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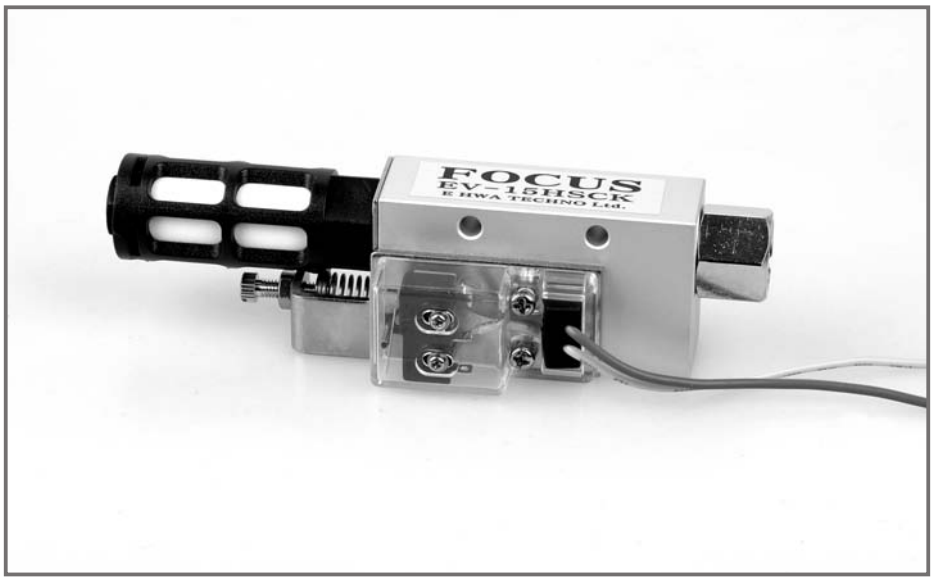
EV Series

▣ 특징

◈ 소형. 경량
◈ 풍부한 Nozzle경
◈ 장수명
◈ 고효율, 고 응답성
◈ SUS, TEFRON 재고보유



◈ EV EJECTOR 주문방법

EV-[1][2][3][4]

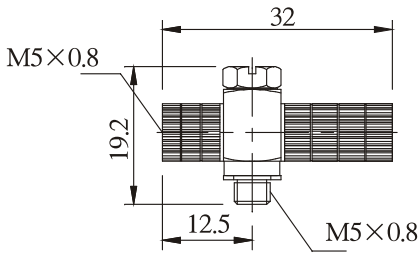
①Nozzle경
05
10
15
20
25
30

②도달진공도 kPa(mmHg)
H -91.8 (-690)
L -57.2 (-430)

③공급공기압력 MPa(kgf/㎠G)
S 0.5 (5)

④진공 S/W
C 설정치고정식
CK 설정치조정식

EV-05HSM5



◈ 사양

사용유체	공기(불연성기체)				
사용온도범위(℃)	0~60				
급유	不要				
사용압력범위mpA(KGF/㎠G)	0.1~0.6(1.0~6.0)				
질량(g)	EV-05.10	EV-15	EV-20	EV-25	EV-30
진공 S/W無 / C / CK	80/100/120	140/160/190	300/390/410	730	870

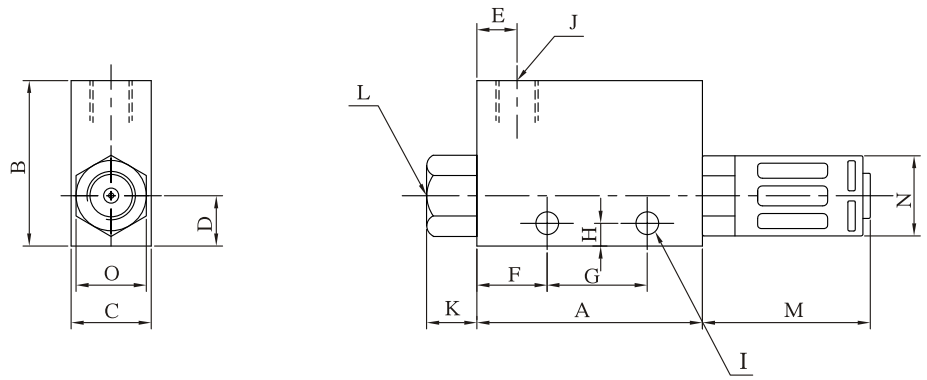
◈ 진공 S/W(PISTON식 MICRO S/W)

	C 설정치 고정식	CK 설정치 조정식
설정범위kPa(mmHg)	-53 (-400mmHg)	-20~ -53 (-150~ -400mmHg)
출하시설정치kPa(mmHg)	-53 (-400mmHg)	-40 (-300mmHg)
동작정도kPa(mmHg)	±5.3 (±40mmHg)	
응차kPa(mmHg)	4.0~13.3 (30~100mmHg)	
전기정격(저항부하시)	AC 125V : 5A AC 250V : 3A	

◈ 진공성능표

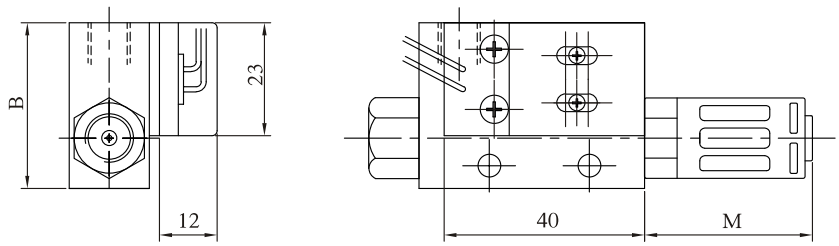
	Nozzle경	배기량	도달진공도	공기소비량	공급공기압력
	mm	1/min(ANR)	-kPa(mmHg)	1/min(ANR)	MPa(kgf/㎠G)
EV-05HS	0.5	6	86.7(650)	13	0.5(5)
EV-05LS	0.5	9	57.2(430)	13	0.5(5)
EV-10HS	1.0	27	92(690)	44	0.5(5)
EV-10LS	1.0	36	57.2(430)	44	0.5(5)
EV-15HS	1.5	62	92(690)	100	0.5(5)
EV-15LS	1.5	93	57.2(430)	100	0.5(5)
EV-20HS	2.0	105	92(690)	180	0.5(5)
EV-20LS	2.0	160	57.2(430)	180	0.5(5)
EV-25HS	2.5	150	92(690)	265	0.5(5)
EV-25LS	2.5	240	57.2(430)	265	0.5(5)
EV-30HS	3.0	220	92(690)	385	0.5(5)
EV-30LS	3.0	340	57.2(430)	385	0.5(5)

◈ EV 외형도



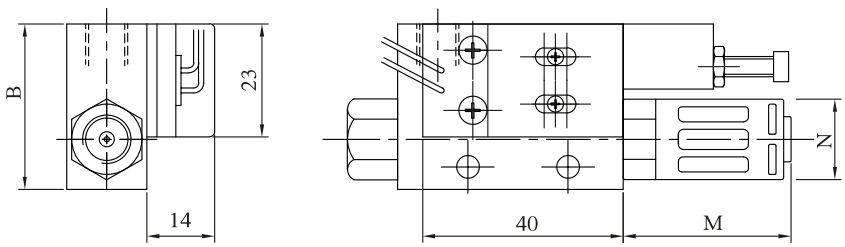
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Silencer
EV-05	45	33	16	10	8	14	20	4.5	2-Φ4.2	1/8	10	1/8	35	16	14	1/8
EV-10	45	33	16	10	8	14	20	4.5	2-Φ4.2	1/8	10	1/8	35	16	14	1/8
EV-15	63	35	20	11	10	20	25	5	2-Φ4.5	1/4	15	1/4	55	21	17	1/4
EV-20	85	40	25	15	13	28	32	7	2-Φ6	1/4	20	1/4	72	25	24	3/8
EV-25	100	60	35	20	16	20	50	5.5	2-Φ6	1/2	17	3/8	80	30	28	3/4
EV-30	118	60	35	20	20	33	50	5.5	2-Φ6	3/4	20	1/2	80	30	30	3/4

C TYPE



	M	B
EV-05HSC	34	33
EV-10HSC	34	33
EV-15HSC	57	35
EV-20HSC	73	40

CK TYPE

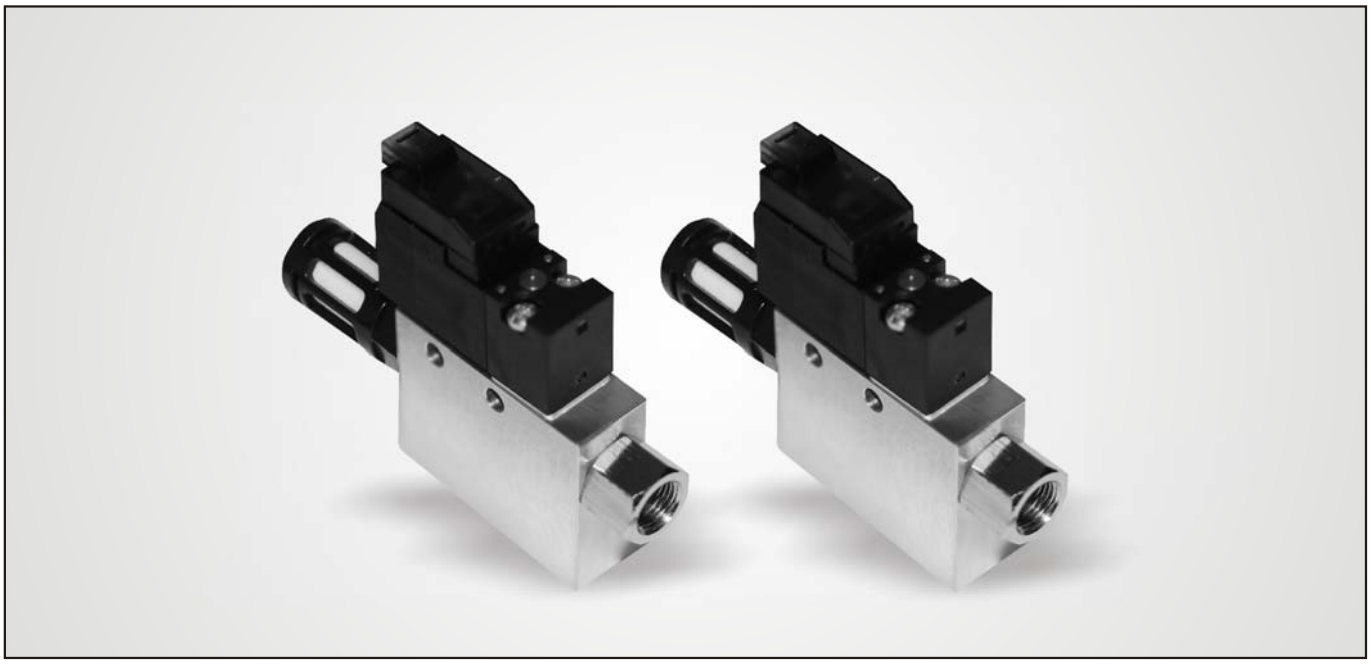


	M	B
EV-05HSCK	34	33
EV-10HSCK	34	33
EV-15HSCK	57	35
EV-20HSCK	73	40

EVB Series

◈ 소형, 경량 / 장 수명

◈ 소형 진공발생기로 EJECTOR 본체에 SOLENOID V/V를 부착하여 고 효율성과 빠른 응답성을 갖추었습니다.



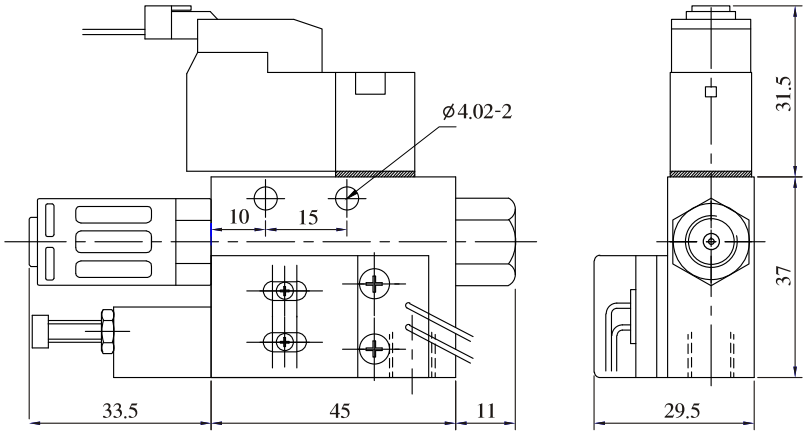
◈ EVB - ① ② ③ ④

1. Nozzle 경
   07
   09
2. 도달 진공도 kPa (mmHg)
   H -91.8 (690)
   L -57.2 (430)
3. 공기 공급압력 MPa (kgf/㎠G)
   S 0.5 (5)
4. 진공 S/W
   CK 설정치 조정식

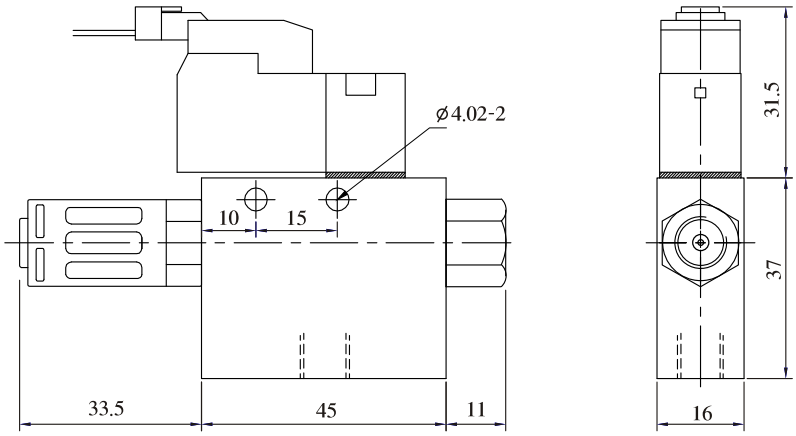
◈ 사양

사용 유체 (Supply air)	압축공기 (Compressed air)
사용 압력 (Supply air pressure)	0.5~0.6㎫
사용 온도 (Working temperature)	0 ~ 60℃
소음도 (Noise level)	65~70dB

◈ EVB 외형도



EVB-07HSCK-110A/220A/24A



EVB-07HS-110A/220A/24A

◈ 진공 성능표

	노 즐 경	도달 진공도	배기량	공기 소비량	공급공기압력
	Nozzie ø	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	MPa (kgf/㎠G)
EVB-07HS	0.7	-92 (-690)	13	22	0.5 (5)
EVB-07LS	0.7	-92 (-690)	20	22	0.5 (5)
EVB-09HS	0.9	-92 (-690)	23	36	0.5 (5)
EVB-09LS	0.9	-92 (-690)	30	36	0.5 (5)

EVD Series

▣ 진공파괴밸브 부착형

◈ 취급하기가 용이하고 구조가 간단하며 별도의 진공 파괴밸브가 필요치 않으며, 보다 많은 용도로 사용 가능하다.

◈ 부착이 용이하며 진공포장기나 진공이송장치, 철판, 유리, 가구 등 용도가 다양하다.

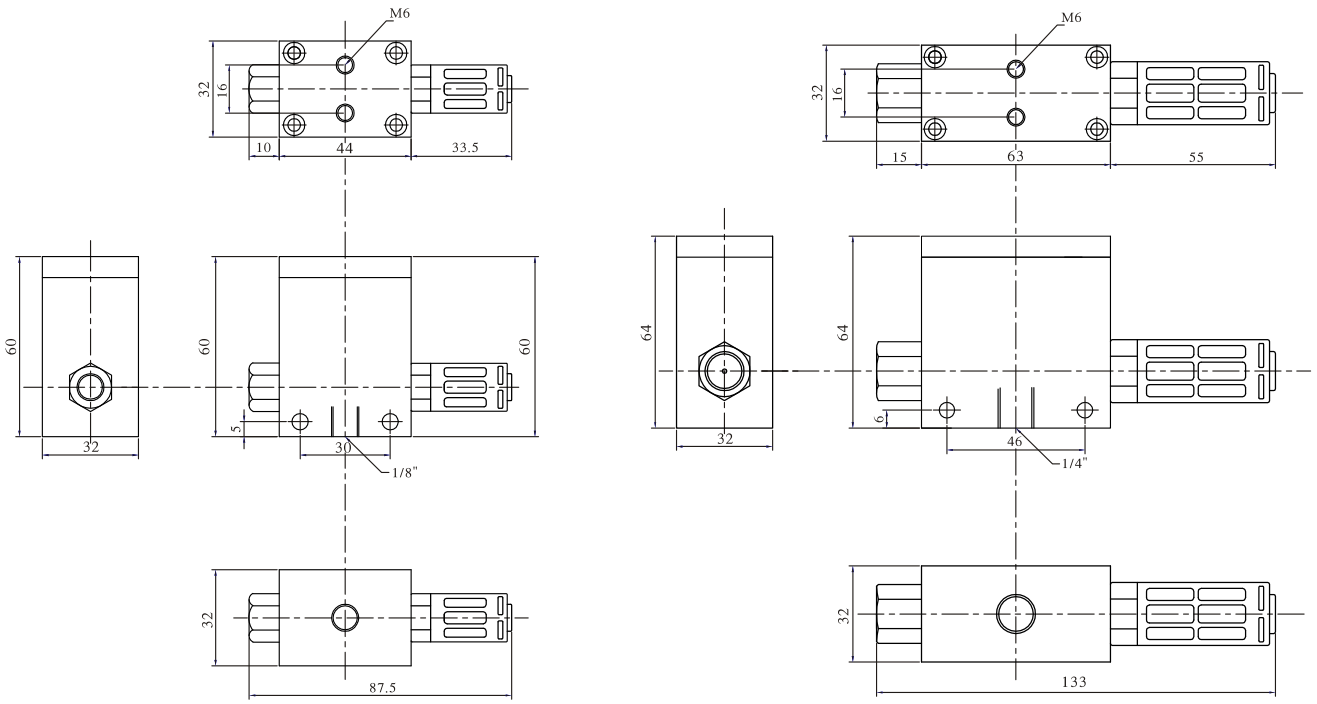
◈ 주문방법

- EVD - 10HS / 15HS

◈ 성능 및 사양

사용 유체 (Supply air)	압축공기 (Compressed air)
급 유	不 要
사용 온도 (Working temperature)	-20~ + 80℃
소음도 (Noise level)	65~70dB
재질 (Material)	AL

◈ EVD 외형도



EVD-10HS

EVD-15HS

◈ 진공 성능표

	도달 진공도	배기량	공기 소비량	공급공기압력	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	MPa	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVD-10HS	-90 (-680)	27	44	0.5~0.6	1/8"	1/8"	1/8"
EVD-15HS		62	100	0.5~0.6	1/4"	1/4"	1/4"

EVS Series

▣ 특징

◈ 기존 EV Series의 특징에 SOLENOID V/V를 부착하여 더욱 간소화 하였습니다.

◈ 주문방법

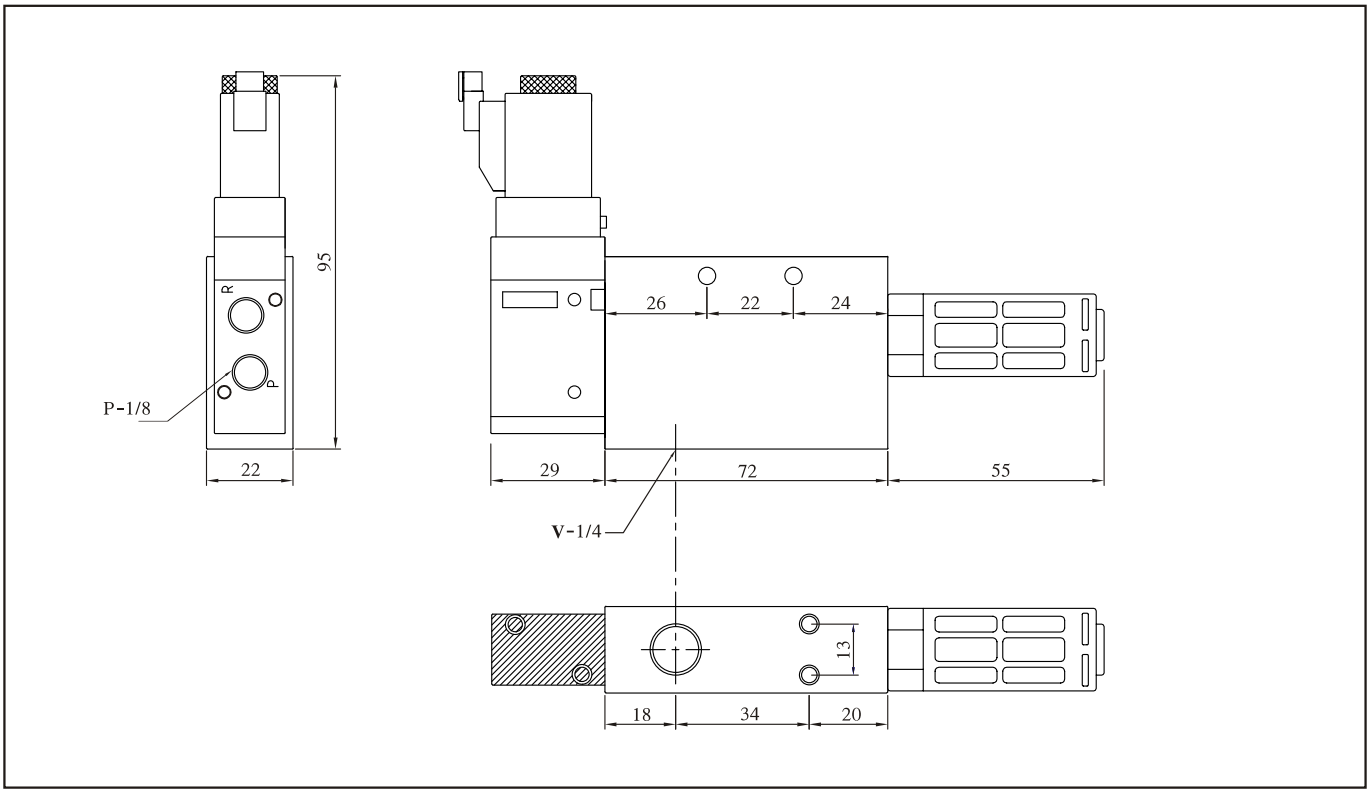
- EVS-10HS-24A / B
- EVS-15HS-110A / B
  -220A / B
  -24A / B
- EVS-15HS-24B-M(2~3~4)

◈ 진공성능표

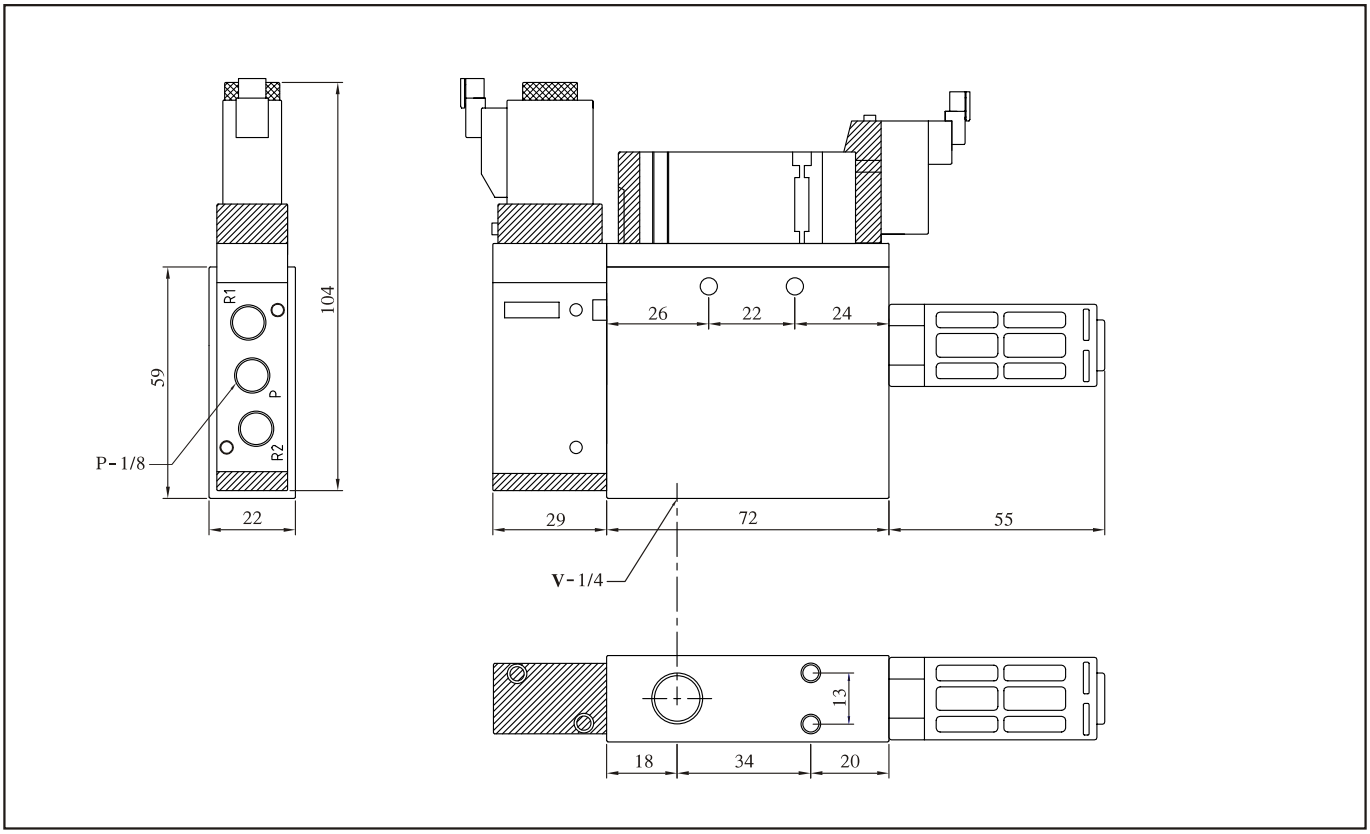
	Nozzle경	배기량	도달진공도	공기소모량	공급공기압력
	mm	l/min(ANR)	-kpa(mmHg)	l/min(ANR)	MPa(kgf/㎠G)
EVS-10HS- * A	1.0	27	92(690)	44	0.5(5)
EVS-10HS- * B	1.0	27	92(690)	44	0.5(5)
EVS-15HS- * A	1.5	62	92(690)	100	0.5(5)
EVS-15HS- * B	1.5	62	92(690)	100	0.5(5)

◈ 외형도

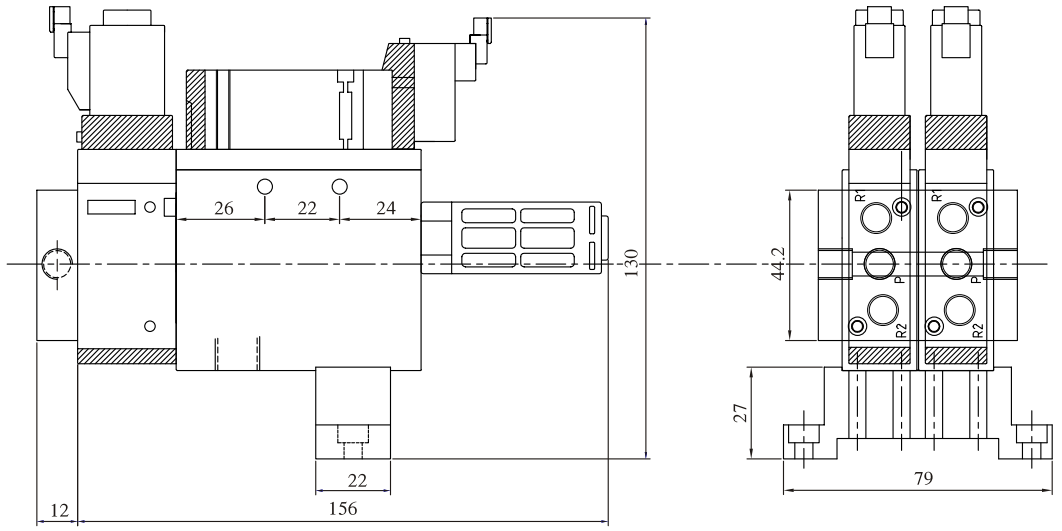
- EVS-15HS-24A/110A/220A



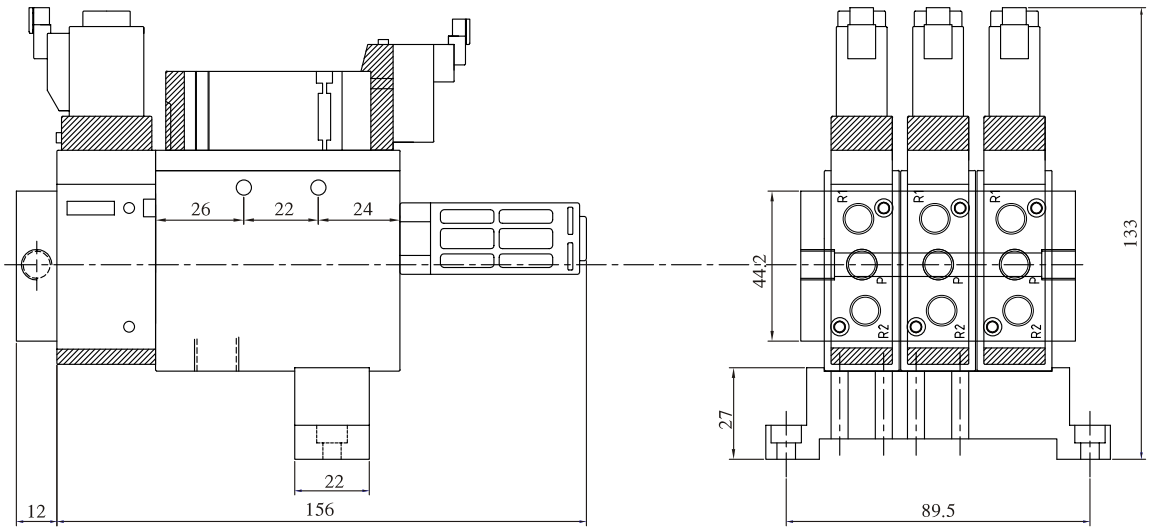
- EVS-15HS-24B/110B/220B



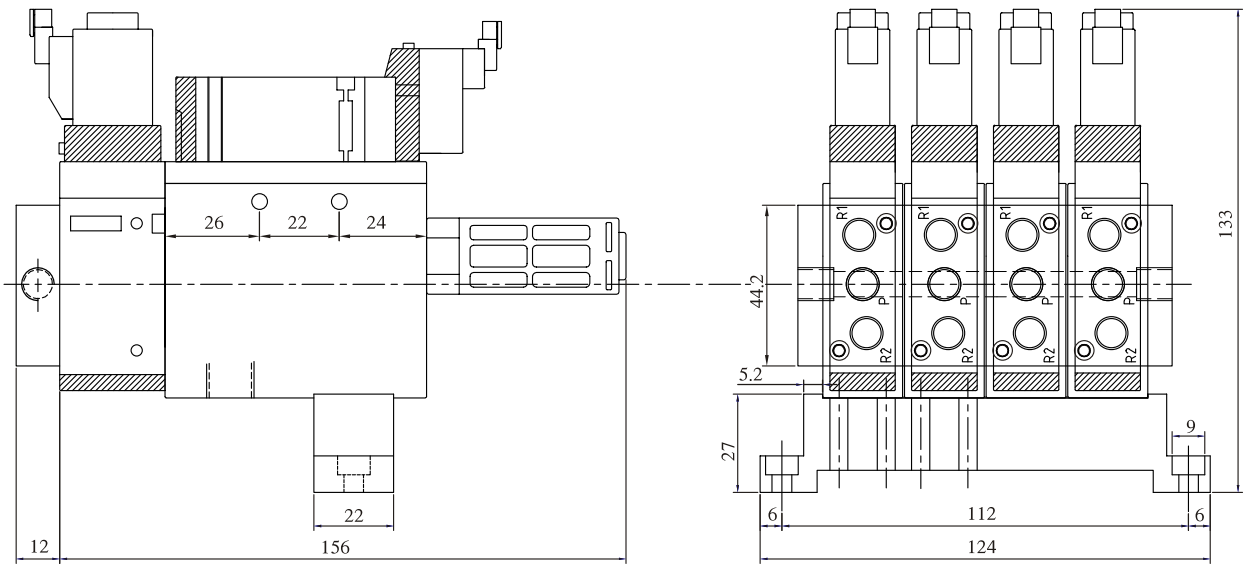
- EVSM-15HS-24B-2 2연조

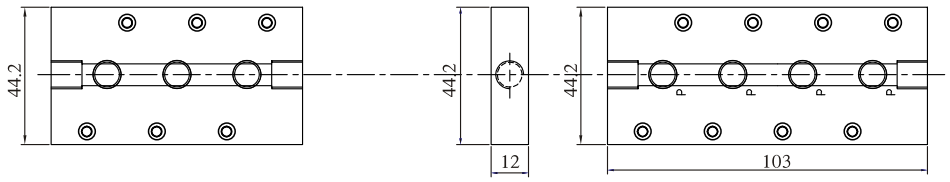


- EVSM-15HS-24B-3 3연조



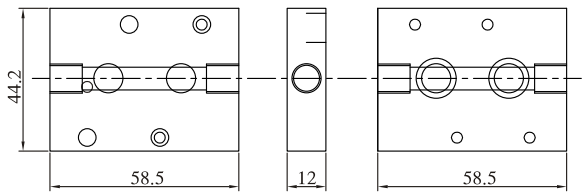
• EVSM-15HS-24B-4 4연조

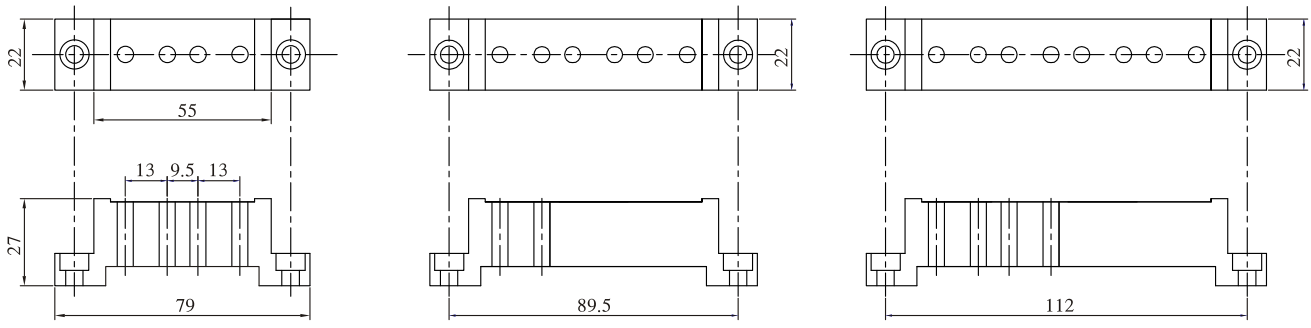




• EVSM-15HS-24B-3 3연조

• EVSM-15HS-24B-4 4연조





• EVSM-15HS-24B-2 2연조

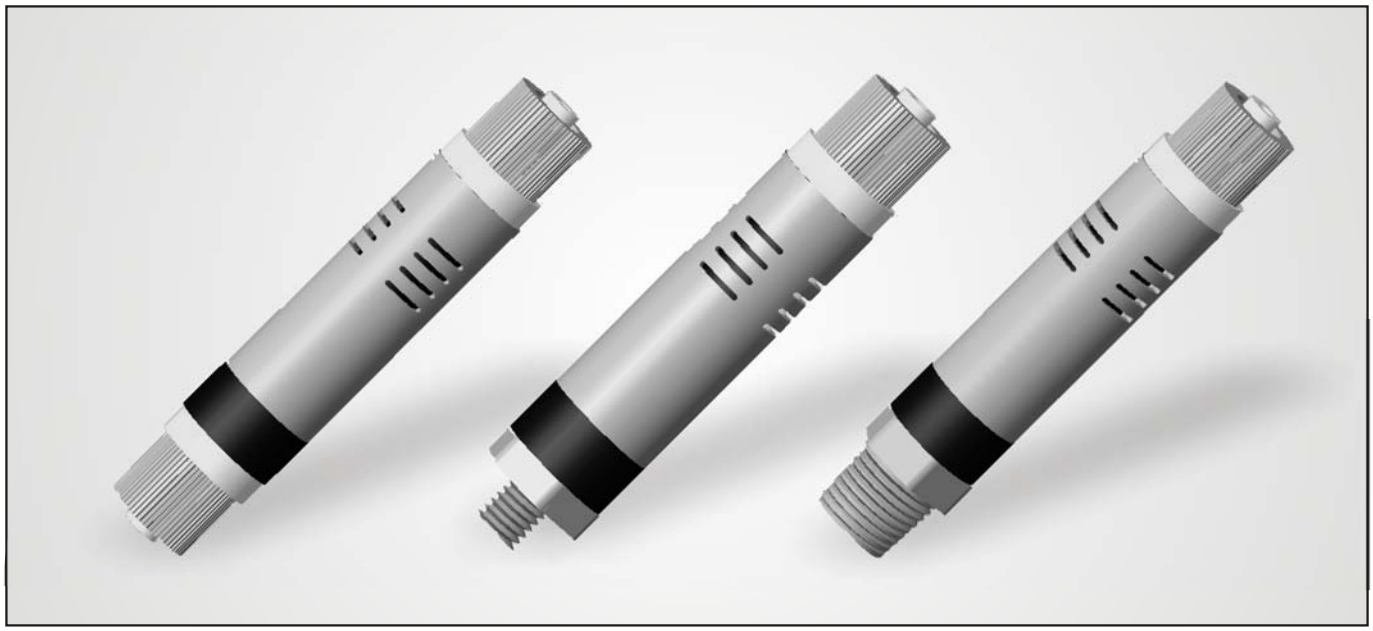
• EVSM-15HS-24B-3 3연조

• EVSM-15HS-24B-4 4연조

EVH Series

◈ LINE 용 진공발생기로 공급포트와 진공포트가 일직선상에 있어 배관이 용이합니다.

◈ 소형 진공발생기로 EJECTOR 본체에 과도한 하중을 가하지 마십시오.



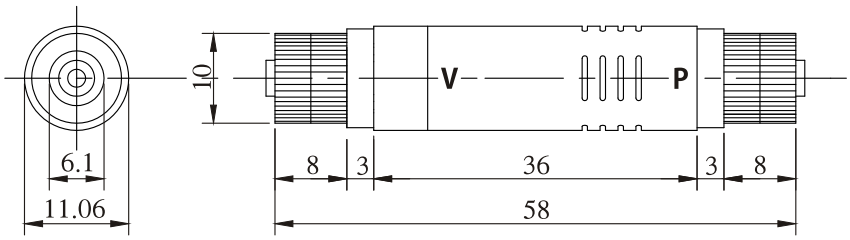
◈ 성능 및 사양

사용 유체 (Supply air)	압축공기 (Compressed air)
사용 압력 (Supply air pressure)	0.5~0.6㎫
사용 온도 (Working temperature)	0 ~ 60℃
소음도 (Noise level)	65~70dB
재질 (Material)	본체 : Poiybutyiene / Nozzle : Brass.

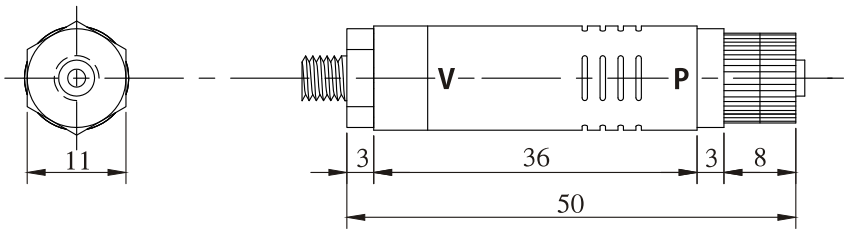
◈ 진공 성능표

	노 즐 경	도달 진공도	배기량	공기 소비량	배 관 사 양	
	Nozzie∅	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	압축공기	진공흡입
EVH05-0606	0.5	-92 (-690)	7	13	∅6	∅6
EVH05-06M5	0.5		7	13	∅6	M5
EVH05-0601	0.5		7	13	∅6	1/8"
EVH07-0606	0.7		12.5	23	∅6	∅6
EVH07-06M5	0.7		12.5	23	∅6	M5
EVH07-0601	0.7		12.5	23	∅6	1/8"

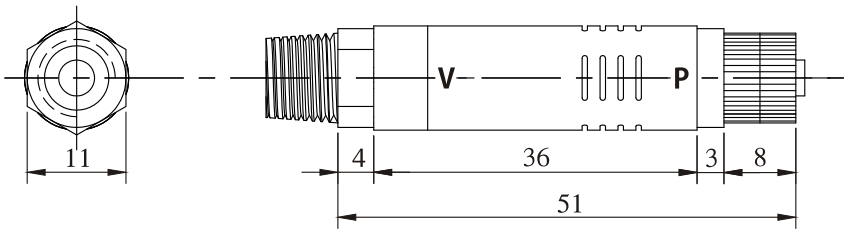
◈ EVH 외형도



EVH05-0606
EVH07-0606



EVH05-06M5
EVH07-06M5



EVH05-0601
EVH07-0601

EVX Series

◈ 소형 다단노즐 진공발생기

- 단노즐 방식보다 두 배 이상의 흡입 유량을 생산.
- 소형, 경량이며 취급하기가 용이하고 구조가 간단하다.
- 소음이 적고 부착이 용이하며 진공포장기나 진공이송장치 등 용도가 다양하다.

◈ 주문방법

MODEL		TYPE	SEALING	ORDER NO	REMARK
EVX	05 10 20 30	A B C	NBR VITON EPDM	• EVX-05-A-(N,V,E) • EVX-10-B,C-(N,V,E) • EVX-20-B,C-(N,V,E) • EVX-30-C-(N,V,E)	기본형-NBR Standard seal

◈ 성능 및 사양

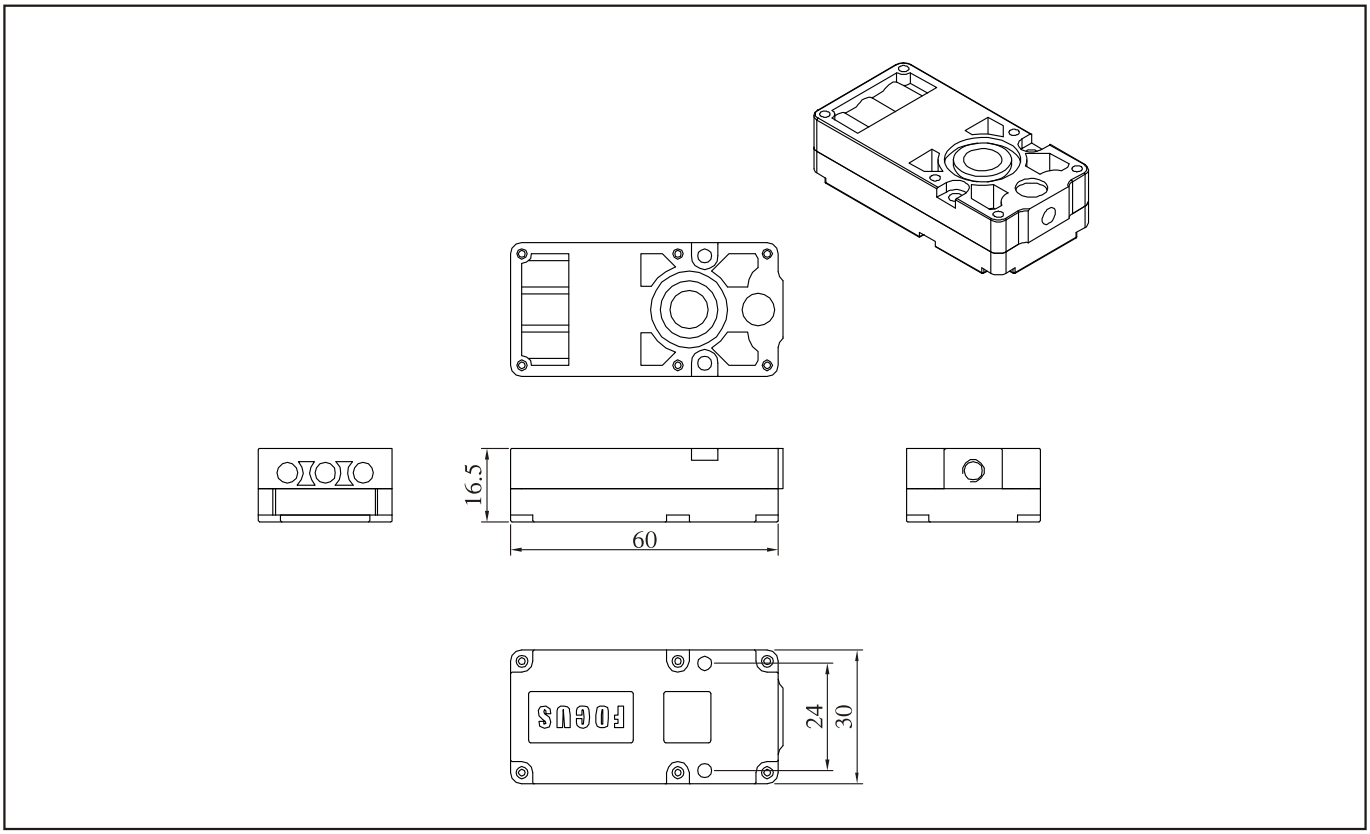
사용 유체 (Supply air)	압축공기(Compressed air)
사용 압력 (Supply air pressure)	0.45~0.6㎫
사용 온도 (Working temperature)	-20~ +80℃
소음도 (Noise level)	50~65dB
재질 (Material)	PPS

◈ 진공 성능표

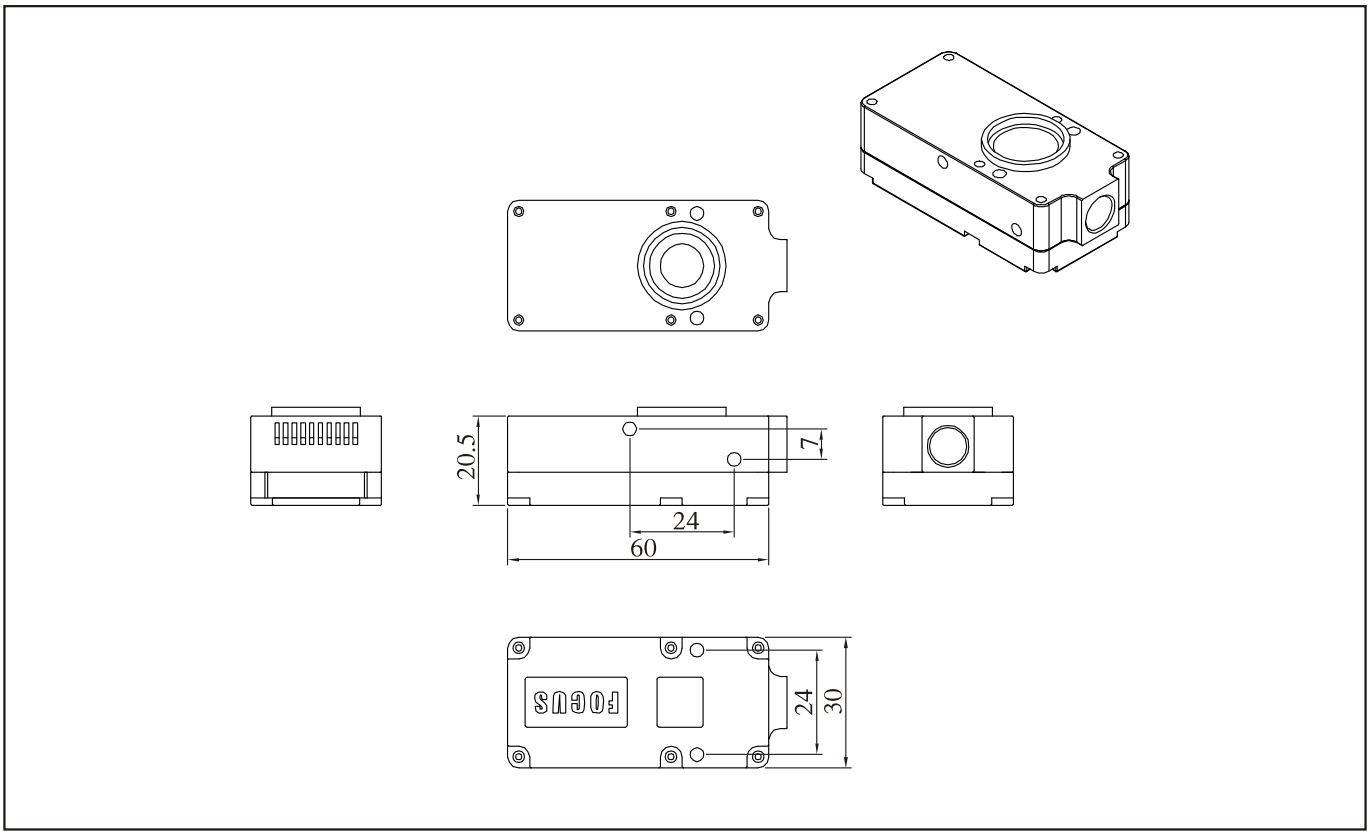
	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVX-05A	-92 (-690)	31	21.5~24	61~66	M5 >Ø2	1/8″ >Ø6	
EVX-10B		62	43~48	60~65	1/8″ >Ø4	3/8″ >Ø8	-
EVX-10C		62	43~48	50~60	1/8″ >Ø4	3/8″ >Ø8	3/8″
EVX-20B		124	86~95	60~65	1/8″ >Ø6	3/8″ >Ø10	-
EVX-20C		124	86~95	55~65	1/8″ >Ø6	3/8″ >Ø10	3/8″
EVX-30C		186	130~145	50~65	1/8″ >Ø6	3/8″ >Ø10	3/8″

▣ EVX 외형도

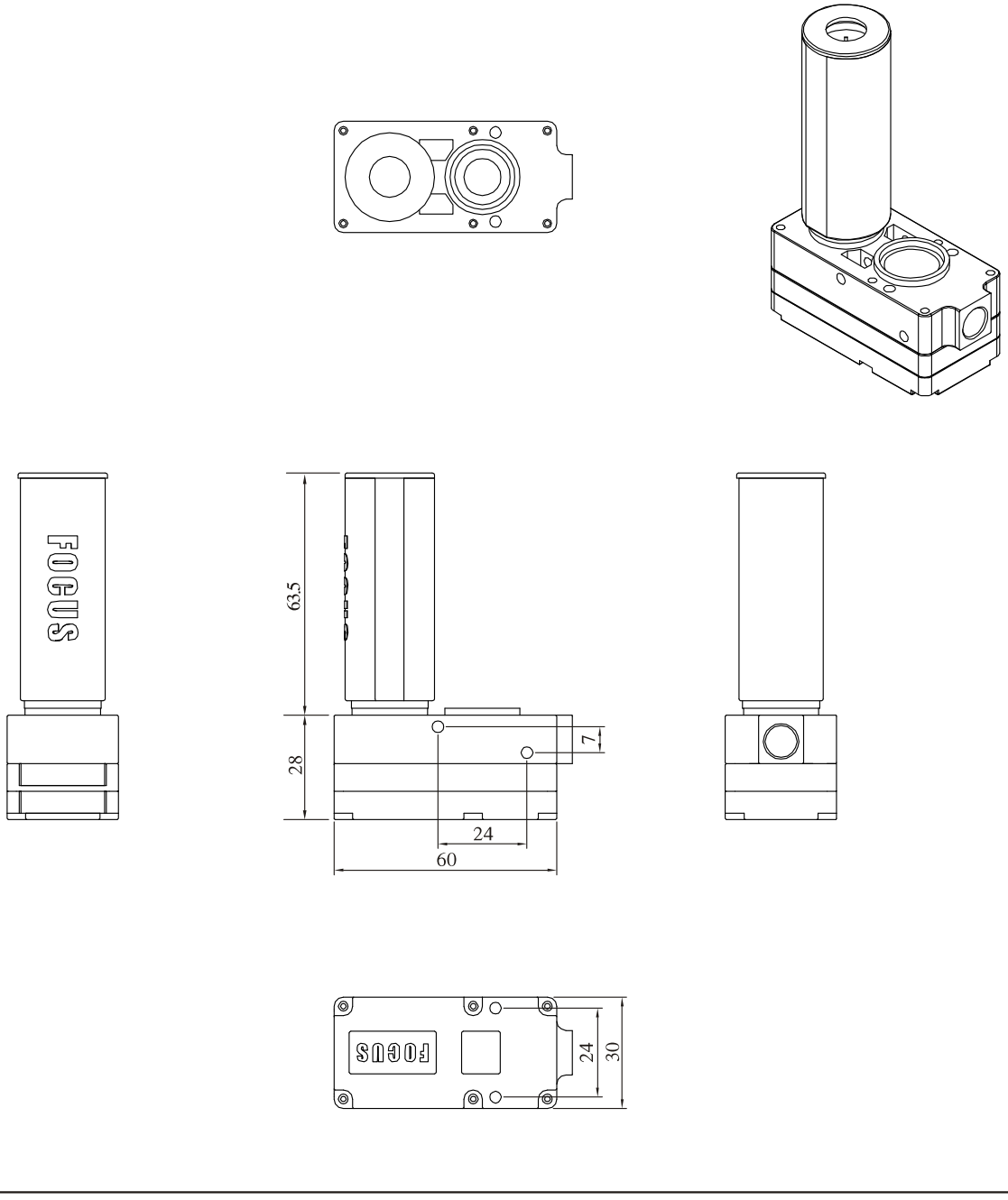
◈ EVX-05-A



◈ EVX-10-B, EVX-20-B, EVX-30-B



◈ EVX-10-C, EVX-20-C, EVX-30-C



EVX-D Series

◈ 소형 다단노즐 진공발생기 (BASE TYPE)

◈ 주문방법

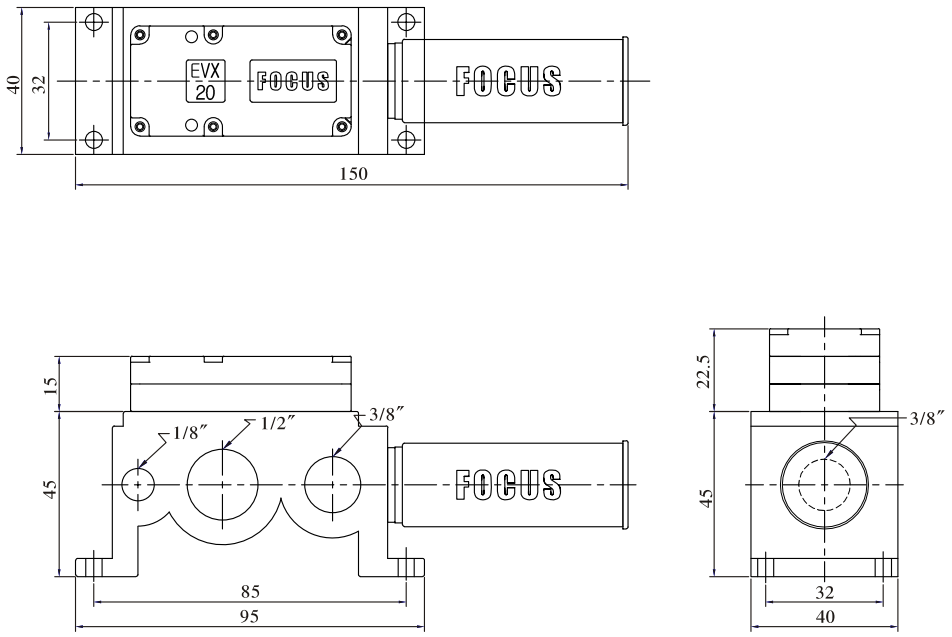
MODEL		TYPE	SEALING	ORDER NO	REMARK
EVX	10~30C 40~60C	D1 D2	NBR VITON EPDM	• EVX-20C-D1-(N,V,E) • EVX-40C-D2-(N,V,E)	기본형-NBR Standard seal

◈ 진공성능표

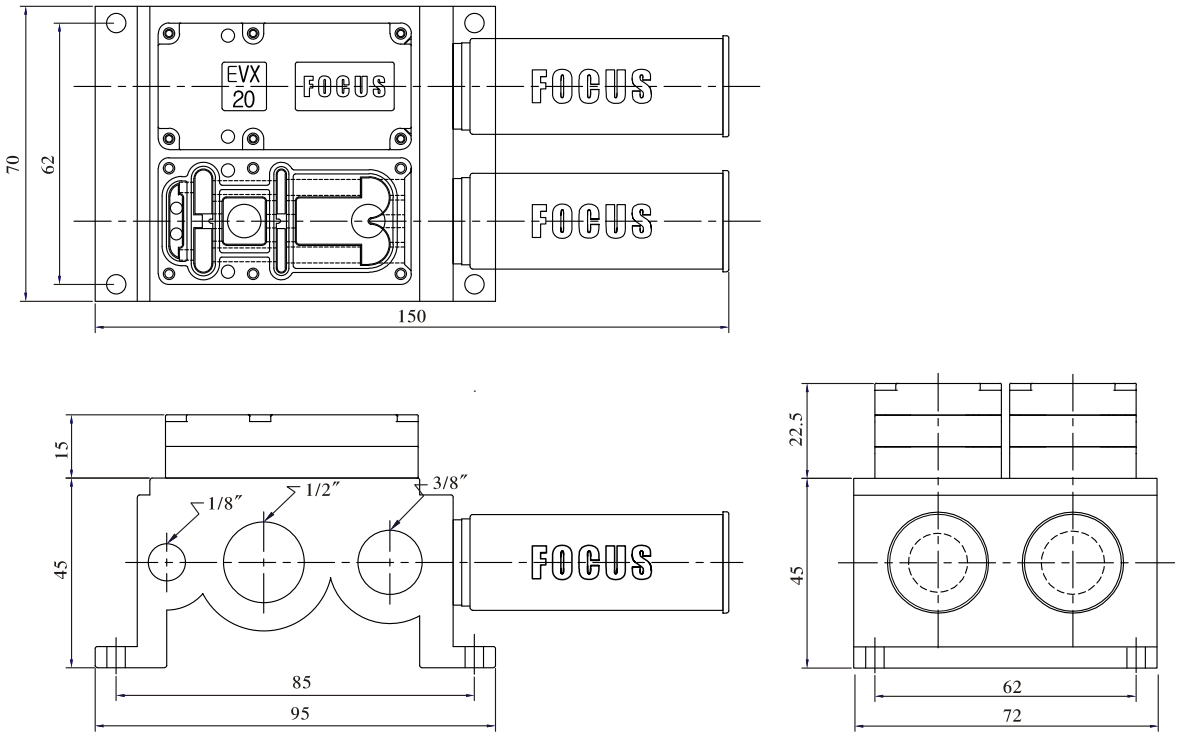
	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVX-10C-D1	-92 (-690)	62	43~48	50~60	1/8″ >Ø4	3/8″ >Ø8	3/8″
EVX-20C-D1		124	86~95	55~65	1/8″ >Ø6	3/8″ >Ø10	3/8″
EVX-30C-D1		186	130~145	55~65	1/8″ >Ø6	3/8″ >Ø10	3/8″
EVX-40C-D2		248	172~192	58~68	1/8″ >Ø8	3/8″ >Ø12	3/8″
EVX-60C-D2		372	258~288	58~68	1/8″ >Ø8	3/8″ >Ø12	3/8″

◈ EVX-D 외형도 (BASE TYPE)

• EVX-10C-D1~30C-D1

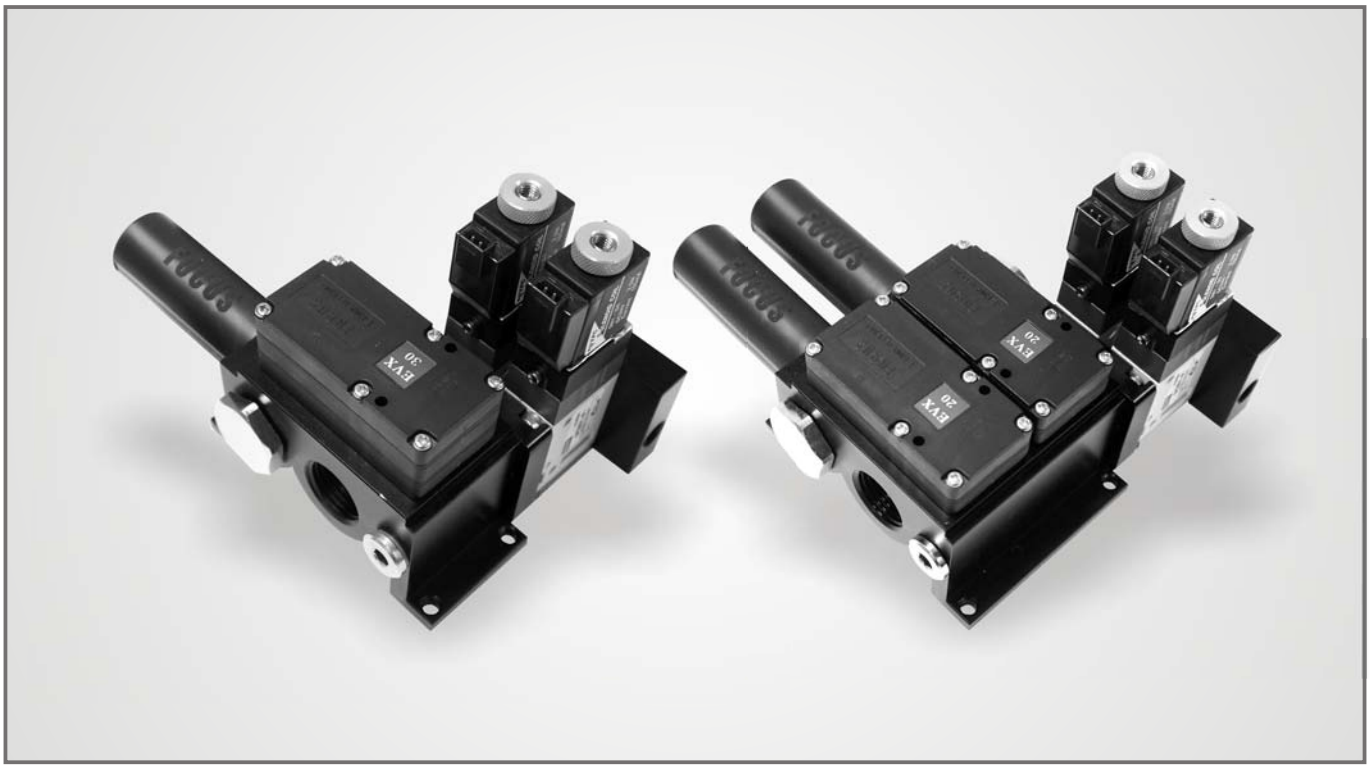


• EVX-40C-D2~60C-D2



EVX-D-B Series

◈ EVX-D-B 소형 다단노즐 진공발생기 (SOLENOID VALVE 부착 TYPE)



◈ 주문방법

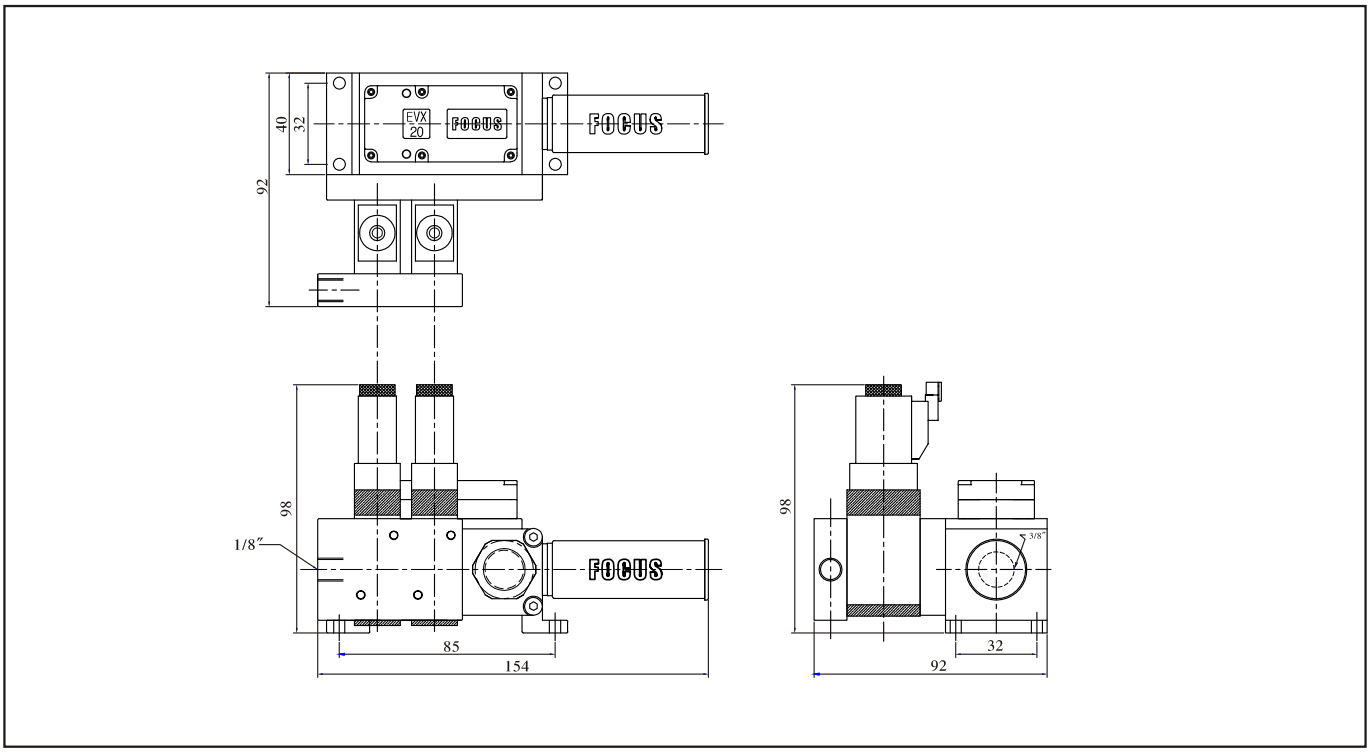
MODEL		TYPE	VALVE	SEALING	ORDER NO	REMARK
EVX	10~30C 40~60C	D1 D2	DC24V AC110V AC220V	NBR VITON EPDM	• EVX-20C-D1-24B(N,V,E) • EVX-40C-D2-24B(N,V,E) (24B / 110B / 220B)	기본형-NBR Standard seal

◈ 진공 성능표

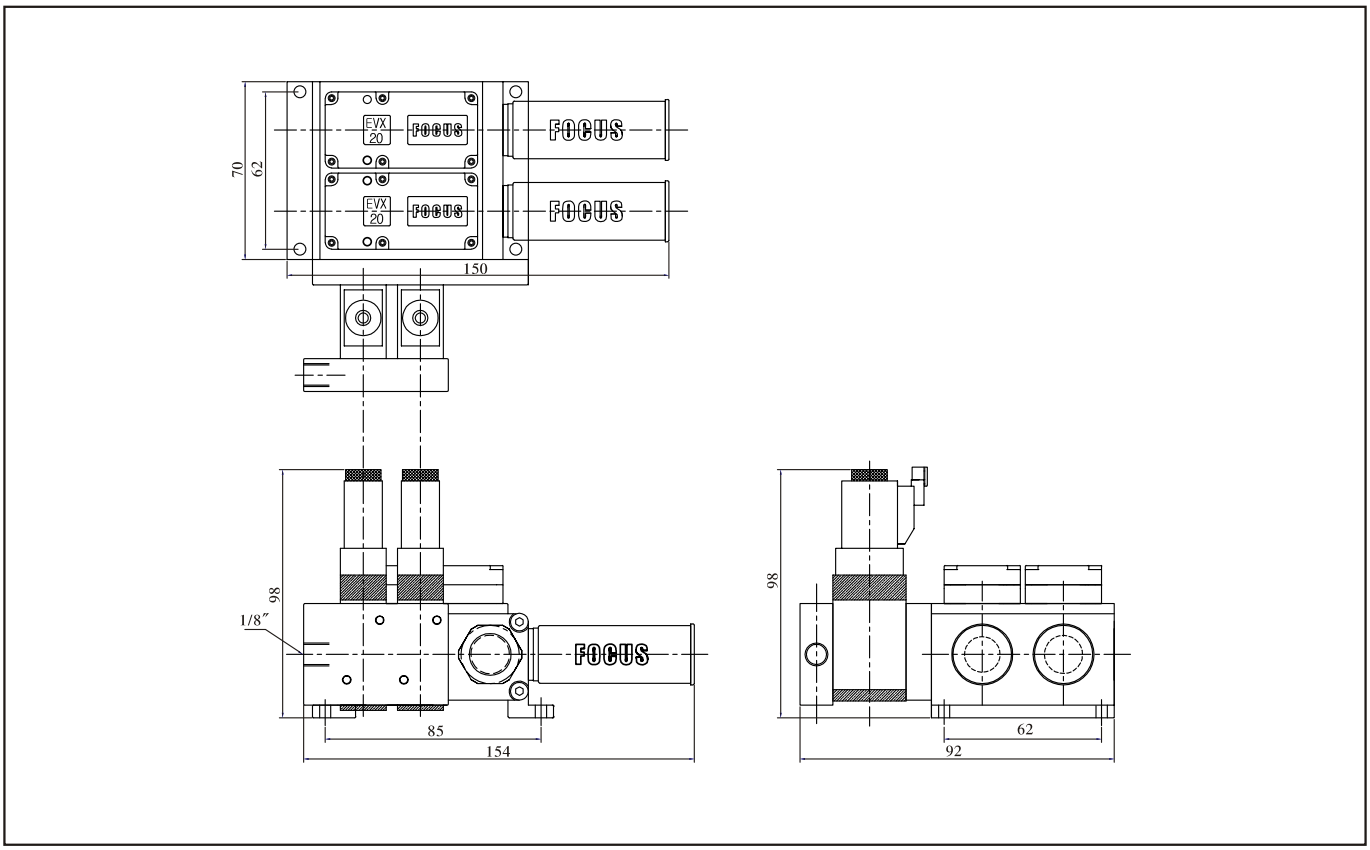
	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVX-10C-D1	-92 (-690)	62	43~48	50~60	1/8″ >Ø4	3/8″ >Ø8	3/8″
EVX-20C-D1		124	86~95	55~65	1/8″ >Ø6	3/8″ >Ø10	3/8″
EVX-30C-D1		186	130~145	55~65	1/8″ >Ø6	3/8″ >Ø10	3/8″
EVX-40C-D2		248	172~192	58~68	1/8″ >Ø8	3/8″ >Ø12	3/8″
EVX-60C-D2		372	258~288	58~68	1/8″ >Ø8	3/8″ >Ø12	3/8″

◈ EVX-D-B 외형도 (SOLENOID VALVE 부착 TYPE)

• EVX-20C-D1-24B(밸브 부착 TYPE)



• EVX-20C-D2-24B(밸브 부착 TYPE)



EVX-M Series

◈ 소형 다단노즐 진공발생기 (MANIFOLD TYPE)

◈ 주문방법

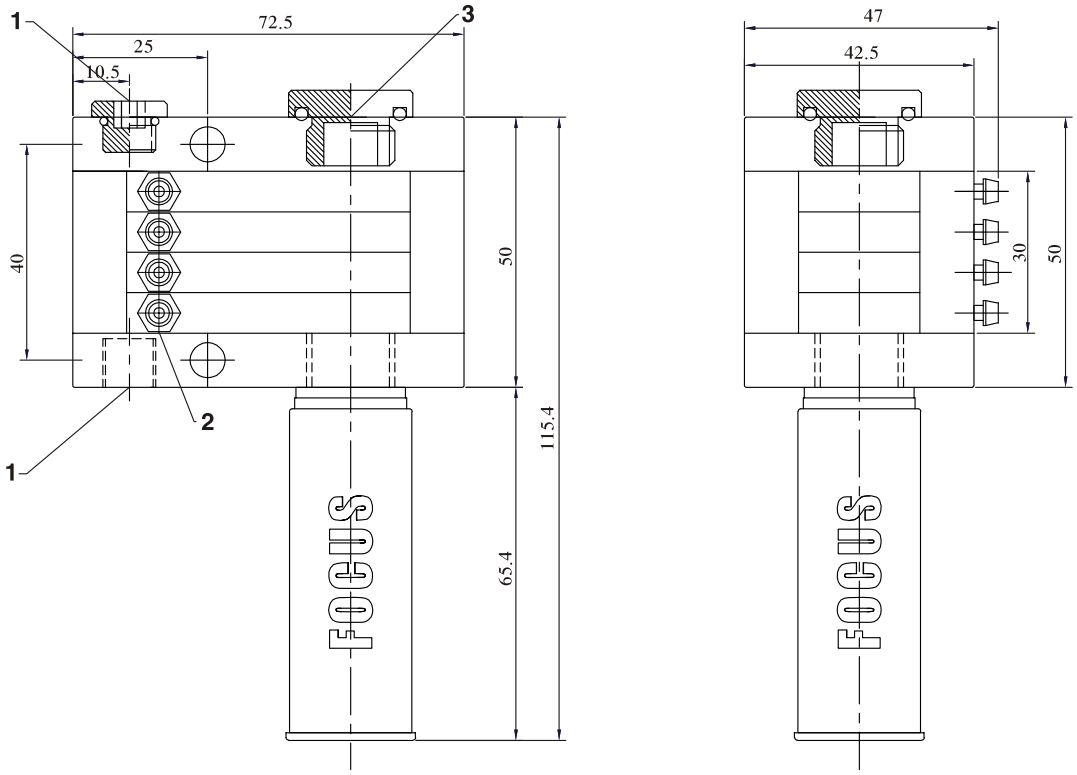
MODEL	TYPE	SEALING	ORDER NO	REMARK
EVX-M-	05 / 10-※ ※ = 연 수	NBR VITON EPDM	• EVX-M-05-4N • EVX-M-10-8N	기본형-NBR Standard seal

◈ 진공 성능표

	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVX-M-05-02	-92 (-690)	31 X 2	43~48	55~65	>∅4		3/8" X 1
EVX-M-05-03		31 X 3	64~72		>∅4		3/8" X 1
EVX-M-05-04		31 X 4	84~96		>∅4		3/8" X 1
EVX-M-05-05		31 X 5	108~120		>∅4		3/8" X 1
EVX-M-05-06		31 X 6	130~145		>∅6		3/8" X 1
EVX-M-05-07		31 X 7	150~170		>∅6		3/8" X 1
EVX-M-05-08		31 X 8	172~195		>∅6		3/8" X 2
EVX-M-05-09		31 X 9	195~215		>∅6		3/8" X 2
EVX-M-05-10		31 X 10	216~240		>∅6		3/8" X 2
EVX-M-05-11		31 X 11	238~360		>∅8		3/8" X 2
EVX-M-05-12		31 X 12	260~290		>∅8		3/8" X 2
EVX-M-10-02	-92 (-690)	62 X 2	86~95	55~65	>∅6		3/8" X 1
EVX-M-10-03		62 X 3	130~145		>∅6		3/8" X 1
EVX-M-10-04		62 X 4	172~192		>∅6		3/8" X 1
EVX-M-10-05		62 X 5	216~240		>∅6		3/8" X 1
EVX-M-10-06		62 X 6	258~288		>∅8		3/8" X 1
EVX-M-10-07		62 X 7	302~335		>∅8		3/8" X 2
EVX-M-10-08		62 X 8	345~383		>∅8		3/8" X 2
EVX-M-10-09		62 X 9	388~430		>∅8		3/8" X 2
EVX-M-10-10		62 X 10	430~480		>∅10		3/8" X 2
EVX-M-10-11		62 X 11	475~530		>∅10		3/8" X 2
EVX-M-10-12		62 X 12	520~575		>∅10		3/8" X 2

◈ EVX-M 외형도 (BASE TYPE)

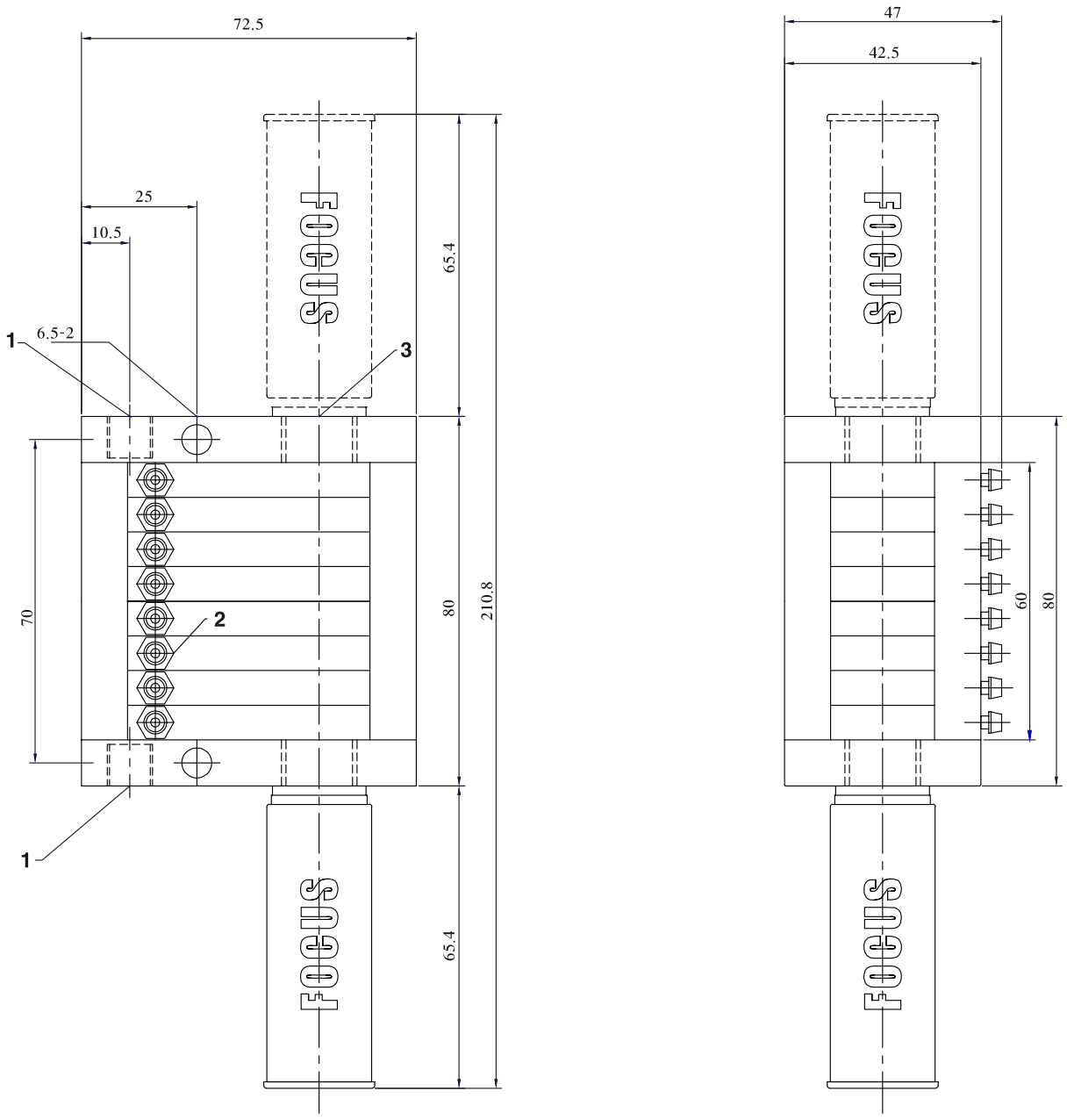
- EVX-M-05/10-04



1. Air 인입구 - 1/8"
2. 진공흡입구 - Φ4, Φ6
3. 배기구 - 3/8"

MODEL	
EVX-M 5.10×(1)	20+7.5
EVX-M 5.10×(2)	20+15.0
EVX-M 5.10×(10)	20+75.0

- EVX-M-05/10-08



1. Air 인입구 - 1/8"
2. 진공흡입구 - Φ4, Φ6
3. 배기구 - 3/8"

MODEL	
EVX-M 5.10×(1)	20+7.5
EVX-M 5.10×(2)	20+15.0
EVX-M 5.10×(10)	20+75.0

EVKM-Series

◈ 다단노즐 진공발생기

- 다단노즐방식을 적용하여 단노즐 방식보다 두배이상의 흡입유량을 생산.
- 취급하기가 용이하고 구조가 간단하며 단노즐보다 많은 흡입유량을 가지고 있어 보다 많은 용도로 사용 가능하다.(Air소모량 절감)
- 소음이 적고 부착이 용이하며 진공포장기나 진공이송장치, 철판, 유리, 가구 등 용도가 다양하다.

◈ 주문방법

EVKM-①- ②- ③- ④- ⑤

① MODEL (SIZE) : 25
50

② VACUUM POT : 04 (1/2)

③ SEALING N : NBR
V : VITON
E : EPDM

④ 진공발생 밸브 : X : NONE
P1 : AC110V
P2 : AC220V
P4 : DC24V

⑤ 진공파기 밸브 : X : NONE
R1 : AC110V
R2 : AC220V
R4 : DC24V

◈ 성능 및 사양

사용유체 (Supply air)	압축공기(Compressed air)
사용압력 (Supply air pressure)	0.5㎫
사용온도 (Workingtemperature)	-20~ +80℃
소음도(Noise level)	55~65dB
재질 (Material)	AL, PPS

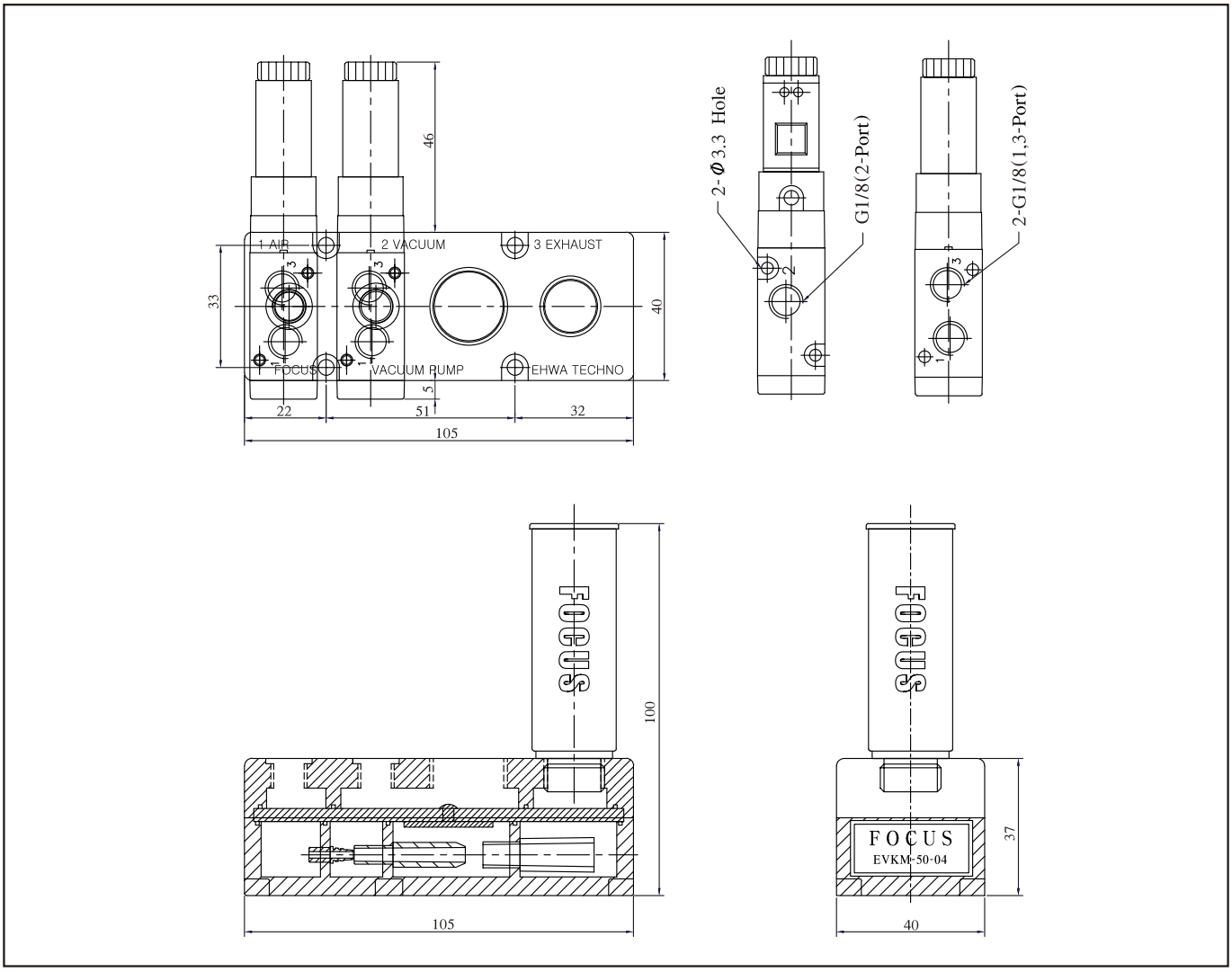
◈ 진공 성능표

	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVKM-25	-92 (-690)	160	80-110	55~65	>8	>10	>12
EVKM-50		272	150-210	55~65	>8	>12	>15

◈ 진공 도달 성능표(sec/l)

KPa (mmHg) / Model	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
EVKM-25	0.020	0.051	0.114	0.240	0.420	0.699	1.136	1.940	2.251
EVKM-50	0.023	0.052	0.086	0.142	0.231	0.364	0.607	1.062	1.202

◈ EVKM 외형도



EVKL-Series

◈ 저 진공 다단노즐 진공발생기

- 저 진공용 다단 진공발생기로서 통기성이 있고 힘보다 많은 흡입유량이 필요시 적합합니다.
- 다단노즐방식을 적용하여 단노즐 방식보다 두배이상의 흡입유량을 생산.
- 취급하기가 용이하고 구조가 간단하며 단노즐보다 많은 흡입유량을 가지고 있어 보다 많은 용도로 사용 가능하다.(Air소모량 절감)
- 소음이 적고 부착이 용이하며 진공포장기나 진공이송장치, 철판, 유리, 가구 등 용도가 다양하다.

◈ 주문방법

EVKL- ①- ②- ③- ④- ⑤

① MODEL (SIZE) : 25
50

② VACUUM POT : 04 (1/2)

③ SEALING N : NBR
V : VITON
E : EPDM

④ 진공발생 밸브 : X : NONE
P1 : AC110V
P2 : AC220V
P4 : DC24V

⑤ 진공파기 밸브 : X : NONE
R1 : AC110V
R2 : AC220V
R4 : DC24V

◈ 성능 및 사양

사용유체 (Supply air)	압축공기(Compressed air)
사용압력 (Supply air pressure)	0.5㎫
사용온도 (Workingtemperature)	-20~ +80℃
소음도(Noise level)	55~65dB
재질 (Material)	AL, PPS

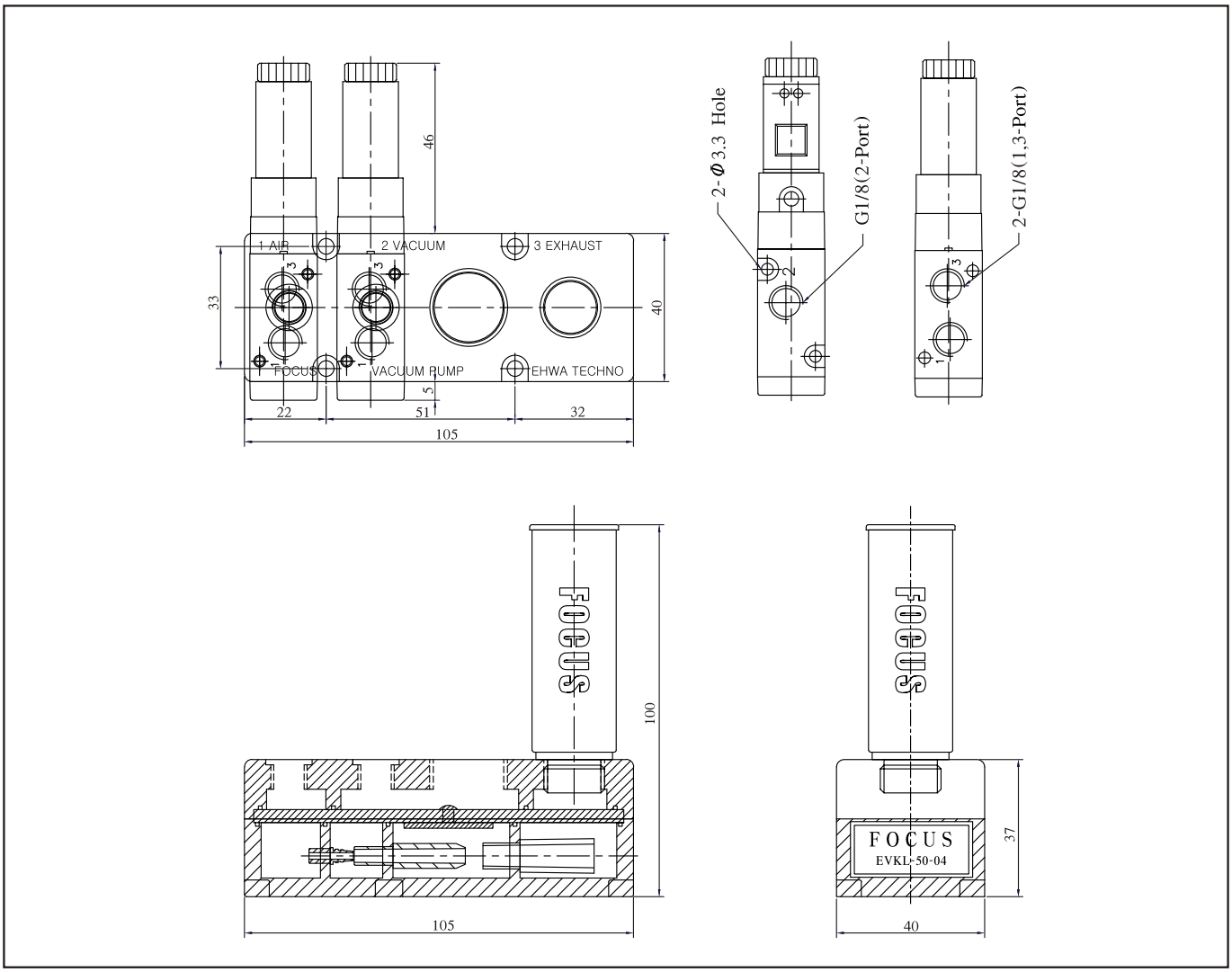
◈ 진공 성능표

	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVKL-25	-76 (-570)	140	64-88	55~65	>8	>10	>12
EVKL-50		240	128-176	55~65	>8	>12	>15

◈ 진공 도달 성능표(sec/l)

KPa (mmHg) / Model	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
EVKL-25	0.020	0.051	0.114	0.240	0.420	0.699	1.136	1.940	2.251
EVKL-50	0.023	0.052	0.086	0.142	0.231	0.364	0.607	1.062	1.202

◈ EVKL 외형도



EVKR-Series

◈ 저압(공급압력) 다단노즐 진공발생기

- 공급압력이 낮은(공급압력:0.36~0.4㎫)곳 에서도 높은 진공도를 유지 할 수 있는 장점을 가지고 있다.
- 다단노즐방식을 적용하여 단노즐 방식보다 두배이상의 흡입유량을 생산.
- 취급하기가 용이하고 구조가 간단하며 단노즐보다 많은 흡입유량을 가지고 있어 보다 많은 용도로 사용 가능하다.(Air소모량 절감)
- 소음이 적고 부착이 용이하며 진공포장기나 진공이송장치, 철판, 유리, 가구 등 용도가 다양하다.

◈ 주문방법

EVKR- ①- ②- ③- ④- ⑤

① MODEL (SIZE) : 25
50

② VACUUM POT : 04 (1/2)

③ SEALING N : NBR
V : VITON
E : EPDM

④ 진공발생 밸브 : X : NONE
P1 : AC110V
P2 : AC220V
P4 : DC24V

⑤ 진공파기 밸브 : X : NONE
R1 : AC110V
R2 : AC220V
R4 : DC24V

◈ 성능 및 사양

사용 유체 (Supply air)	압축공기(Compressed air)
사용 압력 (Supply air pressure)	0.36~0.4 ㎫
사용 온도 (Workingtemperature)	-20~ +80 ℃
소음도(Noise level)	55~65dB
재질 (Material)	AL, PPS

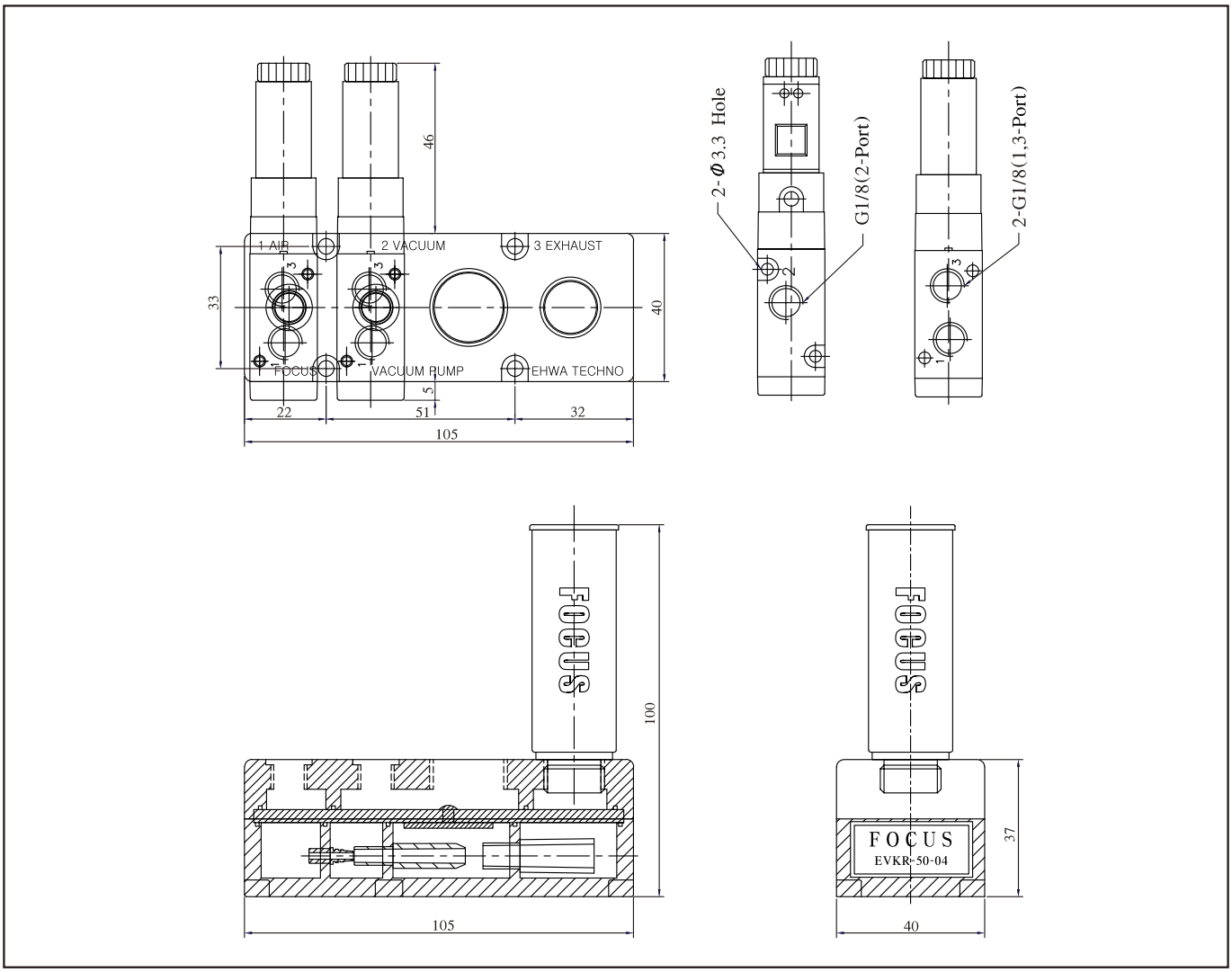
◈ 진공 성능표

	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVKR-25	-92 (-690)	110	102-118	55~65	>8	>10	>12
EVKR-50		272	200-216	55~65	>8	>12	>15

◈ 진공 도달 성능표(sec/l)

KPa (mmHg) / Model	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
EVKR-25	0.020	0.051	0.114	0.240	0.420	0.699	1.136	1.940	2.251
EVKR-50	0.023	0.052	0.086	0.142	0.231	0.364	0.607	1.062	1.202

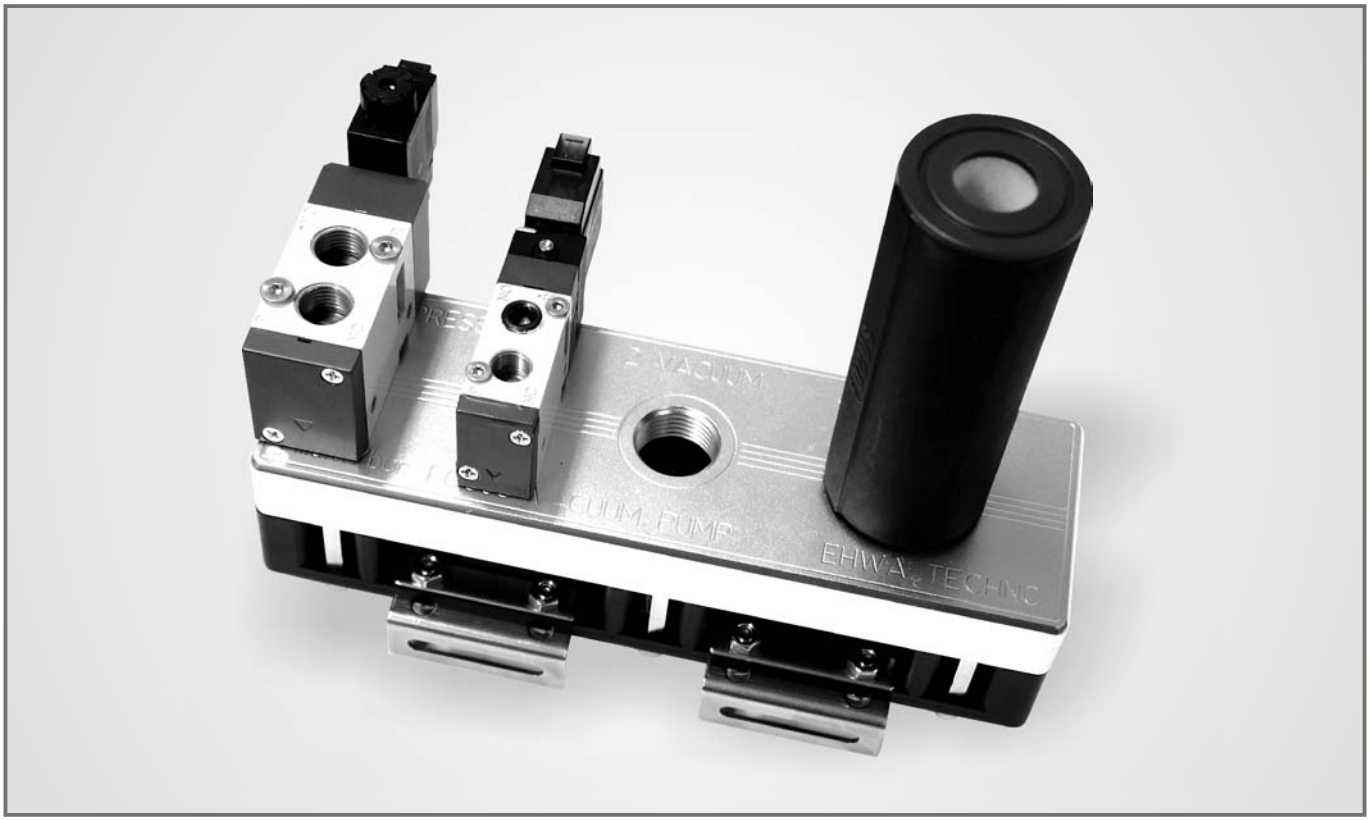
◈ EVKR 외형도



EVM Series

◈ 중형 다단노즐 진공발생기

- 다단노즐방식을 적용하여 단노즐 방식보다 두배이상의 흡입유량을 생산.
- 취급하기가 용이하고 구조가 간단하며 단노즐보다 많은 흡입유량을 가지고 있어 보다 많은 용도로 사용 가능하다. (Air소모량 절감)
- 소음이 적고 부착이 용이하며 진공포장기나 진공이송장치, 철판, 유리, 가구 등 용도가 다양하다.



◈ 주문방법

EVM-①-②-③-④-⑤-⑥

① MODEL (SIZE) : 25(0.25KW)
50(0.5KW)
75(0.75KW)
100(1.0KW)
125(1.25KW)
150(1.5KW)
175(1.75KW)
200(2.0KW)

② VACUUM POT : 04(1/2)
06(3/4)

③ SEALING N : NBR
V : VITON
E : EPDM

④ 진공발생 밸브 : X : NONE
P1 : AC110V
P2 : AC220V
P4 : DC24V

⑤ 진공파기 밸브 : X : NONE
R1 : AC110V
R2 : AC220V
R4 : DC24V

⑥ BRACKET : B1(기본)
B2

◈ 성능 및 사양

사용 유체 (Supply air)	압축공기(Compressed air)
사용 압력 (Supply air pressure)	0.45~0.6MPa
사용 온도 (Working temperature)	-20~ +80℃
소음도 (Noise level)	60~65dB
재질 (Material)	AL, PPS

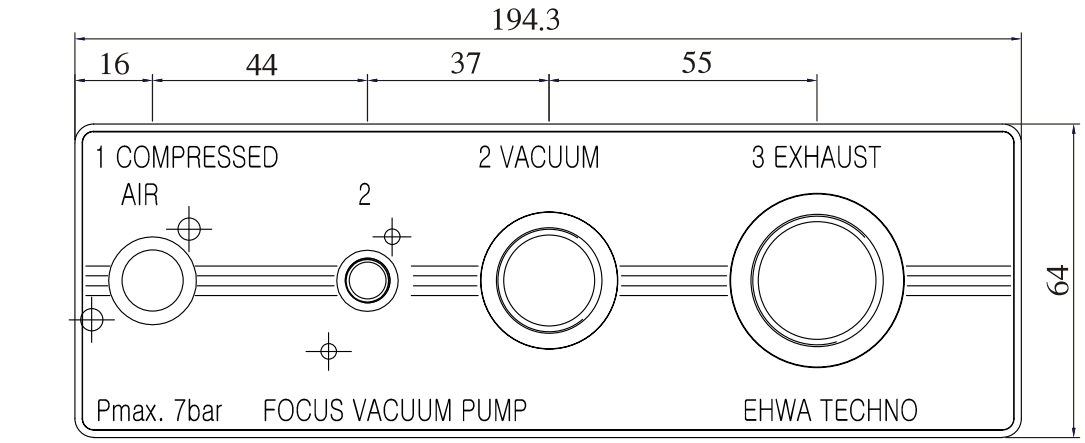
◈ 진공 성능표

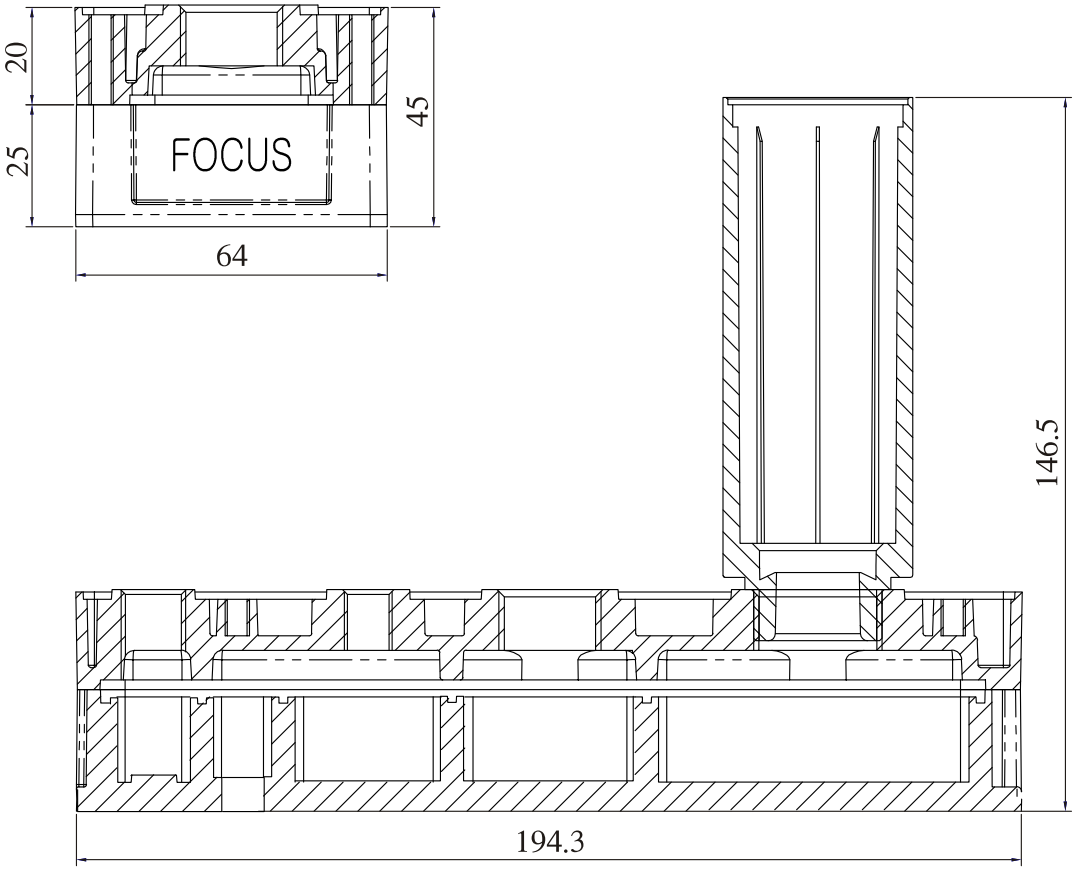
	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVM-25	-92 (-690)	385	80-110	55~65	>8	12	>12
EVM-50		640	150-210	55~65	>8	14	>15
EVM-75		880	230-320	55~65	>10	19	>22
EVM-100		1090	300-420	55~65	>10	19	>22
EVM-125		1180	380-530	60~65	>10	25	>32
EVM-150		1360	450-630	60~65	>10	25	>32
EVM-175		1460	530-740	60~65	>12	32	>40
EVM-200		1550	600-840	60~65	>12	32	>40

◈ 진공 도달 성능표(sec/l)

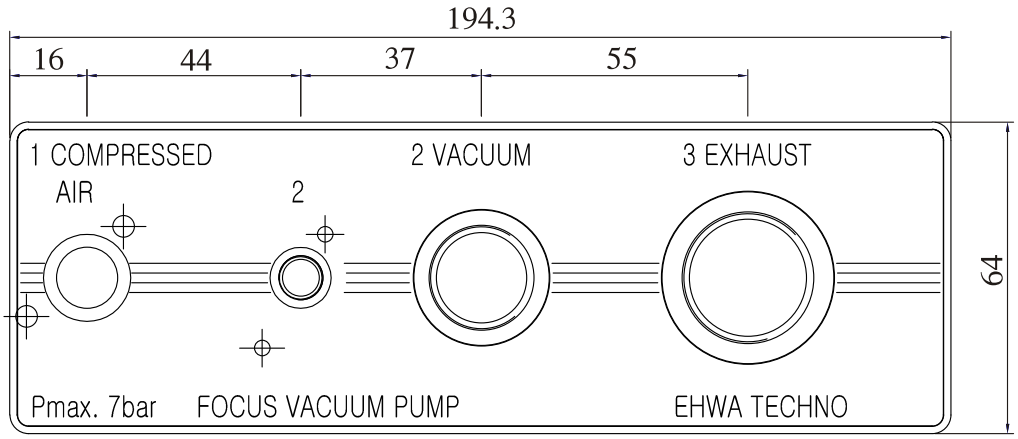
KPa (mmHg) / Model	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
EVM-25	0.019	0.049	0.112	0.238	0.417	0.686	1.123	1.910	2.210
EVM-50	0.013	0.031	0.067	0.126	0.210	0.346	0.595	1.051	1.191
EVM-75	0.009	0.024	0.052	0.093	0.158	0.260	0.447	0.789	1.150
EVM-100	0.006	0.016	0.034	0.064	0.106	0.175	0.298	0.527	1.099
EVM-125	0.005	0.015	0.032	0.056	0.094	0.151	0.262	0.462	1.968
EVM-150	0.005	0.014	0.030	0.048	0.079	0.130	0.230	0.395	0.827
EVM-175	0.005	0.121	0.028	0.041	0.067	0.110	0.188	0.330	0.687
EVM-200	0.004	0.012	0.026	0.028	0.055	0.092	0.155	0.278	0.660

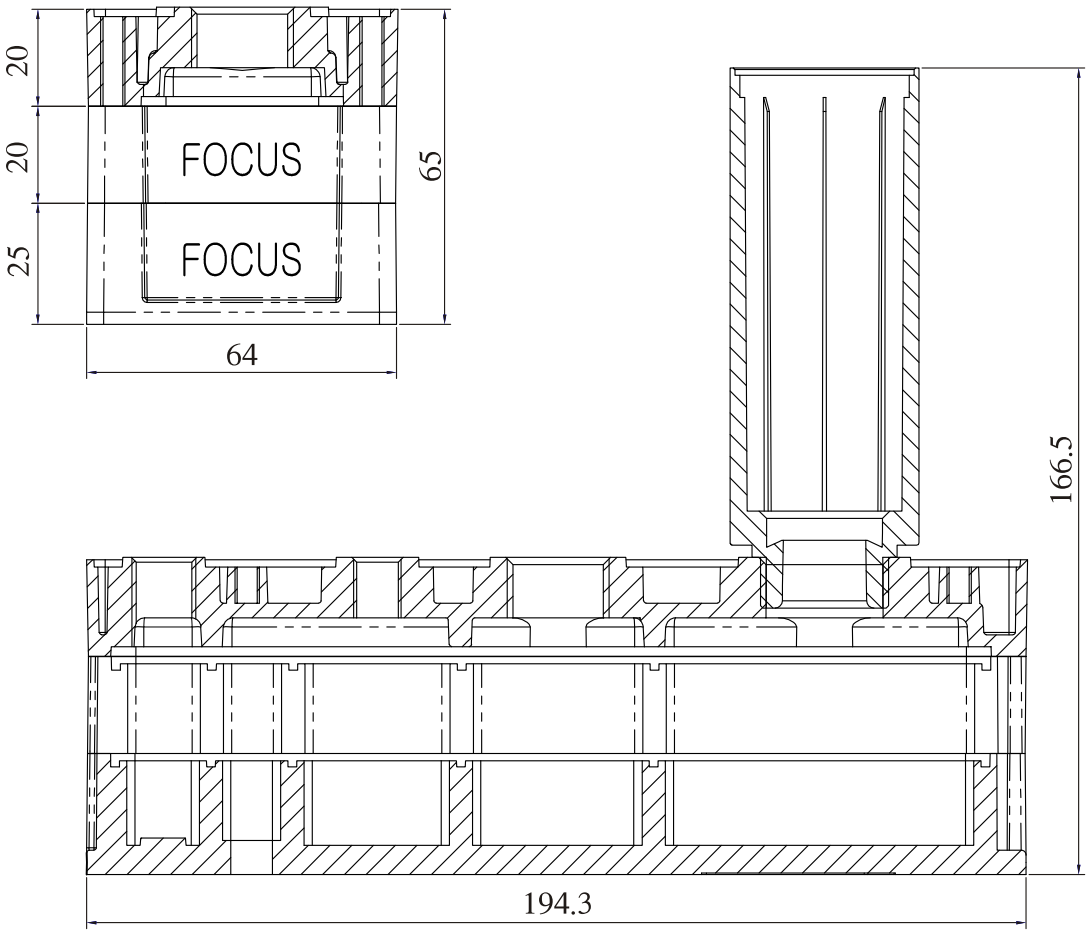
◈ EVM-25~50 외형도


194.3
16
44
37
55
1 COMPRESSED AIR
2
2 VACUUM
3 EXHAUST
64
Pmax. 7bar
FOCUS VACUUM PUMP
EHWA TECHNO


20
25
45
FOCUS
64
146.5
194.3

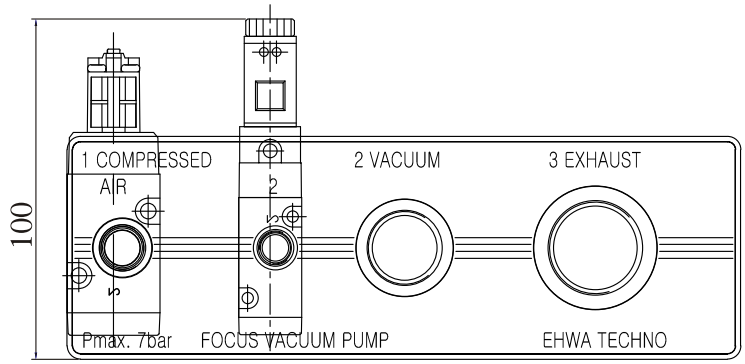
◈ EVM-75~100 외형도

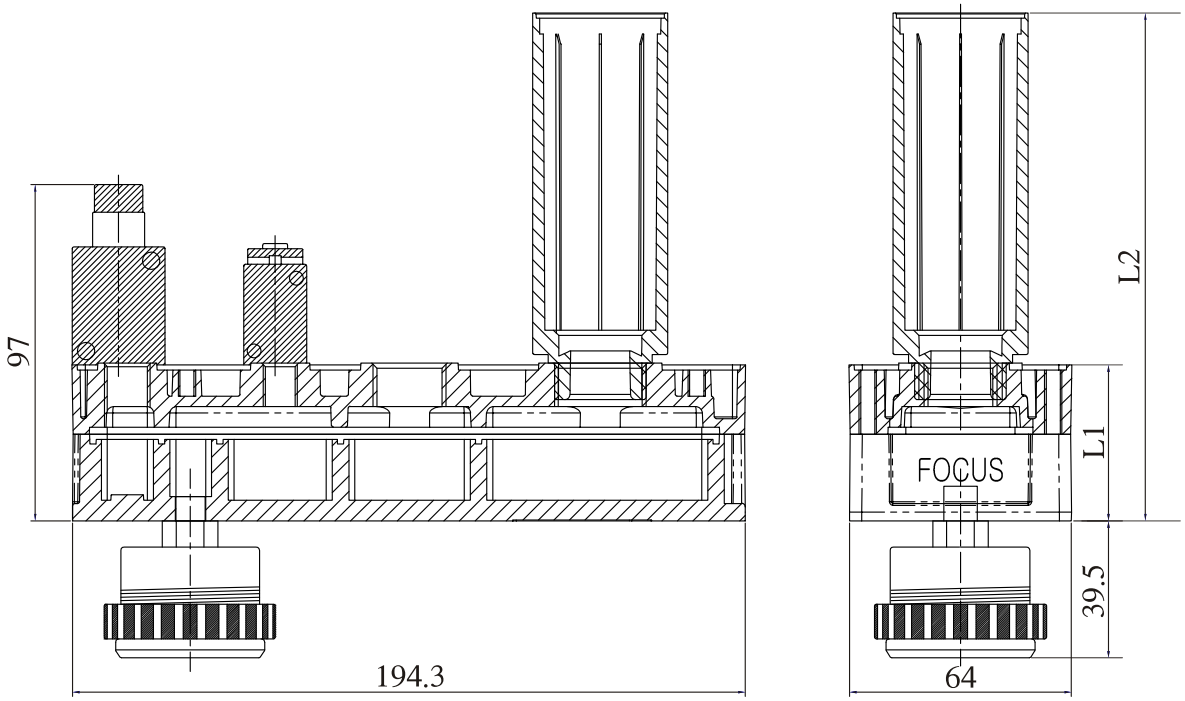




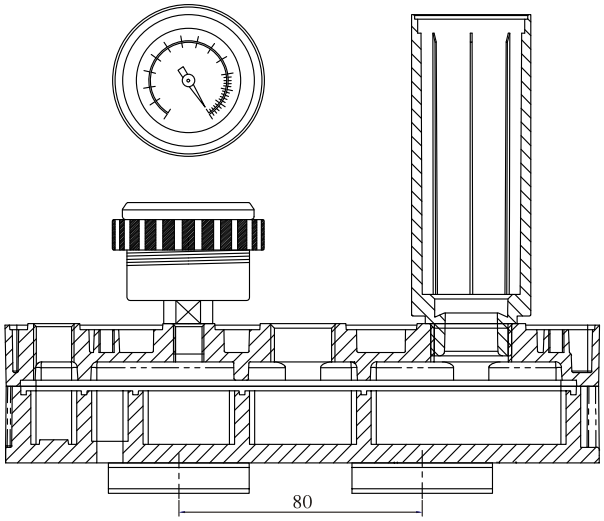
◈ EVM-SOLENOID VALVE 부착 외형도

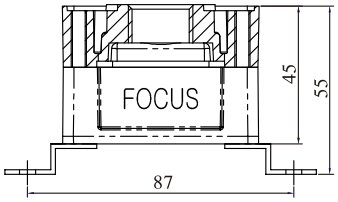
Model	L1	L2
EVM-25	45	146.5
EVM-50	45	146.5
EVM-75	65	166.5
EVM-100	65	166.5
EVM-125	85	186.5
EVM-150	85	186.5
EVM-175	105	206.5
EVM-200	105	206.5

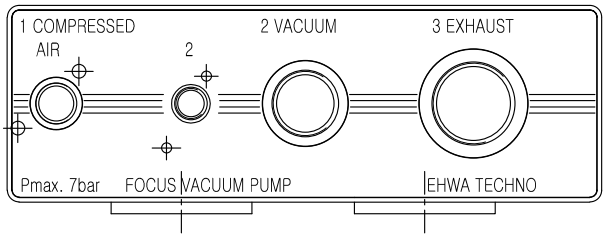


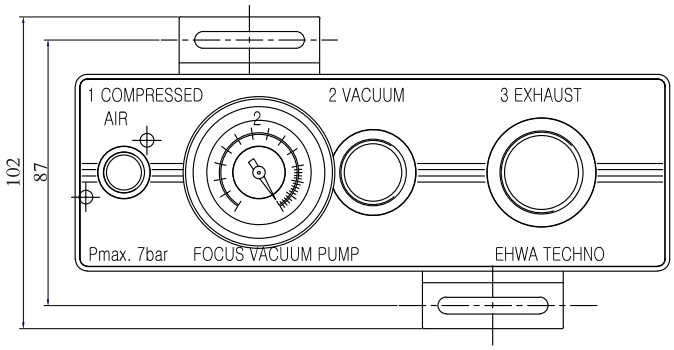


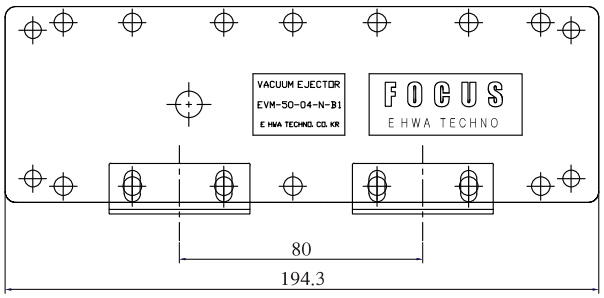
◈ EVM-BRACKET 부착 외형도

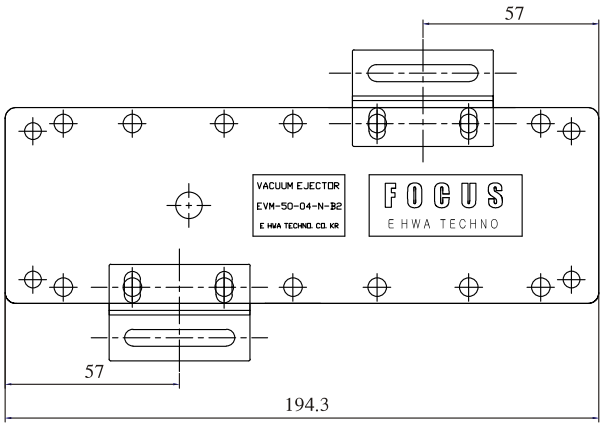




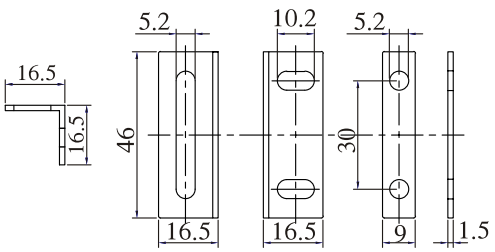




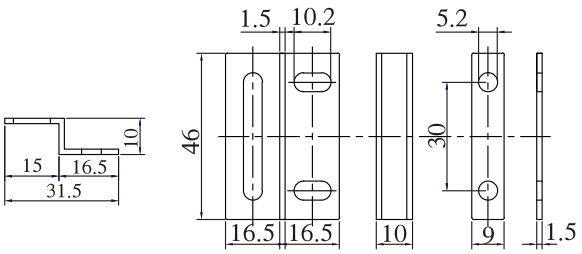




BRACKET TYPE : B1



TYPE : B2



EVL Series

◈ 저 진공 중형 다단노즐 진공발생기

- 다단노즐방식을 적용하여 단노즐 방식보다 두배 이상의 흡입유량을 생산.
- 취급하기가 용이하고 구조가 간단하며 단노즐보다 많은 흡입유량을 가지고 있어 보다 많은 용도로 사용 가능하다. (Air소모량 절감)
- 저 진공 다단 노즐 진공 발생기로 소음이 적고 부착이 용이하며 저 진공 다 흡입 유량을 필요로 하는 공정에 적합.
  (통기성이 있어 진공의 힘보다 많은 흡입 유량이 필요시 적합)

◈ 주문방법

EVL- ①-②-③-④-⑤-⑥

① MODEL (SIZE) : 25(0.25KW)
50(0.5KW)
75(0.75KW)
100(1.0KW)
125(1.25KW)
150(1.5KW)
175(1.75KW)
200(2.0KW)

② VACUUM POT : 04(1/2)
06(3/4)

③ SEALING N : NBR
V : VITON
E : EPDM

④ 진공발생 밸브 : X : NONE
P1 : AC110V
P2 : AC220V
P4 : DC24V

⑤ 진공파기 밸브 : X : NONE
R1 : AC110V
R2 : AC220V
R4 : DC24V

⑥ BRACKET : B1(기본)
B2

◈ 성능 및 사양

사용 유체 (Supply air)	압축공기(Compressed air)
사용 압력 (Supply air pressure)	0.45~0.6㎫
사용 온도 (Working temperature)	-20~ +80℃
소음도 (Noise level)	60~65dB
재질 (Material)	AL, PPS

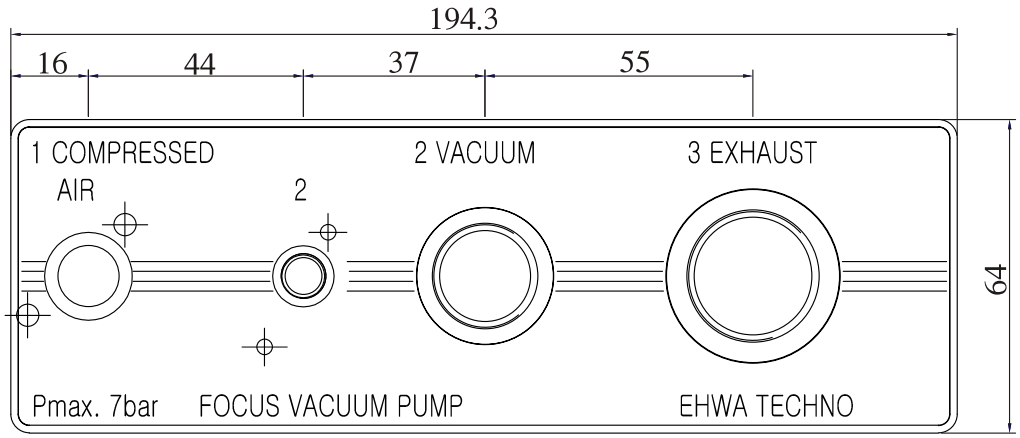
◈ 진공 성능표

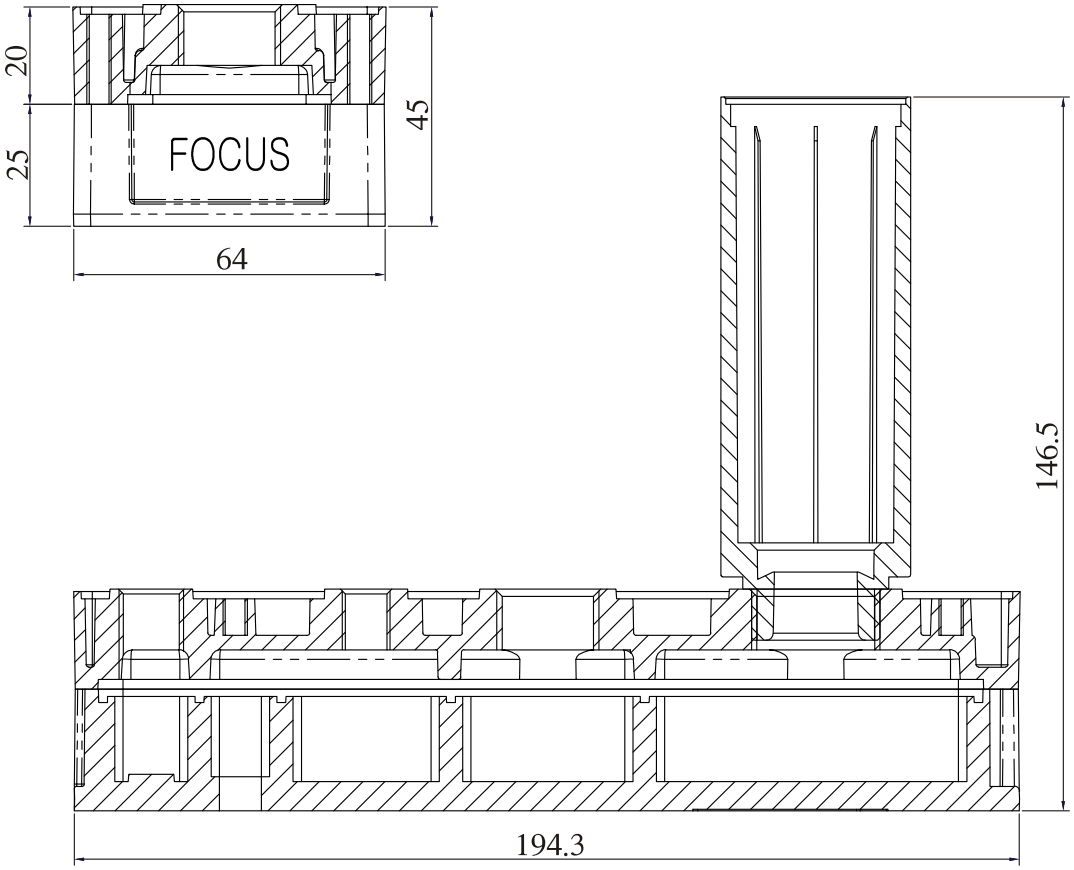
	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVL25	-76 (-570)	365	64-88	55~65	>8	12	>12
EVL-50		608	128-176	55~65	>8	14	>15
EVL-75		836	192-264	55~65	>10	19	>22
EVL-100		1035	256-352	55~65	>10	19	>22
EVL-125		1121	320-440	60~65	>10	25	>32
EVL-150		1292	384-528	60~65	>10	25	>32
EVL-175		1387	448-616	60~65	>12	32	>40
EVL-200		1472	512-704	60~65	>12	32	>40

◈ 진공 도달 성능표(sec/l)

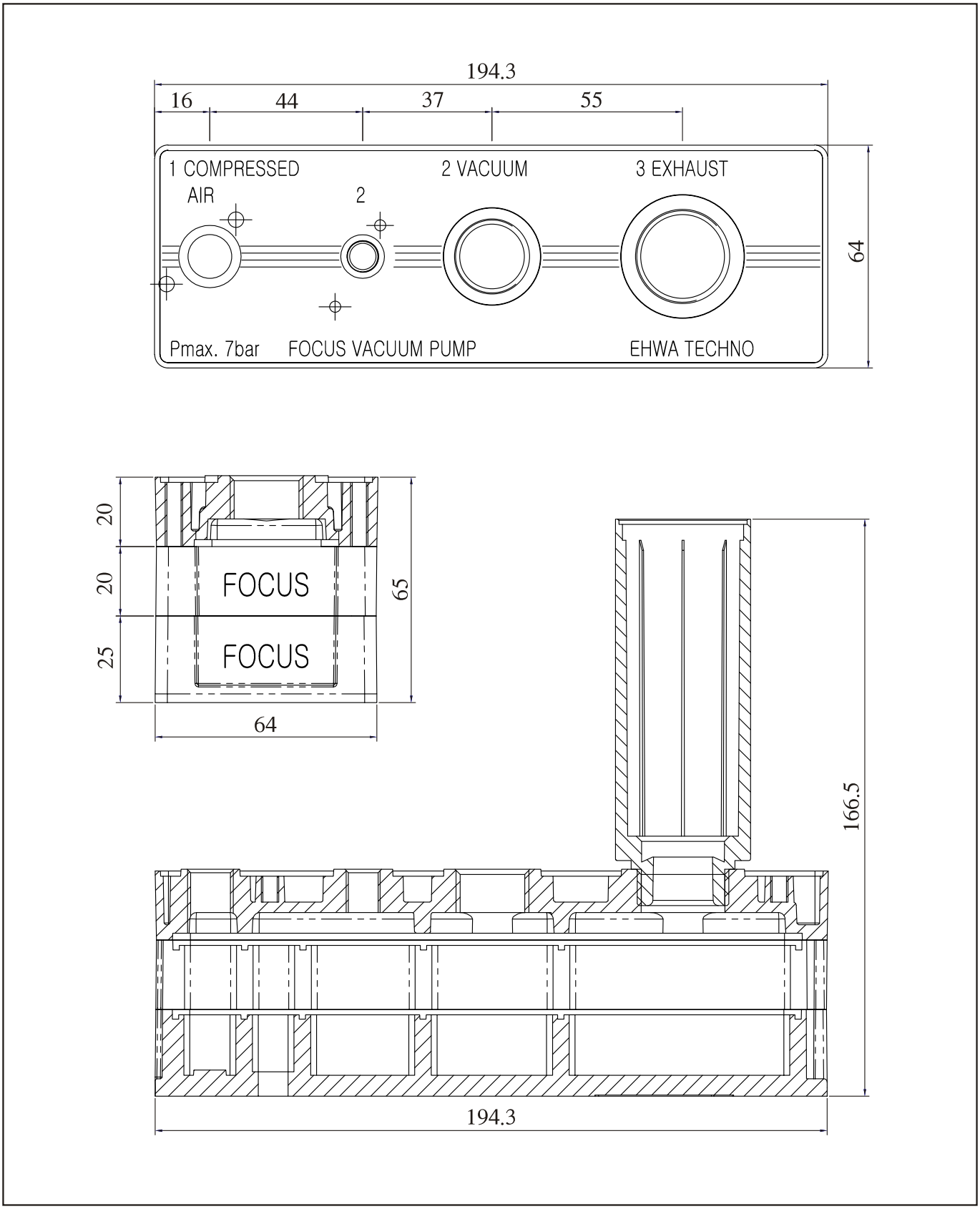
KPa (mmHg) / Model	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)
EVL-25	0.020	0.051	0.131	0.258	0.429	0.692	0.833
EVL-50	0.019	0.037	0.073	0.130	0.219	0.352	0.605
EVL-75	0.011	0.026	0.056	0.097	0.161	0.265	0.450
EVL-100	0.010	0.020	0.039	0.070	0.112	0.181	0.309
EVL-125	0.009	0.018	0.036	0.060	0.098	0.157	0.266
EVL-150	0.007	0.017	0.033	0.051	0.082	0.133	0.233
EVL-175	0.006	0.125	0.031	0.045	0.070	0.115	0.193
EVL-200	0.005	0.015	0.029	0.031	0.059	0.096	0.158

◈ EVL-25~50 외형도


194.3
16
44
37
55
1 COMPRESSED AIR
2
2 VACUUM
3 EXHAUST
64
Pmax. 7bar
FOCUS VACUUM PUMP
EHWA TECHNO

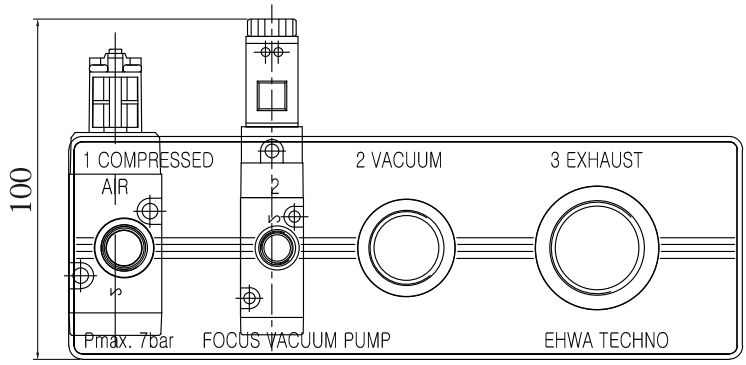

20
25
45
FOCUS
64
146.5
194.3

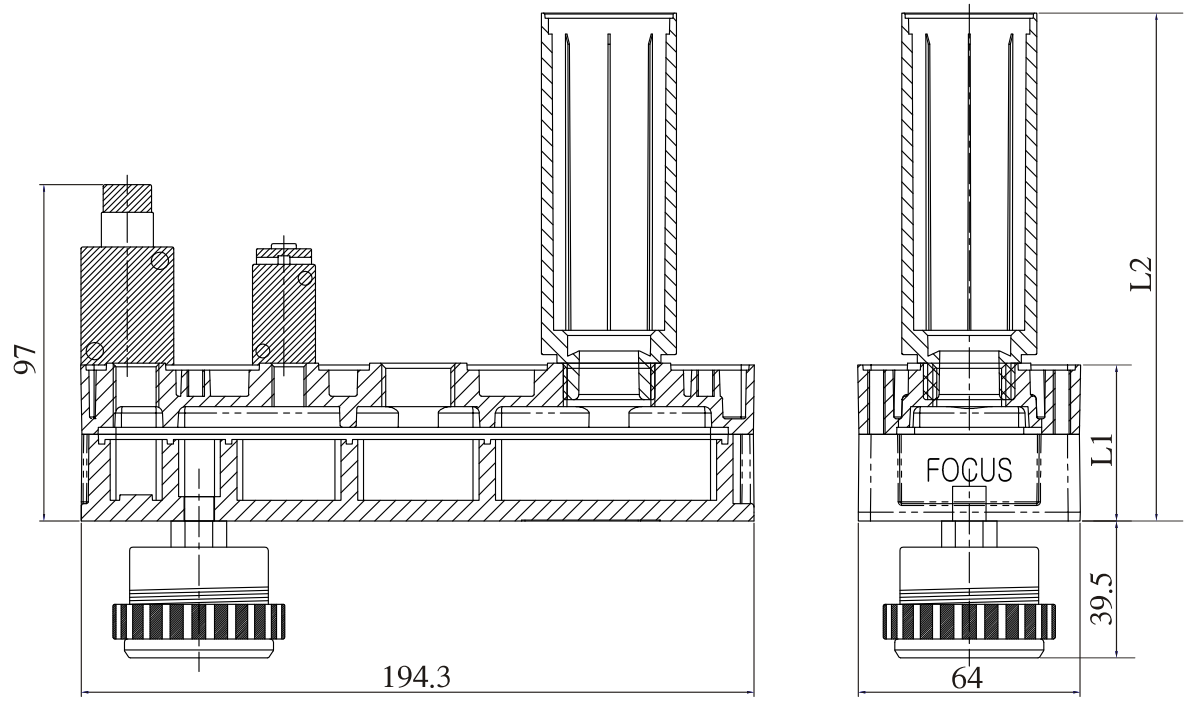
◈ EVL-75~100 외형도



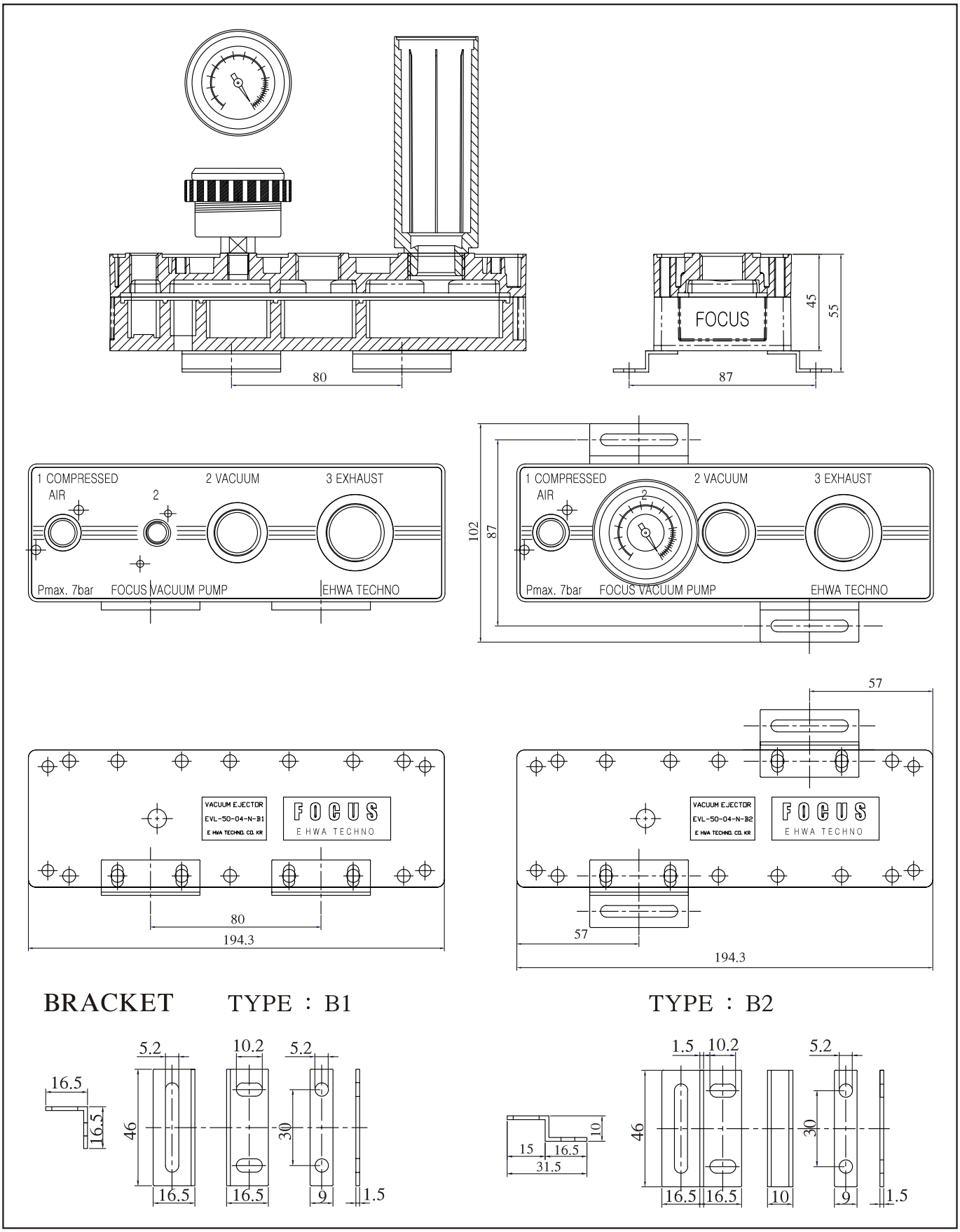
◈ EVL-SOLENOID VALVE 부착 외형도

Model	L1	L2
EVL-25	45	146.5
EVL-50	45	146.5
EVL-75	65	166.5
EVL-100	65	166.5
EVL-125	85	186.5
EVL-150	85	186.5
EVL-175	105	206.5
EVL-200	105	206.5





◈ EVL-BRACKET 부착 외형도



EVR Series

◈ 저압(공급압력) 중형 다단노즐 진공발생기

- 다단노즐방식을 적용하여 단노즐 방식보다 두배이상의 흡입유량을 생산.
- 취급하기가 용이하고 구조가 간단하며 단노즐보다 많은 흡입유량을 가지고 있어 보다 많은 용도로 사용 사용 가능하다. (Air소모량 절감)
- 소음이 적고 부착이 용이하며 진공포장기나 진공이송장치, 철판, 유리, 가구 등 용도가 다양하다.
- 공급압력이 낮은(공급압력 :0.36~0.4MPa)곳 에서도 높은 진공도를 유지 할 수 있는 장점을 가지고 있다.

◈ 주문방법

EVR-①-②-③-④-⑤-⑥

① MODEL (SIZE) : 25(0.25KW)
50(0.5KW)
75(0.75KW)
100(1.0KW)

② VACUUM POT : 04(1/2)
06(3/4)

③ SEALING N : NBR
V : VITON
E : EPDM

④ 진공발생 밸브 : X : NONE
P1 : AC110V
P2 : AC220V
P4 : DC24V

⑤ 진공파기 밸브 : X : NONE
R1 : AC110V
R2 : AC220V
R4 : DC24V

⑥ BRACKET : B1(기본)
B2

◈ 성능 및 사양

사용 유체 (Supply air)	압축공기(Compressed air)
사용 압력 (Supply air pressure)	0.36~0.4 ㎫
사용 온도 (Working temperature)	-20~ +80℃
소음도 (Noise level)	55~65dB
재질 (Material)	AL, PPS

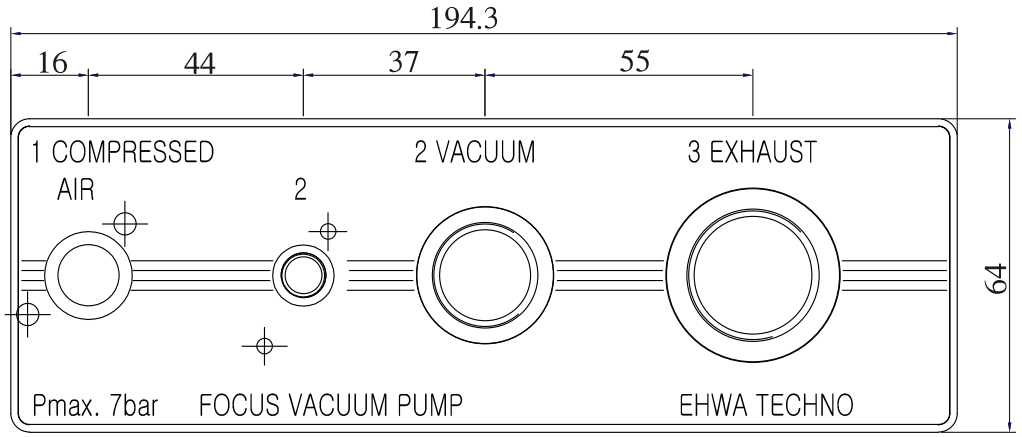
◈ 진공 성능표

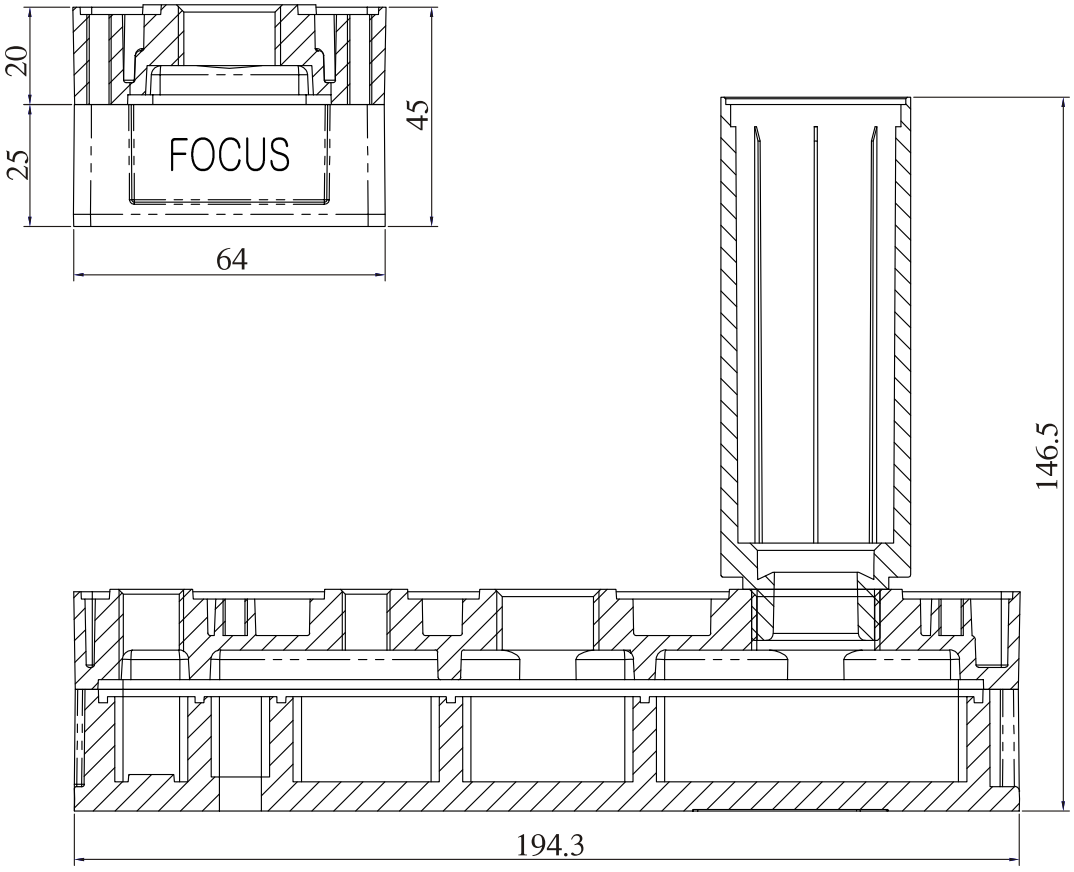
	도달 진공도	배기량	공기 소비량	소음도	배 관 사 양		
	KPa (mmHg)	Vacuum flow (Nℓ/min)	Air consumption (Nℓ/min)	Noise level (dB)	압축공기 Input	진공흡입 Vacuum	배기구 Exhaust
EVR-25	-92 (-690)	380	110	55~65	>8	12	>12
EVR-50		630	210	55~65	>8	14	>15
EVR-75		860	320	55~65	>10	19	>22
EVR-100		1050	420	55~65	>10	19	>22

◈ 진공 도달 성능표(sec/l)

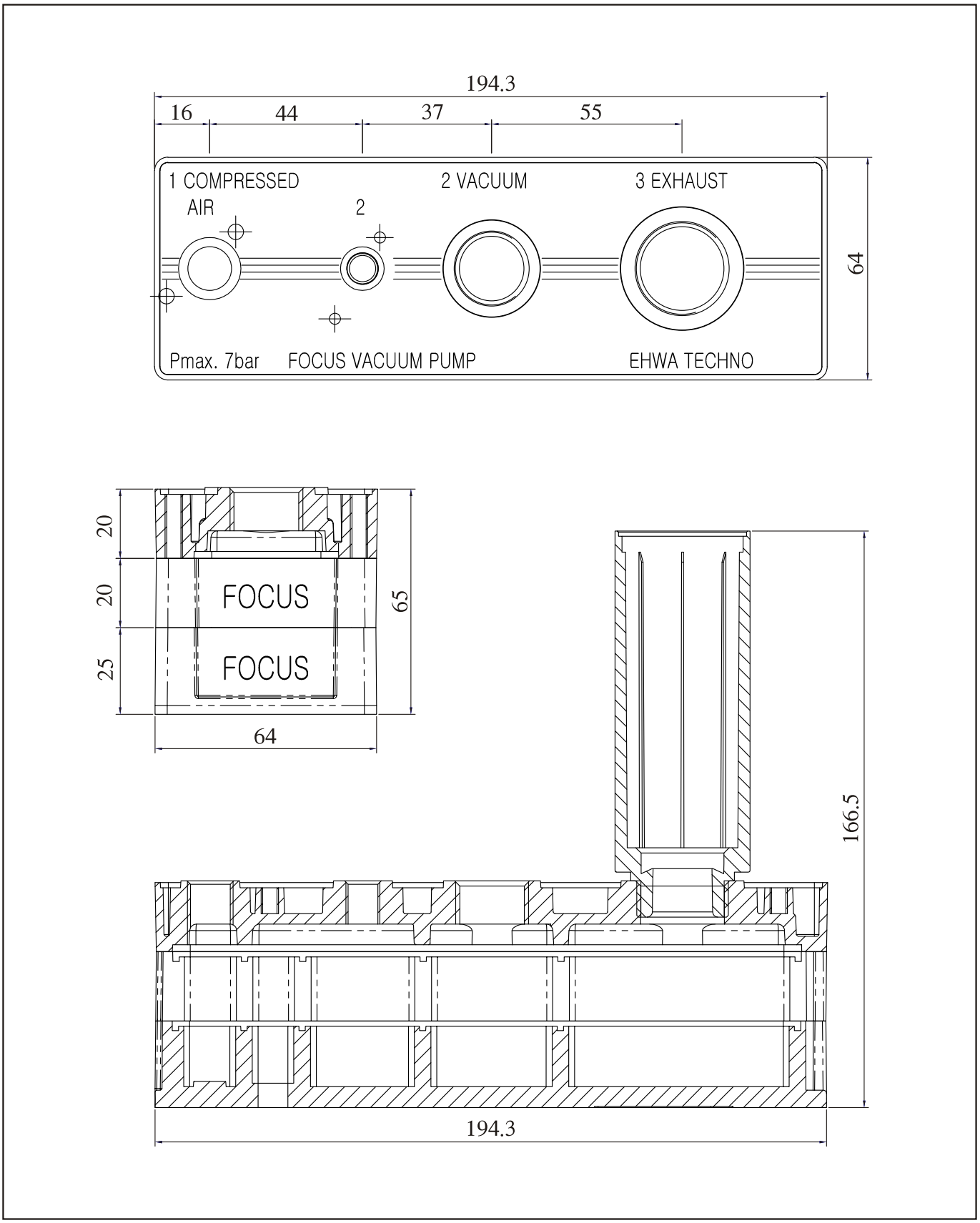
KPa (mmHg) / Model	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
EVR-25	0.020	0.051	0.114	0.240	0.420	0.699	1.136	1.940	2.251
EVR-50	0.023	0.052	0.086	0.142	0.231	0.364	0.607	1.062	1.202
EVR-75	0.022	0.033	0.067	0.105	0.177	0.285	0.464	0.799	1.166
EVR-100	0.013	0.025	0.042	0.073	0.114	0.184	0.305	0.535	1.108

◈ EVR-25~50 외형도


194.3
16
44
37
55
1 COMPRESSED AIR
2
2 VACUUM
3 EXHAUST
64
Pmax. 7bar
FOCUS VACUUM PUMP
EHWA TECHNO

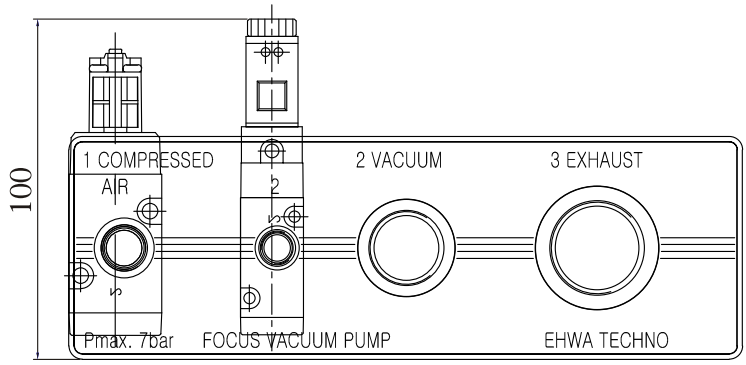

20
25
45
FOCUS
64
146.5
194.3

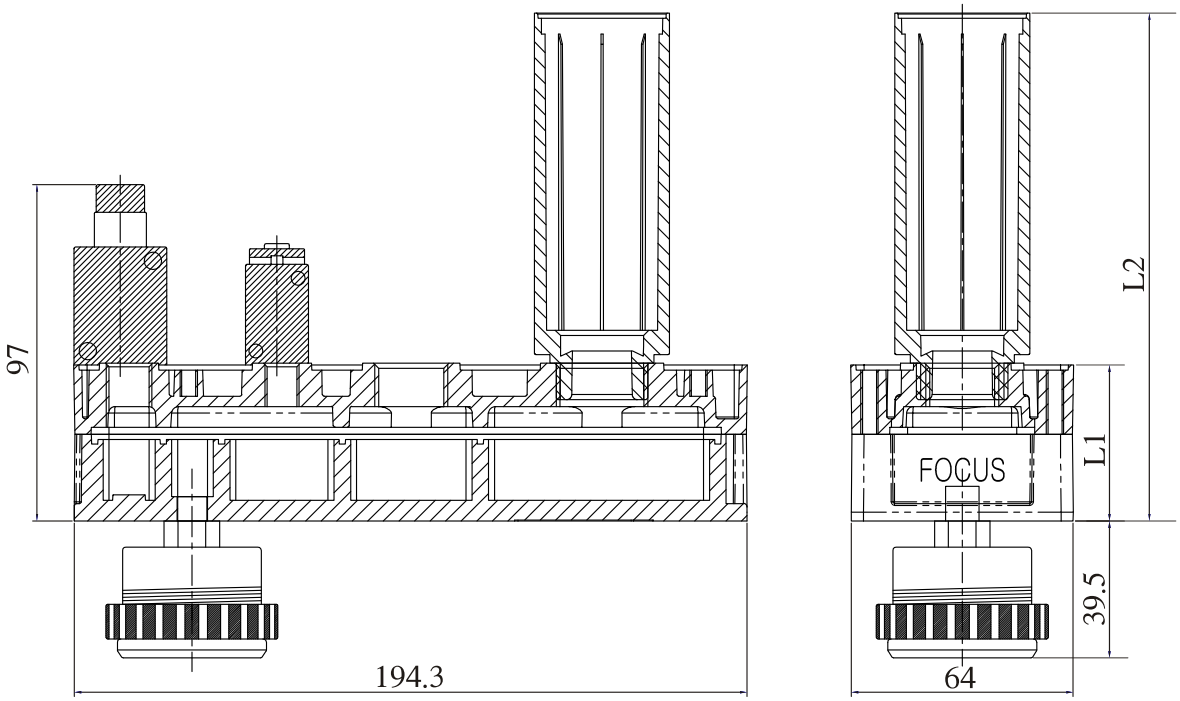
◈ EVR-75~100 외형도



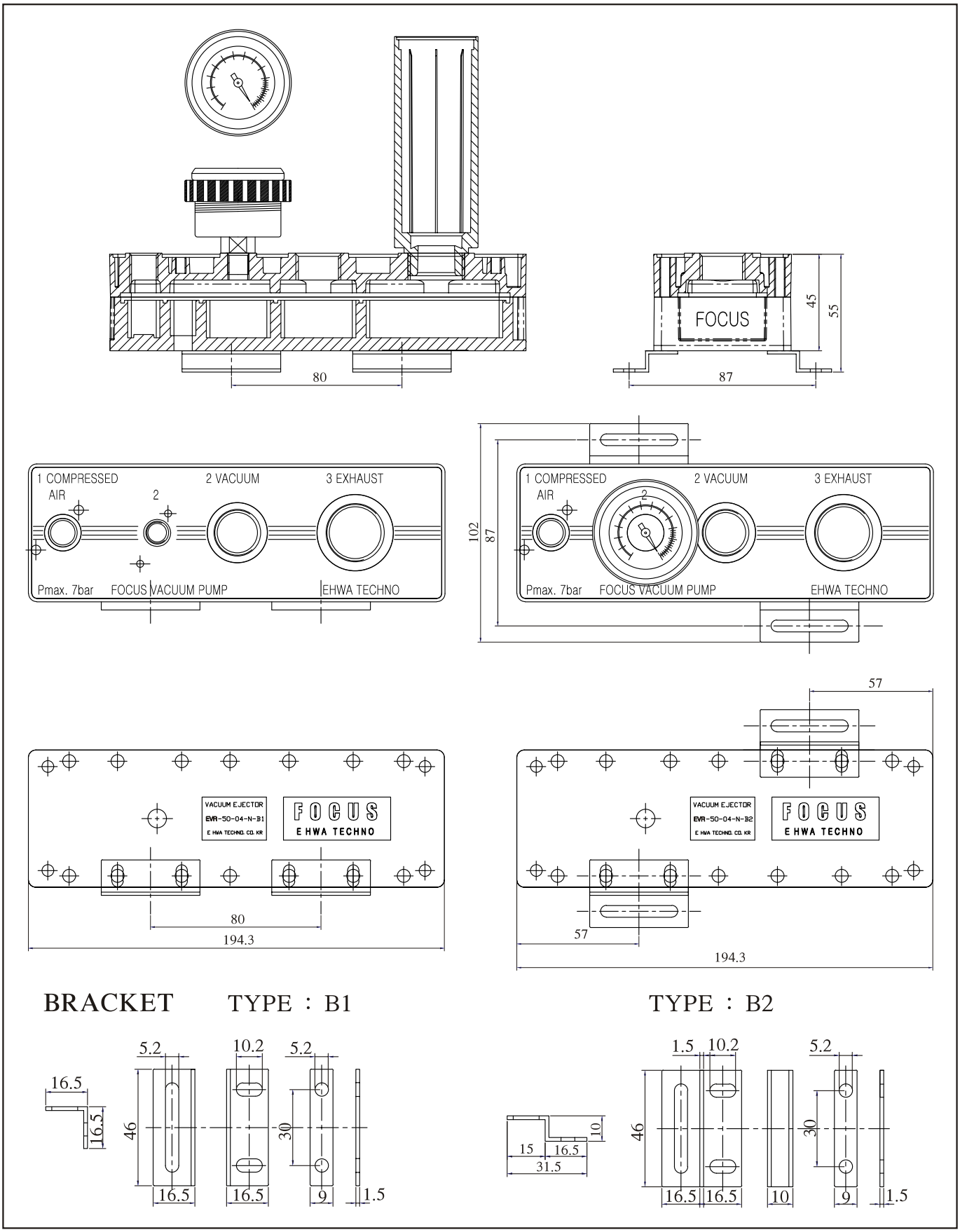
◈ EVR-SOLENOID VALVE 부착 외형도

Model	L1	L2
EVR-25	45	146.5
EVR-50	45	146.5
EVR-75	65	166.5
EVR-100	65	166.5





◈ EVR-BRACKET 부착 외형도



EDF Series

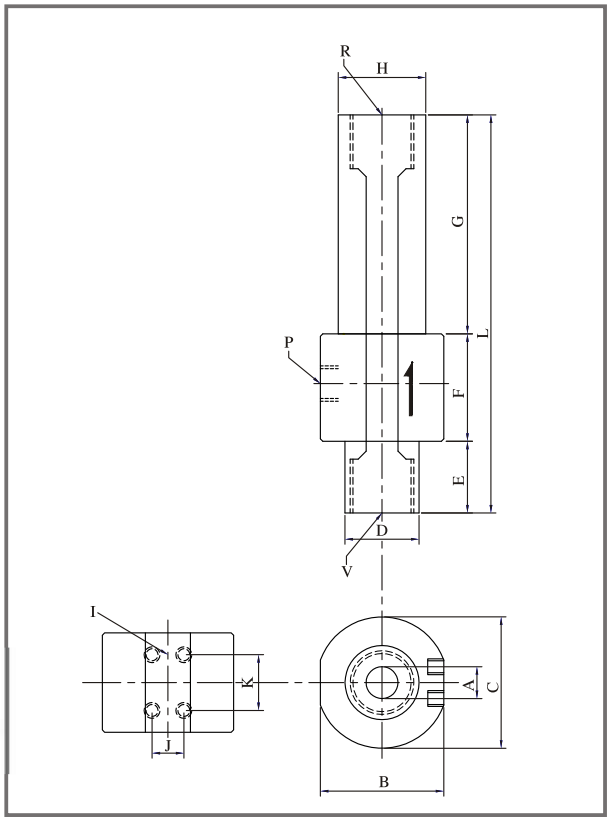
▣ 특징

◈ 코안다 현상(고속의 기체, 유체의 벽면 흡착현상)을 이용하여 주변의 많은 양의 공기를 흡입하여 함께 토출하는 장치이다.

◈ 분체 및 곡물이송이나 진공 압력을 이용한 액체 PUMPING작업에도 탁월하다.

◈ 작업장의 칩 제거와 같은 청소작업과 이송도 가능

◈ **설치시 PIPE라인의 배압이 생기지 않도록 주의하여주세요. 효율이 많이 떨어집니다.**



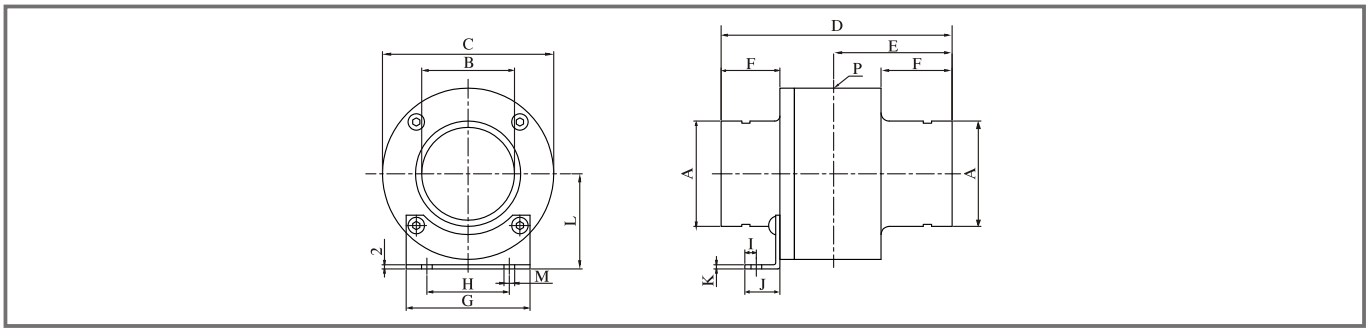
◈ 외 형 도

	Dimension													
	A	B	C	D	E	F	G	H	I	J	K	P	R	V
EDF-0204	⌀4	27	29	16	15	22	45	18	M4-4DP4	6	14	1/8"	1/4"	1/4"
EDF-0308	⌀8	31	33	18.6	18	27	55	22	M4-4DP4	8	14	1/8"	3/8"	3/8"
EDF-0414	⌀14	39.5	42	24.4	20	32	80	28	M5-4DP5	10	20	1/4"	1/2"	1/2"

◈ MODEL및 성능표 (SUS제품 주문 생산 가능)

	공급공기압력	공기소모량	도달진공도	MATERIAL
	MPa(kgf/㎠G)	l/min(ANR)	-kpa	
EDF-0204	0.5 (5)	57	-38	AL
EDF-0308	0.5 (5)	114	-30	AL
EDF-0414	0.5 (5)	350	-30	AL

EDF Series



◈ 외형도

MODEL	단위	A	B	C	D	E	F	G	H	I	J	K	L	M	P
EDF-25	㎜	25	19	54	99	48	25	40	28	4.6	12	2	37	4.2	1/4
EDF-32	㎜	32	25	61	99	48	25	44	32	4.6	12	2	42	4.2	1/4
EDF-38	㎜	38	32	70	111	54	32	56	38	5.6	17	2	48	5.2	3/8
EDF-51	㎜	51	45	83	111	54	32	60	40	5.6	17	2	56	5.2	3/8
EDF-76	㎜	76	70	108	143	70	45	90	60	8.6	23	3	71	6.2	1/2
EDF-102	㎜	102	95	133	143	70	45	100	70	8.6	23	3	84	6.2	1/2

(MODEL 뒤로 B추가시 BRACKET 포함됩니다)

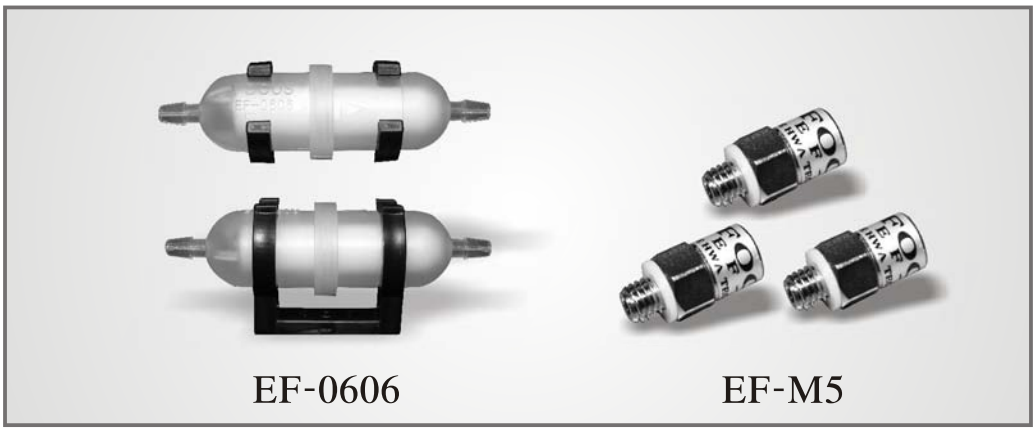
◈ MODEL및 성능표 (SUS제품 주문 생산 가능)

MODEL	공급공기압력	공기소모량	도달진공도	MATERIAL
	MPa(kgf/㎠G)	l/min(ANR)	-kpa	
EDF-25	0.5 (5)	407	-12	AL
EDF-32	0.5 (5)	456	-13	AL
EDF-38	0.5 (5)	637	-8	AL
EDF-51	0.5 (5)	850	-8	AL
EDF-76	0.5 (5)	1,630	-4.5	AL
EDF-102	0.5 (5)	2,040	-3.5	AL

EF Series

▣ 특징

◈ FILTER 오염확인가능
◈ FILTER ELEMENT 교환용이
◈ 배기량의 선택가능



◈ 사양

		EF-3	EF-5	EF-6
배관접속구경		1/8	1/4	3/8
내압Mpa(mmHg)		0.5(5)	0.5(5)	0.5(5)
사용압력범위kPa(mmHg)		0~ -95.8(0~ -720)		
재 질	본체	ALUMINUM합금		
	경판	투명 아크릴		
	소재	투명 아크릴		
평균공경(㎛)		130		
질량(g)		90	150	240
적용nozzle경		0.5~1.0	0.5~1.5	0.5~2.0
내용량(㎤)		13	23	33

◈ 주의

- 진공용 (정압 사용불가)
- 배관방향 확인
- 절삭유, 약품 사용불가

◈ EV FILTER 주문방법

EF - □
- M5
- 0606
- 3
- 5
- 6

◈ 부품주문방법(FILTER ELEMENT)

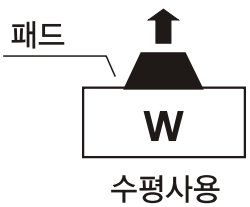
EF - □ E
- 3
- 5
- 6

LIFT계산방법

계산식에 의한 방법

W : 리프트력(kgf)
P : 진공압력(mmHg)
S : 패드면적(㎠)
t : 안전율 수평사용 : $\frac{1}{2}$
수직사용 : $\frac{1}{4}$

$$W = \frac{P}{760} \times S \times t \times (1.033)$$



수평사용

수직사용

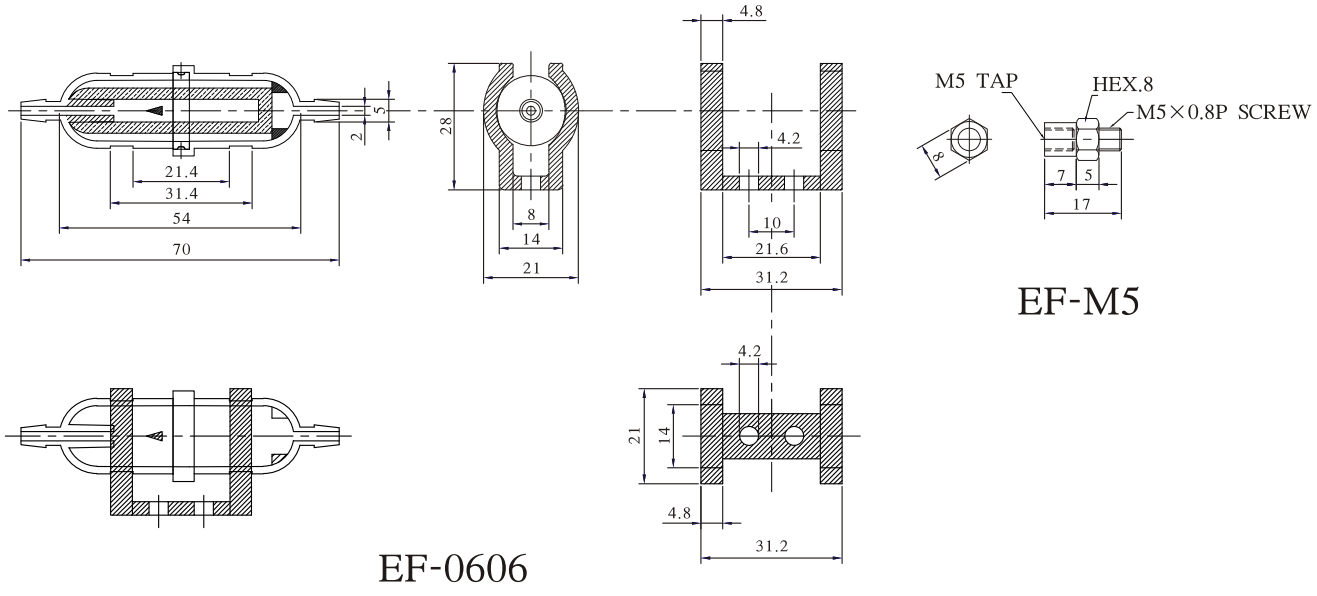
Suction Cup의 Φ(외경) 선정공식

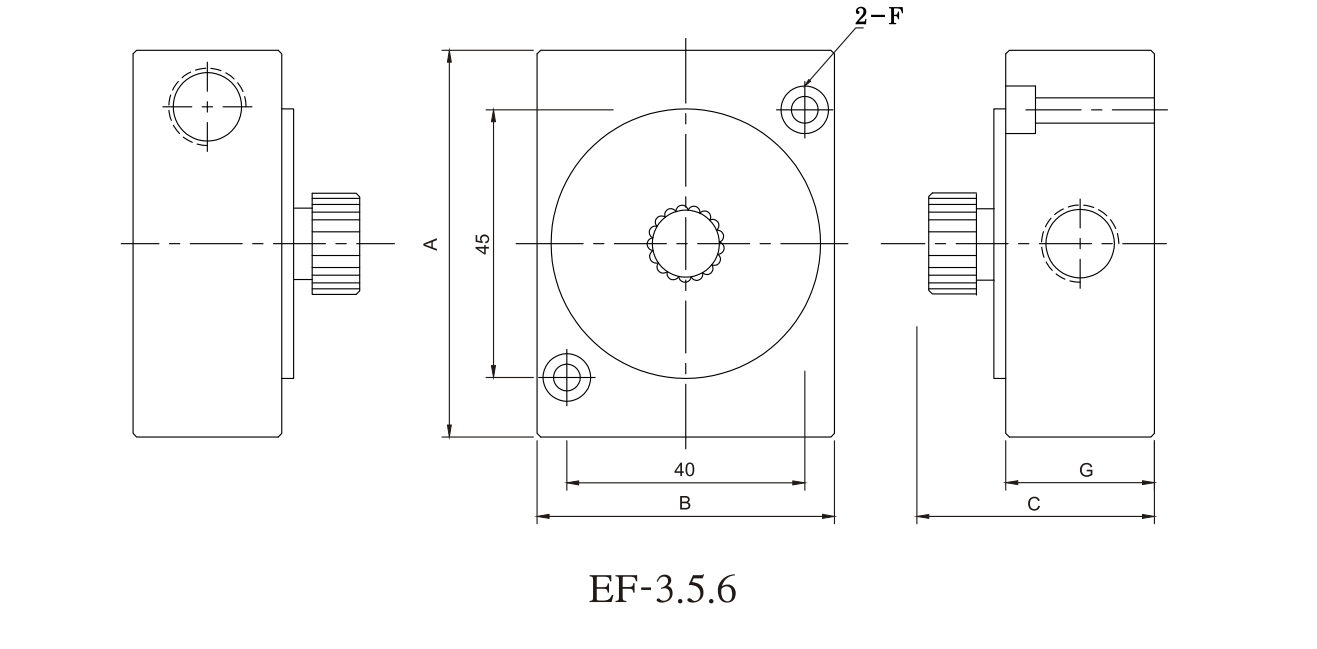
$$D = 113 \times \sqrt{\frac{m \times n}{u \times s}}$$

D = Suction Cup지름
m = 물체질량(kg)
u = 진공도 % Vacuum(-kPa)
n = 안전률(일반적으로 2)
s = 사용할 진공 CUP 수량

◈ EF 외형도

LINE용 FILTER





	A	B	C	D	E	F	G
EF-3	55.5	50	29	18	Rp1/8	Φ4.5×Φ7.5×5	16
EF-5	65	50	38	23	Rp1/4	Φ4.5×Φ8×5	25
EF-6	70	60	43	23	Rp3/8	Φ5.5×Φ10×5	30

EFC Series

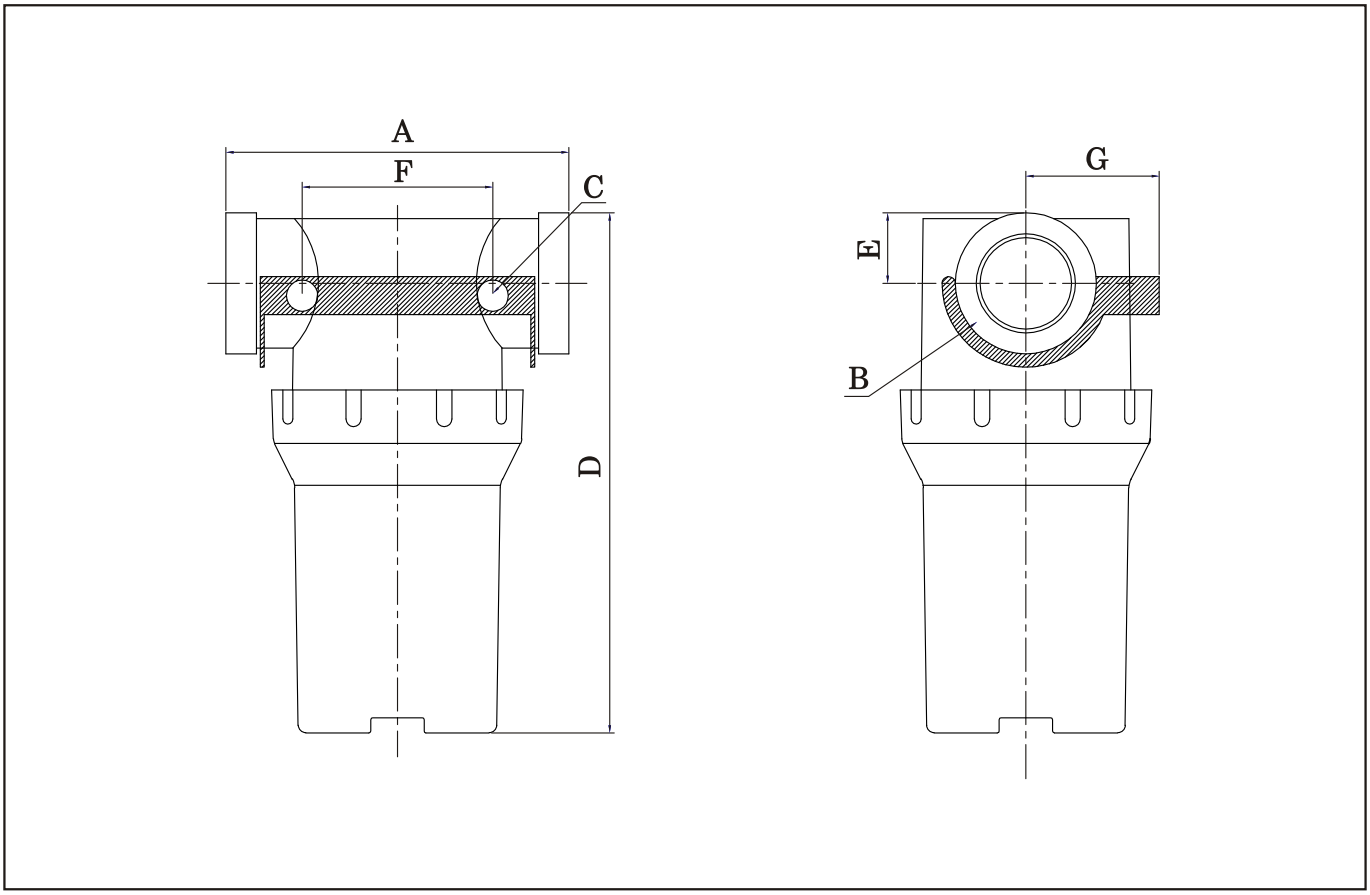
◈ 진공 성능표

MODEL	배관사양
EFC-10	G 3/8"
EFC-15	G 1/2"
EFC-20	G 3/4"
EFC-25	G 1"

◈ 사양

		EFC-10	EFC-15	EFC-20	EFC-25
Pressure range	bar	-1~0			
Material		PA,PC,PE			
Temperature range	℃	-20~80			
Removal effciency	㎛	10			
Weight	g	70	170	170	424
Fiow nominal	l/m	150	900	900	2500
Internal volume	㎤	45	200	200	490
Filter area	㎠	0.003	0.010	0.010	0.020

◈ 외형도



◈ 사양 (mm)

MODEL	EFC-10	EFC-15	EFC-20	EFC-25
A	76mm	91mm	91mm	126mm
B	2-G3/8"	2-G1/2"	2-G3/4"	2-G1"
C	2-∅6.5	2-∅8.5	2-∅8.5	2-∅10.5
D	71mm	131mm	138mm	167mm
E	14mm	16mm	18.5mm	23mm
F	45mm	50mm	50mm	80mm
G	27mm	40mm	40mm	56mm

◈ 진공 성능표 (Filter element)

MODEL	WEIGHT	TYPE	REMOVAL EFFCIENCY
EFC-10E	7 g	3/8"	10㎛
EFC-15E	26 g	1/2"	10㎛
EFC-20E	26 g	3/4"	10㎛
EFC-25E	50 g	1"	10㎛

EC Series

◈ 특징

• 낙하(역류)방지 (CHECK V/V)

◈ 주의

• 정압과 진공 등의 역류 방지로 사용한다.
• 압축공기 8Kgf/㎠ 이내 사용

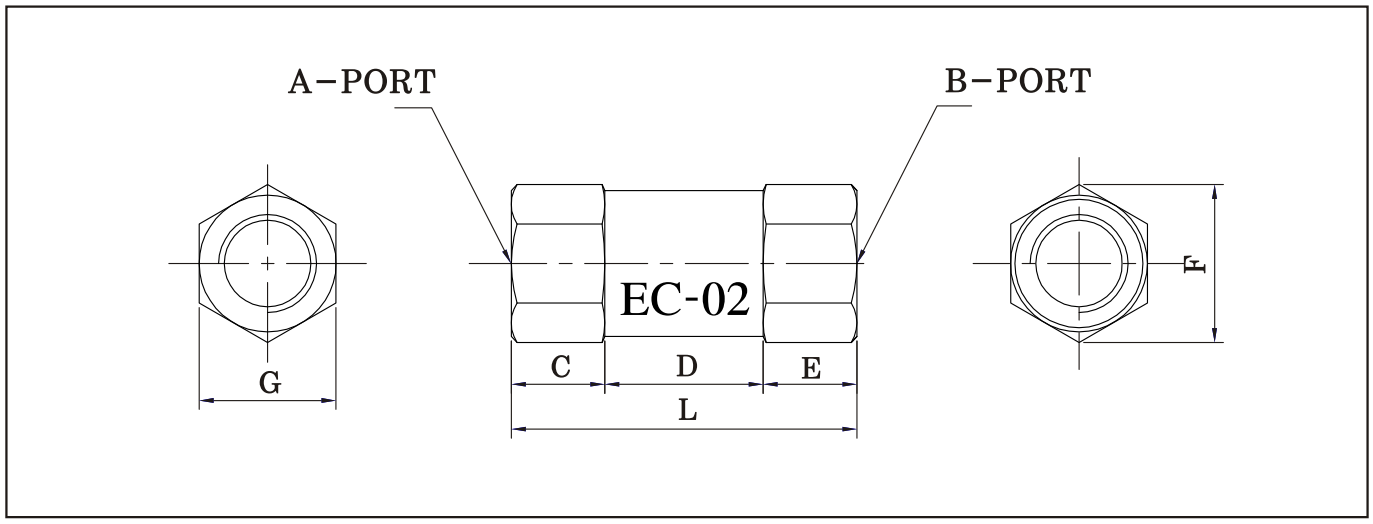
◈ 주문방법

• EC-02
• EC-03
• EC-04

◈ 사양

배관접속구경	EC-02 (1/4") EC-03 (3/8") EC-04 (1/2")
사용유체	공기 (불연성기체), WATER
진공도(KPa)범위 / 정압	-29.3 ~ -95.8 / 8Kgf/㎠
재질	본체와 변체 ; 황동, N BR / EC-04 (1/2")변체 ; AL,NBR

◈ 외형도

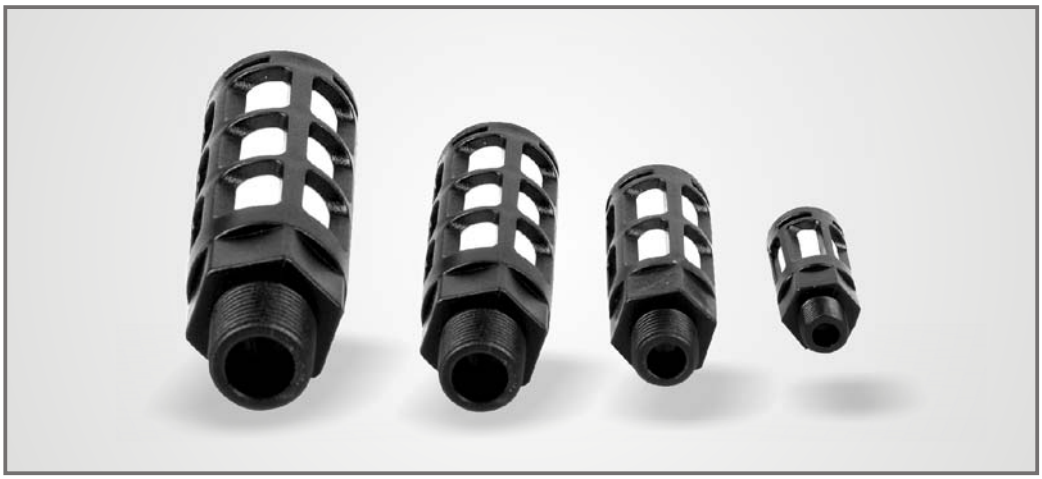


	A	B	C	D	E	L	F	G	질량
EC-02	1/4"	1/4"	12	24	12	48	21.5	19	80
EC-03	3/8"	3/8"	14	24	14	52	25	22	112
EC-04	1/2"	1/2"	23	17	15	55	29.5	26	144

ES Series

▣ 특징

◈ 소음효과

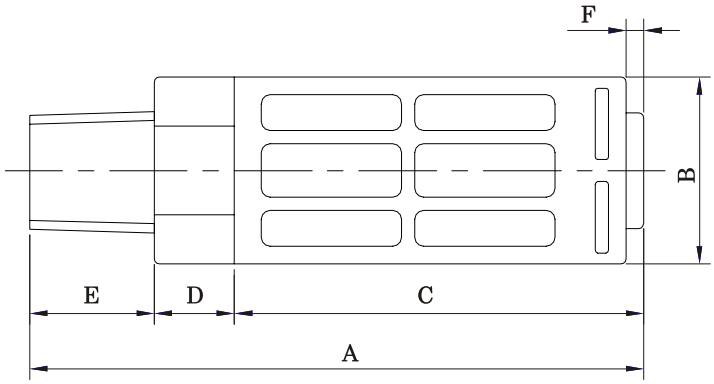


◈ 주문방법

ES - □

- 01(1/8)
- 02(1/4)
- 03(3/8)
- 04(1/2)
- 06(3/4)
- 10(1)

◈ ES 외형도



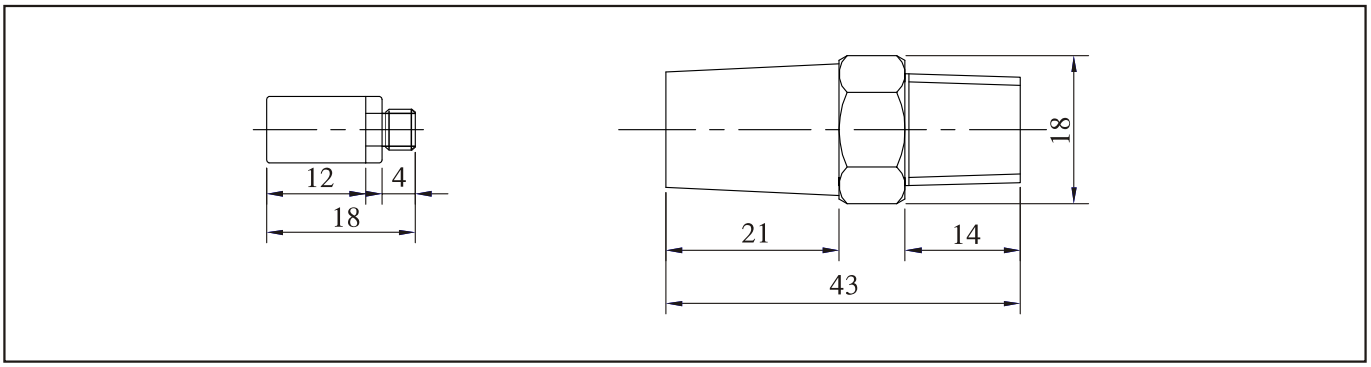
	접속구경	A	B	C	D	E	F
ES-01	PT 1/8	41	16	26	7	7	1
ES-02	PT 1/4	65	21	45	9	10	1
ES-03	PT 3/8	85	25	60	10	13	2
ES-04	PT 1/2	94	30	68	10	14	2
ES-06	PT 3/4	99	40	75	11	13	-
ES-10	PT 1	109	46	80	13	16	-

EMS Series

▣ 특징

◈ 소형이며 부착이 간단하다
◈ 적은 통기저항
◈ 30dB 이상의 소음효과
◈ 소형밸브와 파이럿 에어의 배기용에 최적

◈ EMS 외형도



◈ 사양/형식/치수

		EMS-M5	EMS-01	EMS-02	EMS-03	EMS-04	EMS-06	EMS-10
배관접속구경		M5	PT 1/8	PT 1/4	PT 3/8	PT 1/2	PT 3/4	PT 1
소음효과		32	35	35	38	38	40	40
최고사용압력		15Kgf/㎠						
사용온도/유체		-10~80℃ AIR						
유량(NI/min)		250	300	320	340	370	400	420
치수	A	18	23	33	39	45	52	82
	B	4	7	9	10	12	14	16
	C	12	13	21	21	24	25	52

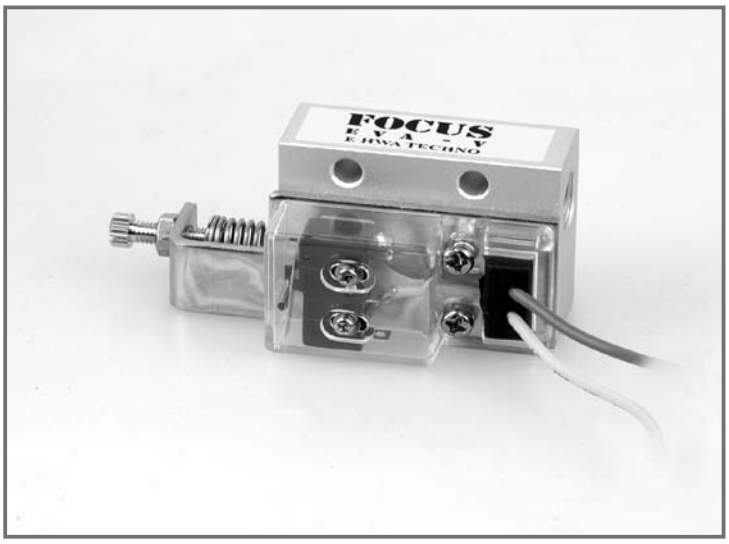
◈ 주의

수지 소음기(ES TYPE)는 충분한 강도가 있지만, EMS TYPE은 횡하중으로 인한 파괴의 우려가 있으므로 40Kgf 이상의 하중이 걸리지 않도록 주의 요망.

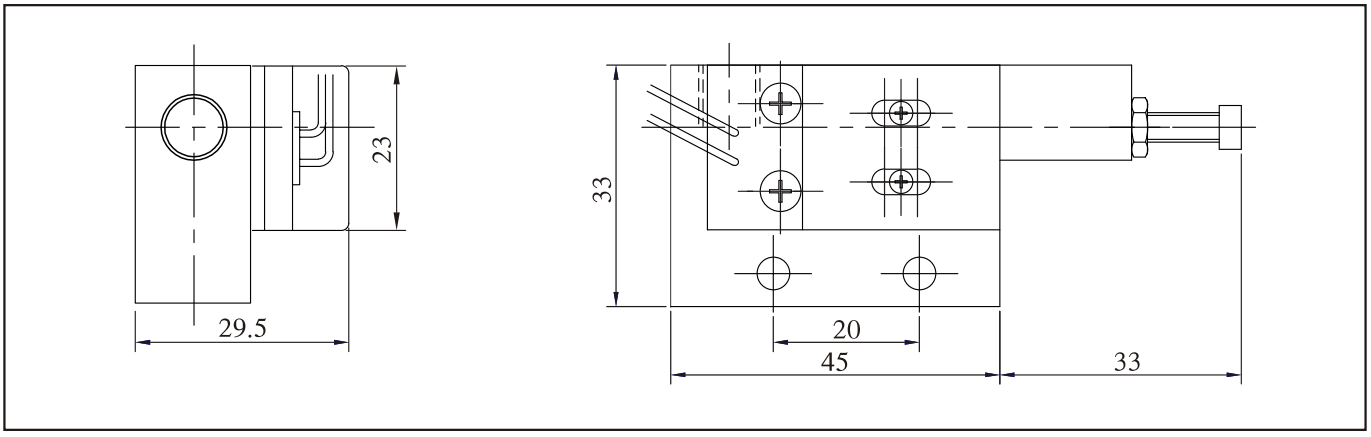
EVA-V Series

▣ 특징

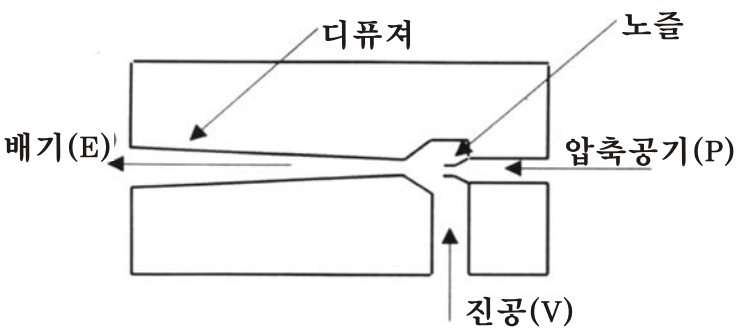
◈ PISTON TYPE VACUUM SWITCH
◈ 개별 진공SWITCH 사용가능



◈ EVA-V 외형도



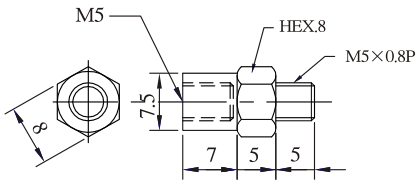
◈ 진공발생 원리

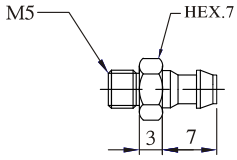


진공안전밸브

- 진공안전밸브"VS"는 플로트밸브, 압력스프링을 조합한 밸브이다.
- 제품의 공정과정에서 진공패드의 위치가 정확하지 않거나 파손되었을 경우에 진공상태가 형성되면 플로트밸브가 작동되어 플로트베이스에 있는 작은 노즐을 통하여 제한된 미세한 AIR가 유출되며 이것은 다른 진공패드에 최소한의 영향을 미치며 진공도 감소를 최소화하여 다른패드의 작업환경을 최적화한다.
- 진공의 유출을 최소화하는 기능을 갖추어 진공에너지 절약 및 패드의 불안전한 흡착으로인한 에러를 방지할 수 있다.

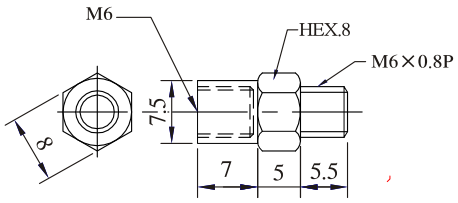
VS-M5



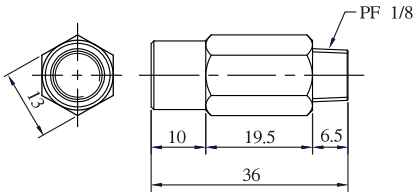


VS-06M5

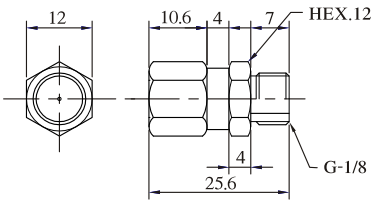
VS-M6



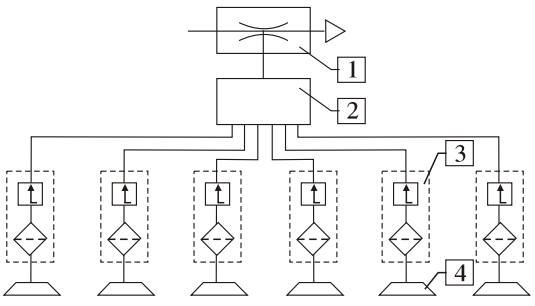
VS-01



VS-01-06,08,10



▣ 적용예



①진공발생기
②분배기
③진공안전(효율)밸브
④흡착패드

NTP Series

▣ MODEL

NTP-25 (M-PVC / AL)

NTP-40 (M-PVC / AL)

NTP-50 (M-PVC)

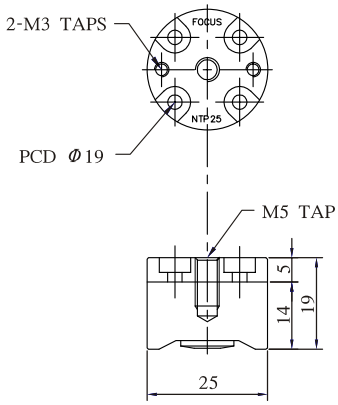
NTP-60 (AL)

NTP-80 (AL)

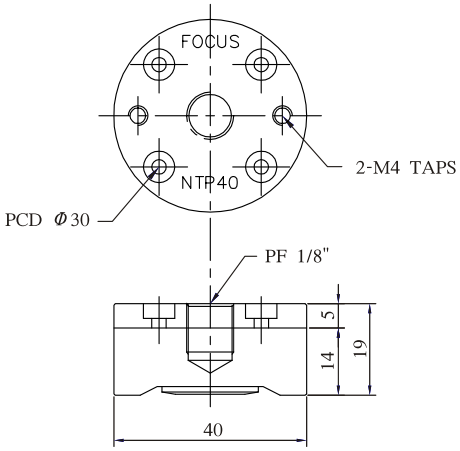
▣ 제품특징

◈ 비 접촉 방식에 의한 자국 및 흠집 방지
◈ 정압에 의한 진공 발생PAD 방식으로 진공발생기와 별도의 진공배관이 불필요하다
◈ 얇은 박판이나 다공성 제품도 흡착 이송 가능
(PCB BOARD, 필름, CD & DVD, 비닐, 종이, 유리)

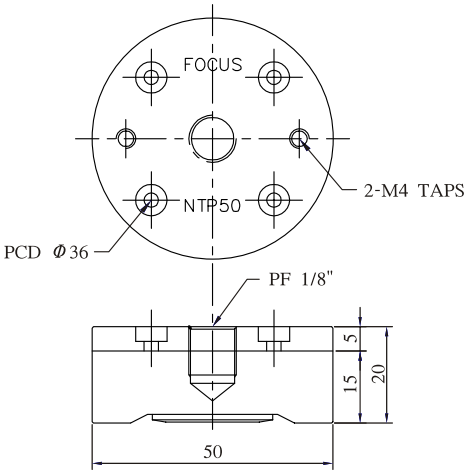
◈ NTP 외형도



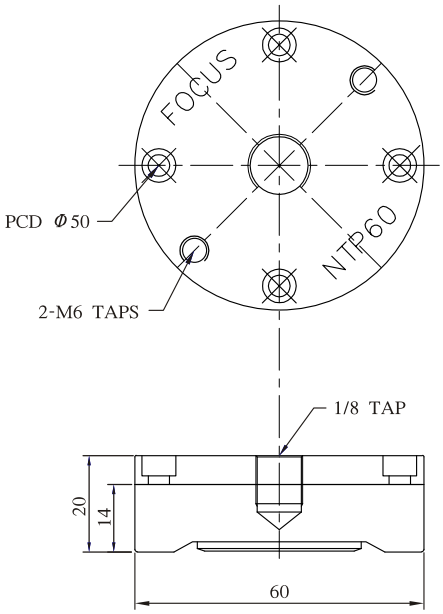
NTP-25



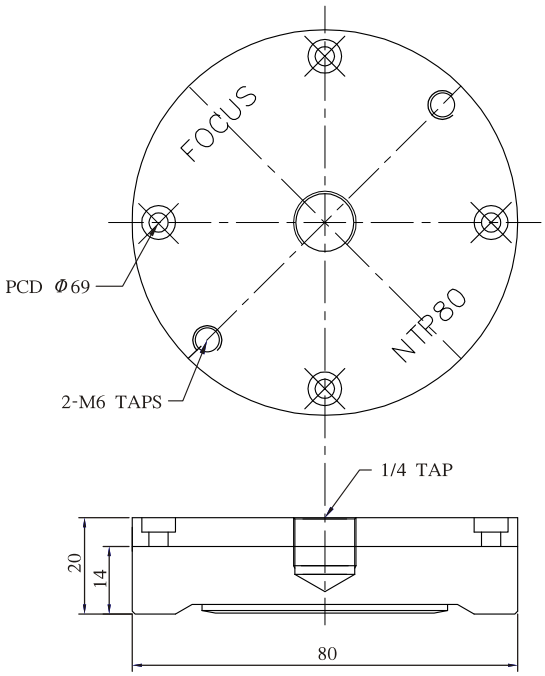
NTP-40



NTP-50



NTP-60



NTP-80

PFIK Series

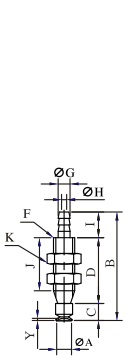
●주문방법 (표 준)

◈PAD · HOLDER			
PF①②③-④-⑤-⑥			
◈PAD			
PFE-④-⑥			
①진공 취출구			
I	종	L	횡
②ROD 형식			
K	고정식	S	SPRING
③HOLDER 형식			
무기호	고정식	B	볼타입

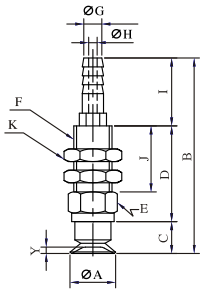
④PAD 경(Ømm)				
2	3.5	5	6	8
10	15	20	25	30
35	40	50	60	80
95	100	120	150	200

⑤STROKE(SPRING식)					
2.5	3	4	5	6	10
15	20	25	30	50	70

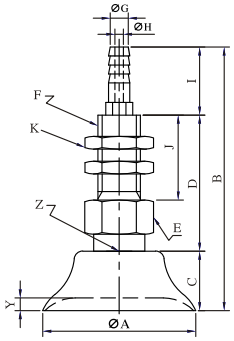
⑥PAD재질 · 색		
N	N B R	흑
U	우 레 탄	청
S	실 리 콘	반투명
NE	도전성 NBR	
SE	도전성 실리콘	
V	불소고무(바이톤)	



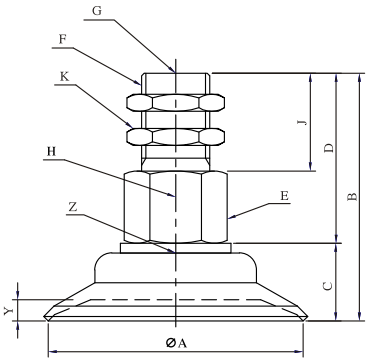
2 · 3.5



5 · 6 · 8 · 10



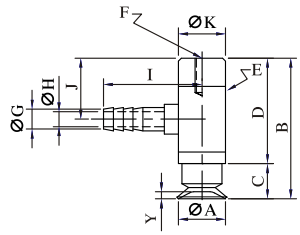
15~50



60~100

PFIK	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PFIK-2	2	25.5	4	15.5		M5×P0.8	Ø2.8	1.2	6	8	7H	0.5		9
PFIK-3.5	3.5	25.5	4	15.5		M5×P0.8	Ø2.8	1.2	6	8	7H	0.5		9
PFIK-5	5	30.5	6.5	14		M9×P1	5	2.5	10	12	12H	0.8		11
PFIK-6	6	30.5	6.5	14		M9×P1	5	2.5	10	12	12H	0.8		11
PFIK-8	8	31	7	14		M9×P1	5	2.5	10	12	12H	1.2		11
PFIK-10	10	46	7.5	22.5	10H	M9×P1	5	3	16	15.5	12H	1.8		15
PFIK-15	15	46	8	22	10H	M8	5	3	16	15	10H	1.9	M5	20
PFIK-20	20	48	10	22	10H	M8	5	3	16	15	10H	2.3	M5	20
PFIK-25	25	62	14	32	14H	M10	5	3	16	20	14H	3.0	M6	40
PFIK-30	30	60	12	32	14H	M10	5	3	16	20	14H	2.0	M6	40
PFIK-35	35	62	14	32	14H	M10	5	3	16	20	14H	3.0	M6	40
PFIK-40	40	62	14	32	14H	M10	5	3	16	20	14H	3.5	M6	40
PFIK-50	50	63	15	32	14H	M10	5	3	16	20	14H	4.0	M8	50
PFIK-60	60	58.5	18.5	40	21H	M16	1/8	5		23	21H	5.0	M10×P1.25	130
PFIK-80	80	60.5	20.5	40	21H	M16	1/8	5		23	21H	6.0	M10×P1.25	170
PFIK-100	100	61	21	40	21H	M16	1/8	5		23	21H	6.0	M10×P1.25	240

PFLK Series



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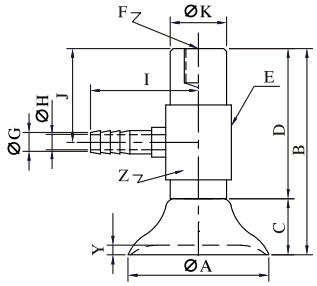

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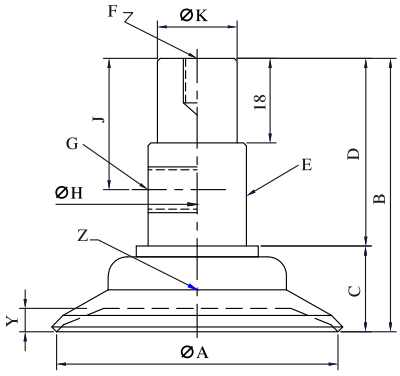

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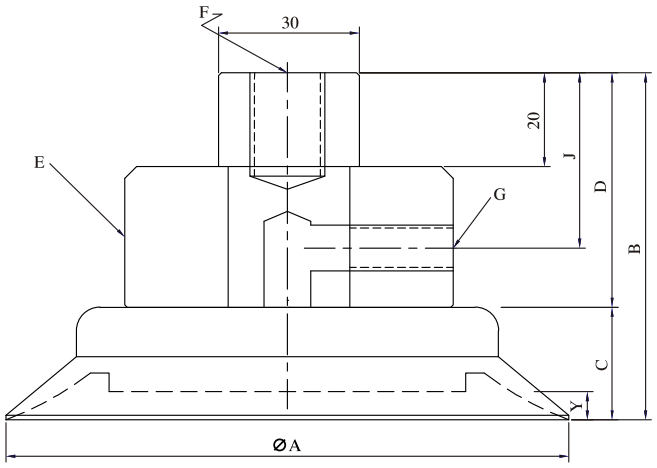
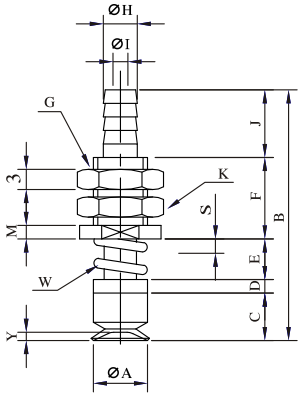


120~200

PFLK	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PFLK-5	5	29	6.5	22.5	10H	M4-6	5	3	21	13	10	0.8		16
PFLK-6	6	29	6.5	22.5	10H	M4-6	5	3	21	13	10	0.8		16
PFLK-8	8	29.5	7	22.5	10H	M4-6	5	3	21	13	10	1.2		16
PFLK-10	10	30	7.5	22.5	10H	M4-6	5	3	21	13	10	1.5		16
PFLK-15	15	30	8	22	10H	M4-6	5	3	21	14	10	1.9	M5	20
PFLK-20	20	32	10	22	10H	M4-6	5	3	21	14	10	2.3	M5	20
PFLK-25	25	46	14	32	14H	M6-8	5	3	23	20	12	3.0	M6	40
PFLK-30	30	44	12	32	14H	M6-8	5	3	23	20	12	2.0	M6	40
PFLK-35	35	46	14	32	14H	M6-8	5	3	23	20	12	3.0	M6	40
PFLK-40	40	46	14	32	14H	M6-8	5	3	23	20	12	3.5	M6	50
PFLK-50	50	47	15	32	14H	M6-8	5	3	23	20	12	4.0	M6	55
PFLK-60	60	58.5	18.5	40	21H	M8-11	1/8	5		28	17	5.0	M10	120
PFLK-80	80	60.5	20.5	40	21H	M8-11	1/8	5		28	17	6.0	M10	160
PFLK-100	100	61	21	40	21H	M8-11	1/8	5		28	17	6.0	M10	230
PFLK-120	120	75.5	25.5	50	Ø70	M16-20	1/8			38	30	6.0	4-M8	640
PFLK-150	150	82.5	32.5	50	Ø70	M16-20	1/8			38	30	9	4-M8	910
PFLK-200	200	87.5	37.5	50	Ø70	M16-20	1/8			38	30	13.0	4-M8	1200

PFIS Series



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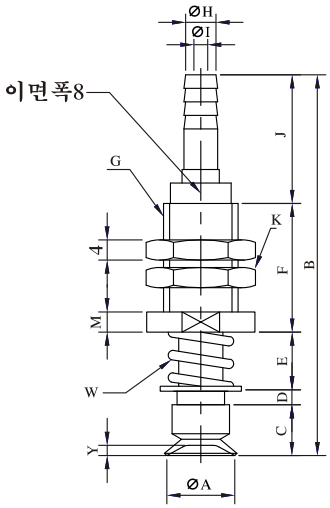

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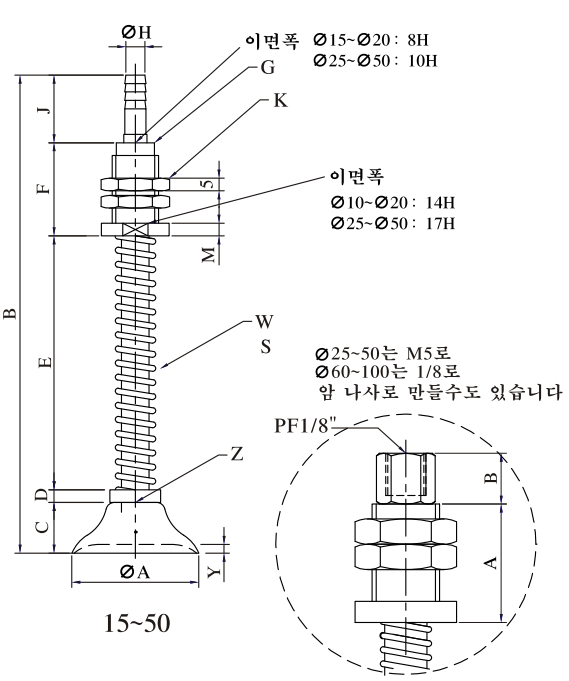
PFIS	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PFIS-5-3	5	37.5	6.5	2	6	13	M9-P1	5	2.2	10	12H	0.8		13
PFIS-5-10	5	51.5	6.5	2	20	13	M9-P1	5	2.2	10	12H	0.8		16
PFIS-5-15	5	61.5	6.5	2	30	13	M9-P1	5	2.2	10	12H	0.8		17
PFIS-5-25	5	81.5	6.5	2	50	13	M9-P1	5	2.2	10	12H	0.8		21
PFIS-6-3	6	37.5	6.5	2	6	13	M9-P1	5	2.2	10	12H	0.8		13
PFIS-6-10	6	51.5	6.5	2	20	13	M9-P1	5	2.2	10	12H	0.8		16
PFIS-6-15	6	61.5	6.5	2	30	13	M9-P1	5	2.2	10	12H	0.8		17
PFIS-6-25	6	81.5	6.5	2	50	13	M9-P1	5	2.2	10	12H	0.8		21
PFIS-8-3	8	38	7	2	6	13	M9-P1	5	2.2	10	12H	1.2		13
PFIS-8-10	8	52	7	2	20	13	M9-P1	5	2.2	10	12H	1.2		16
PFIS-8-15	8	62	7	2	30	13	M9-P1	5	2.2	10	12H	1.2		17
PFIS-8-25	8	82	7	2	50	13	M9-P1	5	2.2	10	12H	1.2		21
PFIS-10-4	10	56.5	7.5	3	8	19	M11-P1	5	3	19	14H	1.5		26
PFIS-10-10	10	68.5	7.5	3	20	19	M11-P1	5	3	19	14H	1.5		31
PFIS-10-20	10	88.5	7.5	3	40	19	M11-P1	5	3	19	14H	1.5		34
PFIS-10-30	10	108.5	7.5	3	60	19	M11-P1	5	3	19	14H	1.5		41
PFIS-15-4	15	54	8	3	8	19	M11-P1	5	3	16	14H	1.9	M5	28
PFIS-15-10	15	66	8	3	20	19	M11-P1	5	3	16	14H	1.9	M5	31
PFIS-15-20	15	86	8	3	40	19	M11-P1	5	3	16	14H	1.9	M5	36
PFIS-15-30	15	106	8	3	60	19	M11-P1	5	3	16	14H	1.9	M5	42
PFIS-20-4	20	56	10	3	8	19	M11-P1	5	3	16	14H	2.3	M5	28
PFIS-20-10	20	68	10	3	20	19	M11-P1	5	3	16	14H	2.3	M5	33
PFIS-20-20	20	88	10	3	40	19	M11-P1	5	3	16	14H	2.3	M5	38
PFIS-20-30	20	108	10	3	60	19	M11-P1	5	3	16	14H	2.3	M5	43
PFIS-25-6	25	71	14	3	13	24	M14-P1.5	5	3	17	17H	3.0	M6	55
PFIS-25-15	25	88	14	3	30	24	M14-P1.5	5	3	17	17H	3.0	M6	60
PFIS-25-30	25	118	14	3	60	24	M14-P1.5	5	3	17	17H	3.0	M6	73
PFIS-25-50	25	158	14	3	100	24	M14-P1.5	5	3	17	17H	3.0	M6	89

PFIS Series



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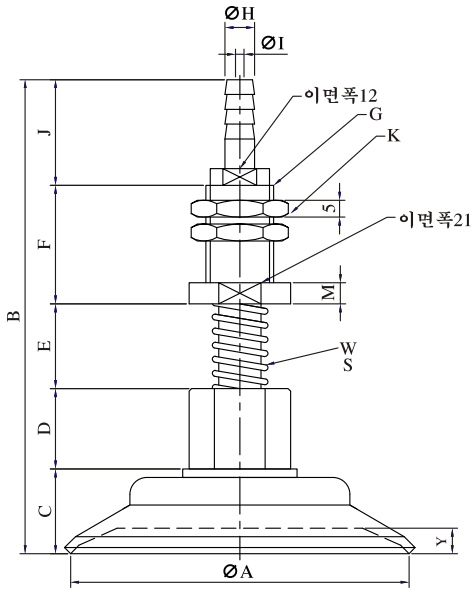
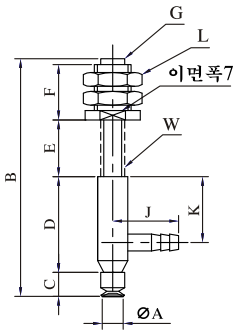


60~100

PFIS	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PFIS-30-6	30	69	12	3	13	24	M14-P1.5	5	3	17	17H	2.0	M6	55
PFIS-30-15	30	86	12	3	30	24	M14-P1.5	5	3	17	17H	2.0	M6	61
PFIS-30-30	30	116	12	3	60	24	M14-P1.5	5	3	17	17H	2.0	M6	73
PFIS-30-50	30	156	12	3	100	24	M14-P1.5	5	3	17	17H	2.0	M6	90
PFIS-35-6	35	71	14	3	13	24	M14-P1.5	5	3	17	17H	3.0	M6	55
PFIS-35-15	35	88	14	3	30	24	M14-P1.5	5	3	17	17H	3.0	M6	64
PFIS-35-30	35	118	14	3	60	24	M14-P1.5	5	3	17	17H	3.0	M6	76
PFIS-35-50	35	158	14	3	100	24	M14-P1.5	5	3	17	17H	3.0	M6	93
PFIS-40-6	40	71	14	3	13	24	M14-P1.5	5	3	17	17H	3.5	M6	55
PFIS-40-15	40	88	14	3	30	24	M14-P1.5	5	3	17	17H	3.5	M6	66
PFIS-40-30	40	118	14	3	60	24	M14-P1.5	5	3	17	17H	3.5	M6	79
PFIS-40-50	40	158	14	3	100	24	M14-P1.5	5	3	17	17H	3.5	M6	95
PFIS-50-6	50	72	15	3	13	24	M14-P1.5	5	3	17	17H	4.0	M6	85
PFIS-50-15	50	89	15	3	30	24	M14-P1.5	5	3	17	17H	4.0	M6	75
PFIS-50-30	50	119	15	3	60	24	M14-P1.5	5	3	17	17H	4.0	M6	87
PFIS-50-50	50	159	15	3	100	24	M14-P1.5	5	3	17	17H	4.0	M 6	103
PFIS-60-10	60	110.5	18.5	19	20	28	M16-P1.5	7	4.5	25	21H	5.0	M10-P1.25	172
PFIS-60-30	60	150.5	18.5	19	60	28	M16-P1.5	7	4.5	25	21H	5.0	M10-P1.25	196
PFIS-60-50	60	190.5	18.5	19	100	28	M16-P1.5	7	4.5	25	21H	5.0	M10-P1.25	214
PFIS-60-70	60	230	18.5	19	140	28	M16-P1.5	7	4.5	25	21H	5.0	M10-P1.25	235
PFIS-80-10	80	112.5	20.5	19	20	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	208
PFIS-80-30	80	152.5	20.5	19	60	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	233
PFIS-80-50	80	192.5	20.5	19	100	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	250
PFIS-80-70	80	232.5	20.5	19	140	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	275
PFIS-100-10	100	113	21	19	20	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	241
PFIS-100-30	100	153	21	19	60	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	265
PFIS-100-50	100	193	21	19	100	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	283
PFIS-100-70	100	233	21	19	140	28	M16-P1.5	7	4.5	25	21H	6.0	M10-P1.25	307

PFLS Series



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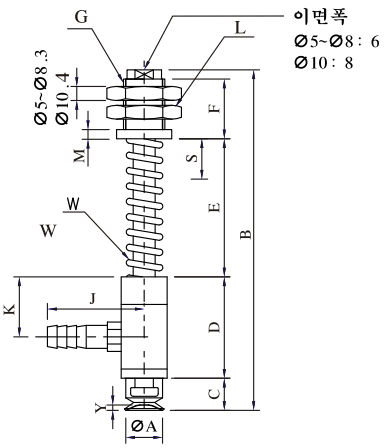

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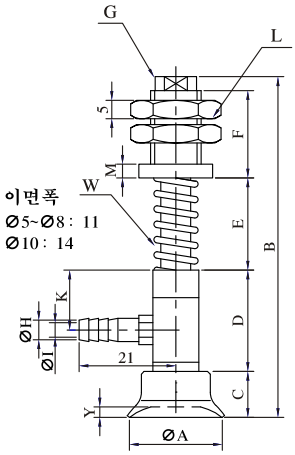
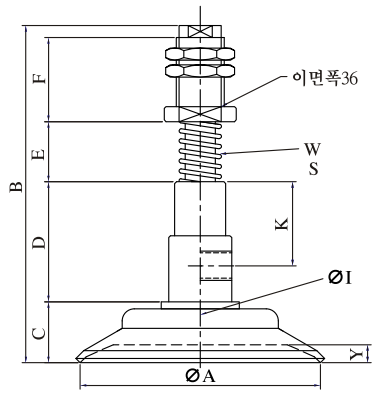


15~50

PFLS	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PFLS-5-3	5	51	6.5	22.5	6	13	M9-P1	5	3	21	13	0.8		28
PFLS-5-10	5	65	6.5	22.5	20	13	M9-P1	5	3	21	13	0.8		31
PFLS-5-15	5	75	6.5	22.5	30	13	M9-P1	5	3	21	13	0.8		33
PFLS-5-25	5	95	6.5	22.5	50	13	M9-P1	5	3	21	13	0.8		38
PFLS-6-3	6	51	6.5	22.5	6	13	M9-P1	5	3	21	13	0.8		28
PFLS-6-10	6	65	6.5	22.5	20	13	M9-P1	5	3	21	13	0.8		31
PFLS-6-15	6	75	6.5	22.5	30	13	M9-P1	5	3	21	13	0.8		33
PFLS-6-25	6	95	6.5	22.5	50	13	M9-P1	5	3	21	13	0.8		38
PFLS-8-3	8	51.5	7	22.5	6	13	M9-P1	5	3	21	13	1.2		28
PFLS-8-10	8	65.5	7	22.5	20	13	M9-P1	5	3	21	13	1.2		31
PFLS-8-15	8	75.5	7	22.5	30	13	M9-P1	5	3	21	13	1.2		33
PFLS-8-25	8	95.5	7	22.5	50	13	M9-P1	5	3	21	13	1.2		38
PFLS-10-4	10	60	7.5	22.5	8	19	M11-P1	5	3	21	13	1.5		43
PFLS-10-10	10	72	7.5	22.5	20	19	M11-P1	5	3	21	13	1.5		48
PFLS-10-15	10	92	7.5	22.5	40	19	M11-P1	5	3	21	13	1.5		55
PFLS-10-30	10	112	7.5	22.5	60	19	M11-P1	5	3	21	13	1.5		62
PFLS-15-4	15	60	8	22	8	19	M11-P1	5	3	21	14	1.9	M5	44
PFLS-15-10	15	72	8	22	20	19	M11-P1	5	3	21	14	1.9	M5	48
PFLS-15-20	15	92	8	22	40	19	M11-P1	5	3	21	14	1.9	M5	55
PFLS-15-30	15	112	8	22	60	19	M11-P1	5	3	21	14	1.9	M5	63
PFLS-20-4	20	62	10	22	8	19	M11-P1	5	3	21	14	2.3	M5	48
PFLS-20-10	20	74	10	22	20	19	M11-P1	5	3	21	14	2.3	M5	80
PFLS-20-20	20	94	10	22	40	19	M11-P1	5	3	21	14	2.3	M5	57
PFLS-20-30	20	114	10	22	60	19	M11-P1	5	3	21	14	2.3	M5	64
PFLS-25-6	25	87	14	32	13	24	M14-P1.5	5	3	23	20	3.0	M6	93
PFLS-25-15	25	104	14	32	30	24	M14-P1.5	5	3	23	20	3.0	M6	102
PFLS-25-30	25	134	14	32	60	24	M14-P1.5	5	3	23	20	3.0	M6	120
PFLS-25-50	25	174	14	32	100	24	M14-P1.5	5	3	23	20	3.0	M6	143
PFLS-30-6	30	85	12	32	13	24	M14-P1.5	5	3	23	20	2.0	M6	93
PFLS-30-15	30	102	12	32	30	24	M14-P1.5	5	3	23	20	2.0	M6	103
PFLS-30-30	30	132	12	32	60	24	M14-P1.5	5	3	23	20	2.0	M6	120
PFLS-30-50	30	172	12	32	100	24	M14-P1.5	5	3	23	20	2.0	M6	145

PFLS Series



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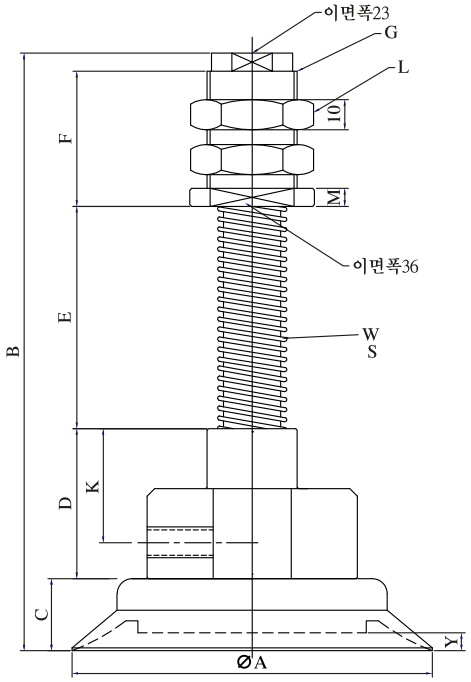


120~200

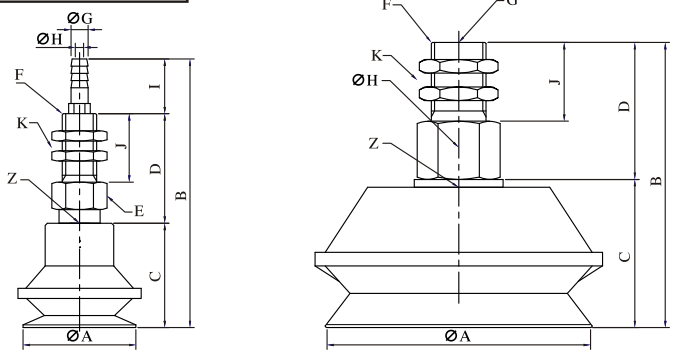
PFLS	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PFLS-35-6	35	87	14	32	13	24	M14-P1.5	5	3	23	20	3.0	M6	96
PFLS-35-15	35	104	14	32	30	24	M14-P1.5	5	3	23	20	3.0	M6	105
PFLS-35-30	35	134	14	32	60	24	M14-P1.5	5	3	23	20	3.0	M6	123
PFLS-35-50	35	174	14	32	100	24	M14-P1.5	5	3	23	20	3.0	M6	147
PFLS-40	40	87	14	32	30	24	M14-P1.5	5	3	23	20	3.5	M6	99
PFLS-40-15	40	104	14	32	30	24	M14-P1.5	5	3	23	20	3.5	M6	108
PFLS-40-30	40	134	14	32	60	24	M14-P1.5	5	3	23	20	3.5	M6	126
PFLS-40-50	40	174	14	32	100	24	M14-P1.5	5	3	23	20	3.5	M6	149
PFLS-50-6	50	88	15	32	13	24	M14-P1.5	5	3	23	20	4.0	M8	103
PFLS-50-15	50	105	15	32	30	24	M14-P1.5	5	3	23	20	4.0	M8	112
PFLS-50-30	50	135	15	32	60	24	M14-P1.5	5	3	23	20	4.0	M8	130
PFLS-50-50	50	175	15	32	100	24	M14-P1.5	5	3	23	20	4.0	M8	154
PFLS-60-10	60	110.5	18.5	40	20	28	M16-P1.5	Rc1/8	5		28	5.0	M10-P1.25	211
PFLS-60-30	60	150.5	18.5	40	60	28	M16-P1.5	Rc1/8	5		28	5.0	M10-P1.25	187
PFLS-60-50	60	190.5	18.5	40	100	28	M16-P1.5	Rc1/8	5		28	5.0	M10-P1.25	217
PFLS-60-70	60	230	18.5	40	140	25	M16-P1.5	Rc1/8	5		28	5.0	M10-P1.25	245
PFLS-80-10	80	112.5	20.5	40	20	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	248
PFLS-80-30	80	152.5	20.5	40	60	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	223
PFLS-80-50	80	192.5	20.5	40	100	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	253
PFLS-80-70	80	232.5	20.5	40	140	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	280
PFLS-100-10	100	113	21	40	20	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	280
PFLS-100-30	100	153	21	40	60	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	255
PFLS-100-50	100	193	21	40	100	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	286
PFLS-100-70	100	233	21	40	140	28	M16-P1.5	Rc1/8	5		28	6.0	M10-P1.25	315
PFLS-120-40	120	203.5	25.5	50	75	45	M30-P1.5	Rc1/8(1/4)			38	6.0	4-M8	1240
PFLS-150-40	150	210.5	32.5	50	75	45	M30-P1.5	Rc1/8(1/4)			38	9	4-M8	1480
PFLS-200-40	200	215.5	37.5	50	75	45	M30-P1.5	Rc1/8(1/4)			38	13.0	4-M8	1800

PBIK/PBLK Series

주문방법 (자바라)

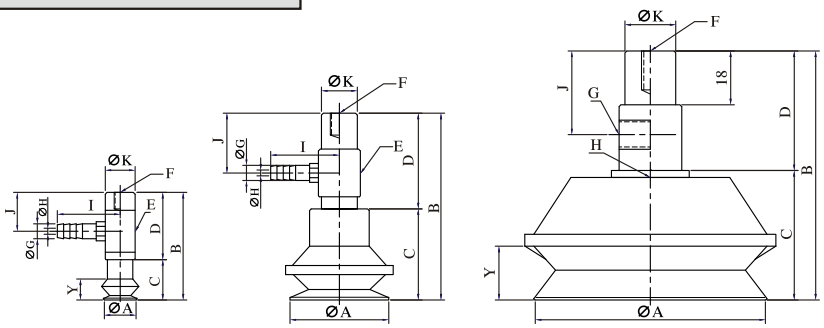
◈PAD · HOLDER					
PB①②-③-④-⑤					
◈PAD					
PBE-③-⑤					
①진공 취출구					
I	종	L	횡		
②ROD 형식					
K	고정식	S	SPRING		
③PAD 경(Ømm)					
10	13	15	20	30	40
50	75	110	150		
④STROKE(SPRING식)					
3	4	6	10	15	
20	25	30	50		
⑤PAD재질 · 색					
N	N B R	흑			
U	우 레 탄	청			
S	실 리 콘	반투명			
NE	도전성 NBR				
SE	도전성 실리콘				
V	불소고무(바이톤)				

PBIK Series



10~50 75

PBLK Series

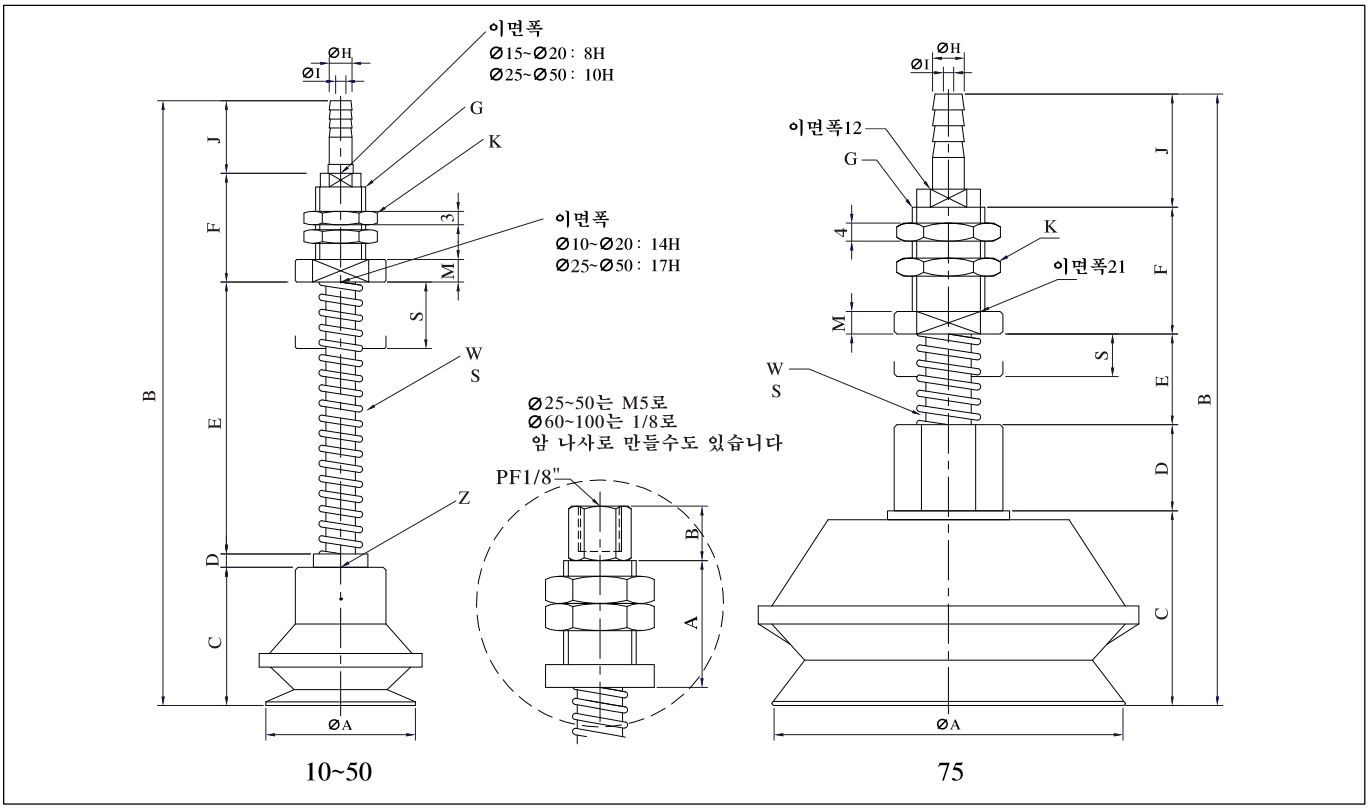


10~15 20~50 75~150

PBIK	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PBIK-10	10	51.5	13.5	22	10H	M9	5	3	16	15	12H	7.5		14
PBIK-13~15	15	54	16	22	10H	M9	5	3	16	15	12H	10		16
PBIK-20	20	57.5	19.5	22	10H	M8	5	3	16	15	10H	12	M5	24
PBIK-30	30	78.5	30.5	32	14H	M10	5	3	16	20	14H	17	M6	48
PBIK-40	40	78.5	30.5	32	14H	M10	5	3	16	20	14H	15.5	M6	55
PBIK-50	50	84.5	36.5	32	14H	M10	5	3	16	20	14H	20	M8	66
PBIK-75	75	83.5	43.5	40	21H	M16-P1.5	Rc1/8	5		23	21H	22	M10-P1.25	152

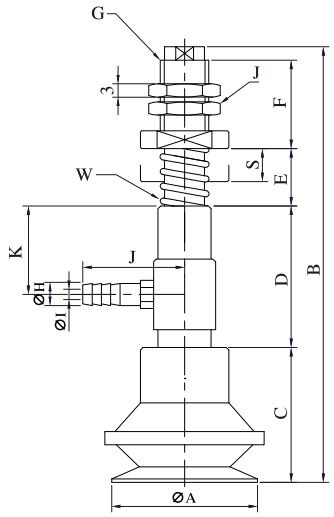
PBLK	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PBLK-10	10	35.5	13.5	22	10H	M4-6	5	3	21	13	10	7.5		18
PBLK-13~15	15	38	16	22	10H	M4-6	5	3	21	13	10	10		20
PBLK-20	20	41.5	19.5	22	10H	M4-6	5	3	21	14	10	12	M5	28
PBLK-30	30	62.5	30.5	32	14H	M6-8	5	3	23	20	12	17	M6	55
PBLK-40	40	62.5	30.5	32	14H	M6-8	5	3	23	20	12	15.5	M6	62
PBLK-50	50	68.5	36.5	32	14H	M6-8	5	3	23	20	12	20	M8	78
PBLK-75	75	83.5	43.5	40	21H	M8-11	1/8	5		28	17	22	M10-P1.25	168
PBLK-110	110	107.5	57.5	50	Ø70	M16-20	1/8	5		38	30	33	4-M8	680
PBLK-150	170	126.8	76.8	50	Ø70	M16-20	1/8	5		38	30	38	4-M8	1020

PBIS Series

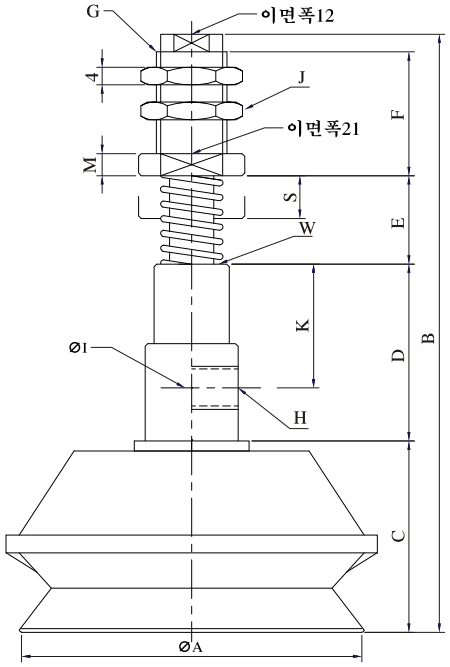


PBIS	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PBIS-10-4	10	59.5	13.5	3	8	19	M11 -P1	5	3	16	14H	7.5		13
PBIS-10-10	10	71.5	13.5	3	20	13	M11 -P1	5	3	16	14H	7.5		16
PBIS-10-20	10	91.5	13.5	3	40	13	M11 -P1	5	3	16	14H	7.5		17
PBIS-10-30	10	111.5	13.5	3	60	13	M11 -P1	5	3	16	14H	7.5		21
PBIS-15-4	15	62	16	3	8	19	M11 -P1	5	3	16	14H	10		21
PBIS-15-10	15	74	16	3	20	19	M11 -P1	5	3	16	14H	10		24
PBIS-15-20	15	94	16	3	40	19	M11 -P1	5	3	16	14H	10		29
PBIS-15-30	15	114	16	3	60	19	M11 -P1	5	3	16	14H	10		34
PBIS-20-4	20	65.5	19.5	3	8	19	M11 -P1	5	3	16	14H	12	M5	23
PBIS-20-10	20	77.6	19.5	3	20	19	M11 -P1	5	3	16	14H	12	M5	26
PBIS-20-20	20	97.5	19.5	3	40	19	M11 -P1	5	3	16	14H	12	M5	30
PBIS-20-30	20	117.5	19.5	3	60	19	M11 -P1	5	3	16	14H	12	M5	36
PBIS-30-6	30	87.5	30.5	3	13	24	M14 -P1.5	5	3	17	17H	17	M6	44
PBIS-30-15	30	104.5	30.5	3	30	24	M14 -P1.5	5	3	17	17H	17	M6	56
PBIS-30-30	30	134.5	30.5	3	60	24	M14 -P1.5	5	3	17	17H	17	M6	72
PBIS-30-50	30	174.5	30.5	3	100	24	M14 -P1.5	5	3	17	17H	17	M6	97
PBIS-40-6	40	87.5	30.5	3	13	24	M14 -P1.5	5	3	17	17H	15.5	M6	47
PBIS-40-15	40	104.5	30.5	3	30	24	M14 -P1.5	5	3	17	17H	15.5	M6	59
PBIS-40-30	40	134.5	30.5	3	60	24	M14 -P1.5	5	3	17	17H	15.5	M6	76
PBIS-40-50	40	174.5	30.5	3	100	24	M14 -P1.5	5	3	17	17H	15.5	M6	99
PBIS-50-6	50	93.5	36.5	3	13	24	M14 -P1.5	5	3	17	17H	20	M6	65
PBIS-50-15	50	110.5	36.5	3	30	24	M14 -P1.5	5	3	17	17H	20	M6	77
PBIS-50-30	50	140.5	36.5	3	60	24	M14 -P1.5	5	3	17	17H	20	M6	95
PBIS-50-50	50	180.5	36.5	3	100	24	M14 -P1.5	5	3	17	17H	20	M6	117
PBIS-75-10	75	137	43.5	19	20	28	M16 -P1.5	7	4.5	25	21H	22	M10-P1.25	191
PBIS-75-30	75	178	43.5	19	60	28	M16 -P1.5	7	4.5	25	21H	22	M10-P1.25	215
PBIS-75-50	75	218	43.5	19	100	28	M16 -P1.5	7	4.5	25	21H	22	M10-P1.25	240

PBLS Series



10~50

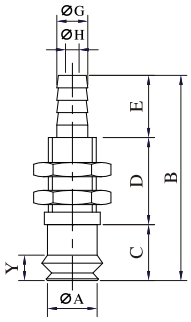


75

PBLS	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PBLS-10-4	10	65.5	13.5	22	8	19	M11-P1	5	3	21	14	7.5		28
PBLS-10-10	10	77.5	13.5	22	20	19	M11-P1	5	3	21	14	7.5		31
PBLS-10-20	10	97.5	13.5	22	40	19	M11-P1	5	3	21	14	7.5		33
PBLS-10-30	10	117.5	13.5	22	60	19	M11-P1	5	3	21	14	7.5		38
PBLS-15-4	15	68	16	22	8	19	M11-P1	5	3	21	14	10		37
PBLS-15-10	15	80	16	22	20	19	M11-P1	5	3	21	14	10		41
PBLS-15-20	15	100	16	22	40	19	M11-P1	5	3	21	14	10		48
PBLS-15-30	15	120	16	22	60	19	M11-P1	5	3	21	14	10		54
PBLS-20-4	20	71.5	19.5	22	8	19	M11-P1	5	3	21	14	12	M5	39
PBLS-20-10	20	83.5	19.5	22	20	19	M11-P1	5	3	21	14	12	M5	43
PBLS-20-20	20	103.5	19.5	22	40	19	M11-P1	5	3	21	14	12	M5	50
PBLS-20-30	20	123.5	19.5	22	60	19	M11-P1	5	3	21	14	12	M5	54
PBLS-30-6	30	103.5	30.5	32	13	24	M14-P1.5	5	3	23	20	17	M6	83
PBLS-30-15	30	120.5	30.5	32	30	24	M14-P1.5	5	3	23	20	17	M6	94
PBLS-30-30	30	150.5	30.5	32	60	24	M14-P1.5	5	3	23	20	17	M6	110
PBLS-30-50	30	190.5	30.5	32	100	24	M14-P1.5	5	3	23	20	17	M6	134
PBLS-40-6	40	103.5	30.5	32	13	24	M14-P1.5	5	3	23	20	15.5	M6	86
PBLS-40-15	40	120.5	30.5	32	30	24	M14-P1.5	5	3	23	20	15.5	M6	95
PBLS-40-30	40	150.5	30.5	32	60	24	M14-P1.5	5	3	23	20	15.5	M6	114
PBLS-40-50	40	190.5	30.5	32	100	24	M14-P1.5	5	3	23	20	15.5	M6	139
PBLS-50-6	50	109.5	36.5	32	13	24	M14-P1.5	5	3	23	20	20	M8	100
PBLS-50-15	50	126.5	36.5	32	30	24	M14-P1.5	5	3	23	20	20	M8	109
PBLS-50-30	50	156.5	36.5	32	60	24	M14-P1.5	5	3	23	20	20	M8	128
PBLS-50-50	50	196.5	36.5	32	100	24	M14-P1.5	5	3	23	20	20	M8	153
PBLS-75-10	75	138	43.5	40	20	28	M16-P1.5	1/8	5		28	22	M10-P1.25	230
PBLS-75-30	75	178	43.5	40	60	28	M16-P1.5	1/8	5		28	22	M10-P1.25	259
PBLS-75-50	75	218	43.5	40	100	28	M16-P1.5	1/8	5		28	22	M10-P1.25	289

PJIK / PJLK Series

PJIK Series



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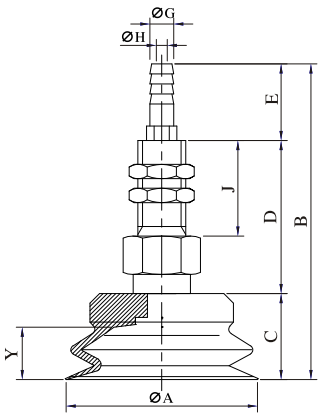
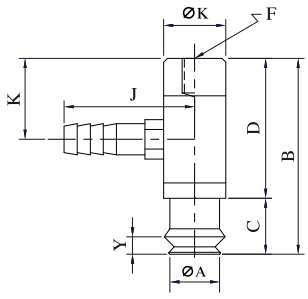


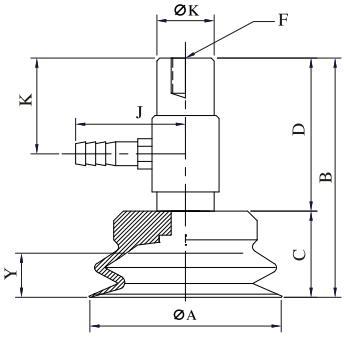
10~50

PJIK	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PJIK-6	6	33	9	14		M9	5	2.5	10		12H	4.2		11
PJIK-8	8	33	9	14		M9	5	2.5	10		12H	4.2		11
PJIK-10	10	42.5	9.5	22	10H	M8	5	3	11	15	10H	3	M5-0.8	11
PJIK-15	15	44	11	22	10H	M8	5	3	11	15	10H	4.5	M5-0.8	15
PJIK-20	20	46	13	22	10H	M8	5	3	11	15	10H	5.5	M5-0.8	17
PJIK-30	30	61	18	32	14H	M10	5	3	11	20	14H	8	M6-1.0	42
PJIK-40	40	61	18	32	14H	M10	5	3	11	20	14H	8	M6-1.0	44
PJIK-50	50	63	20	32	14H	M10	5	3	11	20	14H	9	M8-1.25	58

PJLK Series



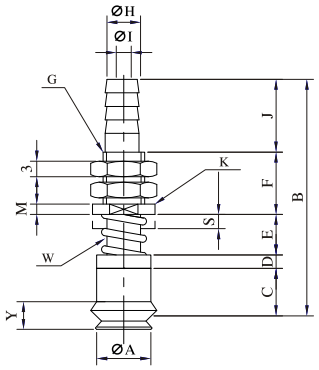
6 • 8



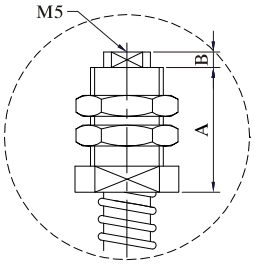
10~50

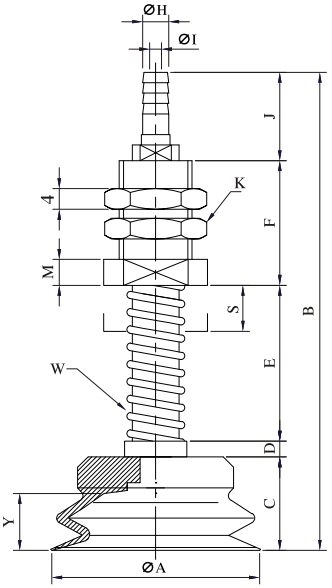
PJLK	A	B	C	D	E	F	G	H	I	J	K	Y	Z	질량(g)
PJLK-6	6	31.5	9	22.5	10H	M4	5	2.5	21	13	10	4.2		16
PJLK-8	8	31.5	9	22.5	10H	M4	5	2.5	21	13	10	4.2		16
PJLK-10	10	31.5	9.5	22	10H	M4-6	5	3	16	14	10	3	M5-0.8	17
PJLK-15	15	33	11	22	10H	M4-6	5	3	16	14	10	4.5	M5-0.8	18
PJLK-20	20	35	13	22	10H	M4-6	5	3	16	14	10	5.5	M5-0.8	20
PJLK-30	30	50	18	32	14H	M6-8	5	3	18	20	12	8	M6-1.0	46
PJLK-40	40	50	18	32	14H	M6-8	5	3	18	20	12	8	M6-1.0	48
PJLK-50	50	52	20	32	14H	M6-8	5	3	18	28	17	10	M6-1.0	139

PJIS Series



6 • 8

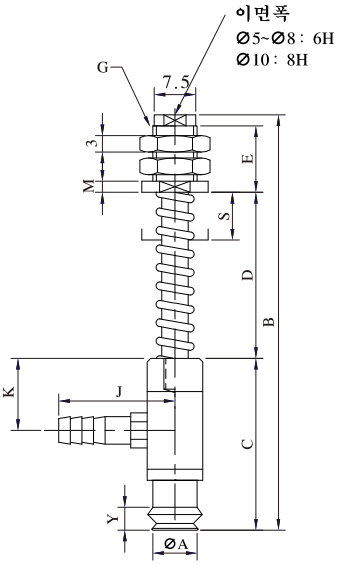




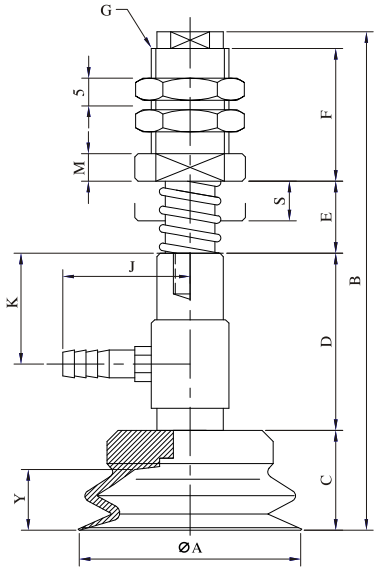
10~50

PJIS	A	B	C	D	E	F	G	H	I	J	K	M	W	S	Y	Z	질량(g)
PJIS6-3	6	40	9	2	6	13	M9-1	5	2.5	10	12H	2	0.98	3	4.2		13
PJIS6-10	6	54	9	2	20	13	M9-1	5	2.5	10	12H	2	0.98	10	4.2		16
PJIS6-15	6	64	9	2	30	13	M9-1	5	2.5	10	12H	2	0.98	15	4.2		17
PJIS8-3	8	40	9	2	6	13	M9-1	5	2.5	10	12H	2	0.98	3	4.2		13
PJIS8-10	8	54	9	2	20	13	M9-1	5	2.5	10	12H	2	0.98	10	4.2		16
PJIS8-15	8	64	9	2	30	13	M9-1	5	2.5	10	12H	2	0.98	15	4.2		17
PJIS10-4	10	55	9.5	3	8	19	M11-P1	5	3	16	14H	3	2.9	4	3	M5	20
PJIS10-10	10	67	9.5	3	20	19	M11-P1	5	3	16	14H	3	2.9	10	3	M5	23
PJIS10-20	10	87	9.5	3	40	19	M11-P1	5	3	16	14H	3	2.9	20	3	M5	28
PJIS10-30	10	107	9.5	3	60	19	M11-P1	5	3	16	14H	3	2.9	30	3	M5	33
PJIS15-4	15	57	11	3	8	19	M11-P1	5	3	16	14H	3	2.9	4	4.5	M5	21
PJIS15-10	15	69	11	3	20	19	M11-P1	5	3	16	14H	3	2.9	10	4.5	M5	24
PJIS15-20	15	89	11	3	40	19	M11-P1	5	3	16	14H	3	2.9	20	4.5	M5	29
PJIS15-30	15	109	11	3	60	19	M11-P1	5	3	16	14H	3	2.9	30	4.5	M5	34
PJIS20-4	20	59	13	3	8	19	M11-P1	5	3	16	14H	3	2.9	4	5.5	M5	23
PJIS20-10	20	71	13	3	20	19	M11-P1	5	3	16	14H	3	2.9	10	5.5	M5	26
PJIS20-20	20	91	13	3	40	19	M11-P1	5	3	16	14H	3	2.9	20	5.5	M5	30
PJIS20-30	20	111	13	3	60	19	M11-P1	5	3	16	14H	3	2.9	30	5.5	M5	36
PJIS30-6	30	75	18	3	13	24	M14-P1.5	5	3	17	17H	4	3.9	6	8	M6	44
PJIS30-15	30	92	18	3	30	24	M14-P1.5	5	3	17	17H	4	3.9	15	8	M6	56
PJIS30-30	30	122	18	3	60	24	M14-P1.5	5	3	17	17H	4	3.9	30	8	M6	72
PJIS30-50	30	162	18	3	100	24	M14-P1.5	5	3	17	17H	4	3.9	50	8	M6	97
PJIS40-6	40	75	18	3	13	24	M14-P1.5	5	3	17	17H	4	3.9	6	8	M6	47
PJIS40-15	40	92	18	3	30	24	M14-P1.5	5	3	17	17H	4	3.9	15	8	M6	59
PJIS40-30	40	122	18	3	60	24	M14-P1.5	5	3	17	17H	4	3.9	30	8	M6	76
PJIS40-50	40	162	18	3	100	24	M14-P1.5	5	3	17	17H	4	3.9	50	8	M6	99
PJIS50-6	50	75	20	3	13	24	M14-P1.5	5	3	17	17H	4	3.9	6	9	M6	65
PJIS50-15	50	92	20	3	30	24	M14-P1.5	5	3	17	17H	4	3.9	15	9	M6	77
PJIS50-30	50	122	20	3	60	24	M14-P1.5	5	3	17	17H	4	3.9	30	9	M6	95
PJIS50-50	50	162	20	3	100	24	M14-P1.5	5	3	17	17H	4	3.9	50	9	M6	117

PJLS Series



6・8

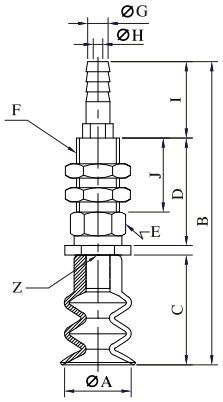


10~50

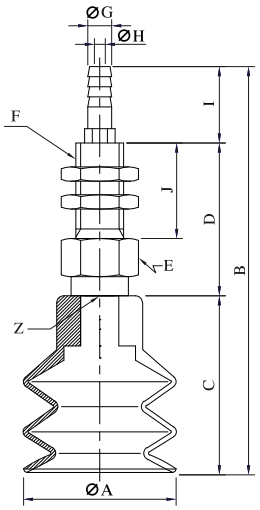
PJLS	A	B	C	D	E	F	G	H	I	J	K	L	M	W	S	Y	Z	질량(g)
PJLS6-3	6	53.5	9	22.5	6	13	M9-1	5	3	21	13		2	0.98	3	4.2		28
PJLS6-10	6	67.5	9	22.5	20	13	M9-1	5	3	21	13		2	0.98	10	4.2		31
PJLS6-15	6	77.5	9	22.5	30	13	M9-1	5	3	21	13		2	0.98	15	4.2		33
PJLS8-3	8	53.5	9	22.5	6	13	M9-1	5	3	21	13		2	0.98	3	4.2		28
PJLS8-10	8	67.5	9	22.5	20	13	M9-1	5	3	21	13		2	0.98	10	4.2		31
PJLS8-15	8	77.5	9	22.5	30	13	M9-1	5	3	21	13		2	0.98	15	4.2		33
PJLS10-4	10	61	9.5	22	8	19	M11-P1	5	3	21	14	14H	3	2.9	4	3	M5	36
PJLS10-10	10	73	9.5	22	20	19	M11-P1	5	3	21	14	14H	3	2.9	10	3	M5	40
PJLS10-20	10	93	9.5	22	40	19	M11-P1	5	3	21	14	14H	3	2.9	20	3	M5	47
PJLS10-30	10	113	9.5	22	60	19	M11-P1	5	3	21	14	14H	3	2.9	30	3	M5	54
PJLS15-4	15	63	11	22	8	19	M11-P1	5	3	21	14	14H	3	2.9	4	4.5	M5	37
PJLS15-10	15	75	11	22	20	19	M11-P1	5	3	21	14	14H	3	2.9	10	4.5	M5	41
PJLS15-20	15	95	11	22	40	19	M11-P1	5	3	21	14	14H	3	2.9	20	4.5	M5	48
PJLS15-30	15	115	11	22	60	19	M11-P1	5	3	21	14	14H	3	2.9	30	4.5	M5	54
PJLS20-4	20	65	13	22	8	19	M11-P1	5	3	21	14	14H	3	2.9	4	5.5	M5	39
PJLS20-10	20	77	13	22	20	19	M11-P1	5	3	21	14	14H	3	2.9	10	5.5	M5	43
PJLS20-20	20	97	13	22	40	19	M11-P1	5	3	21	14	14H	3	2.9	20	5.5	M5	50
PJLS20-30	20	117	13	22	60	19	M11-P1	5	3	21	14	14H	3	2.9	30	5.5	M5	54
PJLS30-6	30	91	18	32	13	24	M14-P1.5	5	3	23	20	17H	4	3.9	6	8	M6	83
PJLS30-15	30	108	18	32	30	24	M14-P1.5	5	3	23	20	17H	4	3.9	15	8	M6	94
PJLS30-30	30	138	18	32	60	24	M14-P1.5	5	3	23	20	17H	4	3.9	30	8	M6	110
PJLS30-50	30	178	18	32	100	24	M14-P1.5	5	3	23	20	17H	4	3.9	50	8	M6	134
PJLS40-6	40	91	18	32	13	24	M14-P1.5	5	3	23	20	17H	4	8.8	6	8	M6	86
PJLS40-15	40	108	18	32	30	24	M14-P1.5	5	3	23	20	17H	4	8.8	15	8	M6	95
PJLS40-30	40	138	18	32	60	24	M14-P1.5	5	3	23	20	17H	4	8.8	30	8	M6	114
PJLS40-50	40	178	18	32	100	24	M14-P1.5	5	3	23	20	17H	4	8.8	50	8	M6	139
PJLS50-6	50	93	20	32	13	24	M14-P1.5	5	3	23	20	17H	4	8.8	6	9	M6	100
PJLS50-15	50	110	20	32	30	24	M14-P1.5	5	3	23	20	17H	4	8.8	15	9	M6	109
PJLS50-30	50	140	20	32	60	24	M14-P1.5	5	3	23	20	17H	4	8.8	30	9	M6	128
PJLS50-50	50	180	20	32	100	24	M14-P1.5	5	3	23	20	17H	4	8.8	50	9	M6	153

PCIK / PCLK Series

PCIK Series



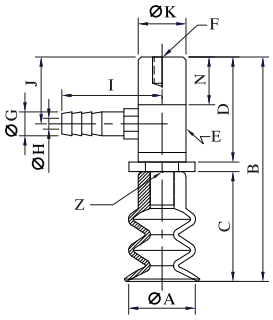
7~20



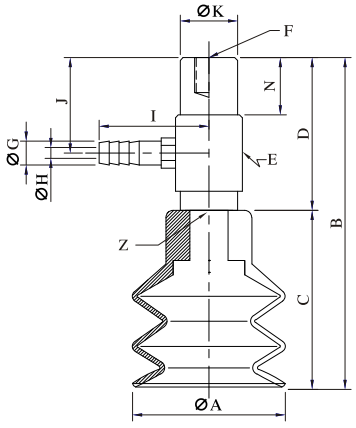
30~40

PCIK	A	B	C	D	E	F	G	H	I	J	Z	질량(g)
PCIK-10	10	56	15	22	10H	M8	5	3	16	15	M5	
PCIK-15	15	64	23	22	10H	M8	5	3	16	15	M5	
PCIK-20	20	64	23	22	10H	M8	5	3	16	15	M5	
PCIK-30	31	86	37.5	32	14H	M10	5	3	16	20	M6/M8	
PCIK-40	42	95	46	32	14H	M10	5	3	16	20	M6/M8	

PCLK Series



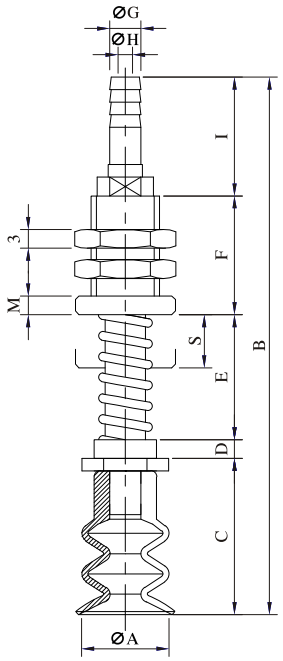
7~20



30~40

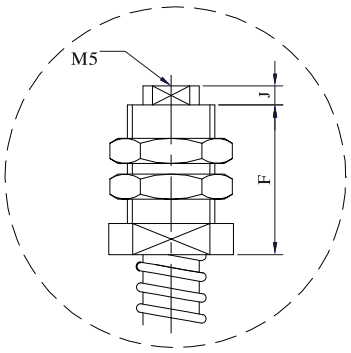
PCLK	A	B	C	D	E	F	G	H	I	J	K	N	Z	질량(g)
PCLK-10	10	40	15	22	10H	M4-7	5	3	21	14	10	10	M5	
PCLK-15	15	48	23	22	10H	M4-7	5	3	21	14	10	10	M5	
PCLK-20	20	48	23	22	10H	M4-7	5	3	21	14	10	10	M5	
PCLK-30	31	71	37.5	32	14H	M6-8	5	3	23	20	12	12	M6/M8	
PCLK-40	42	79	46	32	14H	M6-8	5	3	23	20	12	12	M6/M8	

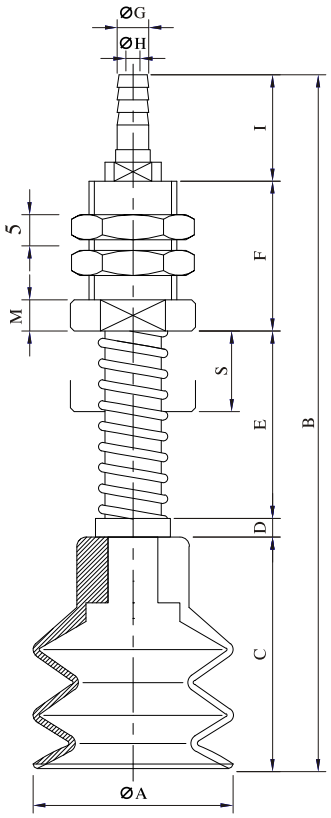
PCIS Series



10~20

Ø30~40는 M5로
암 나사로 만들수도 있습니다

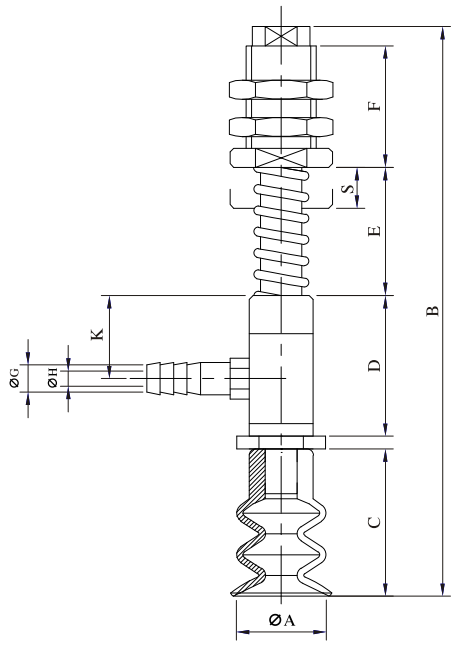




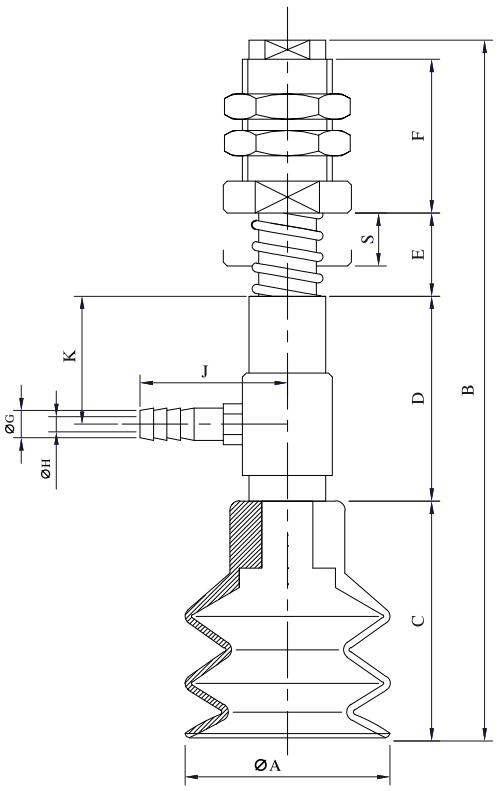
30~40

PCIS	A	B	C	D	E	F	G	H	I	J	K	M	W	S	Z	질량(g)
PCIS10-4	10	61	15	3	8	19	M11-P1	5	3	16	14H	3	2.9	4	M5	20
PCIS10-10	10	73	15	3	20	19	M11-P1	5	3	16	14H	3	2.9	10	M5	23
PCIS10-20	10	93	15	3	40	19	M11-P1	5	3	16	14H	3	2.9	20	M5	28
PCIS10-30	10	113	15	3	60	19	M11-P1	5	3	16	14H	3	2.9	30	M5	33
PCIS15-4	15	69	23	3	8	19	M11-P1	5	3	16	14H	3	2.9	4	M5	21
PCIS15-10	15	81	23	3	20	19	M11-P1	5	3	16	14H	3	2.9	10	M5	24
PCIS15-20	15	101	23	3	40	19	M11-P1	5	3	16	14H	3	2.9	20	M5	29
PCIS15-30	15	121	23	3	60	19	M11-P1	5	3	16	14H	3	2.9	30	M5	34
PCIS20-4	20	69	23	3	8	19	M11-P1	5	3	16	14H	3	2.9	4	M5	23
PCIS20-10	20	81	23	3	20	19	M11-P1	5	3	16	14H	3	2.9	10	M5	26
PCIS20-20	20	101	23	3	40	19	M11-P1	5	3	16	14H	3	2.9	20	M5	30
PCIS20-30	20	121	23	3	60	19	M11-P1	5	3	16	14H	3	2.9	30	M5	36
PCIS30-6	30	94.5	37.5	3	13	24	M14-P1.5	5	3	17	17H	4	3.9	6	M6	44
PCIS30-15	30	111.5	37.5	3	30	24	M14-P1.5	5	3	17	17H	4	3.9	15	M6	56
PCIS30-30	30	141.5	37.5	3	60	24	M14-P1.5	5	3	17	17H	4	3.9	30	M6	72
PCIS30-50	30	181.5	37.5	3	100	24	M14-P1.5	5	3	17	17H	4	3.9	50	M6	97
PCIS40-6	40	103	46	3	13	24	M14-P1.5	5	3	17	17H	4	3.9	6	M6	47
PCIS40-15	40	120	46	3	30	24	M14-P1.5	5	3	17	17H	4	3.9	15	M6	59
PCIS40-30	40	150	46	3	60	24	M14-P1.5	5	3	17	17H	4	3.9	30	M6	76
PCIS40-50	40	190	46	3	100	24	M14-P1.5	5	3	17	17H	4	3.9	50	M6	99

PCLS Series



10~20



30~40

PCLS	A	B	C	D	E	F	G	H	I	J	K	L	M	W	S	Z	질량(g)
PCLS10-4	10	67	15	22	8	19	M11-P1	5	3	21	14	14H	3	2.9	4	M5	36
PCLS10-10	10	79	15	22	20	19	M11-P1	5	3	21	14	14H	3	2.9	10	M5	40
PCLS10-20	10	99	15	22	40	19	M11-P1	5	3	21	14	14H	3	2.9	20	M5	47
PCLS10-30	10	119	15	22	60	19	M11-P1	5	3	21	14	14H	3	2.9	30	M5	54
PCLS15-4	15	75	23	22	8	19	M11-P1	5	3	21	14	14H	3	2.9	4	M5	37
PCLS15-10	15	87	23	22	20	19	M11-P1	5	3	21	14	14H	3	2.9	10	M5	41
PCLS15-20	15	107	23	22	40	19	M11-P1	5	3	21	14	14H	3	2.9	20	M5	48
PCLS15-30	15	127	23	22	60	19	M11-P1	5	3	21	14	14H	3	2.9	30	M5	54
PCLS20-4	20	75	23	22	8	19	M11-P1	5	3	21	14	14H	3	2.9	4	M5	39
PCLS20-10	20	87	23	22	20	19	M11-P1	5	3	21	14	14H	3	2.9	10	M5	43
PCLS20-20	20	107	23	22	40	19	M11-P1	5	3	21	14	14H	3	2.9	20	M5	50
PCLS20-30	20	127	23	22	60	19	M11-P1	5	3	21	14	14H	3	2.9	30	M5	54
PCLS30-6	30	109.5	37.5	32	13	24	M14-P1.5	5	3	23	20	17H	4	3.9	6	M6	83
PCLS30-15	30	126.5	37.5	32	30	24	M14-P1.5	5	3	23	20	17H	4	3.9	15	M6	94
PCLS30-30	30	156.5	37.5	32	60	24	M14-P1.5	5	3	23	20	17H	4	3.9	30	M6	110
PCLS30-50	30	196.5	37.5	32	100	24	M14-P1.5	5	3	23	20	17H	4	3.9	50	M6	134
PCLS40-6	40	118	46	32	13	24	M14-P1.5	5	3	23	20	17H	4	8.8	6	M6	86
PCLS40-15	40	135	46	32	30	24	M14-P1.5	5	3	23	20	17H	4	8.8	15	M6	95
PCLS40-30	40	165	46	32	60	24	M14-P1.5	5	3	23	20	17H	4	8.8	30	M6	114
PCLS40-50	40	204	46	32	100	24	M14-P1.5	5	3	23	20	17H	4	8.8	50	M6	139

PF-M / PF-W Series
PC-M / PC-W Series

●주문방법

◈PAD · HOLDER							
PF①-②-③ PC①-②-③							
①PAD 경(Ømm)							
10	15	20	25	30	35	40	50
②금구							
M	수나사		W	암나사			
③PAD재질 · 색							
N	NBR		흑				
U	우레탄		청				
S	실리콘		반투명				
NE	도전성 NBR						
SE	도전성 실리콘						
V	불소고무(바이톤)						

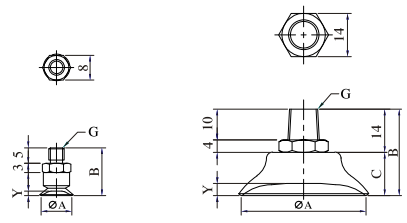
PF-M	A	B	C	G	Y	질량
PF-5,6,8,10M	10	15.5	7.5	M5	1.5	7
PF-15M	15	22	8	R1/8	1.9	8
PF-20M	20	24	10	R1/8	2.3	8
PF-25M	25	28	14	R1/8	3	12
PF-30M	30	26	12	R1/8	2	12
PF-35M	35	28	14	R1/8	3	12
PF-40M	40	28	14	R1/8	3.5	12
PF-50M	50	29	15	R1/8	4	17

PF-W	A	B	C	G	Y	질량
PF-5,6,8,10W	10	15.5	7.5	M5(M6)	1.5	8
PF-15W	15	22	8	Rp1/8	1.9	9
PF-20W	20	24	10	Rp1/8	2.3	9
PF-25W	25	28	14	Rp1/8	3	13
PF-30W	30	26	12	Rp1/8	2	13
PF-35W	35	28	14	Rp1/8	3	13
PF-40W	40	28	14	Rp1/8	3.5	13
PF-50W	50	29	15	Rp1/8	4	18

PC-M	A	B	C	G	Y	질량
PC-7,10M	10	22	15	M5	8	
PC-15M	15	37	23	M5	14	
PC-20M	20	37	23	M5	14	
PC-30M	30	51	37	R1/8	20	
PC-40M	40	60	46	R1/8	33	

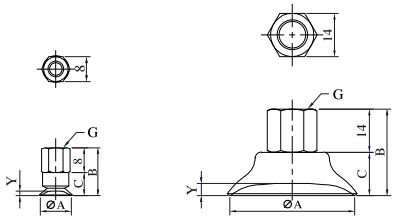
PC-W	A	B	C	G	Y	질량
PC-7,10W	10	22	15	M5	8	
PC-15W	15	37	23	Rp1/8	14	
PC-20W	20	37	23	Rp1/8	14	
PC-30W	30	51	37	Rp1/8	20	
PC-40W	40	60	46	Rp1/8	33	

PF-M



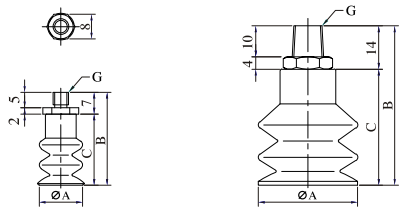
PF-5~10M　　PF-15~50M

PF-W



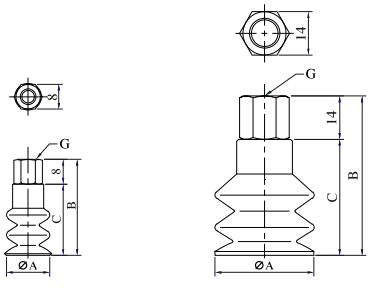
PF-5~10W　　PF-15~50W

PC-M



PC-7~20M　　PC-30~40M

PC-W



PC-7~20W　　PC-30~40W

PJ-M / PJ-W Series
PB-M / PB-W Series

●주문방법

◈PAD · HOLDER						
PB-②-③						
PJ-②-③						
PA-②-③						
①PAD 경(Ømm)						
10	13	15	20	30	40	50
②금구						
M	수나사	W	암나사			
③PAD재질 · 색						
N	NBR	흑				
U	우 레 탄	청				
S	실 리 콘	반투명				
NE	도전성 NBR					
SE	도전성 실리콘					
V	불소고무(바이톤)					

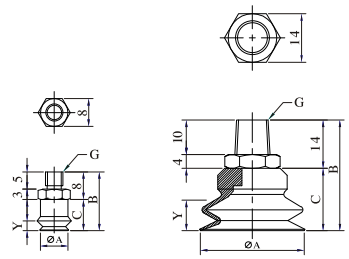
PJ-M	A	B	C	G	Y	질량
PJ-6M	6	17	9	M5	4.2	
PJ-8M	8	17	9	M5	4.2	
PJ-10M	10	17.5	9.5	M5	3	7
PJ-15M	15	25	11	R1/8	4.5	8
PJ-20M	20	27	13	R1/8	5.5	9
PJ-30M	25	32	18	R1/8	8	14
PJ-40M	30	32	18	R1/8	8	16
PJ-50M	50	34	20	R1/8	9	26

PJ-W	A	B	C	G	Y	질량
PJ-6W	6	17	9	M5(M6)	4.2	
PJ-8W	8	17	9	M5(M6)	4.2	
PJ-10W	10	17.5	9.5	M5(M6)	3	8
PJ-15W	15	25	11	Rp1/8	4.5	8
PJ-20W	20	27	13	Rp1/8	5.5	10
PJ-30W	30	32	18	Rp1/8	8	15
PJ-40W	40	32	18	Rp1/8	8	17
PJ-50W	50	34	20	Rp1/8	9	27

PB-M	A	B	C	G	Y	질량
PB-10M	10	21.5	13.5	M5	7.5	8
PB-13M	13	30	16	M5	9.5	9
PB-15M	15	30	16	M5	10	9
PB-20M	20	33.5	19.5	R1/8	12	10
PB-30M	30	44.5	30.5	R1/8	17	16
PB-40M	40	44.5	30.5	R1/8	15.5	19
PB-50M	50	50.5	36.5	R1/8	20	30

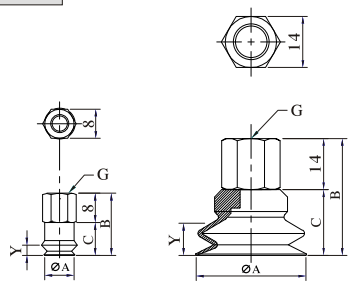
PB-W	A	B	C	G	Y	질량
PB-10W	10	21.5	13.5	M5(M6)	7.5	9
PB-13W	13	30	16	M5(M6)	9.5	9
PB-15W	15	30	16	M5(M6)	10	9
PB-20W	20	33.5	19.5	Rp1/8	12	11
PB-30W	30	44.5	30.5	Rp1/8	17	17
PB-40W	40	44.5	30.5	Rp1/8	15.5	19
PB-50W	50	50.5	36.5	Rp1/8	20	31

PJ-M



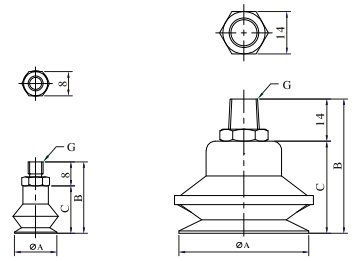
PJ-6~10M　　PJ-15~50M

PJ-W



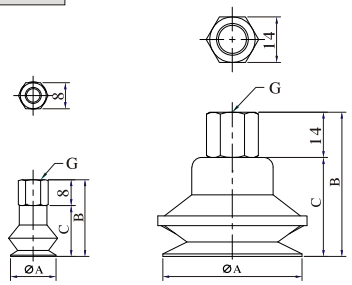
PJ-6~10W　　PJ-15~50W

PB-M



PB-10~15M　　PB-20~50M

PB-W

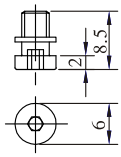


PB-10~15W　　PB-20~50W

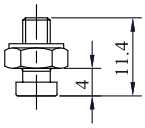
VACUUM PAD

PAE

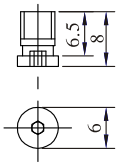
● 편평형 (기존 HOLDER 사용가능)



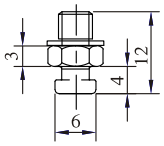
PA-8~20-M4



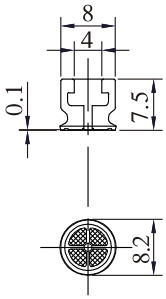
EN-PA-8~20-M4



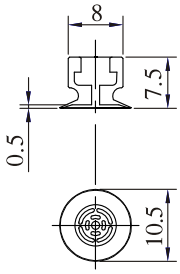
PA-8~20-M5



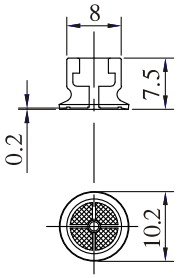
EN-PA-8~20-M5



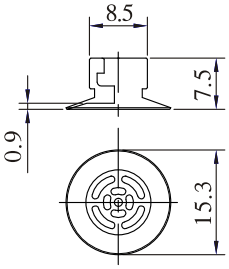
PAE-8A



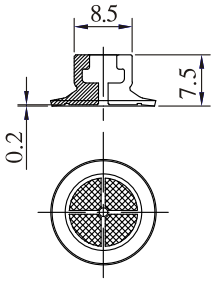
PAE-10



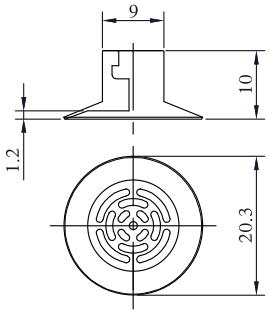
PAE-10A



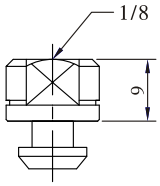
PAE-15



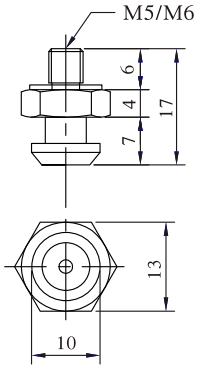
PAE-15A



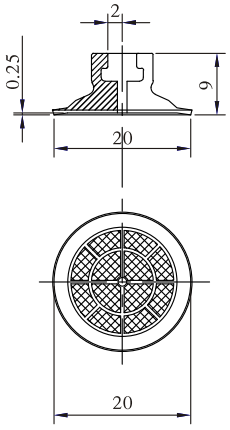
PAE-20



EN-PA-30~40-1/8W



EN-PA-30~40-M6
EN-PA-30~40-M5



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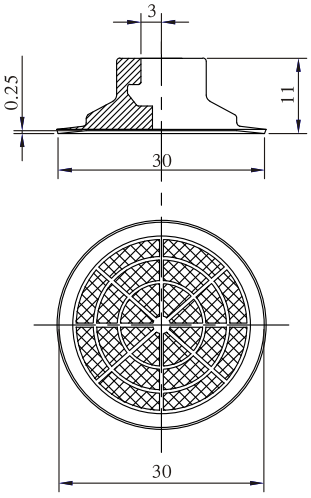
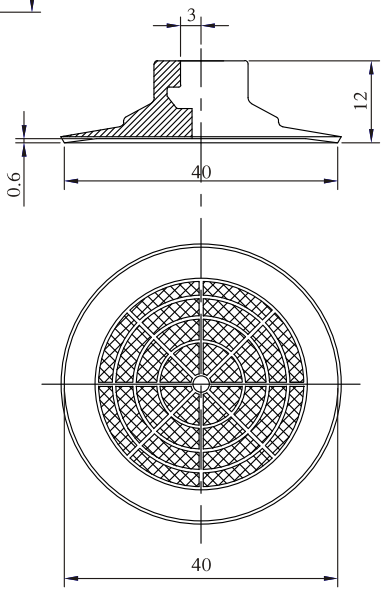


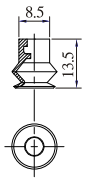
PAE-30A



PAE-40A

VACUUM PAD

PBE



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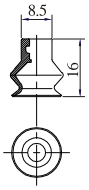
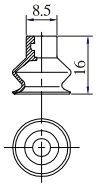
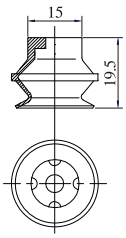


PBE-13



PBE-15



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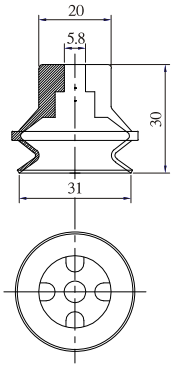
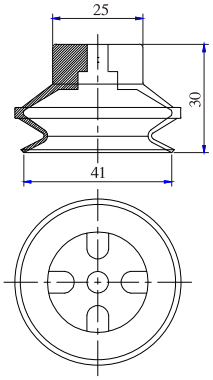


PBE-30



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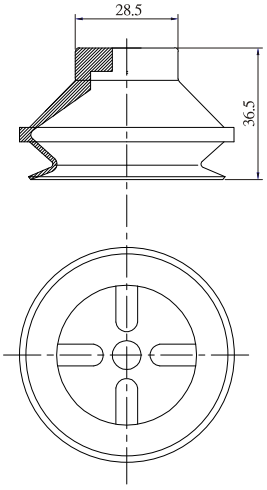

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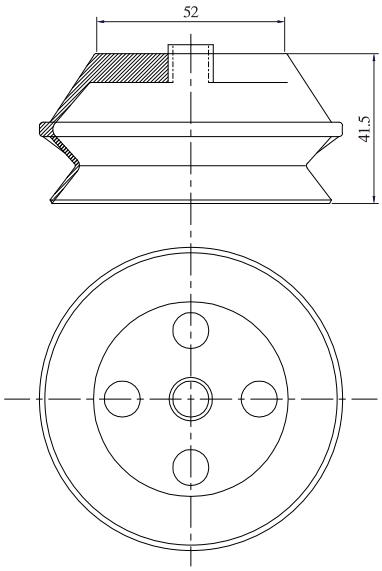

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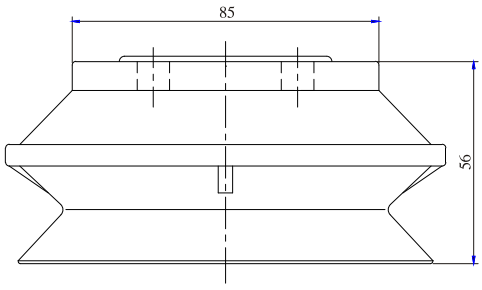
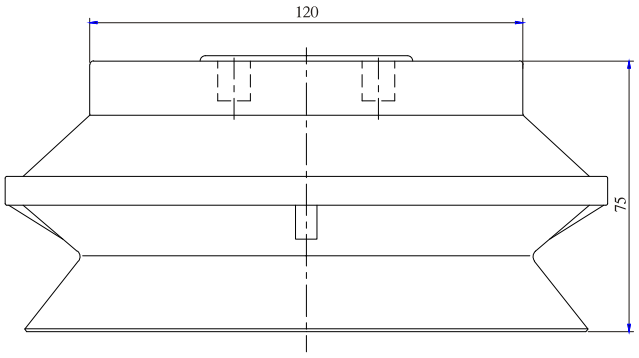


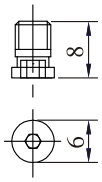
PBE-110



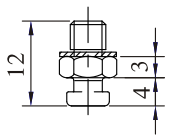
PBE-150

VACUUM PAD

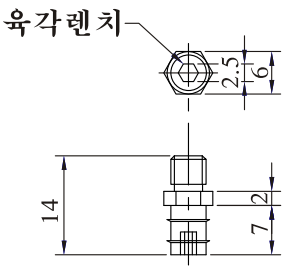
PCE



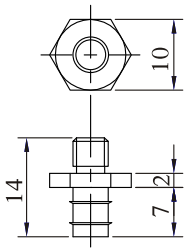
PC-7-M5



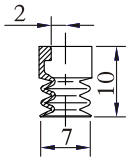
EN-PC-7-M5



PC-10~20-M5



EN-PC-10~20-M5



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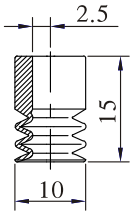

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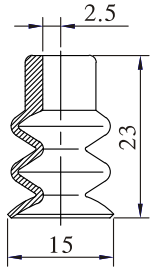

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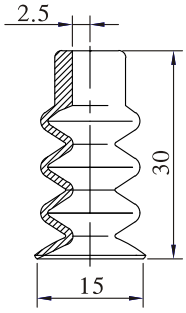

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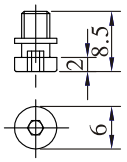
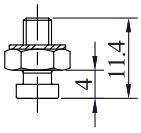
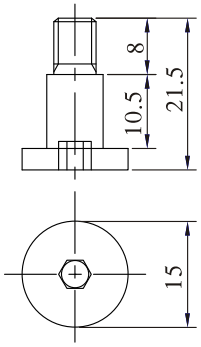


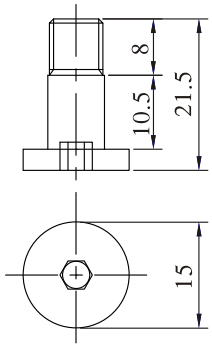
PC-7-M4



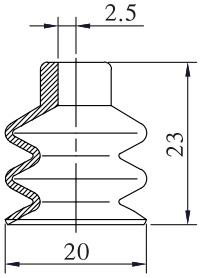
EN-PC-7-M4



PC-30~40-M6



PC-30~40-M8



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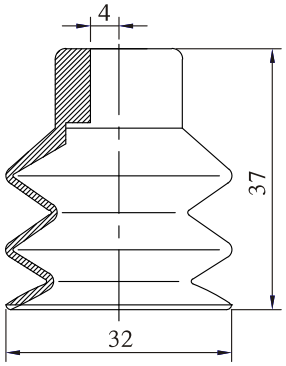

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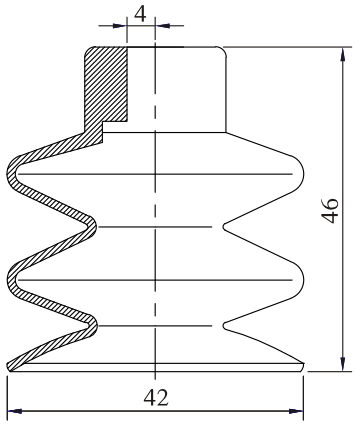
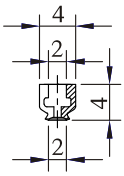


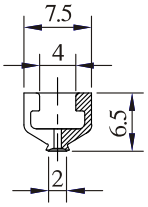
PCE-40

VACUUM PAD

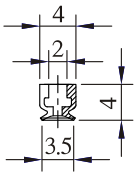
PFE



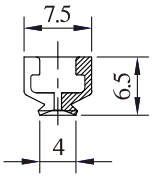
PFE-2



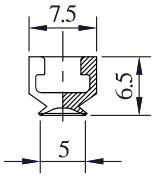
PFE-2A



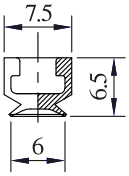
PFE-3.5



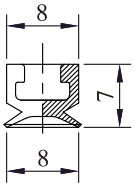
PFE-4A



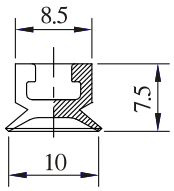
PFE-5



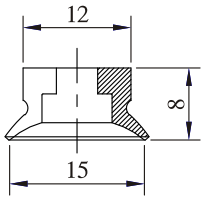
PFE-6



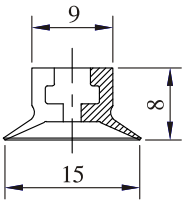
PFE-8



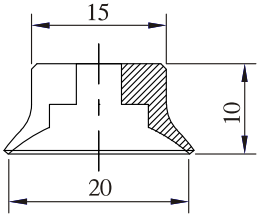
PFE-10



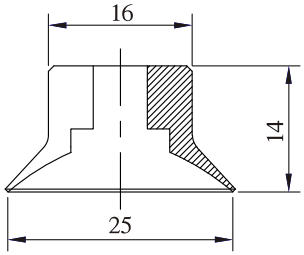
PFE-15



PFE-15A



PFE-20



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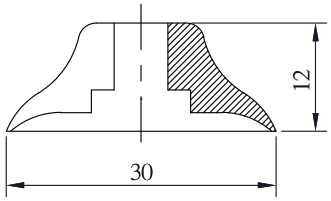

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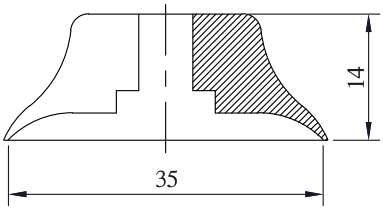

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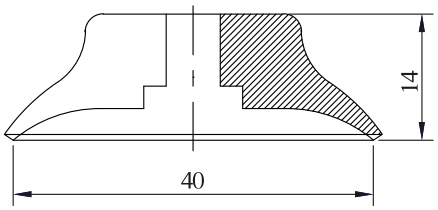

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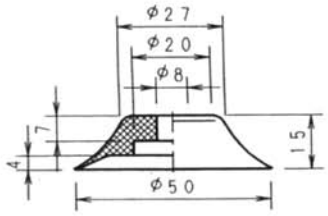
VACUUM PAD

PFE



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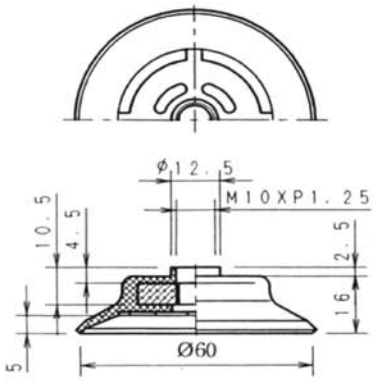

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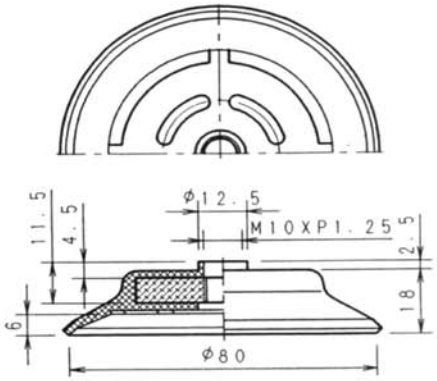

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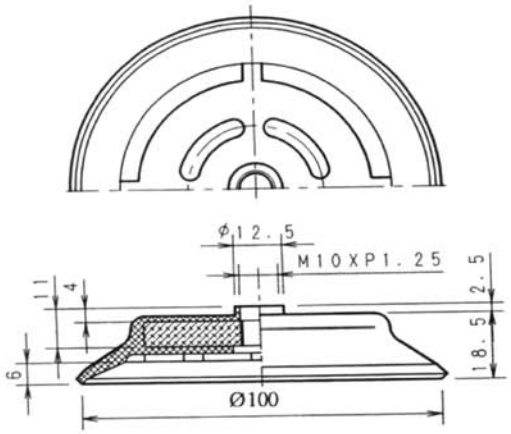

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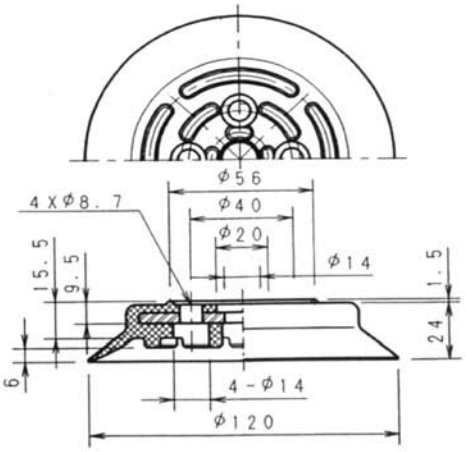

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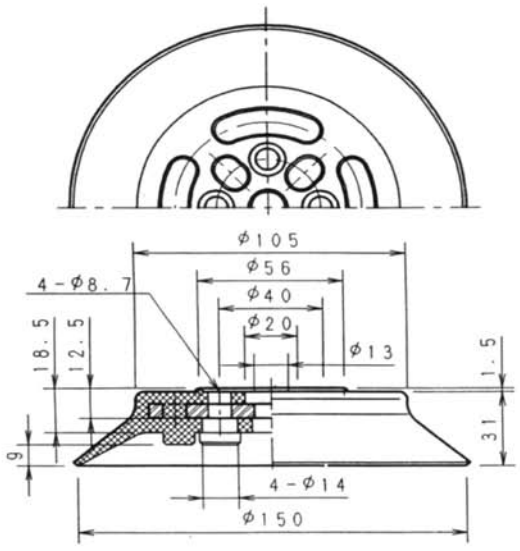

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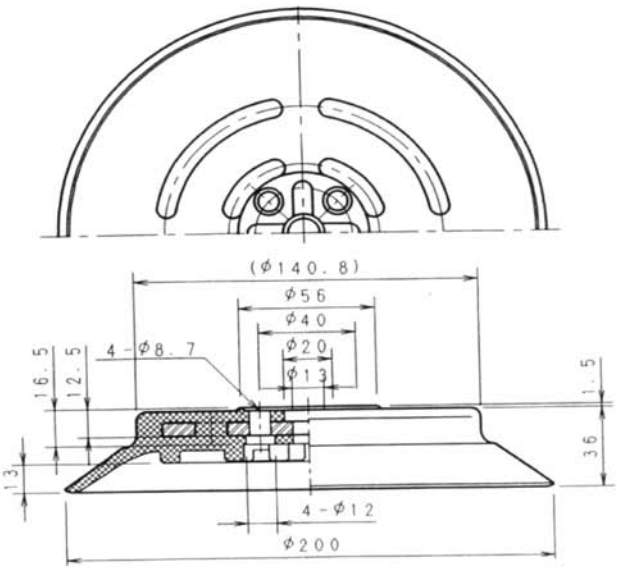

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VACUUM PAD

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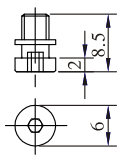

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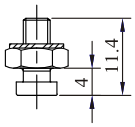
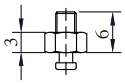


EN-PJ-3A
~8-M4



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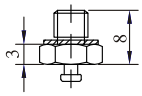

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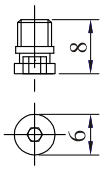

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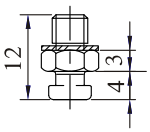
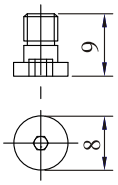


EN-PJ-3A
~8-M5



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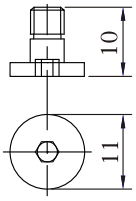

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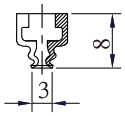

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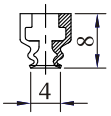

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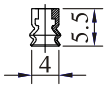

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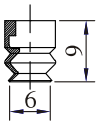

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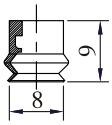

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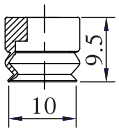

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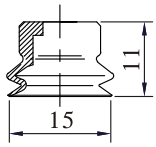

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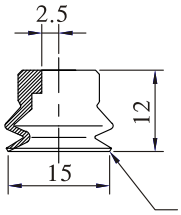
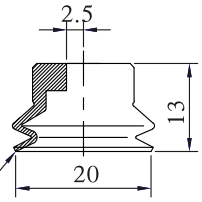


PJE-15A

PAD 날개부분이
기존모델보다
두껍게 되어있습니다.
(PJE-15/20A TYPE)



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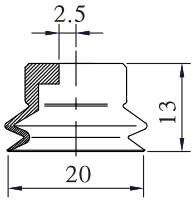

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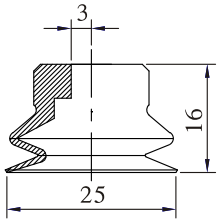

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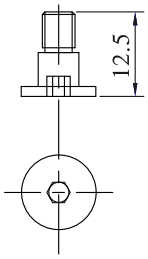

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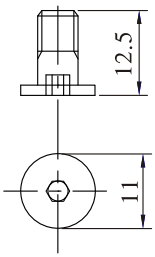

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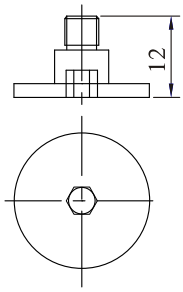

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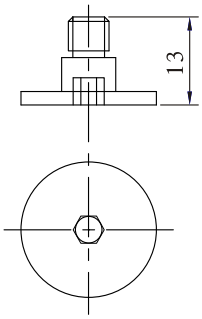

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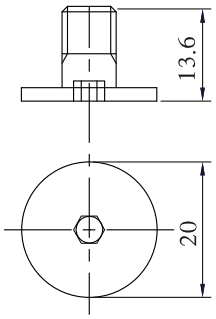

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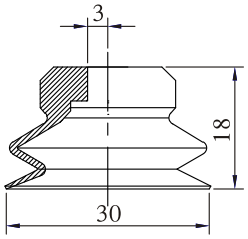

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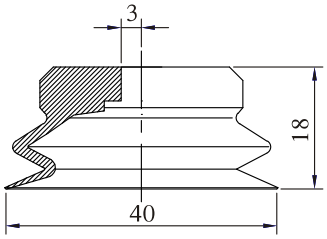

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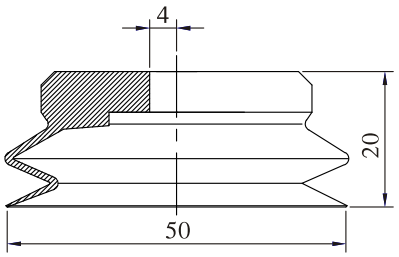

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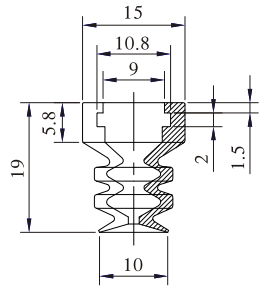
VACUUM PAD

PME



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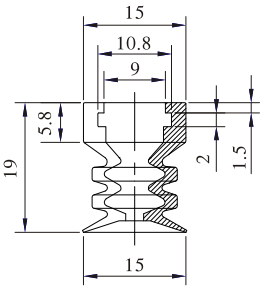

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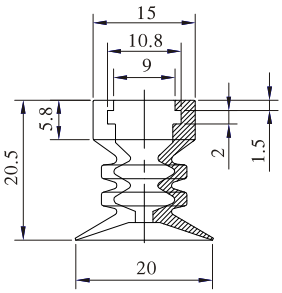

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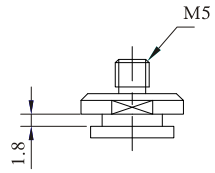

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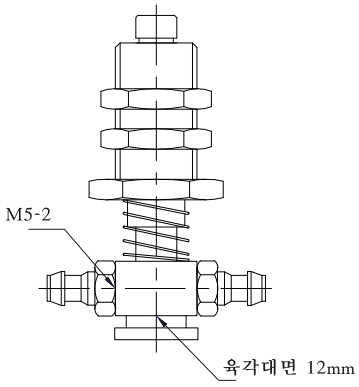

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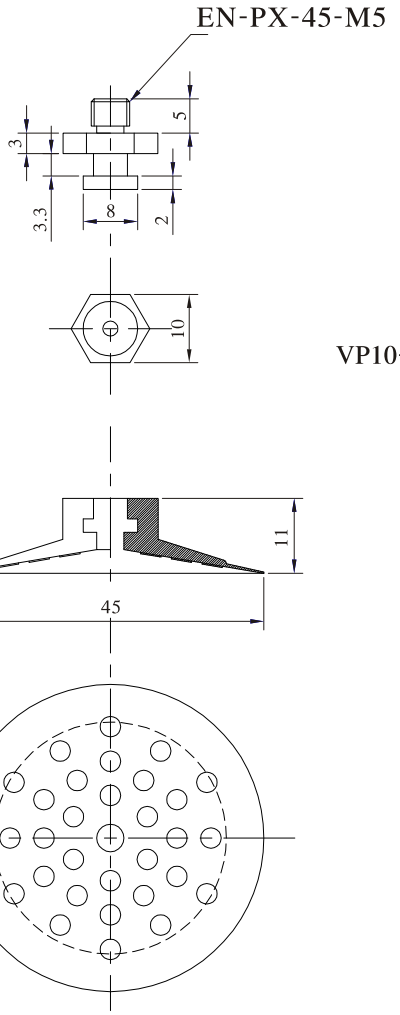

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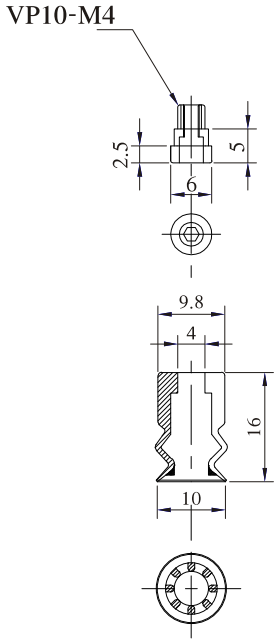
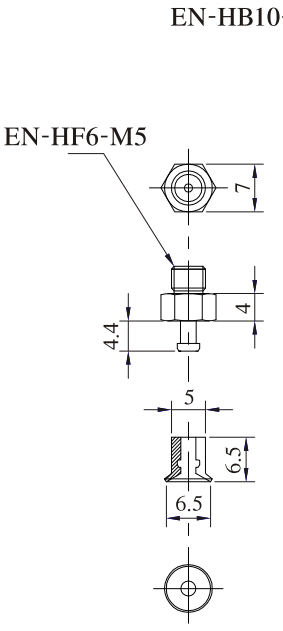


VPE-10B



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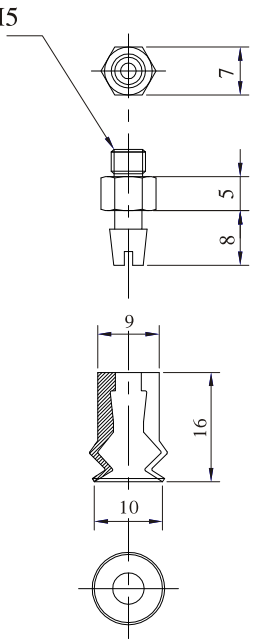
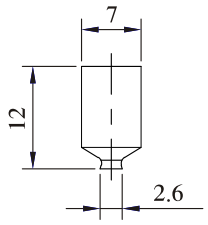


HBE-10

VACUUM PAD

PSE



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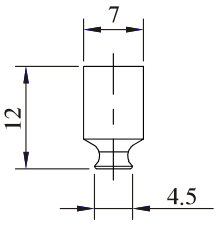

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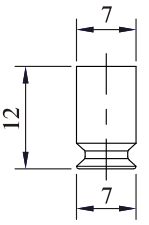

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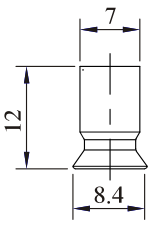

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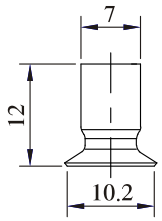

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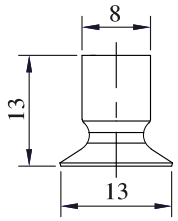

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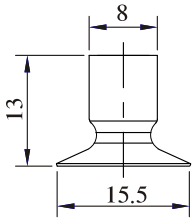

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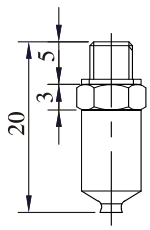

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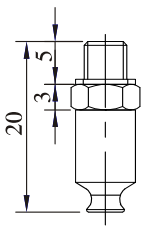

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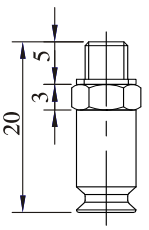

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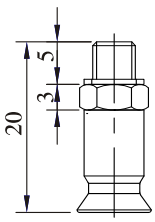

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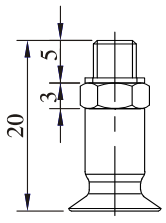

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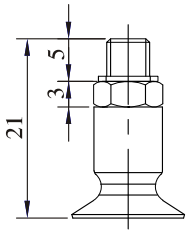
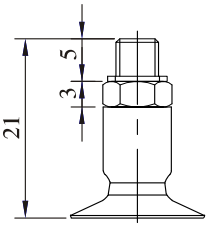


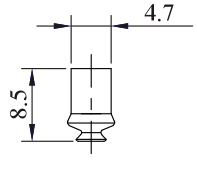
PSE-13-M5



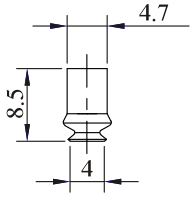
PSE-15-M5

VACUUM PAD

PSE



PSE-3B



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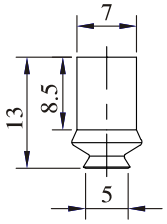

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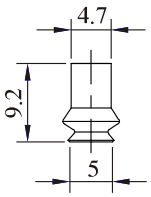
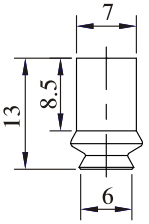
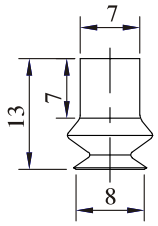


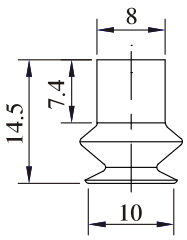
PSE-5AB



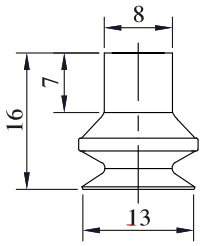
PSE-6B



PSE-8B



PSE-10B



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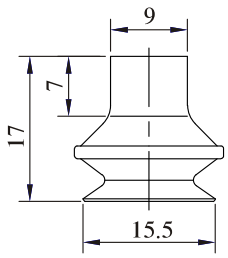
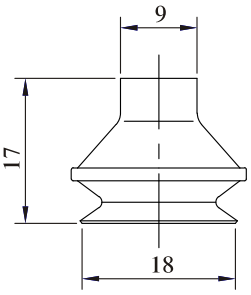
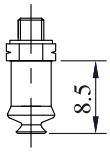


PSE-15B



PSE-18B



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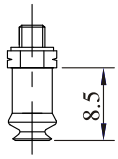

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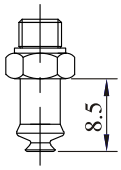

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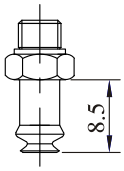

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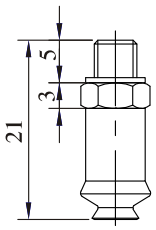

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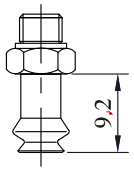
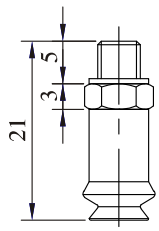


PSE-5AB-M5



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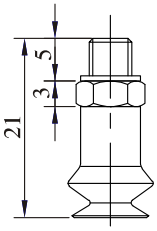

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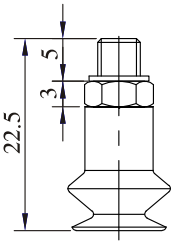

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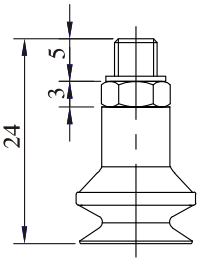

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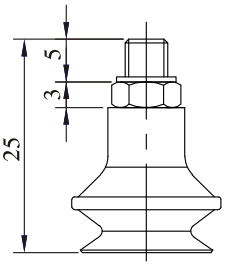

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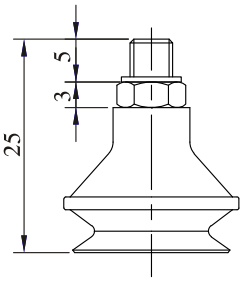
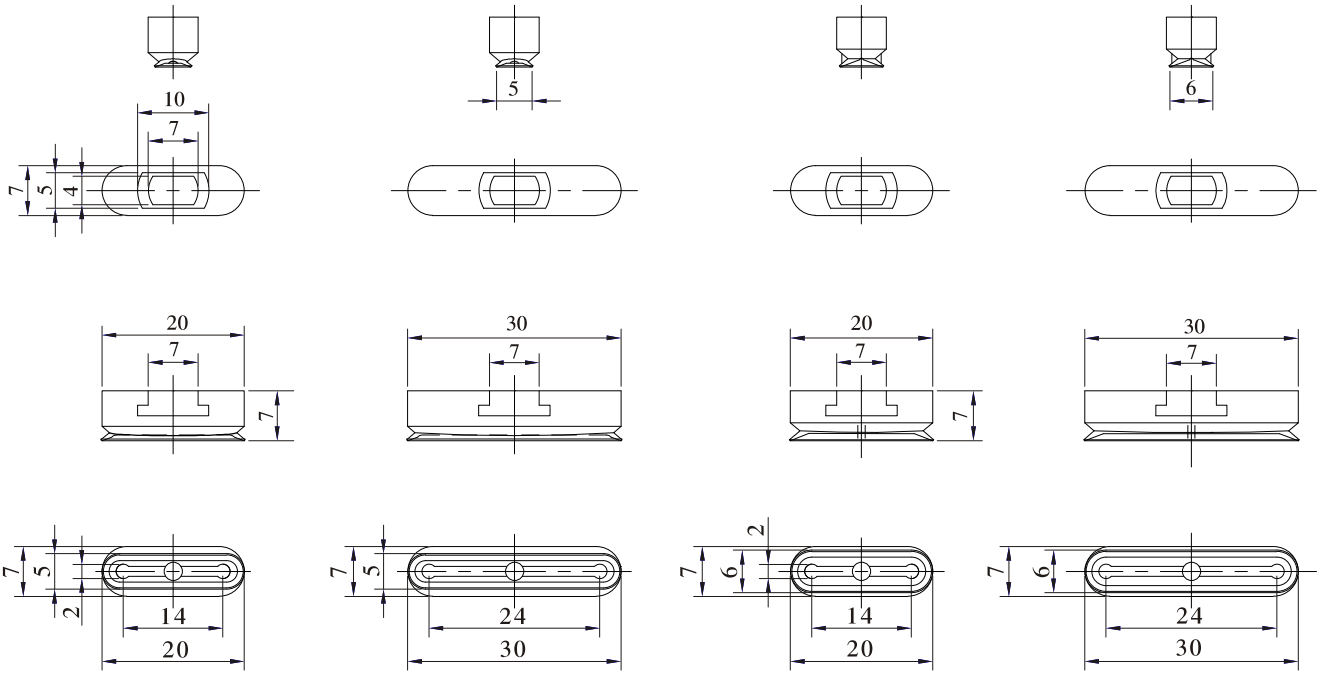


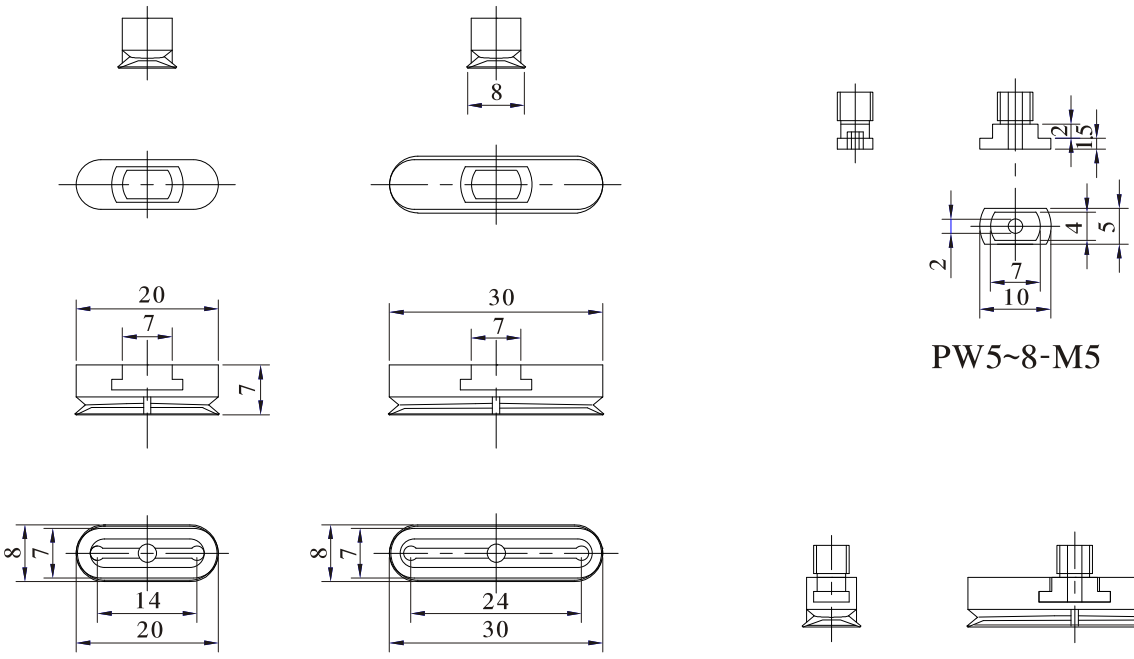
PSE-18B-M5

VACUUM PAD

PWE



PWE-5-20 PWE-5-30 PWE-6-20 PWE-6-30

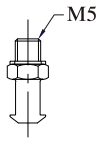


PW5~8-M5

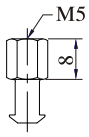
PWE-8-20 PWE-8-30 조립도

VACUUM PAD

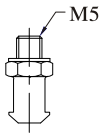
ZPE



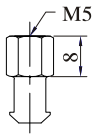
EN-ZP-10~16-M5



EN-ZP-10~16-M5W



EN-ZP-20~32-M5



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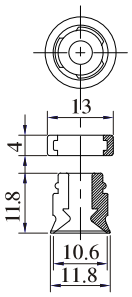

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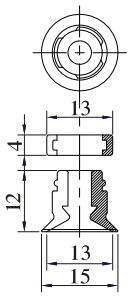

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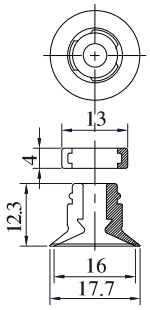

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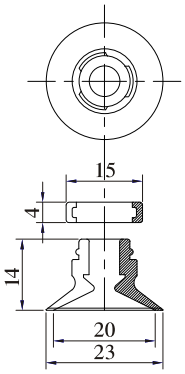

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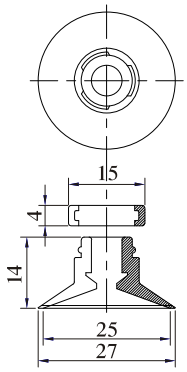
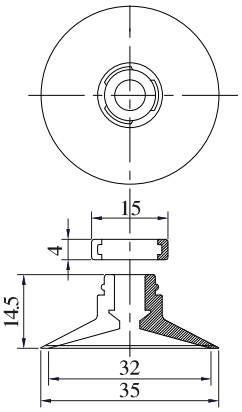
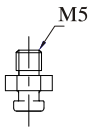


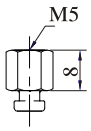
ZPE-25



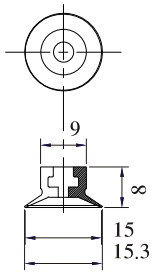
ZPE-32



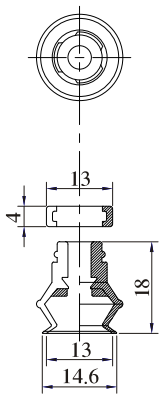
EN-ZP-15-M5



EN-ZP-15-M5W



ZPE2-15



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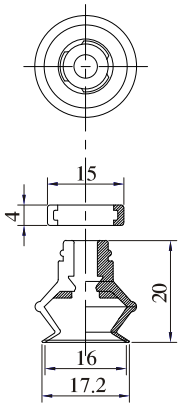

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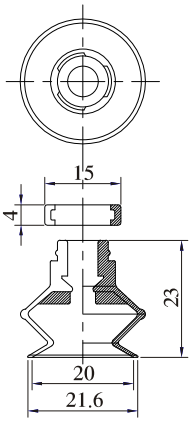
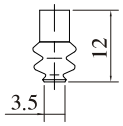


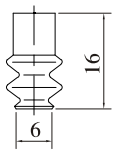
ZPE-20B

VACUUM PAD

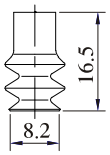
PSLE / SFE



PSLE-3.5B



PSLE-6B



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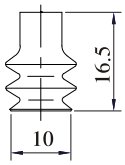

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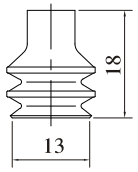
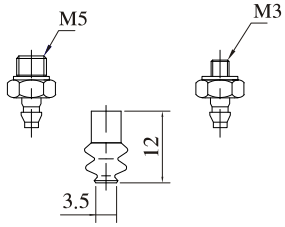
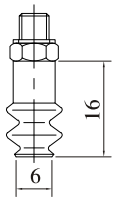


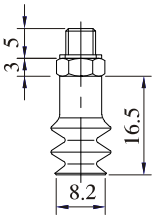
PSLE-13B



PSLE-3.5B-M3/M5



PSLE-6B-M5



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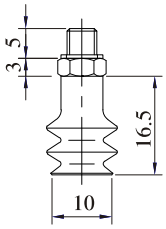

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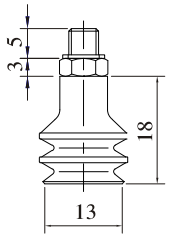
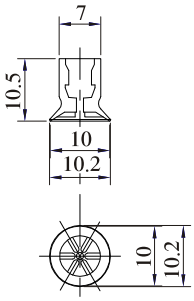
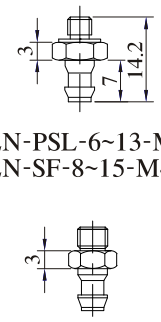


PSLE-13B-M5

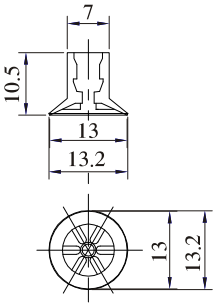


SFE-10A

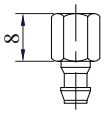


EN-PSL-6~13-M4
EN-SF-8~15-M4

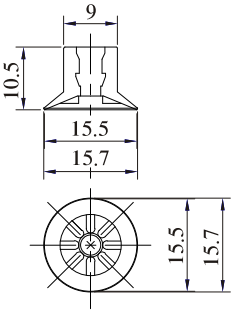
EN-PSL-6~13-M5
EN-SF-8~15-M5



SFE-13A



EN-PSL-6~13-M5W
EN-SF-8~15-M5W



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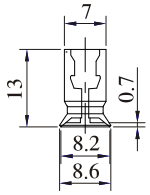
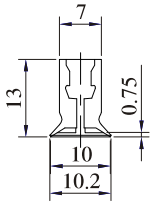
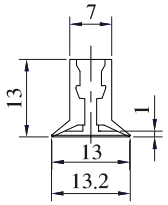


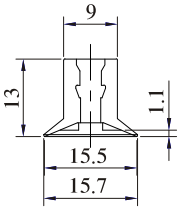
SFE-8



SFE-10



SFE-13



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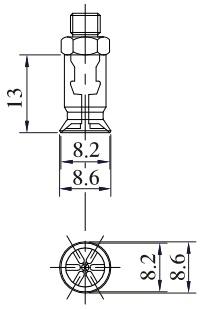

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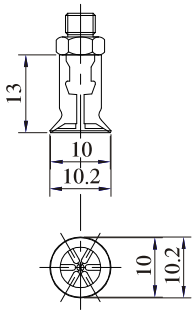

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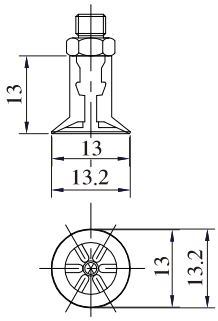

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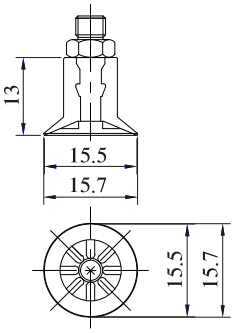

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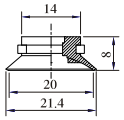
VACUUM PAD

SFE



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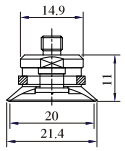

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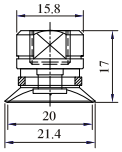

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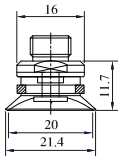

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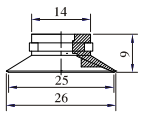

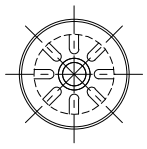

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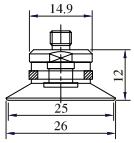

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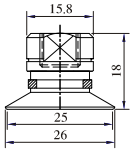

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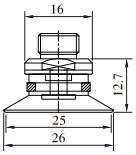

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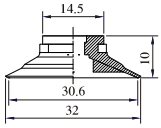

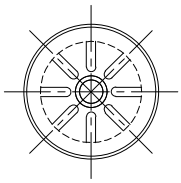

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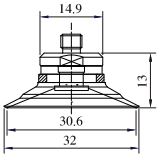

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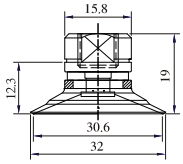

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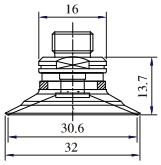

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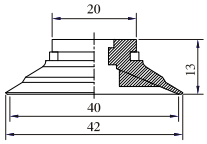

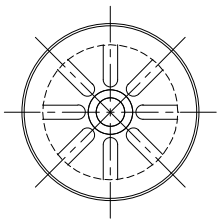

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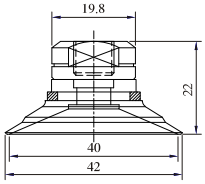

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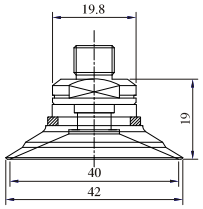

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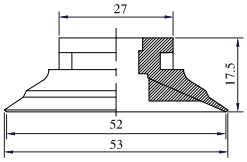

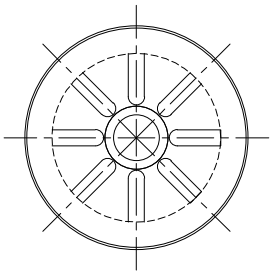

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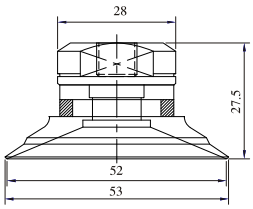

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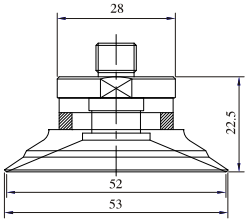
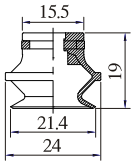
SFE-50-1/4W



SFE-50-1/8M
SFE-50-1/4M

VACUUM PAD

SBE



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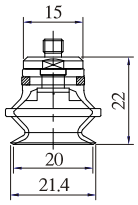

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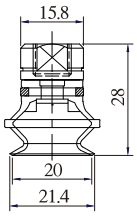

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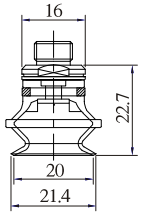

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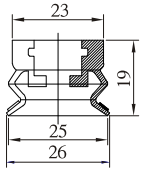

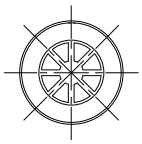

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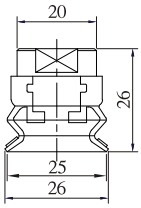

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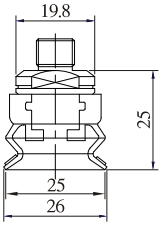

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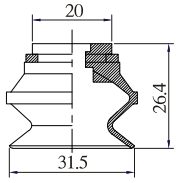

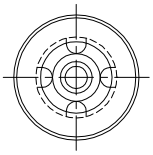

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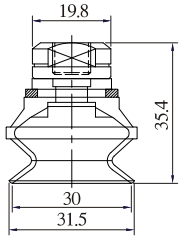

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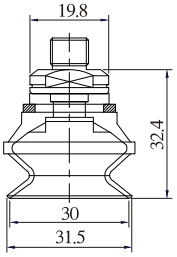

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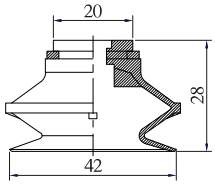

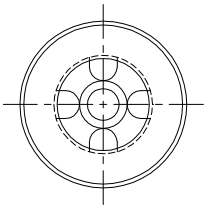

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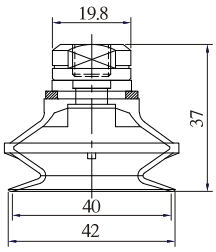

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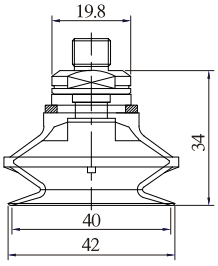

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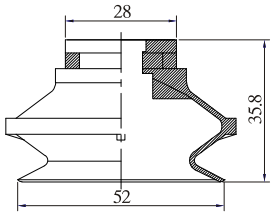

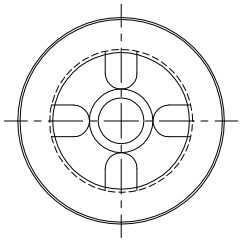

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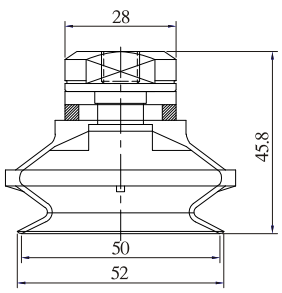
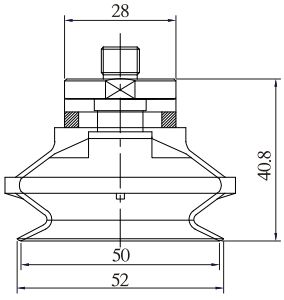


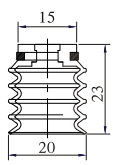
SBE-50-1/8W
SBE-50-1/4W

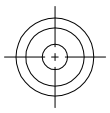


SBE-50-1/8M
SBE-50-1/4M

VACUUM PAD

SBLE





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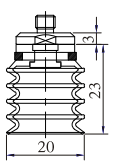

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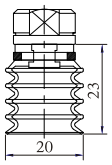

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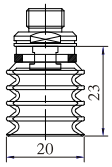

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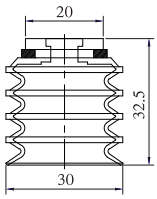

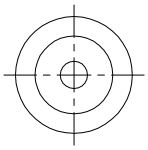

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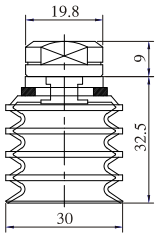

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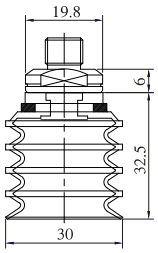

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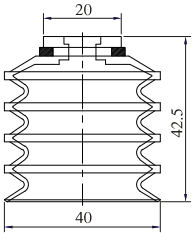

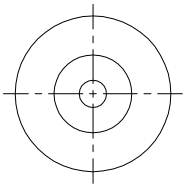

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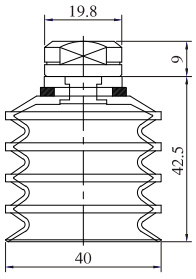

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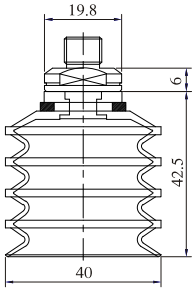
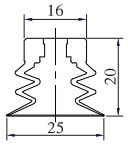
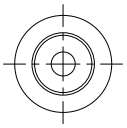
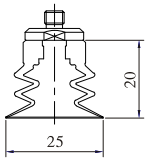


SBLE-40-1/8M

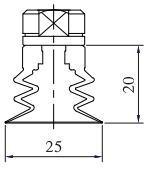




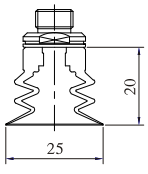
SBME-25



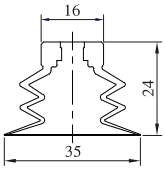
SBME-25-M5

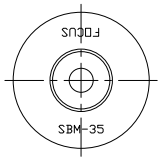


SBME-25-1/8W

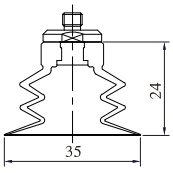


SBME-25-1/8M

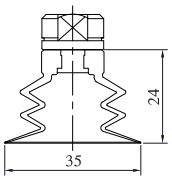




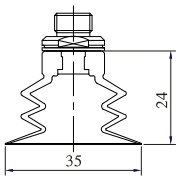
SBME-35



SBME-35-M5



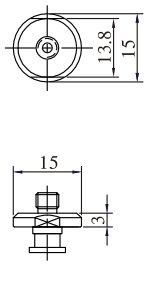
SBME-35-1/8W



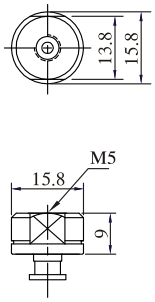
SBME-35-1/8M

VACUUM PAD

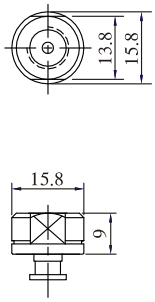
SET SCREW



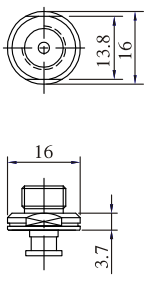
EN-SF-20~30-M5
EN-SB-20-M5
EN-SBL-20-M5
EN-SBM-35-M5



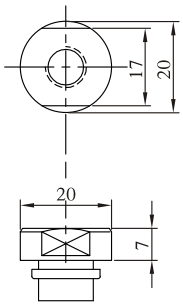
EN-SF-20~30-M5W
EN-SB-20-M5W
EN-SBL-20-M5W
EN-SBM-35-M5W



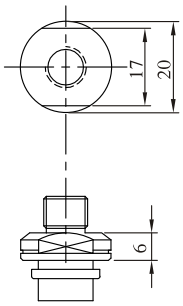
EN-SF-20~30-1/8W
EN-SB-20-1/8W
EN-SBL-20-1/8W
EN-SBM-35-1/8W



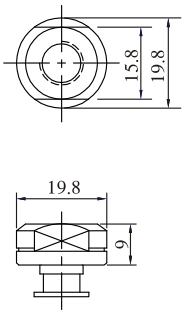
EN-SF-20~30-1/8M
EN-SB-20-1/8M
EN-SBL-20-1/8M
EN-SBM-35-1/8M



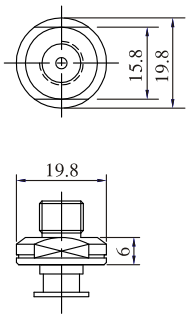
EN-SB-25-1/8W



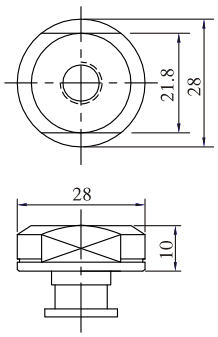
EN-SB-25-1/8M



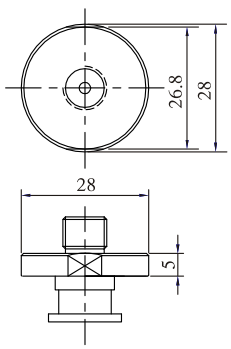
EN-SF-40-1/8W
EN-SB-30~40-1/8W
EN-SBL-30~40-1/8W



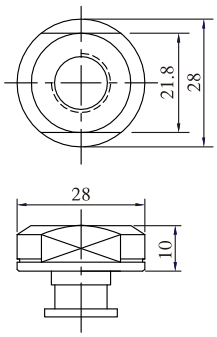
EN-SF-40-1/8M
EN-SB-30~40-1/8M
EN-SBL-30~40-1/8M



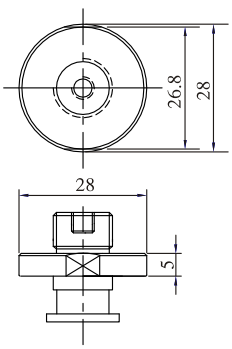
EN-SF-50-1/8W
EN-SB-50-1/8W



EN-SF-50-1/8M
EN-SB-50-1/8M



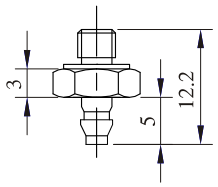
EN-SF-50-1/4W
EN-SB-50-1/4W



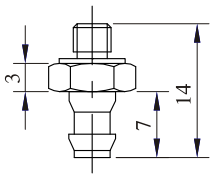
EN-SF-50-1/4M
EN-SB-50-1/4M

VACUUM PAD

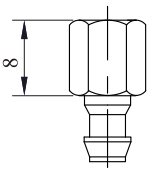
SET SCREW



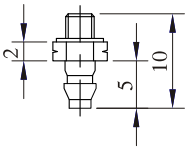
EN-PS-3B-M4
EN-PS-4B-M4
EN-PSL-3.5B-M4



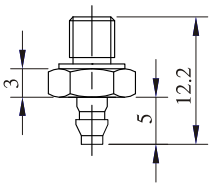
EN-PS-2~18-M4
EN-SF-8~15-M4



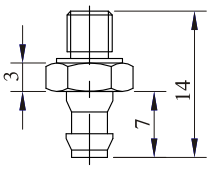
EN-SF-8~15-M5W
EN-PS-2~18-M5W



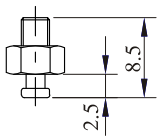
EN-PS-3B-M3
EN-PS-4B-M3
EN-PSL-3.5B-M3



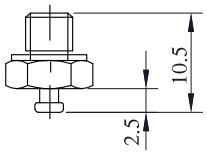
EN-PS-3B-M5
EN-PS-4B-M5



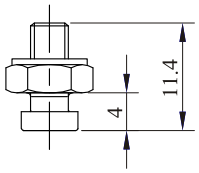
EN-PS-2~18-M5
EN-SF-8~15-M5



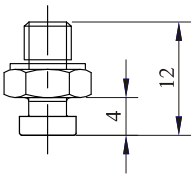
EN-PF-2/3.5-M3
EN-PJ-4-M3



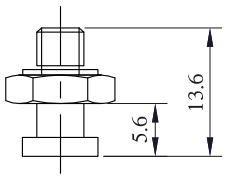
EN-PF-2/3.5-M5
EN-PJ-4-M5



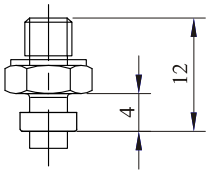
EN-PF-5~10-M4
EN-PJ-4A~8-M4
EN-PB-10-M4
EN-PA-8~20-M4
EN-PC-7-M4



EN-PF-5~10-M5
EN-PJ-4A~8-M5
EN-PB-10-M5
EN-PA-8~20-M5
EN-PC-7-M5



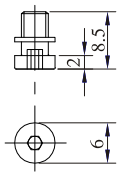
EN-PF-15-M5
EN-PJ-10~15-M5



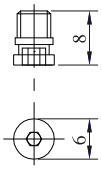
EN-PB-13~15-M5

VACUUM PAD

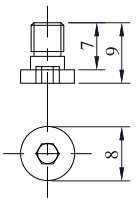
SET SCREW



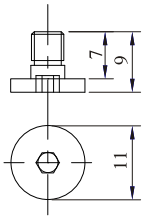
PF-5~10-M4
PB-10~15-M4
PA-10~20-M4
PJ-6~8-M4
PC-7-M4



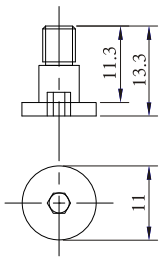
PF-5~10-M5
PB-10~15-M5
PA-10~20-M5
PJ-6~8-M5
PC-7-M5



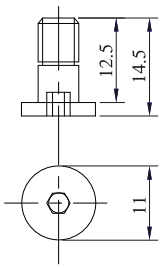
PF-15-M5
PJ-10~15-M5



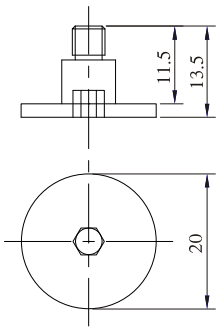
PF-20-M5
PB-20-M5
PJ-20~25-M5



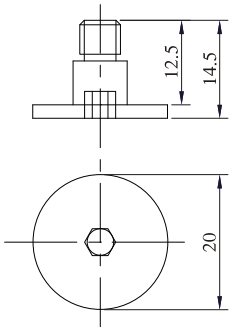
PF-25~40-M5
PB-30~40-M5
PJ-30~40-M5



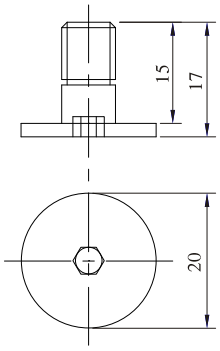
PF-25~40-M6
PB-30~40-M6
PJ-30~40-M6



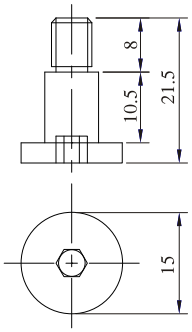
PF-50-M5
PB-50-M5
PJ-50-M5



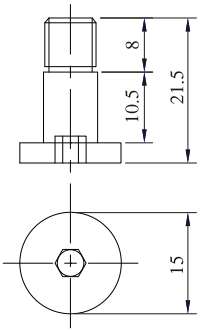
PF-50-M6
PB-50-M6
PJ-50-M6



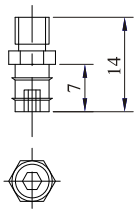
PF-50-M8
PB-50-M8
PJ-50-M8



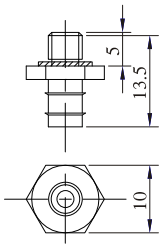
PC-30~40-M6



PC-30~40-M8

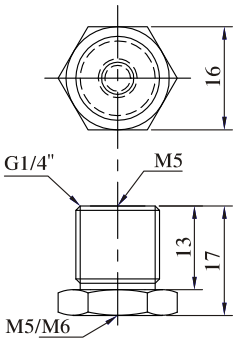


PC-10~20-M5

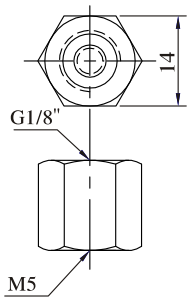


EN-PC-10~20-M5

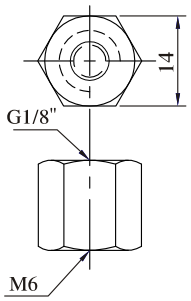
VACUUM PAD
ACCESSORY



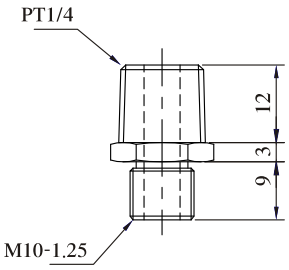
PF-M-M5/M6



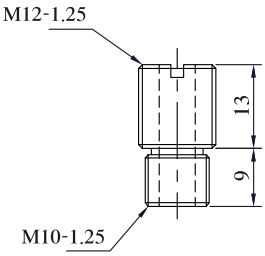
PF-W-M5



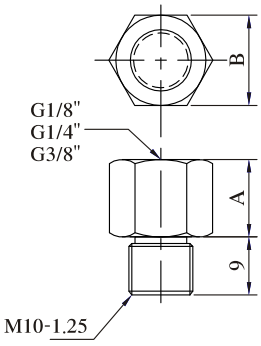
PF-W-M6



NM10-1/4"

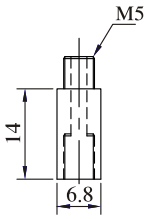


NM10-M12

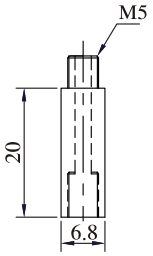


NM10-1/8W / A12 B14
NM10-1/4W / A14 B17
NM10-3/8W / A15 B20

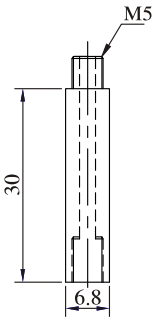
연결대(연장용)로 사용



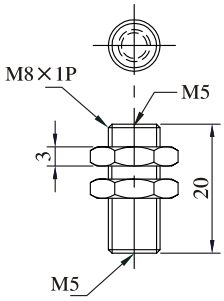
6.8-14 SUS



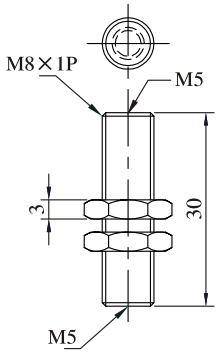
6.8-20 SUS



6.8-30 SUS



M8-M5-20L



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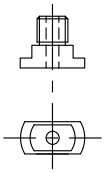
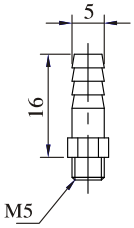
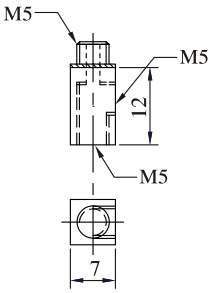


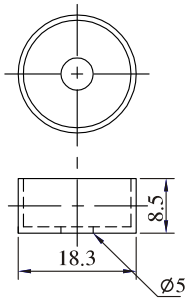
PW5~8-M5



BM-06M5L



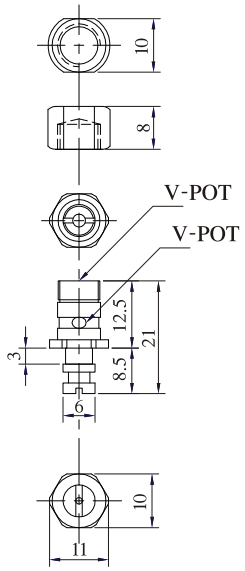
BLT-M5



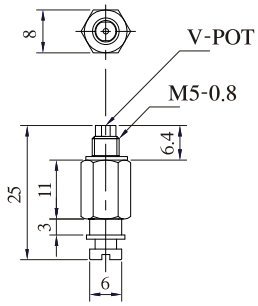
DUST CAP
백색 아세탈

VACUUM PAD

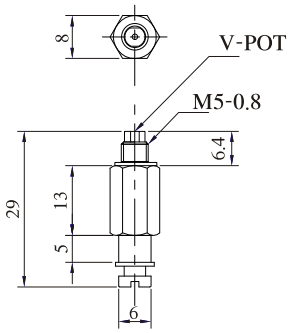
PAD HOLDER



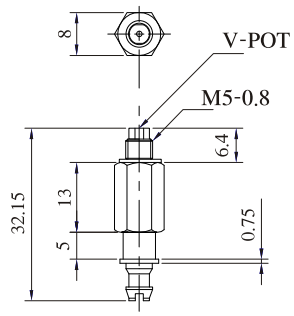
EPHC10-ST3



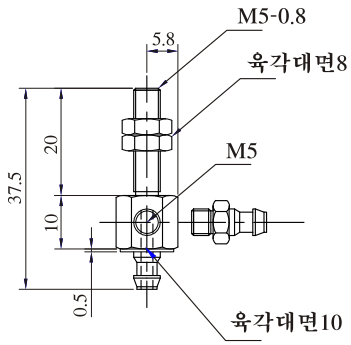
EPHM-ST3-M5



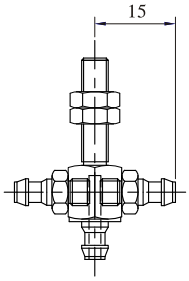
EPHM-ST5-M5



EPHS-ST5-M5



ZPLM-2~18



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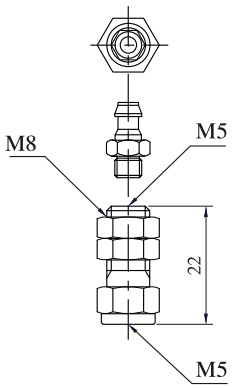

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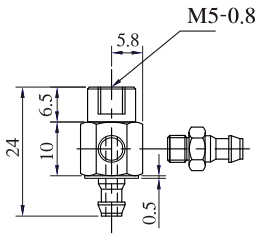

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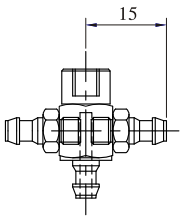

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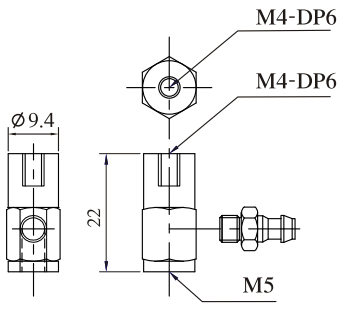
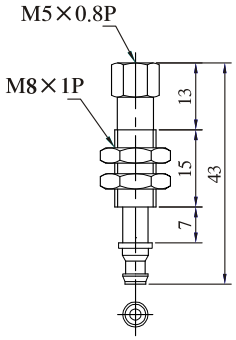


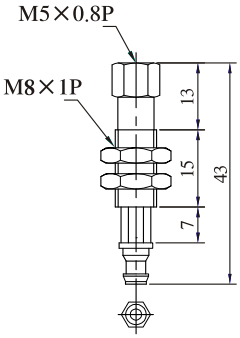
ZPLK-M5

ESC / ESM Series

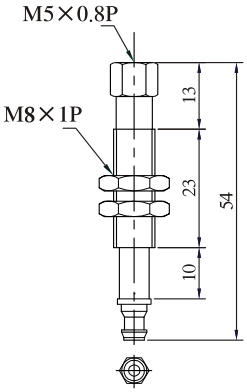
PAD HOLDER



ESC08-ST07



ESC08-ST07-K



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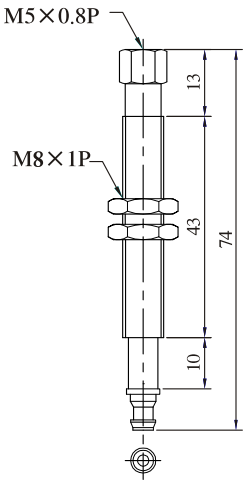

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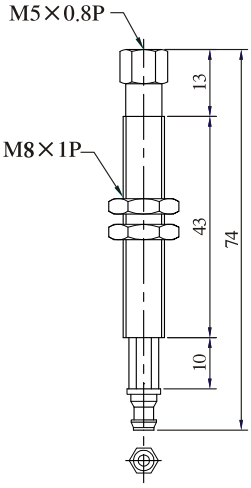

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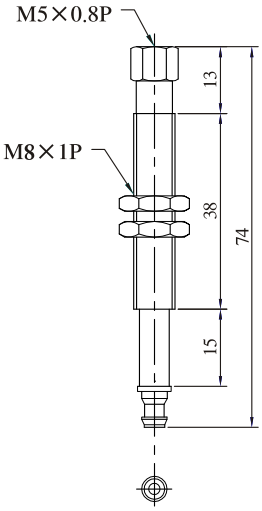

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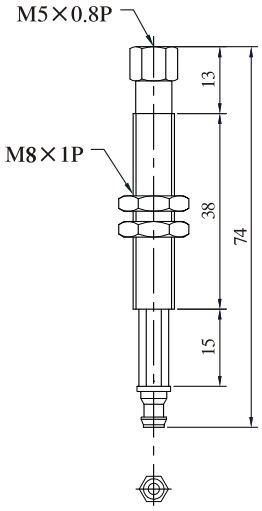
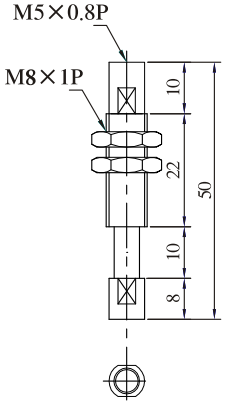
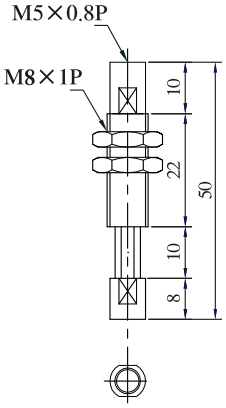


ESC08-ST15-K

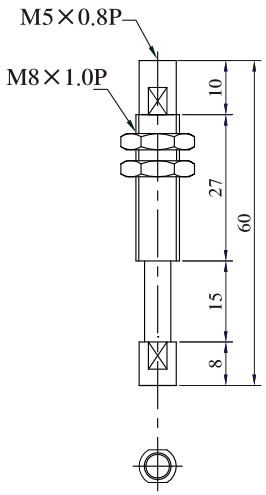


ESM08-ST10
(SUS)



ESM08-ST10-K
(SUS)

ESM Series



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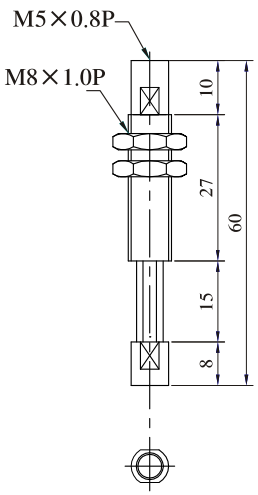
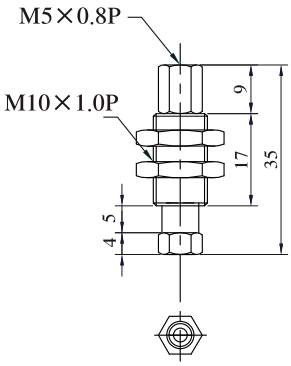
(SUS)



ESM08-ST15-K
(SUS)



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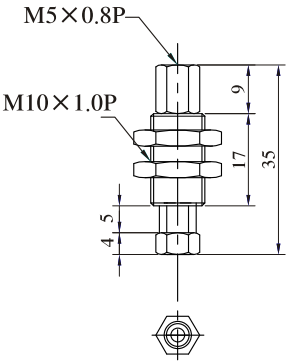

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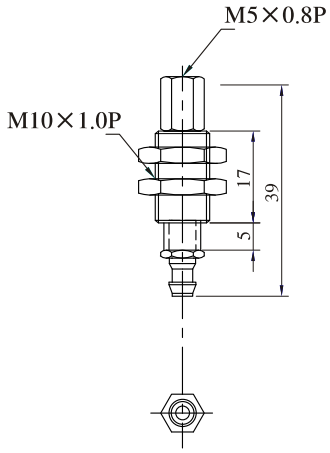
(SUS)



ESM10-ST5-H
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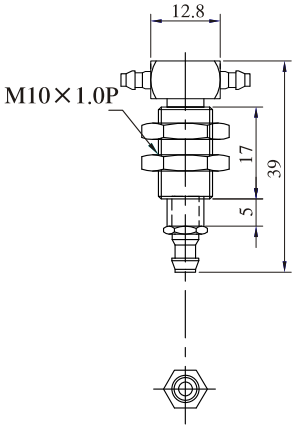

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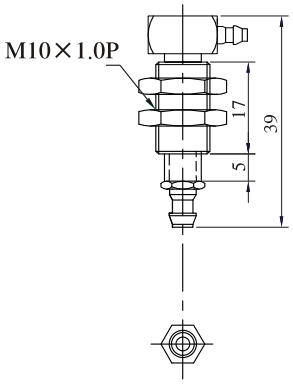
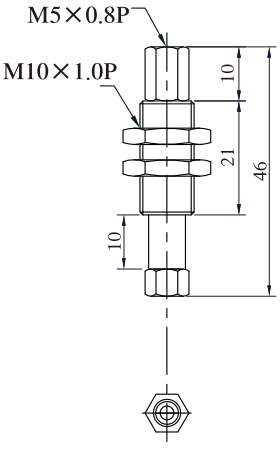
(SUS)

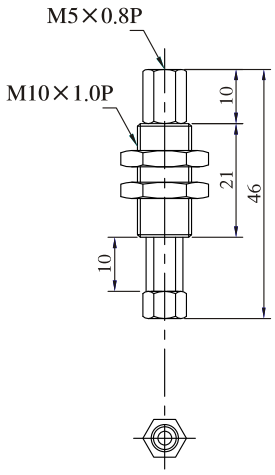


ESM10-ST5-H4L/H6L
(SUS)

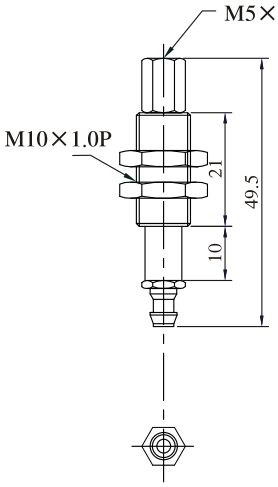


ESM10-ST10
(SUS)

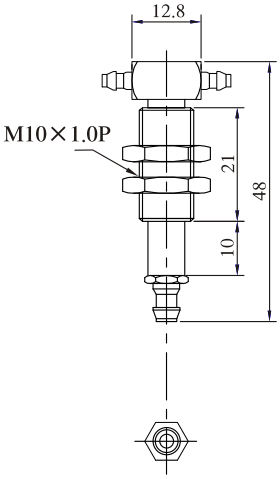
ESM Series



ESM10-ST10-K
(SUS)



ESM10-ST10-H
(SUS)



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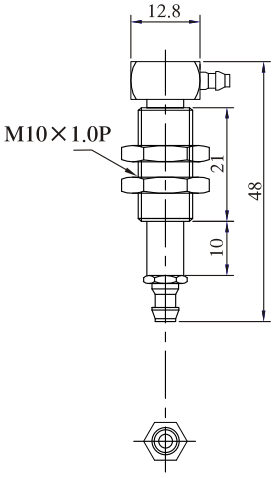

ESM10-ST10-H4L/H6L
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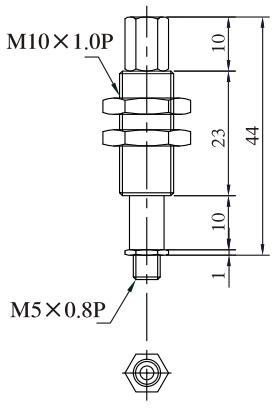

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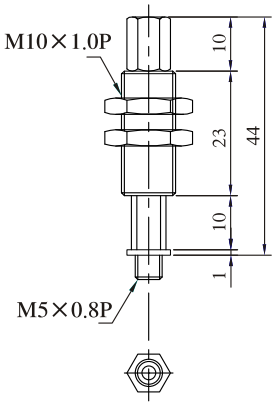
(SUS)



ESM10-ST10-M-K
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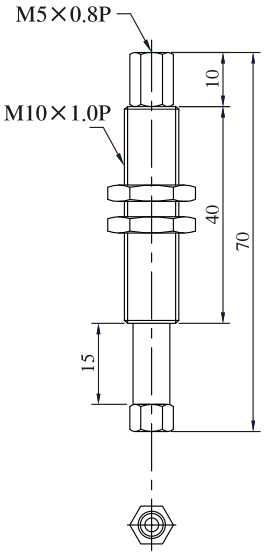
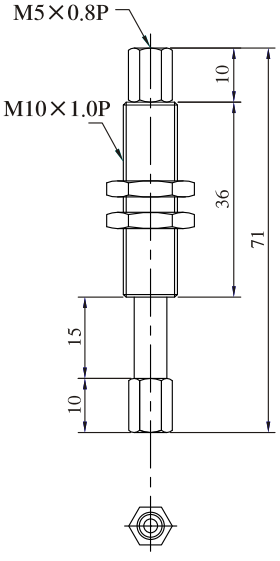


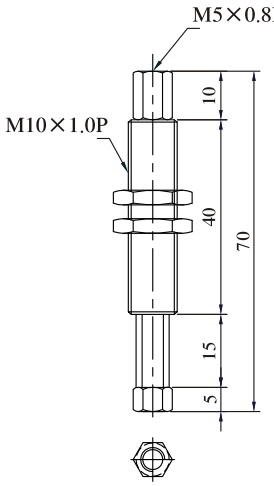
ESM10-ST15(SUS)

※ ESM10-ST15(SUS)
H4L/H4T/H6L/H6T도
생산됩니다

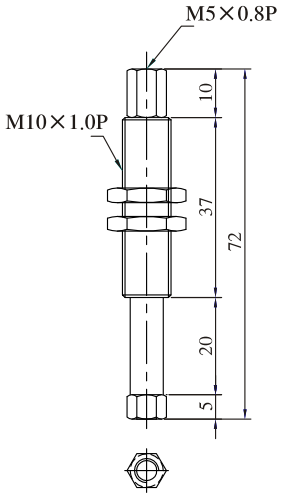


ESM10-ST15-T
(SUS)

ESM Series



ESM10-ST15-K(SUS)



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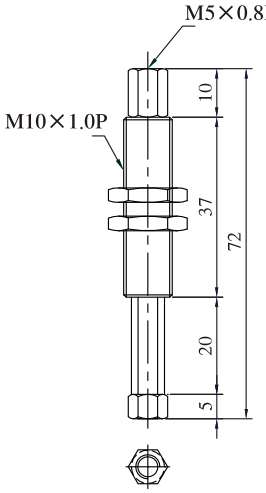

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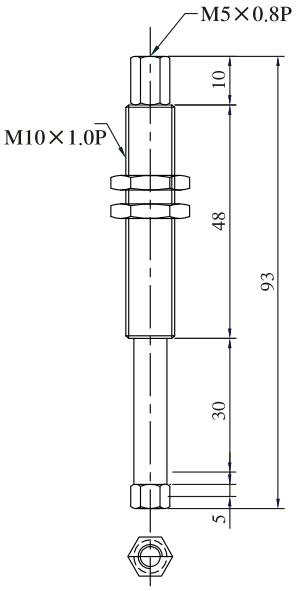
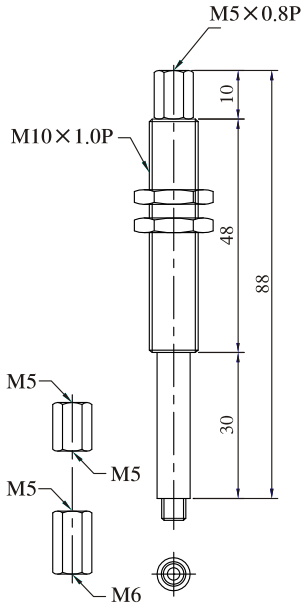
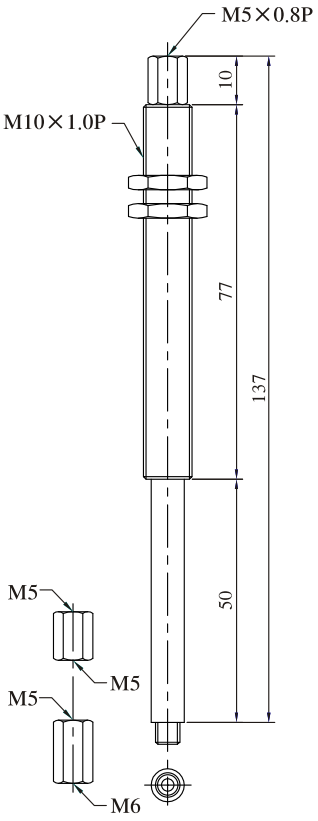


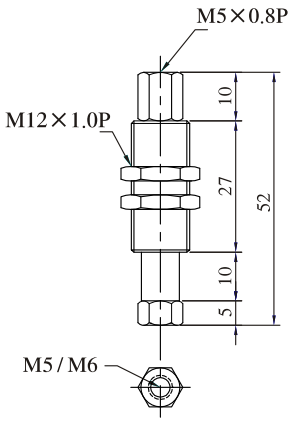
ESM10-ST30(SUS)



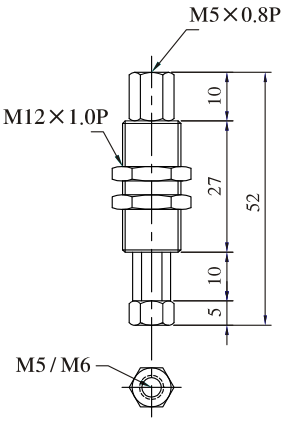
ESM10-ST30-T(SUS)
M5/M6 두 종류가 있습니다



ESM10-ST50-T(SUS)
M5/M6 두 종류가 있습니다

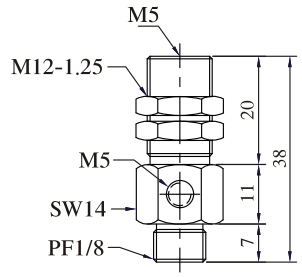


ESM12-ST10-(SUS)
M5/M6 두 종류가 있습니다

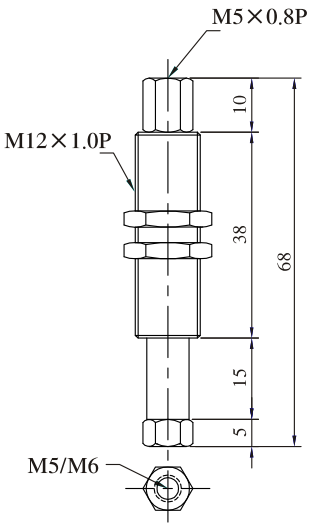


ESM12-ST10-K(SUS)
M5/M6 두 종류가 있습니다

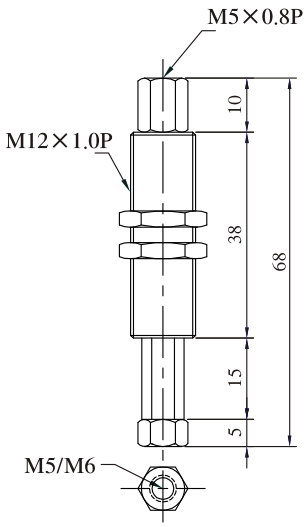
ESM Series



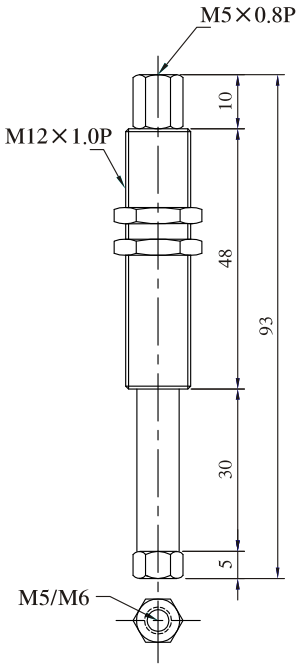
SILK1/8-M12



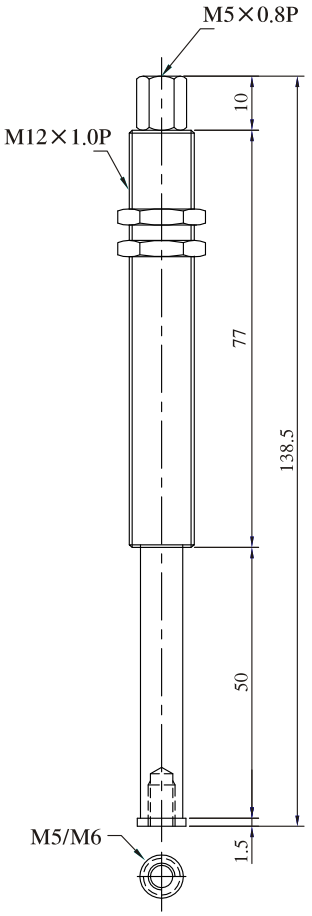
ESM12-ST15(SUS)
M5/M6
두 종류가 있습니다



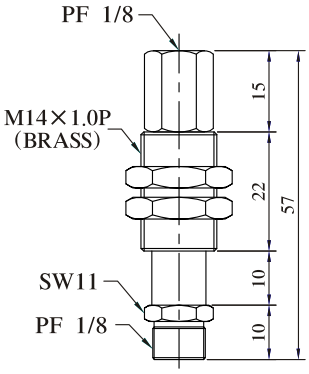
ESM12-ST15-K(SUS)
M5/M6
두 종류가 있습니다



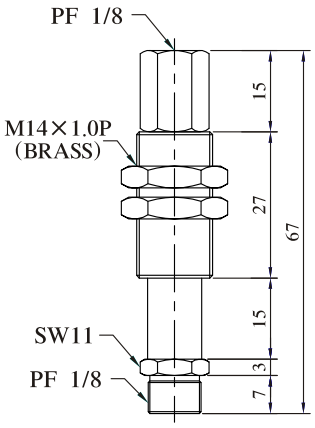
ESM12-ST30(SUS)
M5/M6
두 종류가 있습니다



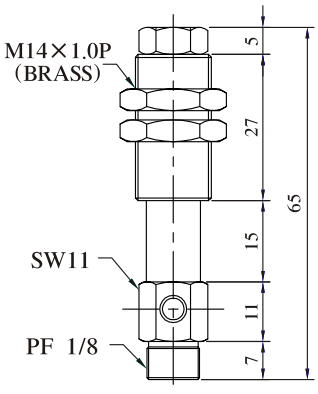
ESM12-ST50(SUS)
M5/M6
두 종류가 있습니다



ESM14-ST10



ESM14-ST15



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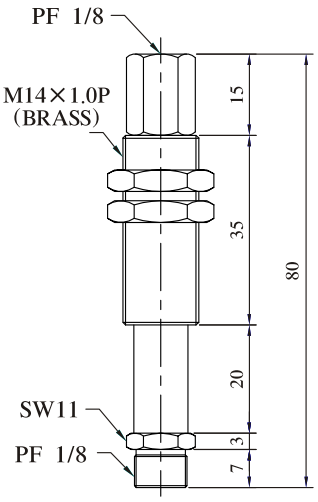
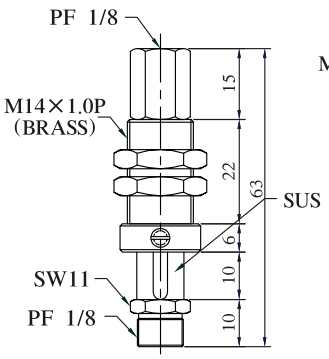
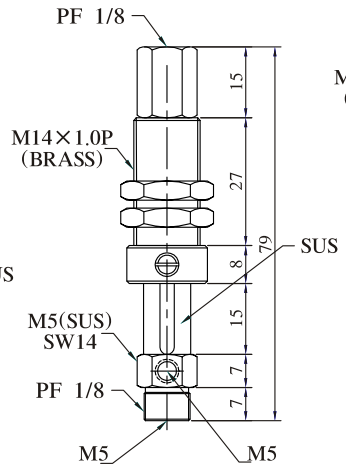


ESM14-ST20

ESM / EPF Series



ESM14-ST10-K



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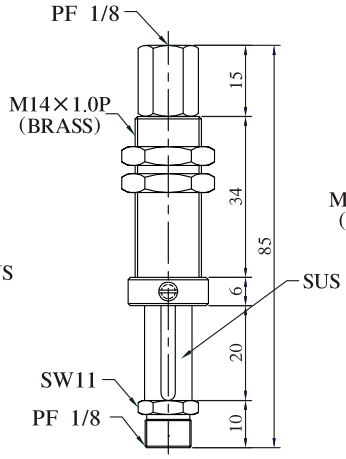
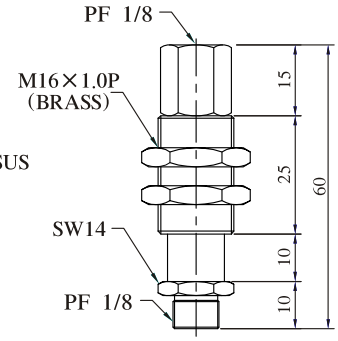
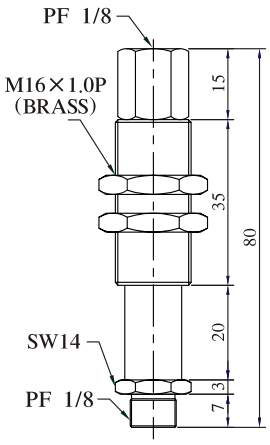


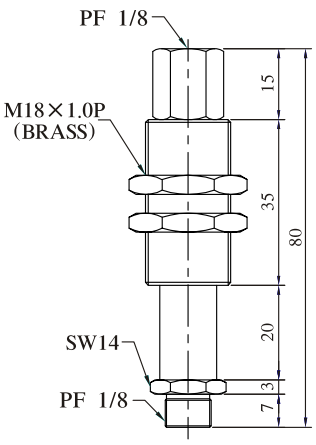
ESM14-ST20-K



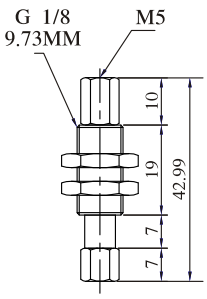
ESM16-ST10



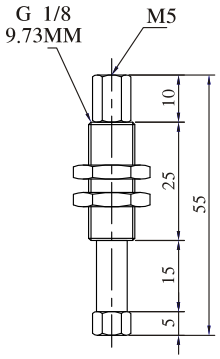
ESM16-ST20



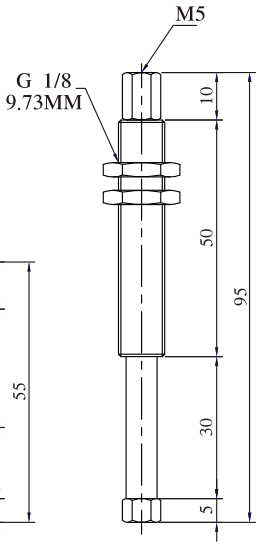
ESM18-ST20



EPF1/8-M507S



EPF1/8-M515S



EPF1/8-M530S

MAGNET GRIPPER

▣원리

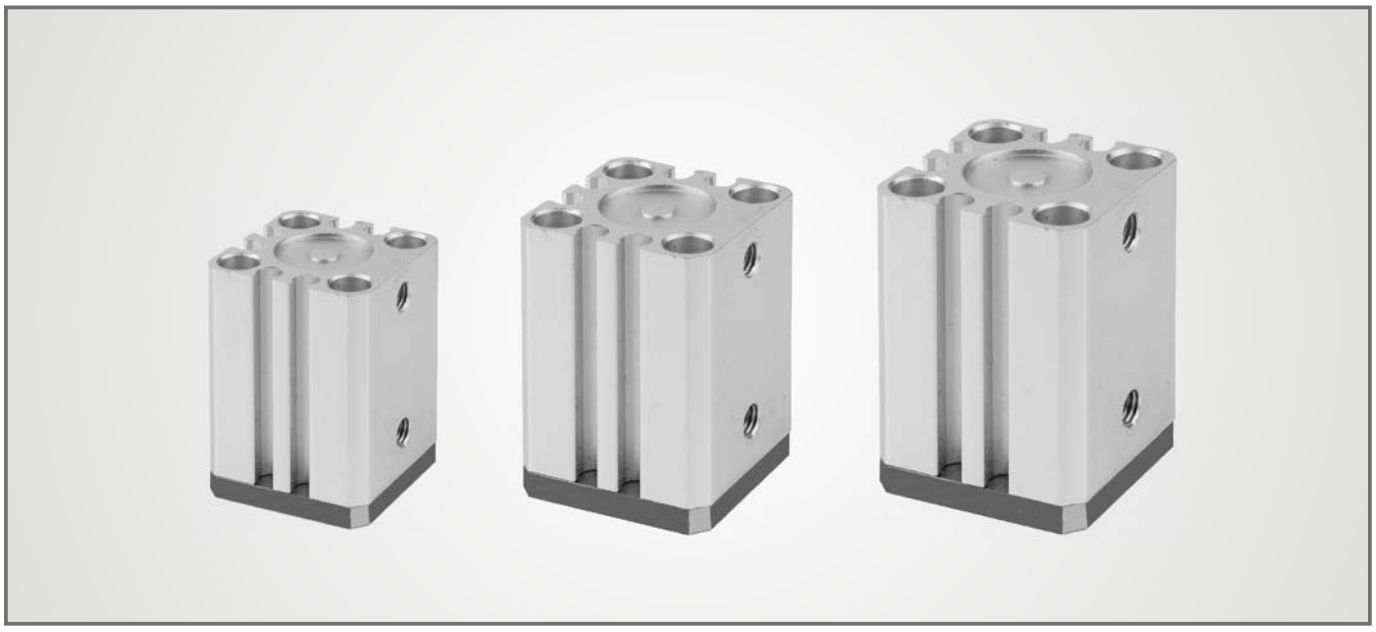
본 Magnet Gripper는 압축된 공기와 Magnet를 사용하여 Gripper안에 장착된 Piston을 상하 운동시키어 발생되는 Magnet의 힘을 이용하여 사용하는 Magnet Gripper이다.

▣특징

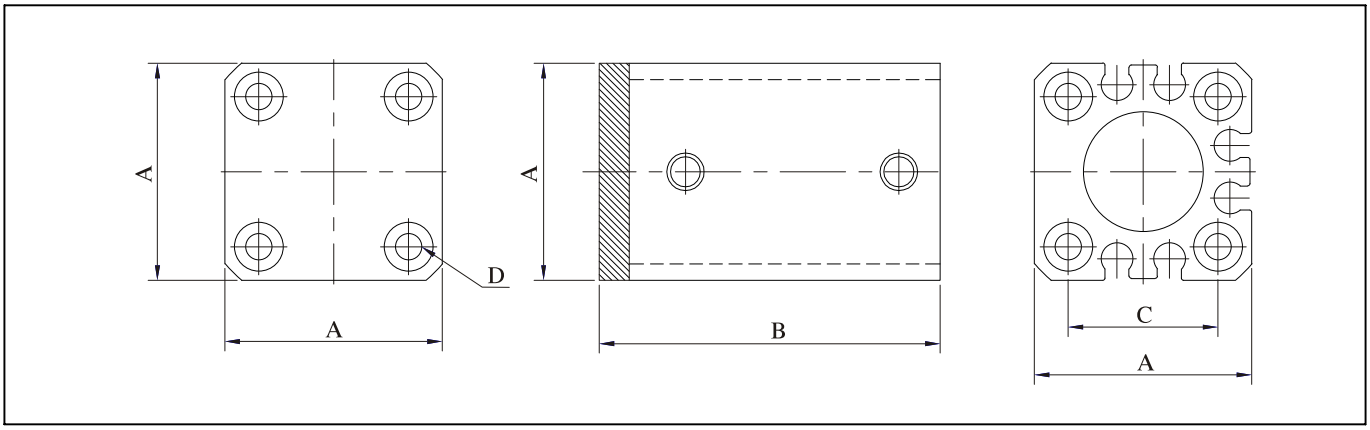
- 압축공기와 Magnet를 동력원으로 사용하기 때문에 누전 방진 방폭으로 사용이 가능하다.
- 소형 경량이며 취급하기가 용이하고 구조가 간단하다.
- 흡착물의 특정한 모양에 구애를 받지 않고 사용하며 내구성이 좋아 수명이 길다.

▣용도

- Press, 자동이송장치, 계량 및 입자선별 등의 용도로 사용한다.



◈ EMG 외형도



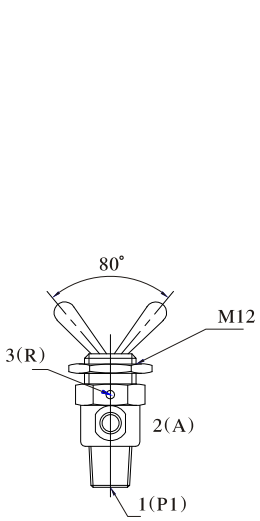
	A	B	C	D	Holding force (N)
EMG-16	29	45.5	20	M4	5
EMG-25	40	55	28	M6	10
EMG-32	45	60	34	M6	23

E-3V/E-4V Series

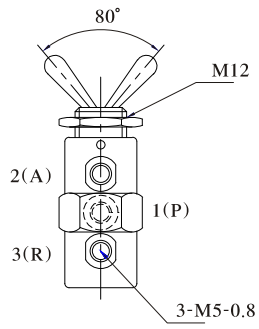
▣ 특 징

◈ 수동VALVE(TOGGLE VALVE)
◈ 3POT, 5POT(3/2, 5/2 WAY)
◈ MINI TYPE

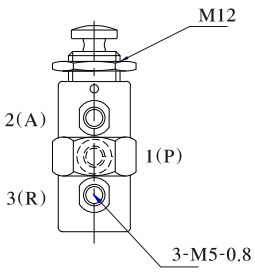
◈ E-3V/E-4V 외형도



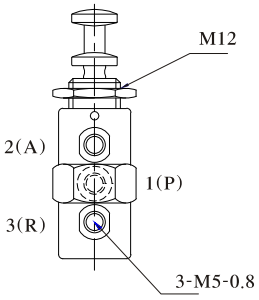
E-3T



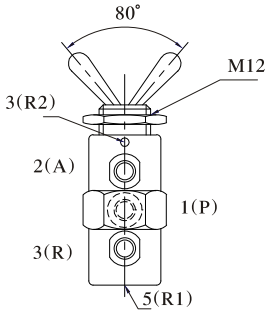
E-3V



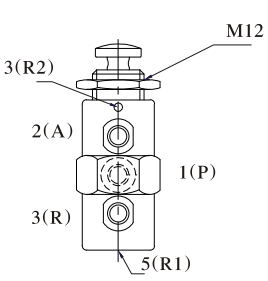
E-3PV



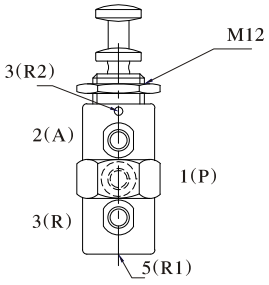
E-3PPV



E-4V



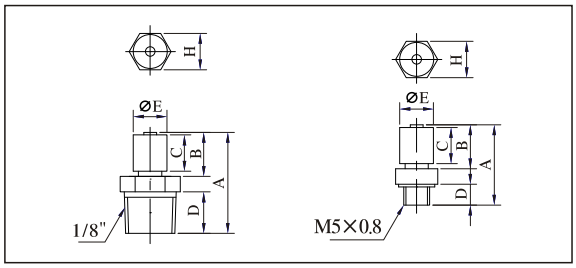
E-4PV



E-4PPV

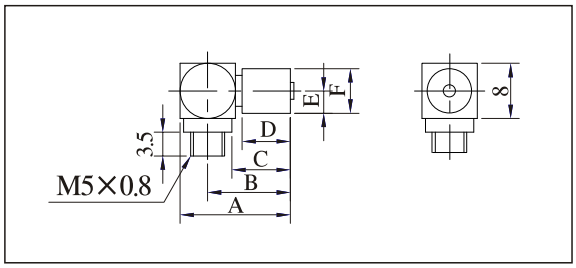
미니어처 피팅

BF-04M5/06M5



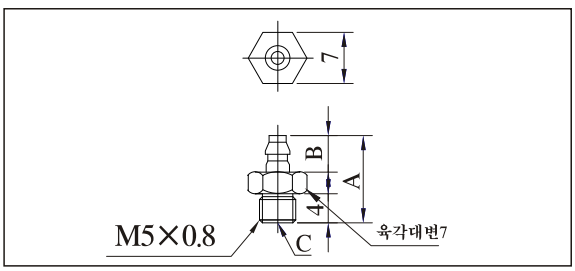
형 식	A	B	C	øD	øE	H	유효단면적㎟	질량g
BF-04M3	14.8	7.5	7	3.5	6.5	5.5	1.1	2.3
BF-04M4	17.6	7.5	7	3.5	6.5	7	1.2	2.6
BF-04M5	15.5	8.5	7	1.8	6.5	7	2.0	2.7
BF-06M5	16.5	9.5	8	2.5	8.5	8	4.0	4
BF-0401	19.5	8.5	7	8	6.5	10	2.1	7.1
BF-0601	20.5	9.5	8	8	8.5	10	5.5	7.8

BFL-04M5/06M5



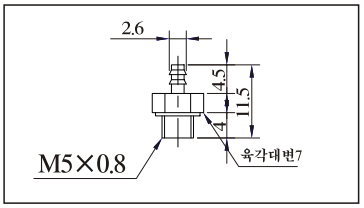
형 식	A	B	C	D	øE	øF	유효단면적㎟	질량g
BFL-04M5	16.5	12.5	8.5	7	1.8	6.5	1.5	4.5
BFL-06M5	17.5	13.6	9.5	8	2.5	8.5	2.5	5

BM-04M3, M5/06M5

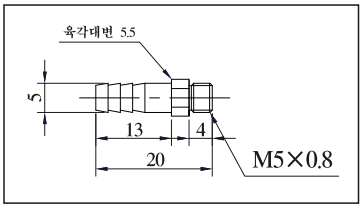


형 식	A	B	øC	유효단면적㎟	질량g
BM-04M3	10	5	1.2	0.9	0.7
BM-04M5	12	5	1.8	2.0	1.6
BM-06M5	14	7	2.5	4.0	1.8

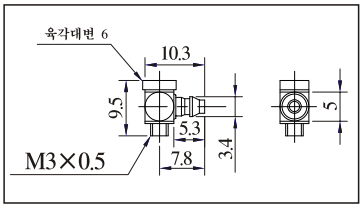
BM-03M5



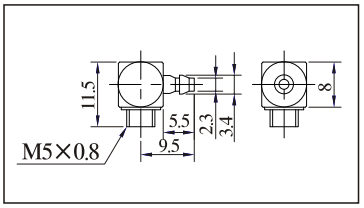
BM-06M5L



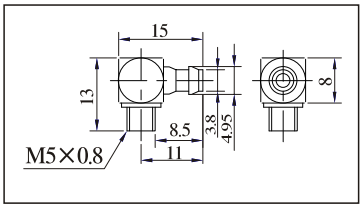
BL-04M3



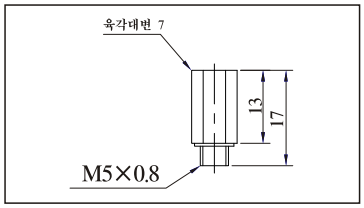
BL-04M5



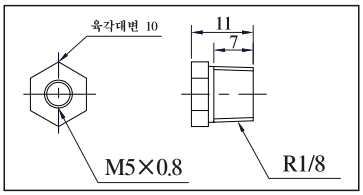
BL-06M5



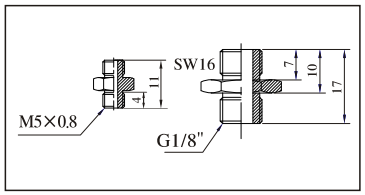
B-M5L



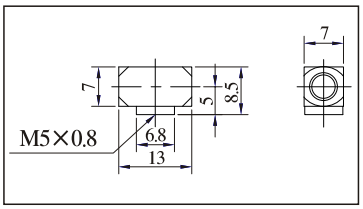
B-01M5



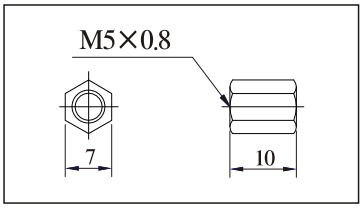
B-M5N/B-01N



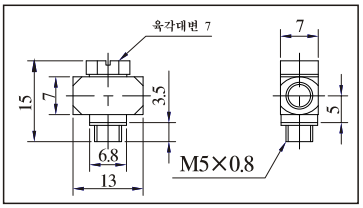
BT-M5



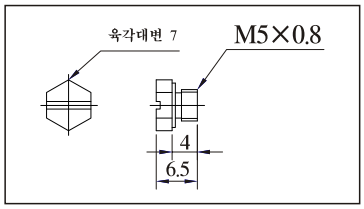
B-M5C



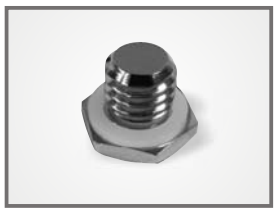
BUT-M5

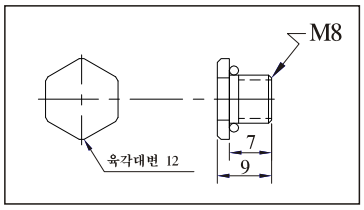


B-M5

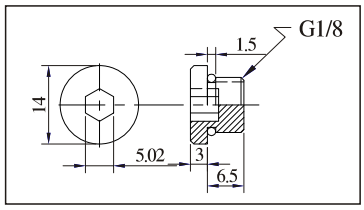


B-M8

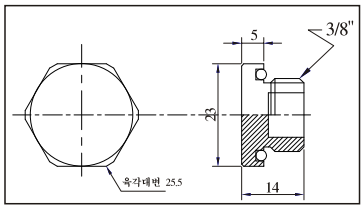




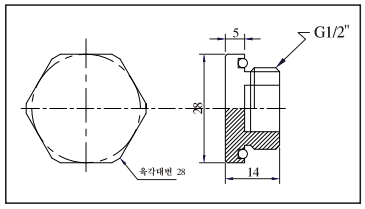
B-G01



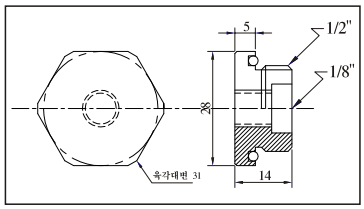
B-G03



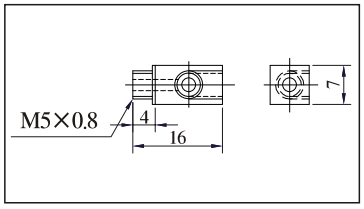
B-G04



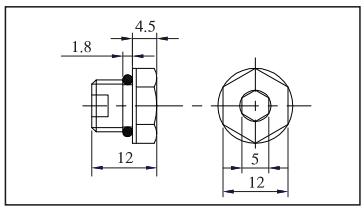
B-G04-01



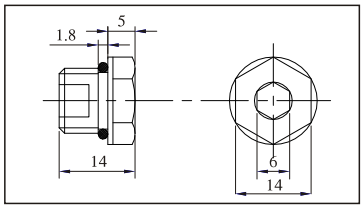
BLT-M5



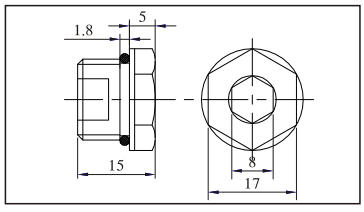
B-01P(프라스틱)



B-02P(프라스틱)



B-03P(프라스틱)



PNEUMATIC VIBRATORS

▣원리

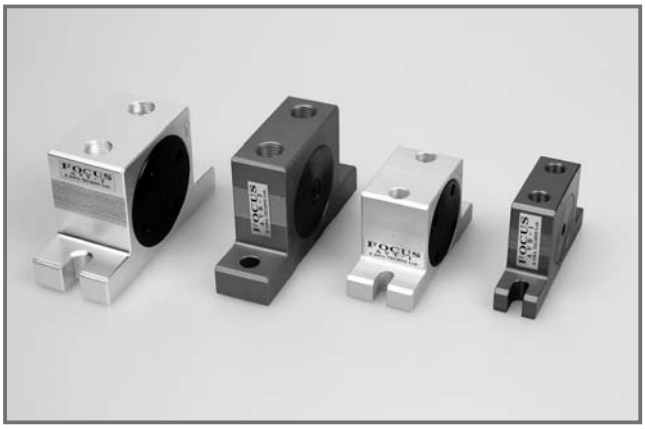
본 VIBRATOR는 압축된 공기를 사용하여 VIBRATOR안에 장착된 BALL/TURBINE을 회전시키므로 발생되는 진동력을 이용하여 사용하는 VIBRATOR이다.

▣특징

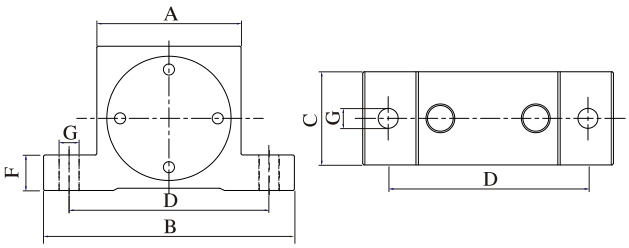
◈압축공기를 동력원으로 사용하기 때문에 누전 방진 방폭으로 사용이 가능하다.
◈소형, 경량이며 취급하기가 용이하고 구조가 간단하다.
◈소음이 적고 부착이 용이하며 내구성이 좋아 수명이 길다.

▣용도

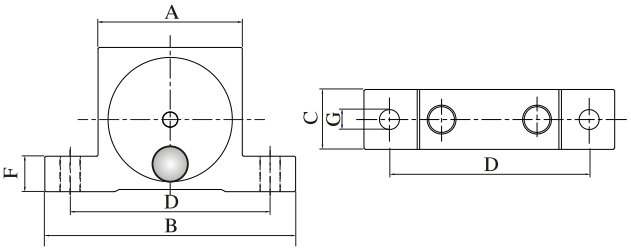
SILO, HOPPER, BIN등의 진동원으로 사용한다.



AVT TYPE



AVB TYPE



◈ 사양

TYPE	A	B	C	D	E	F	G	H	WEIGHT
AVB-1	50㎜	86㎜	20㎜	68㎜	40㎜	12㎜	7㎜	1/8	0.13
AVT-1	50㎜	86㎜	33㎜	68㎜	-	12㎜	7㎜	1/8	0.26
AVB-3	65㎜	113㎜	27㎜	90㎜	50㎜	16㎜	9㎜	1/4	0.30
AVT-3	65㎜	113㎜	42㎜	90㎜	-	16㎜	9㎜	1/4	0.58

◈ 진공성능표

TYPE	VIBRATIONS-VPM (진동수)			FC MAX-Kgf (원심력)			AIR CONSUMP (공기소비량)		
	2Kg	4Kg	6Kg	2Kgf	4Kgf	6Kgf	2Kg/l	4Kg/l	6Kg/l
AVB-1	22,500	28,000	34,000	25	47	70	65	130	180
AVT-1	26,000	33,000	38,000	100	170	250	50	90	130
AVB-3	13,000	17,000	19,500	45	80	110	90	150	200
AVT-3	18,000	20,000	21,000	190	230	260	90	150	200

Pneumatic Linear Vibrators With Internal Piston

▣원리

본 VIBRATOR는 압축된 공기를 사용하여 VIBRATOR안에 장착된 Piston 을
상 하 작동시키므로 발생되는 진동력을 이용하여 사용하는 AIR VIBRATOR이다.

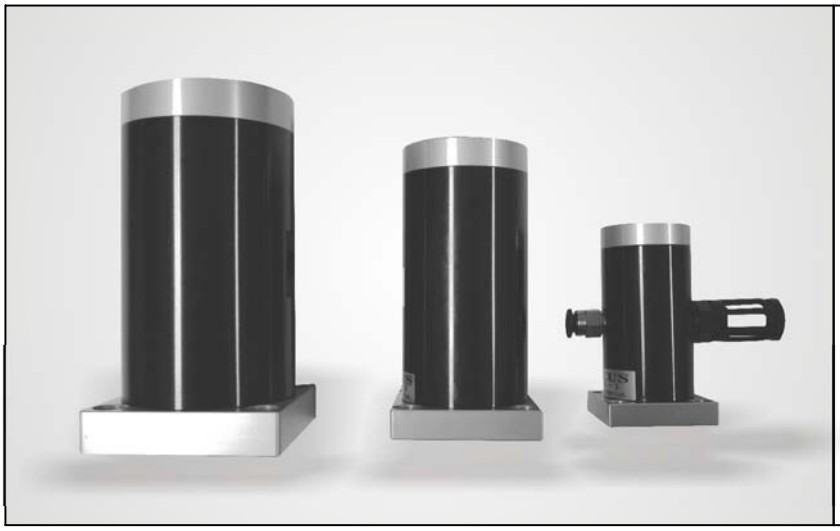
▣특징

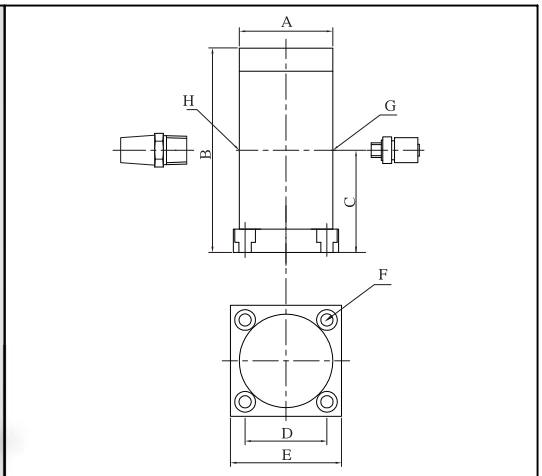
- 압축공기를 동력원으로 사용하기 때문에 누전 방진 방폭으로 사용이 가능하다.
- 소형, 경량이며 취급하기가 용이하고 구조가 간단하다.
- 부착이 용이하며 내구성이 좋아 수명이 길다.
- Piston 의 상하작용으로 에너지를 얻어 Rotary 방식보다 강력한 진동력을 얻을 수 있다.

▣용도

- SILO, HOPPER, BIN등의 진동원으로 사용한다.

AVK TYPE





AVK-1

◈ 사양

TYPE	VIBRATIONS-VPM (진동수)			FORCEC MAX			AIR CONSUMP (공기소비량)		
	2Kgf	4Kgf	6Kgf	2Kg/㎠	4Kg/㎠	6Kg/㎠	2K l/min	4K l/min	6K l/min
AVK-1	4450	5600	6630	2.5	5.5	7.9	9	15	21
AVK-3	2800	3400	4050	8.5	13.8	19.3	32	50	73
AVK-5	2450	3030	3400	14	13.5	30.1	45	90	130

◈ 진공성능표

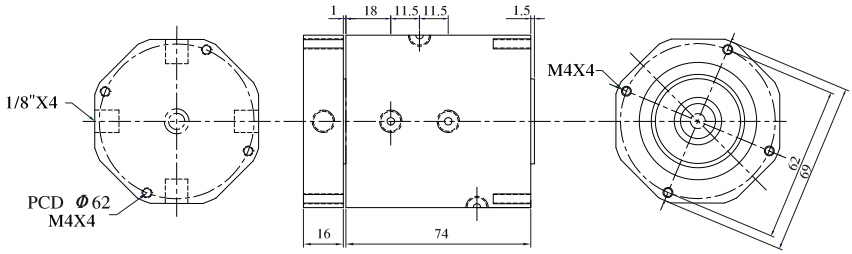
TYPE	A	B	C	D	E	F	G	H	WEIGHT
AVK-1	32㎜	70㎜	35㎜	28㎜	38㎜	M4-4	M5	1/8	0.17
AVK-3	45㎜	98㎜	49㎜	39㎜	50㎜	M5-4	1/8	1/8	0.50
AVK-5	60㎜	118㎜	60㎜	50㎜	66㎜	M6-4	1/4	1/4	1.16

다회로 ROTARY JOINT

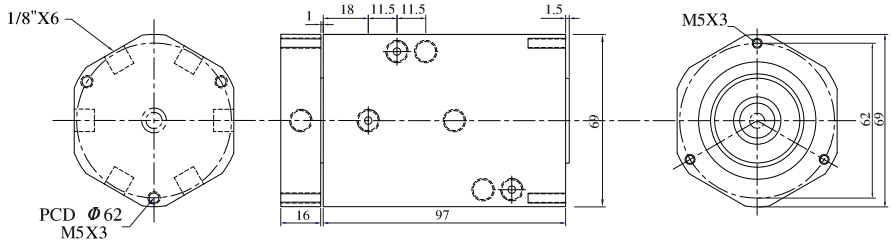
▣ 다회로 로터리 조인트 / 주의사항

◈ 나선형 배관위치이므로 HOSE연결 및 인덱스 테이블 등의 회전부 배관용이
◈ OIL SEAL구조 ◈ AIR, WATER, VACCUM 사용 가능
◈ AIR, WATER, VACUUM 사용시 차압과 동시 사용 가능
◈ 4-4회로, 6-6회로, 8-8회로 3종류가 있습니다.

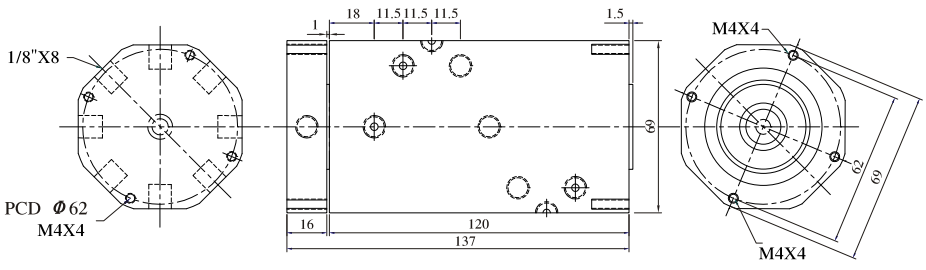
ERM 4-4



ERM 6-6



ERM 8-8

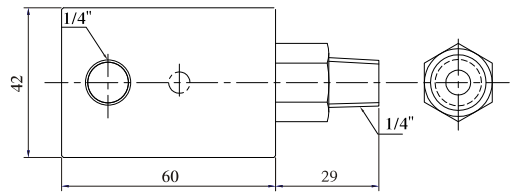


ROTARY JOINT

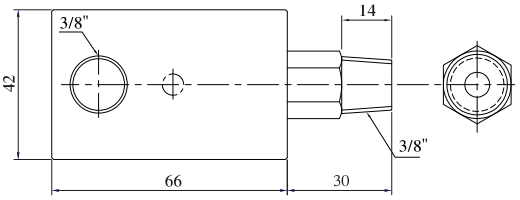
▣ 로터리 조인트 / 주의사항

◈ 조인트 축 기동시 충격력을 가하지 마십시오.
◈ 과도한 편하중은 제품의 마모와 파손을 일으켜 기기 및 장치에 손상을 주는 원인이 됩니다.
◈ 축으로 고정하는 경우에는 자유도를 마련하여 주십시오.
◈ 공기로부터 이물질 유입을 막기위하여 압축공기나 진공AIR를 사용시 FILTER를 사용하십시오.

AIR	재 질	WATER	재 질	Rc(PT)
ERJ2000-02(L)	AL / CM	ERJ2000-02W(L)	AL / SUS	1/4
ERJ3000-03(L)	AL / CM	ERJ3000-03W(L)	AL / SUS	3/8
ERJ4000-04(L)	AL / CM	ERJ4000-04W(L)	AL / SUS	1/2

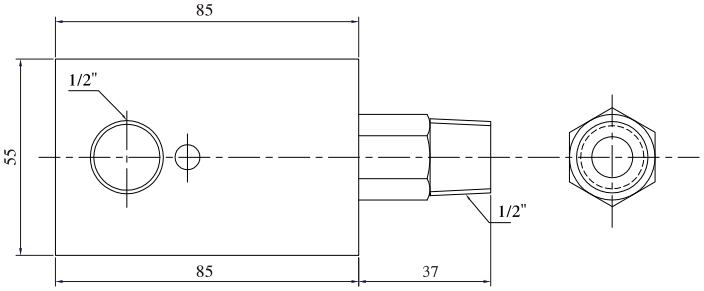


ERJ2000-02 1/4"



ERJ3000-03 3/8"

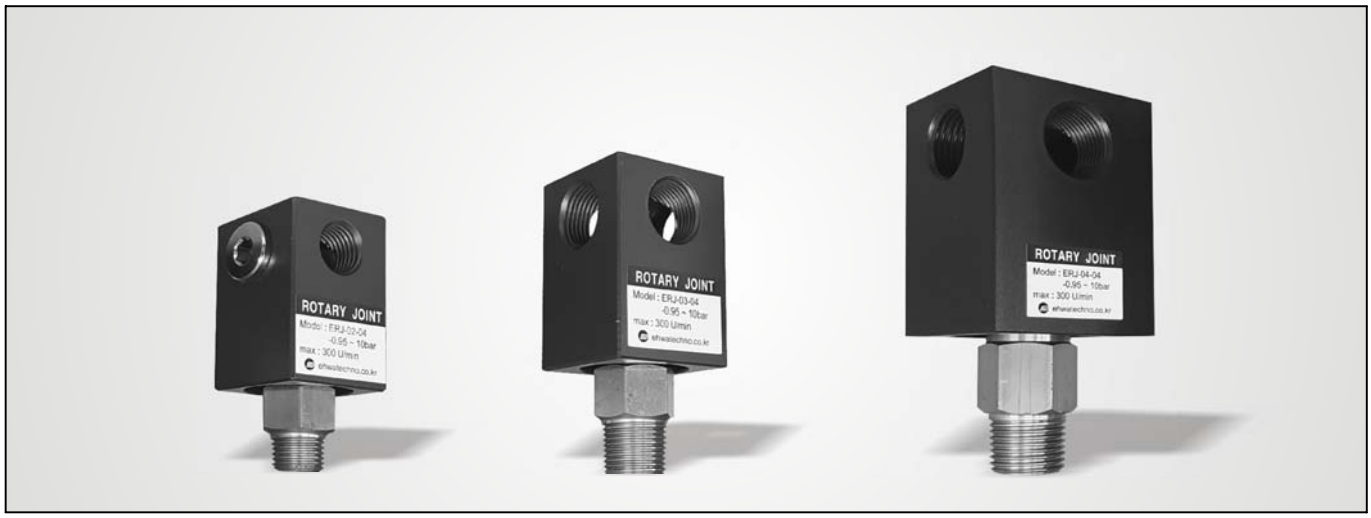
ERJ4000-04 1/2"

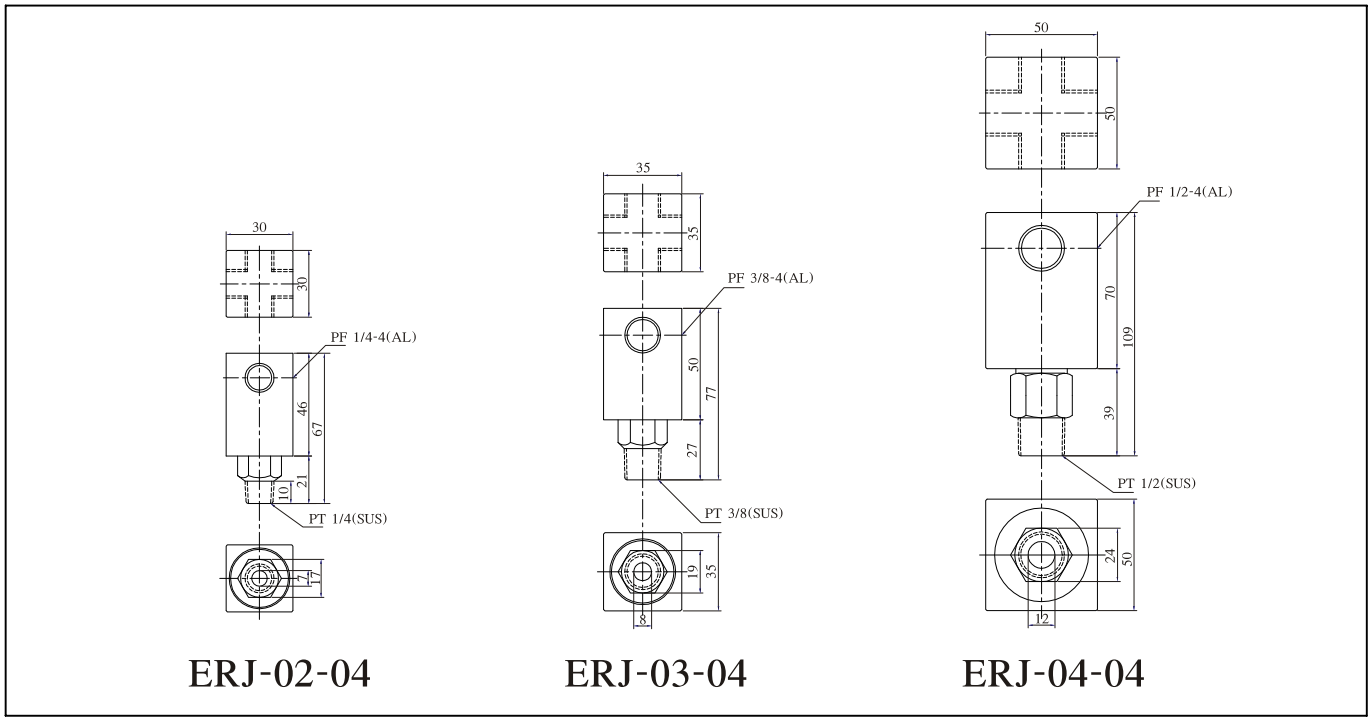


▣ 로터리 조인트 / 주의사항

◈ 조인트 축 기동시 충격력을 가하지 마십시오.
◈ 과도한 편하중은 제품의 마모와 파손을 일으켜 기기 및 장치에 손상을 주는 원인이 됩니다.
◈ 축으로 고정하는 경우에는 자유도를 마련하여 주십시오.
◈ 공기로부터 이물질 유입을 막기위하여 압축공기나 진공AIR를 사용시 FILTER를 사용하십시오.
◈ 4 방향으로 분배 할 수 있도록 구조적으로 설계되어 있어서 사용상의 장점을 추가 하였습니다.

MODEL	재 질	사 용 유 체	배관사양	사용압력
ERJ02-04	AL / SUS	물, 공기, 진공	1/4"	-95.8~9.9kPa
ERJ03-04	AL / SUS	물, 공기, 진공	3/8"	-95.8~9.9kPa
ERJ04-04	AL / SUS	물, 공기, 진공	1/2"	-95.8~9.9kPa





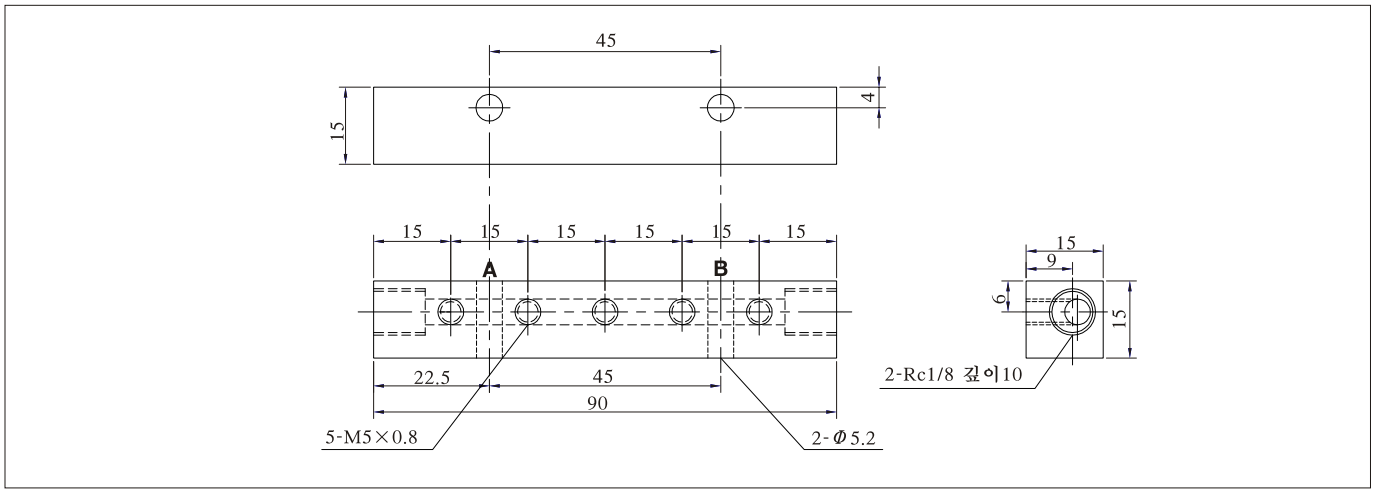
ERJ-02-04 ERJ-03-04 ERJ-04-04

AM Series

▣ AM-01-M5-05
① ② ③ ④

①에어 분배구(AIT MANIFOLD)
②공급측 접속 구경
③분배측 접속 구경
④연수

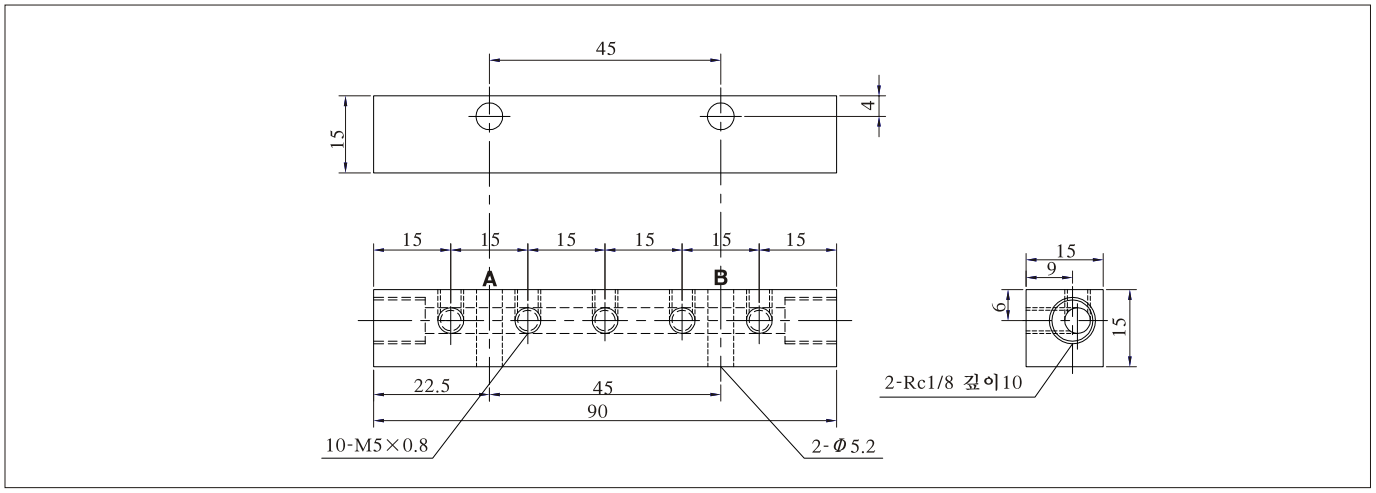
▣ AM 01-M5-5 외형도



▣ AM-01-M5-10
① ② ③ ④

①에어 분배구(AIT MANIFOLD)
②공급측 접속 구경
③분배측 접속 구경
④연수

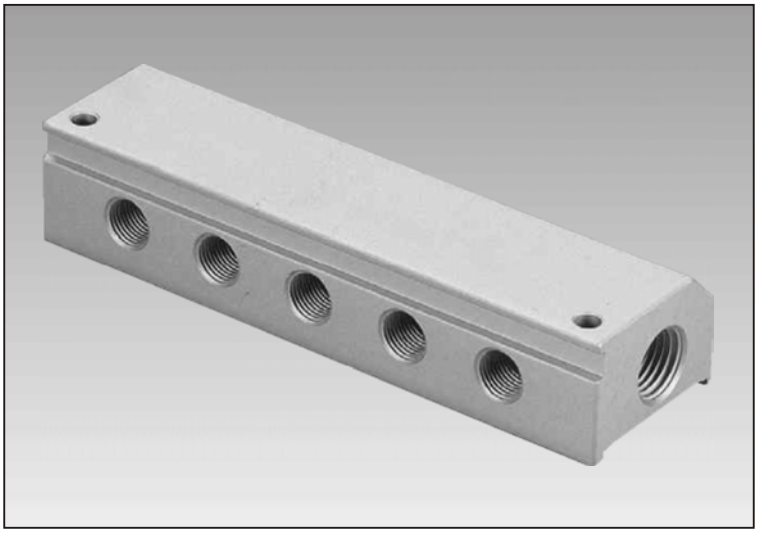
▣ AM 01-M5-10 외형도



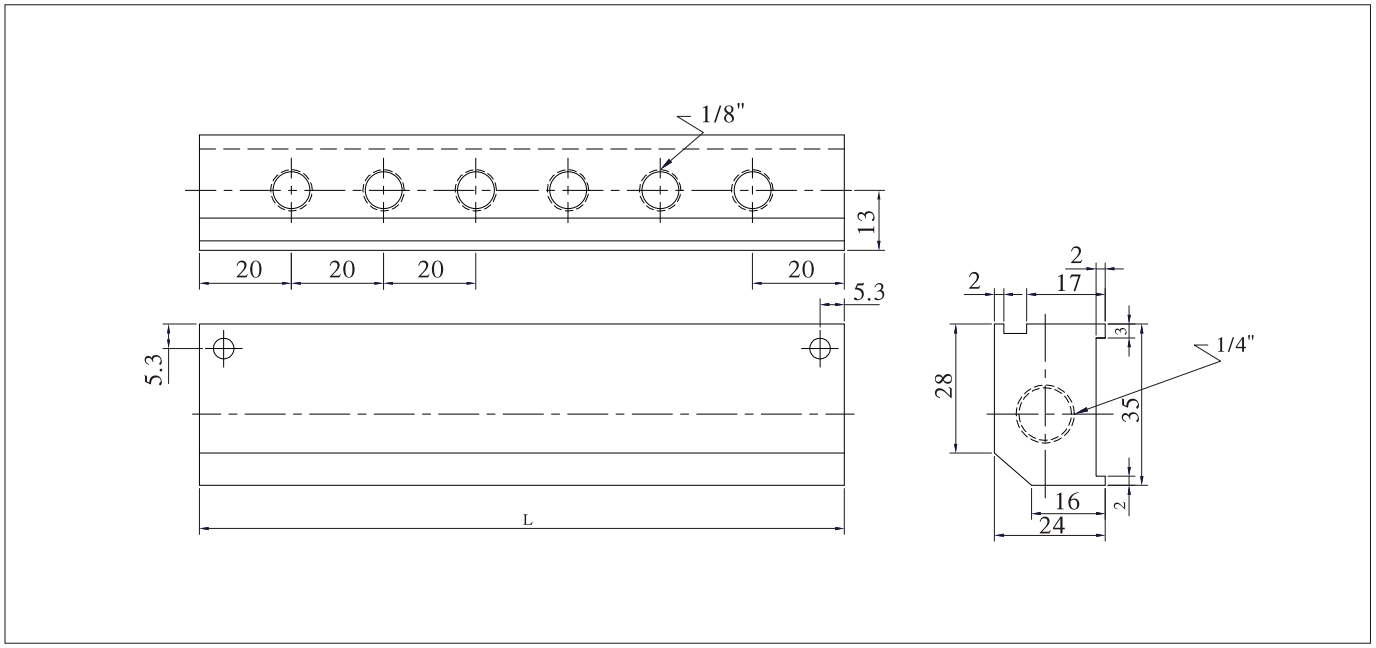
AM Series

▣ AM-02-01-연수
① ② ③ ④

①에어 분배구(AIT MANIFOLD)
②공급측 접속 구경
③분배측 접속 구경
④연수 02 ~ 10연



▣ AM-02-01-6 외형도



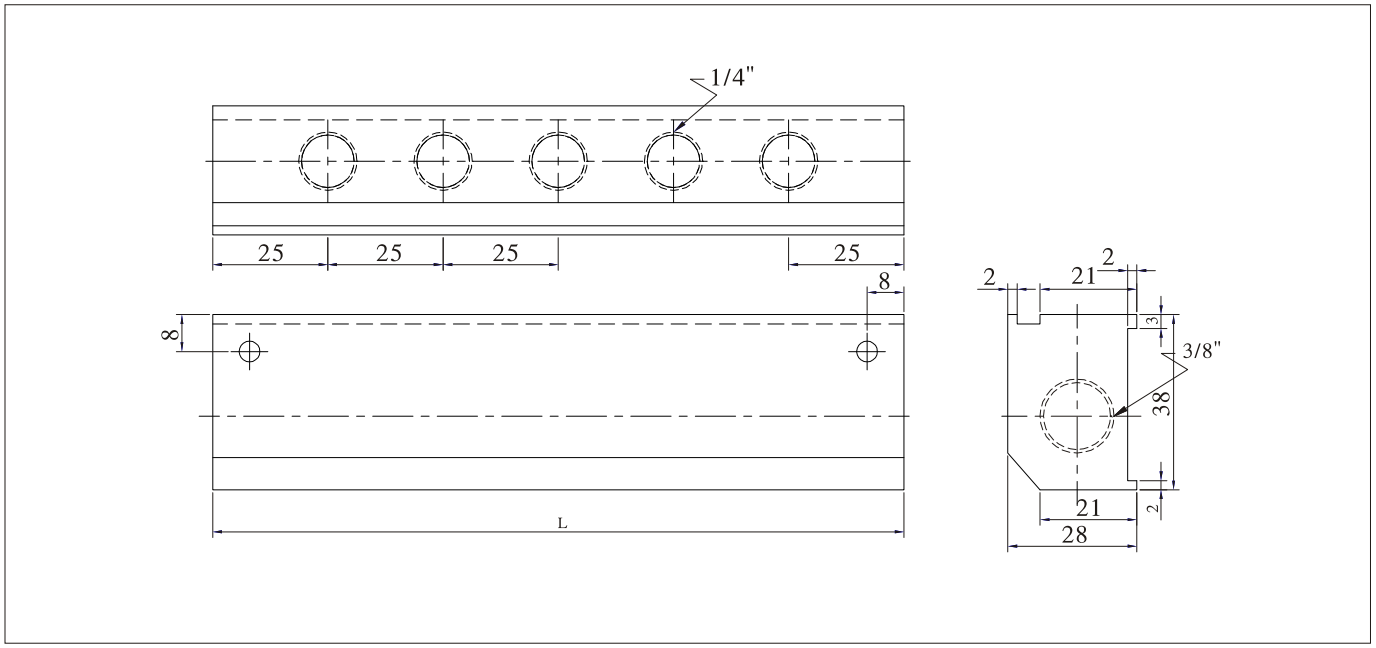
구 분	1	2	3	4	5	6	7	8	9	10
L	40	60	80	100	120	140	160	180	200	220

AM Series

▣ AM-03-02-연수
① ② ③ ④

①에어 분배구(AIT MANIFOLD)
②공급측 접속 구경
③분배측 접속 구경
④연수 02 ~ 10연

▣ AM-03-02-5 외형도



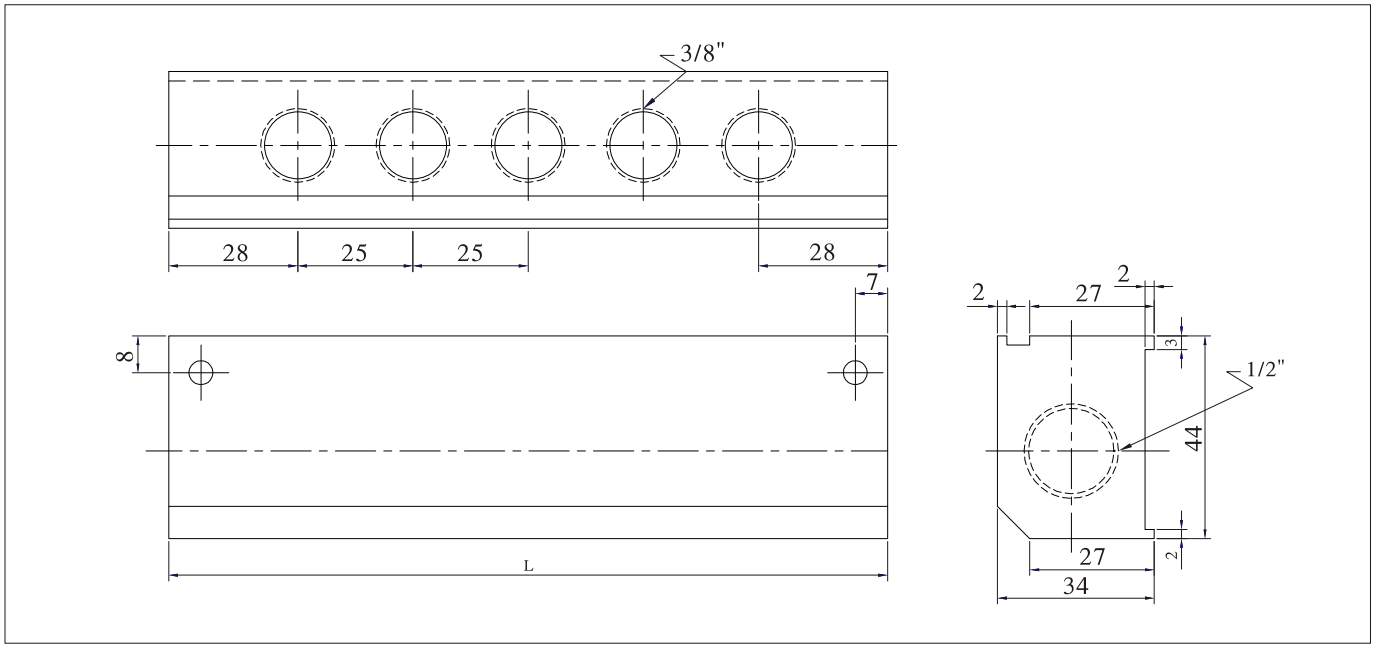
구 분	1	2	3	4	5	6	7	8	9	10
L	50	75	100	125	150	175	200	225	250	275

AM Series

▣ AM-04-03-연수
① ② ③ ④

①에어 분배구(AIT MANIFOLD)
②공급측 접속 구경
③분배측 접속 구경
④연수 02 ~ 10연

▣ AM-04-03-5 외형도



구 분	1	2	3	4	5	6	7	8	9	10
L	56	81	106	131	156	181	206	231	256	281

⚠진공Series의 공통 주의 사항

▣ 당사 제품의 선정 및 사용전에 반드시 읽어 주십시오.

◈흡착물의 낙하로 인한 위험성이 있다고 판단될 때에는 낙하 방지 시설등의 안전 대책을 설치하여 주십시오.

◈Air 공급 압력 트러블에 의한 진공 압력 저하 현상에 주의하여 주십시오.

◈진공 회로에서 1개의 Ejector에 2개 이상의 Pad를 배관한 경우에는 1개의 Pad에 흡착 불량 현상이 발생되면 다른 Pad에도 진공 압력 저하로 인하여 흡착물이 이탈되는 위험성이 있습니다.

◈Ejector의 배기 포트를 막거나 또는 배기 저항이 높아지는 방법으로 사용하지 마십시오.
진공 발생이 되지 않거나, 진공 압력 저하의 원인이 될 가능성이 있습니다.

◈부식성Gas, 인화성Gas, 발열성Gas, 화학약품, 해수등의 조건에서는 사용하지 마십시오.

◈Ejector의 소음기, **진공** 필터의 엘레멘트는 정기적으로 보수, 점검을 해 주십시오.

◈Ejector의 공급 Air는 먼지등 이물질이 함유되지 않은 청결한 Air를 사용하여 주십시오.
Lubricator로 인한 급유는 금하여 주십시오. 성능 저하의 원인이 될 위험성이 있습니다.

◈Ejector의 공급 압력측의 유효 단면적은 노즐경의 3배를 목표로 해서, 배관 및 기기 선정을 해 주십시오.
공급 유량이 부족 할 경우에는 성능 저하의 원인이 됩니다.

◈진공측 배관은 **최대한** 짧게, 또 내경은 넓게 배관하여 주십시오. 배관이 길고 내경이 좁은 경우에는 흡착시, 이탈시의 응답 시간이 길어지며, 필요 흡입 유량의 확보가 어렵습니다.

◈진공 스위치 및 진공 스위치 부착 Ejector는 가장 가까운 진공 배관 끝단 부위에 설치하여 주십시오.
진공 스위치와 진공 끝단 부위의 거리가 멀면 배관 저항이 **커지며**, Sensor부의 진공도가 무흡착시에도 높게 나타나 진공 스위치 오동작의 원인이 될 가능성이 있습니다.

◈기계식 진공 스위치는 인화성, 폭발성이 있는 Gas, 유체 등의 조건에서는 사용하지 마십시오.

◈물, 기름, 분진등이 함유된 조건에서는 사용하지 마십시오. 고장의 원인이 될 수 있습니다.

◈기계식 진공 스위치는 사양의 설정 압력 범위내에서 사용하여 주십시오. 설정 압력 이외에서 사용하면 응차로 인하여 오동작의 원인이 될 가능성이 있습니다.

◈기계식 진공 스위치의 배선은 반드시 전원을 차단한 후 **사용해 주십시오.**

◈Solenoid valve를 사용하는 경우에는 유량 특성이 유지되는 제품을 사용하여 주십시오.
노즐의 유효 단면적에 대하여 3배 이상의 유효 단면적이 있는 valve를 사용하여 주십시오.

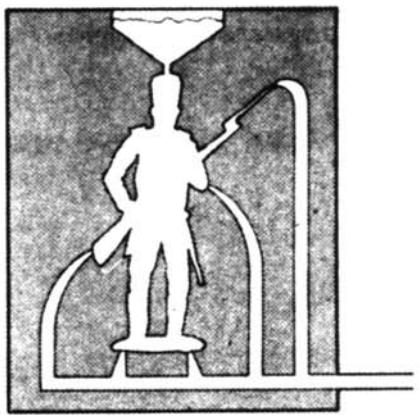
◈성능, 형상이 다른 다양한 제품이 있습니다. 여러가지 조건에 맞게 사용하여 주십시오.

FOCUS 진공발생기의 특성

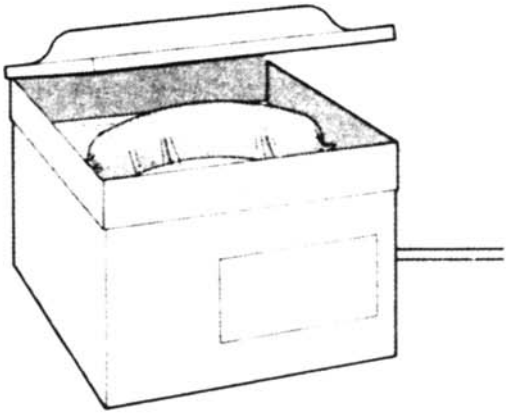
◈고 효율, 고 응답성
◈작고 가벼운 외관
◈설치가 매우 간편하다
◈압축공기(5Kg.f/㎠)만 사용한다
◈전기, oil등이 필요 없다
◈열과 진동이 발생하지 않는다

FOCUS 진공발생기의 적용 사례

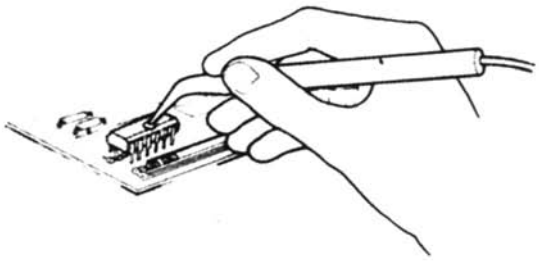
◈성형물의 기포 탈기 장치
진공을 주형, 성형물의 배기 장치에 사용할 경우 기포가 남지 않고, 좀 더 빠르고 빈틈 없이 성형 틀 안에 충진 할 수 있다.



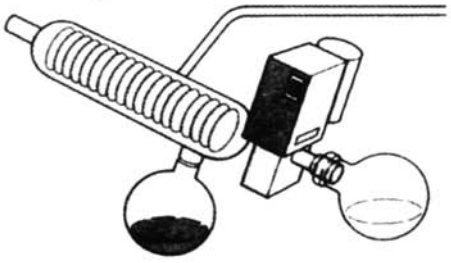
◈진공 포장
진공 식품 포장의 경우 신선한 제품을 오랫 동안 유지 할 수 있다.



◈진공 핀셋
소형 진공패드(Suction Cup)를 핀셋에 배관 설치 하여 작고, 미세한 부품을 생산하고 취부한다. 주로 인쇄 회로기판이나 소형 물체를 이송하는데 사용된다.

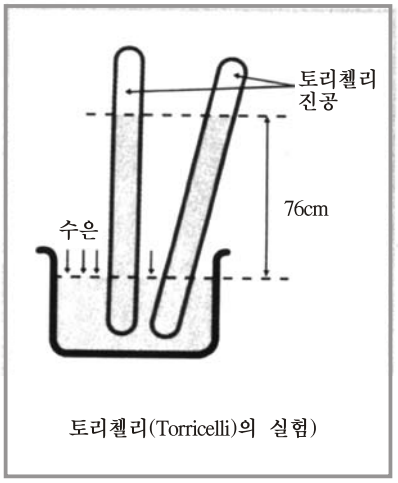


◈증 발
액체상태의 물질에서 증발, 증류를 할 때 진공을 이용한다. 이때 압력이 낮고 저온에서 열을 가하여도 빠르게 작업을 할 수 있다.



진공 교육 자료

A. 토리첼리(Torricelli's 실험)



토리첼리(Torricelli)의 실험)

대기압 = 760Torr
= 760mmHg
= 76cmHg

1643년 이탈리아의 물리학자 토리첼리(Torricelli)는 유리관과 수은을 사용하여 다음과 같은 실험을 하였습니다.
즉, 단면적 1㎠인 한쪽 끝이 막힌 길이 1m의 유리관 안에 수은을 가득 채운 다음, 수은이 담긴 그릇 안에 거꾸로 세우면 유리관 안의 수은주는 그릇에 담겨있는 수은의 표면으로부터 76㎝의 높이를 항상 유지하게 된다는 것입니다.
이때 유리관 위쪽에는 진공상태가 되는데 이를 "토리첼리진공"이라 합니다.

유리관 안의 수은주가 76㎝가 되는 것은 수은주의 무게가 그릇에 담긴 수은의 표면에 작용하는 대기의 압력과 균형을 이루기 때문이다.
이 실험으로 대기압(1기압)은 높이 76㎝의 수은주 무게와 같다는 사실이 기초적인 개념이 되고 있습니다.

우리가 흔히 사용하는 진공도의 단위인 토르(Torr)는 토리첼리의 머리글자를 딴 것이며, 대기압 상태를 표시하는 760Torr나 760mmHg, 76㎝Hg등도 모두 토리첼리의 실험에서 나타나는 수은주의 길이를 이용한 대기압의 표시인 것입니다.

B. 진공도의 단위계

1기압 = 760Torr
= 760mmHg
= 76cmHg
= 101330Pa

한국공업규격(KS)에서는 진공도의 단위로 Torr와 Pa를 규정하고 있으나, 일반적으로 Torr가 널리 사용되고 있습니다.
Torr는 mmHg와 동일한 단위이며, cmHg도 단지 mm를 cm로 표시한 것으로 같은 개념입니다.

그러나 독일공업규격(DIN)에서는 mbar를 사용하고 있는데, 이는 대기압을 C.G.S단위 표시인 dyne으로 나타내는 것으로, 1mbar는 1㎠에 대하여 1000 dyne의 힘이 작용하는 압력을 나타냅니다.

이를 좀더 쉽게 이해하기 위하여 대기압을 우선 g으로 나타내보면,
1기압 = 76cmHg
76cm인 수은주의 부피 = 1㎠(수은주의 단면적)×76cm
= 76cc
76cc×13.6(수은의 비중) = 1033.6g이 되고,
1g = 980dyne 이므로

DIN 규격 진공도 단위 mbar

1기압 = 1013.3mbar

inHg 표시 진공도 단위

1기압 = 29.92inHg

% 표시 진공도 단위

1기압 = 0%

1033.6g×980dyne = 1012928dyne ≒ 1013.3mbar
즉, 1기압 = 1013.3mbar가 되는 것입니다.

그 밖에 종종 쓰이는 진공도의 단위로는 inHg와 %가 있습니다. inHg는 수은주의 길이를 단지 inch로 표시한 것에 불과하며, %는 완전진공상태를 가정하여 100% 진공으로 보고, 대기상태를 0% 진공으로 하여 진공도를 표시하는 것 입니다.

C. 절대진공도(Absolute)와 게이지(Gauge) 상의 진공도

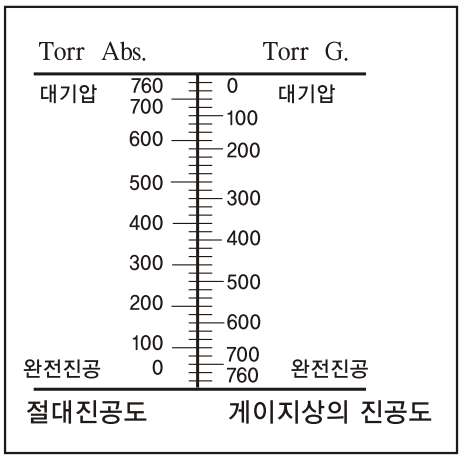
그 외에도 bar, Psi, lbf in^{-2}, Kgf in^{-2}, in H_2O, mm H_2O등이 진공도 단위로 쓰이기도 하나 그리 흔치 않으므로 생략합니다.

진공도 단위를 사용함에 있어서 자주 혼동을 일으키는 것이 절대 진공도와 게이지 상의 진공도입니다.
게이지상의 진공도는 절대 진공도와는 역으로 대기압을 0으로 놓고 완전진공을 760mmHg 또는 76cmHg로 표기한데서 비롯되고 있습니다.
따라서 절대진공도는 760(또는 76)에서 게이지상의 진공도를 뺀 값이 되며, 상호간에 옆 그림과 같은 관계가 있습니다.

Torr Absolute (절대진공도)의 표시 → Torr Abs.

Torr Gauge (게이지상의 진공도)의 표시 → Torr Abs.

Torr Abs. = 760 - Torr G.



이제부터 우리는 진공도 단위를 Torr Abs.(토르로 표시된 절대진공도)로 통일하여 사용하기로 하고, 단순히 Torr라고만 표시된 경우에도 Torr Abs.를 나타내는 것으로 하겠습니다.
그 이외의 다른 진공도 단위에 대해서는 아래의 환산표를 사용하여 Torr Abs.로 쉽게 환산 할 수 있습니다.

진공단위 환산표

	Torr Abs.	mbar	%
mmHg	×1=	×1.333=	×0.131=
cmHg	×10=	×13.33=	×1.31=
inHg	×25.4=	×33.86=	×3.3426=
mbar	×0.75=	×1=	×0.0987=
%	×7.6=	×10.13=	×1=
Pa	×0.0075=	×0.01=	×0.001=
Psi	×51.71=	×68.945=	×6.805=

D. 진공펌프의 배기량 단위

진공펌프의 용량을 나타내는 단위는 여러가지가 있으나, 우리나라에서는 일반적으로 / / min가 사용되고 있습니다.
그러나 M^3/Hr(Cubic Meter per Hour = CMH)나 ft3/min(Cubic Feet per Minute = CFM)등도 간혹 쓰이고 있으므로 다음과 환산표를 이용하면 상용하는 단위로 쉽게 환산 할 수 있습니다.

	1 / min	M^3/Hr(CHM)	ft^3/min(CFM)
1 /min	×1=	×0.06=	×0.0353=
1 / Hr	×0.0167=	×0.001=	×0.0006=
ft^3/min(CFM)	×28.32=	×1.70=	×1=
M^3/Hr(CHM)	×16.67=	×1=	×0.598=

1. 공정 전체의 용적을 계산합니다.
   ◎ 진공이 걸리게 되는 용기의 용적을 계산합니다.
   ◎ 용기로 부터 펌프까지의 배관 용적을 계산합니다.
   ◎ 배관의 굵기와 길이에 따른 흐름저항을 계산합니다.
2. 작업 진공도에 도달해야 하는 최단 시간을 계산합니다.
3. 다음의 공식을 이용하여 펌프의 용량을 계산합니다.

$$S = 2.303 \frac{V}{T} \log \frac{P_1}{P_2}$$

S : 진공 펌프의 용량(/ /min)
V : 용기의 용량(/) 〈진공배관 관로의 총체적 포함〉
T : 작업 진공도에 도달하기까지의 요구되는 시간(minute)
P_2 : 작업 진공도
P_1 : 초기 진공도 (일반적으로 대기압이므로 760 Torr Abs.)

예를 들어, 배관 및 용기의 용적이 150/ 이고, 작업 진공도가 80 Torr일 때 펌프를 가동시켜 15초 만에 작업 진공도에 도달하려면 어느 정도의 용량을 가진 펌프를 사용해야 할 지를 계산해 보면,

$$S = 2.303 \frac{150}{0.25} \log \frac{760}{80} = 1351 \ \ 1/\min$$

그러나 여기서 유의해야 할 점은, 위의 계산식이 다음과 같은 변수를 고려하지 않았다는 점입니다. 즉, 배관의 흐름 저항, 수누(Leak), 필터 및 밸브의 저항 계수, 흡입 공기의 온도 등의 변수가 그것입니다.

공기압이용 참고 자료

1 SI단위로 전환과 단위 환산율료 (굵은선의 단위가 SI에 따른 단위)

힘	N	dyn	kgf
	1	1×10^{5}	1.01972×10^{-1}
	1×10^{-5}	1	1.01972×10^{-1}
	9.80665	9.80665×10^{5}	1

점 도	Pa·s	cP	P
	1	1×10^{3}	1×10
	1×10^{-3}	1	1×10^{-2}
	1×10^{-1}	1×10^{2}	1

주) 1P=1dyn·s/㎠ = 1g/㎠·s

압 력	Pa 또는 N/㎡	MPa 또는 N/㎟	kgf/㎟	kgf/㎠
	1	1×10^{-6}	1.01972×10^{-7}	1.01972×10^{-5}
	1×10^{6}	1	1.01972×10^{-1}	1.01972×10
	9.80665×10^{6}	9.80665×10^{-2}	1	1×10^{2}
	9.80665×10^{4}	9.80665×10^{-2}	1×10^{-2}	1

주) 1P=1N/㎡, 1MPa=N/㎟

동 점 도	㎡/s	cSt	St
	1	1×10^{-6}	1×10^{4}
	1×10^{-6}	1	1×10^{-2}
	1×10^{-4}	1×10^{2}	1

주) 1㎳=1㎠/s, 1cst = 1㎟/s

압 력	Pa	kPa	MPa	bar	kgf/㎠	atm	mmH_2O	mmHg 또는 Torr
	1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}	9.86923×10^{-6}	1.01972×10^{-1}	7.50062×10^{-3}
	1×10^{3}	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}	9.86923×10^{-3}	1.01972×10^{2}	7.50062
	1×10^{6}	1×10^{3}	1	1×10	1.01972×10	9.86923	1.01972×10^{5}	7.50062×10^{3}
	1×10^{5}	1×10^{2}	1×10^{-1}	1	1.01972	9.86923×10^{-1}	1.01972×10^{4}	7.50062×10^{2}
	9.80665×10^{4}	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1	9.86923×10^{-1}	1×10^{4}	7.50062×10^{2}
	1.01325×10^{5}	1.01325×10^{2}	1.01325×10^{-1}	1.01325	1.03323	1	1.03323×10^{4}	7.6×10^{2}
	9.80665	9.80665×10^{-3}	9.80665×10^{-5}	9.80665×10^{-5}	1×10^{-4}	9.80665×10^{-5}	1	7.35559×10^{-2}
	1.33322×10^{2}	1.33322×10^{-1}	1.33322×10^{-3}	1.33322×10^{-3}	1.35951×10^{-3}	1.31579×10^{-3}	1.35951×10	1

주) 1Pa=1N/㎡

일·에너지·열량	J	kw·h	kgf·m	kcal
	1	2.7778×10^{-7}	1.01972×10^{-1}	2.38889×10^{-4}
	3.6×10^{6}	1	3.67098×10^{5}	8.6×10^{2}
	9.80665	2.72407×10^{-6}	1	2.34270×10^{-3}
	4.18605×10^{3}	1.16279×10^{-3}	4.26858×10^{2}	1

주) 1J=1w·s, 1J=1N·M　　1cal=4.18605J(계량법에 따른다.)

일률(공률·동력) 열류	W	kgf·m/s	PS	kcal/h
	1	1.01972×10^{-1}	1.35962×10^{-3}	8.6×10^{-1}
	9.80665	1	1.3333×10^{-2}	8.43371
	7.355×10^{2}	7.5×10	1	6.32529×10^{2}
	1.16279	1.18572×10^{-1}	1.58095×10^{-3}	1

주) 1w=1J/s, Ps 마력
1Ps=0.7355kw(계량법 시행법에 따른다.)
1cal=4.18605J(계량법에 따른다.)

열전도율	W(m·k)	kcal/(h·m·℃)
	1	8.6×10^{-1}
	1.16279	1

주) 1cal=4.18605J(계량법에 따른다.)

열전도계수	W(㎡·k)	kcal/(h·m·℃)
	1	8.6×10^{-1}
	1.16279	1

주) 1cal=4.18605J(계량법에 따른다.)

비 열	J/(kg·K)	kcal/(h·m·℃), cal/(g·℃)
	1	2.38898×10^{-4}
	4.18605×10^{3}	1

주) 1P　　출전 핸드북

❷ 가스관의 추천 최대유량표

호칭지수	1/3B	1/4B	3/8B	1/2B	3/4B	1B	1 1/4B	1 1/4B
압력강화 (주1) MPa{kgf/㎠/10 m}	0.124 {1.23}	0.0707 {0.721}	0.5676 {0.587}	0.0425 {0.433}	0.0276 {0.281}	0.0209 {0.213}	0.0133 {0.136}	0.0105 {0.107}
	추천 최대 유량 (ℓ /min)							
0.05 {0.5}	127	244	518	838	1465	2460	3870	5150
0.1 {1.0}	146	282	598	965	1690	2828	4460	5950
0.15 {1.5}	163	314	668	1076	1885	3150	4960	6630
0.2 {2.0}	179	344	730	1180	2060	3450	5430	7280
0.3 {3.1}	206	395	840	1360	2375	4900	6300	8400
0.4 {4.1}	230	442	940	1520	2660	4450	7000	9360
0.5 {5.1}	252	485	1060	1660	2920	4875	7700	10250
0.6 {6.1}	272	523	1110	1800	3140	5250	8300	11050
0.7 {7.1}	292	558	1185	1920	3350	5620	8870	11800
0.8 {8.2}	308	592	1260	2035	3560	6970	9430	12570
0.9 {9.2}	324	623	1325	2140	3745	6290	9900	13220
1.0 {10.2}	340	654	1395	2250	3930	7600	10400	13880

(주1: 입구압력=0.5MPa{5.1kgf/㎠}시)

(비고)
배관거리가 길어지는 메인라인에 있어서는 공기 유량을 흐르게 했을 때 메인라인의 끝에서 어느 정도의 압력강화가 발생하는지를 고려할 필요가 있습니다. 추천최대유량이란, 실용상으로 판단해 배관길이에 대해 압력강화가 허용되는 범위에서 추천할 수 있는 최대의 유량을 의미합니다. 따라서, 그 이상의 유량을 흐르게 하면 안된다는 것이 아니라, 그 이상이 흐르면 압력강화가 커진다는 것입니다.

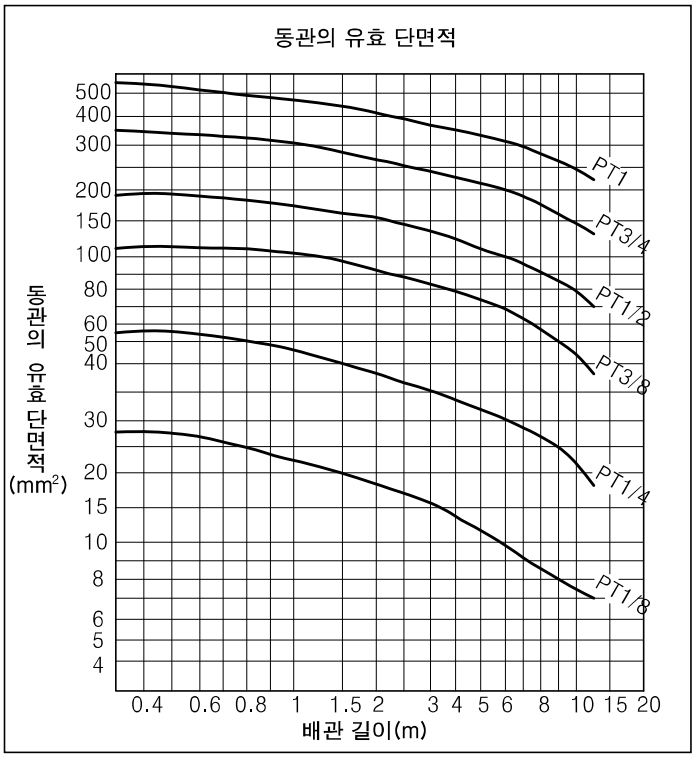
❸ 압력강화의 산출식

$$\triangle P = \frac{0.00237Q^2 \cdot L}{d^{5.31} \times (P+0.1013)}$$

$$d = \sqrt[5.31]{\frac{0.00237Q^2 \cdot L}{\triangle P \times (P+0.1013)}}$$

△P :배관내 압력손실(MPa)
L :배관의 길이(m)
Q :유량 ℓ/min(ANR)
d :배관내경(mm)
P :압력(MPa)

❹ 가스관의 유효단면적



●동관엘보해당배관길이

구 경	해당배관길이(m)
PT1/8	0.2
PT1/4	0.5
PT3/8	0.8
PT1/2	1.5
PT3/4	1.5
PT1	1.7

천연고무 및 합성고무의 물리특성

종 류	내 용
천연고무(NR)	1. 탄성, 타합성 고무보다 최고 우수하다. 2. 신장율이 우수하다. 3. 인장강도가 우수하다. 4. 마모성이 우수하다. 5. 가공성이 우수하다. 6. 점탄성이 우수하다.
합성고무(SBR)	1. 동적 특성이 우수하다. 2. 균열 저항성이 우수하다. 3. 마모성이 우수하다. 4. 저온특성이 우수하다. 5. 노화성이 우수하다.
합성고무(BR)	1. 마모성이 우수하다. 2. 반발탄성이 우수하다. 3. 내한성, 저온에 물성이 우수하다. 4. 동적인 발열이 적다. 5. 노화성이 SBR보다 우수하다.
합성고무(CR)	1. 내후성, 오존성 열노화성에 우수하다. 2. 내유성, 약품성이 우수하다. 3. 난연성이다. 4. (GAS)투과성이 적다. 5. 접착제로 점착성이 우수하다. 6. 강도가 우수하다. 7. 내열성이 우수하다. 최고 150℃까지 사용.
합성고무(NBR)	1. 내유성(기름)에 우수하다. 2. 마모성이 좋다. 3. 열노화성이 우수하다. 4. 내약품성이 우수하다. 5. (GAS)투과율이 적다. 6. 응력, 강도, 경도는 우수하다. 7. PVC수지 등 혼합성이 우수하다. 8. 굴곡, 균열, 오존성, 전기전열성, 접착성이 나쁘다.
합성고무(EPDM)	1. 오존성, 내후성, 노화성이 우수하다. 2. 내열 150℃까지 사용. 3. 내한성 -50℃까지 사용. 4. 내약품성, 극성 용제에 우수하다. 5. 수증기에 우수하다. 6. 접착성, 부루민성이 나쁘다.
합성고무 (POR, CHC, CHR)	1. 내유성(기름)에 우수하다. 2. (GAS)가스 투과성이 나쁘다. 3. 고탄성이 좋다. 4. 전온 유연성이 우수하다. 내마모 및 난연성에 우수하다. 5. 내열성, 오존성, 내연료성이 우수하다. 6. 내한 -40~150℃까지 유연성을 유지한다.
합성고무(PR-Thiocol)	1. 내유성이 좋다. 2. 내한성은 양호하다. 3. 내후성, 오존성이 양호하다. 4. 황화시 GAS가 발생한다. (水分)생성.

종 류	내 용
합성고무(Silicone)	1. 내열성 300℃까지 사용. 2. 내한성 -90℃까지 사용. 3. 내후성, 오존성이 우수하다. 4. 전기적 성질이 최고 우수하다. 5. 강도 내약품성이 약하다. 6. 강산, 강알카리에 약하다.
합성고무(Acryi 고무)	1. 내열성 170℃까지 사용. 2. 내유성(기름)에 우수하다. 3. 오존성이 최고 우수하다. 4. 내후성(바람)이 최고 우수하다. 5. 내수증기, 내수성, 내한성, 탄성이 약하다.
합성고무(Uretane)	1. 내마모성이 최고 우수하다. 2. 인열강도가 최고 우수하다. 3. 저온성, 오존성, 내유성은 양호하다. 4. 끓는물, 수증기, 마찰, 열 등에는 나쁘다. 5. 직사 일광에 변색한다.
합성고무(Viton)	1. 내약품성이 최고 우수하다. 발연황산, 질산에 우수하다. 2. 내열성 350℃까지 사용. 3. 내한성 -50~180℃까지 사용. 4. 내후성, 오존성은 최고 우수하다. 5. 탄성, 농알카리 무수, 암모니아, 활성아민류에 나쁘다.

천연고무 및 합성고무의 물리적 성질, 기준치

원료명	비중	인장강도 (kg/㎠)	신장율 (%)	경도	사용온도 (℃)	내열성	내산성	내마모성	내일광
생고무 (Natural rubber)	0.92	70~250	200~700	40~85	40~75	변화	하	양호	하
합성고무(SBR)	0.93	100~250	300~700	10~20	40~80	경화	양호	우수	변화
내유고무(NBR)	0.96	30~300	200~600	30~80	40~120	연화	우수	우수	약변화
내열고무(Neoplene) 일명(CR)	1.25	700~300	~600	30~95	150	약간변화	우수	우수	양호
부틸고무(Butyl.R)	0.91	90~200	300~700	30~90	+150	연화	양호	양호	우수
지오콜고무(Thiocol)	1.35	100	100~300	30~90	90	취약		양호	우수
하이파론(Hypalon)	1.6	250	500	80	40~140	약간경화	양호	중하	우수
폴리우레탄고무 (Polyesterurethane)	1.10	70~300	700	50~100	-40+250	최우수	우수	최우수	우수
아크릴고무(Acryl.R)	1.1	150	500	30~90	-40+180	약경화	우수	우수	최우수
실리콘고무 (Silicon rubber)	1.2	40~80	500	30~80	-60+250	최우수	우수	양호	양호
바이톤고무 일명 불소고무		7~20	100~500	50~90	-10~200	우수	최우수	우수	
▽/TON.R (Fluoro elastomers)	1.81	+200	300	50~70	250~400	우수	우수	양호	
이피디엠고무 (EPEM rubber)	1.0	230	600	70	+150	우수	우수	양호	
이브에이 스폰치,(E.V.A)	1.0	50	100	70	120	양호	양호	중하	

MEMO