Konik Helisel Dişli Redüktörler
Helical Bevel Gearboxes

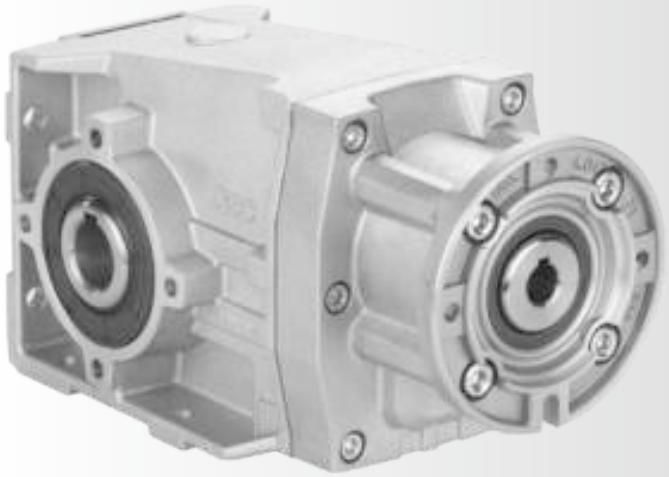
04
2015

HE-MHE-KH-MKH
Serisi Ürün Kataloğu | *Series Product Catalogue*

Ekstruder | *Extruder*
Serisi Ürün Kataloğu | *Series Product Catalogue*

Özel Tasarım Dişliler
Custom Design Gears

Özel Tasarım Redüktörler
Custom Design Gearboxes



Konik Helisel Dişli Redüktörler
Helical Bevel Gearboxes

Yuvarlak Gövde Sonsuz Vidalı Redüktörler
Round Worm Gearboxes

Kare Gövde Sonsuz Vidalı Redüktörler
Square Worm Gearboxes

Tek Kademeli Koaksiyel Redüktörler
One Step Coaxial Gearboxes

Koaksiyel Redüktörler
Coaxial Gearboxes

Koaksiyel Redüktörler
Coaxial Gearboxes

Şaft Montajlı Redüktörler
Shaft Mounted Gearboxes

Hidrostatic Varyatörler
Hydrostatic Variators

Tek Parça Alüminyum Alaşımlı Gövde
MIL-STD 276 standardına göre üretilmiş gövde için herhangi bir ikincil yüzey işlemine gerek yoktur. Yüzeyler boyanabilir.

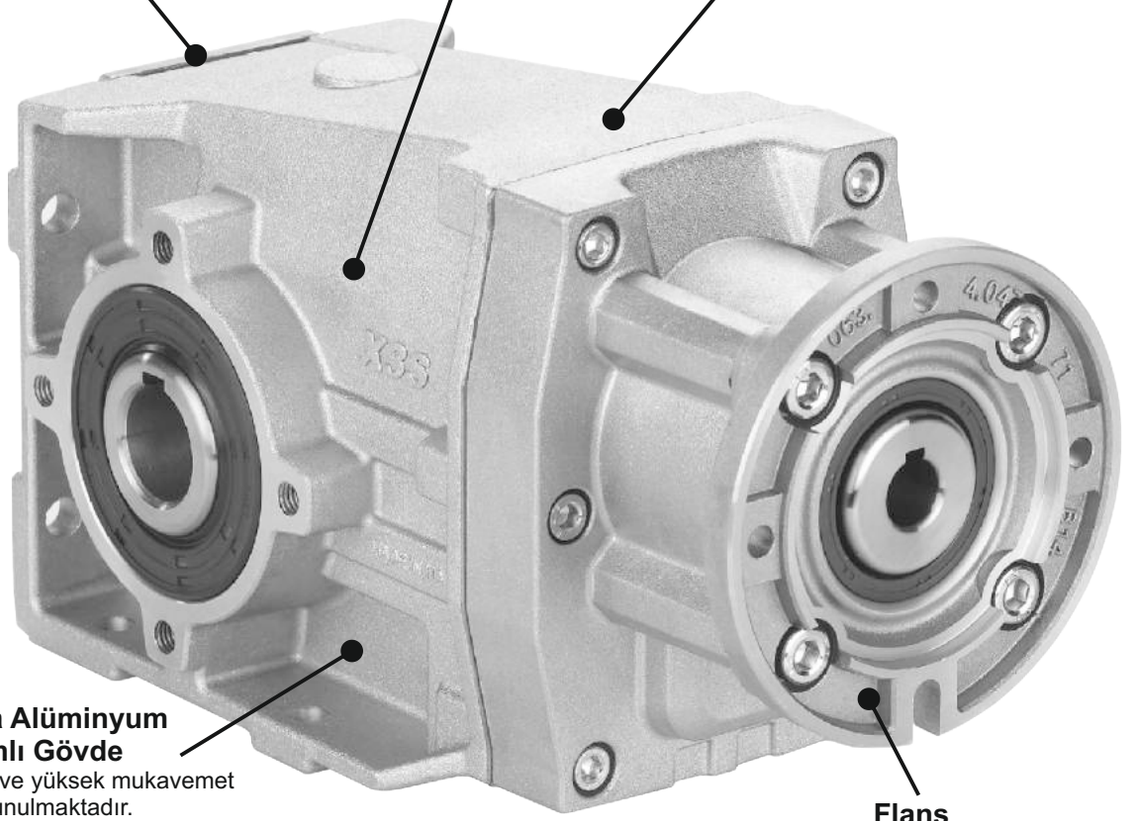
Alloy housing
Is vacuum impregnated (MIL-STD 276) for protection and sealing. No secondary finish required but readily accepts paint.

Dişliler
Isıl işlem görmüş ve hassas profil taşlanmıştır.

Gears
Hardened and ground gears

De-Monte edilebilir kapak

Removable inspection cover



Tek Parça Alüminyum Alaşımlı Gövde
Hafif gövde yapısı ve yüksek mukavemet birlikte sunulmaktadır.
Yüksek hasssiyette işlenmiştir.

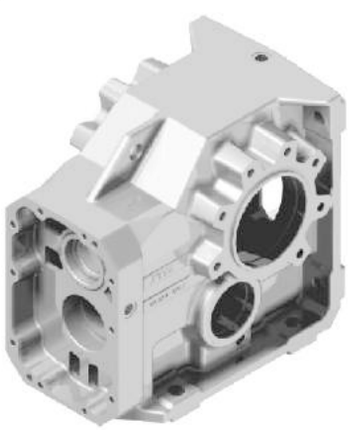
Single-piece aluminum
Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing

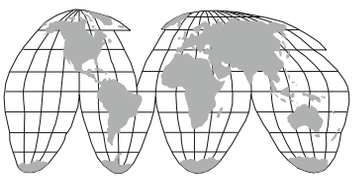
Flanş
Tüm giriş flanşları IEC standardına uygundur.

Flange
Fully modular to IEC and Compact integrated motor.
NEMA C flange

Tek Parça Döküm Gövde
Hafif gövde yapısı ve yüksek mukavemet birlikte sunulmaktadır.
Yüksek hasssiyette işlenmiştir.

Cast Iron housing
With high tensile strength. Precision machined for alignment of bearings and gearing





Yaygın Satış Ağı
World wide sales network.

Konik Helisel Dişli Redüktörler / Helical-Bevel Gearboxes

Sayfa / On page

7-5	7-7	7-9	7-11	7-13	7-15
Tip / Types	**X42A** 150Nm	**X43A** 160Nm	**X52A** 250Nm	**X53A** 250Nm	**X62A** 410Nm	**X63A** 410Nm

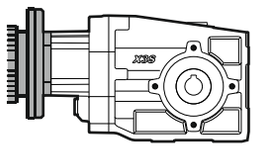
Sayfa / On page

7-17	7-19	7-21	7-23	7-25	7-27	7-29	7-31	7-33	7-35
Tip / Types	**113C** 675Nm	**114C** 675Nm	**133C** 1000Nm	**134C** 1000Nm	**X93C** 1600Nm	**X94C** 1650Nm	**X103** 3000Nm	**X104** 3000Nm	**X113** 4500Nm	**X114** 4600Nm

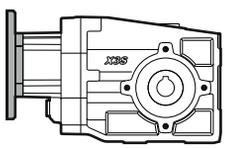
NASIL SİPARİŞ EDİLİR / HOW TO ORDER

Tip / Type	**Gövde Büyüklüğü** / Size	**Montaj Şekli** / Mounting	**Tahvil**- Ratio	**Çıkış Mili** / Output shaft
M	**X22S**	**C**	**4.83**	**-A**

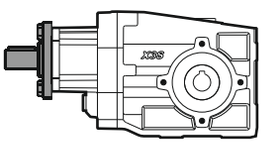
Konik Helisel Dişli Redütörler
Helical-bevel gear



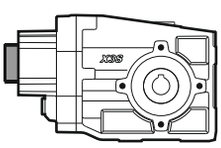
IEC motorlu
M



Motor Flanşlı
P



Dolu Mil girişli
R



Temel Redüktör
B

2 Kademe Stages | 3 Kademe Stages

Alüminyum
Aluminum

X22S
X32S
X42A
X52A
X62A

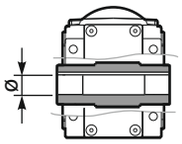
X33S
X43A
X53A
X63A

3 Kademe Stages | 4 Kademe Stages

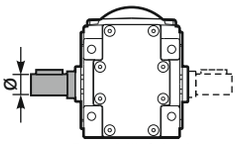
Döküm gövde
Cast Iron

113C
133C
X93C
X103
X113

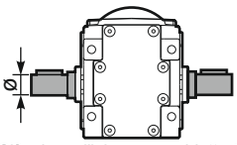
114C
134C
X94C
X104
X114



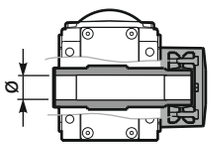
Delik Mil Çıkışlı
C



Dolu Mil Çıkışlı
A

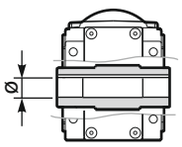


Çift çıkış milinin uygun olduğu tipler
113/4C, 133/4C ve X93/4C
B



Sıkma Bileziği
(Yalnızca DX yönünde)
D

Taleplerinizi adet bilgisi ile birlikte iletiniz.
Only on request for Q.ty



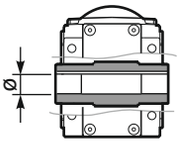
Paslanmaz mil çıkışlı
I

Paslanmaz mil çıkışlı
Stainless steel hub

Taleplerinizi adet bilgisi ile birlikte iletiniz.
Only on request for Q.ty

Ölçü sayfalarına bakınız

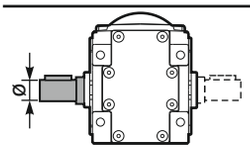
See technical data table



➡ **STANDART**

Delik Mil Çıkışlı

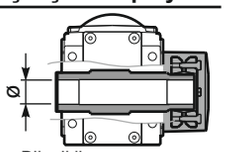
X22S	113C 114C
-A ⇨ ø18	**-F** ➡ **ø40**
-B ➡ **ø20**	**-G** ⇨ ø42
X32S X33S	**133C 134C**
-B ➡ **ø20**	**-F** ⇨ ø40
-C ⇨ ø25	**-H** ➡ **ø45**
X42A X43A	**X93C X94C**
-C ➡ **ø25**	**-H** ⇨ ø45
-D ⇨ ø30	**-J** ➡ **ø50**
X52A X53A	**X103 X104**
-D ➡ **ø30**	**-K** ➡ **ø60**
-E ⇨ ø35	**X113 X114**
X62A X63A	**-T** ➡ **ø70**
-E ➡ **ø35**	
-F ⇨ ø40	



Tek ve Çift Çıkış Mili

-I	X22S X32/3S	⇨ ø20
-L	X32/3S X42/3A	⇨ ø25
-M	X52/3A	⇨ ø30
-N	X52/3A X62/3A	⇨ ø35
-V	113/4C	⇨ ø40*
-O	113/4C	⇨ ø42*
-P	133/4C	⇨ ø45*
-1	X93/4C	⇨ ø50*
-3	X103/4	⇨ ø60*
-5	X113/4	⇨ ø70*

Çift çıkış mili opsiyonu



Sıkma Bilezikli

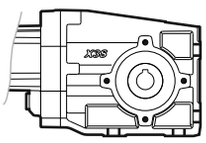
-U	X22S X32/3S	⇨ ø20
-Q	X42/3A	⇨ ø30
-R	X52/3A	⇨ ø35
-S	X62/3A 113/4C	⇨ ø40
-6	133/4C	⇨ ø45
-7	X93/4C	⇨ ø50
-8	X103/4	⇨ ø65
-9	X113/4	⇨ ø75

TÜV NORD 0032 — Dossier according to 94/9/EG 8. b ii stored — Ex

Ürünlerimiz isteğe bağlı olarak ATEX standartlarında tedarik edilebilir.
On request we can deliver our products according to the ATEX

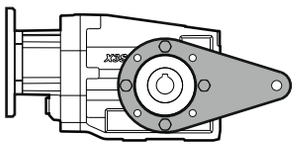
NASIL SİPARİŞ EDİLİR / HOW TO ORDER

Tip / Type	**Çıkış Flanşı** Output flange	**Motor Büyüklüğü** / Motor size	**Terminal Kutusu Pozisyonu** Terminal box position	**Montaj Pozisyonu** Mountin position
BR	**N**	**-O**	**B**	**B3**



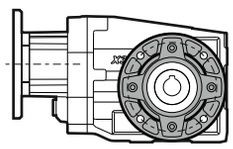
FB

Temel Tip
Form base



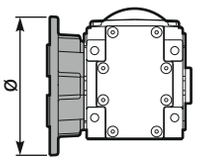
BR

Tork Kolu
Reaction arm



-F

Çıkış Flanşı
output flange



N Flanşsız Without flange

X22S

0 ⇨ ø110
1 ⇨ ø120

X32S X33S

1 ⇨ ø120
2 ⇨ ø160

X42-3A X52-3A X62-3A

2 ⇨ ø160
3 ⇨ ø200
4 ⇨ ø250

113C 114C X93C X94C

C ⇨ ø280
L ⇨ ø280

133C 134C

C ⇨ ø320

X103 X104

6 ⇨ ø350

X113 X114

7 ⇨ ø450

Flanş Flange

B5

-A=56 (ø120)
-B=63 (ø140)
-C=71 (ø160)
-D=80 (ø200)
-E=90 (ø200)
-F=100÷112 (ø250)
-G=132 (ø300)
-H=160 (ø350)
-I=180 (ø350)
-L=200 (ø400)
CA=225 (ø450)

B14

-O=56 (ø80)
-P=63 (ø90)
-Q=71 (ø105)
-R=80 (ø120)
-T=90 (ø140)
-U=100÷112 (ø160)
-V=132 (ø200)

Tip R Type R

X22S X33S X43A

-1 ⇨ ø14

X32S X42A X53A X63A 114C 134C

-2 ⇨ ø19

X52A X62A 113C 133C X94C

-3 ⇨ ø24

X93C X104 X114

-4 ⇨ ø28

X103 X113

-6 ⇨ ø42

Flanşsız Without flange

X22S X33S X43A

-Z ⇨ ø9 (56B5)
-0 ⇨ ø11 (63B5)
-1 ⇨ ø14 (71B5)

X32S X42A X53A X63A 114C 134C

-1 ⇨ ø14 (71B5)
-2 ⇨ ø19 (80B5)
-3 ⇨ ø24 (90B5)

X52A X62A 113C 133C X94C

-2 ⇨ ø19 (80B5)
-3 ⇨ ø24 (90B5)
-4 ⇨ ø28 (100B5)

X93C

-4 ⇨ ø28 (100B5)
-5 ⇨ ø38 (132B5)
-6 ⇨ ø42 (160B5)
-7 ⇨ ø48 (180B5)

X103

-5 ⇨ ø38 (132B5)
-6 ⇨ ø42 (160B5)
-7 ⇨ ø48 (180B5)
-8 ⇨ ø55 (200B5)

X104

-4 ⇨ ø28 (100B5)
-5 ⇨ ø38 (132B5)

X113

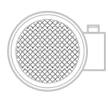
-5 ⇨ ø38 (132B5)
-6 ⇨ ø42 (160B5)
-7 ⇨ ø48 (180B5)
-8 ⇨ ø55 (200B5)
-9 ⇨ ø60 (225B5)

X114

-4 ⇨ ø28 (100B5)
-5 ⇨ ø38 (132B5)
-6 ⇨ ø42 (160B5)

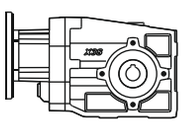
A

B
STANDART

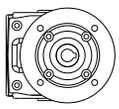


C

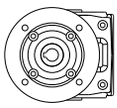
D



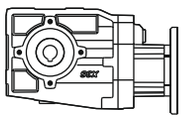
B3
STANDART



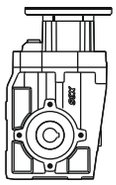
B6



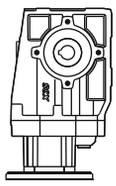
B7



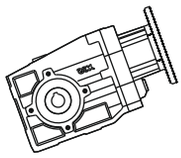
B8



V5



V6



V8

Sadece dikey pozisyonlar için belirtilmiştir

Specify only for vertical positions

7

GEREKLİ FORMÜLLER / USEFUL FORMULAS

GEREKLİ GÜÇ / REQUIRED POWER

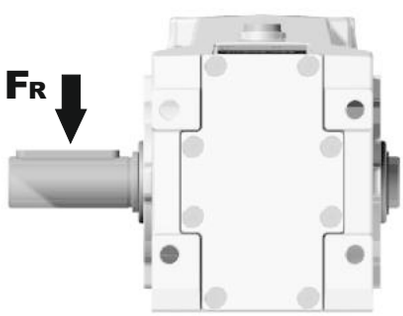
Kaldırma / Lifting	$\mathbf{P}\,[KW] = \dfrac{\mathbf{M}\,[Kg] \cdot \mathbf{g}\,[9.81] \cdot \mathbf{v}\,[m/s]}{\mathbf{1000}}$
Döndürme / Rotation	$\mathbf{P}\,[KW] = \dfrac{\mathbf{M}\,[Nm] \cdot \mathbf{n}\,[d/d]}{\mathbf{9550}}$
Doğrusal haraket / Linear movement	$\mathbf{P}\,[KW] = \dfrac{\mathbf{F}\,[N] \cdot \mathbf{v}\,[m/s]}{\mathbf{1000}}$

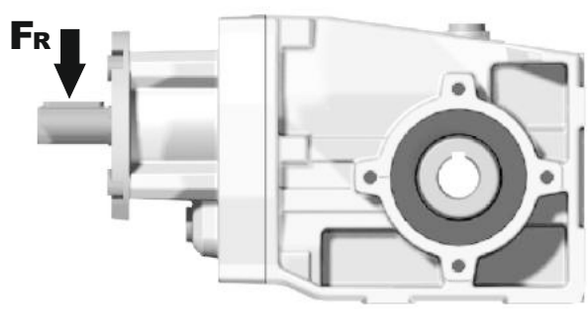
MOMENT / TORQUE

$$\mathbf{M}\,[Nm] = \frac{\mathbf{9550} \cdot \mathbf{P}[KW]}{\mathbf{n}\,[d/d]}$$

RADYAL YÜKLER / RADIAL LOADS

- Radyal yükler giriş ve çıkış milinde harici güç aktarım elemanları tarafından oluşturulur
- Radial load generated by external transmissions keyed onto input and/or output shafts.





$$F_R\,[N] = \frac{\mathbf{M}\,[Nm] \cdot \mathbf{2000}}{\mathbf{d}\,[mm]} \cdot f_K$$

M	Çıkış momenti / Output torque
d	Güç aktarım elemanı çapı / Diameter of driving element
f_k	Düzelteme katsayısı / Factor **1.15** Dişli / Gearwheels **1.25** Zincir Dişli / Chain sprochets **1.75** V kayış / Narrow v-belt pulley **2.50** Düz kayış / Flat-belt pulley

— Daha yüksek radyal yükler için teknik ofisimiz ile iletişime geçiniz.
— If your application requires higher radial loads, contact our technical office. Higher load may be possible.

B Çıkış Devri / Output speed

Nominal Güç / Nominal power

Gövde Büyüklüğü / Gear size

Motor Gücü / Motor power

A Nominal Moment / Nominal torque

Flanş Kodu / Flange code

Giriş Devri / Input speed

X22S

Konik Helisel Dişli Redüktörler
Angletech Gear
50Nm

ZET Redüktör

PERFORMANS TABLOLARI-*ALÜMİNYUM*
RATING-ALUMINUM HELICAL-BEVEL GEARBOXES

▪ HIZLI SEÇİM / Quick Selection

Dinamik verim tüm tahvil oranları için 0,96'dır

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis faktörü f.s.	Nominal güç P_{1R} [kW]	Nominal moment M_{2R} [Nm]	Uygun B5 motor flanşları -B 63	Uygun B5 motor flanşları -C 71	Uygun B14 motor flanşları -O 56	Uygun B14 motor flanşları -P 63	Uygun B14 motor flanşları -Q 71	Çıkış Mili ø	Tahvil kodu
289.7	**4.83**	0.37	11.7	2.6	0.95	30			C	C		289	01
189.2	**7.40**	0.37	17.9	1.7	0.62	30			C	C		287	02
146.2	**9.58**	0.37	23.2	1.7	0.64	40			C	C		199	03
127.5	**10.98**	0.37	26.6	1.7	0.63	45			C	C		179	04

C Tahvil Oranı / Ratio

Çıkış Momenti / Transmitted torque

Servis Faktörü / Service factor

Çıkış mili çapı / Output shaft diameter

Notlar / Notes

fs

Yük Sınıfı ve Saatteki Dur-Kalk Sayısı / Type of load and starts per hour			Günlük Çalışma Süresi / Oper. hours per day: 3 sa	10 sa	24 sa
Sürekli yada Aralıklı Çalışmada Dur-Kalk Sayısı / Saat / Application with start / stop	≤ 10	Düzgün Yükleme / Uniform	0.8	1	1.25
		Orta Darbeli Yükleme /Moderate	1	1.25	1.5
		Ağır Yükleme / Heavy	1.25	1.5	1.75
Aralıklı Çalışmada Dur-Kalk Sayısı / Saat / Intermittent application with start / hour	> 10	Düzgün Yükleme / Uniform	1	1.25	1.5
		Orta Darbeli Yükleme /Moderate	1.25	1.5	1,75
		Ağır Yükleme / Heavy	1.5	1.75	2.15

D	Standart motor flanşı / Motor flange available
B)	Burç ile montajı yapılabilir / Mounting with reduction ring
C)	Terminal kutusu flanş pozisyonu / Motor flangeholes position/terminal box position
B)	Burç kullanılmadan montajı yapılabilir / Available without reduction bushes

A	Servis faktörüne bağlı gerekli moment belirlenir	Select required torque (according to service factor)
B	Gerekli çıkış devri belirlenir	Select ouput speed
C	Aynı satırda belirlenen redüktörün tahvil oranı görülebilir	On the same line of selected geared motor, you can find the gear ratio
D	Uygun motor flanşı belirlenir (Gerekli olduğu durumlarda)	Select motor flange available (if requested)

▪ HIZLI SEÇİM / Quick Selection

Dinamik verim tüm tahvil oranları için **0,96**'dır

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -B 63	-C 71	-D 80	-E 90	-F 100 112	Uygun B14 motor flanşları -Q 71	-R 80	-T 90	-U 100 112		Çıkış mil çapı	Tahvil kodu
192	**7.29**	2.2	104	0.9	2.0	95	B					C	C			2811		01
125	**11.20**	2.2	159	0.9	2.0	150	B					C	C			288		02
106	**13.18**	1.5	129	1.2	1.7	150	B					C	C			1911		03
92	**15.27**	1.1	109	1.4	1.5	150	B					C	C			1711		04
78	**17.93**	1.1	128	1.2	1.3	150	B					C	C			1511		05
69	**20.25**	1.1	145	1.0	1.1	150	B					C	C			198	**standart ø25**	06
65	**21.40**	1.1	153	1.0	1.1	150	B					C	C			1311		07
60	**23.47**	0.75	115	1.3	0.98	150	B					C	C			178		08
51	**27.55**	0.75	135	1.1	0.83	150	B					C	C			158		09
47.9	**29.21**	0.75	143	1.0	0.78	150	B					C	C			1011	ø30 Özel	10
42.6	**32.88**	0.75	161	0.9	0.70	150	B					C	C			138		11
36.7	**38.12**	0.55	138	1.1	0.60	150	B					C	C			911		12
31.2	**44.89**	0.55	163	0.9	0.51	150	B					C	C			108		13
27.8	**50.34**	0.37	122	1.1	0.40	131	B					C	C			711		14
23.9	**58.58**	0.37	142	1.1	0.39	150	B					C	C			98		15
18.1	**77.36**	0.25	126	1.2	0.30	150	B					C	C			78		16

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X42A** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X42A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	**Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz.** For these mounting position specify in the order or add oil						
B3	**B6**	**B7**	**B8**	**V5**	**V6**	**V8**	
0.60 LT	0.75 LT	0.50 LT	0.70 LT	1.10 LT	0.60 LT	0.50 LT	
AGIP Telium VSF 320				**SHELL** Omala S4 WE 320			

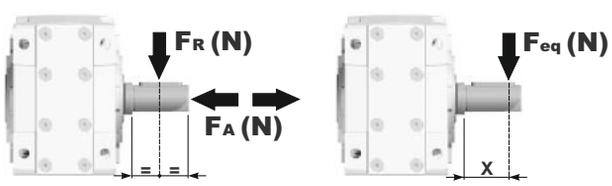
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{54}{X+28}$$



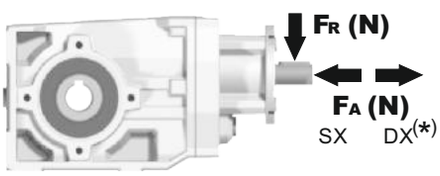
n_2 [min⁻¹]	FA	FR
250	500	2500
150	600	3000
100	700	3500

n_2 [min⁻¹]	FA	FR
75	800	4000
50	960	4800
25	960	4800

n_2 [min⁻¹]	FA	FR
15	960	4800

FR **İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.**
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



n_1 [d/d]	FA	FR
1400	240	1200
900	280	1400
500	340	1700

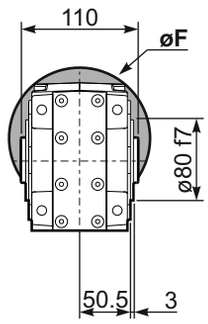
***DX yönünde eksenel yüke izin verilmez**
Strong axial loads in the DX direction are not allowed.

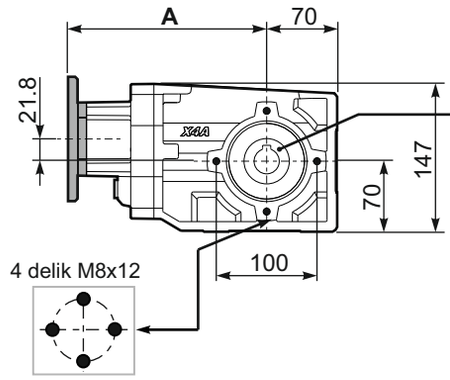
Tablo 2

PX42AC... Standart redüktör
Basic gearbox

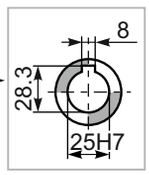
Ağırlık Gearbox weight	7.82 kg

M. flanşları	Kit Kodu	øF	A
63B5	K063.4.041	140	199.5
71B5	K063.4.042	160	197.5
80/90B5	K063.4.043	200	199.5
100/112B5	KC40.4.043	250	214.3
71B14	K063.4.047	105	197.5
80B14	K063.4.046	120	199.5
90B14	K063.4.041	140	199.5
100/112B14	KC40.4.041	160	214.3

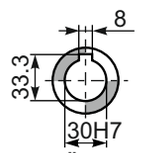




Montaj Delik Pozisyonları
Mounting holes position

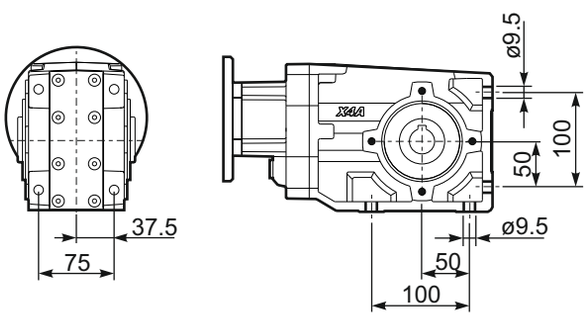


Delik Mil
Hollow Shaft

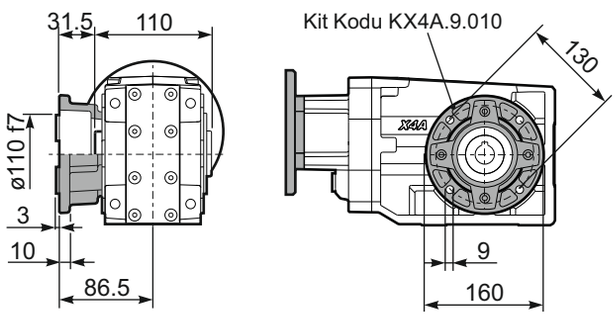


Özel
On request

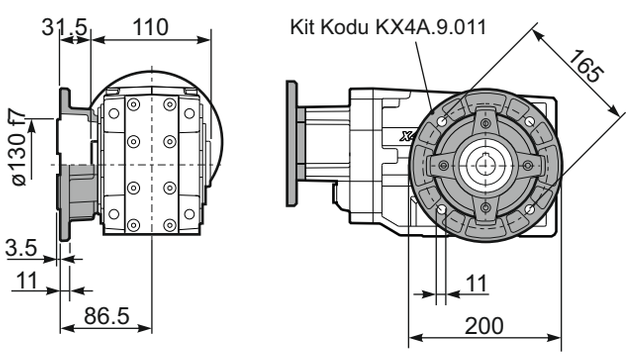
PX42A-N.. Ayak
Feet



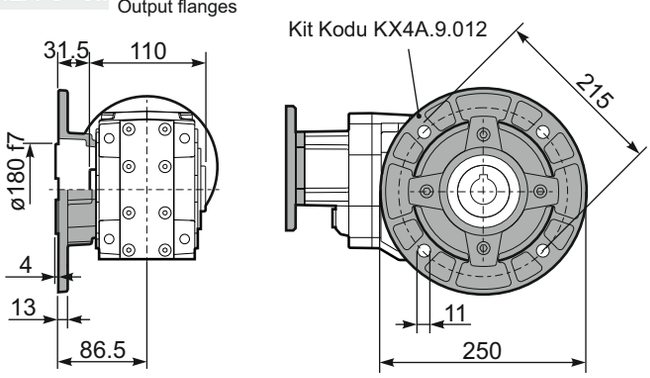
PX42A-F2.. Çıkış flanşı
Output flanges



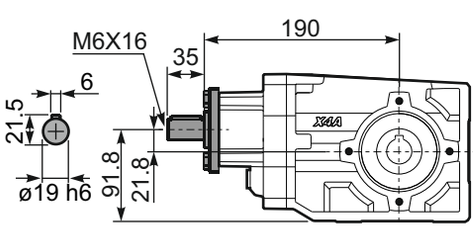
PX42A-F3.. Çıkış flanşı
Output flanges



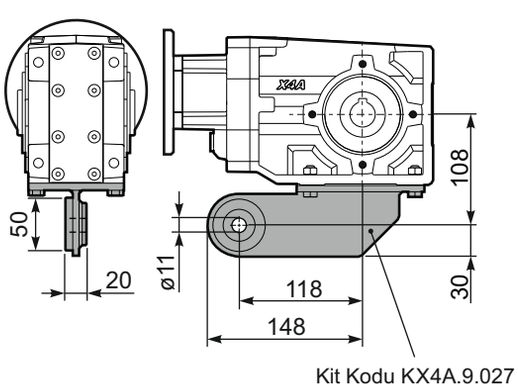
PX42A-F4.. Çıkış flanşı
Output flanges



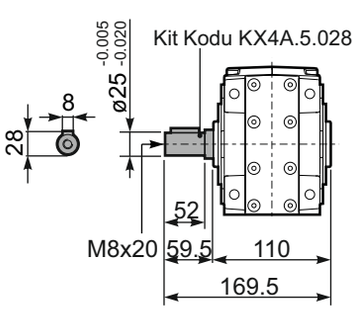
RX42A... Giriş Mili
Input shaft



PX42ABR.. Tok Kolu
Reaction Arm



PX42A..A.. Tek Çıkış Mili
Single Shaft



▪ HIZLI SEÇİM / Quick Selection

Dinamik verim tüm tahvil oranları için **0,94**'dür

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -B 63	Uygun B5 motor flanşları -C 71	Uygun B14 motor flanşları -O 56	Uygun B14 motor flanşları -P 63	Uygun B14 motor flanşları -Q 71		Çıkış mil çapı	Tahvil kodu
27.8	**50.35**	0.37	119	1.3	0.46	150			C	C		171311	standart ø25	01
25.4	**55.22**	0.37	131	1.1	0.42	150			C	C		17178		02
23.4	**59.92**	0.37	142	1.1	0.39	150			C	C		151311		03
21.3	**65.72**	0.37	156	1.0	0.36	150			C	C		15178		04
19.5	**71.78**	0.25	115	1.3	0.33	150			C	C		101711		05
17.6	**79.44**	0.25	127	1.2	0.29	150			C	C		13178		06
15.2	**92.08**	0.25	147	1.0	0.25	150			C	C		15138		07
14.7	**95.03**	0.25	152	1.0	0.25	150			C	C		91711		08
11.1	**126.55**	0.18	155	1.0	0.20	160			C	C		71711		09
10.5	**133.15**	0.18	163	1.0	0.19	160			C	C		91311	ø30 Özel	10
9.3	**150.18**	0.12	119	1.3	0.17	160			C	C		61711		11
7.9	**177.30**	0.12	140	1.1	0.14	160			C	C		71311		12
6.7	**210.42**	0.09	133	1.2	0.12	160			C	C		61311		13
6.1	**230.79**	0.09	146	1.1	0.11	160			C	C		6178		14
5.1	**272.47**	0.06	113	1.4	0.09	160			C	C		7138		15
4.3	**323.37**	0.06	134	1.2	0.08	160			C	C		6138		16

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X43A** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X43A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3	B6	B7	B8	V5	V6	V8
0.80 LT	0.80 LT	0.60 LT	0.80 LT	1.20 LT	0.70 LT	0.70 LT
AGIP Telium VSF 320				**SHELL** Omala S4 WE 320		

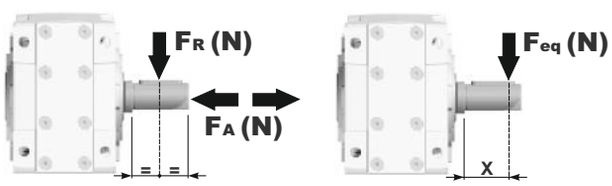
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{54}{X+28}$$



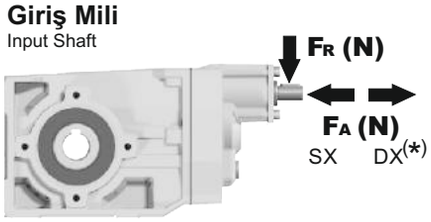
n_2 [min⁻¹]	FA	FR
250	500	2500
150	600	3000
100	700	3500

n_2 [min⁻¹]	FA	FR
75	800	4000
50	960	4800
25	960	4800

n_2 [min⁻¹]	FA	FR
15	960	4800

FR **İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.**
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



n_1 [d/d]	FA [N]	FR [N]
1400	140	700
900	160	800
500	190	950

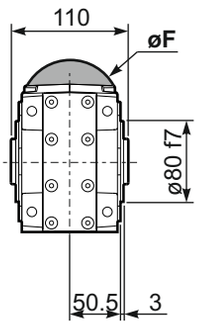
***DX yönünde eksenel yüke izin verilmez**
Strong axial loads in the DX direction are not allowed.

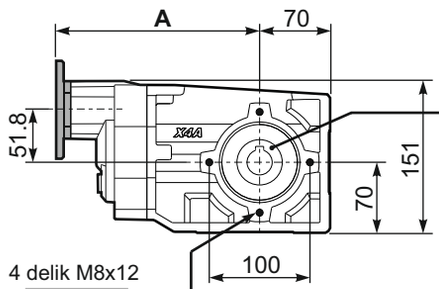
Tablo 2

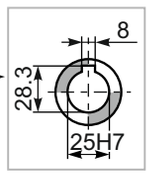
PX43AC... Standart redüktör
Basic gearbox

Ağırlık Gearbox weight	7.93 kg

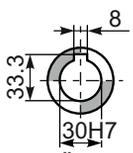
M. flanşları	Kit Kodu	øF	A
63B5	K050.4.041	138	205
71B5	K050.4.042	160	202.5
56B14	KC40.4.049	80	202.5
63B14	K050.4.047	90	205
71B14	K050.4.045	105	202.5







Delik Mil
Hollow Shaft

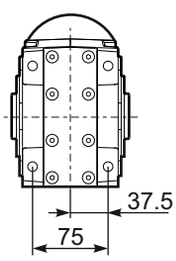


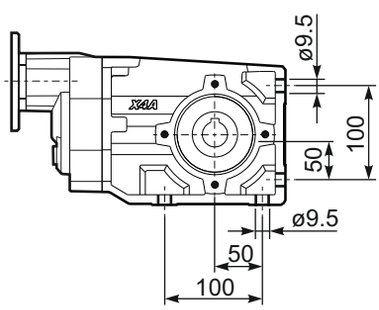
Özel
On request

4 delik M8x12

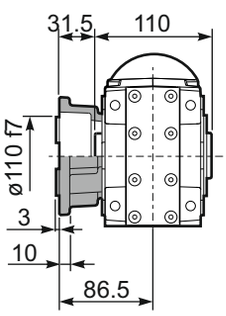
Montaj Delik Pozisyonları
Mounting holes position

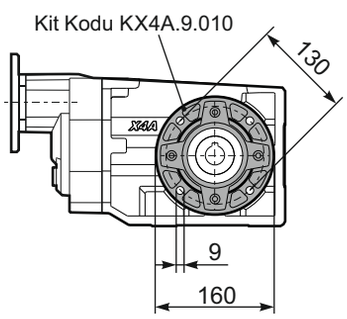
PX43A-N.. Ayak
Feet



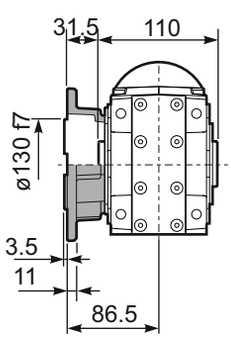


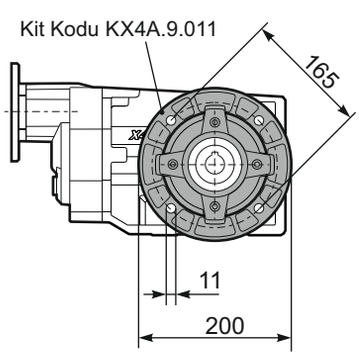
PX43A-F2.. Çıkış flanşı
Output flanges



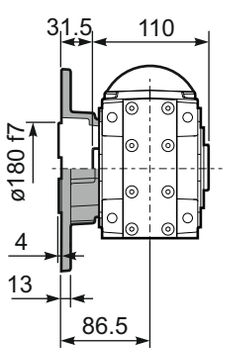


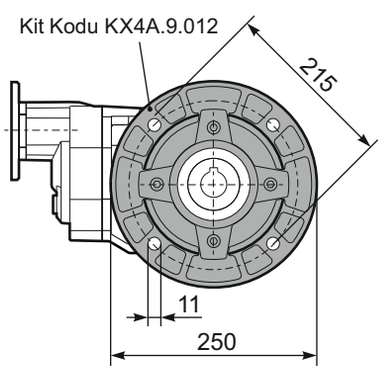
PX43A-F3.. Çıkış flanşı
Output flanges



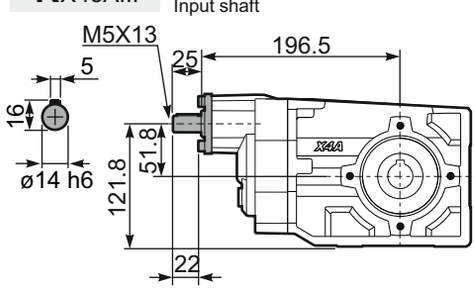


PX43A-F4.. Çıkış flanşı
Output flanges

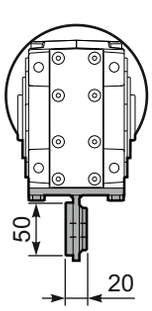


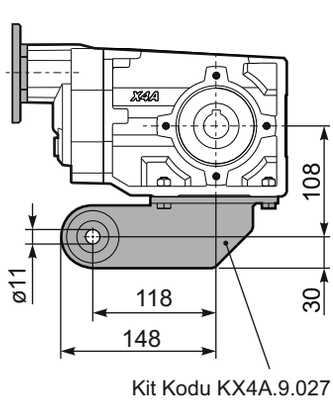


RX43A... Giriş Mili
Input shaft

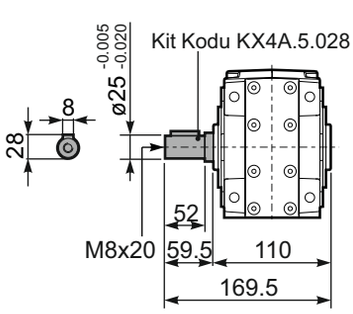


PX43ABR.. Tok Kolu
Reaction Arm





PX43A..A.. Tek Çıkış Mili
Single Shaft



▪ HIZLI SEÇİM / Quick Selection

Dinamik verim tüm tahvil oranları için **0,96**'dır

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -C 71	-D 80	-E 90	-F 100 112	Uygun B14 motor flanşları -R 80	-T 90	-U 100 112		Çıkış mil çapı	Tahvil kodu
232	**6.03**	3	116	1.2	3.4	135	B							3011		01
151	**9.26**	3	179	0.9	2.6	155	B							308		02
123	**11.36**	3	219	1.0	3.1	230	B							2011		03
91	**15.36**	2.2	218	1.1	2.5	250	B							1611		04
80	**17.46**	2.2	248	1.0	2.2	250	B							208	**standart**	05
70	**19.97**	2.2	284	0.9	1.9	250	B							1311	**ø30**	06
59	**23.60**	1.5	231	1.1	1.6	250	B							168		07
57	**24.45**	1.5	239	1.0	1.6	250	B							1111		08
45.6	**30.69**	1.1	220	1.1	1.2	250	B							138	ø35	09
39.6	**35.35**	1.1	253	1.0	1.1	250	B							811	Özel	10
37.3	**37.57**	1.1	269	0.9	1.0	250	B							118		11
28.8	**48.68**	0.75	239	1.0	0.78	250	B							611		12
25.8	**54.33**	0.75	267	0.9	0.70	250	B							88		13
18.7	**74.81**	0.37	181	1.2	0.43	210	B							68		14

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X52A** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X52A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	**Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz.** For these mounting position specify in the order or add oil					
B3	**B6**	**B7**	**B8**	**V5**	**V6**	**V8**
0.90 LT	1.50LT	0.75 LT	1.40 LT	1.95 LT	1.15 LT	0.80 LT
AGIP Telium VSF 320			**SHELL** Omala S4 WE 320			

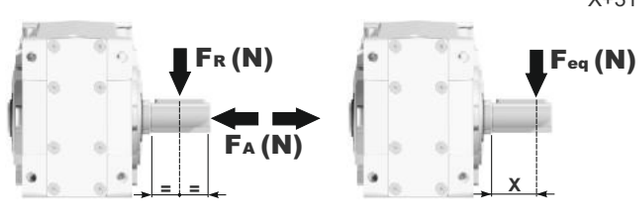
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{61.5}{X+31}$$



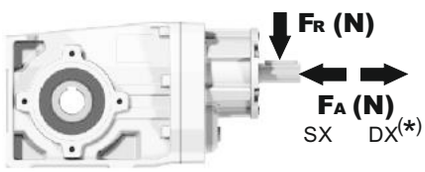
n_2 [d/d]	FA	FR
250	600	3000
150	700	3500
100	800	4000

n_2 [d/d]	FA	FR
75	820	4100
50	960	4800
25	1350	6750

n_2 [d/d]	FA	FR
15	1660	8300

FR **İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.**
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



n_1 [d/d]	FA	FR
1400	450	2250
900	500	2500
500	600	3000

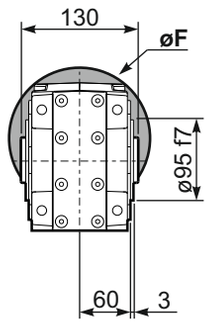
***DX yönünde eksenel yüke izin verilmez**
Strong axial loads in the DX direction are not allowed.

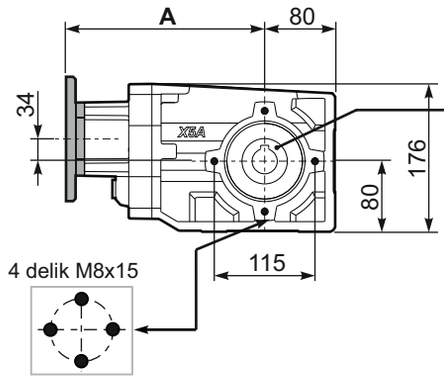
Tablo 2

PX52AC... Standart redüktör
Basic gearbox

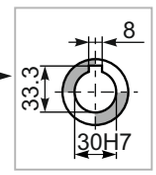
Ağırlık Gearbox weight	12.80 kg

M. flanşları	Kit Kodu	øF	A
71B5	KC023.4.041	160	234
80/90B5	KC023.4.042	200	236
100/112B5	KC023.4.043	250	245
80B14	KC085.4.046	120	236
90B14	KC085.4.045	140	236
100/112B14	KC085.4.047	160	245

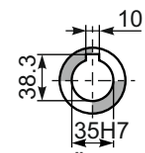




Montaj Delik Pozisyonları
Mounting holes position

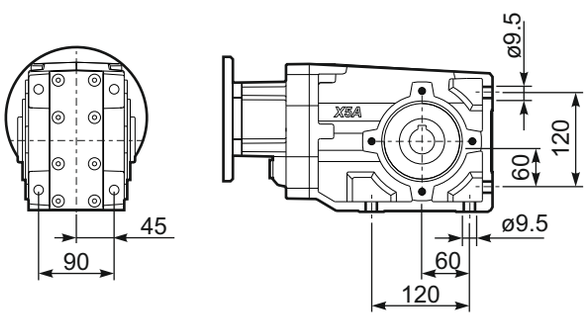


Delik Mil
Hollow Shaft

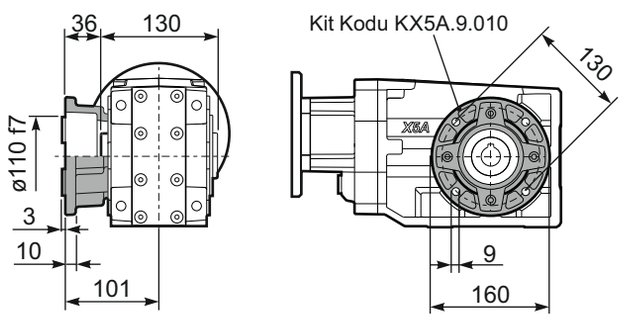


Özel
On request

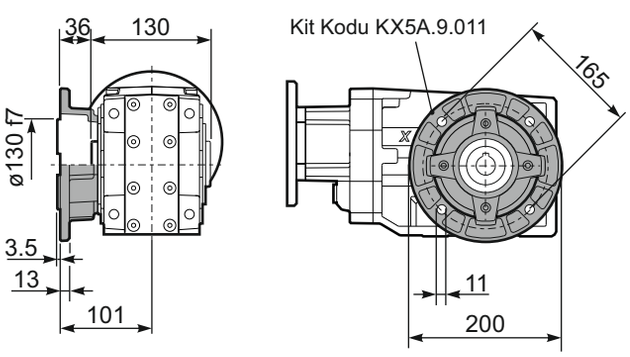
PX52A-N.. Ayak
Feet



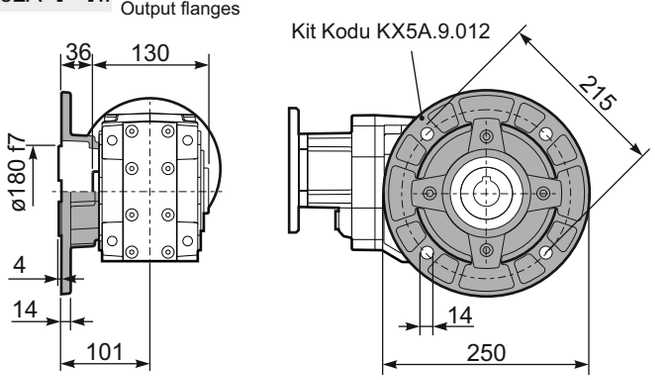
PX52A-F2.. Çıkış flanşı
Output flanges



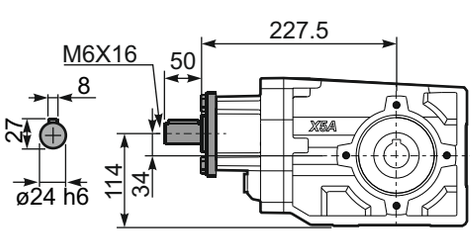
PX52A-F3.. Çıkış flanşı
Output flanges



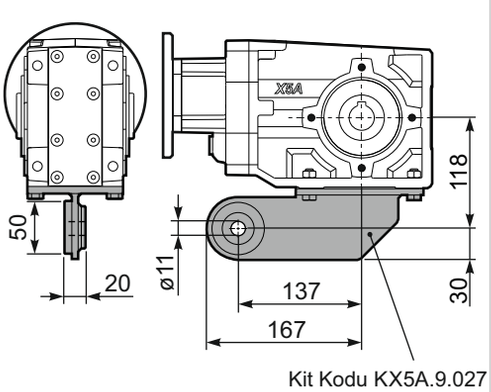
PX52A-F4.. Çıkış flanşı
Output flanges



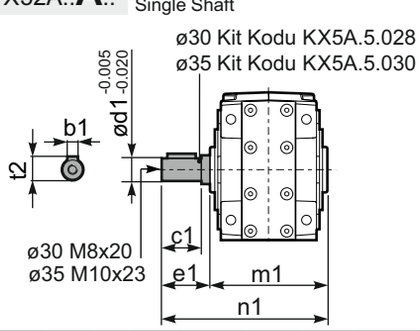
RX52A... Giriş Mili
Input shaft



PX52ABR.. Tok Kolu
Reaction Arm



PX52A..A.. Tek Çıkış Mili
Single Shaft



	b1	c1	d1	e1	m1	n1	t2
ø30	8	60	30	68	134	202	33
ø35	10	60	35	73.5	141	214.5	38

▪ HIZLI SEÇİM / Quick Selection

Dinamik verim tüm tahvil oranları için **0,94**'dür

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -B 63	-C 71	-D 80	-E 90	Uygun B14 motor flanşları -Q 71	-R 80	-T 90		Çıkış mil çapı	Tahvil kodu
24.7	**56.76**	0.55	201	1.2	0.69	250	B				C	C		191311	standart ø30	01
21.3	**65.79**	0.55	233	1.1	0.59	250	B				C	C		171311		02
18.1	**77.23**	0.55	274	0.9	0.50	250	B				C	C		151311		03
16.0	**87.23**	0.37	207	1.2	0.45	250	B				C	C		19138		04
15.2	**92.18**	0.37	219	1.1	0.42	250	B				C	C		131311		05
13.9	**100.47**	0.37	238	1.0	0.39	250	B				C	C		19811		06
12.0	**116.45**	0.37	276	0.9	0.33	250	B				C	C		17811		07
11.1	**125.82**	0.25	201	1.2	0.31	250	B				C	C		101311		08
9.9	**141.66**	0.25	227	1.1	0.28	250	B				C	C		13138		09
8.6	**163.16**	0.25	261	1.0	0.24	250	B				C	C		13811		10
7.8	**178.96**	0.18	219	1.1	0.22	250	B				C	C		1788	ø35 Özel	11
7.2	**193.36**	0.18	237	1.1	0.20	250	B				C	C		10138		12
6.5	**216.84**	0.18	265	0.9	0.18	250	B				C	C		71311		13
5.5	**252.36**	0.12	200	1.3	0.15	250	B				C	C		9138		14
4.8	**290.67**	0.12	230	1.1	0.13	250	B				C	C		9811		15
4.2	**333.23**	0.09	210	1.2	0.12	250	B				C	C		7138		16
3.6	**383.82**	0.09	242	1.0	0.10	250	B				C	C		7811		17
3.1	**446.70**	0.09	282	0.9	0.09	250	B				C	C		988		18
2.4	**589.85**	0.06	244	1.0	0.07	250	B				C	C		788		19

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X53A** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X53A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3	B6	B7	B8	V5	V6	V8
1.30 LT	1.55 LT	0.85 LT	1.45 LT	2.10 LT	1.25 LT	0.95 LT
AGIP Telium VSF 320				**SHELL** Omala S4 WE 320		

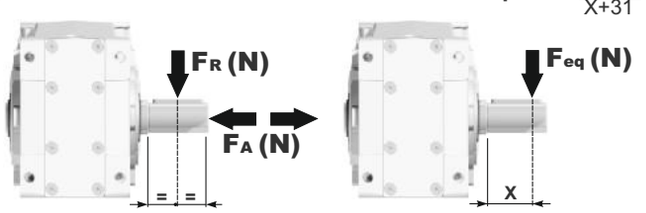
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{61.5}{X+31}$$



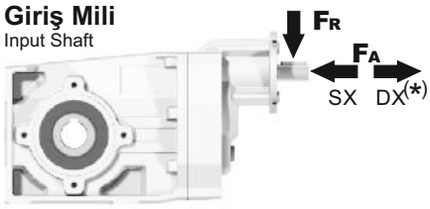
n_2 [d/d]	FA	FR
250	600	3000
150	700	3500
100	800	4000

n_2 [d/d]	FA	FR
75	820	4100
50	960	4800
25	1350	6750

n_2 [d/d]	FA	FR
15	1660	8300

FR **İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.**
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



n_1 [d/d]	FA [N]	FR [N]
1400	400	2000
900	440	2200
500	440	2200

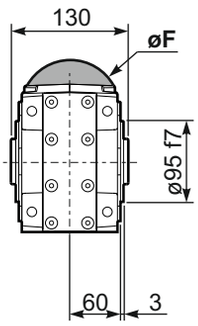
***DX yönünde eksenel yüke izin verilmez**
Strong axial loads in the DX direction are not allowed.

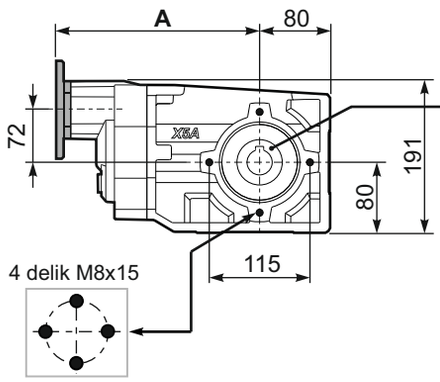
Tablo 2

PX53AC... Standart redüktör
Basic gearbox

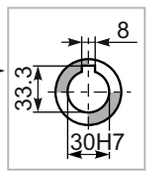
Ağırlık Gearbox weight	12.65 kg

M. flanşları	Kit Kodu	øF	A
63B5	K063.4.041	140	246
71B5	K063.4.042	160	244
80/90B5	K063.4.043	200	246
71B14	K063.4.047	105	244
80B14	K063.4.046	120	246
90B14	K063.4.041	140	246

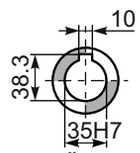




Montaj Delik Pozisyonları
Mounting holes position

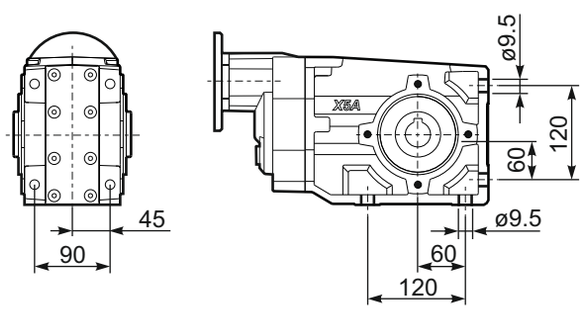


Delik Mil
Hollow Shaft

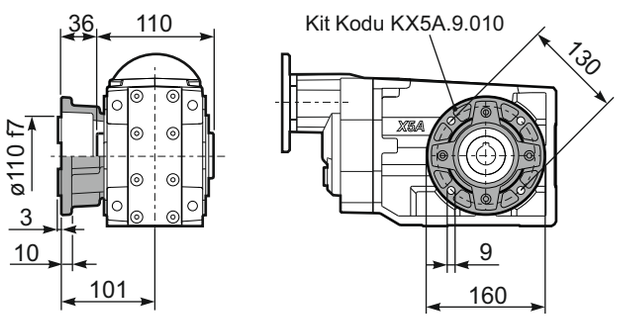


Özel
On request

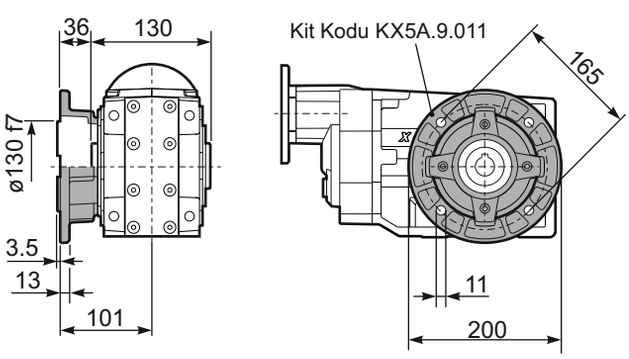
PX53A-N.. Ayak
Feet



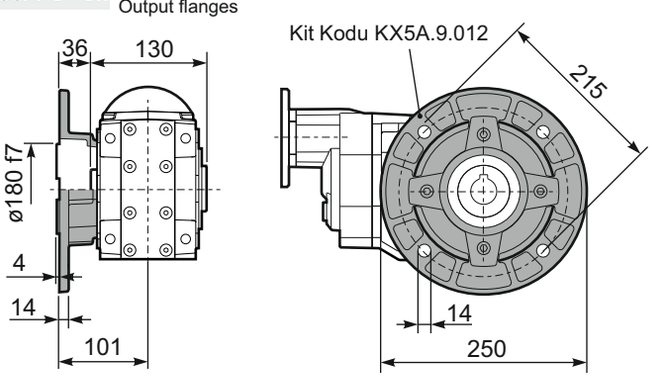
PX53A-F2.. Çıkış flanşı
Output flanges



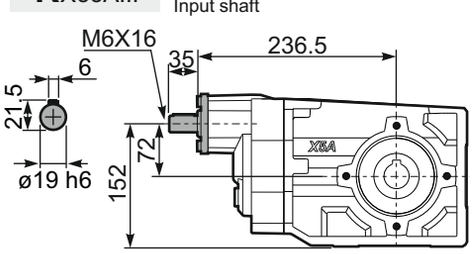
PX53A-F3.. Çıkış flanşı
Output flanges



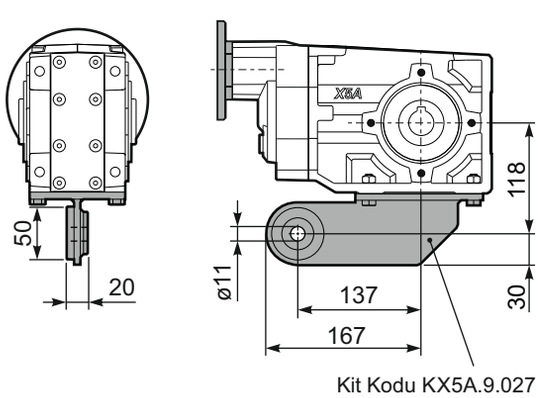
PX53A-F4.. Çıkış flanşı
Output flanges



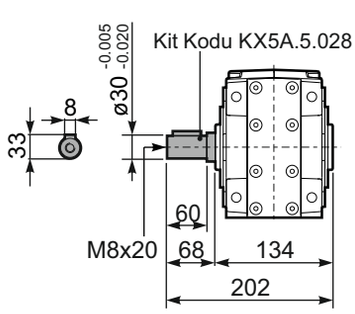
RX53A... Giriş Mili
Input shaft



PX53ABR.. Tok Kolu
Reaction Arm



PX53A..A.. Tek Çıkış Mili
Single Shaft



▪ HIZLI SEÇİM / Quick Selection

Dinamik verim tüm tahvil oranları için **0,96**'dır

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -C 71	-D 80	-E 90	-F 100 112	-G 132	Uygun B14 motor flanşları -R 80	-T 90	-U 100 112	-V 132		Çıkış mil çapı	Tahvil kodu
232	**6.03**	5.5	211	1.1	6.1	240	B									3011		01
151	**9.26**	4	238	1.1	4.5	270	B									308		02
123	**11.36**	4	291	1.2	4.7	350	B									2011		03
91	**15.36**	4	394	1.0	3.8	385	B									1611		04
80	**17.46**	4	448	0.9	3.5	400	B									208	**standart**	05
70	**19.97**	3	386	1.1	3.1	410	B									1311	**ø35**	06
59	**23.60**	3	456	0.9	2.7	410	B									168		07
57	**24.45**	3	472	0.9	2.6	410	B									1111		08
45.6	**30.69**	2.2	436	0.9	2.0	410	B									138	ø40	09
39.6	**35.35**	1.5	346	1.2	1.8	410	B									811	Özel	10
37.3	**37.57**	1.5	368	1.1	1.7	410	B									118		11
28.8	**48.68**	1.1	348	1.0	1.1	365	B									611		12
25.8	**54.33**	1.1	389	1.1	1.2	410	B									88		13
18.7	**74.81**	0.75	367	1.0	0.73	360	B									68		14

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X62A** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X62A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	**Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz.** For these mounting position specify in the order or add oil					
B3	**B6**	**B7**	**B8**	**V5**	**V6**	**V8**
1.25 LT	1.70 LT	0.95 LT	1.60 LT	2.45 LT	1.50 LT	1.10 LT
AGIP Telium VSF 320			**SHELL** Omala S4 WE 320			

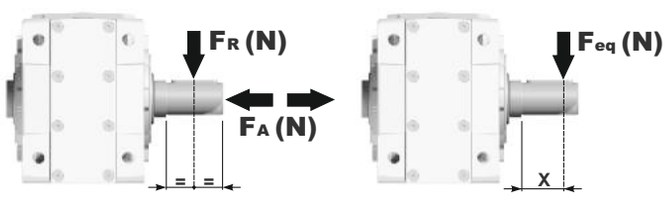
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{69}{X+39}$$



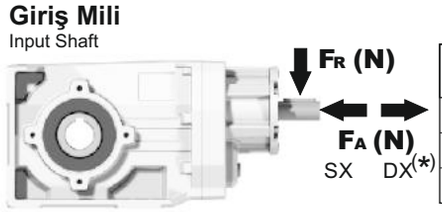
n_2 [d/d]	FA	FR
250	600	3000
150	700	3500
100	780	3900

n_2 [d/d]	FA	FR
75	890	4450
50	1140	5700
25	1330	6650

n_2 [d/d]	FA	FR
15	1660	8300

FR İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



n_1 [d/d]	FA	FR
1400	450	2250
900	500	2500
500	600	3000

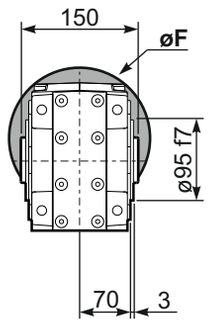
***DX yönünde eksenel yüke izin verilmez**
Strong axial loads in the DX direction are not allowed.

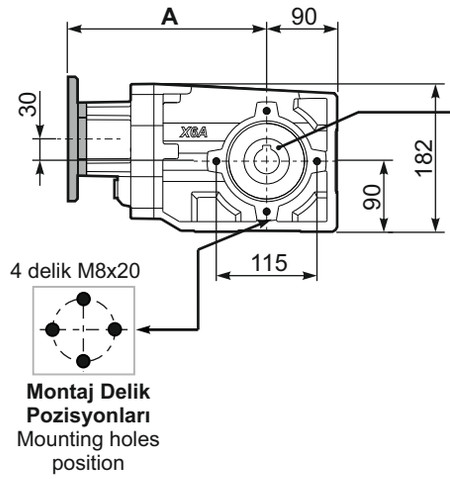
Tablo 2

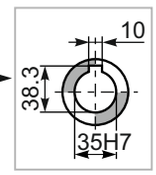
PX62AC... Standart redüktör
Basic gearbox

Ağırlık Gearbox weight	15.80 kg

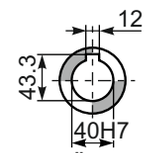
M. flanşları	Kit Kodu	øF	A
71B5	KC023.4.041	160	253
80/90B5	KC023.4.042	200	255
100/112B5	KC023.4.043	250	264
132B5	KC50.4.043	300	282
80B14	KC085.4.046	120	255
90B14	KC085.4.045	140	255
100/112B14	KC085.4.047	160	264
132B14	KC50.4.041	200	282





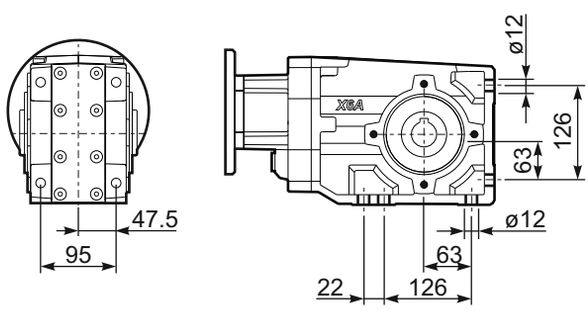


Delik Mil
Hollow Shaft

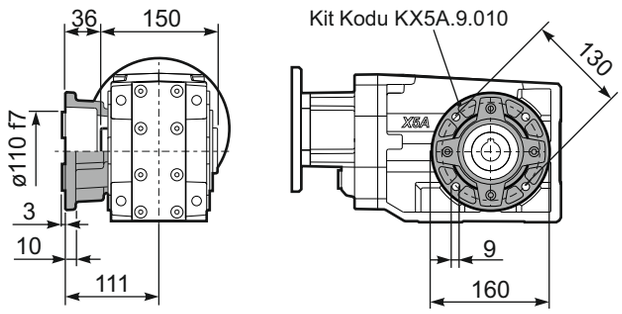


Özel
On request

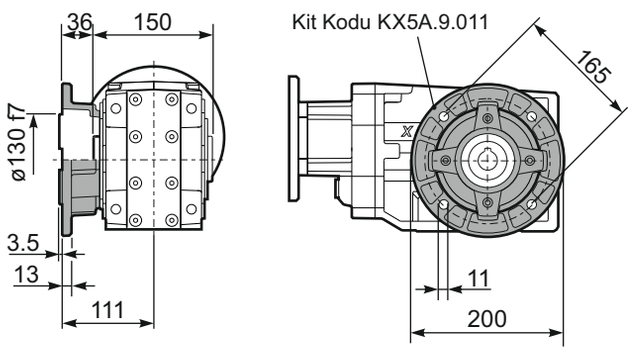
PX62A-N.. Ayak
Feet



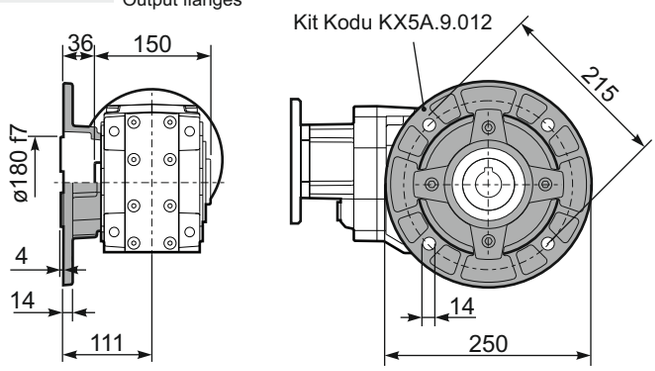
PX62A-F2.. Çıkış flanşı
Output flanges



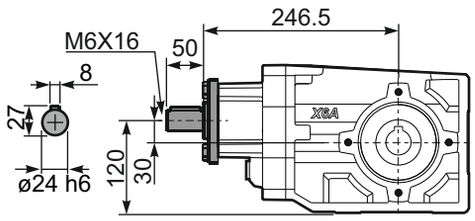
PX62A-F3.. Çıkış flanşı
Output flanges



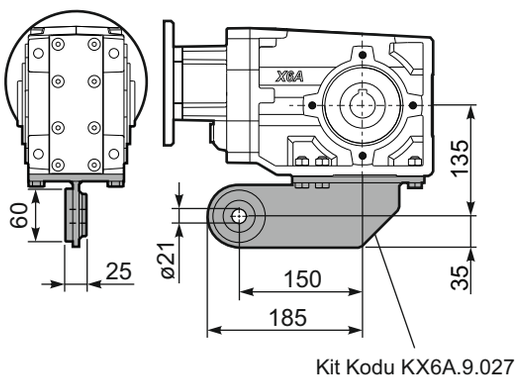
PX62A-F4.. Çıkış flanşı
Output flanges



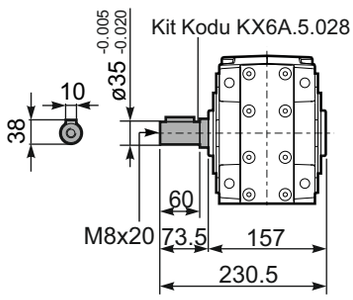
RX62A... Giriş Mili
Input shaft



PX62ABR.. Tok Kolu
Reaction Arm



PX62A..A.. Tek Çıkış Mili
Single Shaft



▪ HIZLI SEÇİM / Quick Selection

Dinamik verim tüm tahvil oranları için **0,94**'dür

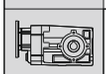
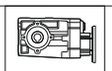
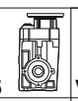
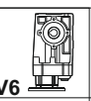
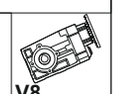
Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -B 63	-C 71	-D 80	-E 90	Uygun B14 motor flanşları -Q 71	-R 80	-T 90		Çıkış mil çapı	Tahvil kodu
24.7	**56.76**	1.1	398	1.0	1.1	410	B				C	C		191311	standart ø35	01
21.3	**65.79**	0.75	316	1.3	0.97	410	B				C	C		171311		02
18.1	**77.23**	0.75	371	1.1	0.83	410	B				C	C		151311		03
16.0	**87.23**	0.75	420	1.0	0.73	410	B				C	C		19138		04
15.2	**92.18**	0.75	443	0.9	0.69	410	B				C	C		131311		05
13.9	**100.47**	0.55	357	1.2	0.64	410	B				C	C		19811		06
12.0	**116.45**	0.55	413	1.0	0.55	410	B				C	C		17811		07
11.1	**125.82**	0.55	446	0.9	0.51	410	B				C	C		101311		08
9.9	**141.66**	0.37	336	1.2	0.45	410	B				C	C		13138		09
8.6	**163.16**	0.37	387	1.1	0.39	410	B				C	C		13811	ø40 Özel	10
7.8	**178.96**	0.37	424	1.0	0.36	410	B				C	C		1788		11
7.2	**193.36**	0.37	459	0.9	0.33	410	B				C	C		10138		12
6.5	**216.84**	0.25	347	1.2	0.29	410	B				C	C		71311		13
5.5	**252.36**	0.25	404	1.0	0.25	410	B				C	C		9138		14
4.8	**290.67**	0.25	465	0.9	0.22	410	B				C	C		9811		15
4.2	**333.23**	0.18	408	1.0	0.19	410	B				C	C		7138		16
3.6	**383.82**	0.18	470	0.9	0.17	410	B				C	C		7811		17
3.1	**446.70**	0.12	353	1.2	0.14	410	B				C	C		988		18
2.4	**589.85**	0.09	372	1.1	0.11	410	B				C	C		788		19

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X63A** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X63A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
						
B3	**B6**	**B7**	**B8**	**V5**	**V6**	**V8**
1.80 LT	1.80 LT	1.05 LT	1.70 LT	2.60 LT	1.65 LT	1.30 LT
AGIP Telium VSF 320				**SHELL** Omala S4 WE 320		

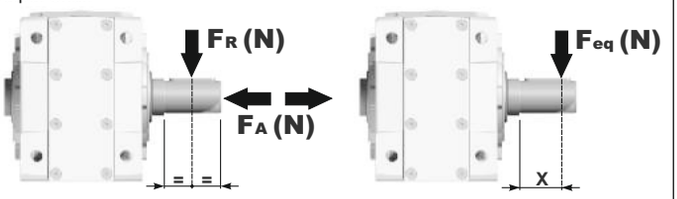
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{69}{X+39}$$



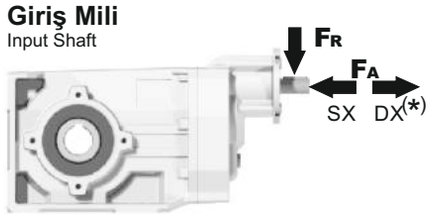
n_2 [d/d]	FA	FR
250	600	3000
150	700	3500
100	780	3900

n_2 [d/d]	FA	FR
75	890	4450
50	1140	5700
25	1330	6650

n_2 [d/d]	FA	FR
15	1660	8300

FR **İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.**
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



n_1 [d/d]	FA [N]	FR [N]
1400	400	2000
900	440	2200
500	440	2200

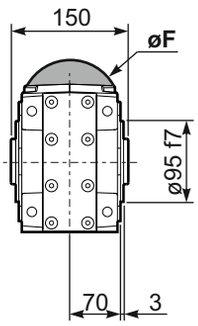
***DX yönünde eksenel yüke izin verilmez**
Strong axial loads in the DX direction are not allowed.

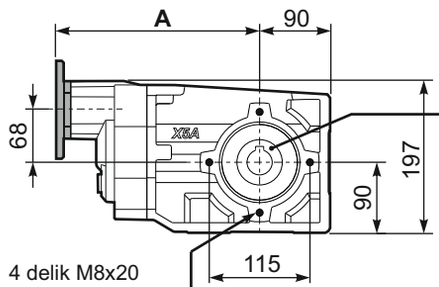
Tablo 2

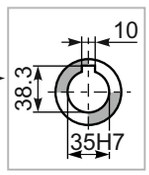
PX63AC... Standart redüktör
Basic gearbox

Ağırlık Gearbox weight	15.98 kg

M. flanşları	Kit Kodu	øF	A
63B5	K063.4.041	140	265
71B5	K063.4.042	160	263
80/90B5	K063.4.043	200	265
71B14	K063.4.047	105	263
80B14	K063.4.046	120	265
90B14	K063.4.041	140	265



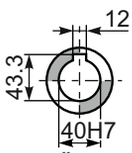




Delik Mil
Hollow Shaft

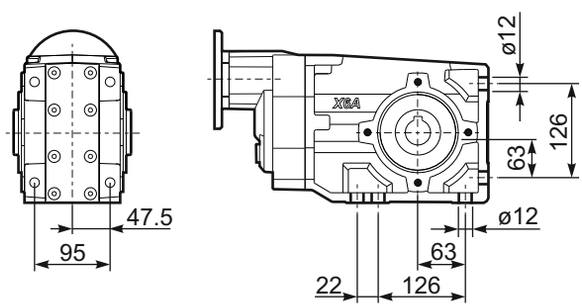
4 delik M8x20

Montaj Delik Pozisyonları
Mounting holes position

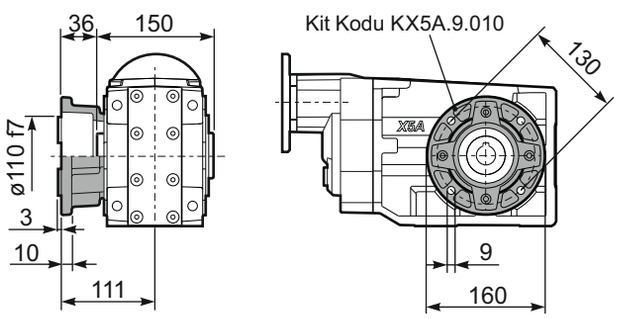


Özel
On request

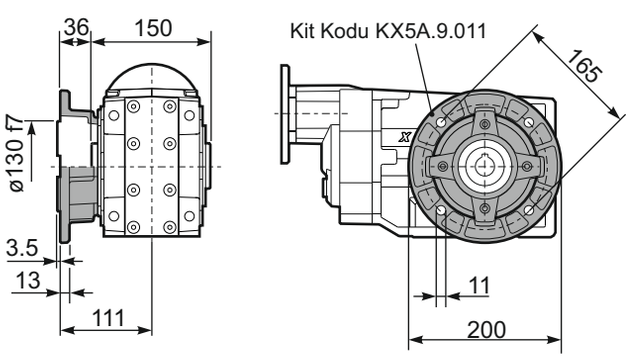
PX63A-N.. Ayak
Feet



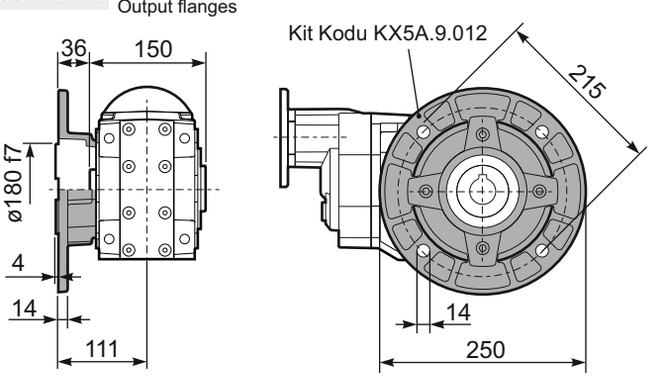
PX63A-F2.. Çıkış flanşı
Output flanges



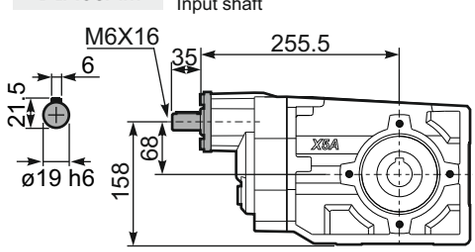
PX63A-F3.. Çıkış flanşı
Output flanges



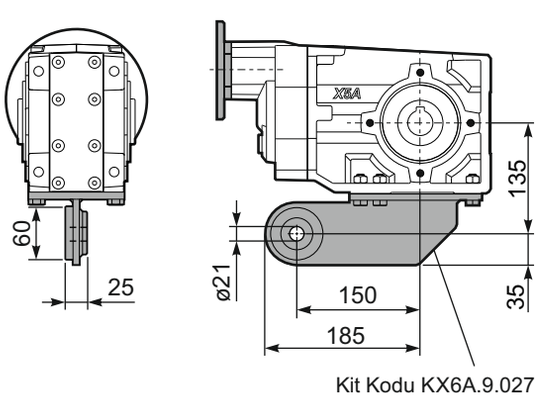
PX63A-F4.. Çıkış flanşı
Output flanges



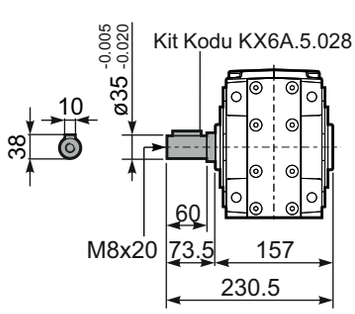
RX63A... Giriş Mili
Input shaft



PX63ABR.. Tok Kolu
Reaction Arm



PX63A..A.. Tek Çıkış Mili
Single Shaft



▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -C 71	-D 80	-E 90	-F 100 112	-G 132	Uygun B14 motor flanşları -R 80	-T 90	-U 100 112	-V 132		Çıkış mil çapı ø	Tahvil kodu
176	**7.94**	7.5	369	1.0	7.5	380	B									302418		01
153	**9.13**	7.5	425	0.9	6.7	390	B									302416		02
131	**10.66**	5.5	366	1.1	6.0	410	B									302414		03
94	**14.97**	5.5	514	1.1	6.0	580	B									202418		04
81	**17.21**	5.5	591	1.0	5.4	600	B									202416		05
69	**20.24**	5.5	695	1.0	5.2	675	B									162418	**standart**	06
60	**23.27**	4	585	1.2	4.5	675	B									162416	**ø40**	07
53	**26.31**	4	661	1.0	4.0	675	B									132418		08
46.3	**30.25**	4	760	0.9	3.5	675	B									132416		09
39.6	**35.32**	3	668	1.0	3.0	675	B									132414	ø42 Özel	10
37.8	**37.03**	3	701	1.0	2.8	675	B									112416		11
32.4	**43.23**	2.2	602	1.1	2.4	675	B									112414		12
30.1	**46.58**	2.2	649	1.0	2.3	675	B									82418		13
26.1	**53.55**	2.2	746	0.9	2.0	675	B									82416		14
22.4	**62.52**	1.5	600	1.1	1.7	675	B									82414		15
19.0	**73.75**	1.1	517	1.1	1.2	580	B									62416		16
16.3	**86.09**	1.1	604	1.1	1.2	675	B									62414		17

Dinamik verim tüm tahvil oranları için **0,94**'dür

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **113C** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **113C** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

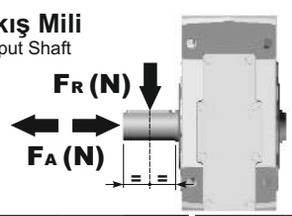
Standart	**Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz.** For these mounting position specify in the order or add oil					
B3	**B6**	**B7**	**B8**	**V5**	**V6**	**V8**
4.00 LT	2.60 LT	2.60 LT	2.60 LT	5.15 LT	2.20 LT	Sorunuz
AGIP Telium VSF 320			**SHELL** Omala S4 WE 320			

Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

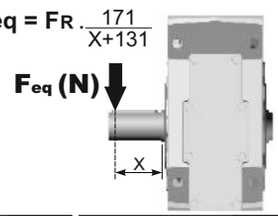
Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft



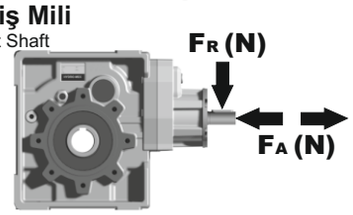
$$F_{eq} = F_R \cdot \frac{171}{X+131}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	640	3200	**140**	860	4300	**70**	1080	5400
250	700	3500	**120**	900	4500	**40**	1300	6500
200	740	3700	**85**	1000	5000	**15**	1840	9200

İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



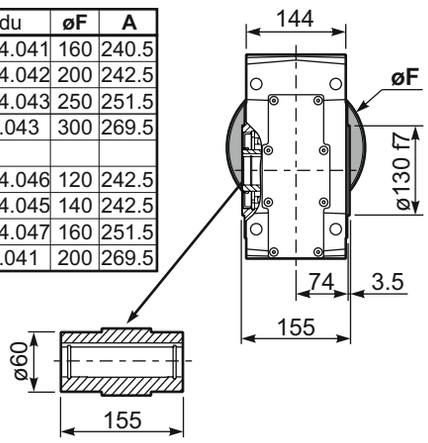
n_1	FA	FR
1400	400	2000
900	440	2200
500	440	2200

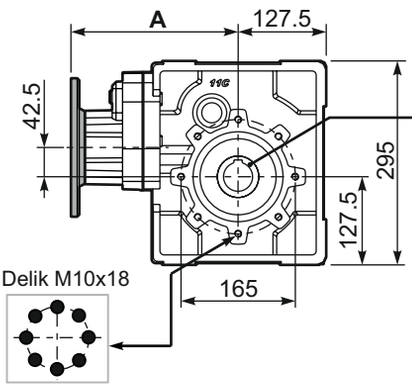
Tablo 2

P113CC... Standart redüktör
Basic gearbox

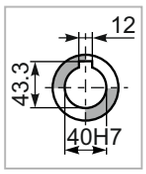
Ağırlık Gearbox weight	38.0 kg

M. flanşları	Kit Kodu	øF	A
71B5	KC023.4.041	160	240.5
80/90B5	KC023.4.042	200	242.5
100/112B5	KC023.4.043	250	251.5
132B5	KC50.4.043	300	269.5
80B14	KC085.4.046	120	242.5
90B14	KC085.4.045	140	242.5
100/112B14	KC085.4.047	160	251.5
132B14	KC50.4.041	200	269.5

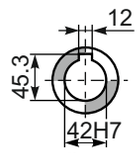




Montaj Pozisyonu Delik Pozisyonları
Mounting holes position

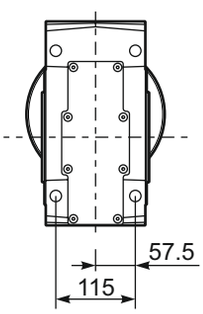


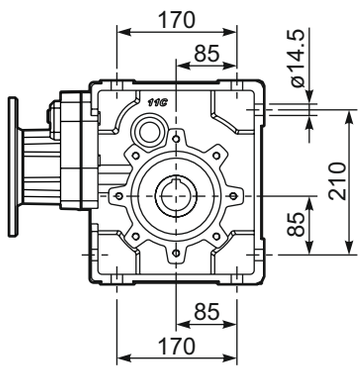
Delik Mil
Hollow Shaft



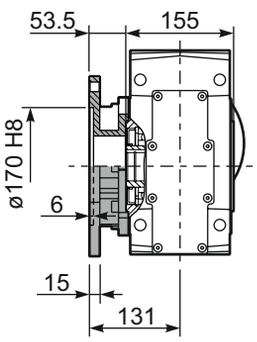
Özel
On request

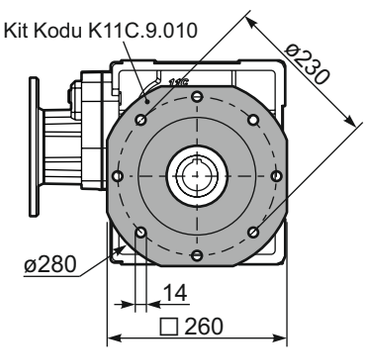
P113C..-N.. Ayak
Feet



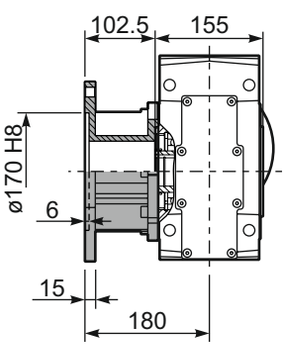


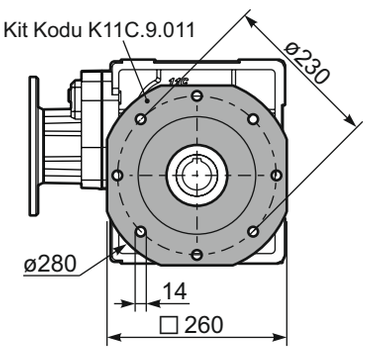
P113C-FC.. Çıkış flanşı
Output flanges



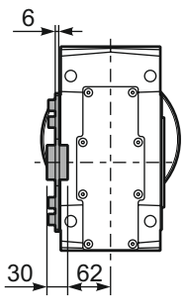


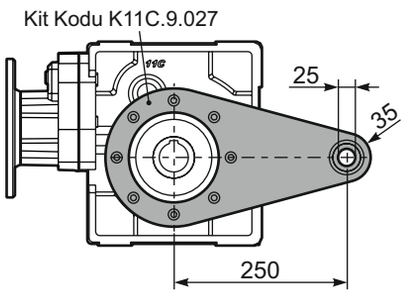
P113C-FL.. Çıkış flanşı
Output flanges



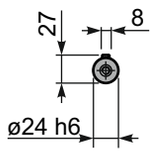


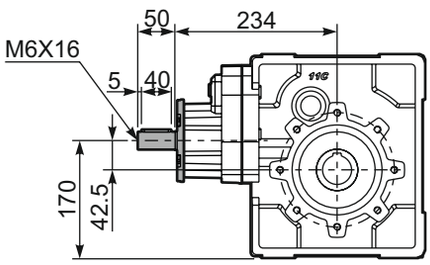
P113CBR.. Tork Kolu
Reaction Arm





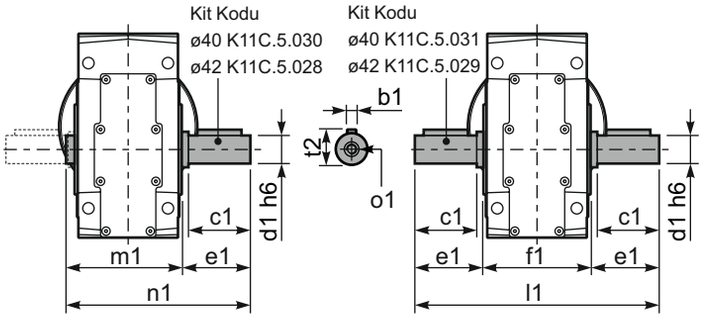
R113C... Giriş Mili
Input shaft





P113C..A.. Tek Çıkış Mili
Single Shaft

P113C..B.. Çift Çıkış Mili
Double Shaft



	b1	c1	d1	e1	f1	l1	m1	n1	t2	o1
ø40 Standart	12	80	40	84.5	155	324	164.5	249	43	M12
ø42 Özel	12	80	42	84.5	155	324	164.5	249	45	M16

▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -B 63	-C 71	-D 80	-E 90	Uygun B14 motor flanşları -Q 71	-R 80	-T 90		Çıkış mil çapı ø	Tahvil kodu
18.7	**74.79**	1.5	704	1.0	1.4	675	B				C	C		19132418		01
16.3	**85.99**	1.1	591	1.1	1.3	675	B				C	C		19132416		02
14.0	**99.66**	1.1	685	1.0	1.1	675	B				C	C		17132416		03
12.0	**116.35**	0.75	548	1.2	0.92	675	B				C	C		17132414		04
11.5	**121.45**	0.75	572	1.2	0.89	675	B				C	C		13132418		05
10.0	**139.64**	0.75	658	1.0	0.77	675	B				C	C		13132416	**standart**	06
9.2	**152.21**	0.75	717	0.9	0.71	675	B				C	C		19082416	**ø40**	07
8.6	**163.02**	0.55	567	1.2	0.66	675	B				C	C		13132414		08
7.9	**177.69**	0.55	618	1.1	0.61	675	B				C	C		19082414		09
6.8	**205.95**	0.55	716	0.9	0.52	675	B				C	C		17082414	ø42	10
6.3	**222.52**	0.55	774	0.9	0.48	675	B				C	C		10132414	Özel	11
5.6	**248.76**	0.37	578	1.2	0.43	675	B				C	C		9132416		12
4.8	**290.41**	0.37	675	1.0	0.37	675	B				C	C		9132414		13
4.1	**337.39**	0.37	784	0.9	0.32	675	B				C	C		10082416		14
3.6	**393.88**	0.25	618	1.1	0.27	675	B				C	C		10082414		15
3.2	**440.33**	0.25	690	1.0	0.24	675	B				C	C		9082416		16
2.7	**514.06**	0.18	616	1.1	0.21	675	B				C	C		9082414		17
2.4	**581.44**	0.18	697	1.0	0.18	675	B				C	C		7082416		18
2.1	**678.79**	0.12	526	1.3	0.16	675	B				C	C		7082414		19

Dinamik verim tüm tahvil oranları için **0,92**'dir

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **114C** Redüktörler ömürlük sentetik yağ ile yağlanmıştır ve bakım gerektirmez. Tablo 1'de uygun yağlar ve yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **114C** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

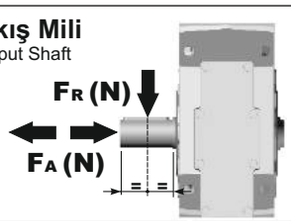
Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3	B6	B7	B8	V5	V6	V8
4.10 LT	2.70 LT	2.70 LT	2.70 LT	5.30 LT	2.35 LT	Sorunuz
AGIP Telium VSF 320				**SHELL** Omala S4 WE 320		

Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

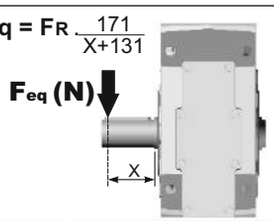
Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft



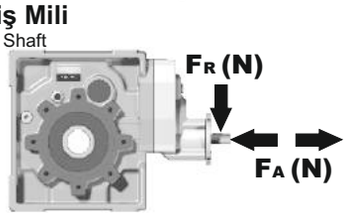
$$F_{eq} = F_R \cdot \frac{171}{X+131}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	640	3200	**140**	860	4300	**70**	1080	5400
250	700	3500	**120**	900	4500	**40**	1300	6500
200	740	3700	**85**	1000	5000	**15**	1840	9200

İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



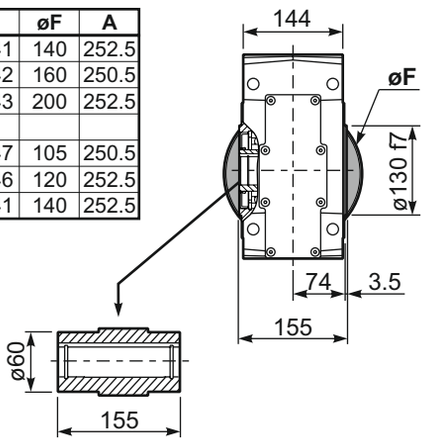
n_1	FA	FR
1400	240	1200
900	280	1400
500	310	1700

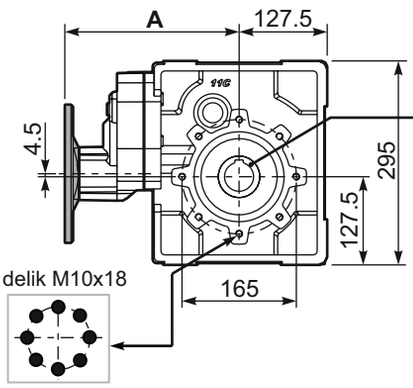
Tablo 2

P114CC... Standart redüktör
Basic gearbox

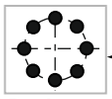
Ağırlık Gearbox weight	38.0 kg

M. flanşları	Kit Kodu	øF	A
63B5	K063.4.041	140	252.5
71B5	K063.4.042	160	250.5
80/90B5	K063.4.043	200	252.5
71B14	K063.4.047	105	250.5
80B14	K063.4.046	120	252.5
90B14	K063.4.041	140	252.5

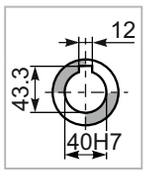




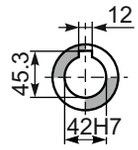
8 delik M10x18



Montaj Pozisyonu Delik Pozisyonları
Mounting holes position

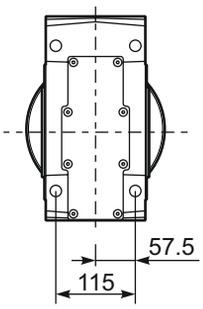


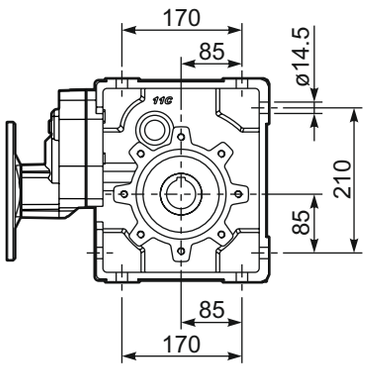
Delik Mil
Hollow Shaft



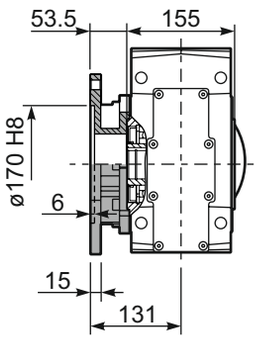
Özel
On request

P114C..-N.. Ayak
Feet

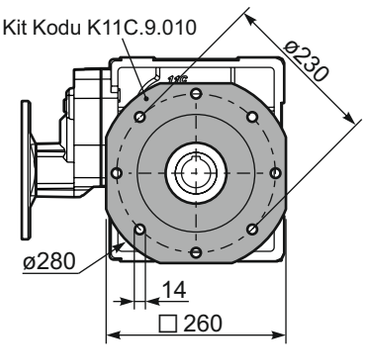




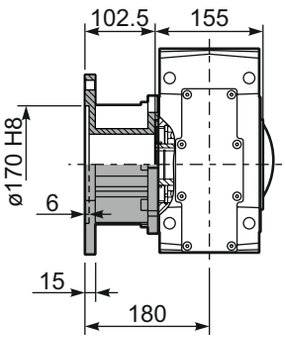
P114C-FC.. Çıkış flanşı
Output flanges



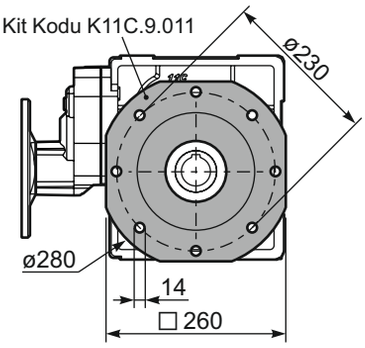
Kit Kodu K11C.9.010



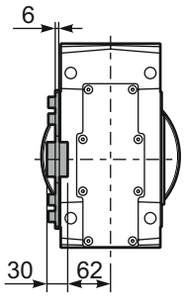
P114C-FL.. Çıkış flanşı
Output flanges



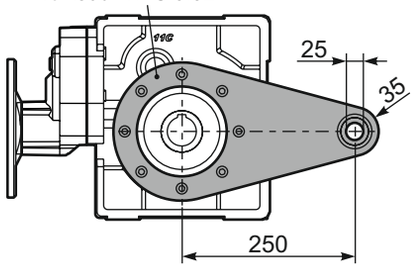
Kit Kodu K11C.9.011



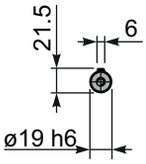
P114CBR.. Tork Kolu
Reaction Arm

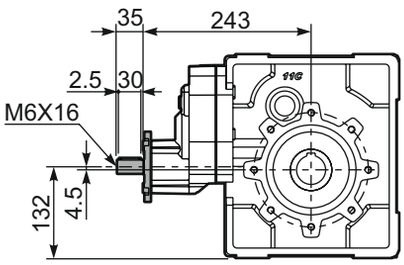


Kit Kodu K11C.9.027



R114C... Giriş Mili
Input shaft



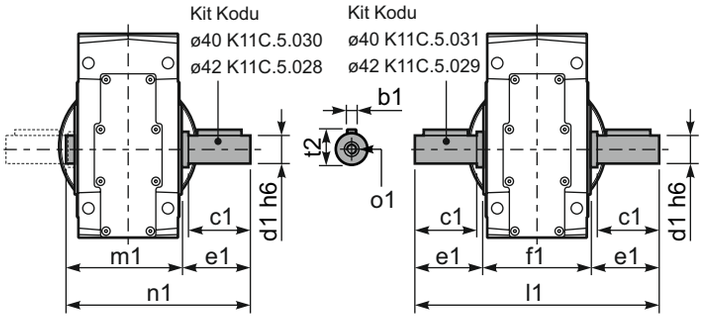


P114C..A.. Tek Çıkış Mili
Single Shaft

P114C..B.. Çift Çıkış Mili
Double Shaft

Kit Kodu
ø40 K11C.5.030
ø42 K11C.5.028

Kit Kodu
ø40 K11C.5.031
ø42 K11C.5.029



	b1	c1	d1	e1	f1	l1	m1	n1	t2	o1
ø40 Standart	12	80	40	84.5	155	324	164.5	249	43	M12
ø42 Özel	12	80	42	84.5	155	324	164.5	249	45	M16

▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

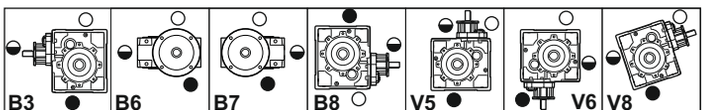
Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -C 71	-D 80	-E 90	-F 100 112	-G 132	Uygun B14 motor flanşları -R 80	-T 90	-U 100 112	-V 132		Çıkış mil çapı ø	Tahvil kodu
145	**9.69**	9	560	1.3	12.2	755	B									302418		01
126	**11.09**	9	641	1.1	9.6	680	B									302416		02
108	**12.90**	9	746	1.1	9.6	790	B									302414		03
77	**18.26**	7.5	849	1.1	8.0	935	B									202418		04
67	**20.91**	7.5	972	1.0	7.5	1000	B									202416		05
58	**24.32**	5.5	835	1.2	6.4	1000	B									202414	**standart ø45**	06
49.5	**28.27**	5.5	971	1.0	5.5	1000	B									162416		07
42.6	**32.88**	4	826	1.2	4.7	1000	B									162414		08
38.1	**36.76**	4	924	1.1	4.2	1000	B									132416		09
32.7	**42.76**	3	809	1.2	3.6	1000	B									132414	ø40	10
31.1	**45.00**	3	851	1.2	3.5	1000	B									112416	Özel	11
26.8	**52.33**	3	990	1.0	3.0	1000	B									112414		12
24.6	**56.82**	2.2	791	1.1	2.3	850	B									82418		13
21.5	**65.07**	2.2	906	1.1	2.3	975	B									82416		14
18.5	**75.68**	2.2	1054	0.9	2.1	1000	B									82414		15
15.6	**89.61**	1.1	628	1.1	1.2	710	B									62416		16
13.4	**104.22**	1.1	731	1.1	1.2	820	B									62414		17

Dinamik verim tüm tahvil oranları için **0,94**'dür

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **133C** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **133C** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.



B3 ●	B6	B7	B8 ○	V5 ●	V6 ●	V8 ●
6.00 LT	4.30 LT	4.30 LT	3.30 LT	7.40 LT	3.10 LT	Sorunuz

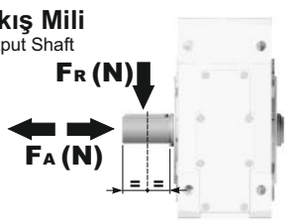
AGIP Blasia 460

Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

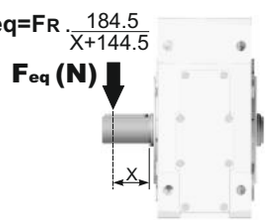
Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft



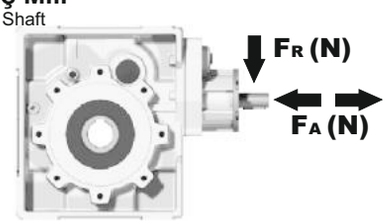
$$F_{eq}=F_R \cdot \frac{184.5}{X+144.5}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	800	4000	**140**	1120	5600	**70**	1400	7000
250	900	4500	**120**	1200	6000	**40**	1700	8500
200	960	4800	**85**	1300	6500	**15**	2400	12000

İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



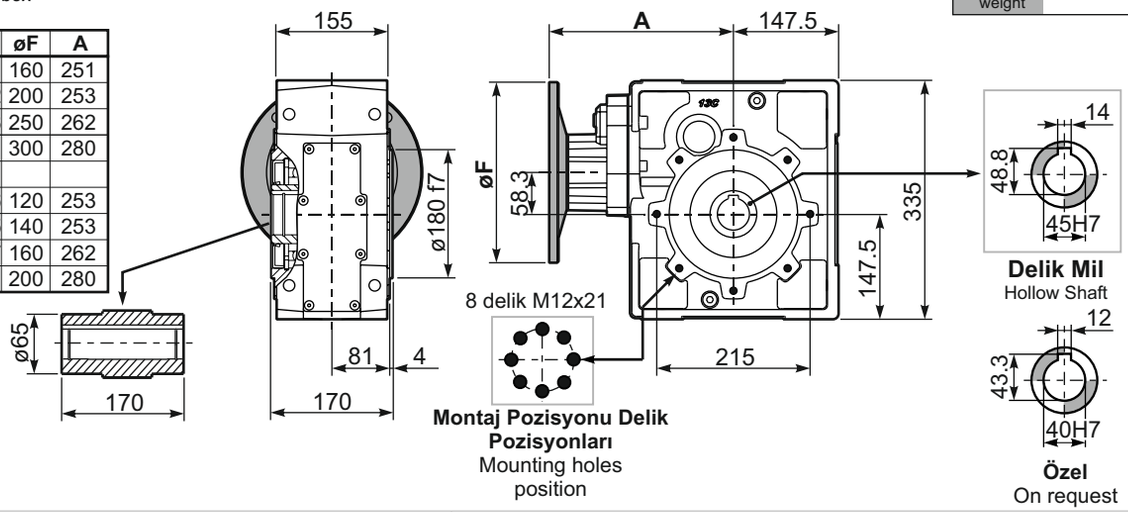
n_1	FA	FR
1400	450	2250
900	500	2500
500	600	3000

Tablo 2

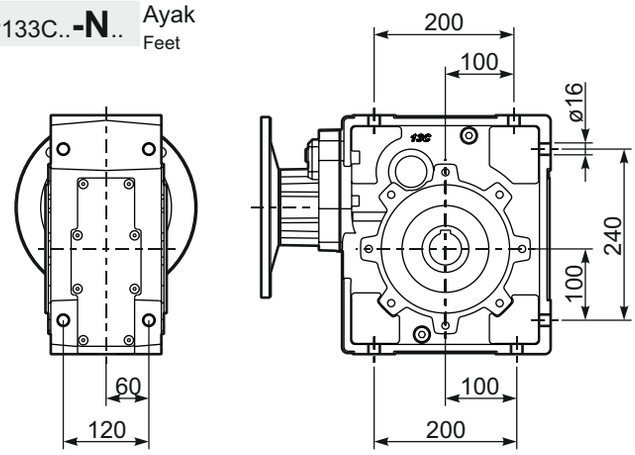
P133CC... Standart redüktör
Basic gearbox

Ağırlık Gearbox weight	53.5 kg

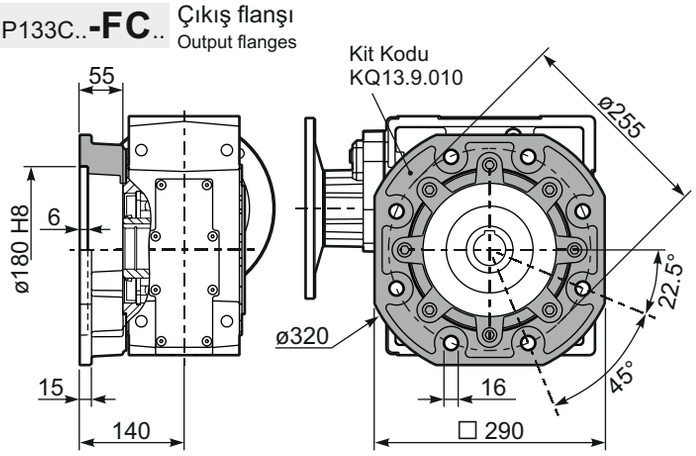
M. flanşları	Kit Kodu	øF	A
71B5	KC023.4.041	160	251
80/90B5	KC023.4.042	200	253
100/112B5	KC023.4.043	250	262
132B5	KC50.4.043	300	280
80B14	KC085.4.046	120	253
90B14	KC085.4.045	140	253
100/112B14	KC085.4.047	160	262
132B14	KC50.4.041	200	280



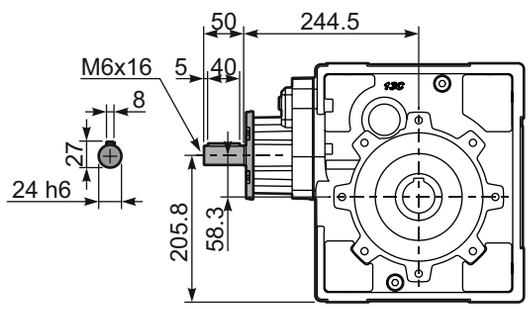
P133C..-N.. Ayak
Feet



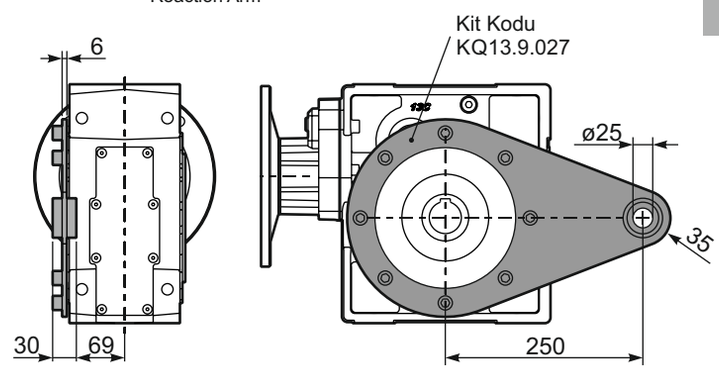
P133C..-FC.. Çıkış flanşı
Output flanges



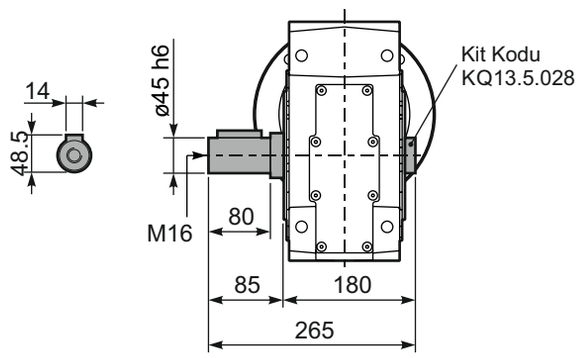
R133C... Giriş Mili
Input shaft



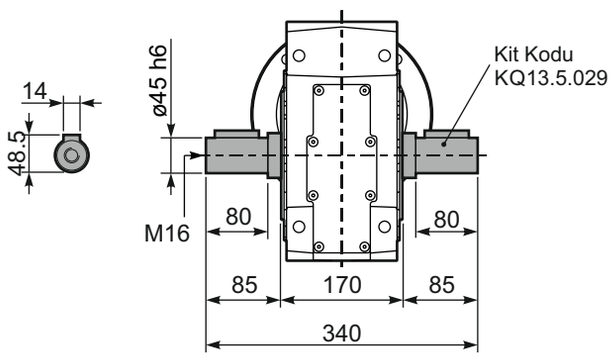
P133CBR.. Tork Kolu
Reaction Arm



P133C..A.. Tek Çıkış Mili
Single Shaft



P133C..B.. Çift Çıkış Mili
Double Shaft



▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

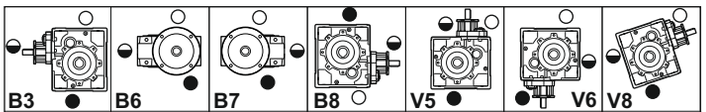
Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -B 63	-C 71	-D 80	-E 90	Uygun B14 motor flanşları -Q 71	-R 80	-T 90		Çıkış mil çapı ø	Tahvil kodu
15.3	**91.23**	1.5	858	1.2	1.7	1000	B				C	C		19132418		01
13.4	**104.48**	1.5	983	1.0	1.5	1000	B				C	C		19132416		02
11.6	**121.10**	1.5	1139	0.9	1.3	1000	B				C	C		17132416		03
9.9	**140.84**	1.1	968	1.0	1.1	1000	B				C	C		17132414		04
8.5	**165.32**	1.1	1136	0.9	0.96	1000	B				C	C		15132414		05
7.6	**184.94**	0.75	872	1.1	0.86	1000	B				C	C		19082416		06
7.1	**197.34**	0.75	930	1.1	0.81	1000	B				C	C		13132414	**standart**	07
6.5	**215.10**	0.75	1014	1.0	0.74	1000	B				C	C		19082414	**ø45**	08
6.0	**231.60**	0.55	805	1.2	0.69	1000	B				C	C		10132416		09
5.6	**249.31**	0.55	867	1.2	0.64	1000	B				C	C		17082414		10
5.2	**269.37**	0.55	937	1.1	0.59	1000	B				C	C		10132414	ø40	11
4.8	**292.64**	0.55	1018	1.0	0.54	1000	B				C	C		15082414	Özel	12
4.6	**302.26**	0.55	1051	1.0	0.53	1000	B				C	C		9132416		13
4.0	**349.30**	0.37	812	1.2	0.46	1000	B				C	C		13082414		14
3.5	**399.12**	0.37	928	1.1	0.40	1000	B				C	C		7132416		15
2.9	**476.80**	0.37	1108	0.9	0.33	1000	B				C	C		10082414		16
2.2	**622.28**	0.25	976	1.0	0.26	1000	B				C	C		9082414		17
1.7	**821.70**	0.18	985	1.0	0.19	1000	B				C	C		7082414		18

Dinamik verim tüm tahvil oranları için **0,92**'dir

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **134C** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **134C** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.



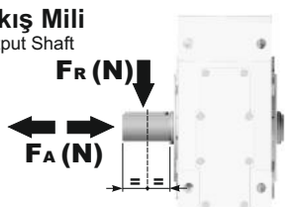
B3	B6	B7	B8	V5	V6	V8
6.10 LT	4.40 LT	4.40 LT	3.40 LT	7.50 LT	3.20 LT	Sorunuz
AGIP Blasia 460						

Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

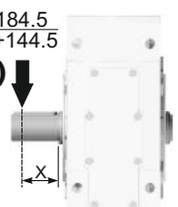
Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft



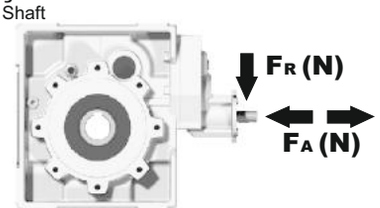
$$F_{eq} = F_R \cdot \frac{184.5}{X+144.5}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	800	4000	**140**	1120	5600	**70**	1400	7000
250	900	4500	**120**	1200	6000	**40**	1700	8500
200	960	4800	**85**	1300	6500	**15**	2400	12000

İsteğe bağlı olarak radyal ve eksenel yükleri karşılamak için güçlendirilmiş rulman opsiyonu.
On request reinforced bearings to increase loads.

Giriş Mili
Input Shaft



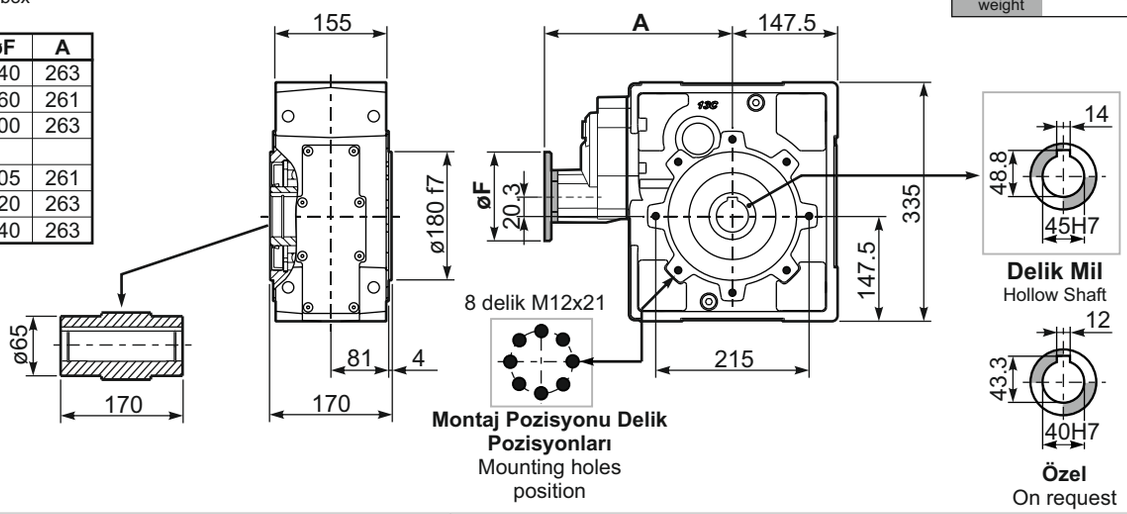
n_1	FA	FR
1400	400	2000
900	440	2200
500	440	2200

Tablo 2

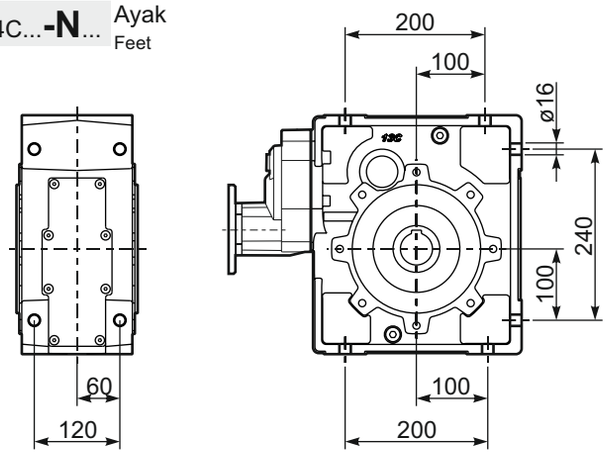
P134CC... Standart redüktör
Basic gearbox

Ağırlık Gearbox weight	53.5 kg

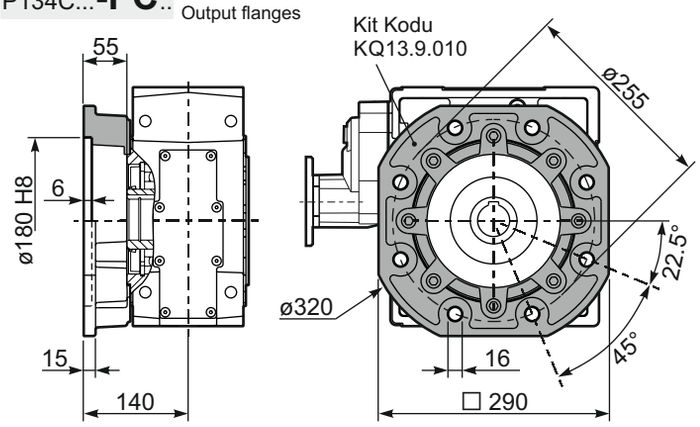
M. flanşları	Kit Kodu	øF	A
63B5	K063.4.041	140	263
71B5	K063.4.042	160	261
80/90B5	K063.4.043	200	263
71B14	K063.4.047	105	261
80B14	K063.4.046	120	263
90B14	K063.4.041	140	263



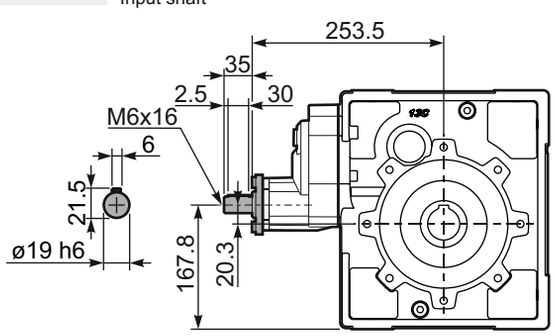
P134C...-N... Ayak
Feet



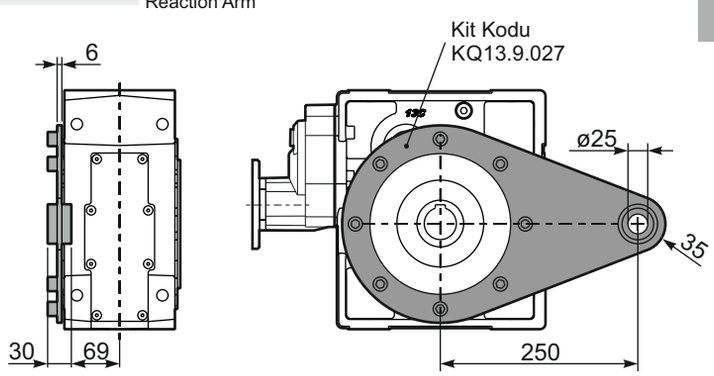
P134C...-FC.. Çıkış flanşı
Output flanges



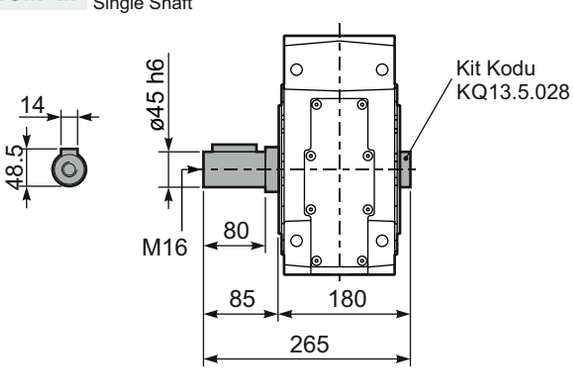
R134C... Giriş Mili
Input shaft



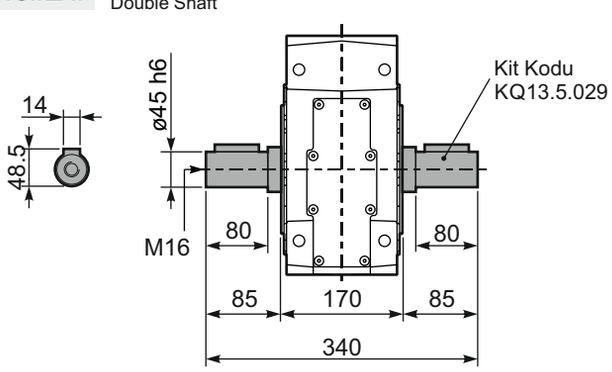
P134CBR.. Tork Kolu
Reaction Arm



P134C..A.. Tek Çıkış Mili
Single Shaft



P134C..B.. Çift Çıkış Mili
Double Shaft



▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -F 100 112	-G 132	-H 160	-I 180	Uygun B14 motor flanşları - - - - / - - - -				Çıkış mil çapı ø	Tahvil kodu
236	**5.94**	22	806	1.0	21.0	800	B				uygun değil				302915	01
196	**7.13**	18.5	812	1.0	17.9	820	B								302913	02
163	**8.58**	18.5	977	1.0	17.3	950	B								302911	03
125	**11.20**	15	1033	1.0	13.9	1000	B								202915	04
104	**13.43**	15	1239	1.1	15.7	1350	B								202913	05
92	**15.15**	15	1397	1.0	14.4	1400	B								162915	06
87	**16.17**	15	1492	1.0	14.0	1450	B								202911	07
77	**18.16**	15	1675	0.9	13.3	1550	B								162913	08
71	**19.70**	11	1335	1.2	12.3	1550	B								132915	09
64	**21.87**	11	1482	1.1	11.4	1600	B								162911	10
59	**23.62**	11	1600	1.0	10.6	1600	B								132913	11
48.4	**28.91**	9	1671	1.0	8.6	1600	B								112913	12
40.2	**34.81**	7.5	1618	1.0	7.2	1600	B								112911	13
33.5	**41.81**	5.5	1436	1.1	6.0	1600	B								82913	14
27.8	**50.34**	5.5	1729	0.9	5.0	1600	B								82911	15

standart ø50 / ø45 Özel

Dinamik verim tüm tahvil oranları için **0,94**'dür

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X93C** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X93C** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3	B6	B7	B8	V5	V6	V8
4.20 LT	3.60 LT	4.40 LT	5.10 LT	7.10 LT	5.00 LT	Sorunuz
AGIP Blasia 460						

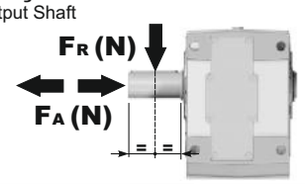
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

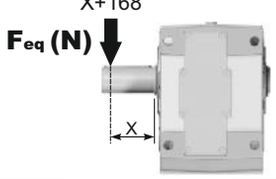
Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

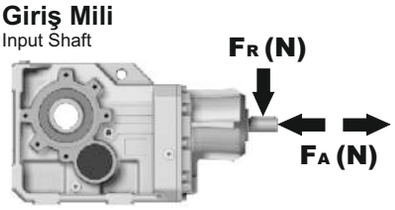
$$F_{eq} = F_R \cdot \frac{218}{X+168}$$





n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	1800	9000	**140**	2700	13500	**70**	3020	15100
250	2400	12000	**120**	2800	14000	**40**	3200	16000
200	2600	13000	**85**	2900	14500	**15**	3500	17500

Giriş Mili
Input Shaft



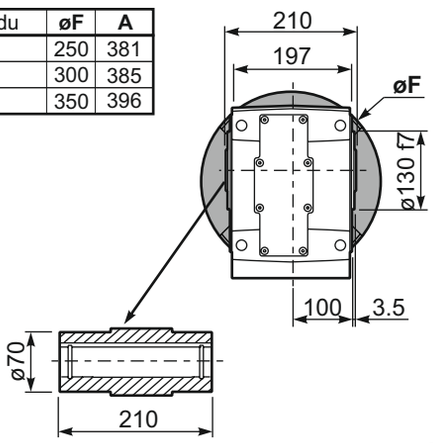
n_1	FA	FR
1400	700	3500
900	840	4200
500	900	4500

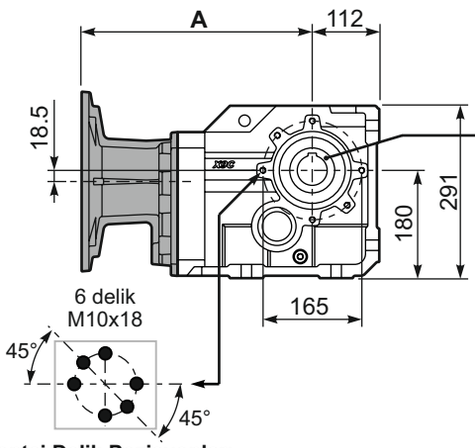
Tablo 2

PX93CC... Standart redüktör
Basic gearbox

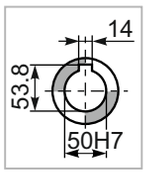
Ağırlık Gearbox weight	75.0 kg

M. flanşları	Kit Kodu	øF	A
100/112B5	-	250	381
132B5	-	300	385
160/180B5	-	350	396

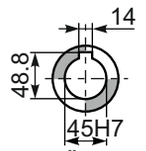




Montaj Delik Pozisyonları
Mounting holes position

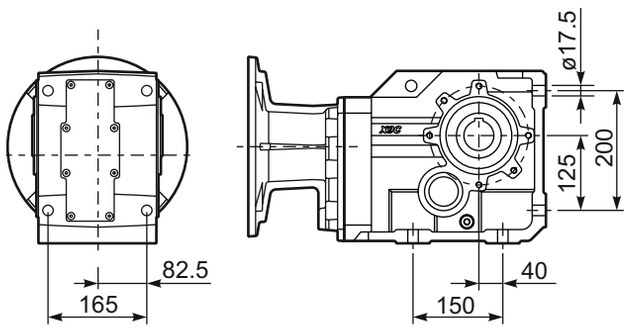


Delik Mil
Hollow Shaft

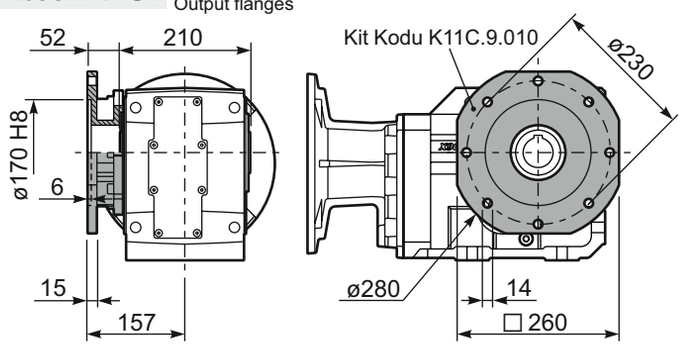


Özel
On request

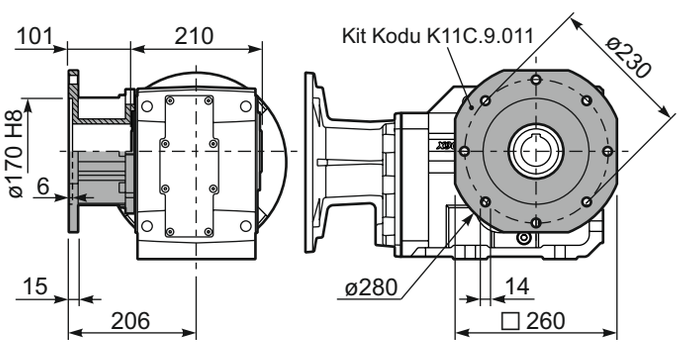
PX93C...FB.. Ayak
Feet



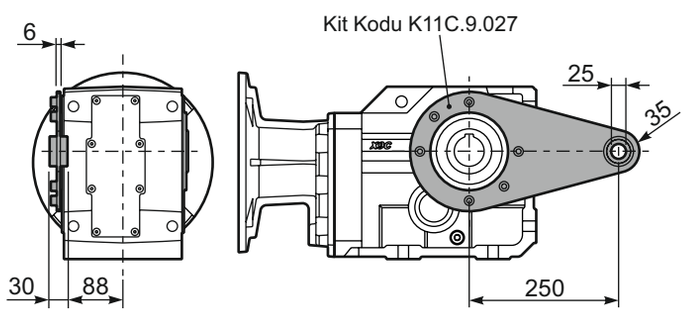
PX93C...-FC.. Çıkış flanşı
Output flanges



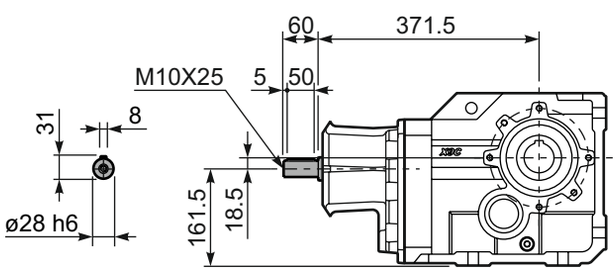
PX93C...-FL.. Çıkış flanşı
Output flanges



PX93C...BR.. Tok Kolu
Reaction Arm

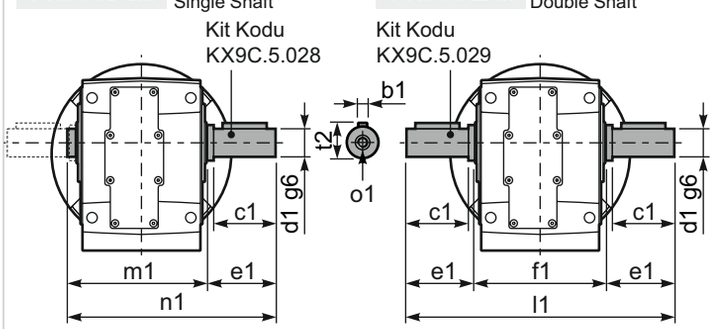


RX93C... Giriş Mili
Input shaft



PX93CA... Tek Çıkış Mili
Single Shaft

PX93CB... Çift Çıkış Mili
Double Shaft



	b1	c1	d1	e1	f1	l1	m1	n1	t2	o1
Standart	14	100	50	105	210	420	218	323	53.5	M16
-	-	-	-	-	-	-	-	-	-	-

▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -C 71	-D 80	-E 90	-F 100 112	-G 132	Uygun B14 motor flanşları -R 80	-T 90	-U 100 112	-V 132		Çıkış mil çapı ø	Tahvil kodu
45.6	**30.70**	7.5	1399	1.1	8.3	1600	B									30132913		01
37.9	**36.97**	7.5	1685	0.9	6.9	1600	B									30132911		02
29.0	**48.26**	5.5	1625	1.0	5.3	1600	B									20132915		03
24.2	**57.86**	4	1425	1.1	4.4	1600	B									20132913		04
21.5	**65.24**	4	1607	1.0	3.9	1600	B									16132915		05
20.1	**69.68**	4	1716	1.0	3.8	1650	B									20132911	**standart**	06
17.9	**78.23**	3	1450	1.1	3.4	1650	B									16132913	**ø50**	07
16.5	**84.85**	3	1573	1.0	3.0	1600	B									13132915		08
14.9	**94.20**	3	1747	0.9	2.8	1650	B									16132911		09
13.8	**101.74**	3	1886	0.9	2.6	1650	B									13132913	ø45	10
11.4	**122.51**	2.2	1672	1.0	2.1	1650	B									13132911	Özel	11
9.3	**149.95**	1.5	1411	1.2	1.8	1650	B									11132911		12
7.8	**180.09**	1.5	1694	1.0	1.5	1650	B									8132913		13
6.8	**206.81**	1.1	1421	1.1	1.2	1600	B									6132915		14
6.5	**216.85**	1.1	1490	1.1	1.2	1650	B									8132911		15
5.6	**247.99**	1.1	1704	1.0	1.1	1650	B									6132913		16
4.7	**298.61**	0.75	1407	1.2	0.88	1650	B									6132911		17

Dinamik verim tüm tahvil oranları için **0,92**'dir

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X94C** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X94C** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	**Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz.** For these mounting position specify in the order or add oil					
B3	**B6**	**B7**	**B8**	**V5**	**V6**	**V8**
4.50 LT	3.80 LT	4.50 LT	5.30 LT	7.60 LT	5.30 LT	Sorunuz
AGIP Blasia 460						

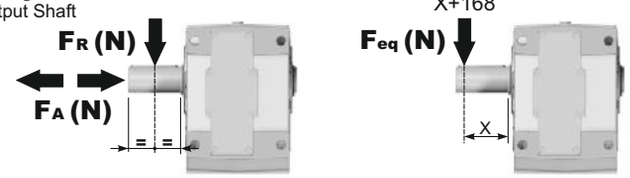
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

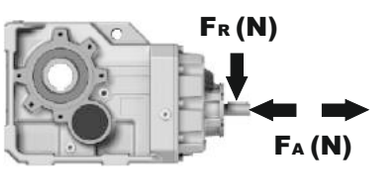
Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{218}{X+168}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	1800	9000	**140**	2700	13500	**70**	3020	15100
250	2400	12000	**120**	2800	14000	**40**	3200	16000
200	2600	13000	**85**	2900	14500	**15**	3500	17500

Giriş Mili
Input Shaft



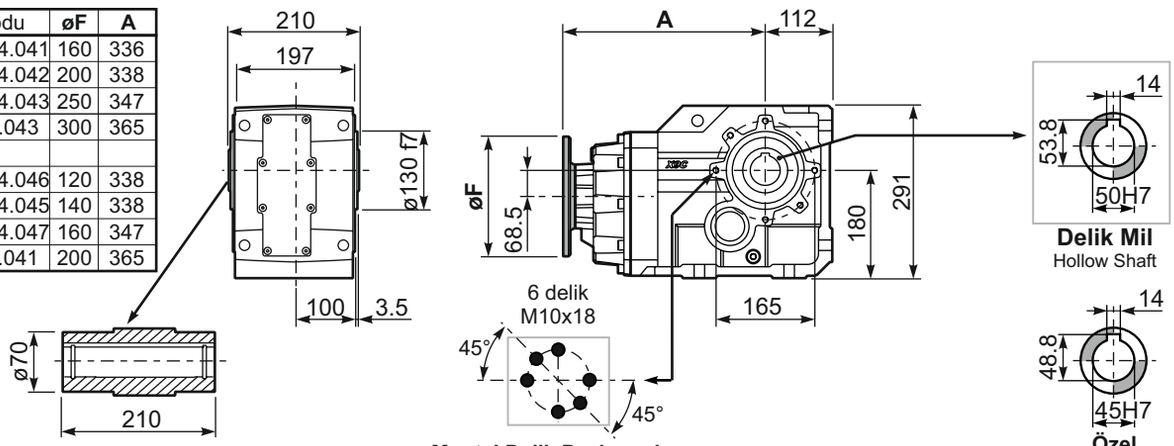
n_1	FA	FR
1400	450	2250
900	500	2500
500	600	3000

Tablo 2

PX94CC... Standart redüktör
Basic gearbox

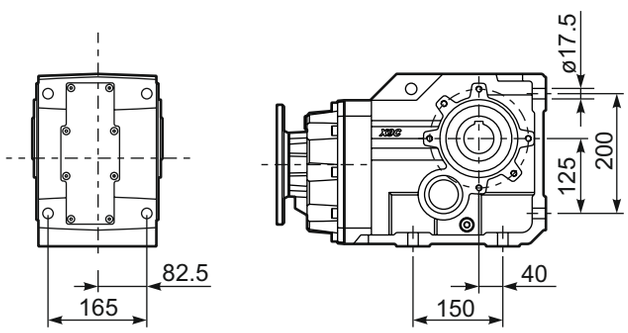
Ağırlık Gearbox weight	68.5 kg

M. flanşları	Kit Kodu	øF	A
71B5	KC023.4.041	160	336
80/90B5	KC023.4.042	200	338
100/112B5	KC023.4.043	250	347
132B5	KC50.4.043	300	365
80B14	KC085.4.046	120	338
90B14	KC085.4.045	140	338
100/112B14	KC085.4.047	160	347
132B14	KC50.4.041	200	365

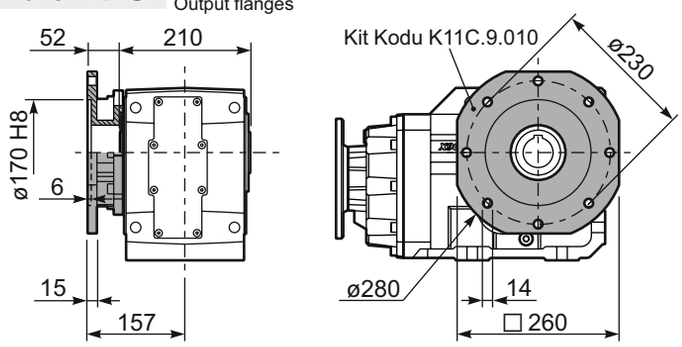


Montaj Delik Pozisyonları
Mounting holes position

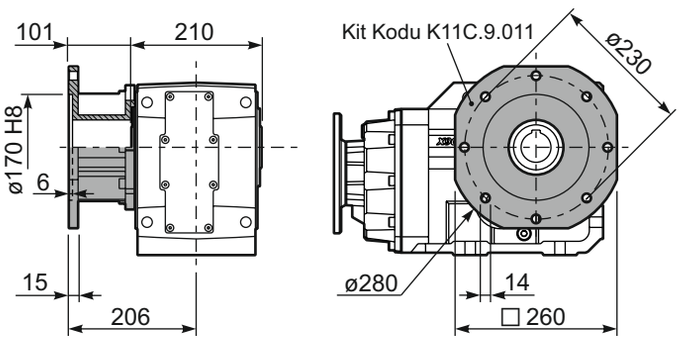
PX94C...FB.. Ayak
Feet



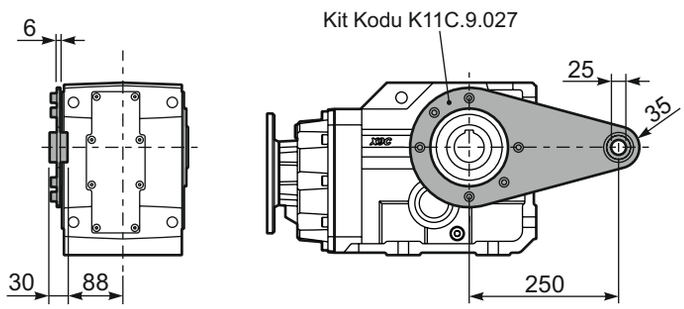
PX94C...-FC.. Çıkış flanşı
Output flanges



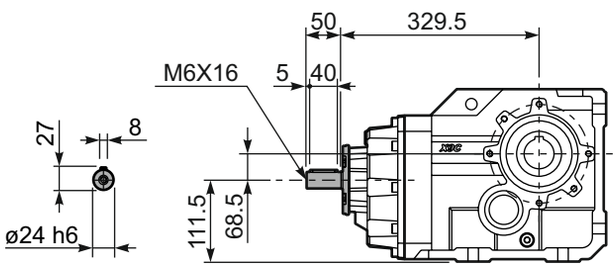
PX94C...-FL.. Çıkış flanşı
Output flanges



PX94C...BR.. Tok Kolu
Reaction Arm

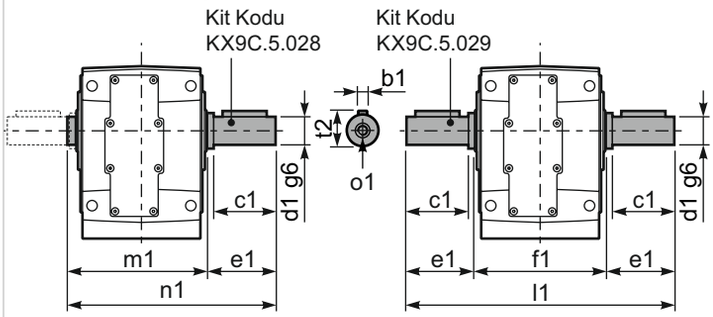


RX94C... Giriş Mili
Input shaft



PX94CA... Tek Çıkış Mili
Single Shaft

PX94CB... Çift Çıkış Mili
Double Shaft



	b1	c1	d1	e1	f1	l1	m1	n1	t2	o1
Standart	14	100	50	105	210	420	218	323	53.5	M16
-	-	-	-	-	-	-	-	-	-	-

▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -G 132	-H 160	-I 180	-L 200	Uygun B14 motor flanşları - - - - / - - - -				Çıkış mil çapı	Tahvil kodu
219	**6.39**	30	1180	1.1	31.7	1300									392914	01
200	**7.00**	30	1292	1.1	31.2	1400									392913	02
164	**8.55**	30	1578	1.0	27.4	1500									392911	03
140	**10.01**	22	1357	1.2	24.9	1600									302914	04
128	**10.97**	22	1486	1.1	24.2	1700									302913	05
105	**13.39**	22	1815	1.2	24.5	2100									302911	06
89	**15.71**	22	2130	1.0	21.8	2200									222914	07
81	**17.21**	22	2333	1.0	20.8	2300									222913	08
67	**21.02**	18.5	2394	1.0	17.8	2400									222911	09
59	**23.73**	18.5	2703	1.0	17.1	2600									162914	10
54	**25.99**	18.5	2960	0.9	16.8	2800									162913	11
50	**27.93**	15	2576	1.1	16.2	2900									142914	12
45.8	**30.59**	15	2822	1.0	14.8	2900									142913	13
44.1	**31.74**	15	2928	1.0	14.2	2900									162911	14
37.5	**37.36**	11	2532	1.1	12.1	2900									142911	15
33.8	**41.37**	11	2804	1.0	10.9	2900									102914	16
30.9	**45.31**	9	2618	1.1	10.0	2900									102913	17
25.3	**55.33**	7.5	2573	1.2	8.5	3000									102911	18

uygun değil — **standart ø60**

Dinamik verim tüm tahvil oranları için **0,94**'dür

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
Teminal Kutusu flanş pozisyonu Motor Flange Holes Position

TR **X103** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X103** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

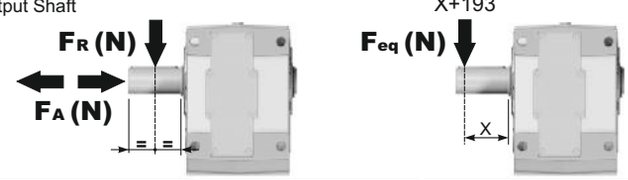
Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3 ●	B6 ●	B7 ●	B8	V5 ●	V6 ●	V8 ●
11.50 LT	5.50 LT	10.50 LT	7.50 LT	13.50 LT	9.50 LT	Sorunuz
AGIP Blasia 460						

Daha fazla ayrıntı için internet sitemizi inceleyiniz. **Tablo 1**
For all details on lubrication and plugs check our website

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

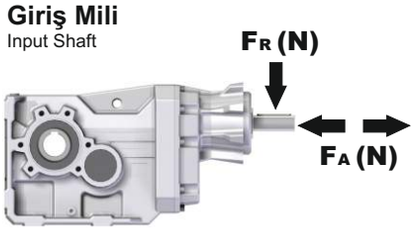
Çıkış Mili
Output Shaft

$$F_{eq} = F_R \cdot \frac{253}{X+193}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2000	10000	**140**	2800	14000	**70**	3500	17500
250	2500	12500	**120**	3000	15000	**40**	4200	21000
200	2700	13500	**85**	3200	16000	**15**	5400	27000

Giriş Mili
Input Shaft



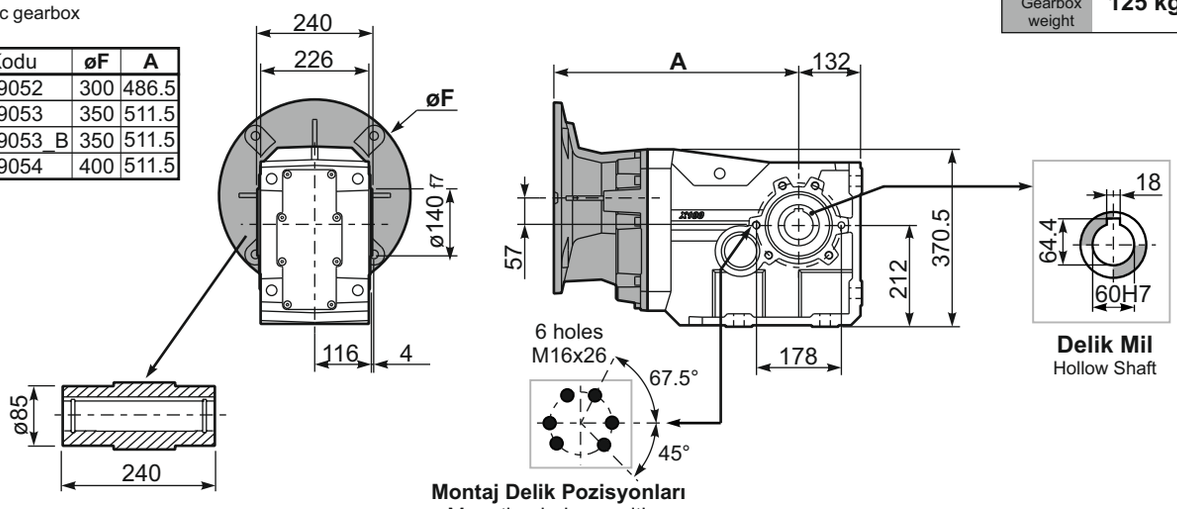
n_1	FA	FR
1400	1120	5600
900	1220	6100
500	1300	6500

Tablo 2

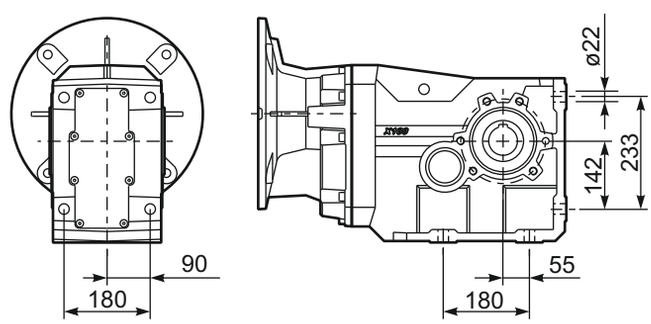
Ağırlık Gearbox weight	125 kg

PX103C... Standart redüktör
Basic gearbox

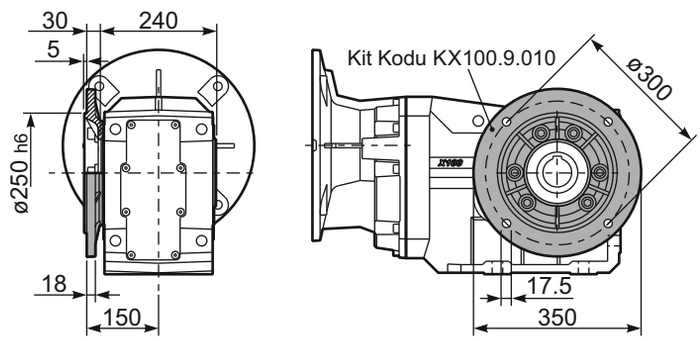
M. flanşları	Kit Kodu	øF	A
132B5	KC1109052	300	486.5
160B5	KC1109053	350	511.5
180B5	KC1109053_B	350	511.5
200B5	KC1109054	400	511.5



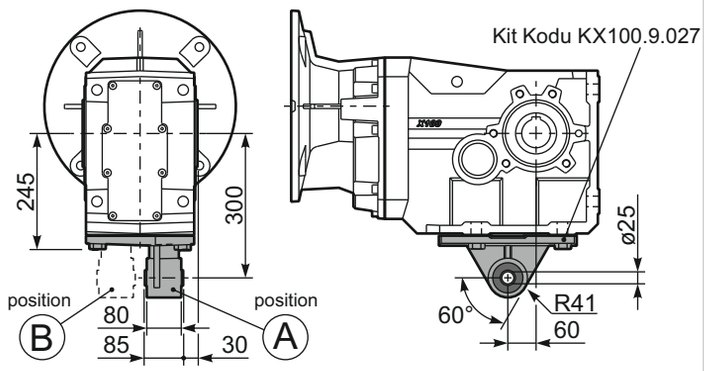
PX103...FB.. Ayak
Feet



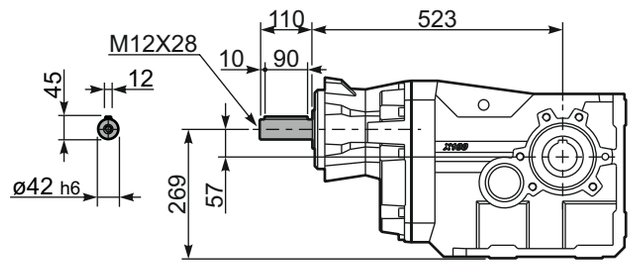
PX103...-F6.. Çıkış flanşı
Output flanges



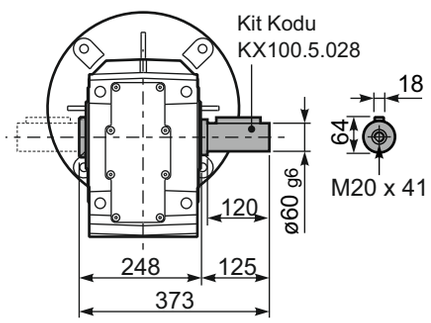
PX103...BR.. Tok Kolu
Reaction Arm



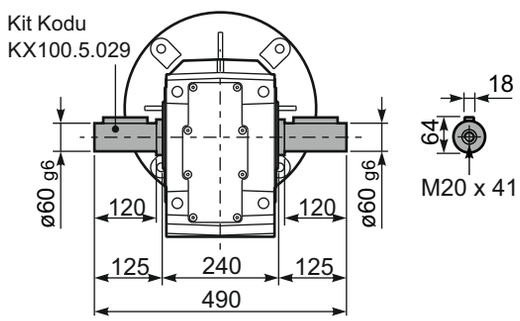
RX103... Giriş Mili
Input shaft



PX103A... Tek Çıkış Mili
Single Shaft



PX103B... Çift Çıkış Mili
Double Shaft



▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -F (100, 112)	Uygun B5 motor flanşları -G (132)	Uygun B14 motor flanşları				Çıkış mil çapı ø	Tahvil kodu
28.8	**48.57**	9	2750	1.1	9.5	2900	B		uygun değil			30142911	standart ø60	01
20.5	**68.43**	7.5	3118	1.0	7.0	3000	B					20142914		02
18.7	**74.95**	5.5	2523	1.2	6.4	3000	B					20142913		03
15.1	**92.53**	5.5	3115	1.0	5.2	3000	B					16142914		04
13.8	**101.33**	4	2496	1.2	4.7	3000	B					16142913		05
11.6	**120.33**	4	2963	1.0	4.0	3000	B					13142914		06
11.3	**123.75**	4	3048	1.0	3.9	3000	B					16142911		07
10.6	**131.78**	4	3245	0.9	3.6	3000	B					13142913		08
9.5	**147.28**	3	2731	1.1	3.2	3000	B					11142914		09
8.7	**161.30**	3	2990	1.0	3.0	3000	B					11142913		10
7.1	**196.98**	2.2	2689	1.1	2.4	3000	B					11142911		11
6.6	**212.99**	2.2	2907	1.0	2.2	3000	B					8142914		12
6.0	**233.26**	2.2	3184	0.9	2.0	3000	B					8142913		13
4.9	**284.86**	2.2	3889	0.8	1.7	3000	B					8142911		14

Dinamik verim tüm tahvil oranları için **0,92**'dir

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X104** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X104** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3 ●	B6 ●	B7 ●	B8 ●	V5 ●	V6 ●	V8 ●
12.00 LT	6.00 LT	11.50 LT	8.00 LT	14.50 LT	11.00 LT	Sorunuz
AGIP Blasia 460						

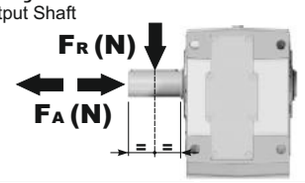
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

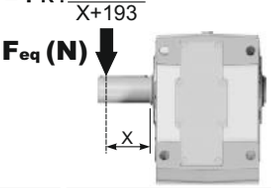
Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

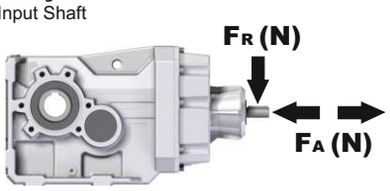
$$F_{eq} = F_R \cdot \frac{253}{X+193}$$





n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2000	10000	**140**	2800	14000	**70**	3500	17500
250	2500	12500	**120**	3000	15000	**40**	4200	21000
200	2700	13500	**85**	3200	16000	**15**	5400	27000

Giriş Mili
Input Shaft



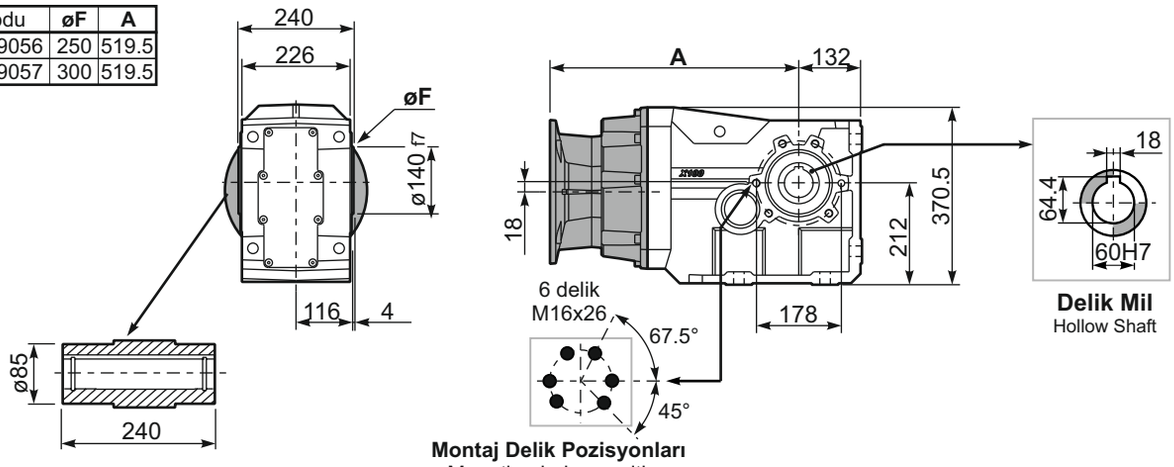
n_1	FA	FR
1400	700	3500
900	840	4200
500	900	4500

Tablo 2

PX104C... Standart redüktör
Basic gearbox

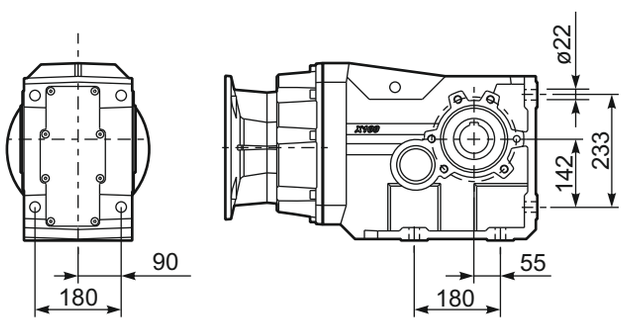
Ağırlık Gearbox weight	118 kg

M. flanşları	Kit Kodu	øF	A
100/112B5	KC1109056	250	519.5
132B5	KC1109057	300	519.5

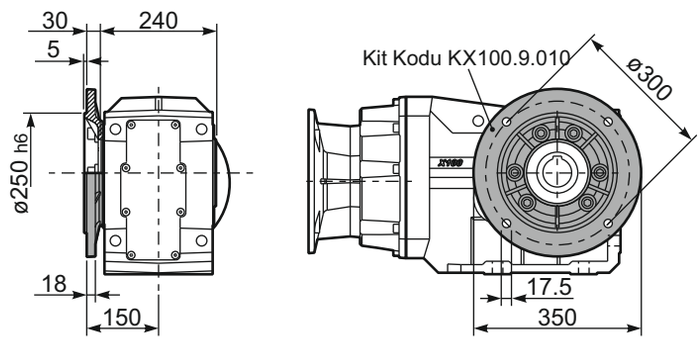


Montaj Delik Pozisyonları
Mounting holes position

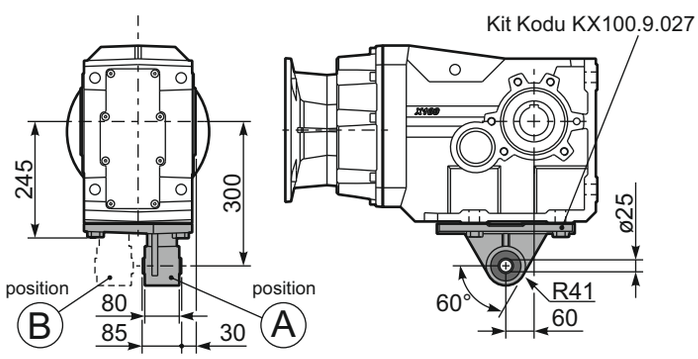
PX104...FB.. Ayak
Feet



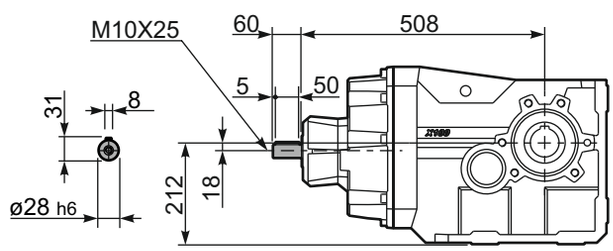
PX104...-F6.. Çıkış flanşı
Output flanges



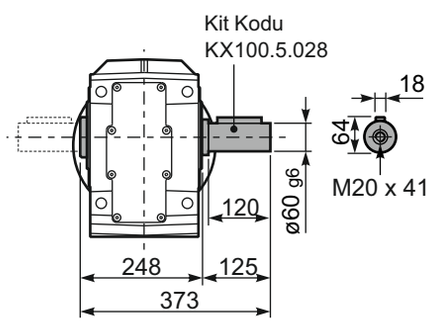
PX104...BR.. Tok Kolu
Reaction Arm



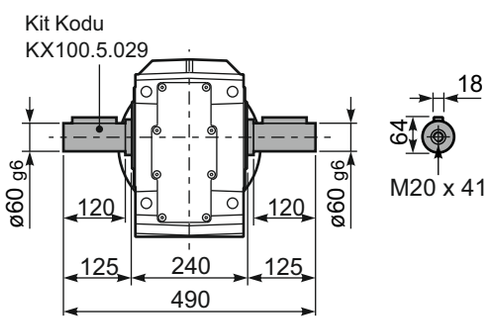
RX104... Giriş Mili
Input shaft



PX104A... Tek Çıkış Mili
Single Shaft



PX104B... Çift Çıkış Mili
Double Shaft



▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -G 132	-H 160	-I 180	-L 200	CA 225	Uygun B14 motor flanşları – –	- -	- -		Çıkış mil çapı ø	Tahvil kodu
219	**6.39**	45	1757	1.4	61.0	2500									392914		01
200	**7.00**	45	1925	1.4	59.0	2650									392913		02
164	**8.55**	45	2350	1.2	51.1	2800									392911		03
140	**10.01**	45	2752	1.2	49.8	3200									302914		04
128	**10.97**	45	3014	1.1	45.5	3200									302913		05
105	**13.39**	37	3025	1.1	39.6	3400									302911		06
89	**15.71**	37	3550	1.0	34.7	3500									222914		07
81	**17.21**	37	3888	1.0	33.5	3700									222913		08
67	**21.02**	30	3877	1.0	29.7	4000									222911		09
59	**23.73**	30	4378	0.9	26.9	4100									162914		10
54	**25.99**	22	3523	1.2	25.8	4300									162913		11
50	**27.93**	22	3786	1.1	24.0	4300									142914		12
45.8	**30.59**	22	4146	1.1	22.9	4500									142913		13
44.1	**31.74**	22	4302	1.0	22.1	4500									162911		14
37.5	**37.36**	18.5	4255	1.1	18.8	4500									142911		15
33.8	**41.37**	18.5	4712	1.0	17.0	4500									102914		16
30.9	**45.31**	15	4179	1.1	15.5	4500									102913		17
25.3	**55.33**	11	3750	1.2	12.7	4500									102911		18

uygun değil

standart ø70

Dinamik verim tüm tahvil oranları için **0,94**'dür

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X113** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X113** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

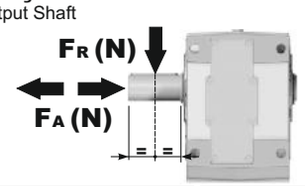
Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3 ●	B6 ●	B7 ●	B8 ●	V5 ●	V6 ●	V8 ●
13.50 LT	8.00 LT	15.50 LT	14.50 LT	22.00 LT	13.00 LT	Sorunuz
AGIP Blasia 460						

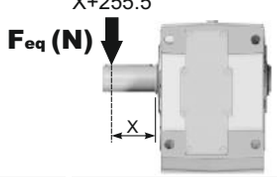
Daha fazla ayrıntı için internet sitemizi inceleyiniz. **Tablo 1**
For all details on lubrication and plugs check our website

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

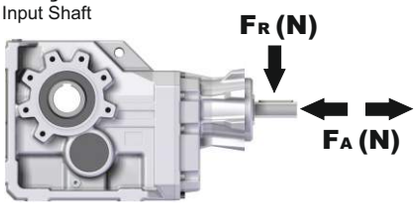
$$F_{eq} = F_R \cdot \frac{325.5}{X+255.5}$$





n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2100	10500	**140**	3100	15500	**70**	4200	21000
250	2600	13000	**120**	3240	16200	**40**	5600	28000
200	3000	15000	**85**	3600	18000	**15**	8000	40000

Giriş Mili
Input Shaft



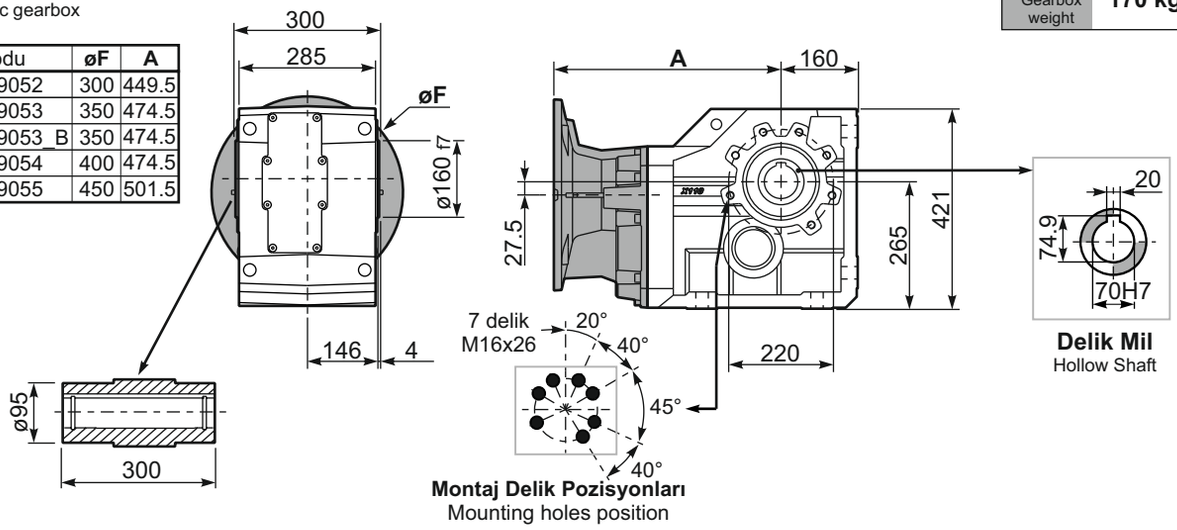
n_1	FA	FR
1400	1120	5600
900	1220	6100
500	1300	6500

Tablo 2

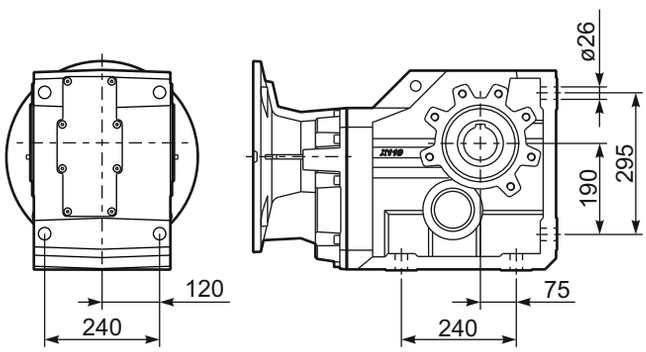
PX113C... Standart redüktör
Basic gearbox

Ağırlık Gearbox weight	170 kg

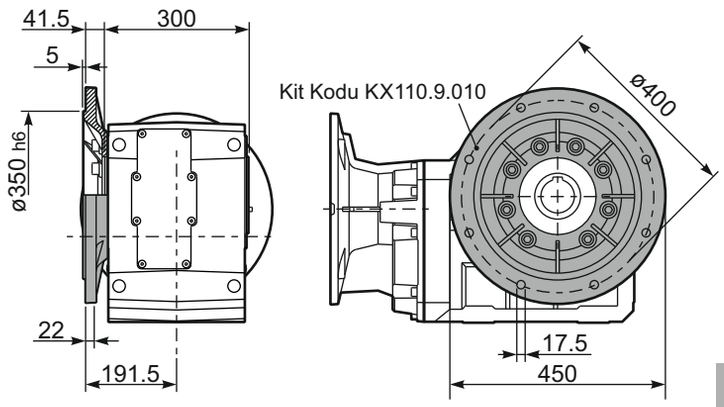
M. flanşları	Kit Kodu	øF	A
132B5	KC1109052	300	449.5
160B5	KC1109053	350	474.5
180B5	KC1109053_B	350	474.5
200B5	KC1109054	400	474.5
225B5	KC1109055	450	501.5



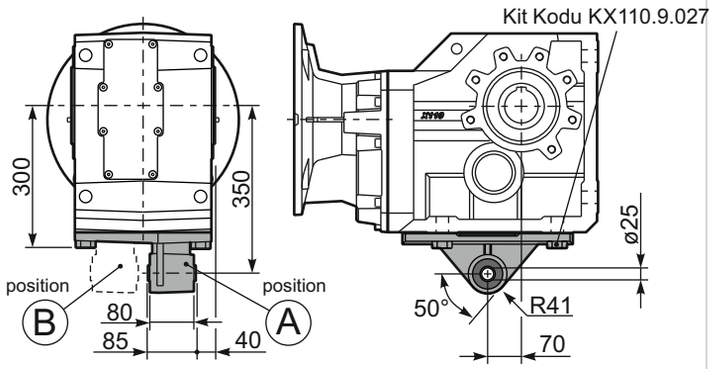
PX113...FB.. Ayak
Feet



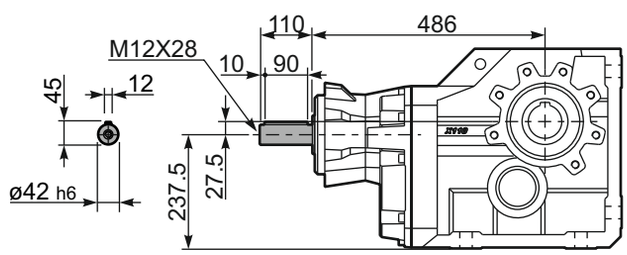
PX113...-F7.. Çıkış flanşı
Output flanges



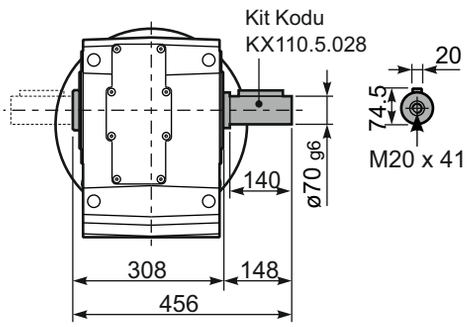
PX113...BR.. Tok Kolu
Reaction Arm



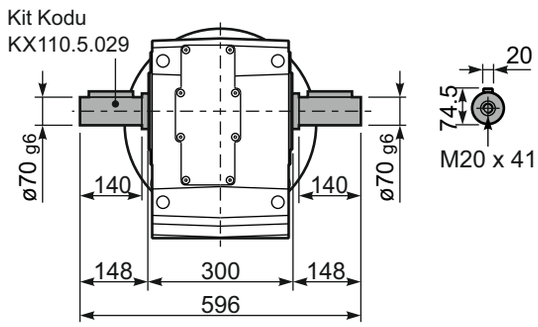
RX113... Giriş Mili
Input shaft



PX113A... Tek Çıkış Mili
Single Shaft



PX113B... Çift Çıkış Mili
Double Shaft



▪ HIZLI SEÇİM / Quick Selection

Giriş devri (n_1) = 1400 d/d

Çıkış devri n_2 [d/d]	Tahvil i	Motor gücü P_{1M} [kW]	Çıkış momenti M_{2M} [Nm]	Servis Faktörü f.s.	Nominal Güç P_{1R} [kW]	Nominal Moment M_{2R} [Nm]	Uygun B5 motor flanşları -F 100 112	-G 132	-H 160	Uygun B14 motor flanşları - - - / - - -				Çıkış mil çapı ø	Tahvil kodu
28.8	**48.57**	15	4390	1.0	14.8	4500	B			uygun değil			30142911	standart ø70	01
20.5	**68.43**	11	4545	1.0	10.7	4600	B						20142914		02
18.7	**74.95**	11	4977	0.9	9.8	4600	B						20142913		03
15.1	**92.53**	7.5	4216	1.1	7.9	4600	B						16142914		04
13.8	**101.33**	7.5	4617	1.0	7.2	4600	B						16142913		05
11.6	**120.33**	5.5	4051	1.1	6.1	4600	B						13142914		06
11.3	**123.75**	5.5	4166	1.1	5.8	4500	B						16142911		07
10.6	**131.78**	5.5	4436	1.0	5.6	4600	B						13142913		08
9.5	**147.28**	5.5	4958	0.9	5.0	4600	B						11142914		09
8.7	**161.30**	4	3972	1.2	4.5	4600	B						11142913		10
7.1	**196.98**	3	3652	1.2	3.6	4500	B						11142911		11
6.6	**212.99**	3	3949	1.2	3.4	4600	B						8142914		12
6.0	**233.26**	3	4324	1.1	3.1	4600	B						8142913		13
4.9	**284.86**	2.2	3889	1.2	2.5	4500	B						8142911		14

Dinamik verim tüm tahvil oranları için **0,92**'dir

Uygun Motor Flanşları Motor Flanges Available
B) **Burç ile montaj yapılabilir** Supplied with Reduction Bushing
B) **Burç Kullanılmadan Montajı Yapılabilir** Available on Request without Reduction Bushing
C) **Teminal Kutusu flanş pozisyonu** Motor Flange Holes Position

TR **X114** gövde redüktörler yağsız olarak sevk edilir. Redüktör üzerinde havalandırma tapası, yağ göstergesi ve tahliye tapası mevcuttur. Mineral yağlar bu ekipmanlar ile birlikte kullanılır. Sentetik yağ kullanılmak istenirse bu ekipmanların körtapa ile değiştirilmesi önerilir.
Tablo 1'de montaj pozisyonuna göre uygun yağ miktarları tanımlanmıştır.
Tablo 2'de izin verilebilir radyal ve eksenel yük değerleri tanımlanmıştır.

EN Unit **X114** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

Standart	Diğer montaj pozisyonlarını siparişte belirtiniz veya uygun miktarda yağ ekleyiniz. For these mounting position specify in the order or add oil					
B3	B6 ●	B7 ●	B8 ●	V5 ●	V6 ●	V8 ●
14.50 LT	8.50 LT	16.50 LT	16.00 LT	23.00 LT	14.50 LT	Sorunuz
AGIP Blasia 460						

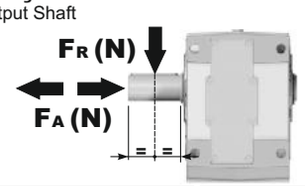
Daha fazla ayrıntı için internet sitemizi inceleyiniz.
For all details on lubrication and plugs check our website

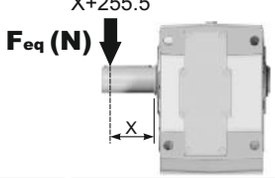
Tablo 1

▪ RADYAL VE EKSENEL YÜKLER / *RADIAL AND AXIAL LOADS*

Çıkış Mili
Output Shaft

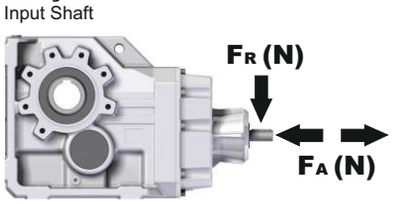
$$F_{eq} = F_R \cdot \frac{325.5}{X+255.5}$$





n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2100	10500	**140**	3100	15500	**70**	4200	21000
250	2600	13000	**120**	3240	16200	**40**	5600	28000
200	3000	15000	**85**	3600	18000	**15**	8000	40000

Giriş Mili
Input Shaft



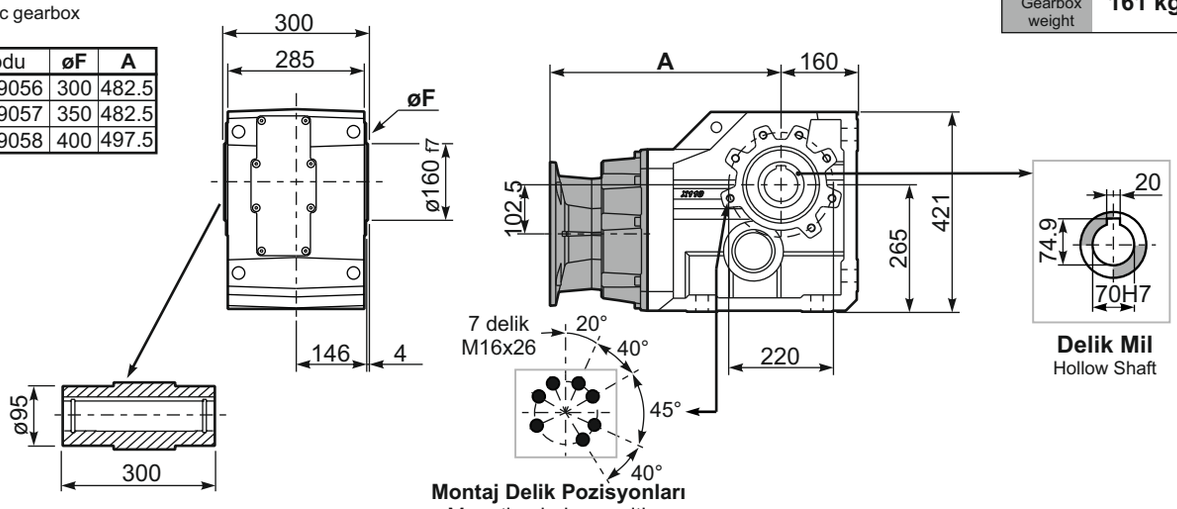
n_1	FA	FR
1400	700	3500
900	840	4200
500	900	4500

Tablo 2

PX114C... Standart redüktör
Basic gearbox

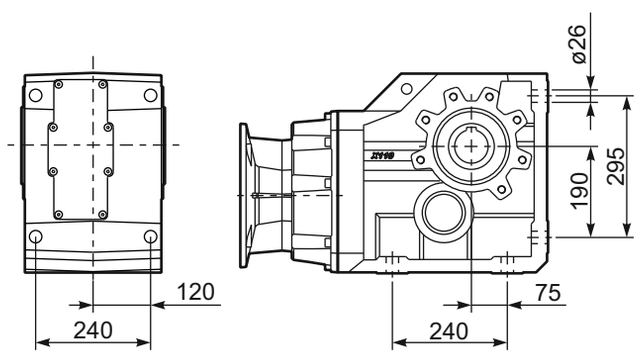
Ağırlık Gearbox weight	161 kg

M. flanşları	Kit Kodu	øF	A
100/112B5	KC1109056	300	482.5
132B5	KC1109057	350	482.5
160B5	KC1109058	400	497.5

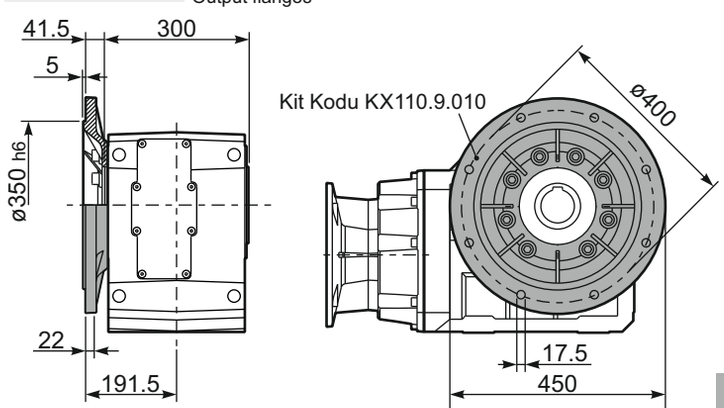


Montaj Delik Pozisyonları
Mounting holes position

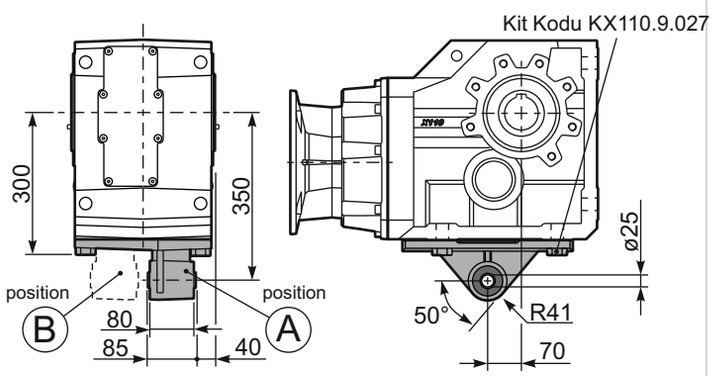
PX114...FB.. Ayak
Feet



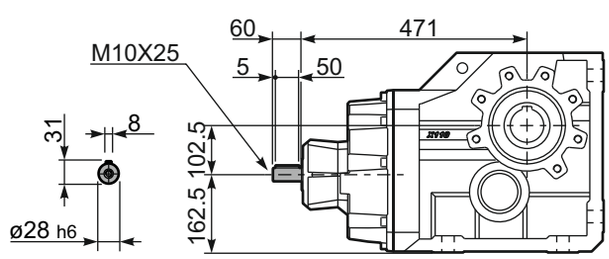
PX114...-F7.. Çıkış flanşı
Output flanges



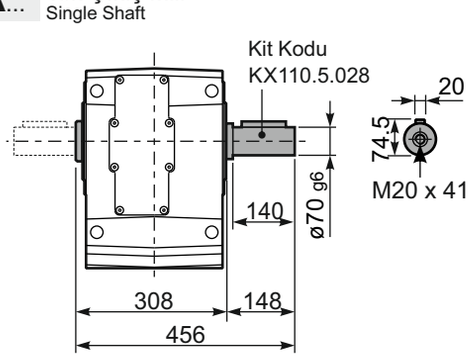
PX114...BR.. Tok Kolu
Reaction Arm



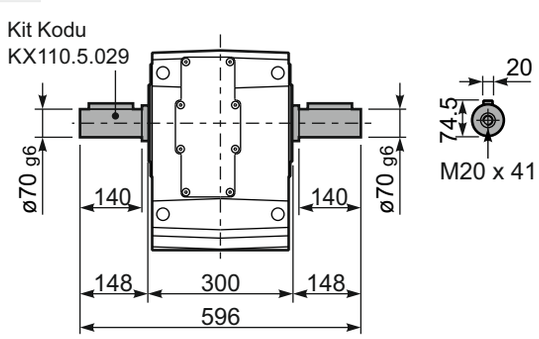
RX114... Giriş Mili
Input shaft



PX114A... Tek Çıkış Mili
Single Shaft



PX114B... Çift Çıkış Mili
Double Shaft



ZET
Redüktör

ZET Redüktör Sanayi ve Ticaret A.Ş.

İSTANBUL MERKEZ OFİS / *HEAD OFFICE*
Uzunçayır Caddesi No: 43
D Blok No:3-4
34722 - Hasanpaşa
İstanbul - Türkiye

Tel : +90-216-327 7254 (2L pbx)
: +90-216-326 0679
Fax : +90-216-326 0078

ESKİŞEHİR FABRİKA / *FACTORY*
Organize Sanayi Bölgesi
14. Cadde No: 17
26110 - OSB
Eskişehir -Türkiye

Tel : +90-222-236 2017 (4L pbx)
Fax : +90-222-236 2035

info@**hydrozet**.com
www.hydrozet.com
www.zetreduktor.com