

Manufacture and Calibration For Axial Tension of Bolts

We attach strain gage for measuring axial tension onto your bolt.

With long experience as a strain-gage-maker, we provide it as a bolt sensor which has less creep effect and temperature change.

We can attach the strain gage to different kinds of bolts. Selectable the direction of cable outlet from the bolt head, the side of bolt head or the tip of threaded portion. Also, we can provide load calibration data and temperature characteristic test data that help precise measurement.

Manufacturing Axial Tension of Bolt

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|-------------|-------------------------|---------------------|-------------------------|-------------------------------------|
| Bonded way | Embedded Type | | | Bonded Type |
| Sensor | Strain Gage | | | Strain Gage |
| Temperature | Normal Temperature | -40~60°C | -40~100°C | -40~200°C |
| Boring Hole | Boring Hole Φ1.0~1.7 | Boring Hole Φ1.2 | Boring Hole Φ1.2~1.7 | Chamfering Surface Processing |
| Bolt Types | M3~M12 | M4~M12 | M4~M12 | Depends on your demand |

Please ask us if your bolt is over M12



With drilling the center of a bolt, a detector element is inserted into there.
We can attach gages while meeting your needs.

The surface of bolts is chamfered and strain gages are pasted. Comparing with inserted types, chamfered type can measure precisely and be used in hotter condition.



Load Calibration Test/Temperature Characteristic Test



Load calibrator



Jig



Measurement devices

Although strain output can be converted into axial tension with cross section of bolt and young's modulus, in order to know more accurate figure, load calibration will be often required.

We Kyowa provide load calibration data sheet which is following Japanese national standard while using high accurate measurement devices.

In addition, we will provide temperature characteristic data sheet to compensate temperature change in case of using the bolt sensor in higher temp range.

Precautions

- *Basically, we will apply strain gage in your bolt even if its shape and material are specific ones.*
- *Please tell us before hand if your bolts should not be exposed to temperature variation or immersed into detergent liquid, because the bolts get ageing of glue at higher temp and are exposed to washing liquid.*
- *Please note that fatigue life and mechanical characteristic of your bolt would be changed after installation of bolt gage.*

Specifications are subject to change without notice for improvement.



Safety precautions

Be sure to observe the safety precautions given in the instruction manual in order to ensure correct and safe operation.



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