

**The best way to maximize respiratory protection
by wearing a mask:
How to wear it properly.
How to inspect it prior to use.
How to maintain it.**

How to don a half-facepiece replaceable type particulate respirator.

To achieve the full performance of a particulate respirator or a gas mask, you must don it properly. To do this, read the user manual carefully and follow the instructions.

As an example, we explain here how to don a half-facepiece replaceable type particulate respirator based on the notification issued by the Ministry of Health, Labour and Welfare.

Steps that are explained here are very important to achieve an airtight fitness of a mask over the face. Please make your workers understand each step fully.

1. As shown in Step 1, you must place a plastic molded cradle harness directly on the back of your head. If you wear a helmet, place it under it, not over it. If you place it over the helmet, a mask may be slipped out of position while at work.
2. As shown in Steps 2 and 3, tighten the head straps in small, equal increments to ensure the respirator is tightened evenly and centered on your face. If it is loose, a gap may occur between the face and the facepiece. If the head straps are not tightened evenly, a longer head strap might be caught by the moving part of machine, resulting in a serious accident.
3. As shown in Step 4, after fastening the buckle behind the neck and adjusting the length of the head straps, move slightly the respirator up and down and from right to left to ensure the entire respirator is snug and centered on your face.
4. As shown in Step 5, after wearing all necessary protective equipment including a helmet, a mask fit check must be performed to ensure the respirator is seated correctly.

1



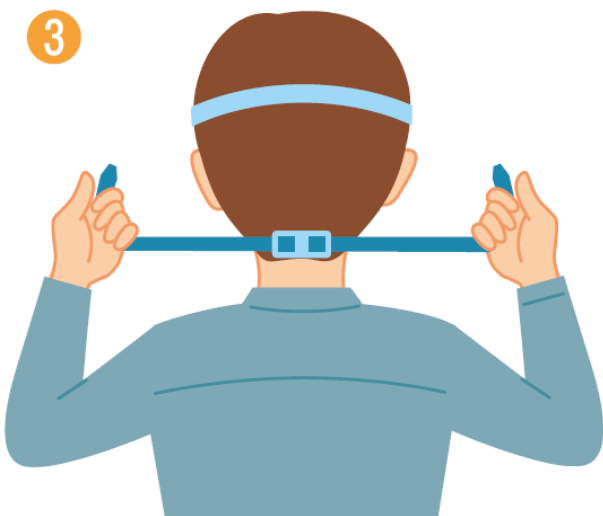
Step 1 : Place a plastic molded cradle harness on the back of your head firmly.

2



Step 2 : Hold the buckles of both straps with fingers and pull the head straps evenly to

3



Step 3 : Fasten the buckles behind the neck and pull the head straps evenly.

4



Step 4 : Move the respirator slightly up and down and from left to right to ensure the respirator is snug, comfortable and centered on your face.

5



Step 5 : After donning a respirator, perform a mask fit check immediately. If any air leaks are detected during a seal check, reposition the facepiece and readjust the head straps until an airtightness is obtained. Inhale gently and if the mask collapses slightly toward the face, the mask fit is satisfactory.

Points to remember

- Do not use a towel over which a respirator is worn.
- Do not use a knit cloth inside the respirator for skin protection. (If donning a respirator causes skin irritation and an airtightness is not disrupted by using a knit cloth, use of a knit cloth is permitted.)
- Avoid the situation that the airtightness of a respirator is disrupted by the insertion of beard, sideburns and forelock into an exhalation valve, etc.,

Prior-to-use inspection and maintenance

The notification of the Ministry of Health, Labour and Welfare requires employers to have their employees conduct a prior-to-use inspection and store spare masks, filters, cartridges, etc. Employers must appoint a health administrator or a chief worker in each workshop who has enough knowledge and experience regarding occupational health as an administrator responsible for personal protective equipment (PPE). He/she is responsible for providing guidance and maintenance regarding proper selection, use and handling of respirators.

1. Prior-to-use inspection

- Make sure there is no damage, crack or remarkable distortion on an inhalation valve, a facepiece, an exhalation valve or head straps.
- Make sure there is no accumulation of particulates on an inhalation valve, an exhalation valve or a valve seat. If any particulates are detected on the exhalation valve, a substantial amount of air leaks is expected. Perform a negative pressure check to see if there is enough airtightness and air seal of an exhalation valve.
- Make sure both an inhalation valve and an exhalation valve are seated firmly on the valve seats and the air seal of the exhalation valve is maintained.
- Make sure a filter and/or a cartridge is installed properly with no damage or hole on it.
- Make sure there is no ingress of water in a cartridge and there is no damage or distortion of it.
- Make sure no unusual odor is detected from a filter and/or a cartridge.

2. Maintenance (Inspection and care after use)

- Inspect the respirator after use if there is damage, crack or distortion on an inhalation valve, a facepiece, an exhalation valve or head straps or if there is damage on a filter and/or a cartridge or it is not installed firmly.
- Remove with a dry cloth or a slightly wet cloth the accumulated particulates on an inhalation valve, a facepiece, an exhalation valve or head straps.
- Dry the filter well and tap it lightly while preventing scattering of particulates to dislodge them. Discard after each use the filter that was used for highly hazardous particulates such as arsenic and chrome. Do not use compressed air to blow off particulates on the filter or do not tap it strongly to remove particulates. This will cause damage on the filter or scattering of particulates.

- If you reuse the filter material after use (after proper maintenance and wash cleaning), you must use it after confirming that the filtering efficiency is as good as that of a new filter and the inhalation resistance is not increased.

3. Maintenance (Disposal)

If one of the followings occurs, replace or discard them:

- There is damage, hole or remarkable distortion on the filtering material.
- There is damage, remarkable distortion or a pre-set service life is exhausted.
- There is damage, crack, remarkable distortion or sticky surface on an inhalation valve, an facepiece, an exhalation valve, etc.
- There is damage, lack of flexibility or elasticity on head straps.

Why don't you start "mask fit check week?"

To establish a good habit of performing a mask fit check prior to work, why don't you start to implement a regular mask fit check at the time of a morning meeting in the workshop?

"Achieve zero air leak of a respirator" promotional poster

KOKEN is ready to provide a promotional poster to help you educate workers on mask fit check.



Case study :

Fujinomiya Plant of Amada Engineering Co., Ltd.

The welding group of the manufacturing and processing department conducts a training for workers who are engaged in dust environment during the national occupational hygiene week in October every year. In it, their effort is focused on respirator training.

We interviewed Mr. Yasuhiro Sei, Group Leader, who is providing guidance on mask fit check to the site workers.



*Mr. Yasuhiro Sei, Group Leader, the Welding Group of the Manufacturing and Processing Department.

“We are continuing zero accident for 1,405 days (as of June, 12, 2014). Administration staffs are careful for not loosening our attention to our safety activities even when production workers are in a busy season of production.”

KOKEN: Please tell us how an occupational safety training and education is conducted in the manufacturing and processing department.

Mr. Sei:

As part of the “2000 day no occupational injury activity,” our department is implementing occupational safety and health programs on a daily basis. Each job unit

such as machine work, welding and maintenance is proceeding its own occupational safety and health program based on its unique characteristic.

In our welding group program, we practice “pointing and calling” which is the activity performed at the whole department, “points to notice you should be aware of” at the start of morning and afternoon work and KYT (Kiken Yochi Training in Japanese) activity (translated into English as hazard prediction activity) on a monthly basis. When all group leaders gather once in a month to implement a safety patrol, they try to identify risk factors pertaining to each group and discuss how to mitigate such risks. Thus risks and corrective strategies are shared by all groups.



*The welding group of the manufacturing and processing department conducts a training for workers who are engaged in dust environment during the national occupational hygiene week in October every year. By practicing how to wear a mask workers are required to make it a rule to don it properly and perform a mask fit check.

KOKEN: Please tell us how a respirator training is implemented during the national occupational hygiene week.

Mr. Sei:

Since each job group requires a different knowledge about respirator training, each tries to tailor its program to meet its own needs. Our welding group focus our efforts on countermeasures to reduce exposure to welding fumes.

In our program which has continued for more than 15 years, we provide knowledge necessary for prevention of exposure to welding fumes such as management classification of workshops, why personal protective equipment is necessary to protect the health of workers and how harmful welding fumes, which cause pneumoconiosis, are.

We try to change our way of training each time although the basic concept remains unchanged in order to help our workers increase their awareness of the importance of respiratory protection.



*In a site where masks with built-in fit checker are used, workers receive guidance from a patrolling instructor regarding how to use a fit checker to perform a mask fit check. (The workers here wear KOKEN's particulate respirators Model 1005R with built-in fit checker.)

In the past several years, we have strengthened a respirator training to train workers on how a mask should be worn correctly, step by step to ensure an airtightness between the face and the facepiece. If a mask is not worn correctly, the sufficient effect for preventing exposure to harmful substances cannot be achieved.

When we started to conduct the training, we made each worker to measure the amount of particulates numerically using a particle counter. This experience was useful for each worker to learn based on the numerical evidence how easily an air leak occurs if a mask is not worn correctly. This has become a catalyst for them to understand that it is essential to establish a habit of performing a mask fit check before donning a mask.

Workers in the welding group now use a respirator with built-in fit checker. In a respirator training, each worker practices a step-by-step procedure of donning a mask and mask fit check.

KOKEN : Wasn't it difficult to make it a rule to perform mask fit check before each use?

Mr. Sei :

Besides a respirator training in October during the national occupational hygiene week, we put up posters to promote mask fit check activities in workshops and we remind them by communicating with them while walking around in the workshop. Because the instructors keep attentive to it, they do not fail to observe if the habit of mask fit check is established. When a new employee is admitted to a workshop, he/she naturally follows the example of senior workers and soon establish a habit of performing a mask fit check.



*Fujinomiya Plant of Amada Engineering Co., Ltd.

KOKEN : We have been informed that the company considers it important to implement inspection and maintenance of respirator parts to maximize the benefit of wearing a mask.

Mr. Sei :

Every weekend after cleaning the factory floor, we conduct an inspection and cleanup on the helmet and the respirator. If the replacement time comes or the parts are deteriorated, we replace them with new ones.

By performing an inspection on his own respirator by himself, he feels more attachment to it and handle it more carefully.

KOKEN : Who are appointed as a person in charge of PPE management?

Mr. Sei :

In our department a person in charge of PPE management and a person in charge of accumulated particulates are chosen from the site workers. This is because we expect the site workers to don a mask properly based on their voluntary awareness.

As a safety officer, what I am trying to keep in mind is to encourage the site workers to act voluntarily and watch carefully what they implement their activities. For example, I make it a rule to store necessary parts in order to replace the parts when performing a mask fit check. I think it important to create an environment in which site workers can continue to act voluntarily. I do not want site workers to put off what they should do now only because necessary parts are not available now. If this occurred, a good habit of safety precaution could not be established.



*Every week, without exception, each worker is required to practice how to wear, inspect and clean a mask in addition to confirming the availability of replacement parts.



Examples of filters that have reached a replacement time are posted in the workshop of the Welding Group. Replacement history is recorded and controlled in a ledger.

A respirator training in October

< Basic Instructions >

- Latest regulations
- Seriousness of pneumoconiosis
- Importance of mask fit check

< Practice on how to don a mask properly >

- How to don a mask properly (to avoid leakage)
- Practice to use a fit checker
- How to clean a mask
- How to inspect a mask (to replace the parts that have reached the replacement time).