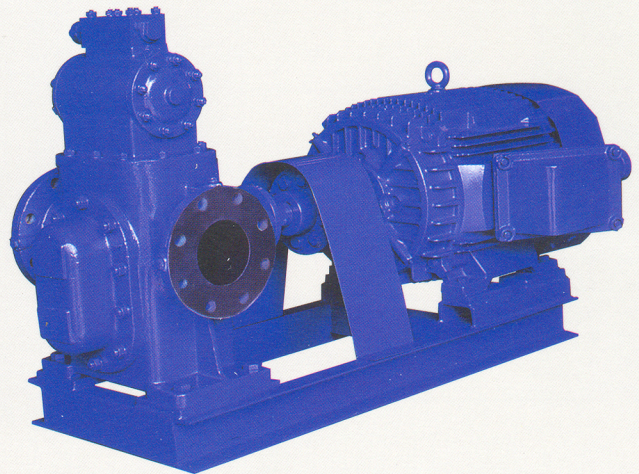


SHINSHIN

External Gear Pump
BHG



 SHIN SHIN
MACHINERY CO., LTD.



Certificate NO. 942848

횡축 외치차 기어펌프 안전변 내장식

Horizontal, External Gear Pumps with Built-in Relief Valve

200m³/h X~10kg/cm²

용도 및 적용 분야

- 용도 : 윤활유, 연료유 등의 유류와 윤활성을 가지고 있는 점성액체
- 사용압력 : 5~10kg/cm²
- 베어링 : 베어링은 내장식으로 이송유체에 의한 자체 윤활방식이며, 볼베어링 또는 로울러 베어링으로 되어 있다.
- 축씰일링 : 글랜드 팩킹을 표준으로 하나 미케니칼 씰일 사용도 가능.
- 안전변 : 안전변은 토출변을 전폐했을때 토출압력 상승한도가 계획 전압력의 132%이하가 되도록 설계되어 있다. 그러나 계획 전압력이 5kg/cm² 이하일때는 압력상승 폭을 1.6kg/cm² 이하로 하였다.
설정압력 - 최저 5.5kg/cm²
최고 10.5kg/cm²
- 온도 : 최고 80°C(상용 60°C까지)
- 플랜지 : KS또는 JIS 10kg/cm², FF.
- 회전수 : 일반적으로 아래와 같다.

점도	Size 40~50	Size 65~200
5~260cst	max. 1200rpm	max. 1000rpm
Up to 1000cst	max. 1200rpm	max. 900rpm

- 점도 : 최저 5cst, 최고 2000cst
- 표준용량 : 표준용량 보정 점도는 25.8cst이며, 전동기의 슬립을 감안한 실제용량이다.

형식 표시 방법

- 씨리즈 (Series) _____
- 정격 회전수에서의 표준용량, m³/h (Standard capacity in m³/h at rating rpm) _____

Use and applications

- Application : Lubricating oil, Fuel oil or other liquids with lubrication property
- Differential pressure : 5~10kg/cm²
- Bearings : Internally setted ball bearing or roller bearing, lubricated by the pumping liquid.
- Shaft sealing : Gland packing or mechanical seal.
- Relief valve : Built-in type.
Setting pressure, minmum 5.5kg/cm²
maximum 10.5kg/cm²
- Pumping temperature : Up to 80°C (Normally up to 60°C)
- Flanges : KS or JIS 10kg/cm², FF
- Number of revolutions : In general.
- Viscosity : 5~2000cst.
- Standard capacity : Calculated at 25.8cst (Rw.No.1, 100sec.)
Motor rpm slip considered.

Viscosity	Size 40~50	Size 65~200
5~260cst	max. 1200rpm	max. 1000rpm
Up to 1000cst	max. 1200rpm	max. 900rpm

Type nomenclature

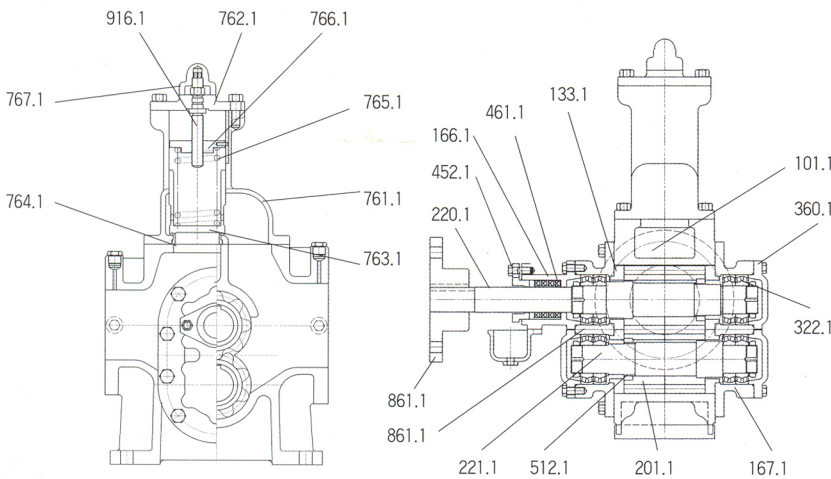
BHG-50

MODEL	BORE(mm)		CAPACITY (m ³ /hr)				SHAFT SEAL SIZE(mm)		BEARING NO.	
	SUC.	DIS.	60HZ		50HZ		Gland Packing	Mechanical seal (unbalance type)		
			1200rpm	900rpm	1000rpm	750rpm				
BHG 40	φ 150	φ 125	40	-	33	-	φ45x φ70	φ45	# 22210	
BHG 50			50	-	40	-				
BHG 65			-	65	70	55				
BHG 80			-	80	90	65	φ55x φ80	φ55		# 22212
BHG 90			-	90	100	75				
BHG 100	φ 200	φ 150	-	100	110	85	φ65x φ97	φ65	# 22214	
BHG 110			-	110	120	90				
BHG 120			-	120	135	100				
BHG 135	φ 250	φ 200	-	135	150	110	φ75x φ115	φ75	# 22216	
BHG 150			-	150	165	125				
BHG 175			-	175	-	145				
BHG 200			-	200	-	165				

조립 단면도

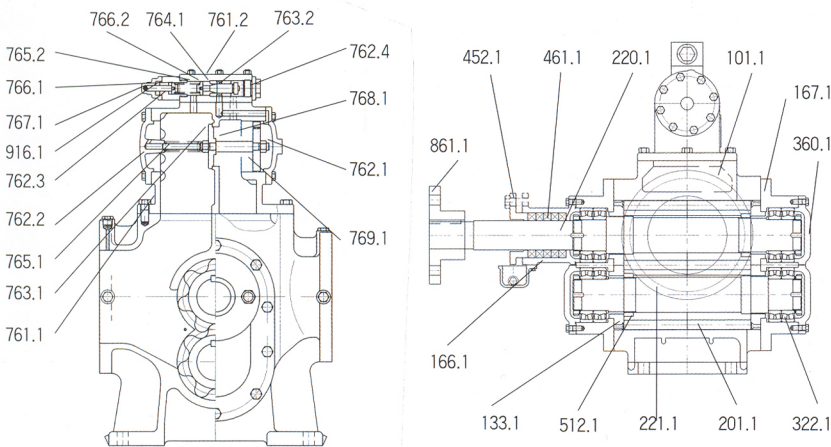
Sectional drawing

BHG 40~50



NO.	PARTS NAME	MATERIAL		Q' ty
		GLASS 1	GLASS 2	
101.1	PUMP CASING	GC200	GCD45	1
133.1	SIDE PLATE	BC 6		4
166.1	STUFFING BOX HOUSING	GC200	GCD45	1
167.1	SIDE COVER	GC200	GCD45	2
201.1	GEAR	SM 45C		4
220.1	DRIVE SHAFT	SM 45C		1
221.1	DRIVEN SHAFT	SM 45C		1
322.1	ROLLER BEARING	STB 2		8
360.1	BEARING COVER	GC 200		3
*33.1	MECHANICAL SEAL	-		1
452.1	PACKING GLAND	GC 200		1
461.1	PACKING	NON-METALLIC		1set
*71.1	SEAL COVER	STS 304		1
504.1	SPACER RING	SS 41		2
512.1	GEAR SET RING	SM 45C		2
761.1	VALVE BODY	GC 200		1
761.2	VAVLE BODY	GC 200		1
762.1	VAVLE COVER	GC 200		1
762.2	VAVLE COVER	GC 200		1
762.3	VAVLE COVER	GC 200		1
762.4	VAVLE COVER	GC 200		1
763.1	SAFETY VAVLE	SM 45C		1
763.2	SAFETY VAVLE	SM 45C		1
764.1	VALVE SEAT	STS 410J1		1
765.1	VALVE SPRING	SPS 6		1
765.2	VALVE SPRING	SPS 6		1
766.1	SPRING CARRIER	SS 41		1
766.2	SPRING CARRIER	SS 41		1
767.1	VALVE CAP	GC 200		1
768.1	PISTON ROD	SM 45C		1
769.1	PISTON VALVE	SM 45C		1
916.1	ADJUST SCREW	SS 41		1
861.1	COUPLING	GC 200		1

BHG 65~200



*OPTION

외형치수도

Outline dimensions

Fig "A"

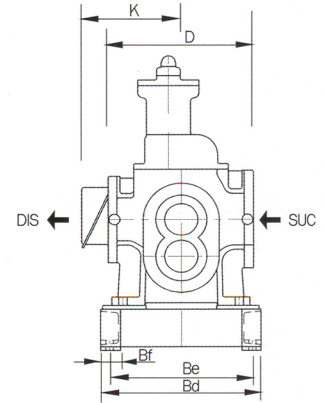
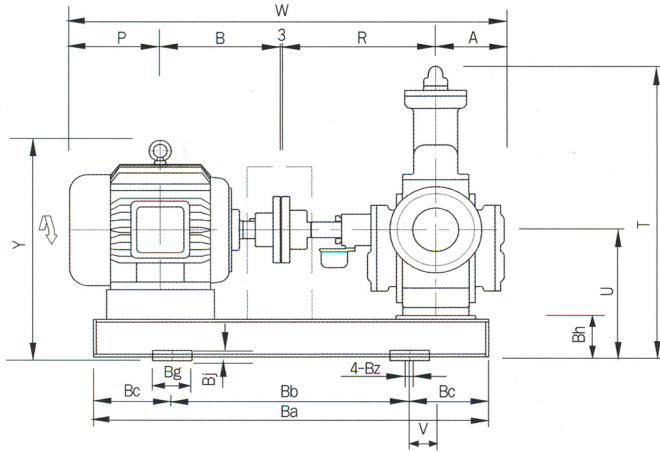
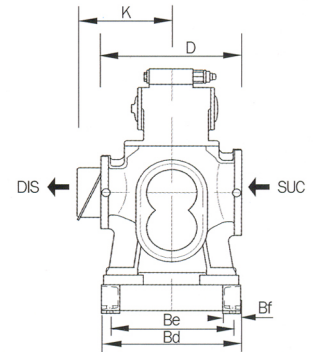
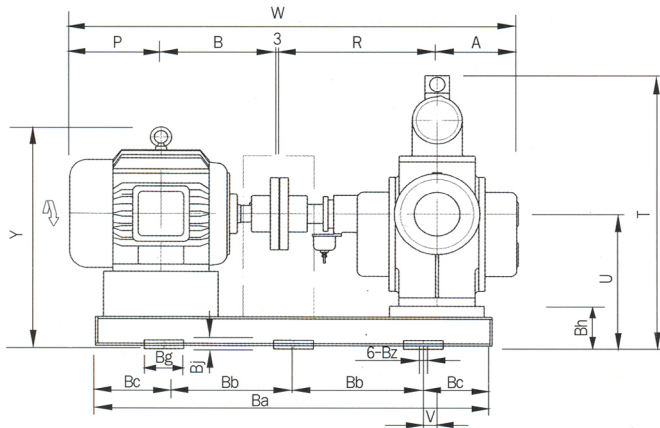


Fig "B"



●Dimensions for the standard unit driven by IECstandard motor.

TYPE	Fig	MOTOR FRAME NO.	Size(mm)										Common(mm)						Weight(kg)								
			A	B	D	K	P	R	T	U	V	W	Y	Ba	Bb	Bc	Bd	Be	Bf	Bg	Bh	Bj	Bz	PUMP	MOTOR	BASE	TOTAL
BHG 40	A	160M	190	400	280	270	420	845	370	30	1026	597	1050	400	125	390	345	50	100	120	28	19	175	109	48	332	
		160L			280	292				30	1250	597	1050	400	125									136	48	359	
		180M			305	295				55	1260	615	1100	400	150									161	51	387	
	B	180L			371	314				55	1298	616	1100	400	150									177	51	403	
		200M			377	331				30	1321	665	1150	450	125									250	53	478	
		200L			396	338				351	30	1360	665	1150	450									125	277	53	505
BHG 50	B	180M	185	400	305	295	420	845	370	55	1255	615	1100	400	150	390	345	50	100	120	28	19	170	161	51	382	
		180L			305	314				55	1293	615	1100	400	150									177	51	398	
		200M			377	338				331	30	1316	665	1150	450									125	250	53	473
		200L			396	338				351	30	1355	665	1150	450									125	277	53	500
		225S			432	410				385	55	1425	692	1200	450									150	380	55	605
		225M			445	410				397	55	1450	692	1200	450									150	420	55	645
BHG 65	B	180M	220	460	305	314	500	850	400	30	1408	646	1200	450	150	450	405	50	100	120	28	19	230	177	56	463	
		200M			377	338				331	30	1431	695	1200	450									150	250	56	536
		200L			396	338				351	10	1470	695	1200	450									150	277	56	563
		225S			432	410				385	10	1540	722	1250	500									125	380	59	669
		225M			445	410				397	10	1565	722	1250	500									125	420	59	709
		250S			464	438				422	880	430	30	1609	753									1300	500	150	540
BHG 80	B	180M	235	460	305	314	500	850	400	30	1368	646	1200	450	150	450	405	50	100	120	28	23	230	177	56	463	
		200M			377	338				331	30	1391	695	1200	450									150	250	56	536
		200L			396	338				351	30	1430	395	1200	450									150	277	56	563
		225S			432	410				385	10	1500	722	1250	500									125	380	59	669
		225M			445	410				385	10	1525	722	1250	500									125	420	59	709
		250S			464	438				397	880	430	30	1569	753									1300	500	150	540

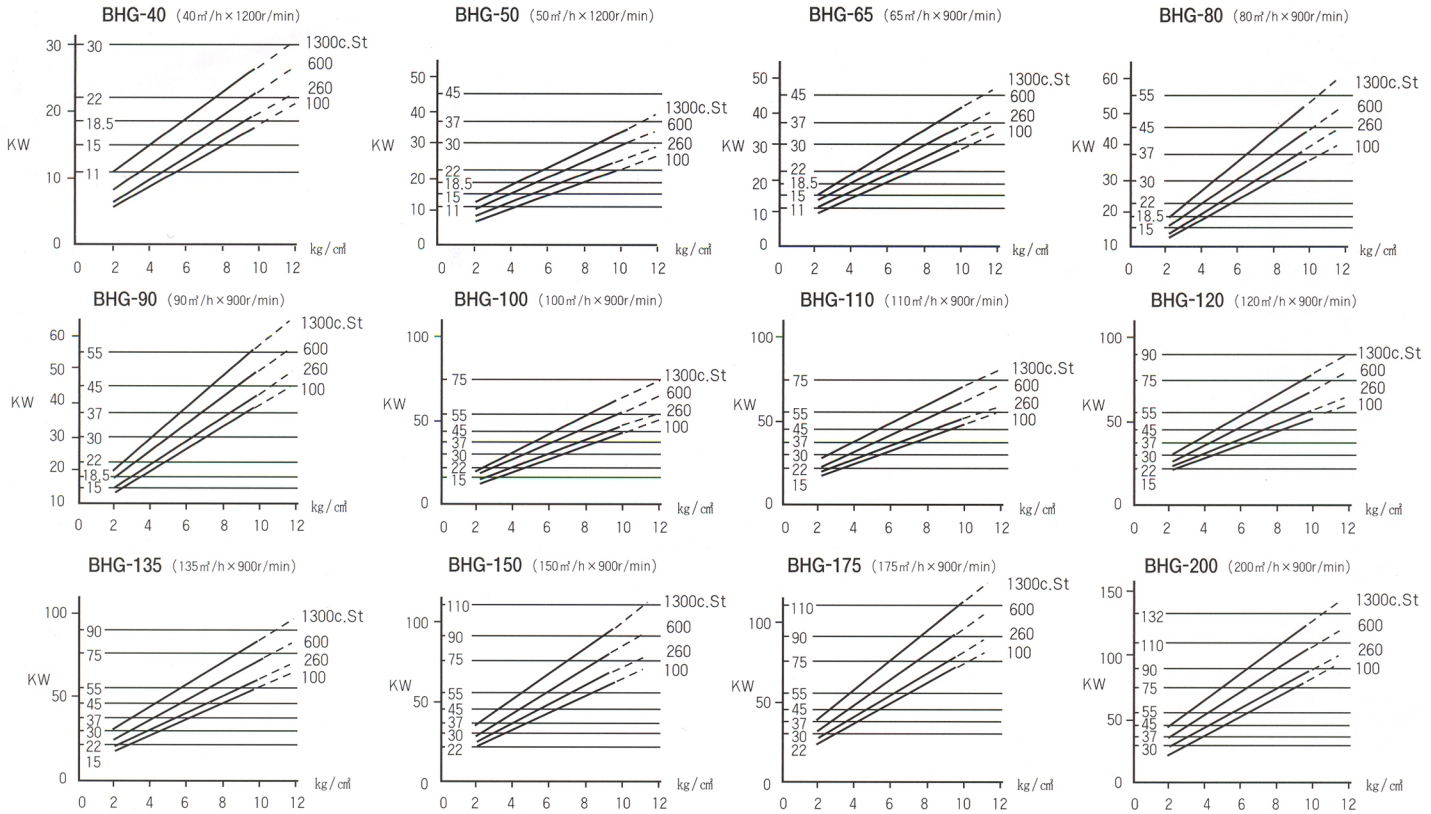
◆치수는 참고용임.

●Dimensions for the standard unit driven by IECstandard motor.

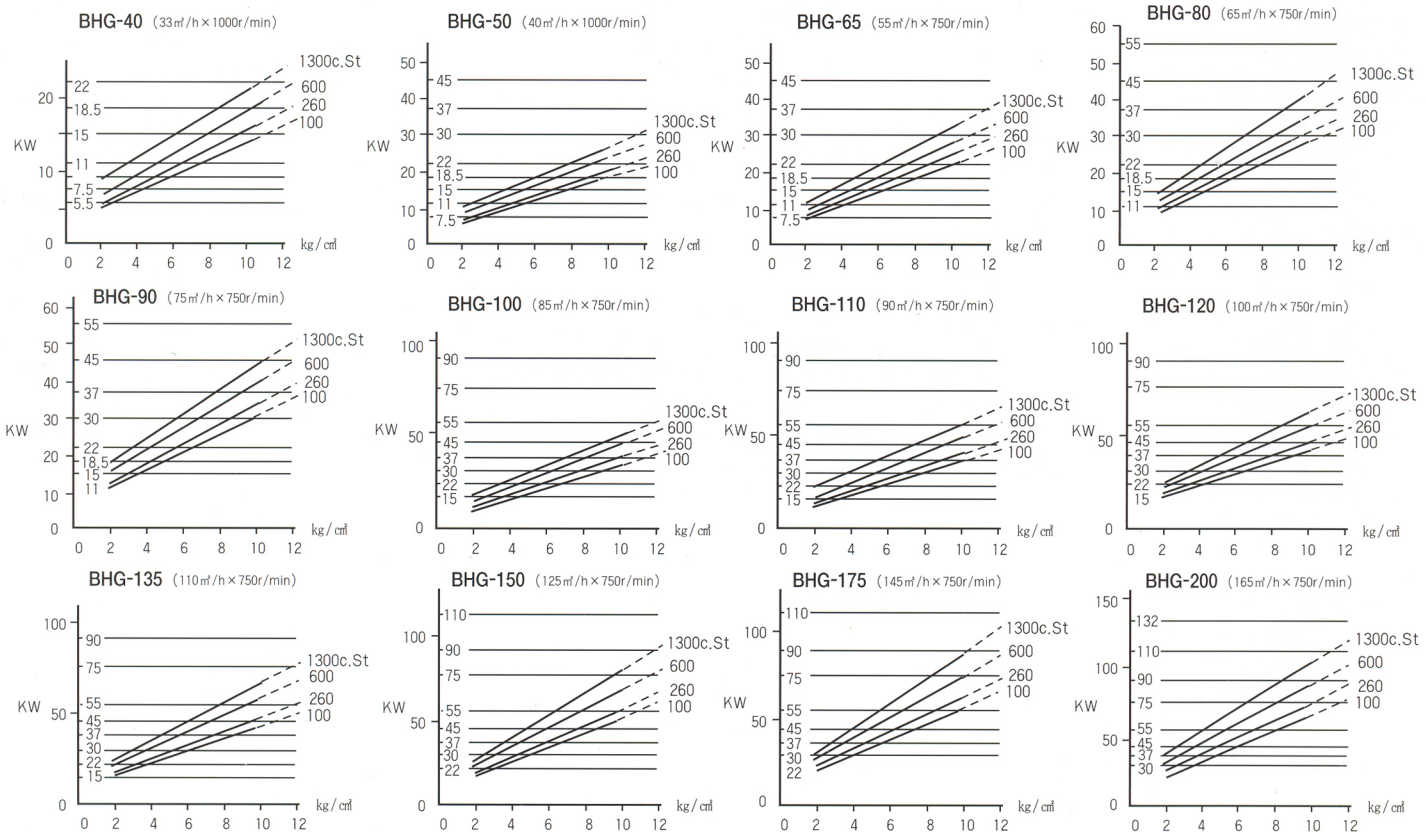
TYPE	Fig	MOTOR FRAME NO.	Size(mm)											Common(mm)								Weight(kg)					
			A	B	D	K	P	R	T	U	V	W	Y	Ba	Bb	Bc	Bd	Be	Bf	Bg	Bh	Bj	Bz	PUMP	MOTOR	BASE	TOTAL
BHG 90	B	180M	235	460	371	305	314	500	850	400	30	1368	646	1200	450	150	450	405	50	100	120	28	23	230	177	56	463
		200M			377	338	331				30	1391	695	1200	450	150									250	56	536
		200L			396	338	351				10	1500	722	1250	500	125									277	56	563
		225S			432	410	385				10	1525	722	1250	500	125									380	59	669
		225M			445	410	385				10	1525	722	1250	500	125									420	59	709
		250S			464	438	397				880	430	30	1569	753	1300									500	150	540
BHG 100	B	200L	250	500	396	338	351	515	950	470	0	1515	765	1250	500	125	470	410	65	130	150	30	23	320	177	59	556
		225S			432	410	385				20	1585	792	1300	500	150									381	62	763
		225M			445	410	397				20	1610	792	1300	500	150									420	62	802
		250S			434	438	422				25	1624	823	1300	500	150									522	62	904
		250M			452	438	422				25	1662	823	1300	500	150									575	62	957
		280S			514	570	500				20	1782	855	1400	550	150									555	495	750
BHG 110	B	200L	250	500	396	338	351	515	950	470	0	1515	765	1250	500	125	470	410	65	130	150	30	23	320	177	59	556
		225S			432	410	385				20	1585	792	1300	500	150									381	62	763
		225M			445	410	397				20	1610	792	1300	500	150									420	62	802
		250S			434	438	422				25	1624	823	1300	500	150									522	62	904
		250M			452	438	422				25	1662	823	1300	500	150									575	62	957
		280S			514	570	500				20	1782	855	1400	550	150									555	495	750
BHG 120	B	200L	250	500	396	338	351	515	950	470	0	1515	765	1250	500	125	470	410	65	130	150	30	23	320	177	59	556
		225S			432	410	385				20	1585	792	1300	500	150									381	62	763
		225M			445	410	397				20	1610	792	1300	500	150									420	62	802
		250S			434	438	422				25	1624	823	1300	500	150									522	62	904
		250M			452	438	422				25	1662	823	1300	500	150									575	62	957
		280S			514	570	500				20	1782	855	1400	550	150									555	495	750
BHG 135	B	225S	265	500	432	410	385	550	960	470	0	1635	792	1350	550	125	470	410	65	130	150	30	23	380	380	64	824
		225M			445	410	397				0	1660	792	1350	550	125									420	64	864
		250S			434	438	422				0	1674	823	1350	550	125									522	64	966
		250M			452	438	442				0	1712	823	1350	550	125									575	64	1019
		280S			514	570	500				70	1832	855	1500	550	200									750	72	1202
		280M			540	570	575				70	1883	855	1500	550	200									890	72	1342
BHG 150	B	225S	265	500	432	410	385	550	960	470	0	1635	792	1350	550	125	470	410	65	130	150	30	23	380	380	64	824
		225M			445	410	397				0	1660	792	1350	550	125									420	64	864
		250S			434	438	422				0	1674	823	1350	550	125									522	64	966
		250M			452	438	442				0	1712	823	1350	550	125									575	64	1019
		280S			514	570	500				70	1832	855	1500	550	200									750	72	1202
		280M			540	570	575				70	1883	855	1500	550	200									890	72	1342
BHG 175	B	225M	300	600	445	410	397	650	995	505	20	1795	827	1450	550	175	560	500	65	130	150	30	23	475	420	70	965
		250S			434	438	422				45	1809	858	1500	550	200									522	72	1069
		250M			452	438	442				45	1847	858	1500	550	200									575	72	1122
		280S			514	570	500				45	1967	920	1600	600	200									750	80	1305
		280M			540	570	525				45	1967	920	1600	600	200									890	80	1445
		280L			584	570	570				45	2107	920	1700	650	200									1070	88	1633
BHG 200	B	225M	300	600	445	410	397	650	995	505	20	1795	827	1450	550	175	560	500	65	130	150	30	23	475	420	70	965
		250S			434	438	422				45	1809	858	1500	550	200									522	72	1069
		250M			452	438	442				45	1847	858	1500	550	200									575	72	1122
		280S			514	570	500				45	1967	920	1600	600	200									750	80	1302
		280M			540	570	525				45	1967	920	1600	600	200									890	80	1445
		280L			584	570	570				45	2107	920	1700	650	200									1070	88	1633

◆치수는 참고용임.

Performance selection chart (60Hz)



Performance selection chart (50Hz)



개략적 점도 환산

Approximate viscosity conversions

Seconds Saybolt Universal SSU	Kinematic viscosity		Seconds Saybolt Furoi SSF	Seconds Saybolt Redwood1 Standard	Seconds Saybolt Redwood2 Standard	Degrees Engler	Degrees Barbey	Kinematiccenti -stokes
	centistokes	ft ² /sec						
31	1.0	0.00001076		29		1.00	6200	1.0
31.5	1.13	0.00001216		29.4		1.01	5486	1.13
32	1.81	0.00001948		29.8		1.08	4325	1.81
32.6	2.00	0.00002153		30.2		1.10	3100	2.00
33	2.11	0.00002271		30.6		1.11	2938	2.11
34	2.40	0.00002583		31.3		1.14	2583	2.40
35	2.71	0.00002917		32.1		1.17	2287	2.71
36	3.00	0.00003229		32.9		1.20	2066	3.00
38	3.64	0.00003918		33.7		1.26	1703	3.64
39.2	4.00	0.00004306		35.5		2.30	1550	4.00
40	4.25	0.00004575		36.2	5.10	1.32	1459	4.25
42	4.88	0.00005253		38.2	5.25	1.36	1207	4.88
42.4	5.00	0.00005382		38.6	5.28	1.37	1240	5.00
44	5.50	0.00005920		40.6	5.39	1.40	1127	5.50
45.6	6.00	0.00006458		41.8	5.51	1.43	1033	6.00
46	6.13	0.00006598		42.3	5.54	1.44	1011	6.13
46.8	7.00	0.00007535		43.1	5.60	1.48	885	7.00
50	7.36	0.00007922		44.3	5.83	1.58	842	7.36
52.1	8.00	0.00008611		46.0	6.03	1.64	775	8.00
55	8.88	0.00009558		48.3	6.30	1.73	698	8.88
55.4	9.00	0.00009688		48.6	6.34	1.74	689	9.00
58.8	10.00	0.0001076		51.3	6.66	1.83	620	10.00
60	10.32	0.0001111		52.3	6.77	1.87	601	10.32
65	11.72	0.0001262		56.7	7.19	2.01	529	11.72
70	13.08	0.0001408		60.9	7.60	2.16	474	13.08
75	14.38	0.0001548		65.1	8.02	2.37	431	14.38
80	15.66	0.0001686		69.2	8.44	2.45	396	15.66
85	16.90	0.0001819		73.4	8.82	2.59	367	16.90
90	18.12	0.0002950		77.6	9.30	2.73	342	18.12
95	19.32	0.0002080		81.6	9.71	2.88	321	19.32
100	20.52	0.0002209		85.6	10.12	3.02	302	20.52
120	25.15	0.0002707		102	11.88	3.57	246	25.15
140	29.65	0.0003191		119	13.63	4.11	209	29.65
160	34.10	0.0003670		136	15.39	4.64	182	34.10
180	38.52	0.0004146		153	17.14	5.12	161	38.52
200	42.95	0.0004623		170	18.90	5.92	144	42.95
300	64.6	0.0006953	32.7	253	28.0	8.79	96	64.6
400	86.2	0.0009278	42.4	338	37.1	11.70	71.9	86.2
500	108.0	0.001163	52.3	423	46.2	14.60	57.4	108.0
600	129.3	0.001393	62.0	507	55.3	17.50	47.9	129.4
700	151.0	0.001625	72.0	592	64.6	20.44	41.0	151.1
800	172.6	0.001858	82.0	677	73.8	23.36	35.9	172.6
900	194.2	0.002090	92.1	762	83.0	26.28	31.9	194.2
1000	215.8	0.002323	102.1	864	92.3	29.20	28.7	215.8
1200	259.0	0.002788	122	1016	111	35.1	23.9	259.0
1400	302.3	0.003254	143	1855	129	40.9	20.5	302.5
1600	345.3	0.003717	163	1354	148	46.7	18.0	345.3
1800	388.5	0.004182	183	1524	166	52.6	15.6	388.5
2000	431.7	0.004647	204	1693	185	58.4	14.4	431.7
2500	539.4	0.005806	254	2115	231	73.0	11.5	539.4
3000	647.3	0.006967	305	2538	277	87.6	9.6	647.3
3500	755.2	0.008129	356	2961	323	102	8.21	755.2
4000	863.1	0.009290	408	3385	369	117	7.18	863.1
4500	970.9	0.01045	458	3807	415	131	6.39	970.9
5000	1078.8	0.01161	590	4230	461	146	5.75	1078.8
6000	1294.6	0.01393	610	5077	553	175	4.78	1294.6
7000	1510.3	0.01626	712	5922	646	204	4.11	1510.3
8000	1726.1	0.01858	814	6769	738	234	3.59	1726.1
9000	1941.9	0.02092	916	7615	830	263	3.19	1941.9
10000	2157.6	0.02322	1018	8461	922	292	2.87	2157.6
15000	3236.5	0.03483	1526	12692		438	1.92	3236.5
20000	4315.3	0.04645	2035	16923		548	1.44	4315.3

Viscosity relationships

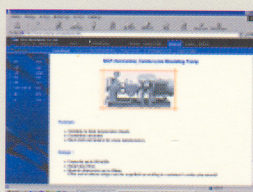
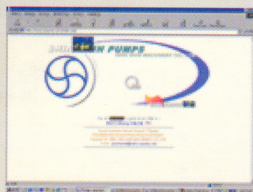
Kinematic viscosity (centistokes) = $\frac{\text{absolute viscosity (centipoises)}}{\text{density (gr/cm}^3\text{)}}$
 centistokes x 1.07639 x 10⁻⁵ = ft²/sec
 ft²/sec x 92903.4 = centistokes

Viscosity relationships

SSU x 2.433 x 10⁻⁶ - .00210/SSU = ft²/sec (50-100 SSU)
 SSU x 2.368 x 10⁻⁶ - .00145/SSU = ft²/sec (100-350 SSU)
 SSU (taken at 100°F) x 2.3210 x 10⁻⁶ = ft²/sec (over 350 SSU)
 0.226 x SSU - 205.3/SSU = centistokes (50-100 SSU)
 0.220 x SSU - 147.7/SSU = centistokes (100-350 SSU)

SSU (taken at 100°F or 37.8°C) x 0.21567 = centistokes (over 350SSU)
 SSU (taken at 210°F or 98.9°C) x 0.21426 = centistokes (over 350SSU)
 SSU (taken at 122°F or 50°C) x 2.120 = centistokes (over 500SSF)
 Redwood #1 (Standard) x 0.255 = centistokes (over 300 Redwood #1)
 Redwood #2 (Admiralty) x 2.3392 = centistokes (over 50 Redwood #2)
 Engler x 7.389 = centistokes (over 18 Engler)
 Stormer x 2.802 = centistokes (over 20 Stormer)
 Demler #10 x 31.506 = centistokes (over 1.0 Demler #10)
 Demler #1 x 3.151 = centistokes (over 1.3 Demler #1)
 Parlin cup #20 x 61.652 = centistokes (over 14 Parlin #20)
 Ford cup #4 x 3.753 = centistokes (over 230 Ford #4)
 6200/Barbey = centistokes

“
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”



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