

## Pneumatic Drive Bellows Pump & Auto Damper

HJS K-Series 벨로우즈 펌프 및 댐퍼 HJS K-Series Bellows Pump & Auto Damper



고품질 및 내구성  
High quality and Durability

- 유량 안정성, 광범위한 온도 적용 및 내구성  
*Flow stability, Wide range of operating temperature and Durability*



특별한 장점  
Special advantages

- 짧은 공급 납기 (*Short lead delivery times*)
- 기존 펌프의 대체성 (*Replaceability of existing pumps*)
- 가격 경쟁력 (*Price competitive*)



쉬운 유지보수  
Easy maintenance

- 낮은 유지비용 (*Low cost for maintenance*)

# KP-30MC & KP-60MC

□ **중온 • 상온 겸용 펌프 ( Bellows Pump )**  
*Medium • Room-Temperature combined Bellows pump*

**KP-60MC**



**KP-30MC**

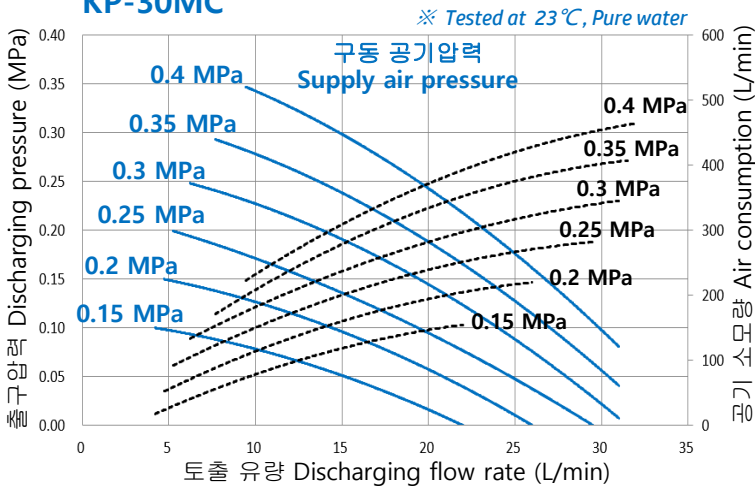
**적용범위 ( Operating temperature )**  
 10°C~100°C

**최대유량 ( Max Flow rate )**  
 30L/min & 60L/min

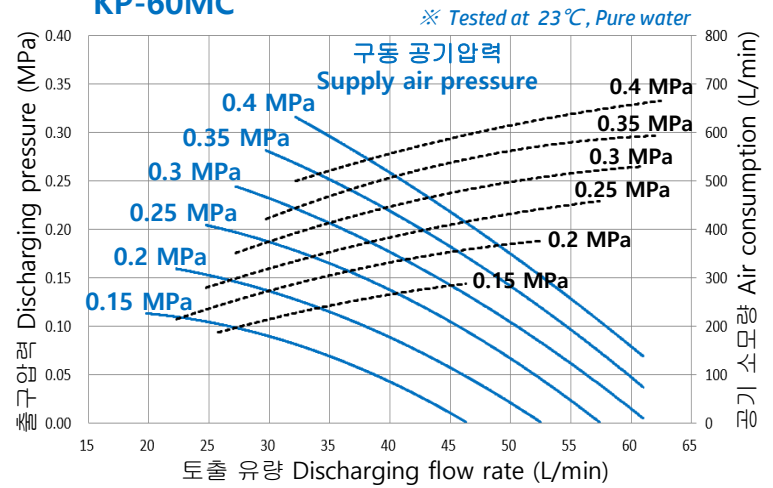
**가격경쟁력**  
*Price competitive*

□ **유량 Pump Performance Curve**

**KP-30MC**



**KP-60MC**



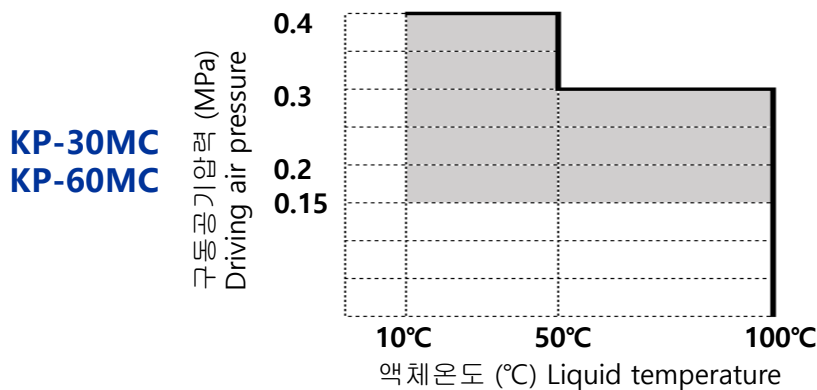
시험조건 Test conditions

- Supply air pipe size : Rc 3/8" (PT) Port (Tube O.D10 X I.D8 X 2M)
- Liquid pipe size : 3/4" Port (Tube O.D19 X I.D16)
- Test liquid : Pure water, 23°C

시험조건 Test conditions

- Supply air pipe size : Rc 1/2" (PT) Port (Tube O.D12 X I.D10 X 2M)
- Liquid pipe size : 1"Port (Tube O.D25 x I.D22)
- Test liquid : Pure water, 23°C

□ **구동공기 압력범위 Driving Air Pressure Range**



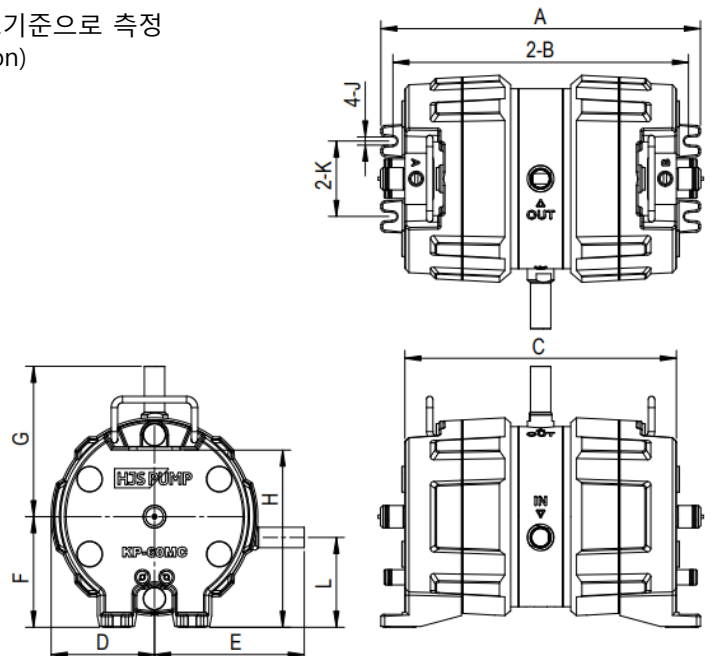
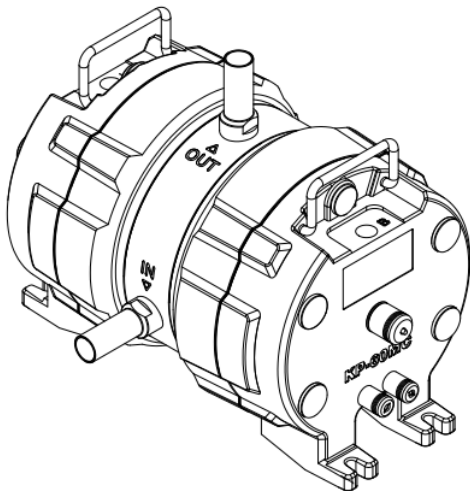
# KP-30MC & KP-60MC

## □ 규격 Standard Specifications

Items / Models	KP - 30MC			KP - 60MC		
최대 토출 유량 (L/min) Max. discharging flow rate	(*Note.1) 30 L/min			(*Note.1) 60 L/min		
스트로크당 유량 (L/stroke) Flow rate per stroke	(*Note.2) 0.40 L/stroke			(*Note.2) 0.86 L/stroke		
액체 온도 사용범위 (°C) Temperature range of liquid	10 ~ 50°C	51 ~ 100°C		10 ~ 50°C	51 ~ 100°C	
구동 공기압 범위 (MPa) Driving air pressure range	0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa		0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa	
최대허용스트로크속도 (spm) Max allowable Stroke speed	Max 75 stroke/min			Max 70 stroke/min		
AIR 공급 연결 포트 Air supply inlet ports	2-Rc 3/8" (PT)			2-Rc 1/2" (PT)		
액체 연결 포트 Liquid connection ports	PTFE 3/4" (O.D 19 x I.D16mm)			PTFE 1" (O.D 25 x I.D 22mm)		
액체 접촉 재질 Liquid contact materials	PTFE, PFA					
주변 환경 온도 범위 Ambient temperature	5 ~ 50°C					
근접스위치 센서 Proximity Switch	출력 형태 Output type	NPN Output ( N.O. mode )				
	전원 Power supply	DC 10~30V				

\*Note.1) 최대토출유량은 실온에서 순수물로 최대스트로크 속도기준으로 측정

\*Note.2) 1스트로크 (1 stroke) : 1회 왕복 (1 reciprocating motion)



Models	A	B	C	D	E	F	G	H	J	K	L	Liquid in/out ports	Air supply ports	Weight
KP-30MC	386	360	326	108.5	163.5	119.0	165.5	182.0	10	80	95	3/4"	Rc 3/8" (PT)	20 Kg
KP-60MC	399	373	339	129.2	187.0	137.8	187.5	220.8	10	94	112	1"	Rc 1/2" (PT)	28 Kg

# KP-30H & KP-60H

□ 고온 • 중온 • 상온 겸용 펌프 ( Bellows Pump )  
 High • Medium • Room-Temperature combined Bellows pump

KP-60H



KP-30H

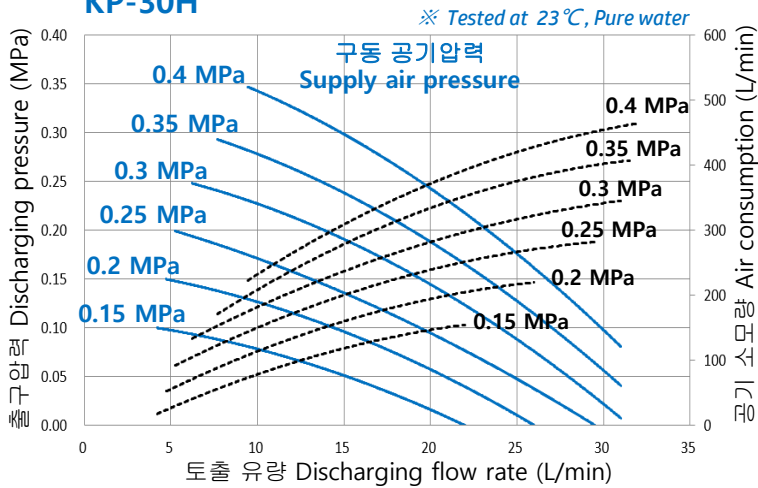
적용범위 ( Operating temperature )  
 10°C~180°C

최대유량 ( Max Flow rate )  
 30L/min & 60L/min

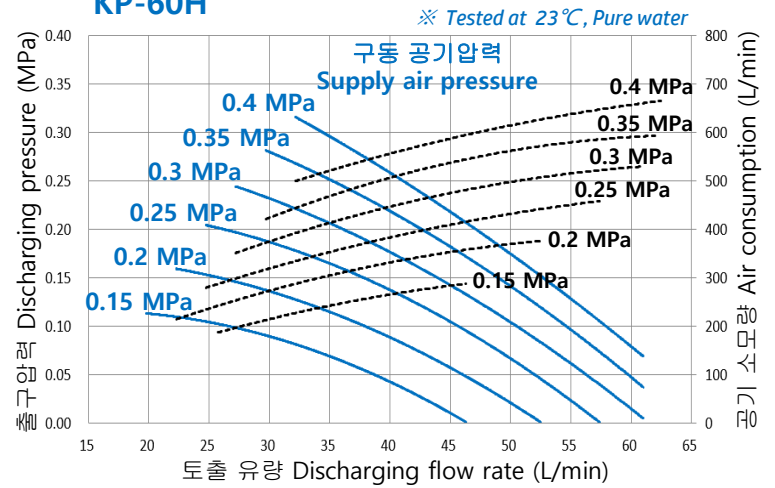
편리한 재고관리  
 Easy stock management

□ 유량 Pump Performance Curve

KP-30H



KP-60H



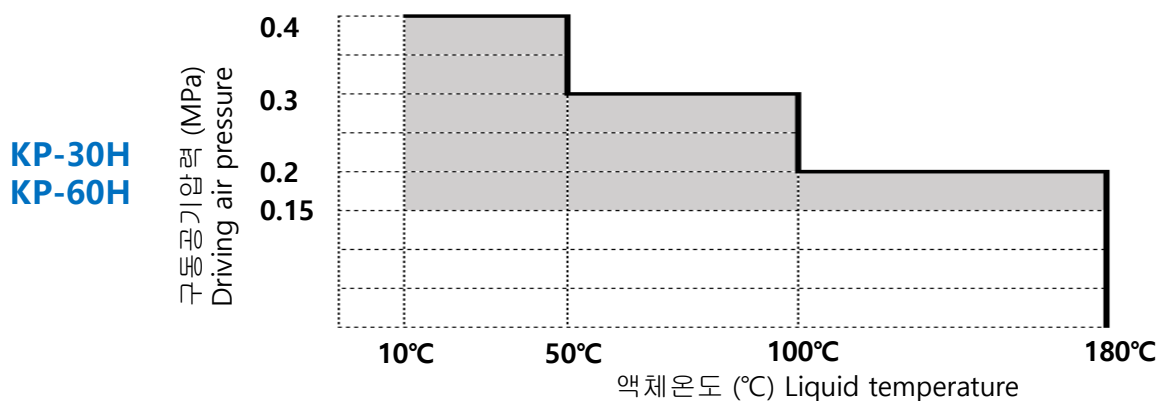
시험조건 Test conditions

- Supply air pipe size : Rc 3/8" (PT) Port (Tube O.D10 X I.D8 X 2M)
- Liquid pipe size : 3/4" Port (Tube O.D19 X I.D16)
- Test liquid : Pure water, 23°C

시험조건 Test conditions

- Supply air pipe size : Rc 1/2" (PT) Port (Tube O.D12 X I.D10 X 2M)
- Liquid pipe size : 1"Port (Tube O.D25 x I.D22)
- Test liquid : Pure water, 23°C

□ 구동공기 압력범위 Driving Air Pressure Range



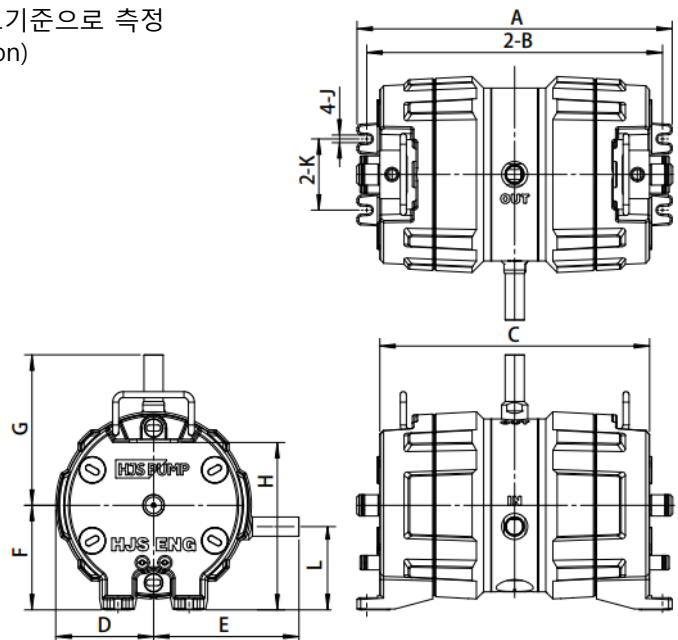
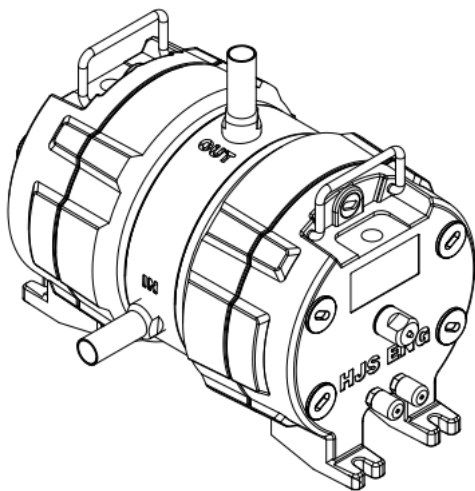
# KP-30H & KP-60H

## □ 규격 Standard Specifications

Items / Models		KP - 30H			KP - 60H		
최대 토출 유량 (L/min) Max. discharging flow rate		(*Note.1) 30 L/min			(*Note.1) 60 L/min		
스트로크당 유량 (L/stroke) Flow rate per stroke		(*Note.2) 0.40 L/stroke			(*Note.2) 0.86 L/stroke		
액체 온도 사용범위 (°C) Temperature range of liquid		10 ~ 50°C	51 ~ 100°C	101 ~ 180°C	10 ~ 50°C	51 ~ 100°C	101 ~ 180°C
구동 공기압 범위 (MPa) Driving air pressure range		0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa	0.15 ~ 0.2 MPa	0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa	0.15 ~ 0.2 MPa
최대허용스트로크속도 (spm) Max allowable Stroke speed		Max 75 stroke/min			Max 70 stroke/min		
AIR 공급 연결 포트 Air supply inlet ports		2-Rc 3/8" (PT)			2-Rc 1/2" (PT)		
액체 연결 포트 Liquid connection ports		PTFE 3/4" (O.D 19 x I.D16mm)			PTFE 1" (O.D 25 x I.D 22mm)		
액체 접촉 재질 Liquid contact materials		PTFE, PFA					
주변 환경 온도 범위 Ambient temperature		5 ~ 50°C					
근접스위치 센서 Proximity Switch	출력 형태 Output type	NPN Output ( N.O. mode )					
	전원 Power supply	DC 10~30V					

\*Note.1) 최대토출유량은 실온에서 순수물로 최대스트로크 속도기준으로 측정

\*Note.2) 1스트로크 (1 stroke) : 1회 왕복 (1 reciprocating motion)



Models	A	B	C	D	E	F	G	H	J	K	L	Liquid in/out ports	Air supply ports	Weight
KP-30H	410.4	384.4	350.4	108.5	163.5	119.0	165.5	182.0	10	80	85.5	3/4"	Rc 3/8" (PT)	23 Kg
KP-60H	416.4	390.4	356.4	129.2	187.0	137.8	187.5	220.8	10	94	109.8	1"	Rc 1/2" (PT)	32 Kg



# KD-30H & KD-60H

## □ 댐퍼 ( Auto Damper )

High • Medium • Room-Temperature combined Auto Damper

**KD-60H**



**KD-30H**

**적용범위 ( Operating temperature )**  
10°C~180°C

**적용펌프 ( Applied pump )**  
KP-30H/30MC & KP-60H/60MC

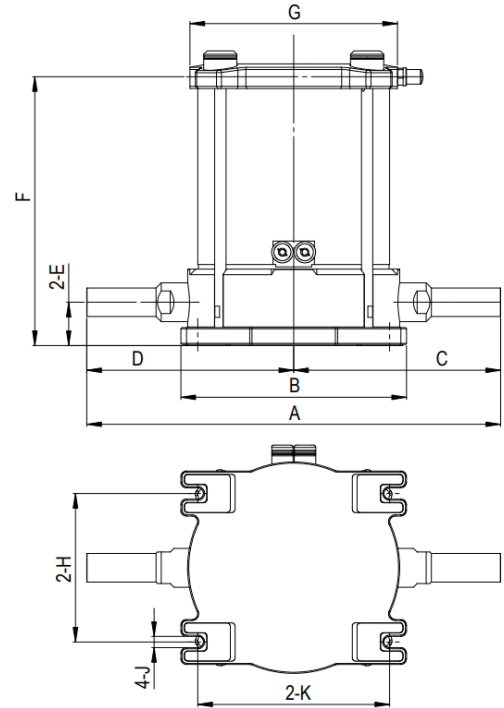
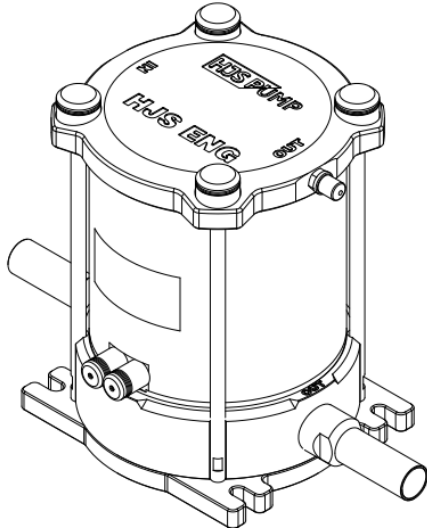
**편리한 재고 관리**  
Easy stock management

## □ 규격 Standard Specifications

Items / Models	KD - 30H			KD - 60H		
적용 펌프 Applied pump	KP-30H / KP-30MC			KP-60H / KP-60MC		
액체온도 사용범위 (°C) Temp. range of liquid 공급공기 압력범위(MPa) Air supply pressure	적용 펌프(Applied pump) : <b>KP-30H</b>			적용 펌프(Applied pump) : <b>KP-60H</b>		
	10 ~ 50 °C	51 ~ 100°C	101 ~ 180°C	10 ~ 50°C	51 ~ 100°C	101 ~ 180°C
	0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa	0.15 ~ 0.2 MPa	0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa	0.15 ~ 0.2 MPa
※ 댐퍼의 공급 공기압은 동작되는 펌프와 동일함 Supply air to Damper at the same pressure as Pump-driven air						
액체온도 사용범위 (°C) Temp. range of liquid 공급공기 압력범위(MPa) Air supply pressure	적용펌프(Applied pump) : <b>KP-30MC</b>			적용펌프(Applied pump) : <b>KP-60MC</b>		
	10 ~ 50 °C	51 ~ 100°C	N/A	10 ~ 50°C	51 ~ 100°C	N/A
	0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa	N/A	0.15 ~ 0.4 MPa	0.15 ~ 0.3 MPa	N/A
※ 댐퍼의 공급 공기압은 동작되는 펌프와 동일함 Supply air to Damper at the same pressure as Pump-driven air						
구동공기 공급 연결포트 Air supply inlet ports	Rc 1/8" (PT)			Rc 1/4" (PT)		
액체 연결 포트 Liquid connection ports	PTFE 3/4" (O.D 19 x I.D16mm)			PTFE 1" (O.D 25 x I.D 22mm)		
액체 접촉 재질 Liquid contact materials	PTFE, PFA					
주변환경 온도범위 Ambient temperature	5 ~ 50°C					
맥동 압력 폭 (MPa) Pulsation pressure width	≤ 0.06 MPa ( 액체 점도가 1~50mPa•s인 경우 ) Within 0.06 MPa ( in case liquid viscosity is within 1~50 mPa•s )					

# KD-30H & KD-60H

## □ 구성도 Structural Drawings



Models	A	B	C	D	E	F	G	H	J	K	Liquid in/out ports	Air supply ports	Weight
KD-30H	304.6	186	152.3	152.3	34.0	231.4	154	110	10	160	3/4"	Rc 1/8" (PT)	9 Kg
KD-60H	341.0	200	170.5	170.5	38.5	238.9	184	132	10	174	1"	Rc 1/4" (PT)	12 Kg

# 급속배기밸브 Quick Exhaust Valve

□ 펌프 리턴 에어에 기인한 전자밸브 부식방지, 배기저항 감소

*Prevent corrosion of solenoid valve by air returning from pump and reduce exhaust resistance*

규격 Models	연결 포트 Connection ports	적용 펌프 Applied pump
KEV-R3	Rc 3/8" (PT)	KP-30MC, KP-30H, KA-C20M, KA-C20H, KA-S25M
KEV-R4	Rc 1/2" (PT)	KP-60MC, KP-60H, KA-C40M, KA-C40H, KA-S50M



# KA-C20M & KA-C40M

## □ 저맥동 펌프 (세정설비 순환용)

Low pulsation pump (Circulation pump for Cleaning equipment)

KA-C40M



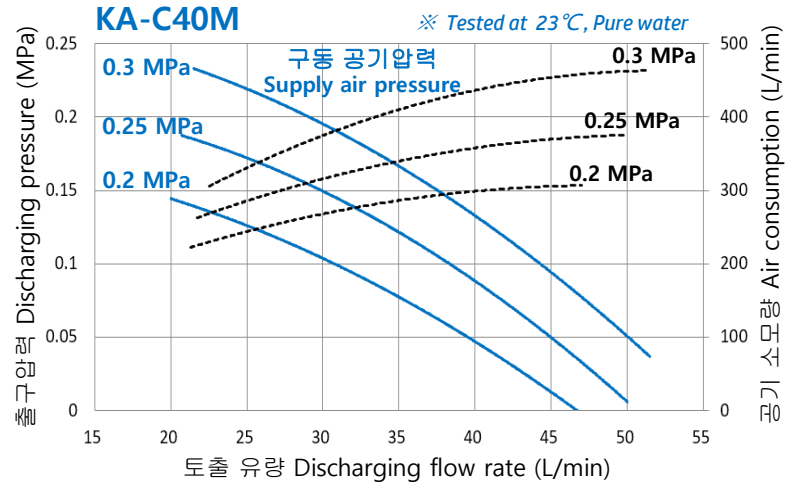
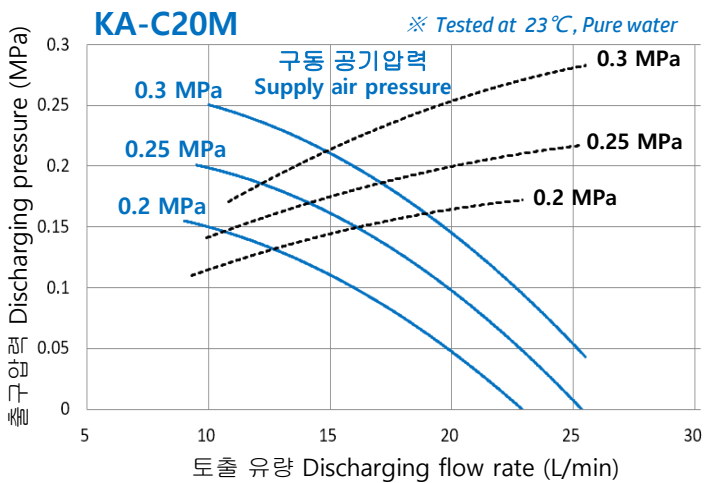
KA-C20M

**적용범위 (Operating Range)**  
 최대유량 : 20 & 40 L/min, 적용온도 : 10°C ~ 100°C

**저맥동 및 안정적인 유량 (Low pulsation, Stable flow)**  
**필터 저항 감소 (Low filter resistance)**

**펌프와 댐퍼 일체형, 설치공간 감소**  
 Pump & damper integration,  
 Reduce installation space

## □ 유량 Pump Performance Curve



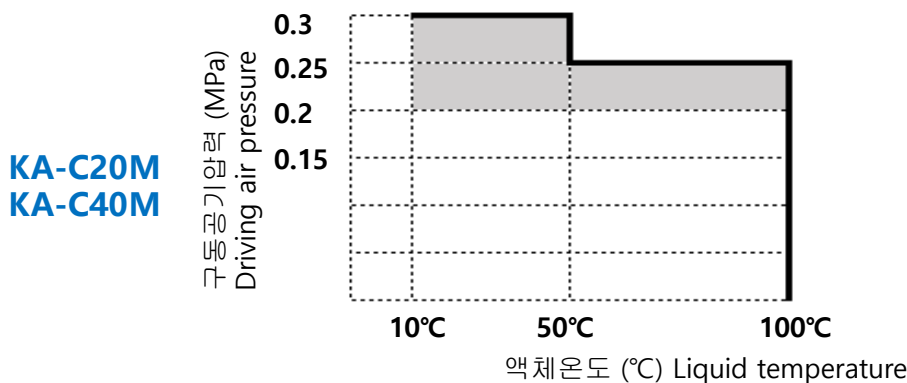
### 시험조건 Test conditions

- Supply air pipe size : Rc 3/8" (PT) Port (Tube O.D10 X I.D8 X 2M)
- Liquid pipe size : In port 3/4" (Tube O.D19 X I.D16)  
 Out port 3/4" (Tube O.D19 X I.D16)
- Test liquid : Pure water, 23°C

### 시험조건 Test conditions

- Supply air pipe size : Rc 1/2" (PT) Port (Tube O.D12 X I.D10 X 2M)
- Liquid pipe size : In port 1" (Tube O.D25 x I.D22)  
 Out port 1" (Tube O.D25 x I.D22)
- Test liquid : Pure water, 23°C

## □ 구동공기 압력범위 Driving Air Pressure Range





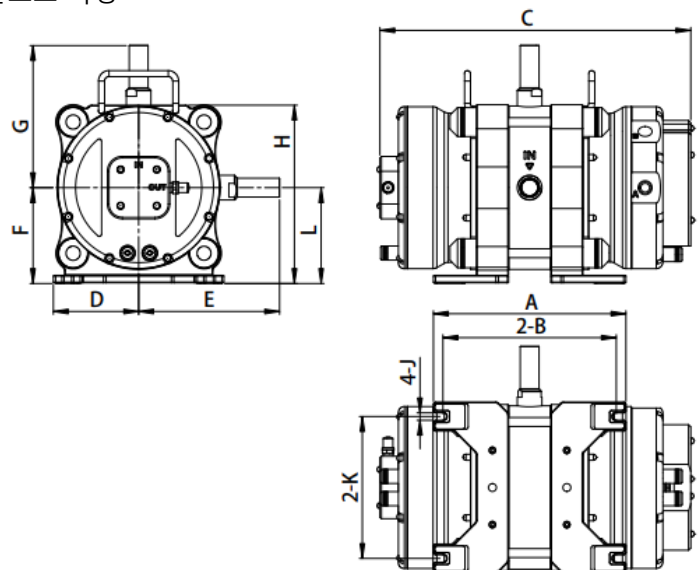
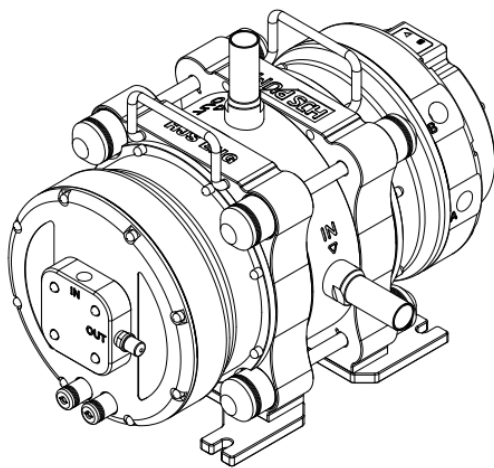
# KA-C20M & KA-C40M

## □ 규격 Standard Specifications

Items / Models	KA - C20M			KA - C40M		
최대 토출 유량 (L/min) Max. discharging flow rate	(*Note.1) 20 L/min			(*Note.1) 40 L/min		
스트로크당 유량 (L/stroke) Flow rate per stroke	(*Note.2) 0.22 L/stroke			(*Note.2) 0.40 L/stroke		
액체 온도 사용범위 (°C) Temperature range of liquid	10 ~ 50°C	51 ~ 100°C		10 ~ 50°C	51 ~ 100°C	
구동 공기압 범위 (MPa) Driving air pressure range	0.2 ~ 0.3 MPa	0.2 ~ 0.25 MPa		0.2 ~ 0.3 MPa	0.2 ~ 0.25 MPa	
최대허용스트로크속도 (spm) Max allowable Stroke speed	Max 105 stroke/min			Max 105 stroke/min		
AIR 공급 연결 포트 Air supply inlet ports	Pump Drive Air-In ports: 2-Rc 3/8" (PT) Damping Valve Air-In port : Rc 1/4" (PT)			Pump Drive Air-In ports : 2-Rc 1/2" (PT) Damping Valve Air-In port : Rc 1/4" (PT)		
액체 연결 포트 Liquid connection ports	PTFE 3/4" (O.D 19 x I.D 16mm)			PTFE 1" (O.D 25 x I.D 22mm)		
액체 접촉 재질 Liquid contact materials	PTFE, PFA					
주변 환경 온도 범위 Ambient temperature	5 ~ 50°C					
근접스위치 센서 Proximity Switch	출력 형태 Output type	NPN Output ( N.O. mode )				
	전원 Power supply	DC 12~24V				
맥동 압력 폭 (MPa) Pulsation pressure width	≤ 0.06 MPa ( 액체 점도가 1~50mPa·s인 경우 ) Within 0.06 MPa ( in case liquid viscosity is within 1~50 mPa·s )					

\*Note.1) 최대토출유량은 실온에서 순수물로 최대스트로크 속도기준으로 측정

\*Note.2) 1스트로크 (1 stroke) : 1회 왕복 (1 reciprocating motion)



Models	A	B	C	D	E	F	G	H	J	K	L	Liquid in/out ports	Air supply ports	Weight
KA-C20M	241.0	217.0	401.6	102.5	173.5	115	173.0	215	10	166	115	In : 3/4" Out : 3/4"	Pump : Rc 3/8" (PT) Valve : Rc 1/4" (PT)	22 Kg
KA-C40M	259.6	235.6	419.1	115.0	190.0	129	191.5	240	10	191	129	In : 1" Out : 1"	Pump : Rc 1/2" (PT) Valve : Rc 1/4" (PT)	28 Kg

# KA-C20H & KA-C40H

## □ 저맥동 펌프 (세정설비 순환용)

Low pulsation pump (Circulation pump for Cleaning equipment)

KA-C40H



KA-C20H

적용범위 (Operating Range)

최대유량 : 20 & 40 L/min, 적용온도 : 10°C ~ 180°C

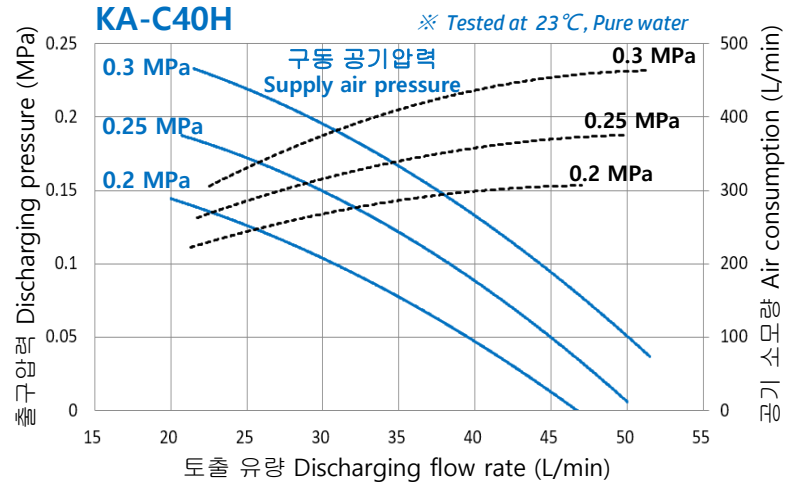
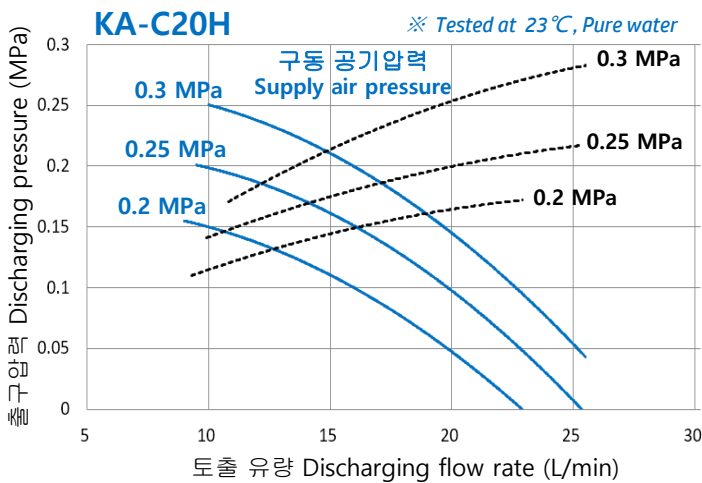
저맥동 및 안정적인 유량 (Low pulsation, Stable flow)

필터 저항 감소 (Low filter resistance)

펌프와 댐퍼 일체형, 설치공간 감소

Pump & damper integration, Reduce installation space

## □ 유량 Pump Performance Curve



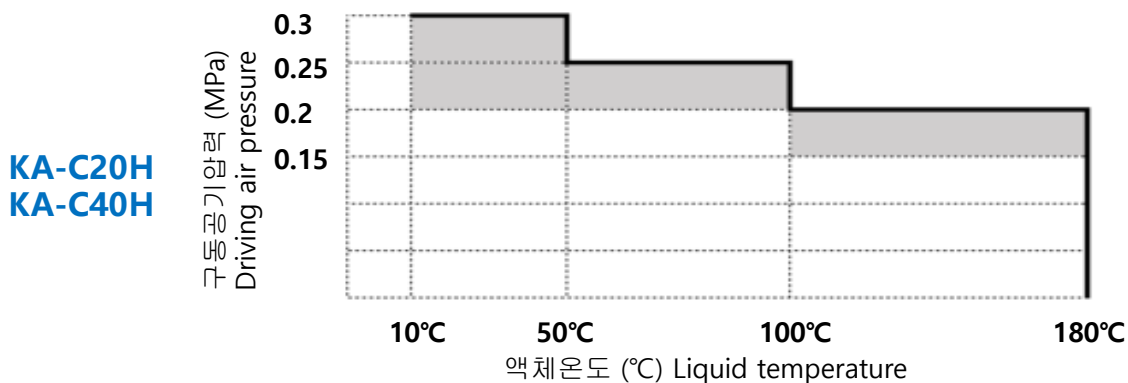
### 시험조건 Test conditions

- Supply air pipe size : Rc 3/8" (PT) Port (Tube O.D10 X I.D8 X 2M)
- Liquid pipe size : In port 3/4" (Tube O.D19 X I.D16)  
Out port 3/4" (Tube O.D19 X I.D16)
- Test liquid : Pure water, 23°C

### 시험조건 Test conditions

- Supply air pipe size : Rc 1/2" (PT) Port (Tube O.D12 X I.D10 X 2M)
- Liquid pipe size : In port 1" (Tube O.D25 x I.D22)  
Out port 1" (Tube O.D25 x I.D22)
- Test liquid : Pure water, 23°C

## □ 구동공기 압력범위 Driving Air Pressure Range



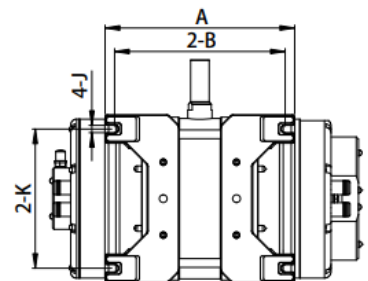
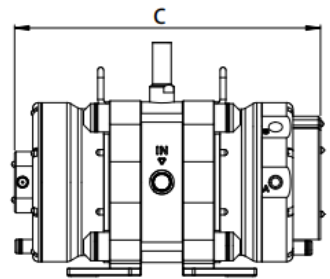
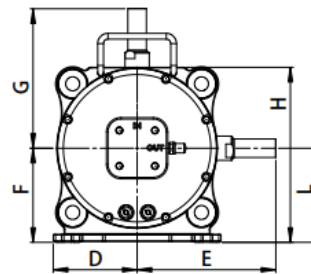
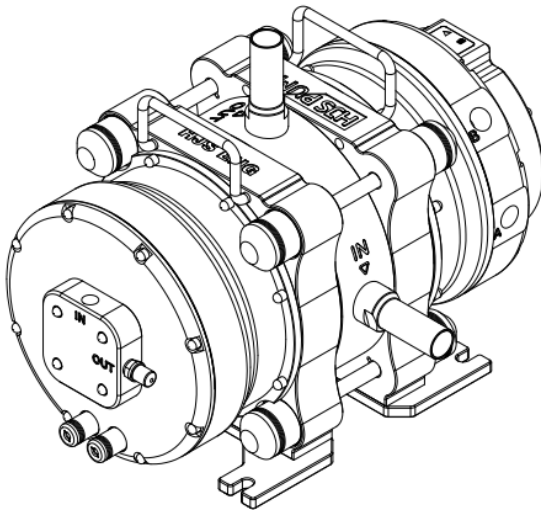
# KA-C20H & KA-C40H

## □ 규격 Standard Specifications

Items / Models	KA - C20H			KA - C40H		
최대 토출 유량 (L/min) Max. discharging flow rate	(*Note.1) 20 L/min			(*Note.1) 40 L/min		
스트로크당 유량 (L/stroke) Flow rate per stroke	(*Note.2) 0.22 L/stroke			(*Note.2) 0.40 L/stroke		
액체 온도 사용범위 (°C) Temperature range of liquid	10 ~ 50°C	51 ~ 100°C	101 ~ 180°C	10 ~ 50°C	51 ~ 100°C	101 ~ 180°C
구동 공기압 범위 (MPa) Driving air pressure range	0.2 ~ 0.3 MPa	0.2 ~ 0.25 MPa	0.15 ~ 0.2 MPa	0.2 ~ 0.3 MPa	0.2 ~ 0.25 MPa	0.15 ~ 0.2 MPa
최대허용스트로크속도 (spm) Max allowable Stroke speed	Max 105 stroke/min			Max 105 stroke/min		
AIR 공급 연결 포트 Air supply inlet ports	Pump Drive Air-In ports: 2-Rc 3/8" (PT) Damping Valve Air-In port : Rc 1/4" (PT)			Pump Drive Air-In ports : 2-Rc 1/2" (PT) Damping Valve Air-In port : Rc 1/4" (PT)		
액체 연결 포트 Liquid connection ports	PTFE 3/4" (O.D 19 x I.D 16mm)			PTFE 1" (O.D 25 x I.D 22mm)		
액체 접촉 재질 Liquid contact materials	PTFE, PFA					
주변 환경 온도 범위 Ambient temperature	5 ~ 50°C					
근접스위치 센서 Proximity Switch	출력 형태 Output type	NPN Output ( N.O. mode )				
	전원 Power supply	DC 12~24V				
맥동 압력 폭 (MPa) Pulsation pressure width	≤ 0.06 MPa ( 액체 점도가 1~50mPa·s인 경우 ) Within 0.06 MPa ( in case liquid viscosity is within 1~50 mPa·s )					

\*Note.1) 최대토출유량은 실온에서 순수물로 최대스트로크 속도기준으로 측정

\*Note.2) 1스트로크 (1 stroke) : 1회 왕복 (1 reciprocating motion)



Models	A	B	C	D	E	F	G	H	J	K	L	Liquid in/out ports	Air supply ports	Weight
KA-C20H	249.0	225.0	409.6	102.5	173.5	115	173.0	215	10	166	115	In : 3/4" Out : 3/4"	Pump : Rc 3/8" (PT) Valve : Rc 1/4" (PT)	23 Kg
KA-C40H	259.6	235.6	419.1	115.0	190.0	129	191.5	240	10	191	129	In : 1" Out : 1"	Pump : Rc 1/2" (PT) Valve : Rc 1/4" (PT)	28 Kg

# KA-S25M & KA-S50M

## □ 저맥동 펌프 ( 다양한 케미컬 이송용, Slurry 등 )

Low pulsation pump ( For various chemical supply system, Slurry etc. )



### 적용범위 ( Operating Range )

최대유량 : 25 & 50 L/min, 적용온도 : 10°C ~ 100°C

저맥동 및 안정적인 유량 ( Low pulsation, Stable flow )

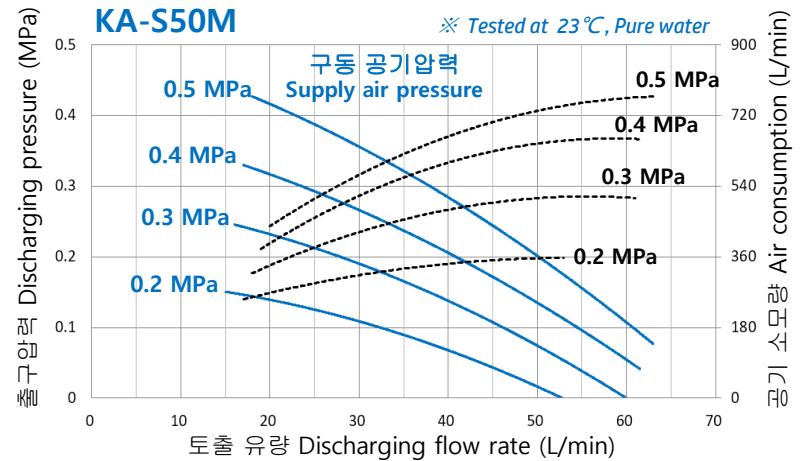
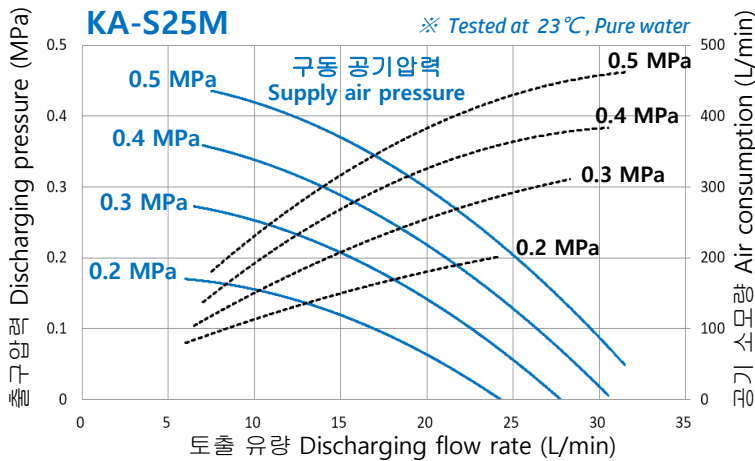
필터 저항 감소 ( Low filter resistance )

펌프와 댐퍼 일체형, 설치공간 감소

Pump & damper integration,

Reduce installation space

## □ 유량 Pump Performance Curve



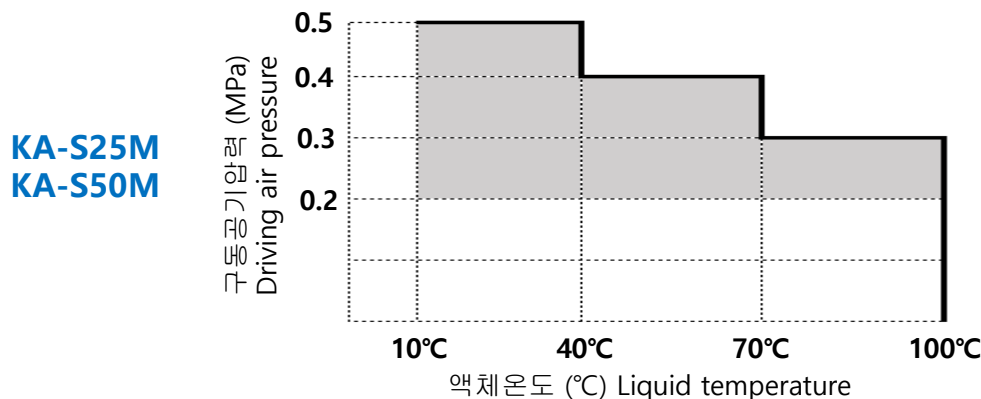
### 시험조건 Test conditions

- Supply air pipe size : Rc 3/8" (PT) Port (Tube O.D10 X I.D8 X 2M)
- Liquid pipe size : In port 1" (Tube O.D25 X I.D22)  
Out port 3/4" (Tube O.D19 X I.D16)
- Test liquid : Pure water, 23°C

### 시험조건 Test conditions

- Supply air pipe size : Rc 1/2" (PT) Port (Tube O.D12 X I.D10 X 2M)
- Liquid pipe size : In port 1+1/2" (Tube O.D38 X I.D34)  
Out port 1" (Tube O.D25 X I.D22)
- Test liquid : Pure water, 23°C

## □ 구동공기 압력범위 Driving Air Pressure Range



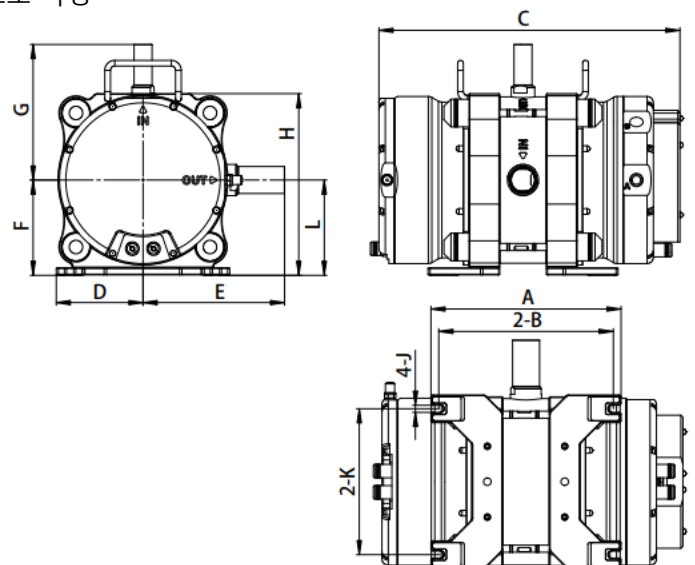
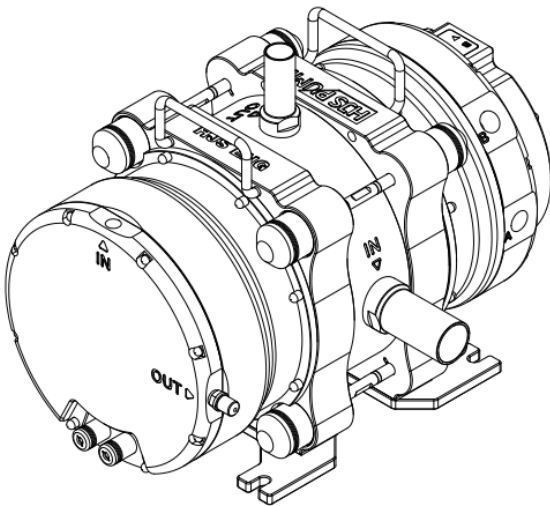
# KA-S25M & KA-S50M

## □ 규격 Standard Specifications

Items / Models	KA - S25M			KA - S50M		
최대 토출 유량 (L/min) Max. discharging flow rate	(*Note.1) 25 L/min			(*Note.1) 50 L/min		
스트로크당 유량 (L/stroke) Flow rate per stroke	(*Note.2) 0.22 L/stroke			(*Note.2) 0.46 L/stroke		
액체 온도 사용범위 (°C) Temperature range of liquid	10 ~ 40°C	41 ~ 70°C	71 ~ 100°C	10 ~ 40°C	41 ~ 70°C	71 ~ 100°C
구동 공기압 범위 (MPa) Driving air pressure range	0.2 ~ 0.5 MPa	0.2 ~ 0.4 MPa	0.2 ~ 0.3 MPa	0.2 ~ 0.5 MPa	0.2 ~ 0.4 MPa	0.2 ~ 0.3 MPa
최대허용스트로크속도 (spm) Max allowable Stroke speed	Max 115 stroke/min			Max 115 stroke/min		
AIR 공급 연결 포트 Air supply inlet ports	Pump Drive Air-In ports : 2-Rc 3/8" (PT) Damping Valve Air-In port : Rc 1/4" (PT)			Pump Drive Air-In ports : 2-Rc 1/2" (PT) Damping Valve Air-In port : Rc 1/4" (PT)		
액체 연결 포트 Liquid connection ports	- In port : PTFE 1" (O.D 25 x I.D 22mm) - Out port : PTFE 3/4" (O.D 19 x I.D 16mm)			- In port : PTFE 1+1/2" (O.D 38 x I.D 34mm) - Out port : PTFE 1" (O.D 25 x I.D 22mm)		
액체 접촉 재질 Liquid contact materials	PTFE, PFA					
주변 환경 온도 범위 Ambient temperature	5 ~ 50°C					
근접스위치 센서 Proximity Switch	출력 형태 Output type	NPN Output ( N.O. mode )				
	전원 Power supply	DC 12~24V				
맥동 압력 폭 (MPa) Pulsation pressure width	≤ 0.06 MPa ( 액체 점도가 1~50mPa•s인 경우 ) Within 0.06 MPa ( in case liquid viscosity is within 1~50 mPa•s )					

\*Note.1) 최대토출유량은 실온에서 순수물로 최대스트로크 속도기준으로 측정

\*Note.2) 1스트로크 (1 stroke) : 1회 왕복 (1 reciprocating motion)



Models	A	B	C	D	E	F	G	H	J	K	L	Liquid in/out ports	Air supply ports	Weight
KA-S25M	249.0	225.0	405.5	102.5	180.5	115	173.0	215	10	166	115	In : 1" Out : 3/4"	Pump : Rc 3/8" (PT) Valve : Rc 1/4" (PT)	24 Kg
KA-S50M	268.6	244.6	425.3	122.5	200.0	135	191.5	257	10	206	135	In : 1+1/2" Out : 1"	Pump : Rc 1/2" (PT) Valve : Rc 1/4" (PT)	33 Kg



## 주의사항 Precautions

### 1. 구성도 ( Structural Drawings )

본 제품은 양산 중에 부분적으로 변경될 수 있으므로 실제 판매되는 제품과 본 카탈로그의 내용에 약간의 차이가 있을 수 있습니다.

*( This product may be partially changed during mass production, so there may be some differences between the actual product being sold and the contents of this catalog. )*

### 2. 압축 공기 ( Compressed air )

만약 제품이 다음의 화학 용액에 사용된다면 당사에 연락주시기 바랍니다. 사용 조건에 따라서 비표준 사양의 제품이 필요할 수 있습니다.

*( Supply the compressed air after reducing pressure at the nearest position of the pump. The compressed air has limitations as to chemicals and temperature to be used. )*

### 3. 사용주의 액체 ( Chemicals to be handled with care )

만약 제품이 다음의 화학 용액에 사용된다면 당사에 연락주시기 바랍니다. 사용 조건에 따라서 비표준 사양의 제품이 필요할 수 있습니다.

*( If the product is used in the following chemical solutions, please contact us. Depending on the conditions of use, non-standard products may be required. )*

- 1) 염산(HCL), 질산(HNO<sub>3</sub>) 등의 고 투과성 화학물질 (Highly permeable chemicals) : 부식방지 사양 필요 ( Corrosion-proof )  
*( Highly permeable chemicals including hydrochloric acid (HCL), nitric acid (HNO<sub>3</sub>), etc : Corrosion-proof is required. )*
- 2) 용제계 용액 (Solvent) : 방폭 사양 필요 ( Explosion-proof )  
*( Solvent : Explosion-proof is required. )*
- 3) 히드라진(Hydrazine) , 발연황산(Fuming sulfuric acid) 및 박리액(Stripper) 등의 반응성이 높은 화학물질  
*( Highly reactive chemicals including hydrazine, fuming sulfuric acid and stripper. )*



## 홈페이지 Company Website

Korean ( 한국어 )



[www.hjseng.com](http://www.hjseng.com)

Chinese ( 中文版 )



[www.hjseng.com](http://www.hjseng.com)

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