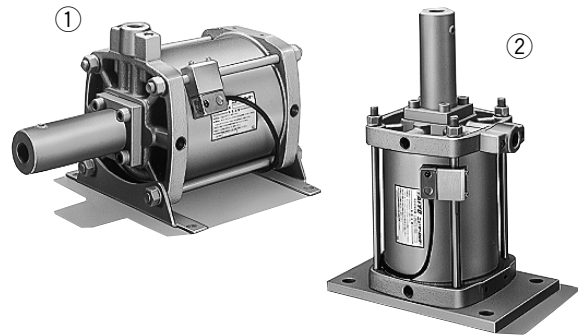


System is designed to convert air pressure to high oil pressure with booster for the high power application of small clamp head.

- It is appropriate for working to pressurize after work is moved with long-stroke clamp head or hydraulic cylinder.
- High output is available optionally with non-phase by adjusting air pressure with an air regulator.
- As oil pressure is used, the balanced, accurate force is always available.



①PBH3-60 ②PBE3-60

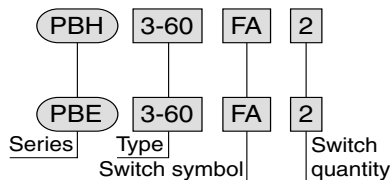
SPECIFICATIONS

Item	Model code	PBH3-40-PBE3-40	PBH3-60-PBE3-60	PBH-80-PBE-80
Boosting ratio		11	25	25
Output oil capacity (cm ³)		77	77	176
Theoretical output oil pressure at max. air pressure		11.1MPa	17.5MPa	
Working oil		Cosmo Mighty 10 (Cosmo Oil)/Duffny Spintex Oil 10 (Idemitsu Kosan)/Spinesso 10 (Esso Standard)		
Temperature range		+5~+60°C		
Air pressure	Working fluid	Air		
	Lubrication	Unnecessary (But possible)		Necessary
	Pressure range	0.2~1MPa	0.2~0.7MPa	
	Recommended lubricating oil	JIS K2213-1 (Additive turbine oil ISO VG32) or equivalent		
Weight (kg)	PBH (Foot type)	9	14.5	40
	PBE (Cap flange type)	10.5	19	48
With reed switch		Available		None
Accessories		Pressure switch · Pressure gauge		

MODEL CODE For order, specify the following code.

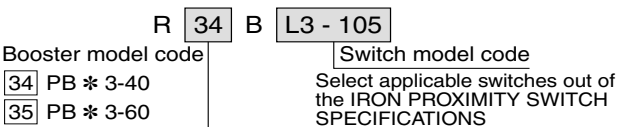
PRE-PRESSURE TYPE BOOSTER

- Foot type



- Cap flange type

SWITCH-BRACKET ASSEMBLY



DELIVERY INFORMATION

- It is delivered with reed switch not mounted.
- For PBH-80/PBE-80, there is no model with reed switch.
- It is delivered with working fluid (Cosmo Mighty Super 10) NBH-80 2ℓ, NBH-100 3ℓ

IRON PROXIMITY SWITCH SPECIFICATIONS

Kind	With contact			
	FA L3-101	FB L3-105	FC L3-241	FD L3-245
Switch symbol	FA	FB	FC	FD
Load voltage range	AC:80~220V		DC:20~28V	
Load current range	2~20mA		3~50mA	
Maximum open / close capacity	2VA		1.5W	
Contact protective circuit	Present		Present	
Indicating lamp	Neon lamp (lights up during ON)		LED (lights up during OFF)	
Wiring method	0.3mm ² 2-core, outside diameter φ5.3mm Rear wiring			
Code length	1m	5m	1m	5m
Applied load	Small relay·Programmable controller			

ACTUAL OUTPUT

Unit: kN

Booster	Clamp head	Operating air pressure MPa								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
PBH3-40 PBE3-40	LHA-LHA-25-LHA-40	2.7	4.1	5.5	6.9	8.2	9.6	11.0	12.4	13.5
	LHAS-2	5.1	7.8	10.4	12.9	15.5	18.1	20.7	23.3	25.6
	LHC	2.5	3.8	5.1	6.4	7.7	8.9	10.2	11.5	12.6
	LHD	1.1	1.7	2.3	2.8	3.3	3.9	4.5	5.0	5.5
	LHF-28-60	1.2	1.8	2.4	3.0	3.6	4.2	4.8	5.4	5.9
	LHF-40-80	2.4	3.7	4.9	6.2	7.4	8.6	9.8	11.0	12.2
PBH3-60 PBE3-60	LHA-LHA-25-LHA-40	6.2	9.3	12.5	15.5	18.5	21.7	-	-	-
	LHAS-2	11.7	17.5	23.3	29.1	35.0	40.8	-	-	-
	LHC	5.7	8.6	11.5	14.3	17.3	20.1	-	-	-
	LHD	2.5	3.8	5.0	6.3	7.6	8.8	-	-	-
	LHF-28-60	2.7	4.0	5.4	6.8	8.0	9.4	-	-	-
	LHF-40-80	5.5	8.2	11.1	13.8	16.6	19.3	-	-	-
PBH-80 PBE-80	LHF-50-100	8.6	12.9	17.3	21.6	25.9	30.1	-	-	-

AIR CONSUMPTION

Unit: Nℓ/1 Reciprocating motion

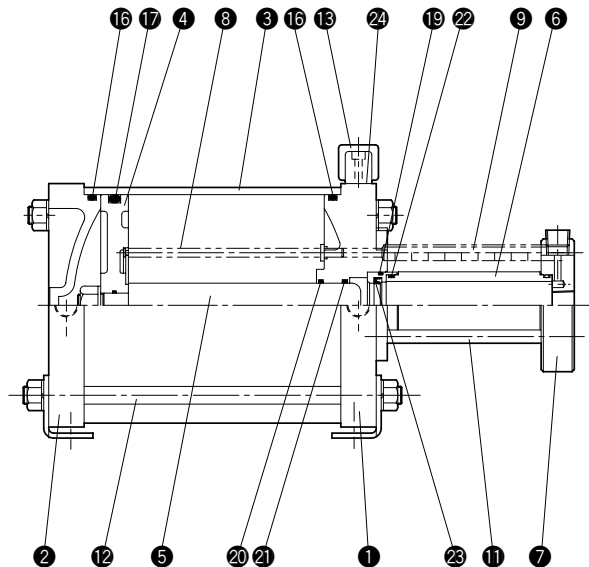
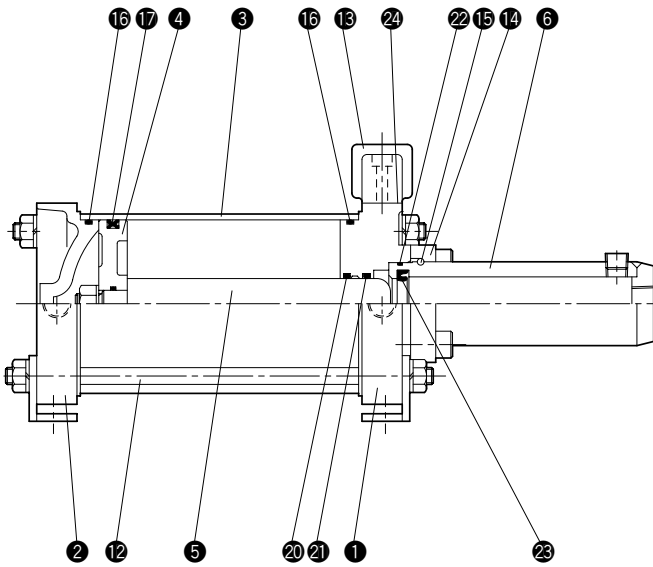
Booster	Operating air pressure MPa								
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
PBH3-40-PBE3-40	6	8	10	12	14	16	18	20	21.8
PBH3-60-PBE3-60	13.5	18	22.5	27	31.5	36	-	-	-
PBH-80-PBE-80	31.5	42	52.5	63	73.5	84	-	-	-

(Note) The above air consumption indicates the atmospheric pressure converted from the capacity in 1 reciprocating motion with respective air pressure by booster.

SECTIONAL DRAWINGS

- PBH3-40 · PBE3-40
- PBH3-60 · PBE3-60

- PBH-80 · PBE-80



- The above drawings are the sectional drawings of PBH type (foot type).

PARTS LIST

No.	Name	Material	Q'ty
①	Hydraulic cylinder mounting cover	Gray cast iron	1
②	Pneumatic cylinder cover	Gray cast iron	1
③	Pneumatic cylinder body	Aluminum alloy (PB*-40-60) Carbon steel (PB*-80)	1
④	Pneumatic piston	Gray cast iron	1
⑤	Hydraulic piston	Carbon steel	1
⑥	Hydraulic cylinder body	Carbon steel	1
⑦	Hydraulic cap	Rolled steel	1

No.	Name	Material	Q'ty
⑧	Indicator rod	Carbon steel	1
⑨	Indicator pipe	Resin	1
⑩	Hydraulic tie rod	Chrome molybdenum steel (PB*-80)	4
⑫	Pneumatic tie rod	Rolled steel	4
⑬	Pre-pressure chamber joint	Aluminum alloy casting	1
⑭	Flange	Rolled steel	1
⑮	Ring	Hard steel wire	1

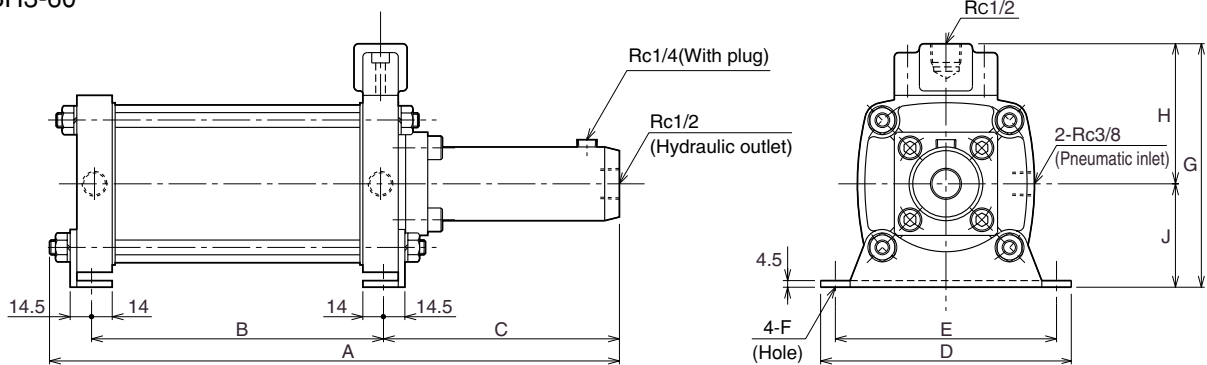
SEAL LIST

Name	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳
Name	Cylinder body gasket	Pneumatic piston seal	Gland gasket	Rod seal	Rod seal	Hydraulic cylinder body gasket	Hydraulic seal	Pre-pressure chamber joint gasket
Material	Nitrile rubber	Nitrile rubber	Nitrile rubber	Nitrile rubber	Nitrile rubber	Nitrile rubber	Nitrile rubber	Nitrile rubber
Model code	Quantity	2	1	1	1	1	1	2
PBH3-40-PBE3-40	G95	DXP100	—	P30	PS-30	S46	IDU-30	P15
PBH3-60-PBE3-60	G145	DXP150	—	P30	PS-30	S46	IDU-30	P15
PBH-80-PBE-80	G190	P185	G55	P40	PS-40	G50	IDU-40	P15

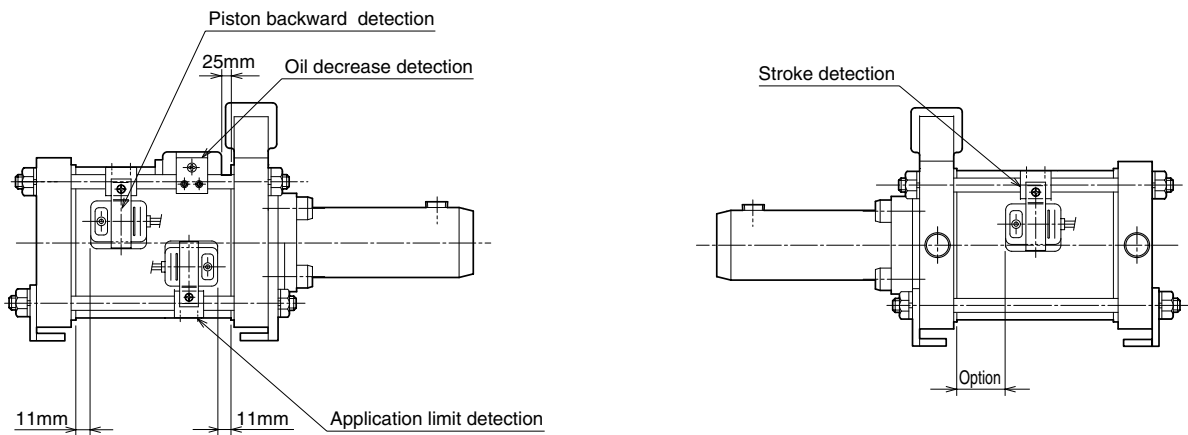
DIMENSIONAL DRAWINGS

Unit: mm

PBH3-40
PBH3-60

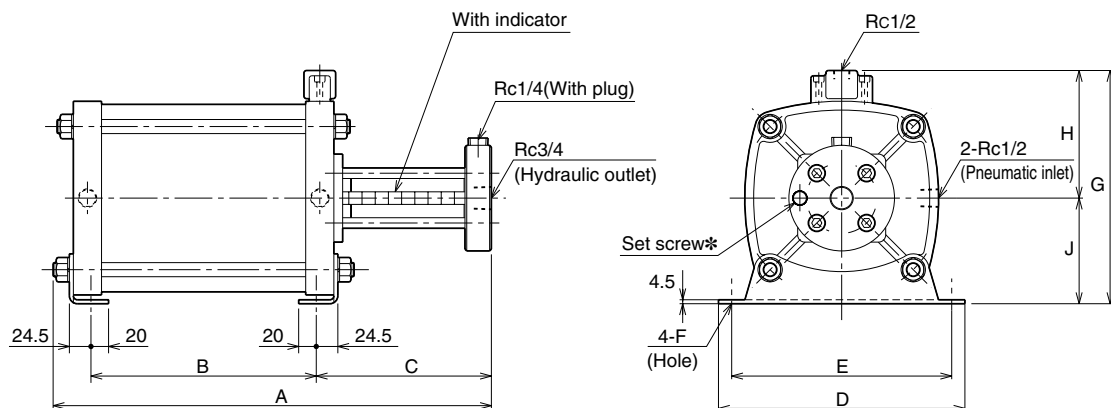


SWITCH SET MOUNTING DIMENSION



Please refer "HOW TO MOUNT SWITCH" (p.21) for switch mounting.

PBH-80



Note*) Do not loosen the set screw of the end of indicator. (the indicator will loose and bolt out)

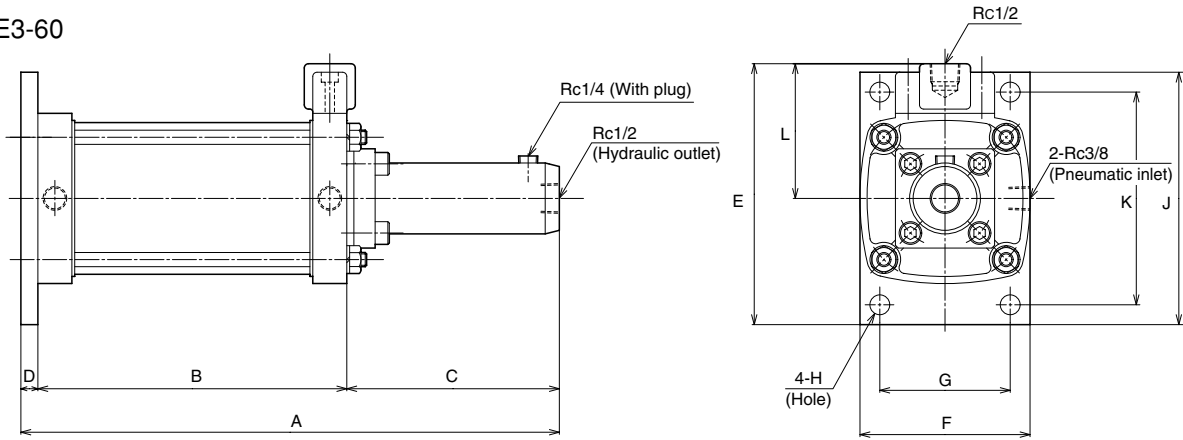
DIMENSIONAL TABLE

Symbol Model code	A	B	C	D	E	F	G	H	J
PBH3-40	384	198	160	170	150	9	165	95	70
PBH3-60	387	198	160	250	220	11	215	120	95
PBH-80	498	256	160	250	220	4	265	145	120

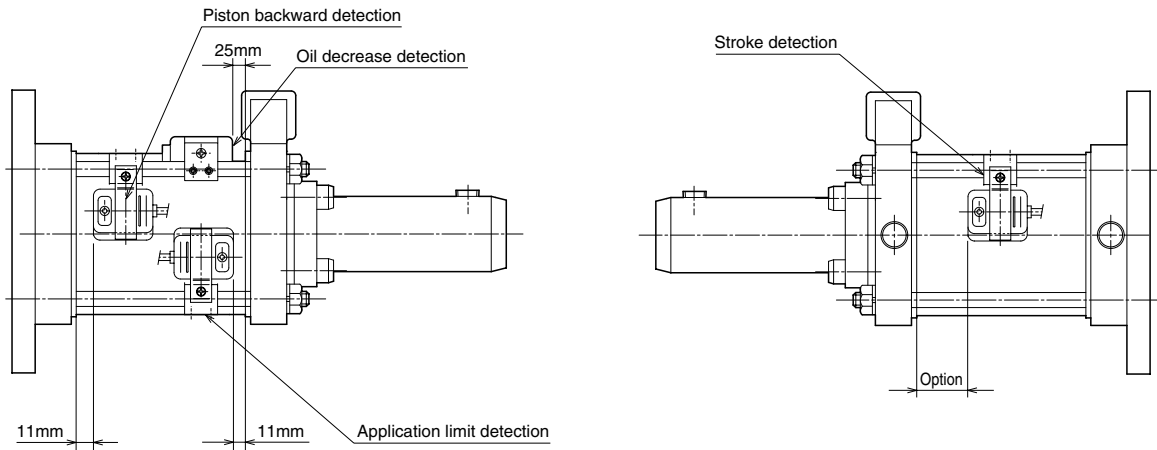
DIMENSIONAL DRAWINGS

Unit: mm

PBE3-40
PBE3-60

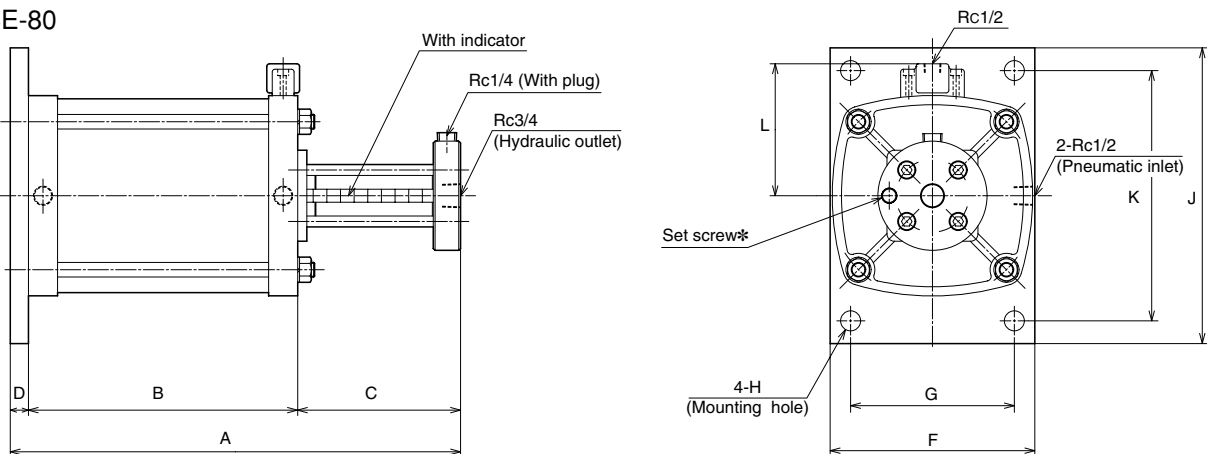


SWITCH SET MOUNTING DIMENSION



Please refer "HOW TO MOUNT SWITCH" (p.21) for switch mounting.

PBE-80



Note*) Do not loosen the set screw of the end of indicator. (the indicator will loose and bolt out)

DIMENSIONAL TABLE

Symbol Model code	A	B	C	D	E	F	G	H	J	K	L
PBE3-40	380	218	150	12	184	120	92	φ14	178	150	95
PBE3-60	382	218	150	14	254	175	134	φ18	270	220	120
PBE-80	495	296	179	20	325	240	180	φ22	325	275	145