Digital Caliper Pressure Device

FMS A40

A FMS caliper pressure device starts at 2N increasing to 4N until the cylinder hole is reached. Within the hole diameter the measurement force is almost exactly 4-5N and past the hole up to 8N. Longer digital calipers of course require larger pressure devices with more pressure.

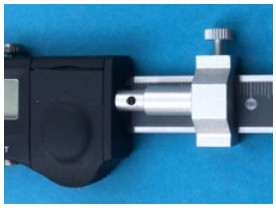
The standard most calipers are manufactured to is DIN 862 / ISO 2012. For standard digital calipers this specifies an external measurement accuracy of 0.02mm of up to 100mm and 0.03mm up to 600mm. There is also an additional allowance of 0.02mm for internal and depth measurement.

Probably the greatest factor for measurement inaccuracy is the user as there is no measurement pressure specified in any specification. "Suitable" is the word most often used.

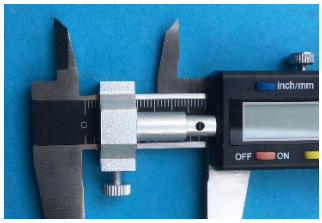
For digital calipers up to 200mm/8" I would personally recommend 4-5N and no more than 2N to move the sliding jaw.

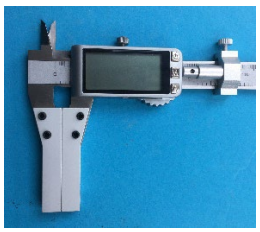
A caliper pressure device has several functions and the device removes almost all user influence when measuring.

- Caliper calibration and use can be be carried out by different people knowing that the same pressure will be used.
- Measuring the same dimension on many items is easy.
- Avoid discussions as to who is measuring correctly.
- Training measurement use with calipers.



The pressure device can be used for calipers with and without a thumb roller.





As FMS measures threads at a distance from the caliper beam a pressure device can be regarded as essential for most thread measuring activities. Especially calibration.

With Caliper calibration it is usually suggested that a gauge block be used. I personally prefer a ground cylinder I know the dimension of. The reason for this is that any slack or wear in the sliding jaw is revealed. Try measuring as shown in 2 or 3 positions. Close to the caliper beam and as far as possible from the caliper beam.

This digital caliper seems to have no wear or slack on the external jaws at a measurement pressure of 5N

There is now a standard caliper pressure device for digital calipers up to 600mm/24". It comes with 2 easily exchangeable springs. One spring gives a pressure of 17N and the other 32N.

B40 is for calipers with a beam height up to 32mm/1.25"

A digital caliper should have a repeatable measurement accuracy of 0.01mm/0.0005".

Suggestion. Keep a small diameter ball bearing as a reference and use it to regularly check that the same measurement result is achieved. Simply zeroing and measuring is inadvisable and a calibration check should always be done as soon as you receive a new digital caliper. If not within spec. return.

Using a pressure device with long digital calipers can feel as an "extra" hand. You can concentrate on reading the measurement result.

If ever in doubt as to the main advantage of a caliper pressure device try asking several people to measure the same item without seeing each other's result. Try again using a pressure device. The result is often surprising and probably explains why a digital caliper is regarded as more inaccurate than it often really is.

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