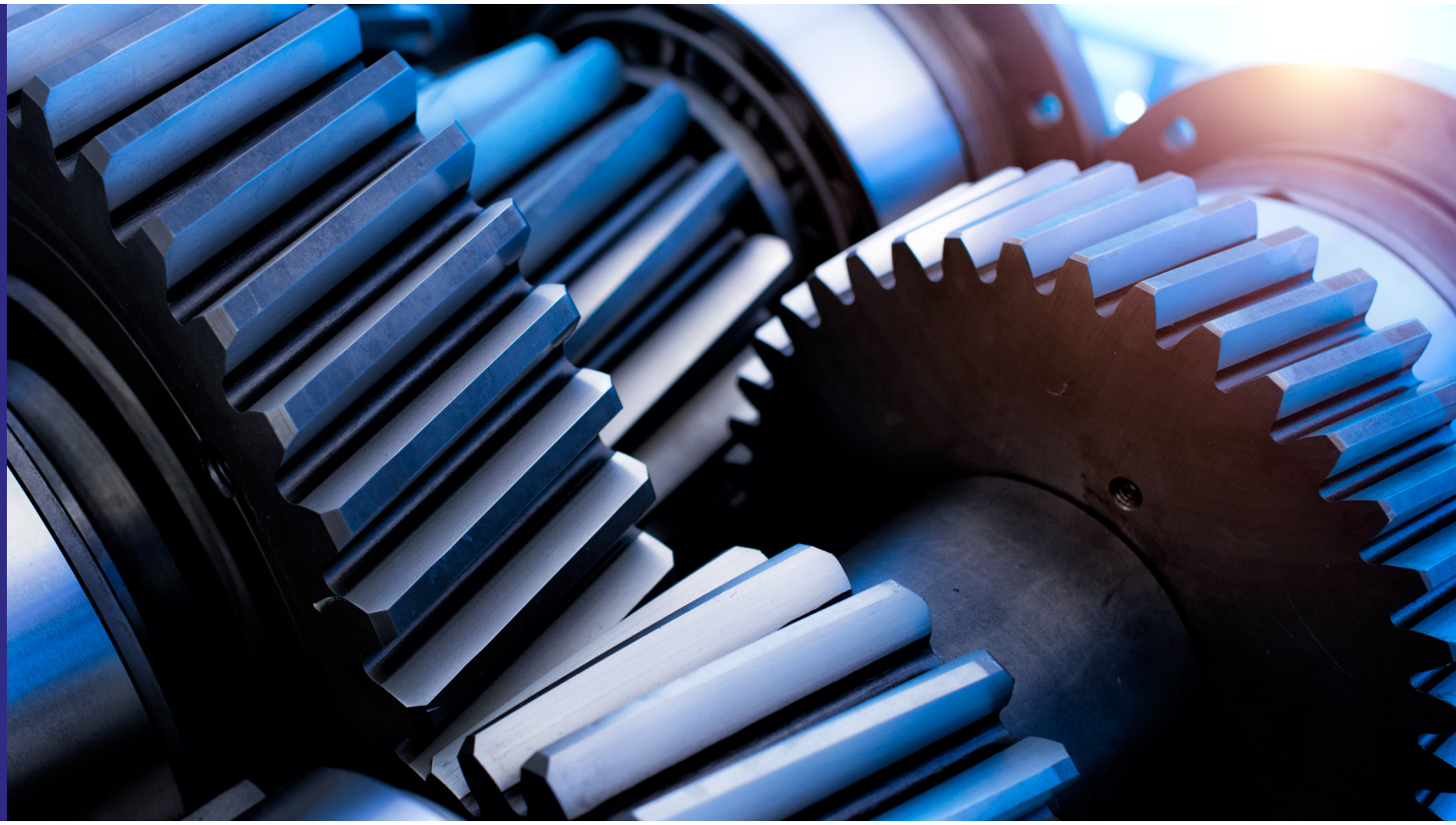
HYOSUNG HEAVY INDUSTRIES

HYOSUNG GEAR SOLUTION

Global Top Energy, Machinery & Plant Solution Provider



GEARED MOTOR

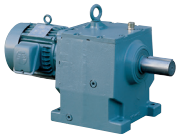
F1-Series

RP-Series

FN-Series

F-Series

H-Series



P-Series

K-Series

GEAR BOX

About HYOSUNG

효성은 국내는 물론 미국, 동남아, 유럽, 남미, 아프리카 등에 80여 개의 생산 및 판매 네트워크를 운영하며, 다양한 고객의 요구를 적극 반영해 특화된 제품과 서비스를 제공하고 있습니다. 이를 통해 효성은 고객들로부터 신뢰를 받는 기업으로 확고하게 자리매김하기 위해 최선을 다하고 있습니다.

01

Our Business

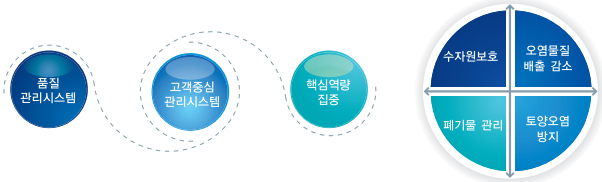
Brief introduction of Hyosung Power & Industrial Systems

효성 중공업PG (Performance Group)

'Global Top Energy, Machinery & Plant Solution Provider'를 지향하는 효성 중공업 퍼포먼스 그룹 (PG : Performance Group)은 전세계 중공업을 선도하는 혁신기술을 통해 전력기기와 산업기자재, 펌프, 풍력발전 시스템 분야에서 글로벌 경쟁력을 키워왔습니다.
효성은 미주와 유럽, 중동, 아시아 등 글로벌 시장에서의 적극적인 세계화와 기술력, 제품경쟁력, 브랜드 인지도의 향상을 바탕으로 최근 수 년 간 지속적인 성장을 이어오고 있으며 글로벌 선진업체와 어깨를 나란히 하고 있습니다.

기전PU (Performance Unit)

기전PU는 전동기, 발전기, 기어의 회전기기와 화학장치 등의 산업기계를 전문으로 생산합니다.
고객의 다양하고 폭 넓은 요구를 만족시키기 위한 최적의 통합 솔루션을 제공함은 물론, 지속적인 제품 혁신을 통해 신뢰성을 향상시키고 효율을 증대시켜 획기적인 비용 절감을 이룰 수 있도록 합니다.
전동기 부문에서는 저압 중소형 전동기에서부터 고압 초대형 전동기는 물론, 슈퍼 프리미엄 효율 전동기, 군사용 전동기, 차세대 방폭형 전동기, 영구자석 전동기까지 세계 시장을 무대로 KS, IEC, NEMA, GOST 규격을 모두 만족하는 전동기를 월 4만대 이상 생산할 수 있는 설비를 갖추고, 어떠한 목적과 장소에도 최적화된 전동기를 공급하고 있습니다. 발전기는 중속 및 고속 산업용 발전 설비, 선박용 발전기, 차세대 신재생 에너지인 풍력용 발전기 등의 핵심 발전시스템을 제공하고 있으며, 기어는 일반 산업용 기어, 오일 시추선 승강용 기어, 펄버라이저용 기어 등의 고신뢰도를 요구하는 제품까지 제작이 가능합니다. 산업기계 부문에서는 석유화학, 오일, 가스 플랜트 공정에 사용되는 핵심 장비인 타워 (컬럼), 반응기, 압력 용기, 열교환기를 포함하는 화학장치 등을 수출함으로써 기술력과 품질을 인정받고 있습니다. 언제나 고객의 목표와 함께 하고, 국제표준 및 산업 표준을 엄격하게 준수하고 있습니다.
고품질의 효성중공업 제품은 철강, 석유화학, 시멘트, 풍력발전, 수력발전, 화력발전, 해양발전, 원자력, 선박용, 광업, 방위산업 등 산업 전반에 걸쳐 사용됩니다.

02 Sustainability

Our sustainability principles are the backbone of the way we design and manufacture products

Quality Assurance

효성은 언제나 최고를 추구합니다. 효성 임직원의 모든 활동은 완벽한 품질과 서비스만이 최고를 향한 길이라는 공통된 믿음을 기반으로 신뢰할 수 있는 품질의 제품과 서비스를 공급하는 일에 초점을 맞추고 있습니다.
효성은 품질보증 원칙을 세우고 이를 구체적으로 실현할 수 있는 품질 보증 정책 및 프로그램을 구축했습니다.
효성의 품질보증 정책은 정부의 관리정책에 기반하여 수립되었으며 ISO9001의 요구사항을 만족합니다.
글로벌 기업 효성은 품질관리 시스템, 고객중심 관리 시스템, 핵심역량 집중이라는 3가지 품질전략을 통해 포괄적인 품질관리를 실행하고 있습니다. 효성은 포괄적인 품질관리 시스템을 통해 관리자원을 효율적으로 운영하여 불필요한 낭비를 막고 모든 컴플라이언스와 적용 가능한 법률과 규정, 표준을 준수합니다.
고객중심 관리 시스템은 효성의 최우선 원칙인 고객만족을 명확하게 하며 임직원의 모든 활동이 고객의 요구를 뛰어넘어 품질표준, 유연성, 혁신을 통해 고객에게 특별한 가치를 제공합니다. 효성은 기술적 역량과 기술혁신의 개선을 통해 고객에게 뛰어난 품질의 제품과 비용 절감의 혜택을 제공하기 위해 지속적인 발전과 엄격한 품질 제어를 목표로 핵심역량을 집중하고 있습니다.
효성의 품질보증 정책은 제어와 평가의 연속적인 과정입니다. 효성은 최고에 한발 더 다가서기 위해 품질보증 정책을 지속적으로 보완, 개정, 수정하고 있습니다.

Environment Protection Policy

효성은 제조활동이 환경에 미치는 영향을 이해하고 환경을 오염으로부터 보호하기 위해 노력하고 있습니다. 또한 효성의 제품과 기술은 환경에 미치는 영향을 최소화 하기 위해 전과정을 관리하며, 환경친화적인 제품과 솔루션 개발에 투자하여 향후 발생 가능한 환경오염과 환경유해영향을 예방하기 위해 최선의 노력을 기울이고 있습니다. 효성은 자원을 보존하고 환경에 미치는 영향을 최소화하기 위해 함께 공유하는 책임에 대한 친환경 철학에 기반해 종합적인 환경보호 프로그램을 구축했습니다. 효성의 환경정책은 ISO14001의 모든 요구사항을 충족합니다.

03 R&D

Inspiring innovation, creation and expertise

중전기기와 산업용 전기, 전자, 에너지 분야에서 세계적인 경쟁력을 입증받은 효성의 기술력의 배경에는 1978년 설립 이래 한국 기술개발 역사와 궤를 함께 해온 중공업연구소가 있습니다. 안양연구소와 창원연구소의 이원화 체제로 운영되어온 효성의 중공업연구소는 중전기기와 에너지 시스템, 전력전자, 전력자동화 시스템 분야에서 핵심기술 개발와 제품일류화에 총력을 다하고 있습니다.
혁신과 창조, 전문성을 핵심가치로 중공업 연구소는 오늘도 고객만족과 품질우선, 성과지향을 행동철학으로 각 연구분야에서 글로벌 탑 역량의 R&D 활동을 지속적으로 펼쳐나가고 있습니다.

연구분야

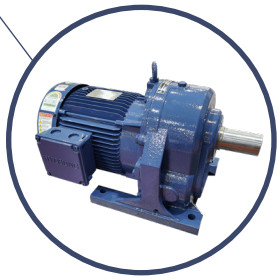
효성 중공업연구소는 국내 중전기 분야의 기술선도를 통해 국가경쟁력 강화에 기여하고 있으며, 그 핵심기술의 결정체인 원자력발전소용 345kV 변압기와 800kV 2점절 가스 절연 개폐기는 장영실상과 에너지 대상을 수상하는 쾌거를 이룩했습니다. CNG 충전 시스템과 송전급 FACTS, 차세대 SAS 시스템, 원자력발전소용 전동기 등을 개발하며 기술개발 경쟁에서도 우위를 점하고 있는 중공업연구소는 녹색산업으로 각광받는 신재생 에너지 분야에서도 차별화된 'Solution & Technology Leadership'을 통해 'Global No. 1 연구소'로 발돋움하고 있습니다.
스마트 그리드(Smart Grid)를 비롯해 태양광, 풍력, 연료전지 등의 그린 비즈니스에 대한 지속적인 검토와 연구가 활발히 진행되고 있습니다. 스마트 그리드의 경우 정부에서 추진하는 제주 실증과제 3개 분야 (Smart Place, Smart Transportation, Smart Renewable)에 참여하고 있으며 충전기 자체개발 등 충전 인프라 사업을 위한 기반 기술과 제품 확보를 위해 노력하고 있습니다. 태양광의 경우 EPC 사업과 발전사업, PCS와 태양전지 양산기술 개발이 진행 중입니다. 풍력은 주요부속품인 증속기와 발전기, PCS의 개발과 신뢰성제고를 위한 신뢰성연구에 집중하고 있습니다. 연료 전지는 가정용 1kW급 PEMFC 개발과 정부의 시범보급 사업에 참여하는 한편, 5kW급 SOFC 시스템용 BOP를 연구하고 있습니다.
IEC61850 기반 SA 시스템과 대용량 유연송전기기(FACTS) 등의 전력 시스템 자동화와 IT 기술 융복합 연구에 주력하고 있습니다. 국내 최초로 80MVA급 UPFC를 개발했으며 독자적인 기술력을 바탕으로 100MVA STATCOM을 개발하여 상용운전시험 중에 있습니다.
기존제품의 글로벌 경쟁력 강화를 위해 설비진단, 고장분석, 원격예방진단, 진단용 센서, 설비수명평가 등의 솔루션 분야 연구를 진행 중이며, 신뢰성 평가센터를 구축하여 설계신뢰성 향상, 시험 프로세스 선진화, 시험평가기술 개발, 인증시험 지원 등 기존제품의 품질경쟁력 확보를 위한 연구를 진행하고 있습니다.
구조진동, 열유동, 전자계 응용 분야의 핵심기반기술 연구를 바탕으로 차별화된 지능형 전력기기 (GIS, IED, 컨트롤러, 용접기 등)와 고속, 고효율, 경량, 친환경의 산업기기, 특수용기기(FACTS용 변압기와 군수용 전동기 등)의 개발에도 박차를 가하고 있습니다.

INTRODUCTION

Helical Geared Motor

F1 Series

- Helical Gear Type
- 0.2 ~ 15kW, Ratio 5 ~ 120
- 4 ~ 6P, 50/60Hz
- Grease Lubrication
- S.F 1.4 ~ 2.0

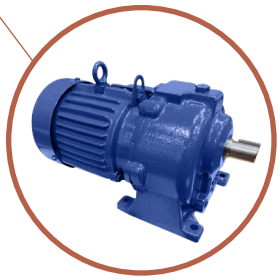


RP Series

- Helical Gear Type
- 0.75 ~ 3.7kW, Ratio 5 ~ 120
- 4 ~ 6P, 50/60Hz
- Grease Lubrication
- S.F 1.0 ~ 1.4

FN Series

- Helical Gear Type
- 0.4 ~ 3.7kW, Ratio 5 ~ 90
- 4 ~ 6P, 50/60Hz
- Grease Lubrication
- S.F 1.4 ~ 2.0

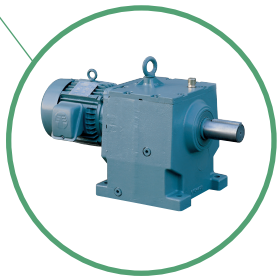


F Series

- Helical Gear Type
- 5.5 ~ 160kW, Ratio 5 ~ 30
- 4 ~ 6P, 50/60Hz
- Oil Lubrication
- S.F 1.4 ~ 2.0

H Series

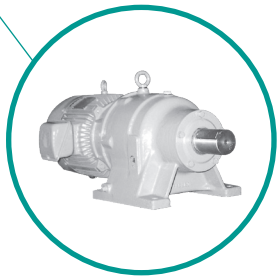
- Helical Gear Type
- 3.7 ~ 22kW, Ratio 40 ~ 120
- 4 ~ 6P, 50/60Hz
- Oil Lubrication
- S.F 1.4 ~ 2.0



Planetary Geared Motor

P Series

- Planetary Gear Type
- 0.4 ~ 55kW, Ratio 40 ~ 600
- 4 ~ 6P, 50/60Hz
- Oil Lubrication
- S.F 1.4 ~ 2.0



Right Angle Geared Motor

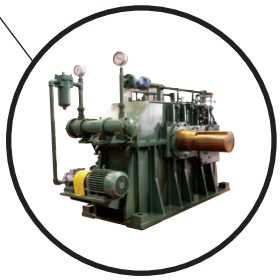
K Series

- Bevel Gear Type
- 0.2 ~ 90kW, Ratio 5 ~ 200
- 4 ~ 6P, 50/60Hz
- Oil Lubrication
- S.F 1.0 ~ 2.0

Gear Box

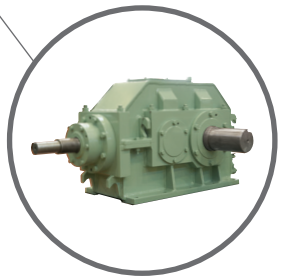
Parallel Shaft

- Helical Gear Type
- Ratio up to 500
- Torgue ratings up to 40,000kg.m Output
- Oil Lubrication



Right Angle

- Bevel Gear Type
- Ratio up to 355
- Torgue ratings up to 40,000kg.m Output
- Oil Lubrication



* 상기 사양을 초과하는 특수사양은 별도 문의 바랍니다.

선정계산

선정

선정순서

1) 감속비

필요한 출력축 회전수에서 감속비를 선정합니다. 모터 회전수가 60Hz일 때 1,800rpm이므로 감속비는 간단히 구할 수 있습니다.

i = 모터 회전수/필요한 출력축 회전수

• 감속비 별 Output RPM

출력축 회전 속도			감속비												
주파수 (Hz)	극수	전동기 rpm[1]	5	10	15	20	30	40	45	50	60	75	90	100	120
60Hz	4P	1,750	350	175	117	87.5	58.3	43.8	38.9	35	29.2	23.3	19.4	17.5	14.6
50Hz	4P	1,450	290	145	96.7	72.5	48.3	36.3	32.2	29	24.2	19.3	16.1	14.5	12.1
60Hz	6P	1,150	230	115	76.7	57.5	38.3	28.8	25.6	23	19.2	15.3	12.8	11.5	9.58
50Hz	6P	950	190	95	63.3	47.5	31.7	23.8	21.1	19	15.8	12.7	10.6	9.5	7.92

1. 전동기 종류와 프레임 사이즈에 따라 모터 RPM 상이될 수 있음.

2) 출력축 토크

부하 토크에서 출력축 토크를 계산합니다. 만약, 부하 토크의 변동이 있을 경우 최대 토크로 계산합니다.

$T_L = T_E \times Sf_1$

T_L : 출력축 토크 T_E : 부하 토크 Sf_1: Service Factor(표1)

표1. Service Factor

Operating time/day (hours)	Load condition								
	E-motor driver						Engine driver		
	기동 빈도 10회/시간 이하			기동 빈도 10회/시간 초과					
	Uniform	Moderate Shock	Heavy Shock	Uniform	Moderate Shock	Heavy Shock	Uniform	Moderate Shock	Heavy Shock
0.5 이하	0.8	0.8	1.0	0.8	1.0	1.25	-	-	-
0.5 ~ 2	1.0	1.0	1.25	1.0	1.25	1.5	-	-	-
2 ~ 10	1.0	1.25	1.5	1.25	1.5	1.75	1.25	1.5	2.0
10 ~ 24	1.25	1.5	1.75	1.5	1.75	2.0	1.5	1.75	2.0

3) 출력선정

특성표에서 출력축 토크와 감속비를 만족하는 출력을 선정합니다.

4) 부하 관성(GD^2)

부하관성이 크고 기동빈도가 빈번한 경우에는 기동시 충격 토크가 발생하므로 GD^2와 시동빈도를 고려하여야 합니다.

① 모터축 환산의 부하관성(GD_L^2)을 구합니다.

$$GD_L^2 = \frac{GD^2}{i^2} \qquad \left(\frac{1}{i} = \text{감속비}\right)$$

② 3항에서 선정된 출력의 모터축 환산 부하관성 제품별 GD_M^2를 표2에서 구합니다.

표2. 기어드모터의 GD_M^2(예시)

모터출력	0.4kW	0.75kW	1.5kW	2.2kW	3.7kW
GD_M^2(N·m²)	0.0774	0.123	0.186	0.372	0.529

③ 부하관성비(Z)를 구합니다.

$$Z = \frac{GD_L^2}{GD_M^2}$$

GD_L^2 : 부하관성(모터축 환산)　　GD_M^2 : 기어드모터의 관성(모터축 환산)

④ 부하 관성비와 시동 빈도에 따른 Service Factor(Sf_2)를 표3에서 구합니다.

표3. 관성비와 시동빈도에 따른 계수

시동빈도 / 시간	연결방법 : 커플링 등 직접 연결				연결방법 : 체인 및 벨트 등 연결			
	Z≤0.5	0.5<Z≤1.0	1.0<Z≤2.0	2.0<Z≤3.0	Z≤0.2	0.2<Z≤0.5	0.5<Z≤0.7	0.7<Z≤1.0
1회	1.00	1.01	1.05	1.10	1.00	1.01	1.03	1.06
5회	1.01	1.04	1.17	1.26	1.01	1.0	1.10	1.19
10회	1.02	1.08	1.24	1.36	1.02	1.09	1.17	1.27
20회	1.04	1.14	1.34	1.47	1.04	1.15	1.24	1.37
50회	1.07	1.25	1.48	1.62	1.07	1.26	1.37	1.51
100회	1.10	1.34	1.61	1.76	1.10	1.35	1.47	1.63
150회	1.14	1.40	1.68	1.85	1.14	1.41	1.53	1.71

5) 필요한 출력축 토크

이상에서 보는 바와 같이 기어드모터의 필요한 출력축 토크(T)를 구합니다.

$$T = T_E \times Sf_1 \times Sf_2$$

T_E : 부하 토크　　Sf_1 : 부하 상태에 따른 계수　　Sf_2 : 부하 관성에 따른 계수

6) Overhung Load(O.H.L)

상대 기계와 연결은 직접 연결이 최적이지만 체인, 벨트 및 기어로 연결 될 경우, 축에 작용하는 O.H.L가 사용하는 기어드 모터의 허용 O.H.L 이하이어야 합니다.

$$O.H.L(N) = \frac{2000 \times T_E \times Sf_1 \times Sf_2}{D} \times \frac{Cf}{Lf}$$

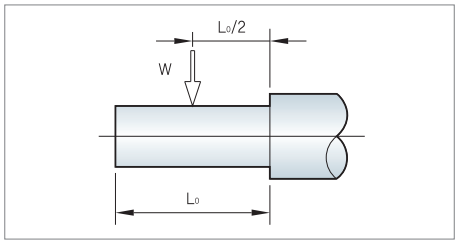
D : 체인, 풀리 등의 피치원 직경(mm) Cf : 연결방식에 따른 계수(표4 참조) Lf : 하중작용 위치에 따른 계수(표5 참조)

표4. 연결방식에 따른 계수

Transmission element	Factor	Remarks
Gears	1.1	Z≤17 teeth
Chain sprockets	1.4	Z≤13 teeth
Chain sprockets	1.2	Z≤20 teeth
V-belt pulleys	1.7	Pre-tension
Flat belt pulleys	2.5	Pre-tension

표5. 하중작용 위치에 따른 계수

Load applied point	Factor
0.3 L_0	1.10
0.5 L_0	1.00
0.7 L_0	0.83
0.9 L_0	0.70



선정 예

■ 사용조건

구동장치
- 모터 극수 : 4극
- 모터 주파수 : 60Hz
- Load Condition : Uniform

피동장치
- 용도 : 컨베이어
- 회전수 : 29rpm
- 가동시간 : 1시간/일
- 기동빈도 : 5회/시간
- 부하 토크 : 98N·m
- 구동 장치와의 연결방식 : 체인(P.C.D=ø90)

1. 감속비 = 1/60

2. 출력축 토크
$T_L = T_E \times Sf_1 = 98 \times 1.00 = 98N \cdot m$
$Sf_1 = 1.00$ (표1)

3. 출력 선정
출력축 토크 : $T_L = 98N \cdot m$
감속비 : 1/60
특성표에서 출력 : 0.4kW

4. 부하 관성(GD^2)
1) $GD^2 = 158.6N \cdot m^2$
2) $GD_L^2 = \frac{GD^2}{i^2} = \frac{158.6}{60^2} = 0.044N \cdot m^2$
3) 기어드 모터 출력 0.4kW의 $GD_M^2 = 0.0774$ (표2)
4) $Z = \frac{GD_L^2}{GD_M^2} = \frac{0.0442}{0.0774} = 0.57$
5) $Sf_2 = 1.10$(표3)

5. 필요한 출력축 토크
$T = T_E \times Sf_1 \times Sf_2 = 98 \times 1.00 \times 1.10$
$= 108N \cdot m$
감속비 : 1/60
이상을 만족하는 기어드모터는 특성표에서 0.4kW에 해당됩니다.

6. O.H.L 확인

$$O.H.L = \frac{2000 \times T_E \times Sf_1 \times Sf_2}{D} \times \frac{Cf}{Lf}$$

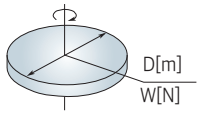
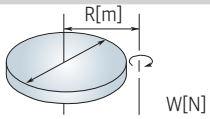
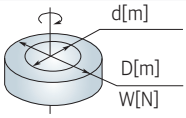
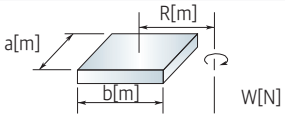
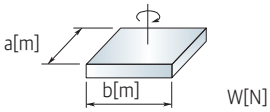
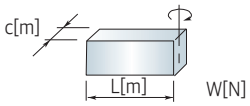
$$= \frac{2000 \times 98 \times 1.00 \times 1.10}{90} \times \frac{1.00}{1.00}$$

$$= 2395N$$

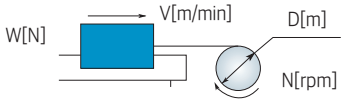
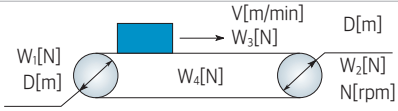
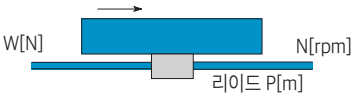
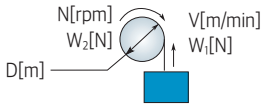
5항에서 선정된 기종의 허용 O.H.L는 2793N이므로
이 기종으로 사용 가능합니다.

GD^2 계산법

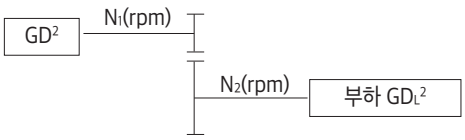
회전체

회전축이 중심인 경우		회전축이 중심이 아닌 경우	
	$GD^2 = 1/2WD^2$ [N·m²]		$GD^2 = W(1/2D^2+4R^2)$ [N·m²]
	$GD^2 = 1/2W(D^2+d^2)$ [N·m²]		$GD^2 = W(\frac{a^2+b^2}{3}+4R^2)$ [N·m²]
	$GD^2 = 1/3W(a^2+b^2)$ [N·m²]		$GD^2 = 1/3W(4L^2+c^2)$ [N·m²]

직선운동

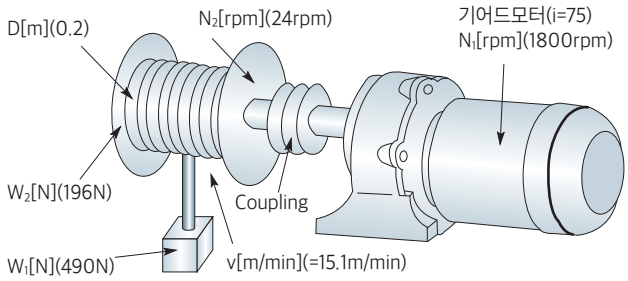
일반용도		$GD^2 = W(\frac{V}{\pi \cdot N})^2$ $= WD^2$ [N·m²]
컨베이어용 수평운동		$GD^2 = (\frac{W_1+W_2}{2}+W_3+W_4)\times D^2$ [N·m²]
이송나사에 의한 수평운동		$GD^2 = W(\frac{V}{\pi \cdot N})^2$ $= W(\frac{P}{\pi})^2$ [N·m²]
권상기용 상하운동		$GD^2 = W_1D^2+\frac{1}{2}W_2D^2$ [N·m²]

회전수가 서로 다른 축



$$GD^2 = (\frac{N_2}{N_1})^2 GD_L^2$$

계산 예



a)부하 GD_L^2

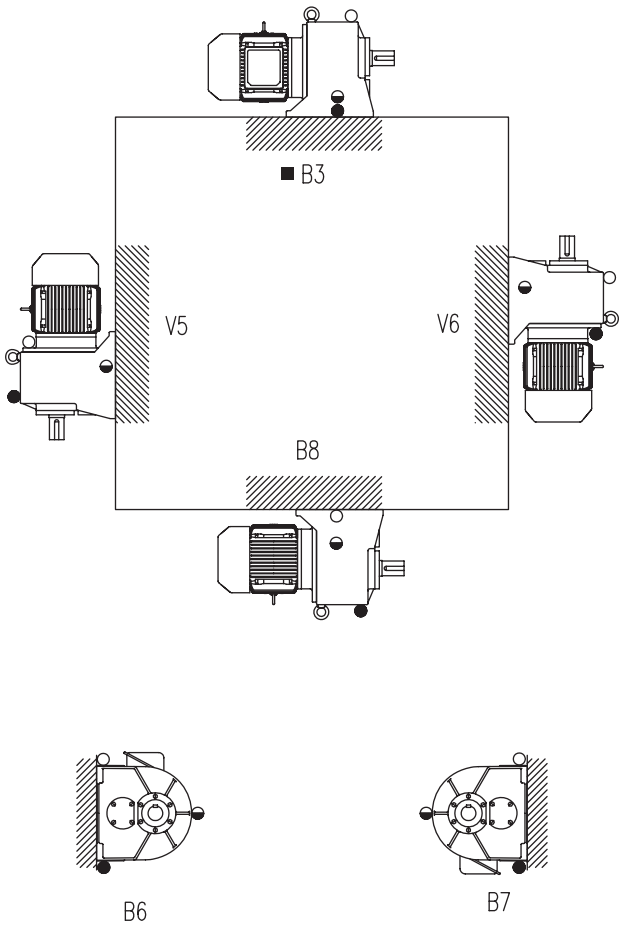
$$= W_1D^2+\frac{1}{2}W_2D^2$$
$$= 490\times0.2^2+\frac{1}{2}\times196\times0.2^2$$
$$= 23.5[N\cdot m^2]$$

b)모터축 환산

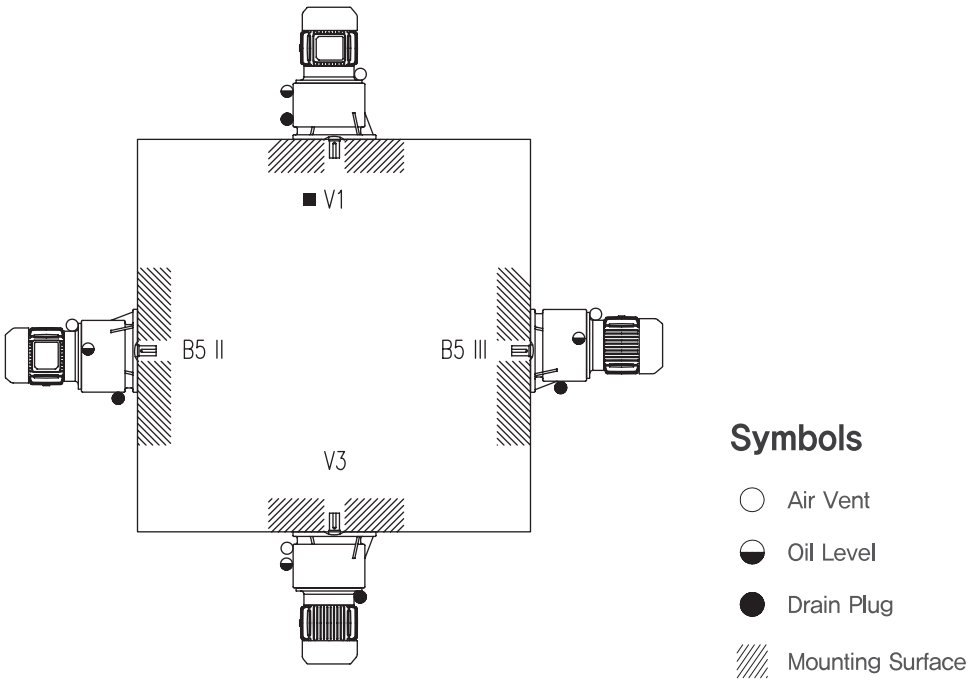
$$GD_L^2 = (\frac{N_2}{N_1})^2\times 부하\,GD_L^2$$
$$= (\frac{24}{1800})^2\times23.5$$
$$= 0.004[N\cdot m^2]$$

설치방향

수평형

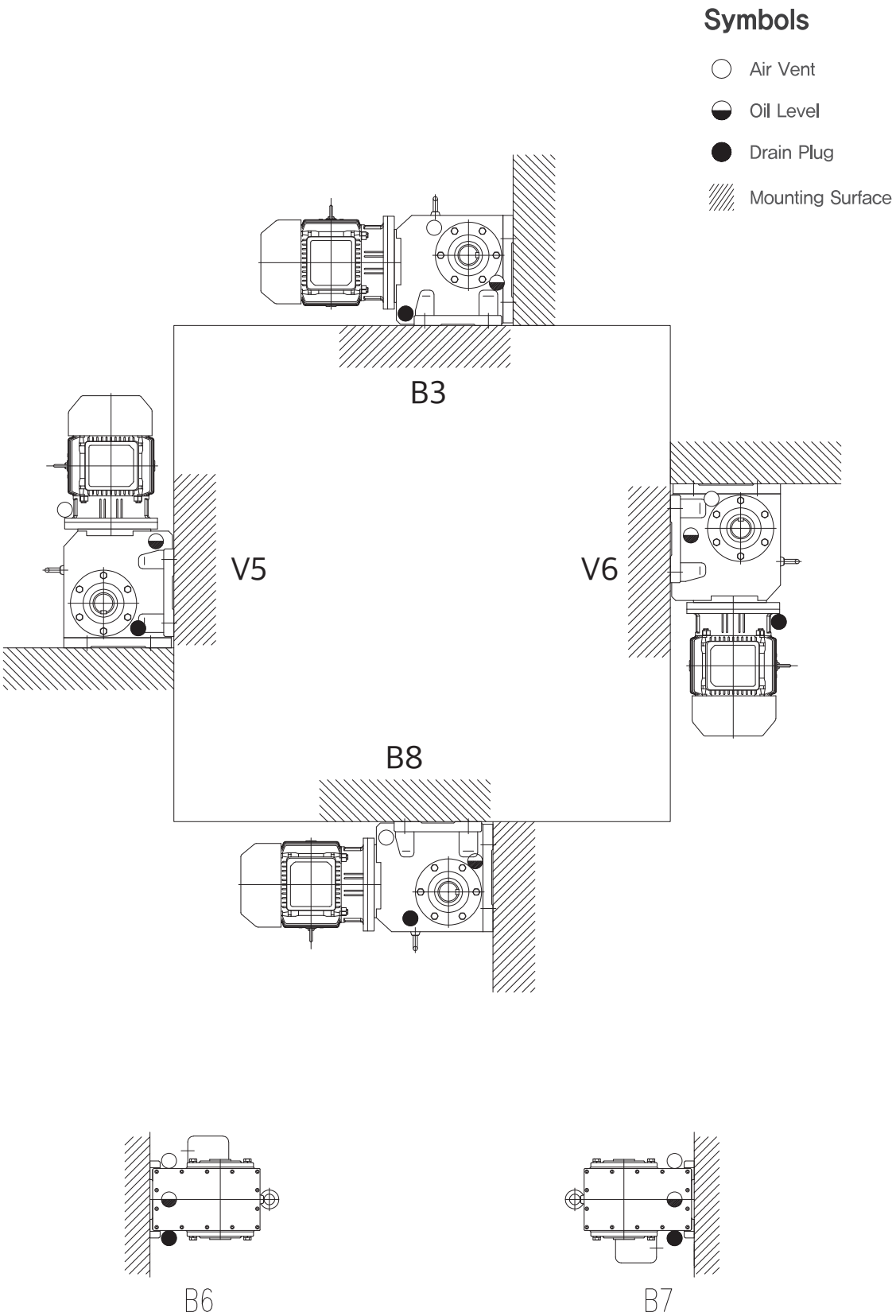


수직형

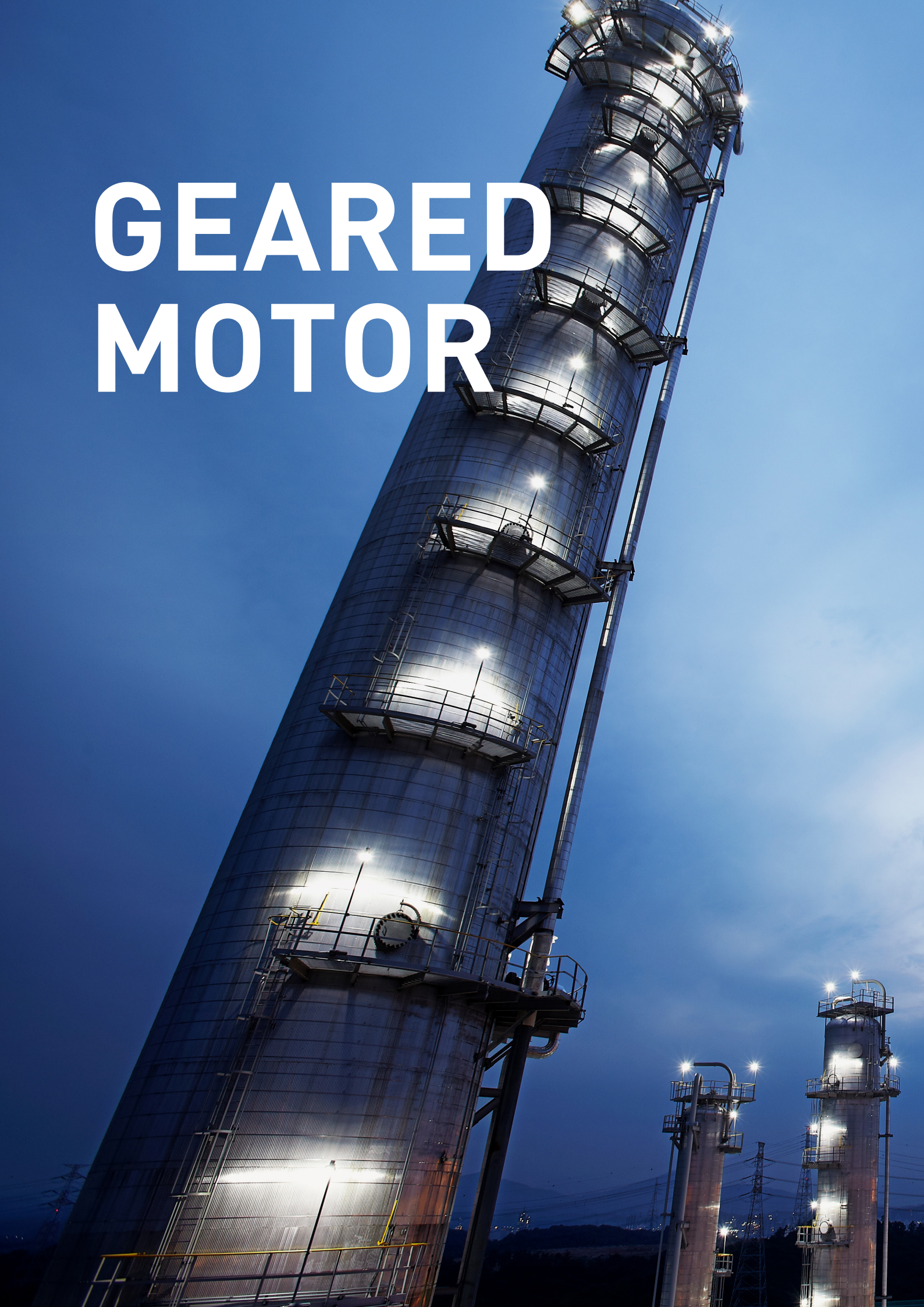


■ 기본 설치방향, 그 외 방향에 대해서는 가격 및 납기를 본사에 문의하여 주시길 바랍니다.

중공축형


Symbols
Air Vent
Oil Level
Drain Plug
Mounting Surface
B3
V5
V6
B8
B6
B7

GEARED MOTOR



F1 AL-Series

F1 주물-Series

[F1 AL] 동력 · 감속비별 기종 선정(60Hz, 4극 기준)

kW \ Ratio	1/5	1/10	1/15	1/20	1/25	1/30	1/40	1/45	1/50	1/60	1/75	1/90	1/100	1/120
0.75	13						15							
1.5	15						17						23	
2.2	17						18			20	23		27	
3.7	17				18		20			23	27			

[F1 주물] 동력 · 감속비별 기종 선정(60Hz, 4극 기준)

kW \ Ratio	1/5	1/10	1/15	1/20	1/25	1/30	1/40	1/45	1/50	1/60	1/75	1/90	1/100	1/120
0.2	8													
0.4	10													
0.75	13						15							
1.5	15						17						23	
2.2	17						18			20	23		27	
3.7	17				18		20			23	27			
5.5	18				20		23			27				
7.5	18		20		23		27							
11	20		23		27									
15	23		27											

· 상기 사방 이외에도 제작이 가능하니 당사에 문의하여 주십시오.

F1 Series

수평형

수직형

IEC FLANGE

F1시리즈 특징

1. 고효율 · 치연마

최적설계 및 모든 기어를 연마하여 저소음과 효율 97%이상을 보장하며 수명, 강도를 증가시켰습니다.

2. 취부의 자유

윤활제로 Grease를 사용하여 완전 밀폐 시킴으로써 취부를 자유롭게 했습니다.

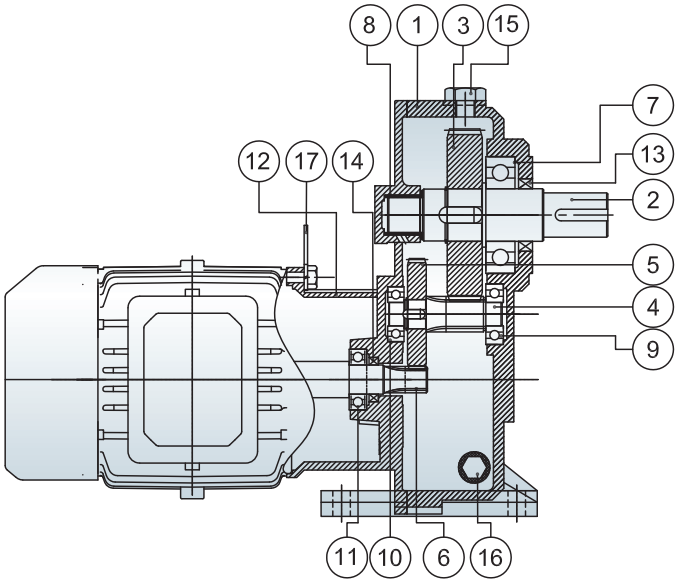
3. 신속한 공급

계획품 및 표준화된 모든 부품을 반제품화하여 확보해 둠으로써 수용가의 요구에 신속히 공급해 드립니다.

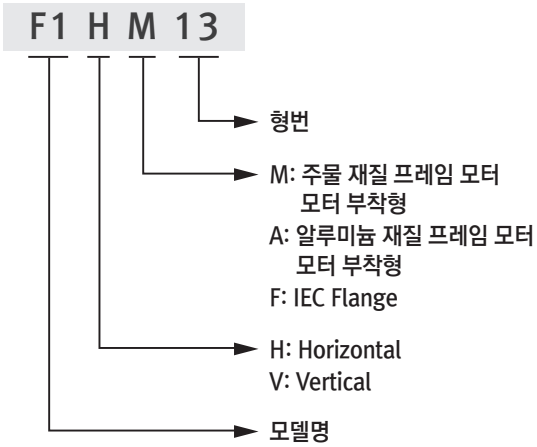
4. MAINTENANCE FREE-20,000시간

윤활성이 좋고 유동성이 높은 긴 수명의 Grease 사용으로 20,000시간 동안 수리, 보수가 필요 없습니다.

F1 구조도



형식표시



NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	6	MOTOR PINION	11	BEARING	16	PLUG
2	OUTPUT SHAFT	7	BEARING	12	MOTOR BRACKET	17	EYE PLATE
3	2'ND GEAR	8	BEARING	13	OIL SEAL		
4	2'ND PINION	9	BEARING	14	OIL SEAL		
5	1'ST GEAR	10	BEARING	15	AIR VENT		

F1시리즈 GD², O.H.L표

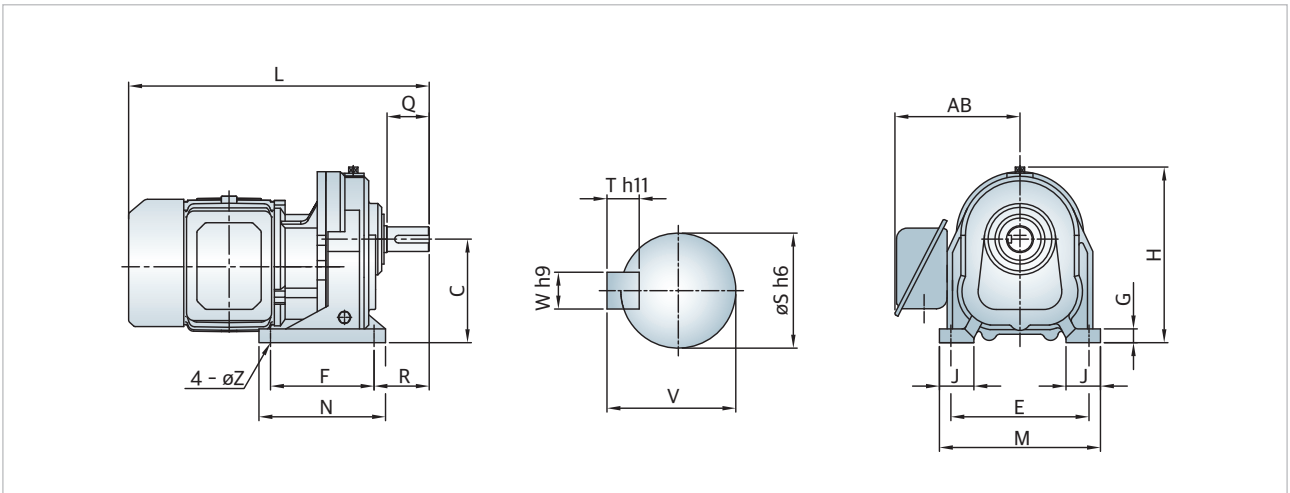
kW	Ratio	형번	최대허용토크		모터축 환산GD²		출력축OHL	
			N · m	kgf · m	N · m²	kg · m²	N	kgf
0.2	1/5	8	7.6	0.8	0.0451	0.0046	2,156	220
	1/10	8	15.3	1.6	0.0450	0.0046	2,156	220
	1/15	8	22.9	2.3	0.0449	0.0046	2,156	220
	1/20	8	30.6	3.1	0.0449	0.0046	2,156	220
	1/25	8	38.2	3.9	0.0449	0.0046	2,156	220
	1/30	8	45.9	4.7	0.0449	0.0046	2,156	220
	1/40	8	61.2	6.2	0.0449	0.0046	2,156	220
	1/45	8	68.8	7.0	0.0449	0.0046	2,156	220
	1/50	8	76.4	7.8	0.0449	0.0046	2,156	220
	1/60	8	91.7	9.4	0.0449	0.0046	2,156	220
	1/75	8	114.7	11.7	0.0449	0.0046	2,156	220
	1/90	8	137.6	14.0	0.0449	0.0046	2,156	220
	1/100	8	152.9	15.6	0.0449	0.0046	2,156	220
0.4	1/5	10	15.3	1.6	0.0794	0.0081	2,254	230
	1/10	10	30.6	3.1	0.0794	0.0081	2,254	230
	1/15	10	45.9	4.7	0.0794	0.0081	2,254	230
	1/20	10	61.2	6.2	0.0794	0.0081	2,254	230
	1/25	10	76.4	7.8	0.0794	0.0081	2,254	230
	1/30	10	91.7	9.4	0.0794	0.0081	2,254	230
	1/40	10	122.3	12.5	0.0794	0.0081	2,254	230
	1/45	10	137.6	14.0	0.0794	0.0081	2,254	230
	1/50	10	152.9	15.6	0.0794	0.0081	2,254	230
	1/60	10	183.5	18.7	0.0794	0.0081	2,254	230
	1/75	10	229.3	23.4	0.0794	0.0081	2,254	230
	1/90	10	275.2	28.1	0.0794	0.0081	2,254	230
	1/100	10	305.8	31.2	0.0794	0.0081	2,254	230
0.75	1/5	13	28.6	2.9	0.1386	0.0141	2,989	305
	1/10	13	57.3	5.8	0.1383	0.0141	2,989	305
	1/15	13	85.9	8.8	0.1382	0.0141	2,989	305
	1/20	13	114.5	11.7	0.1380	0.0141	2,989	305
	1/25	13	143.2	14.6	0.1379	0.0141	2,989	305
	1/30	13	171.8	17.5	0.1379	0.0141	2,989	305
	1/40	15	229.1	23.4	0.1380	0.0141	4,998	510
	1/45	15	257.7	26.3	0.1380	0.0141	4,998	510
	1/50	15	286.4	29.2	0.1380	0.0141	4,998	510
	1/60	15	343.6	35.1	0.1379	0.0141	4,998	510
	1/75	15	429.5	43.8	0.1379	0.0141	4,998	510
	1/90	15	515.4	52.6	0.1378	0.0141	4,998	510
	1/100	15	572.7	58.4	0.1378	0.0141	4,998	510
	1/120	15	687.3	70.1	0.1378	0.0141	4,998	510
1.5	1/5	15	57.3	5.8	0.2409	0.0246	4,998	510
	1/10	15	114.5	11.7	0.2386	0.0243	4,998	510
	1/15	15	171.8	17.5	0.2378	0.0243	4,998	510
	1/20	15	229.1	23.4	0.2374	0.0242	4,998	510
	1/25	15	286.4	29.2	0.2372	0.0242	4,998	510
	1/30	15	343.6	35.1	0.2371	0.0242	4,998	510
	1/40	17	458.2	46.8	0.2373	0.0242	6,664	680
	1/45	17	515.4	52.6	0.2372	0.0242	6,664	680
	1/50	17	572.7	58.4	0.2372	0.0242	6,664	680
	1/60	17	687.3	70.1	0.2372	0.0242	6,664	680
	1/75	17	859.1	87.7	0.2369	0.0242	6,664	680
	1/90	17	1,030.9	105.2	0.2369	0.0242	6,664	680
	1/100	17	1,145.4	116.9	0.2369	0.0242	6,664	680
	1/100	23	1,145.4	116.9	0.2382	0.0243	18,326	1,870
	1/120	17	1,374.5	140.3	0.2368	0.0242	6,664	680
	1/120	23	1,374.5	140.3	0.2380	0.0243	18,326	1,870

kW	Ratio	형번	최대허용토크		모터축 환산GD²		출력축OHL	
			N · m	kgf · m	N · m²	kg · m²	N	kgf
2.2	1/5	17	84.0	8.6	0.5516	0.0563	6,664	680
	1/10	17	168.0	17.1	0.5464	0.0558	6,664	680
	1/15	17	252.0	25.7	0.5448	0.0556	6,664	680
	1/20	17	336.0	34.3	0.5440	0.0555	6,664	680
	1/25	17	420.0	42.9	0.5436	0.0555	6,664	680
	1/30	17	504.0	51.4	0.5433	0.0554	6,664	680
	1/40	18	672.0	68.6	0.5436	0.0555	10,780	1,100
	1/45	18	756.0	77.1	0.5436	0.0555	10,780	1,100
	1/50	18	840.0	85.7	0.5435	0.0555	10,780	1,100
	1/60	18	1,008.0	102.9	0.5433	0.0554	10,780	1,100
	1/60	20	1,008.0	102.9	0.5447	0.0556	14,700	1,500
	1/75	18	1,260.0	128.6	0.5431	0.0554	10,780	1,100
	1/75	20	1,260.0	128.6	0.5447	0.0556	14,700	1,500
	1/75	23	1,260.0	128.6	0.5448	0.0556	18,326	1,870
	1/90	18	1,512.0	154.3	0.5430	0.0554	10,780	1,100
	1/90	20	1,512.0	154.3	0.5443	0.0555	14,700	1,500
	1/90	23	1,512.0	154.3	0.5444	0.0556	18,326	1,870
	1/100	18	1,680.0	171.4	0.5429	0.0554	10,780	1,100
	1/100	20	1,680.0	171.4	0.5442	0.0555	14,700	1,500
	1/100	27	1,680.0	171.4	0.5455	0.0557	23,520	2,400
	1/120	20	2,015.9	205.7	0.5442	0.0555	14,700	1,500
	1/120	27	2,015.9	205.7	0.5447	0.0556	23,520	2,400
3.7	1/5	17	141.3	14.4	0.6986	0.0713	6,664	680
	1/10	17	282.5	28.8	0.6934	0.0708	6,664	680
	1/15	17	423.8	43.2	0.6918	0.0706	6,664	680
	1/20	17	565.1	57.7	0.6910	0.0705	6,664	680
	1/25	18	706.3	72.1	0.6923	0.0706	10,780	1,100
	1/30	18	847.6	86.5	0.6918	0.0706	10,780	1,100
	1/40	20	1,130.2	115.3	0.6919	0.0706	14,700	1,500
	1/45	20	1,271.4	129.7	0.6923	0.0706	14,700	1,500
	1/50	20	1,412.7	144.2	0.6922	0.0706	14,700	1,500
	1/60	20	1,695.2	173.0	0.6921	0.0706	14,700	1,500
	1/60	23	1,695.2	173.0	0.6936	0.0708	18,326	1,870
	1/75	27	2,119.0	216.2	0.6939	0.0708	23,520	2,400
	1/90	27	2,542.8	259.5	0.6930	0.0707	23,520	2,400
	1/100	27	2,828.0	289.0	0.6930	0.0707	23,520	2,400
	1/120	27	3,394.0	346.0	0.6930	0.0707	23,520	2,400
5.5	1/5	18	210.2	21.4	1.5751	0.1607	10,780	1,100
	1/10	18	420.4	42.9	1.5678	0.1600	10,780	1,100
	1/15	18	630.6	64.3	1.5651	0.1597	10,780	1,100
	1/20	18	840.8	85.8	1.5641	0.1596	10,780	1,100
	1/30	20	1,261.3	128.7	1.5610	0.1593	14,700	1,500
	1/40	23	1,681.7	171.6	1.5676	0.1600	18,326	1,870
	1/45	23	1,891.9	193.0	1.5665	0.1598	18,326	1,870
	1/50	23	2,102.1	214.5	1.5660	0.1598	18,326	1,870
	1/60	23	2,522.5	257.4	1.5647	0.1597	18,326	1,870
	1/60	27	2,522.5	257.4	1.5664	0.1598	23,520	2,400
	1/75	27	3,153.1	321.7	1.5652	0.1597	23,520	2,400
	1/90	27	3,783.8	386.1	1.5648	0.1597	23,520	2,400
	1/100	27	4,204.2	429.0	1.5643	0.1596	23,520	2,400
7.5	1/5	18	286.6	29.2	2.0259	0.2067	10,780	1,100
	1/10	18	573.3	58.5	2.0186	0.2060	10,780	1,100
	1/15	20	859.9	87.7	2.0168	0.2058	14,700	1,500
	1/20	20	1,146.6	117.0	2.0145	0.2056	14,700	1,500
	1/30	20	1,719.9	175.5	2.0118	0.2053	14,700	1,500
	1/30	23	1,719.9	175.5	2.0152	0.2056	18,326	1,870
	1/40	27	2,293.2	234.0	2.0224	0.2064	23,520	2,400
	1/45	27	2,579.8	263.2	2.0204	0.2062	23,520	2,400
	1/50	27	2,866.5	292.5	2.0195	0.2061	23,520	2,400
	1/60	27	3,439.8	351.0	2.0172	0.2058	23,520	2,400
11	1/5	20	420.4	42.9	4.2370	0.4323	14,700	1,500
	1/10	20	840.8	85.8	4.2185	0.4305	14,700	1,500
	1/15	23	1,261.3	128.7	4.2222	0.4308	18,326	1,870
	1/20	23	1,681.7	171.6	4.2164	0.4302	18,326	1,870
	1/30	27	2,522.5	257.4	4.2171	0.4303	23,520	2,400
15	1/5	23	573.3	58.5	5.1990	0.5305	18,326	1,870
	1/10	23	1,146.6	117.0	5.1637	0.5269	18,326	1,870
	1/15	27	1,719.9	175.5	5.1670	0.5272	23,520	2,400
	1/20	27	2,293.2	234.0	5.1579	0.5263	23,520	2,400
	1/30	27	3,439.8	351.0	5.1481	0.5253	23,520	2,400

F1_AL시리즈 GD², O.H.L표

kW	Ratio	형번	최대허용토크		모터축 환산GD²		출력축OHL	
			N · m	kgf · m	N · m²	kg · m²	N	kgf
0.75	1/5	13	28.6	2.9	0.0842	0.0086	2,989	305
	1/10	13	57.3	5.8	0.0839	0.0086	2,989	305
	1/15	13	85.9	8.8	0.0838	0.0085	2,989	305
	1/20	13	114.5	11.7	0.0836	0.0085	2,989	305
	1/25	13	143.2	14.6	0.0835	0.0085	2,989	305
	1/30	13	171.8	17.5	0.0835	0.0085	2,989	305
	1/40	15	229.1	23.4	0.0836	0.0085	4,998	510
	1/45	15	257.7	26.3	0.0836	0.0085	4,998	510
	1/50	15	286.4	29.2	0.0836	0.0085	4,998	510
	1/60	15	343.6	35.1	0.0836	0.0085	4,998	510
	1/75	15	429.5	43.8	0.0835	0.0085	4,998	510
	1/90	15	515.4	52.6	0.0834	0.0085	4,998	510
	1/100	15	572.7	58.4	0.0834	0.0085	4,998	510
	1/120	15	687.3	70.1	0.0834	0.0085	4,998	510
1.5	1/5	15	57.3	5.8	0.1861	0.0190	4,998	510
	1/10	15	114.5	11.7	0.1837	0.0187	4,998	510
	1/15	15	171.8	17.5	0.1829	0.0187	4,998	510
	1/20	15	229.1	23.4	0.1826	0.0186	4,998	510
	1/25	15	286.4	29.2	0.1823	0.0186	4,998	510
	1/30	15	343.6	35.1	0.1822	0.0186	4,998	510
	1/40	17	458.2	46.8	0.1824	0.0186	6,664	680
	1/45	17	515.4	52.6	0.1824	0.0186	6,664	680
	1/50	17	572.7	58.4	0.1823	0.0186	6,664	680
	1/60	17	687.3	70.1	0.1823	0.0186	6,664	680
	1/75	17	859.1	87.7	0.1820	0.0186	6,664	680
	1/90	17	1,030.9	105.2	0.1820	0.0186	6,664	680
	1/100	17	1,145.4	116.9	0.1820	0.0186	6,664	680
	1/100	23	1,145.4	116.9	0.1833	0.0187	18,326	1,870
	1/120	17	1,374.5	140.3	0.1820	0.0186	6,664	680
	1/120	23	1,374.5	140.3	0.1832	0.0187	18,326	1,870
2.2	1/5	17	84.0	8.6	0.2322	0.0237	6,664	680
	1/10	17	168.0	17.1	0.2269	0.0232	6,664	680
	1/15	17	252.0	25.7	0.2254	0.0230	6,664	680
	1/20	17	336.0	34.3	0.2245	0.0229	6,664	680
	1/25	17	420.0	42.9	0.2241	0.0229	6,664	680
	1/30	17	504.0	51.4	0.2238	0.0228	6,664	680
	1/40	18	672.0	68.6	0.2241	0.0229	10,780	1,100
	1/45	18	756.0	77.1	0.2241	0.0229	10,780	1,100
	1/50	18	840.0	85.7	0.2240	0.0229	10,780	1,100
	1/60	18	1,008.0	102.9	0.2238	0.0228	10,780	1,100
	1/60	20	1,008.0	102.9	0.2252	0.0260	14,700	1,500
	1/75	18	1,260.0	128.6	0.2236	0.0228	10,780	1,100
	1/75	20	1,260.0	128.6	0.2252	0.0230	14,700	1,500
	1/75	23	1,260.0	128.6	0.2253	0.0230	18,326	1,870
	1/90	18	1,512.0	154.3	0.2235	0.0228	10,780	1,100
	1/90	20	1,512.0	154.3	0.2248	0.0229	14,700	1,500
	1/90	23	1,512.0	154.3	0.2249	0.0230	18,326	1,870
	1/100	18	1,680.0	171.4	0.2234	0.0228	10,780	1,100
	1/100	20	1,680.0	171.4	0.2248	0.0229	14,700	1,500
	1/100	27	1,680.0	171.4	0.2260	0.0231	23,520	2,400
	1/120	20	2,015.9	205.7	0.2247	0.0229	14,700	1,500
	1/120	27	2,015.9	205.7	0.2252	0.0230	23,520	2,400
3.7	1/5	17	141.3	14.4	0.5634	0.0575	6,664	680
	1/10	17	282.5	28.8	0.5582	0.0570	6,664	680
	1/15	17	423.8	43.2	0.5566	0.0568	6,664	680
	1/20	17	565.1	57.7	0.5558	0.0567	6,664	680
	1/25	18	706.3	72.1	0.5570	0.0568	10,780	1,100
	1/30	18	847.6	86.5	0.5566	0.0568	10,780	1,100
	1/40	20	1,130.2	115.3	0.5567	0.0568	14,700	1,500
	1/45	20	1,271.4	129.7	0.5571	0.0568	14,700	1,500
	1/50	20	1,412.7	144.2	0.5570	0.0568	14,700	1,500
	1/60	20	1,695.2	173.0	0.5568	0.0568	14,700	1,500
	1/60	23	1,695.2	173.0	0.5583	0.0570	18,326	1,870
	1/75	27	2,119.0	216.2	0.5586	0.0570	23,520	2,400
	1/90	27	2,542.8	259.5	0.5586	0.0570	23,520	2,400
	1/100	27	2,828.0	289.0	0.5586	0.0570	23,520	2,400
	1/120	27	3,394.0	346.0	0.5578	0.0569	23,520	2,400

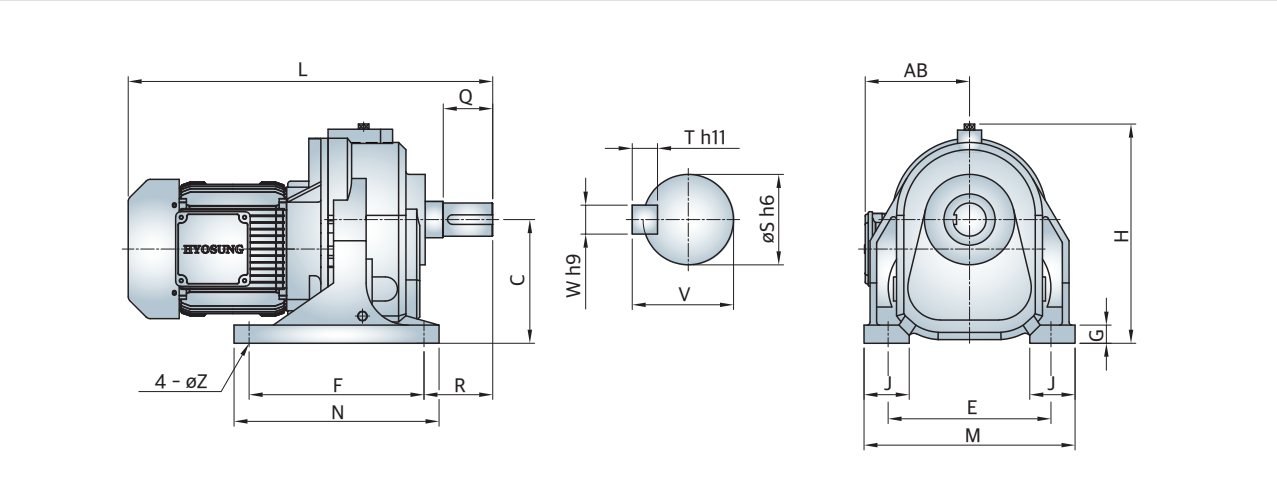
F1HM 외형도 및 외형치수



단위 : mm

kW	Ratio	형번	Dimension												Output Shaft					그리스량 (kg)	중량 (kg)
			C	F	N	R	E	M	J	G	Z	H	L	AB	S	W	T	V	Q		
0.2	5~100	8	88	78	102	45	130	156	30	11	11	135	314	129	22	6	6	24.5	30	0.2	9
0.4	5~100	10	105	90	120	60	135	160	30	12	11	162	345	129	28	7	7	31	40	0.2	11
0.75	5~30	13	135	135	165	72	180	210	45	18	15	229	392	163	32	10	8	35	55	0.4	32
0.75	40~120	15	153	150	185	78	215	250	50	22	15	259	436	163	38	10	8	41	55	0.6	44
1.5	5~30	15	153	150	185	78	215	250	50	22	15	259	516	175	38	10	8	41	55	0.6	52
1.5	40~120	17	172	172	216	113.5	232	276	55	25	19	295	565	175	45	14	9	48.5	82	0.9	64
1.5	100~120	23	235	320	370	135	300	390	80	34	24	412	632	195	65	18	11	69	105	2.3	124
2.2	5~30	17	172	172	216	113.5	232	276	55	25	19	295	581	184	45	14	9	48.5	82	1.0	73
2.2	40~100	18	181	245	295	111	240	300	65	25	19	296	594	184	50	14	9	53.5	82	1.0	86
2.2	60~120	20	205	290	340	114	270	350	75	30	24	363	634	184	55	16	10	59	82	1.4	109
2.2	75~100	23	235	320	370	135	300	390	80	34	24	412	655	195	65	18	11	69	105	2.3	134
2.2	100~120	27	270	350	410	140	360	440	80	40	28	470	660	220	70	20	12	74.5	105	3.0	173
3.7	5~20	17	172	172	216	113.5	232	276	55	25	19	295	581	194	45	14	9	48.5	82	1.0	80
3.7	25~30	18	181	245	295	111	240	300	65	25	19	305	594	194	50	14	9	53.5	82	1.2	90
3.7	40~60	20	205	290	340	114	270	350	75	30	24	363	634	194	55	16	10	59	82	1.5	115
3.7	60	23	235	320	370	135	300	390	80	34	24	412	655	194	65	18	11	69	105	2.3	140
3.7	75~120	27	270	350	410	140	360	440	80	40	28	470	660	220	70	20	12	74.5	105	3.0	179
5.5	5~20	18	181	245	295	111	240	300	65	25	19	346	622	230	50	14	9	53.5	82	1.0	123
5.5	30	20	205	290	340	114	270	350	75	30	24	404	659	230	55	16	10	59	82	1.5	144
5.5	40~60	23	235	320	370	135	300	390	80	34	24	453	697	230	65	18	11	69	105	2.3	168
5.5	60~120	27	270	350	410	140	360	440	80	40	28	470	705	230	70	20	12	74.5	105	3.0	199
7.5	5~10	18	181	245	295	111	240	300	65	25	19	346	660	230	50	14	9	53.5	82	1.0	128
7.5	15~30	20	205	290	340	114	270	350	75	30	24	404	697	230	55	16	10	59	82	1.5	149
7.5	30	23	235	320	370	135	300	390	80	34	24	453	734	230	65	18	11	69	105	2.5	173
7.5	40~60	27	270	350	410	140	360	440	80	40	28	470	742	230	70	20	12	74.5	105	3.0	204
11	5~10	20	205	290	340	114	270	350	75	30	24	404	758	292	55	16	10	59	82	1.5	212
11	15~20	23	235	320	370	135	300	390	80	34	24	453	797	292	65	18	11	69	105	2.5	236
11	30	27	270	350	410	140	360	440	80	40	28	470	805	292	70	20	12	74.5	105	3.3	267
15	5~10	23	235	320	370	135	300	390	80	34	24	453	841	292	65	18	11	69	105	2.5	242
15	15~30	27	270	350	410	140	360	440	80	40	28	470	849	292	70	20	12	74.5	105	3.3	273

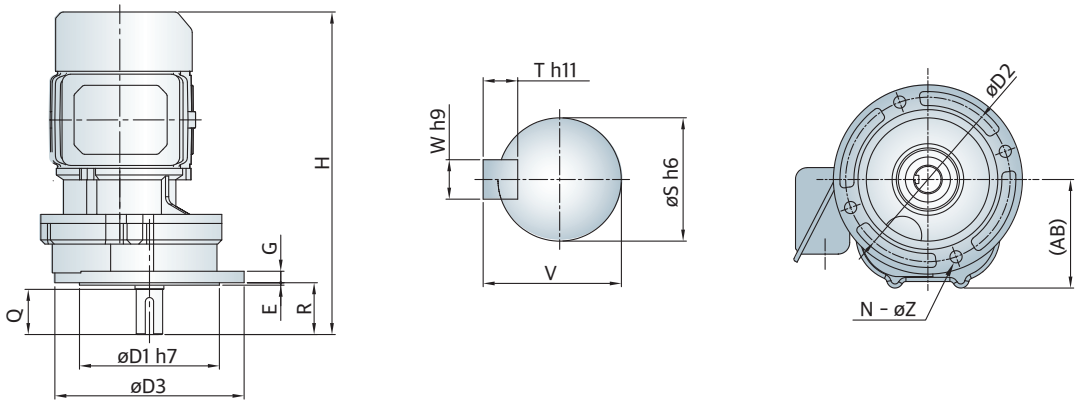
F1HA 외형도 및 외형치수



단위 : mm

kW	Ratio	형번	Dimension												Output Shaft					그리스량 (kg)	중량 (kg)
			C	F	N	R	E	M	J	G	Z	H	L	AB	S	W	T	V	Q		
0.75	5~30	13	135	135	165	72	180	210	45	18	15	229	362	132	32	10	8	35	55	0.4	26
0.75	40~120	15	153	150	185	78	215	250	50	22	15	259	406	132	38	10	8	41	55	0.6	38
1.5	5~30	15	153	150	185	78	215	250	50	22	15	259	442	140	38	10	8	41	55	0.6	43
1.5	40~120	17	172	172	216	113.5	232	276	55	25	19	295	491	140	45	14	9	48.5	82	0.9	55
1.5	100~120	23	235	320	370	135	300	390	80	34	24	412	582	140	65	18	11	69	105	2.3	114
2.2	5~30	17	172	172	216	113.5	232	276	55	25	19	295	544	165	45	14	9	48.5	82	1.0	64
2.2	40~100	18	181	245	295	111	240	300	65	25	19	296	557	165	50	14	9	53.5	82	1.0	77
2.2	60~120	20	205	290	340	114	270	350	75	30	24	363	597	165	55	16	10	59	82	1.4	99
2.2	75~100	23	235	320	370	135	300	390	80	34	24	412	619	165	65	18	11	69	105	2.3	124
2.2	100~120	27	270	350	410	140	360	440	80	40	28	470	623	165	70	20	12	74.5	105	3.0	162
3.7	5~20	17	172	172	216	113.5	232	276	55	25	19	295	551	173	45	14	9	48.5	82	1.0	69
3.7	25~30	18	181	245	295	111	240	300	65	25	19	305	565	173	50	14	9	53.5	82	1.2	79
3.7	40~60	20	205	290	340	114	270	350	75	30	24	363	605	173	55	16	10	59	82	1.5	104
3.7	60	23	235	320	370	135	300	390	80	34	24	412	626	173	65	18	11	69	105	2.3	129
3.7	75~120	27	270	350	410	140	360	440	80	40	28	470	631	173	70	20	12	74.5	105	3.0	167

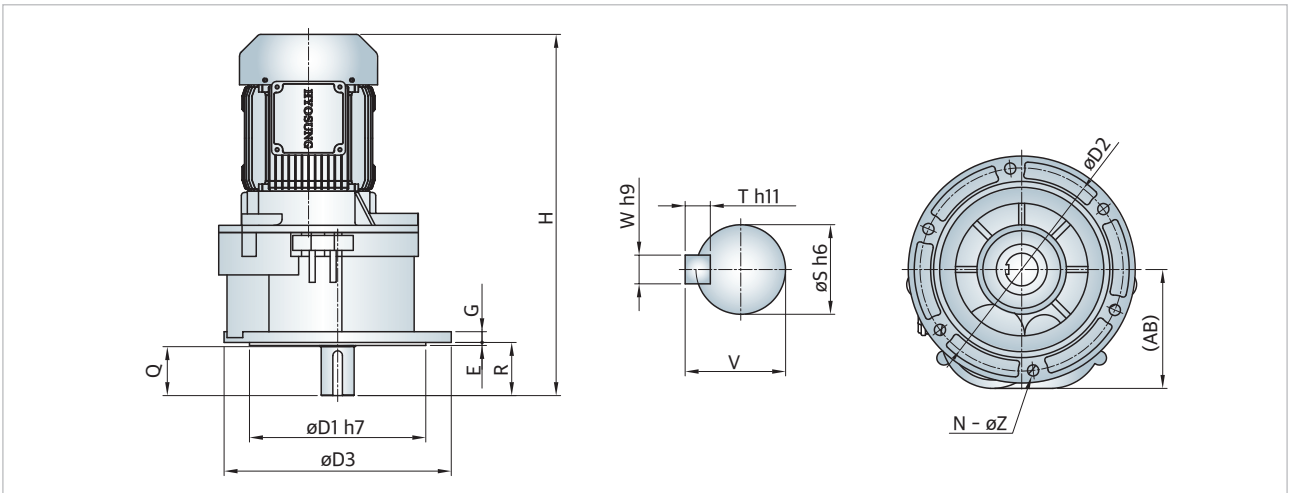
F1VM 외형도 및 외형치수



단위 : mm

kW	Ratio	형번	Dimension										Output Shaft					그리스량 (kg)	중량 (kg)
			D1	D2	D3	R	E	G	H	N	Z	AB	S	W	T	V	Q		
0.2	5~100	8	120	150	130	39	4	11	314	4	11	65	22	6	6	24.5	30	0.2	9
0.4	5~100	10	150	175	155	45	3	11	345	4	11	78	28	7	7	31	40	0.2	11
0.75	5~30	13	170	200	230	63	3	14	392	4	15	132	32	10	8	35	55	1.1	32
0.75	40~120	15	200	230	260	65	4	16	436	4	15	151	38	10	8	41	55	1.7	45
1.5	5~30	15	200	230	260	65	4	16	516	4	15	151	38	10	8	41	55	1.9	53
1.5	40~120	17	275	310	340	69	4	18	565	6	19	169	45	14	9	48.5	82	2.7	76
1.5	100~120	23	355	400	440	113	5	24	632	6	19	232	65	18	11	69	105	7.0	129
2.2	5~30	17	275	310	340	69	4	18	581	6	19	169	45	14	9	48.5	82	3.0	85
2.2	40~100	18	275	310	340	89	4	18	594	6	19	178	50	14	9	53.5	82	3.0	90
2.2	60~120	20	295	340	380	89	5	18	634	6	19	199	55	16	10	59	82	4.1	113
2.2	75~100	23	355	400	440	113	5	24	655	6	19	232	65	18	11	69	105	7.0	140
2.2	100~120	27	435	480	520	115	5	24	660	6	19	265	70	20	12	74.5	105	8.9	184
3.7	5~20	17	275	310	340	69	4	18	581	6	19	169	45	14	9	48.5	82	3.0	92
3.7	25~30	18	275	310	340	89	4	18	594	6	19	178	50	14	9	53.5	82	3.5	94
3.7	40~60	20	295	340	380	89	5	18	634	6	19	199	55	16	10	59	82	4.6	119
3.7	60	23	355	400	440	113	5	24	655	6	19	232	65	18	11	69	105	7.0	145
3.7	75~120	27	435	480	520	115	5	24	660	6	19	265	70	20	12	74.5	105	8.9	190
5.5	5~20	18	275	310	340	89	4	18	622	6	19	178	50	14	9	53.5	82	3.5	127
5.5	30	20	295	340	380	89	5	18	659	6	19	199	55	16	10	59	82	4.6	148
5.5	40~60	23	355	400	440	113	5	24	684	6	19	232	65	18	11	69	105	7.0	173
5.5	60~120	27	435	480	520	115	5	24	689	6	19	265	70	20	12	74.5	105	8.9	210
7.5	5~10	18	275	310	340	89	4	18	660	6	19	178	50	14	9	53.5	82	3.5	132
7.5	15~30	20	295	340	380	89	5	18	698	6	19	199	55	16	10	59	82	4.6	153
7.5	30	23	355	400	440	113	5	24	722	6	19	232	65	18	11	69	105	8.0	178
7.5	40~60	27	435	480	520	115	5	24	727	6	19	265	70	20	12	74.5	105	8.9	215
11	5~10	20	295	340	380	89	5	18	758	6	19	199	55	16	10	59	82	4.6	216
11	15~20	23	355	400	440	113	5	24	785	6	19	232	65	18	11	69	105	8.0	241
11	30	27	435	480	520	115	5	24	790	6	19	265	70	20	12	74.5	105	9.0	278
15	5~10	23	355	400	440	113	5	24	830	6	19	232	65	18	11	69	105	8.0	247
15	15~30	27	435	480	520	115	5	24	834	6	19	265	70	20	12	74.5	105	9.0	278

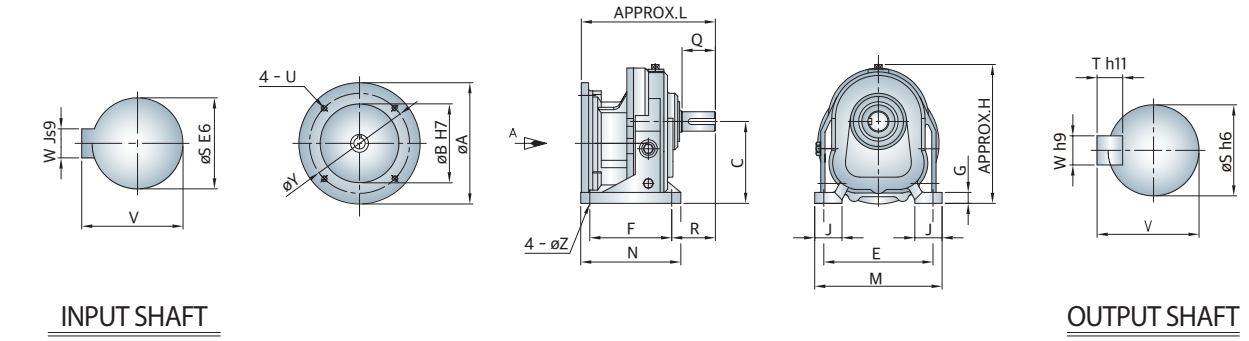
F1VA 외형도 및 외형치수



단위 : mm

kW	Ratio	형번	Dimension										Output Shaft					그리스량 (kg)	중량 (kg)
			D1	D2	D3	R	E	G	H	N	Z	AB	S	W	T	V	Q		
0.75	5~30	13	170	200	230	63	3	14	399	4	15	132	32	10	8	35	55	1.1	36
0.75	40~120	15	200	230	260	65	4	16	443	4	15	151	38	10	8	41	55	1.7	48
1.5	5~30	15	200	230	260	65	4	16	510	4	15	151	38	10	8	41	55	1.9	47
1.5	40~120	17	275	310	340	69	4	18	559	6	19	169	45	14	9	48.5	82	2.7	67
1.5	100~120	23	355	400	440	113	5	24	627	6	19	232	65	18	11	69	105	7.0	114
2.2	5~30	17	275	310	340	69	4	18	578	6	19	169	45	14	9	48.5	82	3.0	76
2.2	40~100	18	275	310	340	89	4	18	591	6	19	178	50	14	9	53.5	82	3.0	82
2.2	60~120	20	295	340	380	89	5	18	631	6	19	199	55	16	10	59	82	4.1	100
2.2	75~100	23	355	400	440	113	5	24	653	6	19	232	65	18	11	69	105	7.0	116
2.2	100~120	27	435	480	520	115	5	24	657	6	19	265	70	20	12	74.5	105	8.9	152
3.7	5~20	17	275	310	340	69	4	18	598	6	19	169	45	14	9	48.5	82	3.0	85
3.7	25~30	18	275	310	340	89	4	18	611	6	19	178	50	14	9	53.5	82	3.5	88
3.7	40~60	20	295	340	380	89	5	18	651	6	19	199	55	16	10	59	82	4.6	109
3.7	60	23	355	400	440	113	5	24	673	6	19	232	65	18	11	69	105	7.0	134
3.7	75~120	27	435	480	520	115	5	24	677	6	19	265	70	20	12	74.5	105	8.9	171

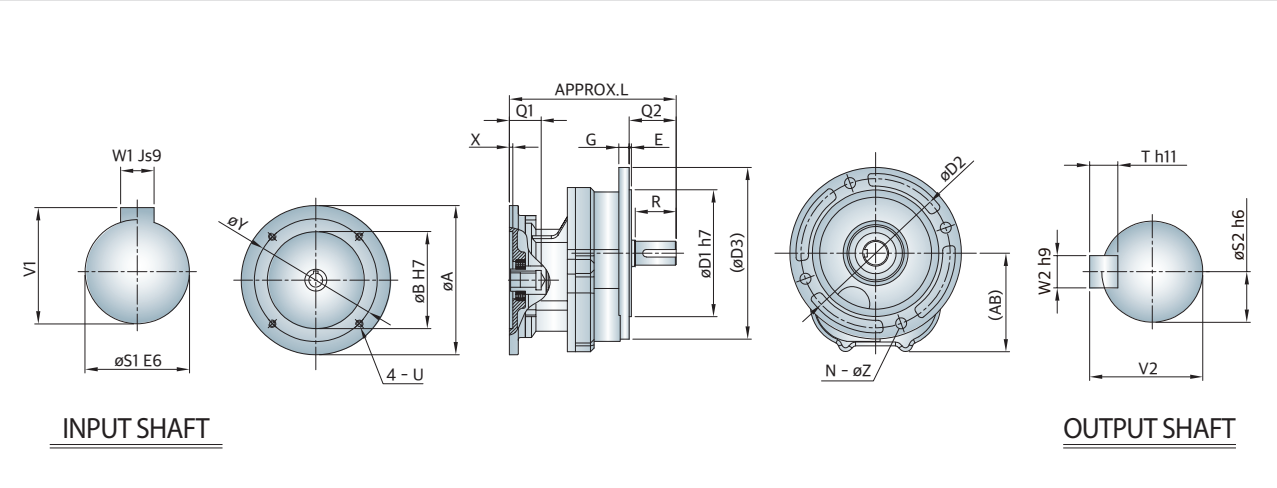
F1HF 외형도 및 외형치수



단위 : mm

kW	Ratio	형번	Dimension											Input flange					Input shaft				Output Shaft					그리스량 (kg)	중량 (kg)
			C	F	N	R	E	M	J	G	Z	H	L	A	B	X	Y	U	S1	W1	V1	Q1	S2	W2	T	V2	Q2		
0.4	5~100	10	105	90	120	60	135	160	30	12	11	162	209.5	160	110	4	130	M8	14	5	16.3	33	28	7	7	31	40	0.2	7.5
0.75	5~30	13	135	135	165	72	180	210	45	18	15	229	224	200	130	4.5	165	M10	19	6	21.8	42	32	10	8	35	55	0.4	19
0.75	40~120	15	153	150	185	78	215	250	50	22	15	259	268	200	130	4.5	165	M10	19	6	21.8	42	38	10	8	41	55	0.6	30
1.5	5~30	15	153	150	185	78	215	250	50	22	15	259	318	200	130	4.5	165	M10	24	8	27.3	52	38	10	8	41	55	0.6	33
1.5	40~120	17	172	172	216	113.5	232	276	55	25	19	295	367	200	130	4.5	165	M10	24	8	27.3	52	45	14	9	48.5	82	0.9	43
1.5	100~120	23	235	320	370	135	300	390	80	34	24	412	435	200	130	4.5	165	M10	24	8	27.3	52	65	18	11	69	105	2.3	102
2.2	5~30	17	172	172	216	113.5	232	276	55	25	19	295	373	250	180	5	215	M12	28	8	31.3	62	45	14	9	48.5	82	1.0	45
2.2	40~100	18	181	245	295	111	240	300	65	25	19	296	386	250	180	5	215	M12	28	8	31.3	62	50	14	9	53.5	82	1.0	58
2.2	60~120	20	205	290	340	114	270	350	75	30	24	363	426	250	180	5	215	M12	28	8	31.3	62	55	16	10	59	82	1.4	78
2.2	75~100	23	235	320	370	135	300	390	80	34	24	412	448	250	180	5	215	M12	28	8	31.3	62	65	18	11	69	105	2.3	105
2.2	100~120	27	270	350	410	140	360	440	80	40	28	470	452	250	180	5	215	M12	28	8	31.3	62	70	20	12	74.5	105	3.0	142
3.7	5~20	17	172	172	216	113.5	232	276	55	25	19	295	376	250	180	5	215	M12	28	8	31.3	62	45	14	9	48.5	82	1.0	46
3.7	25~30	18	181	245	295	111	240	300	65	25	19	305	389	250	180	5	215	M12	28	8	31.3	62	50	14	9	53.5	82	1.2	57
3.7	40~60	20	205	290	340	114	270	350	75	30	24	363	429	250	180	5	215	M12	28	8	31.3	62	55	16	10	59	82	1.5	80
3.7	60	23	235	320	370	135	300	390	80	34	24	412	451	250	180	5	215	M12	28	8	31.3	62	65	18	11	69	105	2.3	106
3.7	75~120	27	270	350	410	140	360	440	80	40	28	470	455	250	180	5	215	M12	28	8	31.3	62	70	20	12	74.5	105	3.0	144
5.5	5~20	18	181	245	295	111	240	300	65	25	19	346	413	300	230	6	265	M12	38	10	41.3	85	50	14	9	53.5	82	1.0	55
5.5	30	20	205	290	340	114	270	350	75	30	24	404	450	300	230	6	265	M12	38	10	41.3	85	55	16	10	59	82	1.5	75
5.5	40~60	23	235	320	370	135	300	390	80	34	24	453	476	300	230	6	265	M12	38	10	41.3	85	65	18	11	69	105	2.3	96
5.5	60~120	27	270	350	410	140	360	440	80	40	28	470	481	300	230	6	265	M12	38	10	41.3	85	70	20	12	74.5	105	3.0	123
7.5	5~10	18	181	245	295	111	240	300	65	25	19	346	413	300	230	6	265	M12	38	10	41.3	85	50	14	9	53.5	82	1.0	55
7.5	15~30	20	205	290	340	114	270	350	75	30	24	404	450	300	230	6	265	M12	38	10	41.3	85	55	16	10	59	82	1.5	75
7.5	30	23	235	320	370	135	300	390	80	34	24	453	476	300	230	6	265	M12	38	10	41.3	85	65	18	11	69	105	2.5	88
7.5	40~60	27	270	350	410	140	360	440	80	40	28	470	481	300	230	6	265	M12	38	10	41.3	85	70	20	12	74.5	105	3.0	123
11	5~10	20	205	290	340	114	270	350	75	30	24	404	466	350	250	3	300	M16	42	12	45.3	119	55	16	10	59	82	1.5	98
11	15~20	23	235	320	370	135	300	390	80	34	24	453	493	350	250	3	300	M16	42	12	45.3	119	65	18	11	69	105	2.5	118
11	30	27	270	350	410	140	360	440	80	40	28	470	497	350	250	3	300	M16	42	12	45.3	119	70	20	12	74.5	105	3.3	146
15	5~10	23	235	320	370	135	300	390	80	34	24	453	493	350	250	3	300	M16	42	12	45.3	119	65	18	11	69	105	2.5	118
15	15~30	27	270	350	410	140	360	440	80	40	28	470	497	350	250	3	300	M16	42	12	45.3	119	70	20	12	74.5	105	3.3	146

F1VF 외형도 및 외형치수



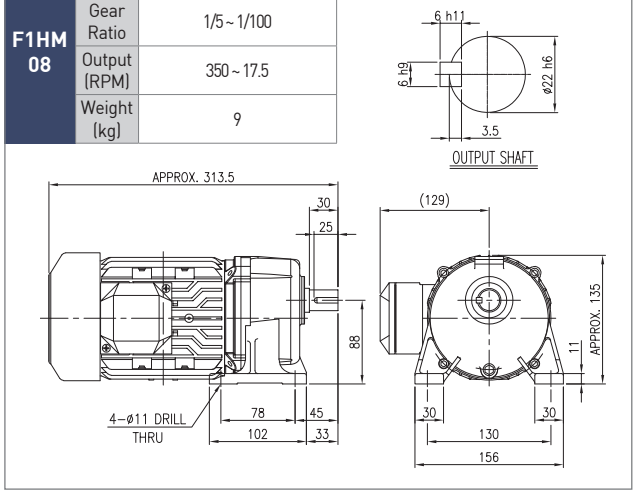
단위 : mm

kW	Ratio	형번	Dimension									Input flange					Input shaft				Output Shaft					그리스량 (kg)	중량 (kg)
			D1	D2	D3	R	E	G	L	N	Z	A	B	X	Y	U	S1	W1	V1	Q1	S	W	T	V	Q		
0.2	5~100	8	120	150	130	39	4	11	173	4	11	140	95	4	115	M8	11	4	12.8	32	22	6	6	24.5	30	0.2	5.5
0.4	5~100	10	150	175	155	45	3	11	209.5	4	11	160	110	4	130	M8	14	5	16.3	33	28	7	7	31	40	0.2	7.5
0.75	5~30	13	170	200	230	63	3	14	224	4	15	200	130	4.5	165	M10	19	6	21.8	42	32	10	8	35	55	1.1	17
0.75	40~120	15	200	230	260	65	4	16	268	4	15	200	130	4.5	165	M10	19	6	21.8	42	38	10	8	41	55	1.7	30
1.5	5~30	15	200	230	260	65	4	16	318	4	15	200	130	4.5	165	M10	24	8	27.3	52	38	10	8	41	55	1.9	33
1.5	40~120	17	275	310	340	69	4	18	367	6	19	200	130	4.5	165	M10	24	8	27.3	52	45	14	9	48.5	82	2.7	53
1.5	100~120	23	355	400	440	113	5	24	435	6	19	200	130	4.5	165	M10	24	8	27.3	52	65	18	11	69	105	7.0	102
2.2	5~30	17	275	310	340	69	4	18	373	6	19	250	180	5	215	M12	28	8	31.3	62	45	14	9	48.5	82	3.0	55
2.2	40~100	18	275	310	340	89	4	18	386	6	19	250	180	5	215	M12	28	8	31.3	62	50	14	9	53.5	82	3.0	60
2.2	60~120	20	295	340	380	89	5	18	426	6	19	250	180	5	215	M12	28	8	31.3	62	55	16	10	59	82	4.1	79
2.2	75~100	23	355	400	440	113	5	24	448	6	19	250	180	5	215	M12	28	8	31.3	62	65	18	11	69	105	7.0	106
2.2	100~120	27	435	480	520	115	5	24	452	6	19	250	180	5	215	M12	28	8	31.3	62	70	20	12	74.5	105	8.9	148
3.7	5~20	17	275	310	340	69	4	18	376	6	19	250	180	5	215	M12	28	8	31.3	62	45	14	9	48.5	82	3.0	56
3.7	25~30	18	275	310	340	89	4	18	389	6	19	250	180	5	215	M12	28	8	31.3	62	50	14	9	53.5	82	3.5	59
3.7	40~60	20	295	340	380	89	5	18	429	6	19	250	180	5	215	M12	28	8	31.3	62	55	16	10	59	82	4.6	81
3.7	60	23	355	400	440	113	5	24	451	6	19	250	180	5	215	M12	28	8	31.3	62	65	18	11	69	105	7.0	107
3.7	75~120	27	435	480	520	115	5	24	455	6	19	250	180	5	215	M12	28	8	31.3	62	70	20	12	74.5	105	8.9	149
5.5	5~20	18	275	310	340	89	4	18	413	6	19	300	230	6	265	M12	38	10	41.3	85	50	14	9	53.5	82	3.5	59
5.5	30	20	295	340	380	89	5	18	450	6	19	300	230	6	265	M12	38	10	41.3	85	55	16	10	59	82	4.6	79
5.5	40~60	23	355	400	440	113	5	24	476	6	19	300	230	6	265	M12	38	10	41.3	85	65	18	11	69	105	7.0	101
5.5	60~120	27	435	480	520	115	5	24	481	6	19	300	230	6	265	M12	38	10	41.3	85	70	20	12	74.5	105	8.9	134
7.5	5~10	18	275	310	340	89	4	18	413	6	19	300	230	6	265	M12	38	10	41.3	85	50	14	9	53.5	82	3.5	59
7.5	15~30	20	295	340	380	89	5	18	450	6	19	300	230	6	265	M12	38	10	41.3	85	55	16	10	59	82	4.6	79
7.5	30	23	355	400	440	113	5	24	476	6	19	300	230	6	265	M12	38	10	41.3	85	65	18	11	69	105	8.0	93
7.5	40~60	27	435	480	520	115	5	24	481	6	19	300	230	6	265	M12	38	10	41.3	85	70	20	12	74.5	105	8.9	134
11	5~10	20	295	340	380	89	5	18	466	6	19	350	250	3	300	M16	42	12	45.3	119	55	16	10	59	82	4.6	102
11	15~20	23	355	400	440	113	5	24	493	6	19	350	250	3	300	M16	42	12	45.3	119	65	18	11	69	105	8.0	123
11	30	27	435	480	520	115	5	24	497	6	19	350	250	3	300	M16	42	12	45.3	119	70	20	12	74.5	105	9.0	157
15	5~10	23	355	400	440	113	5	24	493	6	19	350	250	3	300	M16	42	12	45.3	119	65	18	11	69	105	8.0	123
15	15~30	27	435	480	520	115	5	24	497	6	19	350	250	3	300	M16	42	12	45.3	119	70	20	12	74.5	105	9.0	157

F1 수평형

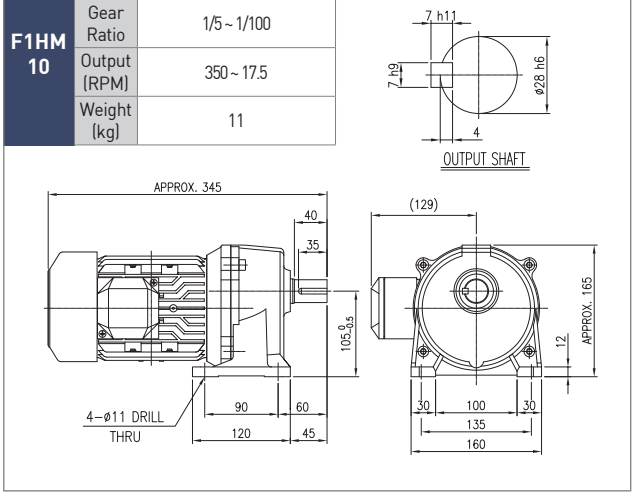
0.2kW

F1HM 08		
	Power	0.2
	Gear Ratio	1/5 ~ 1/100
	Output (RPM)	350 ~ 17.5
	Weight (kg)	9



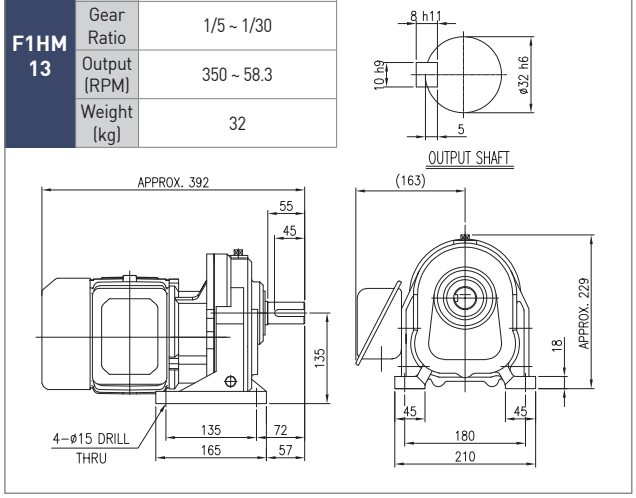
0.4kW

F1HM 10		
	Power	0.4
	Gear Ratio	1/5 ~ 1/100
	Output (RPM)	350 ~ 17.5
	Weight (kg)	11

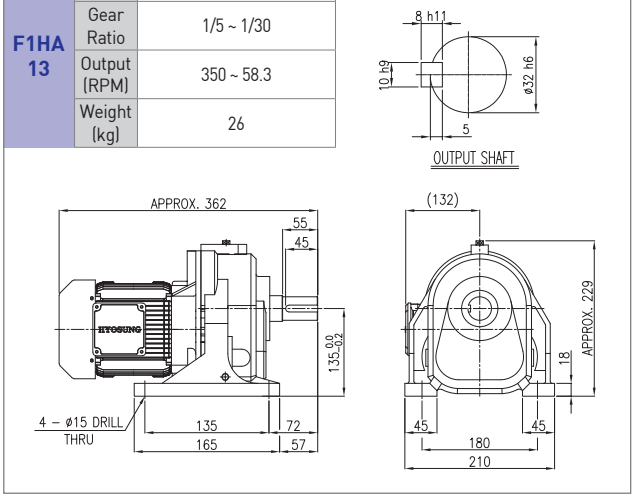


0.75kW

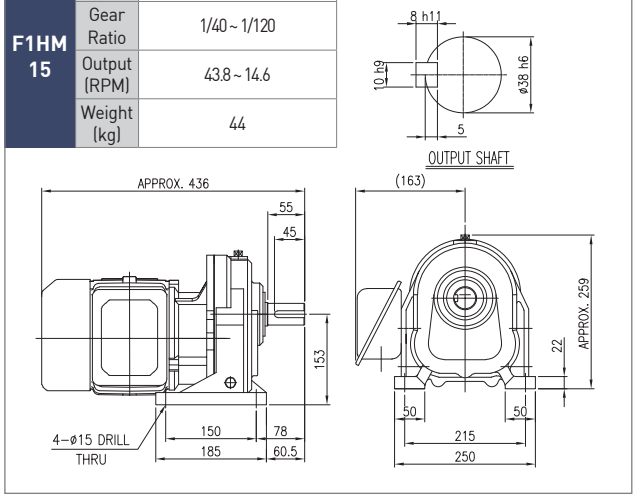
F1HM 13		
	Power	0.75
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	32



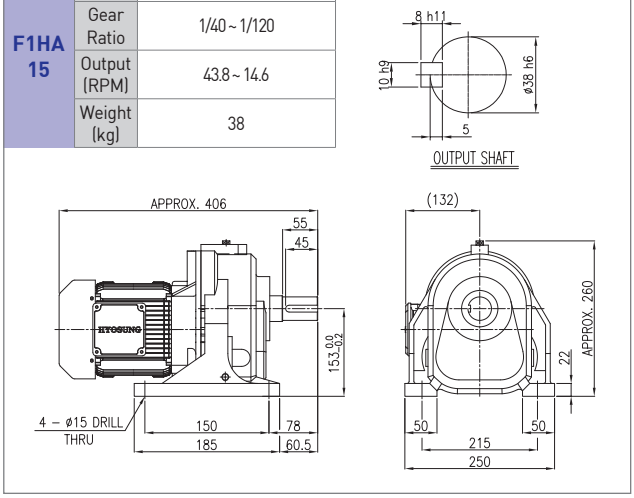
F1HA 13		
	Power	0.75
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	26



F1HM 15		
	Power	0.75
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	44



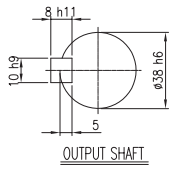
F1HA 15		
	Power	0.75
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	38

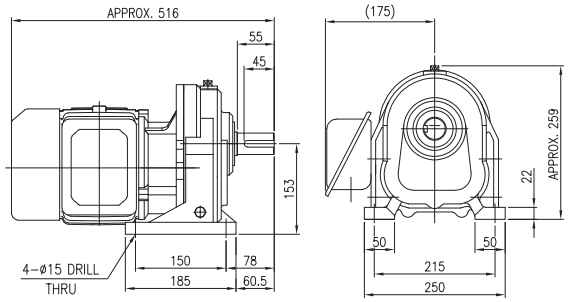


F1 수평형

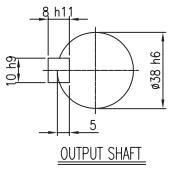
1.5kW

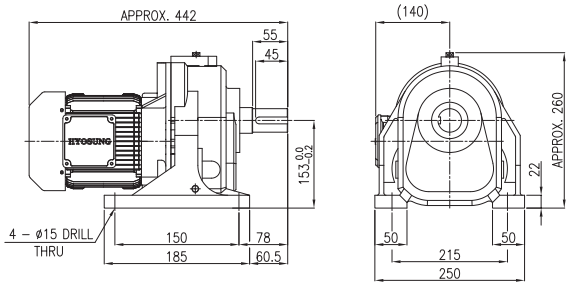
F1HM 15		
	Power	1.5
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	52



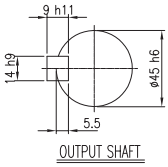


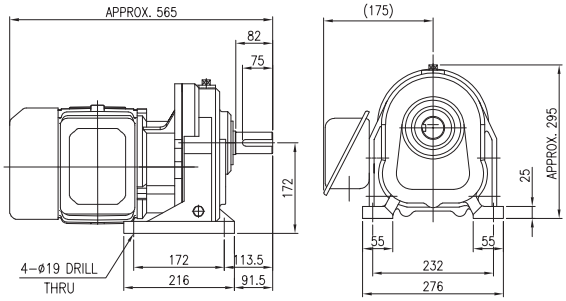
F1HA 15		
	Power	1.5
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	43



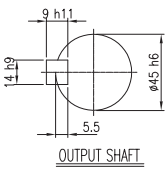


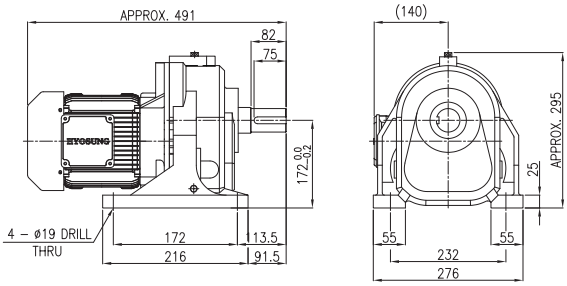
F1HM 17		
	Power	1.5
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	64



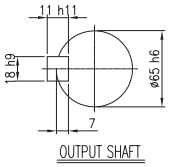


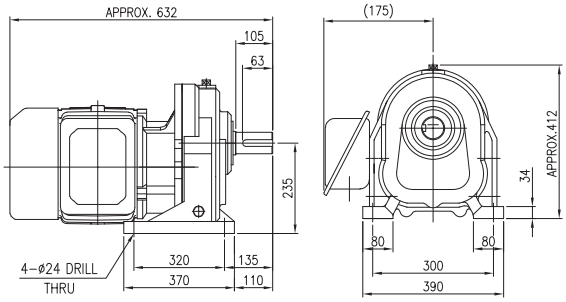
F1HA 17		
	Power	1.5
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	55



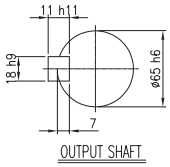


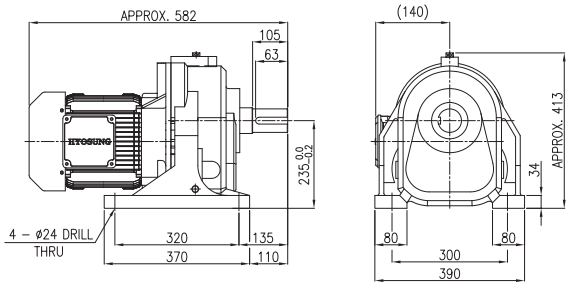
F1HM 23		
	Power	1.5
	Gear Ratio	1/100 / 1/120
	Output (RPM)	17.5 / 14.6
	Weight (kg)	124





F1HA 23		
	Power	1.5
	Gear Ratio	1/100 / 1/120
	Output (RPM)	17.5 / 14.6
	Weight (kg)	114

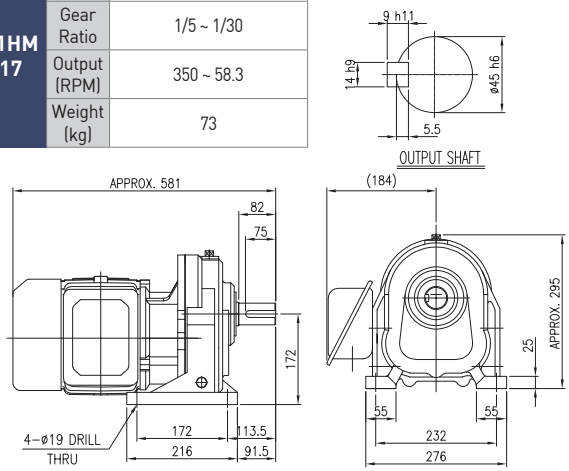




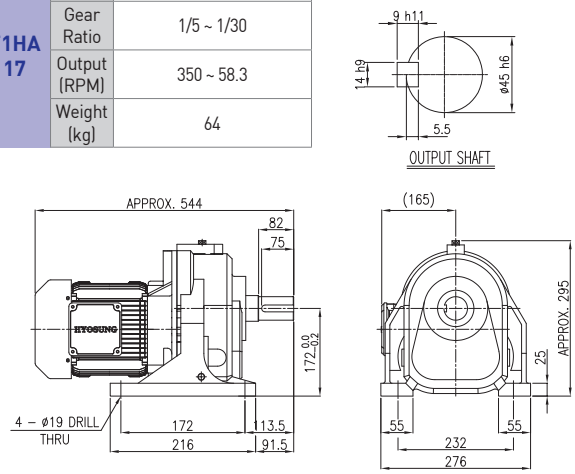
F1 수평형

2.2kW

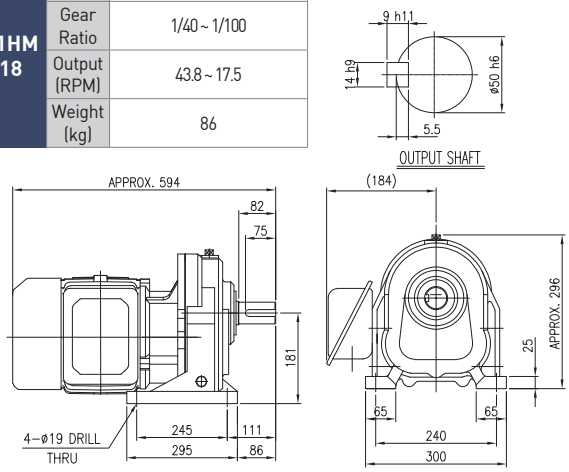
F1HM 17		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	73



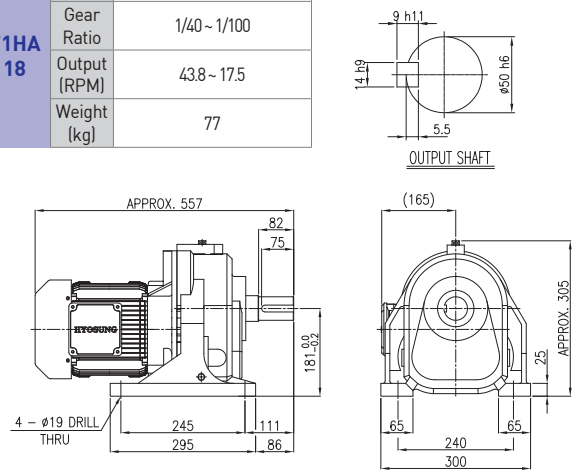
F1HA 17		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	64



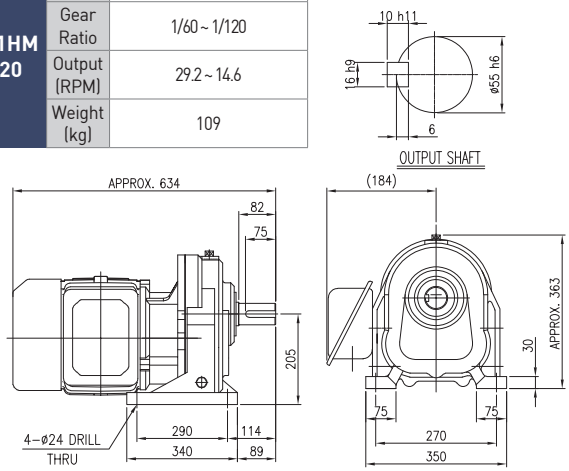
F1HM 18		
	Power	2.2
	Gear Ratio	1/40 ~ 1/100
	Output (RPM)	43.8 ~ 17.5
	Weight (kg)	86



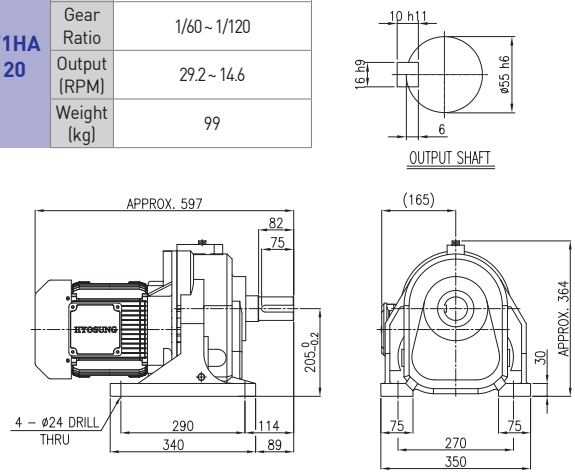
F1HA 18		
	Power	2.2
	Gear Ratio	1/40 ~ 1/100
	Output (RPM)	43.8 ~ 17.5
	Weight (kg)	77



F1HM 20		
	Power	2.2
	Gear Ratio	1/60 ~ 1/120
	Output (RPM)	29.2 ~ 14.6
	Weight (kg)	109



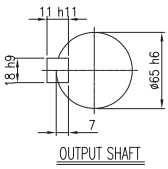
F1HA 20		
	Power	2.2
	Gear Ratio	1/60 ~ 1/120
	Output (RPM)	29.2 ~ 14.6
	Weight (kg)	99

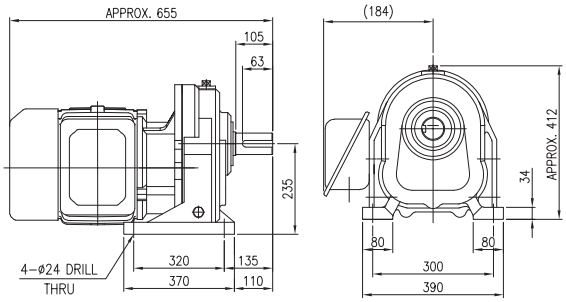


F1 수평형

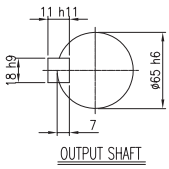
2.2kW

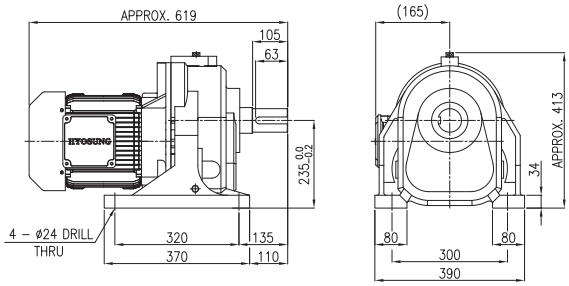
F1HM 23			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	134	



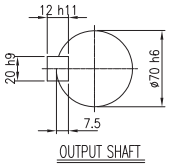


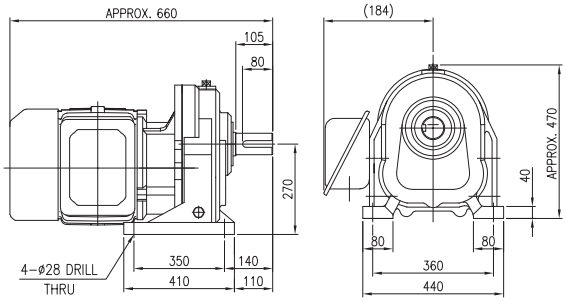
F1HA 23			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	124	



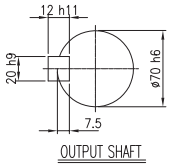


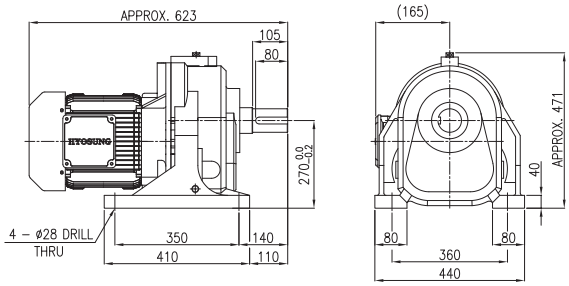
F1HM 27			
	Power	2.2	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	173	





F1HA 27			
	Power	2.2	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	162	

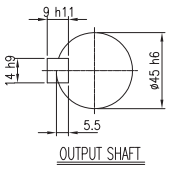


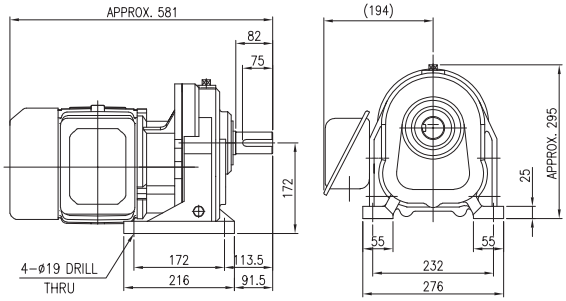


F1 수평형

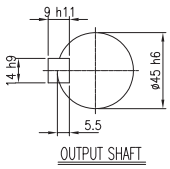
3.7kW

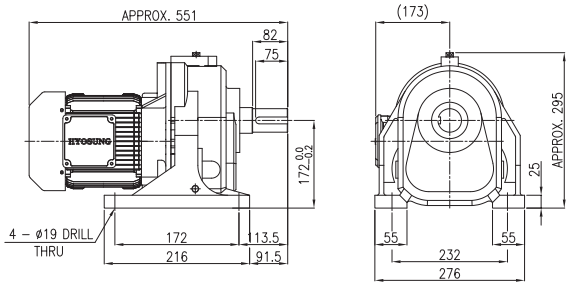
F1HM 17					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	80			



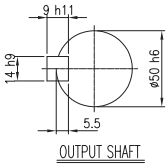


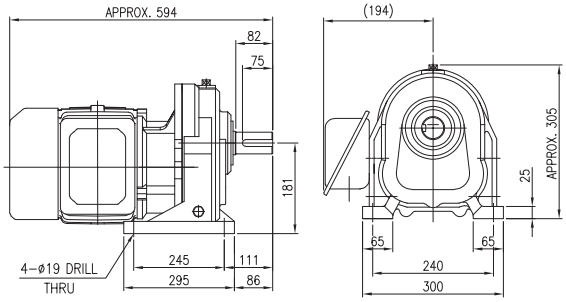
F1HA 17					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	69			



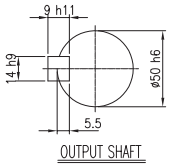


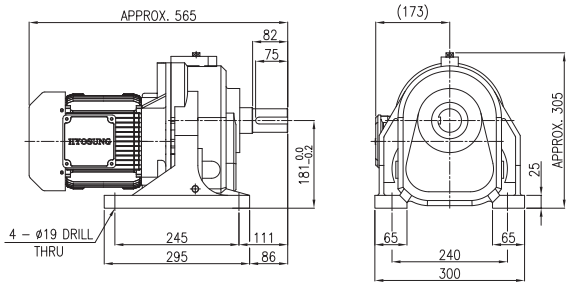
F1HM 18			
	Power	3.7	
	Gear Ratio	1/25	1/30
	Output (RPM)	70.2	58.5
	Weight (kg)	90	



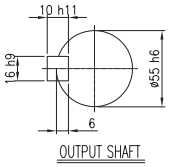


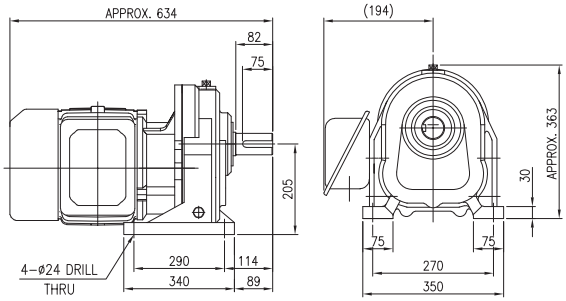
F1HA 18			
	Power	3.7	
	Gear Ratio	1/25	1/30
	Output (RPM)	70.2	58.5
	Weight (kg)	79	



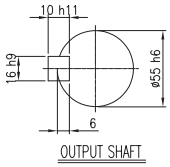


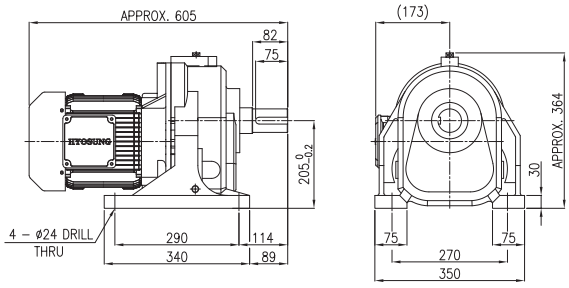
F1HM 20					
	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	115			





F1HA 20					
	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	104			

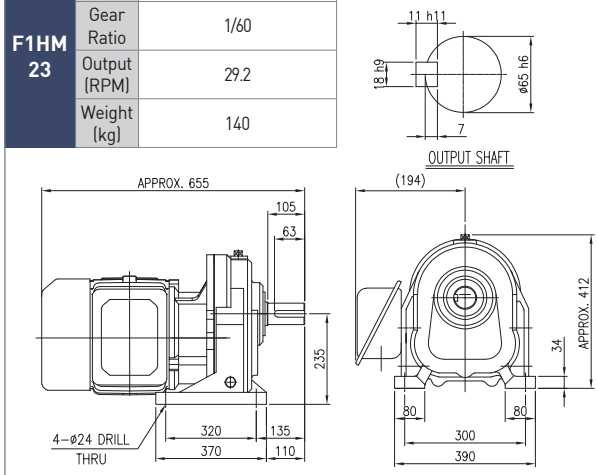




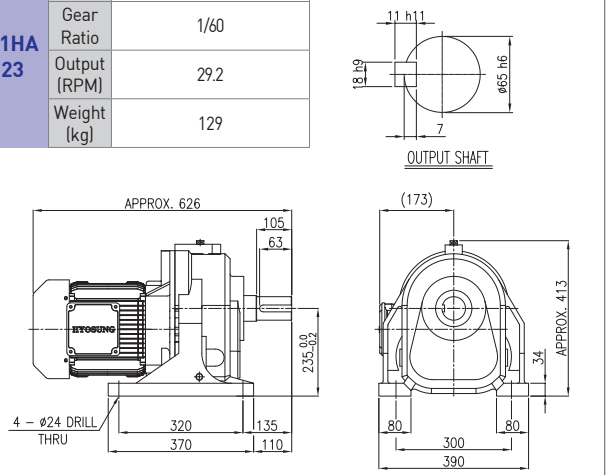
F1 수평형

3.7kW

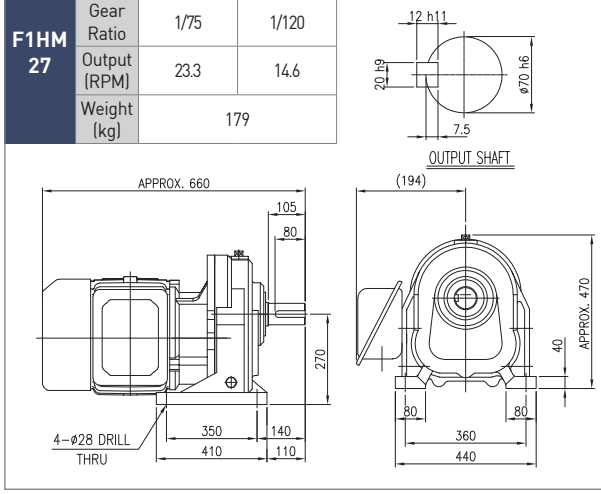
F1HM 23		
	Power	3.7
	Gear Ratio	1/60
	Output (RPM)	29.2
	Weight (kg)	140



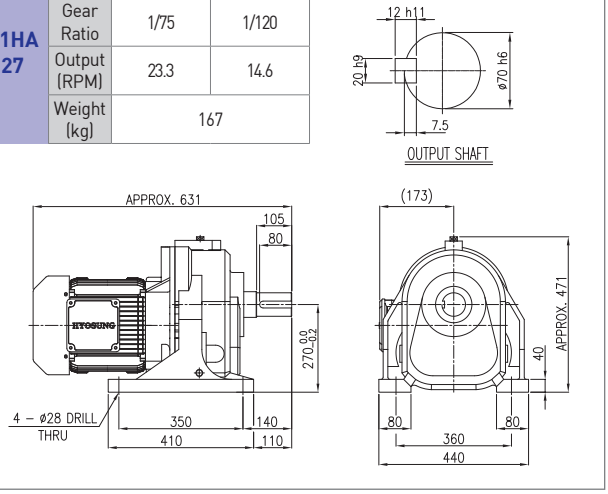
F1HA 23		
	Power	3.7
	Gear Ratio	1/60
	Output (RPM)	29.2
	Weight (kg)	129



F1HM 27			
	Power	3.7	
	Gear Ratio	1/75	1/120
	Output (RPM)	23.3	14.6
	Weight (kg)	179	



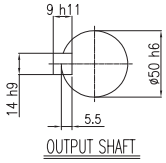
F1HA 27			
	Power	3.7	
	Gear Ratio	1/75	1/120
	Output (RPM)	23.3	14.6
	Weight (kg)	167	

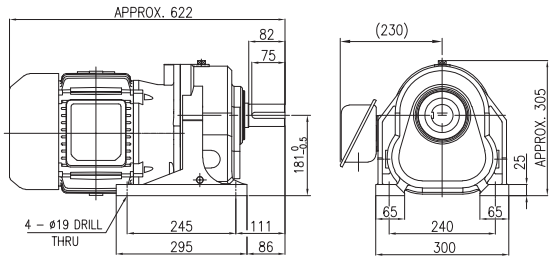


F1 수평형

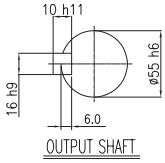
5.5kW

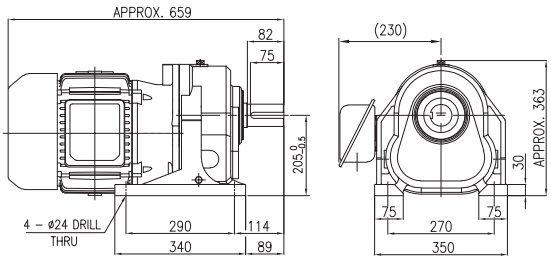
F1HM 18		
	Power	5.5
	Gear Ratio	1/5 ~ 1/20
	Output (RPM)	355 ~ 88.8
	Weight (kg)	123



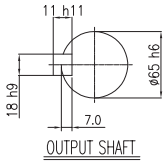


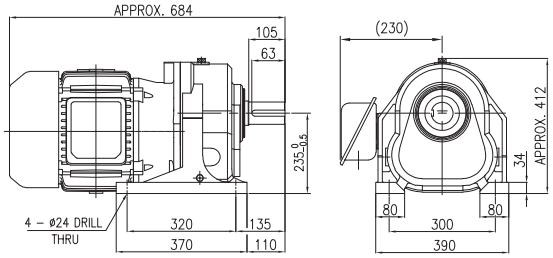
F1HM 20		
	Power	5.5
	Gear Ratio	1/30
	Output (RPM)	59.2
	Weight (kg)	144



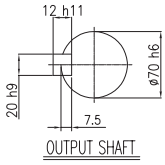


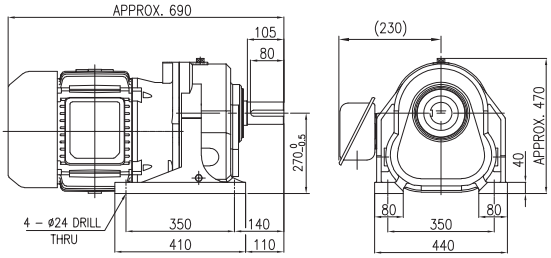
F1HM 23		
	Power	5.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.4 ~ 29.6
	Weight (kg)	168





F1HM 27		
	Power	5.5
	Gear Ratio	1/60 ~ 1/100
	Output (RPM)	29.6 ~ 17.8
	Weight (kg)	199

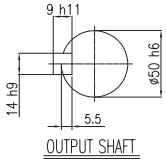


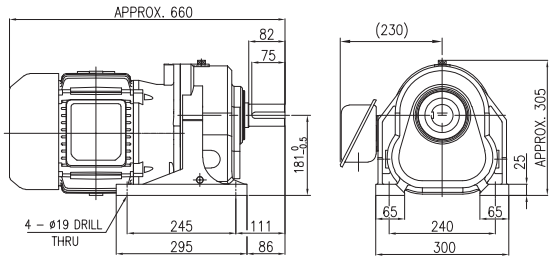


F1 수평형

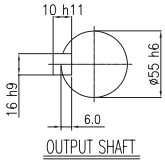
7.5kW

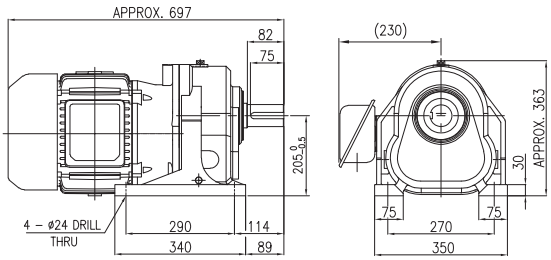
F1HM 18		
	Power	7.5
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	354 ~ 177
	Weight (kg)	128



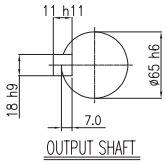


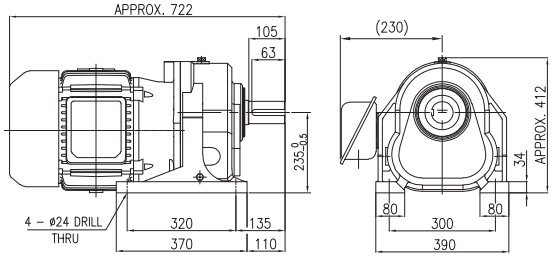
F1HM 20		
	Power	7.5
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118 ~ 59
	Weight (kg)	149



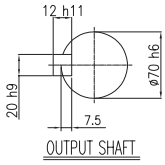


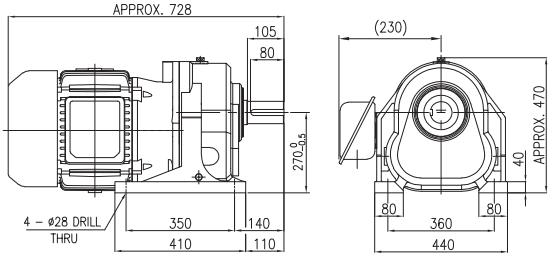
F1HM 23		
	Power	7.5
	Gear Ratio	1/30
	Output (RPM)	59
	Weight (kg)	173





F1HM 27		
	Power	7.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.3 ~ 29.5
	Weight (kg)	204

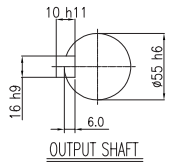


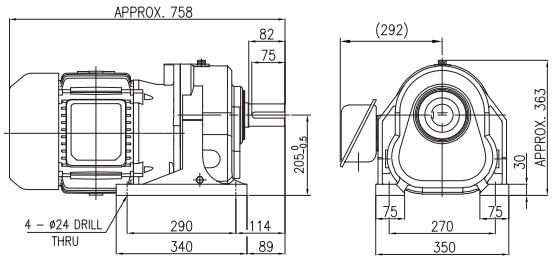


F1 수평형

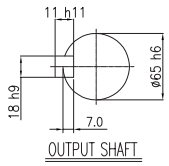
11kW

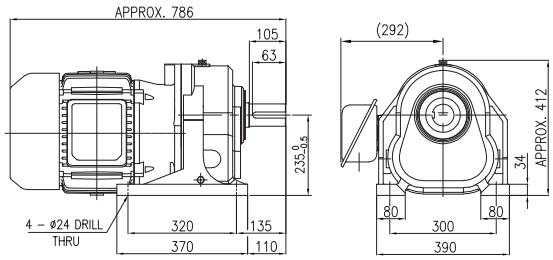
F1HM 20		
	Power	11
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	356 ~ 178
	Weight (kg)	212



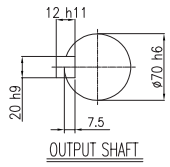


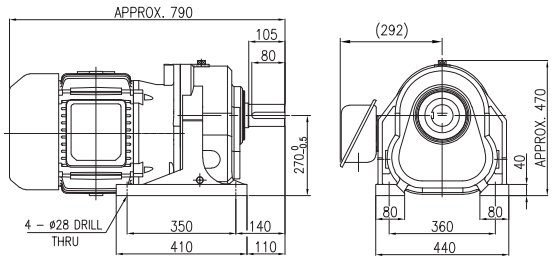
F1HM 23		
	Power	11
	Gear Ratio	1/15 ~ 1/20
	Output (RPM)	118.7 ~ 89
	Weight (kg)	236





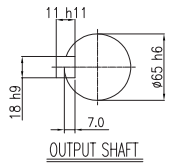
F1HM 27		
	Power	11
	Gear Ratio	1/30
	Output (RPM)	59.3
	Weight (kg)	267

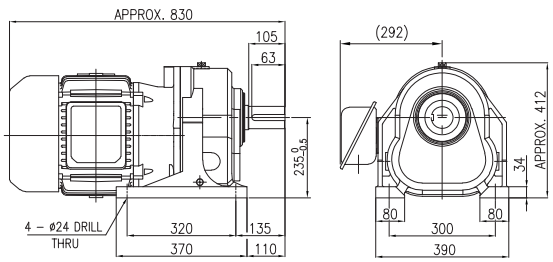




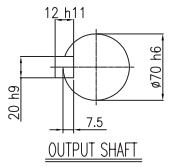
15kW

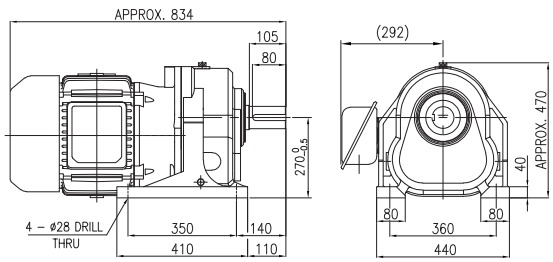
F1HM 23		
	Power	15
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	355 ~ 177.5
	Weight (kg)	242





F1HM 27		
	Power	15
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118.3 ~ 59.2
	Weight (kg)	273

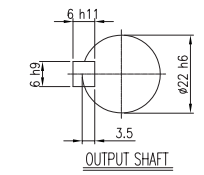


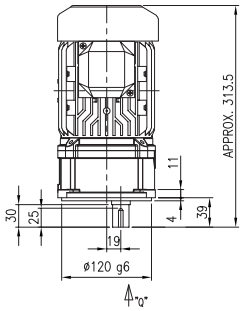


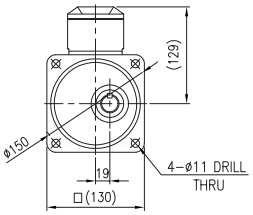
F1 수직형

0.2kW

F1VM 08		
	Power	0.2
	Gear Ratio	1/5 ~ 1/100
	Output (RPM)	350 ~ 17.5
	Weight (kg)	9

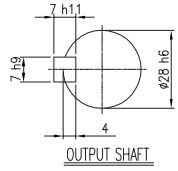


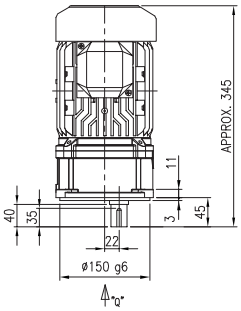


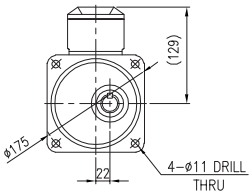


0.4kW

F1VM 10		
	Power	0.4
	Gear Ratio	1/5 ~ 1/100
	Output (RPM)	350 ~ 17.5
	Weight (kg)	11

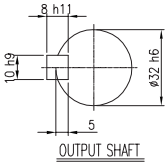


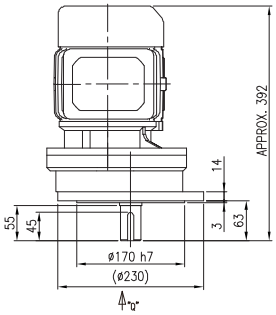


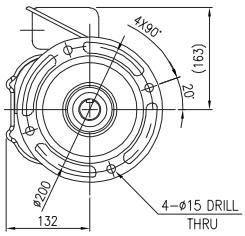


0.75kW

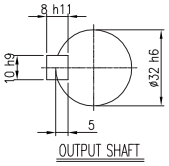
F1VM 13		
	Power	0.75
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	32

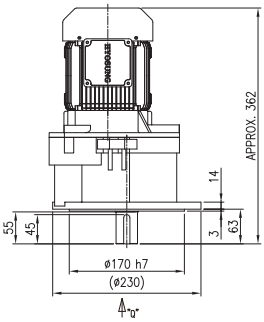


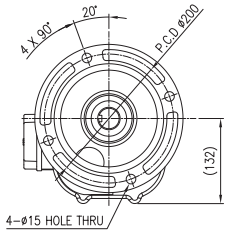




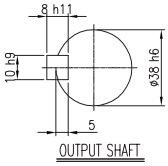
F1VA 13		
	Power	0.75
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	26

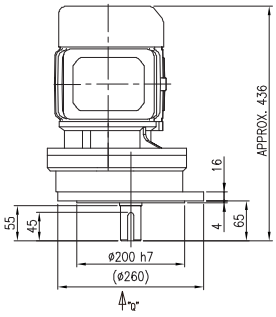


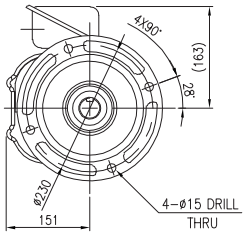




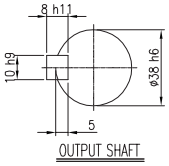
F1VM 15		
	Power	0.75
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	45

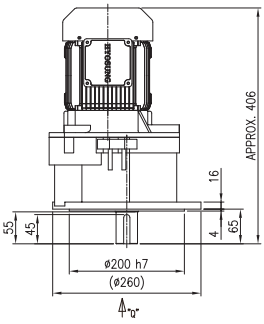


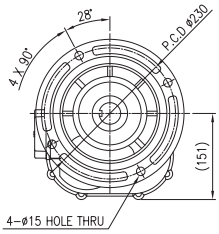




F1VA 15		
	Power	0.75
	Gear Ratio	1/40~1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	39



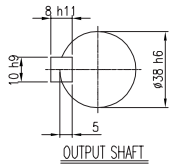


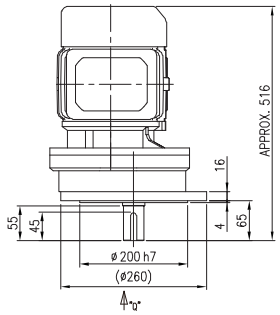


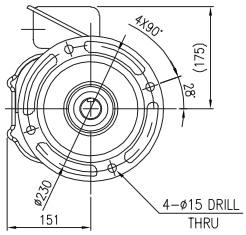
F1 수직형

1.5kW

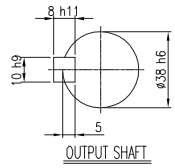
F1VM 15		
	Power	1.5
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	53

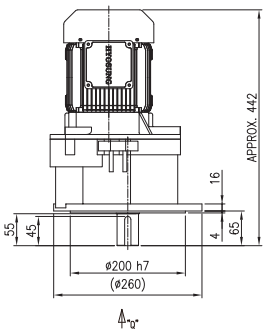


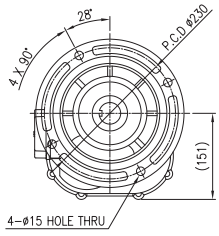




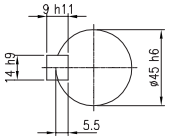
F1VA 15		
	Power	1.5
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	44

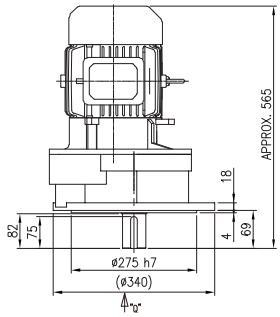


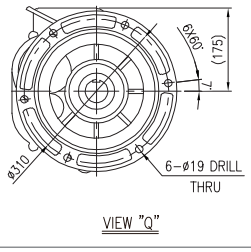




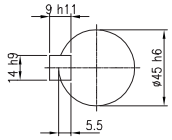
F1VM 17		
	Power	1.5
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	76

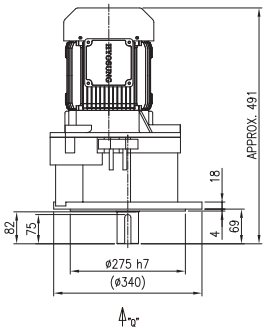


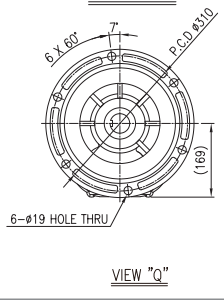




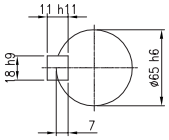
F1VA 17		
	Power	1.5
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	67

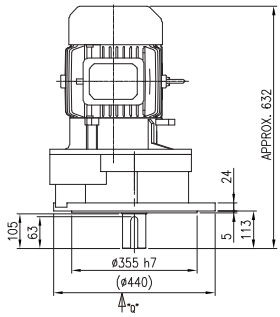


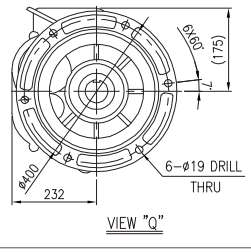




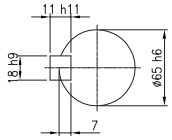
F1VM 23		
	Power	1.5
	Gear Ratio	1/100 / 1/120
	Output (RPM)	17.5 / 14.6
	Weight (kg)	129

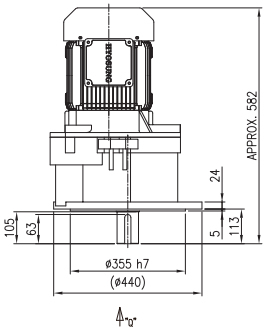


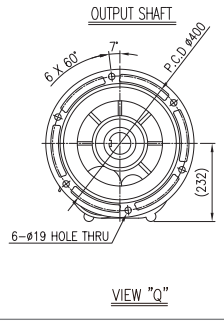




F1VA 23		
	Power	1.5
	Gear Ratio	1/100 / 1/120
	Output (RPM)	17.5 / 14.6
	Weight (kg)	119



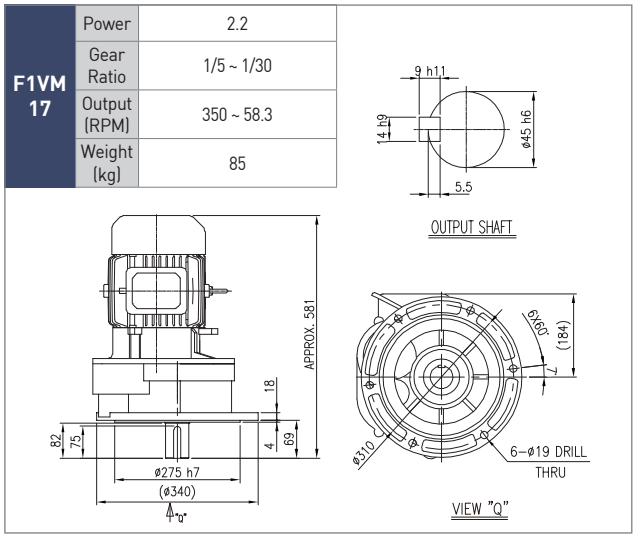




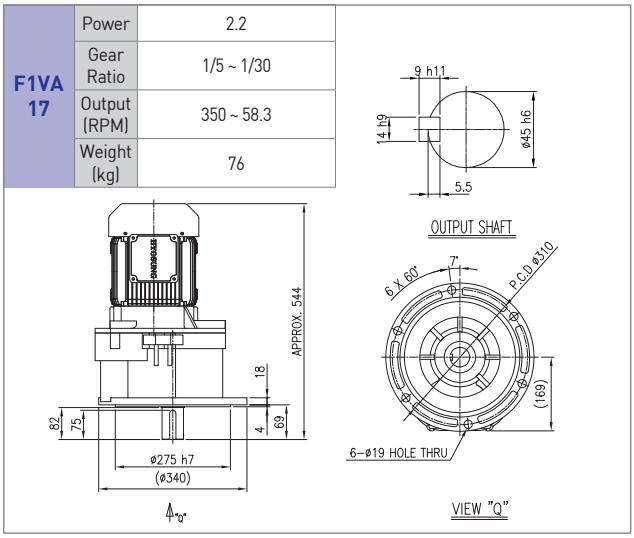
F1 수직형

2.2kW

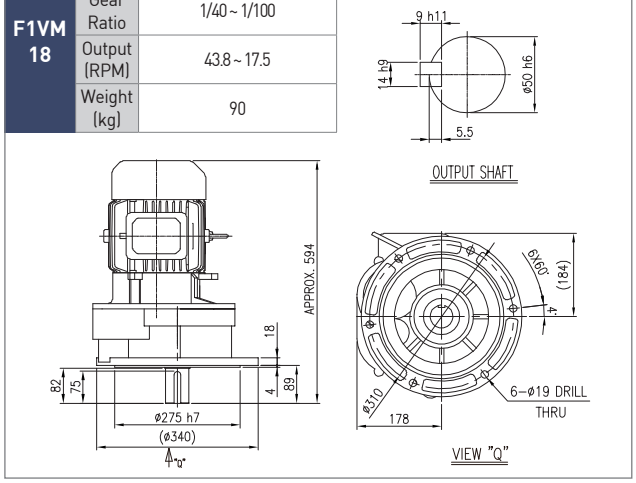
F1VM 17		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	85



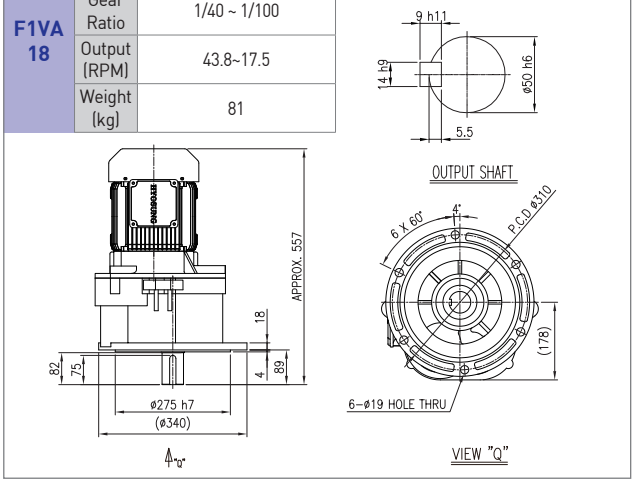
F1VA 17		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	76



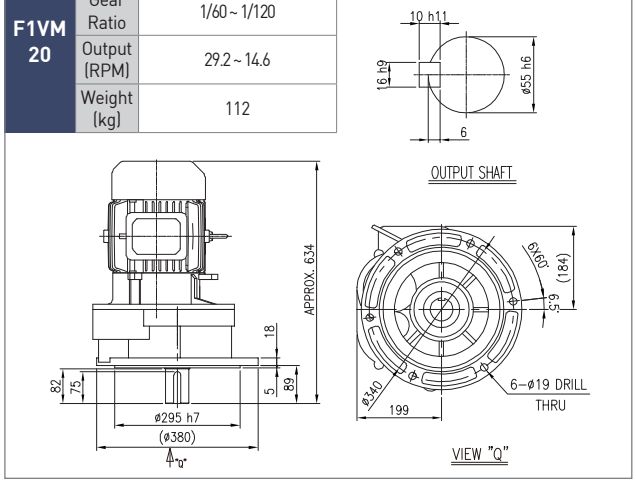
F1VM 18		
	Power	2.2
	Gear Ratio	1/40 ~ 1/100
	Output (RPM)	43.8 ~ 17.5
	Weight (kg)	90



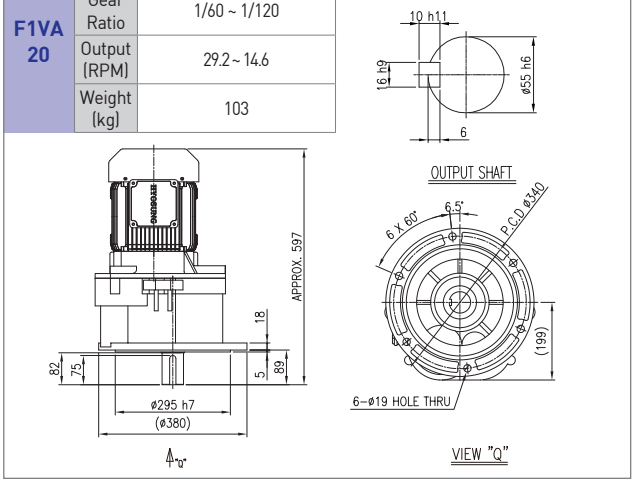
F1VA 18		
	Power	2.2
	Gear Ratio	1/40 ~ 1/100
	Output (RPM)	43.8~17.5
	Weight (kg)	81



F1VM 20		
	Power	2.2
	Gear Ratio	1/60 ~ 1/120
	Output (RPM)	29.2 ~ 14.6
	Weight (kg)	112

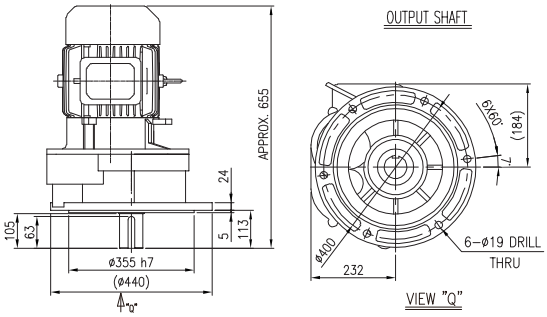


F1VA 20		
	Power	2.2
	Gear Ratio	1/60 ~ 1/120
	Output (RPM)	29.2 ~ 14.6
	Weight (kg)	103

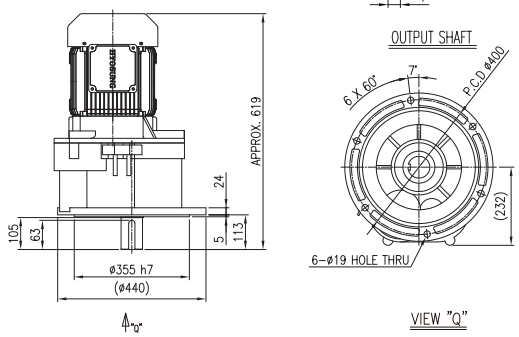


F1 수직형

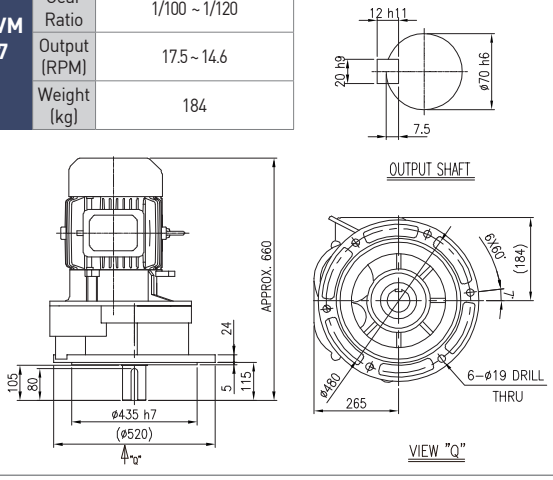
F1VM 23			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	140	



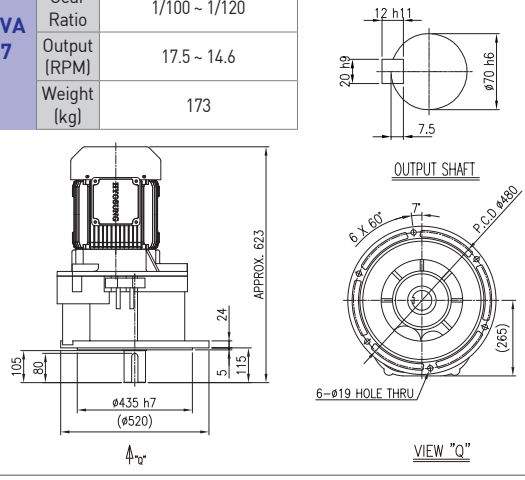
F1VA 23			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	130	



F1VM 27		
	Power	2.2
	Gear Ratio	1/100 ~ 1/120
	Output (RPM)	17.5 ~ 14.6
	Weight (kg)	184



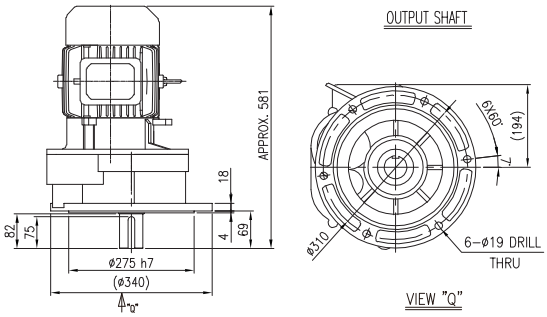
F1VA 27		
	Power	2.2
	Gear Ratio	1/100 ~ 1/120
	Output (RPM)	17.5 ~ 14.6
	Weight (kg)	173



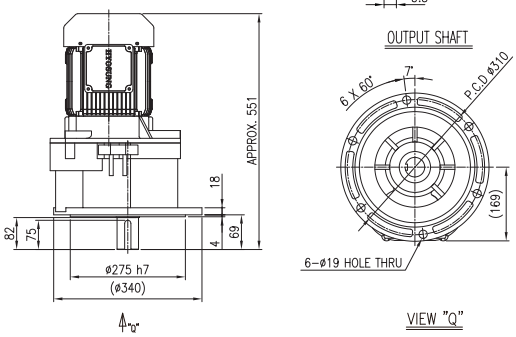
F1 수직형

3.7kW

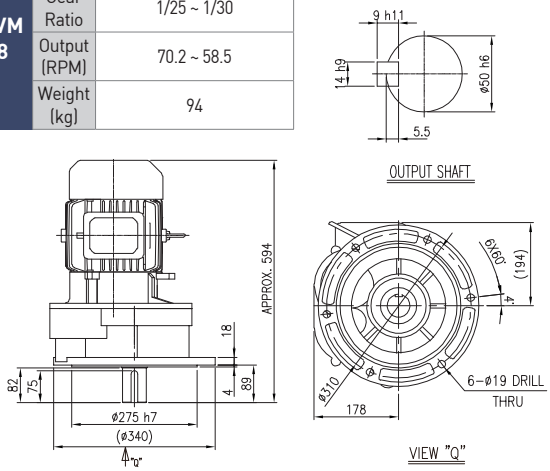
F1VM 17					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	92			



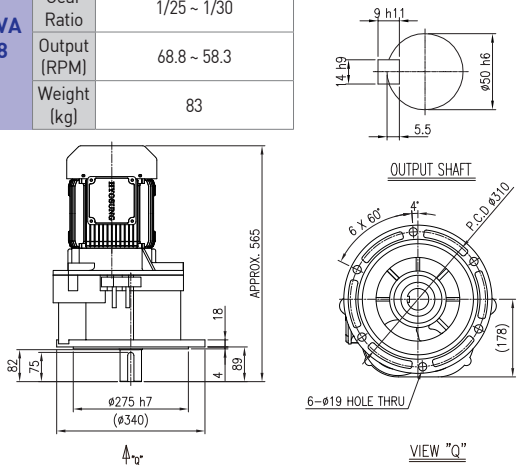
F1VA 17					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	81			



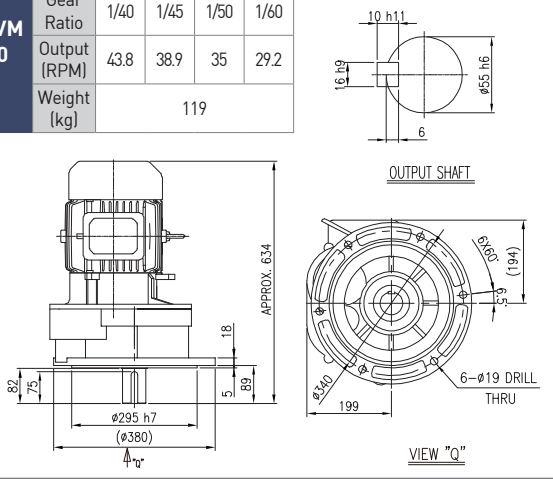
F1VM 18		
	Power	3.7
	Gear Ratio	1/25 ~ 1/30
	Output (RPM)	70.2 ~ 58.5
	Weight (kg)	94



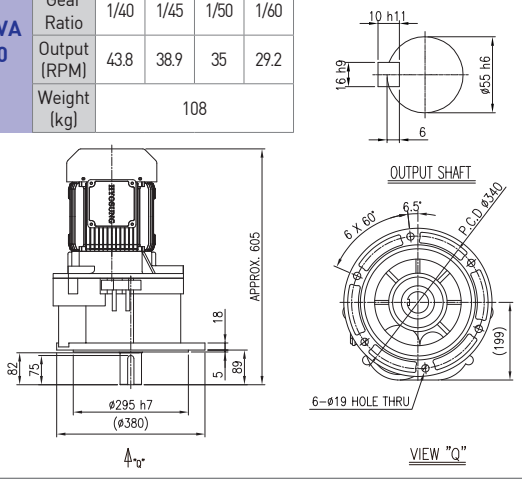
F1VA 18		
	Power	3.7
	Gear Ratio	1/25 ~ 1/30
	Output (RPM)	68.8 ~ 58.3
	Weight (kg)	83



F1VM 20					
	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	119			

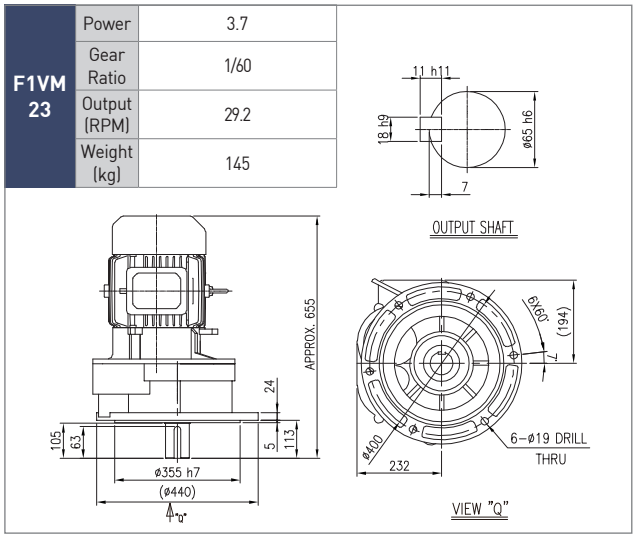


F1VA 20					
	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	108			

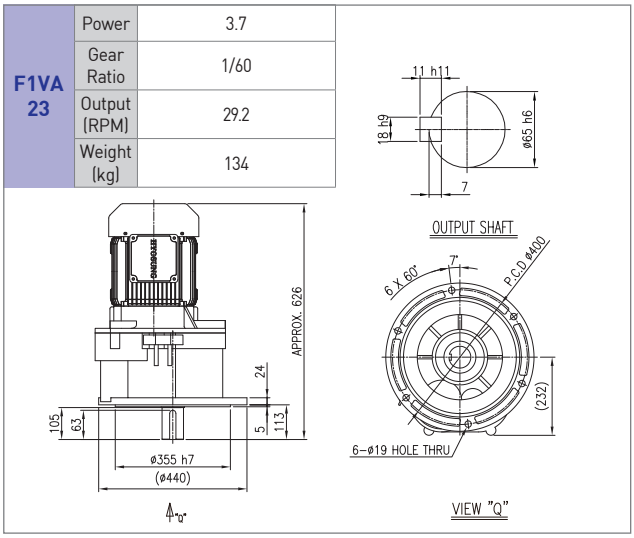


F1 수직형

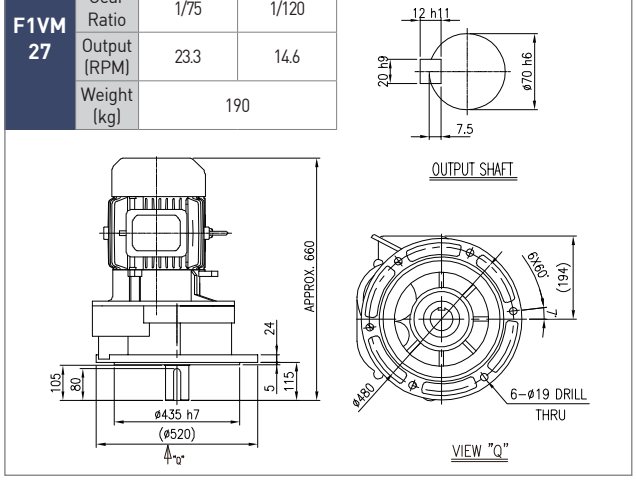
F1VM 23		
	Power	3.7
	Gear Ratio	1/60
	Output (RPM)	29.2
	Weight (kg)	145



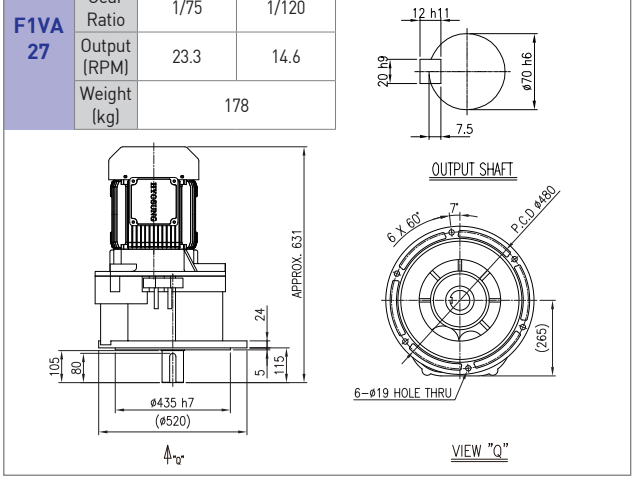
F1VA 23		
	Power	3.7
	Gear Ratio	1/60
	Output (RPM)	29.2
	Weight (kg)	134



F1VM 27			
	Power	3.7	
	Gear Ratio	1/75	1/120
	Output (RPM)	23.3	14.6
	Weight (kg)	190	



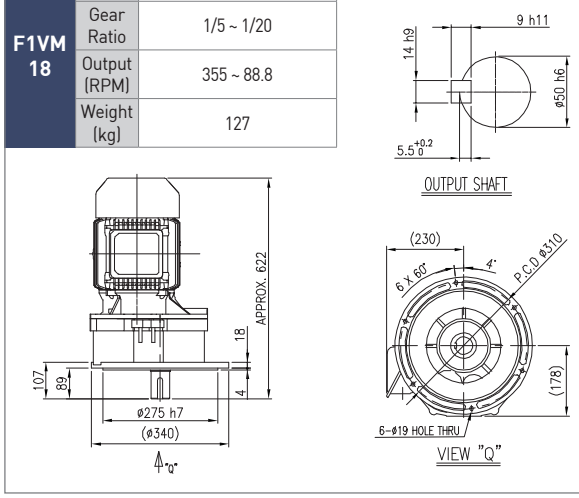
F1VA 27			
	Power	3.7	
	Gear Ratio	1/75	1/120
	Output (RPM)	23.3	14.6
	Weight (kg)	178	



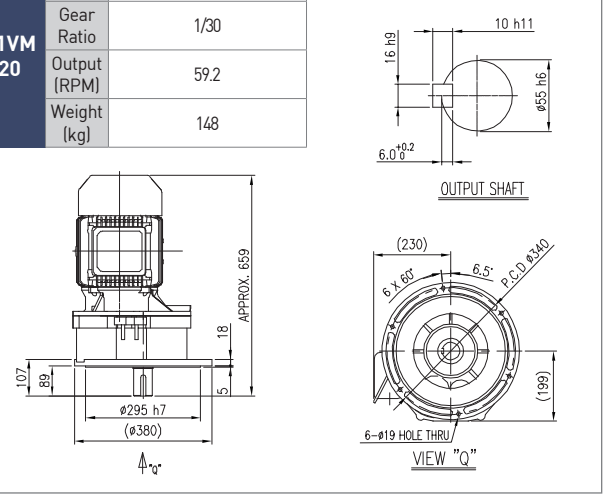
F1 수직형

5.5kW

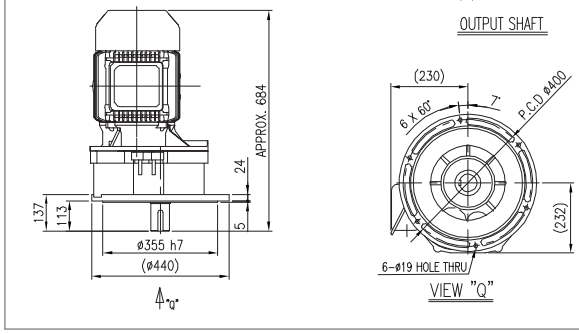
F1VM 18		
	Power	5.5
	Gear Ratio	1/5 ~ 1/20
	Output (RPM)	355 ~ 88.8
	Weight (kg)	127



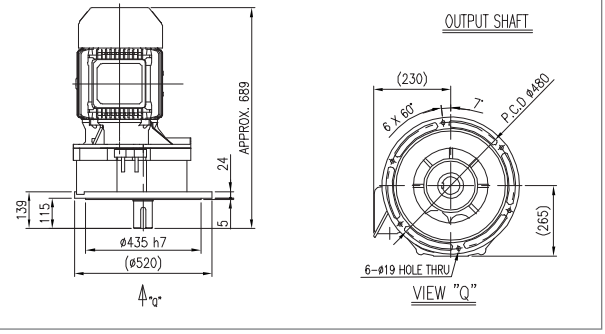
F1VM 20		
	Power	5.5
	Gear Ratio	1/30
	Output (RPM)	59.2
	Weight (kg)	148



F1VM 23		
	Power	5.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.4 ~ 29.6
	Weight (kg)	173



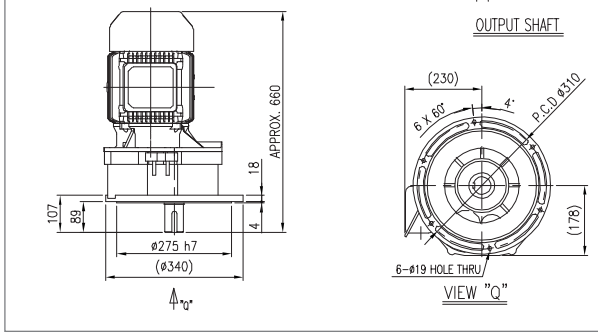
F1VM 27		
	Power	5.5
	Gear Ratio	1/60 ~ 1/100
	Output (RPM)	29.6 ~ 17.8
	Weight (kg)	210



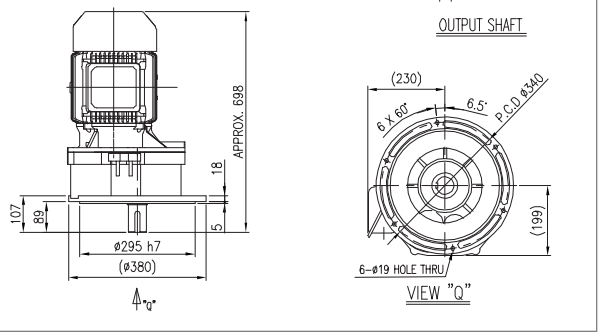
F1 수직형

7.5kW

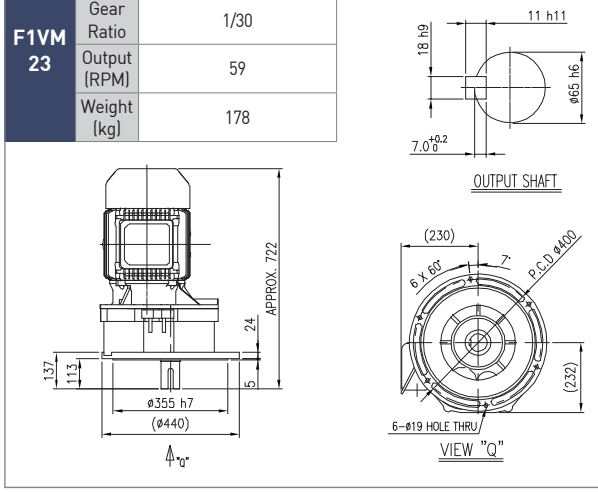
F1VM 18		
	Power	7.5
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	354 ~ 177
	Weight (kg)	132



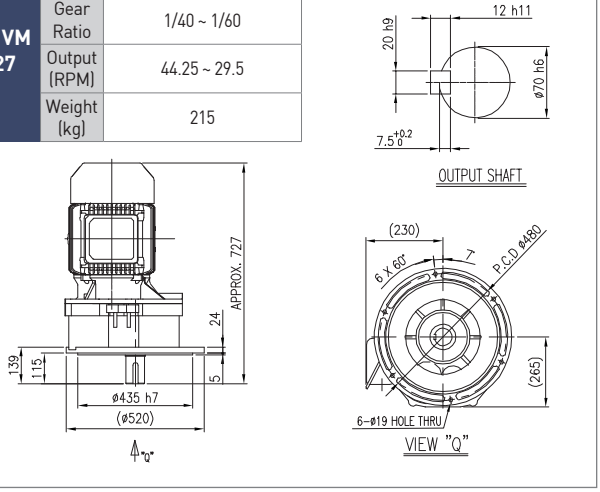
F1VM 20		
	Power	7.5
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118 ~ 59
	Weight (kg)	153



F1VM 23		
	Power	7.5
	Gear Ratio	1/30
	Output (RPM)	59
	Weight (kg)	178



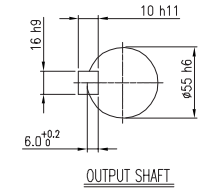
F1VM 27		
	Power	7.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.25 ~ 29.5
	Weight (kg)	215

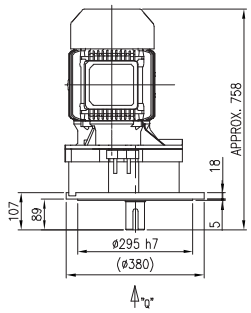


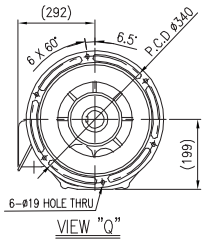
F1 수직형

11kW

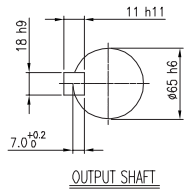
F1VM 20		
	Power	11
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	356 ~ 178
	Weight (kg)	216

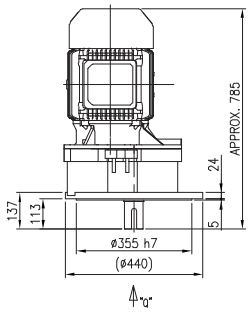


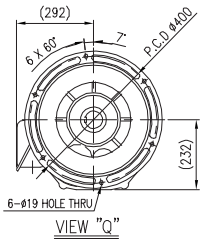




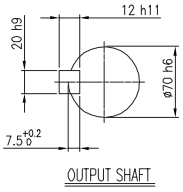
F1VM 23		
	Power	11
	Gear Ratio	1/15 ~ 1/20
	Output (RPM)	118.67 ~ 89
	Weight (kg)	241

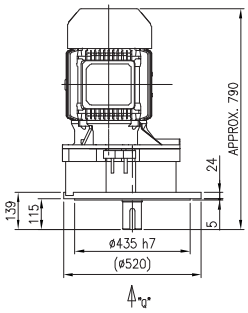


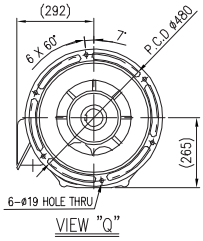




F1VM 27		
	Power	11
	Gear Ratio	1/30
	Output (RPM)	59.3
	Weight (kg)	278

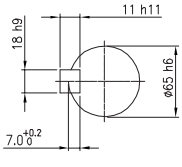


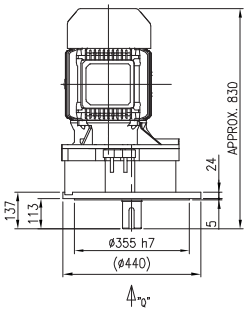


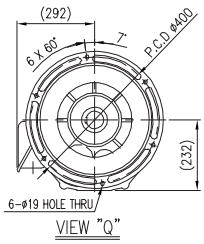


15kW

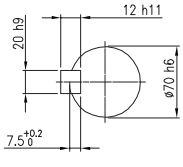
F1VM 23		
	Power	15
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	355 ~ 177.5
	Weight (kg)	247

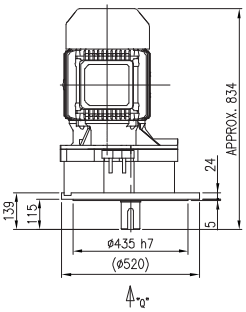


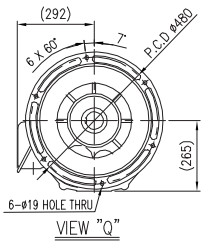




F1VM 27		
	Power	15
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118.3 ~ 59.2
	Weight (kg)	278



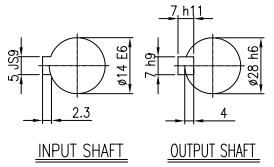


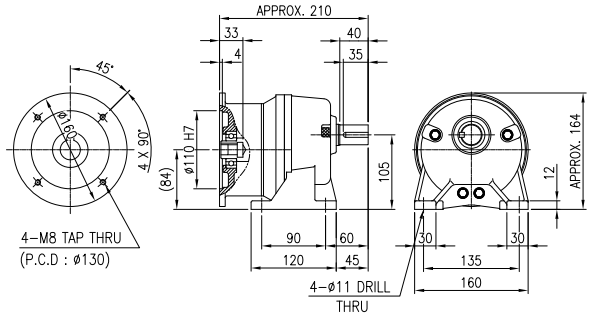


F1 IEC Flange(수평형)

0.4kW

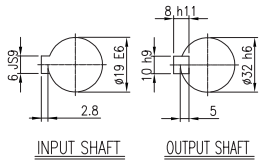
F1HF 10		
	Power	0.4
	Gear Ratio	1/5 ~ 1/100
	Output (RPM)	350 ~ 17.5
	Weight (kg)	7.5

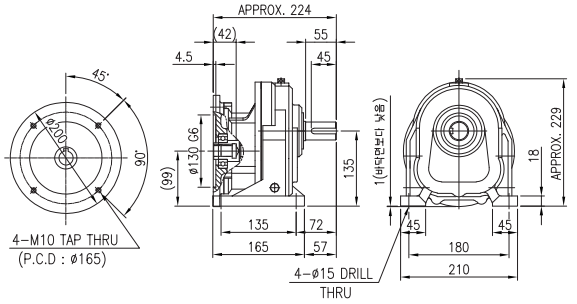




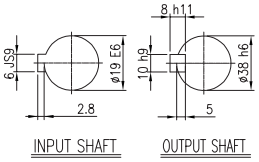
0.75kW

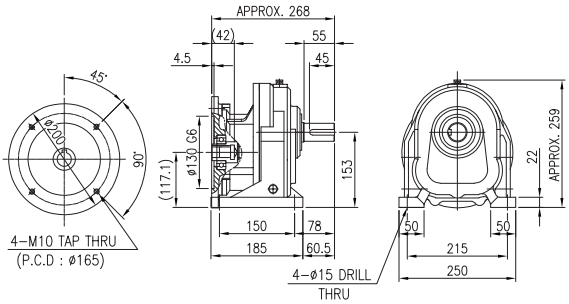
F1HF 13		
	Power	0.75
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	19





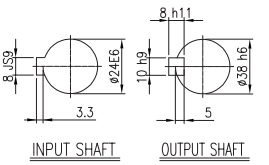
F1HF 15		
	Power	0.75
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	30

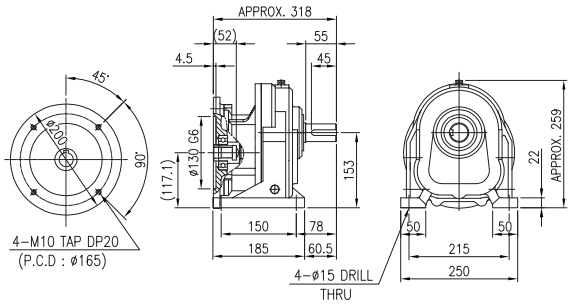




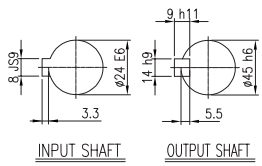
1.5kW

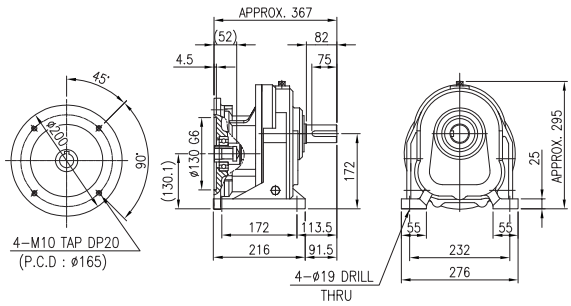
F1HF 15		
	Power	1.5
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	33





F1HF 17		
	Power	1.5
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	43

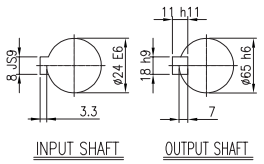


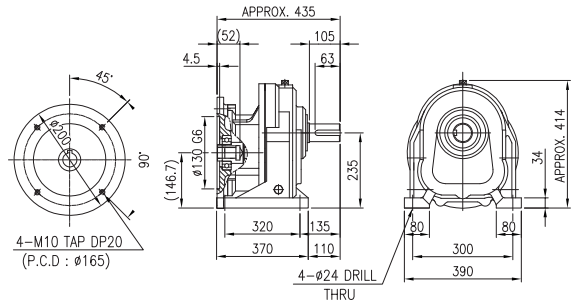


F1 IEC Flange(수평형)

1.5kW

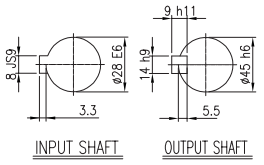
F1HF 23			
	Power	1.5	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	102	

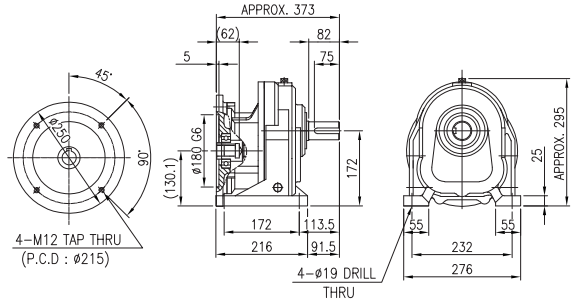




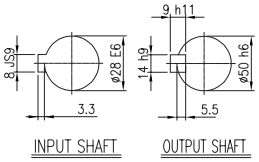
2.2kW

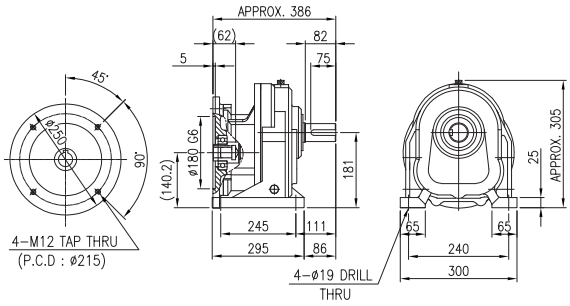
F1HF 17		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	45



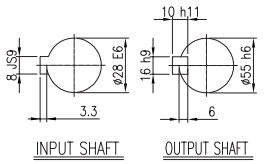


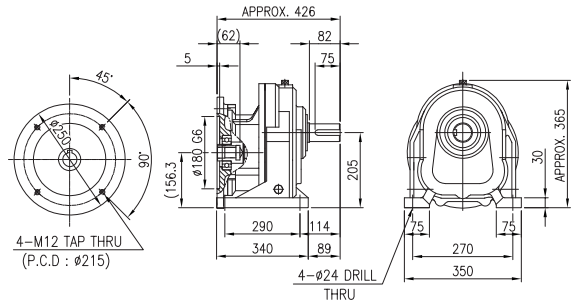
F1HF 18		
	Power	2.2
	Gear Ratio	1/40 ~ 1/100
	Output (RPM)	44.1 ~ 17.5
	Weight (kg)	58



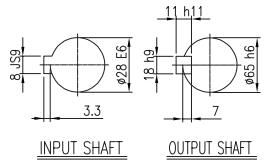


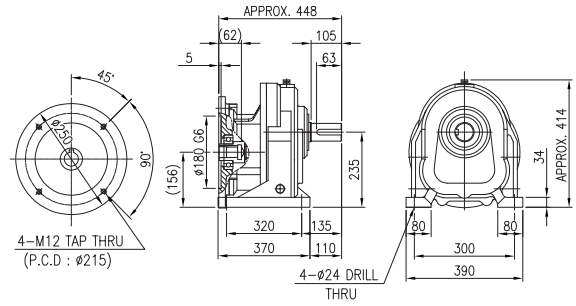
F1HF 20		
	Power	2.2
	Gear Ratio	1/75 ~ 1/120
	Output (RPM)	23.53 ~ 14.71
	Weight (kg)	78





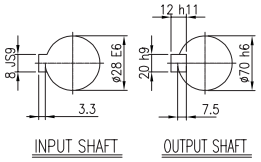
F1HF 23			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	105	

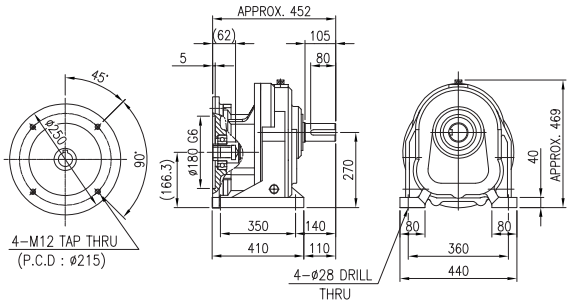




F1 IEC Flange(수평형)

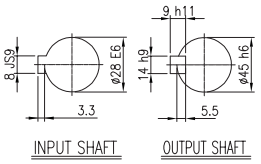
F1HF 27			
Power	2.2		
Gear Ratio	1/100	1/120	
Output (RPM)	17.5	14.6	
Weight (kg)	142		

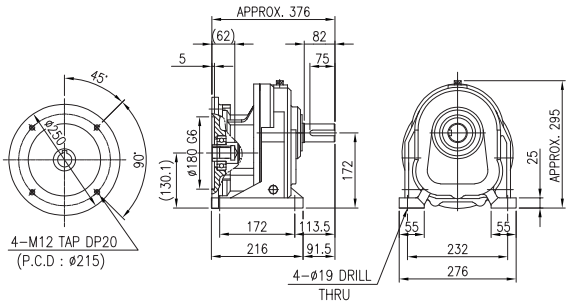




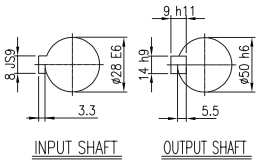
3.7kW

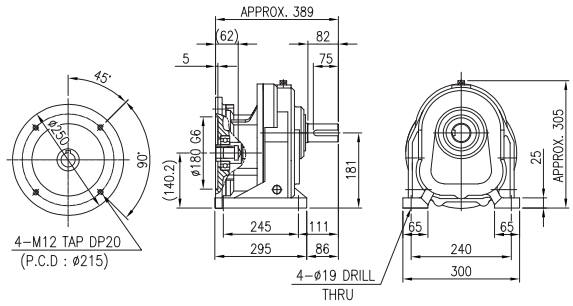
F1HF 17				
Power	3.7			
Gear Ratio	1/5	1/10	1/15	1/20
Output (RPM)	350	175	117	87.5
Weight (kg)	46			



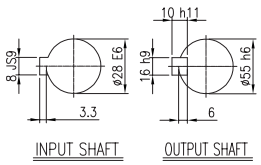


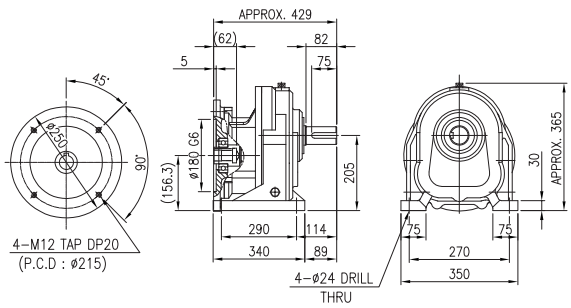
F1HF 18		
Power	3.7	
Gear Ratio	1/25 ~ 1/30	
Output (RPM)	70.2 ~ 58.5	
Weight (kg)	57	



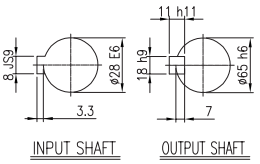


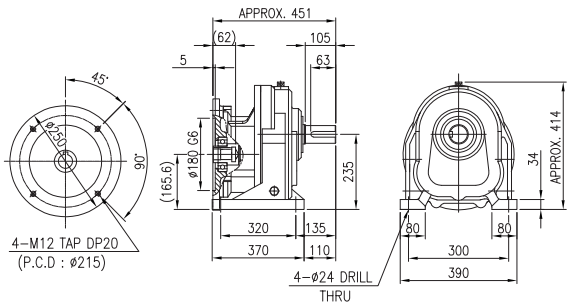
F1HF 20				
Power	3.7			
Gear Ratio	1/40	1/45	1/50	1/60
Output (RPM)	43.8	38.9	35	29.2
Weight (kg)	80			





F1HF 23	
Power	3.7
Gear Ratio	1/60
Output (RPM)	29.2
Weight (kg)	106

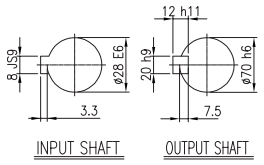


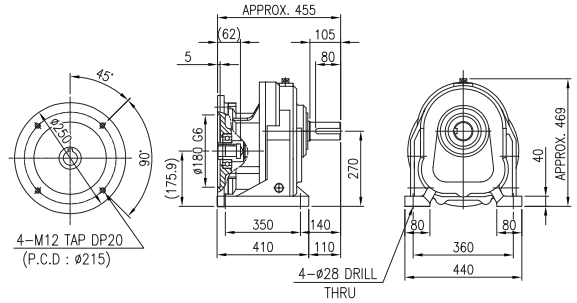


F1 IEC Flange(수평형)

3.7kW

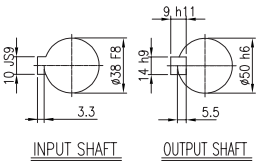
F1HF 27	Power	3.7
	Gear Ratio	1/75 ~ 1/120
	Output (RPM)	23.3 ~ 14.6
	Weight (kg)	144

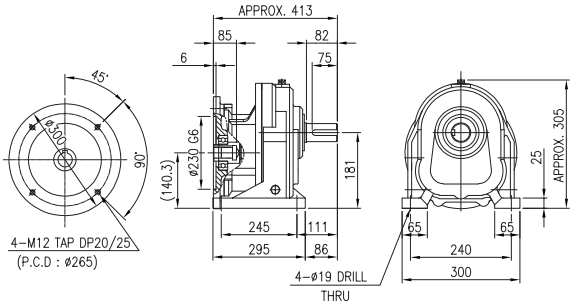




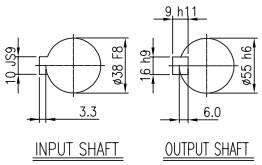
5.5kW

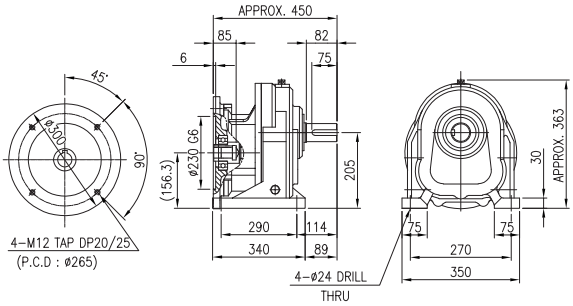
F1HF 18	Power	5.5
	Gear Ratio	1/5 ~ 1/20
	Output (RPM)	355 ~ 88.8
	Weight (kg)	55



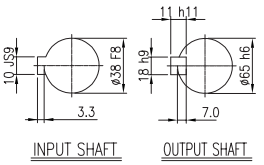


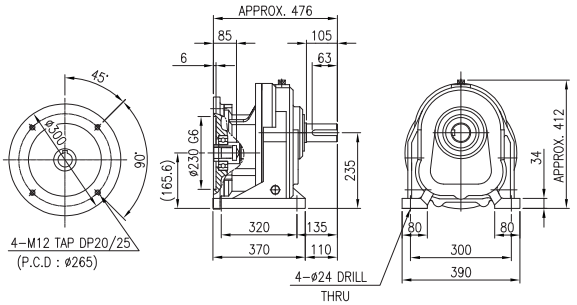
F1HF 20	Power	5.5
	Gear Ratio	1/30
	Output (RPM)	59.2
	Weight (kg)	75



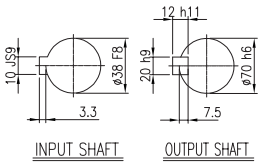


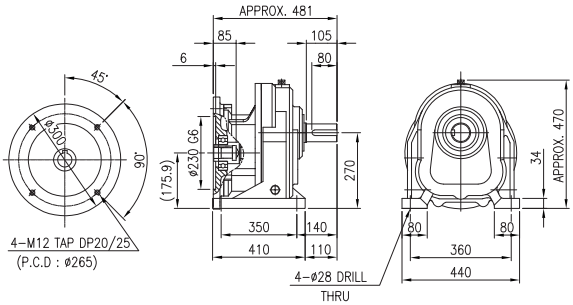
F1HF 23	Power	5.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.4 ~ 29.6
	Weight (kg)	96





F1HF 27	Power	5.5
	Gear Ratio	1/60 ~ 1/100
	Output (RPM)	29.6 ~ 17.8
	Weight (kg)	123

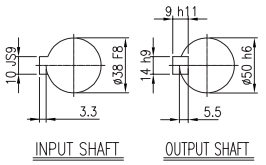


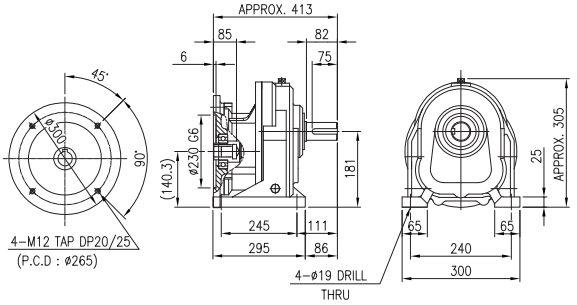


F1 IEC Flange(수평형)

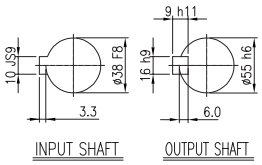
7.5kW

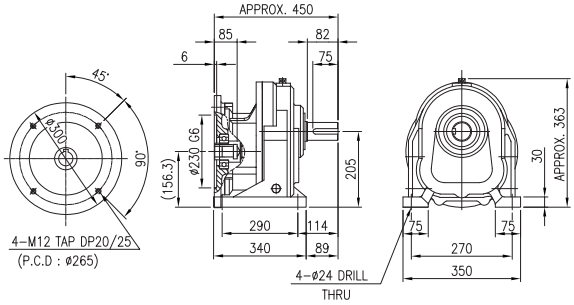
F1HF 18		
	Power	7.5
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	354 ~ 177
	Weight (kg)	55



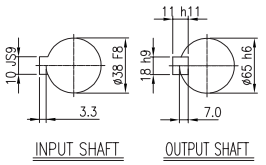


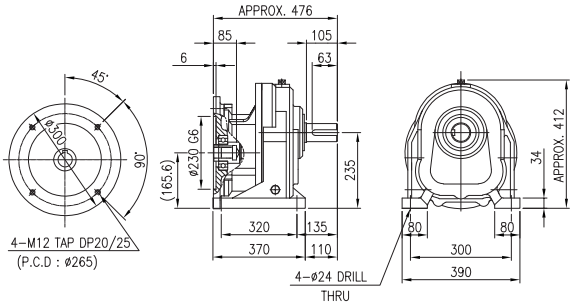
F1HF 20		
	Power	7.5
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118 ~ 59
	Weight (kg)	75



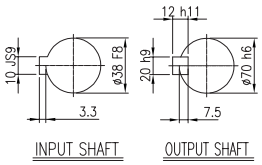


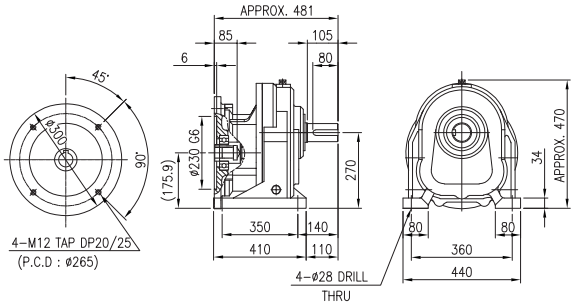
F1HF 23		
	Power	7.5
	Gear Ratio	1/30
	Output (RPM)	59
	Weight (kg)	88





F1HF 27		
	Power	7.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.3 ~ 29.5
	Weight (kg)	123

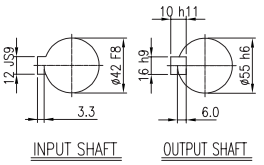


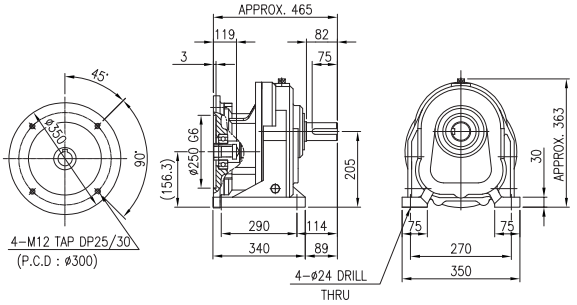


F1 IEC Flange(수평형)

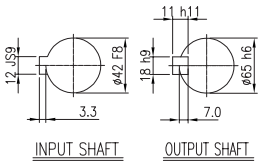
11kW

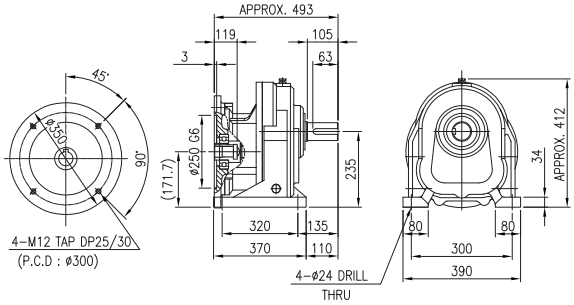
F1HF 20		
	Power	11
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	356 ~ 178
	Weight (kg)	98



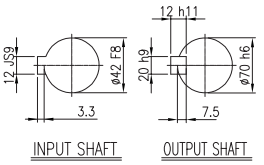


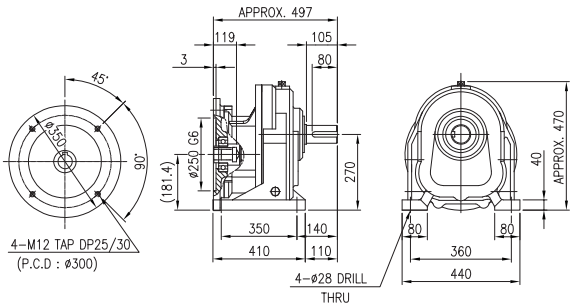
F1HF 23		
	Power	11
	Gear Ratio	1/15 ~ 1/20
	Output (RPM)	118.7 ~ 89
	Weight (kg)	118





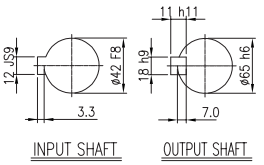
F1HF 27		
	Power	11
	Gear Ratio	1/30
	Output (RPM)	59.3
	Weight (kg)	146

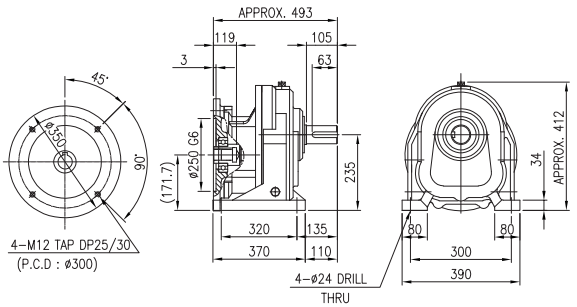




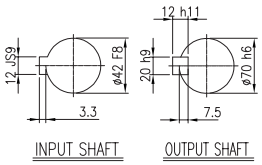
15kW

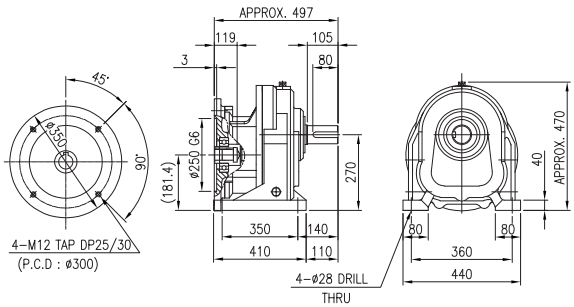
F1HF 23		
	Power	15
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	355 ~ 177.5
	Weight (kg)	118





F1HF 27		
	Power	15
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118.3 ~ 59.2
	Weight (kg)	146

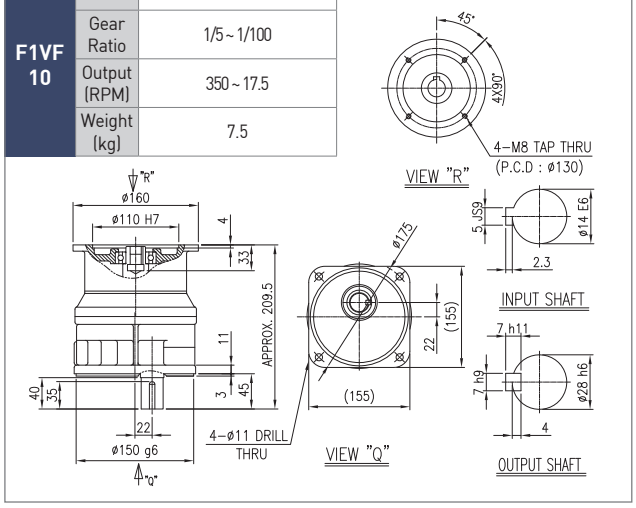




F1 IEC Flange(수직형)

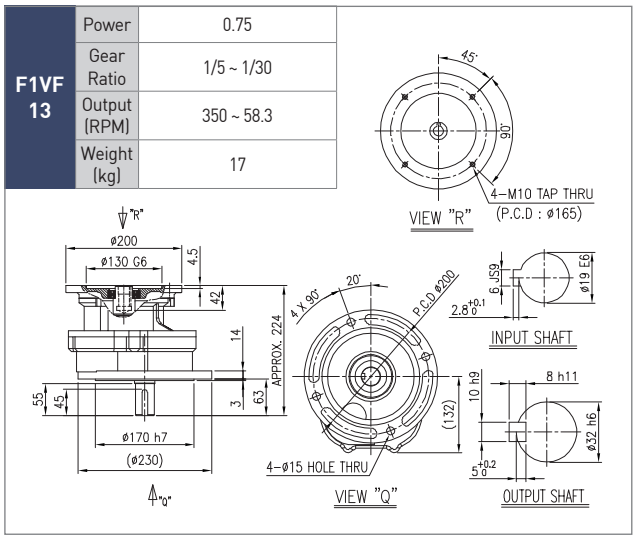
0.4kW

F1VF 10		
	Power	0.4
	Gear Ratio	1/5 ~ 1/100
	Output (RPM)	350 ~ 17.5
	Weight (kg)	7.5

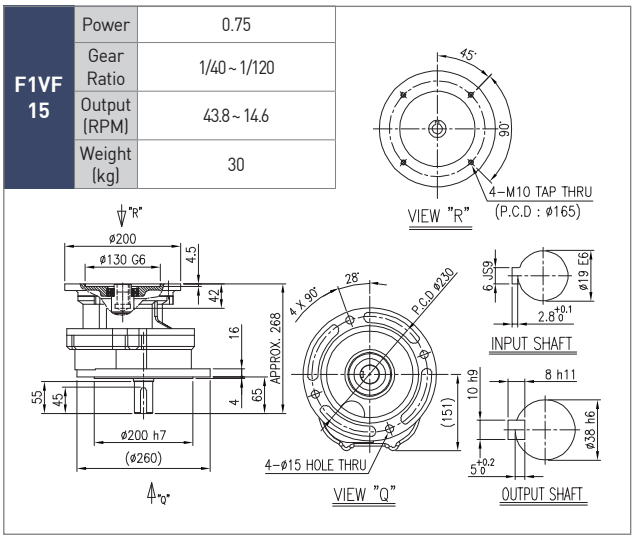


0.75kW

F1VF 13		
	Power	0.75
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	17

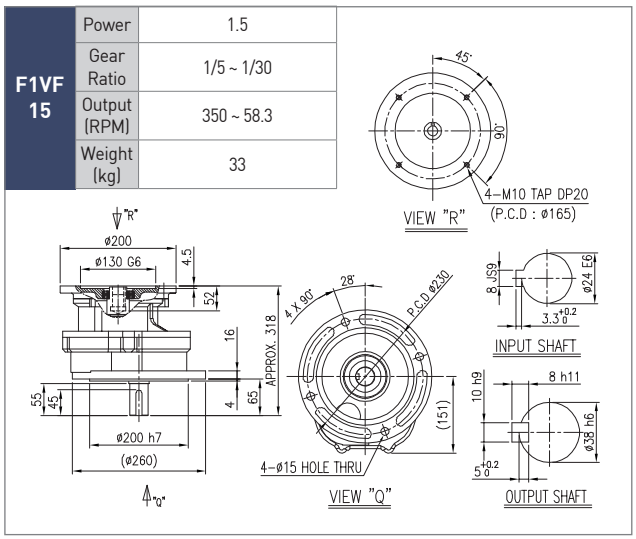


F1VF 15		
	Power	0.75
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	30

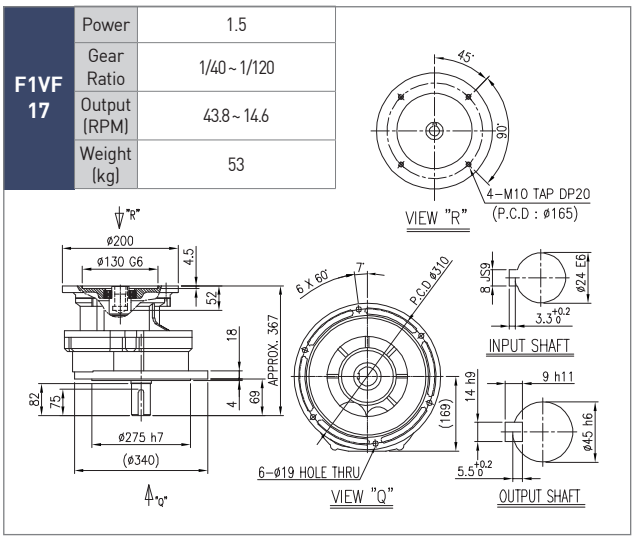


1.5kW

F1VF 15		
	Power	1.5
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	33



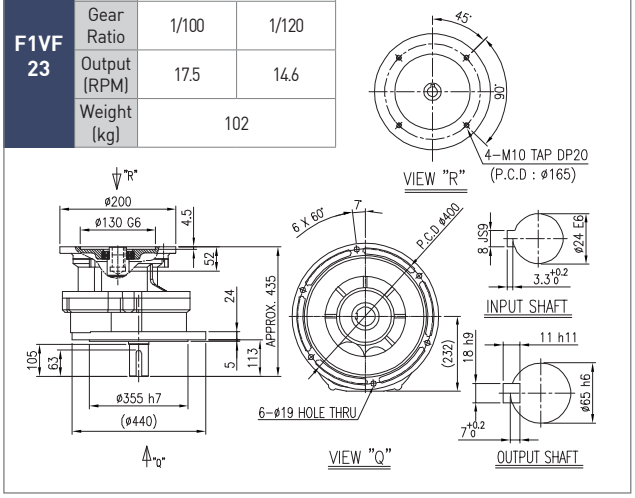
F1VF 17		
	Power	1.5
	Gear Ratio	1/40 ~ 1/120
	Output (RPM)	43.8 ~ 14.6
	Weight (kg)	53



F1 IEC Flange(수직형)

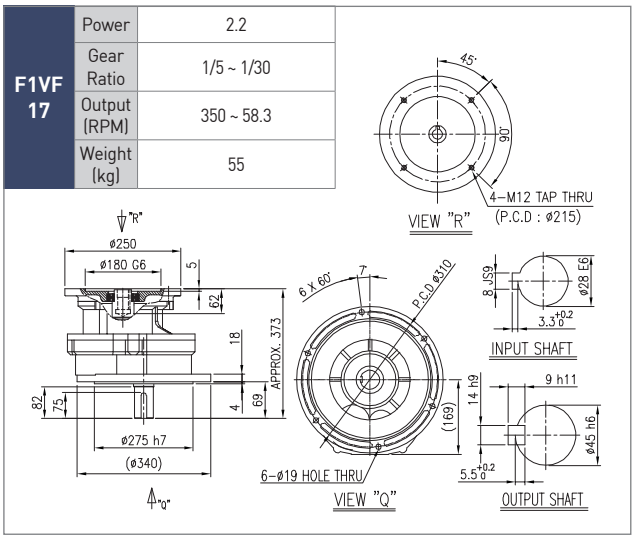
1.5kW

F1VF 23			
	Power	1.5	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	102	

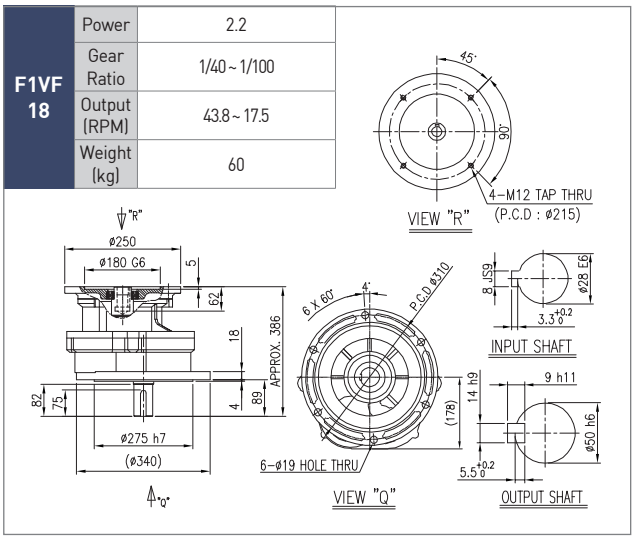


2.2kW

F1VF 17		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	55

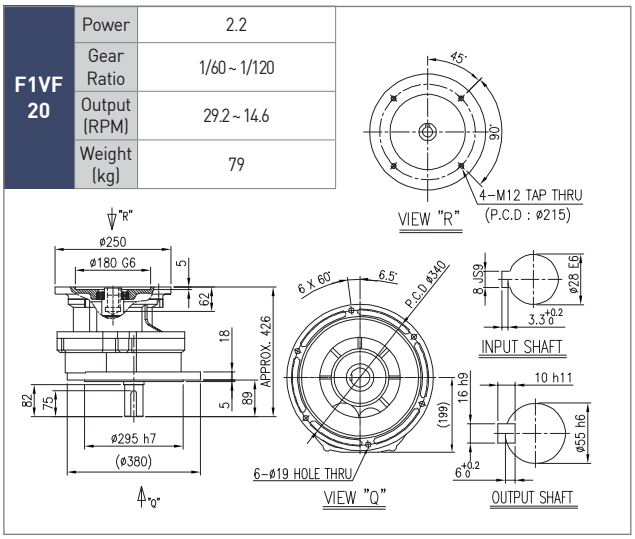


F1VF 18		
	Power	2.2
	Gear Ratio	1/40 ~ 1/100
	Output (RPM)	43.8 ~ 17.5
	Weight (kg)	60

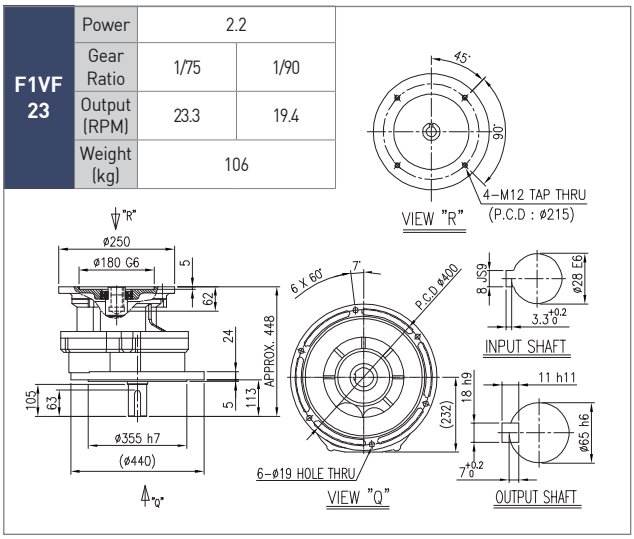


2.2kW

F1VF 20		
	Power	2.2
	Gear Ratio	1/60 ~ 1/120
	Output (RPM)	29.2 ~ 14.6
	Weight (kg)	79

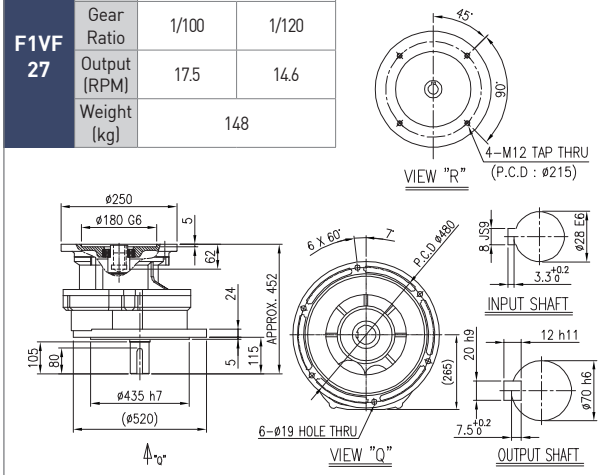


F1VF 23			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	106	



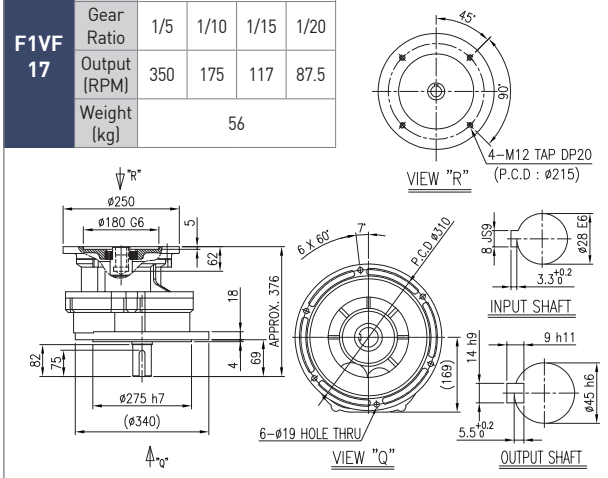
F1 IEC Flange(수직형)

F1VF 27			
Power	2.2		
Gear Ratio	1/100	1/120	
Output (RPM)	17.5	14.6	
Weight (kg)	148		

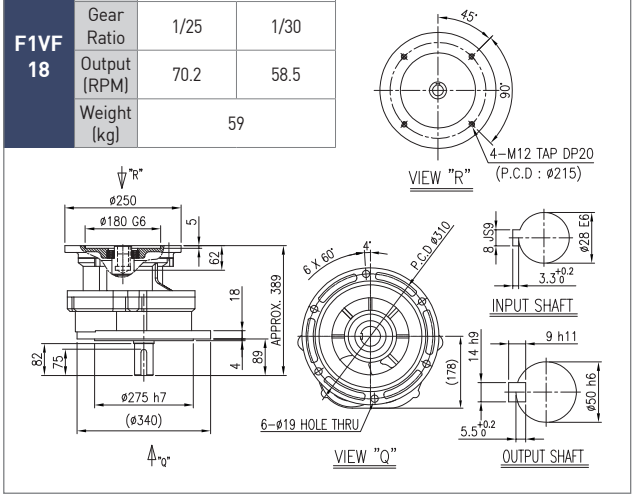


3.7kW

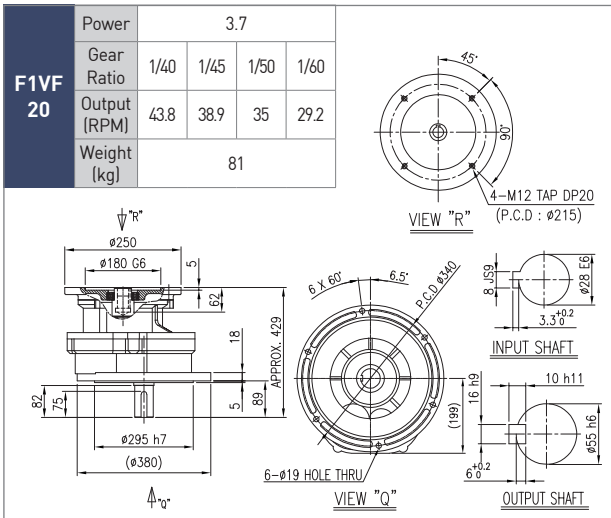
F1VF 17				
Power	3.7			
Gear Ratio	1/5	1/10	1/15	1/20
Output (RPM)	350	175	117	87.5
Weight (kg)	56			



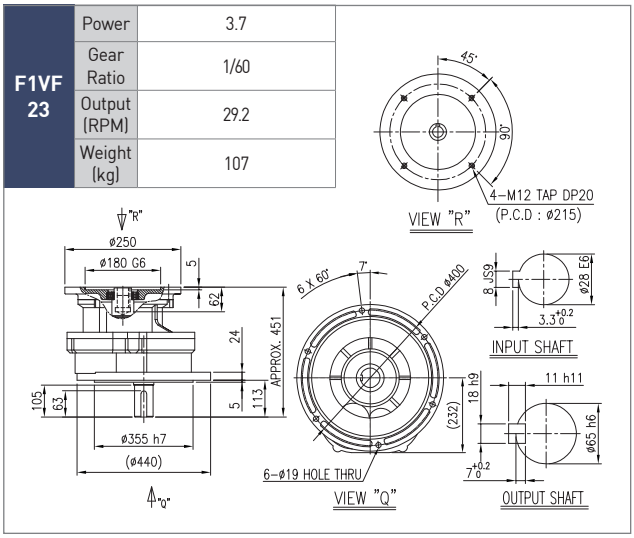
F1VF 18		
Power	3.7	
Gear Ratio	1/25	1/30
Output (RPM)	70.2	58.5
Weight (kg)	59	



F1VF 20				
Power	3.7			
Gear Ratio	1/40	1/45	1/50	1/60
Output (RPM)	43.8	38.9	35	29.2
Weight (kg)	81			



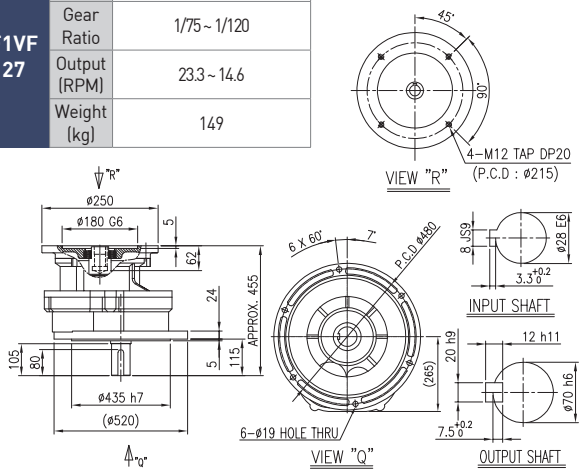
F1VF 23	
Power	3.7
Gear Ratio	1/60
Output (RPM)	29.2
Weight (kg)	107



F1 IEC Flange(수직형)

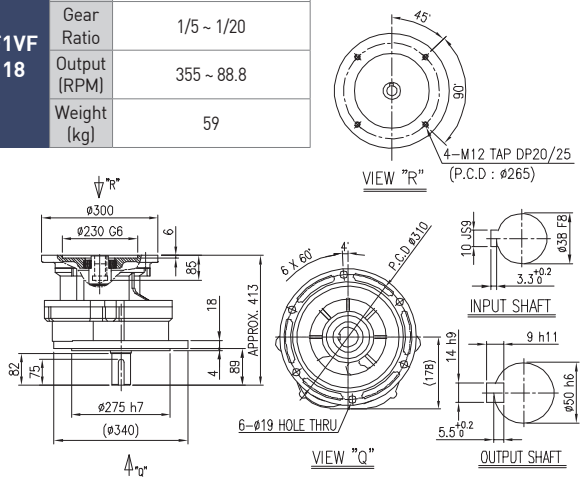
3.7kW

F1VF 27		
	Power	3.7
	Gear Ratio	1/75 ~ 1/120
	Output (RPM)	23.3 ~ 14.6
	Weight (kg)	149

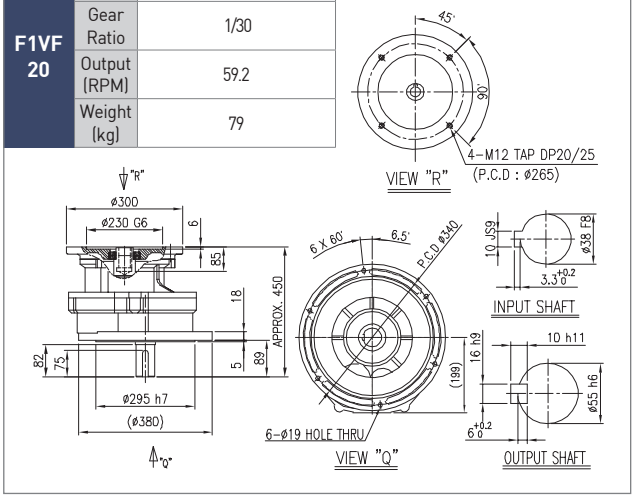


5.5kW

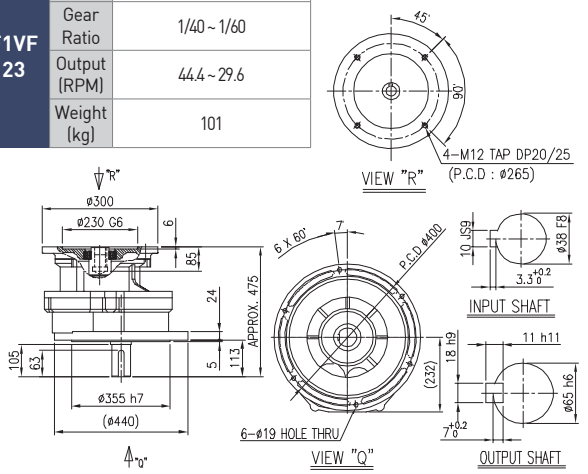
F1VF 18		
	Power	5.5
	Gear Ratio	1/5 ~ 1/20
	Output (RPM)	355 ~ 88.8
	Weight (kg)	59



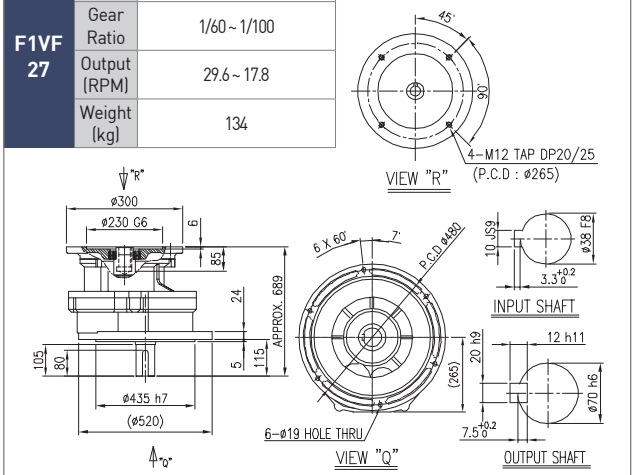
F1VF 20		
	Power	5.5
	Gear Ratio	1/30
	Output (RPM)	59.2
	Weight (kg)	79



F1VF 23		
	Power	5.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.4 ~ 29.6
	Weight (kg)	101



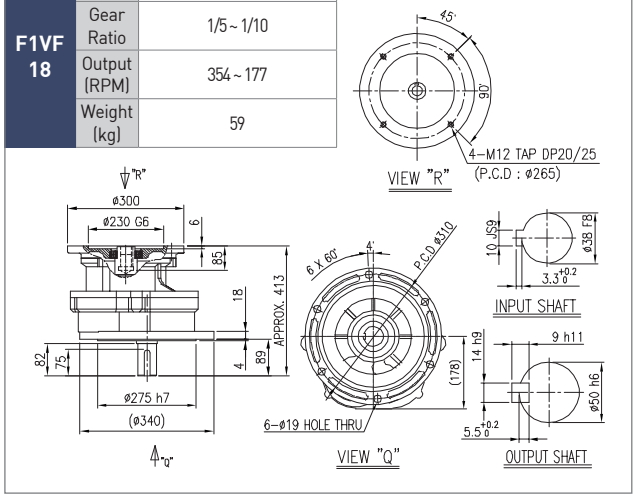
F1VF 27		
	Power	5.5
	Gear Ratio	1/60 ~ 1/100
	Output (RPM)	29.6 ~ 17.8
	Weight (kg)	134



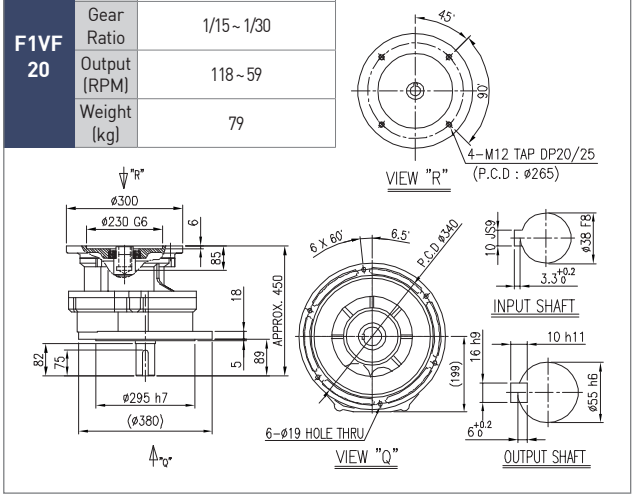
F1 IEC Flange(수직형)

7.5kW

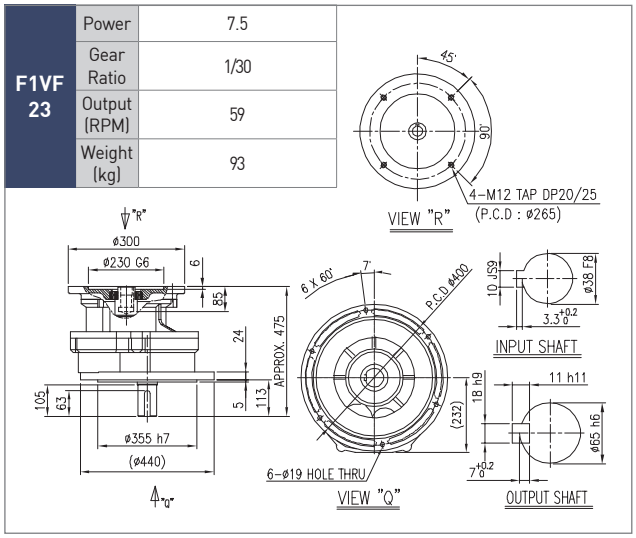
F1VF 18		
	Power	7.5
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	354 ~ 177
	Weight (kg)	59



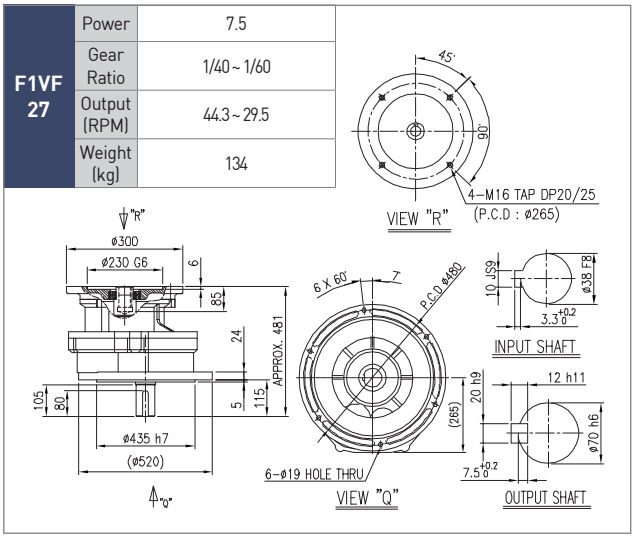
F1VF 20		
	Power	7.5
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118 ~ 59
	Weight (kg)	79



F1VF 23		
	Power	7.5
	Gear Ratio	1/30
	Output (RPM)	59
	Weight (kg)	93



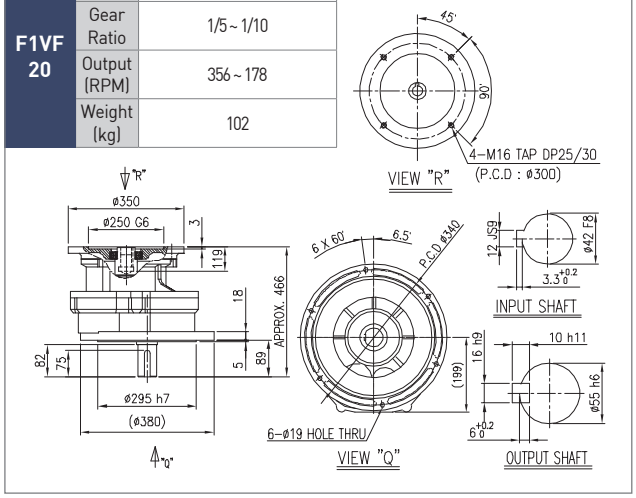
F1VF 27		
	Power	7.5
	Gear Ratio	1/40 ~ 1/60
	Output (RPM)	44.3 ~ 29.5
	Weight (kg)	134



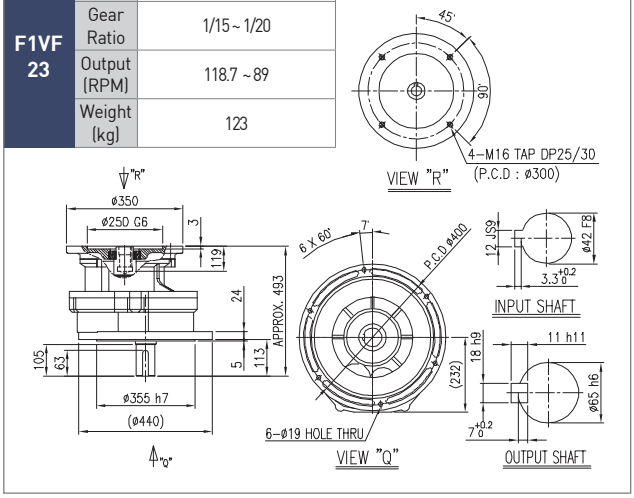
F1 IEC Flange(수직형)

11kW

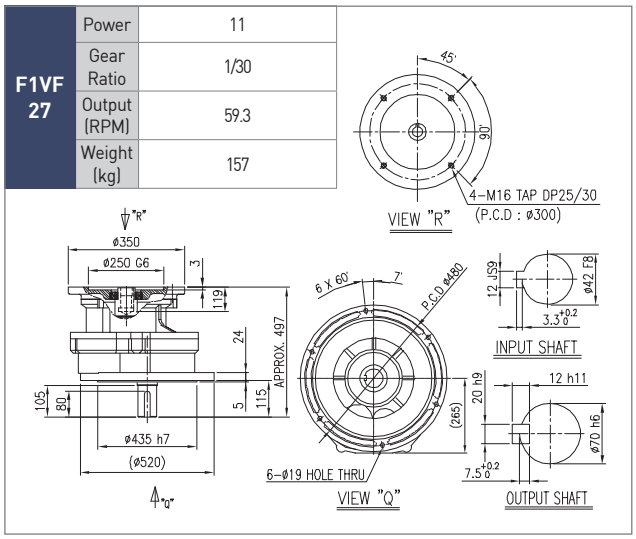
F1VF 20		
	Power	11
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	356 ~ 178
	Weight (kg)	102



F1VF 23		
	Power	11
	Gear Ratio	1/15 ~ 1/20
	Output (RPM)	118.7 ~ 89
	Weight (kg)	123

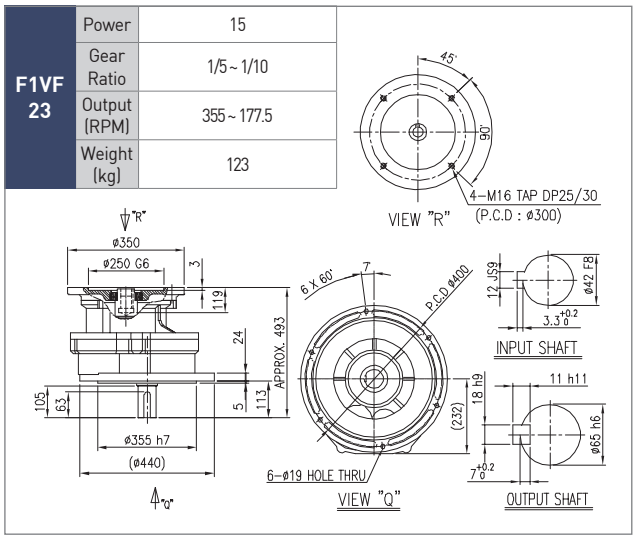


F1VF 27		
	Power	11
	Gear Ratio	1/30
	Output (RPM)	59.3
	Weight (kg)	157

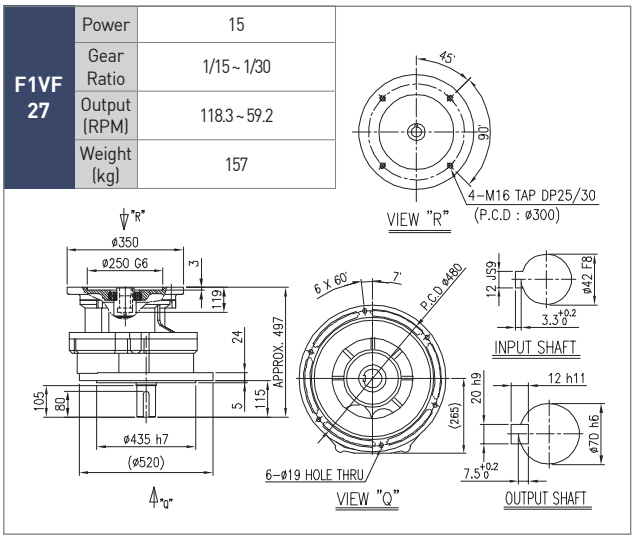


15kW

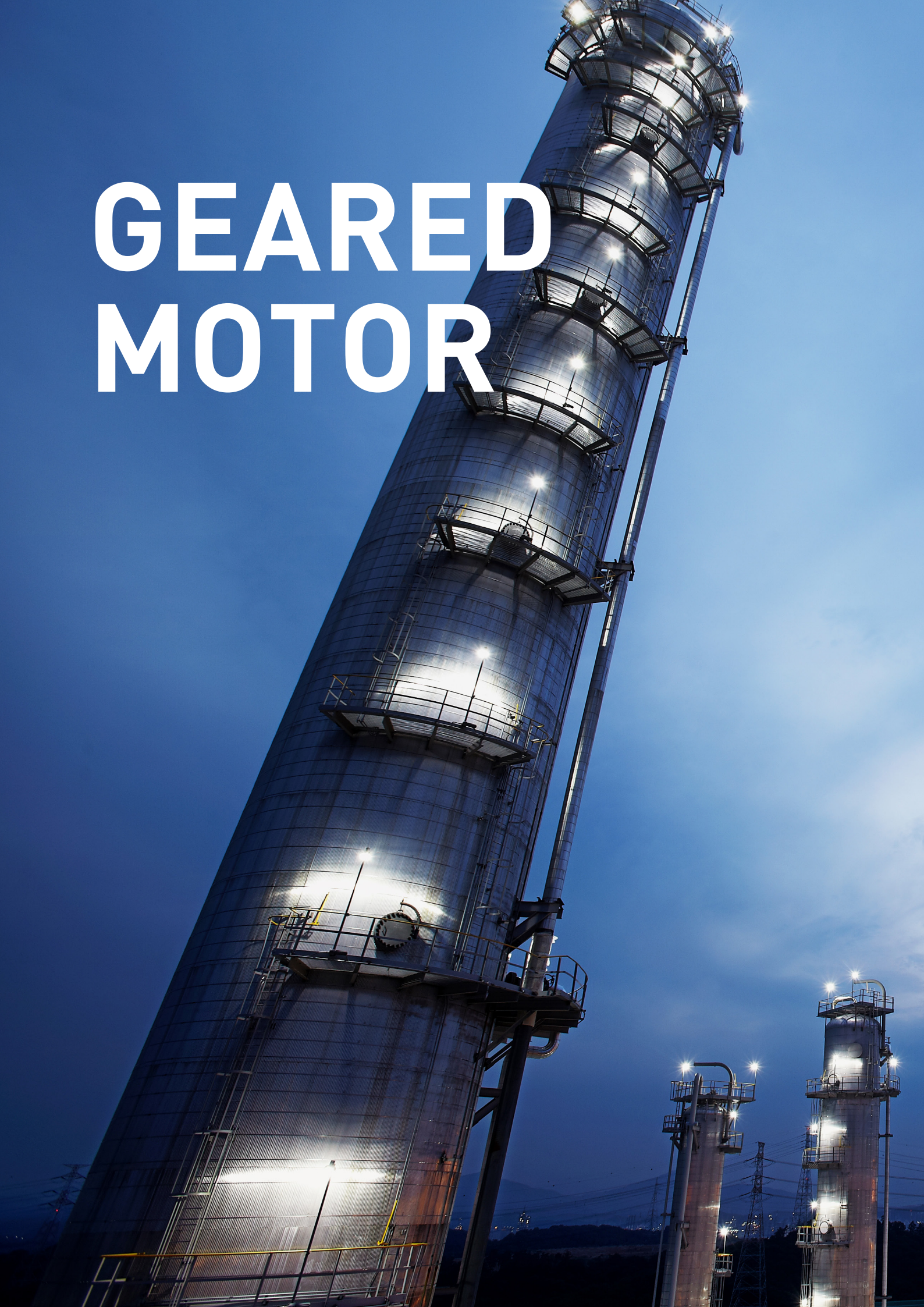
F1VF 23		
	Power	15
	Gear Ratio	1/5 ~ 1/10
	Output (RPM)	355 ~ 177.5
	Weight (kg)	123

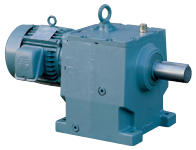
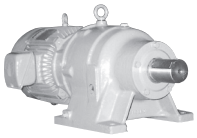


F1VF 27		
	Power	15
	Gear Ratio	1/15 ~ 1/30
	Output (RPM)	118.3 ~ 59.2
	Weight (kg)	157



GEARED MOTOR



RP-Series	FN-Series	F-Series	H-Series	K-Series	P-Series
					

동력 · 감속비별 기종 선정(60Hz, 4극 기준)

kW \ Ratio	10	20	30	40	45	50	60	75 FN, RP (80 H, P)	90	100	120	150	180	240	320	470	600
0.4	FN	FN	FN	FN	FN	FN	FN	FN	FN								P
0.75	FN	FN	FN	FN	FN	FN	FN	FN	FN								
	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP				P	P	P
1.5	FN	FN	FN	FN	FN	FN	FN	FN	FN								
	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP	P	P	P	P	P	P
2.2	FN	FN	FN	FN	FN	FN	FN	FN	FN								
	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP	RP	P	P	P	P	P	P
3.7	FN	FN	FN	FN	FN	FN	FN										
	RP	RP	RP	RP	RP	RP	RP	RP	RP								
								H	H	H	H	P	P	P	P	P	P
5.5	F	F	F	H	H	H	H	H	H	H	H	P	P	P	P	P	P
7.5	F	F	F	H	H	H	H	H	H	H	H	P	P	P	P	P	
11	F	F	F	H	H	H	H	H	H	H	H	P	P	P	P		
15	F	F	F	H	H	H	H	H	H	H	H						
											P	P	P	P			
18.5	F	F	F	H	H	H	H	H	H								
								P	P	P	P	P	P				
22	F	F	F	H	H	H	H	P	P	P	P	P					
30	F	F	F	H	H	H	P	P	P	P	P						
37	F	F	F	H			P	P									
45	F	F	F	P	P	P	P	P									
55	F	F	F	P	P	P	P										
75	F	F	F	P													
90	F	F	F														
110	F	F	F														
132	F	F	F														
160	F	F	F														

■ 안전계수

RP시리즈 : 1.0~1.4
그 외 시리즈 : 1.4~2.0

· 상기 사방 이외에도 제작이 가능하니 당사에 문의하여 주십시오.

RP Series

수평형

수직형

RP시리즈 특징

1. 소형 · 경량

이상적인 강도 분배 설계로써 소형, 경량화를 실현하였으며 취급이 용이할 뿐만 아니라 좁은 공간에서도 설치 가능합니다.

2. MAINTENANCE FREE-20,000시간

윤활성이 좋고 유동성이 높은 긴 수명의 Grease 사용으로 20,000시간 동안 수리, 보수가 필요 없습니다.

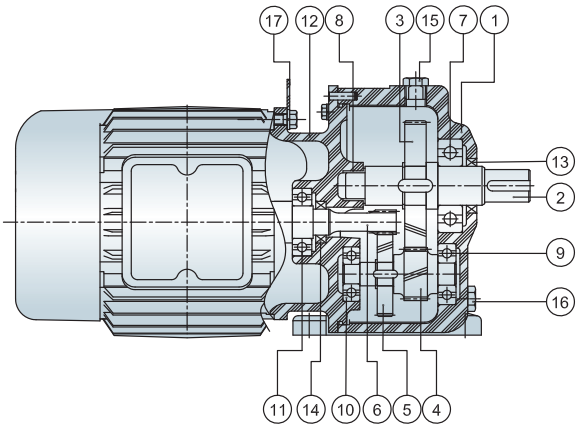
3. 취부의 자유

윤활제로 Grease를 사용하여 완전 밀폐 시킴으로써 취부를 자유롭게 했습니다.

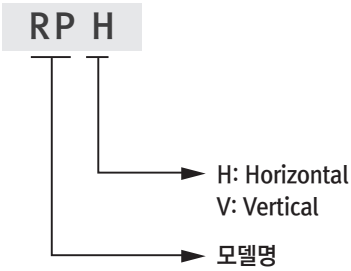
4. 신속한 공급

계획품 및 표준화된 모든 부품을 반제품화하여 확보해 둠으로써 수용가의 요구에 신속히 공급해 드립니다.

RPH 구조도



형식표시



NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	6	MOTOR PINION	11	BEARING	16	PLUG
2	OUTPUT SHAFT	7	BEARING	12	MOTOR BRACKET	17	EYE PLATE
3	2'ND GEAR	8	BEARING	13	OIL SEAL		
4	2'ND PINION	9	BEARING	14	OIL SEAL		
5	1'ST GEAR	10	BEARING	15	AIR VENT		

RP시리즈 GD², O.H.L표

kW	Ratio	최대허용토크		모터축 환산GD²		출력축OHL	
		N · m	kgf · m	N · m²	kg · m²	N	kgf
0.75	1/10	40.9	4.17	0.139	0.014	3,675	375
	1/15	61.4	6.27	0.139	0.014	4,214	430
	1/20	81.9	8.36	0.139	0.014	4,606	470
	1/30	123	12.6	0.137	0.014	5,292	540
	1/40	164	16.7	0.137	0.014	5,439	555
	1/45	184	18.8	0.137	0.014	5,684	580
	1/50	205	20.9	0.137	0.014	5,880	600
	1/60	246	25.1	0.137	0.014	6,272	640
	1/75	307	31.3	0.138	0.014	7,644	780
	1/90	369	37.7	0.138	0.014	8,134	830
1.5	1/10	81.9	8.36	0.239	0.024	3,675	375
	1/15	123	12.6	0.239	0.024	4,214	430
	1/20	164	16.7	0.239	0.024	4,606	470
	1/30	246	25.1	0.236	0.024	5,292	540
	1/40	328	33.5	0.236	0.024	6,223	635
	1/45	369	37.7	0.236	0.024	6,468	660
	1/50	409	41.7	0.236	0.024	6,664	680
	1/60	491	50.1	0.236	0.024	7,105	725
	1/75	614	62.7	0.236	0.024	12,544	1,280
	1/90	737	75.2	0.236	0.024	13,328	1,360
2.2	1/10	120	12.2	0.556	0.057	3,675	375
	1/15	180	18.4	0.556	0.057	4,214	430
	1/20	240	24.5	0.556	0.057	4,606	470
	1/30	360	36.7	0.551	0.056	5,292	540
	1/40	480	49	0.541	0.055	10,192	1,040
	1/45	541	55.2	0.541	0.055	10,584	1,080
	1/50	601	61.3	0.541	0.055	10,976	1,120
	1/60	721	73.6	0.541	0.055	11,662	1,190
	1/75	901	91.9	0.551	0.056	14,896	1,520
	1/90	1081	110	0.551	0.056	15,827	1,615
3.7	1/10	202	20.6	0.693	0.071	3,871	395
	1/15	303	30.9	0.693	0.071	4,410	450
	1/20	404	41.2	0.693	0.071	4,900	500
	1/30	606	61.8	0.689	0.070	5,978	610
	1/40	808	82.4	0.689	0.070	12,054	1,230
	1/45	909	92.8	0.689	0.070	12,544	1,280
	1/50	1,010	103	0.689	0.070	13,181	1,345
	1/60	1,212	124	0.689	0.070	13,818	1,410
	1/75	1,515	155	0.689	0.070	20,286	2,070
	1/90	1,818	186	0.689	0.070	21,560	2,200

RPH 외형도 및 외형치수

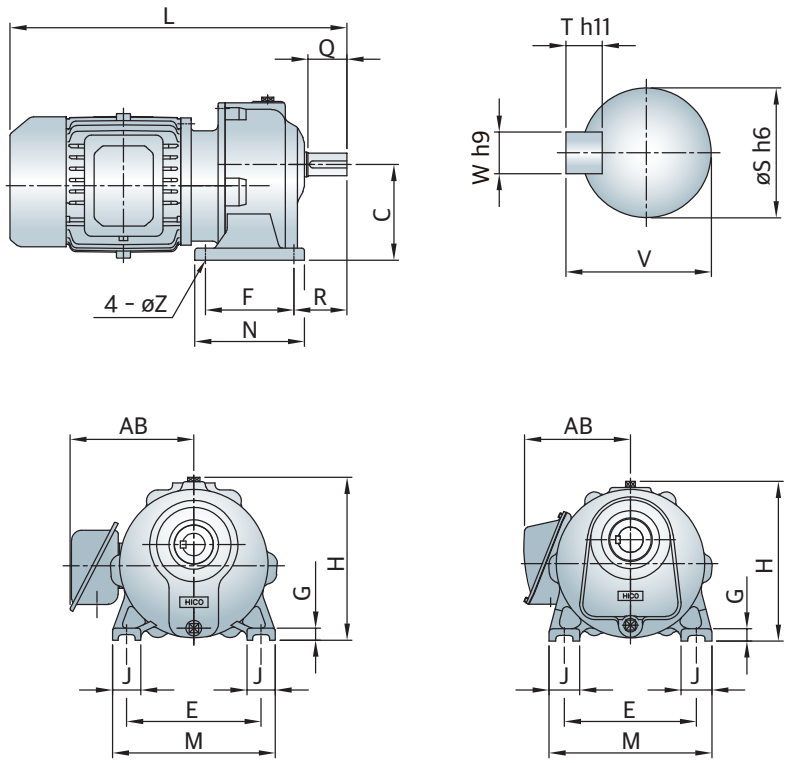


Fig. 1 Fig. 2

단위 : mm

kW	Ratio	Fig	Dimension												Output Shaft					그리스량 (kg)	중량 (kg)
			C	F	N	R	E	M	J	G	Z	H	L	AB	S	W	T	V	Q		
0.75	10~30	1	115	120	145	50	155	190	35	15	12	200	405	165	25	8	7	28	35	0.25	31
	40~60	2	120	120	145	56	155	190	35	15	12	195	410	165	28	8	7	31	42	0.3	35
	70~90		135	150	190	65	190	235	45	17	14	220	455	165	32	10	8	35	55	0.5	40
1.5	10~30	1	135	125	155	75	190	230	40	17	12	230	485	175	32	10	8	35	55	0.3	46
	40~60	2	135	150	190	65	190	235	45	17	14	220	510	175	32	10	8	35	55	0.5	51
	70~90		165	175	220	80	215	265	50	20	19	260	540	175	42	12	8	45	65	0.8	62
2.2	10~30	1	160	130	170	75	215	260	45	20	14	270	510	200	38	12	8	41	58	0.3	69
	40~60	2	165	175	220	80	215	265	50	20	19	260	555	200	42	12	8	45	65	0.8	75
	70~90		180	185	235	95	240	295	55	23	19	285	585	200	48	14	9	51.5	75	1.2	90
3.7	10~20	1	160	130	170	75	215	260	45	20	14	270	510	210	38	12	8	41	58	0.3	73
	30		180	160	210	90	240	295	55	23	19	305	545	210	48	14	9	51.5	80	0.6	89
	40~60	2	180	185	235	95	240	295	55	23	19	285	580	210	48	14	9	51.5	75	1.2	94
	70~90		200	220	270	100	270	330	60	27	22	315	615	210	55	16	10	59	85	1.8	117

주 : 1. 극수는 4극 기준임.

RPV 외형도 및 외형치수

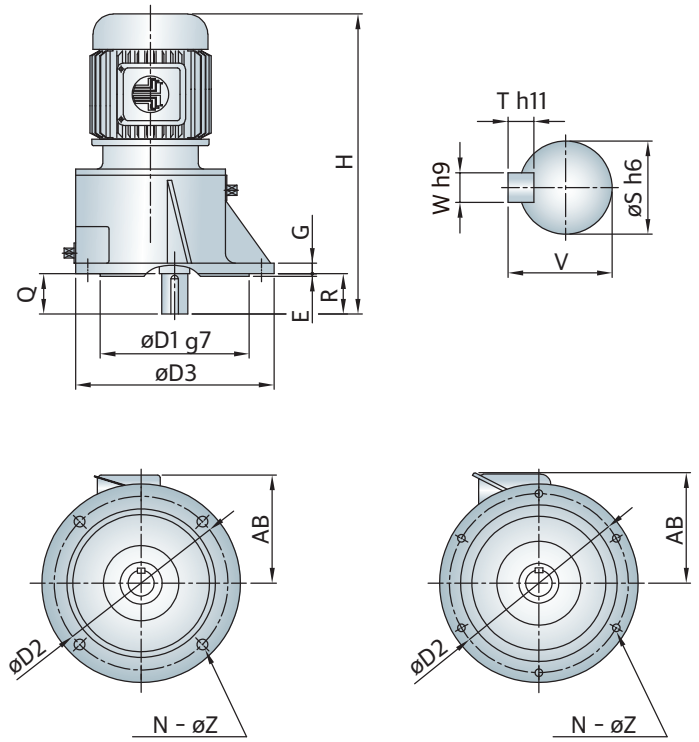


Fig. 1 Fig. 2

단위 : mm

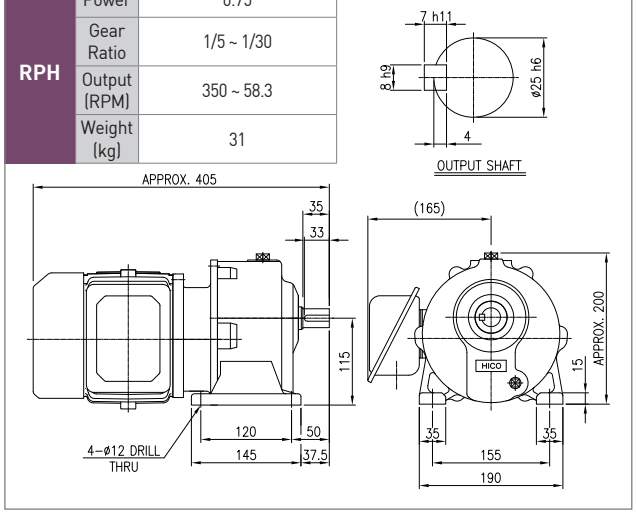
kW	Ratio	Fig	Dimension										Output Shaft					그리스량 (kg)	중량 (kg)
			D1	D2	D3	R	E	G	H	N	Z	AB	S	W	T	V	Q		
0.75	10~30	1	165	195	225	45	4	13	405	4	14	165	25	8	7	28	35	0.25	35
	40~60	2	175	205	235	42	4	13	410	4	14	165	28	8	7	31	42	0.3	36
	70~90		200	230	260	55	4	15	455	4	14	165	32	10	8	35	55	0.5	45
1.5	10~30	1	200	230	260	65	4	15	485	4	14	175	32	10	8	35	55	0.3	50
	40~60	2	200	230	260	55	4	15	510	4	14	175	32	10	8	35	55	0.5	56
	70~90		240	280	320	65	4	17	540	4	18	175	42	12	8	45	65	0.8	69
2.2	10~30	1	230	270	305	70	4	17	510	4	18	200	38	12	8	41	58	0.3	74
	40~60	2	240	280	320	65	4	17	555	4	18	200	42	12	8	45	65	0.8	78
	70~90		280	320	355	75	5	19	585	6	14	200	48	14	9	51.5	75	1.2	94
3.7	10~20	1	230	270	305	70	4	17	515	4	18	210	38	12	8	41	58	0.3	77
	30		280	320	350	85	5	18	545	6	14	210	48	14	9	51.5	80	0.6	94
	40~60	2	280	320	355	75	5	19	580	6	14	210	48	14	9	51.5	75	1.2	98
	70~90		310	355	395	85	5	22	615	6	18	210	55	16	10	59	85	1.8	122

주 : 1. 극수는 4극 기준임.

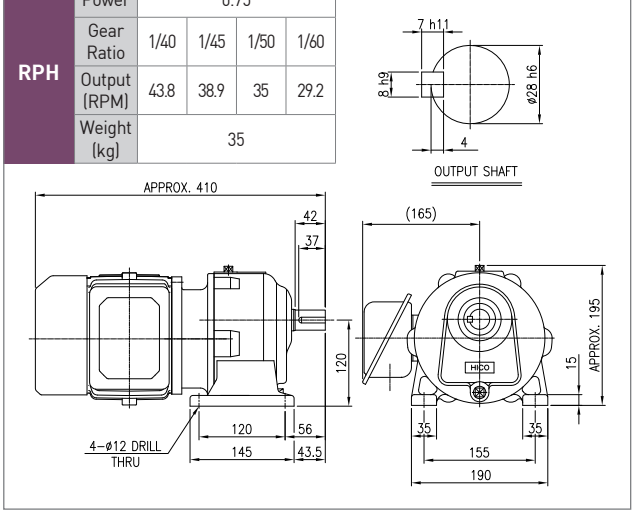
RP 수평형

0.75kW

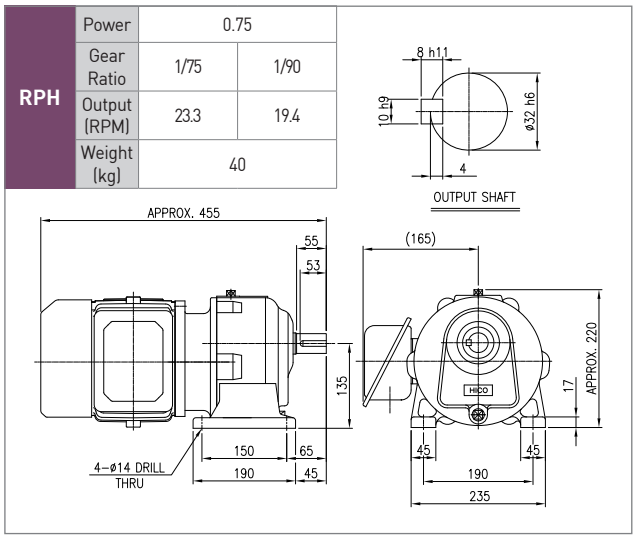
RPH			
	Power	0.75	
	Gear Ratio	1/5 ~ 1/30	
	Output (RPM)	350 ~ 58.3	
	Weight (kg)	31	



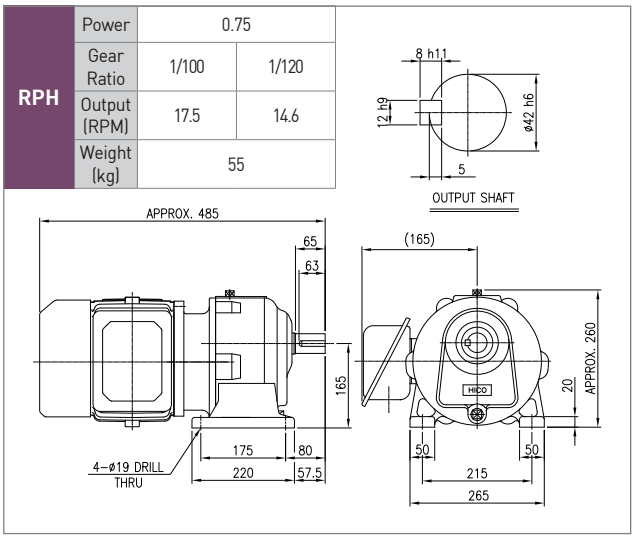
RPH				
	Power	0.75		
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	35		



RPH			
	Power	0.75	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	40	

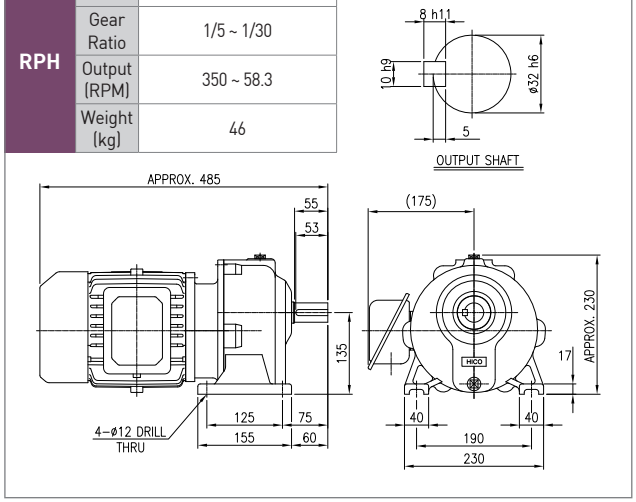


RPH			
	Power	0.75	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	55	

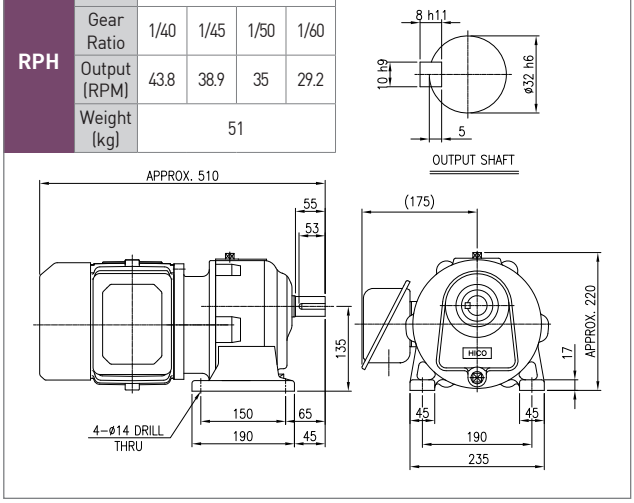


1.5kW

RPH			
	Power	1.5	
	Gear Ratio	1/5 ~ 1/30	
	Output (RPM)	350 ~ 58.3	
	Weight (kg)	46	



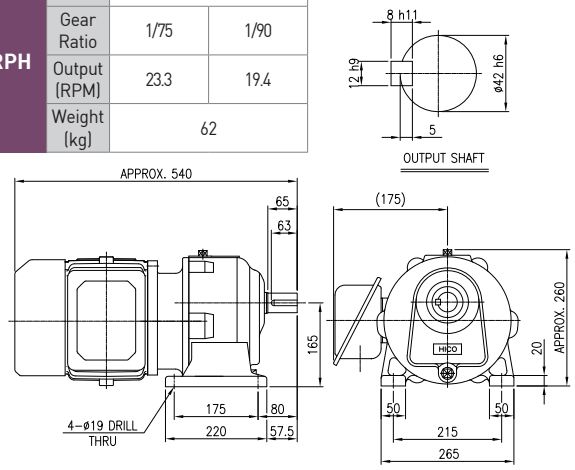
RPH				
	Power	1.5		
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	51		



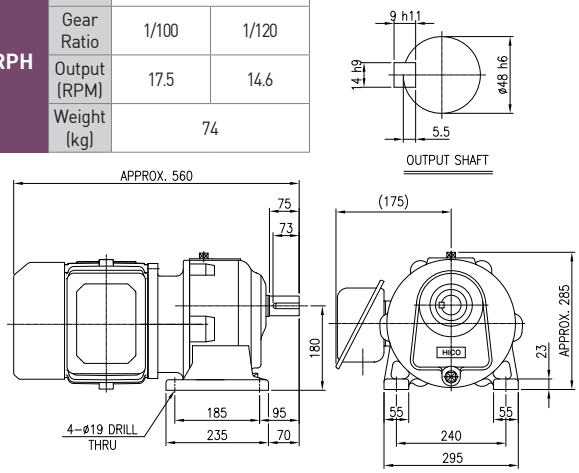
RP 수평형

1.5kW

RPH			
	Power	1.5	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	62	

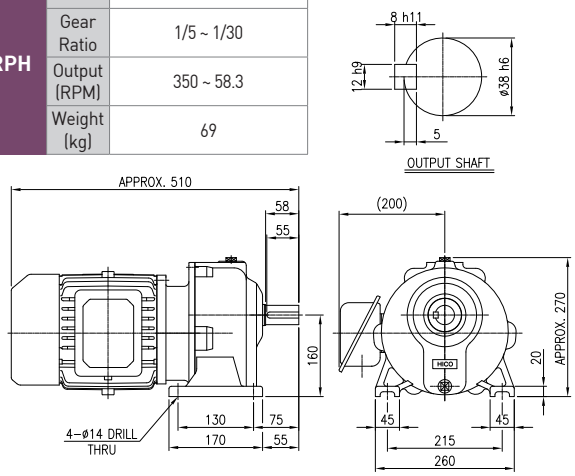


RPH			
	Power	1.5	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	74	

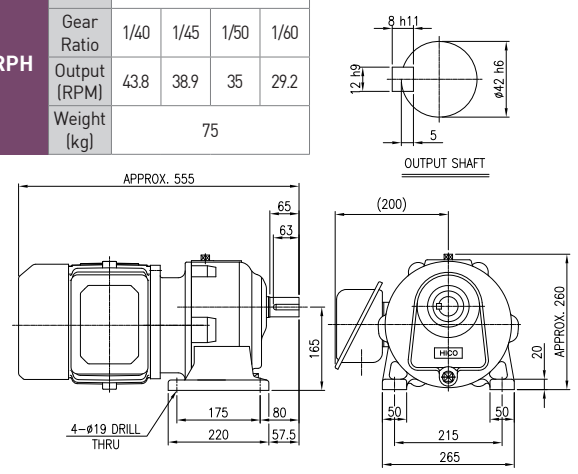


2.2kW

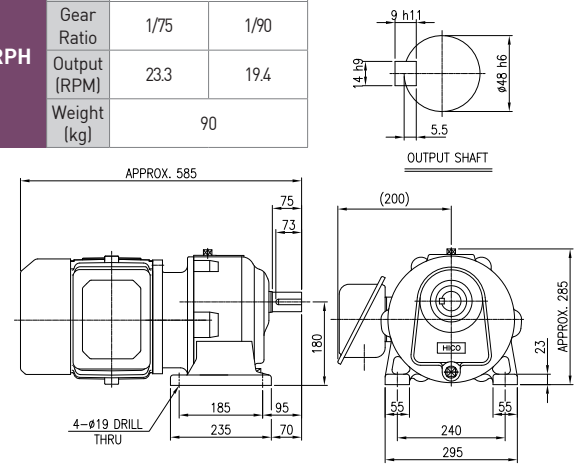
RPH		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	69



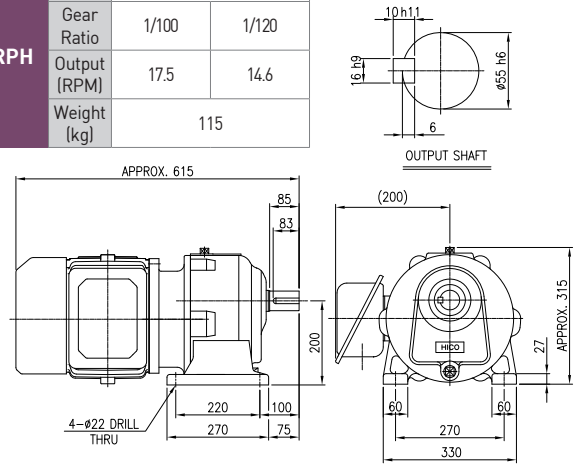
RPH					
	Power	2.2			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	75			



RPH			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	90	



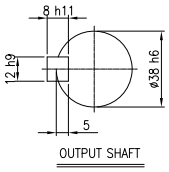
RPH			
	Power	2.2	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	115	

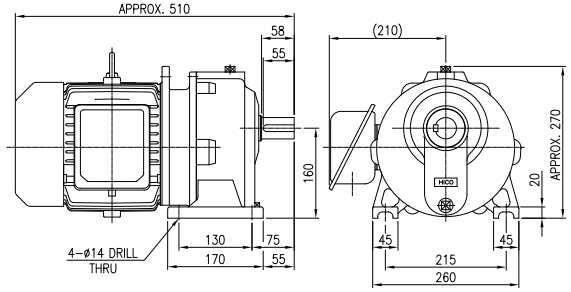


RP 수평형

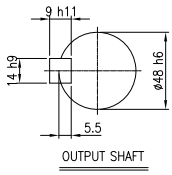
3.7kW

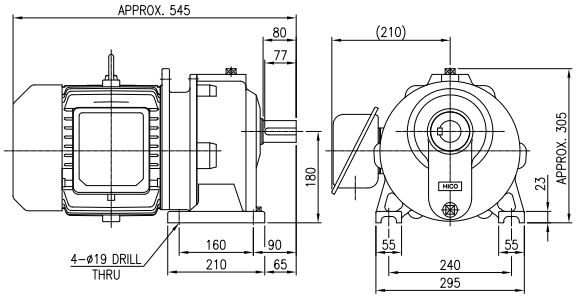
RPH					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	73			



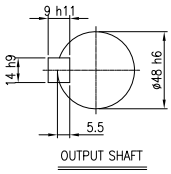


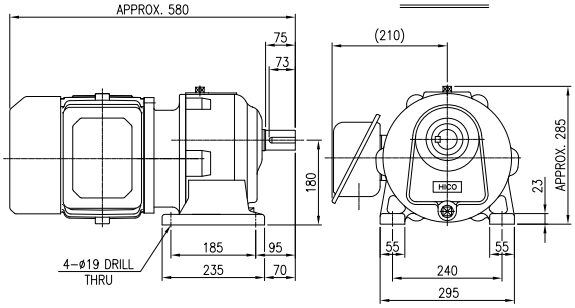
RPH		
	Power	3.7
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	89



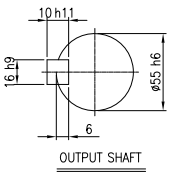


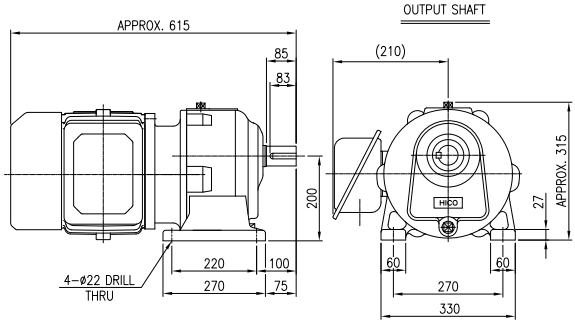
RPH					
	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	94			





RPH			
	Power	3.7	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	117	

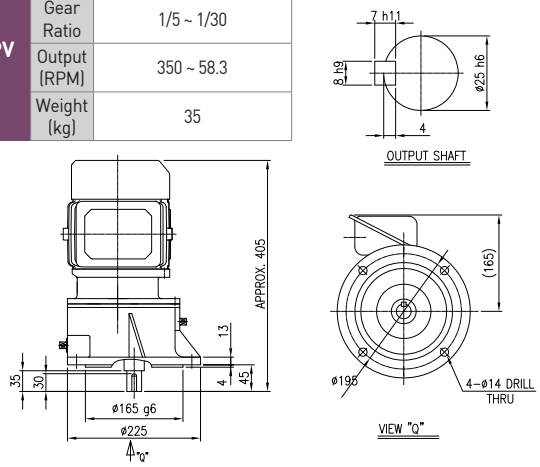




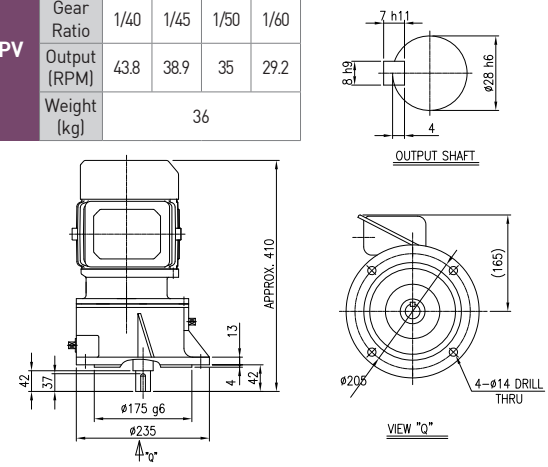
RP 수직형

0.75kW

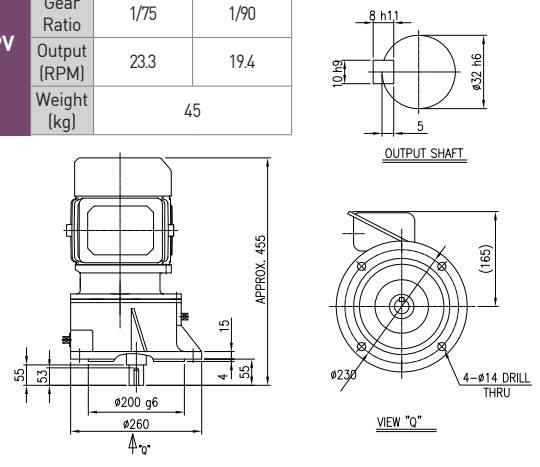
RPV		
	Power	0.75
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	35



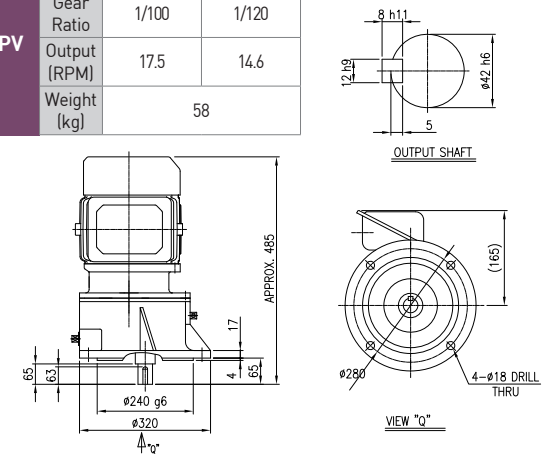
RPV					
	Power	0.75			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	36			



RPV			
	Power	0.75	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	45	

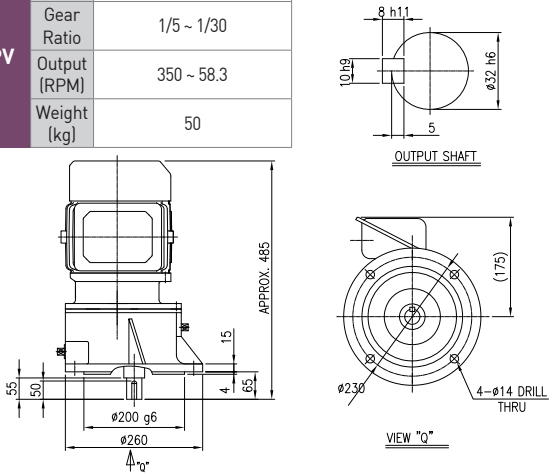


RPV			
	Power	0.75	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	58	

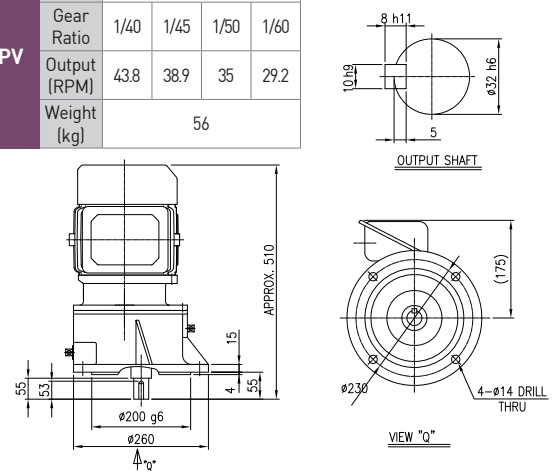


1.5kW

RPV		
	Power	1.5
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	50



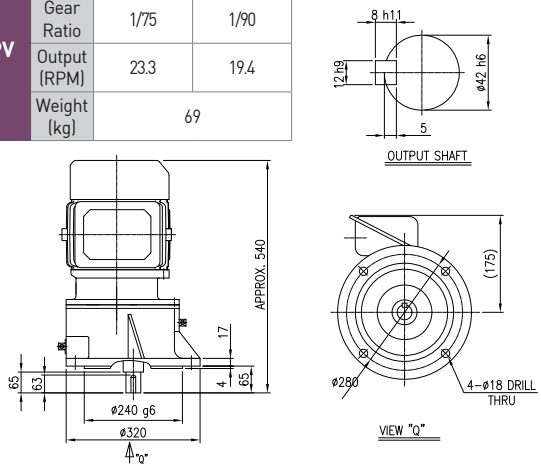
RPV					
	Power	1.5			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	56			



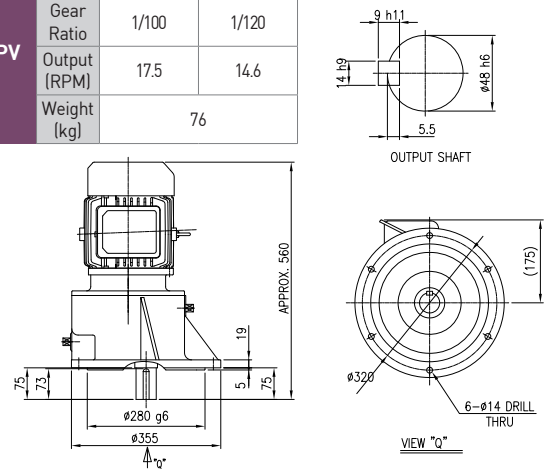
RP 수직형

1.5kW

RPV			
	Power	1.5	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	69	

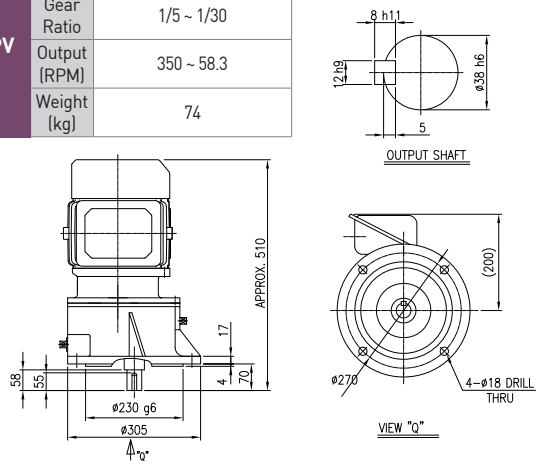


RPV			
	Power	1.5	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	76	

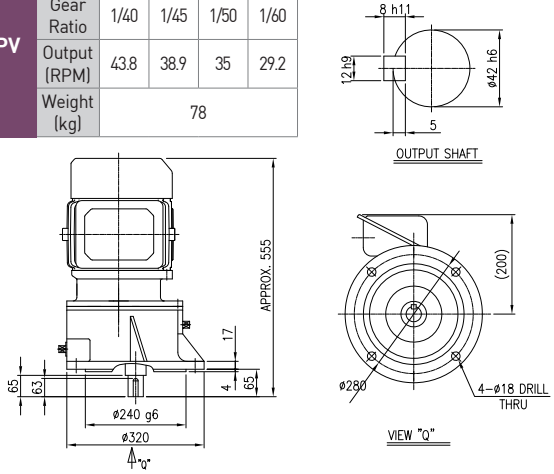


2.2kW

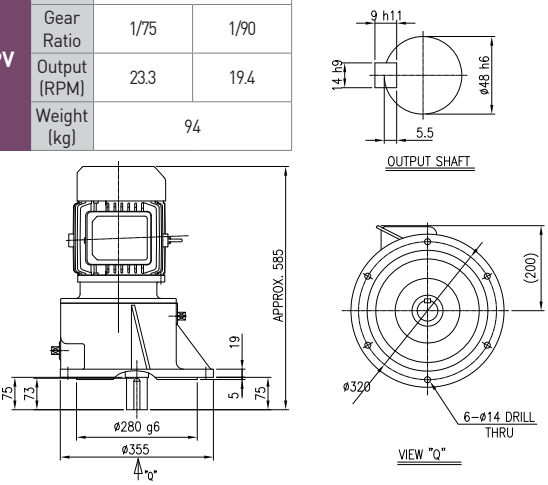
RPV		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	74



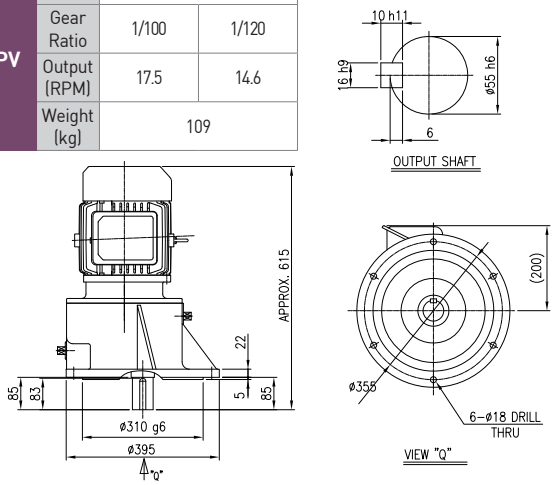
RPV					
	Power	2.2			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	78			



RPV			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	94	



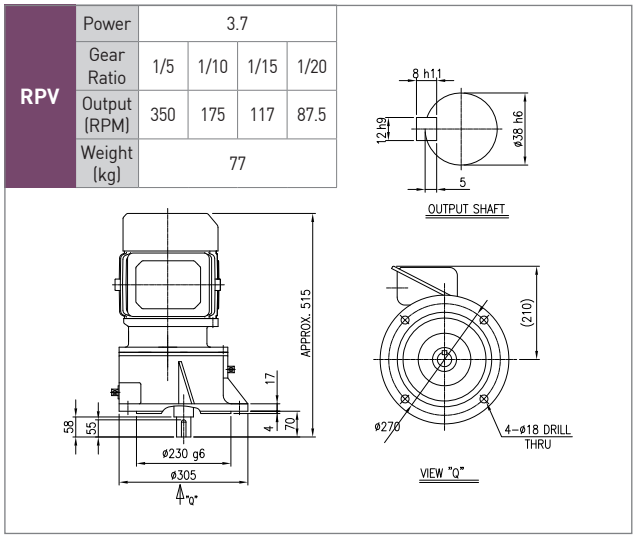
RPV			
	Power	2.2	
	Gear Ratio	1/100	1/120
	Output (RPM)	17.5	14.6
	Weight (kg)	109	



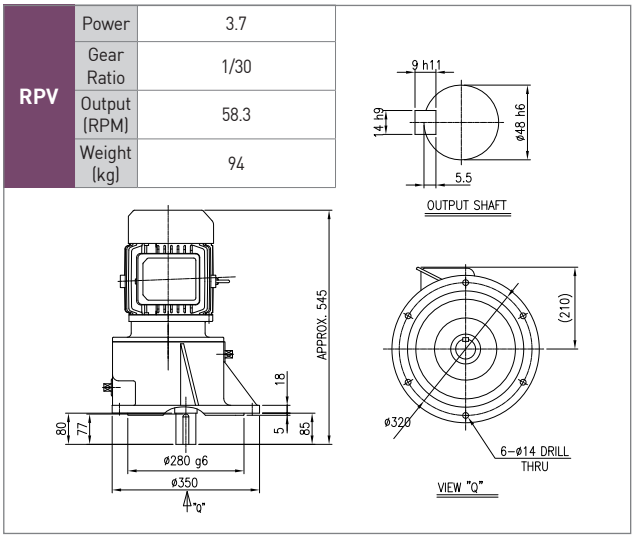
RP 수직형

3.7kW

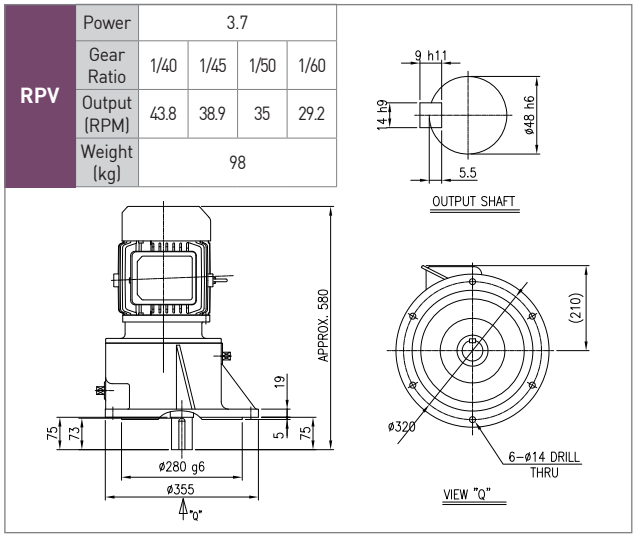
RPV					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	77			



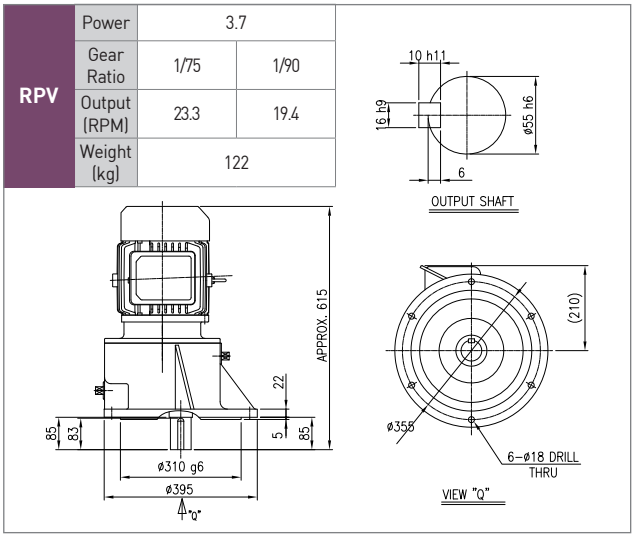
RPV		
	Power	3.7
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	94



RPV					
	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	98			



RPV			
	Power	3.7	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	122	



FN Series

수평형

수직형

IEC FLANGE

라인파워

FN시리즈 특징

1. 소형 · 경량

출력축 반하부측 베어링을 DX부시를 사용하여 극소형, 경량화를 시켰습니다.

2. 고효율 · 치연마

최적설계 및 모든 기어를 연마하여 저소음과 효율 97%이상을 보장하며 수명, 강도를 증가시켰습니다.

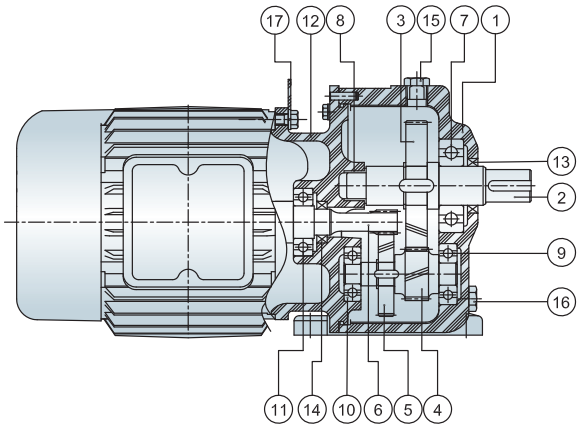
3. 취부의 자유

윤활제로 Grease를 사용하여 완전 밀폐 시킴으로써 취부를 자유롭게 했습니다.

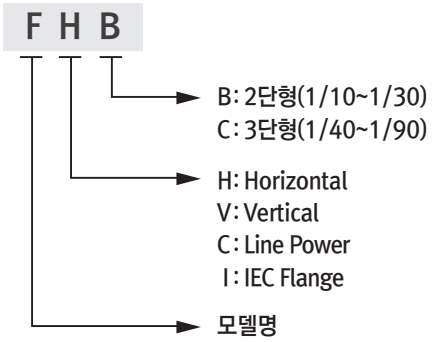
4. 신속한 공급

계획품 및 표준화된 모든 부품을 반제품화하여 확보해 둠으로써 수용가의 요구에 신속히 공급해 드립니다.

FHB 구조도



형식표시



NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	6	MOTOR PINION	11	BEARING	16	PLUG
2	OUTPUT SHAFT	7	BEARING	12	MOTOR BRACKET	17	EYE PLATE
3	2'ND GEAR	8	BEARING	13	OIL SEAL		
4	2'ND PINION	9	BEARING	14	OIL SEAL		
5	1'ST GEAR	10	BEARING	15	AIR VENT		

FN시리즈 GD², O.H.L표

kW	Ratio	최대허용토크		모터축 환산GD²		출력축OHL	
		N · m	kgf · m	N · m²	kg · m²	N	kgf
0.75	1/5	28.6	2.9	0.139	0.0142	2,646	270
	1/10	57.3	5.8	0.139	0.0142	2,646	270
	1/15	85.9	8.8	0.139	0.0142	2,646	270
	1/20	114.5	11.7	0.139	0.0142	2,646	270
	1/30	171.8	17.5	0.138	0.0141	4,018	410
	1/40	229.1	23.4	0.138	0.0141	4,606	470
	1/45	257.7	26.3	0.138	0.0141	4,606	470
	1/50	286.4	29.2	0.138	0.0141	4,606	470
	1/60	343.6	35.1	0.138	0.0141	4,606	470
	1/75	429.5	43.8	0.138	0.0141	6,860	700
	1/90	515.4	52.6	0.138	0.0141	6,860	700
1.5	1/5	57.3	5.8	0.239	0.0244	3,430	350
	1/10	114.5	11.7	0.239	0.0244	3,430	350
	1/15	171.8	17.5	0.239	0.0244	3,430	350
	1/20	229.1	23.4	0.239	0.0244	3,430	350
	1/30	343.6	35.1	0.237	0.0242	5,880	600
	1/40	458.2	46.8	0.237	0.0242	7,840	800
	1/45	515.4	52.6	0.237	0.0242	7,840	800
	1/50	572.7	58.4	0.237	0.0242	7,840	800
	1/60	687.3	70.1	0.237	0.0242	7,840	800
	1/75	859.1	87.7	0.237	0.0242	10,290	1,050
	1/90	1,030.9	105.2	0.237	0.0242	10,290	1,050
2.2	1/5	84.0	8.6	0.556	0.0567	5,978	610
	1/10	168.0	17.1	0.556	0.0567	5,978	610
	1/15	252.0	25.7	0.556	0.0567	5,978	610
	1/20	336.0	34.3	0.556	0.0567	5,978	610
	1/30	504.0	51.4	0.551	0.0562	5,978	610
	1/40	672.0	68.6	0.551	0.0562	8,820	900
	1/45	756.0	77.1	0.551	0.0562	8,820	900
	1/50	840.0	85.7	0.551	0.0562	8,820	900
	1/60	1,008.0	102.9	0.551	0.0562	8,820	900
	1/75	1,260.0	128.6	0.551	0.0562	13,720	1,400
	1/90	1,512.0	154.3	0.551	0.0562	13,720	1,400
3.7	1/5	141.3	14.4	0.693	0.0706	6,370	650
	1/10	282.5	28.8	0.693	0.0706	6,370	650
	1/15	423.8	43.2	0.693	0.0706	6,370	650
	1/20	565.1	57.7	0.692	0.0706	6,370	650
	1/30	847.6	86.5	0.693	0.0707	9,310	950
	1/40	1,130.2	115.3	0.693	0.0707	13,720	1,400
	1/45	1,271.4	129.7	0.693	0.0707	13,720	1,400
	1/50	1,412.7	144.2	0.691	0.0705	13,720	1,400
	1/60	1,695.2	173.0	0.691	0.0705	13,720	1,400

FHB, FHC 외형도 및 외형치수

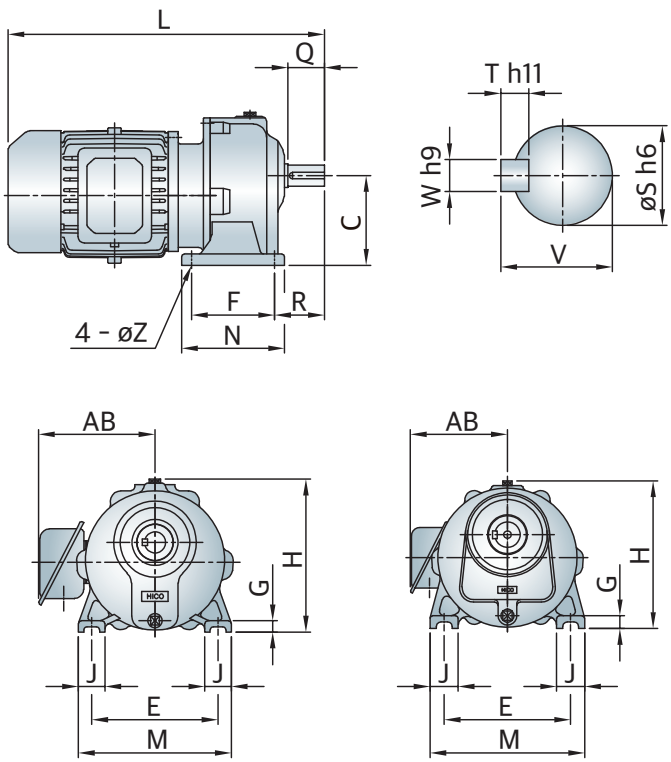


Fig. 1

Fig. 2

단위 : mm

kW	Ratio	Fig	Dimension												Output Shaft					그리스량 (kg)	중량 (kg)
			C	F	N	R	E	M	J	G	Z	H	L	AB	S	W	T	V	Q		
0.4 0.75	10~20	1	115	120	145	50	155	190	35	15	12	200	405	165	25	8	7	28	35	0.25	27
	30		135	125	155	75	190	230	40	17	12	230	430	165	32	10	8	35	55	0.3	36
	40~60	2	135	150	190	65	190	235	45	17	14	230	455	165	32	10	8	35	55	0.5	40
	70~90		165	175	220	80	215	265	50	20	19	260	485	165	42	12	8	45	65	0.8	55
1.5	10~20	1	135	125	155	75	190	230	40	17	12	230	485	175	32	10	8	35	55	0.3	46
	30		160	130	170	75	215	260	45	20	14	265	485	175	38	12	8	41	58	0.3	53
	40~60	2	165	175	220	80	215	265	50	20	19	260	540	175	42	12	8	45	65	0.8	62
	70~90		180	185	235	95	240	295	55	23	19	285	560	175	48	14	9	51.5	75	1.2	74
2.2	10~30	1	160	130	170	75	215	260	45	20	14	265	510	200	38	12	8	41	58	0.3	69
	40~60	2	180	185	235	95	240	295	55	23	19	285	585	200	48	14	9	51.5	75	1.2	90
	70~90		200	220	270	100	270	330	60	27	22	315	615	200	55	16	10	59	85	1.8	115
3.7	10~20	1	180	160	210	90	240	295	55	23	19	305	545	210	48	14	9	51.5	80	0.6	89
	30		200	180	230	95	275	340	65	23	19	350	555	210	48	14	9	51.5	80	0.8	102
	40~60	2	200	220	270	100	270	330	60	27	22	315	615	210	55	16	10	59	85	1.8	117

주 : 1. 극수는 4극 기준임.

FVB, FVC 외형도 및 외형치수

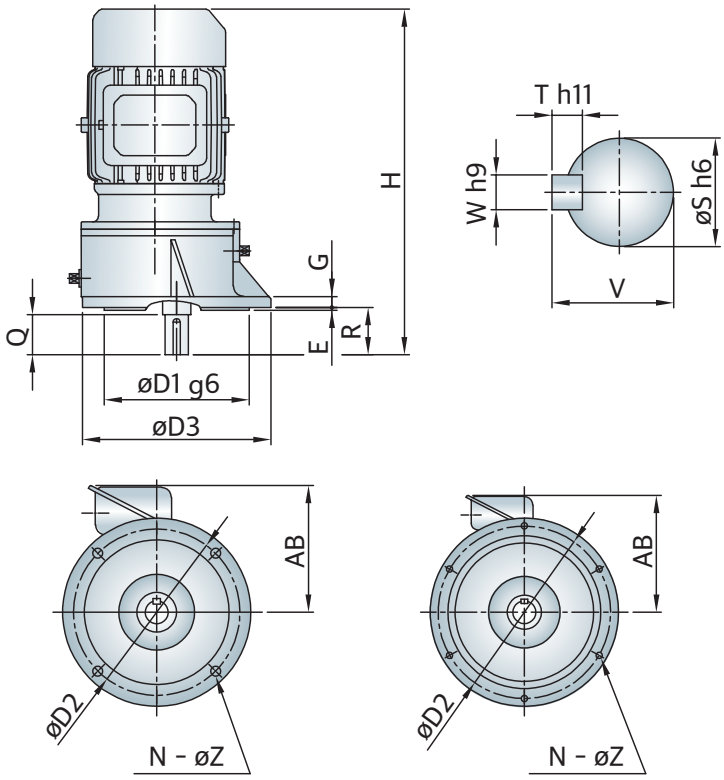


Fig. 1 Fig. 2

단위 : mm

kW	Ratio	Fig	Dimension										Output Shaft					그리스량 (kg)	중량 (kg)
			D1	D2	D3	R	E	G	H	N	Z	AB	S	W	T	V	Q		
0.4 0.75	10~20	1	165	195	225	45	4	13	405	4	14	165	25	8	7	28	35	0.25	35
	30		200	230	260	65	4	15	530	4	14	165	32	10	8	35	55	0.3	40
	40~60		200	230	260	55	4	15	455	4	14	165	32	10	8	35	55	1	45
	70~90		240	280	320	65	4	17	485	4	18	165	42	12	8	45	65	1.2	62
1.5	10~20	1	200	230	260	65	4	15	485	4	14	175	32	10	8	35	55	0.3	50
	30		230	270	305	70	4	17	485	4	18	175	38	12	8	41	58	0.3	58
	40~60		240	280	320	65	4	17	540	4	18	175	42	12	8	45	65	1.2	69
	70~90	2	280	320	355	75	5	19	560	6	14	175	48	14	9	51.5	75	1.2	76
2.2	10~30	1	230	270	305	70	4	17	510	4	18	200	38	12	8	41	58	0.3	74
	40~60	2	280	320	355	75	5	19	585	6	14	200	48	14	9	51.5	75	1.2	98
	70~90		310	355	395	85	5	22	615	6	18	200	55	16	10	59	85	1.8	109
3.7	10~20	2	280	320	350	85	5	18	550	6	14	210	48	14	9	51.5	80	0.6	93
	30		320	360	393	85	5	18	555	6	14	210	48	14	9	51.5	80	0.8	113
	40~60		310	355	395	85	5	22	615	6	18	210	55	16	10	59	85	1.8	122

주 : 1. 극수는 4극 기준임.

FCB, FCC 외형도 및 외형치수

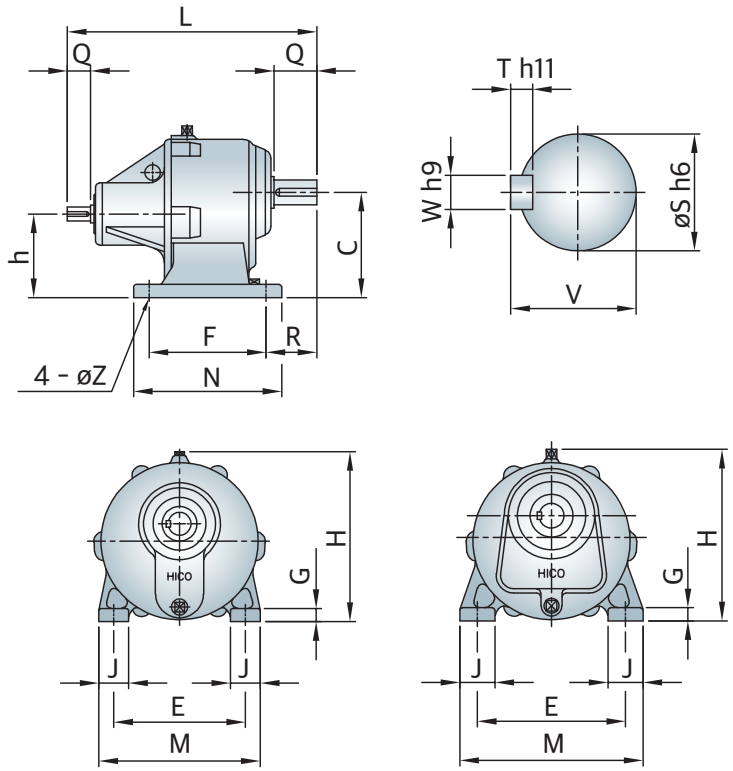


Fig. 1

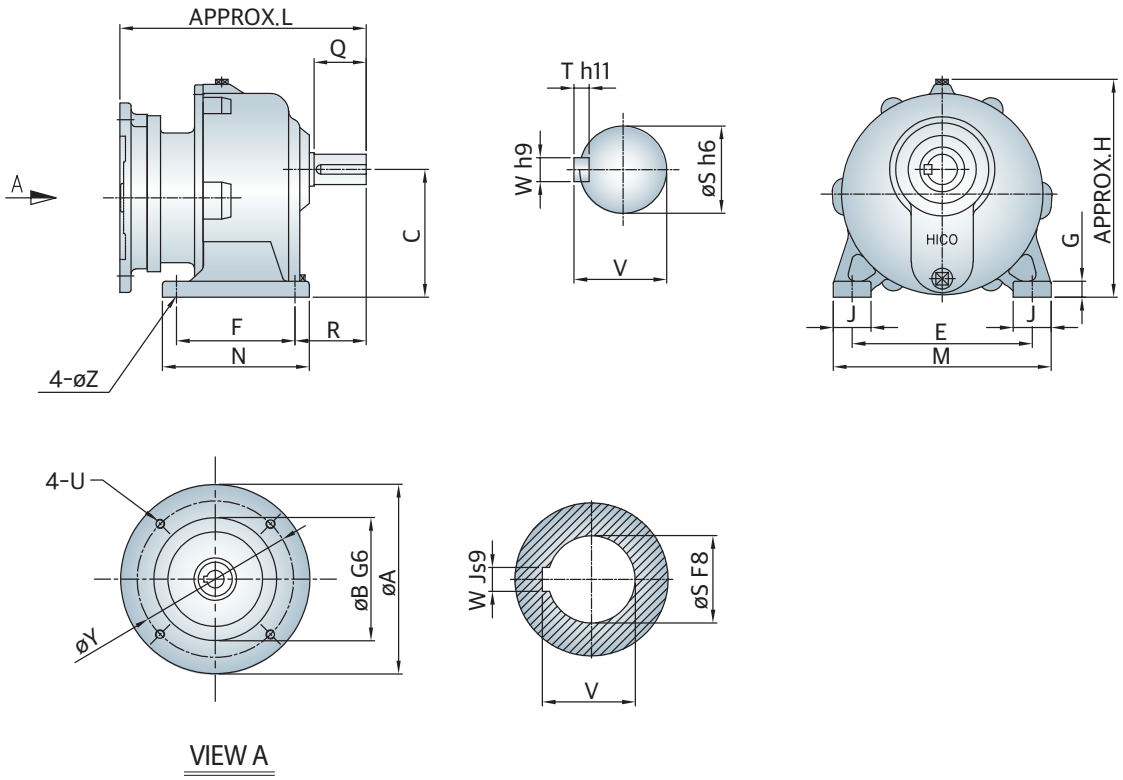
Fig. 2

단위 : mm

kW	Ratio	Fig	Dimension												Input shaft					Output Shaft					그리스량 (kg)	중량 (kg)
			C	F	N	R	E	M	J	G	Z	H	L	h	S	W	T	V	Q	S	W	T	V	Q		
0.4 0.75	10~20	1	115	120	145	50	155	190	35	15	12	200	270	87	18	6	6	20.5	30	25	8	7	28	35	0.25	18
	30		135	125	155	75	190	230	40	17	12	230	295	105	18	6	6	20.5	30	32	10	8	35	55	0.3	24
	40~60	2	135	150	190	65	190	235	45	17	14	230	320	107	18	6	6	20.5	30	32	10	8	35	55	0.5	24
	70~90		165	175	220	80	215	265	50	20	19	260	352	126	18	6	6	20.5	30	42	12	8	45	65	0.8	38
1.5	10~20	1	135	125	155	75	190	230	40	17	12	230	315	105	22	6	6	24.5	35	32	10	8	35	55	0.3	28
	30		160	130	170	75	215	260	45	20	14	265	320	126	22	6	6	24.5	35	38	12	8	41	58	0.3	33
	40~60	2	165	175	220	80	215	265	50	20	19	260	374	126	22	6	6	24.5	35	42	12	8	45	65	0.8	40
	70~90		180	185	235	95	240	295	55	23	19	285	396	137	22	6	6	24.5	35	48	14	9	51.5	75	1.2	46
2.2	10~30	1	160	130	170	75	215	260	45	20	14	265	340	126	25	8	7	28	40	38	12	8	41	58	0.3	35
	40~60	2	180	185	235	95	240	295	55	23	19	285	416	137	25	8	7	28	40	48	14	9	51.5	75	1.2	47
	70~90		200	220	270	100	270	330	60	27	22	315	449	151.5	25	8	7	28	40	55	16	10	59	85	1.8	61
3.7	10~20	1	180	160	210	90	240	295	55	23	19	305	375	135	28	8	7	31	45	48	14	9	51.5	80	0.6	49
	30		200	180	230	95	275	340	65	23	19	351	382	154	28	8	7	31	45	48	14	9	51.5	80	0.8	56
	40~60	2	200	220	270	100	270	330	60	27	22	315	447	151.5	28	8	7	31	45	55	16	10	59	85	1.8	62

주 : 1. 극수는 4극 기준임.

FHI 외형도 및 외형치수

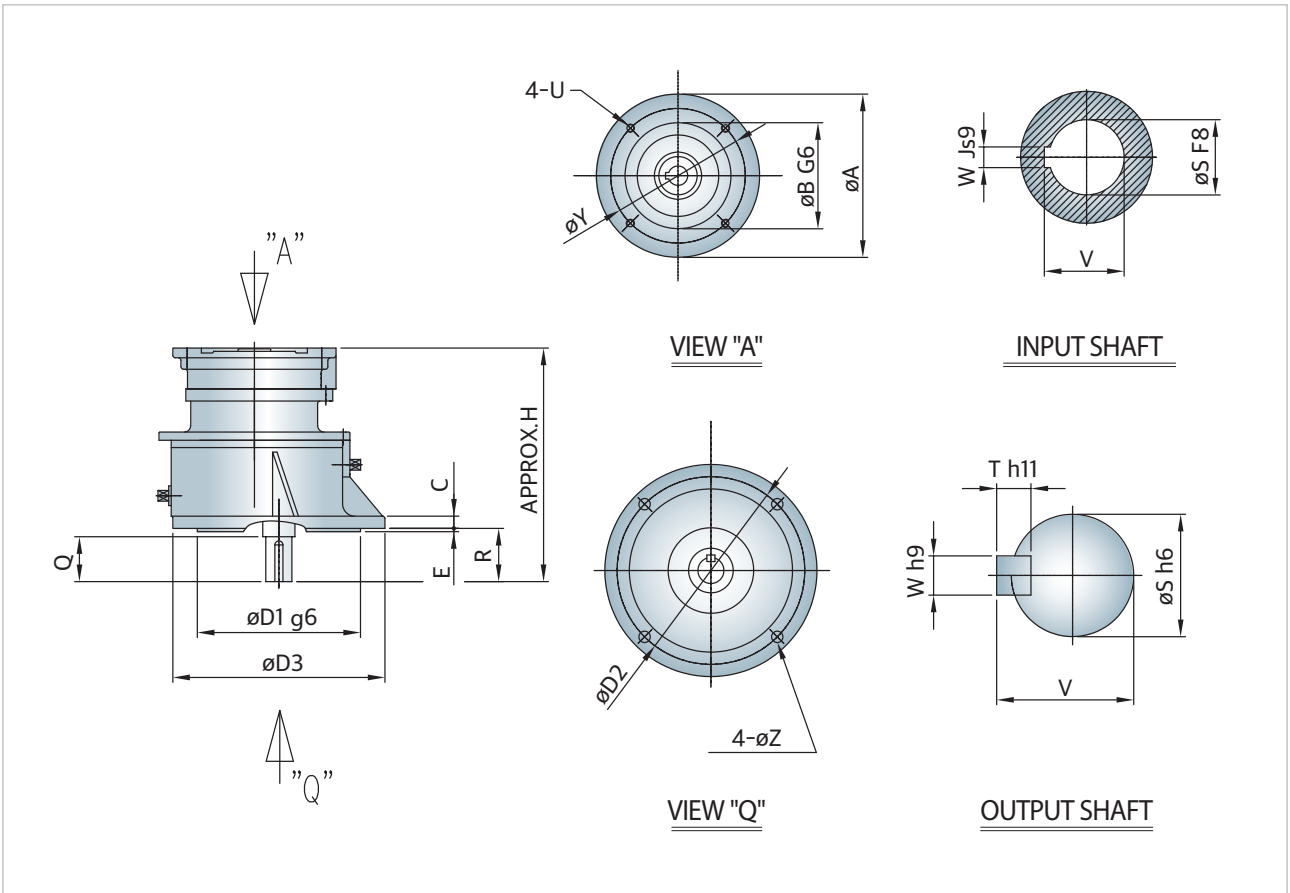


단위 : mm

kW	Ratio	Dimension											Input flange				Input shaft			Output Shaft					그리스량 (kg)	중량 (kg)
		C	F	N	R	Z	L	E	M	J	G	H	Y	U	A	B	W	V	S	W	T	V	S	Q		
0.75	10~20	135	125	155	75	12	285	190	230	40	17	230	165	M10	200	130	6	21.8	19	10	8	35	32	55	0.3	24
	30	135	125	155	75	12	260	190	230	40	17	230	165	M10	200	130	6	21.8	19	10	8	35	32	55	0.3	20
	40~60	135	150	190	65	14	286	190	235	45	17	225	165	M10	200	130	6	21.8	19	10	8	35	32	55	0.5	24
	70~90	165	175	220	80	19	317	215	265	50	20	260	165	M10	200	130	6	21.8	19	12	8	45	42	65	0.8	39
1.5	10~20	135	125	155	75	12	285	190	230	40	17	230	165	M10	200	130	8	27.3	24	10	8	35	32	55	0.3	24
	30	160	130	170	75	14	287	215	260	45	20	265	165	M10	200	130	8	27.3	24	12	8	41	38	58	0.3	31
	40~60	165	175	220	80	19	339	215	265	50	20	260	165	M10	200	130	8	27.3	24	12	8	45	42	65	0.8	40
	70~90	180	185	235	95	19	361	240	295	55	23	285	165	M10	200	130	8	27.3	24	14	9	51.5	48	75	1.2	52
2.2	10~30	160	130	170	75	14	299	215	260	45	20	266	215	M12	250	180	8	31.3	28	12	8	41	38	58	0.3	32
	40~60	180	185	235	95	19	374	240	295	55	23	285	215	M12	250	180	8	31.3	28	14	9	51.5	48	75	1.2	53
	70~90	200	220	270	100	22	407	270	330	60	27	325	215	M12	250	180	8	31.3	28	16	10	59	55	85	1.8	78
3.7	10~20	180	160	210	90	19	340	240	295	55	23	305	215	M12	250	180	8	31.3	28	14	9	51.5	48	80	0.6	49
	30	200	180	230	95	19	347	275	340	65	27	351	215	M12	250	180	8	31.3	28	14	9	51.5	48	80	0.8	62
	40~60	200	220	270	100	22	412	270	330	60	27	325	215	M12	250	180	8	31.3	28	16	10	59	55	85	1.8	77

* FN series 취부와 동일하여 기존제품 호환 가능
* 전동기 취부 IEC 국제표준에 부합하여 전동기 maker 호환 가능

FVI 외형도 및 외형치수



단위 : mm

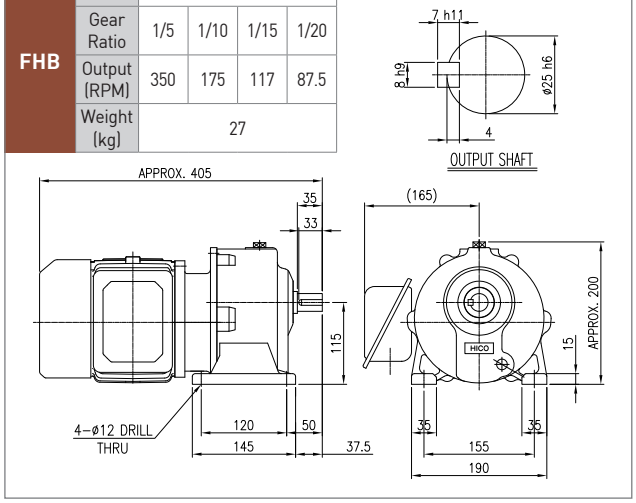
kW	Ratio	Dimension									Input flange				Input shaft			Output Shaft					그리스량 (kg)	중량 (kg)
		D1	D2	D3	R	E	C	H	N	Z	Y	U	A	B	W	V	S	W	T	V	S	Q		
0.75	10~20	200	230	260	65	4	15	295	4	14	165	M10	200	130	6	21.8	19	10	8	35	32	55	0.3	28
	30	200	230	260	65	4	15	270	4	14	165	M10	200	130	6	21.8	19	10	8	35	32	55	0.3	24
	40~60	200	230	260	55	4	15	295	4	14	165	M10	200	130	6	21.8	19	10	8	35	32	55	1	29
	70~90	240	280	320	65	4	17	325	4	18	165	M10	200	130	6	21.8	19	12	8	45	42	65	1.2	46
1.5	10~20	200	230	260	65	4	15	295	4	14	165	M10	200	130	8	27.3	24	10	8	35	32	55	0.3	28
	30	230	270	305	70	4	17	295	4	18	165	M10	200	130	8	27.3	24	12	8	41	38	58	0.3	36
	40~60	240	280	320	65	4	17	345	4	18	165	M10	200	130	8	27.3	24	12	8	45	42	65	1.2	47
	70~90	280	320	355	75	5	19	370	6	14	165	M10	200	130	8	27.3	24	14	9	51.5	48	75	1.2	54
2.2	10~30	230	270	305	70	4	17	305	6	18	215	M12	250	180	8	31.3	28	12	8	41	38	58	0.3	37
	40~60	280	320	355	75	5	19	380	6	14	215	M12	250	180	8	31.3	28	14	9	51.5	48	75	1.2	61
	70~90	310	355	395	85	5	22	415	6	18	215	M12	250	180	8	31.3	28	16	10	59	55	85	1.8	78
3.7	10~20	280	320	350	85	5	18	350	6	14	215	M12	250	180	8	31.3	28	14	9	51.5	48	80	0.6	53
	30	320	360	393	85	5	18	355	6	14	215	M12	250	180	8	31.3	28	14	9	51.5	48	80	0.8	73
	40~60	310	355	395	85	5	22	420	6	18	215	M12	250	180	8	31.3	28	16	10	59	55	85	1.8	82

* FN series 취부와 동일하여 기존제품 호환 가능
* 전동기 취부 IEC 국제표준에 부합하여 전동기 maker 호환 가능

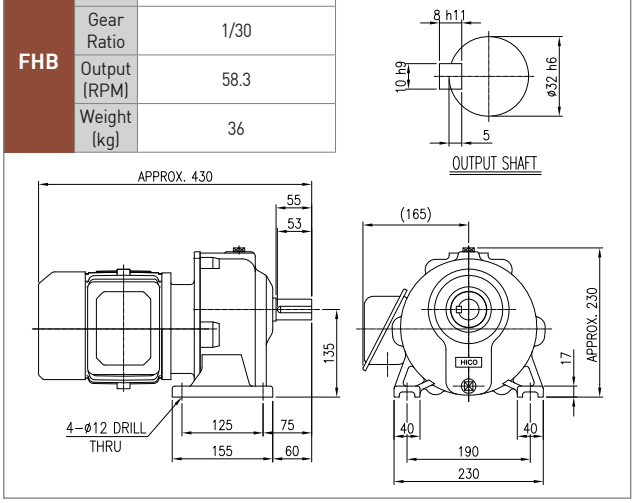
FN 수평형

0.4, 0.75kW

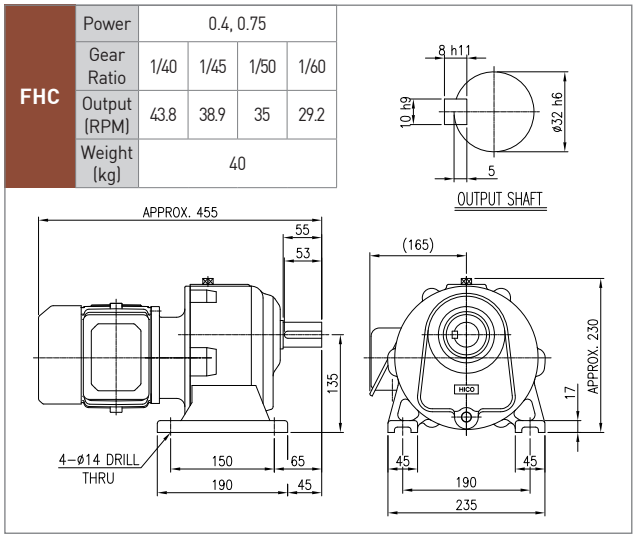
FHB					
	Power	0.4, 0.75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	27			



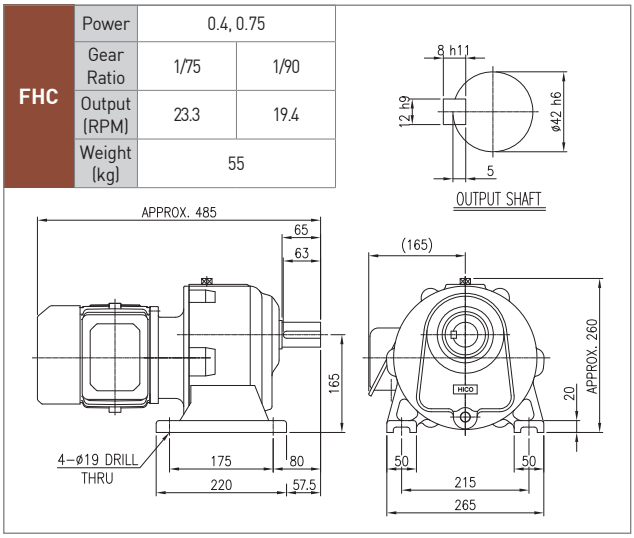
FHB		
	Power	0.4, 0.75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	36



FHC					
	Power	0.4, 0.75			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	40			

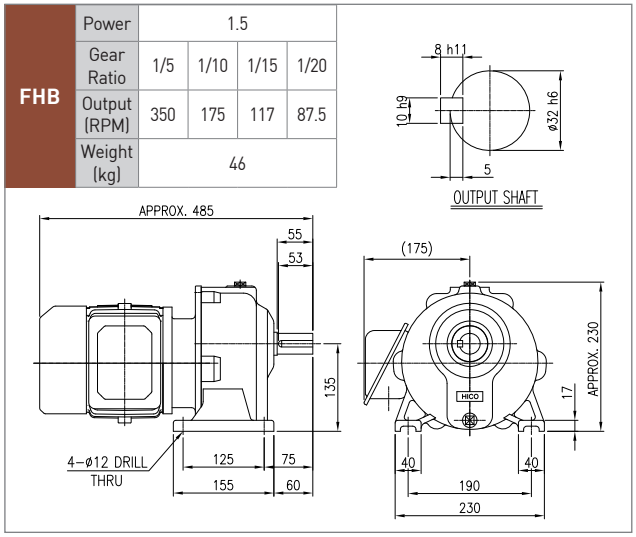


FHC			
	Power	0.4, 0.75	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	55	

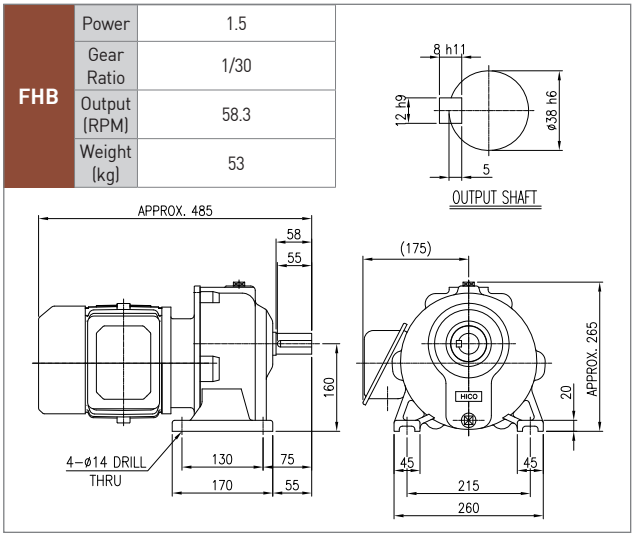


1.5kW

FHB					
	Power	1.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	46			



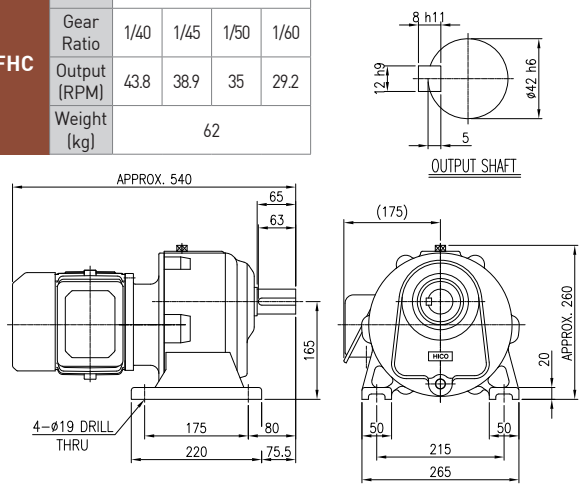
FHB		
	Power	1.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	53



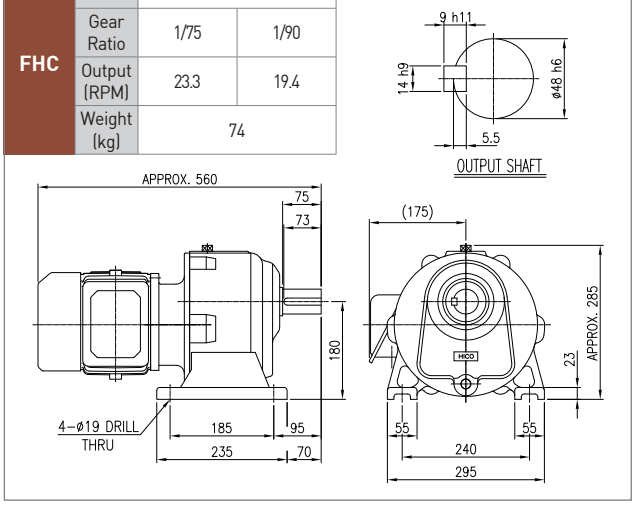
FN 수평형

1.5kW

FHC					
	Power	1.5			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	62			

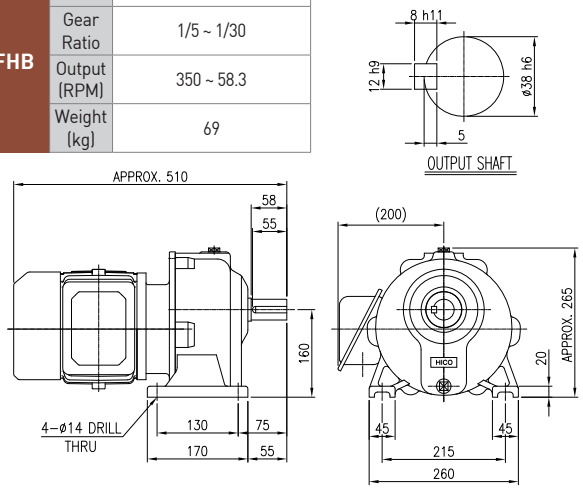


FHC			
	Power	1.5	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	74	

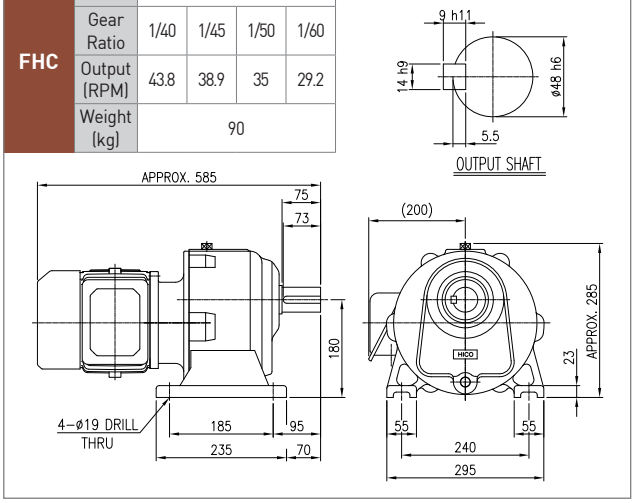


2.2kW

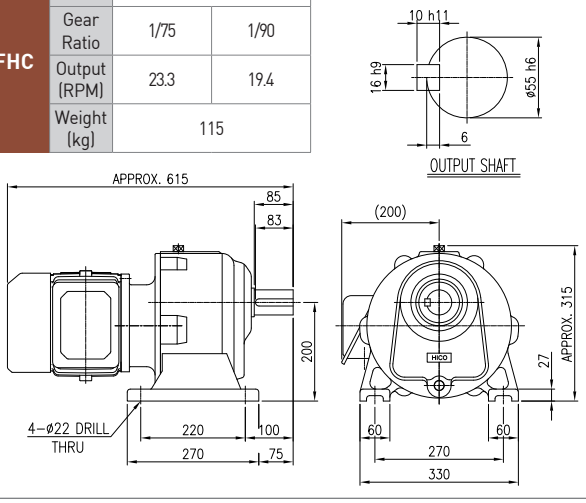
FHB		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	69



FHC					
	Power	2.2			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	90			



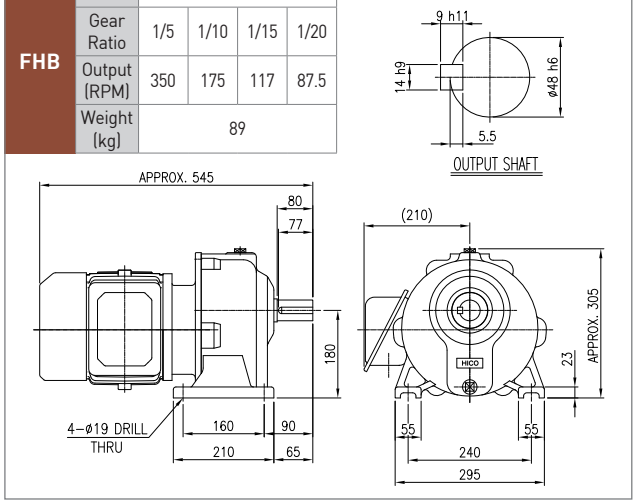
FHC		
	Power	2.2
	Gear Ratio	1/75 / 1/90
	Output (RPM)	23.3 / 19.4
	Weight (kg)	115



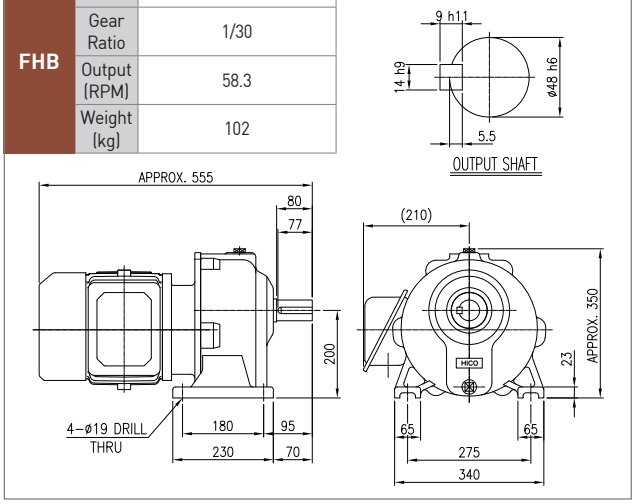
FN 수평형

3.7kW

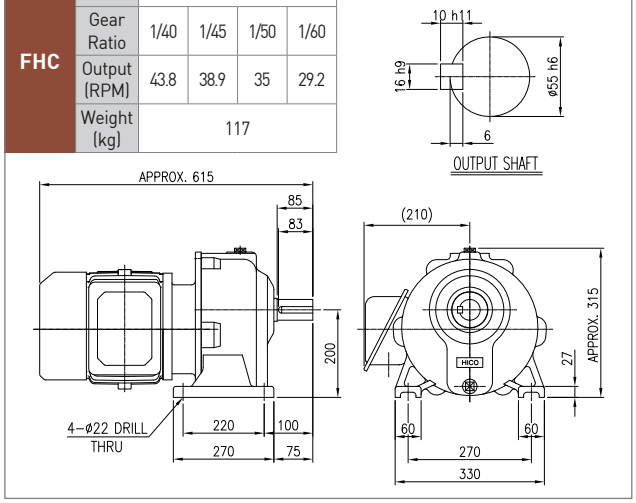
FHB					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	89			



FHB		
	Power	3.7
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	102



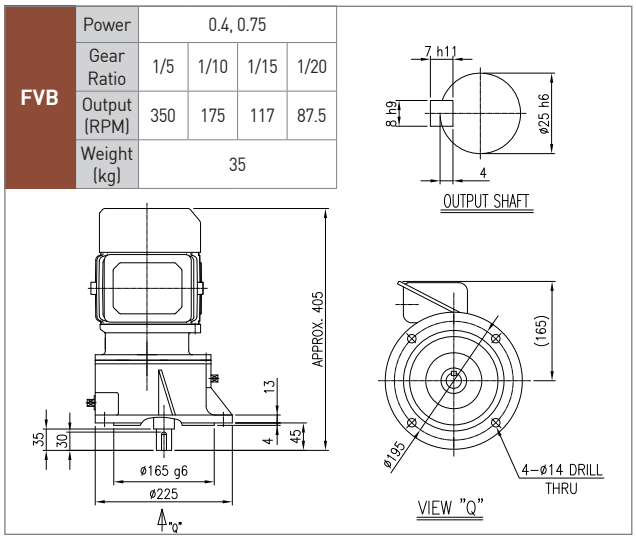
FHC					
	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	117			



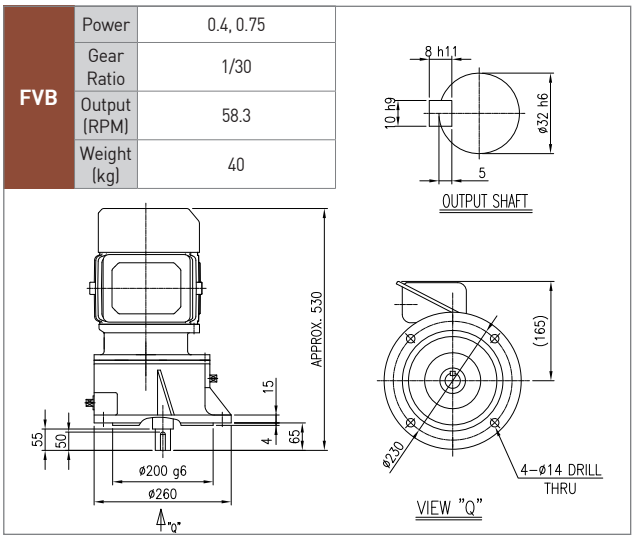
FN 수직형

0.4, 0.75kW

FVB					
	Power	0.4, 0.75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	35			



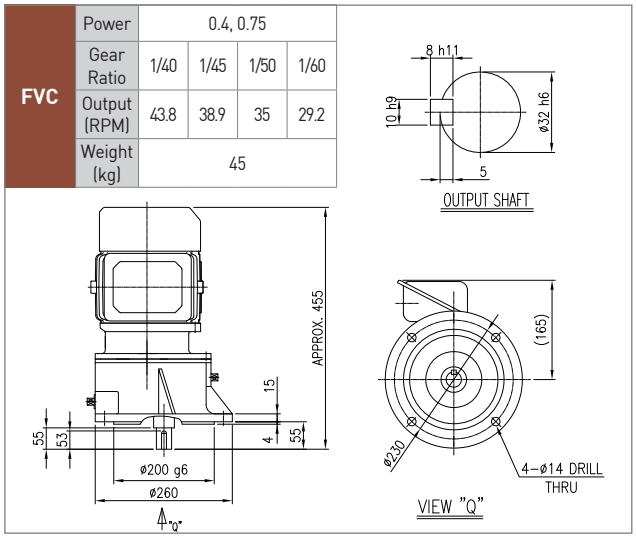
FVB		
	Power	0.4, 0.75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	40



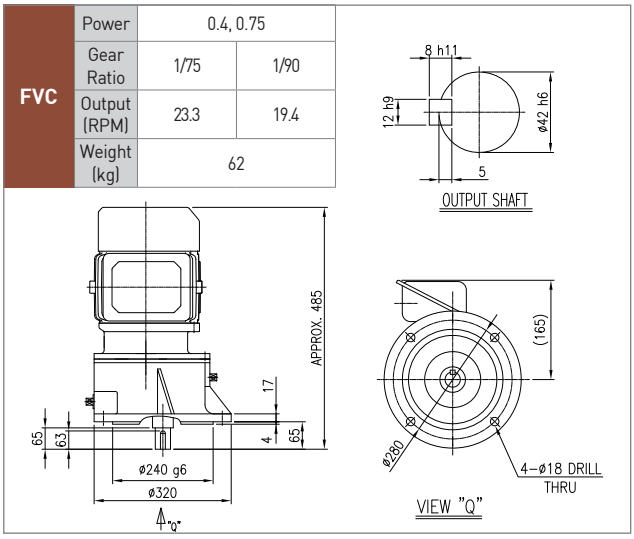
FN 수직형

0.4, 0.75kW

FVC	Power	0.4, 0.75			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	45			

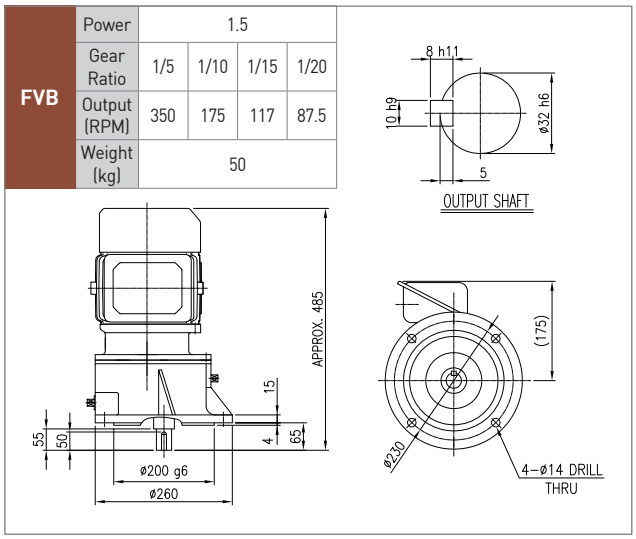


FVC	Power	0.4, 0.75	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	62	

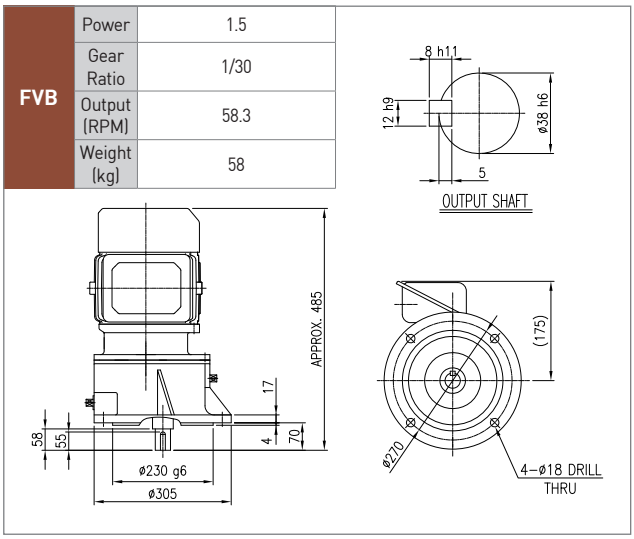


1.5kW

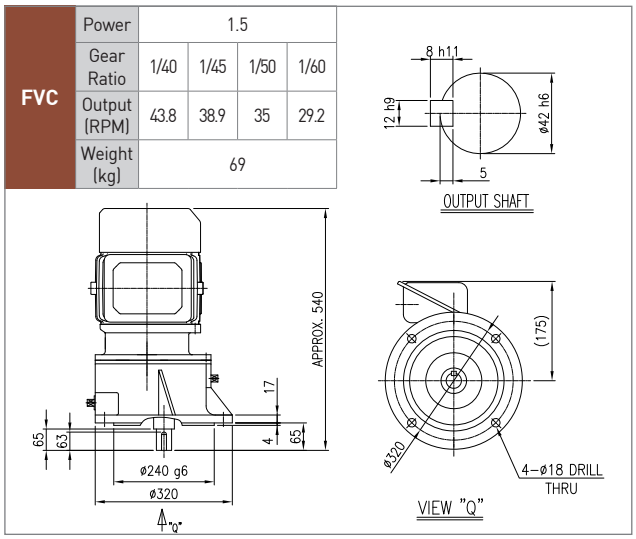
FVB	Power	1.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	50			



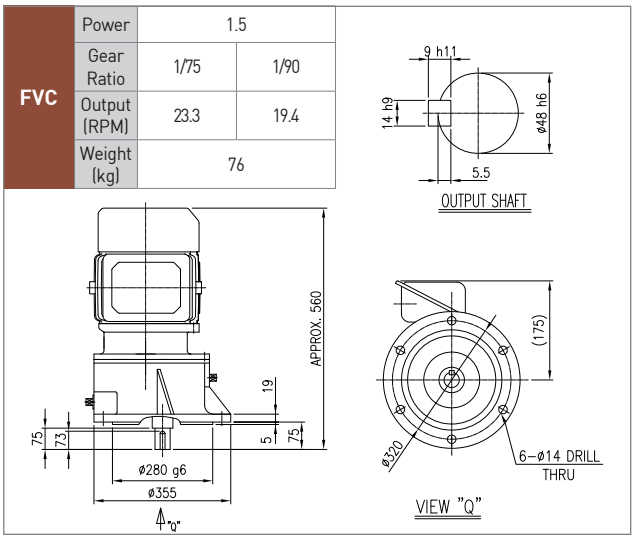
FVB	Power	1.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	58



FVC	Power	1.5			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	69			



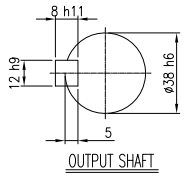
FVC	Power	1.5	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	76	

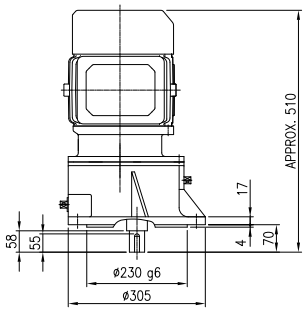


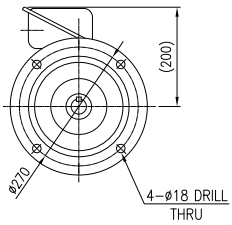
FN 수직형

2.2kW

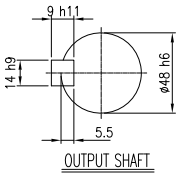
FVB	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	74

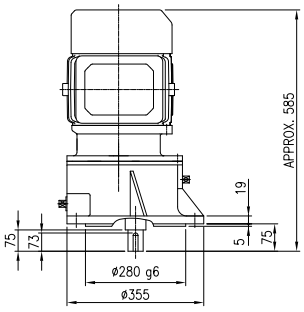


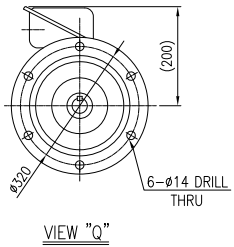




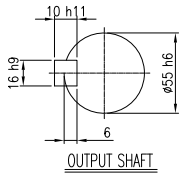
FVC	Power	2.2			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	98			

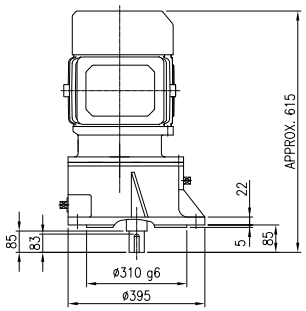


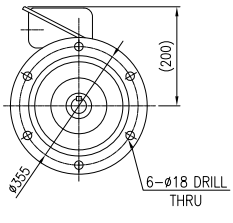




FVC	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	109	

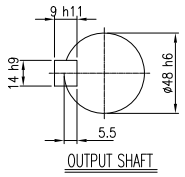


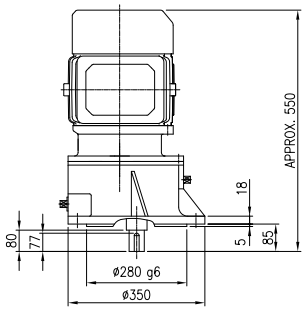


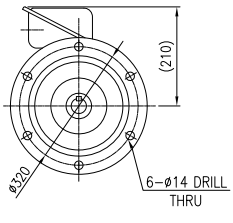


3.7kW

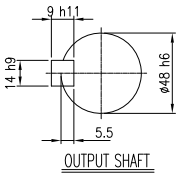
FVB	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	93			

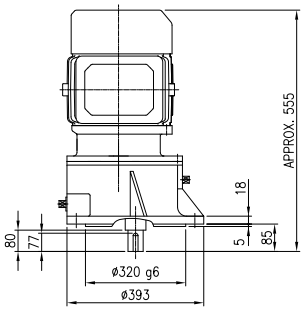


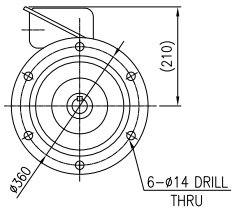




FVB	Power	3.7
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	113



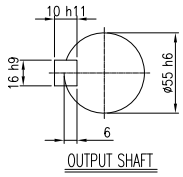


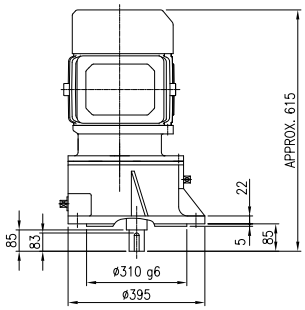


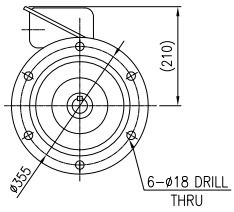
FN 수직형

3.7kW

FVC	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	122			



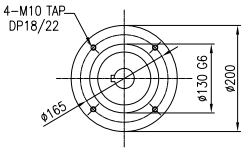


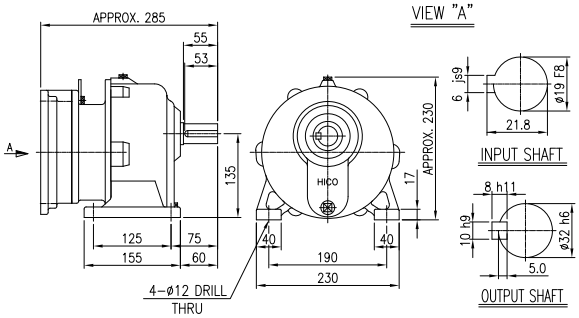


FN IEC FLANGE(수평형)

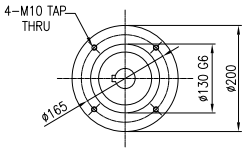
0.4, 0.75kW

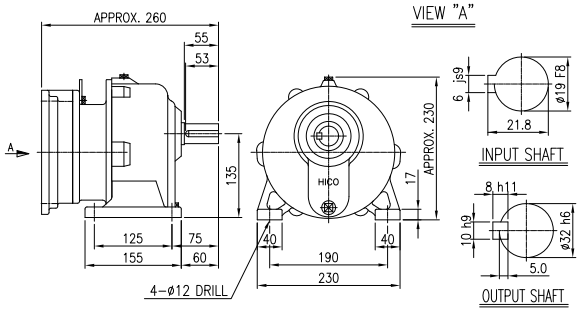
FHI	Power	0.4, 0.75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	24			



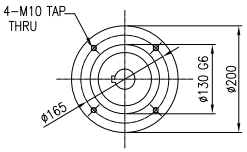


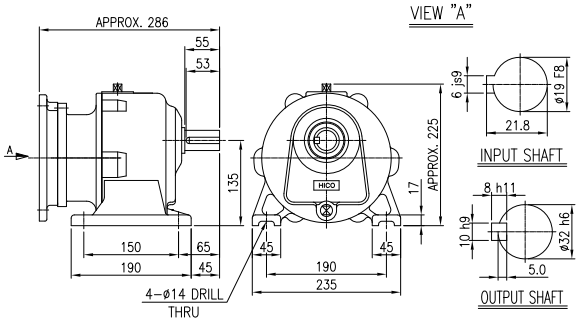
FHI	Power	0.4, 0.75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	20



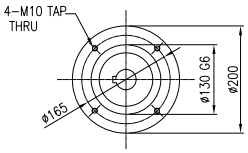


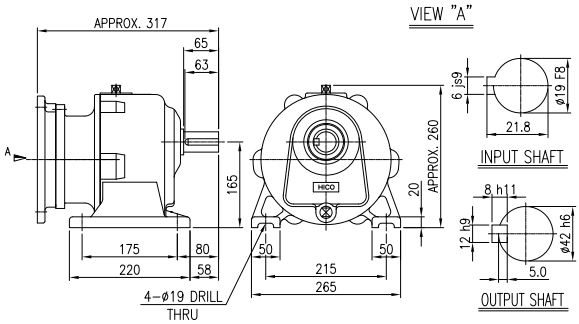
FHI	Power	0.4, 0.75			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	24			





FHI	Power	0.4, 0.75	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	39	

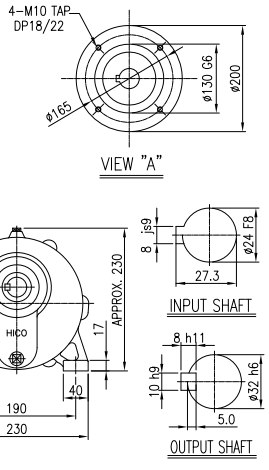




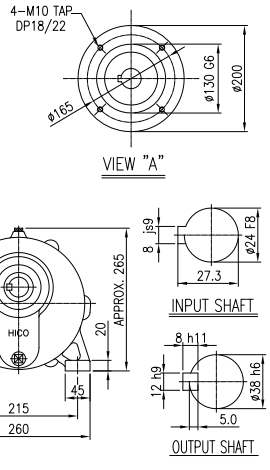
FN IEC FLANGE(수평형)

1.5kW

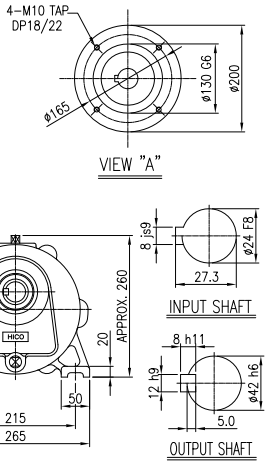
FHI					
	Power	1.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	24			



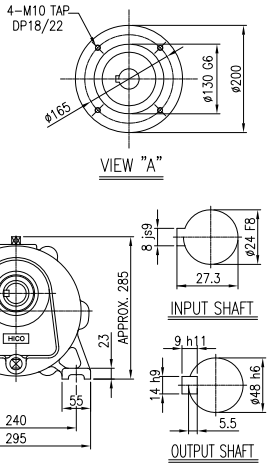
FHI		
	Power	1.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	31



FHI				
	Power	1.5		
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	40			

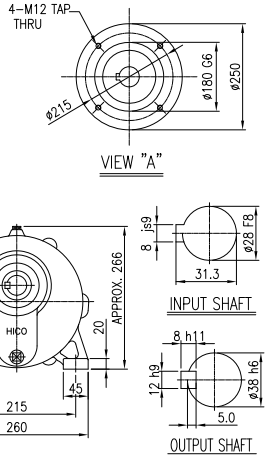


FHI			
	Power	1.5	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	52	

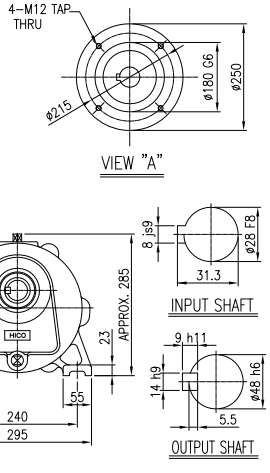


2.2kW

FHI		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	32



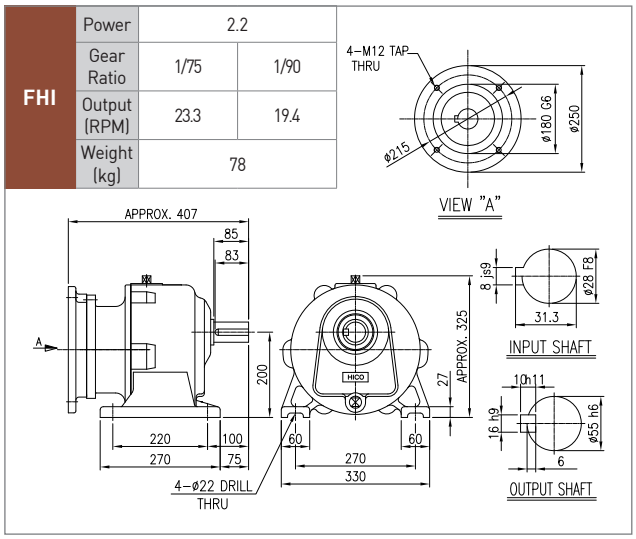
FHI					
	Power	2.2			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	53			



FN IEC FLANGE(수평형)

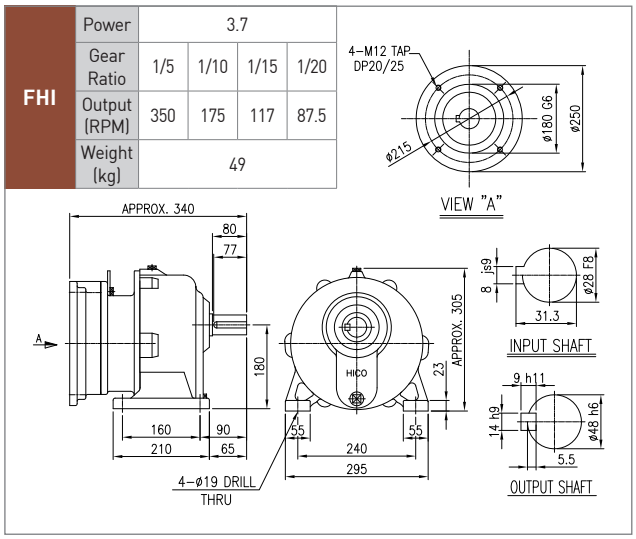
2.2kW

FHI	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	78	

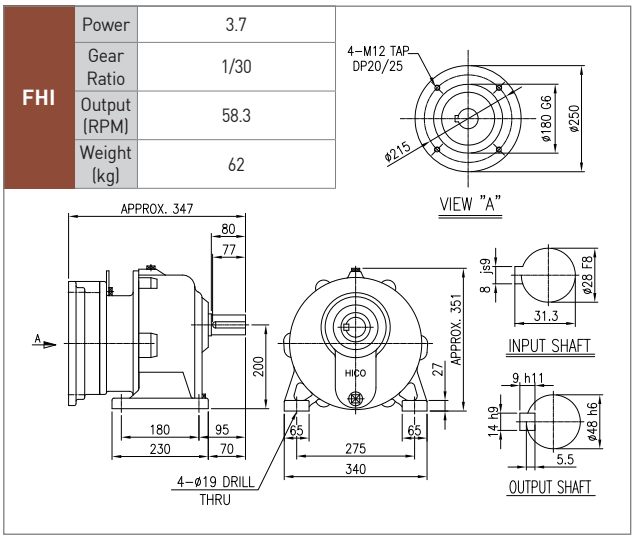


3.7kW

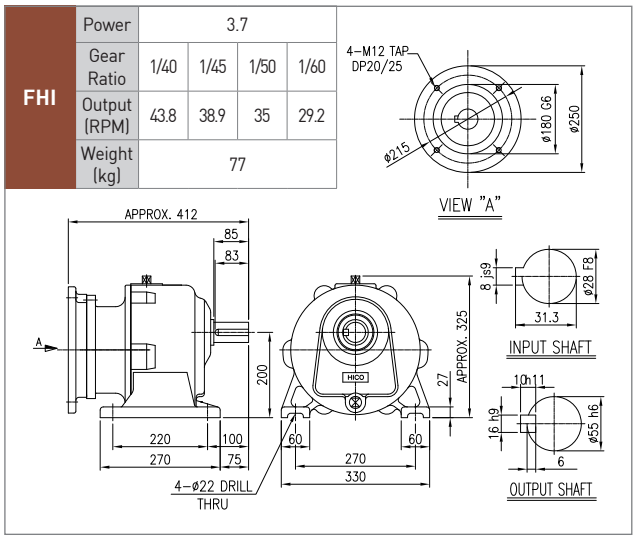
FHI	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	49			



FHI	Power	3.7
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	62



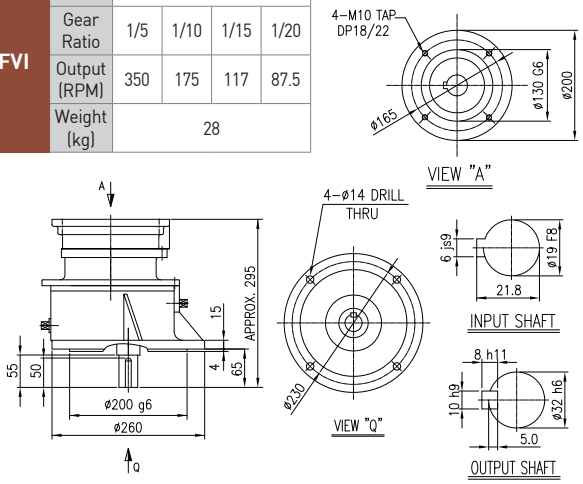
FHI	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	77			



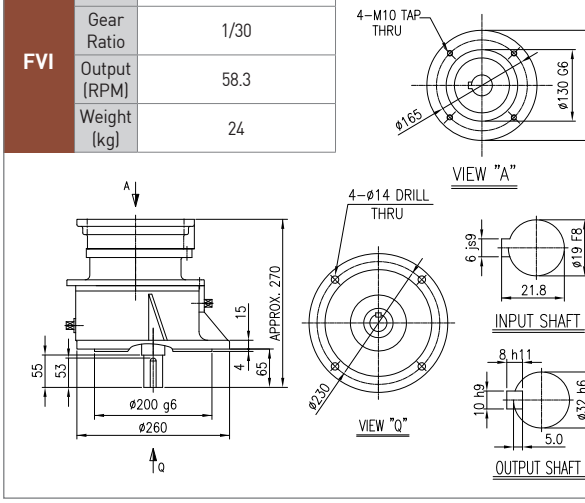
FN IEC FLANGE(수직형)

0.75kW

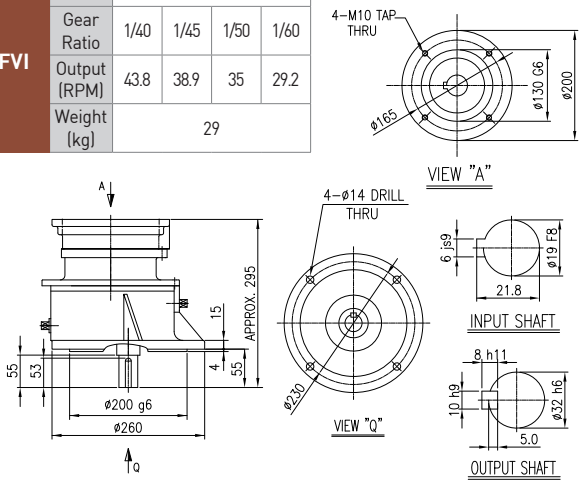
FVI					
	Power	0.75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	28			



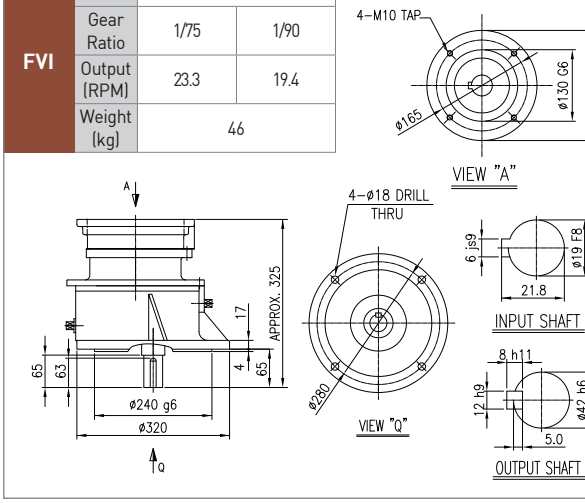
FVI		
	Power	0.75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	24



FVI					
	Power	0.75			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	29			

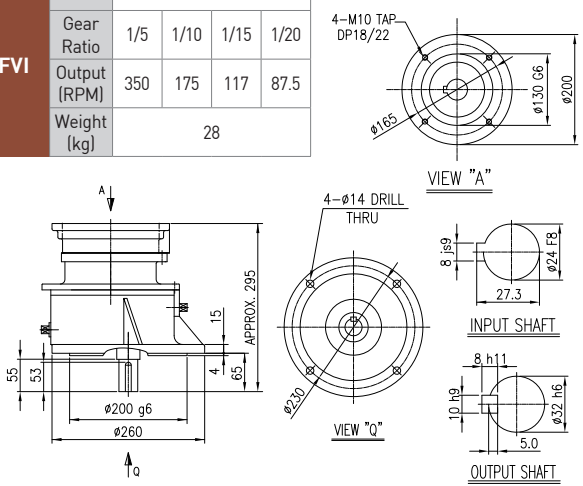


FVI			
	Power	0.75	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	46	

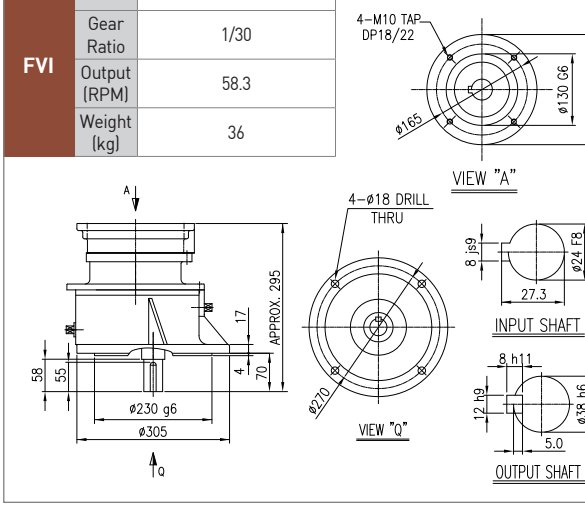


1.5kW

FVI					
	Power	1.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	28			



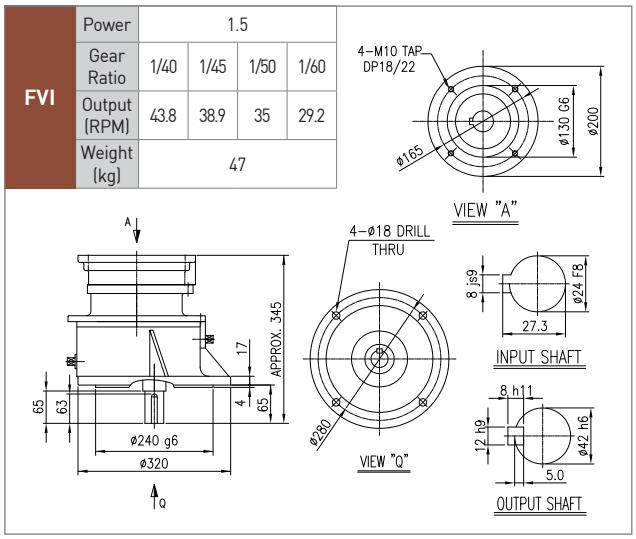
FVI		
	Power	1.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	36



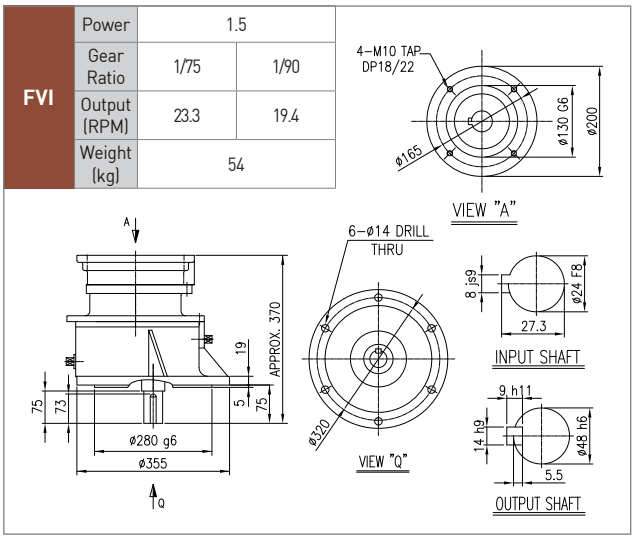
FN IEC FLANGE(수직형)

1.5kW

FVI					
	Power	1.5			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	47			

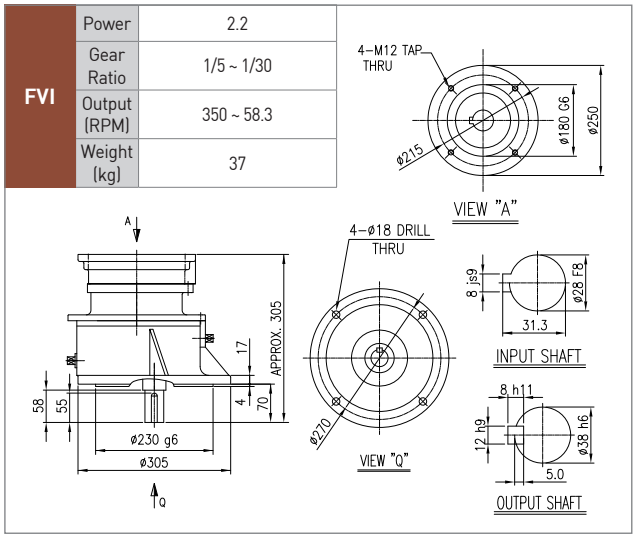


FVI			
	Power	1.5	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	54	

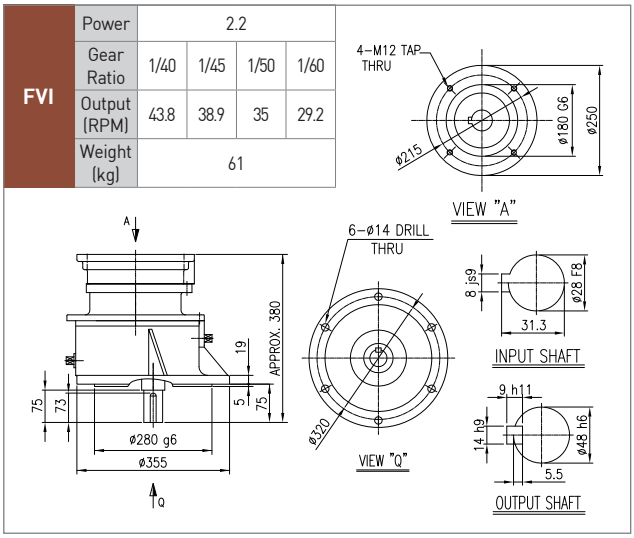


2.2kW

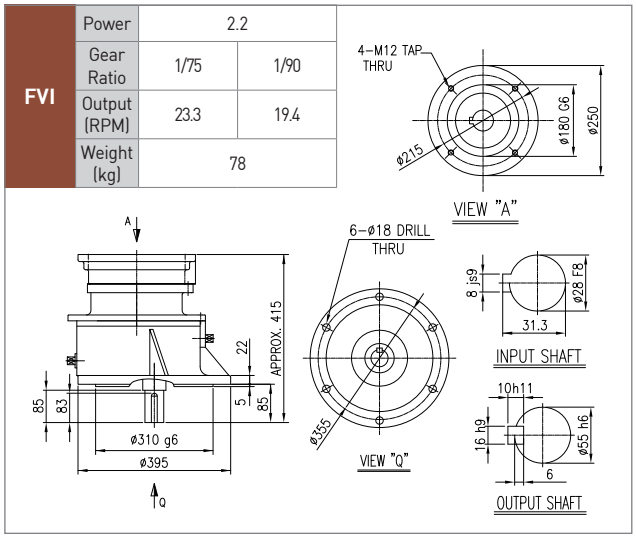
FVI		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	37



FVI					
	Power	2.2			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	61			



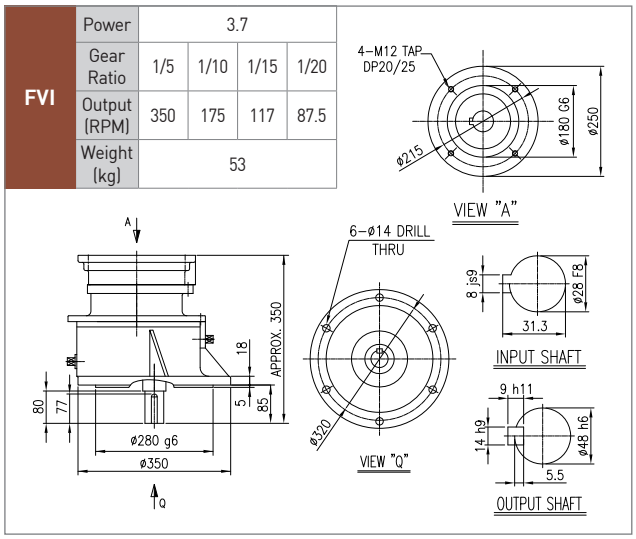
FVI			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	78	



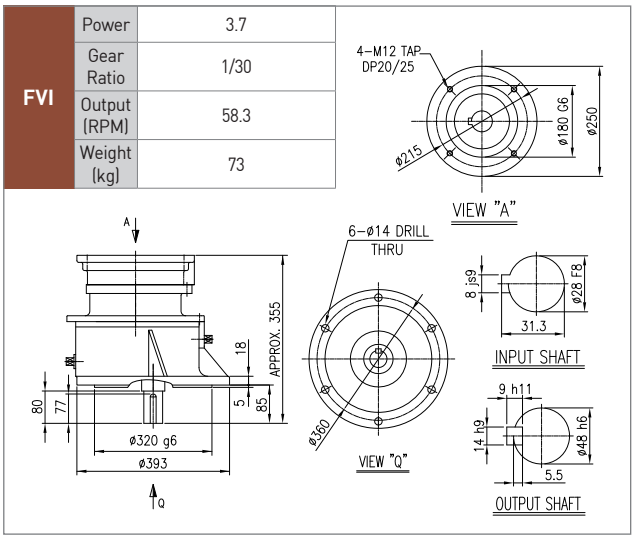
FN IEC FLANGE(수직형)

3.7kW

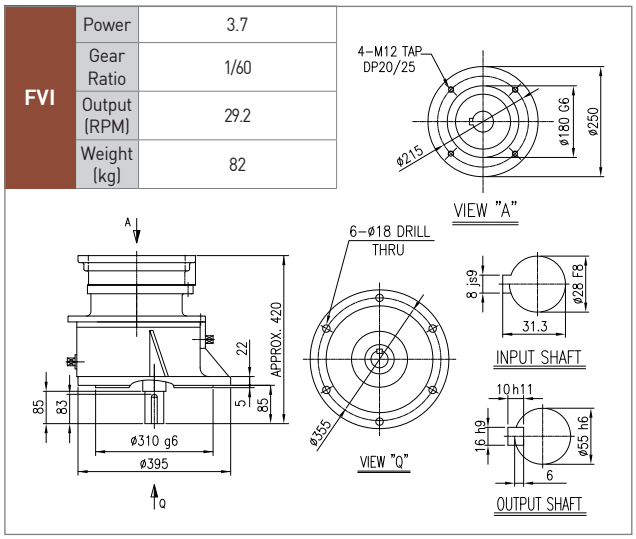
FVI					
	Power	3.7			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	53			



FVI		
	Power	3.7
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	73



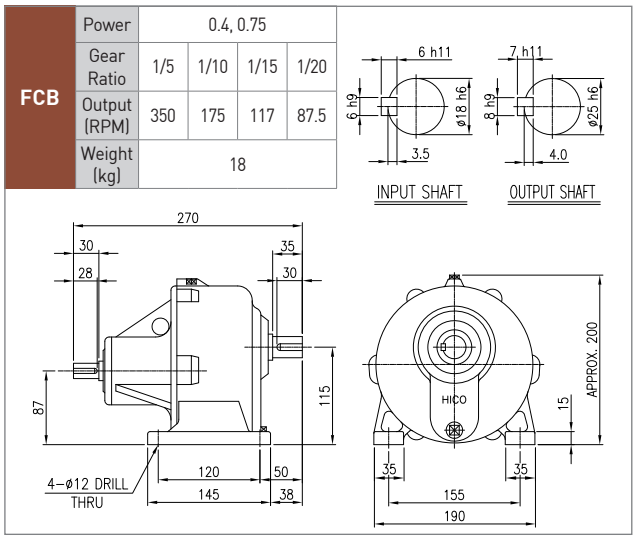
FVI		
	Power	3.7
	Gear Ratio	1/60
	Output (RPM)	29.2
	Weight (kg)	82



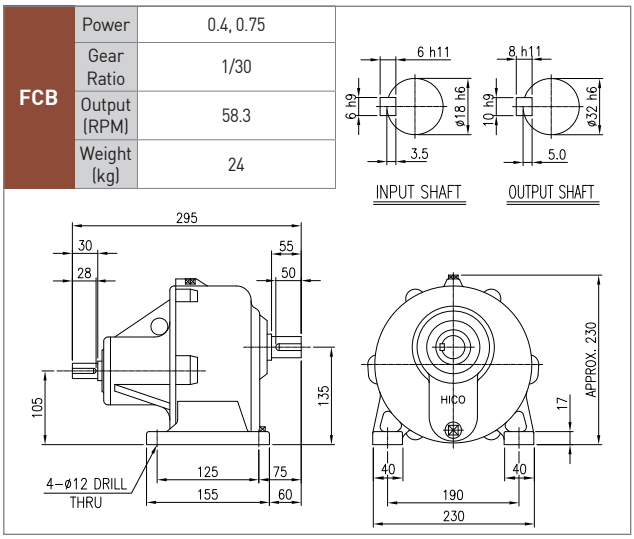
FN 라인파워

0.4, 0.75kW

FCB					
	Power	0.4, 0.75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	18			



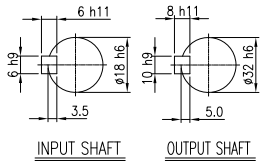
FCB		
	Power	0.4, 0.75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	24

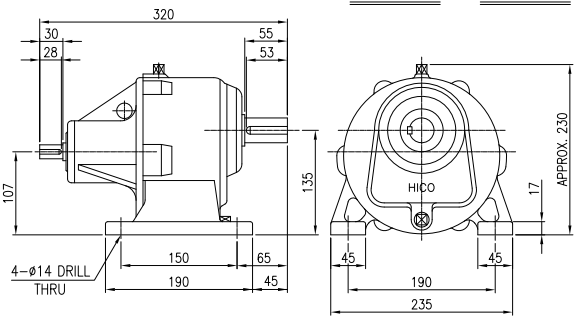


FN 라인파워

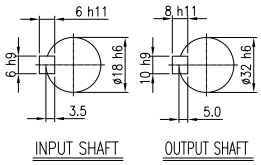
0.4, 0.75kW

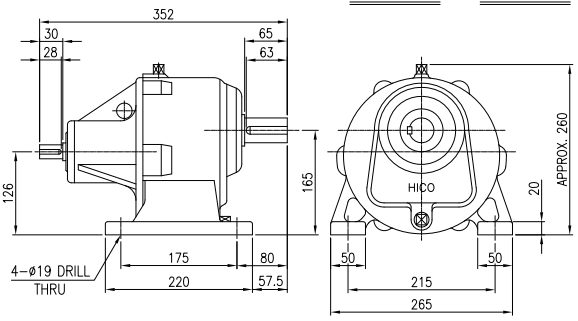
FCC					
Power	0.4, 0.75				
Gear Ratio	1/40	1/45	1/50	1/60	
Output (RPM)	43.8	38.9	35	29.2	
Weight (kg)	24				





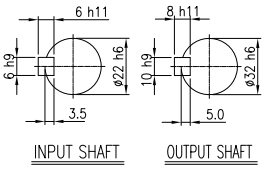
FCC		
Power	0.4, 0.75	
Gear Ratio	1/75	1/90
Output (RPM)	23.3	19.4
Weight (kg)	38	

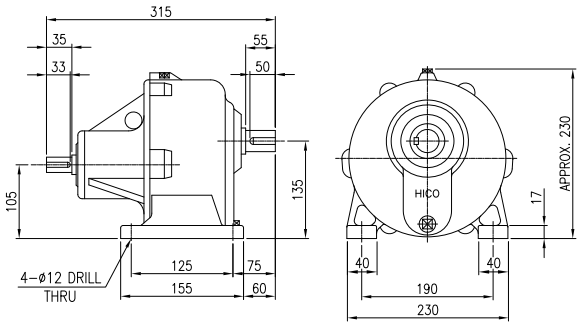




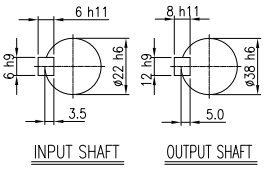
1.5kW

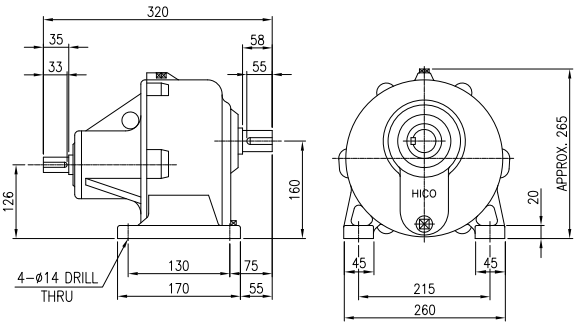
FCB					
Power	1.5				
Gear Ratio	1/5	1/10	1/15	1/20	
Output (RPM)	350	175	117	87.5	
Weight (kg)	28				



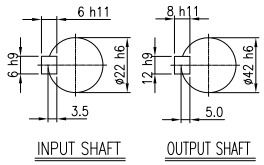


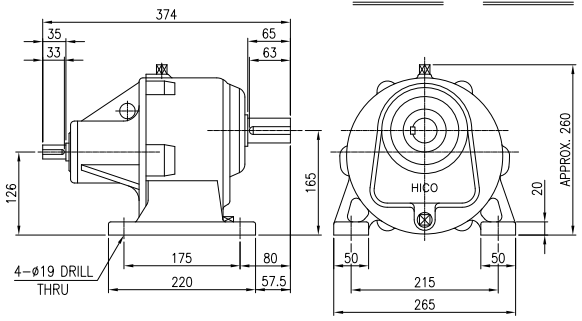
FCB		
Power	1.5	
Gear Ratio	1/30	
Output (RPM)	58.3	
Weight (kg)	33	



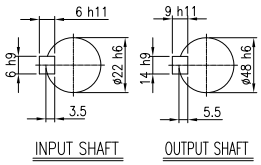


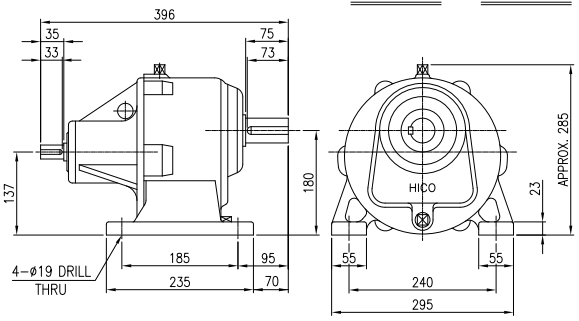
FCC					
Power	1.5				
Gear Ratio	1/40	1/45	1/50	1/60	
Output (RPM)	43.8	38.9	35	29.2	
Weight (kg)	40				





FCC		
Power	1.5	
Gear Ratio	1/75	1/90
Output (RPM)	23.3	19.4
Weight (kg)	46	

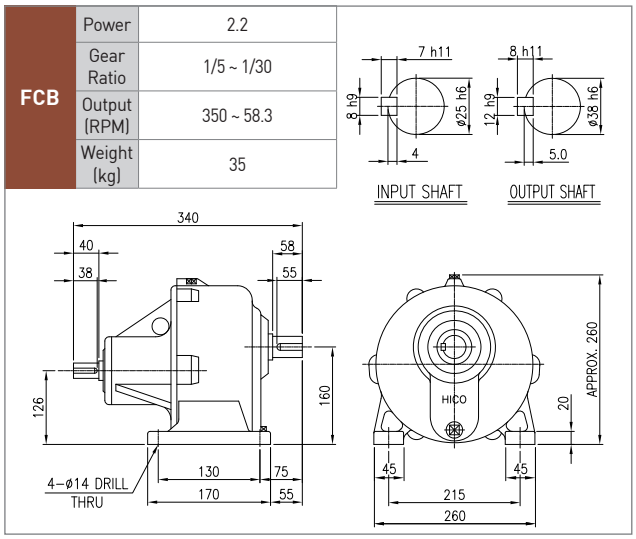




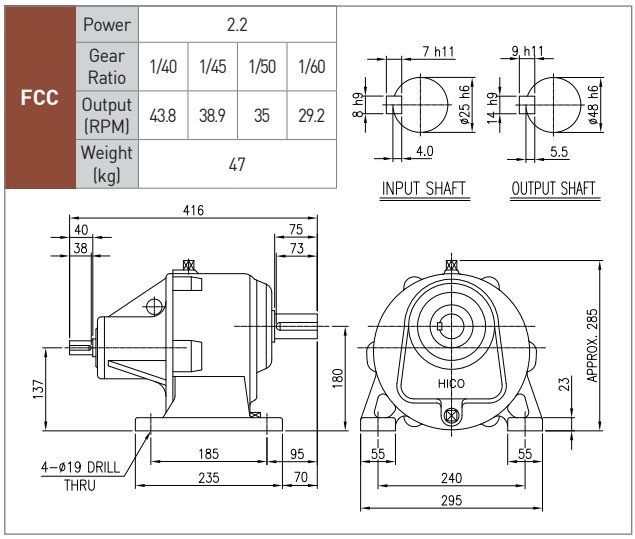
FN 라인파워

2.2kW

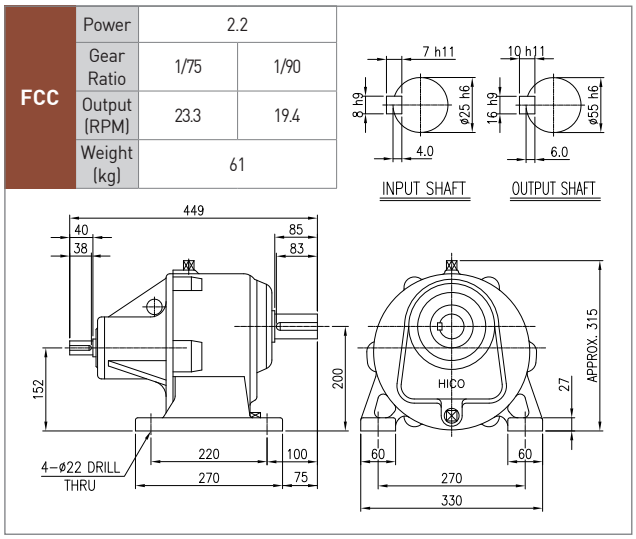
FCB		
	Power	2.2
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	35



FCC				
	Power	2.2		
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	47		

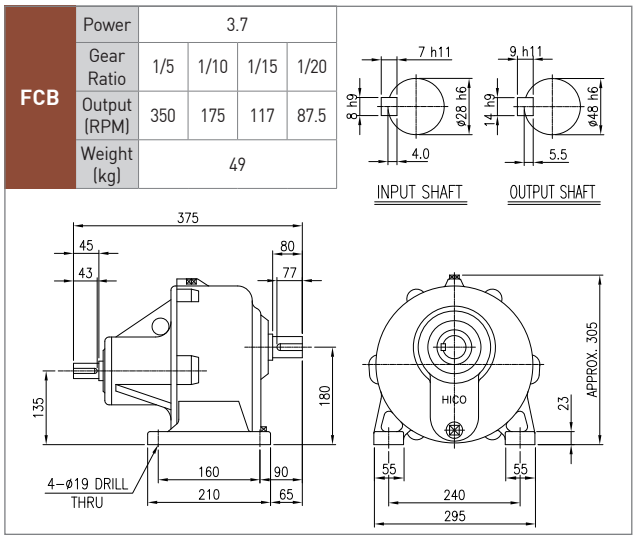


FCC			
	Power	2.2	
	Gear Ratio	1/75	1/90
	Output (RPM)	23.3	19.4
	Weight (kg)	61	

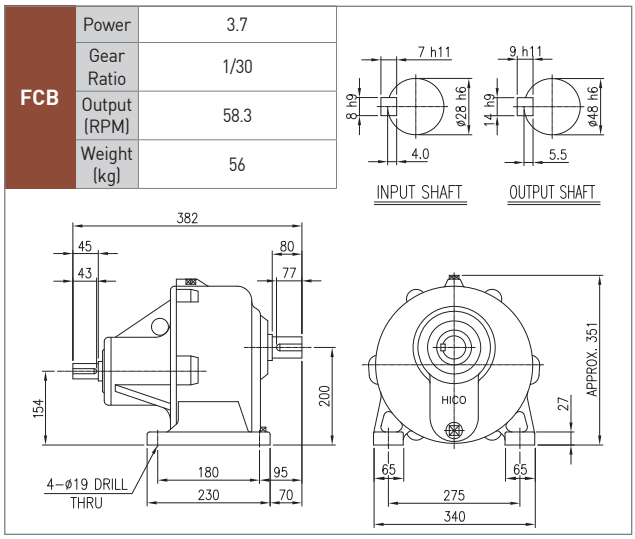


3.7kW

FCB				
	Power	3.7		
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	49		



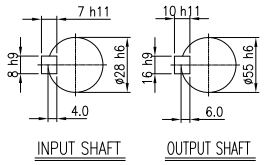
FCB		
	Power	3.7
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	56

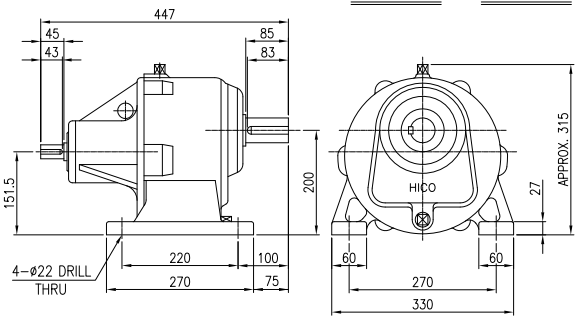


FN 라인파워

3.7kW

FCC	Power	3.7			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	38.9	35	29.2
	Weight (kg)	62			





F Series

수평형

수직형

IEC FLANGE

라인파워

F시리즈 특징

1. 신속한 공급

표준화된 모든 부품을 반제품화하여 확보해 둠으로써 수용가의 요구에 신속하게 공급해 드립니다.

2. 충격강도의 증가

기어드 모터의 1단 피니언은 모터축과 일체로 되어 충격강도가 향상되었으며 소음이 적습니다.

3. 소형 · 경량

1단 피니언은 모터축과 일체로 하며 2단 축간거리를 다르게 하여 소형·경량화 되었습니다.

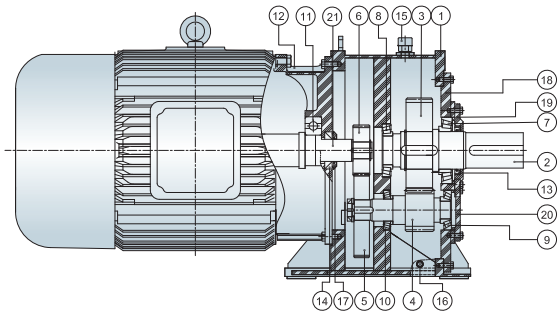
4. 확실한 Seal 구조

오일의 누유를 방지하기 위하여 고급 오일 Seal과 자체개발의 특수 봉입장치를 사용하였습니다.

5. 고성능 강력프레임

치차의 치형을 이상적인 치형으로 수정하고 개스 침탄 후 모든 기어를 연마하여 저소음, 고효율을 얻을 수 있으며 충분한 강성의 프레임으로 되어있습니다.

FHB 구조도



형식표시

• 5.5 ~ 15kW

F H B

- B: 2단형 (1/10~1/30)
- H: Horizontal
  V: Vertical
  C: Line Power
  I: IEC Flange
- 모델명

• 18.5 ~ 160kW

F H M

- M : 모터 일체형
  L : Line Power
- H : Horizontal
  V : Vertical
- 모델명

NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	7	BEARING	13	OIL SEAL	19	OUTPUT COVER
2	OUTPUT SHAFT	8	BEARING	14	OIL SEAL	20	2'ND COVER
3	2'ND GEAR	9	BEARING	15	AIR VENT	21	MOTOR SHAFT
4	2'ND PINION	10	BEARING	16	PLUG		
5	1'ST GEAR	11	BEARING	17	GAMMA SEAL		
6	1'ST PINION	12	MOTOR BRACKET	18	OUTPUT FLANGE		

F시리즈 GD², O.H.L표

kW	Ratio	최대허용토크		모터축 환산GD²		출력축OHL	
		N · m	kgf · m	N · m²	kg · m²	N	kgf
5.5	1/5	209.7	21.4	1.578	0.161	11,270	1,150
	1/10	420.4	42.9	1.578	0.161	11,270	1,150
	1/15	631.1	64.4	1.578	0.161	11,270	1,150
	1/20	840.8	85.8	1.558	0.159	11,270	1,150
	1/30	1,264.2	129.0	1.558	0.159	11,760	1,200
7.5	1/5	287.1	29.3	2.029	0.207	10,486	1,070
	1/10	573.3	58.5	2.029	0.207	10,486	1,070
	1/15	860.4	87.8	2.029	0.207	10,486	1,070
	1/20	1,146.6	117.0	2.009	0.205	10,486	1,070
	1/30	1,724.8	176.0	2.009	0.205	11,760	1,200
11	1/5	420.4	42.9	4.273	0.436	12,740	1,300
	1/10	840.8	85.8	4.273	0.436	12,740	1,300
	1/15	1,264.2	129.0	4.273	0.436	12,740	1,300
	1/20	1,685.6	172.0	4.224	0.431	12,740	1,300
	1/30	2,518.6	257.0	4.234	0.432	17,640	1,800
15	1/5	573.3	58.5	5.204	0.531	11,760	1,200
	1/10	1,146.6	117.0	5.204	0.531	11,760	1,200
	1/15	1,724.8	176.0	5.204	0.531	11,760	1,200
	1/20	2,293.2	234.0	5.155	0.526	11,760	1,200
	1/30	3,440.0	351.0	5.165	0.527	16,660	1,700
18.5	1/5	707	72.1	10.69	1.091	18,620	1,900
	1/10	1,414	144	10.11	1.032	18,620	1,900
	1/15	2,121	216	10.08	1.029	18,620	1,900
	1/20	2,828	289	10.06	1.027	18,620	1,900
	1/30	4,242	433	10.2	1.041	28,420	2,900
22	1/5	841	85.8	10.69	1.091	17,640	1,800
	1/10	1,682	172	10.11	1.032	17,640	1,800
	1/15	2,523	257	10.08	1.029	17,640	1,800
	1/20	3,363	343	10.06	1.027	17,640	1,800
	1/30	5,045	515	10.2	1.041	26,460	2,700
30	1/5	1,147	117	13.02	1.329	23,520	2,400
	1/10	2,293	234	11.74	1.198	23,520	2,400
	1/15	3,440	351	11.68	1.192	23,520	2,400
	1/20	4,586	468	11.65	1.189	23,520	2,400
	1/30	6,880	702	11.9	1.214	38,220	3,900
37	1/5	1,414	144	16.12	1.645	21,560	2,200
	1/10	2,828	289	14.84	1.514	21,560	2,200
	1/15	4,242	433	14.78	1.508	21,560	2,200
	1/20	5,657	577	14.75	1.505	21,560	2,200
	1/30	8,485	866	14.99	1.53	35,280	3,600
45	1/5	1,720	176	20.23	2.064	32,340	3,300
	1/10	3,440	351	17.59	1.795	32,340	3,300
	1/15	5,160	527	17.47	1.783	32,340	3,300
	1/20	6,880	702	17.4	1.776	32,340	3,300
	1/30	10,319	1,053	17.76	1.812	42,140	4,300
55	1/5	2,102	214	36.52	3.727	29,400	3,000
	1/10	4,204	429	33.89	3.458	29,400	3,000
	1/15	6,306	643	33.77	3.446	29,400	3,000
	1/20	8,408	858	33.7	3.439	29,400	3,000
	1/30	12,613	1,287	34.06	3.475	39,200	4,000

* 75kW 이상 제품의 데이터는 당사 문의하시기 바랍니다.

FHB, FHM 외형도 및 외형치수

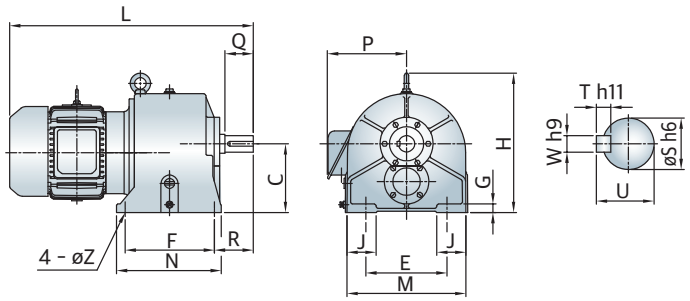


Fig. 1(FHB)

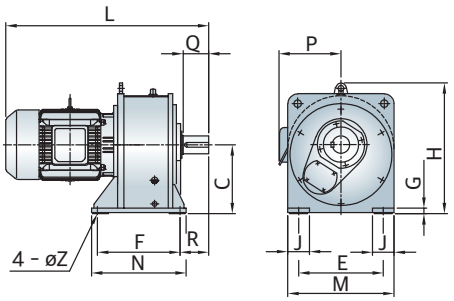


Fig. 2(FHM)

단위 : mm

Type	kW	Ratio	Fig	Dimension												Output Shaft					오일량 (L)	중량 (kg)
				C	E	F	G	H	J	L	M	P	R	N	Z	Q	S	T	U	W		
FHB	5.5	5 10 15 20	1	200	236	260	25	406	85	715	346	230	113	305	19	82	48	9	51.5	14	5	147
	7.5		1	200	236	260	25	406	85	750	346	230	113	305	19	82	48	9	51.5	14	5	152
	11		1	250	284	282	30	461	85	855	384	290	143.5	337	24	105	60	11	64	18	9	224
	15		1	250	284	282	30	461	85	900	384	290	143.5	337	24	105	60	11	64	18	9	228
FHM	18.5		2	290	370	370	24	570	100	1,010	470	315	145	420	24	130	80	14	85	22	10	442
	22		2	290	370	370	24	570	100	1,010	470	315	145	420	24	130	80	14	85	22	10	442
	30		2	350	430	420	28	665	110	1,085	540	315	145	480	28	130	90	14	95	25	15	656
	37		2	350	430	420	28	665	110	1,155	540	370	145	480	28	130	90	14	95	25	15	730
	45		2	400	520	470	28	750	120	1,220	640	370	170	550	28	165	100	16	106	28	22	795
	55		2	400	520	470	28	800	120	1,235	640	-	170	550	28	165	100	16	106	28	22	835
	75		2	400	520	470	28	890	120	1,310	640	-	170	550	28	165	100	16	106	28	22	810
	90		2	450	560	520	28	935	150	1,415	710	-	200	610	33	180	112	18	119	32	31	1,075
FHB	5.5	30	1	225	265	280	30	413	70	735	346	230	110	334	19	82	55	10	59	16	7	157
	7.5		1	225	265	280	30	413	70	770	346	230	110	334	19	82	55	10	59	16	7	162
	11		1	280	355	355	30	524	80	895	448	290	130	415	24	105	70	12	74.5	20	10	296
	15		1	280	355	355	30	524	80	940	448	290	130	415	24	105	70	12	74.5	20	10	302
FHM	18.5		2	350	430	420	28	665	110	1,040	540	315	145	480	28	130	90	14	95	25	15	537
	22		2	350	430	420	28	665	110	1,040	540	315	145	480	28	130	90	14	95	25	15	537
	30		2	400	520	470	28	750	120	1,145	640	315	170	550	28	165	100	16	106	28	22	821
	37		2	400	520	470	28	750	120	1,210	640	370	170	550	28	165	100	16	106	28	22	895
	45		2	450	560	520	28	805	150	1,285	710	370	200	610	33	180	112	18	119	32	31	1,045
	55		2	450	560	520	28	855	150	1,300	710	-	200	610	33	180	112	18	119	32	31	1,103
	75		2	450	560	520	28	935	150	1,375	710	-	200	610	33	180	112	18	119	32	31	1,015
	90		2	510	600	555	28	990	180	1,460	780	-	225	655	39	210	120	18	127	32	41	1,370
	110	5~30	2	510	600	555	28	1,035	180	1,600	780	-	225	655	39	210	120	18	127	32	41	1,590
	130		2	600	940	840	45	1,121	220	1,965	1,040	-	270	1,000	33	240	140	20	148	36	170	2,280
	160		2	600	940	840	45	1,121	220	2,115	1,040	-	270	1,000	33	240	140	20	148	36	170	2,950

주 : 1. 극수는 4극 기준임.

FVB, FVM 외형도 및 외형치수

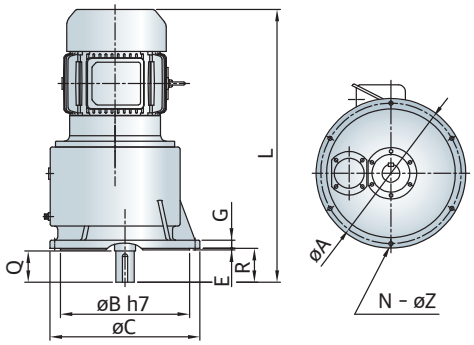


Fig. 1(FVB)

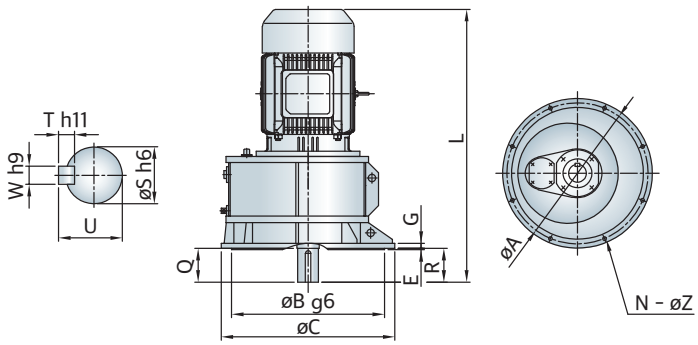


Fig. 2(FVM)

단위 : mm

Type	kW	Ratio	Fig	Dimension									Output Shaft					오일량 (L)	중량 (kg)
				A	B	C	E	G	L	R	N	Z	Q	S	T	U	W		
FVB	5.5	5 10 15 20	1	370	340	395	4	22	720	89	6	12	82	48	9	51.5	14	7.5	160
	7.5		1	370	340	395	4	22	765	89	6	12	82	48	9	51.5	14	7.5	165
	11		1	455	420	485	4	25	880	122	6	15	105	60	11	64	18	14	242
	15		1	455	420	485	4	25	925	122	6	15	105	60	11	64	18	14	250
FVM	18.5		2	630	590	670	5	20	1,065	130	8	18	130	80	14	85	22	16	502
	22		2	630	590	670	5	20	1,065	130	8	18	130	80	14	85	22	16	502
	30		2	715	675	755	5	20	1,135	130	8	18	130	90	14	95	25	24	730
	37		2	715	675	755	5	20	1,195	130	8	18	130	90	14	95	25	24	804
	45		2	810	760	860	6	22	1,265	165	8	22	165	100	16	106	28	35	939
	55		2	810	760	860	6	22	1,280	165	8	22	165	100	16	106	28	35	997
	75		2	810	760	860	6	22	1,355	165	8	22	165	100	16	106	28	35	909
	90		2	900	840	960	6	26	1,465	180	8	26	172	112	18	119	32	50	1,270
FVB	5.5	30	1	410	390	435	4	22	740	92	6	12	82	55	10	59	16	11	172
	7.5		1	410	390	435	4	22	780	92	6	12	82	55	10	59	16	11	177
	11		1	515	480	545	4	25	920	118	6	15	105	70	12	74.5	20	15	327
	15		1	515	480	545	4	25	965	118	6	15	105	70	12	74.5	20	15	330
FVM	18.5		2	715	675	755	5	20	1,085	130	8	18	130	90	14	95	25	24	592
	22		2	715	675	755	5	20	1,085	130	8	18	130	90	14	95	25	24	592
	30		2	810	760	860	6	22	1,190	165	8	22	165	100	16	106	28	35	920
	37		2	810	760	860	6	22	1,255	165	8	22	165	100	16	106	28	35	994
	45		2	900	840	960	6	26	1,340	180	8	26	180	112	18	119	32	50	1,240
	55		2	900	840	960	6	26	1,355	180	8	26	180	112	18	119	32	50	1,298
	75		2	900	840	960	6	26	1,425	180	8	26	180	112	18	119	32	50	1,210

주 : 1. 극수는 4극 기준임.

FCB, FHL 외형도 및 외형치수

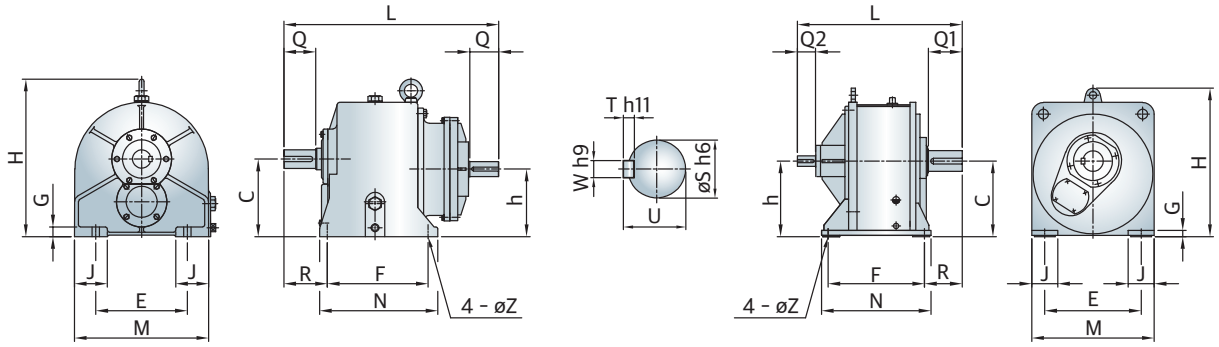


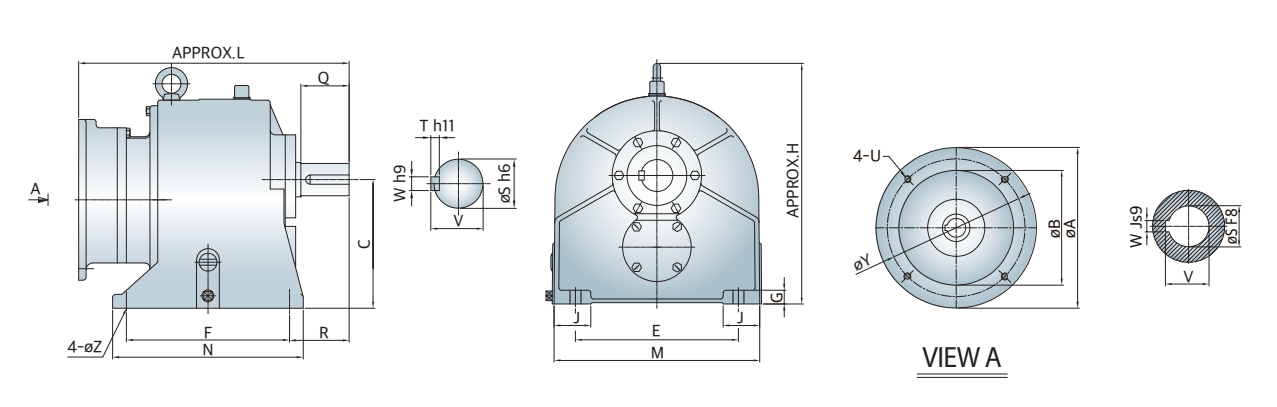
Fig. 1(FCB) Fig. 2(FHL)

단위 : mm

Type	kW	Ratio	Fig	Dimension												Output Shaft					Input Shaft					오일량	중량
				C	E	F	G	H	J	L	M	N	R	Z	h	S	W	T	U	Q	S	W	T	U	Q	(L)	(kg)
FCB	5.5	10 15 20	1	200	236	260	25	415	85	560	346	305	112	19	174	48	14	9	51.5	82	38	10	8	41	75	5	96
	7.5		1	200	236	260	25	415	85	560	346	305	112	19	174	48	14	9	51.5	82	38	10	8	41	75	5	96
	11		1	250	284	282	30	470	85	645	384	337	143.5	24	214	60	18	11	64	105	45	14	9	48.5	95	9	127
	15		1	250	284	282	30	470	85	645	384	337	143.5	24	214	60	18	11	64	105	45	14	9	48.5	95	9	127
FHL	18.5		2	290	370	370	24	570	100	633	470	420	145	24	290	80	22	14	85	130	40	12	8	43	70	10	230
	22		2	290	370	370	24	570	100	633	470	420	145	24	290	80	22	14	85	130	40	12	8	43	70	10	230
	30		2	350	430	420	28	663	110	705	540	480	145	28	350	90	25	14	95	130	50	14	9	53.5	80	15	365
	37		2	350	430	420	28	663	110	705	540	480	145	28	350	90	25	14	95	130	50	14	9	53.5	80	15	365
	45		2	400	520	470	28	750	120	800	640	550	170	28	400	100	28	16	106	165	60	18	11	64	90	22	480
	55		2	400	520	470	28	750	120	800	640	550	170	28	400	100	28	16	106	165	60	18	11	64	90	22	480
	75		2	400	520	470	28	750	120	800	640	550	170	28	400	100	28	16	106	165	60	18	11	64	90	22	480
	90		2	450	560	520	28	805	150	880	710	610	200	33	450	112	32	18	119	180	60	18	11	64	90	31	650
FCB	5.5	30	1	225	265	280	30	420	70	620	346	334	110	19	180	55	16	10	59	82	38	10	8	41	75	7	115
	7.5		1	225	265	280	30	420	70	620	346	334	110	19	180	55	16	10	59	82	38	10	8	41	75	7	115
	11		1	280	355	355	30	520	80	690	448	415	130	24	236	70	20	12	74.5	105	45	14	9	48.5	95	10	189
	15		1	280	355	355	30	520	80	690	448	415	130	24	236	70	20	12	74.5	105	45	14	9	48.5	95	10	189
FHL	18.5		2	350	430	420	28	665	110	685	540	480	145	28	350	90	25	14	95	130	40	12	8	43	70	15	370
	22		2	350	430	420	28	665	110	685	540	480	145	28	350	90	25	14	95	130	40	12	8	43	70	15	370
	30		2	400	520	470	28	750	120	785	640	550	170	28	400	100	28	16	106	165	50	14	9	53.5	80	22	480
	37		2	400	520	470	28	750	120	785	640	550	170	28	400	100	28	16	106	165	50	14	9	53.5	80	22	480
	45		2	450	560	520	28	805	150	880	710	610	200	33	450	112	32	16	119	180	60	18	11	64	90	31	650
	55		2	450	560	520	28	805	150	880	710	610	200	33	450	112	32	16	119	180	60	18	11	64	90	31	650
	75		2	450	560	520	28	805	150	880	710	610	200	33	450	112	32	18	119	180	60	18	11	64	90	31	650

주 : 1. 극수는 4극 기준임.

FHI 외형도 및 외형치수

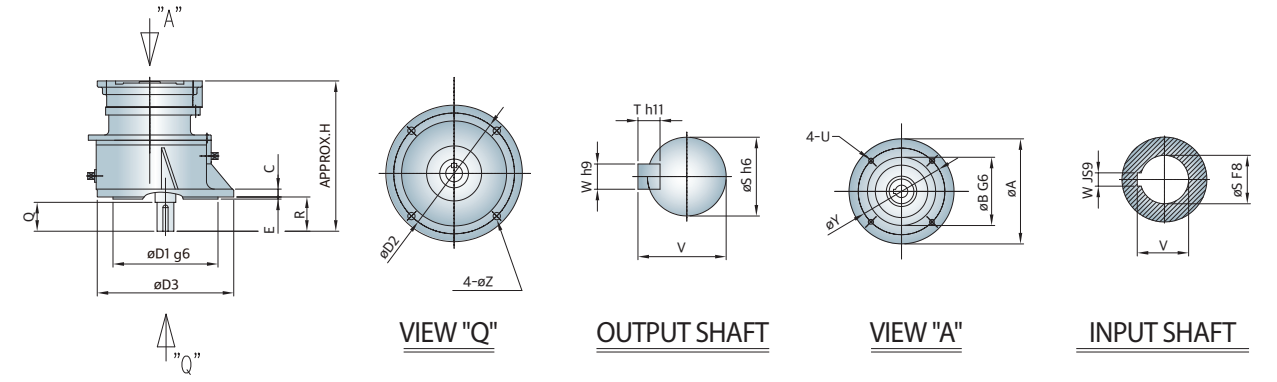


단위 : mm

kW	FRAME	Ratio	Dimension											Input flange				Input shaft			Output Shaft					오일량 (L)	중량 (kg)
			C	F	N	R	Z	L	E	M	J	G	H	Y	U	A	B	W	V	S	W	T	V	S	Q		
5.5	132	10~20	200	260	305	113	19	503	236	346	85	25	406	265	M12	300	230	10	41.3	38	14	9	51.5	48	82	5	100
7.5		30	225	280	334	110	19	514	265	346	70	30	413	265	M12	300	230	10	41.3	38	16	10	59	55	82	7	120
11	160	10~20	250	282	337	144	24	549	284	384	85	30	461	300	M16	350	250	12	45.3	42	18	11	64	60	105	9	133
15		30	280	355	415	130	24	589	355	448	80	30	524	300	M16	350	250	12	45.3	42	20	12	74.5	70	105	10	195

* F series 취부와 동일하여 기존제품 호환 가능
* 전동기 취부 IEC 국제표준에 부합하여 전동기 maker 호환 가능

FVI 외형도 및 외형치수



단위 : mm

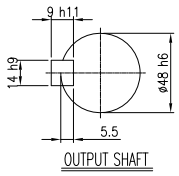
kW	FRAME	Ratio	Dimension									Input flange				Input shaft			Output Shaft					오일량 (L)	중량 (kg)
			D1	D2	D3	R	E	C	H	N	Z	Y	U	A	B	W	V	S	W	T	V	S	Q		
5.5	132	10~20	340	370	395	89	4	22	520	6	12	265	M12	300	230	10	41.3	38	14	9	51.5	48	82	7.5	113
7.5		30	390	410	435	92	4	22	540	6	12	265	M12	300	230	10	41.3	38	16	10	59	55	82	11	135
11	160	10~20	420	455	485	122	4	25	580	6	15	300	M16	350	250	12	45.3	42	18	11	64	60	105	14	151
15		30	480	515	545	118	4	25	620	6	15	300	M16	350	250	12	45.3	42	20	12	74.5	70	105	15	226

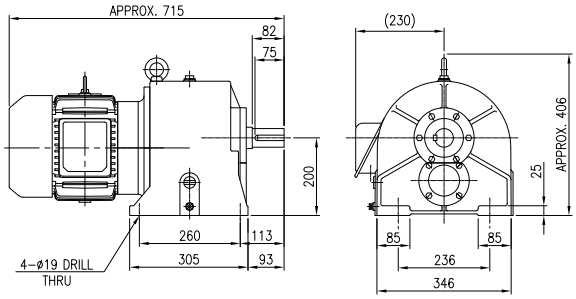
* F series 취부와 동일하여 기존제품 호환 가능
* 전동기 취부 IEC 국제표준에 부합하여 전동기 maker 호환 가능

F 수평형

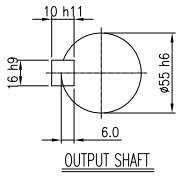
5.5kW

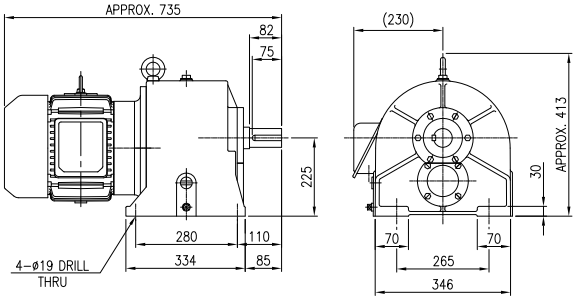
FHB					
	Power	5.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	147			





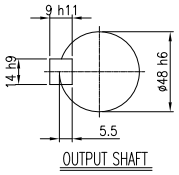
FHB		
	Power	5.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	157

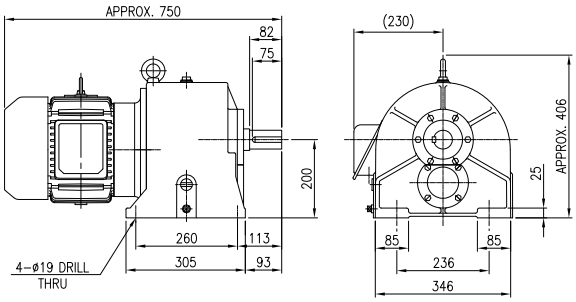




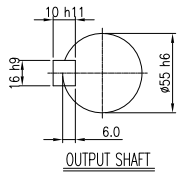
7.5kW

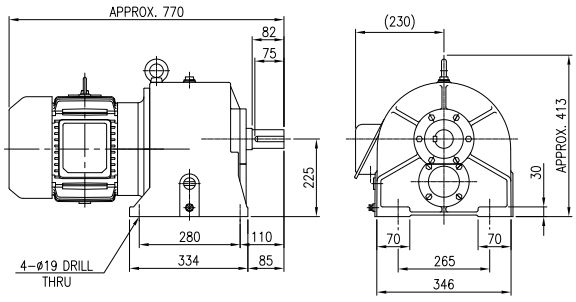
FHB					
	Power	7.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	152			





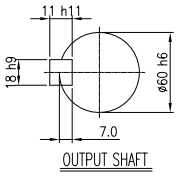
FHB		
	Power	7.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	162

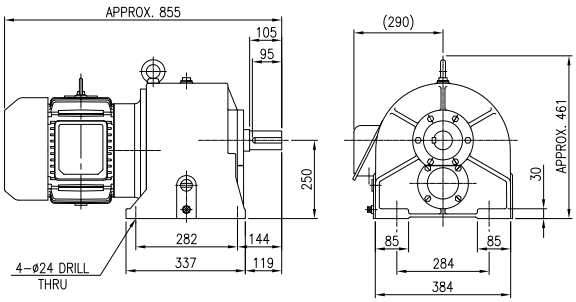




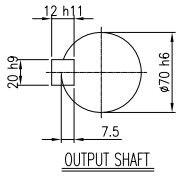
11kW

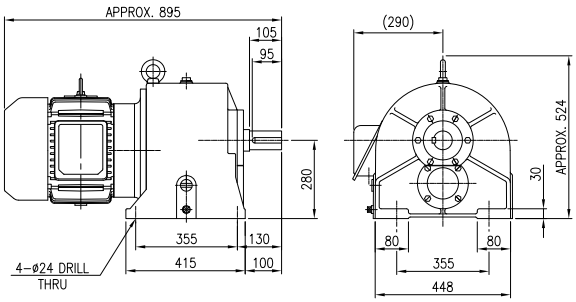
FHB					
	Power	11			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	224			





FHB		
	Power	11
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	296

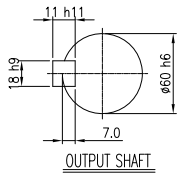


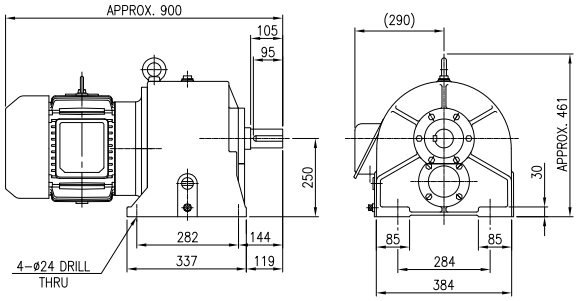


F 수평형

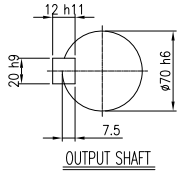
15kW

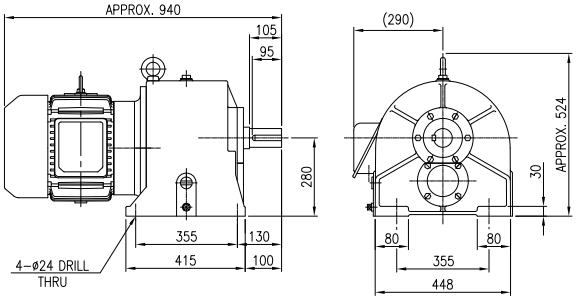
FHB					
	Power	15			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	228			





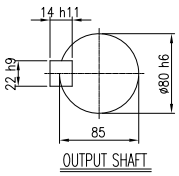
FHB		
	Power	15
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	302

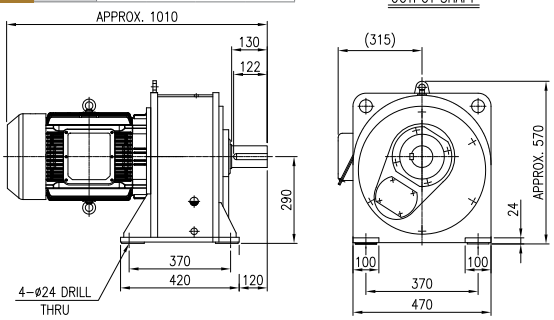




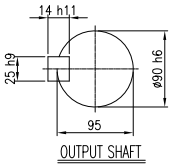
18.5kW

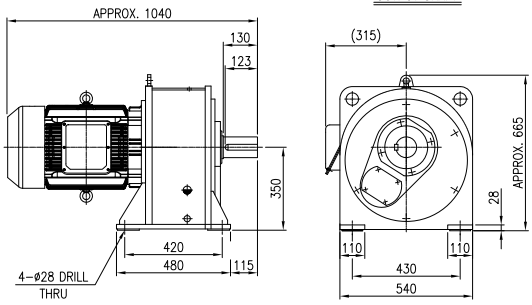
FHM					
	Power	18.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	442			





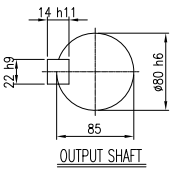
FHM		
	Power	18.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	537

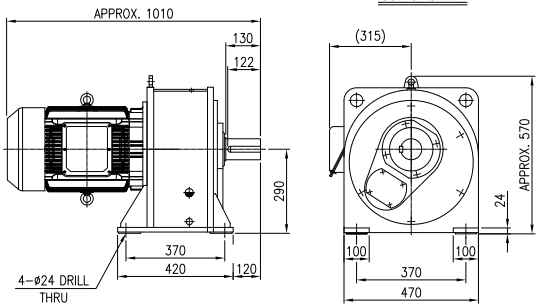




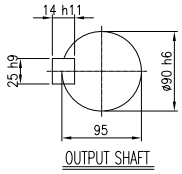
22kW

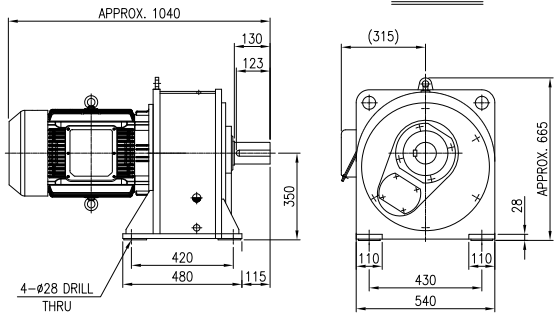
FHM					
	Power	22			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	442			





FHM		
	Power	22
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	537

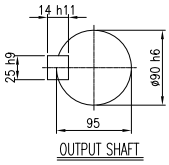


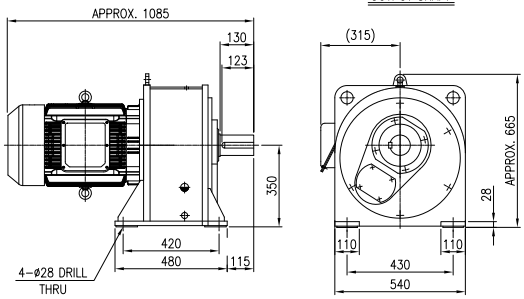


F 수평형

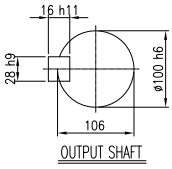
30kW

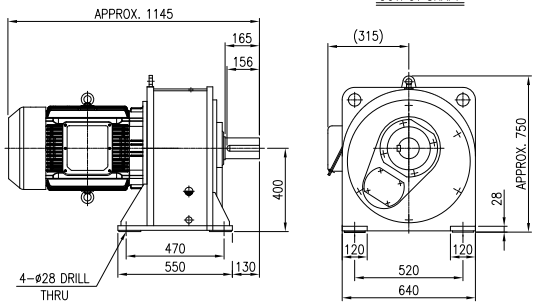
FHM					
	Power	30			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	656			





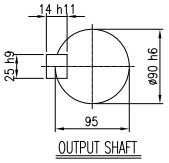
FHM		
	Power	30
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	821

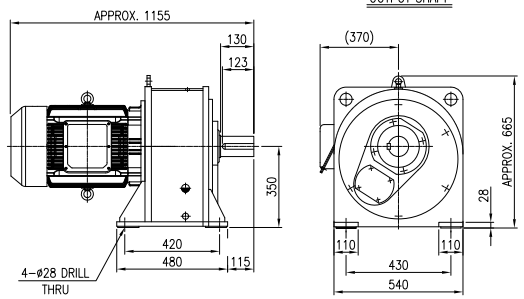




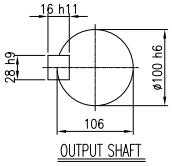
37kW

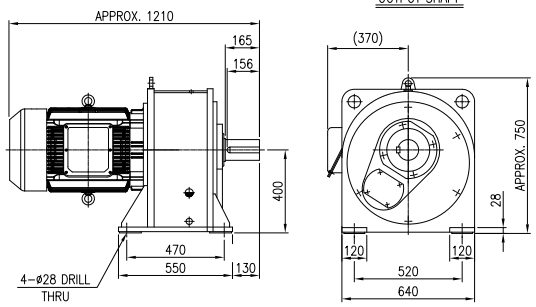
FHM					
	Power	37			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	730			





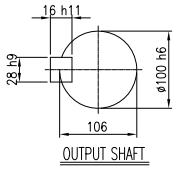
FHM		
	Power	37
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	895

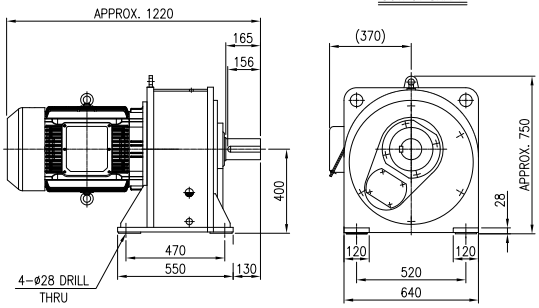




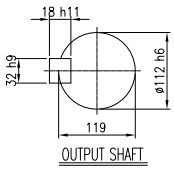
45kW

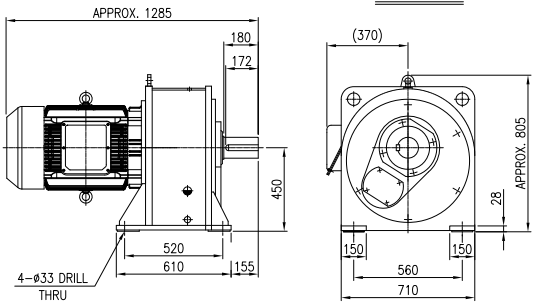
FHM					
	Power	45			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	795			





FHM		
	Power	45
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	1045

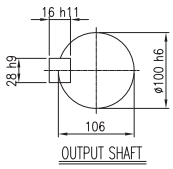


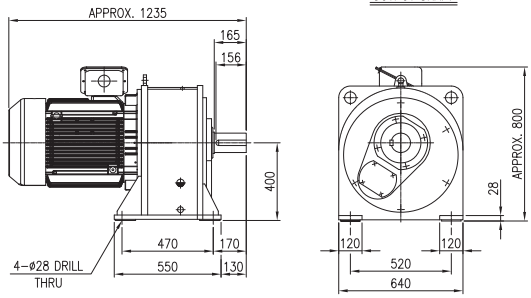


F 수평형

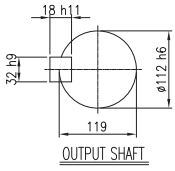
55kW

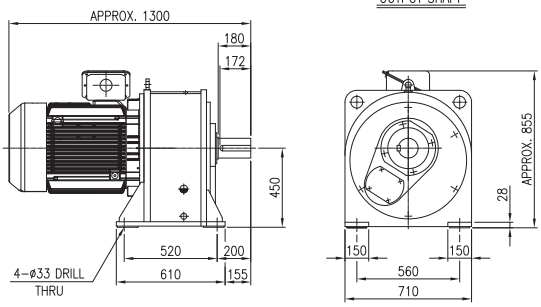
FHM					
	Power	55			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	835			





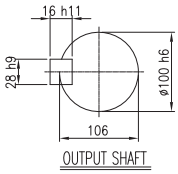
FHM		
	Power	55
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	1103

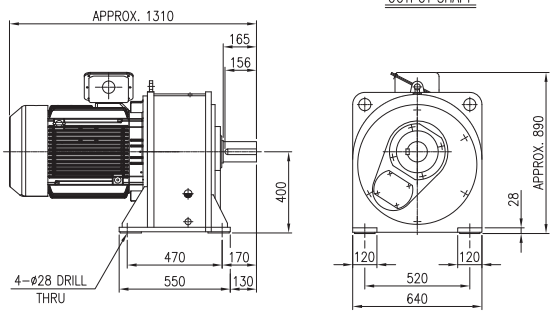




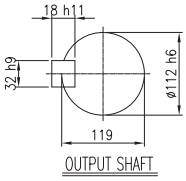
75kW

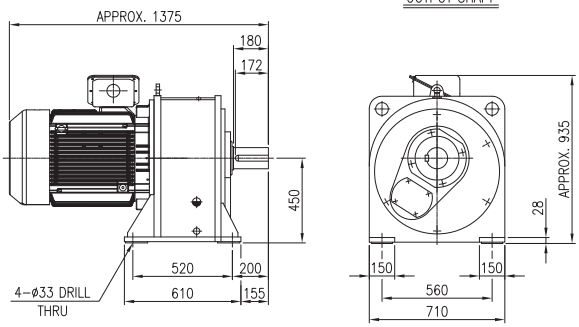
FHM					
	Power	75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	995			





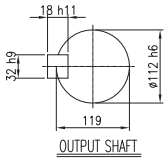
FHM		
	Power	75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	1263

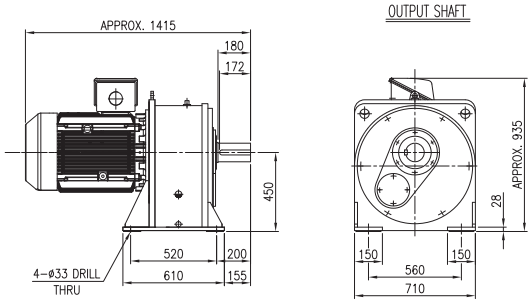




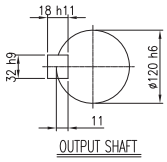
90kW

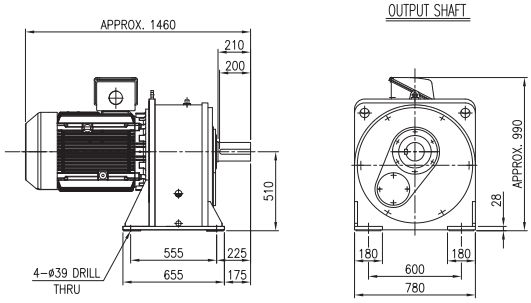
FHM					
	Power	90			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	1075			





FHM		
	Power	90
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	1370

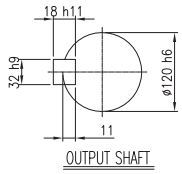


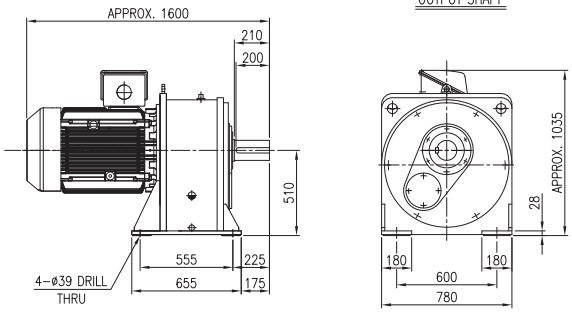


F 수평형

110kW

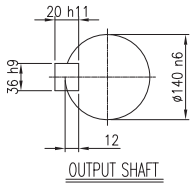
FHM	Power	110
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	1590

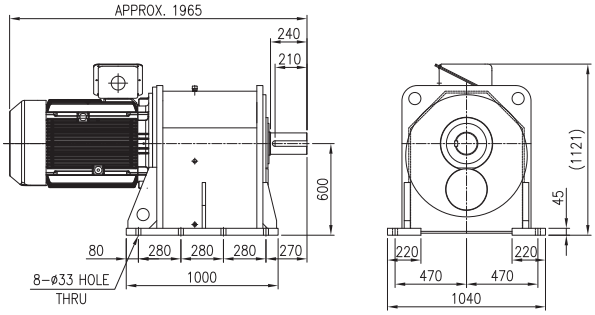




132kW

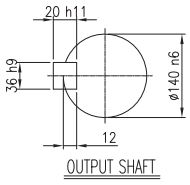
FHM	Power	132
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	2280

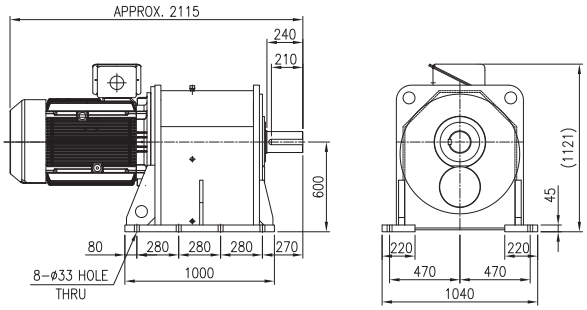




160kW

FHM	Power	160
	Gear Ratio	1/5 ~ 1/30
	Output (RPM)	350 ~ 58.3
	Weight (kg)	2950

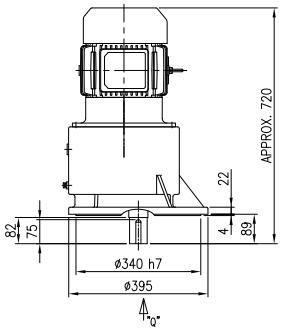


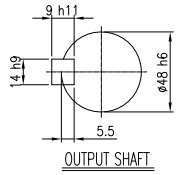


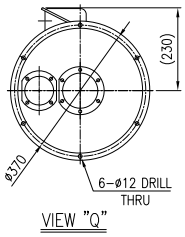
F 수직형

5.5kW

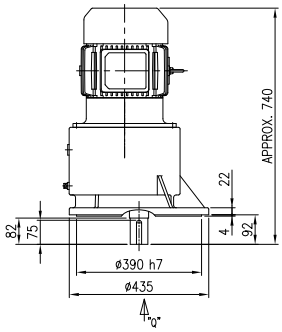
FVB					
	Power	5.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	160			

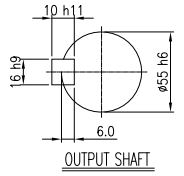


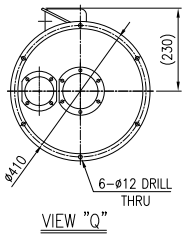




FVB		
	Power	5.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	172

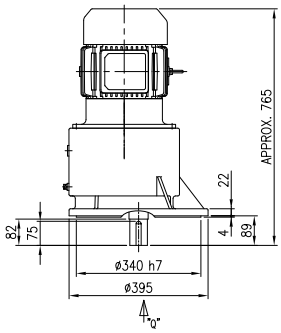


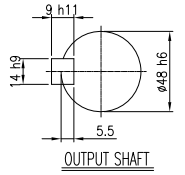


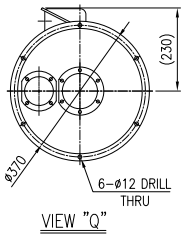


7.5kW

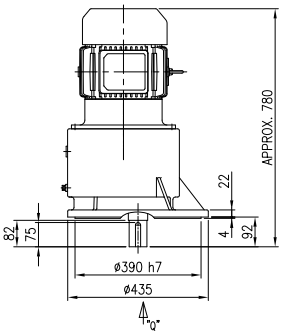
FVB					
	Power	7.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	165			

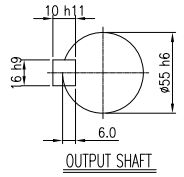


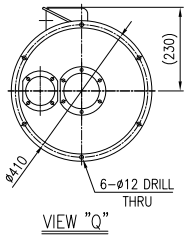




FVB		
	Power	7.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	177

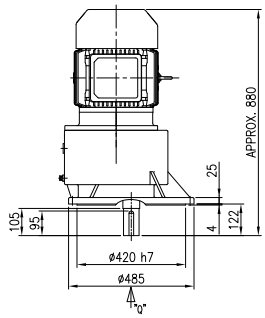


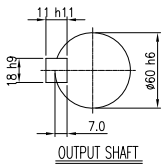


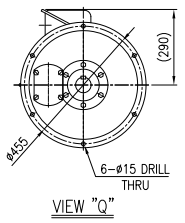


11kW

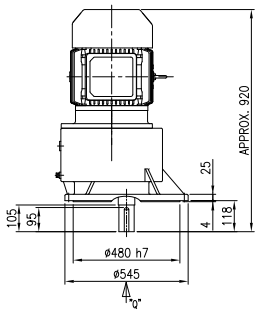
FVB					
	Power	11			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	242			

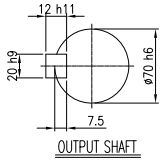


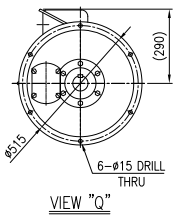




FVB		
	Power	11
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	327



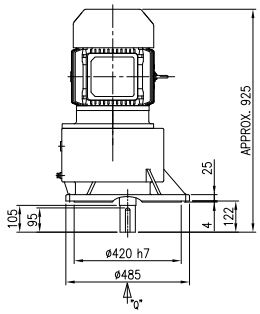


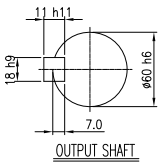


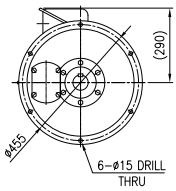
F 수직형

15kW

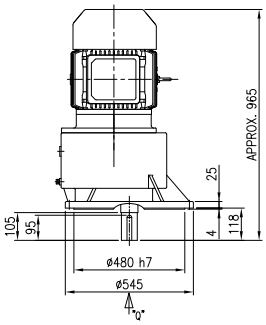
FVB	Power	15			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	250			

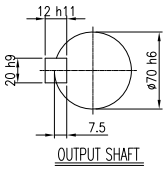


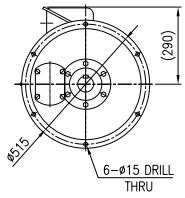




FVB	Power	15
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	330

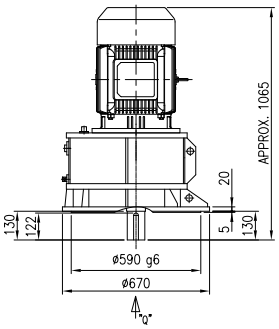


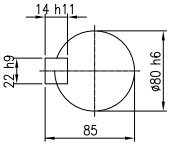


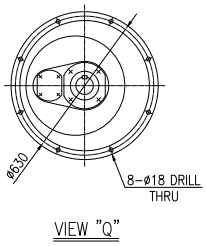


18.5kW

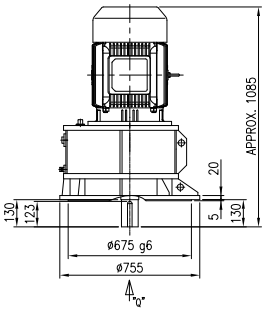
FVM	Power	18.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	502			

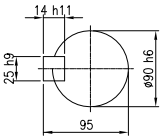


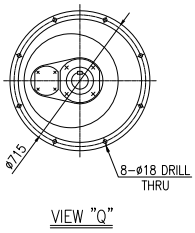




FVM	Power	18.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	592

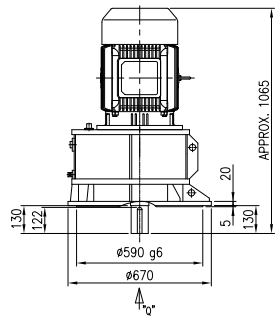


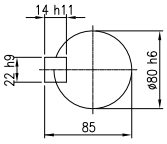


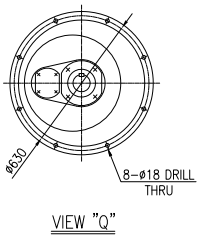


22kW

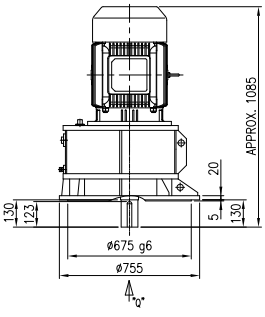
FVM	Power	22			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	502			

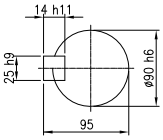


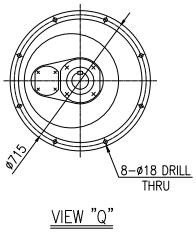




FVM	Power	22
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	592



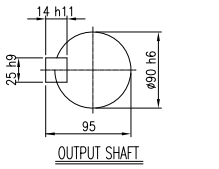


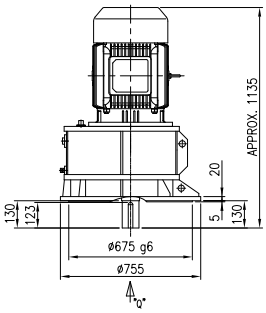


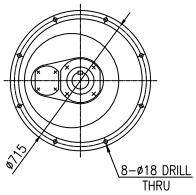
F 수직형

30kW

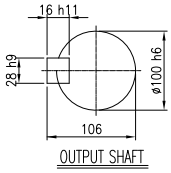
FVM					
	Power	30			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	730			

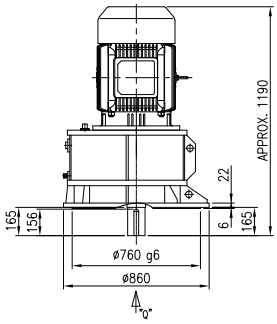


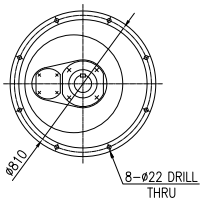




FVM		
	Power	30
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	920

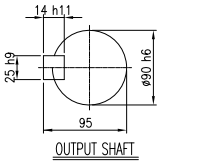


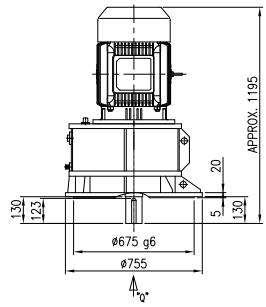


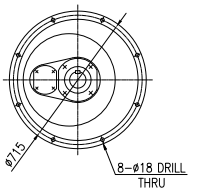


37kW

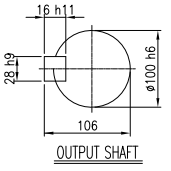
FVM					
	Power	37			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	804			

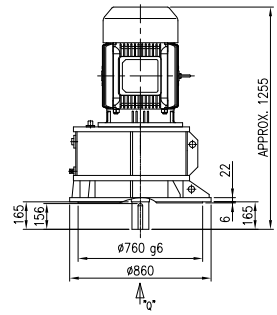


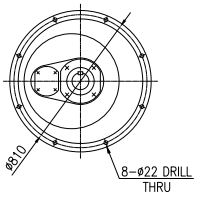




FVM		
	Power	37
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	994

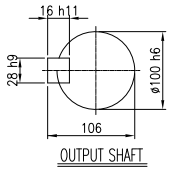


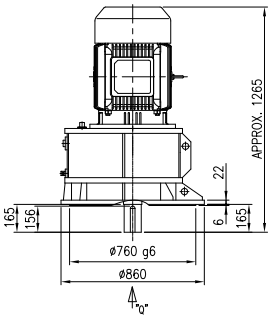


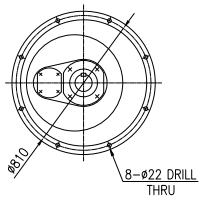


45kW

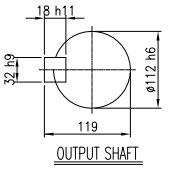
FVM					
	Power	45			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	939			

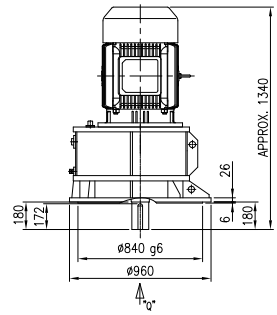


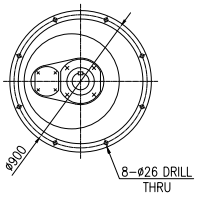




FVM		
	Power	45
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	1240



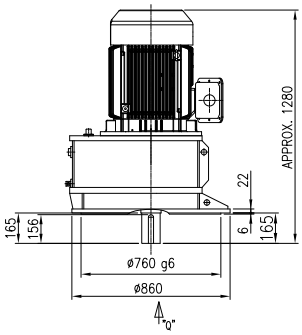


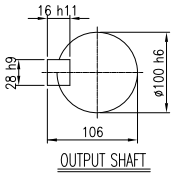


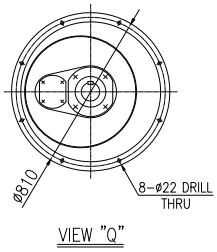
F 수직형

55kW

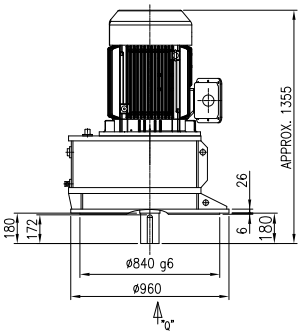
FVM					
	Power	55			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	997			

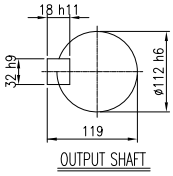


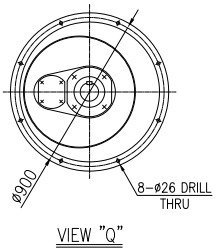




FVM		
	Power	55
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	1298

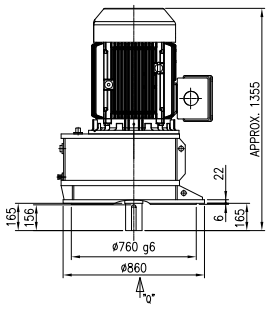


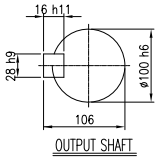


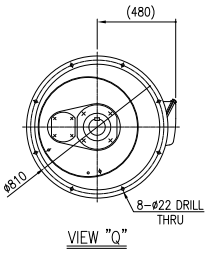


75kW

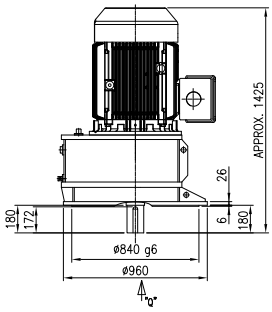
FVM					
	Power	75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	1157			

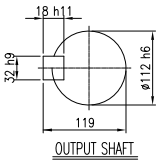


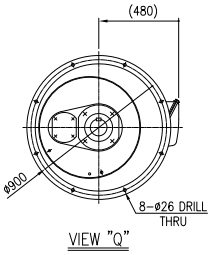




FVM		
	Power	75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	1458

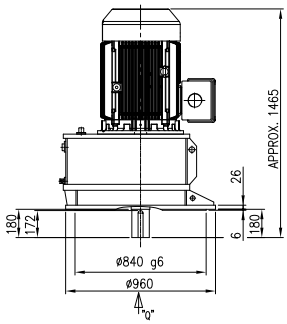


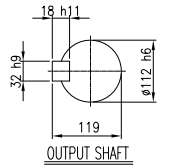


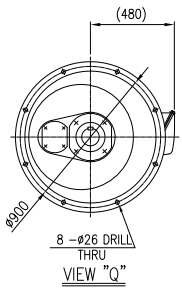


90kW

FVM					
	Power	90			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	1270			



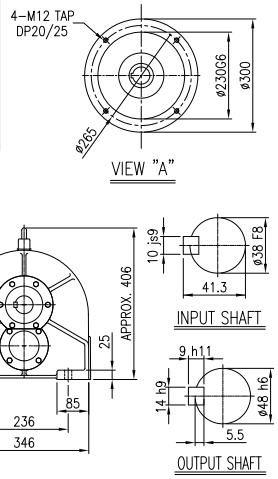




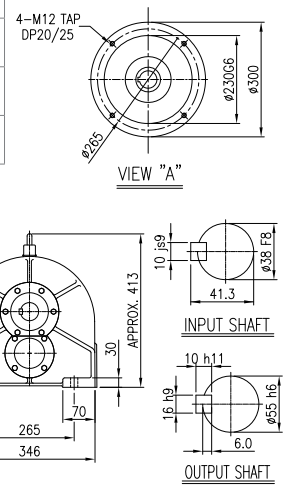
F IEC FLANGE

5.5, 7.5kW

FHI					
	Power	5.5, 7.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	100			

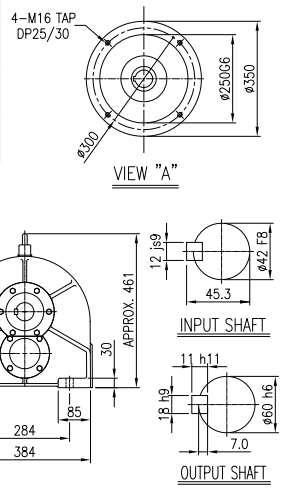


FHI		
	Power	5.5, 7.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	120

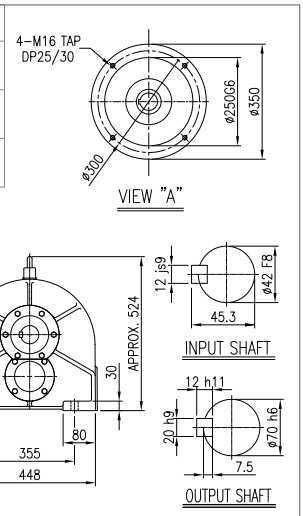


11, 15kW

FHI					
	Power	11, 15			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	133			



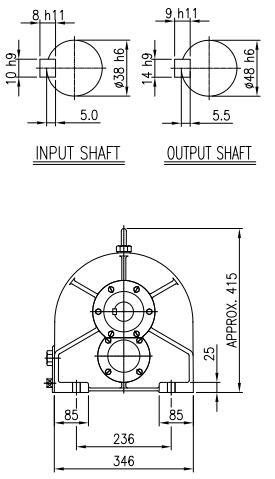
FHI		
	Power	11, 15
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	195



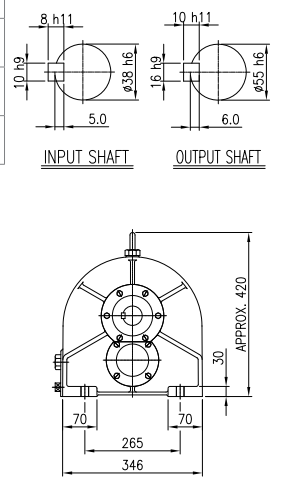
F 라인파워

5.5, 7.5kW

FCB					
	Power	5.5, 7.5			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	96			



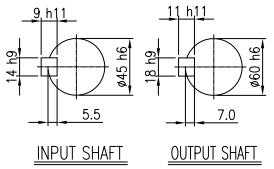
FCB		
	Power	5.5, 7.5
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	115

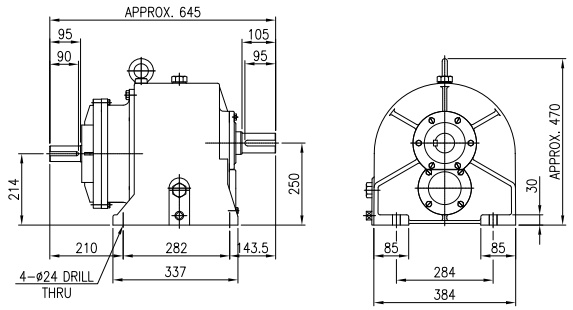


F 라인파워

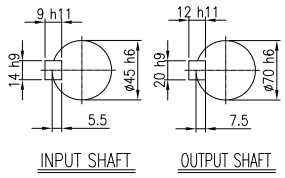
11, 15kW

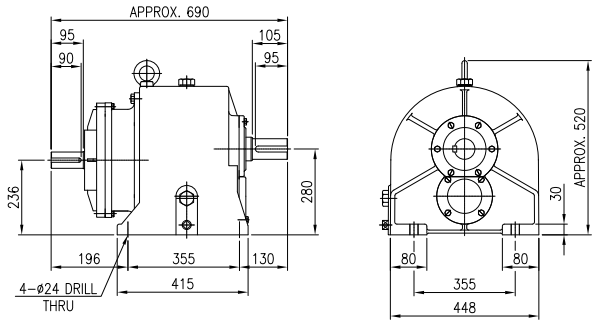
FCB					
	Power	11, 15			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	127			





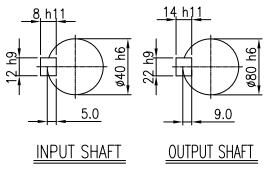
FCB		
	Power	11, 15
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	189

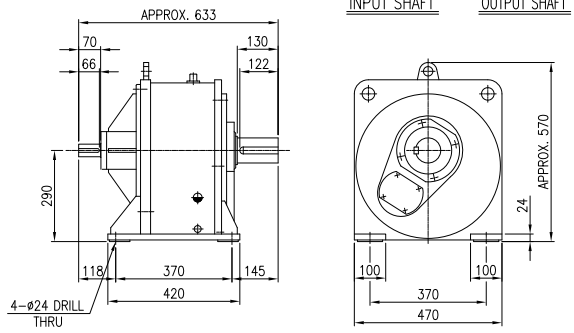




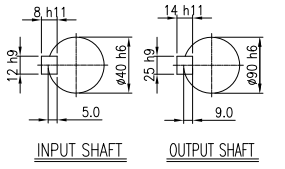
18.5, 22kW

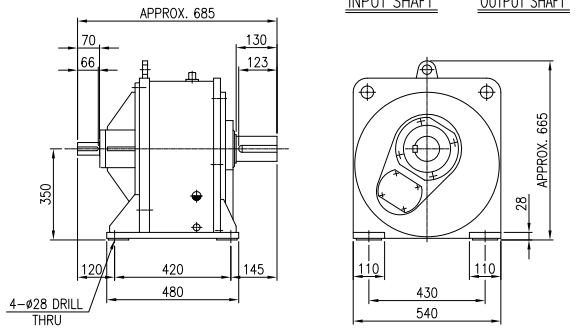
FHL					
	Power	18.5, 22			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	230			





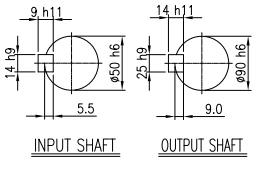
FHL		
	Power	18.5, 22
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	370

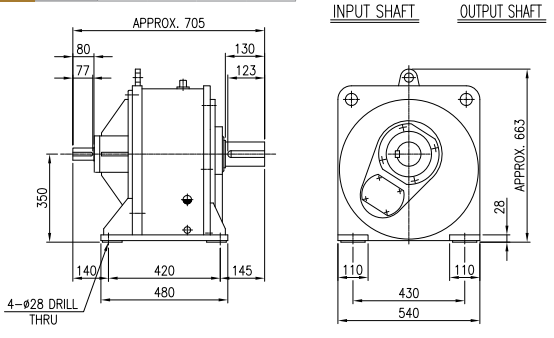




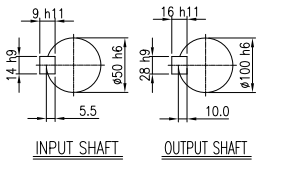
30, 37kW

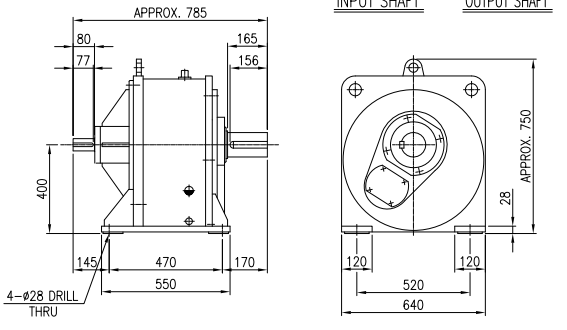
FHL					
	Power	30, 37			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	365			





FHL		
	Power	30, 37
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	380

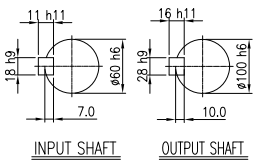


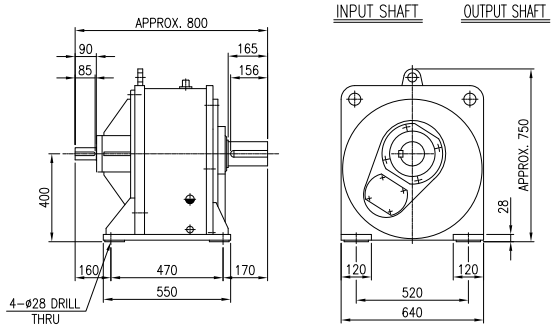


F 라인파워

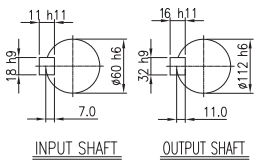
45, 55, 75kW

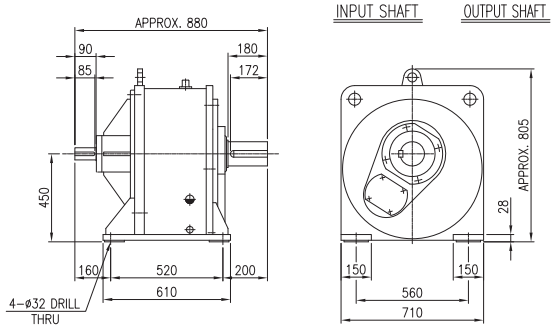
FHL	Power	45, 55, 75			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	480			





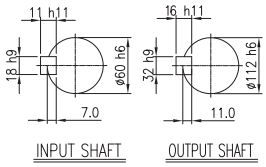
FHL	Power	45, 55, 75
	Gear Ratio	1/30
	Output (RPM)	58.3
	Weight (kg)	650

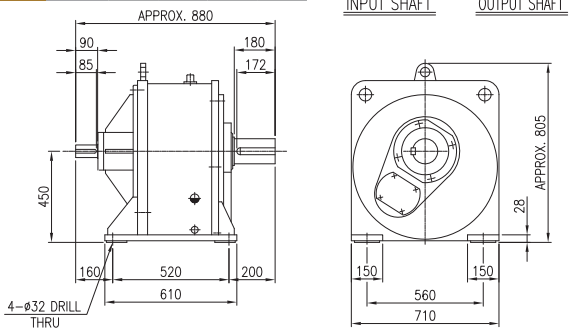




90kW

FHL	Power	90			
	Gear Ratio	1/5	1/10	1/15	1/20
	Output (RPM)	350	175	117	87.5
	Weight (kg)	650			





H Series

수평형

수직형

라인파워

H시리즈 특징

1. 고강도 · 견고성

출력측에 볼트로 고정된 커버가 없고 케이싱이 overhung load 또는 thrust load를 충분히 지탱하여 줍니다.

2. 부드러운 운전과 낮은 소음

진동을 흡수하고 기어 치합음을 낮출 수 있는 케이싱 및 기어 설계와 최상의 설비를 이용한 정밀도가 높은 기어를 제작함으로써 원활한 운전과 낮은 소음을 실현하였습니다.

3. 고정밀도

단 한 번의 기계 setting으로 모든 Bearing housing을 동시에 기계 가공함으로써 고정밀도를 실현하였습니다.

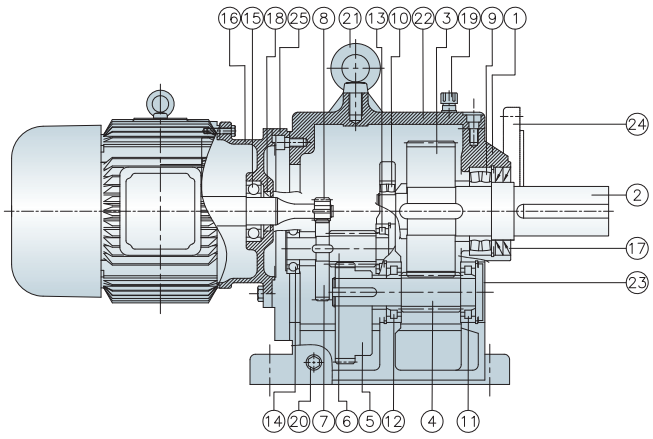
4. MOUNTING POSITIONS FREE

현장의 설치조건에 따라 자유자재로 설치가 가능하여 설치상의 제약이 적도록 되어 있습니다.

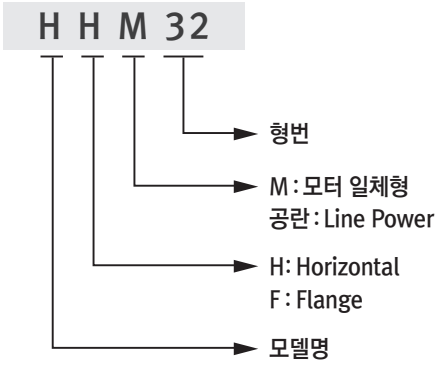
5. 낮은 유지보수비

기존 제품보다 부품 수를 대폭 축소하여 running trouble이 현저히 줄었습니다.

H 구조도



형식표시

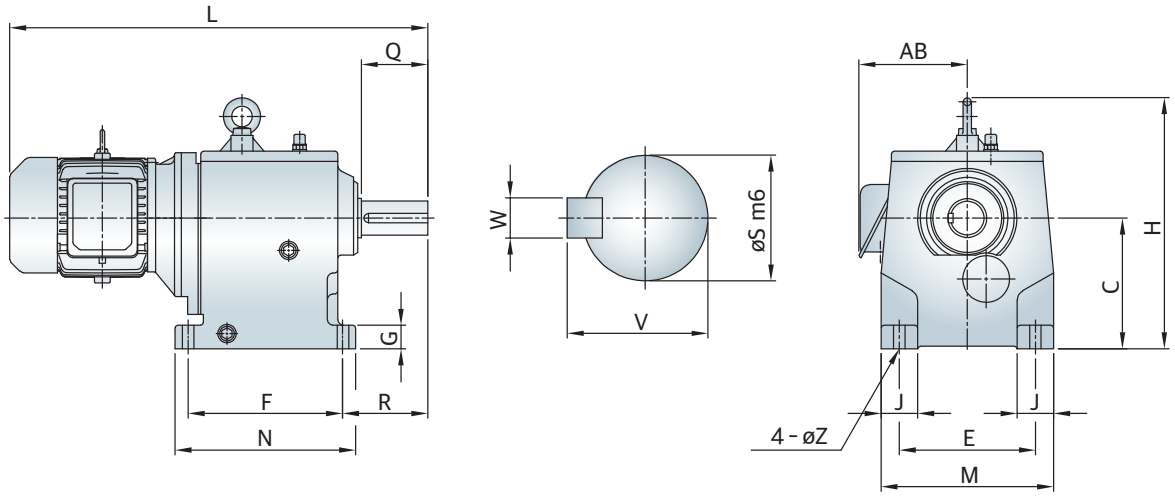


NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	8	1'ST PINION	15	BEARING	22	CASING COVER
2	OUTPUT SHAFT	9	BEARING	16	MOTOR BRACKET	23	SEALING CAP
3	3'RD GEAR	10	BEARING	17	OIL SEAL	24	HFM TYPE FLANGE
4	3'RD PINION	11	BEARING	18	OIL SEAL	25	INPUT FLANGE
5	2'ND GEAR	12	BEARING	19	AIR VENT	26	MOTOR SHAFT
6	2'ND PINION	13	BEARING	20	PLUG		
7	1'ST GEAR	14	BEARING	21	EYE BOLT		

H시리즈 GD², O.H.L표

Type	kW	Ratio	최대허용토크		모터축 환산GD²		출력축OHL	
			N · m	kgf · m	N · m²	kg · m²	N	kgf
HHM25	3.7	1/80	2,263	231	0.696	0.071	17,287	1,764
	3.7	1/90	2,545	260	0.696	0.071	17,287	1,764
	3.7	1/100	2,828	289	0.696	0.071	17,287	1,764
	3.7	1/120	3,394	346	0.696	0.071	17,287	1,764
	5.5	1/40	1,682	172	1.588	0.162	17,287	1,764
	5.5	1/45	1,892	193	1.588	0.162	17,287	1,764
	5.5	1/50	2,102	214	1.588	0.162	17,287	1,764
	5.5	1/60	2,523	257	1.578	0.161	17,287	1,764
	7.5	1/40	2,293	234	2.038	0.208	17,287	1,764
	7.5	1/45	2,580	263	2.038	0.208	17,287	1,764
	7.5	1/50	2,866	292	2.038	0.208	17,287	1,764
HHM28	5.5	1/80	3,363	343	1.568	0.160	24,255	2,475
	5.5	1/90	3,784	386	1.568	0.160	24,255	2,475
	5.5	1/100	4,204	429	1.568	0.160	24,255	2,475
	5.5	1/120	5,045	515	1.568	0.160	24,255	2,475
	7.5	1/60	3,440	351	2.058	0.210	24,255	2,475
	11	1/40	3,363	343	4.253	0.434	24,255	2,475
	11	1/45	3,784	386	4.253	0.434	24,255	2,475
	11	1/50	4,204	429	4.243	0.433	24,255	2,475
	11	1/60	5,045	515	4.243	0.433	24,255	2,475
	15	1/40	4,586	468	5.184	0.529	24,255	2,475
HHM32	7.5	1/80	4,586	468	2.038	0.208	42,248	4,311
	7.5	1/90	5,160	527	2.038	0.208	42,248	4,311
	7.5	1/100	5,733	585	2.038	0.208	42,248	4,311
	7.5	1/120	6,880	702	2.038	0.208	42,248	4,311
	11	1/80	6,727	686	4.224	0.431	42,248	4,311
	15	1/40	4,586	468	5.243	0.535	42,248	4,311
	15	1/45	5,160	527	5.233	0.534	42,248	4,311
	15	1/50	5,733	585	5.223	0.533	42,248	4,311
	15	1/60	6,880	702	5.214	0.532	42,248	4,311
	18.5	1/40	5,657	577	9.848	1.005	42,248	4,311
	18.5	1/45	6,364	649	9.839	1.004	42,248	4,311
	18.5	1/50	7,071	721	9.830	1.003	42,248	4,311
	22	1/40	6,727	686	9.848	1.005	42,248	4,311
HHM39	11	1/90	7,568	772	4.302	0.439	62,122	6,339
	11	1/100	8,408	858	4.302	0.439	62,122	6,339
	11	1/120	10,090	1,030	4.292	0.438	62,122	6,339
	15	1/80	9,173	936	5.243	0.535	62,122	6,339
	15	1/90	10,319	1,053	5.233	0.534	62,122	6,339
	15	1/100	11,466	1,170	5.233	0.534	62,122	6,339
	15	1/120	13,760	1,404	5.233	0.534	62,122	6,339
	18.5	1/60	8,485	866	10.042	1.025	62,122	6,339
	18.5	1/80	11,313	1,154	9.840	1.004	62,122	6,339
	22	1/45	7,568	772	10.096	1.030	62,122	6,339
	22	1/50	8,408	858	10.073	1.028	62,122	6,339
	22	1/60	10,090	1,030	10.042	1.025	62,122	6,339
	30	1/40	9,173	936	11.296	1.153	62,122	6,339
	30	1/45	10,319	1,053	11.271	1.150	62,122	6,339
	30	1/50	11,466	1,170	11.249	1.148	62,122	6,339
	37	1/40	11,313	1,154	14.393	1.469	62,122	6,339

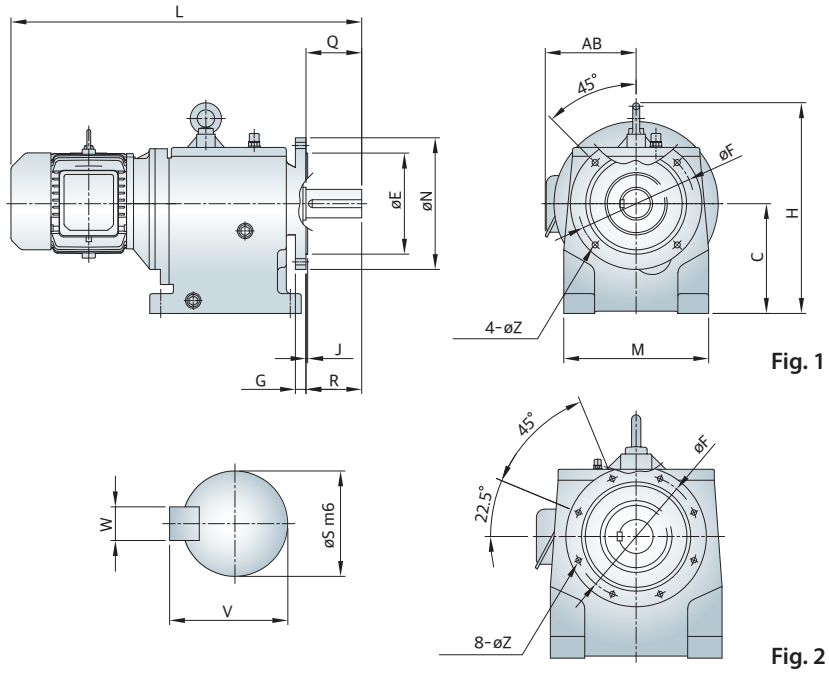
HHM 외형도 및 외형치수



단위 : mm

Type	kW	Dimension												Output Shaft				중량 (kg)
		C	F	N	R	E	M	J	G	Z	H	L	AB	S	V	W	Q	
HHM25	3.7	250	295	345	163	260	330	70	45	22	485	805	210	65	69	18	127	188
	5.5											850	230					205
	7.5											865	230					215
	11											916	280					245
	15											960	280					270
HHM28	5.5	280	330	385	179	325	400	70	55	26	560	890	230	76	81	22	140	300
	7.5											930	230					310
	11											1,010	290					340
	15											1,050	290					365
HHM32	7.5	315	400	472	216	360	450	90	55	33	630	1,025	230	90	95	25	172	420
	11											1,090	290					450
	15											1,135	290					475
	18.5, 22											1,195	315					552
HHM39	11	390	450	540	271	440	550	110	70	33	790	1,185	290	110	116	28	216	640
	15											1,230	290					670
	18.5, 22											1,290	315					752
	30											1,330	315					767
	37											1,390	370					835

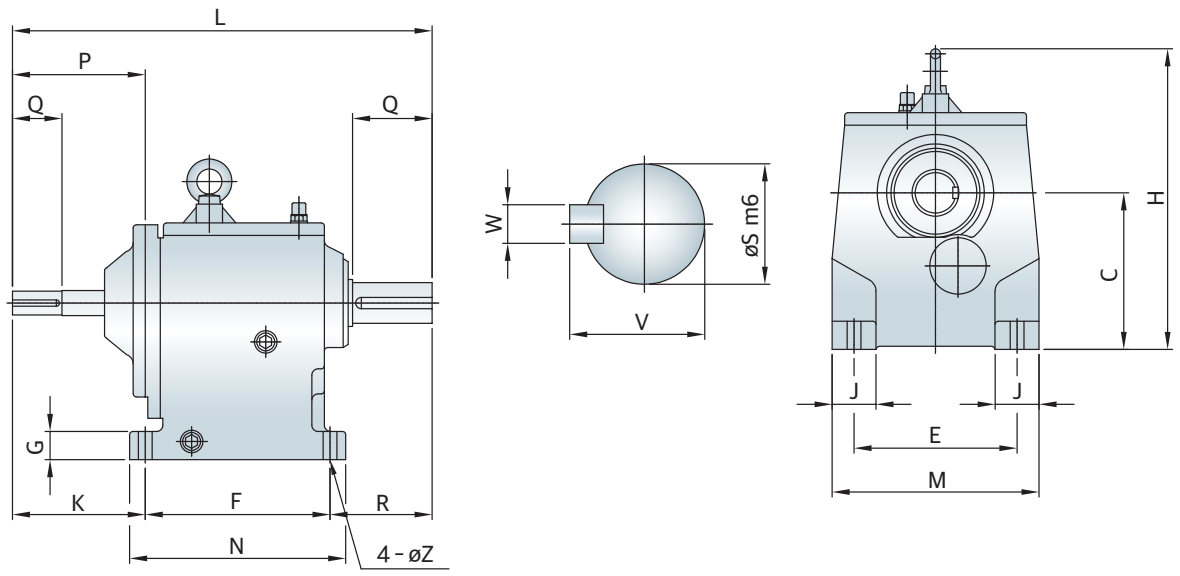
HFM 외형도 및 외형치수



단위 : mm

Type	kW	Fig	Dimension												Output Shaft				중량 (kg)
			C	F	N	R	E	M	J	G	Z	H	L	AB	S	V	W	Q	
HFM25	3.7	1	250	265	300	127	230	330	4	24	14	485	805	210	65	69	18	127	188
	5.5												850	230					205
	7.5												885	230					215
	11												960	280					245
	15												1,004	280					270
HFM28	5.5		280	300	350	140	250	400	5	24	18	560	890	230	76	81	22	140	300
	7.5												930	230					310
	11												1,010	290					340
	15												1,050	290					365
HFM32	7.5	2	315	400	450	167	350	450	5	26	18	630	1,025	230	90	95	25	172	420
	11												1,090	290					450
	15												1,135	290					475
	18.5, 22												1,195	315					552
HFM39	11		390	400	450	216	350	550	5	26	18	790	1,185	290	110	116	28	216	640
	15												1,230	290					670
	18.5, 22												1,290	315					752
	30												1,330	315					767
	37												1,390	370					835

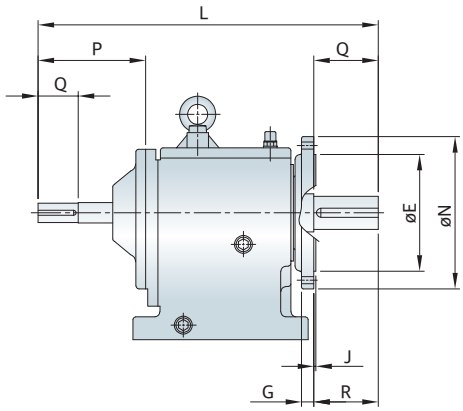
HH 외형도 및 외형치수



단위 : mm

Type	Dimension													Output Shaft				Input Shaft				중량 (kg)
	C	F	N	R	K	E	M	J	G	Z	H	L	P	S	V	W	Q	S	V	W	Q	
HH25	250	295	345	163	212	260	330	70	45	22	490	670	212	65	69	18	127	38	41	10	79	155
HH28	280	330	385	179	311	325	400	70	55	26	551	820	289	76	81	22	140	42	45	12	110	250
HH32	315	400	472	216	285	360	450	90	55	33	630	901	289	90	95	25	172	42	45	12	110	360
HH39	390	450	540	271	276	440	550	110	70	33	790	997	289	110	116	28	216	42	45	12	110	540

HF 외형도 및 외형치수



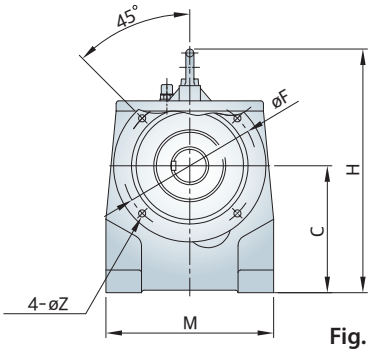
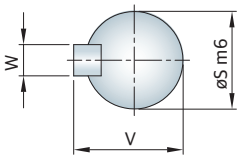


Fig. 1



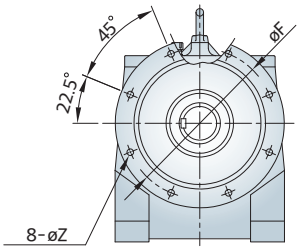


Fig. 2

단위 : mm

Type	Fig	Dimension												Output Shaft				Input Shaft				중량 (kg)
		C	F	N	R	E	M	J	G	Z	H	L	P	S	V	W	Q	S	V	W	Q	
HF25	1	250	265	300	127	230	330	4	24	14	480	670	212	65	69	18	127	38	41	10	79	155
HF28		280	300	350	140	250	400	5	24	18	551	820	289	76	81	22	140	42	45	12	110	250
HF32	2	315	400	450	172	350	450	5	26	18	630	910	289	90	95	25	172	42	45	12	110	360
HF39		390	400	450	216	350	550	5	26	18	790	997	289	110	116	28	216	42	45	12	110	540

Lubricant filling quantity(approx)

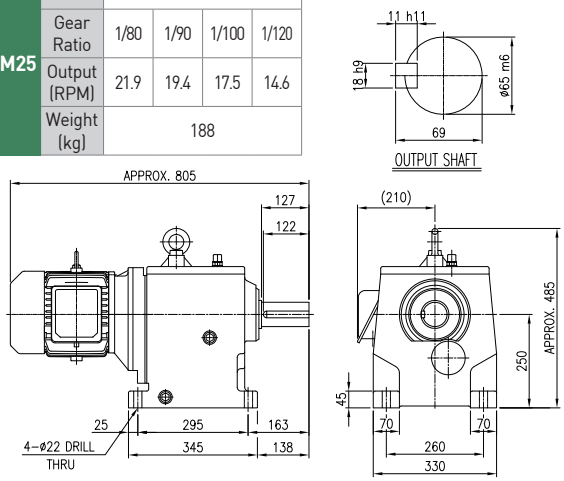
단위 : L

Type	Mounting Position											
	B3	B6	B7	B8	B5	B5I	B5II	B5III	V1	V3	V5	V6
H25	10	13	13	11	11	12	14	14	18	14	16	15
H28	14	20	20	18	14	18	20	20	28	23	27	20
H32	22	33	33	26	23	27	34	34	40	34	37	31
H39	34	67	67	55	55	59	67	67	99	78	97	71

H 수평형

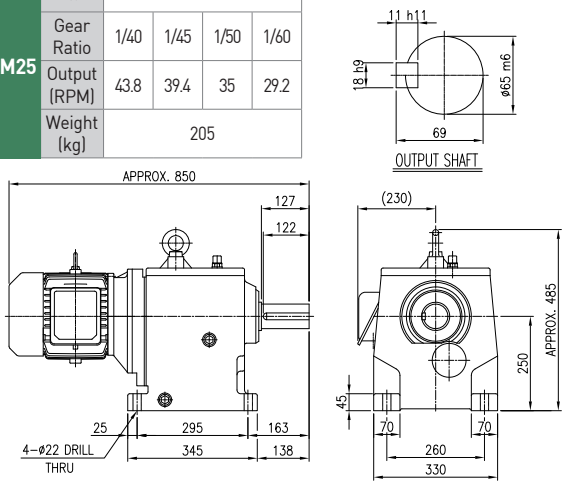
3.7kW

HHM25	Power	3.7			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	188			

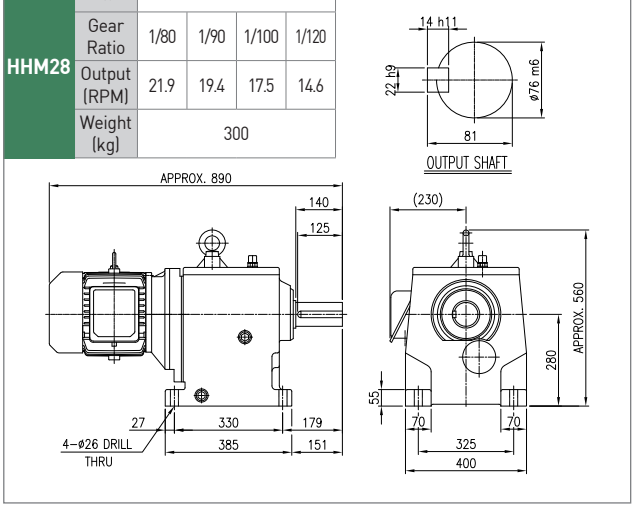


5.5kW

HHM25	Power	5.5			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	39.4	35	29.2
	Weight (kg)	205			

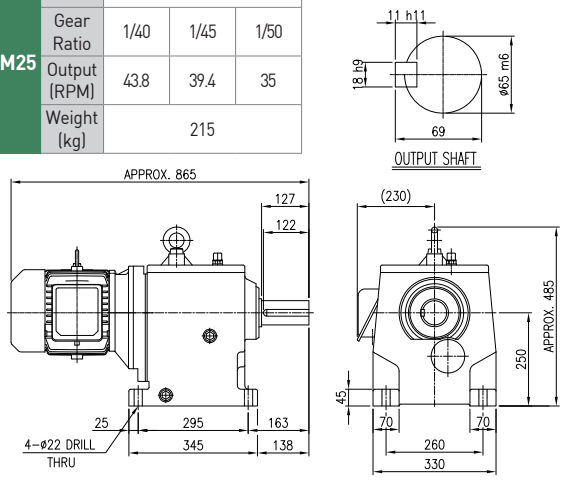


HHM28	Power	5.5			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	300			

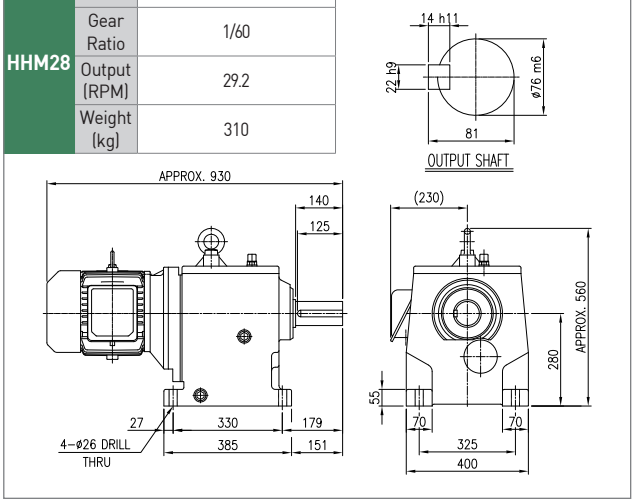


7.5kW

HHM25	Power	7.5		
	Gear Ratio	1/40	1/45	1/50
	Output (RPM)	43.8	39.4	35
	Weight (kg)	215		



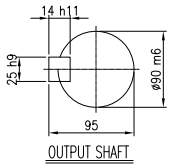
HHM28	Power	7.5
	Gear Ratio	1/60
	Output (RPM)	29.2
	Weight (kg)	310

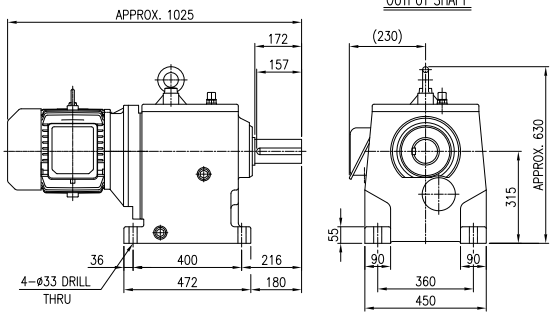


H 수평형

7.5kW

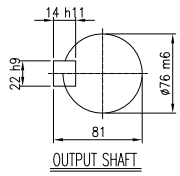
HHM32	Power	7.5			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	420			

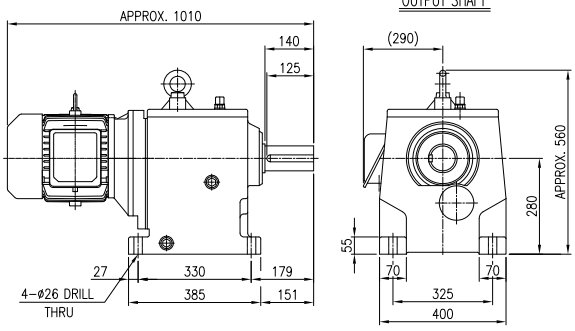




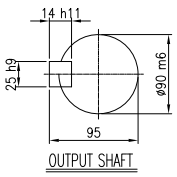
11kW

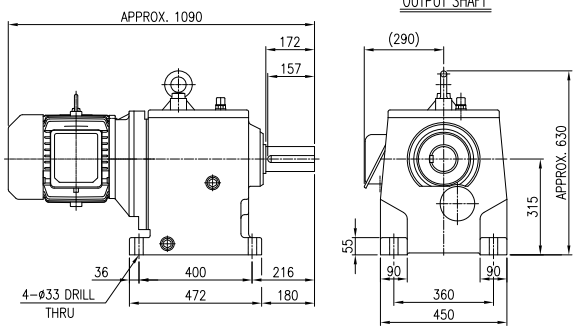
HHM28	Power	11			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	39.4	35	29.2
	Weight (kg)	340			



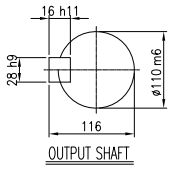


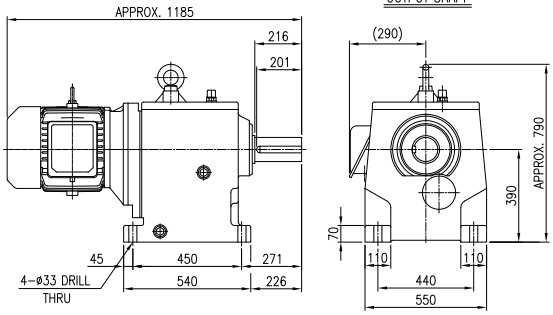
HHM32	Power	11
	Gear Ratio	1/80
	Output (RPM)	21.9
	Weight (kg)	450





HHM39	Power	11		
	Gear Ratio	1/90	1/100	1/120
	Output (RPM)	19.4	17.5	14.6
	Weight (kg)	640		

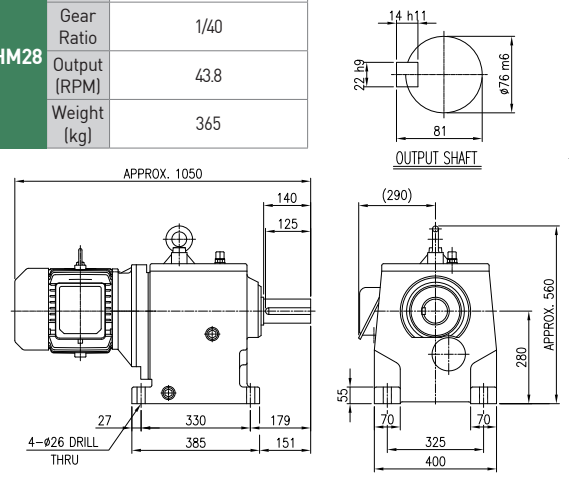




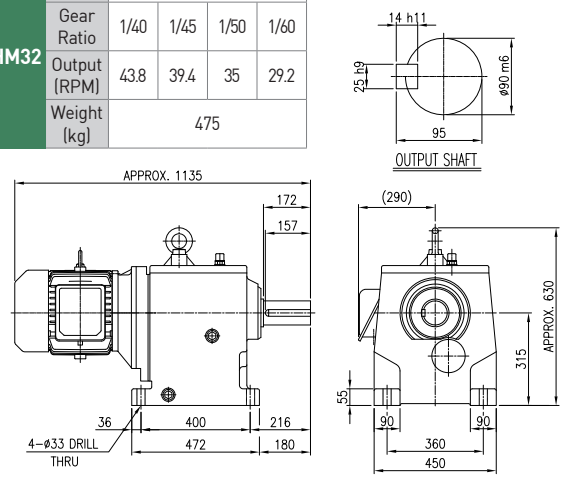
H 수평형

15kW

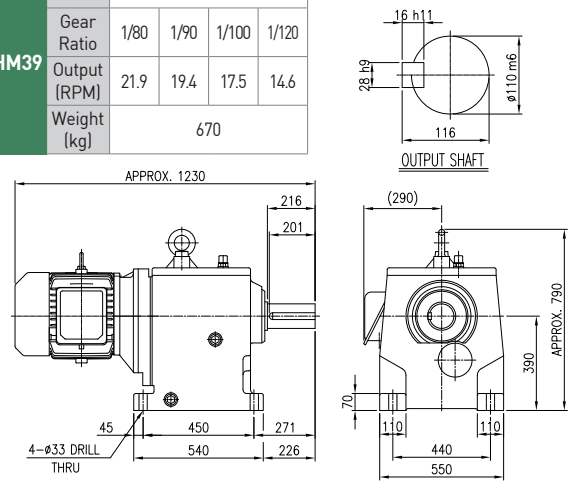
HHM28		
	Power	15
	Gear Ratio	1/40
	Output (RPM)	43.8
	Weight (kg)	365



HHM32					
	Power	15			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	39.4	35	29.2
	Weight (kg)	475			

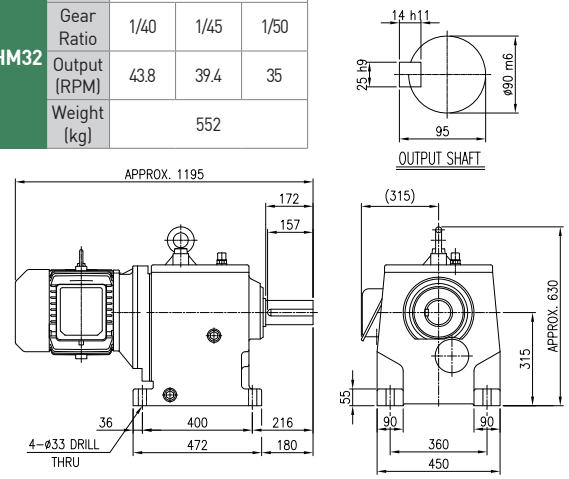


HHM39					
	Power	15			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	670			

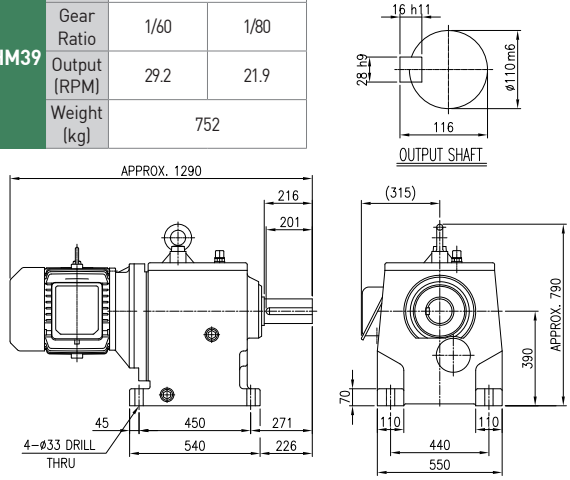


18.5kW

HHM32				
	Power	18.5		
	Gear Ratio	1/40	1/45	1/50
	Output (RPM)	43.8	39.4	35
	Weight (kg)	552		



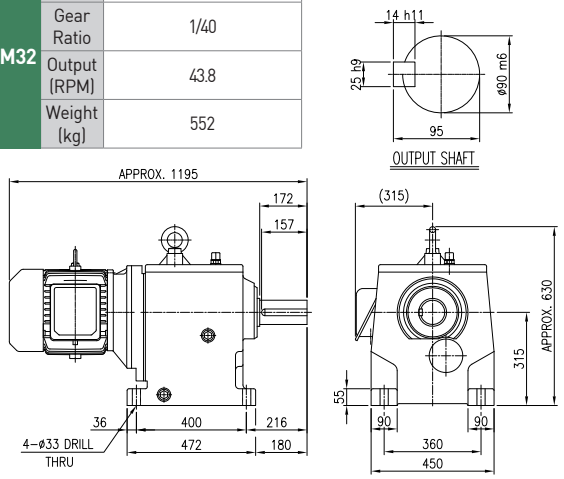
HHM39			
	Power	18.5	
	Gear Ratio	1/60	1/80
	Output (RPM)	29.2	21.9
	Weight (kg)	752	



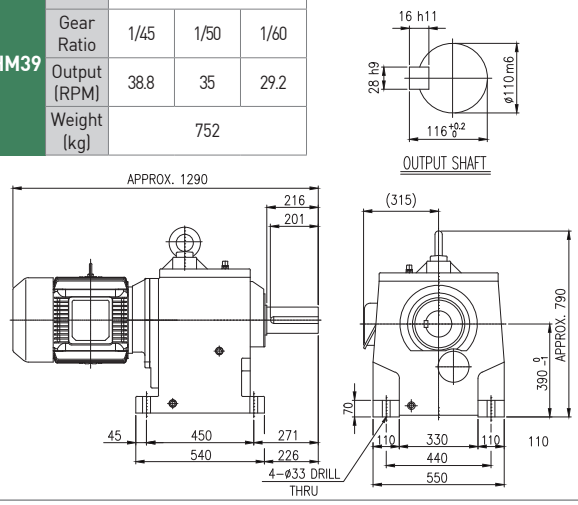
H 수평형

22kW

HHM32	Power	22
	Gear Ratio	1/40
	Output (RPM)	43.8
	Weight (kg)	552

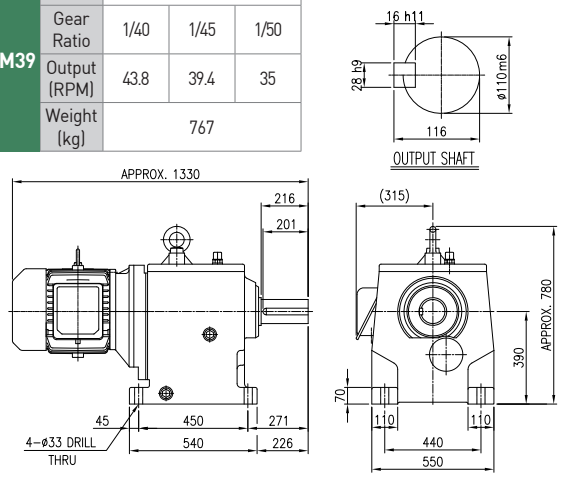


HHM39	Power	22		
	Gear Ratio	1/45	1/50	1/60
	Output (RPM)	38.8	35	29.2
	Weight (kg)	752		



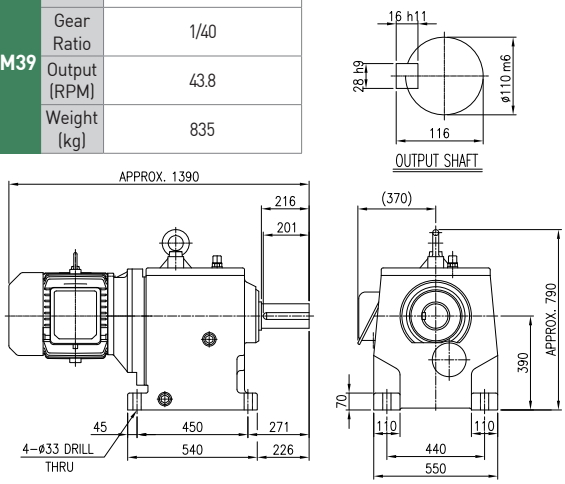
30kW

HHM39	Power	30		
	Gear Ratio	1/40	1/45	1/50
	Output (RPM)	43.8	39.4	35
	Weight (kg)	767		



37kW

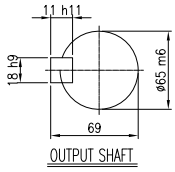
HHM39	Power	37
	Gear Ratio	1/40
	Output (RPM)	43.8
	Weight (kg)	835

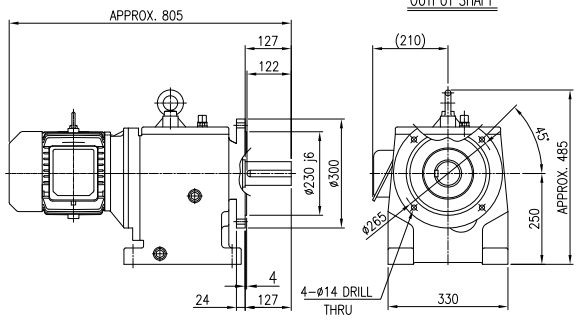


H 수직형

3.7kW

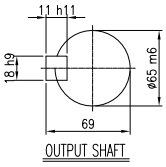
HFM25	Power	3.7			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	188			

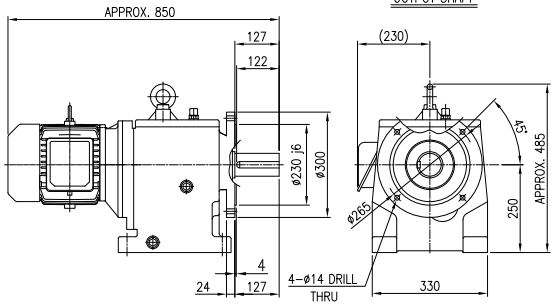




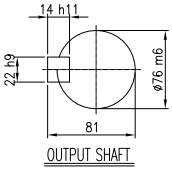
5.5kW

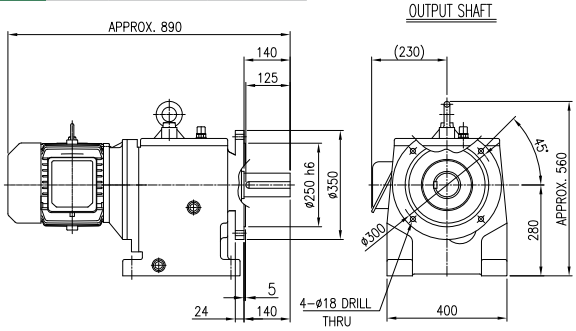
HFM25	Power	5.5			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	39.4	35	29.2
	Weight (kg)	205			





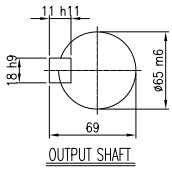
HFM28	Power	5.5			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	300			

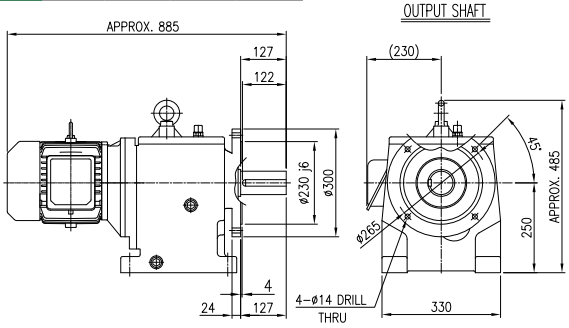




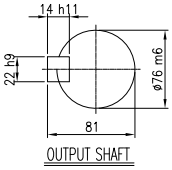
7.5kW

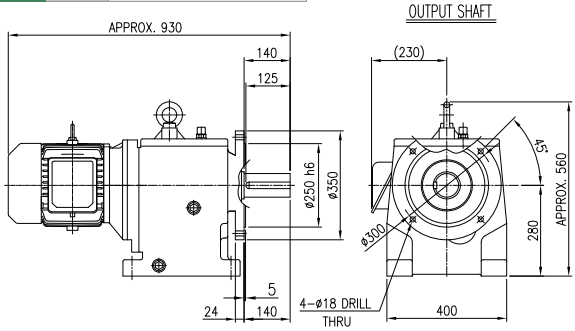
HFM25	Power	7.5		
	Gear Ratio	1/40	1/45	1/50
	Output (RPM)	43.8	39.4	35
	Weight (kg)	215		





HFM28	Power	7.5
	Gear Ratio	1/60
	Output (RPM)	29.2
	Weight (kg)	310

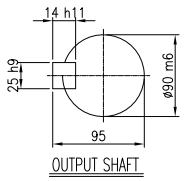


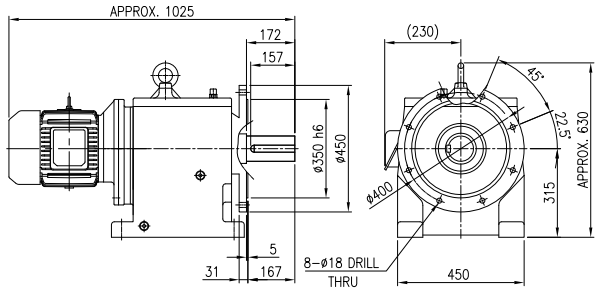


H 수직형

7.5kW

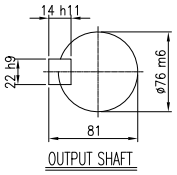
HFM32	Power	7.5			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	420			

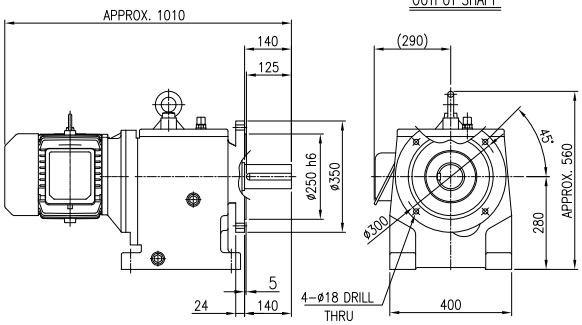




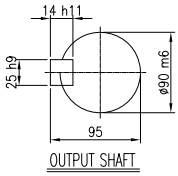
11kW

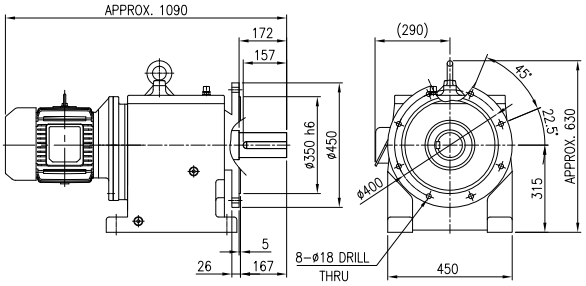
HFM28	Power	11			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	39.4	35	29.2
	Weight (kg)	340			



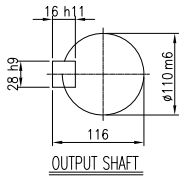


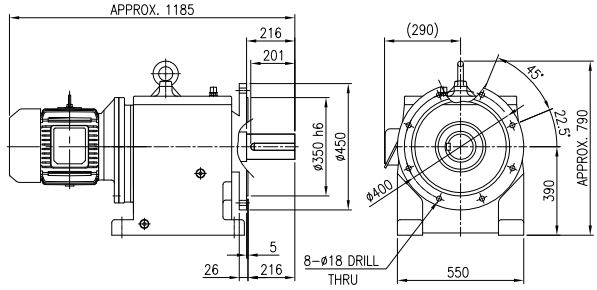
HFM32	Power	11
	Gear Ratio	1/80
	Output (RPM)	21.9
	Weight (kg)	450





HFM39	Power	11		
	Gear Ratio	1/90	1/100	1/120
	Output (RPM)	19.4	17.5	14.6
	Weight (kg)	640		

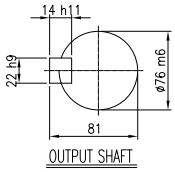


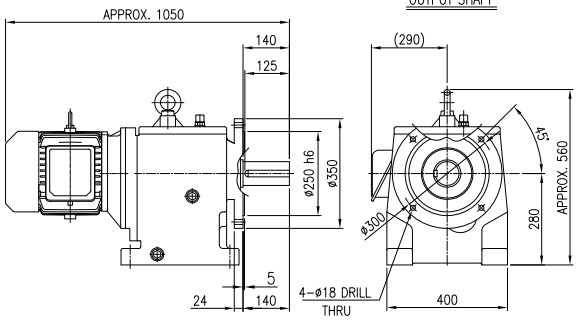


H 수직형

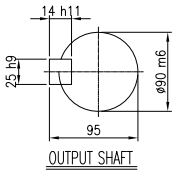
15kW

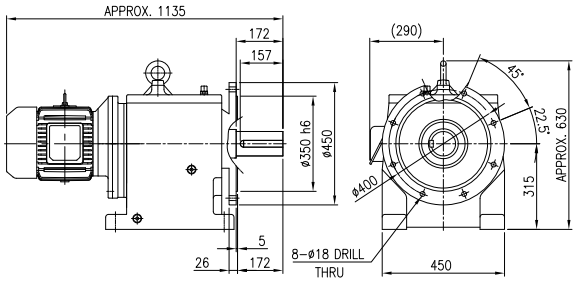
HFM28	Power	15
	Gear Ratio	1/40
	Output (RPM)	43.8
	Weight (kg)	415



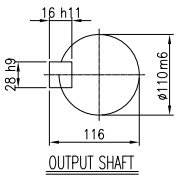


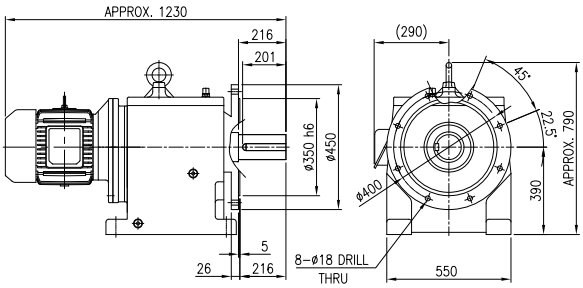
HFM32	Power	15			
	Gear Ratio	1/40	1/45	1/50	1/60
	Output (RPM)	43.8	39.4	35	29.2
	Weight (kg)	475			





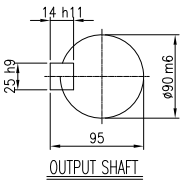
HFM39	Power	15			
	Gear Ratio	1/80	1/90	1/100	1/120
	Output (RPM)	21.9	19.4	17.5	14.6
	Weight (kg)	670			

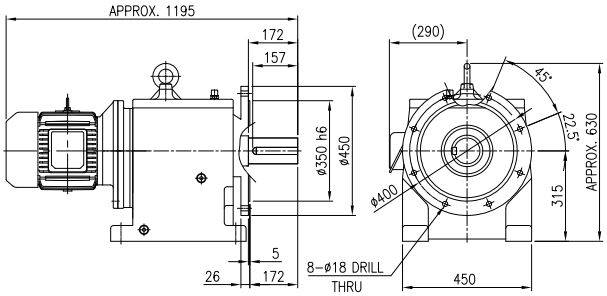




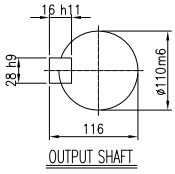
18.5kW

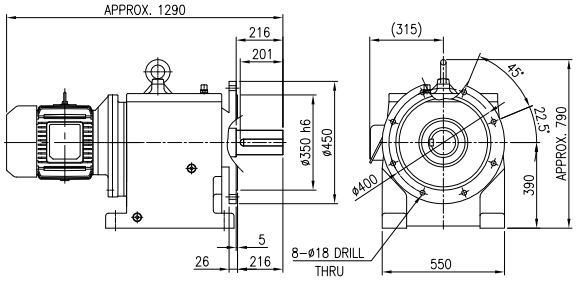
HFM32	Power	18.5		
	Gear Ratio	1/40	1/45	1/50
	Output (RPM)	43.8	39.4	35
	Weight (kg)	572		





HFM39	Power	18.5	
	Gear Ratio	1/60	1/80
	Output (RPM)	29.2	21.9
	Weight (kg)	777	

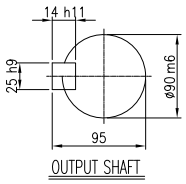


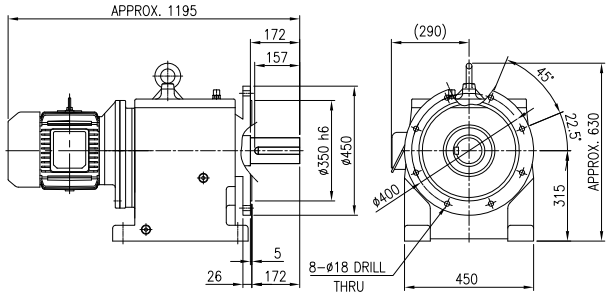


H 수직형

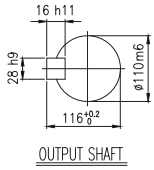
22kW

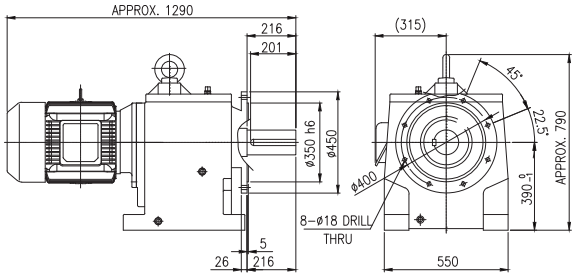
HFM32	Power	22
	Gear Ratio	1/40
	Output (RPM)	43.8
	Weight (kg)	572





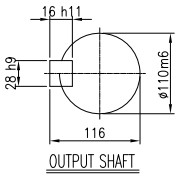
HFM39	Power	22		
	Gear Ratio	1/45	1/50	1/60
	Output (RPM)	38.8	35	29.2
	Weight (kg)	777		

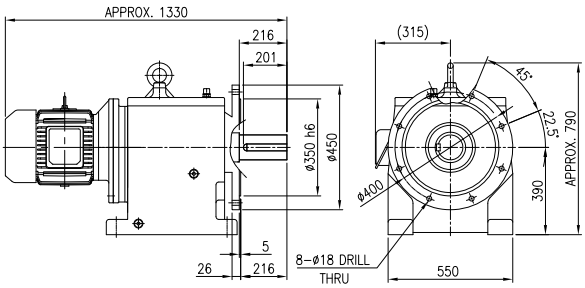




30kW

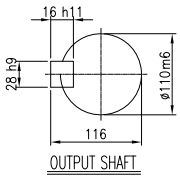
HFM39	Power	30		
	Gear Ratio	1/40	1/45	1/50
	Output (RPM)	43.8	39.4	35
	Weight (kg)	792		

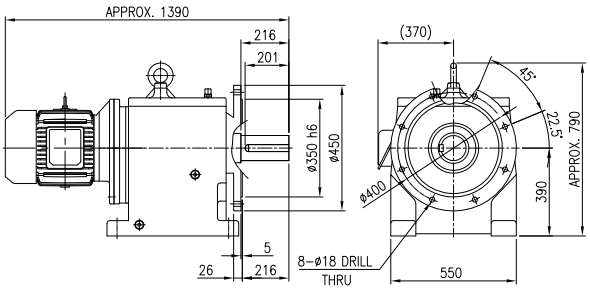




37kW

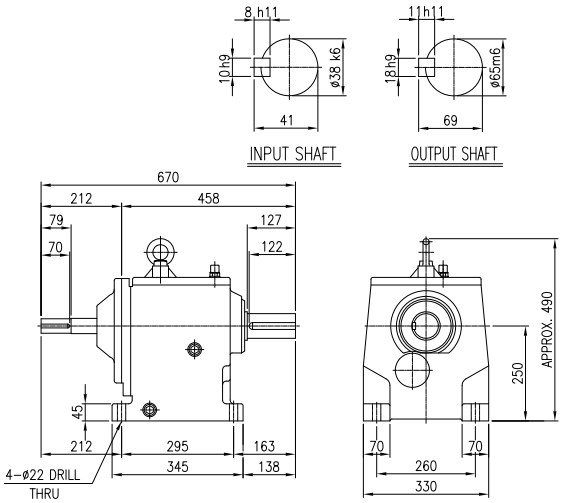
HFM39	Power	37
	Gear Ratio	1/40
	Output (RPM)	43.8
	Weight (kg)	860



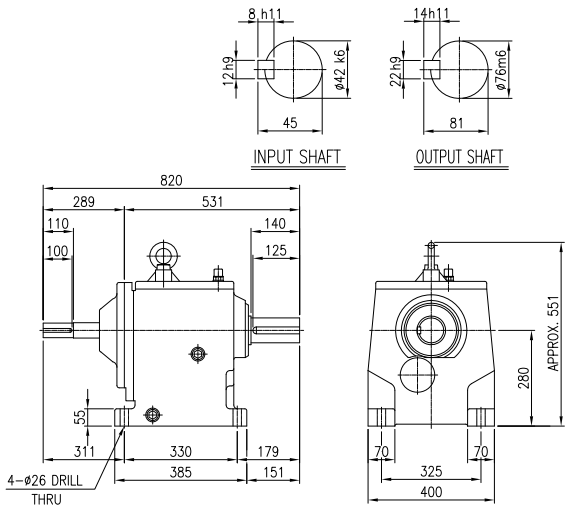


H 라인파워(수평형)

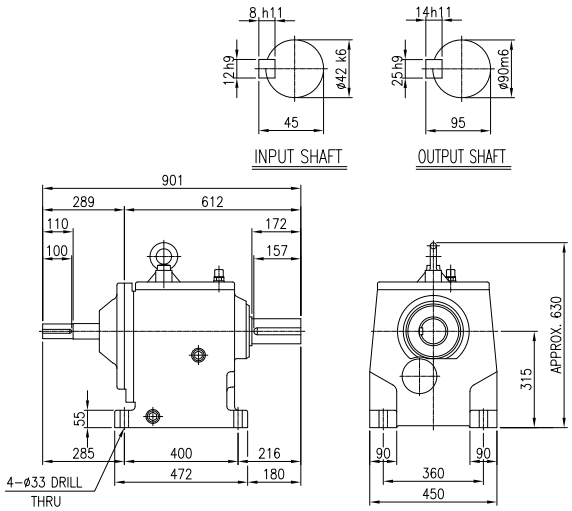
HH25	Power	3.7	5.5	7.5
	Gear Ratio	1/80 ~ 1/120	1/40 ~ 1/60	1/40 ~ 1/50
	Weight (kg)	155		



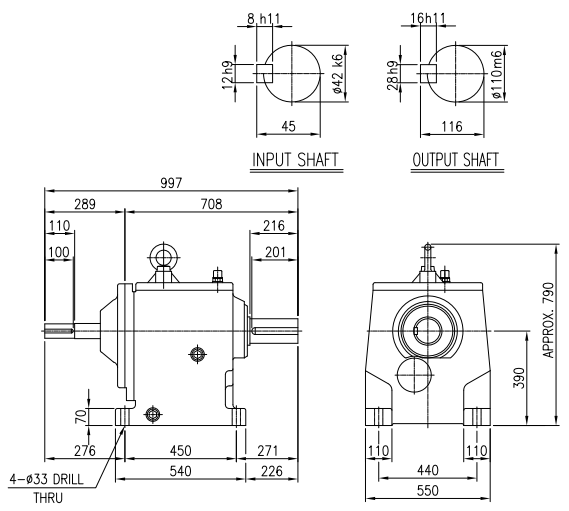
HH28	Power	5.5	7.5	11	15
	Gear Ratio	1/80 ~ 1/120	1/60	1/40 ~ 1/60	1/40
	Weight (kg)	250			



HH32	Power	7.5	11	15	18.5	22
	Gear Ratio	1/80 ~ 1/120	1/80	1/40 ~ 1/60	1/40 ~ 1/50	1/40
	Weight (kg)	360				

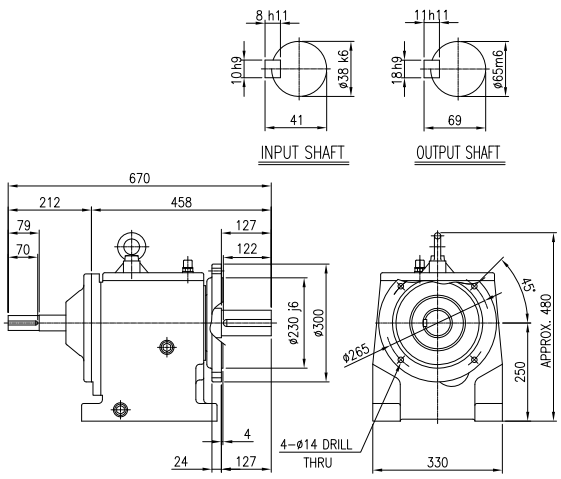


HH39	Power	11	15	18.5	22	30	37
	Gear Ratio	1/90 ~ 1/120	1/80 ~ 1/100	1/60 ~ 1/80	1/45 ~ 1/60	1/40 ~ 1/50	1/40
	Weight (kg)	540					

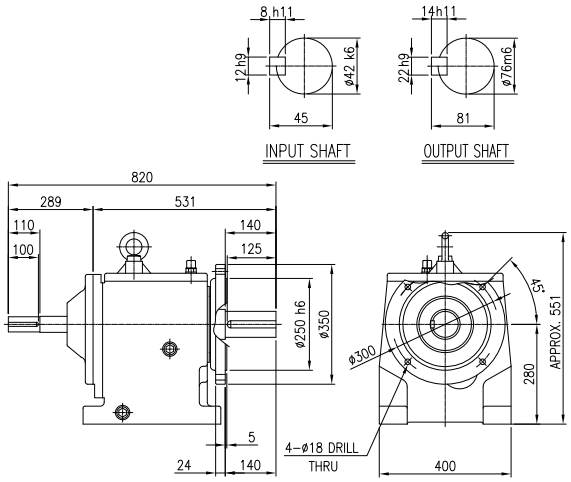


H 라인파워(수직형)

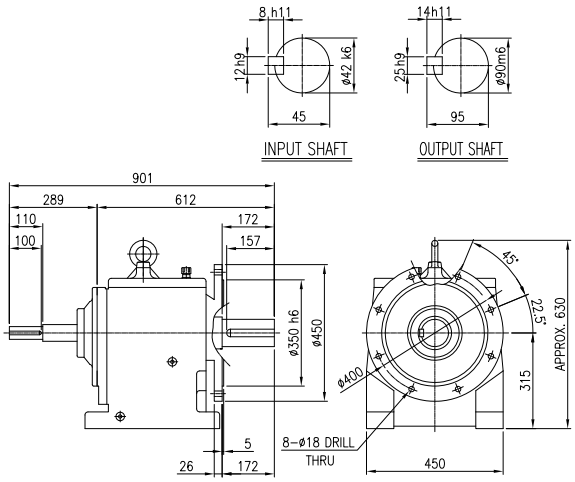
HF25				
	Power	3.7	5.5	7.5
	Gear Ratio	1/80 ~ 1/120	1/40 ~ 1/60	1/40 ~ 1/50
	Weight (kg)	155		



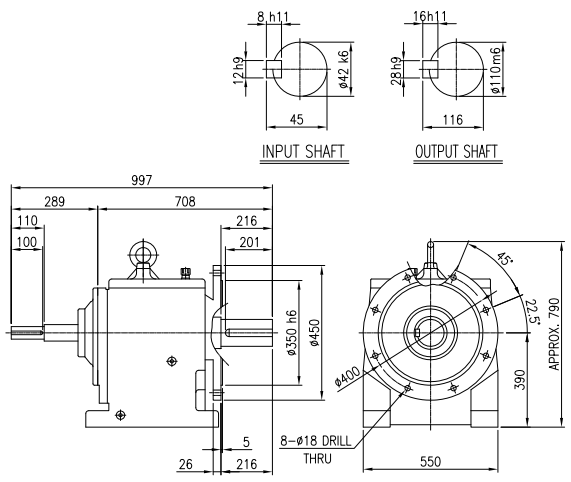
HF28					
	Power	5.5	7.5	11	15
	Gear Ratio	1/80 ~ 1/120	1/60	1/40 ~ 1/60	1/40
	Weight (kg)	250			



HF32						
	Power	7.5	11	15	18.5	22
	Gear Ratio	1/80 ~ 1/120	1/80	1/40 ~ 1/60	1/40 ~ 1/50	1/40
	Weight (kg)	360				



HF39							
	Power	11	15	18.5	22	30	37
	Gear Ratio	1/90 ~ 1/120	1/80 ~ 1/100	1/60 ~ 1/80	1/45 ~ 1/60	1/40 ~ 1/50	1/40
	Weight (kg)	540					



P Series

수평형

수직형

라인파워

P시리즈 특징

1. 소형 · 경량

여러 개의 유성치차에 의한 힘의 분배와 동심축에 의한 케이싱의 콤팩트화로 소형, 경량화 시켰습니다.

2. 고정도 · 고효율

치차의 치형을 이상적인 치형으로 수정하고 고급 합금강을 사용하여 침탄열처리 한후 치연마함으로써 치합 손실을 줄여 고효율을 보장합니다.

3. 긴수명 · 저소음

태양치차의 강도가 같은 동력의 일반 기어드 모터와 동일한 반면 동력이 여러 개의 유성치차에 의해 분배되므로 일반 기어드 모터보다 배 이상의 수명이 보장되며 소음도 적습니다.

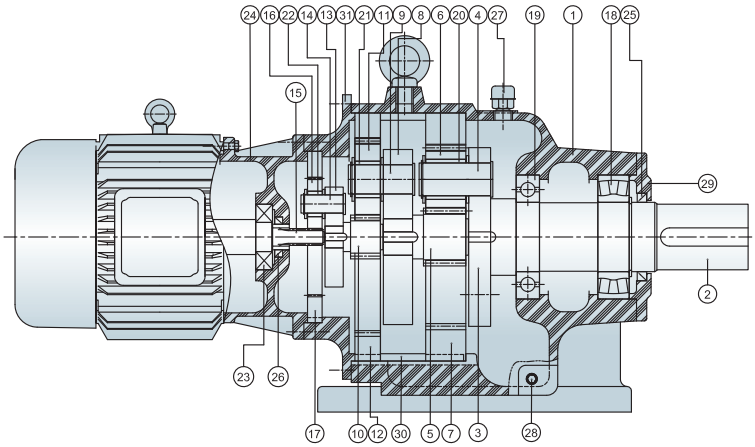
4. 분해 · 조립 및 취급이 용이함

입·출력이 동심이며 대칭구조를 이루고 있으므로 특수 공구 없이 분해·조립의 취급이 용이합니다.

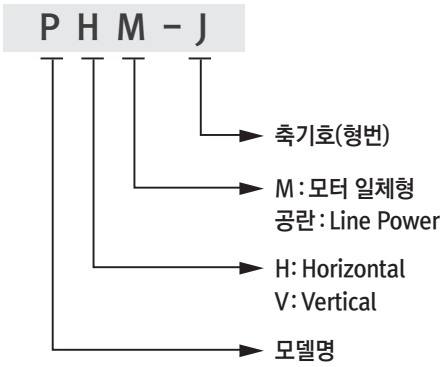
5. 소형 · 경량 및 높은 신뢰도 보장

유성치차에 의한 감속으로 1/600 이상의 고감속비도 소형·경량이 가능합니다.

P 구조도



형식표시



NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	9	PLANETARY SHAFT	17	INTERNAL GEAR	25	OIL SEAL
2	OUTPUT SHAFT	10	SUN GEAR	18	BEARING	26	OIL SEAL
3	3'RD CARRIER	11	PLANETARY GEAR	19	BEARING	27	AIR VENT
4	PLANETARY SHAFT	12	INTERNAL GEAR	20	BEARING	28	PLUG
5	SUN GEAR	13	1'ST CARRIER	21	BEARING	29	OUTPUT COVER
6	PLANETARY GEAR	14	PLANETARY SHAFT	22	BEARING	30	INTERNAL FIX RING
7	INTERNAL GEAR	15	MOTOR PINION	23	BEARING	31	1'ST CASING
8	2'ND CARRIER	16	PLANETARY GEAR	24	MOTOR BRACKET		

동력, 감속비에 따른 표준 축기호표

kW \ Ratio	40	60	80	120	150	180	240	320	470	600
0.4										E
0.75								E	F	G
1.5					E	F	F	G	H	I
2.2					G	G	H	H	I	J
3.7					H	H	I	I	J	J
5.5					I	I	J	J	L	N
7.5					J	J	J	L	N	
11					J	J	L	N		
15				J	L	L	N			
18.5			J	L	L	N				
22			J	L	N					
30		J	L	N						
37		L	N							
45	J	L	N							
55	L	N								
75	N									

F1 시리즈
RP시리즈
FN 시리즈

H시리즈

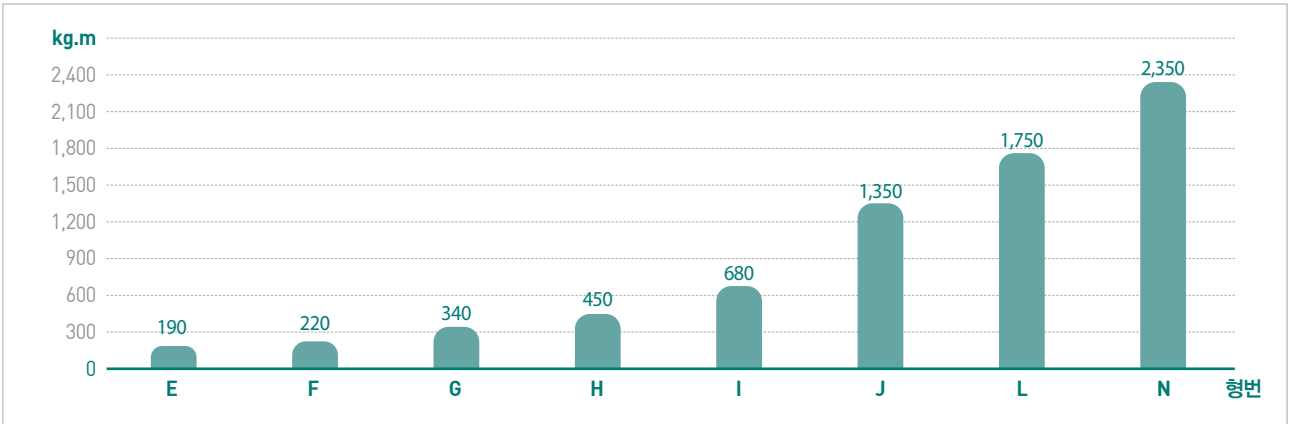
주: 위의 표는 S.F=1.4 기준을 두었으며 60Hz 4극 MOTOR 기준입니다.

비표준 선정 방법

· 동력, 감속비, 회전수 S.F등을 고려하여 저속축의 토크를 구한 후 아래의 축기호를 표에서 형번을 선정합니다.
· 감속비가 크나 요구 토크가 적은 경우, 요구 Service Factor가 1.4이상 큰 경우, MOTOR가 표준 FRAME보다 클 경우 등은 당사로 문의하여 주십시오.
· 동일한 축기호를 갖는 감속기는 설치를 위한 주요 치수는 감속비, 단수에 관계없이 같습니다.

축기호에 따른 저속축 허용 토크

축기호	E	F	G	H	I	J	L	N
토크(kg.m)	190	220	340	450	680	1,350	1,750	2,350
토크(N.m)	1,862	2,156	3,332	4,410	6,664	13,230	17,150	23,030



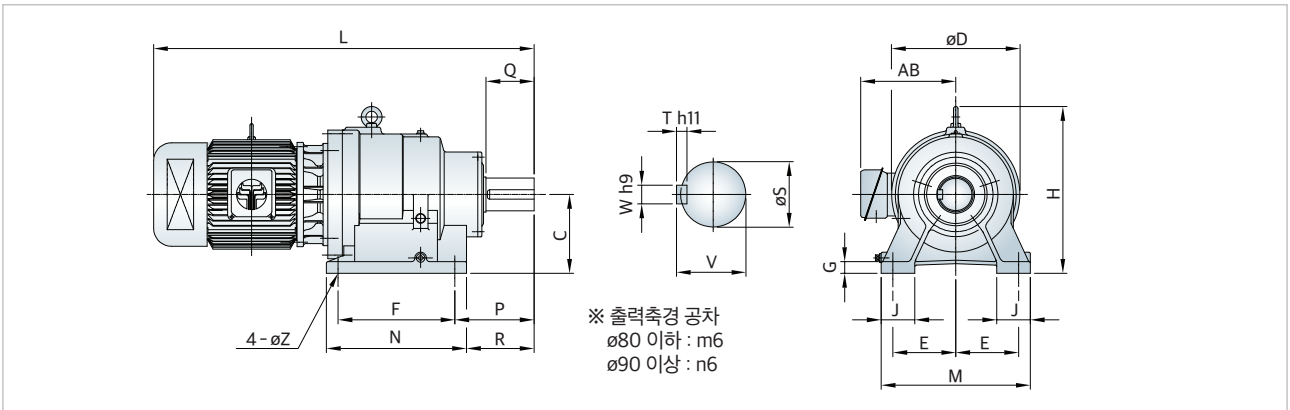
P시리즈 GD², O.H.L표

kW	Ratio	축기호	안전율	최대허용토크		모터축 환산GD²		출력축OHL	
				N · m	kgf · m	N · m²	kg · m²	N	kgf
0.4	1/600	E	1.42	1,862	190	0.124	0.013	4,280	437
0.75	1/320	E	1.42	1,862	190	0.124	0.013	3,470	354
	1/470	F	1.12	2,156	220	0.124	0.013	3,940	402
	1/600	G	1.36	3,332	340	0.130	0.013	6,180	631
1.5	1/150	E	1.52	1,862	190	0.180	0.018	1,820	186
	1/180	F	1.46	2,156	220	0.183	0.019	2,870	293
	1/240	F	1.10	2,156	220	0.183	0.019	3,150	321
	1/320	G	1.27	3,332	340	0.189	0.019	5,010	511
	1/470	H	1.15	4,410	450	0.189	0.019	5,700	582
	1/600	I	1.36	6,664	680	0.201	0.021	7,770	793
2.2	1/120	E	1.29	1,862	190	0.376	0.038	2,500	255
	1/150	G	1.85	3,332	340	0.376	0.038	2,500	255
	1/180	G	1.54	3,332	340	0.382	0.039	4,140	422
	1/240	H	1.53	4,410	450	0.382	0.039	4,550	464
	1/320	H	1.15	4,410	450	0.382	0.039	5,010	511
	1/470	I	1.18	6,664	680	0.394	0.040	7,160	731
	1/600	J	1.84	13,230	1,350	0.596	0.061	9,920	1,012
3.7	1/80	F	1.34	2,156	220	0.523	0.053	2,190	223
	1/120	G	1.38	3,332	340	0.524	0.054	3,610	368
	1/150	H	1.46	4,410	450	0.524	0.054	3,610	368
	1/180	H	1.21	4,410	450	0.524	0.054	4,140	422
	1/240	I	1.38	6,664	680	0.536	0.055	5,730	585
	1/320	I	1.03	6,664	680	0.536	0.055	6,300	643
	1/470	J	1.39	13,230	1,350	0.738	0.075	9,150	934
	1/600	J	1.09	13,230	1,350	0.738	0.075	9,920	1,012
5.5	1/40	E	1.55	1,862	190	0.983	0.100	1,740	178
	1/60	F	1.20	2,156	220	0.983	0.100	1,990	203
	1/80	G	1.39	3,332	340	0.994	0.101	3,160	322
	1/120	H	1.23	4,410	450	0.984	0.100	3,610	368
	1/150	I	1.48	6,664	680	0.984	0.100	3,610	368
	1/180	I	1.23	6,664	680	0.996	0.102	5,200	531
	1/240	J	1.84	13,230	1,350	1.197	0.122	7,310	746
	1/320	J	1.38	13,230	1,350	1.197	0.122	8,050	821
	1/470	L	1.22	17,150	1,750	1.409	0.144	9,370	956
	1/600	N	1.28	23,030	2,350	3.316	0.338	9,310	950
7.5	1/40	F	1.32	2,156	220	1.426	0.146	1,740	178
	1/60	G	1.36	3,332	340	1.427	0.146	2,870	293
	1/80	H	1.35	4,410	450	1.427	0.146	3,160	322
	1/120	I	1.36	6,664	680	1.429	0.146	4,550	464
	1/150	J	2.16	13,230	1,350	1.429	0.146	4,550	464
	1/180	J	1.80	13,230	1,350	1.631	0.166	6,640	678
	1/240	J	1.35	13,230	1,350	1.631	0.166	7,310	746
	1/320	L	1.31	17,150	1,750	1.842	0.188	8,250	842
	1/470	N	1.20	23,030	2,350	3.749	0.383	8,580	876

P시리즈 GD², O.H.L표

kW	Ratio	축기호	안전율	최대허용토크		모터축 환산GD²		출력축OHL	
				N · m	kgf · m	N · m²	kg · m²	N	kgf
11	1/40	G	1.39	3,332	340	2.729	0.279	2,510	256
	1/60	I	1.85	6,664	680	2.784	0.284	3,600	367
	1/80	I	1.39	6,664	680	2.784	0.284	3,970	405
	1/120	J	1.84	13,230	1,350	2.933	0.299	5,800	592
	1/150	J	1.47	13,230	1,350	2.933	0.299	5,800	592
	1/180	J	1.23	13,230	1,350	2.933	0.299	6,640	678
	1/240	L	1.19	17,150	1,750	3.145	0.321	7,500	765
	1/320	N	1.20	23,030	2,350	5.052	0.516	7,550	770
15	1/40	I	2.04	6,664	680	4.142	0.423	3,150	321
	1/60	I	1.36	6,664	680	4.142	0.423	3,600	367
	1/80	J	2.02	13,230	1,350	4.631	0.473	5,070	517
	1/120	J	1.35	13,230	1,350	4.290	0.438	5,800	592
	1/150	L	1.40	17,150	1,750	4.290	0.438	5,800	592
	1/180	L	1.16	17,150	1,750	4.503	0.460	6,810	695
	1/240	N	1.17	23,030	2,350	6.410	0.654	6,860	700
18.5	1/40	I	1.65	6,664	680	5.361	0.547	3,150	321
	1/60	J	2.19	13,230	1,350	5.850	0.597	4,610	470
	1/80	J	1.64	13,230	1,350	5.850	0.597	5,070	517
	1/120	L	1.42	17,150	1,750	5.721	0.584	5,950	607
	1/150	L	1.13	17,150	1,750	5.721	0.584	5,950	607
	1/180	N	1.27	23,030	2,350	7.628	0.778	6,230	636
22	1/40	I	1.39	6,664	680	6.801	0.694	3,150	321
	1/60	J	1.84	13,230	1,350	7.290	0.744	4,610	470
	1/80	J	1.38	13,230	1,350	7.290	0.744	5,070	517
	1/120	L	1.19	17,150	1,750	7.162	0.731	5,950	607
	1/150	N	1.28	23,030	2,350	7.162	0.731	5,950	607
30	1/40	J	2.02	13,230	1,350	12.131	1.238	4,030	411
	1/60	J	1.35	13,230	1,350	12.131	1.238	4,610	470
	1/80	L	1.31	17,150	1,750	12.662	1.292	5,190	530
	1/120	N	1.17	23,030	2,350	13.910	1.419	5,450	556
37	1/40	J	1.64	13,230	1,350	12.955	1.322	4,030	411
	1/60	L	1.42	17,150	1,750	13.485	1.376	4,720	482
	1/80	N	1.43	23,030	2,350	18.561	1.894	4,760	486
45	1/40	J	1.35	13,230	1,350	22.363	2.282	4,030	411
	1/60	L	1.16	17,150	1,750	22.893	2.336	4,720	482
	1/80	N	1.17	23,030	2,350	27.969	2.854	4,760	486
55	1/40	L	1.43	17,150	1,750	28.841	2.943	4,120	420
	1/60	N	1.28	23,030	2,350	33.918	3.461	4,320	441

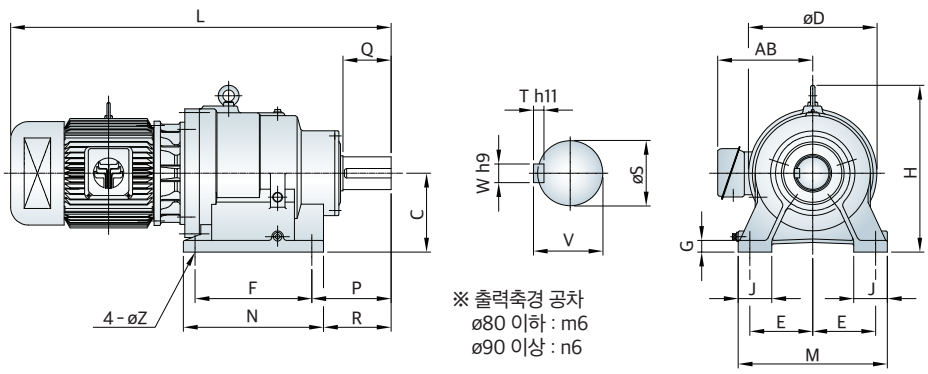
PHM 외형도 및 외형치수



단위 : mm

kW	Ratio	축기호	C	D	E	F	G	H	J	L	M	N	P	R	Z	AB	S	W	T	V	Q	오일량 (L)	중량 (kg)
5.5	1/40	E	180	280	135	240	25	375	70	830	330	300	172	142	22	225	65	18	11	69	95	3	182
7.5		F	180	280	135	240	25	375	70	830	330	300	172	142	22	225	65	18	11	69	95	3	190
11		G	205	340	160	320	30	445	75	975	380	380	178	148	22	280	80	22	14	85	110	4	312
15		I	240	390	190	360	35	520	100	1,090	450	430	195	160	26	280	90	25	14	95	125	6.5	365
18.5		I	240	390	190	360	35	520	100	1,105	450	430	195	160	26	305	90	25	14	95	125	6.5	423
22		I	240	390	190	360	35	520	100	1,132	450	430	195	160	26	305	90	25	14	95	125	6.5	432
30		J	270	440	215	400	40	575	115	1,315	510	480	271	231	33	338	112	32	18	119	165	10	738
37		J	270	440	215	400	40	575	115	1,370	510	480	271	231	33	338	112	32	18	119	165	10	737
45		J	270	440	215	400	40	575	115	1,385	510	480	271	231	33	410	112	32	18	119	165	10	844
55		L	300	470	240	480	45	620	135	1,460	580	560	270	230	39	410	125	32	18	132	185	13	1,109
5.5	1/60	F	180	280	135	240	25	375	70	830	330	300	172	142	22	225	65	18	11	69	95	3	187
7.5		G	205	340	160	320	30	445	75	910	380	380	178	148	22	225	80	22	14	85	110	4	245
11		I	240	390	190	360	35	520	100	1,045	450	430	195	160	26	280	90	25	14	95	125	6.5	362
15		I	240	390	190	360	35	520	100	1,090	450	430	195	160	26	280	90	25	14	95	125	6.5	370
18.5		J	270	440	215	400	40	575	115	1,270	510	480	271	231	33	305	112	32	18	119	165	10	653
22		J	270	440	215	400	40	575	115	1,283	510	480	271	231	33	305	112	32	18	119	165	10	662
30		J	270	440	215	400	40	575	115	1,315	510	480	271	231	33	338	112	32	18	119	165	10	741
37		L	300	470	240	480	45	620	135	1,420	580	560	270	230	39	338	125	32	18	132	185	13	975
45		L	300	470	240	480	45	620	135	1,435	580	560	270	230	39	410	125	32	18	132	185	13	1,082
55		N	420	670	400	660	50	900	150	1,605	880	810	372	297	39	410	140	36	20	148	230	17	1,325
3.7	1/80	F	180	280	135	240	25	375	70	780	330	300	172	142	22	205	65	18	11	69	95	3	159
5.5		G	205	340	160	320	30	445	75	875	380	380	178	148	22	225	80	22	14	85	110	4	237
7.5		H	205	340	160	320	30	445	75	910	380	380	178	148	22	225	80	22	14	85	110	4	250
11		I	240	390	190	360	35	520	100	1,045	450	430	195	160	26	280	90	25	14	95	125	6.5	367
15		J	270	440	215	400	40	575	115	1,235	510	480	271	231	33	305	112	32	18	119	165	10	630
18.5		J	270	440	215	400	40	575	115	1,270	510	480	271	231	33	305	112	32	18	119	165	10	656
22		J	270	440	215	400	40	575	115	1,305	510	480	271	231	33	305	112	32	18	119	165	10	667
30		L	300	470	240	480	45	620	135	1,370	580	560	270	230	39	338	125	32	18	132	185	13	976
37		N	420	670	400	660	50	900	150	1,570	880	810	372	297	39	338	140	36	20	148	230	17	1,193
45		N	420	670	400	660	50	900	150	1,580	880	810	372	297	39	410	140	36	20	148	230	17	1,300
2.2	1/120	E	180	280	135	240	25	375	70	850	330	300	172	142	22	205	65	18	11	69	95	3.2	163
3.7		G	205	340	160	320	30	445	75	910	380	380	178	148	22	205	80	22	14	85	110	4.3	228
5.5		H	205	340	160	320	30	445	75	935	380	380	178	148	22	225	80	22	14	85	110	4.3	258
7.5		I	240	390	190	360	35	520	100	1,050	450	430	195	160	26	225	90	25	14	95	125	6.8	333
11		J	270	440	215	400	40	575	115	1,265	510	480	271	231	33	280	112	32	18	119	165	12	661
15		J	270	440	215	400	40	575	115	1,310	510	480	271	231	33	280	112	32	18	119	165	12	667
18.5		L	300	470	240	480	45	620	135	1,380	580	560	270	230	39	305	125	32	18	132	185	15	996
22		L	300	470	240	480	45	620	135	1,420	580	560	270	230	39	305	125	32	18	132	185	15	1,006
30		N	420	670	400	660	50	900	150	1,505	880	810	372	297	39	338	140	36	20	148	230	20	1,335
1.5	1/150	E	180	280	135	240	25	375	70	840	330	300	172	142	22	158	65	18	11	69	95	3.2	139
2.2		G	205	340	160	320	30	445	75	905	380	380	178	148	22	157	80	22	14	85	110	4.3	218
3.7		H	205	340	160	320	30	445	75	910	380	380	178	148	22	205	80	22	14	85	110	4.3	228
5.5		I	240	390	190	360	35	520	100	1,030	450	430	195	160	26	225	90	25	14	95	125	6.8	327
7.5		J	270	440	215	400	40	575	115	1,180	510	480	271	231	33	225	112	32	18	119	165	12	598
11		J	270	440	215	400	40	575	115	1,265	510	480	271	231	33	280	112	32	18	119	165	12	661
15		L	300	470	240	480	45	620	135	1,320	580	560	270	230	39	280	125	32	18	132	185	15	938
18.5		L	300	470	240	480	45	620	135	1,380	580	560	270	230	39	305	125	32	18	132	185	15	1,035
22		N	420	670	400	660	50	900	150	1,480	880	810	372	297	39	305	140	36	20	148	230	20	1,259

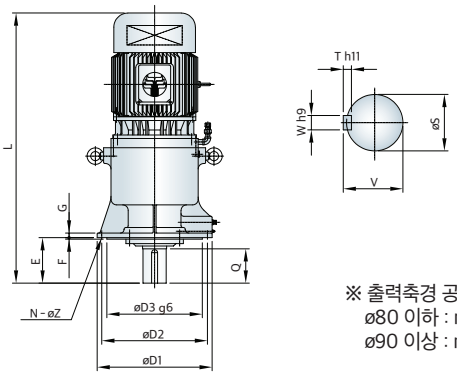
PHM 외형도 및 외형치수



단위 : mm

kW	Ratio	축기호	C	D	E	F	G	H	J	L	M	N	P	R	Z	AB	S	W	T	V	Q	오일량 (L)	중량 (kg)
1.5	1/180	F	180	280	135	240	25	375	70	840	330	300	172	142	22	158	65	18	11	69	95	3.2	139
2.2		G	205	340	160	320	30	445	75	905	380	380	178	148	22	205	80	22	14	85	110	4.3	224
3.7		H	205	340	160	320	30	445	75	910	380	380	178	148	22	205	80	22	14	85	110	4.3	229
5.5		I	240	390	190	360	35	520	100	1,015	450	430	195	160	26	225	90	25	14	95	125	6.8	327
7.5		J	270	440	215	400	40	575	115	1,180	510	480	271	231	33	225	112	32	18	119	165	12	595
11		J	270	440	215	400	40	575	115	1,265	510	480	271	231	39	280	112	32	18	132	165	12	610
15		L	300	470	240	480	45	620	135	1,320	580	560	270	230	39	280	125	32	18	132	185	15	941
18.5		N	420	670	400	660	50	900	150	1,445	880	810	372	297	39	305	140	36	20	148	230	20	1,250
1.5	1/240	F	180	280	135	240	25	375	70	840	330	300	172	148	22	158	65	18	11	69	95	3.2	141
2.2		H	205	340	160	320	30	445	75	905	380	380	178	148	22	205	80	22	14	85	110	4.3	224
3.7		I	240	390	190	360	35	520	100	980	450	430	195	160	26	205	90	25	14	95	125	6.8	297
5.5		J	270	440	215	400	40	575	115	1,140	510	480	271	231	33	225	112	32	18	119	165	12	576
7.5		J	270	440	215	400	40	575	115	1,180	510	480	271	231	39	225	112	32	18	119	165	15	598
11		L	300	470	240	480	45	620	135	1,275	580	560	270	230	39	280	125	32	18	132	185	15	933
15		N	420	670	400	660	50	900	150	1,470	880	810	372	297	39	280	140	36	20	148	230	20	1,192
0.75	1/320	E	180	280	135	240	25	375	70	775	330	300	172	142	22	158	65	18	11	69	95	3.2	135
1.5		G	205	340	160	320	30	445	75	890	380	380	178	148	22	158	80	22	14	85	110	4.3	202
2.2		H	205	340	160	320	30	445	75	905	380	380	178	148	22	205	80	22	14	85	110	4.3	224
3.7		I	240	390	190	360	35	520	100	980	450	430	195	160	26	205	90	25	14	95	125	6.8	297
5.5		J	270	440	215	400	40	575	115	1,140	510	480	271	231	33	225	112	32	18	119	165	12	593
7.5		L	300	470	240	480	45	620	135	1,235	580	560	270	230	39	225	125	32	18	132	185	15	869
11		N	420	670	400	660	50	900	150	1,425	880	810	372	297	39	280	140	36	20	148	230	20	1,187
0.75	1/470	F	180	280	135	240	25	375	70	775	330	300	172	142	22	142	65	18	11	69	95	3.2	134
1.5		H	205	340	160	320	30	445	75	890	380	380	178	148	22	158	80	22	14	85	110	4.3	202
2.2		I	240	390	190	360	35	520	100	995	450	430	195	160	26	205	90	25	14	95	125	6.8	293
3.7		J	270	440	215	400	40	575	115	1,095	510	480	271	231	33	205	112	32	18	119	165	12	562
5.5		L	300	470	240	480	45	620	135	1,200	580	560	270	230	39	225	125	32	18	132	185	15	865
7.5		N	420	670	400	660	50	900	150	1,330	880	810	372	297	39	225	140	36	20	148	230	20	1,123
0.4	1/600	E	180	280	135	240	25	375	70	775	330	300	172	142	22	142	65	18	11	69	95	3.2	130
0.75		G	205	340	160	320	30	445	75	820	380	380	178	148	22	158	80	22	14	85	110	4.3	197
1.5		I	240	390	190	360	35	520	100	965	450	430	195	160	26	158	90	25	14	95	125	6.8	269
2.2		J	270	440	215	400	40	575	115	1,165	510	480	271	231	33	205	112	32	18	119	165	12	559
3.7		J	270	440	215	400	40	575	115	1,210	510	480	271	231	33	205	112	32	18	119	165	12	564
5.5		N	420	670	400	660	50	900	150	1,290	880	810	372	297	39	225	140	36	20	148	230	20	1,117

PVM 외형도 및 외형치수

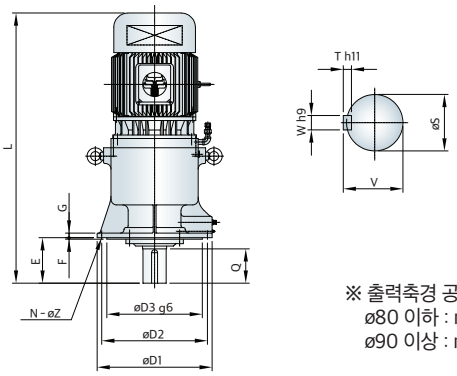


※ 출력축경 공차
ø80 이하 : m6
ø90 이상 : n6

단위 : mm

kW	Ratio	축기호	D1	D2	D3	E	F	G	L	N	Z	S	W	T	V	Q	오일량 (L)	중량 (kg)
5.5	1/40	E	370	330	275	140	5	16	845	6	14	65	18	11	69	95	5.5	192
7.5		F	370	330	275	140	5	16	885	6	14	65	18	11	69	95	5.5	200
11		H	440	395	340	155	5	20	1,000	6	18	80	22	14	85	110	10	328
15		I	495	445	390	170	5	20	1,110	6	18	90	25	14	95	125	15	392
18.5		I	495	445	390	170	5	20	1,120	6	18	90	25	14	95	125	15	450
22		I	495	445	390	170	5	20	1,160	6	18	90	25	14	95	125	15	459
30		J	560	510	455	215	8	25	1,335	8	22	112	32	18	119	165	23	768
37		J	560	510	455	215	8	25	1,370	8	22	112	32	18	119	165	23	767
45		J	560	510	455	215	8	25	1,405	8	22	112	32	18	119	165	23	874
55		L	620	570	515	245	8	25	1,485	8	22	125	32	18	132	185	30	1,185
5.5	1/60	F	370	330	275	140	5	16	845	6	14	65	18	11	69	95	5.5	197
7.5		G	440	395	340	155	5	20	925	6	18	80	22	14	85	110	10	261
11		I	495	445	390	170	5	20	1,060	6	18	90	25	14	95	125	15	389
15		I	495	445	390	170	5	20	1,110	6	18	90	25	14	95	125	15	397
18.5		J	560	510	455	215	8	25	1,240	8	22	112	32	18	119	165	23	683
22		J	560	510	455	215	8	25	1,280	8	22	112	32	18	119	165	23	692
30		J	560	510	455	215	8	25	1,320	8	22	112	32	18	119	165	23	772
37		L	620	570	515	245	8	25	1,425	8	22	125	32	18	132	185	30	1,040
45		L	620	570	515	245	8	25	1,460	8	22	125	32	18	132	185	30	1,160
55		N	690	640	585	290	8	30	1,560	8	26	140	36	20	148	230	40	1,425
3.7	1/80	F	370	330	275	140	5	16	805	6	14	65	18	11	69	95	5.5	169
5.5		G	440	395	340	155	5	20	890	6	18	80	22	14	85	110	10	253
7.5		H	440	395	340	155	5	20	925	6	18	80	22	14	85	110	10	266
11		I	495	445	390	170	5	20	1,060	6	18	90	25	14	95	125	15	394
15		J	560	510	455	215	8	25	1,250	8	22	112	32	18	119	165	23	625
18.5		J	560	510	455	215	8	25	1,240	8	22	112	32	18	119	165	23	686
22		J	560	510	455	215	8	25	1,280	8	22	112	32	18	119	165	23	694
30		L	620	570	515	245	8	25	1,390	8	22	125	32	18	132	185	30	1,026
37		N	690	640	585	290	8	30	1,505	8	26	140	36	20	148	230	40	1,270
45		N	690	640	585	290	8	30	1,540	8	26	140	36	20	148	230	40	1,380
2.2	1/120	E	370	330	275	140	5	16	870	6	14	65	18	11	69	95	6.2	177
3.7		G	440	395	340	155	5	20	935	6	18	80	22	14	85	110	13	248
5.5		H	440	395	340	170	5	20	960	6	18	80	22	14	85	110	13	279
7.5		I	495	445	390	215	5	20	1,085	6	18	90	25	14	95	125	18	364
11		J	560	510	455	215	8	25	1,290	8	22	112	32	18	119	165	27	691
15		J	560	510	455	215	8	25	1,335	8	22	112	32	18	119	165	27	697
18.5		L	620	570	515	245	8	25	1,350	8	22	125	32	18	132	185	38	1,072
22		L	620	570	515	245	8	25	1,390	8	22	125	32	18	132	185	38	1,082
30		N	690	640	585	290	8	30	1,600	8	26	140	36	20	148	230	50	1,424

PVM 외형도 및 외형치수

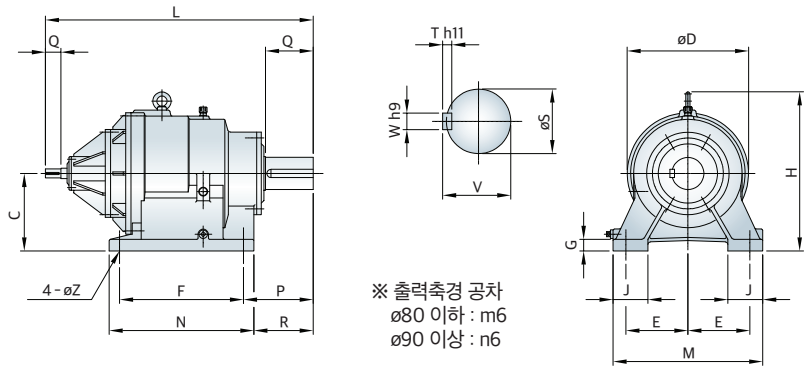


※ 출력축경 공차
ø80 이하 : m6
ø90 이상 : n6

단위 : mm

kW	Ratio	축기호	D1	D2	D3	E	F	G	L	N	Z	S	W	T	V	Q	오일량 (L)	중량 (kg)
1.5	1/150	E	370	330	275	140	5	16	850	6	14	65	18	11	69	95	6.2	156
2.2		G	440	395	340	155	5	20	930	6	18	80	22	14	85	110	13	249
3.7		H	440	395	340	155	5	20	910	6	18	80	22	14	85	110	13	250
5.5		I	495	445	390	170	5	20	1,050	6	18	90	25	14	95	125	18	359
7.5		J	560	510	455	215	8	25	1,200	8	22	112	32	18	119	165	27	628
11		J	560	510	455	215	8	25	1,290	8	22	112	32	18	119	165	27	691
15		L	620	570	515	245	8	25	1,340	8	22	125	32	18	132	185	38	1,014
18.5		L	620	570	515	245	8	25	1,350	8	22	125	32	18	132	185	38	1,077
22		N	690	640	585	290	8	30	1,550	8	26	140	36	20	148	230	50	1,348
1.5	1/180	F	370	330	275	140	5	16	850	6	14	65	18	11	69	95	6.2	156
2.2		G	440	395	340	155	5	20	930	6	18	80	22	14	85	110	13	245
3.7		H	440	395	340	155	5	20	910	6	18	80	22	14	85	110	13	250
5.5		I	495	445	390	170	5	20	1,050	6	18	90	25	14	95	125	18	359
7.5		J	560	510	455	215	8	25	1,200	8	22	112	32	18	119	165	27	628
11		J	560	510	455	215	8	25	1,290	8	22	112	32	18	119	185	27	693
15		L	620	570	515	245	8	25	1,340	8	22	125	32	18	132	185	38	1,015
18.5		N	690	640	585	290	8	30	1,510	8	26	140	36	20	148	230	50	1,339
1.5	1/240	F	370	330	275	140	5	16	850	6	14	65	18	11	69	95	6.2	156
2.2		H	440	395	340	155	5	20	930	6	18	80	22	14	85	110	13	247
3.7		I	495	445	390	170	5	20	975	6	18	90	25	14	95	125	18	328
5.5		J	560	510	455	215	8	25	1,160	8	22	112	32	18	119	125	27	624
7.5		J	560	510	455	215	8	25	1,200	8	22	112	32	18	119	165	27	630
11		L	620	570	515	245	8	25	1,300	8	22	125	32	18	132	185	38	1,008
15		N	690	640	585	290	8	30	1,420	8	26	140	36	20	148	230	50	1,281
0.75	1/320	E	370	330	275	140	5	16	795	6	14	65	18	11	69	95	6.2	151
1.5		G	440	395	340	155	5	20	930	6	18	80	22	14	85	110	13	224
2.2		H	440	395	340	155	5	20	930	6	18	80	22	14	85	110	13	247
3.7		I	495	445	390	170	5	20	975	6	18	90	25	14	95	125	18	328
5.5		J	560	510	455	215	8	25	1,160	8	22	112	32	18	119	165	27	624
7.5		L	620	570	515	245	8	25	1,260	8	22	125	32	18	132	185	38	945
11		N	690	640	585	290	8	30	1,380	8	26	140	36	20	148	230	50	1,275
0.75	1/470	F	370	330	275	140	5	16	795	6	14	65	18	11	69	95	6.2	151
1.5		H	440	395	340	155	5	20	930	6	18	80	22	14	85	110	13	226
2.2		I	495	445	390	170	5	20	1,010	6	18	90	25	14	95	125	18	325
3.7		J	560	510	455	215	8	25	1,110	8	22	112	32	18	119	165	27	592
5.5		L	620	570	515	245	8	25	1,220	8	22	125	32	18	132	185	38	940
7.5		N	690	640	585	290	8	30	1,320	8	26	140	36	20	148	230	50	1,213
0.4	1/600	E	370	330	275	140	5	16	795	6	14	65	18	11	69	95	6.2	144
0.75		G	440	395	340	155	5	20	870	6	18	80	22	14	85	110	13	218
1.5		I	495	445	390	170	5	20	1,000	6	18	90	25	14	95	125	18	300
2.2		J	560	510	455	215	8	25	1,165	8	22	112	32	18	119	165	27	589
3.7		J	560	510	455	215	8	25	1,110	8	22	112	32	18	119	165	27	594
5.5		N	690	640	585	290	8	30	1,280	8	26	140	36	20	148	230	50	1,207

PH 외형도 및 외형치수



단위 : mm

kW	Ratio	축기호	C	D	E	F	G	H	J	L	M	N	P	R	Z	고속축					저속축					오일량 (L)	중량 (kg)
																S	W	T	V	Q	S	W	T	V	Q		
3.7		E	180	280	135	240	25	375	70	615	330	300	172	142	22	25	8	7	28	40	65	18	11	69	95	3	100
5.5		E	180	280	135	240	25	375	70	630	330	300	172	142	22	30	8	7	33	45	65	18	11	69	95	3	105
7.5	1/40	F	180	280	135	240	25	375	70	630	330	300	172	142	22	30	8	7	33	45	65	18	11	69	95	3	107
11		G	205	340	160	320	30	450	75	705	380	380	178	148	22	35	10	8	38	55	80	22	14	85	110	4	173
15		I	240	390	190	360	35	520	100	765	450	430	195	160	26	35	10	8	38	55	90	25	14	95	125	6.5	234
3.7		E	180	280	135	240	25	375	70	615	330	300	172	142	22	25	8	7	28	40	65	18	11	69	95	3	104
5.5		F	180	280	135	240	25	375	70	630	330	300	172	142	22	30	8	7	33	45	65	18	11	69	95	3	108
7.5	1/60	G	205	340	160	320	30	450	75	685	380	380	178	148	22	30	8	7	33	45	80	22	14	85	110	4	166
11		I	240	390	190	360	35	520	100	760	450	430	195	160	26	35	10	8	38	55	90	25	14	95	125	6.5	230
15		I	240	390	190	360	35	520	100	765	450	430	195	160	26	35	10	8	38	55	90	25	14	95	125	6.5	237
3.7		F	180	280	135	240	25	375	70	615	330	300	172	142	22	20	6	6	22.5	35	65	18	11	69	95	3	107
5.5		G	205	340	160	320	30	450	75	675	380	380	178	148	22	25	8	7	28	40	80	22	14	85	110	4	164
7.5	1/80	H	205	340	160	320	30	450	75	675	380	380	178	148	22	25	8	7	28	40	80	22	14	85	110	4	170
11		I	240	390	190	360	35	520	100	745	450	430	195	160	26	30	8	7	33	45	90	25	14	95	125	6.5	232
15		J	270	440	215	400	40	575	115	875	510	480	271	231	33	30	8	7	33	45	112	32	18	119	165	10	465

K Series

중실축형

중공축형

중실축 FLANGE

중공축 FLANGE

K시리즈 특징

1. 고성능 강력한 프레임

기어 치형의 최적 설계 및 구조물의 구조해석과 시험평가로 강력한 프레임에 의해 저소음, 고효율 품질을 실현하였습니다.

2. 확실한 Seal 구조

오일의 누유를 최소화하기 위하여 고품질의 Seal 장치를 사용하였습니다.

3. 설치 Application의 다양화

중실, 중공, 토크암, 플랜지타입 등 다양한 설치방법을 지원하며, 어떠한 방향으로도 설치가 가능합니다.
또한, 전동기를 자유롭게 장착 및 분해할 수 있는 구조로 설계되었습니다.

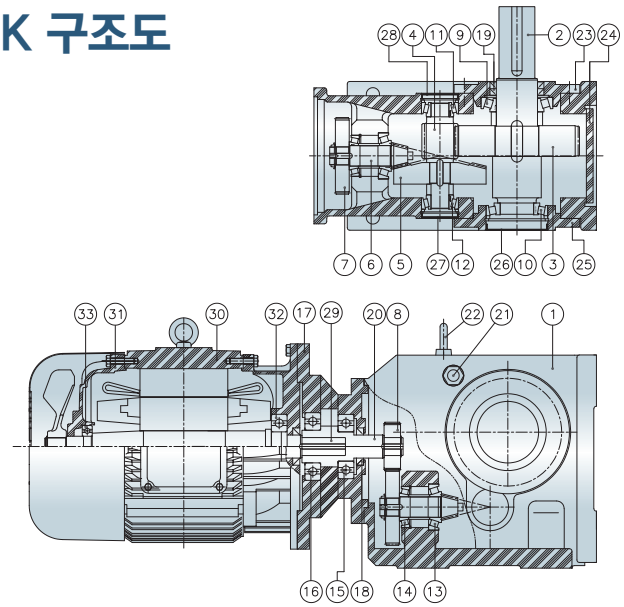
4. 부드러운 운전과 낮은 소음 구현

Bevel 기어에 연마를 기본공정으로 적용함으로써, 동급 제품대비 저소음 및 저진동 운전이 가능하도록 구현하였습니다.

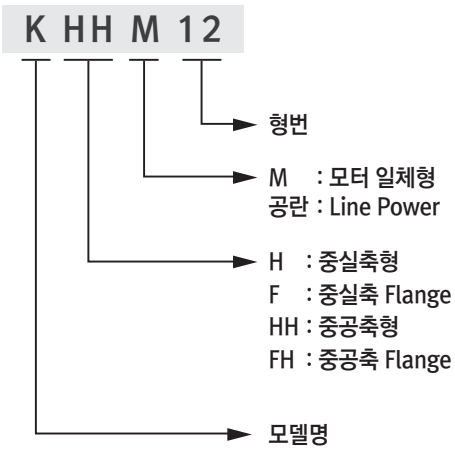
5. 최적화 설계

다양한 설계 프로그램을 활용한 최적화 설계로 축단하중이 고려된 출력 베어링의 사용과 베어링 자체 수명을 증대하였습니다.

K 구조도



형식표시

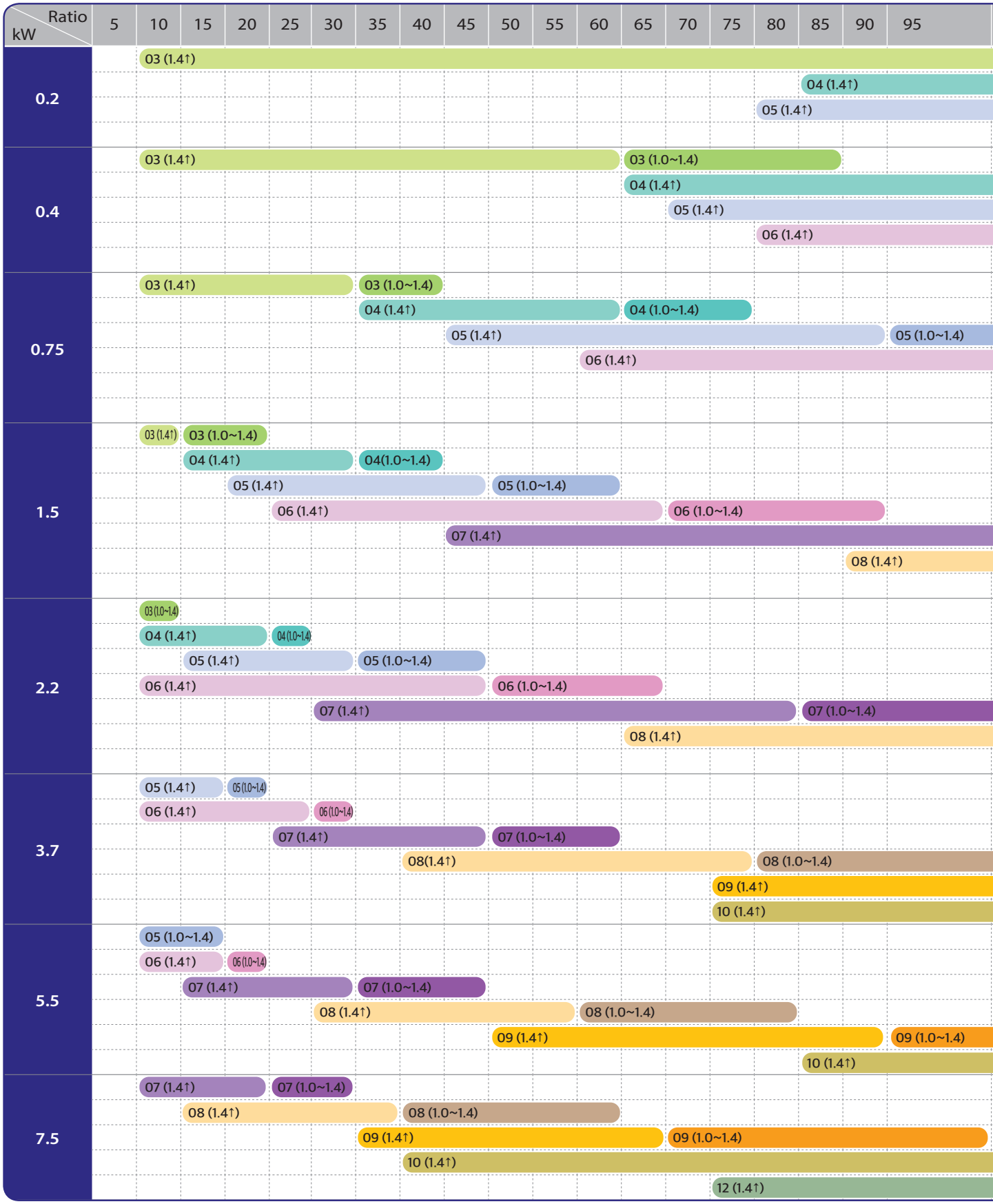


NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	10	BEARING	19	OIL SEAL	28	SEALING CAP
2	OUTPUT SHAFT	11	BEARING	20	INPUT SHAFT	29	MOTOR SHAFT
3	3'RD GEAR	12	BEARING	21	AIR VENT	30	FRAME
4	3'RD PINION	13	BEARING	22	EYE BOLT	31	MOTOR BRACKET NDE
5	BEVEL GEAR	14	BEARING	23	COVER	32	BEARING
6	BEVEL PINION	15	BEARING	24	COVER CASING	33	BEARING
7	1'ST GEAR	16	BEARING	25	COVER		
8	1'ST PINION	17	IEC FLANGE	26	SEALING CAP		
9	BEARING	18	OIL SEAL	27	SEALING CAP		

취부 방식별 오일량

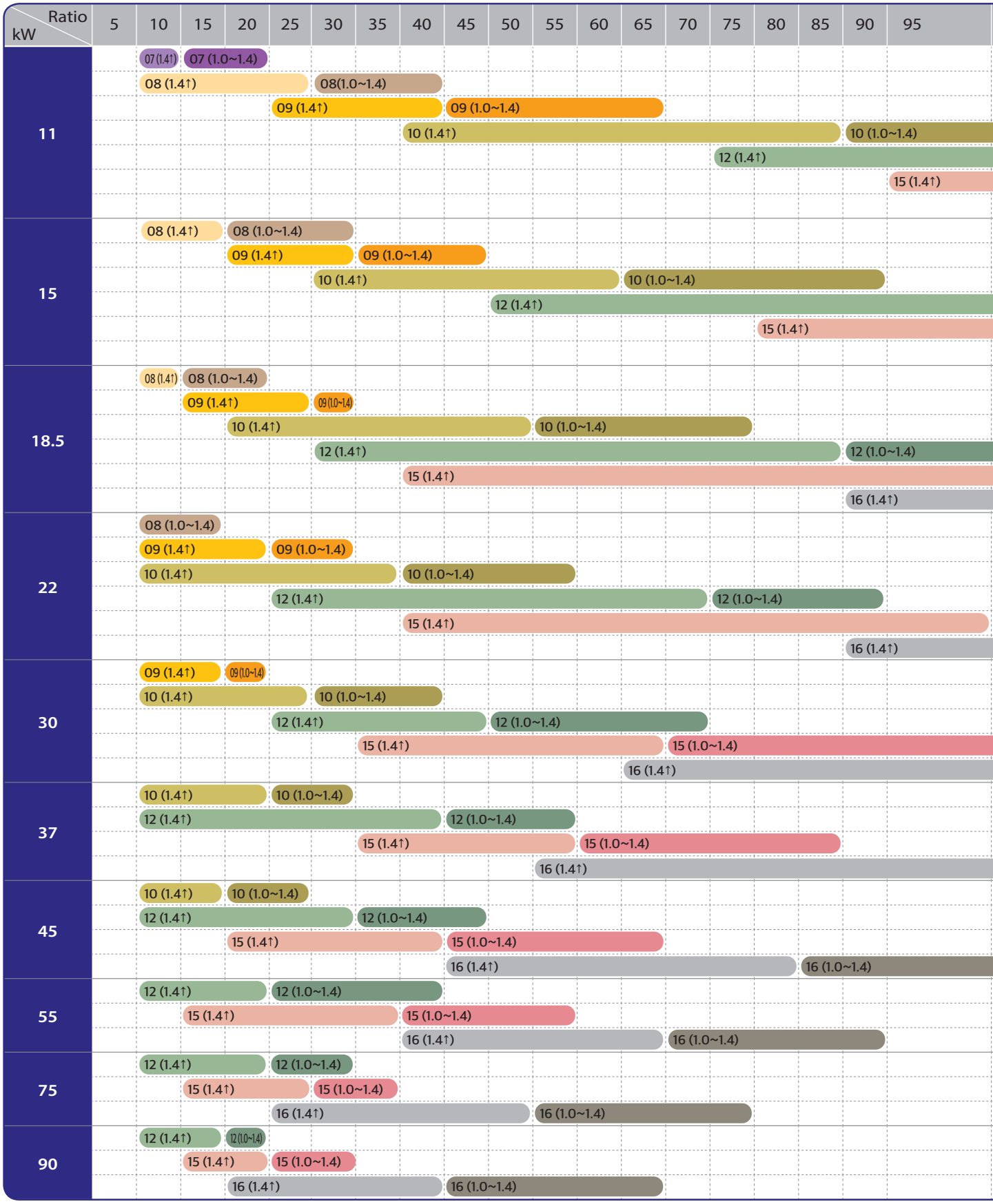
Type	Fr.	Oil Quantity (L)					
		B3	V6	B8	V5	B7	B6
KHHM KHM	03	0.5	1	1	1.3	1	1
	04	0.8	1.3	1.5	2	1.6	1.6
	05	1.2	2.3	2.5	3	2.6	2.4
	06	1.1	2.4	2.6	3.4	2.6	2.6
	07	2.2	4.1	4.4	5.9	4.2	4.4
	08	3.7	8	8.7	10.9	7.8	8
	09	7	14	15.7	20	15.7	15.5
	10	10	21	25.5	33.5	24	24
	12	21	41.5	44	54	40	41
	15	31	62	65	90	58	62
	16	33	95	105	123	85	84
KFHM	03	0.5	1	1	1.4	1	1
	04	0.8	1.3	1.6	2.1	1.6	1.6
	05	1.3	2.3	2.7	3	2.9	2.7
	06	1.1	2.4	2.7	3.6	2.6	2.6
	07	2.1	4.1	4.6	6	4.4	4.4
	08	3.7	8.2	8.8	11.1	8	8
	09	7	14.7	15.7	20	15.7	15.7
	10	10	20.5	24	32	24	24
	12	21	41.5	43	52	40	40
	15	31	66	67	87	62	62
KFM	03	0.5	1.1	1.1	1.5	1	1
	04	0.8	1.3	1.7	2.2	1.6	1.6
	05	1.3	2.3	2.7	3	2.9	2.7
	06	1.1	2.4	2.8	3.6	2.7	2.7
	07	2.1	4.1	4.4	6	4.5	4.5
	08	3.7	8.2	9	11.9	8.4	8.4
	09	7	14.7	17.3	21.5	15.7	16.5
	10	10	22	26	35	25	25
	12	21	41.5	46	55	41	41
	15	31	66	69	92	62	62

형번 선정표 I


Ratio
kW
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
0.2
03 (1.4↑)
04 (1.4↑)
05 (1.4↑)
0.4
03 (1.4↑)
03 (1.0~1.4)
04 (1.4↑)
05 (1.4↑)
06 (1.4↑)
0.75
03 (1.4↑)
03 (1.0~1.4)
04 (1.4↑)
04 (1.0~1.4)
05 (1.4↑)
05 (1.0~1.4)
06 (1.4↑)
1.5
03 (1.4↑)
03 (1.0~1.4)
04 (1.4↑)
04(1.0~1.4)
05 (1.4↑)
05 (1.0~1.4)
06 (1.4↑)
06 (1.0~1.4)
07 (1.4↑)
08 (1.4↑)
2.2
03 (1.0~1.4)
04 (1.4↑)
04 (1.0~1.4)
05 (1.4↑)
05 (1.0~1.4)
06 (1.4↑)
06 (1.0~1.4)
07 (1.4↑)
07 (1.0~1.4)
08 (1.4↑)
3.7
05 (1.4↑)
05 (1.0~1.4)
06 (1.4↑)
06 (1.0~1.4)
07 (1.4↑)
07 (1.0~1.4)
08(1.4↑)
08 (1.0~1.4)
09 (1.4↑)
10 (1.4↑)
5.5
05 (1.0~1.4)
06 (1.4↑)
06 (1.0~1.4)
07 (1.4↑)
07 (1.0~1.4)
08 (1.4↑)
08 (1.0~1.4)
09 (1.4↑)
09 (1.0~1.4)
10 (1.4↑)
7.5
07 (1.4↑)
07 (1.0~1.4)
08 (1.4↑)
08 (1.0~1.4)
09 (1.4↑)
09 (1.0~1.4)
10 (1.4↑)
12 (1.4↑)

주[1]. 동력별 전동기 정격 회전수 기준 / 주[2]. ( )안의 값은 Service Factor값임.

형번 선정표 Ⅱ


Ratio
kW
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
11
07 (1.4↑)
07 (1.0~1.4)
08 (1.4↑)
08(1.0~1.4)
09 (1.4↑)
09 (1.0~1.4)
10 (1.4↑)
10 (1.0~1.4)
12 (1.4↑)
15 (1.4↑)
15
08 (1.4↑)
08 (1.0~1.4)
09 (1.4↑)
09 (1.0~1.4)
10 (1.4↑)
10 (1.0~1.4)
12 (1.4↑)
15 (1.4↑)
18.5
08 (1.4↑)
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09 (1.4↑)
09 (1.0~1.4)
10 (1.4↑)
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12 (1.4↑)
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15 (1.4↑)
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22
08 (1.0~1.4)
09 (1.4↑)
09 (1.0~1.4)
10 (1.4↑)
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12 (1.4↑)
12 (1.0~1.4)
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10 (1.4↑)
10 (1.0~1.4)
12 (1.4↑)
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15 (1.4↑)
15 (1.0~1.4)
16 (1.4↑)
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10 (1.4↑)
10 (1.0~1.4)
12 (1.4↑)
12 (1.0~1.4)
15 (1.4↑)
15 (1.0~1.4)
16 (1.4↑)
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10 (1.4↑)
10 (1.0~1.4)
12 (1.4↑)
12 (1.0~1.4)
15 (1.4↑)
15 (1.0~1.4)
16 (1.4↑)
16 (1.0~1.4)
55
12 (1.4↑)
12 (1.0~1.4)
15 (1.4↑)
15 (1.0~1.4)
16 (1.4↑)
16 (1.0~1.4)
75
12 (1.4↑)
12 (1.0~1.4)
15 (1.4↑)
15 (1.0~1.4)
16 (1.4↑)
16 (1.0~1.4)
90
12 (1.4↑)
12 (1.0~1.4)
15 (1.4↑)
15 (1.0~1.4)
16 (1.4↑)
16 (1.0~1.4)

주[1]. 동력별 전동기 정격 회전수 기준 / 주[2]. ( )안의 값은 Service Factor값임.

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
0.2	106.38	1,650	15.6	116	11.8	5.4	550.5	1.42	03	30
	97.81	1,650	16.9	107	10.9	5.6	570.8	1.56		
	83.69	1,650	19.8	91	9.3	5.8	591.2	1.85		
	72.54	1,650	22.8	79	8.1	5.9	601.4	2.13		
	67.80	1,650	24.4	74	7.5	5.9	601.4	2.28		
	58.60	1,650	28.2	64	6.5	5.7	581.0	2.63		
	49.79	1,650	33.2	54	5.5	5.5	560.7	3.13		
	44.46	1,650	37.2	48	4.9	5.4	550.5	3.56		
	37.97	1,650	43.5	41	4.2	5.2	530.1	4.13		
	35.57	1,650	46.4	39	4.0	5.1	519.9	4.41		
	29.96	1,650	55.1	33	3.3	4.8	489.3	5.13		
	28.83	1,650	57.3	31	3.2	4.8	489.3	5.41		
	24.99	1,650	66.1	27	2.8	4.6	468.9	6.27		
	23.36	1,650	70.7	25	2.6	4.5	458.7	6.55		
	20.19	1,650	81.8	22	2.2	4.4	448.5	7.12		
	17.15	1,650	96.3	19	1.9	4.2	428.1	8.12		
	15.31	1,650	107.8	17	1.7	4.0	407.7	8.83		
	13.08	1,650	126.2	14	1.5	3.8	387.4	9.83		
	12.14	1,650	136.0	13	1.3	3.7	377.2	10.26		
	10.49	1,650	157.3	11	1.2	3.6	367.0	11.82		
	8.91	1,650	185.2	10	1.0	3.4	346.6	13.96		
	7.96	1,650	207.3	9	0.9	3.3	336.4	15.67		
	6.80	1,650	242.7	7	0.8	3.1	316.0	17.10		
	6.37	1,650	259.1	7	0.7	3.1	316.0	17.10		
0.2	131.87	1,650	12.6	144	14.7	7.1	723.8	2.35	04	38
	121.48	1,650	13.6	132	13.5	7.3	744.1	2.56		
	104.37	1,650	15.9	114	11.6	7.4	754.3	2.99		
	90.86	1,650	18.2	99	10.1	7.5	764.5	3.42		
	85.12	1,650	19.4	93	9.5	7.6	774.7	3.70		
0.2	145.14	1,650	11.4	158	16.1	8.9	907.2	3.13	05	39
	123.85	1,650	13.4	135	13.8	9.1	927.6	3.70		
	108.29	1,650	15.3	118	12.0	9.2	937.8	4.27		
	102.88	1,650	16.1	112	11.4	9.2	937.8	4.56		
	90.26	1,650	18.3	98	10.0	9.3	948.0	5.13		
	76.56	1,650	21.6	83	8.5	9.3	948.0	6.12		
0.2	144.79	1,650	11.4	158	16.1	12.0	1,223.2	4.41	06	45
	123.54	1,650	13.4	135	13.7	12.0	1,223.2	5.13		
	108.03	1,650	15.3	118	12.0	12.0	1,223.2	5.84		
	102.62	1,650	16.1	112	11.4	12.0	1,223.2	6.12		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
0.4	97.81	1,680	17.2	210	21.3	2.4	244.6	0.91	03	30
	83.69	1,680	20.1	179	18.3	5.2	530.1	1.08		
	72.54	1,680	23.2	155	15.8	5.4	550.5	1.25		
	67.80	1,680	24.8	145	14.8	5.3	540.3	1.31		
	58.60	1,680	28.7	126	12.8	5.2	530.1	1.53		
	49.79	1,680	33.8	107	10.9	5.1	519.9	1.76		
	44.46	1,680	37.8	95	9.7	5.0	509.7	1.99		
	37.97	1,680	44.3	81	8.3	4.8	489.3	2.39		
	35.57	1,680	47.3	76	7.8	4.7	479.1	2.50		
	29.96	1,680	56.1	64	6.5	4.6	468.9	2.96		
	28.83	1,680	58.3	62	6.3	4.5	458.7	3.07		
	24.99	1,680	67.3	54	5.5	4.4	448.5	3.53		
	23.36	1,680	72.0	50	5.1	4.3	438.3	3.76		
	20.19	1,680	83.3	43	4.4	4.1	417.9	4.10		
	17.15	1,680	98.0	37	3.7	4.0	407.7	4.67		
	15.31	1,680	109.8	33	3.3	3.8	387.4	5.13		
	13.08	1,680	128.5	28	2.9	3.7	377.2	5.58		
	12.14	1,680	138.4	26	2.6	3.6	367.0	5.81		
	10.49	1,680	160.2	22	2.3	3.4	346.6	6.72		
	8.91	1,680	188.6	19	1.9	3.3	336.4	7.98		
	7.96	1,680	211.1	17	1.7	3.2	326.2	8.66		
	6.80	1,680	247.1	15	1.5	3.0	305.8	9.80		
	6.37	1,680	263.8	14	1.4	3.0	305.8	10.14		
	5.36	1,680	313.5	11	1.2	2.8	285.4	11.40		
0.4	131.87	1,680	12.8	282	28.8	6.4	652.4	1.36	04	38
	121.48	1,680	13.9	260	26.5	6.6	672.8	1.48		
	104.37	1,680	16.1	224	22.8	7.0	713.6	1.71		
	90.86	1,680	18.5	195	19.8	7.2	733.9	1.93		
	85.12	1,680	19.8	182	18.6	7.3	744.1	2.10		
	75.20	1,680	22.4	161	16.4	7.4	754.3	2.39		
	69.84	1,680	24.1	150	15.2	7.5	764.5	2.50		
	63.30	1,680	26.6	136	13.8	7.6	774.7	2.85		
0.4	145.14	1,680	11.6	311	31.7	8.6	876.7	1.82	05	39
	123.85	1,680	13.6	265	27.0	8.8	897.0	2.16		
	108.29	1,680	15.6	232	23.6	8.9	907.2	2.50		
	102.88	1,680	16.4	220	22.5	8.9	907.2	2.62		
	90.26	1,680	18.7	193	19.7	9.1	927.6	2.96		
	76.56	1,680	22.0	164	16.7	9.2	937.8	3.53		
	69.12	1,680	24.4	148	15.1	9.2	937.8	3.87		
0.4	144.79	1,680	11.7	310	31.6	12.0	1,223.2	2.50	06	45
	123.54	1,680	13.6	265	27.0	12.0	1,223.2	2.96		
	108.03	1,680	15.6	231	23.6	12.0	1,223.2	3.42		
	90.04	1,680	18.7	193	19.7	12.0	1,223.2	4.10		
	76.37	1,680	22.0	164	16.7	12.0	1,223.2	4.78		
0.4	192.18	1,680	8.8	412	41.9	19.0	1,936.8	3.42	07	71
	179.37	1,680	9.4	384	39.2	19.0	1,936.8	3.64		
	154.02	1,680	11.0	330	33.6	19.0	1,936.8	4.44		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
0.75	44.46	1,735	39.1	173	17.6	4.0	407.7	0.96	03	54
	37.97	1,735	45.7	148	15.0	3.9	397.6	1.14		
	35.57	1,735	48.8	138	14.1	3.9	397.6	1.25		
	29.96	1,735	58.0	117	11.9	3.9	397.6	1.48		
	28.83	1,735	60.2	112	11.4	3.9	397.6	1.53		
	24.99	1,735	69.5	97	9.9	3.8	387.4	1.76		
	23.36	1,735	74.3	91	9.3	3.8	387.4	1.82		
	20.19	1,735	86.0	79	8.0	3.7	377.2	1.99		
	17.15	1,735	101.2	67	6.8	3.6	367.0	2.28		
	15.31	1,735	113.4	60	6.1	3.5	356.8	2.50		
	13.08	1,735	132.7	51	5.2	3.4	346.6	2.73		
	12.14	1,735	143.0	47	4.8	3.3	336.4	2.85		
	10.49	1,735	165.4	41	4.2	3.2	326.2	3.30		
	8.91	1,735	194.8	35	3.5	3.1	316.0	3.99		
	7.96	1,735	218.0	31	3.2	3.0	305.8	4.33		
	6.80	1,735	255.2	26	2.7	2.9	295.6	4.78		
	6.37	1,735	272.4	25	2.5	2.8	285.4	5.01		
	5.36	1,735	323.7	21	2.1	2.7	275.2	5.70		
0.75	75.20	1,735	23.1	292	29.8	5.8	591.2	1.14	04	62
	69.84	1,735	24.9	272	27.7	6.1	621.8	1.25		
	63.30	1,735	27.5	246	25.1	6.5	662.6	1.36		
	56.83	1,735	30.6	221	22.5	6.8	693.2	1.53		
	48.95	1,735	35.5	190	19.4	7.1	723.8	1.76		
	46.03	1,735	37.7	179	18.2	7.2	733.9	1.88		
	39.61	1,735	43.9	154	15.7	7.4	754.3	2.22		
	35.39	1,735	49.1	138	14.0	7.4	754.3	2.50		
	31.30	1,735	55.5	122	12.4	7.2	733.9	2.85		
0.75	123.85	1,735	14.1	482	49.1	6.8	693.2	1.08	05	63
	108.29	1,735	16.1	421	42.9	7.5	764.5	1.19		
	102.88	1,735	16.9	400	40.8	7.8	795.1	1.25		
	90.26	1,735	19.3	351	35.8	8.1	825.7	1.48		
	76.56	1,735	22.7	298	30.3	8.4	856.3	1.71		
	69.12	1,735	25.2	269	27.4	8.6	876.7	1.88		
	60.81	1,735	28.6	236	24.1	8.8	897.0	2.16		
	57.42	1,735	30.3	223	22.8	8.8	897.0	2.28		
	48.89	1,735	35.5	190	19.4	9.0	917.4	2.73		
	44.43	1,735	39.1	173	17.6	9.1	927.6	2.96		
0.75	123.54	1,735	14.1	480	49.0	11.0	1,121.3	1.48	06	69
	108.03	1,735	16.1	420	42.8	11.0	1,121.3	1.65		
	90.04	1,735	19.3	350	35.7	12.0	1,223.2	1.99		
	76.37	1,735	22.8	297	30.3	12.0	1,223.2	2.39		
	68.95	1,735	25.2	268	27.3	12.0	1,223.2	2.62		
	60.66	1,735	28.7	236	24.0	12.0	1,223.2	2.96		
	57.28	1,735	30.3	223	22.7	12.0	1,223.2	3.19		
0.75	154.07	1,735	11.3	599	61.1	18.0	1,834.9	2.22	07	95
	135.28	1,735	12.9	526	53.6	18.0	1,834.9	2.50		
	128.52	1,735	13.5	500	50.9	18.0	1,834.9	2.62		
	113.56	1,735	15.3	442	45.0	19.0	1,936.8	2.96		
	97.05	1,735	17.9	377	38.5	19.0	1,936.8	3.53		
0.75	197.37	1,735	8.8	768	78.2	27.0	2,752.3	2.96	08	133
	174.19	1,735	10.0	677	69.0	27.0	2,752.3	3.42		
	164.34	1,735	10.6	639	65.1	27.0	2,752.3	3.64		
	147.33	1,735	11.8	573	58.4	27.0	2,752.3	3.99		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
1.5	23.36	1,750	75.0	180	18.4	2.7	275.2	0.91	03	56
	20.19	1,750	86.7	156	15.9	2.8	285.4	1.02		
	17.15	1,750	102.1	132	13.5	2.8	285.4	1.19		
	15.31	1,750	114.4	118	12.0	2.8	285.4	1.25		
	13.08	1,750	133.8	101	10.3	2.8	285.4	1.42		
	12.14	1,750	144.2	94	9.5	2.8	285.4	1.48		
	10.49	1,750	166.9	81	8.2	2.7	275.2	1.71		
	8.91	1,750	196.5	69	7.0	2.7	275.2	1.99		
	7.96	1,750	219.9	61	6.3	2.6	265.0	2.16		
	6.80	1,750	257.4	52	5.3	2.6	265.0	2.50		
	6.37	1,750	274.8	49	5.0	2.5	254.8	2.50		
	5.36	1,750	326.5	41	4.2	2.5	254.8	2.96		
1.5	39.61	1,750	44.2	305	31.1	5.6	570.8	1.14	04	64
	35.39	1,750	49.5	273	27.8	6.0	611.6	1.25		
	31.30	1,750	56.0	241	24.6	6.0	611.6	1.42		
	29.32	1,750	59.7	226	23.0	6.0	611.6	1.53		
	25.91	1,750	67.6	200	20.4	5.9	601.4	1.71		
	21.81	1,750	80.3	168	17.1	5.7	581.0	2.05		
	19.58	1,750	89.4	151	15.4	5.7	581.0	2.28		
	16.86	1,750	103.8	130	13.2	5.5	560.7	2.50		
	15.86	1,750	110.4	122	12.5	5.4	550.5	2.73		
	13.65	1,750	128.3	105	10.7	5.3	540.3	2.96		
	12.19	1,750	143.6	94	9.6	5.2	530.1	3.19		
	11.77	1,750	148.7	91	9.2	5.1	519.9	2.62		
1.5	60.81	1,750	28.8	469	47.8	7.1	723.8	1.08	05	65
	57.42	1,750	30.5	443	45.1	7.4	754.3	1.19		
	48.89	1,750	35.8	377	38.4	8.0	815.5	1.36		
	44.43	1,750	39.4	343	34.9	8.2	835.9	1.53		
	38.49	1,750	45.5	297	30.2	8.5	866.5	1.76		
	35.70	1,750	49.1	275	28.1	8.6	876.7	1.88		
	30.28	1,750	57.8	234	23.8	8.7	886.9	2.22		
	27.34	1,750	64.1	211	21.5	8.6	876.7	2.50		
	24.05	1,750	72.8	185	18.9	8.3	846.1	2.85		
	22.71	1,750	77.1	175	17.8	8.2	835.9	2.96		
	19.34	1,750	90.5	149	15.2	7.9	805.3	3.30		
1.5	90.04	1,750	19.5	694	70.7	8.9	907.2	1.02	06	71
	76.37	1,750	23.0	589	60.0	10.0	1,019.4	1.19		
	68.95	1,750	25.4	532	54.2	11.0	1,121.3	1.31		
	60.66	1,750	28.9	468	47.7	11.0	1,121.3	1.53		
	57.28	1,750	30.6	442	45.0	11.0	1,121.3	1.59		
	48.77	1,750	35.9	376	38.3	12.0	1,223.2	1.88		
	44.32	1,750	39.5	342	34.8	12.0	1,223.2	2.05		
	38.39	1,750	45.6	296	30.2	12.0	1,223.2	2.28		
	35.62	1,750	49.2	275	28.0	12.0	1,223.2	2.62		
	30.22	1,750	58.0	233	23.7	12.0	1,223.2	3.07		
	27.28	1,750	64.2	210	21.4	12.0	1,223.2	3.42		
	24.00	1,750	73.0	185	18.9	12.0	1,223.2	3.76		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
1.5	135.28	1,750	13.0	1,043	106.3	16.0	1,631.0	1.31	07	97
	128.57	1,750	13.7	991	101.0	16.0	1,631.0	1.36		
	113.56	1,750	15.5	876	89.2	17.0	1,732.9	1.53		
	97.05	1,750	18.1	748	76.3	17.0	1,732.9	1.76		
	88.97	1,750	19.7	686	69.9	18.0	1,834.9	1.93		
	78.07	1,750	22.5	602	61.3	18.0	1,834.9	2.22		
	73.99	1,750	23.7	571	58.1	18.0	1,834.9	2.39		
	64.75	1,750	27.1	499	50.9	18.0	1,834.9	2.73		
	58.34	1,750	30.0	450	45.8	19.0	1,936.8	2.96		
	51.18	1,750	34.2	395	40.2	19.0	1,936.8	3.42		
	45.16	1,750	38.8	348	35.5	19.0	1,936.8	3.87		
	40.04	1,750	43.8	309	31.5	19.0	1,936.8	4.33		
1.5	174.19	1,750	10.1	1,343	136.9	27.0	2,752.3	1.76	08	135
	164.34	1,750	10.7	1,267	129.1	27.0	2,752.3	1.82		
	147.32	1,750	11.9	1,136	115.8	27.0	2,752.3	2.05		
	126.91	1,750	13.8	979	99.7	27.0	2,752.3	2.39		
	115.82	1,750	15.2	893	91.0	27.0	2,752.3	2.62		
	102.71	1,750	17.1	792	80.7	27.0	2,752.3	2.96		
	86.34	1,750	20.3	666	67.8	27.0	2,752.3	3.53		
1.5	176.05	1,750	10.0	1,358	138.3	38.0	3,873.6	2.73	09	202
	153.21	1,750	11.5	1,181	120.4	38.0	3,873.6	3.19		
	140.28	1,750	12.5	1,082	110.2	38.0	3,873.6	3.42		
	123.93	1,750	14.2	956	97.4	38.0	3,873.6	3.87		
2.2	13.08	1,765	135.0	147	14.9	2.3	234.5	0.96	03	73
	10.49	1,765	168.3	118	12.0	2.3	234.5	1.14		
	8.91	1,765	198.1	100	10.2	2.3	234.5	1.36		
	7.96	1,765	221.8	89	9.1	2.3	234.5	1.48		
	6.80	1,765	259.6	76	7.8	2.3	234.5	1.71		
	6.37	1,765	277.1	71	7.3	2.3	234.5	1.76		
	5.36	1,765	329.3	60	6.1	2.2	224.3	1.99		
2.2	25.91	1,765	68.2	291	29.6	5.0	509.7	1.19	04	81
	21.81	1,765	81.0	245	24.9	5.0	509.7	1.42		
	19.58	1,765	90.2	220	22.4	5.0	509.7	1.53		
	16.86	1,765	104.7	189	19.3	4.9	499.5	1.71		
	15.86	1,765	111.3	178	18.1	4.9	499.5	1.82		
	13.65	1,765	129.4	153	15.6	4.8	489.3	1.99		
	12.19	1,765	144.8	137	13.9	4.7	479.1	2.22		
	11.77	1,765	150.0	132	13.4	4.6	468.9	1.82		
	10.56	1,765	167.2	118	12.1	4.6	468.9	2.05		
	9.10	1,765	194.0	102	10.4	4.5	458.7	2.39		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
2.2	44.43	1,765	39.8	498	50.8	4.8	489.3	1.02	05	82
	38.49	1,765	45.9	432	44.0	7.5	764.5	1.19		
	35.70	1,765	49.5	400	40.8	7.8	795.1	1.31		
	30.28	1,765	58.3	340	34.6	7.8	795.1	1.53		
	27.34	1,765	64.6	307	31.2	7.8	795.1	1.65		
	24.05	1,765	73.4	270	27.5	7.6	774.7	1.88		
	22.71	1,765	77.8	255	25.9	7.6	774.7	1.99		
	19.34	1,765	91.3	217	22.1	7.4	754.3	2.28		
	17.57	1,765	100.5	197	20.1	7.2	733.9	2.39		
	15.22	1,765	116.0	171	17.4	7.1	723.8	2.73		
	13.25	1,765	133.3	149	15.1	6.9	703.4	2.96		
	11.92	1,765	148.1	134	13.6	6.5	662.6	2.62		
	11.26	1,765	156.8	126	12.9	6.5	662.6	2.85		
2.2	60.66	1,765	29.1	680	69.3	9.0	917.4	1.02	06	88
	57.28	1,765	30.9	642	65.5	10.0	1,019.4	1.08		
	48.77	1,765	36.2	547	55.7	11.0	1,121.3	1.31		
	44.32	1,765	39.9	497	50.6	11.0	1,121.3	1.42		
	38.39	1,765	46.0	431	43.9	11.0	1,121.3	1.59		
	35.62	1,765	49.6	399	40.7	12.0	1,223.2	1.76		
	30.22	1,765	58.5	339	34.5	12.0	1,223.2	2.05		
	27.28	1,765	64.7	306	31.2	12.0	1,223.2	2.28		
	24.00	1,765	73.6	269	27.4	12.0	1,223.2	2.50		
	22.66	1,765	77.9	254	25.9	12.0	1,223.2	2.62		
	19.30	1,765	91.5	216	22.1	12.0	1,223.2	2.96		
	17.54	1,765	100.7	197	20.0	12.0	1,223.2	3.19		
	15.19	1,765	116.2	170	17.4	12.0	1,223.2	3.53		
	13.22	1,765	133.6	148	15.1	12.0	1,223.2	3.87		
	12.48	1,765	141.5	140	14.3	12.0	1,223.2	3.19		
	10.63	1,765	166.1	119	12.1	12.0	1,223.2	3.64		
	9.66	1,765	182.8	108	11.0	12.0	1,223.2	3.76		
	8.37	1,765	210.9	94	9.6	12.0	1,223.2	3.99		
	7.28	1,765	242.5	82	8.3	12.0	1,223.2	4.44		
2.2	113.56	1,765	15.6	1,273	129.8	14.0	1,427.1	1.02	07	114
	97.05	1,765	18.2	1,088	110.9	15.0	1,529.1	1.19		
	88.97	1,765	19.9	998	101.7	16.0	1,631.0	1.31		
	78.07	1,765	22.7	875	89.2	17.0	1,732.9	1.53		
	73.99	1,765	23.9	830	84.5	17.0	1,732.9	1.59		
	64.75	1,765	27.3	726	74.0	17.0	1,732.9	1.82		
	58.34	1,765	30.3	654	66.7	18.0	1,834.9	2.05		
	51.18	1,765	34.5	574	58.5	18.0	1,834.9	2.28		
	45.16	1,765	39.1	506	51.6	18.0	1,834.9	2.62		
	40.04	1,765	44.1	449	45.8	19.0	1,936.8	2.96		
	35.26	1,765	50.1	395	40.3	19.0	1,936.8	3.42		
	30.89	1,765	57.2	346	35.3	19.0	1,936.8	3.87		
	29.27	1,765	60.4	328	33.4	19.0	1,936.8	4.10		
	25.62	1,765	68.9	287	29.3	19.0	1,936.8	4.67		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
2.2	147.32	1,765	12.0	1,652	168.3	27.0	2,752.3	1.42	08	152
	126.91	1,765	14.0	1,423	145.0	27.0	2,752.3	1.65		
	115.82	1,765	15.3	1,299	132.3	27.0	2,752.3	1.76		
	102.71	1,765	17.2	1,152	117.4	27.0	2,752.3	1.99		
	86.34	1,765	20.5	968	98.7	27.0	2,752.3	2.39		
	79.34	1,765	22.3	890	90.7	27.0	2,752.3	2.62		
	70.46	1,765	25.1	790	80.5	27.0	2,752.3	2.96		
	63.00	1,765	28.1	706	72.0	27.0	2,752.3	3.30		
2.2	176.05	1,765	10.1	1,974	201.2	38.0	3,873.6	1.88	09	219
	153.21	1,765	11.6	1,718	175.1	38.0	3,873.6	2.16		
	140.28	1,765	12.6	1,573	160.3	38.0	3,873.6	2.39		
	123.93	1,765	14.3	1,390	141.6	38.0	3,873.6	2.62		
	105.13	1,765	16.8	1,179	120.1	38.0	3,873.6	3.19		
	96.80	1,765	18.3	1,086	110.6	38.0	3,873.6	3.42		
3.7	24.05	1,755	73.0	456	46.5	5.8	591.2	1.08	05	86
	22.71	1,755	77.3	431	43.9	5.9	601.4	1.14		
	19.34	1,755	90.8	367	37.4	5.9	601.4	1.25		
	17.57	1,755	99.9	333	34.0	5.9	601.4	1.31		
	15.22	1,755	115.4	289	29.4	5.9	601.4	1.48		
	13.25	1,755	132.5	251	25.6	5.8	591.2	1.65		
	11.92	1,755	147.3	226	23.0	5.5	560.7	1.48		
	11.26	1,755	155.9	214	21.8	5.5	560.7	1.53		
	9.59	1,755	183.1	182	18.5	5.4	550.5	1.76		
	8.71	1,755	201.5	165	16.8	5.4	550.5	1.88		
	7.55	1,755	232.5	143	14.6	5.3	540.3	2.05		
	6.57	1,755	267.2	125	12.7	5.1	519.9	2.22		
3.7	30.22	1,755	58.1	573	58.4	10.0	1,019.4	1.14	06	92
	27.28	1,755	64.4	517	52.7	10.0	1,019.4	1.25		
	24.00	1,755	73.2	455	46.4	11.0	1,121.3	1.42		
	22.66	1,755	77.5	430	43.8	11.0	1,121.3	1.48		
	19.30	1,755	91.0	366	37.3	12.0	1,223.2	1.65		
	17.54	1,755	100.1	333	33.9	12.0	1,223.2	1.76		
	15.19	1,755	115.6	288	29.4	12.0	1,223.2	1.93		
	13.22	1,755	132.8	251	25.6	12.0	1,223.2	2.16		
	12.48	1,755	140.7	237	24.1	12.0	1,223.2	1.82		
	10.63	1,755	165.1	202	20.5	12.0	1,223.2	1.99		
	9.66	1,755	181.7	183	18.7	12.0	1,223.2	2.10		
	8.37	1,755	209.7	159	16.2	12.0	1,223.2	2.22		
	7.28	1,755	241.1	138	14.1	11.0	1,121.3	2.39		
3.7	64.75	1,755	27.2	1,228	125.1	13.0	1,325.2	1.02	07	118
	58.34	1,755	30.1	1,107	112.8	14.0	1,427.1	1.14		
	51.18	1,755	34.3	971	98.9	16.0	1,631.0	1.31		
	45.16	1,755	38.9	857	87.3	17.0	1,732.9	1.48		
	40.04	1,755	43.9	759	77.4	17.0	1,732.9	1.65		
	38.39	1,755	45.8	728	74.2	17.0	1,732.9	1.65		
	35.20	1,755	49.9	668	68.0	18.0	1,834.9	1.88		
	30.89	1,755	56.9	586	59.7	18.0	1,834.9	2.10		
	29.27	1,755	60.0	555	56.6	18.0	1,834.9	2.22		
	25.62	1,755	68.6	486	49.5	18.0	1,834.9	2.50		
	23.08	1,755	76.1	438	44.6	19.0	1,936.8	2.85		
	20.25	1,755	86.7	384	39.1	19.0	1,936.8	3.19		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
3.7	115.82	1,755	15.2	2,197	223.8	25.0	2,548.4	0.96	08	156
	102.71	1,755	17.1	1,948	198.5	26.0	2,650.4	1.14		
	86.34	1,755	20.4	1,638	166.9	26.0	2,650.4	1.31		
	79.34	1,755	22.2	1,505	153.3	27.0	2,752.3	1.42		
	70.46	1,755	25.0	1,336	136.2	27.0	2,752.3	1.59		
	63.00	1,755	27.9	1,195	121.8	27.0	2,752.3	1.82		
	56.64	1,755	31.0	1,074	109.5	27.0	2,752.3	1.99		
	49.16	1,755	35.7	932	95.0	27.0	2,752.3	2.28		
	44.02	1,755	39.9	835	85.1	27.0	2,752.3	2.50		
	36.52	1,755	48.1	693	70.6	26.0	2,650.4	2.85		
3.7	153.21	1,755	11.5	2,906	296.1	38.0	3,873.6	1.19	09	223
	140.28	1,755	12.6	2,661	271.1	38.0	3,873.6	1.31		
	123.93	1,755	14.2	2,351	239.5	38.0	3,873.6	1.48		
	105.13	1,755	16.7	1,994	203.2	38.0	3,873.6	1.71		
	96.80	1,755	18.2	1,836	187.1	38.0	3,873.6	1.88		
	86.52	1,755	20.3	1,641	167.2	38.0	3,873.6	2.10		
	77.89	1,755	22.6	1,477	150.5	38.0	3,873.6	2.28		
	70.54	1,755	24.9	1,338	136.3	38.0	3,873.6	2.62		
3.7	143.47	1,755	12.3	2,721	277.3	62.0	6,320.1	2.39	10	322
	121.46	1,755	14.5	2,304	234.7	62.0	6,320.1	2.85		
	112.41	1,755	15.7	2,132	217.3	62.0	6,320.1	3.07		
	100.75	1,755	17.5	1,911	194.7	62.0	6,320.1	3.42		
	90.96	1,755	19.3	1,725	175.8	62.0	6,320.1	3.76		
	82.61	1,755	21.3	1,567	159.7	62.0	6,320.1	4.10		
	73.30	1,755	24.0	1,390	141.7	62.0	6,320.1	4.67		
5.5	17.57	1,775	101.1	490	49.9	4.8	489.3	0.96	05	117
	15.22	1,775	116.7	424	43.2	4.9	499.5	1.08		
	13.25	1,775	134.0	369	37.6	5.0	509.7	1.19		
	11.92	1,775	149.0	332	33.9	4.7	479.1	1.08		
	11.26	1,775	157.7	314	32.0	4.7	479.1	1.14		
	9.59	1,775	185.1	267	27.2	4.7	479.1	1.31		
	8.71	1,775	203.8	243	24.7	4.7	479.1	1.36		
	7.55	1,775	235.1	210	21.4	4.7	479.1	1.48		
	6.57	1,775	270.2	183	18.7	4.7	479.1	1.65		
5.5	24.00	1,775	74.0	669	68.2	9.2	937.8	1.02	06	123
	22.66	1,775	78.4	632	64.4	10.0	1,019.4	1.08		
	19.30	1,775	92.0	538	54.8	11.0	1,121.3	1.19		
	17.54	1,775	101.2	489	49.8	11.0	1,121.3	1.31		
	15.19	1,775	116.9	423	43.1	11.0	1,121.3	1.42		
	13.22	1,775	134.3	369	37.6	12.0	1,223.2	1.59		
	12.48	1,775	142.3	348	35.4	12.0	1,223.2	1.31		
	10.63	1,775	167.0	296	30.2	12.0	1,223.2	1.48		
	9.66	1,775	183.8	269	27.4	12.0	1,223.2	1.53		
	8.37	1,775	212.1	233	23.8	11.0	1,121.3	1.65		
	7.28	1,775	243.9	203	20.7	11.0	1,121.3	1.76		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
5.5	45.16	1,775	39.4	1,259	128.3	14.0	1,427.1	1.08	07	148
	40.04	1,775	44.4	1,116	113.7	15.0	1,529.1	1.19		
	30.89	1,775	57.5	861	87.7	17.0	1,732.9	1.53		
	29.27	1,775	60.7	816	83.1	17.0	1,732.9	1.65		
	25.62	1,775	69.3	714	72.8	18.0	1,834.9	1.88		
	23.08	1,775	77.0	643	65.6	18.0	1,834.9	2.10		
	20.25	1,775	87.7	565	57.5	18.0	1,834.9	2.28		
	17.87	1,775	99.4	498	50.8	18.0	1,834.9	2.50		
	15.84	1,775	112.1	442	45.0	18.0	1,834.9	2.73		
	13.52	1,775	131.3	377	38.4	18.0	1,834.9	3.07		
	12.36	1,775	143.7	345	35.1	17.0	1,732.9	2.50		
	10.84	1,775	163.8	302	30.8	17.0	1,732.9	2.85		
5.5	86.34	1,775	20.6	2,407	245.3	25.0	2,548.4	0.96	08	186
	79.34	1,775	22.4	2,212	225.4	26.0	2,650.4	1.08		
	70.46	1,775	25.2	1,964	200.1	26.0	2,650.4	1.19		
	63.00	1,775	28.2	1,756	179.0	26.0	2,650.4	1.31		
	56.64	1,775	31.4	1,579	160.9	26.0	2,650.4	1.48		
	49.16	1,775	36.2	1,370	139.6	26.0	2,650.4	1.71		
	44.02	1,775	40.4	1,227	125.0	25.0	2,548.4	1.82		
	36.52	1,775	48.7	1,018	103.7	25.0	2,548.4	2.10		
	31.39	1,775	56.6	875	89.2	24.0	2,446.5	2.62		
	27.88	1,775	63.7	777	79.2	23.0	2,344.5	2.85		
5.5	123.93	1,775	14.4	3,455	352.0	38.0	3,873.6	1.08	09	254
	105.13	1,775	16.9	2,931	298.6	38.0	3,873.6	1.25		
	96.80	1,775	18.4	2,699	275.0	38.0	3,873.6	1.36		
	86.52	1,775	20.6	2,412	245.8	38.0	3,873.6	1.53		
	77.89	1,775	22.8	2,171	221.2	38.0	3,873.6	1.71		
	70.54	1,775	25.2	1,966	200.4	38.0	3,873.6	1.88		
	62.55	1,775	28.4	1,744	177.7	38.0	3,873.6	2.10		
	56.55	1,775	31.4	1,576	160.6	38.0	3,873.6	2.39		
	47.93	1,775	37.1	1,336	136.1	37.0	3,771.7	2.73		
5.5	143.47	1,775	12.4	4,000	407.5	62.0	6,320.1	2.05	10	353
	121.46	1,775	14.7	3,386	345.0	62.0	6,320.1	2.05		
	112.41	1,775	15.8	3,134	319.3	62.0	6,320.1	2.22		
	100.75	1,775	17.7	2,809	286.2	62.0	6,320.1	2.50		
	90.96	1,775	19.6	2,536	258.4	62.0	6,320.1	2.73		
	82.61	1,775	21.5	2,303	234.7	62.0	6,320.1	2.96		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
7.5	30.89	1,770	57.4	1,178	120.0	15.0	1,529.1	1.14	07	155
	29.27	1,770	60.5	1,116	113.7	15.0	1,529.1	1.19		
	25.62	1,770	69.1	977	99.5	16.0	1,631.0	1.36		
	23.08	1,770	76.7	880	89.7	17.0	1,732.9	1.53		
	20.25	1,770	87.5	772	78.7	17.0	1,732.9	1.71		
	17.87	1,770	99.1	681	69.4	18.0	1,834.9	1.82		
	15.84	1,770	111.8	604	61.5	17.0	1,732.9	1.99		
	13.52	1,770	131.0	515	52.5	17.0	1,732.9	2.28		
	12.36	1,770	143.3	471	48.0	16.0	1,631.0	1.82		
	10.84	1,770	163.3	413	42.1	16.0	1,631.0	2.05		
	9.56	1,770	185.2	364	37.1	15.0	1,529.1	2.22		
	8.48	1,770	208.8	323	32.9	15.0	1,529.1	2.39		
	7.24	1,770	244.5	276	28.1	15.0	1,529.1	2.62		
7.5	63.00	1,770	28.1	2,402	244.7	23.0	2,344.5	0.96	08	193
	56.64	1,770	31.3	2,159	220.0	23.0	2,344.5	1.08		
	49.16	1,770	36.1	1,874	191.0	23.0	2,344.5	1.25		
	44.02	1,770	40.3	1,678	171.0	23.0	2,344.5	1.36		
	36.52	1,770	48.5	1,392	141.9	23.0	2,344.5	1.53		
	31.39	1,770	56.4	1,197	121.9	22.0	2,242.6	1.93		
	27.87	1,770	63.6	1,062	108.3	22.0	2,242.6	2.10		
	24.92	1,770	71.1	950	96.8	22.0	2,242.6	2.28		
	22.41	1,770	79.0	854	87.0	21.0	2,140.7	2.28		
	19.45	1,770	91.1	741	75.6	21.0	2,140.7	2.73		
	17.42	1,770	101.7	664	67.7	20.0	2,038.7	2.85		
	16.00	1,770	110.7	610	62.2	20.0	2,038.7	2.50		
	14.45	1,770	122.5	551	56.1	20.0	2,038.7	3.30		
7.5	96.80	1,770	18.3	3,690	376.0	36.0	3,669.7	1.02	09	261
	86.52	1,770	20.5	3,298	336.1	36.0	3,669.7	1.14		
	77.89	1,770	22.8	2,969	302.6	36.0	3,669.7	1.25		
	70.54	1,770	25.1	2,689	274.0	36.0	3,669.7	1.36		
	62.55	1,770	28.3	2,385	243.0	36.0	3,669.7	1.53		
	56.55	1,770	31.3	2,156	219.7	35.0	3,567.8	1.71		
	47.93	1,770	37.0	1,827	186.2	35.0	3,567.8	2.05		
	41.87	1,770	42.3	1,596	162.6	34.0	3,465.9	2.28		
	38.30	1,770	46.3	1,460	148.8	33.0	3,363.9	2.50		
	34.23	1,770	51.8	1,305	133.0	33.0	3,363.9	2.85		
7.5	143.47	1,770	12.4	5,469	557.3	62.0	6,320.1	1.25	10	360
	121.46	1,770	14.6	4,630	471.8	62.0	6,320.1	1.48		
	112.41	1,770	15.8	4,285	436.6	62.0	6,320.1	1.59		
	100.75	1,770	17.6	3,841	391.4	62.0	6,320.1	1.82		
	90.96	1,770	19.5	3,468	353.3	61.0	6,218.1	1.99		
	82.61	1,770	21.5	3,149	320.9	60.0	6,116.2	2.22		
	73.30	1,770	24.2	2,794	284.7	59.0	6,014.3	2.50		
	66.52	1,770	26.7	2,536	258.4	58.0	5,912.3	2.73		
	57.17	1,770	31.0	2,179	222.1	56.0	5,708.5	3.19		
	49.90	1,770	35.5	1,902	193.8	55.0	5,606.5	3.53		
	42.33	1,770	41.9	1,614	164.4	53.0	5,402.7	3.99		
	37.00	1,770	47.9	1,410	143.7	51.0	5,198.8	4.44		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
7.5	146.07	1,770	12.2	5,568	567.4	78.0	7,951.1	2.05	12	542
	136.14	1,770	13.1	5,190	528.8	78.0	7,951.1	2.16		
	122.48	1,770	14.5	4,669	475.8	78.0	7,951.1	2.39		
	110.18	1,770	16.1	4,200	428.0	78.0	7,951.1	2.73		
	89.89	1,770	19.7	3,427	349.2	78.0	7,951.1	3.30		
	81.98	1,770	21.6	3,125	318.4	78.0	7,951.1	3.64		
	70.95	1,770	25.0	2,705	275.6	78.0	7,951.1	4.21		
11	23.08	1,780	77.2	1,283	130.8	14.0	1,427.1	1.02	07	214
	20.25	1,780	88.0	1,126	114.7	15.0	1,529.1	1.14		
	17.87	1,780	99.7	994	101.2	16.0	1,631.0	1.25		
	15.84	1,780	112.4	881	89.7	16.0	1,631.0	1.36		
	13.52	1,780	131.7	752	76.6	15.0	1,529.1	1.53		
	12.36	1,780	144.1	687	70.0	15.0	1,529.1	1.25		
	10.84	1,780	164.3	603	61.4	15.0	1,529.1	1.42		
	9.56	1,780	186.2	532	54.2	14.0	1,427.1	1.53		
	8.48	1,780	210.0	471	48.0	14.0	1,427.1	1.65		
	7.24	1,780	245.9	403	41.0	14.0	1,427.1	1.76		
11	44.02	1,780	40.5	2,447	249.4	19.0	1,936.8	0.91	08	251
	36.52	1,780	48.8	2,030	206.9	19.0	1,936.8	1.08		
	31.39	1,780	56.8	1,745	177.8	20.0	2,038.7	1.36		
	27.88	1,780	63.9	1,550	157.9	20.0	2,038.7	1.48		
	24.92	1,780	71.5	1,385	141.2	19.0	1,936.8	1.59		
	22.41	1,780	79.5	1,246	127.0	19.0	1,936.8	1.59		
	19.45	1,780	91.6	1,081	110.2	19.0	1,936.8	1.82		
	17.42	1,780	102.2	969	98.7	19.0	1,936.8	1.99		
	16.00	1,780	111.3	890	90.6	18.0	1,834.9	1.76		
	14.45	1,780	123.2	803	81.9	18.0	1,834.9	2.28		
	12.56	1,780	141.8	698	71.2	18.0	1,834.9	2.50		
	11.17	1,780	159.4	621	63.3	17.0	1,732.9	2.10		
	10.00	1,780	178.0	556	56.7	17.0	1,732.9	2.39		
	8.29	1,780	214.8	461	47.0	16.0	1,631.0	2.62		
	7.21	1,780	246.9	401	40.8	16.0	1,631.0	2.85		
11	70.54	1,780	25.3	3,922	399.6	31.0	3,160.0	0.96	09	318
	62.55	1,780	28.5	3,478	354.4	31.0	3,160.0	1.08		
	56.55	1,780	31.5	3,144	320.4	31.0	3,160.0	1.19		
	47.93	1,780	37.2	2,665	271.5	31.0	3,160.0	1.42		
	41.87	1,780	42.6	2,328	237.2	31.0	3,160.0	1.59		
	38.30	1,780	46.5	2,129	217.0	30.0	3,058.1	1.76		
	34.23	1,780	52.1	1,903	193.9	30.0	3,058.1	1.93		
	30.82	1,780	57.8	1,714	174.6	30.0	3,058.1	2.16		
	27.91	1,780	63.8	1,552	158.1	29.0	2,956.2	2.39		
	24.75	1,780	72.0	1,376	140.2	29.0	2,956.2	2.73		
	22.37	1,780	79.6	1,244	126.7	28.0	2,854.2	2.96		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
11	112.41	1,780	15.9	6,250	636.8	55.0	5,606.5	1.14	10	417
	100.75	1,780	17.7	5,601	570.8	55.0	5,606.5	1.25		
	90.96	1,780	19.6	5,057	515.3	55.0	5,606.5	1.36		
	82.61	1,780	21.6	4,593	468.0	55.0	5,606.5	1.53		
	73.30	1,780	24.3	4,075	415.3	54.0	5,504.6	1.71		
	66.52	1,780	26.8	3,698	376.8	53.0	5,402.7	1.88		
	57.17	1,780	31.2	3,179	323.9	52.0	5,300.7	2.16		
	49.90	1,780	35.7	2,774	282.7	51.0	5,198.8	2.50		
	42.33	1,780	42.1	2,353	239.8	50.0	5,096.8	2.73		
	37.00	1,780	48.2	2,057	209.6	49.0	4,994.9	3.07		
11	136.14	1,780	13.1	7,569	771.3	77.0	7,849.1	1.48	12	597
	122.48	1,780	14.6	6,810	693.9	77.0	7,849.1	1.65		
	110.18	1,780	16.2	6,126	624.2	77.0	7,849.1	1.82		
	89.89	1,780	19.9	4,998	509.2	78.0	7,951.1	2.28		
	81.98	1,780	21.8	4,558	464.4	78.0	7,951.1	2.50		
	70.95	1,780	25.1	3,945	401.9	78.0	7,951.1	2.85		
11	150.41	1,780	11.9	8,362	852.1	109.0	11,111.1	1.88	15	850
	122.39	1,780	14.6	6,805	693.4	110.0	11,213.0	2.28		
	100.22	1,780	17.8	5,572	567.8	110.0	11,213.0	2.85		
	91.65	1,780	19.5	5,096	519.2	110.0	11,213.0	3.07		
11	164.50	1,780	10.9	9,146	931.9	135.0	13,761.5	3.07	16	1,274
	134.99	1,780	13.2	7,505	764.7	135.0	13,761.5	3.76		
15	31.39	1,775	56.6	2,387	243.2	16.0	1,631.0	1.02	08	259
	27.88	1,775	63.7	2,120	216.0	17.0	1,732.9	1.08		
	24.92	1,775	71.3	1,895	193.1	17.0	1,732.9	1.14		
	22.41	1,775	79.3	1,704	173.6	17.0	1,732.9	1.19		
	19.45	1,775	91.3	1,479	150.7	17.0	1,732.9	1.36		
	17.42	1,775	101.9	1,324	135.0	17.0	1,732.9	1.48		
	16.00	1,775	111.0	1,216	124.0	16.0	1,631.0	1.31		
	14.45	1,775	122.9	1,099	111.9	17.0	1,732.9	1.71		
	12.56	1,775	141.4	955	97.3	17.0	1,732.9	1.82		
	11.17	1,775	159.0	849	86.5	16.0	1,631.0	1.53		
	10.00	1,775	177.5	760	77.5	16.0	1,631.0	1.76		
	8.29	1,775	214.2	630	64.2	15.0	1,529.1	1.93		
	7.21	1,775	246.2	548	55.9	15.0	1,529.1	2.10		
15	47.93	1,775	37.1	3,644	371.3	27.0	2,752.3	1.02	09	326
	41.87	1,775	42.4	3,183	324.4	27.0	2,752.3	1.19		
	38.30	1,775	46.4	2,912	296.7	27.0	2,752.3	1.31		
	34.23	1,775	51.9	2,602	265.2	27.0	2,752.3	1.48		
	30.82	1,775	57.6	2,343	238.8	27.0	2,752.3	1.59		
	27.91	1,775	63.6	2,122	216.2	27.0	2,752.3	1.76		
	24.75	1,775	71.8	1,882	191.7	27.0	2,752.3	1.99		
	22.37	1,775	79.4	1,701	173.3	26.0	2,650.4	2.22		
	18.96	1,775	93.7	1,441	146.9	26.0	2,650.4	2.62		
	16.56	1,775	107.2	1,259	128.3	25.0	2,548.4	3.07		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
15	90.96	1,775	19.6	6,916	704.7	48.0	4,893.0	1.02	10	425
	82.61	1,775	21.5	6,281	640.0	49.0	4,994.9	1.14		
	73.30	1,775	24.3	5,573	567.9	49.0	4,994.9	1.25		
	66.52	1,775	26.7	5,057	515.3	48.0	4,893.0	1.42		
	57.17	1,775	31.1	4,347	442.9	48.0	4,893.0	1.65		
	49.90	1,775	35.6	3,794	386.6	48.0	4,893.0	1.82		
	42.33	1,775	42.0	3,218	327.9	47.0	4,791.0	1.99		
	37.00	1,775	48.0	2,813	286.6	46.0	4,689.1	2.28		
	32.69	1,775	54.3	2,485	253.2	45.0	4,587.2	2.50		
	31.28	1,775	56.8	2,378	242.3	44.0	4,485.2	2.50		
	29.00	1,775	61.3	2,205	224.7	44.0	4,485.2	2.85		
15	136.14	1,775	13.1	10,351	1,054.7	75.0	7,645.3	1.08	12	605
	122.48	1,775	14.5	9,312	948.8	76.0	7,747.2	1.25		
	110.18	1,775	16.2	8,377	853.6	76.0	7,747.2	1.36		
	89.89	1,775	19.8	6,834	696.4	77.0	7,849.1	1.65		
	81.98	1,775	21.7	6,233	635.1	77.0	7,849.1	1.82		
	70.95	1,775	25.1	5,394	549.6	78.0	7,951.1	2.10		
	62.60	1,775	28.4	4,759	485.0	76.0	7,747.2	2.39		
	54.07	1,775	32.9	4,111	418.9	74.0	7,543.3	2.85		
	47.82	1,775	37.2	3,636	370.5	72.0	7,339.4	3.19		
15	150.41	1,775	11.9	11,435	1,165.2	108.0	11,009.2	1.36	15	858
	122.39	1,775	14.6	9,305	948.1	109.0	11,111.1	1.71		
	100.22	1,775	17.8	7,620	776.4	108.0	11,009.2	2.10		
	91.65	1,775	19.4	6,968	710.0	107.0	10,907.2	2.28		
	79.75	1,775	22.3	6,063	617.8	104.0	10,601.4	2.62		
15	164.50	1,775	10.8	12,507	1,274.4	135.0	13,761.5	2.28	16	1,282
	134.99	1,775	13.2	10,263	1,045.8	135.0	13,761.5	2.73		
18.5	24.92	1,780	71.5	2,330	237.4	15.0	1,529.1	0.96	08	277
	22.41	1,780	79.5	2,095	213.5	15.0	1,529.1	0.96		
	19.45	1,780	91.6	1,819	185.3	15.0	1,529.1	1.14		
	17.42	1,780	102.2	1,629	166.0	16.0	1,631.0	1.19		
	14.45	1,780	123.2	1,351	137.7	16.0	1,631.0	1.36		
	12.56	1,780	141.8	1,174	119.7	16.0	1,631.0	1.48		
	11.17	1,780	159.4	1,044	106.4	15.0	1,529.1	1.25		
	10.00	1,780	178.0	935	95.3	15.0	1,529.1	1.42		
	8.29	1,780	214.8	775	79.0	14.0	1,427.1	1.59		
	7.21	1,780	246.9	674	68.7	14.0	1,427.1	1.71		
18.5	41.87	1,780	42.6	3,915	398.9	24.0	2,446.5	0.96	09	344
	30.82	1,780	57.8	2,882	293.6	25.0	2,548.4	1.31		
	27.91	1,780	63.8	2,610	265.9	25.0	2,548.4	1.48		
	24.75	1,780	72.0	2,314	235.8	25.0	2,548.4	1.65		
	22.37	1,780	79.6	2,092	213.1	25.0	2,548.4	1.82		
	18.96	1,780	93.9	1,773	180.6	24.0	2,446.5	2.16		
	16.56	1,780	107.5	1,548	157.8	24.0	2,446.5	2.50		
	13.85	1,780	128.6	1,295	132.0	24.0	2,446.5	2.96		
	11.99	1,780	148.5	1,121	114.2	23.0	2,344.5	3.07		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
18.5	73.30	1,780	24.3	6,854	698.4	44.0	4,485.2	1.02	10	443
	66.52	1,780	26.8	6,220	633.8	44.0	4,485.2	1.14		
	57.17	1,780	31.2	5,346	544.7	44.0	4,485.2	1.31		
	49.90	1,780	35.7	4,666	475.4	44.0	4,485.2	1.48		
	42.33	1,780	42.1	3,958	403.3	44.0	4,485.2	1.65		
	37.00	1,780	48.2	3,460	352.5	43.0	4,383.3	1.82		
	32.69	1,780	54.5	3,057	311.5	43.0	4,383.3	2.10		
	31.28	1,780	57.0	2,925	298.0	43.0	4,383.3	2.05		
	29.00	1,780	61.4	2,712	276.3	42.0	4,281.3	2.39		
	26.32	1,780	67.7	2,461	250.8	42.0	4,281.3	2.62		
	22.62	1,780	78.7	2,115	215.5	41.0	4,179.4	2.96		
	19.74	1,780	90.2	1,846	188.1	40.0	4,077.5	3.42		
	16.75	1,780	106.3	1,566	159.6	38.0	3,873.6	3.99		
18.5	110.18	1,780	16.2	10,302	1,049.8	75.0	7,645.3	1.14	12	623
	89.89	1,780	19.9	8,405	856.4	75.0	7,645.3	1.36		
	81.98	1,780	21.8	7,666	781.1	75.0	7,645.3	1.48		
	70.95	1,780	25.1	6,634	676.0	74.0	7,543.3	1.71		
	62.60	1,780	28.5	5,853	596.4	73.0	7,441.4	1.93		
	54.07	1,780	33.0	5,056	515.2	71.0	7,237.5	2.28		
	47.82	1,780	37.3	4,471	455.6	70.0	7,135.6	2.50		
	40.19	1,780	44.3	3,758	382.9	68.0	6,931.7	3.07		
	36.25	1,780	49.2	3,390	345.4	66.0	6,727.8	3.42		
	31.37	1,780	56.8	2,933	298.9	65.0	6,625.9	3.87		
	27.68	1,780	64.4	2,588	263.7	63.0	6,422.0	4.44		
18.5	122.39	1,780	14.6	11,444	1,166.1	106.0	10,805.3	1.36	15	876
	100.22	1,780	17.8	9,371	954.9	104.0	10,601.4	1.71		
	91.65	1,780	19.5	8,570	873.2	102.0	10,397.6	1.88		
	79.75	1,780	22.4	7,457	759.8	100.0	10,193.7	2.10		
	70.38	1,780	25.3	6,581	670.6	98.0	9,989.8	2.39		
	61.02	1,780	29.2	5,706	581.4	96.0	9,785.9	2.85		
	54.29	1,780	32.8	5,076	517.3	94.0	9,582.1	3.19		
	46.79	1,780	38.1	4,375	445.8	91.0	9,276.2	3.64		
	38.02	1,780	46.9	3,555	362.2	87.0	8,868.5	4.44		
18.5	134.99	1,780	13.2	12,622	1,286.1	135.0	13,761.5	2.22	16	1,300
	109.83	1,780	16.3	10,270	1,046.4	135.0	13,761.5	2.73		
	87.86	1,780	20.3	8,215	837.1	135.0	13,761.5	3.42		
22	19.45	1,780	91.6	2,163	220.4	14.0	1,427.1	0.91	08	277
	17.42	1,780	102.2	1,937	197.4	14.0	1,427.1	1.02		
	14.45	1,780	123.2	1,607	163.7	14.0	1,427.1	1.14		
	12.56	1,780	141.8	1,397	142.3	15.0	1,529.1	1.25		
	11.17	1,780	159.4	1,242	126.6	13.0	1,325.2	1.08		
	10.00	1,780	178.0	1,112	113.3	13.0	1,325.2	1.19		
	8.29	1,780	214.8	922	93.9	14.0	1,427.1	1.36		
	7.21	1,780	246.9	802	81.7	13.0	1,325.2	1.42		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
22	30.82	1,780	57.8	3,427	349.2	23.0	2,344.5	1.08	09	344
	27.91	1,780	63.8	3,103	316.2	23.0	2,344.5	1.19		
	24.75	1,780	72.0	2,752	280.4	23.0	2,344.5	1.36		
	22.37	1,780	79.6	2,487	253.5	23.0	2,344.5	1.53		
	18.96	1,780	93.9	2,108	214.8	23.0	2,344.5	1.82		
	16.56	1,780	107.5	1,841	187.6	23.0	2,344.5	2.05		
	13.85	1,780	128.6	1,540	156.9	23.0	2,344.5	2.50		
	11.99	1,780	148.5	1,333	135.8	22.0	2,242.6	2.62		
	10.41	1,780	171.0	1,158	117.9	21.0	2,140.7	2.16		
	8.71	1,780	204.4	969	98.7	20.0	2,038.7	2.39		
22	57.17	1,780	31.2	6,357	647.8	41.0	4,179.4	1.14	10	443
	49.90	1,780	35.7	5,549	565.4	41.0	4,179.4	1.25		
	42.33	1,780	42.1	4,707	479.6	41.0	4,179.4	1.36		
	37.00	1,780	48.2	4,114	419.2	41.0	4,179.4	1.53		
	32.69	1,780	54.5	3,635	370.4	41.0	4,179.4	1.76		
	31.28	1,780	57.0	3,478	354.4	41.0	4,179.4	1.71		
	29.00	1,780	61.4	3,225	328.6	40.0	4,077.5	1.99		
	26.32	1,780	67.7	2,927	298.2	40.0	4,077.5	2.16		
	22.62	1,780	78.7	2,515	256.3	39.0	3,975.5	2.50		
	19.74	1,780	90.2	2,195	223.7	38.0	3,873.6	2.85		
	16.75	1,780	106.3	1,863	189.8	37.0	3,771.7	3.30		
	14.64	1,780	121.6	1,628	165.9	36.0	3,669.7	3.76		
	13.43	1,780	132.6	1,493	152.2	35.0	3,567.8	2.50		
	11.73	1,780	151.8	1,304	132.9	34.0	3,465.9	2.96		
	9.94	1,780	179.1	1,105	112.6	33.0	3,363.9	3.30		
22	89.89	1,780	19.9	9,995	1,018.5	70.0	7,135.6	1.14	12	623
	81.98	1,780	21.8	9,116	928.9	70.0	7,135.6	1.25		
	70.95	1,780	25.1	7,889	803.9	70.0	7,135.6	1.48		
	62.60	1,780	28.5	6,961	709.3	69.0	7,033.6	1.65		
	54.07	1,780	33.0	6,012	612.6	67.0	6,829.8	1.93		
	47.82	1,780	37.3	5,317	541.8	67.0	6,829.8	2.16		
	40.19	1,780	44.3	4,469	455.4	66.0	6,727.8	2.62		
	36.25	1,780	49.2	4,031	410.7	64.0	6,524.0	2.85		
	31.37	1,780	56.8	3,488	355.4	63.0	6,422.0	3.30		
	27.68	1,780	64.4	3,078	313.6	61.0	6,218.1	3.76		
	23.91	1,780	74.5	2,659	270.9	60.0	6,116.2	4.33		
	21.15	1,780	84.2	2,352	239.6	58.0	5,912.3	4.90		
22	122.39	1,780	14.6	13,609	1,386.7	100.0	10,193.7	1.19	15	876
	100.22	1,780	17.8	11,144	1,135.5	99.0	10,091.7	1.42		
	91.65	1,780	19.5	10,191	1,038.4	98.0	9,989.8	1.53		
	79.75	1,780	22.4	8,868	903.6	97.0	9,887.9	1.76		
	70.38	1,780	25.3	7,826	797.4	95.0	9,684.0	2.05		
	61.02	1,780	29.2	6,785	691.4	93.0	9,480.1	2.39		
	54.29	1,780	32.8	6,037	615.1	91.0	9,276.2	2.62		
	46.79	1,780	38.1	5,203	530.1	89.0	9,072.4	3.07		
	38.02	1,780	46.9	4,228	430.8	85.0	8,664.6	3.76		
22	134.99	1,780	13.2	15,010	1,529.5	135.0	13,761.5	1.88	16	1,300
	109.83	1,780	16.3	12,213	1,244.4	135.0	13,761.5	2.28		
	87.86	1,780	20.3	9,770	995.5	135.0	13,761.5	2.85		
	78.14	1,780	22.8	8,689	885.3	135.0	13,761.5	3.30		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
30	24.75	1,780	72.0	3,753	382.4	19.0	1,936.8	1.02	09	376
	22.37	1,780	79.6	3,392	345.6	19.0	1,936.8	1.14		
	18.96	1,780	93.9	2,875	292.9	20.0	2,038.7	1.31		
	16.56	1,780	107.5	2,511	255.9	20.0	2,038.7	1.53		
	13.85	1,780	128.6	2,100	214.0	20.0	2,038.7	1.82		
	11.99	1,780	148.5	1,818	185.2	20.0	2,038.7	1.88		
	10.41	1,780	171.0	1,578	160.8	19.0	1,936.8	1.59		
	8.71	1,780	204.4	1,321	134.6	18.0	1,834.9	1.76		
30	42.33	1,780	42.1	6,418	654.0	34.0	3,465.9	1.02	10	475
	37.00	1,780	48.2	5,610	571.7	36.0	3,669.7	1.14		
	31.28	1,780	57.0	4,743	483.3	34.0	3,465.9	1.25		
	29.00	1,780	61.4	4,397	448.1	36.0	3,669.7	1.42		
	26.32	1,780	67.7	3,991	406.7	36.0	3,669.7	1.59		
	22.62	1,780	78.7	3,430	349.5	36.0	3,669.7	1.88		
	19.74	1,780	90.2	2,993	305.0	36.0	3,669.7	2.10		
	16.75	1,780	106.3	2,540	258.8	35.0	3,567.8	2.50		
	14.64	1,780	121.6	2,220	226.2	34.0	3,465.9	2.73		
	13.43	1,780	132.6	2,036	207.5	33.0	3,363.9	1.88		
	11.73	1,780	151.8	1,779	181.2	32.0	3,262.0	2.16		
	9.94	1,780	179.1	1,507	153.6	31.0	3,160.0	2.50		
	8.69	1,780	204.9	1,318	134.3	31.0	3,160.0	2.73		
30	70.95	1,780	25.1	10,758	1,096.2	61.0	6,218.1	1.08	12	656
	62.60	1,780	28.5	9,492	967.2	61.0	6,218.1	1.19		
	54.07	1,780	33.0	8,199	835.4	61.0	6,218.1	1.42		
	47.82	1,780	37.3	7,251	738.8	61.0	6,218.1	1.59		
	40.19	1,780	44.3	6,094	620.9	61.0	6,218.1	1.88		
	36.25	1,780	49.2	5,497	560.1	60.0	6,116.2	2.10		
	31.37	1,780	56.8	4,757	484.7	59.0	6,014.3	2.39		
	27.68	1,780	64.4	4,197	427.7	58.0	5,912.3	2.73		
	23.91	1,780	74.5	3,625	369.4	57.0	5,810.4	3.19		
	21.15	1,780	84.2	3,207	326.8	56.0	5,708.5	3.42		
30	100.22	1,780	17.8	15,196	1,548.4	88.0	8,970.4	1.02	15	909
	91.65	1,780	19.5	13,897	1,416.0	88.0	8,970.4	1.14		
	79.75	1,780	22.4	12,092	1,232.2	88.0	8,970.4	1.31		
	70.38	1,780	25.3	10,672	1,087.4	87.0	8,868.5	1.48		
	61.02	1,780	29.2	9,252	942.8	86.0	8,766.6	1.71		
	54.29	1,780	32.8	8,232	838.8	85.0	8,664.6	1.93		
	46.79	1,780	38.1	7,095	722.9	83.0	8,460.8	2.22		
	38.02	1,780	46.9	5,765	587.4	81.0	8,256.9	2.73		
	31.30	1,780	56.9	4,746	483.6	78.0	7,951.1	3.42		
30	109.83	1,780	16.3	16,653	1,696.9	135.0	13,761.5	1.71	16	1,333
	87.86	1,780	20.3	13,322	1,357.5	135.0	13,761.5	2.10		
	78.14	1,780	22.8	11,848	1,207.3	135.0	13,761.5	2.39		
	68.07	1,780	26.2	10,321	1,051.7	135.0	13,761.5	2.73		
	60.74	1,780	29.4	9,210	938.5	135.0	13,761.5	3.07		

제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
37	37.00	1,775	48.0	6,939	707.0	28.0	2,854.2	0.91	10	606
	31.28	1,775	56.8	5,866	597.7	30.0	3,058.1	1.02		
	29.00	1,775	61.3	5,439	554.2	32.0	3,262.0	1.19		
	26.32	1,775	67.5	4,936	503.0	33.0	3,363.9	1.31		
	22.62	1,775	78.5	4,242	432.2	33.0	3,363.9	1.48		
	19.74	1,775	90.0	3,702	377.2	33.0	3,363.9	1.71		
	16.75	1,775	106.0	3,141	320.1	33.0	3,363.9	1.99		
	14.64	1,775	121.3	2,746	279.8	32.0	3,262.0	2.22		
	13.43	1,775	132.2	2,519	256.6	31.0	3,160.0	1.53		
	11.73	1,775	151.4	2,200	224.1	30.0	3,058.1	1.76		
	9.94	1,775	178.6	1,864	189.9	30.0	3,058.1	1.99		
	8.69	1,775	204.3	1,630	166.1	29.0	2,956.2	2.22		
37	62.60	1,775	28.4	11,740	1,196.2	55.0	5,606.5	0.96	12	787
	54.07	1,775	32.9	10,140	1,033.2	56.0	5,708.5	1.14		
	47.82	1,775	37.2	8,968	913.8	56.0	5,708.5	1.31		
	40.19	1,775	44.2	7,537	768.0	56.0	5,708.5	1.53		
	36.25	1,775	49.0	6,798	692.7	56.0	5,708.5	1.71		
	31.37	1,775	56.6	5,883	599.5	56.0	5,708.5	1.93		
	27.68	1,775	64.2	5,191	528.9	55.0	5,606.5	2.22		
	23.91	1,775	74.3	4,484	456.9	54.0	5,504.6	2.62		
	21.15	1,775	84.0	3,966	404.2	53.0	5,402.7	2.96		
	17.77	1,775	99.9	3,333	339.6	52.0	5,300.7	3.42		
	14.35	1,775	123.7	2,691	274.2	50.0	5,096.8	3.99		
	12.79	1,775	138.8	2,399	244.4	48.0	4,893.0	3.19		
	10.74	1,775	165.3	2,014	205.2	46.0	4,689.1	3.53		
	8.68	1,775	204.5	1,628	165.9	44.0	4,485.2	3.99		
37	91.65	1,775	19.4	17,188	1,751.4	79.0	8,053.0	0.91	15	1,039
	79.75	1,775	22.3	14,956	1,524.0	80.0	8,154.9	1.08		
	70.38	1,775	25.3	13,199	1,344.9	81.0	8,256.9	1.19		
	61.02	1,775	29.1	11,443	1,166.0	80.0	8,154.9	1.42		
	54.29	1,775	32.7	10,181	1,037.4	80.0	8,154.9	1.59		
	46.79	1,775	38.0	8,775	894.1	79.0	8,053.0	1.82		
	38.02	1,775	46.7	7,130	726.5	77.0	7,849.1	2.22		
	31.30	1,775	56.8	5,870	598.1	75.0	7,645.3	2.73		
37	109.83	1,775	16.2	20,597	2,098.8	135.0	13,761.5	1.36	16	1,463
	87.86	1,775	20.3	16,477	1,678.9	135.0	13,761.5	1.71		
	78.14	1,775	22.8	14,654	1,493.2	135.0	13,761.5	1.93		
	68.07	1,775	26.1	12,766	1,300.8	135.0	13,761.5	2.22		
	60.74	1,775	29.3	11,391	1,160.7	135.0	13,761.5	2.50		
	51.77	1,775	34.3	9,709	989.3	135.0	13,761.5	2.96		

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
45	29.00	1,780	61.4	6,596	672.1	24.0	2,446.5	0.96	10	606
	26.32	1,780	67.7	5,986	610.0	27.0	2,752.3	1.08		
	22.62	1,780	78.7	5,145	524.2	29.0	2,956.2	1.25		
	19.74	1,780	90.2	4,490	457.5	30.0	3,058.1	1.42		
	16.75	1,780	106.3	3,810	388.2	30.0	3,058.1	1.65		
	14.64	1,780	121.6	3,330	339.3	30.0	3,058.1	1.82		
	13.43	1,780	132.6	3,055	311.2	28.0	2,854.2	1.25		
	11.73	1,780	151.8	2,668	271.8	28.0	2,854.2	1.42		
	9.94	1,780	179.1	2,261	230.4	28.0	2,854.2	1.65		
	8.69	1,780	204.9	1,976	201.4	28.0	2,854.2	1.82		
45	47.82	1,780	37.3	10,876	1,108.3	50.0	5,096.8	1.08	12	787
	40.19	1,780	44.3	9,141	931.4	51.0	5,198.8	1.25		
	36.25	1,780	49.2	8,245	840.1	51.0	5,198.8	1.42		
	31.37	1,780	56.8	7,135	727.0	52.0	5,300.7	1.59		
	27.68	1,780	64.4	6,296	641.5	51.0	5,198.8	1.82		
	23.91	1,780	74.5	5,438	554.1	51.0	5,198.8	2.10		
	21.15	1,780	84.2	4,810	490.2	51.0	5,198.8	2.39		
	17.77	1,780	100.2	4,042	411.8	50.0	5,096.8	2.85		
	14.35	1,780	124.1	3,264	332.6	48.0	4,893.0	3.30		
	12.79	1,780	139.2	2,909	296.4	46.0	4,689.1	2.62		
	10.74	1,780	165.8	2,443	248.9	45.0	4,587.2	2.85		
	8.68	1,780	205.1	1,974	201.2	43.0	4,383.3	3.19		
45	70.38	1,780	25.3	16,008	1,631.1	73.0	7,441.4	0.96	15	1,039
	61.02	1,780	29.2	13,879	1,414.2	74.0	7,543.3	1.14		
	54.29	1,780	32.8	12,348	1,258.2	74.0	7,543.3	1.31		
	46.79	1,780	38.1	10,642	1,084.4	74.0	7,543.3	1.48		
	38.02	1,780	46.9	8,647	881.1	73.0	7,441.4	1.82		
	31.30	1,780	56.9	7,119	725.4	72.0	7,339.4	2.22		
	27.62	1,780	64.5	6,282	640.1	71.0	7,237.5	2.50		
	23.95	1,780	74.4	5,447	555.1	69.0	7,033.6	2.96		
	21.31	1,780	83.6	4,847	493.9	68.0	6,931.7	3.30		
	18.37	1,780	96.9	4,178	425.7	66.0	6,727.8	3.76		
45	109.83	1,780	16.3	24,980	2,545.4	135.0	13,761.5	1.14	16	1,463
	87.86	1,780	20.3	19,983	2,036.2	135.0	13,761.5	1.42		
	78.14	1,780	22.8	17,773	1,810.9	135.0	13,761.5	1.59		
	68.07	1,780	26.2	15,482	1,577.6	135.0	13,761.5	1.82		
	60.74	1,780	29.4	13,815	1,407.7	134.0	13,659.5	2.05		
	51.77	1,780	34.4	11,775	1,199.8	130.0	13,251.8	2.39		
	42.89	1,780	41.6	9,755	994.0	127.0	12,946.0	2.96		

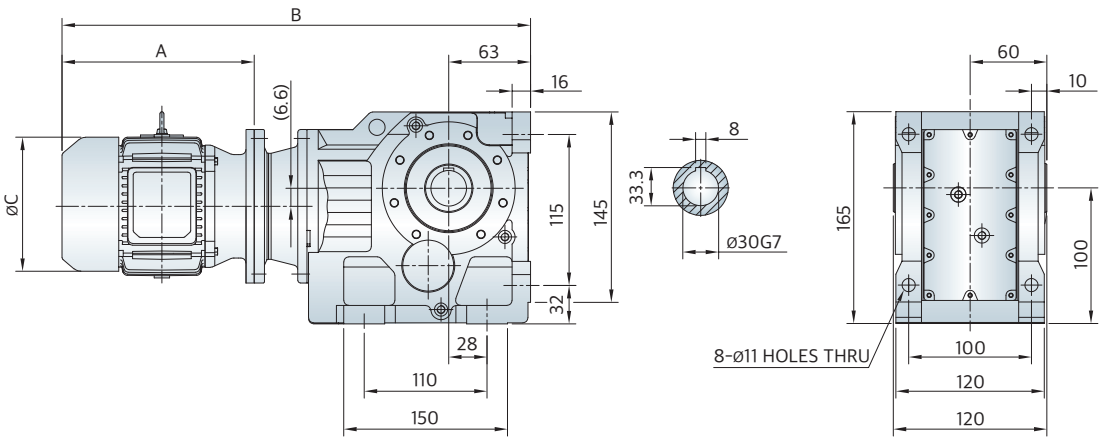
제품 리스트

Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
55	40.19	1,785	44.5	11,141	1,135.2	45.0	4,587.2	1.02	12	856
	31.37	1,785	57.0	8,696	886.1	47.0	4,791.0	1.31		
	27.68	1,785	64.5	7,673	781.9	47.0	4,791.0	1.48		
	23.91	1,785	74.7	6,628	675.4	47.0	4,791.0	1.76		
	21.15	1,785	84.4	5,863	597.4	47.0	4,791.0	1.99		
	17.77	1,785	100.5	4,926	501.9	47.0	4,791.0	2.28		
	14.35	1,785	124.4	3,978	405.3	46.0	4,689.1	2.73		
	12.79	1,785	139.6	3,546	361.3	44.0	4,485.2	2.10		
	12.74	1,785	140.2	3,532	359.9	43.0	4,383.3	2.39		
	8.68	1,785	205.7	2,406	245.2	41.0	4,179.4	2.62		
55	61.02	1,785	29.3	16,915	1,723.6	66.0	6,727.8	0.96	15	1,109
	54.29	1,785	32.9	15,050	1,533.5	67.0	6,829.8	1.08		
	46.79	1,785	38.2	12,971	1,321.6	68.0	6,931.7	1.25		
	38.02	1,785	47.0	10,539	1,073.9	68.0	6,931.7	1.53		
	31.30	1,785	57.1	8,677	884.1	67.0	6,829.8	1.82		
	27.62	1,785	64.7	7,657	780.2	67.0	6,829.8	2.10		
	23.95	1,785	74.6	6,639	676.5	66.0	6,727.8	2.39		
	21.31	1,785	83.8	5,907	601.9	65.0	6,625.9	2.73		
	18.37	1,785	97.2	5,092	518.9	64.0	6,524.0	3.19		
	14.92	1,785	119.7	4,136	421.4	62.0	6,320.1	3.87		
	12.65	1,785	141.2	3,507	357.3	60.0	6,116.2	4.33		
55	87.86	1,785	20.4	24,356	2,481.7	131.0	13,353.7	1.14	16	1,533
	78.14	1,785	22.9	21,661	2,207.2	130.0	13,251.8	1.31		
	68.07	1,785	26.3	18,870	1,922.7	129.0	13,149.8	1.48		
	60.74	1,785	29.4	16,838	1,715.7	128.0	13,047.9	1.71		
	51.77	1,785	34.5	14,351	1,462.3	125.0	12,742.1	1.99		
	42.89	1,785	41.7	11,890	1,211.5	121.0	12,334.4	2.39		
	36.61	1,785	48.8	10,149	1,034.1	119.0	12,130.5	2.85		
75	31.37	1,785	57.0	11,858	1,208.3	37.0	3,771.7	0.96	12	1,029
	27.68	1,785	64.5	10,463	1,066.2	39.0	3,975.5	1.08		
	23.91	1,785	74.7	9,038	921.0	40.0	4,077.5	1.25		
	21.15	1,785	84.4	7,995	814.6	41.0	4,179.4	1.42		
	17.77	1,785	100.5	6,717	684.5	41.0	4,179.4	1.71		
	14.35	1,785	124.4	5,424	552.7	42.0	4,281.3	1.99		
	12.79	1,785	139.6	4,835	492.6	39.0	3,975.5	1.59		
	10.74	1,785	166.3	4,060	413.7	39.0	3,975.5	1.76		
	8.68	1,785	205.7	3,281	334.3	38.0	3,873.6	1.93		
75	38.02	1,785	47.0	14,372	1,464.4	58.0	5,912.3	1.14	15	1,282
	31.30	1,785	57.1	11,832	1,205.6	59.0	6,014.3	1.36		
	27.62	1,785	64.7	10,441	1,063.9	59.0	6,014.3	1.53		
	23.95	1,785	74.6	9,053	922.5	59.0	6,014.3	1.76		
	21.31	1,785	83.8	8,055	820.8	59.0	6,014.3	1.99		
	18.37	1,785	97.2	6,944	707.6	59.0	6,014.3	2.28		
	14.92	1,785	119.7	5,640	574.7	57.0	5,810.4	2.85		
	12.65	1,785	141.2	4,782	487.2	56.0	5,708.5	3.19		

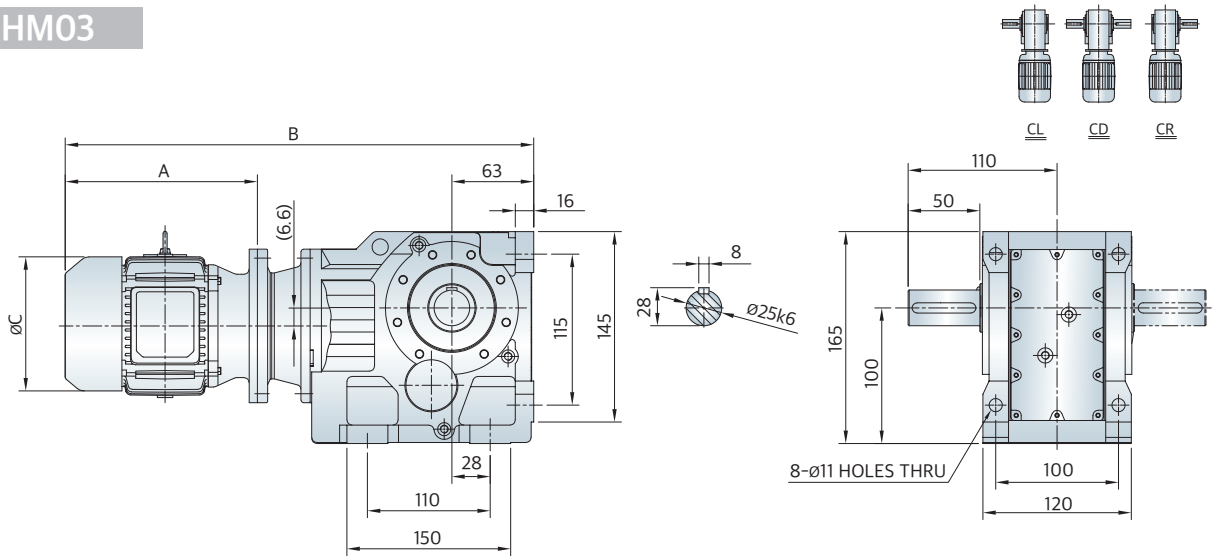
Power (kW)	Ratio (i)	Input RPM	Output RPM	Output Torque (Nm)	Output Torque (kgm)	Permissible O.H.L (kN)	Permissible O.H.L (kg)	Service Factor	Fr.	Weight (kg)
75	78.14	1,785	22.9	29,538	3,009.8	113.0	11,518.9	0.96	16	1,706
	68.07	1,785	26.3	25,731	2,621.9	114.0	11,620.8	1.08		
	60.74	1,785	29.4	22,960	2,339.6	115.0	11,722.7	1.25		
	51.77	1,785	34.5	19,570	1,994.1	114.0	11,620.8	1.48		
	42.89	1,785	41.7	16,213	1,652.0	113.0	11,518.9	1.76		
	36.61	1,785	48.8	13,839	1,410.1	111.0	11,315.0	2.05		
	32.25	1,785	55.4	12,191	1,242.2	109.0	11,111.1	2.39		
	28.77	1,785	62.1	10,875	1,108.2	107.0	10,907.2	2.62		
	24.52	1,785	72.8	9,269	944.5	105.0	10,703.4	3.07		
90	23.91	1,785	74.7	10,846	1,105.1	35.0	3,567.8	1.08	12	1,069
	21.15	1,785	84.4	9,594	977.6	36.0	3,669.7	1.19		
	17.77	1,785	100.5	8,061	821.4	37.0	3,771.7	1.42		
	14.35	1,785	124.4	6,509	663.3	38.0	3,873.6	1.65		
	12.79	1,785	139.6	5,802	591.2	36.0	3,669.7	1.31		
	10.74	1,785	166.3	4,872	496.4	36.0	3,669.7	1.48		
	8.68	1,785	205.7	3,937	401.2	36.0	3,669.7	1.65		
90	38.02	1,785	47.0	17,246	1,757.3	50.0	5,096.8	0.91	15	1,322
	31.30	1,785	57.1	14,198	1,446.7	53.0	5,402.7	1.14		
	27.62	1,785	64.7	12,529	1,276.6	54.0	5,504.6	1.25		
	23.95	1,785	74.6	10,864	1,107.0	55.0	5,606.5	1.48		
	21.31	1,785	83.8	9,667	985.0	55.0	5,606.5	1.65		
	18.37	1,785	97.2	8,333	849.1	55.0	5,606.5	1.93		
	14.92	1,785	119.7	6,768	689.6	55.0	5,606.5	2.39		
	12.65	1,785	141.2	5,738	584.7	54.0	5,504.6	2.62		
90	68.07	1,785	26.3	30,878	3,146.3	104.0	10,601.4	0.91	16	1,746
	60.74	1,785	29.4	27,553	2,807.5	105.0	10,703.4	1.02		
	51.77	1,785	34.5	23,484	2,392.9	106.0	10,805.3	1.19		
	42.89	1,785	41.7	19,456	1,982.4	106.0	10,805.3	1.48		
	36.61	1,785	48.8	16,607	1,692.2	105.0	10,703.4	1.71		
	32.25	1,785	55.4	14,629	1,490.6	104.0	10,601.4	1.93		
	28.77	1,785	62.1	13,051	1,329.8	103.0	10,499.5	2.16		
	24.52	1,785	72.8	11,123	1,133.3	101.0	10,295.6	2.62		
	20.32	1,785	87.9	9,217	939.2	98.0	9,989.8	3.07		
	17.34	1,785	103.0	7,866	801.5	95.0	9,684.0	3.64		

KHHM03 & KHM03 외형도 및 외형치수

KHHM03



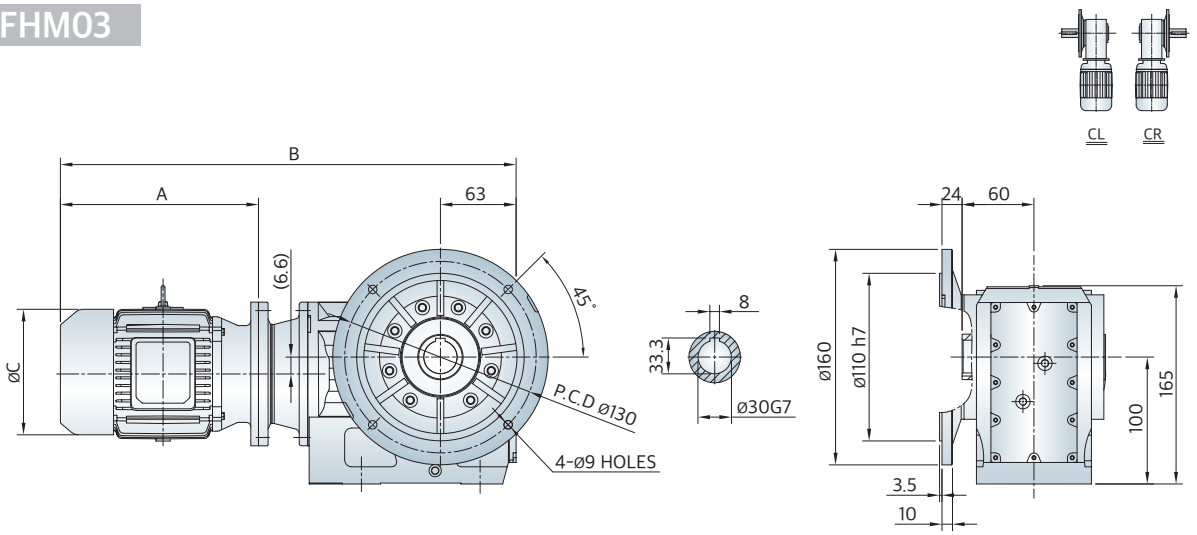
KHM03



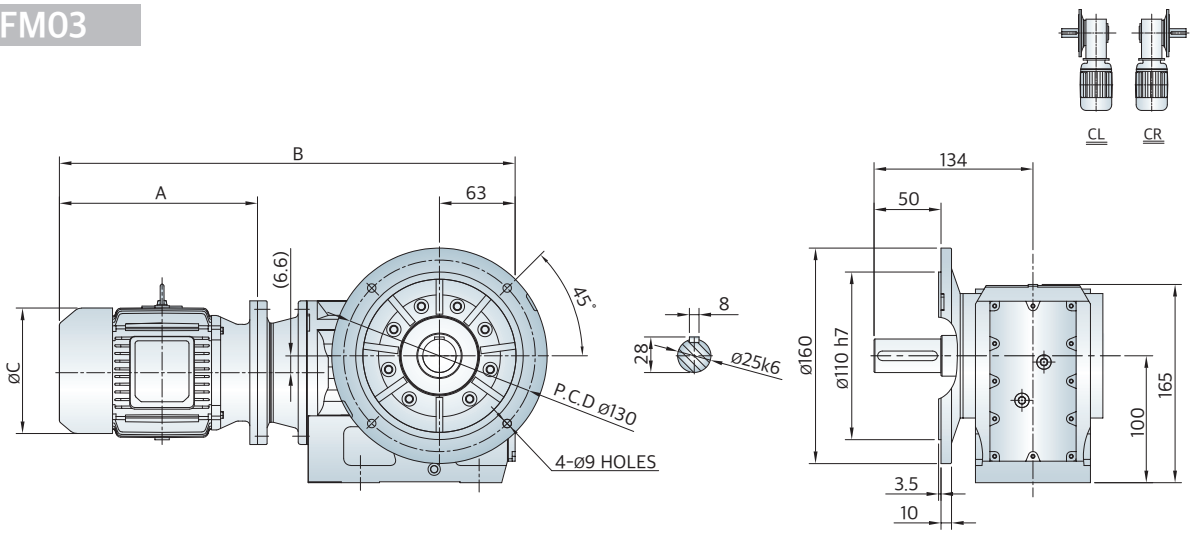
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
03	0.2	6.37 ~ 106.38	17.10 ~ 1.42	232	505	160	30	30
	0.4	5.36 ~ 97.81	11.10 ~ 0.91	232	505	160	30	30
	0.75	5.36 ~ 44.46	5.70 ~ 0.96	259	532	200	54	54
	1.5	5.36 ~ 23.36	2.96 ~ 0.91	315	588	200	56	56
	2.2	5.36 ~ 13.08	1.99 ~ 0.96	346	625	250	73	73

KFHM03 & KFM03 외형도 및 외형치수

KFHM03



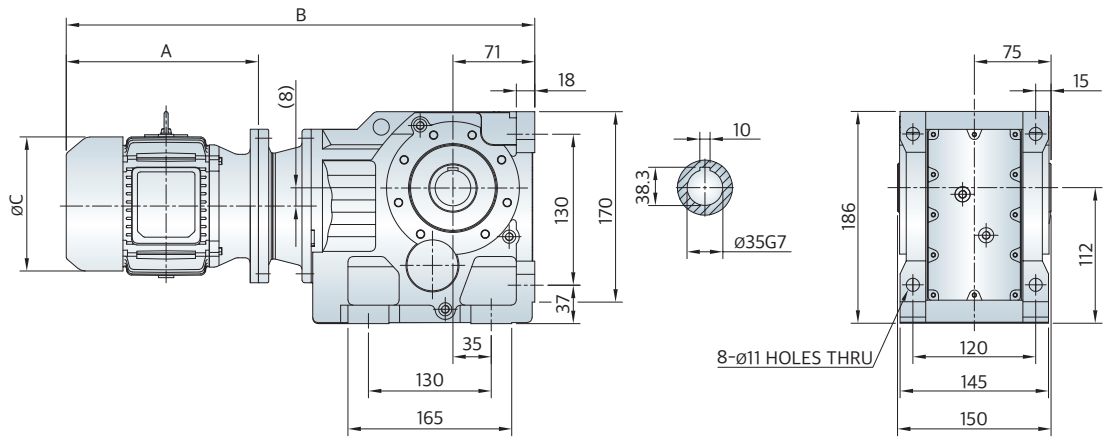
KFM03



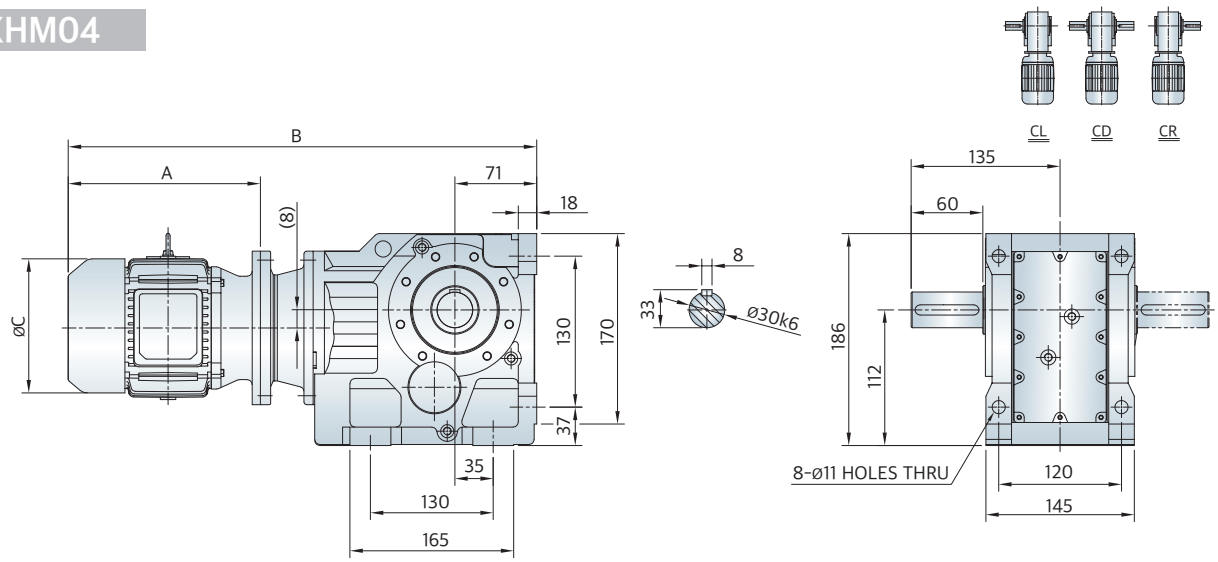
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
03	0.2	6.37 ~ 106.38	17.10 ~ 1.42	232	505	160	31	32
	0.4	5.36 ~ 97.81	11.10 ~ 0.91	232	505	160	31	32
	0.75	5.36 ~ 44.46	5.70 ~ 0.96	259	532	200	55	56
	1.5	5.36 ~ 23.36	2.96 ~ 0.91	315	588	200	57	58
	2.2	5.36 ~ 13.08	1.99 ~ 0.96	346	625	250	74	75

KHHM04 & KHM04 외형도 및 외형치수

KHHM04



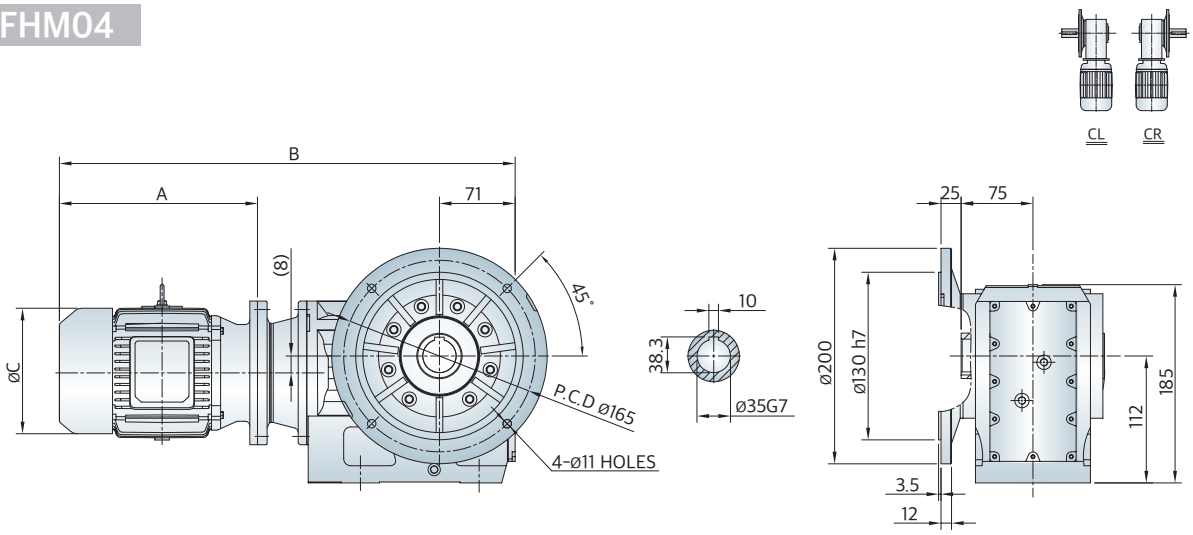
KHM04



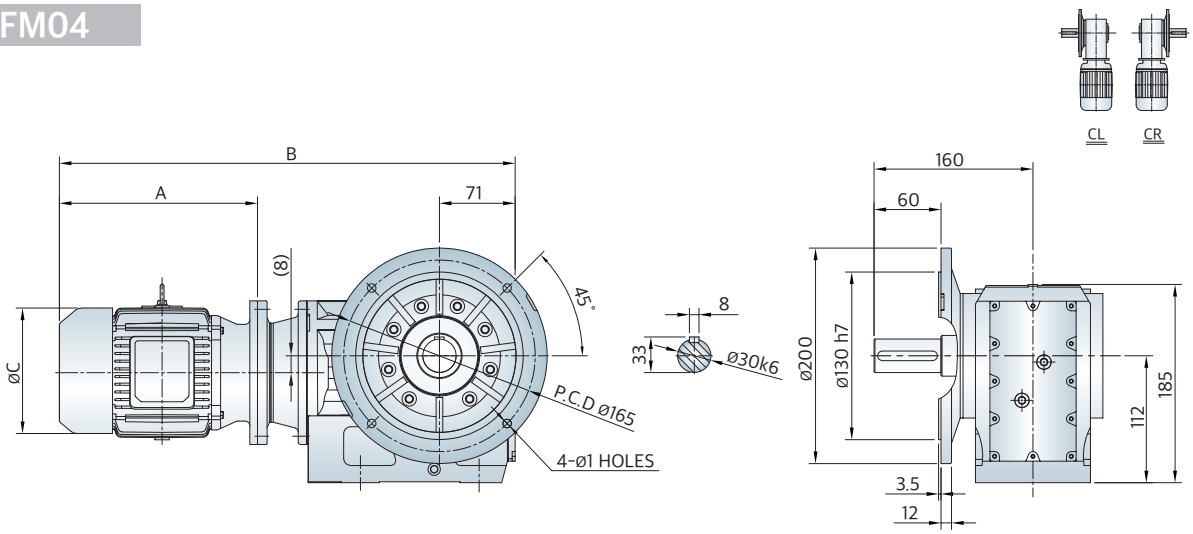
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
04	0.2	85.12 ~ 131.87	3.70 ~ 2.35	232	546	160	38	39
	0.4	63.3 ~ 131.87	2.85 ~ 1.36	232	546	160	38	39
	0.75	31.3 ~ 75.2	2.85 ~ 1.14	259	573	200	62	63
	1.5	11.77 ~ 39.61	2.62 ~ 1.14	315	629	200	64	65
	2.2	9.1 ~ 25.91	2.39 ~ 1.19	346	663	250	81	82

KFHM04 & KFM04 외형도 및 외형치수

KFHM04



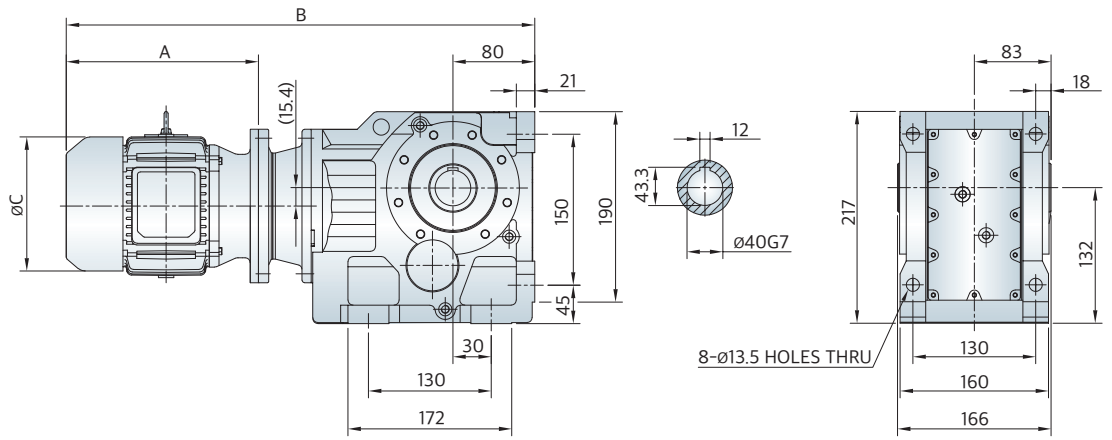
KFM04



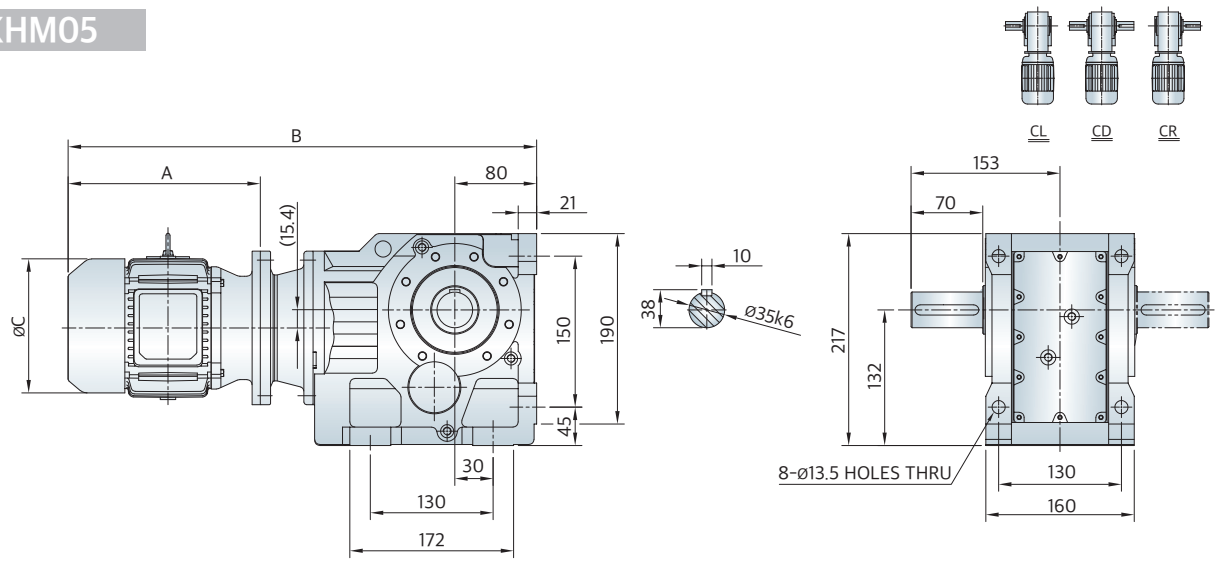
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
04	0.2	85.12 ~ 131.87	3.70 ~ 2.35	232	546	160	41	42
	0.4	63.3 ~ 131.87	2.85 ~ 1.36	232	546	160	41	42
	0.75	31.3 ~ 75.2	2.85 ~ 1.14	259	573	200	65	66
	1.5	11.77 ~ 39.61	2.62 ~ 1.14	315	629	200	67	68
	2.2	9.1 ~ 25.91	2.39 ~ 1.19	346	663	250	84	85

KHHM05 & KHM05 외형도 및 외형치수

KHHM05



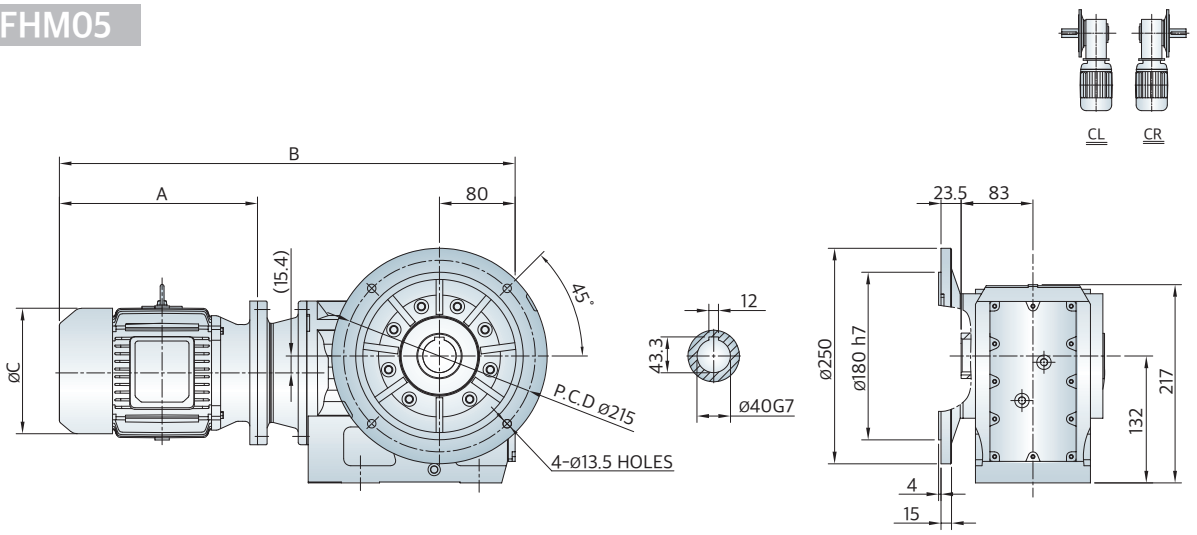
KHM05



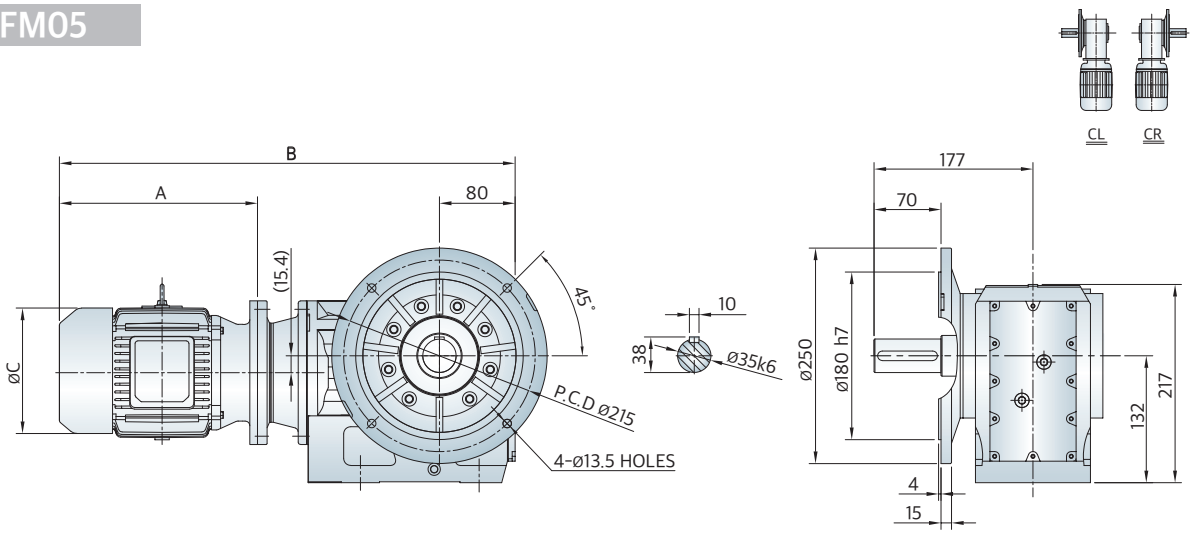
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
05	0.2	76.56 ~ 145.14	6.12 ~ 3.13	232	564	160	39	42
	0.4	69.12 ~ 145.14	3.87 ~ 1.87	232	564	160	39	42
	0.75	44.43 ~ 123.85	2.96 ~ 1.08	259	591	200	63	66
	1.5	19.34 ~ 60.81	3.30 ~ 1.08	315	647	200	65	68
	2.2	11.26 ~ 44.43	2.85 ~ 1.02	346	681	250	82	85
	3.7	6.57 ~ 24.05	2.22 ~ 1.08	330	665	250	86	89
	5.5	6.57 ~ 17.57	1.65 ~ 0.96	379	729	300	117	120

KFHM05 & KFM05 외형도 및 외형치수

KFHM05



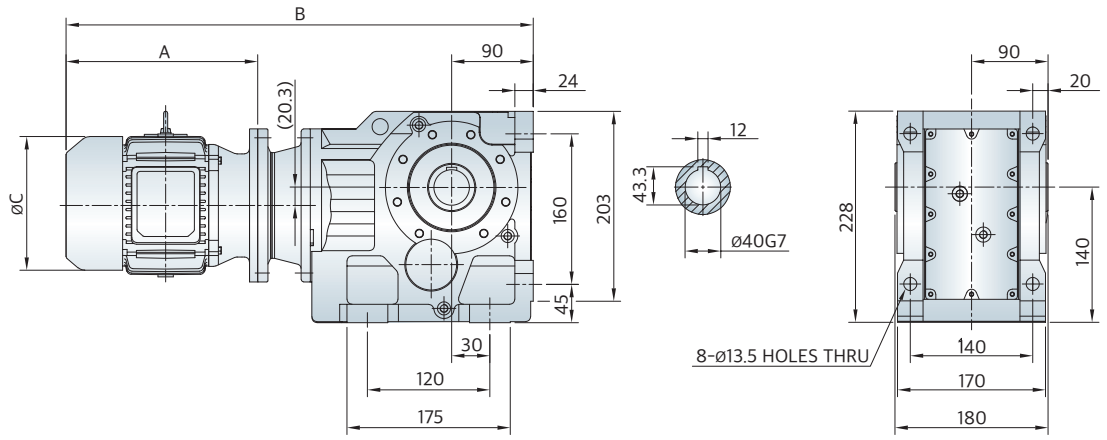
KFM05



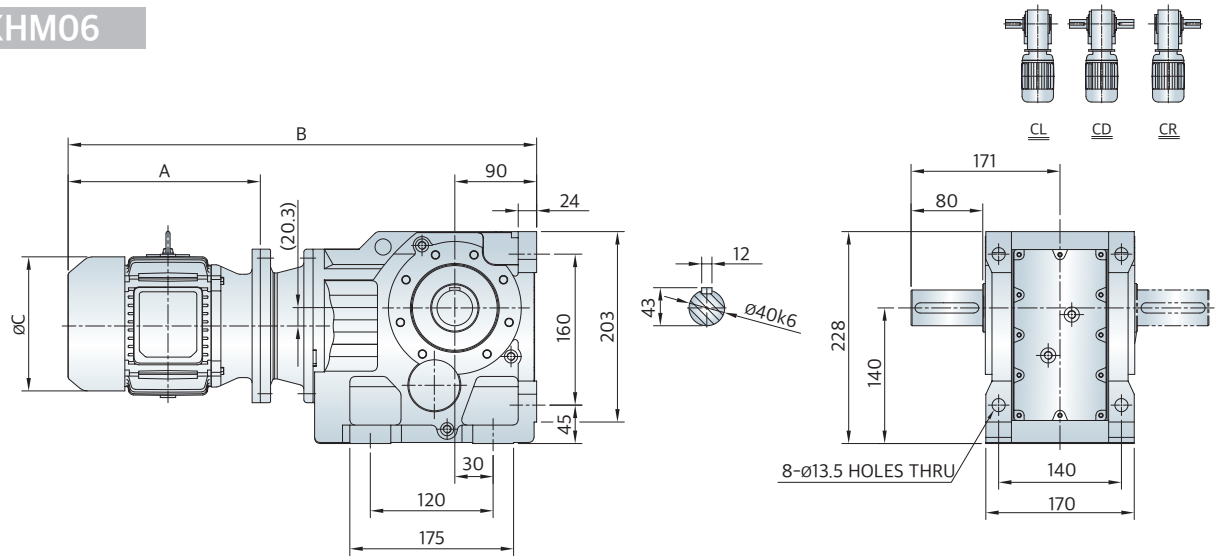
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
05	0.2	76.56 ~ 145.14	6.12 ~ 3.13	232	564	160	46	46
	0.4	69.12 ~ 145.14	3.87 ~ 1.87	232	564	160	46	46
	0.75	44.43 ~ 123.85	2.96 ~ 1.08	259	591	200	70	70
	1.5	19.34 ~ 60.81	3.30 ~ 1.08	315	647	200	72	72
	2.2	11.26 ~ 44.43	2.85 ~ 1.02	346	681	250	89	89
	3.7	6.57 ~ 24.05	2.22 ~ 1.08	330	665	250	93	93
	5.5	6.57 ~ 17.57	1.65 ~ 0.96	379	729	300	124	124

KHHM06 & KHM06 외형도 및 외형치수

KHHM06



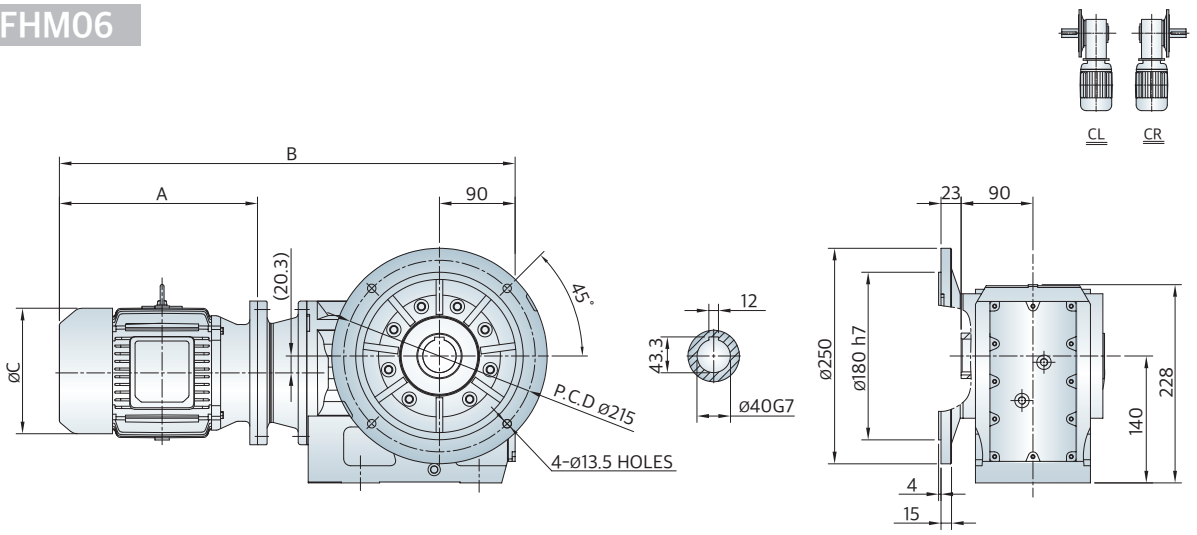
KHM06



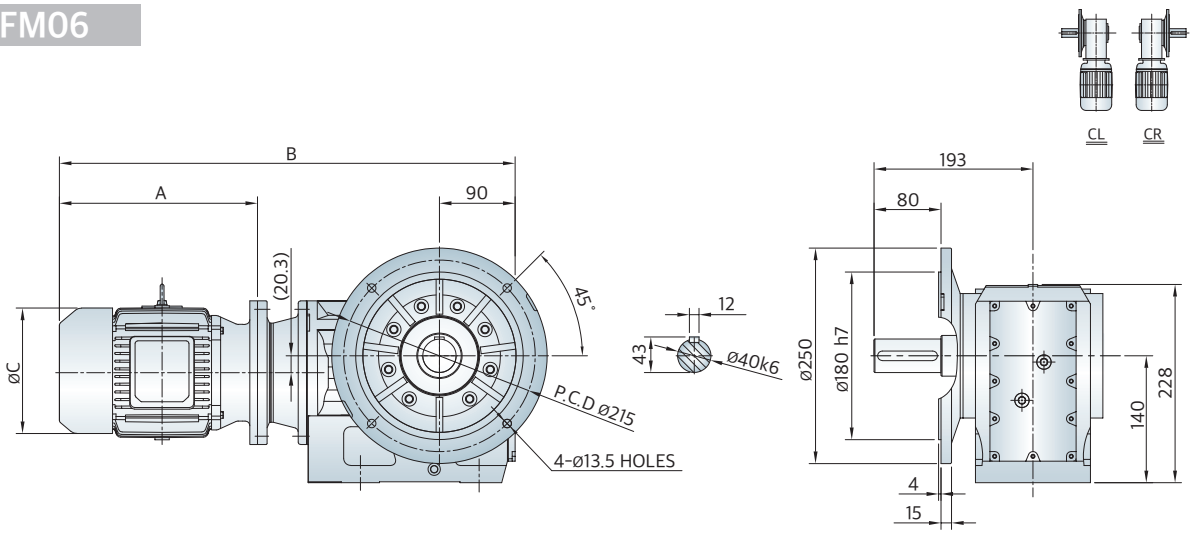
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
06	0.2	102.62 ~ 144.79	6.12 ~ 4.41	232	578	160	45	47
	0.4	76.37 ~ 144.79	4.78 ~ 2.50	232	578	160	45	47
	0.75	57.28 ~ 123.54	3.19 ~ 1.48	259	605	200	69	71
	1.5	24 ~ 90.04	3.76 ~ 1.02	315	661	200	71	73
	2.2	7.28 ~ 60.66	4.44 ~ 1.02	346	695	250	88	90
	3.7	7.28 ~ 30.22	2.39 ~ 1.14	330	679	250	92	94
	5.5	7.28 ~ 24	1.76 ~ 1.02	379	743	300	123	125

KFHM06 & KFM06 외형도 및 외형치수

KFHM06



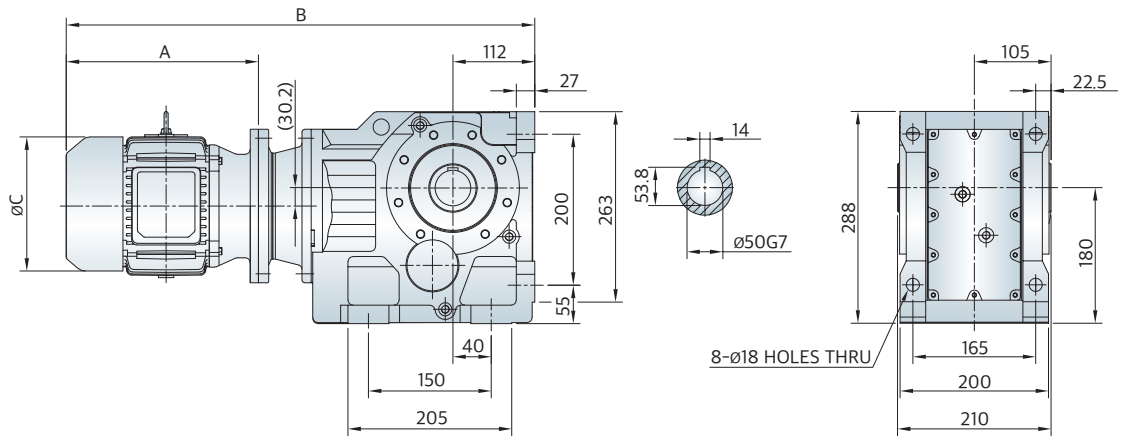
KFM06



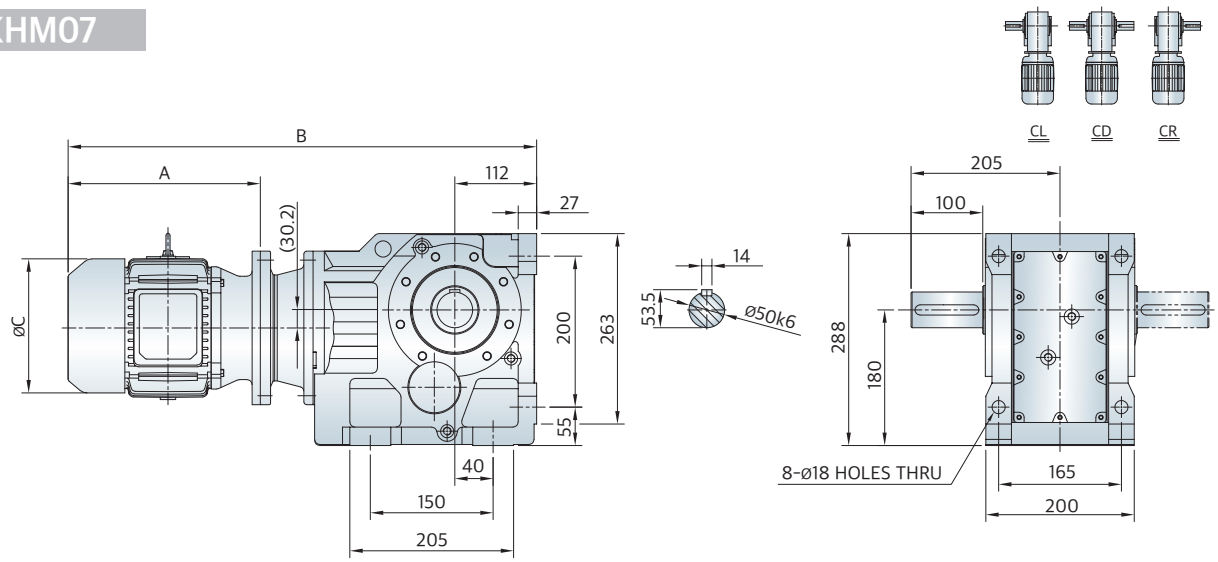
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
06	0.2	102.62 ~ 144.79	6.12 ~ 4.41	232	578	160	50	53
	0.4	76.37 ~ 144.79	4.78 ~ 2.50	232	578	160	50	53
	0.75	57.28 ~ 123.54	3.19 ~ 1.48	259	605	200	74	77
	1.5	24 ~ 90.04	3.76 ~ 1.02	315	661	200	76	79
	2.2	7.28 ~ 60.66	4.44 ~ 1.02	346	695	250	93	96
	3.7	7.28 ~ 30.22	2.39 ~ 1.14	330	679	250	97	100
	5.5	7.28 ~ 24	1.76 ~ 1.02	379	743	300	128	131

KHHM07 & KHM07 외형도 및 외형치수

KHHM07



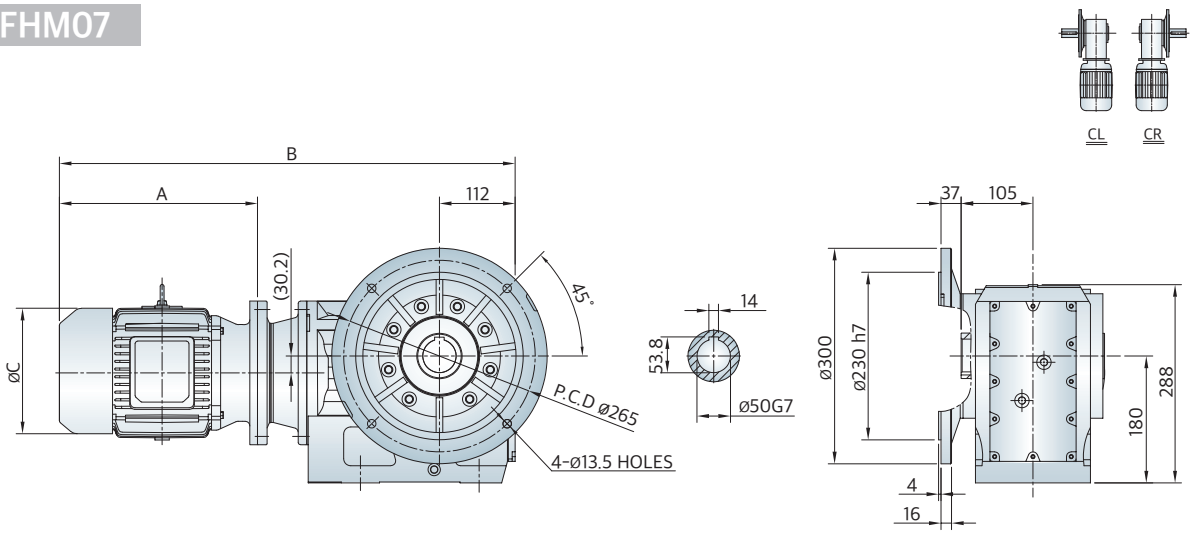
KHM07



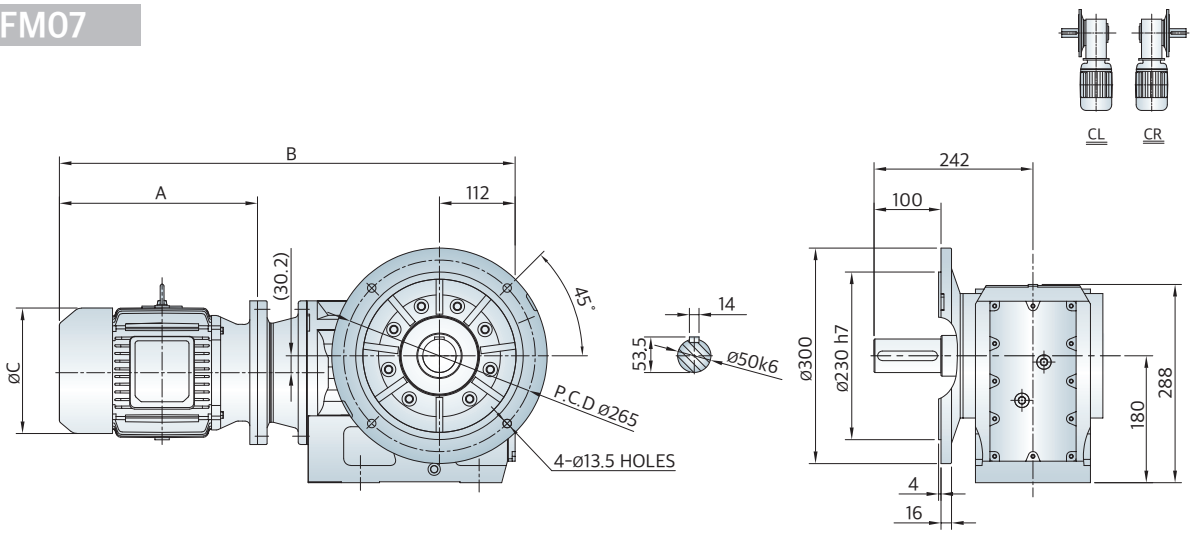
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
07	0.4	154.02 ~ 192.18	4.44 ~ 3.42	232	632	160	71	78
	0.75	97.05 ~ 154.07	3.53 ~ 2.22	259	659	200	95	102
	1.5	40.04 ~ 135.28	4.33 ~ 1.31	315	715	200	97	104
	2.2	25.62 ~ 113.56	4.67 ~ 1.02	346	746	250	114	121
	3.7	20.25 ~ 64.75	3.19 ~ 1.02	330	730	250	118	125
	5.5	10.84 ~ 45.16	2.85 ~ 1.08	379	783	300	148	155
	7.5	7.24 ~ 30.89	2.62 ~ 1.14	417	821	300	155	162
	11	7.24 ~ 23.08	1.76 ~ 1.02	474	910	350	214	221

KFHM07 & KFM07 외형도 및 외형치수

KFHM07



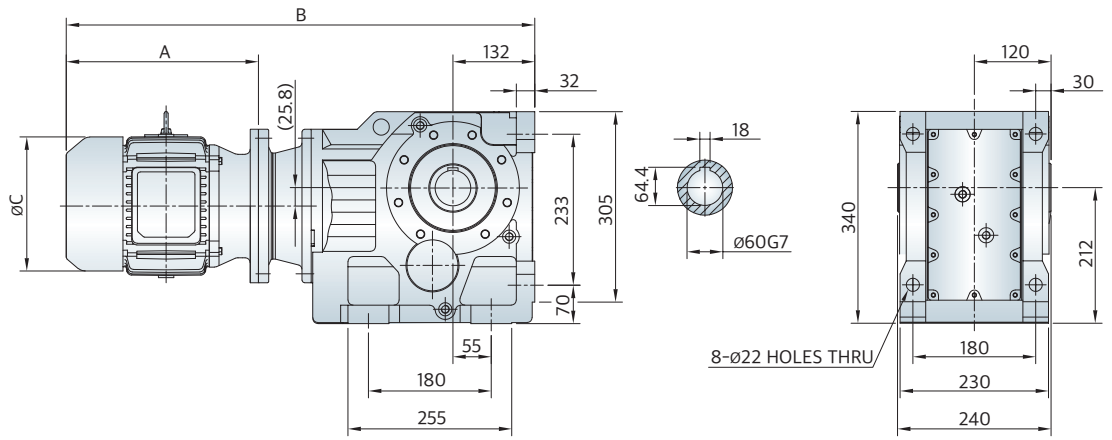
KFM07



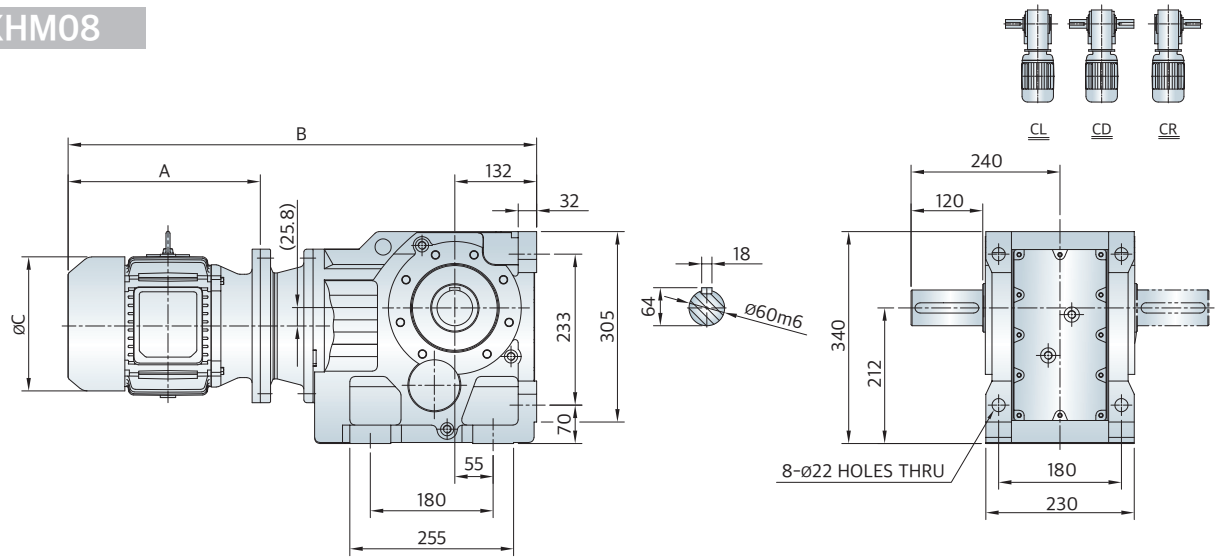
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
07	0.4	154.02 ~ 192.18	4.44 ~ 3.42	232	632	160	78	86
	0.75	97.05 ~ 154.07	3.53 ~ 2.22	259	659	200	102	110
	1.5	40.04 ~ 135.28	4.33 ~ 1.31	315	715	200	104	112
	2.2	25.62 ~ 113.56	4.67 ~ 1.02	346	746	250	121	129
	3.7	20.25 ~ 64.75	3.19 ~ 1.02	330	730	250	125	133
	5.5	10.84 ~ 45.16	2.85 ~ 1.08	379	783	300	155	163
	7.5	7.24 ~ 30.89	2.62 ~ 1.14	417	821	300	162	170
	11	7.24 ~ 23.08	1.76 ~ 1.02	474	910	350	221	229

KHHM08 & KHM08 외형도 및 외형치수

KHHM08



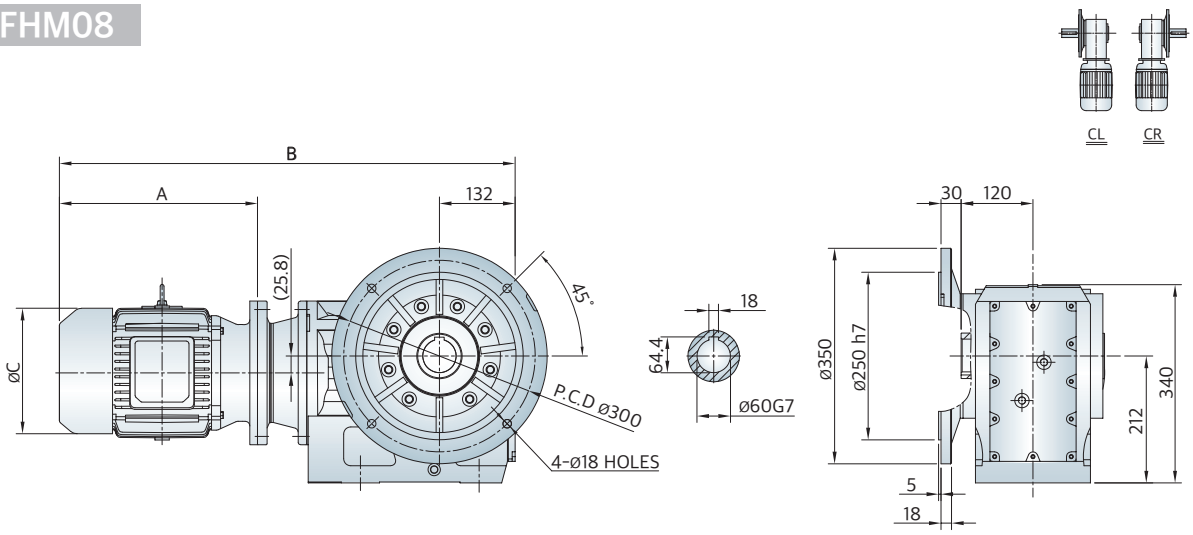
KHM08



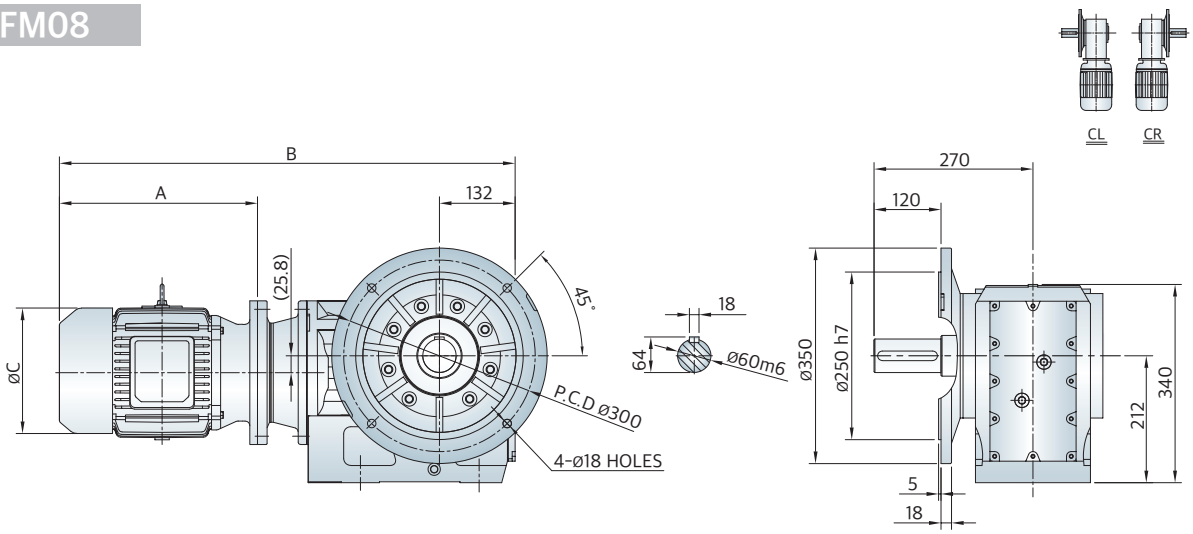
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
08	0.75	147.33 ~ 197.37	3.99 ~ 2.96	259	734	200	133	145
	1.5	86.34 ~ 174.19	3.53 ~ 1.76	315	790	200	135	147
	2.2	63 ~ 147.32	3.30 ~ 1.42	346	821	250	152	164
	3.7	36.52 ~ 115.82	2.85 ~ 0.96	330	805	250	156	168
	5.5	27.88 ~ 86.34	2.85 ~ 0.96	379	858	300	186	198
	7.5	14.45 ~ 63	3.30 ~ 0.96	417	896	300	193	205
	11	7.21 ~ 44.02	2.85 ~ 0.91	474	985	350	251	263
	15	7.21 ~ 31.39	2.10 ~ 1.02	518	1,029	350	259	271
	18.5	7.21 ~ 24.92	1.71 ~ 0.96	537	1,051	400	277	289
	22	7.21 ~ 19.45	1.71 ~ 0.96	537	1,051	400	277	289

KFHM08 & KFM08 외형도 및 외형치수

KFHM08



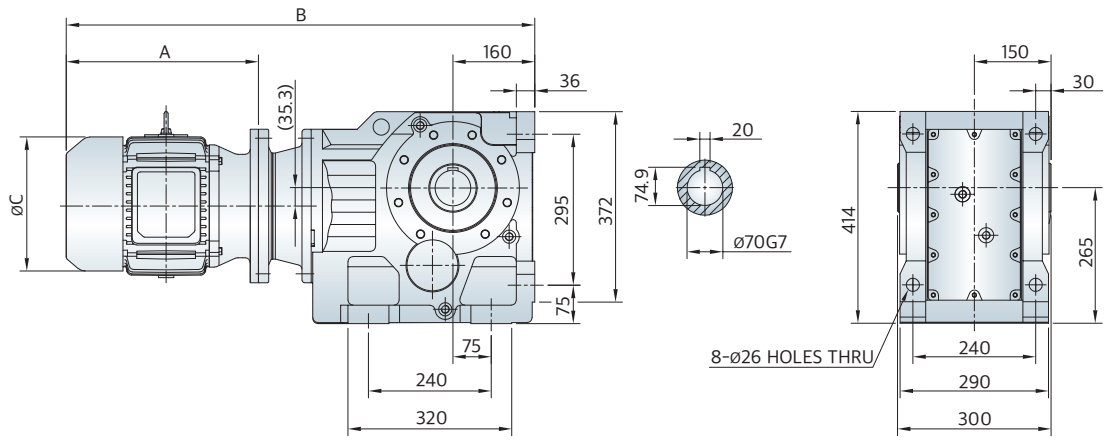
KFM08



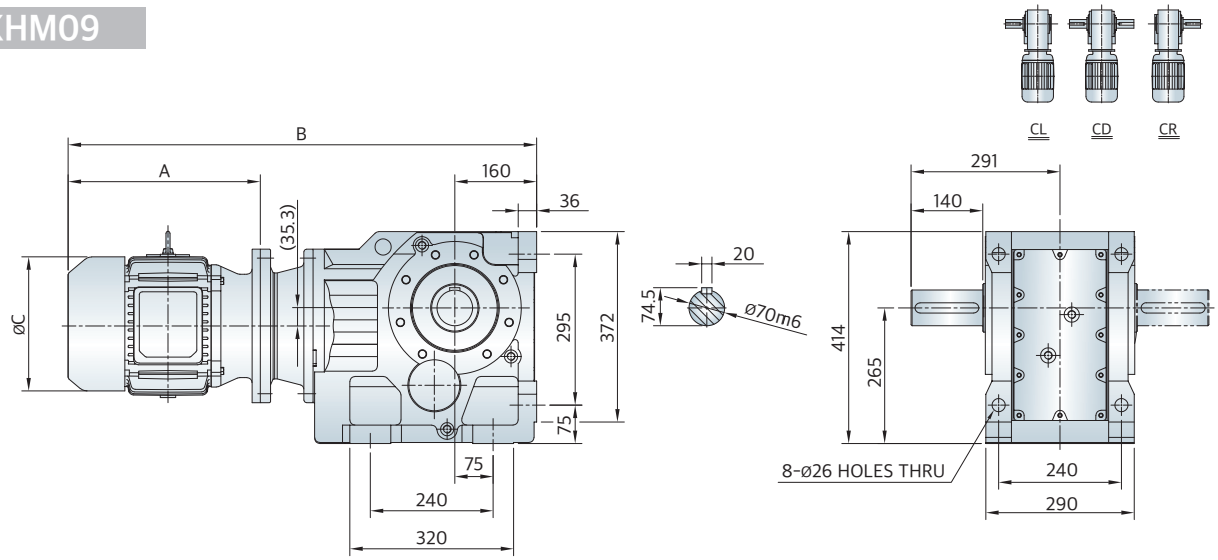
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
08	0.75	147.33 ~ 197.37	3.99 ~ 2.96	259	734	200	146	155
	1.5	86.34 ~ 174.19	3.53 ~ 1.76	315	790	200	148	157
	2.2	63 ~ 147.32	3.30 ~ 1.42	346	821	250	165	174
	3.7	36.52 ~ 115.82	2.85 ~ 0.96	330	805	250	169	178
	5.5	27.88 ~ 86.34	2.85 ~ 0.96	379	858	300	199	208
	7.5	14.45 ~ 63	3.30 ~ 0.96	417	896	300	206	215
	11	7.21 ~ 44.02	2.85 ~ 0.91	474	985	350	264	273
	15	7.21 ~ 31.39	2.10 ~ 1.02	518	1,029	350	272	281
	18.5	7.21 ~ 24.92	1.71 ~ 0.96	537	1,051	400	290	299
	22	7.21 ~ 19.45	1.71 ~ 0.96	537	1,051	400	290	299

KHHM09 & KHM09 외형도 및 외형치수

KHHM09



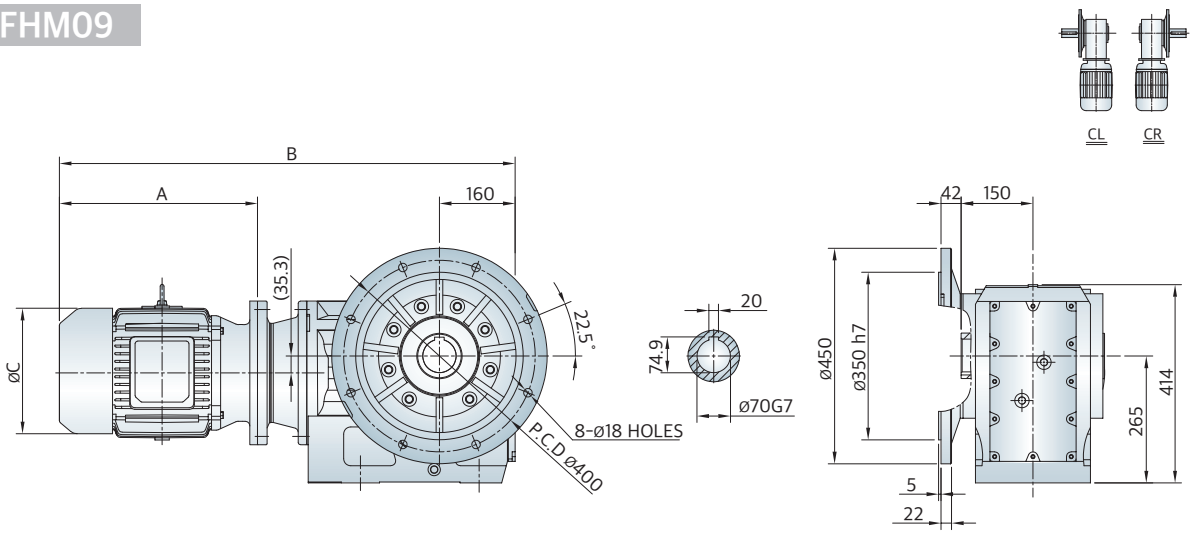
KHM09



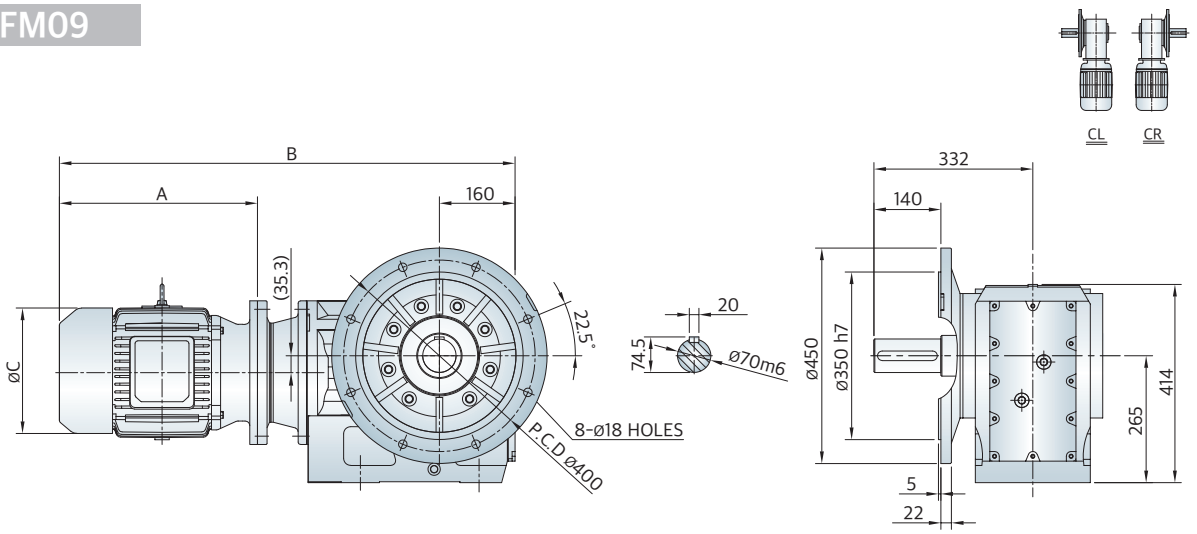
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
09	1.5	123.93 ~ 176.05	3.87 ~ 2.73	315	855	200	202	221
	2.2	96.8 ~ 176.05	3.42 ~ 1.88	346	886	250	219	238
	3.7	70.54 ~ 153.21	2.62 ~ 1.19	330	870	250	223	242
	5.5	47.93 ~ 123.93	2.73 ~ 1.08	379	919	300	254	273
	7.5	34.23 ~ 96.8	2.85 ~ 1.02	417	957	300	261	280
	11	22.37 ~ 70.54	2.96 ~ 0.96	474	1,036	350	318	337
	15	16.56 ~ 47.93	3.07 ~ 1.02	518	1,080	350	326	345
	18.5	11.99 ~ 41.87	3.07 ~ 0.96	537	1,099	400	344	363
	22	8.71 ~ 30.82	2.39 ~ 1.08	537	1,099	400	344	363
	30	8.71 ~ 24.75	1.76 ~ 1.02	596	1,158	400	376	395

KFHM09 & KFM09 외형도 및 외형치수

KFHM09



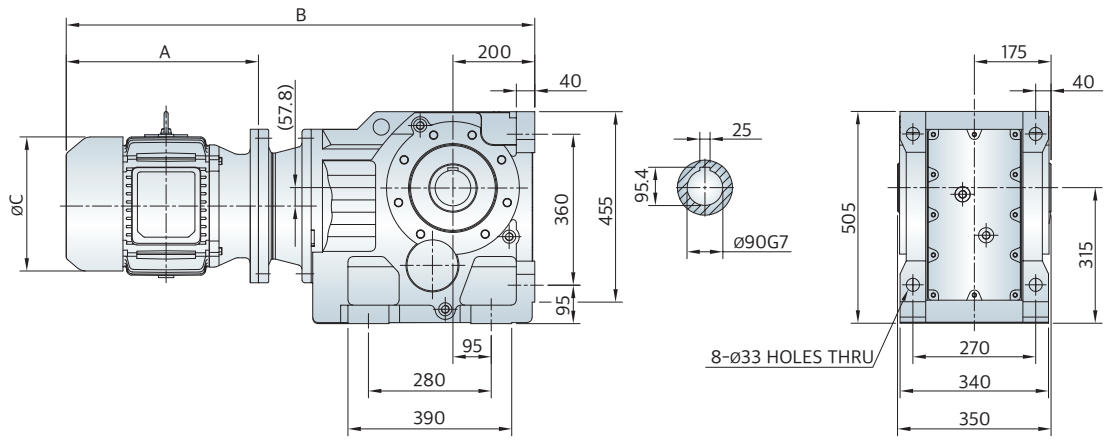
KFM09



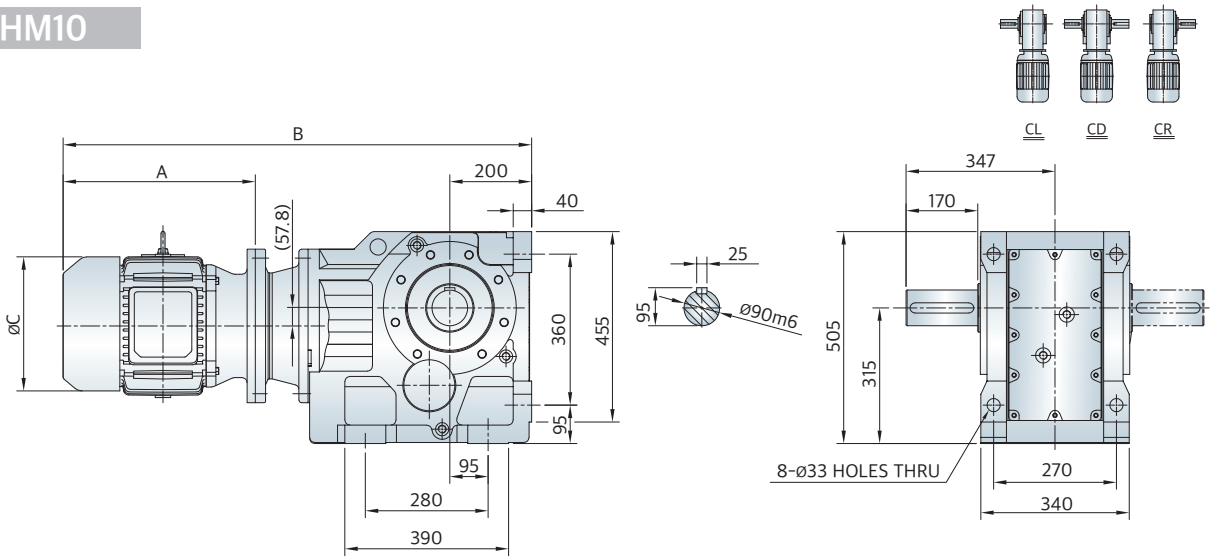
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
09	1.5	123.93 ~ 176.05	3.87 ~ 2.73	315	855	200	226	241
	2.2	96.8 ~ 176.05	3.42 ~ 1.88	346	886	250	243	258
	3.7	70.54 ~ 153.21	2.62 ~ 1.19	330	870	250	247	262
	5.5	47.93 ~ 123.93	2.73 ~ 1.08	379	919	300	278	293
	7.5	34.23 ~ 96.8	2.85 ~ 1.02	417	957	300	285	300
	11	22.37 ~ 70.54	2.96 ~ 0.96	474	1,036	350	342	357
	15	16.56 ~ 47.93	3.07 ~ 1.02	518	1,080	350	350	365
	18.5	11.99 ~ 41.87	3.07 ~ 0.96	537	1,099	400	368	383
	22	8.71 ~ 30.82	2.39 ~ 1.08	537	1,099	400	368	383
	30	8.71 ~ 24.75	1.76 ~ 1.02	596	1,158	400	400	415

KHHM10 & KHM10 외형도 및 외형치수

KHHM10



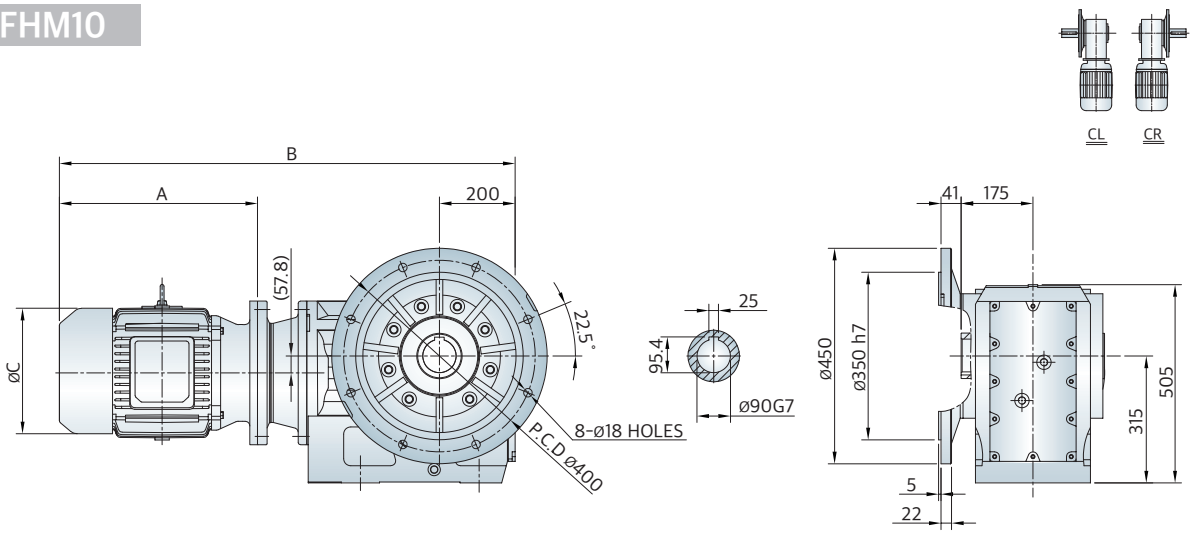
KHM10



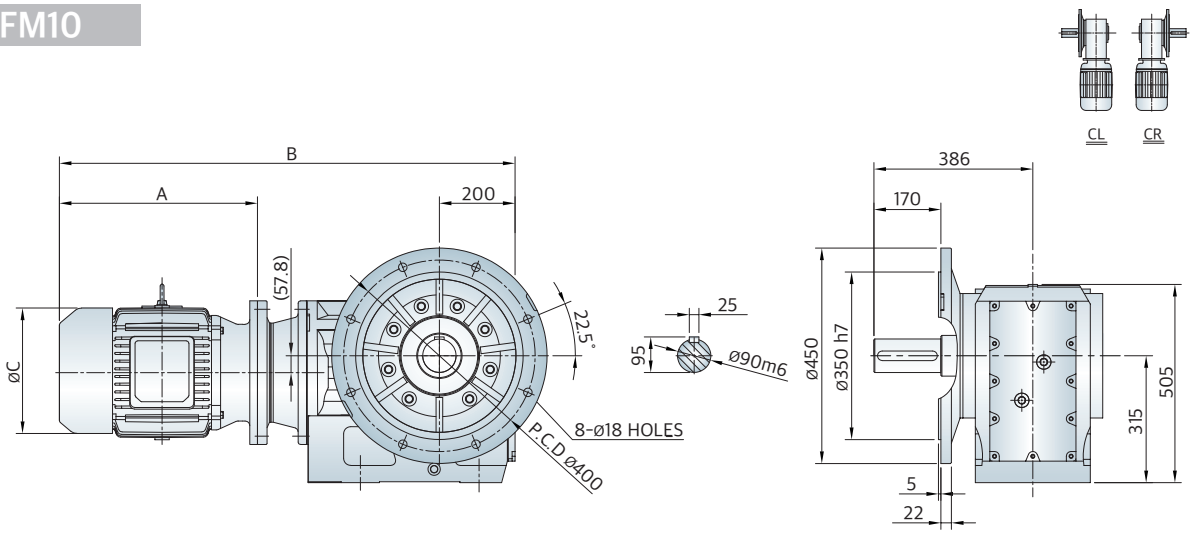
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
10	3.7	73.3 ~ 143.47	4.67 ~ 2.39	330	987	250	322	350
	5.5	82.61 ~ 143.47	2.96 ~ 2.05	379	1,036	300	353	381
	7.5	37 ~ 143.47	4.44 ~ 1.25	417	1,074	300	360	388
	11	37 ~ 112.41	3.07 ~ 1.14	474	1,153	350	417	445
	15	29 ~ 90.96	2.85 ~ 1.02	518	1,197	350	425	453
	18.5	16.75 ~ 73.3	3.99 ~ 1.02	537	1,216	400	443	471
	22	9.94 ~ 57.17	3.30 ~ 1.14	537	1,216	400	443	471
	30	8.69 ~ 42.33	2.73 ~ 1.02	596	1,275	400	475	503
	37	8.69 ~ 37	2.22 ~ 0.91	670	1,374	450	606	634
	45	8.69 ~ 29	1.82 ~ 0.96	670	1,374	450	606	634

KFHM10 & KFM10 외형도 및 외형치수

KFHM10



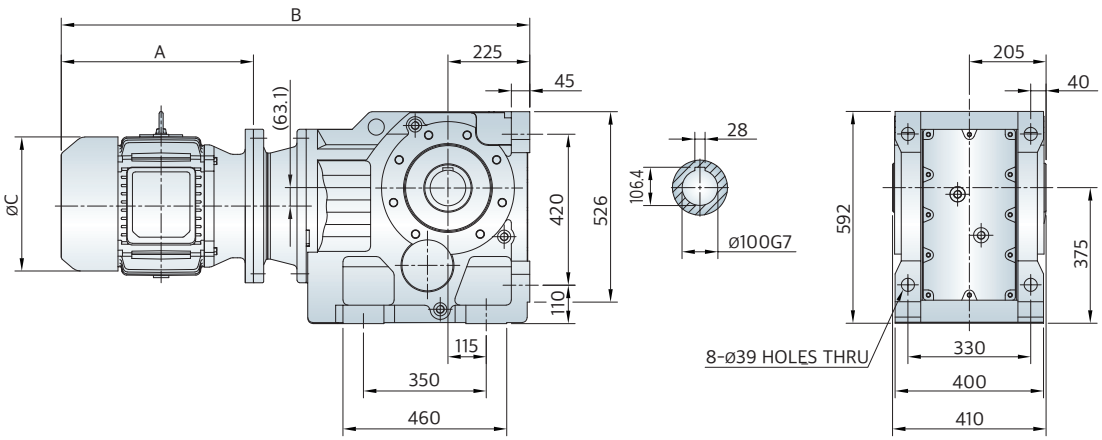
KFM10



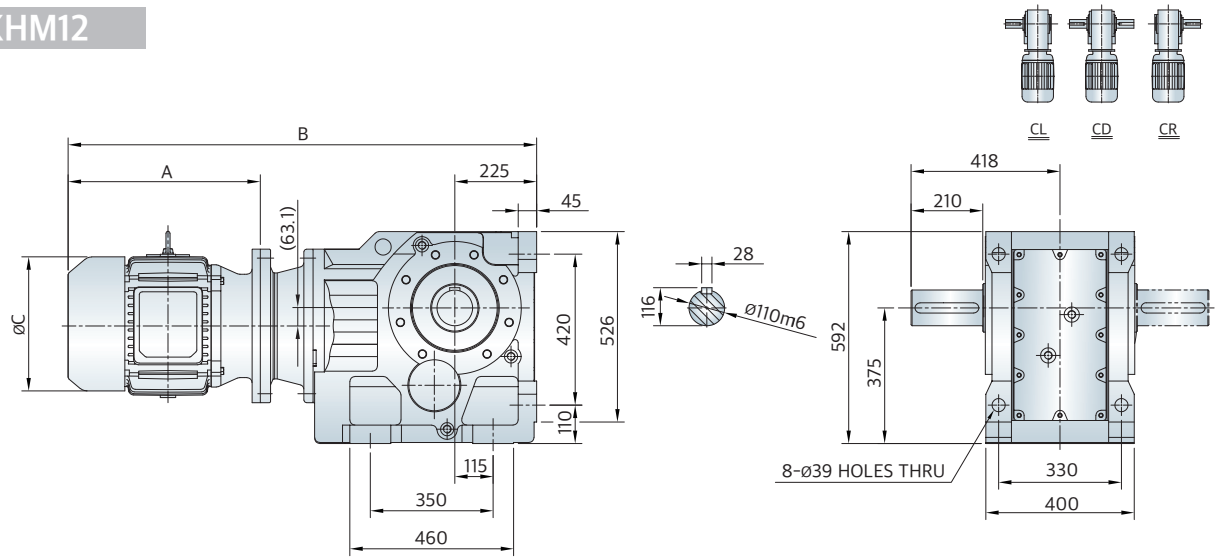
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
10	3.7	73.3 ~ 143.47	4.67 ~ 2.39	330	987	250	345	361
	5.5	82.61 ~ 143.47	2.96 ~ 2.05	379	1,036	300	376	392
	7.5	37 ~ 143.47	4.44 ~ 1.25	417	1,074	300	383	399
	11	37 ~ 112.41	3.07 ~ 1.14	474	1,153	350	440	456
	15	29 ~ 90.96	2.85 ~ 1.02	518	1,197	350	448	464
	18.5	16.75 ~ 73.3	3.99 ~ 1.02	537	1,216	400	466	482
	22	9.94 ~ 57.17	3.30 ~ 1.14	537	1,216	400	466	482
	30	8.69 ~ 42.33	2.73 ~ 1.02	596	1,275	400	498	514
	37	8.69 ~ 37	2.22 ~ 0.91	670	1,374	450	629	645
	45	8.69 ~ 29	1.82 ~ 0.96	670	1,374	450	629	645

KHHM12 & KHM12 외형도 및 외형치수

KHHM12



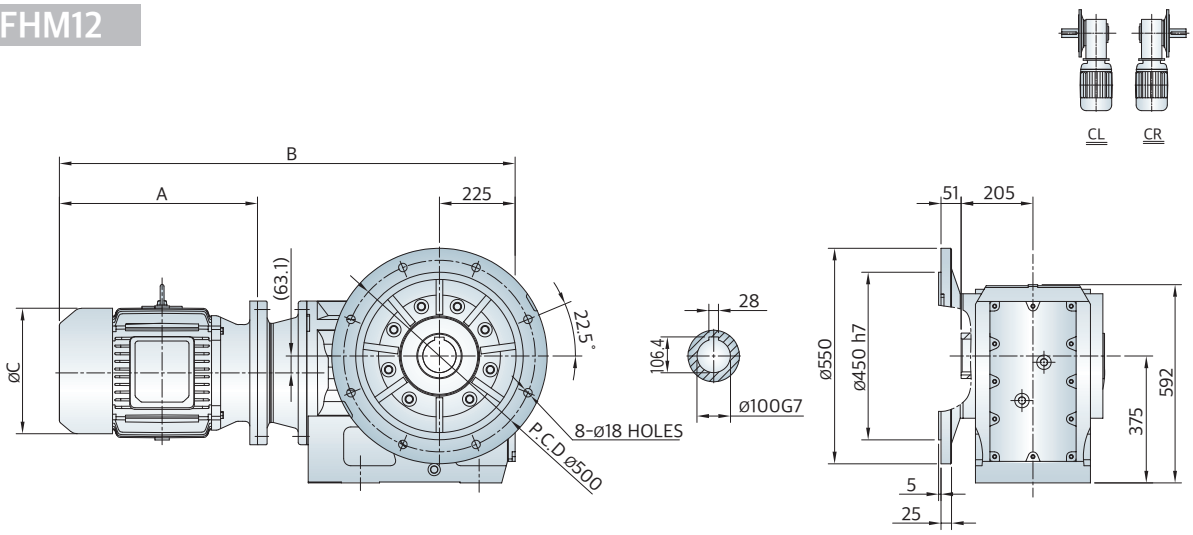
KHM12



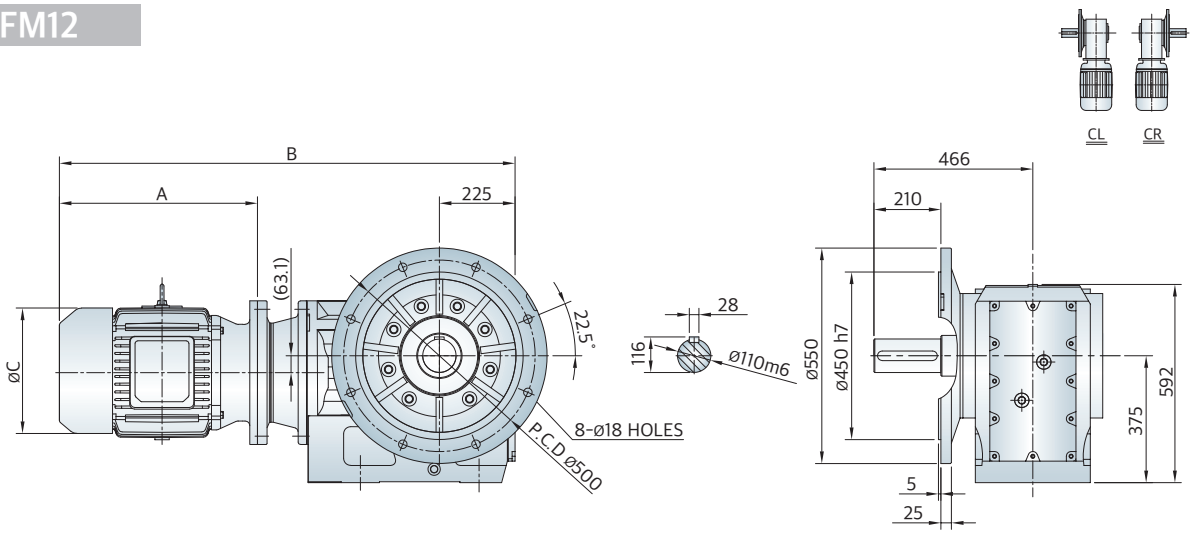
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
12	7.5	70.95 ~ 146.07	4.21 ~ 2.05	417	1,152	300	542	570
	11	70.95 ~ 136.14	2.85 ~ 1.48	474	1,214	350	597	625
	15	47.82 ~ 136.14	3.19 ~ 1.08	518	1,258	350	605	633
	18.5	27.68 ~ 110.18	4.44 ~ 1.14	537	1,277	400	623	651
	22	21.15 ~ 89.89	4.90 ~ 1.14	537	1,277	400	623	651
	30	21.15 ~ 70.95	3.42 ~ 1.08	596	1,336	400	656	684
	37	8.68 ~ 62.6	3.99 ~ 0.96	670	1,435	450	787	815
	45	8.68 ~ 47.82	3.19 ~ 1.08	670	1,435	450	787	815
	55	8.68 ~ 40.19	2.62 ~ 1.02	685	1,452	550	856	884
	75	8.68 ~ 31.37	1.93 ~ 0.96	760	1,527	550	1,029	1,057
	90	8.68 ~ 23.91	1.65 ~ 1.08	800	1,567	550	1,069	1,097

KFHM12 & KFM12 외형도 및 외형치수

KFHM12



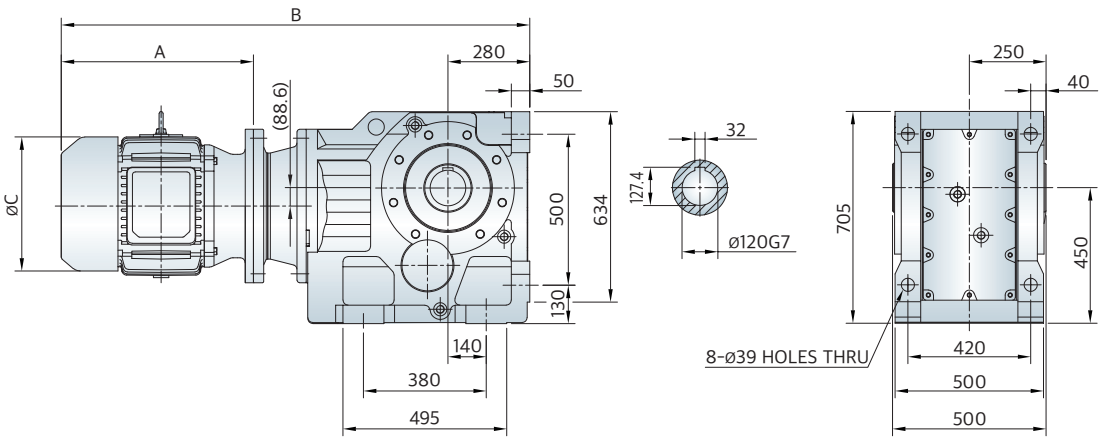
KFM12



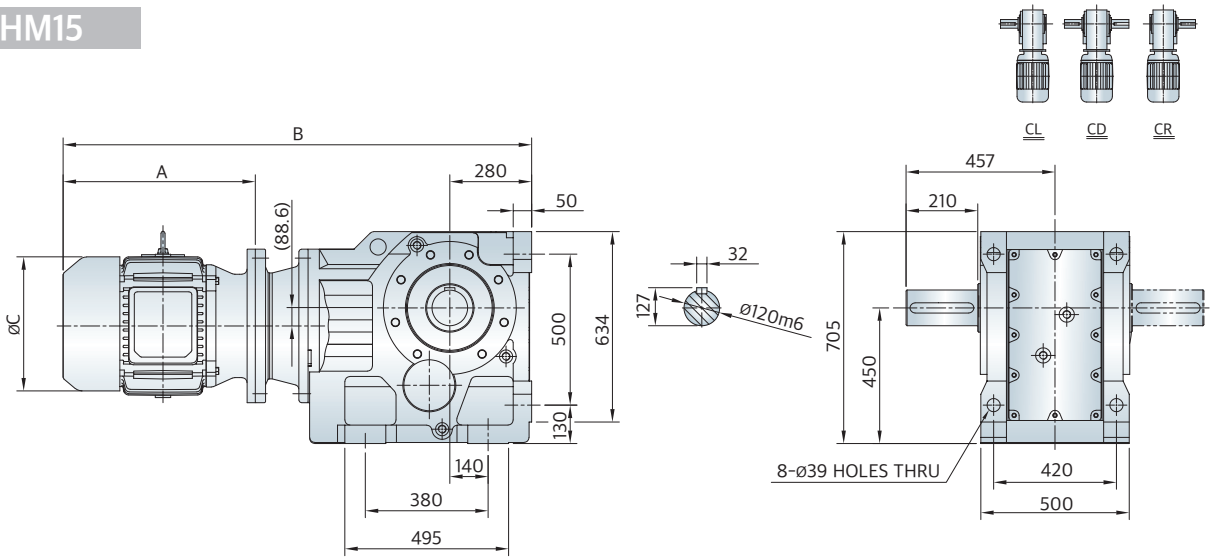
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
12	7.5	70.95 ~ 146.07	4.21 ~ 2.05	417	1,152	300	578	611
	11	70.95 ~ 136.14	2.85 ~ 1.48	474	1,214	350	633	666
	15	47.82 ~ 136.14	3.19 ~ 1.08	518	1,258	350	641	674
	18.5	27.68 ~ 110.18	4.44 ~ 1.14	537	1,277	400	659	692
	22	21.15 ~ 89.89	4.90 ~ 1.14	537	1,277	400	659	692
	30	21.15 ~ 70.95	3.42 ~ 1.08	596	1,336	400	692	725
	37	8.68 ~ 62.6	3.99 ~ 0.96	670	1,435	450	823	856
	45	8.68 ~ 47.82	3.19 ~ 1.08	670	1,435	450	823	856
	55	8.68 ~ 40.19	2.62 ~ 1.02	685	1,452	550	892	925
	75	8.68 ~ 31.37	1.93 ~ 0.96	760	1,527	550	1,065	1,098
	90	8.68 ~ 23.91	1.65 ~ 1.08	800	1,567	550	1,105	1,138

KHHM15 & KHM15 외형도 및 외형치수

KHHM15



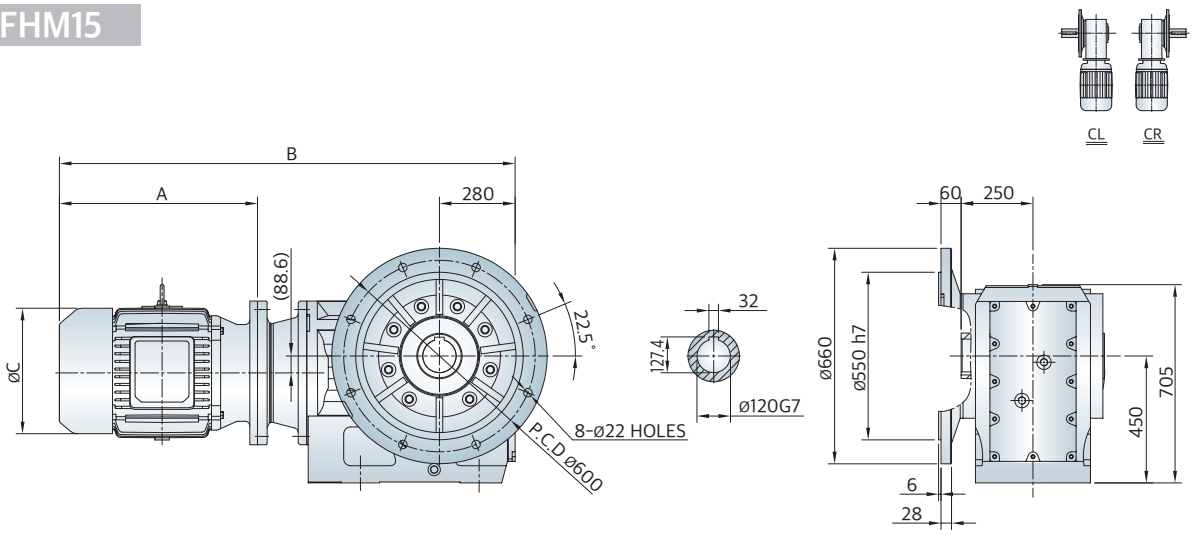
KHM15



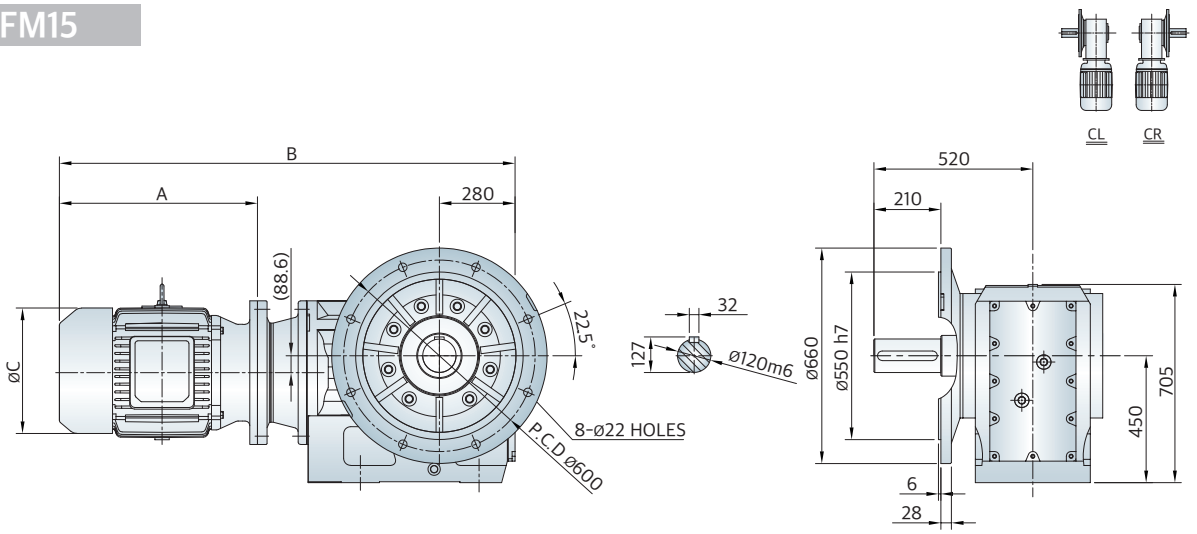
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
15	11	91.65 ~ 150.41	3.07 ~ 1.88	474	1,305	350	850	882
	15	79.75 ~ 150.41	2.62 ~ 1.36	518	1,349	350	858	890
	18.5	38.02 ~ 122.39	4.44 ~ 1.36	537	1,368	400	876	908
	22	38.02 ~ 122.39	3.76 ~ 1.19	537	1,368	400	876	908
	30	31.3 ~ 100.22	3.42 ~ 1.02	596	1,427	400	909	941
	37	31.3 ~ 91.65	2.73 ~ 0.91	670	1,526	450	1,039	1,071
	45	18.37 ~ 70.38	3.76 ~ 0.96	670	1,526	450	1,039	1,071
	55	12.65 ~ 61.02	4.33 ~ 0.96	685	1,543	550	1,109	1,141
	75	12.65 ~ 38.02	3.19 ~ 1.14	760	1,618	550	1,282	1,314
	90	12.65 ~ 38.02	2.62 ~ 0.91	800	1,658	550	1,322	1,354

KFHM15 & KFM15 외형도 및 외형치수

KFHM15



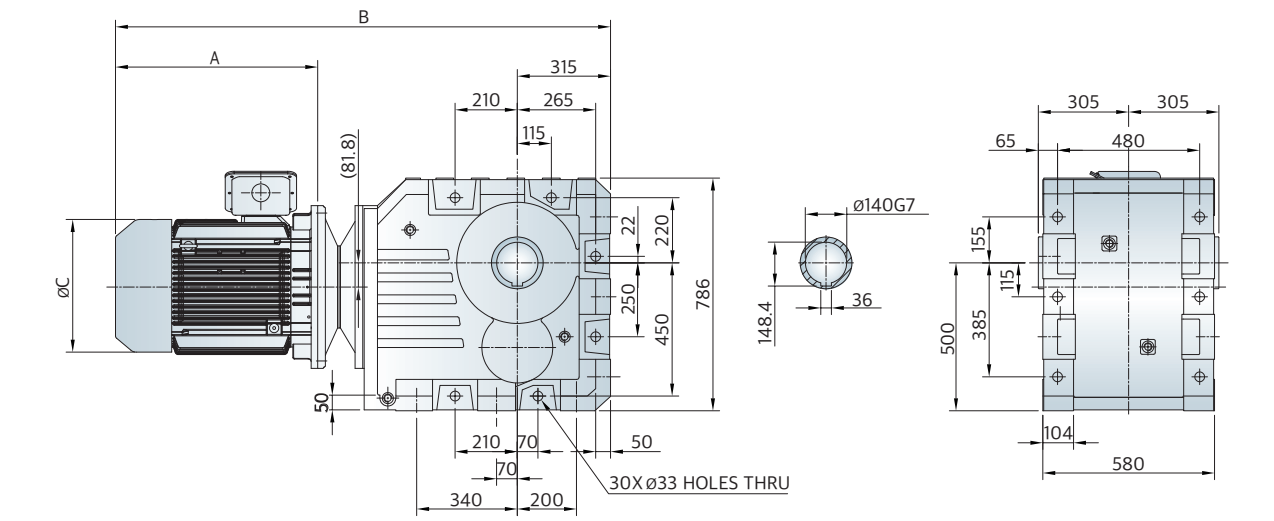
KFM15



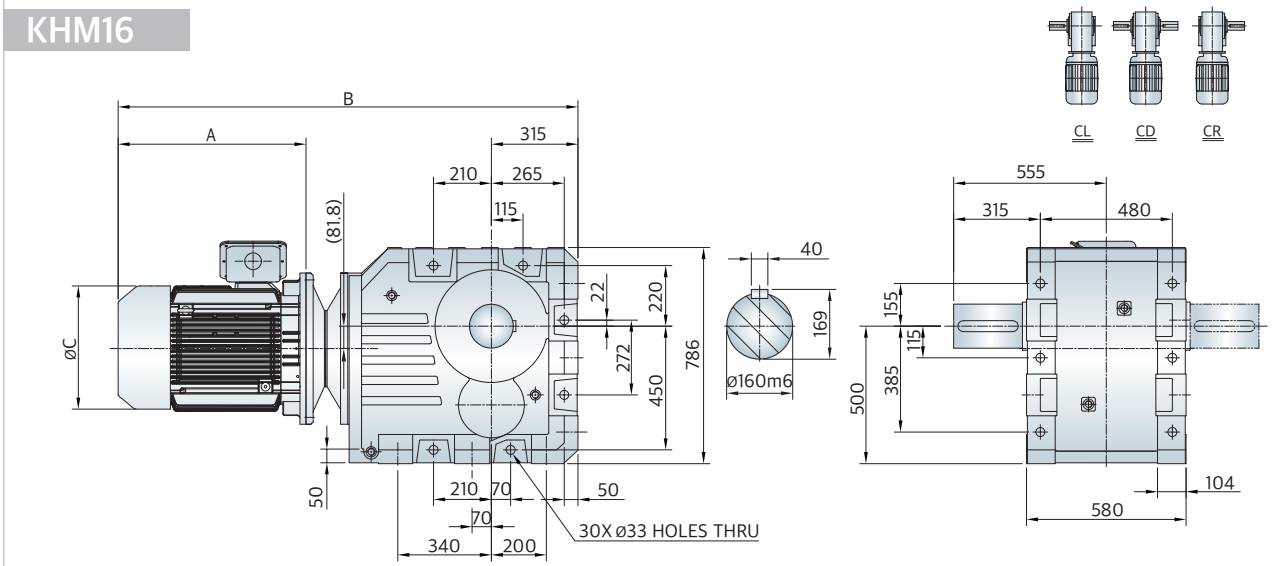
Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KFHM	KFM
15	11	91.65 ~ 150.41	3.07 ~1.88	474	1,305	350	906	960
	15	79.75 ~ 150.41	2.62 ~ 1.36	518	1,349	350	914	968
	18.5	38.02 ~ 122.39	4.44 ~ 1.36	537	1,368	400	932	986
	22	38.02 ~ 122.39	3.76 ~ 1.19	537	1,368	400	932	986
	30	31.3 ~ 100.22	3.42 ~ 1.02	596	1,427	400	965	1,019
	37	31.3 ~ 91.65	2.73 ~ 0.91	670	1,526	450	1,095	1,149
	45	18.37 ~ 70.38	3.76 ~ 0.96	670	1,526	450	1,095	1,149
	55	12.65 ~ 61.02	4.33 ~ 0.96	685	1,543	550	1,165	1,219
	75	12.65 ~ 38.02	3.19 ~ 1.14	760	1,618	550	1,338	1,392
	90	12.65 ~ 38.02	2.62 ~ 0.91	800	1,658	550	1,378	1,432

KHHM16 & KHM16 외형도 및 외형치수

KHHM16



KHM16



Fr.	Power (kW)	Ratio (i)	Service Factor	A	B	C	Weight (kg)	
							KHHM	KHM
16	11	134.99 ~ 164.5	3.76 ~ 3.07	474	1,436	350	1,274	1,313
	15	134.99 ~ 164.5	2.73 ~ 2.28	518	1,480	350	1,282	1,321
	18.5	87.86 ~ 134.99	3.42 ~ 2.22	537	1,499	400	1,300	1,339
	22	78.14 ~ 134.99	3.30 ~ 1.88	537	1,499	400	1,300	1,339
	30	60.74 ~ 109.83	3.07 ~ 1.71	596	1,558	400	1,333	1,372
	37	51.77 ~ 109.83	2.96 ~ 1.36	670	1,657	450	1,463	1,502
	45	42.89 ~ 109.83	2.96 ~ 1.14	670	1,657	450	1,463	1,502
	55	36.61 ~ 87.86	2.85 ~ 1.14	685	1,674	550	1,533	1,572
	75	24.52 ~ 78.14	3.07 ~ 0.96	760	1,749	550	1,706	1,745
	90	17.34 ~ 68.07	3.64 ~ 0.91	800	1,789	550	1,746	1,785

GEARED MOTOR
유지보수 매뉴얼

목 차

1. 안전지침

1.1 서론

이 기어드모터는 높은 전압, 회전체 및 뜨거운 표면으로 인하여 심각한 부상이나 재산상 손해를 초래할 수 있습니다. 설치, 유지, 보수는 자격이 부여되고 교육 되어진 사람에 의해서 안전법규, 규격사항을 준수하여 수행되어야 합니다.
발생 가능한 위험을 예방하기 위해서는 이 취급설명서에 명기되어 있는 안전에 대한 주의사항을 숙지하여야 합니다.
설치 또는 운전을 하기 전에 취급설명서의 모든 내용을 반드시 읽어 주십시오.

1.2 경고, 주의, 공지사항

이 취급지침서에는 안전상에 중요한 문구에 대해서 강조하기 위해 경고, 주의, 공지사항을 표기하였습니다. 이 취급설명서에 경고, 주의, 공지사항은 아래와 같이 정의되어 있습니다.

⚠ 경 고

만일 주의하지 않으면 사망 또는 심각한 부상의 결과를 일으킬 수 있는 잠재적 위험 상황을 가리킨다.

⚠ 주 의

만일 주의하지 않으면 부상 또는 물적 피해의 결과를 일으킬 수 있는 잠재적 위험 상황을 가리킨다.

1.3 안전에 대한 주의사항

⚠ 경 고

- 인원 수송장치에 사용되는 경우, 장치쪽에 안전 보호장치를 설치해 주십시오. 장치의 이상으로 인해 신체상 치명적인 부상 또는 물적 피해를 일으킬 수 있습니다.
- 승강장치에 사용되는 경우, 장치쪽에 낙하방지용 안전 보호장치를 설치해 주십시오. 장치의 이상으로 인해 신체상 치명적인 부상 또는 물적 피해를 일으킬 수 있습니다.

⚠ 주 의

- 기어드모터의 설계사양 내에서만 사용해 주십시오. 다른 용도로 사용했을 경우 제품의 파손으로 인해 신체 또는 물적 피해를 입을 수 있습니다.
- 부품 또는 제품을 임의 개조해서 사용하지 마십시오. 임의 수정해서 사용할 경우 비정상 작동으로 심각한 상해 또는 물적 피해를 초래할 수 있습니다.
- 명판을 훼손하지 마십시오.

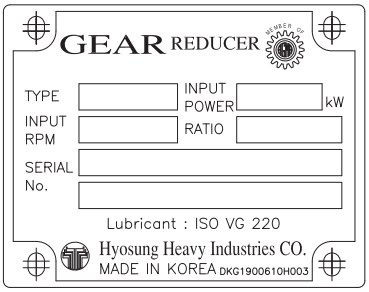
2. 개요

이 취급설명서는 효성 기어드모터를 안전하고 올바르게 사용토록 하기 위하여 작성되었습니다. 기어드모터의 부적절한 설치, 사용 및 보수는 화재, 폭발, 감전 등의 피해를 초래할 수 있으므로 반드시 읽고 난 후에 제품을 취급하여 주십시오. 읽고 난 후에는 항상 볼 수 있는 곳에 보관하십시오.

3. 검사, 운반 및 보관

3.1 검사

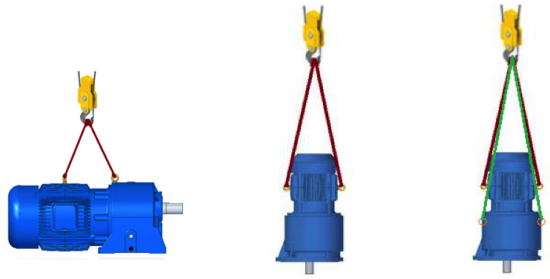
(1) 운송 도중에 발생할 수 있는 손상에 대해서 제품 인수 즉시 이상 여부를 확인하십시오.
(2) 명판에 기재되어 있는 형식, 전압, 감속비, 입력회전수 및 제조번호 등이 주문 사양과 일치하는지 확인하고 축을 손으로 돌렸을 때 잘 돌아가는지, 오일 및 그리스 양은 적정한지 등 기본적인 사항은 반드시 확인하여 주십시오. 만약, 문제가 발생된 경우에는 구매하신 대리점이나, 당사 영업팀 또는 A/S 부서로 제품사양과 제조번호를 확인 후 연락하여 주십시오.



〈 명판 〉
TYPE : 제품 형식
INPUT POWER : 동력
INPUT RPM : 입력회전수
RATIO : 감속비
SERIAL NO : 제조번호

3.2 운반

(1) 인양장치가 있는 기어드모터는 반드시 인양장치를 사용하여 주십시오. 설치시 축 부위, 배관, 부착품 등 주요부품이 손상되지 않도록 주의 하십시오.
(2) 감속기측과 전동기측의 인양고리를 함께 사용하여 안전하게 인양하여 주시기 바랍니다.
(3) 수직형 기어드모터의 경우, 감속기측에 인양용 홀이 없는 소형은 모터의 양쪽 인양용 아이볼트를 이용하여 안전하게 인양하고, 감속기측에 인양용 홀이 있는 중 · 대형은 감속기측 인양용 홀과 모터측 인양용 아이볼트를 같이 이용하여 인양 하십시오.



〈수평형〉 〈수직형(소형)〉 〈수직형(중·대형)〉

⚠ 경 고

- 기어드모터의 인양고리를 이용하여 기계장치를 함께 들어올리지 마십시오. 만일 준수하지 않을 경우 낙하 등에 의하여 심각한 상해를 입을 수 있습니다.
- 운반하기 위해 포장을 거꾸로 해서, 제품을 아래 방향으로 가게 하는 것은 절대로 하지 말아 주십시오. 낙하나 전도로 인해서 심각한 상해를 입을 수 있습니다.

⚠ 주 의

- 운반시 제품 상하의 확인 및 인양고리와 고정볼트의 상태를 확인 후 인양하시기 바랍니다.
  또한, 기어드모터의 중량을 확인 후 이에 맞는 장비를 이용하여 운반하십시오.
- 크레인으로 운반하거나 매달린 기어드모터 밑으로 보행하지 마십시오. 낙하나 전도로 인하여 신체 상에 치명적인 부상 또는 사망에 이를 수 있습니다.
- 수직형 중 · 대형 기어드모터의 경우 감속기측 인양 홀과 모터측 아이볼트를 같이 인양하지 않을 경우 제품의 파손이 발생할 수 있고 뒤집힘으로 인한 상해 또는 파손의 위험이 있습니다.

3.3 보관

기어드모터는 실내에 진동이 없고, 온도변화가 적으며 청결 및 건조하고 통풍이 잘되는 장소에 보관하여 주십시오. 만일 **3개월 이상 장기간 보관할 경우** 아래와 같이 관리하여 주십시오.

(1) 베어링과 기어류의 녹방지를 위해 **매월 1회 5분 이상 축을 회전**시켜 주십시오.

(2) 3개월마다 500V급 절연저항계를 이용하여 **절연저항을 측정**하여 절연상태를 관리하여 주십시오.(기준치 = 정격전압(kV) + 1MΩ 이상)

(3) 제품 인도시 녹이 발생하지 않도록 방청도료가 도포되어 있으나, 보관조건에 따라 녹이 발생할 수도 있으므로 주기적으로 점검하여 **방청도료를 도포**하여 주십시오.
  * 출력축과 같이 외부로 노출된 가공 부위는 보관 도중에도 녹이 발생할 수 있으므로, 주기적으로 용제 희석형 방청유(JIS NP19에 상당하는)를 도포하여 주십시오.

(4) 오일시일은 온도나 주위환경의 영향으로 노화되는 경우가 있습니다. **오일시일의 노화방지**를 위해 주위온도 15~30℃, 습도 40~70%에서 보관하십시오. 또한 직사광선(햇빛), 먼지, 오존에 노출되지 않도록 주의 하십시오. **장기간 보관 후 사용 전에 이상 유무를 점검하고 이상이 있을 경우 교체하십시오.** 오일시일은 소모품으로 장기간 사용하지 않을 경우, 노화(산화)되어 누유 발생의 원인이 됩니다.

(5) 기어드모터를 취부한 상태에서 3개월이상 사용하지 않을 경우 습도가 높은 장소, 수분 및 이물질의 침입이 우려되는 장소에서는 기어드모터 전체를 **방수커버로 덮고 내부에 방습제를 넣은 후 밀봉**하여 주십시오. 방습제는 정기적으로 교환하여 주십시오.

(6) 6개월이상 보관할 경우에는 **기화성 방청유 (JIS NP20에 상당하는)를 적당량 주입후에 밀폐**해 주십시오.

(7) 부하운전 시작 전에 이상음, 진동, 발열 등이 있지 않은가 확인해 주십시오. 이상이 있을 경우에는 대리점이나, 당사 영업팀 또는 A/S 부서로 연락해 주십시오.

4. 설치

4.1 설치장소 조건

(1) 해발고도 1000m이하이고, 주위온도 −10℃~40℃ 사이인 옥내장소에서 사용하여 주십시오. 만약, 해발고도와 주위온도가 현저하게 낮거나 높은 장소에서 사용 시에는 당사의 기술부서와 협의하여 주시기 바랍니다.

(2) 통풍이 양호하고 먼지 및 습기가 적고, 점검이 용이한 장소를 선정하여 설치하십시오

(3) 수분, 기름 및 폭발성 가스가 존재하거나 진동이 심하게 전달되는 장소는 피하여 주십시오.

⚠ 경 고

- 크레인 등으로 이송시 제품의 밑에서 작업을 하면 낙하로 인해 생명이 위험할 수 있습니다.

⚠ 주 의

- 기어드모터 주위에는 통풍을 방해하는 장해물이 없도록 해 주십시오. 냉각 저하로 인해 화재의 우려가 있습니다.
- 기어드모터의 축단부, 내경부, 키 부위 등을 맨손으로 만지지 마십시오.
- 오일이 들어가면 안되는 식품기계 등에는 오일증기의 침입을 방지할 수 있는 장치를 설치해 주십시오. 오일증기나 찌꺼기로 인해서 생산제품이 불량이 발생될 수 있습니다.

4.2 기초 및 설치

(1) 콘크리트 기초 위에 설치하는 경우에는 기초면을 바닥면보다 충분히 높게하여 배수가 양호하게 하고 취부면이 모두 설치면에 안전하게 지지되어 움직이지 않게 설치 하십시오. 필요한 경우 심(SHIM)을 사용하십시오.

(2) 취부대에 고정되는 경우에는 취부각도는 바닥과 ±1° 이내에서 설치하고 운전시 동적 하중이 추가되어 진동 발생의 원인이 될 수 있으므로 견고한 구조로 하여 주십시오. 설치 상태가 부적절하면 진동에 의해 고장을 초래할 수 있으므로 주의하여 주십시오.

(3) 수평 타입 이외의 설치 방향에 대해서는 아래와 같이 Air Vent 와 Oil Level Gauge, Drain Plug의 위치를 반드시 확인하여 필요 시 위치를 변경하여 설치하시기 바랍니다.

⚠ 주 의

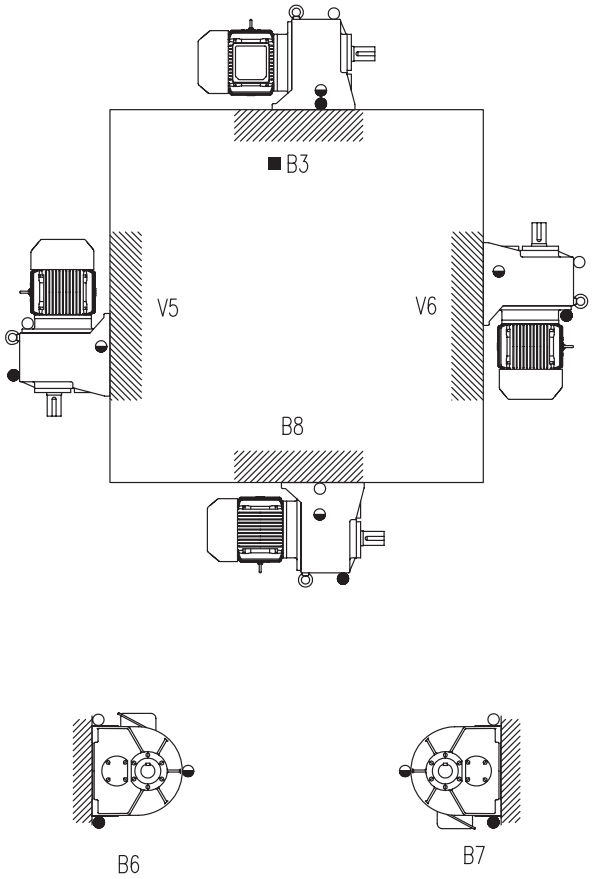
- 취부 방향에 따라 Air Vent, Oil Level Gauge, Drain Plug 위치를 변경하지 않을 시 누유, 제품 파손 등이 발생 될 수 있습니다.
- 상기 부품의 위치 변경시 누유가 될 수 있으므로 주의하여 교체하시기 바랍니다.

4.3 부하연결

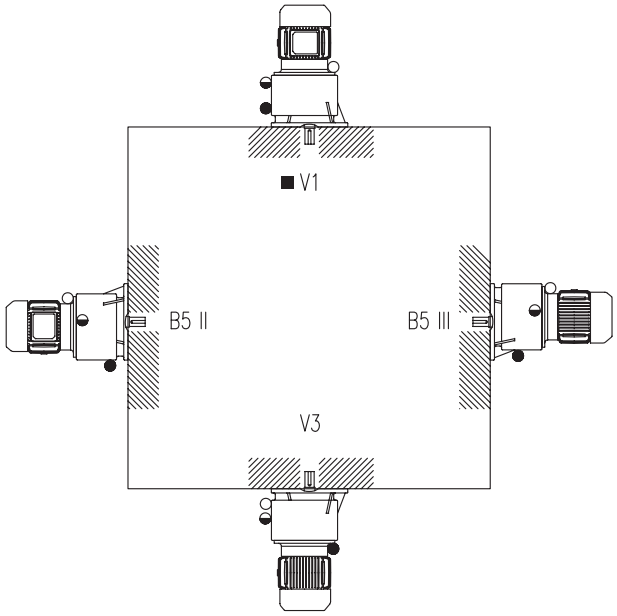
(1) BED가 포함되어 납품된 제품은 BED와 기어드모터의 ALIGNMENT를 조정하여 납품되나, 이동 또는 설치시 제품의 정렬 상태가 틀어질 수 있습니다. MIS-ALIGNMENT는 진동, 소음, 수명에 영향을 줄 수 있으므로 재 확인하여 설치 바랍니다.

(2) 축에 커플링, 풀리, 스프로켓 등을 취부 할 때에는

수평형



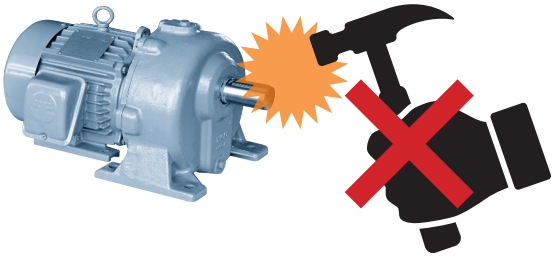
수직형



Symbols

- ○ Air Vent
- ◒ Oil Level
- ● Drain Plug
- ▨ Mounting Surface

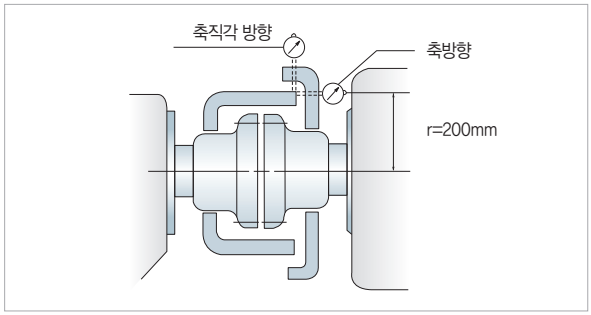
부품의 공차를 고려하고 기름 등을 도포하고 윤활을 하여 수지해머 등과 같이 충격과 손상이 가지 않는 방법으로 가볍게 쳐서 압입하여 주십시오. 또는 커플링을 80~100℃ 로 가열하여 무리없이 축에 끼워주시기 바랍니다.
(출력축에 부착된 충격금지 스티커는 커플링 취부시까지 유지하여 주십시오.)
커플링을 과다하게 가열할 경우 오일시일이 손상되어 누유가 될 수 있습니다.



〈출력축 충격 금지〉

(3) 기어드모터는 직결방식으로 사용하는 것이 좋은 방법이며, 커플링은 가급적 플렉시블(Flexible) 커플링을 사용해 주십시오.
(4) 커플링 취부 시 기어드모터 축 중심과 부하기계 축의 중심이 일직선이 되도록 하여 주십시오.
(5) 일반적으로 커플링의 연결방법 및 허용오차는 하기와 같습니다.

카플링 종류	축직각 방향 눈금	축방향 눈금 r=200mm
고정 커플링	0.03	0.02
기어 커플링	0.05	0.05
플렉시블 커플링	0.1	0.1

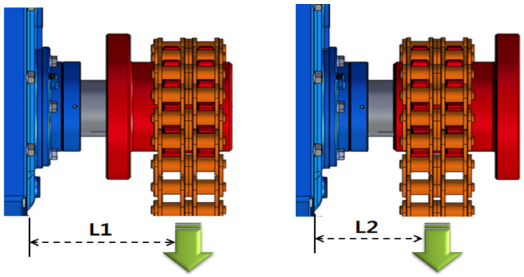


* 축방향 기준 눈금 반경 r=200mm보다 크거나 작을 경우 위 표의 기준값에 비례하여 커지거나 작아집니다.
* 최상의 조건으로 설치되면 노크핀으로 기어드모터 위치를 고정시켜 주십시오.

(6) 스프로켓 및 기어를 취부하는 경우, 출력축 중앙에 하중이 작용하도록 아래의 공식에 의하여 스프로켓 및 기어의 직경을 선정하시고 최대한 축의 돌출부 밑까지 완전히 삽입한 후 사용하십시오.

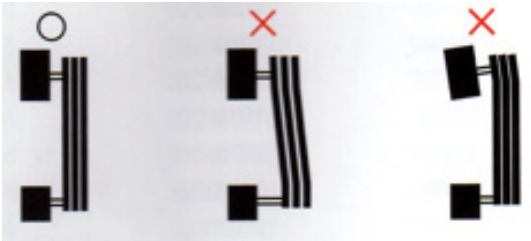
체인스프로켓 기어 피치원직경 ≧ 4×출력축 직경

(7) 출력축에 스프로켓, 풀리 및 기어를 취부하는 경우 하기 그림과 같이 가능하면 기어드모터 본체쪽으로 부착하여 주십시오.(L2가 L1 보다 기어드모터 수명에 유리합니다.)

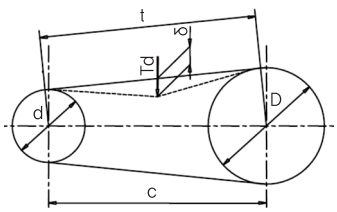


〈나쁜 예〉 〈좋은 예〉

(8) 스프로켓, 풀리 및 기어의 연결 시 기어드모터와 부하기계의 축을 평행하게 하고서 스프로켓, 풀리 및 기어는 양쪽의 중심이 일치되고 축과 직각이 되도록 취부하여 주십시오.



(9) 스프로켓, 체인을 사용하여 상대 기계와 연결하는 경우 체인이 느슨하지 않을 정도의 길이로 사용하여 주십시오.
(10) 벨트 장력 및 풀리 직경은 기어드모터의 베어링 수평 및 축 강도에 큰 영향을 주므로 KS M 6535 규격을 준수하여 설치 사용하는 것이 좋습니다. V-벨트의 속도는 원칙적으로 30m/sec까지로 합니다. V-벨트 장력 및 속도는 다음과 같이 계산할 수 있습니다.



$$t = \sqrt{c^2 - \frac{(D - d)^2}{4}}$$

D : 큰 풀리경(mm)
d : 작은 풀리경(mm)
c : 축간 거리(mm)
Td : 텐션 하중(kgf)
t : 접촉간 거리(mm)
δ: 장력의 허용범위(mm), δ=0.016 x t

⚠ 주 의

- 회전부분에 안전 커버를 설치해서 신체와 직접적인 접촉을 막아주십시오.
- 기어드모터를 설비와 연결하는 경우 오차는 취급설명서, 도면, 카다로그 등에 표시되어 있는 관리치 이내로 연결해 주십시오. 그렇지 못할 경우 파손을 일으킬 수 있습니다.
- 체결부위 볼트는 도면, 카다로그 등에 표시된 규격에 맞는 것을 사용하십시오. 파손시 파편이 비상하여

신체상 상해나 제품에 손상을 줄 수 있습니다.
- 기계와 연결하기 전에 회전방향을 확인해 주십시오. 역 회전으로 인하여 장치의 파손이 일어날 수 있습니다.
- 제품과 상대기계의 연결이 벨트로 되어 있는 경우에는 풀리와의 평행도를 직결되는 경우에는 직결정도를 관리치 이내로 관리해 주십시오. 또한 모든 벨트식 구동장치는 벨트로 인한 상해를 예방하기 위하여 보호망을 반드시 설치하십시오.
- 기어드모터 설치시 원동기와 기어드모터, 기어드모터와 피동기기의 조립시 MIS-ALIGNMENT 발생으로 진동, 소음 등이 생길 수 있으며, 축의 변형량이 규정치 이상으로 발생하여 축절손 가능성이 있으며 내부 베어링에 악영향을 미칠 수 있습니다.
- 기어드모터와 부착용 모터는 반드시 접지해 주십시오. 만약 접지하지 않고 사용하면 운전중 신체 접촉으로 감전되어 사망에 이를 수 있습니다.
- 기어드모터 출력축에 철재해머와 같은 과도한 충격이 가해질 경우 출력축 및 기어, 베어링 손상과 케이싱 파손을 일으킬 수 있습니다.
- 고무 벨트 설치시 구동 후 반드시 텐션을 재확인하여 조정하여 주시기 바랍니다.

5. 운전

5.1 기본 점검사항

설치 후 기어드모터의 시운전시 아래의 사항을 먼저 확인해 주십시오.

(1) 본체와의 연결은 정확하게 되어있는가?
(2) 취부 볼트는 확실하게 조여져 있는가?
(3) 사용하고자 하는 방향과 회전방향은 맞는가?
(4) 오일은 유면계의 지시선까지 주입되었는가?

5.2 시험운전

(1) 부하에 연결하지 않은 상태에서 운전하여 회전방향을 확인하고 원하는 방향이 아닐 때에는 전원의 2상을 바꾸어 결선하면 회전방향이 바뀌게 됩니다. 이때, 일정방향으로 회전을 하는 방향성 팬의 경우 회전방향을 바꾸어 다시 조립하여야 합니다.

(2) 전동기 제어회로, 과부하 보호장치와 접지는 전기관계 규격(법규)에 부합되어야 합니다. 배선 및 결선과 관련한 모든 사항은 검증되고 전문직종의 자격이 있는 자에 의하여 수행되어야 합니다. 인가 전원 및 주파수가 명판과 반드시 일치하는 지를 확인하여 주십시오. 단자박스 내의 리드선 결선작업에는 전기안전을 고려하여 충분한 절연처리가 되도록 하여 주십시오. 감전의 위험이 있으니 결선 작업이 끝난 후에는 반드시 단자박스 커버를 닫아 주십시오.

(3) 기본적인 점검사항 확인 후 무부하 상태에서 서서히 부하를 증가시켜 운전을 하고 아래와 같은 이상여부를 확인해 주십시오. 이상원인이 밝혀지지 않은 경우에는 운전을 중지하고, 대리점이나, 당사 영업팀 또는 A/S 부서로 연락해 주십시오.

시 운 전 시 확 인 사 항	
이상음이나 진동이 발생하지는 않습니까?	취부면의 수평이 틀어져 있지는 않습니까? 취부구조물의 강도가 부족하거나, 공진이 일어나지는 않습니까? 본체와의 축 센터가 일치합니까? 본체의 진동이 기어드모터로 전달되지는 않습니까?
기어드모터의 표면온도가 이상하게 높지 않습니까?	모터 전류치가 명판에 기재된 정격 전류치를 넘지 않습니까? 모터의 전압 상승과 하강이 크지 않습니까? 사용장소의 주위온도가 높지 않습니까? 오일레벨은 적당합니까?

⚠ 경 고

- 운전중 회전체에 접근하지 말아주십시오. 신체와의 접촉이나 늘어진 옷에 걸려서 중상 또는 사망에 이를 수 있습니다.
- 운전 전에 반드시 회전방향을 확인해 주십시오. 반대방향으로 회전하여 인적사고 및 설비사고로 재산상의 피해를 일으킬 수 있습니다.

⚠ 주 의

- 기어드모터를 역회전하는 경우 제품의 회전이 완전히 정지한 후 역방향으로 운전하여 주십시오. 제품 파손이 일어날 수 있습니다
- 운전중인 기어드모터의 표면에 손 등 신체의 접촉에 주의하십시오. 운전중인 기어드모터의 표면은 고온일 수 있으므로 화상의 피해를 입을 수 있습니다.
- 운전중 이상음 또는 소음이 심할 경우 즉시 운전을 멈추고 대리점이나, 당사 영업팀 또는 A/S 부서로 연락하여 주십시오.
- 명판에 표시된 정격 전류치 이상의 전류로 운전하지 마십시오. 과부하 운전으로 인하여 기어드모터의 수명저하 및 열, 소음발생, 파손 등의 원인이 될 수 있습니다.
- 이상이 발생했을 경우에는 운전을 정지해 주십시오.

6. 일상점검 및 보수

6.1 일상점검

아래의 사항은 반드시 실시해 주십시오.
일상점검을 소홀히 할 경우 고장의 원인이 될 수 있습니다.

점 검 항 목	점 검 내 용
이 상 음	구동 소음이 급하게 변하지 않는가?
진 동	기어드모터의 진동이 급하게 변하거나 진동 레벨이 높지 않는가?
표면 온도	기어드모터의 표면온도가 이상하게 높지는 않은가? (90℃이상) 또한 급하게 상승하지는 않는가? (운전중인 기어드모터의 온도상승이 기종에 따라 다르지만 기어드모터의 표면온도가 80℃ 정도에 진동이 조금 있는 것은 특별히 문제가 되지는 않습니다.)
오일 레벨	오일레벨이 감소하지는 않았는가?
오일 누유	오일시일 부위에 누유가 발생하지는 않았는가?
취부 볼트	볼트가 풀리지는 않았는가?
체인, V-벨트	체인 또는 V-벨트에 손상이 발생하지는 않았는가?

일상점검에서 이상이 확인된 경우에는 "8. 문제해결"에 기록되어 있는 대로 적절한 조치를 해주시기 바랍니다. 그래도 조치되지 않았다면 당사로 연락해 주시기 바랍니다.

- 6개월~1년마다 기어드모터 취부면 상태와 ALIGNMENT 상태를 확인하여 주십시오.
- 오일시일은 소모품으로 주기적인 교환이 필요하며, 주위 환경이 악조건(분진, 가스, 고온 등)일 경우, 경화 또는 노화(산화)가 빨리 오기 때문에 수명이 단축되어 누유 발생의 원인이 됩니다.

⚠ 경 고

- 운전중 보수, 점검을 하는 경우에는 회전체(샤프트 등)에는 접근하지 말아주십시오. 접근했을 경우에는 신체와의 접촉이나 늘어진 옷에 걸려서 중상 또는 사망에 이를 수 있습니다.
- 정지시에 제품의 상태를 점검하는 경우에는 구동기의 전원을 차단하고, 기어드모터가 완전히 정지한 후에 점검해 주십시오. 치차의 치합부위에 손이 들어가서 상해를 입을 수 있습니다.
- 운전중에 제품을 분해하지 마시기 바랍니다.
- 점검을 마친 후에 각각의 안전커버 등을 외부에 설치하기 전까지는 운전하지 말아 주십시오. 안전커버 설치 전에 운전시 신체나 의복이 회전체에 걸려서 사망이나 중상이 일어날 수 있습니다.
- 제품 중 중공축과 쉬링크 디스크를 사용하는 제품의 쉬링크 디스크 분해 시에는 락킹 링 혹은 압력 링이 각각 느슨해 지기 전에는 절대 체결볼트를 완전 분해하지 마십시오. 체결볼트 완전 분해시 잔여 응력에 의한 링 이탈로 인해 생명이 위험할 수 있습니다.

⚠ 주 의

- 기어드모터의 표면은 고온이므로 맨손으로 만지지 말아 주십시오. 화상을 입을 수 있습니다.
- 기어드모터 점검 후에는 점검에 사용한 공구와 기타 자재들을 확인해 주십시오. 기어드모터 내부에 들어가서 이물질로 남아 부품을 손상시킬 수 있습니다.

6.2 분해 조립

⚠ 주 의

- 수리, 분해, 조립은 반드시 전문가가 실시해 주십시오. 장치 파손이 일어날 수 있습니다.

6.3 폐기

⚠ 주 의

- 기어드모터를 폐기할 경우에는 내부에 주입되어 있는 오일은 지정폐기물로 처리하시고, 오일이 제거된 케이싱과 기어류는 고철로 처리하십시오.

7. 윤활유

7.1 윤활유의 교환

(1) 운전을 시작하고부터 **500시간 이거나 2개월 이내에 1차 윤활유 교환**을 실시해 주십시오. **이후 2,500시간 이거나 6개월 이내에 2차 윤활유 교환**을 실시해 주십시오.

(2) 그런 후에 **하우징 표면온도가 70℃ 미만인 경우에는 5,000시간 이거나 1년마다** 중에 빠른 시기에 교환해 주십시오.

(3) **하우징 표면온도가 70℃ 이상인 경우에는 2,500시간 또는 6개월마다 교환**해 주십시오.

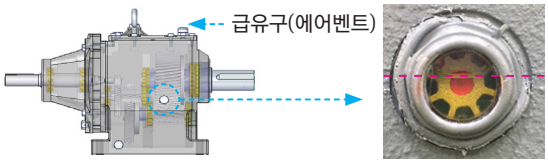
(4) 주위온도가 급변하는 장소이거나, 부식성 가스가 많은 분위기에서는 윤활유의 노화가 빨리 이루어지므로, 윤활유 메이커에 문의해 주십시오.

(5) 교체 후 폐기하는 윤활유는 지정폐기물로 분류하여 법규에 따라 처리해 주십시오.

(6) 바닥에 흘린 윤활유는 깨끗하게 청소해 주십시오. 미끄러짐으로 인해서 신체상의 사고가 발생될 수 있으며, 지면으로 스며들어 토양오염과 수질오염의 원인이 될 수 있습니다.

(7) OIL 급유
급유는 본체 상부의 급유구를 통해서 실시하고, 오일게이지 또는 유면계의 적정 눈금까지 급유해 주십시오. 오일게이지로 유량을 확인할 때는 유면계의 눈금을 반드시 눈으로 확인하시고 윤활유의 양이 적으면 기어나 베어링을 손상시킬 수 있습니다.

급유후 하절기 및 동절기와 같은 계절의 변화에 따른 오일 부피 변화가 생기므로 주기적으로 오일게이지를 확인하여 오일량을 조정 바랍니다.



(8) 윤활유 선정

주위 온도	점도 (40℃) ISO VG	추천메이커			
		하우톤 (HOUGHTON)	모빌 (MOBIL)	쉘 (SHELL)	SK (GULF)
31℃ ~ 50℃	320	MP GEAR OIL 320	MOBIL GEAR 600 XP 320	SHELL OMALA 320	EP LUBRICANT 320
0℃ ~ 30℃	220	MP GEAR OIL 220	MOBIL GEAR 600 XP 220	SHELL OMALA 220	EP LUBRICANT 220
0℃ 미만	150	MP GEAR OIL 150	MOBIL GEAR 600 XP 150	SHELL OMALA 150	EP LUBRICANT 150
50℃ 초과	당사문의				

(9) 배유

배유는 윤활유가 따뜻할 때에, 본체 하부에 있는 드레인 플러그를 통해서 바깥으로 배유해 주십시오. 이때 폐유는 지정폐기물로 처리해 주십시오.

(10) GREASE 교환 (5HP 이하에 적용)

당사에서 사용하는 그리스(GREASE EP 00)는 매 20,000 시간마다 교환해 주십시오. 고온장소 및 연속운전 시에는 매 10,000 시간마다 교환해 주십시오.

(11) GREASE 선정

주위 온도	혼화주도 (25℃, 0.1mm)	추천메이커	
		하우톤(HOUGHTON)	쉘(SHELL)
-25℃~50℃	400~430	COMBI EP NO.00	GADUS S2 V220 00
50℃ 초과	당사문의		

⚠ 주 의

- 운전중인 기어드모터를 완전히 정지시킨 후, 2시간 이상 냉각시켜서 윤활유의 냉각을 확인한 후에 윤활유를 교환해 주십시오.
- 기어드모터 윤활유의 교체시간을 지키지 않음으로 인해 윤활유의 점도 저하로 발열 및 소손을 일으킬 수 있습니다.
- 기어드모터의 휴지기간 없이 계속 운전 된다면 윤활유 교환주기는 더 짧아질 수 있습니다.
- 윤활유 테이블에 나와 있는 윤활유와 다른 윤활유를 혼합하여 사용해서는 안됩니다.
- 윤활유의 교환은 취급설명서에 따라 주십시오. 취급설명서에 명기된 윤활유를 반드시 사용하여 기어드모터를 완전히 정지 후 오일 게이지 레벨에 맞게 교환해 주십시오.
- 윤활유량이 많으면 온도 상승이나 누유가 발생될 수 있으니 적정량을 주입하시기 바랍니다.

7.2 사양별 그리스 및 오일량

(1) F1 시리즈

* 4P 표준 기준

형번	8	10	13	15	17		18		20		23	27
Ratio	5~100	5~100	5~30	5~120	5~30	40~120	25~30	40~100	40~60	60~120	60~120	75~120
그리스량 (kg)	0.2	0.2	0.4	0.6	1.0	0.9	1.2	1.0	1.5	1.4	2.3	3.0

(2) RP 시리즈

* 4P 표준 기준

형번	0.5	1			2			3			5			
Ratio	10~90	10~30	40~60	70~90	10~30	40~60	70~90	10~30	40~60	70~90	10~20	30	40~60	70~90
그리스량 (kg)	0.2	0.25	0.3	0.5	0.3	0.5	0.8	0.3	0.8	1.2	0.3	0.6	1.2	1.8

(3) FN(FHB, FHC) 시리즈

* 4P 표준 기준

형번	0.5 / 1				2				3			5		
Ratio	10~20	30	40~60	70~90	10~20	30	40~60	70~90	10~30	40~60	70~90	10~20	30	40~60
그리스량 (kg)	0.25	0.3	0.5	0.8	0.3	0.3	0.8	1.2	0.3	1.2	1.8	0.6	0.8	1.8

(4) F(FHB, FHM) 시리즈

* 4P 표준 기준

Type	FHB				FHM							
HP	7.5	10	15	20	25	30	40	50	60	75	100	125
Ratio	10 / 15 / 20											
오일량 (Liter)	5	5	9	9	10	10	15	15	22	22	22	31

(5) F(FHB, FHM) 시리즈

* 4P 표준 기준

Type	FHB				FHM						
HP	7.5	10	15	20	25	30	40	50	60	75	100
Ratio	30										
오일량 (Liter)	7	7	10	10	15	15	22	22	31	31	31

* 상기 사양 외 기준은 카탈로그 참조 또는 당사 기술부서나 A/S 부서에 문의 요망.

8. 문제해결

고 장	원 인	대 책
발열	과부하 운전	적정부하로 운전
	윤활유의 과소 또는 과다	유면계의 지시선에 맞게 조정한다
	윤활유의 불량 또는 부적당	노화, 오염된 것은 새 윤활유로 교체
	베어링 틈새 과소 (테이퍼롤러베어링)	베어링 틈새 조정
	오일시일 불량	오일 시일 교체
	전동기의 통풍방해	방해요인 제거
	3상중 1상이 열려있거나 접속 불완전	접속여부를 점검, 단단히 한다
	고정자 코일이 중간에서 단락	수리한다
	전압의 불평형	변압기 및 회로조사
	코일 접지	변압기 및 회로조사
	축이 휘었거나 연결부의 장력이 세다	축심점검, 장력을 조절
	베어링의 불량(마모, 거칠다)	베어링 교체
	부품의 마찰	분해 점검 후 수정
심한 소음 및 이음	규칙적 소음-기어의 치합 상태불량, 베어링 손상	기어교체, 베어링교체, 윤활유 보충교체
	높은 금속음-윤활유 부족	윤활유 보충, 교체
	불규칙소음(이음)-이물질 침입, 베어링 손상	이물질제거(세척), 베어링 교체
	회전자와 고정자의 접촉	수리한다
	팬이 후드에 닿는다	수리(팬을 후드와 닿지 않게 재조립)
	3상 전동기가 단상운전하고 있다	회로조사
	고정부위가 헐겁다(축과 기어, 플랜지 접합부)	분해후 점검, 원인제거, 교체
	인버터 고주파 전기음	캐리어 주파수(스위칭 전압) 조정
심한 진동	치의 마모	기어교체
	이물질 침입	이물질 제거 및 윤활유 교체
	베어링 마모 및 손상	베어링 교체
	취부 볼트 및 고정볼트의 이완	볼트 조임
	조립부위(축, 기어)의 이완	분해 점검후 재조립
	축심이 일직선이 아니다(바란스가 나쁘다)	부하의 연결상태 조사 및 재연결
	전동기의 엔드 플레이가 너무 크다	베어링 조사, 와샤를 넣어 재조립
	케이스 및 연결 부위 파손	교체
오일의 누유	오일 시일 손상 및 경화	오일 시일 교체
	패킹 불량(접합부)	패킹 교체 및 재 씰링
	배유구 플러그 이완	단단히 체결(테프론 테이프)
	유면계 파손 및 이완	교체
	기타 용접부위 누유	재용접 또는 교체
	출력축 마모(씰링부위)	출력축 교체, 도금 또는 SLEEVE 삽입
	출력커버 그리스 부족(그리스링 부위:유성수직형)	커버의 그리이스 보충
	부품의 잘못된 부착	당사로 문의
전동기 가동불능 또는 기동곤란	퓨우즈가 끊어진다	퓨우즈의 용량조사, 교체
	기동 토오크가 모자란다	기동방식 교체 또는 용량 늘림
	회로가 열려있다(접촉불안전)	과부하 릴레이, 기동시 푸시버튼 조사
	코일의 단선	수리
	정전 또는 전원의 이상	전원점검
	과부하	전류 측정 및 부하조사
	베어링 및 부품의 끼임 현상	재조립 또는 교체

⚠ 주 의

- 기어 및 축, 케이스 등을 교체할 때는 당사로 문의하시기 바라며, 임시방편 또는 잘못된 부품 교체는 전체를 손상시키므로 각별히 주의하시기 바랍니다.
- 입/출력 축의 오일시일을 분해할 경우 표면 손상이 보이지 않아도 재사용하지 마시고, 반드시 새 오일시일로 교체하시기 바랍니다.

9. 브레이크

9.1 전원장치

(1) D.C B Type brake는 A.C 전원 차단시 D.C로 전환된 전류전원이 전원장치 내에 존재하여 브레이크 제동시간이 늦습니다. (약 0.3~0.5 (0.8)sec) slip을 요구하는 기계장치(충격 완화용)에는 그대로 사용하시면 됩니다.

(2) 급제동을 요구하는 기계장치에는 magnet switch의 A접점을 사용하여 A.C 전원 차단시 D.C 전원도 함께 차단되어 제동이 신속합니다. (약 0.1~0.15 sec)

모터출력(kW)		0.75	1.5	2.2	3.7	5.5	7.5
Frame No.		80	90L	100L	112M	132S	132M
브레이크 형식		HB 1.2	HB 2.0	HB 6.0	HB 8.0	HB 12.0	
제동방식		무여자 작동					
제동 토크(N·m)		11.8	19.6	58.8	78.4	118	
규정간격(mm)		$0.3^{\pm 0.1}$			$0.4^{\pm 0.1}$	$0.5^{\pm 0.1}$	
한계간격(mm)		0.8				1.0	
제동속도	기준(sec)	0.3 ~ 0.5(HB 20.0:0.3 ~ 0.8)					
	A접점 사용(sec)	0.1 ~ 0.15					
작동전압	입력 AC전압(V)	220, 220/380, 220/440				380, 440	
	작동 DC전압(V)	90				170, 190	

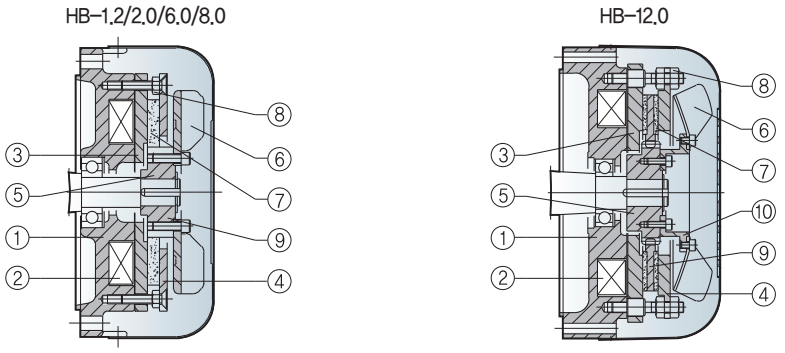
주 : 출하시 기준 제동속도로 결선됨. (별도 절환형 결선)

9.2 간격조정

(1) 출하시 간격이 조정되어 있으나 장시간 사용하면 라이닝이 마모하여 ARMATURE와 MAGNET의 간격이 커지게 되어 제동능력이 감소하게 됩니다.

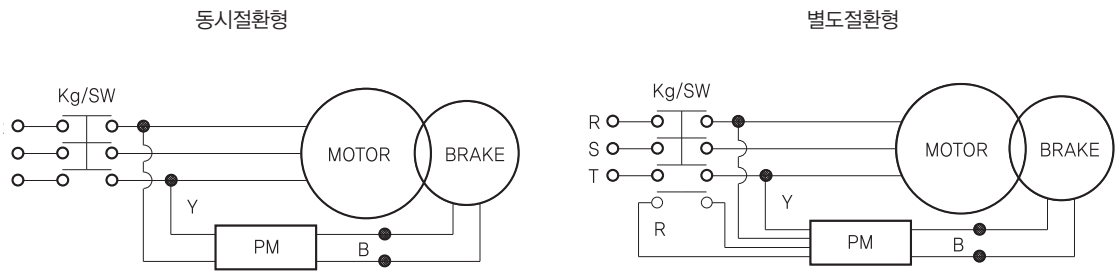
(2) 간격 측정은 ARMATURE와 MAGNET 사이에 GAP GAUGE를 원주방향으로 3~4개소 삽입하여 측정하여야 하며 간격은 원주방향으로 동일해야 합니다.

(3) 간격 조정방법은 간격 측정후 한계 간격 범위가 벗어났으면 간격 조정너트를 이완한 다음 GAP GAUGE를 사용하여 원주방향으로 3~4개소 삽입하여 규정간격으로 조정합니다.



NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	MOTOR BRACKET	2	BRAKE COIL	3	ARMATURE	4	FLANGE
5	HUB	6	FAN	7	LINING	8	STAY BOLT/NUT
9	GEAR	10	FAN FLANGE				

9.3 결선



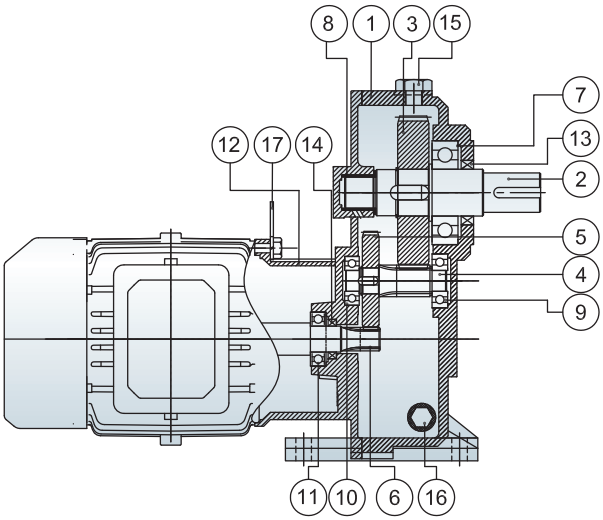
주 : PM–직류 전원 장치(B : Black, Y : Yellow, R : Red)

9.3 고장 원인 및 대책

이상현상	원 인	대 책
동작불량	전원이 투입되지 않음, 결선불량	전원의 배선 재점검
	전원장치(정류기) 고장	정류기 교환
	전원 접속 불확실	전원 접속 조정
	Brake Coil 단선, 단락	Brake Coil 교체
	Gap이 한계간격 이상	Gap 조정 볼트로 규정간격으로 조정
	전압강하	정격전압으로 조정
	운전중 Brake Coil 소손	전압 및 부하용량 재점검
제동지연 및 Slip 현상	부하의 GD^2 과대	부하용량에 맞는 형식으로 재선정
	라이닝의 마찰판 사이에 이물질 투입	이물질 제거
	라이닝 면에 기름 또는 물접촉	분해 후 라이닝 표면 세척
	라이닝 마모로 Gap이 한계간격 이상	Gap 조정 볼트로 규정 간격으로 조정
제동시 과다한 기계충격	제동 토오크의 과대	부하용량에 맞는 형식으로 재선정
개방시 과부하 및 이상음	마찰판 및 마크네트 사이에 이물질	이물질 제거
	장기간 사용으로 마찰판의 Stay	마찰판 교체
	Bolt Hole의 확장	
제동후 지속적으로 Slip 발생	제동토오크 미달	부하 용량에 맞는 형식으로 재선정
	Gap이 한계간격 이상	Gap 조정 볼트로 규정 간격으로 조정

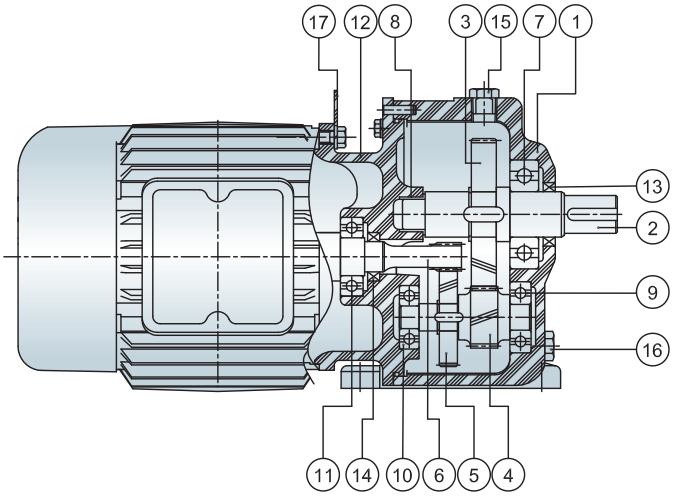
10. 기어드모터 구조

F1 SERIES



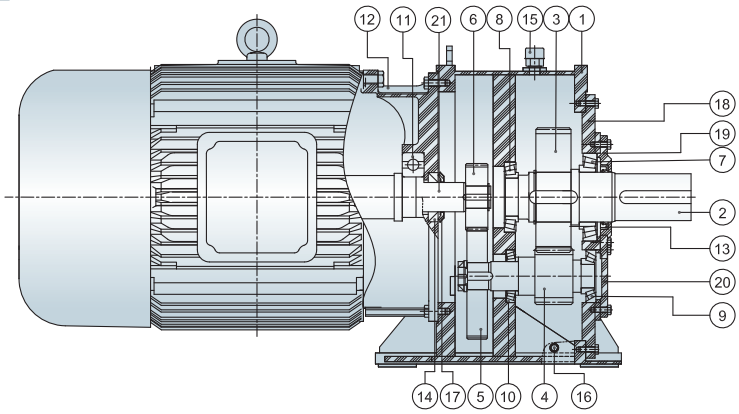
NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	6	MOTOR PINION	11	BEARING	16	PLUG
2	OUTPUT SHAFT	7	BEARING	12	MOTOR BRACKET	17	EYE PLATE
3	2'ND GEAR	8	BEARING	13	OIL SEAL		
4	2'ND PINION	9	BEARING	14	OIL SEAL		
5	1'ST GEAR	10	BEARING	15	AIR VENT		

RP, FN SERIES



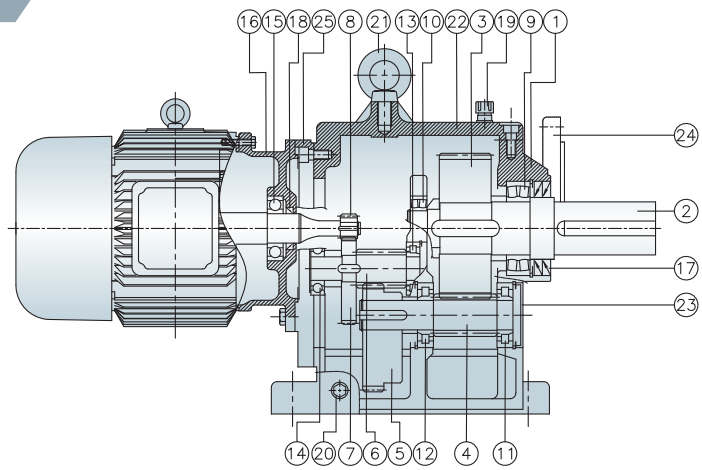
NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	6	MOTOR PINION	11	BEARING	16	PLUG
2	OUTPUT SHAFT	7	BEARING	12	MOTOR BRACKET	17	EYE PLATE
3	2'ND GEAR	8	BEARING	13	OIL SEAL		
4	2'ND PINION	9	BEARING	14	OIL SEAL		
5	1'ST GEAR	10	BEARING	15	AIR VENT		

F SERIES



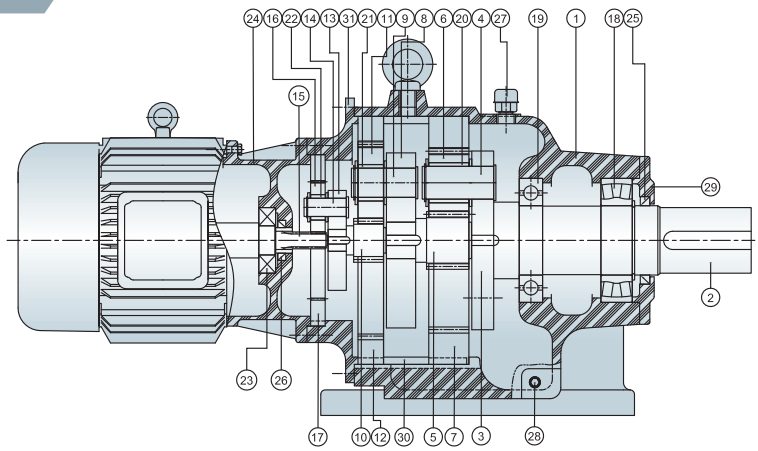
NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	7	BEARING	13	OIL SEAL	19	OUTPUT COVER
2	OUTPUT SHAFT	8	BEARING	14	OIL SEAL	20	2'ND COVER
3	2'ND GEAR	9	BEARING	15	AIR VENT	21	MOTOR SHAFT
4	2'ND PINION	10	BEARING	16	PLUG		
5	1'ST GEAR	11	BEARING	17	GAMMA SEAL		
6	1'ST PINION	12	MOTOR BRACKET	18	OUTPUT FLANGE		

H SERIES



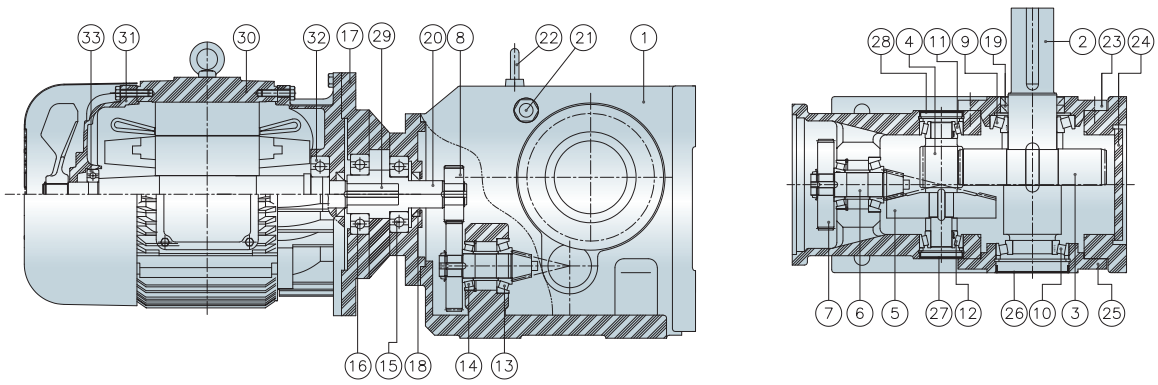
NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	8	1'ST PINION	15	BEARING	22	CASING COVER
2	OUTPUT SHAFT	9	BEARING	16	MOTOR BRACKET	23	SEALING CAP
3	3'RD GEAR	10	BEARING	17	OIL SEAL	24	HFM TYPE FLANGE
4	3'RD PINION	11	BEARING	18	OIL SEAL	25	INPUT FLANGE
5	2'ND GEAR	12	BEARING	19	AIR VENT	26	MOTOR SHAFT
6	2'ND PINION	13	BEARING	20	PLUG		
7	1'ST GEAR	14	BEARING	21	EYE BOLT		

P SERIES



NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	9	PLANETARY SHAFT	17	INTERNAL GEAR	25	OIL SEAL
2	OUTPUT SHAFT	10	SUN GEAR	18	BEARING	26	OIL SEAL
3	3'RD CARRIER	11	PLANETARY GEAR	19	BEARING	27	AIR VENT
4	PLANETARY SHAFT	12	INTERNAL GEAR	20	BEARING	28	PLUG
5	SUN GEAR	13	1'ST CARRIER	21	BEARING	29	OUTPUT COVER
6	PLANETARY GEAR	14	PLANETARY SHAFT	22	BEARING	30	INTERNAL FIX RING
7	INTERNAL GEAR	15	MOTOR PINION	23	BEARING	31	1'ST CASING
8	2'ND CARRIER	16	PLANETARY GEAR	24	MOTOR BRACKET		

K SERIES



NO	NAME	NO	NAME	NO	NAME	NO	NAME
1	CASING	10	BEARING	19	OIL SEAL	28	SEALING CAP
2	OUTPUT SHAFT	11	BEARING	20	INPUT SHAFT	29	MOTOR SHAFT
3	3'RD GEAR	12	BEARING	21	AIR VENT	30	FRAME
4	3'RD PINION	13	BEARING	22	EYE BOLT	31	MOTOR BRACKET NDE
5	BEVEL GEAR	14	BEARING	23	COVER	32	BEARING
6	BEVEL PINION	15	BEARING	24	COVER CASING	33	BEARING
7	1'ST GEAR	16	BEARING	25	COVER		
8	1'ST PINION	17	IEC FLANGE	26	SEALING CAP		
9	BEARING	18	OIL SEAL	27	SEALING CAP		

11. 품질보증

11.1 보증내용

취급설명서에 기재되어 있는 적절한 설치, 운전, 보수 등 정상적인 조건하에 운전하였을 경우 제품 보증기간 내 기어드모터가 정상적으로 작동함을 보증합니다.

11.2 보증범위

기어드모터의 성능, 재료 및 외관에 있어서 발생하는 문제에 대하여 보증합니다.

11.3 보증 제한

(1) 기어드모터를 취부하거나, 다른장치와 연결시 불량품을 사용하였을 경우
(2) 보수관리를 하지 않고, 정상적인 조건하에서 사용하지 않았을 경우
(3) 정상보다 혹독한 환경하에서 사용하였을 경우
(4) 기어드모터를 개조하거나, 구조변경을 하였을 경우
(5) 연결장치의 불량으로 인해서, 기어드모터에 2차적인 고장이 발생하였을 경우
(6) 지진, 화재, 수해, 낙뢰 등 불가항력적인 사태로 인한 고장
(7) 기타 사용자의 오사용이 확실시 되는 경우

11.4 문의사항 안내

제품의 고장이나 의문사항 등으로 문의하실 때에는 다음 사항을 확인하여 주십시오.

(1) 명판기재사항
 가. 제조번호
 나. 제품 형식
 다. 동력/입력회전수/감속비
(2) 사용환경
 가. 부하기의 종류 및 운전 조건
 나. 사용 기간
 다. 설치 장소 및 기타 특이사항

효성중공업(주) 서비스 연락처

• **A/S 센터**
국내 TEL : 080–024–8282
해외 TEL : +82–55–268–8282
E – Mail : hicoservice@hyosung.com

• **영업부서**
기어영업팀
TEL : 02–707–6322~8
FAX : 02–707–6444
전동기국내영업팀
TEL : 02–707–6330
FAX : 02–707–6447
플랜트해양영업팀
TEL : 055–268–8572, 8574~7
FAX : 055–268–8579

• **기술부서**
기어설계팀
TEL : 055–279–7130
FAX : 055–279–7159

인터넷 홈페이지 :
http://www.hyosungheavyindustries.com
주소(본사) : 서울특별시 마포구 마포대로 119(공덕동)
주소(공장) : 경상남도 창원시 성산구 공단로 303

본 취급설명서의 내용은 예고 없이 변경될 수 있음을 양해 바랍니다.
본 취급설명서의 내용에 대하여 만전을 기하고 있습니다만 만일 오기,누락 등 불분명한 점이 발견되면 연락 주십시오.

GEAR BOX

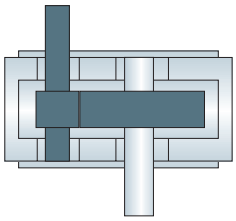
평행형 기어박스
직교형 기어박스

Type & Construction

평행형 타입 : SH

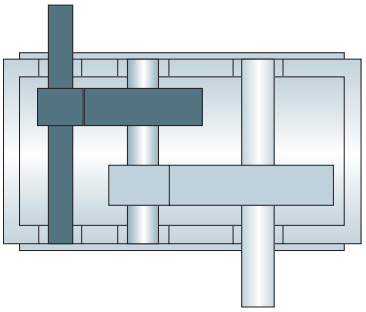
1단 (ratio: 1/2 ~ 1/6.3)

SHA



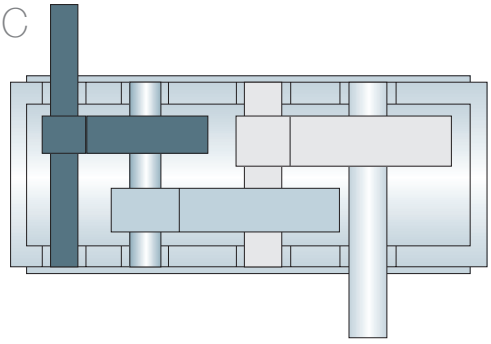
2단 (ratio: 1/7.1 ~ 1/28)

SHB



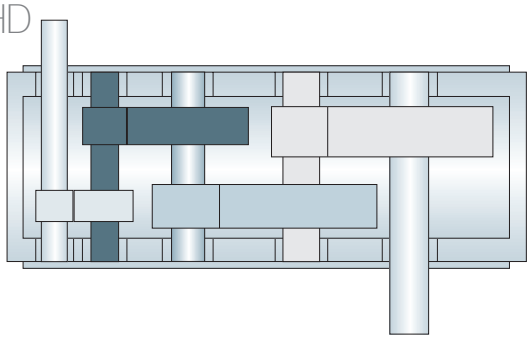
3단 (ratio: 1/20 ~ 1/112)

SHC



4단 (ratio: 1/112 ~ 1/500)

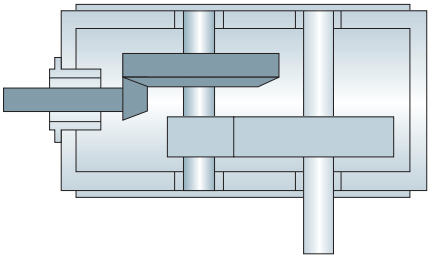
SHD



직교형 타입: SK

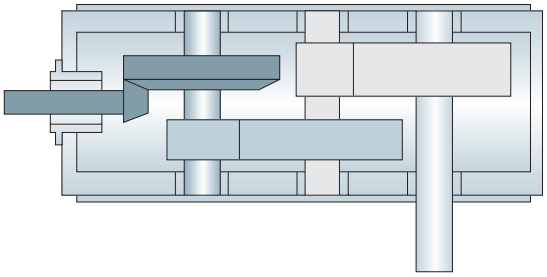
2단 (ratio: 1/5.6 ~ 1/18)

SKB



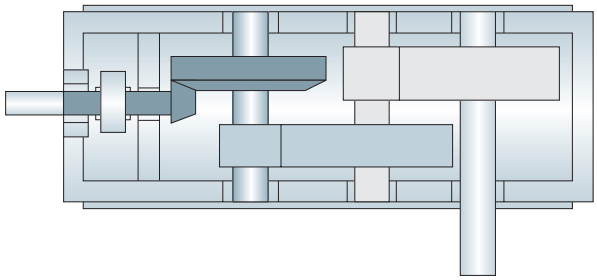
3단 (ratio: 1/20 ~ 1/80)

SKC

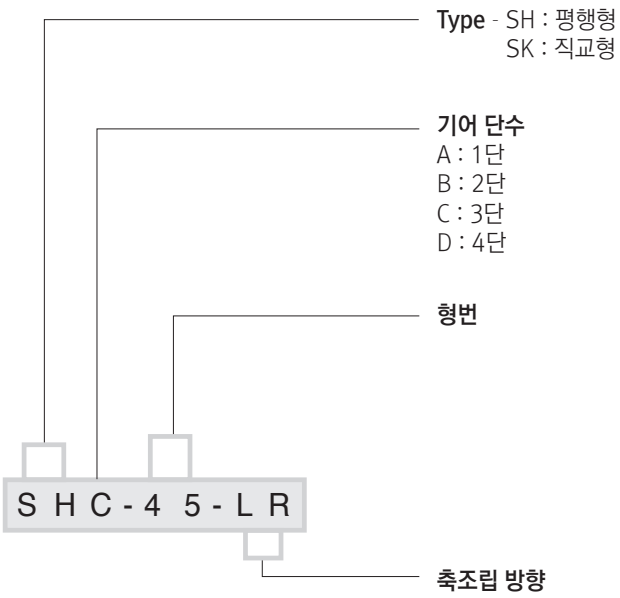


4단 (ratio: 1/80 ~ 1/355)

SKD



형식표시

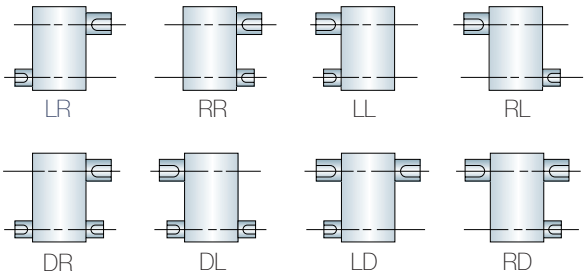


입력/출력축 형식

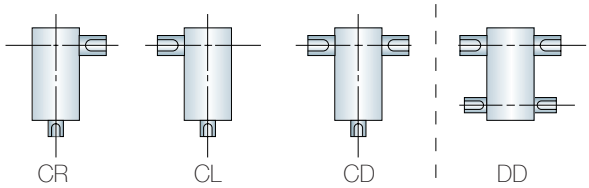
- 중실축
- 중공축 (with Shrink Disc)
- 중공축 (with Keyway)

축조립 방향

평행형



직교형



* VIEW FROM TOP.

선택사항

효성중공업 기어솔루션에서는 고객의 기술적 요구사항에 맞추어 다음의 추가 부품 공급이 가능 합니다. 필요한 경우, 효성중공업 기어솔루션 영업 담당자에게 문의하여 주시길 바랍니다.

- Special Shaft Extension
- Lubrication System
- Auxiliary Cooling
- Sump Heater
- Bedplate
- Coupling and Coupling Guard
- Backstop, Clutch and Brake
- Outboard Pinion and Bearing

Service Factors & Load Characteristics

아래의 Service Factor 변환표와 다음 페이지의 Service Factor Table은 다양한 Application에서 부하의 특성을 나타내고, 해당 서비스에 맞는 적절한 감속기를 선정할 수 있도록 합니다.

Service Factor는 구동기의 종류, 일일 사용시간, 하중특성 (Uniform/Moderate/Heavy Shock)에 따라 선정을 합니다.

기동부하 또는 순간부하는 기동빈도가 빈번하지 않는 경우(시간당 5회 미만)에는 정격하중의 275%(175% 과부하)를 초과할 수 없으며, 기동빈도가 빈번한 경우(시간당 5회 이상)에는 정격하중의 200%(100% 과부하)를 초과할 수 없습니다.

비정상적이거나 심각한 부하 또는 고도의 신뢰성이 요구되는 제품은 별도의 설계 검토가 필요하니, 효성중공업 기어솔루션 영업 담당자에게 문의하여 주시길 바랍니다.

Service Factor 변환표

구동장치와 운전시간, Load 분류에 따라 권장하는 Service Factor값에 차이가 있으므로, Application별 Service Factor 값에서 아래의 Service Factor 변환표를 참조로 변환하여 사용하시길 바랍니다.

만약 구동기가 Multi-Cylinder Engine이라면 Electric/Hydraulic Motor의 값에서 Multi-Cylinder의 값을 적용해야 합니다.

Prime Mover	Duration of Service	Load Class		
		U	M	H
Electric or Hydraulic Motor	Up to 3 hrs/day	0.80	1.00	1.50
	3 to 10 hrs/day	1.00	1.25	1.75
	Over 10 hrs/day	1.25	1.50	2.00
Multi-Cylinder Engine	Up to 3 hrs/day	1.00	1.25	1.75
	3 to 10 hrs/day	1.25	1.50	2.00
	Over 10 hrs/day	1.5	1.75	2.25

Service Factors Table

Application	Service 10 Hrs/ Day	Service 24 Hrs/ Day
Agitators(Mixers)		
Pure Liquids	1.00	1.25
Liquids and Solid	1.25	1.50
Liquids-Variable Density	1.25	1.50
Blowers		
Centrifugal	1.00	1.25
Lobe	1.25	1.50
Vane	1.00	1.25
Brewing and Distilling		
Bottling Machinery	1.00	1.25
Brew Kettles, Cont. Duty	1.00	1.25
Cookers-Cont. Duty	1.00	1.25
Mash Tubs-Cont. Duty	1.00	1.25
Scale Hopper. Freq. Starts	1.25	1.50
Can Filling Machines	1.00	1.25
Car Dumpers	1.75	2.00
Car Pullers	1.25	1.50
Clarifiers	1.00	1.25
Classifiers	1.25	1.50
Clay Working Machinery		
Brick Press	1.75	2.00
Briquette Machine	1.75	2.00
Pug Mill	1.25	1.50
Compactors	2.00	2.00
Compressors		
Centrifugal	1.00	1.25
Lobe	1.25	1.50
Reciprocating Multi Cyl.	1.50	1.75
Reciprocating Single-Cyl.	1.75	2.00
Conveyors		
Uniformly Loaded or Fed	1.00	1.25
Not Uniformly Fed	1.25	1.50
Reciprocating or Shaker	1.75	2.00
Cranes	Δ	Δ
Crusher		
Stone or Ore	1.75	2.00
Dredges		
Cable Reels	1.25	1.50
Conveyors	1.25	1.50
Cutter Head Drives	2.00	2.00
Pumps	2.00	2.00
Screen Drives	1.75	2.00
Stackers	1.25	1.50
Winches	1.25	1.50
Elevators		
Bucket	1.25	1.50
Centrifugal Discharge	1.00	1.25
Escalators	1.00	1.25
Freight	1.25	1.50
Gravity Discharge	1.00	1.25
Extruders		
General	1.50	1.50
Plastics-Var. Speed Dr.	1.50	1.50
Fixed Speed Drive	1.75	1.75
Rubber-Cont. Screw	1.75	1.75
Intermittent Screw	1.75	1.75
Fans		
Centrifugal	1.00	1.25
Cooling Towers	2.00	2.00
Forced Draft	1.25	1.25
Induced Draft	1.50	1.50
Industrial & Mine	1.50	1.50
Feeders		
Apron or Belt	1.25	1.50
Disc	1.00	1.25
Reciprocating	1.75	2.00
Screw	1.25	1.50
Food Industry		
Cereal Cooker	1.00	1.25
Dough Mixer	1.25	1.50
Meat Grinders	1.25	1.50
Slicers	1.25	1.50
Generators & Exciters	1.00	1.25
Hammer Mills	1.75	2.00
Hoists	Δ	Δ
Laundry Tumblers	1.25	1.50
Laundry Washers	1.50	2.00

Application	Service 10 Hrs/ Day	Service 24 Hrs/ Day
Lumber Industry		
Barkers-Spindle Feed	1.25	1.50
- Main Drive	1.75	1.75
Conveyors-Burner	1.25	1.50
- Main of Heavy Duty	1.50	1.50
- Main Log	1.75	2.00
- Re-Saw		
Merry-Go-Round	1.25	1.50
- Slab	1.75	2.00
-Transfer	1.25	1.50
Chains-Floor	1.50	1.50
- Green	1.50	1.75
Cut-Off Saws	1.50	1.75
Debarking Drums	1.75	2.00
Feeds-Edger	1.25	1.50
- Gang	1.75	1.75
- Trimmer	1.25	1.50
Log Deck	1.75	1.75
Log Hauls-Incline-Well Type	1.75	1.75
Log Turning Devices	1.75	1.75
Planer Feed	1.25	1.50
Planer Tilting Hoists	1.50	1.50
Rolls-Live-Off Brg-Roll-Casses	1.75	1.75
Sorting Table	1.25	1.50
Tripple Hoist	1.25	1.50
Transfers-Chain or Craneway	1.50	1.75
Tray Drives	1.25	1.50
Veneer Lathe Drives	1.25	1.50
Metal Mills		
Draw Bench Carriage and		
Main Drive	1.25	1.50
Run Out Tables		
Non-Reversing		
Group Drives	1.50	1.50
Individual Drives	2.00	2.00
Reversing	2.00	2.00
Slab Pushers	1.50	1.50
Shears	2.00	2.00
Wire Drawing	1.25	1.50
Wire Winding Machine	1.50	1.50
Metals Strip Processing Machinery		
Bridles	1.25	1.50
Coilers & Unicoilers	1.00	1.25
Edge Trimmers	1.25	1.50
Flatteners	1.25	1.50
Loopers(Acuummulators)	1.00	1.25
Pinch Rolls	1.25	1.50
Scrap Choppers	1.25	1.50
Shears	2.00	2.00
Slitters	1.25	1.50
Mills, Rotary Type		
Ball & Rod		
Spur Ring Gear	2.00	2.00
Helical Ring Gear	1.50	1.50
Direct Connected	2.00	2.00
Cement Kilns	1.50	1.50
Dryers & Coolers	1.50	1.50
Mixer, Concrete	1.25	1.50
Paper Mills(See Note 1)		
Agitators(Mixer)	1.50	1.50
Agitator for Pure Liquors	1.25	1.25
Barking Drums	2.00	2.00
Barkers-Mechanical	2.00	2.00
Beater	1.50	1.50
Breaker Stack	1.25	1.25
Calender	1.25	1.25
Chipper	2.00	2.00
Chip Feeder	1.50	1.50
Coating Rolls	1.25	1.25
Conveyors-Chip, Bark, Chemical	1.25	1.25
-Log(including Slab)	2.00	2.00
Couch Rolls	1.25	1.25
Cutter	2.00	2.00
Cylinder Molds	1.25	1.25
Dryers(Anti-Frcition, Bearings)	1.25	1.25
Embosser	1.25	1.25

Application	Service 10 Hrs/ Day	Service 24 Hrs/ Day
Extruder	1.50	1.50
Fourdrinier Rolls	1.25	1.25
Jordan	1.50	1.50
Kiln Drive	1.50	1.50
Mt. Hope Rolls	1.25	1.25
Paper Rolls	1.25	1.25
Platter	1.50	1.50
Presses-Felt & Suction	1.25	1.25
Pulper	2.00	2.00
Pumps-Vaccum	1.50	1.50
Reel(Surface Type)	1.25	1.25
Screens-Chip & Rotary	1.50	1.50
- Vibrating	2.00	2.00
Size Press	1.25	1.25
Super Calender-(See Note 2)	1.25	1.25
Thickener(AC Motor)	1.50	1.50
- (DC Motor)	1.25	1.25
Washer(AC Motor)	1.50	1.50
- (DC Motor)	1.25	1.25
Wind & Unwind Stand	1.00	1.25
Winders(Surface Type)	1.25	1.25
Plastic Industry		
Blow Molders	1.50	1.50
Coating	1.25	1.25
Film	1.25	1.25
Pipe	1.25	1.25
Pre-plasticizers	1.50	1.50
Rods	1.25	1.25
Sheet	1.25	1.25
Tubing	1.25	1.50
Pumps		
Centrifugal	1.00	1.25
Proportioning	1.25	1.50
Reciprocating		
Single or Double Acting	1.25	1.50
Rotary	1.00	1.25
Rubber Industry	Δ	Δ
Sand Muller	1.25	1.50
Sewage Disposal Equipment		
Bar Screens	1.25	1.25
Chemical Feeders	1.25	1.25
Dewatering Screens	1.50	1.50
Scum Breakers	1.50	1.50
Slow or Rapid Mixers	1.50	1.50
Sludge Collectors	1.25	1.25
Thickeners	1.50	1.50
Vacuum Filters	1.50	1.50
Screens		
Air Washing	1.00	1.25
Rotary-Stone or Gravel	1.25	1.50
Traveling Water Intake	1.00	1.25
Sugar Industry		
Beet Slicer	2.00	2.00
Cane Knives	1.50	1.50
Crushers	1.50	1.50
Mills(low speed end)	1.75	1.75
Textile Industry		
Batchers	1.25	1.50
Calenders	1.25	1.50
Cards	1.25	1.50
Dry Cans	1.25	1.50
Dryers	1.25	1.50
Dyeing Machinery	1.25	1.50
Looms	1.25	1.50
Mangles	1.25	1.50
Nappers	1.25	1.50
Pads	1.25	1.50
Slashers	1.25	1.50
Soapers	1.25	1.50
Spinners	1.25	1.50
Tenter Frames	1.25	1.50
Washers	1.25	1.50
Winders	1.25	1.50

*Foot Note : See Page8

Service Factors

Service Factor는 어플리케이션에 따라 기계적 전달 동력을 보완하는 역할을 합니다. 감속기 선정에 필요한 동력은 전달 동력과 선정한 Service Factor를 곱하여 계산합니다. Service Factor는 전달 동력에만 적용하며, 열동력에는 적용하지 않습니다.

기계적 전달 동력 (Transmitting Power Ratings)

카탈로그의 정격동력표는 8~10시간 연속 운전 기준이며, 기동 및 순간 충격 부하의 100% 과부하를 고려한 값 입니다. 모든 부품은 시간당 5회 미만의 기동에서 275% 이하의 순간부하를 허용하도록 설계 되었습니다.

열동력 (Thermal Ratings)

열동력은 정격동력표에 함께 표기되어 있습니다. 열동력은 감속기가 과도한 온도상승 없이 3시간 이상 연속적으로 운전시 전달할 수 있는 동력을 나타냅니다. 기계적 전달 동력이 열동력보다 높고 별도 냉각장치가 없는 경우에만 적용합니다.

연속 작동 시간이 3시간을 초과하지 않고 작동 중지 시간이 작동 시간과 같거나 초과 할 경우 열동력을 고려할 필요가 없습니다. 운전시간이 운전정지 시간을 초과하면 열동력을 기준으로 선정하거나 별도 냉각 조건을 고려해야 합니다.

냉각 시스템 권장 사항에 대해서는 효성중공업 기어솔루션 영업담당자에게 문의해 주시길 바랍니다.

Overhung Loads

저속축에 대한 Overhung Load값은 21페이지에 수록되어 있습니다.
Overhung Load가 작용할 경우, 다음의 공식을 통해 계산할 수 있습니다.

$$\text{pull} = \frac{F \times 1{,}948{,}000 \times kW}{D \times rpm}$$

pull = Overhung Loads [kg]
kW = 기계적 전달 동력
RPM = 축의 분당 회전수
D = 축경 [mm]
F = 다음의 계수; 스프로킷 = 1.0, 피니언 = 1.25, V 벨트 = 1.5, 플랫벨트 = 2.5

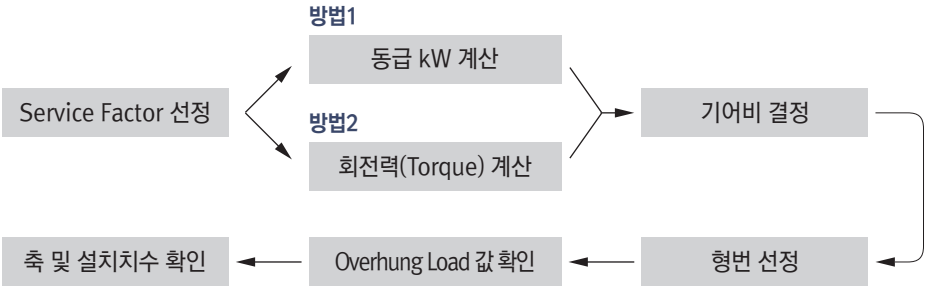
표에 제시한 허용 Overhung Load는 축 (치수표 "L2" 부위)의 중심부에 작용하는 조건으로 계산되었습니다.
허용 하중을 초과하는 경우에는 효성중공업 기어솔루션 영업담당자에게 문의하여 주시길 바랍니다.

보증사항

효성중공업 기어솔루션은 제품의 정격 사양에 대해 1년동안 보증 합니다. 단, 제품의 속도, 동력 및 부하조건의 범위 내에서 장치가 올바르게 보관, 설치, 유지, 작동 되어야 합니다.

제품이 설치되는 국가별 규격, 안전코드 및 설치 설명서에 따라 설치 및 운전하여 주시기 바랍니다.

선정 방법



선정 예시

방법1: 동력에 의한 방법

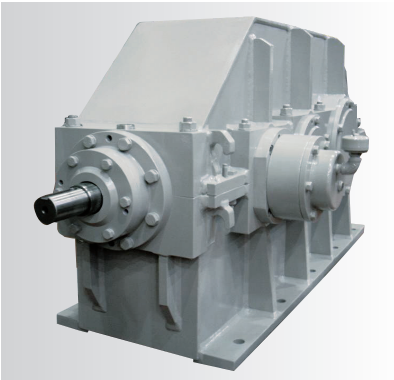
전달동력 75kW, 입력 회전속도 1750rpm, 하루 운전시간 10시간의 수평형 기어박스가 필요합니다.
구동하는 centrifugal pump는 30rpm이며, 일정한 하중을 받습니다. 원동기는 전동기입니다.

1. Service Factor는 이전 페이지의 Service Factor Table에 따라 1.0으로 정합니다.
2. Equivalent kW = 75 kW × 1.0 SF
   = 75 kW
3. Ratio = $\frac{1750\text{rpm}}{30\text{rpm}}$ = 58.3 :1
4. 형번 선정은 해당 기어비를 만족하는 3단의 허용동력표에서 기어비가 가장 유사한 56:1을 찾은 후, 정격 75kW 이상의 값을 확인합니다. 그 값은 89kW입니다.
5. 선정된 동력의 형번은 SHC26이며, 기어비는 56:1 ± 3%를 만족하고, 정격동력 89kW(1750rpm기준)로 실제 Service Factor는 1.19가 됩니다.

방법2: 회전력(Torque)에 의한 방법

72 rpm에서 780 Kg-m의 출력 토크를 전달하려면 평행형 감속기가 필요합니다. 원동기는 최대 하루 10시간 동안 시멘트 믹서를 작동시키는 Multi-Cylinder Gas Engine 입니다.

1. Service Factor는 이전 페이지의 Service Factor Table에 따라 1.25입니다. Multi-Cylinder Gas Engine으로 구동을 하므로 Service Factor 변환표를 고려하여 Service Factor 1.5를 사용합니다.
2. Calculate Equivalent Torque 780 × 1.50 = 1,170 Kg-m
3. Determine Ratio = $\frac{1750\text{rpm input}}{72\text{rpm Mixer}}$ = 24.3
4. 형번 선정은 해당 기어비를 만족하는 2단 회전력표(Torque Table)에서 가장 유사한 기어비 25:1을 찾은 후, 출력 토크 값이 1,215가 될 때까지 오른쪽으로 읽습니다. 해당 토크값을 나타내는 형번은 SHB22가 됩니다.
5. 선정된 동력의 형번은 SHB22, 기어비는 25:1±3 %를 만족하고, 1750 rpm 입력에서 1.215 Kg.m 출력 토크를 나타내므로, 실제 Service Factor는 1.56이 됩니다.



Permissible Transmitting Power Ratings

UNIT : kW

Nominal Ratio	Speed		Gear Unit Size								
	Input rpm	Output rpm	12	16	18	22	26	32	38	45	50
			Mechanical Power Ratings								
2	1,800	900	214	456	690	1,212	1,812	-	-	-	-
	1,200	600	142	300	474	804	1,212	2,646	3,930	5,922	-
	900	450	108	228	348	606	906	1,992	2,946	4,440	-
2.24	1,800	804	202	402	606	1,098	1,662	3,024	-	-	-
	1,200	536	132	264	402	732	1,110	1,920	3,618	5,418	-
	900	402	101	204	300	546	834	1,512	2,712	4,062	-
2.5	1,800	720	176	336	528	996	1,512	2,682	-	-	-
	1,200	480	118	228	354	660	1,003	1,788	3,150	4,914	-
	900	360	88	168	264	498	756	1,344	2,364	3,684	-
2.8	1,800	643	151	288	456	858	1,476	2,520	-	-	-
	1,200	429	101	192	300	570	984	1,680	2,898	4,422	5,604
	900	321	76	144	228	426	738	1,260	2,172	3,318	4,206
3.15	1,800	571	126	240	402	732	1,236	2,280	3,654	-	-
	1,200	381	84	156	270	486	822	1,518	2,436	3,930	4,752
	900	286	62	120	204	366	618	1,140	1,824	2,946	3,564
3.55	1,800	507	114	204	348	630	1,093	1,716	3,150	4,752	-
	1,200	338	76	132	228	420	732	1,140	2,100	3,168	4,092
	900	254	56	102	174	312	546	858	1,572	2,376	3,072
4	1,800	450	108	174	300	552	930	1,650	2,682	4,422	-
	1,200	300	72	119	204	372	618	1,098	1,788	2,946	3,684
	900	225	53	88	150	276	468	828	1,344	2,208	2,760
4.5	1,800	400	88	156	264	438	792	1,338	2,394	3,462	3,389
	1,200	267	58	104	174	294	528	888	1,596	2,310	3,054
	900	200	44	78	132	222	396	666	1,188	1,734	2,292
5	1,800	360	70	132	228	390	678	1,198	1,966	3,024	3,840
	1,200	240	46	88	150	258	456	793	1,308	2,016	2,562
	900	180	34	66	114	192	342	540	984	1,512	1,920
5.6	1,800	321	60	108	204	330	594	942	1,728	2,706	3,276
	1,200	214	40	72	132	216	396	630	1,080	1,806	2,184
	900	161	30	53	101	162	294	474	864	1,356	1,638
6.3	1,800	286	49	89	174	282	504	804	1,410	2,052	2,862
	1,200	190	32	60	118	186	336	534	942	1,368	1,908
	900	143	24	44	89	138	252	402	708	1,026	1,428

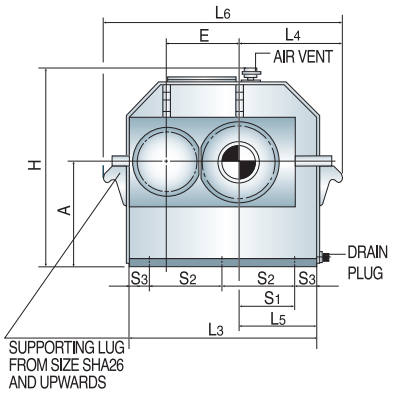
Thermal Ratings

UNIT : kW

Nominal Ratio	Speed	Unit Size								
	Input rpm	12	16	18	22	26	32	38	45	50
		Without Auxiliary Cooling								
2 - 3.15	1,800	56	84	111	170	216	328	393	-	-
	1,200	53	80	106	162	206	312	374	581	711
	900	51	76	101	155	197	298	357	555	679
3.55 - 6.3	1,800	52	77	103	157	200	303	363	564	691
	1,200	49	73	97	148	188	285	342	529	649
	900	47	70	93	142	180	273	328	508	622
		With Fan Cooling								
2 - 3.15	1,800	87	130	173	264	335	508	608	946	1,157
	1,200	81	120	159	244	309	415	498	774	946
	900	75	111	147	225	286	384	461	716	875
3.55 - 6.3	1,800	81	119	160	245	310	416	500	776	94
	1,200	74	110	145	222	283	379	455	707	864
	900	68	102	135	207	223	352	423	655	802

Permissible Torque Ratings / GD²

	Nomina Ratio	Unit Size								
		12.5	16	18	22	26	32	38	45	50
Permissible Torque Ratings (UNIT : kgm)	2	230	486	742	1,292	1,932	4,247	6,281	9,466	-
	2.24	241	487	716	1,304	1,991	3,610	6,476	9,699	-
	2.5	233	448	704	1,327	2,015	3,582	6,300	9,818	-
	2.8	226	609	681	1,272	2,203	3,761	6,483	9,903	12,554
	3.15	210	403	685	1,229	2,075	3,828	6,125	9,892	11,967
	3.55	213	386	658	1,181	2,066	3,247	5,949	8,991	11,625
	4	225	374	640	1,177	1,996	3,531	5,731	9,415	11,769
	4.5	213	374	633	1,065	1,900	3,195	5,699	8,318	10,995
	5	179	352	608	1,023	1,823	2,878	5,245	8,059	10,233
	5.6	179	315	602	967	1,755	2,830	5,158	8,095	9,778
	6.3	161	298	596	927	1,692	2,700	4,755	6,890	9,590
Moment of Inertia GD² (UNIT : kgm²)	2	0.0231	0.0768	0.148	0.3759	0.8529	2.1640	5.7827	12.4992	21.5027
	2.24	0.0217	0.0652	0.1328	0.3372	0.7538	1.9268	5.1773	11.0480	18.0741
	2.5	0.0196	0.0584	0.122	0.3049	0.7209	1.7272	4.4061	9.8197	16.1534
	2.8	0.0168	0.0562	0.1103	0.2616	0.6065	1.5438	3.9432	8.6818	13.6000
	3.15	0.0125	0.0445	0.0911	0.2351	0.5498	1.3728	3.4323	7.6254	12.4838
	3.55	0.0123	0.0373	0.0844	0.2050	0.4988	1.1230	3.1388	6.2881	11.1589
	4	0.0107	0.0345	0.0700	0.1669	0.3965	1.0242	2.6370	5.8862	10.4790
	4.5	0.0090	0.0321	0.0620	0.1422	0.3512	0.8611	2.2549	4.5034	8.8108
	5	0.0074	0.0243	0.0512	0.1322	0.2920	0.7090	1.8253	3.9265	7.0100
	5.6	0.0067	0.0215	0.0471	0.1107	0.2672	0.6242	1.5938	3.5242	5.9883
	6.3	0.0056	0.0179	0.0397	0.0959	0.2156	0.5369	1.3936	2.7650	4.9715



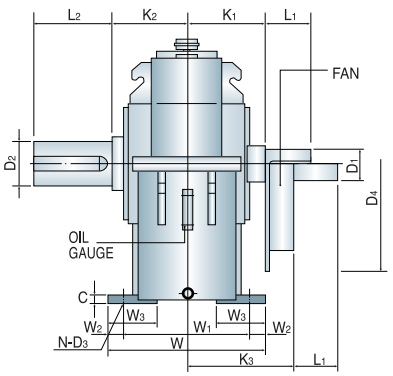
UNIT : mm

Unit Size	High Speed Shaft								
	Ratio : 2 - 2.8			Ratio : 3.15 - 4.5			Ratio : 5 - 6.3		
	D_1	L_1	Key	D_1	L_1	Key	D_1	L_1	Key
12	45	70	14 x 9	35	60	10 x 8	30	50	8 x 7
16	55	90	16 x 10	45	70	14 x 9	35	60	10 x 8
18	60	105	18 x 11	55	90	16 x 10	45	70	14 x 9
22	75	120	20 x 12	65	105	18 x 11	50	80	14 x 9
26	85	140	22 x 14	75	120	20 x 12	60	105	18 x 11
32	105	180	28 x 16	95	160	25 x 14	75	120	20 x 12
38	125	210	32 x 18	110	180	28 x 16	90	160	25 x 14
45	145	240	36 x 20	125	210	32 x 18	100	180	28 x 16
50	155	240	40 x 22	135	210	36 x 20	115	200	32 x 18

UNIT : mm

Unit Size	Dimensions										
	E	K_1	K_2	L_3	L_4	L_5	L_6	A	H	W	C
12	125	120	110	370	220	140	530	160	330	235	15
16	160	135	130	450	250	170	610	200	405	275	15
18	185	155	145	510	275	195	670	250	490	330	20
22	220	180	170	600	305	225	760	315	595	370	20
26	265	200	190	690	340	260	850	355	670	410	28
32	320	240	220	840	400	320	1,000	400	780	480	28
38	385	270	250	970	440	360	1,130	500	950	530	28
45	450	310	290	1,150	540	440	1,350	560	1,070	620	35
50	500	335	320	1,280	590	490	1,480	630	1,190	670	35

*Dimension 'H' can be flexible according to Technical Specifications.



UNIT : mm

Unit Size	Low Speed Shaft				
	Ratio : 2 - 2.8				Unit Size
	WT(kg)	D_2	L_2	Key	
12	95	55	90	16 x 10	Consult HYOSUNG Engineering Department
16	170	70	120	20 x 12	
18	280	85	140	22 x 14	
22	395	100	180	28 x 16	
26	625	120	210	32 x 18	
32	1,020	140	240	36 x 20	
38	1,490	155	240	40 x 22	
45	2,260	190	310	45 x 25	
50	3,100	210	350	50 x 28	

UNIT : mm

Unit Size	Dimensions								Fan Cooling		Oil Cap.
	S_1	S_2	S_3	W_1	W_2	W_3	D_3	N	D_4	K_3	Liter
12	95	140	45	195	20	80	14	6	265	200	3.2
16	125	180	45	230	23	90	18	6	310	225	5.5
18	140	200	55	270	30	110	22	6	335	245	11
22	175	250	50	310	30	120	22	6	480	270	21
26	195	280	65	350	30	130	26	6	480	290	27
32	260	240	60	420	30	150	26	8	540	330	46
38	280	270	80	470	30	155	26	8	540	360	73
45	365	250	75	550	35	180	33	10	635	400	100
50	420	285	70	600	35	190	33	10	735	425	150

*Shaft Tolerance $D_{1,2} \leq 80$=m6
$D_{1,2} > 80$=n6

*Dimension 'D_4' can be flexible according to Technical Specifications.

Permissible Transmitting Power Ratings

UNIT : kW

Nominal Ratio	Speed		Gear Unit Size										
	Input rpm	Output rpm	18	22	26	32	38	45	50	56	61	66	71
			Mechanical Power Ratings										
7.1	1,800	254	216	378	594	1,020	1,614	-	-	-	-	-	-
	1,200	169	144	252	396	678	1,074	2,064	2,598	3,366	4,500	4,926	5,340
	900	127	108	186	294	510	804	1,548	1,944	2,520	3,372	3,696	4,008
8	1,800	225	190	334	522	882	1,512	2,748	-	-	-	-	-
	1,200	150	126	222	348	588	1,008	1,830	2,304	2,940	4,056	4,434	4,860
	900	113	94	166	262	438	756	1,374	1,728	2,250	3,042	3,324	3,648
9	1,800	200	176	300	468	780	1,374	2,430	-	-	-	-	-
	1,200	133	116	202	312	522	918	1,620	2,076	2,760	3,642	3,996	5,742
	900	100	88	150	234	390	684	1,218	1,560	2,070	2,730	2,994	4,308
10	1,800	180	162	264	414	702	1,206	2,142	-	-	-	-	-
	1,200	120	108	174	276	468	804	1,428	1,890	2,520	3,324	3,618	5,142
	900	90	82	132	210	354	606	1,068	1,416	1,890	2,496	2,712	3,858
11.2	1,800	161	138	234	370	630	1,092	1,962	2,484	3,276	-	-	-
	1,200	107	90	156	246	420	732	1,308	1,656	2,184	2,976	3,198	4,836
	900	80	66	114	186	312	546	984	1,242	1,638	2,232	2,400	3,288
12.5	1,800	144	132	211	330	564	954	1,710	2,220	2,934	3,906	4,794	-
	1,200	96	88	140	220	378	636	1,140	1,476	1,956	2,604	2,796	3,942
	900	72	66	106	164	282	480	853	1,110	1,470	1,950	2,100	2,958
14	1,800	129	114	188	320	504	870	1,446	2,004	2,484	3,528	4,092	-
	1,200	86	77	126	214	336	582	966	1,338	1,656	2,352	2,730	3,666
	900	64	56	94	160	252	432	726	1,002	1,242	1,764	2,046	2,748
16	1,800	113	101	176	288	444	780	1,362	1,650	2,202	3,264	3,816	-
	1,200	75	66	116	192	300	516	906	1,098	1,470	2,178	3,744	3,264
	900	56	55	88	144	222	390	678	822	1,104	1,632	1,908	2,448
18	1,800	100	90	151	254	396	692	1,248	1,422	1,914	2,893	3,312	4,344
	1,200	67	60	101	168	264	462	832	948	1,276	1,932	2,208	2,898
	900	50	46	76	127	198	346	624	714	958	1,446	1,656	2,172
20	1,800	90	76	138	228	390	612	1,110	1,322	1,764	2,544	2,910	3,703
	1,200	60	50	92	152	263	408	739	882	1,176	1,698	1,938	2,472
	900	45	38	70	114	196	306	552	660	882	1,272	1,452	1,854
22.4	1,800	80	70	108	192	316	535	816	1,198	1,462	2,076	2,520	3,150
	1,200	54	48	70	128	210	358	546	793	972	1,386	1,680	2,100
	900	40	34	53	96	158	264	408	598	732	1,039	1,260	1,572
25	1,800	72	60	94	174	282	486	744	1,032	1,284	1,890	2,268	2,923
	1,200	48	41	62	116	190	324	496	690	858	1,260	1,512	1,950
	900	36	30	46	88	142	244	372	516	642	946	1,134	1,462
28	1,800	64	54	84	156	252	436	655	946	1,164	1,663	2,004	2,584
	1,200	43	36	55	104	168	288	438	630	778	1,109	1,336	1,722
	900	32	26	42	84	126	216	328	472	582	832	1,002	1,291

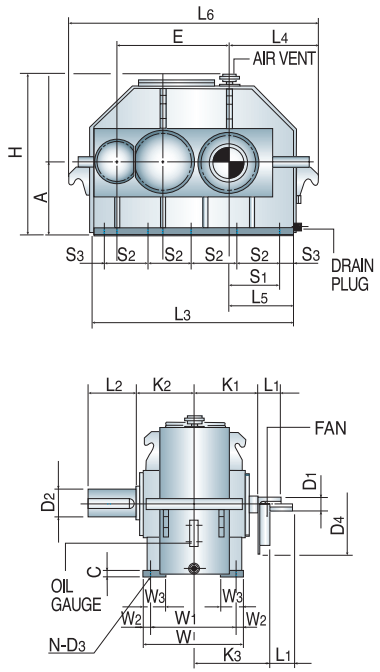
Thermal Ratings

UNIT : kW

Ratio	Speed	Unit Size										
	Input rpm	18	22	26	32	38	45	50	56	61	66	71
		Without Auxiliary Cooling										
7.1 - 14	1,800	73	99	141	201	259	376	462	549	690	771	-
	1,200	70	94	134	192	246	358	440	523	657	735	837
	900	66	90	128	183	235	342	420	499	626	701	799
16 - 28	1,800	67	92	131	187	240	350	430	510	641	717	818
	1,200	63	85	123	175	225	327	401	478	600	670	766
	900	61	83	118	168	216	314	385	458	575	643	734
		With Fan Cooling										
7.1 - 14	1,800	99	134	190	272	349	508	623	742	933	1,040	1,189
	1,200	91	124	176	251	323	469	576	685	861	962	1,100
	900	84	114	163	232	298	434	532	634	796	890	1,015
16 - 28	1,800	92	125	177	253	325	473	579	690	867	969	1,104
	1,200	83	113	160	229	294	429	526	625	787	878	1,003
	900	77	105	149	213	274	398	488	581	730	816	931

Permissible Torque Ratings / GD²

	Nominal Ratio	Unit Size										
		18	22	26	32	38	45	50	56	61	66	71
Permissible Torque Ratings (UNIT : kgm)	7.1	817	1,408	2,225	3,860	6,085	11,716	14,713	19,073	25,521	27,973	30,335
	8	798	1,412	2,231	3,735	6,447	11,717	14,736	19,188	25,942	28,347	31,110
	9	840	1,439	2,245	3,742	6,562	11,685	14,966	19,859	26,191	28,724	41,331
	10	870	1,407	2,239	3,774	6,460	11,385	15,094	20,147	26,607	28,910	41,126
	11.2	783	1,361	2,221	3,725	6,519	11,748	14,828	19,556	26,648	28,654	39,256
	12.5	879	1,407	2,191	3,758	6,396	11,433	14,791	19,588	25,983	27,982	39,415
	14	842	1,397	2,382	3,761	6,447	10,835	14,954	18,535	26,326	30,534	41,011
	16	941	1,494	2,456	3,786	6,652	11,564	14,020	18,830	27,835	32,543	41,753
	18	875	1,451	2,441	3,799	6,631	11,973	13,700	18,374	27,746	31,775	41,676
	20	819	1,484	2,430	4,170	6,524	11,769	14,071	18,804	27,119	30,956	39,527
	22.4	802	1,261	2,292	3,782	6,304	9,742	14,270	17,479	24,814	30,086	37,536
	25	799	1,215	2,335	3,774	6,492	9,914	13,751	17,109	25,200	30,221	38,951
	28	788	1,254	2,507	3,761	6,447	9,778	14,076	17,371	24,821	29,907	38,539
Moment of Inertia GD² (UNIT : kgm²)	7.1	0.0788	0.1232	0.2710	0.6453	1.6313	3.6605	8.3737	10.0026	19.999	21.8899	36.4019
	8	0.0668	0.1021	0.2311	0.5504	1.3792	3.1134	7.2080	8.522	16.9865	18.477	29.9804
	9	0.0580	0.0881	0.2010	0.4748	1.2274	2.6721	6.0005	7.0696	14.5424	15.7215	25.7306
	10	0.0503	0.0772	0.1759	0.3985	1.0291	2.3136	5.2212	6.1096	12.5209	13.4748	21.4881
	11.2	0.0417	0.0650	0.1444	0.3476	0.9004	2.0006	4.4867	5.2477	10.7056	11.4657	19.0505
	12.5	0.0385	0.0521	0.1292	0.2818	0.7377	1.6110	3.9524	4.5529	8.6571	9.2665	16.1590
	14	0.0373	0.0495	0.1209	0.2742	0.6978	1.5817	3.8397	4.3235	8.2558	8.9751	15.4114
	16	0.0327	0.0441	0.1003	0.2214	0.5414	1.3706	3.0422	3.5133	7.3510	7.9030	13.0207
	18	0.0203	0.0377	0.0788	0.1847	0.4756	1.1435	2.6031	3.0155	5.8158	6.2520	10.7628
	20	0.0176	0.0323	0.0666	0.1701	0.4138	0.9686	2.1873	2.5108	5.0565	5.4156	9.3973
	22.4	0.0173	0.0313	0.0652	0.1645	0.4014	0.9192	2.1209	2.4575	4.8875	5.2744	7.7461
	25	0.0144	0.0273	0.0570	0.1332	0.3558	0.7757	1.7886	2.0333	4.2904	4.6007	7.8943
	28	0.0125	0.0231	0.469	0.1131	0.2908	0.6609	1.5396	1.7529	3.4014	3.6485	6.5992



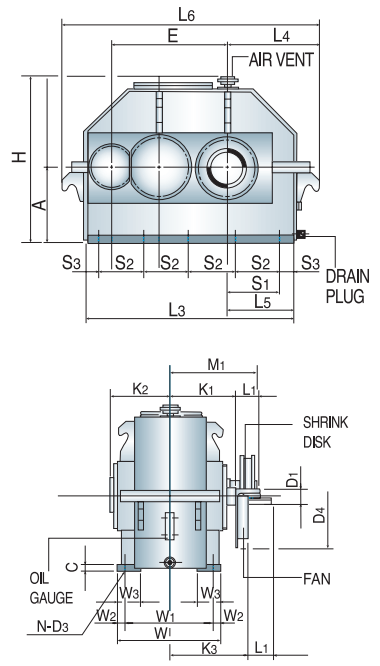
UNIT : mm

Unit Size	High Speed Shaft								
	Ratio : 7.1 - 11.2			Ratio : 12.5 - 22.4			Ratio : 25 - 28		
	D_1	L_1	Key	D_1	L_1	Key	D_1	L_1	Key
18	45	70	14 x 9	35	60	10 x 8	30	50	8 x 7
22	55	90	16 x 10	45	70	14 x 9	35	60	10 x 8
26	65	105	18 x 11	50	80	14 x 9	42	70	12 x 8
32	75	120	20 x 12	60	105	18 x 11	50	80	14 x 9
38	90	160	25 x 14	75	120	20 x 12	60	100	18 x 11
45	100	180	28 x 16	90	160	25 x 14	70	120	20 x 12
50	120	210	32 x 18	100	180	28 x 16	80	140	22 x 14
56	130	210	32 x 18	110	180	28 x 16	90	160	25 x 14
61	150	240	36 x 20	120	210	32 x 18	100	180	28 x 16
66	150	240	36 x 20	120	210	32 x 18	100	180	28 x 16
71	170	270	40 x 22	140	240	36 x 20	110	180	28 x 16

UNIT : mm

Unit Size	Dimensions										
	E	K_1	K_2	L_3	L_4	L_5	L_6	A	H	W	C
18	310	190	180	610	270	190	770	200	452	292	20
22	380	220	200	730	310	230	890	250	561	332	20
26	450	260	240	840	340	260	1,000	280	640	408	28
32	540	305	280	1,000	380	300	1,160	355	765	490	28
38	650	330	310	1,170	450	350	1,370	400	860	530	28
45	770	390	370	1,390	510	410	1,590	500	1,019	650	35
50	885	420	400	1,570	575	455	1,810	560	1,119	710	35
56	940	470	440	1,680	620	500	1,920	630	1,239	780	40
61	1,060	525	500	1,870	670	550	2,110	710	1,379	900	45
66	1,110	530	510	1,990	710	590	2,230	750	1,469	920	45
71	1,205	580	560	2,140	775	635	2,480	800	1,549	1,010	50

*Dimension 'H' can be flexible according to Technical Specifications.



UNIT : mm

Unit Size	Low Speed Shaft					
	Solid Shaft				Hollow Shaft	
	WT(kg)	D_2	L_2	Key	WT(kg)	
18	285	80	140	22 x 14	262	Refer to page 21 and 22 for shaft dimensions
22	470	100	180	28 x 16	432	
26	745	120	210	32 x 18	685	
32	1,300	140	240	36 x 20	1,196	
38	1,905	170	270	40 x 22	1,753	
45	3,150	200	350	45 x 25	2,898	
50	4,160	220	350	50 x 28	3,827	
56	5,170	240	400	56 x 32	4,756	
61	7,100	270	450	63 x 32	6,531	
66	7,740	290	450	63 x 32	1,721	
71	9,710	310	500	70 x 36	8,933	

UNIT : mm

Unit Size	Dimensions								Fan Cooling		Oil Cap.
	S_1	S_2	S_3	W_1	W_2	W_3	D_3	N	D_4	K_3	Liter
18	155	135	35	260	16	56	14	10	350	280	13
22	195	165	35	290	21	66	18	10	430	310	21
26	220	190	40	355	26.5	89	22	10	430	350	32
32	250	225	50	430	30	95	26	10	480	395	65
38	305	270	45	465	32.5	100	26	10	480	420	85
45	365	325	45	570	40	120	33	10	540	480	170
50	390	360	65	640	35	125	33	10	575	510	240
56	440	390	60	690	45	135	39	10	635	560	330
61	475	430	75	800	50	155	45	10	635	615	470
66	515	460	75	820	50	160	45	10	735	620	550
71	545	490	90	910	50	168	45	10	735	670	680

*Dimension 'D_4' can be flexible according to Technical Specifications.

*Shaft Tolerance $D_{1,2} \leq 80$=m6
$D_{1,2} > 80$=n6

Permissible Transmitting Power Ratings

UNIT : kW

Nominal Ratio	Speed		Gear Unit Size										
	Input rpm	Output rpm	18	22	26	32	38	45	50	56	61	66	71
			Mechanical Power Ratings										
28	1,800	64	55	98	158	262	475	732	1,080	1,320	2,004	-	-
	1,200	43	36	66	106	174	317	487	720	878	1,336	1,505	2,024
	900	32	28	48	79	131	238	366	540	660	1,002	1,128	1,518
31.5	1,800	57	53	92	138	232	415	648	967	1,164	1,836	1,904	-
	1,200	38	34	60	90	154	277	432	644	774	1,224	1,272	1,784
	900	29	28	46	68	116	206	324	482	581	918	952	1,338
35.5	1,800	51	46	82	122	226	402	588	871	1,046	1,630	1,750	-
	1,200	34	30	54	82	150	268	394	581	696	1,086	1,166	1,614
	900	25	23	41	60	112	200	294	436	522	814	876	1,208
40	1,800	45	41	73	110	199	361	569	773	944	1,260	1,544	-
	1,200	30	26	48	73	132	240	378	515	630	840	1,030	1,458
	900	23	20	36	55	98	180	283	386	473	630	772	1,092
45	1,800	40	37	65	98	175	322	515	692	868	1,152	1,493	1,956
	1,200	27	24	42	66	116	214	343	462	578	768	996	1,304
	900	20	18	31	48	86	161	258	346	432	576	744	987
50	1,800	36	34	58	95	158	290	468	564	654	996	1,304	1,750
	1,200	24	23	38	64	106	192	312	376	436	664	869	1,166
	900	18	17	29	48	79	145	234	282	328	498	653	876
56	1,800	32	30	53	89	149	258	420	556	667	1,038	1,172	1,410
	1,200	21	19	34	58	98	172	280	370	444	691	781	940
	900	16	16	26	43	74	128	210	277	334	518	586	704
63	1,800	29	25	46	79	138	224	367	492	592	847	1,021	1,274
	1,200	19	17	30	53	91	149	244	328	406	628	680	850
	900	14	12	23	40	68	112	184	245	295	472	510	637
71	1,800	25	23	41	70	120	202	326	442	538	830	894	1,200
	1,200	17	16	26	46	79	134	216	294	358	552	596	799
	900	13	11	19	34	60	100	162	221	268	414	448	600
80	1,800	23	20	37	62	108	176	296	396	498	734	799	1,098
	1,200	15	13	25	41	72	118	198	264	331	488	533	732
	900	11	10	18	30	54	89	148	198	248	366	400	548
90	1,800	20	18	32	55	96	161	258	337	442	652	733	978
	1,200	13	12	20	36	64	108	172	224	294	434	488	652
	900	10	9	16	28	48	80	127	168	221	326	366	488
100	1,800	18	-	29	52	85	145	234	305	383	592	672	850
	1,200	12	-	18	34	56	96	156	204	254	394	448	566
	900	9	-	14	25	42	72	116	151	191	295	336	425
112	1,800	16	-	26	44	76	132	211	275	348	517	594	772
	1,200	11	-	17	29	50	86	139	182	230	344	396	515
	900	8	-	13	23	36	66	106	138	173	258	296	385

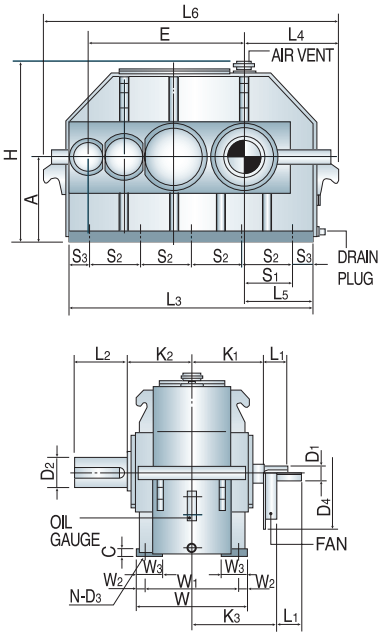
Thermal Ratings

UNIT : kW

Ratio	Speed	Unit Size										
	Input rpm	18	22	26	32	38	45	50	56	61	66	71
		Without Auxiliary Cooling										
28 - 45	1,800	49	72	97	135	181	263	338	366	495	537	637
	1,200	46	67	91	126	170	246	317	343	464	503	597
	900	44	63	86	119	160	232	298	323	437	474	562
51 - 112	1,800	44	64	87	120	162	235	303	328	444	481	570
	1,200	42	61	83	115	155	225	290	314	425	460	546
	900	41	60	81	112	151	219	282	305	413	448	531
		With Fan Cooling										
28 - 45	1,800	62	89	122	168	227	328	423	458	619	670	796
	1,200	56	81	111	153	206	298	385	416	563	610	724
	900	51	74	101	140	188	272	351	379	514	557	661
51 - 112	1,800	0	80	109	151	203	294	379	410	554	601	713
	1,200	0	75	100	139	190	270	352	381	515	560	663
	900	0	70	95	132	178	257	331	358	485	526	623

Permissible Torque Ratings / GD²

	Nominal Ratio	Unit Size										
		18	22	26	32	38	45	50	56	61	66	71
Permissible Torque Ratings (UNIT : kgm)	28	824	1,433	2,364	3,904	7,092	10,924	16,118	19,699	29,907	33,668	45,309
	31.5	927	1,531	2,297	3,909	6,931	10,879	16,198	19,502	30,825	31,953	44,928
	35.5	863	1,544	2,271	4,223	7,584	11,126	16,484	19,754	30,789	33,150	45,729
	40	870	1,535	2,354	4,196	7,675	12,076	16,476	20,160	26,863	32,901	46,562
	45	863	1,497	2,303	4,145	7,713	12,376	16,578	20,723	27,630	35,689	46,914
	50	895	1,535	2,558	4,221	7,739	12,472	15,030	17,461	26,543	34,794	46,690
	56	931	1,576	2,576	4,441	7,665	12,536	16,548	19,914	30,946	34,958	42,049
	63	806	1,531	2,659	4,594	7,495	12,330	16,440	19,825	31,671	34,250	42,793
	71	863	1,453	2,543	4,541	7,538	12,261	16,711	20,253	31,334	33,877	45,411
	80	890	1,535	2,558	4,605	7,573	12,587	16,885	21,183	31,212	34,078	46,767
	90	898	1,497	2,648	4,605	7,713	12,203	16,118	21,183	31,314	35,114	46,857
	100	0	1,535	2,686	4,477	7,675	12,408	16,118	20,339	31,468	35,817	45,283
	112	0	1,576	2,722	4,298	7,880	12,608	16,476	20,631	30,803	35,387	45,989
Moment of Inertia GD² (UNIT : kgm²)	28	0.0085	0.0313	0.0481	0.1376	0.3147	0.7379	1.7635	1.8537	4.1494	4.3517	9.2290
	31.5	0.0074	0.0277	0.0415	0.1131	0.2652	0.6232	1.4819	1.5553	3.5111	3.6736	7.8851
	35.5	0.0062	0.0239	0.0353	0.0965	0.2275	0.1088	1.3066	1.3669	2.9984	3.1292	6.5368
	40	0.0053	0.0197	0.0289	0.0822	0.1938	0.0172	1.0757	1.1254	2.5483	2.6649	5.6029
	45	0.0045	0.0162	0.0239	0.0686	0.1587	0.0331	0.9293	0.9708	2.1646	2.2615	4.7681
	50	0.0037	0.0151	0.0213	0.0566	0.1382	0.3119	0.7857	0.8202	1.7500	1.8325	4.1676
	56	0.0035	0.0147	0.0197	0.0528	0.1268	0.2967	0.7345	0.7640	1.6887	1.7589	3.9937
	63	0.0029	0.0125	0.0165	0.0463	0.1037	0.2437	0.5805	0.5983	1.4803	1.5294	3.2572
	71	0.0024	0.0102	0.0131	0.0373	0.0887	0.1980	0.4892	0.5047	1.2005	1.2331	2.7517
	80	0.0021	0.0085	0.0110	0.0199	0.0740	0.1785	0.4090	0.4220	1.0051	1.0316	2.2713
	90	0.0020	0.0083	0.0105	0.0297	0.0714	0.1699	0.3913	0.4022	0.9423	0.9638	2.1787
	100	0.0000	0.0072	0.0092	0.0257	0.0648	0.1392	0.3436	0.3550	0.8119	0.8300	1.8642
	112	0.0000	0.0059	0.0076	0.0211	0.0542	0.1161	0.2750	0.2916	0.6828	0.6976	1.5908



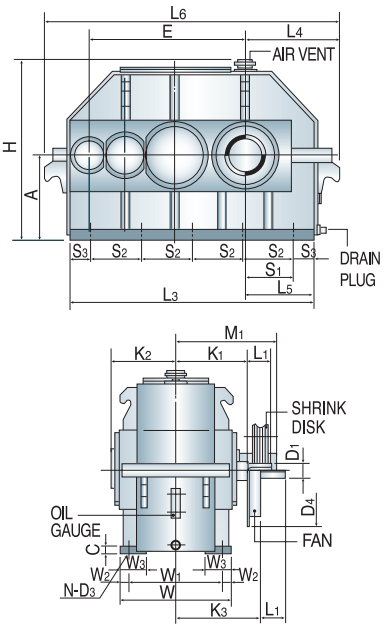
UNIT : mm

Unit Size	High Speed Shaft					
	Ratio : 28 - 63			Ratio : 71 - 112		
	D_1	L_1	Key	D_1	L_1	Key
18	25	40	8 x 7	20	35	6 x 6
22	30	50	8 x 7	25	40	8 x 7
26	38	60	10 x 8	28	50	8 x 7
32	45	70	14 x 9	35	60	10 x 8
38	55	90	16 x 10	42	70	12 x 8
45	65	105	18 x 11	50	80	14 x 9
50	75	120	20 x 12	60	105	18 x 11
56	80	140	22 x 14	65	105	18 x 11
61	90	160	25 x 14	75	120	20 x 12
66	100	180	28 x 16	80	140	22 x 14
71	110	180	28 x 16	90	160	25 x 14

UNIT : mm

Unit Size	Dimensions										
	E	K_1	K_2	L_3	L_4	L_5	L_6	A	H	W	C
18	400	175	170	670	265	185	830	200	445	270	20
22	505	195	190	820	295	215	980	250	525	310	20
26	575	220	215	940	335	255	1,100	280	640	360	28
32	700	260	250	1,130	395	295	1,330	355	740	430	28
38	835	300	285	1,330	445	345	1,530	400	870	490	28
45	990	360	350	1,570	530	410	1,810	500	1,030	600	35
50	1,150	400	390	1,830	620	500	2,070	560	1,125	680	35
56	1,205	400	390	1,910	645	525	2,150	630	1,230	680	40
61	1,380	470	460	2,170	715	575	2,450	710	1,370	820	45
66	1,430	470	460	2,260	755	615	2,540	750	1,470	820	45
71	1,590	510	500	2,500	810	670	2,780	800	1,570	900	50

*Dimension 'H' can be flexible according to Technical Specifications.



UNIT : mm

Unit Size	Low Speed Shaft					
	Solid Shaft				Hollow Shaft	
	WT(kg)	D_2	L_2	Key	WT(kg)	
18	295	80	140	22 x 14	271	Refer to page 21 and 22 for shaft dimensions
22	455	100	180	28 x 16	419	
26	730	120	210	32 x 18	672	
32	1,150	140	240	36 x 20	1,058	
38	1,750	170	270	40 x 22	1,610	
45	3,150	200	350	45 x 25	2,899	
50	4,120	220	350	50 x 28	3,790	
56	4,925	240	400	56 x 32	4,531	
61	7,395	260	450	56 x 32	6,803	
66	8,345	280	450	63 x 32	7,677	
71	10,650	300	500	70 x 36	9,798	

UNIT : mm

Unit Size	Dimensions								Fan Cooling		Oil Cap.
	S_1	S_2	S_3	W_1	W_2	W_3	D_3	N	D_4	K_3	Liter
18	150	200	35	230	20	55	14	8	265	255	12
22	155	175	60	270	20	60	18	10	310	285	24
26	205	210	50	310	25	70	22	10	335	310	43
32	220	245	75	370	30	90	26	10	335	350	70
38	260	290	85	430	30	95	26	10	430	390	110
45	345	360	65	520	40	125	33	10	430	450	190
50	425	420	75	600	40	140	33	10	480	490	280
56	450	440	75	590	45	140	39	10	480	490	340
61	490	500	85	710	55	175	45	10	540	560	530
66	525	520	90	710	55	175	45	10	540	560	590
71	580	580	90	790	55	190	45	10	575	600	740

*Dimension 'D_4' can be flexible according to Technical Specifications.

*Shaft Tolerance $D_{1,2} \leq 80$=m6
$D_{1,2} > 80$=n6

Permissible Transmitting Power Ratings

UNIT : kW

Nominal Ratio	Speed		Gear Unit Size									
	Input rpm	Output rpm	22	26	32	38	45	50	56	61	66	71
			Mechanical Power Ratings									
112	1,800	16	27	44	76	132	210	296	363	545	620	824
	1,200	11	18	29	51	88	140	197	242	363	414	550
	900	8	13	22	38	66	105	148	181	272	310	412
125	1,800	14	23	37	61	110	171	261	319	485	546	735
	1,200	10	15	25	41	74	113	174	213	323	364	489
	900	7	11	18	31	55	85	130	160	242	273	367
140	1,800	13	21	32	54	97	227	235	283	446	462	650
	1,200	9	14	21	36	65	101	157	188	298	308	433
	900	6	11	16	27	48	76	117	141	223	231	325
160	1,800	11	19	28	52	92	136	209	250	390	419	580
	1,200	8	13	19	35	62	90	139	167	260	280	386
	900	6	9	14	26	46	68	104	125	195	210	290
180	1,800	10	17	26	46	84	131	186	227	302	371	524
	1,200	7	11	17	30	55	87	124	151	201	247	350
	900	5	8	13	23	42	66	92	113	151	186	262
200	1,800	9	15	23	41	75	121	169	210	280	362	475
	1,200	6	10	15	27	50	81	112	140	186	242	317
	900	5	7	11	20	37	60	84	105	140	181	237
224	1,800	8	13	22	37	67	108	136	157	240	315	422
	1,200	5	9	15	25	45	72	90	105	160	210	281
	900	4	7	11	18	34	54	68	79	120	157	211
250	1,800	7	12	20	35	60	98	134	161	251	283	341
	1,200	5	8	13	23	40	65	89	107	167	189	227
	900	4	6	10	17	30	49	67	81	125	142	171
280	1,800	6	11	19	32	52	86	119	144	228	248	309
	1,200	4	7	12	21	35	57	80	95	152	166	207
	900	3	5	9	16	26	43	60	72	114	124	155
315	1,800	6	10	16	28	47	76	107	130	201	218	292
	1,200	4	6	11	19	31	51	72	87	134	145	195
	900	3	5	8	14	24	38	54	65	101	109	146
355	1,800	5	9	14	25	41	69	96	121	178	194	267
	1,200	3	6	10	17	28	46	64	81	119	130	178
	900	3	4	7	13	21	34	48	60	89	97	133
400	1,800	5	7	13	22	37	60	82	107	158	177	237
	1,200	3	5	9	15	25	40	54	72	106	119	158
	900	2	4	6	11	19	30	41	54	79	89	119
450	1,800	4	7	12	20	34	54	73	91	142	161	204
	1,200	3	5	8	13	22	36	48	61	94	107	136
	900	2	3	6	10	16	27	37	45	71	81	102
500	1,800	4	6	10	18	31	49	66	84	125	143	187
	1,200	2	4	7	12	20	33	45	56	84	95	125
	900	2	3	5	9	15	25	34	42	63	72	93

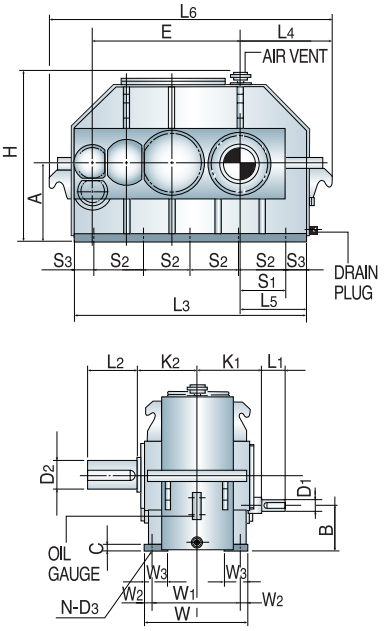
Thermal Ratings

UNIT : kW

Ratio	Speed	Unit Size									
	Input rpm	22	26	32	38	45	50	56	61	66	71
		Without Auxiliary Cooling									
112 - 280	1,800	47	65	92	128	181	232	257	337	367	435
	1,200	44	61	86	120	170	218	241	316	345	409
	900	41	57	80	112	159	204	226	297	324	384
315 - 500	1,800	42	58	83	115	163	209	231	304	331	393
	1,200	39	54	78	108	153	196	217	285	311	369
	900	37	51	74	103	146	188	208	273	298	353
		With Fan Cooling									
112 - 280	1,800	64	89	126	175	247	317	352	461	502	597
	1,200	59	82	117	162	229	294	326	427	465	553
	900	54	76	108	150	213	273	303	397	432	514
315 - 500	1,800	59	82	117	162	229	294	327	428	466	555
	1,200	53	74	106	147	208	267	297	389	424	505
	900	49	69	98	136	193	248	276	362	394	469

Permissible Torque Ratings / GD²

	Nominal Ratio	Unit Size									
		22	26	32	38	45	50	56	61	66	71
Permissible Torque Ratings (UNIT : kgm)	112	1,603	2,617	4,523	7,835	12,553	17,628	21,634	32,496	37,036	49,144
	125	1,520	2,464	4,074	7,353	11,327	17,389	21,264	32,293	36,367	48,887
	140	1,580	2,382	4,029	7,234	11,351	17,472	21,033	33,275	34,499	48,521
	160	1,603	2,404	4,439	7,885	11,574	17,806	21,367	33,195	35,739	49,475
	180	1,603	2,461	4,378	8,013	12,591	17,742	21,749	29,046	35,628	50,365
	200	1,574	2,448	4,324	7,949	12,878	17,965	22,416	29,889	38,633	50,556
	224	1,585	2,671	4,398	8,013	12,998	16,203	18,874	28,668	37,571	50,391
	250	1,669	2,703	4,650	7,949	13,116	17,885	21,463	33,386	37,758	45,508
	280	1,603	2,782	4,763	7,790	12,909	17,806	21,367	34,054	36,947	46,295
	315	1,603	2,679	4,732	8,013	12,770	18,029	21,784	33,803	36,558	49,078
	355	1,637	2,709	4,741	7,901	12,981	18,343	22,858	33,581	36,685	50,512
	400	1,558	2,766	4,801	7,949	12,719	17,488	22,893	33,704	37,838	50,556
	450	1,645	2,754	4,722	7,870	12,878	17,528	21,820	33,982	38,633	49,006
	500	1,590	2,742	4,690	7,949	13,116	17,885	22,257	33,386	38,156	49,682
Moment of Inertia GD² (UNIT : kgm²)	112	0.0040	0.0064	0.0170	0.0419	0.0939	0.2351	0.2409	0.5532	0.5801	1.2348
	125	0.0036	0.0054	0.0156	0.0353	0.0846	0.2046	0.2176	0.4681	0.4898	1.1130
	140	0.0034	0.0046	0.0144	0.0305	0.0776	0.1841	0.1998	0.3998	0.4172	1.0045
	160	0.0032	0.0038	0.0134	0.0259	0.0716	0.1709	0.1855	0.3398	0.3552	0.9519
	180	0.0026	0.0030	0.0106	0.0211	0.0602	0.1432	0.1552	0.2884	0.3015	0.7905
	200	0.0024	0.0028	0.0106	0.0185	0.0566	0.1344	0.1452	0.2333	0.2443	0.7472
	224	0.0024	0.0026	0.0106	0.0168	0.0578	0.1368	0.1482	0.225	0.2345	0.7590
	250	0.0020	0.0020	0.0084	0.0138	0.0485	0.1151	0.1242	0.1974	0.2038	0.6370
	280	0.0020	0.0016	0.0082	0.0116	0.0469	0.1119	0.1212	0.1601	0.1643	0.6174
	315	0.0016	0.0014	0.0066	0.0098	0.0375	0.0903	0.0971	0.1340	0.1374	0.4914
	355	0.0016	0.0012	0.0068	0.0094	0.0393	0.0935	0.1009	0.1256	0.1284	0.5151
	400	0.0016	0.0012	0.0066	0.0086	0.0375	0.0923	0.0997	0.1081	0.1105	0.5073
	450	0.0016	0.0012	0.0064	0.0072	0.0369	0.0891	0.0971	0.0909	0.0929	0.4954
	500	0.0012	0.0012	0.0054	0.0066	0.0311	0.0746	0.0808	0.0756	0.0772	0.4246



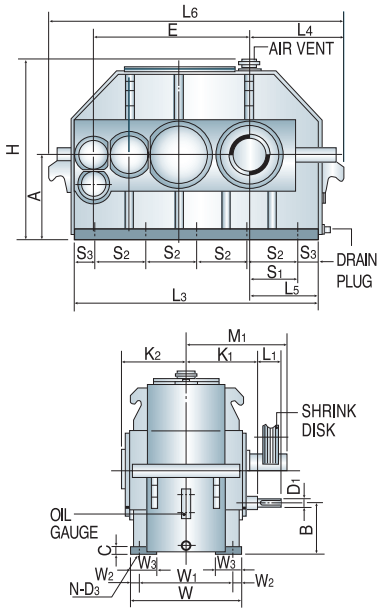
UNIT : mm

Unit Size	High Speed Shaft					
	Ratio : 112 - 280			Ratio : 315 - 500		
	D_1	L_1	Key	D_1	L_1	Key
22	22	35	6 x 6	19	35	6 x 6
26	25	40	8 x 7	20	35	6 x 6
32	32	60	10 x 8	28	50	8 x 7
38	38	60	10 x 8	30	50	8 x 7
45	45	70	14 x 9	35	60	10 x 8
50	55	90	16 x 10	42	70	12 x 8
56	60	105	18 x 11	45	70	14 x 9
61	65	105	18 x 11	50	80	14 x 9
66	70	110	20 x 12	55	90	16 x 10
71	75	120	20 x 12	60	105	18 x 11

UNIT : mm

Unit Size	Dimensions											
	E	K_1	K_2	L_3	L_4	L_5	L_6	A	H	B	W	C
22	505	190	190	810	295	215	970	250	525	160	310	20
26	575	220	215	930	335	255	1,090	315	640	225	360	28
32	700	260	250	1,130	395	295	1,330	355	740	243	430	28
38	835	300	285	1,310	445	345	1,510	400	870	275	490	35
45	990	360	350	1,560	530	410	1,800	500	1,030	340	600	35
50	1,150	400	390	1,830	620	500	2,070	560	1,140	375	680	40
56	1,205	400	390	1,920	655	525	2,180	630	1,230	445	680	45
61	1,380	470	460	2,170	705	575	2,430	710	1,380	490	820	45
66	1,430	470	460	2,270	745	615	2,530	750	1,470	530	820	45
71	1,590	510	500	2,520	800	670	2,780	800	1,570	535	900	50

*Dimension 'H' can be flexible according to Technical Specifications.



UNIT : mm

Unit Size	Low Speed Shaft					
	Solid Shaft				Hollow Shaft	
	WT(kg)	D_2	L_2	Key	WT(kg)	
22	465	100	180	28 x 16	442	Refer to page 21 and 22 for shaft dimensions
26	660	120	210	32 x 18	627	
32	1,200	140	240	36 x 20	1,140	
38	1,800	170	270	40 x 22	1,710	
45	2,800	200	350	45 x 25	2,660	
50	4,250	220	350	50 x 28	3,910	
56	5,150	240	400	56 x 32	4,738	
61	6,950	270	450	63 x 32	6,394	
66	8,030	290	450	63 x 32	7,388	
71	10,500	310	500	70 x 36	9,660	

UNIT : mm

Unit Size	Dimensions									Oil Cap.
	S_1	S_2	S_3	W_1	W_2	W_3	D_3	N	B	Liter
22	160	175	55	270	20	60	18	10	160	26
26	190	200	65	310	25	70	22	10	225	45
32	230	250	65	370	30	90	26	10	243	83
38	290	300	55	430	30	95	26	10	275	155
45	330	350	80	520	40	125	33	10	340	275
50	425	420	75	600	40	140	33	10	375	380
56	445	440	80	590	45	140	39	10	445	500
61	490	500	85	710	55	175	45	10	490	560
66	520	520	95	710	55	175	45	10	530	620
71	570	580	100	790	55	190	45	10	535	940

*Dimension 'D_4' can be flexible according to Technical Specifications.

*Shaft Tolerance $D_{1,2} \leq 80$=m6
$D_{1,2} > 80$=n6

Permissible Transmitting Power Ratings

UNIT : kW

Nominal Ratio	Speed		Gear Unit Size								
	Input rpm	Output rpm	18	22	26	32	38	45	50	56	61
			Mechanical Power Ratings								
5.6	1,800	321	174	289	434	944	1,676	-	-	-	-
	1,200	214	115	192	289	630	1,116	1,826	2,504	3,480	-
	900	161	86	144	216	473	840	1,370	1,878	2,610	3,622
6.3	1,800	286	150	216	325	787	1,448	-	-	-	-
	1,200	190	100	144	216	526	966	1,543	2,047	2,936	-
	900	143	76	108	162	394	725	1,158	1,536	2,202	3,072
7.1	1,800	254	174	289	434	944	1,676	-	-	-	-
	1,200	169	115	192	289	630	1,117	1,826	2,504	3,480	-
	900	127	86	144	216	473	840	1,370	1,878	2,610	3,622
8	1,800	225	150	216	325	787	1,448	-	-	-	-
	1,200	150	100	144	216	526	966	1,543	2,047	2,936	-
	900	113	76	108	162	394	725	1,158	1,536	2,202	3,072
9	1,800	200	150	216	325	787	1,448	-	-	-	-
	1,200	133	100	144	216	526	966	1,543	2,047	2,630	-
	900	100	76	108	162	394	725	1,158	1,536	1,973	3,072
10	1,800	180	120	174	312	594	1,070	1,934	-	-	-
	1,200	120	79	115	206	396	638	1,291	1,638	2,332	-
	900	90	60	86	155	296	535	968	1,229	1,748	2,363
11.2	1,800	161	92	138	252	506	984	1,512	1,914	-	-
	1,200	107	60	90	168	337	656	1,008	1,277	2,016	2,834
	900	80	46	67	126	252	492	756	958	1,512	2,126
12.5	1,800	144	84	120	205	473	780	1,236	1,638	-	-
	1,200	96	55	79	137	314	521	824	1,092	1,654	2,252
	900	72	42	60	103	236	390	618	818	1,241	1,690
14	1,800	129	84	120	205	473	780	1,236	1,638	-	-
	1,200	86	55	79	137	314	521	824	1,092	1,550	2,252
	900	64	42	60	103	236	390	618	818	1,164	1,690
16	1,800	113	70	98	181	354	630	968	1,402	1,866	-
	1,200	75	47	66	120	235	420	646	936	1,243	1,795
	900	56	36	49	90	178	314	485	702	934	1,346
18	1,800	100	55	76	149	282	511	835	1,094	1,622	-
	1,200	67	36	50	100	180	341	557	730	1,082	1,465
	900	50	28	37	74	140	256	418	548	811	1,098

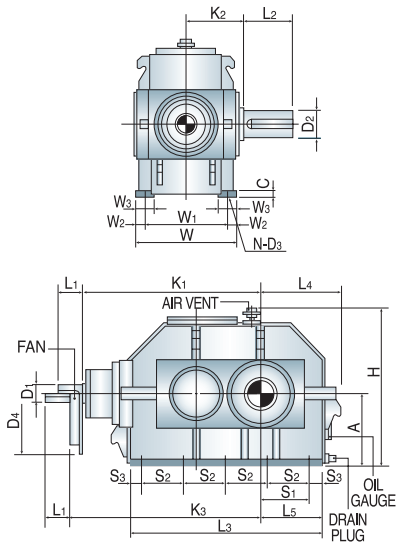
Thermal Ratings

UNIT : kW

Nominal Ratio	Speed	Unit Size								
	Input rpm	18	22	26	32	38	45	50	56	61
		Without Auxiliary Cooling								
5.6 - 11.2	1,800	58	79	113	161	207	301	370	438	552
	1,200	56	76	108	155	199	290	356	423	531
	900	53	72	103	146	188	274	336	399	502
12.5 - 18	1,800	54	73	104	149	192	279	342	407	511
	1,200	51	70	99	141	182	264	324	385	484
	900	49	66	94	134	172	251	308	366	460
		With Fan Cooling								
5.6 - 11.2	1,800	102	139	197	282	362	526	647	769	966
	1,200	95	129	184	263	338	491	630	717	902
	900	87	119	169	241	309	450	553	657	825
12.5 - 18	1,800	94	128	183	260	335	488	599	711	895
	1,200	87	118	168	239	308	448	550	654	823
	900	80	108	154	221	283	412	506	602	757

Permissible Torque Ratings / GD²

	Nominal Ratio	Unit Size								
		18	22	26	32	38	45	50	56	61
Permissible Torque Ratings (UNIT : kgm)	5.6	516	860	1,289	2,822	5,014	8,181	11,121	15,580	21,619
	6.3	508	725	1,088	2,643	4,868	7,777	10,315	14,788	21,358
	7.1	654	1,090	1,635	3,578	6,358	10,372	14,214	19,754	27,410
	8	645	921	1,382	3,357	6,181	9,875	13,099	18,778	26,198
	9	725	1,036	1,554	3,776	6,954	11,110	14,736	18,927	29,472
	10	640	921	1,650	3,160	5,705	10,323	13,099	18,638	25,187
	11.2	544	802	1,504	3,009	5,874	9,026	11,433	18,052	25,387
	12.5	560	799	1,375	3,150	5,197	8,235	10,905	16,533	22,514
	14	627	895	1,540	3,528	5,820	9,223	12,222	17,371	25,215
	16	614	839	1,535	3,029	5,362	8,269	11,973	15,923	22,964
	18	530	714	1,428	2,694	4,904	8,013	10,523	15,565	21,068
Moment of Inertia GD² (UNIT : kgm²)	5.6	0.0706	0.1645	0.4639	1.1601	2.4982	5.5261	9.0766	17.4657	30.5083
	6.3	0.0610	0.1428	0.3951	1.0205	2.2210	4.8253	8.1854	15.1388	26.3525
	7.1	0.0646	0.1510	0.4204	1.0546	2.3083	4.9348	8.4640	16.0737	28.7578
	8	0.0562	0.1322	0.3602	0.9365	2.0688	4.3539	7.6944	14.0284	24.9501
	9	0.0534	0.1258	0.3386	0.9162	1.9653	4.2691	7.4031	13.5023	23.9298
	10	0.0471	0.1081	0.2902	0.8045	1.6395	3.9054	6.6134	11.7655	20.8712
	11.2	0.0363	0.0836	0.2483	0.6421	1.4925	3.2546	5.4559	10.1693	17.5345
	12.5	0.0309	0.0682	0.1964	0.5456	1.1750	2.7397	4.5798	7.9509	14.2631
	14	0.0301	0.0656	0.1911	0.5315	1.1395	2.6079	4.4103	7.8247	13.8373
	16	0.0251	0.0542	0.1623	0.4326	0.8697	1.8764	2.9359	5.9403	10.4842
	18	0.0213	0.0467	0.1376	0.3632	0.7371	1.5798	2.4505	4.9663	8.7378



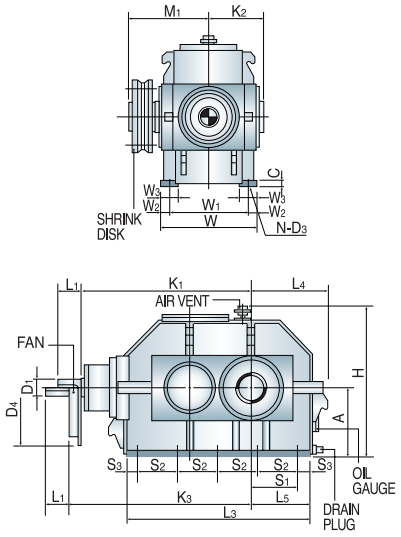
UNIT : mm

Unit Size	High Speed Shaft					
	Ratio : 5.6 - 10			Ratio : 11.2 - 18		
	D_1	L_1	Key	D_1	L_1	Key
18	45	70	14 x 9	35	60	10 x 8
22	50	80	14 x 9	40	70	12 x 8
26	60	105	18 x 11	55	90	16 x 10
32	75	120	20 x 12	70	120	20 x 12
38	90	160	25 x 14	80	140	22 x 14
45	100	180	28 x 16	90	160	25 x 14
50	110	180	28 x 16	100	180	28 x 16
56	130	210	32 x 18	110	180	28 x 16
61	140	240	36 x 20	120	210	32 x 18

UNIT : mm

Unit Size	Dimensions										
	E	K_1	K_2	L_3	L_4	L_5	L_6	A	H	W	C
18		540	180	560	270	190		200	452	292	20
22		620	200	690	310	230		250	561	332	20
26		715	240	790	340	260		280	640	408	28
32		890	280	940	380	300		355	765	490	28
38		1,050	310	1,110	450	350		400	860	530	28
45		1,195	370	1,315	510	410		500	1,019	650	35
50		1,315	400	1,500	575	455		560	1,119	710	35
56		1,485	440	1,600	620	500		630	1,239	780	40
61		1,630	500	1,790	670	550		710	1,357	900	45

*Dimension 'H' can be flexible according to Technical Specifications.



UNIT : mm

Unit Size	Low Speed Shaft					
	Ratio : 2 - 2.8				Hollow Shaft	
	WT(kg)	D_2	L_2	Key	WT(kg)	
18	315	80	140	22 x 14	289	Refer to page 21 and 22 for shaft dimensions
22	490	100	180	28 x 16	450	
26	770	120	210	32 x 18	707	
32	1,340	140	240	36 x 20	1,230	
38	2,015	170	270	40 x 22	1,850	
45	3,270	200	350	45 x 25	3,002	
50	4,240	220	350	50 x 28	3,893	
56	5,580	240	400	56 x 32	5,123	
61	7,450	270	450	63 x 32	6,840	

UNIT : mm

Unit Size	Dimensions								Fan Cooling		Oil Cap.
	S_1	S_2	S_3	W_1	W_2	W_3	D_3	N	D_4	K_3	Liter
18	160	125	30	260	16	56	14	10	430	630	11
22	195	155	35	290	21	66	18	10	430	710	19
26	225	180	35	355	26.5	89	22	10	480	805	28
32	250	210	50	430	30	95	26	10	575	980	55
38	305	255	45	465	32.5	100	26	10	635	1,140	75
45	362.5	305	47.5	570	40	120	33	10	735	1,285	150
50	385	340	70	640	35	125	33	10	735	1,405	220
56	440	370	60	690	45	135	39	10	830	1,575	290
61	475	410	75	800	50	155	45	10	830	1,720	420

*Dimension 'D_4' can be flexible according to Technical Specifications.

*Shaft Tolerance $D_{1,2} \leq 80$=m6
$D_{1,2} > 80$=n6

Permissible Transmitting Power Ratings

UNIT : kW

Nominal Ratio	Speed		Gear Unit Size										
	Input rpm	Output rpm	18	22	26	32	38	45	50	56	61	66	71
			Mechanical Power Ratings										
20	1,800	90	54	115	180	304	456	950	1,484	1,758	-	-	-
	1,200	60	36	77	120	209	310	660	990	1,170	1,914	-	2,622
	900	45	26	56	90	152	228	474	742	876	1,434	-	1,968
22.4	1,800	80	54	115	180	304	456	950	1,402	1,650	-	-	-
	1,200	54	36	77	120	209	310	660	936	1,099	1,732	-	2,172
	900	40	26	56	90	152	228	474	700	824	1,232	-	1,624
25	1,800	72	54	108	180	296	456	854	1,178	1,674	-	-	-
	1,200	48	36	72	120	198	310	588	786	1,116	1,560	1,632	2,094
	900	36	26	54	90	148	228	426	588	836	1,168	1,224	1,578
28	1,800	64	54	90	168	288	456	758	1,122	1,302	-	-	-
	1,200	43	36	60	110	192	310	522	746	869	1,368	1,584	1,946
	900	32	26	44	84	144	228	378	560	650	1,026	1,188	1,459
31.5	1,800	57	46	82	151	228	341	690	996	1,170	-	-	-
	1,200	38	30	54	92	156	234	475	666	780	1,230	1,418	1,734
	900	29	22	41	74	114	168	344	498	584	922	1,064	1,298
35.5	1,800	51	44	72	122	228	341	650	890	1,046	-	-	-
	1,200	34	29	48	82	151	234	432	594	696	1,112	1,286	1,490
	900	25	22	36	60	114	168	324	444	522	834	965	1,164
40	1,800	45	36	66	113	198	324	588	792	924	1,484	1,698	-
	1,200	30	24	44	72	132	218	384	528	614	990	1,133	1,368
	900	23	17	32	55	98	162	312	396	462	742	848	1,026
45	1,800	40	28	56	96	144	264	510	701	824	1,310	1,518	1,730
	1,200	27	18	38	65	96	178	341	468	550	874	1,010	1,152
	900	20	13	36	48	72	132	254	348	412	654	758	864
50	1,800	36	22	50	84	125	214	462	636	742	1,188	1,296	1,650
	1,200	24	14	32	58	84	142	307	422	493	792	864	1,099
	900	18	11	25	42	61	108	170	317	371	594	648	824
56	1,800	32	22	48	85	125	214	408	552	642	1,046	1,212	1,468
	1,200	21	14	31	56	84	142	270	422	427	696	808	978
	900	16	11	24	42	61	108	204	276	320	522	606	732
63	1,800	29	17	42	73	112	188	364	486	569	924	1,014	1,278
	1,200	19	11	28	48	73	125	242	324	378	614	676	852
	900	14	8	20	36	55	94	180	242	283	462	506	638
71	1,800	25	17	36	60	100	188	265	386	468	726	924	1,104
	1,200	17	11	24	40	66	125	176	257	312	482	614	737
	900	13	8	17	30	50	94	132	192	235	362	462	550
80	1,800	23	14	31	54	85	154	228	346	420	650	824	990
	1,200	15	10	20	36	56	103	151	229	280	432	550	660
	900	11	7	16	26	42	77	114	173	210	324	412	494

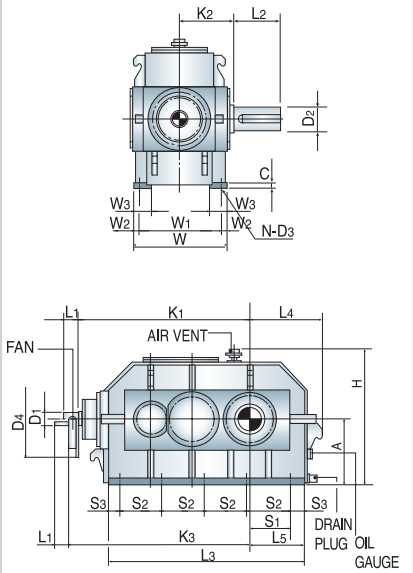
Thermal Ratings

UNIT : kW

Ratio	Speed	Unit Size										
	Input rpm	18	22	26	32	38	45	50	56	61	66	71
		Without Auxiliary Cooling										
20 - 35.5	1,800	42	61	83	115	155	225	290	314	425	460	546
	1,200	39	57	78	108	145	210	271	293	396	430	510
	900	37	54	73	101	136	197	254	275	372	403	478
40 - 80	1,800	37	54	74	102	138	199	257	278	376	408	484
	1,200	35	51	70	96	130	188	242	261	354	384	455
	900	34	49	66	92	124	179	231	250	338	366	434
		With Fan Cooling										
20 - 35.5	1,800	64	92	125	173	233	337	435	471	637	691	819
	1,200	58	83	113	157	211	306	394	426	576	625	742
	900	52	76	103	142	192	278	358	387	523	567	673
40 - 80	1,800	56	81	111	153	207	299	385	417	564	611	726
	1,200	51	74	101	140	188	273	352	380	515	558	661
	900	48	69	94	129	174	252	325	352	476	516	613

Permissible Torque Ratings / GD²

	Nominal Ratio	Unit Size										
		18	22	26	32	38	45	50	56	61	66	71
Permissible Torque Ratings (UNIT : kgm)	20	563	1,202	1,919	3,249	4,861	10,106	15,811	18,676	30,573	-	41,957
	22.4	630	1,347	2,149	3,639	5,444	11,318	16,705	19,685	29,427	-	38,769
	25	704	1,439	2,398	3,933	6,076	11,353	15,670	22,290	31,116	32,619	42,053
	28	788	1,325	2,507	4,298	6,805	11,282	16,727	19,413	30,624	35,459	43,554
	31.5	725	1,370	2,498	3,828	5,641	11,564	16,722	19,623	30,946	35,741	43,599
	35.5	817	1,362	2,271	4,314	6,358	12,261	16,802	19,754	31,561	36,511	44,049
	40	716	1,382	2,354	4,196	6,908	13,304	16,885	19,699	31,621	36,175	43,748
	45	633	1,727	2,303	3,454	6,332	12,203	16,693	19,744	31,372	36,380	41,446
	50	595	1,343	2,239	3,262	5,756	9,082	16,885	19,763	31,660	34,538	43,940
	56	666	1,433	2,507	3,653	6,447	12,178	16,476	19,126	31,161	36,175	43,697
	63	564	1,370	2,418	3,707	6,286	12,088	16,279	19,019	31,027	34,008	42,873
	71	636	1,272	2,271	3,815	7,084	9,990	14,532	17,801	27,428	34,967	41,597
	80	614	1,330	2,251	3,582	6,549	9,722	14,736	17,909	27,630	35,101	42,162
Moment of Inertia GD² (UNIT : kgm²)	20	0.0134	0.0429	0.0846	0.1942	0.4998	1.3318	2.689	2.9714	6.4464	6.4241	10.8962
	22.4	0.0130	0.0419	0.0814	0.1916	0.4840	1.3206	2.6444	2.8797	6.2917	6.2369	10.5989
	25	0.0117	0.0375	0.0732	0.1701	0.4377	1.1652	2.3847	2.6043	5.5013	5.6699	9.5846
	28	0.0115	0.0369	0.0712	0.1683	0.4276	1.1579	2.3562	2.5459	5.4028	5.5935	9.3953
	31.5	0.0100	0.0321	0.0616	0.1462	0.3669	1.0201	2.0900	2.2629	4.7366	4.8875	8.4537
	35.5	0.0095	0.0311	0.0576	0.1368	0.338	0.9810	1.955	2.1199	4.5766	4.6973	8.0101
	40	0.0079	0.0265	0.0503	0.1167	0.2888	0.8543	1.6126	1.7583	4.1873	4.2811	7.0806
	45	0.0060	0.0209	0.0389	0.0903	0.2471	0.6814	1.3886	1.5862	3.4419	3.5161	5.8254
	50	0.0051	0.0174	0.0329	0.0734	0.1952	0.5761	1.1609	1.2474	2.8831	2.9431	4.8646
	56	0.0048	0.0167	0.0317	0.0696	0.1887	0.5538	1.1150	1.1935	2.7186	2.7734	4.6322
	63	0.0040	0.0137	0.0263	0.0576	0.1611	0.4519	0.8282	0.9166	1.9729	2.0160	3.1268
	71	0.0040	0.0136	0.0263	0.0570	0.1597	0.4467	0.8212	0.9116	1.9563	2.0014	3.1086
	80	0.0027	0.0113	0.0221	0.0489	0.1356	0.3741	0.6832	0.7698	1.6381	1.6734	2.5851



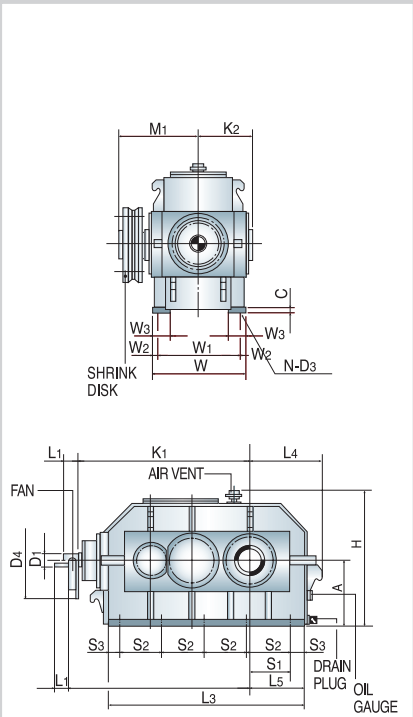
UNIT : mm

Unit Size	High Speed Shaft					
	Ratio : 20 - 40			Ratio : 45 - 80		
	D_1	L_1	Key	D_1	L_1	Key
18	28	50	8 x 7	22	35	6 x 6
22	35	60	10 x 8	28	50	8 x 7
26	45	70	14 x 9	35	60	10 x 8
32	50	80	14 x 9	40	70	12 x 8
38	60	105	18 x 11	55	90	16 x 10
45	75	120	20 x 12	70	120	20 x 12
50	80	140	22 x 14	75	120	20 x 12
56	90	160	25 x 14	80	140	22 x 14
61	100	180	28 x 16	90	160	25 x 14
66	100	180	28 x 16	90	160	25 x 14
71	110	180	28 x 16	100	180	28 x 16

UNIT : mm

Unit Size	Dimensions										
	E	K_1	K_2	L_3	L_4	L_5	L_6	A	H	W	C
18		580	170	630	265	185		200	445	270	20
22		685	190	780	295	215		250	525	310	20
26		805	215	890	335	255		280	640	360	28
32		940	250	1,070	395	295		355	740	430	28
38		1,100	285	1,260	445	345		400	870	490	28
45		1,340	350	1,500	530	410		500	1,030	600	35
50		1,550	390	1,760	620	500		560	1,125	680	35
56		1,605	390	1,840	645	525		630	1,230	680	40
61		1,805	460	2,090	715	575		710	1,370	820	45
66		1,855	460	2,180	755	615		750	1,470	820	45
71		2,020	500	2,420	810	670		800	1,570	900	50

*Dimension 'H' can be flexible according to Technical Specifications.



UNIT : mm

Unit Size	Low Speed Shaft					
	Solid Shaft				Hollow Shaft	
	WT(kg)	D_2	L_2	Key	WT(kg)	
18	305	80	140	22 x 14	280	Refer to page 21 and 22 for shaft dimensions
22	470	100	180	28 x 16	431	
26	750	120	210	32 x 18	689	
32	1,160	140	240	36 x 20	1,065	
38	1,815	170	270	40 x 22	1,666	
45	3,175	200	350	45 x 25	2,915	
50	4,285	220	350	50 x 28	3,934	
56	5,035	240	400	56 x 32	4,623	
61	7,430	260	450	56 x 32	6,821	
66	8,400	280	450	63 x 32	7,712	
71	10,750	300	500	70 x 36	9,869	

UNIT : mm

Unit Size	Dimensions								Fan Cooling		Oil Cap.
	S_1	S_2	S_3	W_1	W_2	W_3	D_3	N	D_4	K_3	Liter
18	140	180	45	230	20	55	14	8	310	670	12
22	155	165	60	270	20	60	18	10	335	775	24
26	190	190	65	310	25	70	22	10	430	895	41
32	220	230	75	370	30	90	26	10	430	1,030	65
38	255	270	90	430	30	95	26	10	480	1,190	100
45	340	340	70	520	40	125	33	10	575	1,430	180
50	420	400	80	600	40	140	33	10	635	1,640	270
56	445	420	80	590	45	140	39	10	735	1,695	330
61	490	480	85	710	55	175	45	10	735	1,895	500
66	525	500	90	710	55	175	45	10	735	1,945	560
71	580	560	90	790	55	190	45	10	735	2,110	720

*Dimension 'D_4' can be flexible according to Technical Specifications.

*Shaft Tolerance $D_{1,2} \leq 80$=m6
$D_{1,2} > 80$=n6

Permissible Transmitting Power Ratings

UNIT : kW

Nominal Ratio	Speed		Gear Unit Size									
	Input rpm	Output rpm	22	26	32	38	45	50	56	61	66	71
			Mechanical Power Ratings									
80	1,800	23	34	58	94	154	286	404	483	761	877	1,059
	1,200	15	23	38	63	103	190	269	322	508	585	706
	900	11	17	29	47	77	142	202	242	381	438	529
90	1,800	20	27	42	72	107	224	350	413	676	764	927
	1,200	13	18	28	48	72	149	233	276	451	509	618
	900	10	13	21	36	54	112	174	207	338	382	463
100	1,800	18	27	42	72	107	225	333	391	616	716	773
	1,200	12	18	28	48	72	151	221	261	411	477	515
	900	9	13	21	36	54	113	166	195	308	358	387
112	1,800	16	25	42	70	108	202	279	396	553	579	746
	1,200	11	17	28	47	72	135	186	264	369	386	497
	900	8	12	21	35	54	101	139	198	277	289	374
125	1,800	14	21	40	68	108	180	265	309	487	564	693
	1,200	10	14	27	46	72	120	177	206	324	376	462
	900	7	11	20	34	54	90	133	154	243	282	347
140	1,800	13	19	36	54	81	164	237	279	440	508	620
	1,200	9	13	24	36	54	110	158	186	293	339	413
	900	6	10	18	27	40	82	119	139	220	254	310
160	1,800	11	17	29	53	80	153	210	245	392	453	538
	1,200	8	11	19	36	53	101	139	163	262	303	359
	900	6	9	14	27	40	76	104	123	196	227	269
180	1,800	10	16	26	47	76	139	186	218	350	400	483
	1,200	7	10	17	31	51	92	125	145	233	267	322
	900	5	8	13	23	38	69	93	109	174	200	242
200	1,800	9	14	23	34	63	122	167	197	312	362	412
	1,200	6	9	15	23	42	81	111	131	208	241	274
	900	5	7	11	17	31	61	84	98	156	181	206
224	1,800	8	12	20	30	51	110	150	175	281	306	391
	1,200	5	8	13	20	34	73	100	117	187	204	260
	900	4	6	10	15	25	54	75	88	140	153	195
250	1,800	7	11	20	30	51	97	131	152	248	288	348
	1,200	5	7	13	20	34	65	87	101	166	192	232
	900	4	6	10	15	25	48	66	76	124	144	174
280	1,800	6	10	17	26	48	87	116	135	220	242	305
	1,200	4	6	11	18	30	58	78	90	147	161	204
	900	3	5	9	13	22	43	58	68	110	121	152
315	1,800	6	8	14	24	45	63	92	112	173	221	263
	1,200	4	6	9	16	30	42	61	75	116	147	176
	900	3	4	7	12	22	31	46	56	87	110	132
355	1,800	5	8	13	20	37	54	83	100	155	197	236
	1,200	5	5	9	13	25	37	55	67	103	131	157
	900	3	4	6	10	19	27	41	50	78	98	119

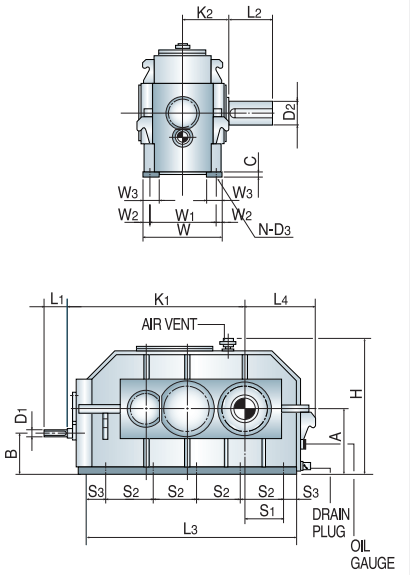
Thermal Ratings

UNIT : kW

Ratio	Speed	Unit Size									
	Input rpm	22	26	32	38	45	50	56	61	66	71
		Without Auxiliary Cooling									
80 - 200	1,800	41	56	81	110	156	200	222	291	317	376
	1,200	38	52	73	102	145	187	207	272	296	351
	900	35	49	68	96	136	176	194	256	278	330
224 - 355	1,800	36	50	70	98	139	178	198	259	282	335
	1,200	33	47	66	92	130	167	186	243	265	315
	900	31	45	63	87	124	159	177	232	253	300
		With Fan Cooling									
80 - 200	1,800	62	84	119	166	235	302	335	438	478	567
	1,200	56	76	108	150	213	199	304	399	434	515
	900	51	69	98	136	193	249	276	363	394	468
224 - 355	1,800	55	74	105	147	209	268	298	390	425	504
	1,200	50	67	95	133	190	243	271	354	386	458
	900	46	62	87	123	175	224	250	327	356	423

Permissible Torque Ratings / GD²

	Nominal Ratio	Unit Size									
		22	26	32	38	45	50	56	61	66	71
Permissible Torque Ratings (UNIT : kgm)	80	1,437	2,461	4,013	6,550	12,146	17,234	20,604	32,496	37,392	45,151
	90	1,295	2,025	3,441	5,151	10,731	16,741	19,817	32,408	36,629	44,427
	100	1,447	2,265	3,855	5,803	12,003	17,726	20,827	32,830	38,156	41,256
	112	1,514	2,528	4,175	6,410	12,019	16,649	23,682	33,030	34,544	44,604
	125	1,431	2,663	4,561	7,254	12,023	17,687	20,568	32,392	37,559	46,204
	140	1,447	2,660	4,073	6,010	12,242	17,695	20,811	32,830	37,838	46,295
	160	1,450	2,442	4,553	6,868	12,973	17,806	20,986	33,450	38,664	45,914
	180	1,502	2,504	4,464	7,297	13,307	17,885	20,890	33,482	38,346	46,359
	200	1,463	2,448	3,688	6,677	13,036	17,806	20,986	33,227	38,633	43,879
	224	1,407	2,350	3,543	6,054	12,998	17,984	21,011	33,475	36,502	46,473
	250	1,471	2,683	3,975	6,757	12,917	17,488	20,270	32,989	38,354	46,502
	280	1,447	2,560	3,940	6,677	12,909	17,361	20,254	32,941	36,057	46,405
	315	1,402	2,379	4,006	7,512	10,517	15,525	18,780	29,046	37,059	44,320
	355	1,411	2,427	3,838	7,055	10,159	15,521	18,907	29,348	37,249	44,869
Moment of Inertia GD² (UNIT : kgm²)	80	0.0085	0.0166	0.0215	0.0465	0.1149	0.2684	0.3153	0.6431	0.7768	0.9939
	90	0.0042	0.0080	0.0187	0.0403	0.0995	0.2323	0.2728	0.5562	0.6719	0.8597
	100	0.0032	0.0062	0.0162	0.0391	0.0967	0.2255	0.2648	0.5396	0.6519	0.8340
	112	0.0031	0.0060	0.0156	0.0379	0.0937	0.2186	0.2567	0.5233	0.6322	0.8089
	125	0.0026	0.0052	0.0138	0.0337	0.0832	0.1946	0.2285	0.4657	0.5626	0.7199
	140	0.0026	0.0050	0.0139	0.0325	0.0806	0.1885	0.2214	0.4517	0.5456	0.6982
	160	0.0022	0.0042	0.0116	0.0281	0.0700	0.1639	0.1926	0.3925	0.4746	0.6073
	180	0.0020	0.0038	0.0064	0.0255	0.0650	0.1522	0.1629	0.3653	0.4436	0.5648
	200	0.0016	0.0030	0.0088	0.0211	0.0538	0.1262	0.1484	0.3031	0.3763	0.4687
	224	0.0012	0.0024	0.0070	0.0168	0.0429	0.1009	0.1187	0.2423	0.2928	0.3749
	250	0.0008	0.0020	0.0058	0.0136	0.0355	0.0836	0.0985	0.2010	0.2429	0.3111
	280	0.0006	0.0016	0.0054	0.0126	0.0333	0.0784	0.0925	0.1885	0.2283	0.2922
	315	0.0004	0.0012	0.0044	0.0104	0.0275	0.0650	0.0766	0.1564	0.1885	0.2425
	355	0.0002	0.0012	0.0042	0.0098	0.0263	0.0624	0.0732	0.1484	0.1805	0.2327



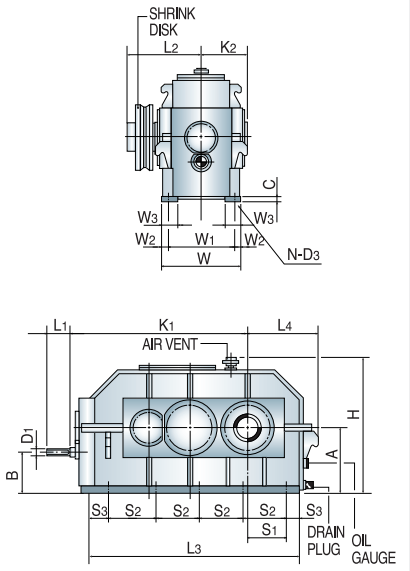
UNIT : mm

Unit Size	High Speed Shaft					
	Ratio : 80 - 200			Ratio : 224 - 355		
	D_1	L_1	Key	D_1	L_1	Key
22	24	40	8 x 7	22	35	6 x 6
26	32	55	10 x 8	28	50	8 x 7
32	32	55	10 x 8	28	50	8 x 7
38	42	70	12 x 8	32	60	10 x 8
45	48	80	14 x 9	38	60	10 x 8
50	55	90	16 x 10	42	70	12 x 8
56	60	105	18 x 11	42	70	12 x 8
61	65	105	18 x 11	48	80	14 x 9
66	75	120	20 x 12	60	105	18 x 11
71	90	160	25 x 14	65	105	18 x 11

UNIT : mm

Unit Size	Dimensions										
	E	K_1	K_2	L_3	L_4	L_5	A	H	B	W	C
22		690	190	850	295	215	250	525	160	310	20
26		810	215	1,010	335	255	315	640	203	360	28
32		950	250	1,190	395	295	355	740	230	430	28
38		1,110	285	1,400	445	345	400	870	240	490	28
45		1,330	350	1,680	530	410	500	1,030	315	600	35
50		1,535	390	1,970	620	500	560	1,125	340	680	35
56		1,590	390	2,050	645	525	630	1,230	410	680	40
61		1,810	460	2,310	715	575	710	1,370	445	820	45
66		1,860	460	2,400	755	615	750	1,470	485	820	45
71		2,025	500	2,610	810	670	800	1,570	480	900	50

*Dimension 'H' can be flexible according to Technical Specifications.



UNIT : mm

Unit Size	Low Speed Shaft				
	Solid Shaft				Hollow Shaft
	WT(kg)	D_2	L_2	Key	WT(kg)
22	480	100	180	28 x 16	441
26	690	120	210	32 x 18	635
32	1,260	140	240	36 x 20	1,159
38	1,800	170	270	40 x 22	1,656
45	3,100	200	350	45 x 25	2,852
50	4,500	220	350	50 x 28	4,140
56	5,300	240	400	56 x 32	4,876
61	7,300	270	450	63 x 32	6,716
66	8,000	280	450	63 x 32	7,360
71	10,500	310	500	70 x 36	9,660

Refer to page 21 and 22 for shaft dimensions

UNIT : mm

Unit Size	Dimensions										Oil Cap.
	S_1	S_2	S_3	W_1	W_2	W_3	D_3	N			Liter
22	105	210	110	270	20	60	14	8			38
26	150	200	105	310	25	70	22	10			57
32	200	250	95	370	30	90	26	10			98
38	245	300	100	430	30	95	26	10			165
45	290	360	120	520	40	125	33	10			310
50	355	420	145	600	40	140	33	10			400
56	400	450	125	590	45	140	39	10			500
61	440	510	135	710	55	175	45	10			570
66	475	530	140	710	55	175	45	10			600
71	505	570	165	790	55	190	45	10			900

*Dimension 'D_4' can be flexible according to Technical Specifications.

*Shaft Tolerance $D_{1,2} \leq 80$=m6
$D_{1,2} > 80$=n6

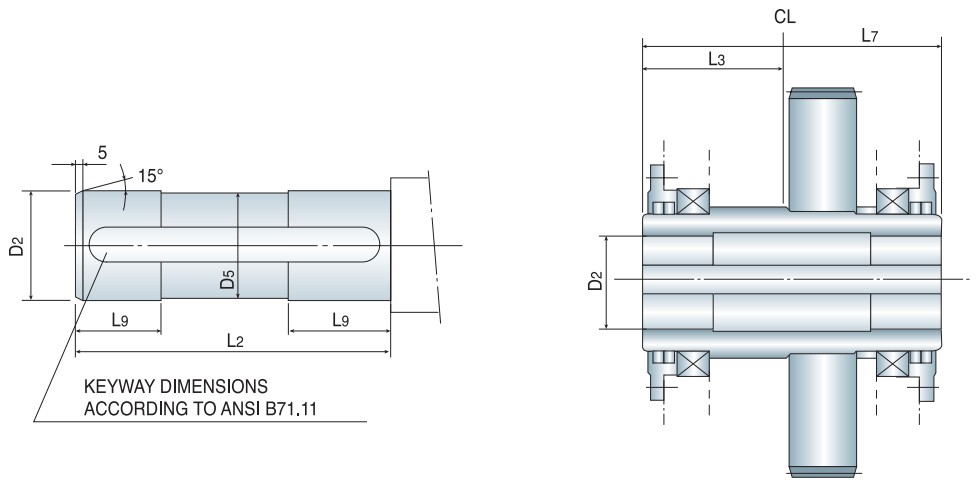
Low Speed Overhung Loads

UNIT : kg

Unit Size	Low Speed Shaft R.P.M							
	20	40	60	80	100	150	200	250
18	3,942	3,942	3,942	3,429	3,071	2,472	2,082	1,792
22	5,770	5,770	4,899	4,119	3,502	3,502	3,198	2,748
26	7,108	6,101	4,921	4,259	3,529	3,529	3,302	3,175
32	10,002	8,750	7,498	6,151	5,298	4,898	4,082	3,379
38	13,000	11,449	9,789	7,498	5,702	4,999	4,999	4,999
45	13,898	13,898	12,501	8,750	6,999	6,500	6,001	-
50	18,080	18,080	13,998	11,970	8,001	6,999	-	-
56	19,999	19,999	14,501	13,000	8,500	7,979	-	-
61	21,999	19,187	15,998	13,499	8,999	-	-	-
66	23,002	21,500	17,001	13,998	9,498	-	-	-
71	24,997	22,199	17,998	14,501	10,501	-	-	-

*NOTE : Overhung load value for worst condition.
Allowable overhung loads acting at the center of the standard shaft extension.
Overhung loads for 20 RPM and below use 20 RPM value.

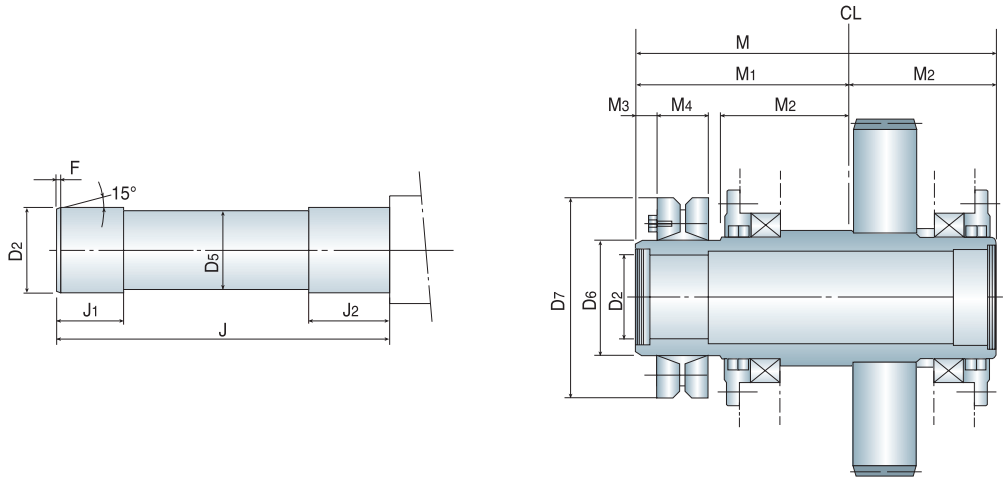
Hollow Shaft Design with Keyway



UNIT : mm

Unit Size	Double Reduction						Triple/Quadruple Reduction					
	D_2	L_2	L_7	L_3	D_9	D_5	D_2	L_2	L_7	L_3	D_9	D_5
18	90	357	360	180	85	87	90	337	340	170	85	87
22	110	397	400	200	115	107	110	377	380	190	115	107
26	130	477	480	240	130	127	130	427	430	215	130	127
32	155	557	560	280	150	152	156	155	500	250	150	152

Hollow Shaft Design with Shrink Disk



Double Reduction

UNIT : mm

Unit Size	Hollow Shaft										Shrink Disk		
	D_2	J	J_1	J_2	D_5	F	M	M_1	M_2	M_3	M_4	D_6	D_7
18	90	440	75	115	87	5	455	275	180	30	54	125	215
22	110	490	85	120	107	5	510	310	200	35	64	155	265
26	130	575	95	135	127	5	600	360	240	37	71	175	300
32	155	675	120	160	152	5	700	420	280	38	86	200	350
38	200	775	135	180	197	5	800	490	310	45	120	260	430
45	220	905	155	200	217	9	940	570	370	48	134	280	460
50	280	995	240	290	277	9	1,040	640	400	60	162	350	580
56	310	1,090	260	310	307	9	1,135	695	440	67	168	390	660
61	340	1,235	275	330	337	12	1,280	780	500	70	188	420	690
66	350	1,275	290	340	347	12	1,320	810	510	72	202	440	750
71	370	1,370	305	350	367	12	1,420	860	560	73	202	460	770

Triple / Quadruple Reduction

UNIT : mm

Unit Size	Hollow Shaft										Shrink Disk		
	D_2	J	J_1	J_2	D_5	F	M	M_1	M_2	M_3	M_4	D_6	D_7
18	90	420	75	115	87	5	435	265	170	30	54	125	215
22	110	470	85	120	107	5	490	300	190	35	64	155	265
26	130	525	95	135	127	5	550	335	215	37	71	175	300
32	155	615	120	160	152	5	640	390	250	38	86	200	350
38	200	725	135	180	197	5	750	465	285	45	120	260	430
45	220	865	155	200	217	9	900	550	350	48	134	280	460
50	280	975	240	290	277	9	1,020	630	390	60	162	350	580
56	310	990	260	310	307	9	1,035	645	390	67	168	390	660
61	340	1,155	275	330	337	12	1,200	740	460	70	188	420	690
66	350	1,175	290	340	347	12	1,220	760	460	72	202	440	750
71	370	1,250	305	350	367	12	1,300	800	500	73	202	460	770

*NOTE : All data throughout the catalog subject to change without notice.

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