

- ★ READ THIS INSTRUCTION MANUAL AND THE INSTRUCTIONS OF THE COMPRESSED BREATHING AIR SAMPLING SYSTEM (P-41R) PRIOR TO USING THIS PRODUCT.
- ★ DO NOT DISCARD CAREFULLY THIS INSTRUCTION MANUAL UNTIL ALL THE TUBES IN THIS BOX ARE USED UP.

1. PERFORMANCE:

Measuring Range	: 2 - 24 %
and Sampling time	: approx. 1 minute
Flow Rate (L/min.)	: 2
Sampling amount	: 50 mL
2nd Pressure	: 0.6 Kg/cm ² (0.059 MPa)
Operating Temperature	: 0 - 40 °C (32 - 104°F) (Temperature correction is necessary.)
Colour Change	: White → Brown

⚠ CAUTION

1. THE DETECTOR TUBE CONTAINS CHEMICAL REAGENTS.
2. DO NOT TOUCH THESE REAGENTS DIRECTLY ONCE TUBES WERE BROKEN.
3. KEEP THE TUBES OUT OF THE REACH OF CHILDREN.

NOTICE

1. USE ONLY WITH THE COMPRESSED BREATHING AIR SAMPLING SYSTEM (P-41R). OTHERWISE, CONSIDERABLE ERROR IN INDICATION MAY OCCUR.
2. DO NOT USE THIS TUBE OUTSIDE THE STATED OPERATING TEMPERATURE RANGE.
3. STORE TUBES IN A COOL AND DARK PLACE (0-25 °C/32-77°F), AND USE BEFORE EXPIRATION DATE PRINTED ON THE TOP OF THE BOX.
4. PRIOR TO USE, READ ITEM 7. USER RESPONSIBILITY CAREFULLY.
5. READ THE CONCENTRATION IMMEDIATELY AFTER DRAWING THE SAMPLE.

2. SAMPLING AND MEASUREMENT:

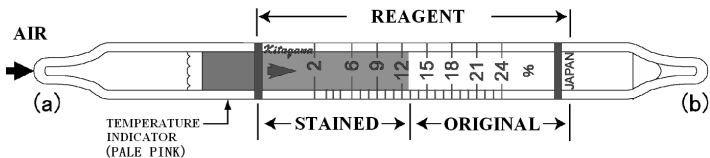
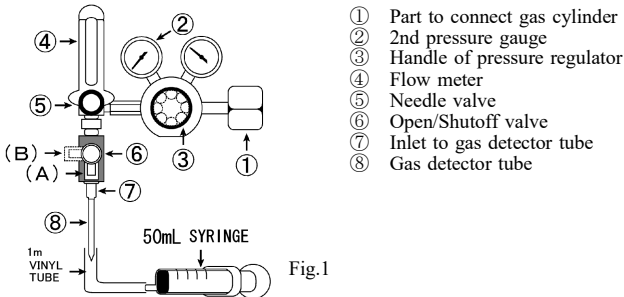


Fig.2

- 1) Without connecting detector tube, make the position of Open/Shutoff valve ⑥ to (A) and open the Needle valve ⑤ fully. Adjust the 2nd pressure to a preset condition while looking at the 2nd pressure gauge ② through the pressure regulator ③.

- 2) Adjust the flow rate to the preset condition while looking at the Flow meter ④ though the Needle valve ⑤ and purge the air flow circuit for 1 minute as it is.
- 3) Connect 1m vinyl tube (as option) to a 50 mL syringe(as option) of which inner volume is at 0 mL, as shown in Fig. 3.

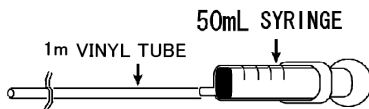


Fig. 3

- 4) Heat the temperature indicator part of a tube until the indicator of pale pink in colour is changed to pale purple by direct flame of a match or lighter.

▲WARNING THE TEMPERATURE INDICATOR IN THE OXYGEN DETECTOR TUBE BECOMES HOT AFTER HEATING. TO AVOID POSSIBLE INJURY, DO NOT TOUCH THE PART NEAR THE TEMPERATURE INDICATOR OR WEAR SAFETY GLOVES WHEN HANDLING THE OXYGEN DETECTOR TUBE.

- 5) Break both ends of the detector tube and immediately connect the outlet side (b) of the detector tube to the 1m vinyl tube.

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

- 6) Insert the detector tube into the Inlet to gas detector tube securely as shown in Fig.1. (Arrow mark shall point to the opposite side of the Inlet.) At that time, the indication value of the Flow meter is decreased on a large scale, but leave it as it is, and continue putting the compressed breathing air through the gas detector tube.
- 7) When the sampling amount becomes 50 mL (with confirming it through the 50 mL syringe), immediately make the position of Open/Shutoff valve ⑥ to (B), put off the detector tube and read the scale at the maximum point of a stained layer.

SPECIAL NOTE: I. When the maximum point of the stained layer is unclear or oblique, read the scale at the centre between the longest and shortest points.

3. CORRECTION FOR AMBIENT CONDITIONS:

- ① Temperature; The scale is calibrated based on the temperature of 20 °C (68°F). Readings obtained in other circumstances should be corrected with the following temperature correction table.

Table of the coefficient for temperature correction			
Temperature	0 ~ 9 °C (32 ~ 48.2°F)	10 ~ 30 °C (50 ~ 86°F)	31 ~ 40 °C (87.8 ~ 104°F)
Coefficient	1.05	1.00	0.95

Procedure of temperature correction: True concentration can be obtained by multiplying the readings of tubes by coefficient for temperature correction shown in the above. Therefore,

$$\text{True concentration (\%)} = \text{Readings (\%)} \times \text{Coefficient for temperature correction}$$

4. CHEMICAL REACTION IN THE DETECTOR TUBE:

Oxygen reacts with alkaline pyrogallol.

5. DISPOSAL OF TUBES:

USED TUBES SHOULD BE DISPOSED CAREFULLY ACCORDING TO RELEVANT REGULATIONS, IF ANY.

6. OXYGEN DEFICIENCY: Less than 18%

7. 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 Model P-41R, and that detector tubes are not used beyond their expiration date or have a colour change different to that stated in the Performance specifications. The Manufacturer and Manufacturer's Distributors shall not be otherwise liable for any incorrect measurement or any damages, whether damages result from negligence or otherwise.

※ Product specifications are subject to change without any prior notice.