

**Specification of JCSS calibration (basis on ISO/IEC 17025)**

1. Scope

This specification is applicable to all JCSS calibration of vacuum gauges which listed on Table.1.

**NOTE** Our calibration Lab. was accredited as JCSS calibration Lab.,JCSS 0258, by the accreditation body, NITE/IAJapan (National Institute of Technology and Evaluation/International Accreditation Japan)

**NOTE2.** JCSS (Japan calibration service system) is accredited basis on the ISO/IEC 17025:2005, “General requirements for the competence of testing and calibration laboratories”. The JCSS and MRA logo mark clearly express the metrological traceability of calibration results.

**Table.1 Scope of calibration**

| Reference standard  | Calibration item  |
|---|---|
| Primary standard or Working standard:<br>Spinning rotor vacuum gauge (SRG)    | Viscosity vacuum gauge (Spinning rotor vacuum gauge) with controller, sensor and measurement cable      |
| Working standard: Spinning rotor vacuum gauge (SRG)                           | Ionization vacuum gauge with controller, sensor and measurement cable                                   |
| Working standard: Capacitance diaphragm vacuum gauge (CDG) and pressure gauge | Diaphragm vacuum gauge, Thermal conductivity vacuum gauge with controller, sensor and measurement cable |

**Note.1** Primary standard is directly traceable to the medium vacuum standard of AIST/NMIJ (National institute of Advanced industrial science and technology/ National metrology institute of Japan).

**Note.2** Working standards is calibrated by the primary standard or upper metrological reference standard(s).

**Note.3** Calibration item(s) which is not listed in Table.1 can be accepted. Contact us.

2. Requirement of calibration item(s)

- 1) External output signal or communication port such as RS-232C, GPIB, IO output.

**Note.** Contact us if there are no external output port(s).

- 2) We decide the applicable of JCSS calibration after checking 1) the

Requirement sheet of JCSS calibration, and 2) the Confirmation sheet of the history of calibration item.

3) Recommendation of the transportation: Hand carried.

**Note.** To avoid the damage of sensor head and sensitivity change.

**Note.2** If acceptable of exemption from responsibility, postal transportation is acceptable. Contact us.

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**3. Calibration point(s)**

Calibration points are listed in Table.2.

**Note1.** From 133kPa to  $1 \times 10^{-4}$  Pa (absolute pressure)

**Note2.** Increasing calibration point(s), if necessary, contact us.

**Note3.** If necessary, calibration point(s) can be shifted with requirement.

**Table.2 Calibration points**

| Calibration points (Pa)           |  |
|-----------------------------------|--|
| Viscosity vacuum gauge (SRG)      | 1.5E-3, 4.5E-3, 9.0E-3, 1.5E-2, 4.5E-2, 9.0E-2, 1.5E-1, 4.5E-1 |
| Ionization vacuum gauge           | 1.0E-3, 1.0E-2, 1.0E-1   |
| Diaphragm vacuum gauge            | 100%, 50%, 10% of Full scale.                                  |
| Thermal conductivity vacuum gauge | 10, 100, 1000  |

**4. Calibration method**

Direct comparison method with reference standard vacuum gauge(s).

**5. Calibration condition**

Calibration gas : Nitrogen

Calibration temperature : 23 °C ± 3 °C

Relative Humidity : 50 % ± 25%

**6. Reporting the results**

Calibration results will be reported in the Calibration Certificate with a JCSS/MRA logo mark. The unit of pressure is “Pa”.[

Contents of the calibration certificate include information listed below.

- 1) Title(Calibration certificate)
- 2) The name and address of the laboratory
- 3) Unique identification of the calibration certificate
- 4) Page / Total page and identification of the end of calibration certificate
- 5) The name and address of the customer
- 6) Identification of the calibration item
- 7) Identification of the calibration quantity
- 8) Identification of the method used
- 9) Identification of the reference standard
- 10) Calibration date
- 11) Calibration condition (Gas, temperature, settings of calibration item)
- 12) Calibration condition (Room temperature, Relative Humidity)
- 13) Calibration results with uncertainty (confidential level approximately 95%)
- 14) Date of issue
- 15) Sign of the responsibility of calibration

**7. Compliance of / non-compliance with requirements and / or specifications**

If compliance/non-compliance with requirements and / or specifications of calibration result is needed, contact us.

**8. Acceptance**

The calibration certificate by the results from clause 3 to 5 causes the acceptance of the item.