

# Polymatic<sup>TM</sup>

PREMIUM PNEUMATIC SOLUTIONS

## PREMIUM PRODUCTS



# One Touch - in Fitting

## How to Order?

Series No.	Type No.	O.D.of Tube	Port Size	Thread Type
F : Grey body and Orange release sleeve E : Black body and Blue release sleeve	PC PCF POC ...	04: 4mm 06: 6mm 08: 8mm 10: 10mm 12: 12mm 14: 14mm 16: 16mm	5/32: 5/32 " 3/16: 3/16 " 1/4: 1/4 " 5/16: 5/16 " 3/8: 3/8 " 1/2: 1/2 "	M5: M5 M6: M6 01: 1/8 " 02: 1/4 " 03: 3/8 " 04: 1/2 "
				P: PT G: G T: NPT

### Order Example:

ZPC series One Touch-in Fitting, Grey body and Orange release sleeve, for 4mm OD tube, 1/8" G thread, ERP code ZPC04-01G

## Metric Tubing-PT Thread

FPC	Model	D	R	A	B	S1	S2	Main Dimension
	FPC04-M5	4	M5	3.5	21.5	10	2	
	FPC04-M6	4	M6	4.5	22.5	10	2	
	FPC04-01	4	PT1/8	7.5	20.2	10	3	
	FPC04-02	4	PT1/4	9.5	18.5	14	3	
	FPC06-M5	6	M5	3.5	22.1	12	2	
	FPC06-M6	6	M6	4.5	23.1	12	2	
	FPC06-01	6	PT1/8	7.5	21.1	12	4	
	FPC06-02	6	PT1/4	9.5	22.1	14	4	
	FPC06-03	6	PT3/8	10.5	21.1	17	4	
	FPC06-04	6	PT1/2	13.5	24.1	21	4	
	FPC08-01	8	PT1/8	7.5	26.4	14	5	
	FPC08-02	8	PT1/4	9.5	23.9	14	6	
	FPC08-03	8	PT3/8	10.5	21.9	17	6	
	FPC08-04	8	PT1/2	13.5	24.4	21	6	
	FPC10-01	10	PT1/8	7.5	29.5	17	5	
	FPC10-02	10	PT1/4	9.5	30.8	17	6	
	FPC10-03	10	PT3/8	10.5	27.7	17	8	
	FPC10-04	10	PT1/2	13.5	25.5	21	8	
	FPC12-01	12	PT1/8	7.5	32	20	5	
	FPC12-02	12	PT1/4	9.5	34	20	6	
	FPC12-03	12	PT3/8	10.5	30	20	8	
	FPC12-04	12	PT1/2	13.5	29	21	10	
	FPC14-03	14	PT3/8	10.5	35.3	22	-	
	FPC14-04	14	PT1/2	13.5	33.3	22	-	
	FPC16-03	16	PT3/8	10.5	36.5	24	-	
	FPC16-04	16	PT1/2	13.5	34.5	24	-	

FPWT	Model	D	R	A	B	S	Main Dimension
	FPWT04-M5	4	M5	3.5	40.2	10	
	FPWT04-M6	4	M6	4.5	41.2	10	
	FPWT04-01	4	PT1/8	7.5	41.2	10	
	FPWT04-02	4	PT1/4	9.5	45.5	14	
	FPWT06-M5	6	M5	3.5	41.2	12	
	FPWT06-M6	6	M6	4.5	42.2	12	
	FPWT06-01	6	PT1/8	7.5	44.2	12	
	FPWT06-02	6	PT1/4	9.5	46.2	14	
	FPWT06-03	6	PT3/8	10.5	47.2	17	
	FPWT06-04	6	PT1/2	13.5	50.2	21	
	FPWT08-01	8	PT1/8	7.5	46.9	14	
	FPWT08-02	8	PT1/4	9.5	48.9	14	
	FPWT08-03	8	PT3/8	10.5	49.9	17	
	FPWT08-04	8	PT1/2	13.5	52.9	21	
	FPWT10-01	10	PT1/8	7.5	56.1	17	
	FPWT10-02	10	PT1/4	9.5	58.1	17	
	FPWT10-03	10	PT3/8	10.5	59.1	17	
	FPWT10-04	10	PT1/2	13.5	62.1	21	
	FPWT12-01	12	PT1/8	7.5	58.8	19	
	FPWT12-02	12	PT1/4	9.5	60.8	19	
	FPWT12-03	12	PT3/8	10.5	61.8	19	
	FPWT12-04	12	PT1/2	13.5	64.8	21	
	FPWT14-03	14	PT3/8	10.5	65.4	24	
	FPWT14-04	14	PT1/2	13.5	68.4	24	
	FPWT16-03	16	PT3/8	10.5	68.5	24	
	FPWT16-04	16	PT1/2	13.5	71.5	24	

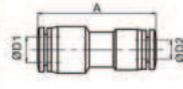
◆ Metric Tubing-PT Thread

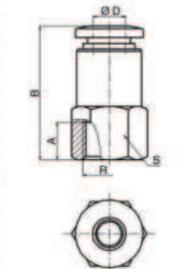
FPB	Model	D	R	A	B	C	S	Main Dimension
	FPB04-M5	4	M5	3.5	23	18.7	10	
	FPB04-M6	4	M6	4.5	24	18.7	10	
	FPB04-01	4	PT 1/8	7.5	26	18.7	10	
	FPB04-02	4	PT 1/4	9.5	28	18.7	14	
	FPB06-M5	6	M5	3.5	23.5	19.7	12	
	FPB06-M6	6	M6	4.5	24.5	19.5	12	
	FPB06-01	6	PT 1/8	7.5	26.5	19.5	12	
	FPB06-02	6	PT 1/4	9.5	28.5	19.5	14	
	FPB06-03	6	PT 3/8	10.5	29.5	19.5	17	
	FPB06-04	6	PT 1/2	13.5	32.5	19.5	21	
	FPB08-01	8	PT 1/8	7.5	29.5	22.6	14	
	FPB08-02	8	PT 1/4	9.5	31.5	22.6	14	
	FPB08-03	8	PT 3/8	10.5	32.5	22.6	17	
	FPB08-04	8	PT 1/2	13.5	35.5	22.6	21	
	FPB10-01	10	PT 1/8	7.5	34.5	28.5	17	
	FPB10-02	10	PT 1/4	9.5	36.5	28.5	17	
	FPB10-03	10	PT 3/8	10.5	37.5	28.5	17	
	FPB10-04	10	PT 1/2	13.5	40.5	28.5	21	
	FPB12-01	12	PT 1/8	7.5	35.5	29.3	19	
	FPB12-02	12	PT 1/4	9.5	37.5	29.3	19	
	FPB12-03	12	PT 3/8	10.5	38.5	29.3	19	
	FPB12-04	12	PT 1/2	13.5	41.5	29.3	21	
	FPB14-01	14	PT 1/8	7.5	37.5	29.8	24	
	FPB14-02	14	PT 1/4	9.5	39.5	29.8	24	
	FPB14-03	14	PT 3/8	10.5	39.7	29.8	24	
	FPB14-04	14	PT 1/2	13.5	42.7	29.8	24	
	FPB16-01	16	PT 1/8	7.5	38.5	33	24	
	FPB16-02	16	PT 1/4	9.5	40.5	33	24	
	FPB16-03	16	PT 3/8	10.5	41.1	33	24	
	FPB16-04	16	PT 1/2	13.5	44.1	33	24	

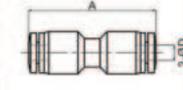
FPL	Model	D	R	A	B	C	S	Main Dimension
	FPL04-M5	4	M5	3.5	22	17.7	10	
	FPL04-M6	4	M6	4.5	23	17.7	10	
	FPL04-01	4	PT 1/8	7.5	25	17.7	10	
	FPL04-02	4	PT 1/4	9.5	27	17.7	14	
	FPL06-M5	6	M5	3.5	23.7	19.2	12	
	FPL06-M6	6	M6	4.5	24.2	19.2	12	
	FPL06-01	6	PT 1/8	7.5	26.2	19.2	12	
	FPL06-02	6	PT 1/4	9.5	28.2	19.2	14	
	FPL06-03	6	PT 3/8	10.5	29.2	19.2	17	
	FPL06-04	6	PT 1/2	13.5	32.2	19.2	21	
	FPL08-01	8	PT 1/8	7.5	29.5	22.6	14	
	FPL08-02	8	PT 1/4	9.5	31.5	22.6	14	
	FPL08-03	8	PT 3/8	10.5	32.5	22.6	17	
	FPL08-04	8	PT 1/2	13.5	35.5	22.6	21	
	FPL10-01	10	PT 1/8	7.5	33.8	27.8	17	
	FPL10-02	10	PT 1/4	9.5	35.8	27.8	17	
	FPL10-03	10	PT 3/8	10.5	36.8	27.8	17	
	FPL10-04	10	PT 1/2	13.5	39.8	27.8	21	
	FPL12-01	12	PT 1/8	7.5	35.5	29.3	19	
	FPL12-02	12	PT 1/4	9.5	37.5	29.3	19	
	FPL12-03	12	PT 3/8	10.5	38.5	29.3	19	
	FPL12-04	12	PT 1/2	13.5	41.5	29.3	21	
	FPL14-01	14	PT 1/8	7.5	37.5	30.6	24	
	FPL14-02	14	PT 1/4	9.5	39.5	30.6	24	
	FPL14-03	14	PT 3/8	10.5	40.5	30.6	24	
	FPL14-04	14	PT 1/2	13.5	43.5	30.6	24	
	FPL16-01	16	PT 1/8	7.5	38.5	33.3	24	
	FPL16-02	16	PT 1/4	9.5	40.5	33.3	24	
	FPL16-03	16	PT 3/8	10.5	43	33.3	24	
	FPL16-04	16	PT 1/2	13.5	46	33.3	24	

FPD	Model	D	R	A	B	C	S	Main Dimension
	FPD04-M5	4	M5	3.5	23	18.7	10	
	FPD04-M6	4	M6	4.5	24	18.7	10	
	FPD04-01	4	PT 1/8	7.5	26	18.7	10	
	FPD04-02	4	PT 1/4	9.5	28	18.7	14	
	FPD06-M5	6	M5	3.5	23.5	19.5	12	
	FPD06-M6	6	M6	4.5	24.5	19.5	12	
	FPD06-01	6	PT 1/8	7.5	26.5	19.5	12	
	FPD06-02	6	PT 1/4	9.5	28.5	19.5	14	
	FPD06-03	6	PT 3/8	10.5	29.5	19.5	17	
	FPD06-04	6	PT 1/2	13.5	32.5	19.5	21	
	FPD08-01	8	PT 1/8	7.5	29.5	22.6	14	
	FPD08-02	8	PT 1/4	9.5	31.5	22.6	14	
	FPD08-03	8	PT 3/8	10.5	32.5	22.6	17	
	FPD08-04	8	PT 1/2	13.5	35.5	22.6	21	
	FPD10-01	10	PT 1/8	7.5	34.5	28.5	17	
	FPD10-02	10	PT 1/4	9.5	36.5	28.5	17	
	FPD10-03	10	PT 3/8	10.5	37.5	28.5	17	
	FPD10-04	10	PT 1/2	13.5	40.5	28.5	21	
	FPD12-01	12	PT 1/8	7.5	35.5	29.3	19	
	FPD12-02	12	PT 1/4	9.5	37.5	29.3	19	
	FPD12-03	12	PT 3/8	10.5	38.5	29.3	19	
	FPD12-04	12	PT 1/2	13.5	41.5	29.3	21	
	FPD14-03	14	PT 3/8	10.5	39.7	29.8	24	
	FPD14-04	14	PT 1/2	13.5	42.7	29.8	24	
	FPD16-03	16	PT 3/8	10.5	41.1	31.9	24	
	FPD16-04	16	PT 1/2	13.5	44.1	31.9	24	

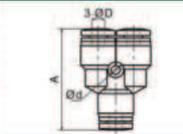
◆ **Metric Tubing-PT Thread**

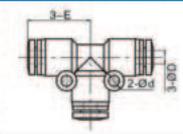
FPG	Model	D1	D2	A	Main Dimension
 <p>ΦD1 D1&gt;D2 ΦD2</p>	FPG06-04	6	4	35.4	
	FPG08-04	8	4	37.8	
	FPG08-06	8	6	37.8	
	FPG10-06	10	6	42.8	
	FPG10-08	10	8	42.8	
	FPG12-08	12	8	48.5	
	FPG12-10	12	10	48.5	

FPCF	Model	D	R	A	B	S	Main Dimension
 <p>R ΦD</p>	FPCF04-01	4	PT1/8	8	24.7	12	
	FPCF04-02	4	PT1/4	11	27.7	17	
	FPCF06-01	6	PT1/8	8	25.2	12	
	FPCF06-02	6	PT1/4	11	28.2	17	
	FPCF06-03	6	PT3/8	12	29.2	20	
	FPCF06-04	6	PT1/2	14	31.2	24	
	FPCF08-01	8	PT1/8	8	26.9	14	
	FPCF08-02	8	PT1/4	11	29.9	17	
	FPCF08-03	8	PT3/8	12	30.9	20	
	FPCF08-04	8	PT1/2	14	32.9	24	
	FPCF10-01	10	PT1/8	8	29.9	17	
	FPCF10-02	10	PT1/4	11	32.9	17	
	FPCF10-03	10	PT3/8	12	33.9	20	
	FPCF10-04	10	PT1/2	14	35.9	24	
	FPCF12-01	12	PT1/8	8	31.5	20	
	FPCF12-02	12	PT1/4	11	34.5	20	
FPCF12-03	12	PT3/8	12	35.5	20		
FPCF12-04	12	PT1/2	14	37.5	24		

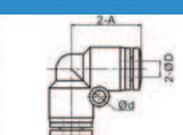
FPU	Model	D	A	Main Dimension
 <p>ΦD</p>	FPU04	4	33.4	
	FPU06	6	35.6	
	FPU08	8	38.7	
	FPU10	10	48.2	
	FPU12	12	48.6	
	FPU14	14	48.2	
	FPU16	16	49.6	

◆ **Metric Tubing**

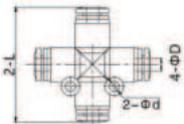
FPY	Model	D	A	d	Main Dimension
 <p>ΦD</p>	FPY04	4	35.6	3	
	FPY06	6	37.2	3.2	
	FPY08	8	40	3.2	
	FPY10	10	50.1	4.2	
	FPY12	12	52.6	4.2	
	FPY14	14	57.3	4.2	
	FPY16	16	60.5	5	

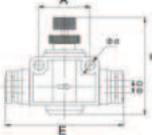
FPE	Model	D	E	d	Main Dimension
 <p>ΦD</p>	FPE04	4	18.7	3.2	
	FPE06	6	19.5	3.2	
	FPE08	8	22.6	3.2	
	FPE10	10	28.5	4.2	
	FPE12	12	29.3	4.2	
	FPE14	14	31.5	5	
	FPE16	16	33	5	

◆ **Metric Tubing-G Thread**

FPV	Model	D	A	d	Main Dimension
 <p>ΦD</p>	FPV04	4	17.7	3.2	
	FPV06	6	19.2	3.2	
	FPV08	8	22.6	3.2	
	FPV10	10	27.8	4.2	
	FPV12	12	29.3	4.2	
	FPV14	14	30.6	5	
	FPV16	16	33.3	5	

◆ **Metric Tubing-G Thread**

<b>FPZA</b>  $\phi D$	Model	D	L	d	Main Dimension 
	FPZA04	4	38.2	3.2	
FPZA06	6	39	3.2		
FPZA08	8	45.7	3.1		
FPZA10	10	56.8	4.2		
FPZA12	12	58.4	4.4		

<b>FSA</b>  $\phi D$	Model	D	d	A	B		E	Main Dimension 
	FSA04	4	3.2	14	min	max	39.5	
FSA06	6	4.3	20	38.8	43.6	46.8		
FSA08	8	4.3	22	40	45.5	52		
FSA10	10	4.3	26	48	52.2	62.3		
FSA12	12	4.3	32	51.5	58	73		

### How to Order?

Series No.	O.D.of Tube	Port Size	Thread Type	Ways
FHVFS	04: 4mm	5/32; 5/32"	M5: M5	Blank: 3 ways
FHVSS	06: 6mm	3/16; 3/16"	M6: M6	B: 2 ways
FHVFF	08: 8mm	1/4; 1/4"	01: 1/8"	
...	10: 10mm	5/16; 5/16"	02: 1/4"	
	12: 12mm	3/8; 3/8"	03: 3/8"	
	14: 14mm	1/2; 1/2"	04: 1/2"	
	16: 16mm			

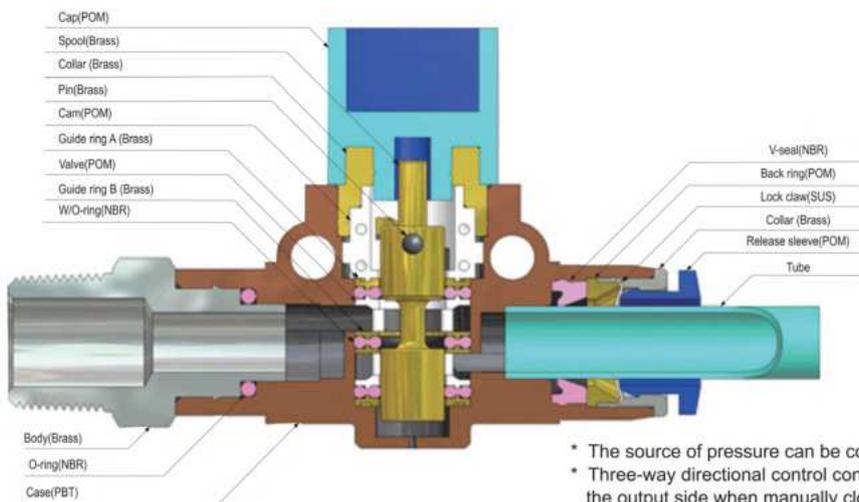
### Specifications

Working Medium	Air, Vacuum
Working Pressure (MPa)	0~0.8
Guaranteed Pressure (MPa)	1.2
Working Temperature (°C)	0~60
Tube Material	Nylon PU tube

#### Order example :

FHVFS series plastic fitting, for 6mm OD tube, G1/8" port size, ERP code is FHVFS06-01G  
 Note: If both sides with tube, then will show its size accordingly. For example, FHVFF hand valve for both 6mm OD tube, ERP code is: FHVFF 06-06

### Internal Structure



- \* The source of pressure can be completely shut off by simply turning the knob.
- \* Three-way directional control configuration releases the residual internal pressure on the output side when manually closed.
- \* Ideal for inspecting or repairing any devices without compromising the safety.
- \* Directionality of airflow may be selected from the tubing or threaded input side to the tubing or threaded output side.

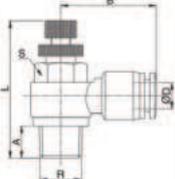
### Hand Valve



MODEL[Φ D1-Φ D2]	
Tube (Metric)	
FHVFF 06-06	FHVFF 12-10
FHVFF 08-06	FHVFF 12-12
FHVFF 08-08	
FHVFF 10-08	
FHVFF 10-10	

FHVFF	Model	C	D	P	d	E	F	L	M	H	Main Dimension
	FHVFF06-06	6	6	15	4.2	16.5	24	51	18	40.5	
	FHVFF08-06	8	6	15	4.2	16.5	24	52	18	40.5	
	FHVFF08-08	8	8	15	4.2	16.5	24	53	18	40.5	
	FHVFF10-08	10	8	21	4.2	21.5	29	63	22	45	
	FHVFF10-10	10	10	21	4.2	21.5	29	63	22	45	
	FHVFF12-10	12	10	21	4.2	21.5	29	64	22	45	
	FHVFS12-12	12	12	21	4.2	21.5	29	64	22	45	

◆ Main Dimension

FSC(Meter-out type)	Model	D	R	A	B	S	L		Main Dimension
							min	max	
	FSC04-M5	4	M5	4	20.2	8	37.5	44.3	
	FSC04-01	4	PT 1/8	8	22	10	37.5	44.3	
	FSC04-02	4	PT 1/4	10	25	14	43.7	51.3	
	FSC06-M5	6	M5	4	21.8	8	28.5	30.3	
	FSC06-01	6	PT 1/8	8	23.8	12	37.5	44.3	
	FSC06-02	6	PT 1/4	10	25.8	14	43.7	51.3	
	FSC06-03	6	PT 3/8	11	27.5	17	48.4	55.3	
	FSC06-04	6	PT 1/2	14	31	21	52.7	59.5	
	FSC08-01	8	PT 1/8	8	26.1	14	37.5	44.3	
	FSC08-02	8	PT 1/4	10	29.2	14	43.7	51.3	
	FSC08-03	8	PT 3/8	11	30.1	17	48.4	55.3	
	FSC08-04	8	PT 1/2	14	33.6	21	52.7	59.5	
	FSC10-02	10	PT 1/4	10	32.7	17	43.7	51.3	
	FSC10-03	10	PT 3/8	11	33.2	17	48.4	55.3	
	FSC10-04	10	PT 1/2	14	36.7	21	52.7	59.5	
	FSC12-02	12	PT 1/4	10	34.7	19	43.7	51.3	
FSC12-03	12	PT 3/8	11	36.6	19	48.4	55.3		
FSC12-04	12	PT 1/2	14	39	21	52.7	59.5		

**AC Series Air Preparation Unit**

# AC2010 AC3010 AC4010

## FR.L Unit



### Specifications

Model	AC2010-01 F2	AC2010-02 F2	AC3010-02 F2	AC3010-03 F2	AC3010-04 F2	AC4010-03 F2	AC4010-04 F2	AC4010-06 F2	
Working Medium	Clean Air(after 40 μ m filtration)								
Proof Pressure(MPa)	1.5								
Working Pressure Range(MPa)	0.15~1.0								
Pressure Adjustment Range(MPa)	0.05~0.9, Low pressure type 0.05~0.4								
Working Temperature(°C)	-5~60 ( No freezing )								
Filter Precision	40 μ m/5 μ m optional								
Recommended Oil	Turbine No.1 Oil, ISO VG32								
Bowl Material	PC(Polycarbonate)								
Water Bowl Capacity(CC)	11		40			75			
Oil Bowl Capacity(CC)	30		76			183			
Weight(g)	388		585			1628			
Component	Filter regulator	AW2000-01 F2	AW2000-02 F2	AW3000-02 F2	AW3000-03 F2	AW3000-04 F2	AW4000-03 F2	AW4000-04 F2	AW4000-06 F2
	Lubricator	AL2000-01 F2	AL2000-02 F2	AL3000-02 F2	AL3000-03 F2	AL3000-04 F2	AL4000-03 F2	AL4000-04 F2	AL4000-06 F2

### How to Order?

Series No.	Port size	Drain Type	Type No.	Pressure Gauge	Pressure Gauge Type	Scale Unit	Filter Precision	Thread Type
AC2010: A2000 series FR.L Units		Blank: Manual drain type C: Semi-anto drain D: Auto Drain type①		Blank: With pressure gauge N: No pressure gauge		②	Blank: 40 μ m 5M: 5 μ m	Blank: G P: PT T: NPT
AC3010: A3000 series FR.L Units			Blank: Standard type		F: Square pressure gauge Y: Round pressure gauge	Square pressure gauge optional Round pressure gauge optional	1: MPa 2: Bar 3: Psi 4: Mpa/Psi 5: Bar/Psi	
AC4010: A4000 series FR.L Units	2000 ----- 3000 ----- 4000	01: 1/8" 02: 1/4" ----- 02: 1/4" 03: 3/8" ----- 04: 1/2" 03: 3/8" ----- 04: 1/2" 06: 3/4"						

#### Order Example:

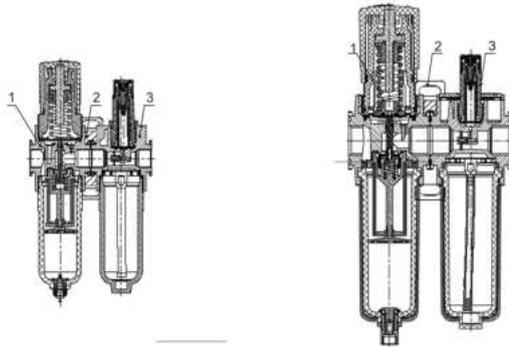
AC series FR.L unit, port size of 1/2", differential pressure drain type, with square pressure gauge, Mpa, 5 μ m, G thread, the ERP code is: AC3010-04CF15M

Remark: ① 2000 series without automatic drainage type

② Square pressure gauge is single scale, round pressure gauge is double scale.

## AC Series Air Preparation Unit

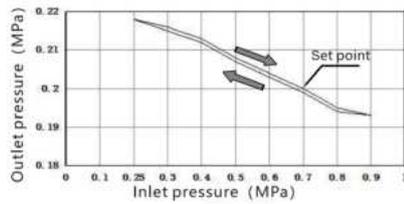
### Internal Structure



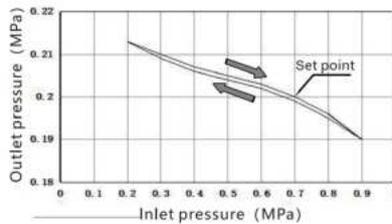
No.	Part Name
1	AC Series filter regulator
2	T type bracket
3	AC Series lubricator

### Pressure Feature

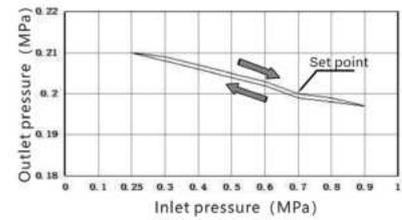
AC2010



AC3010



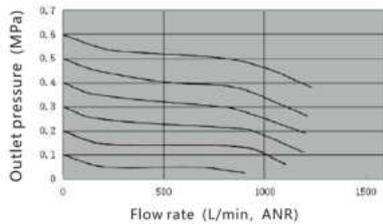
AC4010



### Flow Chart

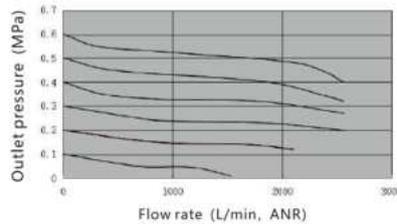
AC2010

Flow chart(Inlet pressure 0.7Mpa)



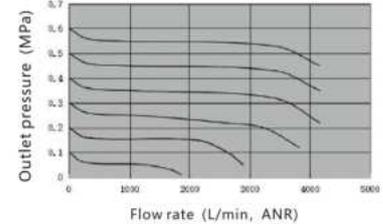
AC3010

Flow chart(Inlet pressure 0.7Mpa)

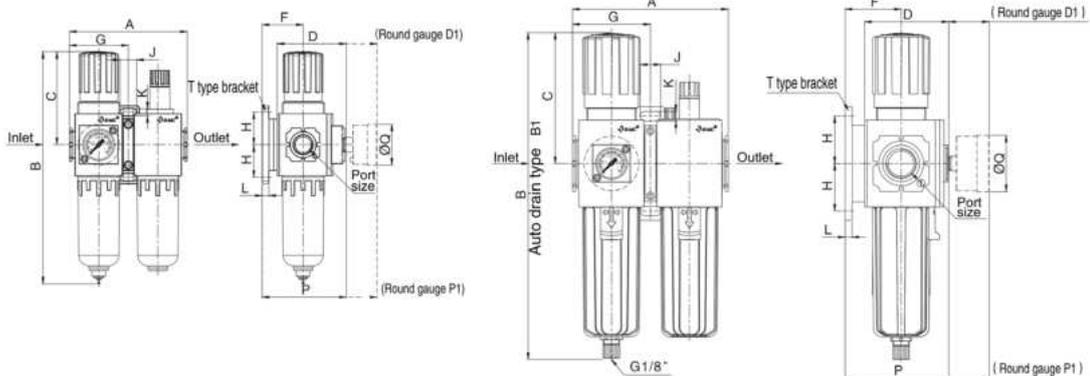


AC4010

Flow chart(Inlet pressure 0.7Mpa)



### Main Dimensions



Model	Port Size	A	B	B1	C	D	D1	F	G	H	J	K	L	P	P1	Q
AC2010	1/8", 1/4"	86	171.2	-	68.6	50.6	73	30	43	24	12.5	5.5	5	61.6	84	30
AC3010	1/4", 3/8", 1/2"	114	239.6	236.6	96.6	61.6	91.2	41	57	35	15	7	5	75.8	105.4	41.5
AC4010	3/8", 1/2", 3/4"	160	270.2	264.5	105.4	82.1	110.7	50	80	40	17.5	8.5	7	95.3	123.8	41.5

**AR Series Air Preparation Unit**

# AR2000 AR3000 AR4000

## Regulator



### ◆ Specifications

Model	AR2000-01 F2	AR2000-02 F2	AR3000-02 F2	AR3000-03 F2	AR3000-04 F2	AR4000-03 F2	AR4000-04 F2	AR4000-06 F2
Working Medium	Clean Air(after 40 μ m filtration)							
Proof Pressure(MPa)	1.5							
Max. Working Pressure(MPa)	1.0							
Pressure Adjustment Range(Mpa)	0.05~0.9, Low pressure type 0.05~0.4							
Working Temperature(°C)	-5~60 ( No freezing )							
Weight(g)	166		380			684		

### ◆ How to Order?

Series No.	Port size	Type No.	Pressure Gauge	Pressure Gauge Type	Bracket Code	Scale Unit	Thread Type
AR2000: A2000 series Regulator AR3000: A3000 series Regulator AR4000: A3000 series Regulator	2000 01: 1/8" 02: 1/4" 02: 1/4" 3000 03: 3/8" 04: 1/2" 4000 03: 3/8" 04: 1/2" 06: 3/4"	Blank: Standard type	Blank: With pressure gauge N: No pressure gauge	F: Square pressure gauge Y: Round pressure gauge	Blank: With bracket J: No bracket	①	Blank: G P: PT T: NPT
						Square pressure gauge optional { 1: MPa 2: Bar 3: Psi Round pressure gauge optional { 4: Mpa/Psi 5: Bar/Psi	

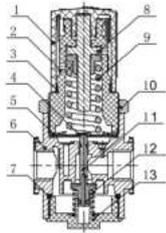
#### Order Example:

AR series Regulator, port size of 1/2", with square pressure gauge, with bracket, Mpa, G thread,  
the ERP code is: AR3000-04F1

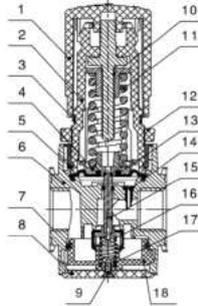
Remark: ① Port of round pressure gauge is M6; It is not allowed to distribute pressure gauges to customers.

**AR Series Air Preparation Unit**

**Internal Structure**



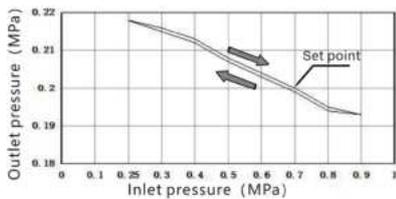
No.	Part Name	Material
1	Pressure regulating handle	Plastics
2	Pressure regulating valve cover	Plastics
3	Marking ring	Plastics
4	Diaphragm	SUS304+NBR
5	Gaskets	6061
6	Valve body	Aluminum alloy
7	Seal	NBR
8	Water bowl	Plastics
9	Pressure regulating screw/ Screw set	Free-cutting steel
10	Spring	SWC
11	Octagonal caps	Aluminum alloy
12	Valve stem	Brass
13	Spring	SUS304
14	Water separator propeller	Plastics
15	Valve core	Plastics
16	Water baffle	Plastics



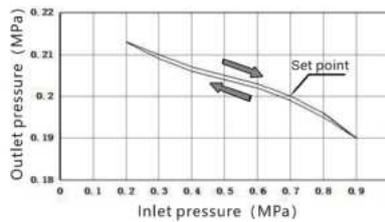
No.	Part Name	Material
1	Pressure regulating handle	Plastics
2	Pressure regulating valve cover	Plastics
3	Marking ring	Plastics
4	Pressure regulating spring seat	Plastics
5	Cover plate	Plastics
6	Valve body	Aluminum alloy
7	Seal	NBR
8	Valve seat cover	Plastics
9	Screw	Mild steel
10	Pressure regulating screw/ Screw set	Free-cutting steel
11	Spring	SWC
12	Octagonal caps	Plastics
13	Diaphragm	NBR
14	Interline	Plastics
15	Valve stem	Brass
16	Valve core	6061+NBR
17	Spring	Plastics
18	Pressure regulating valve seat	Plastics

**Pressure Feature**

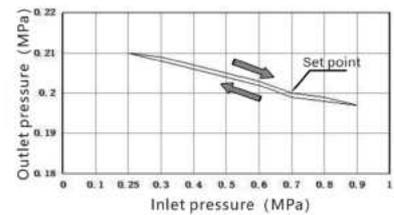
**AR2000**



**AR3000**

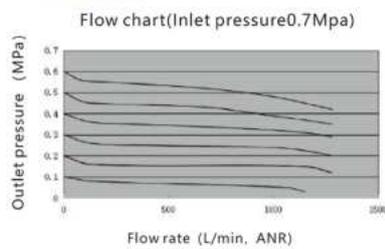


**AR4000**

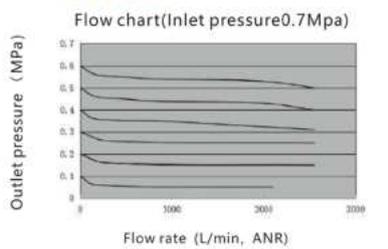


**Flow Chart**

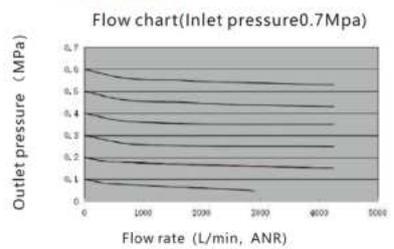
**AR2000**



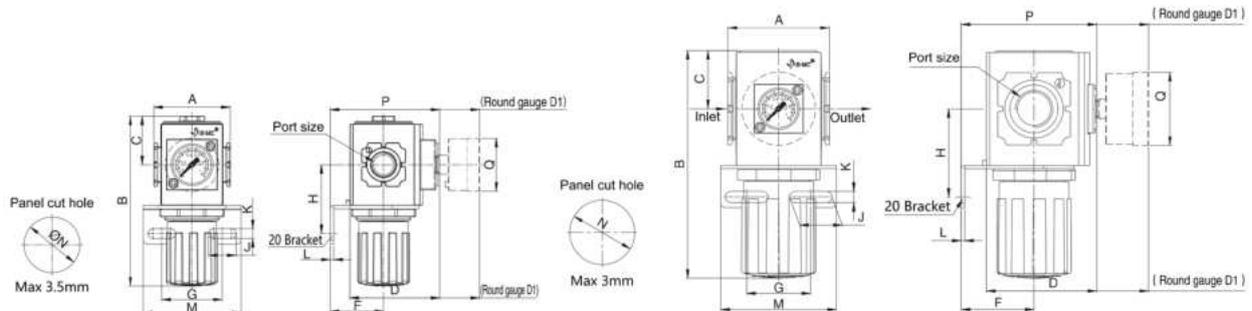
**AR3000**



**AR4000**



**Main Dimensions**

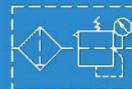


Model	Port Size	A	B	C	D	D1	F	G	H	J	K	L	M	N	P	P1	Q
AR2000	1/8", 1/4"	43	96.3	27.5	50.6	73	30	34	39	15.5	5.5	2	55	31.5	61.6	84	30
AR3000	1/4", 3/8", 1/2"	57	129.1	33	62.1	91.2	41	36	50	24	6.5	2	65	36.5	76.3	105.4	41.5
AR4000	3/8", 1/2", 3/4"	80	141.6	36	82.1	110.7	50	38	53	28	8.5	2.5	72	52.5	95.3	123.9	41.5

**AW Series Air Preparation Unit**

# AW2000 AW3000 AW4000

## Filter Regulator



### ◆ Specifications

Model	AW2000-01 F2	AW2000-02 F2	AW3000-02 F2	AW3000-03 F2	AW3000-04 F2	AW4000-03 F2	AW4000-04 F2	AW4000-06 F2
Working Medium	Clean Air(after 40 μ m filtration)							
Proof Pressure(MPa)	1.5							
Working Pressure Range(MPa)	0.15~1.0							
Pressure Adjustment Range(MPa)	0.05~0.9, Low pressure type 0.05~0.4							
Working Temperature(°C)	-5~60 ( No freezing )							
Filter Precision	40 μ m/5 μ m optional							
Recommended Oil	Turbine No.1 Oil, ISO VG32							
Container Material	PC (Polycarbonate)							
Water Bowl Capacity(CC)	11			40			75	
Weight(g)	197			477			853	

### ◆ How to Order?

Series No.	Port size	Drain Type	Type No.	Pressure Gauge	Pressure Gauge Type	Bracket Code	Scale Unit	Filter Precision	Thread Type
AW2000: A2000 series Filter regulator	2000 ----- 3000 ----- 4000	Blank: Manual drain type C: Semi-auto drain D: Auto Drain type①	Blank: Standard type	Blank: With pressure gauge N: No pressure gauge	F: Square pressure gauge Y: Round pressure gauge	Blank: With bracket J: No bracket	Square pressure gauge optional Round pressure gauge optional	Blank: 40 μ m 5M: 5 μ m	Blank: G P: PT T: NPT
AW3000: A3000 series Filter regulator									
AW4000: A4000 series Filter regulator									
01: 1/8"									
02: 1/4"									
03: 3/8"									
04: 1/2"									
05: 3/8"									
06: 1/2"									
06: 3/4"									

#### Order Example:

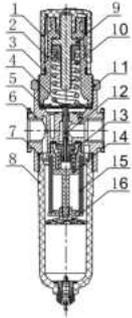
AW series FR unit, port size of 1/2", differential pressure drain type, with square pressure gauge, with bracket, Mpa, 5 μ m, G thread, the ERP code is: AW3000-04CF15M

Remark: ① 2000 series without automatic drainage type

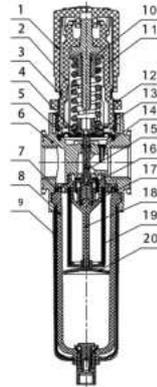
② Square pressure gauge is single scale, round pressure gauge is double scale.

**AW Series Air Preparation Unit**

**Internal Structure**



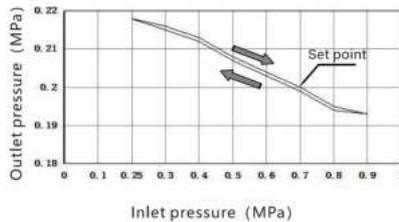
No.	Part Name	Material
1	Pressure regulating handle	Plastics
2	Pressure regulating valve cover	Plastics
3	Marking ring	Plastics
4	Diaphragm	SUS304+NBR
5	Gaskets	6061
6	Valve body	Aluminum alloy
7	Seal	NBR
8	Water bowl	Plastics
9	Protection guard	Plastics
10	Pressure regulating screw/Screw set	Free-cutting steel
11	Spring	SWC
12	Octagonal caps	Aluminum alloy
13	Spring	SUS304
14	Water separator propeller	Plastics
15	Valve core	Plastics
16	Water baffle	Plastics



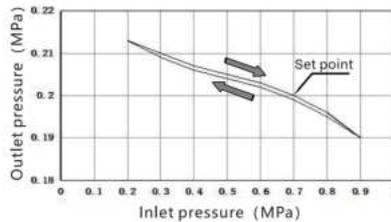
No.	Part Name	Material
1	Pressure regulating handle	Plastics
2	Pressure regulating valve cover	Plastics
3	Marking ring	Plastics
4	Pressure regulating spring seat	Plastics
5	Cover plate	Plastics
6	Valve body	Aluminum alloy
7	Seal	NBR
8	Water bowl	Plastics
9	Protection guard	Plastics
10	Pressure regulating screw/Screw set	Free-cutting steel
11	Spring	SWC
12	Octagonal caps	PCM with glass fiber/Zinc alloy
13	Diaphragm	NBR
14	Interline	Plastics
15	Valve stem	Brass
16	Valve core	6061+NBR
17	Spring	SUS304
18	Water separator propeller	Plastics
19	Filter element	Plastics
20	Water baffle	Plastics

**Pressure Feature**

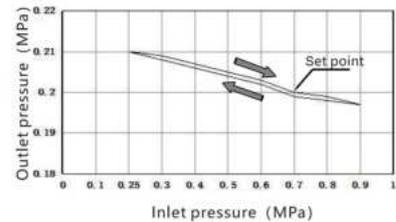
**AW2000**



**AW3000**

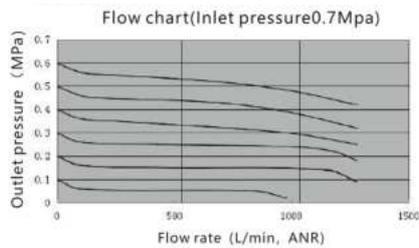


**AW4000**

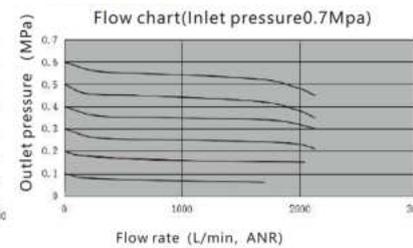


**Flow Chart**

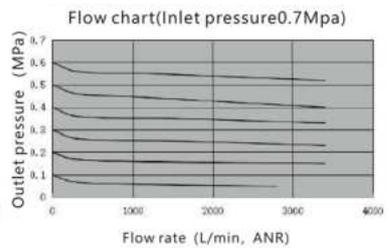
**AW2000**



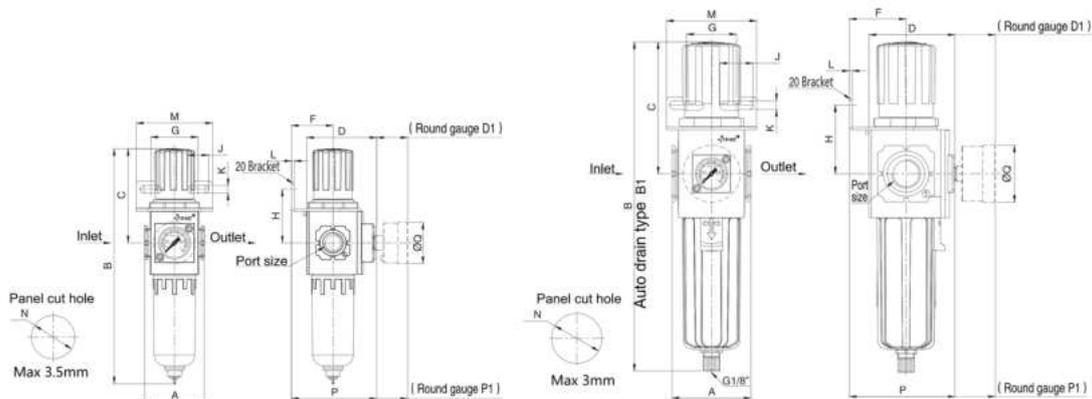
**AW3000**



**AW4000**



**Main Dimensions**



Model	Port Size	A	B	B1	C	D	D1	F	G	H	J	K	L	M	N	P	P1	Q
AW2000	1/8", 1/4"	43	171.2	-	68.6	50.6	73	30	34	39	15.5	5.5	2	55	31.5	61.6	84	30
AW3000	1/4", 3/8", 1/2"	57	239.6	236.6	96.6	62.1	91.2	41	36	50	24	6.5	2	65	36.5	76.3	105.4	41.5
AW4000	3/8", 1/2", 3/4"	80	270.2	264.5	105.4	82.1	110.7	50	38	53	28	8.5	2.5	72	52.5	95.3	123.9	41.5

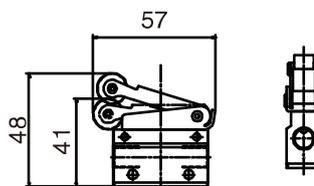
**EMOV Series Mechanical Valve**

# EMOV

## Mechanical Valve

EMOV321-R

◆ Graphic Symbol



### ◆ Product Features

- 1、 The mechanical valve uses manual mode to directly control the opening and closing of the spool, and does not rely on external energy sources (such as electricity, air pressure, etc.) to work;
- 2、 Due to its relatively simple structure, the mechanical valve can still work normally in the case of no power supply or control system failure, with high reliability and self-locking;
- 3、 Mechanical valve internal parts less, less affected by environmental factors, maintenance is relatively simple, long service life;
- 4、 Compared with electronic control or pneumatic smoke, the action response speed of the mechanical valve may be slow, and the adjustment accuracy is relatively low, but it is suitable for occasions without complex adjustment or accurate control of flow and pressure;
- 5、 The cost of the mechanical valve is relatively low, easy to install, the technical requirements of the operator is not high, so it is widely used in many industrial fields and civil facilities;
- 6、 There are a variety of buttons, switches can be selected, suitable for use under different working conditions.

### ◆ How to order

Series code	Valve body size	Nozzle diameter	Button Type	Button color
EMOV: EMOV series	32: 3/2 way	1:G1/8"(EMOV, EMV series optional)	Air self: basic type	R: red
EMJ: EMJ series	52: 5/2 way	2:G1/4"(EMV, EMJ series optional)	R: Roller type	G: Green
EMV: EMV series (Only EMV series optional)		3:PT1/8"(EMOV, EMV series optional)	PP: Parallel button	B: Black
		4:PT1/4"(EMV, EMJ series optional)	EB: Button with lock	Y: Yellow
		5:NPT1/8"(EMOV, EMV series optional)	PPL: Concave button	
		6:NPT1/4"(EMV, EMJ series optional)	PB: Big round button	
		The conventional thread is G-thread	TB: Select button	

#### Ordering example:

EMV series mechanical valve , 2/3 way, nozzle diameter 1/8, G thread,select button, its ERP code is EMV321-TB.

### ◆ Specification

Model number	EMOV321	EJM322	EMV321	EMV521
Working medium	Clean air(After 40 μm filtration)			
Acting type	External control			
Lubrication	unnecessary			
Working pressure(Mpa)	0~0.8			
Maximum pressure resistance(Mpa)	1.2			
Working temperature(°C)	-5~60			
Maximum operating frequency	5 cycles/s			
Nozzle diameter	1/8", 1/4"			

**GHF Series Low Profile Air Gripper**

**GHF**

Low Profile Air Gripper

GHF: Double Acting, with magnet



◆ **Specification**

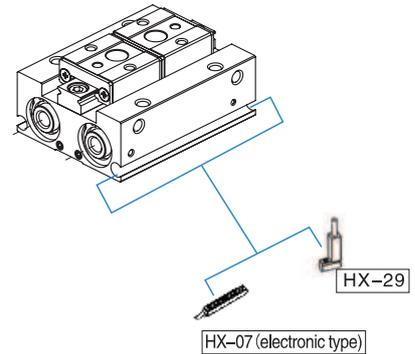
Bore Size	8	12	16	20
Acting Type	Double Acting			
Working Medium	Clean air(40 μ m filtration)			
Applicable Pressure Reage	0.15~0.7MPa	0.1~0.7MPa		
Working Temperature	-20~70 ( No freezing )			
Oil	Not required			
Repetition accuracy ①	± 0.05mm			
Maximum Frequency	Short Stroke	120c.p.m		
	Medium Stroke	120c.p.m		
	Long Stroke	60c.p.m		
Port Size	M3X0.5	M5X0.8		

① Is the value of the gripper without the role of bias load state; conversely, affected by the tooth gap between the rack and gear, the maximum value is 15mm

◆ **How to Order?**

Series No.	Bore Size	Double Acting	Stroke	Connecting Type	Magnet No
SHF:Low Profile Air Gripper	8 12 16 20	D	Blank 1 2	Blank:Axial Ported R:Side ported	Blank:With magnet
			Blank Short Stroke 1 Medium Stroke 2 Long Stroke		
				Blank:Axial Ported R:Side Ported	

◆ **Optional Accessories**



Note:Short stroke please use HX-29 series due to limited space.

**Order Example:** SHF Compact air gripper,Bore12,Medium stroke,Side air intake, with magnet,ERP code is:SHF12D1R

◆ **Products Features**

1. Stainless steel gripper & linear ball guide design, high precision, good rigidity,good corrosion resistance for longer life spans.
2. Double piston structure design can provide bigger clamping force.
3. The bottom of the body is equipped with positioning pin holes to effectively enhance the installation accuracy and improve the consistency of repeated disassembly and positioning.
4. The Gripper can be installed from four directions freely.
5. Compared with the parallel air gripper with the same clamping force, this thin body design reduces the overall height by 50%, which effectively reduces the installation space and shaking torque, reduces the deviation, and improves the accuracy.
6. The body is designed with a buried induction switch slot to reduce the space.
7. All series are with magnetic.

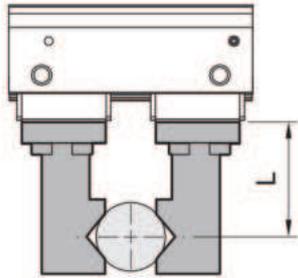
◆ **Standrad Stroke**

Stroke/Bore(mm)	∅8	∅12	∅16	∅20
Short Stroke	8mm	12mm	16mm	20mm
Medium Stroke	16mm	24mm	32mm	40mm
Long Stroke	32mm	48mm	64mm	80mm

Note: The short, medium and long strokes are standardized for each bore, and the most suitable stroke can be selected to be easier matched.

**GHF Series Low Profile Air Gripper**

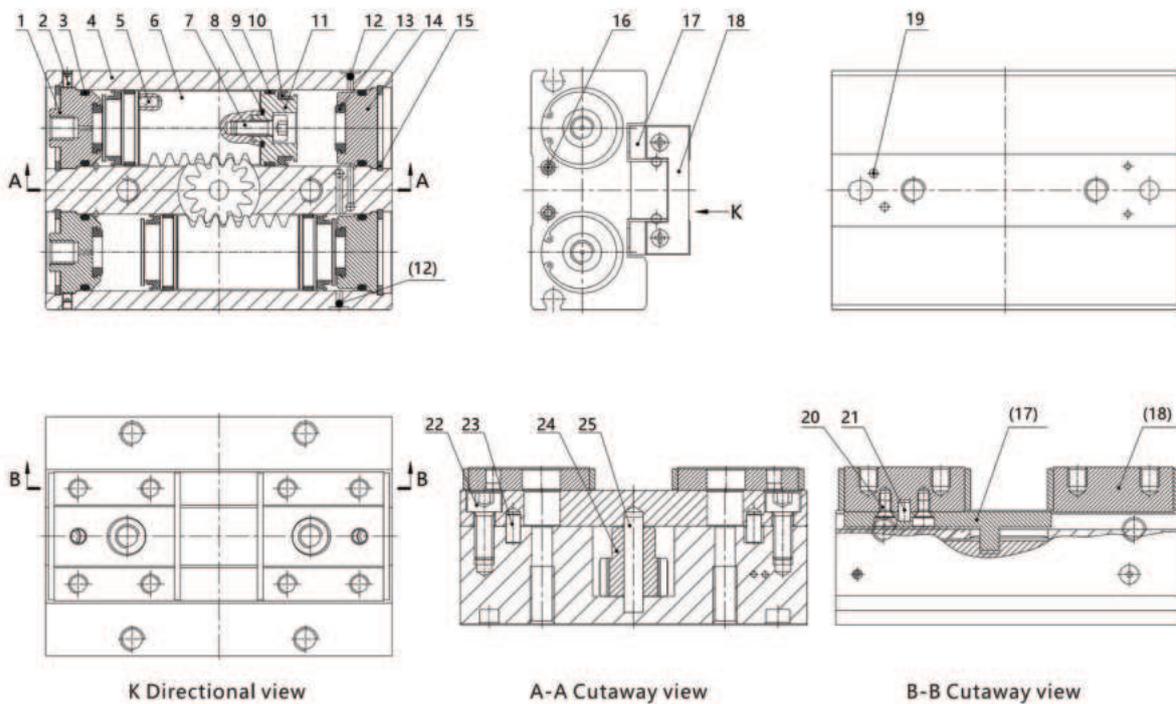
◆ **Clamping Force**



Model Number	Effective clamping force of a single gripper(N)(*)	Weight(g)
GHF 8D	19	59
GHF 8D1		78
GHF 8D2		110
GHF 12D	48	145
GHF 12D1		185
GHF 12D2		270
GHF 16D	90	344
GHF 16D1		441
GHF 16D2		642
GHF 20D	141	659
GHF 20D1		847
GHF 20D2		1221

\*Pressure 0.5MPa, clamping point L=20mm, and the value at the center of the stroke.

◆ **Internal Structure**



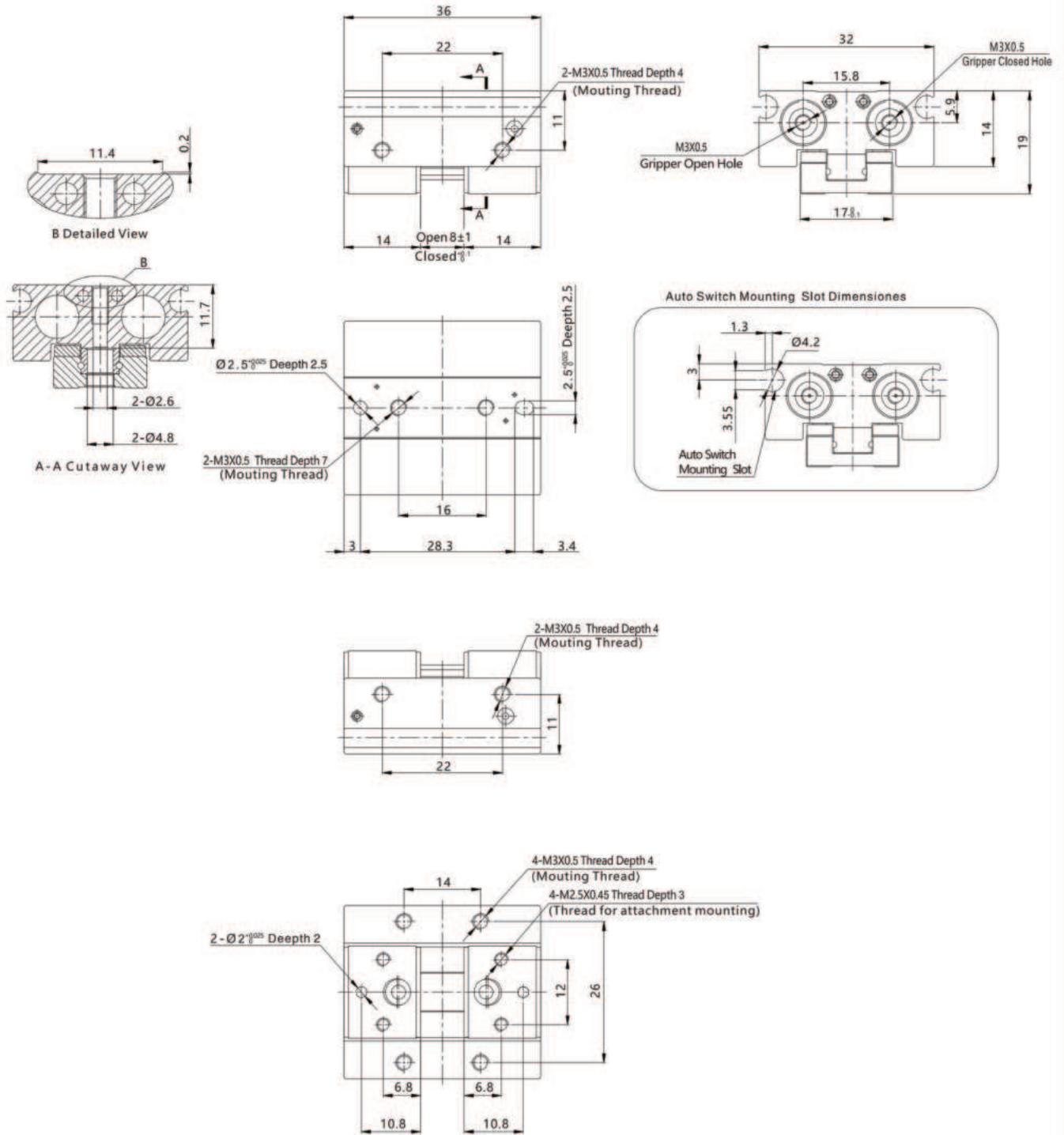
No.	Part Name	Material	No.	Part Name	Material	No.	Part Name	Material
1	Front cover	Aluminum alloy	10	Piston seal	NBR	19	Steel ball	Stainless steel
2	Hexagon socket set screw	Q235	11	Piston	Aluminum alloy	20	Screws	Stainless steel
3	O-ring	NBR	12	Steel ball	Stainless steel	21	Pin	Bearing Steel
4	Barrel	Aluminum alloy	13	Anti-bump cushion	TPU	22	Hexagon socket cap screw	Stainless steel
5	Magnet	Sintered NdFeB	14	Rear cover	Aluminum alloy	23	Positioning pins	Stainless steel
6	Rack	Stainless steel	15	C type ring	Spring steel	24	Gear	Carbon Steel
7	Hexagon socket cap screw	Stainless steel	16	Hexagon socket set screw	Q235	25	Pin	Bearing Steel
8	O-ring	NBR	17	Connector	Stainless steel			
9	Wear ring	PTFE	18	Linear ball sliding guide	Combined parts			

Note: 1. Commercially available socket cap screws are sufficient when E04-SHF12, 16 compact air grippers are used for body through-hole mounting.  
2. In the above table, SE04-HF12D short stroke without wear ring.

**GHF Series Low Profile Air Gripper**

◆ **Main Dimension**

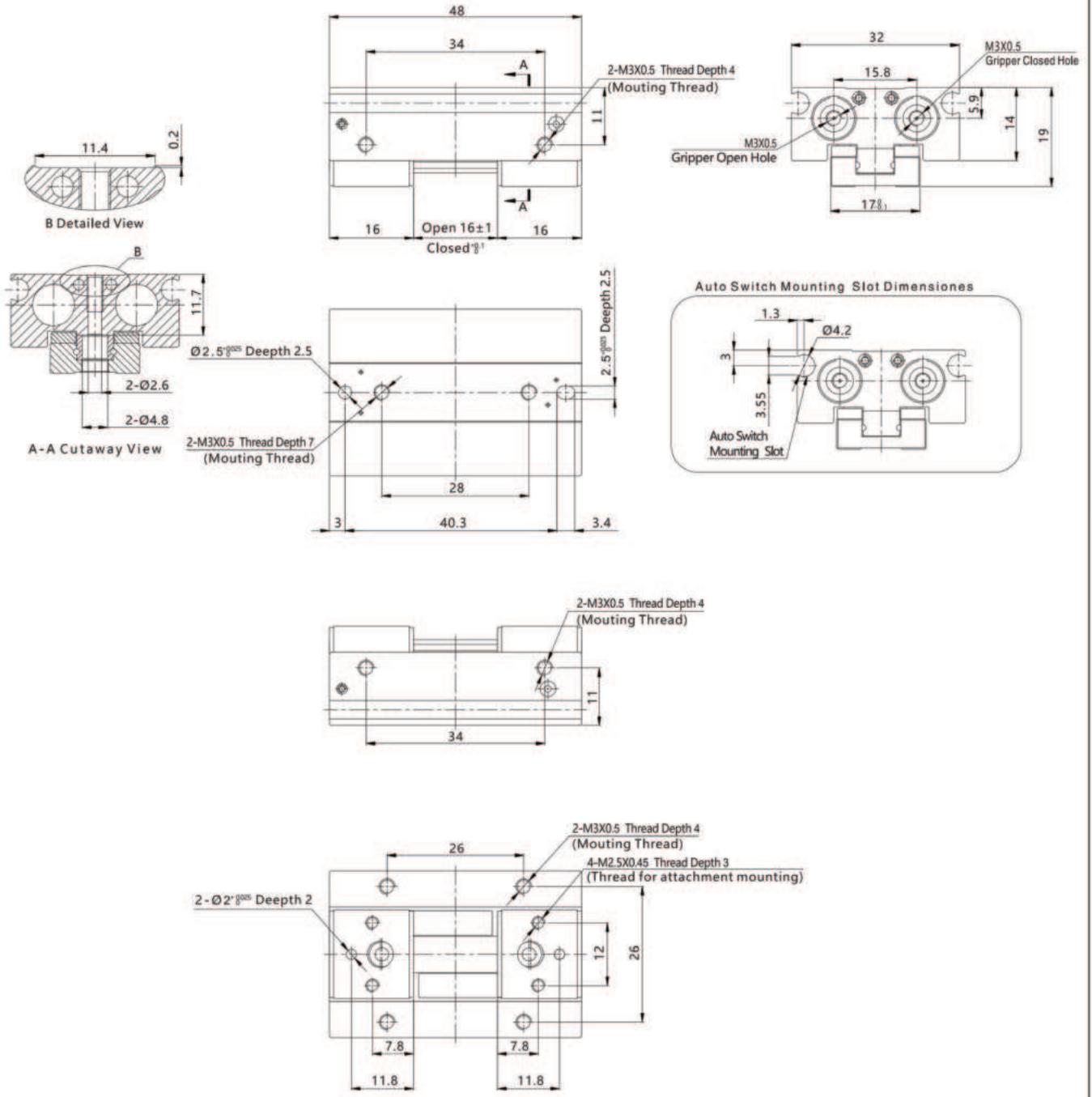
GHF 8D



**GHF Series Low Profile Air Gripper**

◆ **Main Dimension**

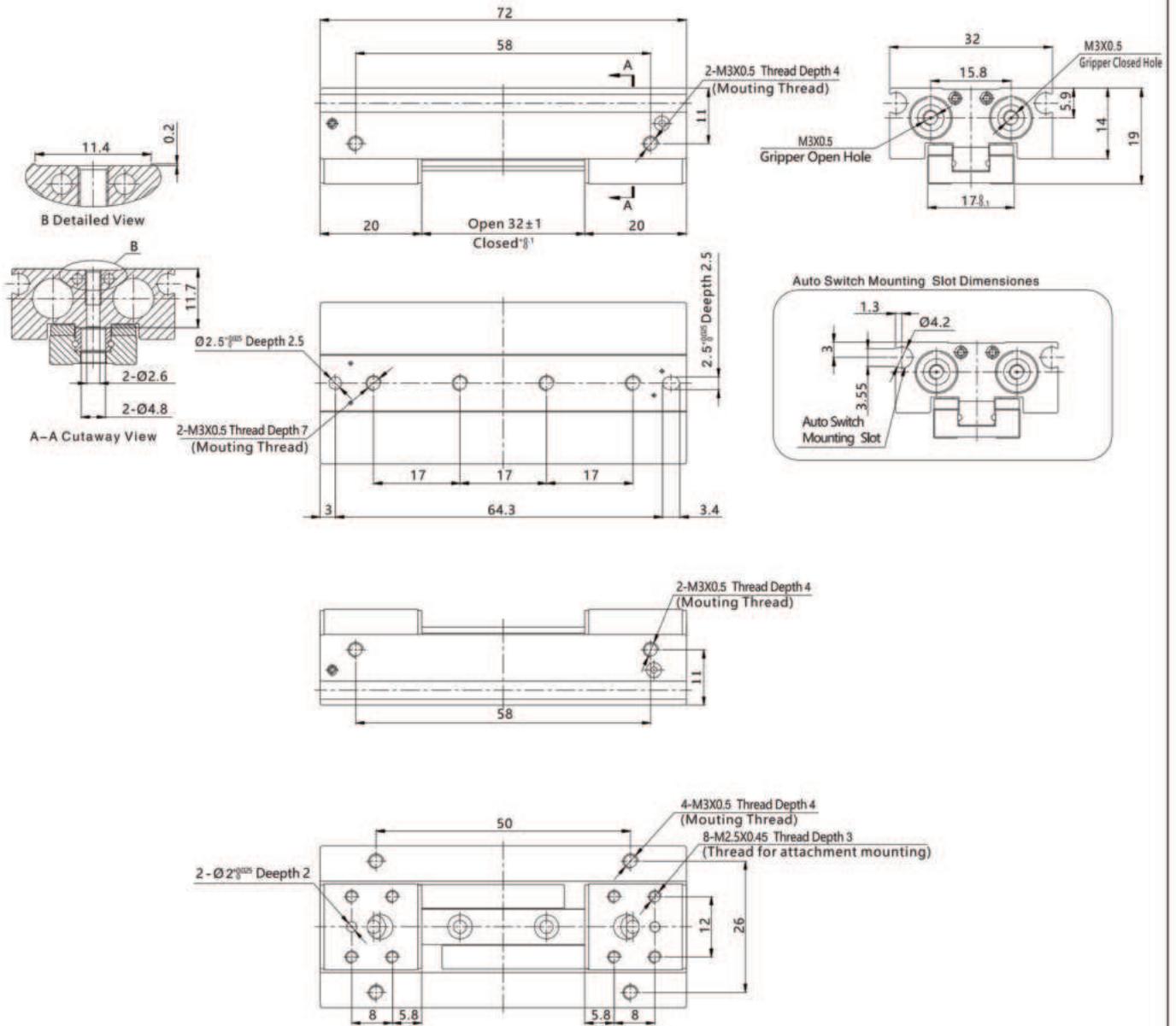
**GHF 8D1**



**GHF Series Low Profile Air Gripper**

**Main Dimension**

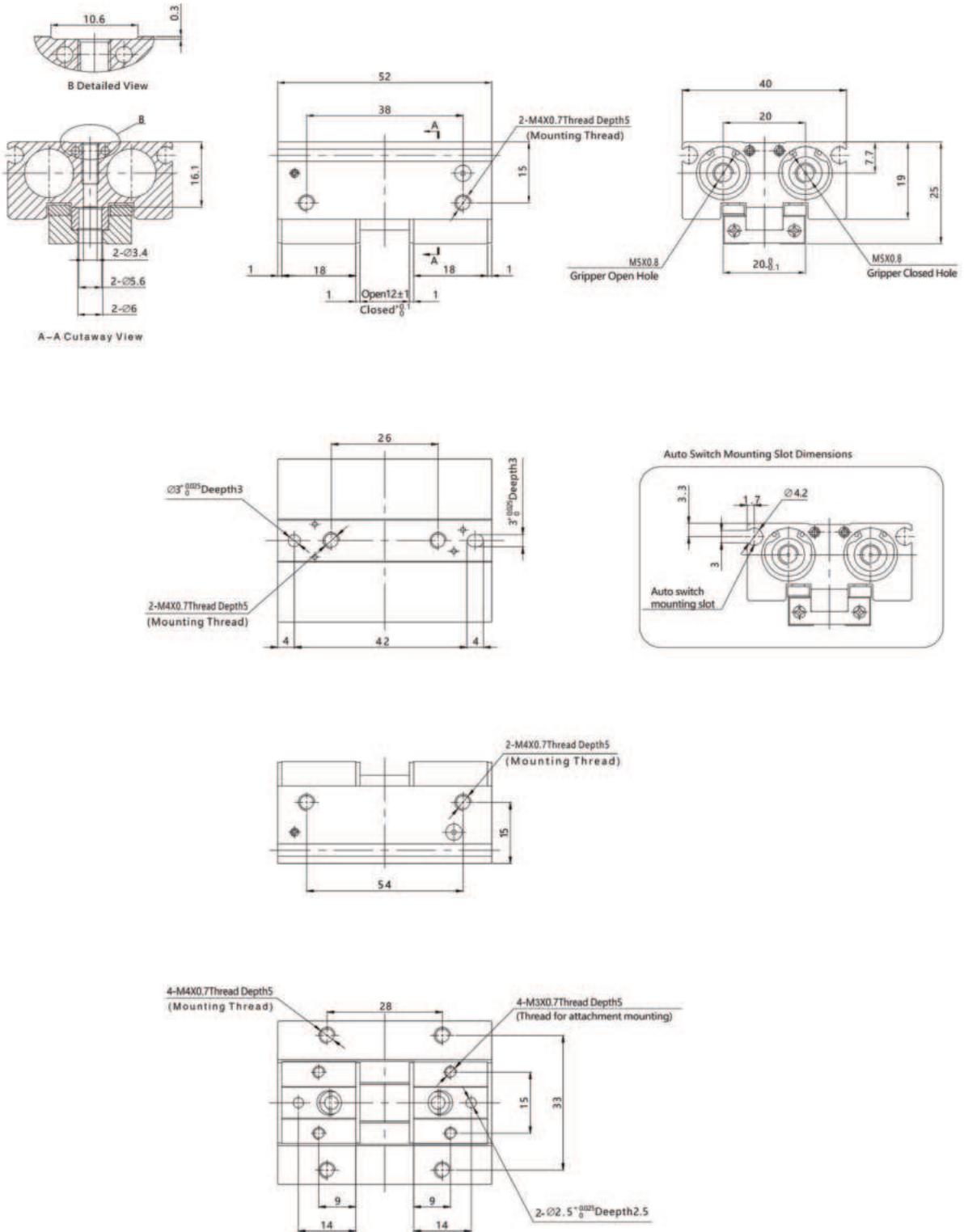
GHF 8D2



**GHF Series Low Profile Air Gripper**

◆ **Main Dimension**

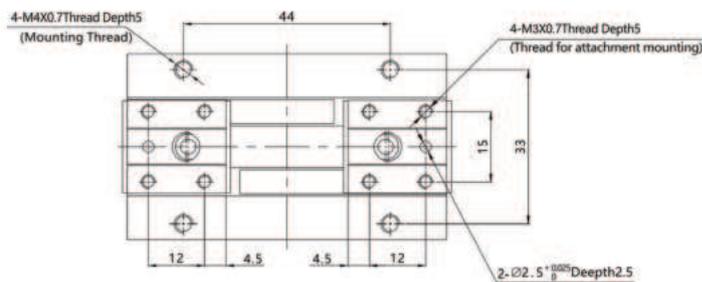
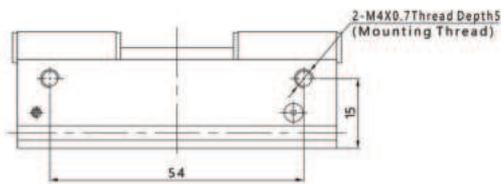
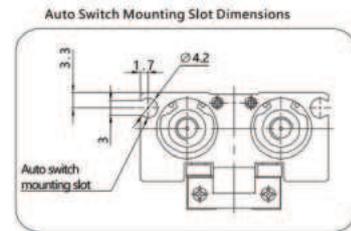
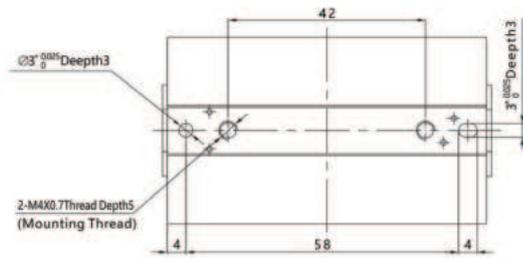
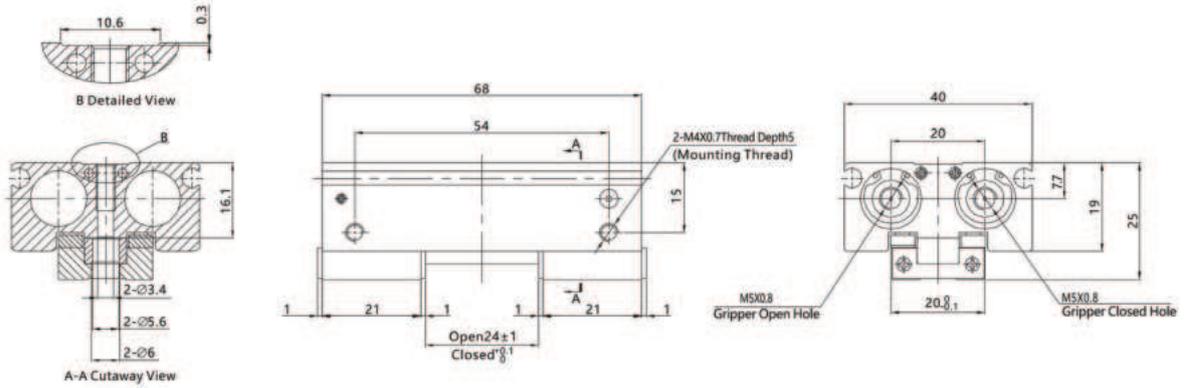
**GHF 12D**



**GHF Series Low Profile Air Gripper**

**Main Dimension**

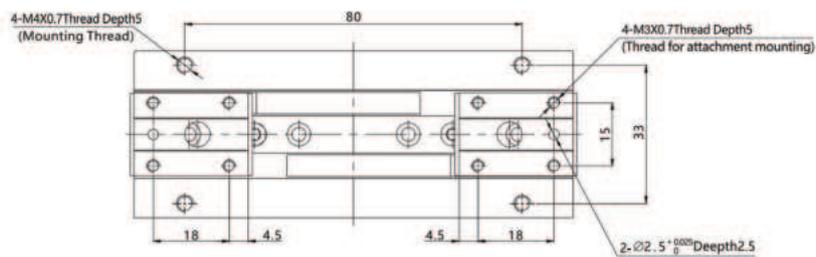
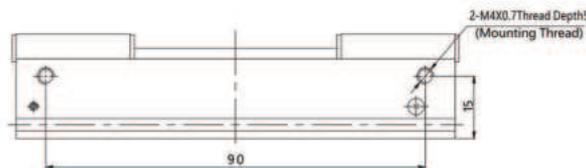
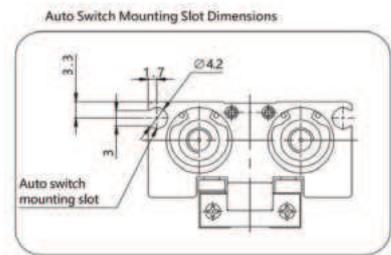
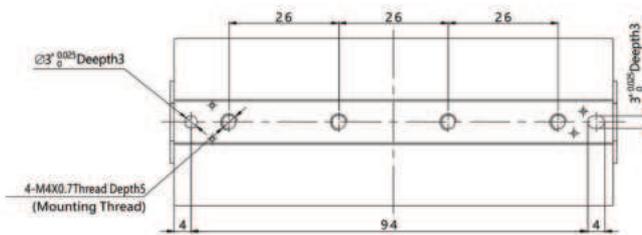
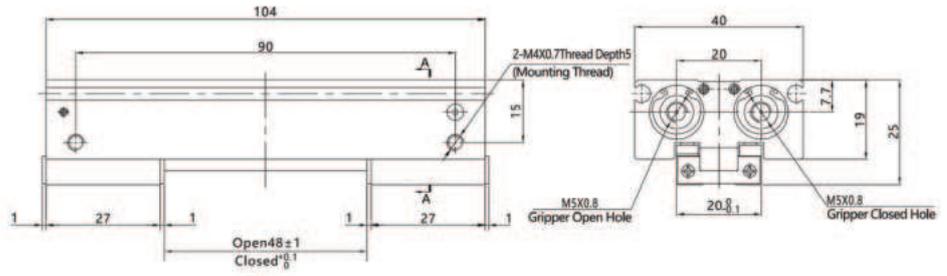
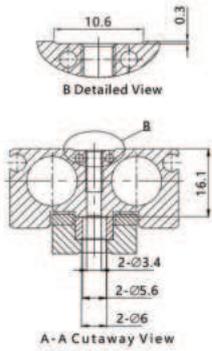
GHF 12D1



**GHF Series Low Profile Air Gripper**

◆ **Main Dimension**

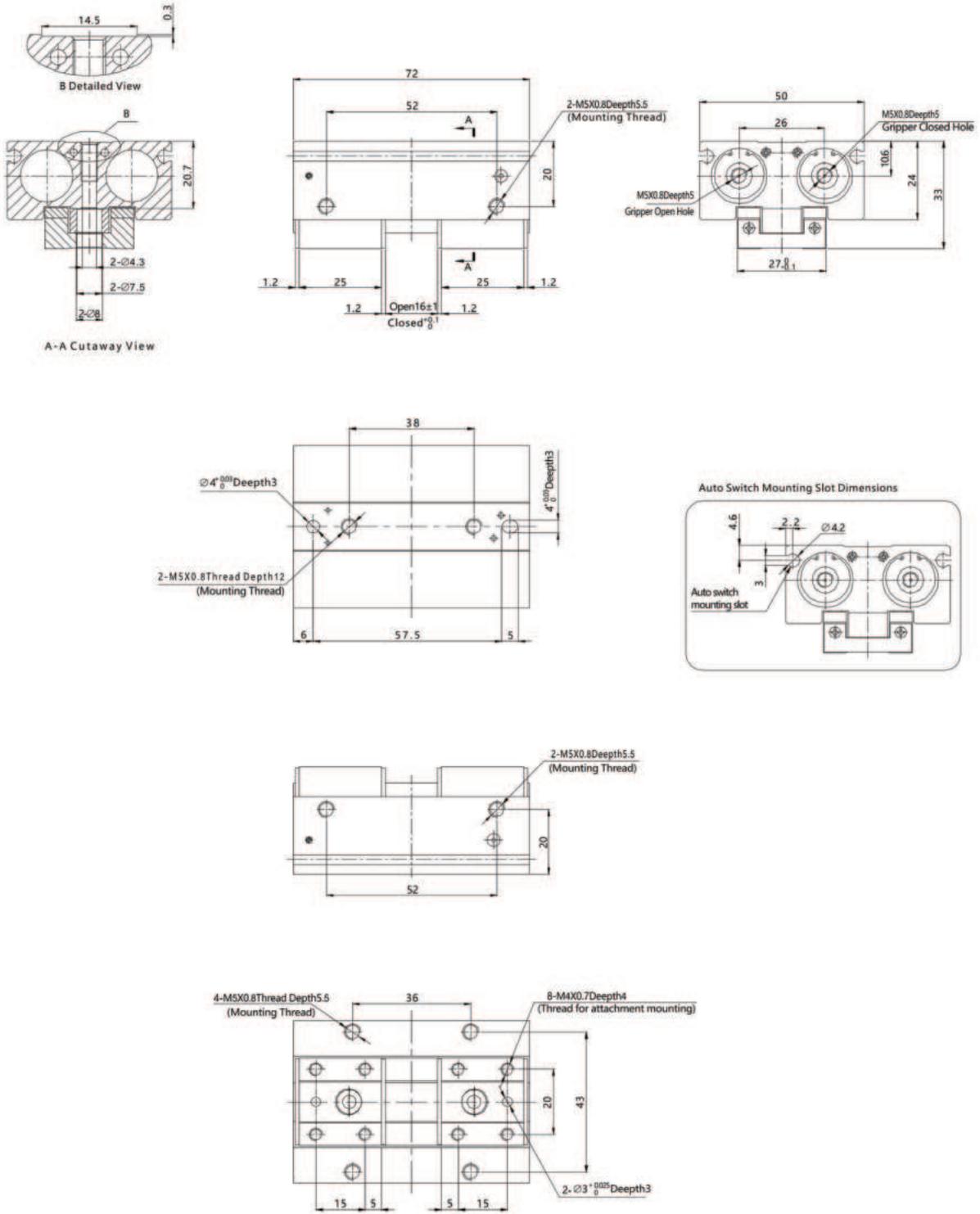
**GHF 12D2**



**GHF Series Low Profile Air Gripper**

**Main Dimension**

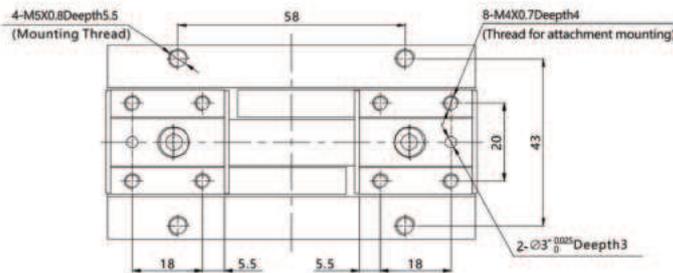
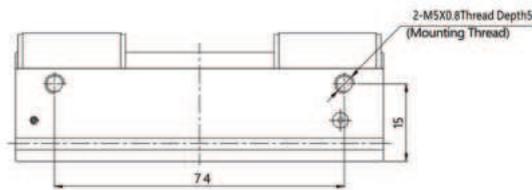
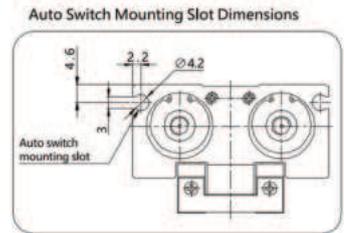
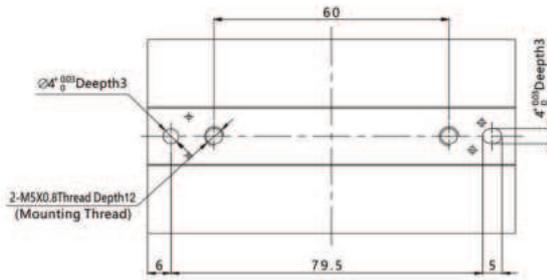
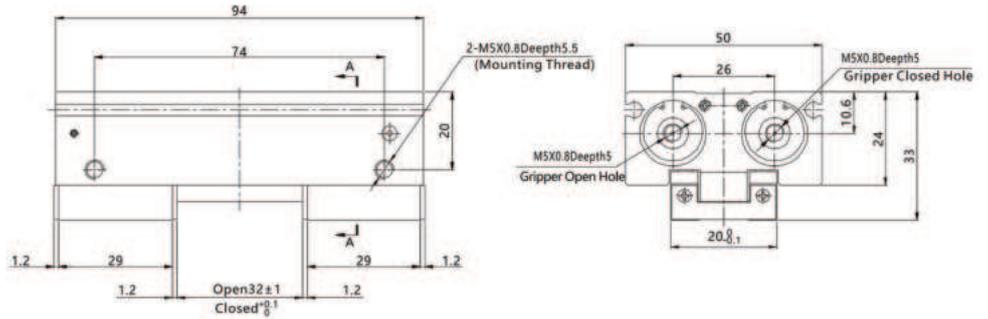
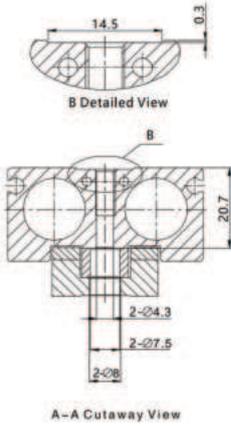
GHF 16D



**GHF Series Low Profile Air Gripper**

◆ **Main Dimension**

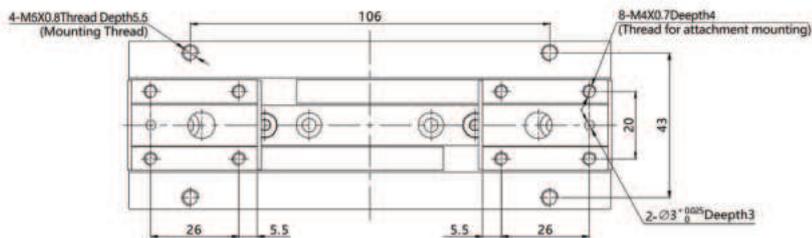
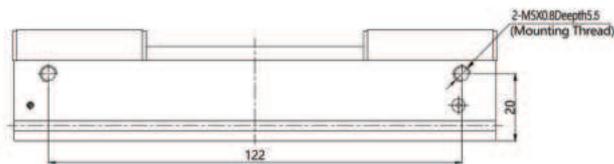
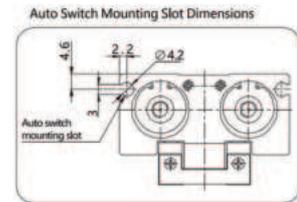
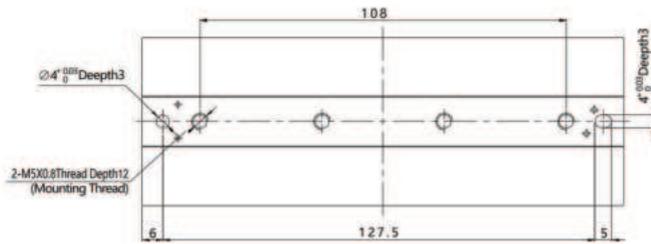
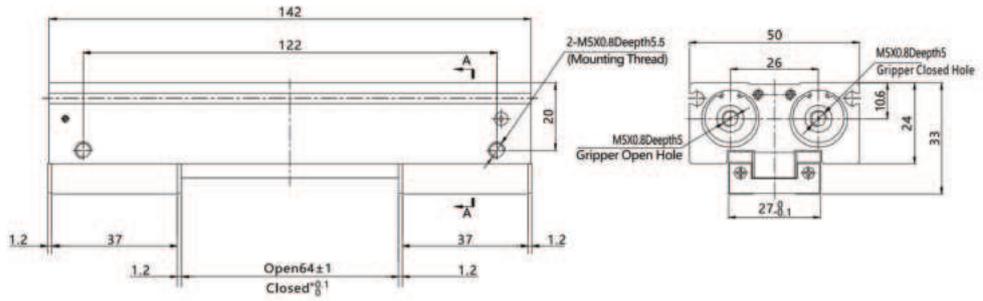
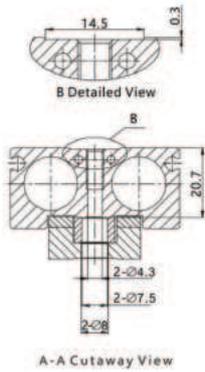
**GHF 16D1**



**GHF Series Low Profile Air Gripper**

◆ **Main Dimension**

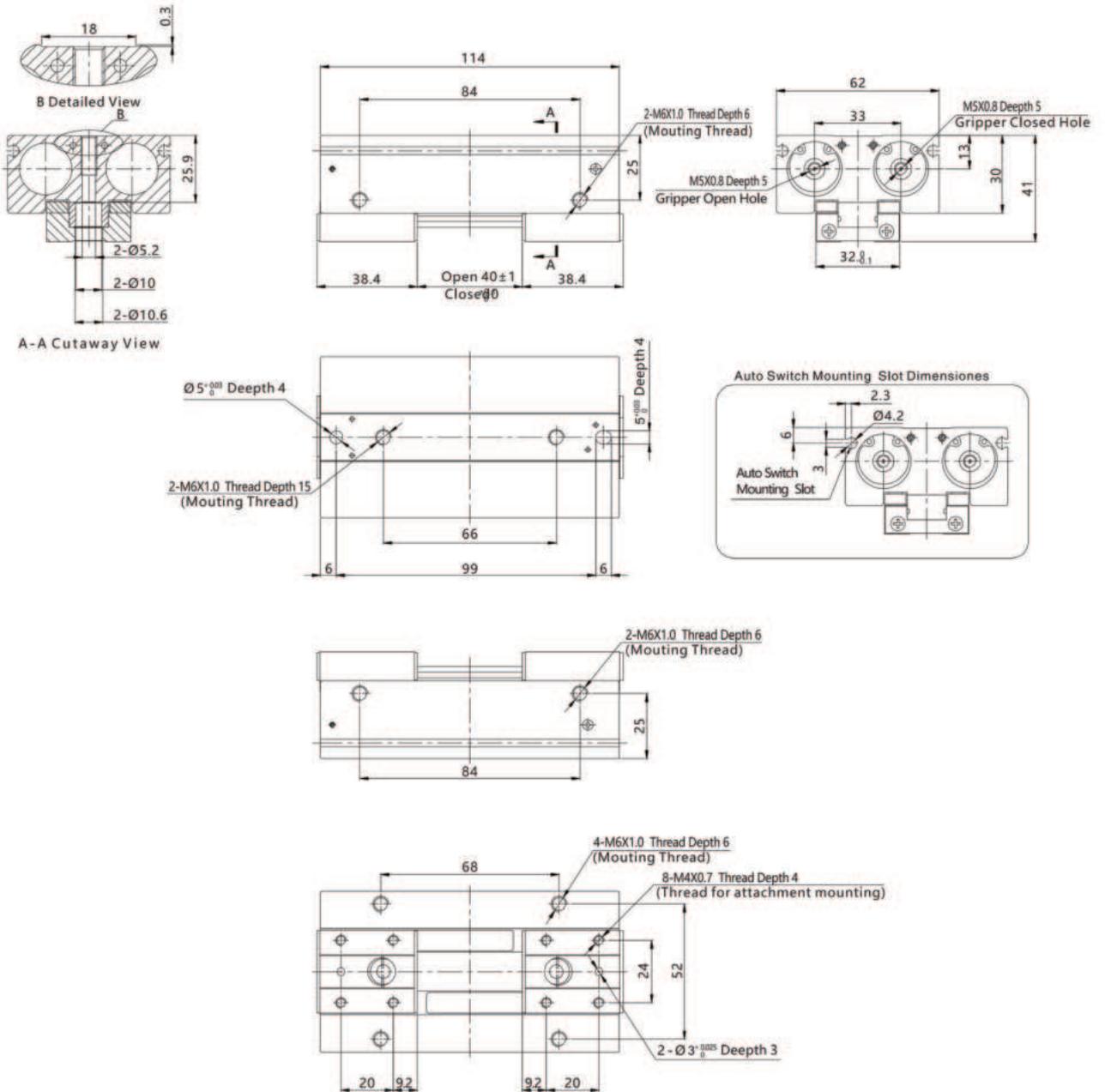
GHF 16D2



**GHF Series Low Profile Air Gripper**

◆ **Main Dimension**

**GHF 20D1**

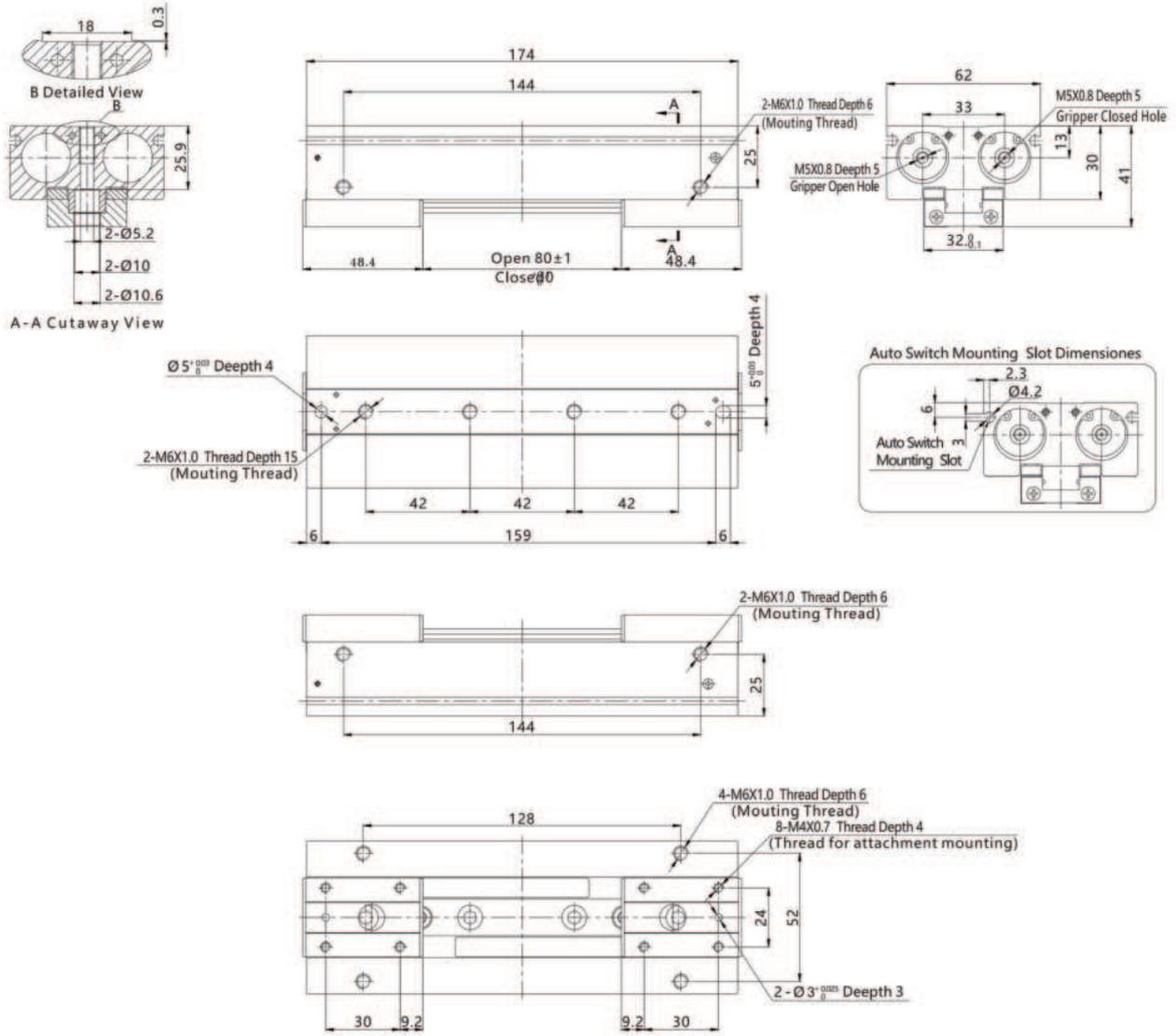




**GHF Series Low Profile Air Gripper**

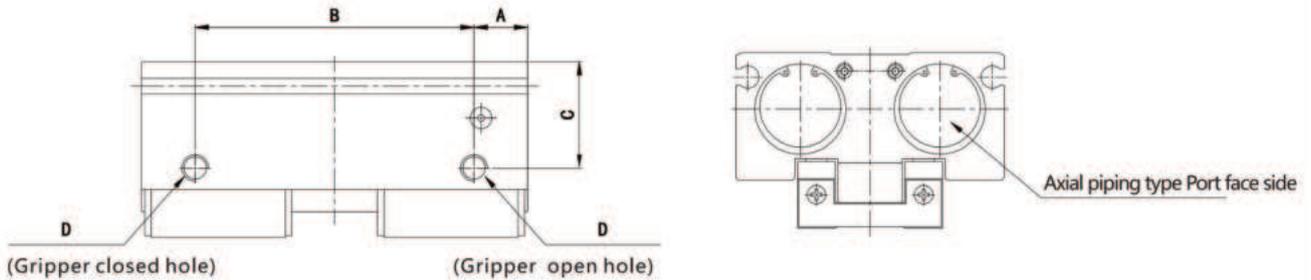
◆ **Main Dimension**

**GHF 20D2**



**GHF Series Low Profile Air Gripper**

◆ **Main Body Options: Side Ported Type**

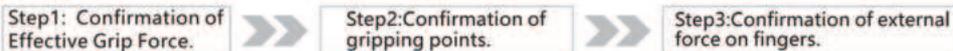


Model	GHF8DR	GHF8D1R	GHF8D2R	GHF12DR	GHF12D1R	GHF12D2R	GHF16DR	GHF16D1R	GHF16D2R	GHF20DR	GHF20D1R	GHF20D2R
A	5.5			7			9			10		
B	25	37	61	38	54	90	54	76	124	66	94	154
C	11			14.8			19			23		
D	M3×0.5			M5×0.8			M5×0.8			M5×0.8		

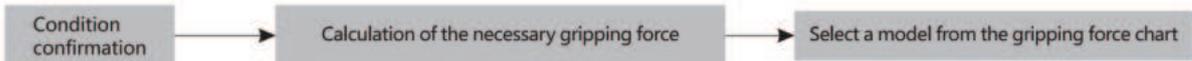
Note: Dimensions other than the above are the same as the Horizontal ported type

◆ **Model Selection**

**Selected Steps**



**Step 1 Effective gripping force confirmation**



Confirmed example

Workpiece mass: 0.15kg

Gripping Method: External diameter

**Roughly select the model according to the quality**

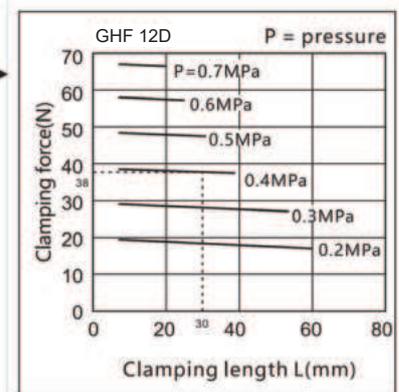
- According to the difference in friction coefficient and shape between the workpiece and the accessories, the type of air gripper with the gripping force of the fingers 10~20 times the weight of the workpiece should be selected.
- \*Check detailed information from the explanatory drawing.
- If bigger accelerated speed or impact force in the application, more extra allowance requested.

**Example of calculation**

When you want to set the clamping force to be 20 times or more the weight of the workpiece.  
Necessary clamping force =  $0.15\text{kg} \times 20 \times 9.8\text{m/S}^2 = 29.4\text{N}$  or more

Grip point distance: 30mm

Working pressure: 0.4MPa



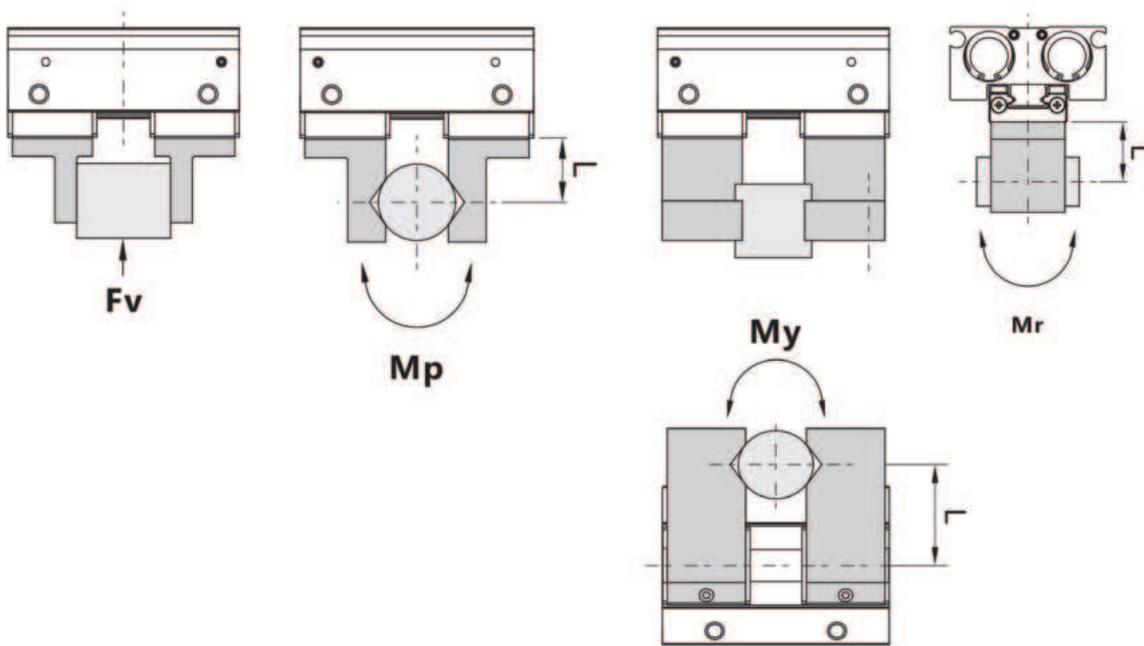
**Occasion To Try SHF12D**

- From the intersection of the clamping point  $L=30\text{mm}$  and the pressure  $P=0.4\text{MPa}$ , find the clamping force  
Clamping  $N=38\text{N}$
- The clamping force of 38 meets the necessary clamping force of 29.4N, so SHF12D can be selected.

**GHF Series Low Profile Air Gripper**

◆ **Model Selection**

**Step3 Confirmation of external force on fingers**



L: The distance to the load application point

Model	Vertical direction Allowable load Fv(N)	Maximum allowable torque		
		Bending torque Mp(N.m)	Deflection torque My(N.m)	Rotation torque Mr(N.m)
GHF 8D□	58	0.26	0.26	0.53
GHF 12D□	98	0.68	0.68	1.4
GHF 16D□	176	1.4	1.4	2.8
GHF 20D□	294	2	2	4

Note: The load and moment values in the table are static values

Calculation of allowable external force (when moment load is applied)	Example of calculation
$\text{Allowable load } F(\text{N}) = \frac{M(\text{maximum allowable moment}) (\text{N.m})}{L \times \frac{10^{-3}}{\text{※}}}$ <p>(※ Is the unit conversion constant)</p>	<p>When the actual static load <math>f=10\text{N}</math>, the bending moment of the point <math>L=30\text{mm}</math> from the end face of the jaw of SHF2-12D</p> $\text{Allowable load } F = \frac{0.68}{30 \times 10^{-3}}$ $= 22.7 (\text{N})$ <p>Load <math>f=10(\text{N}) &lt; 22.7(\text{N})</math></p> <p>so you can use.</p>

## GHF Series Low Profile Air Gripper

### Installation and Use

**1. When installing, do not let the air gripper fall or be hit, so as to avoid damage to the product and dents.**

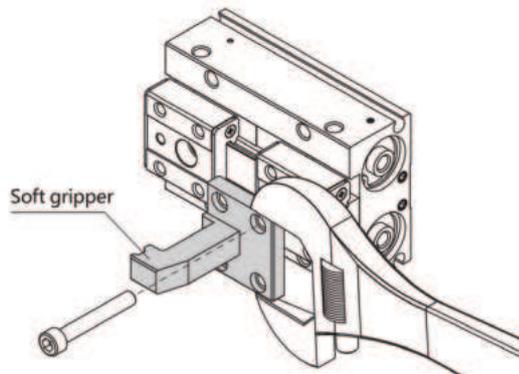
Slight deformation will cause poor accuracy and work not well.

**2. When installing accessories, please properly tighten the screws within the limited torque range.**

Tightening with a torque out of the torque range may cause malfunction, and if the tightening torque is insufficient, positional displacement or drop may occur.

#### How to install the gripper attachment

Attach the attachment to the mounting female thread of the jaws with screws, etc., using the tightening torque in the table below.



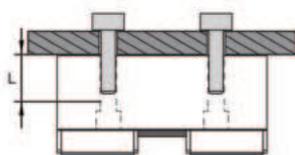
Model	Screws used	Maximum tightening torque N.m
GHF 8D□	M2.5×0.45	0.36
GHF 12D□	M3×0.5	0.63
GHF 16D□	M4×0.7	1.5
GHF 20D□	M4×0.7	1.5

**3. When installing the air gripper, please properly tighten the screws within the limited torque range.**

Bad action if bigger tighten torque;  
Position offset or fall if smaller tighten torque.

#### How to install the gripper attachment

Top mount type (main body screw hole)



Model	Screws used	Maximum tightening torque N.m	Maximum thread entry depth Lmm
GHF 8D□	M3×0.5	0.95	7
GHF 12D□	M4×0.7	2.2	10
GHF 16D□	M5×0.8	4.5	12
GHF 20D□	M6×1.0	7.8	15

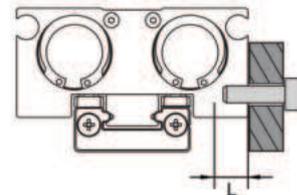
### Use Environment



**Pay attention to the corrosion resistance of linear guides.**

The materials of Fingers & guides are martensitic stainless steel, which is weaker than. Martensitic stainless steel is used on fingers and rails; compared with austenitic stainless steel, the corrosion resistance is weak; especially in the environment where there are water droplets such as freezing dew, there is a problem of rust

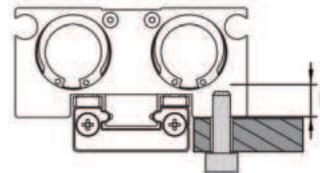
Side Mount Type (Through Hole in Body)



Model	Screws used	Maximum tightening torque N.m	Maximum thread entry depth Lmm
GHF 8D□	M3×0.5	0.63	4
GHF 12D□	M4×0.7	1.5	5
GHF 16D□	M5×0.8	3	5.5
GHF 20D□	M6×1.0	5.2	6

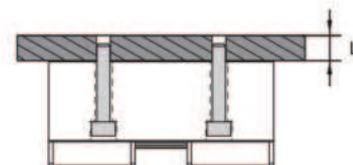
Bottom mount type (main body screw hole, main body through hole)

1. Use the main body screw holes



Model	Screws used	Maximum tightening torque N.m	Maximum thread entry depth Lmm
GHF 8D□	M3×0.5	0.63	4
GHF 12D□	M4×0.7	1.5	5
GHF 16D□	M5×0.8	3	5.5
GHF 20D□	M6×1.0	5.2	6

2. Use the empty holes without thread



Model	Screws used	Maximum tightening torque N.m	Maximum thread entry depth Lmm
GHF 8D□	★M2.5×0.45	0.36	4.3
GHF 12D□	M3×0.5	0.63	—
GHF 16D□	M4×0.7	1.5	—
GHF 20D□	M5×0.8	3	—

Note: When the SHF12, 16 thin air gripper is installed through the main body, the commercially available hexagon socket screws can be used; the screw depth depends on the specific installation situation.

Note: When SHF air grippers are used for body through-hole mounting:

★1: SHF8 use the included special screws

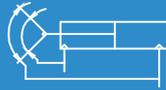
2: SHF12, 16 20 commercially available socket cap screws

3: The screw screwing depth depends on the customer's specific installation situation.

**GHR Series 180° Angular Style Air Gripper**

**GHR**  
Air gripper

GHR: Standard double acting type



**Specifications**

Bore size(mm)	10	16	20	25
Action type	Double Acting			
Working medium	Clean Air(40 μ m filtration)			
Operating pressure	0.15~0.7MPa(22~100psi)(1.5~7.0bar)			
Ambient and fluid temperature(°C)	-20~70( No freezing)			
Lubrication	Cylinder: Not required Gripper: Fingers: grease required			
Theoretical gripping force (N.m)①	0.16	0.55	1.10	2.30
Max. operating frequency	60(C.P.M)			
Opening/Closing angle (°)	Open:180±2, Close:-2~5			
Repeatability (mm)	±0.2			
Cushion type	Rubber cushion			
Port size	M5X0.8			
Weight(g)	67	142	312	552

① The indicated gripping forces were measured at room temperature at an operating pressure of 0.5Mpa

**How to Order?**

Series	Bore	Magnet No.
GHR:180° Open/Close Style Air gripper	10 16 20 25	S : With magnet (Magnet is standard)

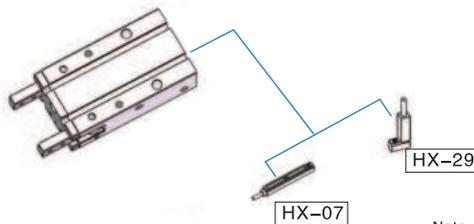
Order Example:

GHR Series 180°Open/Close Style Air gripper, Bore25,with magnet,ERP code is:GHR25-S

**Product Features**

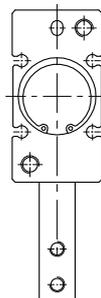
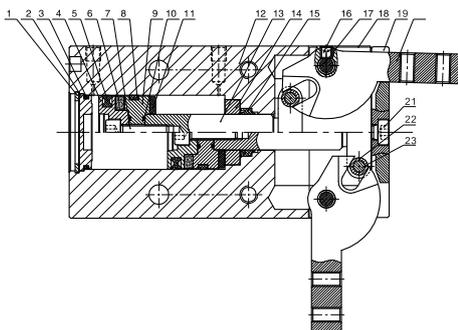
1. Unique design for the opening and closing, effectively preventing foreign objects from entering
2. Special shutter used between fingers and body, reducing wearing and extending lifetime
3. 180° opening and closing type, simplify gripping and releasing, avoid workpiece motion space, wider applications
4. Built-in sensor switch groove, easy for mounting
5. Multi mounting types, convenient for using under different conditions
6. All sizes are built with magnet, easy for controlling

**Optional Accessories**



Note: For shorter stroke, due to limited space, please use HX-29

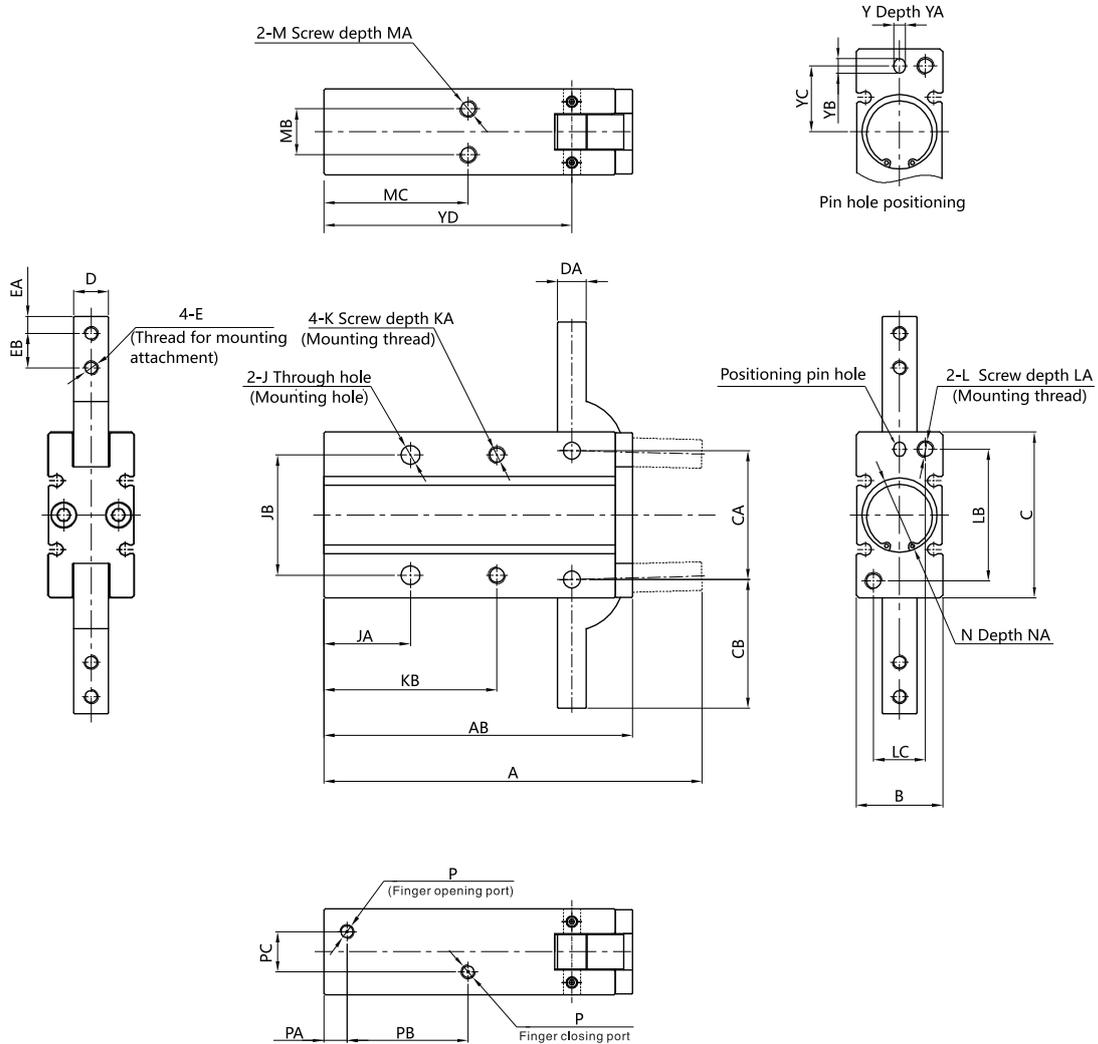
**Internal Structure**



No.	Part Name	Material	No.	Part Name	Material
1	Type C retaining ring	Spring steel	13	Joint	Stainless steel
2	Rear cover	Aluminum alloy	14	Dust baffle	Brass
3	O-ring	NBR	15	Piston rod seal	NBR
4	Piston	Aluminum alloy	16	Hexagon socket set screw	Carbon steel
5	Piston seal	NBR	17	Pin	Stainless steel
6	Rutile Boron	Rutile Boron	18	Blade	Stainless steel (φ16, φ20, φ25) φ10
7	Hexagon socket cap screw	Carbon steel (φ16, φ20, φ25) φ10 Cross recessed countersink head screws	19	Cover plate	Aluminum alloy
8	Wear ring	PTFE	20	Gripper	Stainless steel
9	Magnet	Aluminum alloy	21	Hexagon socket cap screw	Carbon steel
10	O-ring	NBR (φ16, φ20, φ25) φ10	22	Pin sleeve	Stainless steel (φ20, φ25) φ10, φ16
11	Anti-bump cushion	TPU (φ10, φ16, φ20) NBR (φ25)	23	Pin	Stainless steel
12	Body	Aluminum alloy			

**GHR Series 180° Angular Style Air Gripper**

**Main Dimension**



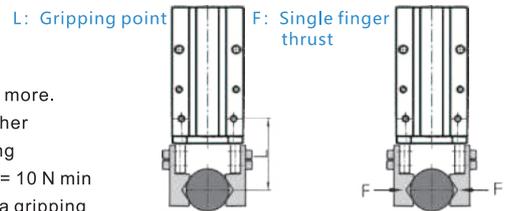
Bore/Sign	A	AB	B	C	CA	CB	D	DA	E	EA	EB	J	JA	JB	K	KA	KB	L	LA	LB	LC
GHR10	71	58	15	30	22	23.5	6	4	M3X0.5	3	6	Ø3.4	18	24	M3X0.5	6	35	M3X0.5	6	24	9
GHR16	84	69	20	38	28	28.5	8	5	M3X0.5	4	7	Ø4.5	20	30	M4X0.7	8	41	M4X0.7	8	30	12
GHR20	106	86	26	48	36	37	10	8	M4X0.7	5	9	Ø5.5	25	36	M5X0.8	10	50	M5X0.8	10	38	16
GHR25	131	107	30	58	45	45	12	10	M5X0.8	6	12	Ø6.6	30	42	M6X1.0	12	60	M6X1.0	12	46	18
Bore/Sign	M	MA	MB	MC	N	NA	P	PA	PB	PC	Y	YA	YB	YC	YD						
GHR10	M3X0.5	4	9	30	Ø11 <sup>+0.05</sup> <sub>0</sub>	1.7	M5X0.8	7	23	3	3 <sup>+0.03</sup> <sub>0</sub>	3	4	9	47.5						
GHR16	M4X0.7	5	12	33	Ø17 <sup>+0.05</sup> <sub>0</sub>	2	M5X0.8	7	25	8	3 <sup>+0.03</sup> <sub>0</sub>	3	4	15	55.5						
GHR20	M5X0.8	8	14	42	Ø21 <sup>+0.05</sup> <sub>0</sub>	2	M5X0.8	8	32	12	4 <sup>+0.03</sup> <sub>0</sub>	4	5	19	69						
GHR25	M6X1.0	10	16	50	Ø26 <sup>+0.05</sup> <sub>0</sub>	2	M5X0.8	8	42	14	4 <sup>+0.03</sup> <sub>0</sub>	4	5	23	86						

**GHR Series 180° Angular Style Air Gripper**

◆ **How to select product**

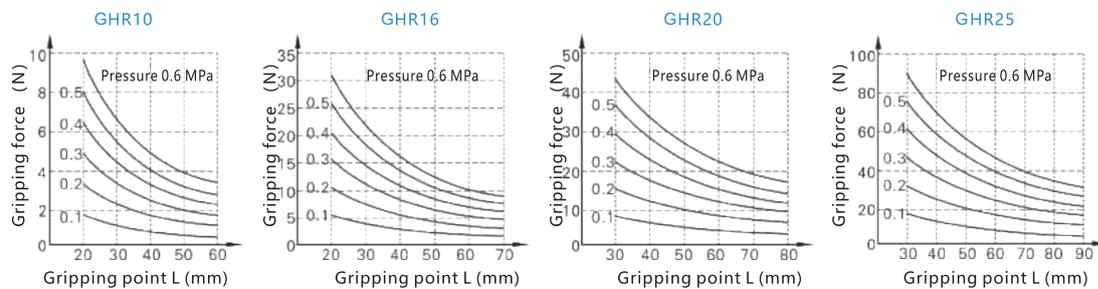
**1. Confirmation of effective gripping force**

- 1.1 Although the coefficient of friction between the attachments and the workpiece differ, select a model that can provide a gripping force of 10 to 20 times the workpiece mass, or more.
- 1.2 If high acceleration, deceleration or impact forces are encountered during motion, a further margin of safety should be considered. Example) given workpiece mass: 0.05kgs, gripping point L: 30mm, the pressure: 5kgf/cm<sup>2</sup> Required gripping force = 0.05 kg x 20 x 9.8 m/s<sup>2</sup> = 10 N min Model selection: HFR16 is recommended. The gripping force is 17N, therefore satisfies a gripping force setting value of 20 times or more



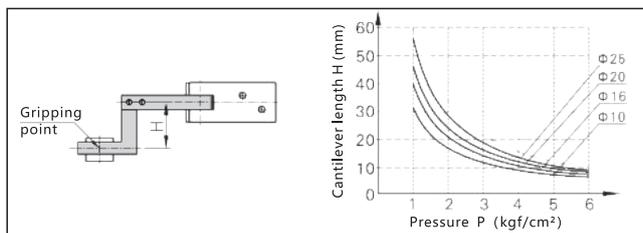
- 1.3 The effective gripping force shown in the graphs to the right is expressed as F, when both fingers and attachments are in full contact with the workpiece.

**2. Connection between gripping force and gripping point distance**



**3. The selection of the gripping point**

- 3.1 Workpiece should be held at a point within the range of overhanging distance (H) for a given pressure indicated in the tables below. When the workpiece is held at a point outside of the recommended range for a given pressure, it may cause adverse effect on the product life.
- 3.2 Within the allowable range of gripping point, the fixture shall be shore and light; when it is long and heavy, the inertia force when finger open and close, it will influence the performance and lifetime of the fingers at the same time.

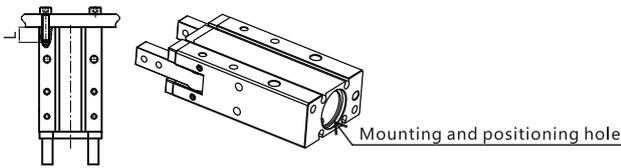


**GHR Series 180° Angular Style Air Gripper**

**Installation and application**

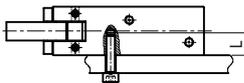
1. Due to the abrupt changes, the pressure is low, which will lead to the decrease of the gripping force and falling of the work-pieces. In order to avoid the harm to the human body and damage to the equipment, anti-dropping device must be equipped.
2. Don't use the air gripper under strong external force and impact force.
3. When install and fix the air gripper, avoid falling down, collision and damage.
4. When fixing the gripping jaw parts, don't twist the gripping jaw.
5. There are several kinds of installation method, and the torque of fastening screw must be within the prescribed moment range shown in the below chart. If the locking moment is too large, it will cause the dysfunctional. If the locking moment is too small, it will cause the position deviation and fall.

**Tail Mounting Type**



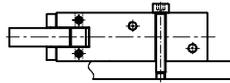
Bore	Bolt Size	Max.Locking Torque (Nm)	Max.Screwed Depth L (mm)	Tail Positioning Bore Dia(mm)	Tail positioning Depth(mm)
10	M3X0.5	1	6	φ11	1.5
16	M4X0.7	2	8	φ17	2
20	M5X0.8	4.5	10	φ21	2
25	M6X1.0	7	12	φ26	2

**Mounting by front tapped hole**



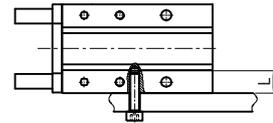
Bore	Bolt Size	Max.Locking Torque (Nm)	Max.Screwed Depth L (mm)
10	M3X0.5	0.9	6
16	M4X0.7	1.6	8
20	M5X0.8	3.3	10
25	M6X1.0	5.9	12

**Mounting by front through hole**



Bore	Bolt Size	Max.Locking Torque (Nm)
10	M3X0.5	1
16	M4X0.7	2
20	M5X0.8	4.5
25	M6X1.0	7

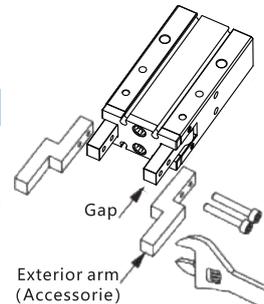
**Mounting by side tapped hole**



Bore	Bolt Size	Max.Locking Torque (Nm)	Max.Screwed Depth L (mm)
10	M3X0.5	0.6	4
16	M4X0.7	1.5	5
20	M5X0.8	3.5	8
25	M6X1.0	6	10

6. The installation method of the gripping jaw fittings. When install the gripping jaw fittings, you have to pay particular attention that you can only hold the gripping jaw by using spanner, and then lock the screws with allen wrench. Never clamp the body directly and then lock the screws, otherwise the parts will be easily damaged. Please refer to below chart for the locking torque.
7. When gripping, the workpiece must be located in the center line between fingers, and the two fingers shall touch the workpiece at the same time, otherwise they could easily get broken.
8. Confirm that there is no additional external forces exerted on the fingers. Transverse load acts on the fingers, which will cause impact load, leading to the shaking and damage of gripping jaw. Equip with gaps so that the air gripper will not crash into work-pieces and accessories at the end of its trip.
9. When workpieces inserted, the center line should be coaxial, no offset, in case there are additional external force generated on the jaw. When testing, it is specially required that the manual operation should be reduced and the pressure should be used to run it at a low speed, and guarantee the safety and no impact.
10. Please use the flow control valve to adjust the opening and closing speed of gripping jaw if too fast.
11. People cannot enter the movement path of air gripper and articles cannot be placed on the path too.
12. Before removing the air gripper, please confirm that it is out of working state, and then discharge of compressed air.

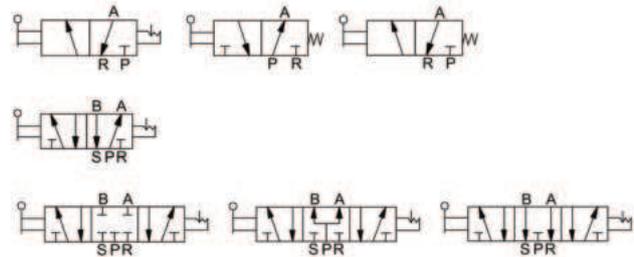
Bore	Bolt Size	Max.Locking Torque (Nm)
10	M3X0.5	0.6
16	M3X0.5	0.6
20	M4X0.7	0.8
25	M5X0.8	1.5



**H Series Hand Valve 5/2 way**

**H**

**Hand Push Valve (5/2)**



**How to Order?**

Series No.	Ways	Positions	Valve body size	Original Status	Port size	Reset	Thread Type
H	3:3 ways 5:5 ways	2:2 positions 3:3 positions	1: 1 Series 2: 2 Series 3: 3 Series 4: 4 Series	C: Center close P: Center pressure E: Center exhaust (Only for 5/3 way)	1 Series M5: M5 06: 1/8"  2 Series 06: 1/8" 08: 1/4"	3 Series 08: 1/4" 10: 3/8"  4 Series 10: 3/8" 15: 1/2"	Blank: Manual reset S: Spring return  Blank: G P: PT T: NPT

**Order Example**

H series hand push valve, 5/2 way, 2 series valve body, NC type, 1/4" port size, manual reset, black valve body, G thread, ERP code is: H522-08

Remarks: Manual reset of two position tee can be divided into non opening and non closing

**Specifications**

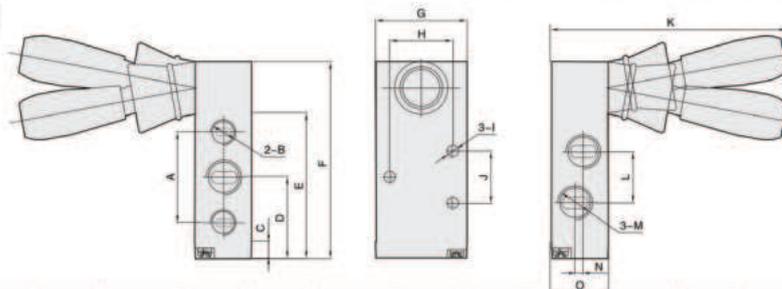
Model	H Series Hand Valve
Working medium	Clean air(After 40 μm filtration)
Acting type	External control
Lubrication	Not required
Working pressure(MPa)	0~0.8
Guaranteed pressure (MPa)	1.2
Working temperature (°C)	-5~60
Seal material	NBR

**Product Features**

- \* Manual operated
- \* Various working style are available

**Main Dimension**

H521/H522/H523/H524



Model/Sign	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
H521-06	28	G1/8	6.7	28.2	49.7	69.7	27	19	Φ3.3	14	83.8	16	G1/8	3	18
H522-08	35	G1/8	6.7	31.7	56.7	76.7	35	24	Φ4.3	20	91.3	20	G1/4	3	22
H523-10	45	G1/4	7.5	40	72.5	92.5	40	28	Φ4.3	24	96.5	24	G3/8	4	27
H524-15	63	G1/2	10	57	104	132	50	36	Φ5.5	28	105	36	G1/2	4	34

**QPC Series Pilot Non - Return Valve**

# QPC

## Pilot Non - Return Valve



### Product Features

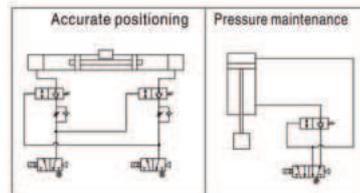
1. Can make cylinder momentary stop, accurate orientation;
2. Prevent cylinder moving after stopped;
3. Can be used for safety loop of pressure holding;
4. Can be used for special loop.

### How to Order?

Series	Port Size
QPC	08: 1/4" 10: 3/8" 15: 1/2"

Order Example:

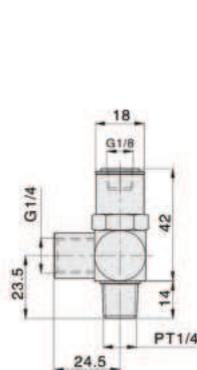
QPC series valve, 1/4" port size, ERP code is: QPC-08



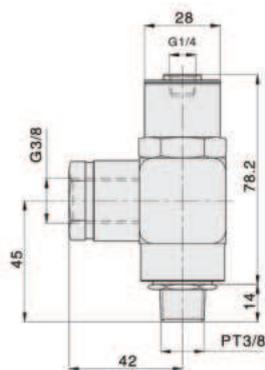
### Specifications

Model	QPC - 08	QPC - 10	QPC - 15
Working medium	Clean air(After 40 μ m filtration )		
Sectional ( mm )	24	79	79
Working pressure(MPa)	0.1~1.0		
Guaranteed pressure(MPa)	1.5		
Working temperture(°C)	-20~70		
Operating Frequency ( Times/min )	60	40	40
Valve material	Nickel plated brass	Aluminum alloy	Aluminum alloy
Port size	1/4"	3/8"	1/2"
Pilot Port Size	1/8"		

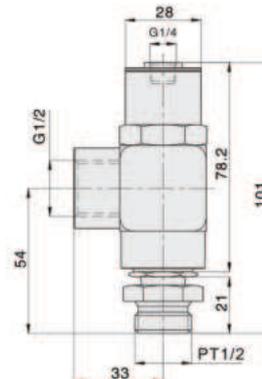
### Main Dimension



QPC - 08



QPC - 10

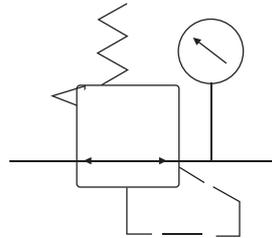


QPC - 15

**PFRH Series High Pressure Filter Regulator**

# PFRH

## High Pressure Filter Regulator



### How to order

PFRH	Valve Body Size	Port Size
PFRH Series	20: 2000 Valve body 30: 3000 Valve body 40: 4000 Valve body 50: 5000 Valve body	02: G1/4 " 03: G3/8 " 04: G1/2 " 06: G3/4 " 10: G1 "

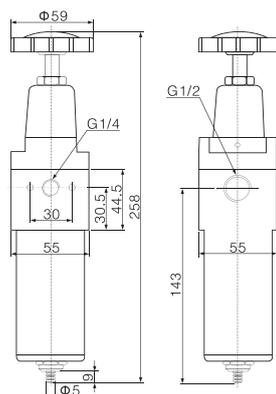
#### Order Example:

PFRH Series, 4000 Valve body, Port Size: G1/2 " , EPR Code: PFRH 40-04

### Specification

Model	PFRH-02	PFRH-03	PFRH-04	PFRH-06	PFRH-10
Working Medium	Air				
Port Size	G1/4	G/8	G1/2	G3/4	G1
Filter Precision	20 u m/40 u m				
Pressure Adjustment Range	0.15 - 3.5MPa				
Max.Input Pressure	4MPa				
Working Temperature	5 - +80°C				

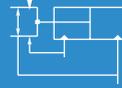
### Main Dimensions



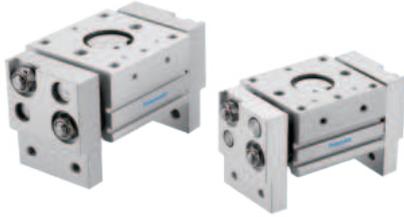
**PHL Wide Type Parallel Style Air Gripper**

**PHL**

Wide Type Parallel Style Air Gripper



◆ **Specification**



Bore Size(mm)	16	20	25	32
Acting Type	Double acting			
Fluid	Air(to be filtered by 40 μm or better)			
Operating pressure	0.15~0.7MPa(22~100psi)(1.5~7bar)			
Temperature°C	-20~70( No freezing)			
Lubrication	Cylinder:No necessary			
Max.frequency	40 cycle/minute			20 cycle/minute
Gripping force(N) ①	45	74	131	228
Proof pressure	1.2MPa(175psi)			
Repeatability(mm)	± 0.1			
Cushion type	Bumper			
Port Size	M5X0.8			G1/8②

- ① Grip point distance is 40mm(φ16~φ25) or 80mm(φ32) at 0.5 MPa
- ② G、PT、NPT thread Optional

◆ **How to order?**

Series	Bore	X	Stroke	—	Magnet No	□ (缸径32)
PHL: Wide air gripper (Double acting)	16 20 25 32		Listed below		S:With magnet (Magnet is standard)	Blank: G P: PT T: NPT

**Order Example:**

PHL Series air gripper, Bore 25mm, Stroke 60mm, With magnet, ERP code is:SHL25X60-S

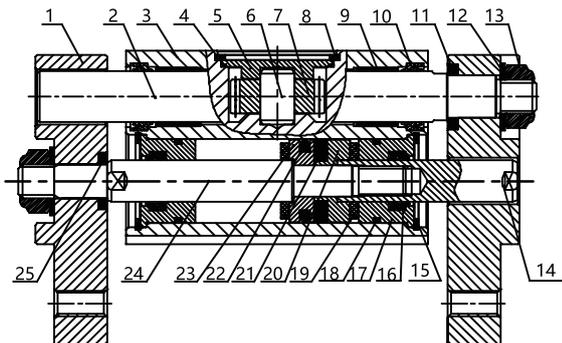
◆ **Stroke**

Bore(mm)	Standard Stroke(mm)	Max.Stroke(mm)
16	30 40 60 80	80
20	40 60 80 100	100
25	40 60 80 100	100
32	60 80 100 150	150

◆ **Product feature**

- 1.The gripper opening or closing can be precisely synchronized with the rack & pinion mechanism.
2. Two round and two square Slots on the barrel, Multiple magnet switch are available.
- 3.Multiple bore size and stroke are available.
- 4.Double pistons design to increase the clamping force.
- 5.Multiple options for installing and fixing .
- 6.Convenience to mount workpiece.
- 7.Design for large workpiece.
- 8.Magnet is included in the standard configuration.

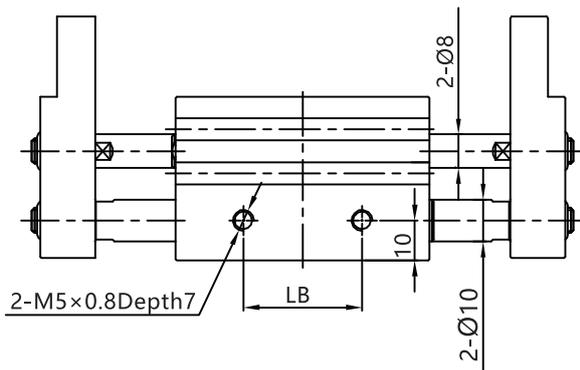
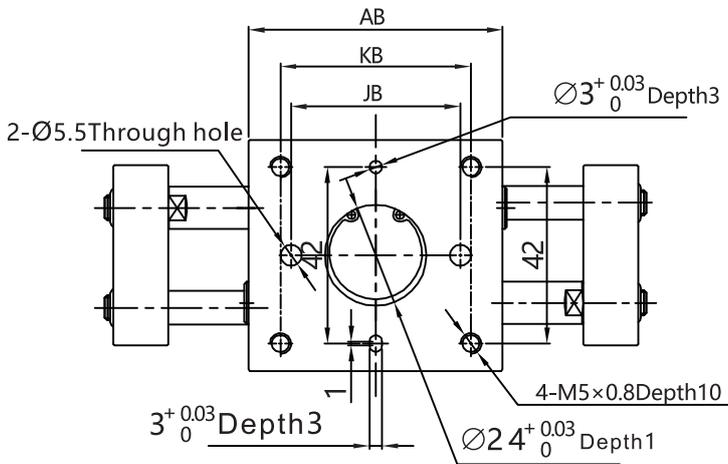
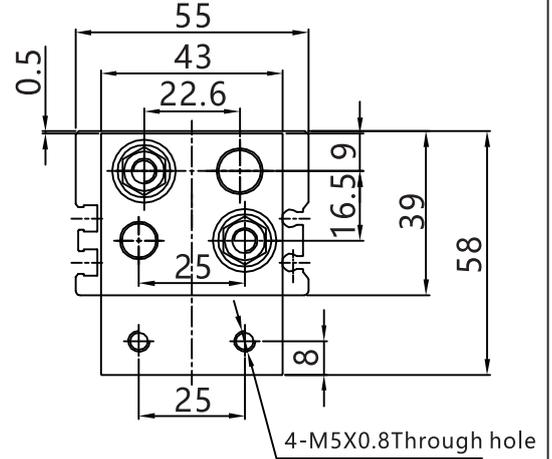
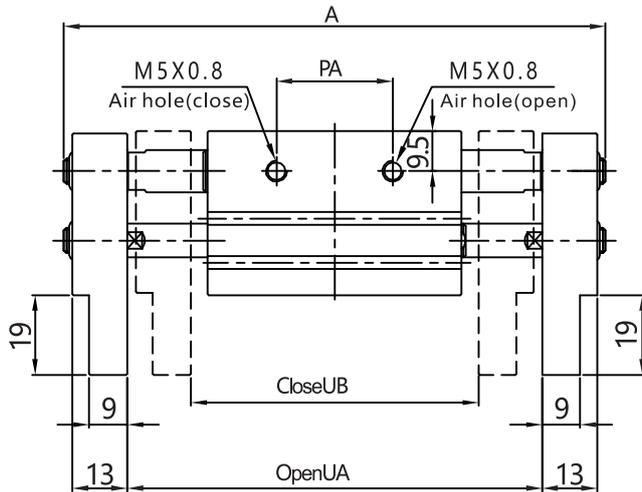
◆ **Internal Structure**



No.	Part Name	Material	No.	Part Name	Material
1	Face plate	Aluminum alloy	14	Piston rod B	Stainless steel
2	Rack	Stainless steel	15	C Type retaining ring	Spring steel
3	Bore	Aluminum alloy	16	Piston rod seal	NBR
4	O-ring	NBR	17	Head cover	Aluminum alloy
5	Gear cover	Aluminum alloy	18	O-ring	NBR
6	Gear axes	Stainless steel	19	Bumper	TPU
7	Gear	Mould steel	20	Magnet seat	Aluminum alloy
8	C Type retaining ring	Spring steel	21	Magnet	Sintered metal (Neodymium-iron-boron)
9	Bearing	Wear resistant material			
10	Piston rod seal	NBR	22	Piston seal	NBR
11	Washer	Carbon steel	23	Piston	Aluminum alloy
12	Washer	Stainless steel	24	Piston rod A	Stainless steel
13	Nut	Stainless steel	25	Washer	Carbon steel

**PHL Wide Type Parallel Style Air Gripper**

PHL16

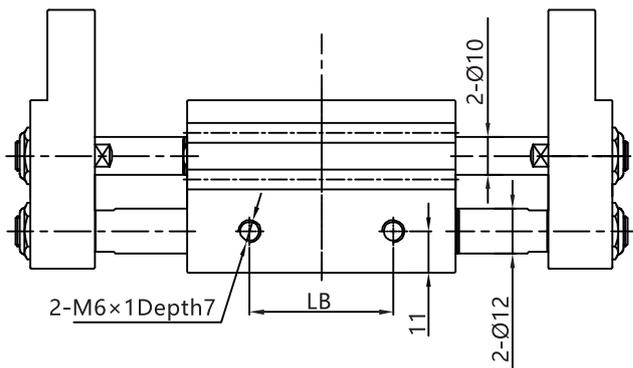
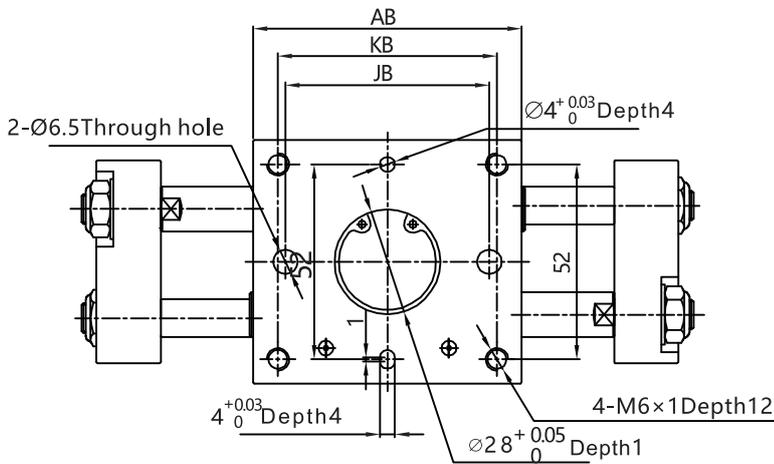
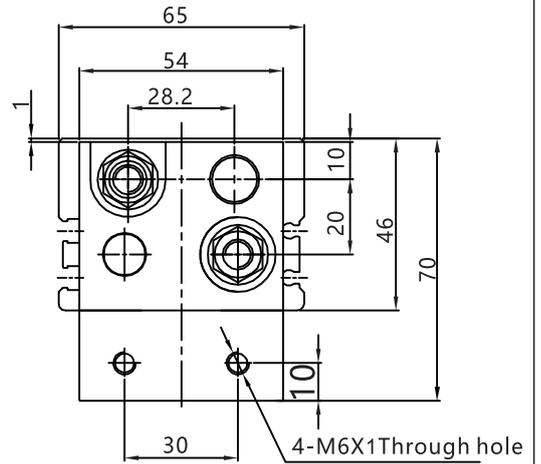
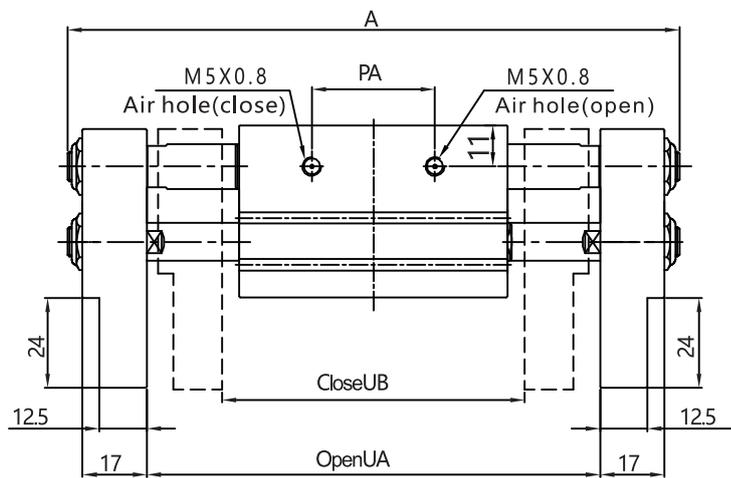


Sign/Bore	30	40	60	80
A	128	148	194	234
AB	60	70	90	110
JB	40	50	70	90
KB	45	55	75	95
LB	28	38	58	78
PA	25	30	40	51.6
UA(Open )	98	118	164	204
UB ( Close )	68	78	104	124

XV

**PHL Wide Type Parallel Style Air Gripper**

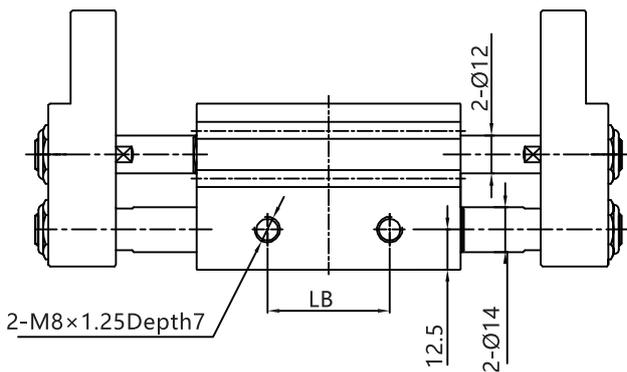
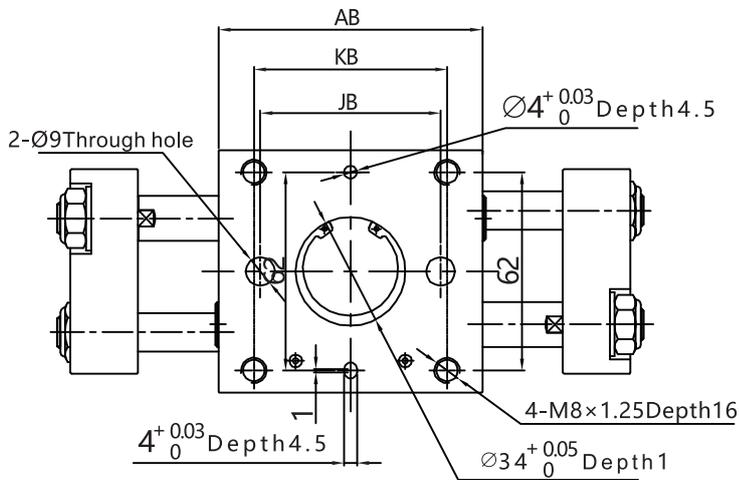
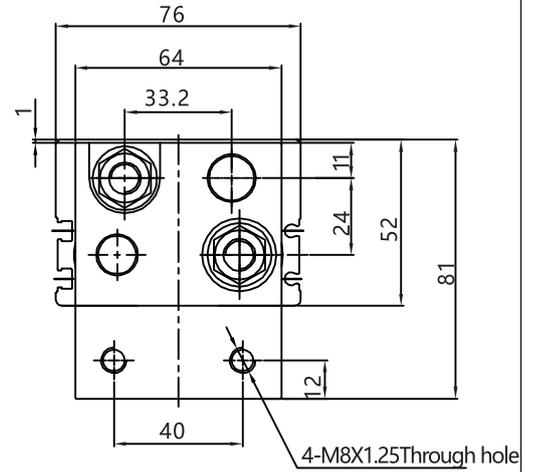
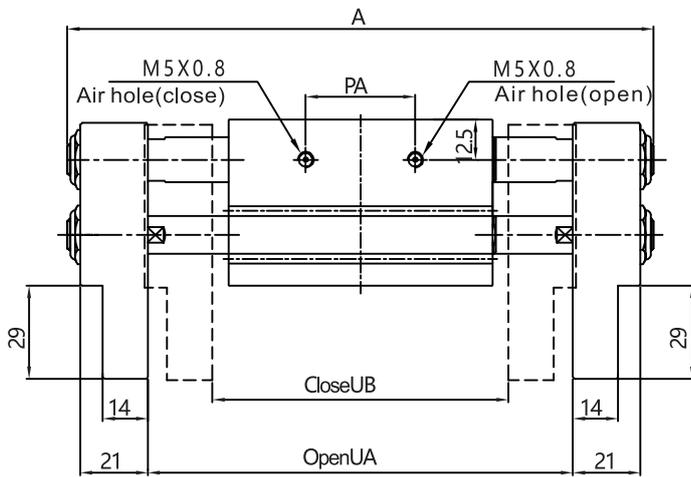
PHL20



Sign/Bore	40	60	80	100
A	162	202	254	294
AB	71	91	113	133
JB	54	74	96	116
KB	58	78	100	120
LB	38	58	80	100
PA	32.6	42.6	52.6	64
UA(Open)	120	160	212	252
UB (Close)	80	100	132	152

**PHL Wide Type Parallel Style Air Gripper**

PHL25

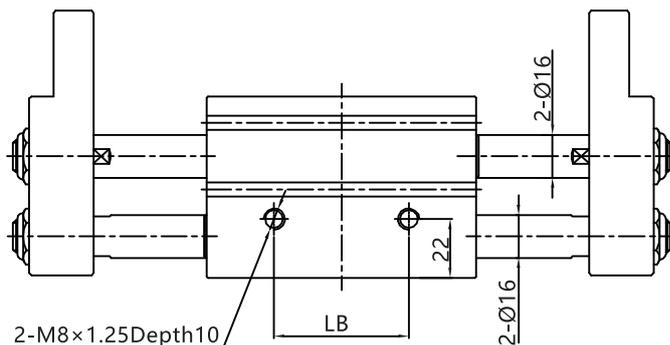
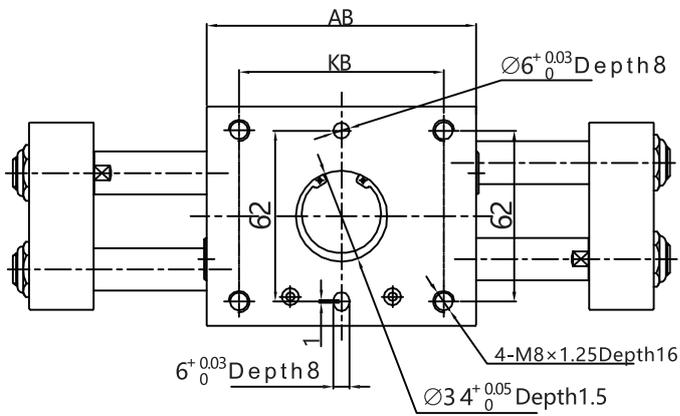
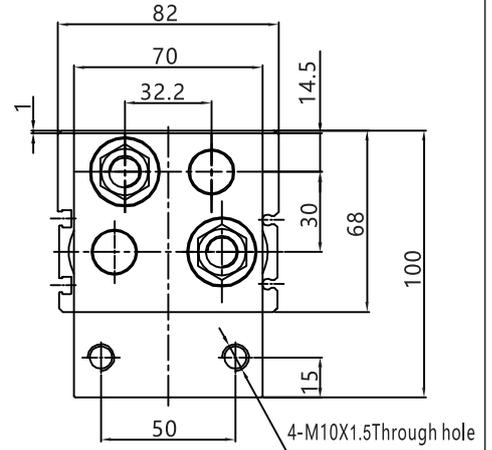
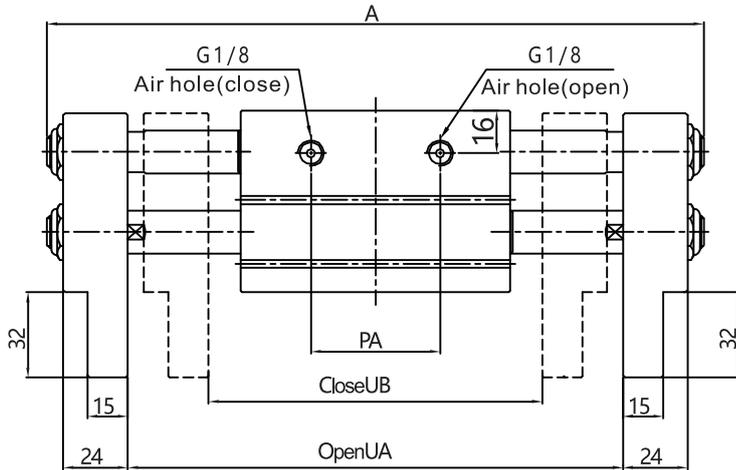


Sign/Bore	40	60	80	100
A	182	222	276	316
AB	82	102	122	142
JB	56	66	100	120
KB	60	70	104	124
LB	38	48	82	102
PA	34	44	54	64
UA(Open )	132	172	226	266
UB ( Close )	92	112	146	166

XV

**PHL Wide Type Parallel Style Air Gripper**

PHL32



Sign/Bore	60	80	100	150
A	244	284	342	442
AB	100	120	158	208
KB	76	86	134	184
LB	50	60	108	158
PA	45	55	65	90
UA(Open )	184	224	282	382
UB ( Close )	124	144	182	232

**PHL Wide Type Parallel Style Air Gripper**

◆ **Product type**

1. Please select pneumatic finger according to the following steps

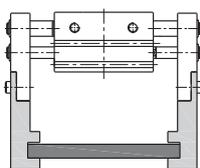
Confirmation of conditions >>> Select possible type according to the work length >>> Calculation of required gripping force >>> Selection of model by gripping force graph

Work form  
Diameter x Length  
200 mm x 200 mm  
plate.

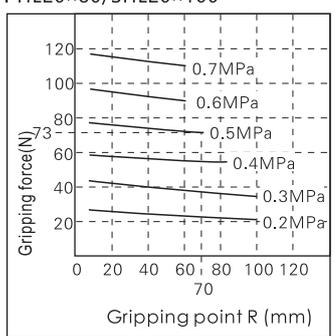
Work length: From the dimensions of models that have an opening width of 200 mm or more  
PHL16 x 80  
PHL20 x 80/PHL20 x 100  
PHL25 x 80/PHL25 x 100

PHL20 x 80/SHL20 x 100

Work mass: 0.3 kg



1. Although conditions differ according to the workpiece shape and the coefficient of friction between the attachments and the workpiece, select a model that can provide a gripping force of 10 to 20 times the workpiece mass, or more.  
2. Further allowance should be provided when great acceleration or impact is expected during workpiece transfer. Example: For setting the gripping force to be at least 20 times the workpiece mass:  
Required gripping force = 0.3kg x 20 x 9.8 m/s<sup>2</sup> = 60 N



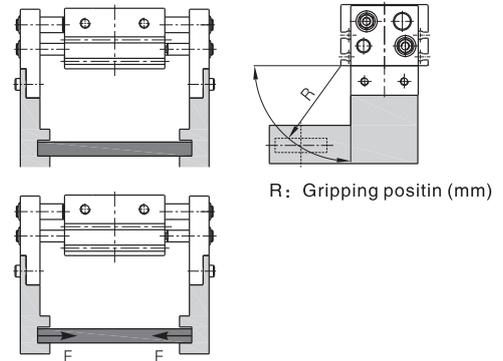
Gripping point R = 70 mm

Operating pressure: 0.5 MPa

1. Selecting the HFT20\*80 A gripping force of 73 N is obtained from the intersection point of gripping point position R=70 and a pressure 0.5 Mpa.  
2. The gripping force is 24 times greater than the workpiece mass, and therefore satisfies a gripping force setting value of 20 times or more.

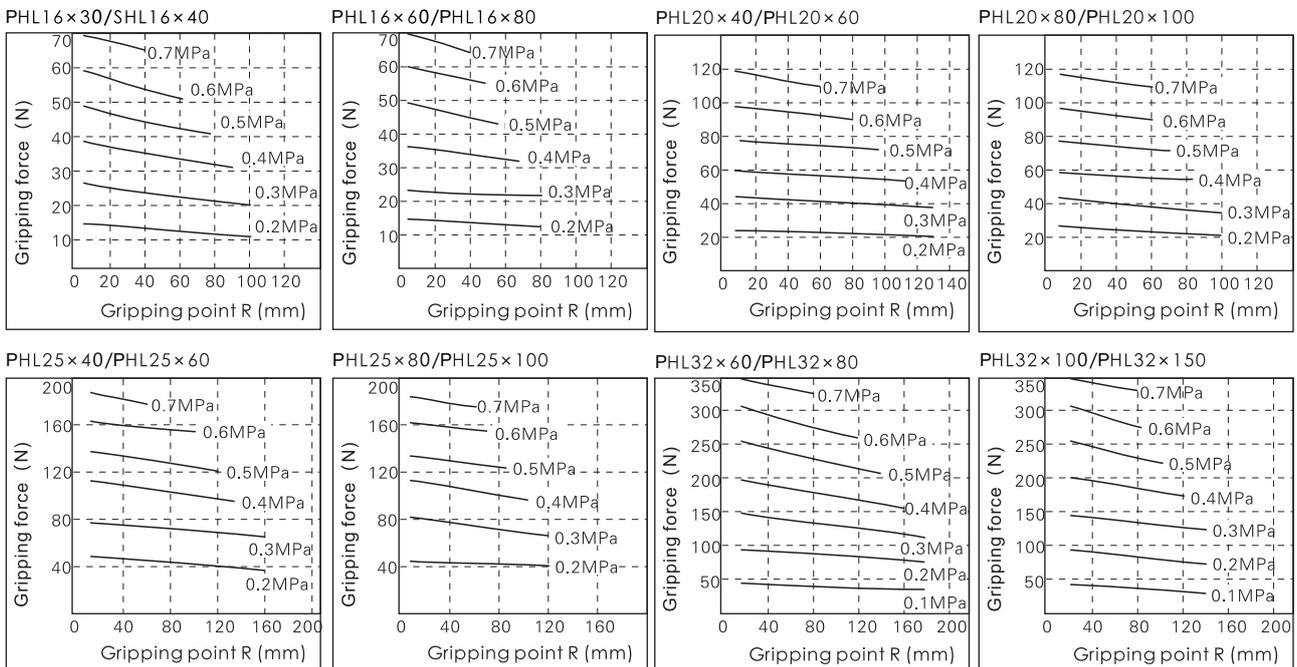
2. Gripping Point

- 2.1. The workpiece gripping point distance should be within the gripping force ranges given for each pressure in the effective gripping force graphs below.
- 2.2. If operated with the workpiece gripping point beyond the indicated ranges, the load that will be applied to the fingers or the guide will become excessively unbalanced. As a result, the fingers could become loosened and adversely affect the service life of the unit.



3. Effective Gripping Force

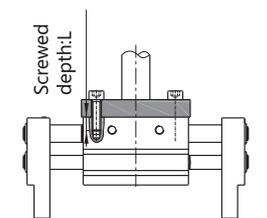
The gripping force shown in the tables represents the gripping force of one finger when all fingers and attachments are in contact with the work.



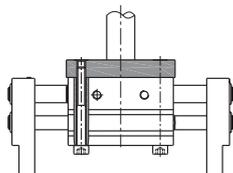
## PHL Wide Type Parallel Style Air Gripper

### ◆ Installation and application

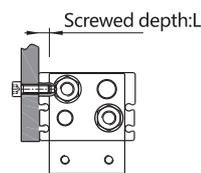
1. Due to the abrupt changes, the circuit pressure is low, which will lead to the decrease of the gripping force and falling of the work-pieces. In order to avoid the harm to the human body and damage to the equipment, anti-dropping device must be equipped.
2. Don't use the air gripper under strong external force and impact force.
3. When install and fix the air gripper, avoid falling down, collision and damage.
4. When fixing the gripping jaw parts, don't twist the gripping jaw.
5. There are several kinds of installation method, and the locking torque of fastening screw must be within the prescribed torque range shown in the below chart. If the locking torque is too large, it will cause the dysfunctional. If the locking torque is too small, it will cause the position deviation and fall.



Axial mounted(thread hole)



Axial mounted(through hole)



Beside mounted

Bore size	The bolts type	Max.locking moment (Nm)	Max.screwed depth (mm)
16	M5 × 0.8	4.3	10
20	M6 × 1.0	7.3	12
25	M8 × 1.25	17.7	16
32	M8 × 1.25	17.7	16

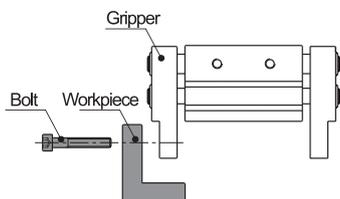
Bore size	The bolts type	Max.locking moment (Nm)
16	M5 × 0.8	4.3
20	M6 × 1.0	7.3
25	M8 × 1.25	17.7

Note: Not available for Ø32

Bore size	The bolts type	Max.locking moment (Nm)	Max.screwed depth (mm)
16	M5 × 0.8	2.8	7
20	M6 × 1.0	4.8	7
25	M8 × 1.25	12	7
32	M8 × 1.25	12	10

6. The installation method of the gripping jaw fittings:

When install the gripping jaw fittings, you have to pay particular attention that you can only hold the gripping jaw by using spanner, and then lock the screws with alien wrench. Never clamp the body directly and then lock the screws, otherwise the parts will be easily damaged.

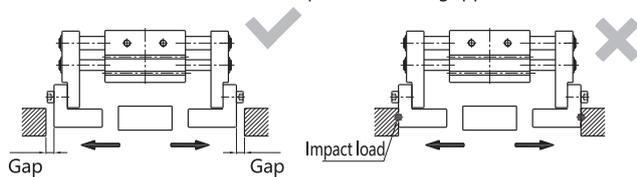


Bore size	The bolts type	Max.locking moment (Nm)
16	M5 × 0.8	2.8
20	M6 × 1.0	4.8
25	M8 × 1.25	12
32	M10 × 1.5	24

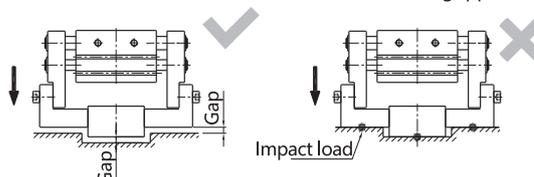
7. Confirm that there is no external forces exerted on the gripping jaw.

Transverse load acts on the gripping jaw, which will cause impact load and leads to the shaking and damage of gripping jaw. Equip with gaps so that the air gripper will not crash into work-pieces and accessories at the end of its trip.

#### 7.1. The end of stroke under the open state of air gripper



#### 7.2. The end of stroke under the move state of air gripper



8. When the work-pieces are inserted, the center line should be coaxial, no offset, in case there are external force generated on gripping jaw. When testing, it is specially required that the manual operation should be reduced, the pressure should be used to run it at a low speed, and guarantee the safety and no impact.

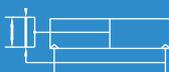


9. Please use the flow control valve to adjust the opening and closing speed of gripping jaw if too fast.
10. People can not enter the movement path of air gripper and articles can not be placed on the path too.
11. Before removing the air gripper, please confirm that it is out of working state, and then discharge of compressed air.

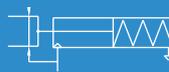
**PHZ Series Air Gripper**

**PHZ**  
Air Gripper

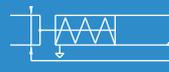
PHZ:  
Standard double acting



PHZSA:  
Single acting (N.O.)



PHZSB:  
Single acting (N.C.)



◆ **Specifications**

Bore size(mm)		10	16	20	25
Acting type		Double Acting/Single Acting			
Working medium		Clean Air(40 μm filtration)			
Applicable pressure range	Double acting	Φ 10	0.15~0.7MPa(22~100psi)(1.5~7.0bar)		
		Φ 16~Φ 25	0.1~0.7MPa(15~100psi)(1.0~7.0bar)		
	Single acting	Φ 10	0.3~0.7MPa(45~100psi)(3.0~7.0bar)		
		Φ 16~Φ 25	0.25~0.7MPa(36~100psi)(2.5~7.0bar)		
Working temperature		-20~70℃(No freezing)			
Oil		Not required			
Maximum frequency		180(C.P.M)			
Port size		M3X0.5	M5X0.8		
Weight(g)		52	120	236	430

◆ **How to Order?**

Series	Type No.	Bore	Magnet No.
PHZ: Parallel air gripper	Blank: Basic type SA: Single acting (N.O.) SB: Single acting (N.C.)	10 16 20 25	S : With magnet (Magnet is standard)

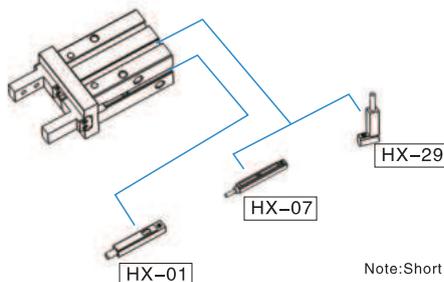
Order Example:

Parallel air gripper, Bore 20, with magnet, ERP code is: SHZ20-S

◆ **Product Features**

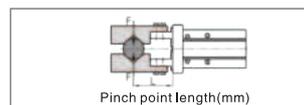
1. Integrated design of linear guide rail, high rigidity, high precision;
2. Positioning pin at the bottom of the linear guide rail, efficiently preventing deviation of guide rail from the body;
3. Deeper attached fixing benchmark centering hole, improving fixing accuracy, and improving consistency after repeated dismounting and fixing
4. According to the actual requirements of the customer, the initial position of the claw can be customized to meet the different needs under different working conditions.

◆ **Optional Acces**



Note: Short stroke please use HX-29 series due to limited space.

◆ **Clamping Force and Stroke**

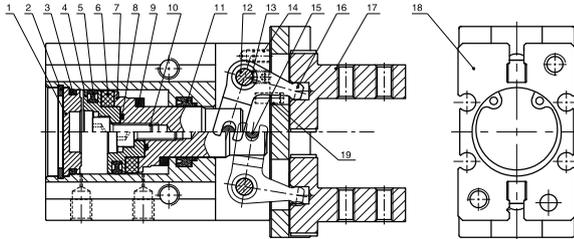


Acting Type	Type	Clamping force effective value of single air finger(N)		Stroke(two sides) ( L ) ( mm )	
		Closure clamping torque	Open clamping torque		
Double acting	PHZ10	11	17	4	
	PHZ16	34	45	6	
	PHZ20	45	68	10	
	PHZ25	69	102	14	
Single acting (N.O.)	(N.O.)	PHZSA10	7	-	4
		PHZSA16	27	-	6
		PHZSA20	35	-	10
		PHZSA25	55	-	14
	(N.C.)	PHZSB10	-	13	4
		PHZSB16	-	38	6
		PHZSB20	-	59	10
		PHZSB25	-	87	14

Note: The value of the clamping force in above table is when the working pressure is 0.5Mpa and the L value of the clamping point is 20mm.

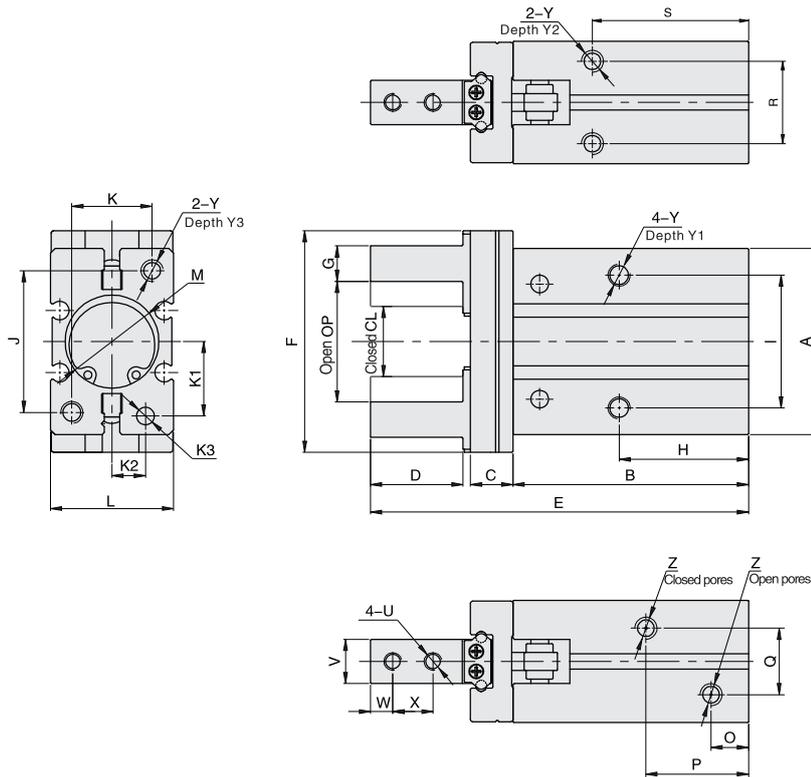
**PHZ Series Air Gripper**

**Internal Structure**



No.	Part Name	Material	No.	Part Name	Material
1	Rear cover	Aluminum alloy	11	Piston rod seal	TPU/NBR(Φ25)
2	C type retainer ring	Spring steel	12	Pin	Stainless steel
3	O-ring	NBR	13	Hexagon set screw	Carbon steel
4	Piston	Aluminum alloy/ Stainless steel(Φ10)	14	Hexagon socket cap screw	Carbon steel
5	Piston seal	NBR	15	Pin	Stainless steel
6	Magnet	Plastic	16	Bent lever	Alloy steel
7	Piston rod	Aluminum alloy/ Stainless steel (Φ10, Φ16)	17	Clamping jaw assembly	Assembly
8	O-ring	NBR	18	Barrel	Aluminum alloy
9	Anti-bump cushion	PTEE	19	Pin	Stainless steel
10	Hexagon socket cap screw	Carbon steel			

**Main Dimension**



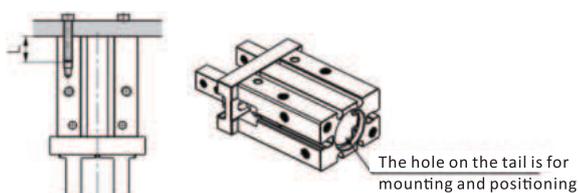
Bore/Sign	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P	Q	K1	K2	K3
PHZ10	23	37.6	6	12.3	57	29	4 <sup>0</sup> <sub>-0.05</sub>	23	16	18	12	16.4	11 <sup>+0.05</sup> <sub>0</sub> Depth2	7	18.8	10	7.6	5.2	2 <sup>0</sup> <sub>0</sub> Depth3
PHZ16	30.6	42.5	7.5	15.5	67.3	38	5 <sup>0</sup> <sub>-0.05</sub>	24.5	24	22	15	23.6	17 <sup>+0.05</sup> <sub>0</sub> Depth2	7.1	18.5	13	11	6.5	3 <sup>+0.05</sup> <sub>0</sub> Depth3
PHZ20	42	52.8	9.5	20.7	84.7	50	8 <sup>0</sup> <sub>-0.05</sub>	29	30	32	18	27.6	21 <sup>+0.05</sup> <sub>0</sub> Depth3	8.4	23	15	16.8	7.5	4 <sup>+0.05</sup> <sub>0</sub> Depth4
PHZ25	52	63.6	11	25.5	102.7	63	10 <sup>0</sup> <sub>-0.05</sub>	30	36	40	22	33.6	26 <sup>+0.05</sup> <sub>0</sub> Depth3.5	9.5	23.5	19.5	21.8	10	4 <sup>+0.05</sup> <sub>0</sub> Depth4
Bore/Sign	R	S	U	W	V	X	Y	Y1	Y2	Y3	Z	OP	CL						
PHZ10	11.4	27	M2.5X0.45	3	5 <sup>0</sup> <sub>-0.05</sub>	5.7	M3X0.5	6	6	6	M3X0.5	14.8 <sup>±2</sup> <sub>0</sub>	11.4 <sup>0</sup> <sub>0.7</sub>						
PHZ16	16	30	M3X0.5	4	8 <sup>0</sup> <sub>-0.05</sub>	7	M4X0.7	9.5	5.5	8	M5X0.8	20.8 <sup>±2</sup> <sub>0</sub>	14.8 <sup>0</sup> <sub>0.7</sub>						
PHZ20	18.6	35	M4X0.7	5	10 <sup>0</sup> <sub>-0.05</sub>	9	M5X0.8	11.5	8	10	M5X0.8	26 <sup>±2</sup> <sub>0</sub>	16.2 <sup>0</sup> <sub>0.7</sub>						
PHZ25	22	36.5	M5X0.8	6	12 <sup>0</sup> <sub>-0.05</sub>	12	M6X1.0	14.5	10	12	M5X0.8	33.5 <sup>±2</sup> <sub>0</sub>	19.2 <sup>0</sup> <sub>0.7</sub>						

**PHZ Series Air Gripper**

**Installation and Use**

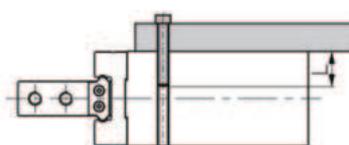
1. Installing a fall prevention device is recommended when applying a lowering clamping force. In the case of a sudden pressure decrease due to emergency stop, these prevention devices can help to avoid personal or equipment injuries.
2. Don't use air gripper upon strong external force and impact force. Air grippers are not intended for use under external or impact forces.
3. When installing or repairing your air gripper take precautions to safely use your component.
4. Please contact with us when using the single acting type gripper for specific spring action force information.
5. Don't reverse the clamping gripper when installing clamping parts.
6. The locking torque of the fastening screw must be within the prescribed torque range shown in the chart below. If the locking torque is not set properly the unit will not perform correctly.

**Tail Mounting Type**



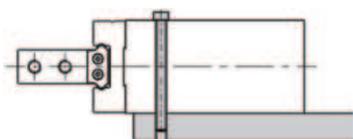
Bore	Bolt Size	Max.Locking Torque (Nm)	Max.Screwed Depth (mm)	Tail Positioning Bore Dia.(mm)	Tail positioning Depth.(mm)
10	M3X0.5	0.88	6	$\phi 11^{+0.05}_0$	2
16	M4X0.7	2.1	8	$\phi 17^{+0.05}_0$	2
20	M5X0.8	4.3	10	$\phi 21^{+0.05}_0$	3
25	M6X1.0	7.3	12	$\phi 26^{+0.05}_0$	3.5

**Front Tapped Hole Mounting**



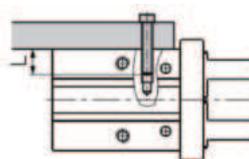
Bore	Bolt Size	Max.Locking Torque (Nm)	Max.Screwed Depth (mm)
10	M3X0.5	0.69	5
16	M4X0.7	2.1	8
20	M5X0.8	4.3	10
25	M6X1.0	7.3	12

**Through Hole Mounting**



Bore	Bolt Size	Max.Locking Torque (Nm)	Max.Screwed Depth (mm)
10	M2.5X0.45	0.49	5
16	M3X0.5	0.88	8
20	M4X0.7	2.1	10
25	M5X0.8	4.3	12

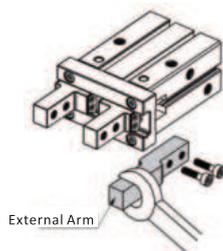
**Side Tapped Hole Mounting**



Bore	Bolt Size	Max.Locking Torque (Nm)	Max.Screwed Depth (mm)
10	M3X0.5	0.9	6
16	M4X0.7	1.6	4.5
20	M5X0.8	3.3	8
25	M6X1.0	5.9	10

**7. Clamping Jaw Installation:**

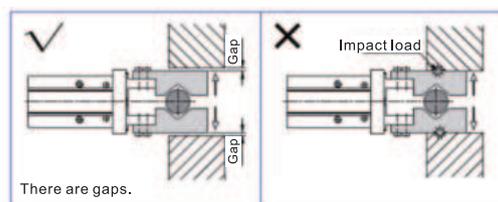
Never clamp the body directly and then lock the screws. The gripping jaw should be held by the spanner and the screw should be locked using a hex wrench.



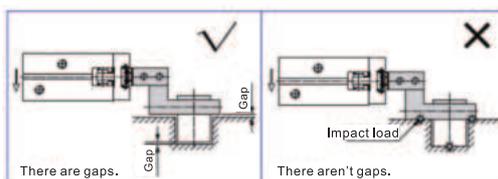
Bore	Bolt Size	Max.Locking Torque (Nm)
10	M2.5X0.45	0.31
16	M3X0.5	0.59
20	M4X0.7	1.4
25	M5X0.8	2.8

**8. Avoid applying external forces to the gripping jaw.**

**8.1 The air gripper end of stroke in open status.**



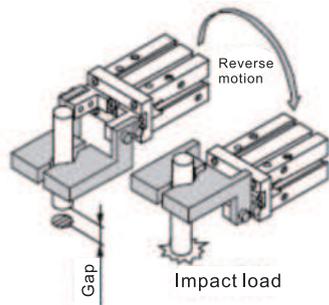
**8.2 The air gripper end of stroke in moving status.**



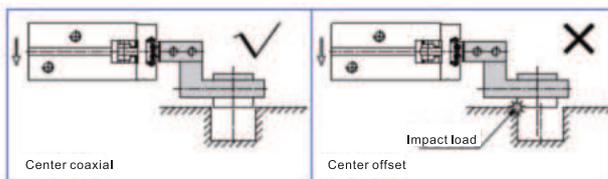
## PHZ Series Air Gripper

### ◆ Installation and Use

8.3 When reversing your loaded air gripper make sure the object being gripped is centred.



9. When ripping an object the item should always be centred. When testing, you must reduce the pressure for low speed running, to guarantee the safety and no impact.



- 10. Please use the flow control valve to adjust the opening and closing speed of your gripper.
- 11. Always ensure the gripper path is clear of obstruction.
- 12. Before removing your air gripper, please make sure all power is disconnected and you've discharged residual compressed air.

**PMQ Rotary Cylinder**

**PMQ**  
Rotary Cylinder



◆ **Specifications**

Specifications		7	10	20	30	50
Acting type		Double Cylinder, Rack & Pinion Style, Double Acting				
Working medium		Clean Air(40um filtration or better)				
Working pressure range	With angle adjustable screw	0.1~0.7MPa		0.1~1.0MPa		
	With shock absorber	None		0.1~0.6MPa		
Proof pressure(MPa)		1.5MPa				
Working temperature ( °C )		-20~70( No freezing)				
Angle adjustable range		0~190°				
Repeat Accuracy	With angle adjustable screw	0.2°				
	With shock absorber	None		0.05°		
Theoretical Torque(NM)(0.5Mpa)		0.63	1.1	2.2	2.8	5.0
Cushion	With angle adjustable screw	Rubber bumper(Standard)				
	With shock absorber	None		Shock absorber(Optional)		
Port size	Front port	M5x0.8			G1/8①	
	Side port	M5x0.8				
Weight(g)	With angle adjustable screw	270	530	1020	1310	2130
	With shock absorber	None	540	1020	1310	2140

Note: When setting the rotation angle for rotary tables with shock absorbers, following the above table. Failing to follow the guide may result in a decrease in energy absorption capacity.

① PT、NPT port size is optional

Bore Size(mm)	10	20	30	50
Minimum rotation angle that will not allow decrease of energy absorption ability	61°	52°	46°	66°

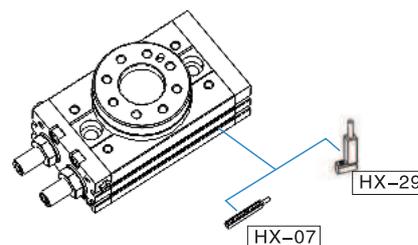
◆ **How to Order?**

Series No	Specifications	Magnet No	Cushion Type	Thread Type
PMQ	7 10 20 30 50	S: With magnet (Magnet is standard)	A: With adjustment bolt R: With shock absorber (7 series no shock absorber is optional)	Blank: G P: PT T: NPT

**Order Example:**

PMQ Series Rotary Cylinder, Specifications 30, with adjustment bolt, G Thread, ERP code is: PMQ30-S-A  
Note: Specific Bore and Stroke of the cylinder subject to the drawing.

⊙ **Optional Accessories**



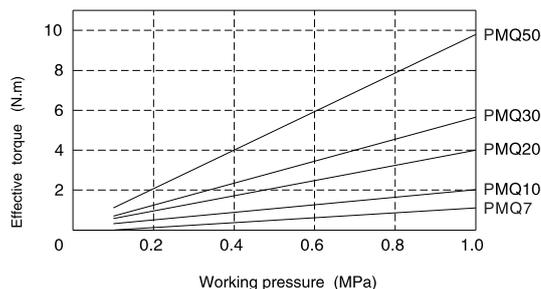
Note: Short stroke please use HX-29 series due to limited space.

◆ **Allowable Kinetic Energy and Rotation Time Adjustment Range**

Model	Allowable kinetic energy (J)		Rotation time adjustment range for stable operation (s/90°)	
	With adjutment bolt	With shock absorber	With adjutment bolt	With shock absorber
PMQ7	0.006	None	0.2~1.0	None
PMQ10	0.01	0.04	0.2~1.0	0.2~0.7
PMQ20	0.025	0.12	0.2~1.0	0.2~0.7
PMQ30	0.05	0.12	0.2~1.0	0.2~0.7
PMQ50	0.08	0.30	0.2~1.0	0.2~0.7

Note 1. If operated where the kinetic energy exceeds the allowable value, this may cause damage to the internal parts and result in product failure. Please pay special attention to the kinetic energy levels when designing and during operation to avoid exceeding the allowable limit.  
2. When the rotation time of the type with an internal absorber is set longer than the time shown in the table above, energy absorption of the shock absorber greatly decreases.

◆ **Effective Output Torque**

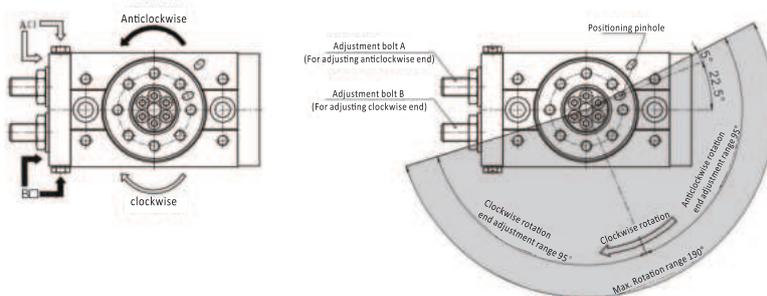


## PMQ Rotary Cylinder

### Installation and Use

#### 1. Rotation direction and rotation angle

- 1.1 When pressurized from port A, the shaft rotates clockwise and counter-clockwise when pressurized from port B.
- 1.2 To obtain the desired rotation angle, the rotation ends can be set within the range shown in the diagram by regulating the adjustment bolt.
- 1.3 Rotary table with a shock absorber is available to adjust the rotation angle.

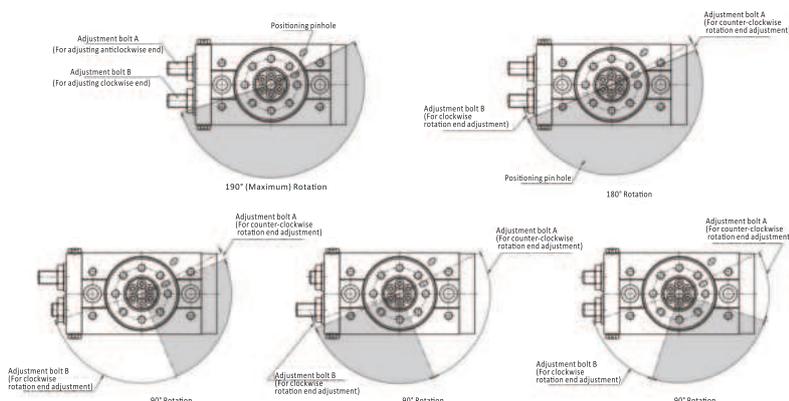


#### Note:

- \* The figure above shows the rotation range of from the positioning pinhole.
- \* Position of the pinhole in the figure above shows a counter-clockwise rotation where the rotation angle is set at 180° by equally tightening the A & B adjustment bolts.
- \* The adjustment bolt of the shock absorber is factory set to the maximum output. Please adjust inward for first use if necessary.

#### 2. Rotation range example:

- 2.1 Rotation can be set by adjusting the A & B adjuster bolts.
- 2.2 Rotary tables with shock absorbers can be set to various angles.



#### 3. Adjustment angle per rotation (Adjustment bolt or shock absorber) The adjustment angle of the turntable for each turn is as follows:

Bore size	Adjustment angle per rotation
7	10.2°
10	10.2°
20	7.4°
30	6.5°
50	8.2°

4. The rotation angle has been adjusted to the maximum output at the factory. Please do not extend the rotation angle beyond the maximum factory setting.
5. The movement energy should not exceed the maximum allowable energy, or the inner components can be damaged.
6. The rotary parts do not require lubrication.
7. Minimum operation pressure for a rotary table with a shock absorber is no less than 0.1Mpa.

#### 8. Refer to the table below for tightening torques of the shock absorber setting nut.

Shock absorber size	Max. tightening torque (Nm)
M8X1.0	2.5
M10X1.0	3.5
M14X1.5	11

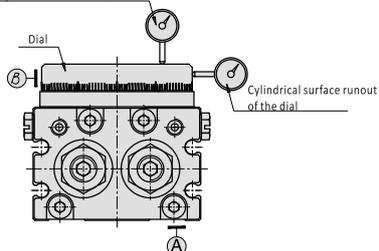
#### 9. Never loosen the bottom screw of the shock absorber. That may cause oil leakage.

#### 10. Shock absorbers are consumable parts. When a decrease in energy absorption capacity is noticed, it must be replaced.

Series	Shock Absorber Type and Ordering code	Thread Type
PMQ10	AC0806-SN	M8X1.0
PMQ20	AC1007-SN	M10X1.0
PMQ30	AC1007-SN	M10X1.0
PMQ50	AC1412-SN	M14X1.5

#### 11. Control the runout and parallelism of the dial according to the requirements of the following table:

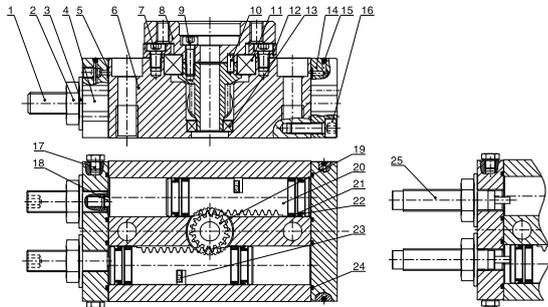
Plane parallelism and runout of the dial



Items	Specific Requirements (mm)	Relative Datum
Plane parallelism of the dial	0.1	A
Plane runout of the dial	0.1	A
Cylindrical surface runout of the dial	0.1	B

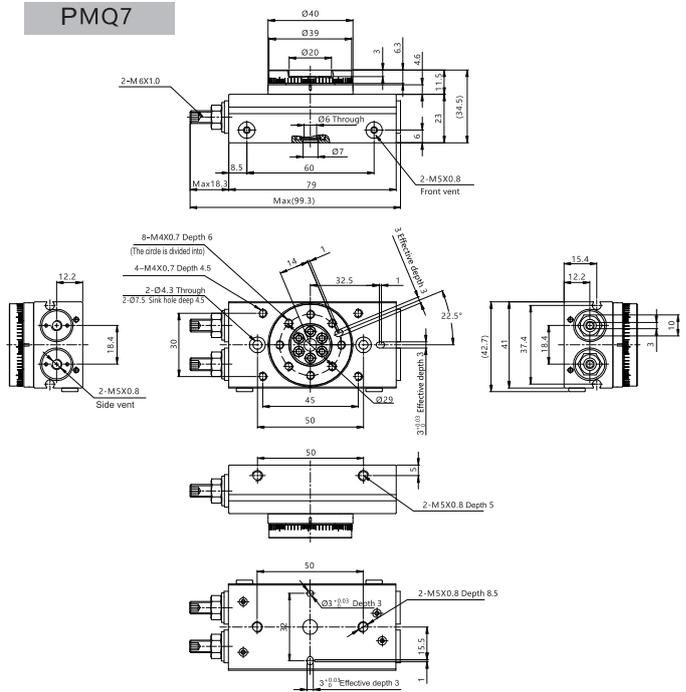
**PMQ Rotary Cylinder**

**Internal Structure**

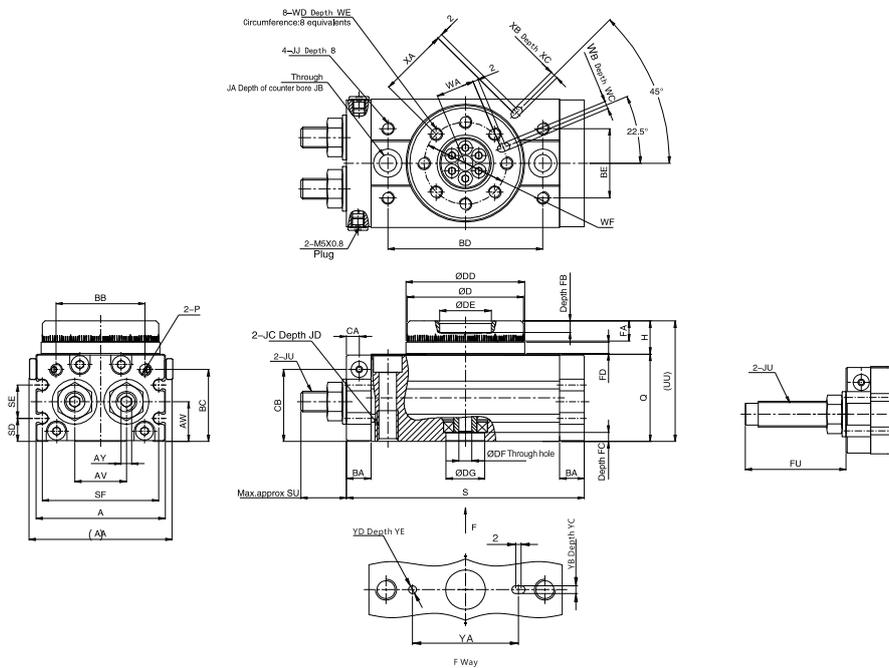


No.	Part Name	Material	No.	Part Name	Material
1	Adjustment screw	Carbon steel	14	Rear cover	Aluminum alloy
2	Hexagon nut	Carbon steel	15	Steel ball	Stainless steel
3	Seal washer	Carbon steel rubber coating	16	Hexagon socket head set screw	Carbon steel
4	Head cover	Aluminum alloy	17	Plug	Carbon steel
5	O-ring	NBR	18	Cushion pad	NBR
6	Barrel	Aluminum alloy	19	Pinion	Alloy steel
7	Hexagon socket head set screw	Carbon steel	20	Rack	Alloy steel
8	Dial	Aluminum alloy	21	Wear ring	PTFE
9	Hexagon socket head set screw	Carbon steel	22	Piston seal	NBR
10	Positioning pin	Stainless steel	23	Magnet	Sintered NdFeB
11	Deep groove ball bearing	Subassembly	24	O-ring	NBR
12	Plate	Aluminum alloy	25	Shock absorber	Subassembly
13	Deep groove ball bearing	Subassembly			

**Main Dimension**



**PMQ10~50**



型号	AA	A	AV	AW	AY	BA	BB	BC	BD	BE	CA	CB	D	DD	DE	DF	DG	FA	FB	FC	FD	H	J	JA	JB	JC	FU
10	52.8	50	20	15.5	4	9.5	34.5	28	60	27	5	28	45 <sup>+0.062</sup> <sub>0</sub>	46 <sup>+0.062</sup> <sub>0</sub>	20 <sup>+0.052</sup> <sub>0</sub>	5	15 <sup>+0.043</sup> <sub>0</sub>	7.8	4.5	3.5	4.5	13	6.8	11	6.5	M8X1.25	30.9
20	67.8	65	27.5	16	5	12	47	30	76	34	6.5	30	60 <sup>+0.074</sup> <sub>0</sub>	61 <sup>+0.074</sup> <sub>0</sub>	28 <sup>+0.052</sup> <sub>0</sub>	9	17 <sup>+0.043</sup> <sub>0</sub>	9.8	6.5	3	6.5	17	8.6	14	8.5	M10X1.5	34.8
30	72.4	70	29	18.5	5	12	50	32.5	84	37	7	33.5	65 <sup>+0.074</sup> <sub>0</sub>	67 <sup>+0.074</sup> <sub>0</sub>	32 <sup>+0.052</sup> <sub>0</sub>	10	22 <sup>+0.052</sup> <sub>0</sub>	9.8	5	3.5	6.5	17	8.6	14	8.5	M10X1.5	34.8
50	82.4	80	38	22	6	15.5	63	37.5	100	50	10	37.5	75 <sup>+0.074</sup> <sub>0</sub>	77 <sup>+0.074</sup> <sub>0</sub>	35 <sup>+0.062</sup> <sub>0</sub>	11	26 <sup>+0.052</sup> <sub>0</sub>	11.8	5.5	3.5	7.5	20	10.3	18	10.5	M12X1.75	54.3
型号	JD	JJ	JU	P	Q	S	SD	SE	SF	SU	UU	WA	WB	WC	WD	WE	WF	XA	XB	XC	YA	YB	YC	YD	YE		
10	12	M5X0.8	M8X1	M5X0.8	34	92	9	13	45	17.3	47	15	3 <sup>+0.025</sup> <sub>0</sub>	3.5	M5X0.8	8	32	27	3 <sup>+0.03</sup> <sub>0</sub>	3.5	40	3 <sup>+0.03</sup> <sub>0</sub>	3.5	Ø3 <sup>+0.03</sup> <sub>0</sub>	3.5		
20	15	M6X1	M10X1	M5X0.8	37	117	10	12	59.7	24.8	54	20.5	4 <sup>+0.03</sup> <sub>0</sub>	4.5	M6X1	10	43	36	4 <sup>+0.03</sup> <sub>0</sub>	4.5	50	4 <sup>+0.03</sup> <sub>0</sub>	4.5	Ø4 <sup>+0.03</sup> <sub>0</sub>	4.5		
30	15	M6X1	M10X1	1/8"	40	127	11.5	14	64.7	24.8	57	23	4 <sup>+0.03</sup> <sub>0</sub>	4.5	M6X1	10	48	39	4 <sup>+0.03</sup> <sub>0</sub>	4.5	58	4 <sup>+0.03</sup> <sub>0</sub>	4.5	Ø4 <sup>+0.03</sup> <sub>0</sub>	4.5		
50	18	M8X1.25	M14X1.5	1/8"	46	152	14.5	15	74.7	31.3	66	26.5	5 <sup>+0.03</sup> <sub>0</sub>	5.5	M8X1.25	12	55	45	5 <sup>+0.03</sup> <sub>0</sub>	5.5	68	5 <sup>+0.03</sup> <sub>0</sub>	5.5	Ø5 <sup>+0.03</sup> <sub>0</sub>	5.5		

**PR Precision Pressure Regulator**

**PR 2000/3000/4000**

**Precision Pressure Regulator**



◆ **Product Features**

- High precision , sensitive response.
- Steady output pressure.
- Large flow rate and steady flow output.
- Easy installation : Independent installation by bracket ; Bottom installation; Direct installation with existing modular air preparation.
- High pressure type, medium pressure type and low pressure type optional.

◆ **How to Order?**

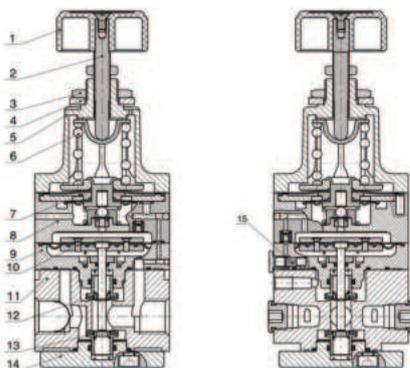
Series No.	Port size	Pressure Range	Pressure Gauge Code	Bracket Code	Scale Unit	Thread Type
PR2000 PR3000 PR4000	2000 01:1/8"	L: 0.005 ~ 0.2MPa M: 0.01 ~ 0.4MPa H: 0.01 ~ 0.8MPa	Blank: With pressure gauge N: No pressure gauge	Blank: With bracket J: No bracket	4: MPa/psi	Blank: G P: PT T:NPT
	3000 02:1/4"	L: 0.01 ~ 0.2MPa M: 0.01 ~ 0.4MPa H: 0.01 ~ 0.8MPa				
	4000 02:1/4" 03:3/8" 04:1/2"	L: 0.01 ~ 0.2MPa M: 0.01 ~ 0.4MPa H: 0.01 ~ 0.8MPa				

**Order Example:** PR3000 high precision regulator , 1/4" port, pressure range 0.01~0.8MPa , with gauge.with bracket.scale unit MPa/psi,G thread.  
RP code is PR3000-02H

◆ **Specifications**

Model No.	PR2000-01	PR3000-02	PR4000-02	PR4000-03	PR4000-04
Working Medium	Clean air(After 5 μm filtration )				
Max. Supply Pressure(Mpa)	1.0				
Min. Supply Pressure(Mpa)	Setting pressure+0.05		Setting pressure+0.1		
Proof Pressure(Mpa)	1.5				
Set Pressure	Low Pressure	L:0.005 ~ 0.2MPa		L:0.01 ~ 0.2MPa	
	Medium Pressure	M:0.01 ~ 0.4MPa			
	High Pressure	H:0.01 ~ 0.8MPa			
Sensitivity	Within 0.2% of full scale				
Repeatability	Within ±0.5% of full scale				
Air Consumption	≤4.4L/min (ANR)		≤11.5L/min (ANR)		
Port Size	1/8"	1/4"	1/4"	3/8"	1/2"
Pressure Gauge Port Size	G1/8(2 locations)				
Working Temperature(°C)	-20~70 ( No freezing )				
Weight(g)	140	420	710		

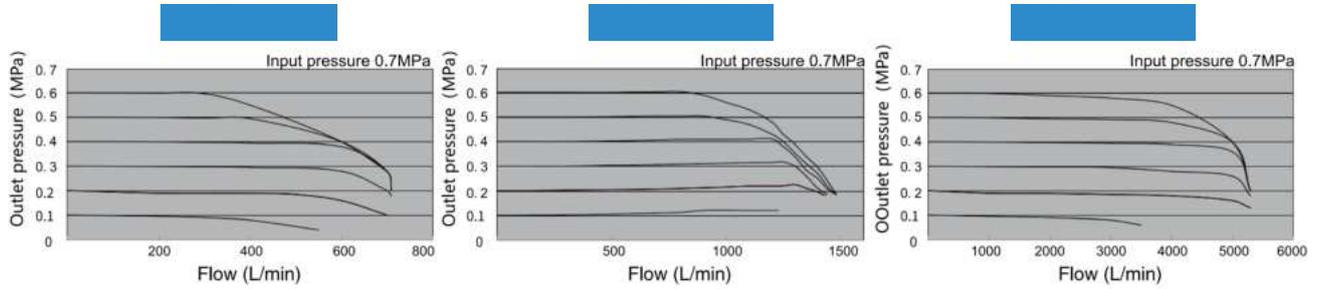
◆ **Internal Structure**



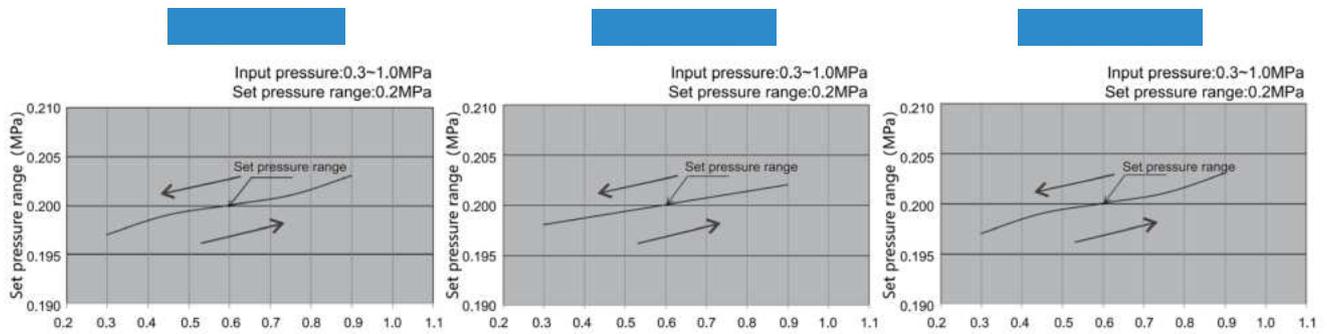
No.	Part Name	Material
1	Pilot regulate button	Plastic
2	Pilot regulate axle	Carbon steel
3	Hex nut	Free Machining Steel
4	Flat washer	SPCC
5	Pilot regulate seat	Aluminum
6	Spring	Spring steel
7	Pilot diaphragm assy	Assy
8	Nozzle	Aluminum
9	Middle valve body	Aluminum
10	Main regulate diaphragm	Assy
11	Main valve body	Aluminum
12	Exhaust valve core	Assy
13	Inlet valve core	Assy
14	Bottom cover	Aluminum
15	Filter element	High polymer material

**PR Precision Pressure Regulator**

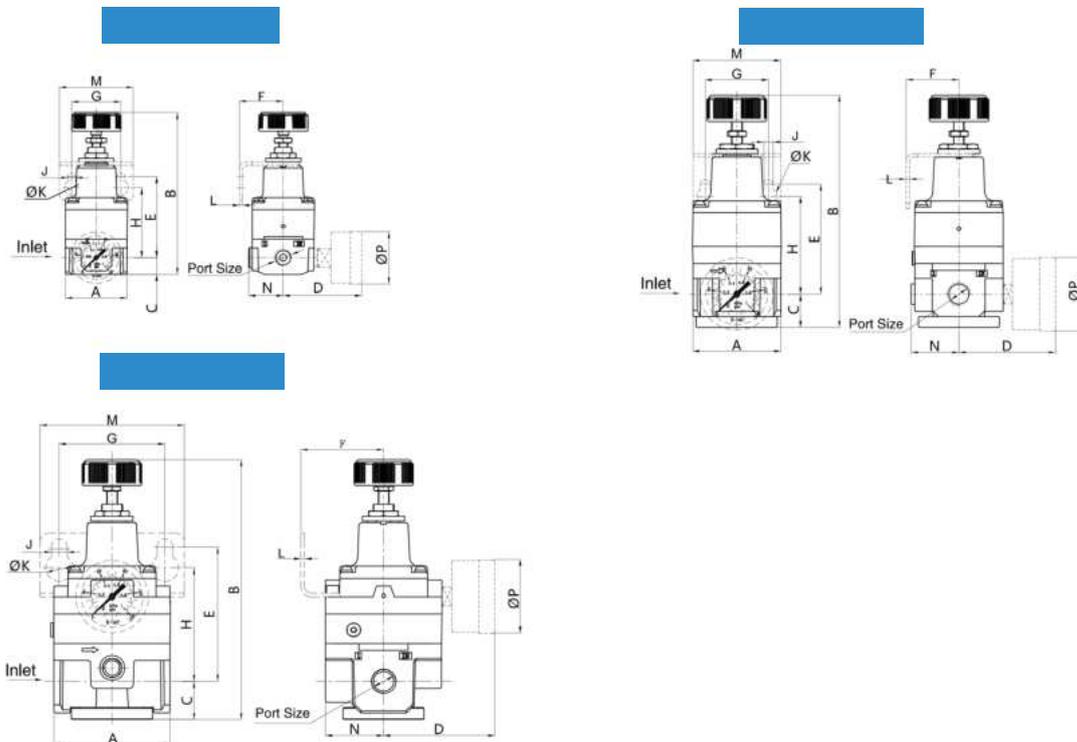
**Flow Chart**



**Pressure Characteristic Diagram**



**Main Dimension**



PR2000	1/8"	35	93	9.5	44.5	46.5	25	28	40	4.5	8.5	2	42	19.5	30
PR3000	1/4"	50	133	19	55	63	30	36	56	5.5	9.5	2	50	27	42
PR4000	1/4", 3/8", 1/2"	66	149	22	63.5	77	47	60	65	9	15.5	2	82	33	42

**Digital Display Pressure Switch**

# SP30

## Digital Display Pressure Switch



### ◆ Product Features

- Compact appearance and easy to assemble.
- The current value and reference value are displayed simultaneously, and the reference value can be directly set.
- Dual screen, three color display of red, green, and orange.
- Digital display, more recognizable.

### ◆ How to Order?

Series No.	Pressure Type	Output Type	Port Size
PS30: Economical type	P: Positive pressure C: Continuous pressure	NP: 1-circuit switching value, adjustable, its factory default NPN) NPV: 1-circuit switching value, adjustable, its factory default NPN)+ 1-analog voltage output(1~5V) NPA: 1-circuit switching value, adjustable, its factory default NPN)+ 1-analog current output(4~20mA)	01: PT1/8(M5)

### ◆ Installation Accessories: Sold Separately

Panel Installation bracket	MS-PS-01	PS30 and PS42 are interchangeable
Front protective cover	MS-PS-02	
Front protective cover	MS-PS-03	
L-shaped bracket	MS-PS-04	
Z-shaped bracket	MS-PS-05	

### ◆ Product Profile

Type	Positive pressure	Continuous pressure
1000kPa		
100kPa		
-100kPa		
Rated pressure range	-0.1MPa~1.0MPa	-100kPa~100kPa
Set pressure range	-0.1MPa~1.0MPa	-100kPa~100kPa

### ◆ Specifications

Models	Positive Pressure	Continuous Pressure
Type of pressure	Standard pressure	
Rated pressure range*	-0.1MPa~1.0MPa	-100kPa~100kPa
Set pressure range*	-0.1MPa~1.0MPa	-100kPa~100kPa
Pressure resistance	1.5MPa	500kPa
Applicable fluid	Non corrosive gas	
Supply voltage	12~24V DC ± 5%	
Consumption current	24V 30mA Max	12V 60mA Max
Switch output	NPN O.C output:80mA/24VDCMax or PNP O.C output :80mA/24VDC	
Repetitive accuracy	± 0.2%F.S.	± 0.5%F.S.
Reaction time	Select through key operation:2.5ms,5ms,10ms,25ms,50ms,100ms,250ms,500ms,1000ms,5000ms	
Analog output	Voltage output	0.6V~5V (or slightly lower) Linearity: ± 1%F.S. Output impedance: 1K Ω
	Current output	2.4mA~20mA(or slightly lower) Linearity : ± 1%F.S. Maximum load impedance, when the supply voltage is 12V :300 Ω ; 24V power supply: 600 Ω minimum load impedance :50 Ω
Range of temperature	Working temperature :0~50°C Storage temperature : -10~60°C (no condensation, no icing)	
Range of humidity	35~85%RH	
Temperature characteristics	± 1%F.S.(25°C)	
Protection level	IP40	
Material	Outer shell: Nylon + glass fiber LCD display: Propylene Pressure port: External thread POM+ inlaid N5 copper Seal ring: H-NBR Keys: Silicone rubber	
Overall dimensions	30 x 30 x 25mm(plastic part)/30 x 30 x 43mm (including connectors)	
Weight	Approx 80g (barometer body + user interface connector)	

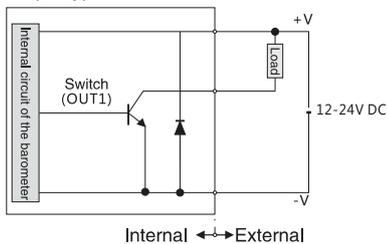
※ Note: Due to the influence of temperature and linear compensation, there may be slight fluctuation near the upper/lower range of the barometer, which is positive Panel description

**Digital Display Pressure Switch**

**I/O Circuit Diagram and Wiring Diagram**

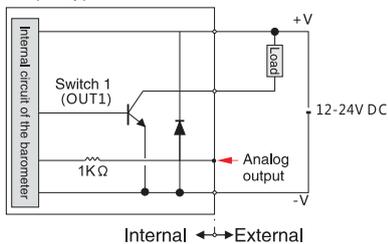
**Output type without analog**

Output type NPN

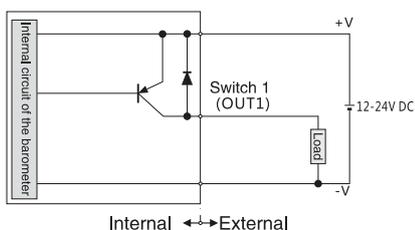


**Output type with analog**

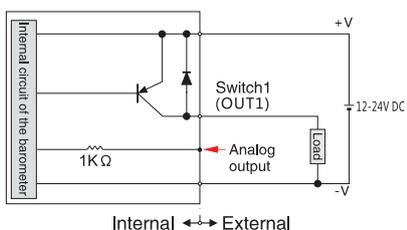
Output type NPN



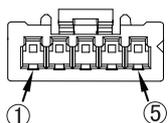
Output type PNP



Output type PNP

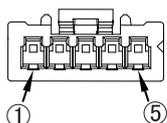


Terminal arrangement diagram



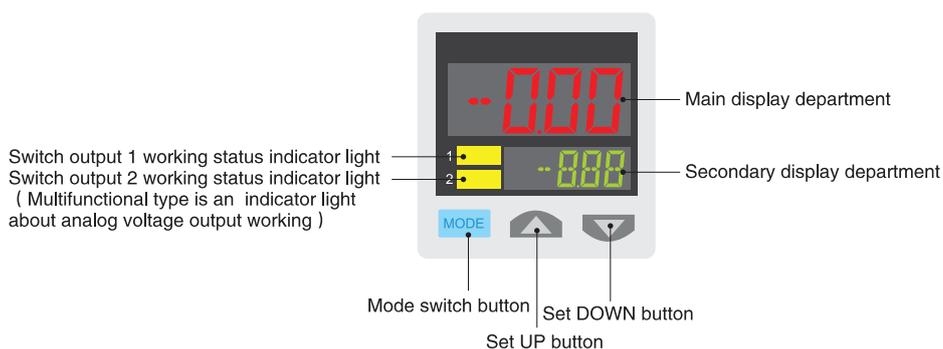
Connector Pin NO	Terminal name
① Brown	+V
② Black	Switch output1
③ White	-
④ Orange	-
⑤ Blue	0V

Terminal arrangement diagram



Connector Pin NO	Terminal name
① Brown	+V
② Black	Switch output1
③ White	-
④ Orange	Analog output
⑤ Blue	0V

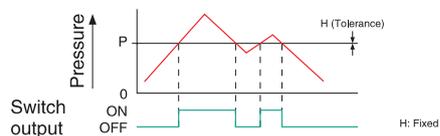
**Panel Description**



**Input Mode and Output Mode**

**① EASYmode**

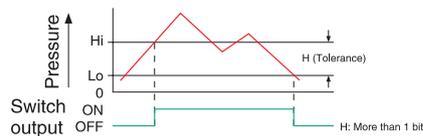
Mode for switch output ON/OFF control



(Note 1): The stress can be fixed at level 8.  
(Note 2): The auxiliary display unit displays "P-1" when the switch outputs 1  
Displayed "P-2" when switching output 2

**② Lag mode**

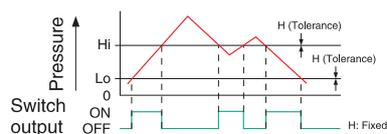
Mode for switch output ON/OFF control



(Note 1): The auxiliary display unit displays "Hi-1", "Lo-1" when the switch outputs 1  
Displayed "Hi-2", "Lo-2" when switching output 2

**③ Window comparison mode**

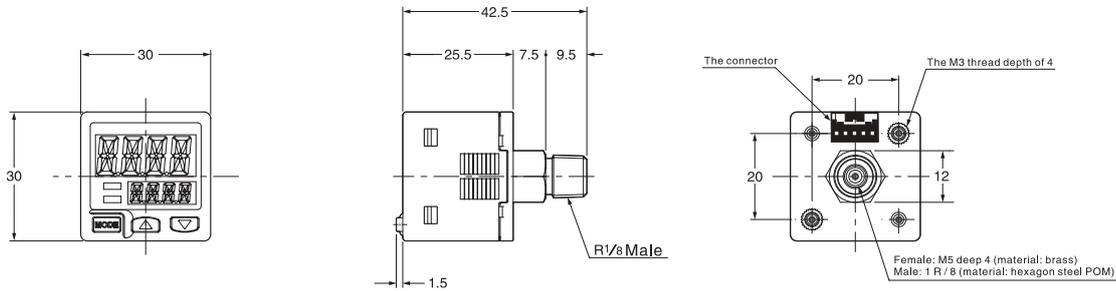
Set the switch to ON or OFF mode according to the pressure within the set range



(Note 1): The stress can be fixed at level 8.  
(Note 2): The auxiliary display unit displays "Hi-1", "Lo-1" when the switch outputs 1  
Displayed "Hi-2", "Lo-2" when switching output 2

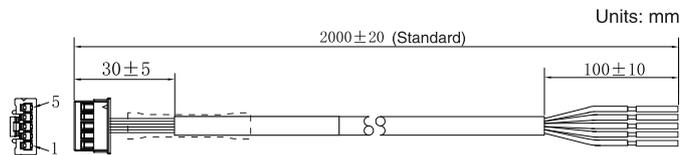
## Digital Display Pressure Switch

### Outline Dimensional Drawing



### Accessories Parts

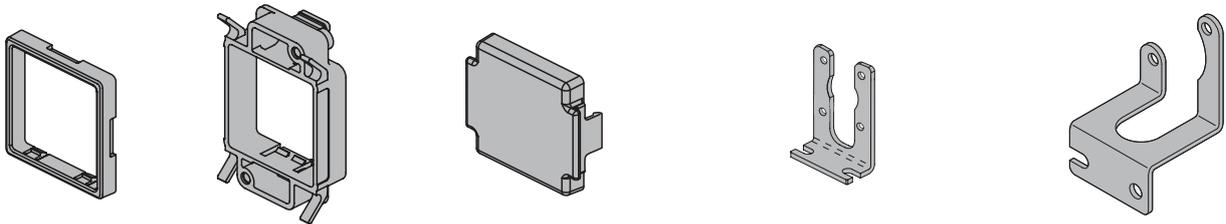
Accessories parts(1): cables



Please use the attached form a complete set of connecting cable with plug.

Note: remove, please hold the connection head part to be removed, otherwise it will cause cable bolt, connecting cable damage.

Accessories parts(2): the mounting bracket (sold separately)



Type 01 panel support (MS-PS-01)

Type 02 panel support (MS-PS-02)

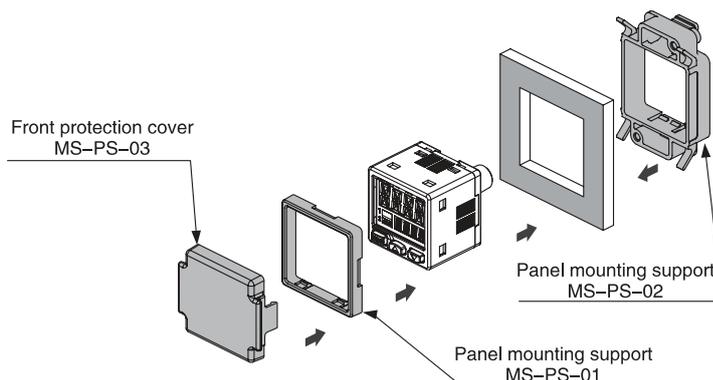
Type 03 front protection cover (MS-PS-03)

Type 04 sensor mounting support (MS-PS-04)

Type 05 sensor mounting support (MS-PS-05)

Product name	Type number	Type number
Sensor mounting bracket	MS-PS-04	Sensors can be mounted on the bottom or top side, or multiple sensors can be installed closely.
	MS-PS-05	The sensor can be mounted in the rear direction, or multiple sensors can be installed closely.
Panel mounting bracket	MS-PS-02	When used together, the sensor can be mounted on a panel with a thickness of 1 to 6mm, or multiple sensors can be installed closely.
	MS-PS-01	
Panel mounting bracket	MS-PS-03	Protect the adjusting surface of the sensor. (This protective cover can be installed when mounting the bracket using the panel.)

### Insyallation Instruction



◆ **Pressure Switch Usage and Application SP30**

- To monitor your Pneumatic pressure and get output at the set pressure
- Three colour Digital display
- Set Pressure range 0 to 10 Bar
- For vacuum pressure -100Kpa to 100Kpa
- Digital output PNP or NPN can be interchangeable in the same product
- Analog output 1-5V or 4-20mA available
- Compact in size
- Port connection is 1/8" and M5 female
- Can be used in the FRL gauge port
- All type of industries use this product
- IP40 Protection
- Current and set value can be seen in the screen, same time
- Supply voltage 24v DC
- Panel mounting and Protection cover available on option.
- 2 Mtrs cable with free leads will be supplied along with the product

**PRH Series High Pressure Reducing Regulator**

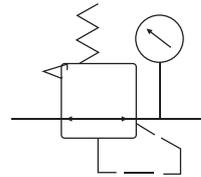
**PRH**

High Pressure Reducing Regulator



◆ **Product Features**

- Use pressure up to 3.5MPa, reliable pressure regulation and stable pressure;
- 20/30/40/50 series are available;
- Connection caliber 1/4" 3/8" 1/2" 3/4" 1".



◆ **How to order**

PRH	Valve Body Size	Receiver Caliber
PRH Series	20: 2000 Valve body 30: 3000 Valve body 40: 4000 Valve body 50: 5000 Valve body	02: G1/4" 03: G3/8" 04: G1/2" 06: G3/4" 10: G1"

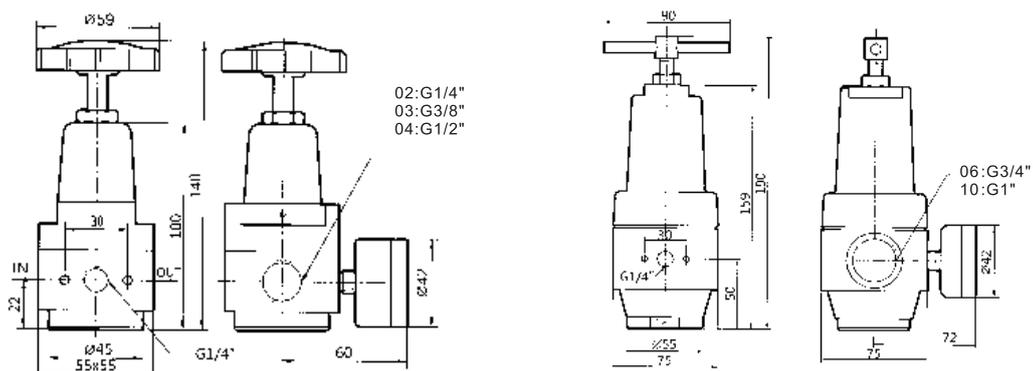
**Order Example:**

PRH Series, 4000 Valve body, Receiver caliber: G1/2", The PRH Code: PRH 40-04

◆ **Standard**

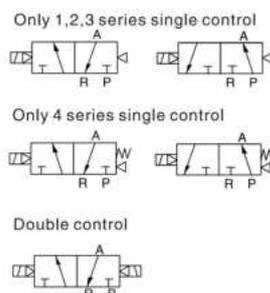
Model	PRH-02	PRH-03	PRH-04	PRH-06	PRH-10
Fluid to be used	Air				
Tube Caliber	G1/4"	G/8	G1/2"	G3/4"	G1"
Regulating Pressure Range	0.5 - 3.5MPa				
Max.Input Pressure	4MPa				
Operating Temperature Range	25 - +80°C				

◆ **External Dimensions**



**PV Series Standard/Low Power Solenoid Valve(3/2way)**

**PV**  
Standard / Low Power Solenoid Valve (3/2)



**How to Order?**

**Low Power Solenoid Valve**

Series	Valve body size	ID code	Positions	Ways	Controls	Original Status	Port Size	Reset Type	Voltage	Connection Mode	Cover Color	Acting Type	Patchcord	Thread Type
N	1: 1Series 2: 2Series 3: 3Series 4: 4Series		2: positions	3: 3 ways	1: Single control 2: Double control	Blank: Normal close H: Normal open	M5: M5 06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	Blank: Spring (4 series single control only) Q: Air (1,2,3 series single control)	E1: AC110V E2: AC220V E4: DC24V (for 1series, only DC24V available)	Blank: DIN connector type L: Plug-in Type K: Water proof connector type (only for 2,3,4 series)	Blank: Brown translucent J: Colorless and translucent B: Black (Only black color available for water proof connector)	Blank: Internal pilot WB: External pilot	Blank: Patchcord length is 0.3 meter 0.6M: Patchcord length is 0.6 meter 1M: Patchcord length is 1 meter (Options for "L: Plug-in type" Only)	Blank: G P: PT T: NPT
	P: Standard armature + Energy saving coil													

**Order Example:**

PV series energy saving solenoid valve, 2 series valve body size, 3/2 ways, double control, 1/8" port size, AC220V, DIN connector, G thread, ERP code is :N2P232-06E2

**Specifications**

Model No.	N1P231-M5 N1P232-M5	N1P231-06 N1P232-06	N2P231-06 N2P232-06	N2P231-08 N2P232-08	N3P231-08 N3P232-08	N3P231-10 N3P232-10	N4P231-10 N4P232-10	N4P231-15 N4P232-15
Port size	M5	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2
Sectional area(mm)	5.5(CV=0.31)	12(CV=0.67)	14(CV=0.78)	16(CV=0.89)	25(CV=1.40)	30(CV=1.68)	50(CV=2.79)	50(CV=2.79)
Working medium	Clean air(After 40 μ m filtration )							
Acting type	Internal pilot type/External pilot type							
Reset type	Air reset					Spring reset /Air reset		
Lubrication	Not required							
Working pressure(MPa)	0.15~0.8							
Guaranteed pressur(MPa)	1.2							
Working temperature(°C)	-20~70(No freezing)							
Voltage range	-15%~10%							
Power consumption	DC24V:0.6W		DC24V:0.7W AC220V:0.9VA AC110V:1.4VA					
Insulation class	Class F							
Protective class	IP65(DIN40050)							
Max. acting frequency	5 Cycles/s							
Activate time(S)	<0.05							
Weight(g)	N1P231:102 N1P232:169		N2P231:107 N2P232:169		N3P231:260 N3P232:370		N4P231:443 N4P232:569	

Note: Normal open is same as normal close.

**PV Series Standard/Low Power Solenoid Valve(3/2way)**

**How to Order?**

**Standard Solenoid Valve**

Series No.	Ways	Positions	Valve Body ID Code	Controls	Original Status	Port Size	Reset Type	Voltage	Connection Mode	Cover Color	Valve Color	Patchcord	Thread Type
PV	2: 2 positions 3: 3 ways		1: 1Series 2: 2Series 3: 3Series 4: 4Series	1: Single control 2: Double control	Blank: Normal close H: Normal open	M5: M5 06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	Blank: Spring (Only 4 series single control) C: Air (1,2,3 series single control)	E1: AC110V E6: AC36V E2: AC220V E7: AC24V E3: AC380V E8: DC110V E4: DC24V E9: DC48V E5: DC12V E10: DC36V	Blank: DIN connector L: Plug-in Type F: Flying leads K: Waterproof DIN connector (Only 2, 3, 4 series is optional for K/M)	Blank: Brown translucent J: Colorless and translucent B: Black (Only Waterproof DIN connector)	Blank: Internal pilot WB: External pilot	Blank: Patchcord length is 0.3 meter 0.6M: Patchcord length is 0.6 meter 1M: Patchcord length is 1 meter (Options for "L: Plug-in type" and "F: Flying leads type" Only)	Blank: G P: PT T: NPT

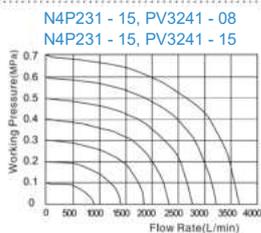
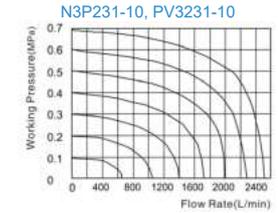
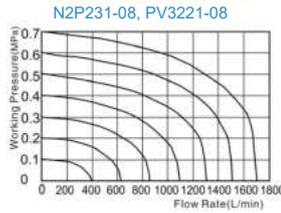
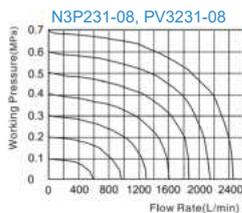
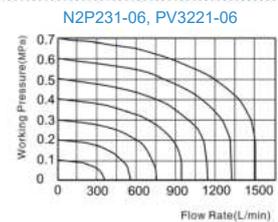
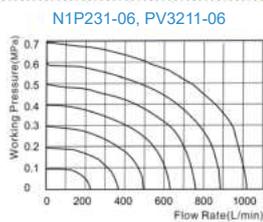
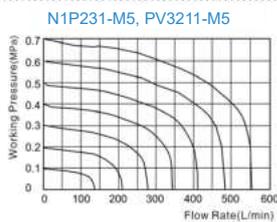
**Order Example:**

PV series solenoid valve, 2 series valve body size, 3/2 ways, single control, 1/8" port size, air return, standard coil, AC220V, DIN connector, G thread, ERP code is :PV3221-06QE2

**Specifications**

Model No.	PV3211-M5 PV3212-M5	PV3211-06 PV3212-06	PV3221-06 PV3222-06	PV3221-08 PV3222-08	PV3231-08 PV3232-08	PV3231-10 PV3232-10	PV3241-10 PV3242-10	PV3241-15 PV3242-15
Port size	M5	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2
Sectional area(mm)	2 way :5.5(CV=0.31)	2 way :12(CV=0.67)	2 way :14(CV=0.78)	2 way :16(CV=0.89)	2 way :25(CV=1.40)	2 way :30(CV=1.68)	2 way :50(CV=2.79)	2 way :50(CV=2.79)
Working medium	Clean air(After 40 μm filtration )							
Acting type	Internal pilot type/External pilot type							
Reset type	Air reset						Spring reset /Air reset	
Lubrication	Not required							
Working pressure(MPa)	0.15~0.8							
Guaranteed pressur(MPa)	1.2							
Working temperature(°C)	-20~70(No freezing)							
Voltage range	-15%~10%							
Power consumption	DC:2.8W ; AC:3.0VA			DC:3.0W ; AC:4.0VA				
Insulation class	Class F							
Protective class	IP65(DIN40050)							
Max. acting frequency	5 Cycles/s							
Activate time(S)	<0.05							
Weight(g)	PV3211: 102 PV3212: 169		PV3221: 102 PV3222: 303		PV3231: 260 PV3232: 370		PV3241: 443 PV3242: 569	

**Flow Chat**

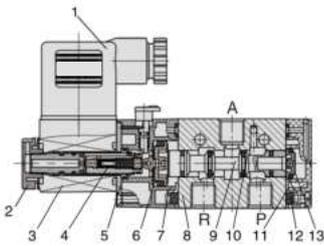


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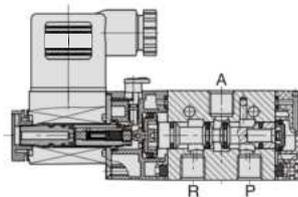
**PV Series Standard/Low Power Solenoid Valve(3/2way)**

**Internal Structure**

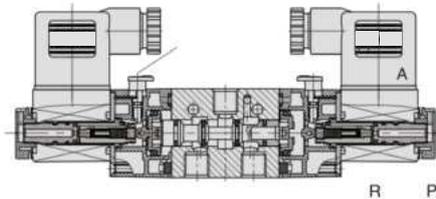
Single Solenoid Valve (Normal Close)



Single Solenoid Valve (Normal Open)



Double Solenoid Valve (Normal Close)



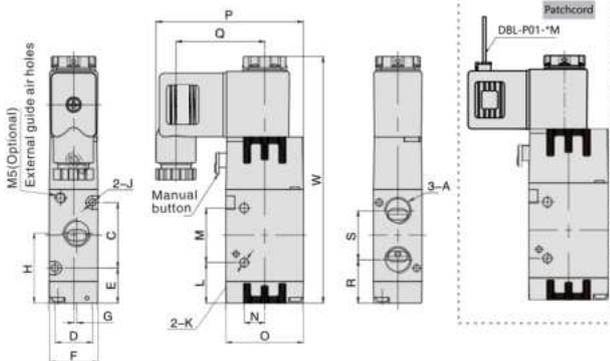
No.	Part Name	Material
1	Connector	Engineered plastics
2	Nut	POM
3	Coil	Cu+ Thermosetting resin
4	Pilot units	Pure iron + copper + stainless steel
5	Plate	Carbon steel
6	Piston	POM
7	Pilot seat	Engineered plastics
8	Valve body	Aluminum alloy
9	Spool	Aluminum alloy
10	O-ring	NBR
11	Rear cover	Engineered plastics
12	Filter	Synthetic material
13	Piston	Engineered plastics
14	Manual button	Engineered plastics

**Main Dimension**

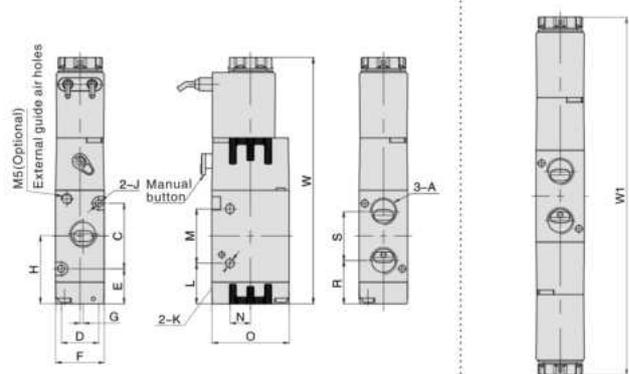
**Single Solenoid Valve**

**Double Solenoid Valve**

DIN Type



Flying Leads Type



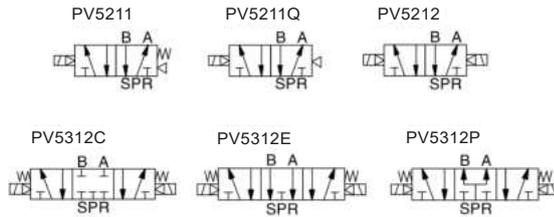
Model/Sign	A	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	W	W1*
PV3211-M5	M5	19	13	16.5	18	0	26	3.3	3.1	15.5	21	6	27	55.2	33.9	18.9	14.2	92.1	132.2
PV3211-06	G1/8	19	13	16.5	18	1.5	27	3.3	3.1	15.5	21	6	27	55.2	33.9	18	16	92.1	132.2
PV3221-06	G1/8	30	17	16	22	0	31	3.3	4.2	18.5	25	9.3	35	66.7	40.2	20	22	112.7	163.4
PV3221-08	G1/4	30	17	16	22	1.5	32	3.3	4.2	18.5	25	9.3	35	66.7	40.2	19.8	22.5	112.7	163.4
PV3231-08	G1/4	35	20	19.1	27	0	36.6	4.3	4.3	21.6	30	9.5	40	69.2	40.2	24.6	24	124.3	175.4
PV3231-10	G3/8	35	20	19.1	27	2	36.6	4.3	4.3	21.6	30	9.5	40	69.2	40.2	24.6	24	124.3	175.4
PV3241-10	G3/8	40.5	27	24.8	34	0	45	4.3	5.2	21	48	11.5	50	74.2	40.2	29.3	31.5	144.7	199.4
PV3241-15	G1/2	40.5	27	24.8	34	2	45	4.3	5.2	21	48	11.5	50	74.2	40.2	29.3	31.5	144.7	199.4

Note: The dimension of NR series and PV series are same, The dimension of normal open type and normal close type are same, W1\* is the dimension of double control solenoid valve.

**PV Series Standard/Low Power Solenoid Valve(5/2,5/3way)**

**PV**

**Standard / Low Power Solenoid Valve (5/2,5/3)**



**How to Order?**

**Low Power Solenoid Valve**

Series No.	Valve body size	ID Code	Positions	Ways	Controls	Original Status	Port Size	Reset Form	Voltage	Connection Mode	Cover Color	Acting Type	Patchcord	Thread Type
N	1: 1Series 2: 2Series 3: 3Series 4: 4Series	P: Standard armature +Energy saving coil	2: 2 positions 3: 3 positions	5:5 ways	1: Single control 2: Double control	C: Center close P: Center pressure E: Center exhaust (Only for 5/3 way)	M5: M5 06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	Blank: Spring Q: Air (Only single control)	E1: AC110V E2: AC220V E4: DC24V (1 Serie only DC24V)	Blank: DIN connector type L: Plug-in Type K: Water proof connector type (only for 2,3,4 series)	Blank: Brown translucent J: Colorless and translucent B: Black (K/M connector is only available in black)	Blank: Internal pilot WB: External pilot		Blank: G P: PT T: NPT

**Order Example:**

PV series solenoid valve, 2 series valve body size, standard pilot+Energy saving coil, 5/2 way, single control, 1/4" port size, standard coil, DC24V, DIN connector, G thread, ERP code is: N2P251-08E4

Blank: Patchcord length is 0.3 meter  
0.6M: Patchcord length is 0.6 meter  
1M: Patchcord length is 1 meter  
(Options for "L: Plug-in type" Only)

**Specifications**

Model No.	N1P251-M5 N1P252-M5 N1P352-M5	N1P251-06 N1P252-06 N1P352-06	N2P251-06 N2P252-06 N2P352-06	N2P251-08 N2P252-08 N2P352-08	N3P251-08 N3P252-08 N3P352-08	N3P251-10 N3P252-10 N3P352-10	N4P251-10 N4P252-10 N4P352-10	N4P251-15 N4P252-15 N4P352-15
Port size	M5	G1/8	G1/8	G1/4(Ex.G1/8)	G1/4	G3/8(排气G1/4)	G3/8	G1/2
Sectional area(mm <sup>2</sup> )	5/2:5.5(CV=0.31) 5/3:5.5(CV=0.28)	5/2:12(CV=0.67) 5/3:9(CV=0.50)	5/2:14(CV=0.78) 5/3:12(CV=0.67)	5/2:16(CV=0.89) 5/3:12(CV=0.67)	5/2:25(CV=1.40) 5/3:18(CV=1.00)	5/2:30(CV=1.68) 5/3:18(CV=1.00)	5/2:50(CV=2.79) 5/3:30(CV=1.67)	5/2:50(CV=2.79) 5/3:30(CV=1.67)
Working medium	Clean air(After 40 μ m filtration)							
Acting type	Internal pilot type / External pilot type							
Reset Type	Air reset				Spring reset /Air reset			
Lubrication	Not required							
Working pressure(MPa)	0.15~0.8							
Guaranteed pressure(MPa)	1.2							
Working temperature(°C)	-20~70(No freezing)							
Voltage range	-15%~10%							
Power consumption	DC24V:0.6W		DC24V:0.7W AC220V:0.9VA AC110V:1.4VA					
Insulation class	Class F							
Protective class	IP65(DIN40050)							
Max. acting frequency	5/2: 5 Cycles/s; 5/3: 3 Cycles/s							
Activate time(S)	<0.05							
Weight(g)	N1P251: 110 N1P252: 171 N1P352: 181	N2P251: 209 N2P252: 314 N2P352: 357	N3P251: 289 N3P252: 400 N3P352: 450	N4P251: 528 N4P252: 638 N4P352: 727				

**PV Series Standard/Low Power Solenoid Valve(5/2,5/3way)**

◆ **How to Order?**

**Standard Solenoid Valve**

Series No.	Ways	Positions	Valve body size	Controls	Original Status	Port Size	Reset Form	Voltage	Connection Mode	Cover Color	Acting Type	Patchcord	Thread Type
PV	5:5 ways	2: 2 positions 3: 3 positions	1: 1Series 2: 2Series 3: 3Series 4: 4Series	1: Single control 2: Double control	C: Center close P: Center pressure E: Center exhaust (Only for 5/3 way)	M5: M5 06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	Blank: Spring Q: Air (Only single control)	E1: AC110V E6: AC36V E2: AC220V E7: AC24V E3: AC380V E8: DC110V E4: DC24V E9: DC48V E5: DC12V E10: DC36V	Blank: DIN connector L: Plug-in Type F: Flying leads K: Waterproof DIN connector (Only 2, 3, 4 series is optional for K/M)	Blank: Brown translucent J: Colorless and translucent B: Black (K/M connector is only available in black)	Blank: Internal pilot WB: External pilot	Blank: Patchcord length is 0.3 meter 0.6M: Patchcord length is 0.6 meter 1M: Patchcord length is 1 meter (Options for "L: Plug-in type" and "F: Flying leads type" Only)	Blank: G P: PT T: NPT

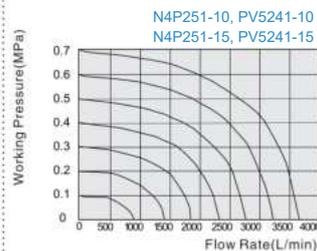
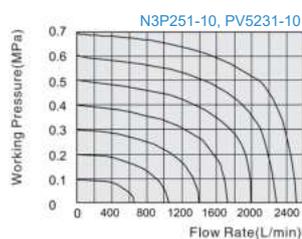
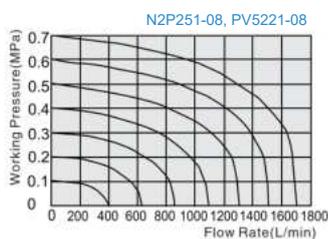
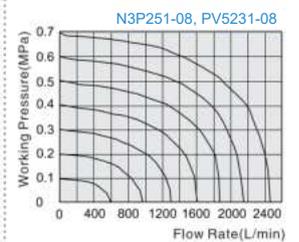
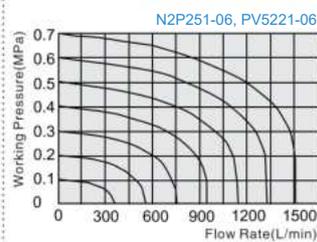
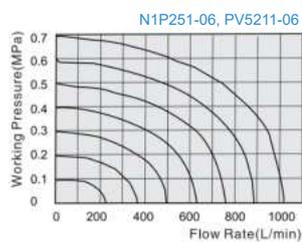
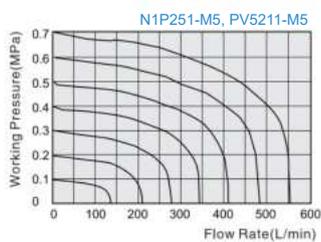
**Order Example:**

PV series solenoid valve, 2 series valve body size, 5/2 way, single control, 1/4" port size, standard coil, DC24V, DIN connector, G thread, ERP code is: PV5221-08E4

◆ **Specifications**

Model No.	PV5211-M5 PV5212-M5 PV5312-M5	PV5211-06 PV5212-06 PV5312-06	PV5221-06 PV5222-06 PV5322-06	PV5221-08 PV5222-08 PV5322-08	PV5231-08 PV5232-08 PV5332-08	PV5231-10 PV5232-10 PV5332-10	PV5241-10 PV5242-10 PV5342-10	PV5241-15 PV5242-15 PV5342-15
Port size	M5	G1/8	G1/8	G1/4(Ex.G1/8)	G1/4	G3/8(Ex.G1/4)	G3/8	G1/2
Sectional area(mm <sup>2</sup> )	5/2:5.5(CV=0.31) 5/3:5.5(CV=0.28)	5/2:12(CV=0.67) 5/3:9(CV=0.50)	5/2:14(CV=0.78) 5/3:12(CV=0.67)	5/2:16(CV=0.89) 5/3:12(CV=0.67)	5/2:25(CV=1.40) 5/3:18(CV=1.00)	5/2:30(CV=1.68) 5/3:18(CV=1.00)	5/2:50(CV=2.79) 5/3:30(CV=1.67)	5/2:50(CV=2.79) 5/3:30(CV=1.67)
Working medium	Clean air(After 40 μ m filtration)							
Acting type	Internal pilot type / External pilot type							
Reset Type	Air reset				Spring reset /Air reset			
Lubrication	Not required							
Working pressure(MPa)	0.15~0.8							
Guaranteed pressure(MPa)	1.2							
Working temperature(°C)	-20~70(No freezing)							
Voltage range	-15%~10%							
Power consumption	DC:2.8W ; AC:3.0VA			DC:3.0W ; AC:4.0VA				
Insulation class	Class F							
Protective class	IP65(DIN40050)							
Max. acting frequency	5/2: 5 Cycles/s; 5/3: 3 Cycles/s							
Activate time(S)	<0.05							
Weight(g)	PV5211: 110 PV5212: 171 PV5312: 181		PV5221: 209 PV5222: 314 PV5322: 357		PV5231: 289 PV5232: 400 PV5332: 450		PV5241: 528 PV5242: 638 PV5342: 727	

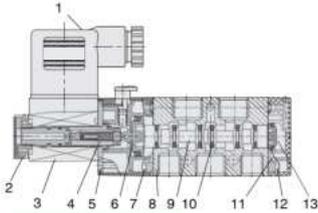
◆ **Flow Chat**



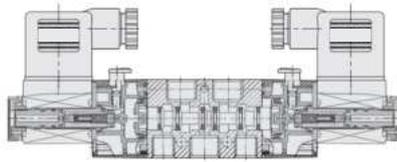
**PV Series Standard/Low Power Solenoid Valve(5/2,5/3way)**

**Internal Structure**

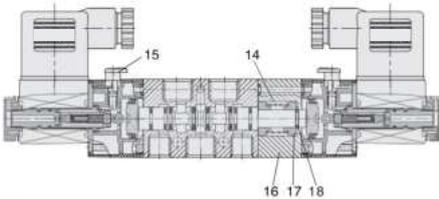
Single Solenoid Valve



Double Solenoid Valve



5/3 Solenoid Valve

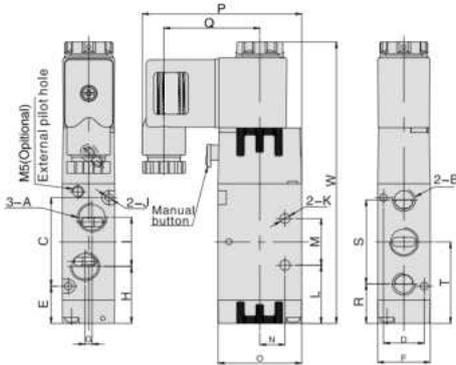


No.	Part Name	Material
1	Connector	Engineered plastics
2	Nut	POM+Carbon steel
3	Coil	Cu
4	Pilot units	Engineered plastics
5	Plate	Carbon steel
6	Piston	POM
7	Pilot seat	Engineered plastics
8	Valve body	Aluminum alloy
9	Spool	Aluminum alloy
10	O-ring	HNBR
11	Rear cover	Engineered plastics
12	Filter	Synthetic material
13	Piston	POM
14	Spring	Stainless steel
15	Manual override	Engineered plastics
16	Back seat	Aluminum alloy
17	Spring seat	Aluminum alloy
18	C-type buckle	65Mn

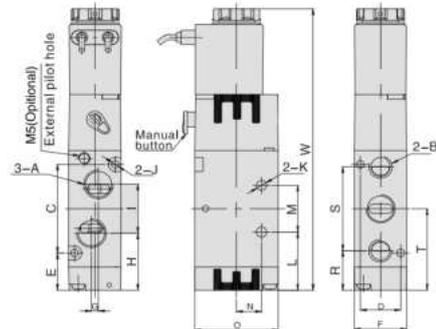
**Main Dimension**

Single Solenoid Valve

DIN Type



Flying Leads Type



Model/Sign	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	W
PV5211-M5	M5	M5	30	13	16.5	18	0	24.5	14.1	3.3	3.3	24.5	14	9.5	27	55.2	33.9	17.9	27.2	31.5	103.1
PV5211-06	G1/8	G1/8	30	13	16.5	18	3	23.5	16	3.3	3.3	24.5	14	9.5	27	55.2	33.9	17.5	28	31.5	103.1
PV5221-06	G1/8	G1/8	38	17	16	22	0	26	18	3.3	4.3	25	20	10.5	35	66.7	40.2	17	36	35	120.7
PV5221-08	G1/4	G1/8	38	17	16	22	3	24.5	21	3.3	4.3	25	20	10.5	35	66.7	40.2	17	36	35	120.7
PV5231-08	G1/4	G1/4	50	20	19.1	27	0	33.1	22	4.3	4.3	32.1	24	13.5	40	69.2	40.2	21.6	45	44.1	139.3
PV5231-10	G3/8	G1/4	50	20	19.1	27	4	32.1	24	4.3	4.3	32.1	24	13.5	40	69.2	40.2	21.6	45	44.1	139.3
PV5241-10	G3/8	G3/8	72	27	21	34	0	39	36	4.3	5.5	43	28	17.5	50	74.2	40.2	25.5	63	57	168.7
PV5241-15	G1/2	G1/2	72	27	21	34	4	39	36	4.3	5.5	43	28	17.5	50	74.2	40.2	25.5	63	57	168.7

Note: The dimensions of NP series and PV series are same.

Double Solenoid Valve

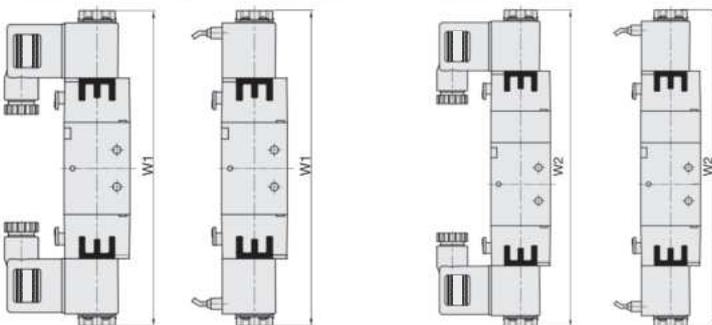
5/3 Solenoid Valve

DIN Type

Flying Leads Type

DIN Type

Flying Leads Type



Model/Sign	W1
PV5212-M5	143.2
PV5212-06	143.2
PV5222-06	171.4
PV5222-08	171.4
PV5232-08	190.4
PV5232-10	190.4
PV5242-10	223.4
PV5242-15	223.4

Model/Sign	W2
PV5312-M5	158.2
PV5312-06	158.2
PV5322-06	190.4
PV5322-08	190.4
PV5332-08	209.4
PV5332-10	209.4
PV5342-10	244.4
PV5342-15	244.4

Note: The dimensions of NP series and PV series are same.

XV

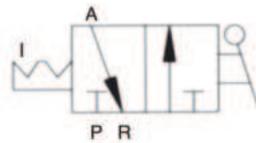
**PVSH Series 3/2 Way Pressure Relief Valve**

# PVSH

## Pressure Relief Valve (3/2)



PVSH



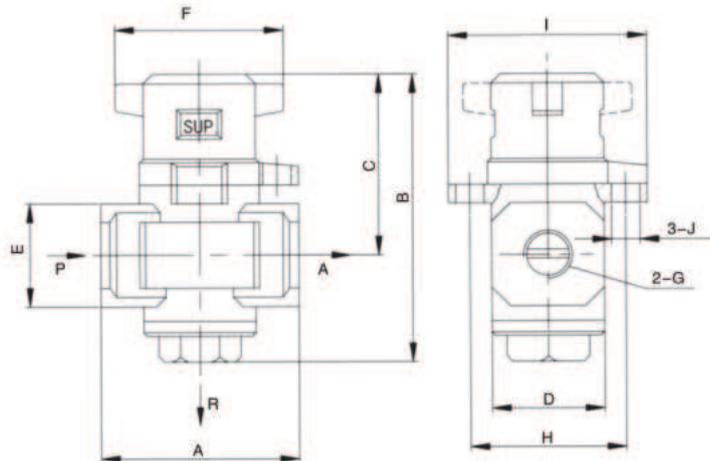
### How to Order?

Series No.	Positions	Port size	Thread Type
PVSH Series	2000: 2000 Body 3000: 3000 Body 4000: 4000 Body 5000: 5000 Body	01: 1/8" 02: 1/4" 03: 3/8" 04: 1/2" 06: 3/4" 10: 1"	Blank: G P: PT T: NPT

Order Example:

PVSH series 3/2 way check valve, 2000 body size, 1/4" port size, PT thread, ERP code is: PVSH2000-02-P

### Main Dimension



Model	G	Exhaust Port	A	B	C	D	E	F	H	I	J
PVSH2000-01	1/8	1/8	40	59	39	28	22	40	32	41	Φ6
PVSH2000-02	1/4	1/8	40	59	39	28	22	40	32	41	Φ6
PVSH2000-02	1/4	1/4	53	78	49	30	28	45	41.5	53	Φ7.5
PVSH2000-03	3/8	1/4	53	78	49	30	28	45	41.5	53	Φ7.5
PVSH2000-03	3/8	3/8	70	84	52	36	36	45	41.5	53	Φ7.5
PVSH2000-04	1/2	3/8	70	84	52	36	36	45	41.5	53	Φ7.5
PVSH2000-10	1	1/2	90	136	72	54	48	68	77	90	Φ8.5

**Magnet Switch**

# HX-07

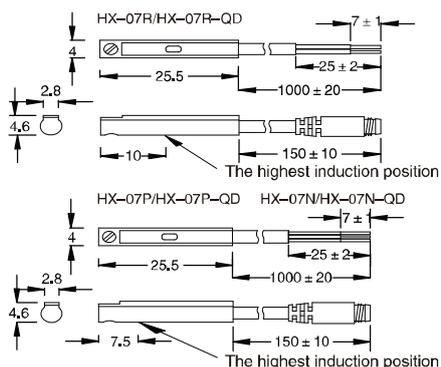
## Magnet Switch



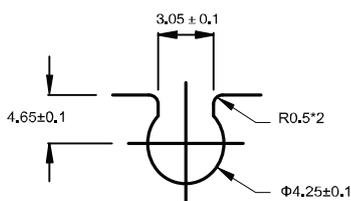
◆ **How to Order?**

HX	-	07	D	-	2M
Product code		Series NO.	Switch Type D: Two wire without contact switch N: NPN type P: PNP type R: Two wire reed switch		Wire length 2M: 2M 5M: 5M 10M: 10M ..... QD8: QD8 Male connector QD12: QD12 Male connector Note: The standard wire length of the quick connector is 0.15m. Other wire lengths cannot be ordered

◆ **Dimension**

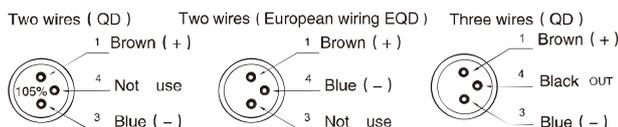


**Groove Dimension**



Suitable for cylinder:  
SQ/SQM/EU/EUK/  
EUM/EUP/SF/SFM/  
SQK/SG//EMQ/ELS/  
ELQ/EXH/ESWT  
\*SHY/SHZ(except Φ 10)

**M8/M12 male wiring diagram**



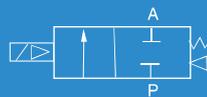
◆ **Specifications**

Type	HX-07D	HX-07N	HX-07P	HX-07R
Connect Diagram				
Parameter				
Wiring method	2-Wire Type	3-Wire Type		2-Wire Type
Switching logic	Electronic no contact type N.O.			SPST Normally Open
Sensor type	None contact type	NPN type ( Input)	PNP type ( Output)	Reed switch
Operating voltage	10-28V DC	5-30V DC		5-240V DC/AC
Max. switching current	50mA max	200mA max.		100mA max.
Contact rating	1.4 W max	6W max.		10W max.
Current consumption	40 μ Amax @ 24V	8mAmax @ 24V (Switch Active)		None
Voltage drop	2.8 V max.	1 V max. @ 200mA DC		2.5 V max.
Leakage current	90 μ Amax @ 28V	0.01mA max.		None
Indicator	Red LED			
Max. exchange frequency		1000Hz		200Hz
Temperature range		-10 - 70°C		
Shock		50G		30G
Vibration		9G		
Enclosure classification		IEC 529 IP67 (NEMA 6)		
Protection circuit	2、4	3、4		1
Cable	2.6Φ, 2C, Black color, oil resistance PVC	2.6Φ, 3C, Black color, oil resistance PVC		2.6Φ, 2C, Gray color, oil resistance PVC
Switch sensitive		40-750G		70G

**VS Series 2/2 Solenoid Valve (Normal Close)**

**VS**

2/2 Solenoid Valve (N.C.)



VS small orifice

**Product Features**

- \* Normal close/Normal open, available body: brass, SS304, SS316
- \* Multiple seals are available for different medium
- \* To reduce the power consumption of 80% energy-saving
- \* Wide size range from 1/8" to 2", with both thread and flange connection
- \* Diaphragm pilot solenoid valve, with lower working pressure (10mm is special)

**How to Order?**

Series No.	Port size	Original status	Orifice	ID Code	Voltage	Valve body material	Seal material	Thread type
VS: Thread connection VSF: Flange connection		Blank: NC H: NO		Blank: Standard type N: Low power type		Blank: Brass S1: SS316 S2: SS304	Blank: NBR E: EPDM V: VITON Si: Silicon (smaller than $\Phi$ 25mm is optional)	Blank: G P: PT T: NPT
	06: 1/8"		025: 2.5mm		E1: AC110V E2: AC220V E3: AC380V E4: DC24V E5: DC12V	E6: AC36V E7: AC24V E8: DC110V E9: DC48V E10: DC36V		
	08: 1/4"		025: 2.5mm 100: 10mm					
	10: 3/8"		040: 4mm 160: 16mm 100: 10mm					
	15: 1/2"		100: 10mm 160: 16mm					
	20: 3/4"		200: 20mm					
	25: 1"		250: 25mm					
	32: 1-1/4"		350: 35mm					
	40: 1-1/2"		400: 40mm					
	50: 2"		500: 50mm					
	Flange connection		250: 25mm 650: 65mm 320: 32mm 800: 80mm 400: 40mm 1000: 100mm 500: 50mm					

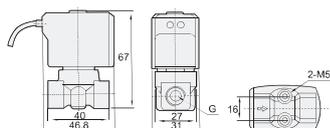
( Note: cancel if same with port size )

**Order Example:**

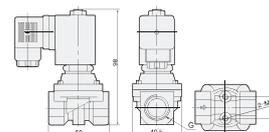
VS series solenoid valve, 1/2" port size, NC, 16mm orifice, standard type, AC110V, Brass valve body, NBR seal, G thread, ERP code is: VS15-160E1  
Note: 2.5mm small orifice valve only with flying leads coil, other orifice with DIN connector coil.

**Main Dimension**

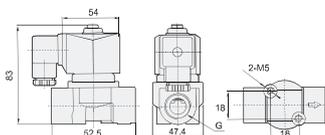
$\Phi$ 2.5mm 1/8" 1/4"



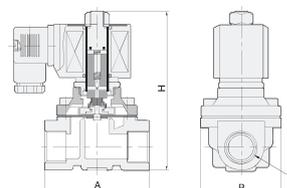
10mm, 1/4", 3/8", 1/2"



$\Phi$ 4mm 3/8"



Large diameter



**Specifications**

Port size (G)	Office (mm)	CV Value	Pressure difference (Bar)							Max. temperature (°C)	Power		Order Code 220VAC		Main Dimension Length x Width x Height A x B x H (mm)
			Max. working pressure								VA	W	220VAC		
			Min. Pressure	Air, Gas	Hot water, Liquid	Light Oil $\leq$ 20CST	80	13	8.5		Brass	Stainless steel 304			
1/4"	2.5	0.23	0	7	5	7	5	7	80	13	8.5	VS08-025E2	VS08-025E2S2	46.8 x 31 x 67	
	2.5	0.23	0	7	5	7	5	-	120	13	8.5	VS08-025E2E	VS08-025E2S2E	46.8 x 31 x 67	
	2.5	0.23	0	7	5	7	5	7	120	13	8.5	VS08-025E2V	VS08-025E2S2V	46.8 x 31 x 67	
	10	1	0	20	16	20	16	20	80	22	13	VS08-100E2	-	50 x 40.5 x 98	
	10	1	0	20	16	20	16	-	120	22	13	VS08-100E2E	-	50 x 40.5 x 98	
1/2"	10	1	0	20	16	20	16	20	120	22	13	VS08-100E2V	-	50 x 40.5 x 98	
	10	1.9	0	20	16	20	16	20	80	22	13	VS15-100E2	-	69 x 75 x 106	
	10	1.9	0	20	16	20	16	-	130	22	13	VS15-100E2E	-	69 x 75 x 106	
	10	1.9	0	20	16	20	16	20	120	22	13	VS15-100E2V	-	69 x 75 x 106	
	16	4.8	0	10	6	10	6	7	80	33	20	VS15-160E2	S15-160E2S2	69 x 75 x 106	
	16	4.8	0	10	6	10	6	-	130	33	20	VS15-160E2E	S15-160E2S2E	69 x 75 x 106	
16	4.8	0	10	6	10	6	7	120	33	20	VS15-160E2V	S15-160E2S2V	69 x 75 x 106		

**Electro-Pneumatic Proportional Regulator**

# PETV 3000/4000

## Electro-Pneumatic Proportional Regulator



◆ **Product Features**

- Adopt 32 - bits CPU, special closed - loop control algorithm to realize the rapid response and precise control effectively;
- Control precision is  $\leq \pm 0.5\%$ ;
- Adopt high - precision built - in pressure sensor to improve control precision effectively;
- Three - color digital display LCD, real - time display actual pressure and setting pressure simultaneously , convenient to confirm and adjust on site;
- Easy to change 4 pressure units(Mpa,Bar,Psi,Kpa)at any time;
- Self - diagnosis;
- Error indication failure alarm;
- 4 - pins M12A standard (male) fieldbus connector;
- Easy assembling and operating;
- The built - in filter can be easily removed for cleaning or replacement;
- The valve body made by microdiecast technology;
- Large flow rate;
- Protection class IP65;

◆ **How to order?**

Series No.	Valve body size	Port size	Pressure range	Input signal	Monitor output	Port size	Bracket	Cable connector type
3000: 3000 Series	02:1/4"	03:3/8"	30: 0-0.5MPa/0-5bar/ 0-72psi/0-500KPa	0: 4-20mA	1: 1-5V 4: 4-20mA	Blank: G	Blank: Without bracket	Blank: Without cable connector
4000: 4000 Series	03:3/8"	04:1/2"	50: 0-0.9MPa/0-9bar/ 0-130psi/0-900KPa	3: 0-10V	1: 1-5V 4: 4-20mA	P: PT T: NPT	B: Flat bracket C: L- bracket	L: Right angle type 2m S: Straight type 2m
				0: 4-20mA	1: 1-5V 2: 24V NPN 3: 24V PNP			

PETV:PETV Series  
Electro - Pneumatic  
proportional regulator

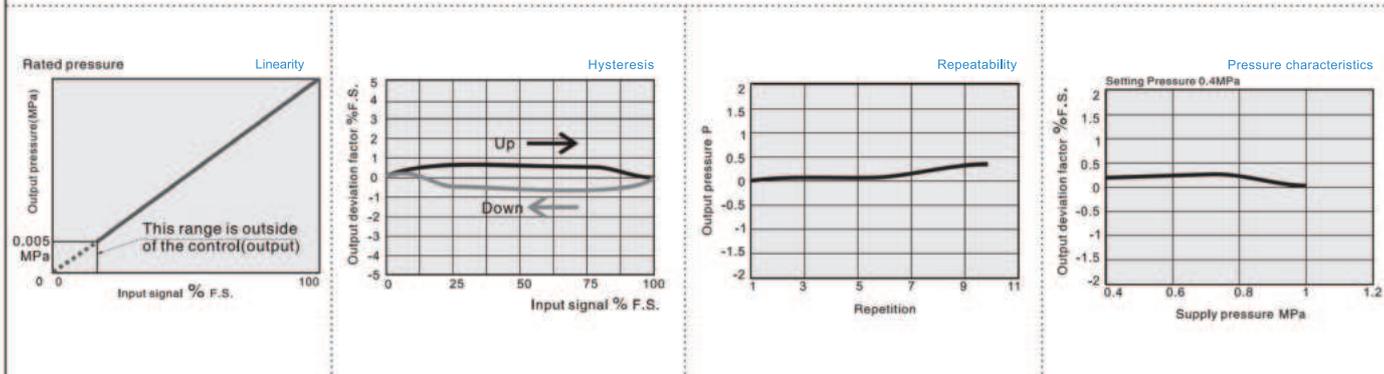
**Order Example:** PETV series Electro - Pneumatic Proportional Regulator, valve body3000, portsize1/4", Output pressure 0-0.9MPa, input signa 0-10V, Monitor output 1-5V, Port Size G, Flat bracket,straight type 2m, ERP code is: PETV3000-025031-BS.

◆ **PETV Series Assessories Order Code**

Cable connector Name	Order code	Bracket Name	Order code
4 - pins M12A standard Straight type 2m	M124R - PVC - 2M	Flat bracket	FJ - PETV - FA
4 - pins M12A standard Right angle type 2m	M124RL - PVC - 2M	L - bracket	FJ - PETV - LB

**Note:** Normal cable connector length is 2m,any other model need to be customized production,max length 10m.

◆ **Characteristic Parameters Curve**



## Electro-Pneumatic Proportional Regulator

### Specifications

Model	PETV3000-02	PETV3000-03	PETV4000-03	PETV4000-04
Port size	G1/4	G3/8	G3/8	G1/2
Flow rate (Cv)	1.5	2.0	2.5	3
Pressure range	0-0.9MPa			
Input signal	0-10V or 0-5V or 4-20mA(sink)			
Monitor output	4-20mA(sink) / 1-5V			
Connector type	4-pins M12A standard(Male)			
Supply Voltage	DC24V ± 10%			
Power	≤ 3W			
Enclosure	IP65 ( DIN40050 )			
Working temperature	0-50°C			
Working medium	Clear air(After 5µm filtration)			
LCD display	Set pressure and actual pressure display at the same time			
Valve body	Aluminium alloy			
Installation position	Random direction			
Max input pressure	1.0MPa			
Min input pressure	bigger than max output pressure by 0.1Mpa			
Accuracy	≤ ± 0.5%			
Linearity	≤ 1.0%F.S.			
Repeatability	≤ ± 0.5%F.S.			
Hysteresis	≤ 0.5%F.S.			

### Wiring

Definition	Electrical connection
PIN number	Cable color
PIN1	Brown
PIN2	White
PIN3	Blue
PIN4	Black
	Analog input type
	+24VDC
	Positive pole of control singa
	Negative pole of power
	Monitor singal

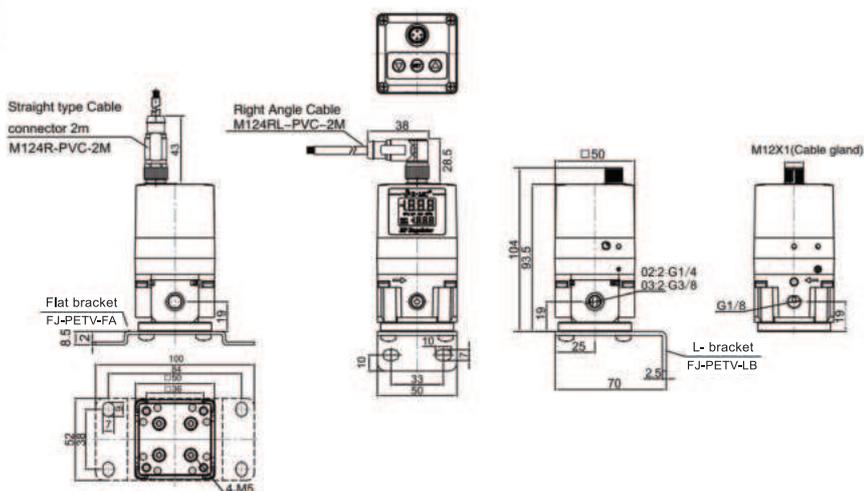


### Button & LCDScreen

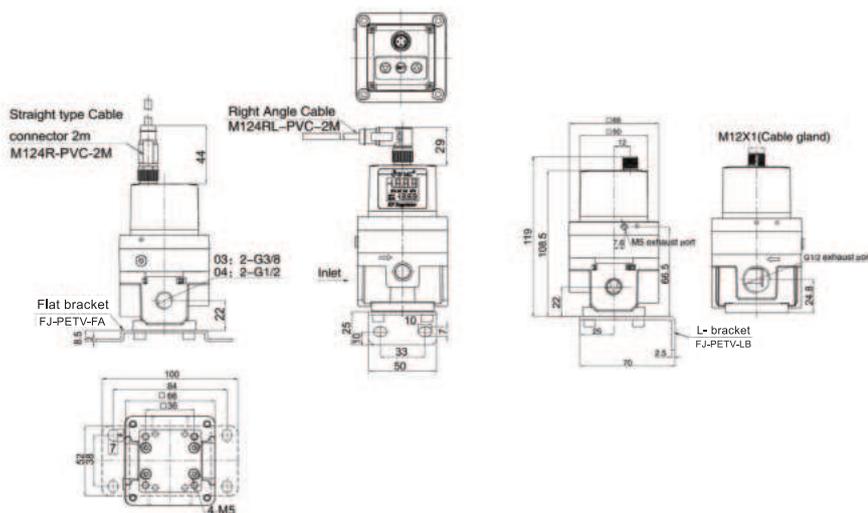


### Main Dimension

PETV3000



PETV3000



**Vacuum Pump**

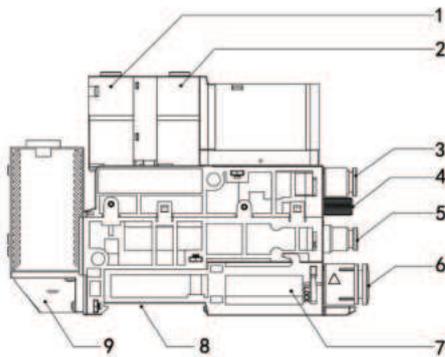
# EFA

## Vacuum Pump



### Applications / Features

- Built in low power solenoid valve has higher stability and longer service life.
- Built in intergated external vacuum control, vacuum breaking control, vacuum breaking flow regulating, vacuum pressure gauge, vacuum filtration, air supply filtration.
- Two installation modes, including intergated lateral hole installation, 35mm clamp rail stallation.
- Built in quick replaceable vacuum filter makes installation and removal faster.
- External vacuum supply valve, optionally equipped with self-holding type.



1. Vacuum breaking valve ( Positive pressure vacuum blowback control the power-on green light is on)
2. Vacuum supply valve ( External vacuum control the power-on red light is on)
3. External vacuum interface (  $\phi$  6)
4. Positive pressure vacuum blowback flow regulating valve
5. Positive pressure air intake (  $\phi$  4)
6. Vacuum chuck port interface (  $\phi$  6/  $\phi$  8)
7. Vacuum filtration observation window
8. 35mm clamp rail installation
9. Digital Pressure Switch (Optional)

### How to Order?

Series No	Vacuum Gauge Specification	Vacuum Chuck Port Interface	Mounting Bracket
EFA : EFA series	Without: Without N: Type NPN P: Type PNP	06: insert $\phi$ 6 tube 08: insert $\phi$ 8 tube	Without: Without (default) B: L-type mounting bracket

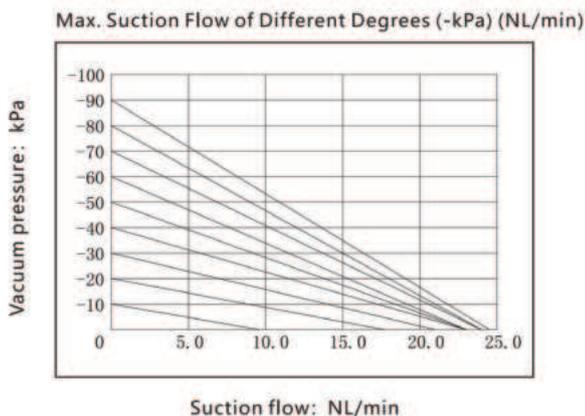
Code	Supple Valve	Air Breaking Valve
K	NC	NC
R	Self-holding type	NC

Note: When the R-type is energized for more than 20ms, supply valve open and hold, vacuum breaking valve is energized, and supply valve stop.

**Order Example:** EFA series Vacuum Pump, vacuum supply valve NC, vacuum breaking valve NC, NPN Type vacuum gauge, insert  $\phi$  8 tube, with L-type mounting bracket, the ERP code is: EFA -K-N-08-B

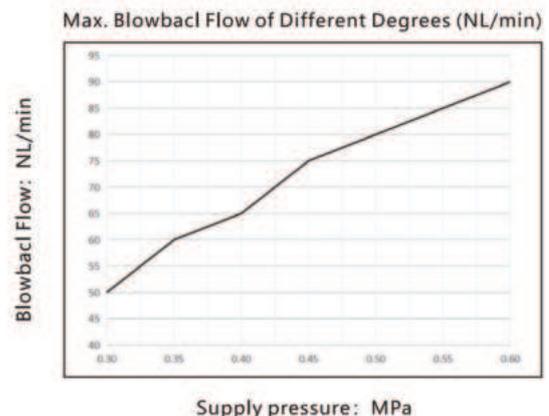
### Max. Suction Flow of Different Degrees (-kPa) (NL/min)

Specifications and Models	-10	-20	-30	-40	-50	-60	-70	-80	-90
EFA-	9.3	17	21	22	23	23	24	24	24.5



### Max. Blowback Flow of Different Degrees (NL/min)

Specifications and Models	0.30MPa	0.35MPa	0.45MPa	0.50MPa	0.55MPa	0.60MPa
EFA-	50	60	75	80	85	90

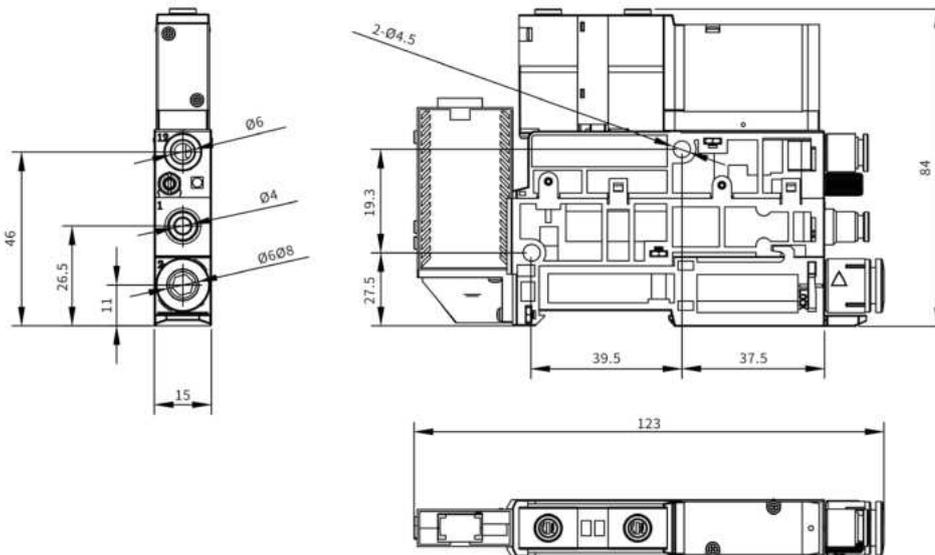


**Vacuum Pump**

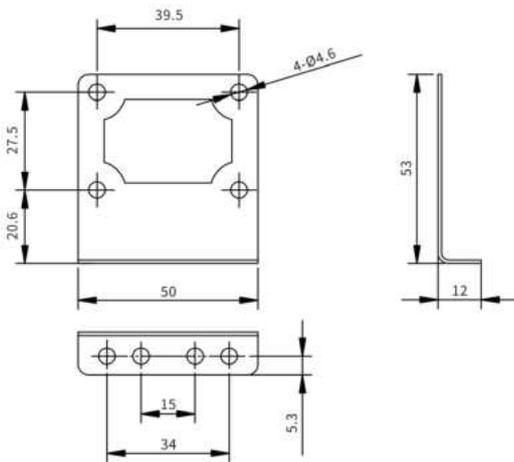
◆ **Performance Parameter**

Specifications and Models	Supply Pressure (Mpa)	Max.Suction Flow (NL/min)	External Vacuum Interface (mm)	Vacuum Chuck Port Interface (mm)	Positive Pressure Air Intake(mm)
EFA-	0.3-0.6	24.5	Ø6	Ø6/Ø8	Ø4

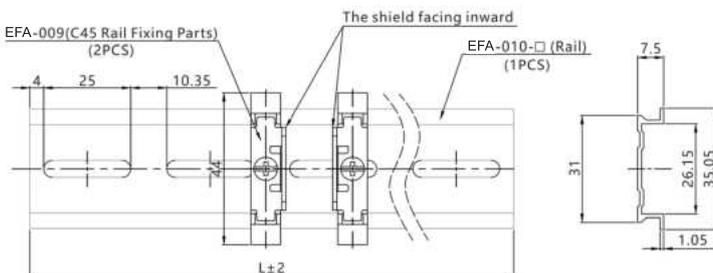
◆ **Main Dimension**



◆ **L-type Mounting Bracket**



◆ **Rail Installation Dimensions and Model**



Model	Rail Length (L)	Applicable Links
FJ-EFA-D3	103.5	2~4 Links
FJ-EFA-D4	139	5~6 Links
FJ-EFA-D5	174.5	7~8 Links
FJ-EFA-D6	210	9~11 Links
FJ-EFA-D7	245	12~13 Links
FJ-EFA-D8	280.5	14~16 Links
FJ-EFA-D9	316	17~18 Links
FJ-EFA-D10	351	19~20 Links

**Operating instructions (non energy-saving) v2.0**

**Notes**

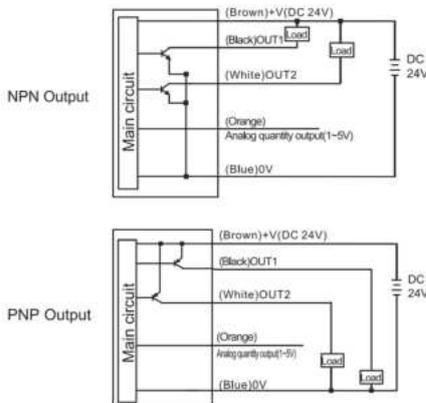
- Do not use corrosive and inflammable gas or any liquid.
- Use it within the specified operating pressure. Otherwise it can cause damage to the pressure switch or inability to measure correctly.
- Do not drop, hit or apply shock to the Pressure switch. Otherwise damage to the internal parts can result, causing malfunction.
- Turn off the power before connecting the wires. Because it can cause damage due to the wrong wiring or short circuit.
- Do not use in an environment with spattering liquid of oil or solvent.
- This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
- Separate power lines from high voltage lines, avoiding wiring in the same conduit with these lines.

**A. Specifications**

Product No.	Compound Pressure	
Rated pressure range※	-105.0~100.5kPa	
Set pressure range※	-100.0~100.kPa	
Withstand pressure	500kPa	
Applicable fluid	Air, non-corrosive gas and non-flammable gas	
Display/Min. setting unit	kPa: 0.1 kgf/cm <sup>2</sup> : 0.001 bar: 0.001 psi: 0.01 inHg: 0.1 mmHg: 1	
Power supply voltage	24 VDC ±10%, ripple max.: 10%	
Current consumption	≤40mA	
Switch output	Output type	2 switching value (NPN/PNP adjustable) + 1 Analog (Voltage) output
	Maximum load current	125mA
	Maximum applied voltage	24V DC
	Internal voltage drop/external voltage	≤1.5V
Display accuracy	±0.2%F.S. ±1 digit	
Response time	≤2.5ms (Malfunction prevention function: 2.5ms, 20ms, 100ms, 500ms, 1000ms, 1999ms optional)	
Action display light	OUT1:GREEN OUT2:RED	
Environment	Enclosure	Ip40
	Ambient temperature range	Operation: 0 to 50 °C, Storage: -10 to 60 °C (No condensation)
	Operating humidity range	Operation, Storage: 35 to 85%RH (No condensation)
	Withstand voltage	1000 VAC in 1 minute (between case and lead wire)
	Insulation resistance	50 MΩ or more (at 500 VDC, between case and lead wire)
	Vibration resistance	Total amplitude 1.5mm, 10Hz~150Hz~10Hz scan for 1 minute, 2 hours each directions of X, Y and Z
Impact resistance	Maximum 980m/s(100G) 3 times each in directions of X, Y and Z	
Temperature characteristics	±2%F.S. of detected pressure(25 °C) at temp.(Range of 0~50°C)	
Inlet type	90° inlet Port & No Port	
Wire specification	Oil-resistance cable(PVC)(0.15mm)	
Weigh	Approx. 56g(with 2 meters lead wire)	

Note1: Due to temperature and linear compensation, the upper/lower ranges of the gauge may fluctuate slightly. This is normal.  
Note2: Factory default :-50kPa.

**B. Output Circuit Wiring Diagrams**

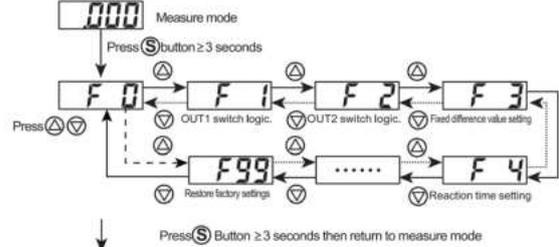


**C. Panel Description**

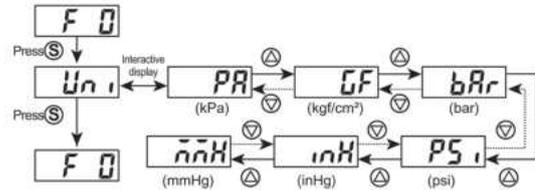


**D. Initial Setting Mode**

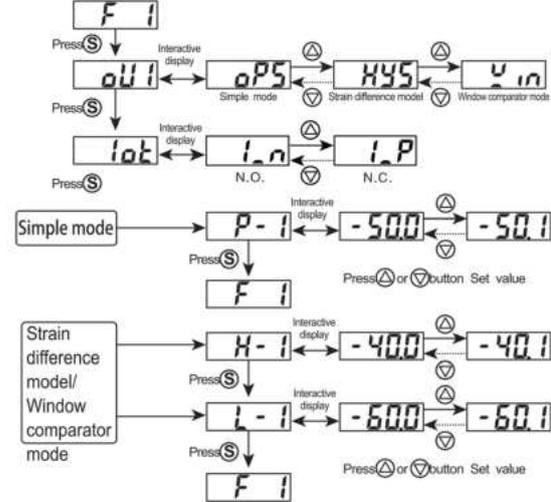
**1 Function selection mode**



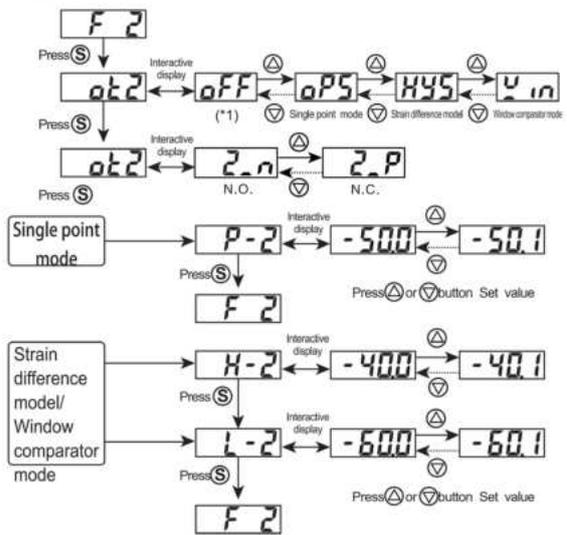
**2 Pressure unit (F0)**



**3 OUT Switch Logic (F1)**



**4 OUT2 Switch Logic (F2)**

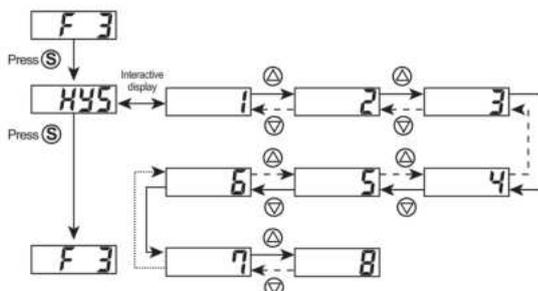


Note(\*1) When OUT2 is set to "OFF", skip to the end of F2

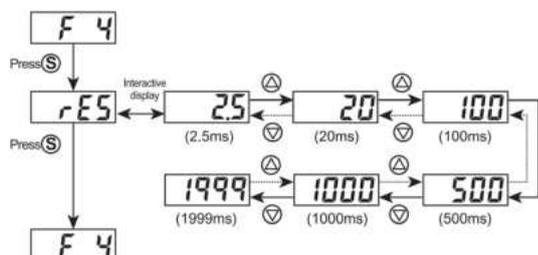
## Vacuum Pump

### Operating instructions (non energy-saving) v2.0

#### 5 Fixed difference value setting(F3)

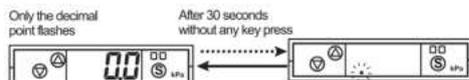
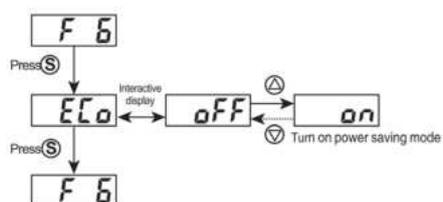


#### 6 Switch reaction time setting(F4)

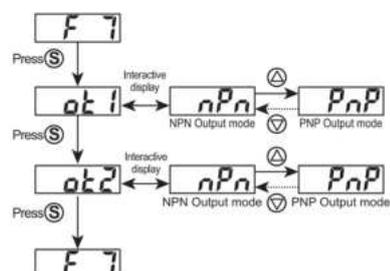


#### 7 Power Save Mode (F6)

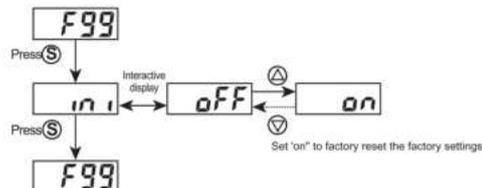
- ⊗ During Power-Save mode, the main display will turned off if no buttons is pressed after 30 seconds.
- ⊗ During Power-Save mode, the output LCD may not be synchronize with the output. It is normal and will not affect output operation.
- ⊗ Press any button to turn-on main display temporarily.



#### 8 Output mode setting(F7)

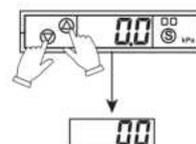


#### 9 Factory reset values(F99)



### E. Zero Point Setting

Press the ▲ + ▼ more than 3s at the same time until the "00" is shown.

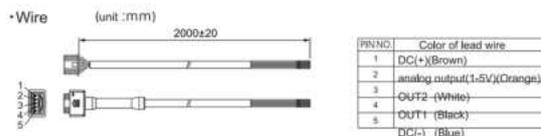


### F. Pressure Unit Translation Table

From	To	kPa	kgf/cm <sup>2</sup>	mmHg	psi	bar	inHg
1 kPa	1	0.010197	7.500616	0.145038	0.010000	0.2953	
1 kgf/cm <sup>2</sup>	98.0665	1	735.559	14.2233	0.980665	28.95979	
1 mmHg	0.13332	0.0013595	1	0.019336	0.0013332	0.039370	
1 psi	6.895	0.07031	51.7157	1	0.06895	2.036074	
1 bar	100.0000	1.01972	750.062	14.5038	1	29.52998	
1 inHg	3.386388	0.034530	25.40000	0.491141	0.033863	1	

### G. Dimension

(Unit:mm)



### H. Error Indication Function

Error	Error displayed	Error Condition	Troubleshooting
Residual pressure error	Err	The zero clear range more than 2%F.S	Change input pressure to ambient pressure and perform zero reset again.
Pressurizing error	HHH	Reset applied pressure to a level within the set pressure range.	Reset applied pressure to a level within the set pressure range.
	LLL	Pressure exceeding the lower limit of the set pressure range is applied.	
System error	Er4	Displayed if an internal system error has occurred.	Turn the power off and on again.If the failure cannot be solved, contact EMC.

◇ **Vacuum Generator EFA12 usage and Application**

- Generates the vacuum by passing positive pressure
- Works on Venture effect
- All with as one product, Its integrated product of Generator, supply and release valve, Vacuum switch
- Compact and space saving
- Used in pick and place application in various industries like Electronics, plastic parts Automobile industries, Food and Pharma packaging application,
- Energy saving and self holding is optional
- Vacuum flow is 62Lpm
- Max vacuum pressure is -85Kpa.
- Vacuum filter element can be replaced.



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