

# High-Power Parallel Robotic Hand Gripper

Closing Side Only

Model WPS-C



Built-in Mechanical Lock enables

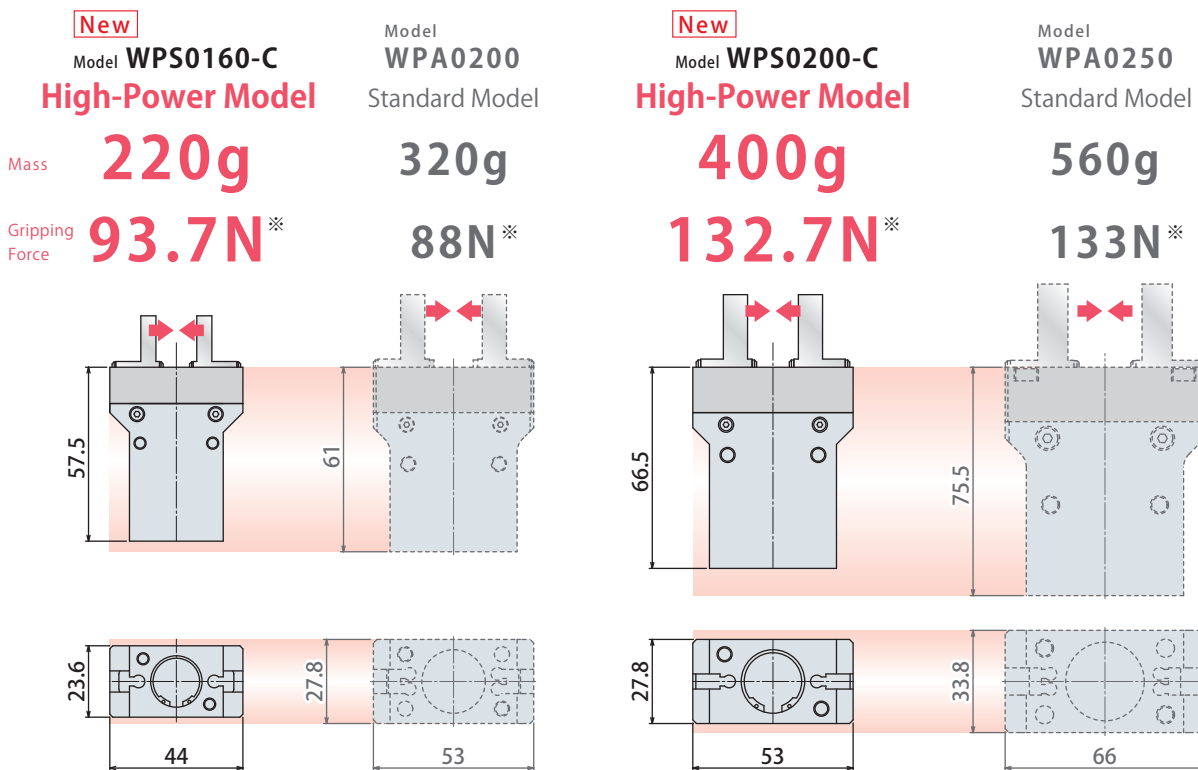
Powerful Gripping Force even with a Compact and Light Body

PAT.

## • Powerful Gripping Force

Mechanical lock allows for powerful gripping force with a more compact and lighter body than model WPA.

Note: For WPS, mechanical locking works only when gripping to closing direction.



\* It shows gripping force on the closing side at air pressure 0.5MPa.

## • High Accuracy and Rigidity

The linear guide function allows for high rigidity and high accuracy opening/closing function.

Repeatability : ±0.01mm

## • Auto Switch Capability

Easy to install and adjust auto switches for gripper detection.



## Model No. Indication

**WPS 016 0 - C - A2 S**

1 2 3 4 5

※ Only 1 2 3 are marked on the product.  
Please specify 4 5 if you need auto switches.

### 1 Cylinder Inner Diameter

**016** :  $\phi$  16 mm  
**020** :  $\phi$  20 mm

### 2 Design No.

**0** : Revision Number

### 3 Gripping Direction

**C** : Closing Only

### 4 Auto Switch Type

**Blank** : Without Auto Switch  
**A2** : 2-Wire Reed Auto Switch (Cable: 1m)  
**A2L** : 2-Wire Reed Auto Switch (Cable: 3m)  
**A2V** : L-Shaped 2-Wire Reed Auto Switch (Cable: 1m)  
**A2VL** : L-Shaped 2-Wire Reed Auto Switch (Cable: 3m)  
**B2** : 3-Wire Solid State Auto Switch (Cable: 1m)  
**B2L** : 3-Wire Solid State Auto Switch (Cable: 3m)  
**B3** : L-Shaped 3-Wire Solid State Auto Switch (Cable: 1m)  
**B3L** : L-Shaped 3-Wire Solid State Auto Switch (Cable: 3m)

※ Please refer to P.405 ~ P.414 for auto switch details.

### 5 Number of Auto Switches ※ Only for 4 Auto Switch

**Blank** : 2  
**S** : 1

## Specifications

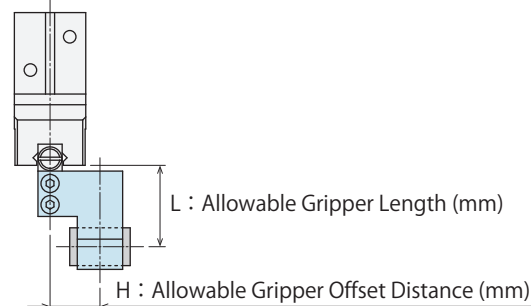
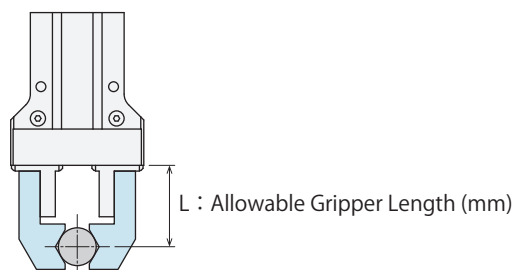
Model No.		WPS0160-C	WPS0200-C
Cylinder Inner Diameter <sup>※1</sup>	mm	16	20
Gripping Force <sup>※2</sup> (Air Pressure : At 0.5MPa)	Closing Side	N	93.7
	Opening Side	N	(10.8)
Full Stroke	mm	6	8
Repeatability <sup>※3</sup>	mm	±0.01	
Stroke Error	mm	Opened State : -0.5 ~ +1 / Closed State : -1 ~ +0.5	
Allowable Gripper Length L (Air Pressure : at 0.5MPa) <sup>※4</sup>	mm	40	50
Allowable Gripper Offset Distance H (Air Pressure : at 0.5MPa) <sup>※4</sup>	mm	15	25
Maximum Cycle / min.		90	
Cylinder Capacity (Clamping w/o Workpiece)	Closing Side	cm <sup>3</sup>	1.1
	Opening Side	cm <sup>3</sup>	1.2
Maximum Operating Pressure	MPa	0.5	
Minimum Operating Pressure	MPa	0.2	
Withstanding Pressure	MPa	0.75	
Operating Temperature Range	°C	5 ~ 60	
Usable Fluid		Dry Air	
Weight	kg	0.22	0.40

Notes : ※1. Gripping force and holding force cannot be calculated from the cylinder inner diameter.  
Please refer to the gripping force curve and holding force curve.

※2. Gripping force indicates the calculated value based on the gripper length (L).

※3. Repeatability under the same condition (no load).

※4. L : Allowable Gripper Length (mm), H : Allowable Gripper Offset Distance (mm). (Air Pressure : at 0.5MPa)



Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

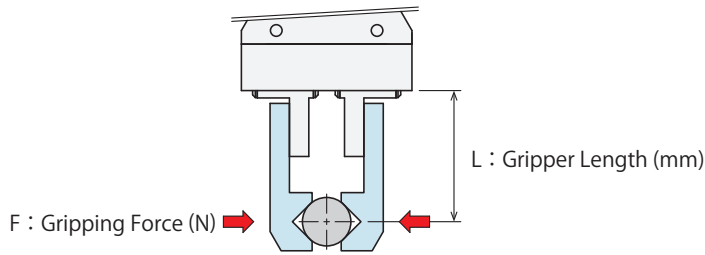
Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

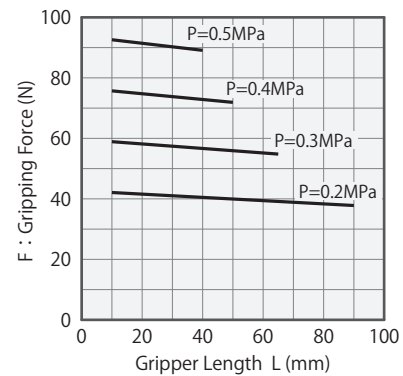
● Gripping Force Performance Curve : Closing Side



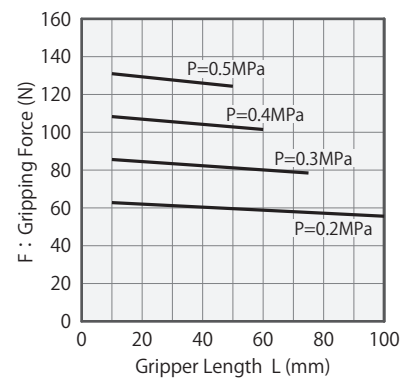
Notes:

1. This table and graph show the relationship among F:Gripping Force (N), L:Gripper Length (mm) and P: Air Pressure (MPa).
2. Operation in the non-usable range may cause deformation, galling or air leakage.
3. WPS is for gripping the closing side only and incapable of gripping the opening side.

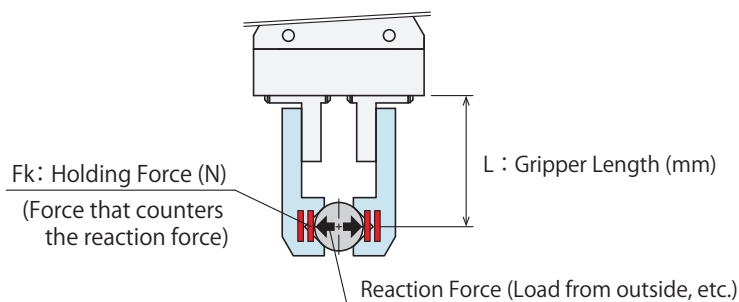
WPS0160-C							
Air Pressure (MPa)	Gripping Force (N)						Max. Gripper Length (L) (mm)
	Gripper Length L (mm)						
	10	20	30	40	60	80	
0.5	93	91	90	89	■	■	40
0.4	76	75	74	73	■	■	50
0.3	59	58	57	57	55	■	65
0.2	42	42	41	41	39	38	90



WPS0200-C							
Air Pressure (MPa)	Gripping Force (N)						Max. Gripper Length (L) (mm)
	Gripper Length L (mm)						
	10	20	40	60	80	100	
0.5	131	129	126	■	■	■	50
0.4	108	107	104	101	■	■	60
0.3	86	85	82	80	■	■	75
0.2	63	62	60	59	57	56	100



## ● Holding Force Performance Curve : Closing Side

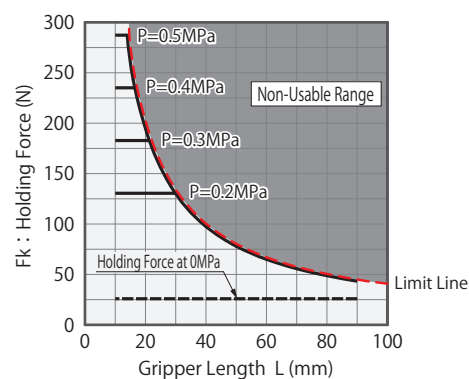


### Notes :

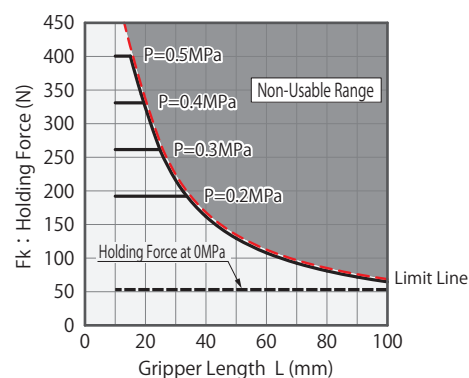
1. Holding force is the force that counters the reaction force and different from gripping force. Please keep in mind that it can produce displacement depending on lever rigidity even if the reaction force is lower than holding force. (If slight displacement is also not allowed, please keep the reaction force beyond gripping force from being applied.)
2. This table and graph show the relationship among Fk:Holding Force (N), L:Gripper Length (mm) and P: Air Pressure (MPa).
3. Operation in the non-usable range may cause deformation, galling or air leaks.

※ 1. Holding force at 0MPa is the holding force when air pressure drops to 0MPa after gripping with more than the minimum operating pressure.

WPS0160-C						
Air Pressure (MPa)	Holding Force (N)		Non-Usable Range (■)			
	Gripper Length L (mm)					
	10	20	30	40	60	80
0.5	287	195	130	98	■	■
0.4	235	195	130	98	■	■
0.3	183	183	130	98	65	■
0.2	131	131	130	98	65	49
At 0MPa ※1	26					



WPS0200-C						
Air Pressure (MPa)	Holding Force (N)		Non-Usable Range (■)			
	Gripper Length L (mm)					
	10	20	40	60	80	100
0.5	400	325	163	■	■	■
0.4	331	325	163	108	■	■
0.3	262	262	163	108	■	■
0.2	192	192	163	108	81	65
At 0MPa ※1	53					

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

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High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

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High-Power Pneumatic  
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High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

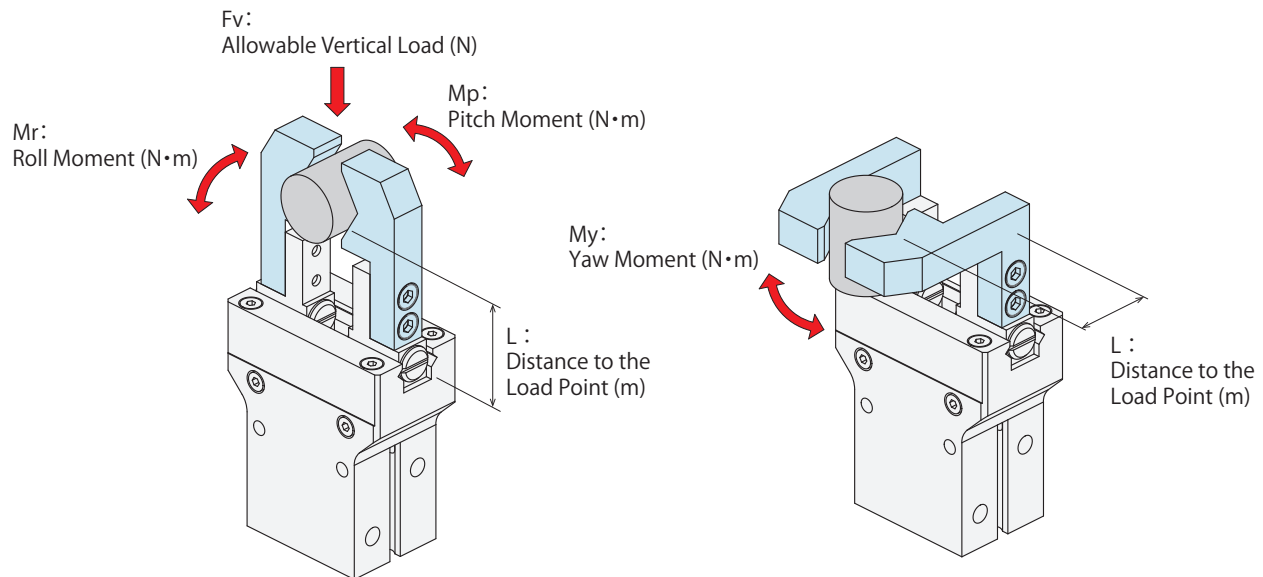
BZW

Manifold  
Block

WHZ-MD

● Allowable Load and Allowable Moment

Model No.	Fv : Allowable Vertical Load (N)	Maximum Allowable Moment (N · m)		
		Mp : Pitch Moment	My : Yaw Moment	Mr : Roll Moment
WPS0160-C	141	0.67	0.67	1.77
WPS0200-C	169	0.84	0.84	2.61



Notes :

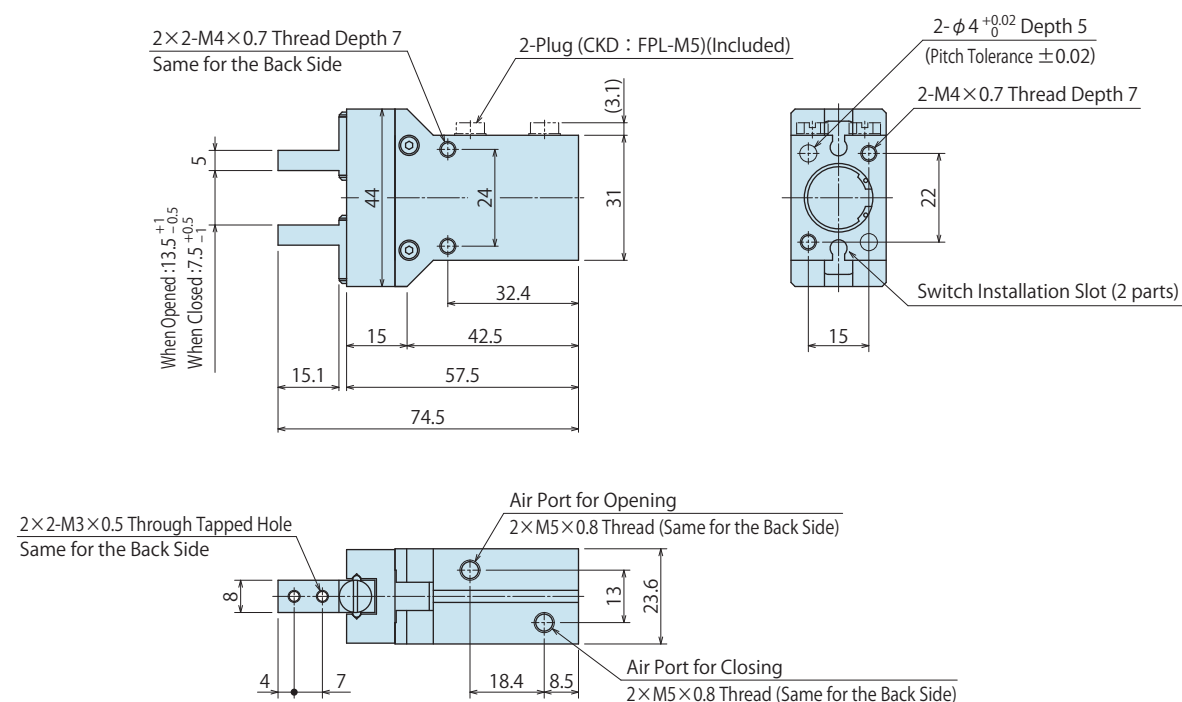
1. The values on the list are the static values.
2. The arrows show the direction of  $F_v$  : Allowable Vertical Load (N),  $M_p$  : Pitch Moment (N · m),  $M_y$  : Yaw Moment (N · m) and  $M_r$  : Roll Moment (N · m).

● Allowable Load Calculation Formula

$$F : \text{Allowable Load (N)} = \frac{M : \text{Maximum Allowable Moment (N} \cdot \text{m)}}{L : \text{Distance to the Load Point (m)}}$$

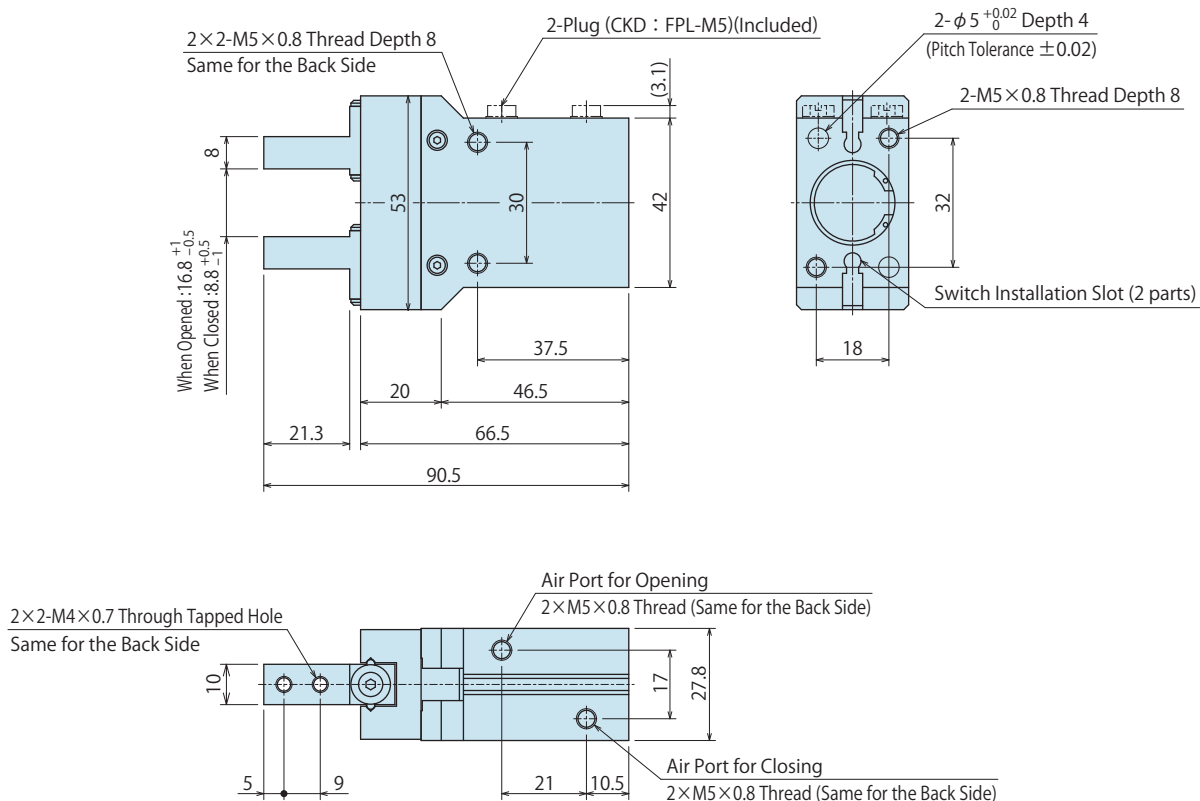
## External Dimensions : WPS0160-C

※ The drawing shows the opened state of WPS0160-C.



## External Dimensions : WPS0200-C

※ The drawing shows the opened state of WPS0200-C.

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

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Pull Stud Clamp

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Hole Clamp

WKH

Lifting  
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Pneumatic  
Swing Clamp

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Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

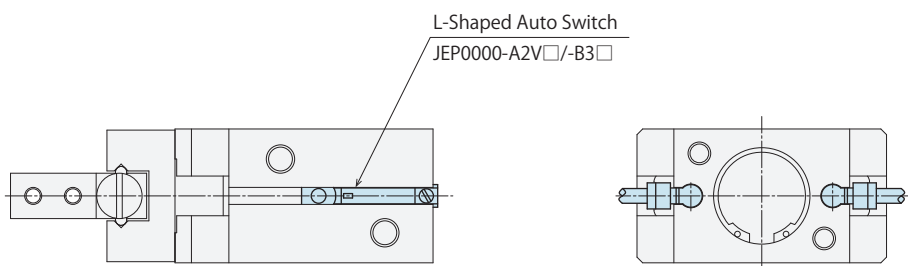
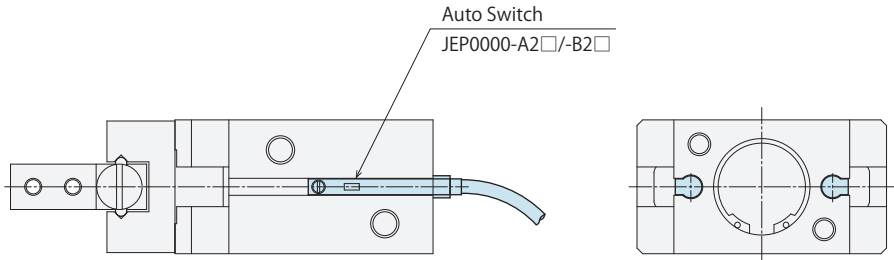
Manifold  
Block

WHZ-MD

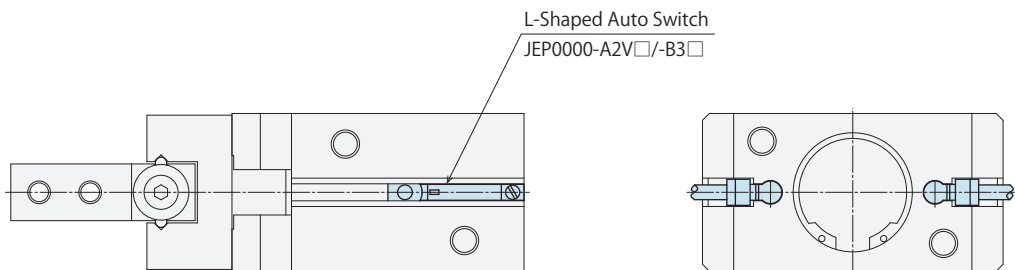
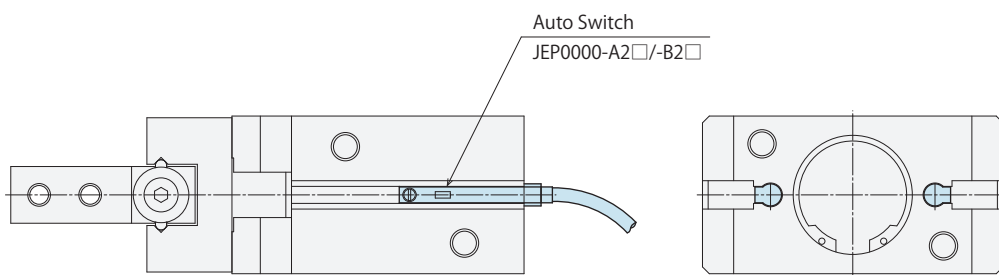
● External Dimensions : Auto Switch Installation Image (Reference)

※ This drawing shows the installation image of Auto Switch JEP0000-A2□, JEP0000-A2V□, JEP0000-B2□ and JEP0000-B3□.  
Adjust installation position depending on the stroke position.

● For WPS0160-C



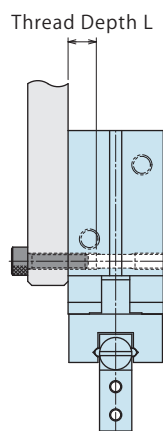
● For WPS0200-C



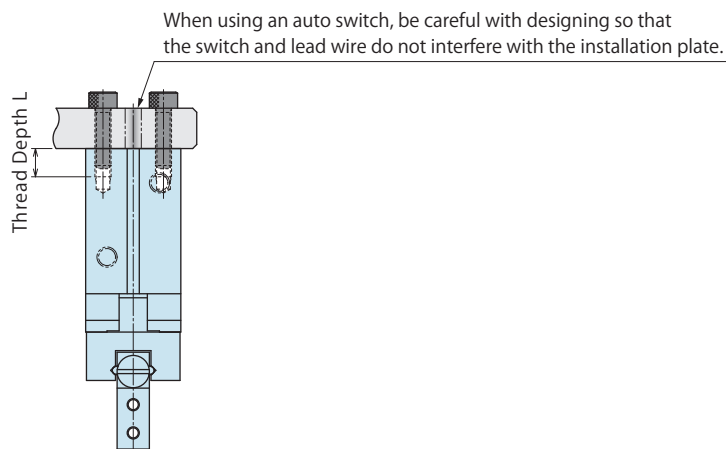
## ● Installation Method

### ● Installation Method and Tightening Torque

【Installation Method 1】

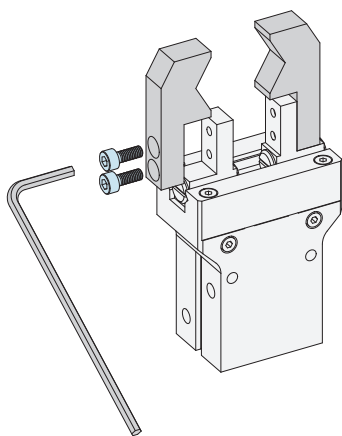


【Installation Method 2】



Model No.	Nominal × Pitch	Tightening Torque (N · m)	Thread Depth L (mm)
<b>WPS0160-C</b>	M4 × 0.7	2.5	7
<b>WPS0200-C</b>	M5 × 0.8	5.0	8

### ● Gripper Installation Method and Tightening Torque



Model No.	Nominal × Pitch	Tightening Torque (N · m)
<b>WPS0160-C</b>	M3 × 0.5	1.1
<b>WPS0200-C</b>	M4 × 0.7	2.5

Locating  
+  
Clamp

Locating

Hand · Clamp

Support

Valve · Coupler

Cautions · Others

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Pull Stud Clamp

WPT

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Lifting  
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Ball Lock  
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Pneumatic  
Robotic Hands

WPW-C

**WPS-C**

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

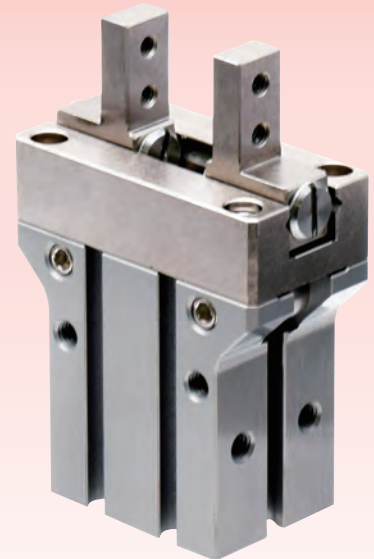
WHZ-MD



Pneumatic Robotic Hand

# Parallel Robotic Hand Gripper

Model WPA



## Compact Parallel Robotic Hand with High-Gripping Force Ability to Install Auto Switches for Gripper Detection

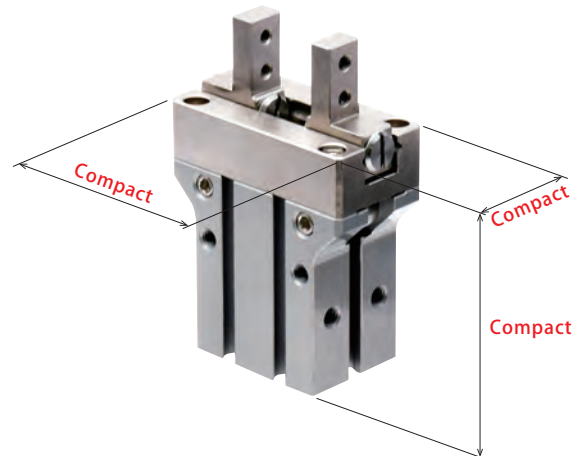
- **Wider Stroke**

Wider opening and closing stroke allows for gripping various sizes of workpieces.



- **Compact Body with High Gripping Force**

It has a compact body with stable and high gripping force. Reduction in size allows for less interference and optimal space utilization.



- **High Accuracy and High Rigidity**

The cross roller guide function allows for high rigidity and high accuracy opening/closing function.  
Repeatability:  $\pm 0.01\text{mm}$

- **Light Weight**

Reduced size and weight allows for best use of the robotic payload.

- **Long Operational Life**

Solid internal features provide for excellent durability.

- **Auto Switch Capability**

Easy to install and adjust auto switches for gripper detection.

## Model No. Indication

**WPA 016 0 - A2 S**

1 2 3 4

※ Only 1 2 are marked on the product.  
Please indicate the specifications of 3 4 if you need switches.

### 1 Cylinder Inner Diameter

**012** :  $\phi$  12 mm  
**016** :  $\phi$  16 mm  
**020** :  $\phi$  20 mm  
**025** :  $\phi$  25 mm

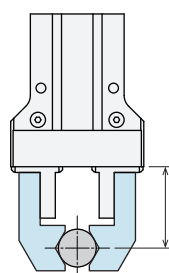
### 2 Design No.

**0** : Revision Number

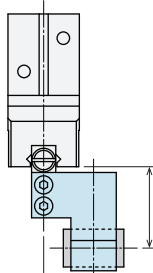
## Specifications

Model No.		WPA0120	WPA0160	WPA0200	WPA0250
Cylinder Inner Diameter	mm	12	16	20	25
Gripping Force <sup>※1</sup> (Air Pressure : At 0.5MPa)	Closing Side N	29	63	88	133
	Opening Side N	39	73	105	158
Full Stroke	mm	6	8	12	16
Repeatability <sup>※2</sup>	mm	±0.01			
Stroke Error	mm	Opened State : -0.5 ~ +1 / Closed State : -1 ~ +0.5			
Allowable Gripper Length L (Air Pressure : at 0.5MPa) <sup>※3</sup>	mm	30	40	50	60
Allowable Gripper Offset Distance H (Air Pressure : at 0.5MPa) <sup>※3</sup>	mm	12	15	25	35
Maximum Cycle / min.		90			
Cylinder Capacity (Clamping w/o Workpiece)	Closing Side cm <sup>3</sup>	0.2	0.7	1.3	2.6
	Opening Side cm <sup>3</sup>	0.3	0.8	1.6	3.1
Maximum Operating Pressure	MPa	0.7			
Minimum Operating Pressure	MPa	0.2			
Withstanding Pressure	MPa	1.05			
Operating Temperature Range	°C	5 ~ 60			
Usable Fluid		Dry Air			
Weight	kg	0.07	0.17	0.32	0.56

Notes :   
 ※1. Gripping force indicates the calculated value based on the gripper length (L).  
 ※2. Repeatability under the same condition (no load).  
 ※3. L : Allowable Gripper Length (mm), H : Allowable Gripper Offset Distance (mm). (Air Pressure : at 0.5MPa)



L : Allowable Gripper Length (mm)



L : Allowable Gripper Length (mm)

H : Allowable Gripper Offset Distance (mm)

### 3 Auto Switch Type

**Blank** : Without Auto Switch

**A2** : 2-Wire Reed Auto Switch (Cable: 1m)

**A2L** : 2-Wire Reed Auto Switch (Cable: 3m)

**A2V** : L-Shaped 2-Wire Reed Auto Switch (Cable: 1m)

**A2VL** : L-Shaped 2-Wire Reed Auto Switch (Cable: 3m)

**B2** : 3-Wire Solid State Auto Switch (Cable: 1m)

**B2L** : 3-Wire Solid State Auto Switch (Cable: 3m)

**B3** : L-Shaped 3-Wire Solid State Auto Switch (Cable: 1m)

**B3L** : L-Shaped 3-Wire Solid State Auto Switch (Cable: 3m)

※ Please refer to P.405 ~ P.414 for details on auto switches.

### 4 Number of Auto Switches<sup>※</sup>

**Blank** : 2

**S** : 1

※ Only when selecting the auto switch option other than 3 Blank.

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

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High-Power  
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WPW-C

WPS-C

WPA

WPH

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Auto Switch  
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High-Power Pneumatic  
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High-Power Pneumatic  
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Double Piston  
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WHD

Pneumatic  
Link Clamp

WCA

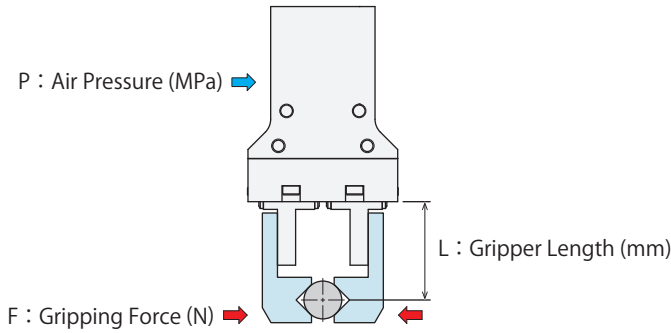
Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

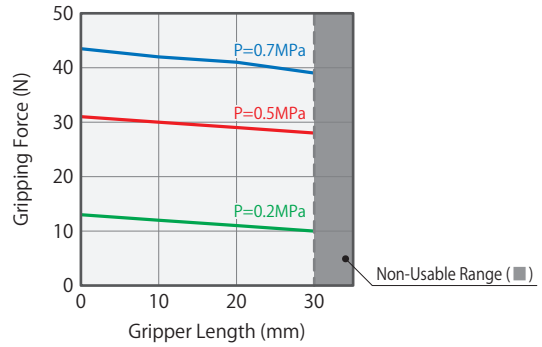
● Gripping Force Performance Curve : Closing Side



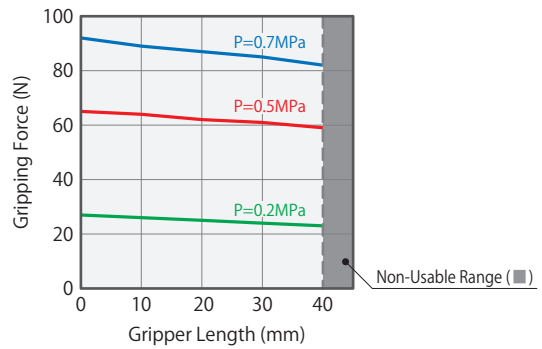
Notes:

1. This chart and graph show the relationship among: F:Gripping Force (N), P: Air Pressure (MPa) and L:Gripper Length (mm).
2. Operation in the non-usable range may cause deformation, galling or air leakage.

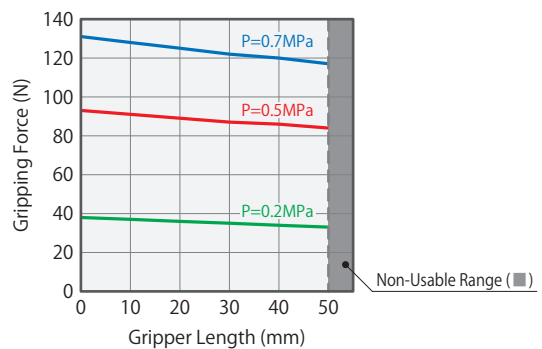
WPA0120				(N)
Air Pressure (MPa)	Gripper Length L (mm)			
	10	20	30	
0.7	42	41	39	
0.5	30	29	28	
0.2	12	11	10	



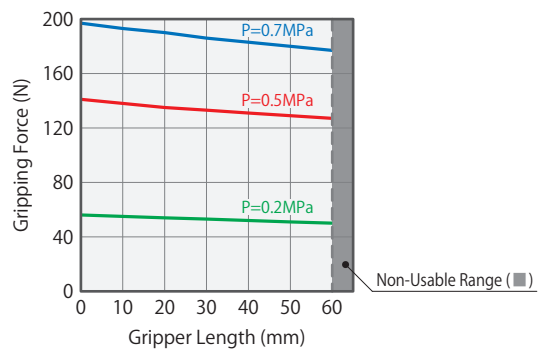
WPA0160					(N)
Air Pressure (MPa)	Gripper Length L (mm)				
	10	20	30	40	
0.7	89	87	85	82	
0.5	64	62	61	59	
0.2	26	25	24	23	



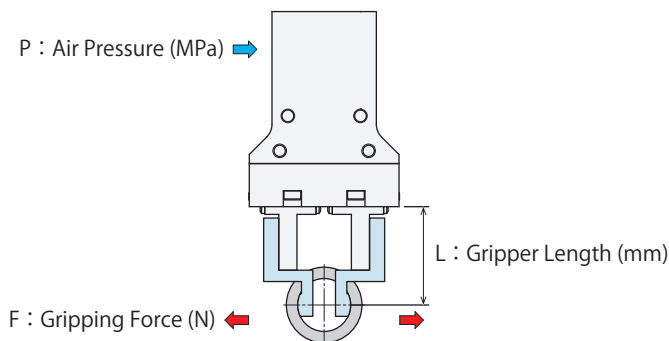
WPA0200						(N)
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	30	40	50	
0.7	128	125	122	120	117	
0.5	91	89	87	86	84	
0.2	37	36	35	34	33	



WPA0250							(N)
Air Pressure (MPa)	Gripper Length L (mm)						
	10	20	30	40	50	60	
0.7	193	190	186	183	180	177	
0.5	138	135	133	131	129	127	
0.2	55	54	53	52	51	50	



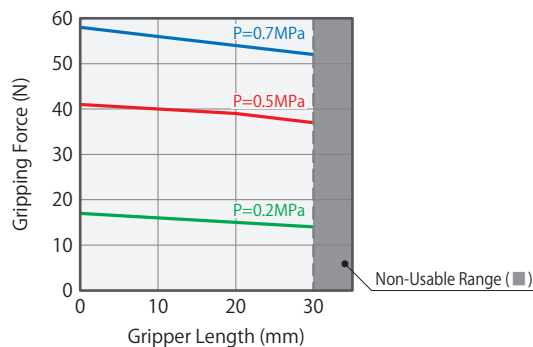
### Gripping Force Performance Curve : Opening Side



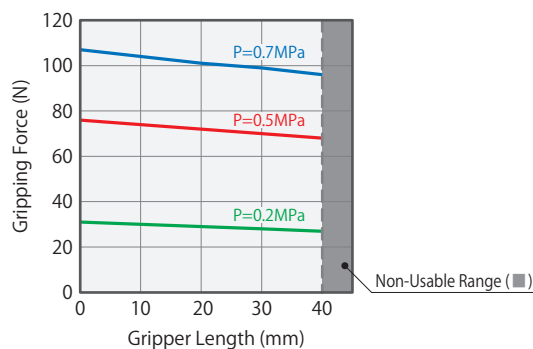
Notes:

1. This chart and graph show the relationship among: F:Gripping Force (N), P: Air Pressure (MPa) and L:Gripper Length (mm).
2. Operation in the non-usable range may cause deformation, galling or air leakage.

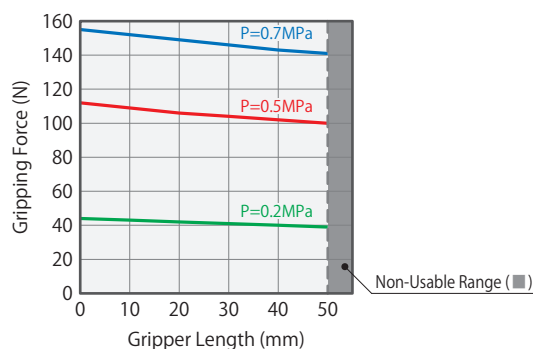
WPA0120 (N)				
Air Pressure (MPa)	Gripper Length L (mm)			
		10	20	30
0.7	56	54	52	
0.5	40	39	37	
0.2	16	15	14	



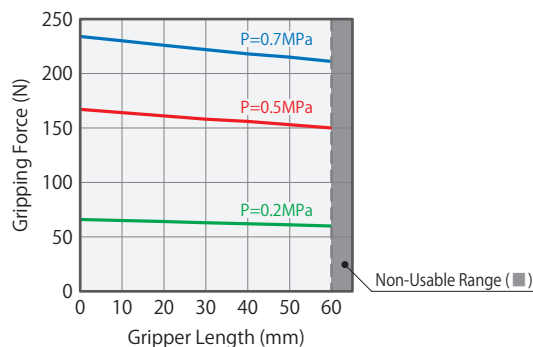
WPA0160 (N)					
Air Pressure (MPa)	Gripper Length L (mm)				
		10	20	30	40
0.7	104	101	99	96	
0.5	74	72	70	68	
0.2	30	29	28	27	



WPA0200 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
		10	20	30	40	50
0.7	152	149	146	143	141	
0.5	109	106	104	102	100	
0.2	43	42	41	40	39	



WPA0250 (N)							
Air Pressure (MPa)	Gripper Length L (mm)						
		10	20	30	40	50	60
0.7	230	226	222	218	215	211	
0.5	164	161	158	156	153	150	
0.2	65	64	63	62	61	60	

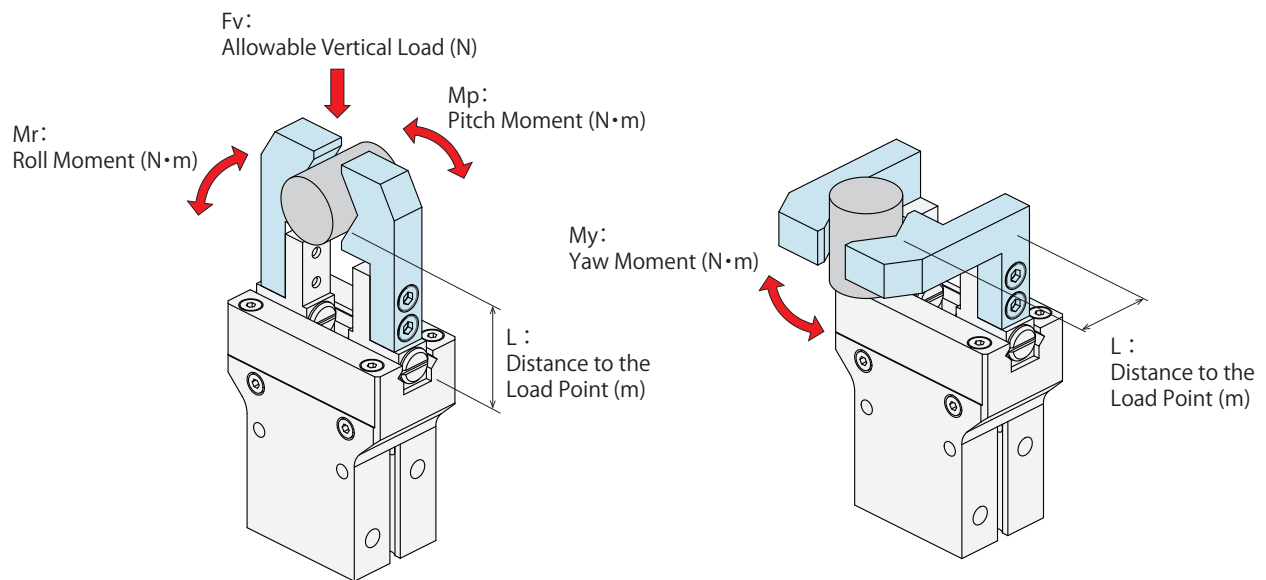


- Locating + Clamp
- Locating
- Hand + Clamp
- Support
- Valve + Coupler
- Cautions + Others

- Pallet Gripper
  - WVA
- Locating Pin Clamp
  - SWP
- High-Power Pull Stud Clamp
  - WPT
  - JES
- FA Pneumatic Hole Clamp
  - WKH
- Lifting Hole Clamp
  - SWJ
- Ball Lock Cylinder
  - WKA
- Pneumatic Robotic Hands
  - WPW-C
  - WPS-C
  - WPA
  - WPH
  - WPP
  - WPQ
- Auto Switch Proximity Switch
  - JEP
- High-Power Pneumatic Hole Clamp
  - SWE
- High-Power Pneumatic Swing Clamp
  - WHE
- High-Power Pneumatic Link Clamp
  - WCE
- Pneumatic Hole Clamp
  - SWA
- Pneumatic Swing Clamp
  - WHA
- Double Piston Pneumatic Swing Clamp
  - WHD
- Pneumatic Link Clamp
  - WCA
- Air Flow Control Valve
  - BZW
- Manifold Block
  - WHZ-MD

● Allowable Load and Allowable Moment

Model No.	Fv : Allowable Vertical Load (N)	Maximum Allowable Moment (N · m)		
		Mp : Pitch Moment	My : Yaw Moment	Mr : Roll Moment
WPA0120	79	0.28	0.28	0.63
WPA0160	141	0.67	0.67	1.77
WPA0200	169	0.84	0.84	2.61
WPA0250	265	1.65	1.65	4.93



Notes :

1. The values on the list are the static values.
2. The arrows show the direction of Fv : Allowable Vertical Load (N), Mp : Pitch Moment (N · m), My : Yaw Moment (N · m) and Mr : Roll Moment (N · m).

● Allowable Load Calculation Formula

$$F : \text{Allowable Load (N)} = \frac{M : \text{Maximum Allowable Moment (N} \cdot \text{m)}}{L : \text{Distance to the Load Point (m)}}$$

Locating  
+  
Clamp

Locating

**Hand • Clamp**

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

**Pneumatic  
Robotic Hands**

WPW-C

WPS-C

**WPA**

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

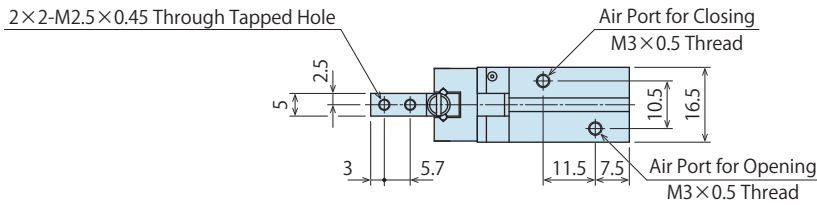
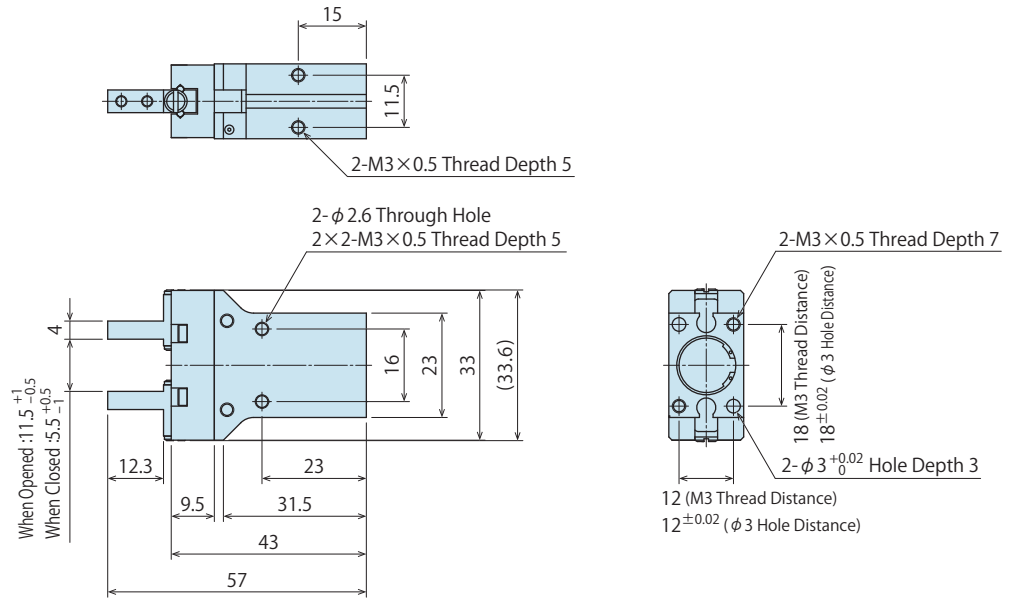
BZW

Manifold  
Block

WHZ-MD

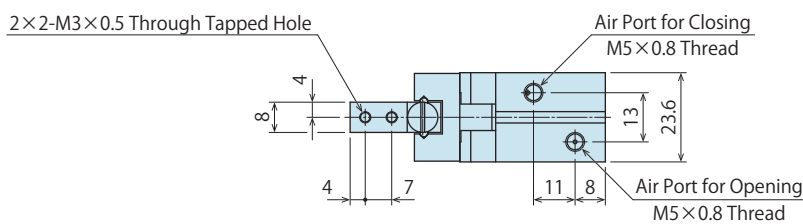
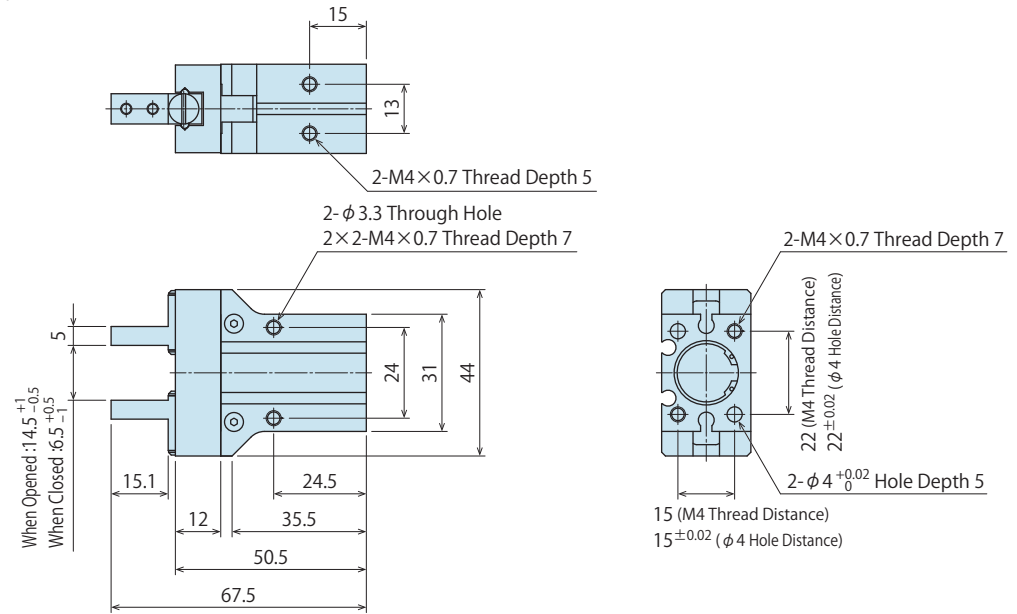
External Dimensions : WPA0120

※ The drawing shows the opened state of WPA0120.



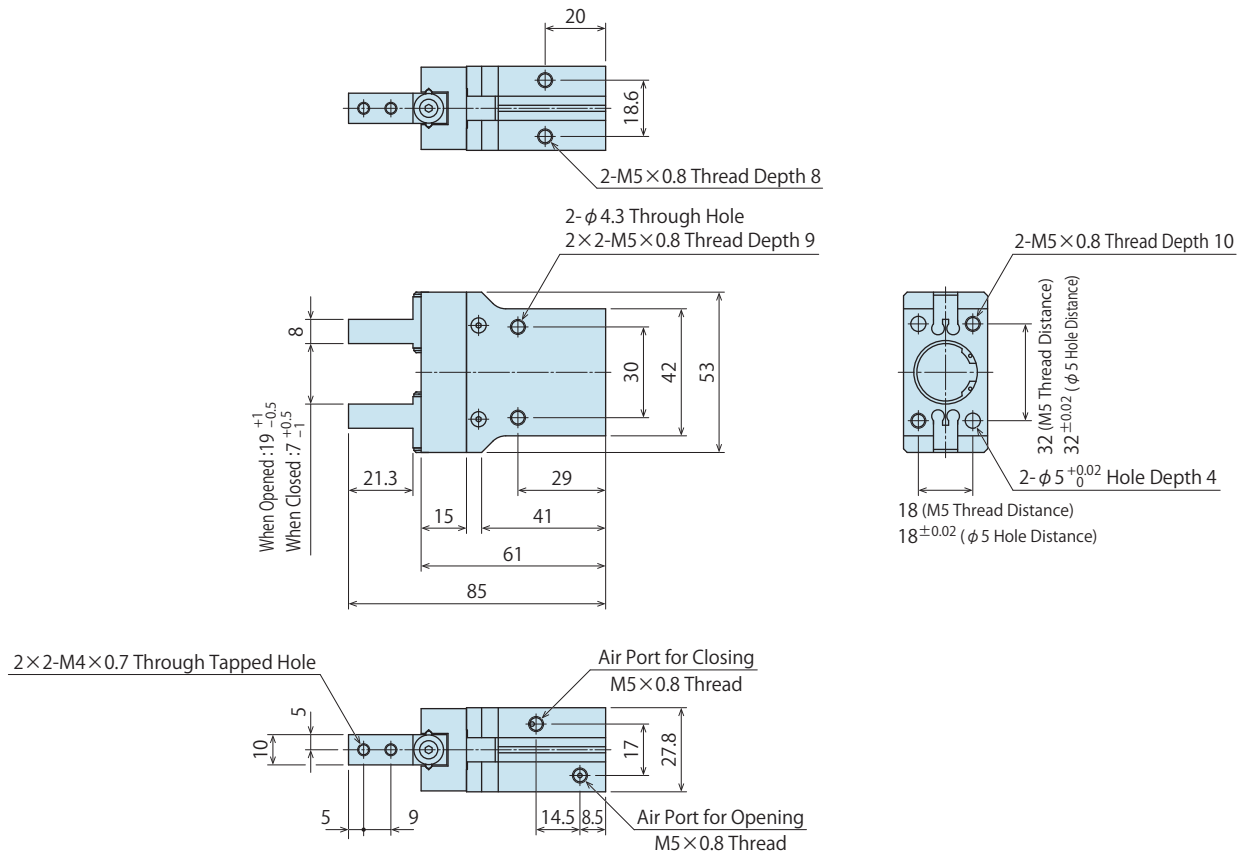
External Dimensions : WPA0160

※ The drawing shows the opened state of WPA0160.



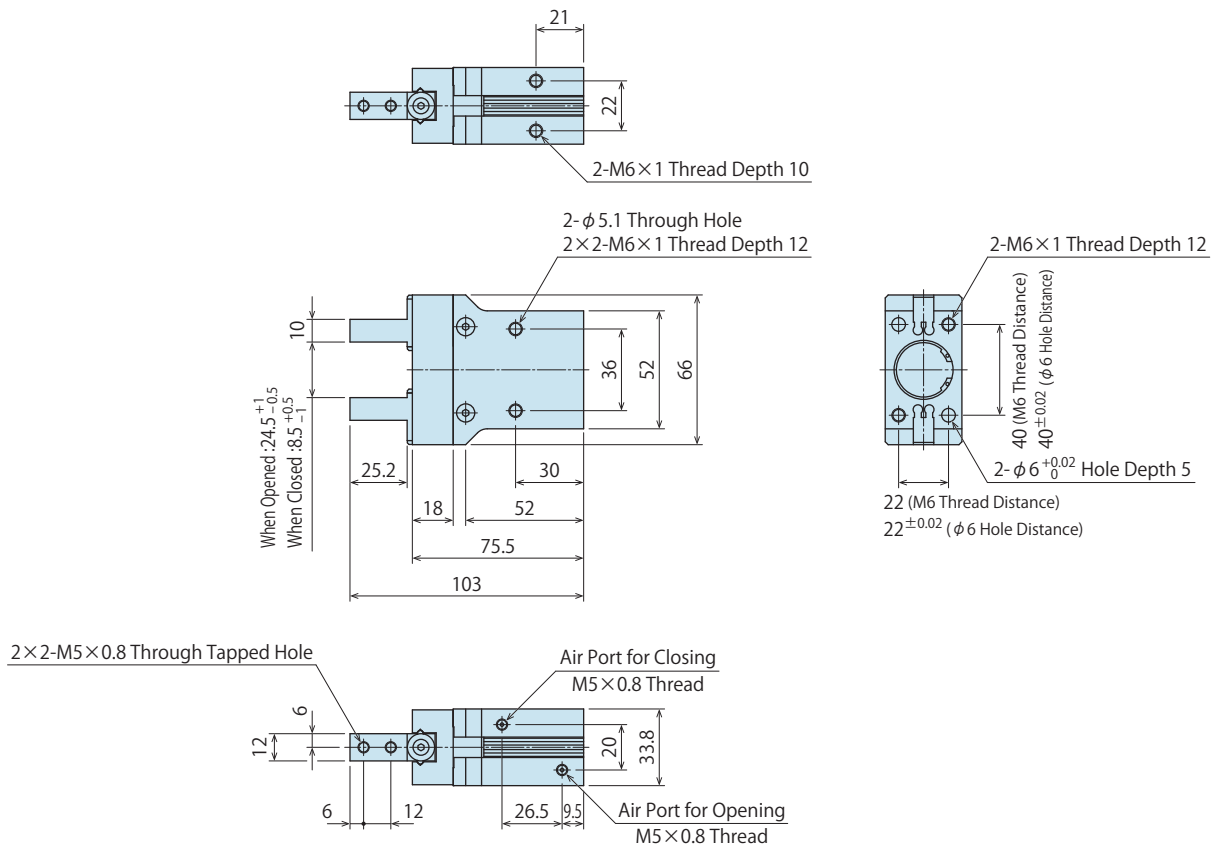
## External Dimensions : WPA0200

※ The drawing shows the opened state of WPA0200.



## External Dimensions : WPA0250

※ The drawing shows the opened state of WPA0250.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

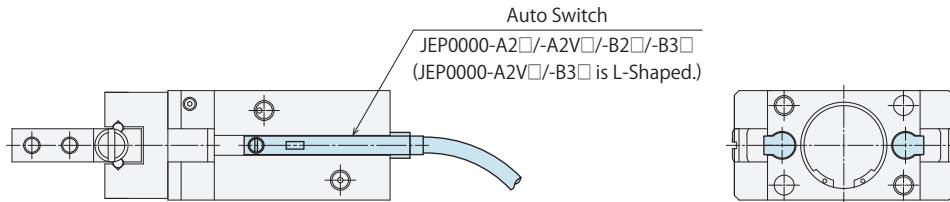
WHZ-MD



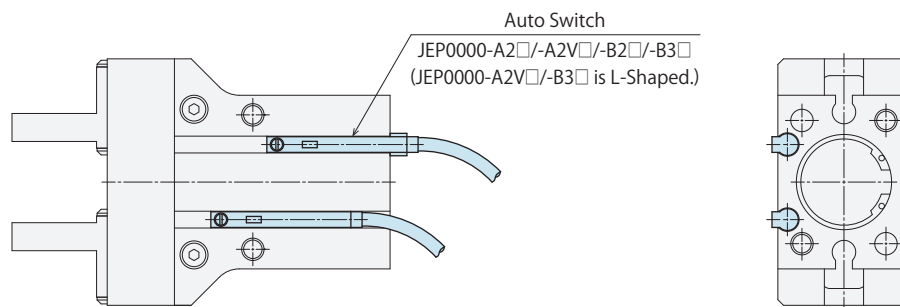
● External Dimensions : Auto Switch Installation Image (Reference)

※ This drawing shows the installation image of Auto Switch JEP0000-A2□ and JEP0000-B2□.  
 Installation image of L-Shaped Auto Switch -A2V□ and -B3□ is different from this.  
 Adjust installation position depending on the stroke position.

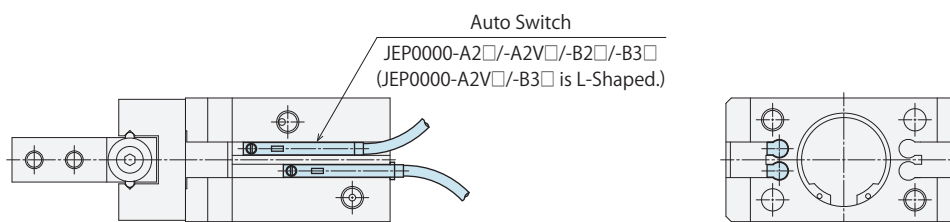
● For WPA0120



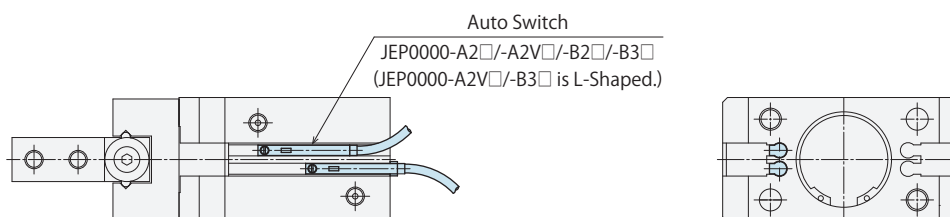
● For WPA0160



● For WPA0200

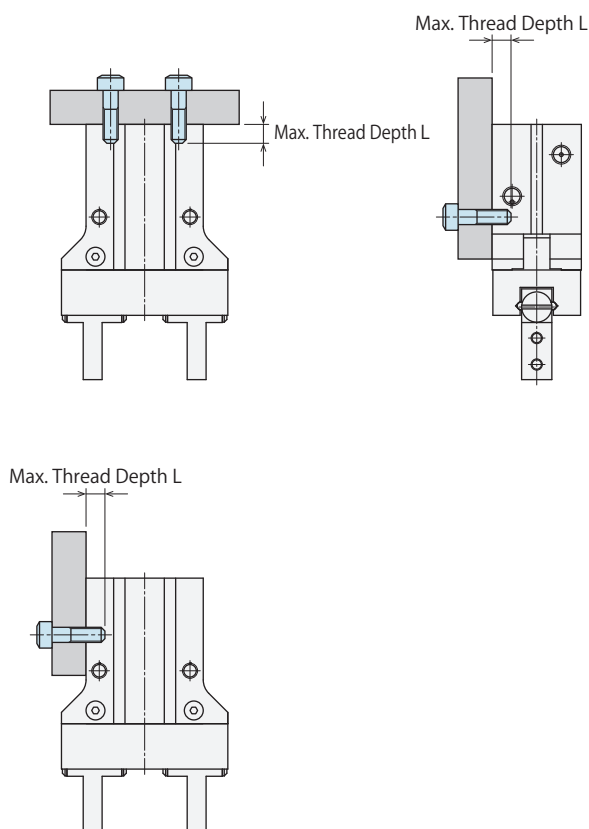


● For WPA0250



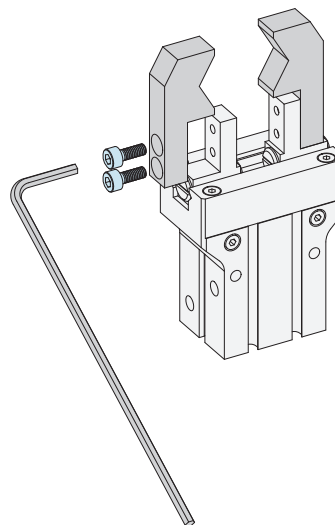
## ● Installation Method

### ● Tightening Torque for Cylinder Body



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
<b>WPA0120</b>	M3×0.5	1.1	5
<b>WPA0160</b>	M4×0.7	2.5	5
<b>WPA0200</b>	M5×0.8	5.0	8
<b>WPA0250</b>	M6×1	7.9	10

### ● Tightening Torque for Gripper



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
<b>WPA0120</b>	M2.5×0.45	0.5	4
<b>WPA0160</b>	M3×0.5	1.1	5
<b>WPA0200</b>	M4×0.7	2.5	8
<b>WPA0250</b>	M5×0.8	5.0	10

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

**WPA**

WPH

WPP

WPAQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

Pneumatic Robotic Hand

# Parallel Robotic Hand Gripper

Model WPH



## Compact Parallel Robotic Hand with High-Gripping Force Ability to Install Auto Switches for Gripper Detection

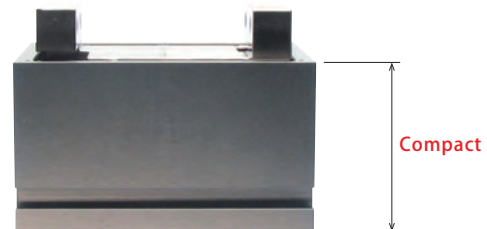
- **Wider Stroke**

Wider opening and closing stroke allows for gripping various sizes of workpieces.



- **Compact Body with High Gripping Force**

It is compact and has high gripping force, even with two internal cylinders. Reduction in height allows for less interference and optimal space utilization.



- **High Accuracy and High Rigidity**

The cross roller guide function allows for high rigidity and high accuracy opening/closing function.  
Repeatability:  $\pm 0.01\text{mm}$

- **Light Weight**

Reduced size and weight allows for best use of the robotic payload.

- **Long Operational Life**

Solid internal features provide for excellent durability.

- **Auto Switch Capability**

Easy to install and adjust auto switches for gripper detection.

## Model No. Indication

**WPH 010 0 - A2 S**

1 2 3 4

※ Only 1 2 are marked on the product.  
Please indicate the specifications of 3 4 if you need switches.

### 1 Cylinder Inner Diameter

**010** :  $\phi$  10 mm  
**016** :  $\phi$  16 mm  
**020** :  $\phi$  20 mm

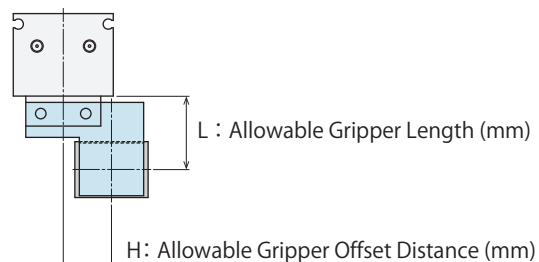
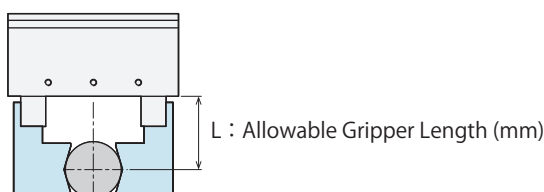
### 2 Design No.

**0** : Revision Number

## Specifications

Model No.		WPH0100	WPH0160	WPH0200
Cylinder Inner Diameter	mm	10	16	20
Gripping Force <sup>※1</sup> (Air Pressure : At 0.5MPa)	Closing Side	N	86	135
Full Stroke	mm	15	20	20
Repeatability <sup>※2</sup>	mm	$\pm 0.01$		
Stroke Error	mm	Opened State : $-0.5 \sim +1$ / Closed State : $-1 \sim +0.5$		
Allowable Gripper Length L (Air Pressure : at 0.5MPa) <sup>※3</sup>	mm	40	50	60
Allowable Gripper Offset Distance H (Air Pressure : at 0.5MPa) <sup>※3</sup>	mm	20	30	40
Maximum Cycle / min.		80		
Cylinder Capacity (Clamping w/o Workpiece)	cm <sup>3</sup>	1.2	4.0	6.3
Maximum Operating Pressure	MPa	0.7		
Minimum Operating Pressure	MPa	0.15		
Withstanding Pressure	MPa	1.05		
Operating Temperature Range	°C	5 ~ 60		
Usable Fluid		Dry Air		
Weight	kg	0.14	0.32	0.7

Notes :   
 ※1. Gripping force indicates the calculated value based on the gripper length (L).  
 ※2. Repeatability under the same condition (no load).  
 ※3. L : Allowable Gripper Length (mm), H : Allowable Gripper Offset Distance (mm). (Air Pressure : at 0.5MPa)



### 3 Auto Switch Type

**Blank** : Without Auto Switch  
**A1 / A2** : 2-Wire Reed Auto Switch (Cable: 1m)  
**A1L / A2L** : 2-Wire Reed Auto Switch (Cable: 3m)  
**A2V** : L-Shaped 2-Wire Reed Auto Switch (Cable: 1m)  
**A2VL** : L-Shaped 2-Wire Reed Auto Switch (Cable: 3m)  
**B1 / B2** : 3-Wire Solid State Auto Switch (Cable: 1m)  
**B1L / B2L** : 3-Wire Solid State Auto Switch (Cable: 3m)  
**B3** : L-Shaped 3-Wire Solid State Auto Switch (Cable: 1m)  
**B3L** : L-Shaped 3-Wire Solid State Auto Switch (Cable: 3m)

#### Application Table

Model No.	A1□	A2□	B1□	B2□	B3□
<b>WPH0100</b>		●		●	●
<b>WPH0160</b>		●		●	●
<b>WPH0200</b>	●		●		

※ Please refer to P.405 ~ P.414 for details on auto switches.

### 4 Number of Auto Switches<sup>※</sup>

**Blank** : 2

**S** : 1

※ Only when requiring 3 Auto Switch.

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

**WPH**

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

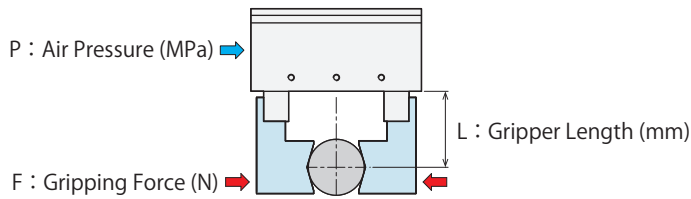
Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

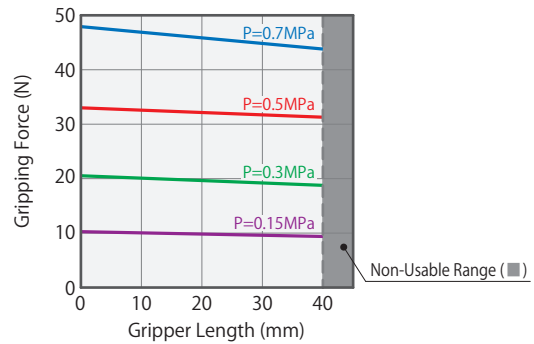
**Gripping Force Performance Curve**



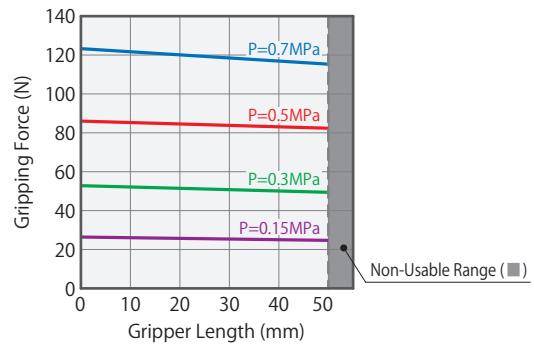
Notes:

1. This chart and graph show the relationship among:  
F: Gripping Force (N), P: Air Pressure (MPa) and L: Gripper Length (mm).
2. Operation in the non-usable range may cause deformation, galling or air leakage.

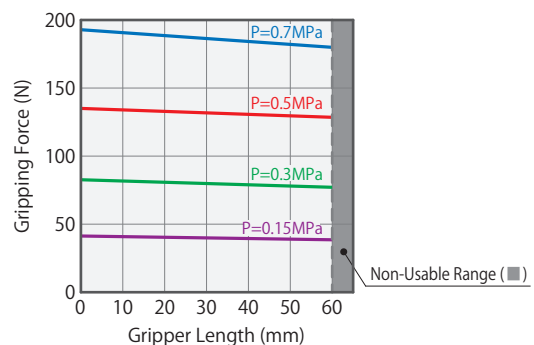
WPH0100 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	15	20	30	40
0.7	48	47	47	46	45	44
0.5	34	34	33	33	32	31
0.3	21	20	20	20	19	19
0.15	10	10	10	10	10	9



WPH0160 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	20	30	40	50
0.7	123	122	121	119	117	115
0.5	88	87	86	85	84	82
0.3	53	52	52	51	50	49
0.15	26	26	26	25	25	25

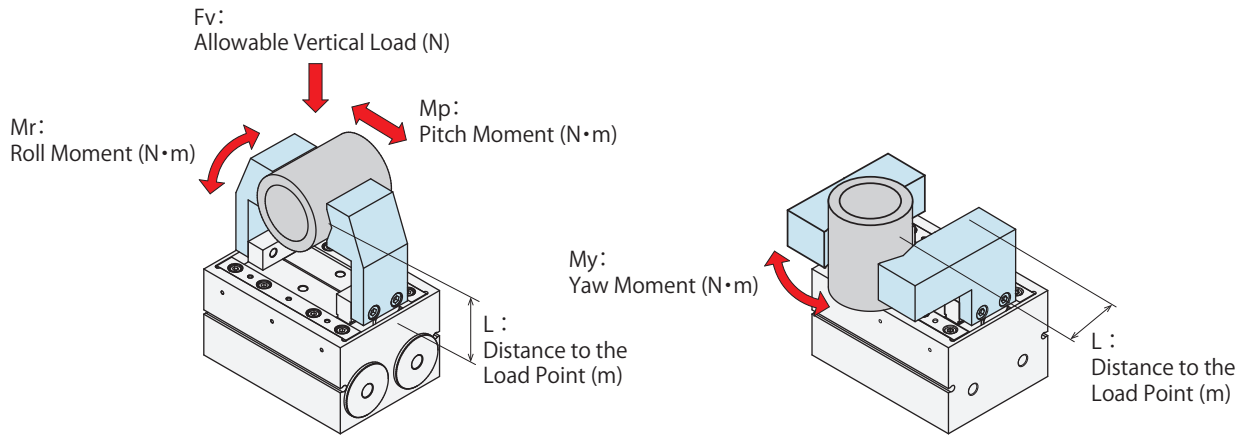


WPH0200 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	30	40	50	60
0.7	192	189	187	185	182	180
0.5	137	135	134	132	130	128
0.3	82	81	80	79	78	77
0.15	41	41	40	40	39	39



## ● Allowable Load and Allowable Moment

Model No.	Fv : Allowable Vertical Load (N)	Maximum Allowable Moment (N · m)		
		Mp : Pitch Moment	My : Yaw Moment	Mr : Roll Moment
<b>WPH0100</b>	310	1.0	1.0	2.8
<b>WPH0160</b>	430	2.0	2.0	3.8
<b>WPH0200</b>	810	5.7	5.7	11.4



### Notes :

1. The values on the list are the static values.
2. The arrows show the direction of Fv : Allowable Vertical Load (N), Mp : Pitch Moment (N · m), My : Yaw Moment (N · m) and Mr : Roll Moment (N · m).

## ● Allowable Load Calculation Formula

$$F : \text{Allowable Load (N)} = \frac{M : \text{Maximum Allowable Moment (N} \cdot \text{m)}}{L : \text{Distance to the Load Point (m)}}$$

 Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

 Locating  
Pin Clamp

SWP

 High-Power  
Pull Stud Clamp

WPT

JES

 FA Pneumatic  
Hole Clamp

WKH

 Lifting  
Hole Clamp

SWJ

 Ball Lock  
Cylinder

WKA

**Pneumatic  
Robotic Hands**

WPW-C

WPS-C

WPA

**WPH**

WPP

WPQ

 Auto Switch  
Proximity Switch

JEP

 High-Power Pneumatic  
Hole Clamp

SWE

 High-Power Pneumatic  
Swing Clamp

WHE

 High-Power Pneumatic  
Link Clamp

WCE

 Pneumatic  
Hole Clamp

SWA

 Pneumatic  
Swing Clamp

WHA

 Double Piston  
Pneumatic  
Swing Clamp

WHD

 Pneumatic  
Link Clamp

WCA

 Air Flow  
Control Valve

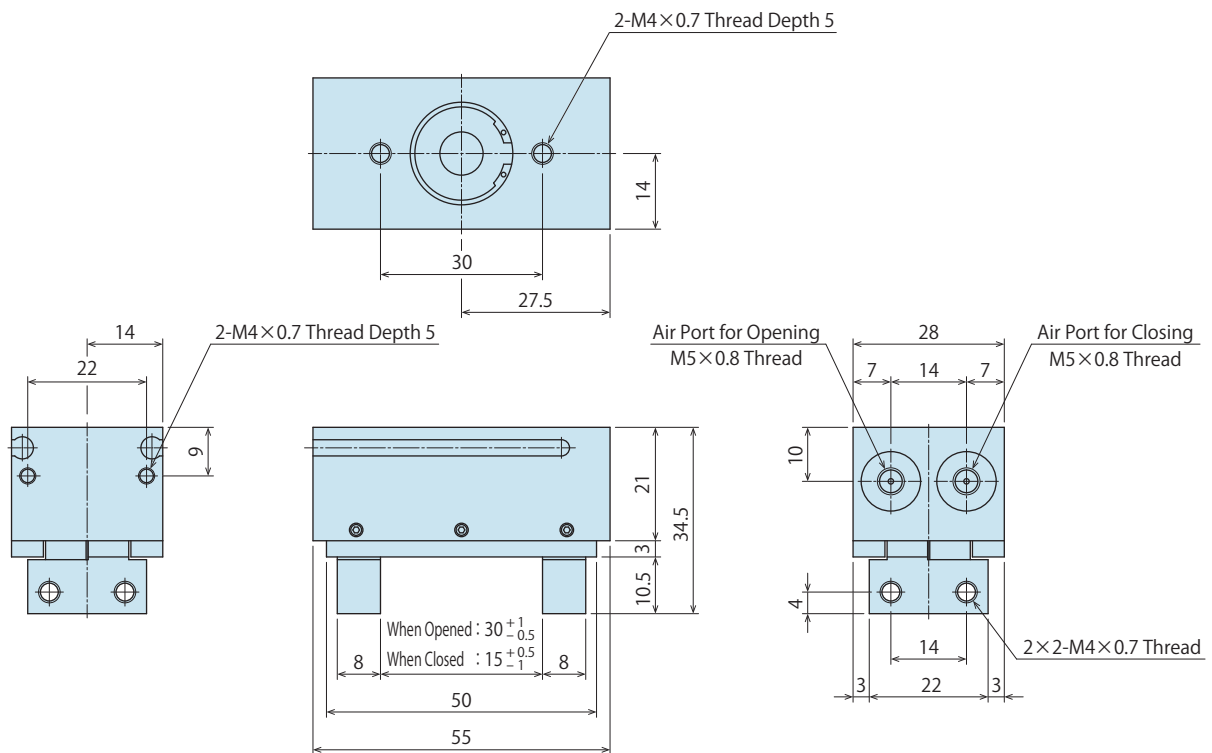
BZW

 Manifold  
Block

WHZ-MD

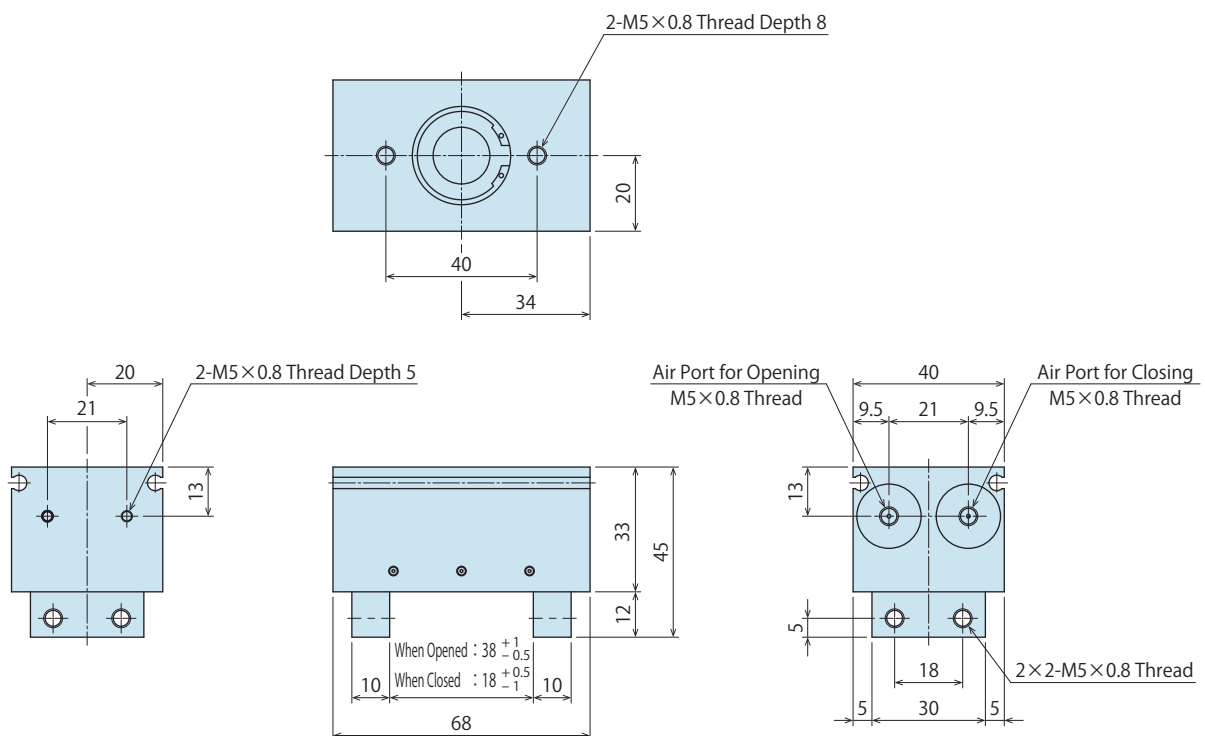
External Dimensions : WPH0100

※ The drawing shows the opened state of WPH0100.



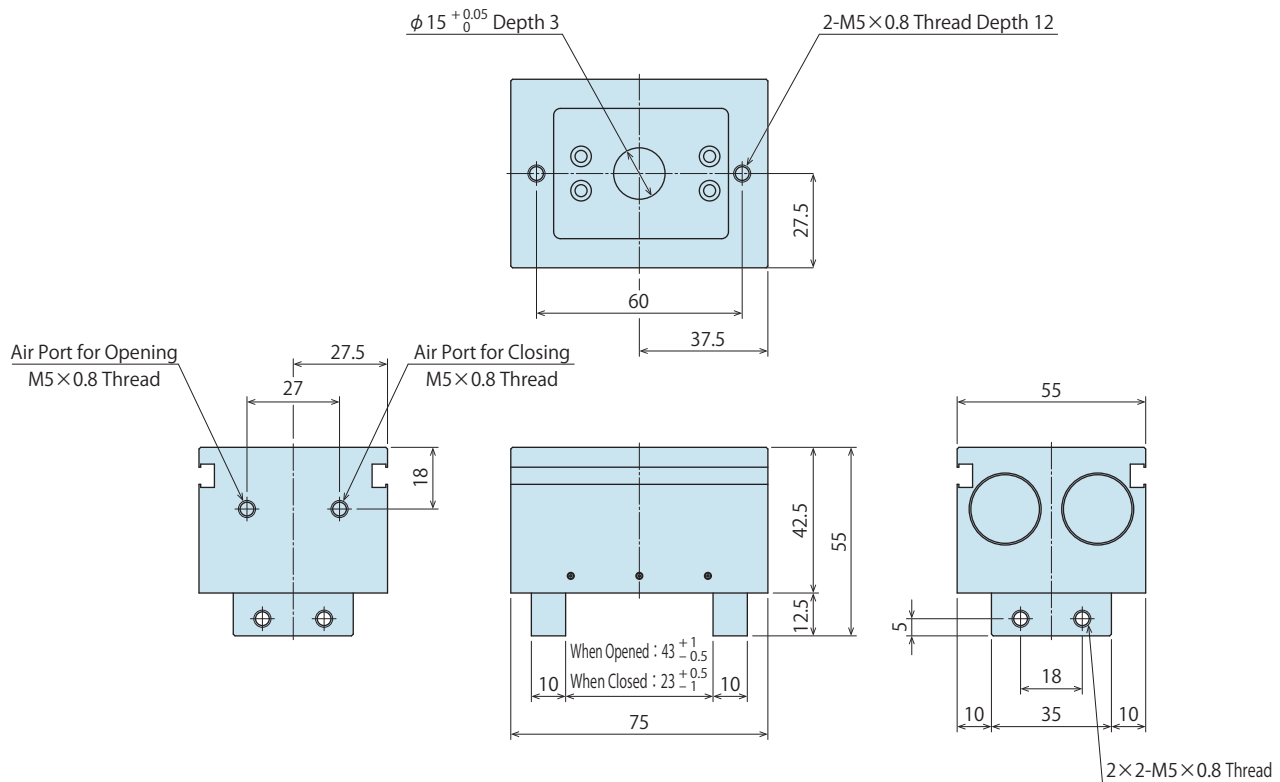
External Dimensions : WPH0160

※ The drawing shows the opened state of WPH0160.



## External Dimensions : WPH0200

※ The drawing shows the opened state of WPH0200.



Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

**Pneumatic  
Robotic Hands**

WPW-C

WPS-C

WPA

**WPH**

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

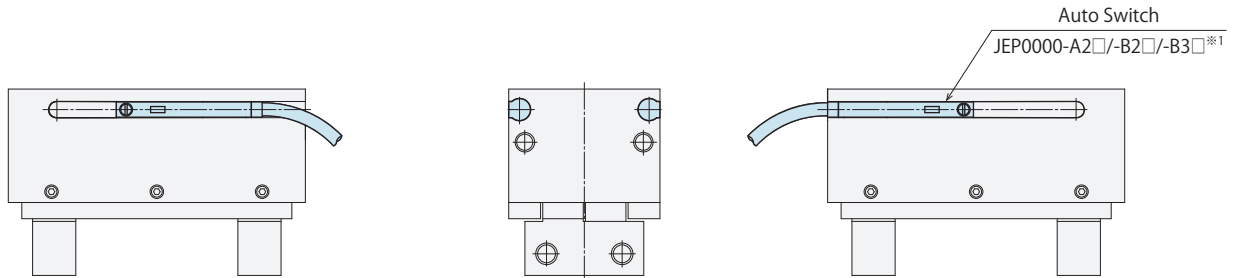
WHZ-MD



● External Dimensions : Auto Switch

※ This drawing shows the installation image of Auto Switch JEP0000-A1□ / A2□ and JEP0000-B1□ / B2□.  
 Installation image of L-Shaped Auto Switch -A2V□ and -B3□ is different from this.  
 Adjust installation position depending on the stroke position.

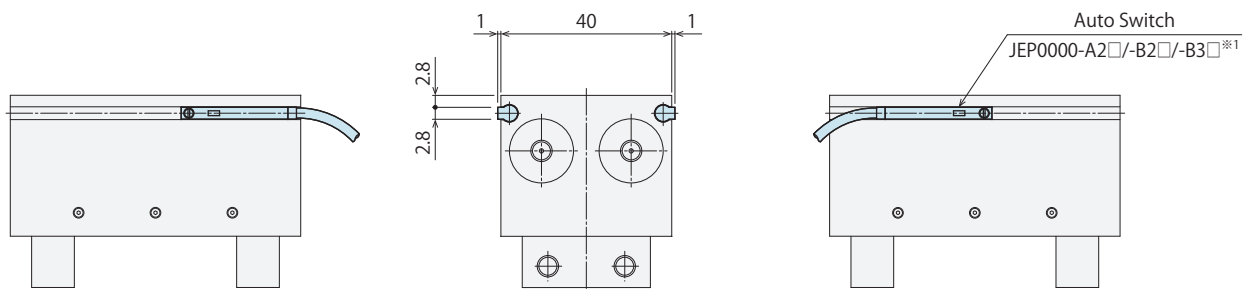
● For WPH0100



Note :

※1. External dimension of JEP0000-A2V□/-B3□ is different from this.

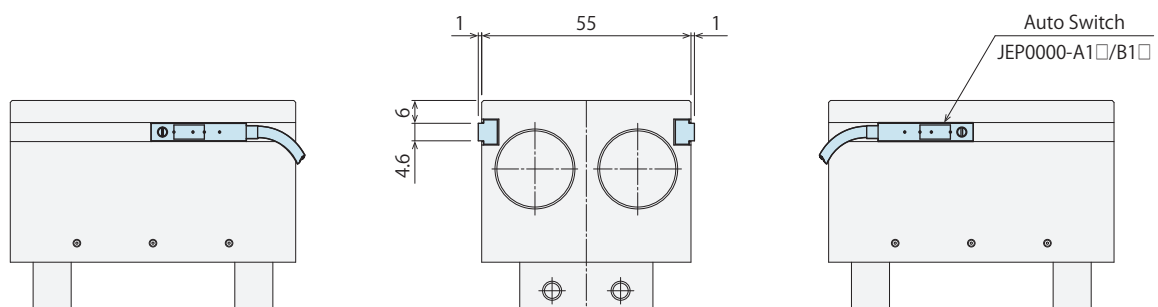
● For WPH0160



Note :

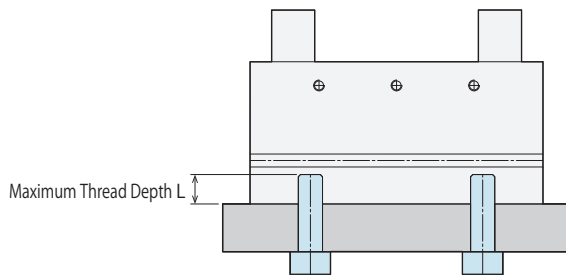
※1. External dimension of JEP0000-A2V□/-B3□ is different from this.

● For WPH0200



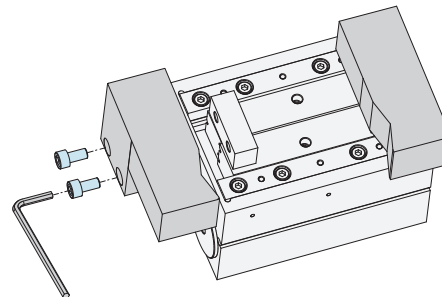
## ● Installation Method

### ● Tightening Torque for Cylinder Body



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
<b>WPH0100</b>	M4×0.7	2.5	5
<b>WPH0160</b>	M5×0.8	5.0	8
<b>WPH0200</b>	M5×0.8	5.0	12

### ● Tightening Torque for Gripper



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
<b>WPH0100</b>	M4×0.7	2.5	8
<b>WPH0160</b>	M5×0.8	5.0	10
<b>WPH0200</b>	M5×0.8	5.0	10

 Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

**Pneumatic  
Robotic Hands**

WPW-C

WPS-C

WPA

**WPH**

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

Pneumatic Robotic Hand

# Three-Jaw Chuck

Model WPP



High Gripping Force with Wider Stroke

Compact, Light Weight, Powerful, Solid and Durable!!

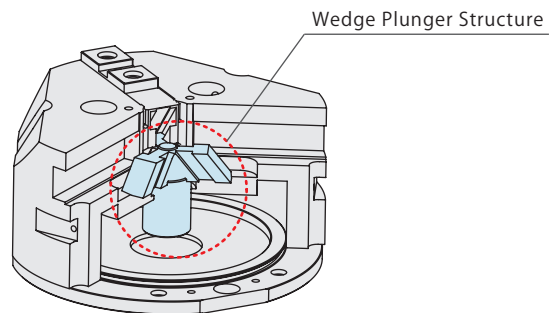
- **Compact and Light Weight**

Small footprint by reducing overall height.



- **Strong and Stable Gripping Force**

High gripping force is generated by wedge plunger structure. Limiting backlash at the end of stroke enables stable and powerful gripping.



- **Wider Stroke**

Allowable stroke is increased by T-shape slide guide.



- **High Rigidity**

The metal guides provide for higher and excellent rigidity.

- **Long Operational Life**

The body is manufactured with resistance to contaminants, cutting oil and coolant for excellent durability.

- **Proximity Switch for Gripping Detection**

The Three-Jaw Chuck design allows for easy proximity switch installation.

## Model No. Indication

**WPP 030 0 - P2 S - C**

1 2 3 4 5

※ Only 1 2 are marked on the product. Please indicate the specifications of 3 4 5 if you need switches.

※ A sensor dog is provided to the product including 3 Blank : Without Proximity Switch.

### 1 Cylinder Inner Diameter

**030** :  $\phi$  30 mm  
**040** :  $\phi$  40 mm  
**050** :  $\phi$  50 mm  
**060** :  $\phi$  60 mm  
**080** :  $\phi$  80 mm  
**100** :  $\phi$  100 mm  
**125** :  $\phi$  125 mm

### 2 Design No.

**0** : Revision Number

### 3 Proximity Switch Type

**Blank** : Without Proximity Switch

**P** : 3-Wire Proximity Switch for Gripping Detection (Length:32mm)

**P2** : 3-Wire Proximity Switch for Gripping Detection (Length:16mm)

※ Please refer to P.405 ~ P.414 for details on proximity switches.

### 4 Number of Proximity Switches\*

**Blank** : 2

**S** : 1

※ Only when selecting the proximity switch option 3.

### 5 Option

**Blank** : Without Center Pusher

**C** : With Center Pusher

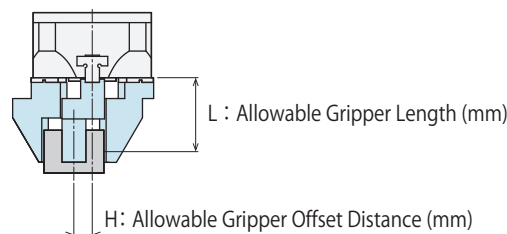
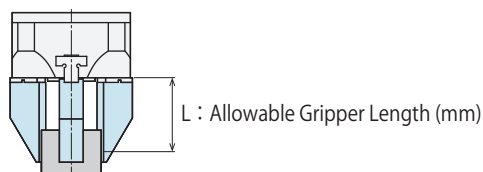
## Specifications

Model No.		WPP0300	WPP0400	WPP0500	WPP0600	WPP0800	WPP1000	WPP1250	
Cylinder Inner Diameter	mm	30	40	50	60	80	100	125	
Gripping Force ※ <sup>1</sup> (Air Pressure : At 0.5MPa)	Closing Side	N	187	335	537	799	1451	2304	3619
	Opening Side	N	211	375	586	848	1589	2383	3707
Full Stroke	mm	8	12	14	16	20	26	32	
Repeatability ※ <sup>2</sup>	mm	±0.01					±0.03		
Stroke Error	mm	Opened State : -0.5 ~ +1 / Closed State : -1 ~ +0.5							
Allowable Gripper Length L (Air Pressure : at 0.5MPa) ※ <sup>3</sup>	mm	40	50	60	80	100	120	140	
Allowable Gripper Offset Distance H (Air Pressure : at 0.5MPa) ※ <sup>3</sup>	mm	40	50	60	80	100	120	140	
Maximum Cycle / min.		70					40		
Cylinder Capacity (Clamping w/o Workpiece)	Closing Side	cm <sup>3</sup>	3.3	8.6	16.3	26.7	60.3	122.9	239.2
	Opening Side	cm <sup>3</sup>	3.7	9.4	17.7	28.3	62.8	128.0	245.4
Maximum Operating Pressure	MPa	0.7							
Minimum Operating Pressure	MPa	0.3							
Withstanding Pressure	MPa	1.05							
Operating Temperature Range	°C	5 ~ 60							
Usable Fluid		Dry Air							
Weight	kg	0.2	0.38	0.6	0.75	1.37	2.35	4.5	

Notes : ※1. Gripping force indicates the calculated value based on the gripper length (L).

※2. Repeatability under the same condition (no load).

※3. L : Allowable Gripper Length (mm), H : Allowable Gripper Offset Distance (mm). (Air Pressure : at 0.5MPa)



Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

Pneumatic Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

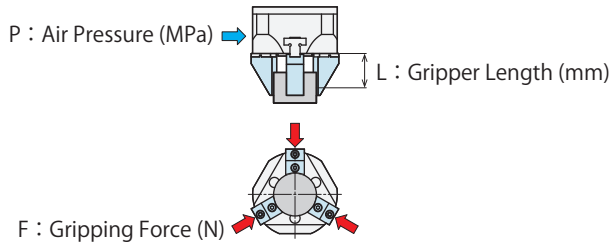
Air Flow Control Valve

BZW

Manifold Block

WHZ-MD

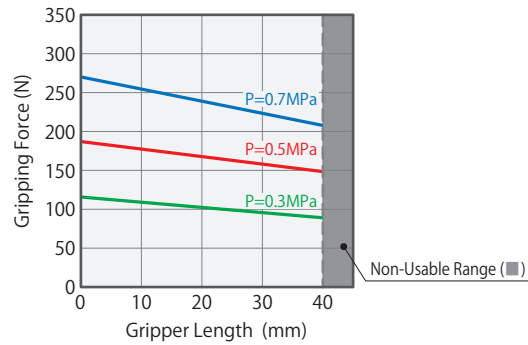
● Gripping Force Performance Curve : Closing Side



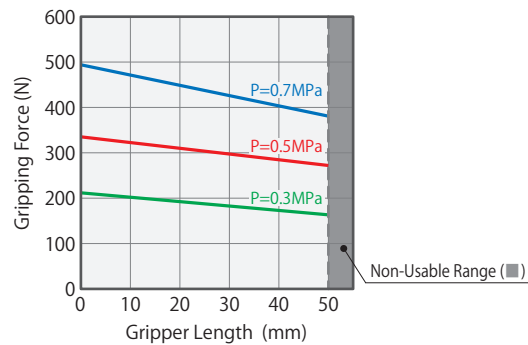
Notes:

1. This chart and graph show the relationship among :  
F : Gripping Force (N), P : Air Pressure (MPa) and L : Gripper Length (mm).
2. Operation in the non-usable range may cause deformation, galling or air leakage.

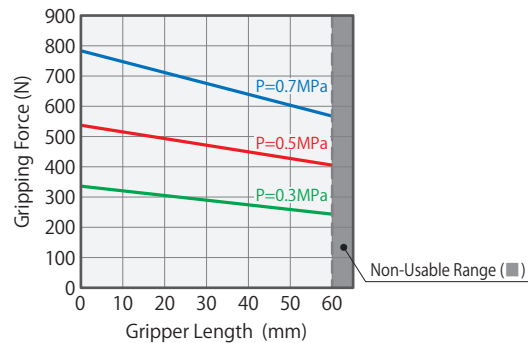
WPP0300		(N)				
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	15	20	30	40
0.7	279	263	249	235	222	208
0.5	193	188	178	168	158	148
0.3	116	113	107	101	95	89



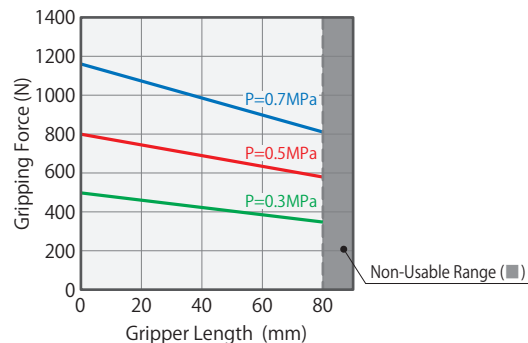
WPP0400		(N)				
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	20	30	40	50
0.7	494	483	442	422	401	381
0.5	353	345	316	301	287	272
0.3	212	207	190	181	172	163



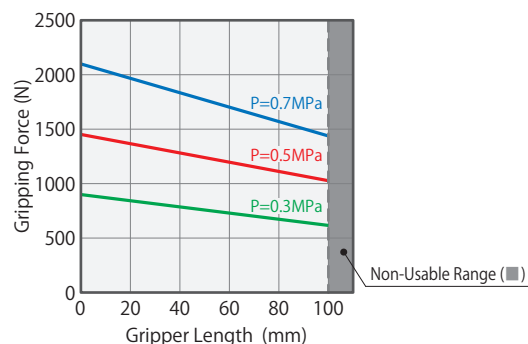
WPP0500		(N)				
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	30	40	50	60
0.7	769	711	682	654	625	567
0.5	549	508	487	467	446	405
0.3	329	305	292	280	268	243



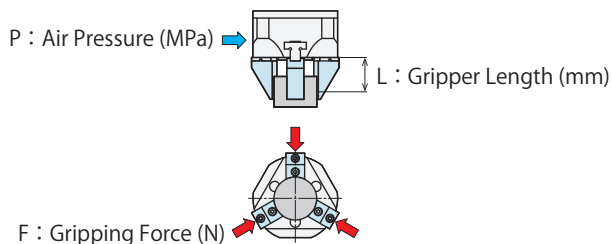
WPP0600		(N)				
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	30	40	60	80
0.7	1142	1068	1031	994	884	810
0.5	815	763	739	710	631	579
0.3	489	458	442	426	379	347



WPP0800		(N)				
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	40	60	80	100
0.7	2070	1955	1840	1667	1552	1437
0.5	1478	1396	1314	1191	1109	1027
0.3	889	838	788	714	665	616



## ● Gripping Force Performance Curve : Closing Side

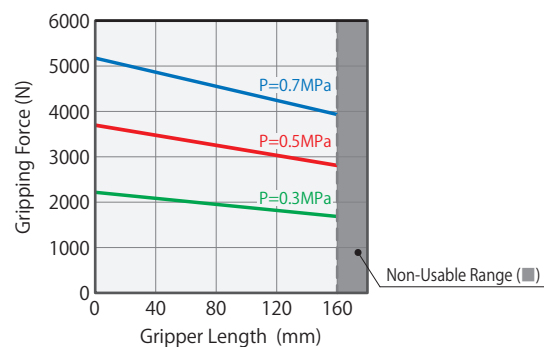
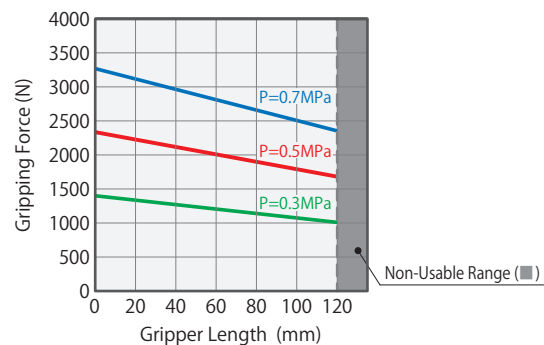


WPP1000		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	20	40	60	80	100	120	
0.7	3116	2977	2770	2631	2493	2354	
0.5	2226	2127	1978	1879	1780	1681	
0.3	1335	1276	1187	1128	1068	1009	

WPP1250		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	20	40	60	80	120	160	
0.7	5020	4852	4601	4434	4099	3932	
0.5	3586	3466	3287	3167	2928	2809	
0.3	2151	2080	1972	1900	1757	1685	

Notes:

1. This chart and graph show the relationship among :  
F : Gripping Force (N), P : Air Pressure (MPa) and  
L : Gripper Length (mm).
2. Operation in the non-usable range may cause  
deformation, galling or air leakage.

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

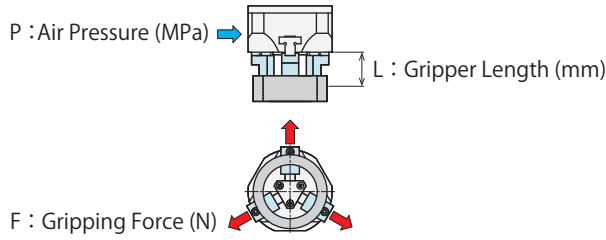
Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

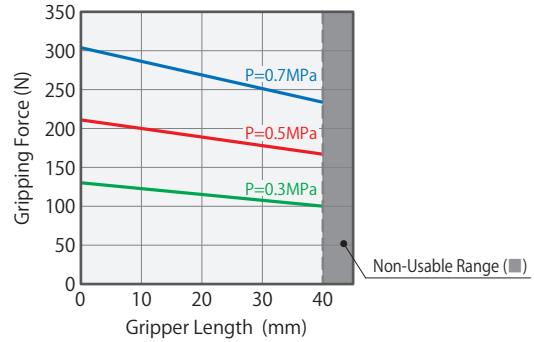
● Gripping Force Performance Curve : Opening Side



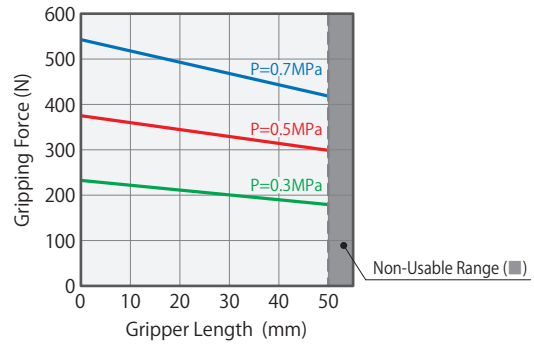
Notes:

1. This chart and graph show the relationship among :  
F : Gripping Force (N), P : Air Pressure (MPa) and L : Lever Length (mm).
2. Operation in the non-usable range may cause deformation, galling or air leakage.

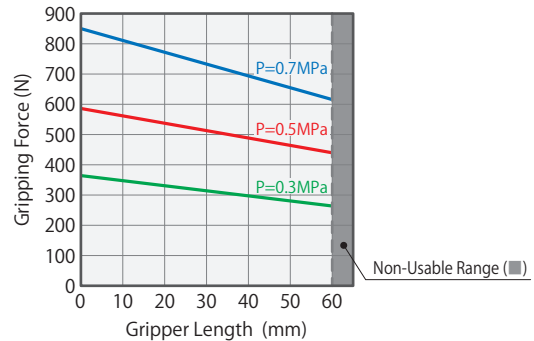
WPP0300 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	15	20	30	40
0.7	304	296	280	265	244	234
0.5	217	211	200	184	178	167
0.3	130	127	120	114	107	100



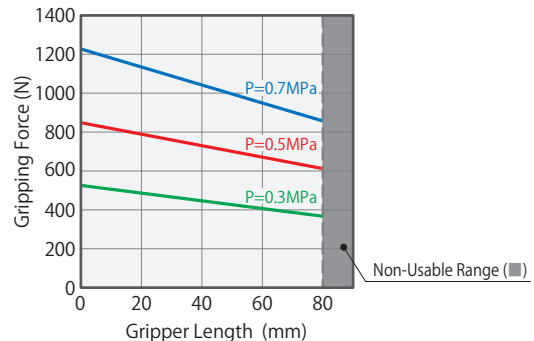
WPP0400 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	20	30	40	50
0.7	543	531	486	463	441	418
0.5	388	379	347	331	315	299
0.3	233	228	208	199	189	179



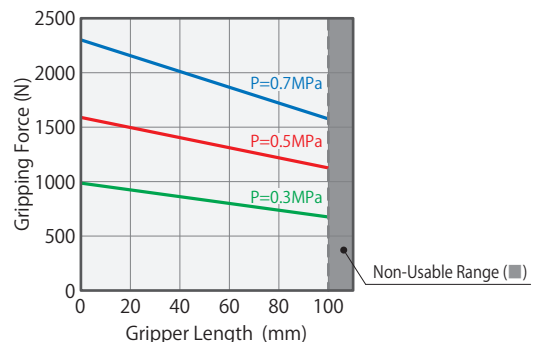
WPP0500 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	30	40	50	60
0.7	834	772	740	704	678	616
0.5	596	551	529	507	484	440
0.3	358	331	317	304	291	264



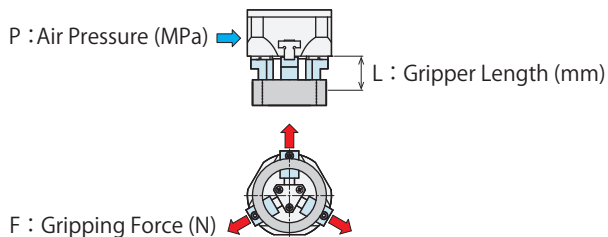
WPP0600 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	30	40	60	80
0.7	1207	1129	1090	1052	935	857
0.5	862	807	779	751	668	612
0.3	517	484	467	451	401	367



WPP0800 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	10	20	40	60	80	100
0.7	2269	2143	2017	1828	1702	1576
0.5	1621	1531	1441	1306	1216	1126
0.3	973	918	864	783	729	675



## ● Gripping Force Performance Curve : Opening Side

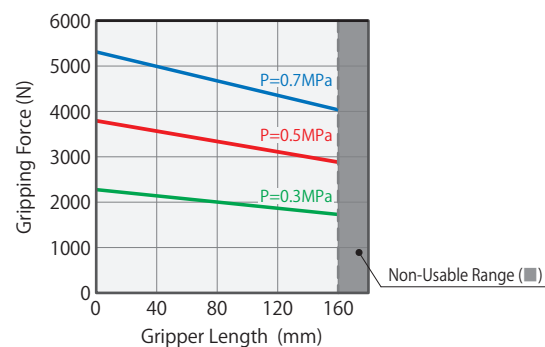
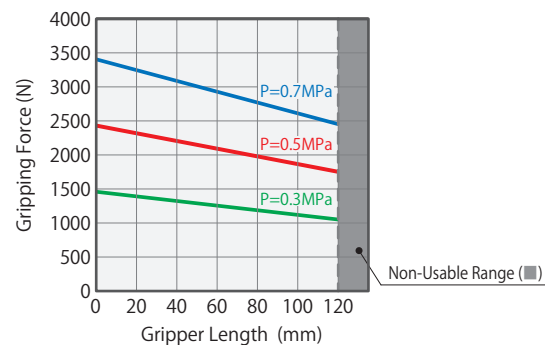


WPP1000							(N)
Air Pressure (MPa)	Gripper Length L (mm)						
	20	40	60	80	100	120	
0.7	3246	3101	2885	2741	2596	2452	
0.5	2318	2215	2061	1958	1855	1752	
0.3	1391	1329	1236	1175	1113	1051	

WPP1250							(N)
Air Pressure (MPa)	Gripper Length L (mm)						
	20	40	60	80	120	160	
0.7	5152	4980	4722	4551	4207	4035	
0.5	3680	3557	3373	3250	3005	2882	
0.3	2208	2134	2024	1950	1803	1729	

Notes:

1. This chart and graph show the relationship among :  
F : Gripping Force (N), P : Air Pressure (MPa) and  
L : Lever Length (mm).
2. Operation in the non-usable range may cause  
deformation, galling or air leakage.

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

**WPP**

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

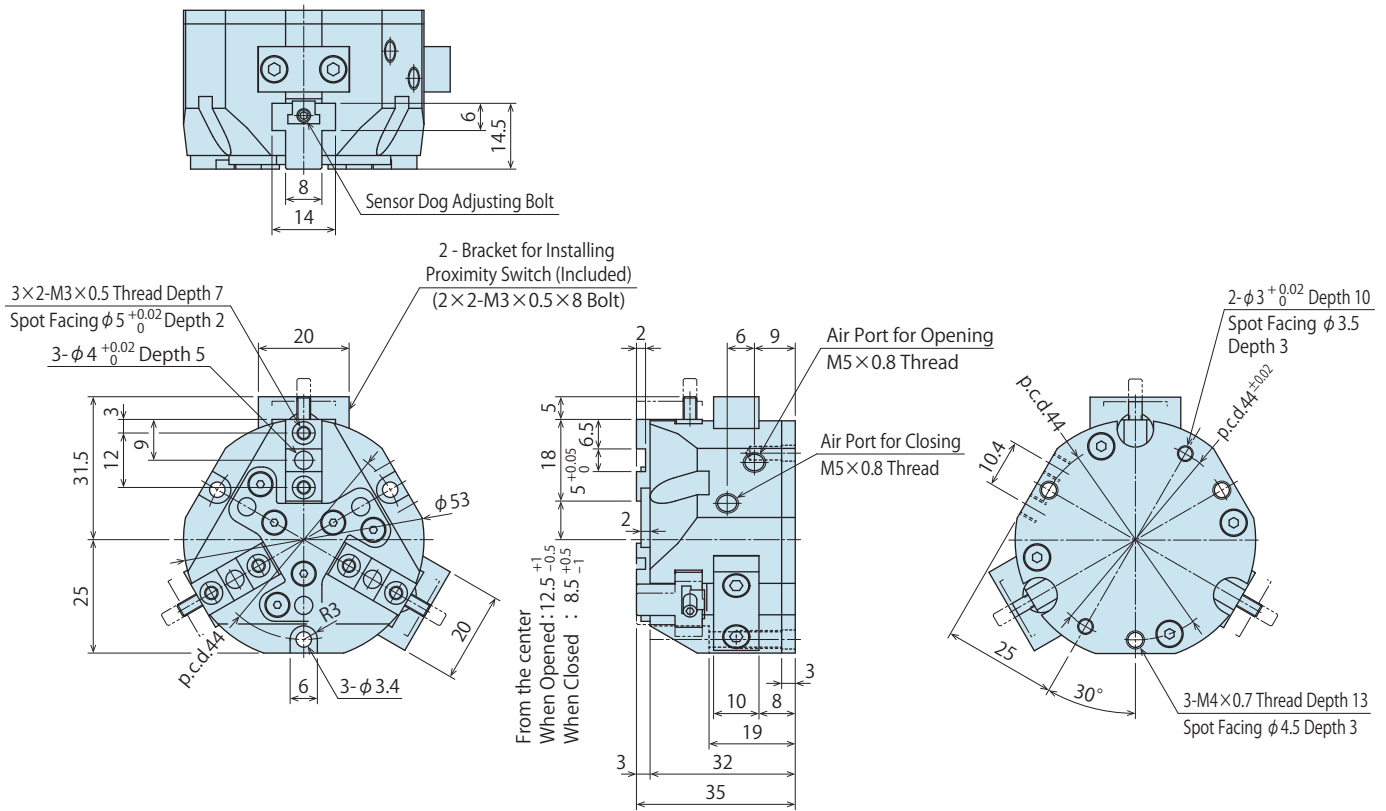
Manifold  
Block

WHZ-MD



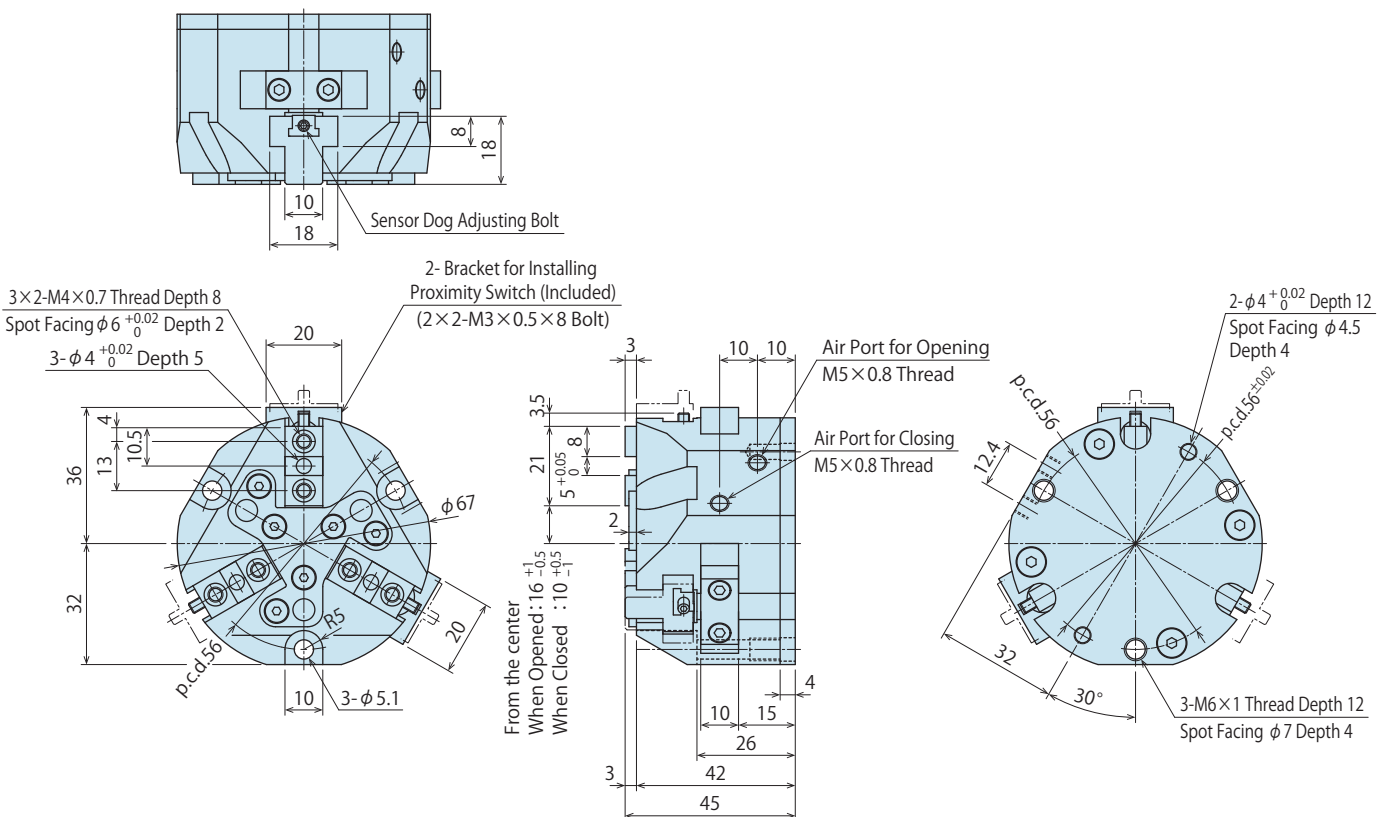
External Dimensions : WPP0300

※ The drawing shows the closed state of WPP0300.



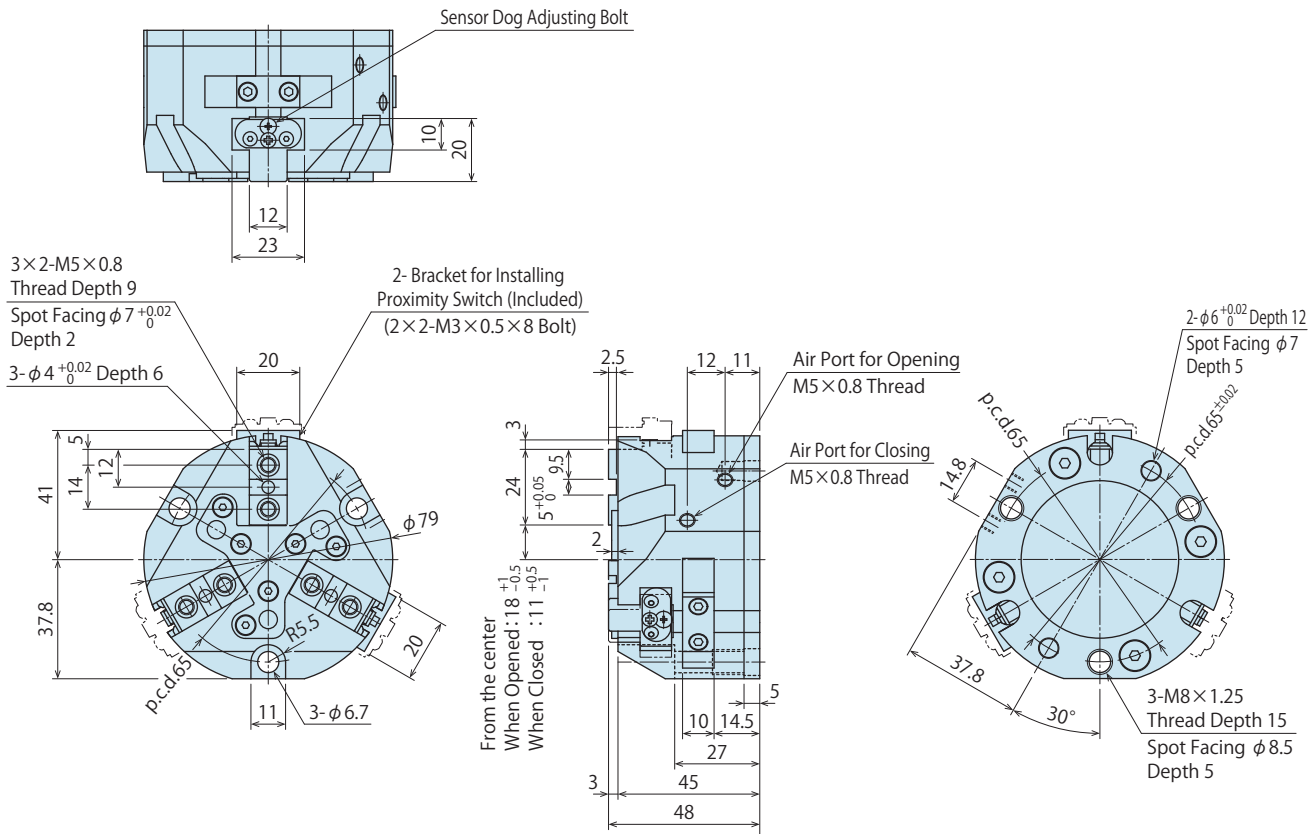
External Dimensions : WPP0400

※ The drawing shows the closed state of WPP0400.



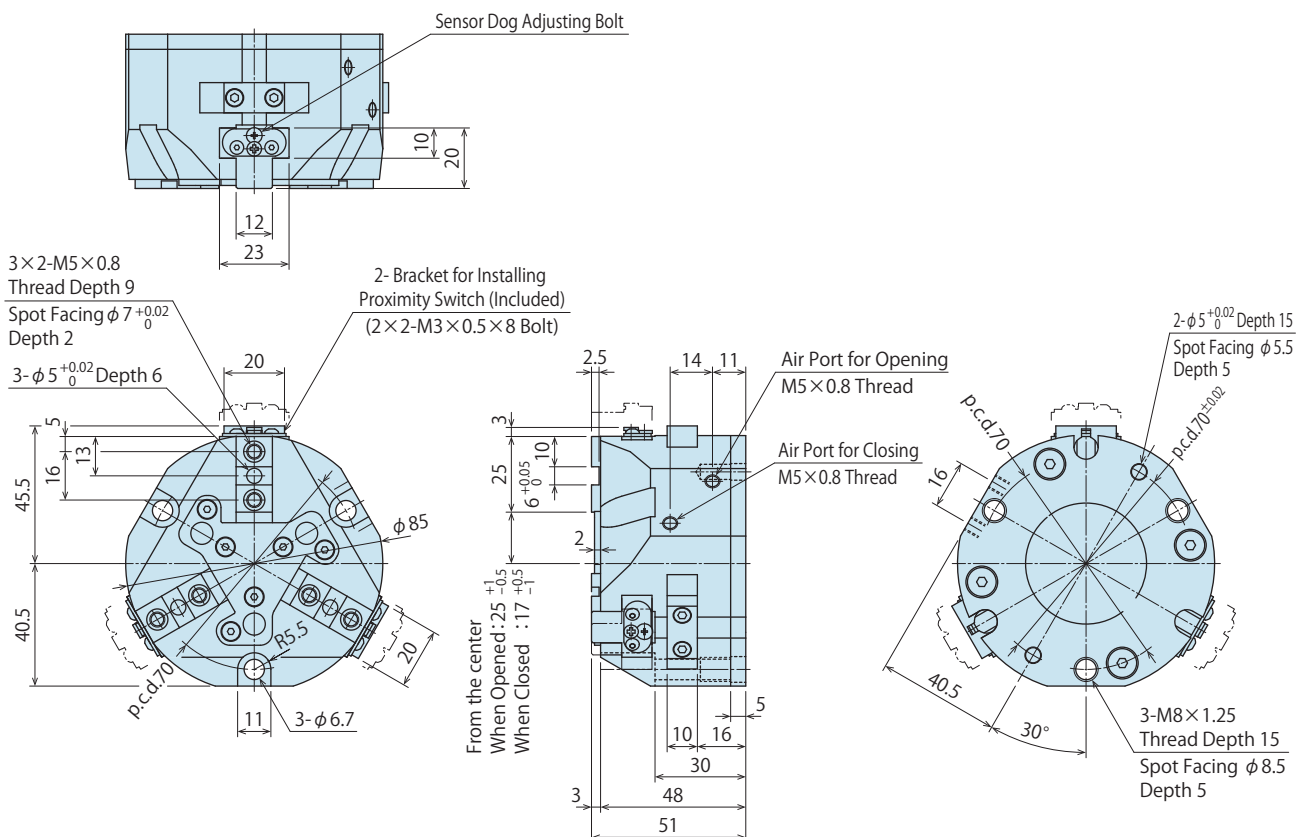
## External Dimensions : WPP0500

※ The drawing shows the closed state of WPP0500.



## External Dimensions : WPP0600

※ The drawing shows the closed state of WPP0600.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch

Proximity Switch

JEP

High-Power Pneumatic

Hole Clamp

SWE

High-Power Pneumatic

Swing Clamp

WHE

High-Power Pneumatic

Link Clamp

WCE

Pneumatic

Hole Clamp

SWA

Pneumatic

Swing Clamp

WHA

Double Piston

Pneumatic

Swing Clamp

WHD

Pneumatic

Link Clamp

WCA

Air Flow

Control Valve

BZW

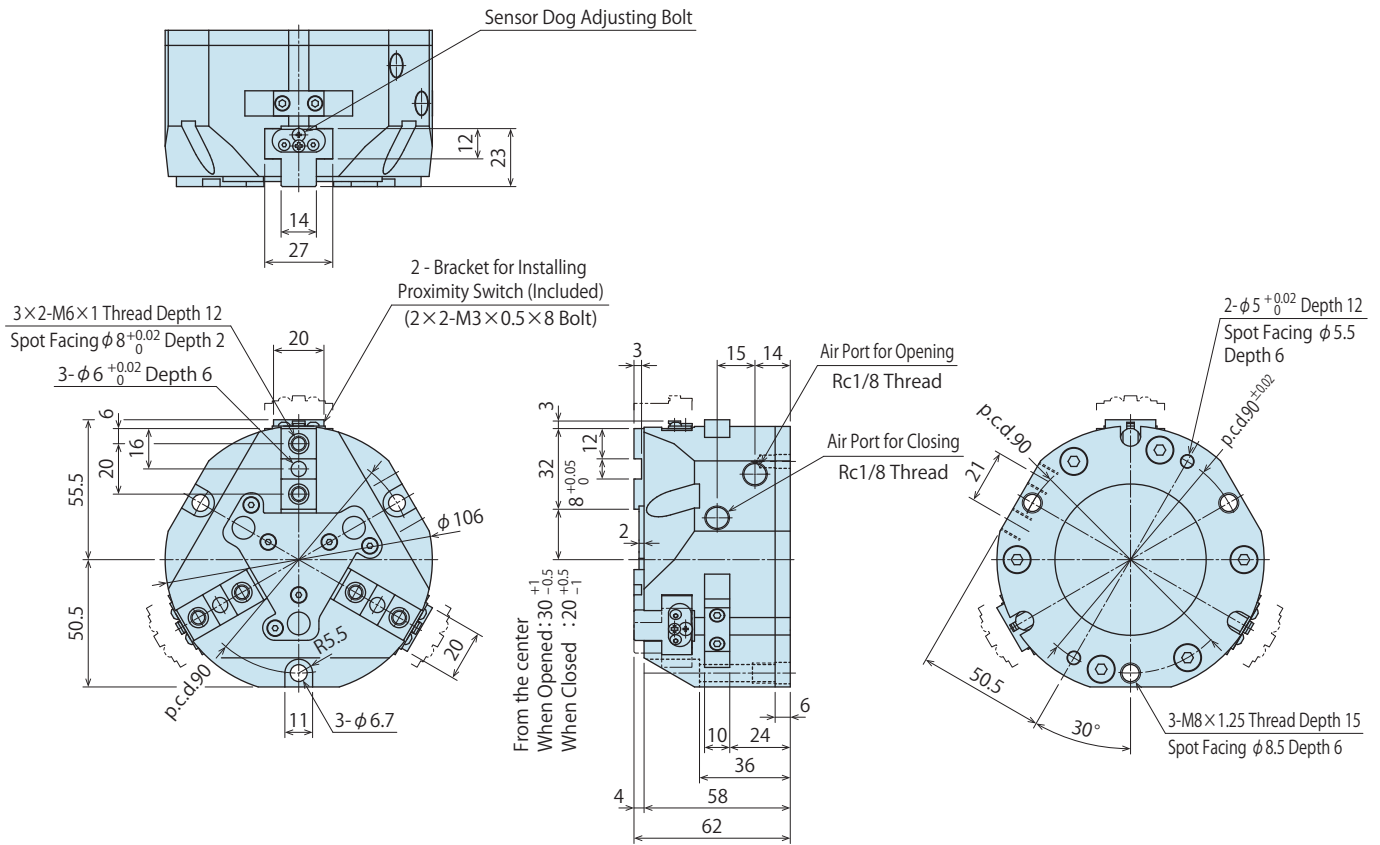
Manifold

Block

WHZ-MD

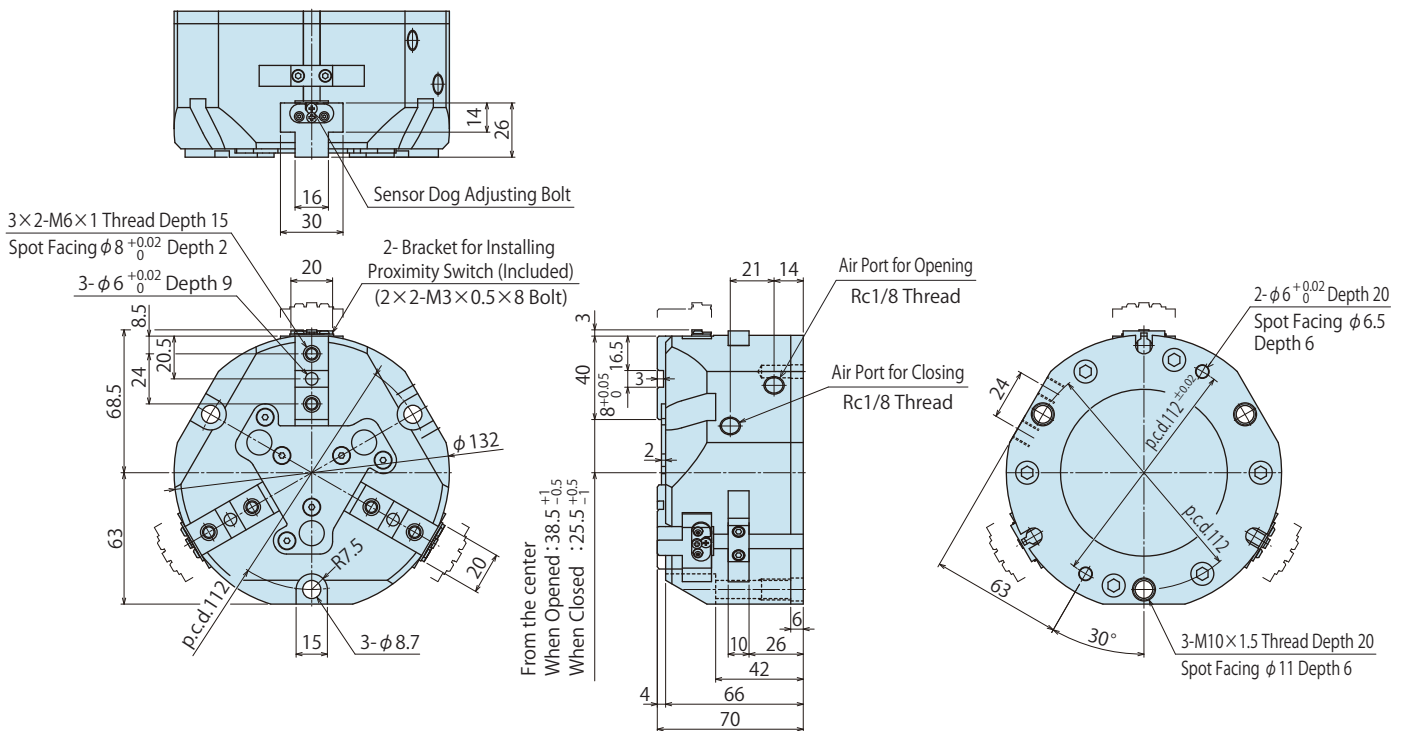
External Dimensions : WPP0800

※ The drawing shows the closed state of WPP0800.



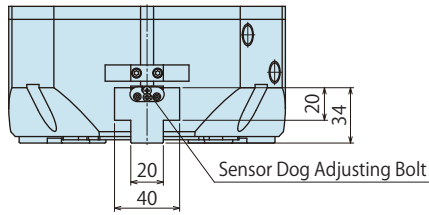
External Dimensions : WPP1000

※ The drawing shows the closed state of WPP1000.



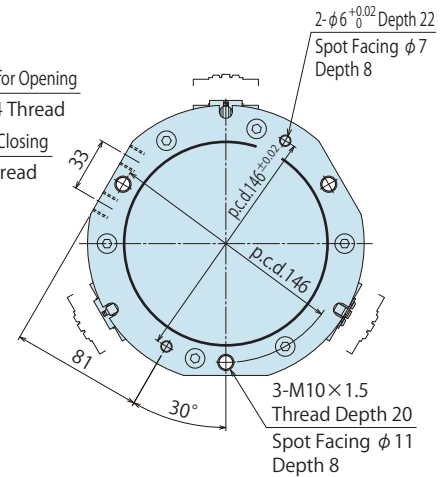
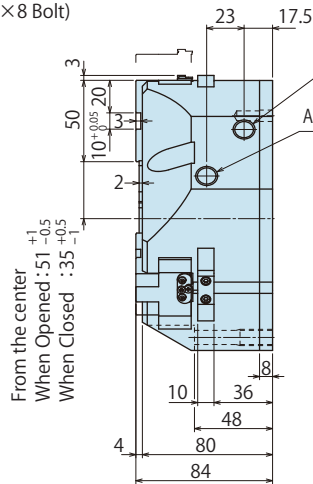
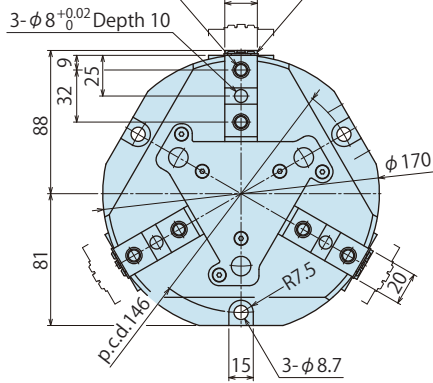
## External Dimensions : WPP1250

※ The drawing shows the closed state of WPP1250.



3×2-M8×1.25  
Thread Depth 15  
Spot Facing  $\phi 10^{+0.02}_0$   
Depth 2

2 - Bracket for Installing  
Proximity Switch (Included)  
(2×2-M3×0.5×8 Bolt)



Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

**Pneumatic  
Robotic Hands**

WPW-C

WPS-C

WPA

WPH

**WPP**

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

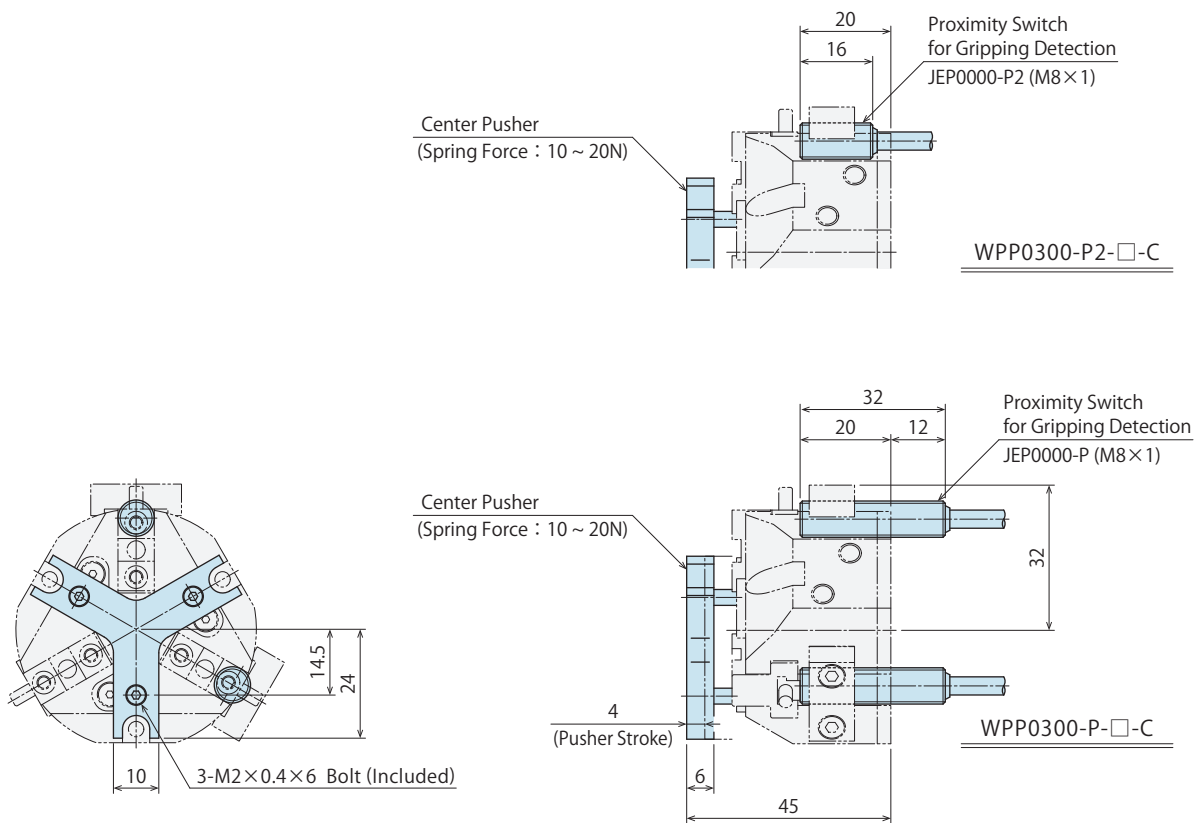
BZW

Manifold  
Block

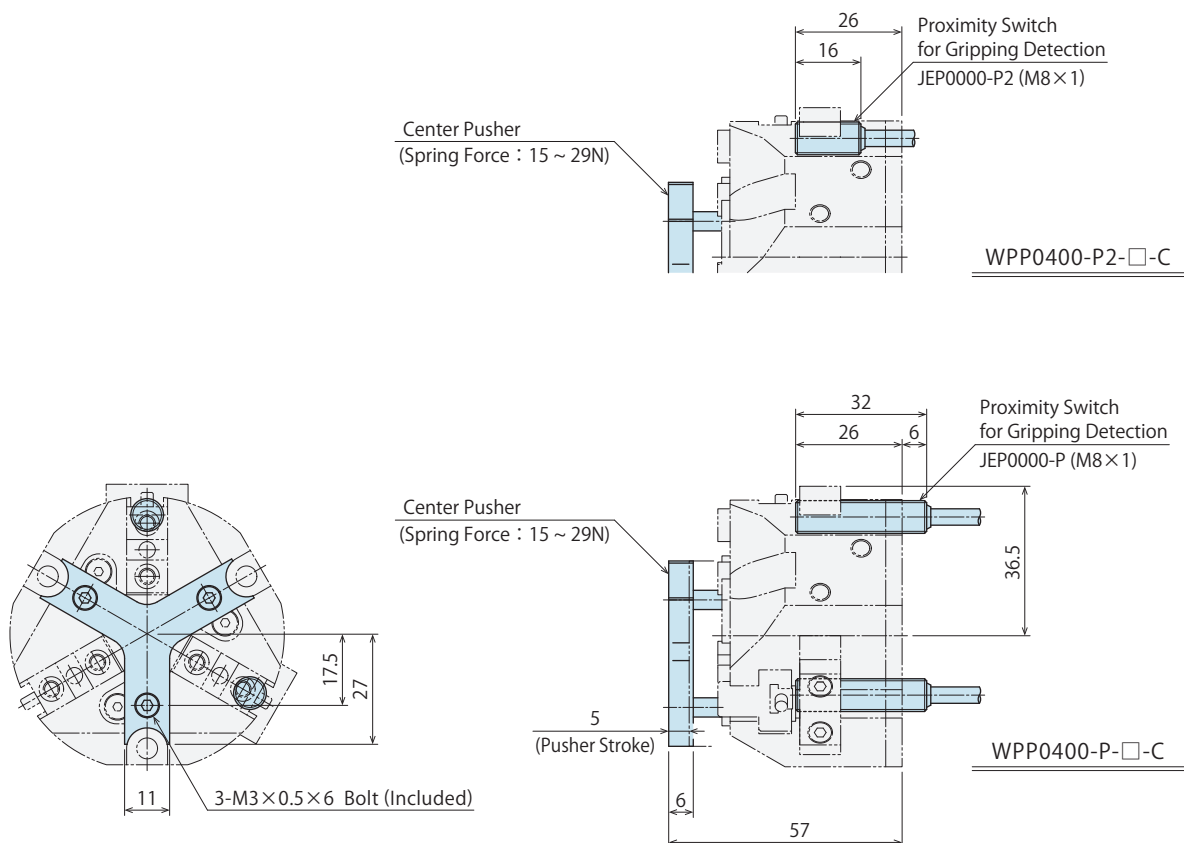
WHZ-MD

External Dimensions : Proximity Switch for Gripping Detection, Center Pusher

WPP0300-P / P2-□-C

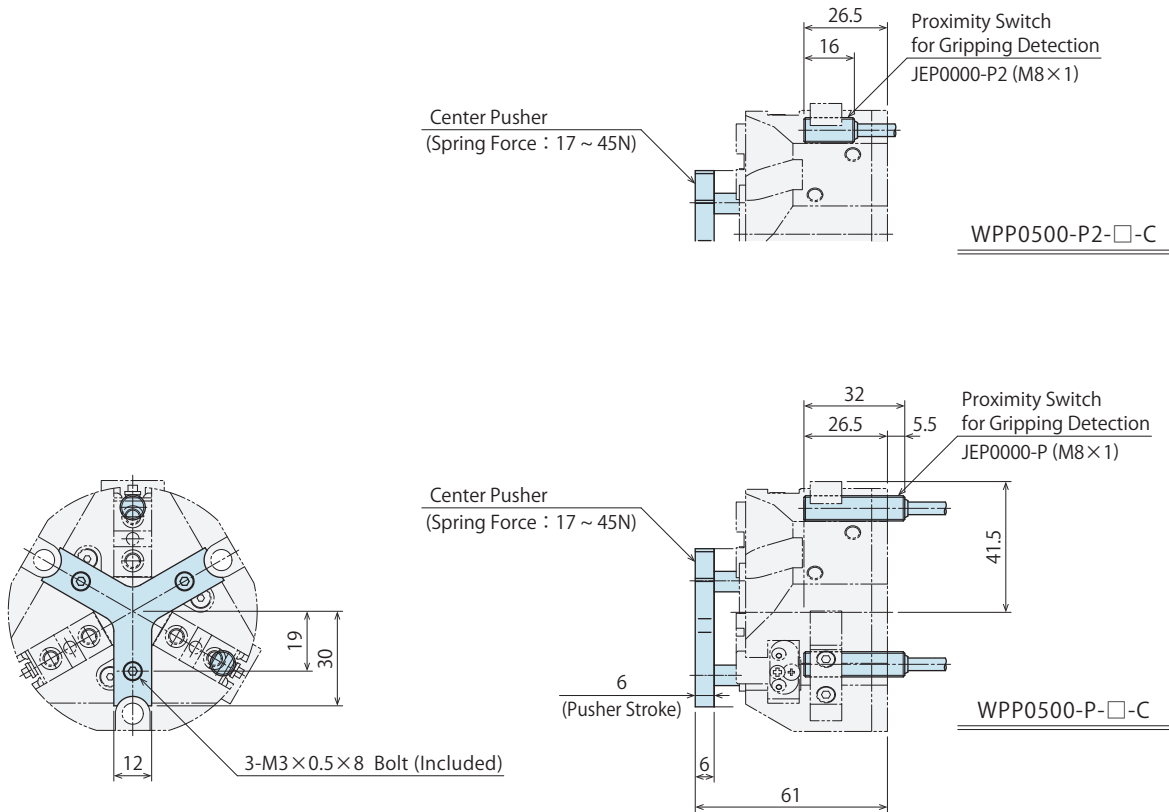


WPP0400-P / P2-□-C

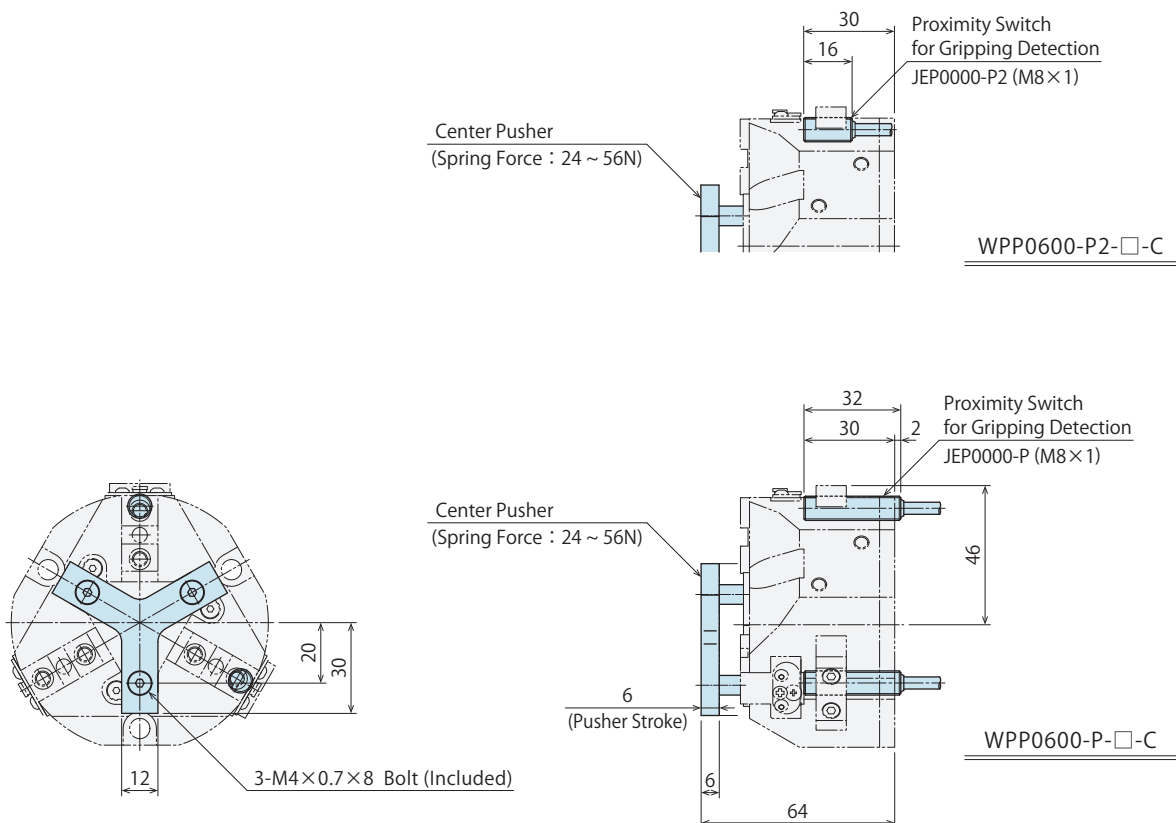


## External Dimensions : Proximity Switch for Gripping Detection, Center Pusher

### WPP0500-P / P2-□-C



### WPP0600-P / P2-□-C

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

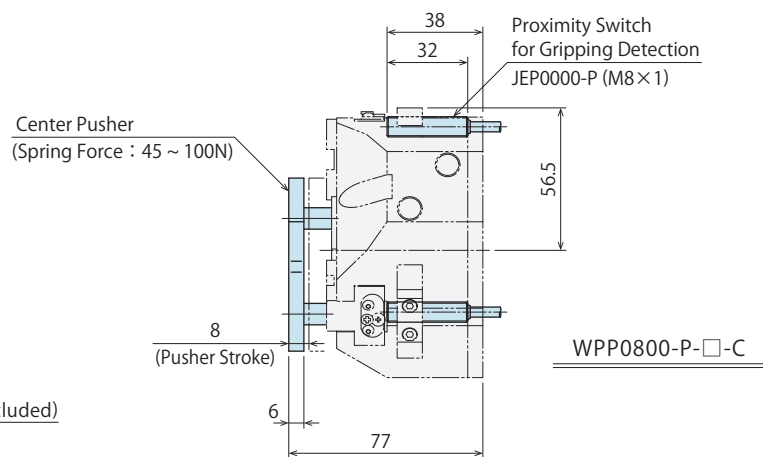
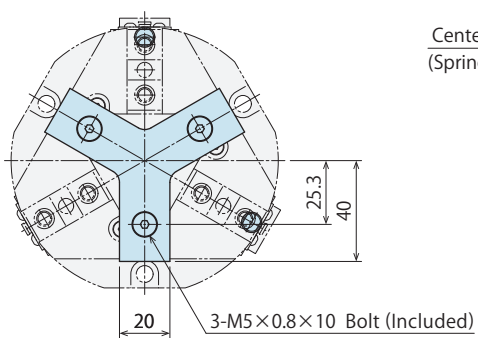
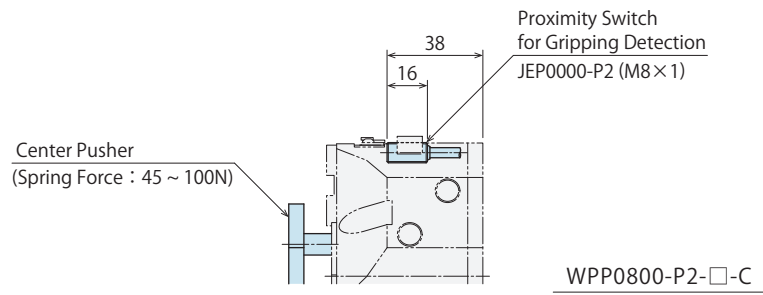
BZW

Manifold  
Block

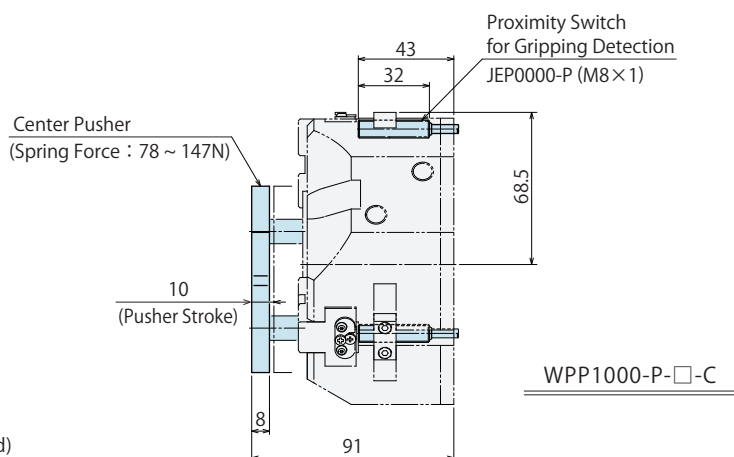
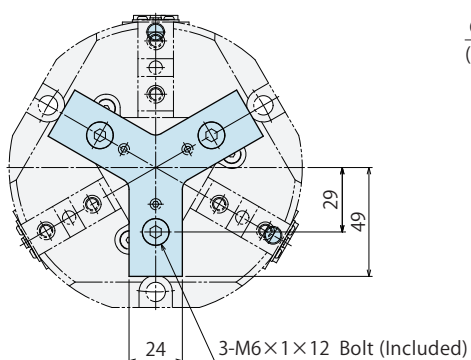
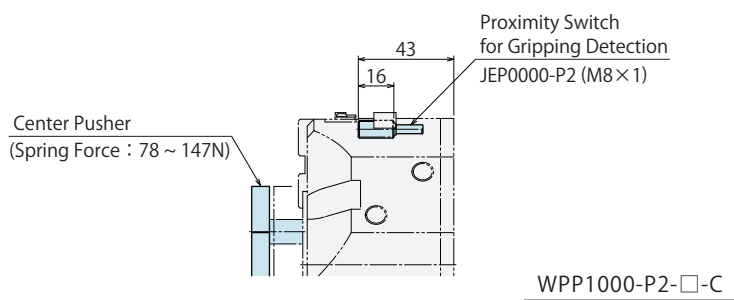
WHZ-MD

External Dimensions : Proximity Switch for Gripping Detection, Center Pusher

WPP0800-P / P2-□-C

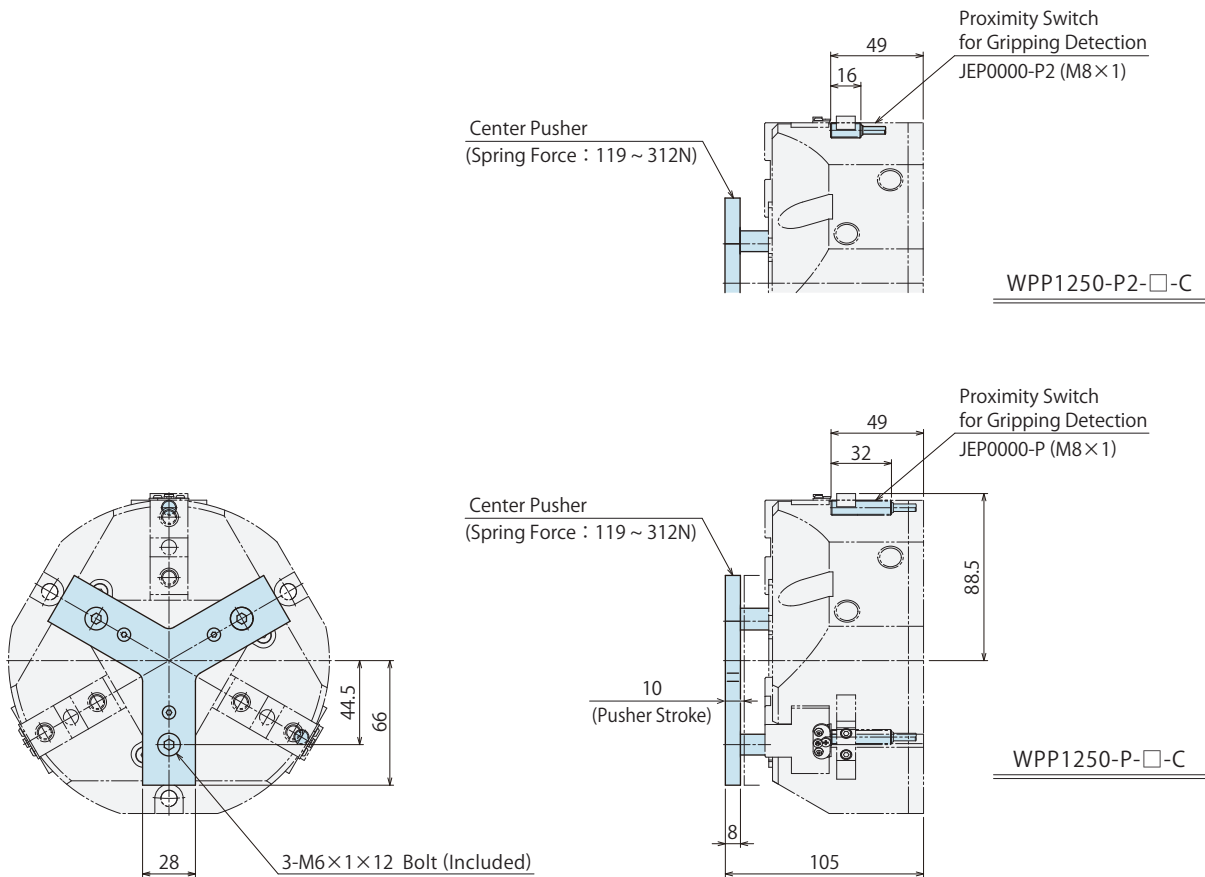


WPP1000-P / P2-□-C



## External Dimensions : Proximity Switch for Gripping Detection, Center Pusher

### WPP1250-P / P2-□-C

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

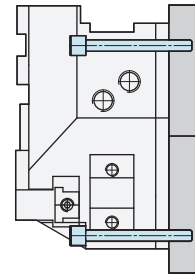
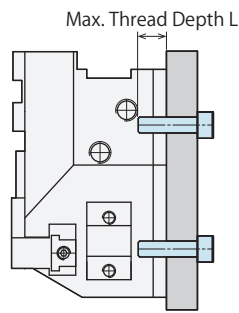
Manifold  
Block

WHZ-MD



● Installation Method

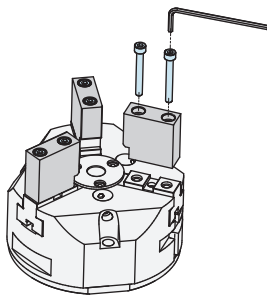
● Tightening Torque for Cylinder Body



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
WPP0300	M4×0.7	2.5	13
WPP0400	M6×1	7.9	12
WPP0500	M8×1.25	15.4	15
WPP0600	M8×1.25	15.4	15
WPP0800	M8×1.25	15.4	15
WPP1000	M10×1.5	23.5	20
WPP1250	M10×1.5	23.5	20

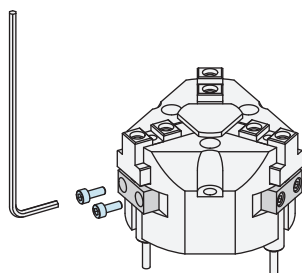
Model No.	Thread Size	Tightening Torque (N · m)
WPP0300	M3×0.5	1.1
WPP0400	M5×0.8	5.0
WPP0500	M6×1	7.9
WPP0600	M6×1	7.9
WPP0800	M6×1	7.9
WPP1000	M8×1.25	15.4
WPP1250	M8×1.25	15.4

● Tightening Torque for Gripper



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
WPP0300	M3×0.5	1.1	7
WPP0400	M4×0.7	2.5	8
WPP0500	M5×0.8	5.0	9
WPP0600	M5×0.8	5.0	9
WPP0800	M6×1	7.9	12
WPP1000	M6×1	7.9	15
WPP1250	M8×1.25	15.4	15

● Tightening Torque for Bracket for Installing Proximity Switch



Model No.	Thread Size	Tightening Torque (N · m)
WPP□□□0	M3×0.5	1.3

Excessive tightening leads to breakage of proximity switch.

## Installation Method

### Sensor Dog Adjustment Method

Proximity switch is used for opening/closing detection of robotic hand.

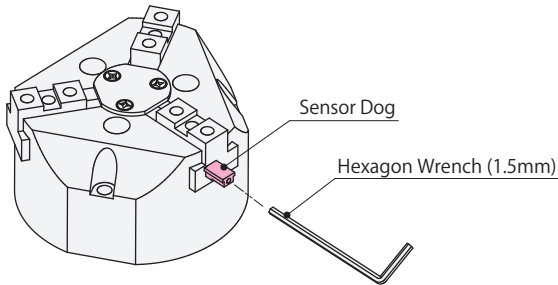
You can change the detection timing of proximity switch by adjusting the position of sensor dog.

There are two adjustment methods for sensor dog depending on shipment time.

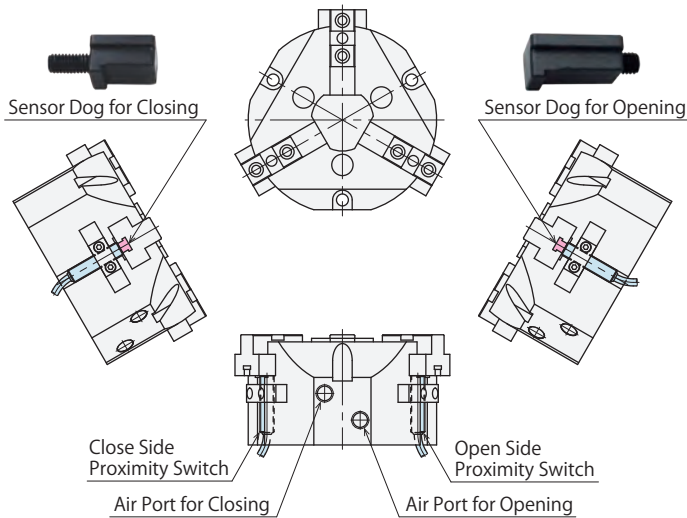
Please check on the product and refer to the applicable adjustment method.

#### Adjustment Method ①

Adjust the sensor dog to the detection position and tighten it with hexagon wrench (1.5mm).



Shapes of sensor dog for opening and closing are different. Please refer to the drawing below and install the sensor dog to the appropriate position. Otherwise, the sensor dog may extremely stick out and/or the proximity switch may not react.

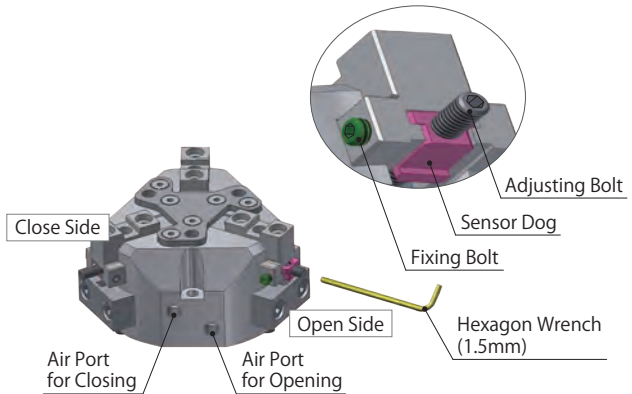


#### Adjustment Method ②

- For WPP0300/0400

Untighten the fixing bolt with hexagon wrench (1.5mm), adjust the dog position with adjusting bolt, and tighten the fixing bolt again.

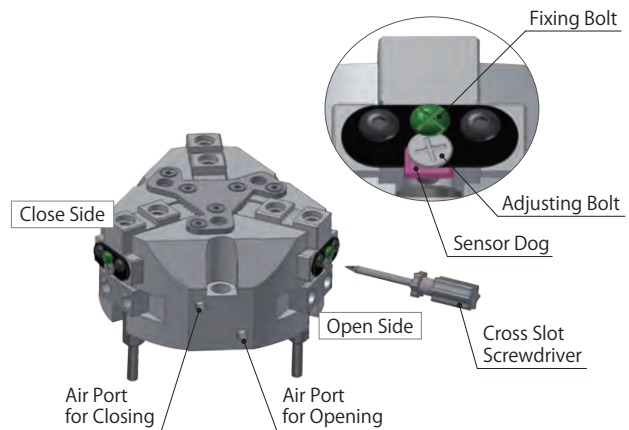
Make sure to tighten the fixing bolt before operating the robotic hand.



- For WPP0500/0600/0800/1000/1250

Untighten the fixing bolt with cross slot screwdriver, adjust the dog position with adjusting bolt, and tighten the fixing bolt again.

Make sure to tighten the fixing bolt before operating the robotic hand.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

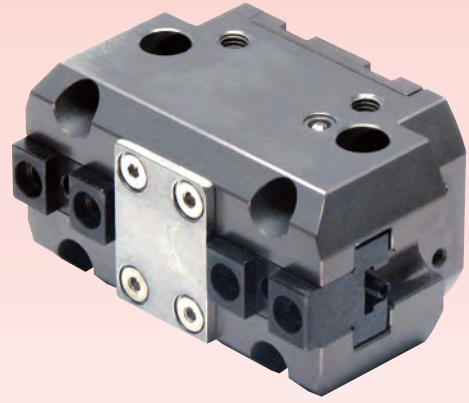
Manifold  
Block

WHZ-MD

Pneumatic Robotic Hand

# Two-Jaw Chuck

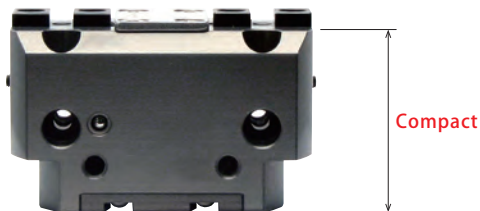
Model WPQ



High Gripping Force with Wider Stroke  
Compact, Light Weight, Powerful, Solid and Durable!!

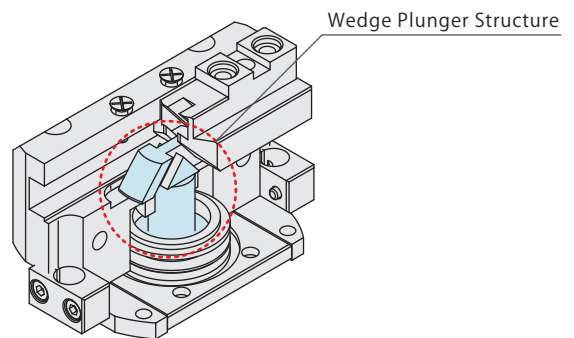
- **Compact and Light Weight**

Reduced height for smaller footprint.



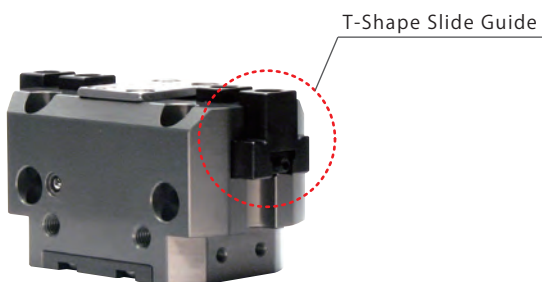
- **Strong and Stable Gripping Force**

High gripping force is generated by wedge plunger structure. Limiting backlash at the end of stroke enables stable and powerful gripping.



- **Wider Stroke**

Allowable stroke is increased by T-shape slide guide.



- **High Rigidity**

The metal guides provide for higher and excellent rigidity.

- **Long Operational Life**

The body is designed and manufactured to be resistant to contaminants, cutting oil and coolant for longer durability.

- **Proximity Switch Installation for Gripping Detection**

The Two-Jaw Chuck design allows for easy proximity switch installation.

## Model No. Indication

WPQ **025** **0** - **P2** **S**

1 2 3 4

※ Only **1** **2** are marked on the product. Please indicate the specifications of **3** **4** if you need switches.

※ A sensor dog is provided to the product including **3** **Blank** : Without Proximity Switch.

### 1 Cylinder Inner Diameter

<b>020</b>	: φ 20 mm
<b>025</b>	: φ 25 mm
<b>030</b>	: φ 30 mm
<b>040</b>	: φ 40 mm
<b>050</b>	: φ 50 mm
<b>060</b>	: φ 60 mm
<b>080</b>	: φ 80 mm
<b>100</b>	: φ 100 mm

### 3 Proximity Switch Type

**Blank** : Without Proximity Switch

**P** : 3-Wire Proximity Switch for Gripping Detection (Length:32mm)

**P2** : 3-Wire Proximity Switch for Gripping Detection (Length:16mm)  
(Only when selecting **1** **020/025**.)

#### Application Table

Model No.	WPQ0200	WPQ0250	WPQ0300	WPQ0400	WPQ0500	WPQ0600	WPQ0800	WPQ1000
<b>P</b>	●	●	●	●	●	●	●	●
<b>P2</b>	●	●						

※ Please refer to P.405 ~ P.414 for details on proximity switches.

### 2 Design No.

**0** : Revision Number

### 4 Number of Proximity Switches<sup>※</sup>

**Blank** : 2

**S** : 1

※ Only when selecting the proximity switch option **3**.

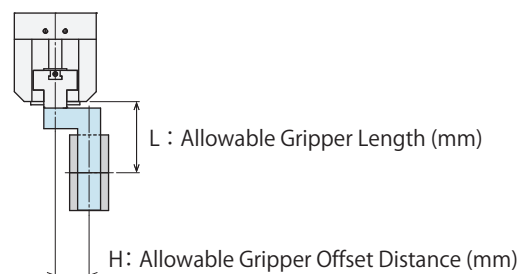
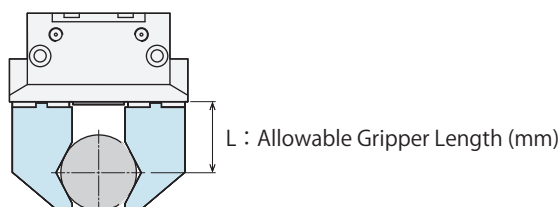
## Specifications

Model No.		WPQ0200	WPQ0250	WPQ0300	WPQ0400	WPQ0500	WPQ0600	WPQ0800	WPQ1000	
Cylinder Inner Diameter	mm	20	25	30	40	50	60	80	100	
Gripping Force <sup>※1</sup> (Air Pressure : at 0.5MPa)	Closing Side	N	84.3	121	179	322	497	778	1049	1589
	Opening Side	N	93.2	147	201	373	592	876	1118	1746
Full Stroke	mm	8	12	16	20	26	32	50	60	
Repeatability <sup>※2</sup>	mm	±0.01							±0.03	
Stroke Error	mm	Opened State : -0.5 ~ +1 / Closed State : -1 ~ +0.5								
Allowable Gripper Length L (Air Pressure : at 0.5MPa) <sup>※3</sup>	mm	30	35	40	50	60	80	110	140	
Allowable Gripper Offset Distance H (Air Pressure : at 0.5MPa) <sup>※3</sup>	mm	30	35	40	50	60	80	110	140	
Maximum Cycle / min.		100		60			30			
Cylinder Capacity (Clamping w/o Workpiece)	Closing Side	cm <sup>3</sup>	1.4	3.1	5.9	13.4	26.9	50.3	117.8	214.4
	Opening Side	cm <sup>3</sup>	1.6	3.7	7.1	16.0	32.0	56.5	125.7	235.6
Maximum Operating Pressure	MPa	0.7								
Minimum Operating Pressure	MPa	0.3								
Withstanding Pressure	MPa	1.05								
Operating Temperature Range	°C	5 ~ 60								
Usable Fluid		Dry Air								
Weight	kg	0.13	0.27	0.43	0.75	1.3	2.4	5.0	9.2	

Notes : ※1. Gripping force indicates the calculated value based on the gripper length (L).

※2. Repeatability under the same condition (no load).

※3. L : Allowable Gripper Length (mm), H : Allowable Gripper Offset Distance (mm). (Air Pressure : at 0.5MPa)



Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

Pneumatic Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

**WPQ**

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

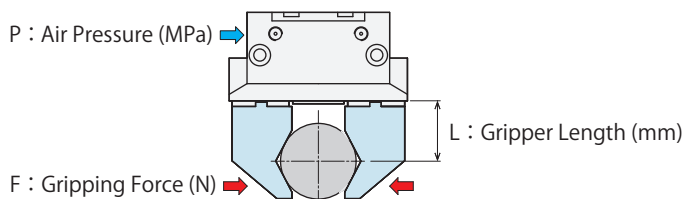
Air Flow Control Valve

BZW

Manifold Block

WHZ-MD

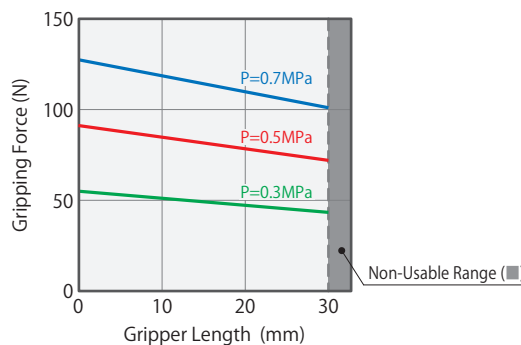
● Gripping Force Performance Curve : Closing Side



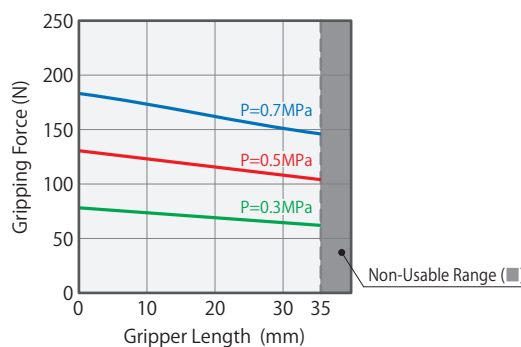
Notes:

1. This chart and graph show the relationship among:  
F: Gripping Force (N), P: Air Pressure (MPa) and L: Gripper Length (mm).
2. Operation in the non-usable range may cause deformation, galling or air leakage.

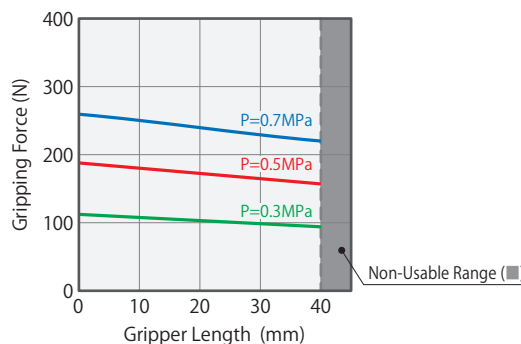
WPQ0200 (N)					
Air Pressure (MPa)	Gripper Length L (mm)				
	5	10	15	20	30
0.7	123	120	114	108	101
0.5	88	86	81	77	72
0.3	53	51	49	46	43



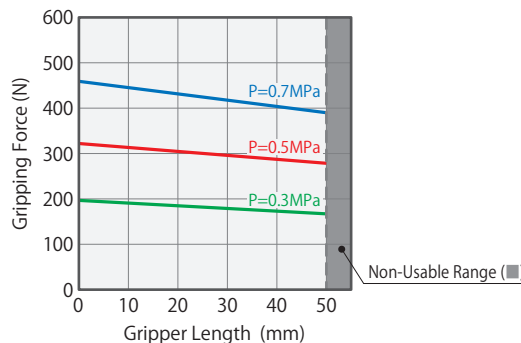
WPQ0250 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	15	20	30	35
0.7	178	174	166	158	150	146
0.5	127	124	119	113	107	104
0.3	76	75	71	68	64	62



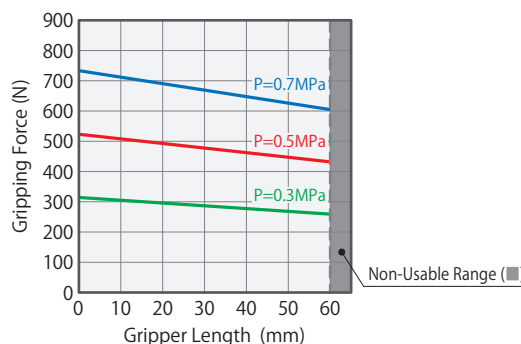
WPQ0300 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	15	20	30	40
0.7	257	253	245	236	228	220
0.5	184	181	175	169	163	157
0.3	110	109	105	101	98	94



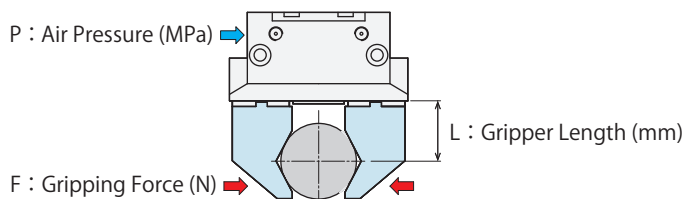
WPQ0400 (N)						
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	20	30	40	50
0.7	459	453	428	415	402	390
0.5	328	323	305	296	287	278
0.3	197	194	183	178	172	167



WPQ0500 (N)						
Air Pressure (MPa)	レバー長さ L (mm)					
	10	20	30	40	50	60
0.7	712	681	666	650	635	605
0.5	508	486	476	465	454	432
0.3	305	292	285	279	272	259



## ● Gripping Force Performance Curve : Closing Side



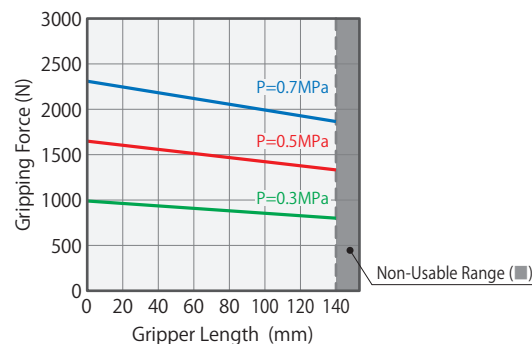
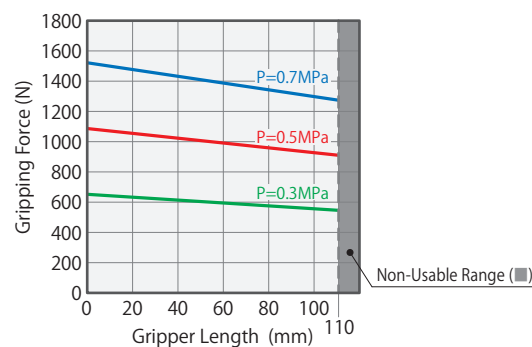
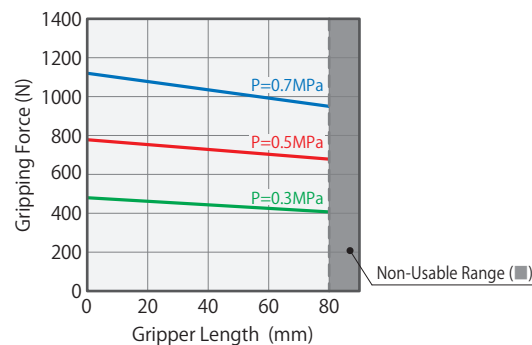
Notes:

1. This chart and graph show the relationship among:  
F: Gripping Force (N), P: Air Pressure (MPa) and  
L: Gripper Length (mm).
2. Operation in the non-usable range may cause  
deformation, galling or air leakage.

<b>WPQ0600</b>		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	10	20	30	40	60	80	
0.7	1111	1075	1057	1039	985	950	
0.5	793	768	755	742	704	678	
0.3	476	461	453	445	422	407	

<b>WPQ0800</b>		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	20	40	60	80	100	110	
0.7	1477	1436	1376	1335	1295	1274	
0.5	1055	1026	983	954	925	910	
0.3	633	616	590	572	555	546	

<b>WPQ1000</b>		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	40	60	80	100	120	140	
0.7	2186	2099	2041	1982	1924	1865	
0.5	1562	1499	1458	1416	1374	1332	
0.3	937	900	875	850	825	800	

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

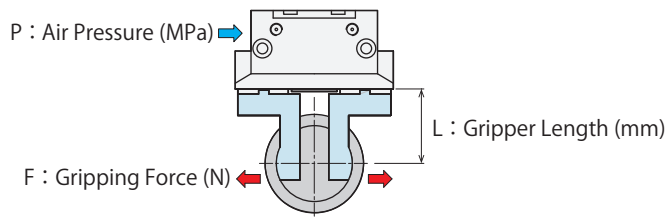
Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

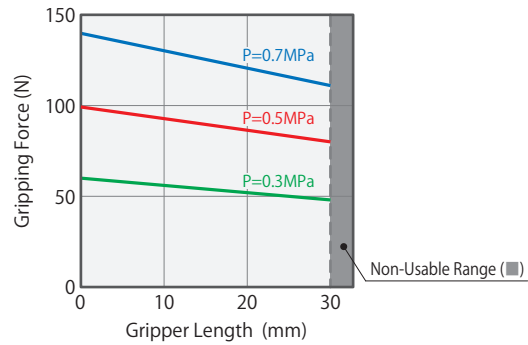
● Gripping Force Performance Curve : Opening Side



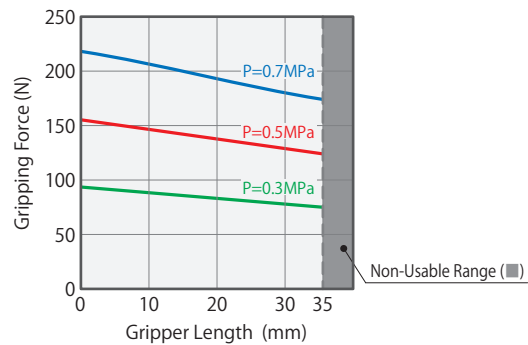
Notes:

1. This chart and graph show the relationship among :  
F : Gripping Force (N), P : Air Pressure (MPa) and  
L : Gripper Length (mm).
2. Operation in the non-usable range may cause  
deformation, galling or air leakage.

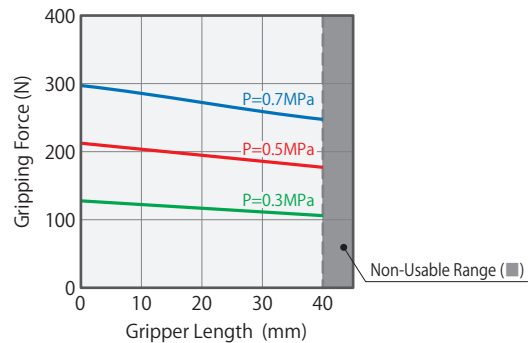
WPQ0200		(N)				
Air Pressure (MPa)	Gripper Length L (mm)					
	5	10	15	20	30	
0.7	135	132	125	118	111	
0.5	96	94	89	84	80	
0.3	58	56	54	51	48	



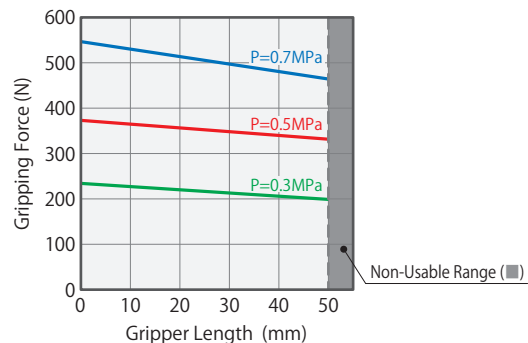
WPQ0250		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	5	10	15	20	25	35	
0.7	212	207	198	188	179	174	
0.5	151	148	141	134	128	124	
0.3	91	89	85	81	77	75	



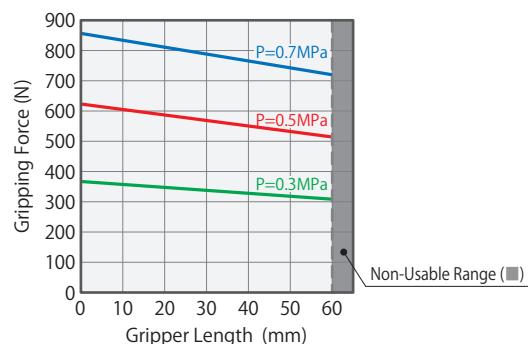
WPQ0300		(N)						
Air Pressure (MPa)	Gripper Length L (mm)							
	5	10	15	20	30	40		
0.7	291	286	277	267	258	248		
0.5	208	205	198	191	184	177		
0.3	125	123	119	115	110	106		



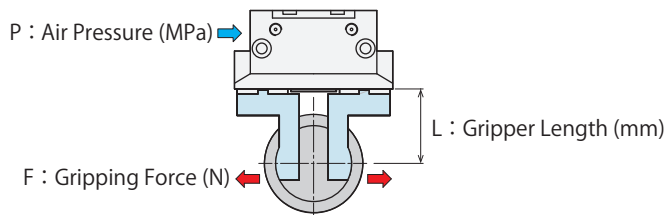
WPQ0400		(N)						
Air Pressure (MPa)	Gripper Length L (mm)							
	5	10	20	30	40	50		
0.7	546	539	509	494	479	464		
0.5	390	385	364	353	342	331		
0.3	234	231	218	212	205	199		



WPQ0500		(N)						
供給エア圧 (MPa)	Gripper Length L (mm)							
	10	20	30	40	50	60		
0.7	847	811	793	774	756	720		
0.5	605	579	566	553	540	514		
0.3	363	347	340	332	324	308		



## ● Gripping Force Performance Curve : Opening Side



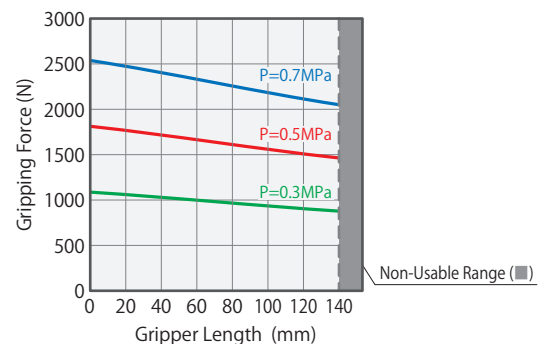
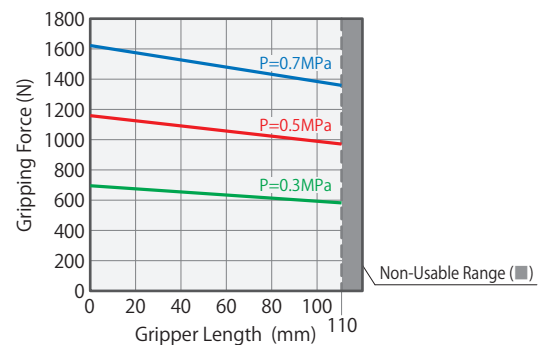
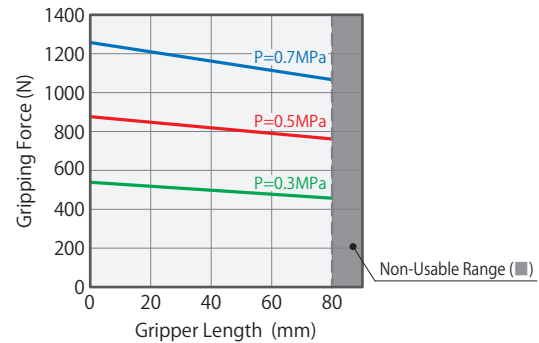
Notes:

1. This chart and graph show the relationship among :  
F : Gripping Force (N), P : Air Pressure (MPa) and  
L : Gripper Length (mm).
2. Operation in the non-usable range may cause  
deformation, galling or air leakage.

<b>WPQ0600</b>		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	10	20	30	40	60	80	
0.7	1247	1207	1187	1167	1106	1066	
0.5	891	862	848	833	790	761	
0.3	534	517	509	500	474	457	

<b>WPQ0800</b>		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	20	40	60	80	100	110	
0.7	1575	1532	1468	1424	1381	1359	
0.5	1125	1094	1048	1017	987	971	
0.3	675	657	629	610	592	582	

<b>WPQ1000</b>		(N)					
Air Pressure (MPa)	Gripper Length L (mm)						
	40	60	80	100	120	140	
0.7	2403	2306	2242	2178	2114	2050	
0.5	1716	1647	1602	1556	1510	1464	
0.3	1030	988	961	934	906	878	

Locating  
+  
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

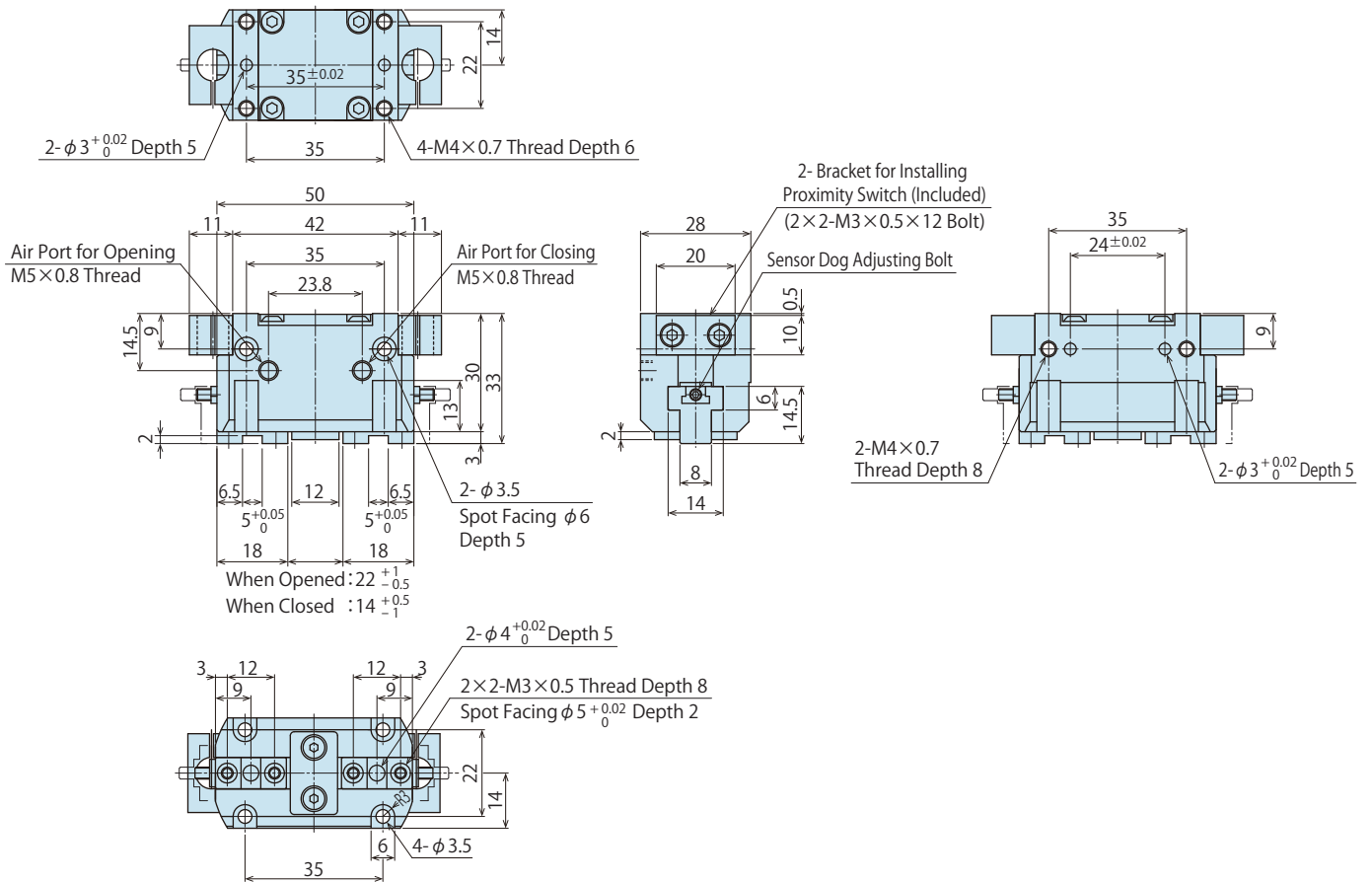
Manifold  
Block

WHZ-MD



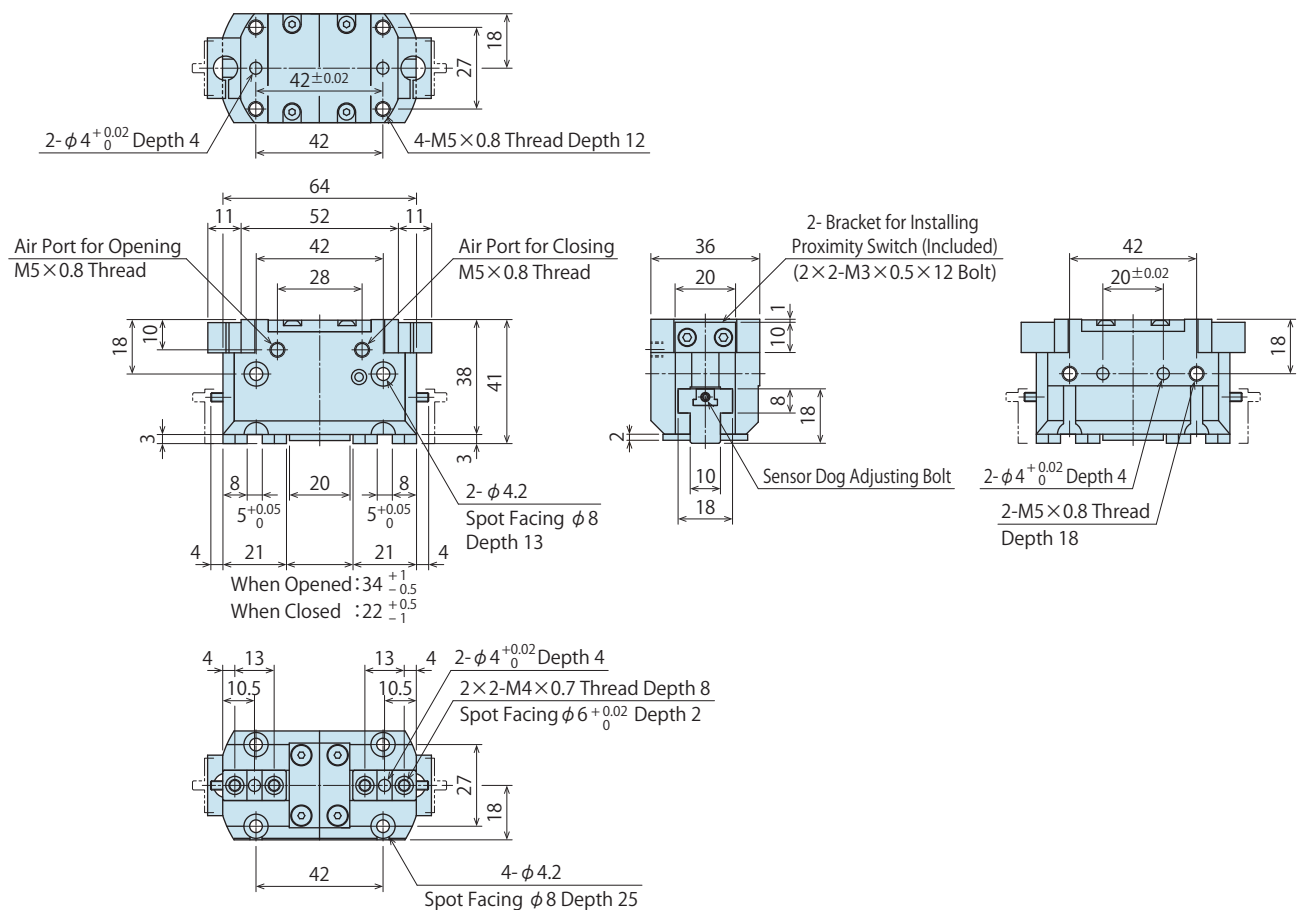
**External Dimensions : WPQ0200**

※ The drawing shows the closed state of WPQ0200.



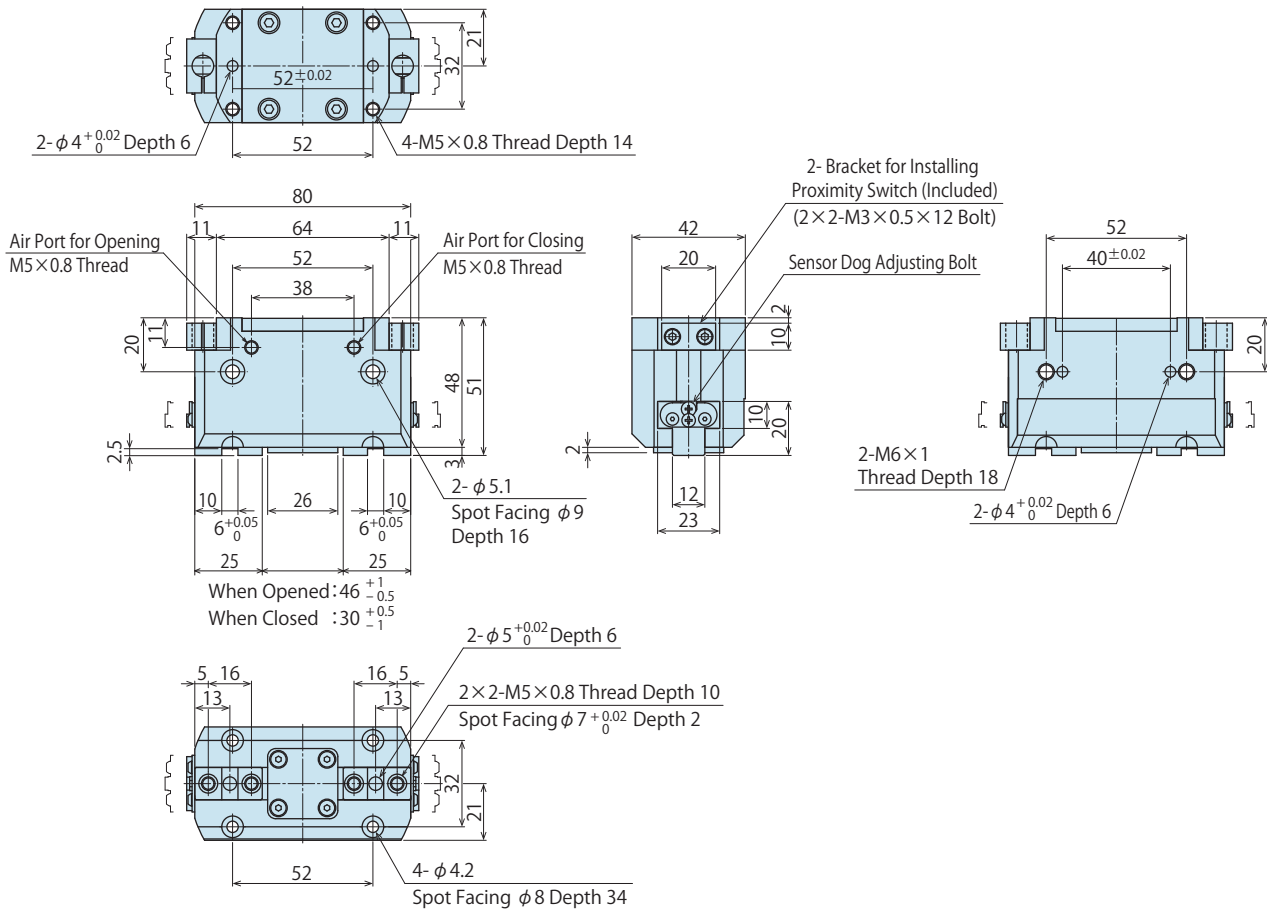
**External Dimensions : WPQ0250**

※ The drawing shows the closed state of WPQ0250.



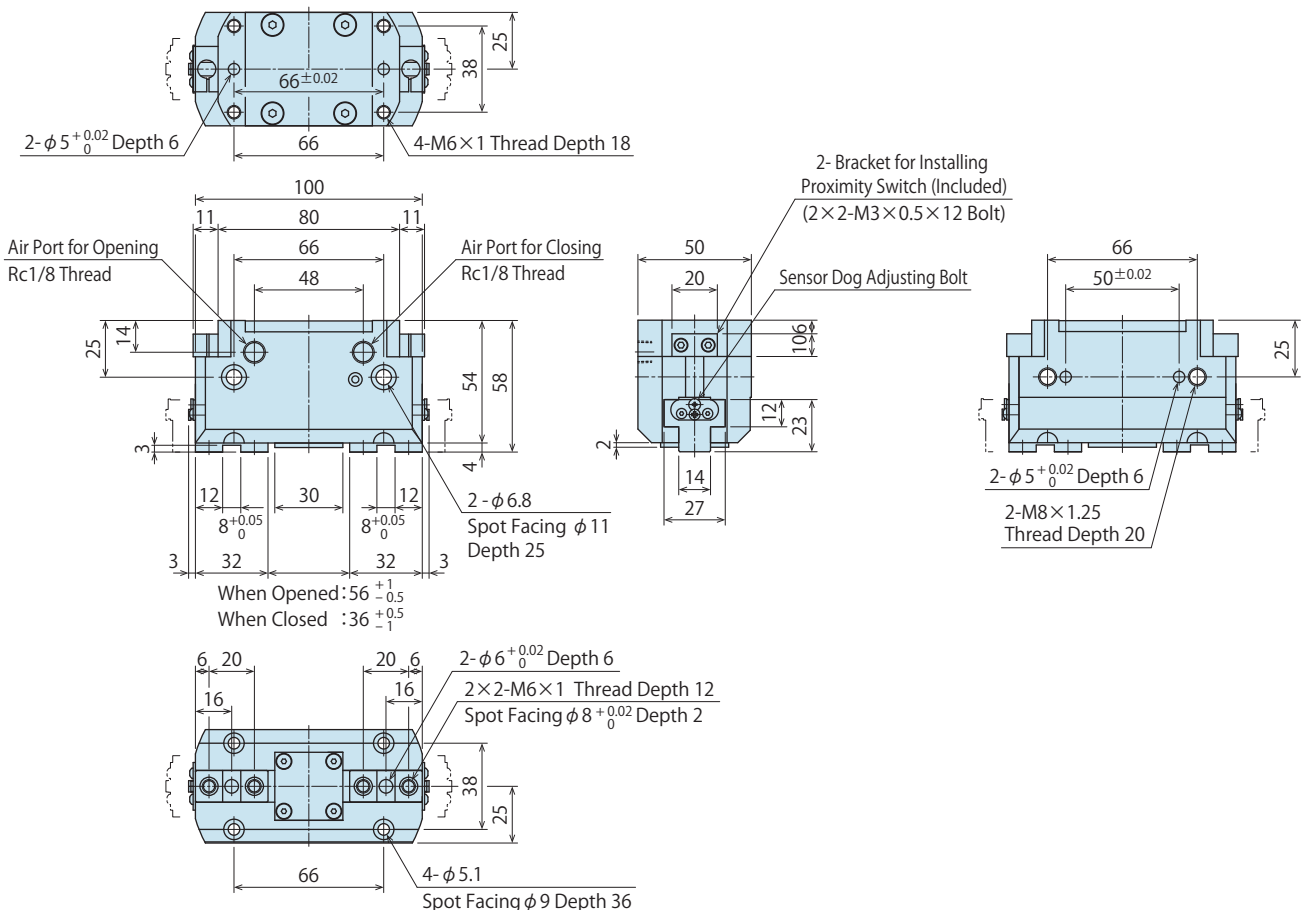
## External Dimensions : WPQ0300

※ The drawing shows the closed state of WPQ0300.



## External Dimensions : WPQ0400

※ The drawing shows the closed state of WPQ0400.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

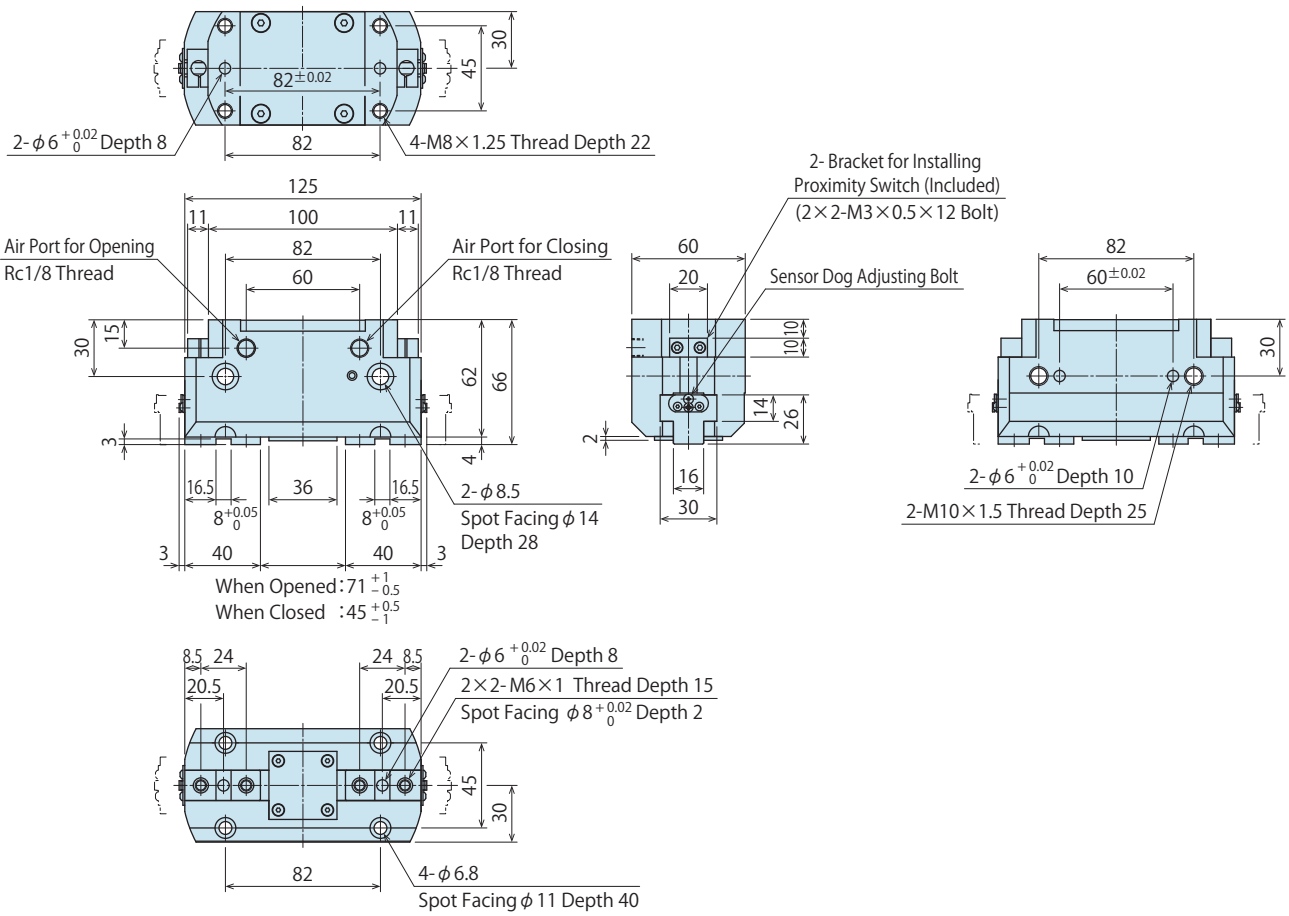
BZW

Manifold  
Block

WHZ-MD

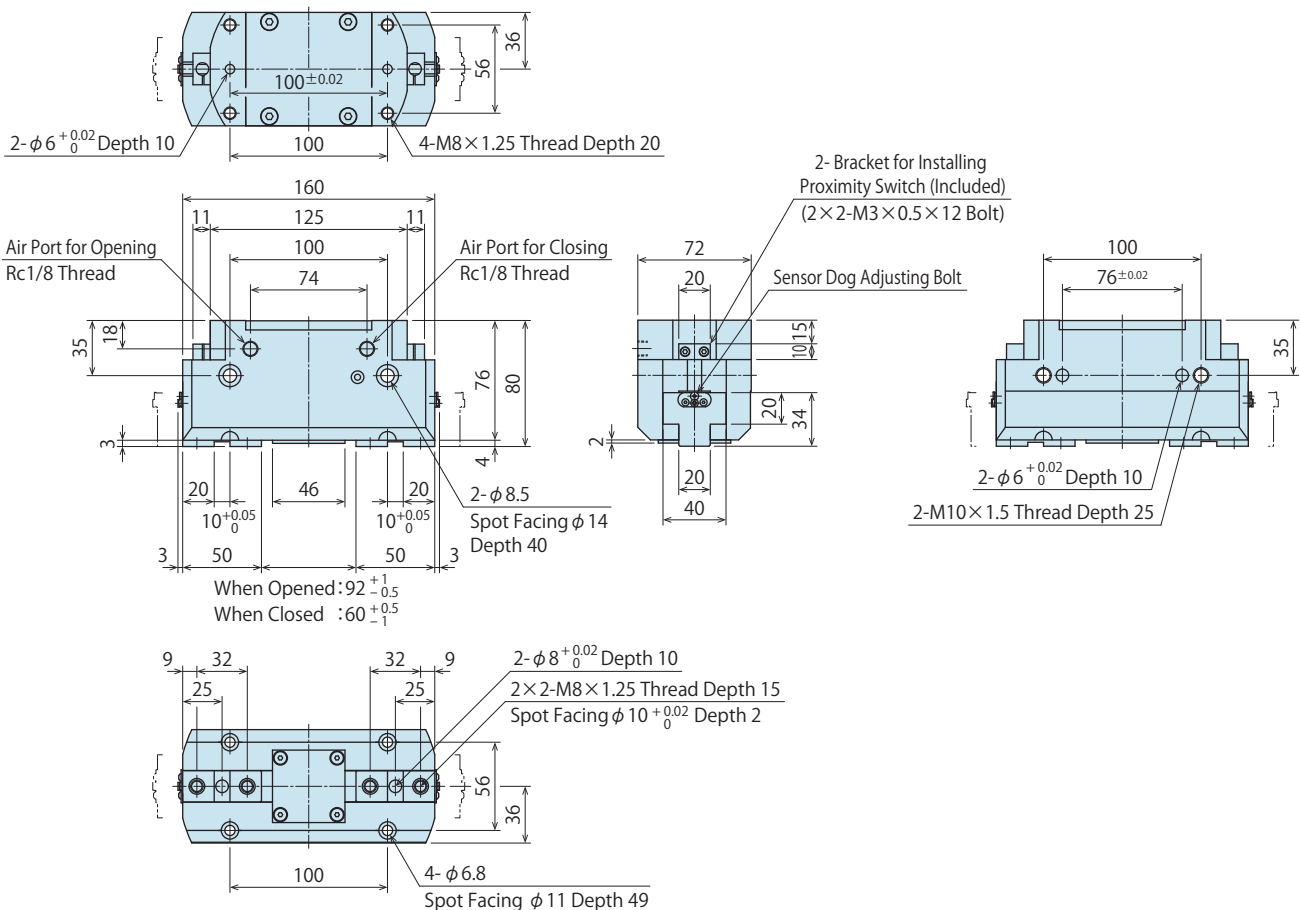
External Dimensions : WPQ0500

※ The drawing shows the closed state of WPQ0500.



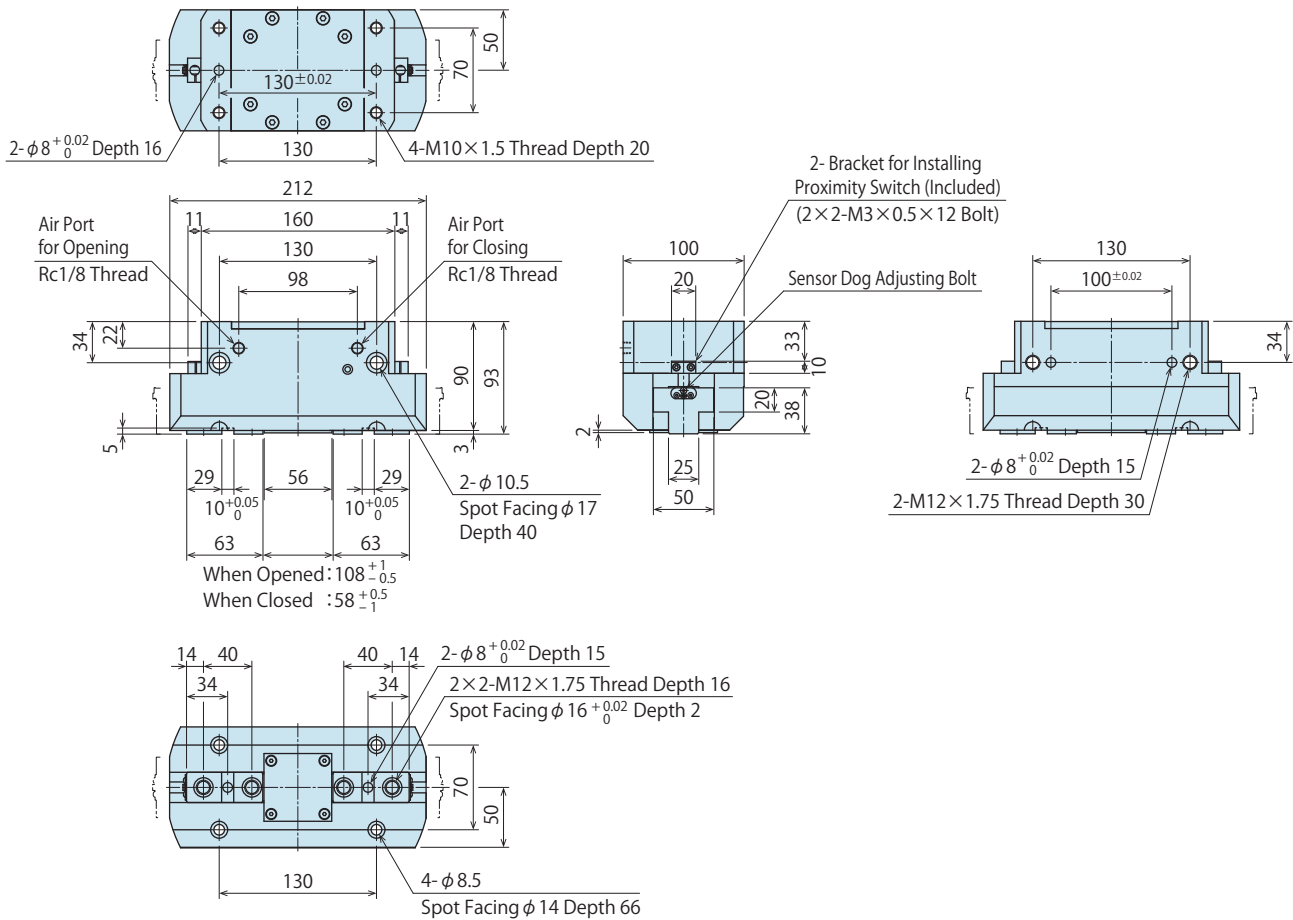
External Dimensions : WPQ0600

※ The drawing shows the closed state of WPQ0600.



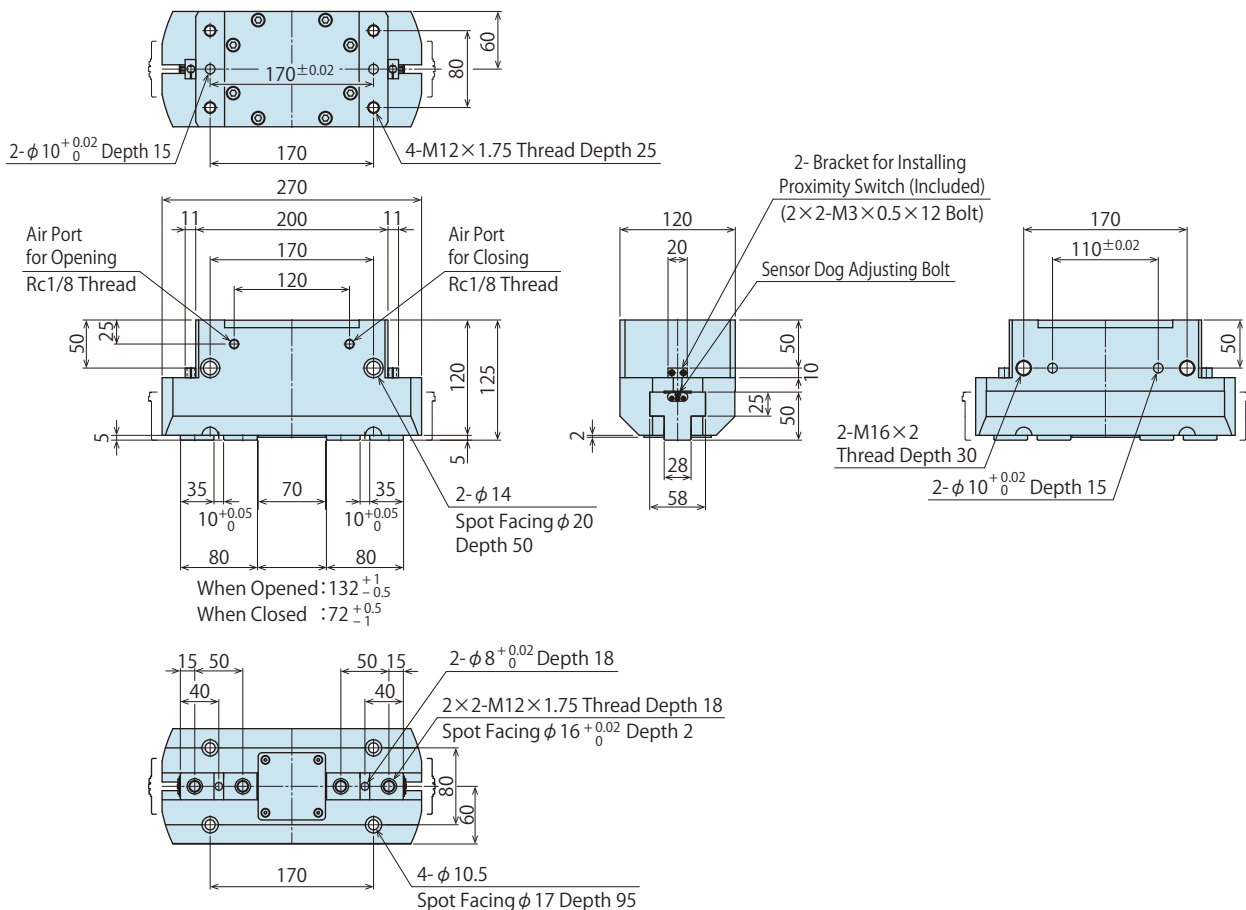
## External Dimensions : WPQ0800

※ The drawing shows the closed state of WPQ0800.



## External Dimensions : WPQ1000

※ The drawing shows the closed state of WPQ1000.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

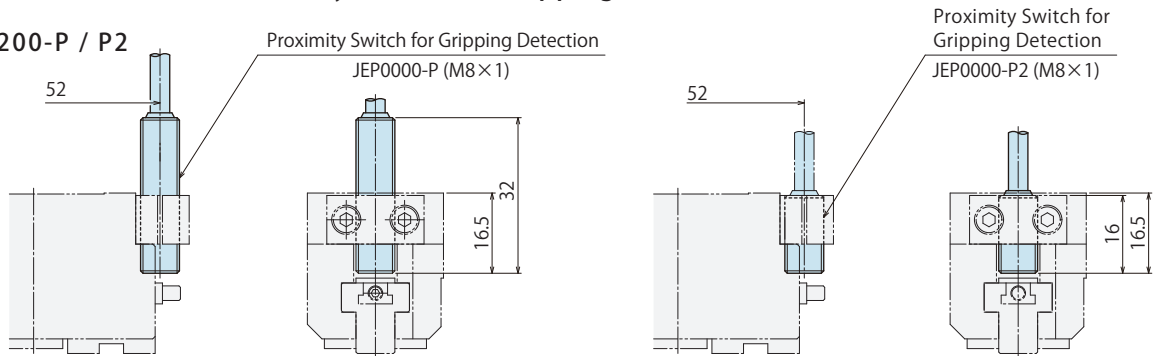
BZW

Manifold  
Block

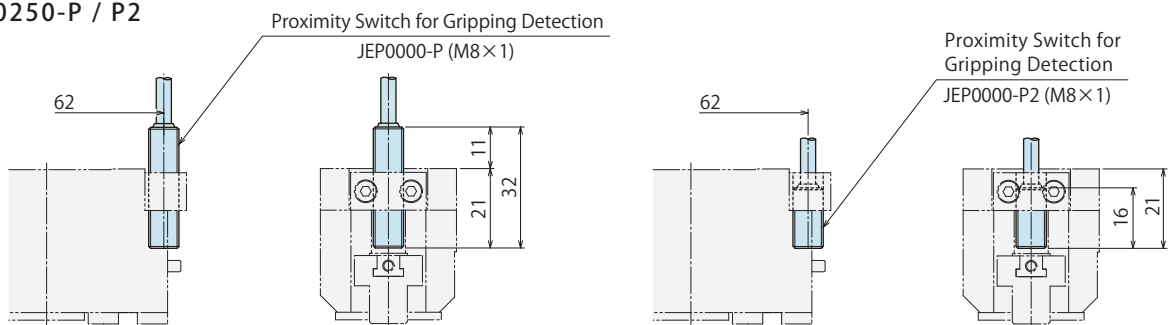
WHZ-MD

● External Dimensions : Proximity Switch for Gripping Detection

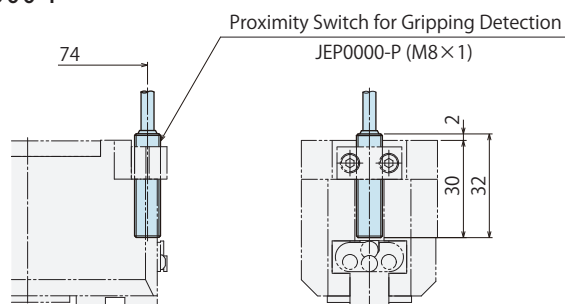
● WPQ0200-P / P2



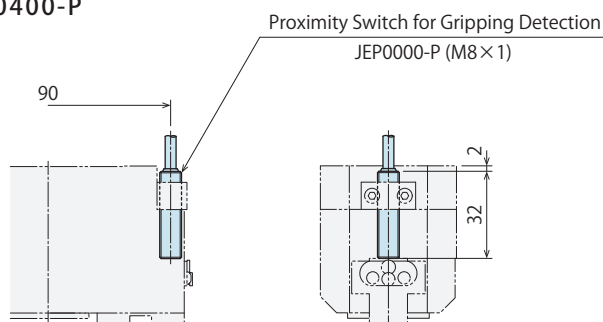
● WPQ0250-P / P2



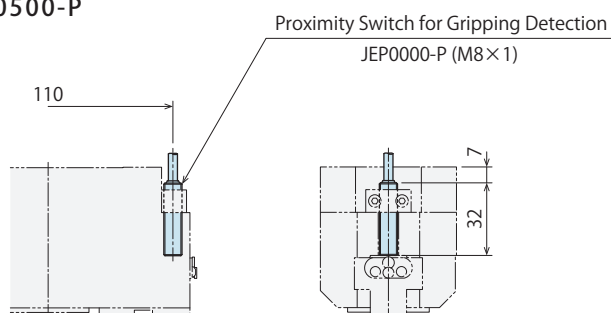
● WPQ0300-P



● WPQ0400-P



● WPQ0500-P

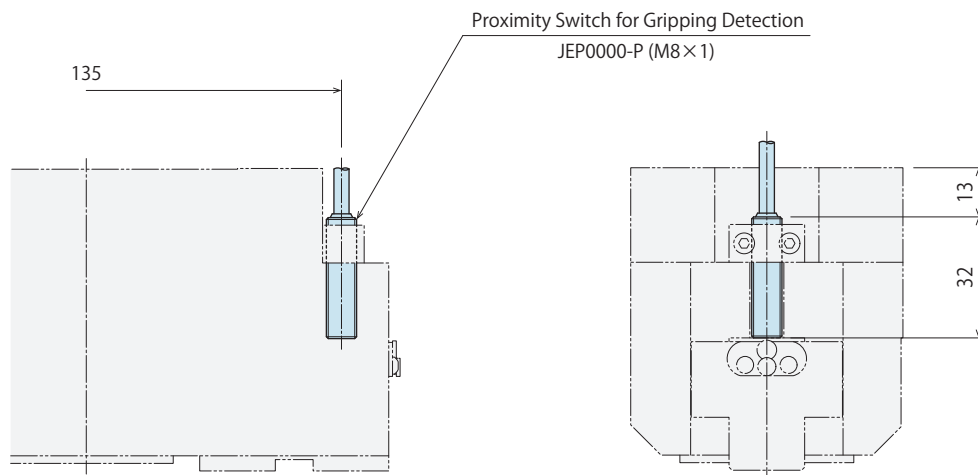


Note :

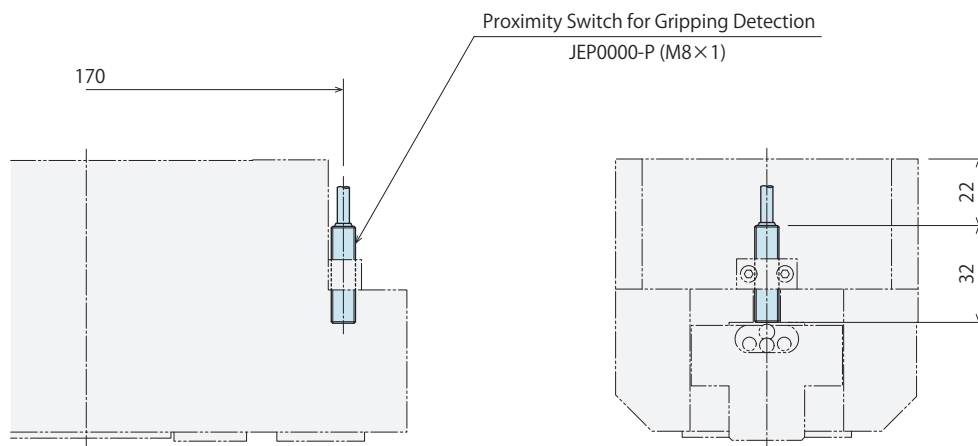
1. Proximity Switch for Gripping Detection Type P2 (Length 16mm) cannot be installed in WPQ0300 or larger sizes.

## External Dimensions : Proximity Switch for Gripping Detection

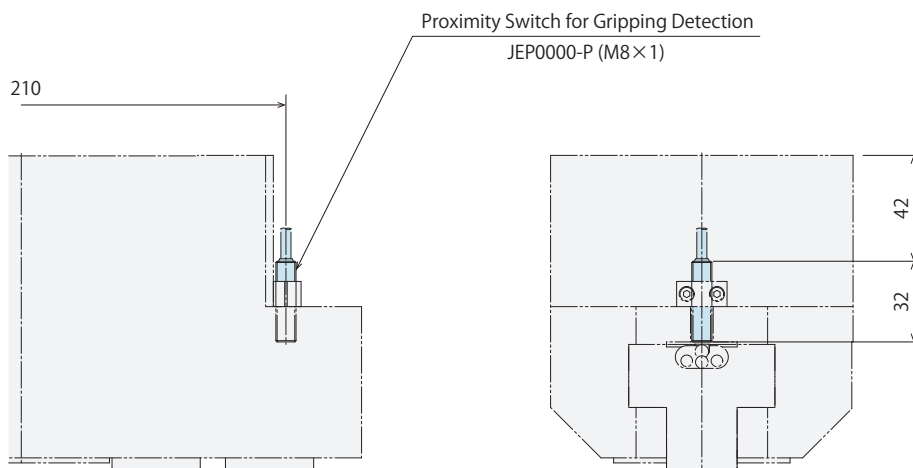
### WPQ0600-P



### WPQ0800-P



### WPQ1000-P



Note :

1. Proximity Switch for Gripping Detection Type P2 (Length 16mm) cannot be installed in WPQ0300 or larger sizes.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

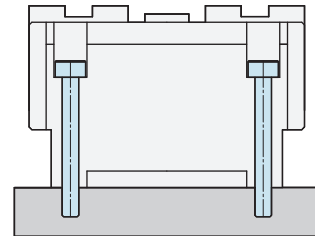
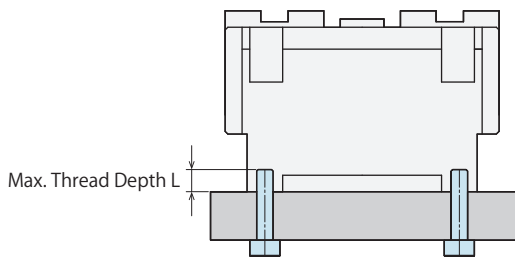
BZW

Manifold  
Block

WHZ-MD

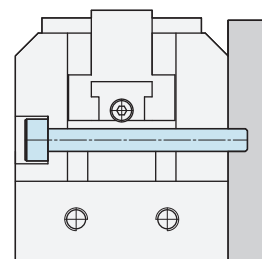
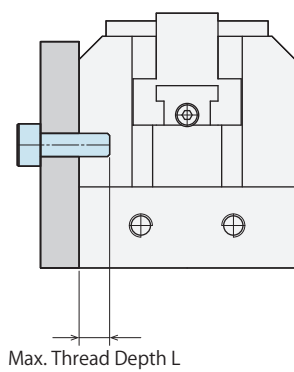
● Installation Method

● Tightening Torque for Cylinder Body



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
<b>WPQ0200</b>	M4×0.7	2.5	6
<b>WPQ0250</b>	M5×0.8	5.0	12
<b>WPQ0300</b>	M5×0.8	5.0	14
<b>WPQ0400</b>	M6×1	7.9	18
<b>WPQ0500</b>	M8×1.25	15.4	20
<b>WPQ0600</b>	M8×1.25	15.4	20
<b>WPQ0800</b>	M10×1.5	35.3	20
<b>WPQ1000</b>	M12×1.75	65.7	25

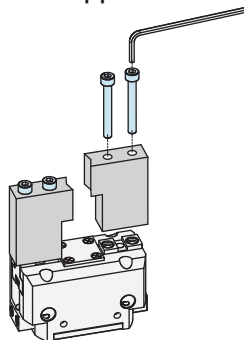
Model No.	Thread Size	Tightening Torque (N · m)
<b>WPQ0200</b>	M3×0.5	1.3
<b>WPQ0250</b>	M4×0.7	2.5
<b>WPQ0300</b>	M4×0.7	2.5
<b>WPQ0400</b>	M5×0.8	5.0
<b>WPQ0500</b>	M6×1	7.9
<b>WPQ0600</b>	M6×1	7.9
<b>WPQ0800</b>	M8×1.25	15.4
<b>WPQ1000</b>	M10×1.5	35.3



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
<b>WPQ0200</b>	M4×0.7	2.5	8
<b>WPQ0250</b>	M5×0.8	5.0	15
<b>WPQ0300</b>	M6×1	7.9	14
<b>WPQ0400</b>	M8×1.25	15.4	14
<b>WPQ0500</b>	M10×1.5	35.3	18
<b>WPQ0600</b>	M10×1.5	35.3	18
<b>WPQ0800</b>	M12×1.75	65.7	25
<b>WPQ1000</b>	M16×2	162	30

Model No.	Thread Size	Tightening Torque (N · m)
<b>WPQ0200</b>	M3×0.5	1.3
<b>WPQ0250</b>	M4×0.7	2.5
<b>WPQ0300</b>	M5×0.8	5.0
<b>WPQ0400</b>	M6×1	7.9
<b>WPQ0500</b>	M8×1.25	15.4
<b>WPQ0600</b>	M8×1.25	15.4
<b>WPQ0800</b>	M10×1.5	35.3
<b>WPQ1000</b>	M12×1.75	65.7

## ● Tightening Torque for Gripper



Model No.	Thread Size	Tightening Torque (N · m)	Max. Thread Depth L (mm)
WPQ0200	M3×0.5	1.3	8
WPQ0250	M4×0.7	2.5	8
WPQ0300	M5×0.8	5.0	10
WPQ0400	M6×1	7.9	12
WPQ0500	M6×1	7.9	15
WPQ0600	M8×1.25	15.4	15
WPQ0800	M12×1.75	65.7	16
WPQ1000	M12×1.75	65.7	18

## ● Sensor Dog Adjustment Method

Proximity switch is used for opening/closing detection of robotic hand.

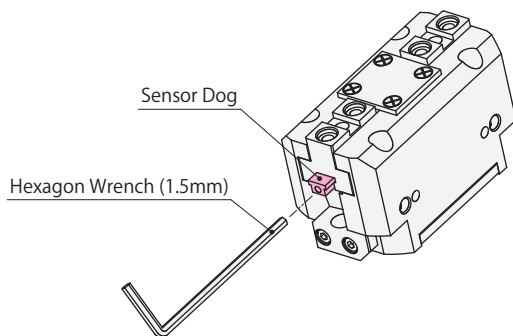
You can change the detection timing of proximity switch by adjusting the position of sensor dog.

There are two adjustment methods for sensor dog depending on shipment time.

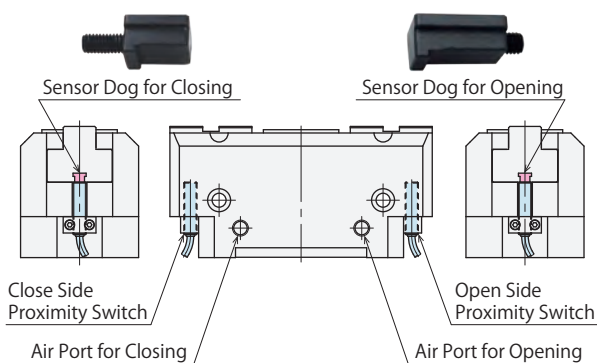
Please check on the product and refer to the applicable adjustment method.

### Adjustment Method ①

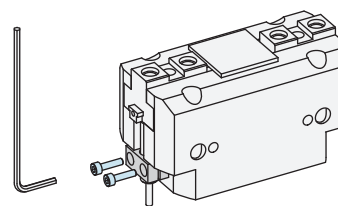
Adjust the sensor dog to the detection position and tighten it with hexagon wrench (1.5mm).



Shapes of sensor dog for opening and closing are different. Please refer to the drawing below and install the sensor dog to the appropriate position. Otherwise, the sensor dog may extremely stick out and/or the proximity switch may not react.



## ● Tightening Torque for Bracket for Installing Proximity Switch



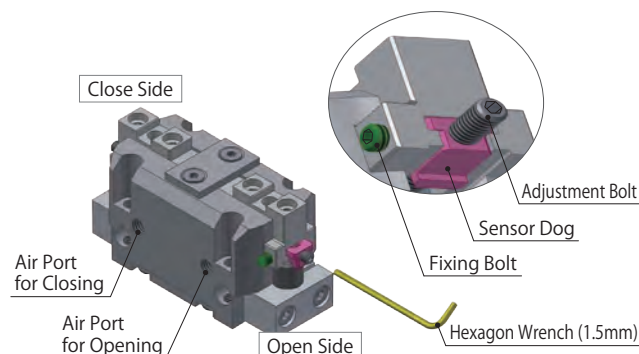
Model No.	Thread Size	Tightening Torque (N · m)
WPQ□0	M3×0.5	1.3

Excessive tightening leads to breakage of proximity switch.

### Adjustment Method ②

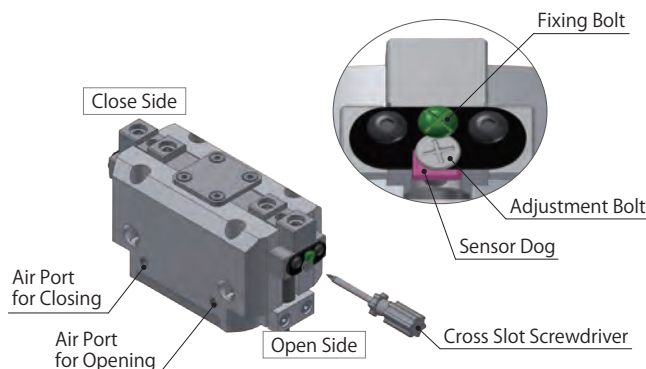
- For WPQ0200/0250

Untighten the fixing bolt with hexagon wrench (1.5mm), adjust the dog position with adjustment bolt, and tighten the fixing bolt again. Make sure to tighten the fixing bolt before operating the robotic hand.



- For WPQ0300/0400/0500/0600/0800/1000

Untighten the fixing bolt with cross slot screwdriver, adjust the dog position with adjustment bolt, and tighten the fixing bolt again. Make sure to tighten the fixing bolt before operating the robotic hand.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

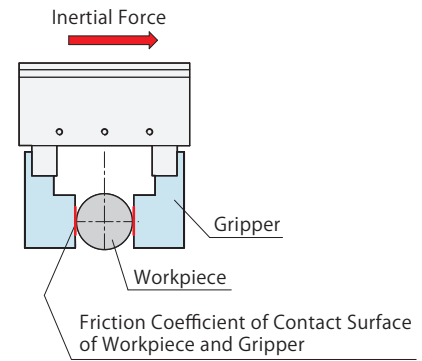
WHZ-MD



● Gripper Length/Workpiece Weight Graph

● Inertial Force • Friction Coefficient • Safety Factor Selection List

Inertial Force		Friction Coefficient※1	Safety Factor
Low Speed	Stops after 0.1 sec at the speed of 0 ~ 100mm/sec.	Large	5 times
		Small	10 times
Middle Speed	Stops after 0.1 sec at the speed of 100 ~ 300mm/sec.	Large	10 times
		Small	15 times
	Stops after 0.1 sec at the speed of 300 ~ 500mm/sec.	Large	15 times
		Small	20 times
High Speed	Stops after 0.1 sec at the speed of 500 ~ 1000mm/sec.	-	30 times



Note :

- ※1. Indicates the friction coefficient of contact surface of workpiece and gripper. Refer to the condition below.  
 Friction Coefficient : Small (Approximately  $\mu=0.1$ ) ... When contact surface is flat.  
 Friction Coefficient : Large (More than  $\mu=0.15$ ) ... When contact surface is serration or spike shape.

● How to Read Gripper Length/Workpiece Weight Graph

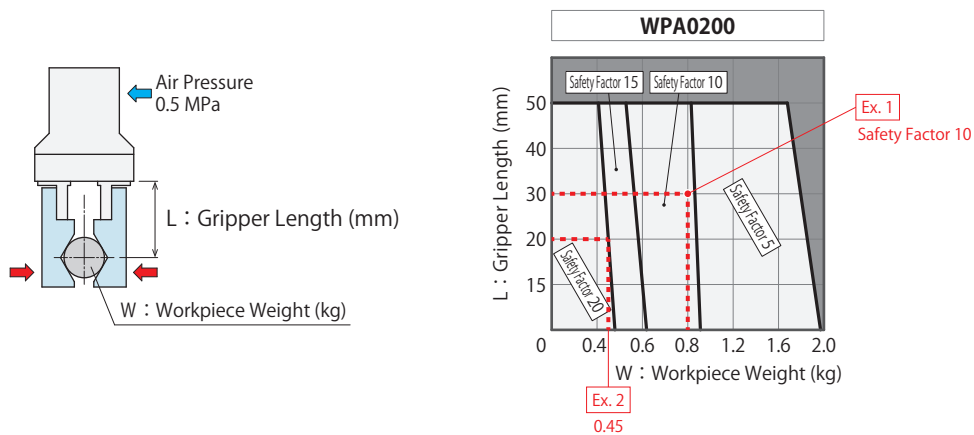
The selection method is a reference. It is recommended to consider the actual conditions (environment) when selecting the product. The graph shows when air pressure is 0.5MPa.

【Ex. 1】

When using WPA0200 (close side) with 0.8kg workpiece and 30mm gripper, the safety factor should be 10 times. When using it with lower speed which is indicated in Inertial Force • Friction Coefficient • Safety Factor Selection List, the friction coefficient of contact surface can be small. When using it with middle speed (stops after 0.1 sec at the speed of 100~300mm/sec.), contact surface should be serration or spike shape to secure larger friction coefficient.

【Ex. 2】

When using it with middle speed (stops after 0.1 sec at the speed of 300 ~ 500mm/sec.) and when friction coefficient is small due to flat contact surface, the safety factor should be 20 times. When using WPA0200 with 20 times safety factor and 20mm gripper, the maximum workpiece weight is 0.45kg.

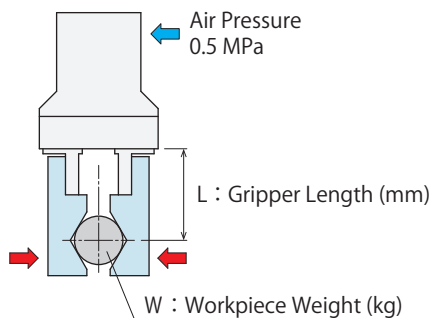


● Relationship between Workpiece Weight and Robotic Hand Gripping Force

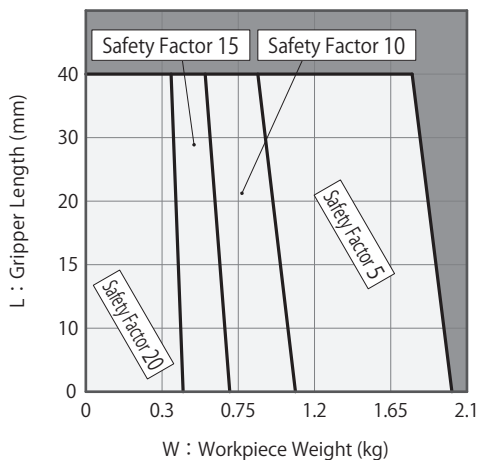
The safety factor of robotic hand gripping force to workpiece weight should be approximately 16 times for each robot manufacturer, but it differs according to the conditions. Refer to the following contents when selecting the product.

- ① Workpiece Gravity Center and Gripping Position  
It is recommended to design the gripper so that it grips the workpiece gravity center with the center of robotic hand.
- ② Gripper Length  
The load applied on the robotic hand body depends on the gripper length. It is recommended to design the gripper so that the workpiece gravity center is as close as possible to the robotic hand.

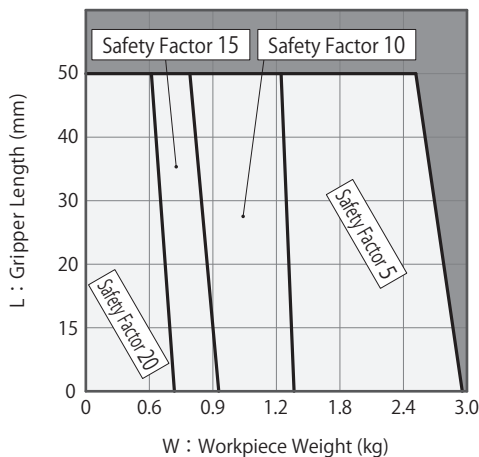
● WPS : Close Side



**WPS0160-C**



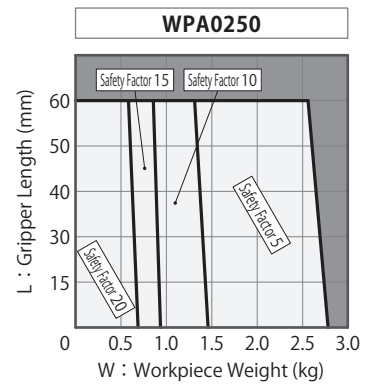
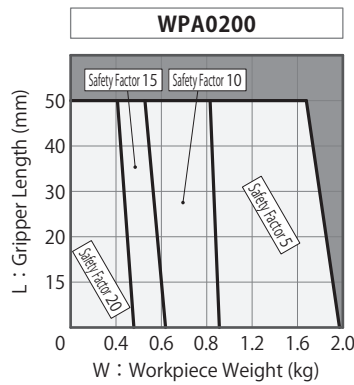
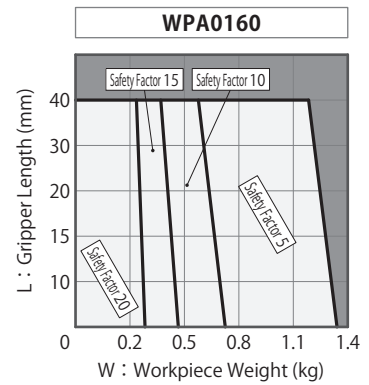
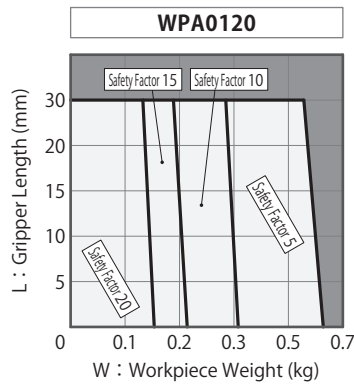
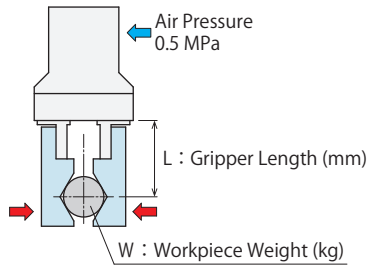
**WPS0200-C**



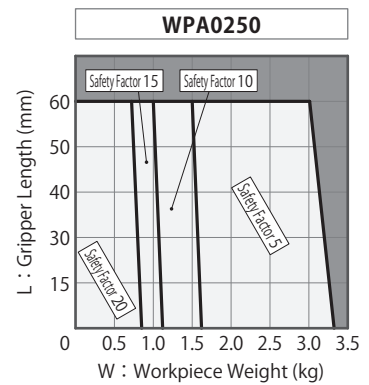
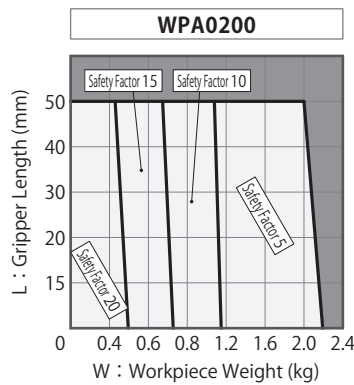
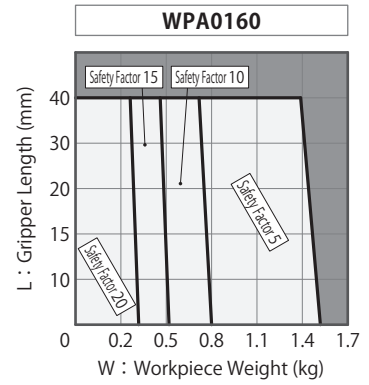
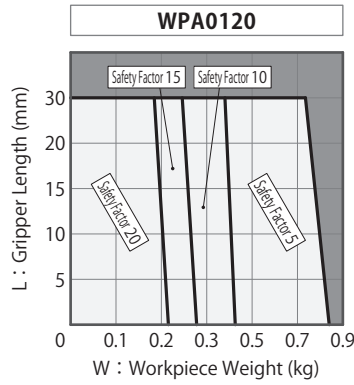
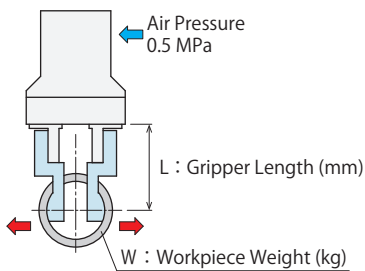
- Locating + Clamp
- Locating
- Hand + Clamp
- Support
- Valve + Coupler
- Cautions + Others
- Pallet Gripper
  - WVA
- Locating Pin Clamp
  - SWP
- High-Power Pull Stud Clamp
  - WPT
  - JES
- FA Pneumatic Hole Clamp
  - WKH
- Lifting Hole Clamp
  - SWJ
- Ball Lock Cylinder
  - WKA
- Pneumatic Robotic Hands**
  - WPW-C
  - WPS-C**
  - WPA**
  - WPH**
  - WPP**
  - WPQ**
- Auto Switch Proximity Switch
  - JEP
- High-Power Pneumatic Hole Clamp
  - SWE
- High-Power Pneumatic Swing Clamp
  - WHE
- High-Power Pneumatic Link Clamp
  - WCE
- Pneumatic Hole Clamp
  - SWA
- Pneumatic Swing Clamp
  - WHA
- Double Piston Pneumatic Swing Clamp
  - WHD
- Pneumatic Link Clamp
  - WCA
- Air Flow Control Valve
  - BZW
- Manifold Block
  - WHZ-MD

● Gripper Length/Workpiece Weight Graph

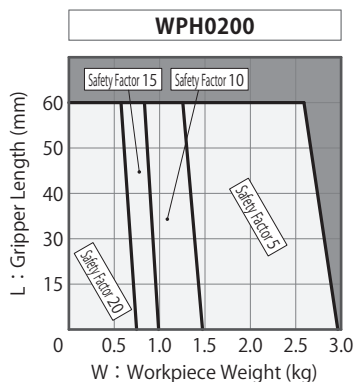
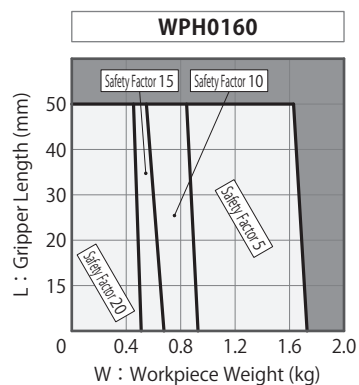
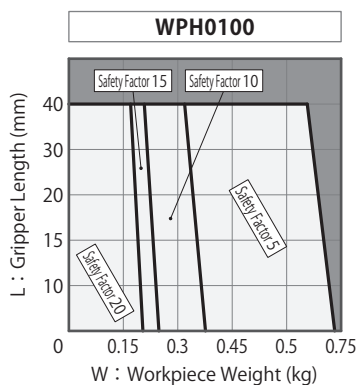
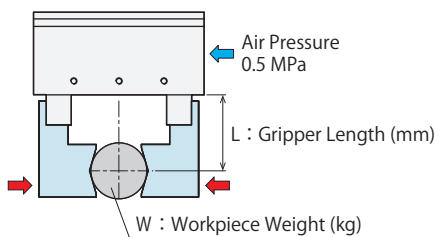
● WPA : Close Side



● WPA : Open Side



● WPH



Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

**Pneumatic Robotic Hands**

WPW-C

**WPS-C**

**WPA**

**WPH**

**WPP**

**WPQ**

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

Air Flow Control Valve

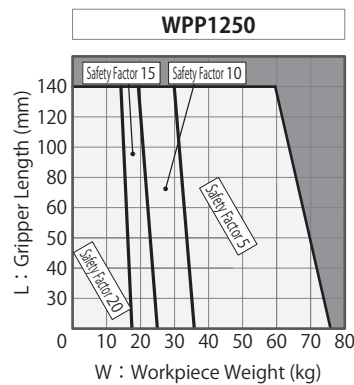
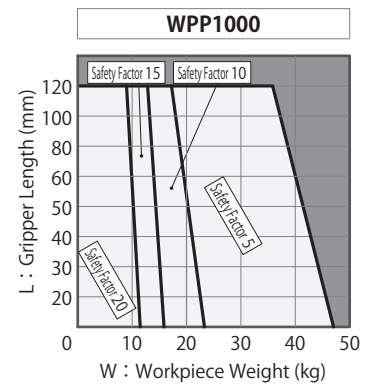
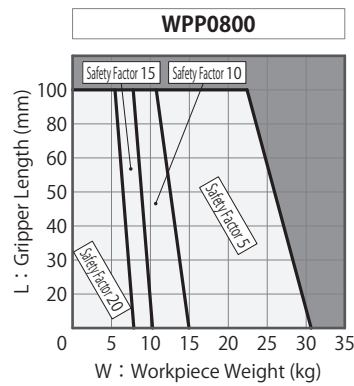
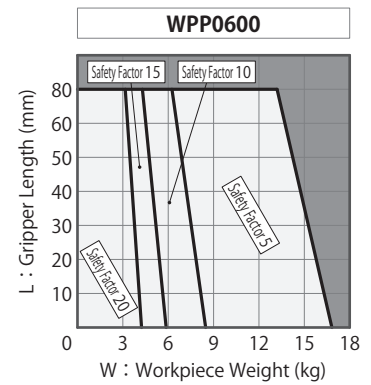
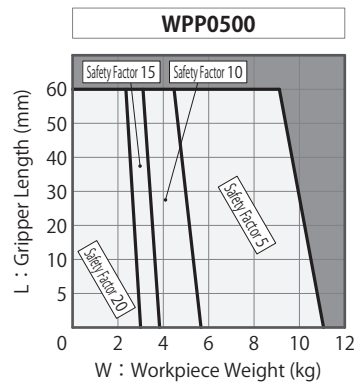
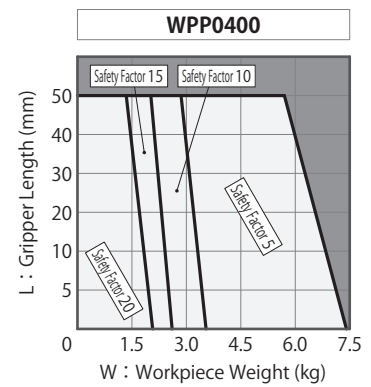
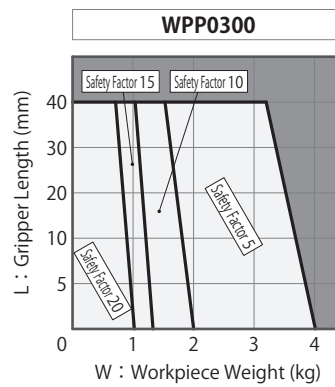
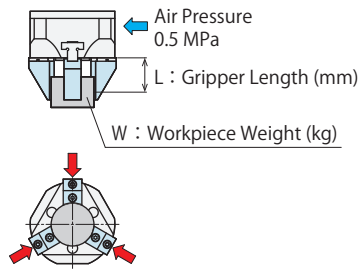
BZW

Manifold Block

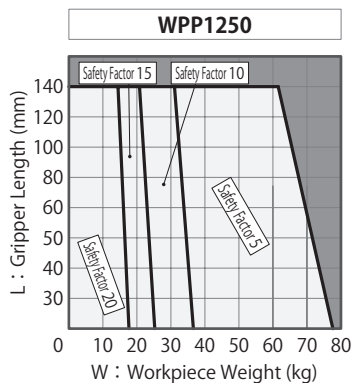
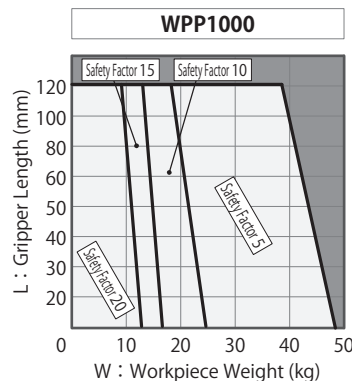
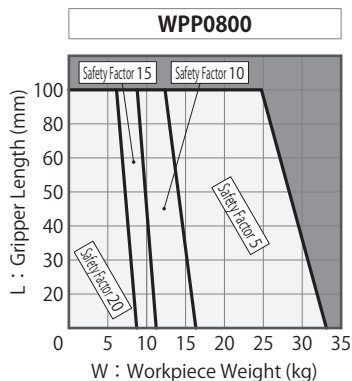
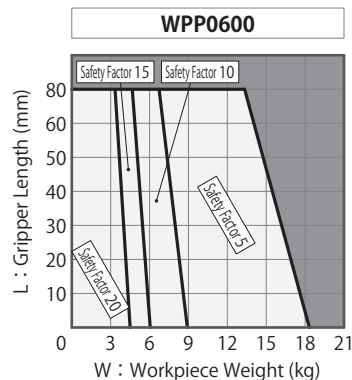
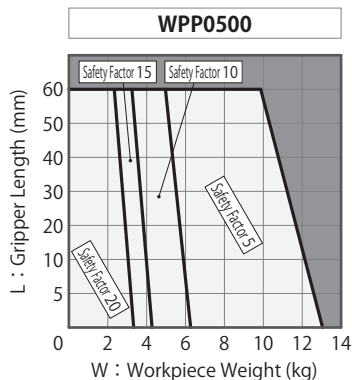
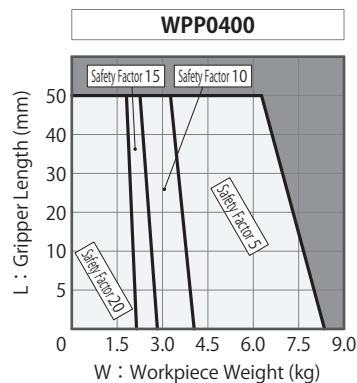
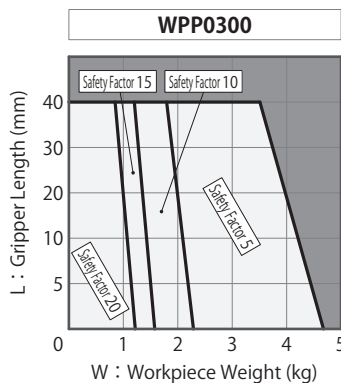
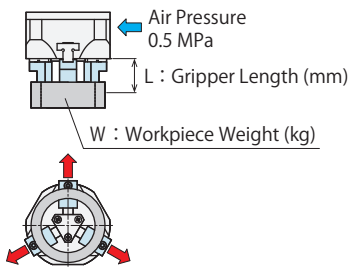
WHZ-MD

● Gripper Length/Workpiece Weight Graph

● WPP : Closing Side



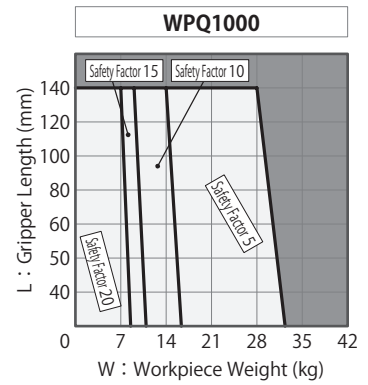
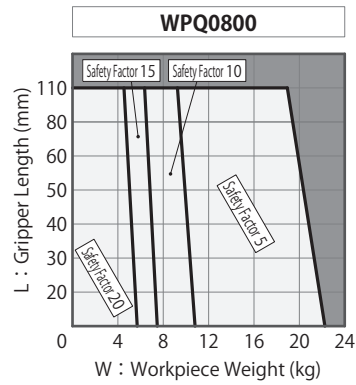
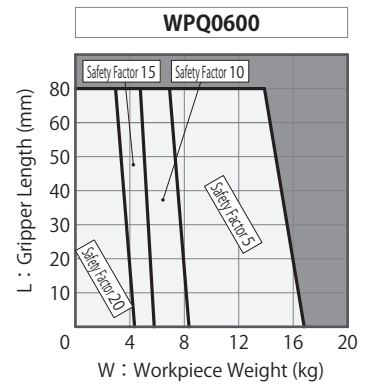
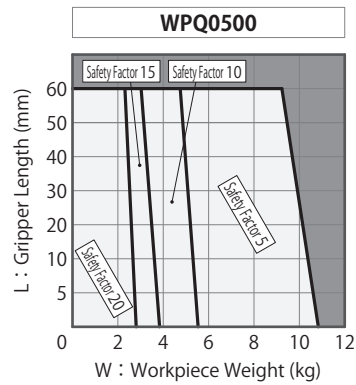
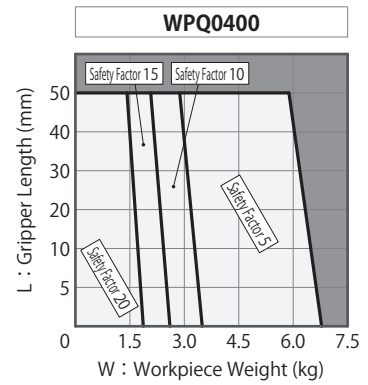
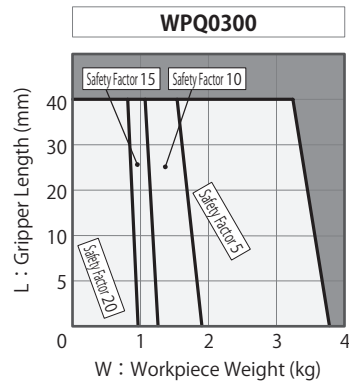
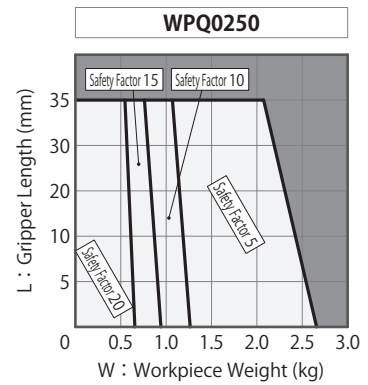
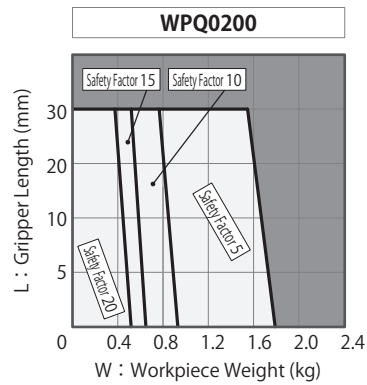
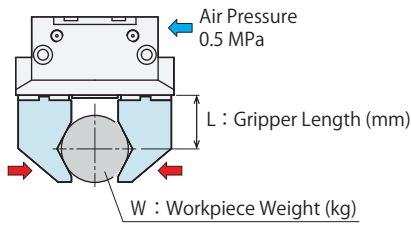
● WPP : Opening Side



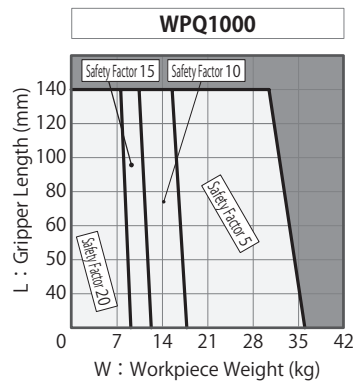
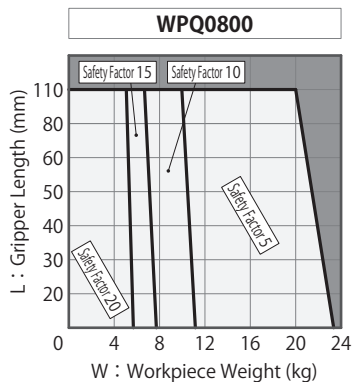
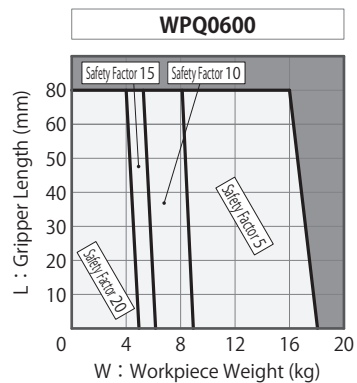
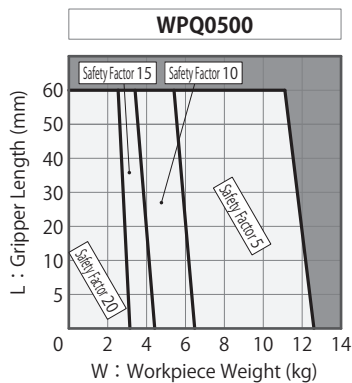
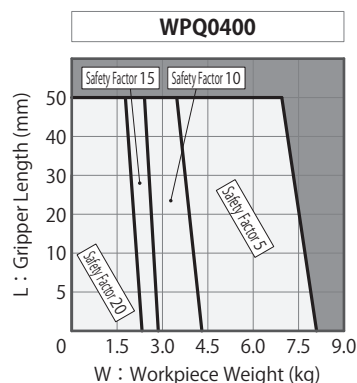
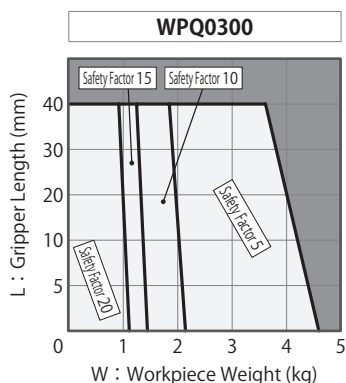
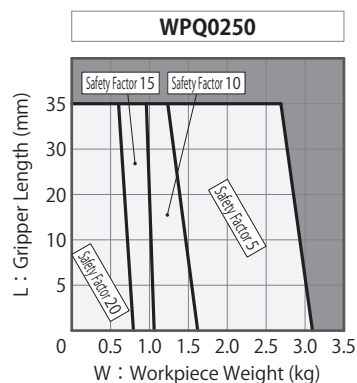
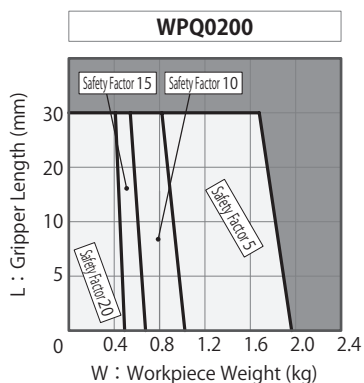
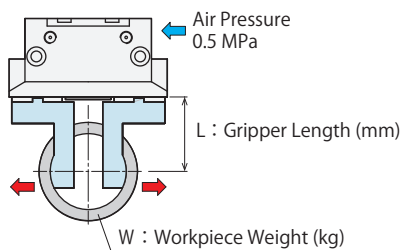
Locating + Clamp
Locating
Hand + Clamp
Support
Valve + Coupler
Cautions + Others
Pallet Gripper
WVA
Locating Pin Clamp
SWP
High-Power Pull Stud Clamp
WPT
JES
FA Pneumatic Hole Clamp
WKH
Lifting Hole Clamp
SWJ
Ball Lock Cylinder
WKA
Pneumatic Robotic Hands
WPW-C
WPS-C
WPA
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WCE
Pneumatic Hole Clamp
SWA
Pneumatic Swing Clamp
WHA
Double Piston Pneumatic Swing Clamp
WHD
Pneumatic Link Clamp
WCA
Air Flow Control Valve
BZW
Manifold Block
WHZ-MD

● Cautions

- WPQ : Closing Side



● WPQ : Opening Side



- Locating + Clamp
- Locating
- Hand + Clamp
- Support
- Valve + Coupler
- Cautions + Others
- Pallet Gripper
  - WVA
- Locating Pin Clamp
  - SWP
- High-Power Pull Stud Clamp
  - WPT
  - JES
- FA Pneumatic Hole Clamp
  - WKH
- Lifting Hole Clamp
  - SWJ
- Ball Lock Cylinder
  - WKA
- Pneumatic Robotic Hands**
  - WPW-C
  - WPS-C**
  - WPA**
  - WPH**
  - WPP**
  - WPQ**
- Auto Switch Proximity Switch
  - JEP
- High-Power Pneumatic Hole Clamp
  - SWE
- High-Power Pneumatic Swing Clamp
  - WHE
- High-Power Pneumatic Link Clamp
  - WCE
- Pneumatic Hole Clamp
  - SWA
- Pneumatic Swing Clamp
  - WHA
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  - WHD
- Pneumatic Link Clamp
  - WCA
- Air Flow Control Valve
  - BZW
- Manifold Block
  - WHZ-MD



**Cautions**

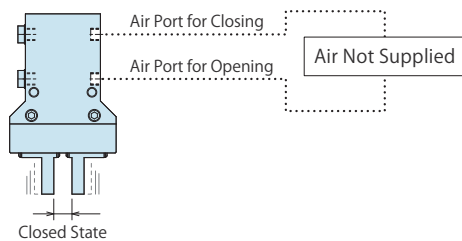
● **Notes for Design**

1) Check Specifications

- model WPS : Maximum operating air pressure is 0.5 MPa.  
Minimum operating air pressure is 0.2 MPa.
  - model WPA : Maximum operating air pressure is 0.7MPa.  
Minimum operating air pressure is 0.2 MPa.
  - model WPH : Maximum operating air pressure is 0.7MPa.  
Minimum operating air pressure is 0.15 MPa.
  - model WPP/WPQ : Maximum operating air pressure is 0.7MPa.  
Minimum operating air pressure is 0.3 MPa.
- However, the maximum operating pressure and gripping force may change depending on the gripper length. Please provide appropriate air pressure in order to avoid deformation, seizure or air leakage caused by overload applied to the robotic hand.

● **model WPS Only**

When air is not supplied to either air port for closing or air port for opening, the gripper is closed by built-in spring.



2) Notes for Circuit Design

- Please design the air circuit properly and review the circuit design in advance in order to avoid malfunction or breakage of the device.

3) Protective Cover Installation

- If the moving parts of the robot or robotic hand may endanger human life, please install the protection cover.

4) Please supply filtered clean dry air.

- Oil supply with a lubricator etc. is unnecessary.

5) Adjustment of Operating Speed

- If the operating speed of the robotic hand is very fast, it leads to wear-out or malfunction of the parts.  
Please prepare a speed controller to adjust speed in order not to exceed the appropriate opening and closing time.

● **Installation Notes**

1) Check the Fluid to Use

- Please supply filtered clean dry air. (Install drain removing device.)
- Oil supply with a lubricator etc. is unnecessary.  
Oil supply with a lubricator may cause loss of the initial lubricant.  
The operation under low pressure and low speed may be unstable. (In case of using secondary lubricant, please supply the lubricant continuously.)

2) Preparation for Piping

- Pipes, piping connectors and fixture circuits should be cleaned and flushed thoroughly. The dust and cutting chips in the circuit may lead to air leakage and malfunction.
- There is no filter provided with this product for prevention of contaminants in the air circuit.

3) Applying Sealing Tape

- Wrap with tape 1 to 2 times following the screwing direction.
- Pieces of the sealing tape can lead to air leakage and malfunction.
- When piping, be careful that contaminant such as sealing tape does not enter the products.

4) Installation of the Robotic Hand and the Gripper

- Please tighten the robotic hand/gripper with the tightening torque listed on each product page.  
WPS : P.346, WPA : P.356, WPH : P.364,  
WPP : P.379, WPQ : P.393

5) Trial Operation Method

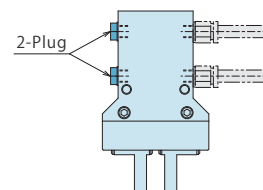
- Avoid supplying large air flow right after the installation.  
The operating time will be very fast and the robotic hand may be seriously damaged. Please install the speed controller near the air source and gradually supply air pressure.

6) Adjustment of Operating Speed

- If the operating speed of the robotic hand is very fast, it leads to wear-out or malfunction of the parts.  
Please prepare a speed controller to adjust speed in order not to exceed the appropriate opening and closing time.

7) Plug Installation (model WPS Only)

- Air port for closing and air port for opening are on the both sides of the hand. Please choose either side of the air ports to supply air and install the attached plugs on the other side.



● Notes on Handling

- 1) It should be operated by qualified personnel.
  - Machines and devices with hydraulic and pneumatic equipment should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
  - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
  - ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
  - ③ After stopping the product, do not remove until the temperature drops.
  - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not touch the robotic hand or the robot while it is operating. Otherwise, your hands may be injured.



- 4) Do not disassemble or modify.
  - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.
  - Built-in spring is very strong and can be dangerous. (model WPS only)

● Maintenance and Inspection

- 1) Please contact us for overhaul and repair.
 

Built-in spring is very strong and can be dangerous. (model WPS only)

Locating + Clamp
Locating
Hand + Clamp
Support
Valve + Coupler
Cautions + Others

Pallet Gripper
WVA
Locating Pin Clamp
SWP
High-Power Pull Stud Clamp
WPT
JES
FA Pneumatic Hole Clamp
WKH
Lifting Hole Clamp
SWJ
Ball Lock Cylinder
WKA
Pneumatic Robotic Hands
WPW-C
WPS-C
WPA
WPH
WPP
WPQ
Auto Switch Proximity Switch
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WHA
Double Piston Pneumatic Swing Clamp
WHD
Pneumatic Link Clamp
WCA
Air Flow Control Valve
BZW
Manifold Block
WHZ-MD

※ Please refer to P.715 for common cautions.    • Maintenance/Inspection    • Warranty

## Model No. Indication

**JEP 000 0 - A1 L**

1   
 2   
 3

### 1 Design No.

**0** : Revision Number

### 2 Switch Type

- A1** : 2-Wire Reed Auto Switch
- A2** : 2-Wire Reed Auto Switch
- A2V** : 2-Wire L-Shaped Reed Auto Switch
- B1** : 3-Wire Solid State Auto Switch
- B2** : 3-Wire Solid State Auto Switch
- B3** : 3-Wire L-Shaped Solid State Auto Switch
- P** : 3-Wire Proximity Switch for Gripping Detection (Length 32mm)
- P2** : 3-Wire Proximity Switch for Gripping Detection (Length 16mm)

### 3 Electric Cable Length <sup>※1</sup>

**Blank** : 1m

**L** : 3m

Note :

※1. **3** Electric Cable Length is chosen only for A□/B□ Auto Switch of **2** Switch Type.  
For P□: Proximity Switch for Gripping Detection, electric cable length is all 2m.

## Application Table

Switch Type	2-Wire Reed Auto Switch		3-Wire Solid State Auto Switch		
	JEP0000-A1□	JEP0000-A2□ JEP0000-A2V□	JEP0000-B1□	JEP0000-B2□	JEP0000-B3□
SWJ2000		●		●	●
SWP050□		●		●	●
SWP100□		●		●	●
WKH2000		●		●	●
WPA0120		●		●	●
WPA0160		●		●	●
WPA0200		●		●	●
WPA0250		●		●	●
WPH0100		●		●	●
WPH0160		●		●	●
WPH0200	●		●		
WPS0160-C		●		●	●
WPS0200-C		●		●	●
WPW0500-C		●		●	●
WPW0600-C		●		●	●

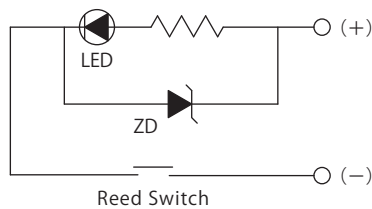
Switch Type	3-Wire Proximity Switch for Gripping Detection	
Model No.	JEP0000-P	JEP0000-P2
WPP0300	●	●
WPP0400	●	●
WPP0500	●	●
WPP0600	●	●
WPP0800	●	●
WPP1000	●	●
WPP1250	●	●
WPQ0200	●	●
WPQ0250	●	●
WPQ0300	●	
WPQ0400	●	
WPQ0500	●	
WPQ0600	●	
WPQ0800	●	
WPQ1000	●	

## ● JEP0000-A□□ (2-Wire Reed Auto Switch)

### ● Specifications

Model No.	JEP0000-A1	JEP0000-A1L	JEP0000-A2	JEP0000-A2L	JEP0000-A2V	JEP0000-A2VL
Name	Reed Auto Switch					
Wiring Type	2-Wire					
Applicable Load	Relay, Programmable Logic Controller (PLC)					
Load Voltage / Load Current	Less than DC24V / 40mA Less than AC100V / 20mA					
Internal Voltage Drop	Less than 3V					
Operating Time	1ms					
Ambient Temperature	-10 ~ 70°C					
Withstand Voltage	AC1500V (There should be no abnormalities in 1 min. application.)					
Leakage Current	0					
Shock Resistance	30G					
Protection Circuit	None					
Protection Grade	IP67 (IEC Standard)					
Indicator Light	Red LED illuminates when turned ON					
Electric Cable Length	1m	3m	1m	3m	1m	3m

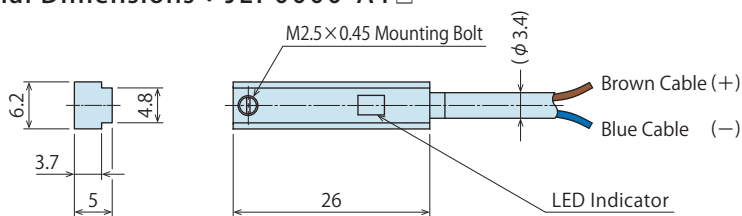
### ● Electric Circuit Diagram



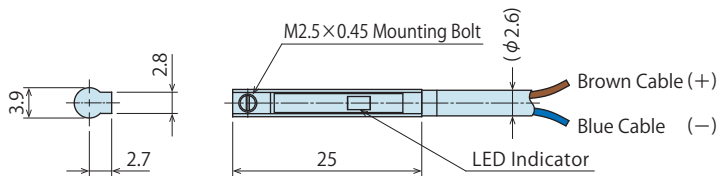
Note :

1. Auto switch will instantly break due to over loading current if turning on the auto switches without connecting the load. (Refer to Notes on Wiring 4) and 5) on P.413.)

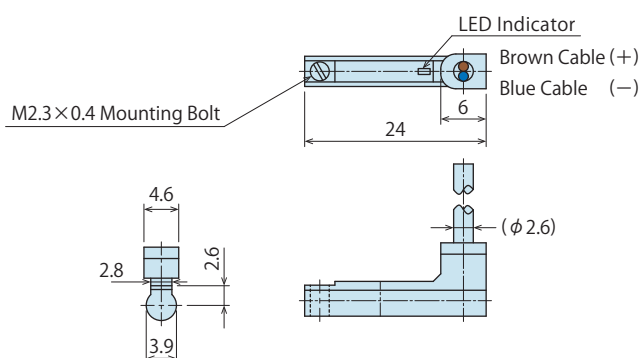
### ● External Dimensions : JEP0000-A1□



### ● External Dimensions : JEP0000-A2□



### ● External Dimensions : JEP0000-A2V□



Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

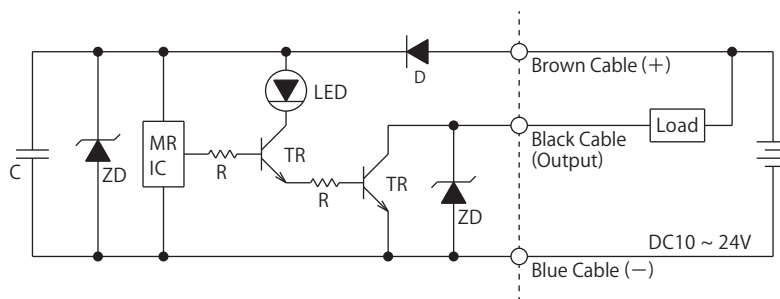
WHZ-MD

● JEP0000-B□□ (3-Wire Solid State Auto Switch)

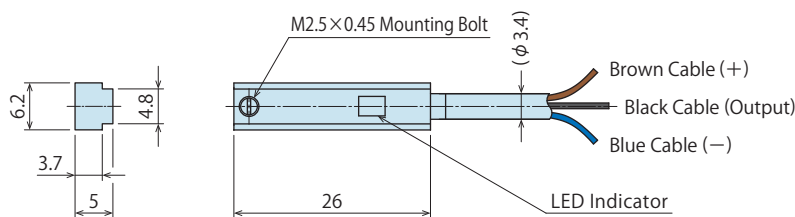
● Specifications

Model No.	JEP0000-B1	JEP0000-B1L	JEP0000-B2	JEP0000-B2L
Name	Solid State Auto Switch			
Wiring Type	3-Wire			
Applicable Load	Relay, Programmable Logic Controller (PLC)			
Output Type	NPN			
Load Voltage / Load Current	Less than DC10 ~ 24V / 100mA			
Internal Voltage Drop	Less than 0.7V			
Operating Time	1ms			
Ambient Temperature	-10 ~ 70°C			
Withstand Voltage	AC2000V (There should be no abnormalities in 1 min. application.)			
Leakage Current	0			
Shock Resistance	30G			
Protection Grade	IP67 (IEC Standard)			
Indicator Light	Red LED illuminates when turned ON			
Electric Cable Length	1m	3m	1m	3m

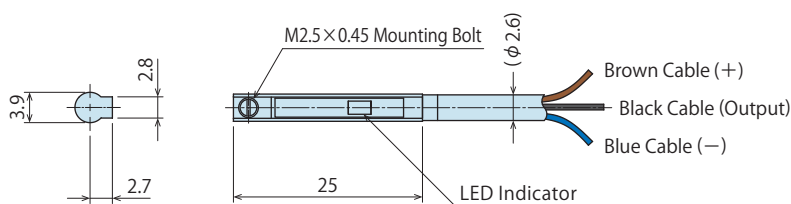
● Electric Circuit Diagram



● External Dimensions : JEP0000-B1□



● External Dimensions : JEP0000-B2□



Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

Pneumatic Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

Air Flow Control Valve

BZW

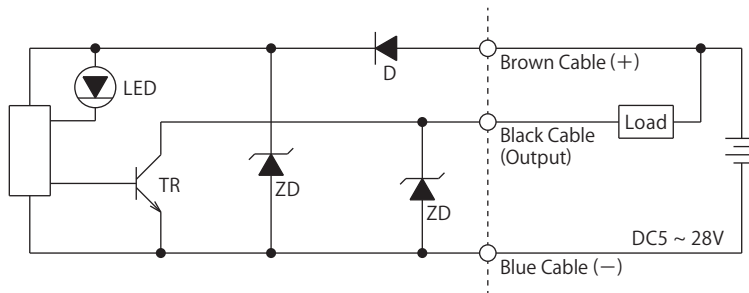
Manifold Block

WHZ-MD

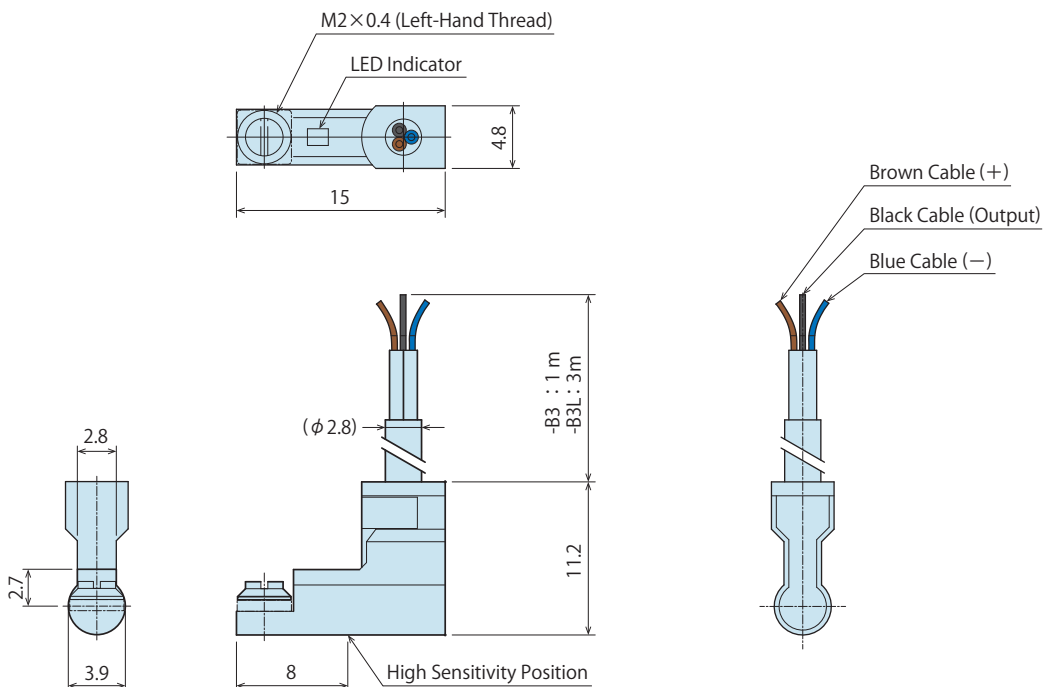
### Specifications

Model No.	JEP0000-B3	JEP0000-B3L
Name	Solid State Auto Switch	
Wiring Type	3-Wire	
Applicable Load	Relay, Programmable Logic Controller (PLC)	
Output Type	NPN	
Load Voltage / Load Current	Less than DC5 ~ 28V / 0.1 ~ 40mA	
Internal Voltage Drop	Max. 0.5V	
Leakage Current	Max. 50 $\mu$ A (DC24V)	
Current Consumption	Max. 10 mA	
Response Time	Max. 1ms	
Ambient Temperature	0 ~ 60°C	
Withstand Voltage	AC1500V (There should be no abnormalities in 1 min. application.)	
Insulation Resistance	More than 100M $\Omega$ / DC500V (Between the Case and Signal Cable)	
Shock Resistance	30G	
Protection Grade	IP67(IEC Standard)	
Indicator Light	Red LED illuminates when turned ON	
Electric Cable Length	1m	3m

### Electric Circuit Diagram



### External Dimensions : JEP0000-B3 □

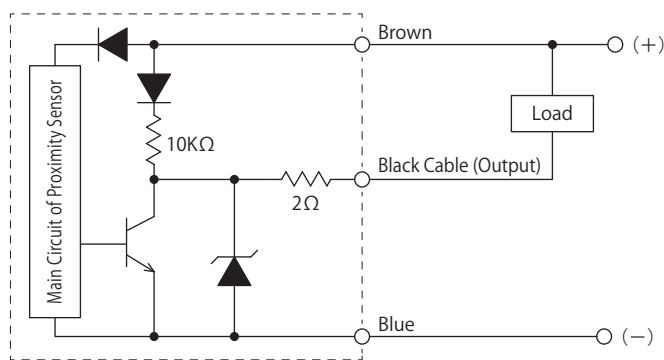


● JEP0000-P□ (3-Wire Proximity Switch for Gripping Detection)

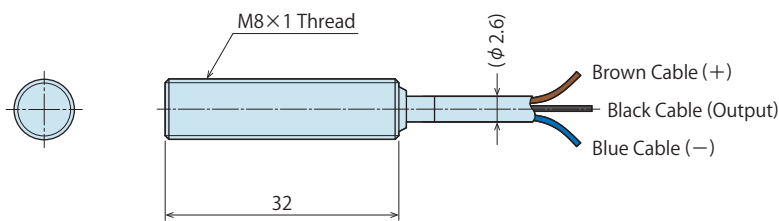
● Specifications

Model No.	JEP0000-P	JEP0000-P2
Name	Proximity Switch for Gripping Detection	
Wiring Type	3-Wire	
Output Type	NPN	
Moving Distance	1.5±0.15mm	
Voltage Range	DC10 ~ 30V	
Opening / Closing Voltage	Less than 200mA	
Current Consumption	Less than 10mA	
Response Frequency	800Hz	
Ambient Temperature	-25 ~ 70°C	
Withstand Voltage	AC2000V (There should be no abnormalities in 1 min. application.)	
Protection Grade	IP67 (IEC Standard)	
Indicator Light	Red LED illuminates when turned ON	
Electric Cable Length	2m	

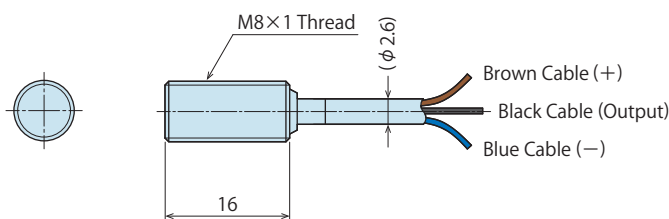
● Electric Circuit Diagram



● External Dimensions : JEP0000-P



● External Dimensions : JEP0000-P2




**MEMO**

 Locating  
+  
Clamp

Locating

**Hand • Clamp**

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

**Auto Switch  
Proximity Switch****JEP**High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD



## Cautions

### ● Notes for Design

- 1) Check the Specifications
  - Please use each product according to the specifications.  
The product may be damaged or malfunction if used outside the range of load or specifications.
- 2) Notes on Use in the Interlock Circuit
  - When the auto switch is used for an interlock signal that requires high reliability, please use a double interlock system by providing a mechanical protection function. Or by using another switch (sensor) together with the auto switch. Also, please perform periodic maintenance and confirm proper operation.
- 3) Wiring should be prepared as short as possible.
  - For the reed auto switch, if the wiring length to the load is longer, inrush current to the auto switch increases and the life span will be shortened. (Remains ON)
  - If the wiring length of the solid state auto switch is long, we recommend installing the ferrite core on both ends of the electric cable for noise control.
- 4) Please avoid using loads that generate surge voltage.
  - If driving loads that generate surge voltage such as relay, please use the auto switch equipped with junction protective circuit or install protective box.
  - If surge voltage is repeatedly applied to the auto switch even with the Zener Diode for surge protection, it may damage the contact. When directly driving loads generating surge voltage, such as solenoid valves, use the auto switch equipped with surge absorption element.
  - The magnet switch is equipped with surge absorption element. However, please provide an absorption element, such as varistor, if there is large surge-generating equipment.  
Example: Motors or welding machines.
- 5) Leakage Current
  - In case of 2-wire solid state auto switch, the leakage current that activates internal circuit of the auto switch may flow even in OFF state. If the load operating current (the controller is in OFF state) does not satisfy the specified leakage current, it may result in restoration defect (remains ON state).  
If it does not satisfy the specifications, please use 3-wire auto switch. Also, n parallel connections will multiply leakage current flowing to the load by n times.
- 6) Internal Voltage Drop of the Auto Switch
  - Due to voltage drop (refer to internal voltage drop on the specifications) caused by internal resistance of LED, voltage drop of n auto switches connected in series will be multiplied by n times.  
As a result, in some cases the load will not activate even if the auto switch drives properly.
- 7) When wiring is disconnected, or when forcibly activating the auto switch for action confirmation, carefully design the circuit to avoid reverse current.
  - The auto switch may malfunction or be damaged when reverse current occurs.
- 8) When multiple cylinders or robotic hands are placed close together.
  - Please provide enough space when using multiple actuators such as cylinders or robotic hands equipped with auto switches. (If allowable distance of each actuator is specified please follow specified instructions.) If they are too close, auto switches may malfunction due to magnetic interference.
- 9) Secure space for maintenance and inspection
  - Please secure space for maintenance and inspection of auto switches when setting actuators such as cylinders and robotic hands equipped with auto switches.

## ● Notes on Operating Environment

- 1) Never use the product in an atmosphere with explosive gases.
  - Auto switches are not designed to prevent explosion. Do not use the product in an atmosphere with explosive gases since it may cause serious explosions.
- 2) Do not use the product in an area where a magnetic field is generated.
  - Auto switches may malfunction, or internal magnet actuators, such as cylinders or robotic hands, equipped with auto switches will be demagnetized.
- 3) Do not use the product in an environment where the auto switches are continuously exposed to water or coolant.
  - Although IEC standard IP67 structure is satisfied, please avoid using auto switches in an environment where continuously exposed to water or coolant. This may cause insulation failure or malfunction.
- 4) Do not use the product in an environment with oil or chemicals.
  - If auto switches are used in an environment with coolant or cleaning solvent, even in a short time, they may be adversely affected by improper insulation, malfunction due to swelling of potting resin and/or hardening of electric cable.
- 5) Do not use the product in an environment subject to large temperature cycle.
  - Heat cycles other than ordinary changes in temperature may adversely affect the internal structure of auto switches.
- 6) Avoid accumulation of steel dust and close connection of magnetic materials.
  - An amount of steel chips or steel dusts, such as sputters of welding accumulate around an actuator. Cylinders, robotic hand equipped with auto switches and or magnetic materials (those attracted by magnet) are gathered closely to the actuator. These can weaken internal magnet actuators.
- 7) Do not use the product in an environment with excessive impact.
  - Under the condition of the excessive impact of more than 30G, the contact of the reed auto switch will malfunction and the indicator light may signal or may be disconnected.

## ● Installation Notes

- 1) Do not drop or bump.
  - Do not drop, bump or apply excessive impact on auto switches. The auto switches may be damaged and cause malfunction.
- 2) Tighten auto switches with appropriate tightening torque.
  - Please follow the tightening torque below. Excessive tightening torque may damage the mounting screw, fitting or main body of the auto switch. Also, mounting position may be shifted due to insufficient tightening torque.

Mounting Screw Size	Tightening Torque (N·m)
M2×0.4	0.1
M2.5×0.45	0.25
M3×0.5	0.5

- 3) Do not carry cylinders or robotic hands by holding the electric cable of the auto switch.
  - It may break the electric cable or damage the internal element.
- 4) Do not fix auto switches with the mounting screws other than attached in main body of the auto switches.
  - Using non-designated screws may damage auto switches.
- 5) Install the auto switches at the center of the operating area.
  - Installation position of auto switches should be adjusted so that a detected object (piston etc.) stops at the center of operating range. (Installation position shown in the catalog shows the most suitable fixed position of stroke end.) Please refer to P.345 for WPS, P.355 for WPA, P.363 for WPH, P.375 for WPP and P.391 for WPQ. If the auto switches are installed at the edge of operating range (near the boundary of ON and OFF), output movement may be unstable.
- 6) Installation position of the auto switches should be adjusted by checking actual operating state.
  - Depending on the installation environment, actuators such as cylinders and robotic hands may not operate properly even if they are installed to the appropriate position. Make sure to check the operating condition even when mounting them at the middle of the stroke.

Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

Pneumatic Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

Air Flow Control Valve

BZW

Manifold Block

WHZ-MD

## Cautions

### ● Notes on Wiring

- 1) Check the insulation of wiring.
  - Insulation failure (interference with other circuit, ground fault, and insulation failure between terminals) may send excessive voltage or current to the auto switches causing damage.
- 2) Do not place wires and auto switch cables close to other cables and high voltage cables.
  - Otherwise, surge voltages will be induced creating noise and leading to malfunctions.
- 3) Repeated bending stress or stretching force should be avoided on electric cables.
  - Wiring with bending stress or stretching force repeatedly applied on electric cables will prematurely breakdown.  
Bending stress or stretching force applied on the connecting area of electric cables and main body of the auto switches will damage the electric cables.  
Auto switches or wires should not be moving especially near the connecting areas.
- 4) Make sure to check the load state (connection and current value) before turning on the power.
  - For 2-Wire Type  
Auto switches will instantly break due to over loading current if turning on the auto switches without connecting the load (Shorted Load Circuit). The above statement is also applied to the condition when the brown cable (+, output) of 2-wire type is directly connected to the (+) power terminal of a fixture and etc.
- 5) Avoid shorted load circuit.
  - Reed Auto Switch  
Auto switches will instantly break due to over loading current if turning on the auto switch in load short circuit condition.
  - Solid State Auto Switch  
Be aware of auto switch breakages when products with PNP output is not equipped with short-circuit protection.
- 6) Avoid wrong wiring
  - Reed Auto Switch  
The electric circuit has polarities. The brown cable is "+", and the blue cable is "-". The reed switch can operate even with reversed connection, but LED light will not illuminate.  
Also, flowing excessive current will damage LED and it will not operate properly.
  - Solid State Auto Switch  
In case of 2-wire type, even if connected reversely, the auto switch will not be damaged due to protection circuit, but it is always ON.  
If reversely connected under short circuit condition, the auto switch will be damaged.  
In case of 3-wire type, even if the connections are reversed (power supply line "+" and "-"), the auto switch will be protected by a protection circuit.  
However, if connecting the power supply "+" to the blue cable and "-" to the black cable, the auto switch will be damaged.

### ● Notes on Handling

- 1) It should be operated by qualified personnel.
  - Machines and devices with hydraulic and pneumatic equipment should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
  - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
  - ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
  - ③ After stopping the product, do not remove until the temperature drops.
  - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not disassemble or modify.
  - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

## ● Maintenance • Inspection

Conduct the below maintenances and inspections periodically in order to avoid unintended malfunctions and to ensure the safety.

- 1) Removal of the Product and Shut-off of Pressure Source
  - Before removing the product, make sure that safety devices and preventive devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
  - Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 2) Never touch terminals while the power is on.
  - It will cause electric shock, malfunction and damage to the auto switches.
- 3) Retightening of Mounting Screws
  - Retighten the screws after adjusting the mounting position when the mounting position of the auto switches is shifted due to the looseness of the mounting screws.
- 4) Check if the electric cable is damaged or not.
  - Damaged cables may cause insulation failure. Exchange the auto switch or repair the reed if there is damage on the electric cable.
- 5) Check the setting position of the detector.
  - Confirm the set position is stopped at the center of the detecting range (the area that red LED illuminates).
- 6) Cleaning Auto Switches
  - The auto switch should be clean. Do not use benzene, paint thinner or alcohol for cleaning. Doing so will cause scratches on the product and indications may be erased. If it is hard to remove stains from the product, wipe it out with a cloth soaked in a neutral detergent diluted with water. Wipe with a dry cloth to remove wet residue.
- 7) Product Storage
  - Keep the product out of direct sunlight in a cool area where it is protected from water and humidity.
- 8) Please contact us for auto switch replacements.

Locating  
+  
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating  
Pin Clamp

SWP

High-Power  
Pull Stud Clamp

WPT

JES

FA Pneumatic  
Hole Clamp

WKH

Lifting  
Hole Clamp

SWJ

Ball Lock  
Cylinder

WKA

Pneumatic  
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch  
Proximity Switch

JEP

High-Power Pneumatic  
Hole Clamp

SWE

High-Power Pneumatic  
Swing Clamp

WHE

High-Power Pneumatic  
Link Clamp

WCE

Pneumatic  
Hole Clamp

SWA

Pneumatic  
Swing Clamp

WHA

Double Piston  
Pneumatic  
Swing Clamp

WHD

Pneumatic  
Link Clamp

WCA

Air Flow  
Control Valve

BZW

Manifold  
Block

WHZ-MD

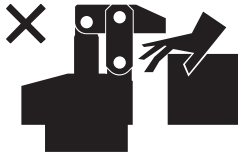
※ Please refer to P.716 for common cautions.

• Warranty

## ● Cautions

### ● Notes on Handling

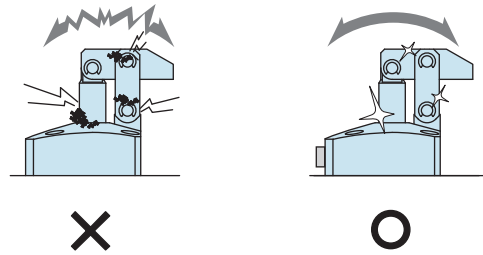
- 1) It should be operated by qualified personnel.
  - The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
  - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
  - ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
  - ③ After stopping the product, do not remove until the temperature drops.
  - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not touch a clamp (cylinder) while it is working. Otherwise, your hands may be injured.



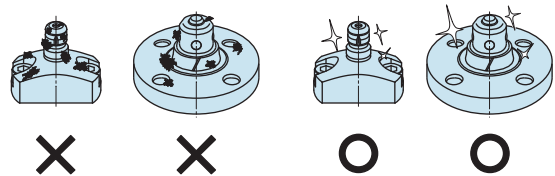
- 4) Do not disassemble or modify.
  - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

### ● Maintenance and Inspection

- 1) Removal of the Machine and Shut-off of Pressure Source
  - Before removing the product, make sure that the safety devices are in place. Shut off the pressure and power source and make sure no pressure exists in the air and hydraulic circuits.
  - Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 2) Regularly clean the area around the piston rod and plunger.
  - If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage.



- 3) Regularly clean the reference surfaces (taper reference surface and seating surface) of locating products (SWT/SWQ/SWP/VRA/VRC/VX/VXE/VXF/WVS/VWH/VWM/VWK).
  - Locating products (except VRA/VRC/VX/VXE/VXF and SWR without air blow port) can remove contaminants with the cleaning function. When installing a workpiece or a pallet, make sure there are no contaminants such as thick sludge.
  - Continuous use with dirt on components will lead to locating failure, fluid leakage and malfunction.



- 4) Regularly tighten pipe, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.
- 5) Make sure the hydraulic fluid has not deteriorated.
- 6) Make sure there is a smooth action without an irregular noise.
  - Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
- 7) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 8) Please contact us for overhaul and repair.

## ● Warranty

### 1) Warranty Period

- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

### 2) Warranty Scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.

Defects or failures caused by the following are not covered.

- ① If the stipulated maintenance and inspection are not carried out.
- ② Failure caused by the use of the non-confirming state at the user's discretion.
- ③ If it is used or operated in an inappropriate way by the operator. (Including damage caused by the misconduct of the third party.)
- ④ If the defect is caused by reasons other than our responsibility.
- ⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
- ⑥ Other caused by natural disasters or calamities not attributable to our company.
- ⑦ Parts or replacement expenses due to parts consumption and deterioration. (Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.

Locating  
+  
Clamp

Locating

Hand · Clamp

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Valve · Coupler

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#### Cautions

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#### Company Profile

Company Profile

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#### Sales Offices

# Sales Offices

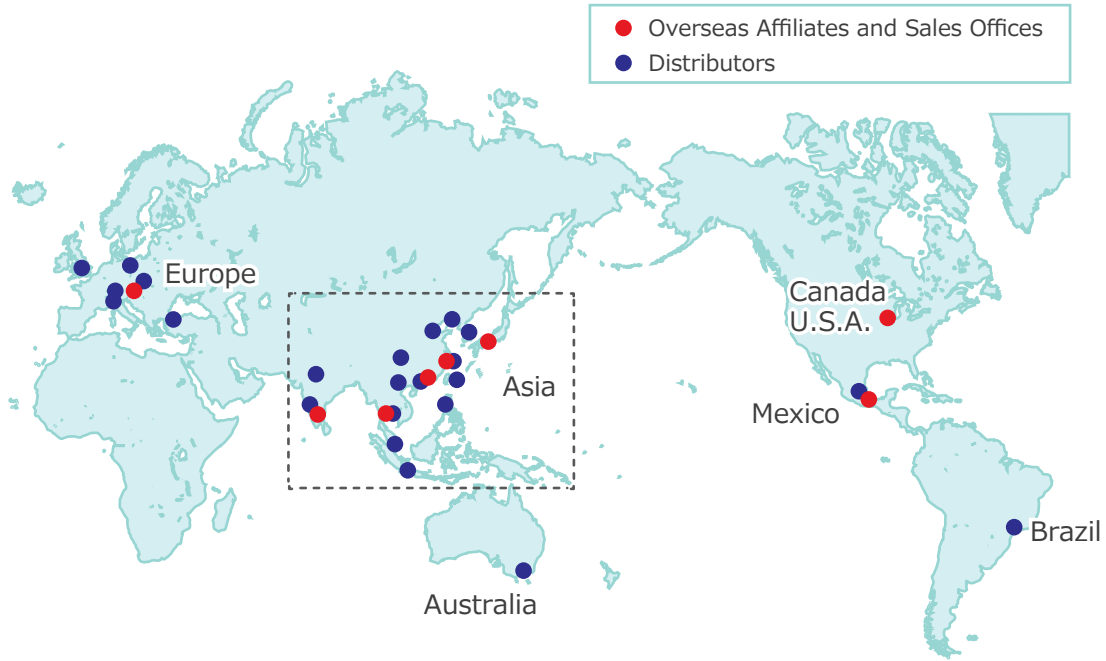
## Sales Offices across the World

JAPAN HEAD OFFICE Overseas Sales	<b>TEL. +81-78-991-5162</b>	<b>FAX. +81-78-991-8787</b>
	KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241 〒651-2241 兵庫県神戸市西区室谷2丁目1番5号	
United States of America SUBSIDIARY KOSMEK (USA) LTD.	<b>TEL. +1-630-620-7650</b>	<b>FAX. +1-630-620-9015</b>
	650 Springer Drive, Lombard, IL 60148 USA	
MEXICO REPRESENTATIVE OFFICE KOSMEK USA Mexico Office	<b>TEL. +52-442-161-2347</b>	
	Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico	
EUROPE SUBSIDIARY KOSMEK EUROPE GmbH	<b>TEL. +43-463-287587</b>	<b>FAX. +43-463-287587-20</b>
	Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria	
CHINA KOSMEK (CHINA) LTD. 考世美(上海)貿易有限公司	<b>TEL. +86-21-54253000</b>	<b>FAX. +86-21-54253709</b>
	Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China 中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125	
INDIA BRANCH OFFICE KOSMEK LTD - INDIA	<b>TEL. +91-9880561695</b>	
	F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India	
THAILAND REPRESENTATIVE OFFICE KOSMEK Thailand Representation Office	<b>TEL. +66-2-300-5132</b>	<b>FAX. +66-2-300-5133</b>
	67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand	
TAIWAN (Taiwan Exclusive Distributor) Full Life Trading Co., Ltd. 盈生貿易有限公司	<b>TEL. +886-2-82261860</b>	<b>FAX. +886-2-82261890</b>
	16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511 台湾新北市中和區建八路2號 16F-4 (遠東世紀廣場)	
PHILIPPINES (Philippines Exclusive Distributor) G.E.T. Inc, Phil.	<b>TEL. +63-2-310-7286</b>	<b>FAX. +63-2-310-7286</b>
	Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427	
INDONESIA (Indonesia Exclusive Distributor) PT. Yamata Machinery	<b>TEL. +62-21-29628607</b>	<b>FAX. +62-21-29628608</b>
	Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti, Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia	

## Sales Offices in Japan

Head Office Osaka Sales Office Overseas Sales	<b>TEL. 078-991-5162</b>	<b>FAX. 078-991-8787</b>
	〒651-2241 兵庫県神戸市西区室谷2丁目1番5号	
Tokyo Sales Office	<b>TEL. 048-652-8839</b>	<b>FAX. 048-652-8828</b>
	〒331-0815 埼玉県さいたま市北区大成町4丁目81番地	
Nagoya Sales Office	<b>TEL. 0566-74-8778</b>	<b>FAX. 0566-74-8808</b>
	〒446-0076 愛知県安城市美園町2丁目10番地1	
Fukuoka Sales Office	<b>TEL. 092-433-0424</b>	<b>FAX. 092-433-0426</b>
	〒812-0006 福岡県福岡市博多区上牟田1丁目8-10-101	

# Global Network



Asia Detailed Map



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