

Mistrésa

Operation Manual & Cautions



CRD-H Series



CRN Series




CRH-H Series



CRH Series

Thank you for purchasing the Mistresa from Showa Denki. This manual explains the specifications for the **[Mistresa units from CRD-H Series, CRH-H Series, CRN Series, and CRH (High Temperature Types) Series]**.


Please read the operating instructions and cautionary information carefully to ensure that the Mistresa is used in a **safe and efficient manner**. Special attention should be given to cautionary information **which bears the [] mark**.


Keep this manual in a secure location where it can be easily accessed.

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1. Cautionary information indications used in this manual

"[] **WARNING**" mark indicates cautionary information that, if not heeded, **could result in serious injury or death**, and could also pose a **fire hazard**.

A "[] **CAUTION**" mark indicates cautionary information that, if not heeded, **could result in injury and/or equipment damage**.

2. Meanings of symbol marks used in this manual



A prohibited action
(Target is unspecified)



Follow instructions
carefully



Failing to heed the
instructions could
result in accidents



Disassembly prohibited



Electrical ground required



Electrical shock hazard

**All warnings and instructions
must be strictly observed.**

3. Using the Mistresa in a safe manner



WARNING Do not install in hazardous locations

The Mistresa does not have a pressure and explosion-proof construction. Operating the Mistresa in areas where explosive gases, etc., are present could result in an explosion in the event of an electric motor burnout. (CRH-□□E Series except.)



WARNING Fire and explosion prevention

Never allow explosive gases, organic solvents, or flames to be sucked into the suction port. (CRH-□□E series, please use in the range of 8 page described.)



WARNING Fire and electrical shock prevention

The Mistresa wiring work must be performed by a qualified electrician, and must conform to the relevant electrical engineering standards and internal wiring standards.



WARNING Maintenance and inspections prohibited during impeller rotation

Always wait at least 2 minutes after a power OFF before performing filter replacement work or inspections (to allow the impeller's inertial rotation to come to a complete stop).



CAUTION Cautionary notes on using the CRD-H, CRH-H, and CRN Series Mistresa

Mistresa from CRD-H, CRH-H, and CRN Series use high efficiency motors (IE3) that are designed to have lower motor winding resistances than the standard motors (IE1 or equivalent) so as to reduce losses. Since this design feature calls for a higher starting current, replacing the motor of your existing Showa Denki's Mistresa may require to change the circuit breakers, thermal relays, and other relevant devices.



CAUTION For after installation transport

If you want to transport by installing the product on the device, please fix firmly with as rope hanging. It may cause malfunction or damage.



4. Items to check at product delivery

Although all our products are thoroughly tested and inspected prior to shipment, the customer should nonetheless check the following items when taking delivery of the Mistresa.

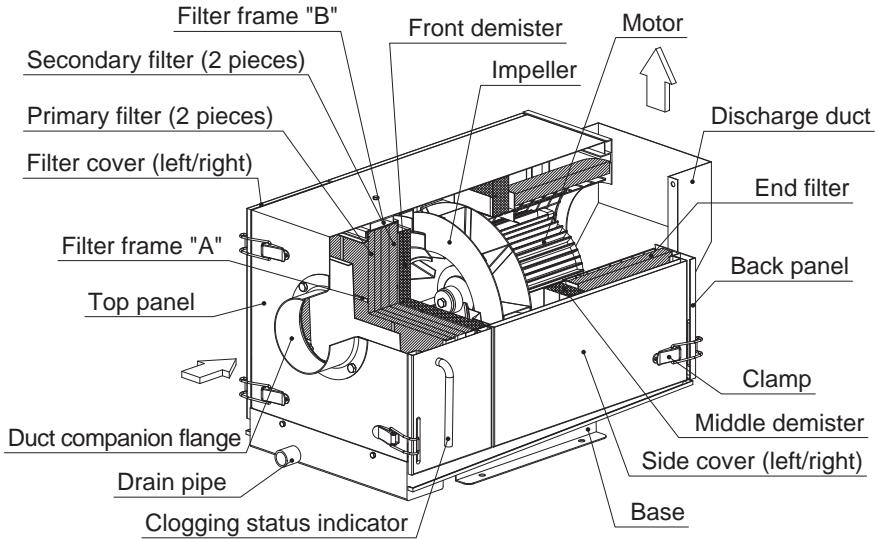
- Verify that the delivered product (model, etc.) is the same as that which was ordered.
- Verify that the product has not been **damaged or deformed**, etc., during shipment.
- Verify that all the product accessories are present.

Standard Accessories	Type	CRD-H Series	CRH-H Series	CRN Series	CRH Series
Operation & Cautions Manual	1 copy	○	○	○	○
Primary filter (for replacements)	1 piece	○	○	—	○
Drain tube 2.5m	—	1 piece	1 piece	2 pieces	2 pieces
Hose band (for drain tube)	—	1 piece	1 piece	2 pieces	2 pieces
Anti-vibration pads	4 pieces	○	○	○	○
Duct companion flange	1 piece	○	○	○	○
Packing (for duct companion flange)	*1 sheet	—	—	—	○
Bolts + nuts (for securing the duct companion flange)	4 sets	○	○	○	○
Crimp terminals (1 spare)	7 sets	○	○	○	—

* Two duct companion flanges come with the product – one for installing the product and the other for connecting with the next machine. The packings (for duct companion flanges) for CRD-H, CRH-H, and CRN Series are affixed to the duct companion flanges.

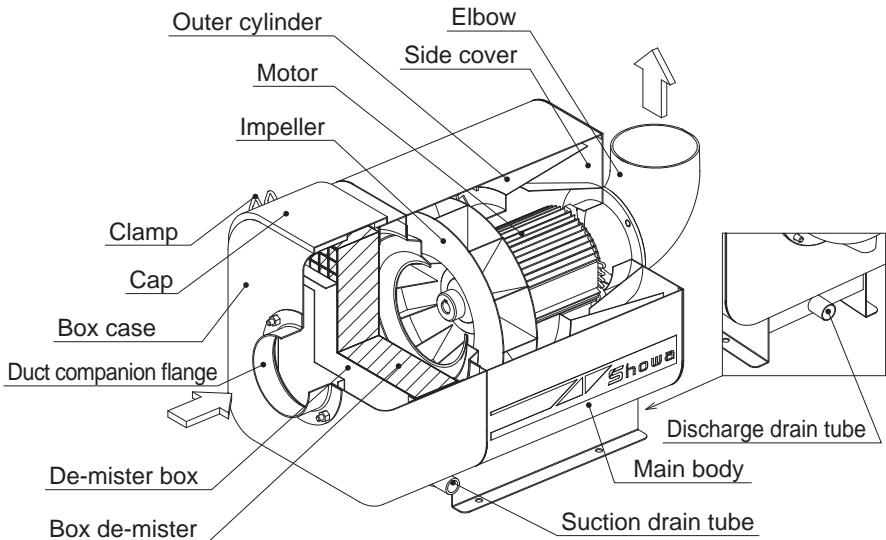
5. Internal component names and layout

(1) Internal component names and layout for CRD-H Series and CRH-H Series Mistresa



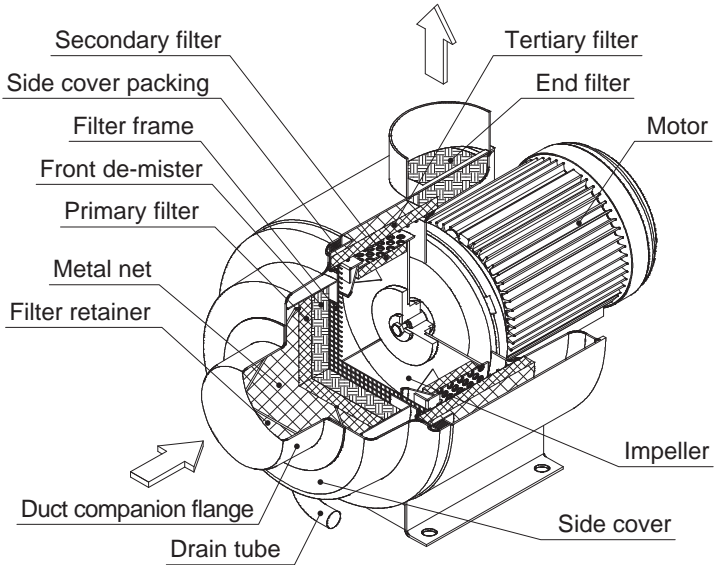
* The CRH-H Series do not come with the clogging status indicator.

(2) Internal component names and layout for CRN Series Mistresa

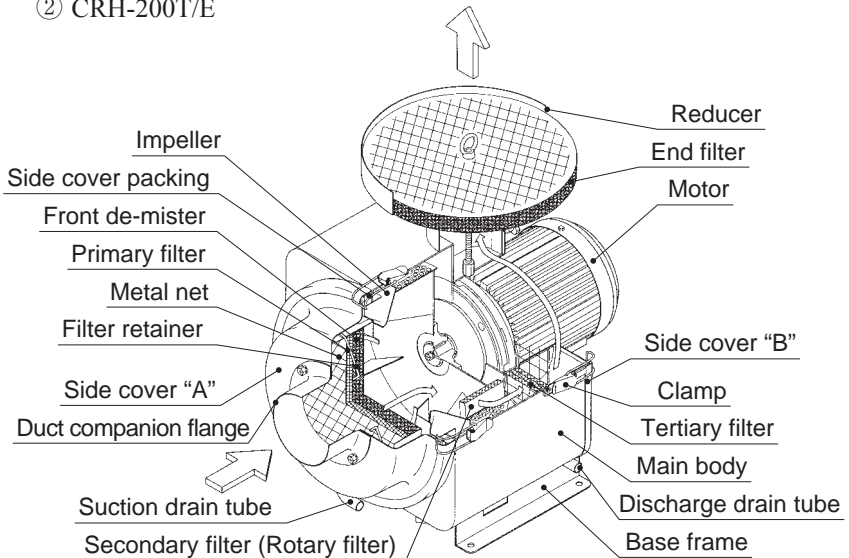


(3) Internal component names and layout for CRH Series Mistresa

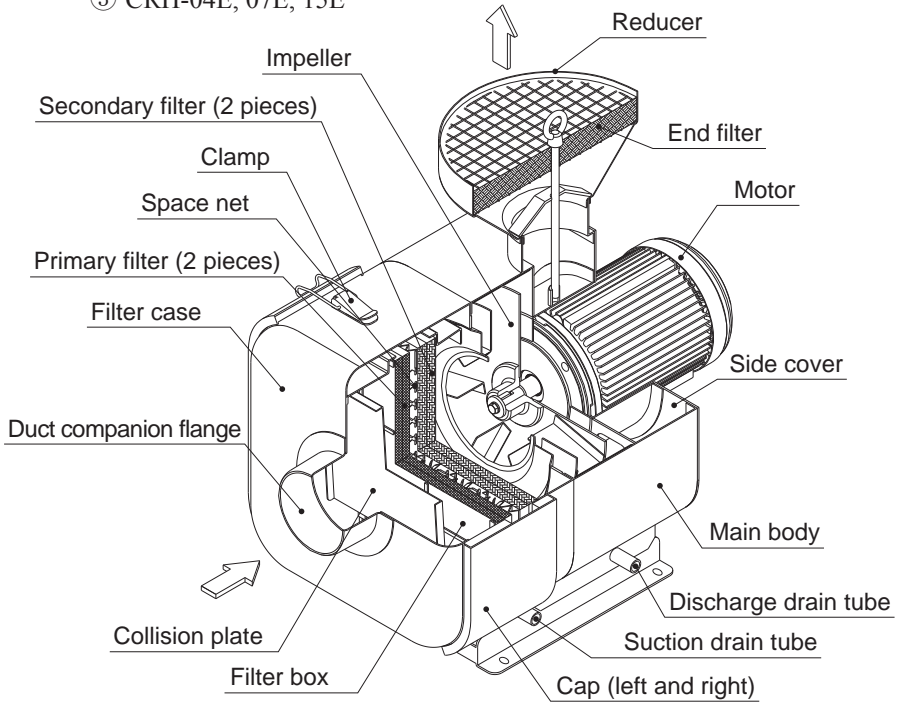
① CRH-100T/E



② CRH-200T/E



③ CRH-04E, 07E, 15E



6. Product labels

- (1) Product nameplate(motor nameplate).....At main body or base frame
The nameplate label contains the following information: product model, rated voltage, rated frequency, rated current, insulation class, max. static pressure, max. airflow rate, manufacture No., etc.

Note 1: The "ratings" are the operating limit values.

Note 2: The static pressure is the force which a gas flow applies to faces which are parallel to that flow.

- (2) Direction of air flow.....Top face of main body (CRN Series)

Suction side  Discharge side

- (3) Ground connection.....Inside the terminal box

The "⏚" mark indicates a ground connection.

Be sure that the mark-indicated part is securely grounded.

- (4) Caution label.....Located on the back panel.

To prevent the back panel from falling when removing it, support the panel with the hands while releasing the clamp.

Because the discharge port area is constructed from thin sheet metal, use care to prevent damage (deformation) when grasping this area to carry the unit.

- (5) Caution label.....Located on the filter cover.

Before using the product, be sure to remove the drop-prevention rubber bands used to secure the clogging status indicator during shipment.

- (6) Warning label.....Filter case (CRH Series)

Warning label that prohibits removing the caps or covers while the impeller is rotating

Wait for **[at least 2 minutes]** after turning off the power supply and before opening the caps or the covers. The inertia keeps the impeller rotating even after turning off the power supply. Otherwise, a **[finger or wrist]** injury could result.

- (7) Caution label.....Side cover or top panel (CRH and CRH-H Series)

Burn hazard. Do not touch the main body during operation or immediately after stopping operation. Burn could result.

7. Ambient temperature and intake air (suction port) temperature



CAUTION

Item \ Type	CRD-H Series, CRN Series	CRH-H Series, CRH Series <small>(High Temperature Types)</small>
Ambient temp.	50°C or lower	50°C or lower
Intake air (suction port) temp.	50°C or lower	50°C or lower

Failure to observe the above temperature limits could result in motor burn damage and component degradation. Be sure to operate within the above temperature range.

8. Suction port cautions



WARNING

NEVER allow the following items to flow into the product - Explosive gases, organic solvent, sparks, burning cigarettes and so forth. Otherwise, an explosion, fire or product damage could result.

Using a CRH-□□E Series product equipped with a quasi-explosion-proof motor, however, allows Class 2 petroleum mist (such as kerosene) and Class 3 petroleum mist or higher of Class 4 hazardous substances to flow into the product. However, make absolutely sure that the mist temperature is below the flash point.

Since the CRH Series Mistresa use oil seals on the shafts, be sure to make the mist flow into the product for lubrication. (See (6) in section “**Cautionary Notes on Operation**” on page 14.)

- * Class 3 petroleum mist having the flash point higher than 150°C may flow into the CRD-H, CRH-H or CRN Series Mistresa provided that the suction temperature of the mist is 50°C or lower (80°C or lower for the CRH-H Series). Be absolutely sure to use the burnout prevention terminals A and B (white leads) in the operation circuit so that the motor would not experience an excessive temperature.
- * Note that some mist substances may deteriorate the packings and filters.

9. Product installation

(1) Installation environment

⚠ CAUTION

- ① This product must be installed **indoors** only.
- ② Do not install in an environment where explosive gases, etc., may be present. (Excluding CRH-□□E Series Mistresa)

(2) Installation method

⚠ CAUTION

- ① Install in a horizontal (level) manner to evenly distribute the weight of the drain pipe discharge and the anti-vibration pads.
- ② When installing the product on top of another machine, etc., secure it with bolts to prevent shifting due to vibration.
- ③ Leave a gap at the securing bolts to allow the anti-vibration pads to function properly (See Fig.1).
- ④ The liquid seal surface should be 300mm or farther below the drain pipe in order to allow drain pipe discharge. An optional floor stand with a height of 600mm is available (see Fig.2) (For drain piping details, see page 8, item (3) "Drain tube piping").
- ⑤ Leave a 500mm margin of space at all sides of the product to permit filter replacements, maintenance, and inspections.

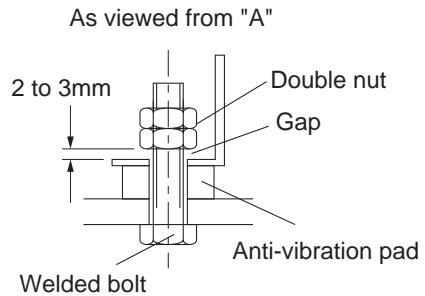


Fig.1

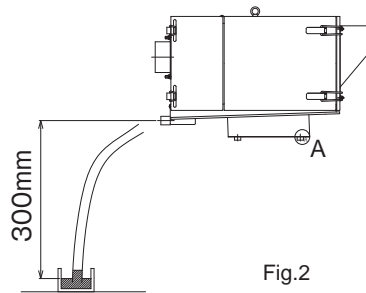


Fig.2

(3) Power supply connection

WARNING

- ① Be sure that the power supply conforms to the rated voltage and rated frequency requirements.
 - When using inverter controlled operation, protect the motor by incorporating the motor burnout prevention terminals "A" and "B" in the inverter's control circuit.

In addition, if it is inverter operation at different voltage (more than 380V), you will need a motor insulation strengthening.
 - Permissible voltage fluctuation range:
 - Continuous...Rated voltage within $\pm 5\%$
 - Momentary...Rated voltage within $\pm 10\%$
- ② Please connect the **ground wire** sure.
- ③ CRH Series: The impeller rotates clockwise when viewed from the motor. Make sure that impeller rotates in the correct direction before starting operation.

CRD-H Series, CRH-H Series, and CRN Series

: The impeller can rotate either clockwise or counterclockwise direction.
- ④ The terminals A and B (with white leads) on the CRD-H, CRH-H, and CRN Series are for motor burnout prevention. See (4) for their connection and use.
- ⑤ When using crimp terminals, either cover the crimp area with an insulation tube, or use insulated type crimp terminals.

Screw size	Tightening torque
M3.5	0.87N·m (max0.96N·m)

- ⑥ In electrical installation, use a cable lock or a similar item at the cable pull-in opening so that pulling force does not apply to the terminals.

(4) Using the burnout prevention terminals

The CRD-H, CRH-H, and CRN Series Mistresa have a heat-sensitive thermal protector at the motor winding. This auto reset thermal protector operates as follows. When the motor winding temperature rises excessively high, the relay contacts open. When the temperature comes back down to a certain temperature, the contacts automatically close again. Connect the thermal protector with the terminals A and B for burnout prevention.

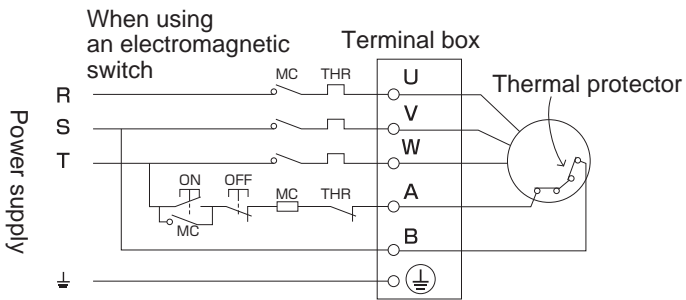
By connecting this terminal in series with the operating circuit of the electromagnetic switch (with thermal relay), to prevent motor burnout.

⚠ CAUTION

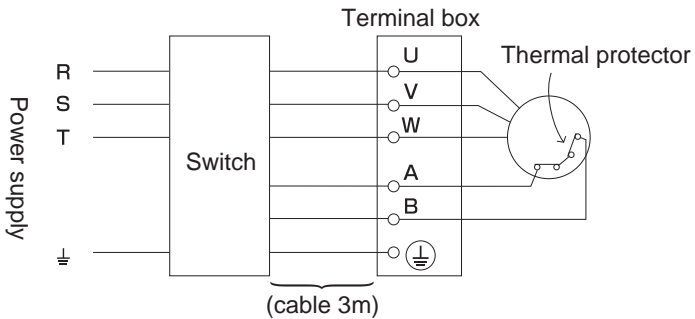
- ① Be sure to connect the "A" and "B" terminals to the operation circuit in order to protect the motor.
- ② Use the prescribed or lower contact rating (115V AC, 18A / 230V AC, 13A / 24V DC, 18A).
- ③ When the thermal relay is tripped, correct the cause, then press the [RESET] button.
- ④ The thermal relay may be erroneously tripped if the Mistresa is operated in an intermittent manner. In this case, change the thermal relay.

a) Connection example for burnout prevention terminals "A" and "B"

Electromagnetic switch device (with thermal relay) Please prepare.



b) Connection example when using the optional switch with built-in 3SW thermal and a 3m cable)



10. Piping

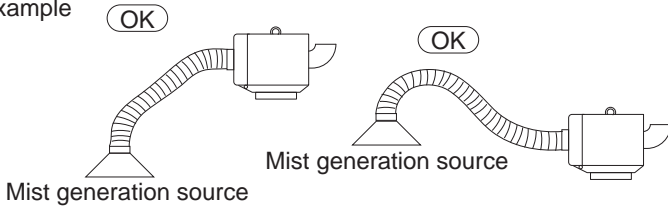
(1) Duct hose material

Because the life of the duct hose will vary according to the type of mist being sucked in, the use of an oil-resistant duct hose is recommended.

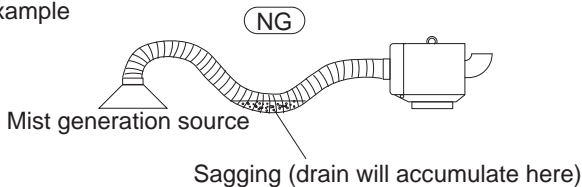
(2) Intake duct piping

- ① A flexible duct (optional item) should be used to facilitate easy duct maintenance and vibration resistance.
- ② The duct should be somewhat longer than strictly necessary (slight length surplus), but it must not sag when connected.
- ③ Use the duct companion flange (accessory item) to facilitate easy connection.

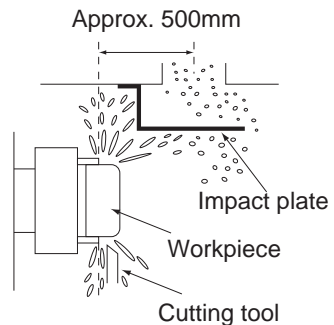
OK example



NG example



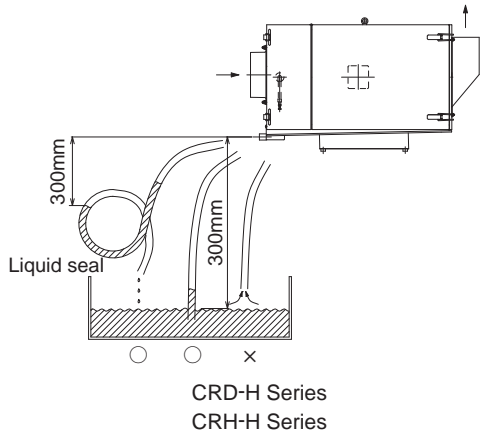
- ④ Positioning the intake port too close to the mist generation source could result in large amounts of mist, cutting chips, and dust to be sucked in, causing blow leakage and accelerated clogging of the filters and demister. Either provide an adequate distance (approx. 500mm) between the mist generation source and the intake port, or install an impact plate to prevent clogging from sucked-in mist, cutting chips, and dust.



(3) Drain tube piping

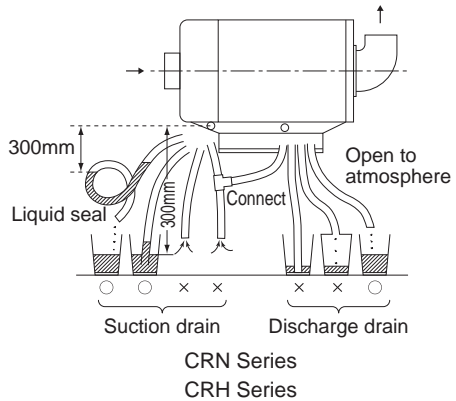
Install the suction drawing tube only for the CRD-H Series and CRH-H Series Mistresa. Install both the suction and discharge drain tubes for the CRN and CRH Series.

- ① Be sure to **[liquid seal]** the suction drain tube. Otherwise, the suction drain tube sucks air through its end, causing the drain to flow back but not drain. This in turn could lead to premature clogging of the next step filter.



- ② Do not connect the suction drain tube with the discharge drain tube.

- ③ Make sure that the discharge drain tube is **[open to atmosphere]**. Otherwise, it does not drain well, possibly causing the drain to remain inside the main body.



- ④ Use a plug or a similar element to close the drain tube that is not connected to the drain system.

11. Operating cautions

- (1) In order to prevent fires, never allow explosive gases, organic solvents, sparks, or burning cigarettes to be sucked into the suction port.
- (2) The optional **chip separator** should be used when operating the Mistresa in environments where large amounts of chips, dust, and high-concentration mist are present.
- (3) In environments where large amounts of **oily** mist (non-water-soluble) are being sucked in, or where the sucked in mist particulate is small, etc., either the optional **general-purpose after-filter or the high-performance after-filter** should be used to compensate for changes in the collection efficiency due to these operating conditions, and to prevent blow leakage and re-dispersion. Additional optional parts are required to install the after-filter.
- (4) The optional **high-performance after-filter** should be used when operating the Mistresa in environments with small particulate matter such as oily smoke, etc., and where the mist particulate is small and present in high concentrations. Moreover, the optional inner-filter should also be used to increase the after-filter life.
- (5) For the CRD-H Series, CRH-H Series and CRN Series Mistresa, use care so as not to let the filter (de-mister) clogged to choke itself up (a state where no air flows). Otherwise, since the air flow cools the integrated air-cooled motor, choking up causes the motor not to cool down sufficiently, possibly leading to burnout. It does not apply, however, to the motors of the CRH (high temperature types) as they sit outside the units.
- (6) Make sure that the CRH (high temperature types) Series Mistresa draws mist. Otherwise, since the lack of mist (fluid) causes insufficient lubrication and poor cooling at the contacts between the oil seal and shaft, the resulting heat buildup leads to a shorter service life and premature leak. However, this does not apply to the CRD-H, CRH-H Series, or CRN Series as each of them employs a V ring that can operate in a dry condition.
- (7) If a CRH (high temperature types) or a CRH-H Series has to draw in water mist that does not contain a corrosion preventive, be sure to operate it at no load for a few minutes to dry the inner structure to prevent corrosion.

12. Maintenance and inspections

(1) Periodic inspections

An inspection should be performed every 3 months to check for abnormal vibration and sounds. The insulation condition should be checked once per year.

(2) Filter and demister inspection/replacement schedule

① CRD-H Series, CRH-H Series

Part Name	Material	Quantity	Inspection/Replacement Schedule	Washable YES/NO Status	Spare Part
Primary filter	Polyester	2	1 to 6 months	YES	Present
Secondary filter	Polyester	2	1 to 6 months	YES	Absent
Front demister	Aluminum	1	1 to 6 months	YES	Absent
Middle demister	Aluminum	1	6 to 12 months	YES	Absent
End filter	Polyester	1	6 to 12 months	NO	Absent

② CRN Series

Part Name	Material	Quantity	Inspection/Replacement Schedule	Washable YES/NO Status	Spare Part
Box de-mister	Aluminum	1	12 to 24 months	YES	Absent

③ CRH (High Temperature Types) Series

Part Name	Material	Quantity	Inspection/Replacement Schedule	Washable YES/NO Status	Spare Part
Primary filter	Polyester	*	1 to 6 months	YES	Present
Secondary filter	Polyester	*	1 to 6 months	YES	Absent
Tertiary filter	Polyester	*	6 to 12 months	YES	Absent
End filter	Polyurethane	1	6 to 12 months	YES	Absent

* CRH-100T/E: Primary filter 1 piece, secondary filter 4 pieces, tertiary filter one piece
 CRH-200T/E: Primary filter 1 piece, secondary filter 5 pieces, tertiary filter one piece
 CRH-04E, 07E and 15E: Primary filter 2 pieces, secondary filter 2 pieces, tertiary filter none
 CRH-100T/E: The end filter is made of stainless steel.

CAUTION

To prevent injuries, always wear **rubber gloves, etc.**, when inspecting the filters and demisters.

(3) Filter replacement procedure

Be sure to verify that **the power switch is OFF** before beginning the filter replacement procedure. During the replacement procedure, place a placard on the power switch which says "**Maintenance In Progress. Do not turn the power switch ON**".

① CRD-H Series, CRH-H Series

Primary and secondary filter replacement

(These filters can be reused after being washed)

[CAUTION]



Release the clamps and open the filter cover.



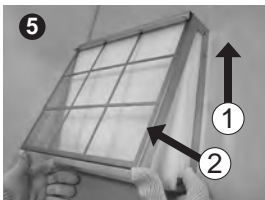
Use care to avoid contact with the clogging status indicator and terminal box when opening the cover.



Remove the filter by sliding the filter box out.



If cutting chips and dust have accumulated in the dust case, remove the dust case and discard its contents.



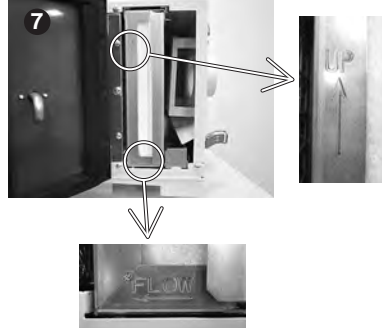
Push filter frame "B" upward, then pull it forward (①) and detach it (②).



Remove the primary filter (the thin one) first, then remove the secondary filter (the thick one).

*When reinstalling, install the secondary filter first, then the primary filter.

Install the primary filter (2 sheets) and the secondary filter (2 sheets) one sheet at a time, with their "Genuine Mistresa Part" stamp on the downstream (downwind) side. (Installing both sheets at once could cause positional deviations.)



To install the filter box, insert it in the posture shown above.

End-filter replacement



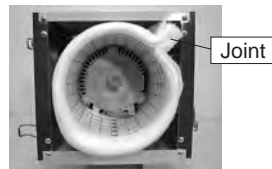
Release the discharge-side clamp and remove the back panel to reveal the end-filter.

[CAUTION]

To prevent the back panel from falling when removing it, support the panel with the hands while releasing the clamp.



Extract the end-filter.



* Install the end-filter with the joint in the upper diagonal posture shown above.

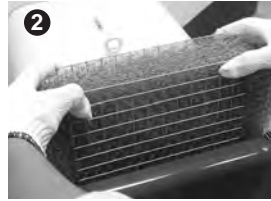
② CRN Series

Box de-mister inspection

(Reusable after washing)



Unclamp the box de-mister.
Remove the cap.



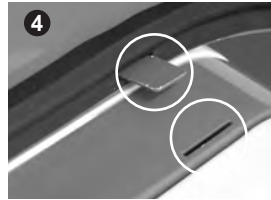
Lift the box de-mister upwards to
take it out.

Drain line inspection



To inspect the drain line, unclamp
the box de-mister. Lift the box
de-mister upwards to take it out.

[CAUTION]



To put the cap back, put the cap
guide into the guide slot.
Otherwise, improper installation
of the cap could lead to oil leak.

③ CRH Series

(The CRH-100 and CRH-200T/E use a different replacement procedure. Contact us.)

Primary and secondary filter replacement

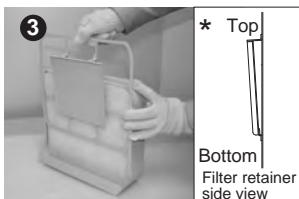
(These filters can be reused after being washed)



1 Unclamp the filter. Remove the cap.



2 Slide the filter box to take it out.



3 Remove the filter retainer.

*After replacing the filter and put the filter retainer back in position, be sure of the correct orientation of the filter retainer.



4 Remove the primary filter (thin one) first, then space net and finally the secondary filter (thick one).



Install the replacements in the order of the secondary filter, space net, and primary filter. For the primary filter (2 pieces) and the secondary filter (2 pieces), put each one piece of them in place at a time with the stamp "Mistresa Genuine Part" facing the downstream (downstream of air flow direction). (Do not attempt to put all of them in at one time. Otherwise, you may not be able to install them in the right position.)

[CAUTION]



When installing the cap after replacing the filters, be sure to put the guide into the guide slot. Otherwise, improper installation of the cap could lead to oil leak.

End-filter replacement

(These filters can be reused after being washed)



Remove the eye nut.



Take out the end filter and replace it.

CAUTION

Use only filters which are genuine SHOWA parts, and never operate the Mistresa with the filters removed. Doing so could cause abnormal operation and product failure.

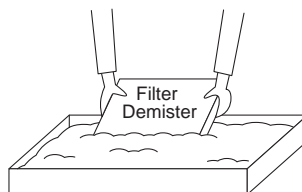
(4) Other maintenance items

Since the CRH-□□E Series Mistresa use a quasi-explosion-proof motor, contact us for maintenance other than replacing the filters. (See page 24.)

(5) Filter washing procedure

① Washing method

Filters and demisters which have a "washable" status can be cleaned by air-blowing them, or by soaking them with a neutral detergent until clean.



② Disposal method

After filter washing is completed, the waste water and filter waste material must be discarded in accordance with the local waste water and waste material disposal regulations.

13. Clogging status indicator

The CRD-H Series is equipped with a clogging status indicator. This section explains how to read the indicator, how to make the initial setting, and how to change the indicator's mount position.

(1) Reading the clogging status indicator

As shown in Fig. 1, the float position should be checked when the power is turned ON. The upper part of the float is red and the bottom part is green. When the filter is in good condition (not clogged), the float's green part is visible. When clogged, the red part is visible.

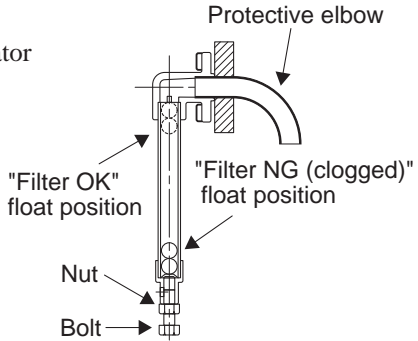


Fig.1 Structural diagram

(2) Initial setting

The initial setting described here assumes that the Mistresa is in a standard operating condition (3m or less from the suction duct, with no after-filter installed at the discharge side). Depending on the customers piping configuration and installed accessories, the following initial settings may be required.

① Loosen the Fig. 1 nut.

② Adjust the Fig. 1 bolt as follows:

When an after-filter is installed Loosen the bolt **1/4 of a turn**.

When the distance from the suction side is greater than 3m

..... Tighten the bolt **1/4 of a turn**.

If other special piping exists Tighten or loosen the bolt until the float sinks (drops), then **loosen the bolt 2 turns** from that position.

(or when the initial setting bolt's position is unknown)

③ Secure the bolt, then tighten the nut. (Both the bolt and nut have right-hand threads.)

(3) Changing the indicator's mount position

As viewed from the suction side, the clogging status indicator can be mounted on either the left or right side. The customer should therefore mount the indicator on the side where it can be most easily read, a decision determined by the Mistres's onsite installation conditions. Prior to shipment, the indicator is mounted on the left side (as viewed from the suction side). The procedure for changing this to a right-side mount is given below.

- ① Release the clamp, remove the bolts at the side-cover side of the hinge which connects the filter cover and side-cover, then remove the filter cover (both left and right). (See Fig. 2 and 3)

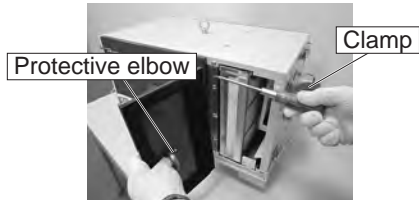


Fig.2

- ② Remove the 2 bolts which secure the clogging status indicator, rotate the indicator and the protective elbow 180 degrees, then secure with the 2 bolts. (See Fig. 4)

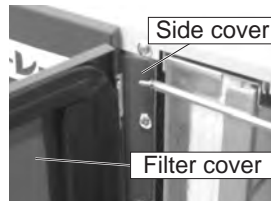


Fig.3

- ③ Reverse the filter cover's left and right sides, then reattach the filter cover hinge to the side cover. (See Fig. 5)

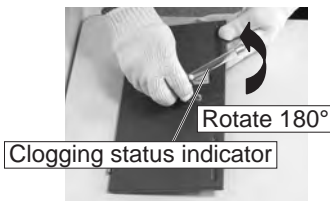


Fig.4



Fig.5



Fig.6

(4) Cautions

- When changing the clogging status indicator's mount position after the Mistresa has already been used (mist has already been sucked in), be sure to wipe all oil from the indicator before changing its mount position. Failing to do so could allow oil to enter the indicator, preventing it from functioning properly.
- Piping changes which alter the system resistance could prevent the clogging status indicator from functioning properly. In particular, the installation of a metal screen, etc., at the Mistresa's intake side could cause malfunctions. Customers should refrain, as far as possible, from installing items which facilitate clogging.

14. Warranty

(1) Scope of warranty

In the event of a product failure which occurs within the warranty period, repairs shall be made free of charge, provided that the product was used in accordance with the instructions given in the operation manual, and on the product labels.

In the event that the customer has installed this product in other existing equipment, this warranty does not cover the cost of removing and re-installing this product from and to that equipment. Nor does this warranty cover costs for work and transport, etc., which are associated with those procedures. Moreover, customer losses related to equipment and operation, and any other indirect losses are also outside the scope of this warranty.

(2) Warranty period

This warranty shall extend for a period of 12 months from the date of delivery.

(3) As a general rule, a repair fee shall be charged under the following circumstances, even if still under warranty.

- ① When a product failure or damage was caused by incorrect product handling (failure to observe the operation manual instructions and affixed label information), or by unauthorized repairs or modifications.
- ② When a product failure or damage was caused by transport or dropping, etc., after the product has been purchased.

- ③ When a product failure or damage was caused by a natural disaster such as a fire, earthquake, storm/flood, lightning, etc., or by abnormal voltage, or usage with an incorrect power supply (voltage, frequency), etc.
 - ④ When a product failure or damage was caused by repairs or modifications (new holes drilled in the product, etc.) by any party other than Showa Denki.
 - ⑤ When a product failure or damage was caused by using parts other than those specified by Showa Denki.
 - ⑥ When a product failure or damage was caused by the introduction of foreign matter into the product.
 - ⑦ Product aging related discoloration, scratches, and natural wear of consumable parts.
- (4) Showa Denki shall not be liable for any customer damages incurred due to a malfunction of this product.

15. Contact information

- (1) Technical inquiries regarding this product should be directed to the following office.



• Showa Denki Co., Ltd.,

Daito Factory.

TEL + 8 1 - 7 2 - 8 7 0 - 5 7 0 8

FAX + 8 1 - 7 2 - 8 7 0 - 7 2 4 3

- (2) Inquiries regarding product faults and requests for repairs, etc., should be directed to the Oversea Sales Department. The contact information for this Group is given on the back cover of this manual. When contacting the Oversea Sales Department, please have the following product information in hand: The product "TYPE" (indicated on the affixed nameplate label), and the manufacture No.

16. Specifications

CRD-H Series

Type	CRD-H04 CRD-H04A	CRD-H07 CRD-H07A	CRD-H15 CRD-H15A	CRD-H22 CRD-H22A
Power supply	3-phase, 50Hz, 200V, 60Hz, 200V / 220V			
Output kW	0.4	0.75	1.5	2.2
Frequency Hz	50/60	50/60	50/60	50/60
Current A	2.0/2.0/2.0	3.0/3.3/3.3	6.9/7.0/7.0	10.2/10.4/10.4
Weight kg	33	44	70	79

CRH-H Series

Type	CRH-H04 CRH-H04A	CRH-H07 CRH-H07A	CRH-H15 CRH-H15A	CRH-H22 CRH-H22A
Power supply	3-phase, 50Hz, 200V, 60Hz, 200V / 220V			
Output kW	0.4	0.75	1.5	50/60
Frequency Hz	50/60	50/60	50/60	10.2/10.4/10.4
Current A	2.0/2.0/2.0	3.0/3.3/3.3	6.9/7.0/7.0	79
Weight kg	33	44	70	

CRN Series

Type	CRN-H04B CRN-H04BA	CRN-H07B CRN-H07BA	CRN-H15B CRN-H15BA
Power supply	3-phase, 50Hz, 200V / 60Hz, 200V / 60Hz, 220V		
Output kW	0.4	0.75	1.5
Frequency Hz	50/60	50/60	50/60
Current A	2.2/2.0/2.0	3.0/2.8/2.8	5.1/6.8/6.8
Weight kg	31	41	74

CRH (High Temperature Types) Series

Type	CRH-100T/E CRH-100T/EA	CRH-200T/E CRH-200T/EA	CRH-04E CRH-04EA	CRH-07E CRH-07EA	CRH-15E CRH-15EA
Power supply	3-phase, 50Hz, 200V / 60Hz, 200V / 60Hz, 220V				
Output kW	0.2	0.2	0.4	0.75	1.5
Frequency Hz	50/60	50/60	50/60	50/60	50/60
Current A	1.2/1.1/1.0	1.2/1.1/1.0	2.0/1.8/1.7	3.3/3.1/2.8	6.2/5.8/5.4
Weight kg	13	20	26	37	57

T : The motors are not explosion-proof.

E : The motors are quasi-explosion-proof.

* Refer to the delivery specifications to verify voltages other than those shown above.

Showa Denki Co., Ltd.

1-25 Shinden Kitamachi, Daito City, Osaka 574-0052

Oversea Sales Department

1-25 Shinden Kitamachi, Daito City, Osaka 574-0052

TEL +81-72-871-1511 FAX +81-72-870-7243

SHOWA DENKI (Thailand) Co., Ltd.

No1/46 Soi2 Grand De Ville, Soi Supamong 1 (Soi Srinakarin 42), SriNakarin Road Nongbon, Pravet Bangkok, Thailand 10250

TEL +66-2-330-8798 FAX +66-2-330-8799

<http://www.showadenki.co.jp>

CAD data is available on this website



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