

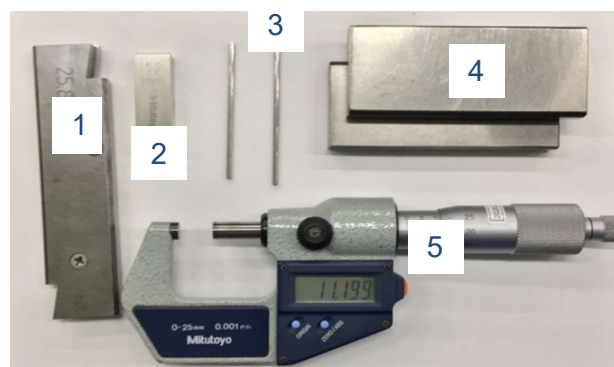
● Instruction of measuring between pin diameter cut with broaches

We introduce the instruction of measuring Between Pin Diameter (BPD) cut with broaches that we supply when it's ordered with test cut.

In general, measuring the tooth thickness of internal gears is conducted with balls as Between Ball Diameter (BBD), however for spline holes, we believe that the measuring with pins (BPD) is appropriate due to the characteristics of spline holes. Because the mating shaft tooth face contacts the tooth face point with the smallest tooth thickness of the spline hole. This method is used the measurement at our facility.

● Equipments

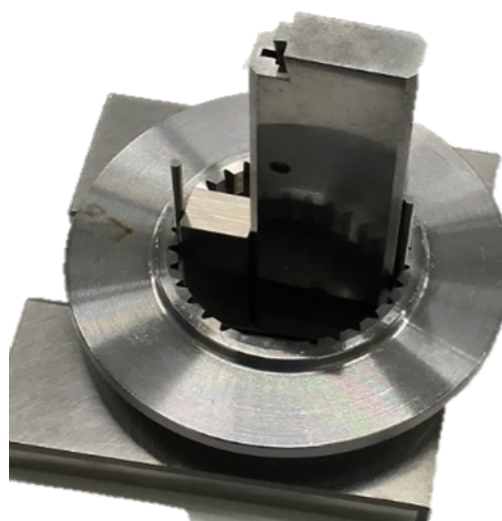
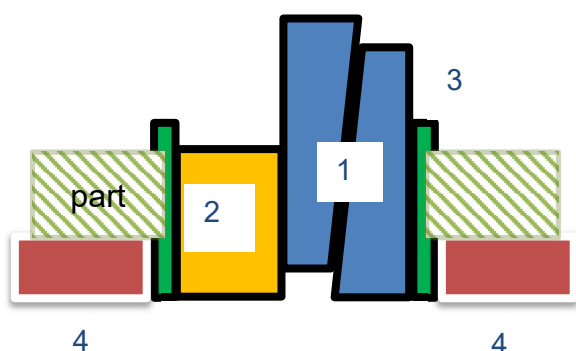
1. Adjustable parallel blocks
2. Parallel blocks
3. Pins (for specific size of the part)
4. Base plates for levelling
5. Outside micrometer



● 1. Setting equipments before measuring

This is for measuring of 35mm BPD.

1. Set the equipments as shown below.
2. Parallel block size is selected as 10mm.
(BPD35-Adjustable blocks 25=10)



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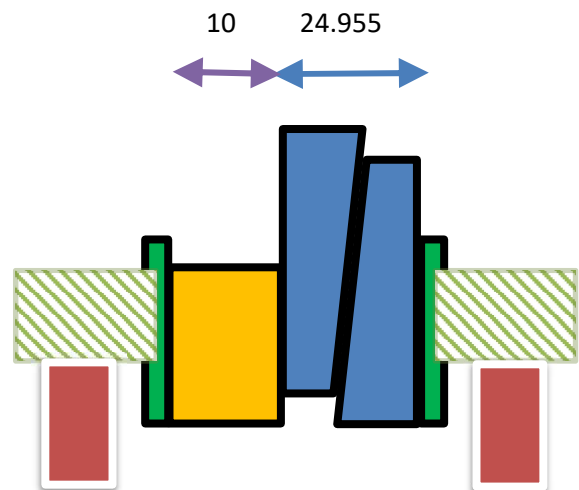
2. Applying pressure

- 1) Apply pressure to the parallel blocks by your fingers from the top so that the pin gauge does not fall even if lifting it while it is placed.
- 2) Lift the entire set and apply force on the blocks by your fingers from both ends as shown in the photo.
- 3) Check the pressure is applied enough so that the pins don't fall even if you shake the set.



3. Measuring BPD

- 1) Measure the adjustable blocks
- 2) Calculate BPD
Parallel Block 10+Adjustble blocks 24.955=34.955mm



Pros

Can be measured with inexpensive tools.
If you prepare a pin, you can handle various sizes.
Relatively easy to measure using pins with cutout.

Cons

Requires some skills and it may occur variation in person.
It takes longer to measure than the dedicated measurement
If BPD becomes small, the blocks will not fit and measurement will not be possible.

<NOTE>

1. Measure with multiple people and correct the variation in person.
2. Use parallel blocks that stays the parallel no matter where you slide it.
3. The adjustable blocks are supplied by Japan Automatic Machine Co., Ltd.
<https://www.jam-net.co.jp/eng/product/vise/supporttooling/pbs3/>

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