Opus Instructions for the Care of Gauge Blocks

CLEANING

When purchased from new, gauges (in particular steel ones), may be covered in a protective coating. All traces of this coating must be removed before the gauges can be used.

1. If heavily coated use a paper tissue to remove the excess coating.

2. Use an appropriate solvent (Opus recommends ethanol, Industrial Denatured Alcohol) to moisten a tissue and remove the remainder of the coating.

3. When the gauge is apparently clean moisten an Opus micro-fibre cloth with some solvent and once more thoroughly clean the gauge. Wipe away any solvent residue with a dry part of the cloth.

4. The gauge is now ready for use.

CHECKING FOR DAMAGE

Gauges must be regularly examined for damage. There are two major dangers associated with the use of damaged gauge blocks.

- Raised material on the measuring face will influence measurements being made.
- Raised material will cause damage when gauges are wrung together.

We recommend that the following procedure is used.

1. Thoroughly clean the gauges to be wrung using solvent and the Opus micro-fibre cloth.

2. Gently bring the Opus optical flat into contact with the measuring face of the gauge (use the surface of the optical flat indicated by the arrow).

3. Gently slide the optical flat (Fig.1) to and fro, interference fringes should appear. If they do not then there may be a large burr present or there may be dust present between the optical flat and the gauge surface.

4. The interference fringes indicate the flatness of the gauge surface. Small black spots surrounded by a white area indicate damage on the gauge surface (assuming that the optic itself has not been damaged). Irregular interference patterns also indicate damage to either the optic or the gauge and can highlight areas of excessive wear.

5. Should a burr be present on the gauge measuring face then this **must** be removed before use.

6. Using a de-burring stone, which Opus can provide, gently draw the measuring face of the gauge with the burr across the stone until it feels as if it is sticking or wringing to the stone.

7. When steel gauges are not being used they should be covered either with protective grease or with a film of protective oil.

WRINGING GAUGES TOGETHER

We recommend the following procedure for wringing together of Opus gauge blocks.

1. To wring Opus Steel gauges apply a very small drop of Opus wringing fluid to the gauge measuring face and spread evenly over the surface. Wipe the surface visually clean (not with a solvent). When using Opus Tungsten Carbide or ***Zirco-Blocks*** (Opus ceramic gauge blocks) then wringing fluid is not required, the gauge need only be cleaned with the micro-fibre cloth.

2. Place the two gauges at 90° to each other with the thinner of the two gauges on top. Move them to and fro until the gauges appear to "bite" or stick. Apply only gentle pressure.

3. Using the side of the thumb apply more and even pressure to the exposed face of the upper gauge and twist the gauges until they are in line with each other (Figs 2 & 3). As the gauges are twisted very strong resistance should be felt (this is particularly true of Tungsten Carbide and ***Zirco-Blocks*** gauges as they have extremely good wringing characteristics).

4. If resistance is not felt or it feels as if the gauges are pushing each other apart then the wringing process should be stopped as there may be contamination between the wringing faces which may cause damage to either or both of the gauges or indeed one or both gauges may be damaged.

Check the gauges for damage or contamination, clean if necessary and start again at No. 1.

5. Check that the gauges have wrung together by using the optical flat. Irregular fringe patterns indicate poor wringing (Fig 4).

6. Never leave gauges wrung together for excessive periods of time.

7. Allow the wrung pack to thermally stabilize before use.

AFTER USE

Opus ***Zirco-Blocks*** and Tungsten Carbide blocks should be wiped clean and returned to their gauge case. Steel gauges should be wiped clean and then coated with either oil or a suitable protective grease.

Fig. 1

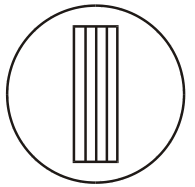
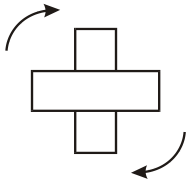


Fig. 2



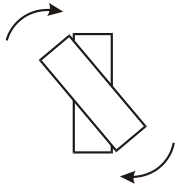


Fig. 3

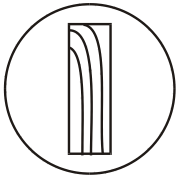


Fig. 4