

YÜK SINIFLANDIRMASI**KRENLER**

- A * Kaldırma dişlileri
* Palanga Dişlileri
- B * Bomlu Vinç Dişlileri
* Yana Döndürme Dişlileri
- C * Yürütme Dişlileri

POMPALAR

- A * Santrifüj Pompalar (ince sıvı)
- B * Santrifüj Pompalar (yarı sıvı)
- C * Basınçlı Pompalar
* Dalgıç Pompalar

TAŞ VE KİL İŞ LEME MAKİNALARI

- C * Çekiçli Değirmenler
* Döner Fırınlr
* Dövücü Değirmenler
* Kırıcılar
* Küreli Değirmenler
* Tuğla Presi
* Tüp Değirmenler

TEKSTİL MAKİNALARI

- B * Baskı ve Boyama Makinaları
* Dokuma Tezgahları
* Hallaç Makinaları
* Harman Makinaları
* Taneleme (Debagat) Makinaları

YAĞ SANAYİ

- B * Besleme Pompaları
* Döner Delme Techizatları

YİYECEK SANAYİ

- B * Kutu Bıçaklar
* Kutu Kaplama
* Mayalama Tekneleri
- C * Kenar açma

LOAD SPECIFICATION**CRANES**

- A * Hoist Gears
* Lifting Gears
- B * Defrocking Jib Gears
* Slowing Gears
- C * Travelling Gears

PUMPS

- A * Centrifugal Pumps (light liquids)
- B * Centrifugal Pumps (semi liquids)
- C * Pressure Pumps
* Plunger Pumps

STONE AND CLAY WORKING MACHINES

- C * Hammer Mills
* Rotary Ovens
* Beater Mills
* Breakers
* Ball Mills
* Brick Presses
* Tup Mills

TEXTILE MACHINES

- B * Printing and Dyeing Machines
* Looms
* Willows
* Batchers
* Tanning Vats

OIL INDUSTRY

- B * Pipeline Pumps
* Rotary Drilling Equipment

FOOD INDUSTRY

- B * Cane Knives
* Cane Crushers
* Mach Tubs
- C * Cane Mills

ÇAMAŞIR YIKAMA MAKİNALARI

- B * Döner Kurutucular
* Yıkama Makineleri

HADDE MAKİNALARI

- B * Hız Ayarlı Silindirler
* Sabit Silindirler
* Sarma Makinaları
* Tel Çekme
C * Çubuk Çekme Makinaları
* Döner Tablalar (büyük)
* Kabuk Sıyırma Makinaları
* Plaka Haddeme
* Silindir Haddeme
* Soğuk Haddeme

İNŞAAT MAKİNALARI

- * Beton Mikserleri
* Ağır Yük Asansörleri

KAĞIT MAKİNALARI

- C * Islak Presler
* Kağıt Hamur Makinaları
* Kurutma Silindirleri
* Perdahlama Silindirleri

KAUÇUK MAKİNALARI

- B * Kalenderler
* Mikserler
C * Extruderler
* Hamur Karma
* Silindirler

KİMYA SANAYİ

- B * Agitatörler
* Kurutma Merdaneleri
* Mikserler ve Silindirler

LAUNDRIES

- B * Trumblers
* Washing Machines

METAL ROLLING MILLS

- B * Roller Adjustment Drivers
* Roller Straightened
* Winding Machines
* Wire Drawing Benches
C * Billet Shears
* Roller Tables (heavy)
* Descaling Machines
* Sheet Mills
* Manipulators
* Cold Rolling Mills

BUILDING MACHINES

- * Concrete Mixers
* Hoist

PAPER MACHINES

- C * Wet Presses
* Pulpers
* Drying Cylinders
* Glazing Cylinders

RUBBER MACHINERY

- B * Calenders
* Mixers
C * Extruders
* Plug Mills
* Rolling Mills

CHEMICAL INDUSTRY

- B * Agitators (semi-liquid)
* Drying Drums.
* Mixers and Rolling Mills

A	Üniform Yük / Uniform Load	$F_i < 0,25$
B	Orta Darbeli / Moderate Loads	$F_i > 3$
C	Darbeli Yük / Heavy Shock	$F_i < 10,00$

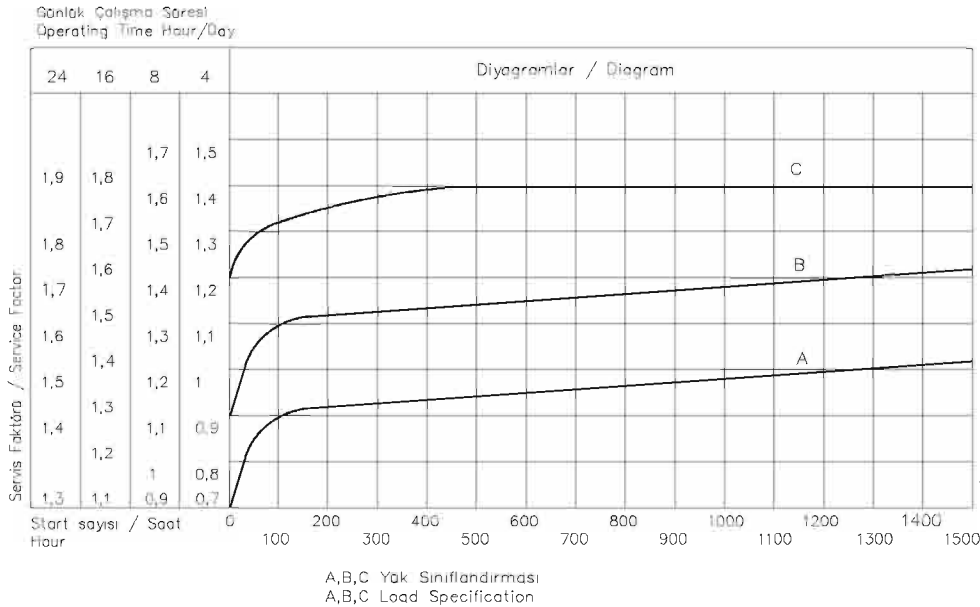
J ext : Toplam Dış Atalet Momenti
All external inertia moments

$$J_{ext} = \frac{J_{ext}}{I^2} + J_{rot}$$

J total : Motora indirgenmiş toplam moment
All external moments corrected to motor input

$$F_i = \frac{J_{total}}{J_{rot}}$$

J rotor : Motorun Atalet Momenti
Moment of inertia of the motor



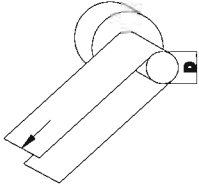
Çıkış Momenti / Output Torque

$$M_2 = \frac{9550 \times P}{n \times \eta} [KW]$$

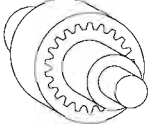
Servis Faktörü / Service Factor

$$f_s = \frac{M_2 \max}{M_2}$$

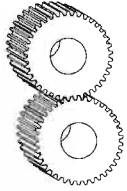
Bu değer güç-devir tablolarından alın
This value can be taken from the performances list


RADYAL YÜKLERİN HESABI

Radyal yük F_r (N) 'nin hesaplanmasında, gerekli tahrik momenti M (Nm), kasnak veya dişli çapı D (mm) olmak üzere aşağıdaki formüller kullanılır

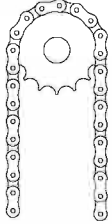

1. Elastik Kaplin

Çalışma sırasında oluşan saptmalar kaplinin güvenlik sırasında içerisinde ise kuvvetler ihmal edilebilir

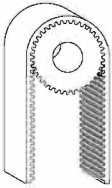

2. Düz Dişli

(20° kavrama açılı)

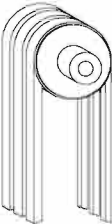
$$F_r = \frac{2100 \times M_2}{D}$$


3. Küçük Hızlarda Zincir Dişli ($z < 17$)

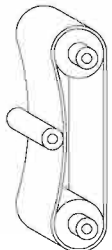
$$F_r = \frac{2100 \times M_2}{D}$$


4. Trigger Kayış

$$F_r = \frac{2500 \times M_2}{D}$$


5. V Kayış

$$F_r = \frac{5000 \times M_2}{D}$$


6. Gerdirme Makaralı Kayış

$$F_r = \frac{5000 \times M_2}{D}$$

CALCULATION OF OVERHUNG LOAD

Radial load F_r (N) is calculated with the following equations where required moment M (Nm) and hoop or gear diameter D (mm) is used

1. Elastic Coupling

If Elastic coupling is working in its reliable working area, the overhung loads can be neglected.

2. For Spur Gear

(Pressure angle 20°)

$$F_r = \frac{2100 \times M_2}{D}$$

3. For Chain Drive With Low Speed ($z < 17$)

$$F_r = \frac{2100 \times M_2}{D}$$

4. For Trigger Belt

$$F_r = \frac{2500 \times M_2}{D}$$

5. For V Belt

$$F_r = \frac{5000 \times M_2}{D}$$

6. Flat Belt With Spanning Pulley

$$F_r = \frac{5000 \times M_2}{D}$$

RADYAL YÜKLEME / RADIAL LOADS

Şafttaki radyal yük aşağıdaki formül ile hesaplanabilir :
The radial load on the shaft is calculated with the following formula :

$$F_{re} = \frac{2000 \cdot M \cdot F_z}{D} \quad \text{O Fr1 \& Fr2}$$

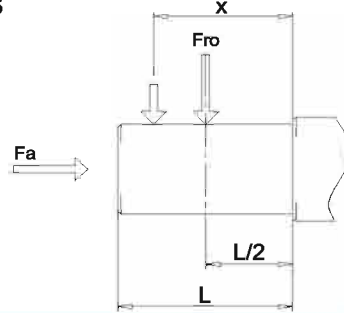
- F_{re}** (N) Radyal yük sonucu / Resulting radial load
M (Nm) Şafttaki tork miktarı / Torque on the shaft
D (mm) Şafta montaj edilen şanzuman parçasının çapı / Diameter of the transmission member mounted on the shaft
Fr (N) Kabul edilen maksimum yük değeri (ilgili tablolara bakınız) / Value of the maximum admitted radial load (see relative tables)
f_z : 1,1 Pinyon dişli / Gear pinion
 1,4 Zincir dişli / Chain wheel
 1,7 V-kayış / V- pulley
 2,5 Düz kayış / Flat pulley

Sonuç olarak , bulunan radyal yük şaftın merkezine uygulanmıyorsa ;efektif yük aşağıdaki formül ile hesaplanır :

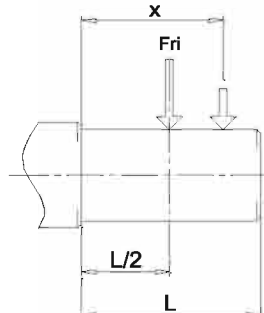
When the resulting, radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:

$$F_{re} \text{ O } \frac{Fr \cdot A}{(b + x)} \quad \text{O Fr1max \& Fr2max}$$

a , b , x : Değerler aşağıdaki tablolarda verilmiştir / values given in the tables

ÇIKIŞ MILİ / OUTPUT SHAFTS


MS	30	40	50	63	75	90
a	65	84	101	120	131	162
b	50	64	76	95	101	122
Fro max	1830	3490	4840	6270	7380	8180

GİRİŞ MILİ / INPUT SHAFTS


GM	30	40	50	63	75	90
a	86	106	129	159	192	227
b	76	94,5	114	139	167	202
Fri max	210	350	490	700	980	1270

YAĞ LAMA

Redüktörün uzun ömürlü olması ve iyi performansla çalışabilmesi için, uygun yağın kullanılması ve belirli periyotlarda değişimleri yapılmalıdır. Yağın seçiminde devir, çevre sıcaklığı, redüktör yağ sıcaklığı, çalışma koşulları ve yağ ömrü önem taşımaktadır.

LR30 ile LR90 tipi arası redüktörler üretici firma tarafından SHELL TIVELA SC 320 adlı ömürlük bir sentetik yağ ile doldurularak sevk edilir. LR75 ve LR90 gövdeler V5 ve V6 pozisyonunda bağlanmak istendiğinde optimum yağlanma şartlarının belirlenmesi açısından teknik servisimize görüşülmelidir.

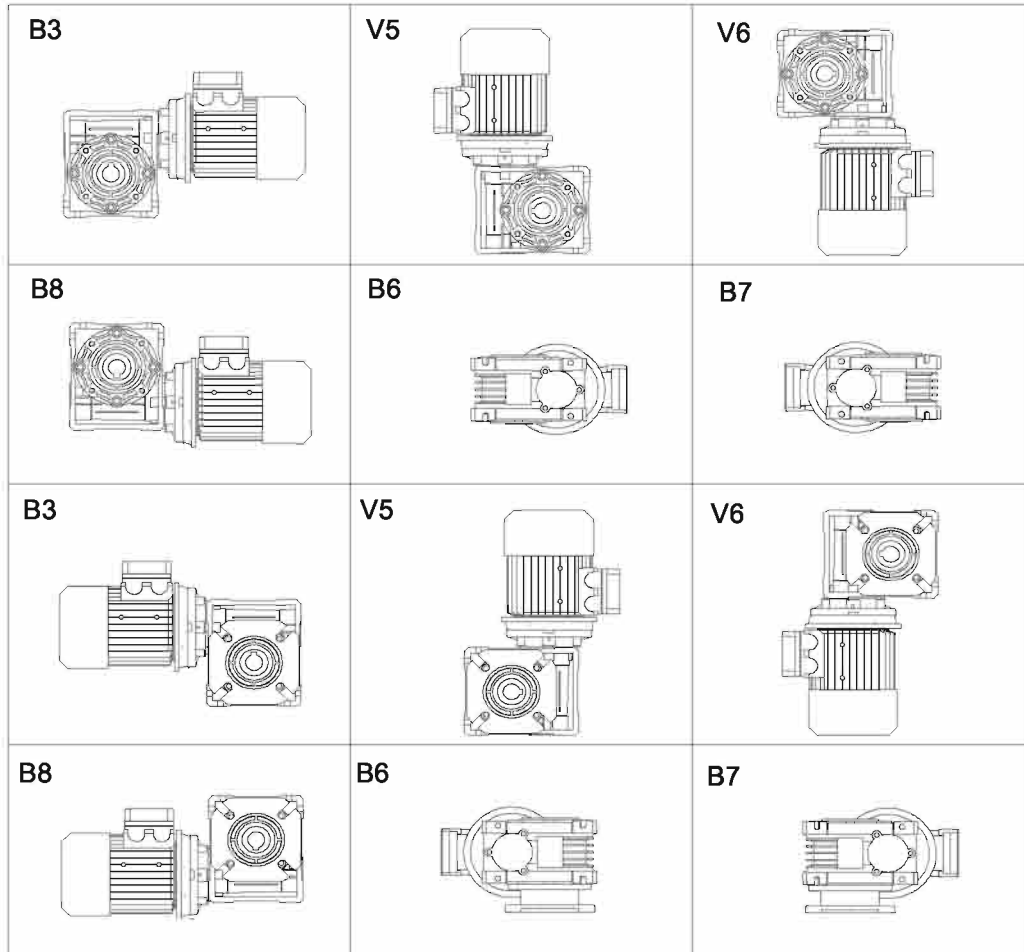
YAĞ MİKTARI (LT) / QUANTITY OF OIL (LT)

LR30	LR40	LR50	LR63	LR75	LR90
0,03	0,11	0,18	0,33	0,5	1

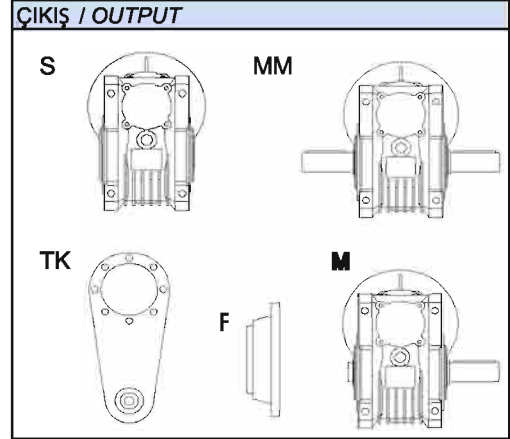
LUBRICATION

Selection of oil for gearboxes is very important. Because of this importance LR GEAR is using syntetic oil SHELL TIVELA SC between LR30 - LR75 . There is no Oil plugs on our gear cases. Since the lubricant used is "lifetime" in other words it does not require any maintenace during the wormgearboxes life

MONTAJ POZİSYONLARI / MOUNTING POSITIONS



			/			/				/			/		
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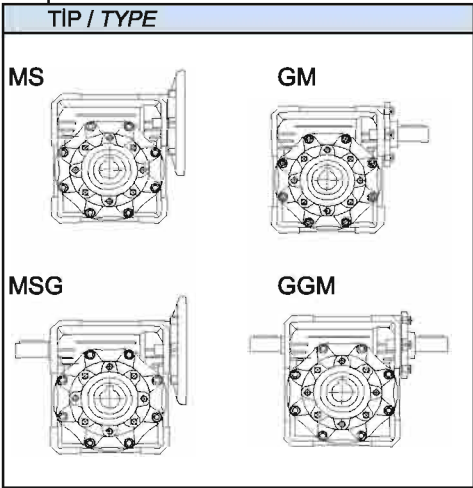


MOTOR ADAPTOR /
 Sadece MS ve MSG tipler için
 Bakınız: Sayfa 7
 Only for MS and MSG
 Sec. Page 7

TAHVİL ORANI / RATIO
 7.5 , 10 , 15 , 20 , 25 , 30 , 40 , 50 , 60 , 80 , 100

BOYUT / SIZE	
30	75
40	90
50	
63	

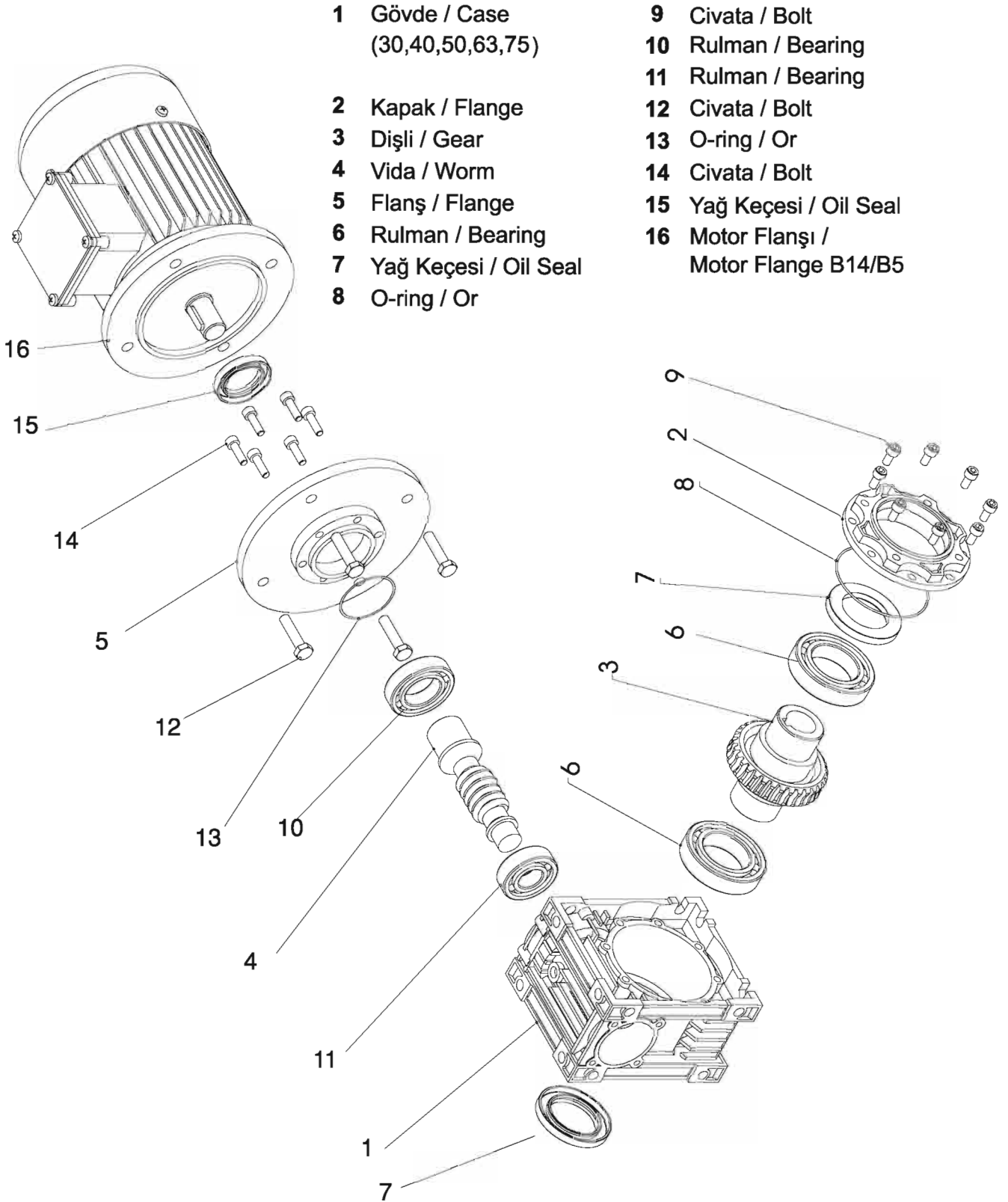
Performans tablolarına bakınız
 See performance tables

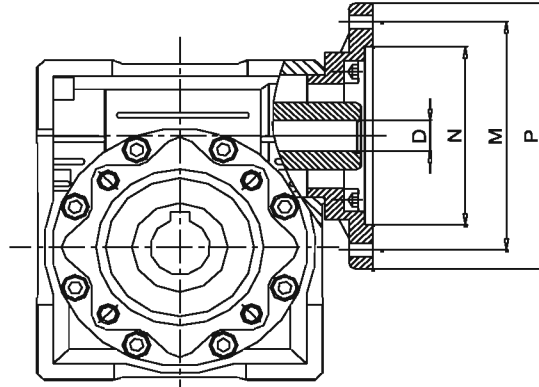


- MS : Motor Bağlantılı
Motor Mounted Type
- MSG : Motor Bağlantılı ve Giriş Milli
Motor Mounted and Input Shaft
- GM : Giriş Milli / Input Shaft
- GGM : Çift Giriş Milli / Double Input Shaft
- S : Standart / Standard
- M : Mil Çıkış / Output Shaft
- MM : Çift Mil Çıkış / Double Output Shaft
- TK : Tork Kolu / Torque Arm
- F : Flanş / Flange

ÖRNEK SİPARİŞ GÖSTERİMİ
 EXAMPLE OF ORDER

			/	M	S	/	3	0	/	8	0	/	6	3	/	T	K
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TİP TYPE	PAM IEC	N	M	P	7,5	10	15	20	25	30	40	50	60	80	100	
					D											
MS30	63B5	95	115	140	11	11	11	11	11	11	11	11				
	63B14	60	75	90												
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	9	9
	56B14	50	65	80												
MS40	71B5	110	130	160	14	14	14	14	14	14	14					
	71B14	70	85	105												
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	11	11	11
	63B14	60	75	90												
	56B5	80	100	120									9	9	9	9
MS50	80B5	130	165	200	19	19	19	19	19	19						
	80B14	80	100	120												
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	14	14
	71B14	70	85	105												
	63B5	95	115	140								11	11	11	11	11
MS63	90B5	130	165	200	24	24	24	24	24	24						
	90B14	95	115	140												
	80B5	130	165	200	19	19	19	19	19	19	19	19	19			
	80B14	80	100	120												
	71B5	110	130	160								14	14	14	14	14
	71B14	70	85	105												
MS75	100/112B5	180	215	250	28	28	28									
	100/112B14	110	130	160												
	90B5	130	165	200	24	24	24	24	24	24	24					
	90B14	95	115	140												
	80B5	130	165	200				19	19	19	19	19	19	19	19	19
	80B14	80	100	120												
	71B5	110	130	160								14	14	14	14	14
MS90	100/112B5	180	215	260	28	28	28	28	28	28						
	100/112B14	110	130	160												
	90B5	130	165	200	24	24	24	24	24	24	24	24	24			
	90B14	95	115	140												
	80B5	130	165	200								19	19	19	19	19
	80B14	80	100	120												

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
30	Kw	0,18	0,18	0,18	0,18	0,12	0,12	0,12	0,12	0,09	0,09	0,09
	Hp	0,25	0,25	0,25	0,25	0,16	0,16	0,16	0,12	0,12	0,12	0,12
	M	16	18	18	18	20	22	22	26	18	27	29
	n	186	140	93	70	56	47	35	28	23	18	14
	f_s	2,07	1,80	1,30	1,50	1,30	1,38	0,90	0,90	0,94	0,94	0,94
	Fri	150	169	169	190	210	210	210	210	210	210	210
	Fro	683	752	861	948	1021	1085	1194	1286	1367	1504	1612

- i : Oran / Ratio
 Kw : Motor Kw /1400
 Hp : Motor Hp
 M : Çıkış Momenti (Nm) / Output Torque (Nm)
 n : Redüktör Çıkış Devri devir/dakika / Gearbox output Speed rpm.
 Fri : Giriş mili üzerinde kabul edilen max yük değeri / Input value of the maximum admitted radial load
 Fro : Çıkış mili üzerinde kabul edilen max yük değeri / Output value of the maximum admitted radial load

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
30	Z	4	3	2	2	2	1	1	1	1	1	1
	Beta	21°40'	18°40'	13°20'	7°57'	12°10'	5°50'	7°20'	5°10'	2°30'	4°12'	2°18'
	Mn	1,32	1,03	1,42	1,06	1,05	1,46	1,21	0,98	0,78	0,6	0,46
	Rd	0,85	0,82	0,77	0,73	0,68	0,65	0,59	0,55	0,51	0,44	0,40
	Rs	0,67	0,63	0,55	0,50	0,43	0,39	0,35	0,31	0,27	0,23	0,22

- i : Oran / Ratio
 Z : Vida Ağız Sayısı / The number of starts of the worm
 Mn : Normal Modül / Normal Module
 Beta : Helis Açısı / Helix Angle
 Rd : Dinamik Verim / Dynamic efficiency
 Rs : Statik Verim / Static efficiency

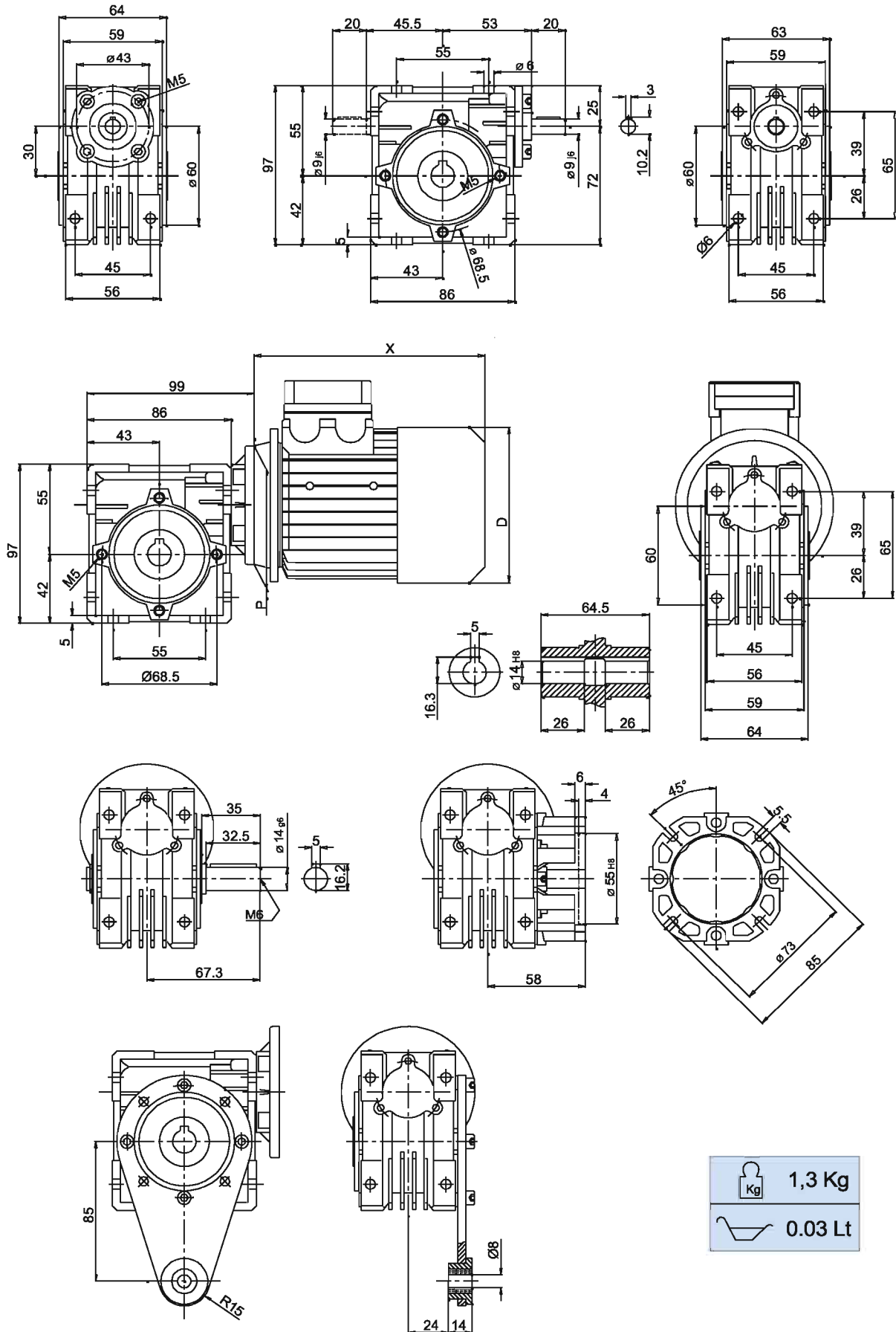
Rd , Rs < 0,5 Rd ve Rs değerlerinin 0,5'in altında olduğu durumlarda sistem geridönmezlik kazanmıştır
 Rd , Rs < 0,5 When the values of Rd and Rs under 0,5. The system is irreversible

MOTOR YAPI ÖLÇÜLERİ / MOTOR CONTRUCTION DIMENSIONS

Type	Kw /1400	X	D	P (B14)	P (B5)
56	0,09	156	105	80	120
63	012/018	187	121	90	140

YEDEK PARÇA LİSTESİ / SPARE PART LIST

No	Tanım / Identification
6	6006 Rulman /Bearing
7	Ø30xØ55x7 Keçe / Oil Seal
10	6003 Rulman /Bearing
13	6000 Rulman /Bearing
17	Ø17xØ28x7 Keçe / Oil Seal



	1,3 Kg
	0.03 Lt

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
40	Kw	0,55	0,55	0,37	0,25	0,25	0,25	0,25	0,18	0,12	0,12	0,12
	Hp	0,75	0,75	0,50	0,33	0,33	0,33	0,33	0,25	0,16	0,16	0,16
	M	25	32	46	39	32	35	46	38	29	35	40
	n	186	140	93	70	56	47	35	28	23	18	14
	f _s	1,84	1,39	0,98	1,11	1,21	1,23	1,00	1,14	1,30	1,01	1,04
	Fri	294	331	331	350	350	350	350	350	350	350	350
	Fro	1315	1447	1657	1824	1964	2087	2298	3475	2630	2895	3118

- i : Oran / Ratio
 Kw : Motor Kw /1400
 Hp : Motor Hp
 M : Çıkış Momenti (Nm) / Output Torque (Nm)
 n : Redüktör Çıkış Devri devir/dakika / Gearbox output Speed rpm.
 Fri : Giriş mili üzerinde kabul edilen max yük değeri / Input value of the maximum admitted radial load
 Fro : Çıkış mili üzerinde kabul edilen max yük değeri / Output value of the maximum admitted radial load

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
40	Z	4	3	2	2	2	1	1	1	1	1	1
	Beta	21°40'	17°50'	12°10'	12°15'	9°40'	6°20'	6°30'	4°50'	4°10'	3°25'	2°30'
	Mn	1,68	1,83	1,96	1,56	1,26	1,95	1,55	1,25	1,03	0,76	0,67
	Rd	0,87	0,85	0,82	0,78	0,75	0,7	0,65	0,62	0,58	0,52	0,47
	Rs	0,71	0,67	0,60	0,55	0,51	0,45	0,40	0,36	0,32	0,28	0,24

- i : Oran / Ratio
 Z : Vida Ağız Sayısı / The number of starts of the worm
 Mn : Normal Modül / Normal Module
 Beta : Helis Açısı / Helix Angle
 Rd : Dinamik Verim / Dynamic efficiency
 Rs : Statik Verim / Static efficiency

Rd , Rs < 0,5 Rd ve Rs değerlerinin 0,5'in altında olduğu durumlarda sistem geridönmezlik kazanmıştır
 Rd , Rs < 0,5 When the values of Rd and Rs under 0,5. The system is irreversible

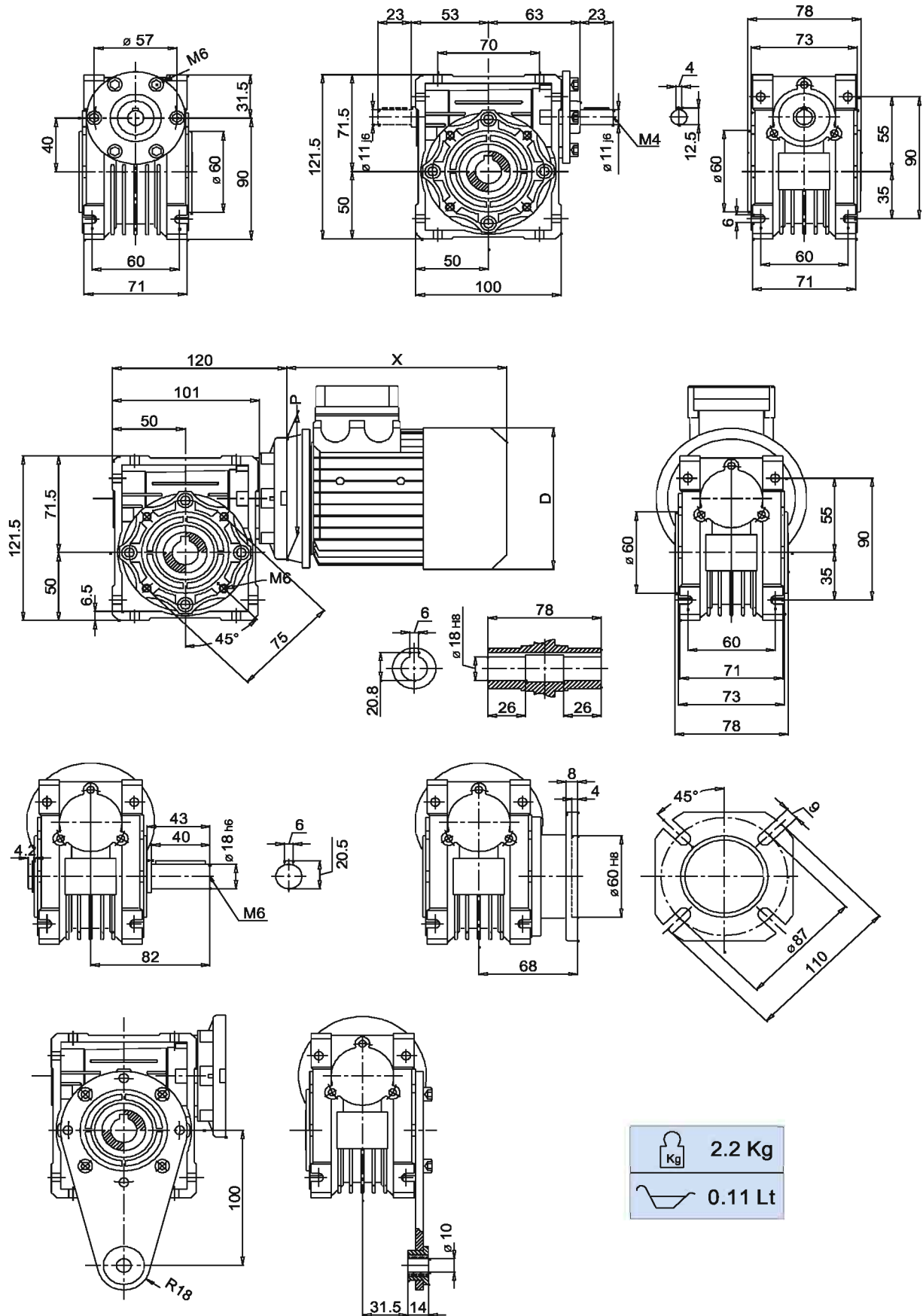
MOTOR YAPI ÖLÇÜLERİ / MOTOR CONTRUCTION DIMENSIONS

MOTOR CONTRUCTION DIMENSIONS

Type	Kw /1400	X	D	P (B14)	P (B5)
63	0,12 / 0,18	187	121	90	140
71	0,25 / 0,37	212	138	105	160

YEDEK PARÇA LİSTESİ / SPARE PART LIST

No	Tanım / Identification
6	6006 Rulman /Bearing
7	Ø30xØ55x7 Keçe / Oil Seal
10	6005 Rulman /Bearing
13	6202 Rulman /Bearing
17	Ø25xØ35x7 Keçe / Oil Seal



	2.2 Kg
	0.11 Lt

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
50	Kw	0,75	0,75	0,75	0,75	0,55	0,55	0,37	0,37	0,25	0,25	0,25
	Hp	1	1	1	1	0,75	0,75	0,5	0,50	0,33	0,33	0,33
	M	41	54	78	83	71	83	71	81	61	53	41
	n	186	140	93	70	56	47	35	28	23	18	14
	f _s	1,90	1,40	1,00	1,00	1,00	1,00	1,20	1,00	1,20	1,10	1,00
	Fri	401	490	490	490	490	490	490	490	490	490	490
	Fro	1805	1987	2274	2503	2696	2865	3153	3397	3610	3973	4280

- i : Oran / Ratio
 Kw : Motor Kw /1400
 Hp : Motor Hp
 M : Çıkış Momenti (Nm) / Output Torque (Nm)
 n : Redüktör Çıkış Devri devir/dakika / Gearbox output Speed rpm.
 Fri : Giriş mili üzerinde kabul edilen max yük değeri / Input value of the maximum admitted radial load
 Fro : Çıkış mili üzerinde kabul edilen max yük değeri / Output value of the maximum admitted radial load

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
50	Z	4	3	2	2	2	1	1	1	1	1	1
	Beta	21°50'	17°20'	11°50'	12°10'	9°50'	5°45'	6°10'	4°45'	4°10'	3°40'	2°15'
	Mn	2,20	2,35	2,55	1,85	1,56	2,38	1,87	1,52	1,27	0,96	0,75
	Rd	0,88	0,86	0,82	0,79	0,76	0,72	0,67	0,63	0,59	0,53	0,49
	Rs	0,70	0,66	0,59	0,55	0,51	0,44	0,39	0,35	0,32	0,27	0,23

- i : Oran / Ratio
 Z : Vida Ağız Sayısı / The number of starts of the worm
 Mn : Normal Modül / Normal Module
 Beta : Helis Açısı / Helix Angle
 Rd : Dinamik Verim / Dynamic efficiency
 Rs : Statik Verim / Static efficiency

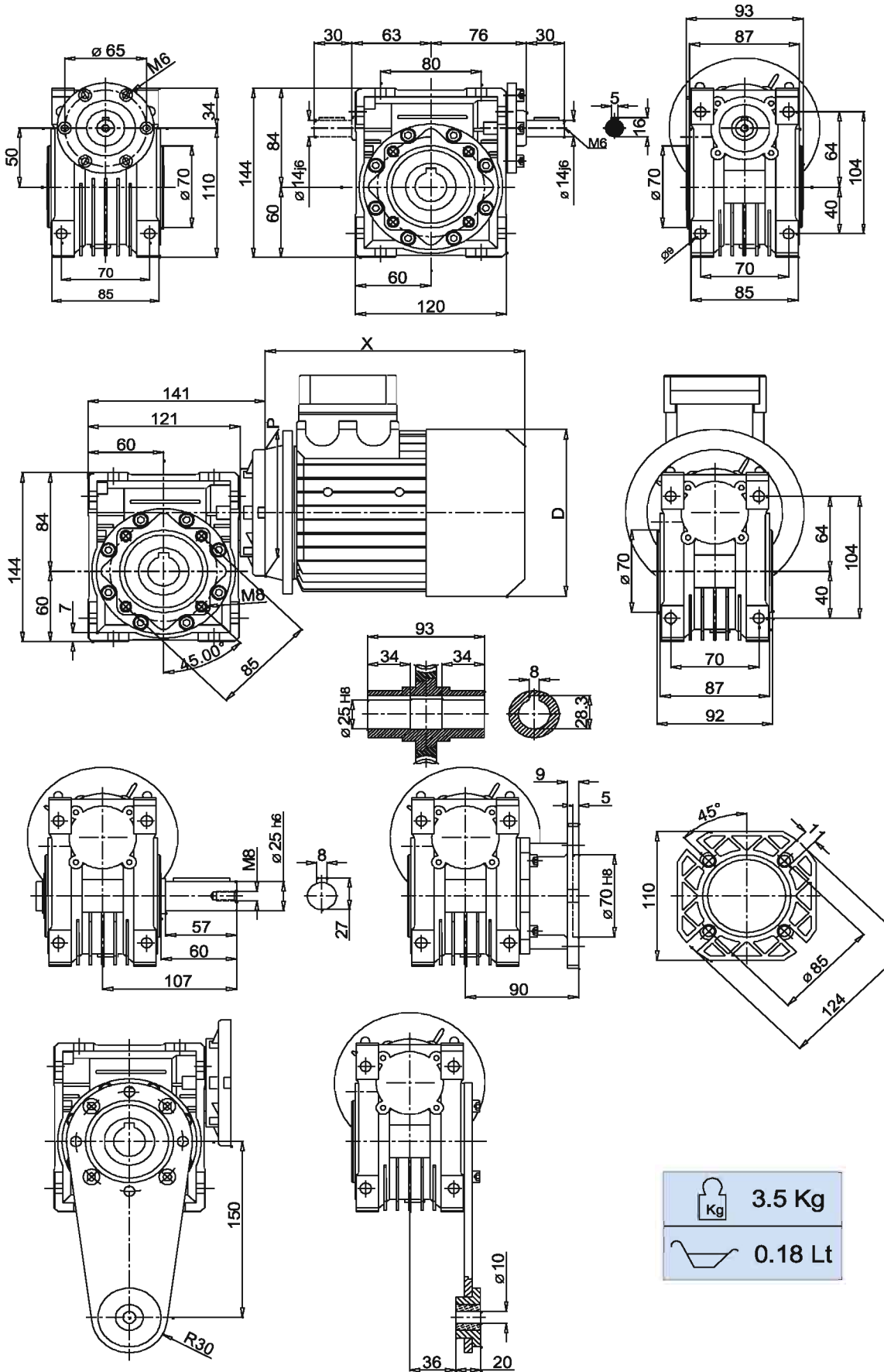
Rd , Rs < 0,5 Rd ve Rs değerlerinin 0,5'in altında olduğu durumlarda sistem geridönmezlik kazanmıştır
 Rd , Rs < 0,5 When the values of Rd and Rs under 0,5. The system is irreversible

MOTOR YAPI ÖLÇÜLERİ / MOTOR CONTRUCTION DIMENSIONS

Type	Kw /1400	X	D	P (B14)	P (B5)
71	0,25 / 0,37	212	138	105	160
80	0,55 / 0,75	232	156	120	200

YEDEK PARÇA LİSTESİ / SPARE PART LIST

No	Tanım / Identification
6	6008 Rulman /Bearing
7	Ø40xØ62x10 Keçe / Oil Seal
10	6006 Rulman /Bearing
13	6204 Rulman /Bearing
17	Ø30xØ47x7 Keçe / Oil Seal



	3.5 Kg
	0.18 Lt

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
63	Kw	1,5	1,5	1,5	1,5	1,1	1,1	0,75	0,55	0,55	0,37	0,37
	Hp	2	2	2	2	1,5	1,5	1	0,75	0,75	0,5	0,50
	M	81	107	128	123	123	140	145	125	141	115	131
	n	186	140	93	70	56	47	35	28	23	18	14
	f_s	1,7	1,3	1,1	1,1	1,0	1,0	1,0	1,2	1,0	1,1	1,1
	Fri	500	571	615	667	700	700	700	700	700	700	700
	Fro	2359	2597	2973	3272	3524	3745	4122	4440	4719	5193	5595

- i : Oran / Ratio
 Kw : Motor Kw /1400
 Hp : Motor Hp
 M : Çıkış Momenti (Nm) / Output Torque (Nm)
 n : Redüktör Çıkış Devri devir/dakika / Gearbox output Speed rpm.
 Fri : Giriş mili üzerinde kabul edilen max yük değeri / Input value of the maximum admitted radial load
 Fro : Çıkış mili üzerinde kabul edilen max yük değeri / Output value of the maximum admitted radial load

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
63	Z	4	3	2	2	2	1	1	1	1	1	1
	Beta	22°40'	16°50'	12°10'	11°40'	9°50'	5°40'	5°10'	4°15'	4°55'	3°05'	2°15'
	Mn	2,75	2,8	2,9	2,2	1,8	2,85	2,3	1,82	1,56	1,16	0,8
	Rd	0,88	0,87	0,83	0,81	0,78	0,74	0,7	0,66	0,62	0,57	0,51
	Rs	0,71	0,67	0,60	0,55	0,51	0,45	0,40	0,36	0,33	0,28	0,24

- i : Oran / Ratio
 Z : Vida Ağız Sayısı / The number of starts of the worm
 Mn : Normal Modül / Normal Module
 Beta : Helis Açısı / Helix Angle
 Rd : Dinamik Verim / Dynamic efficiency
 Rs : Statik Verim / Static efficiency

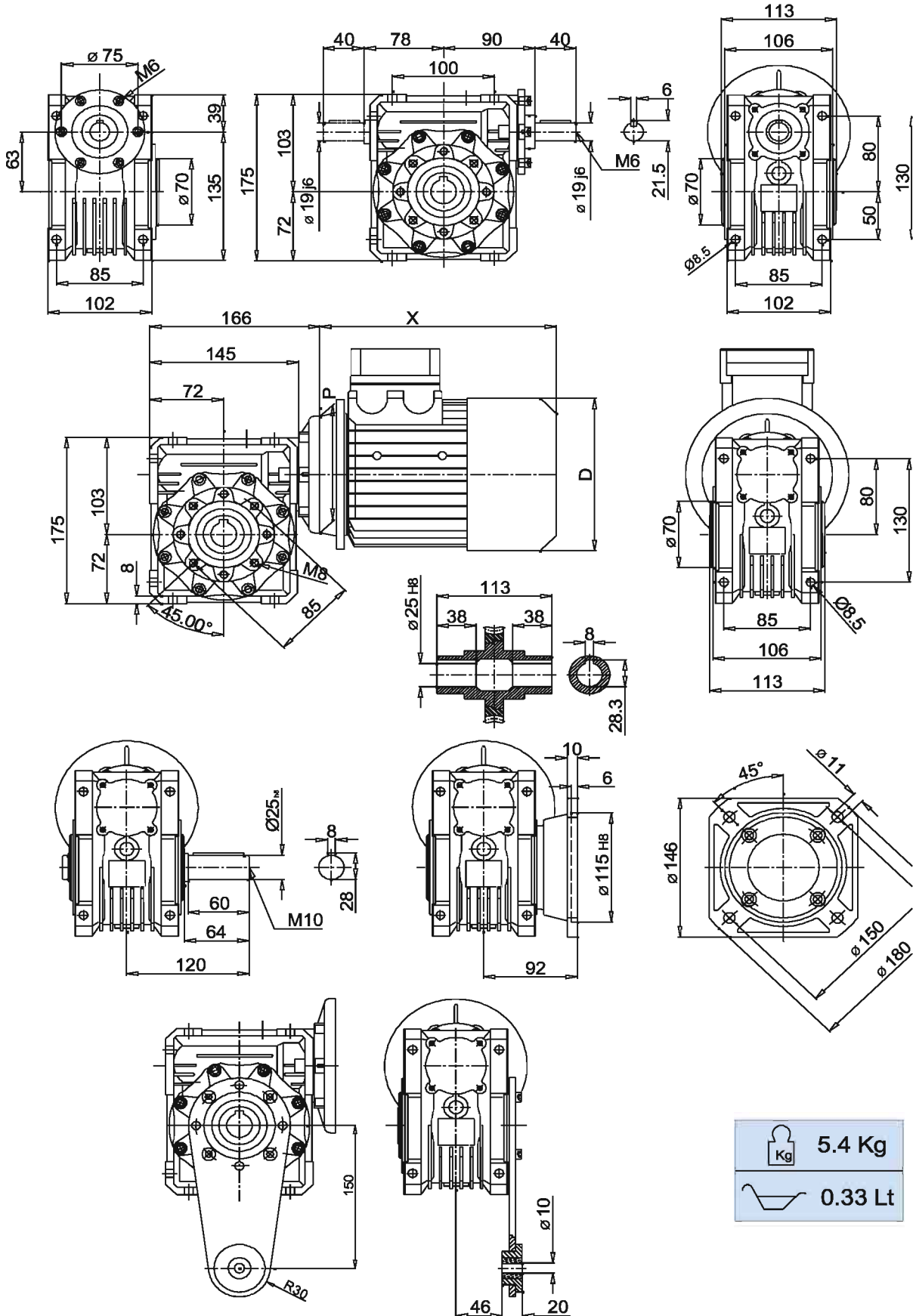
Rd , Rs < 0,5 Rd ve Rs değerlerinin 0,5'in altında olduğu durumlarda sistem geridönmezlik kazanmıştır
 Rd , Rs < 0,5 When the values of Rd and Rs under 0,5. The system is irreversible

MOTOR YAPI ÖLÇÜLERİ / MOTOR CONTRUCTION DIMENSIONS

Type	Kw /1400	X	D	P (B14)	P (B5)
71	0,25 / 0,37	212	138	105	160
80	0,55 / 0,75	232	156	120	200
90	1,1 / 1,5	270	176	140	200

YEDEK PARÇA LİSTESİ / SPARE PART LIST

No	Tanım / Identification
6	6008 Rulman /Bearing
7	Ø40xØ56x8 Keçe / Oil Seal
10	6007 Rulman /Bearing
13	6205 Rulman /Bearing
17	Ø35xØ55x10 Keçe / Oil Seal



	5.4 Kg
	0.33 Lt

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
75	Kw	4	4	2,2	2,2	1,5	1,5	1,1	1,1	0,75	0,55	0,55
	Hp	5,5	5,5	3	3	2	2	1,5	1,5	1	0,75	0,75
	M	182	240	193	248	205	235	217	217	200	181	142
	n	186	140	93	70	56	47	35	28	23	18	14
	f _s	1,27	1,0	1,2	1,0	1,1	1,1	1,2	1,1	1,1	1,1	1,1
	Fri	700	830	851	980	980	980	980	980	980	980	980
	Fro	2785	3065	3509	3862	4160	4421	4865	5241	5569	6130	6603

- i : Oran / Ratio
Kw : Motor Kw /1400
Hp : Motor Hp
M : Çıkış Momenti (Nm) / Output Torque (Nm)
n : Redüktör Çıkış Devri devir/dakika / Gearbox output Speed rpm.
Fri : Giriş mili üzerinde kabul edilen max yük değeri / Input value of the maximum admitted radial load
Fro : Çıkış mili üzerinde kabul edilen max yük değeri / Output value of the maximum admitted radial load

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
75	Z	4	3	2	2	2	1	1	1	1	1	1
	Beta	23°50'	18°10'	12°30'	10°10'	9°50'	8°20'	4°55'	5°25'	4°10'	3°40'	2°06'
	Mn	3,08	3,3	3,38	2,6	2,06	1,69	2,6	2,16	1,83	1,36	1,04
	Rd	0,89	0,88	0,85	0,82	0,8	0,76	0,72	0,69	0,65	0,6	0,55
	Rs	0,71	0,68	0,61	0,57	0,53	0,46	0,42	0,38	0,35	0,29	0,26

- i : Oran / Ratio
Z : Vida Ağız Sayısı / The number of starts of the worm
Mn : Normal Modül / Normal Module
Beta : Helis Açısı / Helix Angle
Rd : Dinamik Verim / Dynamic efficiency
Rs : Statik Verim / Static efficiency

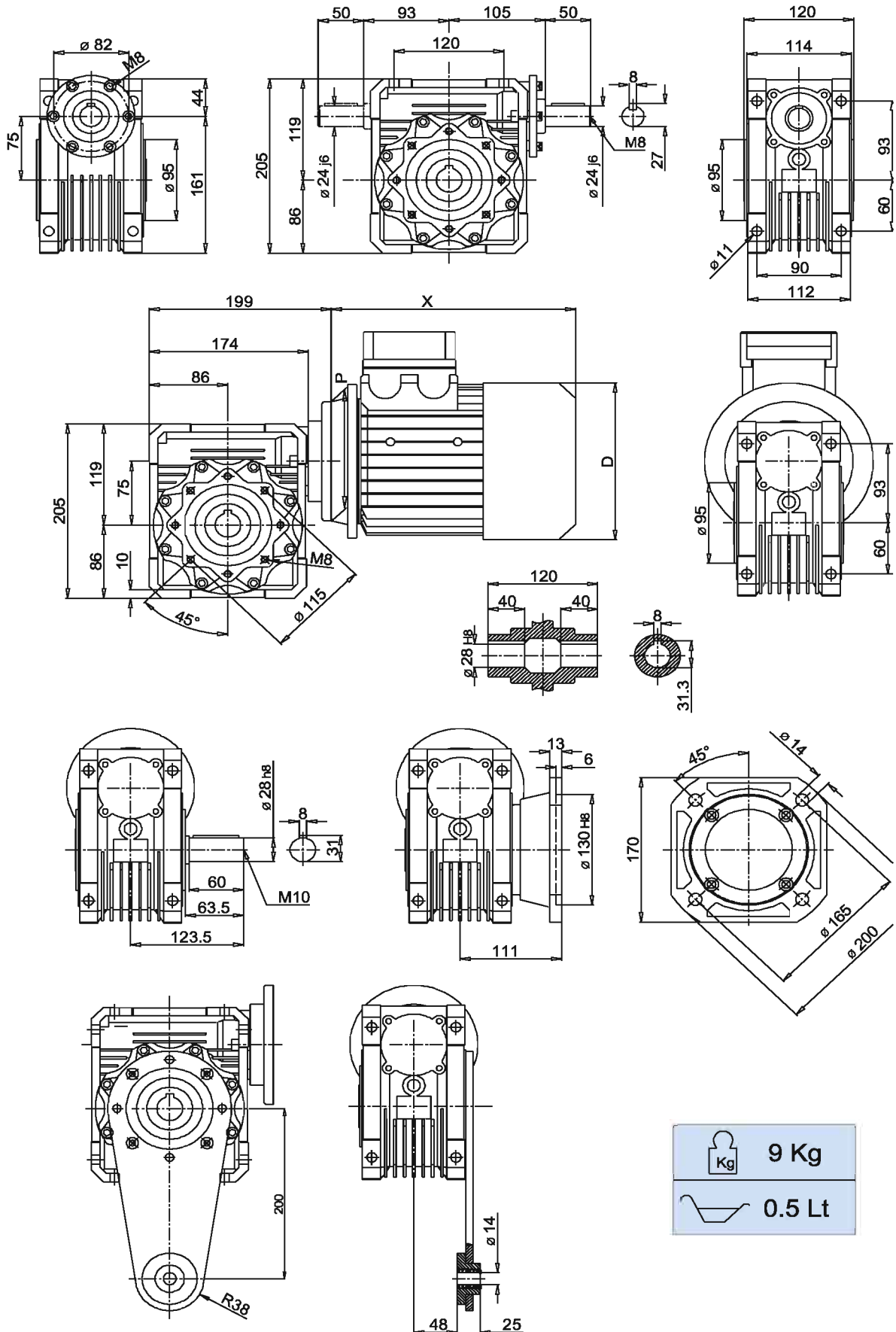
Rd , Rs < 0,5 Rd ve Rs değerlerinin 0,5'in altında olduğu durumlarda sistem geridönmezlik kazanmıştır
Rd , Rs < 0,5 When the values of Rd and Rs under 0,5. The system is irreversible

MOTOR YAPI ÖLÇÜLERİ / MOTOR CONTRUCTION DIMENSIONS

Type	Kw /1400	X	D	P (B14)	P (B5)
80	0,55 / 0,75	232	156	120	200
90	1,1 / 1,5	270	176	140	200
100/112	4 / 3 /2,2	315	218	160	250

YEDEK PARÇA LİSTESİ / SPARE PART LIST

No	Tanım / Identification
6	6010 Rulman /Bearing
7	Ø50xØ72x8 Keçe / Oil Seal
10	32008 Rulman /Bearing
13	32005 Rulman /Bearing
17	Ø40xØ60x10 Keçe / Oil Seal



	9 Kg
	0.5 Lt

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
90	Kw	4	4	4	3	2,2	3	2,2	1,5	1,1	1,1	0,75
	Hp	5,5	5,5	5,5	4	3	4	3	2	1,5	1,5	1
	M	223	292	354	347	310	483	451	371	311	317	302
	n	186.7	140	93.3	70	56	46.7	35	28	23.3	17.5	14
	f _s	1.66	1.26	1.06	1.23	1.2	1	1	1.1	1.18	1	1
	Fri	900	1082	1257	1270	1270	1270	1270	1270	1270	1270	1270
	Fro	3081	3391	3882	4273	4603	4891	5383	5799	6163	6783	7306

- i : Oran / Ratio
 Kw : Motor Kw /1400
 Hp : Motor Hp
 M : Çıkış Momenti (Nm) / Output Torque (Nm)
 n : Redüktör Çıkış Devri devir/dakika / Gearbox output Speed rpm.
 Fri : Giriş mili üzerinde kabul edilen max yük değeri / Input value of the maximum admitted radial load
 Fro : Çıkış mili üzerinde kabul edilen max yük değeri / Output value of the maximum admitted radial load

LR	i	7,5	10	15	20	25	30	40	50	60	80	100
90	Z	4	3	2	2	2	1	1	1	1	1	1
	Beta	24°03'	18°30'	12°35'	12°50'	10°20'	8°38'	6°30'	5°12'	4°20'	3°15'	2°36'
	Mn	4,3	4,4	4,5	3,6	2,9	4,8	3,6	2,9	2,5	1,8	1,5
	Rd	0,9	0,89	0,86	0,84	0,82	0,78	0,75	0,72	0,69	0,63	0,59
	Rs	0,73	0,70	0,64	0,60	0,56	0,49	0,45	0,41	0,38	0,32	0,28

- i : Oran / Ratio
 Z : Vida Ağız Sayısı / The number of starts of the worm
 Mn : Normal Modül / Normal Module
 Beta : Helis Açısı / Helix Angle
 Rd : Dinamik Verim / Dynamic efficiency
 Rs : Statik Verim / Static efficiency

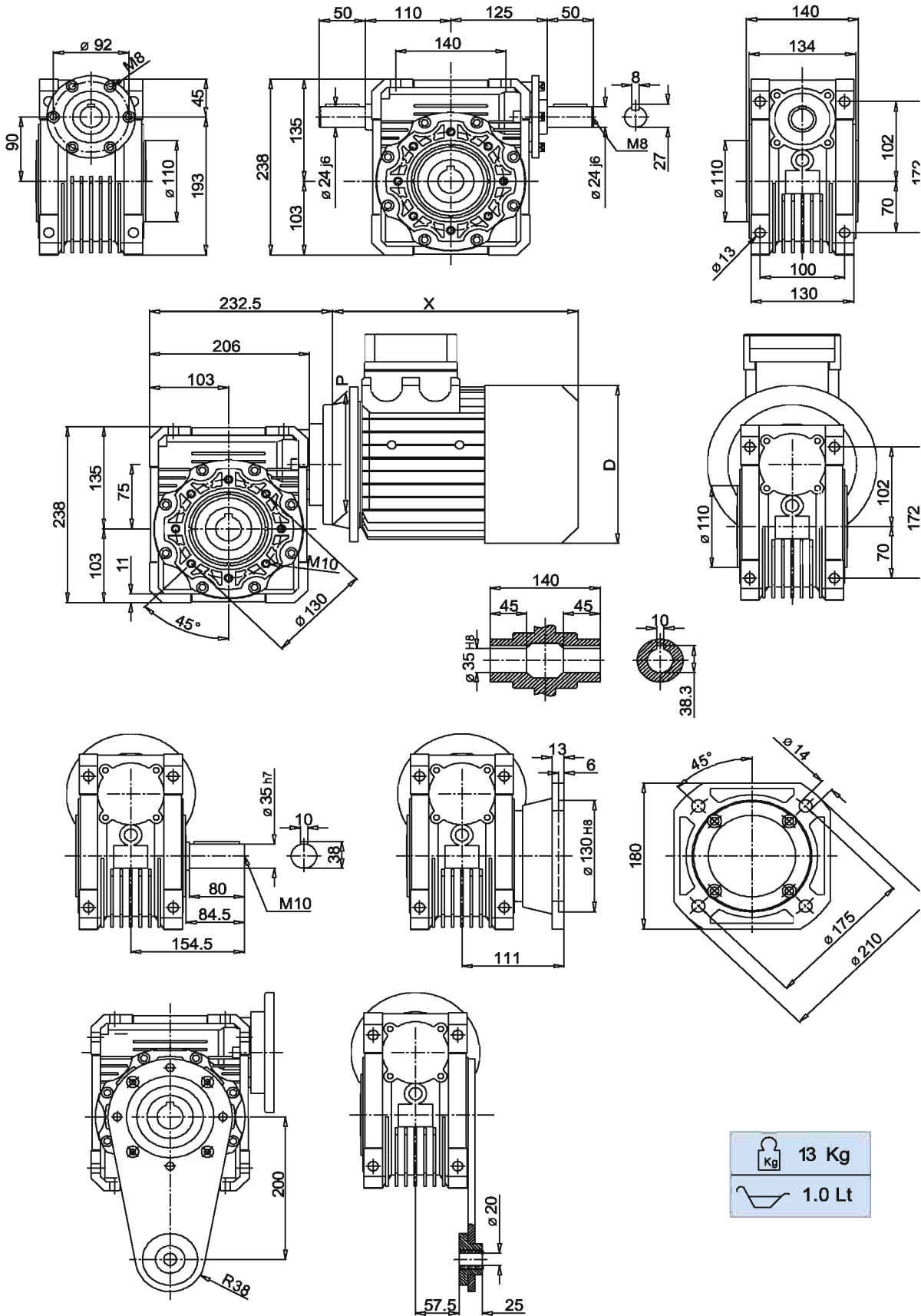
Rd , Rs < 0,5 Rd ve Rs değerlerinin 0,5'in altında olduğu durumlarda sistem geridönmezlik kazanmıştır
 Rd , Rs < 0,5 When the values of Rd and Rs under 0,5. The system is irreversible

MOTOR YAPI ÖLÇÜLERİ / MOTOR CONTRUCTION DIMENSIONS

Type	Kw /1400	X	D	P (B14)	P (B5)
80	0,75	232	156	120	200
90	1,1 / 1,5	270	176	140	200
100/112	4 / 3 /2,2	315	218	160	250

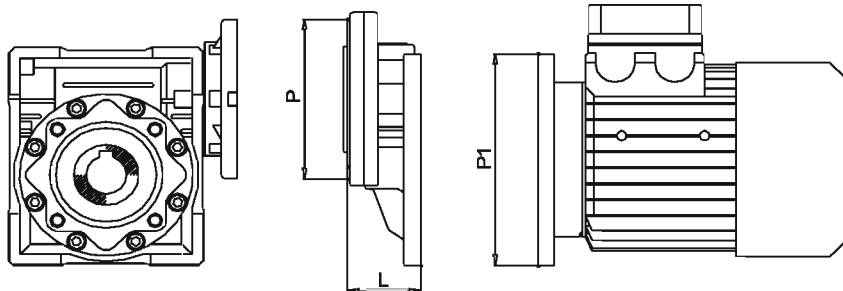
YEDEK PARÇA LİSTESİ / SPARE PART LIST

No	Tanım / Identification
6	6012 Rulman /Bearing
7	Ø60xØ85x8 Keçe / Oil Seal
10	32008 Rulman /Bearing
13	32206 Rulman /Bearing
17	Ø40xØ60x10 Keçe / Oil Seal



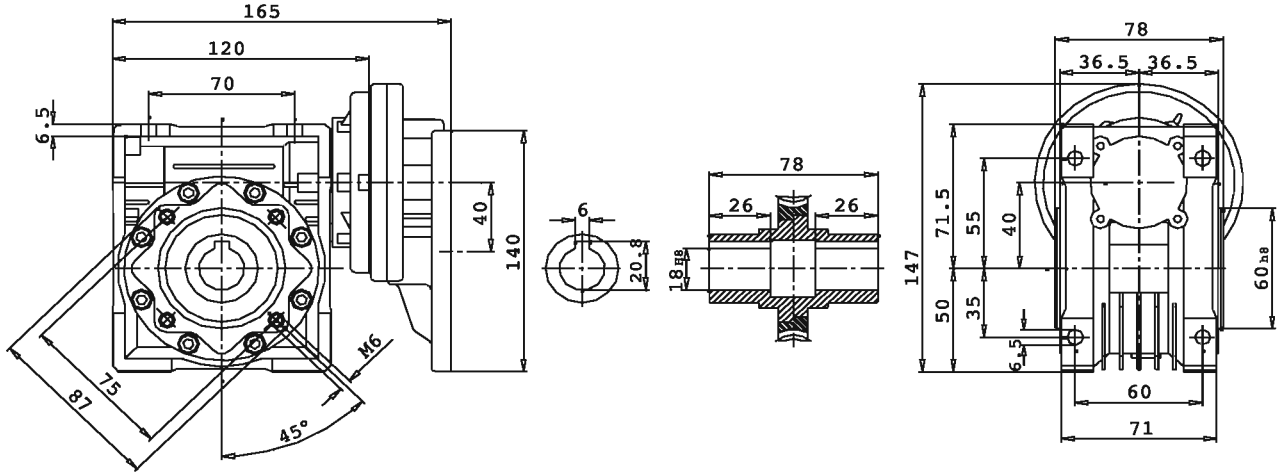
	13 Kg
	1.0 Lt

MS	i	PR063		PR071	
		105 / 11 i = 3	105 / 14 i = 3	120 / 14 i = 3	120 / 19 i = 3
40	25				
	30				
	40				
	50				
	60				
	80				
	100				
50	25				
	30				
	40				
	50				
	60				
	80				
	100				
63	25				
	30				
	40				
	50				
	60				
	80				
	100				
75	25				
	30				
	40				
	50				
	60				
	80				
	100				
90	25				
	30				
	40				
	50				
	60				
	80				
	100				



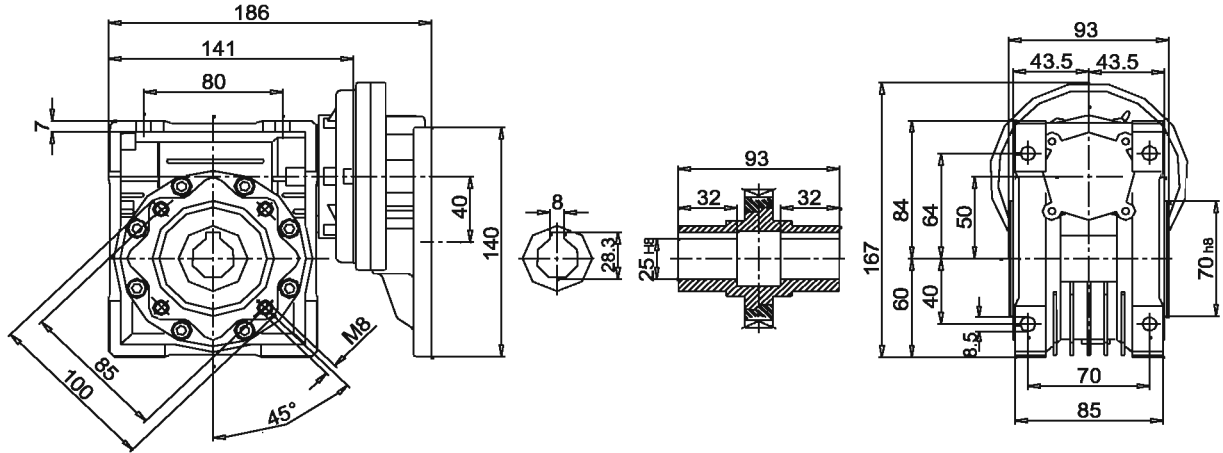
	P1	P	(P)	L
PC 063	63B5 - 140 / 11	105 / 11	(105 / 14)	45
PC 071	71B5 - 160 / 14	120 / 14	(120 / 19)	53

PR 063+MS 40



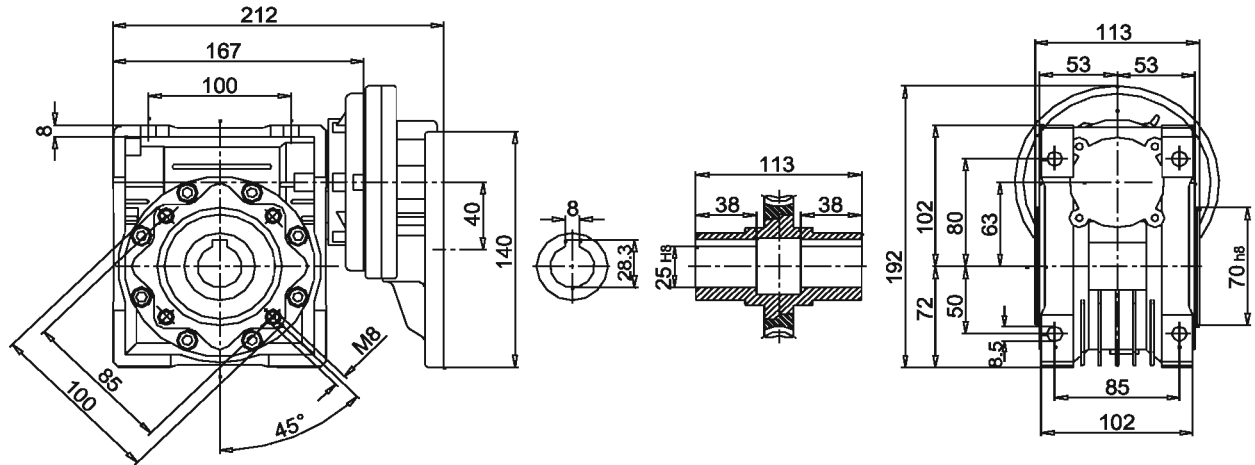
n1=1400		Motorlu Redüktör / Geared Motors				
i	n2 1/min		P1 (kW)	M2 (Nm)	f.s.	Fro (N)
75	18.7	PR063+MS40	0.18	64	0.8	2833
90	15.6		0.18	70	0.8	3011
120	11.7		0.18	85	0.6	3314
150	9.3		0.12	66	0.7	3490
180	7.8		0.12	74	0.6	3490
240	5.8		0.12	86	0.5	3490

PR 063+MS 50



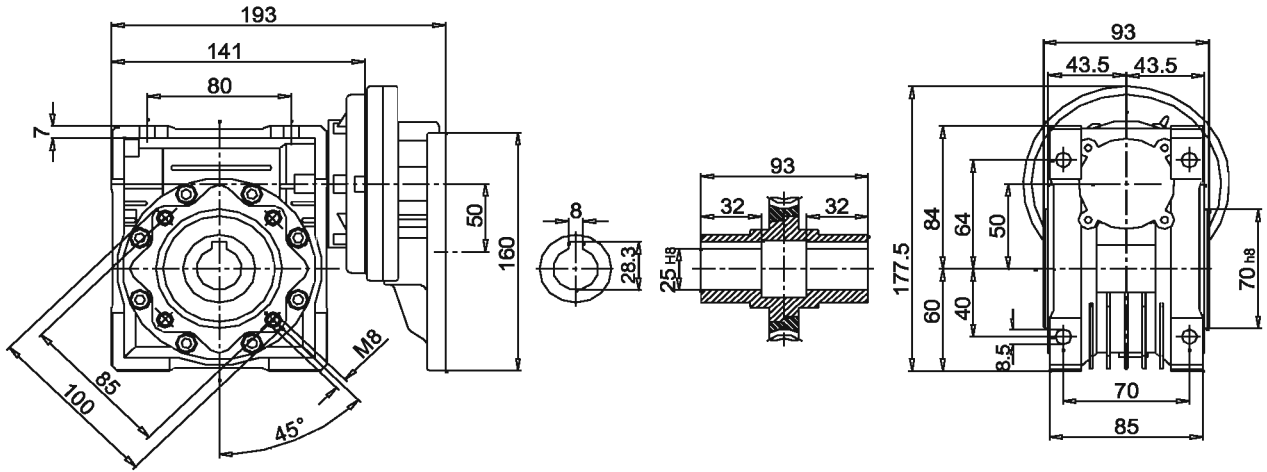
n1 = 1400		Motorlu Redüktör / Geared Motors				
i	n2 1/min		P1 (kW)	M2 (Nm)	f.s.	Fro (N)
75	18.7	PR063 + MS50	0.22	78	1.2	3889
90	15.6		0.22	86	1.2	4132
120	11.7		0.22	106	0.9	4548
150	9.3		0.18	101	0.9	4840
180	7.8		0.18	113	0.7	4840
240	5.8		0.18	133	0.6	4840
300	4.7		0.12	98	0.7	4840

PR 063+MS 63



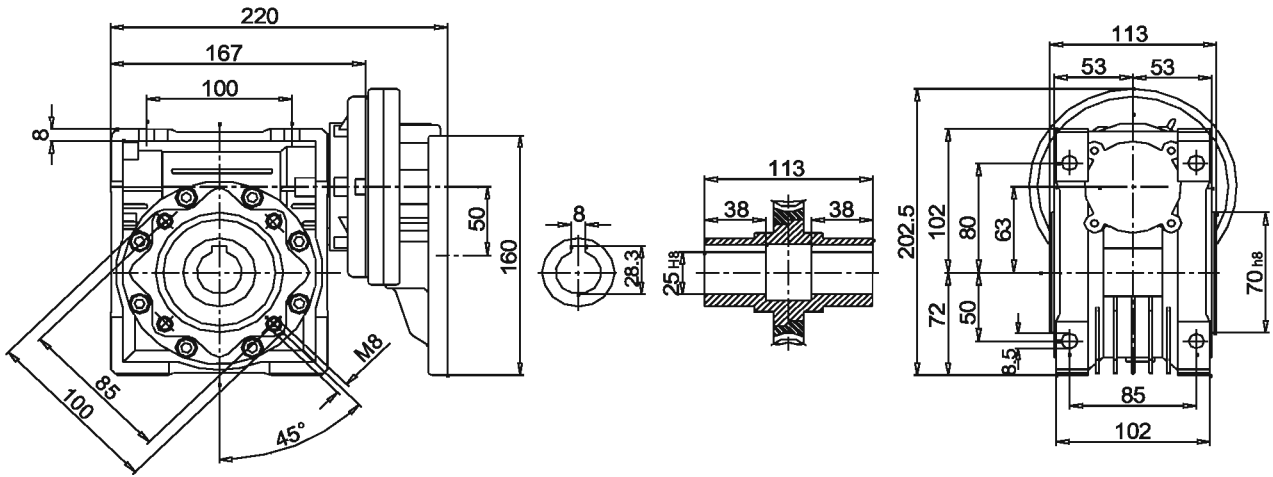
n1 = 1400		Motorlu Redüktör / Geared Motors				
i	n2 1/min		P1 (kW)	M2 (Nm)	f.s.	Fro (N)
120	11.7	PR063 + MS63	0.22	110	1.7	5945
150	9.3		0.22	126	1.4	6270
180	7.8		0.22	143	1.1	6270
240	5.8		0.18	139	1.0	6270
300	4.7		0.18	155	0.8	6270

PR 071+MS 50

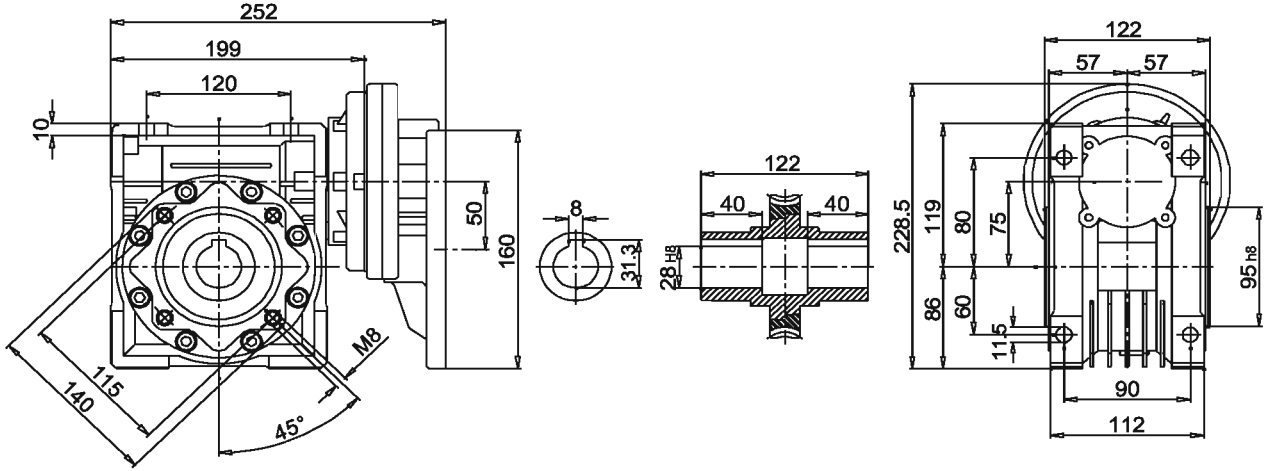


n1 = 1400		Motorlu Redüktör / Geared Motors				
i	n2 1/min		P1 (kW)	M2 (Nm)	f.s.	Fro (N)
75	18.7	PR071 + MS50	0.25	88	1.0	3889
90	15.6		0.25	98	1.1	4132
120	11.7		0.25	121	0.8	4548
150	9.3		0.25	141	0.6	4840

PR 071+MS 63

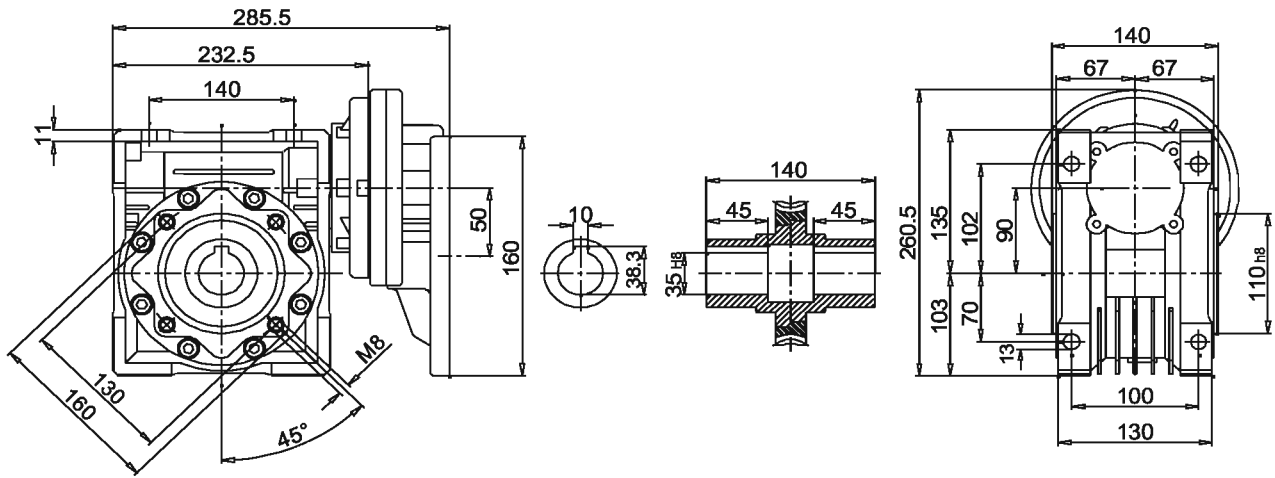


n1 = 1400		Motorlu Redüktör / Geared Motors				
i	n2 1/min		P1 (kW)	M2 (Nm)	f.s.	Fro (N)
75	18.7	PC071 + MS63	0.25	91	1.8	5083
90	15.6		0.55	219	0.9	5401
120	11.7		0.37	185	1.0	5945
150	9.3		0.37	212	0.8	6270
180	7.8		0.25	163	1.0	6270
240	5.8		0.25	192	0.7	6270
300	4.7		0.25	215	0.6	6270

PR 071+MS 75


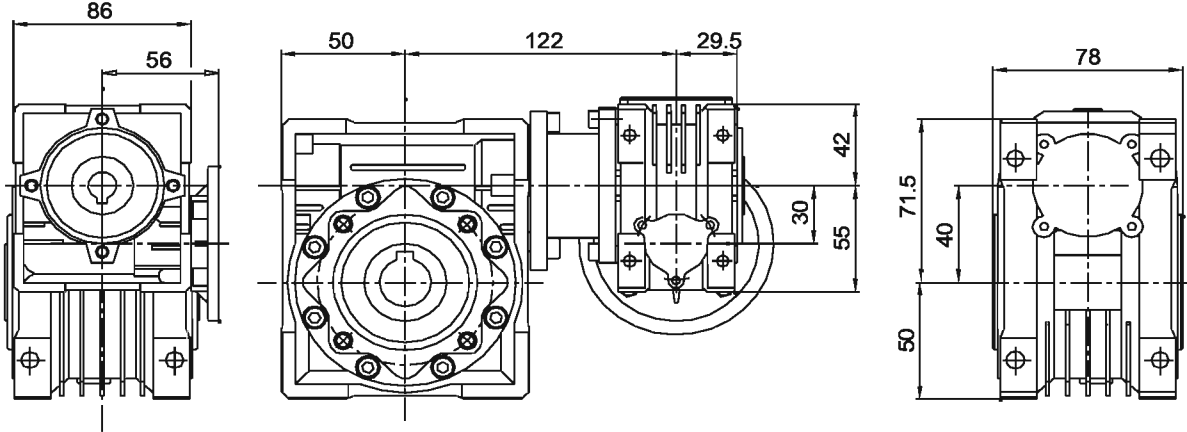
n1 = 1400		Motorlu Redüktör / Geared Motors				
i	n2 1/min		P1 (kW)	M2 (Nm)	f.s.	Fro (N)
75	18.7	PR071 + MS75	0.55	205	1.2	6000
90	15.6		0.55	230	1.3	6375
120	11.7		0.55	284	1.0	7017
150	9.3		0.37	223	1.1	7380
180	7.8		0.37	254	0.9	7380
240	5.8		0.25	201	1.1	7380
300	4.7		0.25	230	0.9	7380

PR 071+MS 90



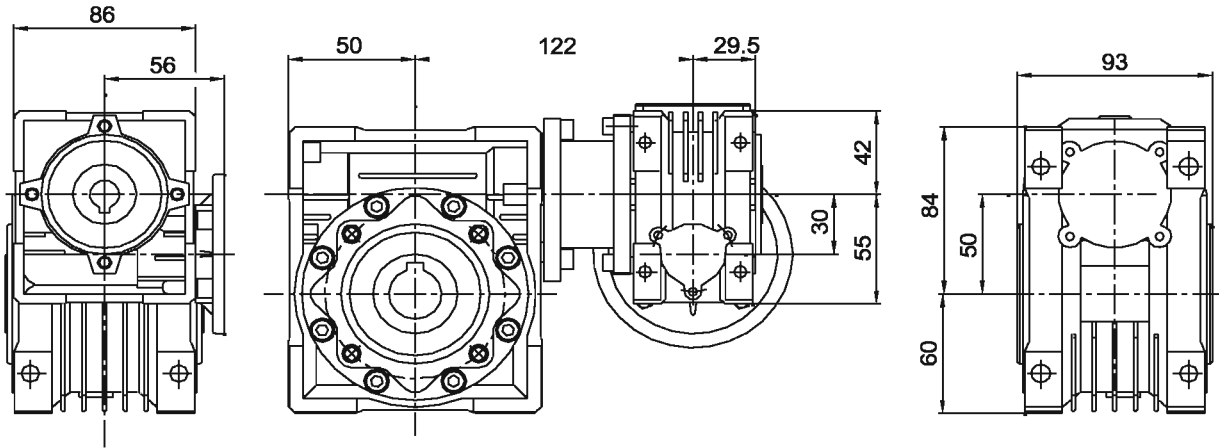
n1 = 1400		Motorlu Redüktör / Geared Motors				
i	n2 1/min		P1 (kW)	M2 (Nm)	f.s.	Fro (N)
120	11.7	PR071 + MS90	0.55	297	1.6	7764
150	9.3		0.55	355	1.3	8180
180	7.8		0.55	398	1.0	8180
240	5.8		0.37	321	1.1	8180
300	4.7		0.37	371	0.9	8180

MS 30+MS 40



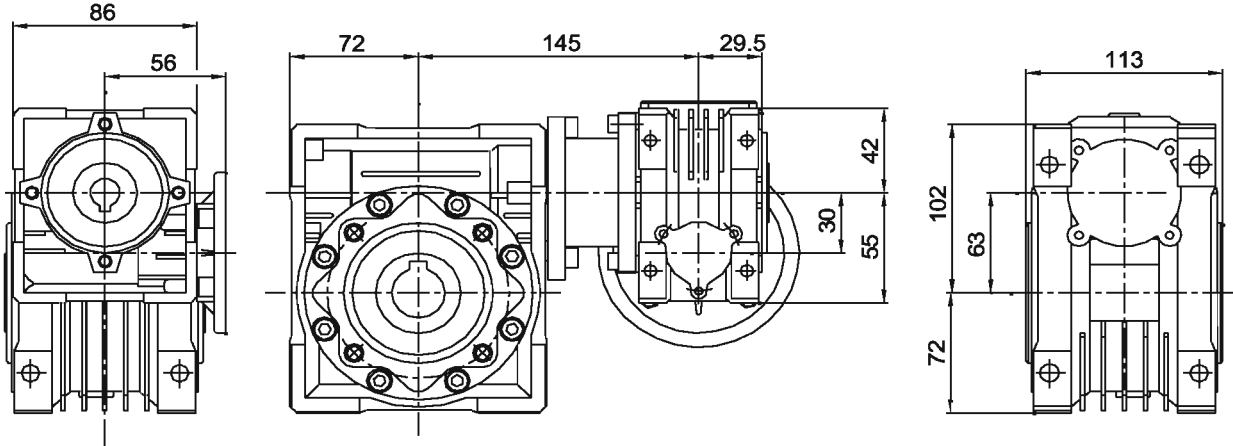
n1 = 1400		Motorlu Redüktör / Geared Motors						Giriş Millî Redüktör / Gear Units			
i	n2 1/min	i1	i2		P1 (kW)	M2 (Nm)	f.s.		M2 (Nm)	Fri (N)	Fro (N)
300	4.7	10	30		0.09	88	0.8		73	210	3490
400	3.5	20	20		0.06	70	0.9		65	210	3490
500	2.8	25	20		0.06	96	0.6		61	210	3490
600	2.3	20	30		0.06	104	0.7		73	210	3490
750	1.9	25	30		0.06	121	0.6		73	210	3490
900	1.6	30	30		0.06	139	0.5		73	210	3490
1200	1.2	40	30	MS 30 / 40	0.06	166	0.4	GM 30 / 40	65	210	3490
1500	0.9	50	30		0.06	196	0.4		73	210	3490
1800	0.8	60	30		0.06	218	0.3		73	210	3490
2400	0.58	80	30		0.06	261	0.2		65	210	3490
3200	0.4	80	40		0.06	300	0.2		65	210	3490
4000	0.4	100	40		0.06	279	0.1		33	210	3490
5000	0.28	100	50		0.06	338	0.1		29	210	3490

MS 30+MS 50



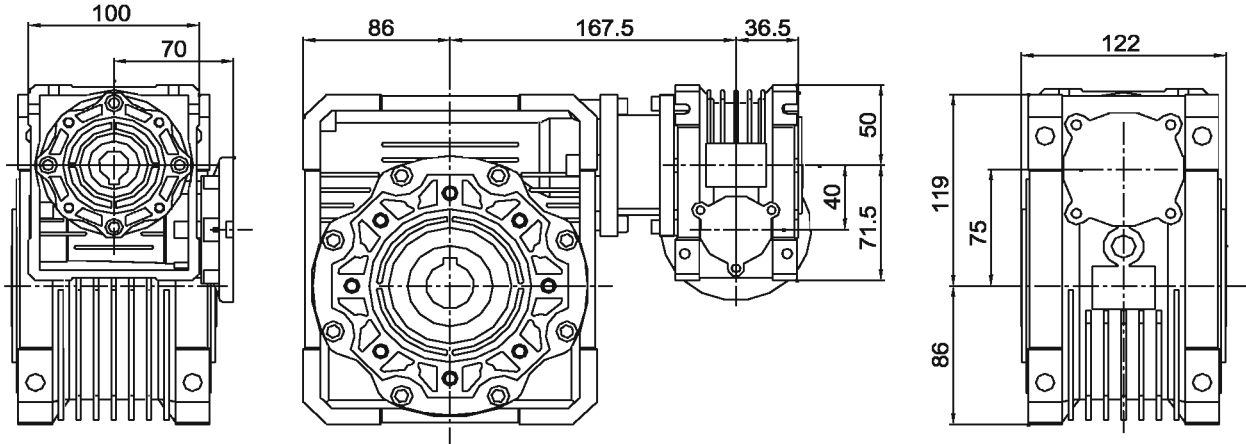
n1 = 1400		Motorlu Redüktör / Geared Motors						Giriş Milli Redüktör / Gear Units			
i	n2 1/min	i1	i2		P1 (kW)	M2 (Nm)	f.s.		M2 (Nm)	Fri (N)	Fro (N)
300	4.7	10	30		0.12	119	1.2		145	210	4840
400	3.5	20	20		0.12	142	0.9		124	210	4840
500	2.8	25	20		0.12	164	0.7		120	210	4840
600	2.3	20	30		0.09	159	0.9		145	210	4840
750	1.9	25	30		0.09	185	0.8		145	210	4840
900	1.6	30	30		0.09	212	0.7		145	210	4840
1200	1.2	40	30	MS 30 / 50	0.06	169	0.7	GM 30 / 50	124	210	4840
1500	0.93	50	30		0.06	199	0.7		145	210	4840
1800	0.78	60	30		0.06	222	0.7		145	210	4840
2400	0.6	80	30		0.06	266	0.5		124	210	4840
3200	0.5	80	40		0.06	307	0.4		120	210	4840
4000	0.35	100	40		0.06	288	0.3		82	210	4840
5000	0.29	100	50		0.06	311	0.3		82	210	4840

MS 30+MS 63



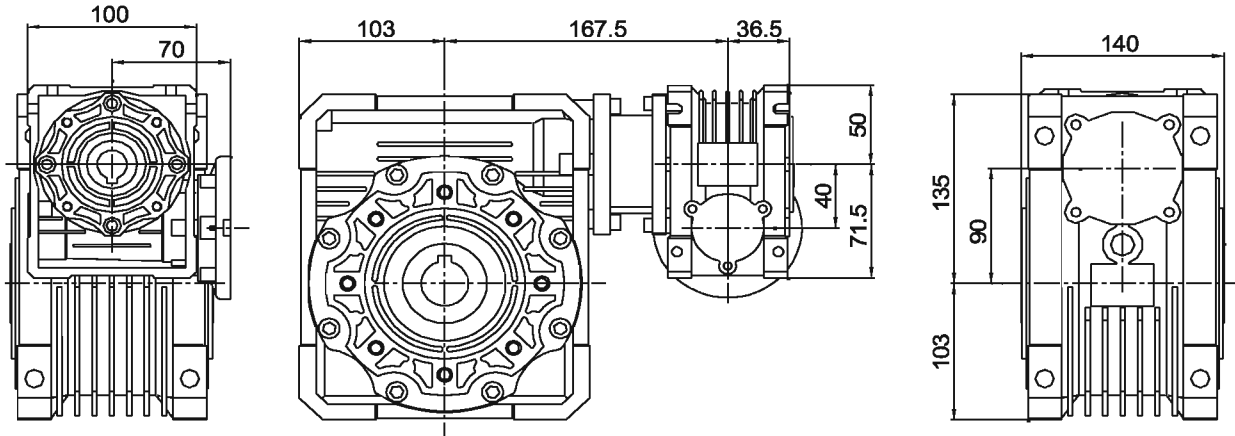
n1 = 1400		Motorlu Redüktör / Geared Motors						Giriş Millî Redüktör / Gear Units			
i	n2 1/min	i1	i2		P1 (kW)	M2 (Nm)	f.s.		M2 (Nm)	Fri (N)	Fro (N)
300	4.7	10	30		0.22	210	1.1		230	210	6270
400	3.5	20	20		0.22	271	0.8		230	210	6270
500	2.8	25	20		0.18	257	0.8		216	210	6270
600	2.3	20	30		0.12	208	1.1		230	210	6270
750	1.9	25	30		0.12	241	0.9		216	210	6270
900	1.6	30	30		0.09	200	1.0		198	210	6270
1200	1.2	40	30	MS 30 / 63	0.09	263	0.9	GM 30 / 63	230	210	6270
1500	0.93	50	30		0.09	305	0.7		216	210	6270
1800	0.78	60	30		0.06	225	0.9		198	210	6270
2400	0.58	80	30		0.06	276	0.8		230	210	6270
3200	0.47	80	40		0.06	319	0.7		216	210	6270
4000	0.35	100	40		0.06	306	0.6		172	210	6270
5000	0.28	100	50		0.06	360	0.4		150	210	6270

MS 40+MS 75



n1 = 1400		Motorlu Redüktör / Geared Motors						Giriş Millî Redüktör / Gear Units			
i	n2 1/min	i1	i2		P1 (kW)	M2 (Nm)	f.s.		M2 (Nm)	Fri (N)	Fro (N)
300	4.7	10	30		0.37	405	1.0		390	350	7380
400	3.5	20	20		0.37	498	0.7		360	350	7380
500	2.8	25	20		0.25	384	0.8		320	350	7380
600	2.3	20	30		0.18	362	1.1		390	350	7380
750	1.9	25	30		0.18	435	0.9		390	350	7380
900	1.6	30	30		0.18	487	0.8		390	350	7380
1200	1.2	40	30	MS 40 / 75	0.12	399	0.9	GM 40 / 75	360	350	7380
1500	0.93	50	30		0.09	360	1.1		390	350	7380
1800	0.78	60	30		0.09	404	1.0		390	350	7380
2400	0.58	80	30		0.09	496	0.7		360	350	7380
3200	0.47	80	40		0.06	377	0.8		320	350	7380
4000	0.35	100	40		0.06	355	0.7		250	350	7380
5000	0.28	100	50		0.06	419	0.5		230	350	7380

MS 40+MS 90



n1 = 1400		Motorlu Redüktör / Geared Motors						Giriş Milli Redüktör / Gear Units			
i	n2 1/min	l1	l2		P1 (kW)	M2 (Nm)	f.s.		M2 (Nm)	Fr i (N)	Fro (N)
300	4.7	10	30		0.37	402	1.5		390	##	7380
400	3.5	20	20		0.37	523	1.2		360	##	7380
500	2.8	25	20		0.37	611	0.9		320	##	7380
600	2.3	20	30		0.37	757	0.8		390	##	7380
750	1.9	25	30		0.25	598	0.9		390	##	7380
900	1.6	30	30		0.25	667	0.8		390	##	7380
1200	1.2	40	30	MS 40 / 90	0.18	629	1.0	GM 40 / 90	360	##	7380
1500	0.93	50	30		0.18	735	0.8		390	##	7380
1800	0.78	60	30		0.12	547	0.9		390	##	7380
2400	0.58	80	30		0.12	695	0.9		360	##	7380
3200	0.47	80	40		0.09	609	0.9		320	##	7380
4000	0.35	100	40		0.09	548	0.8		250	##	7380
5000	0.28	100	50		0.06	431	1.0		230	##	7380