

# Operation Manual for

## Dustrésa

CFA-H410  
CFA-H515



# Introduction

Thank you for choosing our Dustrésa dust collector in the CFA series from among so many similar products on the market.

Showa Denki, as a dedicated manufacturer of blowers and dust collectors, has supplied innovative products developed by making the best use of its flow and rotary machine expertise. Compact, yet featuring high performance and low energy consumption, your Dustrésa will serve you for long safe and sound as long as you follow the instructions in this manual.

It is recommended that you keep the manual on hand for quick reference.

This manual contains all necessary information from installation to operation about the following varieties of Dustrésa:

CFA-H410  
CFA-H515

## Symbols used herein

The symbols and headwords found in this manual respectively have the following meaning:

 <b>Warning</b>	If failed to observe the relevant instructions, it could cause death or serious injury.
 <b>Caution</b>	If failed to observe the relevant instructions, it could cause injury or property damage.



indicates what must not be done.



indicates what requires the use of good care.



indicates what must be done.

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## **Warning**



Any Dustrésa must not suck the following things:

- **A lit cigarette or match, hot dust**

- **Sander or grinder sparks**

The filter cloth of the dust collector is flammable. The filter cloth may be ignited by a spark, causing a fire.

If a fire occurs in the dust collector, immediately turn the switch off and supply fire extinguishing agents, which are suitable for the dust particles to be suctioned, to the intake port. After that, block both the intake port and exhaust port. Do not open the front door until the temperature inside the dust collector lowers.

- **Flammable gases from petrol, thinner, etc.**

Sparks from the incorporated electric components, static and contact of metals can cause an explosion.



Do not operate the Dustrésa with its maintenance door opened because it could be closed by negative pressure inside catching your fingers and/or the motor overloaded.



Do not ride on the Dustrésa because it could be deformed or you could fall.



The wooden pallets and wooden frames used for shipping the product use nails.

When unpacking the wooden packing materials, immediately remove the nails. Protruding nails may cause personal injury.



Before performing the maintenance and inspection work, be sure to turn the power off, lock the circuit breaker or power distribution panel, and post a sign stating that an inspection is underway. Take appropriate measures so that a third person does not turn the power on accidentally. (Ordinance on Industrial Safety and Health, Article 107)

This dust collector cannot suction metal powder particles such as aluminum, magnesium or titanium dust; grain powder particles such as flour or starch dust; flammable powder dust particles such as wood flour, resin powder particles or carbon dust; or flammable gases. A powder dust explosion due to static electricity may occur inside the dust collector. When handling these powder dust particles, be sure to use a dust explosion proof model.

The design service life of this product is eight years except excluding its consumable parts. When the product is used for an extended period of time exceeding the design service life, the risk of failure or malfunction increases.

# **Caution**



The Dustrésa should not suck the following things which can cause it a failure:

- **Hot gas**

The gas heated to 40°C or more would deteriorate the insulation of electric components inside the dust collector.

- **Water, oil, adhesives and adhesive dust**

They would adhere to the filter cloth causing it blinding.

- **Work, tools and other solid objects than dust**

They could damage the ducts and filter cloth.

- **Particulates** (5 μ or smaller) of carbon and other materials

Use a high-performance filter cloth as the standard type can allow leaks.

- **Lightweight dust** including feather, cotton dust, polystyrene foam dust

They would adhere to the inside of the dust collector.

- **Highly abrasive powder dust particles** such as glass powder particles or polishing agents

Holes may be opened in the filter cloth by abrasion, causing powder dust particles to leak. Furthermore, holes may also be opened in the duct or main unit.



Do not apply high pressure on the Dustrésa with a pressurizer.



Do not directly connect an inverter to the machine; otherwise, other internal circuits for the pulse control than that of the motor could be damaged.



Handle powder dust particles collected by the dust collector correctly according to the national or local governmental regulations in the same manner as disposal parts such as old filter cloths to which powder dust particles are adhered, except when reusing them.

In addition, when disposing of a dust collector that is no longer used, remove powder dust particles adhered to the main unit and recycle the unit as metal waste. Handle other parts to which powder dust particles are adhered according to the relevant laws.



Before performing the maintenance and inspection of pneumatic units such as the FR unit, be sure to release the residual pressure inside the main unit. To release the residual pressure, stop the air supply and loosen the drain valve on the FR unit to exhaust the air from inside the main unit.

This dust collector operates based on the assumption that the particle diameter of the target dust is 5 μm or more with the standard filter cloth and 1 μm or more with the optional high performance filter cloth. The dust amount is 1 g or less for an air volume of 1 m<sup>3</sup>/min. If the dust collector suctions powder dust particles exceeding this range, dust leakage, increase in filter cloth pressure loss, or clogging may occur.

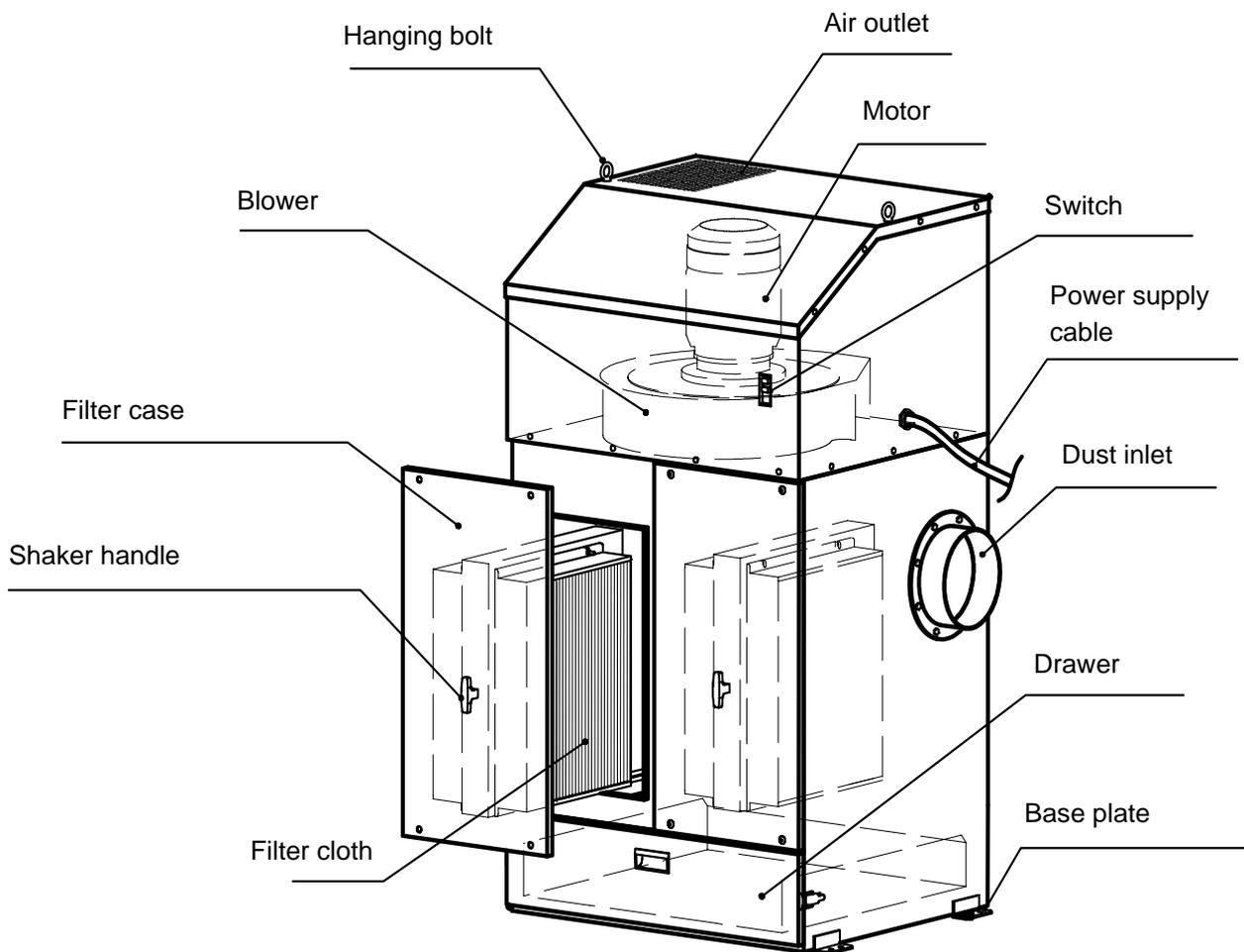
## Chapter 2 Outline of the dust collector

### Configuration

The dust-containing air sucked from the inlet port is dispersed and led to the filter cloth that purifies the air. Then the air is filtrated by the filter cloth into pure air which is passed through the blower and discharged from the outlet in the machine roof into the atmosphere. Dust deposited on the filter cloth is shaken off by pulling the front lever several times after the blower has stopped. The shaken off dust is collected in the drawer at the bottom of the machine and discharged from the machine's front.

The CFA-410 and CFA-515 dust collectors have the following features:

### Components



## Chapter 3 Installation

Upon receiving the product, please examine its nameplate to see if the type, voltage and frequency indicated on it conform with those of the ordered product. Also, check up the accessories for conformity. In case of any damage to the product caused during transportation or a shortage of parts, please immediately contact the relevant retailer or a nearby branch or sales office of Showa Denki.



Install the dust collector in a place fulfilling the following conditions:  
**Indoor places not get wet by rainwater**



Dust collectors in the CFA 410, 515 are designed for indoor use.

For installation, avoid places liable to get wet that may induce an electric shock and a product failure.

### No dew condensation at room temperature

Ambient temperature: 5°C to 40°C

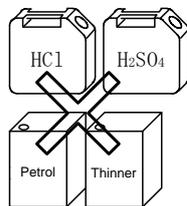
Humidity: not higher than 80%

High temperatures and dew condensation could cause an electric component failure and/or an electric shock.

### Horizontal places free from vibrations

Unusual vibrations could cause the product topple over.

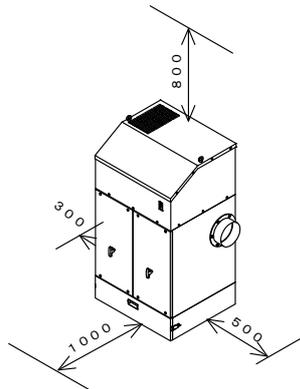
### No hazardous chemicals stored around



Places close to stored petrol, thinner, and other flammable chemicals have the possibility of an explosion and/or a fire.

Places near the chemicals, like hydrochloric acid and sulphuric acid, that produce a corrosive gas could cause the product to corrode.

### Places easy for maintenance



Unit: mm

Spaces as illustrated on the left must be secured for dust discharge, filter cloth replacement and purified-air release.

## Installation



- When moving the machine body, use its hanging (ring) bolts and handle the body very carefully without giving it impact. Never hang the body at one point. This work should be undertaken only by qualified persons.
- As its standard installation, the machine should be fixed on a concrete floor with anchor bolts. Use liner to regulate any gap between the machine and the floor. Use the base plate net for leveling work.



- Keep an adequate space above the outlets on the machine's roof because if they were blocked, the machine would fail to display its design suction power. Do not put any object on the outlets.

## Electrical wiring



- Only qualified persons should work on the electrical wiring of the dust collector pursuant to the Electrical Equipment Technical Standards and the Internal Wiring Regulations.
- Make sure of the machine's power supply as per its nameplate and use what is specified therein. Operating the machine on a different power supply could be very dangerous causing an operation failure.
- The breaker and earth leakage breaker of the power supply should be compatible with the start-up current value. Also, be sure to earth the machine if the power supply is connected to it.

## Hood and connection of the duct

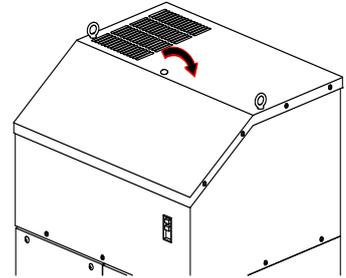
- Dust collection method and suction air speed (controlled air speed) may vary depending on the kind of dust and the condition of scattered dust. Generally, the suction air speed in the hood opening vicinity should be designed to be 0.5 m/sec. or faster. Also, it is desirable that the airflow in the duct is 15 m/sec. or higher.
- The duct joints should be tightly sealed so no air may be sucked or leaked through them.
- If a flexible duct is used, do not bend it acutely or let it sag, or the suction power may drop.
- The suction port is factory-set on the machine's left flank, which may be changed to the left flank by changing the port with the suction cover.

For detailed information about the choosing of hoods and ducts, please call our nearby branch/sales office.

## Trial operation



- Before a trial run of the dust collector, make sure:
  - that the installed machine has no backlash or play;
  - that the power supply cable, earth cable, insulation and voltage have been arranged as specified;
  - that the filter case and the drawer are securely mounted in position.
- With the above points confirmed, turn on the power switch and turn it off quick and observe the rotation direction of the motor cooling fan. The motor cooling fan may be seen from the peeping hole in the machine's roof. If it turns clockwise, it is alright. If it turns counter-clockwise, then turn off the power supply and change the connections of 2 cables of the 3 power supply cables.



## Chapter 4 Operation

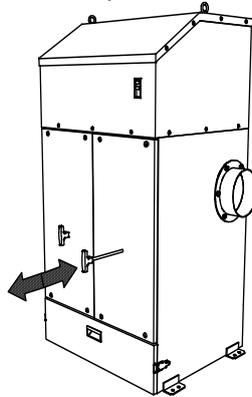
### Routine operation

Operation procedures:

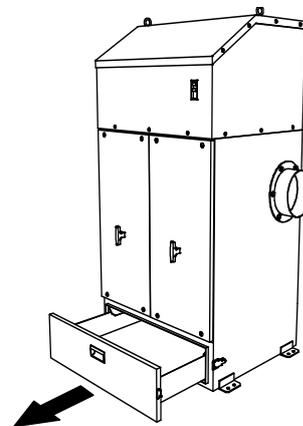
- [1] Make sure that no dust remaining in the drawer.
- [2] Check up the filter case and the drawer to see if they are securely mounted in position.
- [3] Turn on the power switch to start operation.

End operation procedures:

- [1] Turn off the power switch.
- [2] Wait some 2 minutes, shake off the dust and discharge the dust collected in the drawer.
- [3] Clean dust from the drawer and its vicinity and insert the drawer back into position.



Shake dust off the filter cloth by operating the shaker handle back and forth.



Pull out the drawer and discharge the collected dust from it.



## Caution

- When operating the power switch, press it quick and securely. Insufficient switch operation could induce a machine failure due to heating and damage caused to the machine.
- Although, in case of fine dust, a small amount can leak from the dust collector at its start, this phenomenon will disappear when dust deposits on the filter cloth overall. If, however, the leakage continues, replace the cloth with the optional high-performance type.
- Since continuous operation of the dust collector would blind the filter cloth and cause the suction power to drop, stop operating the machine and go through the shaking-off and discharge steps in such a case.
- To shake off dust, pull the shaker handle and let it back. Repeat this procedure approximately 5 times for both of the two filters.



- Although the shaker handle is equipped with a spring, keep holding the handle and let it return gently to its original position.
- During operation, the shaking-off and discharge procedures are disabled.
- Discharge the collected dust at the end of the day's operation of the machine. Wear protective goggles and gloves and a dustproof mask during dust discharge.
- Do not allow too much dust to deposit in the drawer. The dust with a large specific weight, in particular, should be discharged earlier.



- The filter cloth's life is one to two years on the average, which, however, depends on the machine's operation time and dust attributes and concentration. Replace the cloth with a new one if the shake-off procedure fails to recover the suction power.
- Although the filter cloth may not be damaged by usual operation, stop the machine operation and replace the cloth with a new one if it is damaged. Using a damaged filter cloth could not only allow dust to be released into the atmosphere but damage the built-in blower as well.

## **Chapter 5 Maintenance**



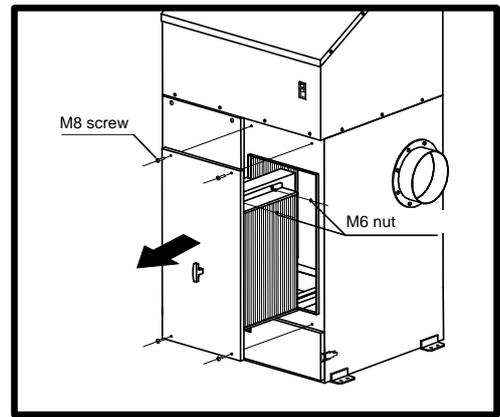
Be sure to maintain the dust collector at regular intervals. This is important to prevent the machine's failure or accident and keep it serving you for many years to come. The power supply should be turned off before inspecting the inside of the machine. During inspection, wear protective goggles and gloves and a dustproof mask.

### **What and when to inspect**

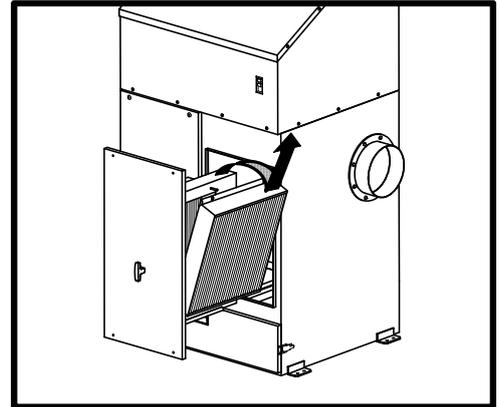
What	When	Description
Filter case, drawer, inside of drawer	Before operation ↑	Must be fixed securely in position. Cleared of collected dust.
Motor load current	Once a day	Inspected and recorded by reading the control panel ammeter.
Exhaust air	↑	Dust must not leak.
Blower vibrations	↑	No vibrations or noise
Shaker	↑	No noise or operation error
Filter cloth application	Once a month	Cloth must not come off, loosen or damage.
Piping	↑	No bolt coming off or loosened or no worn-off packing
Ducting	↑	No dust deposits or clogs
Electrical wirings	↑	No poor insulation or loosened terminal
Inside of the machine	One a year	Clean the components of adhered dust
Door, drawer packing	↑	No damage or deterioration
The machine and its casing	↑	No corrosion or gap

## Replacing the filter cloth

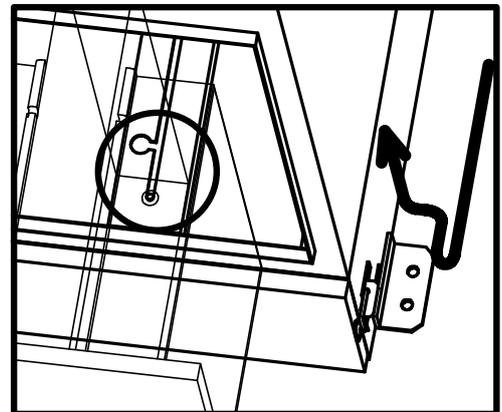
- (1) Pull out the filter case by loosening the four M8 screws. The guiderail stops the case when it is fully drawn. If the case must be taken out of the machine for maintenance, follow the procedure described in Step 3 below.



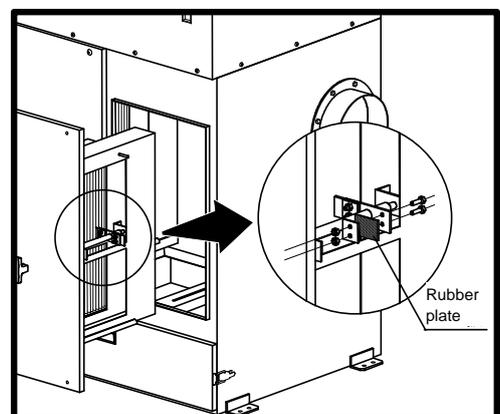
- (2) Detach the filter cloth by loosening the M6 nut that retains the upper part of the cloth.



- (3) To detach the filter case from the machine, draw out the case to its limit and then slightly push it back, press it to the left and lift it up.



- (4) When replacing the filter cloth, replace the rubber plate of the shaker unit with a new one as well.



- (5) Attach a new filter cloth following the steps reverse to the above procedure.



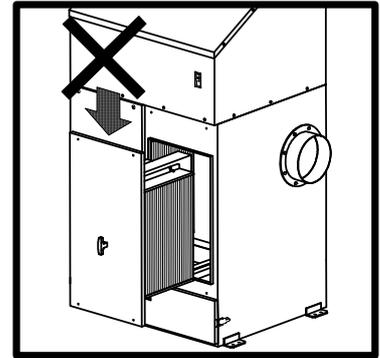
## Caution



- During the replacement work, wear protective goggles and gloves and a dustproof mask.



- Do not hold down the filter case too strong while it is pulled out.



- The shaker rubber plate also has its lifetime. So, replace the plate with a new one if the shaker is frequently used or even if the filter cloth is not replaced over a long period of time.
- Replace all the filter cloths simultaneously. Be sure to use our genuine cloths only.

Filter cloth size

Type	Cloth size	Number of cloths applied
CFA-410	420 mm × 565 mm × 75 mm	4
CFA-515	420 mm × 565 mm × 95 mm	4

Shaker rubber plate

Common with all machine models

8 pcs./machine

## Troubleshooting

Symptom	Possible causes	Remedies
Blower motor fails to start	<ul style="list-style-type: none"> <li>• Power absent</li> <li>• Thermostat activated</li> <li>• Motor failure</li> </ul>	<ul style="list-style-type: none"> <li>• Turn on the power supply.</li> <li>• Turn off the switch, determine the cause(s), remove it (them) and restart.</li> <li>• Inspect and repair the motor (Consult the manufacturer).</li> </ul>
Blower noise, unusual vibrations	<ul style="list-style-type: none"> <li>• Broken motor bearings</li> <li>• Foreign matter mixed</li> <li>• Impeller out of balance</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the bearings.</li> <li>• Remove the foreign matter.</li> <li>• Clean the impeller.</li> <li>• Correct the imbalance (Consult the manufacturer).</li> </ul>
Blown dust leakage	<ul style="list-style-type: none"> <li>• Broken filter cloth</li> <li>• Filter cloth mounting error</li> <li>• Packing worn off</li> <li>• Dust particles too fine</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the filter cloth.</li> <li>• Remount the filter cloth.</li> <li>• Replace the packing with a new one.</li> <li>• Replace the filter cloth with a higher-performance version.</li> </ul>
Poor suction power	<ul style="list-style-type: none"> <li>• Damper closed</li> <li>• Inlet piping clogged</li> <li>• Filter cloth blinding</li> <li>• Using both side of suction port</li> </ul>	<ul style="list-style-type: none"> <li>• Open the damper.</li> <li>• Clear deposit from the piping.</li> <li>• See the following item.</li> <li>• Please make piping branch only on one side of suction port and pipe it again.</li> </ul>
Filter cloth blinding	<ul style="list-style-type: none"> <li>• Filter cloth's life</li> <li>• Poor dust condition</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the cloth with a new one.</li> <li>• Effective measures should be taken separately.</li> </ul>
	<ul style="list-style-type: none"> <li>• Too much quantity of dust</li> </ul>	<ul style="list-style-type: none"> <li>• Please install pretreatment device like cyclone, sedimentation box etc.</li> </ul>
	<ul style="list-style-type: none"> <li>• Because of too high filtering speed, dust enters into the meshes of filters and cannot be removed by dust removing system.</li> </ul>	<ul style="list-style-type: none"> <li>• Control suction amount by using damper etc.</li> </ul>

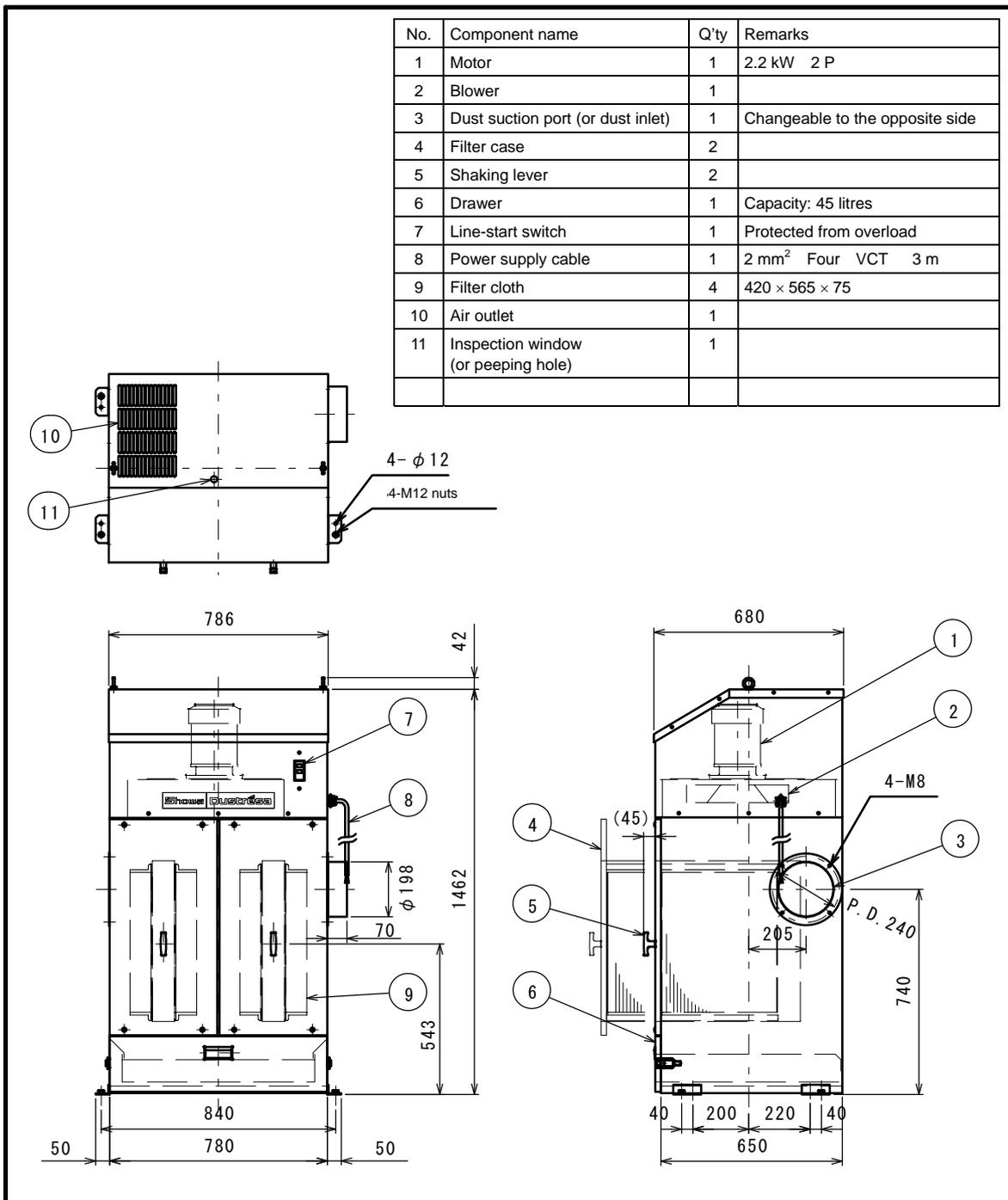
## Specifications

Type	Motor kW-P	Airflow rate m <sup>3</sup> /min	Static pressure kPa	Filtration area m <sup>2</sup>	Drawing capacity L	Noise level dB(A)	Product mass kg
CFA-410	2.2-2	30	2.45	10.6	45	64	182
CFA-515	3.7-2	40	2.45	14.1	68	67	240

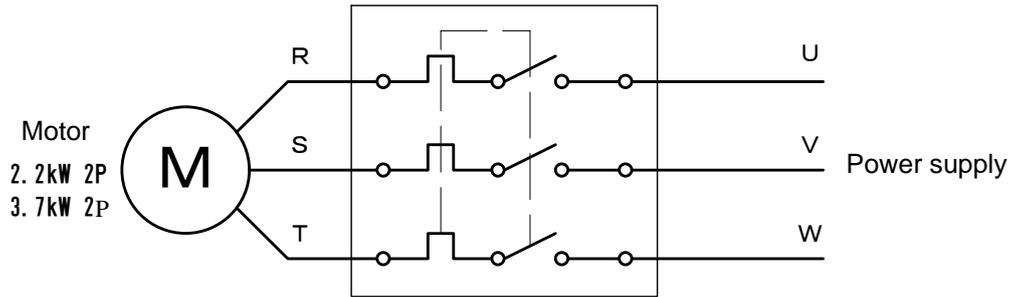
Note: The noise level may vary depending on the machine operation environment and condition.

## Dimensional outline drawing & internal structure drawing

### CFA-410



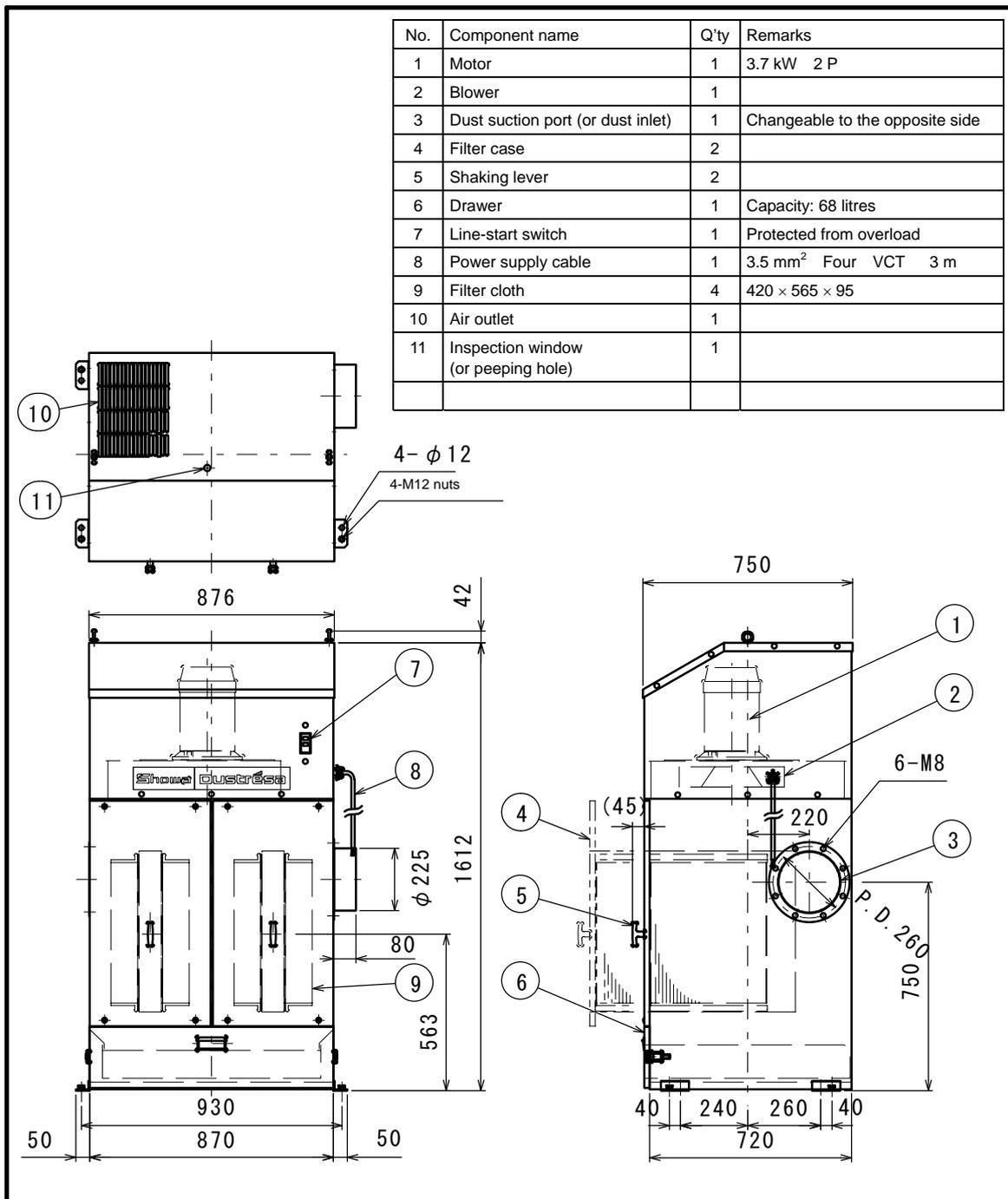
### Wiring diagram



Push-button switch with protection from overload

### Dimensional outline drawing & internal structure drawing

CFA-515



### **Scope of warranty**

Repair service is provided free of charge for a failure during the warranty period, as long as the blower has been used in compliance with these Operating Instructions, labels attached to the body, and other instructions.

In the case that this product is incorporated into other equipment used by the customer, the warranty does not cover costs for removal from such equipment, reattachment to such equipment, costs of other incidental work, costs of transportation etc., resulting opportunity loss incurred by the customer, lost operation, or any other indirect loss or damage suffered by the customer.

- For requests for repair service, please contact our nearest branch or sales office.

### **Warranty period**

One (1) year from the date of delivery of the product.

### **Even during the warranty period, only charged service is provided in principle, if any of the following applies:**

- Failure or damage due to incorrect use that is not compliant with these Operating Instructions, labels attached to the body, or other instructions, and/or unauthorized repair or modification
- Failure or damage due to transportation, dropping, etc. after the purchase
- Failure or damage due to fire, earthquake, storm, flood, lightening or other natural disasters, environmental factors such as salt damage and public pollution, abnormal voltage, use of a power supply (voltage or frequency) other than that specified, or the like
- Failure or damage due to repair or modification (including punching, etc. in the product) not conducted by our company
- Failure or damage due to the use of parts other than those designated by our company
- Trouble when I absorbed the dust except the meeting and the damage
- The trouble that damage of the filter cloth and the packing that happened by having absorbed a sharp material depends on and the damage
- Discoloration, scratching, natural consumption of consumable parts or other defects due to use or deterioration over time
- Failure or damage caused by neglecting the maintenance and inspection described in the Operating Instructions
- Expendable supplies including the filter cloth and packing

### **We will not compensate for any loss or damage resulting from defects that occur during the use of this product.**

[Notices]

- (1) The descriptions in these Operating Instructions are subject to change without prior notification in the future.
- (2) We have made all possible efforts to prepare these Operating Instructions. However, if you have any questions about them or find any inquiries, errors, omissions, etc., please contact our nearest branch or sales office.
- (3) If the power supply frequency changes due to a change in the location where the blower is used, it may not be used as it is. We will consider a measure in each case where it is required. In such a case, please contact our nearest branch or sales office.
- (4) At the time of inquiry, please describe the product type and the manufacturing number indicated on the product nameplate.

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**Notes** : We are not responsible for any accident or breakdown caused by different/wrong use from this manual, and improper repair or remodeling.



**Business Promotion Dpt.**

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