Doc No. BTS-39E-000
Ver.05

Turbo Molecular Pump

STP-603/1003 series

Specification

Pump Type

- STP-603
- STP-1003
- STP-603C
- STP-1003C

Edwards Japan Limited

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1 Introduction

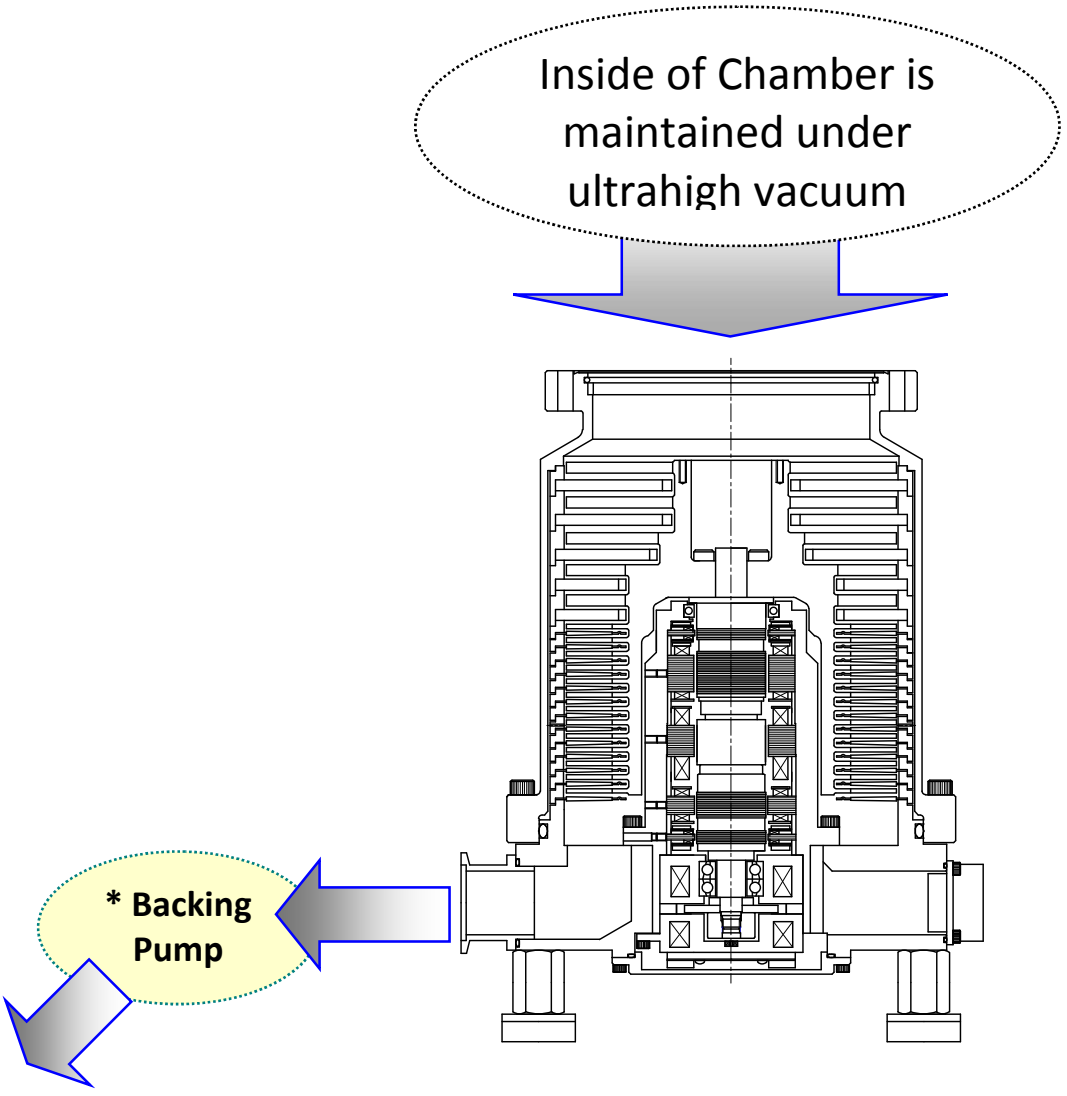
Turbo Molecular pump is one of the most important Vacuum Components in the most-advanced technologies field like Semiconductor and LCD manufacturing tools, high-energy physics, etc.

This document describes the standard specification for the magnetically levitated turbo molecular pumps of STP-603/1003 and STP-603C/1003C.

- STP-603/1003 is one of UHV (Ultra-high vacuum) series turbomolecular pump and outfitted with all rotor blades to realize ultra-high vacuum.
- STP-603C/1003C is corrosion resistant turbomolecular pump (C type), which has a capability against corrosive gases (chlorine or fluorine system gases) with anti-corrosion treatment.

1.1 Application

- Electron beam microscope
- Surface analyzer
- Mass spectrum analyzer
- Accelerators
- Nuclear fusion experimental equipment
- Semiconductor / LCD manufacturing equipment
  (such as a dry etcher, CVD, sputter, and ion implanter)



* The backing pump is needed to operate the turbomolecular pump.

1.2 Configuration

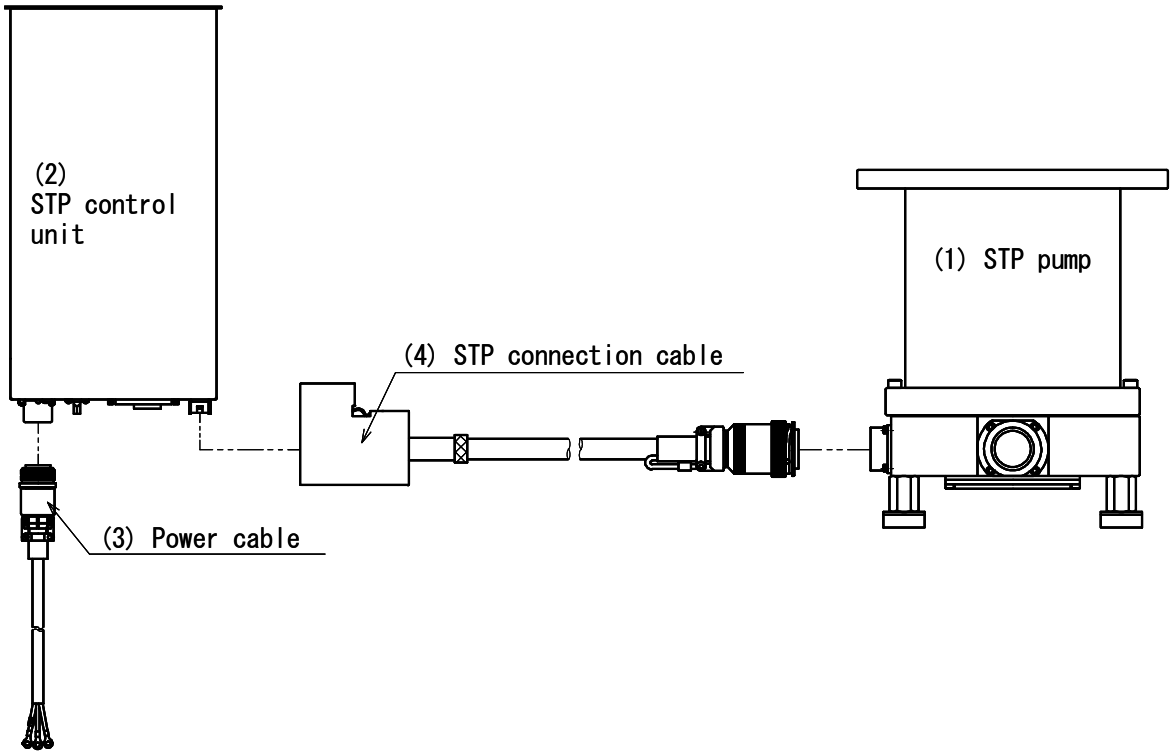


Figure 1.1 STP pump assembly drawing

	Item	Q'ty	Description	Need to specify at order
(1)	STP pump	1	Please select pump type and inlet flange type according to the customer specifications. See the chapter 2.1 for the pump specifications.	- Inlet flange type - Corrosion resistance
(2)	STP control unit	1	The control unit has a remote function to communicate with the customer tool. The controller accepts Start/Stop commands and delivers the pump operating status (Levitation, Normal, Alarm etc)	- Input voltage
(3)	Power cable	1	Power cable to supply AC power to the controller. Please specify the cable length to order. (5 m/10 m/15 m/20 m)	- Cable length
(4)	STP connection cable	1	The connection cable between STP pump and STP control unit. Straight type and L-type are available on the pump side connector. Please specify the angle for the L-type connector to order. (0°/90°) Please specify the cable length to order. (5 m/10 m/15 m/20 m)	- Cable length - Connector type - Angle for L-type connector

* Use the STP selection sheet at the end of this document when you order our pumps.

2 STP pump

2.1 STP pump specification

Pump Type			STP-603	STP-1003	STP-603C	STP-1003C
Corrosion resistant specific			N/A		Applicable	
Flange size	Inlet port flange		VG150/ICF203 ISO160F	VG200/ICF253 ISO200F/ISO250F	VG150/ICF203 ISO160F	VG200/ICF253 ISO200F/ISO250F
	Outlet port flange		KF40			
	Purge port flange		N/A		KF10	
Pumping speed[*1] (L/s) (See chapter 7.1)		N_2	650	1000	650	1000
		H_2	550	800	550	800
Compression ratio[*1]		N_2	$> 10^8$			
		H_2	10^5			
Ultimate pressure[*1,*2]		Pa	10^{-7} (10^{-9} Torr) : VG/ISO flange 10^{-8} (10^{-10} Torr) order: ICF flange		6.5×10^{-6} (5×10^{-8} Torr) :VG/ISO flange 10^{-7} (10^{-9}T orr) order: ICF flange	
Allowable maximum working pressure[*1]		Pa	1.3×10^{-2} (1×10^{-4} Torr)			
Allowable maximum backing pressure[*1]		Pa	13 (0.1 Torr)			
Enable exhaust gas			STP-603/STP-1003 is not corrosion resistant type. Chlorine and Fluorine gases cannot be used. Use corrosion resistant pump (C-type) when using Chlorine and Fluorine gases.		Chlorine and Fluorine gases can be used. When using the following gas, contact Edwards. • The gas including alkali metal, but except "Li". • The gas including "Ga", "Hg", "Sn" and "In". • HBr	
Purge gas flow rate		sccm			10 (see chapter 2.2.2)	
Back pump size		L/min	> 1300 (Recommend)			
Rated speed		rpm	35000 (Allowable speed range: between 17500 and 35000)			
Starting time		min	6			
Stopping time		min	6			
Baking temperature		°C	< 120			
Lubricating oil			Not necessary			
Installation position			Free			
Cooling method			Natural Air Cooling (Air cooling: for baking / gas suction)			
Mass		kg	31			
Physical size		mm	(See chapter 6.3 Pump Overview Chart)			
Ambient air temp. range		°C	0 to 40			
Storage temp. range		°C	-25 to 55			
Connection cable length		m	30 (maximum)			

The data inside above table are the typical measured value. It's not guaranteed performance.

[*1] : Pumping speed, compression ratio, ultimate pressure, allowable maximum working pressure and allowable maximum backing pressure are measured by Edwards method.

[*2] : Ultimate pressure is a value after baking.

2.2 Precaution before installing the STP pump

2.2.1 How to secure the STP pump

The STP pump has a high-speed rotor. The worst-case failure may result in a jump in rotational torque leading to personal injury or equipment damages.

The generated torque during a pump failure is called "Destructive torque". Design and secure the mounting for the STP pump on the tools in order to withstand this destructive torque. Refer to Table 2.1 for destructive torque values and recommended bolts. All flange bolts size should be the size specified by the flange standard. And it is necessary to use all flange holes in order to secure the STP pump mounting.

Inlet flange is secured with bolts

Table 2.1 Table Destructive torque and recommended bolts

Pump type		STP-603/1003			
Flange type		VG150/ISO160F ISO200F/ISO250F	VG200	ICF203	ICF253
Destructive torque [Nm]		1.5×10^4			
Recommended bolts for flange	Shape of bolts	M10 Standard	M12 Standard	M8 Standard	
	Q'ty	8	8	20	24
	Steel type *1	Stainless steel			
	Strength class *1	70 or more			
Secured the base (8 positions)	Without damper	Although base securing is unnecessary, it is recommended for safety			
	With damper	Secure the base or install torque restraint. The pump can be installed only vertically.			

Use all 8 holes on the base plate for the attached legs or the 8 leg-holes to secure the pump.

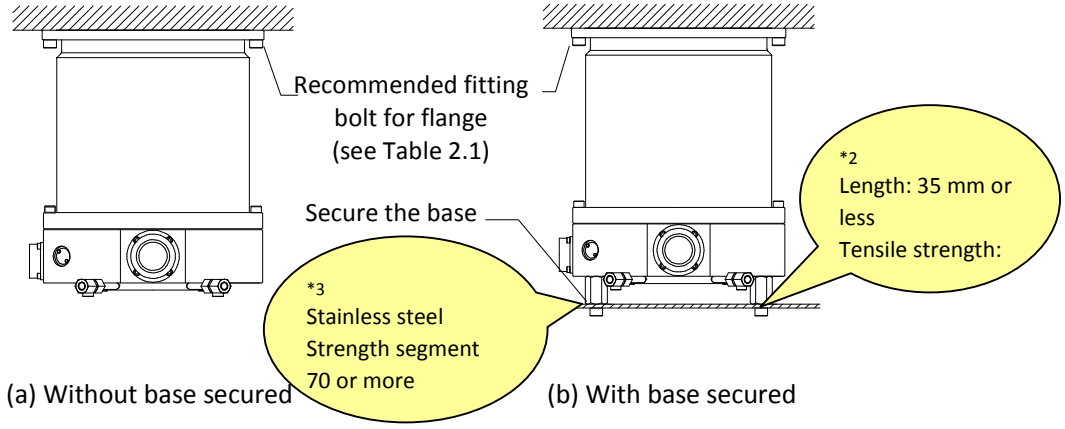


Figure 2.1 Methods of securing the STP pump using inlet flange holes

*1 Refer to JISB1051 (ISO898-1), JISB1054 (ISO3506), AMS6419 (Aerospace Material Specification).
*2 The length of the legs, when the customer would like to make, should be less than attached legs (35 mm) from Edwards. And the material tensile strength should be 600 N/mm^2 or more.
*3 The bolts for the base secure should be Stainless Steel with strength segment of 70 or more.

Table 2.2 Table Destructive torque and claw clamps

Inlet flange is secured with claw clamps

Pump type		STP-603/1003	
Flange type		ISO160	ISO200
Destructive torque [Nm]		1.5×10^4	
Flange Claw clamp	Number of claw clamps	4 or more	6 or more
	Clamper position	Position the claw clamps evenly on the circumference	
Secured the base (8 positions)	Without damper	Secure the base	
	With damper	Secure the base or install torque restraint. The pump can be installed only vertically.	

Use all 8 holes on the base plate for the attached legs or the 8 leg holes to secure the pump.

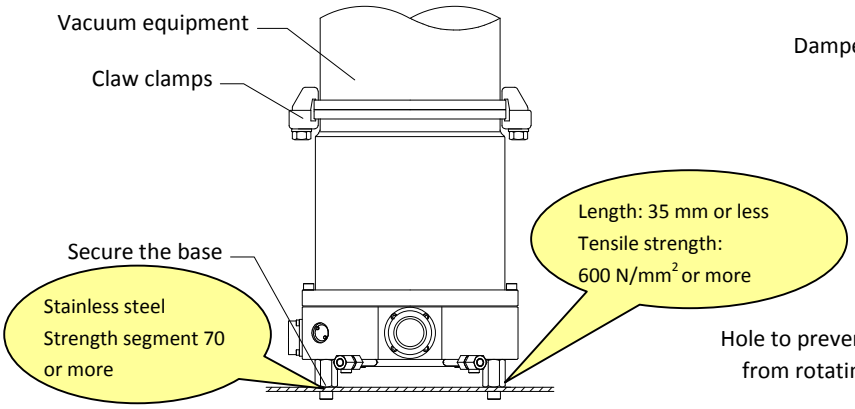


Figure 2.2 Example of securing the STP pump
(When securing the inlet port flange with claw clamps)

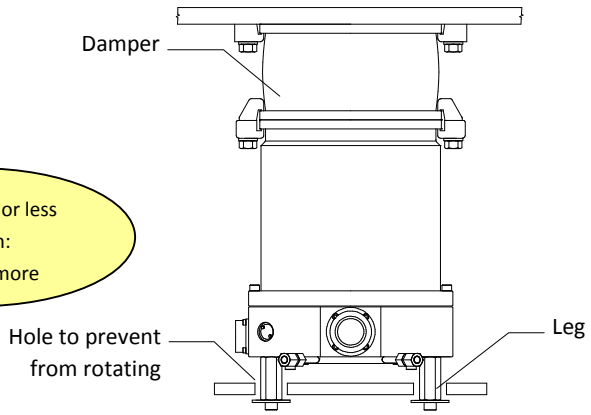


Figure 2.3 Example of securing the STP pump
(When installing the damper in the inlet port flange)

2.2.2 Purge gas for STP pump (only STP-603C/1003C)

When pumping reactive or corrosive gases, introduce the dry N_2 gas or other gas in to the STP pump in order to protect the inside of the STP pump.

- ◇ Introduce dry N_2 or other gas into the pump through the purge port using the electromagnetic valve or the needle valve provided by the customer.
- ◇ Recommended Purge gas flow rate is 1.7×10^{-2} Pa·m^3/s (10 sccm).
- ◇ The allowable gas pressure is from 1.0×10^5 Pa (atmospheric pressure) to 4.9×10^4 Pa (0.5 kgf/cm^2) on the introduction side.
- ◇ It is possible to have some noise from the STP pump when the inlet pressure becomes higher. But there is no problem to use the STP pumps as normal.

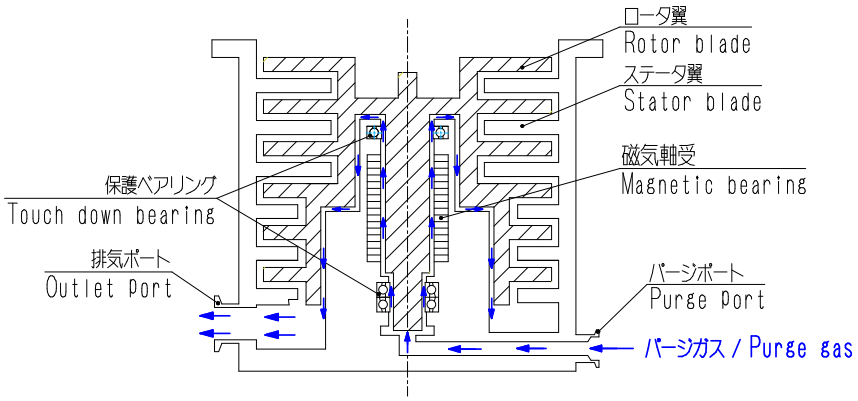
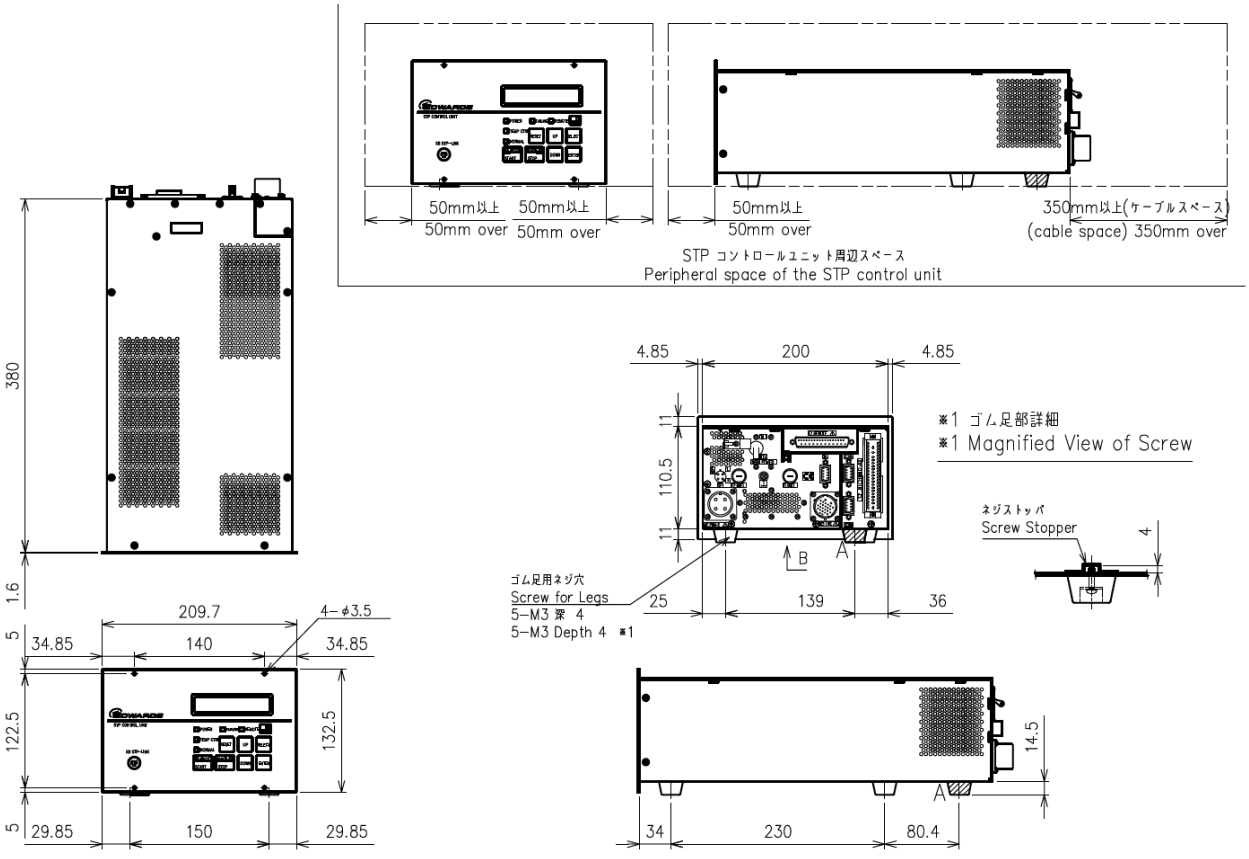


Figure 2.4 Purge gas flow inside the pump

3 STP control unit specification

Item			Specification
Controller type			SCU-800
Input Voltage		Vac	100 to 120 / 200 to 240
Input Frequency		Hz	50/60 +/-2
Input Phase			Single Phase
Input Power (Maximum value)			800
Inrush current		A	25 $_{0\text{-}P}$
Leakage current		mA	3.5 or less
Main breaker	Rated current	A	15
	AIC: Ampere Interrupting Capacity	A	1,000 (240 Vac: 50/60 Hz)
Allowable operating temperature		°C	0 to 40
Allowable Storage temperature		°C	-25 to 55
Mass		kg	9
Remote interface			I/O Remote (See chapter 7.1) RS232/RS485 (See chapter 7.2)

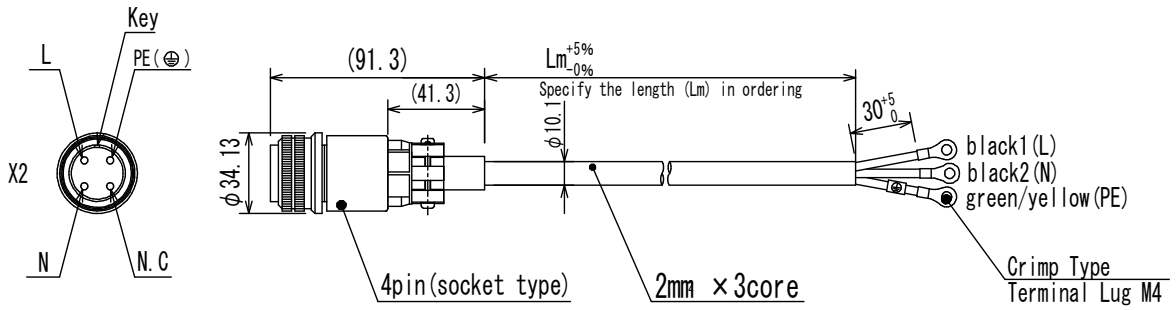


External view of STP control unit SCU-800

4 Power cable specification

Control unit side	Primary power source side

Unit: mm

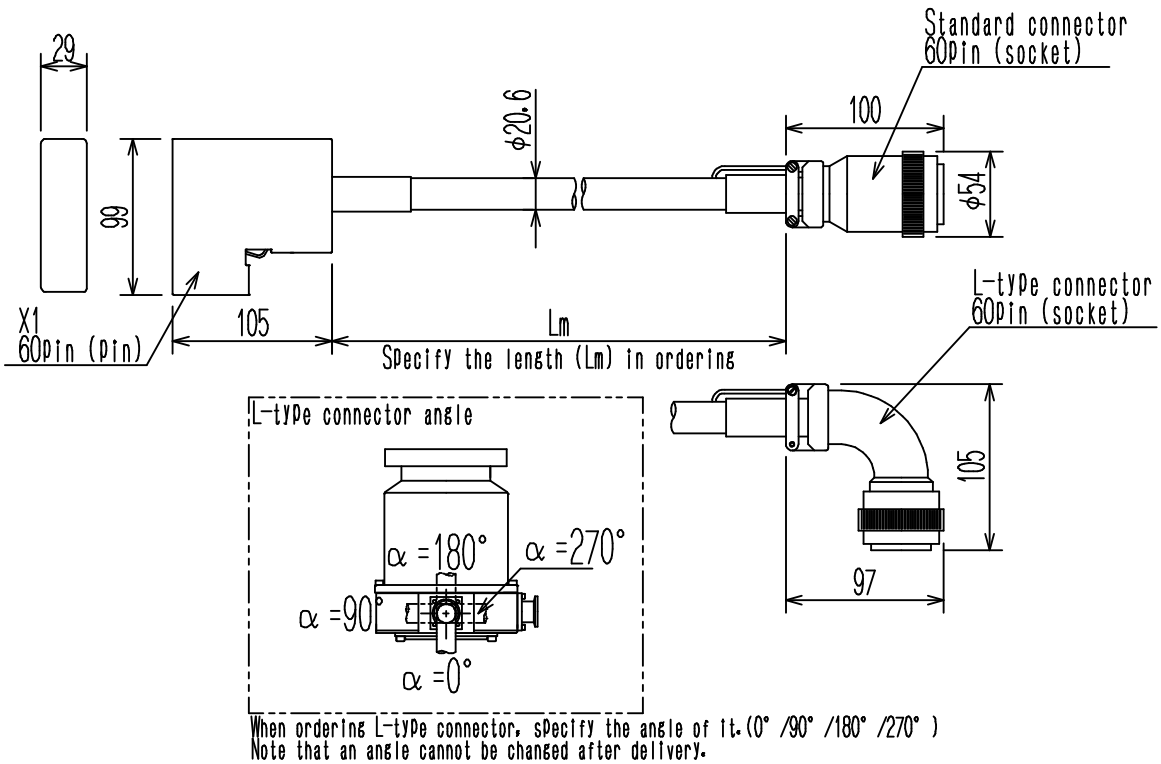


External view of power cable (Maximum length is 30 m)

5 STP connection cable specification

Control unit side	Pump side

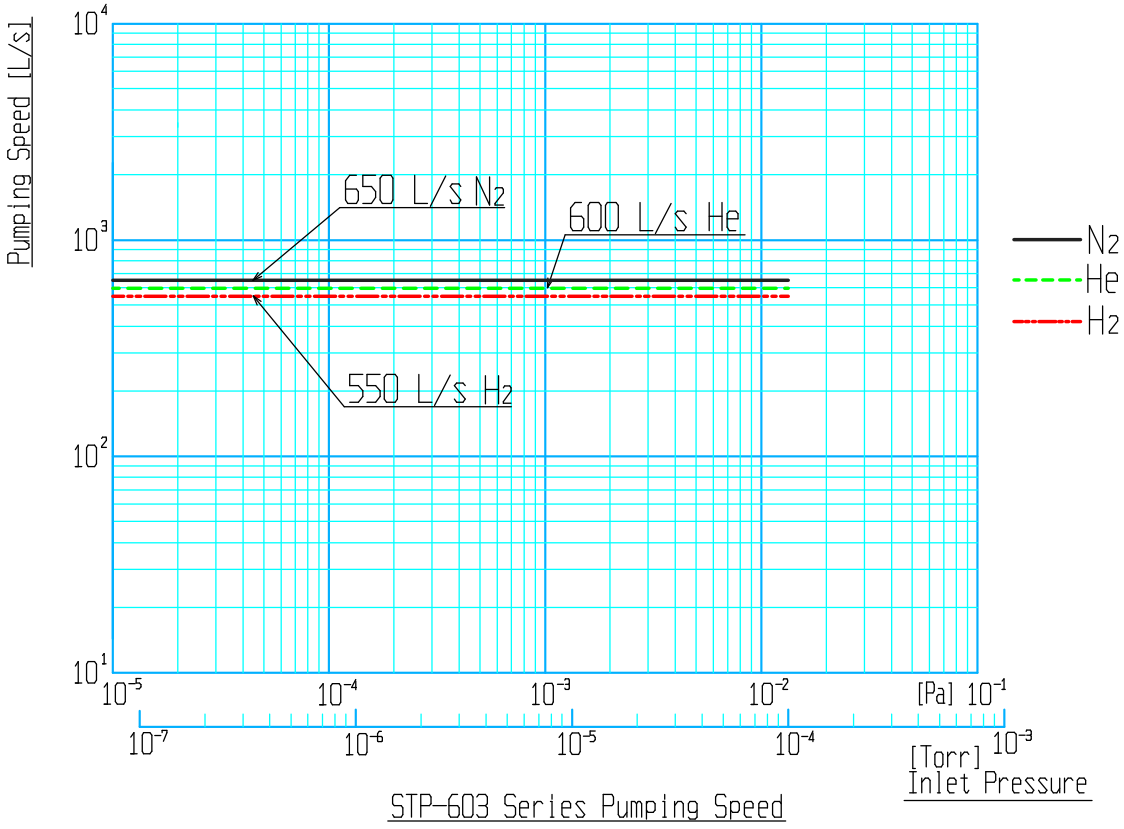
Unit: mm



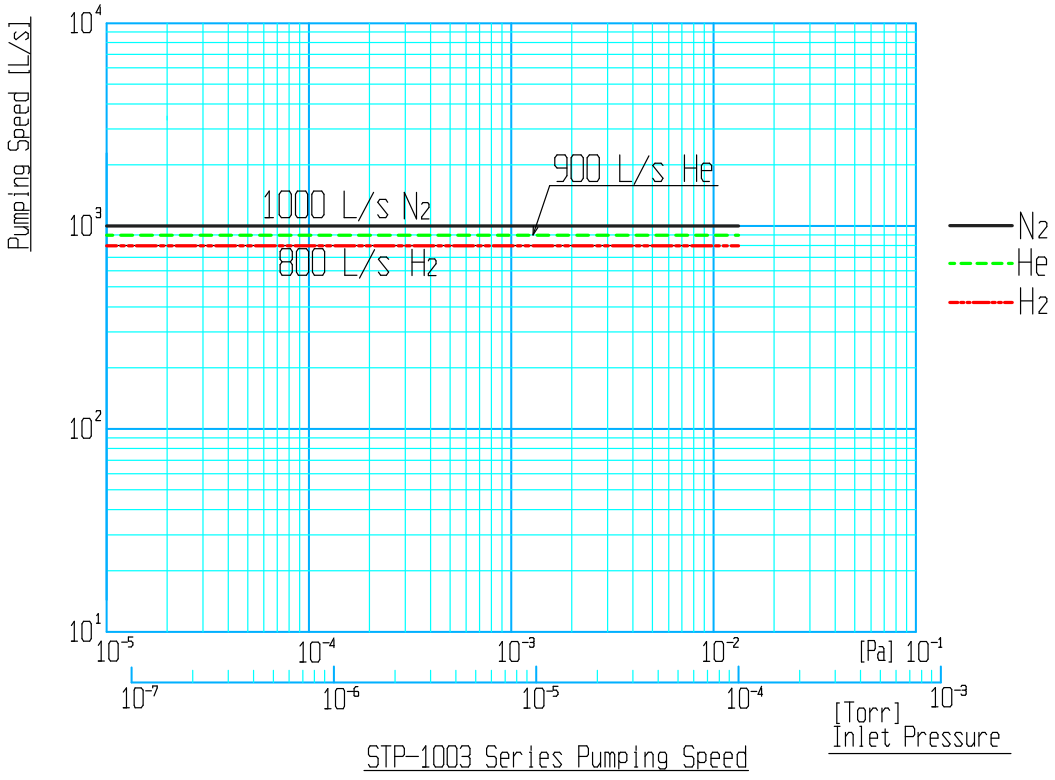
External view of STP connection cable (Maximum length is 30 m)

6 STP pump detailed specification

6.1 Pumping speed graph

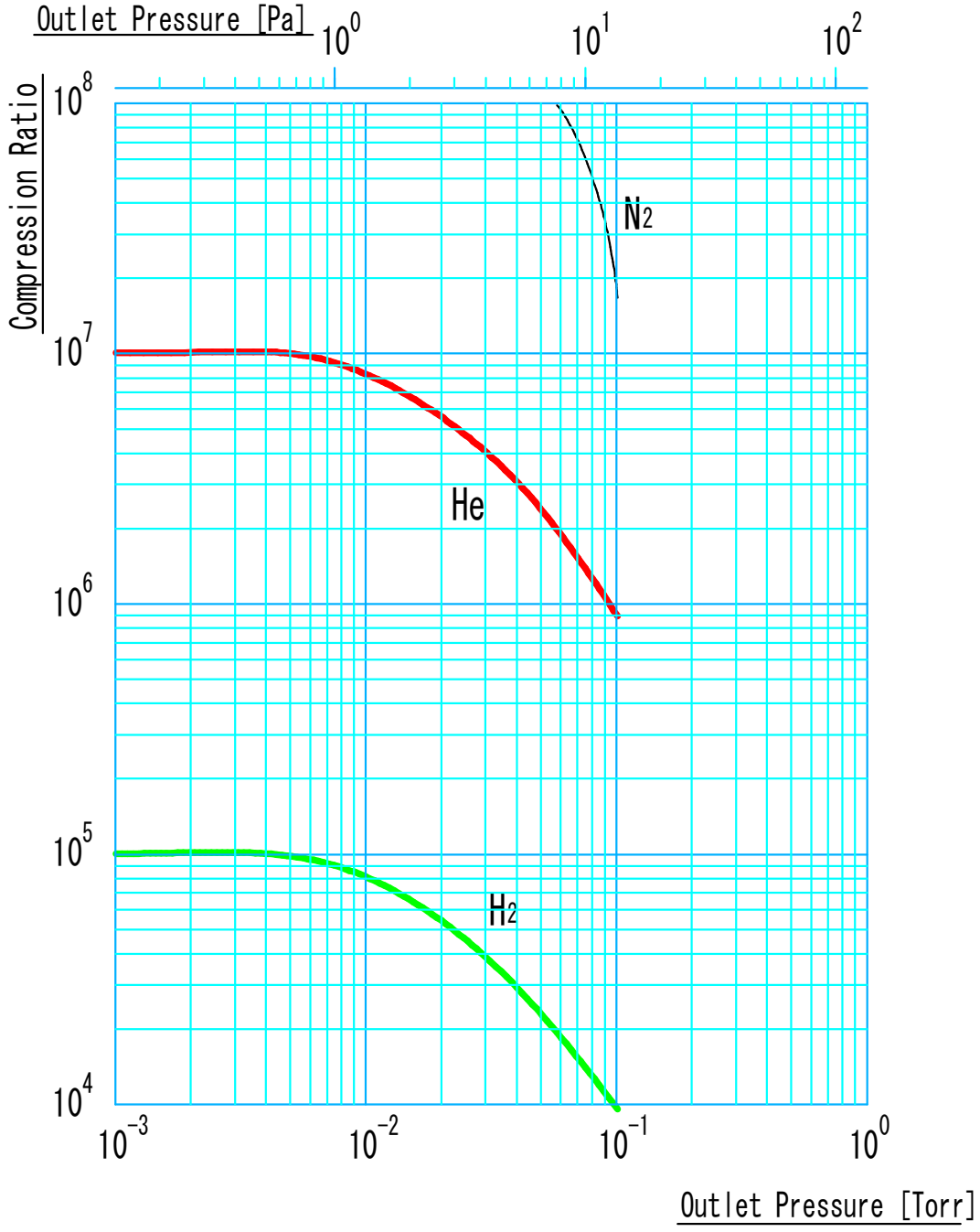


Graph 1



Graph 2

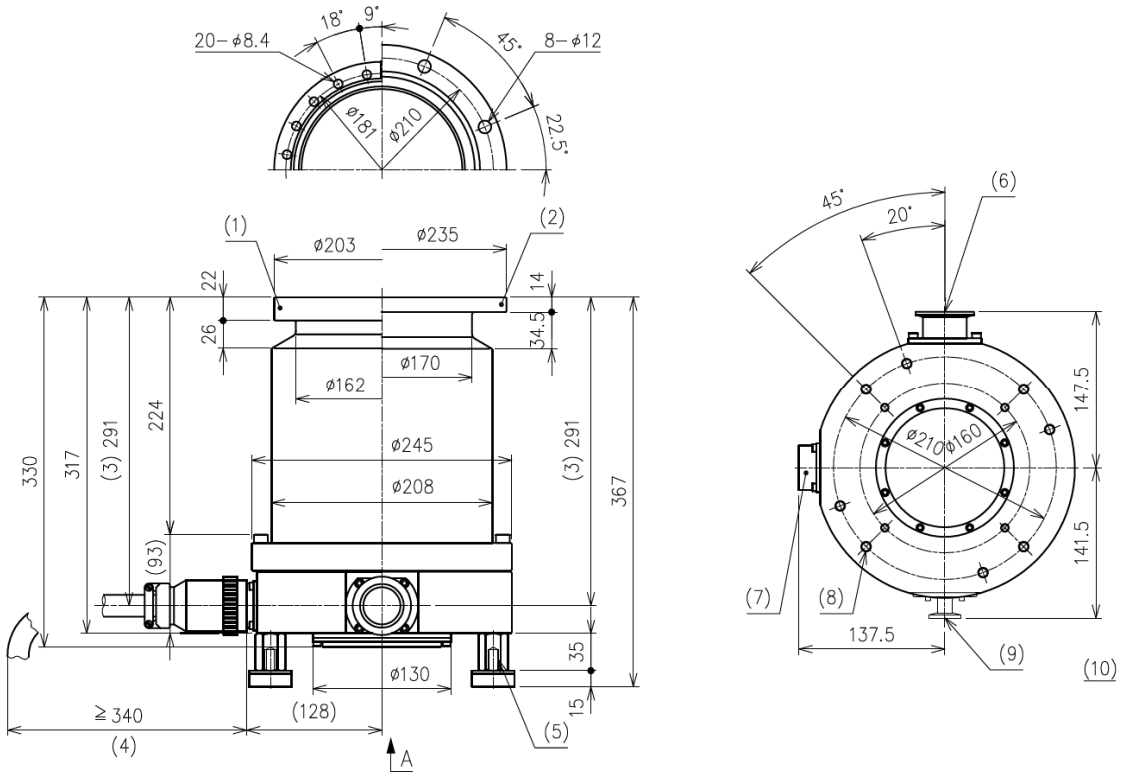
6.2 Compression ratio graph



STP-603/1003series Compression Ratio

Graph 3

6.3 STP pump external views

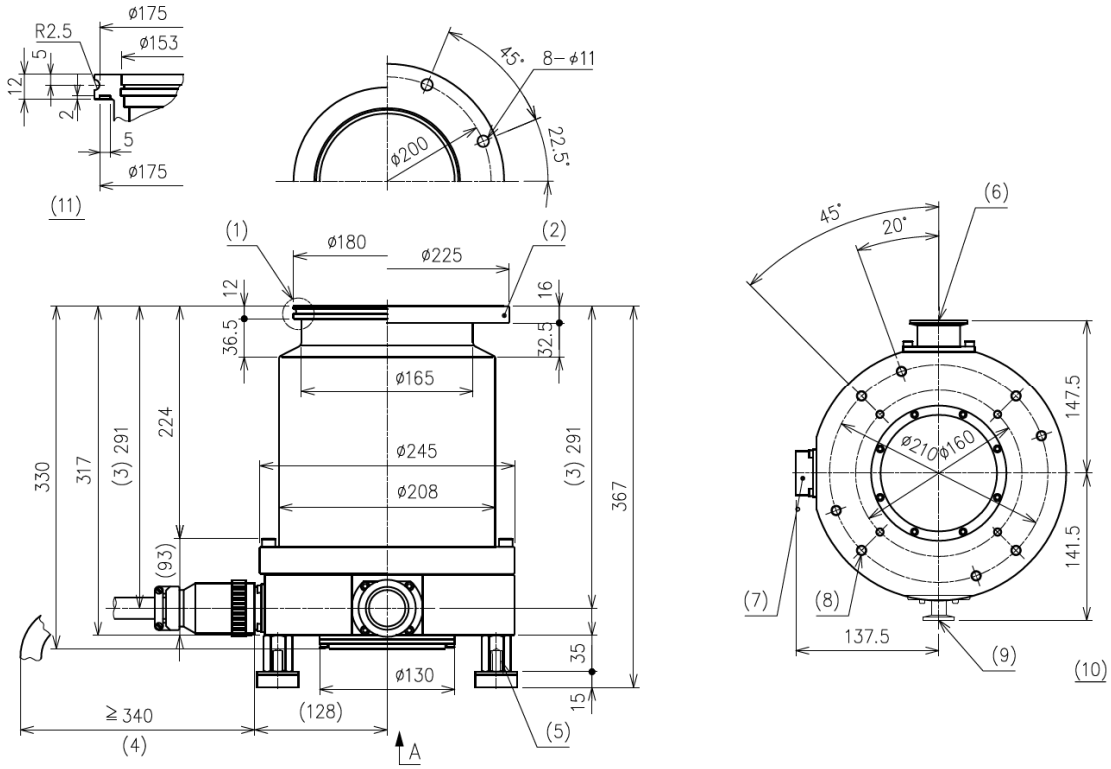


STP-603/603C (ICF203/VG150)

No.	Item	Description
1	Inlet port flange	ICF[*1]203
2	Inlet port flange	VG[*2]150
3	Height of the purge port	(only for corrosion resistant type)
4	Bending dimension of the STP connection cable	
5	Screw hole of legs	M10[*2] depth 20
6	Outlet port flange	KF[*2]40
7	STP connector	
8	Screw hole for legs	8-M10[*2] depth 24
9	Purge port	KF[*2]10 (only for corrosion resistant type)
10	Viewed from arrow A	

[*1] JVIS

[*2] JIS

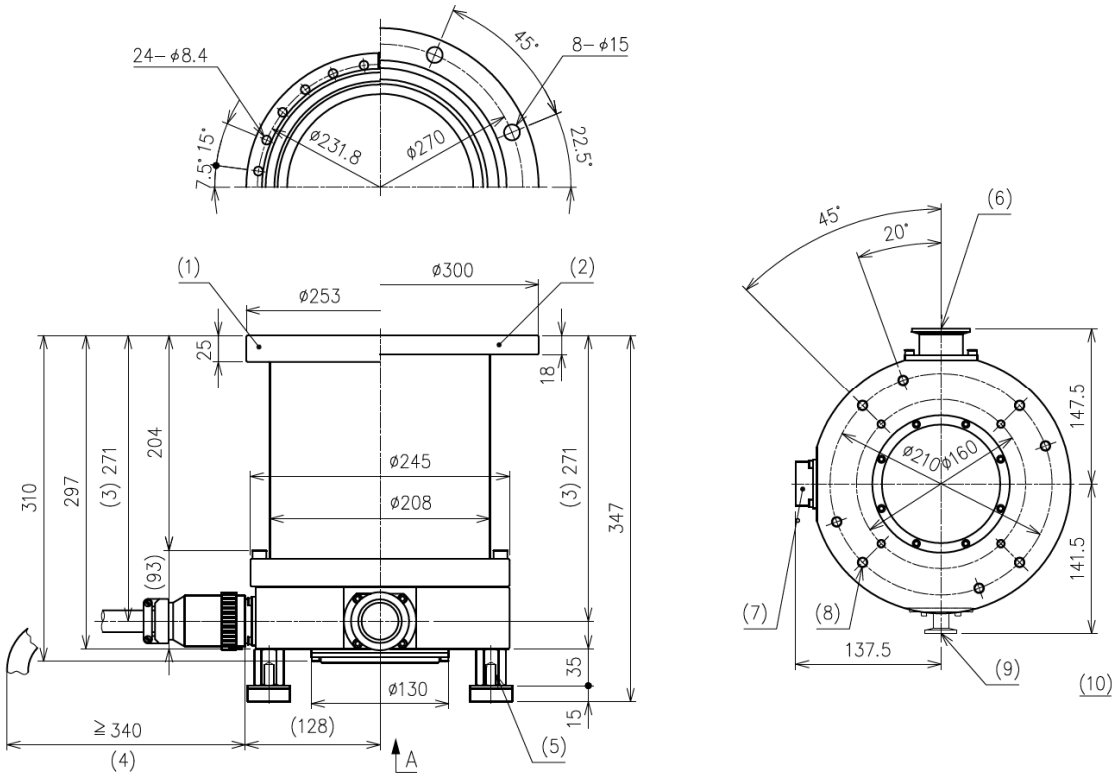


STP-603/603C (ISO160/ISO160F)

No.	Item	Description
1	Inlet port flange	ISO[*2]160
2	Inlet port flange	ISO[*2]160F
3	Height of the purge port	(only for corrosion resistant type)
4	Bending dimension of the STP connection cable	
5	Screw hole of legs	M10[*1] depth 20
6	Outlet port flange	KF[*1]40
7	STP connector	
8	Screw hole for legs	8-M10[*1] depth 24
9	Purge port	KF[*1]10 (only for corrosion resistant type)
10	Viewed from arrow A	
11	Magnified view of the inlet port flange	ISO160

[*1] JIS

[*2] ISO

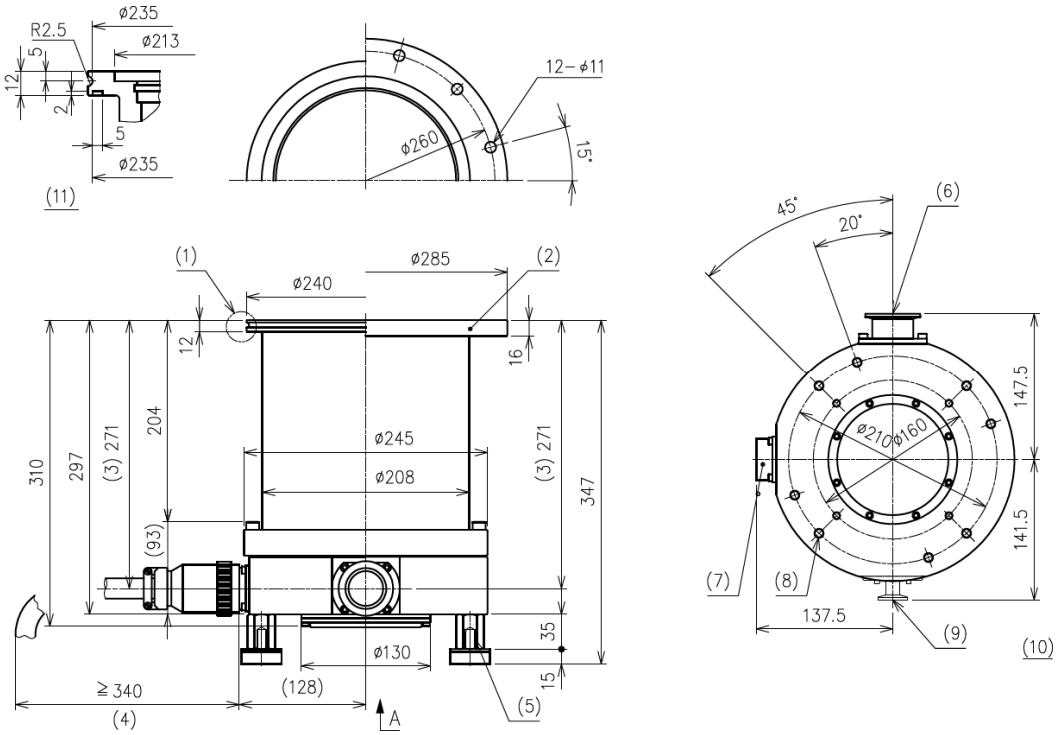


STP-1003/1003C (ICF253/VG200)

No.	Item	Description
1	Inlet port flange	ICF[*1]253
2	Inlet port flange	VG[*2]200
3	Height of the purge port	(only for corrosion resistant type)
4	Bending dimension of the STP connection cable	
5	Screw hole of legs	M10[*2] depth 20
6	Outlet port flange	KF[*2]40
7	STP connector	
8	Screw hole for legs	8-M10[*2] depth 24
9	Purge port	KF[*1]10 (only for corrosion resistant type)
10	Viewed from arrow A	

[*1] JVIS

[*2] JIS

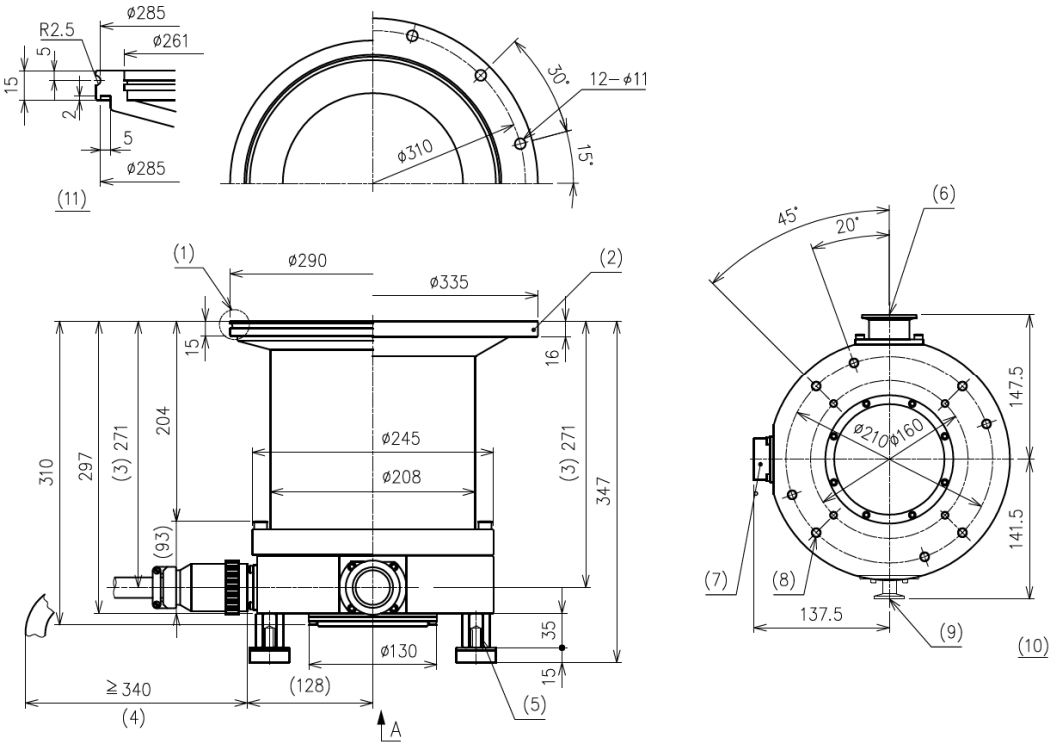


STP-1003/1003C (ISO200/ISO200F)

No.	Item	Description
1	Inlet port flange	ISO*2200
2	Inlet port flange	ISO*2200F
3	Height of the purge port	(only for corrosion resistant type)
4	Bending dimension of the STP connection cable	
5	Screw hole of legs	M10*1 depth 20
6	Outlet port flange	KF*140
7	STP connector	
8	Screw hole for legs	8-M10*1 depth 24
9	Purge port	KF*110 (only for corrosion resistant type)
10	Viewed from arrow A	
11	Magnified view of the inlet port flange	ISO200

*1 JIS

*2 ISO

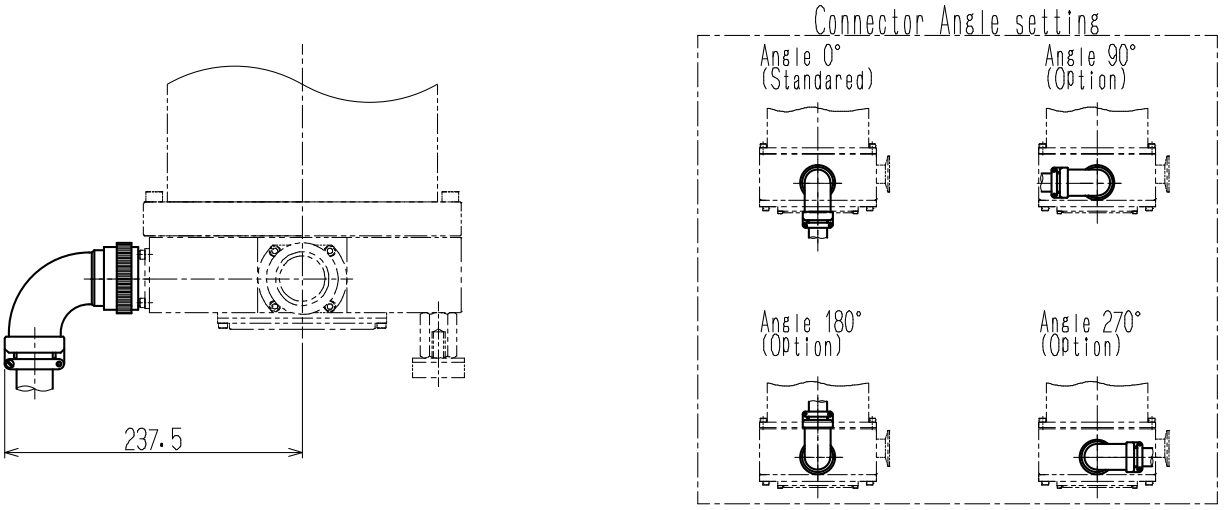


STP-1003/1003C (ISO250/ISO250F)

No.	Item	Description
1	Inlet port flange	ISO*2250
2	Inlet port flange	ISO*2250F
3	Position of the purge port	(only for corrosion resistant type)
4	Bending dimension of the STP connection cable	
5	Screw hole of legs	M10*1 depth 20
6	Outlet port flange	KF*140
7	STP connector	
8	Screw hole for legs	8-M10*1 depth 20
9	Purge port	KF*110 (only for corrosion resistant type)
10	Viewed from arrow A	

*1 JIS

*2 ISO



Angle setting for STP-603/1003 series L-type connector

7 STP control unit detailed specification

7.1 I/O Remote

Specification for Remote input and output signal on Remote Connector X7 [*1]

Pin No	Description	Pin No	Description
1	COM. (IN)	20	
2		21	STOP IN
3	START IN	22	RESET IN
4	REM_IN_OPT1 [*2]	23	REM_IN_OPT2 [*2]
5	INHIBIT IN	24	WARNING OUT (N.O)
6	WARNING OUT (COM.)	25	WARNING OUT (N.C)
7	L.VALVE OUT (N.O.)[*2]	26	L.VALVE OUT (N.O.) [*2]
8	REMOTE OUT (N.O.)	27	REMOTE OUT (N.O.)
9	POWER OUT (N.O.)	28	POWER OUT (N.O.)
10	ACCELERATION OUT (N.O.)	29	ACCELERATION OUT (N.O.)
11	NORMAL OUT (N.O.)	30	NORMAL OUT (COM.)
12	NORMAL OUT (N.C.)	31	
13	BRAKE OUT (N.O.)	32	BRAKE OUT (N.O.)
14	ALARM OUT (N.O.)	33	ALARM OUT (COM.)
15	ALARM OUT (N.C.)	34	
16	AT TEMP. OUT (N.O.) [*3]	35	AT TEMP. OUT (N.C.) [*3]
17	AT TEMP. OUT (COM.) [*3]	36	OPT.1 OUT (N.O.) [*2]
18	OPT.1 OUT (COM.) [*2]	37	OPT.1 OUT (N.C.) [*2]
19			

IN: Input pin, OUT: Output pin.
N.O[*4]: Normal Open, N.C[*5]: Normal Close, COM.: Common
Input signal specification: Operation by Close/Open between COM. (IN) and each Input pin.
Output signal specification: Relay contact output.
Contact point ratings is 125 Vac/0.5 A, 24 Vdc/1 A
Connector type: D-sub 37 pin (Socket), The screw for the remote connector is M2.6.
Connector for the remote cable needs to be provided by the customer.
It is recommended to use a remote cable with shield type, and connect both terminal to ground.

[*1] : Please refer to the Instruction Manual for the detail explanations.
[*2] : This is not used in the standard specification pump.
[*3] : This signal will be set when TMS detects the measured temperature is inside +/- 10 ℃ from the setting temperature.
[*4] : N.O; The contact will close when the STP pump status becomes the stated status.
[*5] : N.C; The contact will open when the STP pump status becomes the stated status.

7.2 RS232/RS485

Specification of Serial port COM1 (X3A, X3B) for both RS232 and 485 *1

	STP control unit side X3A (D-sub 9 pin, Socket)	STP control unit side X3B (D-sub 9 pin, Socket)	PC side connector (example of DOS/V compatible machine)	
			D-sub 9 pin	D-sub 25 pin
RS232	2 (TxD)	-	2 (TxD)	3 (TxD)
	3 (RxD)	-	3 (RxD)	2 (RxD)
	5 (GND)	-	5 (GND)	7 (GND)
RS485	7 (D-)	7 (D-)	-	-
	8 (D+)	8 (D+)	-	-
Not for use	1,4,6,9	1,2,3,4,5,6,9	-	-

Screw size of the connector housing for X3A and X3B is M2.6.
The connectors for the serial cables need to be provided by the customer.
It is recommended to use a serial communication cable with shield type, and connect both terminal to ground. DO NOT connect anything to these unused pins.

8 Attachment components

Below parts are attached with the pump as standard.

Item	Q' ty	Note
Blank flange for parge port (KF10)	1	They are supplied to the corrosion resistance specific pump (type C)
Clamper for purge port (KF10)	1	
O-ring for the purge port (KF10)	1	
Leg	8	
Instruction Manual	1	

9 Accessory

The following accessories are prepared according to the use.

Item	Remark
Air-cooling unit	Pump cooling (when pumping gas or baking)
Damper	Reduction of the vibration from the pump to the equipment

Doc No. BTS-39E-000
Ver.05

Turbo Molecular Pump

STP-603/1003 series Selection Guide

Pump Type
- STP-603
- STP-1003
- STP-603C
- STP-1003C

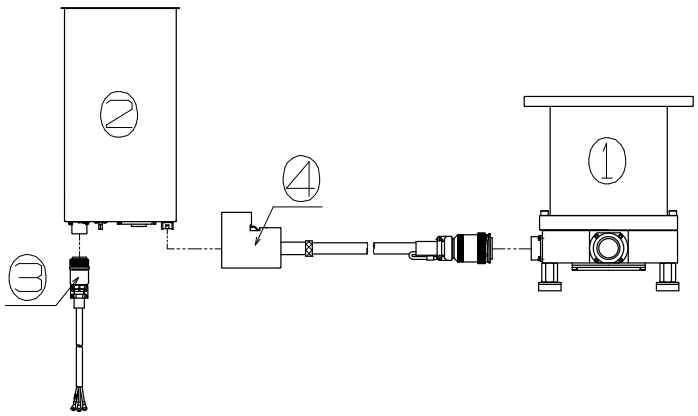
Edwards Japan Limited

STP-603/1003 series Selection Guide

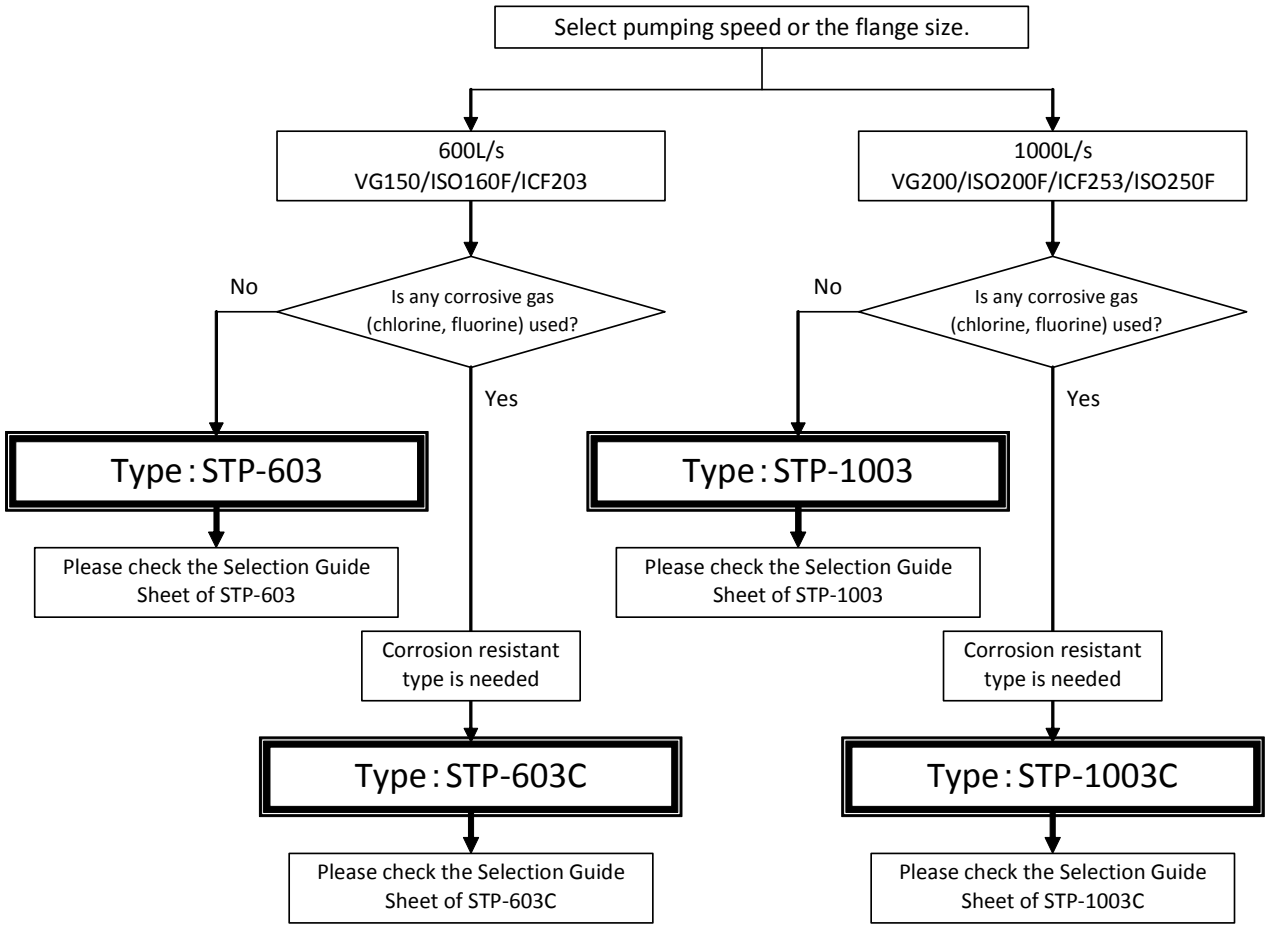
Please complete a kit using the Product Structure and the Selection Flow Chart.

< Product Structure >

	Item	Q'ty
(1)	STP pump	1
(2)	STP control unit	1
(3)	Power cable	1
(4)	STP connection cable	1



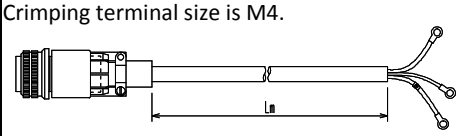
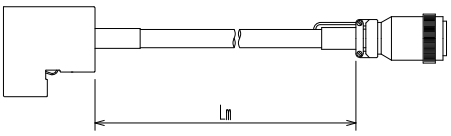
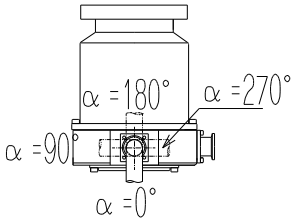
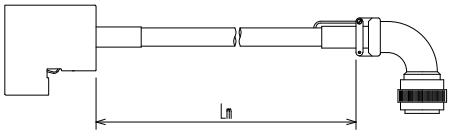
< Selection Flow Chart >



STP-603 Selection Guide Sheet

Please tick the boxes to order the components.

☐ Pump type: STP-603

	Item		Part number	Select	Note
(1)	STP pump	VG150	YT390Z003	☐	Select flange size. Outlet port: KF40 Purge port: N/A
		ISO160F	YT39B0030	☐	
		ICF203	YT390Z005	☐	
(2)	STP control unit	SCU-800	YT49Z2Z00	✓	Input voltage: 100Vac to 120Vac/200Vac to 240Vac
(3)	Power cable	Please select cable length.			
		5 m	PT49Y0A00	☐	Crimping terminal size is M4. 
		10 m	PT49Y0A01	☐	
		15 m	PT49Y0A02	☐	
		20 m	PT49Y0A03	☐	
(4)	STP connection cable	Please select connector type and cable length			
	Both side straight connector	5 m	B75130020	☐	
		10 m	B75130060	☐	
		15 m	B75130070	☐	
		20 m	B75130190	☐	
	- Pump side L-type connector (α=0°) - Controller side straight	5 m	PT46Y1B00	☐	
		10 m	PT46Y1B01	☐	
		15 m	PT46Y1B02	☐	
		20 m	B71830060	☐	
	- Pump side L-type connector (α=90°) - Controller side straight	5 m	PT46Y1B05	☐	Need to select angle for L-type connector. 
		10 m	PT46Y1B06	☐	
		15 m	PT46Y1B07	☐	
		20 m	B71830080	☐	
	Instruction Manual			✓	CD

* Maximum length of all cables is 30 meters.

"Option Parts Selection Sheet" is at the back of this guide. When ordering optional parts, mark a checkbox in "Option Parts Selection Sheet".

STP-1003 Selection Guide Sheet

Please tick the boxes to order the components.

☐ Pump type: STP-1003

	Item		Part number	Select	Note
(1)	STP pump	VG200	YT390Z004	☐	Select flange size. Outlet port: KF40 Purge port: N/A
		ISO200F	YT390Z001	☐	
		ICF253	YT39B0010	☐	
		ISO250F	YT390Z002	☐	
(2)	STP control unit	SCU-800	YT49Z2Z00	✓	Input voltage: 100Vac to 120Vac/200Vac to 240Vac
(3)	Power cable	Please select cable length.			
		5 m	PT49Y0A00	☐	Crimping terminal size is M4.
		10 m	PT49Y0A01	☐	
		15 m	PT49Y0A02	☐	
		20 m	PT49Y0A03	☐	
(4)	STP connection cable	Please select connector type and cable length			
	Both side straight connector	5 m	B75130020	☐	
		10 m	B75130060	☐	
		15 m	B75130070	☐	
		20 m	B75130190	☐	
	- Pump side L-type connector (α=0°) - Controller side straight	5 m	PT46Y1B00	☐	
		10 m	PT46Y1B01	☐	
		15 m	PT46Y1B02	☐	
		20 m	B71830060	☐	
	- Pump side L-type connector (α=90°) - Controller side straight	5 m	PT46Y1B05	☐	Need to select angle for L-type connector.
		10 m	PT46Y1B06	☐	
		15 m	PT46Y1B07	☐	
		20 m	B71830080	☐	
	Instruction Manual			✓	CD

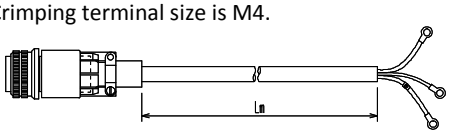
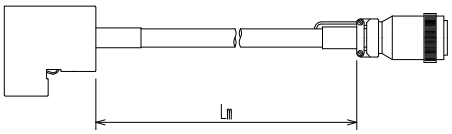
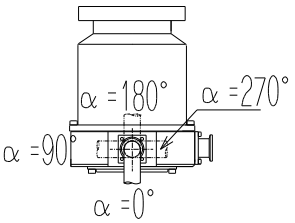
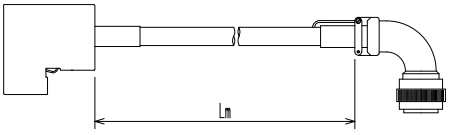
* Maximum length of all cables is 30 meters.

"Option Parts Selection Sheet" is at the back of this guide. When ordering optional parts, mark a checkbox in "Option Parts Selection Sheet".

STP-603C Selection Guide Sheet

Please tick the boxes to order the components.

☐ Pump type: STP-603C (Corrosion resistant type)

	Item		Part number	Select	Note
(1)	STP pump	VG150	YT39AZ000	☐	Select flange size. Outlet port: KF40 Purge port: KF10
		ISO160F	YT39B0110	☐	
		ICF203	YT39AZ002	☐	
(2)	STP control unit	SCU-800	YT49Z2Z00	✓	Input voltage: 100Vac to 120Vac/200Vac to 240Vac
(3)	Power cable	Please select cable length.			
		5 m	PT49Y0A00	☐	Crimping terminal size is M4. 
		10 m	PT49Y0A01	☐	
		15 m	PT49Y0A02	☐	
		20 m	PT49Y0A03	☐	
(4)	STP connection cable	Please select connector type and cable length			
	Both side straight connector	5 m	B75130020	☐	
		10 m	B75130060	☐	
		15 m	B75130070	☐	
		20 m	B75130190	☐	
	- Pump side L-type connector (α=0°) - Controller side straight	5 m	PT46Y1B00	☐	
		10 m	PT46Y1B01	☐	
		15 m	PT46Y1B02	☐	
		20 m	B71830060	☐	
	- Pump side L-type connector (α=90°) - Controller side straight	5 m	PT46Y1B05	☐	Need to select angle for L-type connector. 
		10 m	PT46Y1B06	☐	
		15 m	PT46Y1B07	☐	
		20 m	B71830080	☐	
	Instruction Manual			✓	CD

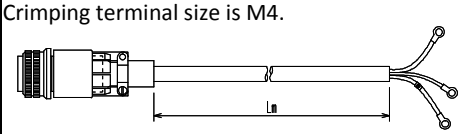
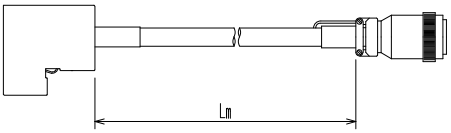
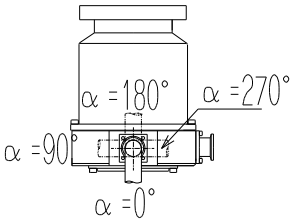
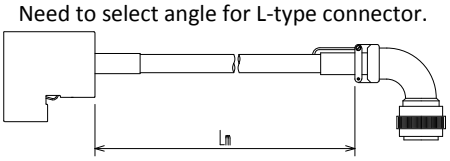
* Maximum length of all cables is 30 meters.

"Option Parts Selection Sheet" is at the back of this guide. When ordering optional parts, mark a checkbox in "Option Parts Selection Sheet".

STP-1003C Selection Guide Sheet

Please tick the boxes to order the components.

☐ Pump type: STP-1003C (Corrosion resistant type)

	Item		Part number	Select	Note
(1)	STP pump	VG200	YT39AZ001	☐	Select flange size. Outlet port: KF40 Purge port: KF10
		ISO200F	YT39B0130	☐	
		ICF253	YT39AZ003	☐	
		ISO250F	YT39B0150	☐	
(2)	STP control unit	SCU-800	YT49Z2Z00	✓	Input voltage: 100Vac to 120Vac/200Vac to 240Vac
(3)	Power cable	Please select cable length.			
		5 m	PT49Y0A00	☐	Crimping terminal size is M4.
		10 m	PT49Y0A01	☐	
		15 m	PT49Y0A02	☐	
		20 m	PT49Y0A03	☐	
(4)	STP connection cable	Please select connector type and cable length			
	Both side straight connector	5 m	B75130020	☐	
		10 m	B75130060	☐	
		15 m	B75130070	☐	
		20 m	B75130190	☐	
	- Pump side L-type connector (α=0°) - Controller side straight	5 m	PT46Y1B00	☐	
		10 m	PT46Y1B01	☐	
		15 m	PT46Y1B02	☐	
		20 m	B71830060	☐	
	- Pump side L-type connector (α=90°) - Controller side straight	5 m	PT46Y1B05	☐	Need to select angle for L-type connector.
		10 m	PT46Y1B06	☐	
		15 m	PT46Y1B07	☐	
		20 m	B71830080	☐	
	Instruction Manual			✓	CD

* Maximum length of all cables is 30 meters.

"Option Parts Selection Sheet" is at the back of this guide. When ordering optional parts, mark a checkbox in "Option Parts Selection Sheet".

Option Parts Selection Sheet - 1

Selection and Use of Optional Parts

Item	Remark
Baking heater	It reduces the time to attain ultimate pressure by heating
Air-cooling unit	Pump cooling (when pumping gas or baking)
Damper	Reduction of the vibration from the pump to the equipment

Please tick the boxes to order the components.

Baking heater

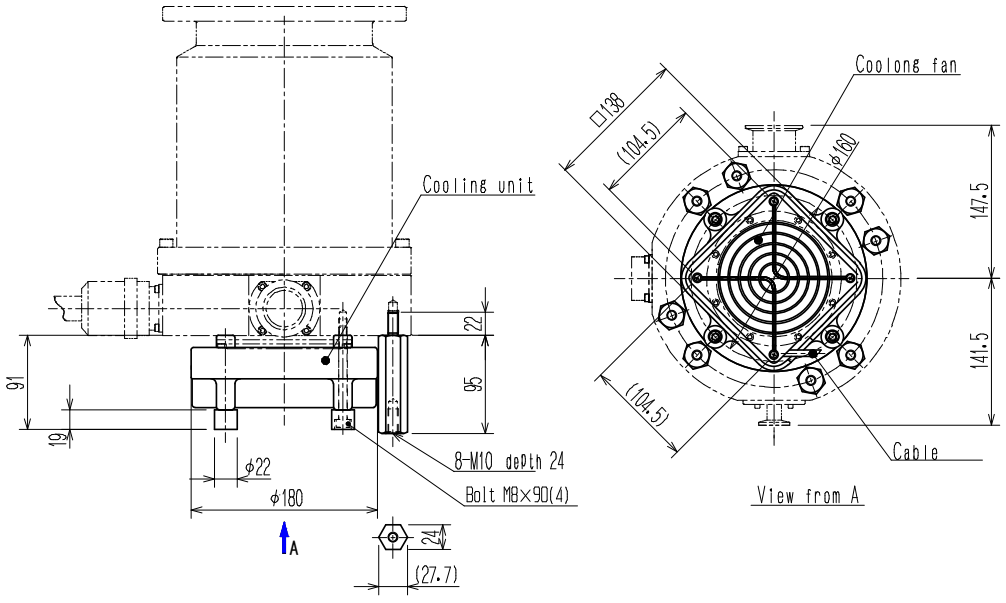
Select input voltage. Cool the STP pump with air-cooling unit during baking.

Input voltage	Part number	Select	Note
100Vac spec.	PTZ002442	☐	100 Vac, 300 W, 3 m with cable
200Vac spec.	PTZ000011	☐	200 Vac, 300 W, 3 m with cable

Air-cooling unit

Select input voltage.

Input voltage	Part number	Select	Note
100Vac spec.	YT011A030	☐	Single phase 100 V,11.0/9.5 W (50/60 Hz), with cable 1 m
200Vac spec.	YT01BA030	☐	Single phase 200 V,11.0/9.5 W (50/60 Hz), with cable 1 m



Damper

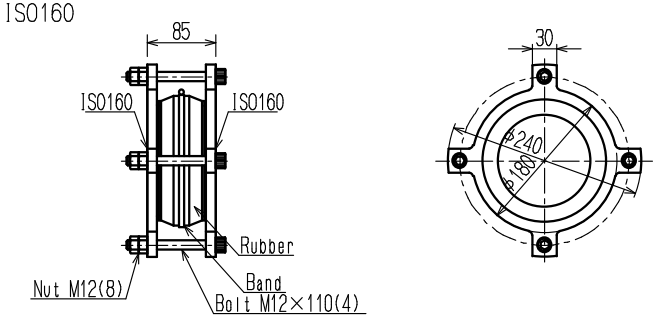
Select flange size.

Flange size	Part number	Select	Note
ISO160	PT05QDK00	☐	Damper external view (see the next page)
ISO200	B58061000	☐	
VG150	PT05QDC00	☐	
VG200	B72132030	☐	
ICF253	PT05QDA00	☐	

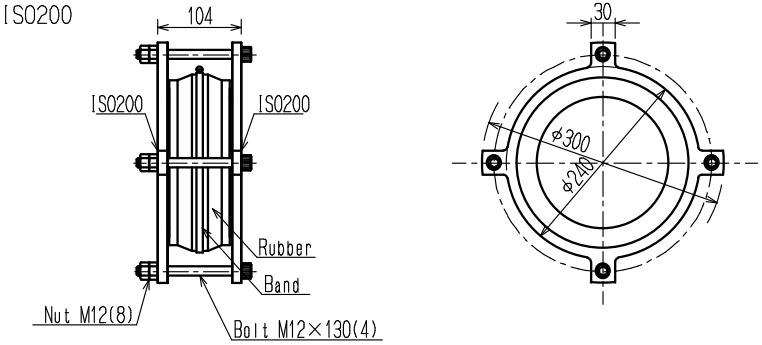
Option Parts Selection Sheet - 2

* Damper contracts approximately 3 mm during vacuuming.

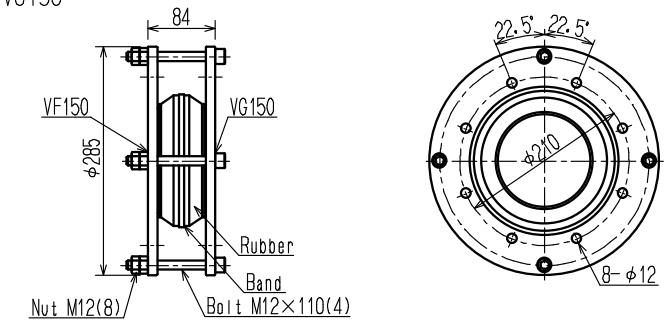
ISO160



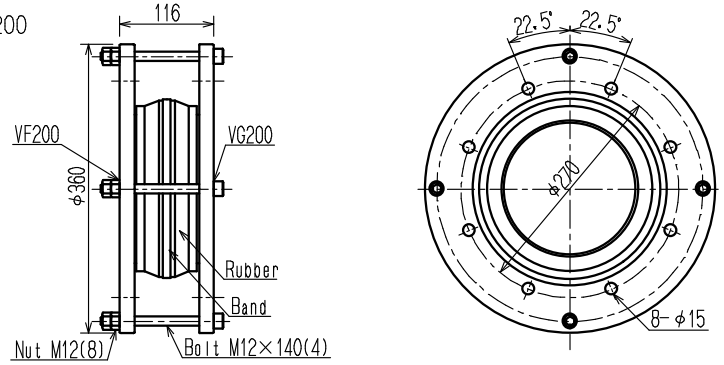
ISO200



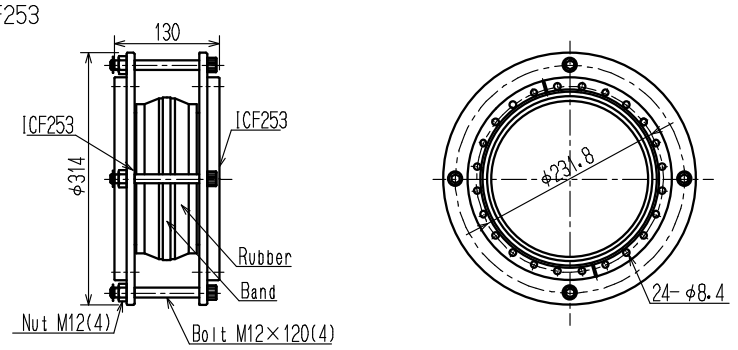
VG150



VG200



ICF253



External view of damper