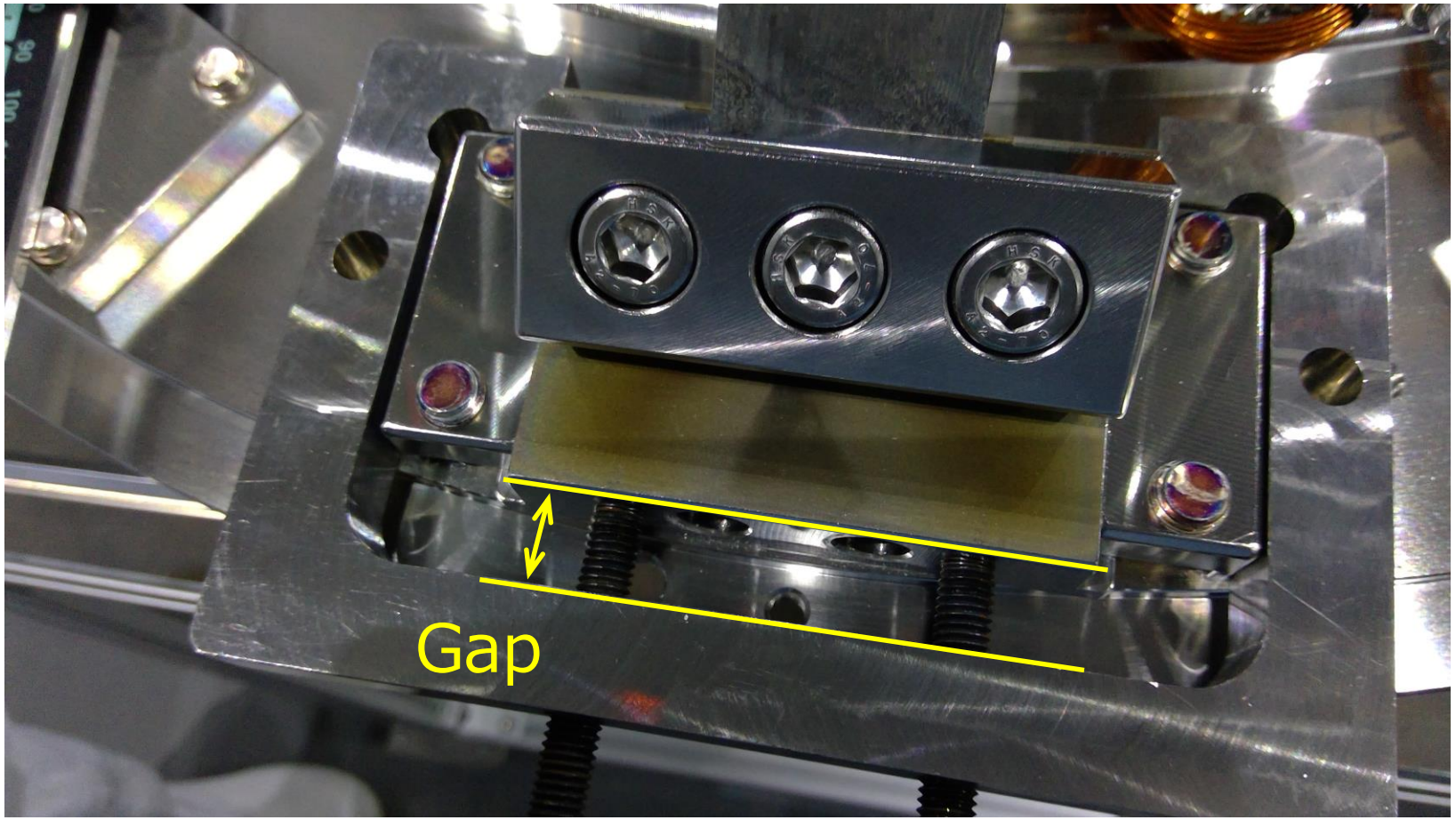
3. Adjust the blade clamp position for each blade.





Step1: change the compression

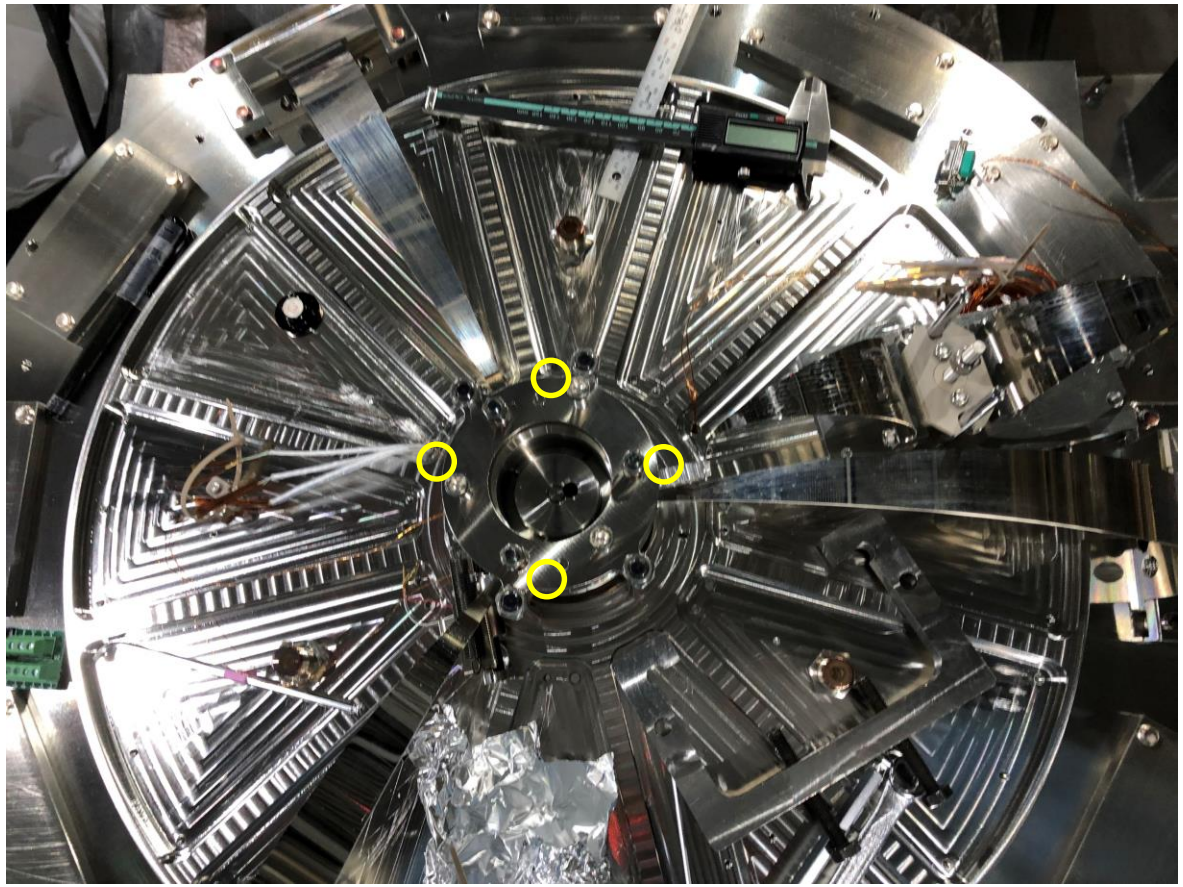
Note: watch this gap.



Ex). For BF, the optimal gap is around 18 mm.

Step2: check the key-stone tilt

1. Measure the height of the keystone (at the balanced point) at some points.
2. Check if the differences are small enough.



less than ~0.2 mm(?)

Setp3: measure resonant frequency with some load

1. Measure load hooked on the keystone.

2. Measure resonant frequency of the keystone-oscillation.

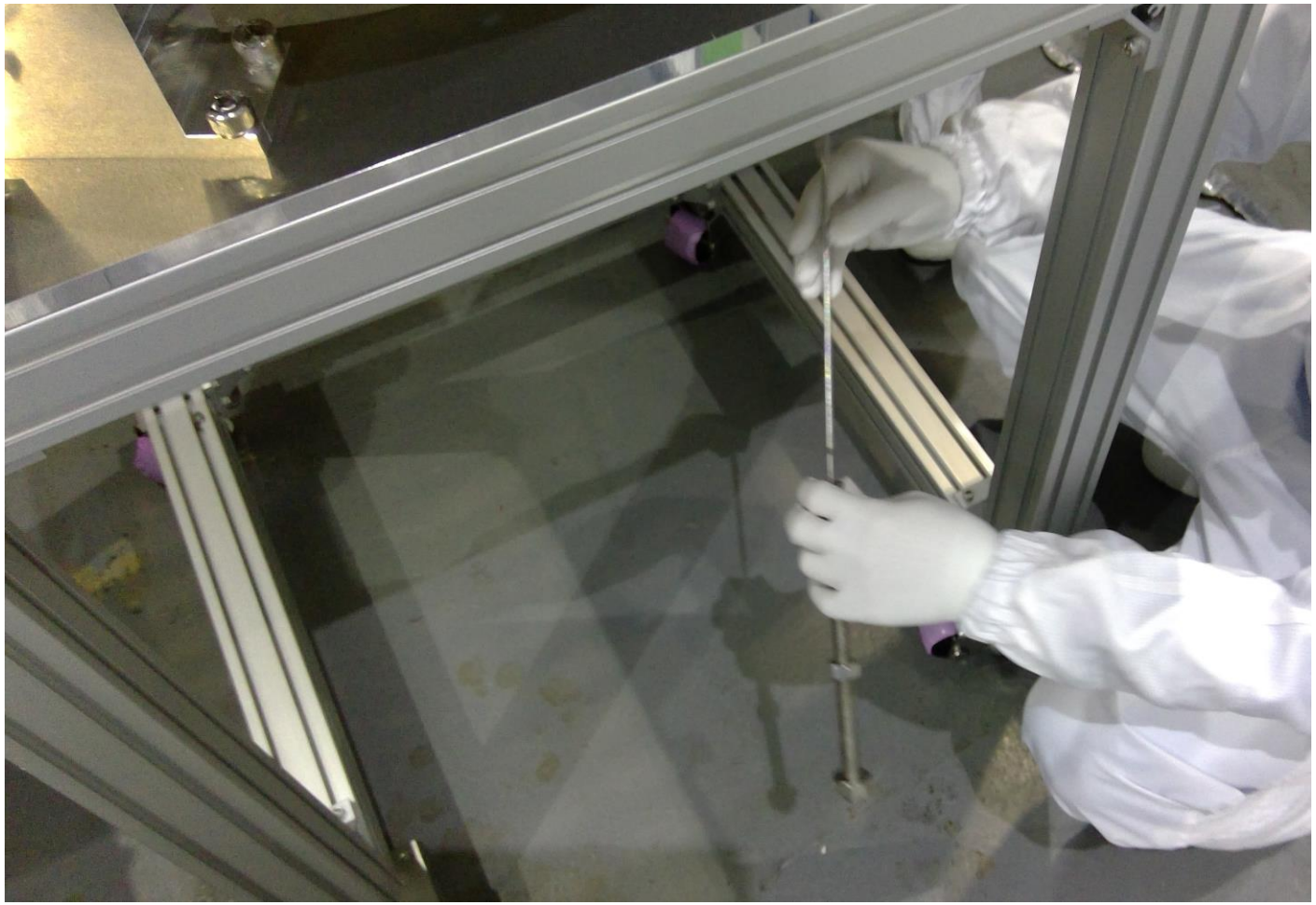
3. Measure the height of the keystone at the balanced point.

4. Change the load, and go 1.

5. Check the following plots:
   5-1. resonant frequency(y) vs. load(x)
   5-2. resonant frequency(y) vs. height of the keystone(x)

Setp3: measure resonant frequency with some load

Note: Do not forget to count this weight.



Setp3: measure resonant frequency with some load

You will find the upper 2 plots (ref. [1]):

- The base clamp position of the fishing rod $z = 64$ mm のとき

5-2. Optimal height

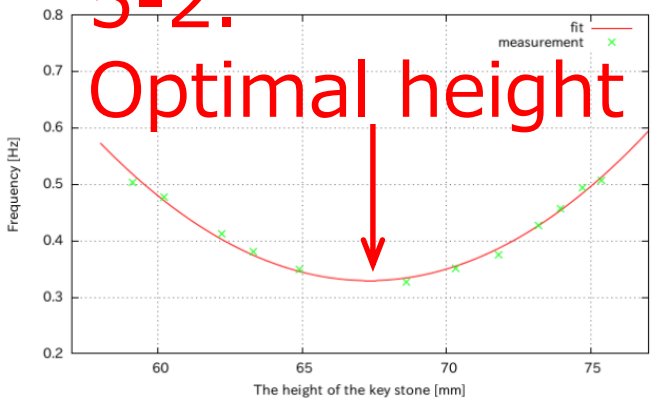


図 E.25: Resonant frequency vs.The height of the KS

5-1. Optimal load

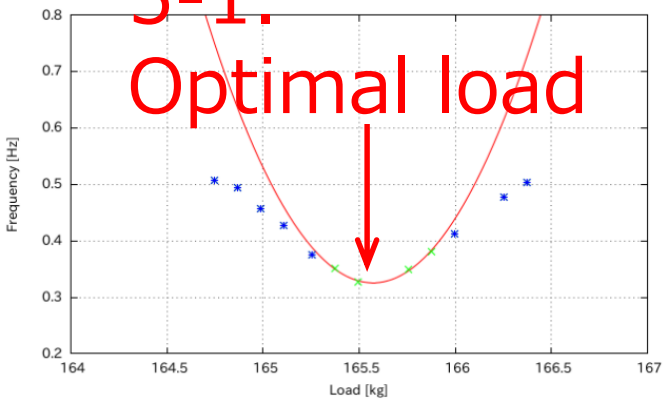


図 E.26: Resonant Frequency vs.The load

Just for check.

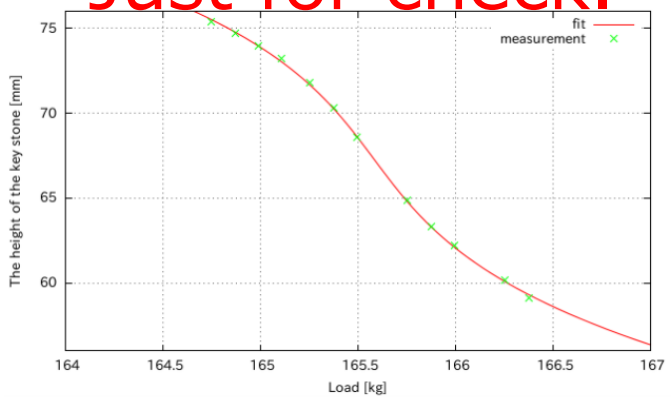


図 E.27: The height of the key stone vs. The load

keystone の高さと共振周波数のグラフ (左上) と荷重と keystone の高さのグラフ (左下) より

最適動作点：67.297 ± 0.093 [mm]
最適荷重：165.572 ± 0.010 [kg]
@ 0.3235 ± 0.0085 [Hz]

[1] https://gwdoc.icrr.u-tokyo.ac.jp/DocDB/0036/T1503604/001/BachelorThesis.pdf

Target:

Optimal resonant frequency → 0.3 ~ 0.4 Hz

height of the keystone at the frequency → 65 mm

Do some iterations on blade-compression change until this target is achieved.

Otukare sama deshita!