

KEMPION

ISO9001



Challenge to Pulseless Feed

SMOOTHY *Metering Pumps*

Diaphragm type **PKD**

Plunger type **PKP**



www.cheonsei.co.kr



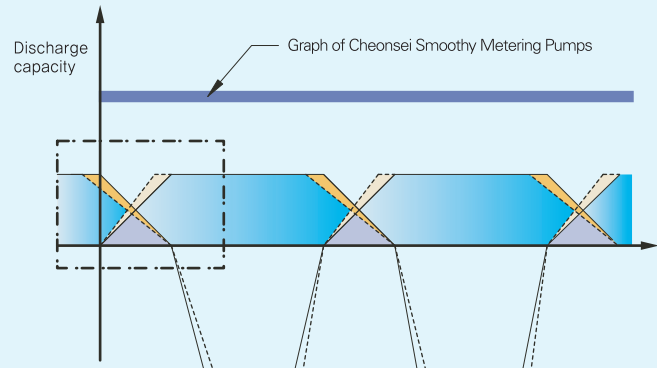
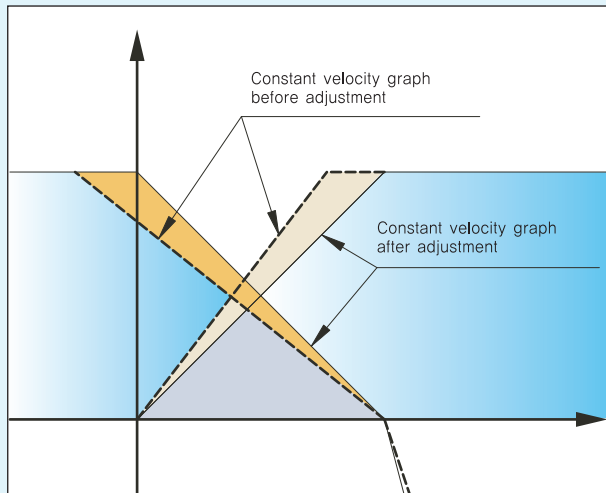
Challenge to Pulseless Feeds~

KEMPION Smoothy Metering Pumps have developed with Advanced Patent Technology

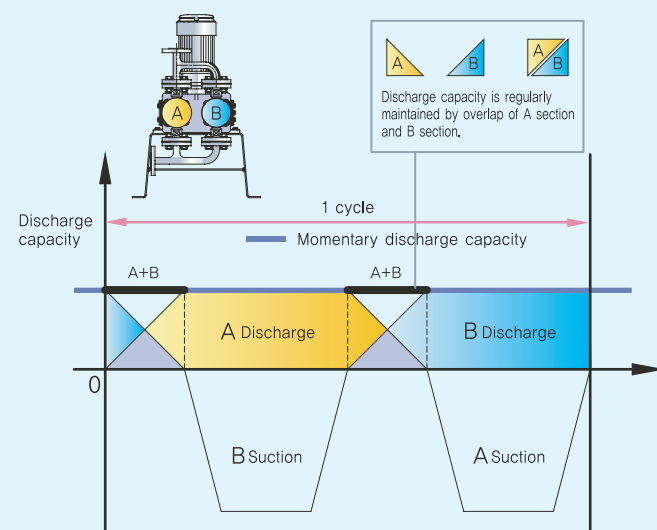
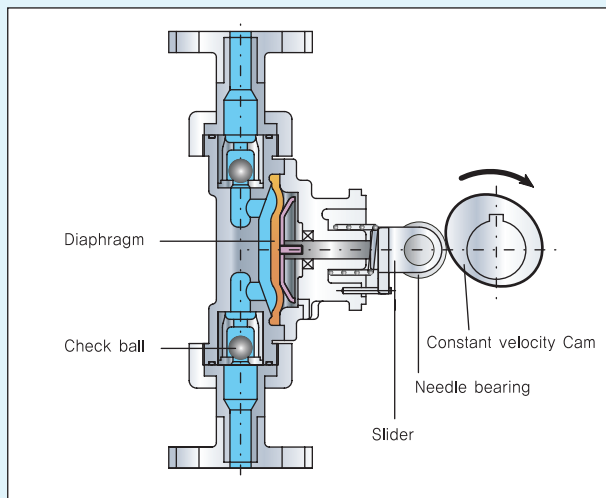
In general, metering pumps have advantages for high discharge pressure, fixed quantity, and corrosion resistance, but it could be restricted for use according to the process because it have characteristic arising pulsation in injection side caused by operating principle. Cheonsei has developed constant velocity cam which removes its characteristic radically, and has completed Smoothy Metering Pumps as patent technology for correction of constant velocity cam. It has acquired Certificate of New Excellent Product(NeP) and Excellent Performance Certification(EPC) by patent technology.

■ Patent Principle of adjustment for constant velocity Cam

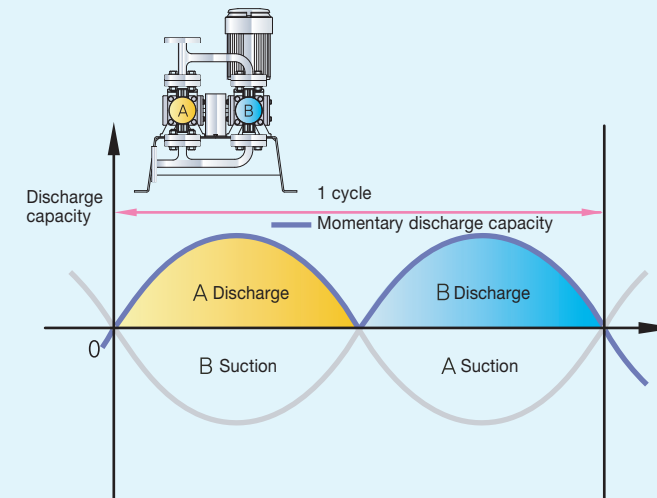
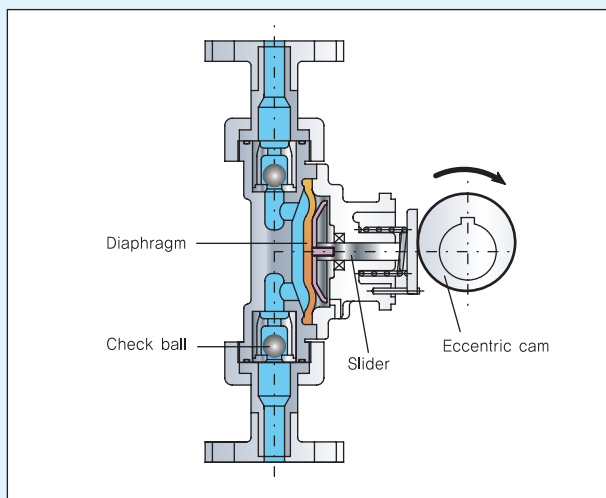
- Achievement of the best pulse rate through compensation graph for distorted phenomenon caused by change of contact points between cam and bearing.



○ Discharge waves of Cheonsei Smoothy Metering Pumps



○ Discharge waves of general Metering Pumps



PKD Diaphragm type KEMPION Smoothy Metering Pumps

Automatic proportion remote control of discharge capacity by BLDC motor



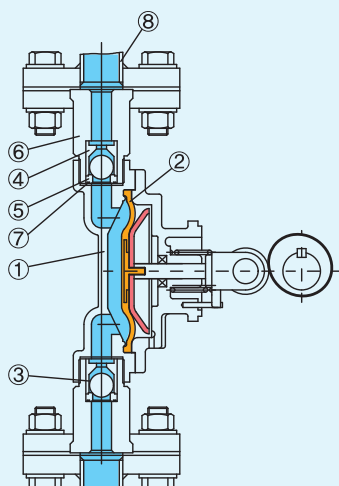
BLDC motor which has excellent speed (discharge capacity) control ability has been installed

- Increased confidence of discharge capacity by RPM Feedback control
- Proportion remote control by 4~20mA input signal
- No need for concern about motor damage at low speed operation
- Simplified electric equipments, possible to control the discharge rate to minimum 10% operation of full scale

Model Code

P	K	D	2	1	2	S	T	S	F	W	S	1	2
Series name PULSELESS METERING PUMPS			Diaphragm			Capacity 21 2 ↓ ↓ 21 00 (mL/min)			Connection Type F: Flange X: Special			Confluent Pipe 0: Excluded 1: Included 2: Included+ Relief Valve	
						Liquid End Material S: Head material (SS304) T: Diaphragm material (PTFE) S: Check ball material (SS304)			Viscosity W: Standard V: High viscosity			Remote control type of discharge capacity 0: Excluded 1: Inverter 2: BLDC M/C UNIT (AUTO) 3: BLDC M/C UNIT (MANU)	
						Power Supply (BLDC) S: 3Ø, 380~480V A: 1Ø, 3Ø, 200~240V X: Special ※1.5kw is only for 3phase							

Standard Liquid End Material



Material [Standard]		PTC		*FTC		STS		
Parts Name	Capacity	500~102	212~423	500~333	243~423	500~102	212~203	243~423
① Head		PP	PVC	PVDF	PTFE			SS304
② Diaphragm		PTFE		PTFE				PTFE
③ Check ball		CERAMIC		CERAMIC				SS304
④ Ball guide		PP	PVC	PVDF		PVDF		SS304
⑤ Ball seat		FKM	PVC	PTFE		PTFE		SS304
⑥ Joint		PP	PVC	PVDF				SS304
⑦ O-ring, Packing		FKM		PTFE				PTFE
⑧ Confluent pipe		PVC		PVDF				SS304

※ Material other than standard can be used for special purpose pumps.
Please contact us for special material (* is order made).

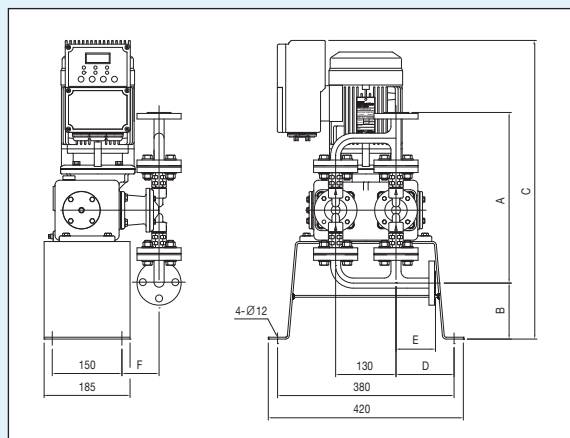
Standard Specifications

Specifications		PKD - Series													
		-500	-121	-241	-521	-102	-212	-412	-702	-143	-113	-203	-243	-333	-423
Max. Capacity (mL/min)		50	120	240	520	1040	2100	4100	7000	14900	11200	20700	24000	33000	42000
Max. Discharge Pressure (bar)		10						8	5	3	7	5	7	5	3
Pulse Rate (%) F/S		±5.0													
Stroke Length (mm)		3	4	6				10			15	12.5	17.5		
Stroke Number (SPM)		58		116	58	116	58	116	58	116	87				
Max. Liquid Temp. (°C)		STS, 6T6 : 0~80°C / PTC, FTC : 0~50°C / Ambient temperature : 0~40°C													
Connection (Flange)		KS 10K 15A							KS 10K 25A				KS 10K 40A		
Discharge Volume Controller (BLDC M/C UNIT)	Driver	Power Supply				200V class : 1Ø, 3Ø, 200~240V 400V class : 3Ø, 380~480V									
		Input signal (Auto)				RPM : DC4~20mA RUN/STOP : CLOSE-RUN, OPEN-STOP									
		Output signal				RPM : DC4~20mA (Isolated, Load Resistance : 500Ω below) Operation Setting : REMOTE, LOCAL, AUTO, MANU Dry Contact (1a) Operation Status : RUN, TRIP Dry Contact (RUN : 1a, TRIP : 1a1b)									
		Control range of discharge volume				10~100% of Max. rpm									
		Display				RPM : 0~100.0%, Over Current : E.oC, Error of Analog Input Signal : E.or Short Circuit : E.SC, Error of Hall Sensor : E.HS, Over Heat : E.tE									
		Other functions				Ratio operation (Setting range : 0~100% against remote input signal), IP66									
		Motor	0.55kW, FR71									0.75kW, FR80		1.5kW, FR90	
		8 Poles BLDC (Max. rpm : 1,750 / Insulation Class : F), IP66													
Others		Self priming : 1m/Never use this pump to transfer liquid containing slurry or solids.													
Painting		Munsell No. : 0.6PB 4.8/10.6													
Weight(kg)-STS type Standard		37			38		53		60		90	95	130		140

※ The above specifications and design could be changed for improvement without prior notice.

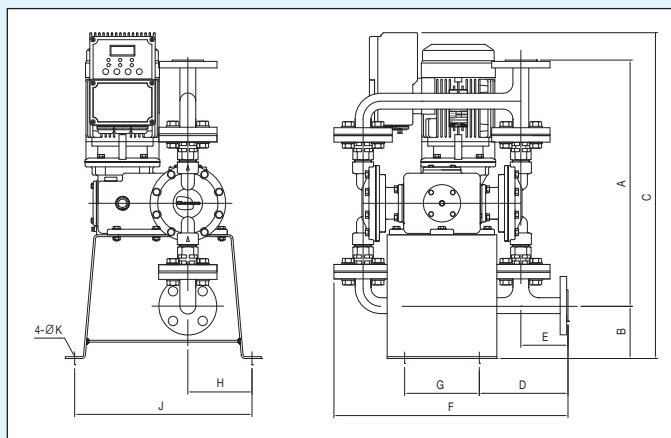
Dimensions

○ PKD-500~102



○ PKD-212~423

(Unit:mm)



Type (PKD)	A			B			C			D			E			F			G	H	J	K
	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS	PTC	FTC	STS				
-500	390	380	348	119	122	131	643	125			74	70	85	77		76	-	-	-	-		
-121, 241	390	380		119	122									81	80							
-521, 102	410	400	368	109	112	121								448		453						
-212, 412	516	500	422	112	118	151	698	155	190	448		453	160	138	380	12						
-702, 143	625	596	524	70	80	116		193	185	215	90	101					510	503	502			
-113	625	596	524	129	139	174	754	230	229	234	99	90	101	625	623	645	200	178	465	15		
-203	637	614	567	123	130	152		234	233	241	90	101	632	630	645							
-243, 333	938	935	807	134	135	190	927	305	302	314	128	125	110	863		874	300	243	600	15		
-423	944	937	854	131	134	166		338	335	343	128	125		869		878						

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