

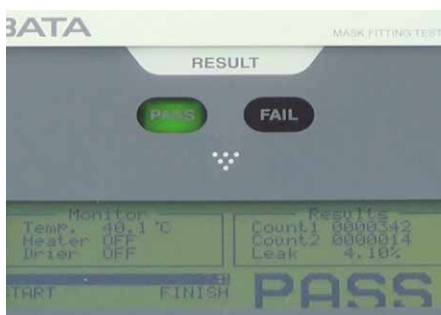
# Mask Fitting Tester

## Model MT-03



**The implementation of quantitative fitness test is effective with respect to mask selection as well as confirmation and guidance regarding correct mask placement.**

**Relevant to exposure prevention at occupational health sites, prevention of airborne and droplet transmission at medical sites (such as influenza infections incurred within hospitals)**



- Measuring the seal of dust masks against the face
- Measurements can be performed without altering the mask
- Automatically measures the number of particles inside/outside the mask, and displays the leakage ratio
- Can also measure the N95 respirator, Surgical Mask
- Measurement is possible without damaging mask

## Measures the seal of the dust mask against the face with indoor dust

Whether or not a dust mask fits the face of the user is determined by the contact between the mask and face. The MT-03 Mask Fitting Tester obtains a quantitative measure of the seal of dust, influenza, or asbestos masks against the face in less than 1 minute.

- In terms of the measurement principle, the dust mask is put on, the concentrations of dust particles inside and outside the mask are measured, and then the penetration ratio (leakage ratio) of dust into the mask is obtained from the results.
- Dust typically found suspended indoors is used as the test particles, and a sealing test guide is utilized to sample the test air inside the mask. As a result, there is no need to create a test air sampling hole in the mask.

## Occupational health / work environments / nanoparticles



- People working with nano materials
- People involved with tunnel construction and coal mines
- People involved with welding projects
- People working with asbestos

### Interviewed the our customers

**Exxon Mobil Corporation**  
Medical Affairs and Occupational Health  
Department, Assistant Manager,  
industrial hygienist

#### ● What exactly is involved in the mask fit test program that you have deployed company-wide?

A rule was established to perform mask fit testing periodically, and the process is implemented by all workers at Exxon and subcontracting companies who wear respiratory protective gear. The program is enforced particularly for employees who have never use fit testing prior to work, and when mask manufacturers or sizes are changed.

#### ● How many employees are involved in the mask fit testing program? And what criteria have been determined?

More than 1,500 workers at Exxon and 1,200 workers at subcontracting companies are believed to be involved. In terms of criteria, a leak ratio of 1 % or less for full face masks and 5 % or less for half face masks is considered a pass.

#### ● Including your mask fit testing program, what has been the impact of the mask fitting tester?

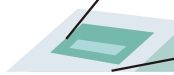
The tester has been an effective means of teaching workers the correct method of wearing masks while they check for mask leaks numerically. At the same time, the tester has been extremely effective in terms of worker safety measures, including the discovery of worn out and ineffective masks.



The concentrations of dust particles inside



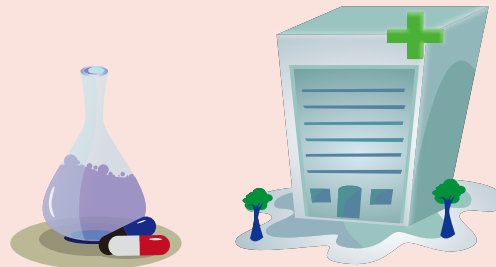
The concentrations of dust particles outside



## Medical / Influenza



● Preventing airborne and droplet transmission to medical personnel!

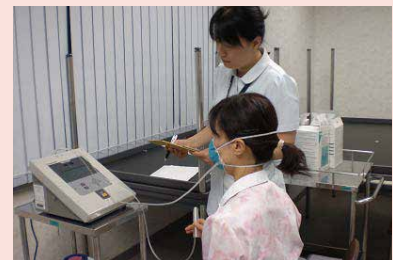


### Interviewed the our customers

**Tokyo Metropolitan Health and Medical Treatment Corporation, Ebara Hospital**  
Head nurse in charge of infection control

● Please describe your motives for purchasing our equipment.

Previously, we had implemented qualitative leakage tests utilizing sweet odors. However, when it became apparent that there are significant variations in the ability of people to sense the presence of sweet odors, we learned of the mask fitting tester, a quantitative measuring instrument, and put it to use on a trial basis. It was evident that this is an effective means of quantifying leakage ratios objectively, and so the decision was made to purchase it.

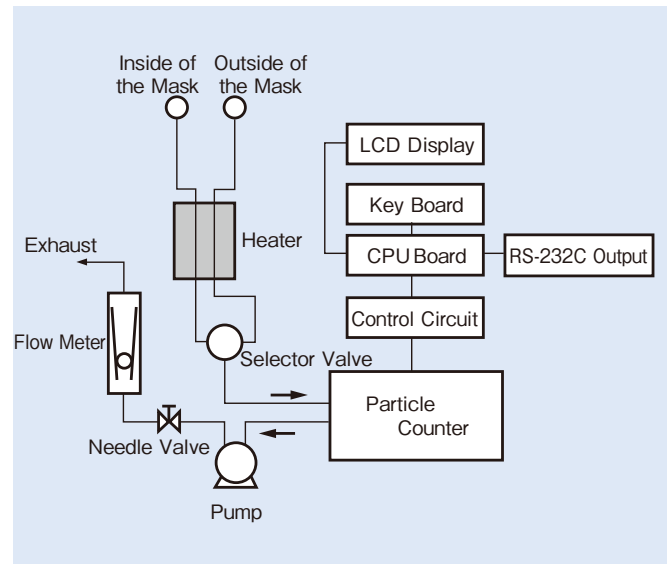


● Currently, when do you use the equipment?

As we have the Infectious Diseases/Internal Medicine Department, our hospital has been specified as a designated medical institution for Class I infectious diseases. This department implements education periodically regarding disease control measures as a means of preventing infections incurred within the hospital during influenza epidemics and potential pandemics. The equipment is used in this context, in relation to correct mask fitting procedures, and to check that a mask is suitable for the size of one's face.

● What has been the response of employees who have used the equipment?

The response has been successful. Employees have commented that they feel relieved knowing that their masks are not leaking, and that the correct mask fitting method makes sense when they can quantify the fit numerically.



Block Diagram

## ■ Features

- Includes a heating tube to prevent the occurrence of water droplets that condense from water vapor in exhalation.
- A single detector (particle counter) provides continuous measurement of dust particles, switching automatically between the room (outside the mask) and inside the mask. As a result, errors due to difference in the characteristics of detectors are minimized.
- The mask fitting can be checked with the special mirror.

## ■ Specifications

Code No. / Mode	080200-06 / MT-03
Measuring Object	Fitness between face and mask
Measuring Item	Particle number, Leak
Measuring Principle	Counting number of particles by light scattering method. Ratio of number of particles in the inside and outside of mask
Measuring Particles	Selectable 3-range: 0.3 $\mu\text{m}$ or more, 0.5 $\mu\text{m}$ or more, 0.3 to 0.5 $\mu\text{m}$
Range	Counting : 0 to 9999999 Leak : 0 to 100%
Time	Each 3 sec. in the inside/outside, Waiting 10 sec.
Conditions	0 to 40°C, RH30 to 90%(without dew)
Power Supply	AC100 to 240V, 50/60Hz
Dimensions, Weight	270(W)×310(D)×210(H)mm, Approx.4.3kg

Specifications, and appearance described in this document are based on information as of April 3, 2015. They are subject to change without notice for improvement of the product.

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