

Mistresa Accessories

Installation, Assembly, And Handling Guide



Thank you for your recent purchase of accessories for the Mistresa from Showa Denki. This guide explains the installation and handling procedures, etc., for **Mistresa accessory products**. Please read this guide carefully to ensure that the accessories are used in a **safe and efficient manner**.

Use care not to misplace or lose this guide.

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1. Elbow unit installation guide

<Accessories>

Model Name	Unit (Elbow Unit)	Supplied Bolts (Shipped with unit)
3EU-H04	Elbow (with packing)	M8 x 20 bolts (4 bolts)
3EU-H07	Elbow + Elbow adapter (with packing)	M8 x 16 bolts (4 bolts)
3EU-H15	Elbow + Elbow adapter (with packing)	None (discharge duct securing nuts are used)
3EU-H22	Elbow + Elbow adapter (with packing)	None (discharge duct securing nuts are used)

<Installation procedure>

- ① Loosen the nuts (4 locations) which secure the Mistresa's discharge duct, then remove the discharge duct (see Fig.1).
- ② Secure the elbow unit to the back panel. For models 3EU-H04 and 3EU-H07, this is done by using the 4 accessory bolts. For models 3EU-H15 and 3EU-H22, use the 4 nuts which secured the removed discharge duct (see Fig.2).

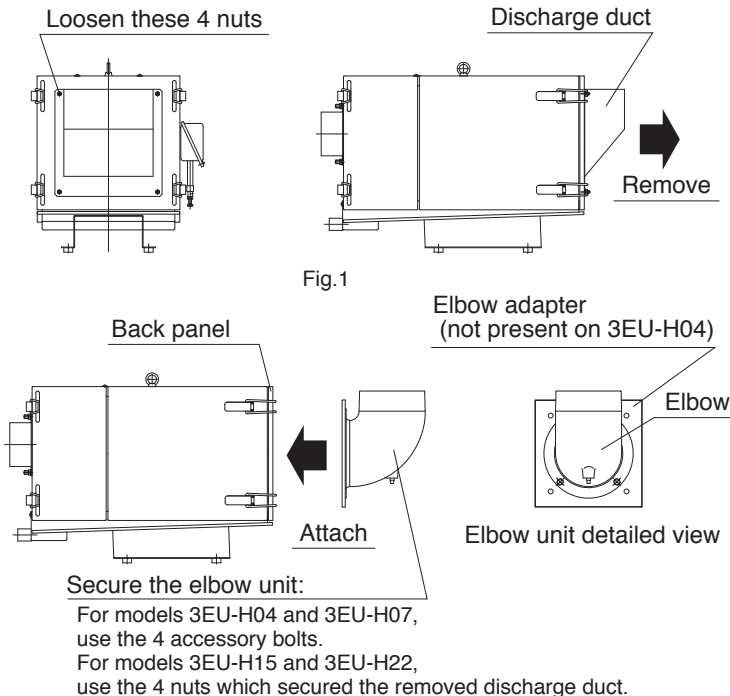


Fig.2

2. Adapter installation guide

(1) 3AD-□□□ (CRD(-H), CRH(-H), CRN, CRM(H)-S)

The shipping package should contain the following items (1 each): adapter, long bolt,^{*1} wing nut, seal washer.

^{*1} Table 1. Model-specific long bolts

Model Name	Model (Representative Examples)	Applicable Long Bolts
3AD-100	CRH-100T/E	M8 x 90 stud bolt (shipped with unit)
	CRD-400R, CRN-H04B CRM(H)-H02, H04-S	M8 x 190 hexagon half-thread bolt (shipped with unit)
	CRH-200T/E, CRH-04T/E	Unit's existing long bolt is used
3AD-125	CRD-750R, CRN-H07B CRM(H)-H07-S	M8 x 220 hexagon half-thread bolt (shipped with unit)
	CRH-07T/E	Unit's existing long bolt is used
3AD-150	CRH-15T/E	M8 x 220 stud bolt (shipped with unit)
	CRD-H04/H07/H15/1500R CRH-H04/H07/H15	M8 x 240 hexagon half-thread bolt (shipped with unit)
	CRM(H)-H15-S	

① Installing on CRD(-H)/CRH-H/CRN/CRM(H)-S models

(On models CRH-H and CRH-H, the discharge duct must be replaced by the elbow unit. See page 1.)

- Remove the plug from the bottom of the Mistresa elbow (see Fig.3).
- Place the adapter over the elbow (see Fig.4).
- Place the seal washer on the long bolt, then insert the long applicable bolt^{*1} which is shipped with the unit from the bottom of the elbow (see Fig.5).
- Insert the long bolt into the adapter's center hole, then screw on the wing nut from above to secure it.

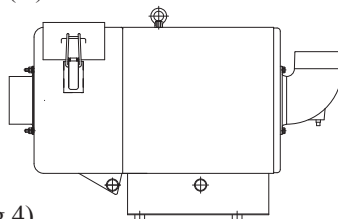


Fig.3

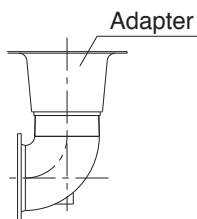


Fig.4

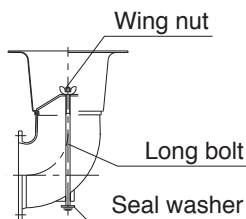


Fig.5

② Installing on the CRH model

- a Remove the eye-nut which secures the reducer at the top of the Mistresa (see Fig.6).
- b Place the adapter over the reducer's original position. The stud bolt will protrude from the Mistresa at this time, so pass the bolt through the adapter's center hole (on models CRH-100 and CRH-15, the existing stud bolts must be replaced by the applicable long bolts shown in Table 1) (see Fig.7).
- c Screw the wing nut onto the stud bolt from above to secure the adapter (see Fig.8).
- d Insert the long bolt into the adapter's center hole, then screw on the wing nut from above to secure it.

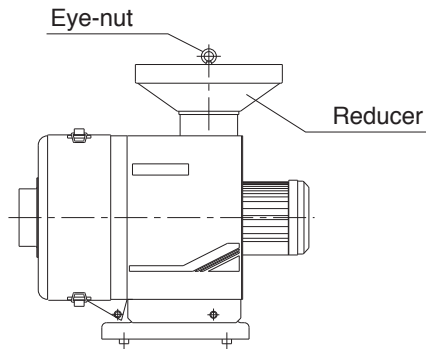


Fig.6

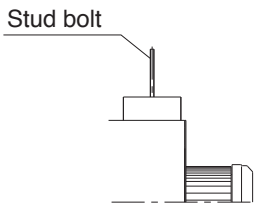


Fig.7

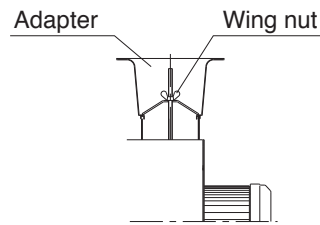


Fig.8

(2) 3AD-□□□V(CRM-V)

The shipping package should contain one adapter and four installation bolts (hexagon head).

- ① Remove the side cover installation bolts, followed by the side cover. (See Fig. 9)
- ② Remove the bolts (with seal washer) which secure the side cover and wire screen weight (for V□1, outer cylinder of the cover) (See Fig. 9)
- ③ Tighten the hexagon head bolts together with - in the order of - the adapter, side cover, wire screen and wire screen weight (for V□1, the outer cylinder of the cover) so that the packing installation face of the adapter is the matching face of the side cover. (Attach the seal washer that was with attached to the removed bolts) (See Fig. 10)
- ④ Attach the side cover with the bolts.

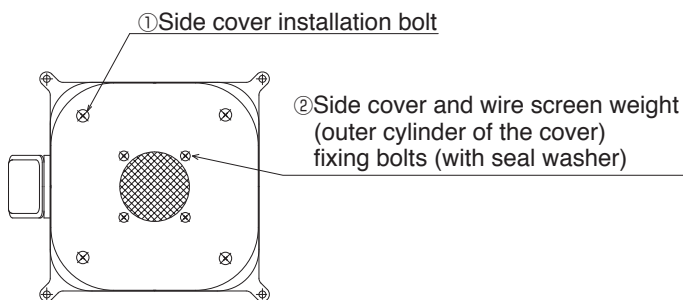


Fig.9

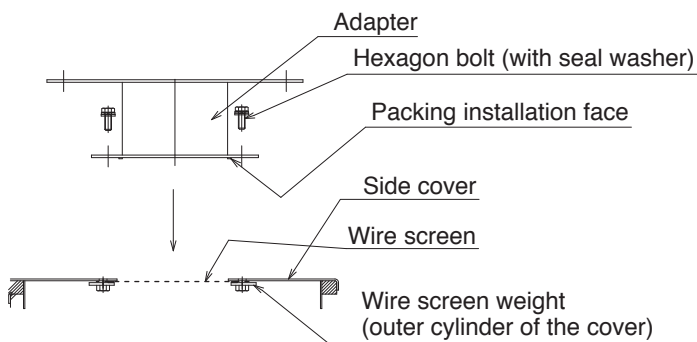


Fig.10

3. After-filter and inner-filter (sold separately) installation guide

<Installation procedure>

Place the packing over the adapter (sold separately), then use the wing nut to secure the after-filter.

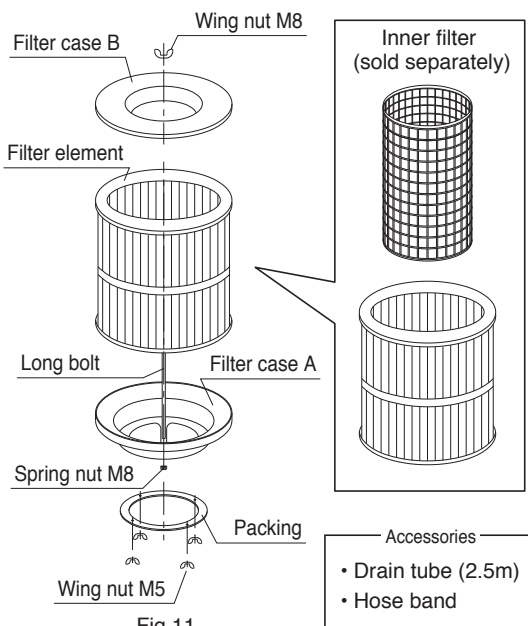
<Installation cautions>

Always tighten the wing nut by hand only.

The after-filter already has filter cases A and B, and a filter element installed.

When replacing the filter, it is only necessary to order the filter element.

The adapter and inner filter are sold separately.



[Note] The 3AF-41E filter case "A" and the adapter are integrated (single component), and an adapter is therefore not required. For installation procedure details, refer to the dedicated installation/operation guide.

<Replacement procedure>

Removal Loosen the wing nut at the upper part of filter case "B", then extract filter case "B" and the filter element by lifting them upward.

Installation ... Center the filter element on filter case "A". Place filter case "B" on top, then tighten the wing nut.

<Inner filter>

After-filter clogging may be accelerated in areas with large amounts of oil mist and oily smoke. The rate of clogging can be slowed by installing the inner filter (sold separately) inside the filter element.

[CAUTION] The after-filter and inner-filter cannot be reused even if washed.

4. Chip separator adapter installation guide

<Accessories>

- Chip separator adapter (with packing)
- Chip separator mounting bolts and nuts
3CA-100 : M6 x 16 bolt (4 bolts), M6 nut (4 nuts)
3CA-125 & 3CA-150 : M8 x 20 bolt (4 bolts), M8 nut (4 nuts)

<Installation procedure>

- ① Loosen the 4 nuts which secure the Mistresa's duct phase flange, then remove the duct phase flange (see Fig.12).
- ② Secure the chip separator adapter to the Mistresa using the 4 nuts which had been used to secure the duct phase flange (see Fig.13) .
(Fig.14 shows the proper orientation for the chip separator adapter.)

* Refer to section 5 (Chip separator installation guide) for the chip separator installation procedure.

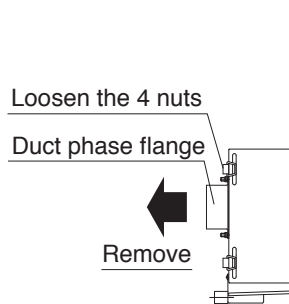


Fig.12

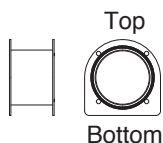


Fig.14

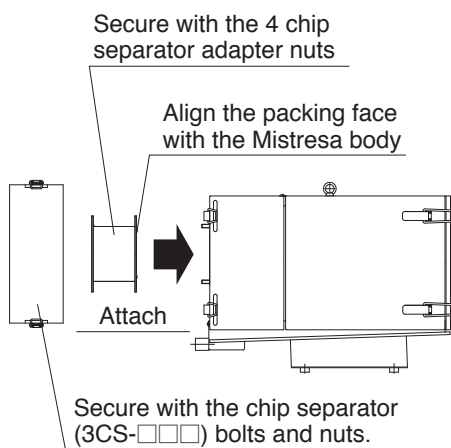


Fig.13

5. Chip separator installation guide

(1) 3CS-□□□, 3CS-□□□M (CRD(-H), CRH(-H), CRN, CRM(H)-S)

A chip separator, drain tube (2.5m), and hose band packing have been shipped together with the accessory item. Installation bolts and nuts (4 sets) have also been provided.

<Installation procedure>

- ① Loosen the Mistresa's duct companion flange stops (4 locations), then detach the duct companion flange.(On models CRD-H and CRH-H, the duct phase flange is removed when installing the chip separator adapter.)
- ② Release the chip separator's corner clamps (2 locations), then extract the filter with frame.
- ③ Position the chip separator's chip outlet port toward either the left or right, then insert a packing between the chip separator and the Mistresa and secure with bolts (the chip separator's front and rear mounting holes are the same size).
- ④ Place the duct companion flange (with packaging) which was detached from the Mistresa, then secure with bolts and nuts. (For the CRH series, insert packing between the duct companion flange and the Mistresa.)
- ⑤ With the wire screen side positioned at the downstream (main unit side), insert the filter with frame into the chip separator, then attach the cover. (For 3CS-□□□M, attach the cover to face the clogging status indicator as shown in Fig. 16 on page 8.)
- ⑥ Insert the drain tube into the drain pipe, then secure it with the hose band. Take care to avoid bending the drain tube, and be sure to **seal** (liquid seal) its end.

<Chip ejection procedure>

Release the upper and lower corner clamps in that order, then discharge the chips. Because drain matter such as cutting oil, etc., is also present inside,

hold a cloth against the bottom of the cover before opening it to prevent spillage and soiling.

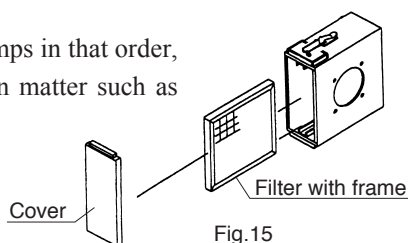


Fig.15

<Clogging status indicator for 3CS-□□□M>

3CS-□□□M is equipped with a clogging status indicator. This section explains how to read the indicator, and how to make the initial setting.

① Reading the clogging status indicator

As shown in Fig.16, 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.

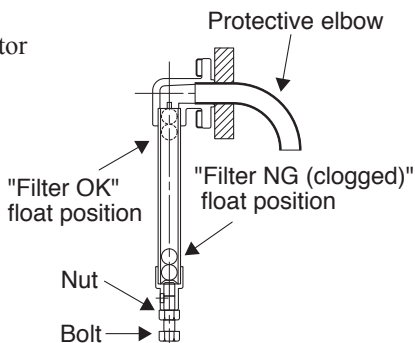


Fig.16 Structural diagram

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.

a Loosen the Fig.16 nut.

b Adjust the Fig.16 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

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

loosen the bolt 2 turns
from that position.

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

③ Note

When the resistance changes within the pipe on site, the clogging status indicator may not operate properly. In particular, if the wire screen is installed on the inspiratory side, the screen could get clogged and malfunction, so we advise not installing anything that could cause clogging as far as possible.

(2) 3CS-□□□V (CRM-V)

The shipping package should contain one chip separator and four installation bolts.

<Installation procedure>

- ① Overlap the chip separator's face without the drain pipe and the bottom of the Mistresa, then secure with bolts. (Nuts are welded onto the chip separator side.) Ensure that the chip separator's chip outlet port is facing the same direction as the filter box slot of the Mistresa.
- ② Secure the Mistresa with the chip separator with bolts from the machine and equipment side. (Nuts are welded onto the chip separator side.)

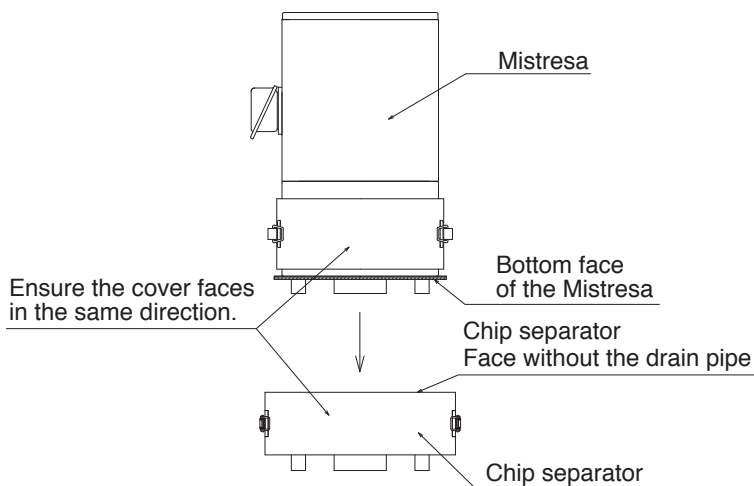


Fig.17

<Chip ejection procedure>

Release the corner clamps, then discharge the chips. As drain matter such as cutting oil, etc., is also present inside, **hold a cloth** against the bottom of the cover before opening it to prevent spillage and soiling.

6. Air suction adapter

The shipping package should contain an air suction adapter, two drain tubes (2.5 m), two hose bands and four bolts.

<Installation procedure>

- ① Overlap the air suction adapter with no packing face and the bottom face of the Mistresa, then secure with bolts. (Nuts are welded onto the air suction adapter side)
- ② Secure Mistresa with the air suction adapter with the machine and equipment side using bolts and nuts.
- ③ Insert the drain tube into the drain pipe and secure it with the hose band. The end of the drain tube should be **exposed to the atmosphere** without being bent.

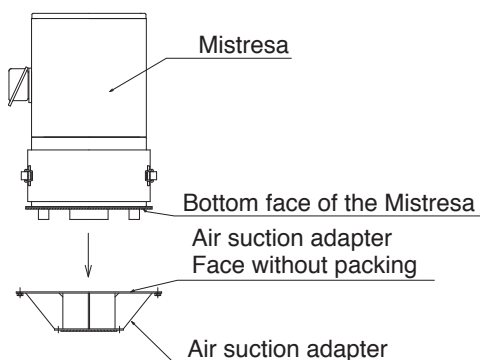


Fig.18

7. $\phi 15$ Drain tube unit

The shipping package should contain two $\phi 15$ drain tubes, two hose bands and two hexagon hose nipples (with seal tape).

<Installation procedure>

- ① Connect the hexagon hose nipple to the drain pipe on the Mistresa.
- ② Insert the drain tube into the hexagon hose nipple, then secure it with the hose band. (As for the piping configuration of the drain tube, see the Piping section of the Operation Manual & Cautions of the Mistresa.)

8. Floor stand assembly guide

The shipping package should contain 1 top board, 1 bottom board and 4 pillars. The installation bolts and tools shown below are also provided.

<For floor stand assembly>

M8 hexagon socket-head button bolts 16 pieces

<For floor stand stabilizing>

M12 bolt 1 piece

<For Mistresa & floor stand securing>

M8 bolts 4 pieces

M8 nuts 8 pieces

<Assembly tool>

Hexagonal bar spanner (for M8) 1 piece

<Assembly procedure>

- ① Use the button bolts to partially secure the bottom board to the 4 pillars.
- ② Place the top board on the 4 pillars and use the button bolts to partially secure its 4 corners to the pillars.
- ③ Fully tighten all the button bolts while adjusting the stand's tilt, etc.
- ④ Screw the M12 bolts into the pillars to stabilize the stand and prevent looseness.

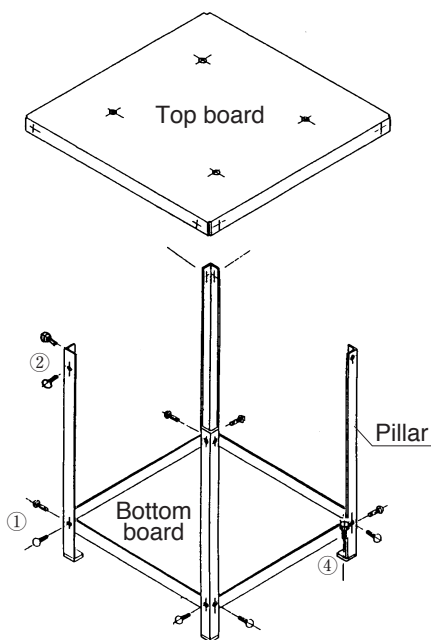


Fig.19

9. Switch (with thermal) installation/operation guide

(1) 3SW-020 (for 0.1 ~ 0.2kW)

<Switch nameplate check>

Verify that the rated capacity indicated on the switch nameplate is suitable for the applicable model.

Table 2. Switch model & rated capacity ①

Model	Rated Capacity	Applicable Model
3SW-020	0.2kW	CRH-100T/E CRH-200T/E

The switch's secondary-side accessory cable is 3m in length.

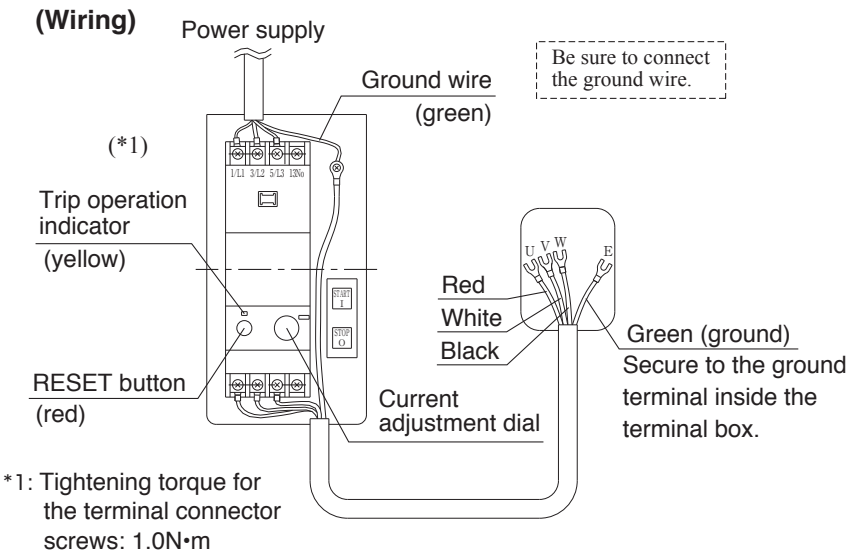


Fig.20

<Setting the thermal relay's current>

Be sure to set the current to the value indicated on the Mistresa's nameplate.

<To begin operation after completing the wiring connections>

Before beginning operation, be sure that the thermal relay's RESET button has been pressed.

<When tripped>

The Trip indicator lights (yellow) when a trip condition occurs, and operation is disabled, even if the START button is pressed. After identifying and correcting the trip cause, press the RESET button. The yellow indicator then switches off and a normal status is restored.

(2) 3SW-□□□ (for 0.4 ~ 2.2kW)

<Switch nameplate check>

Verify that the rated capacity indicated on the switch nameplate is suitable for the applicable model.

Table 3. Switch model & rated capacity ②

Model	Rated Capacity	Applicable Model
3SW-020B	0.2kW	CRM-H02
3SW-040	0.4kW	CRD-H04/400R, CRH-H04, CRN-H04B, CRM(H)-H04 *CRH-04T/E
3SW-075	0.75kW	CRD-H07/750R, CRH-H07, CRN-H07B, CRM(H)-H07 *CRH-07T/E
3SW-150	1.5kW	CRD-H15/1500R, CRH-H15, CRN-H15B, CRM(H)-H15 *CRH-15T/E
3SW-220	2.2kW	CRD-H22/2200R, CRH-H22, CRM(H)-H22

* Because the CRH-T/E type motor is not equipped with explosion-proof terminals, the cable side "A" and "B" terminals must be shorted (connected) and wrapped with insulating tape.

* Although the CRH-E is an enhanced safety explosion-proof type motor, please note that the switch itself is not an explosion-proof type.

(Wiring)

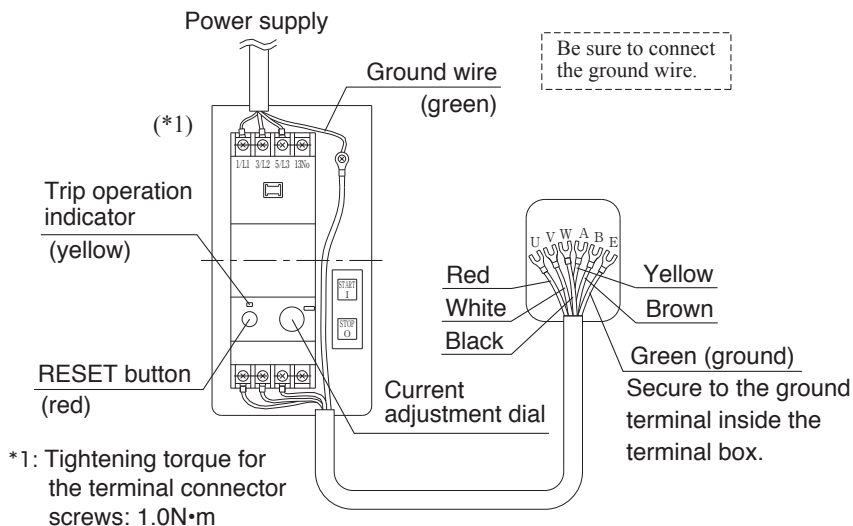


Fig.21

<Setting the thermal relay's current>

Be sure to set the current to the value indicated on the Mistresa's nameplate.

<To begin operation after completing the wiring connections>

Before beginning operation, be sure that the thermal relay's RESET button has been pressed.

<When tripped>

The Trip indicator lights (yellow) when a trip condition occurs, and operation is disabled, even if the START button is pressed. After identifying and correcting the trip cause, press the RESET button. The yellow indicator then switches off and a normal status is restored.

10. Fire prevention damper installation/operation guide

1. Specifications

Table 4. Fire prevention damper standard specifications

Damper operating temperature	Nominal 72°C
Operating (actuation) principle	Temperature fuse
Paint color	Munsell 7.5R4/15
Standard accessories	Limit switch (molded type, 1m cable) ON/OFF switching by damper operation.

2. Installation procedure

Installing the fire prevention damper on the Mistresa

- ① Remove the bolts which secure the duct companion flange, then remove the duct companion flange and the packing (see Fig.22).
- ② Install the fire prevention damper and packing, then secure them with the duct companion flange mounting bolts (see Fig.23).

Duct companion flange

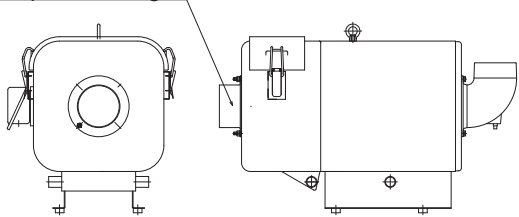


Fig.22. Before installing the fire prevention damper

Fire prevention damper

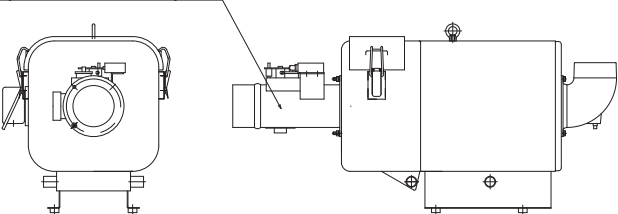


Fig.23. After installing the fire prevention damper

Install the fire prevention damper on the machine tool side and the limit switch installed in the control circuit with the Mistresa. This allows it to be used also when a fire alarm activates, etc.

CAUTION

Failing to perform the installation as shown below could result in oil leakage. Use care to ensure that installation is performed correctly.

- (1) Be sure to install in a horizontal posture.
- (2) When installing in a horizontal posture, be sure that the inspection port and the damper drive are facing either upward or sideways (see photos 1 and 2).

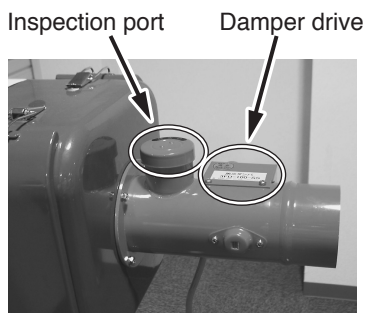


Photo 1

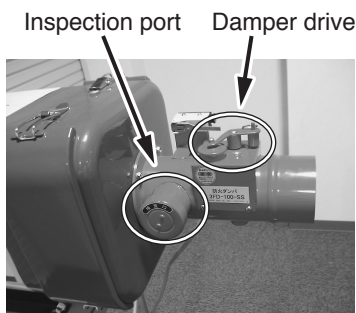


Photo 2

- (3) The above installation procedure applies even when installing on the machine tool side rather than directly on the Mistresa.

3. Limit switch

(1) Contact format

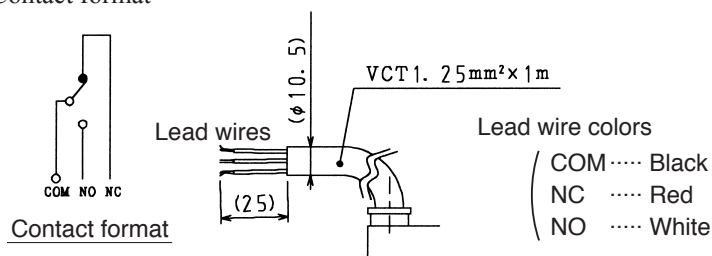


Fig.24. Limit switch contact format

(2) Specifications

Table 5. Limit switch standard specifications table

Rated frequency	50/60Hz
Rated operating current	10A
Rated operating voltage	250V AC

4. Wiring procedure

(1) When the Mistresa operation is stopped by damper actuation:

- ① When using a solenoid switch (optional item, sold separately. Must be provided by the customer.)

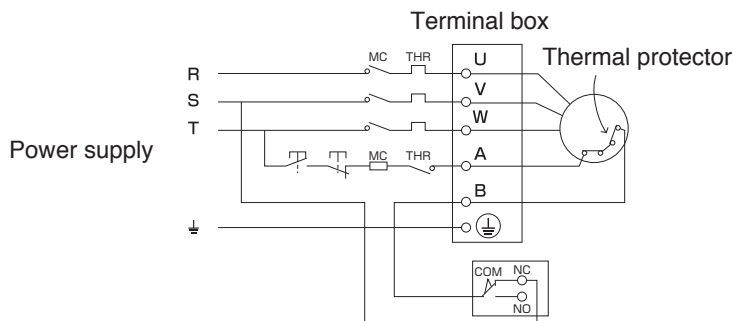


Fig.25. Wiring example when using a solenoid switch

The limit switch cable's NO (white) lead wire must be wrapped with insulating tape.

- ② Example when using the optional switch (Item name: 3SW-○○○)

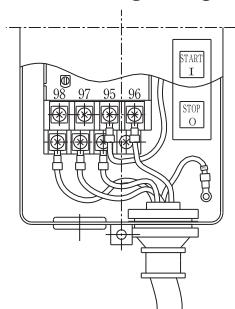


Fig.26. Condition before connecting the optional switch

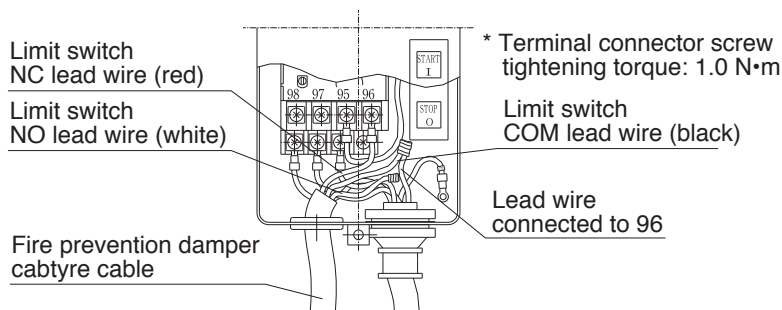


Fig.27. Wiring example when using the optional switch

<Wiring procedure>

- a. Verify that the main power switch is OFF (failing to do so could result in electrical shocks).
- b. Open the optional switch (Item name: 3SW-○○○) cover and plug the fire prevention damper's cabtyre cable into the position shown in Fig.27. (Take cable locking measures to prevent the cable from being pulled.)
- c. Disconnect the lead wire connected to "96", then secure this lead and the limit switch COM lead wire (black) with bolt and nut, and wrap with insulating tape.
- d. Connect the limit switch NC lead wire (red) to "96".
- e. Wrap the limit switch NO lead wire (white) with insulating tape.

[Note] Once the fire prevention damper's temperature fuse has been actuated it cannot be reused. In this case, a new fuse must be purchased from the sales outlet.

5. Periodic inspections

- ① As a general guideline, the fire prevention damper should be replaced after approximately 6 or 7 years.
- ② The fire prevention damper's operating (actuation) inspection and temperature fuse inspection (visual inspection) should be performed every 6 months.

11. Ensuring safe use of the product

(1) **Preventing fires and electrical shocks**

When installing a switch and fire prevention damper, the wiring connections to the Mistresa should be performed only by a qualified electrician in accordance with the electrical equipment technical standards and internal wiring standards.

- (2) When the thermal relay is tripped, identify and correct the cause, verify that the system is safe, then press the RESET button.

12. 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), the production year, and the manufacture No.

* If using a CRM-S, CRM-V or CRMH-S Mistresa and internal parts were replaced after delivery, inform Showa Denki of both the newly installed equipment and the nameplate attached to the Mistresa at the delivery time. (See the nameplate below.)

memo

This image shows a full page of white paper with horizontal dashed lines, typical of primary school handwriting practice paper. The lines are evenly spaced and run across the entire width of the page. There are no margins, text, or other markings present.

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CAD data is available on this website



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