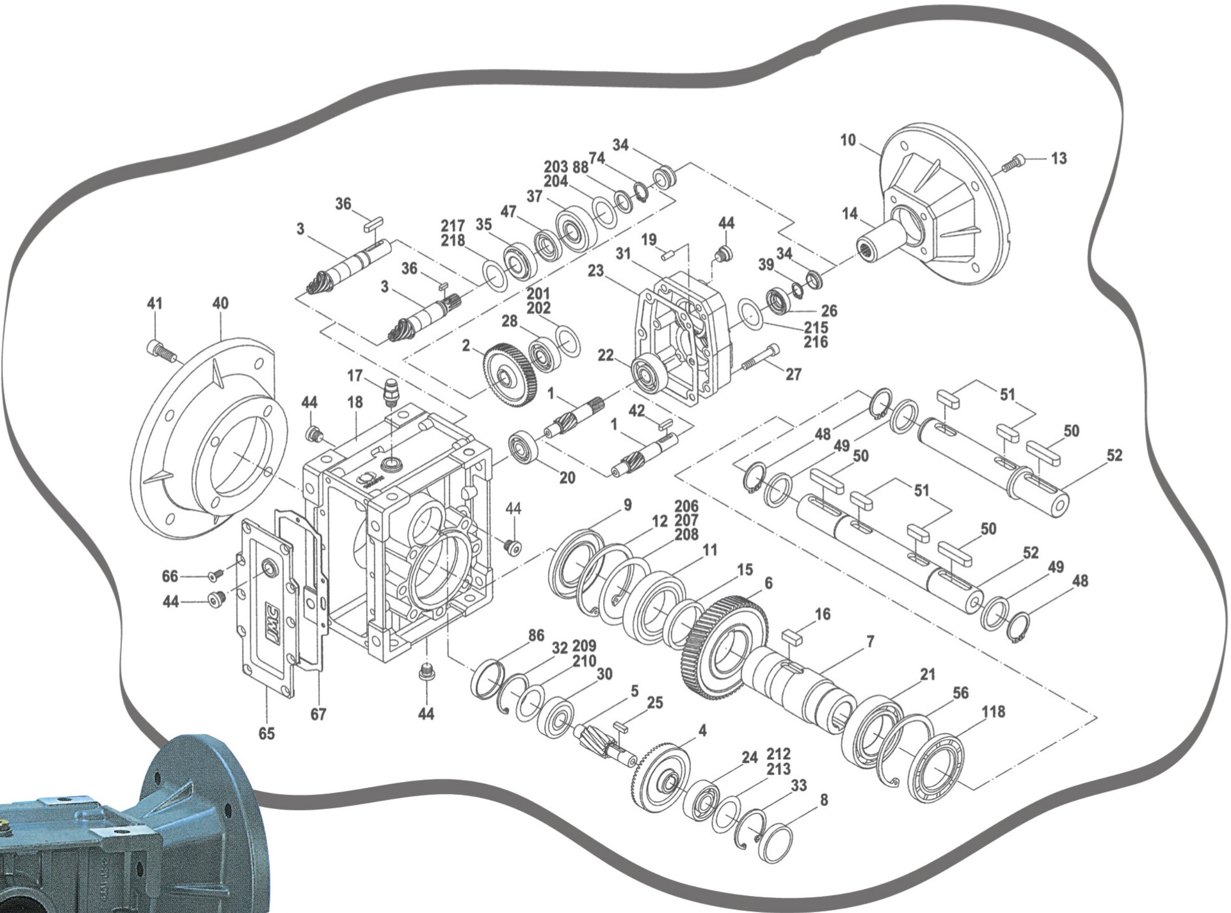
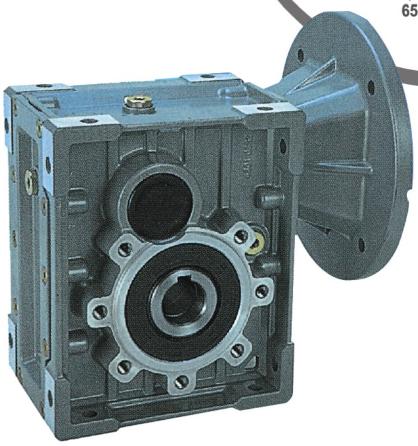
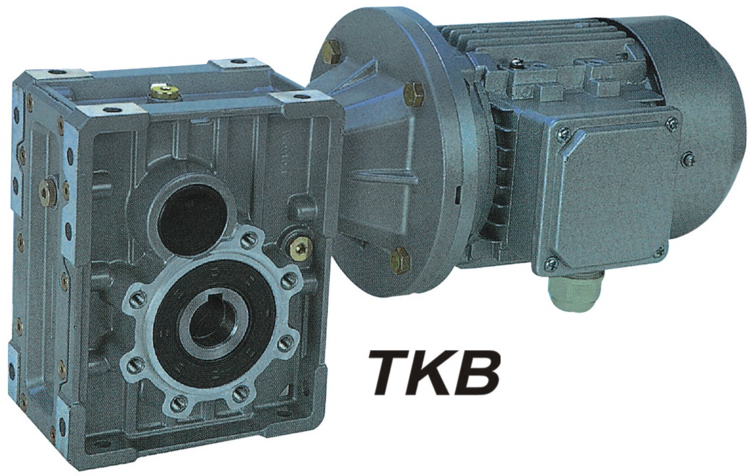
헬리칼하이포이드 감속기

Helical Hypoid Gear Reducer





KPM



TKB

(株)利電産業

정밀유성감속기 (Planetary Gearboxes)

PS/WPS P 01-14

Ratio 減速比 3: 1 ~10,000: 1 | Backlash 回程間隙 < 3 arcmin
Output 輸出轉矩 ~ 16,000 N.m | Frame 機座型號 70~400

PP/WPP P 23-28

Ratio 減速比 3: 1 ~10,000: 1 | Backlash 回程間隙 < 3 arcmin
Output 輸出轉矩 ~ 6,500 N.m | Frame 機座型號 70~285

PL(F)/WPL(F) P 15-22

Ratio 減速比 3: 1 ~10,000: 1 | Backlash 回程間隙 < 3 arcmin
Output 輸出轉矩 ~ 1,800 N.m | Frame 機座型號 40~200(215)

IB/IBR P 75-82

Ratio 減速比 3: 1 ~100: 1 | Backlash 回程間隙 < 2 arcmin
Output 輸出轉矩 ~ 2,000 N.m | Frame 機座型號 42~220

IE/IER P 57-65

Ratio 減速比 3: 1 ~100: 1 | Backlash 回程間隙 <2 arcmin
Output 輸出轉矩 ~ 2,000 N.m | Frame 機座型號 50~235

PN / WPN P 29-34

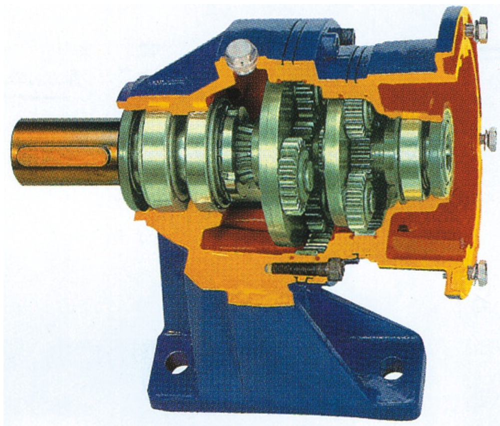
Ratio 減速比 3: 1 ~100: 1 | Backlash 回程間隙 < 2 arcmin
Output 輸出轉矩 ~ 3,500 N.m | Frame 機座型號 070~240

유성감속기 (Planetary Gearboxes)

경하중, 큰토오르크, Compact, 고효율

■ 감속비 : 1/3.5~1/2900

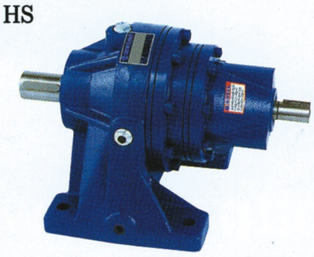
■ 토오르크 : 28~4, 100kg-m



HF

VF

HS



VS

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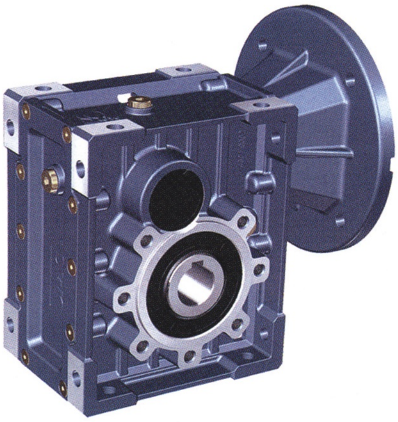
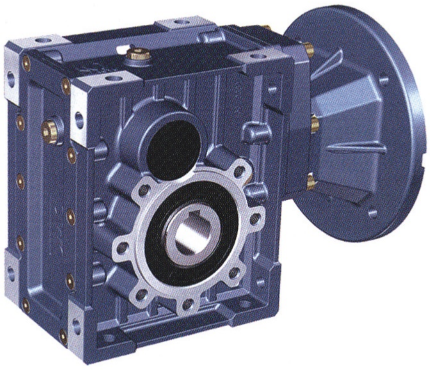
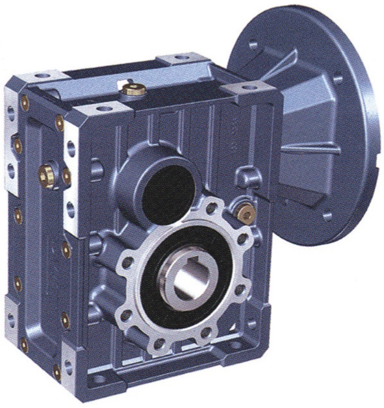
1. 제품사진 / PRODUCT PICTURE



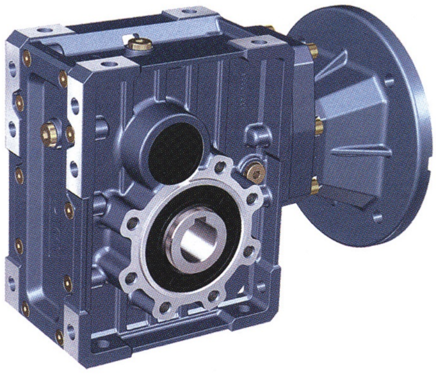
KPM50B~90B



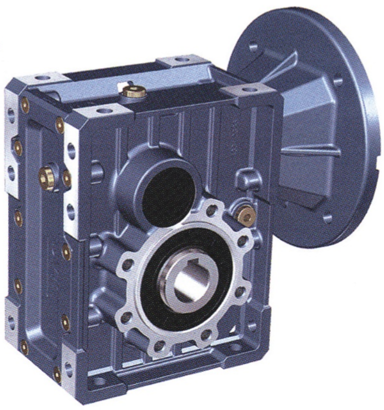
KPM50C~90C



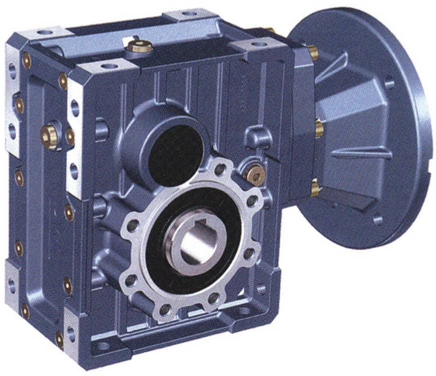
TKB38B ~ 58B



TKB38C ~ 58C

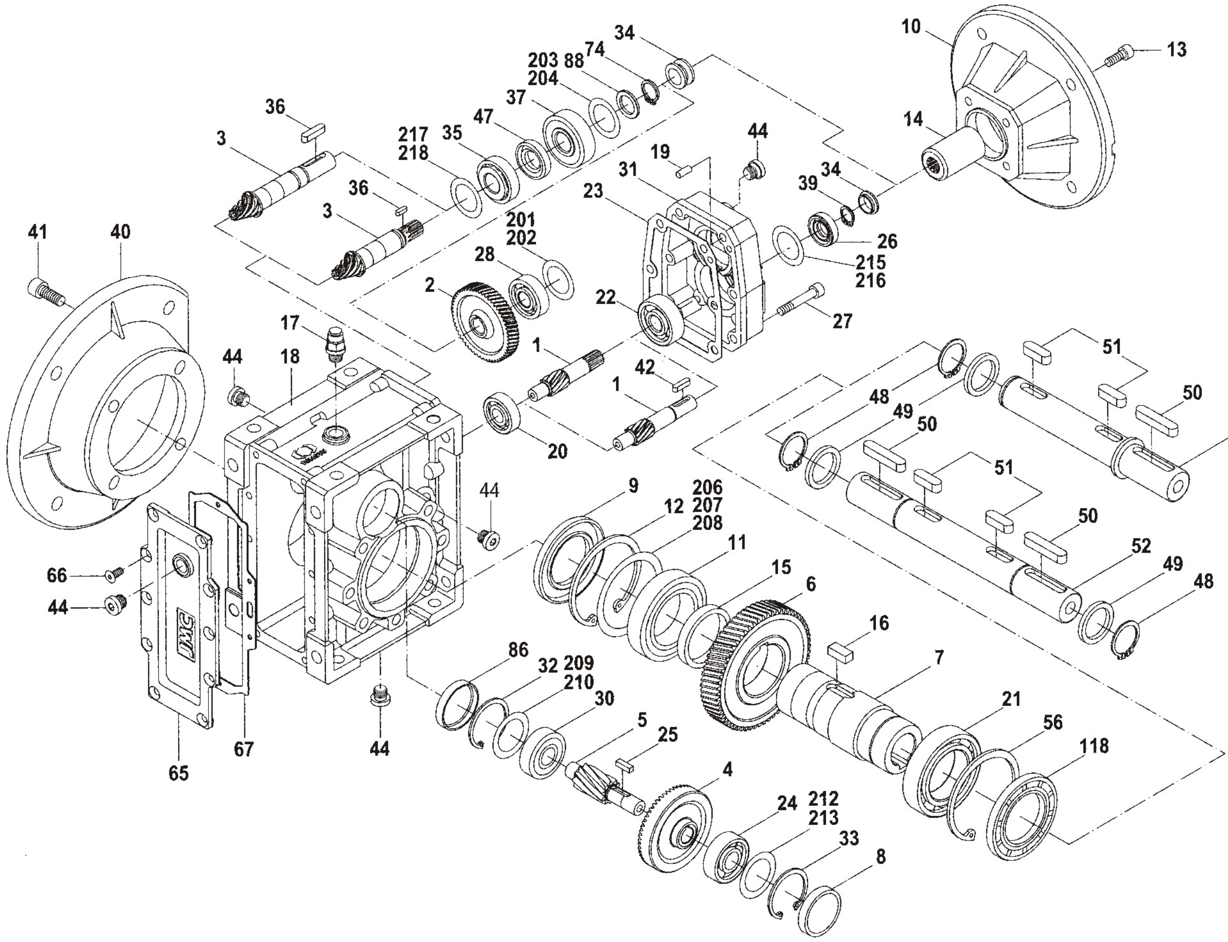


KPM110B



KPM110C

1.1. 기본구조 / Basic structure



1 피니언 / Pinion	25 키/ Key	56 홀 서클립 / Hole-circlip
2 기어 / Gear	26 오일 실 / Oil seal	65 기어케이스 덮개 / Gearcase cover
3 피니언 축 / Pinion shaft	27 내부 헥스 스크류 / Inner hex screw	66 6면 싱크 스크류 / Hexagon sunk screw
4 기어 / Gear	28 베어링 / Bearing	67 고무 개스킷 / Rubber gasket
5 피니언 축 / Pinion shaf	30 베어링 / Bearing	74 축 서클립 / Bearing
6 기어 / Gear	31 3단계 기어케이스 / 3 stage gearcase	86 폐쇄 캡 / Closing cap
7 할로우 축 / Hollow shaft	32 홀 서클립 / Hole-circlip	88 와셔 / Washer
8 폐쇄 캡 / Closing cap	33 홀 서클립 / Hole-circlip	118 오일 실 / Oil seal
9 오일 실 / Oil seal	34 고무 부트 / Rubber boot	201 심링 / Shim ring
10 입력 플랜지 / Input flange	35 베어링 / Bearing	202 심링 / Shim ring
11 베어링 / Bearing	36 키/ Key	203 심링 / Shim ring
12 홀 서클립 / Hole-circlip	37 베어링 / Bearing	204 심링 / Shim ring
13 내부 헥스 스크류 / Inner hex screw	39 축 서클립 / Shaft-circlip	206 심링 / Shim ring
14 입력 축 / Input shaft	40 출력 플랜지 / Output flage	207 심링 / Shim ring
15 스페이서 / Spacer	41 내부 헥스 스크류 / Inner hex screw	208 심링 / Shim ring
16 키 / Key	42 키/ Key	209 심링 / Shim ring
17 환기관 밸브 / Breather valve	44 오일 플러그 / Oil plug	210 심링 / Shim ring
18 기어캐이스 / Gearcase	47 오일 실 / Oil seal	212 심링 / Shim ring
19 Stifte	48 축 서클립 / Shaft-circlip	213 심링 / Shim ring
20 베어링 / Bearing	49 개스킷 / Gasket	215 심링 / Shim ring
21 베어링 / Bearing	50 키/ Key	216 심링 / Shim ring
22 베어링 / Bearing	51 키/ Key	217 심링 / Shim ring
23 하우징 개스킷 / Housing gasket	52 이중 출력 축 / Double output shaft	218 심링 / Shim ring
24 베어링 / Bearing	53 이중 출력 축 / Double output shaft	

2. 요약

2.1 제품특성

KPM, TKB 시리즈인 나선형 하이포이드 기어 장치는 당사에서 개발한 신제품으로, 국내외의 첨단 기술을 조합한 제품이다. 이장치의 주요 기능은 다음과 같다.

1. 하이포이드 기어로 가동되며 감속비가 크다.
2. 고출력 토크, 고효율의 에너지 절약형 제품으로, 친환경적이다.
3. 고품질의 알루미늄 합금으로,무게가 가볍고 녹이 슬지 않는다.
4. 가동이 원활하고 소음이 적으며 악조건에서 오래 작동할 수 있다.
5. 세련된 외관과 긴 서비스 수명을 가지며 크기가 작다.
6. 상시 설치에 적합하며 활용폭이 크고 사용이 간편하다.
7. KPM 시리즈의 장착 크기는 TNRV 시리즈의 웜 기어 장치와 호환된다. (TNRV050 크기 부분은 KPM50과는 다르다.)
8. TKB 시리즈의 장착 크기는 W 시리즈의 웜 기어 장치와 호환된다.
9. 모듈식 다중 구조로, 다양한 조건의 수요를 충족할 수 있다.

2.2 주요부품

1. 케이스 : 다이캐스트 알루미늄 합금
(프레임 크기:28~58)
2. 기어 바퀴 : 탄소화 및 담금질 열 처리로 기어 표면의 강도가 최대 56~62 HRC까지 형성되고 정밀 연삭 작업을 하면 탄소 처리 계층의 두께가 0.3~0.5로 유지된다.

2.3 표면 도료 작업

알루미늄 합금 케이스

3. 알루미늄 합금 표면에 숏 블라스팅 및 특별 방부 처리
4. 인삼염 피막 처리작업 후에 은백색의 도료 RAL9022를 분사

2. SUMMARIZE

2.1 Products characteristics

KPM、**TKB** series helical-hypoid gear units is a new-generation of product developed by our company . with a compromise of advanced technology both at home and abroad, its main features are as follows:

1. Driven by hypois gear,has big ratios.
2. Large in output torque,high efficiency,energy saving and environmental protection.
3. Made of high-quqlity aluminum alloy, light in weight and nonrusting.
4. Smooth in running and low in noise, can work long time in dreadful conditions.
5. Good-looking in appearance, durable in service life and small in volume.
6. Suitable for all round installation,wide application and easy of use.
7. The mounting dimension of **KPM** series are compatible with **TNRV** series worm gear unit(A part of **TNRV050** dimensions are different from **KPM50).**
8. The mounting dimension of **TKB** series are compatible with **W** series worm gear unit.
9. Modulaw and multistructure can meet the demands of various conditions .

2.2 Main materials

1. Housing: die-cast aluminum alloy (frame size: 28 to 58); .
2. gear wheel: 20CrMnTiH1, carbonize & quencher heat treatment make the hardness of gear's surface up to 56~62 HRC，retain carburization layer's thickness between 0.3 and 0.5mm after precise grinding.

2.3 Surface painting

Aluminum alloy housing：

1. Shot blasting and special antiseptic treatment on the aluminum alloy surface.
2. After phosphating,spray the paint RAL9022 in silver white.

3. 모델설명 / MODEL ILLUMINATE

/ Gear unit　　　　　　　　　　/ Motor

KPM 63 B - 20.25 - FA1 SS1 - 71B5 B3 - 7124 或/or 0.37 - 4 / 1

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

번호	설　명	Comments
1	기어 장치 시리즈 코드 : KPM,TKB	Code for gear units series : KPM, TKB
1	기어 장치 구분 코드 : 28, 38, 48, 58	Specification code of gear units 28, 38, 48, 58
3	1) B : 2단계를 뜻함 2) C : 3단계를 뜻함	1) B : Means 2 stages 2) C : Means 3 stages
4	감속기 i의 감속을	Speed ratio of reducer i
5	1) 비표시는 출력 플랜지가 없음을 의미 2) FA, FB, FC, FD, FE(1/2) : 출력 플랜지 및 위치	1) No mark means without output flange 2) FA, FB, FC, FD, FE(1/2) : output Flange and position
6	1) 비표시는 홀 출력을 의미 2) SS(1/2) : 단일 출력 축 및 위치 3) Ds : 이중 출력 축	1) 1) No mark means hole code(63B5, 71B5, 71B14...) 2) SS(1/2) : Single output shaft and position 3) Ds : Double output shaft
7	1) 입력 플랜지 코드 2) HS : 축 입력을 뜻함	1) Input flange code(63B5, 71B5, 71B14...) 2) HS : means shaft input
8	설치 위치 코드	Installation position code
9	1) 비표시는 모터가 없음을 의미 2) 모델 모터 (전극)	1) No mark means without motor 2) Model motor (poles of power)
10	모터 단자함의 위치 그림, 기본 위치 1은 표시하지 않아도 무방함	Position diagram for motor terminal box default position 1 not to weite out is ok

주문시 감속기에 모터를 장착할 것인지의 여부를 알아 함. 그렇지 않을 경우, 감소기는 모터와 함께 제공되지 않음.

When ordering, you should show whether the reducers are equipped with motors, otherwise reducers aren't supplied with motors.

예:　　　Exam**KPM75.M48B - 15.09 - FA1 - 71B5 - 7124**

4. 관련 매개변수

4.1 전원 P

$$P_1 = \frac{P_2}{\eta} \text{ [kW]}$$
$$P_{1n} \geqslant P_1 \cdot f_s \text{ [kW]}$$

P_1 입력전원
P_2 출력전원
P_{1n} 정력 전원 가동모터
f_s 서비스 계수
η 전송 효율성

KPM, TKB 기어 장치의 효율성은 기어 단계에 따라 94%(2단계), 92%(3단계)로 달라진다.

4.2 회전속도 n

n_1 기어장치의 입력속도
n_2 기어장치의 출력속도

4.3 전송율 i

$$i = \frac{n_1}{n_2}$$

통상, 전송율은 기수점이 2인 소수로, 선택표시에 표시된다.

4.4 토크 M

$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$
$$M_{2n} \geqslant M_2 \cdot f_s \text{ [Nm]}$$

M_2 출력 토크
M_{2n} 선택한 출력 토크
P_1 입력 전원
η 전송 효율성
f_s 서비스 계수

4.5 서비스 계수 fs

기어 장치에 가동되는 장비의 효과는 서비스 계수 fs를 사용하여 충분한 수준의 정확성을 고려한 것이다. 서비스 계수는 매일의 운용 시간과 시작 빈도 Z에 따라 결정한다.

4. RELEVANT PARAMETER

4.1 Power P

$$P_1 = \frac{P_2}{\eta} \text{ [kW]}$$
$$P_{1n} \geqslant P_1 \cdot f_s \text{ [kW]}$$

P_1 Input power
P_2 Output power
P_{1n} Rated power driving motor
f_s Service factor
η Transmission efficiency

The efficiency of **KPM**、**TKB** gear units varies with the number of gear stages, between 94 % (2-stage)， 92 % (3-stage).

4.2 Rotation speed n

n_1 Gear units input speed
n_2 Gear units output speed

If driven by the external gearing,1400r/min or lower rotation speed is suggested so as to optimize the working conditions and prolong the service life. Higher input rotation speed is permitted, but in this situation, the rated torque **M2** will be reduced.

4.3 Transmission ratio i

$$i = \frac{n_1}{n_2}$$

Usually transmission ratio is decimal fraction with 2 radix point tagged in selection tables.

4.4 Torque M

$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$
$$M_{2n} \geqslant M_2 \cdot f_s \text{ [Nm]}$$

M_2 Output torque
M_{2n} Selected output torque
P_1 Input power
η Transmission efficiency
f_s Service factor

4.5 Service factor f_S

The effect of the driven machine on the gear unit is taken into account to a sufficient level of accuracy using the service factor $\mathbf{f_S}$. The service factor is determined according to the daily operating time and the starting frequency **Z**.

3개 하중 분류는 질량 가속 계수에 따라 감안한다. 아래 도표에서 실제 활용 적합한 서비스 계수를 확인 할 수 있다. 이러한 도표를 활용하여 선택한 서비스 계수는 성능 매개변수 표에 제시한 서비스 계수 이하여야 한다.

Three load classifications are considered depending on the mass acceleration factor. You can read off the service factor applicable to your application in following Figure. The service factor selected using this diagram must be less than or equal to the service factor as given in the performance parameter table.

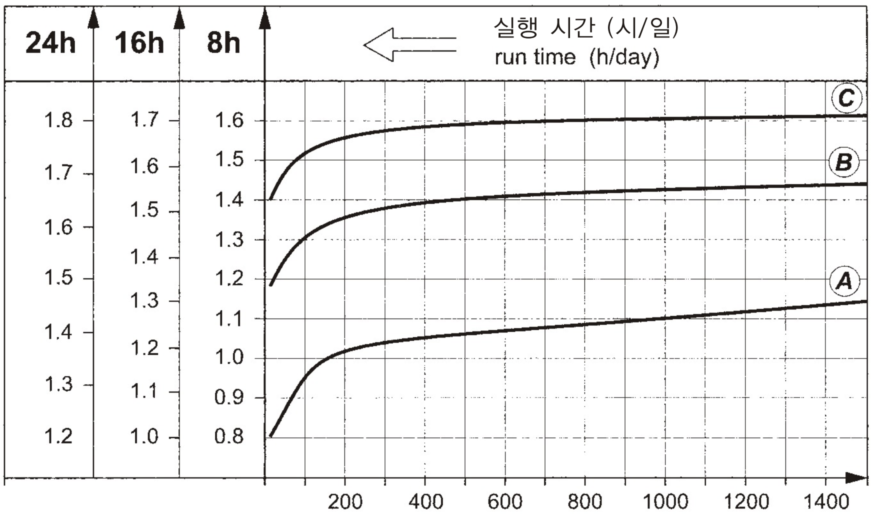


도표 : 서비스 계수 (fs)
FIg : Service factor (fs)

시작빈도 Z #
start up frequency **Z** (1/h) #

시작빈도 Z : 주기에는 시작 절차 및 제동 절차, 저속에서 고속으로의 전환 작업이 모두 포함된다.

starting frequency **Z**: The cycles include all starting and braking procedures as well as change overs from low to high speed.

4.5.1 하중 분류

Ⓐ 단일허용 질량가속 계수 **fa**≤0.2

Ⓑ 원만한 충격 하중, 허용 질량 가속 계수 **fa**≤3

Ⓒ 강한 충격 하중, 허용 질량 가속 계수 **fa**≤10

4.5.1 load classifications

Ⓐ Uniform, permitted mass acceleration factor **fa**≤0.2

Ⓑ Moderate shock load, permitted mass acceleration factor **fa**≤3

Ⓒ Heavy shock load, permitted mass acceleration factor **fa**≤10

하중분류 : 경량재용 스크류 피더, 팬, 조립라인, 경량재용 컨베이어 벨트, 소형 믹서, 리프트, 소제 장비, 필러, 제어기

와인딩 장비, 목세공 장비, 피더, 물품 리프트, 밸런서, 쓰레딩 장비, 중형 믹서, 중량재용 컨베이어 벨트, 윈치, 슬라이딩 도어, 비료 스크레이퍼, 포장기, 콘크리트 믹서, 크레인 매커니즘, 제분용 커터, 폴딩 장비, 기어 펌프

중량재용 믹서, 절단기, 프레스, 원심 분리기, 회전 지지대, 중량재 용 윈치 및 리프트, 선반 연삭 장치, 스톤 밀 장치, 버킷 엘리베이터, 드릴장비, 헤머밀, 캠 프레스, 폴딩 장비, 턴테이블, 회전통, 진동기, 서류 분쇄기

oad classifications:

Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.

Winding devices, woodworking machine feeders, goods lifts, balancers,threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.

Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.

4.5.2 질량 가속 계수

질량 가속 계수는 다음과 같이 계산한다.

$$f_a = \frac{J_c}{J_m}$$

f_a 질량 가속 계수

J_c 모든 와부 질량 관성 모멘트 (kmg²)

J_m 모터 끝부분의 질량 관성 모멘트 (kmg²)
질량 가속 계수 fa가 10보다 큰 경우, 당사 서비스 센터에 문의하십시오.

기어 장치의 수명 유지를 위해 카탈로그에서 선택한 사용 계수는 반드시 계산한 사용 계수 fs와 동일하거나 이 값보다 약간 큰 정도여야 한다.

예 :

질량 가속 계수 2.5(하중 분류 B), 14시/일의 운용시간(16h/d로 읽힘), 200주기/시인 경우, 서비스 계수 fa는 1.480이다.
매계변수 시트에 따라 서비스 계수 fs=1.48을 선택한다.

4.5.2 *Mass acceleration factor*

The mass acceleration factor is calculated as follows:

$$f_a = \frac{J_c}{J_m}$$

f_a Mass acceleration factor

J_c All external mass moments of inertia (kgm^2)

J_m Mass moment of inertia on the motor end (kgm^2)
If mass acceleration factors **fa**>10, please call our Technical Service.

To keep the service-life of gear units, the use factor f_S selected from the catalogue must be equal or slightly higher than the calculated use factor f_S.

Example:

Mass acceleration factor 2.5 (load classification B), 14 hours/day operating time (read off at 16 h/d) and 200 cycles/hour result in a service factor f_S =1.48.
choose the service factor f_S = 1.48 according to the parameter sheet .

4.6 정격 허용 하중 및 축압

결과치인 반경 방향 하중을 결정할 때 축 끝에 장착되어 전송 요소 유형을 고려해야 한다.
다양한 전송 요소는 다음 전송 용소 계수 fz와 같다.

4.6 *Overhung loads and axial forces*

When determining the resulting radial loads, the type of transmission elements, mounted on the shaft end must be considered. Various transmission elements are corresponding with following transmission element factors f_z:

전송 요소 Transmission element	전송 요소 계수 Transmission element factor	설 명 Comments
기어 Gear	1.15	〈 17톱니 Teeth
체인사슬바퀴 Chain sprockets	1.25	〈 20톱니 Teeth
	1.40	〈 13톱니 Teeth
좁은 v벨트 도르레 Narrow V-belt pulleys	1.75	장력의 영향 Influence of the tensile force
평면 벨트 도르레 Flat belt pulleys	2.50	장력의 영향 Influence of the tensile force
맞물린 벨트 도르레 Toothed belt pulleys	2.50	장력의 영향 Influence of the tensile force

그리하여 모터나 기어 축에 가해지는 정격 허용 하중은 다음과 같이 계산한다.

$$F_r = \frac{M \cdot 2000 \cdot f_z}{d_0} \text{ [N]}$$

F_r 결과치인 반경 방향 하중

M 축의 토크

d_0 장착되는 전송 요소의 평균 직경(mm)

f_z 전송 요소 계수

The overhung loads exerted on the motor or gear shaft is then calculated as follows:

$$F_r = \frac{M \cdot 2000 \cdot f_z}{d_0} \text{ [N]}$$

F_r Resulting radial load [N]

M Torque on the shaft [Nm]

d_0 Mean diameter of the mounted transmission element in [mm]

f_z Transmission element factor

허용되는 반경 방향 하중을 결정하기 위한 기본 작업은 (ISO281에 따라) 베어링의 정격 서비스 수명 L10h를 계산하는 것이다. 특별 운용 조건에서의 반경 방향 하중 허용치는 수정된 서비스 수명인 Lna와 관려하여 결정할 수 있다.

The basis for determining the permitted radial loads is the computation of the rated service life L_{10h} of the bearings (according to **ISO281**). For special operating conditions, the permitted radial loads can be determined with regard to the modified service life L_{na}.

선택 표에 제시한 반경 방향 하중 허용치는 축단 중심부에 힘을 쓰지 않을 경우에 다음 공식으로 계산해야 한다.(베어링 서비스 수명에 따라) 2개 값 FxL 중에서 작은 값이 된다.

The permitted radial loads given in the selection tables must be calculated using the following formula in the event of force application not in the center of the shaft end. The smaller of the two values F_{xL} (according to bearing service life)

베어링 수명에 따라 :

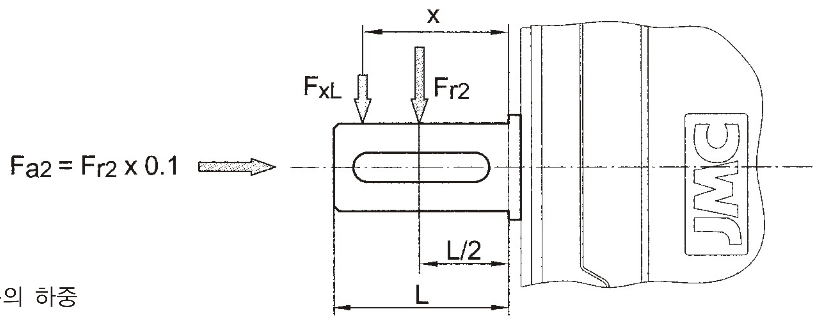
F_{xL} according to bearing service life:

$$F_{xL} = F_{r(1,2)} \cdot \frac{a}{b + x} \text{ [N]}$$

F_{r1}, F_{r2} (N)의 선택표에 따라 발부분에 장착되는 기어 장치를 위한 정격 허용 하중(x=L/2)
x 축 숄더 부분에서 힘 활용점의 거리
a, b, 정격 허용 하중 변환을 위한 기어 장치 상수

F_{r1}, F_{r2} = Permitted overhung load (x = L/2) for foot-mounted gear units according to he selection tables in [N]
x = Distance from the shaft shoulder to the force application point in [mm]
a, b = Gear unit constant for overhung load conversion [mm]

출력 축의 반경 방향 하중 / Output shafts radial loads



Fa2 = 출력 축의 하중
Output axial loads

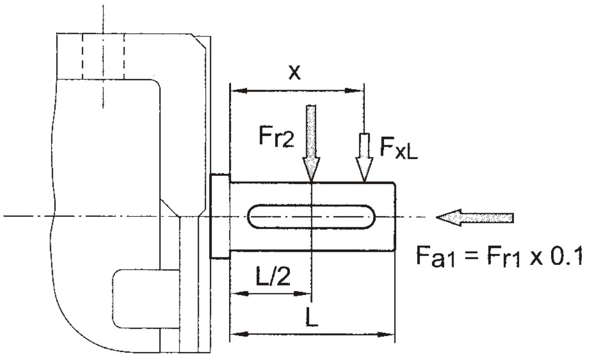
KPM 정격 허용 하중 변환을 위한 기어 장치 상수 / Gear unit constantsfor overhung load conversion:

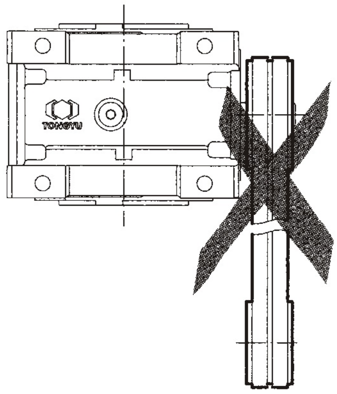
	KPM50B	KPM50C	KPM63B	KPM63C	KPM75B	KPM75C	KPM90B	KPM90C
a	104	104	118	118	131	131	159	159
b	78	78	93	93	101	101	119	119

KPM 정격 허용 하중 변환을 위한 기어 장치 상수 / Gear unit constantsfor overhung load conversion:

			KPM63B	KPM63C	KPM75B	KPM75C	KPM90B	KPM90C
a			128	128	135	135	148.5	148.5
b			98	98	105	105	118.5	118.5

입력 축의 반경 방향 하중 Input shafts radial loads





입력
좁은 V벨트 도르래 Narrow V-belg pulleys
평면 벨트 도르래 Flat belg pulleys
맞물린 벨트 도르래 Toothed belg pulleys

F_{a1} = 입력 축의 하중
Intput axial loads

오른쪽 챠트의 입력을 사용하는 것은 금한다. (3단계 입력 포함)
It is forbidden to use the input on the right chart (including 3 stage input).

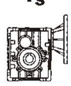
KPM/TKB 정격 허용 하중 변환을 위한 기어 장치 상수 / Gear unit constantsfor overhung load conversion:

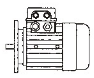
	KPM50B	KPM50C	KPM63B TKB38B	KPM63C TKB38C	KPM75B TKB48B	KPM75C TKB48C	KPM90B TKB58B	KPM90C TKB58C
a	51.5	56	58	56	73	70	81	70
b	40	44.5	43	44.5	53	55	61	55

4.7 선택 표 설명

헤더 열에 모터를 장착하는 조합이 가능하다.
헤더 열에 모터를 장착하는 조합이 불가능하다.

- * 유한의 기어 장치 감소율
- **P_{1n}** 정격 전원 가동 모터 (kW);
- **n_2** 출력 속도 (r/min);
- **M_{2n}** 출력 토크 (Nm);
- **$M_{2\,max}$** 최대 허용 가능한 출력 토크 (Nm);
- **F_{r2}** 허용 가능한 정격 허용 하중의 출력 측 (N);
- **i** 기어 장치의 공칭율
- **i_a** 기어 장치의 실제 비율
- **f_s**

 기어 장치 유형

 모터 유형

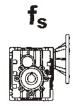
page 페이지

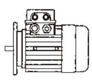
4.7 Selection tables comments

Combination with the motor in the header row **is possible**

Combination with the motor in the header row **is not possible**

- * Finite gear unit reduction ratio;
- **P_{1n}** Rated power driving motor **[kW]**;
- **n_2** Output speed **[r/min]**;
- **M_{2n}** Output torque **[Nm]**;
- **$M_{2\,max}$** Max. permissible output torque **[Nm]**
- **F_{r2}** Permissible overhung load output side **[N]**
- **i** Gear unit nominal ratio;
- **i_a** Gear unit actual ratio;
- **f_s** Service factor;

 Gear unit type;

 Motor type;

Page Dimension sheet page no;

5 선택 사례

5.1 기어 모터

예 : 구동되는 장비에 필요한 전원 0.25KW, 8시간/일 근무, 원만한 충격 하중, 시작 빈도 100(1/시),n2=35r/min, B3 장착
7쪽의 서비스 계수 표 참고. Fs=1.3 선택

5 SELECTION EXAMPLE

5.1 Gear motor

Example: Required power 0.25kW on driven machine, work for 8 h/day, moderate shock load, start up frequency 100(1/h)，n_2=35r/min，**B3** mounted，So：

Check the service factor table at page 7 ,choose f_S=1.3

$$i = \frac{n_1}{n_2} = \frac{1400}{35} = 40$$

$$P_{1n} \geqslant P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{0.25}{0.94} \times 1.3 = 0.345 \text{ [kW]}$$

유형 선택 :

KPM50B - 40.09 - 71B5 - 7124 - B3

Choose type:

KPM50B - 40.09 - 71B5 - 7124 - B3

5.2 기어 장치

예 : 구동되는 장비에 필요한 토크 200Nm,8시간/일 근무, 단일한 하중, 시작 빈도 400(1/시), FA1 장착 900r/min. 따라서 표를 참조하면 3단계가 유일한 선택안임.
7쪽의 서비스 계수 표 참고. Fs=1.5 선택

5.2 Gear units

Example: Recliured torquc 200Nrn on driven machine, work 8 h/day, uniform load, start up frequency 400(1/h)，**FA1** mounted，n_1=900 r/min, n_2=2.5 r/min，so the only selection is 3 stage after checked the table:

Check the service factor table at page 7 ,choose f_S=1.05

$$i = \frac{n_1}{n_2} = \frac{900}{6} = 150$$

$$M_{2n} \geq M_2 \cdot f_s = 200 \times 1.05 = 210 \text{ [Nm]}$$

$$P_{1n} \geqslant P_1 \cdot f_s = \frac{M_2 \cdot n_1}{9550 \cdot \eta \cdot i} \cdot f_s = \frac{210 \times 900}{9550 \times 0.92 \times 150} \times 1.05 = 0.151 \text{ [kW]}$$

유형 선택 :

KPM75C-151.20-FA1

Choose type:

KPM75C-151.20-FA1

6. 기어 장비 선택 표 / GEAR UNIT SELECTION TABLES

6.1 가능한 기하학적 조합 / Possible geometrical combinations

KPM50.. n_1=1400 r/min 130Nm

기어 장치 Gear units		i 공칭 Nominal	i 실제 Actual	n_2 [r/min]	M_{2n} [Nm]	F_{r2} [N]	63B5	71B5 71B14	80B5 80B14	90B5 90B14
3단계 / Stage										
KPM50C		300	291.79	4.8	110	4100				
KPM50C		250	244.29	5.8	130	4100				
KPM50C		200	200.44	7.0	130	4100				
KPM50C		150	146.67	9.6	130	4000				
KPM50C		125	120.34	12	130	3770				
KPM50C		100	101.04	14	130	3560				
KPM50C		75	74.62	19	130	3220				
KPM50C		60	62.36	23	120	3030				
KPM50C		50	52.36	27	110	2860				
2단계 / Stage										
KPM50B		60	58.36	24	110	2960				
KPM50B		50	48.86	29	130	2790				
KPM50B		40	40.09	35	130	2610				
KPM50B		30	29.33	48	130	2350				
KPM50B		25	24.07	59	130	2200				
KPM50B		20	20.21	70	130	2080				
KPM50B		15	14.92	94	130	1880				
KPM50B		12.5	12.47	113	130	1770				
KPM50B		10	10.47	134	130	1670				
KPM50B		7.5	7.73	182	100	1510				

KPM63..,TKB38.. n_1=1400 r/min 200Nm

기어 장치 Gear units		i 공칭 Nominal	i 실제 Actual	n_2 [r/min]	M_{2n} [Nm]	F_{r2} [N]	63B5	71B5 71B14	80B5 80B14	90B5 90B14
3단계 / Stage										
KPM63C	TKB38C	300	302.50	4.7	170	4800				
KPM63C	TKB38C	250	243.57	5.8	200	4800				
KPM63C	TKB38C	200	196.43	7.2	200	4800				
KPM63C	TKB38C	150	151.56	9.3	200	4650				
KPM63C	TKB38C	125	122.22	12	200	4330				
KPM63C	TKB38C	100	101.27	14	200	4070				
KPM63C	TKB38C	75	73.33	20	160	3650				
KPM63C	TKB38C	60	63.33	23	140	3480				
KPM63C	TKB38C	50	52.48	27	120	3270				
2단계 / Stage										
KPM63B	TKB38B	60	60.50	24	170	3430				
KPM63B	TKB38B	50	48.71	29	200	3190				
KPM63B	TKB38B	40	39.29	36	200	2970				
KPM63B	TKB38B	30	30.31	47	200	2720				
KPM63B	TKB38B	25	24.44	58	200	2530				
KPM63B	TKB38B	20	20.25	70	200	2380				
KPM63B	TKB38B	15	14.67	96	190	2130				
KPM63B	TKB38B	12.5	12.67	111	165	2030				
KPM63B	TKB38B	10	10.50	134	135	1910				
KPM63B	TKB38B	7.5	7.60	185	100	1710				

KPM75..,TKB48.. n_1=1400 r/min 350Nm

기어 장치 Gear units		i 공칭 Nominal	i 실제 Actual	n_2 [r/min]	M_{2n} [Nm]	F_{r2} [N]	63B5	71B5 71B14	80B5 80B14	90B5 90B14	100B5 100B14	112B5 112B14
3단계 / Stage												
KPM75C	TKB48C	300	297.21	4.8	350	6500						
KPM75C	TKB48C	250	240.89	5.9	350	6500						
KPM75C	TKB48C	200	200.66	7.0	350	6500						
KPM75C	TKB48C	150	151.20	9.3	350	6500						
KPM75C	TKB48C	125	125.95	12	350	5980						
KPM75C	TKB48C	100	99.22	15	350	5520						
KPM75C	TKB48C	75	75.45	19	350	5040						
KPM75C	TKB48C	60	62.43	23	350	4730						
KPM75C	TKB48C	50	49.18	29	350	4370						
2단계 / Stage												
KPM75B	TKB48B	60	59.44	24	350	4660						
KPM75B	TKB48B	50	48.18	30	350	4340						
KPM75B	TKB48B	40	40.13	35	350	4080						
KPM75B	TKB48B	30	30.24	47	350	3720						
KPM75B	TKB48B	25	25.19	56	350	3500						
KPM75B	TKB48B	20	19.84	71	350	3230						
KPM75B	TKB48B	15	15.09	93	350	2950						
KPM75B	TKB48B	12.5	12.49	113	350	2770						
KPM75B	TKB48B	10	9.84	143	350	2550						
KPM75B	TKB48B	7.5	7.48	188	280	2330						

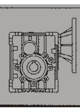
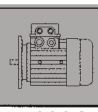
KPM90..,TKB58.. n_1=1400 r/min 500Nm

기어 장치 Gear units		i 공칭 Nominal	i 실제 Actual	n_2 [r/min]	M_{2n} [Nm]	F_{r2} [N]	63B5	71B5 71B14	80B5 80B14	90B5 90B14	100B5 100B14	112B5 112B14
3단계 / Stage												
KPM90C	TKB58C	300	295.18	4.8	460	8300						
KPM90C	TKB58C	250	240.89	5.9	500	8300						
KPM90C	TKB58C	200	200.66	7.0	500	8300						
KPM90C	TKB58C	150	151.20	9.3	500	8050						
KPM90C	TKB58C	125	125.95	12	500	7580						
KPM90C	TKB58C	100	99.22	15	500	7000						
KPM90C	TKB58C	75	75.45	19	500	6390						
KPM90C	TKB58C	60	62.43	23	450	6000						
KPM90C	TKB58C	50	49.18	29	350	5540						
2단계 / Stage												
KPM90B	TKB58B	60	59.04	24	460	5890						
KPM90B	TKB58B	50	48.18	30	500	5500						
KPM90B	TKB58B	40	40.13	35	500	5170						
KPM90B	TKB58B	30	30.24	47	500	4710						
KPM90B	TKB58B	25	25.19	56	500	4430						
KPM90B	TKB58B	20	19.84	71	500	4090						
KPM90B	TKB58B	15	15.09	93	500	3730						
KPM90B	TKB58B	12.5	12.49	113	460	3510						
KPM90B	TKB58B	10	9.84	143	360	3240						
KPM90B	TKB58B	7.5	7.48	188	280	2950						

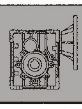
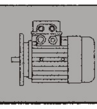
6.2 KPM../TKB..(IEC)..성능 매개변수 / Performance parameter

P$_{1n}$ [kW]	n$_2$ [r/min]	M$_{2n}$ [Nm]	i 공칭 Nominal	i 실제 Actual	F$_{r2}$ [N]	fs				Page
0.12	5.7	184	**250**	244.29	4100	0.7	**KPM50C**	**63B5**	**6314**	31
	7.0	151	**200**	200.44	4100	0.9				
	9.5	110	**150**	146.67	4000	1.2				
	11.6	91	**125**	120.34	3770	1.4				
	13.9	76	**100**	101.04	3560	1.7				
	18.8	56	**75**	74.62	3220	2.3				
	22.5	47	**60**	62.36	3030	2.6				
	26.7	39	**50**	52.36	2860	2.8				
	24.0	45	**60**	58.36	2960	2.4	**KPM50B**	**63B5**	**6314**	30
	28.7	38	**50**	48.86	2790	3.5				
	35	31	**40**	40.09	2610	4.2				
	48	23	**30**	29.33	2350	5.8				
	58	18.5	**25**	24.07	2200	7.0				
	69	15.6	**20**	20.21	2080	8.4				
	94	11.5	**15**	14.92	1880	11.3				
	112	9.6	**12.5**	12.47	1770	13.5				
	134	8.1	**10**	10.47	1670	16.1				
	181	5.9	**7.5**	7.73	1510	16.8				
	5.7	183	**250**	243.57	4800	1.1	**KPM63C**	**63B5**	**6314**	33
	7.1	148	**200**	196.43	4800	1.4	**TKB38C**	**63B5**	**6314**	39
	9.2	114	**150**	151.56	4650	1.8				
	11.5	92	**125**	122.22	4330	2.2				
	13.8	76	**100**	101.27	4070	2.6				
	19.1	55	**75**	73.33	3650	2.9				
	22.1	48	**60**	63.33	3480	2.9				
	26.7	40	**50**	52.48	3270	3.0				
	23.1	47	**60**	60.50	3430	3.7	**KPM63B**	**63B5**	**6314**	32
	28.7	37	**50**	48.71	3190	5.3	**TKB38B**	**63B5**	**6314**	38
	36	30	**40**	39.29	2970	6.6				
	46	23	**30**	30.31	2720	8.6				
	4.7	224	**300**	297.21	6500	1.6	**KPM75C**	**63B5**	**6314**	35
	5.8	181	**250**	240.89	6500	1.9	**TKB48C**	**63B5**	**6314**	41
	7.0	151	**200**	200.66	6500	2.3				
	9.3	114	**150**	151.20	6500	3.1				
	11.1	95	**125**	125.95	5980	3.7				
	4.7	222	**300**	295.18	8300	2.1	**KPM90C**	**63B5**	**6314**	37
	5.8	181	**250**	240.89	8300	2.8	**TKB58C**	**63B5**	**6314**	43
	7.0	151	**200**	200.66	8300	3.3				
	9	114	**150**	151.20	8050	4.4				
0.18	9.6	165	**300**	291.79	4000	0.7	**KPM50C**	**63B5**	**6312**	31
	11.5	138	**250**	244.29	3790	0.9				
	14.0	113	**200**	200.44	3550	1.1				
	19.1	83	**150**	146.67	3200	1.6				
	23.3	68	**125**	120.34	2990	1.9				
	27.7	57	**100**	101.04	2820	2.3				
	38	42	**75**	74.62	2550	3.1				
	45	35	**60**	62.36	2400	3.4				
	53	30	**50**	52.36	2270	3.7				
	48	34	**60**	58.36	2350	3.3	**KPM50B**	**63B5**	**6312**	30
	57	28	**50**	48.86	2220	4.6				
	70	23	**40**	40.09	2070	5.6				
	95	16.9	**30**	29.33	1870	7.7				
	116	13.9	**25**	24.07	1750	9.4				

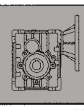
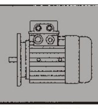
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
0.18	11.6	136	**125**	120.34	3770	1.0	**KPM50C**	**63B5**	**6324**	31
	13.9	114	**100**	101.04	3560	1.1				
	18.8	84	**75**	74.62	3220	1.5				
	22.5	70	**60**	62.36	3030	1.7				
	26.7	59	**50**	52.36	2860	1.9				
	24.0	67	**60**	58.36	2960	1.6	**KPM50B**	**63B5**	**6324**	30
	28.7	56	**50**	48.86	2790	2.3				
	35	46	**40**	40.09	2610	2.8				
	48	34	**30**	29.33	2350	3.8				
	58	28	**25**	24.07	2200	4.7				
	69	23	**20**	20.21	2080	5.6				
	94	17.2	**15**	14.92	1880	7.5				
	112	14.4	**12.5**	12.47	1770	9.0				
	134	12.1	**10**	10.47	1670	10.8				
	181	8.9	**7.5**	7.73	1510	11.2				
	12.1	131	**75**	74.62	3730	1.0	**KPM50C**	**71B5/B14**	**7116**	31
	14.4	110	**60**	62.36	3510	1.1				
	17.2	92	**50**	52.36	3310	1.2				
	15.4	105	**60**	58.36	3430	1.0	**KPM50B**	**71B5/B14**	**7116**	30
	18.4	88	**50**	48.86	3240	1.5				
	22.4	72	**40**	40.09	3030	1.8				
	31	53	**30**	29.33	2730	2.5				
	37	43	**25**	24.07	2550	3.0				
	45	36	**20**	20.21	2410	3.6				
	60	27	**15**	14.92	2180	4.9				
	72	22	**12.5**	12.47	2050	5.8				
	9.3	171	**300**	302.50	4650	1.0	**KPM63C**	**63B5**	**6312**	33
	11.5	138	**250**	243.57	4330	1.5	**TKB38C**	**63B5**	**6312**	39
	14.3	111	**200**	196.43	4030	1.8				
	18.5	86	**150**	151.56	3690	2.3				
	22.9	69	**125**	122.22	3440	2.9				
	27.6	57	**100**	101.27	3230	3.5				
	38	41	**75**	73.33	2900	3.9				
	44	36	**60**	63.33	2760	3.9				
	53	30	**50**	52.48	2590	4.0				
	7.1	222	**200**	196.43	4800	0.9	**KPM63C**	**63B5**	**6324**	33
	9.2	171	**150**	151.56	4650	1.2	**TKB38C**	**63B5**	**6324**	39
	11.5	138	**125**	122.22	4330	1.4				
	13.8	114	**100**	101.27	4070	1.7				
	19.1	83	**75**	73.33	3650	1.9				
	22.1	72	**60**	63.33	3480	2.0				
	26.7	59	**50**	52.48	3270	2.0				
	23.1	70	**60**	60.50	3430	2.4	**KPM63B**	**63B5**	**6324**	32
	28.7	56	**50**	48.71	3190	3.6	**TKB38B**	**63B5**	**6324**	38
	36	45	**40**	39.29	2970	4.4				
	7.4	215	**125**	122.22	4800	0.9	**KPM63C**	**71B5/B14**	**7116**	33
	8.9	178	**100**	101.27	4720	1.1	**TKB38C**	**71B5/B14**	**7116**	39
	12.3	129	**75**	73.33	4230	1.2				
	14.2	111	**60**	63.33	4030	1.3				
	17.1	92	**50**	52.48	3790	1.3				
	14.9	109	**60**	60.50	3970	1.6	**KPM63B**	**71B5/B14**	**7116**	32
	18.5	87	**50**	48.71	3690	2.3	**TKB38B**	**71B5/B14**	**7116**	38
	22.9	71	**40**	39.29	3440	2.8				
	29.7	54	**30**	30.31	3150	3.7				
	9.4	168	**300**	297.21	6320	2.1	**KPM75C**	**63B5**	**6312**	35
	11.6	136	**250**	240.89	5890	2.6	**TKB48C**	**63B5**	**6312**	41
	14.0	113	**200**	200.66	5540	3.1				
	18.5	85	**150**	151.20	5040	4.1				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
0.18	4.7	336	**300**	297.21	6500	1.0	**KPM75C**	**63B5**	**6324**	35
	5.8	272	**250**	240.89	6500	1.3	**TKB48C**	**63B5**	**6324**	41
	7.0	227	**200**	200.66	6500	1.5				
	9.3	171	**150**	151.20	6500	2.0				
	11.1	142	**125**	125.95	5980	2.5				
	14.1	112	**100**	99.22	5520	3.1				
	18.6	85	**75**	75.45	5040	4.1				
	4.5	353	**200**	200.66	6500	1.0	**KPM75C**	**71B5/B14**	**7116**	35
	6.0	266	**150**	151.20	6500	1.3	**TKB48C**	**71B5/B14**	**7116**	41
	7.1	221	**125**	125.95	6500	1.6				
	9.1	174	**100**	99.22	6400	2.0				
	11.9	133	**75**	75.45	5840	2.6				
	14.4	110	**60**	62.43	5480	3.2				
	18.3	86	**50**	49.18	5060	4.1				
	15.1	107	**60**	59.44	5390	3.3	**KPM75B**	**71B5/B14**	**7116**	34
	18.7	87	**50**	48.18	5030	4.0	**TKB48B**	**71B5/B14**	**7116**	40
	9.5	167	**300**	295.18	7990	2.8	**KPM90B**	**63B5**	**6312**	37
	11.6	136	**250**	240.89	7470	3.7	**TKB58C**	**63B5**	**6312**	43
	4.7	333	**300**	295.18	8300	1.4	**KPM90C**	**63B5**	**6324**	37
	5.8	272	**250**	240.89	8300	1.8	**TKB58C**	**63B5**	**6324**	43
	7.0	227	**200**	200.66	8300	2.2				
	9.3	171	**150**	151.20	8050	2.9				
	11.1	142	**125**	125.95	7580	3.5				
	3.7	423	**250**	240.89	8300	1.2	**KPM90C**	**71B5/B14**	**7116**	37
	4.5	353	**200**	200.66	8300	1.4	**TKB58C**	**71B5/B14**	**7116**	43
	6.0	266	**150**	151.20	8300	1.9				
	7.1	221	**125**	125.95	8300	2.3				
	9.1	174	**100**	99.22	8110	2.9				
	11.9	133	**75**	75.45	7400	3.8				
	14.4	110	**60**	62.43	6950	4.1				
0.25	19.1	115	**150**	146.67	3200	1.1	**KPM50C**	**63B5**	**6322**	31
	23.3	94	**125**	120.34	2990	1.4				
	27.7	79	**100**	101.04	2820	1.6				
	38	59	**75**	74.62	2550	2.2				
	45	49	**60**	62.36	2400	2.5				
	53	41	**50**	52.36	2270	2.7				
	48	47	**60**	58.36	2350	2.4	**KPM50B**	**63B5**	**6322**	30
	57	39	**50**	48.86	2220	3.3				
	70	32	**40**	40.09	2070	4.0				
	18.8	117	**75**	74.62	3220	1.1	**KPM50C**	**71B5/B14**	**7114**	31
	22.5	98	**60**	62.36	3030	1.2				
	26.7	82	**50**	52.36	2860	1.3				
	24.0	94	**60**	58.36	2960	1.2	**KPM50C**	**71B5/B14**	**7114**	30
	28.7	78	**50**	48.86	2790	1.7				
	35	64	**40**	40.09	2610	2.0				
	48	47	**30**	29.33	2350	2.8				
	58	39	**25**	24.07	2200	3.4				
	69	32	**20**	20.21	2080	4.0				
	94	24	**15**	14.92	1880	5.4				
	18.4	122	**50**	48.86	3240	1.1	**KPM50B**	**71B5/B14**	**7126**	30
	22.4	100	**40**	40.09	3030	1.3				
	31	73	**30**	29.33	2730	1.8				
	37	60	**25**	24.07	2550	2.2				
	45	50	**20**	20.21	2410	2.6				
	60	37	**15**	14.92	2180	3.5				
	72	31	**12.5**	12.47	2050	4.2				
	86	26	**10**	10.47	1930	5.0				
	116	19	**7.5**	7.73	1750	5.2				

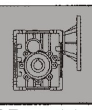
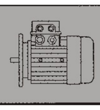
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
0.25	11.5	191	**250**	243.57	4330	1.0	**KPM63C**	**63B5**	**6322**	33
	14.3	154	**200**	196.43	4030	1.3	**TKB38C**	**63B5**	**6322**	39
	18.5	119	**150**	151.56	3690	1.7				
	22.9	96	**125**	122.22	3440	2.1				
	27.6	79	**100**	101.27	3230	2.5				
	38	58	**75**	73.33	2900	2.8				
	44	50	**60**	63.33	2760	2.8				
	53	41	**50**	52.48	2590	2.9				
	11.5	192	**125**	122.22	4330	1.0	**KPM63C**	**71B5/B14**	**7114**	33
	13.8	159	**100**	101.27	4070	1.3	**TKB38C**	**71B5/B14**	**7114**	39
	19.1	115	**75**	73.33	3650	1.4				
	22.1	99	**60**	63.33	3480	1.4				
	26.7	82	**50**	52.48	3270	1.5				
	23.1	97	**60**	60.50	3430	1.8	**KPM63B**	**71B5/B14**	**7114**	32
	28.7	78	**50**	48.71	3190	2.6	**TKB38B**	**71B5/B14**	**7114**	38
	36	63	**40**	39.29	2970	3.2				
	46	49	**30**	30.31	2720	4.1				
	12.3	179	**75**	73.33	4230	0.9	**KPM63C**	**71B5/B14**	**7126**	33
	14.2	155	**60**	63.33	4030	0.9	**TKB38C**	**71B5/B14**	**7126**	39
	17.1	128	**50**	52.48	3790	0.9				
	14.9	151	**60**	60.50	3970	1.1	**KPM63B**	**71B5/B14**	**7126**	32
	18.5	121	**50**	48.71	3690	1.6	**TKB38B**	**71B5/B14**	**7126**	38
	22.9	98	**40**	39.29	3440	2.0				
	29.7	76	**30**	30.31	3150	2.6				
	37	61	**25**	24.44	2930	3.3				
	44	50	**20**	20.25	2760	4.0				
	9.4	233	**300**	297.21	6320	1.5	**KPM75C**	**63B5**	**6322**	35
	11.6	189	**250**	240.89	5890	1.9	**TKB48C**	**63B5**	**6322**	41
	14.0	157	**200**	200.66	5540	2.2				
	18.5	119	**150**	151.20	5040	3.0				
	22.2	99	**125**	125.95	4750	3.5				
	5.8	378	**250**	240.89	6500	0.9	**KPM75C**	**71B5/B14**	**7114**	35
	7.0	315	**200**	200.66	6500	1.1	**TKB48C**	**71B5/B14**	**7114**	41
	9.3	237	**150**	151.20	6500	1.5				
	11.1	198	**125**	125.95	5980	1.8				
	14.1	156	**100**	99.22	5520	2.2				
	18.6	118	**75**	75.45	5040	3.0				
	22.4	98	**60**	62.43	4730	3.6				
	6.0	369	**150**	151.20	6500	0.9	**KPM75C**	**71B5/B14**	**7126**	35
	7.1	307	**125**	125.95	6500	1.1	**TKB48C**	**71B5/B14**	**7126**	41
	9.1	242	**100**	99.22	6400	1.4				
	11.9	184	**75**	75.45	5840	1.9				
	14.4	152	**60**	62.43	5480	2.3				
	18.3	120	**50**	49.18	5060	2.9				
	15.1	148	**60**	59.44	5390	2.4	**KPM75B**	**71B5/B14**	**7126**	34
	18.7	120	**50**	48.18	5030	2.9	**TKB48B**	**71B5/B14**	**7126**	40
	22.4	100	**40**	40.13	4730	3.5				
	9.5	232	**300**	295.18	7990	2.0	**KPM90B**	**63B5**	**6322**	37
	11.6	189	**250**	240.89	7470	2.6	**TKB58C**	**63B5**	**6322**	43
	14.0	157	**200**	200.66	7030	3.2				
	18.5	119	**150**	151.20	6390	4.2				
	4.7	463	**300**	295.18	8300	1.0	**KPM90C**	**71B5/B14**	**7114**	37
	5.8	378	**250**	240.89	8300	1.3	**TKB58C**	**71B5/B14**	**7114**	43
	7.0	315	**200**	200.66	8300	1.6				
	9.3	237	**150**	151.20	8050	2.1				
	11.1	198	**125**	125.95	7580	2.5				
	14.1	156	**100**	99.22	7000	3.2				
	18.6	118	**75**	75.45	6390	4.2				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
0.25	4.5	490	**200**	200.66	8300	1.0	**KPM90C**	**71B5/B14**	**7126**	37
	6.0	369	**150**	151.20	8300	1.4	**TKB58C**	**71B5/B14**	**7126**	43
	7.1	307	**125**	125.95	8300	1.6				
	9.1	242	**100**	99.22	8110	2.1				
	11.9	184	**75**	75.45	7400	2.7				
	14.4	152	**60**	62.43	6950	3.0				
	18.3	120	**50**	49.18	6420	2.9				
	15.2	147	**60**	59.04	6820	3.1	**KPM90B**	**71B5/B14**	**7126**	36
	18.7	120	**50**	48.18	6370	4.2	**TKB58B**	**71B5/B14**	**7126**	42
0.37	23.3	140	**125**	120.34	2990	0.9	**KPM90C**	**71B5/B14**	**7112**	31
	27.7	117	**100**	101.04	2820	1.1				
	38	87	**75**	74.62	2550	1.5				
	45	72	**60**	62.36	2400	1.7				
	53	61	**50**	52.36	2270	1.8				
	48	69	**60**	58.36	2350	1.6	**KPM50B**	**71B5/B14**	**7112**	30
	57	58	**50**	48.86	2220	2.2				
	70	48	**40**	40.09	2070	2.7				
	95	35	**30**	29.33	1870	3.7				
	28.7	116	**50**	48.86	2790	1.1	**KPM50B**	**71B5/B14**	**7124**	30
	35	95	**40**	40.09	2610	1.4				
	48	70	**30**	29.33	2350	1.9				
	58	57	**25**	24.07	2200	2.3				
	69	48	**20**	20.21	2080	2.7				
	94	35	**15**	14.92	1880	3.7				
	112	30	**12.5**	12.47	1770	4.4				
	134	25	**10**	10.47	1670	5.2				
	181	18	**7.5**	7.73	1510	5.5				
	31	108	**30**	29.33	2730	1.2	**KPM50B**	**80B5/B14**	**8016**	30
	37	89	**25**	24.07	2550	1.5				
	45	75	**20**	20.21	2410	1.7				
	60	55	**15**	14.92	2180	2.4				
	72	46	**12.5**	12.47	2050	2.8				
	86	39	**10**	10.47	1930	3.4				
	116	29	**7.5**	7.73	1750	3.5				
	14.3	228	**200**	196.43	4030	0.9	**KPM63C**	**71B5/B14**	**7112**	33
	18.5	176	**150**	151.56	3690	1.1	**TKB38C**	**71B5/B14**	**7112**	39
	22.9	142	**125**	122.22	3440	1.4				
	27.6	118	**100**	101.27	3230	1.7				
	38	85	**75**	73.33	2900	1.9				
	44	74	**60**	63.33	2760	1.9				
	53	61	**50**	52.48	2590	2.0				
	46	72	**60**	60.50	2720	2.4	**KPM63B**	**71B5/B14**	**7112**	32
	57	58	**50**	48.71	2530	3.5	**TKB38B**	**71B5/B14**	**7112**	38
	71	47	**40**	39.29	2350	4.3				
	13.8	235	**100**	101.27	4070	0.9	**KPM63C**	**71B5/B14**	**7124**	33
	19.1	170	**75**	73.33	3650	0.9	**TKB38C**	**71B5/B14**	**7124**	39
	22.1	147	**60**	63.33	3480	1.0				
	26.7	122	**50**	52.48	3270	1.0				
	23.1	144	**60**	60.50	3430	1.2	**KPM63B**	**71B5/B14**	**7124**	32
	28.7	116	**50**	48.71	3190	1.7	**TKB38B**	**71B5/B14**	**7124**	38
	36	93	**40**	39.29	2970	2.1				
	46	72	**30**	30.31	2720	2.8				
	57	58	**25**	24.44	2530	3.4				
	69	48	**20**	20.25	2380	4.2				
	18.5	180	**50**	48.71	3690	1.1	**KPM63B**	**80B5/B14**	**8016**	32
	22.9	145	**40**	39.29	3440	1.4	**TKB38B**	**80B5/B14**	**8016**	38
	29.7	112	**30**	30.31	3150	1.8				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
0.37	37	90	**25**	24.44	2930	2.2	**KPM63B**	**80B5/B14**	**8016**	32
	44	75	**20**	20.25	2760	2.7	**TKB38B**	**80B5/B14**	**8016**	38
	61	54	**15**	14.67	2470	3.5				
	71	47	**12.5**	12.67	2360	3.5				
	86	39	**10**	10.50	2210	3.5				
	118	28	**7.5**	7.60	1990	3.6				
	9.4	345	**300**	297.21	6320	1.0	**KPM75C**	**71B5/B14**	**7112**	35
	11.6	280	**250**	240.89	5890	1.3	**TKB48C**	**71B5/B14**	**7112**	41
	14.0	233	**200**	200.66	5540	1.5				
	18.5	176	**150**	151.20	5040	2.0				
	22.2	146	**125**	125.95	4750	2.4				
	28.2	115	**100**	99.22	4380	3.0				
	37	88	**75**	75.45	4000	4.0				
	9.3	351	**150**	151.20	6500	1.0	**KPM75C**	**71B5/B14**	**7124**	35
	11.1	292	**125**	125.95	5980	1.2	**TKB48C**	**71B5/B14**	**7124**	41
	14.1	230	**100**	99.22	5520	1.5				
	18.6	175	**75**	75.45	5040	2.0				
	22.4	145	**60**	62.43	4730	2.4				
	28.5	114	**50**	49.18	4370	3.1				
	23.6	141	**60**	59.44	4660	2.5	**KPM75B**	**71B5/B14**	**7124**	34
	29.1	114	**50**	48.18	4340	3.1	**TKB48B**	**71B5/B14**	**7124**	40
	35	95	**40**	40.13	4080	3.7				
	9.1	358	**100**	99.22	6400	1.0	**KPM75C**	**80B5/B14**	**8016**	35
	11.9	273	**75**	75.45	5840	1.3	**TKB48C**	**80B5/B14**	**8016**	41
	14.4	225	**60**	62.43	5480	1.6				
	18.3	178	**50**	49.18	5060	2.0				
	15.1	219	**60**	59.44	5390	1.6	**KPM75B**	**80B5/B14**	**8016**	34
	18.7	178	**50**	48.18	5030	2.0	**TKB48B**	**80B5/B14**	**8016**	40
	22.4	148	**40**	40.13	4730	2.4				
	29.8	112	**30**	30.24	4310	3.1				
	36	93	**25**	25.19	4050	3.8				
	9.5	343	**300**	295.18	7990	1.3	**KPM90C**	**71B5/B14**	**7112**	37
	11.6	280	**250**	240.89	7470	1.8	**TKB58C**	**71B5/B14**	**7112**	43
	14.0	233	**200**	200.66	7030	2.1				
	18.5	176	**150**	151.20	6390	2.8				
	22.2	146	**125**	125.95	6010	3.4				
	5.8	559	**250**	240.89	8300	0.9	**KPM90C**	**71B5/B14**	**7124**	37
	7.0	466	**200**	200.66	8300	1.1	**TKB58C**	**71B5/B14**	**7124**	43
	9.3	351	**150**	151.20	8050	1.4				
	11.1	292	**125**	125.95	7580	1.7				
	14.1	230	**100**	99.22	7000	2.2				
	18.6	175	**75**	75.45	6390	2.9				
	22.4	145	**60**	62.43	6000	3.1				
	28.5	114	**50**	49.18	5540	3.1				
	23.7	140	**60**	59.04	5890	3.3	**KPM90B**	**71B5/B14**	**7124**	36
	29.1	114	**50**	48.18	5500	4.4	**TKB58B**	**71B5/B14**	**7124**	42
	6.0	546	**150**	151.20	8300	0.9	**KPM90C**	**80B5/B14**	**8016**	37
	7.1	455	**125**	125.95	8300	1.1	**TKB58C**	**80B5/B14**	**8016**	43
	9.1	358	**100**	99.22	8110	1.4				
	11.9	273	**75**	75.45	7400	1.8				
	14.4	225	**60**	62.43	6950	2.0				
	18.3	178	**50**	49.18	6420	2.0				
	15.2	218	**60**	59.04	6820	2.1	**KPM90B**	**80B5/B14**	**8016**	36
	18.7	178	**50**	48.18	6370	2.8	**TKB58B**	**80B5/B14**	**8016**	42
	22.4	148	**40**	40.13	6000	3.4				
0.55	38	129	**75**	74.62	2550	1.0	**KPM50C**	**71B5/B14**	**7122**	31
	45	108	**60**	62.36	2400	1.1				
	53	90	**50**	52.36	2270	1.2				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
0.55	48	103	**60**	58.36	2350	1.1	**KPM50C**	**71B5/B14**	**7122**	30
	57	86	**50**	48.86	2220	1.5				
	70	71	**40**	40.09	2070	1.8				
	95	52	**30**	29.33	1870	2.5				
	116	42	**25**	24.07	1750	3.1				
	139	36	**20**	20.21	1650	3.6				
	35	141	**40**	40.09	2610	0.9	**KPM50B**	**80B5/B14**	**8014**	30
	48	103	**30**	29.33	2350	1.3				
	58	85	**25**	24.07	2200	1.5				
	69	71	**20**	20.21	2080	1.8				
	94	53	**15**	14.92	1880	2.5				
	112	44	**12.5**	12.47	1770	3.0				
	134	37	**10**	10.47	1670	3.5				
	181	27	**7.5**	7.73	1510	3.7				
	37	132	**25**	24.07	2550	1.0	**KPM50B**	**80B5/B14**	**8026**	30
	45	111	**20**	20.21	2410	1.2				
	60	82	**15**	14.92	2180	1.6				
	72	68	**12.5**	12.47	2050	1.9				
	86	57	**10**	10.47	1930	2.3				
	116	42	**7.5**	7.73	1750	2.4				
	22.9	211	**125**	122.22	3440	0.9	**KPM63C**	**71B5/B14**	**7122**	33
	27.6	175	**100**	101.27	3230	1.1	**KPM63C**	**71B5/B14**	**7122**	39
	38	127	**75**	73.33	2900	1.3				
	44	109	**60**	63.33	2760	1.3				
	53	91	**50**	52.48	2590	1.3				
	46	107	**60**	60.50	2720	1.6	**KPM63B**	**71B5/B14**	**7122**	32
	57	86	**50**	48.71	2530	2.3	**TKB38B**	**71B5/B14**	**7122**	38
	71	69	**40**	39.29	2350	2.9				
	92	53	**30**	30.31	2160	3.7				
	28.7	172	**50**	48.71	3190	1.2	**KPM63B**	**80B5/B14**	**8014**	32
	36	139	**40**	39.29	2970	1.4	**TKB38B**	**80B5/B14**	**8014**	38
	46	107	**30**	30.31	2720	1.9				
	57	86	**25**	24.44	2530	2.3				
	69	71	**20**	20.25	2380	2.8				
	95	52	**15**	14.67	2130	3.7				
	110	45	**12.5**	12.67	2030	3.7				
	133	37	**10**	10.50	1910	3.6				
	184	27	**7.5**	7.60	1710	3.7				
	22.9	216	**40**	39.29	3440	0.9	**KPM63B**	**80B5/B14**	**8026**	32
	29.7	166	**30**	30.31	3150	1.2	**TKB38B**	**80B5/B14**	**8026**	38
	37	134	**25**	24.44	2930	1.5				
	44	111	**20**	20.25	2760	1.8				
	61	80	**15**	14.67	2470	2.4				
	71	70	**12.5**	12.67	2360	2.4				
	86	58	**10**	10.50	2210	2.3				
	118	42	**7.5**	7.60	1990	2.4				
	14.0	346	**200**	200.66	5540	1.0	**KPM75C**	**71B5/B14**	**7122**	35
	18.5	261	**150**	151.20	5040	1.3	**TKB48C**	**71B5/B14**	**7122**	41
	22.2	217	**125**	125.95	4750	1.6				
	28.2	171	**100**	99.22	4380	2.0				
	37	130	**75**	75.45	4000	2.7				
	45	108	**60**	62.43	3750	3.2				
	57	85	**50**	49.18	3470	4.1				
	47	105	**60**	59.44	3690	3.3	**KPM75B**	**71B5/B14**	**7122**	34
	58	85	**50**	48.18	3440	4.1	**TKB48B**	**71B5/B14**	**7122**	40
	14.1	342	**100**	99.22	5520	1.0	**KPM75C**	**80B5/B14**	**8014**	35
	18.6	260	**75**	75.45	5040	1.3	**TKB48C**	**80B5/B14**	**8014**	41

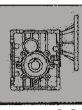
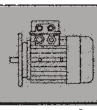
			공칭	실제						
0.55	22.4	215	**60**	62.43	4730	1.6	**KPM75C**	**80B5/B14**	**8014**	35
	28.5	170	**50**	49.18	4370	2.1	**TKB48C**	**80B5/B14**	**8014**	41
	23.6	210	**60**	59.44	4660	1.7	**KPM75B**	**80B5/B14**	**8014**	34
	29.1	170	**50**	48.18	4340	2.1	**TKB48B**	**80B5/B14**	**8014**	40
	35	142	**40**	40.13	4080	2.5				
	46	107	**30**	30.24	3720	3.3				
	56	89	**25**	25.19	3500	3.9				
	14.4	335	**60**	62.43	5480	1.0	**KPM75C**	**80B5/B14**	**8026**	35
	18.3	264	**50**	49.18	5060	1.3	**TKB48C**	**80B5/B14**	**8026**	41
	15.1	326	**60**	59.44	5390	1.1	**KPM75B**	**80B5/B14**	**8026**	34
	18.7	264	**50**	48.18	5030	1.3	**TKB48B**	**80B5/B14**	**8026**	40
	22.4	220	**40**	40.13	4730	1.6				
	29.8	166	**30**	30.24	4310	2.1				
	36	138	**25**	25.19	4050	2.5				
	45	109	**20**	19.84	3740	3.2				
	60	83	**15**	15.09	3410	4.2				
	9.5	509	**300**	295.18	7990	0.9	**KPM90C**	**71B5/B14**	**7122**	37
	11.6	416	**250**	240.89	7470	1.2	**TKB58C**	**71B5/B14**	**7122**	43
	14.0	346	**200**	200.66	7030	1.4				
	18.5	261	**150**	151.20	6390	1.9				
	22.2	217	**125**	125.95	6010	2.3				
	28.2	171	**100**	99.22	5550	2.9				
	37	130	**75**	75.45	5070	3.8				
	45	108	**60**	62.43	4760	4.2				
	57	85	**50**	49.18	4390	4.1				
	9.3	522	**150**	151.20	8050	1.0	**KPM90C**	**80B5/B14**	**8014**	37
	11.1	435	**125**	125.95	7580	1.2	**TKB58C**	**80B5/B14**	**8014**	43
	14.1	342	**100**	99.22	7000	1.5				
	18.6	260	**75**	75.45	6390	1.9				
	22.4	215	**60**	62.43	6000	2.1				
	28.5	170	**50**	49.18	5540	2.1				
	23.7	208	**60**	59.04	5890	2.2	**KPM90B**	**80B5/B14**	**8014**	36
	29.1	170	**50**	48.18	5500	2.9	**TKB58B**	**80B5/B14**	**8014**	42
	35	142	**40**	40.13	5170	3.5				
	9.1	533	**100**	99.22	8110	0.9	**KPM90C**	**80B5/B14**	**8026**	37
	11.9	405	**75**	75.45	7400	1.2	**TKB58C**	**80B5/B14**	**8026**	43
	14.4	335	**60**	62.43	6950	1.3				
	18.3	264	**50**	49.18	6420	1.3				
	15.2	324	**60**	59.04	6820	1.4	**KPM90B**	**80B5/B14**	**8026**	36
	18.7	264	**50**	48.18	6370	1.9	**TKB58B**	**80B5/B14**	**8026**	42
	22.4	220	**40**	40.13	6000	2.3				
	29.8	166	**30**	30.24	5460	3.0				
	36	138	**25**	25.19	5130	3.6				
0.75	57	117	**50**	48.86	2220	1.1	**KPM50B**	**80B5/B14**	**8012**	30
	70	96	**40**	40.09	2070	1.3				
	95	71	**30**	29.33	1870	1.8				
	116	58	**25**	24.07	1750	2.2				
	139	49	**20**	20.21	1650	2.7				
	188	36	**15**	14.92	1490	3.6				
	48	141	**30**	29.33	2350	0.9	**KPM50B**	**80B5/B14**	**8024**	30
	58	116	**25**	24.07	2200	1.1				
	69	97	**20**	20.21	2080	1.3				
	94	72	**15**	14.92	1880	1.8				
	112	60	**12.5**	12.47	1770	2.2				
	134	50	**10**	10.47	1670	2.6				
	181	37	**7.5**	7.73	1510	2.7				

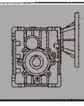
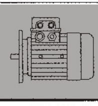
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
0.75	60	112	**15**	14.92	2180	1.2	**KPM50B**	**90B5/B14**	**90S6**	30
	72	93	**12.5**	12.47	2050	1.4				
	86	78	**10**	10.47	1930	1.7				
	116	58	**7.5**	7.73	1750	1.7				
	38	173	**75**	73.33	2900	0.9	**KPM63C**	**80B5/B14**	**8012**	33
	44	149	**60**	63.33	2760	0.9	**TKB38C**	**80B5/B14**	**8012**	39
	53	124	**50**	52.48	2590	1.0				
	46	145	**60**	60.50	2720	1.2	**KPM63B**	**80B5/B14**	**8012**	32
	57	117	**50**	48.71	2530	1.7	**TKB38B**	**80B5/B14**	**8012**	38
	71	94	**40**	39.29	2350	2.1				
	92	73	**30**	30.31	2160	2.7				
	115	59	**25**	24.44	2010	3.4				
	138	49	**20**	20.25	1890	4.1				
	28.7	234	**50**	48.71	3190	0.9	**KPM63B**	**80B5/B14**	**8024**	32
	36	189	**40**	39.29	2970	1.1	**TKB38B**	**80B5/B14**	**8024**	38
	46	146	**30**	30.31	2720	1.4				
	57	118	**25**	24.44	2530	1.7				
	69	97	**20**	20.25	2380	2.1				
	95	71	**15**	14.67	2130	2.7				
	110	61	**12.5**	12.67	2030	2.7				
	133	50	**10**	10.50	1910	2.7				
	184	37	**7.5**	7.60	1710	2.7				
	37	183	**25**	24.44	2930	1.1	**KPM63B**	**90B5/B14**	**90S6**	32
	44	151	**20**	20.25	2760	1.3	**TKB38B**	**90B5/B14**	**90S6**	38
	61	110	**15**	14.67	2470	1.7				
	71	95	**12.5**	12.67	2360	1.7				
	86	79	**10**	10.50	2210	1.7				
	118	57	**7.5**	7.60	1990	1.8				
	18.5	356	**150**	151.20	5040	1.0	**KPM75C**	**80B5/B14**	**8012**	35
	22.2	296	**125**	125.95	4750	1.2	**TKB48C**	**80B5/B14**	**8012**	41
	28.2	234	**100**	99.22	4380	1.5				
	37	178	**75**	75.45	4000	2.0				
	45	147	**60**	62.43	3750	2.4				
	57	116	**50**	49.18	3470	3.0				
	47	143	**60**	59.44	3690	2.4	**KPM75B**	**80B5/B14**	**8012**	34
	58	116	**50**	48.18	3440	3.0	**TKB48B**	**80B5/B14**	**8012**	40
	70	96	**40**	40.13	3240	3.6				
	18.6	355	**75**	75.45	5040	1.0	**KPM75C**	**80B5/B14**	**8024**	35
	22.4	294	**60**	62.43	4730	1.2	**TKB48C**	**80B5/B14**	**8024**	41
	28.5	231	**50**	49.18	4370	1.5				
	23.6	286	**60**	59.44	4660	1.2	**KPM75B**	**80B5/B14**	**8024**	34
	29.1	232	**50**	48.18	4340	1.5	**TKB48B**	**80B5/B14**	**8024**	40
	35	193	**40**	40.13	4080	1.8				
	46	145	**30**	30.24	3720	2.4				
	56	121	**25**	25.19	3500	2.9				
	71	95	**20**	19.84	3230	3.7				
	18.7	360	**50**	48.18	5030	1.0	**KPM75B**	**90B5/B14**	**90S6**	34
	22.4	300	**40**	40.13	4730	1.2	**TKB48B**	**90B5/B14**	**90S6**	40
	29.8	226	**30**	30.24	4310	1.5				
	36	188	**25**	25.19	4050	1.9				
	45	148	**20**	19.84	3740	2.4				
	60	113	**15**	15.09	3410	3.1				
	72	93	**12.5**	12.49	3210	3.7				
	11.6	567	**250**	240.89	7470	0.9	**KPM90C**	**80B5/B14**	**8012**	37
	14.0	472	**200**	200.66	7030	1.1	**TKB58C**	**80B5/B14**	**8012**	43
	18.5	356	**150**	151.20	6390	1.4				
	22.2	296	**125**	125.95	6010	1.7				

			공칭	실제						
0.75	28.2	234	**100**	99.22	5550	2.1	**KPM90C**	**80B5/B14**	**8012**	37
	37	178	**75**	75.45	5070	2.8	**TKB58C**	**80B5/B14**	**8012**	43
	45	147	**60**	62.43	4760	3.1				
	57	116	**50**	49.18	4390	3.0				
	14.1	467	**100**	99.22	7000	1.1	**KPM90C**	**80B5/B14**	**8024**	37
	18.6	355	**75**	75.45	6390	1.4	**TKB58C**	**80B5/B14**	**8024**	43
	22.4	294	**60**	62.43	6000	1.5				
	28.5	231	**50**	49.18	5540	1.5				
	23.7	284	**60**	59.04	5890	1.6	**KPM90B**	**80B5/B14**	**8024**	36
	29.1	232	**50**	48.18	5500	2.2	**TKB58B**	**80B5/B14**	**8024**	42
	35	193	**40**	40.13	5170	2.6				
	46	145	**30**	30.24	4710	3.4				
	56	121	**25**	25.19	4430	4.1				
	11.9	552	**75**	75.45	7400	0.9	**KPM90C**	**90B5/B14**	**90S6**	37
	14.4	457	**60**	62.43	6950	1.0	**TKB58C**	**90B5/B14**	**90S6**	43
	18.3	360	**50**	49.18	6420	1.0				
	15.2	442	**60**	59.04	6820	1.0	**KPM90B**	**90B5/B14**	**90S6**	36
	18.7	360	**50**	48.18	6370	1.4	**TKB58B**	**90B5/B14**	**90S6**	42
	22.4	300	**40**	40.13	6000	1.7				
	29.8	226	**30**	30.24	5460	2.2				
	36	188	**25**	25.19	5130	2.7				
	45	148	**20**	19.84	4740	3.4				
	60	113	**15**	15.09	4330	4.4				
1.1	70	141	**40**	40.09	2070	0.9	**KPM50B**	**80B5/B14**	**8022**	30
	95	103	**30**	29.33	1870	1.3				
	116	85	**25**	24.07	1750	1.5				
	139	71	**20**	20.21	1650	1.8				
	188	53	**15**	14.92	1490	2.5				
	225	44	**12.5**	12.47	1400	3.0				
	267	37	**10**	10.47	1320	3.5				
	362	27	**7.5**	7.73	1200	3.7				
	69	143	**20**	20.21	2080	0.9	**KPM50B**	**90B5/B14**	**90S4**	30
	94	105	**15**	14.92	1880	1.2				
	112	88	**12.5**	12.47	1770	1.5				
	134	74	**10**	10.47	1670	1.8				
	181	55	**7.5**	7.73	1510	1.8				
	72	137	**12.5**	12.47	2050	1.0	**KPM50B**	**90B5/B14**	**90L6**	30
	86	115	**10**	10.47	1930	1.1				
	116	85	**7.5**	7.73	1750	1.2				
	57	172	**50**	48.71	2530	1.2	**KPM63B**	**80B5/B14**	**8022**	32
	71	139	**40**	39.29	2350	1.4	**TKB38B**	**80B5/B14**	**8022**	38
	92	107	**30**	30.31	2160	1.9				
	115	86	**25**	24.44	2010	2.3				
	138	71	**20**	20.25	1890	2.8				
	191	52	**15**	14.67	1690	3.7				
	221	45	**12.5**	12.67	1610	3.7				
	267	37	**10**	10.50	1510	3.6				
	368	27	**7.5**	7.60	1360	3.7				
	46	214	**30**	30.31	2720	0.9	**KPM63B**	**90B5/B14**	**90S4**	32
	57	172	**25**	24.44	2530	1.2	**TKB38B**	**90B5/B14**	**90S4**	38
	69	143	**20**	20.25	2380	1.4				
	95	103	**15**	14.67	2130	1.8				
	110	89	**12.5**	12.67	2030	1.8				
	133	74	**10**	10.50	1910	1.8				
	184	54	**7.5**	7.60	1710	1.9				
	44	222	**20**	20.25	2760	0.9	**KPM63B**	**90B5/B14**	**90L6**	32
	61	161	**15**	14.67	2470	1.2	**TKB38B**	**90B5/B14**	**90L6**	38

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
1.1	71	139	**12.5**	12.67	2360	1.2	**KPM63B**	**90B5/B14**	**90L6**	32
	86	115	**10**	10.50	2210	1.2	**TKB38B**	**90B5/B14**	**90L6**	38
	118	83	**7.5**	7.60	1990	1.2				
	28.2	342	**100**	99.22	4380	1.0	**KPM75C**	**80B5/B14**	**8022**	35
	37	260	**75**	75.45	4000	1.3	**TKB48C**	**80B5/B14**	**8022**	41
	45	215	**60**	62.43	3750	1.6				
	57	170	**50**	49.18	3470	2.1				
	47	210	**60**	59.44	3690	1.7	**KPM75B**	**80B5/B14**	**8022**	34
	58	170	**50**	48.18	3440	2.1	**TKB48B**	**80B5/B14**	**8022**	40
	70	142	**40**	40.13	3240	2.5				
	93	107	**30**	30.24	2950	3.3				
	111	89	**25**	25.19	2770	3.9				
	29.1	340	**50**	48.18	4340	1.0	**KPM75B**	**90B5/B14**	**90S4**	34
	35	283	**40**	40.13	4080	1.2	**TKB48B**	**90B5/B14**	**90S4**	40
	46	213	**30**	30.24	3720	1.6				
	56	178	**25**	25.19	3500	2.0				
	71	140	**20**	19.84	3230	2.5				
	93	106	**15**	15.09	2950	3.3				
	112	88	**12.5**	12.49	2770	4.0				
	29.8	332	**30**	30.24	4310	1.1	**KPM75B**	**90B5/B14**	**90L6**	34
	36	276	**25**	25.19	4050	1.3	**TKB48B**	**90B5/B14**	**90L6**	40
	45	218	**20**	19.84	3740	1.6				
	60	166	**15**	15.09	3410	2.1				
	72	137	**12.5**	12.49	3210	2.6				
	91	108	**10**	9.84	2960	3.2				
	120	82	**7.5**	7.48	2700	3.4				
	18.5	522	**150**	151.20	6390	1.0	**KPM90C**	**80B5/B14**	**8022**	37
	22.2	435	**125**	125.95	6010	1.2	**TKB58C**	**80B5/B14**	**8022**	43
	28.2	342	**100**	99.22	5550	1.5				
	37	260	**75**	75.45	5070	1.9				
	45	215	**60**	62.43	4760	2.1				
	57	170	**50**	49.18	4390	2.1				
	47	208	**60**	59.04	4670	2.2	**KPM90B**	**80B5/B14**	**8022**	36
	58	170	**50**	48.18	4360	2.9	**TKB58B**	**80B5/B14**	**8022**	42
	70	142	**40**	40.13	4110	3.5				
	18.6	521	**75**	75.45	6390	1.0	**KPM90C**	**90B5/B14**	**90S4**	37
	22.4	431	**60**	62.43	6000	1.0	**TKB58C**	**90B5/B14**	**90S4**	43
	28.5	340	**50**	49.18	5540	1.0				
	23.7	416	**60**	59.04	5890	1.1	**KPM90B**	**90B5/B14**	**90S4**	36
	29.1	340	**50**	48.18	5500	1.5	**TKB58B**	**90B5/B14**	**90S4**	42
	35	283	**40**	40.13	5170	1.8				
	46	213	**30**	30.24	4710	2.3				
	56	178	**25**	25.19	4430	2.8				
	71	140	**20**	19.84	4090	3.6				
	18.7	529	**50**	48.18	6370	0.9	**KPM90B**	**90B5/B14**	**90L6**	36
	22.4	440	**40**	40.13	6000	1.1	**TKB58B**	**90B5/B14**	**90L6**	42
	29.8	332	**30**	30.24	5460	1.5				
	36	276	**25**	25.19	5130	1.8				
	45	218	**20**	19.84	4740	2.3				
	60	166	**15**	15.09	4330	3.0				
	72	137	**12.5**	12.49	4060	3.4				
	91	108	**10**	9.84	3750	3.3				
	120	82	**7.5**	7.48	3420	3.4				
1.5	116	116	**25**	24.07	1750	1.1	**KPM50B**	**90B5/B14**	**90S2**	30
	139	97	**20**	20.21	1650	1.3				
	188	72	**15**	14.92	1490	1.8				
	225	60	**12.5**	12.47	1400	2.2				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
1.5	267	50	**10**	10.47	1320	2.6	**KPM50B**	**90B5/B14**	**90S2**	30
	362	37	**7.5**	7.73	1200	2.7				
	94	144	**15**	14.92	1880	0.9	**KPM50B**	**90B5/B14**	**90L4**	30
	112	120	**12.5**	12.47	1770	1.1				
	134	101	**10**	10.47	1670	1.3				
	181	74	**7.5**	7.73	1510	1.3				
	57	234	**50**	48.71	2530	0.9	**KPM63B**	**90B5/B14**	**90S2**	32
	71	189	**40**	39.29	2350	1.1	**TKB38B**	**90B5/B14**	**90S2**	38
	92	146	**30**	30.31	2160	1.4				
	115	118	**25**	24.44	2010	1.7				
	138	97	**20**	20.25	1890	2.1				
	191	71	**15**	14.67	1690	2.7				
	221	61	**12.5**	12.67	1610	2.7				
	267	50	**10**	10.50	1510	2.7				
	368	37	**7.5**	7.60	1360	2.7				
	57	235	**25**	24.44	2530	0.9	**KPM63B**	**90B5/B14**	**90L4**	32
	69	195	**20**	20.25	2380	1.0	**TKB38B**	**90B5/B14**	**90L4**	38
	95	141	**15**	14.67	2130	1.3				
	110	122	**12.5**	12.67	2030	1.4				
	133	101	**10**	10.50	1910	1.3				
	184	73	**7.5**	7.60	1710	1.4				
	37	355	**75**	75.45	4000	1.0	**KPM75C**	**90B5/B14**	**90S2**	35
	45	294	**60**	62.43	3750	1.2	**TKB48C**	**90B5/B14**	**90S2**	41
	57	231	**50**	49.18	3470	1.5				
	47	286	**60**	59.44	3690	1.2	**KPM75B**	**90B5/B14**	**90S2**	34
	58	232	**50**	48.18	3440	1.5	**TKB48B**	**90B5/B14**	**90S2**	40
	70	193	**40**	40.13	3240	1.8				
	93	145	**30**	30.24	2950	2.4				
	111	121	**25**	25.19	2770	2.9				
	141	95	**20**	19.84	2560	3.7				
	35	386	**40**	40.13	4080	0.9	**KPM75B**	**90B5/B14**	**90L4**	34
	46	291	**30**	30.24	3720	1.2	**TKB48B**	**90B5/B14**	**90L4**	40
	56	242	**25**	25.19	3500	1.4				
	71	191	**20**	19.84	3230	1.8				
	93	145	**15**	15.09	2950	2.4				
	112	120	**12.5**	12.49	2770	2.9				
	142	95	**10**	9.84	2550	3.7				
	187	72	**7.5**	7.48	2330	3.9				
	28.2	467	**100**	99.22	5550	1.1	**KPM90C**	**90B5/B14**	**90S2**	37
	37	355	**75**	75.45	5070	1.4	**TKB58C**	**90B5/B14**	**90S2**	43
	45	294	**60**	62.43	4760	1.5				
	57	231	**50**	49.18	4390	1.5				
	47	284	**60**	59.04	4670	1.6	**KPM90B**	**90B5/B14**	**90S2**	36
	58	232	**50**	48.18	4360	2.2	**TKB58B**	**90B5/B14**	**90S2**	42
	70	193	**40**	40.13	4110	2.6				
	93	145	**30**	30.24	3740	3.4				
	111	121	**25**	25.19	3520	4.1				
	29.1	463	**50**	48.18	5500	1.1	**KPM90B**	**90B5/B14**	**90L4**	36
	35	386	**40**	40.13	5170	1.3	**TKB58B**	**90B5/B14**	**90L4**	42
	46	291	**30**	30.24	4710	1.7				
	56	242	**25**	25.19	4430	2.1				
	71	191	**20**	19.84	4090	2.6				
	93	145	**15**	15.09	3730	3.4				
	112	120	**12.5**	12.49	3510	3.8				
	142	95	**10**	9.84	3240	3.8				
	187	72	**7.5**	7.48	2950	3.9				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
2.2	139	143	**20**	20.21	1650	0.9	**KPM63B**	**90B5/B14**	**90L2**	30
	188	105	**15**	14.92	1490	1.2				
	225	88	**12.5**	12.47	1400	1.5				
	267	74	**10**	10.47	1320	1.8				
	362	55	**7.5**	7.73	1200	1.8				
	92	214	**30**	30.31	2160	0.9	**KPM63B**	**90B5/B14**	**90L2**	32
	115	172	**25**	24.44	2010	1.2	**TKB38B**	**90B5/B14**	**90L2**	38
	138	143	**20**	20.25	1890	1.4				
	191	103	**15**	14.67	1690	1.8				
	221	89	**12.5**	12.67	1610	1.8				
	267	74	**10**	10.50	1510	1.8				
	368	54	**7.5**	7.60	1360	1.9				
	58	340	**50**	48.18	3440	1.0	**KPM75B**	**90B5/B14**	**90L2**	34
	70	283	**40**	40.13	3240	1.2	**TKB48B**	**90B5/B14**	**90L2**	40
	93	213	**30**	30.24	2950	1.6				
	111	178	**25**	25.19	2770	2.0				
	141	140	**20**	19.84	2560	2.5				
	186	106	**15**	15.09	2340	3.3				
	224	88	**12.5**	12.49	2190	4.0				
	56	355	**25**	25.19	3500	1.0	**KPM75B**	**100B5/B14**	**100LA4**	34
	71	280	**20**	19.84	3230	1.3	**TKB48B**	**100B5/B14**	**100LA4**	40
	93	213	**15**	15.09	2950	1.6				
	112	176	**12.5**	12.49	2770	2.0				
	142	139	**10**	9.84	2550	2.5				
	187	106	**7.5**	7.48	2330	2.7				
	60	331	**15**	15.09	3410	1.1	**KPM75B**	**112B5/B14**	**112M6**	34
	72	274	**12.5**	12.49	3210	1.3	**TKB48B**	**112B5/B14**	**112M6**	40
	91	216	**10**	9.84	2960	1.6				
	120	164	**7.5**	7.48	2700	1.7				
	37	521	**75**	75.45	5070	1.0	**KPM90C**	**90B5/B14**	**90L2**	37
	45	431	**60**	62.43	4760	1.0	**TKB58C**	**90B5/B14**	**90L2**	43
	57	340	**50**	49.18	4390	1.0				
	47	416	**60**	59.04	4670	1.1	**KPM90B**	**90B5/B14**	**90L2**	36
	58	340	**50**	48.18	4360	1.5	**TKB58B**	**90B5/B14**	**90L2**	42
	70	283	**40**	40.13	4110	1.8				
	93	213	**30**	30.24	3740	2.3				
	111	178	**25**	25.19	3520	2.8				
	141	140	**20**	19.84	3250	3.6				
	35	566	**40**	40.13	5170	0.9	**KPM90B**	**100B5/B14**	**100LA4**	36
	46	427	**30**	30.24	4710	1.2	**TKB58B**	**100B5/B14**	**100LA4**	42
	56	355	**25**	25.19	4430	1.4				
	71	280	**20**	19.84	4090	1.8				
	93	213	**15**	15.09	3730	2.3				
	112	176	**12.5**	12.49	3510	2.6				
	142	139	**10**	9.84	3240	2.6				
	187	106	**7.5**	7.48	2950	2.7				
	36	553	**25**	25.19	5130	0.9	**KPM90B**	**112B5/B14**	**112M6**	36
	45	435	**20**	19.84	4740	1.1	**TKB58B**	**112B5/B14**	**112M6**	42
	60	331	**15**	15.09	4330	1.5				
	72	274	**12.5**	12.49	4060	1.7				
	91	216	**10**	9.84	3750	1.7				
	120	164	**7.5**	7.48	3420	1.7				
3	70	386	**40**	40.13	3240	0.9	**KPM75B**	**100B5/B14**	**100L2**	34
	93	291	**30**	30.24	2950	1.2	**TKB48B**	**100B5/B14**	**100L2**	40
	111	242	**25**	25.19	2770	1.4				
	141	191	**20**	19.84	2560	1.8				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i 공칭 Nominal	i 실제 Actual	F_{r2} [N]	fs				Page
3	186	145	**15**	15.09	2340	2.4	**KPM75B**	**100B5/B14**	**100L2**	34
	224	120	**12.5**	12.49	2190	2.9	**TKB48B**	**100B5/B14**	**100L2**	40
	285	95	**10**	9.84	2030	3.7				
	374	72	**7.5**	7.48	1850	3.9				
	93	290	**15**	15.09	2950	1.2	**KPM75B**	**100B5/B14**	**100LB4**	34
	112	240	**12.5**	12.49	2770	1.5	**TKB48B**	**100B5/B14**	**100LB4**	40
	142	189	**10**	9.84	2550	1.8				
	187	144	**7.5**	7.48	2330	1.9				
	47	568	**60**	59.04	4670	0.8	**KPM90B**	**100B5/B14**	**100L2**	36
	58	463	**50**	48.18	4360	1.1	**TKB58B**	**100B5/B14**	**100L2**	42
	70	386	**40**	40.13	4110	1.3				
	93	291	**30**	30.24	3740	1.7				
	111	242	**25**	25.19	3520	2.1				
	141	191	**20**	19.84	3250	2.6				
	186	145	**15**	15.09	2960	3.4				
	224	120	**12.5**	12.49	2780	3.8				
	285	95	**10**	9.84	2570	3.8				
	374	72	**7.5**	7.48	2340	3.9				
	56	485	**25**	25.19	4430	1.0	**KPM90B**	**100B5/B14**	**100LB4**	36
	71	382	**20**	19.84	4090	1.3	**TKB58B**	**100B5/B14**	**100LB4**	42
	93	290	**15**	15.09	3730	1.7				
	112	240	**12.5**	12.49	3510	1.9				
	142	189	**10**	9.84	3240	1.9				
	187	144	**7.5**	7.48	2950	1.9				
4	111	323	**25**	25.19	2770	1.1	**KPM75B**	**112B5/B14**	**112M2**	34
	141	254	**20**	19.84	2560	1.4	**TKB48B**	**112B5/B14**	**112M2**	40
	186	194	**15**	15.09	2340	1.8				
	224	160	**12.5**	12.49	2190	2.2				
	285	126	**10**	9.84	2030	2.8				
	374	96	**7.5**	7.48	1850	2.9				
	112	320	**12.5**	12.49	2770	1.1	**KPM75B**	**112B5/B14**	**112M4**	34
	142	252	**10**	9.84	2550	1.4	**TKB48B**	**112B5/B14**	**112M4**	40
	187	192	**7.5**	7.48	2330	1.5				
	70	515	**40**	40.13	4110	1.0	**KPM90B**	**112B5/B14**	**112M2**	36
	93	388	**30**	30.24	3740	1.3	**TKB58B**	**112B5/B14**	**112M2**	42
	111	323	**25**	25.19	3520	1.5				
	141	254	**20**	19.84	3250	2.0				
	186	194	**15**	15.09	2960	2.6				
	224	160	**12.5**	12.49	2780	2.9				
	285	126	**10**	9.84	2570	2.9				
	374	96	**7.5**	7.48	2340	2.9				
	71	509	**20**	19.84	4090	1.0	**KPM90B**	**112B5/B14**	**112M4**	36
	93	387	**15**	15.09	3730	1.3	**TKB58B**	**112B5/B14**	**112M4**	42
	112	320	**12.5**	12.49	3510	1.4				
	142	252	**10**	9.84	3240	1.4				
	187	192	**7.5**	7.48	2950	1.5				

6.3 KPM../TKB..HS 성능 매개변수 / Performance parameter

n_1=1400r/min

$M_{2\,max}$ [Nm]	n_2 [r/min]	i 공칭 Nominal	i 실제 Actual	P_{1n} [kW]	Fr_2 [N]	Fr_1 [N]		Page
110	4.8	300	291.79	0.06	4100	400	KPM50C..HS	44
130	5.7	250	244.29	0.08	4100	400		
130	7	200	200.44	0.10	4100	400		
130	10	150	146.67	0.14	4000	400		
130	12	125	120.34	0.17	3770	400		
130	14	100	101.04	0.21	3560	400		
130	19	75	74.62	0.28	3220	400		
120	22	60	62.36	0.31	3030	400		
110	27	50	52.36	0.33	2860	400		
110	24	60	58.36	0.29	2960	400	KPM50C..HS	44
130	29	50	48.86	0.41	2790	400		
130	35	40	40.09	0.51	2610	400		
130	48	30	29.33	0.69	2350	400		
130	58	25	24.07	0.84	2200	400		
130	69	20	20.21	1.0	2080	400		
130	94	15	14.92	1.4	1880	400		
130	112	12.5	12.47	1.6	1770	400		
130	134	10	10.47	1.9	1670	400		
100	181	7.5	7.73	2.0	1510	400		
170	4.6	300	302.50	0.09	4800	400	KPM63C..HS	44
200	5.7	250	243.57	0.13	4800	400	TKB38C..HS	44
200	7.1	200	196.43	0.16	4800	400		
200	9.2	150	151.56	0.21	4650	400		
200	11	125	122.22	0.26	4330	400		
200	14	100	101.27	0.31	4070	400		
160	19	75	73.33	0.35	3650	400		
140	22	60	63.33	0.35	3480	400		
120	27	50	52.48	0.36	3270	400		
170	23	60	60.50	0.44	3430	530	KPM63C..HS	44
200	29	50	48.71	0.64	3190	530	TKB38B..HS	44
200	36	40	39.29	0.79	2970	530		
200	46	30	30.31	1.0	2720	530		
200	57	25	24.44	1.3	2530	530		
200	69	20	20.25	1.5	2380	530		
190	95	15	14.67	2.0	2130	530		
165	110	12.5	12.67	2.0	2030	530		
135	133	10	10.50	2.0	1910	530		
100	184	7.5	7.60	2.05	1710	530		
350	4.7	300	297.21	0.19	6500	560	KPM75C..HS	44
350	5.8	250	240.89	0.23	6500	560	TKB48C..HS	44
350	7	200	200.66	0.28	6500	560		
350	9.3	150	151.20	0.37	6500	560		
350	11	125	125.95	0.44	5980	560		
350	14	100	99.22	0.56	5520	560		
350	19	75	75.45	0.74	5040	560		
350	22	60	62.43	0.89	4730	560		
350	28	50	49.18	1.1	4370	560		
350	24	60	59.44	0.92	4660	860	KPM48B..HS	44
350	29	50	48.18	1.1	4340	860	TKB48B..HS	44
350	35	40	40.13	1.4	4080	860		
350	46	30	30.24	1.8	3720	860		
350	56	25	25.19	2.2	3500	860		

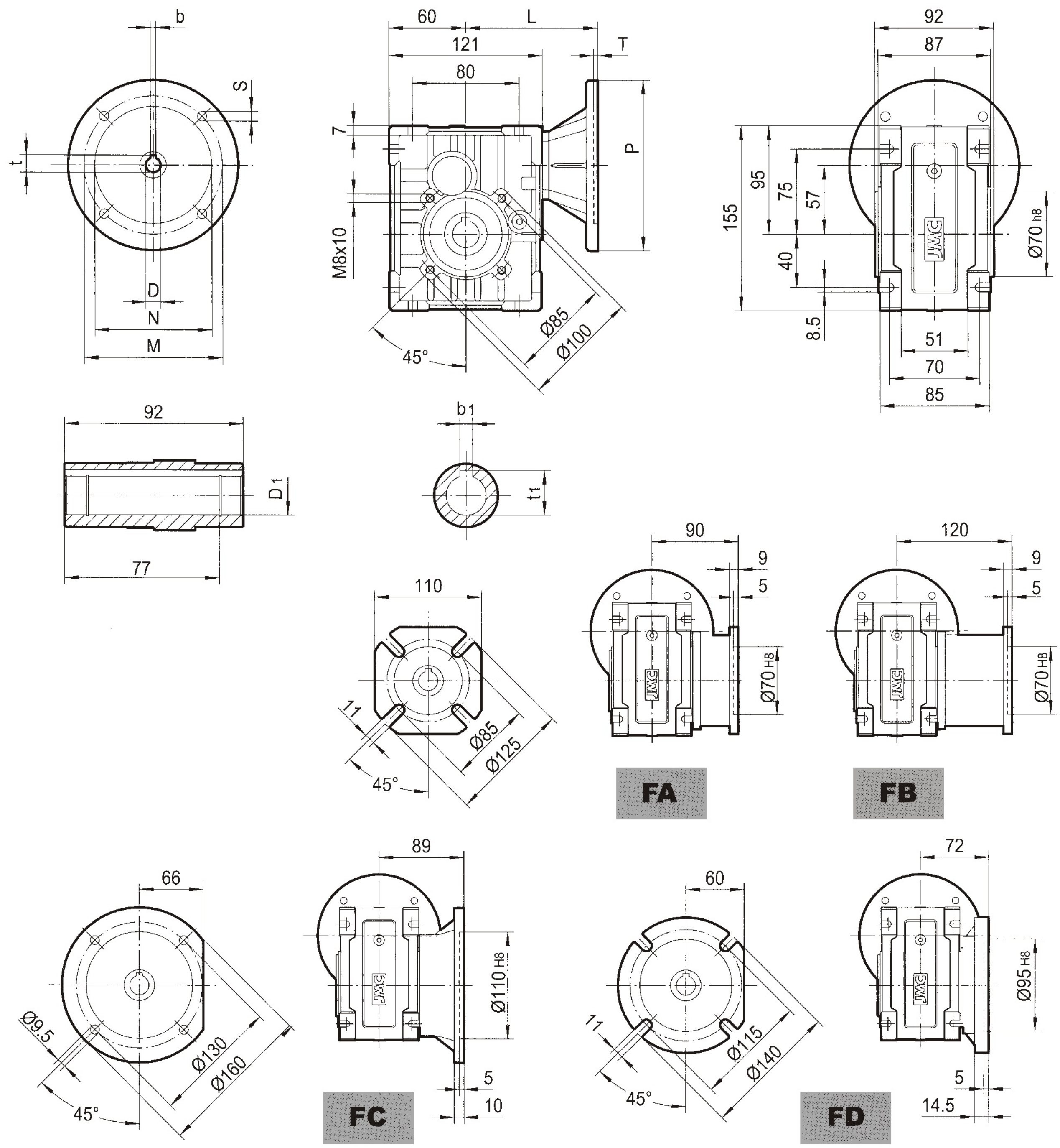
n_1=1400r/min

$M_{2\,max}$ [Nm]	n_2 [r/min]	i 공칭 Nominal	i 실제 Actual	P_{1n} [kW]	Fr_2 [N]	Fr_1 [N]		Page
350	71	20	19.84	2.8	3230	860	**KPM75B..HS**	44
350	93	15	15.09	3.6	2950	860	**TKB48B..HS**	44
350	112	12.5	12.49	4.4	2770	860		
350	142	10	9.84	5.5	2550	860		
280	187	7.5	7.48	5.8	2330	860		
460	4.7	300	295.18	0.25	8300	560	**KPM90C..HS**	44
500	5.8	250	240.89	0.33	8300	560	**TKB58C..HS**	44
500	7	200	200.66	0.40	8300	560		
500	9.3	150	151.20	0.53	8050	560		
500	11	125	125.95	0.63	7580	560		
500	14	100	99.22	0.80	7000	560		
500	19	75	75.45	1.1	6390	560		
450	22	60	62.43	1.1	6000	560		
350	28	50	49.18	1.1	5540	560		
460	24	60	59.04	1.2	5890	1260	**KPM90C..HS**	44
500	29	50	48.18	1.6	5500	1260	**TKB58B..HS**	44
500	35	40	40.13	1.9	5170	1260		
500	46	30	30.24	2.6	4710	1260		
500	56	25	25.19	3.1	4430	1260		
500	71	20	19.84	3.9	4090	1260		
500	93	15	15.09	5.2	3730	1260		
460	112	12.5	12.49	5.7	3510	1260		
360	142	10	9.84	5.7	3240	1260		
280	187	7.5	7.48	5.8	2950	1260		

7. 외형 치수 시트 / OUTLINE DIMENSION SHEET

7.1 KPM..외형 치수 / Outline Dimension

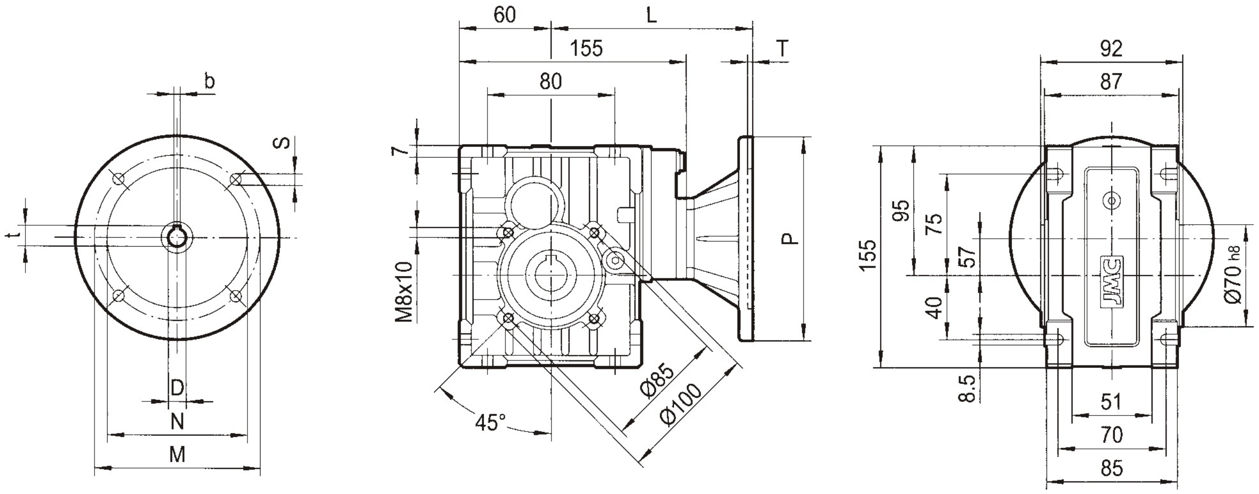
KPM50B..

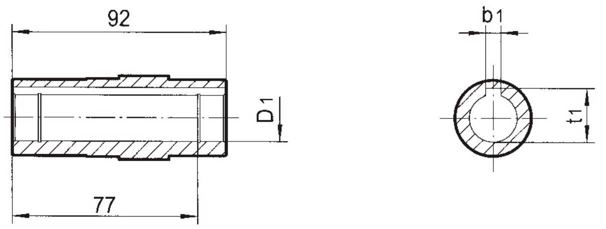


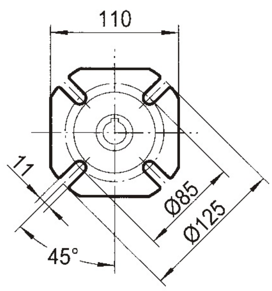
IEC	DE8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	106	20 *	6 *	22.8 *
71B5	14	5	16.3	160	130	110	9	4	113	24 *	8 *	27.3 *
71B14	14	5	16.3	105	85	70	7	4	113	25	8	28.3
80B5	19	6	21.8	200	165	130	11	4	133	*		
80B14	19	6	21.8	120	100	80	7	4	133	* Only on request		
90B14	24	8	27.3	140	115	95	9	4	133			

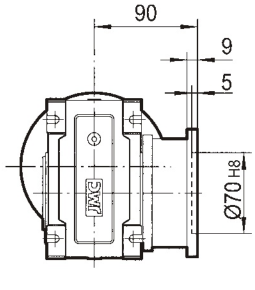
모터 제외시 무게
≈ 4.2kg
Weight without motor
≈ 4.2 kg

KPM50C..









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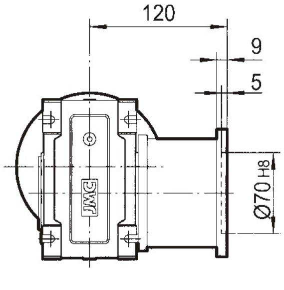
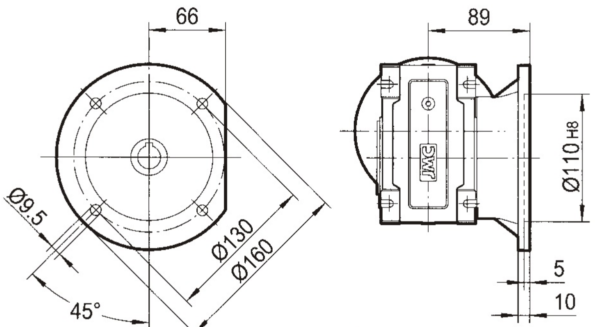


FB



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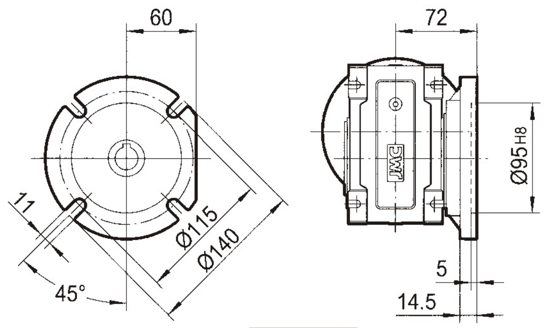
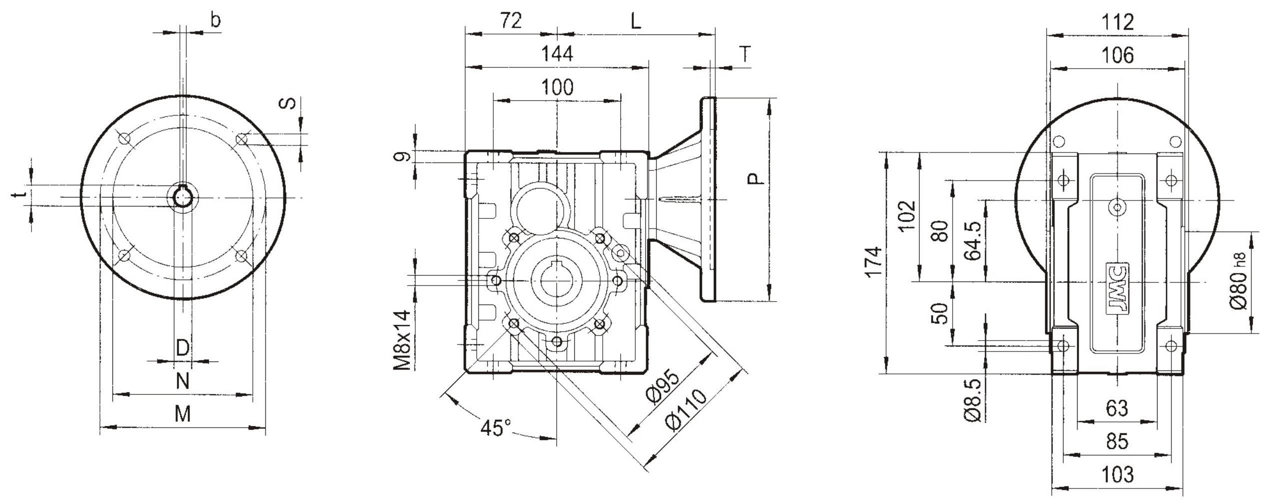


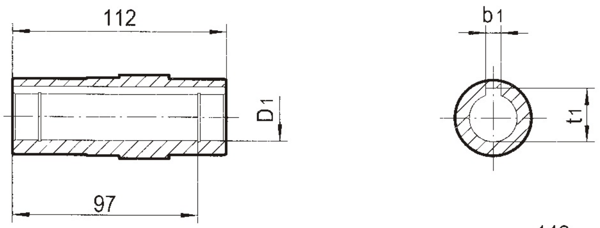
FD

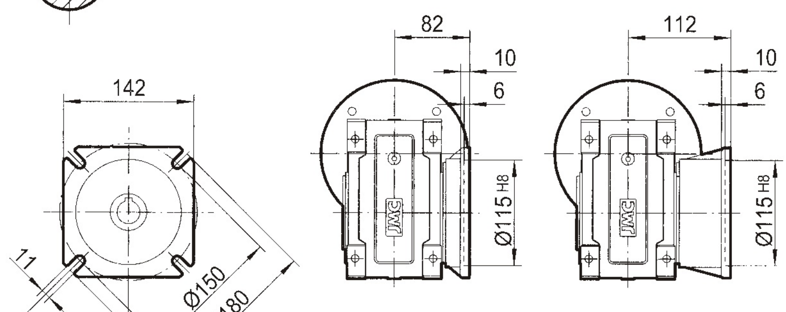
IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
63B5	11	4	12.8	140	115	95	9	4	140	20 *	6*	22.8*
71B5	14	5	16.3	160	130	110	9	4	147	24 *	8*	27.3*
71B14	14	5	16.3	105	85	70	7	4	147	25	8	28.3
80B5	19	6	21.8	200	165	130	11	4	167	*		
80B14	19	6	21.8	120	100	80	7	4	167	* Only on request		
90B14	24	8	27.3	140	115	95	9	4	167			

모터 제외시 무게
≈ 5 kg
Weight without motor
≈ 5 kg

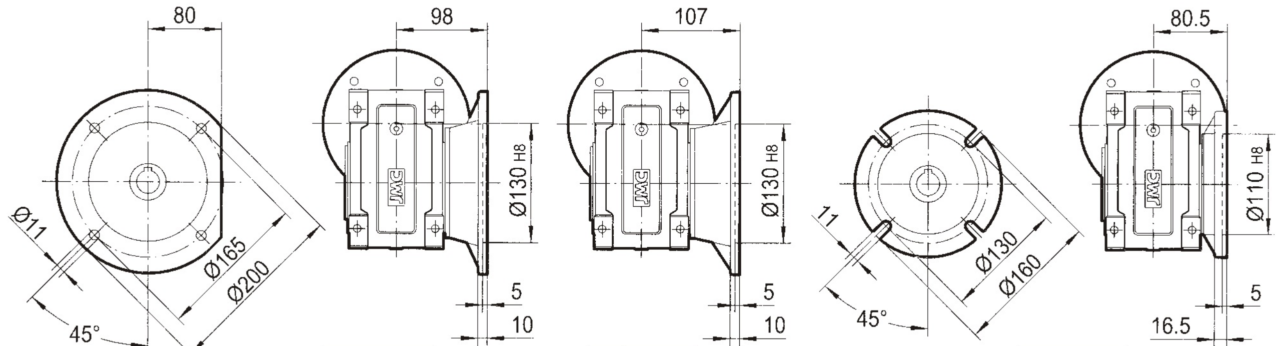
KPM63B..







FA **FB**

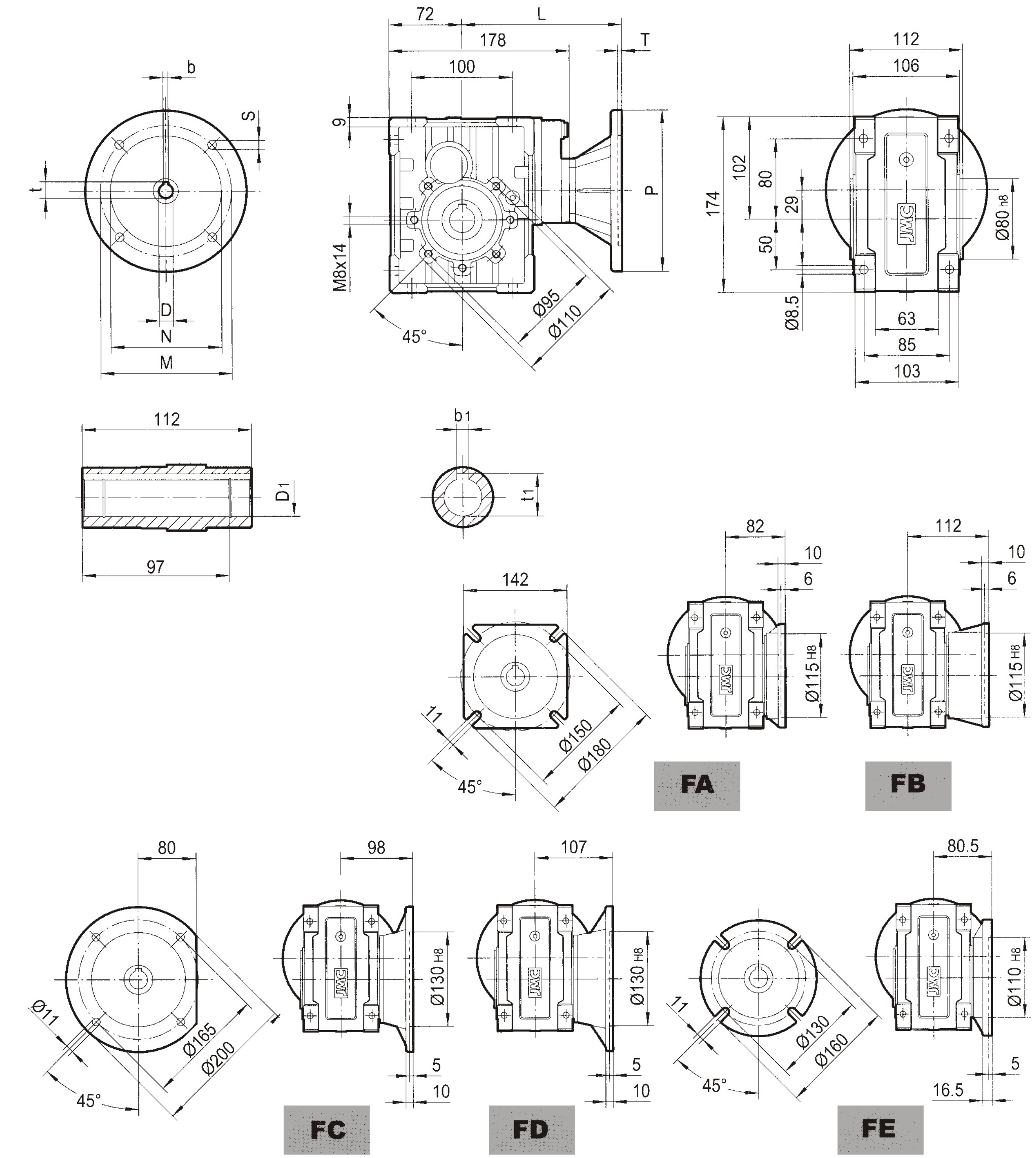


FC **FD** **FE**

IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
71B5	14	5	16.3	160	130	110	9	4	124	25	8	28.3
71B14	14	5	16.3	105	85	70	7	4	124	28*	8*	31.3*
80B5	19	6	21.8	200	165	130	11	4	144	30*	8*	33.3*
80B14	19	6	21.8	120	100	80	7	4	144	*		
90B5	24	8	27.3	200	165	130	11	4	144	* Only on request		
90B14	24	8	27.3	140	115	95	9	4	144			

모터 제외시 무게
≈ 6.0 kg
Weight without motor
≈ 6.0 kg

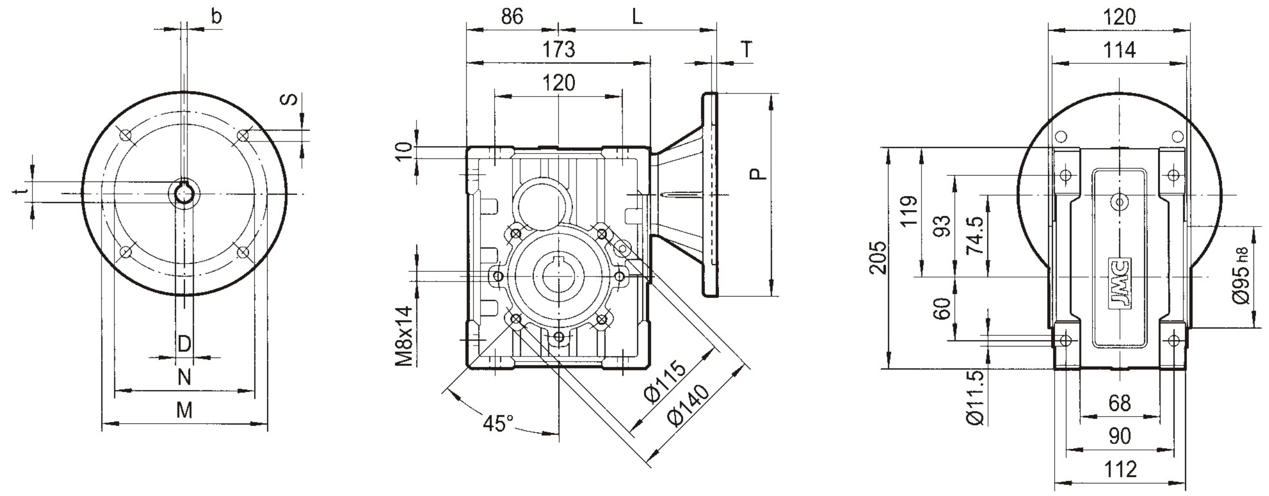
KPM63C..

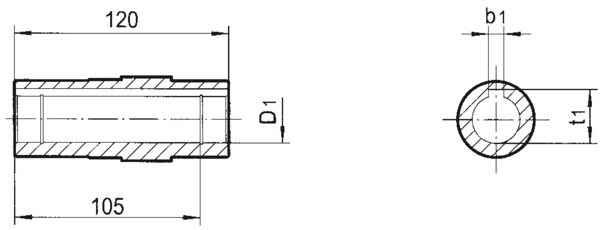


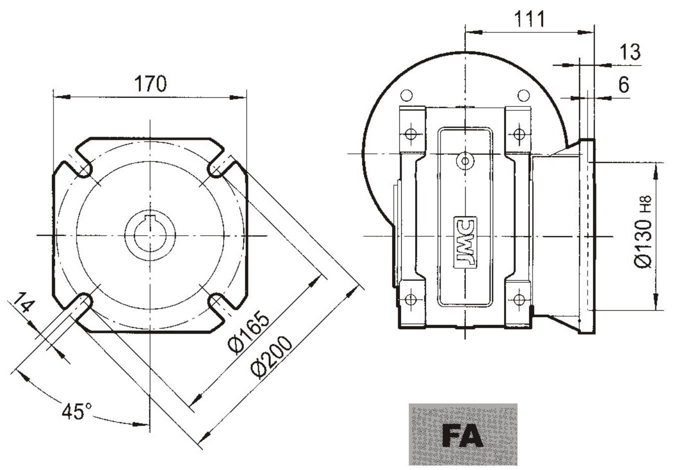
IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
71B5	14	5	16.3	160	130	110	9	4	158	25	8	28.3
71B14	14	5	16.3	105	85	70	7	4	158	28*	8*	31.3*
80B5	19	6	21.8	200	165	130	11	4	178	30*	8*	33.3*
80B14	19	6	21.8	120	100	80	7	4	178	*		
90B5	24	8	27.3	200	165	130	11	4	178	* Only on request		
90B14	24	8	27.3	140	115	95	9	4	178			

모터 제외시 무게
≈ 6.8 kg
Weight without motor
≈ 6.8 kg

KPM75B..







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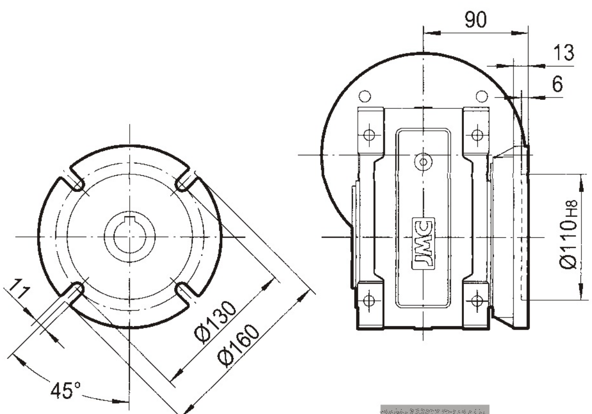


FB

IEC	D E8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	139	28	8	31.3
71B5	14	5	16.3	160	130	110	9	4	146	30*	8*	33.3*
80B5	19	6	21.8	200	165	130	11	4	166	35*	10*	38.3*
80B14	19	6	21.8	120	100	80	7	4	166	* Only on request		
90B5	24	8	27.3	200	165	130	11	4	166			
90B14	24	8	27.3	140	115	95	9	4	166			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	176			
100/112B14	28	8	31.3	160	130	110	9	4.5	176			

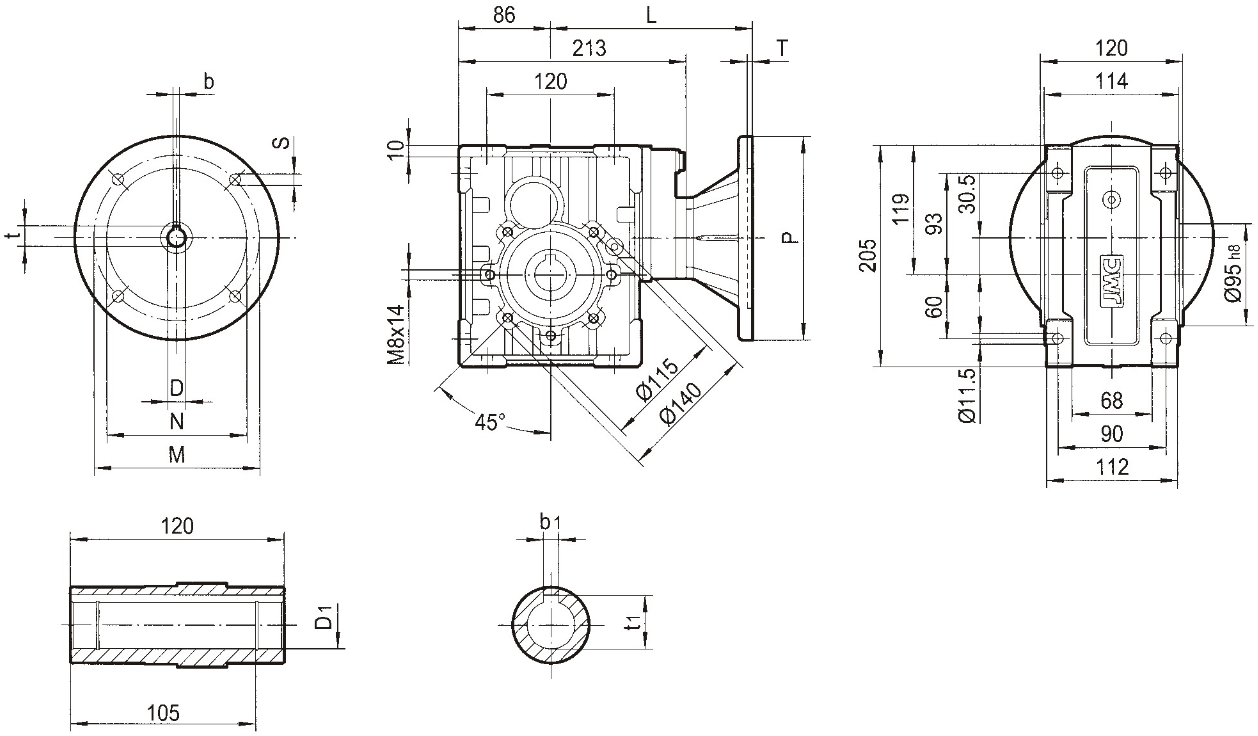
모터 제외시 무게

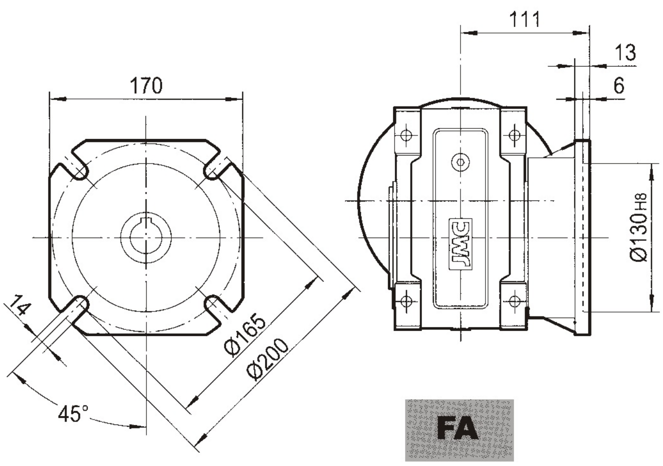
≈ 9.2 kg

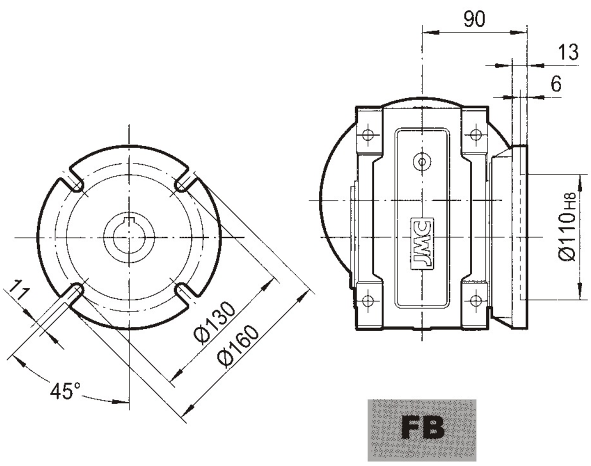
Weight without motor

≈ 9.2 kg

KPM75C..







IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
63B5	11	4	12.8	140	115	95	9	4	179	28	8	31.3
71B5	14	5	16.3	160	130	110	9	4	186	30*	8*	33.3*
80B5	19	6	21.8	200	165	130	11	4	206	35*	10*	38.3*
80B14	19	6	21.8	120	100	80	7	4	206	*		
90B5	24	8	27.3	200	165	130	11	4	206	* Only on request		
90B14	24	8	27.3	140	115	95	9	4	206			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	216			
100/112B14	28	8	31.3	160	130	110	9	4.5	216			

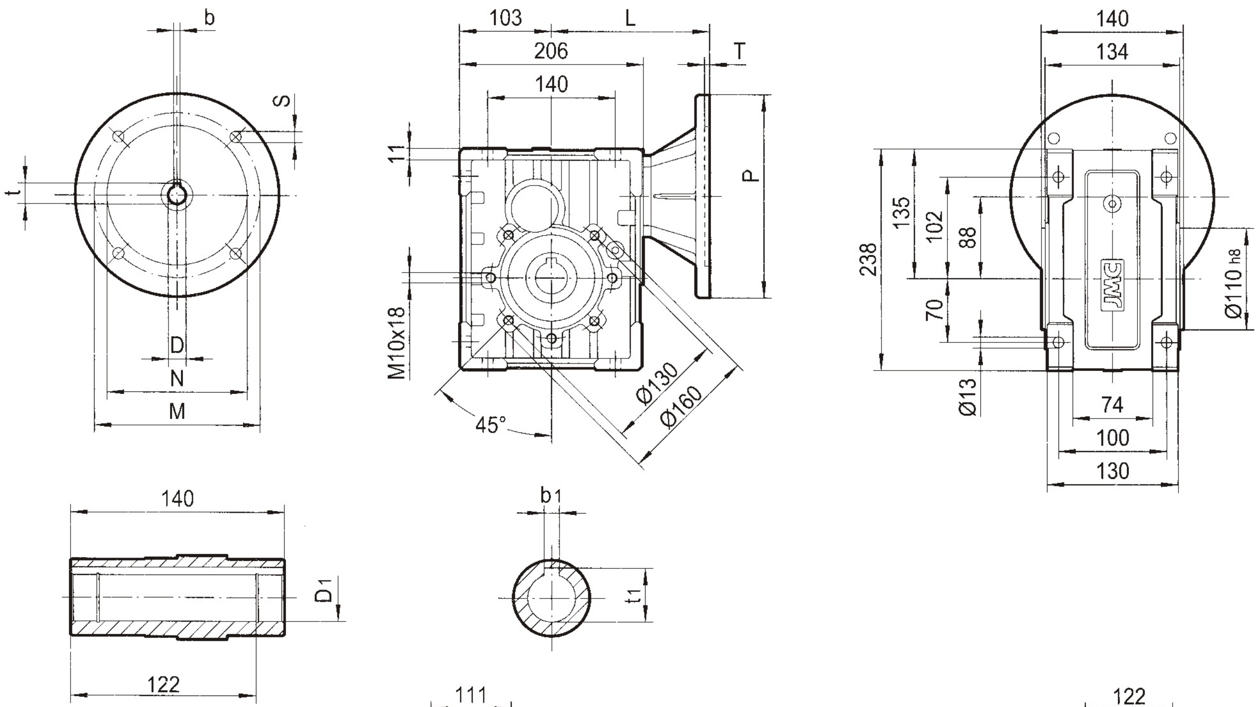
모터 제외시 무게

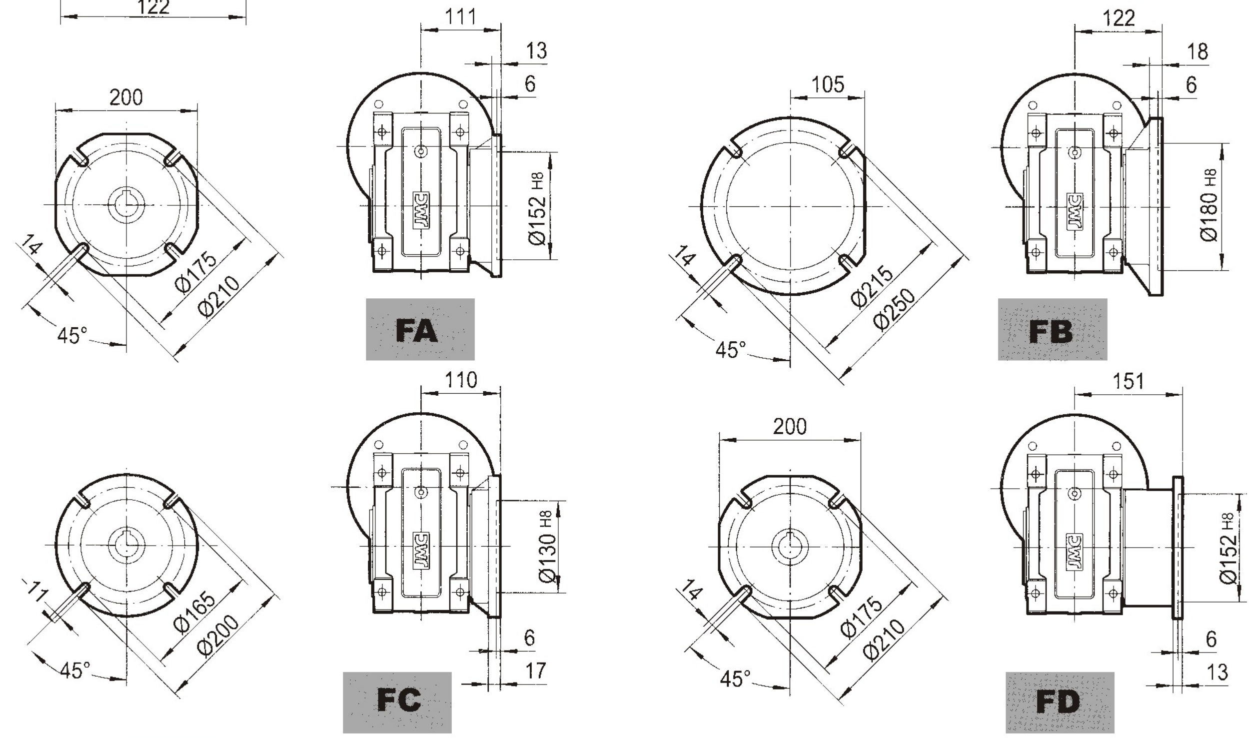
≈ 10.8 kg

Weight without motor

≈ 10.8 kg

KPM90B..





IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
63B5	11	4	12.8	140	115	95	9	4	155	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	162	38*	10*	41.3*
80B5	19	6	21.8	200	165	130	11	4	182	40*	10*	43.3*
80B14	19	6	21.8	120	100	80	7	4	182	* Only on request		
90B5	24	8	27.3	200	165	130	11	4	182			
90B14	24	8	27.3	140	115	95	9	4	182			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	192			
100/112B14	28	8	31.3	160	130	110	9	4.5	192			

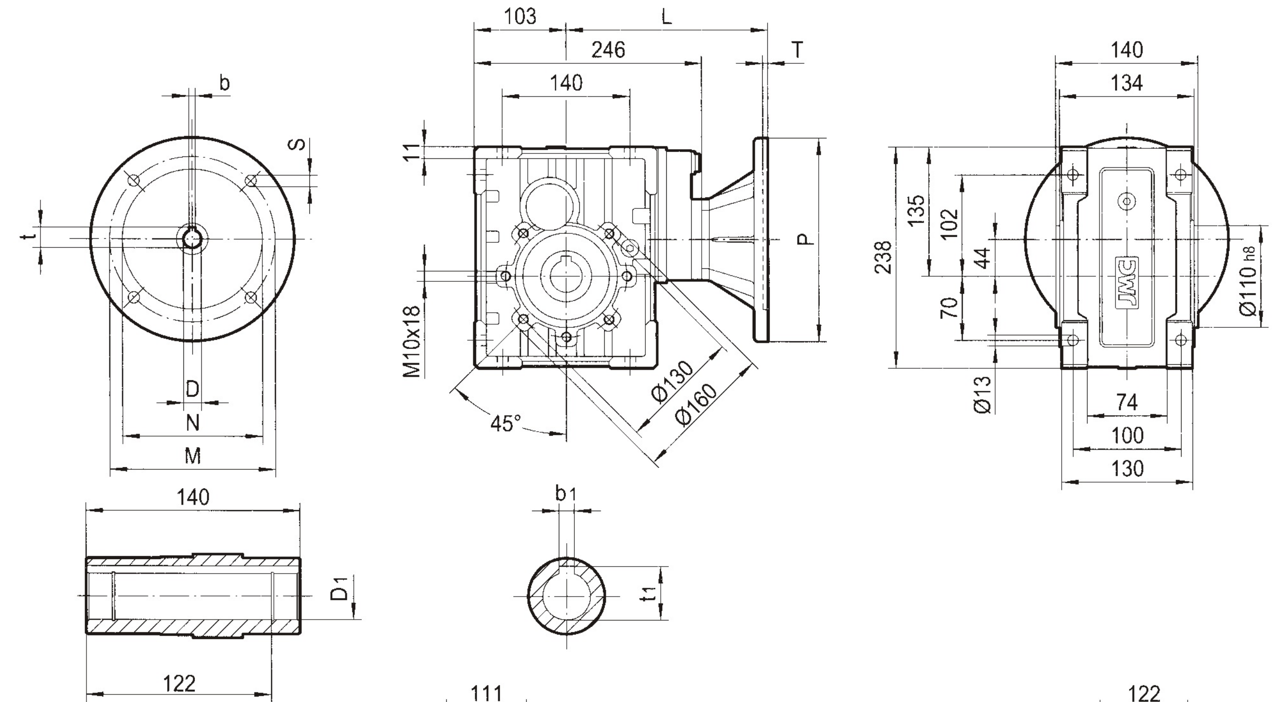
모터 제외시 무게

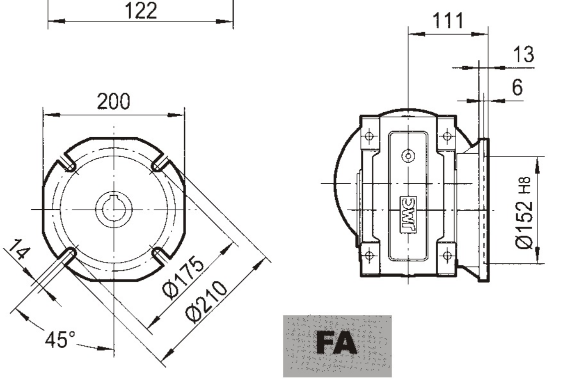
≈ 13.3 kg

Weight without motor

≈ 13.3 kg

KPM90C..





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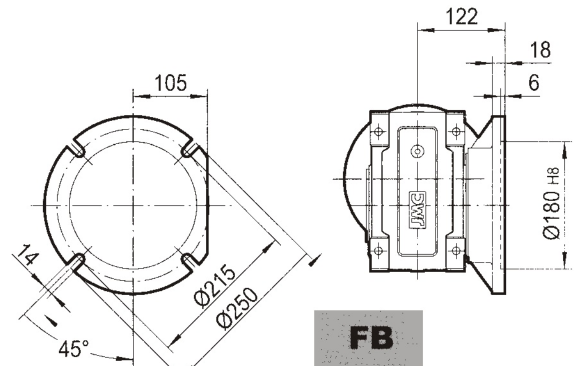

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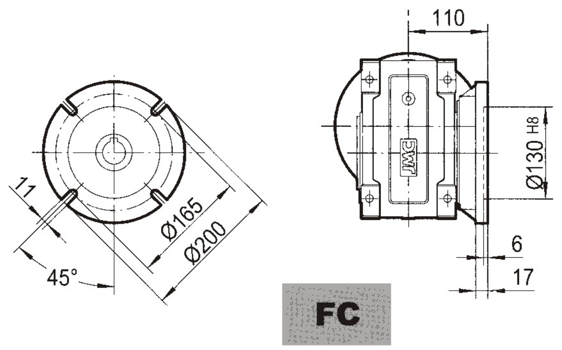

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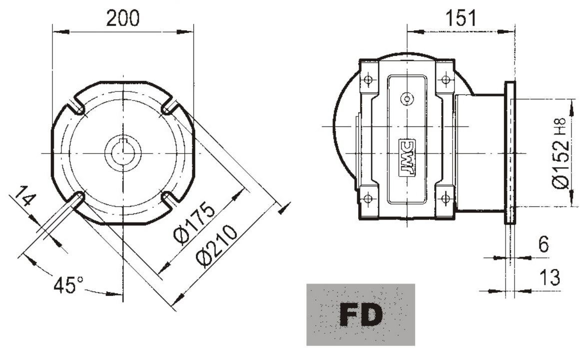


FD

IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
63B5	11	4	12.8	140	115	95	9	4	195	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	202	38*	10*	41.3*
80B5	19	6	21.8	200	165	130	11	4	222	40*	10*	43.3*
80B14	19	6	21.8	120	100	80	7	4	222			
90B5	24	8	27.3	200	165	130	11	4	222			
90B14	24	8	27.3	140	115	95	9	4	222			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	232			
100/112B14	28	8	31.3	160	130	110	9	4.5	232			

* Only on request

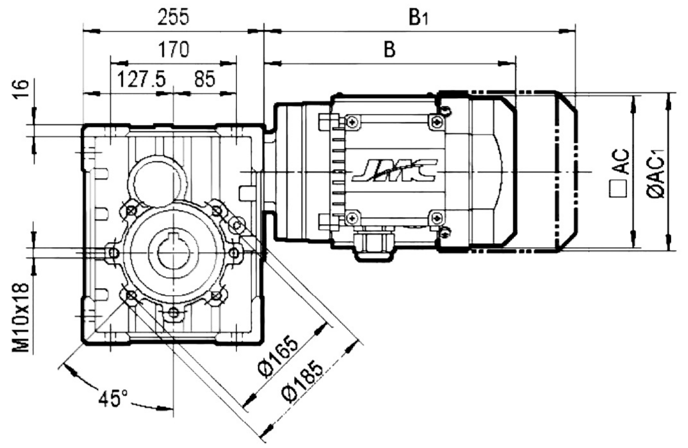
모터 제외시 무게

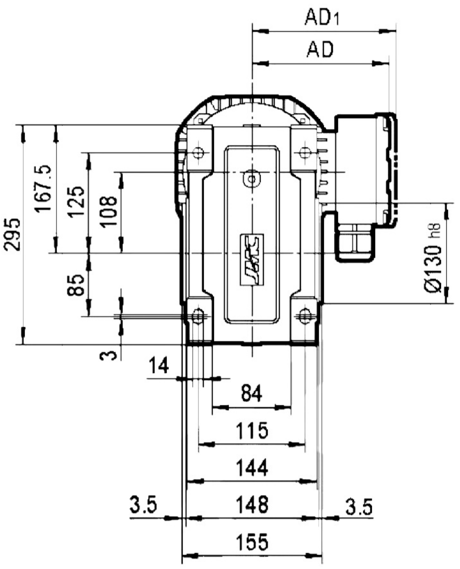
≈ 14.8 kg

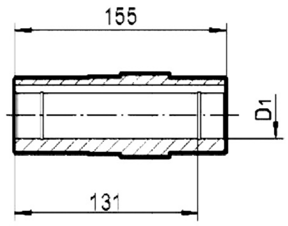
Weight without motor

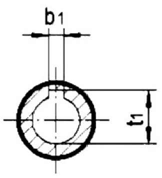
≈ 14.8 kg

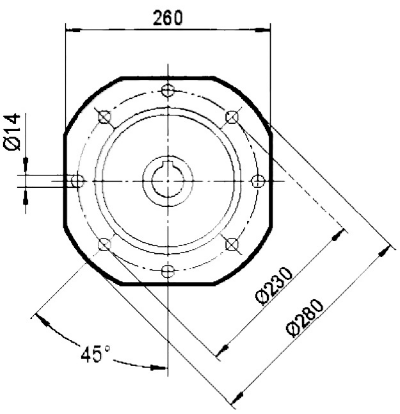
KPM110B..MV..

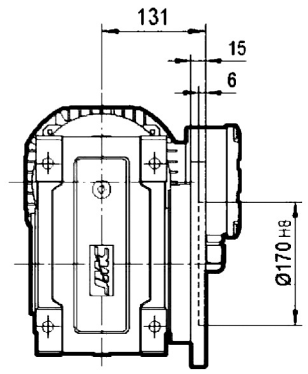




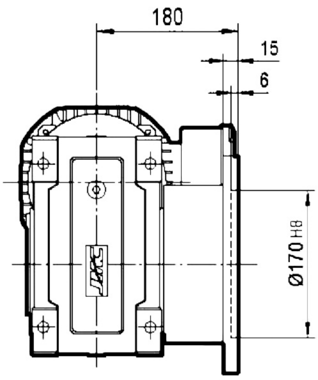








FA



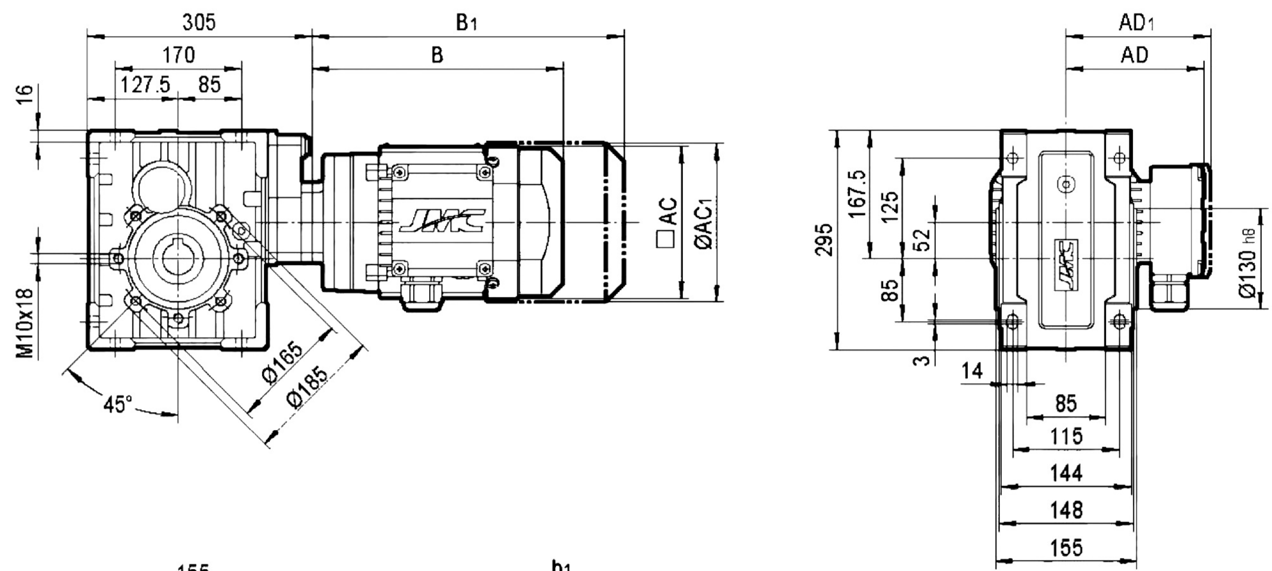
FB

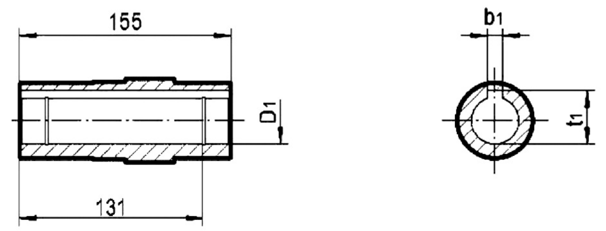
MV..	B	B1	AC	AC1	AD	AD1
MV80..	267	360	134	148	122	127
MV90..	291	376	182	203	154	161
MV100M..	331	416	182	203	154	161
MV100L..	361	446	182	203	154	161
MV112..	379	459	206	221	179	182
MV132..	424	504	206	221	179	182

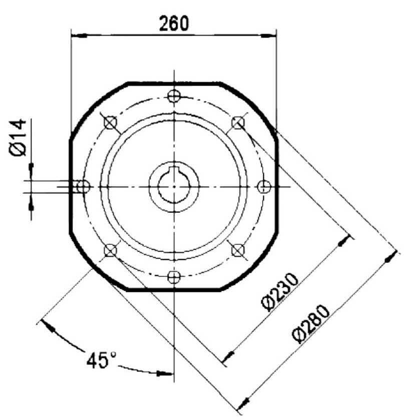
D1 H8	b1	t1
40 *	12	43.3
42	12	45.3

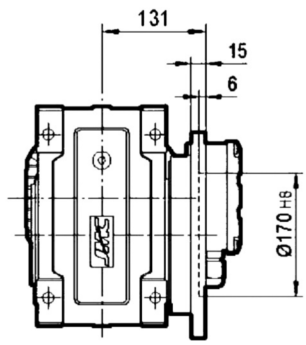
* Only on request

KPM110C..MV..

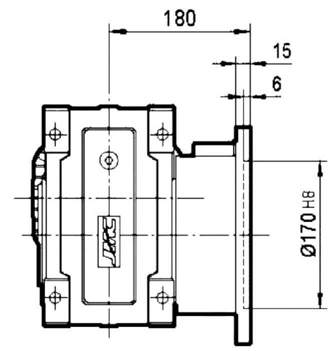








FA



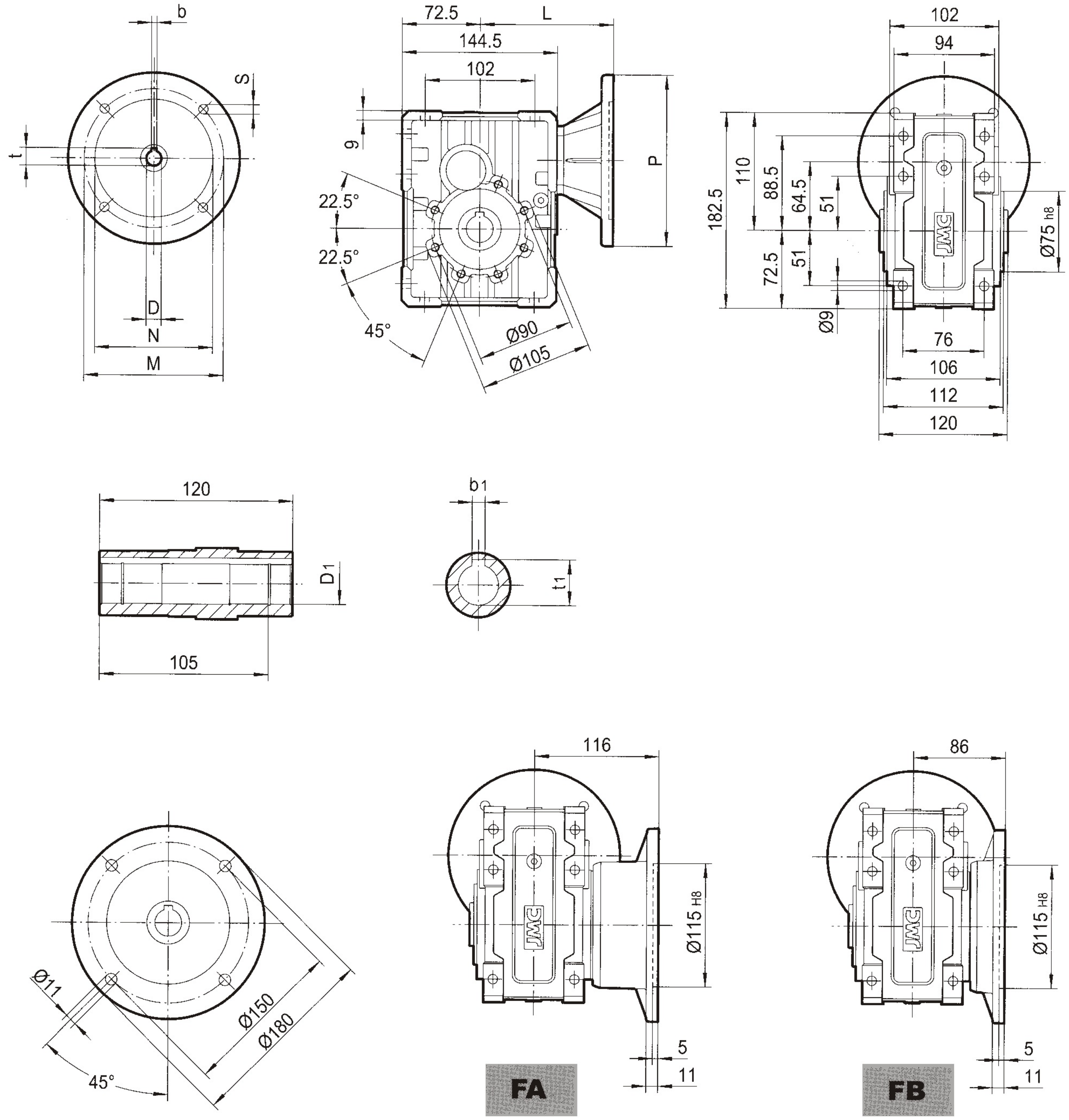
FB

MV..	B	B1	AC	AC1	AD	AD1	D1 H8	b1	t1
MV71..	232	325	134	148	122	127	40 *	12	43.3
MV80..	267	360	134	148	122	127	42	12	45.3
MV90..	291	376	182	203	154	161			
MV100M..	331	416	182	203	154	161			
MV100L..	361	446	182	203	154	161			

*
* Only on request

7.2 TKB..외형 치수 / Outline Dimension

TKB38B..



IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
71B5	14	5	16.3	160	130	110	9	4	124	25	8	28.3
71B14	14	5	16.3	105	85	70	7	4	124	28*	8*	31.3*
80B5	19	6	21.8	200	165	130	11	4	144	30*	8*	33.3*
80B14	19	6	21.8	120	100	80	7	4	144	*		
90B5	24	8	27.3	200	165	130	11	4	144	* Only on request		
90B14	24	8	27.3	140	115	95	9	4	144			

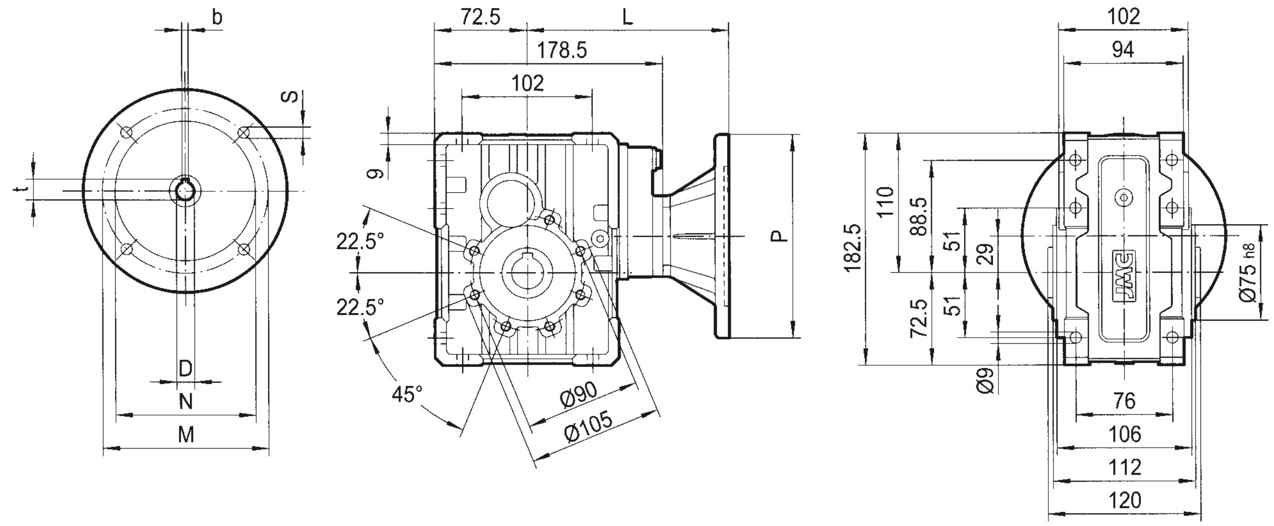
모터 제외시 무게

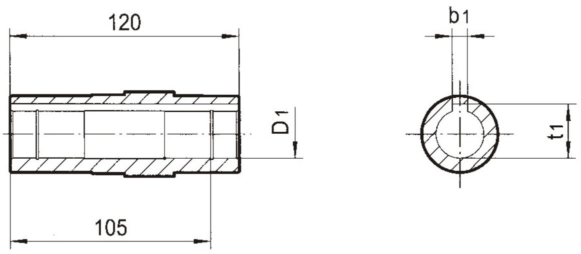
≈ 6.0 kg

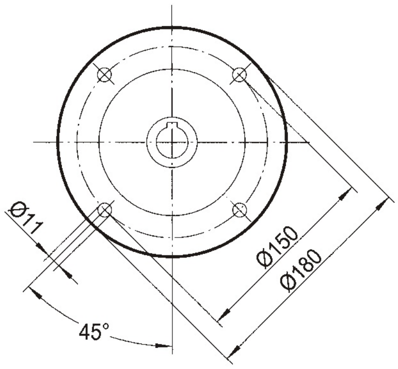
Weight without motor

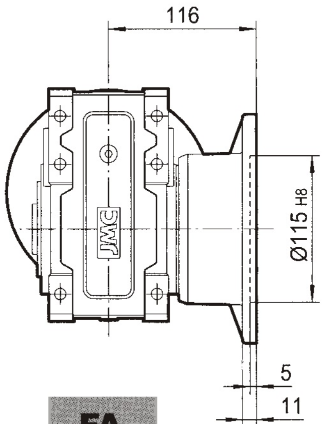
≈ 6.0 kg

TKB38C..

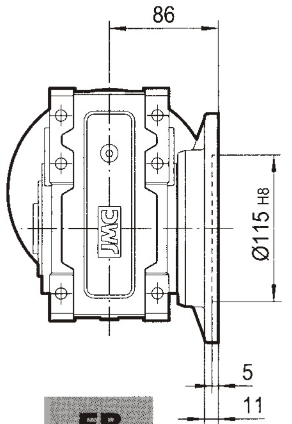








FA



FB

IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
71B5	14	5	16.3	160	130	110	9	4	158	25	8	28.3
71B14	14	5	16.3	105	85	70	7	4	158	28*	8*	31.3*
80B5	19	6	21.8	200	165	130	11	4	178	30*	8*	33.3*
80B14	19	6	21.8	120	100	80	7	4	178	*		
90B5	24	8	27.3	200	165	130	11	4	178	* Only on request		
90B14	24	8	27.3	140	115	95	9	4	178			

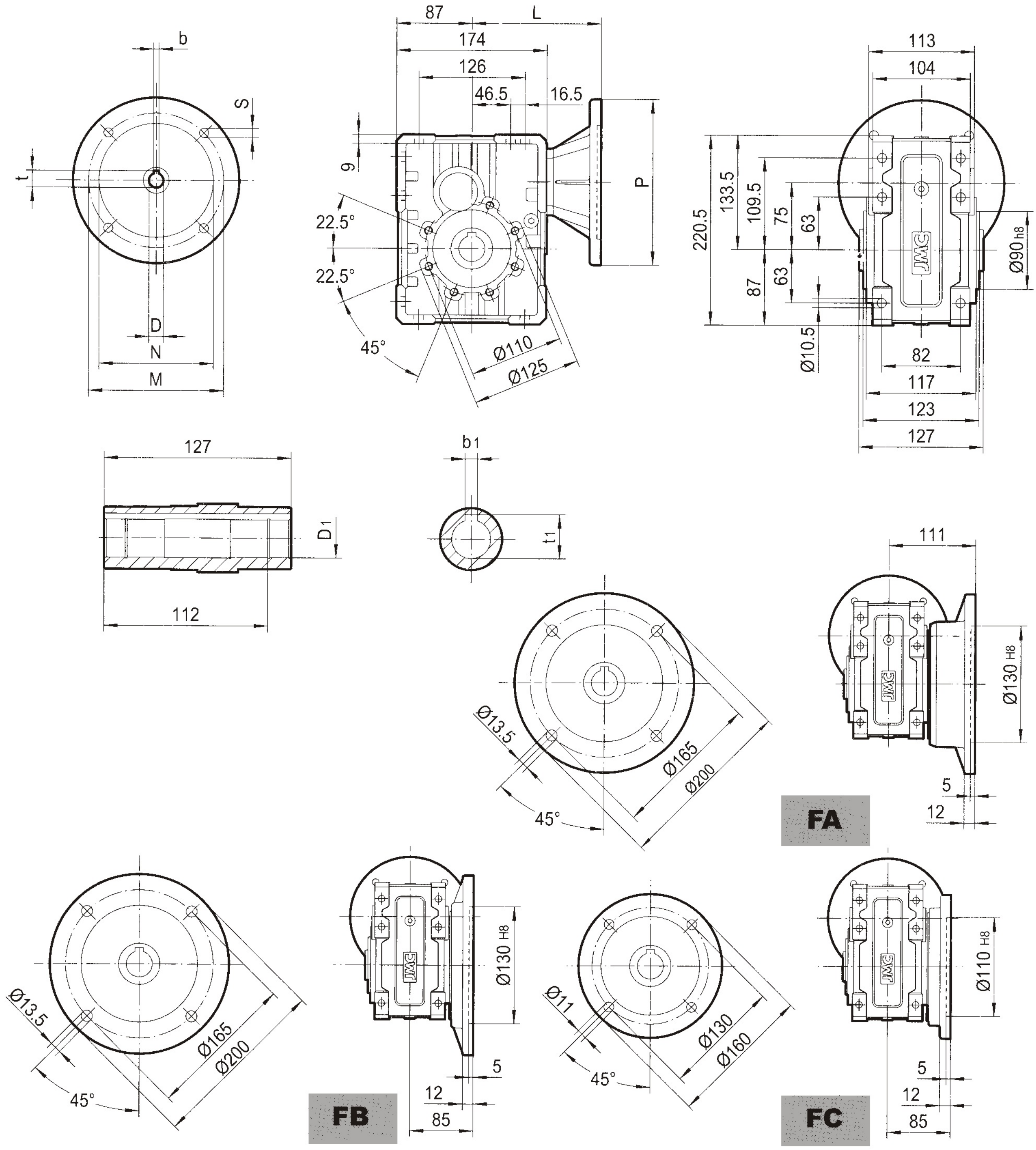
모터 제외시 무게

≈ 6.8 kg

Weight without motor

≈ 6.8 kg

TKB48B..



IEC	D E8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	139	28	8	31.3
71B5	14	5	16.3	160	130	110	9	4	146	30*	8*	33.3*
80B5	19	6	21.8	200	165	130	11	4	166	35*	10*	38.3*
80B14	19	6	21.8	120	100	80	7	4	166			
90B5	24	8	27.3	200	165	130	11	4	166			
90B14	24	8	27.3	140	115	95	9	4	166			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	176			
100/112B14	28	8	31.3	160	130	110	9	4.5	176			

* Only on request

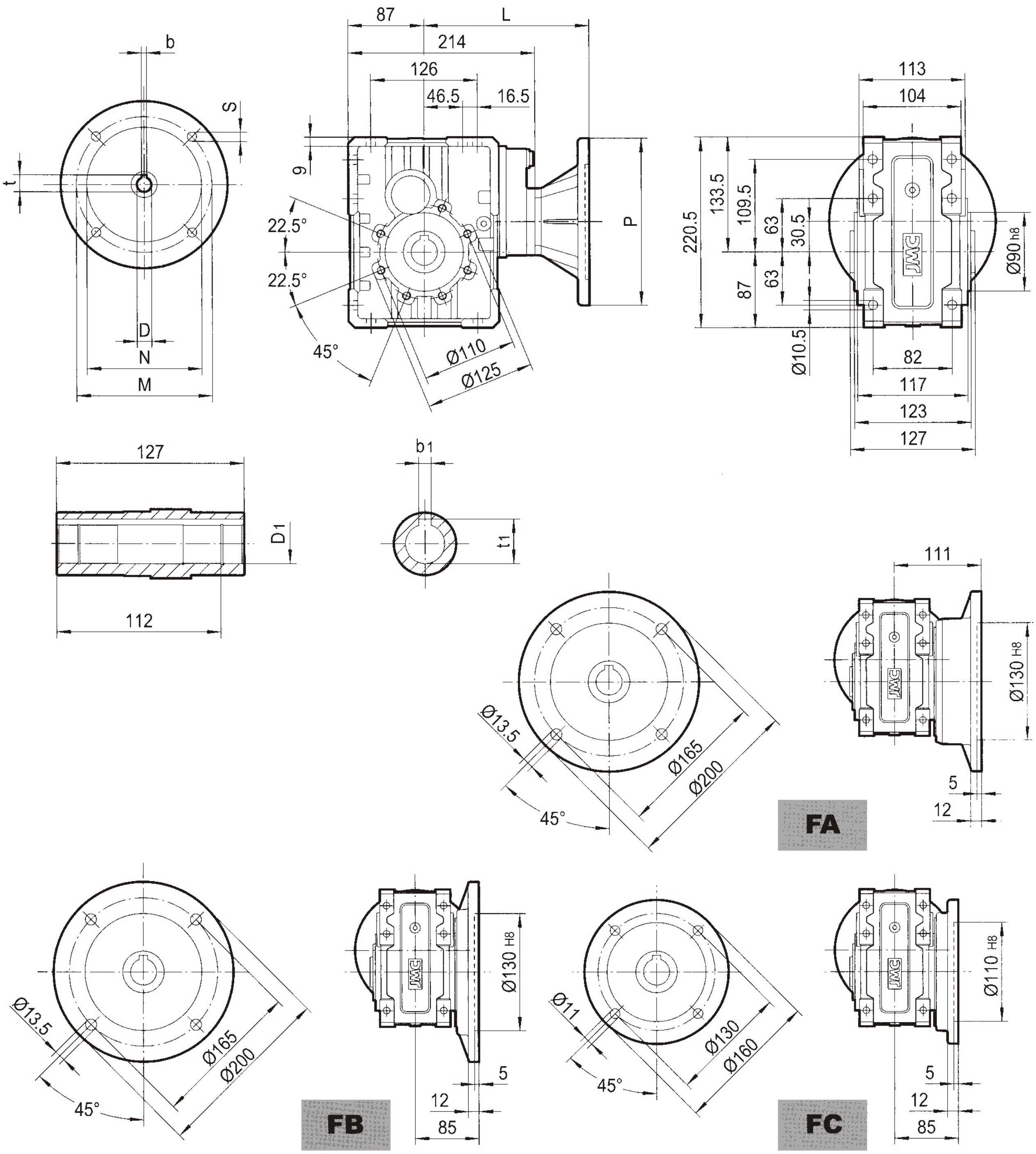
모터 제외시 무게

≈ 9.5 kg

Weight without motor

≈ 9.5 kg

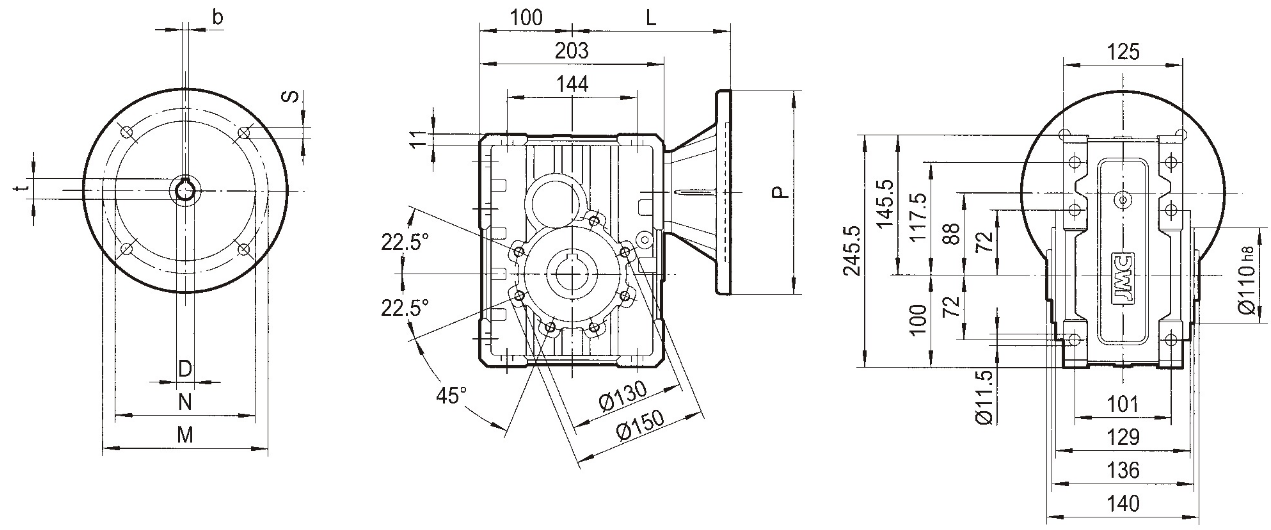
TKB48C..

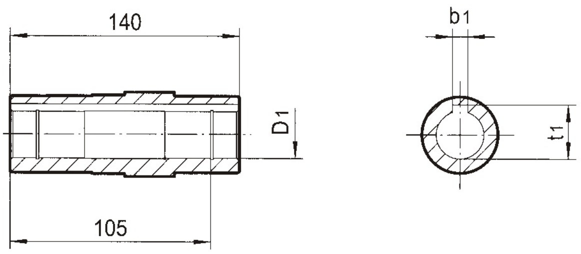


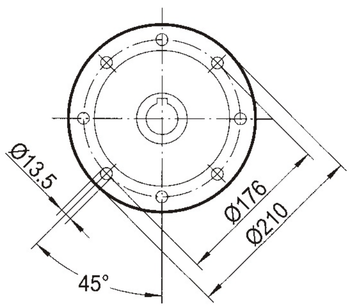
IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
63B5	11	4	12.8	140	115	95	9	4	179	28	8	31.3
71B5	14	5	16.3	160	130	110	9	4	186	30*	8*	33.3*
80B5	19	6	21.8	200	165	130	11	4	206	35*	10*	38.3*
80B14	19	6	21.8	120	100	80	7	4	206	* Only on request		
90B5	24	8	27.3	200	165	130	11	4	206			
90B14	24	8	27.3	140	115	95	9	4	206			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	216			
100/112B14	28	8	31.3	160	130	110	9	4.5	216			

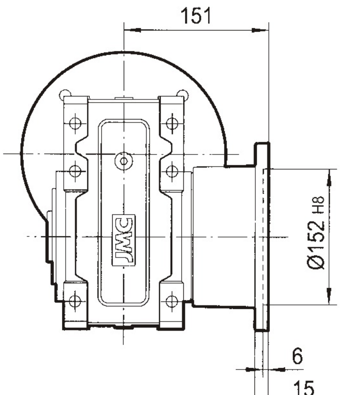
모터 제외시 무게
≈ 10.8 kg
Weight without motor
≈ 10.8 kg

TKB58B..

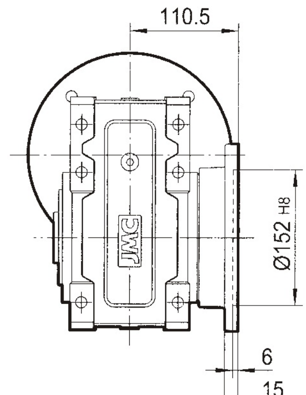








FA



FB

IEC	D_{E8}	b	t	P	M	N	S	T	L	$D1_{H8}$	b1	t1
63B5	11	4	12.8	140	115	95	9	4	155	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	162	38*	10*	41.3*
80B5	19	6	21.8	200	165	130	11	4	182	40*	10*	43.3*
80B14	19	6	21.8	120	100	80	7	4	182	* * Only on request		
90B5	24	8	27.3	200	165	130	11	4	182			
90B14	24	8	27.3	140	115	95	9	4	182			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	192			
100/112B14	28	8	31.3	160	130	110	9	4.5	192			

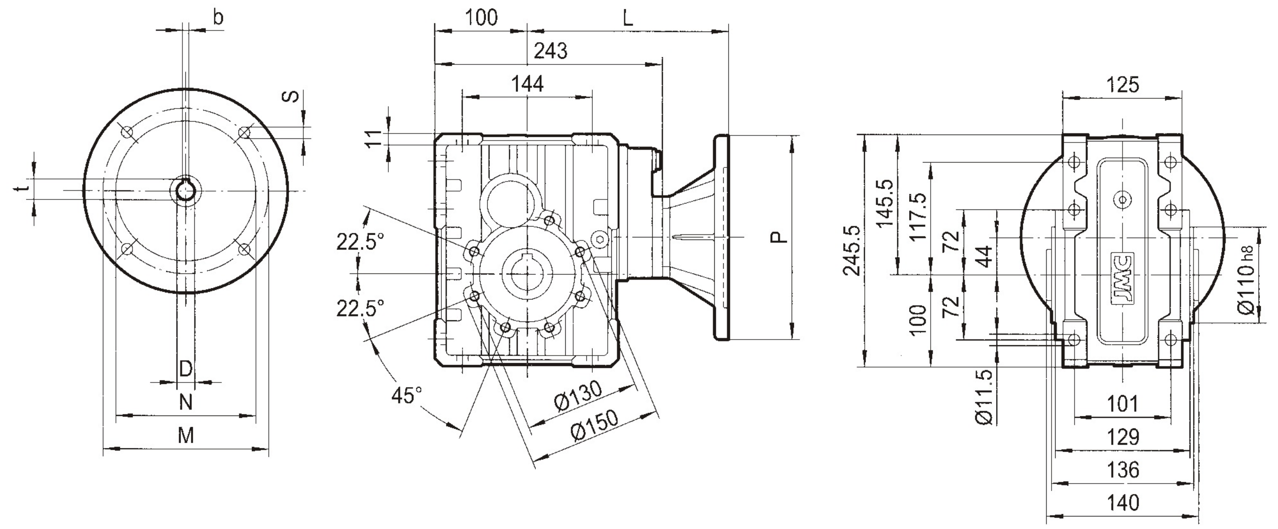
모터 제외시 무게

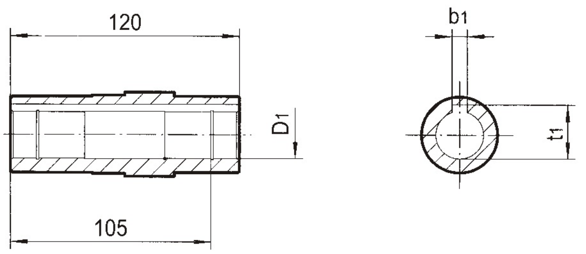
≈ 13.5 kg

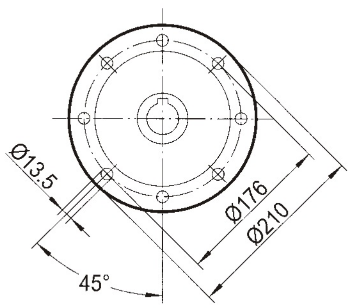
Weight without motor

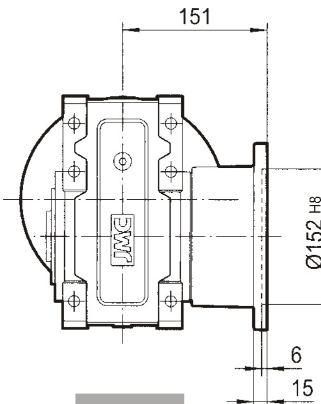
≈ 13.5 kg

TKB58C..

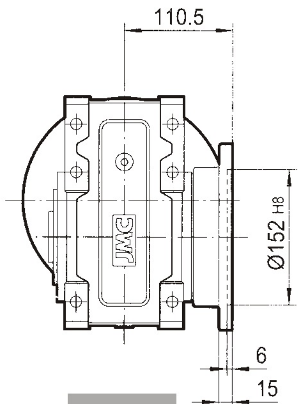








FA



FB

IEC	D E8	b	t	P	M	N	S	T	L	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	195	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	202	38*	10*	41.3*
80B5	19	6	21.8	200	165	130	11	4	222	40*	10*	43.3*
80B14	19	6	21.8	120	100	80	7	4	222			
90B5	24	8	27.3	200	165	130	11	4	222			
90B14	24	8	27.3	140	115	95	9	4	222			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	232			
100/112B14	28	8	31.3	160	130	110	9	4.5	232			

*
* Only on request

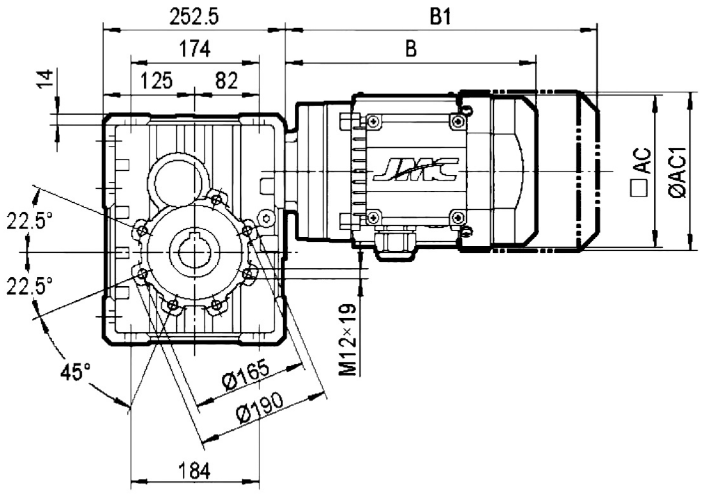
모터 제외시 무게

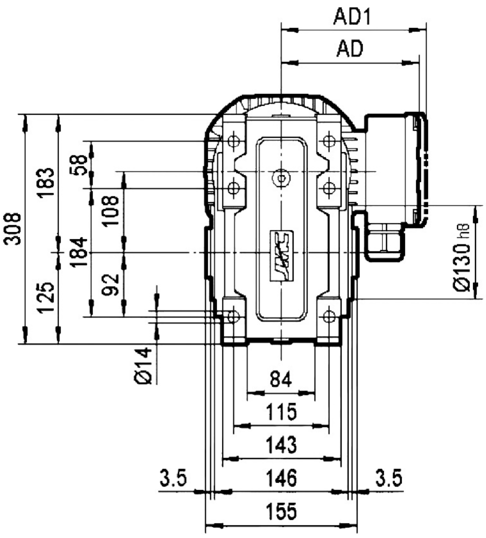
≈ 14.8 kg

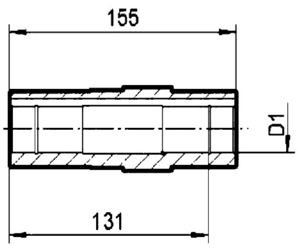
Weight without motor

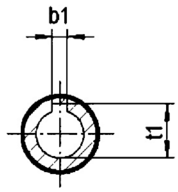
≈ 14.8 kg

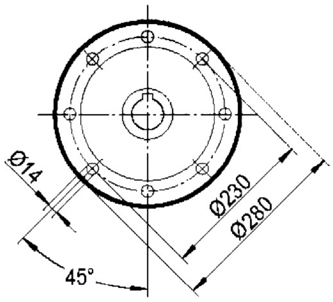
TKB68B..MV..

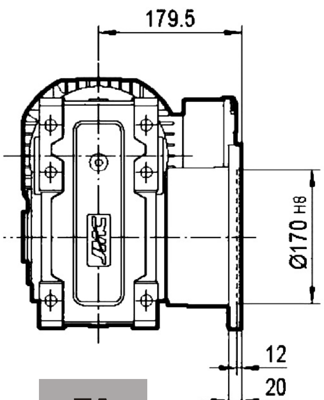




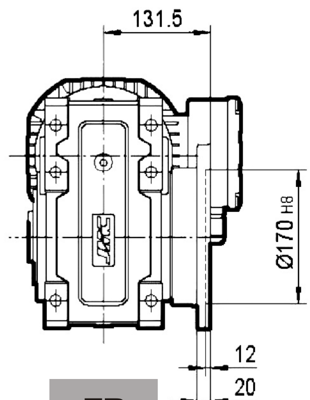








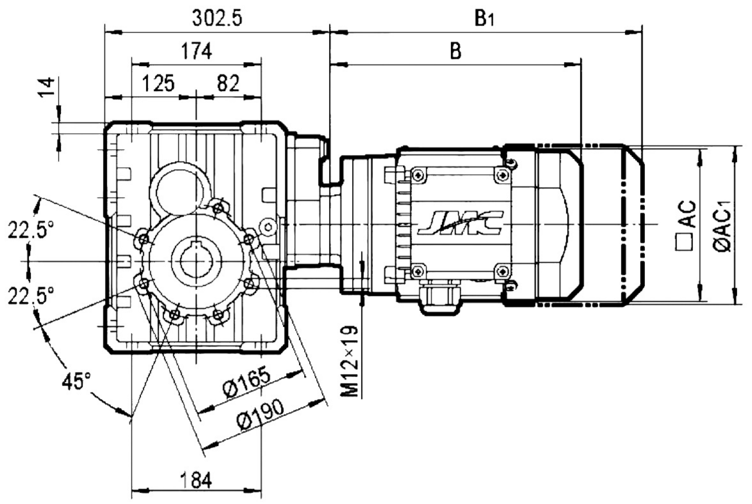
FA

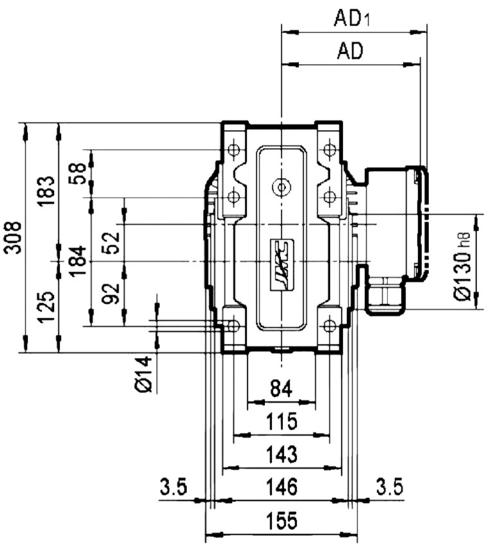


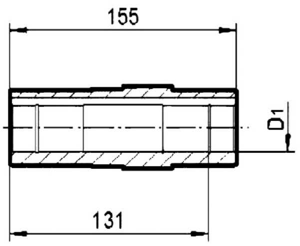
FB

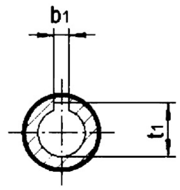
MV..	B	B1	AC	AC1	AD	AD1	D1 H8	b1	t1
MV80..	267	360	134	148	122	127	40 *	12	43.3
MV90..	291	376	182	203	154	161	42	12	45.3
MV100M..	331	416	182	203	154	161	* Only on request		
MV100L..	361	446	182	203	154	161			
MV112..	379	459	206	221	179	182			
MV132..	424	504	206	221	179	182			

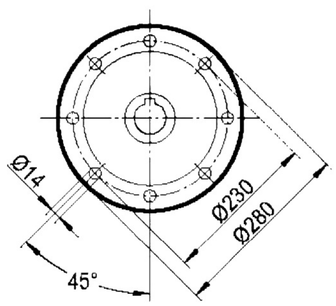
TKB68C..MV..

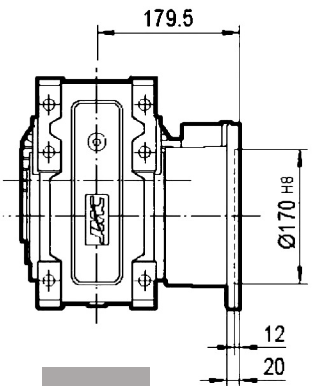




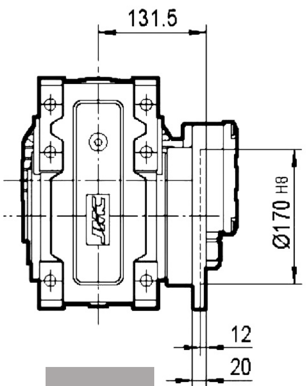








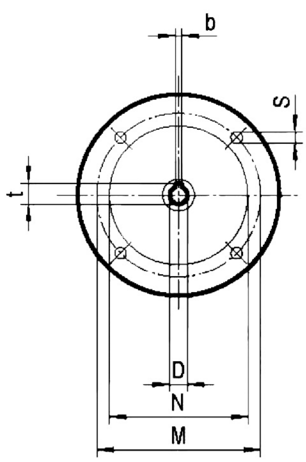
FA

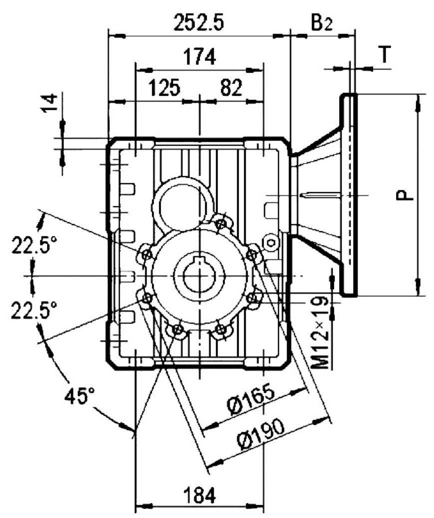


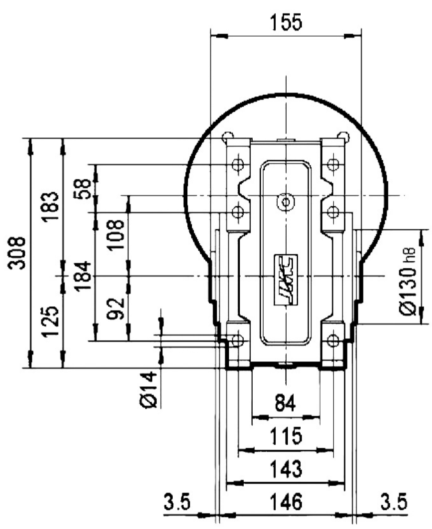
FB

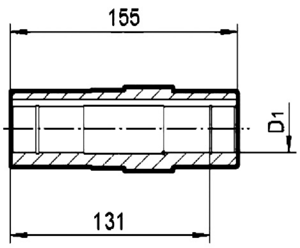
MV..	B	B1	AC	AC1	AD	AD1	D1 H8	b1	t1
MV71..	232	325	134	148	122	127	40 *	12	43.3
MV80..	267	360	134	148	122	127	42	12	45.3
MV90..	291	376	182	203	154	161	*		
MV100M..	331	416	182	203	154	161	* Only on request		
MV100L..	361	446	182	203	154	161			

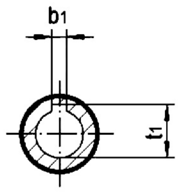
TKB68B..(IEC)

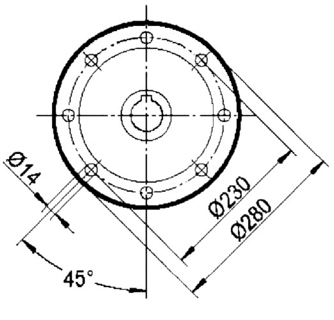


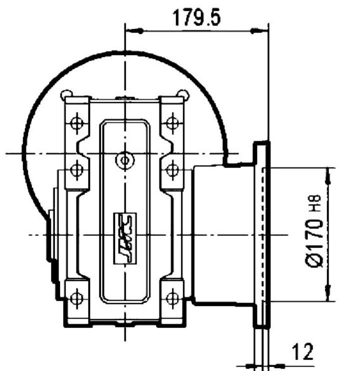




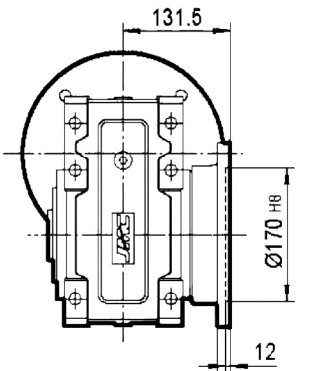








FA

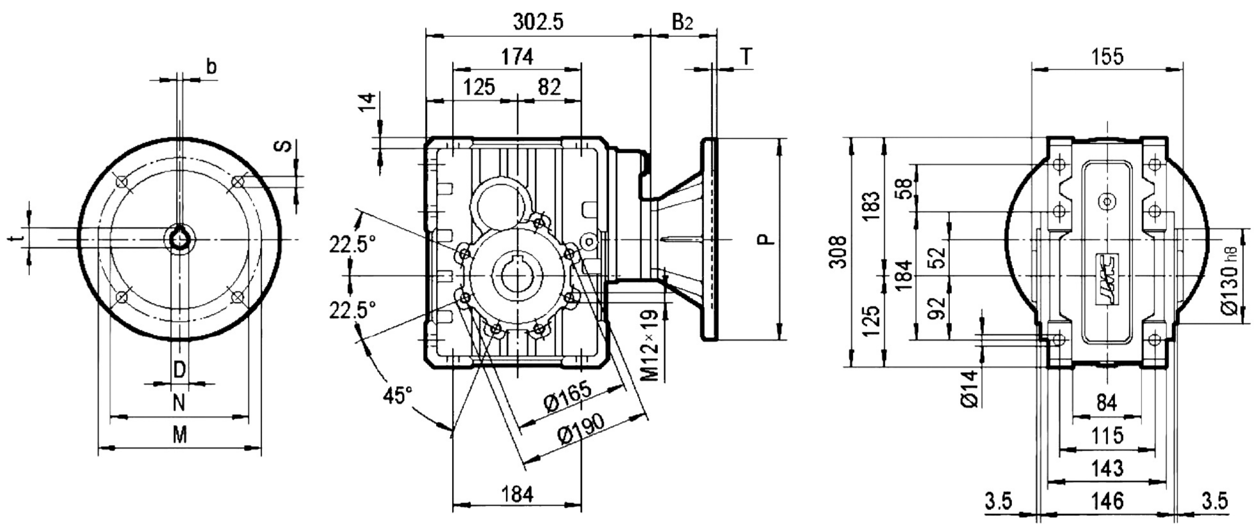


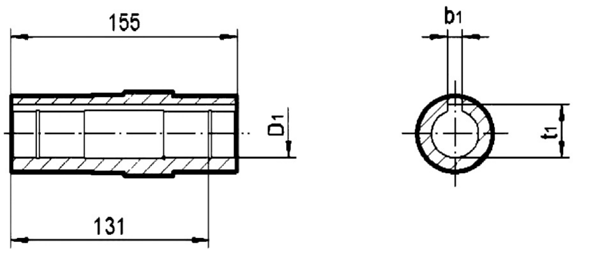
FB

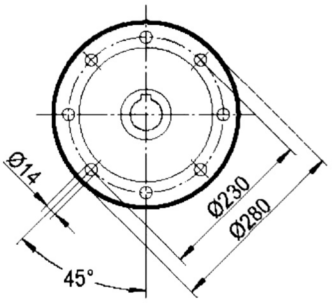
IEC	D E8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
80B5	19	6	21.8	200	165	130	11	4	84	40*	12	43.3
90B5	24	8	27.3	200	165	130	11	4	84	42	12	45.3
100/112B5	28	8	31.3	250	215	180	13.5	4.5	94	*		
100/112B14	28	8	31.3	160	130	110	9	4.5	94	* Only on request		
132B5	38	10	41.3	300	265	230	14	4.5	114			

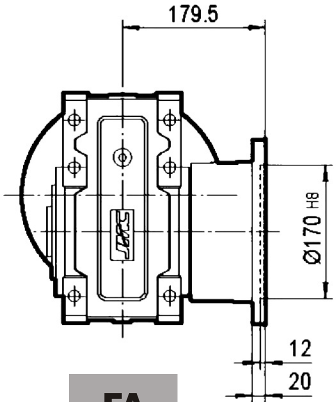
모터 제외시 무게
≈ 21.5 kg
Weight without motor
≈ 21.5 kg

KPM68C..(IEC)

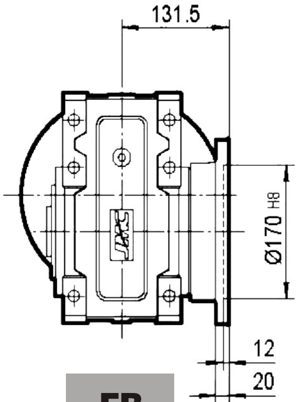








FA



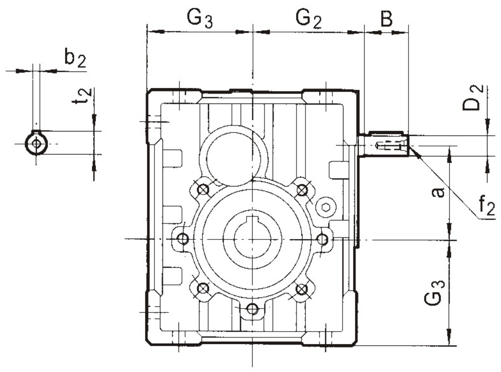
FB

IEC	D_{E8}	b	t	P	M	N	S	T	B2	$D1_{H8}$	b1	t1
71B5	14	5	16.3	160	130	110	9	4	64	40*	12	43.3
80B5	19	6	21.8	200	165	130	11	4	84	42	12	45.3
90B5	24	8	27.3	200	165	130	11	4	84	*		
100/112B5	28	8	31.3	250	215	180	13.5	4.5	94	* Only on request		
100/112B14	28	8	31.3	160	130	110	9	4.5	94			

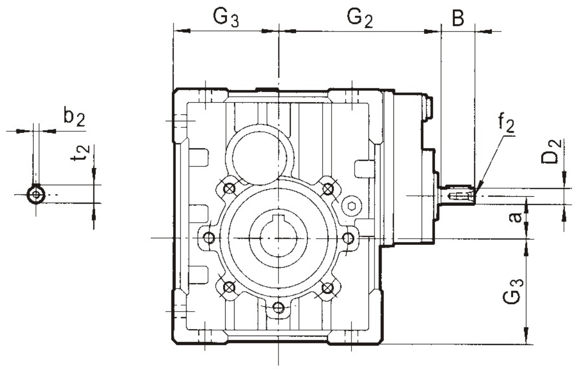
모터 제외시 무게
≈ 23.5 kg
Weight without motor
≈ 23.5 kg

7.3 KPM..HS 외형 치수 / Outline Dimension

KPM..B..HS



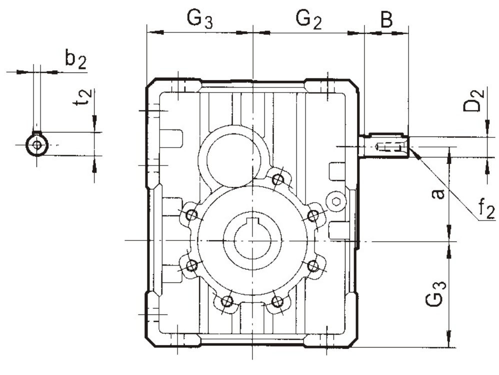
KPM..C..HS



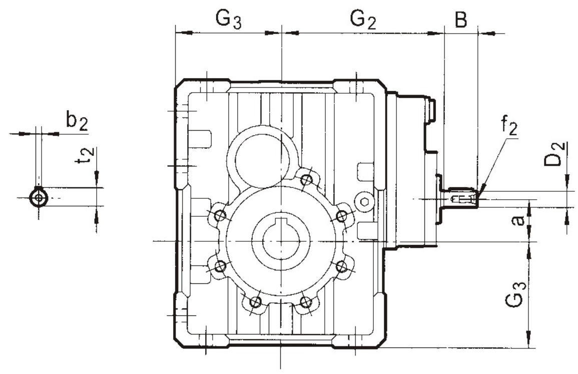
	B	$D_{2\,j6}$	G_2	G_3	a	b_2	f_2	t_2
KPM50B	23	11	65	60	57	4	-	12.5
KPM50C	23	11	100	60	21.5	4	-	12.5
KPM63B	30	14	76	72	64.5	5	M6	16
KPM63C	23	11	111	72	29	4	-	12.5
KPM75B	40	16	91	86	74.5	5	M6	18
KPM75C	30	14	132	86	30.5	5	M6	16
KPM90B	40	19	107	103	88	6	M6	21.5
KPM90C	30	14	148	103	44	5	M6	16

7.4 TKB..HS 외형 치수 / Outline Dimension

TKB..B..HS



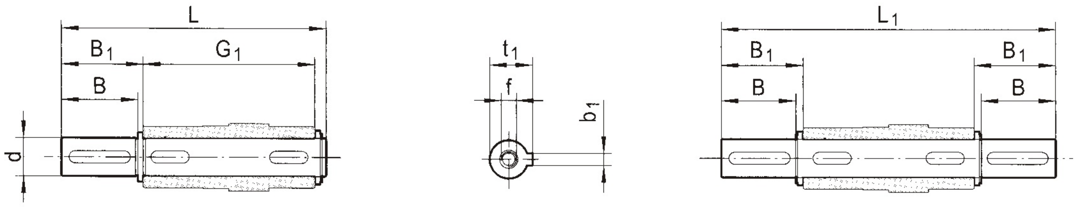
TKB..C..HS



	B	$D_{2\,j6}$	G_2	G_3	a	b_2	f_2	t_2
TKB38B	30	14	76	72.5	64.5	5	M6	16
TKB38C	23	11	111	72.5	29	4	-	12.5
TKB48B	40	16	91	87	74.5	5	M6	18
TKB48C	30	14	132	87	30.5	5	M6	16
TKB58B	40	19	107	100	88	6	M6	21.5
TKB58C	30	14	148	100	44	5	M6	16

8. 부가장치 외형 치수 시트 / ACCESSORIES OUTLINE DIMENSION SHEET

8.1 출력 축 / Output Shafts



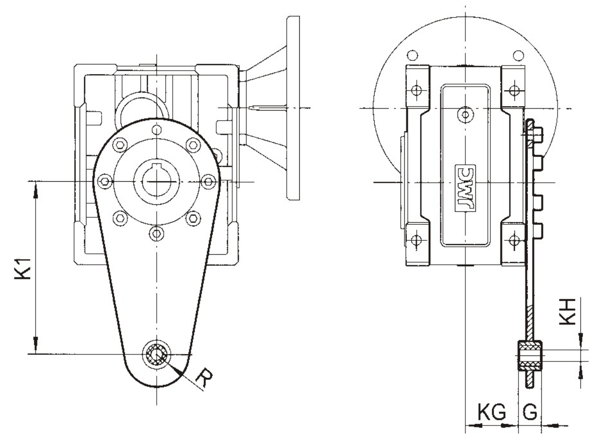
SS **DS**

	d_{h6}	B	B_1	G_1	L	L_1	f	b_1	t_1
KPM50	25	50	53.5	92	153	199	M10	8	28
KPM63	25	50	53.5	112	173	219	M10	8	28
KPM75	28	60	63.5	120	192	247	M10	8	31
KPM90	35	80	84.5	140	234	309	M12	10	38
TKB38	25	60	65	120	192	246.4	M8	8	28
TKB48_d 28	28	60	65	127	199	255	M8	8	31
TKB48_d 30	30	60	65	127	199	255	M10	8	33
TKB58	35	60	65	140	214	268	M12	10	38

* 표안번역 : 요청 시에만
* Only on request

8.2 토크 암 / Toque Arm

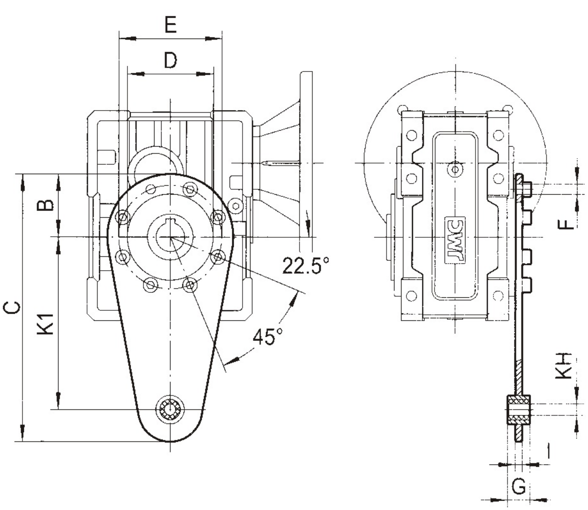
8.2.1 KPM..토크 암 / Toque Arm



	K_1	G	KG	KH	R
KPM50	100	14	38.5	10	18
KPM63	150	14	49	10	18
KPM75	200	25	47.5	20	30
KPM90	200	25	57.5	20	30

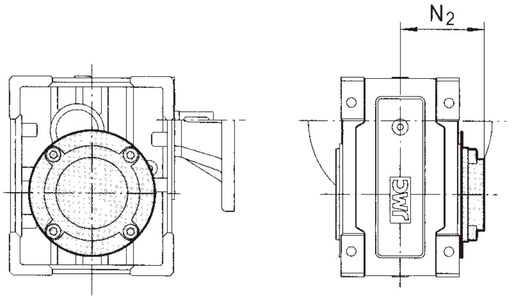
8.2.2 TKB..토크 암 / Toque Arm

	K1	B	C	D	E	F	G	KH	I
TKB38	150	55	233	75	90	9	20	10	6
TKB48	200	63	300	90	110	9	25	20	6
TKB58	200	80	318	110	130	11	25	20	6



8.3 덮개 / Cover

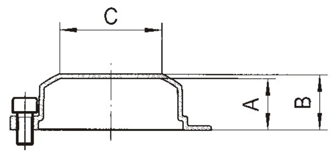
8.3.1 KPM..덮개 / Cover



	N_2
KPM50	63
KPM63	73
KPM75	79
KPM90	94
KPM110	102

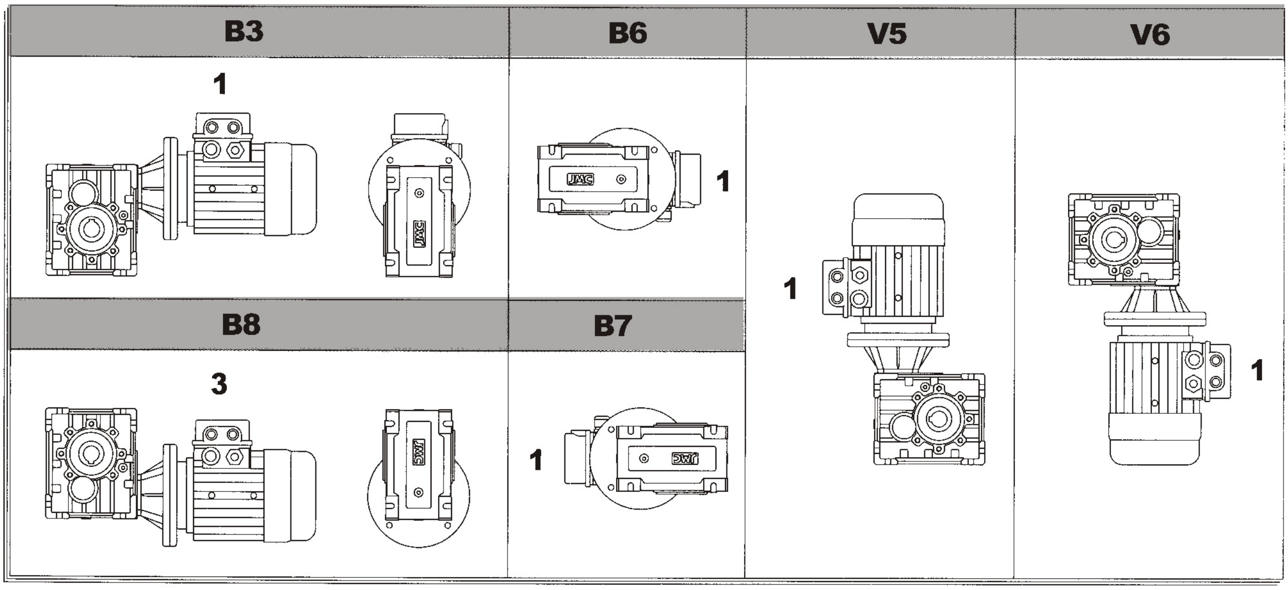
8.3.2 TKB..덮개 / Cover

	A	B	C
TKB38	26.5	29	Φ35
TKB48	24.5	27	Φ54
TKB58	26.5	29	Φ71
TKB68	27.5	30	Φ89

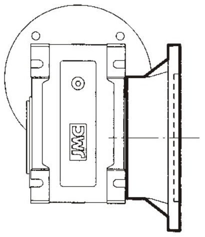
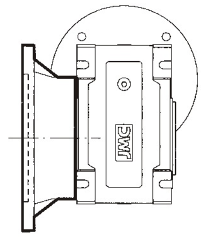


9. 설치 위치 단면도 / INSTALLATION POSITIONS DIAGRAM

9.1 KPM..또는 TKB.. 장착 위치/ Mounting Positions



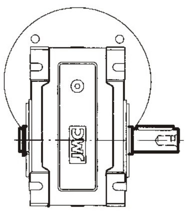
9.2 출력 플랜지의 위치 단면도 / Position diagram for output flange

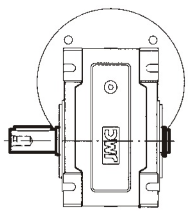
FA1,FB1,FC1,FD1,FE1	FA2,FB2,FC2,FD2,FE2
	

달리 명시하지 않는 한 감소기 장치는 F..1 위치의 플랜지와 함께 공급한다.(B3 위치 참조)

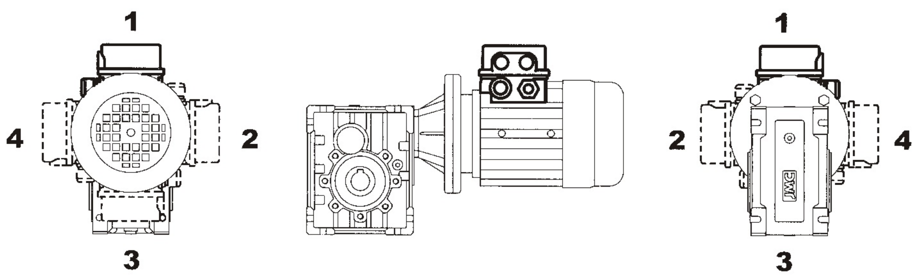
Unless specified otherwise, the reduction unit is supplied with the flange in pos. **F..1** referred to position B3.

9.3 단일 출력 플랜지의 위치 단면도 / Position diagram for single output shaft





9.4 단자함 위치 / Position of terminal box



주문 시 특별한 요구사항이 있을 경우, 그림과 같이 단자함의 위치를 표기한다.

In the case of specific requirements, when ordering, specify the position of the terminal box as shown in the diagram.

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TECHNICAL DATA—HEFF 1

SPEED 3000RPM 2-POLE 50HZ

Type	Output		Speed	Rated current A			Efficiency	Power factor	TN	TS	TMAX	IS	Moment (J)	Noise	Weight
	Kw	Hp	r/min	380V	400V	415V	η% 100%	Cosφ 100%	NM	TN	TN	IN	kgm^2	LwdB(A)	Kg
JL1 801-2	0.75	1	2840	1.7	1.62	1.56	80.6	0.83	2.54	2.2	2.3	6.1	0.0008	67	11.5
JL1 802-2	1.1	1.5	2840	2.4	2.28	2.19	82.9	0.84	3.72	3	3.2	8	0.0009	67	13
JL1 90S-2	1.5	2	2840	3.22	3.06	2.95	84.2	0.84	5.04	3	3.2	8	0.0012	72	17
JL1 90L-2	2.2	3	2840	4.59	4.36	4.2	85.7	0.85	7.4	3	3.2	8	0.0014	72	21
JL1 100L-2	3	4	2860	6.04	5.73	5.53	86.8	0.87	9.95	2.8	3.2	8	0.0029	76	26.5
JL1 112M-2	4	5.5	2880	7.87	7.48	7.21	87.7	0.88	13.22	2.5	3.2	8	0.0055	77	29.5
JL1 132S1-2	5.5	7.5	2900	10.7	10.2	9.79	88.8	0.88	18.11	2.2	3.2	8	0.0109	80	42.5
JL1 132S2-2	7.5	10	2900	14.5	13.7	13.2	89.6	0.88	24.7	2.2	3.2	8	0.0126	80	48
JL1 160M1-2	11	15	2930	20.7	19.6	18.9	90.8	0.89	35.85	1.9	3	8	0.0377	86	88
JL1 160M2-2	15	20	2930	28	26.6	25.6	91.5	0.89	48.89	1.9	3	8	0.0499	86	97
JL1 160L-2	18.5	25	2930	33.9	32.3	31.1	92.0	0.90	60.3	1.9	3	8	0.055	86	107
JL1 180M-2	22	30	2940	40.2	38.2	36.8	92.3	0.90	71.46	1.9	3	8.2	0.075	89	125
JL1 200L1-2	30	40	2950	54.5	51.7	49.9	93.0	0.90	97.12	1.9	3	7.6	0.124	92	240
JL1 200L2-2	37	50	2950	66.8	63.5	61.2	93.5	0.90	119.78	1.9	3	7.6	0.139	92	247

TECHNICAL DATA—HEFF 1

SPEED 1500RPM 4-POLE 50HZ

Type	Output		Speed	Rated current A			Efficiency	Power factor	TN	TS	TMAX	IS	Moment (J)	Noise	Weight
	Kw	Hp	r/min	380V	400V	415V	η% 100%	Cosφ 100%	NM	TN	TN	IN	kgm^2	LwdB(A)	Kg
JL1 801-4	0.55	0.75	1390	1.38	1.31	1.26	80.6	0.75	3.78	2.4	2.3	5.2	0.0018	58	12.5
JL1 802-4	0.75	1	1390	1.82	1.73	1.67	82.4	0.76	5.15	2.4	2.3	6.0	0.0021	58	14
JL1 90S-4	1.1	1.5	1390	2.59	2.46	2.37	83.9	0.77	7.5	2.7	3.0	7.0	0.0023	61	18
JL1 90L-4	1.5	2	1390	3.39	3.22	3.11	85.1	0.79	10.23	2.7	3.0	7.0	0.0027	61	20.5
JL1 100L1-4	2.2	3	1410	4.77	4.53	4.37	86.5	0.81	14.8	2.5	2.8	7.0	0.0054	64	29
JL1 100L2-4	3	4	1410	6.35	6.04	5.82	87.5	0.82	20.18	2.5	2.8	7.0	0.0067	64	34
JL1 112M-4	4	5.5	1435	8.37	7.96	7.67	88.5	0.82	26.53	2.2	2.8	7.0	0.0095	65	38
JL1 132S-4	5.5	7.5	1440	11.3	10.7	10.3	89.3	0.83	36.48	2.2	2.8	7.0	0.0214	71	48
JL1 132M-4	7.5	10	1440	15	14.3	13.8	90.2	0.84	49.74	2.2	2.8	7.0	0.0296	71	58.5
JL1 160M-4	11	15	1460	21.8	20.7	20.0	91.1	0.84	71.59	2.1	2.8	7.5	0.0747	75	90
JL1 160L-4	15	20	1460	29.1	27.7	26.7	92.0	0.85	98.12	2.1	2.8	7.5	0.0918	75	104
JL1 180M-4	18.5	25	1470	35.4	33.6	32.4	92.3	0.86	120.19	2.1	2.8	7.5	0.139	76	120
JL1 180L-4	22	30	1470	41.9	39.8	38.4	92.8	0.86	142.93	2.1	2.5	7.5	0.158	76	131
JL1 200L-4	30	40	1470	56.8	54	52	93.3	0.86	160.98	2.1	2.5	7.5	0.262	79	248

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TECHNICAL DATA—HEFF 1

SPEED 1000RPM 6-POLE 50HZ

Type	Output		Speed	Rated current A			Efficiency η%	Power factor Cos φ	TN	TS/TN	TMAX/TN	IS/IN	Moment (J)	Noise	Weight
	Kw	Hp	r/min	380V	400V	415V	100%	100%	NM				kgm^2	LwdB(A)	Kg
JL1 801-6	0.37	0.5	885	1.29	1.23	1.18	62.0	0.70	3.93	1.9	2.0	4.7	0.0016	52	111.
JL1 802-6	0.55	0.75	885	1.54	1.46	1.41	75.5	0.72	5.84	1.9	2.1	4.7	0.0019	52	14
JL1 90S-6	0.75	1	910	2.03	1.93	1.86	77.8	0.72	7.87	2.5	2.5	5.5	0.0029	55	18
JL1 90L-6	1.1	1.5	910	2.86	2.72	2.62	80.0	0.73	11.54	2.5	2.5	5.5	0.0035	55	20.5
JL1 100L-6	1.5	2	920	3.72	3.53	3.41	81.7	0.75	15.24	2.2	2.5	5.5	0.0069	59	27.5
JL1 112M-6	2.2	3	935	5.26	5	4.82	83.6	0.76	22.35	2.2	2.5	5.5	0.014	63	30.5
JL1 132S-6	3	4	960	7.05	6.7	6.45	85.1	0.76	29.84	2.1	2.5	5.5	0.0286	67	40
JL1 132M1-6	4	5.5	960	9.27	8.8	8.48	86.3	0.76	39.79	2.1	2.5	6	0.0357	67	48.5
JL1 132M2-6	5.5	7.5	960	12.4	11.8	11.3	87.6	0.77	54.71	2.1	2.5	6	0.0449	67	58
JL1 160M-6	7.5	10	970	16.6	15.8	15.2	89.2	0.77	73.84	2.1	2.5	6	0.0081	71	92
JL1 160L-6	11	15	970	23.8	22.6	21.8	90.2	0.78	108.3	2.1	2.5	6.5	0.116	71	105
JL1 180L-6	15	20	970	30.9	29.3	28.2	91.2	0.81	147.68	2.1	2.5	6.5	0.207	71	126
JL1 200L1-6	18.5	25	980	37.8	36	34.7	91.7	0.81	182.14	2.1	2.5	7	0.315	74	137
JL1 200L2-6	22	30	980	43.7	41.5	40	92.2	0.83	216.6	2.1	2.5	7	0.36	74	148

TECHNICAL DATA—HEFF 1

SPEED 750RPM 8-POLE 50HZ

Type	Output		Speed	Rated current A			Efficiency η%	Power factor Cos φ	TN	TS/TN	TMAX/TN	IS/IN	Moment (J)	Noise	Weight
	Kw	Hp	r/min	380V	400V	415V	100%	100%	NM				kgm^2	LwdB(A)	Kg
JL1 801-8	0.18	0.25	645	0.88	0.83	0.8	51.0	0.61	2.49	1.8	1.9	3.3	0.0025	52	113
JL1 802-8	0.25	0.37	645	1.57	1.09	1.05	54.0	0.61	3.46	1.8	1.9	3.3	0.003	52	15
JL1 90S-8	0.37	0.5	670	1.49	1.41	1.36	62.0	0.61	5.12	1.8	1.9	4.9	0.0051	56	19
JL1 90L-8	0.55	0.75	670	2.17	2.06	1.99	63.0	0.61	7.61	1.8	2	4	0.0065	56	21
JL1 100L1-8	0.75	1	680	2.31	2.2	2.12	73.6	0.67	10.23	1.8	2	4	0.009	59	28
JL1 100L2-8	1.1	1.5	680	3.17	3.01	2.9	76.5	0.69	15.00	1.8	2	5	0.011	59	30
JL1 112M-8	1.5	2	690	4.2	3.99	3.85	78.6	0.69	20.46	1.8	2	5	0.0245	61	31
JL1 132S-8	2.2	3	705	5.81	5.51	5.32	81.1	0.71	29.59	1.8	2	6	0.0314	64	41
JL1 132M-8	3	4	705	7.54	7.16	6.91	82.8	0.73	40.35	1.8	2	6	0.0395	64	58
JL1 160M1-8	4	5.5	720	9.86	9.37	9.03	84.4	0.73	53.06	1.9	2	6	0.0753	68	93
JL1 160M2-8	5.5	7.5	720	13.1	12.5	12	86.0	0.74	72.59	2	2	6	0.0931	68	95
JL1 160L-8	7.5	10	720	17.4	16.5	15.9	87.3	0.75	99.50	2	2	6	0.126	68	107
JL1 180L-8	11	15	730	24.7	23.5	22.6	89.0	0.76	143.90	2	2	6	0.203	70	122
JL1 200L-8	15	20	730	33.2	31.6	30.4	90.2	0.76	196.23	2	2	6.6	0.399	73	145

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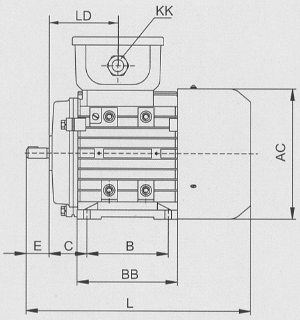
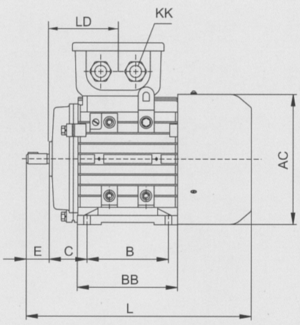
MOUNTING AND OVERALL DIMENSIONS-HEFF1

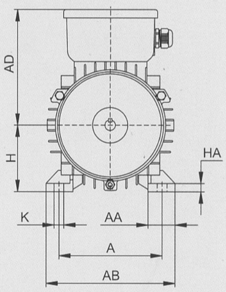
IM B3 H56-200



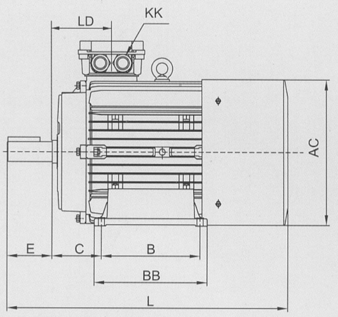
56-90



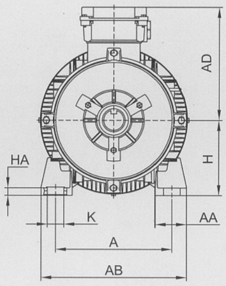
100-160



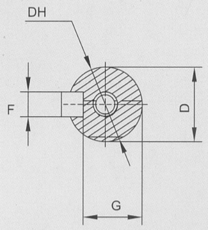
56-160



180-200



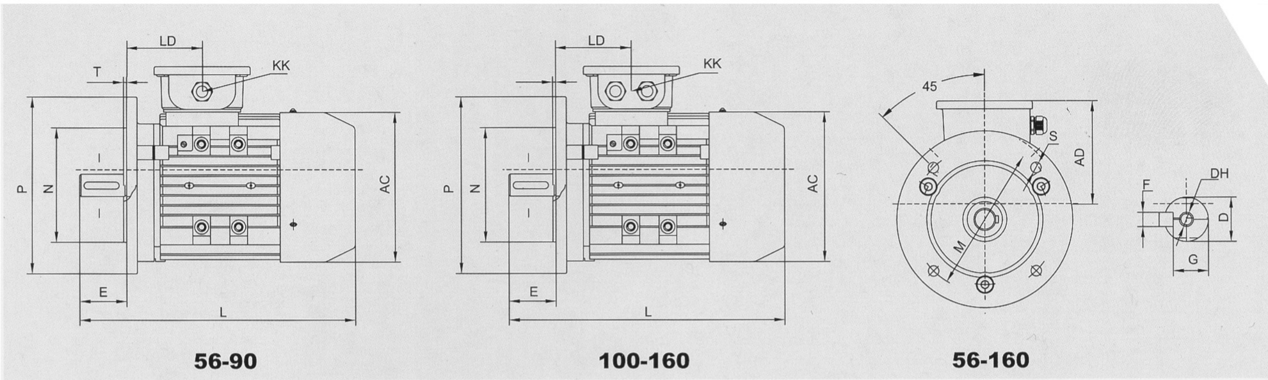
180-200

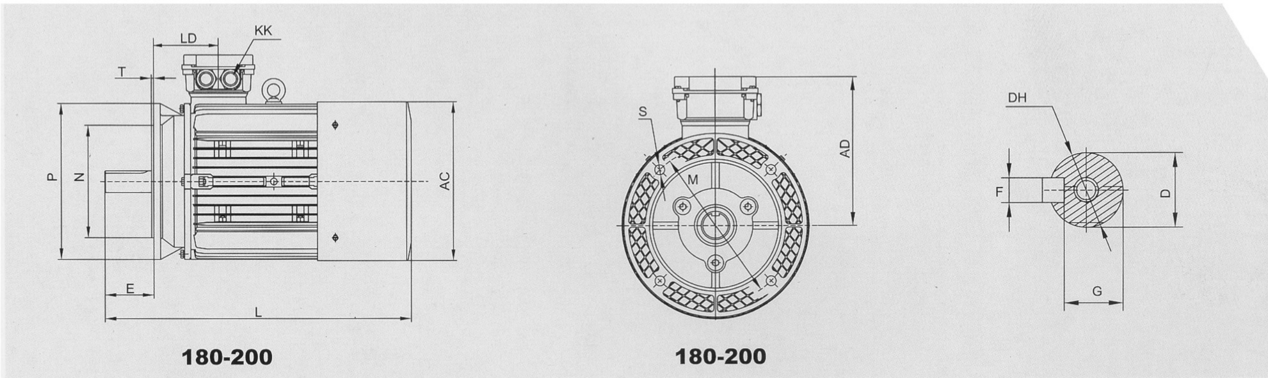


Frame size	Mounting dimensions																		Overall dimensions	LD
	A	AA	AB	BB	HA	AC	AD	B	C	D	DH	E	F	G	H	K	KK METRIC	KK PG	L	
80	125	35	157	125	8	158	129	100	50	19	M6X16	40	6	15.5	80	10X14	1-M25X1.5	1-PG16	290	75
90S	140	37	173	125	10	175	140	100	56	24	M8X19	50	8	20	90	10X14	1-M25X1.5	1-PG16	325	95
90L	140	37	173	150	10	175	140	125	56	24	M8X19	50	8	20	90	10X14	1-M25X1.5	1-PG16	350	95
100L	160	40	196	172	11	198	156	140	63	28	M10X22	60	8	24	100	12X16	1-M32X1.5	1-PG21	398	88.5
112M	190	41	227	180	12	219	166	140	70	28	M10X22	60	8	24	112	12X16	2-M32X1.5	2-PG21	447	92
132S	216	51	262	186	15	258	188	140	89	38	M12X28	80	10	33	132	12X16	2-M32X1.5	2-PG21	475	100
132M	216	51	262	224	15	258	188	178	89	38	M12X28	80	10	33	132	12X16	2-M32X1.5	2-PG21	513	100
160M	254	55	304	260	18	315	242	210	108	42	M16X36	110	12	37	160	15X18	2-M40X1.5	2-PG29	609	158.5
160L	254	55	304	304	18	315	242	254	108	42	M16X36	110	12	37	160	15X18	2-M40X1.5	2-PG29	653	158.5
180M	279	75	350	315	18	355	272	241	121	48	M16x36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	161
180L	279	75	350	315	18	355	272	279	121	48	M16x36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	161
200L	318	100	398	355	24	355	272	305	133	55	M20x42	110	16	49	200	19	2-M32x1.5	2-PG36	790	186.5

MOUNTING AND OVERALL DIMENSIONS-HEFF1

IM B5 H56-200



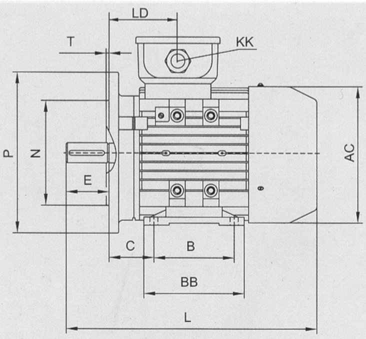


Frame size	Mounting dimensions										Overall dimensions						LD
	AC	AD	C	D	DH	E	F	G	KK METRIC	KK PG	L	M	N	P	S	T	
80	158	129	50	19	M6X16	40	6	15.5	1-M25X1.5	1-PG16	290	165	130	200	12	3.5	75
90S	175	140	56	24	M8X19	50	8	20	1-M25X1.5	1-PG16	325	165	130	200	12	3.5	95
90L	175	140	56	24	M8X19	50	8	20	1-M25X1.5	1-PG16	350	165	130	200	12	3.5	95
100L	198	156	63	28	M10X22	60	8	24	1-M32X1.5	1-PG21	398	215	180	250	15	4	88.5
112M	219	166	70	28	M10X22	60	8	24	2-M32X1.5	2-PG21	447	215	180	250	15	4	92
132S	258	188	89	38	M12X28	80	10	33	2-M32X1.5	2-PG21	475	265	230	300	15	4	100
132M	258	188	89	38	M12X28	80	10	33	2-M32X1.5	2-PG21	513	265	230	300	15	4	100
160M	315	242	108	42	M16X36	110	12	37	2-M40X1.5	2-PG29	609	300	250	350	19	5	158.5
160L	315	242	108	42	M16X36	110	12	37	2-M40X1.5	2-PG29	653	300	250	350	19	5	158.5
180M	355	272	121	48	M16x36	110	14	42.5	2-M32x1.5	2-PG29	765	300	250	350	19	5	161
180L	355	272	121	48	M16x36	110	14	42.5	2-M32x1.5	2-PG29	765	300	250	350	19	5	161
200L	355	272	133	55	M20x42	110	16	49	2-M32x1.5	2-PG36	790	350	300	400	19	5	186.5

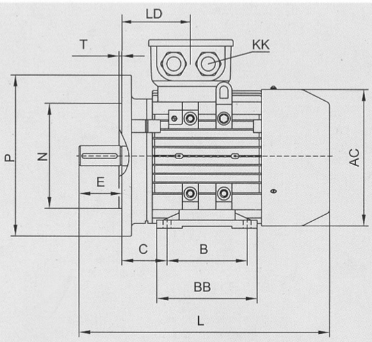
HEFF1

MOUNTING AND OVERALL DIMENSIONS-HEFF1

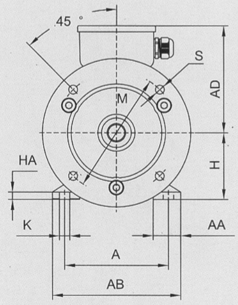
IM B35 H56-200



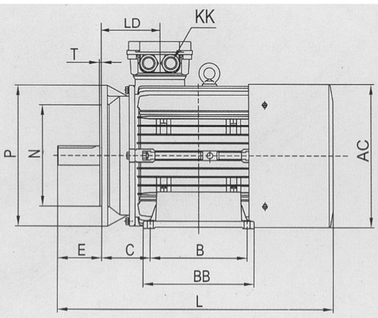
56-90



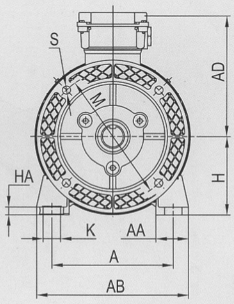
100-160



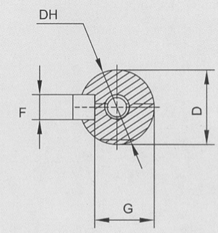
56-160



180-200



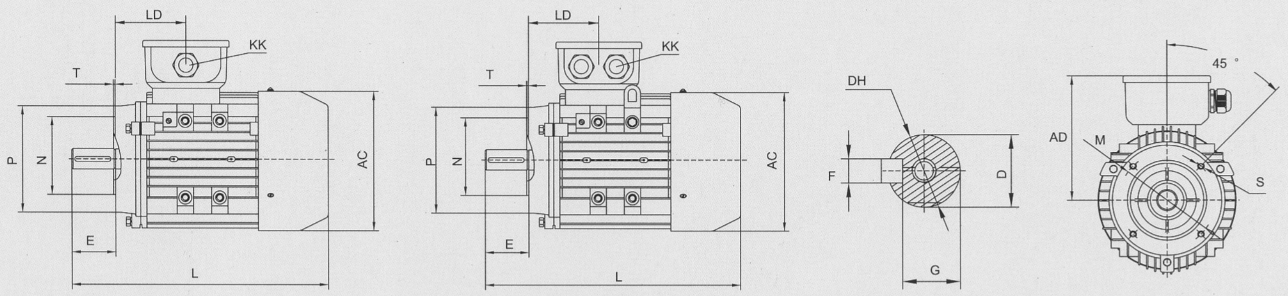
180-200



size	Mounting dimensions																	Overall dimensions						LD
	A	AA	AB	BB	HA	AC	AD	B	C	D	DH	E	F	G	H	K	KK METRIC	KK PG	L	M	N	P	S	T	
80	125	35	157	125	8	158	129	100	50	19	M6X16	40	6	15.5	80	10	1-M25X1.5	1-PG16	290	165	130	200	12	3.5	75
90S	140	37	173	125	10	175	140	100	56	24	M8X19	50	8	20	90	10	1-M25X1.5	1-PG16	325	165	130	200	12	3.5	95
90L	140	37	173	150	10	175	140	125	56	24	M8X19	50	8	20	90	10	1-M25X1.5	1-PG16	350	165	130	200	12	3.5	95
100L	160	40	196	172	11	198	156	140	63	28	M10X22	60	8	24	100	12	1-M32X1.5	1-PG21	398	215	180	250	15	4	88.5
112M	190	41	227	180	12	219	166	140	70	28	M10X22	60	8	24	112	12	2-M32X1.5	2-PG21	447	215	180	250	15	4	92
132S	216	51	262	186	15	258	188	140	89	38	M12X28	80	10	33	132	12	2-M32X1.5	2-PG21	475	265	230	300	15	4	100
132M	216	51	262	224	15	258	188	178	89	38	M12X28	80	10	33	132	12	2-M32X1.5	2-PG21	513	265	230	300	15	4	100
160M	254	55	304	260	18	315	242	210	108	42	M16X36	110	12	37	160	15	2-M40X1.5	2-PG29	609	300	250	350	19	5	158.5
160L	254	55	304	304	18	315	242	254	108	42	M16X36	110	12	37	160	15	2-M40X1.5	2-PG29	653	300	250	350	19	5	158.5
180M	279	75	350	315	18	355	272	241	121	48	M16X36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	300	250	350	19	5.0	161
180L	279	75	350	315	18	355	272	279	121	48	M16X36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	300	250	350	19	5.0	161
200L	318	100	398	355	24	355	272	305	133	55	M20X42	110	16	49	200	19	2-M32x1.5	2-PG36	790	350	300	400	19	5.0	186.5

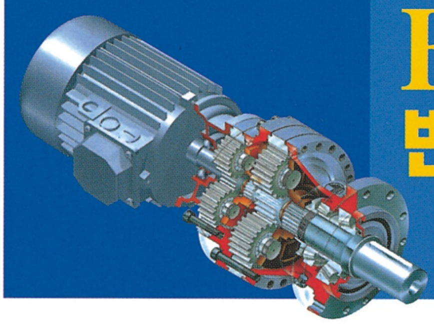
MOUNTING AND OVERALL DIMENSIONS-HEFF1

IM B14A H56-160



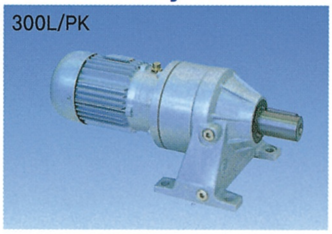
56-90 100-160 56-160

Frame size	AC	AD	D	DH	E	F	G	K	KK METRIC	KK PG	L	M	N	P	S	T	LD
80	158	129	19	M6X16	40	6	15.5	10	1-M25X1.5	1-PG16	290	100	80	120	M6	3	75
90S	175	140	24	M8X19	50	8	20	10	1-M25X1.5	1-PG16	325	115	95	140	M8	3	95
90L	175	140	24	M8X19	50	8	20	10	1-M25X1.5	1-PG16	350	115	95	140	M8	3	95
100L	198	156	28	M10X22	60	8	24	12	1-M32X1.5	1-PG21	398	130	110	160	M8	3.5	88.5
112M	219	166	28	M10X22	60	8	24	12	2-M32X1.5	2-PG21	447	130	110	160	M8	3.5	92
132S	258	188	38	M12X28	80	10	33	12	2-M32X1.5	2-PG21	475	165	130	200	M10	3.5	100
132M	258	188	38	M12X28	80	10	33	12	2-M32X1.5	2-PG21	513	165	130	200	M10	3.5	100
160M	315	242	42	M16X36	110	12	37	15	2-M40X1.5	2-PG29	609	215	180	250	M12	4	158.5
160L	315	242	42	M16X36	110	12	37	15	2-M40X1.5	2-PG29	653	215	180	250	M12	4	158.5

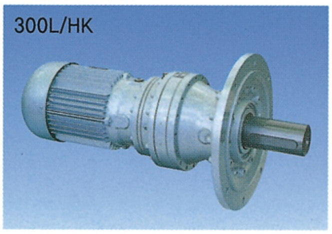


BONFIGLIOLI
변·감속기 한국총대리점
ITALY

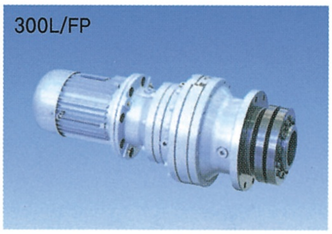
>> Planetary Reduction Gear Unit



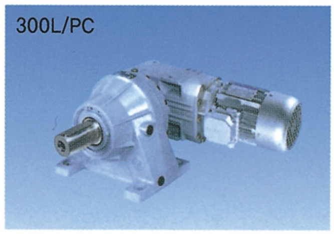
· Power : 0.37kW-250kW
· Ratio : 4.26-2687



· Power : 0.37kW-250kW
· Ratio : 4.26-2687

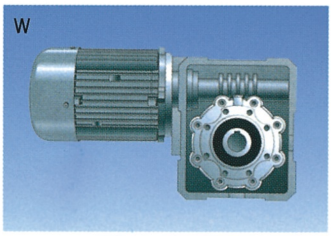


· Power : 0.37kW-250kW
· Ratio : 4.26-2687

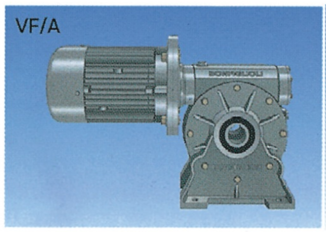


· Power : 0.37kW-250kW
· Ratio : 4.26-2687

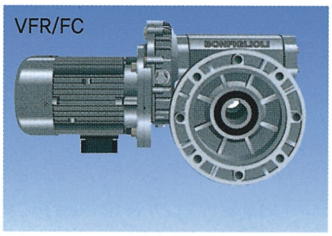
>> Worm & Helical Worm Gear Unit



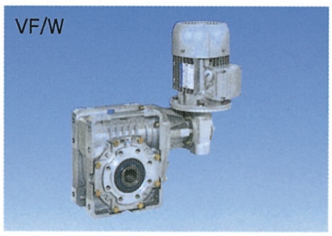
· Power : 0.02kW-9.2kW
· Ratio : 7-100



· Power : 0.04kW-75kW
· Ratio : 7-100

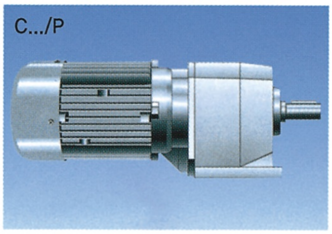


· Power : 0.09kW-15kW
· Ratio : 30-300

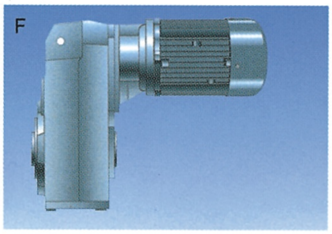


· Power : 0.12kW-9kW
· Ratio : 230-10.000

>> Helical Gear Unit

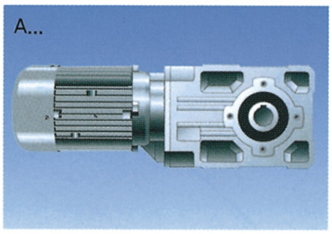


· Power : 0.16kW-200kW
· Ratio : 2.6-1481

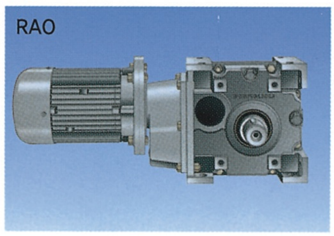


· Shaft Mounted Geabox
· Power : 0.17~200kW
· Ratio : 6.4~2188

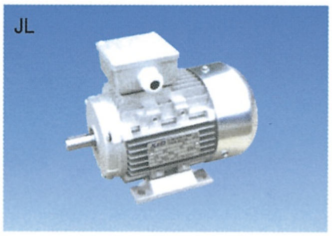
>> Helical Bevel Gear Unit



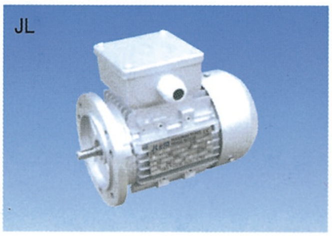
· Power : 0.22kW-150kW
· Ratio : 2.6-1715



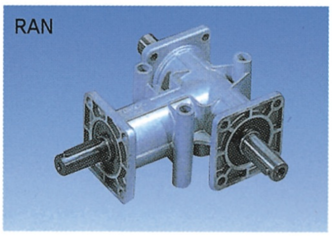
· Power : 0.25kW-280kW
· Ratio : 9.29-175



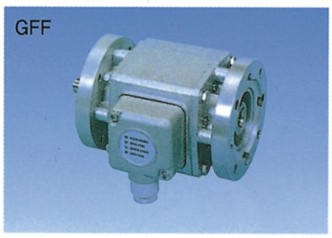
· Power : 0.06kW-315kW



· Power : 0.06kW-315kW

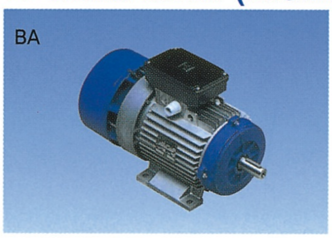


· Bevel Gearboxes
· Ratio : 1, 2, 4, 7.7



· Clutch&Brake
· Power : 12W, 17W, 22W, 35W

>> Brake motor (M.G.M Italy)

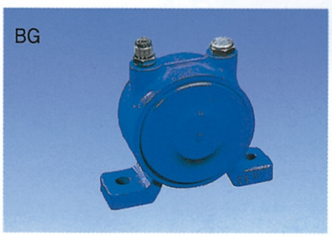


· Power: 0.08kW~37kW

· Power : 0.09kW-37kW

>> Vibrator (O.M.B Italy)

· 전기 바이브레이타
· Power : 30W~13800W

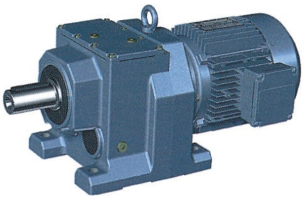
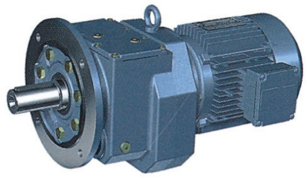


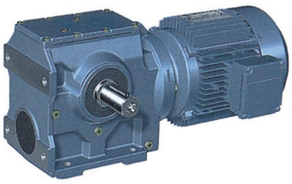
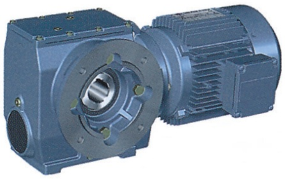
· 공압 바이브레이타 · rpm : 4000~21500

▶▶ **기타취급품목 |** ABB & Simens motor, COEL brake motor, 삼양감속기, STM, GHIRRI

시리즈 제품 보기
SHOW THE SERIES PRODUCTS

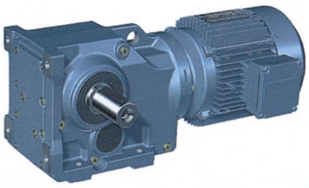
TR 헬리컬 기어드모터 시리즈
TR Series helical geared motors

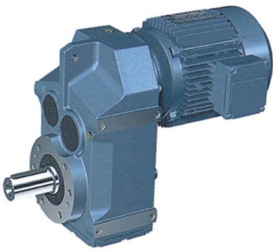
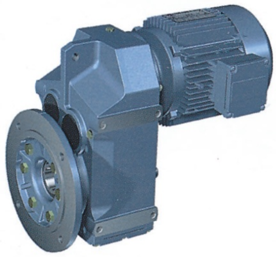



TS 헬리컬-웜 기어드모터 시리즈
TS Series helical-worm geared motors

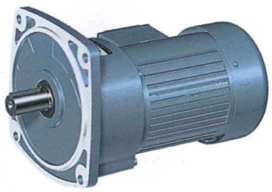
TK 헬리컬-베벨 기어드모터 시리즈
TK Series helical-bevel geared motors

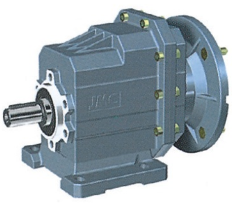
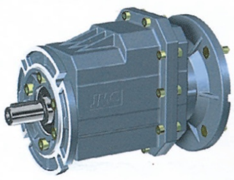


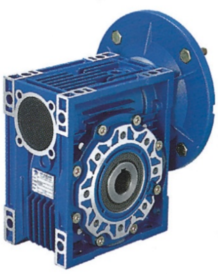
TF 축 평행 헬리컬 기어드모터 시리즈
TF Series parallel shaft helical geared motors

G3 소형 헬리컬 기어드모터 시리즈
G3 Series mini helical geared motors

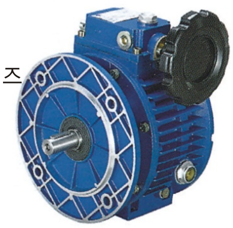



TRC TRC 소형 헬리컬 기어장치 시리즈
TRC Series mini helical gear units



TNRV TNRV 웜 기어장치 시리즈
TNRV Series worm gear units

UDL UDL 무단변속기 시리즈
UDL Series stepless speed variator



(株)利電産業

▶본사
서울특별시 금천구 가산동 60-73 벽산디지탈밸리 101동 203호
▶공장
서울특별시 금천구 가산동 60-73 벽산디지탈밸리 101동 B105호
TEL : 02)2082-5411~4　FAX : 02)2082-5415
E-mail : ejon0570@chol.com
www.ejohn.co.kr