JET LOADER

JL4-V.VC-3~6

MODELS

INSTRUCTION MANUAL

⚠ WARNING

Thank you for choosing MATSUI product. Please use Manual by thoroughly reading this manual. Keep this manual near JET Loader for easy access whenever required.

MATSUI®
in search of rapport

Issued in December 2020

CHAPTER-1 : INTRODUCTION

Thank you for purchasing of our JET LOADER. Please read this manual carefully for proper and safe operation. This instruction manual constitutes a warranty. So, please carefully store this manual after you have read it.

1. Warranty Period

Warranty of this products covers repair or replacement of parts free of charge if any failure occurs even when this product is normally used according to the operation procedures etc., within the warranty period.

In addition, products which have been claimed to fail, shall be returned to us.
1. This warranty period shall be twelve (12) months after installation or fifteen months after the date of invoice, whichever is earlier.
2. The warranty period for parts replaced during repair shall be three (3) months from the date of repairs.

2. Scope

The following items, if applicable, are not covered by the free warranty even within the warranty period.
1) Failure or damage caused by modifications or repair carried out by an person other than Matsui.
2) Failure or damage caused by natural disasters such as earthquake, typhoon, flooding etc. and accident or fire.
3) Failure or damage caused by use exceeding the limits of specifications described in this instruction manual, catalog etc. or by installation environment.
4) Failure or damage caused by improper use or handling.
5) Effect on products caused by external factors
(Pain peeling due to generated gas, malfunction due to electrical noise, etc.)
6) Failure or damage caused by use of parts other than genuine parts (oil, medium, filter, etc.)
7) Consumables (hoses, filters, packings, O-rings, magnetic contactors, mechanical seals, etc.)
8) When the product is transferred or leased to third party.

The scope of warranty includes up to repair or replacement of parts of our products, and does not include productsmanufactured by use of our products and damage to other products due to failure or use of our products. In addition “transportation expenses”, “customs duties”, “travel expenses” and “commuting expenses” associated with the repair or replacement of parts shall not be covered.

The product price does not include the following service expenses. They are separately charged. (However, this does not apply if the contract includes the following)
1) Technical guidance and technical education.
2) Installation adjustment guidance and trial operation attendance.
3) Maintenance and inspection, adjustment and repair.

3. After warranty period

All repairs shall be on chargeable basis.

4. Spares Availability

Functional parts for repairs can be supplied for eight years from date of invoice.

CONTENTS

The chapters identified with the mark ⚠ contain critical information. You must carefully read and well understand them before you can start using Vacuum Loader.

CONTENTS

CHAPTER-1 : CONFIGURATION OF EQUIPMENT

⚠ The following marked chapters are very important. Please read them in advance and pay attention to them.

1. Product model

a) Collection Hopper and Control Procedure

Collection Hopper	Control Procedure
Jet Clone	Limit control
	Level switch control
	Cylinder control
Suction hopper	E2K control
	SD control

b) Suction Unit

Standard	Cyclone-type
JL4-4V-3～6	JL4-4VC-3～6
JL4-5V-3～6	JL4-5VC-3～6
JL4-6V-3～6	JL4-6VC-3～6
JL4-7V-3～6	JL4-7VC-3～6

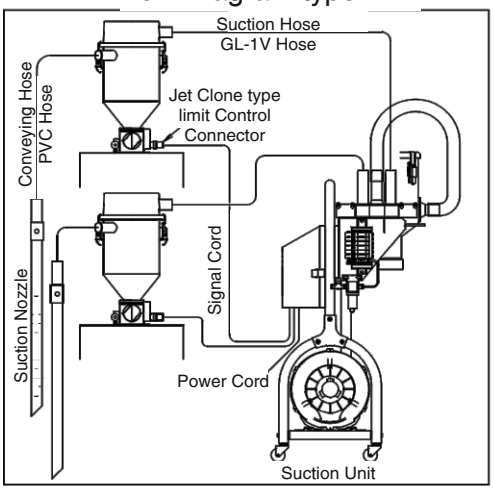
c) Flow Diagrams

Flow Diagrams No.
Flow diagram type 1
Flow diagram type 2
Flow diagram type 3
Flow diagram type 4
Flow diagram type 5
Flow diagram type 6
Flow diagram type 7
Flow diagram type 8
Flow diagram type 9
Flow diagram type 10

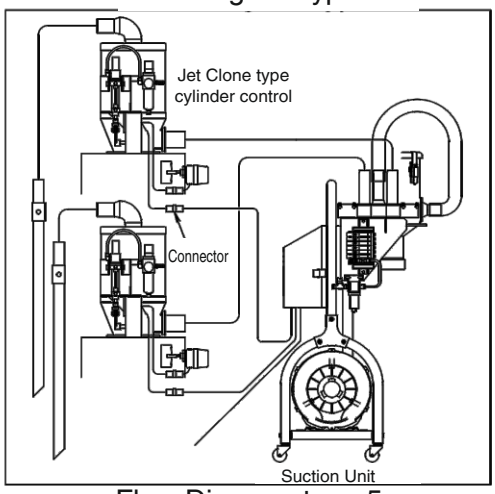
2. Flow diagrams (V type)

Bi-directional valves are shown in the following diagrams, however, in actuality, 3-6-directional valves can additionally be installed.

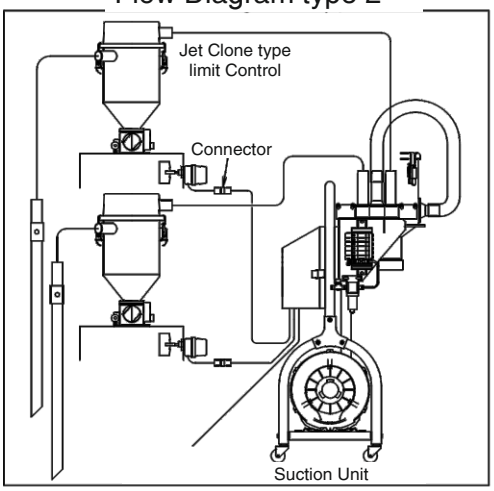
Flow Diagram type 1



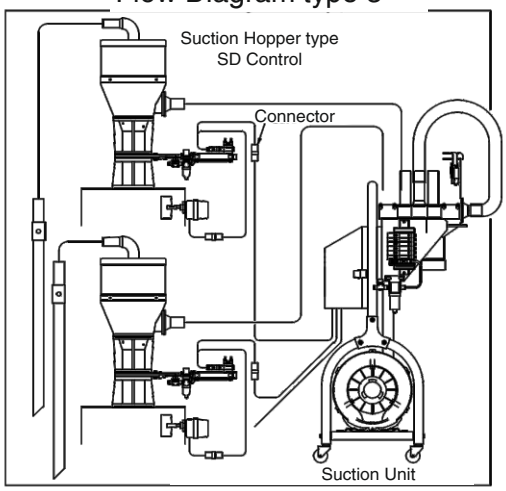
Flow Diagram type 4



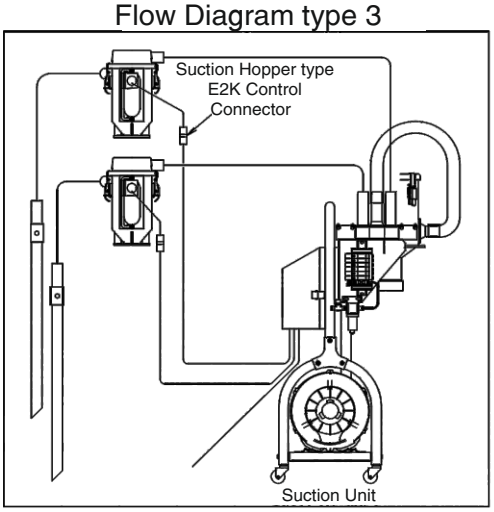
Flow Diagram type 2



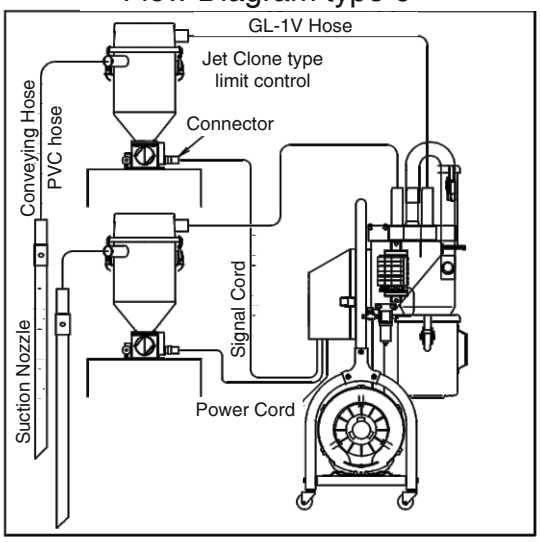
Flow Diagram type 5



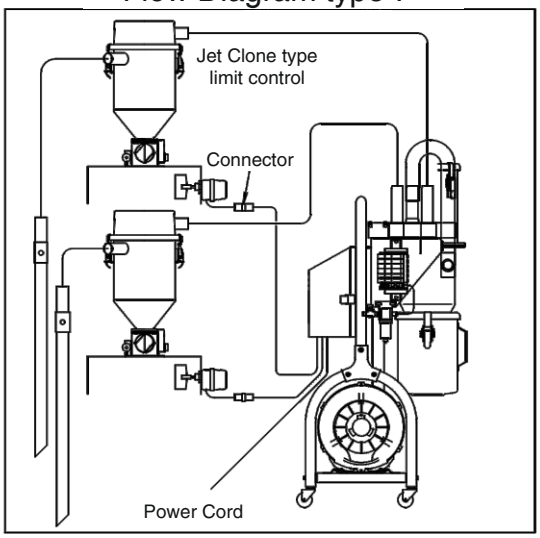
Flow Diagram type 3



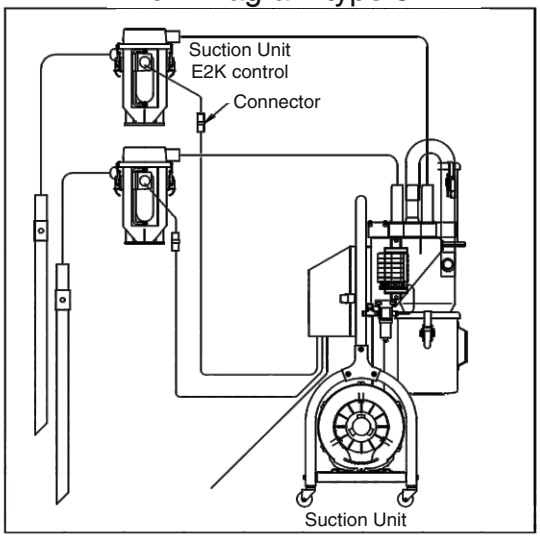
Flow Diagram type 6



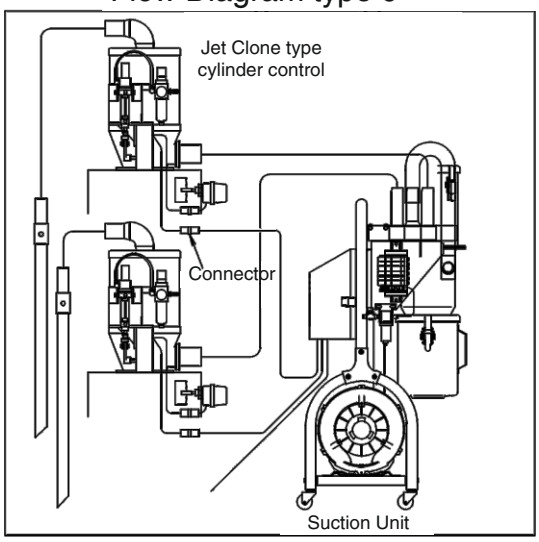
Flow Diagram type 7



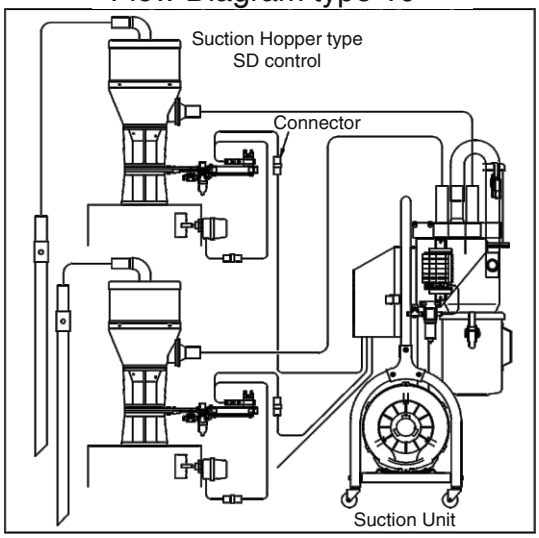
Flow Diagram type 8



Flow Diagram type 9

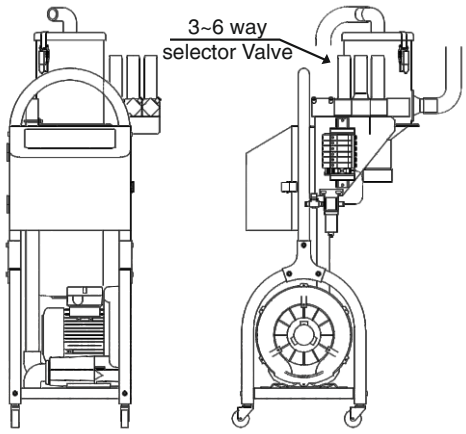
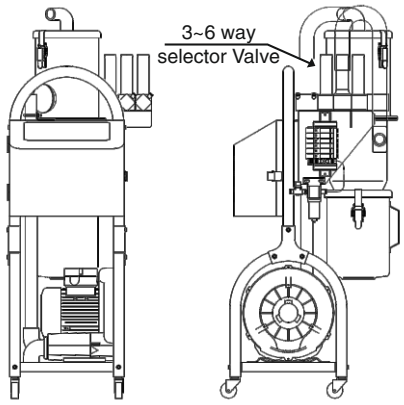
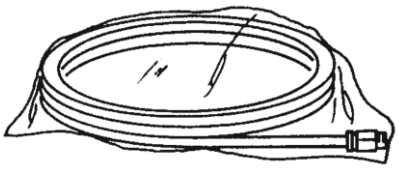


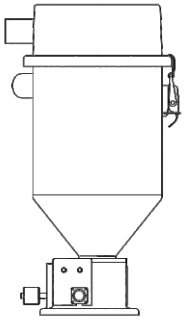
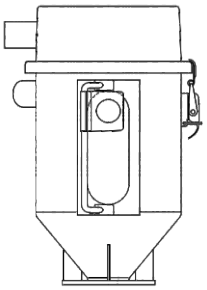
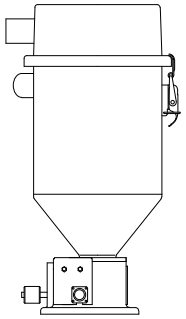
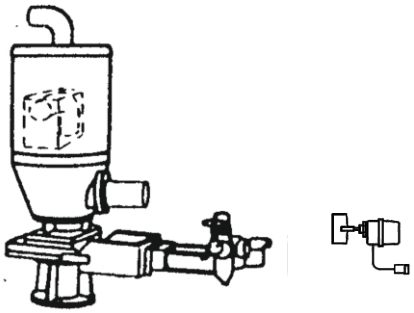
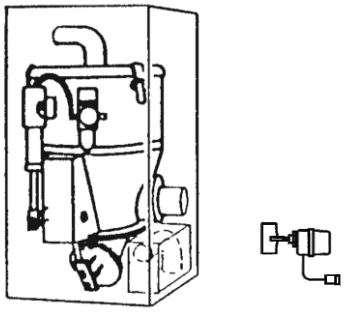
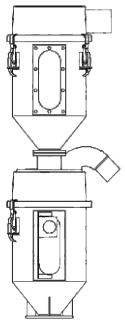
Flow Diagram type 10



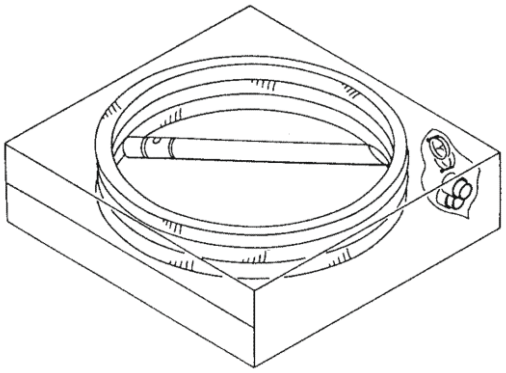
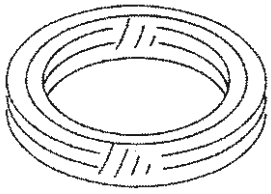
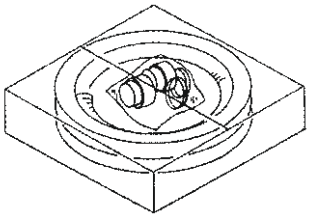
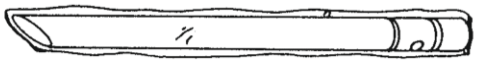
3. Packing List

Please confirm that all purchased devices are included.

Component Name	Style of Packing
Suction unit JL4-(4,5,6,7) V-3~6 type	
Suction unit JL4-(4,5,6,7) VC-3~6 type	
Nylon hose Aperture ϕ 6, Length 5m (Standard) With one touch joint (1 pc.) ※ 1/4B equivalent product should be used for coupler connection.	 * The hose is contained in a vinyl bag.

<table>
<tr><th>Component Name</th><th colspan="2">Style of Packing</th></tr>
<tr><td rowspan="4">Collection hopper</td><td>■ Jet Clone type limit control
  </td><td>■ Suction hopper type E2K control
 
＊This unit is supplied with an injection molding machine match base or chute</td></tr>
<tr><td>■ Jet Clone type level switch control
  </td><td>■ Suction hopper type SD control
  </td></tr>
<tr><td>■ Jet Clone type cylinder control
 
＊ This unit is contained in a corrugated cardboard case.</td><td>■ Aero Power hopper type E2K control
  </td></tr>
<tr><td colspan="2">NOTES
The elbow is contained for the Jet Clone type cylinder control and Suction hopper type SD control. The conditions are as follows.
1. For collection hoppers with an SUS lid, the elbow is attached to the lid.
2. For collection hoppers with an aluminum lid, the elbow is contained in the corrugated cardboard case or the hopper in the collection hopper.</td></tr>
</table>

<table>
<tr><th>Component Name</th><th>Style of Packing</th></tr>
<tr><td>JL4-4V (VC) 3~6
JL4-5V (VC) 3~6
The following parts are 3~6 sets.

■ Conveying hose (ϕ38 PVC hose)
JL4-4V(VC): Length 5m
JL4-5V(VC): Length 10m
■ Suction hose (ϕ38 GL-IV hose)
Length 5m
■ GL-IV hose mouthpieces
(One set including 2 pcs.)
■ Hose band (One set including 4 pcs.)
■ Suction nozzle (ϕ38)</td><td> 
These components are contained in a corrugated cardboard case</td></tr>
<tr><td>JL4-6V (VC) 3~6
The following parts are 3~6 sets.
■ Conveying hose (ϕ50 PVC hose)
Length 10m
■ Suction hose (ϕ65 GL-IV hose)
Length 5m
■ GL-IV hose mouthpieces
(One set including 2 pcs.)
■ Hose band (One set including 4 pcs.)
■ Suction nozzle (ϕ50)</td><td rowspan="2"> 
Translation hose (PVC hose) is wound with vinyl tape.
 
The suction hose (GL-IV hose), GL-IV hose mouthpieces, and hose clamps are contained in a corrugated cardboard case.
 
The suction nozzle is wrapped in vinyl sheeting.</td></tr>
<tr><td>JL4-7V (VC) 3~6
The following parts are 3~6 sets.
■ Conveying hose (ϕ50 PVC hose)
Length 10m
■ Suction hose (ϕ65 GL-IV hose)
Length 5m
■ GL-IV hose mouthpieces
(One set including 2 pcs.)
■ Hose band (One set including 4 pcs.)
■ Suction nozzle (ϕ65)</td></tr>
</table>

CHAPTER-2 : FOR SAFE OPERATION

This chapter contains instructions for operation, maintenance, and repair to operate this equipment properly and safely. Moreover this chapter explains the labels and meaning of each indication on the products.

⚠ WARNING

Please observe safety notices described in this manual.
Our company bears no responsibility or liability for injuries or accidents caused by the non-observance of these notices.

1. Types & Meanings of Notice Labels

In the user's manual, hazardous degrees are classified as follows :

Mark	Meaning
⚠ DANGER	When improper operation may cause the death of the operator, this label is used. To avoid such an accident, safety instructions are mentioned under this heading.
⚠ WARNING	When improper operation may cause serious injury of the operator, this label is used. To avoid such an accident, safety instructions are mentioned under this heading.
⚠ CAUTION	This indication is used when failure to observe this may cause users to be injured slightly or products to be damaged. Instructions with this indication explain how to prevent them.
NOTE	When the content needs special attention and emphasis in the operation procedure and introduction, safety instructions are mentioned under this heading.
⚠	Special attention is needed while in use.

2. Items to be observed for safety

To operate this product safely, general instructions which should be observed are described below.

⚠ WARNING

Using environment	■ This equipment should be used indoors. ■ This equipment should be used at ambient temperatures from 0°C to 40°C and an ambient humidity of 25-85%.
Knowledge of electricity	■ Inspection or replacement by persons without sufficient knowledge of electricity may cause defects or danger. Therefore, inspection and replacement should be performed by our persons in charge of sales or persons of your company who have sufficient knowledge about electricity.
Prohibition against operation in gases	■ Do not operate this equipment in flammable or explosive gases or vapors. . Operating this equipment in such an environment is very dangerous.
Prohibition against remodeling	■ This equipment must not be remodeled or altered by users without obtaining our approval. We shall not be responsible for any accidents caused by remodeling or alteration.
Inspection	■ Before maintenance and inspection, be sure to stop operation and turn “OFF” the power of the primary power supply of your equipment and power switch of the control panel. ■ And stop compressed air fed to the air kit, press the drain valve of the filter regulator to release residual pressure in air pipe.
Maintenance	■ Inspection and replacement of parts must be performed by persons who have sufficient knowledge about this product. Inspection and replacement by persons without sufficient knowledge about product may cause defects or danger. ■ When maintenance or repair is necessary, contact our person in charge of sales at the nearest office (listed on the back page).

⚠ CAUTION

Disposal of the product and parts	■ When disposing of them, obeys law in the applicable use country after use in product and parts.
Power Supply	■ This equipment should be operated with a line voltage and frequency conforming to the specifications. ＊ Be sure to connect the grounding (earth).
Use of the equipment	■ This product is conveying equipment for resin pellets. This is not suitable for other materials and conveying materials other than resin pellets may cause defects. ■ We make no warranty against any troubles caused by using materials other than resin pellets.

3. Labels

■ Labels are pasted where special care must be taken to prevent danger. Warnings or cautions must be thoroughly understood before starting operation

1. Handling of Label

■ Keep the label legible until scraping the equipment.
■ When the label becomes dirty, wipe it with a soft cloth soaked in water under 40C and well wrung.

NOTE

1) Wiping

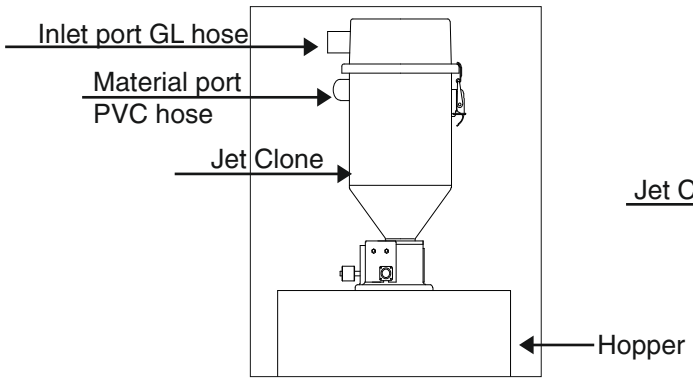
■ Do not wipe the equipment using petroleum solvent. Cleaning with benzene, thinner, and polishing powder will scratch the surface. When equipment is blemished badly, wipe it with a soft cloth soaked in water under 40C and well wrung.

CHAPTER-3 : INSTALLATION

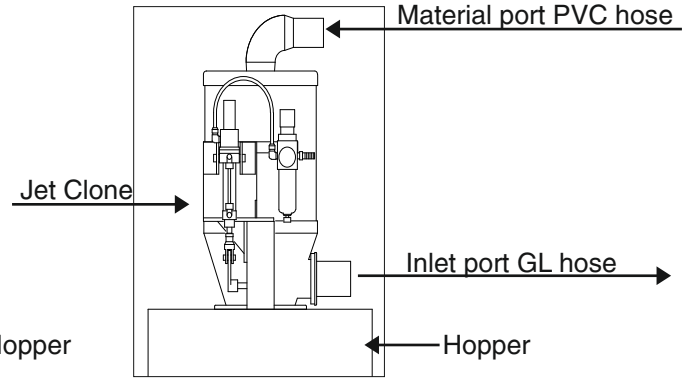
This Chapter describes installation work of the product for each piece of equipment according to the procedure.

1. MOUNTING COLLECTION HOPPER

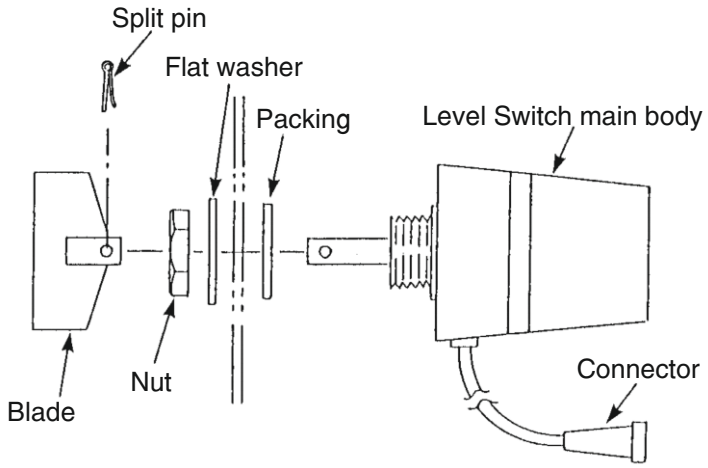
a)Jet Clone type limit, level, cylinder control



Jet Clone type limit, level control



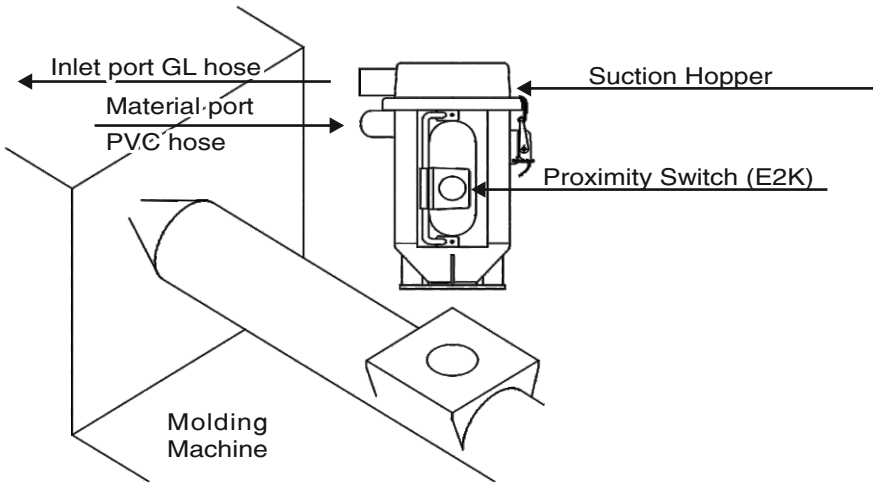
Jet Clone type cylinder control

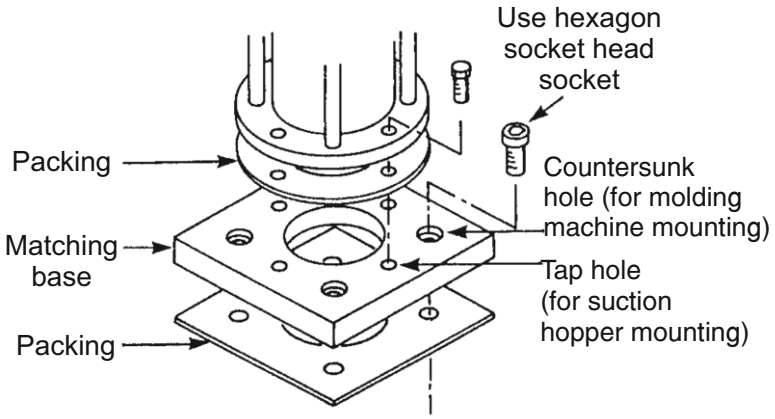
Step	Working	Description
1	Drilling mounting hole	Drill holes in the hopper to be mounted so that they match the mounting holes in the Jet Clone. ＊ It is recommended to tap the hopper hole so that the collection hopper can be secured with bolts alone. When the holes are not tapped, the collection hopper should be secured with bolts and nuts. In this case, an adequate measure should be taken to prevent the bolts and nuts from falling into the hopper when they loosen and fall off.
2	Mounting Jet Clone	Mount the Jet Clone on the hopper on which mounting holes are drilled.
3	Mounting level switch ＊Only when the collection hopper is controlled by the . level switch	Drill holes at the specified positions in the hopper on which the suction hopper is mounted, and install the level switch. 

NOTE

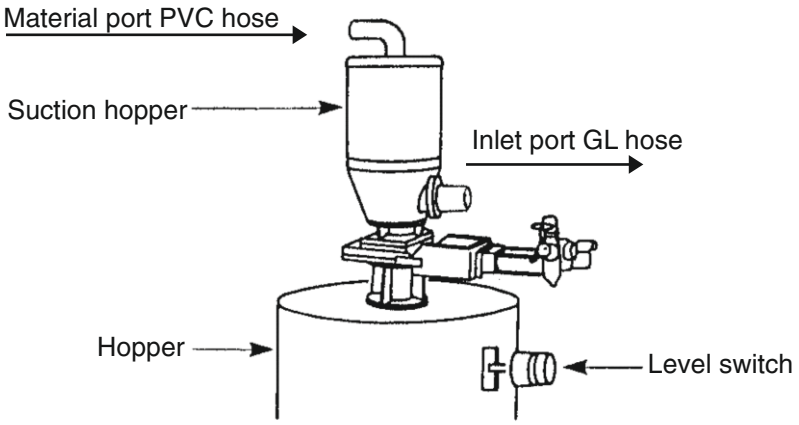
- The hopper on which the Jet Clone is mounted should be selected to be sized so that the damper of the Jet Clone does not contact the inner wall of the hopper.
- Install the Jet Clone horizontally. Otherwise, it may not accurately detect the hopper full of material.
- The damper of the Jet Clone has been adjusted at the time of shipment, therefore, do not give a shock to it. Otherwise, it may not accurately detect the hopper full of material.

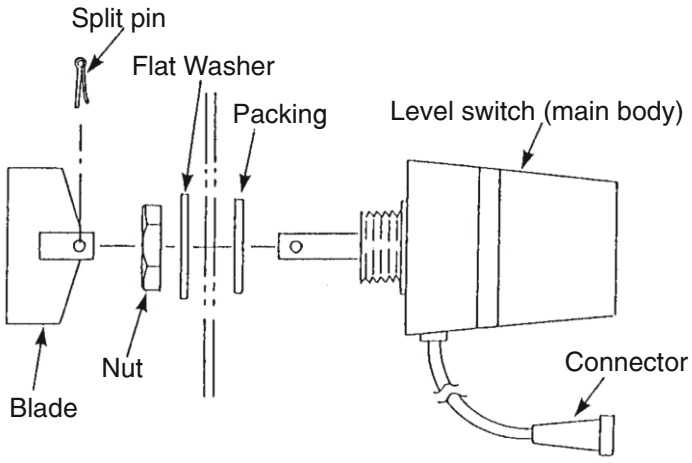
b) Suction hopper type E2K control



Step	Working	Description
1	Mounting match base	Attach the accessory match base to the molding machine. (Fix with hexagon socket head cap screw.) ＊ Be sure to install a packing or fluor resin universal gasket between the match base and the molding machine mount.
2	Suction hopper mounting	Mount the suction hopper flange (sight glass section) on the match base 

c) Suction hopper type SD control



Step	Working	Description
1	Drilling mounting hole	Drill holes in the hopper to be mounted so that they match the mounting holes in the suction hopper * It is recommended to tap the hopper hole so that the collection hopper can be secured with bolts alone. When the holes are not tapped, the collection hopper should be secured with bolts and nuts. In this case, an adequate measure should be taken to prevent the bolts and nuts from falling into the hopper when they loosen and fall off
2	Mounting suction hopper	Mount the suction hopper to the hopper on which the mounting holes are drilled.
3	Mounting level switch	Drill holes at the specified positions in the hopper on which the suction hopper is mounted, and install the level switch. 

d) Outline of Aero Power Hopper

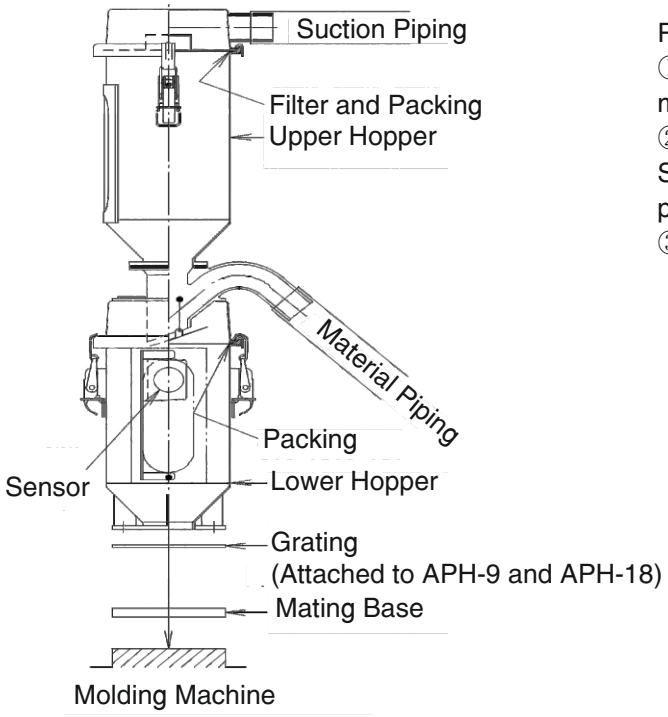
This is a material conveyance hopper installed onto the molding machine.
This has the following features by flowing conveying material in hopper.

- Fine powders and particles are separated and removed.
- If crushed material is compounded, natural pellets and crushed material are mixed.

1) Inspection before use

- Check that there is no unnecessary material in the hopper.
- Check that the filter and packing are correctly installed with reference to the attached drawings at end.

2) Installation to molding machine



Refer to the overview (Referential example APH-3)
① Install this hopper onto molding machine via the mating base with bolts.
② Connect the suction piping and material piping. Securely fix the piping using hose bands so as to prevent air leakage.
③ Connect electric wires to the sensor.

3) Test Run adjustment

(A) Sensor sensitivity adjustment (Proximity switch E2K type)
If the presence or absence of the material is not correctly detected, adjust the sensitivity of the proximity switch by the following procedure.

(1)Remove the material in the hopper.
Turn “ON” the power for the conveying origin unit.
<Also, refer to the instruction manual of the conveying origin unit (such as MJ3, MGD).>

(2)Check whether there is clearance of 1mm or more between the end of the sensor and hopper peep hole.
In the case of clearance, loosen the tightening screws (two pieces) for the proximity switch fixing bracket, and adjust the distance between the end of the sensor and hopper peep hole to about 1mm and fix them.

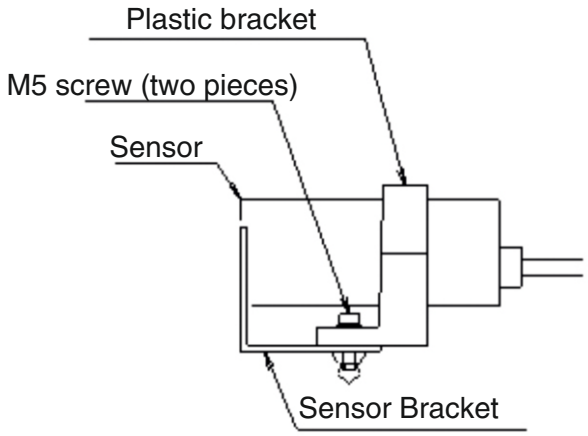
(3)Remove the rubber cap on the back of the proximity switch.

(4) Adjust the sensitivity adjust screw with the included screw driver and perform operations in the following ①, ② and ③.
① Adjust the screw to a point where the sensor turns OFF from ON with no material (Detection indicator lights off).
② Adjust the screw to a point where the sensor turns ON from OFF with material being loaded (Detection indicator lights up).
③ Set the sensitivity adjust screw to a middle point between ① of turning OFF from ON with no material and ② of turning ON from OFF with material being loaded.

Note: Adjust with material to be actually used. Also, in the case of various materials, perform the operations of ①, ② and ③ with material whose apparent specific gravity is lightest.

(5) Install the rubber cap removed in procedure (3).
Convey material to check that the presence or absence of material is correctly detected.

(B) Adjustment of sensor installing position (Not applicable to APH-1 type)
The sensor can be moved up and down by slightly loosening the M5 screws (two pieces) fixing the sensor bracket and plastic bracket. Securely tighten the M5 screws (two pieces) after adjustment.



(1) When conveying material from one conveying origin unit to one molding machine (One-by-one conveyance)
Adjust the sensor position so that conveyance starts at any material amount according to the material consumption of the molding machine.
For dried material, quality of the molded product is generally improved with a shorter dwelling time on the molding machine.
<Material conveying amount for one time can be adjusted by the conveying origin unit. Adjust it to a conveying amount equal to or less than the maximum conveying amount of the applicable model. For the maximum conveying amount, refer to 7. Specifications. Also, refer to the instruction manual of the conveying origin unit (such as MJ3, MGD, etc.)>

(2) When conveying material from one conveying origin unit to two molding machines (One-by-two conveyance)
Adjust the sensor position so that the entire conveying material amount is reliably loaded into the lower hopper and conveyance starts.
<Material conveying amount for one time can be adjusted by the conveying origin unit. Adjust it to a conveying amount equal to or less than the maximum conveying amount of the applicable model. For the maximum conveying amount, refer to 7. Specifications. Also, refer to the instruction manual of the conveying origin unit (such as MJ3, MGD, etc.)>

Note :
A damper is provided between the upper hopper and the lower hopper. When conveying material remains in the damper part, conveyance failure result.

4. Maintenance and check

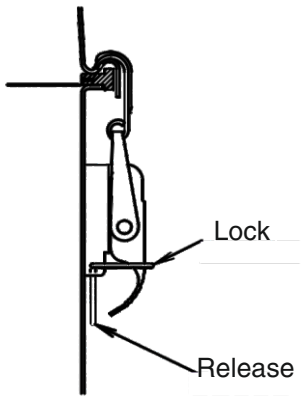
1. Cleaning of filter : A filter (porous plate made of stainless steel) is provided in the upper hopper. As it is clogged with fragments of crushed material, regularly remove them.

2. Damper : A damper is incorporated in the upper hopper discharge part. This damper is suspended by two stainless steel wires of 0.5mm.
These wires have sufficient strength and will not be cut during normal use, however, regularly check them when cleaning.
The conveyed material flows in the upper hopper in a normal state, however, if the above wires are cut, the conveyed material directly falls into the lower hopper. If such a state is observed, also check the wires.

5. Precautions :

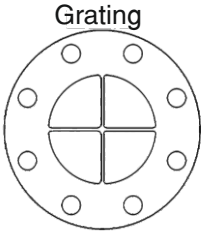
1. Lock for catch clip

A lock mechanism is provided to prevent catch clips (6 locations) from being released due to vibration of molding machine or unintended operation. Be sure to lock when using the clips.



2. Grating

A grating is attached to APH-9 and APH-18. This is for preventing the damper from falling into the hopper opening of the molding machine even if the wires are cut. Be sure to install the grating to the hopper opening of the molding machine, and attach it even when relocating.

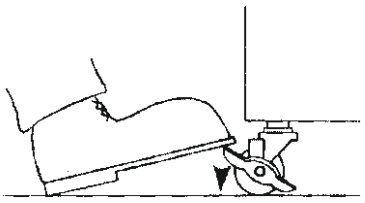
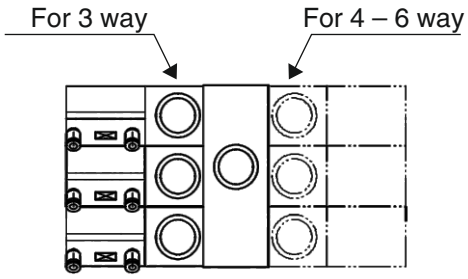


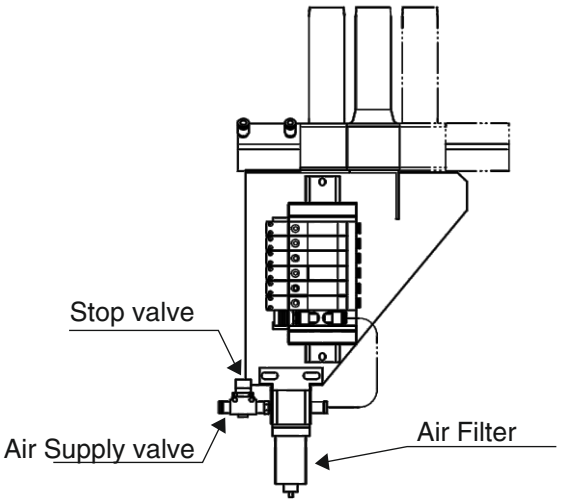
6. Specifications

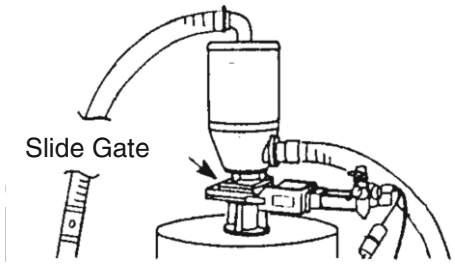
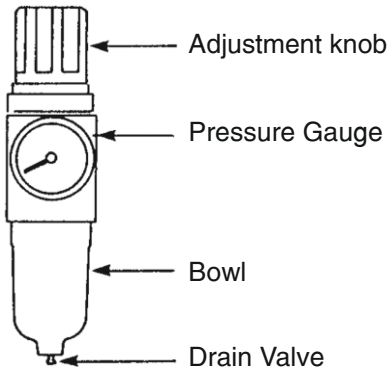
Model APH	1	3	3W	6	6W	9	18
Conveying pipe caliper (mm)	38	38	38	50	50	50	50
Suction pipe caliper (mm)	38	38	38	65	65	65	65
Maximum conveying amount (kg)	1	1	1	2	2	3	6
Conveying hopper capacity (L)	4	4	4	8	8	12	24
Conveying hopper diameter (mm)	140	140	140	200	200	245	300
Charge hopper capacity (L) (Demand level switch)	0.8	3	3 + allow-ance 2	6	6 + allow-ance 4	9	18
Charge hopper diameter (mm)	50A pipe	140	200	200	245	245	300

2. INSTALLATION

Install the equipment as shown in 2. Flow diagrams in Chapter 1.

Step	Working	Description
1	Installing suction unit	Install a suction unit near each collection hopper (within the reach of the 5m-long air suction hose) in the vicinity of respective collectors. * When the installing position is determined, be sure to apply the caster brakes (4 locations) to secure. As shown in the diagram, the brake is applied by stepping down on the ON side of the caster brake. 
	Mounting suction hose (GL-IV)	Connect the suction hose to the suction port of each collection hopper and the 3 – 6 way selector valve of the suction unit. * Be sure to secure with a hose band and GL-IV hose mouthpieces * A direction indicating seal is attached to respective hose openings of the selector valves. Attention should be given not to connect respective collectors, in error.  (3 – 6 way selector valve viewed from above) **NOTE** Securely tighten the hose bands so as to avoid leakage of the intake from the connecting ends of the conveying (raw material conveying) hose and the suction hose.
3	Connecting conveying hose (PVC hose)	Connect the conveying hose to the material port of each collection hopper. Install the suction nozzle to the end (conveying source side) of the conveying hose. * Firmly secure with a hose band.
4	Connecting conveying hose (PVC hose)	Connect the signal conductor cord (with connector) of the suction unit to the signal conductor cord (with connector) of the collection hopper.

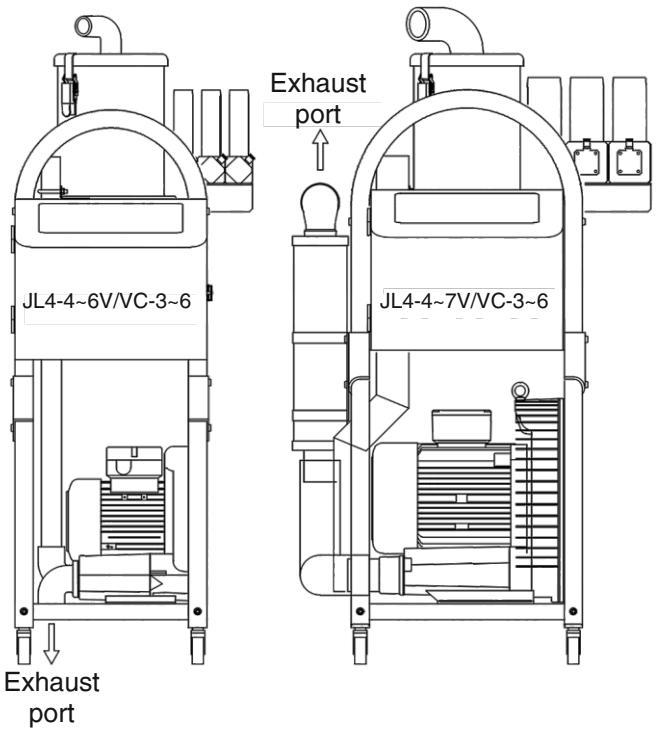
Step	Working	Description
5	Supply of operational compressed air to 3 – 6 way selector valve	Insert an attached nylon hose to the air supply port of the solenoid valve unit for the selector valve installed in the suction unit to connect the other one opening (one touch joint side) to the pneumatic suction unit of your facility. ↓ Fully open the stop valve of the solenoid valve unit to supply dry compressed air of 0.3MPa or more from the pneumatic suction unit.  **NOTE** ▪ Securely insert the nylon hose so that it does not easily come off. ▪ Never fail to secure a pressure of 0.3MPa or more, since the device can be operated within a pressure of 0.3 - 0.9MPa. (Please confirm the pressure indicated by the pressure gauge at the time of operation of the selector valve.) Additionally, use clean dry air processed by an air dryer or air filter. In particular, sufficiently drain water in order to prevent drainage from freezing in cold regions.

Step	Working	Description
6	Supplying operating compressed air to collection hopper air kit * Only when the collection hopper is Jet Clone type cylinder control or suction hopper type SD control	Connect an air hose for a compressed air source to the air supply port valve of the automatic slide gate air kit from your existing source.  ↓ Fully open the valve of the air kit to supply dry compressed air of 0.5 MPa or higher from the compressed air source. ↓ Set the filter regulator outlet pressure of the air kit within a range of 0.4 to 0.5 MPa. ①Pull up the filter regulator adjustment knob to unlock it. ②Adjust the indication of the pressure gauge to 0.4 to 0.5 MPa by turning the adjustment knob clockwise or counterclockwise. Turning the knob clockwise causes the indicated value to rise, and vice versa. ③After setting the pressure, push down the adjustment knob to lock it.  **NOTE** ■ Secure pressure of 0.5 MPa or higher for dry compressed air from the compressed air source. Properly process with an air dryer or air filter to use clean dry compressed air. Sufficiently drain to prevent freezing of drain water especially in cold climates.

3. CONNECTING POWER

Connect the power cord of the suction unit control panel.

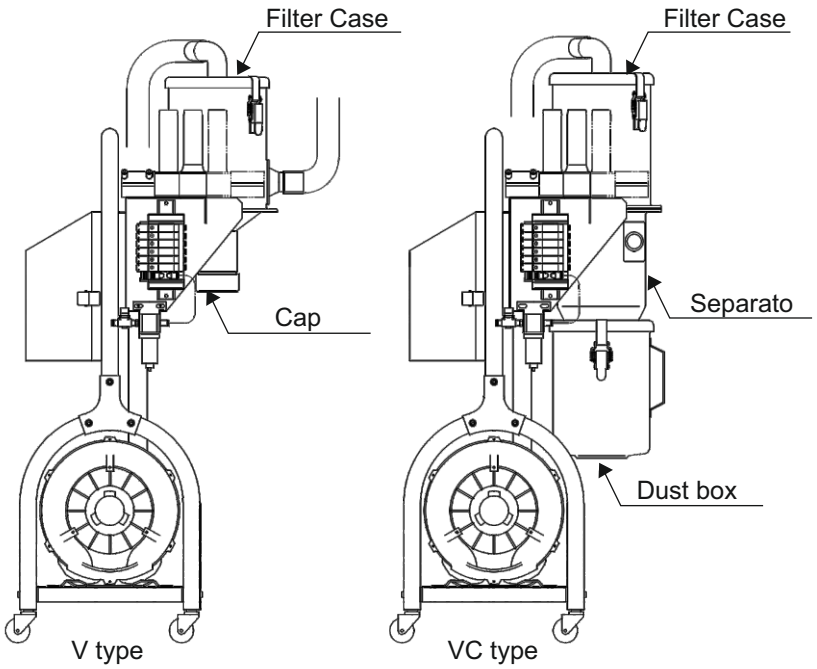
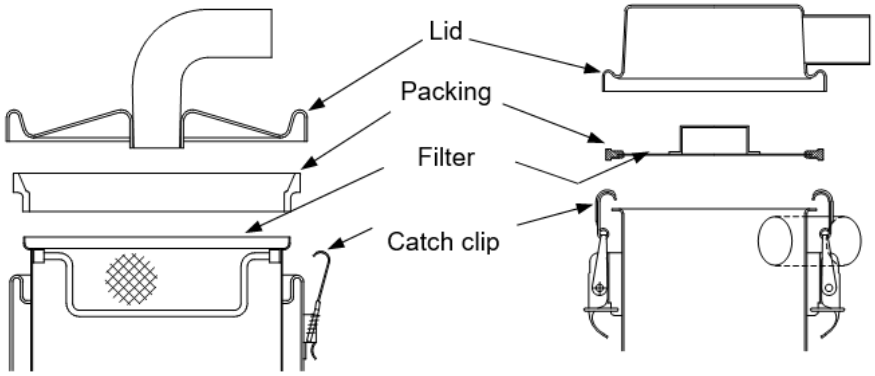
Step	Working	Description
6	Connecting power cord * Only when the collection hopper is Jet Clone type cylinder control or suction hopper type SD control	Turn OFF the primary power of your existing source. ↓ After checking that the power breaker in the control panel is OFF, connect the 5m-long power cord to the primary power of your existing source. Power cord ..... R phase---Red, S phase---White, T phase---Blue (Black) ·····For the primary E phase---Green·····For the primary **⚠ CAUTION** ■ Before power cord connection, be sure to set the power circuit breaker in the control panel to OFF. ■ The power cord should be securely connected to the power source. A loose power cord connection may cause abnormal equipment operation, single-phase operation and heat generation, etc. ■ Be sure to connect the ground.
6	Checking forward and reverse phase	Turn ON the primary power of your existing source. ↓ Turn on the power breaker in the control panel. ↓ Press the operation panel No. 1 start/stop switch [No. 1] and the blower for the suction unit starts after the predetermined time. ↓ Apply your hand to the blower exhaust port to check that air is blowing out from the exhaust port. If so, the blower rotates in the forward direction (forward phase). Connection of the power cord is completed. ↓ Continued on the next page

Step	Working	Description
3	Checking forward and reverse phase	⬇ If no air is blowing out from the exhaust port, it means that the blower rotates in the reverse direction (reverse phase). In this case, turn OFF the primary power and reverse the R phase and T phase of the three wires of the power cord. ⬇ Again, turn ON the primary power and check that air is blowing out from the exhaust port. 

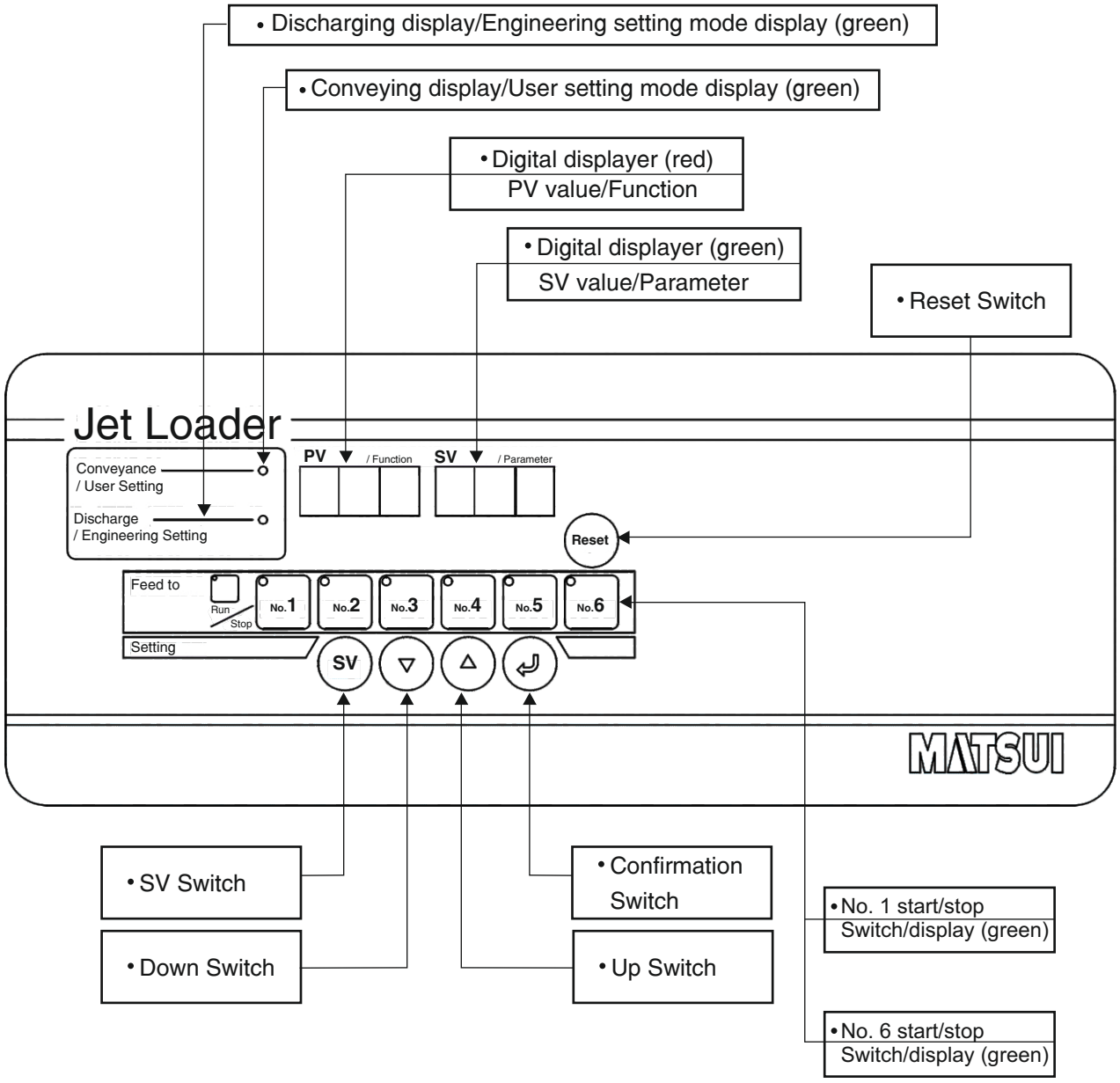
CHAPTER-4 : PREPARATION FOR OPERATION

This chapter describes checks before starting operation.

1. Check status of each component

Unit to be checked	Check
Filter case for suction unit	Check that the cartridge and cap are set to the filter case. 
Dust box for suction unit * Only for VC type	Check that the dust box is installed on the lower part of the separator. (Refer to the above diagram.)
Each collection hopper	Check that no foreign matter intrudes inside, and further check that the packing and metal mesh filter are properly set. After checking, firmly fix the lid of the collection hopper with the catch clips (3 pieces). 

2. Control Panel Description



CHAPTER-5 : OPERATION PROCEDURES

This Chapter describes starting, stopping and cleaning procedures according to the steps.

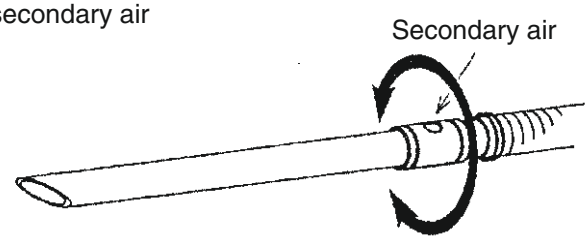
1. Starting procedure

Step	Operation	Description	Display
1	Turn on Power	Turn ON the power breaker in the control panel.	
2	Starting operation	Press a desired switch from the No. 1 start/stop switch [No. 1] to the No. 6 start/stop switch [No. 6] on the operation panel. ⇩ The equipment starts conveyance in response to a request signal. However, when the collection hopper is full, the equipment does not start conveyance. ⇩ ＊ For details on operation, refer to Chapter 6. Operational Descriptions and Timing Chart.	The display corresponding to operation of [No. 1] through [No. 6] is turned on during start. Conveying set time (green) and conveying time (red) appear on the digital displayed during conveyance. Discharge set time (green) and discharge time (red) appear on the digital displayed during discharge.

[Adjusting the amount of secondary air suctioned by the suction nozzle]
Put the suction nozzle into the material and adjust the secondary air regulator to achieve smooth material conveyance.

NOTE

Throttling secondary air flow excessively may cause the hose to be clogged with material.



2. Stopping procedure

Step	Operation	Description	Display
1	Stopping operation	Press a desired switch from the No. 1 start/stop switch [No. 1] to the No. 6 start/stop switch [No. 6] on the operation panel. ⇩ The equipment stops operation. If operation is stopped during conveyance operation, the device is stopped after conveyance operation. (Cycle stop)	The display corresponding to operation of [No. 1] through [No. 6] is turned on during start.

NOTE

Operation is continued for operation performance during cycle stop.

3.Cleaning procedure

This section describes the procedure for cleaning the conveying hoses and collection hoppers after stopping equipment operation.

Step	Operation	Description	Display
1	Preparation work	Remove the suction nozzle at the end of the conveying hose from the material supply section.	
2	Starting operation	Perform the operation to start conveyance to the collection hopper. (Refer to the previous page.)	(Refer to the previous page.)
3	Cleaning inside of conveying hose	Play up the suction nozzle opening with your hand at intervals of several seconds during conveyance to completely feed the material remaining in the conveying hose to the collection hopper. 	
4	Stopping operation	Perform the stopping operation to stop the conveyance to the collection hopper. (Refer to the previous page.)	(Refer to the previous page.)
5	Cleaning inside of collection hopper	Remove the lid of the collection hopper to clean the inside.	

CHAPTER-6 : OPERATIONAL DESCRIPTIONS AND TIMING CHARTS

This Chapter describes the operation for the collection hopper.

1. Jet Clone type limit or level switch control collection hopper

(a) Description of operations

Set the control panel power circuit breaker to ON.

⇩

When the equipment starts conveyance by the start of operation, the blower starts rotating in response to the request signal from the limit switch. At the same time, the collection hopper gate closes.

⇩

Material is conveyed to the collection hopper of the period of time set by the conveyance timer

⇩

When the conveyance timer has run out, the blower stops. As the suction pressure decreases the collection hopper gate opens to discharge material into the lower receiver hopper for the period of time set on the discharge timer.

⇩

The above operations are repeated.

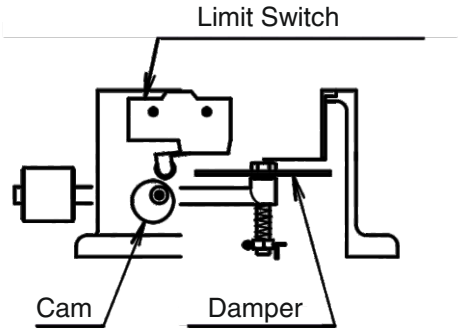
In a case where respective request signals from multiple conveyance directions are simultaneously sent, the material is conveyed in the order of No. 1⇨ No. 2 ⇨No. n ⇨ No.2, alternatively.

When the receiver hopper has become full, the collection hopper limit switch (in the case of limit control) or the receiver hopper level switch (in the case of level switch control) senses the condition to stop conveyance

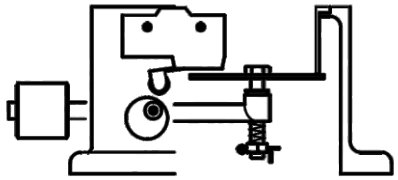
When a request signal is sensed again, conveyance is started

Gate operations

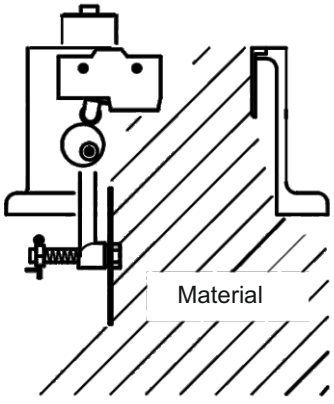
(1) Normal condition



(2) Closed condition (during conveyance)

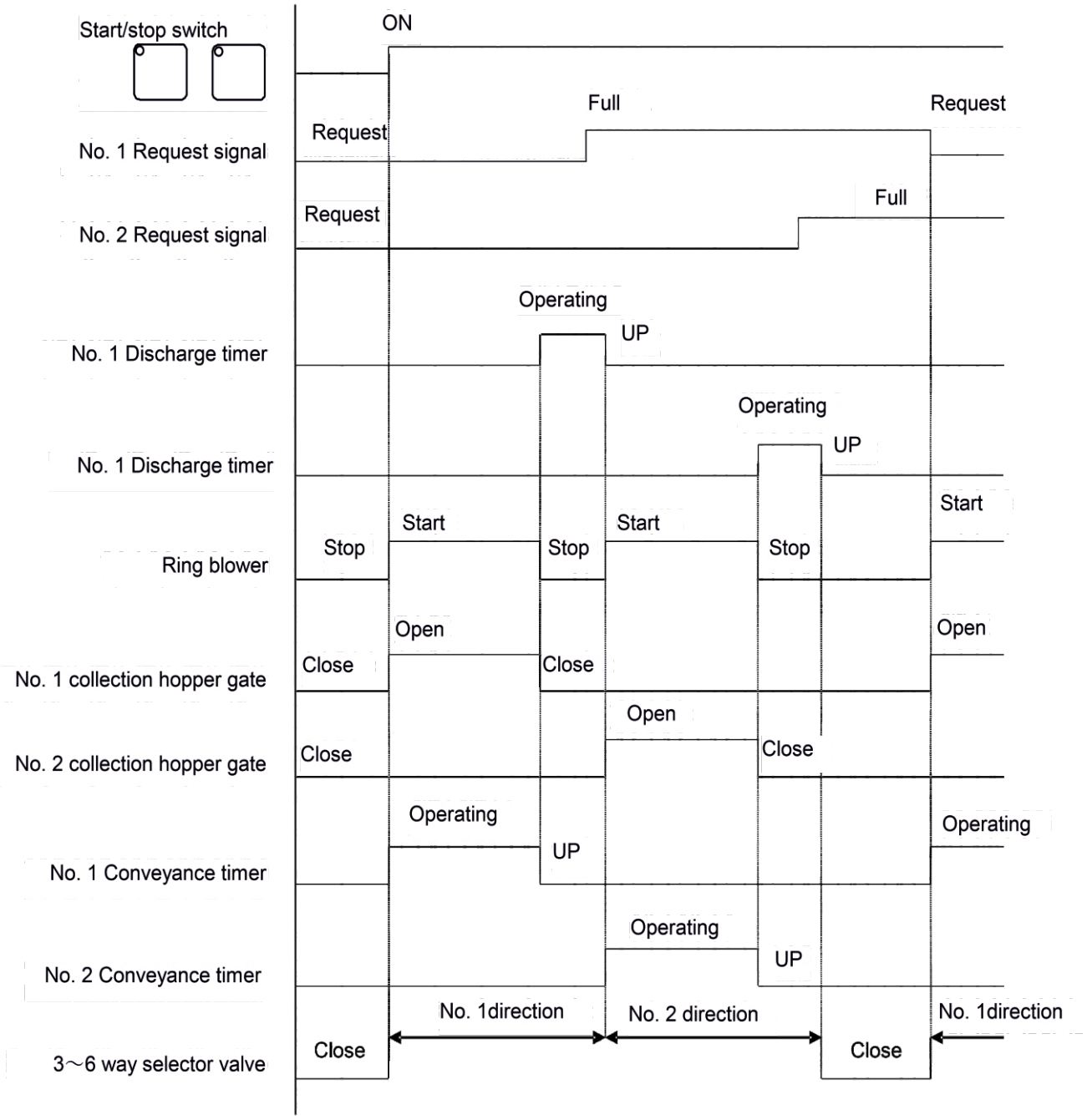


(3) Full condition (Limit switch actuation
Material conveyance stop)



2. Timing chart

The following is the time chart for No.1 and No. 2 directions, however, operation for No. 3 direction or more is similarly carried out.



2. Suction hopper type E2K control collection hopper

1. Description of operations

Set the control panel power circuit breaker to ON.

⇩

When the equipment starts conveyance by the start of operation, the blower starts rotating in response to the request signal from the E2K.

⇩

Material is conveyed to the collection hopper for the period of time set by the conveyance timer.

⇩

When the conveyance timer has run out, the blower stops.

⇩

The above operations are repeated.

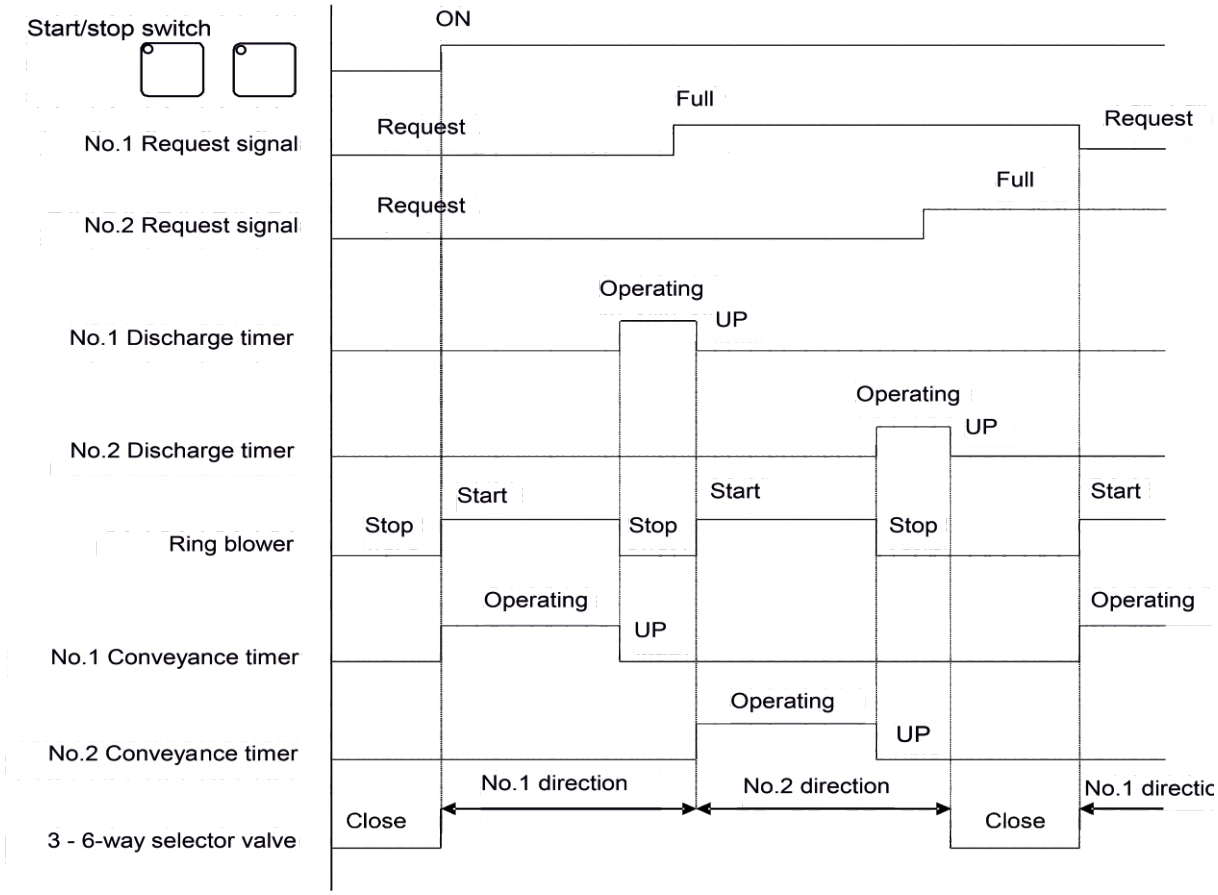
In a case where respective request signals from multiple conveyance directions are simultaneously sent, the material is conveyed in the order of No. 1 ⇨ No. 2 ⇨ No. n ⇨ No.2, alternatively.

When the collection hopper has become full, the E2K installed on the collection hopper senses the conditions to stop conveyance.

When a request signal is sensed again, conveyance is started.

2. Timing Chart

The following is the time chart for No.1 and No.2 directions, however, operation for No.3 direction or more is similarly carried out.



3. Jet Clone cylinder control or suction hopper type SD control collection hopper

1. Description of operation

Set the control panel power circuit breaker to ON.

⇩

When the equipment starts conveyance by the start of operation, the discharge timer starts and after the lapse of the preset time, the blower starts rotating in response to the request signal from the level switch.

⇩

Material is conveyed to the collection hopper for the period of time set by the conveyance timer.

⇩

When the conveyance timer has run out, the blower stops. The collection hopper gate opens to discharge material for the period of time set on the discharge timer.

⇩

The above operations are repeated.

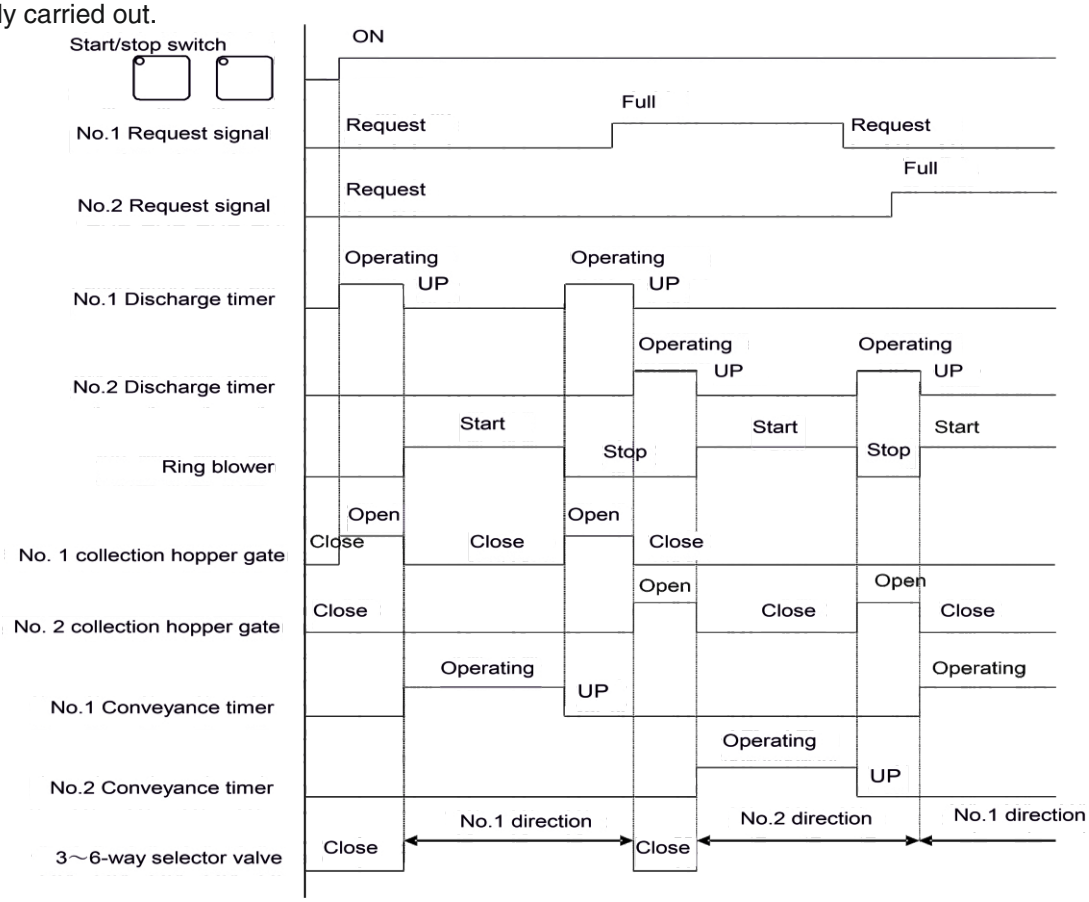
In a case where respective request signals from multiple conveyance directions are simultaneously sent, the material is conveyed in the order of No. 1 ⇨ No. 2 ⇨ No. n ⇨ No.2, alternatively.

When the receiver hopper has become full, the level switch installed on the receiver hopper senses the conditions to stop conveyance.

When a request signal is sensed again, conveyance is started.

2. Timing Chart

The following is the time chart for No.1 and No.2 directions, however, operation for No.3 direction or more is similarly carried out.



CHAPTER-7 : RESPECTIVE PARAMETER SETUP

This chapter describes respective parameter setup carried out on the operation panel.
Respective parameter setup is classified into user setting mode and engineering setting mode.

NOTE

The parameters of the engineering setting mode have been set according to the specification at shipment or at installation. In general, there is no need to change the setting. When changing the setting, sufficiently understand the functions. When in doubt, contact our responsible personnel.

1. Setting Guide

User Setting Mode					
No.	**Code**	**Setting Item**	**Function**	**Setting Range**	**Initial Value**
1.	Fd1	No. 1 Conveyance timer	The timer should be set for No.1 conveyance time. The time for conveyance varies with the conveying distance, the type of material, and the type of collection hopper. The conveyance timer should be set so that conveyance ends before the collection hopper becomes full of material.	0 - 999 sec	5 sec
2.	Fd2	No. 2 Conveyance timer	The timer should be set for No.2 conveyance time. Here in after, same as above.	Same as above	Same as above
3.	Fd3	No. 3 Conveyance timer	The timer should be set for No.3 conveyance time. Here in after, same as above.	Same as above	Same as above
4.	Fd4	No. 4 Conveyance timer	The timer should be set for No.4 conveyance time. Here in after, same as above.	Same as above	Same as above
5.	Fd5	No. 5 Conveyance timer	The timer should be set for No.5 conveyance time. Here in after, same as above.	Same as above	Same as above
6.	Fd6	No. 6 Conveyance timer	The timer should be set for No.6 conveyance time. Here in after, same as above.	Same as above	Same as above

User Setting Mode					
No.	**Code**	**Setting Item**	**Function**	**Setting Range**	**Initial Value**
7.	dC1	No. 1 Conveyance timer	The timer should be set for No.1 conveyance time. The time for conveyance varies with the conveying distance, the type of material, and the type of collection hopper. The conveyance timer should be set so that conveyance ends before the collection hopper becomes full of material.	0 - 999 sec	20 sec
8.	dC2	No. 2 Conveyance timer	The timer should be set for No.2 conveyance time.	Same as above	Same as above
9.	dC3	No. 3 Conveyance timer	The timer should be set for No.3 conveyance time.	Same as above	Same as above
10.	dC4	No. 4 Conveyance timer	The timer should be set for No.4 conveyance time.	Same as above	Same as above
11.	dC5	No. 5 Conveyance timer	The timer should be set for No.5 conveyance time.	Same as above	Same as above
12.	dC6	No. 6 Conveyance timer	The timer should be set for No.6 conveyance time.	Same as above	Same as above
13.	dUC	Dust cleaning counter	The counter should be set for conveyance times to inform filter cleaning interval. If this counter is set to OFF, this does not function. When the conveyance times reach the set value, E15 appears on the digital displayer on the operation panel, informing of the cleaning interval. The set times vary with properties of the conveying material and operating status.	oFF 1-999 times	oFF
14.	dUP	Dust cleaning count	This displays the count number of the dust cleaning counter. When this is set to 0, the count number is reset.	0-999 times	0

Engineering Setting Mode					
No.	**Code**	**Setting Item**	**Function**	**Setting Range**	**Initial Value**
1.	L1d	No. 1 Request signal . delay timer	The timer should be set for the time to judge No.1 request signal. The timer should be set so as to disregard a false request signal in short time due to flowing of material.	0 - 99 sec	5 sec
2.	L2d	No. 2 Request signal . delay timer	The timer should be set for the time to judge No.2 request signal. Hereinafter same as above.	Same as above	Same as above
3.	L3d	No. 3 Request signal . delay timer	The timer should be set for the time to judge No.3 request signal. Hereinafter same as above.	Same as above	Same as above
4.	L4d	No. 4 Request signal . delay timer	The timer should be set for the time to judge No.4 request signal. Hereinafter same as above.	Same as above	Same as above
5.	L5d	No. 5 Request signal . delay timer	The timer should be set for the time to judge No.5 request signal. Hereinafter same as above.	Same as above	Same as above
6.	L6d	No. 6 Request signal . delay timer	The timer should be set for the time to judge No.6 request signal. Hereinafter same as above.	Same as above	Same as above
7.	1Ed	No. 1 Conveyance error timer	The timer should be set for level switch request status monitoring time during No. 1 conveying operation.	oFF, 1 - 999 sec	oFF
8.	2Ed	No. 2 Conveyance error timer	The timer should be set for level switch request status monitoring time during No. 2 conveying operation.	oFF, 1 - 999 sec	oFF
9.	3Ed	No. 3 Conveyance error timer	The timer should be set for level switch request status monitoring time during No. 3 conveying operation.	oFF, 1 - 999 sec	oFF
10.	4Ed	No. 4 Conveyance error timer	The timer should be set for level switch request status monitoring time during No. 4 conveying operation.	oFF, 1 - 999 sec	oFF

Engineering Setting Mode					
No.	**Code**	**Setting Item**	**Function**	**Setting Range**	**Initial Value**
11.	5Ed	No. 5 Conveyance error timer	The timer should be set for level switch request status monitoring time during No. 5 conveying operation.	oFF, 1 - 999 sec	oFF
12.	6Ed	No. 6 Conveyance error timer	The timer should be set for level switch request status monitoring time during No. 6 conveying operation.	oFF, 1 - 999 sec	oFF
13.	1rL	No. 1 Request signal input select	This should be set for the type of No.1 request signal. no:State where input circuit is open should be a request signal. nC:State where input circuit is close should be a request signal.	nC/no	no
14.	2rL	No. 2 Request signal input select	This should be set for the type of No. 2 request signal. Hereinafter same as above.	Same as above	Same as above
15.	3rL	No. 3 Request signal input select	This should be set for the type of No. 3 request signal. Hereinafter same as above.	Same as above	Same as above
16.	4rL	No. 4 Request signal input select	This should be set for the type of No. 4 request signal. Hereinafter same as above.	Same as above	Same as above
17.	5rL	No. 5 Request signal input select	This should be set for the type of No. 5 request signal. Hereinafter same as above.	Same as above	Same as above
18.	6rL	No. 6 Request signal input select	This should be set for the type of No. 6 request signal. Hereinafter same as above.	Same as above	Same as above
19.	bt1	No. 1 Batch gate timer	No.1 Batch gate timer should be set for opening time of automatic slide gate when the batch conveyance option is performed. This should be set so that any desired amount is conveyed.	0.0 - 99.9 sec	1.0
20.	bt2	No. 2 Batch gate timer	No.2 Batch gate timer should be set for opening time of automatic slide gate when the batch conveyance option is performed. Here in after same as above.	Same as above	Same as above

Engineering Setting Mode					
No.	**Code**	**Setting Item**	**Function**	**Setting Range**	**Initial Value**
21.	bt3	No. 3 batch gate timer	No.3 Batch gate timer should be set for opening time of automatic slide gate when the batch conveyance option is performed. Hereinafter same as above.	Same as above	Same as above
22.	bt4	No. 4 batch gate timer	No.4 Batch gate timer should be set for opening time of automatic slide gate when the batch conveyance option is performed. Hereinafter same as above.	Same as above	Same as above
23.	bt5	No. 5 batch gate timer	No.5 Batch gate timer should be set for opening time of automatic slide gate when the batch conveyance option is performed. Hereinafter same as above.	Same as above	Same as above
24.	bt6	No. 6 batch gate timer	No.6 Batch gate timer should be set for opening time of automatic slide gate when the batch conveyance option is performed. Hereinafter same as above.	Same as above	Same as above
25.	bn_	Batch gate interlocking direction	This should be set for interlocking conveying direction when the batch conveyance option is performed. oFF: No batch conveyance 1: Interlocking in No. 1 direction 2: Interlocking in No. 2 direction 3: Interlocking in No. 3 direction 4: Interlocking in No. 4 direction 5: Interlocking in No. 5 direction 6: Interlocking in No. 6 direction ALL:Interlocking in all directions	oFF, 1,2,3,4,5,6 ALL	oFF
26.	bS_	Batch gate	When batch conveyance option is performed, this should be set to select the type. 0: Automatic slide gate 1-2: These cannot be set for standard specifications and options This should be set for special specification. (Remark)1: Idling valve 2: MSD	0	0
27.	Jd_	–	This should be set in case of special specifications. Keep the initial value.	–	0

Engineering Setting Mode					
No.	**Code**	**Setting Item**	**Function**	**Setting Range**	**Initial Value**
28.	JAt	–	Same as above	–	3
29.	Jbt	–	Same as above	–	3
30.	JC_	–	Same as above	–	1
31.	Ab_	–	Same as above	–	A
32.	JS_	–	Same as above	–	OFF

2. Setting procedure

The codes for each setting item are displayed on the left digital display (red).
The set values are displayed on the right digital display (green).

NOTE

Carry out the respective setting procedures after stopping operation. The setting mode cannot be turned on during operation.

Step	User Setting Mode
1.	Press the SV switch (SV) The User Setting Mode display flashes.
2.	Codes for setting items and set values are displayed on the digital display. With this state, respective setting items are sequentially displayed each time when the SV switch (SV) is depressed. Display code for any desired setting item.
3.	Press the ENTER switch (↵) with the code for any desired setting item displayed. The set value can now be changed. Set the set value to any desired value with the UP switch (▲) or DOWN (▼) switch SV. The set value is written when the ENTER switch (↵) is depressed. [Remark] 1 setting unit is added every time the UP switch (▲) is depressed. It is continuously added when the switch is kept depressed. 1 setting unit is subtracted every time the UP switch (▼) SV is depressed. It is continuously subtracted when the switch is kept depressed.
4.	The mode returns to the normal mode when the SV switch (SV) is depressed while the last setting item (dUP) is displayed.

NOTE

Unless operation is performed for ten seconds or longer, the mode automatically exits the setting mode and returns to the normal mode.

Step	Engineering Setting Mode
1.	Keep pressing the SV switch (SV) for five seconds or longer. The Engineering Setting Mode display blinks.
2.	Codes for setting items and set values are displayed on the digital display. Operate in the same way as the User Setting Mode from now on.
3.	After the setting procedure is completed, the mode returns to the normal mode when the SV switch (SV) is kept depressed for five seconds or longer.

NOTE

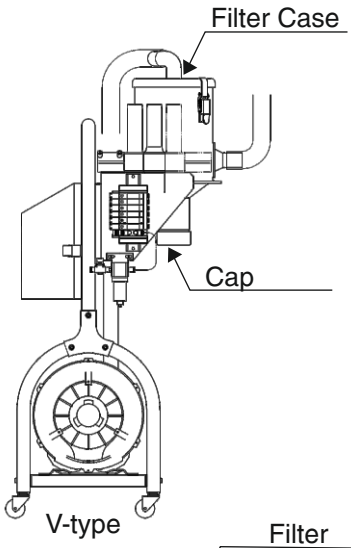
Unless operation is performed for ten seconds or longer, the mode automatically exits the setting mode and returns to the normal mode.

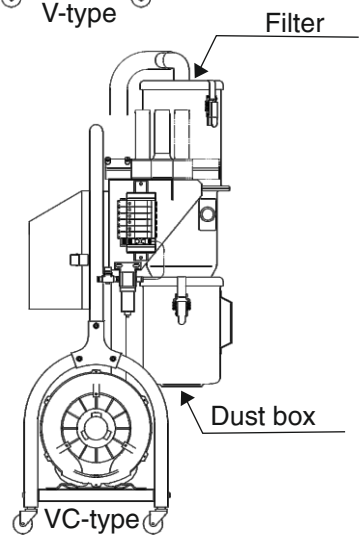
CHAPTER-8 : INSPECTION AND MAINTENANCE

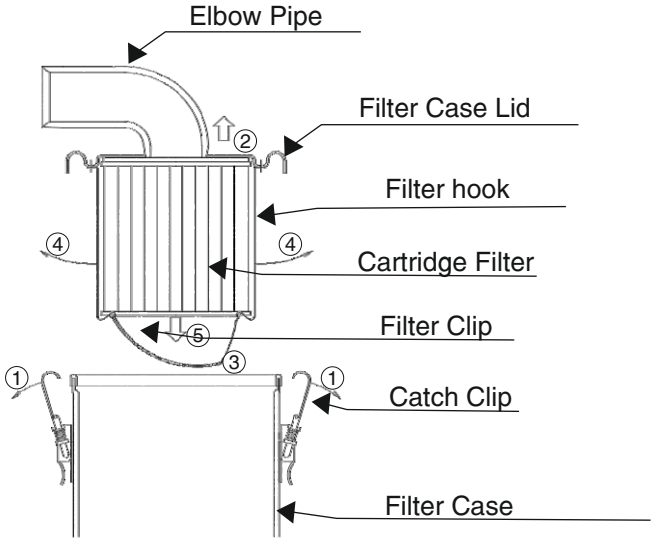
This chapter describes inspection and maintenance items and the procedures in order of inspecting frequency in order to always keep the product in a favorable state.

1. Daily Inspection

Maintenance and inspection item	Descriptions
Cartridge filter within filter case of the suction unit	1.After removing a catch clip on the filter case, remove the filter case lid.[①→②] 2.After removing a filter clip, take out the cartridge filter from the filter case lid to clean.[③→④→⑤] 3.Remove the fine particles that adhere to the filter with a vacuum cleaner. 4.Be sure to recover after cleaning.

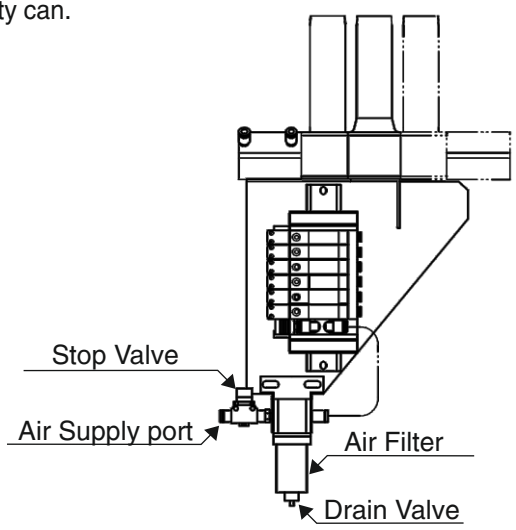


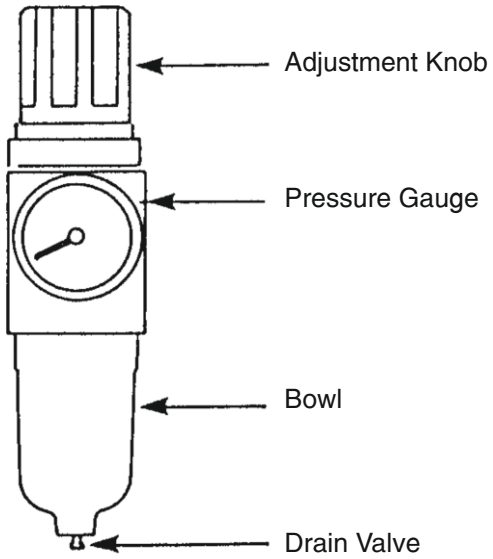




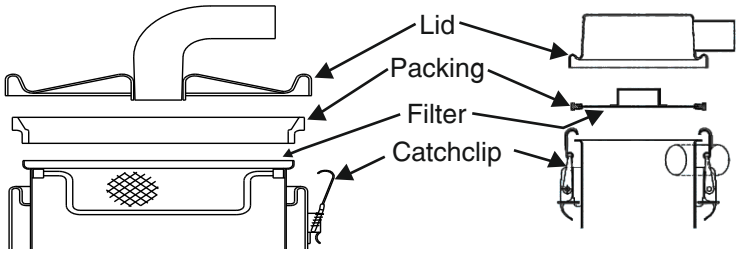
⚠ CAUTION

1. Install the cartridge filter so that the opening having the packing is directed toward the filter case lid.
2. If the equipment is used in a state where packing of the cartridge filter does not closely contact the filter case lid, the fine particles will mix into the blower and cause blower trouble.
3. Replace with a new cartridge filter, in the case where a damaged cartridge filter, a cartridge filter that is severely deteriorated, deformed or is adhered with deposits cannot be removed. Replace when the blower has trouble and cannot carry out material conveyance, the filter mesh is clogged, or fine particles result of a damaged part.

Maintenance and inspection item	Descriptions
Discharging dust in suction unit	V type Remove the cap below the filter case and discharge the accumulated dust. Be sure to recover after discharging. VC type Remove the catch clip on the upper part of the dust box and discharge the accumulated dust. Be sure to recover after discharging. * Replace with new packing if the U type packing for the dust box is severely deteriorated, deformed, discolored or hardened.
Air kit for 3-6 way selector valve	Discharge drainage accumulated in the bowl of the air filter by pressing the drain valve on the lower part of the bowl. Catch drainage with an empty can. 

Maintenance and inspection item	Descriptions
Air kit for slide gate of collection hopper ＊Only for a suction hopper type SD control collection hopper	Pull up the adjusting knob of the filter regulator to unlock, turn the adjusting knob the to left, and check that the indicated pressure on the pressure gauge has reached “0 (zero)” and then discharge the drainage accumulated in the bowl. Drainage can be discharged by pushing the drain valve of the bowl lower part. Drainage should be received by an empty can. 

2. Monthly inspection

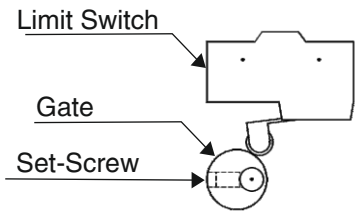
Maintenance and inspection item	Descriptions
Metal screen filter inside the collection hopper	Open the lid of the collection hopper to take out the filter, and check that it is not clogged. If clogged, blow clean dry air to remove the deposits  ▪ If the deposits cannot be removed even by blowing dry air, use sharp metal wire ▪ Replace with new packing if the packing is severely deteriorated, deformed, discolored or hardened **⚠ CAUTION** Exercise sufficient care when handling the filter. A deformed metal screen filter may cause air leakage, resulting in conveyance failure. If the filter is deformed, fix it by tapping it with a soft object such as a wooden or rubber hammer. If the filter still cannot be fixed, replace it with a new one.
Conveying hose (PVC hose) Air hose (GL-IV hose)	Inspect each hose connection for suction leakage, and additionally tighten the hose bands. ▪ Replace with new packing if the packing is severely deteriorated, deformed, discolored or hardened

3. Component adjustment procedure

This section describes the adjustment procedure of the full detecting device attached to each collection hopper.

A. Jet Clone gate cam

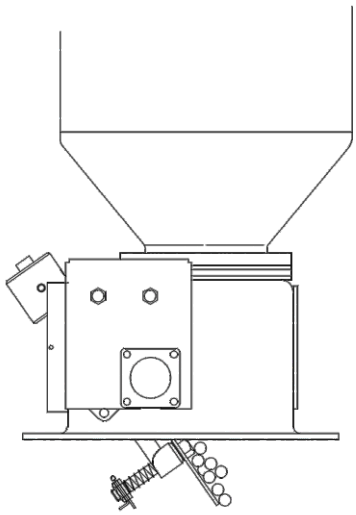
Adjust the gate cam when full is not detected regardless of whether the material is full



Step	Details of operation
1.	Loosen the set-screw with a hexagon rod spanner (2.5mm).
2.	Adjust position of the gate cam so that limit switch becomes turn “ON” when the gate about 70°Copened from horizontal.
3.	After adjusting the cam, secure it by tightening the set-screw.

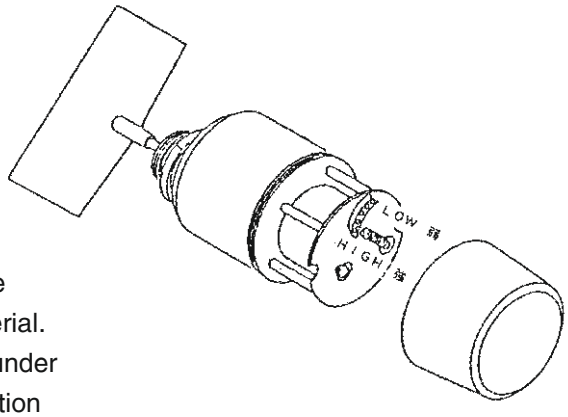
B. Balance weight for Jet clone

In a case where material is attached to the damper due to static electricity, the state shown on the right is brought about in rare cases. In such a case, adjust the damper by loosening two locking screws for the balance weight rearward by 5mm, respectively so as to be horizontally positioned. Retighten screws for fixing after adjustment.



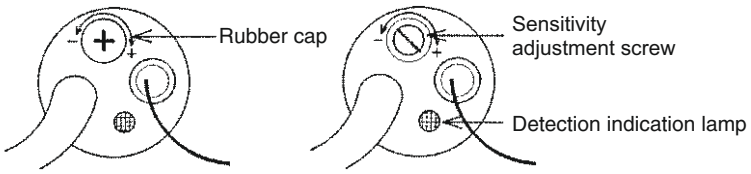
C. Suction hopper level switch

If the level switch does not accurately detect the full level for the material used, make a sensitivity adjustment of the level switch. Adjust the sensitivity according to the specific gravity of the material.

Step	Details of operation
1.	Set the control panel power circuit breaker to ON.
2.	Remove the lid of the level switch.
3.	Change the spring hook position. Moving the spring toward the HIGH position causes the sensitivity to increase, and vice versa. **[Confirmation method]** (1)The spring of the level switch is set up in the strongest direction. (2)The material is fed slowly until the blade of the level switch is filled up with the material. (3)The adjustment confirmation performs under this condition from the HIGH to LOW direction step by step. Then, the adjustment is completed in the position where the blade rotation stops securely. 

D. Suction hopper proximity switch (E2K)

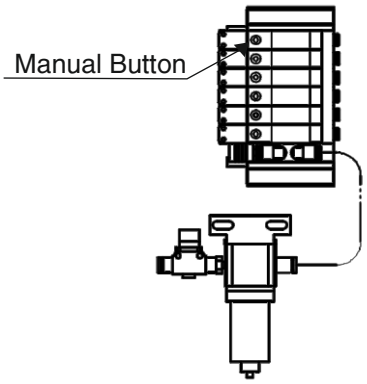
If the proximity switch does not detect the full level, make a sensitivity adjustment of the proximity switch by the following steps.

Step	Details of operation
1.	Remove the materials in the collection hopper. Turn ON the power circuit breaker on the control panel.
2.	Confirm that there is no gap of 1mm or more between the end of the proximity switch and the hopper sight glass. If there is a gap between them, loosen the fastening screws (2 pieces) of the proximity switch fitting bracket and adjust the distance between the end of the proximity switch and the hopper sight glass to approximately 1mm, and then fix them.
3.	Remove the rubber cap at the back of the proximity switch. 
4.	Perform the following ①, ② and ③ operation while adjusting the sensitivity adjustment screw with the attached screwdriver. ①Adjust the sensitivity to a point where the sensor switches from ON to OFF without material (Detection indication lamp turns OFF). ②Adjust the sensitivity to a point where the sensor switches from OFF to ON with material (Detection indication lamp turns ON). ③Set the sensitivity adjustment screw at the middle point between the ON to OFF point ① without material and the OFF to ON point ② with material. NOTE: Perform the sensitivity setting with the actually used material. And, when there are various materials, the ①, ② and ③ operations should be performed with a light material of appearance specific gravity. **(-side)** **(+side)** ② ③ ① With material ON (turn ON) ▲ Setting point With material OFF (turn OFF)
5.	Install the rubber cap removed in step 3. Perform the material conveyance and confirm that the detection indicator turns on.

4. Operation check procedure of 3 – 6 way selector valve

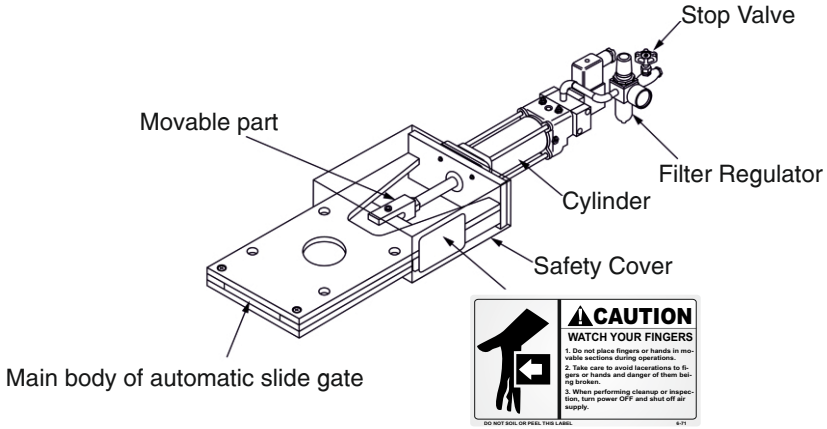
Manually operate the 3 – 6 way selector valve and describe the Operation check

the Operation check procedure according to the steps.

Step	Details of operation
1.	Turn OFF the power breaker on the rear face of the control panel.
2.	Supply dry compressed air of –0.3 MPa - 0.9 MPa to the air kit of the 3-6 way selector valve.
3.	Press the manual button of the solenoid valve.  When the manual button of the solenoid valve is pressed, the air cylinder operates.

5. Operation check procedure of automatic slide gate

In the case of the suction hopper type SD control collection hopper, manually operate the automatic slide gate. The methods for checking the operation are described according to the steps.

Step	Details of operation
1.	Turn “OFF” the control panel power circuit breaker.
2.	Supply dry compressed air of 0.4 MPa to 0.5 MPa to the air kit of the automatic slide gate.
3.	Press the manual button on the solenoid valve. The air cylinder starts to operate. 

⚠ CAUTION

- Do not place fingers or hands into the movable parts (slide part) during operation. Tears or bone fractures may result.
- Never operate with the cover of the movable part removed.
- Never operate with material caught in the slide damper. Failure may result.

CHAPTER-9 : TROUBLESHOOTING

This chapter describes troubleshooting of the product. Check before requesting repair.

Before inspection, be sure to stop the operation and set the control panel power circuit breaker and the primary power supply to “OFF.”

Error by digital display on control panel			
Code	Location to be checked	Action	Precaution
“E 0” Memory error	Check the control board.	▪ Restart. ▪ Turn “OFF” the power circuit breaker once, and turn it “ON” again.	▪ Be sure to turn “OFF” the power supply of your facility before carrying out work. ▪ If the “E0” is displayed even after restarting, the control board has failed. ▪ Contact your local Matsui SDI dealer.
“E 3” Conveying blower overload error	Check that material is not clogged in the conveying hose.	▪ Remove the material in the conveying hose. ▪ Adjust the secondary air intake amount with the secondary air adjustment ring on the suction nozzle at the end of the conveying hose.	▪ When the suction part (metal mesh) on the secondary air adjustment ring is clogged, blow clean dry air to remove the deposits. ▪ Be sure to turn “OFF” the power supply of your facility, and then set to the rated value of the thermal relay and reset the alarm with the reset button.
	Check that the thermal relay in the control panel is set to the rated value.	▪ Set the thermal relay to the rated value. ▪ Press the reset button for the thermal relay to reset the alarm.	
“E 14” Control board error	Check the control board	▪ Restart. ▪ Turn “OFF” the power circuit breaker once, and turn it “ON” again.	▪ Be sure to turn “OFF” the power supply of your facility before carrying out work. ▪ If the “E14” is displayed even after restarting, the control board has failed. ▪ Contact your local Matsui SDI dealer.

Error by digital display on control panel			
Code	Location to be checked	Action	Precaution
"E 15" Alarm for filter cleaning	Clean the cartridge filter and check powder dust in the dust box.	▪ Clean the filter, and dispose powder dust in the dust box. (see Chapter 8 Inspection and Maintenance). ▪ Set the dust cleaning count (dUP) to "0" to reset.	▪ If the cartridge filter is damaged or deposits cannot be removed, replace the filter. ▪ Contact your local Matsui SDI dealer for a new filter.
"E 21" No. 1 Conveying. error	Check that material is not clogged in the conveying hose in the No. 1 direction.	▪ Remove the material in the conveying hose. ▪ Adjust the secondary air intake amount with the secondary air adjustment ring on the suction nozzle at the end of the conveying hose.	▪ When the suction part (metal mesh) on the secondary air adjustment ring is clogged, blow clean dry air to remove the deposits. ▪ See "Blower does not rotate" in the next item.
	Check the limit switch for the level switch in the No. 1 direction (Jet Clone type), E2K for the suction hopper type, and level switch for level switch type.	▪ See "Blower does not rotate" in the next item.	
"E 22" No. 2 Conveying. error	Check that material is not clogged in the conveying hose in the No. 2 direction.	▪ Remove the material in the conveying hose. ▪ Adjust the secondary air intake amount with the secondary air adjustment ring on the suction nozzle at the end of the conveying hose.	▪ When the suction part (metal mesh) on the secondary air adjustment ring is clogged, blow clean dry air to remove the deposits. ▪ See "Blower does not rotate" in the next item.
	Check the limit switch for the level switch in the No. 2 direction (Jet Clone type), E2K for the suction hopper type, and level switch for level switch type.	▪ See "Blower does not rotate" in the next item.	

Error by digital display on control panel			
Code	Location to be checked	Action	Precaution
"E 23" No. 3 Conveying. error	Check that material is not clogged in the conveying hose in the No. 3 direction.	▪ Remove the material in the conveying hose. ▪ Adjust the secondary air intake amount with the secondary air adjustment ring on the suction nozzle at the end of the conveying hose.	▪ When the suction part (metal mesh) on the secondary air adjustment ring is clogged, blow clean dry air to remove the deposits. ▪ See "Blower does not rotate" in the next item.
	Check the limit switch for the level switch in the No. 3 direction (Jet Clone type), E2K for the suction hopper type, and level switch for level switch type.	▪ See "Blower does not rotate" in the next item.	
"E 24" No. 4 Conveying. error	Check that material is not clogged in the conveying hose in the No. 4 direction.	▪ Remove the material in the conveying hose. ▪ Adjust the secondary air intake amount with the secondary air adjustment ring on the suction nozzle at the end of the conveying hose.	▪ When the suction part (metal mesh) on the secondary air adjustment ring is clogged, blow clean dry air to remove the deposits. ▪ See "Blower does not rotate" in the next item.
	Check the limit switch for the level switch in the No. 4 direction (Jet Clone type), E2K for the suction hopper type, and level switch for level switch type.	▪ See "Blower does not rotate" in the next item.	

Error by digital display on control panel			
Code	Location to be checked	Action	Precaution
"E 25" No. 5 Conveying. error	Check that material is not clogged in the conveying hose in the No. 5 direction.	▪ Remove the material in the conveying hose. ▪ Adjust the secondary air intake amount with the secondary air adjustment ring on the suction nozzle at the end of the conveying hose.	▪ When the suction part (metal mesh) on the secondary air adjustment ring is clogged, blow clean dry air to remove the deposits. ▪ See "Blower does not rotate" in the next item.
	Check the limit switch for the level switch in the No. 5 direction (Jet Clone type), E2K for the suction hopper type, and level switch for level switch type.	▪ See "Blower does not rotate" in the next item.	
"E 26" No. 46 Conveying. error	Check that material is not clogged in the conveying hose in the No. 6 direction.	▪ Remove the material in the conveying hose. ▪ Adjust the secondary air intake amount with the secondary air adjustment ring on the suction nozzle at the end of the conveying hose.	▪ When the suction part (metal mesh) on the secondary air adjustment ring is clogged, blow clean dry air to remove the deposits. ▪ See "Blower does not rotate" in the next item.
	Check the limit switch for the level switch in the No. 6 direction (Jet Clone type), E2K for the suction hopper type, and level switch for level switch type.	▪ See "Blower does not rotate" in the next item.	

Power circuit breaker trips		
Location to be checked	Action	Precaution
Check that foreign matter is not caught in the blower fan.	Remove the fan cover to remove foreign matter.	Turn “OFF” the primary power supply and power circuit breaker before carrying out work.
Check that the magnetic switch (MS-1) in the control panel operates normally.	Replace the magnetic switch (MS-1).	Tolerance: 1,000,000 times Even if it is normal, replace by the time the above times are reached or within 2 years after starting use. Entrust Matsui SDI or your employee who has sufficient working knowledge of electricity to carry out inspection or exchange, since the operation includes the potential for failure or danger.
Check that the power circuit is not short-circuited.	Eliminate the short-circuit.	Entrust Matsui SDI or your employee who has sufficient working knowledge of electricity to carry out inspection or exchange, since the operation includes the potential for failure or danger.

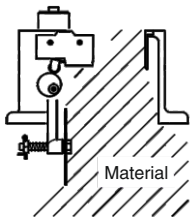
Operation panel does not turn on.

NOTE

When not in operation, a decimal point at the bottom of the digital display on the operation panel turns on, indicating that power is “ON.”

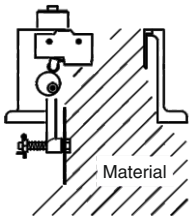
Location to be checked	Action	Precaution
Check that the power circuit breaker on the control panel is “ON.”	Turn “ON” the power breaker.	If switching does not function properly, replace the power breaker. Entrust Matsui SDI or your employee who has sufficient working knowledge of electricity to carry out inspection or exchange, since the operation includes the potential for failure or danger.
Check that the glass-tube fuse . (F-1) in the control panel has not burned out.	Replace the glass-tube fuse (F-1). Check that the power circuit is not short-circuited.	Turn “OFF” the primary power supply and power circuit breaker before carrying out work. Entrust Matsui SDI or your employee who has sufficient working knowledge of electricity to carry out inspection or exchange, since the operation includes the potential for failure or danger.

Blower does not rotate.		
Location to be checked	Action	Precaution
Check that the connecting terminal of the power cord is securely tightened.	Securely tighten the connecting terminal.	Turn “OFF” the primary power supply before carrying out work.
Check that the magnetic switch (MS-1) in the control panel operates normally.	Replace the magnetic switch (MS-1).	Tolerance: 1,000,000 times Even if it is normal, replace by the time the above times are reached or within 2 years after starting use. Entrust Matsui SDI or your employee who has sufficient working knowledge of electricity to carry out inspection or exchange, since the operation includes the potential for failure or danger.

Blower does not rotate.		
Location to be checked	Action	Precaution
Check that foreign matter is not caught in the blower fan.	Remove the fan cover to remove foreign matter.	Turn “OFF” the primary power supply and power circuit breaker before carrying out work.
Check that the Jet Clone limit switch operates normally. * Only when the Jet Clone type limit type collection hopper is used.	Replace the limit switch	For purchase of the limit switch and type, contact Matsui SDI.
Check that the Jet Clone gate can is properly adjusted. * Only when the Jet Clone type limit type material hopper is used.	Refer to Chapter 8 Inspection and Maintenance to adjust the gate cam.	A condition when the limit switch is “ON.” 
Check that the suction hopper proximity switch detects normally. * Only when the suction hopper type E2K control is used.	Refer to Chapter 8 Inspection and Maintenance to adjust the sensitivity of the proximity switch. If the proximity switch does not operate normally even after the sensitivity adjustment, replace it.	For purchase of the proximity switch and type, contact Matsui SDI.
Check that the suction hopper level switch detects normally. * Only when the suction hopper type level switch control or SD control collection hopper is used.	Refer to Chapter 8 Inspection and Maintenance to adjust the sensitivity of the level switch. If the level switch does not operate normally even after the sensitivity adjustment, replace it.	For purchase of the level switch and type, contact Matsui SDI.

The blower rotates but does not suction air.		
Location to be checked	Action	Precaution
Check the blower for reverse rotation. ＊ The blower rotates in reverse if air is suctioned from the exhaust port of the blower.	Refer to Chapter 3 Installation to rotate the blower forward.	Turn “OFF” the primary power supply and power circuit breaker before carrying out work.
Check that the suction hopper damper is securely closed. ＊ Only when the suction hopper type SD control collection hopper is used.	Securely connect the power connector for the electromagnetic valve. If the damper still does not close, replace the electromagnetic valve.	For purchase of the electromagnetic valve and type, contact Matsui SDI. Entrust Matsui SDI or your employee who has sufficient working knowledge of electricity to carry out inspection or exchange, since the operation includes the potential for failure or danger.
Check that external air is suctioned from the connection . end of the conveying hose or suction hose.	Securely tighten the hose clamps.	If any of the hoses are broken, replace them with new ones. For purchase of the hose and type, contact Matsui SDI.
Check that the conveying hose is not clogged with material.	Remove the material from the conveying hose. Increase the amount of secondary intake air by adjusting the secondary air adjustment ring of the suction nozzle at the end of the conveying hose.	If the suction part (metal mesh part) of the secondary air adjustment ring is clogged, blow clean dry air to remove deposits

The blower rotates but does not suction air.		
Location to be checked	Action	Precaution
Check that the lid of the collection hopper is securely fitted.	Fit the packing and fix the lid with catch clips.	If the packing is significantly deteriorated, deformed, discolored or hardens, replace it with a new one. For purchase of the packing and type, contact Matsui SDI.
Check that the metal mesh filter inside the collection hopper is not clogged.	Blow clean dry air to the metal mesh filter to remove deposits.	If the deposits cannot be removed by the procedure described at the left, use a wire with a sharp edge. Do not deform the metal mesh filter.
Check that the cartridge filter inside the filter case is not clogged.	After removing powder dust remaining inside of the cartridge filter, blow clean dry air to remove deposits.	If the deposits cannot be removed due to severe deterioration of the cartridge filter, replace it with a new one. In addition, if the packing is significantly deteriorated, deformed, discolored or hardens, replace it with a new one. For purchase of the packing and cartridge filter and type, contact Matsui SDI
Check that the 2-way selector valve is properly selected.	Refer to Chapter 8 Inspection and Maintenance to check the operation of the electromagnetic valve. If the electromagnetic valve does not properly operate, dismantle and clean it or replace it.	For purchase of the electromagnetic valve and type, contact Matsui SDI.

No full level signal of the collector appears.		
Location to be checked	Action	Precaution
Check that the Jet Clone limit switch operates normally. * Only when the Jet Clone type limit type collection hopper is used.	Replace the limit switch.	For purchase of the limit switch and type, contact Matsui SDI
Check that the Jet Clone gate cam is properly adjusted. * Only when the Jet Clone type limit type material hopper is used.	Refer to Chapter 8 Inspection and Maintenance to adjust the gate cam.	A condition when the limit switch is "ON." 
Check that the Jet Clone gate is completely opened. * Only when the Jet Clone type limit type collection hopper is used.	Check the end of the damper solenoid and repair any abnormality.	Contact Matsui SDI for replacement of the end.
Check that the suction hopper proximity switch detects normally. * Only when the suction hopper type E2K control is used.	Refer to Chapter 8 Inspection and Maintenance to adjust the sensitivity of the proximity switch. If the proximity switch does not operate normally even after the sensitivity adjustment, replace it.	For purchase of the proximity switch and type, contact Matsui SDI.
Check that the suction hopper level switch detects normally. * Only when the suction hopper type level switch control or SD control collection hopper is used.	Refer to Chapter 8 Inspection and Maintenance to adjust the sensitivity of the proximity switch. If the level switch does not operate normally even after the sensitivity adjustment, replace it.	For purchase of the level switch and type, contact Matsui SDI.

CHAPTER-10 : LIST OF CONSUMABLES

Code No.	Part Name	Maker	Mode / Material	Qty.	Recommended Replacement interval
00427	Conveying hose (PVC hose)	Tigers Polymer Co.	W-38	5m/one direction	Every Year
00427			W-38	10m/one direction	
00427			W-50	10m/one direction	
12735	Suction hose (GL-IV hose)	Tigers Polymer Co.	#38	5m/one direction	Every Year
12736			#65		
00552	Packing (for filter case lid)	Matsui Mfg Co.	NBR U-packing	1	Every Year
00552	Packing (for dust hopper lid)	Matsui Mfg Co.	NBR U-packing	1	Every Year
21614	Cartridge filter	Matsui Mfg Co.	MXF-16SP-G4	1	Every Year
—	Magnetic switch	Fuji Electric Co	DWG No,189756	1	Every Year

NOTE

1. The replacement interval varies with the conditions of operation.
2. The hoses shown above are of the standard type.

CHAPTER-11 : SPECIFICATIONS

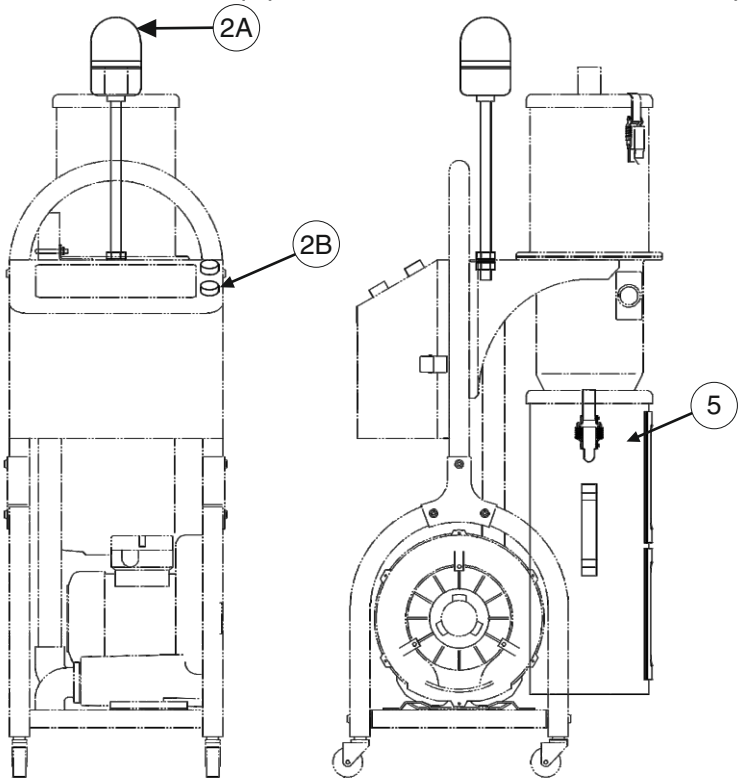
This chapter describes physical properties which customers should understand when operating the product.

Model	JL4-		4 (V, VC)	5 (V, VC)	6 (V, VC)	7 (V, VC)
Blower type	J, A version		RB40-520	RB40-620	RB50-620	RB60-720
	U version		RB40-53U	RB40-63U	RB50-63U	RB60-73U
Maximum static pressure-kPa		50 Hz	17	18	22	27
		60 Hz	18	21	24	32
Maximum air flow rate m^3/min		50 Hz	2.4	2.4	3.5	5.1
		60 Hz	2.8	2.8	3.8	6.1
Maximum output kW		50 Hz	0.9	1.1	2.2	4.0
		60 Hz	1.15	1.5	2.55	4.6
∗ Conveying capacity kg/h	5 m	50 Hz	200	390	850	950
		60 Hz	250	440	910	1000
	10 m	50 Hz	170	300	740	840
		60 Hz	220	360	820	920
	20 m	50 Hz	120	230	590	720
		60 Hz	170	300	700	820
	30 m	50 Hz	100	180	520	630
		60 Hz	150	250	630	760
Conveying hose (PVC hose) inner diameter mm			38	38	50	50
Suction hose (GL-IV hose) inner diameter mm			38	38	65	65
Standard combined Jet Clone			JC-6	JC-9	JC-18	JC-18
Power (V) (Hz) Capacity (A)	J version (A)		200V AC 3-phase 50/60Hz, 220V AC 3-phase 60Hz			
			15	15	20	40
	A version (A)/50Hz (A)/60Hz		380/400/415V AC 3-phase 50/60Hz			
			10	10	10	15
			10	10	15	20
	U version (A)/230Hz (A)/460Hz		230V AC 3-phase 60Hz, 460V AC 3-phase 60Hz			
			15	15	20	40
			10	10	10	20

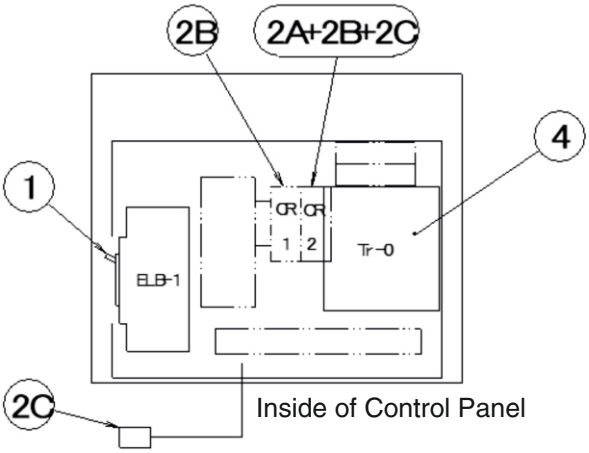
1. The above conveying capacity shall be obtained under the following conditions.
   - Resin used: ABS virgin pellets with an apparent specific gravity of 0.63.
   - Suction distance: 5m. The conveying distance (5 to 30m) includes a vertical distance of 3m.
   - Hose used: PVC hose, Nozzle used: made by Matsui
   - Standard combined Jet Clone
2. The conveying capacity of the equipment varies with the shape and specific gravity of the virgin material, the temperature, the material and bend of the conveying pipe, the types of suction nozzle and collection box, and the control procedures for the collection hopper.

CHAPTER-12 : OPTION

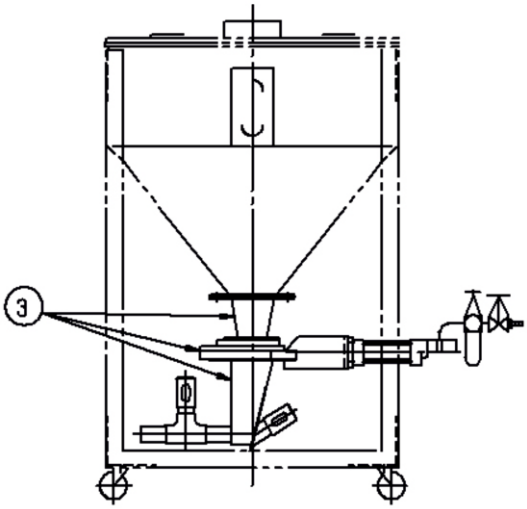
The following options are available for this equipment. Please make sure that correct options are installed



∗ The unit shown above is a suction unit of the type JL4-VC

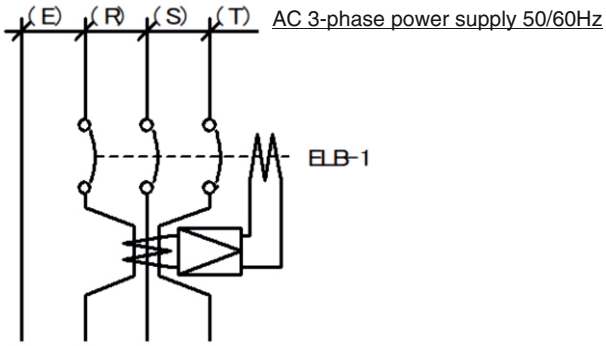


※ It becomes a large-scale control board for option 2A+2B+2C+4.



1. Leakage circuit breaker

The leakage circuit breaker, if attached to the power circuit breaker, will protect the equipment against a ground fault, an overload or short-circuit, thus preventing electric shock hazards.



Symbol	Name	Maker	Model	
ELB-1	Leakage circuit breaker for motor protection	Mitsubishi Electric Corp.	JL4-4V/VC	NV30-KC 3P 15A 30mA
			JL4-5V/VC	NV30-KC 3P 15A 30mA
			JL4-6V/VC	NV30-KC 3P 20A 30mA
			JL4-7V/VC	NV50-KC 3P 40A 30mA

NOTE

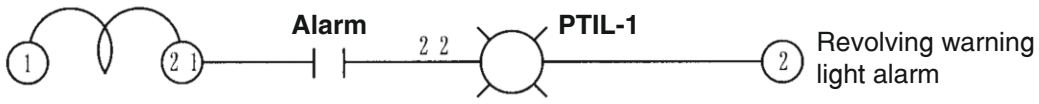
- The leakage circuit breaker is for supplied voltage of 200V AC to 220V AC. The breaker cannot be attached for other voltages.
- When the leakage breaker is attached, a no-fuse breaker (NFB-1) is not attached.

2. Alarm

The alarm can be chosen for only one of the following, 2A revolving alarm lamp, 2B buzzer lamp, 2A+2B revolving alarm lamp with buzzer and 2C alarm output.

2A: Alarm lamp

At the time of dusting operation, the alarm lamp turns on, alerting operators in a wide working area.

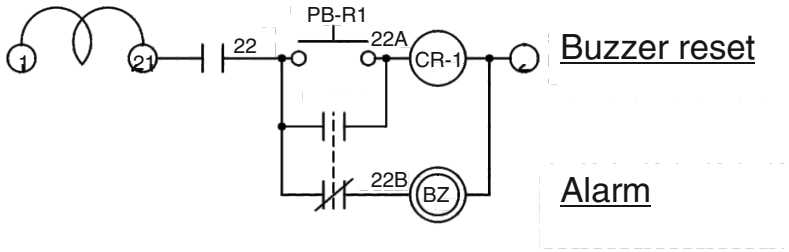


Symbol	Name	Maker	Model
PTL-1	Revolving warning light	Arrow	AP-200 (R, Y)

* The color of revolving alarm lamp can be chosen from red or yellow.

2A: Alarm Buzzer

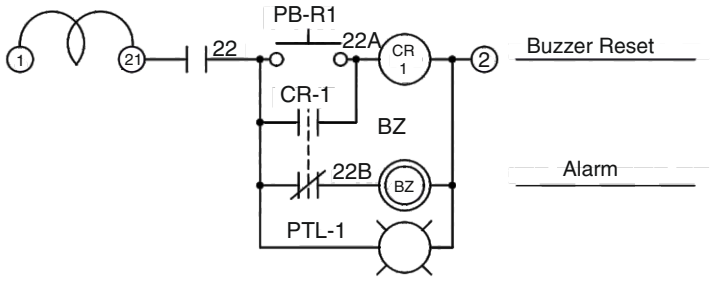
At the time of dusting operation, the buzzer sounds, alerting operators in a wide working area.
The buzzer sound can be stopped by a pushbutton.



Symbol	Name	Maker	Model
BZ	Buzzer	Fuji electric	DR22B5-MB
PB-R1	Pushbutton	Fuji electric	AR22F0R-10B

2A+2B: Alarm display with buzzer

At the time of dusting operation, the buzzer sounds and alarm display lamp turns on, alerting operators in a wide working area.
The buzzer sound can be stopped by a pushbutton.



Symbol	Name	Maker	Model
PTL-1	Revolving alarm lamp	Arrow	AP-200 (R, Y)
BZ	Buzzer	Fuji electric	DR22B5-MB
PB-R1	Pushbutton	Fuji electric	AR22F0R-10B

* The color of the revolving alarm lamp can be chosen from red or yellow.

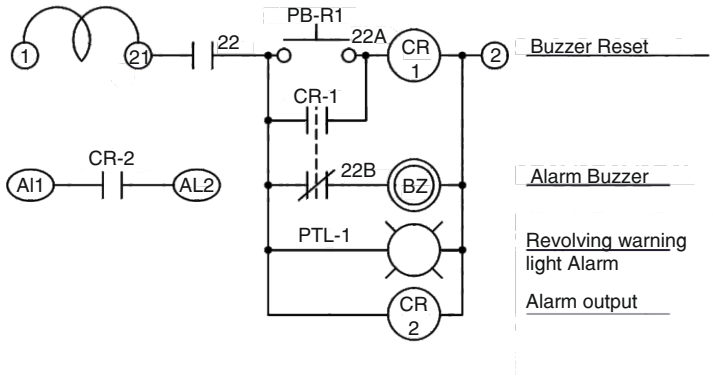
2A+2B: Alarm display with buzzer

At the time of dusting operation, the buzzer sounds and alarm display lamp turns on, alerting operators in a wide working area.
The buzzer sound can be stopped by a pushbutton.

Symbol	Name	Maker	Model
	Metal Connector	Nanaboshi Electric Mfg. Co	NJC-202-PF/AdM

2A+2B+2C: Warning display with buzzer and alarm output

The warning display light lights when JL4 is warned, the buzzer rings, and the point of contact of warning is output.



Symbol	Name	Maker	Model
PTL-1	Revolving alarm lamp	Arrow	AP-200 (R, Y)
BZ	Buzzer	Fuji electric	DR22B5-MB
PB-R1	Pushbutton	Fuji electric	AR22F0R-10B
	Metal connector	Nanaboshi Electric Mfg. Co.	NJC-202-PF/AdM

＊The color of the revolving alarm lamp can be chosen from red or yellow.

3. Batch conveyance

If the automatic slide gate is installed below the receiver tank, material can be stopped during conveyance. The blower stops after blowing air into the conveying pipe.

Symbol	Name	Maker	Model
PTL-1	Automatic Slide Gate	MATSUI	ASD ϕ70 automatic gate
BZ	Chute	MATSUI	SUS-304
PB-R1	Suction Box	MATSUI	SUS-304

4. Operating Voltage

The supplied voltage is transformed down to an operating voltage by the internal transformer.

Symbol	Name	Maker	Model
Tr-0	Transformer	MATSUI	150 VA

NOTE

For operating voltage , coils for the magnetic switch, solenoid coil, level switch and buzzer are replaced .

5. Large dust hopper (JL4-VC TYPE ONLY)

When loading the material containing a large amount of powder, we recommend a large dust hopper.

CUSTOMER NAME	OB NO.	ITEM NO.	Design Confirmation	APPROVED BY	CHECKED BY	PERSON IN CHARGE
Matsui Technologies India Limited	OB000000000			MATSUMOTO	VIKAS	VIVEK

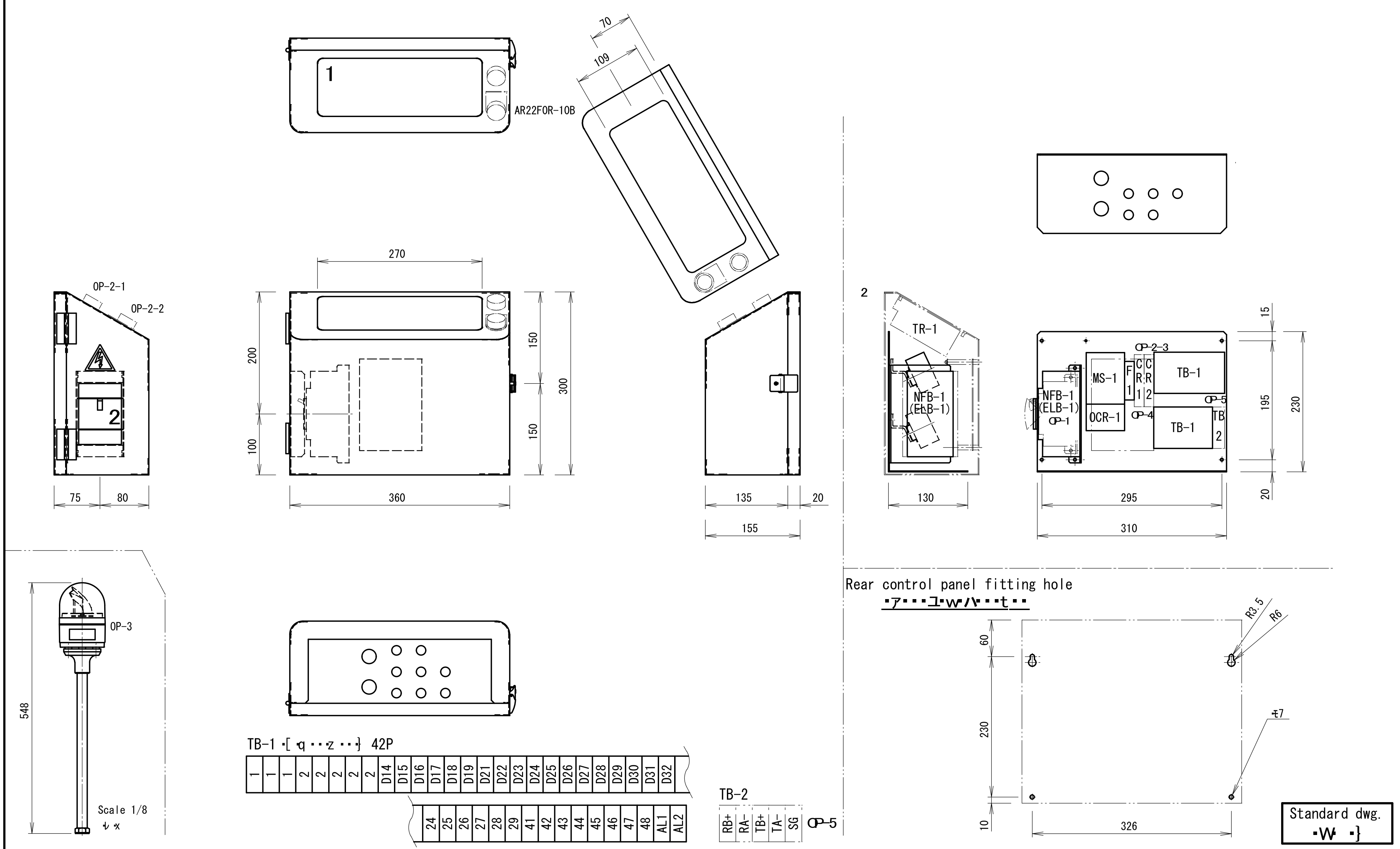
HISTRY						DELIVERY TIME	INSTRUCTION MANUAL
				AP: / PIC:	STANDARD		
				AP: / PIC:			
				AP: / PIC:			

PAINTING							FINISH AND DRAWING STANDARD
	M	1. AN-80	2. SPECIFICATION ATTACHED	3. COLOR NO.			
	E	1. AN-80	2. SPECIFICATION ATTACHED	3. COLOR NO.	OUTER INNER		

MODEL CODE		NAME	**JET LOADER**	Date
DRAWING NO.	F34433	MODEL	**JL4 - JLD3~6**	
DESIGNER	M SANDEEP / E VIKAS	APPROVAL MATSUMOTO	POWER- VAC, Hz OPERATION- VAC	
NOTED SPECIFICATION				

UNLESS OTHERWISE SPECIFIED IN THE DRAWING, MST-536 MACHINING STANDARD. MST-541 DRAWING REGULATION AND 241-003/503 PRODUCT INSPECTION PROCEDURE (STANDARD) SHALL APPLY.
IF THEY ARE INSUFFICIENT, THE JIS STANDARD SHALL APPLY.
CONTENT OF VERIFICATION CHECKLIST SHALL APPLY FOR DYNAMIC CHECK.

DRAWING NO.	SIZE	MODEL CODE	MODEL	NAME, MODEL	LOT	QTY	REMARK	REV
F34433	A3		JL4-JLD3~6	GA DRAWING	1	1	STD	
189768	A4		JL4-JLD3~6	CONTROLLER DAIGRAM	1	1	STD	
189773	A4		JL4	POWER DAIGRAM-1	1	1	STD	
189767	A4		JL4-JLD3~6	CIRCUIT DAIGRAM-1	1	1	STD	
189769	A4		JL4-JLD3~6	CIRCUIT DAIGRAM-2	1	1	STD	
189759	A4		JL4	CIRCUIT DAIGRAM A	1	1	STD	



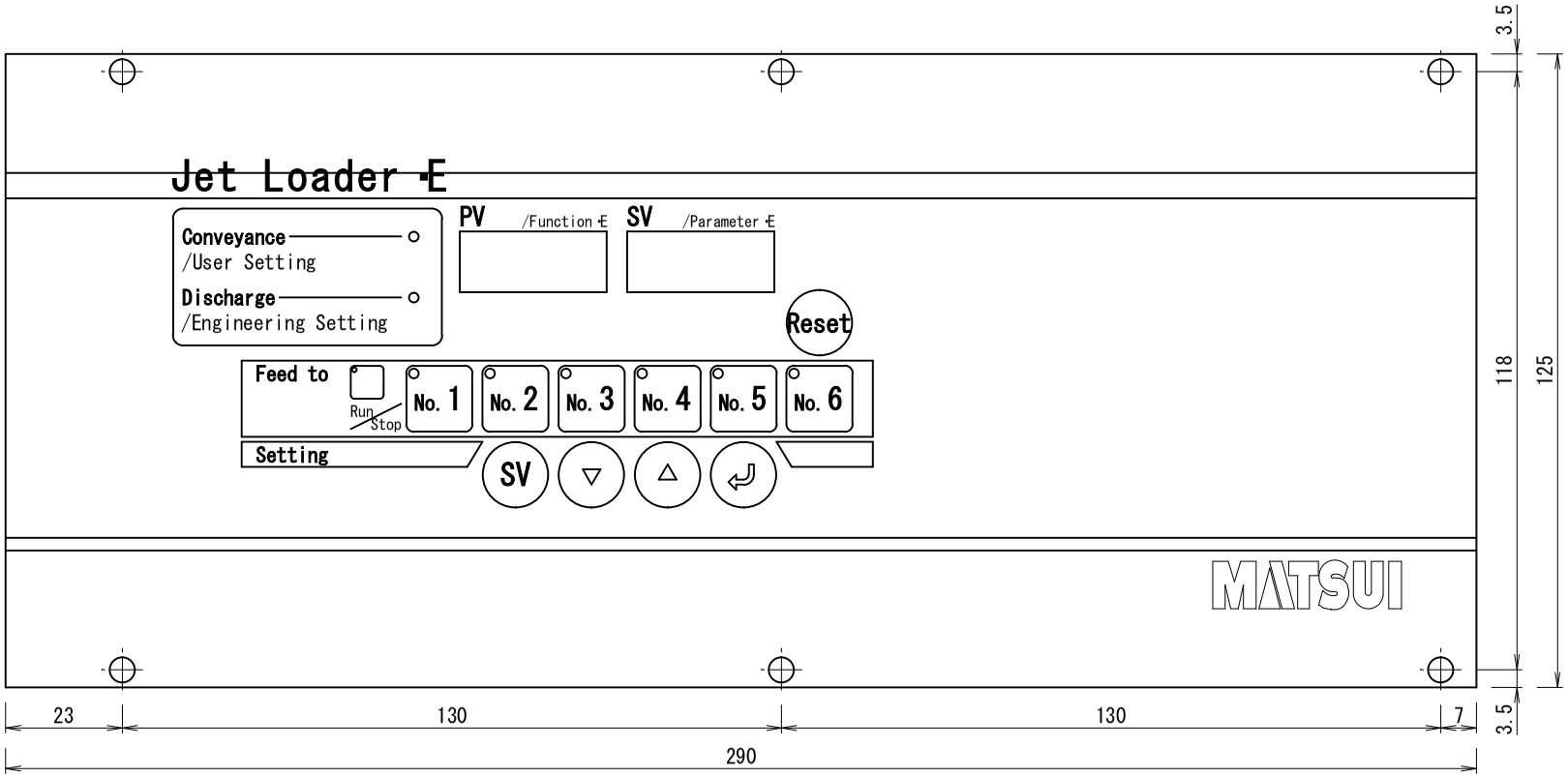
REVISION	△					SCALE	1/6	CODE NO.	700203
	△					APPROVED BY	M. Nakano	FORM	Control Panel
	△					DSGND (CHKD) BY	K. Shimizu	DATE	Feb. 04. 2020
	△		ORIGINAL DWG No. 189753						
	MARK	DATE	CONTENTS	CHKD	APPD	DRAWN BY	D. Yonemura	UNIT mm	PLANE TRIGONOMETRY

NAME	JL4-**VC-3~6-J	DWG. NO.	F34433

MATSUI MFG. CO., LTD.

A3

ITEM NO.	DESCRIPTION	REQ. D	MATERIAL	REFERENCE

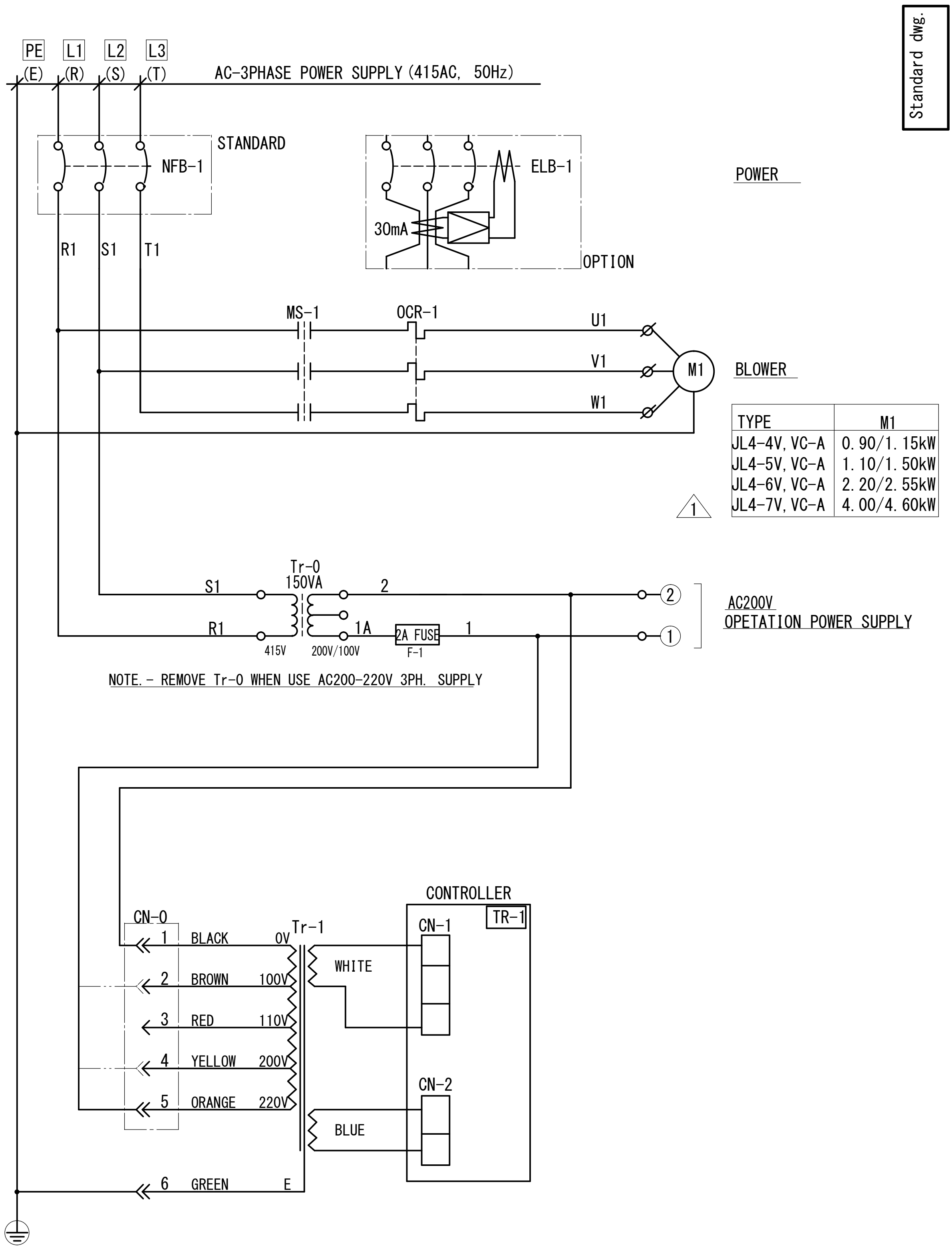


Standard dwg.
W-

REVISION								
MARK	DATE	CONTENTS	CHKD	APPD	SCALE	1:1	FORM/TYPE	CONTROLLER DAIGRAM
		W-J DWG. NO. A301139			APPROVED BY		KIMURA	CODE NO. 700203
					DSGND (CHKD) BY			DATE JUN/9/2004
					DRAWN BY		T. OONO	UNIT mm PLANE TRIGONOMETRY

NAME	JL4-JLD3~6	DWG. NO.	189768

MATSUI MFG. CO., LTD.



TYPE	M1
JL4-4V, VC-A	0.90/1.15kW
JL4-5V, VC-A	1.10/1.50kW
JL4-6V, VC-A	2.20/2.55kW
JL4-7V, VC-A	4.00/4.60kW

Matsui Technologies India Limited

NAME JL4

DWG. NO. 189773

POWER DIAGRAM 1

ROEM/TYPE

SCALE

APPROVED BY KIMURA

CODE NO. 700203

DSGND (CHKD) BY -

DATE DEC/23/2003

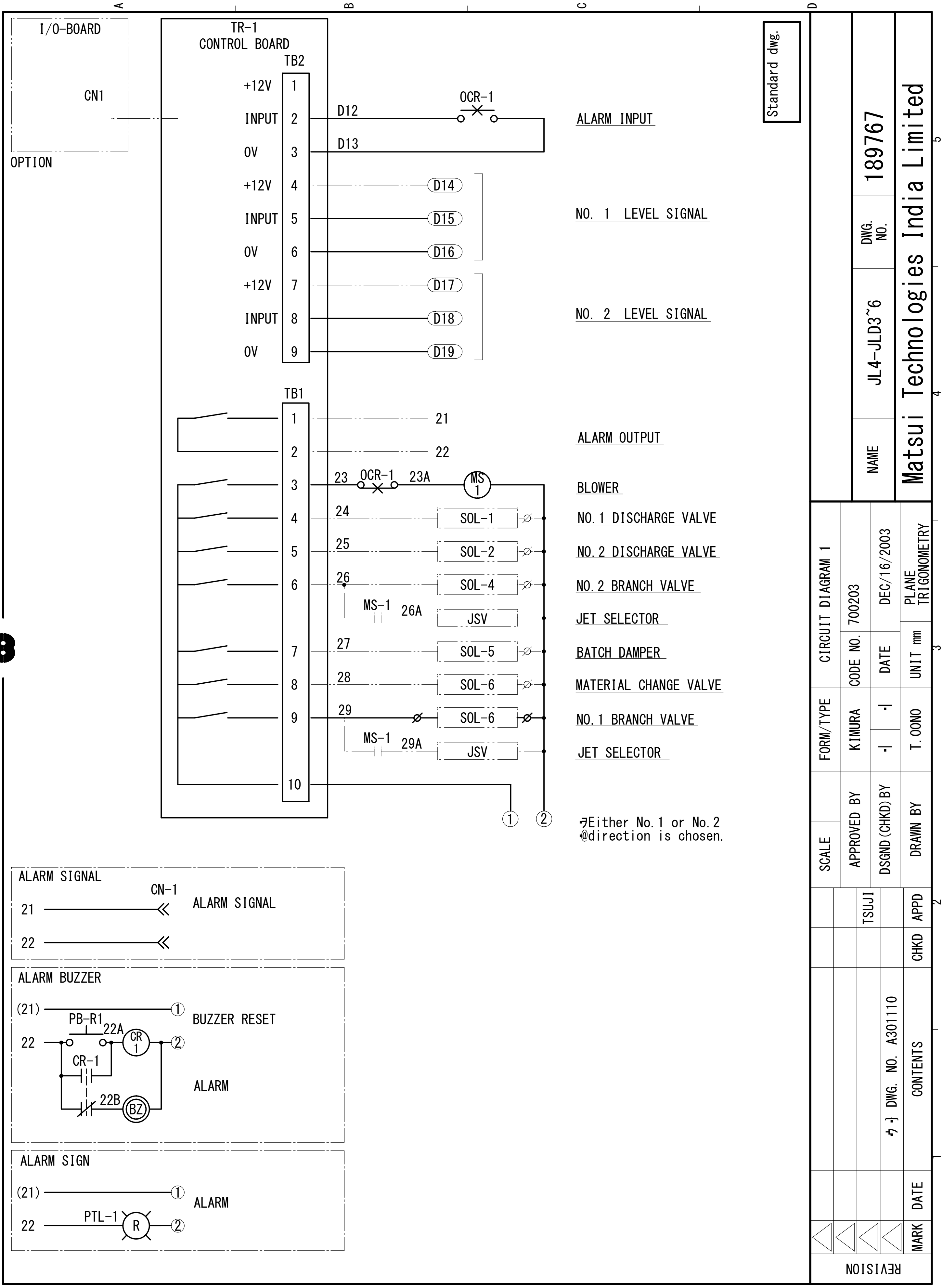
DRAWN BY T. OONO

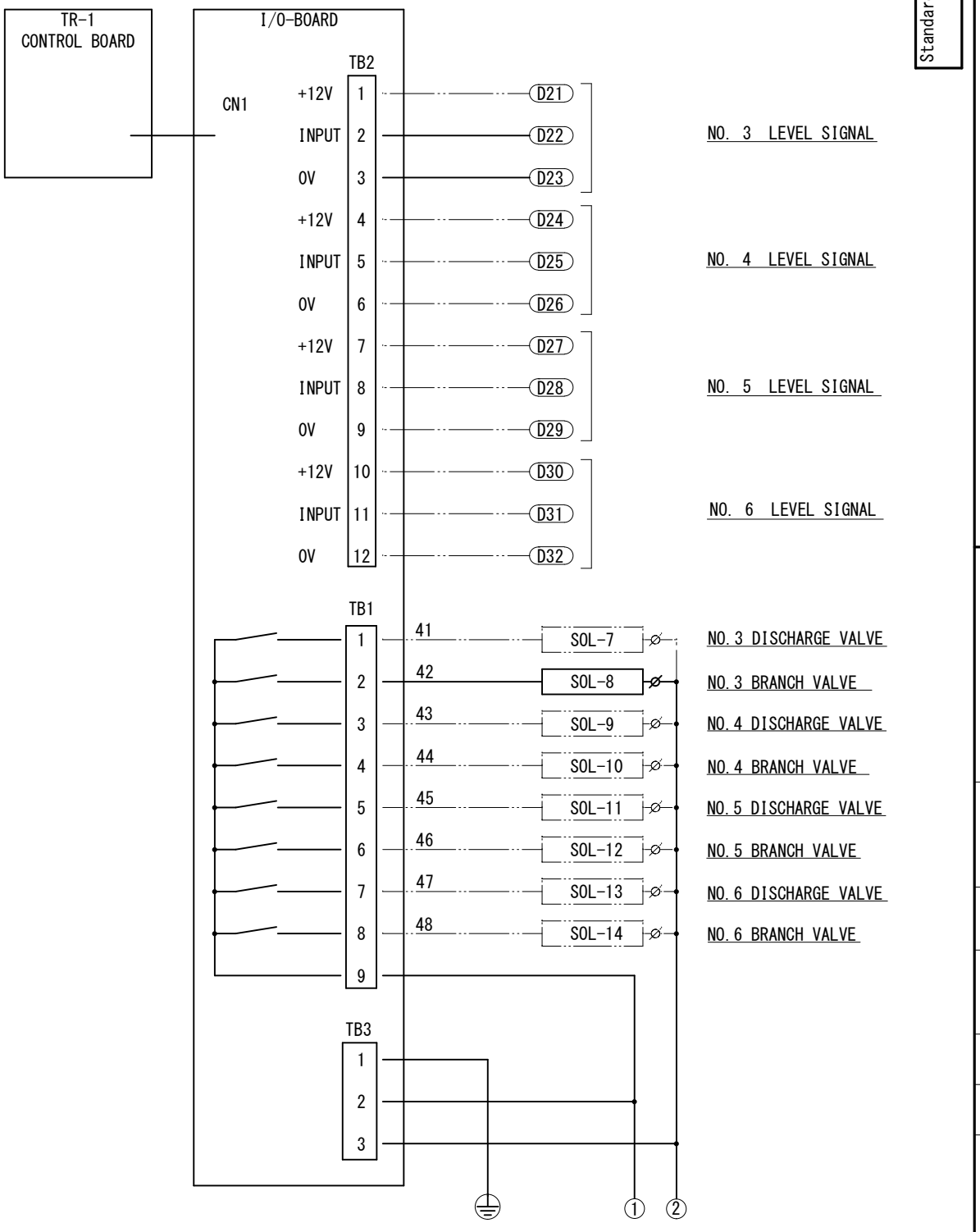
UNIT mm

PLANE TRIGONOMETRY

MARK	DATE	CONTENTS	CHKD	APPD
1	MAR/10/2005	The JL4-7V(C) addition / JL4-7V(C) DWG. NO. A301107	-	T. ONO

REVISION

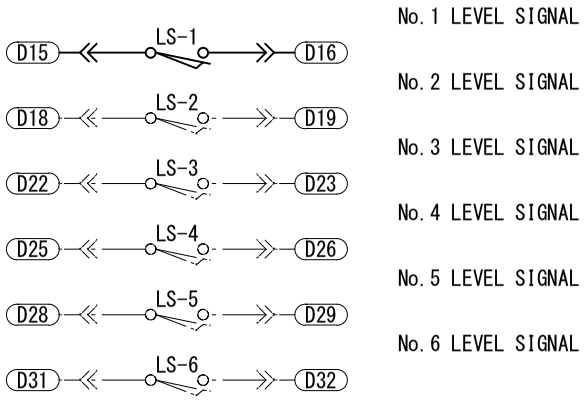

I/O-BOARD
CN1
OPTION
TR-1
CONTROL BOARD
TB2
+12V 1
INPUT 2
OV 3
+12V 4
INPUT 5
OV 6
+12V 7
INPUT 8
OV 9
D12
D13
OCR-1
ALARM INPUT
D14
D15
D16
NO. 1 LEVEL SIGNAL
D17
D18
D19
NO. 2 LEVEL SIGNAL
TB1
21
22
ALARM OUTPUT
23 OCR-1 23A MS 1
BLOWER
24 SOL-1
NO.1 DISCHARGE VALVE
25 SOL-2
NO.2 DISCHARGE VALVE
26 SOL-4
NO.2 BRANCH VALVE
MS-1 26A JSV
JET SELECTOR
27 SOL-5
BATCH DAMPER
28 SOL-6
MATERIAL CHANGE VALVE
29 SOL-6
NO.1 BRANCH VALVE
MS-1 29A JSV
JET SELECTOR
10
① ②
Either No.1 or No.2
direction is chosen.
ALARM SIGNAL
CN-1
21
22
ALARM SIGNAL
ALARM BUZZER
(21) ①
BUZZER RESET
PB-R1 22A CR 1
22 ②
CR-1
22B BZ
ALARM
ALARM SIGN
(21) ①
ALARM
PTL-1 R
22 ②
Standard dwg.
Matsui Technologies India Limited
DWG. NO. 189767
NAME JL4-JLD3~6
CIRCUIT DIAGRAM 1
FORM/TYPE
CODE NO. 700203
DATE DEC/16/2003
UNIT mm
PLANE TRIGONOMETRY
SCALE
APPROVED BY KIMURA
DSGND(CHKD)BY -|-
DRAWN BY T.OONO
TSUJI
APPD
CHKD
DWG. NO. A301110
CONTENTS
DATE
MARK
REVISION



						NAME	JL4-JLD3~6
						DWG. NO.	189769
						Matsui Technologies India Limited	
SCALE		FORM/TYPE	CIRCUIT DIAGRAM 2				
APPROVED BY		KIMURA	CODE NO.	700203			
DSGND(CHKD)BY	-|	-|	DATE	JUN/9/2004			
DRAWN BY	T.OONO	T.OONO	UNIT mm	PLANE TRIGONOMETRY			

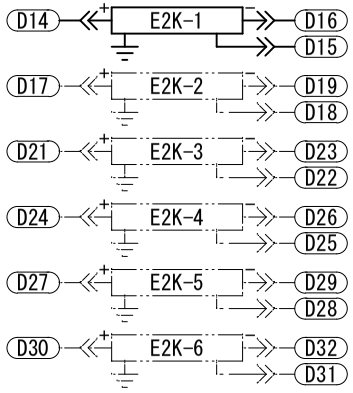
REVISION					
MARK	DATE	CONTENTS	CHKD	APPD	
1	MAR/10 /2005	Correction of an error in writing ﾀｲﾄﾙ DWG. NO. A301140	-	T.ONO	

IN CASE OF LIMIT SWITCH CONTROL



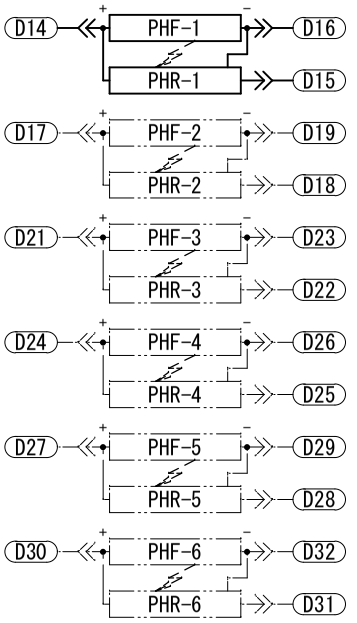
No. 1 LEVEL SIGNAL
No. 2 LEVEL SIGNAL
No. 3 LEVEL SIGNAL
No. 4 LEVEL SIGNAL
No. 5 LEVEL SIGNAL
No. 6 LEVEL SIGNAL

IN CASE OF CAPACITIVE PROXIMITY SENSOR(DC) CONTROL



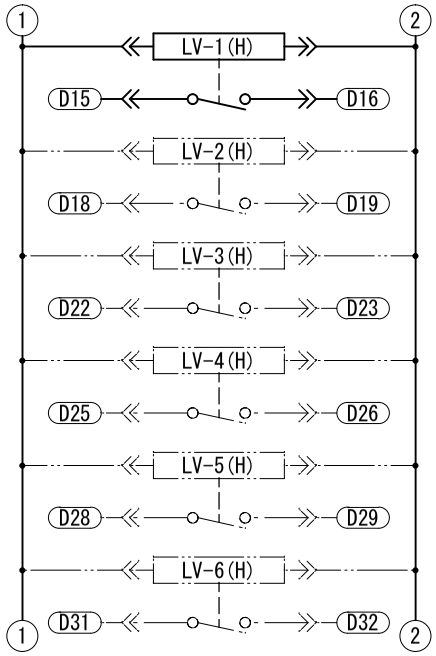
No. 1 PROXIMITY SWITCH
No. 2 PROXIMITY SWITCH
No. 3 PROXIMITY SWITCH
No. 4 PROXIMITY SWITCH
No. 5 PROXIMITY SWITCH
No. 6 PROXIMITY SWITCH

IN CASE OF PHOTOELECTRIC SENSOR CONTROL



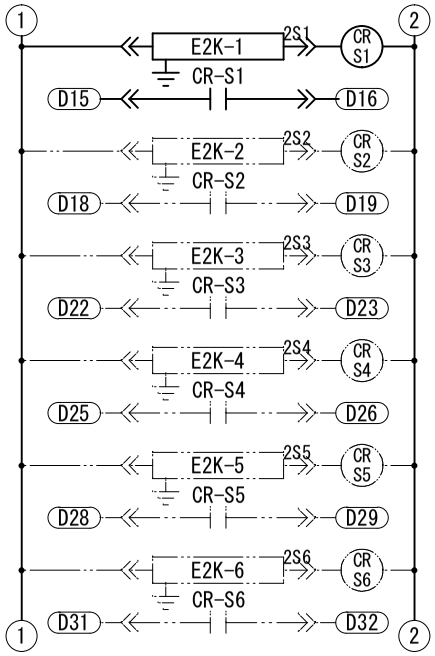
No. 1 LEVEL SWITCH
No. 2 LEVEL SWITCH
No. 3 LEVEL SWITCH
No. 4 LEVEL SWITCH
No. 5 LEVEL SWITCH
No. 6 LEVEL SWITCH

IN CASE OF LEVEL SWITCH CONTROL



No. 1 LEVEL SWITCH
No. 2 LEVEL SWITCH
No. 3 LEVEL SWITCH
No. 4 LEVEL SWITCH
No. 5 LEVEL SWITCH
No. 6 LEVEL SWITCH

IN CASE OF CAPACITIVE PROXIMITY SENSOR(AC) CONTROL



No. 1 PROXIMITY SWITCH
No. 2 PROXIMITY SWITCH
No. 3 PROXIMITY SWITCH
No. 4 PROXIMITY SWITCH
No. 5 PROXIMITY SWITCH
No. 6 PROXIMITY SWITCH

Standard dwg.

REVISION						SCALE		FORM/TYPE	CIRCUIT DIAGRAM A		
						APPROVED BY		KIMURA	CODE NO.	700203	
			ｻﾌﾈ DWG. NO. A301141			DSGND(CHKD) BY	・|	・|	DATE	JUN/9/2004
MARK	DATE	CONTENTS		CHKD	APPD	DRAWN BY		T.OONO	UNIT mm	PLANE TRIGONOMETRY	

NAME	JL4	DWG. NO.	189759

Matsui Technologies India Limited