

Fit Check



Using Palm (Negative Pressure Method)

- You can use your palm to check fit by the negative pressure method without using a fit checker.

STEP 1 Place your palm over the inhalation hole of the filter.

STEP 2 Make sure no air is leaking between your face and the respirator when you inhale gently. (The respirator fits tightly to your face.)

⚠ Do not push the respirator to your face.

Negative Pressure Method



Using a Fit Checker (Negative Pressure Method)

- You can use a fit checker to check fit by the negative pressure method.

STEP 1 Pinch the protruding tube of the fit checker.

STEP 2 Make sure no air is leaking between your face and the respirator when you inhale gently. (The respirator fits tightly to your face.)

*If using a fit checker, attach it before putting on the filter.

TW01SC with an integrated fit checker is also available. [See P.14](#)

Negative Pressure Method



Features of Particulate Filter



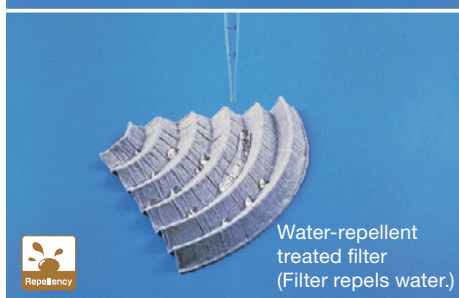
Water/Oil Repellency

The water/oil repellent mechanical filter is suitable in environments with splashing water and oil mist, where it is able to maintain easy breathing with little change in inhalation resistance.

Comparison of Water Repellent Capability



Non-treated filter
(Water soaks into filter.)



Water-repellent
treated filter
(Filter repels water.)

Comparison of Oil Repellent Capability



Non-treated filter
(Oil soaks into filter.)



Oil-repellent
treated filter
(Filter repels oil.)



Washable Filter is Economical



These marks appear
in Japanese.

The mechanical filters with this mark can be washed with water.



Mechanical Filter with Activated Carbon Fiber (ACF)

ACF can remove nuisance odors accompanying welding work.

Particulate respirator protects respiratory organs from the dust and other particulates generated during welding, excavating, etc. Our extensive product lineup features a range of respirators from the ultimate in protective respirators to light and compact models for a variety of industrial fields. All of our particulate respirators have been approved by the Japanese Ministry of Health, Labour and Welfare.

Japanese Government Standards

Test Conditions for Filter Efficiency

Test Particulate	DOP(Liquid)	NaCl(Solid)
Count median diameter [μm]	0.15-0.25 [σg ≤ 1.6]	0.06-0.1 [σg ≤ 1.8]
Concentration [mg/m³]	≤ 100	≤ 50
Air flow [L/min.]	85	85
Time	Until 200 mg supplied	Until 100 mg supplied

Meaning of Abbreviations

DOP : Di(2-Ethylhexyl) Phthalate	L : Liquid
NaCl : Sodium Chloride	S : Solid
σg: Geometric standard deviation	3 : Filter efficiency 99.9% ≤
R : Replaceable	2 : Filter efficiency 95.0% ≤
D : Disposable	1 : Filter efficiency 80.0% ≤

Classification of Reusable Respirator for Particle

See P.11

Classification		Filter Efficiency [%]	Inhalation Resistance*1 [Pa]		Exhalation Resistance*1 [Pa]	
DOP	NaCl		Inhalation Support		Inhalation Support	
			Yes	No	Yes	No
RL3	RS3	≥ 99.9	≤ 160	≤ 160	≤ 80	
RL2	RS2	≥ 95.0		≤ 80	≤ 80	
RL1	RS1	≥ 80.0		≤ 70	≤ 70	

Classification of Disposable Respirator for Particle

See P.19

Classification		Filter Efficiency [%]	Inhalation Resistance*1 [Pa]		Exhalation Resistance*1 [Pa]	
DOP	NaCl		Exhalation Valve		Exhalation Valve	
			Yes	No	Yes	No
DL3	DS3	≥ 99.9	≤ 150	≤ 100	≤ 80	≤ 100
DL2	DS2	≥ 95.0	≤ 70	≤ 50	≤ 70	≤ 50
DL1	DS1	≥ 80.0	≤ 60	≤ 45	≤ 60	≤ 45

*1: Air flow rate at 40 L/min.

Particle Filter Replacement Criteria

Mechanical Filter	• Replace the filter with a new one when you have difficulty in breathing due to clogging from particle accumulation.
Electrostatic Filter	• Replace the filter with a new one when you have difficulty in breathing due to clogging from particle accumulation. • Replace the filter with a new one after a certain period of use determined beforehand.

Dispose the filter per every use in atmospheres such as arsenic, chromium etc.

*In accordance with "Choosing and Usage of Particulate Respirators" (Notice of the Japanese Ministry of Health, Labour and Welfare Division Labour Standards Bureau No.0207006 of February 7, 2005).

Filter Selection Chart

See P.11

Type of Particle		Classification			
		RL3	RL2	RL1	DS2
Nanoparticle	Low exposure risk is expected	○ ^{*2}	×	×	×
	Little exposure risk is expected	○	×	×	×
Indium Compound	Concentration < 15 μg/m³	◎ ^{*2}	×	×	×
	Concentration < 3 μg/m³	◎	×	×	×
Radioactive Dust		◎	×	×	×
Dioxin (level 1)		◎	×	×	×
Asbestos	Full facepiece reusable respirators for particles (Classification RL3, RS3)	◎ ^{*2}	×	×	×
	Half facepiece reusable respirators for particles (Classification RL3, RS3)	◎	×	×	×
	Reusable respirators for particles (Classification RL2, RS2)		◎	×	×
Heavy Metal		◎	◎	×	◎
Metal Fumes	Welding, Fusing, Melting Work		◎	×	◎
Tar Mists			◎	○	×
Oil Mists			◎	○	×
Water Mists	Wet Grinding		◎	○	×
Sand/ Rock Dust	Drilling, Grinding			◎	○

*1 This table is in accordance with the Japanese Ministry of Health, Labour and Welfare.

*2 Please use a full facepiece reusable respirator.

◎ : Recommended ○ : Suitable × : Not Suitable
Blank : suitable, but indicates sufficient capability with lower-grade filter (at right) under "Nationally Certified Classification".

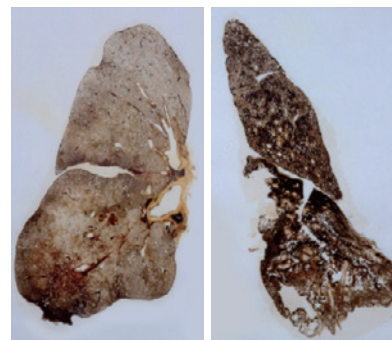
Shelf Life of Particle Filter

Mechanical filters have not degraded the particle filtering efficiency. Since electrostatic filters have a certain degradation of particle filtering efficiency with the passage of time, the storage period is rather short. Please use both types of filter within the storage period as a safety precaution, even though those filters cannot be always used on the spot after the storage period.

Shelf Life after the Manufacturing Date (Unopened)

Mechanical Filter	10 years
Electrostatic Filter (Disposable Respirator) See P.19	2 years for the Model: DD11 series
	5 years for the Model: DD02 series

Dust Hazard – Formidable Dust –



Healthy lung

Structural change in lung due to dust (Welder's lung)

Pneumoconiosis

Pneumoconiosis has been said as "stagger" in Japan since many years ago and is an incurable disease causing respiration disorder due to fibro proliferative change in the lung by inhaling dust.

Filter Selection Chart of Replaceable Type Dust Respirators

Type of filter			Mechanical Filter															
Classification			RL2				RL1											
Performance	Test Particulate		DOP				DOP											
Filtering Efficiency (% or more)			96.0	Test Conditions for Filter Efficiency <table><tr><th>Test Particulate</th><th>DOP(Liquid)</th></tr><tr><td>Count median diameter [μm]</td><td>0.15-0.25 [σg ≤ 1.6]</td></tr><tr><td>Concentration [mg/m³]</td><td>≤ 100</td></tr><tr><td>Air flow [L/min.]</td><td>85</td></tr><tr><td>Time</td><td>Until 200 mg supplied</td></tr></table>			Test Particulate	DOP(Liquid)	Count median diameter [μm]	0.15-0.25 [σg ≤ 1.6]	Concentration [mg/m³]	≤ 100	Air flow [L/min.]	85	Time	Until 200 mg supplied	82.0	
Test Particulate	DOP(Liquid)																	
Count median diameter [μm]	0.15-0.25 [σg ≤ 1.6]																	
Concentration [mg/m³]	≤ 100																	
Air flow [L/min.]	85																	
Time	Until 200 mg supplied																	
Filter Model			C2 	P2W 	L2W 	U2W 	L 	R1 										
Features of Filter Replacement				Press & Push														
Filter Recovery by washing with water																		
Water / Oil Repellency Repels water/oil																		
Activated Carbon Fiber																		
Removes Ozone			⓪	⓪	⓪	⓪	X	X										
Remove Nuisance Odors			⓪	⓪	⓪	⓪	X	X										
Type of Dust	Radioactive Dust		X	X	X	X	X	X										
	Dioxin (Lv.1)		X	X	X	X	X	X										
	Asbestos (Concentration of fiber)	Lv.1 (7.5 pcs./cm2 or less)	X	X	X	X	X	X										
		Lv.2 (1.5 pcs./cm2 or less)	X	X	X	X	X	X										
		Lv.3 (0.15 pcs./cm2 or less)	⓪	⓪	⓪	⓪	X	X										
	Heavy Metal	Containing Arsonic Lean, Chromium, Zine	O	O	O	O	X	X										
	Heavy Fumes	Welding, Meltdown, Melting work	⓪	⓪	⓪	⓪	O	O										
	Tar Mists		⓪	⓪	⓪	⓪	O	O										
	Oil Mists		⓪	⓪	⓪	⓪	⓪	⓪										
	Water Mists	wet grinding	⓪	⓪	⓪	⓪	⓪	⓪										
Sand/Rock Dust		Drilling, Grinding					⓪	⓪										
Respirator			DR31C2 DR30C2 DR30SC2	DR22P2W	DR175L2W DR28L2W	DR165U2W	DR33L	DR77R DR77SR										

Meaning ⊙ : Most Suitable O : Suitable X : Not Suitable