

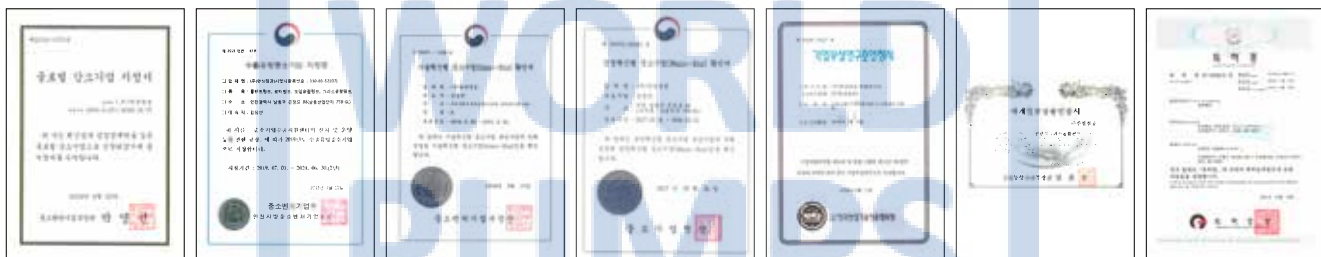
HALS

HANSUNG AUTOMATIC LUBRICATION SYSTEM
Products & Technical Information Collection



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To the World Best Technology & Quality





Coolant PUMP

HALS

Coolant pump series



HCP-S series

소형 경량의 자흡식 절삭유펌프
TANK 공간의 제약이 있는 경우
활용이 가능

연삭기
선 반
세척기
방전기
기타 선삭 및
절삭 가공 전용기

A compact and lightweight
self-priming cutting fluid pump.
It can be used when there are
limitations on tank space.

Grinder
Lathe
Washer
Electrical discharging machine
other turning and cutting
processing machines

Page 3



HCP-F series

침수식 절삭유펌프로 별도의
기름마중이 없이 초기구동이 용이
TANK내 PUMP부가 침수되는 형식

MCT
CNC
기타 선삭 및
절삭 가공 전용기

A submerged type cutting fluid
pump that can be driven initially
without oil priming.
The pump part is submerged
inside the tank.

MCT
CNC
Other turning and cutting
processing machines

Page 6



HCP-EMF(S) & HCP-BMF series

침수식 절삭유펌프로
많은 유량이 필요할 경우 사용됨
다단펌프로 다양한 범위의
성능구현이 가능

MCT
CNC
연삭기
세척기
방전기
기타 선삭 및
절삭 가공 전용기

A submerged type cutting fluid
pump that is used when large
quantities of oil are required.
A multi-stage pump capable of a
wide range of performances.

MCT
CNC
Grinder
Washer
Electrical discharging machine
other turning and cutting
processing machines

Page 12



HCP-EHMF(S) series

고압 다단 펌프로
높은 압력이 필요한 경우 적용
장착방법에 따라
VERTICAL과 HORIZONTAL형으로
구분됨

MCT
CNC

.....

A multi-stage high-pressure pump,
applied when high pressure is
required.
It is separated into a vertical type
or a horizontal type depending on
the installation method used.

MCT
CNC



HCP-EMS series

주요구동부가 STAINLESS 정밀프레스 제조공법으로
소형, 경량사용에 용이하며
다단 구조의 펌프로 고압사용이 용이함

MCT
CNC
세척기
방전기
기타 선삭 및
절삭 가공 전용기

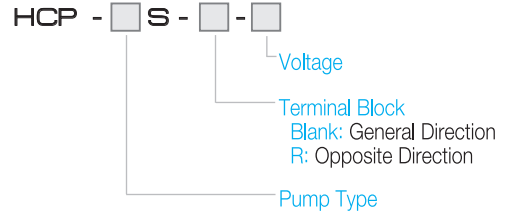
.....

A multi-stage pump with its main
drive parts produced from stainless
materials to ensure excellent
durability and anti-corrosiveness.

MCT
CNC
Grinder
Washer
Electrical discharging machine
other turning and cutting
processing machines



Model



Feature

1. 펌프와 모터가 일체형으로 소형, 경량의 펌프
 2. 소형으로 설치공간의 제약이 적음
 3. MECHANICAL SEAL이 장착되어 장시간의 공회전은 금지함 (공회전 30초 이상 금지)
 4. 반드시 펌프구동전 펌프 자흡실내 사용유 넣은 후 구동
1. A compact, lightweight single-unit pump.
 2. The small, design means less installation limitations.
 3. Prolonged idling is prohibited due to the installed mechanical seal, (Idling for more than 30 seconds is prohibited)
 4. Sufficient quantities of oil need to be supplied to the self-priming compartment before use.

Structure

- 펌프와 모터가 일체형으로 된 소형의 자흡식 펌프
- 흡입부로 파이프를 연결하여 사용유를 흡입하는 형식의 펌프
- A single-unit small self-priming pump
- A pipe is connected to the suction part to suck in oil.

Pump Spec.

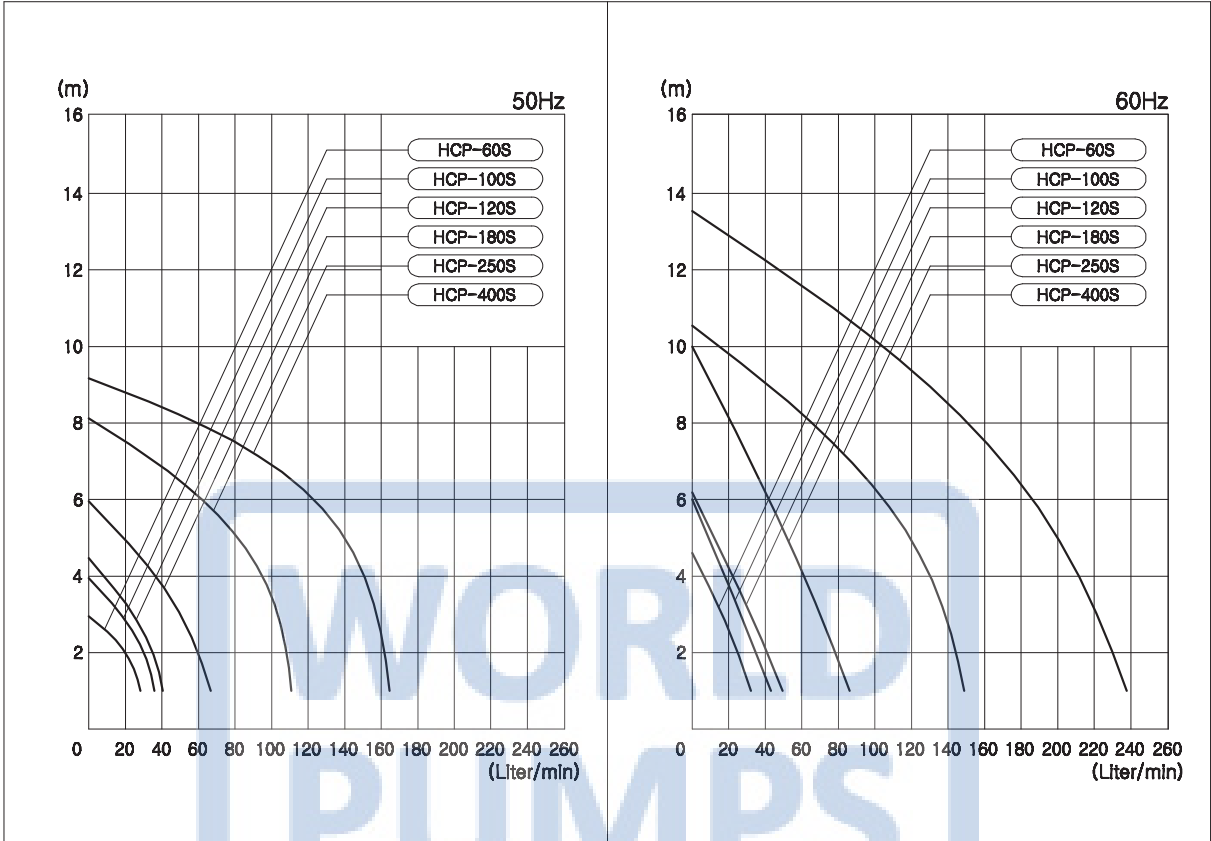
Specification Type	MOTOR						PUMP		
	OUTPUT (W)	FREQUENCY (Hz)	VOLTAGE (V)	CURRENT (A)	PHASE	POLES	TOTAL HEAD (m)	DIS. VOL (ℓ/min)	PIPE SIZE (PT)
HCP-60S	60	50	200 380	0.42 0.24	3	2	2	20	3/8"
		60	200/220 380	0.45 0.26				25	
HCP-100S	100	50	200 380	0.51 0.3	3	2	2	30	3/8"
		60	200/220 380	0.55 0.32				36	
HCP-120S	120	50	200 380	0.56 0.33	3	2	2	35	3/8"
		60	200/220 380	0.6 0.35				42	
HCP-180S	180	50	200 380	0.93 0.53	3	2	3	58	1/2"
		60	200/220 380	1.0 0.57				70	
HCP-250S	250	50	200 380	1.4 0.8	3	2	4	95	3/4"
		60	200/220 380	1.5 0.86				130	
HCP-400S	400	50	200 380	2.4 1.4	3	2	5	140	1"
		60	200/220 380	2.5 1.5				200	

Packing Spec.

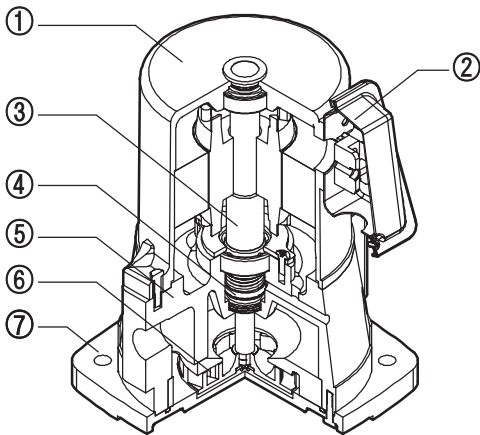
MODEL NAME	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PACKING
HCP-60S	18(W) x 16(L) x 26(D)	8	9
HCP-100S			
HCP-120S			
HCP-180S	26(W) x 21(L) x 21(D)	11	12
HCP-250S	26(W) x 22(L) x 23(D)	12	13
HCP-400S	34(W) x 22(L) x 23(D)	16	17

Performance Curve

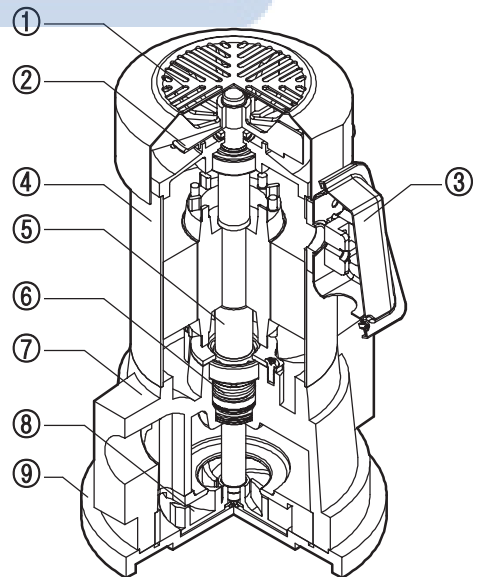
Oil for testing: ISO-VG2, Temperature 20°C



- 비수용성 절삭유 사용시 32cSt 이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력·유량)이 저하됨.
- When using non water-soluble cutting fluid, Viscosity must be under 32cSt, Pump performance (pressure and quantity) will decrease compared to water-soluble cutting fluid.



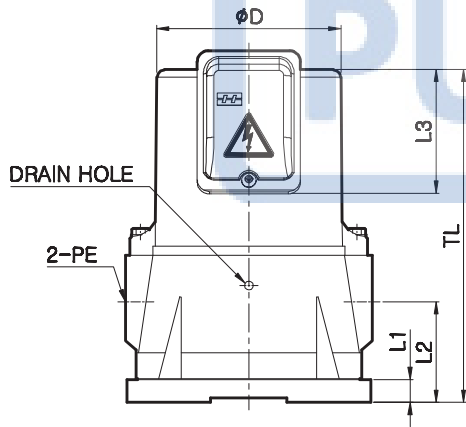
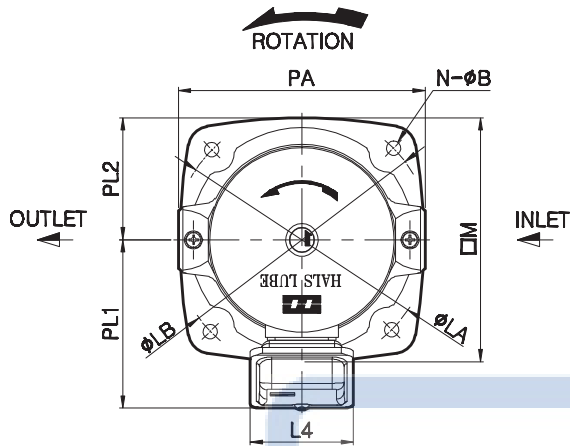
No	PART NAME	No	PART NAME
1	MOTOR	5	PUMP BODY
2	TERMINAL BLOCK	6	IMPELLER
3	SHAFT	7	BASE
4	MECHANICAL SEAL	-	-



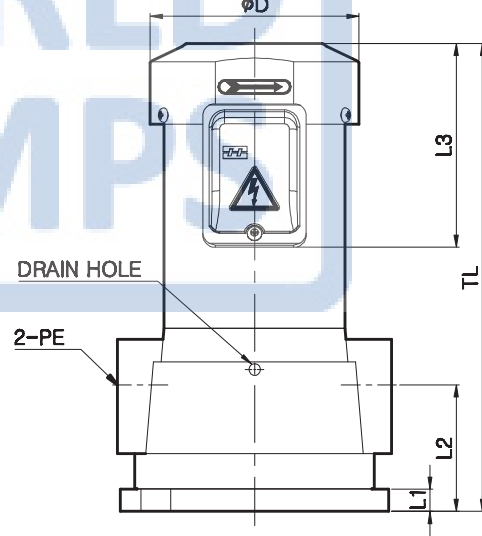
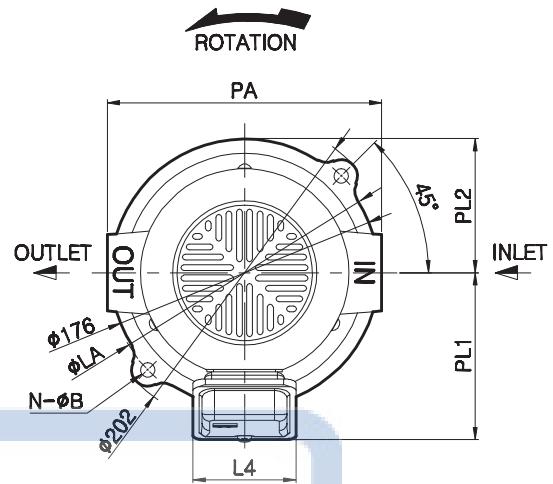
No	PART NAME	No	PART NAME
1	FAN COVER	6	MECHANICAL SEAL
2	FAN	7	BODY
3	TERMINAL BLOCK	8	IMPELLER
4	MOTOR	9	BASE
5	SHAFT	-	-

External Figure

HCP-60S~250S



HCP-400S



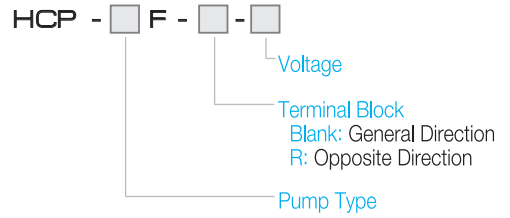
Dimension

※ LA, LB형 ()안의 치수는 수출용임 [LA, LB () are products for export]

Type	Item	ø D	L1	L2	L3	L4	PE(PT)	TL	LA	LB	N-ø B	PA	M	PL1	PL2
HCP-60S		95	56	55.5	88	68	3/8"	201	132(132)	150(130)	4-7	130	130	95	65
HCP-100S		95	56	55.5	88	68	3/8"	201	132(132)	150(150)	4-7	130	130	95	65
HCP-120S		95	15	55.5	88	68	3/8"	201	132(132)	150(150)	4-7	130	130	95	65
HCP-180S		121	15	66	81	68	1/2"	201	167(160)	170(164)	4-10	162	160	110	80
HCP-250S		121	20	71	81	68	3/4"	225	167(160)	170(170)	4-10	162	160	110	80
HCP-400S		137	14.5	83	133	68	1"	307	180(180)	-	2-10	180	-	110	88



Model



Structure

- 펌프부가 탱크내 침수되어 구동하는 펌프
- 탱크 깊이와 성능에 따라 펌프 선택이 다양하고 별도의 기름마중 없이 사용이 가능함
- A pump that operates with the pump part submerged in the tank,
- Different pumps can be selected according to tank depths, and can be used without separate oil priming.

Feature

1. 펌프와 모터가 동축이나, 분리된 형태
 2. 소형의 단각형 탱크의 깊이에 따라 다양한 선택가능
 3. MECHANICAL SEAL 등 별도의 SEAL이 없는 구조
 4. 연마입자가 혼합된 연삭기를 포함한 광범위한 부분의 적용이 가능
1. The motor and the pump have the same shaft but are separated.
 2. Various selections can be made according to the depths of the compact low-set tanks.
 3. A structure with no additional seals such as a mechanical seal
 4. Can be applied to a wide range of parts including grinding machine with mixed abrasive grain.

Pump Spec.

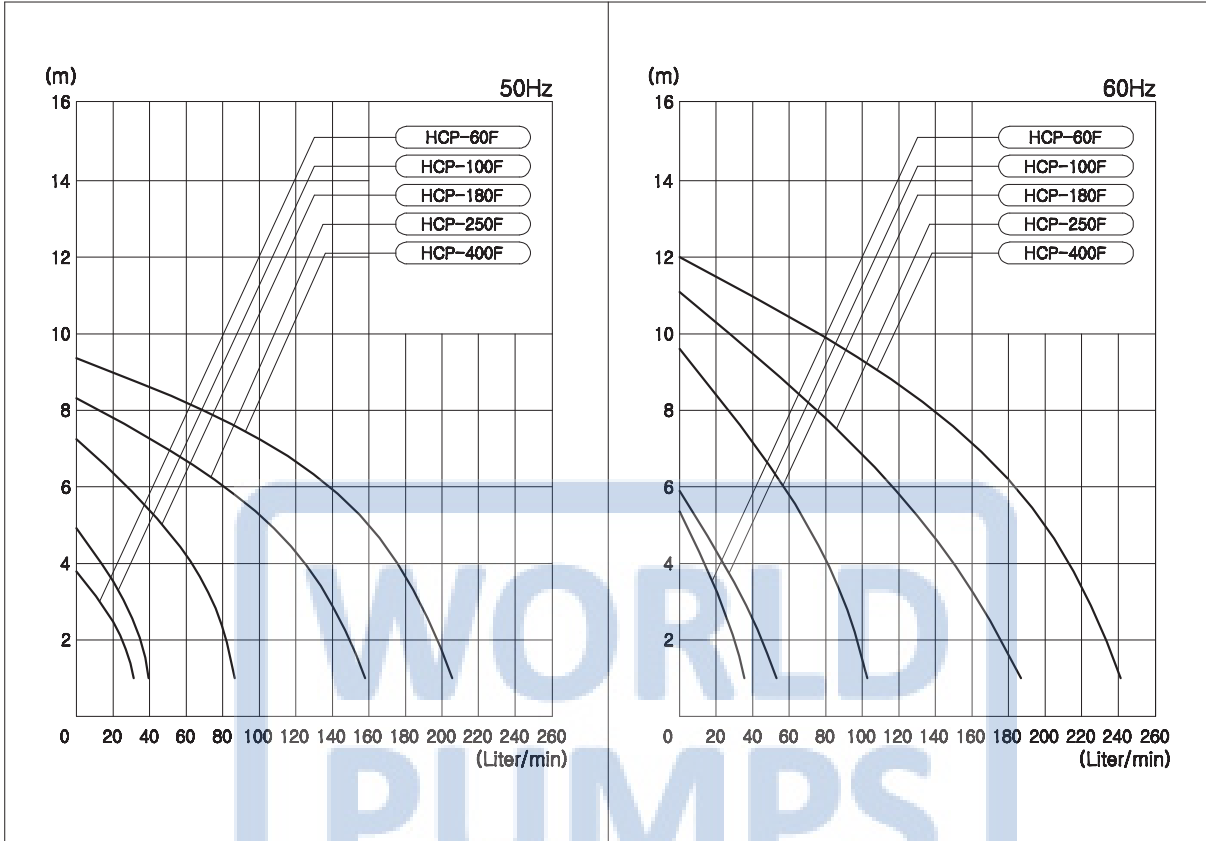
Specification Type	MOTOR						PUMP		
	OUTPUT (W)	FREQUENCY (Hz)	VOLTAGE (V)	CURRENT (A)	PHASE	POLES	TOTAL HEAD (m)	DIS. VOL (ℓ/min)	PIPE SIZE (PT)
HCP-60F	60	50	200 380	0.42 0.24	3	2	2	25	3/8"
		60	200/220 380	0.45 0.26				32	
HCP-100F	100	50	200 380	0.51 0.3	3	2	2	37	3/8"
		60	200/220 380	0.55 0.32				47	
HCP-180F	180	50	200 380	0.93 0.53	3	2	3	75	1/2"
		60	200/220 380	1.0 0.57				90	
HCP-250F	250	50	200 380	1.4 0.8	3	2	4	125	3/4"
		60	200/220 380	1.5 0.86				150	
HCP-400F	400	50	200 380	2.4 1.4	3	2	5	160	1"
		60	200/220 380	2.5 1.5				200	

Packing Spec.

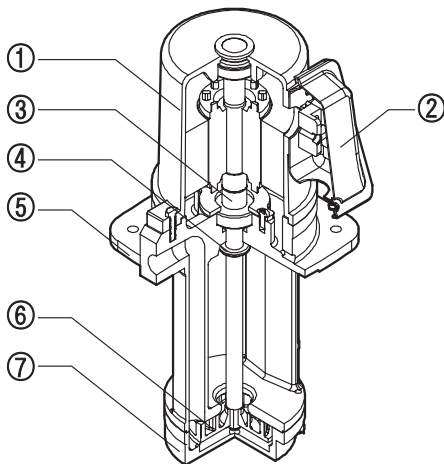
MODEL NAME	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PACKING
HCP-60F	34(W) x 20(L) x 17(D)	7	8
HCP-100F			
HCP-180F	40(W) x 22(L) x 21(D)	11	12
HCP-250F	48(W) x 22(L) x 22(D)	15	16
HCP-400F	58(W) x 22(L) x 22(D)	17	18

Performance Curve

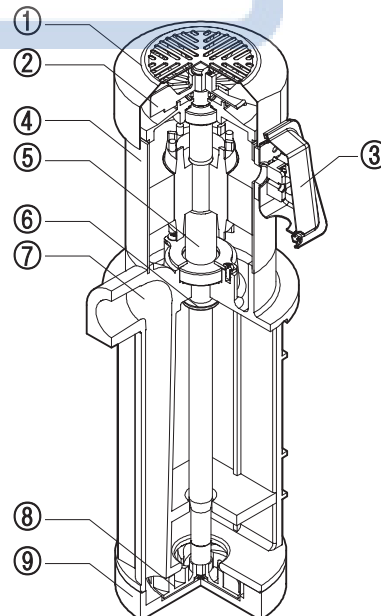
Oil for testing: ISO-VG2, Temperature 20 c



- 비수용성 절삭유 사용시 32cSt 이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력·유량)이 저하됨.
- When using non water-soluble cutting fluid, Viscosity must be under 32cSt, Pump performance (pressure and quantity) will decrease compared to water-soluble cutting fluid.



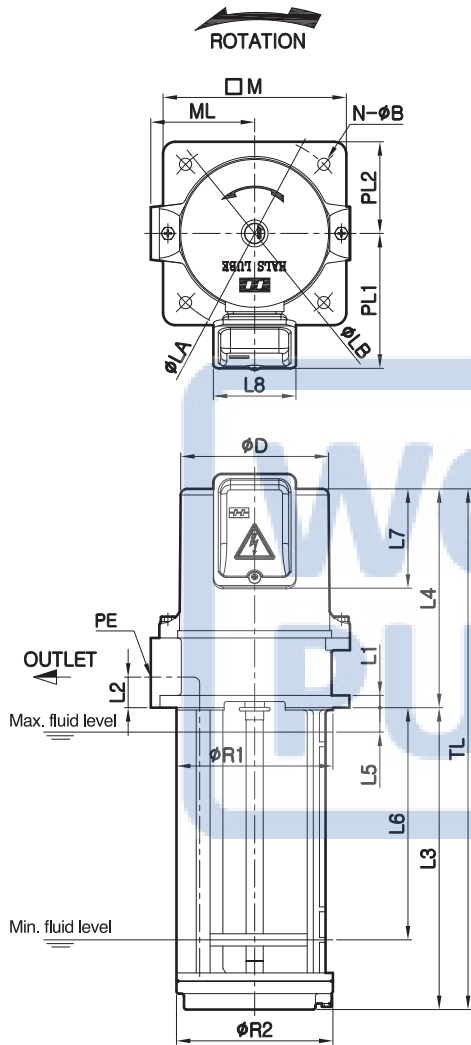
No	PART NAME	No	PART NAME
1	MOTOR	5	PUMP BODY
2	TERMINAL BLOCK	6	IMPELLER
3	SHAFT	7	IMPELLER HOUSING
4	STOPPER	-	-



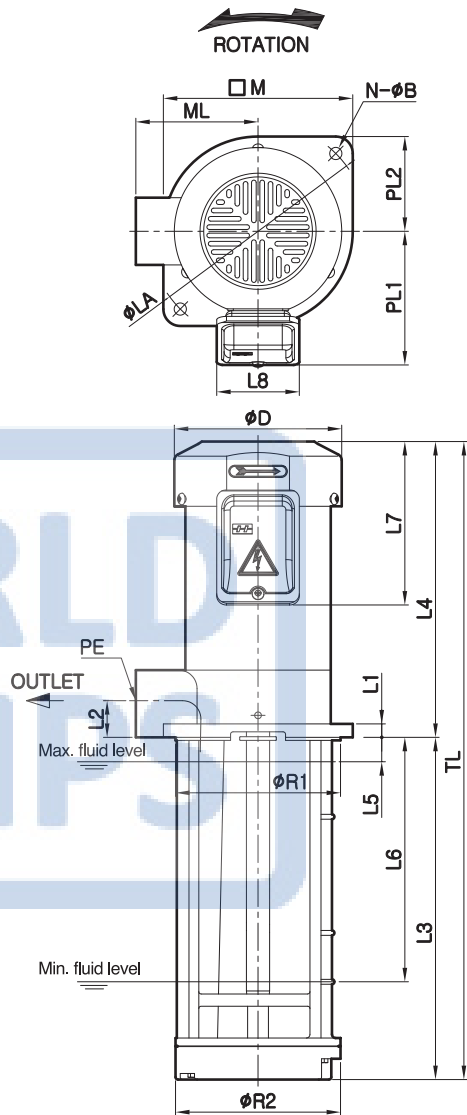
No	PART NAME	No	PART NAME
1	FAN COVER	6	STOPPER
2	FAN	7	BODY
3	TERMINAL BLOCK	8	IMPELLER
4	MOTOR	9	IMPELLER HOUSING
5	SHAFT	-	-

External Figure

HCP-60F~250F



HCP-400F



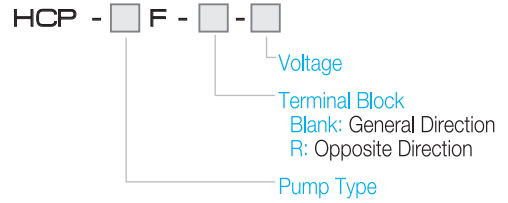
Dimension

※ LA, LB형 ()안의 치수는 수출용임 [LA, LB () are products for export]

Type	Item	φ D	L1	L2	L3	L4	L5	L6	L7	L8	PE(PT)	TL	R1	R2	LA	LB	N-φB	PL1	PL2	M	ML
HCP-60F		94	8	15	155	150	20	90	93	68	3/8"	305	90	90	130 (132)	130 (130)	4-7	94	64	128	71
HCP-100F		94	8	15	155	150	20	90	93	68	3/8"	305	90	90	130 (132)	130 (134)	4-7	94	64	128	71
HCP-180F		121	10	20	175	171	20	105	93	68	1/2"	346	115	115	160 (160)	160 (134)	4-10	109	72.5	145	80
HCP-250F		121	10	25	250	180	20	190	93	68	3/4"	427	128	128	160 (160)	160 (170)	4-10	109	75	150	85
HCP-400F		137	11	30	280	232	20	200	143	68	1"	512	135	135	180 (180)	-	2-10	110	77.5	155	100



Model



Feature

1. 펌프와 모터가 분리형으로 HCP-F와 동일형태
 2. HCP-F 보다 높은 압력을 요하는 경우 적용
 3. 펌프 상단부에 와류 방지부가 있어 원활한 흡입이 가능
 4. TANK 형태에 따라 다양한 침수깊이와 상단과 하단 흡입 형태로 구분
 5. HCP-419F, 420F는 하단 흡입형 제품으로 흡입 수위 폭이 넓음
1. It has the same separate motor & pump structure as the HCP-F
 2. It is used when more pressure than HCP-F is required.
 3. There is an anti-vortex part at the top of the pump, which allows smooth suction.
 4. The pump is divided into top section suction or bottom section suction according to the type of the applied tank.
 5. HCP-419F, 420F are bottom section suction products that have a wide range of suction oil levels.

Structure

- HCP-F TYPE과 동일한 구조의 침수식 펌프
- 탱크깊이에 따라 다양한 종류의 펌프 형태
- A submerged-type pump with the same structure as the HCP-F type.
- There are various pump forms according to the different tank depths.

Pump Spec.

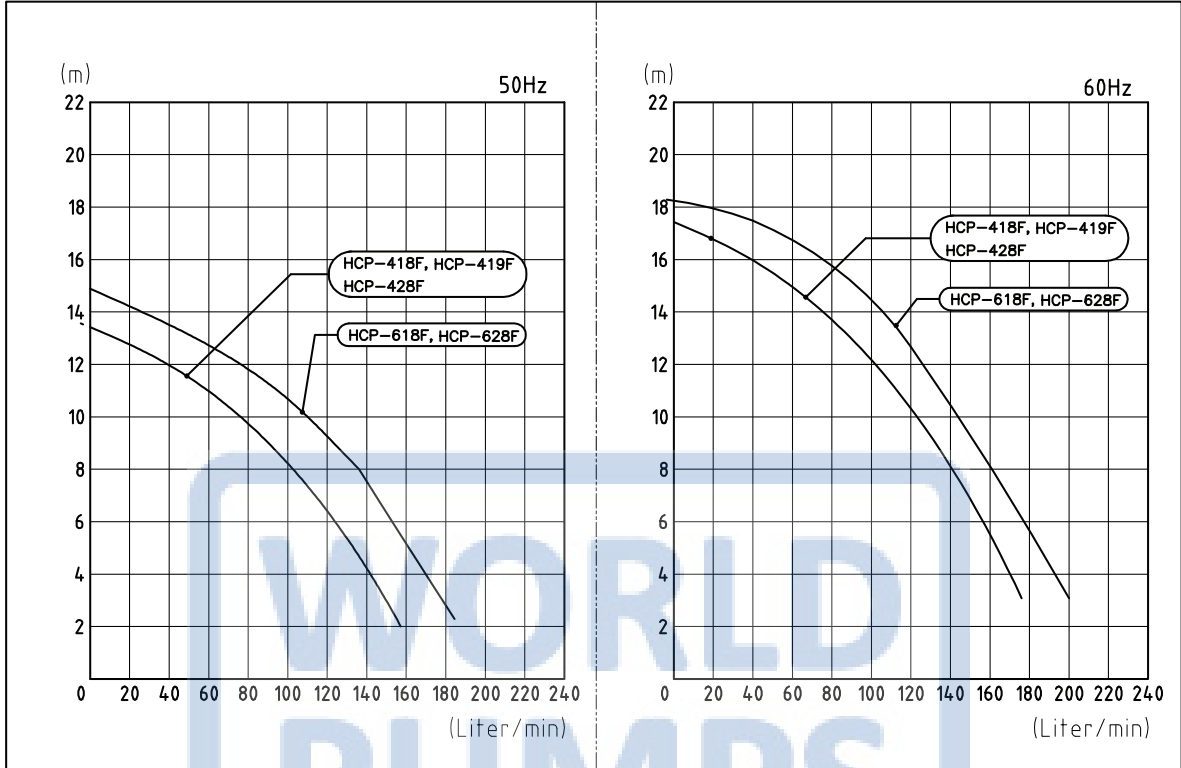
Specification Type	MOTOR						PUMP		
	OUTPUT (W)	FREQUENCY (Hz)	VOLTAGE (V)	CURRENT (A)	PHASE	POLES	TOTAL HEAD (m)	DIS. VOL (l/min)	PIPE SIZE (PT)
HCP- 418F, 428F, 419F	400	50	200 380	2.4 1.4	3	2	12	40	1"
		60	200/220 380	2.5 1.5			16		
HCP- 618F, 628F	600	50	200 380	2.79 1.61	3	2	12	80	1"
		60	200/220 380	3.0 1.73			16		

Pump Spec.

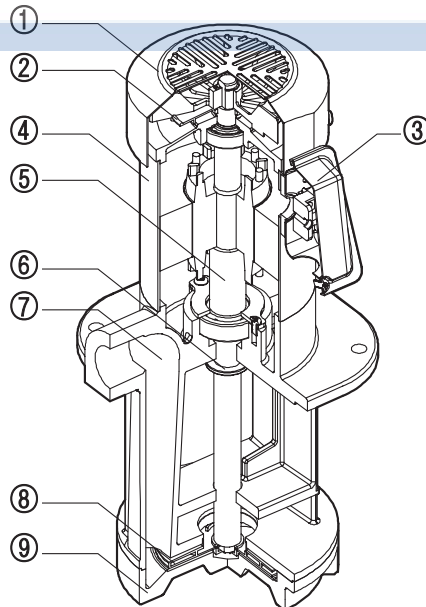
MOTOR	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PUMP
HCP-418F	46(W) x 23(L) x 24(D)	17	18
HCP-419F	50(W) x 24(L) x 24(D)	18	19
HCP-428F	58(W) x 22(L) x 23(D)	18	19
HCP-618F	46(W) x 23(L) x 24(D)	17	18
HCP-628F	58(W) x 22(L) x 23(D)	18	19

Performance Curve

Oil for testing : ISO-VG32, Temperature 20°C



* 비수용성 절삭유 사용시 32cSt이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력-유량)이 저하됨
 * When using non water-soluble cutting fluid, Viscosity must be under 32cSt Pump performance (pressure and quantity) will decrease compared to water-soluble cutting fluid.

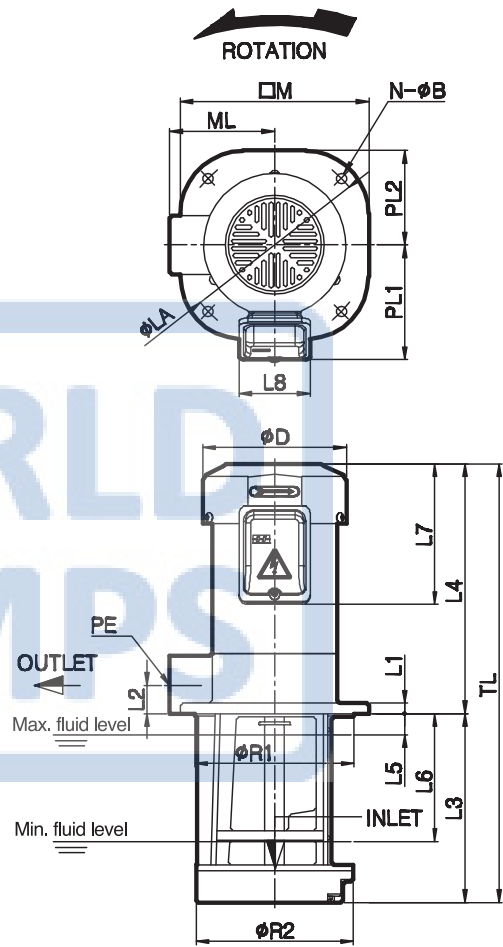
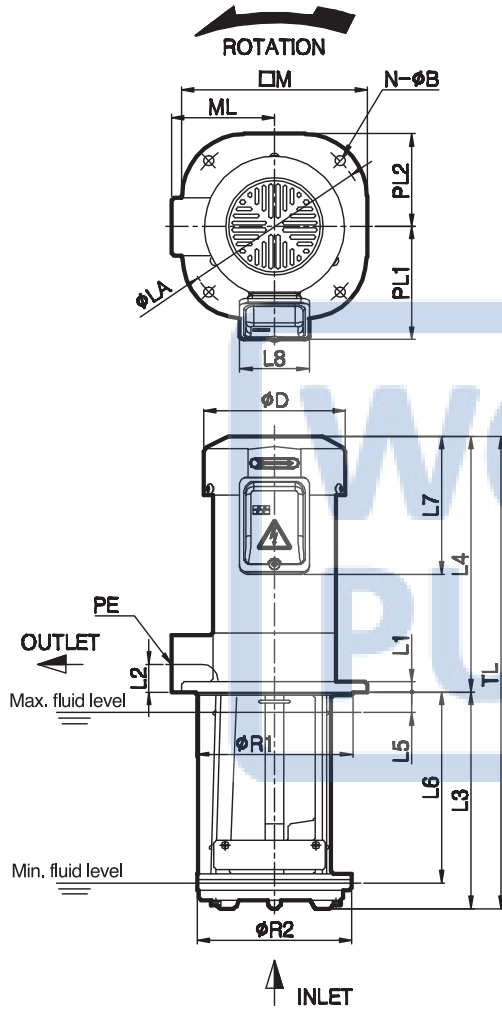


No	PART NAME	No	PART NAME
1	FAN COVER	6	STOPPER
2	FAN	7	BODY
3	TERMINAL BLOCK	8	IMPELLER
4	MOTOR	9	IMPELLER HOUSING
5	SHAFT	-	-

External Figure

HCP-419F

HCP-418F
HCP-618F
HCP-428F
HCP-628F



Dimension

Type \ Item	ϕD	L1	L2	L3	L4	L5	L6	L7	L8	PE (PT)	TL	R1	R2	LA	N- ϕB	PL1	PL2	M	ML
HCP - 418F/618F	137	10	27	180	234	20	122	143	143	1"	414	152	150	180	4-10.5	110	90	180	100
HCP - 419F	137	10	27	210	244	20	185	139	139	1"	454	152	150	180	4-10.5	110	90	180	100
HCP - 428F/628F	137	10	27	280	234	20	220	143	143	1"	514	152	150	180	4-10.5	110	90	180	100



Model

HCP - [] [] MF [] - [] - []

- Voltage
- Terminal Block
- L: 90° Direction / R: 180° Direction
- Blank: General Type / S: Short Type
- Blank: General Motor
- E: High Efficiency Motor
- Pump Type

Feature

1. HCP-□MF(S)

- 많은 유량을 요할 경우 적용이 가능
- Motor부가 분리되어 온도의 전달이 적음
- 침수 하단흡입식 펌프로 탱크 밑면과 30mm이상 유지하여야 함
- 펌프부가 분리되어 Motor부로 사용유의 침입이 적음

2. HCP-□EMF(S)

- HCP-MF(S) Type에 고효율 모터를 장착
- 효율의 극대화로 우수한 절전 및 투자비 회수가 가능한 높은 경제성
- 낮은 온도상승, 고 절연재료 사용으로 권선수명연장
- 고효율 에너지 기자재 마크 획득 (IE3)

1. HCP-□MF(S)

- It can be applied when large quantities of oil are required
- The motor part is detached to reduce the transfer of heat.
- A submerged bottom section suction pump that must be kept at least 30mm above the tank floor.
- The pump part is detached to reduce the entry of oil into the motor.

2. HCP-□EMF(S)

- High efficiency motor is installed in HCP-MF(S) Type
- Excellent electricity savings and high economic return on investment through optimized efficiency
- Increase in life-time use through slow temperature increase and use of highly energy-efficient energy materials
- Acquired high efficiency energy equipment mark (IE3)

Pump Spec.

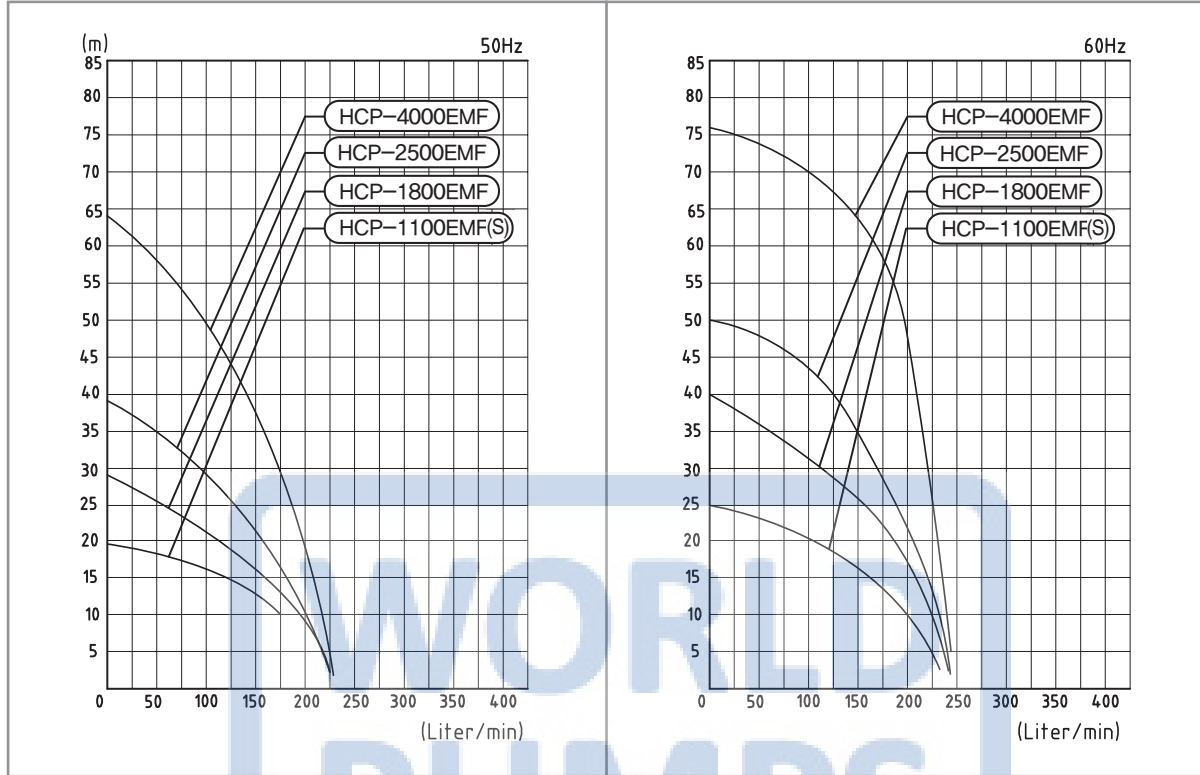
Specification Type	MOTOR						PUMP		
	OUTPUT(W)	FREQUENCY(Hz)	VOLTAGE(V)	CURRENT(A)	PHASE	POLES	TOTAL HEAD(m)	DIS. VOL(L/min)	PIPE SIZE(PT)
HCP- 1100EMF(S)	1100	50	200 380	4.2 2.5	3	2	6.5	200	1¼"(1½")
		60	200/220 380	4.8 2.8			10		
HCP- 1800EMF	1800	50	200 380	6.6 3.8	3	2	20	100	1½"
		60	200/220 380	7.0 4.1			30		
HCP- 2500EMF	2500	50	200 380	8.8 5.2	3	2	30	100	1½"
		60	200/220 380	10.0 5.6			45		
HCP- 4000EMF	4000	50	200 380	16.0 8.5	3	2	50	100	1½"
		60	200/220 380	18.0 10.7			70		

Packing Spec.

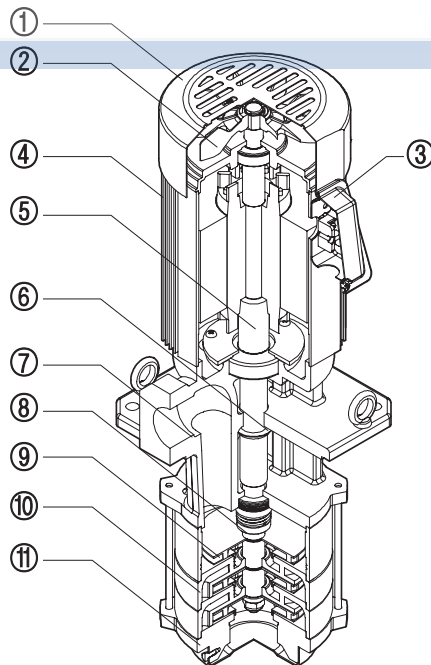
MODEL NAME	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PACKING
HCP- 1100EMF	59(W) x 25(L) x 29(D)	28	29
HCP- 1100EMFS		27	28
HCP- 1800EMF	63(W) x 29(L) x 30(D)	31	32
HCP- 2500EMF		35	36
HCP- 4000EMF	80(W) x 27(L) x 31(D)	45	46

Performance Curve

Oil for testing: ISO-VG2, Temperature 20°C



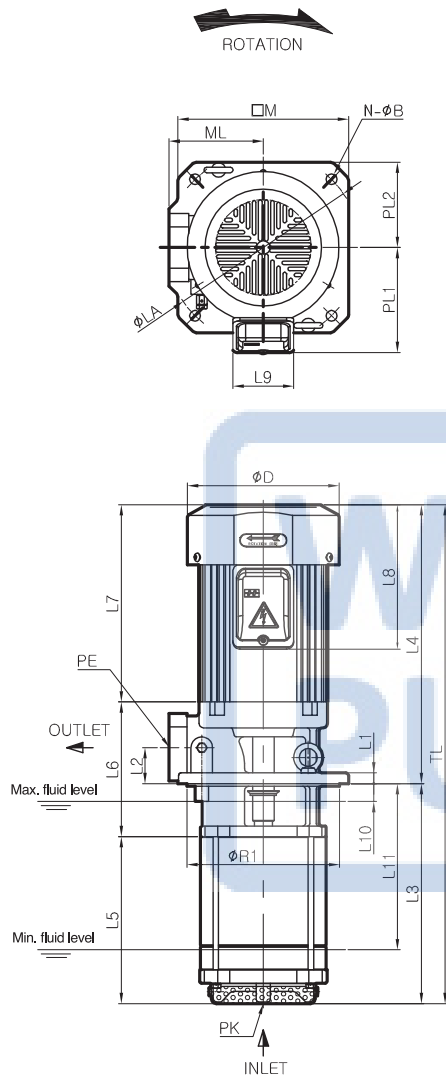
- 비수용성 절삭유 사용시 32cSt 이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력,유량)이 저하됨.
- When using non water-soluble cutting fluid, Viscosity must be under 32cSt. Pump performance (pressure and quantity) will decrease compared to water-soluble cutting fluid.



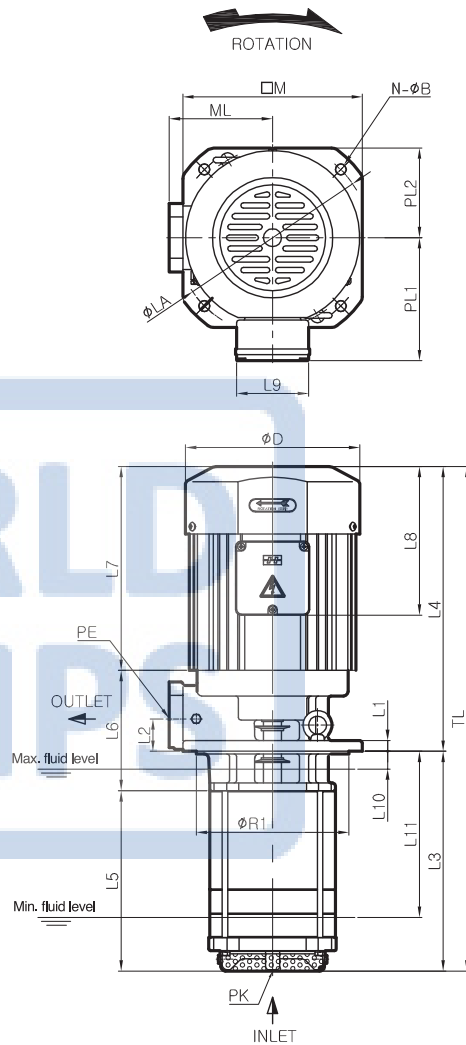
No	PART NAME	No	PART NAME	No	PART NAME
1	FAN COVER	5	SHAFT	9	IMPELLER
2	FAN	6	STOPPER	10	IMPELLER CASING
3	TERMINAL BLOCK	7	BODY	11	INLET COVER
4	MOTOR	8	IMPELLER SEAL	-	-

External Figure

HCP-1100EMF(S)



HCP-1800EMF~4000EMF

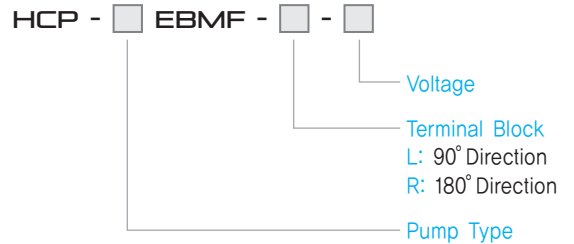


Dimension

Type	Item	∅D	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	PE (PT)	TL	R1	LA	N-∅B	PL1	PL2	M	ML	PK (PF)
HCP-1100EMF		169	12	40	245	310.5	186	150	220	166	67.6	20	185	1 1/2"	555	170	215	4-12	119	95	190	105	2"
HCP-1100EMFS		169	12	40	210	310.5	151	150	220	166	67.6	20	150	1 1/4"	520	170	215	4-12	119	95	190	105	2"
HCP-1800EMF		164	12	36	245	317	201	134	227	166	80	20	185	1 1/2"	562	170	215	4-12	119	95	190	115	2"
HCP-2500EMF		194	12	36	245	343	201	134	253	166	80	20	185	1 1/2"	588	170	215	4-12	137	100	200	115	2"
HCP-4000-EMF		232	12	36	354	377	310	144	277	176	80	20	303	1 1/2"	731	170	215	4-12	162	109	218	115	2"



Model



Structure

- HCP-EBMF 전 기종 취부 자리는 동일하여 변경이 자유로움
- 펌프 하단부에서 탱크 밑면과 30mm이상 유지하여야 함
- Attachment area is same for all HCP-EBMF equipment and therefore flexible in terms of moving.
- Must maintain 30mm distance from the tank's bottom in the lower part of the pump.

Feature

1. 대형 공작기계의 대용량 원심 다단 펌프로 세척 및 샤워용 절삭유 펌프로 적합
 2. 펌프부와 모터부가 분리되어 모터의 사용유 침입이 거의 없음
1. A large capacity multi-level pump of large machine tools suitable for cutting oil pump used for washing and shower.
 2. The motor and the pump have the same shaft but are separated to decrease the flow of oil into the motor.

Pump Spec.

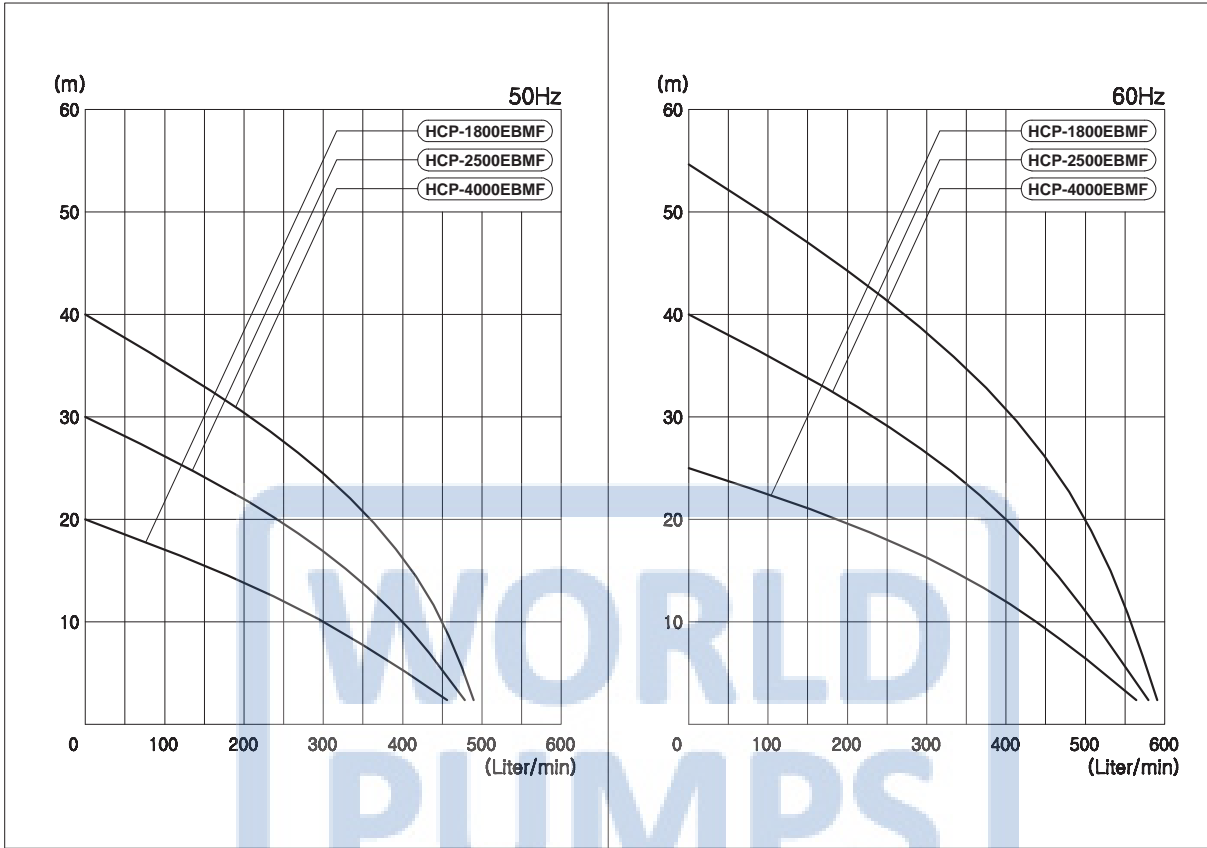
Specification Type	MOTOR						PUMP		
	OUTPUT (W)	FREQUENCY (Hz)	VOLTAGE (V)	CURRENT (A)	PHASE	POLES	TOTAL HEAD (m)	DIS. VOL (ℓ/min)	PIPE SIZE (PT)
HCP-1800EBMF	1800	50	200 380	7.5 4.1	3	2	10	300	2"
		60	200/220 380	8.5 / 8.0 4.6			12	400	
HCP-2500EBMF	2500	50	200 380	9.0 5.5	3	2	10	400	2"
		60	200/220 380	12.0 / 11.0 6.4			20		
HCP-4000EBMF	4000	50	200 380	16.0 8.5	3	2	10	450	2"
		60	200/220 380	18.0 / 17.0 10.7			20	500	

Packing Spec.

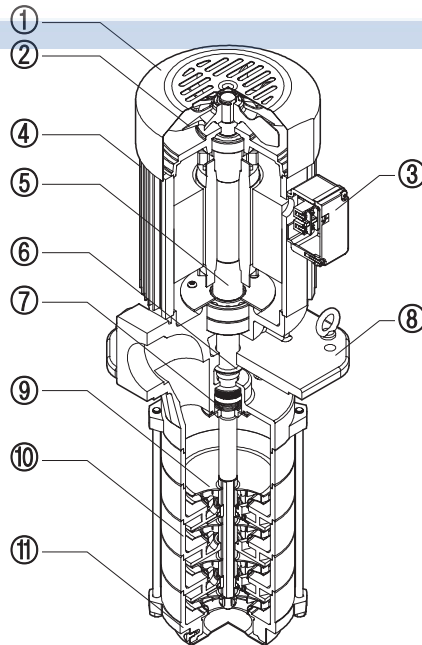
MODEL NAME	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PACKING
HCP-1800EBMF	63(W) x 29(L) x 30(D)	35	36
HCP-2500EBMF		40	41
HCP-4000EBMF	80(W) x 27(L) x 31(D)	45	46

Performance Curve

Oil for testing: ISO-VG2, Temperature 20 °c



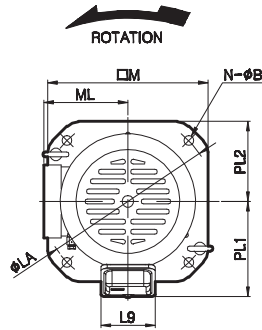
- 비수용성 절삭유 사용시 32cSt 이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력·유량)이 저하됨.
- When using non water-soluble cutting fluid, Viscosity must be under 32cSt, Pump performance (pressure and quantity) will decrease compared to water-soluble cutting fluid.



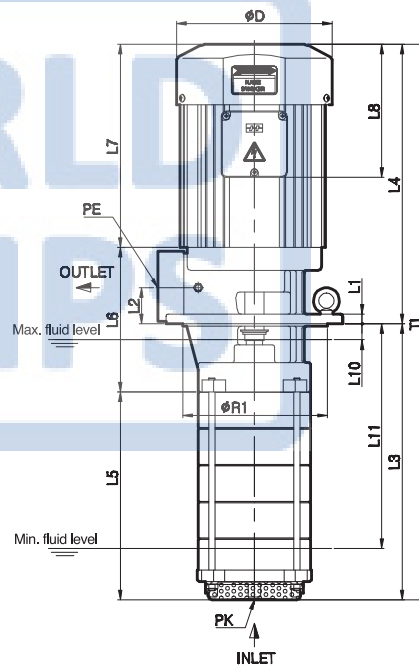
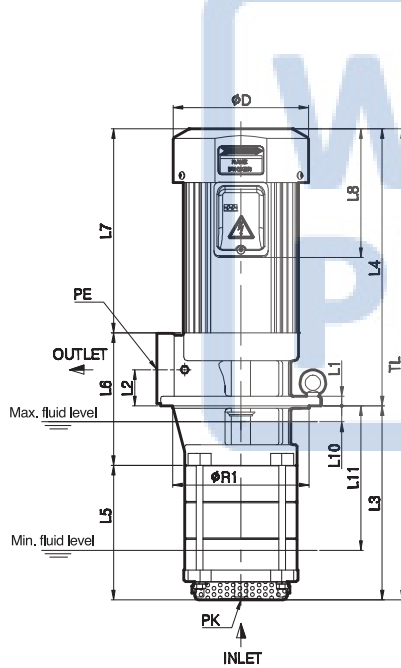
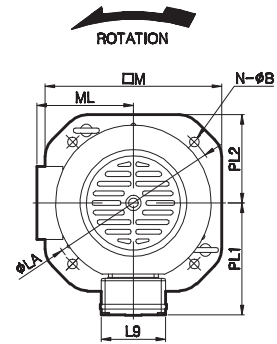
No	PART NAME	No	PART NAME	No	PART NAME
1	FAN COVER	5	SHAFT	9	IMPELLER
2	FAN	6	STOPPER	10	IMPELLER CASING
3	TERMINAL BLOCK	7	IMPELLER SEAL	11	INLET COVER
4	MOTOR	8	BODY	-	-

External Figure

HCP-1800~2500EBMF



HCP-4000EBMF



Dimension

Item	ØD	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	PE (PT)	TL	R1	LA	N-ØB	PL1	PL2	M	ML	PK (PT)
HCP-1800EBMF	186	12	45	341	322	160	180	227	163	67,6	20	190	2"	563	180	215	4-12	137	110	220	120	2½"
HCP-2500EBMF	186	12	45	252	342	160	180	247	163	67,6	20	200	2"	594	180	215	4-12	137	110	220	120	2½"
HCP-4000EBMF	194	12	5	345	368	260	180	273	166	80	20	245	2"	713	180	215	4-12	154	110	220	120	2½"



Model

HCP - [] EHMF - [] - [] - []

- Voltage
- Terminal Block
- L: 90° Direction / R: 180° Direction
- Blank: General Type / S: Short Type
- E: High Efficiency Motor
- Pump Type

Pump Spec.

Specification Type	MOTOR						PUMP		
	OUTPUT(W)	FREQUENCY(Hz)	VOLTAGE(V)	CURRENT(A)	PHASE	POLES	TOTAL HEAD(m)	DIS. VOL(l/min)	PIPE SIZE(PT)
HCP-1100EHMF(S)	1100	50	220 380	4.3 2.5	3	2	30	30	3/4"
		60	200/220 380	5.1 3.0			45		
HCP-1800EHMF(S)	1800	50	200 380	6.5 3.8	3	2	50	30	3/4"
		60	200/220 380	7.0 4.1			70		
HCP-2500EHMF(S)	2500	50	200 380	8.7 5.2	3	2	70	30	3/4"
		60	200/220 380	9.7 5.6			100		
HCP-4000EHMF(S)	4000	50	200 380	16.0 8.5	3	2	90	20	3/4"
		60	200/220 380	18.0 10.7			130		

Packing Spec.

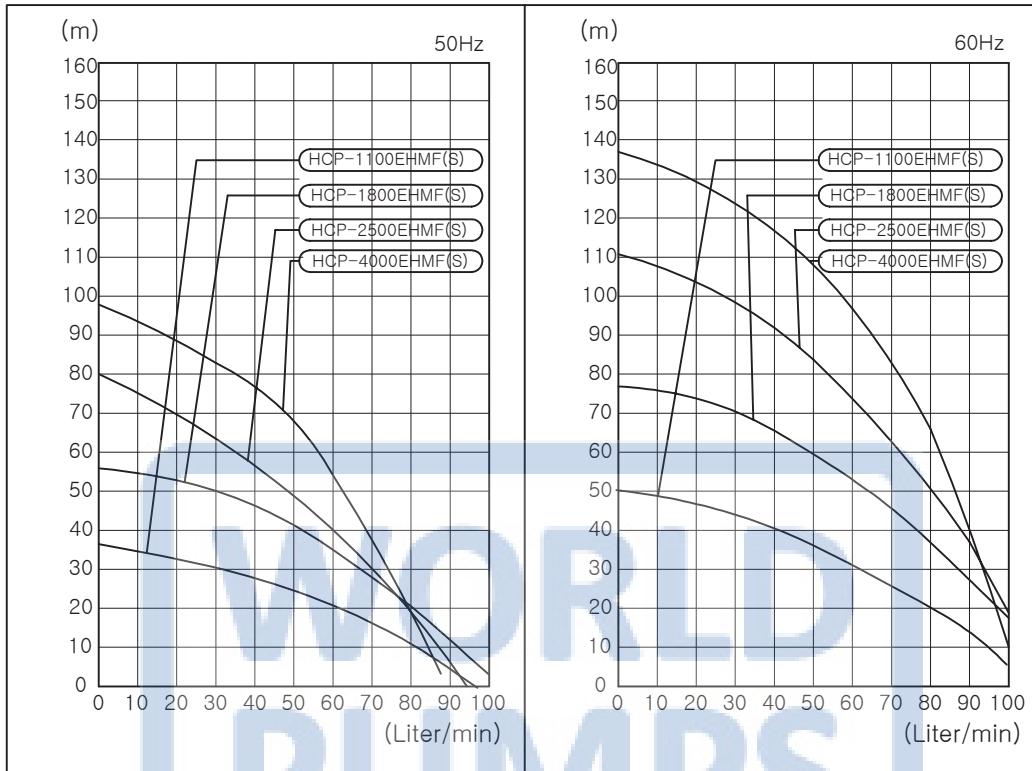
MODEL NAME	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PACKING
HCP-1100EHMF	50(W) x 30(L) x 27(D)	26	27
HCP-1100EHMFS		25	27
HCP-1800EHMFS		28	29
HCP-1800EHMF	63(W) x 29(L) x 30(D)	29	30
HCP-2500EHMF		39	40
HCP-2500EHMFS		38	39
HCP-4000EHMF		45	46
HCP-4000EHMFS		44	45

Feature

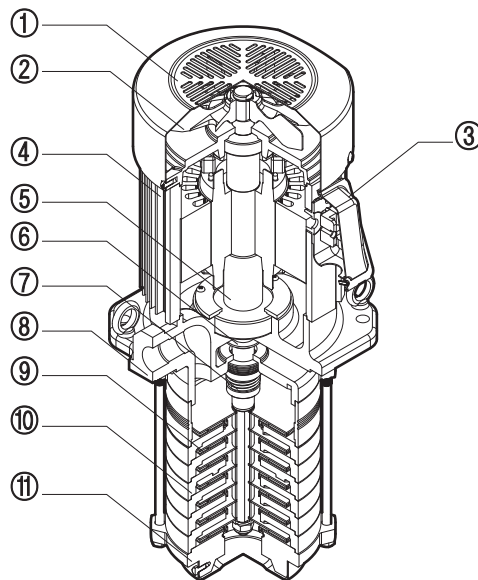
1. HCP-□EHMF(S)
 - 동일한 펌프 취부자리로 교체가 용이함
 - Mechanical Seal이 장착되어 장시간의 공회전은 금지함 (공회전 10초 이상 금지)
 - 일체형 축으로 제작되어 내구성과 관리가 용이함
2. HCP-□EHMF(S)
 - HCP-EHMF(S) Type에 고효율 모터를 장착
 - 효율의 극대화로 우수한 절전 및 투자비 회수가 가능한 높은 경제성
 - 낮은 온도상승, 고 절연재료 사용으로 권선수명연장
 - 고효율 에너지 기자재 마크 획득
1. HCP-□EHMF(S)
 - Identical pump spray areas make exchanges easy.
 - Prolonged idling is prohibited due to the installed mechanical seal. (Idling for more than 10 seconds is prohibited)
 - It is produced with a single-unit shaft, which increases durability and makes management easy.
2. HCP-□EHMF(S)
 - High efficiency motor is installed in HCP-EHMF(S) Type.
 - Excellent electricity savings and high economic return on investment through optimized efficiency.
 - Increase in life-time use through slow temperature increase and use of highly energy-efficient energy materials.
 - Acquired high efficiency energy equipment mark.

Performance Curve

Oil for testing: ISO-VG32, Temperature 20°C



- 비수용성 절삭유 사용시 32cSt 이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력·유량)이 저하됨.
- When using non water-soluble cutting fluid, Viscosity must be under 32cSt, Pump performance (pressure and quantity) will clecrease compared to water-solube cutting fluid.



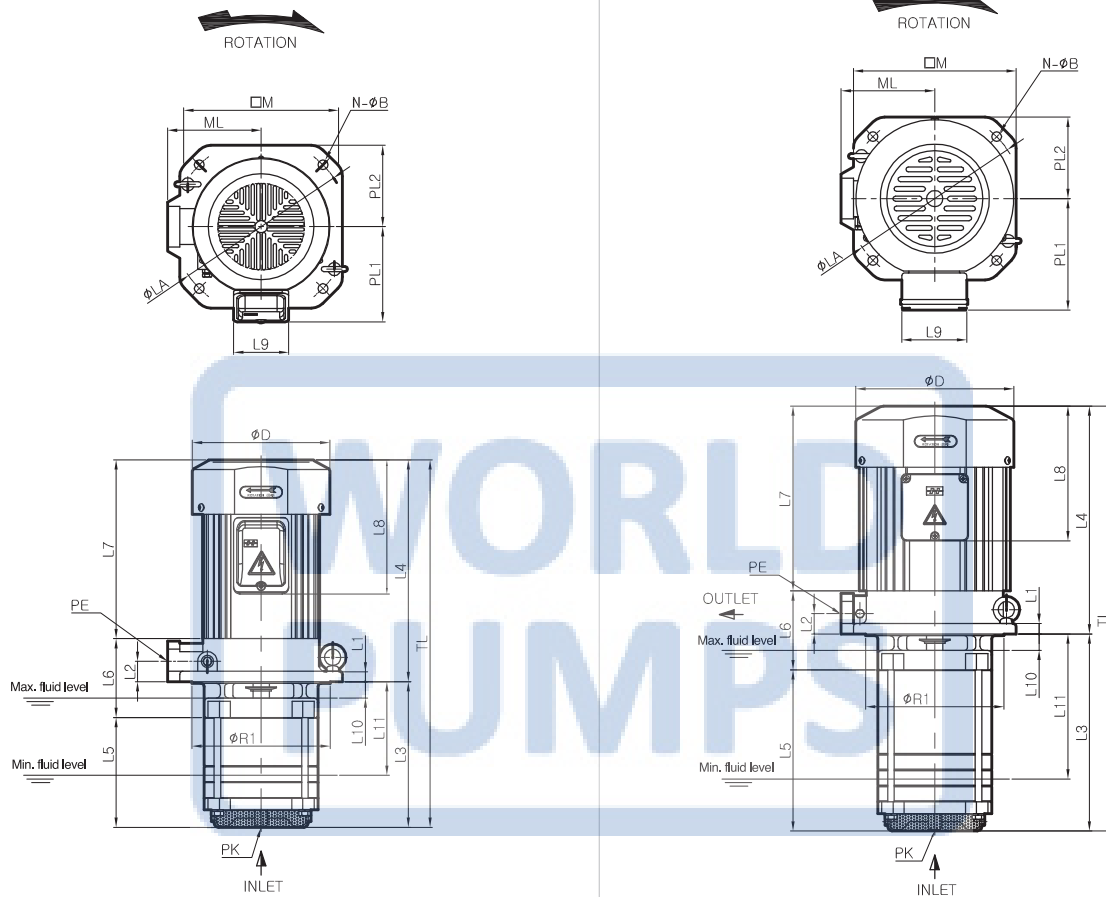
No	PART NAME	No	PART NAME	No	PART NAME
1	FAN COVER	5	SHAFT	9	IMPELLER
2	FAN	6	STOPPER	10	IMPELLER CASING
3	TERMINAL BLOCK	7	IMPELLER SEAL	11	INLET COVER
4	MOTOR	8	BODY	-	-

HCP EHMf

External Figure

HCP-1100EHMF(S)~HCP-2500EHMF(S)

HCP-4000EHMF(S)

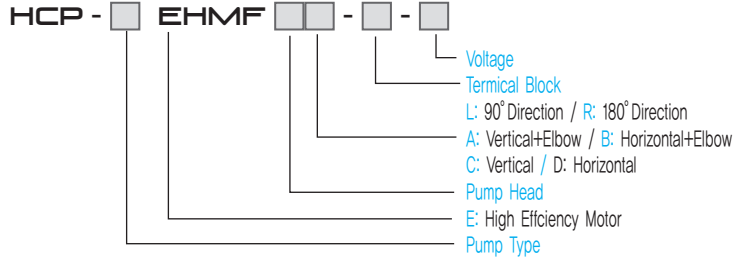


Dimension

Type	Item	ØD	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	PE (PT)	TL	R1	LA	N-ØB	PL1	PL2	M	ML	PK (PF)
HCP-1100EHMF		169	13	25	179	272.5	136	97	219.5	164	68	20	115	3/4"	451	170	215	4-12	119	100	200	115	1 1/2"
HCP-1100EHMF(S)		162.5	13	25	154	272.5	111	97	219.5	164	68	20	90	3/4"	426	170	215	4-12	119	100	200	115	1 1/2"
HCP-1800EHMF		86	13	25	243	280	199	97	227	164	83	20	178	3/4"	523	170	215	4-12	137	100	200	115	1 1/2"
HCP-1800EHMF(S)		186	13	25	195	280	151	97	227	164	83	20	130	3/4"	475	170	215	4-12	137	100	200	115	1 1/2"
HCP-2500EHMF		186	13	25	290	306	246	97	253	164	83	20	224	3/4"	596	170	215	4-12	137	100	200	115	1 1/2"
HCP-2500EHMF(S)		186	13	25	250	306	206	97	253	164	83	20	184	3/4"	556	170	215	4-12	137	100	200	115	1 1/2"
HCP-4000EHMF		186	13	25	359	326	316	97	273	170	95	20	302	3/4"	687	170	215	4-12	154	100	200	115	1 1/2"
HCP-4000EHMF(S)		186	13	25	312	326	269	97	273	170	95	20	255	3/4"	638	170	215	4-12	154	100	200	115	1 1/2"



Model



Structure

- 사용환경에 따라 Vertical과 Horizontal형태로 제작
- 동일한 펌프 취부자리로 교체가 용이함.
- HCP-4000EHMF280S는 기존 펌프와 달리 IN, OUT이 반대로 되어 있어 Mechanical Seal부에 진공압이 발생되어 누유 발생 문제를 줄임.
- Either vertical or horizontal type possible depending on manufacturing environment.
- Easily replaced to the area in the same pump.
- Unlike existing pump, HCP-4000EHMF280S has IN and OUT the other way round and therefore minimizes oil leakage as pressure is formed inside mechanical seal.

Feature

1. HCP-HMF(S) Type과 동일한 압력형 다단 원심펌프
 2. 고압의 절삭유 토출로 대형·정밀 공작기계의 가공물 냉각 및 세척용 펌프로 사용
 3. Mechanical Seal이 장착되어 장시간의 공회전은 금지함 (공회전 30초 이상 금지)
 4. 일체형 축으로 제작되어 내구성과 관리가 용이함
1. Multi-step centrifugal pump that is identical with HCP-HMF(S) Type.
 2. Used as cooling and cleaning pump for large scale / high precision manufacturing machine via discharge of high pressure cutting oil.
 3. Prolonged idling is prohibited due to the installed mechanical seal. (Idling for more than 30 seconds is prohibited)
 4. It is produced with a single-unit shaft, which increases durability and makes management easy.

Pump Spec.

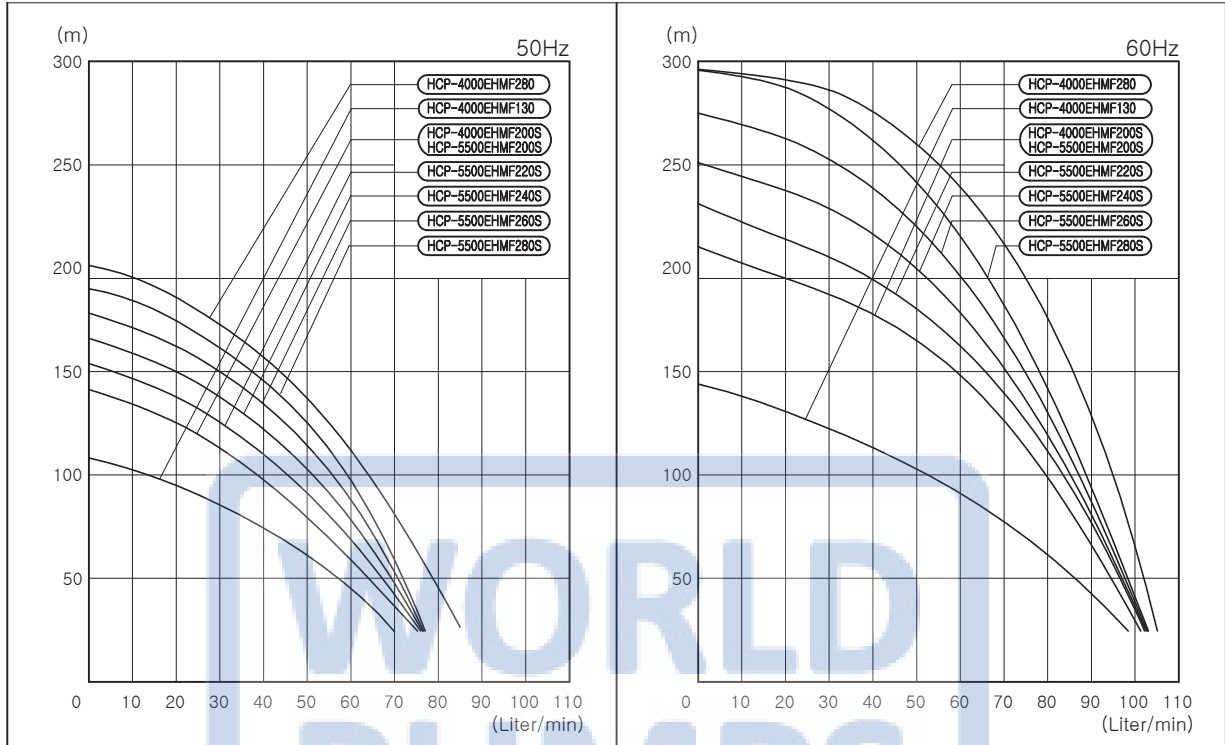
Specification Type	MOTOR						PUMP		
	OUTPUT (W)	FREQUENCY (Hz)	VOLTAGE (V)	CURRENT (A)	PHASE	POLES	TOTAL HEAD (m)	DIS. VOL (ℓ/min)	PIPE SIZE (PT)
HCP-4000EHMF130	4000	50	200 380	16.0 8.5	3	2	90	20	3/4"
		60	200/220 380	18.0/17.0 10.7			130		
HCP-4000EHMF200	4000	50	200 380	16.0 8.5	3	2	125	20	3/4"
		60	200/220 380	18.0/17.0 10.7			200		
HCP-4000EHMF280S	4000	50	200 380	15.0 9.0	3	2	195	20	3/4"
		60	200/220 380	18.0 10.7			280		
HCP-5500EHMF200	5500	50	200 380	17 10.5	3	2	145	20	3/4"
		60	220 380	25 14.5			200		
HCP-5500EHMF220	5500	50	200 380	17 10.5	3	2	155	20	3/4"
		60	220 380	25 14.5			220		
HCP-5500EHMF240	5500	50	200 380	17 10.5	3	2	165	20	3/4"
		60	220 380	25 14.5			240		
HCP-5500EHMF260	5500	50	200 380	17 10.5	3	2	175	20	3/4"
		60	220 380	25 14.5			260		
HCP-5500EHMF280	5500	50	200 380	17 10.5	3	2	185	20	3/4"
		60	220 380	25 14.5			280		

Packing Spec.

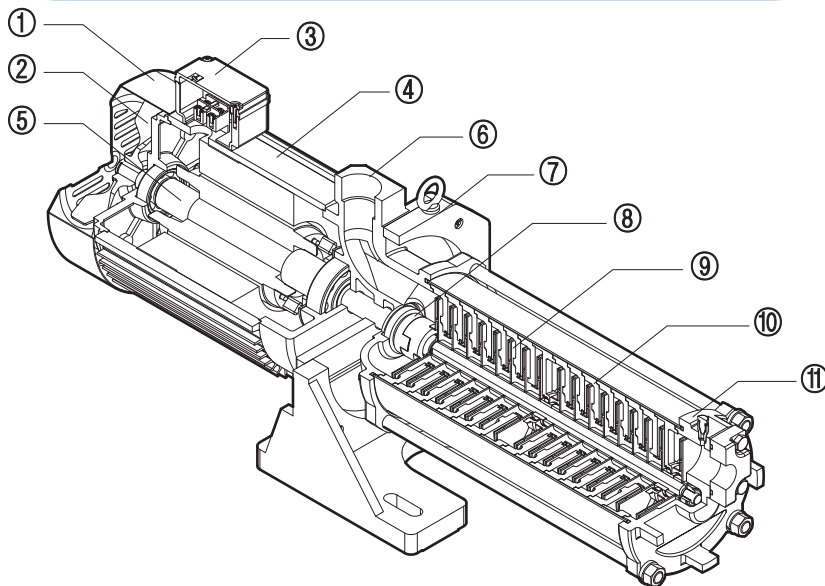
MODEL NAME	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PACKING
HCP-4000EHMF130	80(W) x 27(L) x 31(D)	44(A, C), 54(B, D)	45(A, C), 55(B, D)
HCP-4000EHMF200		49(A, C), 59(B, D)	50(A, C), 60(B, D)
HCP-4000EHMF280S		59(A, C), 69(B, D)	60(A, C), 70(B, D)
HCP-5500EHMF200	100(W) x 28(L) x 33(D)	59(A, C), 69(B, D)	60(A, C), 70(B, D)
HCP-5500EHMF220		62(A, C), 72(B, D)	63(A, C), 73(B, D)
HCP-5500EHMF240		64(A, C), 74(B, D)	65(A, C), 75(B, D)
HCP-5500EHMF260		67(A, C), 77(B, D)	68(A, C), 78(B, D)
HCP-5500EHMF280		69(A, C), 79(B, D)	70(A, C), 80(B, D)

Performance Curve

Oil for testing: ISO-VG2, Temperature 20°C



- 비수용성 절삭유 사용시 32cSt 이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력·유량)이 저하됨.
- When using non water-soluble cutting fluid, Viscosity must be under 32cSt, Pump performance (pressure and quantity) will decrease compared to water-soluble cutting fluid.

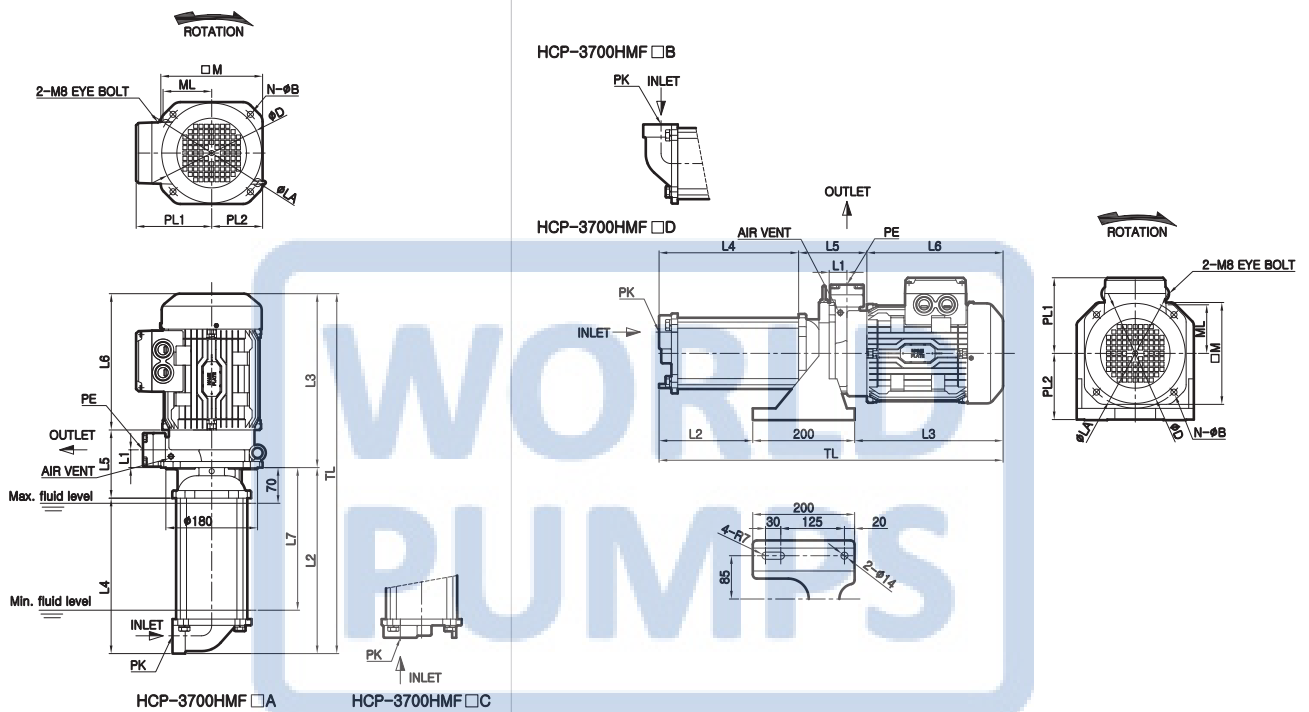


No	PART NAME	No	PART NAME	No	PART NAME
1	FAN COVER	5	SHAFT	9	IMPELLER
2	FAN	6	BODY	10	IMPELLER CASING
3	TERMINAL BLOCK	7	FLANGE	11	INLET COVER
4	MOTOR	8	IMPELLER SEAL	-	-

External Figure

HCP-4000HMF □A / □C

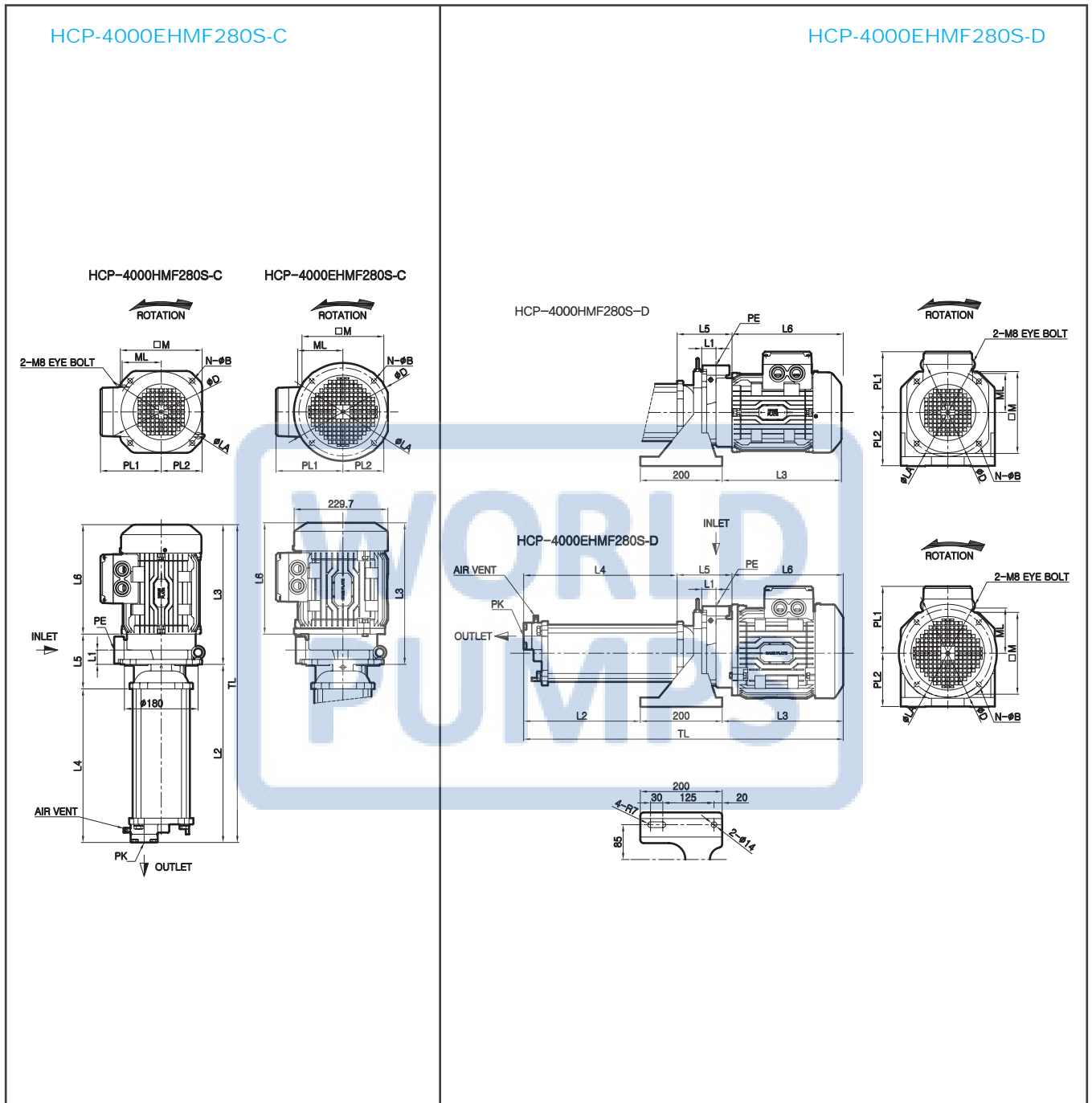
HCP-4000HMF □B / □D



Dimension

Type	Item	∅ D	L1	L2	L3	L4	L5	L6	L7	PE (PT)	TL	LA	N-∅B	PL1	PL2	M	ML	PK (PF)
HCP-4000HMF130A		196.4	35	291.1	341.5	231.2	134	267.5	200	3/4"	632.7	215	4-12	148.5	100	200	95.5	1 1/2"
HCP-4000HMF130B		196.4	35	141.2	291.5	231.2	134	267.5	-	3/4"	632.7	215	4-12	148.5	130	200	95.5	1 1/2"
HCP-4000HMF130C		196.4	35	260.1	341.5	200.1	134	267.5	200	3/4"	601.6	215	4-12	148.5	100	200	95.5	1 1/4"
HCP-4000HMF130D		196.4	35	110.1	291.5	200.1	134	267.5	-	3/4"	601.6	215	4-12	148.5	130	200	95.5	1 1/4"
HCP-4000HMF200A		196.4	35	365.2	341.5	305.2	134	267.5	280	3/4"	706.7	215	4-12	148.5	100	200	95.5	1 1/2"
HCP-4000HMF200B		196.4	35	215.2	291.5	305.2	134	267.5	-	3/4"	706.7	215	4-12	148.5	130	200	95.5	1 1/2"
HCP-4000HMF200C		196.4	35	334.1	341.5	274.1	134	267.5	280	3/4"	675.6	215	4-12	148.5	100	200	95.5	1 1/4"
HCP-4000HMF200D		196.4	35	184.1	291.5	274.1	134	267.5	-	3/4"	675.6	215	4-12	148.5	130	200	95.5	1 1/4"

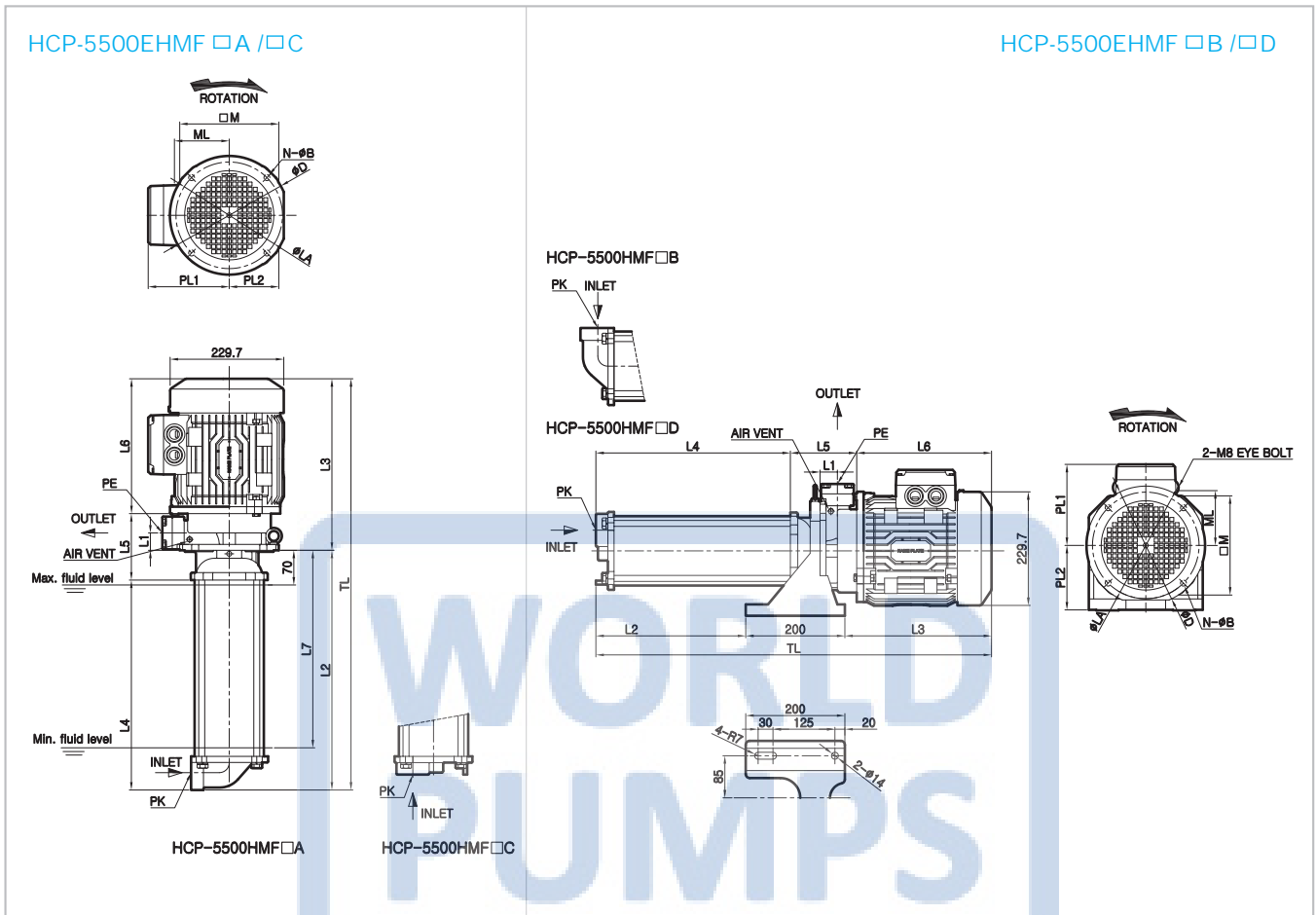
External Figure



Dimension

Type	Item	ø D	L1	L2	L3	L4	L5	L6	PE (PT)	TL	LA	N-ØB	PL1	PL2	M	ML	PK (PF)
HCP-4000EHMF200S-C		239.4	35	436	346	376	144	272	1 1/4"	797	215	4-12	163	100	200	110.5	3/4"
HCP-4000EHMF200S-D		239.4	35	286	296	376	144	272	1 1/4"	797	215	4-12	163	130	200	110.5	3/4"
HCP-4000EHMF280S-C		239.4	35	436	346	376	144	272	1 1/4"	782	215	4-12	163	100	200	110.5	3/4"
HCP-4000EHMF280S-D		239.4	35	286	296	376	144	272	1 1/4"	782	215	4-12	163	130	200	110.5	3/4"

External Figure



Dimension

Type	Item	∅ D	L1	L2	L3	L4	L5	L6	L7	PE (PT)	TL	LA	N-∅ B	PL1	PL2	M	ML	PK (PF)
HCP-5500ELMF200A		239	35	384	346	324	144	272	298,5	3/4"	730	215	4-12	163,5	100	200	110,5	1 1/2"
HCP-5500ELMF200B		239	35	233,7	296	324	144	272	-	3/4"	730	215	4-12	163,5	130	200	110,5	1 1/2"
HCP-5500ELMF200C		239	35	353	346	293	144	272	298,5	3/4"	699	215	4-12	163,5	100	200	110,5	1 1/4"
HCP-5500ELMF200D		239	35	203	296	293	144	272	-	3/4"	699	215	4-12	163,5	130	200	110,5	1 1/4"
HCP-5500ELMF220A		239	35	410	346	350	144	272	324,3	3/4"	756	215	4-12	163,5	100	200	110,5	1 1/2"
HCP-5500ELMF220B		239	35	260	296	350	144	272	-	3/4"	756	215	4-12	163,5	130	200	110,5	1 1/2"
HCP-5500ELMF220C		239	35	379	346	318	144	272	324,3	3/4"	724	215	4-12	163,5	100	200	110,5	1 1/4"
HCP-5500ELMF220D		239	35	228	296	318	144	272	-	3/4"	724	215	4-12	163,5	130	200	110,5	1 1/4"
HCP-5500ELMF240A		239	35	428	346	368	144	272	342,8	3/4"	774	215	4-12	163,5	100	200	110,5	1 1/2"
HCP-5500ELMF240B		239	35	278	296	368	144	272	-	3/4"	774	215	4-12	163,5	130	200	110,5	1 1/2"
HCP-5500ELMF240C		239	35	397	346	337	144	272	342,8	3/4"	743	215	4-12	163,5	100	200	110,5	1 1/4"
HCP-5500ELMF240D		239	35	247	296	337	144	272	-	3/4"	743	215	4-12	163,5	130	200	110,5	1 1/4"
HCP-5500ELMF260A		239	35	465	346	405	144	272	379,8	3/4"	811	215	4-12	163,5	100	200	110,5	1 1/2"
HCP-5500ELMF260B		239	35	315	296	405	144	272	-	3/4"	811	215	4-12	163,5	130	200	110,5	1 1/2"
HCP-5500ELMF260C		239	35	434	346	374	144	272	379,8	3/4"	780	215	4-12	163,5	100	200	110,5	1 1/4"
HCP-5500ELMF260D		239	35	284	296	374	144	272	-	3/4"	780	215	4-12	163,5	100	200	110,5	1 1/4"
HCP-5500ELMF280A		239	35	484	346	424	144	272	398,3	3/4"	830	215	4-12	163,5	100	200	110,5	1 1/2"
HCP-5500ELMF280B		239	35	334	296	424	144	272	-	3/4"	830	215	4-12	163,5	130	200	110,5	1 1/2"
HCP-5500ELMF280C		239	35	452	346	392	144	272	398,3	3/4"	798	215	4-12	163,5	100	200	110,5	1 1/4"
HCP-5500ELMF280D		239	35	302	296	392	144	272	-	3/4"	798	215	4-12	163,5	130	200	110,5	1 1/4"



Model

HCP - [] - [] / [] - []

- Terminal Block
- L: 90° Direction
- R: 180° Direction
- Impeller Stage □
- Casing Stage □
- Pump Type □ : 750EMS
- : 1100EMS

Structure

- 동일한 펌프 취부자리로 교체가 용이함
- 사용 TANK 깊이에 따라 다양한 침수 깊이로 제작이 가능함
- 다단펌프로 광범위한 성능 구현이 가능
- Easy to replace it with identical pump attachment area.
- Depending on tank depth, it can be manufactured with various immersion depth.
- A multi-stage pump capable of a wide range of performances.

Feature

1. 주요 구동부가 Stainless로 제작되어 내구성 및 내식성이 우수함
2. 소형으로 설치공간의 제약이 있는 경우 사용
3. 압력형과 유량형 펌프로 구분되며 다양한 성능 범위를 갖고 있음

1. The main drive parts are made with stainless materials, which increase durability and corrosion resistance.
2. It is compact, and can be used when there are limitations on instillation space.
3. It is separated into a pressure type and a oil quantity type, and has a wide range of performances.

Pump Spec.

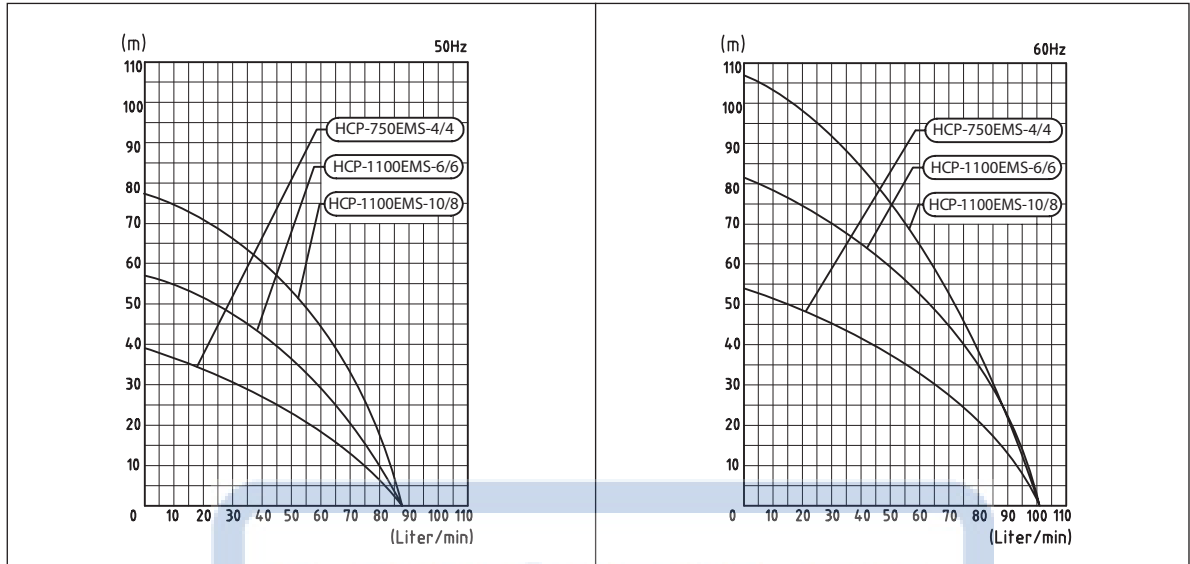
Specification Type	MOTOR						PUMP		
	OUTPUT (W)	FREQUENCY (Hz)	VOLTAGE (V)	CURRENT (A)	PHASE	POLES	TOTALHEAD (m)	DIS. VOL (l/min)	PIPE SIZE (PT)
HCP-550EMS-4/3	550	50	220 380	2.5 1.5	3	2	23	30	3/4"
		60	220 380	2.2 1.3			35		
HCP-750EMS-4/4	750	50	220 380	3.2 2.0	3	2	30	35	3/4"
		60	220 380	3.4 2.2			45		
HCP-1100EMS-6/6	1100	50	220 380	4.2 2.5	3	2	45	30	3/4"
		60	220 380	4.6 3.0			70		
HCP-1100EMS-10/8	1100	50	220 380	5.4 3.0	3	2	75	20	3/4"
		60	220 380	6.1 5.5			100		

Packing Spec.

MODEL NAME	PACKING SIZE(cm)	WEIGHT(kg)	
		PUMP	PACKING
HCP-550EMS-4/3	51(W) x 28(L) x 26(D)	11.5	12.3
HCP-750EMS-4/4	51(W) x 28(L) x 26(D)	12	12.8
HCP-1100EMS-6/6	51(W) x 28(L) x 26(D)	15.6	16.4
HCP-1100EMS-10/8	58(W) x 28(L) x 26(D)	17.5	18.5

Performance Curve

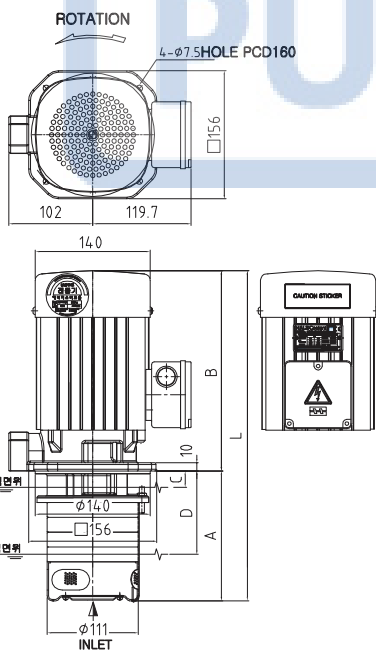
Oil for testing: ISO-VG2, Temperature 20°C



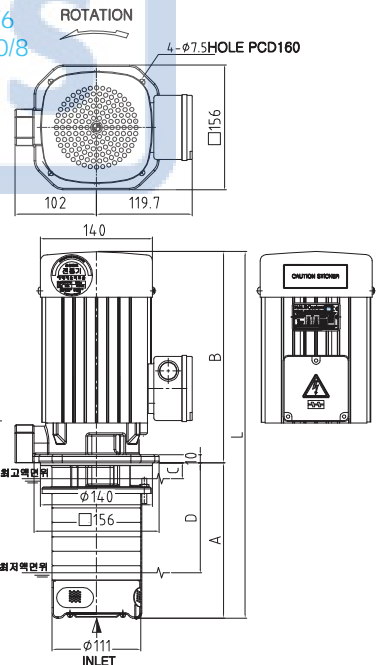
- 비수용성 절삭유 사용시 32cSt 이하의 점도를 사용하여야 하며, 수용성 절삭유에 비하여 펌프성능(압력·유량)이 저하됨.
- When using non water-soluble cutting fluid, Viscosity must be under 32cSt, Pump performance (pressure and quantity) will decrease compared to water-soluble cutting fluid.

External Figure

HCP-550EMS-4/3
HCP-750EMS-4/4



HCP-1100EMS-6/6
HCP-1100EMS-10/8



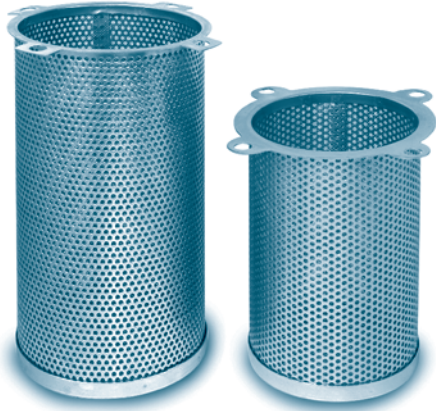
Dimension

Type	Item	A	B	C	D	L
HCP-550EMS-4/3		160	244	20	102	404
HCP-750EMS-4/4		160	244	20	102	404
HCP-1100EMS-6/6		196	264	20	138	460
HCP-1100EMS-10/8		267	264	20	210	531

Technical Data

Model	No. of Casing	No. of Impeller	FREQUENCY (Hz)	VOLTAGE (V)	CURRENT(A)		TOTAL HEAD(M)		DIS.VOL (ℓ/min)	Immersion Depth (mm)	Total Height (mm)	Remarks
					50Hz	60Hz	50Hz	60Hz				
					220V/380V	220V/380V						
HCP-550EMS-	3	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	142	386	
	3	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	142	386	
	3	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	142	386	
	4	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	160	404	
	4	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	160	404	
	4	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	160	404	
	5	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	178	422	
	5	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	178	422	
	5	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	178	422	
	6	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	196	440	
	6	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	196	440	
	6	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	196	440	
	7	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	214	458	
	7	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	214	458	
	7	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	214	458	
	8	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	232	476	
	8	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	232	476	
	8	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	232	476	
	9	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	250	494	
	9	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	250	494	
	9	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	250	494	
10	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	268	512		
10	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	268	512		
10	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	268	512		
11	1	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	8	12	30	286	530		
11	2	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	16	23	30	286	530		
11	3	50Hz/60Hz	220V/380V	2.5/1.5	2.2/1.3	23	35	30	286	530		
HCP-750EMS-	4	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	160	404	
	5	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	178	422	
	5	5	50Hz/60Hz	220V/380V	3.6/2.5	4.0/3.0	37	55	30	178	422	
	6	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	196	440	
	6	5	50Hz/60Hz	220V/380V	3.6/2.5	4.0/3.0	37	55	30	196	440	
	7	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	214	458	
	7	5	50Hz/60Hz	220V/380V	3.6/2.5	4.0/3.0	37	55	30	214	458	
	8	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	232	476	
	8	5	50Hz/60Hz	220V/380V	3.6/2.5	4.0/3.0	37	55	30	232	476	
	9	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	250	494	
	9	5	50Hz/60Hz	220V/380V	3.6/2.5	4.0/3.0	37	55	30	250	494	
	10	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	268	512	
	10	5	50Hz/60Hz	220V/380V	3.6/2.5	4.0/3.0	37	55	30	268	512	
11	4	50Hz/60Hz	220V/380V	3.2/2.0	3.4/2.2	30	45	30	286	530		
11	5	50Hz/60Hz	220V/380V	3.6/2.5	4.0/3.0	37	55	30	286	530		
HCP-1100EMS-	6	6	50Hz/60Hz	220V/380V	4.2/2.5	4.6/3.0	50	70	30	196	460	
	7	6	50Hz/60Hz	220V/380V	4.2/2.5	4.6/3.0	50	70	30	214	478	
	7	7	50Hz/60Hz	220V/380V	4.5/3.0	5.0/3.5	53	77	30	214	478	
	8	6	50Hz/60Hz	220V/380V	4.2/2.5	4.6/3.0	50	70	30	232	496	
	8	7	50Hz/60Hz	220V/380V	4.5/3.0	5.0/3.5	53	77	30	232	496	
	8	8	50Hz/60Hz	220V/380V	4.7/3.2	6.0/4.0	75	100	20	232	496	
	9	6	50Hz/60Hz	220V/380V	4.2/2.5	4.6/3.0	50	70	30	250	513	
	9	7	50Hz/60Hz	220V/380V	4.5/3.0	5.0/3.5	53	77	30	250	513	
	9	8	50Hz/60Hz	220V/380V	4.7/3.2	6.0/4.0	75	100	20	250	513	
	10	6	50Hz/60Hz	220V/380V	4.2/2.5	4.6/3.0	50	70	30	268	531	
	10	7	50Hz/60Hz	220V/380V	4.5/3.0	5.0/3.5	53	77	30	268	531	
	10	8	50Hz/60Hz	220V/380V	4.7/3.2	6.0/4.0	75	100	20	268	531	
	11	6	50Hz/60Hz	220V/380V	4.2/2.5	4.6/3.0	50	70	30	286	550	
11	7	50Hz/60Hz	220V/380V	4.5/3.0	5.0/3.5	53	77	30	286	550		
11	8	50Hz/60Hz	220V/380V	4.7/3.2	6.0/4.0	75	100	20	286	550		

● MOTOR 출력은 550W, 750W, 1100W 세가지 종류이며 IE-3등급 모터임. Three types of motors of Class IE-3 are used (550W, 750W, 1100W)
 ● Pipe Size는 PT 3/4" 로 공통임. Pipe Size is common as PT 3/4"



Model

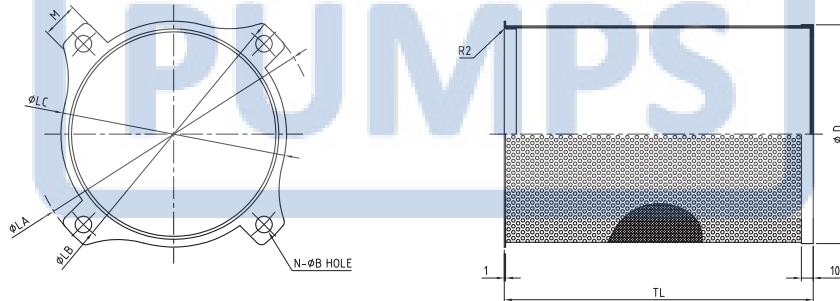
HCS - Model Name

Feature

1. 본 HCS-TYPE은 침수형 Coolant Pump인 HCP-F, HCP-MF용 Suction Filter임
 2. 펌프의 이물질 흡입을 방지하므로, 내구성을 보장하며 가공물의 정도를 향상시킴
 3. 원활한 사용을 위해 주기적인 청소가 필요함
 4. 펌프의 형태에 따라 F-TYPE은 20Mesh, MF-TYPE은 14Mesh의 여과망을 사용
1. This HCS-type is a suction filter for the submerged type coolant pumps HCP-F and HCP-MF.
 2. It prevents the entry of foreign substances to the pump, ensuring durability and increased viscosity.
 3. It requires regular cleaning for optimum use.
 4. The F-type uses a 20Mesh filter, and the MF-type uses a 14Mesh filter.

External Figure

HCP-60F-900



Type	Item	øD	øR1	TL	øLA	øLB	øLC	M	N-øB
HCS-180F		124	117	180	180	160	143	30	4-ø12
HCS-250F		140	133	255	180	160	150	30	4-ø12
HCS-400F		144	137	285	202	180	153	30	2-ø12
HCS-418F		161	154	186	200	180	176	30	4-ø12
HCS-419F		161	154	215	200	180	176	30	4-ø12
HCS-428F		161	154	286	200	180	176	30	4-ø12
HCS-1100EHMF		184	177	190	240	215	199	30	4-ø12
HCS-1100EMF		184	177	260	240	215	199	30	4-ø14
HCS-1800EHMF		184	177	205	240	215	199	30	4-ø14
HCS-1800EMF		184	177	285	240	215	199	30	4-ø14
HCS-4000EBMF		193	186	360	240	215	199	30	4-ø14
HCS-4000EHMF200C		193	186	345	240	215	199	30	4-ø14
HCS-4000EHMF		193	186	320	240	215	199	30	4-ø14

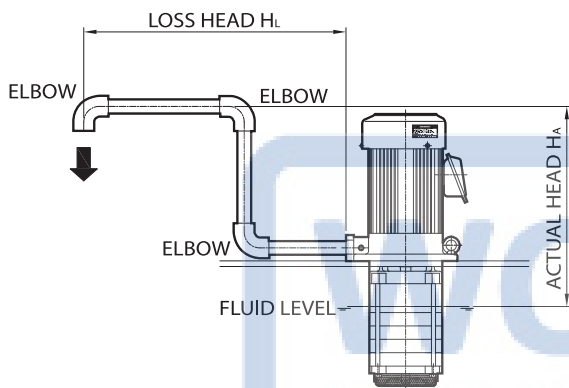
펌프의 선정 방법은 배관의 경로와 연결방식에 의해서 결정된다. 손실양정은 파이프의 길이와 배관부품의 수로 결정되어 진다. 따라서, 배관 경로 설계시 파이프 길이는 되도록 짧게하고 엘보나 기타 피팅 및 밸브는 필요한 수만 사용하는 것이 손실양정을 적게하는 방법이다.

적정한 배관 설계를 바탕으로 얻어진 전양정과 필요한 유량을 기준으로 펌프를 선정할 수 있고, 선정하는 방법은 아래와 같은 과정으로 계산할 수 있다.

The selection of the pump is made according to the pipe path and the connection method. The loss of head is decided by the pipe length and the number of pipe components. Hence, when designing the pipe path, the pipe length should be kept as short as possible, and elbows or other fittings and valves should be kept to the minimum necessary number to minimize loss of head.

A pump can be selected based on the total head and required oil quantity acquired through an optimum piping design, and the selection method can be calculated as follows:

양정 계산 방법 (Head Calculation Method)



사용자가 원하는 전체양정인 전양정(H_T)은 실제양정(H_A)과 손실양정(H_L)의 합을 뜻하며, 아래와 같이 나타낸다.

The total head (H_T) as required by the user is the sum of the actual head (H_A) and the loss of head (H_L), and is expressed as below.

$$H_T = H_A + H_L$$

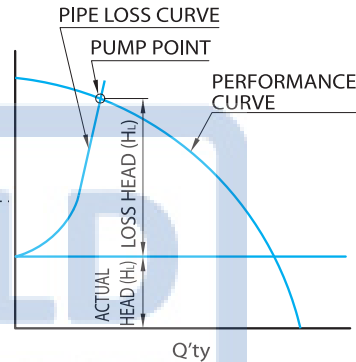
상단 도면과 같이 실제양정에 손실양정을 더한 전양정 값과 이때 필요한 유량을 기준으로 펌프를 선정하면 된다.

※ 사용환경과 사용유의 점도에 따라 계산값의 변화가 있다.
[손실양정 계산은 아래의 방법으로 구할 수 있다.]

As illustrated in the diagram on the top, the pump can be selected based in the total head calculated by adding the actual head to the loss of head, and the required oil quantity.
※ The calculated values differ according to operational environments and oil viscosity.

[The loss of head can be calculated as follows:]

$$H_L = f \times \frac{L}{d} \times \frac{V^2}{2g}$$



여기서,

f=관마찰계수 (레이놀드 수에 의해 결정)

※ 수용성오일 0.03, 점도가 높을 수록 계수값은 증가함

L=관의 길이 (m) d=파이프 내경 (m)

V=유체의 속도 (m/s) g=중력가속도 (9.8m²/s)

관의 길이 L 값은 전체 배관길이 뿐만 아니라, 각종 배관부품의 손실 길이 값도 포함해야 한다. 각종 부품에 대한 손실 길이 값은 하기 표를 참조하여 값을 더한다.

EX) 전체 파이프길이 + 엘보길이 x 갯수 + 흡입 + 토출 = 전체 관길이 (L)

Here,

f= pipe coefficient of friction (decided by the Reynolds number)

※ Water-soluble oil 0.03, coefficient value increases with viscosity

L=pipe length (m) d=pipe internal diameter (m)

V=fluid speed (m/s) g=gravitational acceleration (9.8m²/s)

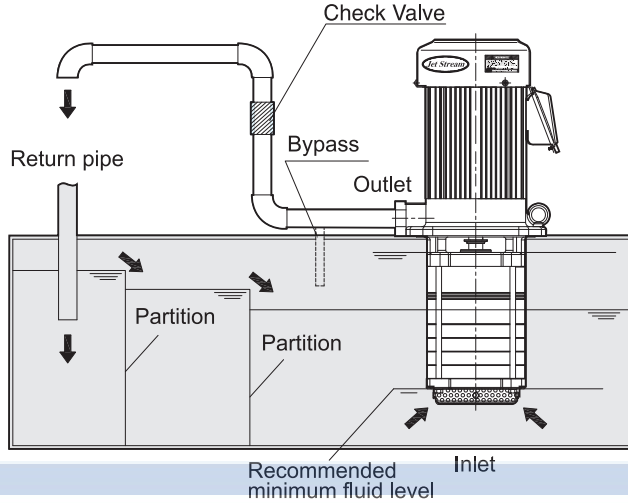
L, the pipe length, is not only the length of the total piping, but also includes piping components' length loss values. Refer to the below table to calculate the length loss values for the components.

EX) Total pipe length + elbow length x quantity + suction + discharge = total piping length (L)

SIZE	INFLOW	OUTFLOW	90° ELBOW	BALLVALVE
8A(1/4B)	0.3	0.6	0.7	6.4
10A(3/8B)	0.4	0.8	0.9	6.7
15A(1/2B)	0.6	1.2	1.1	6.7

SIZE	INFLOW	OUTFLOW	90° ELBOW	BALLVALVE
20A(3/4B)	0.8	1.6	1.3	7.3
25A(1B)	1.1	2.2	1.6	8.8
40A(1 1/2B)	1.9	3.2	2.3	12.8

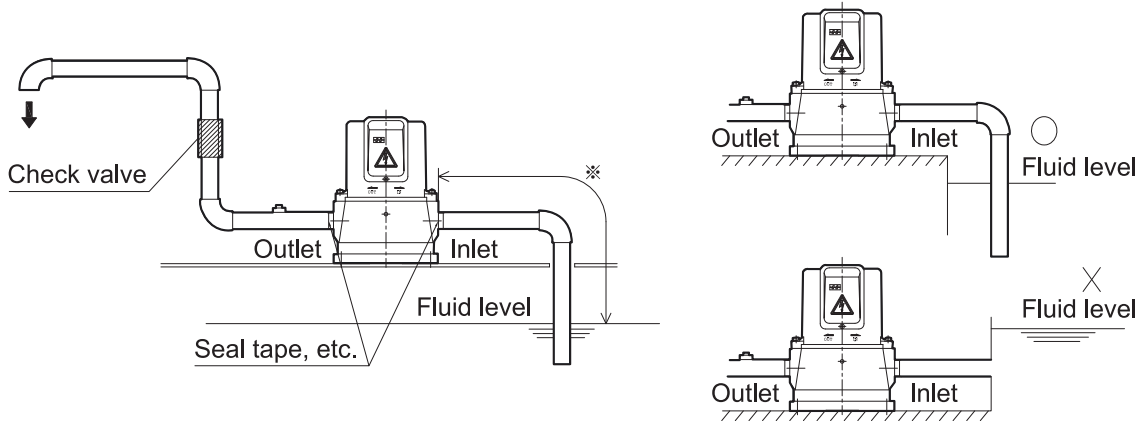
전기종 (All Type)



- ① 파이프 길이는 되도록 짧게 하고, 엘보, 피팅 그리고 각종 밸브들의 수도 적게하여 주십시오. 또한, 파이프는 정식 규격품을 사용하여 주십시오. 만약 파이프가 가늘거나, 많은 굴곡이 있는 경우 토출량이 줄어듭니다.
- ② 연결한 파이프의 무게가 바로 펌프에 영향이 없도록 배관해 주십시오.
- ③ 펌프 나사부 연결시 과도한 힘으로 조립하지 마십시오.
- ④ 사용유나 에어혼입을 방지하기 위하여 배관 연결시 실 테이프와 같은 누유방지 후 배관하여 주십시오.
- ⑤ 탱크는 폭이 넓게 제작하여 주십시오. 사용펌프의 토출량의 적어도 3배 이상의 크기의 탱크 용량으로 제작하십시오. 탱크의 용량이 충분하지 못할 경우 토출량의 저하나, 사용유의 온도상승, 흡입 스트레이너로의 이물질이나 기포 등에 따라 막히는 현상등의 문제점이 발생합니다. 탱크내 사용유 보충시 에어 혼입을 방지하기 위하여 천천히 공급해 주십시오.
- ⑥ 칩, 먼지 또는 다른 이물질의 펌프 유입을 막아주십시오. 탱크내 3단계의 오일 턱을 제작하거나, 적어도 1단계의 오일턱과 필터를 사용해 주십시오.
- ⑦ 만약, 수격현상이 발생할 경우 펌프 토출부 바로 앞에 바이패스 할 수 있도록 배관을 설치하여 주십시오.
- ⑧ 만약 수위면이 낮을 경우 공기가 혼입되거나, 사용유 토출이 되지 못합니다. 탱크내 최저 수위는 추천하는 수위까지 채워주십시오. 사용유의 점도에 따라 수위 높이는 다르지만, 안전을 고려하여 실제 수위는 충분히 높게 책정하여 주십시오. 반면 수위면이 너무 높은 경우 모터부 틈으로 사용유가 유입되어 모터 소손이 발생합니다. 따라서, 최고 수위면은 추천하는 최대 수위면이 넘지 않도록 하여 주십시오.

- ① Keep the pipe length to a minimum, as well as the number of elbows, fittings and various valves. Also, use officially standardized products. If the pipe is thin, or has many curves, the discharge quantity will decrease.
- ② Make sure that the pipe's weight does not directly affect the pump.
- ③ When connecting the pump screws, do not use excessive force.
- ④ To prevent the entry of oil or air, take oil leak prevention measures, for example by using seal tapes, before piping.
- ⑤ Use tanks with large widths. Even if the discharge quantity is small, produce a tank that is at least 3 times the size. If the tank capacity is insufficient, it may cause reductions in discharge quantity, increase in oil temperature, clogging caused by foreign substances or bubbles in the strainer. When supplying oil inside the tank, supply slowly to prevent the adulteration of air.
- ⑥ Make sure to prevent the entry of chips, dust, and other foreign substances into the pump. Produce a 3-level oil thresholds inside the tank, or use at least a 1-level oil threshold and a filter.
- ⑦ In the event of water hammer effects, install a bypass pipe in front of the discharge outlet.
- ⑧ If the oil level is low, air can mix, or oil will not be discharged. Keep the minimum tank oil level as recommended. Oil levels differ according to oil viscosity, but make sure to keep the actual level sufficiently high. However, if the oil level is too high, oil can enter through the gap in the motor section, and cause motor damage. Hence, make sure that the oil level does not exceed the recommended maximum oil level.

HCP-S type

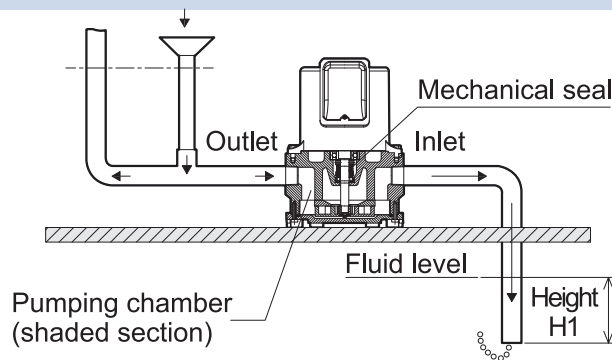


- ▶ HCP-S TYPE은 탱크에 가까이 설치하고, 흡입 파이프의 길이도 최대한 짧게 하여 주십시오.
- ▶ 최대 흡입 배관길이는 (※) 0.7m 이하로 하십시오.
- ▶ 다른 이유로 흡입배관을 연장할 경우 토출부 파이프에 체크밸브를 연결해 주십시오.
- ▶ 흡입배관 연결부도 실 테이프와 같이 확실한 누유방지 후 배관하여 주십시오. 만약 흡입부로 에어 혼입시 토출량 저하 및 펌핑의 이상이 발생합니다.
- ▶ 펌프의 흡입부 수위는 반드시 펌프 흡입부 보다 낮아야 합니다. 수위가 높을 경우 MECHANICAL SEAL로부터 오일 누유가 발생 할 수 있습니다.

- ▶ Install the HCP-STYPE close to the tank, and keep length of the suction pipe to a minimum.
- ▶ Keep the maximum length of the suction pipe below (※)0.7m.
- ▶ When extending the suction pipe for other reasons, connect a check valve to the discharge pipe
- ▶ Make sure to take oil leak prevention measures, for example by using a seal tape, before installing the suction pipe connection. If air enters the suction pipe, it can cause pumping and reduced discharge quantity.
- ▶ The oil level at the pump suction section needs to be lower than the pump suction section. If the oil level is high, it can cause oil leaks from the mechanical seal.

기름마중

Priming

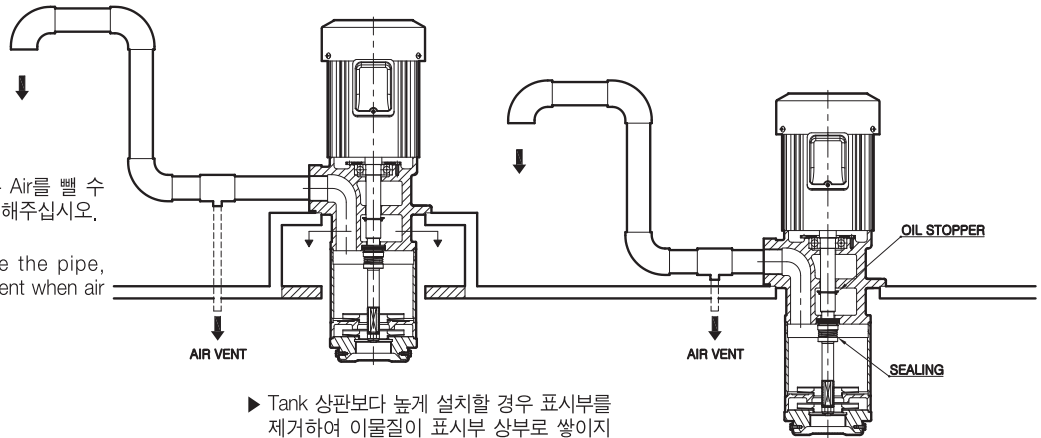


- ▶ HCP-S TYPE의 경우 처음 구동할 경우나, 오랜 휴식후 구동할 경우 펌프내 에어가 차 있게 됩니다. 따라서 펌핑을 하기 위해서는 에어를 빼주어야 합니다. 만약 에어가 있는 상태에서 구동할 경우 사용유 토출이 안되거나, 압력 저하나 유량 저하의 원인이 됩니다. 또한 이에 따른 과도한 공회전을 하게 되면 MECHANICAL SEAL의 파손의 원인이 됩니다.
- ▶ HCP-S TYPE의 기름마중 방법은 도면과 같이 토출부 앞부분에 사용유를 넣어주십시오.

- ▶ As with the HCP-S type, there will be air inside the pump when using it after a prolonged rest. Therefore, to operate the pump, air needs to be let out. If it is operated with the presence of air, the oil will not discharge, or it may cause pressure reduction and oil quantity reduction. Moreover, the consequent excessive idling will cause mechanical seal damage.
- ▶ For HCP-S type oil priming, inject oil into the front of the discharge section as set out in the diagram.

HCP-MF & HMF type

- ▶ Drain 배관설치:
배관 내에 Air가 찰 경우 Air를 뺄 수 있는 Air vent배관을 설치해주시시오.
- ▶ Install drain pipe:
if air can enter inside the pipe, install the pump in air vent when air can be released.

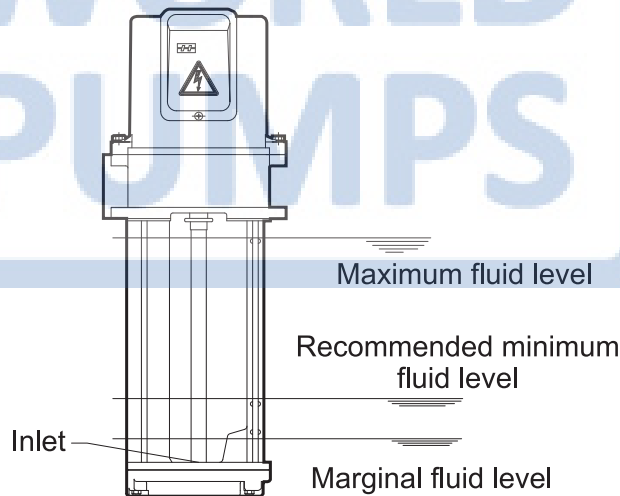


- ▶ Tank 상판보다 높게 설치할 경우 표시부를 제거하여 이물질이 표시부 상부로 쌓이지 않도록 넓게 제작해 주십시오.
- ▶ When installing higher than the upper board of tank, remove the display unit and build it with a large space so that impure materials cannot accumulate over the display unit's upper part.

- ▶ Pump Flange 상부로 사용액이 흐를 경우 Sealing을 교체하여야 합니다.
- ▶ If liquid is discharged from the upper part of plump flange, sealing must be replaced.

펌프사용

Use the Pump



- ▶ 펌프 사용은 CATALOG 및 명판상 에 기재되어 있는 규격의 범위 내에 사용하시기 바랍니다. 또한, 펌프의 성능이 저하된 경우에는 흡입부로 이물질 혼입의 원인이 크므로 탱크 청소는 정기적으로 1년에 2~3회씩 시행한 후 청정 사용유로 교체하여 재구동을 하여 주십시오.
- ▶ HCP-S TYPE 일체형 축으로 제작되었으며, 축봉장치로 MECHANICAL SEAL을 채택하였습니다. 따라서 지나친 공회전은 SEAL 파손의 원인이 되므로 30초 이상의 공회전은 삼가해 주십시오.
- ▶ 침수식 펌프의 경우 왼쪽 그림과 같이 사용유 수위면이 최대와 최소 사이에 위치하여야 합니다. 추천 최저 수위 이하로 떨어질 경우 구동중 에어 혼입이 일어 날수 있습니다. 또한, 펌프 바닥부터 탱크 까지 간격은 20~30mm 이상이 되도록 하여 주십시오. 최고수위는 펌프 플랜지부에서 적어도 20mm 정도 떨어지도록 하십시오.

- ▶ Make sure to use the pump within the standard range as set out in the catalog and the nametag. Also, in the event of lowered pump performance, it is most likely caused by the adulteration of foreign substances at the suction section. Please operate again with clean oil 2 to 3 times a year.
- ▶ HCP-S type have been produced with a single shaft, and use a mechanical seal as the stuffing box. Therefore, excessive idling can damage the seal, and idling for more than 30 seconds should be avoided.
- ▶ For submerged type pumps, the oil level needs to be between the maximum and the minimum levels as illustrated in the diagram on the left. If the level drops below the recommended level, air adulteration can occur during operations. Also, make sure that the gap between the floor and the tank is more than 20~30mm. Keep the maximum oil level at least 20mm lower that the flange section.

- 장치를 취급하기 전에 사용설명서에 제공된 모든 지시(설치, 교통, 유지보수, 검사 등)를 철저히 읽고 올바르게 장치를 사용합니다. 장치를 사용하기 전에 장치의 메커니즘과 안전 및 취급절차를 숙지하십시오.
- 전원이 공급되는 중에는 작업을 하지 마십시오. 주전원을 완전히 차단 후 작업하십시오.
- 정전의 경우 주전원스위치를 끄십시오.
- 이상이 발견된 경우 즉시 장치를 중지하고 주전원스위치를 끄십시오.
- 안전하게 지면에 접지단자를 연결합니다.
- 기기 · 배관 및 배선은 전기설비 및 내부배선표준에 대한 기술표준에 따라 수행되어야 한다.
- 보호 장치는 기기에 포함되지 않습니다. 전기 시설에 대한 기술표준에 지정된 대로 과전류 보호 장치의 설치는 필수입니다.
- 절삭칩, 절삭유 슬러지 또는 기타 이물질이 외부배선포트를 통해 단자함에 들어오지 않도록 충분한 방진 및 커넥터, 마개 등을 사용하여 방적조치를 하십시오.
- 폭발물 근처에서 사용하지 마십시오.
- 기기 근처에 인화성물질을 두지 마십시오.
- 이 제품은 등유, 가솔린이나 기타 휘발성 액체를 사용할 수 없습니다.
- MOTOR FAN, IMPELLER 등 회전체를 만지거나 접근하지 마십시오.
- 기기의 구멍(팬 커버, 펌프입구와 출구, 배수구 등)에 손가락이나 물체를 삽입하지 마십시오.
- 기기를 절대로 밟지 마십시오.
- 반드시 통풍이 자유롭고 장치주변을 깨끗이 합니다.
- 기기가 유지보수가 쉽고 (좁은 지역을 피해서) 검사를 할 수 있는 장소에 기기를 설치하십시오.
- 수평인 장소에 기기를 설치하십시오. 기기가 문제없는지 확인합니다.
- 사용되는 액체의 점도가 너무 높은 경우 모터의 수명이 단축되고 단선의 위험이 존재합니다.
- 기기가 연삭 및 유체절삭 등의 절삭유와 함께 사용하도록 설계되어 있습니다. 분말, 연마재, 세라믹 등의 미세한 슬러지가 혼합된 경우 메카니컬 씰의 수명이 상당히 줄어들 것입니다. 적절한 필터(자석이나 종이필터 등)를 설치합니다.
- 기기를 연결하기 전에 회전방향을 확인하십시오.
- 에어 벤트 밸브를 기기가 시작할 때 펌프의 밸브를 약간 열어 액체가 밸브에서 배출되어 있는지 확인합니다. 확인 후 확실하게 밸브를 닫습니다.
- 수리, 분해, 장치의 수정은 전문가에 의해 수행되어야 합니다.
- 고객의 임의로 기기수정에 따라 발생한 문제는 책임지지 않습니다.
- 이 카탈로그에 언급된 사양 이외에 다른 전압의 제품을 생산하고 있습니다. 더 자세한 사항을 위해서 저희에게 연락하십시오.

주문 전 검토사항

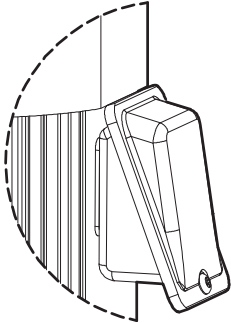
- (1) 용 도 : 공작기계 이외에 특별한 용도를 위해 기기를 쓸 수 있는지 주의 깊게 여부를 고려해서 실제로 사용 또는 저희에게 연락하십시오.
- (2) 사용 액체 : 이물질 종류, 점도, 온도, 산도, 오염
- (3) 펌프 사양 : 전체 헤드 토출량, 흡입 헤드 (자흡식 높이)
- (4) 모터 사양 : 출력 전압, 주파수, PHASE
- (5) 사용 조건 : 환기, 온도
- (6) 배관 방식 : 배관도
- (7) 설치 방법 : 자흡식 타입과 비자흡식 타입 간의 차이

- Before handling device, make sure to read thoroughly all the instructions (installation, transportation, repair & maintenance and inspection) provided in the instruction manual to use the device properly.
- Make sure to understand the mechanism of device and safety and treatment procedure before using.
- Do not operate the device while the electricity is being supplied. Start using after main electricity has been blocked.
- Turn off the main electricity during black-out.
- If you find flaws, immediately stop the device and turn off the main power switch.
- Safely connect the earth terminal to the ground.
- Installation, pipe and wiring system must be performed according to the technical standard of electricity installation and interior wiring standard.
- Protective equipment is not part of the machine. As specified in the technical standard pertaining to electricity installation, installation of over-current protection device is required.
- There should be sufficient dust preventives, connectors, marks and other measures to stop cutting chips, cutting oil, sludge or other impure materials to enter the terminal box through external wiring port.
- Do not use it near explosives.
- Do not place inflammable materials around the machine.
- Lamp oil, gasoline or other inflammable liquid cannot be used for this product.
- Do not touch or go near motor fan, impeller or other spinning object.
- Do not insert fingers or objects to the holes of the machine (fan cover, pump door and exit, drainage)
- Do not step on the machine.
- Make sure there is good ventilation and clean the place near the device.
- Install the equipment in a place where repair and maintenance (avoid narrow place) where inspection can be done.
- Place the device on a flat surface. Make sure there is no defect with the machine.
- If the viscosity of liquid being used is too high, the life of motor declines and there is a risk of disconnection.
- The device was designed to use cutting oil such as grinding and fluid cutting. If fine sludge such as powder, grinding chips and ceramic powder are mixed, the life of mechanical seal will significantly decline. Appropriate filter (magnet or paper filter) must be installed.
- Verify the spinning direction before connecting to the device.
- When the machine starts air vent valve, open the valve to verify if liquid has been discharged from the valve. After verification, make sure to close the valve tight.
- Repair, disassembling and revision of device should be carried out by experts.
- We are not responsible for problems caused customer's arbitrary modification of machine.
- We are producing products with different voltages with specification not mentioned in this catalogue. For more detailed information, please contact us.

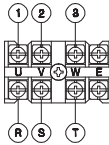
Check items before Odering

- (1) Use: Consider carefully if the machine can be used for purpose other than manufacturing tool and contact us.
- (2) Liquid used: type, viscosity, temperature, acidity and pollution of impure materials
- (3) Pump specification: total discharge of head, suction head (suction height)
- (4) Motor specification: output voltage, frequency, phase
- (5) Use condition: ventilation, temperature
- (6) Piping method: piping diagram
- (7) Installation method: difference between suction type and non-suction type

TERMINAL BOX CONNECTION

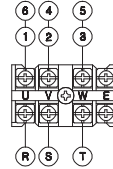


Sole Connection

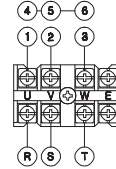


220V/380V Connection

200,220V Connection



380V Connection

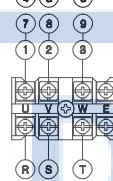


Model

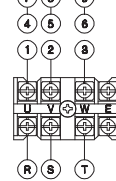
- HCP-S TYPE • HCP-F TYPE • HCP-F(고압형) TYPE
- HCP-EMF(S) TYPE
 - └ HCP-1100EMFS └ HCP-1800EMF └ HCP-1100EBMF
 - └ HCP-1100EMF └ HCP-2500EMF └ HCP-1800EBMF
 - └ HCP-4000EMF └ HCP-2500EMF
- HCP-EHMF(S) TYPE
 - └ HCP-1100EHMF └ HCP-2500EHMF
 - └ HCP-1100EHMFS └ HCP-2500EHMFS
 - └ HCP-1800EHMF └ HCP-4000EHMF
 - └ HCP-1800EHMFS └ HCP-4000EHMFS

220V/440V Connection

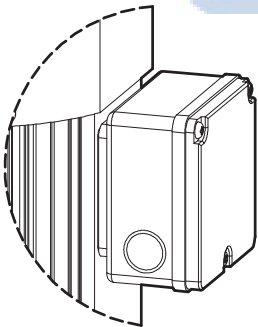
200,220V Connection



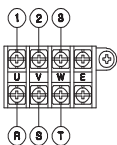
440V Connection



TERMINAL BOX CONNECTION

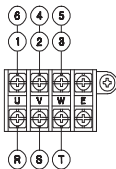


Sole Connection

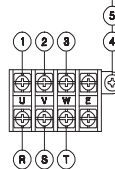


220V/380V Connection

200,220V Connection

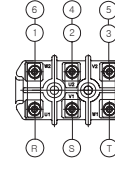


380V Connection

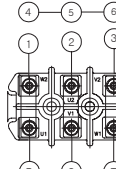


4000W/220V/380V Connection

220V Connection



380V Connection



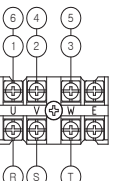
BOLT 규격 : M4X0.7P

Model

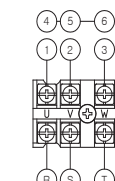
- HCP-S TYPE • HCP-F TYPE • HCP-F(고압형) TYPE
- HCP-EMF(S) TYPE
 - └ HCP-1100EMFS └ HCP-1800EMF └ HCP-1100EBMF
 - └ HCP-1100EMF └ HCP-2500EMF └ HCP-1800EBMF
 - └ HCP-4000EMF └ HCP-2500EMF
- HCP-EHMF(S) TYPE
 - └ HCP-1100EHMF └ HCP-2500EHMF
 - └ HCP-1100EHMFS └ HCP-2500EHMFS
 - └ HCP-1800EHMF └ HCP-4000EHMF
 - └ HCP-1800EHMFS └ HCP-4000EHMFS
- └ HCP-4000HMF130-A,B,C,D └ HCP-4000HMF200-A,B,C,D
- └ HCP-4000EHMF130-A,B,C,D └ HCP-4000EHMF200-A,B,C,D
- └ HCP-4000HMF280S-C,D
- └ HCP-4000EHMF280S-C,D

220V/380V Connection

220V Connection



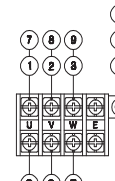
380V Connection



BOLT 규격 : M4X0.7P

220V/440V Connection

200,220V Connection



440V Connection

