

1. Detailed Specifications

Table 1.1 Specification

Model			EV-S20	EV-S20P	EV-S20N (Corrosion-Resistant Model)
Pumping Speed			1670 L/min		
Ultimate Pressure			3.0 Pa	5.0 Pa	
Connection	Gas Inlet		NW50		
	Gas Outlet		NW25		
Approx. Power at Ultimate Pressure (Max. Power)			0.4 kW (2.2 kW)		
Utility	Cooling Water	Connection	Coupler (Rc1/4)		
		Pressure [Gauge Press.]	Supply: Max. 0.4 MPa Differential Press.: Min. 0.2 MPa		
		Flow rate	1.5 – 3.0 L/min		
		Temperature	Max. 30°C		
	N2 Gas	Connection	—	1/4” Tube Fitting(Same as SWAGELOK)	
		Pressure [Gauge Press.]	—	Supply: 0.15 – 0.7 MPa [Setting: 0.09 – 0.12 MPa]	
		Approx. Flow rate [N2-0 Mode]	—	17 – 20 Pa·m ³ /s [2.4 Pa·m ³ /s]	
	Duct Ventilation	Connection	—	ϕ 50mm	
		Pressure	—	-196 Pa	
		Approx. Flow rate	—	0.5 m ³ /min	
	Lubrication Oil	Brand	BARRIERTA J100ES (NOK)		
		Quantity	0.05 L		
Approx. Weight			60 kg		
Power Supply	Phase/Volt/Freq.		3 Phase、380-440V、50/60Hz		
	Power capacity		3.2 kVA		
	Connection		Amphenol C016 20C003 100 12		
Control Signal			D-sub 15Pin + D-sub 25Pin		
Fuse			15A		

※This pump is served as a product for the uses which does not generate reaction by-products.

Please consult EBARA if the pump might be used for process gas pumping use.

※The ambient temperature of the pump installation place shall be 30°C or lower.

※Since the judgment based on Japanese regulation of foreign trade control is required, please ask EBARA when the product written in this document is exported outside Japan.

Table 1.2 Specification

Model			EV-S50	EV-S50P	EV-S50N (Corrosion-Resistant Model)
Pumping Speed			5000 L/min		
Ultimate Pressure			0.5 Pa		
Connection	Gas Inlet		NW50		
	Gas Outlet		NW25		
Approx. Power at Ultimate Pressure (Max. Power)			0.55 kW (3.6 kW)		
Utility	Cooling Water	Connection	Coupler (Rc1/4)		
		Pressure [Gauge Press.]	Supply : Max. 0.4 MPa Differential Press. : Min. 0.2 MPa		
		Flow rate	2.0 – 3.0 L/min		
		Temperature	Max. 30℃		
	N2 Gas	Connection	—	1/4” Tube Fitting(Same as SWAGELOK)	
		Pressure [Gauge Press]	—	Supply : 0.15 – 0.7 MPa [Setting : 0.09 – 0.12 MPa]	
		Approx. Flow rate [N2-0 Mode]	—	17 – 20 Pa・m ³ /s [2.4 Pa・m ³ /s]	
	Duct Ventilation	Connection	—	φ 50mm	
		Pressure	—	-196 Pa	
		Approx. Flow rate	—	0.5 m ³ /min	
	Lubrication Oil	Brand	BARRIERTA J100ES (NOK)		
		Quantity	0.1 L		
Approx. Weight			100 kg		
Power Supply	Phase/Volt/Freq.		3 Phase、380-440V、50/60Hz		
	Power capacity		4.8 kVA		
	Connection		Japan Aviation Electronics Industry JL04HV-2E22-22PE-B		
Control Signal			D-sub 15Pin + D-sub 25Pin		
Fuse			20A		

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Please consult EBARA if the pump might be used for process gas pumping use.

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Table 1.3 Specification

Model			EV-S100	EV-S100P	EV-S100N (Corrosion-Resistant Model)
Pumping Speed			10000 L/min		
Ultimate Pressure			0.5 Pa		
Connection	Gas Inlet		NW80		
	Gas Outlet		NW40		
Approx. Power at Ultimate Pressure (Max. Power)			0.65 kW (4.6 kW)		
Utility	Cooling Water	Connection	Coupler (Rc1/4)		
		Pressure [Gauge Press.]	Supply: Max. 0.4 MPa Differential Press.: Min. 0.2 MPa		
		Flow rate	2.0 – 3.0 L/min		
		Temperature	Max. 30°C		
	N2 Gas	Connection	—	1/4” Tube Fitting(Same as SWAGELOK)	
		Pressure [Gauge Press]	—	Supply: 0.15 – 0.7 MPa [Setting: 0.09 – 0.12 MPa]	
		Approx. Flow rate [N2-0 Mode]	—	17 – 20 Pa·m ³ /s [2.4 Pa·m ³ /s]	
	Duct Ventilation	Connection	—	φ 50mm	
		Pressure	—	-196 Pa	
		Approx. Flow rate	—	0.5 m ³ /min	
	Lubrication Oil	Brand	BARRIERTA J100ES (NOK)		
		Quantity	0.1 L		
Approx. Weight			120 kg		
Power Supply	Phase/Volt/Freq.		3 Phase、380-440V、50/60Hz		
	Power capacity		6.4 kVA		
	Connection		Japan Aviation Electronics Industry JL04HV-2E22-22PE-B		
Control Signal			D-sub 15Pin + D-sub 25Pin		
Fuse			20A		

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Please consult EBARA if the pump might be used for process gas pumping use.

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※Since the judgment based on Japanese regulation of foreign trade control is required, please ask EBARA when the product written in this document is exported outside Japan.

Table 1.4 Specification

Model			EV-S200	EV-S200P	EV-S200N (Corrosion-Resistant Model)
Pumping Speed			20000 L/min		
Ultimate Pressure			0.5 Pa		
Connection	Gas Inlet		NW100		
	Gas Outlet		NW40		
Approx. Power at Ultimate Pressure (Max. Power)			0.75 kW (5.1 kW)		
Utility	Cooling Water	Connection	Coupler (Rc1/4)		
		Pressure [Gauge Press.]	Supply: Max. 0.4 MPa Differential Press.: Min. 0.2 MPa		
		Flow rate	2.0 – 3.0 L/min		
		Temperature	Max. 30℃		
	N2 Gas	Connection	—	1/4” Tube Fitting(Same as SWAGELOK)	
		Pressure [Gauge Press]	—	Supply: 0.15 – 0.7 MPa [Setting: 0.09 – 0.12 MPa]	
		Approx. Flow rate [N2-0 Mode]	—	17 – 20 Pa·m ³ /s [2.4 Pa·m ³ /s]	
	Duct Ventilation	Connection	—	φ 50mm	
		Pressure	—	-196 Pa	
		Approx. Flow rate	—	0.5 m ³ /min	
	Lubrication Oil	Brand	BARRIERTA J100ES (NOK)		
		Quantity	0.15 L		
Approx. Weight			170 kg		
Power Supply	Phase/Volt/Freq.		3 Phase、380-440V、50/60Hz		
	Power capacity		6.8 kVA		
	Connection		Japan Aviation Electronics Industry JL04HV-2E22-22PE-B		
Control Signal			D-sub 15Pin + D-sub 25Pin		
Fuse			20A		

※This pump is served as a product for the uses which does not generate reaction by-products.

Please consult EBARA if the pump might be used for process gas pumping use.

※The ambient temperature of the pump installation place shall be 30°C or lower.

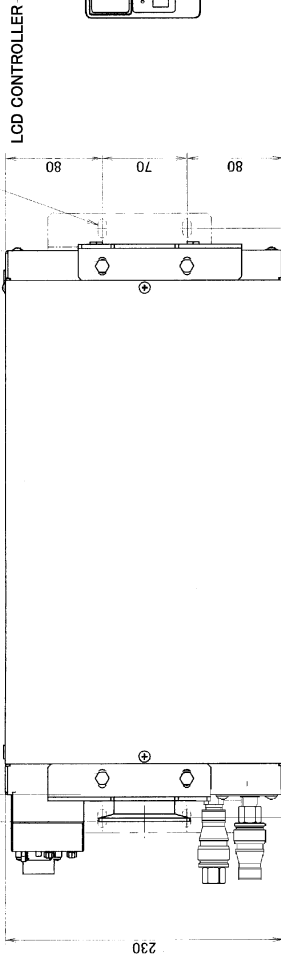
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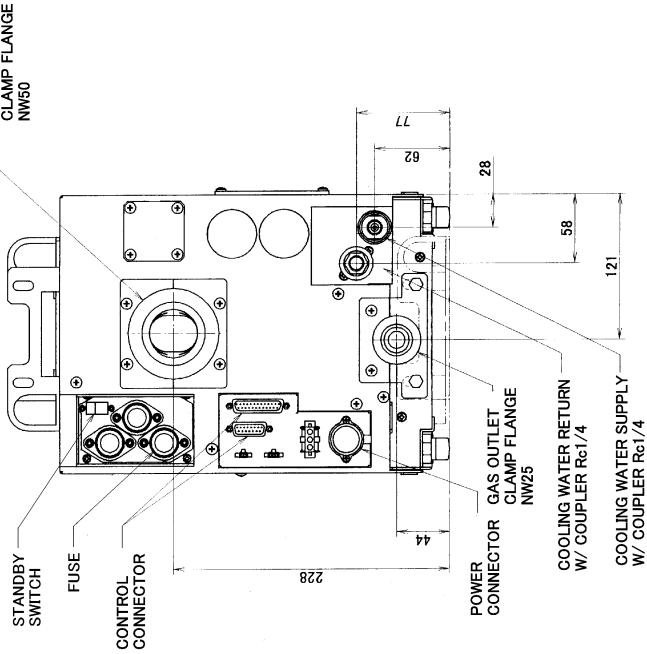
LCD CONTROLLER

18

COMMUNICATION
CONNECTOR
(RS232C)

GAS INLET
CLAMP FLANGE
NW50

LIFTING BRACKET *



STANDBY
SWITCH

FUSE

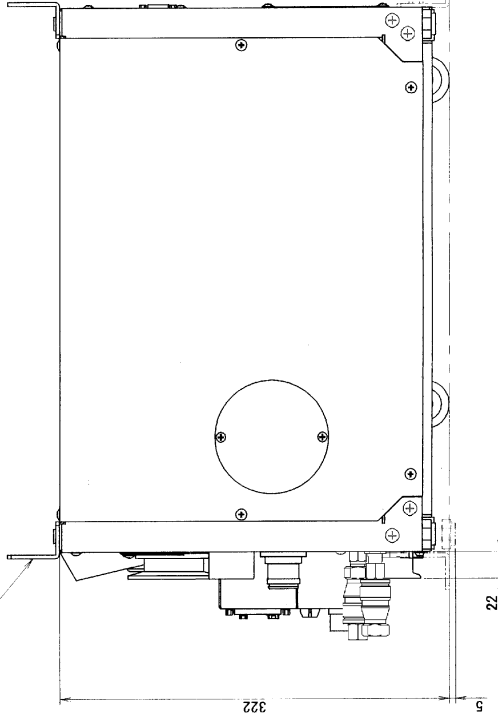
CONTROL
CONNECTOR

POWER
CONNECTOR

GAS OUTLET
CLAMP FLANGE
NW25

COOLING WATER RETURN
W/ COUPLER Rc1/4

COOLING WATER SUPPLY
W/ COUPLER Rc1/4



FIXTURE

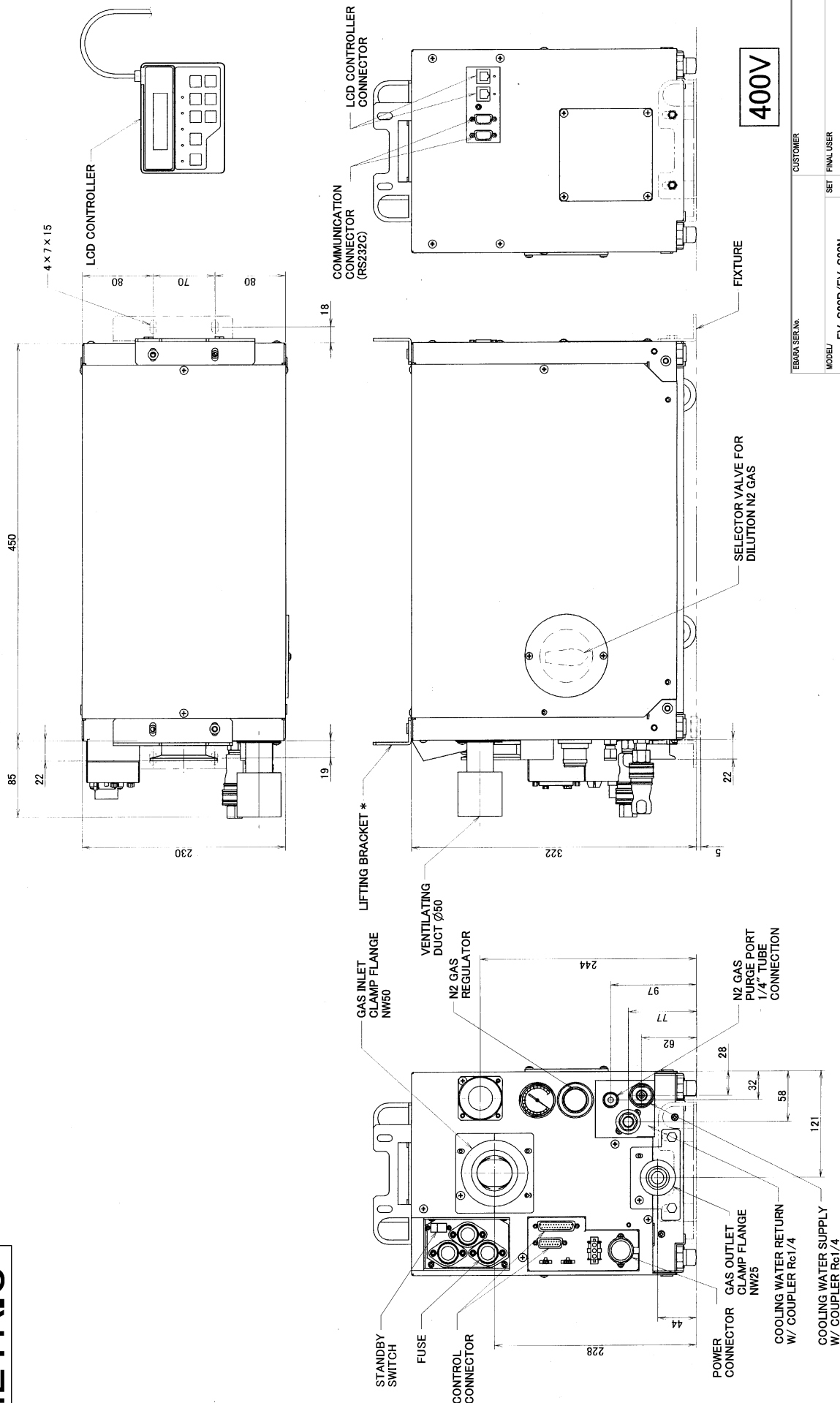
400V

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		DWG. No.	
		Doc.No.7311-Y94211 Rev.0	
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* LIFTING BRACKET CAN BE USE FOR FIXTURE

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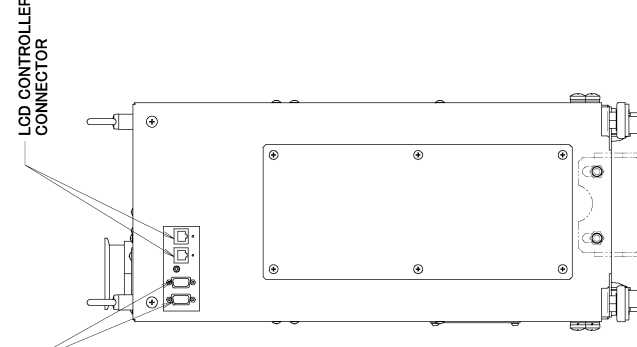
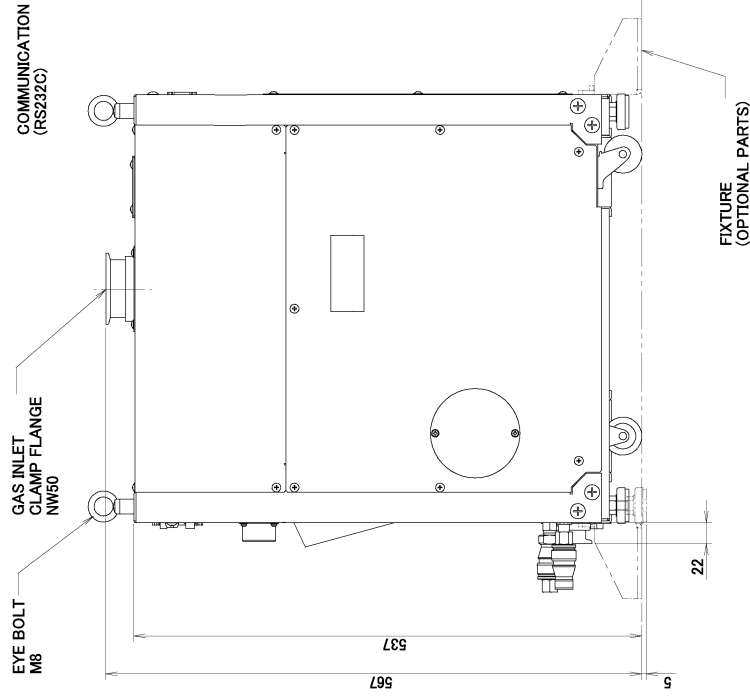
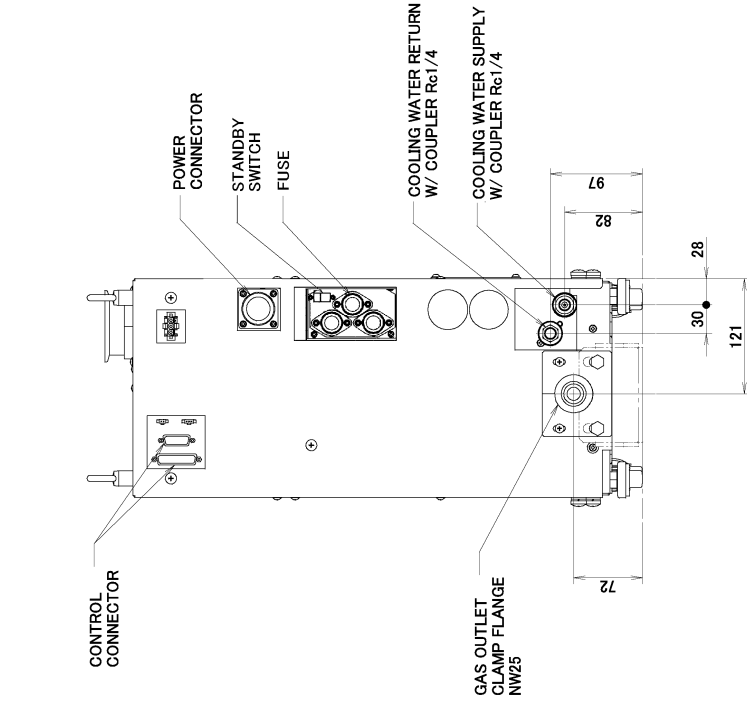
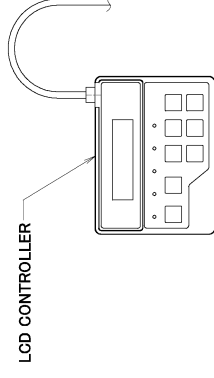
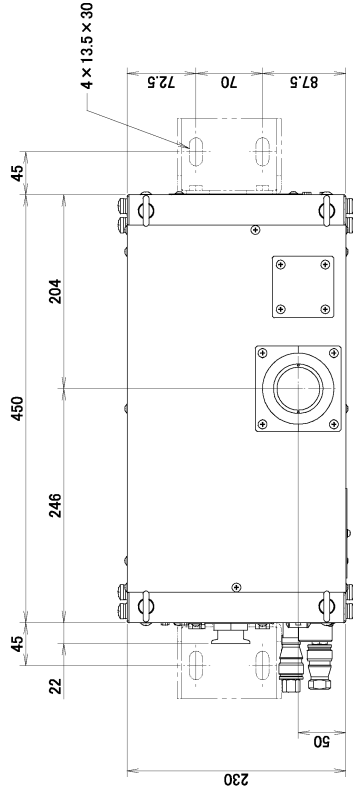
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EV-S20P/EV-S20N			
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	CHKD BY		
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EBARA CORPORATION		DWG No.	Doc.No.7311-Y94212 Rev.0
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		OUTLINE DRAWING	

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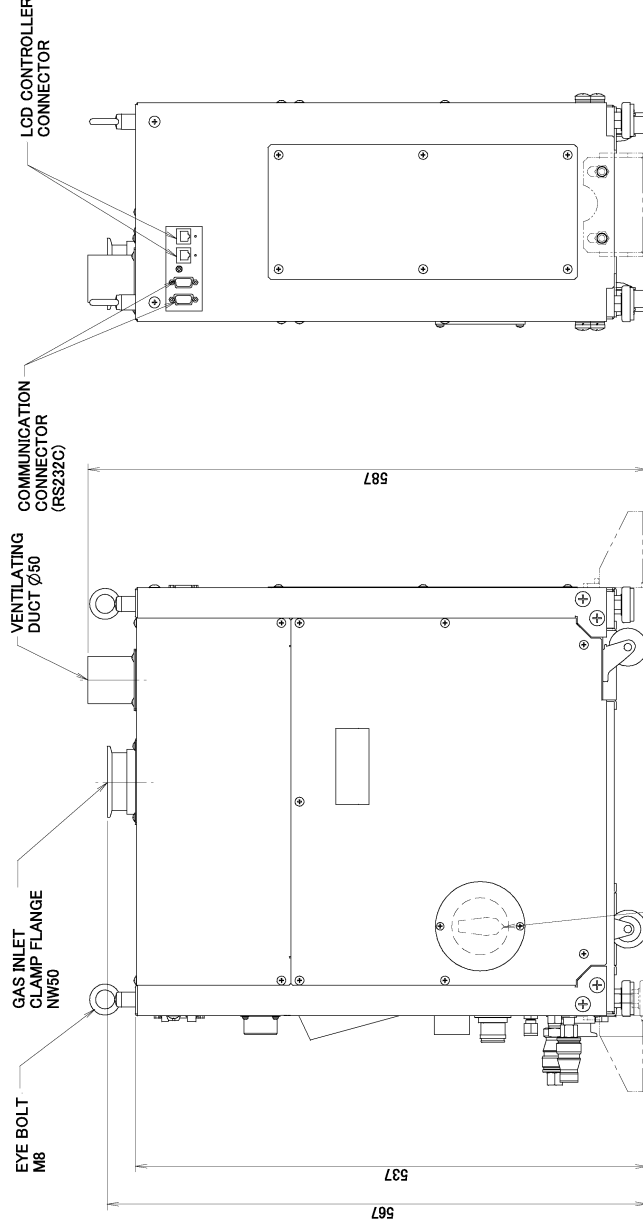
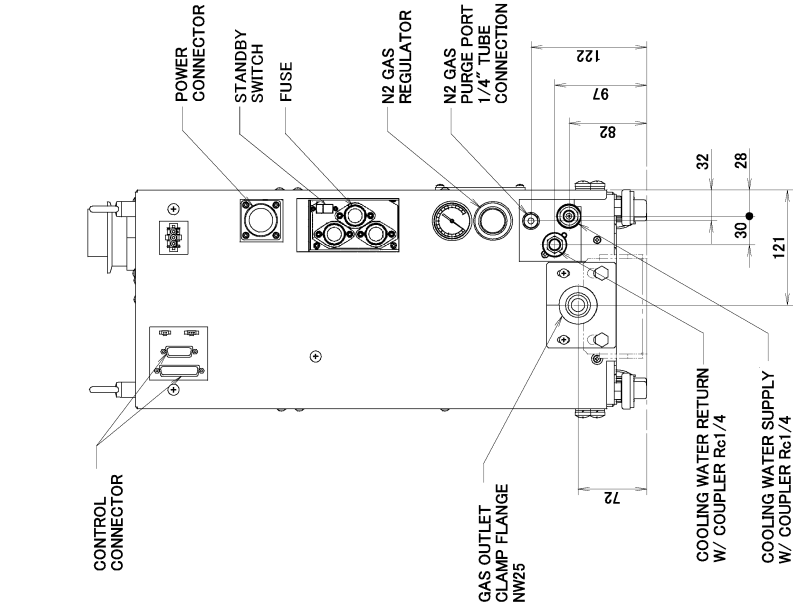
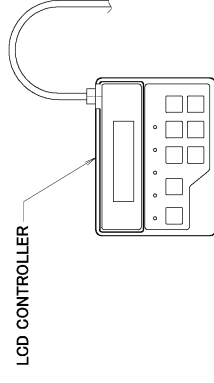
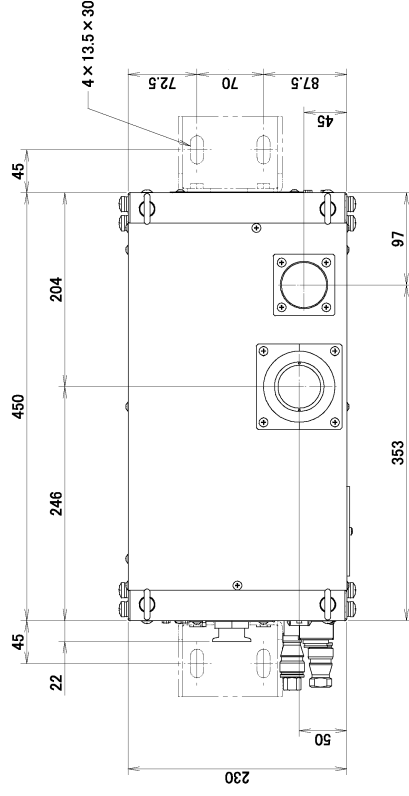


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400V

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			Doc No. 7311-Y94213 Rev.0

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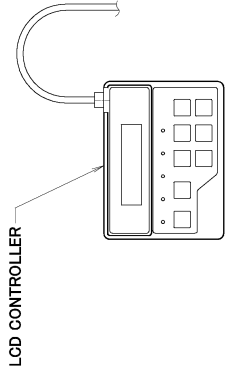
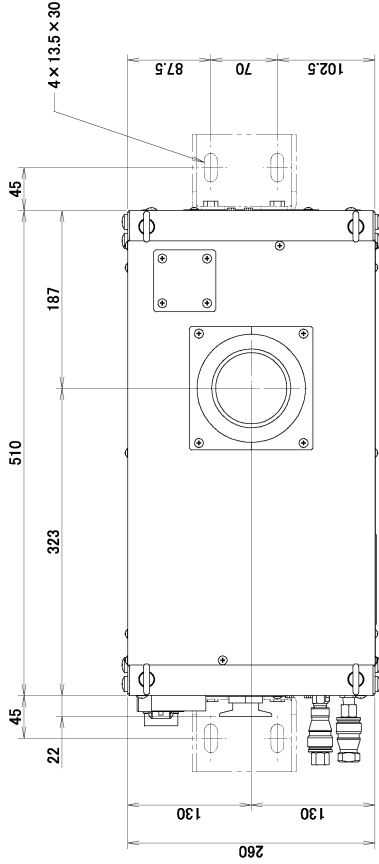
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	CHKD BY	OUTLINE DRAWING	
	DRAWN BY		
		DWG. No.	REV
EBARA CORPORATION		Doc.No. 7311-Y94214	Rev.0

METRIC

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LCD CONTROLLER

COMMUNICATION CONNECTOR (RS232C)

GAS INLET CLAMP FLANGE NW80

EYE BOLT M8

STANDBY SWITCH

FUSE

CONTROL CONNECTOR

GAS OUTLET CLAMP FLANGE NW40

POWER CONNECTOR

COOLING WATER RETURN W/ COUPLER Rc1/4

COOLING WATER SUPPLY W/ COUPLER Rc1/4

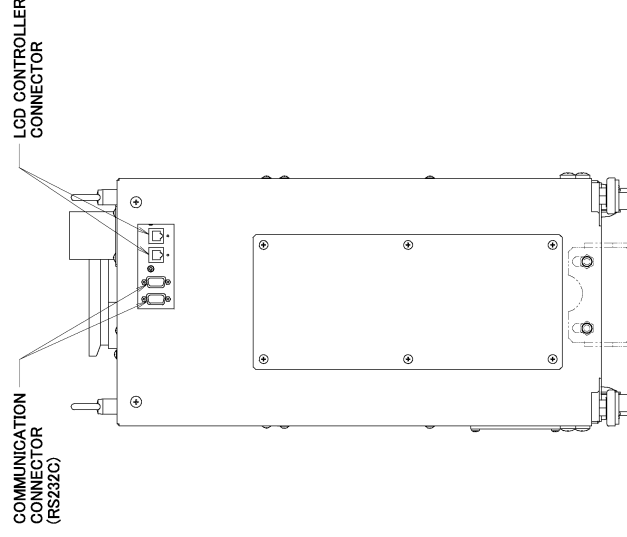
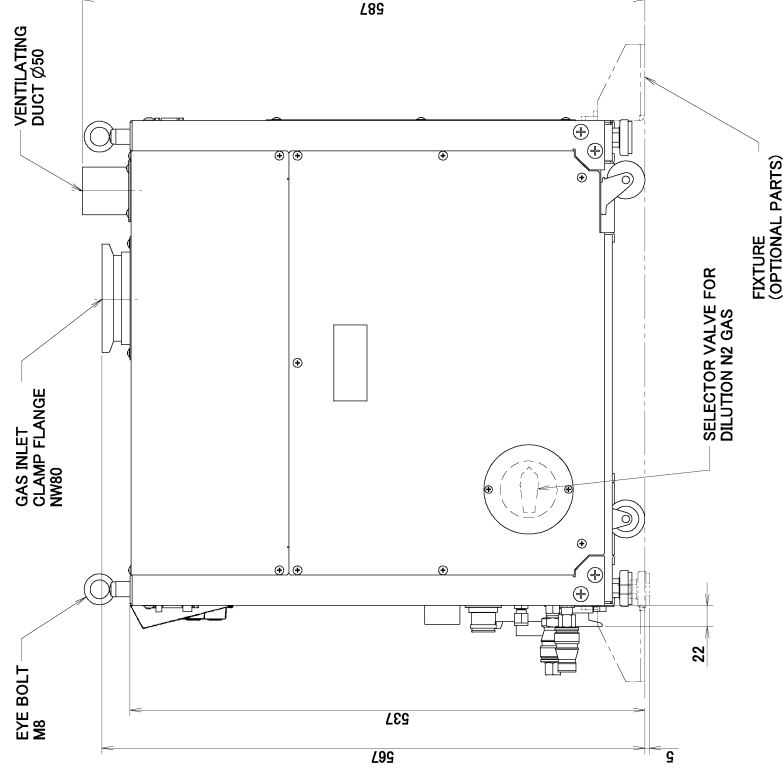
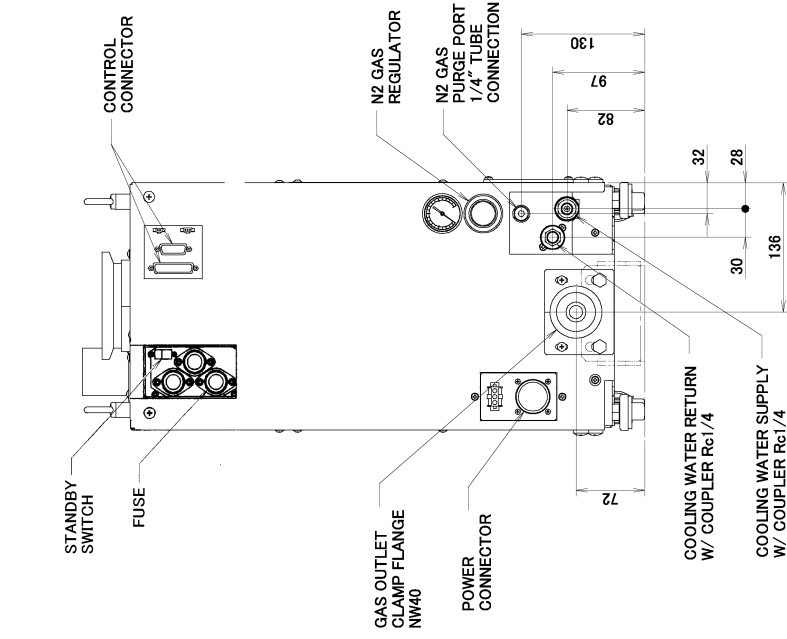
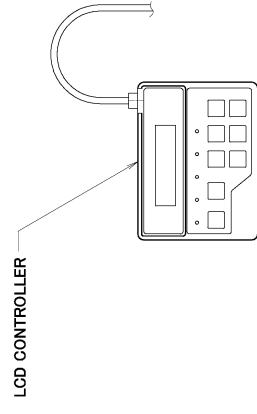
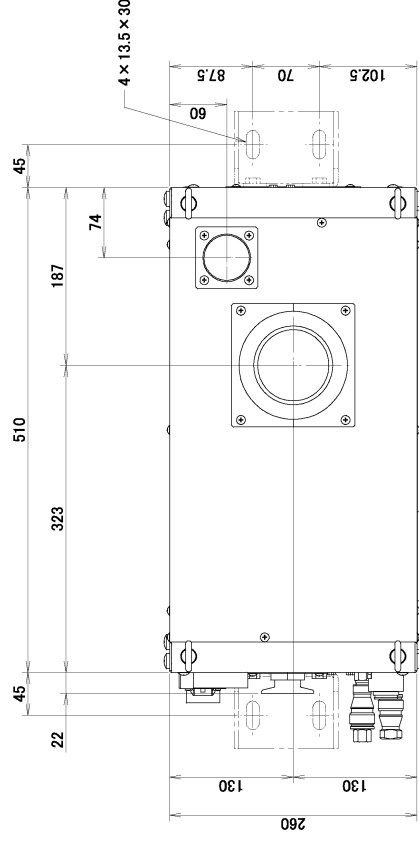
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400V

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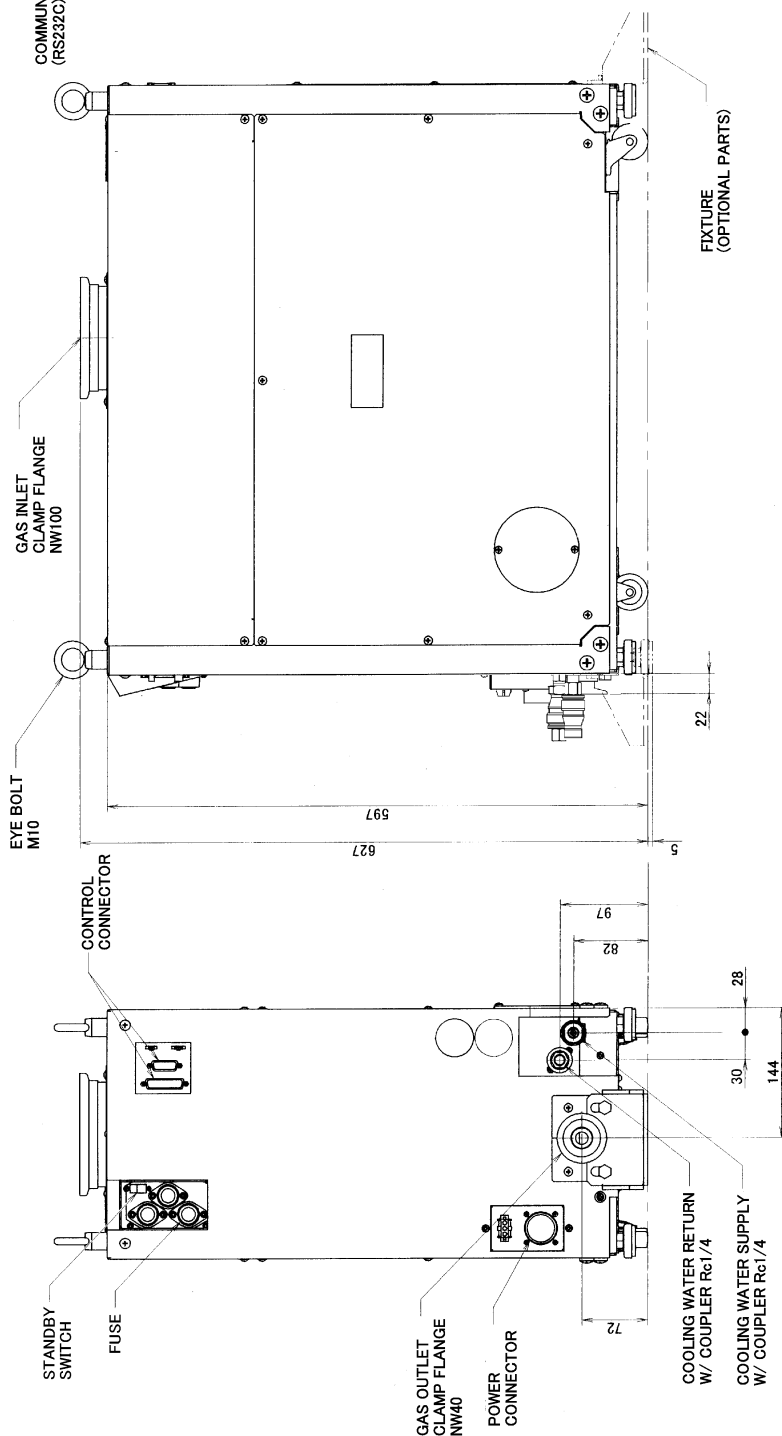
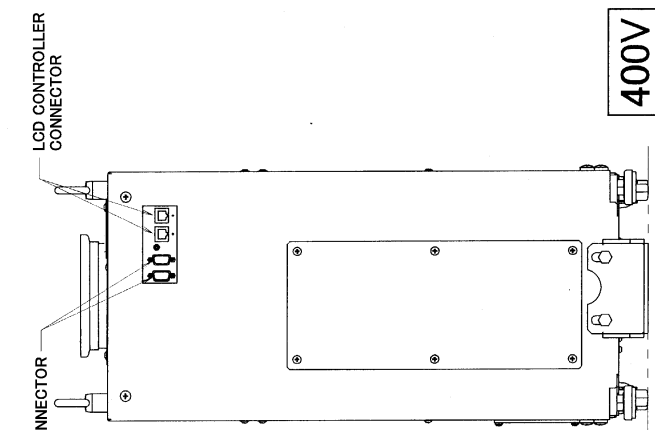
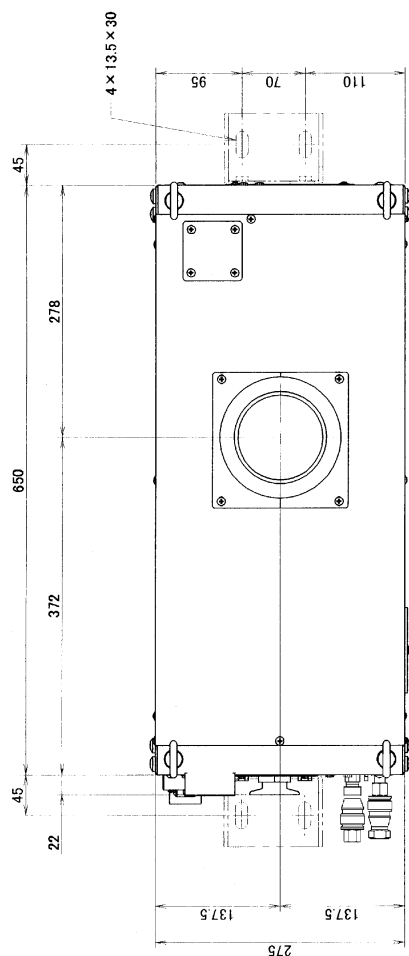
OUTLINE DRAWING

P.9



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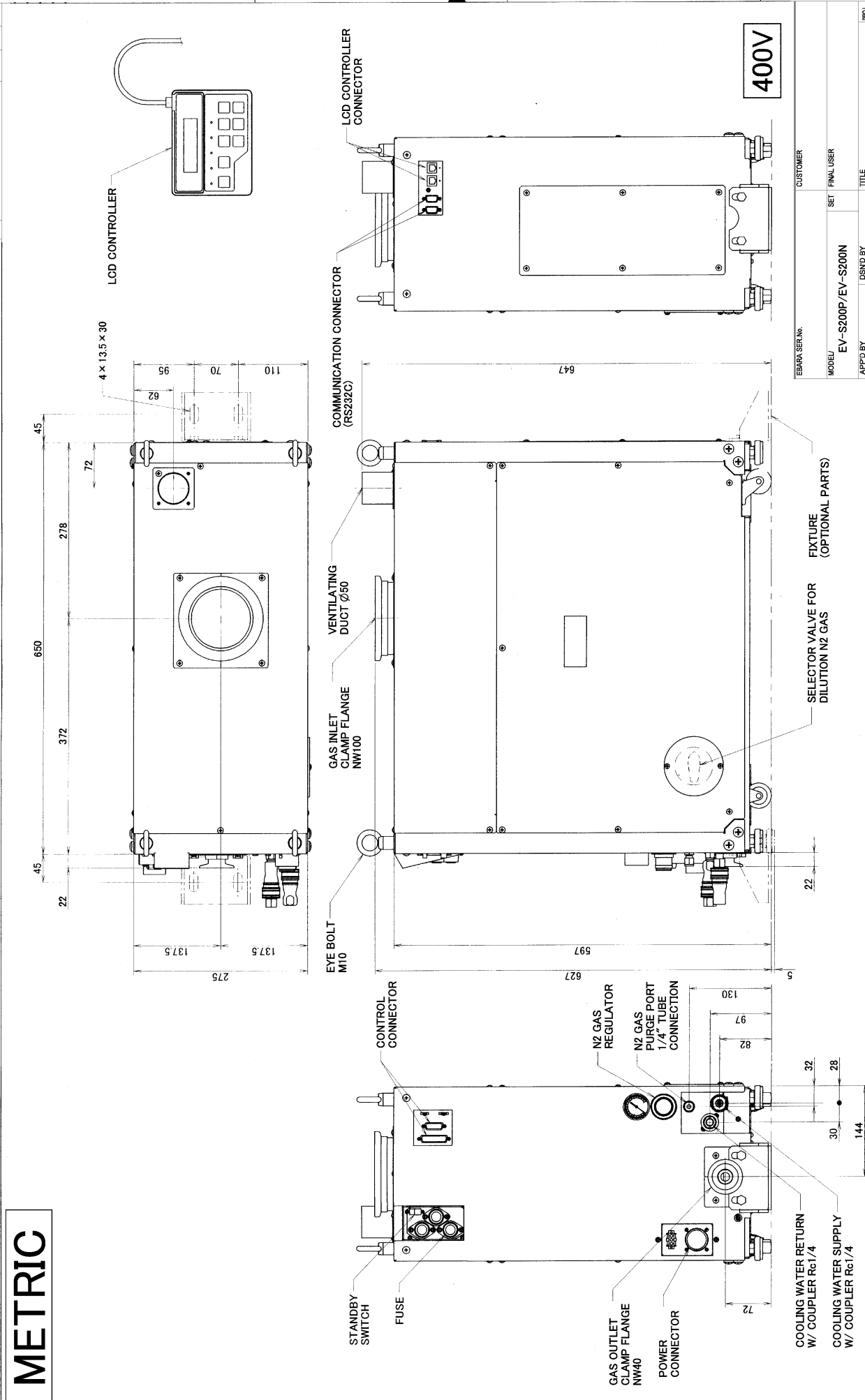
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**FIXTURE
(OPTIONAL PARTS)**

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		Doc. No. 7311-Y94217 Rev.0	

METRIC



EBA® SER. No.		CUSTOMER	
MODEL/		FINAL USER	
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	CHK'D BY	OUTLINE DRAWING	
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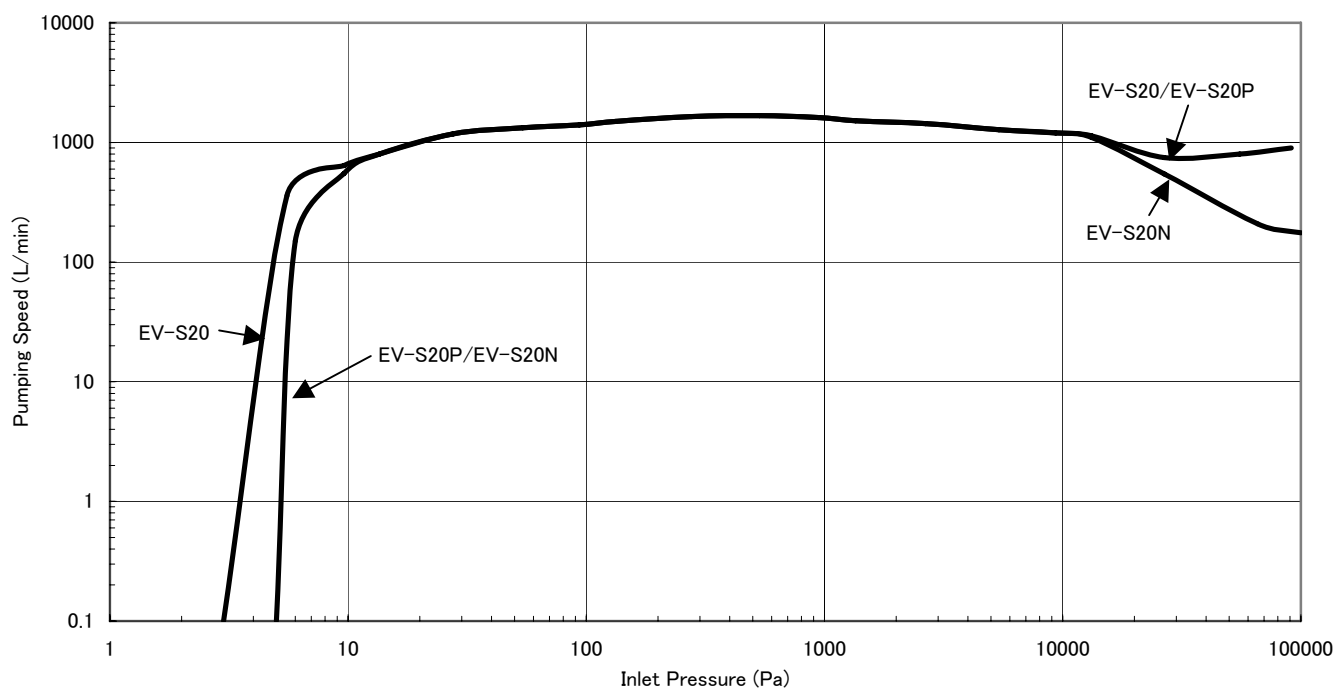


Fig.1.1 EV-S20(P/N) Performance curve

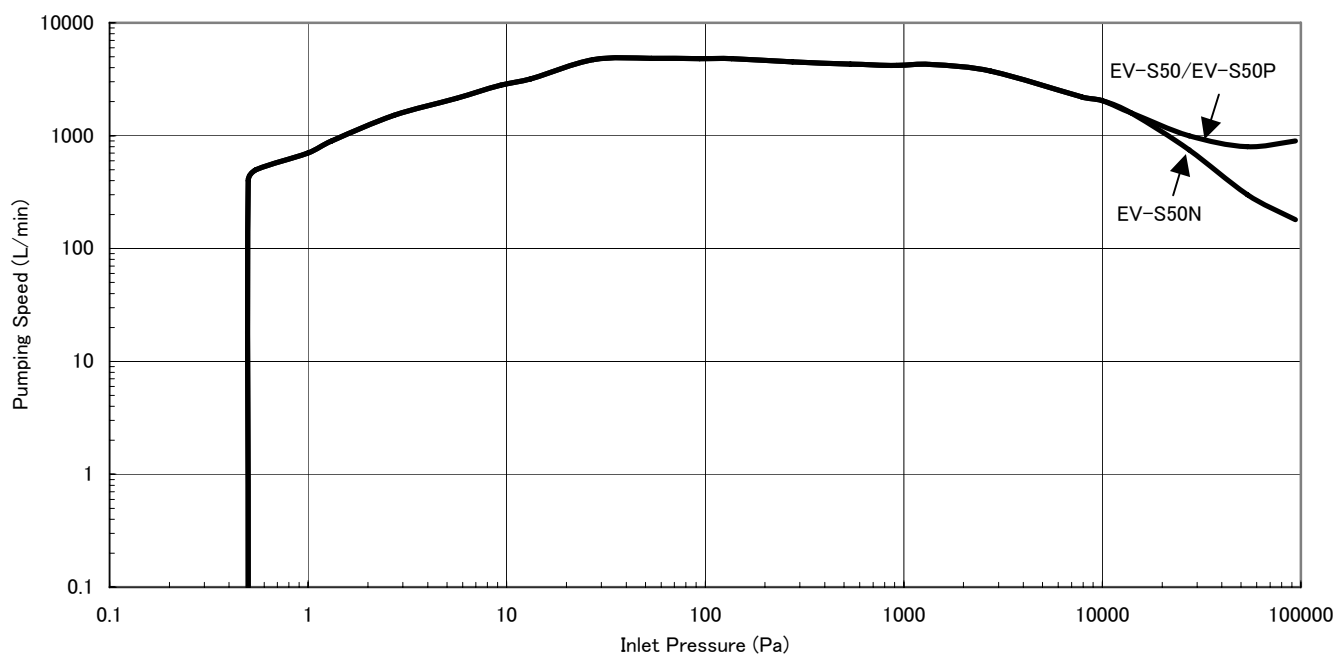


Fig.1.2 EV-S50(P/N) Performance curve

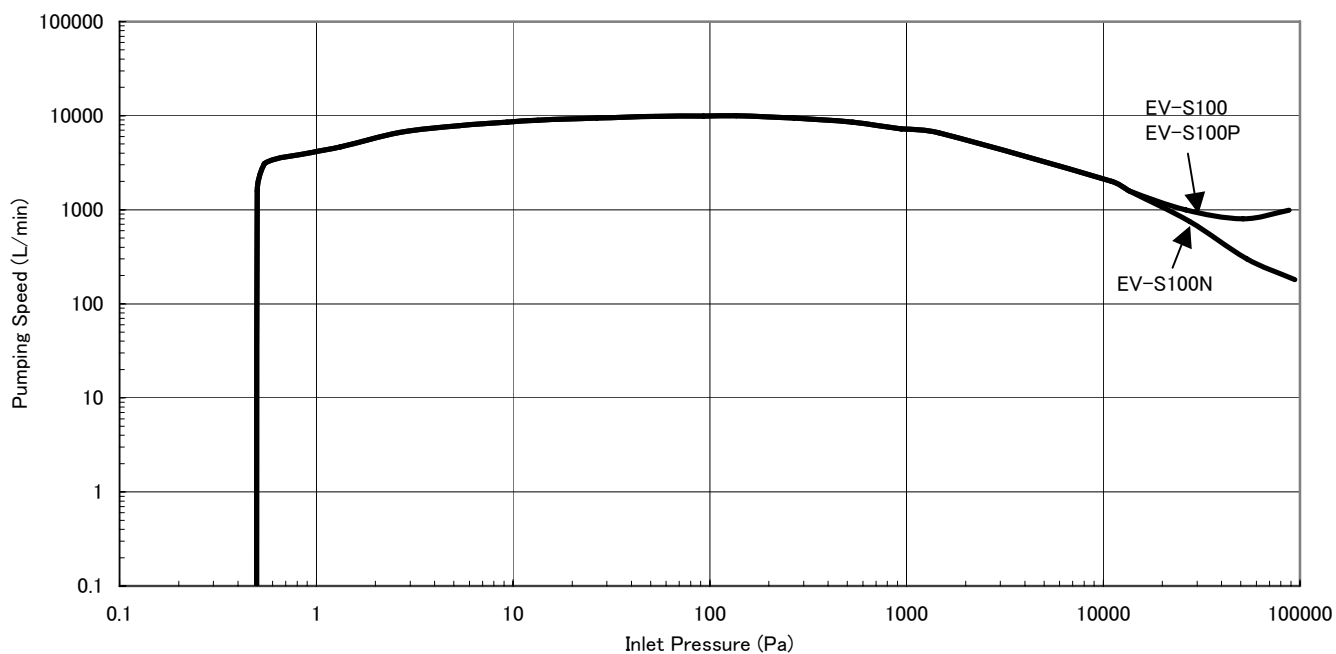


Fig.1.3 EV-S100(P/N) Performance curve

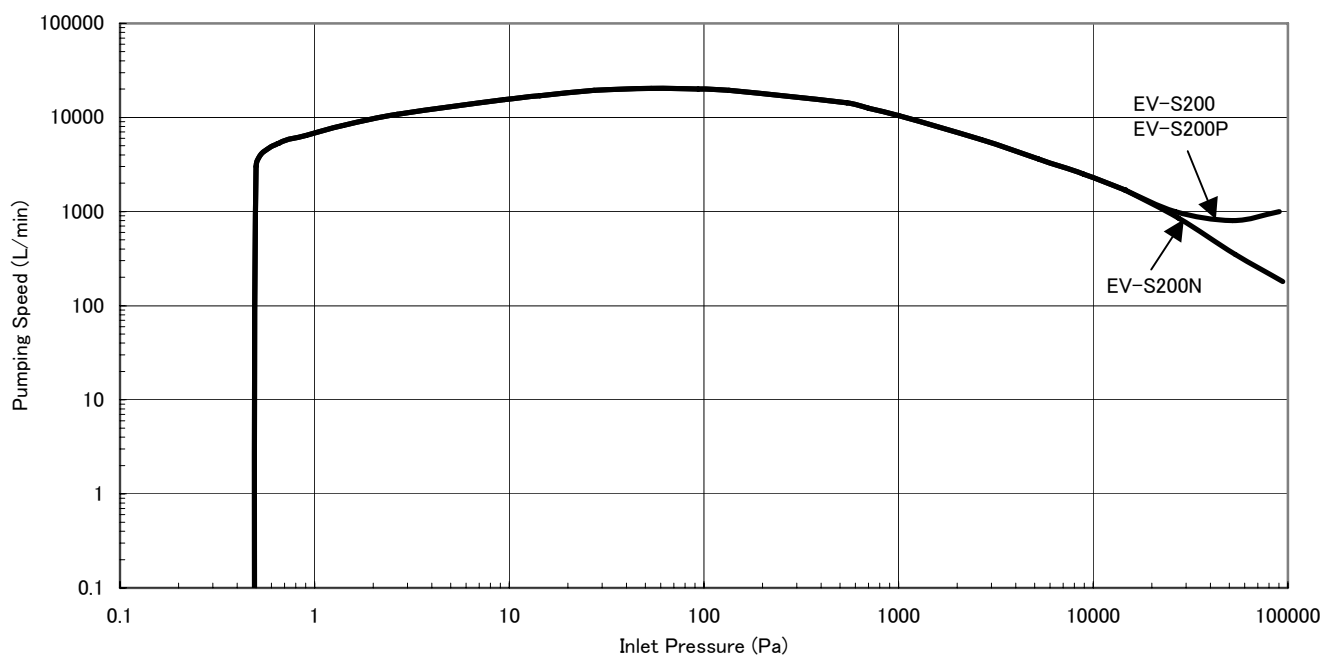
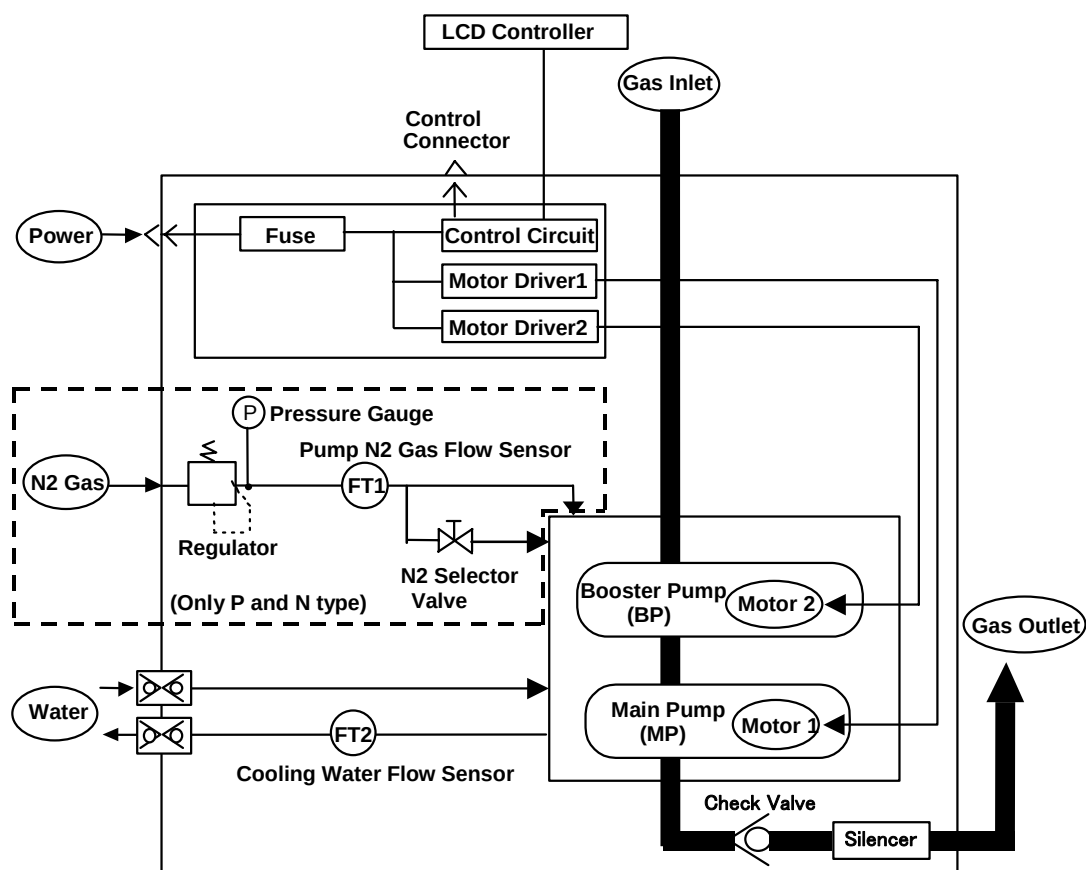


Fig.1.4 EV-S200(P/N) Performance curve



※EV-S20(P/N) pump is supplied without a booster pump (BP).

Fig. 1.5 System Flow

2. Electrical connection

2.1 Power Supply Wiring

Wire the connector for the main power supply (380–440V AC at 3–Phase and 50/60Hz)

Figure 2.1, 2.2 and Tables 2.1, 2.2 and 2.3 show the connector pin assignment.

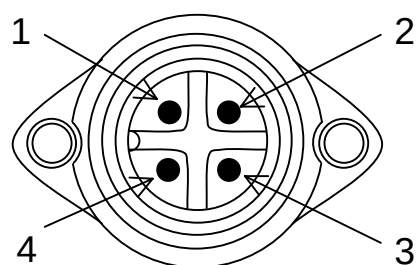


Fig. 2.1 EV-S20(P/N) Power Supply Receptacle
(As seen from connecting side)

Table 2.1 EV-S20(P/N) Pin Assignment of Power Supply Receptacle

No.	Phase
1	R
2	S
3	T
4	GND

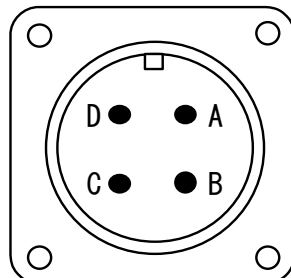


Fig. 2.2 EV-S50~200(P/N) Power Supply Receptacle
(As seen from connecting side)

Table 2.2 EV-S50~200(P/N) Pin Assignment of Power Supply Receptacle

No.	Phase
A	R
B	S
C	T
D	GND

Table 2.3 Receptacle Specification

Pump Model	EV-S20(P/N)	EV-S50(P/N)	EV-S100(P/N)	EV-S200(P/N)
Receptacle type	C016 20C003 100 12	JL04HV-2E22-22PE-B		
Receptacle Manufacturer	Amphenol	Japan Aviation Electronics Industry Co.,Ltd		
Adapted plug type	C016 20D003 100 12	JL04V-6A22-22SE-EB		
Suitable wire	AWG #14	AWG #12		
Power capacity	3.2 kVA	4.8 kVA	6.4 kVA	6.8 kVA

2.2 Control Signal Wiring

Connect wires to the control connector for remote operation and remote monitoring.
Tables 2.4 , 2.5 , 2.6 and 2.7 and Figs. 2.3 and 2.4 show the pin assignment.

Table 2.4 Receptacle Specification

Connector No.	Connector type
CN-Z	15 pin D-sub miniature Female receptacle (Applicable for SEMI E73)
CN-Y	25 pin D-sub miniature Female receptacle

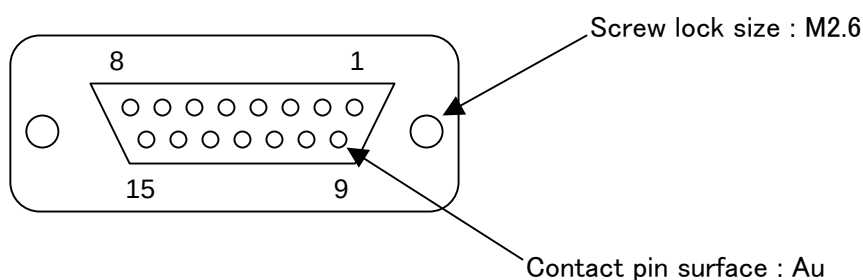


Fig. 2.3 15 Pin D-Sub Miniature Female Receptacle(As seen from connecting side)

Table 2.5 Control Connector Pin Assignment (CN-Z) (Applicable for SEMI E73)

Pin No.	Signal name	I/O	Signal type
1	MP START (+)	IN	Run: CLOSE, Alternate
2	BP START (+)	IN	Run: CLOSE, Alternate
3	MP START STATUS (+)	OUT	Run: CLOSE, Alternate
4	BP START STATUS (+)	OUT	Run: CLOSE, Alternate
5	WARNING STATUS (+)	OUT	WARNING: OPEN, Alternate
6	ALARM STATUS (+)	OUT	ALARM: OPEN, Alternate
7	REMOTE STATUS (+)	OUT	REMOTE: CLOSE
8	—		
9	MP START (—)		
10	BP START (—)		
11	MP START STATUS (—)		
12	BP START STATUS (—)		
13	WARNING STATUS (—)		
14	ALARM STATUS (—)		
15	REMOTE STATUS (—)		

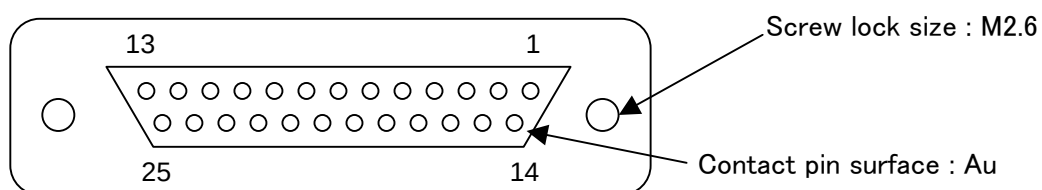


Fig. 2.4 25 Pin D-Sub Miniature Female Receptacle
(As seen from connecting side)

Table 2.6 Control Connector Pin Assignment (CN-Y)

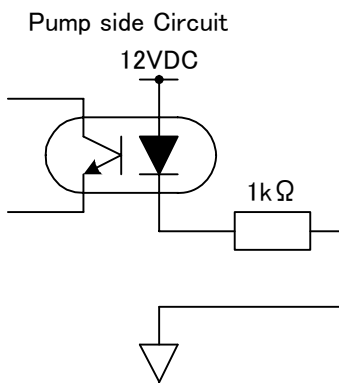
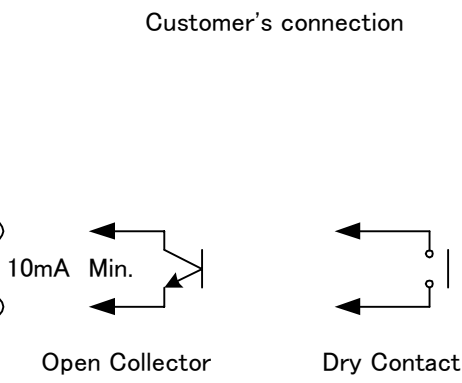
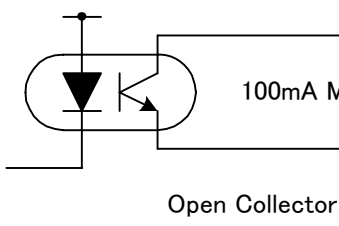
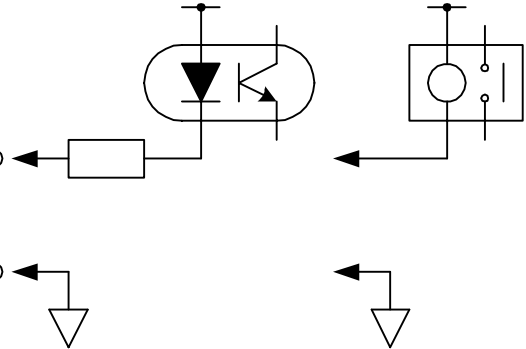
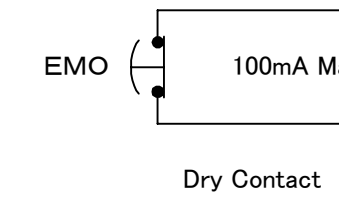
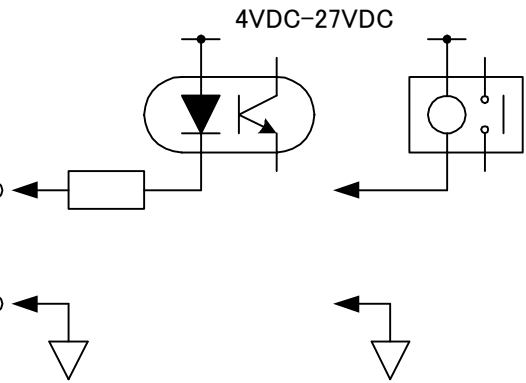
Pin No.	Signal name	I/O	Signal type
1	RESET (+)	IN	RESET: CLOSE
2	SAVING ENERGY CONTROL (+)	IN	SAVING ENERGY: CLOSE, Alternate
3	RESERVED (+)	IN	
4	RESERVED (+)	IN	
5	RESERVED (+)	IN	
6	EMO STATUS (+) ※1	OUT	Abnormality: OPEN, Alternate
7	PUMP N2 WARNING STATUS (+) ※2	OUT	Abnormality: CLOSE, Alternate ※3
8	RESERVED (+)	OUT	
9	SAVING ENERGY STATUS (+)	OUT	SAVING ENERGY: CLOSE, Alternate
10	RESERVED (+)	OUT	
11	RESERVED (+)	OUT	
12	RESERVED (+)	OUT	
13	—		
14	RESET (-)		
15	SAVING ENERGY CONTROL (-)		
16	RESERVED (-)		
17	RESET (-)		
18	RESET (-)		
19	EMO STATUS (-) ※1		
20	PUMP N2 WARNING STATUS (-) ※2		
21	RESET (-)		
22	SAVING ENERGY STATUS (-)		
23	RESERVED (-)		
24	RESERVED (-)		
25	RESERVED (-)		

※1 EMO is option correspondence.

※2 For P and N type only.

※3 It can change to “Abnormality: OPEN, Alternate” by DIP SW. setting.

Table 2.7 CN-Z & CN-Y Signal Contacts

Input Signal	Pump side Circuit  Customer's connection  10mA Min. Open Collector Dry Contact
Output Signal	Pump side Circuit  100mA Max. Open Collector Customer's connection  4VDC-27VDC EMO  100mA Max. Dry Contact Customer's connection  4VDC-27VDC