



ISO/IEC 17025

Service Catalog for Pressure and Flow Calibration

Cosmo Instruments Co., Ltd.
Cosmo Group Calibration Laboratory



Cosmo Instruments is a manufacturer specialized in industrial measuring instruments including Air Leak Testers, pressure gauges, and flow meters.

Cosmo Group Calibration Laboratory (CGCL)

CGCL was accredited for “**pressure**” and “**flow**” calibration in accordance with JIS Q 17025 (ISO/IEC 17025) by **JAB** (Japan Accreditation Board) who is a signatory to **ILAC/MRA** and **APAC/MRA**.



- Accredited for 17025 pressure calibration of Air Leak Testers for the first time in Japan, we have been certified for the highest level of calibration and measurement capability (CMC) in Japan and overseas.
- ISO/IEC 17025 accreditation assures that CGCL provides internationally recognized and reliable calibration services and results.

Accreditation body	Accreditation no.	Accreditation scope	Accreditation program
Japan Accreditation Board (JAB)	RCL00350	Mechanical (Pressure/Flow)	Calibration
Air Leak Tester, Digital pressure gauge, Pressure sensor, Analog pressure gauge (Mechanical pressure gauge), Gas flow meter, Rotameter, Leak Master, etc.			

Our ISO/IEC 17025 calibration services deliver:

- On-site 17025 calibration around the world.
- Compliance with **IATF 16949** 7.1.5.3.2: External laboratory.
- Compliance with UL, JIS, ISO 13485 (medical device), ISO 9001 and other standards.
- Equivalent compliance with Japan Calibration Service System (JCSS).



What is ISO/IEC 17025

< Overview >

- ISO/IEC 17025 is an **international standard** providing the general requirements for **testing** and **calibration** capabilities.
- The calibration certificates issued by ISO/IEC 17025 accredited CGCL are the global standard with high reliability.
(= **One-stop testing**)
- Many industries require calibration by ISO/IEC 17025 accredited calibration laboratories.
- Quality Management Systems for Automotive Industry (**IATF 16949**) requires **ISO/IEC 17025** calibration.

< Assurance by ISO/IEC 17025 Accreditation >

ISO/IEC 17025 accreditation assures the quality of our calibration results since we satisfy the following:

- Our calibration standards are traceable to national or international standards.
- Our calibration procedures are strictly specified for strict calibration.
- All our calibration engineers are qualified and highly competent by education and training.
- We have the technical ability to calculate measurement uncertainties.
- We operate with a quality system that meets the ISO 9001 standards (international quality assurance standard).

< Importance of Scope of Accreditation >

- 17025 accredited calibration laboratories have a “scope” of accreditation.
- The “scope” is a very important indicator of the “competence” of the laboratory.
 - Scope of measurement (17025 accredited calibration ranges of pressure and flow)
 - Measurement uncertainty CMC (A value that expresses how reliably a laboratory can measure.)

CMC: Calibration and Measurement Capability

Visit our website for details.



Advantages of ISO/IEC 17025 calibration

< Advantages for Our Customers >

1 **Proof of high quality**

We issue ISO/IEC 17025 calibration certificates with ilac-MRA and JAB symbols. These certificates are equivalent to those with JCSS or A2LA (American Association for Laboratory Accreditation) accreditation symbol.

2 **International credibility**

Our technical capabilities have been proven based on the international Mutual Recognition Agreement (MRA).

3 **Realization of one-stop testing**

Calibration certificates, even overseas ones, with the accreditation symbols prove that the calibration results can be trusted. No calibration for confirmation required.

4 **Traceability certificate (Diagram)**

Not required since the traceability to national or international standards is ensured.

5 **Utilized in many industrial fields**

Advantageous in many fields including the automobile industry, UL and JIS certified factories, ISO 9001 and ISO 13485 (QMS standards for medical devices) certified companies.

6 **On-site calibration**

We provide on-site calibration services around the world.

< Quality Assurance in Automotive Industry >

(IATF 16949 requirements) 7.1.5.3 Laboratory requirements, 7.1.5.3.2 External laboratory

External/commercial/independent laboratory facilities used for inspection, test, or calibration services by the organization shall have a defined laboratory scope that includes the capability to perform the required inspection, test, or calibration, and either:

- the laboratory shall be accredited to ISO/IEC 17025 or national equivalent and include the relevant inspection, test, or calibration service in the scope of the accreditation (certificate); the certificate of calibration or test report shall include the mark of a national accreditation body; or
- there shall be evidence that the external laboratory is acceptable to the customer.

The above means that the following are mandatory when outsourcing the periodic inspection of production facilities and test equipment to an outside contractor.

- The contractor has ISO/IEC 17025 accreditation.
- The contractor can perform ISO/IEC 17025 equivalent calibration and submit objective evidence.

ISO/IEC 17025 calibration specifications

Our calibration engineers will assist you in determining the specifications for ISO/IEC 17025 calibration. Feel free to contact us.

If you don't know the contact person, contact our nearest local office.

< ISO/IEC 17025 Calibration Services >

- Give us the product information (model number, serial number, range). For products from other manufacturers, prepare the operation manuals, catalogs, etc.
- **Pressure calibration of products, including new purchases, at Cosmo will be performed outside our permanent facilities. The uncertainty in the calibration outside our permanent facilities will be the same as that of on-site calibration. If you want to use the DUT as a standard, inform us beforehand. We will perform calibration in our permanent facilities in that case.**
- For Cosmo's products, we will conduct inspection (including safety check and span adjustment) before ISO/ IEC17025 calibration in principle. We recommend the calibration of not only the sensors of leak and flow but also the pressure gauges for measuring the test pressure.
- The prices listed in this catalog are for ISO/IEC 17025 calibration only. The fees for inspection, repair, and the travel expenses (for on-site calibration) will be charged separately.
- The specifications in this catalog are standard specifications. If any extra specifications are needed, we will discuss with you about the arrangements and then prepare the calibration specifications sheet. We will not issue the calibration specifications sheet for those listed in this catalog. **If additional calibration points are required, we will charge extra JPY 10,000 per another point. Note that some points are unavailable to calibrate due to the condition of standard instrument.**
- We will attach a calibration sticker to the calibrated instrument and issue a calibration certificate.
- When we send the calibrated instrument to you, we will use the packaging box you used when sending the instrument to us. However, if we determine that the packaging box cannot withstand the stress to which it is exposed during transport due to wear of the packaging box, we will use our box.
- For the calibration of our products and other manufacturers' products, we can provide uncertainty at or above CMC for customers who require uncertainty. Tell us if you want the uncertainty to be close to the CMC.
- Contact us in advance if you would like to witness the calibration or tour our laboratory.
- Note that for absolute gas pressure, zero-point check and zero-point adjustment cannot be performed.
- If the display units of your instrument are only non-SI units, it cannot be calibrated.

ISO/IEC 17025 calibration specifications

Our calibration engineers will assist you in determining the specifications for ISO/IEC 17025 calibration. Feel free to contact us. If you don't know the contact person, contact our nearest local office.

< Calibration at Cosmo >

(Calibration outside our permanent facilities)

- Our calibration lead time is about 15 business days. However, we may not be able to meet your request depending on the situation. Tell us if you have an urgent order.
- If it is found in inspection that the accuracy of your instrument is out of tolerance or the instrument malfunctions, calibration may be suspended. In that case, we will contact you immediately.

< On-Site Calibration >

(Calibration outside our permanent facilities)

- We will perform calibration under the following conditions.
 - Room temperature 5 to 40°C, Humidity 10 to 80% RH, Temperature change during calibration within 2 °C
 - The fluctuation of the displayed value is within the range we specify.
- If the environmental conditions for calibration are not met (failure of facility or air conditioner, bad weather, etc.), we will stop the calibration. Even in that case, we will charge the travel expenses.
- If calibration must be done at a high place of the system due to the location where the instrument is placed and safety cannot be ensured, or if the calibration quality cannot be maintained due to the influence of environmental conditions, we may consult with you to calibrate in another location in the facility. In that case, move the instrument to another location two hours before or on the day before calibration and keep it turned on.
- We will send you the calibration certificate, formal calibration sticker, etc. about 15 days after the calibration. We attach a pro forma calibration sticker to the calibrated instrument after we have completed the calibration.
- If you require calibration for another company's product or our product not listed in this catalog, we will calibrate according to the calibration specifications determined through direct discussion with you. In the case of a request for completely new specification, we will prepare a calibration specification and submit it to you.

Pressure Gauge Calibration

Outside Our Permanent Facilities

We will use digital pressure gauges of working standards for on-site calibration.

◆ Cosmo's Products

Air Leak Tester

Pressure type: **Gas gauge pressure**

◆ Differential Pressure Sensor (DPS) Calibration price: JPY 40,000

Spec. no.	FS range	Resolution (kPa)	Calibration range	Basic calibration points 4 points from the following	CMC
9FFF	1 kPa	0.001	0.025 kPa to 1 kPa	0.025 0.05 0.075 0.095 0.25 0.5 0.75 0.95	0.006 kPa
9FFD	10 kPa	0.01	0.25 kPa to 10 kPa	0.095 0.25 0.5 0.75 0.95 2.5 5 7.5 9.5	0.03 kPa / 0.1 kPa

◆ Pressure sensor (PS)

◆ Analog pressure gauge (Mechanical pressure gauge)

Calibration price: JPY 30,000

Spec. no.	FS range	Resolution (kPa)	Calibration range	Basic calibration points 3 points from the following	CMC
9F12	1 kPa	0.001	0.025 kPa to 1 kPa	Same as 9FFF	0.006 kPa
9F43	10 kPa	0.01	0.25 kPa to 10 kPa	Same as 9FFD	0.03 kPa
9F44	10 kPa	0.1	0.1 kPa to 10 kPa	0.1 1 2 3 4 5 6 8 10	0.2 kPa
9F32	20 kPa	0.001	1 kPa to 20 kPa	1 2 3 4 5 6 8 10 12 16 19.5 20	0.004 kPa
9F33	20 kPa	0.01	1 kPa to 20 kPa		0.06 kPa
9F35	20 kPa	1	1 kPa to 20 kPa		1 kPa
9F64	100 kPa	0.1	10 kPa to 100 kPa	10 20 30 40 50 60 70 80 90 100	1 kPa
9F66	100 kPa	2	10 kPa to 100 kPa		2 kPa
9F84	200 kPa	0.1	10 kPa to 200 kPa	10 20 30 40 50 60 80 100 120 160 200	2.0 kPa
9F87	250 kPa	5	40 kPa to 200 kPa	40 120 160 195 200	5 kPa
9F85	1000 kPa	1	10 kPa to 1000 kPa	10 20 30 40 50 60 80 100 120 160 200 400 600 800 1000	1 kPa / 6 kPa
9F78	1000 kPa	20	100 kPa to 1000 kPa	100 120 160 200 400 600 800 1000	20 kPa
9F75	2000 kPa	1	100 kPa to 2000 kPa	100 200 300 400 500 600 700 800	8 kPa / 12 kPa
9F79	2500 kPa	100	100 kPa to 2000 kPa	1000 1200 1600 1950 2000	100 kPa
9F22	-1 kPa	0.001	-1 kPa to -0.025 kPa	-0.025 -0.05 -0.075 -0.095 -0.25 -0.5 -0.75 -0.95	0.006 kPa
9F52	-20 kPa	0.001	-20 kPa to -2 kPa	-2 -4 -6 -8 -10 -12 -16 -19.5 -20	0.006 kPa
9F94	-90 kPa	0.1	-90 kPa to -10 kPa	-10 -20 -30 -40 -50 -60 -70 -80 -90	0.8 kPa
9F95	-90 kPa	1	-90 kPa to -10 kPa		2 kPa
9F96	-90 kPa	2	-90 kPa to -10 kPa		2 kPa

Pressure Gauge Calibration

Outside Our Permanent Facilities

We will use digital pressure gauges of working standards for on-site calibration.

◆ Cosmo's Products

DP Series / DM Series, Others

Pressure type: **Gas gauge pressure**

◆ Digital pressure gauge (DP Series / DM Series)

Calibration price: JPY **30,000**

Spec. no.	FS range	Resolution (kPa)	Calibration range	Basic calibration points 3 points from the following	CMC
3F12	1 kPa	0.001	0.025 kPa to 1 kPa	0.025 0.05 0.075 0.095 0.2 0.25 0.4 0.5 0.6 0.75 0.8 0.95	0.006 kPa
3F43	10 kPa	0.01	0.25 kPa to 10 kPa	0.095 0.25 0.5 0.75 0.95 2.5 5 7.5 9.5	0.03 kPa
3F44	10 kPa	0.1	0.1 kPa to 10 kPa	0.1 1 2 3 4 5 6 8 10	0.2 kPa
3F32	20 kPa	0.001	1 kPa to 20 kPa	1 2 3 4 5 6 8 10 12 16 19.5 20	0.004 kPa
3F33	20 kPa	0.01			0.06 kPa
3F35	20 kPa	1			1 kPa
3F64	100 kPa	0.1	10 kPa to 100 kPa	10 20 30 40 50 60 70 80 90 100	1 kPa
3F66	100 kPa	2			2 kPa
3F84	200 kPa	0.1	10 kPa to 200 kPa	10 20 30 40 50 60 80 100 120 160 200	2.0 kPa
3F87	250 kPa	5	40 kPa to 200 kPa	40 120 160 195 200	5 kPa
3F85	1000 kPa	1	10 kPa to 1000 kPa	10 20 30 40 50 60 80 100 120 160 200 400 600 800 1000	1 kPa / 6 kPa
3F78	1000 kPa	20	100 kPa to 1000 kPa	100 120 160 200 400 600 800 1000	20 kPa
3F75	2000 kPa	1	100 kPa to 2000 kPa	100 200 300 400 500 600 700 800 1000 1200 1600 1950 2000	8 kPa / 12 kPa
3F79	2500 kPa	100			100 kPa
3F22	-1 kPa	0.001	-1 kPa to -0.025 kPa	-0.025 -0.05 -0.075 -0.095 -0.2 -0.25 -0.4 -0.5 -0.6 -0.75 -0.8 -0.95	0.006 kPa
3F52	-20 kPa	0.001	-20 kPa to -2 kPa	-2 -4 -6 -8 -10 -12 -16 -19.5 -20	0.006 kPa
3F94	-90 kPa	0.1	-90 kPa to -10 kPa	-10 -20 -30 -40 -50 -60 -70 -80 -90	0.8 kPa
3F95	-90 kPa	1			2 kPa
3F96	-90 kPa	2			2 kPa

Pressure type: **Gas absolute pressure**

The basic calibration points are 3 points from the points in the table.

Calibration price: JPY **30,000**

Spec. no.	FS range	Resolution (kPa abs.)	Calibration range	Basic calibration points 3 points from the following	CMC
3G04	110 kPa abs.	0.01	90 kPa abs. to 110 kPa abs.	90 95 100 105 110	0.05 kPa abs.

◆ Other Manufacturers' Products

We will calibrate according to the calibration specifications determined through discussion with you. In the case of a request for completely new specification, we will prepare a calibration specification and submit it to you.

Pressure Gauge Calibration

in Our Permanent Facilities

Digital pressure gauges: DP/DM Series, Others

Pressure type: **Liquid gauge pressure** Calibration price: JPY **30,000**

Spec. no.	FS range	Resolution (MPa)	Calibration range	Basic calibration points 3 points from the following	CMC
2Q01	5 MPa	0.0001	1 MPa to 5 MPa	1 2 3 4 5	0.0028 MPa
2Q02	5 MPa	0.001			0.007 Mpa
2Q03	5 MPa	0.01			0.02 MPa
2R01	10 MPa	0.0001	1 MPa to 10 MPa	1 2 3 4 5 6 8 10	0.005 Mpa
2S03	20 MPa	0.01	1 MPa to 20 MPa	2 4 6 8 10 12 16 20	0.02 MPa
2T01	50 MPa	0.0001	1 MPa to 50 MPa	1 2 3 4 5 6 8 10 12 16 20 30 40 50	0.003 MPa / 0.015%
2T02	50 MPa	0.001			0.003 MPa / 0.015%
2T03	50 MPa	0.01	10 MPa to 50 MPa	10 12 16 20 30 40 50	0.03 Mpa
2T04	50 MPa	0.1			0.3 MPa

Pressure type: **Gas absolute pressure** Calibration price: JPY **30,000**

Spec. no.	FS range	Resolution (kPa abs.)	Calibration range	Basic calibration points 3 points from the following	CMC
2B03	120 kPa abs.	0.01	20 kPa abs to 120 kPa abs.	20 40 60 70 75 80 90 100 110 120	0.03 kPa abs.
2B04	120 kPa abs.	0.1			0.3 kPa abs.
2D03	700 kPa abs.	0.01	20 kPa abs. to 700 kPa abs.	20 40 60 80 100 120 160 180 200 300 400 500 600 700	0.05 kPa abs.
2G02	110 kPa abs.	0.001	90 kPa abs to 110 kPa abs.	90 95 100 105 110	0.005 kPa abs.
2G03	110 kPa abs.	0.01			0.05 kPa abs.
2G04	110 kPa abs.	0.1			0.6 kPa abs.

Digital pressure gauge: PK Series

Pressure type: **Gas gauge pressure**
Calibration price (Spec. nos. K102 and K302): JPY **80,000**
Calibration price (Other than K102 and K302): JPY **50,000**

Spec. no.	FS range	Resolution (kPa)	Calibration range (kPa)	Basic calibration points K102 and K302: 8 points, Others: 5 points	CMC
K102	1 kPa	0.001	0.025 to 1	0.025 0.05 0.075 0.095 0.25 0.5 0.75 0.95	0.003 kPa
K302	-1 kPa	0.001	-1 to -0.025	-0.025 -0.05 -0.075 -0.095 -0.25 -0.5 -0.75 -0.95	0.007 kPa
K502	20 kPa	0.001	1 to 20	2 4 6 8 10 12 16 20	0.003 kPa
K602	-20 kPa	0.001	-20 to -2	-2 -4 -6 -8 -10 -12 -16 -20	0.005 kPa
K904	2000 kPa	0.1	200 to 2000	200 400 600 800 1000 1200 1600 2000	0.3 kPa
K804	200 kPa	0.1	20 to 200	20 40 60 80 100 120 160 200	0.3 kPa
K704	-90 kPa	0.1	-90 to -10	10 -20 -30 -40 -50 -60 -70 -80 -90	0.3 kPa

Flow Meter Calibration

Outside Our Permanent Facilities

For calibration outside our permanent facilities (calibration at Cosmo or our sales/service office), **we will handle it as on-site calibration.**

- ◆ Digital flow meters
- ◆ Air Flow Testers
- ◆ Mass flow gauge/Laminar flow gauge series
- ◆ Leak Master Checker series

For calibration of instruments manufactured by us, select from the following.
If the instrument’s temperature setting is at 0 °C and changeable, we will change it to 20 °C and then calibrate.

Calibration price: JPY **70,000**

Spec. no.	FS range	Calibration range	Basic calibration points (3 points from the following)	CMC
6231	20 mL/min	1 mL/min to 20 mL/min	4 8 12 16 19.5	From 1 mL/min to less than 2 mL/min: 3.3%
	50 mL/min	10 mL/min to 50 mL/min	10 20 30 40 50	
	100 mL/min	10 mL/min to 100 mL/min	20 40 60 80 100	
	200 mL/min	10 mL/min to 200 mL/min	40 80 120 160 195	
	500 mL/min	100 mL/min to 500 mL/min	100 200 300 400 500	
	1 L/min	0.06 L/min to 0.3 L/min	0.1 0.2 0.3	
	1 L/min	0.2 L/min to 1 L/min	0.4 0.6 0.8 1.0	
	2 L/min	0.1 L/min to 0.6 L/min	0.2 0.4 0.6	
	2 L/min	0.4 L/min to 2 L/min	0.4 0.6 0.8 1.2 1.6 1.95	
	5 L/min	0.3 L/min to 1.5 L/min	0.5 1.0 1.5	
	5 L/min	1 L/min to 5 L/min	1 2 3 4 5	2 mL/min or more: 1.8%
	10 L/min	0.6 L/min to 3 L/min	1 2 3	
	10 L/min	2 L/min to 10 L/min	2 4 6 8 10	
	20 L/min	1 L/min to 6 L/min	2 4 6	
	20 L/min	4 L/min to 20 L/min	4 8 12 16 19.5	
	30 L/min	1 L/min to 9 L/min	3 6 9	
	30 L/min	6 L/min to 30 L/min	6 12 18 24 30	
	50 L/min	3 L/min to 15 L/min	5 10 15	
	50 L/min	10 L/min to 50 L/min	10 20 30 40 50	
	100 L/min	6 L/min to 30 L/min	10 20 30	
	100 L/min	20 L/min to 100 L/min	20 40 60 80 100	
	200 L/min	10 L/min to 50 L/min	10 20 30 40 50	
	200 L/min	40 L/min to 200 L/min	40 80 120 160 195	

The specification no. is for 3-point calibration.
For example, 6241 for 4-point calibration and 6251 for 5-point calibration.

Flow Meter Calibration

in Our Permanent Facilities

For calibration outside our permanent facilities (calibration at Cosmo or our sales/service office), **we will handle it as on-site calibration.**

- ◆ Digital flow meters
- ◆ Air Flow Testers
- ◆ Mass flow gauge/Laminar flow gauge series
- ◆ Leak Master Checker series

For calibration of instruments manufactured by us, select from the following.
If the instrument's temperature setting is at 0 °C and changeable, we will change it to 20 °C and then calibrate.

Calibration price: JPY **70,000**

Spec. no.	FS range	Calibration range	Basic calibration points	CMC
5131	20 mL/min	1 mL/min to 20 mL/min	3 points in each range shown on the left	From 1 mL/min to less than 2 mL/min: 3.1% From 2 mL/min to 10 mL/min: 1.6% Greater than 10 mL/min: 1%
	50 mL/min	10 mL/min to 50 mL/min		
	100 mL/min	10 mL/min to 100 mL/min		
	200 mL/min	10 mL/min to 200 mL/min		
	500 mL/min	100 mL/min to 500 mL/min		
	1 L/min	0.06 L/min to 0.3 L/min		
	1 L/min	0.2 L/min to 1 L/min		
	2 L/min	0.1 L/min to 0.6 L/min		
	2 L/min	0.4 L/min to 2 L/min		
	5 L/min	0.3 L/min to 1.5 L/min		
	5 L/min	1 L/min to 5 L/min		
	10 L/min	0.6 L/min to 3 L/min		
	10 L/min	2 L/min to 10 L/min		
	20 L/min	1 L/min to 6 L/min		
	20 L/min	4 L/min to 20 L/min		
	30 L/min	1 L/min to 9 L/min		
	30 L/min	6 L/min to 30 L/min		
	50 L/min	3 L/min to 15 L/min		
	50 L/min	10 L/min to 50 L/min		
	100 L/min	6 L/min to 30 L/min		
	100 L/min	20 L/min to 100 L/min		
	200 L/min	10 L/min to 50 L/min		
	200 L/min	40 L/min to 200 L/min		
	500 L/min	30 L/min to 150 L/min		
	500 L/min	100 L/min to 500 L/min		

The specification no. is for 3-point calibration.
For example, 5141 for 4-point calibration and 5151 for 5-point calibration.

17025 Calibration of Flow

◆ Leak Masters, Flow Masters

Leak Masters: Applicable to **LM-1B, LM-1C, FM-2B series, etc.**
Specify the flow range and the test pressure.
We can calibrate other manufacturers' orifices within the flow and test pressure ranges below. Contact us.
Range: Calibration at Cosmo: 1 mL/min to 500 L/min, Not at Cosmo: 1 mL/min to 200 L/min
Test pressure range (-90 kPa to 2 MPa)

Calibration price:
JPY **35,000**

Calibration (at Cosmo) in our permanent facilities

Spec. no.	FS range	Calibration range	Basic calibration points	CMC
5110	20 mL/min	1 mL/min to 20 mL/min	1 points in each range shown on the left	See Note 1.
	200 mL/min	20 mL/min to 200 mL/min		
	500 mL/min	200 mL/min to 500 mL/min		
	2 L/min	0.1 L/min to 2 L/min		
	20 L/min	1 L/min to 20 L/min		
	200 L/min	10 L/min to 200 L/min		
	500 L/min	100 L/min to 500 L/min		

Note 1: From 1 mL/min to less than 2 mL/min: 3.1%,
From 2 mL/min to 10 mL/min: 1.6%, Greater than 10 mL/min: 1%

Calibration outside our permanent facilities (At Cosmo or our sales/service office)

Calibration price: JPY **35,000**

Spec. no.	FS range	Calibration range	Basic calibration points	CMC
6210	20 mL/min	1 mL/min to 20 mL/min	1 points in each range shown on the left	See Note 2.
	200 mL/min	10 mL/min to 200 mL/min		
	500 mL/min	100 mL/min to 500 mL/min		
	2 L/min	0.1 L/min to 2 L/min		
	20 L/min	1 L/min to 20 L/min		
	200 L/min	10 L/min to 200 L/min		

Note 2: From 1 mL/min to less than 2 mL/min: 3.3%, 2 mL/min or more: 1.8%

◆ Other Manufacturers' Products

We will calibrate according to the calibration specifications determined through discussion with you. In the case of a request for completely new specification, we will prepare a calibration specification and submit it to you.

< **General gas flow gauges** > Calibration price: From JPY **120,000**

For general gas flow meters, we evaluate the uncertainty of products from other manufacturers.

< **Rotameters** > Calibration price: From JPY **50,000**

We calibrate rotameters (floating flow meters) by measuring the flow at the outlet (no test pressure applied) in principle. With the reading points of the float and the scale aligned with each other, we measure the flow of the rotameter and compare it with the standard. We need to discuss the calibration specifications for flowmeters. Contact us beforehand.

17025 Calibration of Flow

◆ For ranges of 1 mL/min or less

Leak Masters: **LM-1B, LM-1C, etc.**

For these ranges, only calibrations in our permanent facilities are available.

Specify the flow range and the test pressure.

The test pressure range for the ranges 1 mL/min or less is as follows.

-90 kPa to 2 MPa

Calibration (at Cosmo) in our permanent facilities

Calibration price: JPY **70,000**

Spec. no.	FS range	Calibration range	Basic calibration points	CMC
5110	1 mL/min	0.05 mL/min to 0.1 mL/min	1 points in each range shown on the left	25.0%
		0.1 mL/min to 0.2 mL/min		12.5%
		0.2 mL/min to 0.3 mL/min		6.3%
		0.3 mL/min to 1 mL/min		5.0%

◆ Calibration of Other Manufacturers' Orifices

Flow calibration of other manufacturers' orifices for ranges 1 mL/min or less is also available. We will calibrate according to the calibration specifications determined through discussion with you. In the case of a request for completely new specification, we will prepare a calibration specification and submit it to you.

For more details including prices, contact our staff.

Cosmo Group Calibration Laboratory & Offices in Japan

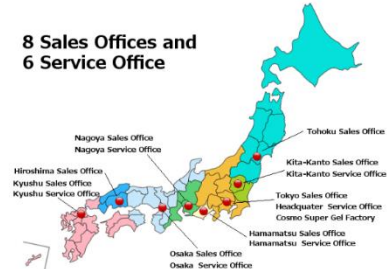
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