

INSTRUCTION MANUAL

Kitagawa COMPRESSED BREATHING AIR TEST TUBES

PERFORMANCE:

Substances to be measured	CO	CO ₂	Oil mist	Water vapor		Oxygen
Tube No.	600SP	601SP	602SP	603SPA	603SP-2	604SP ^(*)
Measuring Range	5-100 (ppm)	100-3000 (ppm)	0.3-5 (mg/m ³)	20-160 (mg/m ³)	100-1000 (ppm)	2-24 (%)
Color Change	Yellow	Purplish blue	Yellow	Yellow	Yellow	white
	Dark brown	Pale pink	Pale blue	Yellowish green or Blue ^(**)	greenish Blue	Brown
Shelf life (years)	2	2	2	3	3	2
Tubes / Box	10	10	10	10	10	10

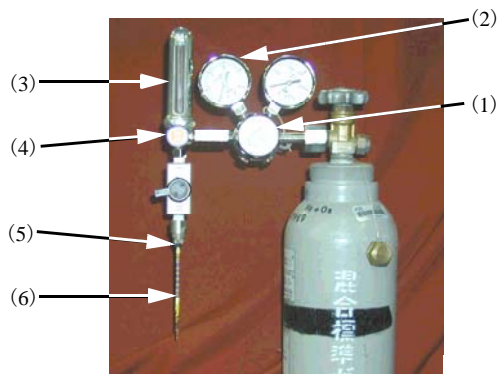
NOTES:

- No.604SP Further details of No.604SP operation are described in an additional instruction sheet packed in a No.604SP tube box together.
- No.603SPA In the case of less than approx. 60mg/m³, the changed color becomes Yellowish green and it becomes Blue at more than 60mg/m³.

- CAUTION

- DETECTOR TUBE CONTAINS REAGENTS.
- DON'T TOUCH THESE REAGENTS DIRECTLY ONCE TUBES ARE BROKEN.
- KEEP THE TUBES OUT OF THE REACH OF CHILDREN.

SAMPLING AND MEASUREMENT:



- Pressure regulator
- 2nd pressure gauge
- Flow meter
- Needle valve
- Tube connector
- Detector tube

- Without connecting a detector tube, open the needle valve (4) fully and adjust the 2nd pressure to a preset condition listed below with looking at the 2nd pressure gauge (2) through the pressure regulator (1).
- Adjust the flow rate to the preset condition with looking at the flow meter (3) through the needle valve (4) and purge the air flow circuit for 3 minutes as it is.
In case of No.603SPA, the purge time of air flow circuit shall be kept for 10 minutes.

- Cut both ends of a detector tube by a file of tip cutter and immediately connect the tube into the tube connector (5) referring to the arrow mark printed on the tube.

CAUTION SAFETY GLASSES AND GLOVES SHOULD BE WORN TO PREVENT INJURY FROM SPLINTERING GLASS.

- Take the sampling time accuracy which is listed in the measurement conditions, then remove off the detector tube. Read out a concentration from graduations printed on the detector tube.

PRESET CONDITIONS:

Set the conditions without connecting a tube.

Substances	Tube No.	(Open Flow Rate)	
		2nd pressure	Flow rate (L/min)
CO	600SP	0.6Kg/cm ² (60KPa)	2.0
CO ₂	601SP	1.0Kg/cm ² (100KPa)	1.0
Oil Mist	602SP	1.0Kg/cm ² (100KPa)	3.0
Water Vapor	603SPA	1.0Kg/cm ² (100KPa)	2.0
	603SP-2	1.0Kg/cm ² (100KPa)	3.0

MEASUREMENT CONDITIONS:

Substances	Tube No.	Sampling time (min)
CO	600SP	2.0
CO ₂	601SP	2.0
Oil Mist	602SP	25.0
Water Vapor	603SPA	1.0
	603SP-2	20.0 (sec)

SPECIAL NOTES:

- Upon use of No.602SP Oil Mist tubes, orange-color stain may be produced by water vapor in the sample gas but the discoloration by oil mist is not interfered. The top of pale-blue discoloration shall be read irrespective to the orange-color stain.
- Upon use of No.603SPA and No.603SP-2 Water Vapor tubes, a diaphragm in the pressure regulator (1) should be composed of stainless steel or teflon coated rubber. Because, a normal rubber diaphragm is pervious to ambient humidity and a reading of the water vapor (H₂O) tube will be affected by the ambient humidity.

CAUTION:

Keep the detector tubes out of the reach of children and used tubes should be discarded carefully according to relevant regulations.

USER RESPONSIBILITY:

It is the sole responsibility of the user of this equipment to ensure that the equipment is operated, maintained, and repaired in strict accordance with these instructions and the instructions provided with the model P-41R compressed breathing air sampling kit and that detector tubes are not used which are either beyond their expiration date or have a color different than referenced under Performance Specifications.

The Manufacturer and Manufacturer's Distributor shall not be otherwise liable for any incorrect measurement of any damages, whether damages result from negligence or otherwise.

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