



BKH

Hydraulic Metering Pumps

Prompt signal transmission by sensor in damage of diaphragm
Enabled long-time continuous operation by outstanding durability
Adjustable and precise injection up to 7,000ml/min
Meet API 675 Performance Standards
High pressure injection up to 130bar

천세(주)

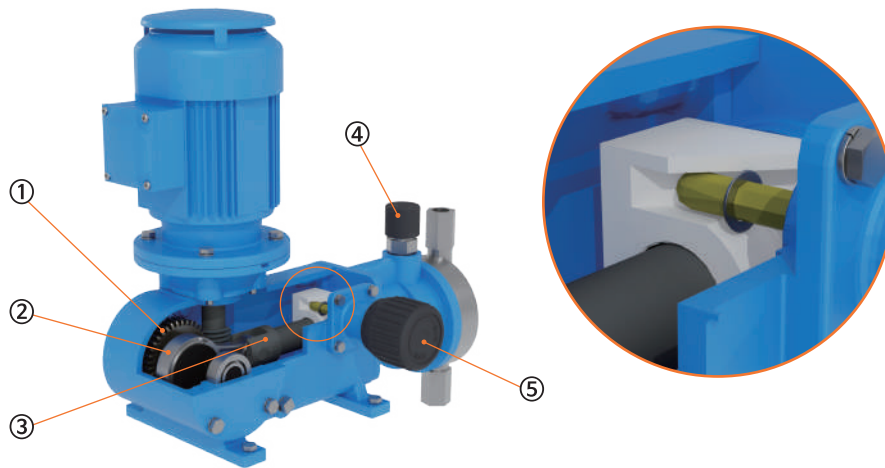
BKH

Hydraulic Metering Pumps

- Diaphragm Rupture Detection by pressure gauge is installed to prevent problems that may occur during the process.
- By applying own precision-developed diaphragm, it has high quantitative performance and can be used for a long time.
- Built-in relief valve can protect the pump and piping under overpressure conditions.
- BKH is designed and manufactured to meet API 675 performance standards.
- A double diaphragm is applied to secure the durability of the diaphragm.
- Injection is possible up to 130bar.



Structure & Function of Pump



① Reducer	The rotation of the motor is reduced by the worm gear and gets the high torque.
② Eccentric device	As crank system, it changes rotation motion to reciprocation motion and high durability is the characteristic.
③ Rod	While the rod is reciprocating, it causes inflow and outflow of hydraulic oil by bypass hole. The oil makes suction and discharge of the pump with piston principle.
④ Hydraulic Regulator	The relief valve prevents pump damage when abnormal pressure occurs during operation. The air vent valve discharges certain amount of hydraulic oil and bubble every stroke.
⑤ Adjustment of Discharge Flow	By the dial, hydraulic oil's volume is changed by adjusting the section that is open and close of the bypass hole. The diaphragm's momentum and discharge capacity are controlled according to the variation of the volume.

Model Code

BKH- -101A-SS- -FS

1

2 a

2 b

2 c

3 a

3 b

4

5

6

1 Control Option**No Mark :** Manual**A :** BLDC M/C Unit**B :** Servo Unit**C :** Explosion Proof Servo Unit**2 Type****(a)** Plunger diameter

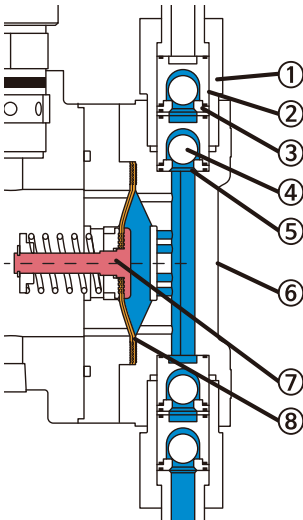
10, 15, 22, 32, 42, 55, 70

(b) Gear ratio

1, 2, 3, 4

(c) Driving box size**A :** 0.2kW **B :** 0.4kW**C :** 0.75kW **D :** 1.5kW**3 Liquid End Material****(a)** Head**P :** PVC**F :** PVDF**S :** SSC14A**X :** Special**(b)** Check ball**C :** CERAMIC**S :** STS316**X :** Special**4 Liquid End Option****No Mark :** None**1 :** Diaphragm Rupture Detection by pressure gauge**X :** Special**5 Connection****F :** Flange**T :** Thread**X :** Special**6 Power Supply****S :** 3 ϕ , 220/380V**A :** 3 ϕ , 440V**X :** Special

Liquid End Material



Classification	PC		FC	SS
	10, 15	22~70		
① Joint	PVC	PVC	PVDF	SSC16A
② Ball Guide	PP	PVC	PVDF	SSC16A
③ Ball Seat	FKM	PVC	PTFE	STS316L
④ Check Ball	CERAMIC	CERAMIC	CERAMIC	STS316L
⑤ Gasket	FKM	FKM	PTFE	PTFE
⑥ Head	PVC	PVC	PVDF	SSC16A
⑦ Diaphragm Support	SSC14A (ETFE Coating)	SSC14A (ETFE Coating)	SSC14A (ETFE Coating)	SSC16A
⑧ Diaphragm*	PTFE	PTFE	PTFE	PTFE

* A double diaphragm is applied to secure the durability of the diaphragm.



PC



FC



SS

Specifications (Gear Ratio A,B)

Model	Max. Capacity [L/h, (mL/min)]				Max. Discharge Pressure (bar)		Stroke Frequency (SPM)		Weight (kg)
	50Hz		60Hz						
	PVC·PVDF	SSC16A	PVC·PVDF	SSC16A	PVC·PVDF	SSC16A	50Hz	60Hz	
BKH-101A	2.2 (35)	1 (15)	2.7 (45)	1.2 (20)	15	110	40	48	36
BKH-102A	5.5 (90)	4 (65)	6.6 (110)	4.8 (80)	15	100	80	97	
BKH-103A	8.5 (140)	7 (115)	10.2 (170)	8.4 (140)	15	90	120	145	
BKH-104A	11 (185)	9.5 (160)	13.2 (220)	11.4 (190)	15	80	160	193	
BKH-151A	6.5 (110)	4.5 (75)	7.8 (130)	5.4 (90)	15	70	40	48	36
BKH-152A	14 (235)	12.5 (210)	16.8 (280)	15 (250)	15	50	80	97	
BKH-153A	21 (350)	20 (335)	25.2 (420)	24 (400)	15	40	120	145	
BKH-154A	25.8 (475)	27.5 (460)	34.2 (570)	33 (550)	15	35	160	193	
BKH-221A	15.0 (250)	14.4 (240)	18.0 (300)	17.4 (290)	15	32	40	48	38
BKH-222A	31.8 (530)		38.4 (640)		15	23	80	97	
BKH-223A	47.4 (790)		57.0 (950)		15	19	120	145	
BKH-224A	62.4 (1040)		75.0 (1250)		15	16	160	193	
BKH-321A	33.0 (550)		39.6 (660)		15	15	40	48	40
BKH-322A	67.8 (1130)		81.6 (1360)		11	11	80	97	
BKH-323A	102.3 (1705)		123.0 (2050)		9	9	120	145	
BKH-324A	135.0 (2250)		162.0 (2700)		8	8	160	193	
BKH-101B	4.3 (70)	3 (50)	5.1 (85)	3.6 (60)	15	120	40	48	48
BKH-102B	8.5 (140)	6.5 (110)	10.2 (170)	7.8 (130)	15	120	80	97	
BKH-103B	13.8 (230)	12 (200)	16.5 (275)	14.4 (240)	15	110	120	145	
BKH-104B	19.5 (325)	15.3 (255)	23.4 (390)	18.3 (305)	15	100	160	193	
BKH-151B	10.8 (180)	9 (150)	12.9 (215)	10.8 (180)	15	100	40	48	48
BKH-152B	21.5 (360)	19.3 (320)	25.8 (430)	23.1 (385)	15	70	80	97	
BKH-153B	32.5 (540)	31 (515)	39 (650)	37.2 (620)	15	58	120	145	
BKH-154B	45 (750)	44.1 (735)	54 (900)	52.8 (880)	15	50	160	193	
BKH-221B	24.0 (400)	22.8 (380)	28.8 (480)	27.6 (460)	15	46	40	48	51
BKH-222B	47.4 (790)	46.5 (775)	57.0 (960)	55.8 (930)	15	34	80	97	
BKH-223B	72.0 (1200)	69.9 (1165)	86.4 (1440)	84.0 (1400)	15	27	120	145	
BKH-224B	97.5 (1625)		117.0 (1950)		15	23	160	193	
BKH-321B	49.8 (830)		60.0 (1000)		15	22	40	48	52
BKH-322B	102.3 (1705)		123.0 (2050)		15	16	80	97	
BKH-323B	152.4 (2540)		183.0 (3050)		13	13	120	145	
BKH-324B	204.9 (3415)		246.0 (4100)		11	11	160	193	
BKH-421B	90.0 (1500)		108.0 (1800)		13	13	40	48	54
BKH-422B	180.0 (3000)		216.0 (3600)		9	9	80	97	
BKH-423B	270.0 (4500)		324.0 (5400)		7	7	120	145	
BKH-424B	360.0 (6000)		432.0 (7200)		6	6	160	193	

Specifications (Gear Ratio C,D)

모델	Max. Capacity [L/h, (mL/min)]				Max. Discharge Pressure (bar)		Stroke Frequency (SPM)		Weight (kg)
	50Hz		60Hz						
	PVC·PVDF	SSC16A	PVC·PVDF	SSC16A	PVC·PVDF	SSC16A	50Hz	60Hz	
BKH-151C	12.3 (205)	9.9 (165)	15.0 (250)	12.0 (200)	15	130	40	48	70
BKH-152C	24.9 (415)	21.3 (355)	30.0 (500)	25.8 (430)	15	120	80	97	
BKH-153C	39.0 (650)	34.8 (580)	46.8 (780)	42.0 (700)	15	95	120	145	
BKH-154C	52.5 (875)	48.3 (790)	63.0 (1050)	57.0 (950)	15	85	160	193	
BKH-221C	30.0 (500)	26.4 (440)	36.0 (600)	31.8 (530)	15	80	40	48	73
BKH-222C	60.0 (1000)	54.9 (915)	72.0 (1200)	66.0 (1100)	15	55	80	97	
BKH-223C	87.3 (1455)	82.5 (1375)	108.0 (1800)	99.0 (1650)	15	45	120	145	
BKH-224C	120.0 (2000)	112.5 (1875)	144.0 (2400)	135.0 (2250)	15	40	160	193	
BKH-321C	62.4 (1040)	60.0 (1000)	75.0 (1250)	72.0 (1200)	15	36	40	48	74
BKH-322C	124.8 (2080)		150.0 (2500)		15	26	80	97	
BKH-323C	187.5 (3125)		225.0 (3750)		15	21	120	145	
BKH-324C	250.0 (4165)		300.0 (5000)		15	18	160	193	
BKH-421C	107.4 (1790)		129.0 (2150)		15	21	40	48	77
BKH-422C	219.9 (3665)		264.0 (4400)		15	15	80	97	
BKH-423C	330.0 (5500)		396.0 (6600)		12	12	120	145	
BKH-424C	435.0 (7250)		522.0 (8700)		11	11	160	193	
BKH-551C	184.8 (3080)		222.0 (3700)		13	13	40	48	82
BKH-552C	375.0 (6250)		450.0 (7500)		9	9	80	97	
BKH-553C	564.9 (9415)		678.0 (11300)		7	7	120	145	
BKH-554C	765.0 (12750)		918.0 (15300)		6	6	160	193	
BKH-221D	40.0 (665)	31.5 (525)	48.0 (800)	37.8 (630)	15	130	48	58	82
BKH-222D	79.8 (1330)	72.3 (1205)	96.0 (1600)	87.0 (1450)	15	95	96	116	
BKH-223D	120.0 (2000)	114.9 (1915)	144.0 (2400)	138.0 (2300)	15	80	144	174	
BKH-321D	87.3 (1455)	82.5 (1375)	105.0 (1750)	99.0 (1650)	15	65	48	58	83
BKH-322D	174.9 (2915)	169.8 (2830)	210.0 (3500)	204.0 (3400)	15	45	96	116	
BKH-323D	262.5 (4375)	255.0 (4250)	315.0 (5250)	306.0 (5100)	15	38	144	174	
BKH-421D	150.0 (2500)	144.9 (2415)	180.0 (3000)	174.0 (2900)	15	36	48	58	85
BKH-422D	294.9 (4915)		354.0 (5900)		15	26	96	116	
BKH-423D	435.0 (7250)		522.0 (8700)		15	22	144	174	
BKH-551D	249.9 (4165)		300.0 (5000)		15	22	48	58	92
BKH-552D	510.0 (8500)		612.0 (10200)		15	15	96	116	
BKH-553D	774.9 (12915)		930.0 (15500)		13	13	144	174	
BKH-701D	420.0 (7000)		504.0 (8400)		14	14	48	58	95
BKH-702D	849.9 (14165)		1020.0 (17000)		10	10	96	116	
BKH-703D	1290.0 (21500)		1548.0 (25800)		8	8	144	174	

Note

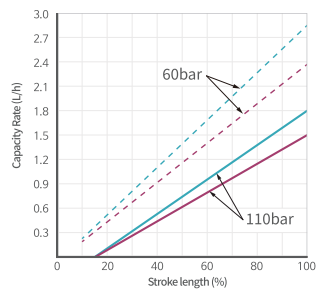
- Maximum capacity is tested under standard status (room temperature, clean water).
- Effective control range: 10~100%, Precision: $\pm 1\%$ FS, Linearity: $\pm 3\%$ FS
- Weight is based on flange (SS Type) connection & standard motor.
- Ambient temperature should be 0~40°C.
- Liquid temperature is 0~50°C for PVC and 0~80°C for PVDF and STS.
- The Munsell No. of painting is 6.51 B 4.99 / 9.55.
- Specifications can be changed for improvement without prior notice.
- It is required to maintain the back pressure 2bar or more for precise metering.

Performance Curves

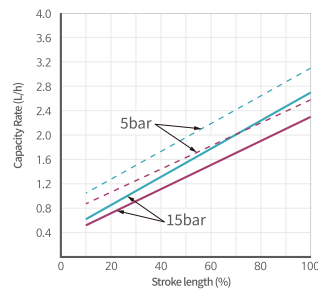
※ Conditions : Room Temperature, Clean Water, Suction Head - 1meter

----- 60Hz ----- 50Hz

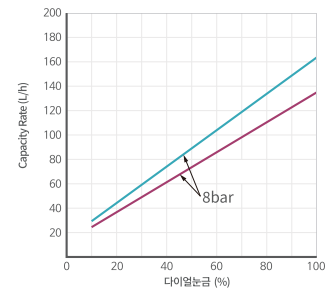
BKH-101A (SSC16A)



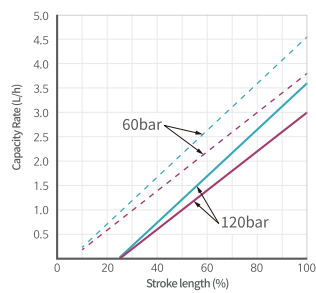
BKH-101A(PVC·PVDF)



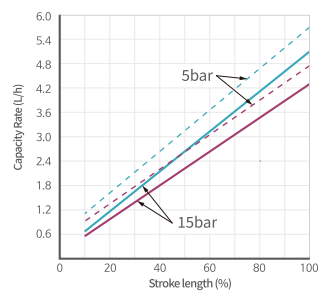
BKH-324A



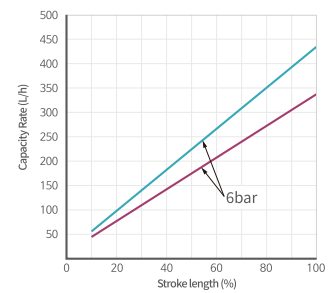
BKH-101B (SSC16A)



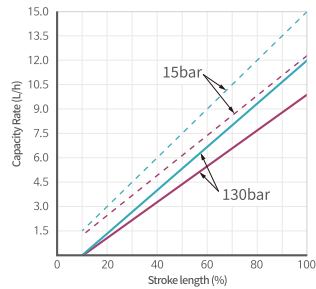
BKH-101B(PVC·PVDF)



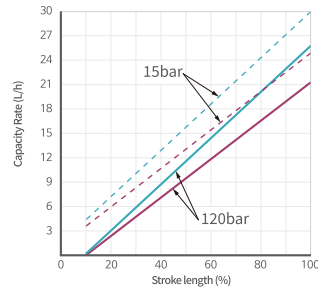
BKH-424B



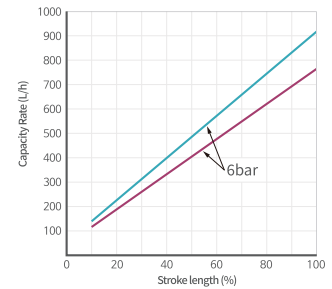
BKH-151C



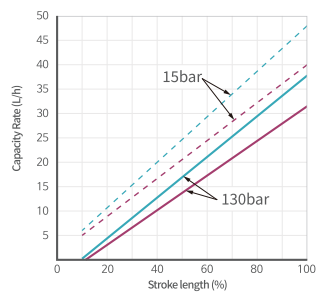
BKH-152C



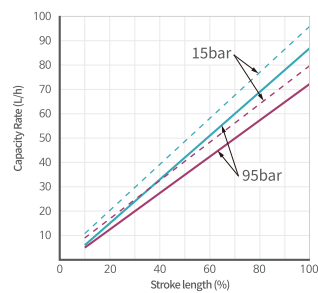
BKH-554C



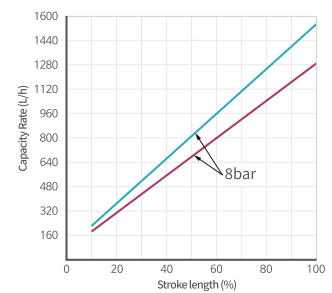
BKH-221D



BKH-222D



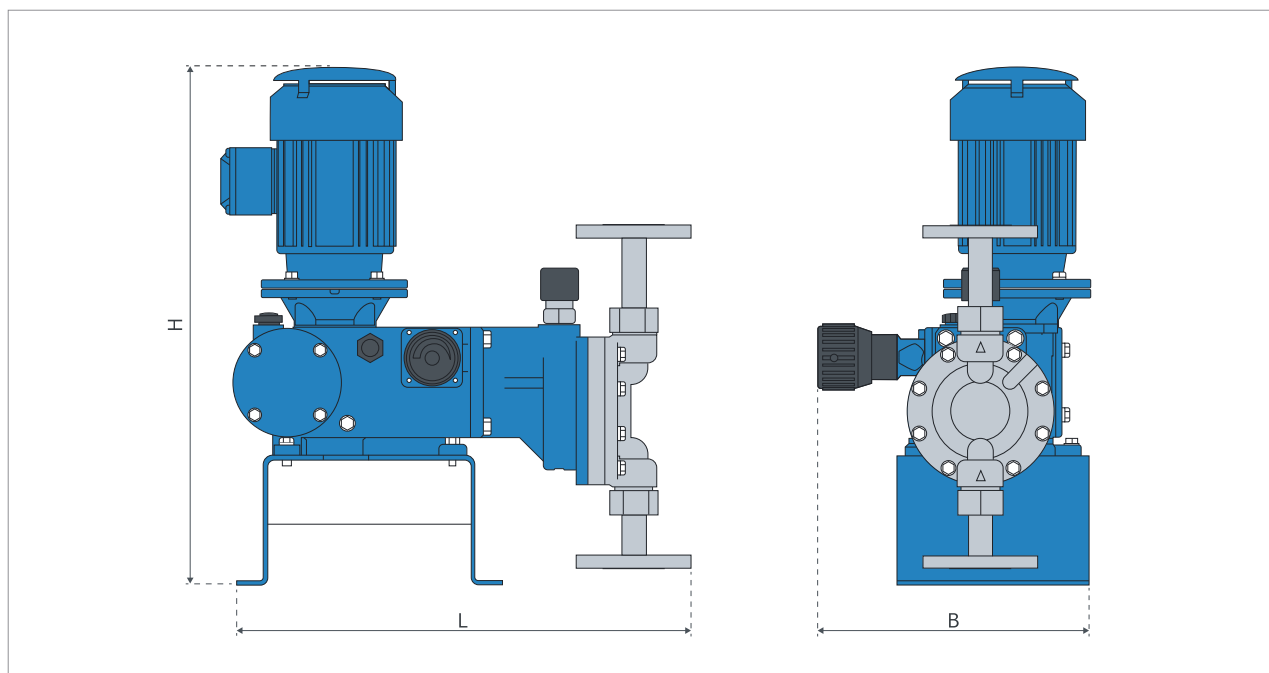
BKH-703D



Note

1. The performance curves are the reference which is tested at our facility under normal conditions. It could be somewhat different at jobsite.
2. Discharge capacity could be varied according to chemical's characteristic and piping condition. After installation, please check discharge capacity (make own performance curve) in commission.

Connection Standard & Dimension



Model	Connections			Size(mm)		
	PVC·PVDF	SSC16A		SSC16A		
	Flange	Thread	Flange(Suction/Discharge)	L	B	H
BKH-10□A	KS 10K 15A	Rc1/4	KS 10K 15A / KS 63K 15A	433	242	502
BKH-15□A	KS 10K 15A	Rc3/8	KS 10K 15A / KS 40K 15A	432		
BKH-22□A	KS 10K 15A	Rc1/2	KS 10K 15A / KS 20K 15A	427		
BKH-32□A	KS 10K 20A	Rc3/4	KS 10K 20A	434		
BKH-10□B	KS 10K 15A	Rc3/8	KS 10K 15A / KS 63K 15A	473	297	579
BKH-15□B	KS 10K 15A	Rc1/2	KS 10K 15A / KS 40K 15A	472		
BKH-22□B	KS 10K 15A	Rc1/2	KS 10K 15A / KS 20K 15A	470		
BKH-32□B	KS 10K 20A	Rc3/4	KS 10K 20A / KS 20K 20A	477		
BKH-42□B	KS 10K 25A	Rc1	KS 10K 25A	495	388	651
BKH-15□C	KS 10K 15A	Rc1/2	KS 10K 15A / KS 63K 15A	582		
BKH-22□C	KS 10K 15A	Rc1/2	KS 10K 15A / KS 40K 15A	594		
BKH-32□C	KS 10K 20A	Rc3/4	KS 10K 20A / KS 20K 20A	592		
BKH-42□C	KS 10K 25A	Rc1	KS 10K 25A / KS 20K 25A	607		
BKH-55□C	KS 10K 25A	Rc1	KS 10K 25A	631	398	755
BKH-22□D	KS 10K 15A	Rc1/2	KS 10K 15A / KS 63K 15A	617		
BKH-32□D	KS 10K 20A	Rc3/4	KS 10K 20A / KS 30K 20A	622		
BKH-42□D	KS 10K 25A	Rc1	KS 10K 25A / KS 20K 25A	627		
BKH-55□D	KS 10K 25A	Rc1	KS 10K 25A / KS 20K 25A	651		
BKH-70□D	KS 10K 40A	Rc1½	KS 10K 40A	693		



천세(주)

Address : 40, Ansantekom-gil, Sangnok-gu,
Ansan-si, Gyeonggi-do, Republic of Korea (+82-31-508-1003)

Homepage : www.cheonsei.co.kr
E-mail : cheonsei@cheonsei.co.kr