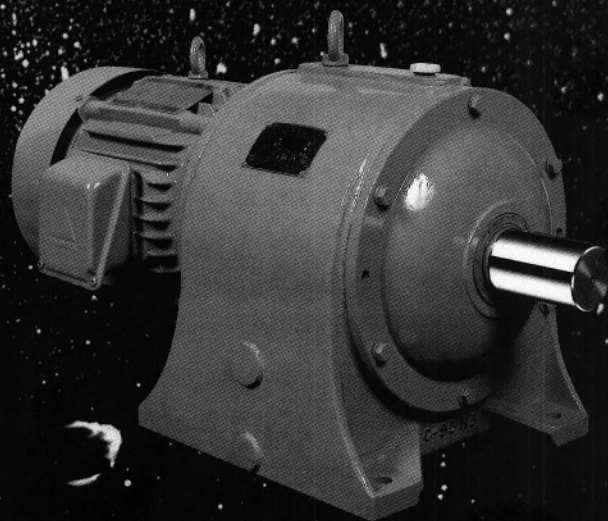
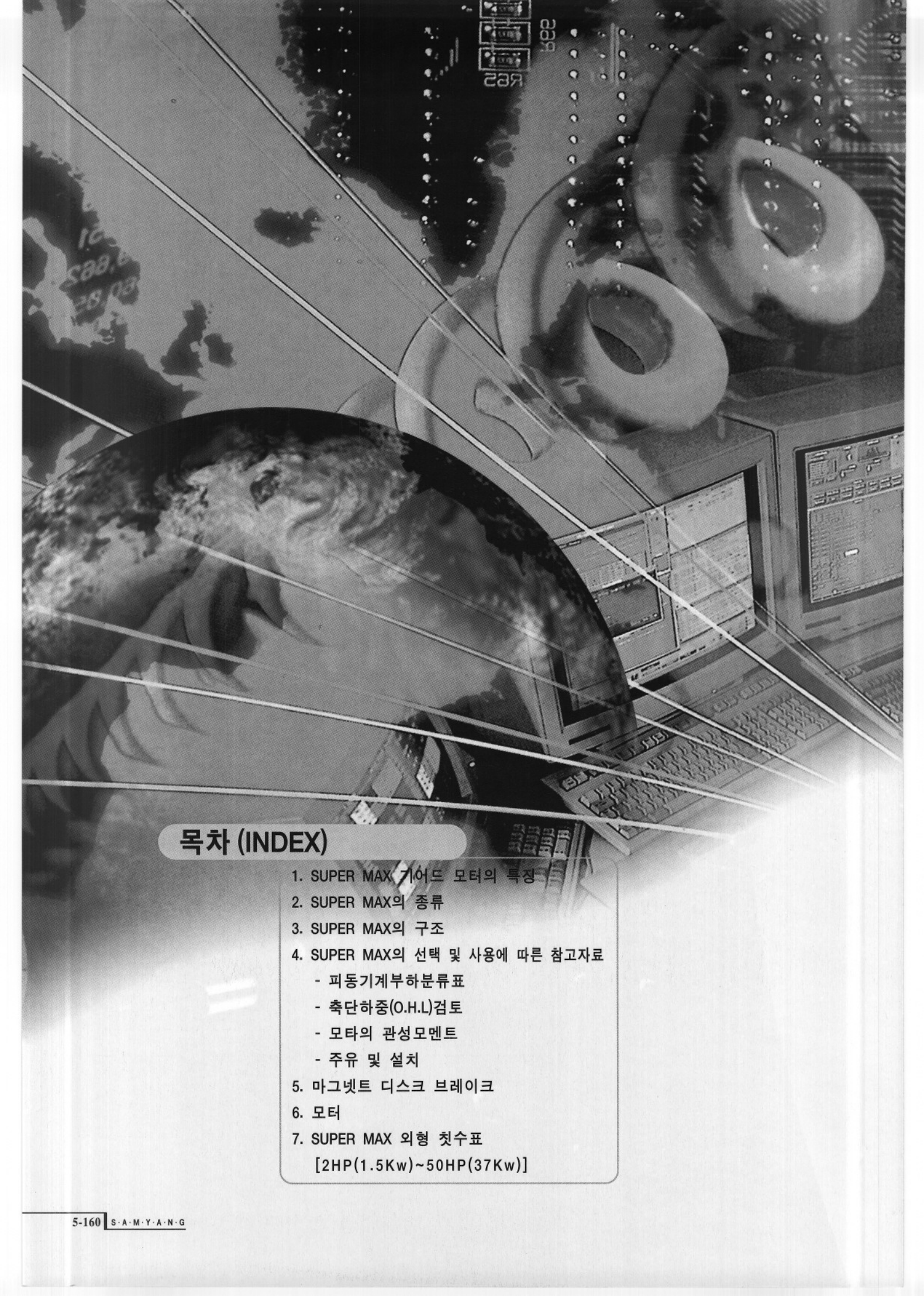


SUPER MAX!





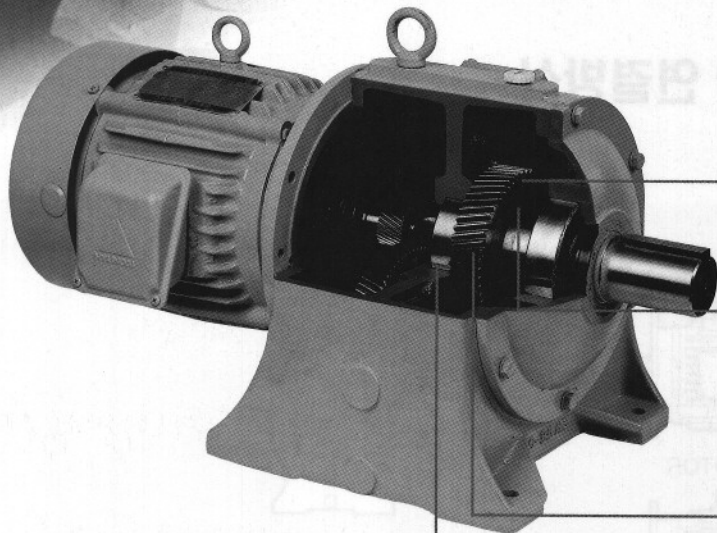
목차 (INDEX)

1. SUPER MAX 기어드 모터의 특징
2. SUPER MAX의 종류
3. SUPER MAX의 구조
4. SUPER MAX의 선택 및 사용에 따른 참고자료
 - 피동기계부하분류표
 - 축단하중(O.H.L)검토
 - 모터의 관성모멘트
 - 주유 및 설치
5. 마그네틱 디스크 브레이크
6. 모터
7. SUPER MAX 외형 치수표
[2HP(1.5Kw)~50HP(37Kw)]

SPECIAL FEATURE

SUPER MAX GEARED MOTOR의 특징

종래의 감속기에 비하여 진동을
30% 감소, 소음 10dB이상 감소,
기어 소재는 SCM21, SNCM21을
사용하였으며 가공 후 전체침탄 및
고속회전축 기어는 연마 실시



(1) MOTOR

고효율, 절전형의 SUPER-MAX
전용으로 설계된 F종 모터 채용

(2) PINION & GEAR

(주)삼양감속기에서 독자적으로
축적된 기술로 피니언과 기어의
수명을 동일하게 하는 신설계
공법을 적용한 저소음·고효율·
긴수명을 실현하였습니다.

(3) BEARING

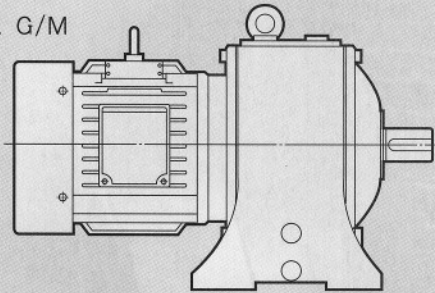
자동조심 로울러 베어링과 테이퍼
로울러 베어링을 채용하여 감속기를
분해, 조립할 경우 Adjusting Plate에
의해 간단히 조정할 수 있습니다.

(4) 윤활

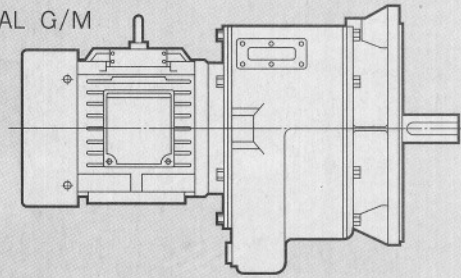
신기구 채용으로 비밀윤활방법을
채용, 일반 기어드 모터에 비하여
유량 10% 감소, 설치 경사각도
20° 까지 가능

SUPER MAX SERIES

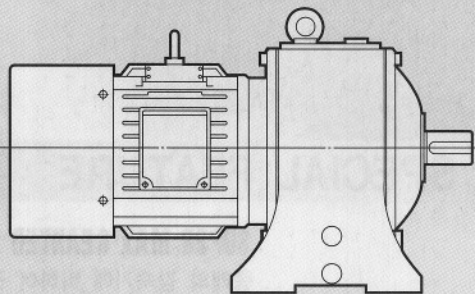
HORIZONTAL G/M



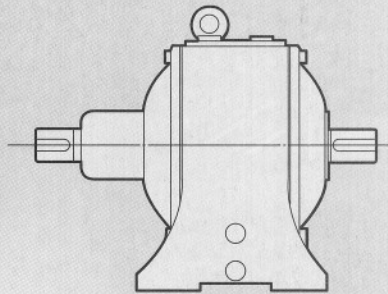
VERTICAL G/M



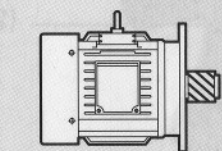
HORIZONTAL G/M WITH BRAKE



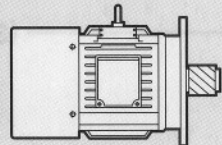
LINE POWER



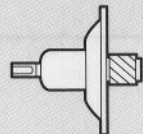
MODULE화에 따른 다양한 연결방식



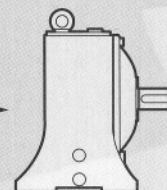
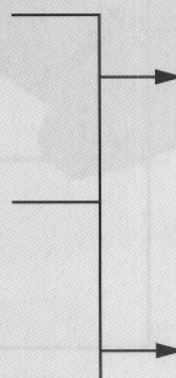
MOTOR



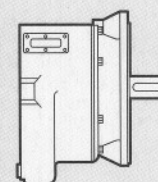
BRAKE MOTOR



LINE SHAFT



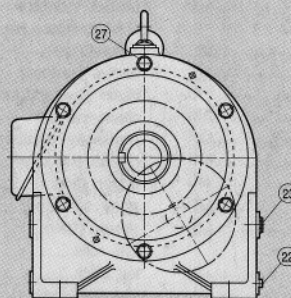
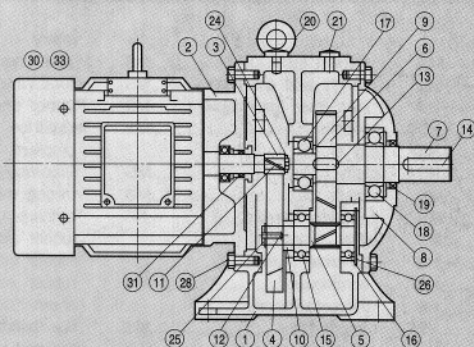
H-TYPE



V-TYPE

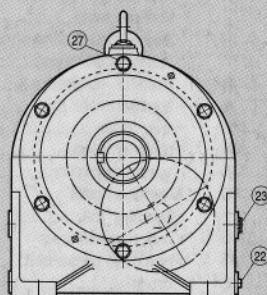
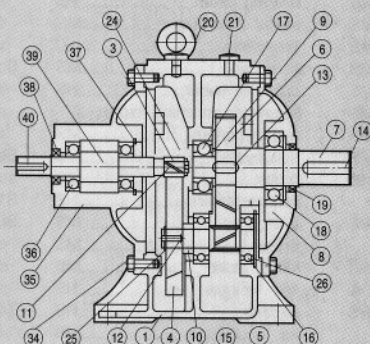
구조도면

HORIZONTAL TYPE

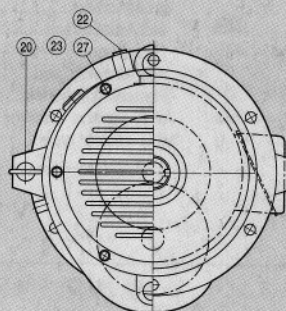
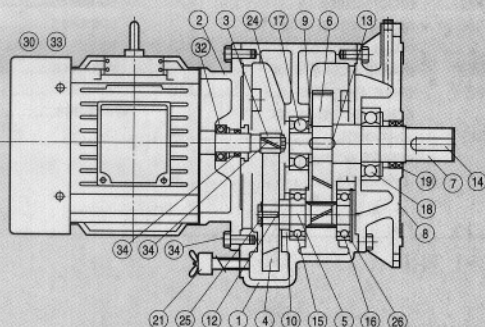


1. Case
2. Motor Flange
3. 1st Pinion
4. 1st Gear
5. 2nd Pinion Shaft
6. 2nd Gear
7. Output shaft
8. Flange
9. Spacer
10. Spacer
11. Inspection Cover
12. 1st Pinion Key
13. 2nd Pinion Shaft Key
14. Output Shaft Key
15. Output Shaft Key
16. 2nd Pinion Shaft Bearing
17. 2nd Pinion Shaft Bearing
18. Output Bearing
19. Output Bearing
20. Output Oil Seal
21. Eye Bolt
22. Air Vent
23. Drain Plug
24. Oil Level Gauge
25. Snap Ring
26. Snap Ring
27. Snap Ring
28. Hex.Bolt.&S/W
29. Hex.Bolt.&S/W
30. Hex.Bolt.&S/W
31. Name Plate
32. Motor F. Bearing
33. Motor R. Bearing
34. Hex. Bolt & S/W
35. Line Power Cover
36. Bearing
37. Snap Ring
38. Oil Seal
39. Line Power Shaft
40. Key

LINE POWER TYPE



VERTICAL TYPE



피동기계 부하 분류표

피동기계	하중 부하	피동기계	하중 부하	피동기계	하중 부하	피동기계	하중 부하	피동기계	하중 부하
Agitato		sugar ○.....MS		Lumber industry					
pure liquids.....U		Dredges		brakers-hydraulic-		cement kilns ○.....MS		rotary	
liquids and solids.....MS		cable reels.....MS		mechanical.....MS		dryers and coolers○.....MS		gear type.....U	
liquids-Variable density.....U		conveyor.....MS		burner conveyor.....MS		kilns,other than cement.....MS		lobe,vane.....U	
Blowers		cutter head drive ○.....HS		chain saw and drag.....HS		pebble ○.....MS		Rubber and plastis	
centrifugal.....U		lig drives.....HS		chain transfer.....HS				Industries	
lobe.....MS		maneuvering winches.....MS		craneway transe.....HS		rod ○		crackers ○.....HS	
vane.....MS		pumps.....MS		de-barking drum.....HS		plain.....MS		laboratory equipment.....MS	
Brewing and distilling		screen drive.....HS		edger feed.....MS		wedge bar.....MS		mixing mills ○.....HS	
botting machinery.....U		stackers.....MS		gang feed.....MS		tumbling barrels.....HS		refiners ○.....MS	
brew kettles-continuous		utility winches.....MS		green chain.....MS		Mixer		rubber calenders ○.....MS	
duty.....U		Dry dock cranes		live rolls.....HS		concrete mixers-		rubber mill-2 on line ○.....MS	
cookers-continous duty		main hoist.....△		log deck.....HS		continous.....MS		rubber mill-3 on line ○.....U	
mash tubs-continous duty.....U		auxiliary hoist.....△		log houl-incline.....HS		concrete mixers-		sheeter ○.....MS	
scale hopper-frequent.....U		boom,luffing.....△		log houl-well type.....HS		intermittent.....MS		tire building machines.....▲	
starts.....MS		rotating,swing or slew.....△		log turning device.....HS		constant density.....U		tire and tube press	
Can filling machinesU		tracking,drive wheels.....☆		main log conveyor.....HS		variable dentisty.....MS		openers.....▲	
cane knives.....MS		Eilvators		off bearing rolls.....MS		Oil industry		tubers and strainers ○.....MS	
Car dumpers.....HS		bucket-uniform load.....U		planer feed chain.....MS		chillers.....MS		warming mill ○.....MS	
Car Pullers.....MS		bucket-heavy load.....MS		planer floor chain.....MS		oil well pumping.....▲		Sand mullerMS	
Clarifiers.....U		bucket-continous.....U		planer tilting hoist.....MS		paraffin filter press.....MS		Sewage disposal equipment	
Clarifiers.....U		centrifugal dischargy.....U		re-saw merry-go-round		rotary kilns.....MS		bar screens.....U	
Clay working machinery		escators.....U		conveyor.....MS		Paper mills		chemical feeders.....U	
brik press.....HS		freight.....MS		roll cases.....HS		agitator,(mixers).....MS		collectors.....U	
brquette machine.....HS		gravity dischargy.....U		slab conveyor.....HS		hydraulic.....MS		dewatering screws.....U	
clay working machinery.....HS		man lifts.....▲		small waste conveyor-		barker-mechanical.....MS		scum breakers.....MS	
Pug mill.....MS		passenger.....▲		chain.....MS		barking drum.....HS		slow or rapid mixers.....MS	
CompressorsMS		Fans		sorting table.....MS		beater and pulper.....MS		thickeners.....MS	
centrifugal.....U		centrifugal.....U		tipple hoist conveyor.....MS		bleacher.....U		vacuum filters.....MS	
lobe.....MS		cooling towers		tipple hoist drive.....MS		calendar.....MS		Screens	
reciprocating		induced draft.....▲		transfer conveyors.....MS		calendar-super.....HS		air washing.....U	
multi-cylinder.....MS		forced draft.....▲		transfer rolls.....MS		converting machine except		rotary-stone or gravel.....MS	
single-cylinder.....MS		induced draft.....MS		tray drive.....MS		cutters,platers.....MS		taveling water intake.....U	
conVeyors-uniformly		large,mine,etc.....MS		trimmer feed.....MS		conveyors.....U		Slab pusherMS	
loaded or fed		large,industrial.....MS		waste conveyor.....MS		couch.....MS		steering gear▲	
apron.....U		light, small diameter.....U		Machine tools		cutters-platers.....HS		StokersU	
assembly.....U		Feeders		bending roll.....MS		cylinders.....MS		Sugar industry	
belt.....U		apron.....MS		punch press-gear		dryers.....MS		cane knives ○.....MS	
bucket.....U		belt.....MS		notching press-belt.....HS		felt stretcher.....MS		crushers ○.....MS	
chain.....MS		disc.....U		driven.....▲		felt whipper.....HS		mills ○.....MS	
flight.....U		reciprocasting.....HS		plate planers.....HS		jordans.....HS		Textile industry	
oven.....U		screw.....MS		other machine tools		log haul.....HS		batchers.....MS	
screw.....U		Food industry		tapping machine.....HS		presses.....U		calenders.....MS	
Conveyors-heavy duty		beet slicer.....MS		main drives.....MS		pulp machine reel.....MS		cards.....MS	
apron.....U		cereal cooker.....U		auxiliary drives.....U		stock chest.....MS		dry cans.....MS	
assembly.....U		dough mixer.....MS		Metal mills		suction roll.....U		dryers.....MS	
belt.....MS		meat grinders.....MS		draw bench carriage		washers and thickeners.....MS		dyeing machinery.....MS	
bucket.....MS		Generatorors-not weldingU		and main drive.....MS		winders.....U		knitting machines.....U	
chain.....MS		Hammer millsHS		pinch,dryer and		Printing presses▲		looms.....MS	
flight.....U		Hoist		scrubber rolls-reversing.....▲		Pullers		mangles.....MS	
live roll.....▲		heavy duty.....HS		slitters.....MS		barge haul.....HS		nappers.....MS	
oven.....MS		medium duty.....MS		table conveyor		Pumps		pads.....MS	
reciprocating.....HS		skip hoist.....MS		non-reversing		centrifugal.....U		range drives.....U	
screw.....MS		Laundry washer		group drives.....MS		proportioning.....MS		slashers.....MS	
shaker.....HS		reversing.....MS		individual drives.....HS		reciprocating		soapers.....MS	
cranes		Laundry tumblersMS		reversing.....▲		single acting:3 or		spinners.....MS	
main hoists.....U		Line shafts		wire drawing and		more cylinders.....MS		tenter frames.....MS	
bridge travel.....▲		driving procesing		Flattening machine.....MS		double acting:2 or		washers.....MS	
trolly travel.....▲		equipment.....MS		wire winding machine.....MS		more cylinders.....MS		winders.....MS	
Crusher		light.....U		Mills-rotary type		single acting: 1 or 2		WindlassU	
ore.....HS				ball.....MS		cylinders.....▲			
stone.....HS						double acting:single			
						cylinder.....▲			

■ U Uniform load (균일하중)
 MS Moderte shock load (中 정도 하중)
 HS Heavy shock load (重 정도 하중)
 ▲삼양감속기에 문의바랍니다.

○ 1일 24시간 연속운전 S・F 적음
 △ S・F = 1.0
 □ S・F = 1.25
 ☆ S・F = 1.5

축단하중(OVER HUNG LOAD)의 검토

감속기 출력축과 사용할 피동기계와의 연결시 체인기어, V벨트, 기어등을 이용하여 동력전달을 해야 하는 경우에는 출력축에 굽힘하중이 작용하며, 출력축에 설치된 베어링에도 굽힘하중 만큼의 하중이 작용하므로 이 경우에는 필히 축단하중을 검토하여야 하며 이 검토에 따라 감속기를 선택하여야 합니다.

단, 기어카프링, 체인카프링 또는 기타카프링으로 출력축과 동일축선상에서 연결하는 경우에는 축단하중을 검토할 필요가 없습니다.

표 1. 출력축 (저속축)의 허용 축단하중 (O.H.L)

단위 : kg · f

R.P.M	kw	1.5	2.2	3.7	5.5	7.5	11	15	22	30	37
5		2300	3020	4250	5555	6750	8825				
10		1450	1900	2675	3500	4250	5560	6750			
15		1105	1450	2040	2675	3240	4250	5150	6750		
20		915	1200	1680	2205	2675	3500	4250	5560	6750	
25		790	1035	1450	1900	2300	3020	3655	4800	5820	6750
30		700	915	1280	1680	2040	2675	3240	4250	5150	5985
40		575	755	1060	1390	1680	2205	2675	3500	4250	4940
50		495	650	915	1200	1450	1900	2300	3020	3655	4250
60		435	575	810	1060	1280	1680	2040	2675	3240	3760
80		360	475	670	875	1060	1390	1680	2205	2675	3100
100		310	410	575	755	915	1200	1450	1900	2300	2675
120		275	360	510	670	810	1060	1280	1680	2040	2370
150		238	312	440	575	695	915	1105	1450	1750	2040
180		210	276	390	510	615	810	980	1280	1550	1810
200		196	258	363	475	575	755	915	1200	1450	1680
250		170	223	313	410	496	650	790	1035	1250	1450
300		149	197	276	362	438	575	700	915	1105	1280

$$O.H.L(kg) = \frac{P \times 974 \times 2}{N \times R} \times \frac{C_f}{L_f} \times s.f$$

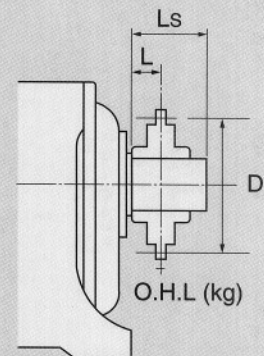
P = 전달출력 (kw)
 N = 출력축회전수 (rpm)
 R = CHAIN SPROCKET, PULLEY, GEAR 의 피치원직경 (m) = D
 Cf = 구동방법에 의한 계수
 Lf = 하중위치에 의한 계수
 s.f = 부하계수 (기본설계: 1.4)

표 1. Cf: 구동방법의 계수

SINGLE CHAIN	DOUBLE CHAIN	GEAR	V-BELT	FLAT BELT
1.00	1.25	1.25	1.50	2.50

표 2. Lf: 하중위치의 계수

0.3Ls	0.5Ls	0.7Ls	0.9Ls
1.10	1.00	0.83	0.70



상기식에서 구한 O.H.L가 허용 O.H.L 보다 작는지 확인하여 주십시오.
 O.H.L에 적용하는 부하계수는, Sf ≤ 1.4 입니다만,
 사용상 부하계수가 크게 작용하는 경우에는 한단계 위의 형번으로 선택해야
 하므로 당사에 문의하여 주시기 바랍니다.

(사용조건)

용도 CONVEYOR(Sf = 1.0)

출력 3.7kw

입출력회전수 1800/60 rpm

감속비 1/30

연결방법 SINGLE CHAIN 구동

(CHAIN SPROCKET의 피치원 직경 D = 0.152 (m))

하중위치 출력축의 중앙 (0.5Ls)

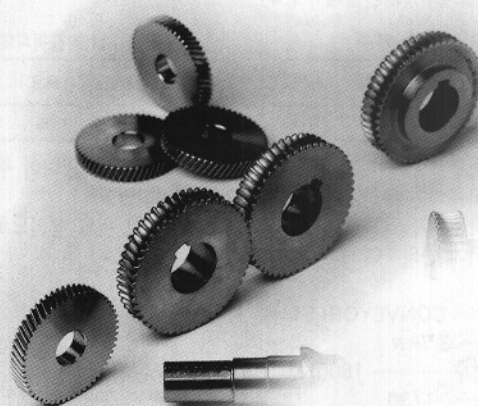
축단하중의 계산식

$$\text{축단하중 (kg} \cdot \text{f)} = \frac{3.7 \times 974}{60 \times 0.076} \times \frac{1 \times 1.0}{1} \approx 790.3 \text{ kg} \cdot \text{f}$$

∴ 사용 O.H.L = 790.3 < 810이므로 상기의 사용
 조건에서는 당사 표준제품인 3.7kw 1/30
 (FR 2225)사용 가능합니다.

표준사양

		SUPER MAX SERIES
		GEARED MOTOR
감속기	감속방식	외접치차방식(헬리칼치차) 2단감속(감속비 1/5~1/30) 3단감속(감속비 1/40~1/60)
	윤활방식	유욕 (OIL BATH)
	축단KEY	KS B 1311-84
전동기	전원	3 Ø, 220/380 V, 440 V, 60Hz
	보호형식	전폐외선형 IP44
	시간정격	연속
	단자박스위치	축단에서 볼때 좌측
	리드선	3本 (3.7 kw-4P 2.2 kw-6P) 6 本스타델타시동 (5.5~37 kw-4P 1.5 kw-6P)
	주위온도·습도	-30℃~40℃ 100%이하 (브레이크 부착시 85% 이하)
설치조건	고도	표고 1000m이하
	설치장소	옥내



주유와 교환

SUPER MAX GEARED MOTOR는 납품시 윤활유를 주입하여 납품하고 있습니다. 사용전에 필히 윤활유 주입상태를 점검하여 주시기 바랍니다.

※ 윤활유의 선택

윤활유는 기계의 소음·발열 및 수명 등에 많은 작용을 하므로,
하기 주유일람표를 참조하시어 절기에 따라 지정 윤활유를 사용하여 주시기 바랍니다.

■ 주 유 일 란 표

형식	주위온도	메 이 커	동 절 기	하 절 기
Small Box (소 형)		Shell	Omala 150	Omala 220
		Mobil	Gear 629	Gear 630
		Caltex	Meropa 150	Meropa 220
Medium Box (중 형)		Shell	Omala 220	Omala 320
		Mobil	Gear 630	Gear 632
		Caltex	Meropa 220	Meropa 320
Large Box (대 형)		Shell	Omala 320	Omala 680
		Mobil	Gear 632	Gear 636
		Caltex	Meropa 320	Meropa 680

※ 유 량

- 1) 운전전에 유면계 중앙까지 오일이 들어 있는지 확인하여 주시기 바랍니다.
- 2) 정기적으로 유면계를 확인, 윤활유 부족시 보충하여 주시기 바랍니다.

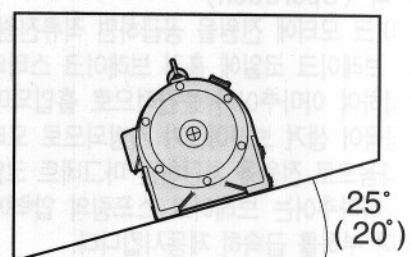
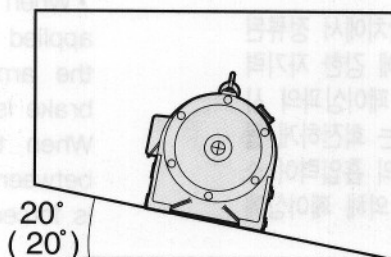
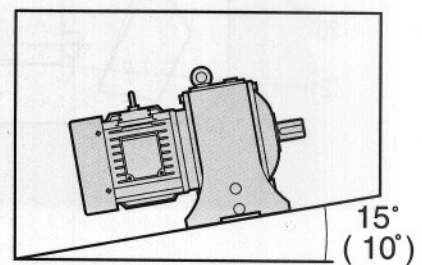
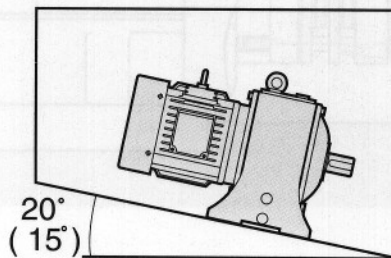
※ 오일교환

설치운전 1개월후에 초기교환 실시후 매 2500 시간정도에 내부세척 후 새로운 오일로 교환하여 주십시오.

설치방법

- ① 일반기계와 동일한 수평 또는 수평에 가깝도록 설치 하여 주십시오.
- ② 회전방향의 좌우 관계없이 사용 가능합니다.
- ③ 경사면에 설치할 경우 우측 그림을 참조하시기 바랍니다.
- ④ 지시된 경사각도 이상으로 설치할 경우 당사에 문의바랍니다.

※ 20HP이상의 GEARED MOTOR는 () 안의 각도범위 내에
서 설치하여 주시기 바랍니다.



브레이크 모터

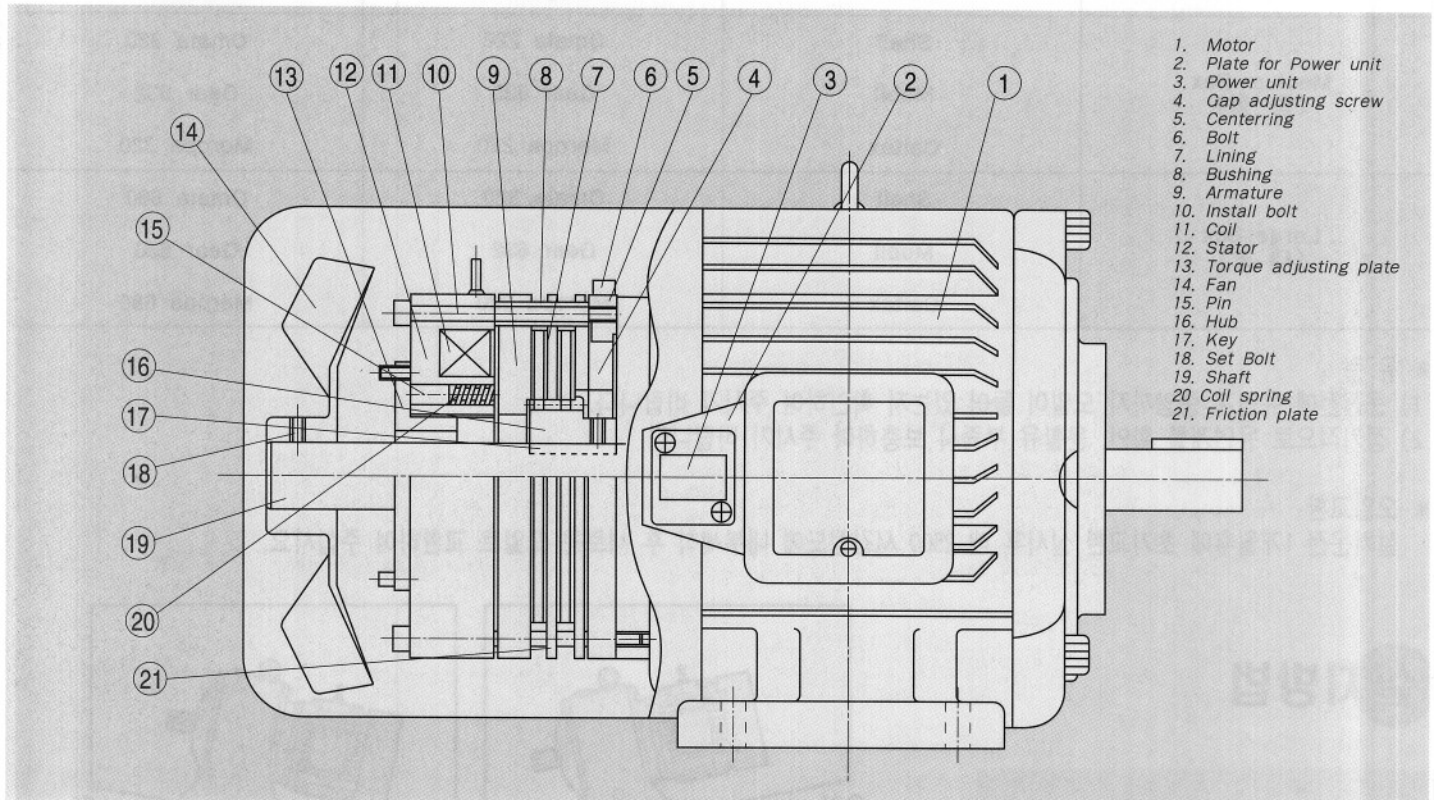
1. SBB BRAKE MOTOR

1) 구조 (CONSTRUCTION)

• SBB브레이크 모터 시리즈는 모터부와 브레이크부로 구성되어 있고 브레이크부는 무여자 작동형의 건식 다판 직류 브레이크입니다.

• Hanshin brake motor, SBB brake motor series are three phase induction motors with dry typed multiple disc, spring actuated electromagnetic friction brake.

SBB형 브레이크모터 구조도 (Basic construction of SBB brake motor)



2) 동작 (Operation)

• 브레이크 모터에 전원을 공급하면 직류전원장치에서 정류된 전류가 브레이크 코일에 흘러 브레이크 스테에 강한 자기력을 발생하여 아마추어가 순간적으로 흡입되며 페이싱과의 사이에 공극이 생겨 브레이크가 개방되므로 모터는 회전하게 됩니다. 다음으로 전원을 차단하면 마그네트 코일의 흡입력이 소멸되어 아마추어는 브레이크 스프링의 압력에 의해 페이싱에 밀착되며 부하를 급속히 제동시킵니다.

• When the brake motor is switched on, D.C is applied to the magnet coil through power unit, and the armature is pulled in a moment. Then the brake is releasd and the motor start rotating.

When the brake motor is switched off, friction between brake shoe and armature by brake spring is forced, Then brake is applied.

브레이크 모터

3)특징 및 사양 (Features and Specification)

• SBB BRAKE MOTOR 는 0.75kw-37kw급으로 안전용 BRAKE MOTOR로서 최적의 특성을 갖도록 제작되었습니다.

1. BRAKE의 제동 TORQUE가 크며 안전 BRAKE로서 장시간의 사용에도 안정된 제동특성을 갖고 있습니다.
2. BRAKE 설치 부분에서 제동 TORQUE를 조정 할 수 있으며 틈새(GAP)조정을 간단히 처리 할 수 있습니다.
3. 수명이 길고 보수가 간단하도록 설계되어 있습니다.

The capacity of SBB brake motor is from 0.75kw to 37kw.

1. Spring-brake-type permits constantly stable and quiet operation characteristic.
2. Easily adjustable gap and easy maintenance assures a long working life.
3. Greater friction surface than that of conventional brakes assures an exceptionally long life.

MOTOR				BRAKE					
Type	Frame	Out(kw)		Voltage Frequency	Type	TORQUE (kg.m)	Voltage	Capacity (w)	Power Unit
		4P	6P						
전폐형 Totally enclosed an cooled type)	80	0.75	0.4	AC220/380 60HZ (AC440V 60HZ)	SBB-0.9	0.9	DC90V (DC190V)	25	HD-10B (HD-20B)
	80L	1.5	0.75		SBB-0.18	1.8		35	
	100L	2.2	1.5		SBB-03.5	3.5		40	
	112M	3.7	2.2		SBB-08	8		45	HD-30B
	132S	5.5	3.7		SBB-08	8		45	
	132M	3.7	5.5		SBB-08	8		45	
	160M	11	7.5		SBB-015	15		50	
	160L	15	11		SBB-030	30		55	
	180M	18.5 22	15		SBB-030	30		55	
	180L	30	18.5 22		SBB-060	60		60	
200L	37	30 37	SBB-060	60	60				

SBB 브레이크의 사양표

	S B B						
	SBB-0.9	SBB-01.8	SBB-03.5	SBB-0.8	SBB-015	SBB-030	SBB-060
정격토크(TORQUE) (kg·m)	0.9	1.8	3.5	8	15	30	60
정격전압 (Votage) (DC·V)	DC 90 V (DC 190V)						
정격전류 (Current) (A at 20°C)	0.278	0.389	0.445	0.500	0.556	0.611	0.667
소비전력 (Capacity) (W at 20°C)	25	35	40	45	50	55	60
간극(Gap)							
규정간극 (Regular) (mm)	0.3	0.3	0.5	0.5	0.5	0.7	0.7
한계간극 (Limit) (mm)	0.8	0.8	1.0	2.0	2.0	2.0	2.0
COIL Ohm (at 20°C)	323.8	231.1	202.4	180.1	161.9	147.4	134.9
아마추어 흡인시간 (Attraction time) (sec)							
규정간극 (Regular) (mm)	0.09	0.12	0.15	0.08	0.13	0.15	0.18
한계간극 (Limit) (mm)	0.11	0.17	0.19	0.13	0.20	0.28	0.37
아마추어해방시간 (Diminishing) (sec)	0.045	0.05	0.065	0.080	0.085	0.090	0.095
허용열방산용량 (Allowable heat dissipation capacity) at 1800mm-50%ED (kg·m/min)	280	420	610	1190	1350	2490	3130
간극조정까지의 허용열량 (Allowable energy for first adjustment) at 1800mm-50%ED(kg·m/min)	2.21	2.91	16.95	26.4	32.5	39.8	51.9
허용총열량 (Allowable total energy) (×10 ⁸ ·m)	18	23.5	43	56	104	205	267
브레이크부GD ² (GD ² OF brake) (kg·m ²)	0.00124	0.00223	0.00168	0.0147	0.0205	0.04325	0.08921
전원장치 (Power Unit)	HD-10B (HD-20B)			HD-30B HD-80			

브레이크 전원장치

■ Type HD-10B 전원장치

HD-10전원장치 최신 전자부품을 조합하여 BRAKE MOTOR의 교류 일체절환을 할 경우에 발생하는 제품 지연 시간을 해소한 전원 장치로 응답시간 신속하고 안정되면 소형화된 제품으로 MOTOR에 취부 및 배선이 용이합니다. 상용 교류전원 AC 220V를정류하여 DC 90V의 출력 전원을 얻으며 고속 SWITCHING 부가 내장된 직류 전원 공급 장치입니다.

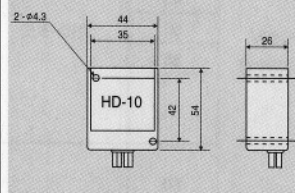
■ Type HD-10B Power unit

HD-10 Power unit is the latest style that provides quick response without delay time.
Exciting DC voltage, DC 90V is available from the AC power source(AC 220) and high speed switching device is inside.

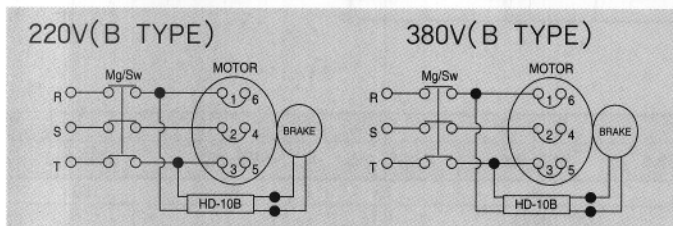
■ 사양(Specification)

전원장치 형식 (TYPE)	HD -10B
정격입력전압 (Primary voltage)	AC 220V, 50/60Hz
정격출력전압 (Secondary voltage)	DC 90V
정격출력전류 (Secondary Current)	DC 1A
주위온도범위 (Ambient temperature)	-10°C ~ +40°C
특징 (Feature)	Non-contact simultaneous switching (무접점 동시 절환형)

■ 외형치수도(Dimension)



■ 결선도 (Circuit)



- 전원장치는 반도체(SEMICONDUCTOR)로 구성되어있어 전기적 충격으로 소손될 수 있으므로 주의하십시오.
- 전원 장치 출력측(BACK)에 접점을 접속하여 사용하지 마십시오.

- Handle power unit carefully due to being made of semiconductor.
- Do not connect the output of power unit to contact point.

■ Type HD-20B, 20A 전원장치

HD-20전원장치는 별도 절환방식을 채택한 전원 장치로 접점을 사용하여 직류 별도 절환을 하여야 신속한 응답점을 얻을 수 있으며 보급형 전원장치로 널리 사용되고 있습니다.
상용 교류 전원을 AC 220V를 정류하여 DC 90V의 출력 전원을 얻는 보급형 별도 절환 직류전원 장치입니다.

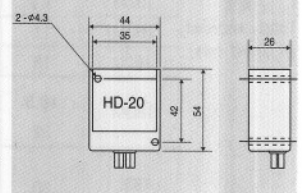
■ Type HD-20B, 20A Power unit

Fast and simple installation can be provided by using HD-20 Power unit.
Exciting DC Voltage, DC 90V is available from the AC power source (AC 220V)

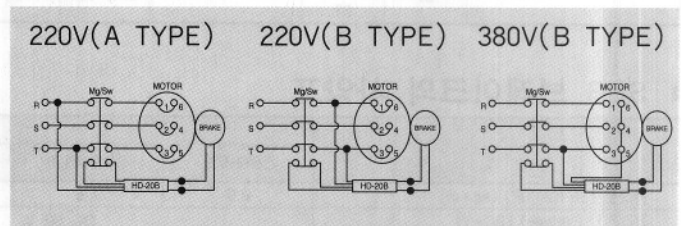
■ 사양(Specification)

전원장치 형식 (TYPE)	HD -20B, 20A
정격입력전압 (Primary voltage)	AC 220V, 50/60Hz
정격출력전압 (Secondary voltage)	DC 90V
정격출력전류 (Secondary current)	DC 2A
주위온도범위 (Ambient temperature)	-10°C ~ +40°C
특징 (Feature)	Separate switching (별도절환방식)

■ 외형치수도(Dimension)



■ 결선도 (Circuit)



- 무접점 전원장치가 아니므로 SWITCH를 사용하여서 별도 절환을 하여야 제동이 신속합니다.
(단, 제동이 늦어도 제동이 없을시는 동시절환을 하여야 합니다.)
- 전원 장치는 반도체 SEMICONDUCTOR로 구성되어 있어 전기적 충격으로 소손될 수 있으므로 주의하십시오.

- Use separate switching for fast response.
(In the case of fast response is unnecessary, simultaneous switching would be possible)
- Handle carefully

■ Type HD-30B,30A 전원장치

HD-30B전원장치 최신 전자부품을 조합하여 BRAKE MOTOR의 교류 일체절환을 할 경우에 발생하는 제품 지연 시간을 해소하고, 순시 과여자 방식(DC 190V)을 채택하여 응답 시간이 신속하고 안정되며 정밀한 정지 정도를 요구할때 사용되는 직류 전원 공급 장치 입니다.

상용 교류 전원 AC 220V 을 정류하여 DC 90V의 직류 전원을 얻으며 고속 SWITCHING부 및 과여자가 내장된 직류 전원공급장치 입니다.

■ Type HD-30BA Power unit

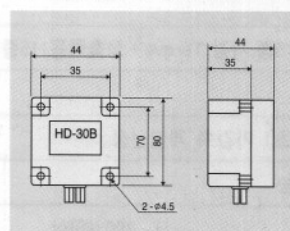
Twice over-excitation power unit HD-30 Provide fast response and perfect stop accuracy.

An over-excitation switching applies a high voltage(DC 190V)to the brake coil for a short period of time until the torque reaches full force by using high speed switching.

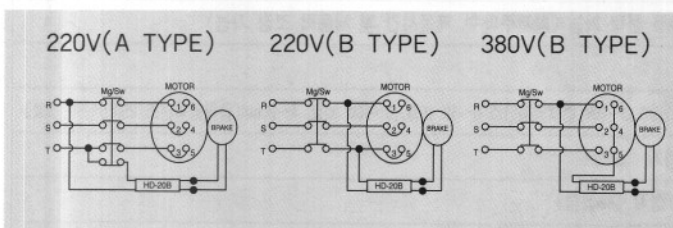
■ 사양(Specification)

전원장치 형식 (TYPE)	HD -30B,30A
정격입력전압 (Primary voltage)	AC 220V, 50/60Hz
정격출력전압 (Secondary voltage)	DC 90V (Instantaneously)
정격출력전류 (Secondary current)	DC 1A
주위온도범위 (Ambient temperature)	-10°C ~ +40°C
특징 (Feature)	simultaneous switching (동시 절환 방식)

■ 외형치수도(Dimension)



■ 결선도 (Circuit)



- 무접점 전원 장치로 교류 동시 절환을 하여야 제동이 신속합니다.
- 전원 장치는 반도체(SEMICONDUCTOR)구성 되어 있어 전기적 충격으로 손상될 수 있으므로 주의하십시오.
- BRAKE운전시 신속한 응답성과 안정된 정지정도를 요구할 때 가장 적합합니다.
- Use separate switching for fast response and stopping accuracy.
- Handle power unit carefully due to being made of semiconductor.
- Do not connect the output of power unit to contact point.
- Perfect for fast response and contact stopping accuracy of braking.

■ Type HD-80B 전원장치

HD-80전원장치는 대형 BRAKE 제어용으로 순시 과여자 전압(DC 270V) 방식 채택하여 열량이 크고 신속하며 안정된 제동이 장점이고 정격 여자 전압은 최소 DC 45V · 최대 DC 90V까지 조절이 가능하며 사용자의 사양 선택에 따라 고정 및 조절이 가능합니다.

■ Type HD-80B, Power unit

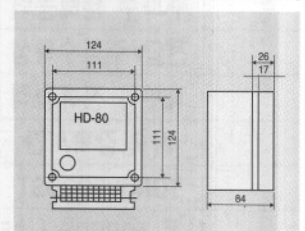
Compact and the latest style of HD-80 power unit provides very fast response and high stop precision by triple over-excitation.

Exciting voltage controlling is possible from DC 45V to DC 90V.

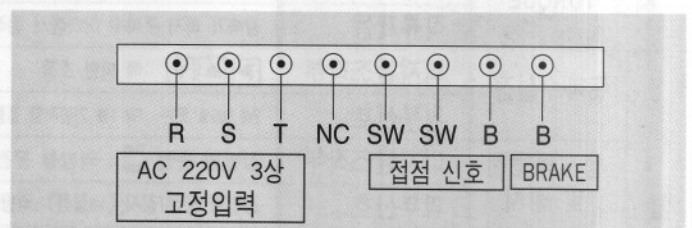
■ 사양(Specification)

전원장치 형식 (TYPE)	HD -80
정격입력 전압 (Primary voltage)	AC 220V 3Phase, 50/60Hz
정격출력전압 (Secondary voltage)	DC 45V-DC90V,Instantaneously DC270
정격출력전류 (Secondary current)	DC 2A
주위온도범위 (Ambient temperature)	-10°C ~ +40°C

■ 외형치수도(Dimension)



■ 결선도 (Circuit)



- AC 220V3상 입력 전원에는 점점을 사용하여 절환하지 마십시오.(고정입력)
- 점점 신호(S/W)를 사용하여 절환하면 정확한 정지 정도를 얻을 수 있습니다.
- 전원 장치는 반도체 (SEMICONDUCTOR)로 구성되어 있어 전기적 충격 (누설 전류,ARC)으로 손상될 수 있으므로 주의하십시오.
- Do not switching with contact point in AC 220V, 3Phase.
- Handle carefully

전기적 특성 220V급

■ 표준사양표

시리즈명칭		220V급HYDRIVE-V(BRD일체형)					220V급 HYDRIVE-V																
모델명		1LD-B	1.5LD-B	2.5LD-B	3.5LD-B	5.5LF-B	1LD	1.5LD	2.5LD	3.5LD	5.5LD	8F	11LF	16LF	22LF	33LF	40LF	50LF	60LF	75LF			
보호구조 (注1)		밀폐형 (IP 40)					밀폐형 (IP 40)		밀폐형 (IP 20)		개방형 (IP 00)												
최대적용모타용량(kw,4p)(注2)		0.4	0.75	1.5	2.2	3.7	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	22	30	37	45	55			
정격용량 (KVA)	220 V	1.0	1.7	2.6	3.6	5.7	1.0	1.7	2.6	3.6	5.7	8.3	11	16	22	33	42	50	63	83			
	220V	1.1	1.9	2.9	4.0	6.3	1.1	1.9	2.9	4.0	6.3	9.1	12	18	24	36	46	55	69	83			
정격입력 교류전압		3상 (3선) 200~220/ 200~230V±10%,50/60Hz ±5%																					
정격출력전압 (V) (注3)		3상 (3선) 200~300V(수전전압에 대응함)																					
정격출력전류 (V)		3	5	7.5	10.5	16.5	3	5	7.5	10.5	16.5	24	32	46	64	95	121	145	182	220			
제어방식		정현파 PWM방식, 전압제어방식																					
출력 주파수 범위 (注4)		1~400Hz(0.5Hz시동)											1~120Hz(0.5Hz시동)										
주파수정도 (程度)		최고 주파수의 ±0.5%(25±10℃)																					
주파수 분해능력		0.01Hz																					
전압/주파수특성		정Torque용:4종 정 Torque + 정출력용:5종,저감 Torque + 정출력용:15종 합계36종 선택가능																					
과부하 전류정격		150% 60초 (단,10분간 1회에 한함)																					
가속,감속시간		직선 가감속시 0.1~2.999.9초 (매 0.1초) 가감속 개별선택																					
TORQUEBOOST		수동 Boots / 자동 Boots교체 병용가능																					
시동 TORQUE (注5)		100%~150%											100%이상										
제동 TORQUE		회생제동					약50%이상 (콘덴서제한 및 BRD 회생제동)					약20%(콘덴서 제한형 회생 제동)					약 10~15%(콘덴서 제한형 회생제동)						
		직류제동					감속기 최저 주파수 이하에서 동작, 사용유무 선택 가능 (최저주파수, 제동시간 및 제동력 조정 가능)																
입력 신호	주파수설정	디지털조작부		 에 의한 조작																			
		외부신호		2W 500Ω 또는 1W 1kΩ 가변저항 볼륨 DC 0~5V,DC 0~10V(입력임피던스 0~5V 15kΩ, 0~10V 30kΩ, 4~20mA(입력임피던스 250 0~5V 15kΩ)																			
	정·역운전 및 정지	디지털조작부		정방향 운전 ^{FWD} RUN , 역방향 운전, ^{REV} RUN /정지 STOP																			
		외부신호		정방향 운전/정지 (1a접점),역방향 운전 /정지 (2a접점)																			
	다단속 속도 운전		최대 4단계까지 설정 가능 (2a접점지령)																				
	불연속(Jogging)운전		0.5~9.9 Hz (매 0.1Hz,1a접점지령)																				
	2단 가감속		가감속 기간의 2단계설정																				
	고장해제 (Reset)		고장 해제 , 출력 순시 차단 (1a 접점지령)																				
	Free-Run Stop		외부입력에의해 출력 순시 차단 (1a 접점 지령)																				
	외부 신호	주파수 도달 신호		주파수 설정값에 도달시 ON (Transister의 개방 콜렉터 출력)																			
운전중신호		인버터 운전중 ON (Transister의 개방 콜렉터 출력)																					
주파수표시		아날로그 매터 (AC 0~10V, 1mA최대 눈금계기), 디지털 주파수 카운터에 의한 표시																					
고장표시 점점		인버터 이상시 ON (1C접점출력)																					

기 타 기 능		주파수 점프, 주파수 상하한값설정 , 최고주파수 조정, 모터운전 잠음 조정, 가변식 전자 열동계전기, 직선, 곡선, 가감속 아날로그 주파수 설정 바이어스 이득 조정, 출력 주파수 표시, 모터회전수 표시, 출력전류 표시, 출력전압 이득조정, 고장 표시, Retry 기능 (15m sec~ 3sec의 순시정전, 과전류, 과전압, 부족전압에 의한 트립발생시 재실행)													
보 호 기 능	부족전압	수전전압이 150~160V 이하일 때 정지													
	순시과전류	전자회로에 의한 보호													
	과전압	콘버터부 출력전압이 약 400V이상일 때 정지													
	과부하	전자 열동 계전기에 의한 보호 (열동값이 50%~100% 사이 가변 가능)													
	방열판 과열	온도 계전기 (Retry) 에 의한 보호													
	순시정전	정전이 15m sec 이상이면 인버터 정지됨													
	SALL방지	과전류 · 과전압 제한으로 Trip 방지													
	과부하 제한기능	인버터 출력 전류를 검출하여 과부하시 전류를 억제함													
일 반 사 양	주위온도	-10~40℃ (Cover 개방시 -10~50℃, 보존온도 -10~70℃)								-10~50℃ (보존온도 -10~70℃)					
	습도	20~90%RH (이슬이 없는 경우)													
	진동 (注 6)	0.5G (40~55Hz), 진폭 0.075 (10~40Hz)							0.2G (40~55Hz)						
	사용장소	표고 1,000m 이하, 옥내 (부식성 가스 및 먼지가 없는 장소)													
	도장색	MUNSELL 기준 5Y 7/1													
O p t i o n	사용 전원 전환	오프선기판을 취부함으로써 모터를 상용 운전으로부터 인버터 운전으로 전환이 가능함													
	직류제동 외부지령	외부신호에 의해 직류 제동이 가능함 (1a접점 홀딩 입력)													
	인버터 출력 전류 신호	직류 전압으로 출력 (인버터 정격전류시 DC 4V 출력)													
	과부하 예고신호 계전기 출력	과부하 운전시 ON(1a접점 출력)													
	운전중표시신호 계전기 출력	인버터 운전시 ON(1a접점 출력)													
	주파수도달신호 계전기 출력	지정주파수 도달시 ON (1a접점 출력)													
중량 (kg)		4.5	4.5	5.2	6	6.5	12	13.5	14	22	26	30	40	58	58

(注 1) 보호방식은 JEM1030-1977에 따릅니다. IP40의 보호가 필요한 경우에는 배선용 구멍을 막아주십시오.

(注 2) 적용 모터는 당사 표준 3상 모터를 표시하였고 기타 타사 제품의 모터를 사용하는 경우는 모터의 정격전류가 인버터의 정격 출력전류를 넘지 않도록하여 주십시오.

(注 3) 출력 전압은 전원 전압이 낮아짐에 따라 같이 낮아집니다.

(注 4) 모터를 50Hz/60Hz를 초과하여 운전하는 경우는 모터 제작회사에 문의후 사용바랍니다.

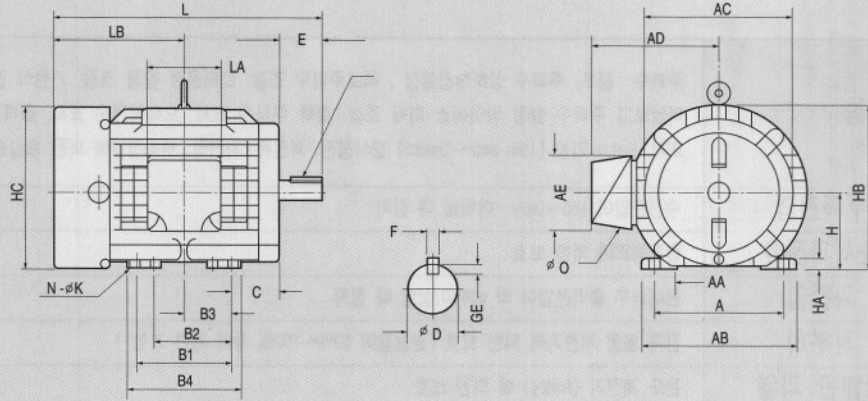
(注 5) 당사 표준 3상 모터를 사용시 최고 주파수 50Hz/60Hz를 선택하여 Torque boots를 조정하는 경우

(注 6) 시험방법은 JIS C 0911 (1984)를 기준하였습니다.

일반 사양

그림 A

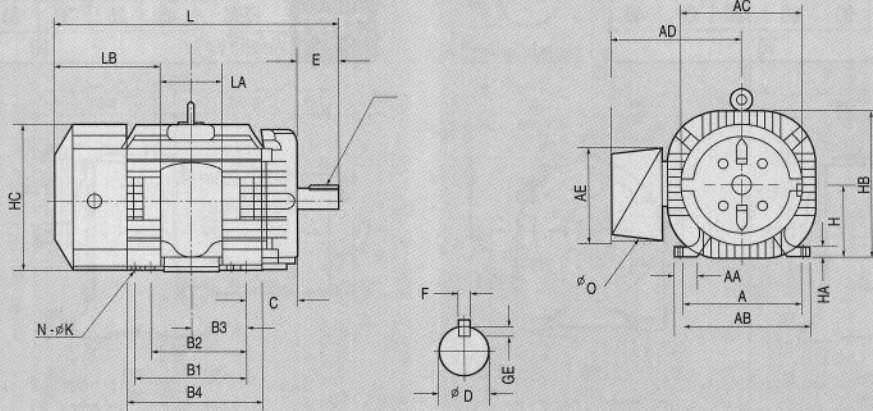
- 출력(kw): 0.75~190
- 전압 : 600V이하
- Phase: 3 ϕ
- Hz: 60, 50
- pole: 2, 4, 6, 8
- 보호등급 : IP44, 54
- 절연계급 : B, F



(단위mm)

프레임	출력(KW)				전동기 외형지수											그림
					전장치수						축치수				키이치수 (폭×높이×길이)	
	2극	4극	6극	8극	AC	H㉓	HB	HC	L	LB	D㉑	E	키홀㉒ F GE			
100L	-	2.2	1.5	0.75	191	100	223	213	368	175	28	60	8	4	8×7×45	A
112M	3.7	3.7	2.2	1.5	216	112	234	239	389	189	28	60	8	4	8×7×45	
132S	5.5 7.5	5.5	3.7	2.2	256	132	279	278	460	221	38	80	10	5	10×8×63	
132M	-	7.5	5.5	3.7	256	132	279	278	498	240	38	80	10	5	10×8×63	
160M	11 15	11	7.5	5.5	312	160	333	334	606	283	42	110	12	5	12×8×80	
160L	18.5	15	11	7.5	312	160	333	334	650	305	42	110	12	5	12×8×80	
180M	22	18.5 22	15	11	342	180	373	374 374	676	324	48	110	14	5.5	14×8×80	
180L	30	30 22	18.5	15	342	180	373	374 374	714	343	55	110	16	6	16×10×80	B
200L	37 45	-	-	-	411	200	403	405	771	375.5	55	110	16	6	16×10×80	
	-	37 45	30 37	18.5 22	411	200	403	405	801	375.5	60	140	18	7	18×11×110	
225M	55	55	-	30	463	225	475	450	854	409.5	60	140	15	5	15×10×110	
250S	-	-	45	37	512	250	534	500	945	462.5	75	140	20	7.5	20×12×110	
250M-P	-	75	55	45	512	250	534	500	945	462.5	75	140	20	7.5	20×12×110	
250M-C	75	-	-	-	512	250	534	500	945	462.5	55	110	15	5	15×10×110	
280S-P	-	93	75	55	569	280	594	570	1091	521.5	85	170	24	8	24×16×140	
280S-C	93	-	-	-	569	280	594	570	1061	521.5	60	140	15	5	15×10×80	
280M-P	-	110	93	75	569	280	594	570	1091	521.5	85	170	24	8	24×16×140	
280M-C	110	-	-	-	569	280	594	570	1061	521.5	60	140	15	5	15×10×110	
280L-P	-	150	110	93	569	280	594	570	1091	521.5	85	170	24	8	24×16×140	
280L-C	150	-	-	-	569	280	594	570	1061	521.5	60	140	15	5	15×10×110	
280LL-P	-	190	150	110	569	280	594	570	1310	632.5	85	170	24	8	24×16×140	
280LL-C	190	-	-	-	569	280	594	570	1280	632.5	60	140	15	5	15×10×110	

그림 B



(단위mm)

프레임	설치부치수⑤											단자박스치수					중량 (KG)	그림
	A	AA	AB	HA	B1	B2	B3	B4	C	K④	N	AD	AE	LA	O			
															구멍	PF		
100L	160	44	194	12	140	-	70	163	63	12	4	177	115	105	28	0.75	30	A
112M	190	49	226	13	140	(114)	70	166	70	12	8	188	115	105	28	0.75	46	
132S	216	50	264	14	140	-	70	172	89	12	4	218	146	125	35	1	61	
132M	216	50	264	14	178	(140)	89	210	89	12	8	218	146	125	35	1	74	
160L	254	50	284	16	210	-	105	243	108	15	4	287	193	150	44	1.25	116	
160L	254	50	285	16	254	(210)	127	287	108	15	8	287	193	150	44	1.25	135	
180M	279	57	315	18	241	-	120.5	280	121	15	4	301	193	150	50	1.5	172	
180L	279	57	315	18	279	(241)	139.5	325	121	15	8	301	193	150	50	1.5	181	B
200L	318	60	364	23	305	(267)	152.5	350	133	19	8	362	260	180	60	2	297	
	318	60	364	23	305	(267)	125.5	350	133	19	8	362	260	180	60	2	297	
225M	356	57	406	25	311	(286)	155.5	366	149	19	8	387	260	180	60	2	385	
250S	406	58	458	30	(349)	311	174.5	406	168	24	8	474	296	270	76	2.5	450	
205M-P	406	58	458	30	349	(311)	174.5	406	168	24	8	474	296	270	76	2.5	510	
205M-C	406	58	458	30	349	(311)	174.5	406	190	24	8	474	296	270	76	2.5	510	
280S-P	457	65	508	38	(419)	368	209.5	478	190	24	8	510	296	270	76	2.5	670	
280S-C	457	65	508	38	(419)	368	209.5	478	190	24	8	510	296	270	76	2.5	670	
280M-P	457	65	508	38	419	(368)	209.5	478	190	24	8	510	296	270	76	2.5	790	
280M-C	457	65	508	38	419	(368)	209.5	478	190	24	8	510	296	270	76	2.5	790	
280L-P	457	65	508	38	419	(368)	209.5	478	190	24	8	510	296	270	76	2.5	825	
280L-C	457	65	508	38	419	(368)	209.5	478	190	24	8	510	296	270	76	2.5	825	
280LL-P	457	65	508	38	635	508	317.5	693	190	24	8	510	296	270	76	2.5	1250	
280LL-C	457	65	508	38	635	508	317.5	693	190	24	8	510	296	270	76	2.5	1250	

* 적용공사: ④ ø : +0.43 j ⑤ 괄호내의 설치 구멍위치는 적용하지 않습니다.

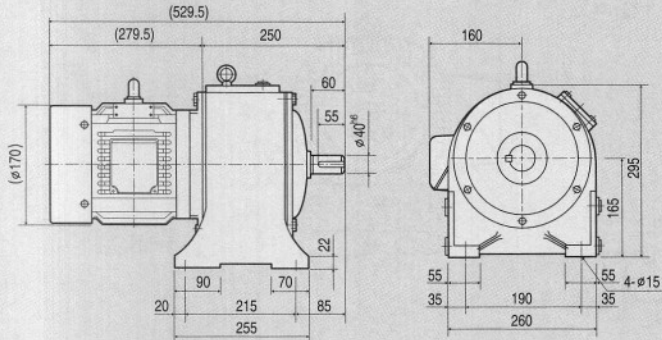
⑥주문에 따라 C형 치수로 P형출력, C형 출력의 제품도 생산 가능함

GEARED MOTOR

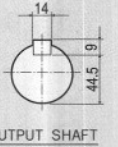
SG 2165	Power	1.5Kw 4P			0.75Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	70					



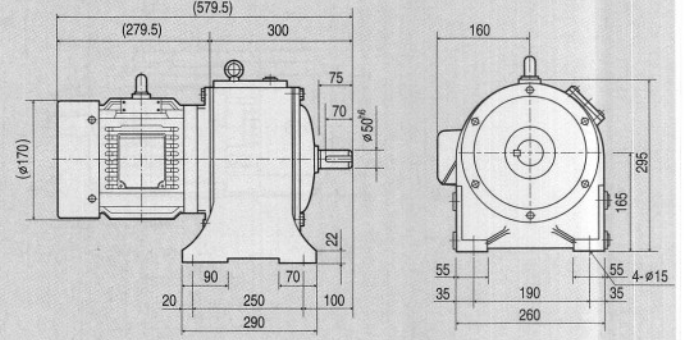
OUTPUT SHAFT



SG 3165	Power	1.5Kw 4P			0.75Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	90					



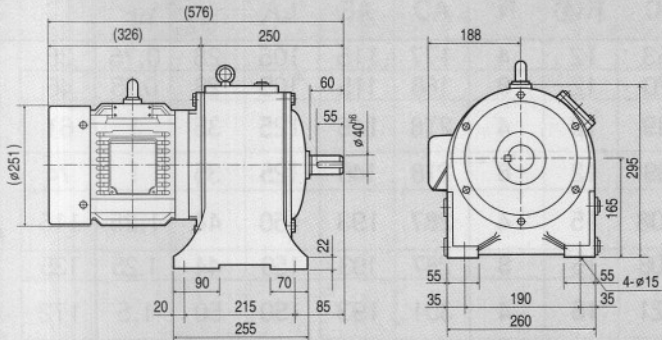
OUTPUT SHAFT



SG 2165	Power	2.2Kw 4P			1.5Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	85					



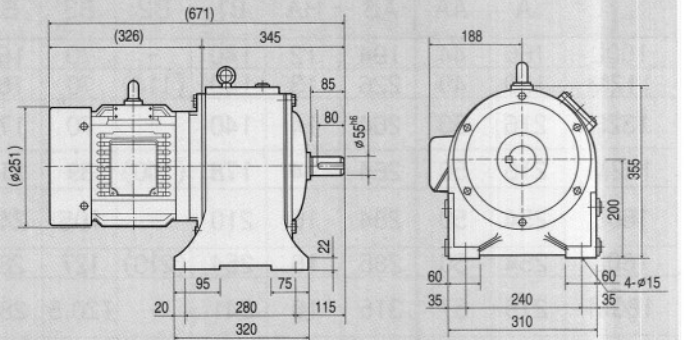
OUTPUT SHAFT



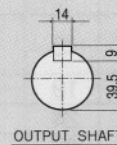
SG 3200	Power	2.2Kw 4P			1.5Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	140					



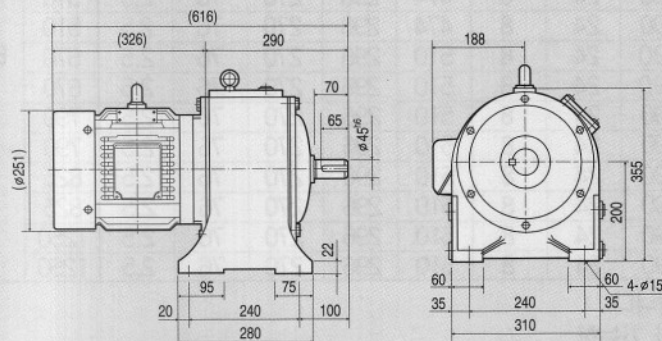
OUTPUT SHAFT



SG 2200	Power	2.2Kw 4P		1.5Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	98			



OUTPUT SHAFT

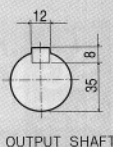


※ () 내의 치수는 다소 변경될 수 있음

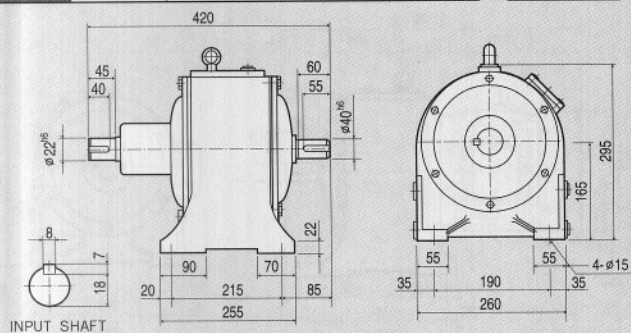
LINE POWER

SUPERMAX

SL 2165	Power	1.5Kw 4P			0.75Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	52					

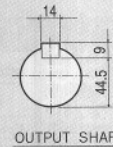


OUTPUT SHAFT

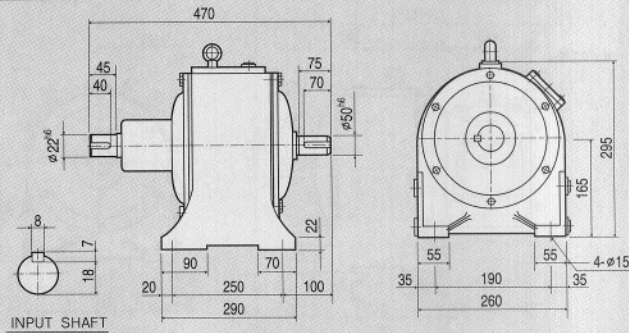


INPUT SHAFT

SL 3165	Power	1.5Kw 4P			0.75Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	72					

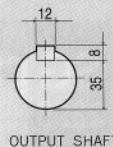


OUTPUT SHAFT

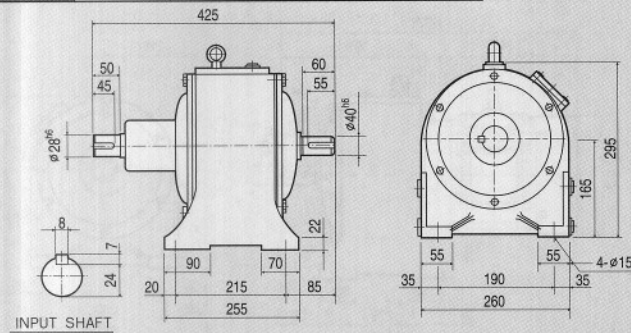


INPUT SHAFT

SL 2165	Power	2.2Kw 4P			1.5Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	52					

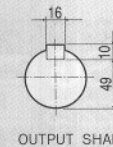


OUTPUT SHAFT

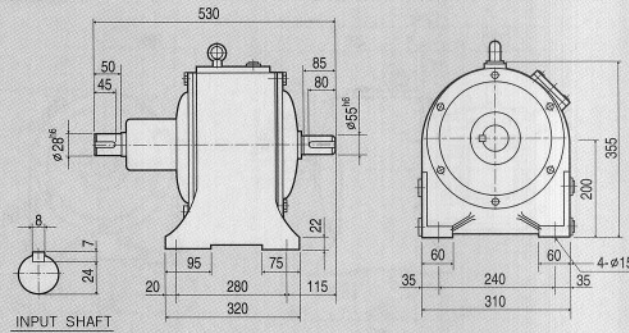


INPUT SHAFT

SL 3200	Power	2.2Kw 4P			1.5Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	116					

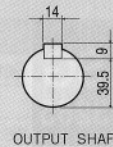


OUTPUT SHAFT

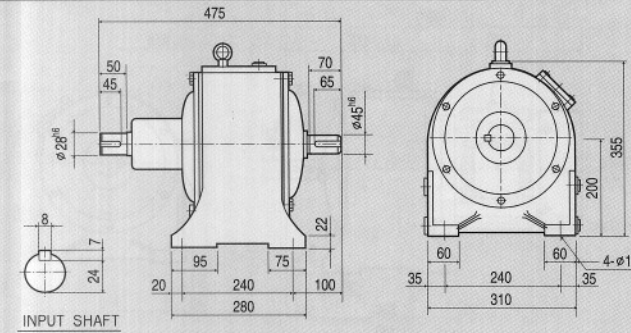


INPUT SHAFT

SL 2200	Power	2.2Kw 4P		1.5Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	76			



OUTPUT SHAFT

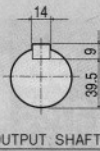


INPUT SHAFT

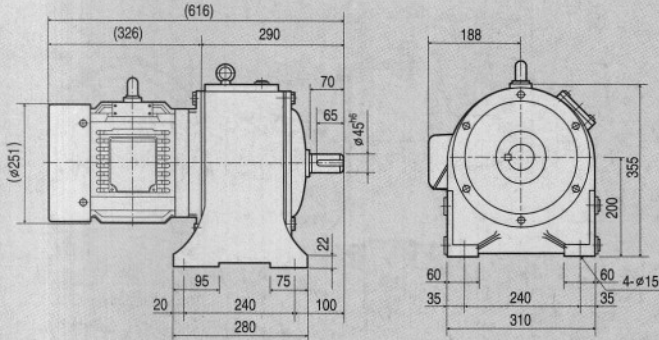
GEARED MOTORS

GEARED MOTOR

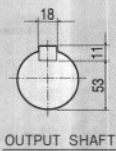
SG 2200	Power	3.7Kw 4P			2.2Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	110					



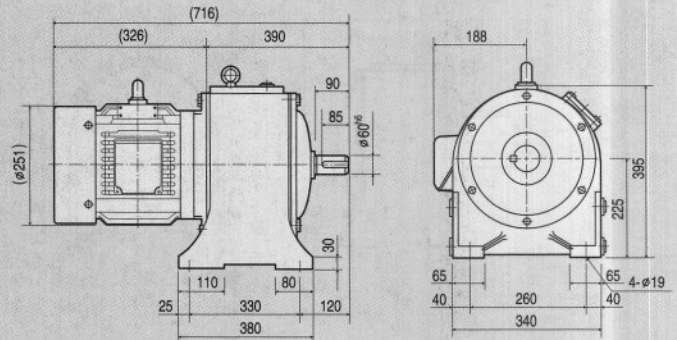
OUTPUT SHAFT



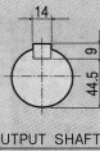
SG 3225	Power	3.7Kw 4P			2.2Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight (Kg)	185					



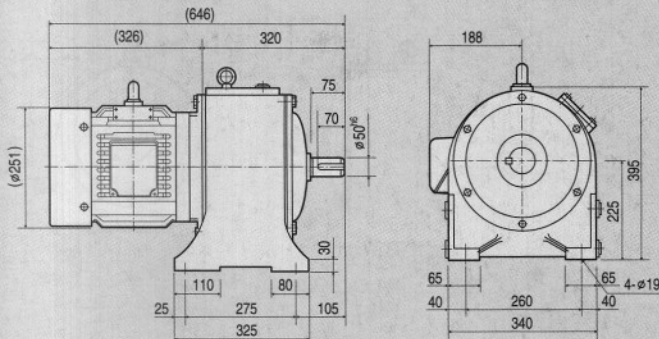
OUTPUT SHAFT



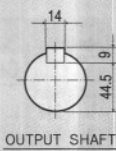
SG 2225	Power	3.7Kw 4P			2.2Kw 6P		
	Gear Ratio	1/25	1/30		1/25	1/30	
	RPM	72	60		48	40	
	Weight (Kg)	135					



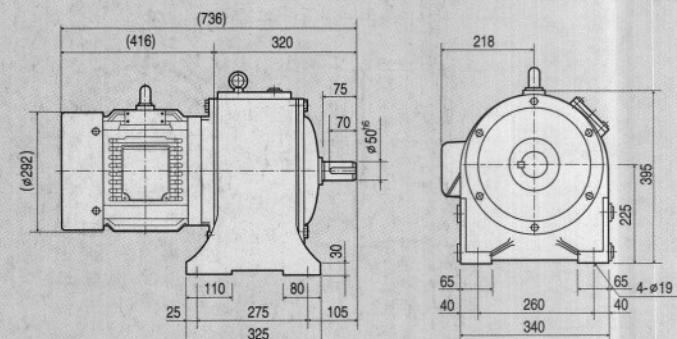
OUTPUT SHAFT



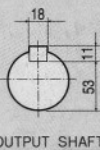
SG 2225	Power	5.5Kw 4P			3.7Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	160					



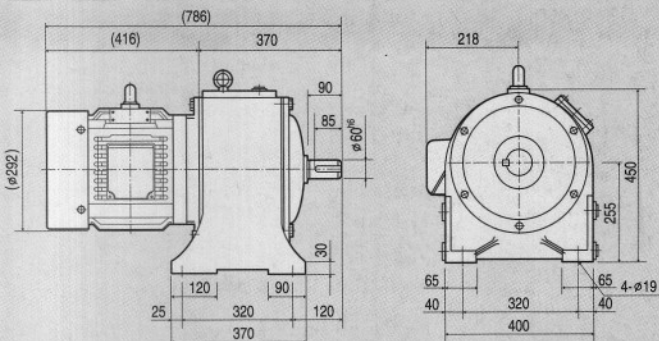
OUTPUT SHAFT



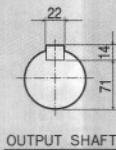
SG 2255	Power	5.5Kw 4P			3.7Kw 6P		
	Gear Ratio	1/25	1/30		1/25	1/30	
	RPM	72	60		48	40	
	Weight(Kg)	200					



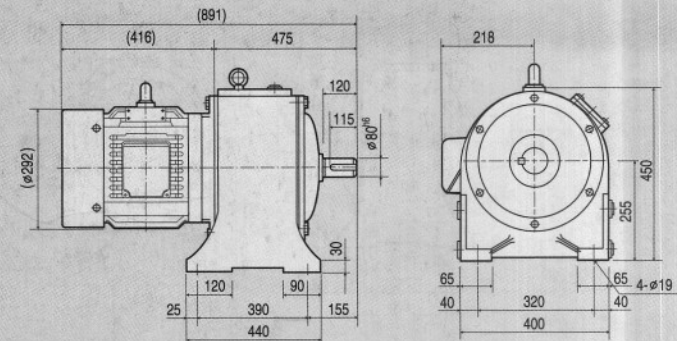
OUTPUT SHAFT



SG 3255	Power	5.5Kw 4P			3.7Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	295					



OUTPUT SHAFT

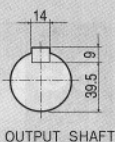


LINE POWER

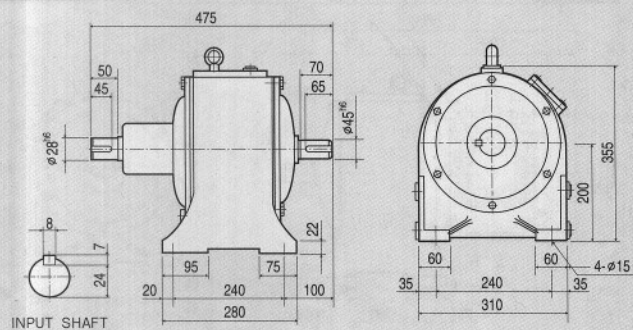
SUPER MAX

**SL
2200**

Power	3.7Kw 4P			2.2Kw 6P		
Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
RPM	180	120	90	120	80	60
Weight(Kg)	76					

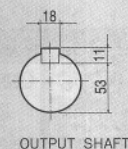


OUTPUT SHAFT

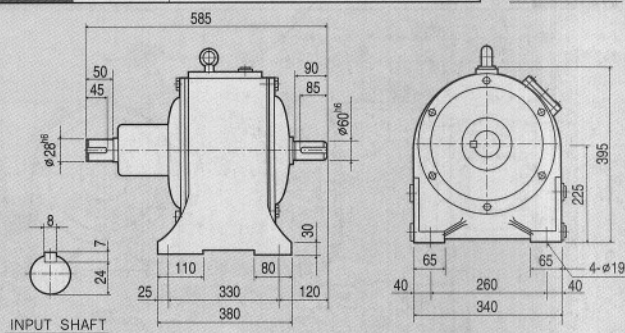


**SL
3225**

Power	3.7Kw 4P			2.2Kw 6P		
Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
RPM	45	36	30	30	24	20
Weight(Kg)	160					

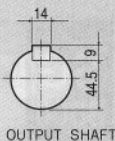


OUTPUT SHAFT

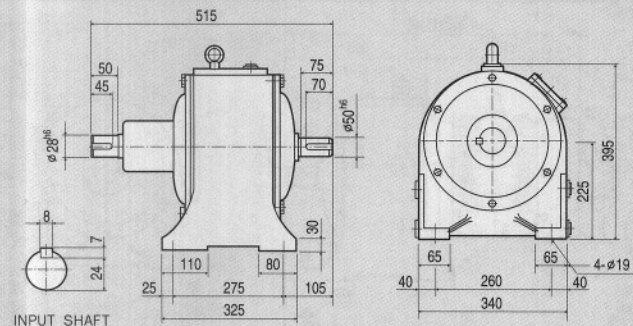


**SL
2225**

Power	3.7Kw 4P		2.2Kw 6P	
Gear Ratio	1/25	1/30	1/25	1/30
RPM	72	60	48	40
Weight(Kg)	105			



OUTPUT SHAFT

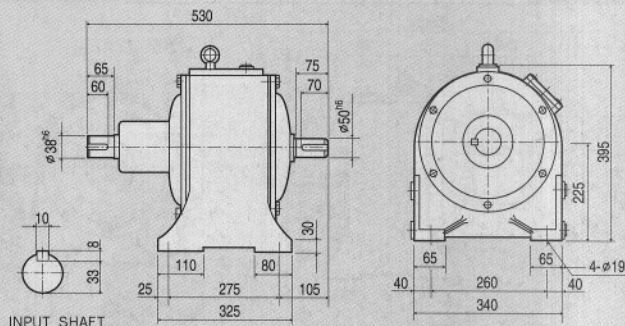


**SL
2225**

Power	5.5Kw 4P			3.7Kw 6P		
Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
RPM	180	120	90	120	80	60
Weight(Kg)	107					

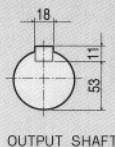


OUTPUT SHAFT

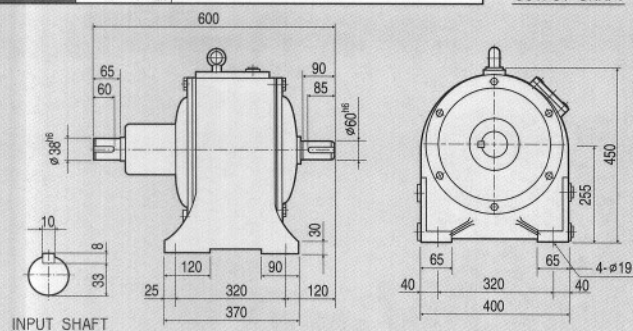


**SL
2255**

Power	5.5Kw 4P		3.7Kw 6P	
Gear Ratio	1/25	1/30	1/25	1/30
RPM	72	60	48	40
Weight(Kg)	175			

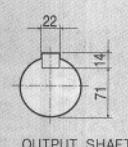


OUTPUT SHAFT

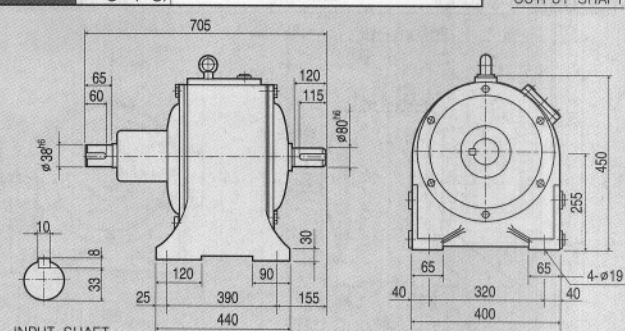


**SL
3255**

Power	5.5Kw 4P			3.7Kw 6P		
Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
RPM	45	36	30	30	24	20
Weight(Kg)	250					

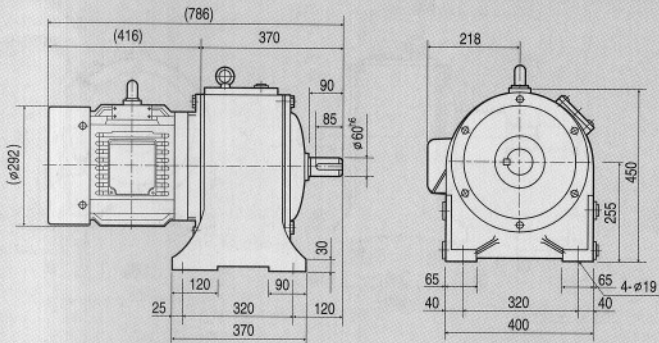
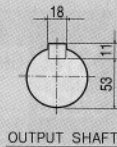


OUTPUT SHAFT

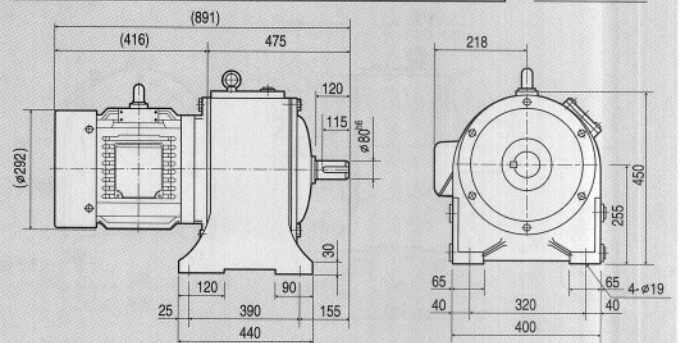
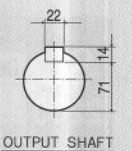


GEARED MOTOR

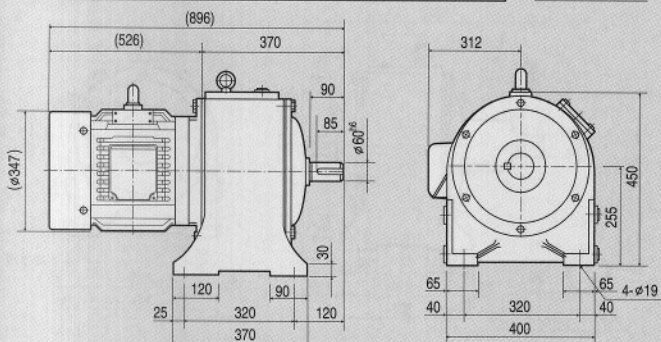
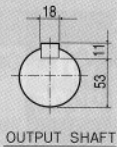
SG 2255	Power	7.5Kw 4P			5.5Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	220					



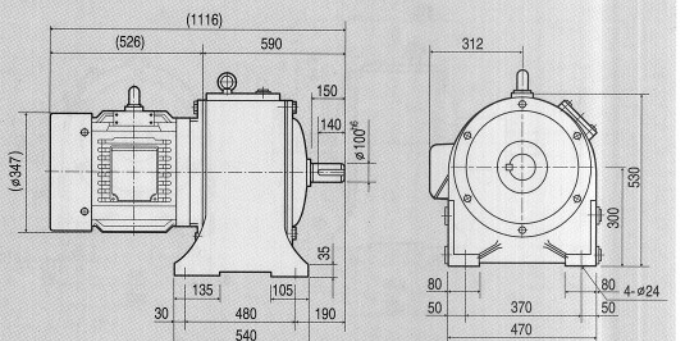
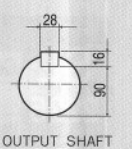
SG 3255	Power	7.5Kw 4P			5.5Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	310					



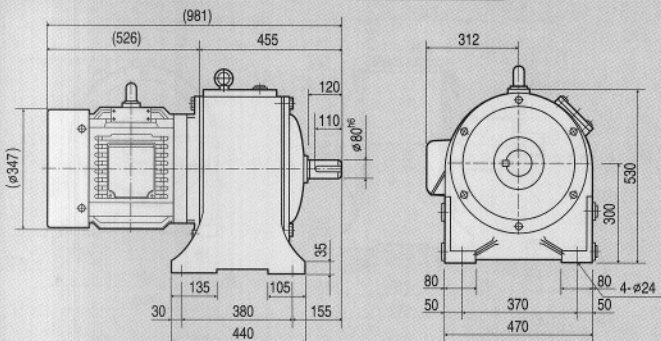
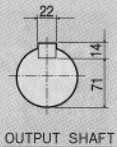
SG 2255	Power	11Kw 4P			7.5Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	230					



SG 3300	Power	11Kw 4P			7.5Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight (Kg)	450					



SG 2300	Power	11Kw 4P		7.5Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	370			



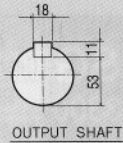
※ () 내의 치수는 다소 변경될 수 있음

LINE POWER

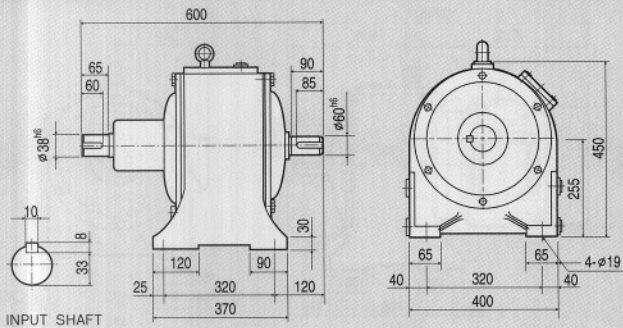
SUPERMAX

**SL
2255**

Power	7.5Kw 4P			5.5Kw 6P		
Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
RPM	180	90	60	120	60	40
Weight(Kg)	175					

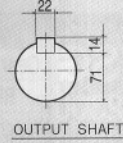


OUTPUT SHAFT

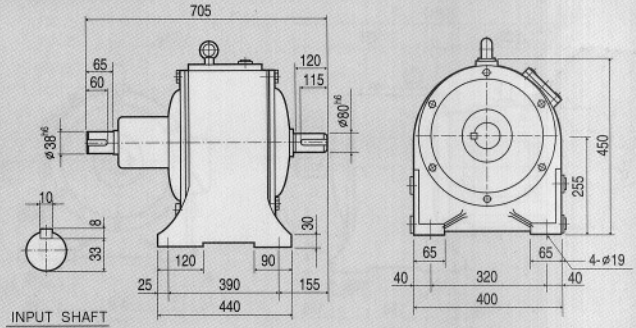


**SL
3255**

Power	7.5Kw 4P			5.5Kw 6P		
Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
RPM	45	36	30	30	24	20
Weight(Kg)	250					

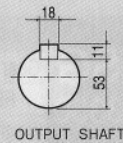


OUTPUT SHAFT

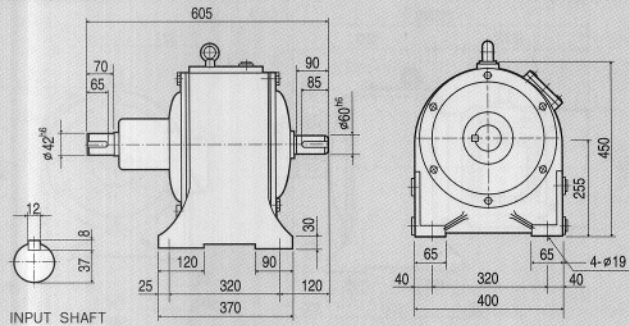


**SL
2255**

Power	11Kw 4P			7.5Kw 6P		
Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
RPM	180	120	90	120	80	60
Weight(Kg)	178					

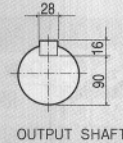


OUTPUT SHAFT

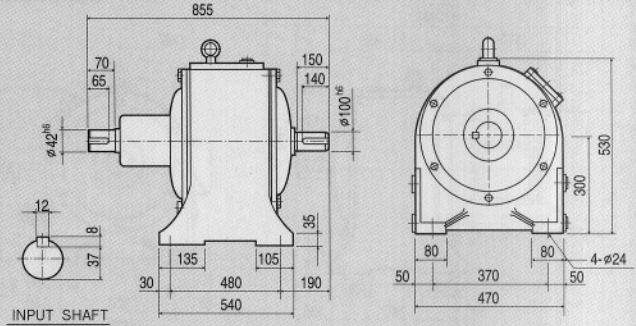


**SL
3300**

Power	11Kw 4P			7.5Kw 6P		
Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
RPM	45	36	30	30	24	20
Weight(Kg)	365					

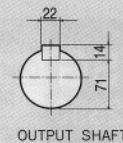


OUTPUT SHAFT

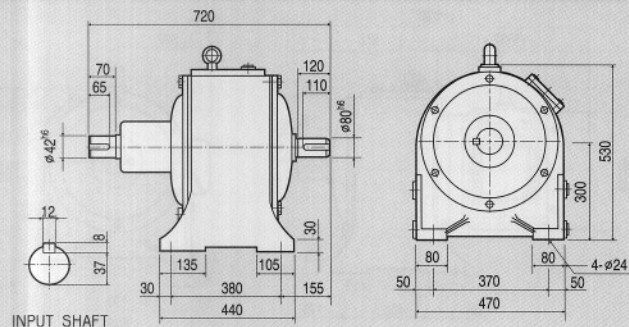


**SL
2300**

Power	11Kw 4P		7.5Kw 6P	
Gear Ratio	1/25	1/30	1/25	1/30
RPM	72	60	48	40
Weight(Kg)	280			

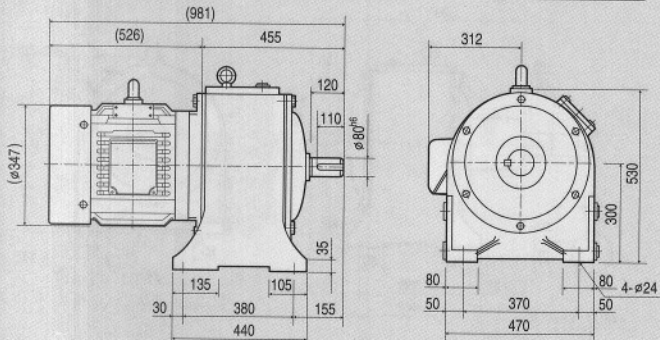
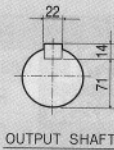


OUTPUT SHAFT

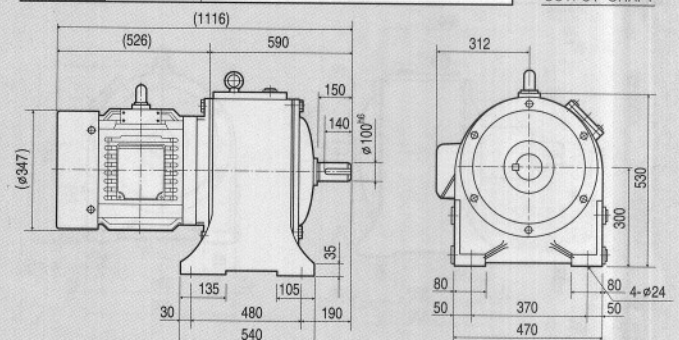
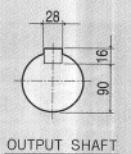


GEARED MOTOR

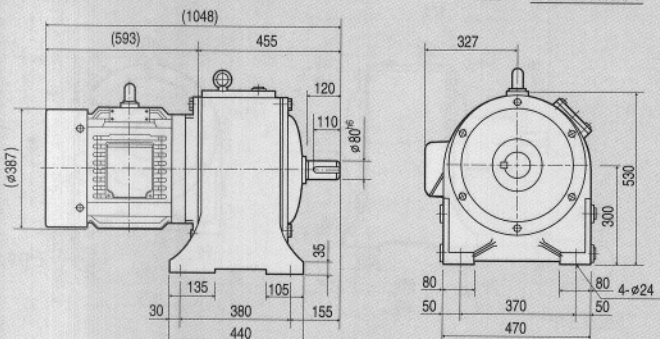
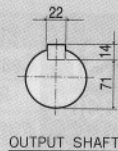
SG 2300	Power	15Kw 4P			11Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	390					



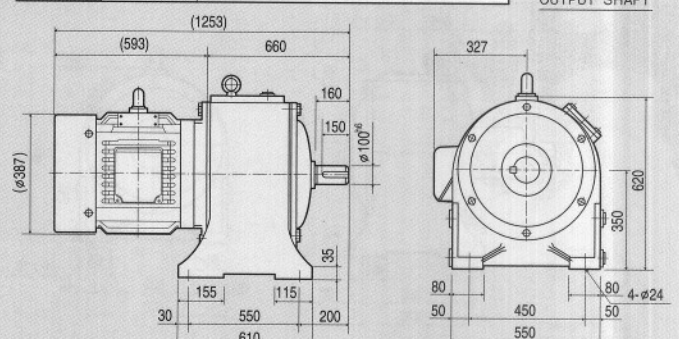
SG 3300	Power	15Kw 4P			11Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	485					



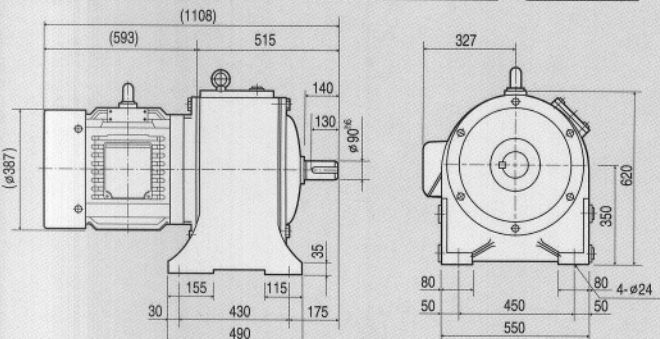
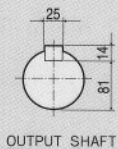
SG 2300	Power	22Kw 4P			15Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	480					



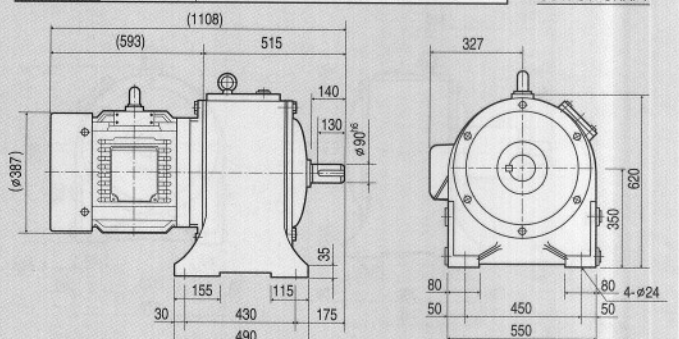
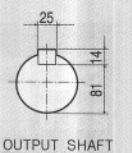
SG 3350	Power	22Kw 4P			15Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	690					



SG 2350	Power	22Kw 4P		15Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	525			

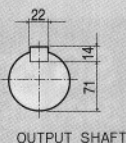


SG 2350	Power	30Kw 4P			19Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	605					

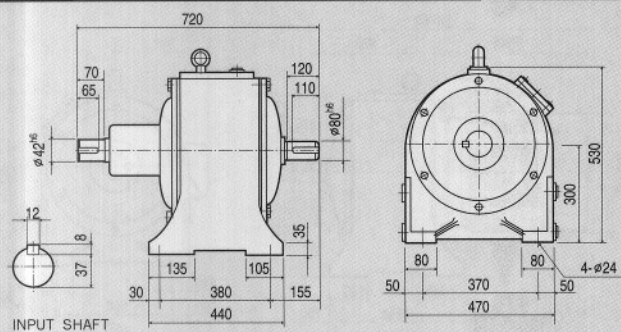


LINE POWER

SL 2300	Power	15Kw 4P			11Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	280					



OUTPUT SHAFT

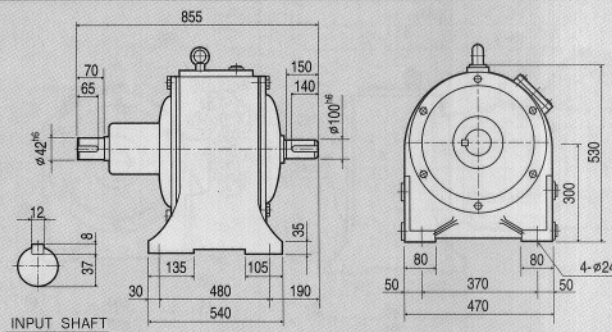


INPUT SHAFT

SL 3300	Power	15Kw 4P			11Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	365					

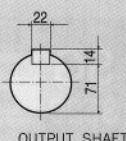


OUTPUT SHAFT

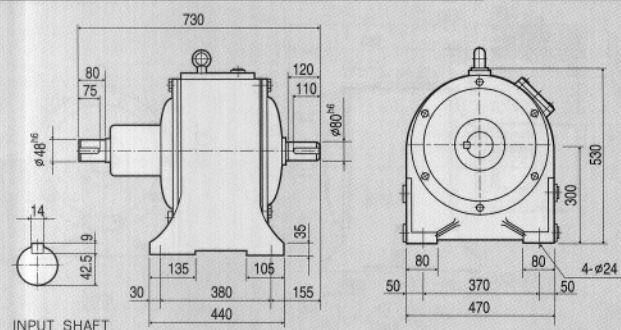


INPUT SHAFT

SL 2300	Power	22Kw 4P			15Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	285					

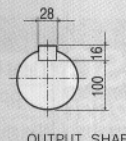


OUTPUT SHAFT

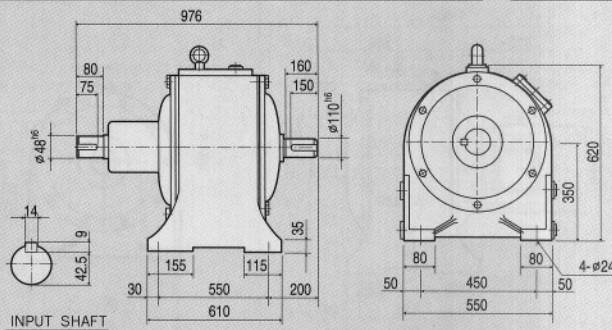


INPUT SHAFT

SL 3350	Power	22Kw 4P			15Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	480					

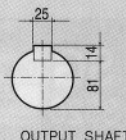


OUTPUT SHAFT

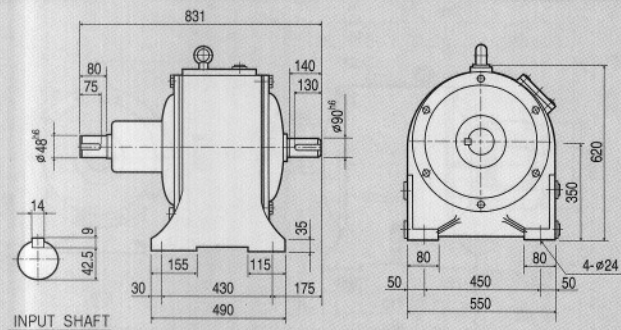


INPUT SHAFT

SL 2350	Power	22Kw 4P			15Kw 6P		
	Gear Ratio	1/25	1/30		1/25	1/30	
	RPM	72	60		48	40	
	Weight(Kg)	350					

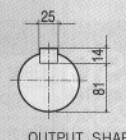


OUTPUT SHAFT

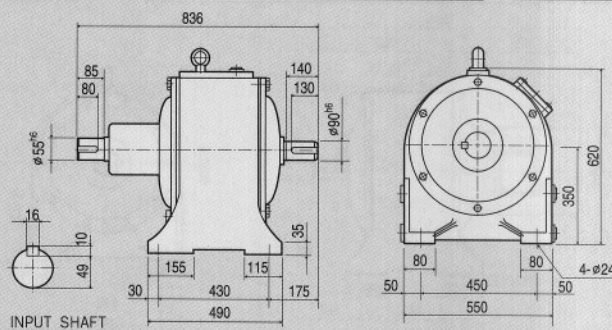


INPUT SHAFT

SL 2350	Power	30Kw 4P			19Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	355					



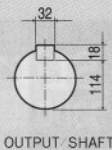
OUTPUT SHAFT



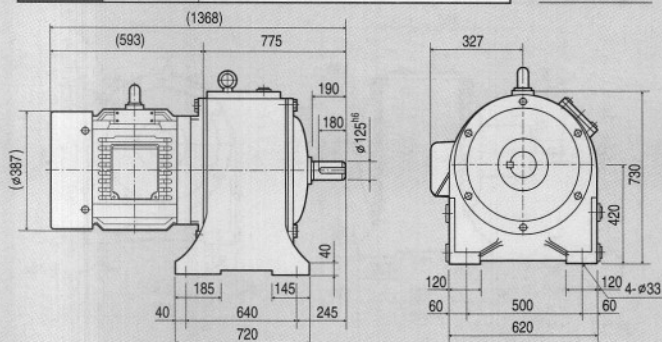
INPUT SHAFT

GEARED MOTOR

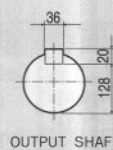
SG 3420	Power	30Kw 4P			22Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	960					



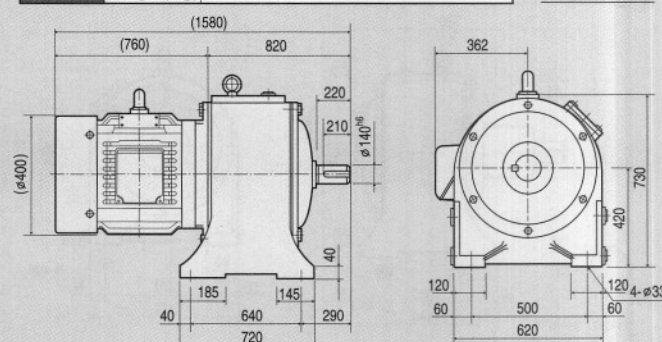
OUTPUT SHAFT



SG 3420	Power	37Kw 4P			30Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	980					

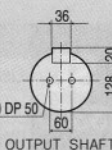


OUTPUT SHAFT

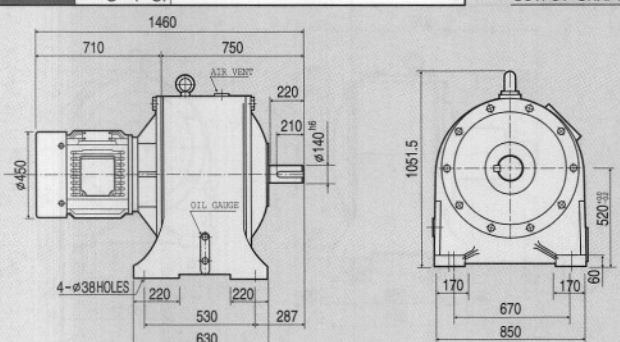


※ () 내의 치수는 다소 변경될 수 있음

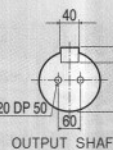
SG 2520	Power	55Kw 4P			37Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	1100					



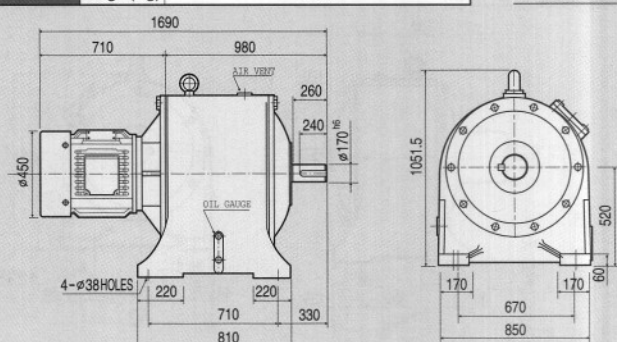
OUTPUT SHAFT



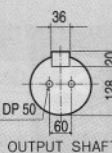
SG 3520	Power	55Kw 4P			37Kw 6P		
	Gear Ratio	1/30	1/40	1/50	1/60	1/30	1/40
	RPM	60	45	36	30	40	30
	Weight(Kg)	1400					



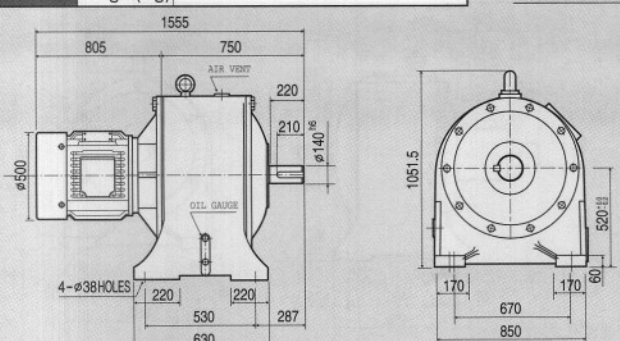
OUTPUT SHAFT



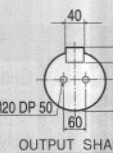
SG 2520	Power	75Kw 4P			55Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	1150					



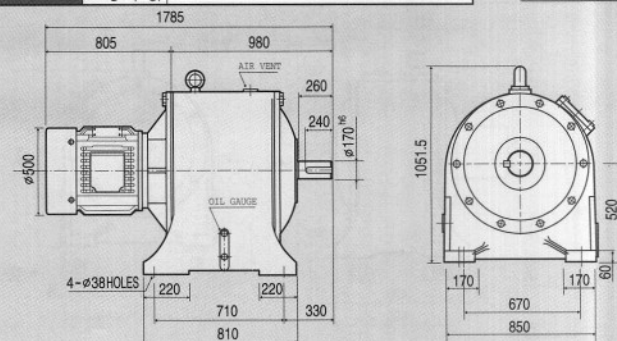
OUTPUT SHAFT



SG 3520	Power	75Kw 4P			55Kw 6P		
	Gear Ratio	1/30	1/40	1/50	1/60	1/30	1/40
	RPM	60	45	36	30	40	30
	Weight(Kg)	1450					



OUTPUT SHAFT

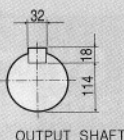


LINE POWER

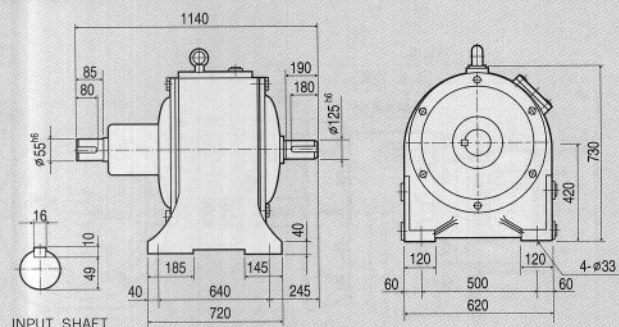
SUPERMAX

**SL
3420**

Power	30Kw 4P			22Kw 6P		
Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
RPM	45	36	30	30	24	20
Weight(Kg)	660					

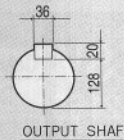


OUTPUT SHAFT

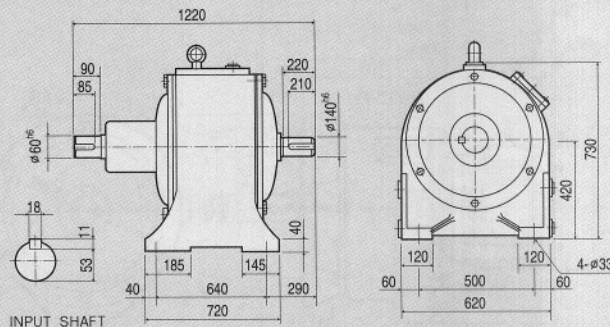


**SL
3420**

Power	37Kw 4P			30Kw 6P		
Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
RPM	45	36	30	30	24	20
Weight(Kg)	680					

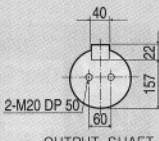


OUTPUT SHAFT

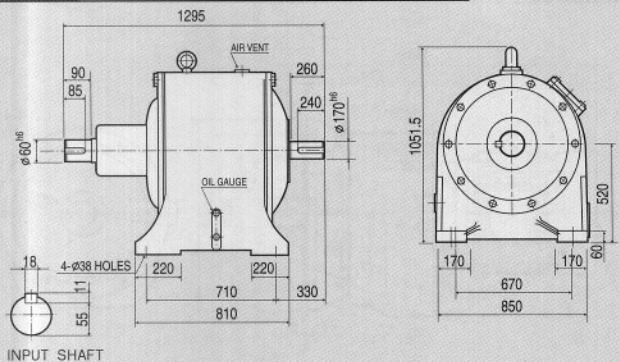


**SL
3520**

Power	55Kw 4P				37Kw 6P			
Gear Ratio	1/30	1/40	1/50	1/60	1/30	1/40	1/50	1/60
RPM	60	45	36	30	40	30	24	20
Weight(Kg)	1000							

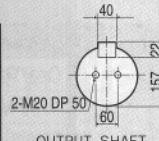


OUTPUT SHAFT

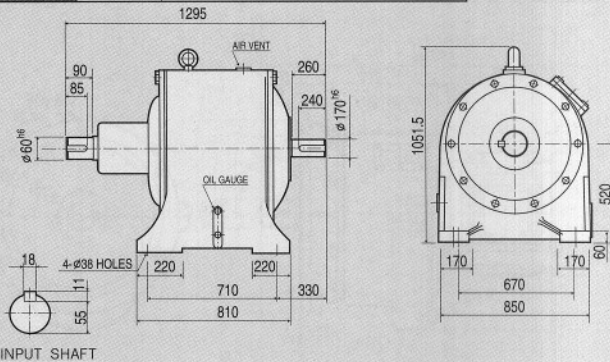


**SL
3520**

Power	75Kw 4P				55Kw 6P			
Gear Ratio	1/30	1/40	1/50	1/60	1/30	1/40	1/50	1/60
RPM	60	45	36	30	40	30	24	20
Weight(Kg)	1000							

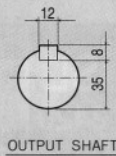


OUTPUT SHAFT

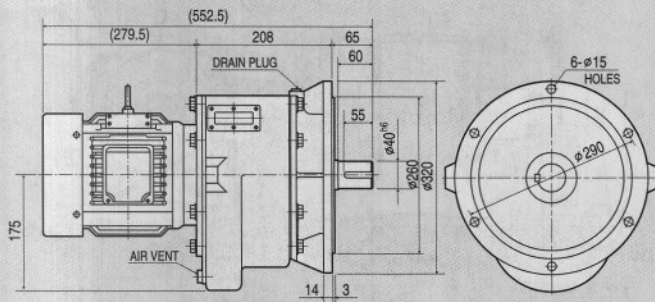


V.T GEARED MOTOR

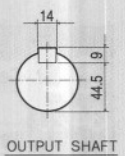
SV 2165	Power	1.5Kw 4P			0.75Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	89					



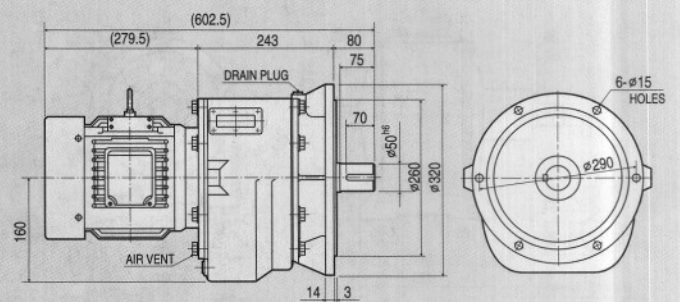
OUTPUT SHAFT



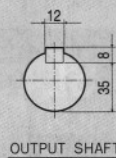
SV 3165	Power	15.Kw 4P			0.75Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	108					



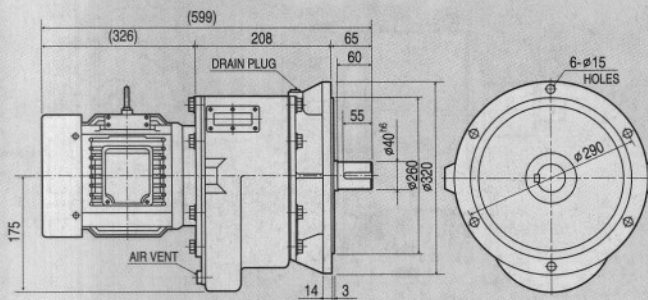
OUTPUT SHAFT



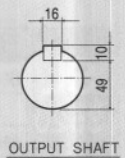
SV 2165	Power	2.2Kw 4P			1.5Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	104					



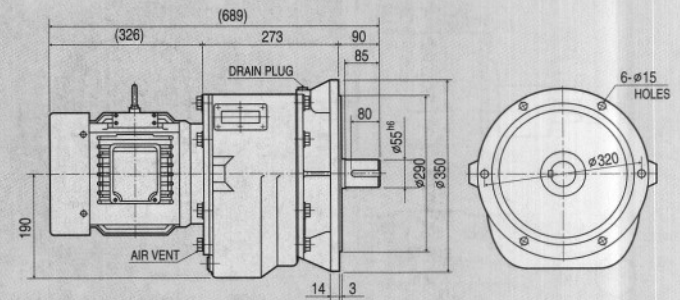
OUTPUT SHAFT



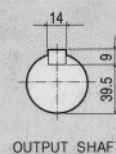
SV 3200	Power	2.2Kw 4P			1.5Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	168					



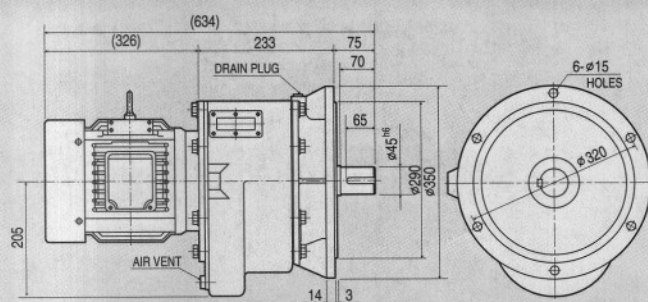
OUTPUT SHAFT



SV 2200	Power	2.2Kw 4P		1.5Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	122			



OUTPUT SHAFT

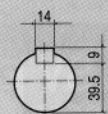


※ () 내의 치수는 다소 변경될 수 있음

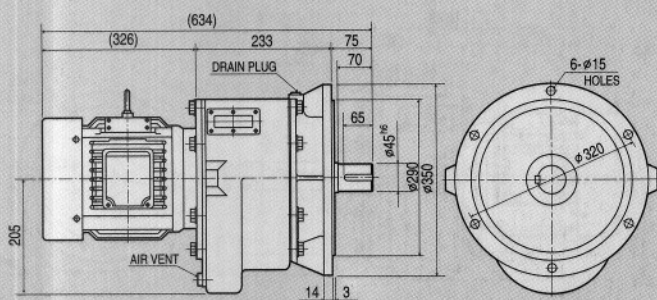
V.T GEARED MOTOR

SUPERMAX

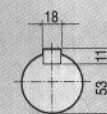
SV 2200	Power	3.7Kw 4P			2.2Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	133					



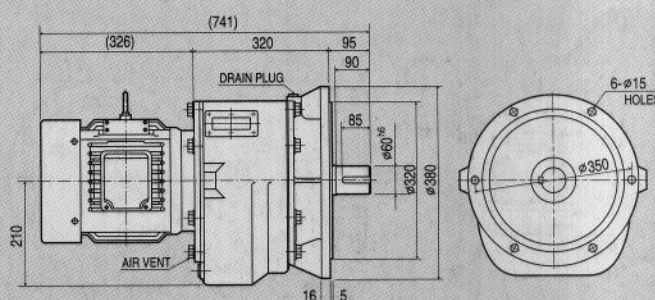
OUTPUT SHAFT



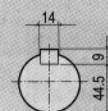
SV 3225	Power	3.7Kw 4P			2.2Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	210					



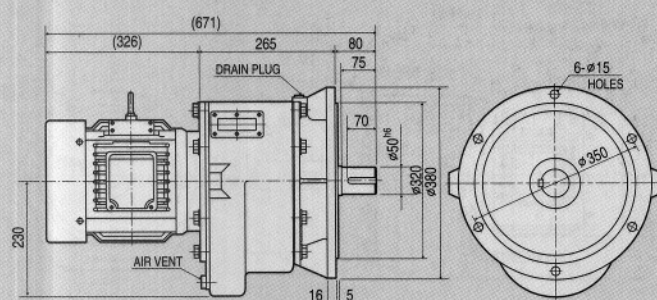
OUTPUT SHAFT



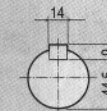
SV 2225	Power	3.7Kw 4P		2.2Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	160			



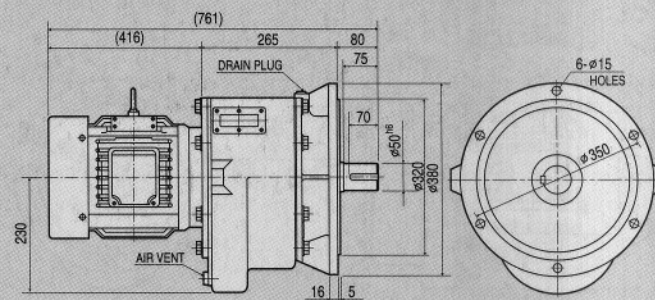
OUTPUT SHAFT



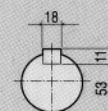
SV 2225	Power	5.5Kw 4P			3.7Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	180					



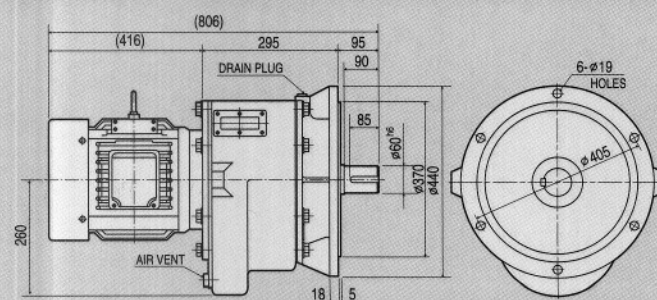
OUTPUT SHAFT



SV 2255	Power	5.5Kw 4P		3.7Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	240			



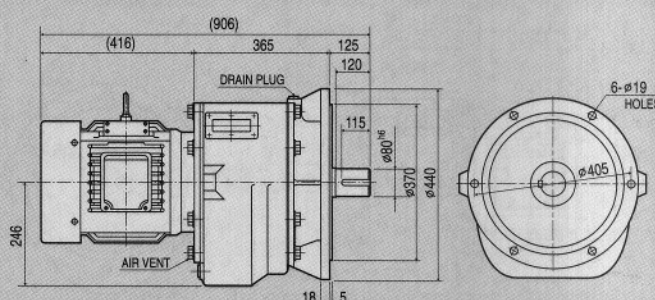
OUTPUT SHAFT



SV 3255	Power	5.5Kw 4P			3.7Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	332					

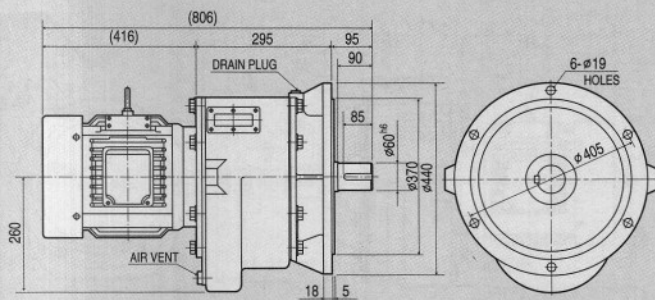
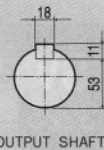


OUTPUT SHAFT

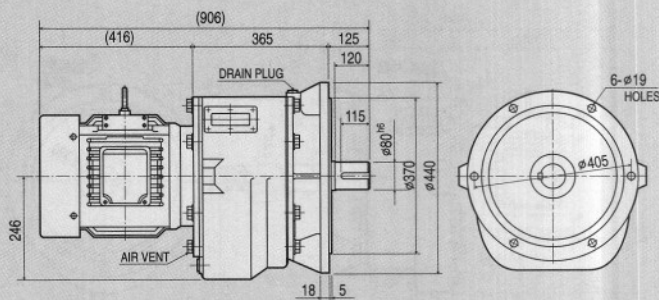
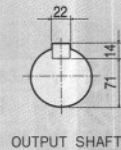


V.T GEARED MOTOR

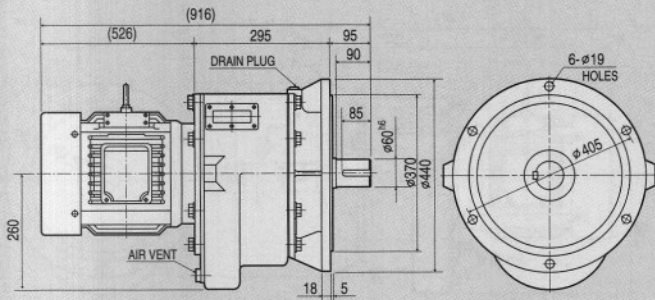
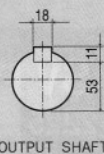
SV 2255	Power	7.5Kw 4P			5.5Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	260					



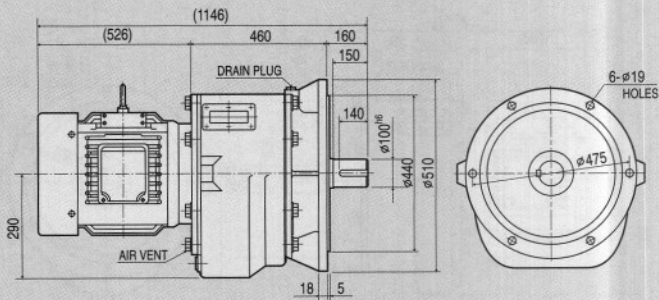
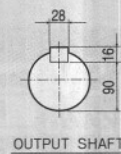
SV 3255	Power	7.5Kw 4P			5.5Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	350					



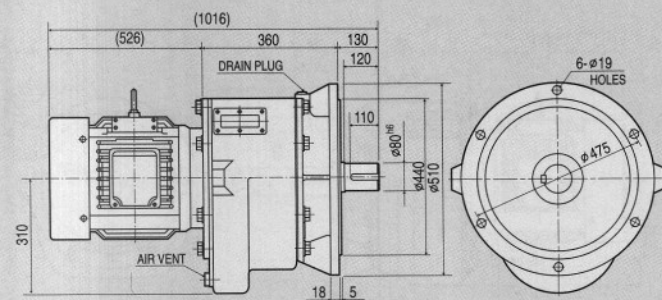
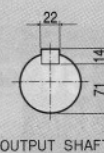
SV 2255	Power	11Kw 4P			7.5Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	315					



SV 3300	Power	11Kw 4P			7.5Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	490					



SV 2300	Power	11Kw 4P		7.5Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	415			

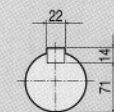


※ () 내의 치수는 다소 변경될 수 있음

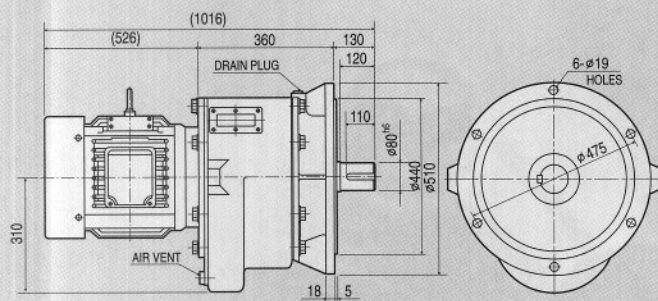
V.T GEARED MOTOR

SUPER MAX

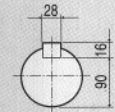
SV 2300	Power	15Kw 4P			11Kw 6P		
	Gear Ratio	1/10	1/20	1/30	1/10	1/20	1/30
	RPM	180	90	60	120	60	40
	Weight(Kg)	435					



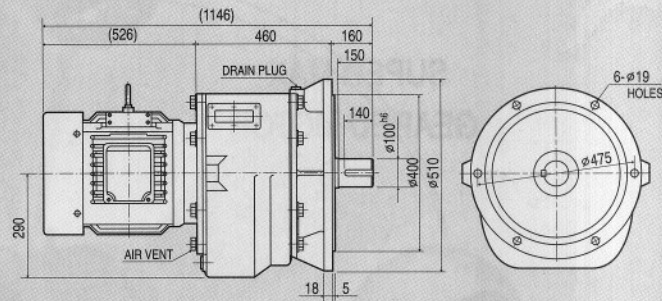
OUTPUT SHAFT



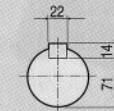
SV 3300	Power	15Kw 4P			11Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	530					



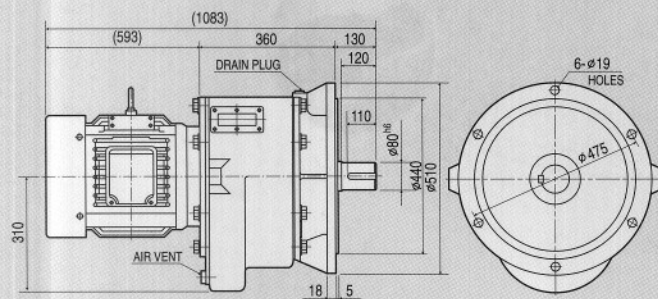
OUTPUT SHAFT



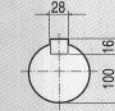
SV 2300	Power	22Kw 4P			15Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	525					



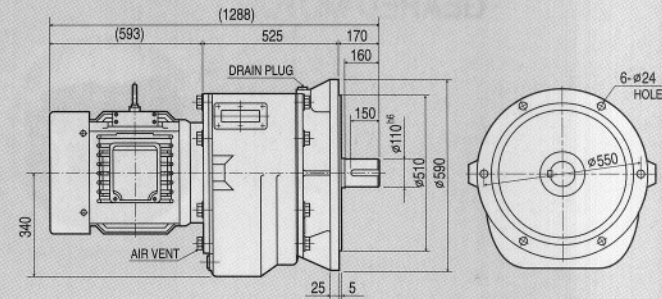
OUTPUT SHAFT



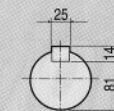
SV 3350	Power	22Kw 4P			15Kw 6P		
	Gear Ratio	1/40	1/50	1/60	1/40	1/50	1/60
	RPM	45	36	30	30	24	20
	Weight(Kg)	740					



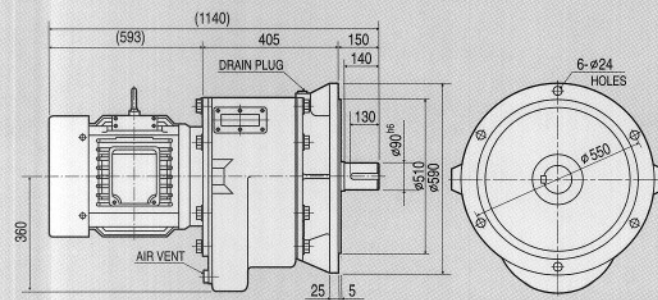
OUTPUT SHAFT



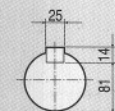
SV 2350	Power	22Kw 4P		15Kw 6P	
	Gear Ratio	1/25	1/30	1/25	1/30
	RPM	72	60	48	40
	Weight(Kg)	590			



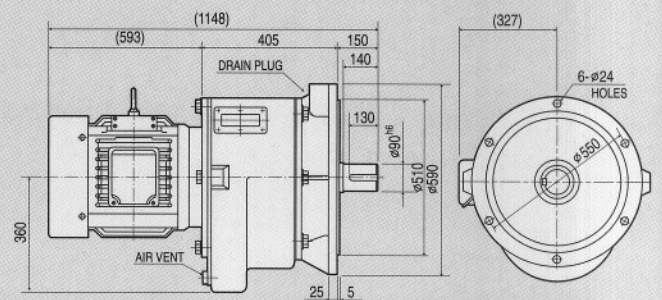
OUTPUT SHAFT



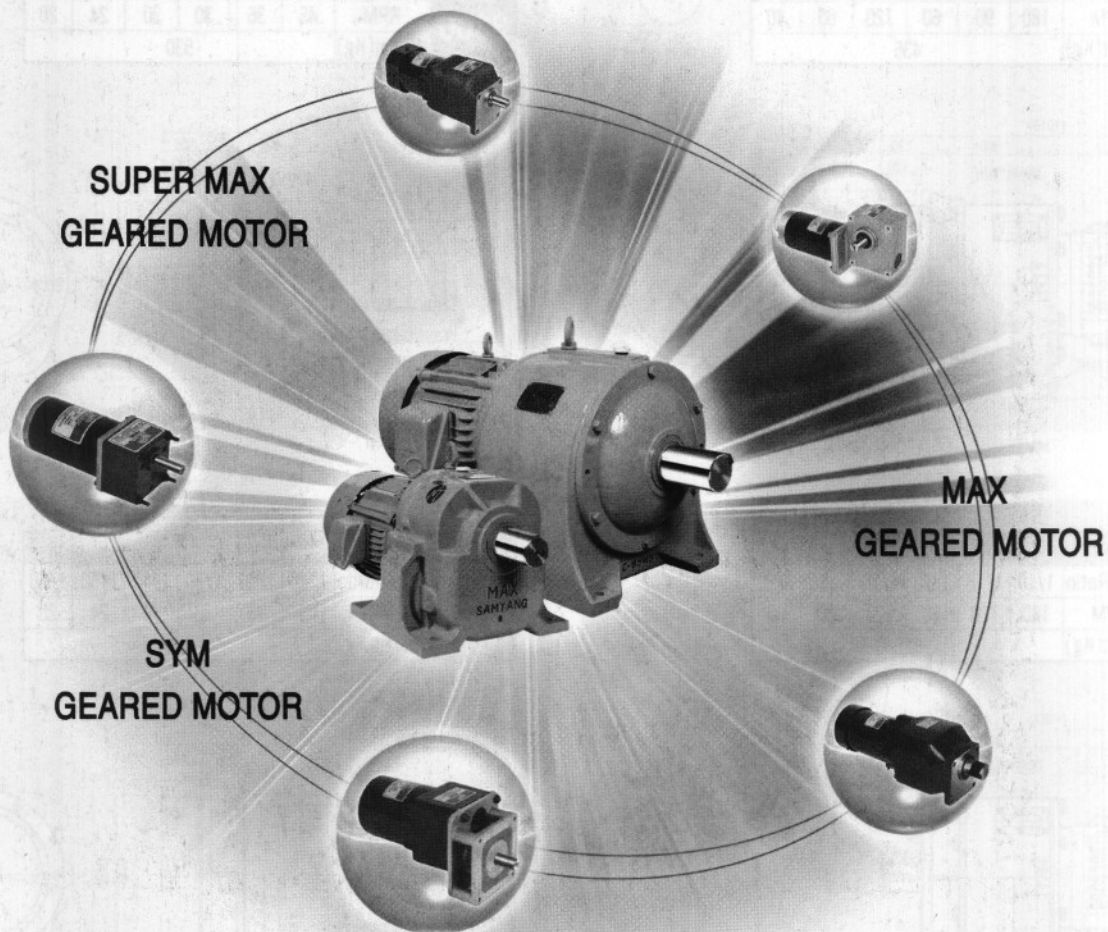
SV 2350	Power	30Kw 4P			22Kw 6P		
	Gear Ratio	1/10	1/15	1/20	1/10	1/15	1/20
	RPM	180	120	90	120	80	60
	Weight(Kg)	590					



OUTPUT SHAFT



GEARED MOTOR



GEARED MOTORS