

## JCSS On-site Calibration service of Gear Measuring Machine

Although we, Gear Measuring Center, have already carried out the JCSS calibration of the Gauge block and the Gear, we recently acquired the accreditation for the JCSS On-site calibration of Gear measuring machine in May, 2014.

Previously, we ensured the traceability of Gear measuring machine to the national standard through the master gears or several kind of measuring instruments that are traceable to the national standard. However, by carrying out the JCSS calibration of Gear measuring machine, now it is possible to satisfy the requirements of each Quality Management Systems(ISO 9001,IATF 16949 etc.) and it enables easier management of Gear measuring machine which is acceptable internationally (Copy of Calibration Certificate of higher standard or traceability system diagram is no longer necessary). In order to carry out the on-site calibration of Gear measuring machine, our staff in charge of calibration visits the customer's site, and performs repeatability measurement by means of the JCSS calibrated Gear shape artifacts based on the standards indicated below, then obtains calibration results and uncertainty under the environment in which the measuring instrument is used.

JIS B 1757-1:2012 Evaluation of instruments for the measurement of individual gears -  
Part 1: Method by gear shape artifacts

JIS B 1758:2013 Acceptance tests for gear measuring instruments

### Calibration scope

Objective item:

CNC AUTOMATIC GEAR MEASURING MACHINE

Reference diameter : From 50 mm up to 240 mm

Environmental condition :

Room temperature 20 °C±5 °C

humidity 70 % or less

### Calibration items

Measurement error of total profile deviation

Measurement error of total helix deviation

Measurement error of single pitch deviation

Measurement error of total cumulative pitch deviation



### Calibration Uncertainty

The value combined with the standard deviation of 10 times of repeatability measurement by a instruments and uncertainty of reference artifacts are indicated as uncertainty of measurement on the calibration certificate.

And, the result of each represents the maximum bias value of the gear measuring machine performance under the site conditions, and the repeatability of the gear measuring machine represents uncertainty including other factors (environmental conditions change etc.).

That is, when the mean value of measuring deviation is large, the calibration result becomes large, and when the deviation of repeatability measurement is large, the uncertainty becomes large.



GMC's calibration is corresponding to MRA JCSS.  
JCSS 0190 is accreditation number for GMC.