Cheonsei

CE SPEC KAB ISO 9001 Certified Company
KAB-QC-18



Diaphragm Metering Pumps

KD

- For Chemical Dosing
- Wide Capacity Range
- Accurate Adjustment
- Simple Operation
- Easy Maintenance

전세산업 (주)

Model Code

❶	❷	❸a	❸b	❹	❺a	❺b	❺c	❻	❼	❽
KD	V	–	–	3	3	H	–	P	T	C	–	F	W	S

❶ Construction
V : Vertical
H : Horizontal

❷ Option
No Mark : No Option
A : BLDC M/C UNIT
E : Air Relief Valve
F : Relief Valve

❸ Norminal Capacity
a x 10^b = 3 x 10^3 = 3000(mL/min)

❹ Discharge Pressure Rank
H : High
M : Middle
L : Low
S : Special

❺ Liquid-End materials
(a) Head
P : PP(PVC)
F : PVDF(PTFE)
S : SSC13A
6 : SSC14A

(b) Diaphragm
T : PTFE
E : EPDM

(c) Check ball
C : Ceramic
S : STS316
6 : STS316

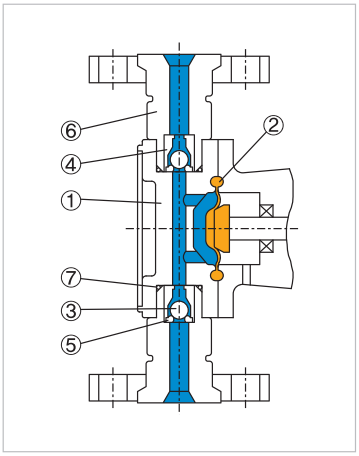
❻ Connection type
F : Flange
H : Hose
T : Thread
X : Others

❼ Viscosity Limit
W : Standard
V : High Viscosity

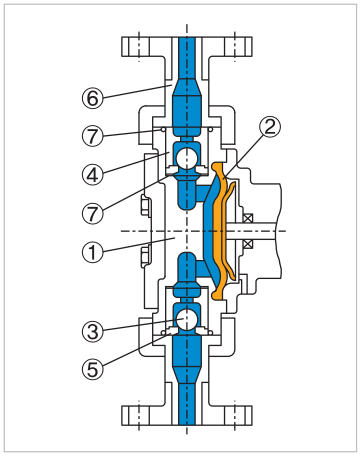
❽ Power Supply
S : 3Ø, 220/380V 60Hz
3Ø, 440V 60Hz
X : Others

Materials of Standard Liquid End

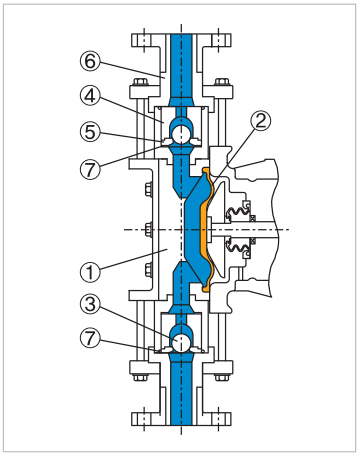
• KD-21H~82H-PTC



• KD-13H~14M-PTC



• KD-14H~54L-PTC



Parts Name	PTC(PES)		FTC		STS(6T6)	
	21H~82H	13H~54L	21H~14M	14H~54L	21H~82H	13H~54L
① Head	PP	PVC	PVDF	PVDF (PTFE)	SSC13A(SSC14A)	
② Diaphragm	PTFE(EPDM)		PTFE		PTFE	
③ Checkball	CERAMIC(STS304)		CERAMIC		STS316	
④ Ball Guide	PP	PVC	PVDF		PVDF	SSC14A
⑤ Ball Seat	FKM(EPDM)	PVC	PTFE(PVDF)		PTFE	STS316
⑥ Joint	PP	PVC	PVDF		STS316	
⑦ O-ring, Packing	FKM(EPDM)		PTFE		PTFE	

Note) 1. Materials other than standard can be used specially. If the customer request. Please contact to sales engineer or distributer.
2. All the information mentioned above can be revised for improvement without prior notice.
3. The limits of liquid temperature are 0~50℃ for PVC and 0~80℃ for Stainless Steel respectively.
4. Ambient temperature limit is 0~40℃.
5. Self-priming capacity is 1 meter or less in full stroke operation.

Examples of Liquid End Material Type

• PTC Type



• FTC Type



• STS Type



Standard Specification

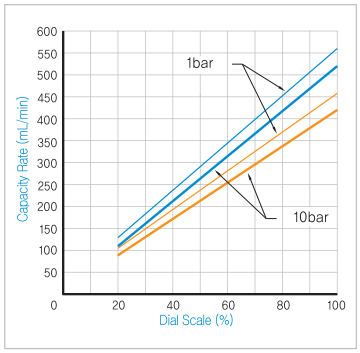
Spec.	Max. Capacity (mL/min)		Max. Discharge Pressure (bar)	Stroke Frequency (SPM)		Diameter of Diaphragm (mm)	Stroke Length (mm)	Connection				Motor (kW)	Weight (kg) Vert. (Hori.)
								Hose		Flange	Thread		
	50Hz	60Hz		50Hz	60Hz			PVC	PTFE				
KD-21H	20	25	10	48	58	30	3	Ø6xØ11	Ø10xØ12	KS10K15A	-	0.2	14(17)
KD-61H	50	60	10	48	58	36	4						
KD-12H	100	120	10	96	116	36	4						
KD-22H	210	260	10	48	58	55	6	Ø12xØ18			Rc 3/8		15(18)
KD-52H	420	520	10	96	116	55	6						
KD-82H	700	840	10	96	116	68	5						
KD-13H	850	1020	10	48	58	100	6		Ø12xØ14		Rc 1/2		17(20)
KD-23H	1700	2040	8	96	116	100	6						
KD-33L	2900	3480	5	48	58	130	10	-		KS10K25A	Rc 1		19(22)
KD-43L	3400	4100	5	96	116	130	6						
KD-73L	6200	7440	3	96	116	130	10						
KD-53L	4800	5800	5	96	116	130	8	-		KS10K25A		0.4	20(22)
KD-63L	5450	6550	4	96	116	130	9						
KD-33H	2900	3480	10	48	58	130	10						47(51)
KD-73H	6200	7440	7	96	116	130	10						
KD-43H	3600	4400	8	48	58	145	10				Rc 1		40(44)
KD-63H	5500	6600	7	48	58	145	15						
KD-93M	7500	9100	5	96	116	145	10						
KD-14N	9800	11800	4	96	116	145	12.5						
KD-14M	11500	13800	5	96	116	145	15					0.55	42(46)
KD-14H	9000	10800	7	48	58	177	17.5	-		KS10K40A	-	0.75	86
KD-14G	13300	16000	5	96	116	177	12.5						86
KD-24L	18400	22000	3	96	116	177	17.5						86
KD-24S	23300	28000	3	96	116	195	17.5						89
KD-24H	18400	22000	7	96	116	177	17.5	-		KS10K40A	-	1.5	88
KD-34H	26600	32000	5	96	116	195	20						92
KD-54L	45000	54000	3	96	116	250	20			KS10K50A			100

Note) 1. Max. Capacity is tested under the following conditions (Ambient Temp., Potable Water, Max. discharge pressure)
2. The effective rage of discharge volume adjustment is 20% up to 100% of max. capacity.
3. Special requirement of the motor (such as explosion proof) can only be met with horizontal type. (Except KDV-14H~54L)
4. The weight is based on standard motor & PTC type pump.
5. The contents on this catalog may be revised for improvement without prior notice.
6. The Munsell No. of painting is 6.51 B 4.99/9.55.
7. Thread connection is available only for P□□ liquid end materials.

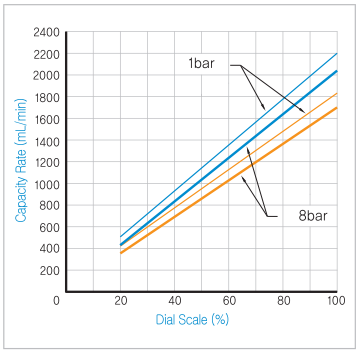
Performance Curves

60Hz 50Hz Conditions : Room Temperature, Clean water, Suction Head - 1m

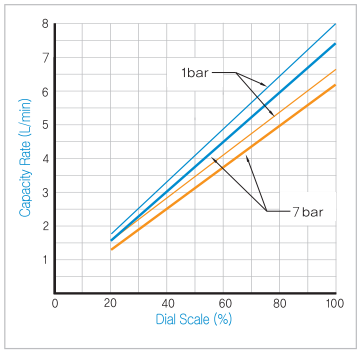
• KD-52H



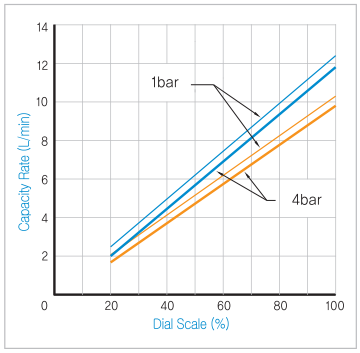
• KD-23H



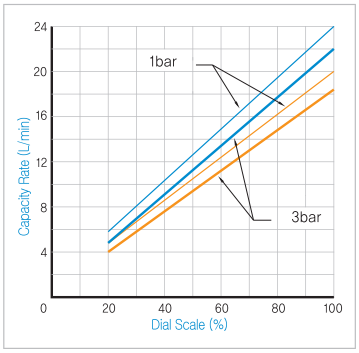
• KD-73H



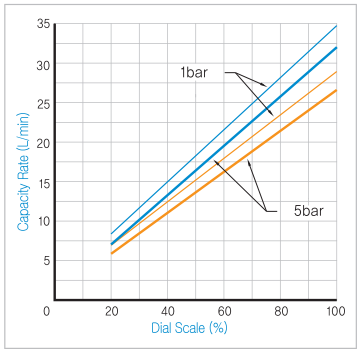
• KD-14N



• KD-24L



• KD-34H



※ For more information, please visit our Web site.

Precautions for Installation and Piping

KEMPION Diaphragm Metering Pumps are reciprocating metering pumps utilizing the eccentric cam and return spring. It is natural that pulsation should occur in the suction and discharge piping. Precaution in pump installation and piping in order to dampen the pulsation is required, in contrast to those of general centrifugal pump.

1. Countermeasure for Damping of Pulsation (Inertial resistance)

(1) Install pulsation damping device(air chamber)

(2) Reduce the total discharge piping length and enlarge diameter of the discharge piping

2. Countermeasure for Prevention of Overfeeding

(1) Install air chamber

(2) Install back pressure valve

When Placing Order

In order to provide the most suitable pump, please provide the following information.

1. Specification of liquid

(1) Liquid name (2) Ingredients (3) Concentration (4) Temperature (5) Viscosity

2. Conditions of installation

(1) Purpose of use (2) Required discharge volume (3) Suction side piping (4) Discharge side piping

(5) Power source (6) Ambient temperature (7) Installation location & Mounting method (8) Operating condition

3. Other

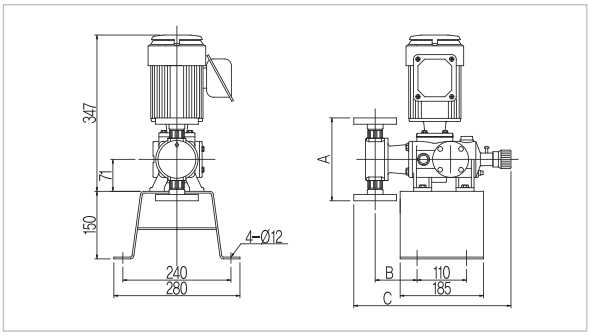
(1) Desired delivery date and place (2) Any other requirements

Note) 1. The Performance curves show examples at our facility under regular conditions. Performance curves can be somewhat different at each local site. Please measure the discharge capacity under the operation condition and adjust the stroke length dial on its performance curves.

Dimension

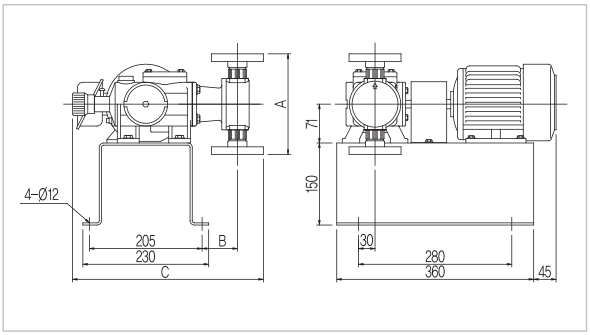
(Unit : mm)

• KDV-21H,61H,12H,22H,52H,82H,13H,23H,33L,43L,73L,53L,63L



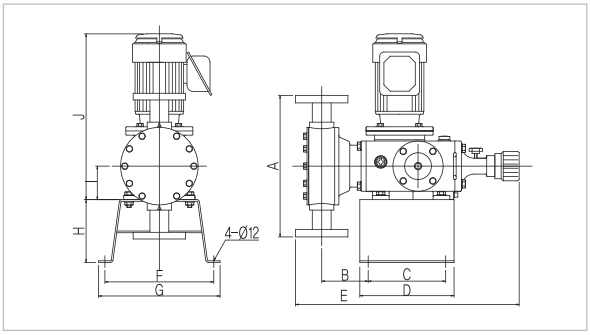
Size	A			B			C		
	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS
21H	164	164	166	90	90	89	346	346	345
61H, 12H	164	164	166	91	91	90	347	347	346
22H, 52H	184	184	186	93	93	92	350	350	349
82H	190	190	192	93	93	93	349	349	349
13H, 23H	290	284	240	91	91	86	349	349	344
43L, 33L, 73L, 53L, 63L	326	320	290	101	101	95	376	376	370

• KDH-21H,61H,12H,22H,52H,82H,13H,23H,33L,43L,73L,53L,63L



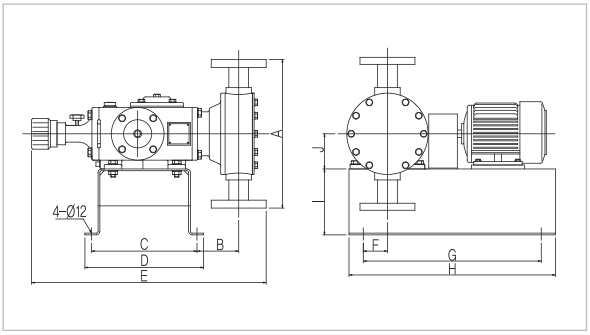
Size	A			B			C		
	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS
21H	164	164	166	62	62	61	346	346	345
61H, 12H	164	164	166	63	63	62	347	347	346
22H, 52H	184	184	186	65	65	64	350	350	349
82H	190	190	192	65	65	65	349	349	349
13H, 23H	290	284	240	63	63	58	349	349	344
43L, 33L, 73L, 53L, 63L	326	320	290	73	73	67	376	376	370

• KDV-33H,73H,43H,63H,93M,14N,14M



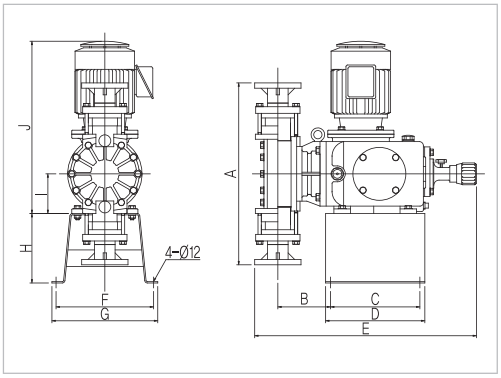
Size		A	B	C	D	E	F	G	H	I	J
33H, 73H	PTC	326	96	220	250	538	290	320	180	100	434
	FTC	320	96			538					
	STS	290	90			532					
43H, 63H, 93M, 14N, 14M	PTC	338	110	185	225	535	260	290	150	80	396
	FTC	340	110			535					
	STS	334	115			540					

• KDH-33H,73H,43H,63H,93M,14N,14M



Size		A	B	C	D	E	F	G	H	I	J
33H, 73H	PTC	326	69	270	300	538	83	450	510	190	90
	FTC	320	69			538					
	STS	290	63			532					
43H, 63H, 93M, 14N, 14M	PTC	338	94	240	270	535	55	290	470	150	80
	FTC	340	94			535					
	STS	334	99			540					

• KDV-14H,24L,24S,24H,34H,54L



Size	14H, 14G, 24L			24S			24H			34H			54L		
	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS
A	550	554	475	556	556	522	550	554	475	556	556	522	640	638	580
B	160	160	170	163	163	174	159	159	169	172	172	184	180	180	190
C	270			270			250			250			250		
D	300			300			310			310			310		
E	671	671	681	675	675	686	655	655	665	669	669	681	685	685	695
F	290			290			310			310			310		
G	320			320			350			350			350		
H	210			210			90			90			90		
I	120			120			120			120			120		
J	520			520			538			538			538		

Note) 1. The above specifications and design could be changed for improvement without prior notice.

BLDC Motor Specification

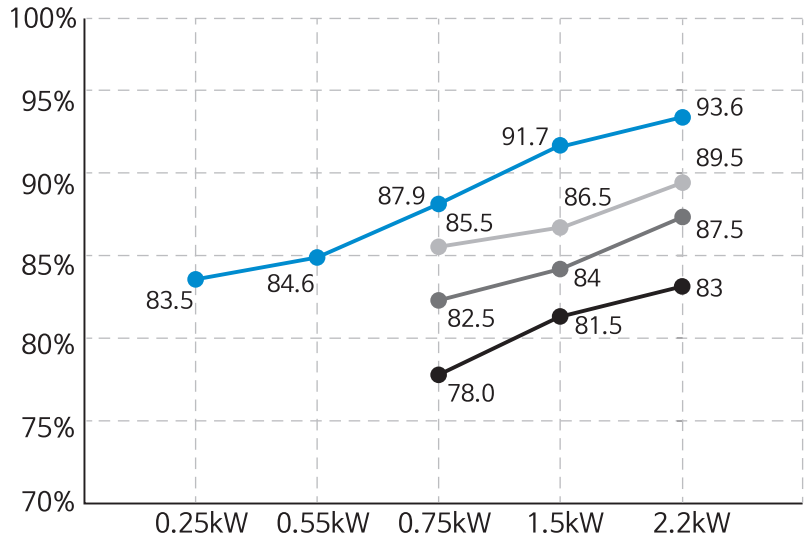
• Specification of Motor & Driver

Output		0.25kW	0.55kW	0.75kW	1.5kW	2.2kW
Voltage	220V Class	1Ø, 3Ø AC200~240V 50/60Hz		3Ø AC200~240V 50/60Hz		-
	400V Class	3Ø AC380~480V 50/60Hz				
Motor	Type	Brushless DC Motor(Sensored SPM)				
	Enclosure	TENV				TEFC
	Pole	8 Class				
	Insulation	F				
Protection Class		IP66				
Weight		5.2	10	13.5	15.5	17

• Feature

- It is possible to do stable & accurate control in proportion to Input Signal because Motor RPM is controlled by PID.
- Save energy cost by high efficiency operation.
- It is optimally designed for Metering Pumps in order that it makes high torque at low RPM.
- It can be remotely controlled by simple connection.
- It is simple to install as all-in one structure.

Efficiency Standard Grade of BLDC Motor





IE1 Efficiency Standard
IE2 Efficiency Standard
IE3 Efficiency Standard
BLDC Motor

- The value of between IE1 and IE3 is a efficiency value of 4 Pole/60Hz Motor under IEC60034-30 standard.
- The BLDC Motor is not a regulated item for High Efficiency.
- Save energy cost since it is possible to do High performance & high efficiency operation as BLDC(Brushless DC) Motor is Synchronous Motor in which permanent magnet is embedded.

Note) 1. TENV : Totally Enclosed, Non-Ventilated
2. TEFC : Totally Enclosed, Fan-Cooled

Accessories

1. Air Chamber

❶ ❷ ❸ ❹

AC – V 15 A

❶ Model
- AC : Air Chamber
- BV : Back Pressure Valve
- RV : Relief Valve

❷ Body Materials
- V : PVC (Packing : FKM)
- VE : PVC (Packing : EPDM)
- S : STS304
- 6 : STS316
- F : STS304+ETFE

❸ Flange Size
- 15 : KS 10K 15A
- 20 : KS 10K 20A
- 25 : KS 10K 25A
- 40 : KS 10K 40A
  KS 10K 40P*
- 50 : KS 10K 50A

❹ Capacity
- A : Standard
- P : Special

※ 40P is size of 40A but the capacity is specially big.



Reciprocating pump has a peculiar pulsation which results in vibration of piping and overfeed phenomena. Air Chamber will be used to solve such problems caused by pulsation.

Model	Net Capacity (㎤)	Max. discharge pressure(bar)	
		PVC	STS
AC-□15A	500	10	10
AC-□20A	1,000		
AC-□25A	2,000		
AC-□40A	4,000	9	
AC-□40P	6,000	6	
AC-□50A	10,000	5	

2. Valve

❶ ❷ ❸ ❹

BV – V 15 A

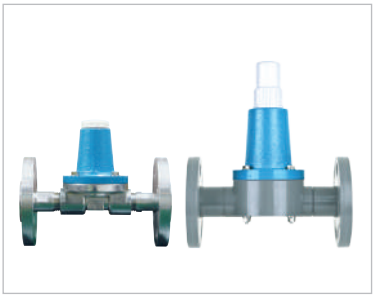
❶ Model
- BV : Back Pressure Valve
- RV : Relief Valve

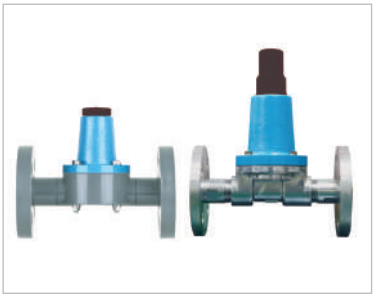
❷ Body Materials
- V : PVC (O-ring : FKM)
- VE : PVC (O-ring : EPDM)
- S : SSC14
- F : PVDF

❸ Flange Size
- 15 : KS 10K 15A
- 20 : KS 10K 20A
- 25 : KS 10K 25A
- 40 : KS 10K 40A
  KS 10K 40P*
- 50 : KS 10K 50A

❹ Capacity
- A : Standard
- P : Special

※ 40P is size of 40A but the capacity is specially big.





According to the conditions of the piping, the discharge rate may be excessive or the pumping liquid may be continuously leaked in spite of stopping the pump which is caused by overfeed or siphon phenomena. The back pressure valve is for preventing such things.

When the discharge pressure increases to more than a setting point due to choking the valve with debris or closing the valve, the safety valve will open automatically to relieve the pressure. Relief valve prevents pump and piping from damages.

Model	Pressure Control Range(bar)	Standard Setting Pressure(bar)
BV-□15A	0.5~3	1
BV-□20A		
BV-□25A		
BV-□40A		
BV-□40P		
BV-□50A		

Model	Pressure Control Range(bar)	Standard Setting Pressure(bar)
RV-□15A	3~10	5
RV-□20A		
RV-□25A		
RV-□40A		
RV-□40P	3~8	5
RV-□50A		3



KD

CSCE - A - 19

2025. 03

Cheonsei

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