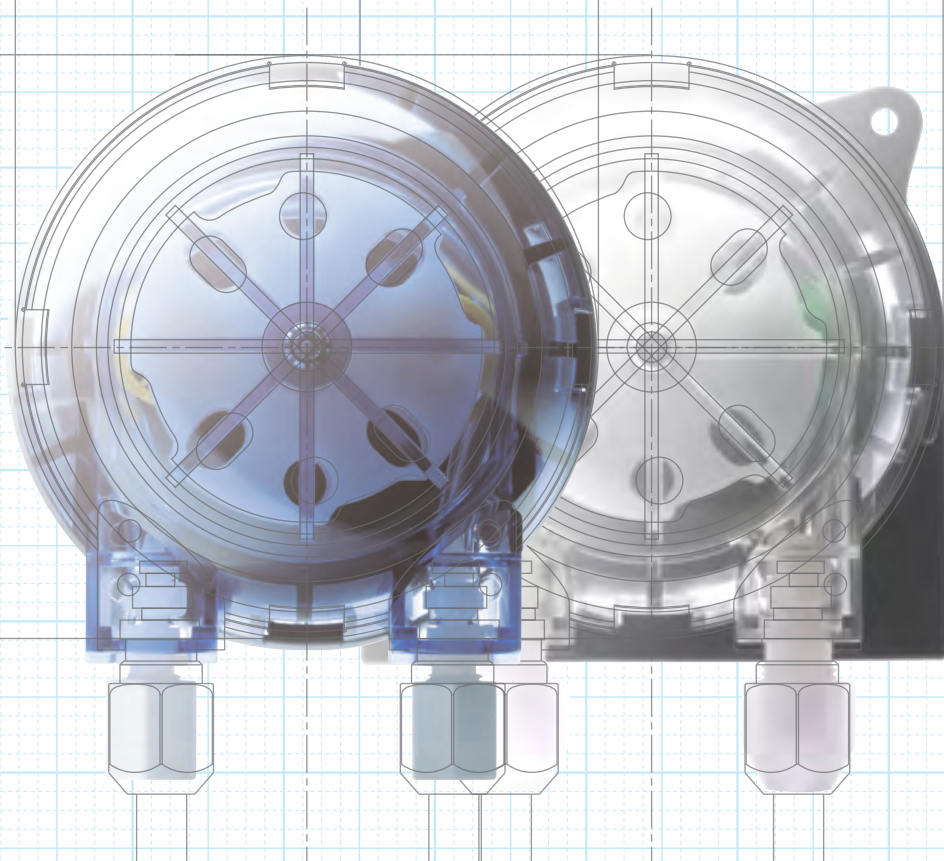


Pump Your Needs.

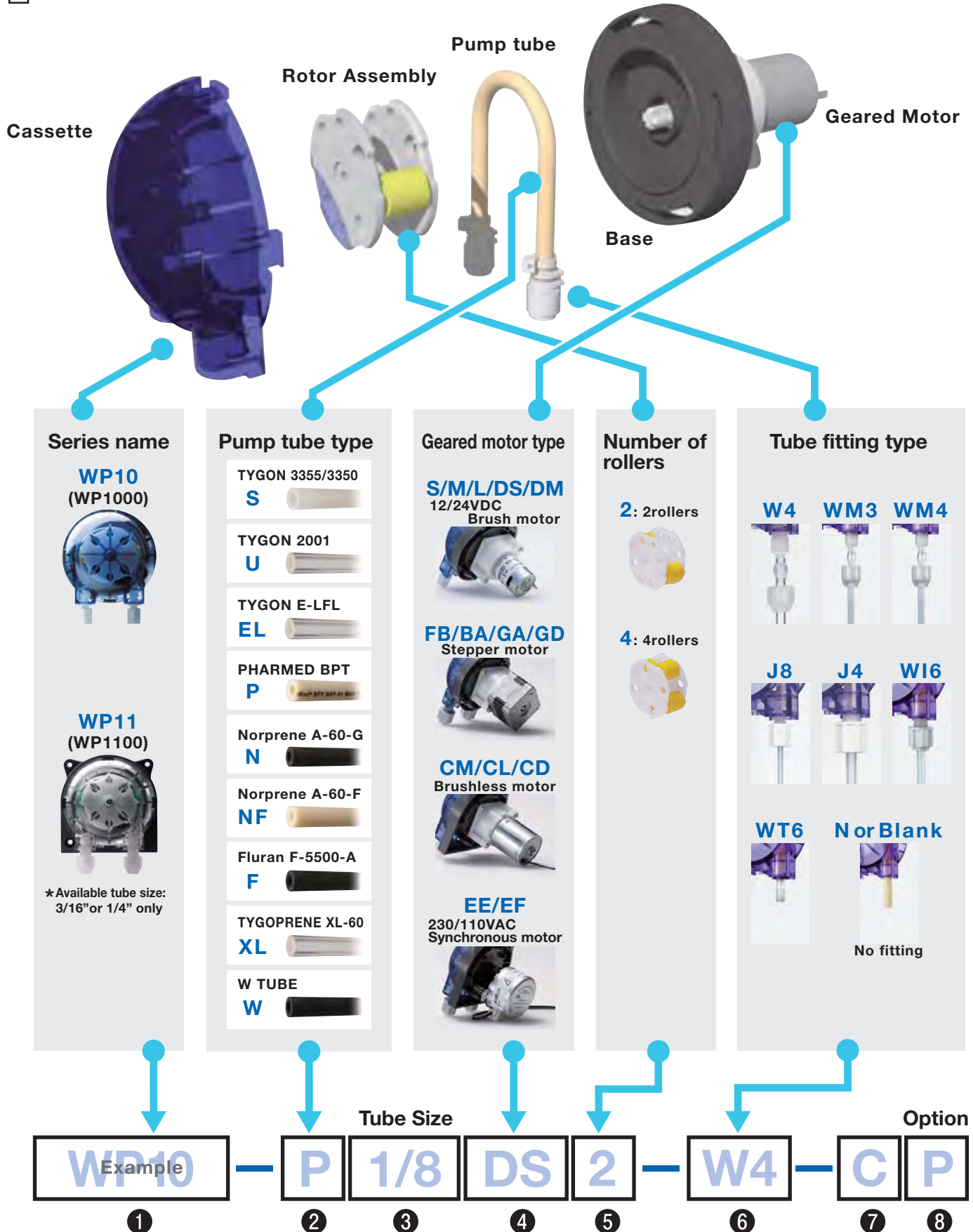


**WELCO's easy ordering system
can match the best product to the customer's needs**

WP1000 / WP1100 PERISTALTIC PUMP SELECTION GUIDE


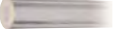
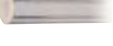
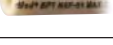




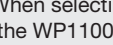
WELCO Peristaltic pumps use a custom ordering system that enables part types and sizes to be selected according to the desired application.

Selection method for customization of pumps
Select the part number according to the following guide



2 Pump tube type: Material (Selectable according to fluid type)



Tube type	Product Description	Regulatory compliance/meets
TYGON 3355/3350 S 	<ul style="list-style-type: none"> *High-performance and platinum-cured silicone tube *Ultra-smooth inner bore reduces potential for particle entrapment *Excellent fluid flow characteristics. 	FDA 21 CFR Part 177.2600 USP Class IV 3-A (3350 only)
TYGON 2001 U 	<ul style="list-style-type: none"> *Plasticizer-free chemical resistant tube. *Great resistant to a wide range of fluids that typically destroy PVC products *Applicable to soap and detergent dispensing, ink transfer, water purification lines, food, beverage and chemical transfer 	FDA 21 CFR Part 177.2600
TYGON E-LFL EL 	<ul style="list-style-type: none"> *Non-DEGO tube for laboratory, Food & Beverage and Biopharmaceutical Applications *Longest flex life in any clear Tygon tubes *Extremely low particle spallation for sensitive fluid applications 	FDA 21 CFR Part 177.2600 USP Class VI NSF-51
PHARMED BPT P 	<ul style="list-style-type: none"> *Great resistant to general chemicals, acid, alkali and oxidizing agents *Compatible with virtually all commercial cleaners and sanitizers *Lasts up to 30 times longer than silicone tubes. 	FDA 21 CFR Part 177.2600 USP Class VI
Norprene A-60-G N 	<ul style="list-style-type: none"> *Lasts and perform better than EPDM and other speciality rubber tubes *Ozone and UV Light resistant *Applicable to soap and disinfectant dispensing, printing ink transfer, and etc... 	-
Norprene A-60-F NF 	<ul style="list-style-type: none"> *Food process tube for critical processing applications in the food, dairy and cosmetic industries. *Compatible with virtually all commercial cleaners and sanitizers *Great resistant to general chemicals, acid, alkali and oxidizing agents 	FDA 21 CFR Part 177.2600 NSF 51 3-A
Fluran F-5500-A F 	<ul style="list-style-type: none"> *A proprietary fluorelastomer tube *Excellent resistance to corrosive chemicals, oils, fuels and solvents *Ozone and UV Light resistant 	-
TYGOPRENE XL-60 XL 	<ul style="list-style-type: none"> *Alternative to silicones and PVC when longer pump tube life is required *Excellent resistance to a wide range of fluids, including acids and bases *Greatly reduce the risk of fluid contamination 	FDA 21 CFR Part 177.2600 NSF 51
W TUBE W 	<ul style="list-style-type: none"> *Dual-wall tube which has excellent resistant to chemicals, acid, alkali. *Inner layer: Polyolefin Outer layer: Thermoplastic Elastomers 	-

Note: TYGON, Pharmed, Norprene, Fluran and Tygoprene are manufactured by Saint-Gobain Group.

Note: When selecting tubes with a 3/16" inner diameter, as long as there are no specification or shape-related issues, use of the WP1100 is recommended.

3 Pump tube type: Tube size (Selectable according to the tube material and number of rollers)

WP1000

Model name (inner diameter)	1/16	3/32	1/8	4
Inner diameter	1.6mm (1/16")	2.4mm (3/32")	3.2mm (1/8")	4mm (-)
Available tube material	P	S / P	All type (of)	W / P
Number of rollers	2 / 4	2 / 4	2 / 4	2 / 4

WP1100

Model name (inner diameter)	3/16	1/4
Inner diameter	4.8mm (3/16")	6.4mm(1/4")
Available tube material	ALL type except for XL	ALL type except for EL,XL
Number of rollers	2 / 4	2

Caution: Tube type F3/16", EL3/16" and U3/16" cannot be used with four rollers due to its characteristic.

Flow amount benchmark (flow amount per rotation)

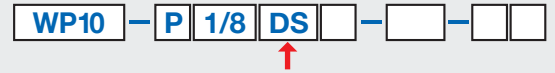
Inside diameter of tube (inches)	1.6mm (1/16")		2.4mm (3/32")		3.2mm (1/8")		4mm		4.8mm (3/16")		6.4mm(1/4")	
Number of rollers	2	4	2	4	2	4	2	4	2	4	2	-
WP1000 Flow amount (mL)	-	0.2	0.5	0.45	0.9	0.8	1.45	1.2	1.95	1.6	3.0	-

Caution: The above table describes the initial benchmark flow amounts during water suction. This may vary considerably depending on the tube type, use period, ambient temperature, and lot tolerances, etc. Measure the specifications with reasonable leeway.

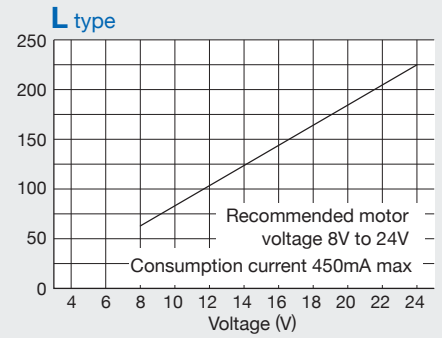
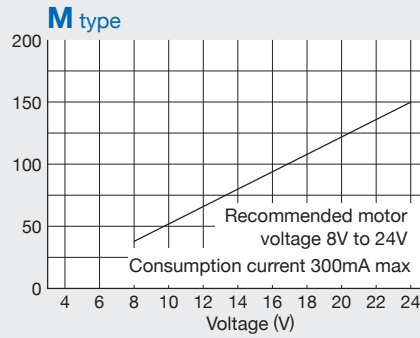
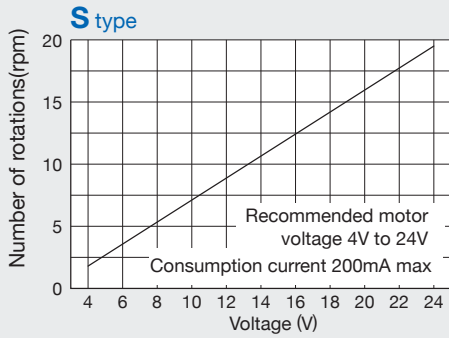
4 Geared motor types



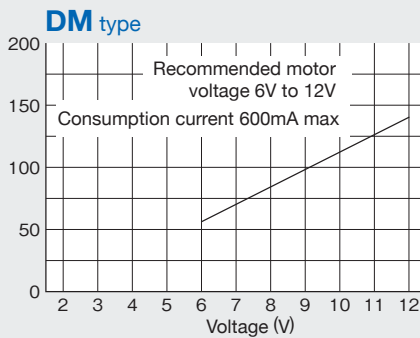
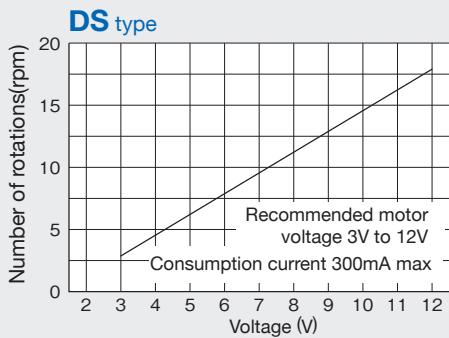
DC Brush Motor & Gear



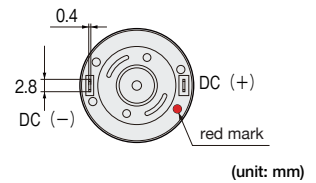
24VDC Brush Motor & Gear: Three types are selectable (low, medium and high speeds)



12VDC Brush Motor & Gear: Two types are selectable (low and medium speeds)



Motor wiring and terminal dimensions diagrams



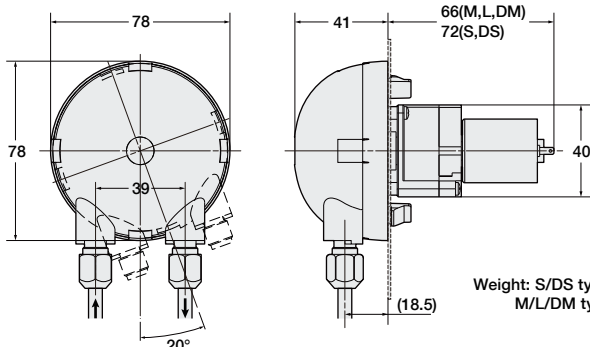
Caution: The consumption current described above is the value during normal operations.

An approximately threefold inrush current occurs during rotation startup.

Short circuit between terminals may occur due to end of motor life or short circuit between commutator slits by specific operating environment and condition. In order to prevent circuit burnout, please take protective measures such as using fuses.

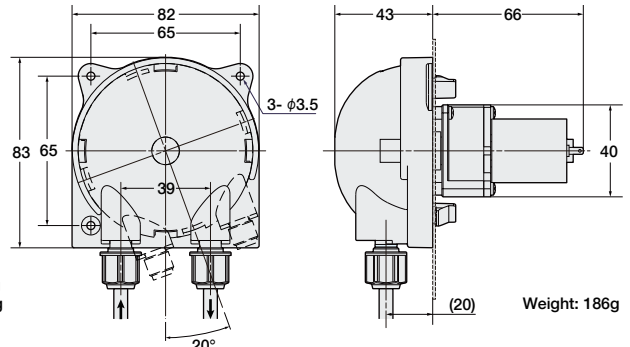
Dimensions (unit: mm)

WP1000



Weight: S/DS type 185g
M/L/DM type 178g

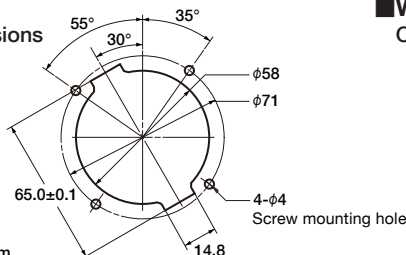
WP1100



Weight: 186g

WP1000

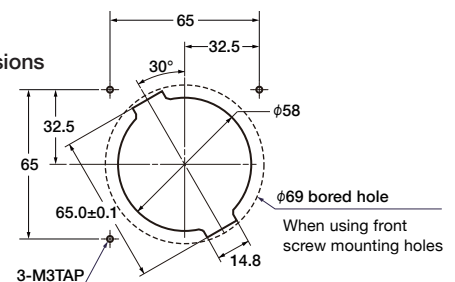
Cutting hole dimensions



Panel thickness: 1.0 to 1.2mm

WP1100

Cutting hole dimensions





WP10 - P 1/8 **CM** 2 - - -

DC Brushless Motor & Gear

Three types are selectable (medium and high speeds)

Geared motor Specification

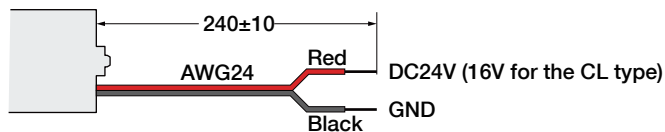
Geared motor model	CM type	CD type	CL type
Configuration	Brushless motor & 1:64 Gear head	Brushless motor & 1:42 Gear head	Brushless motor & 1:8 Gear head
Operation Voltage *1	DC16V to DC24V	DC16V to DC24V	DC16V
Current *2	Less than 400mA	Less than 600mA	Less than 800mA
Pump Rev.	Approx. 47 to 70rpm at DC16 to 24V (100mNm Load)	Approx. 78 to 117rpm at DC16 to 24V (100mNm Load)	Approx. 348rpm at DC16V (100mNm Load)**3
Rotatory direction	CW		
Motor operating temperature	less than 70°C		
Motor lock protection	2sec TYP If the motor locks up, the motor power will be shut down within a predefined time. The motor will restart upon power-up.		
Life	5,000hr (Geared motor) *Not a guaranteed value.		

*1. The lowest operation voltage may vary depending on the tube type, tube size, ambient temperature, etc. Please contact your sales representative to get help when you operate by lower voltage.

*2. Caution: The consumption current described above is the value during normal operations. An approximately threefold inrush current occurs during rotation startup.

*3. The flow rate of the CL (6.4mm) type is lower than the value calculated by the flow rate per rotation number of rotations, and is approximately 700mL per minute.

Motor wiring terminal dimensions diagrams



Circuit protection

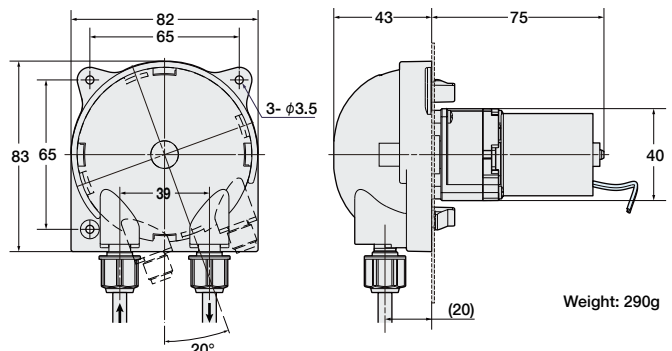
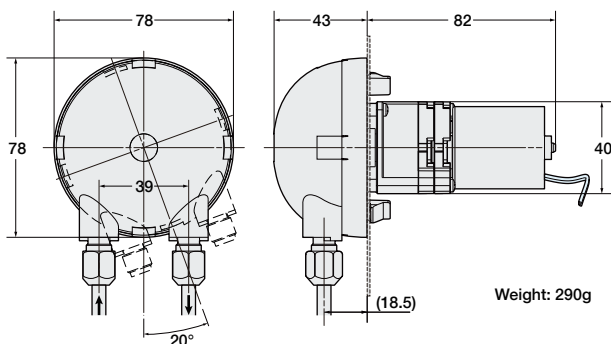
This motor is not equipped with a circuit for protection against overvoltage and connection to terminals at the incorrect polarity. Be careful not to apply surge voltages that exceed the rated voltage and not to connect to the incorrect polarity.

Dimensions (unit: mm)

WP10 - CM

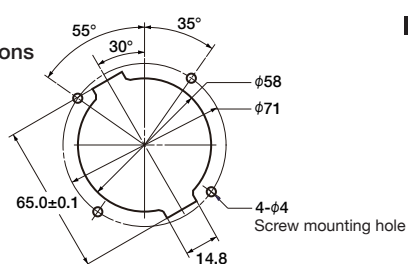
WP10 - CD

WP11 - CL



WP1000

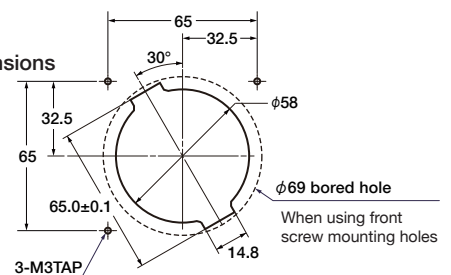
Cutting hole dimensions



Panel thickness: 1.0 to 1.2mm

WP1100

Cutting hole dimensions





WP10 - P 1/8 FB - - -

Stepper Motor & Gear

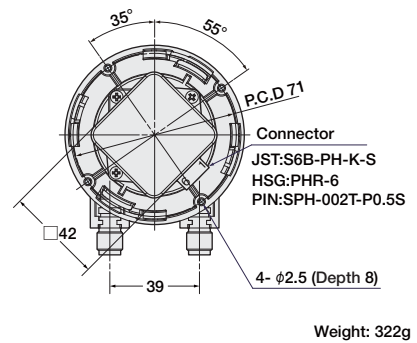
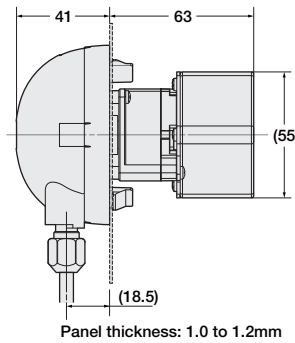
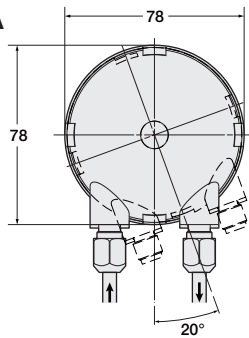
Four types of stepper motors can be selected according to the application and the product series

Geared motor Specification

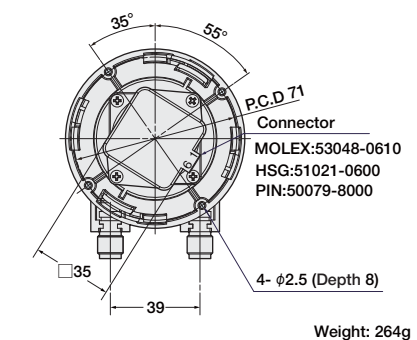
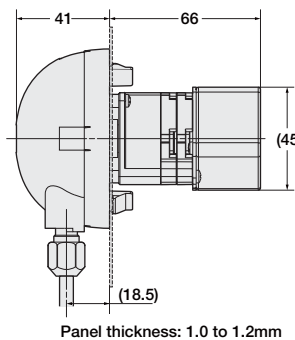
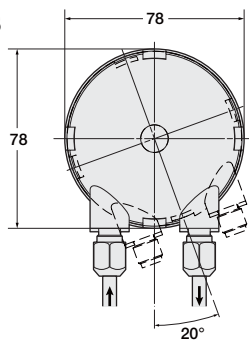
Geared motor model	FB type	BA type	GA type	GD type
Configuration	Hybrid stepper motor & 1: 64 Gear ratio	Hybrid stepper motor & 1: 8 Gear ratio	Hybrid stepper motor & 1:8 Gear ratio	Hybrid stepper motor & 1:42 Gear ratio
Number of phases and motor type	2 phase / BI polar system		2 phase / UNI polar system	
Rated Voltage	1.92V	1.76V	3.5V	
Rated Current	0.8A / Phase	1.1A / Phase	1.2A / Phase	
Step Angle	0.0141° (Half step)	0.1125° (Half step)	0.1125° (Half step)	0.0216° (Half step)
RPM	0 to 20rpm	20 to 150rpm	20 to 150rpm	0 to 29rpm
Duty Ratio	Max. 50%			
Winding Resistance	2.4Ω±10%	1.6Ω±10%	2.9Ω±10%	
Inductance	2.5mH	2.6mH	4.0mH	
Motor Insulation Class	B			
Motor operating temperature	less than 80°C			
Life	5,000hr (Geared motor) ※Not a guaranteed value.			

Dimensions (unit: mm)

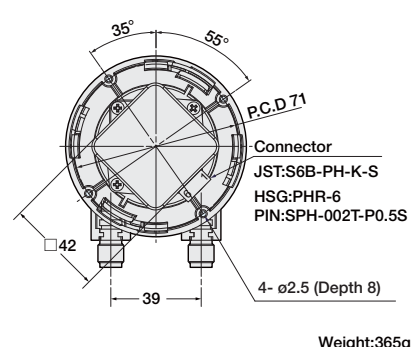
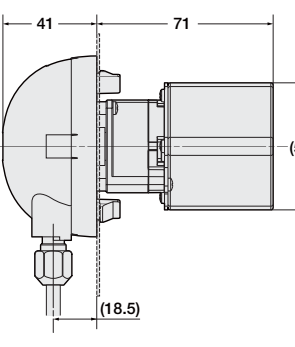
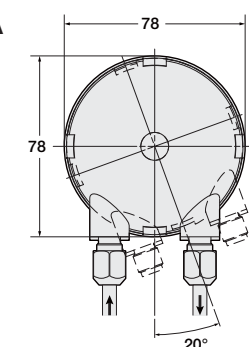
WP10 - BA



WP10 - FB



WP10 - GA





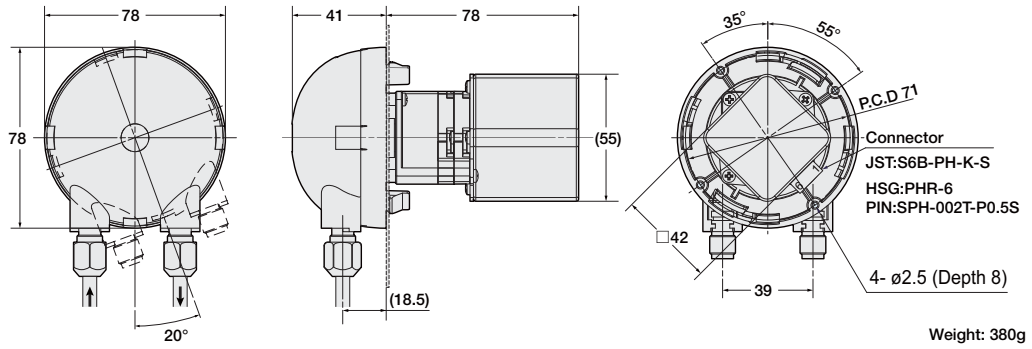
WP10 - P 1/8 FB - - -

Stepper Motor & Gear

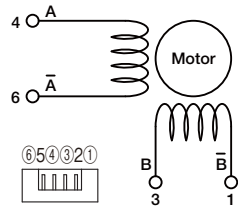
Four types of stepper motors can be selected according to the application and the product series

Dimensions (unit: mm)

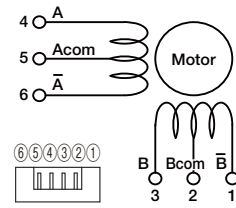
WP10 - GD



BI POLAR Winding Diagram



UNI POLAR Winding Diagram





WP11 - P 1/8 **EE** 2 - - -

AC Synchronous Geared motor

Geared motor Specification

Geared motor model	EE type	EF type
Configuration	AC Synchronous Geared motor	
Operation Voltage	AC230V (220-240V)	AC110V (110-120V)
Hertz	50Hz	50/60Hz
Input	8W	
Pump Rev.	20rpm	18/22rpm
Direction of rotation	CW	
Drive Mode	5min (DUTY30%) ※ Operating continuously is not possible.	
Motor Insulation Class	F	
Motor operating temperature	less than 60 °C	
Life	2,000hr (Geared motor) ※ Not a guaranteed value.	

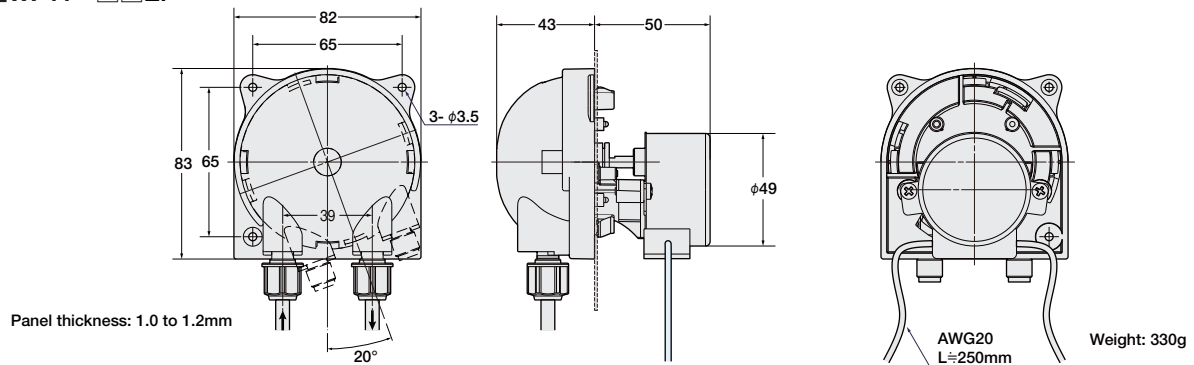
Flow amount benchmark (flow amount per rotation)

Tubing material	Tubing size I.D.(inch)	Number of roller	Flow amount (mL)
S, P, N, F NF, EL, XL	2.4mm (3/32")	2	0.5
	3.2mm (1/8")		0.9
	4.8mm (3/16")		1.95

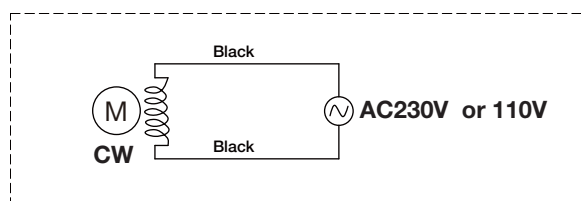
Caution: AC Synchronous Geared motor cannot be used with 4 rollers due to low torque.

Dimensions (unit: mm)

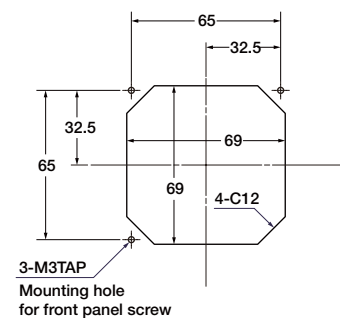
- WP11 - □□EE
- WP11 - □□EF



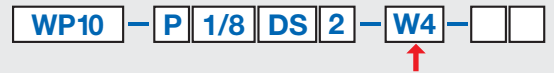
Winding Diagram



Cutting hole dimensions



6 Tube fitting type: Varied lineup that is selectable according to requirements



W4

- Connectable hose sizes (OD)
1/4"(6.4mm) or 6mm
- Available pump tube sizes & pump series
WP1000: 1/8"(3.2mm), 4mm,
WP1100: 3/16"(4.8mm), 1/4"(6.4mm)

Fitting consists of compression nut, sleeve and insert. Supports various hose hardnesses.



WM3

- Connectable hose sizes (OD)
3mm
- Available pump tube sizes & pump series
WP1000: 1/16"(1.6mm), 3/32"(2.4mm),
1/8"(3.2mm)
WP1100: N/A

Fitting consists of compression nut and sleeve. Supports various hose hardnesses
Nut and sleeve will vary according to hose size.



WM4

- Connectable hose sizes (OD)
4mm
- Available pump tube sizes & pump series
WP1000: 1/16"(1.6mm), 3/32"(2.4mm),
1/8"(3.2mm)
WP1100: N/A

Fitting consists of compression nut and sleeve. Supports various hose hardnesses
Nut and sleeve will vary according to hose size.



J8

- Connectable hose sizes (OD)
1/8"(3.2mm) (Nylon or Polyethylene)
- Available pump tube sizes & pump series
WP1000: 3/32"(2.4mm), 1/8"(3.2mm)
WP1100: N/A

Nut and sleeve are integrated. Excellent workability.
Suitable for polyethylene, nylon and other plastic hoses.



J4

- Connectable hose sizes (OD)
1/4"(6.4mm) (Nylon or Polyethylene)
- Available pump tube sizes & pump series
WP1000: 1/8"(3.2mm), 4mm,
WP1100: 3/16"(4.8mm), 1/4"(6.4mm)

Nut and sleeve are integrated. Excellent workability.
Suitable for polyethylene, nylon and other plastic hoses.



WI6

- Connectable hose sizes (OD)
6mm (Nylon or Polyethylene)
- Available pump tube sizes & pump series
WP1000: 1/8"(3.2mm), 4mm,
WP1100: 3/16"(4.8mm), 1/4"(6.4mm)

Nut and sleeve are integrated. Excellent workability.
Suitable for polyethylene, nylon and other plastic hoses.



WT6

- Connectable hose sizes
6mm (Note: ID size)
- Available pump tube sizes & pump series
WP1000: 1/8"(3.2mm), 4mm,
WP1100: 3/16"(4.8mm), 1/4"(6.4mm)

Barbed type. Inserted directly into hose and used.



N or Blank

- Connectable hose sizes (OD)
N/A
- Available pump tube sizes & pump series
WP1000: 1/8"(3.2mm), 4mm,
WP1100: 3/16"(4.8mm), 1/4"(6.4mm)

No fitting. For the case in which a customer connects their own original fitting, or when using a special length pump tube.
Note: If the pump tube has a large diameter, the flow rate tolerance should be increased.

7 Color variation

A 5-color lineup that can be classified for use according to the type of liquids used

WP10 - P 1/8 DS 2 - W4 - B

B: Blue **G:** Green **C:** Clear **R:** Red **Y:** Yellow **UV:** Black
(Special order item)
(Only for WP1000)

8 Using an optional panel

There is also a lineup of panels to which the pump can be easily mounted

WP1000 - P 1/8 DS 2 - W4 - B P

P = with bracket
N or **Blank** = without bracket

■ Option bracket dimensions (unit: mm)

Thickness: 1.2mm
Material properties: SUS304

General specifications

Recommended installation height	2.0m max
Liquid temperature range	5 to 50°C (41°F to 122°F)
Specified environment temperature range	0 to 50°C (32°F to 122°F)
Specified ambient humidity range	20% to 80% (with no condensation)
Certifications & Approvals	

⚠ Precautions

- When selecting a tube, the customer should perform a verification test to verify the chemical suitability according to the usage environment and the intended application.
- Regardless of the pump tube type, the phenomenon of peeling from inside of the tube starts with small amounts.
- This product was not designed for medical use. Do not use for medical applications.
- This product is not waterproof. If using in water-filled environments, design to protect against water.
- Numerical data listed in this catalog reflect conditions measured over short periods of time. Their accuracy for long-term use is not assured.
- There is a tendency for the flow rate to increase until the tube becomes acclimated, and even among the same model, different lots may have different flow rates within the specified tolerances. Also, the rotating speed of the DC motor may fluctuate depending on the load conditions and changes in the motor temperature. During the design stage, be sure to select a motor with ample capacity.