



Instruction Manual

Dust Collector with Worktable

Workrésa (WRM)



Showa Denki Group

Introduction

Thank you for purchasing our Showa Denki “Dust Collector with Worktable (WRM).”

We at Showa Denki Co., Ltd., as a special manufacturer of blowers and dust collectors, have strived to produce products by making the best use of “Flow technology” and “Rotating machine technology.” WRM is a dust collector with worktable that utilizes these technologies. In order to demonstrate sufficient performance of this machine and use this machine for a long time without malfunctions, read this instruction manual well.

Keep this manual in a place easily accessible by workers in charge of maintenance and inspection. The latest issue of the instruction manual can be downloaded from the homepage of Showa Denki Co., Ltd. (http://www.showadenki.co.jp/pam_phlet_download.html)

This manual describes the details from installation to use method of the duct collector with worktable.

WRM-04H-□□□(-A) Standard specifications (-A type includes optional air coupler)

WRM-04B-□□□(-A) Simple explosion-proof specifications (-A type includes optional air coupler)



WRM-04S-□□□(-A) Spark countermeasure specifications (-A type includes optional air coupler)

This instruction manual is for standard models. When purchasing a custom-made product, please comply with the instructions in this manual and observe the terms and conditions of use included separately.

Workers in charge of handling and maintenance and inspection of this Machine must receive education and training for this Machine.

Caution marks in this manual

The marks in this manual indicate the following:

 WARNING	This mark indicates that mishandling may cause death and serious accidents.
 CAUTION	This mark indicates that mishandling may cause personal injuries and property damages.



This mark indicates prohibited items.



This mark indicates items to which attention should be paid.



This mark indicates items that must be done without fail.

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■ Chapter 1 Safety precautions

WARNING



Never intake the following:

- **Lit cigarettes, cigarette butts or ash, fire sources like matches, and other high-temperature powder dusts.**

- **Sparks generated by sanders, grinders, etc.**

The filter cloth is flammable. It may ignite due to sparks, etc., resulting in a fire.

If a fire should occur in this machine, immediately turn off the switch and insert, through the suction inlet, an extinguishant suitable for the collected materials, then close both the suction inlet and discharge outlet.

- **Gasoline, paint thinner, or kerosene cutting oils or cleaning liquids with a flashpoint lower than 125°C.**

- **Flammable gas, explosive gas, gasoline or other combustible vaporized gas.**

There is risk of ignition or explosion by heat generated by sparks or the electric motor due to internal electric components, static electricity, contact with metal, etc.

- **Powder dust such as aluminum, carbon or starch posing dust explosion risk**

Explosion due to dusts may occur depending on the particle size, concentration, etc.

- **Substances that generate heat and change into dangerous substances if mixed.**

If different materials are collected in the same machine, a potentially dangerous chemical reaction may occur. Please responsibly determine if mixed intake is safe for your materials. If it is dangerous, please use the machine after clearly displaying it as a dedicated dust collector for each material.



Never operate this machine with the main body front door open. The door may close due to negative pressure, and cause fingers, etc. to be caught. In addition, the motor may be overloaded.



Never ride on this machine. Doing so may deform the machine or cause an accident due to a fall.

When handling dust that may cause an explosion, be sure to use a dust-explosion-proof product (Simple explosion-proof specifications). When handling high-temperature dust and sparks generated during grinding, be sure to use a spark-countermeasure model.



Do not use when unable to make sound judgements.

The design life of this product is 8 years, excluding consumable parts. If using for longer, the risk of failure or malfunction may increase due to aging and deterioration of materials.

CAUTION



Never Intake the following, as they may cause malfunction.

- **High-temperature gas and heat-generating substances**

Gas at 40°C or higher that is suctioned in or generated within the machine by heat-generating materials may cause insulation failure of internal electric components.

- **Adhesive dusts**

The filter cloth may clog if dust adheres to it and cannot be shaken.

- **Solid materials such as workpieces and tools**

These objects may damage the duct, filter cloth, etc.

- **Fine powder dust such as carbon (5 μm or less)**

Powder dust may leak if a standard filter cloth is used. Use a high-performance filter cloth.

- **Light powder dust such as feather, cotton, paper and styrene foam dusts**

These objects may get entangled internally and suspend without falling.

- **Highly abrasive powder dust such as glass powder and abrasives**

The filter cloth may be perforated due to wear and powder dust may leak. Furthermore, the duct and main body of the machine may be punctured.

- **Corrosive gas and mists**

The machine main body and parts may corrode.



Do not apply high pressure to this machine with other pressure machines.



Never increase operation speed using an inverter, etc.
Doing so may cause damage to the blower.



Except when reusing the material collected by this machine, dispose of it appropriately in accordance with the relevant laws and regulations set by national and local governments. Dispose of old filter cloths and other wastes similarly.

This machine collects 5μm or larger-sized particles with a standard filter cloth and 1μm or larger particles with an optional high-performance filter cloth. Powder dust amount must be 1g or less per 1 m³/min of air. If the intake powder dust is beyond this performance range, it is possible that dust will leak through the filter cloth, pressure loss of filter cloth increases, or clogging, etc. will occur.

Chapter 2 Equipment Overview

This machine separates and collects dusts and mists scattered in the worktable hood when workpiece cutting powder/oil are air-blown or generated when grinding with electric tools. It cannot process large amounts of powder or mist in a short time, intake liquids not in a mist state, nor perform shaking during operation. If clogging decreases air volume, stop operating and perform shaking. Continuous shaking cannot be done.

Structure of this machine

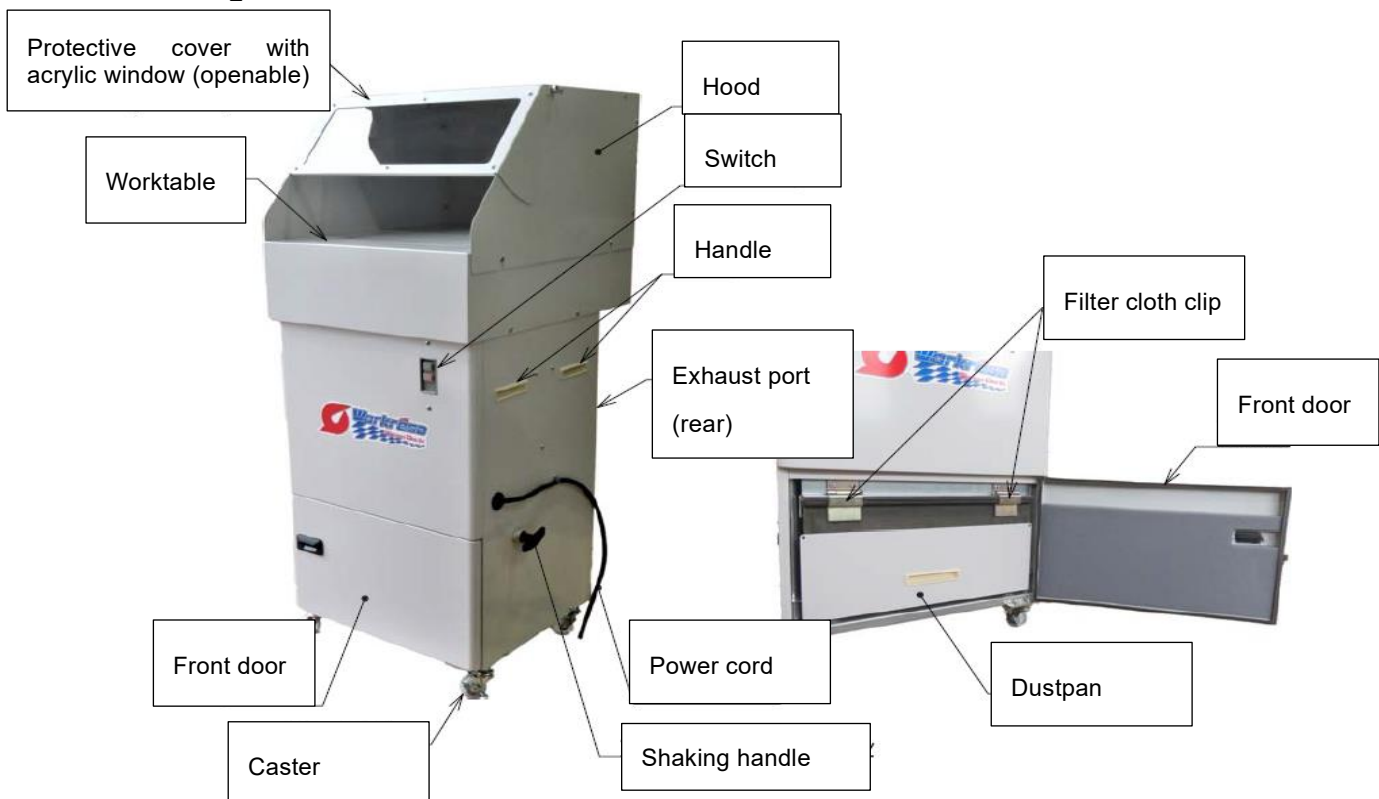
Air containing the collected materials is separated in the main body and filtered by the filter cloth. Cleaned air passes through the blower to the machine back and exhausted. Filtered dust is shaken by operating the shaking handle to beat the filter surface with the shaking mechanism. Shaken dust accumulates on the dustpan and is removed via the front door easily.

Dust explosion countermeasure (simple explosion-proof specifications) models are equipped with: an antistatic filter medium to prevent static electricity sparks; an explosion outlet which releases internal pressure in the event of an explosion; a check valve to prevent backflow into the duct; and an electric motor with specifications equivalent to Japanese increased-safety explosion-proof specifications.

* Dust explosion countermeasure (Simple explosion-proof specifications) models cannot completely prevent explosions.

Spark countermeasure specifications machines equip parts making it difficult for high-temperature dust and sparks from grinding a workpiece with a power tool to reach the dustpan.

Parts diagram



■ Chapter 3 Installation

When you receive the product, confirm the product is as ordered by checking the model, voltage, frequency, etc. on the nameplate. In addition, check accessories. We take all possible precautions when packing, but if damages from transportation or missing parts are observed, contact your dealer or our nearest branch or sales office immediately.

Nails are used in the wooden pallets and frames used for packing. Pull them out immediately after unpacking; there is risk of injury due to protruding nails. Dispose properly of unnecessary packing materials in accordance with relevant local and national laws and regulations.



Install this machine where the following conditions are met:

Indoors without exposure to rainwater

The Workrésa is a machine for indoor use.

Avoid installation locations easily wet with water, as the water can cause electric shock or malfunction.

Condensation-free at room temperature

Ambient temperature: 5°C-40°C

High temperature and dew/condensation may cause electrical component failure or electric shock.

Humidity: 80% or less

Horizontally flat without vibration

Installing on a not-flat floor may cause abnormal vibration and cause a fall.

Free of dangerous chemicals nearby

Installing this machine near flammable chemicals, such as gasoline and paint thinner, or an explosive atmosphere may cause an explosion or fire. Operation near chemicals generating corrosive gas such as hydrochloric acid and sulfuric acid may cause main body and parts to be corroded.

Easily accessible for maintenance



Maintain space as shown at left for elimination of collected materials, filter cloth replacement, and air exhaust.

Unit: mm

Installation

- This machine can be easily moved with the equipped casters. However, use the stoppers on the front wheels to lock the machine during operation. In addition, avoid operation on a slope. When moving this machine, move it slowly on a flat floor and be careful not to tip it over.
- When lifting the machine, use the two handles provided on either side of the machine. Do this work with two or more people.
- If the exhaust port is blocked, normal suction power cannot be exerted. Maintain a sufficient space around the exhaust port.
- Leave nearby a fire extinguisher suitable for the collected materials.
- For the dust explosion countermeasures (simple explosion-proof specifications) models, be sure to install the explosion emission port in a safe direction away from workers.

Electric wiring



- Use the power supply designated on the nameplate. Operation using power supply other than specified may cause malfunction and is extremely dangerous.
- Before connecting the power supply, be sure to connect the ground cable.
- Use a power supply fuse (circuit breaker) suitable for the startup current.
- Use a voltage within $\pm 5\%$ of the rated voltage.
(Temporary fluctuation in voltage: $\pm 10\%$ or less)
- Use a current within the rated current.
- Never increase operation speed run using an inverter. Doing so may damage the blower.

Rated Current for Standard Products

100V single-phase		220V single-phase
50Hz	60Hz	50Hz
6.0A	7.8A	2.8A

For three-phase power supply, voltage specifications other than the above in single- or three-phase, or other custom specifications, please contact us.

Test run

- Re-check the following items before a trial or test run:
- The power cord and ground cable connection, insulation and voltage within the specified value:

- The main body front door is closed completely:
- No tools, bolts, nuts, etc. left on the worktable:
- For dust explosion countermeasure (Simple explosion-proof specification) models, the explosion outlet port lid is not displaced.

■ Chapter 4 Operation

Daily operation

- Operation steps
- (1) Check that the front door is closed.
 - (2) For dust explosion countermeasure (Simple explosion-proof specification) models, ensure the explosion outlet port lid is not displaced.
 - (3) Turn on the switch to start operation.
- Shutdown
- (1) Turn off the switch.
 - (2) Perform shaking after about two minutes and remove the collected materials accumulated on the dust pan.

Precautions



- The switch is equipped with an overload protection device:
- If the dust is very fine, at the start of operation, a small amount of dust may leak temporarily. If dust adheres properly to the filter cloth, there will be no leak. If leaking does not cease, replace filter with the optional high-performance filter cloth:
- Continual operation of the machine will clog the filter and decrease suction power. Stop operation, shake the filter, and discharge the collected materials:
- Shaking and collected materials removal during operation is not possible:
- Since the dust pan is fixed with a spring, it catches when pulling it in and out. When inserting, insert the pan until it clicks back into place.
- Be careful not to allow too much collected materials in the dust box. Also, if too much liquid is stored in the dustpan and spills out, it may leak from the front door. When removing the collected material, use suitable protective equipment, such as protective goggles, a dust mask, and gloves.
- If using the machine with collected materials accumulated in the machine between the workbench and the dustpan, the collected materials may be ignited by sparks.
- Perform a trial run and inspect according to instructions if using a machine that has been in stored or that was shutdown and has not been operated for a long time.
- Although the life of filter cloth varies depending on use time, characteristics of powder dust and dust amount, the usual lifespan is 1 to 2 years. If the suction power is not restored even after shaking, or shaking becomes heavy, replace the filter cloth.
- Filter cloth damage should not occur with normal use, but if it is damaged, stop operation and replace the filter cloth with a new one. Continuous use with a broken the filter cloth may cause not only powder dust to leak and be released to the atmosphere but also the blower to be damaged.

Hood

The door on the hood front side with protective acrylic window can be slid open upwardly. Operate this machine with the door closed. The blowing speed decreases if the door is slid upward. Also, do not operate with the protective cover opened just partway. The protective cover with acrylic window may close suddenly, causing injury,



Protective cover with acrylic window closed
(Recommended state during operation)



Protective cover with acrylic window open
(Wind speed slows down)



Protective cover with acrylic window opened
halfway
(May cause injury)

Shaking

Pull the shaking handle approx. 3 times while supporting the main body with hand to prevent it from moving. Return the handle so that the handle does not slack.



Coupler (When optionally included)

- The machine is equipped with a coupler for attaching the compressor and air tool hose couplers.

Coupler Specifications: **Nitto Kohki Super Coupler (socket • plug)**

- This optional feature can also be installed post-purchase at a later date.

Chapter 5 Maintenance and inspection



Perform maintenance and inspections to prevent malfunctions and accidents and ensure long life of this machine. Be sure to turn off the power supply before inspecting internally. While performing maintenance and inspection work or replacing the filter cloth, wear protective glasses, a dust mask, and gloves.

If this machine falls under the Industrial Safety and Health Act (Organic Solvent Ordinance, Lead Ordinance, Specified Chemicals Ordinance, Dust Ordinance), inspect this machine according to the periodic self-inspection guidelines specified by law.

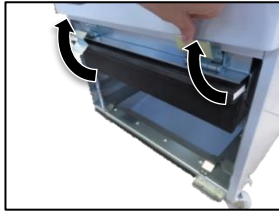
Inspection item and frequency

Inspection item	Frequency	Inspection details
Front door	Before operation	Is the door closed completely?
Dust pan	↑	Have collected materials been discharged?
Motor load current	Once/day	Inspect by ammeter on control panel, etc.
Exhaust condition	↑	Is there any dust leak through the filter?
Vibration of blower	↑	Is there no abnormal vibration or abnormal sound?
Shaking device	↑	Is there no abnormal sound or malfunction?
Filter cloth attachment	Once/month	Is there no detachment, looseness, breakage, etc.?
Each electric wiring	↑	Is insulation proper? Is there no looseness in the terminal?
Inside of main body	↑r	Clean stuck materials or powder. (Increase inspection frequency depending on use)
Main body	Once/year	Is there no corrosion or apertures/gaps/cracks?

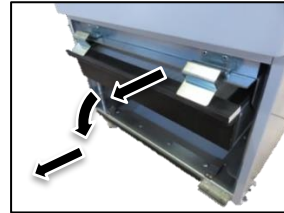
- When cleaning the outer or inner surface of the main body, wipe it with a waste cloth soaked in water or a neutral detergent. Wiping with a solvent such as paint thinner may cause peeling or discoloration of the coated surface.

Filter cloth replacement

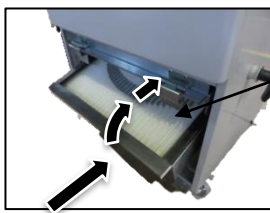
- (1) Pull out the dust pan, then pull up the filter cloth clip toward you.



- (2) Pull out the filter cloth and lower the front side of the filter cloth. Remove filter cloth.



- (3) Insert a new filter cloth in the direction shown in the following photo. Check that it is inserted into the groove at the back before pushing it in fully.



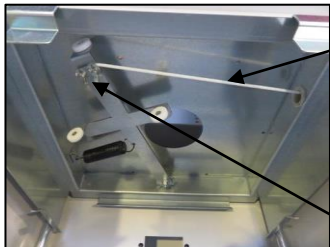
Pay attention to the direction.

- (4) Lift up the front side of the filter cloth and secure it with filter cloth clip. Insert the dustpan fully.

Shaking rope tension adjustment

If the shaking handle becomes loose or the filter cloth is replaced, adjust the shaking rope tension.

- (1) Loosen the two wing nuts for the rope holder and let the shaking handle come in contact with the main body. (Remove the filter cloth.)



Rope

Rope holder

- (2) While pulling the rope end, rotate the rope holder in the curved arrow direction by 2 to 3cm.



- (3) Tighten the wing screws of the rope holder while pulling the rope.



Detail of rope holder

Note: Even after rope tension adjustment, some air leakage may occur where the rope passes through, but that will not affect the performance of this machine.

If the rope breaks or is worn severely, replace it with a new one.

Replacement rope	Starter rope (Nylon solid braided rope)	Φ4 mm × 50-60 cm
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Ropes are also available at home improvement stores, etc.

Size of replacement filter cloth

Size of filter cloth	Number of cloths used
420 mm x 420 mm x 75 mm	1

Use our genuine filter cloth for replacement.

Wear protective glasses, a dust-proof mask, and gloves during replacement work.

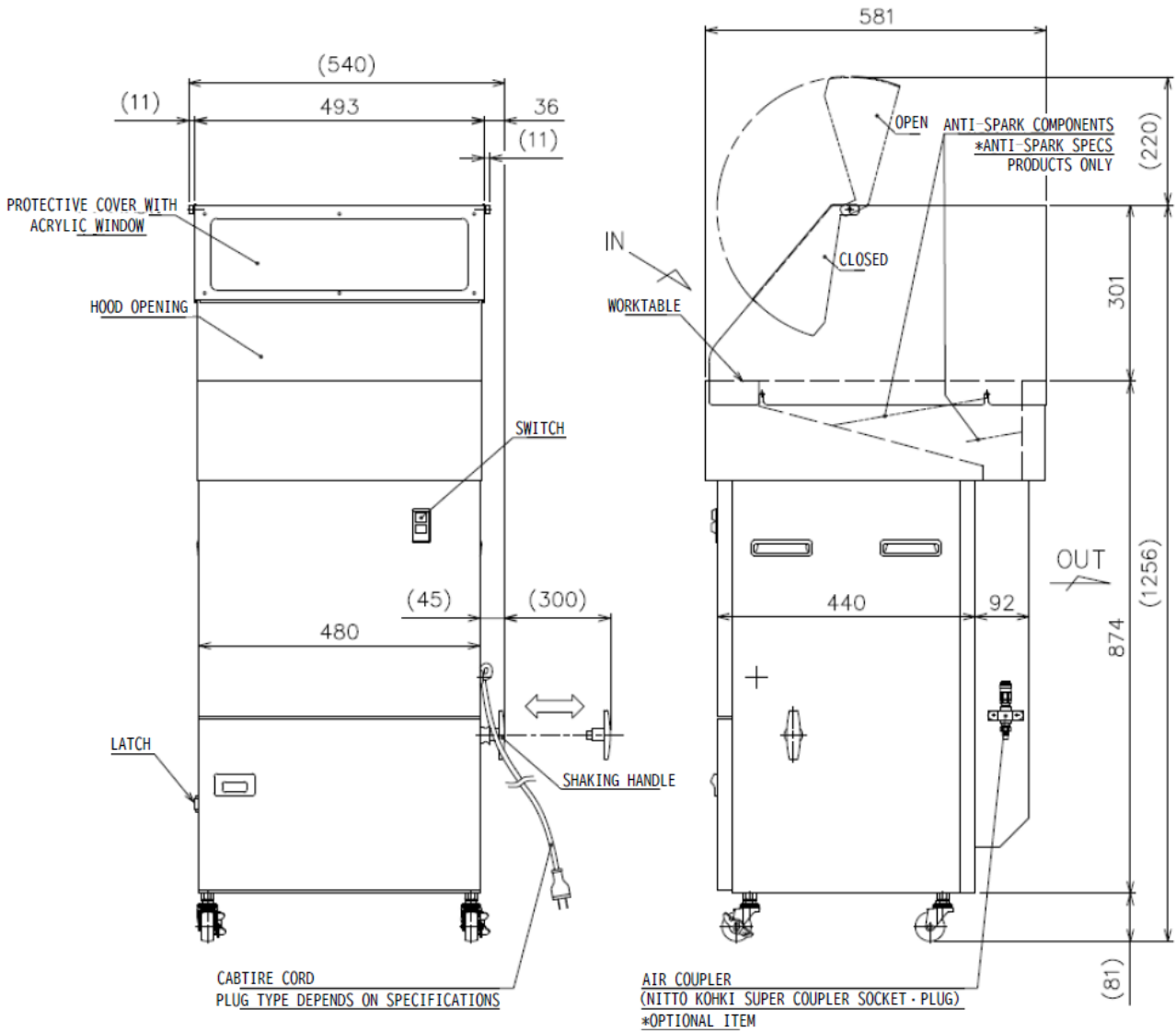
Troubleshooting

Malfunction	Cause	Solutions and Countermeasures
Blower motor does not start.	<ul style="list-style-type: none"> Power supply is not turned on The thermal protection has activated. Motor failure 	<ul style="list-style-type: none"> Turn on the power supply Investigate root cause, resolve issue, and restart the machine. Inspection or replacement (Consult us.)
Abnormal sound from the blower Abnormal vibration	<ul style="list-style-type: none"> Damaged motor bearings Contamination by foreign matter Impeller imbalance 	<ul style="list-style-type: none"> Replacement of bearing (or motor replacement) Removal of foreign matter Cleaning of impellers Imbalance correction (Consult us,)
Dust leakage	<ul style="list-style-type: none"> Damaged or detached filter cloth Deterioration of packing Too fine powder dust 	<ul style="list-style-type: none"> Replacement or reattachment of filter cloth Packing replacement Replace current filter with high-performance filter.
Weak suction power.	<ul style="list-style-type: none"> Suction duct etc. is clogged or blocked. Clogged filter cloth 	<ul style="list-style-type: none"> Remove blockage Refer to the next item
Clogged filter cloth	<ul style="list-style-type: none"> Aging filter cloth Unsuitable dust characteristics 	<ul style="list-style-type: none"> Replacement of filter cloth Other measures required (Consult us.).

Specifications (Standard specifications, Spark countermeasure specifications)

Frequency	50Hz or 60Hz
Hood face velocity	1.2m/sec
Body dimensions	545mm × 537mm × H1281mm (H1476mm when protective cover with acrylic window is fully open)
Body mass	70/68kg (Spark countermeasure type: 72/70kg)

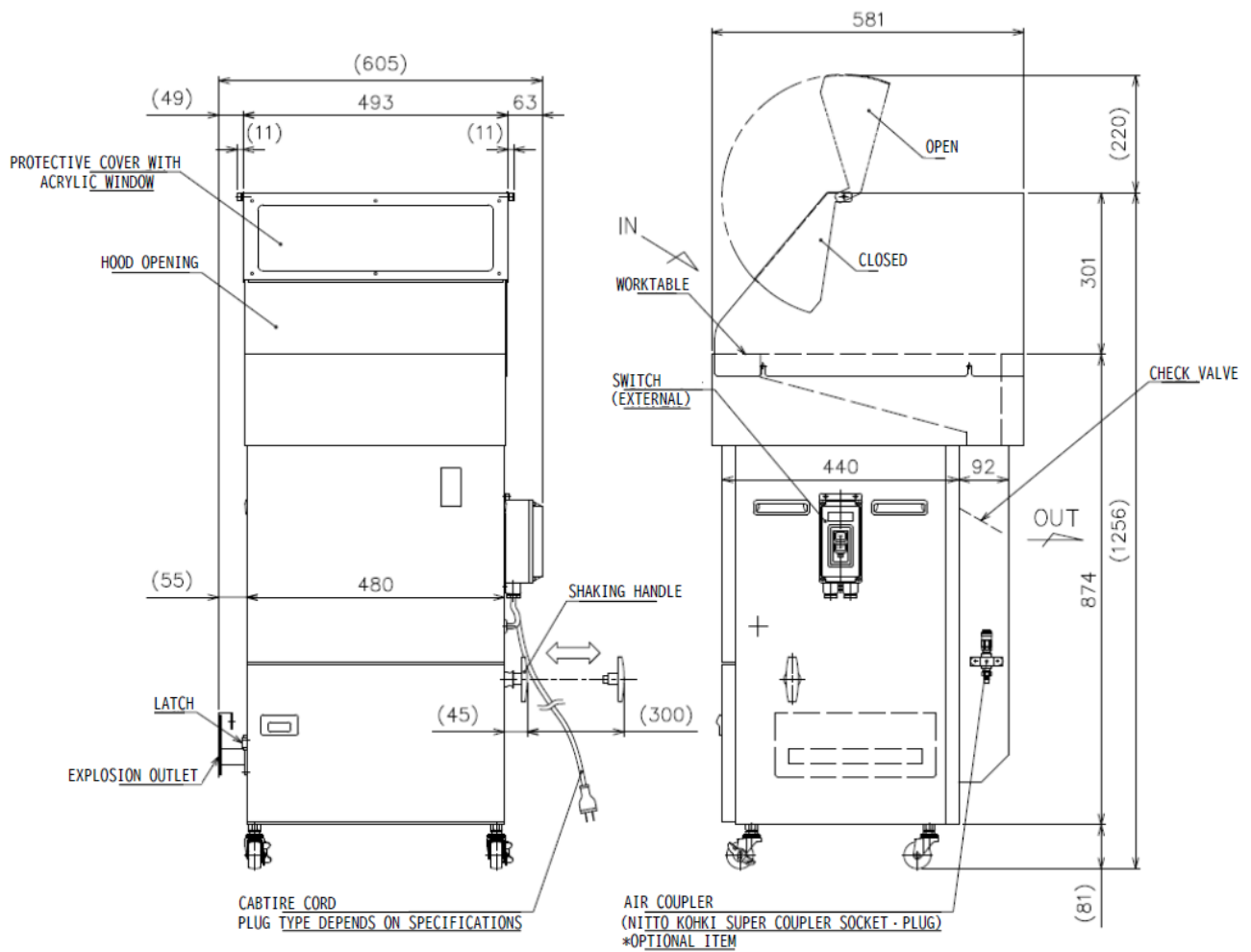
Outer dimensions (mm)



Specifications (Simple explosion-proof specifications)

Frequency	50Hz or 60Hz
Hood face velocity	1.2m/sec
Body dimensions	545mm × 537mm × H1281mm (H1476mm when protective cover with acrylic window is fully open)
Body mass	74/72kg

Outer dimensions (mm)



■ Chapter 6 Disposal

- **Collected materials**

Properly dispose in accordance with relevant national and local laws and regulations.

- **Used filters**

Properly dispose in accordance with relevant national and local laws and regulations.

- **Waste cloth for cleaning containing collected materials**

Properly dispose in accordance with relevant national and local laws and regulations.

- **Materials no longer needed post-replacement**

Properly dispose in accordance with relevant national and local laws and regulations.

- **Disposing of this machine**

Remove the collected material adhering to the machine and recycle the machine as metal waste. Properly dispose of filters and waste clothes for cleaning in accordance with relevant national and local laws and regulations.

■ Chapter 7 Warranty statement

If a malfunction of the machine occurs within the warranty period despite normal usage conditions in accordance with cautions in the instruction manual and labels on the main body, we will repair the product free of charge according to the contents of this warranty statement.

Warranty period

The warranty period shall be 12 months after the date of delivery.

Warranty coverage

If a malfunction occurs under normal use conditions within the warranty period due to a manufacturing defect, we will repair or replace the parts in question free of charge.

However, secondary loss resulting from the malfunction such as opportunity or operation loss are not covered by this warranty.

Repair or replacement costs will be charged in the following cases, even within the warranty period.

- ◇ Malfunctions and damages due to improper use and repair or modification not in accordance with the cautions in the instruction manual, attached labels, etc.
- ◇ Malfunctions and damage due to transportation, drop by mishandling, etc. after purchasing
- ◇ Malfunctions and damages due to environmental factors such as fire, earthquake, storm and flood damage, lightning strike or other natural disasters, salt damage, pollution, abnormal voltage, or use of power supply (voltage, frequency) other than the specified, etc.
- ◇ Malfunctions and damages due to repair and modification by parties other than our company (including drilling holes into the product)
- ◇ Malfunctions and damages due to use of parts other than specified by our company
- ◇ Malfunctions and damages due to powder dust intake other than as was discussed and consulted with our company
- ◇ Malfunctions and damages due to damage done to the filter cloth and packing by intake of sharp materials
- ◇ Problems such as discoloration, wear, or marks due to aging or use.
- ◇ Malfunctions or damages induced by failure to perform maintenance and inspections as specified in the instruction manual
- ◇ Replacement of consumable parts such as filter cloth and packing.

* Note

- (1) The content of this instruction manual is subject to change without notice.
- (2) Every effort has been made to ensure the contents of the manual are correct. However, if there is an unclear point, error or omission, contact our nearest branch or sales office.
- (3) If the frequency of power supply is changed due to a change in place of use, the fan must be replaced. Contact our nearest branch or sales office.
- (4) When making an inquiry, please inform us of the model and manufacturing serial number listed on the product nameplate.

Notes : We are not responsible for any accident or malfunction caused by usage not in accordance with this manual, or improper repair or remodeling.



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