



YILMAZ - EV گپیوکس



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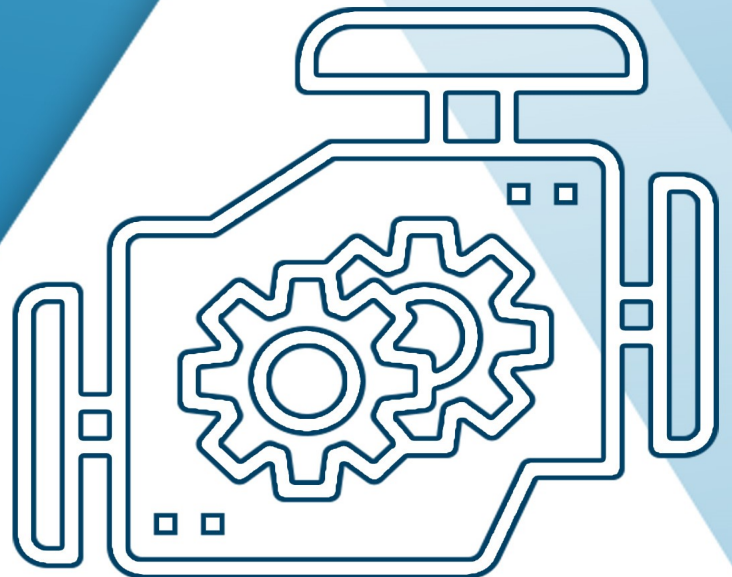


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Catalog 2021

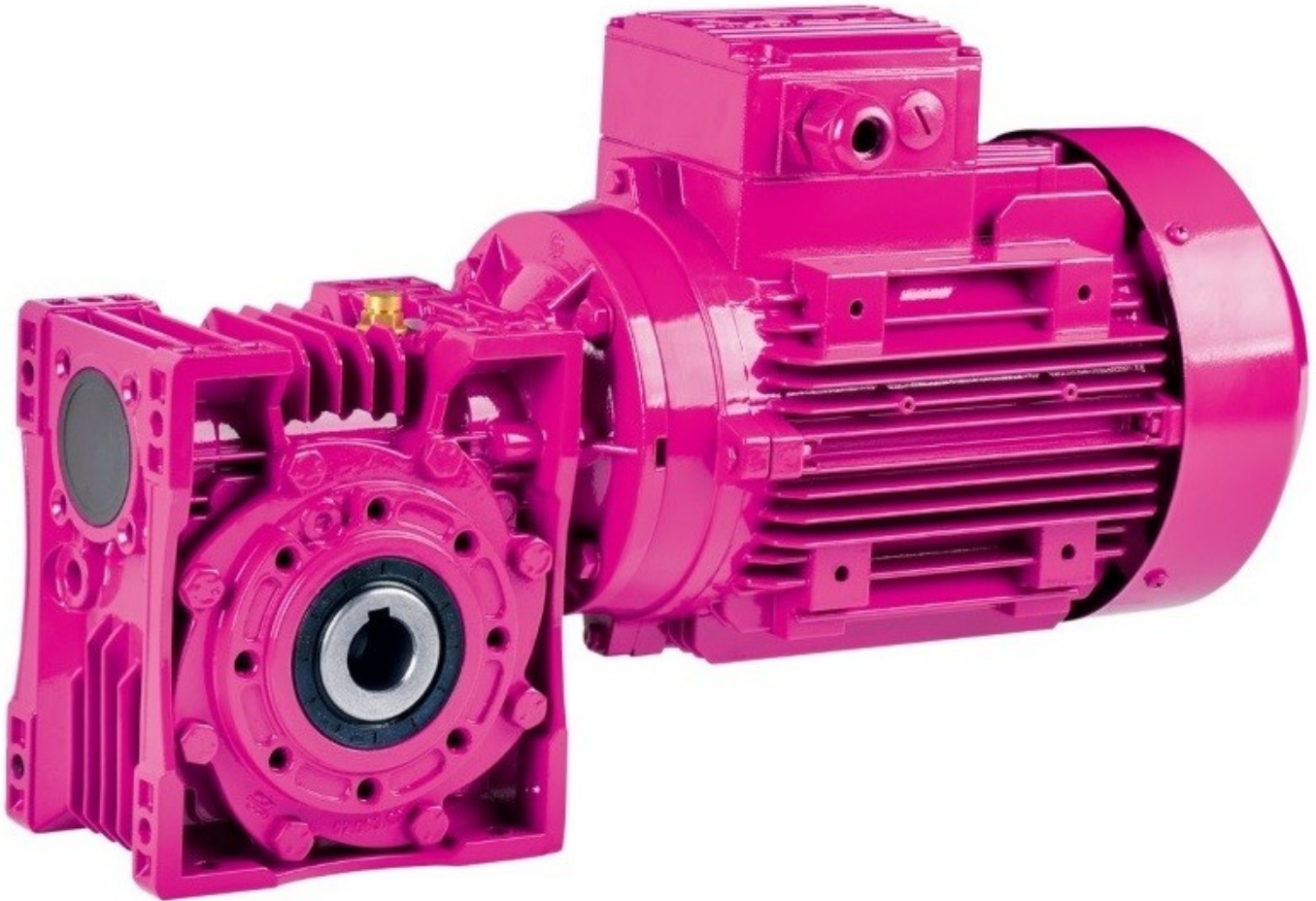


GEARBOX

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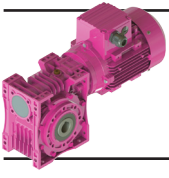


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Gearbox

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Genel Bilgiler General Information Einführung



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Tip Tanımlaması / Unit Designation / Typenbezeichnung

E V 063 . 01 - 3 E90S/4C - L05

Fren / Brake / Bremse

L-220V **Fanlı** / With Fan / Mit Lüfter
P-24V **Fanlı** / With Fan / Mit Lüfter
S-220 V **Fansız** / Without Fan / Ohne Lüfter
Z-24 V **Fansız** / Without Fan / Ohne Lüfter
00-5 Nm **10**-100Nm
01-10 Nm
02-25 Nm
04-40 Nm
05-50 Nm

Kutup sayısı / Number of Poles / Anzahl der Polen

Motor Büyüklüğü / Motor Size / Motorbaugröße

-EV Tipleri için / For EV types / Für Typen EV

E90S / 4

Kutup Sayısı / Pole Number / Anzahl der Polen

Gövde uzunluğu / Frame Length / Gehäuselänge des Motors

Motor büyüklüğü / Motor size / Motorbaugröße

Motor tipi / Motor type / Motortyp

Motor Verim Sınıfı / Motor Efficiency Class / Motor-Effizienzklasse

-EN tipleri için / For EN Types / Für Typen EN

| | |
|--------------------|---------------------|
| A05 :56 B5 | A09 :90 B5 |
| B05 :56 B14 | B09 :90 B14 |
| A06 :63 B5 | A10 :100 B5 |
| B06 :63 B14 | B10 :100 B14 |
| A07 :71 B5 | A11 :112 B5 |
| B07 :71 B14 | B11 :112 B14 |
| A08 :80 B5 | A13 :132 B5 |
| B08 :80 B14 | B13 :132 B14 |

Çıkış Mili Özelliği / Output Shaft / Eigenschaften der Abtriebswelle

00 :Standart delik milli / Hollow Output Shaft / Standarte Ausführung mit Hohlwelle

01 :Mil Çıkışlı / Solid Output Shaft / Vollwelle

02 :Flanşlı ve mil çıkışlı / Solid Output Shaft and Output Flange / Mit Flansch und Abtriebsvollwelle

03 :Flanşlı ve delik milli çıkışlı / Output Shaft and Output Flange. / Mit Flansch und Hohltriebsschwelle

04 :Çift çıkış milli / With Double Output Shaft / Mit doppelter Abtriebswelle

05 :Çift flanşlı ve çift çıkış milli / With Double Flange and Double Output Shaft / Mit doppeltem Flansch und doppelter Abtriebswelle

***06** :Motor karşısından giriş mili çıkışlı / With Shaft Extension from the Opposite Side of the Motor / Mit doppelter verlängerten Abtriebswelle auf der gegenüberliegenden Seite des Motors

****07** : Motorsuz çift giriş milli / With Double Input Shaft Without Motor / Mit doppelter Antriebswelle

08 : Çift flanşlı delik milli / With Double Output Shaft and Hollow Output Flange / Doppelte Flansch und Aufsteckenwelle

Gövde Büyüklük / Housing Size / Größe von Gehäuse

030, 040, 050, 063, 075, 080,100, 125

Giriş Tipi / Input Type / Eingangstyp

N :Motorsuz ve IEC B5/B14 Flanş girişli / IEC B5 / B14 Input Flange without Motor / Ohne Motor und mit IEC B5/B14 Eingangsflansch

V :Motorlu ve IEC B5/B14 Flanş girişli / IEC B5 / B14 Input Flange with Motor / Mit Motor und IEC B5/B14 Eingangsflansch

T :Motorsuz / Without Motor Solid Input Shaft / Eingang mit Vollwelle ohne Motor

***EN ve EV tiplerinde giriş mili 06 opsiyonel olarak verilmektedir. Gösterim şekli EN050.01-06.A06 vb şeklindedir.**

*06 code is optional input shaft option for EN and EV types. Description as EN050.01-06.A06.

*Kode 06 ist auswählbare Eingangswelle für EN und EV Typen. Kann bei EN050.01-06.A06 angesehen werden.

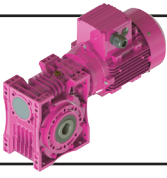
****ET tiplerinde giriş mili 07 opsiyonel olarak verilmektedir. Gösterim şekli ET050.00-07**

*07 code is optional input shaft types for ET types. Description as ET050.00-07

*Kode 07 ist auswählbare Eingangswelle für ET Typen. Kann bei ET050.00-07 angesehen werden.

Redüktör Tipi / Gearbox Type / Getriebe

E serisi / E serie / E Serie



Genel Bilgiler

General Information

Einführung



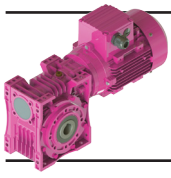
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Tip Tanımlaması / Unit Designation / Typenbezeichnung

| | |
|-----------|---|
| EN..00.. | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, delik milli çıkış / Worm geared units IEC B5/B14 input flange with hollow output shaft / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch und Hohlwelle am Ausgang |
| EN..01.. | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, mil çıkışlı / Worm geared units IEC B5/B14 input flange, with solid output shaft / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch und Vollwelle am Ausgang |
| EN..02.. | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, mil ve flanş çıkışlı / Worm geared units IEC B5/B14 input flange, with solid output shaft and output flange / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch, Vollwelle und Flansch am Ausgang |
| EN..03.. | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, delik milli ve flanş çıkışlı / Worm geared units IEC B5/B14 input flange, with hollow output shaft and output flange / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch, Hohlwelle und Flansch am Ausgang |
| EN..04.. | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, çift çıkış milli / Worm geared units IEC B5/B14 input flange, with double output shaft / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch und doppelter Abtriebswelle |
| EN..05.. | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, çift çıkış milli ve çift çıkış flanşlı / Worm geared units IEC B5/B14 input flange, with double output shaft and double output flange / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch, doppelter Abtriebswelle und doppelter Ausgangsflansch |
| EN..08.. | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, çift flanşlı delik milli / Worm geared units IEC B5/B14 input flange, with double output flange and hollow output shaft / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch, doppelter Ausgangsflansch und Hohlwelle am Ausgang |
| EN.....06 | Sonsuz tip IEC B5/B14 bağlantılı redüktörler, motor karşısından giriş mili çıkışlı / Worm geared units IEC B5/B14 input flange, shaft extension from the opposite side of the motor / Schneckenradgetriebe mit IEC B5/B14 Eingangsflansch und Verlängerung von Abtriebswelle auf der gegenüberliegenden Seite des Motors |

| | |
|-----------|--|
| EV..00.. | Sonsuz tip motorlu redüktörler, delik milli çıkış / Worm geared motors IEC B5/B14 input flange with motor, hollow output shaft / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch und Hohlwelle am Ausgang |
| EV..01.. | Sonsuz tip motorlu redüktörler, mil çıkışlı / Worm geared motors IEC B5/B14 input flange with motor, solid output shaft / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch und Vollwelle am Ausgang |
| EV..02.. | Sonsuz tip motorlu redüktörler, mil ve flanş çıkışlı / Worm geared motors IEC B5/B14 input flange with motor, solid output shaft and output flange / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch, Vollwelle und Flansch am Ausgang |
| EV..03.. | Sonsuz tip motorlu redüktörler, delik milli ve flanş çıkışlı / Worm geared motors IEC B5/B14 input flange with motor, hollow output shaft and output flange with motor / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch, Hohlwelle und Flansch am Ausgang |
| EV..04.. | Sonsuz tip motorlu redüktörler, çift çıkış milli / Worm geared motors IEC B5/B14 input flange with motor, double output shaft with motor / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch und doppelter Abtriebswelle |
| EV..05.. | Sonsuz tip motorlu redüktörler, çift çıkış milli ve çift çıkış flanşlı / Worm geared motors IEC B5/B14 input flange with motor, double output shaft and double output flange / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch, doppelter Abtriebswelle und doppelter Ausgangsflansch |
| EV..08.. | Sonsuz tip motorlu redüktörler, çift flanşlı delik milli / Worm geared motors IEC B5/B14 input flange with motor, double output flange and hollow output shaft / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch, doppelter Ausgangsflansch und Hohlwelle am Ausgang |
| EV....-06 | Sonsuz tip motorlu redüktörler, motor karşısından giriş mili çıkışlı / Worm geared motors IEC B5/B14 input flange with motor, shaft extension from the opposite side of the motor / Schneckenradtriebemotor mit IEC B5/B14 Eingangsflansch und Verlängerung von Abtriebswelle auf der gegenüberliegenden Seite des Motors |

| | |
|-----------|---|
| ET..00.. | Sonsuz tip motorsuz redüktörler, delik milli çıkış / Worm geared units solid input shaft, hollow output shaft / Schneckenradgetriebe mit Vollwelle am Eingang und Hohlwelle am Ausgang |
| ET..01.. | Sonsuz tip motorsuz redüktörler, mil çıkışlı / Worm geared units solid input shaft, solid output shaft / Schneckenradgetriebe mit Vollwelle am Eingang und Vollwelle am Ausgang |
| ET..02.. | Sonsuz tip motorsuz redüktörler, mil ve flanş çıkışlı / Worm geared units solid input shaft, solid output shaft and output flange / Schneckenradgetriebe mit Vollwelle am Eingang, Vollwelle und Flansch am Ausgang |
| ET..03.. | Sonsuz tip motorsuz redüktörler, delik milli ve flanş çıkışlı / Worm geared units solid input shaft, hollow output shaft and output flange / Schneckenradgetriebe mit Vollwelle am Eingang, Hohlwelle und Flansch am Ausgang |
| ET..04.. | Sonsuz tip motorsuz redüktörler, çift çıkış milli / Worm geared units solid input shaft, double output shaft / Schneckenradgetriebe mit Vollwelle am Eingang und doppelter Abtriebswelle |
| ET..05.. | Sonsuz tip motorsuz redüktörler, çift çıkış milli ve çift çıkış flanşlı / Worm geared units solid input shaft, double output shaft and double output flange / Schneckenradgetriebe mit Vollwelle am Eingang, doppelter Abtriebswelle und doppelter Ausgangsflansch |
| ET..08.. | Sonsuz tip motorsuz redüktörler, çift flanşlı ve delik mil çıkışlı / Worm geared units solid input shaft, double flange and hollow output shaft / Schneckenradgetriebe mit Vollwelle am Eingang, doppelter Ausgangsflansch und Hohlwelle am Ausgang |
| ET....-07 | Sonsuz tip motorsuz redüktörler, motorsuz çift giriş milli / Worm geared units solid input shaft, double input shaft / Schneckenradgetriebe mit doppelter Vollwelle am Eingang und Verlängerung von Motorwelle an der Seite des Deckels von Motorlüfter |



Genel Bilgiler

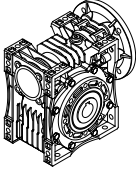
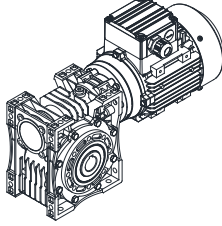
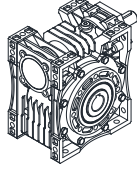
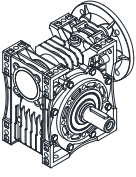
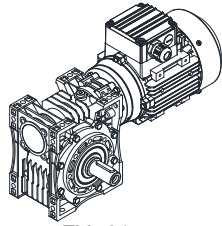
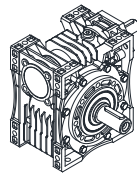
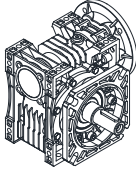
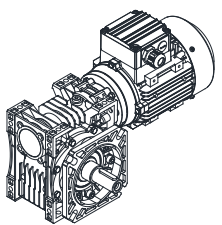
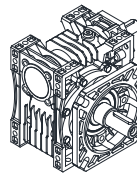
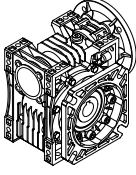
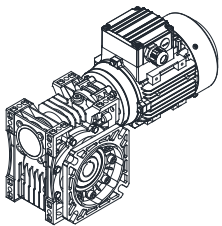
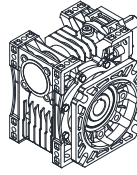
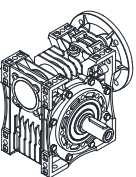
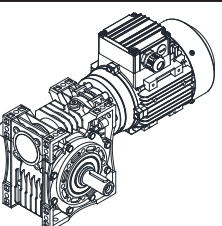
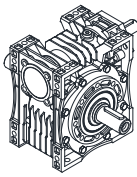
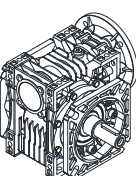
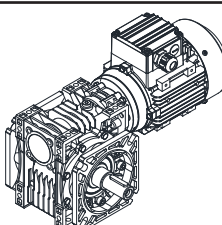
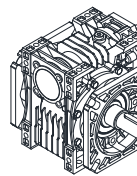
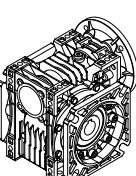
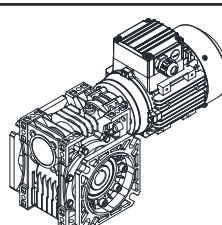
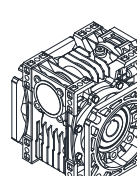
General Information

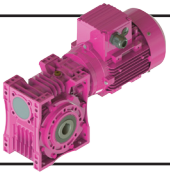
Einführung



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Tip Tanımlaması / Unit Designation / Typenbezeichnungen

| | | |
|--|--|--|
|  EN...00 |  EV...00 |  ET...00 |
|  EN...01 |  EV...01 |  ET...01 |
|  EN...02 |  EV...02 |  ET...02 |
|  EN...03 |  EV...03 |  ET...03 |
|  EN...04 |  EV...04 |  ET...04 |
|  EN...05 |  EV...05 |  ET...05 |
|  EN...08 |  EV...08 |  ET...08 |



Genel Bilgiler

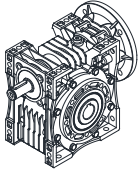
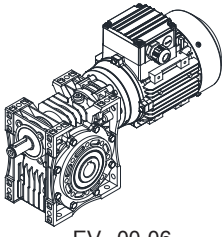
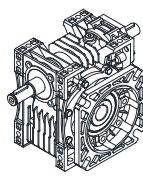
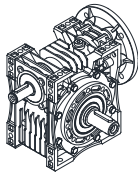
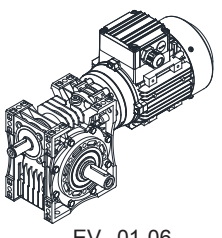
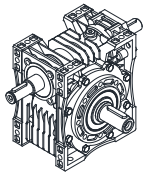
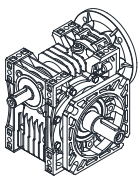
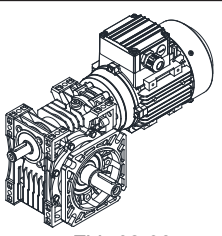
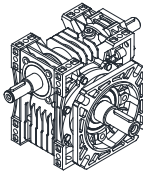
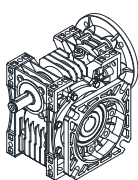
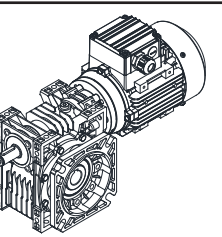
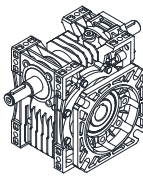
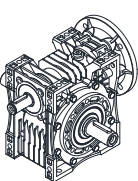
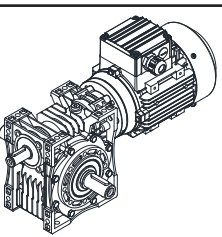
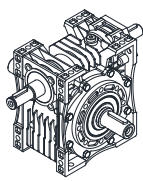
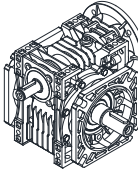
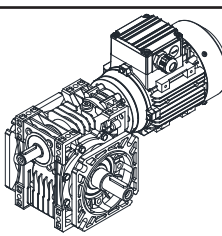
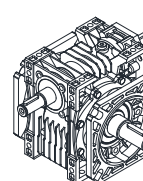
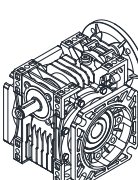
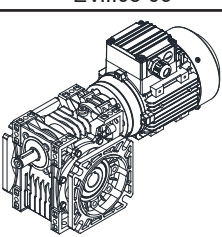
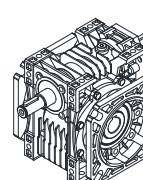
General Information

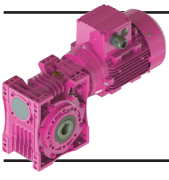
Einführung



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Tip Tanımlaması / Unit Designation / Typenbezeichnungen

| | | |
|---|---|---|
|  EN...00-06 |  EV...00-06 |  ET...00-07 |
|  EN...01-06 |  EV...01-06 |  ET...01-07 |
|  EN...02-06 |  EV...02-06 |  ET...02-07 |
|  EN...03-06 |  EV...03-06 |  ET...03-07 |
|  EN...04-06 |  EV...04-06 |  ET...04-07 |
|  EN...05-06 |  EV...05-06 |  ET...05-07 |
|  EN...08-06 |  EV...08-06 |  ET...08-07 |



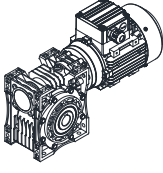
Genel Bilgiler General Information Einführung



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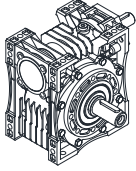
Örnek Tip Tanımlamaları

EV063.00.3E90S/4C



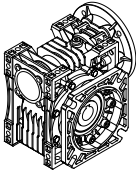
E.....: E serisi redüktör
V.....: IEC B5/B14 Motor bağlantılı
063.....: Gövde büyüklüğü
00.....: Delik mil çıkışı
3.....: Verim Sınıfı
E.....: Motor Tipi
90S.....: Motor büyüklüğü
4C.....: Motor Kutup Sayısı
L02.....: Fren Tipi

ET075.01



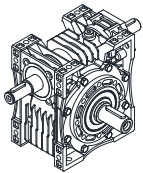
E.....: E serisi redüktör
T.....: Motorsuz giriş milli
075.....: Gövde büyüklüğü
01.....: Mil çıkışı

EN075.03 - A11



E.....: E serisi redüktör
N.....: Motorsuz ve IEC B5/B14 giriş flanşlı
075.....: Gövde büyüklüğü
03.....: Delik milli flanş bağlantılı çıkış
A11.....: 112 tip motor, B5/B14 bağlantı flanş

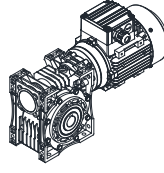
ET063.01-07



E.....: E serisi redüktör
T.....: Motorsuz giriş flanşlı
063.....: Gövde büyüklüğü
01.....: Delik milli flanş bağlantılı çıkış
07.....: Çift giriş milli

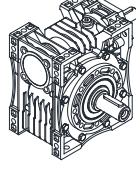
Sample Designations

EV063.00.3E90S/4C



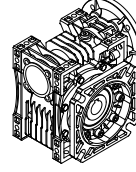
E.....: E series gearbox
V.....: IEC B5/B14 Motor Connection
063.....: Gear Unit Size
00.....: Hollow Shaft Output
3.....: Efficiency Class
E.....: Motor type
90S.....: Motor frame size
4C.....: Number of poles
L02.....: Brake Type

ET075.01



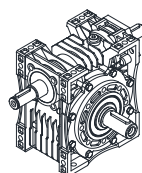
E.....: E series gearbox
T.....: Solid input shaft
075.....: Gear unit size
01.....: Solid output shaft

EN075.03 - A11



E.....: E series of gearbox
N.....: IEC B5/B14 flange without motor input
075.....: Gear unit size
03.....: Hollow output shaft and output flange
A11.....: IEC 112 B5/B14 motor connection flange.

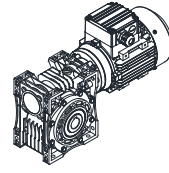
ET063.01-07



E.....: E series gearbox
T.....: Solid input shaft
063.....: Gear unit size
01.....: Solid output shaft
07.....: Double input shaft

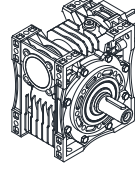
Typenbezeichnungsbeispiele

EV063.00.3E90S/4C



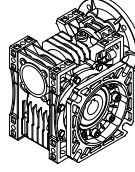
E.....: E serie Getriebe
V.....: Mit Motor und IEC B5/B14
Eingangsfansch
063.....: Größe von Gehäuse
00.....: Ausführung mit Hohlwelle
3.....: Effizienzklasse
E.....: Motortyp
90S.....: Motorbaugröße
4C.....: Anzahl der Polen
L02.....: Bremse

ET075.01



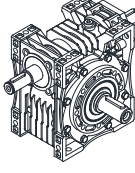
E.....: E serie Getriebe
T.....: Vollwelleneingang ohne Motor
075.....: Größe von Gehäuse
01.....: Vollwelle

EN075.03 - A11

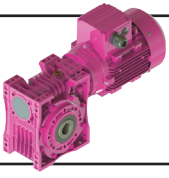


E.....: E serie Getriebe
N.....: Ohne Motor und mit IEC B5/B14
Eingangsfansch
075.....: Größe von Gehäuse
03.....: Mit Flansch und Hohltriebsschwelle
A11.....: Motor typ 112, B5 Motorflansch

ET063.01-07



E.....: E serie Getriebe
T.....: Vollwelleneingang ohne Motor
063.....: Größe von Gehäuse
01.....: Vollwelle
07.....: Doppelte Eingangswelle



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Redüktör Çıkış Özelliği / Gearbox Output Shaft and Flange Arrangement / Eigenschaft des Ausgangs

| Redüktör Çıkış Özelliği Gearbox Output Specification Eigenschaft des Ausgangs | R | L |
|---|---|---|
| E..01 | | |
| E..02 | | |
| E..03 | | |

Klemens Pozisyonları

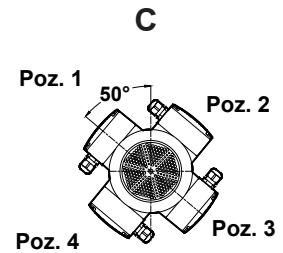
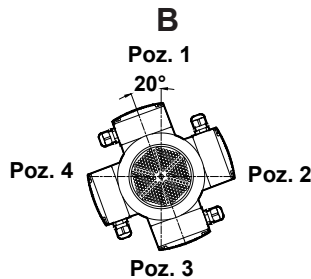
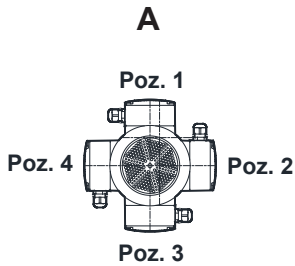
Aşağıda gösterildiği gibi klemens kutuları farklı açısal pozisyonlarda olabilir (A,B,C). Doğru pozisyon için ilgili ölçü sayfasını dikkate alınız.

Terminal Box Positions

Terminal Boxes can be at different angular positions (A,B,C) as shown below. Please take in to account related gearbox dimension pages for right position.

Klemmenkastenpositionen

Klemmenkasten können unterschiedliche Stellungen nehmen, siehe unten. (A,B,C) Bitte beachten Sie die Abmessungsseiten für die richtige Position.



Klemens Kablo Çıkış Pozisyonları

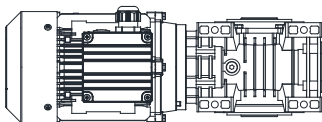
Kablo çıkış pozisyonları motor üstünden bakarak sağ veya sol olarak aşağıdaki gibi seçilebilir.

Terminal Box Cable Output Positions

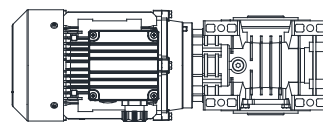
Terminal box cable output positions can be selected as right side or left side according to top view of terminal box.

Kabelausgang von der Klemmenkasten

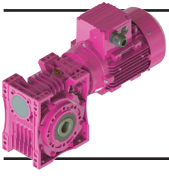
Kabelausgangsseite von der Klemmenkasten kann als links oder rechts gemäß Blickrichtung oben von dem Motor ausgewählt werden.



A tipi kablo çıkışı / A type Cable Output / Kabelausgang A



B tipi Kablo Çıkışı / B type Cable output / Kabelausgang B



Genel Bilgiler

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Moment kolu Pozisyonları

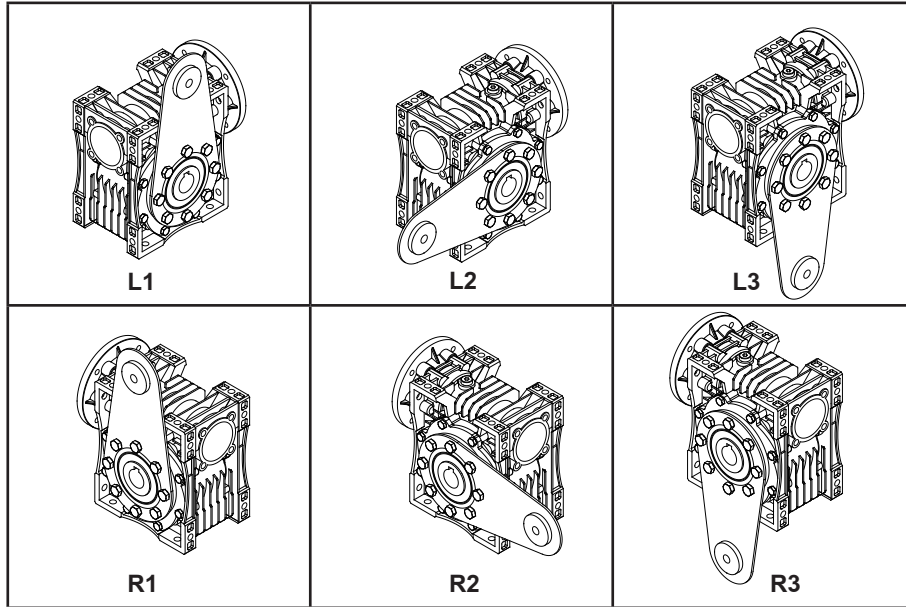
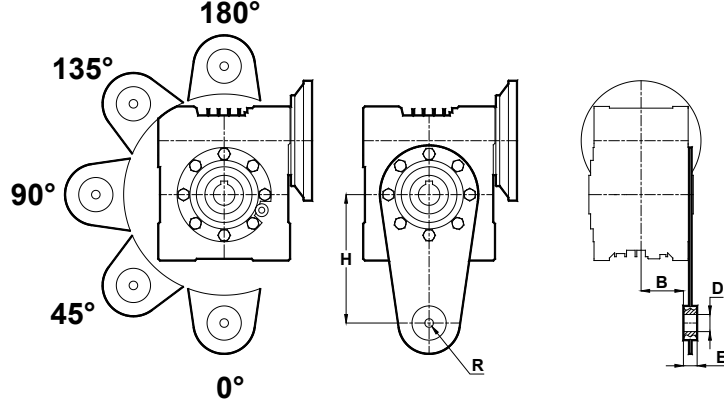
Moment kolu pozisyonları aşağıdaki gibidir.

Torque Arm Positions

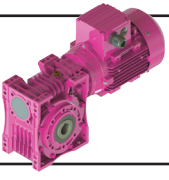
Torque arm positions are shown on below.

Stelle Von Drehmomentstütze

Drehmomentstützestellungen wurden unten dargestellt.



| Tipi Type Typ | b | e | d | h | R | Parça No. Part No. Teil Nr. |
|---------------------|------|----|----|-----|----|-----------------------------------|
| EX030 | 22 | 14 | 10 | 85 | 25 | 9E030 |
| EX040 | 31 | 14 | 10 | 100 | 25 | 9E040 |
| EX050 | 38 | 16 | 10 | 100 | 32 | 9E050 |
| EX063 | 49,5 | 16 | 10 | 150 | 36 | 9E063 |
| EX075 | 46,5 | 25 | 20 | 200 | 45 | 9E075 |
| EX080 | 49,5 | 25 | 20 | 200 | 45 | 9E080 |
| EX100 | 57,5 | 30 | 25 | 250 | 50 | 9E100 |
| EX125 | 72 | 30 | 25 | 300 | 55 | 9E125 |



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Redüktör Dönüş Yönleri

Giriş mili dönüş yönüne göre çıkış mili dönüş yönleri aşağıdaki gibidir.

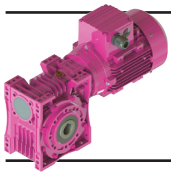
Direction of Rotation

Output shaft rotation directions according to the input shaft rotation directions are as follows.

Getriebedrehrichtungen Kalasanati.com

Drehrichtungen der Abtriebswelle in Abhängigkeit von den Antriebswellen sind wie folgt;

| Tip / Type / Typ | Saat Yönünde / Clockwise / Rechtslauf CW | Saat Tersi Yönünde / Counter Clockwise / Linkslauf CCW |
|------------------|--|--|
| ET...01 | | |
| ET...NT.. | | |
| ET...01-ET... | | |



Genel Bilgiler

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Einführung

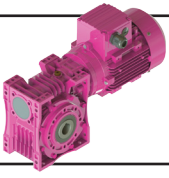


Motor Büyüklüğüne Göre Geometrik Mümkün Çevrim Oranları
Geometrically Possible Combinations of Ratios According to Motor Size
Geometrisch mögliche Kombinationen von Übersetzungen nach Motorbaugröße

Kalasanati.com

Motor Büyüklüğü / Motor Size / Motorbaugröße

| Tip Type Typ | Kademe Stages Stufen | 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 |
|--------------------|----------------------------|-------------|-------------|---------------|---------------|---------------|----------|----------|---------|
| E..030.. | W | 5,25-80 | 5,25-80 | - | - | - | - | - | - |
| E..040.. | W | | 8-100 | 8-100 | - | - | - | - | - |
| E..040-030.. | W+W | 84-3720 | 84-3720 | - | - | - | - | - | - |
| E..050.. | W | - | 19-100 | 7,25-100 | 7,25-100 | 7,25-100 | - | - | - |
| E..050-N01.. | W+H | - | 87-498 | 87-498 | 87-498 | - | - | - | - |
| E..050-030.. | W+W | 138-4980 | 138-4980 | - | - | - | - | - | - |
| E..063.. | W | - | - | 7,25-100 | 7,25-100 | 7,25-100 | - | - | - |
| E..063-N01.. | W+H | - | 117-600 | 117-600 | 117-600 | - | - | - | - |
| E..063-030.. | W+W | 210,25-4920 | 210,25-4920 | - | - | - | - | - | - |
| E..075.. | W | - | - | - | 7,5-100 | 7,5-100 | 7,5-100 | 7,5-100 | - |
| E..075-N11.. | W+H | - | - | 111,75-745 | 111,75-745 | - | - | - | - |
| E..075-040.. | W+W | - | - | 60-6200 | 60-6200 | - | - | - | - |
| E..080.. | W | - | - | - | 7,5-110 | 7,5-110 | 7,5-110 | 7,5-110 | - |
| E..080-N11.. | W+H | - | - | 111,75-819,5 | 111,75-819,5 | - | - | - | - |
| E..080-040.. | W+W | - | 180-5084 | 180-5084 | - | - | - | - | - |
| E..100.. | W | - | - | - | 7,5-107 | 7,5-107 | 7,25-107 | 7,25-107 | - |
| E..100-N11 | W+H | - | - | 149-797,15 | 149-797,15 | - | - | - | - |
| E..100-050.. | W+W | - | 180-5084 | 180-5084 | 180-5084 | 180-5084 | - | - | - |
| E..125.. | W | - | - | - | - | 7,25-107 | 7,25-107 | 7,25-107 | 7,25-62 |
| E..125-N21.. | W+H | - | - | 125,58-516,81 | 125,58-516,81 | 125,58-516,81 | - | - | - |
| E..125-063 | W+W | - | 184,88-5084 | 184,88-5084 | 184,88-5084 | 184,88-5084 | - | - | - |



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Servis Faktörü

Servis faktörü (fs) redüktörün çalıştığı şartlar ile uyumlu olması için gerekli olan emniyet katsayısıdır. "fs =1" Düzgün ve sakin yüklerde, günlük sekiz saat ve saatte yüz start çalışmayı karşılar.

Aşağıdaki etkenlere bağlıdır:

- Günlük çalışma süresi
- Yük sınıfı
- Bir saatteki start sayısı
- Redüktör tahrik tipi
- Diğer gözlemler

Bu etkenleri göz önüne aldığımızda, gerekli servis faktörünü belirlemek için:

1. Makinanın günlük çalışma süresini tespit ediniz.
2. Makinanın ne türde yükler verdiğini tespit ediniz (Sayfa 20-21).

- U - Düzgün ve sabit yükler
- M - Orta darbeli yükler
- H - Ağır darbeli yükler

Yük sınıfının daha teknik seçimi için rotora indirgenmiş toplam atalet momenti formülünden faydalanabilirsiniz (Sayfa 21).

3. Saatteki start sayısını tespit ediniz.
4. İlk üç maddeye bağlı servis faktörünü aşağıdaki tablodan seçiniz.

5. fs Redüktörümüzün tahrik tipine bağlı olarak "k" katsayısı ile çarpılarak artırılır.

- k=1 :Elektrik motoru veya hidromotor
k=1.25 :İçten yanmalı çok silindirli motor
k=1.5 :İçten yanmalı tek silindirli motor

Service Factor

Service Factor (fs) is a safety coefficient, which takes into account the different running conditions of the driven machine. "fs=1" is used for uniform loads 8 hours working per day and up to 100 starts per hour.

Service factor depends on:

- Running time
- Nature of load
- Frequency of starting
- Driver type
- Other considerations

For the right selection of the needed service factor for your machine;

1. Determine the running time of driven machine.
2. Select the nature of load of driven machine (Page 20-21).

- U - Uniform loads
- M - Moderate loads
- H - Heavy shock loads

For a better selection, the nature of load can be calculated from the formulas given (page 21).

3. Determine frequency of starting.
4. After determining the above mentioned factors, the service factor can be easily selected from the table given below.
5. The selected service factor multiplied with the factor "k" according to the driver type;

- k=1 :Electric motor or Hydraulic motor
k=1.25 :Multicylinder internal combustion engine
k=1.5 :Single cylinder internal combustion engine

Betriebsfaktor

Der Betriebsfaktor (fs) ist ein Sicherheitsfaktor für die Getriebe, damit sie unter den Betriebsbedingungen sicher arbeiten. "fs =1" steht für gleichförmige Belastung, 8 Stunden pro Tag und bis zu 100 Schaltungen pro Stunde.

Betriebsfaktor ist abhängig von:

- Betriebsdauer
- Belastungsart
- Schalthäufigkeit
- Antriebsart
- Andere Faktoren

Um die richtigen Betriebsfaktor festzulegen;

1. Betriebsdauer der angetriebenen Maschine bestimmen.
2. Belastungsart der angetriebenen Maschine auswählen (Seite 20-21).

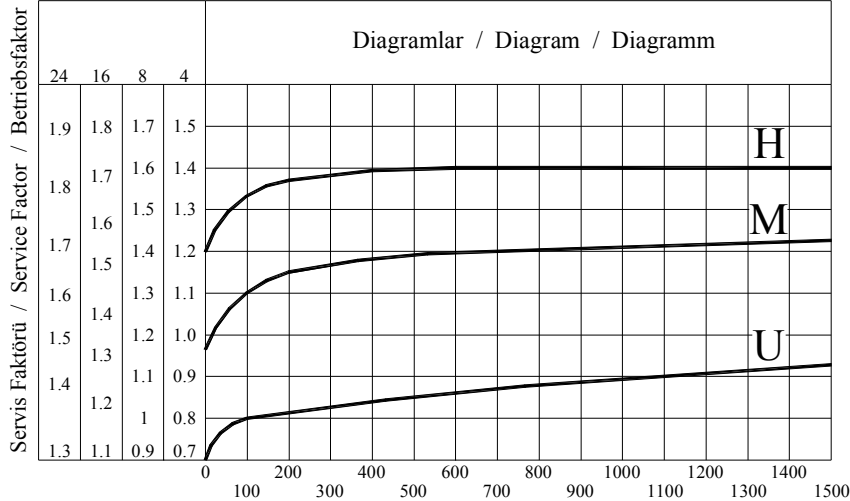
- U - Gleichförmige Belastung
- M - Ungleichförmige Belastung
- H - Stark ungleichförmige Belastung

Um eine bessere Auswahl zu treffen, können die Belastungsarten mit den angegebenen Formeln (Seite 21) errechnet werden.

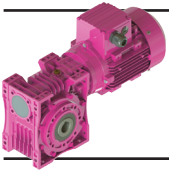
3. Schalthäufigkeit bestimmen.
4. Nach Bestimmen der oben angegebenen Werte, können die Betriebsfaktoren von der unten stehenden Tabelle entnommen werden.
5. Der ausgewählte Betriebsfaktor muß mit dem Faktor "k" abhängig von der Antriebsart multipliziert werden

- k=1 :Elektromotor oder Hydraulikmotor
k=1.25 :Vielzylindermotor
k=1.5 :Einzylindermotor

Günlük Çalıřma Süresi
Operating Time hour / Day
Laufzeit Std. / Tag



Start sayısı / Saat
Cycle / Hour
Schaltungen / Std.



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Yük Sınıflandırması

Krenler:

- U - Kaldırma Dişlileri
- Palanga Dişlileri
- M - Bomlu Vinç Dişlileri
- Yana Döndürme Dişlileri
- H - Yürütme Dişlileri

Pompalar:

- U - Santrifuj Pompalar (ince sıvı)
- M - Santrifuj Pompalar (yarı sıvı)
- H - Basınçlı Pompalar
- Dalgıç Pompalar

Taş ve Kil İşleme Makinaları:

- H - Çekiçli Değirmenler
- Döner Fırınlr
- Dövücü Değirmenler
- Kırıcılar
- Küreli Değirmenler
- Tuğla Presi
- Tüp Değirmenler

Tekstil Makinaları:

- M - Basma ve Boyama Makinaları
- Dokuma Tezgahları
- Hallac Makinaları
- Harman Makinaları
- Taneleme (Debegat)Tekneleri

Yağ Sanayi:

- M - Besleme Pompaları
- Döner Delme Teçhizatları

Yiyecek Sanayi:

- M - Kutu Bıçaklar
- Kutu Kaplama
- Mayalama Tekneleri
- H - Kenar Açma

Çamaşır Yıkama Makinaları:

- M - Döner Kurutucular
- Yıkama Makinaları

Hadde Makinaları:

- M - Hız Ayarlı Silindirler
- Sabit Silindirler
- Sarma Makaraları
- Tel Çekme
- H - Çubuk Kesme Makinaları
- Döner Tablalar (büyük)
- Kabuk Sıyırma Makinaları
- Plaka Haddeleme
- Silindir Haddeleme
- Soğuk Haddeleme

Load Classification

Cranes:

- U - Hoist Gears
- Lifting Gears
- M - Defrocking jib Gears
- Slowing Gears
- H - Travelling Gears

Pumps:

- U - Centrifugal Pumps (light liquids)
- M - Centrifugal Pumps (semi liquid)
- H - Pressure Pumps
- Plunger Pumps

Stone and Clay Working Machines:

- H - Hammer Mills
- Rotary Kilns
- Beater Mills
- Breakers
- Ball Mills
- Brick Presses
- Tüp Mills

Textile Machines:

- M - Printing and Dyeing Machines
- Looms
- Willow
- Batchers
- Tanning Vats

Oil Industry:

- M - Pipeline Pumps
- Rotary Drilling Equipment

Food Industry:

- M - Cane Knives
- Cane Crushers
- Mach Tubs
- H - Cane Mills

Laundries:

- M - Tumblers
- Washing Machines

Metal Rolling Mills:

- M - Roller Adjustment Drives
- Roller Straightened
- Winding Machines
- Wire Drawing Benches
- H - Billet Shears
- Rotary Tables (heavy)
- Descaling Machines,
- Sheet Mills
- Manipulators
- Cold Rolling Mills

Belastungsart

Krananlagen:

- U - Einziehwerke
- Hubwerke
- M - Schwenkwerke
- Wippwerke
- H - Fahrwerke

Pumpen:

- U - Kreiselpumpen (leichte Flüssigkeit)
- M - Kreiselpumpen (zahe Flüssigkeit)
- H - Prebpumpen
- Plungerpumpen

Stein- und Erdebearbeitende Maschine

- H - Hammermühlen
- Drehofen
- Schlagmühlen
- Brecher
- Kugelmühlen
- Ziegelpressen
- Rohrmühlen

Textilmaschinen:

- M - Drukerei
- Farbereimachinen
- Aufwickler
- Webstuhle
- Gerbfasser
- Reibwolfe

Erdölgewinnung:

- M - Pipeline Pumpen
- Rotative Bohranlagen

Nahrungsmittelmachinen:

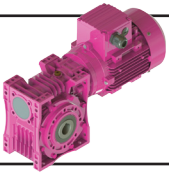
- M - Rohrschneiden
- Knetmaschinen
- Maichen
- H - Rohrmühlen

Waschereimaschinen:

- M - Trommeltrockner
- Waschmaschinen

Wälzwerke:

- M - Rollenrichtmaschinen
- Walzenantriebe
- Drahtzuge
- Haspeln
- H - Blechscheren
- Rollgänge (schwer)
- Knüppelscheren
- Schöpfscheren
- Stranggubanlagen
- Kaltwälzwerke



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İnşaat Makinaları:

- M - Beton Mikserleri
- Ağır Yük Asansörleri

Kağıt Makinaları:

- H - Islak Presler
- Kağıt Hamur Makinaları
- Kurutma Silindirleri
- Perdahlama Silindirleri

Kauçuk Makinaları:

- M - Kalenderler
- Mikserler
H - Extruderler
- Hamur Karma
- Silindirler

Kimya Sanayi:

- M - Agidatörler (yarı sıvı)
- Kurutma Merdaneleri
- Mikserler ve Silindirleri

Konveyörler:

- M - Bant Ceppli Konveyörler
- Çelik Bantlı Konveyörler
- Dökme Yüklü Kayışlı Konv.
H - Yük Asansörleri
- Parça Yüklü Kayışlı Konv.

Building Machines:

- M - Concrete Mixers
- Hoist

Paper Machines:

- H - Wet Presses
- Pulpers
- Drying Cylinders
- Glazing Cylinders

Rubber Machinery:

- M - Calenders
- Mixers
H - Extruders
- Pug Mills
- Rolling Mills

Chemical Ind.:

- M - Aggidators (semi- liquid)
- Drying Drums.
- Mixers and Rolling Mills

Conveyors:

- M - Band Pocket Conveyors
- Steel Belt Conveyors
- Belt Conveyors
H - Hoists
- Bulk Belt Conveyors

Baumaschinen:

- M - Betonmischermaschinen
- Bauaufzüge

Papiermaschinen:

- H - Naßpressen
- Gautschen
- Trockenzylinder
- Glattzylinder

Kunststoffmaschinen:

- M - Kalender
- Mischer
H - Extruder
- Knetwerke
- Wälzwerke

Chemische Industrie:

- M - Rührwerke (leichte Flüssig.)
- Trockentrommeln
- Mischer und Wälzwerke

Förderanlagen:

- M - Gurtaschenbecherwerke
- Stahlbandförderer
- Gurtbandförderer (Schüttgut)
H - Schrägaufzüge
- Gurtbandförderer(Stückgut)

| | | |
|---|--|--------------|
| U | Uniform Yük Uniform Loads Gleichförmige Last | $F_i < 0,25$ |
| M | Orta Darbeli Yük Moderate Loads Ungleichförmige Last | $F_i < 3$ |
| H | Darbeli Yük Heavy Shock Loads Starke ungleichförmige Last | $F_i < 10$ |

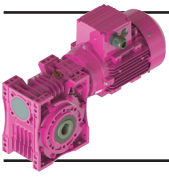
$$J'_{ext} = \frac{J_{ext}}{i^2}$$

$$F_i = \frac{J'_{ext}}{J_{rotor}}$$

J'_{ext} : **Motor miline indirgenmiş toplam dış atalet momenti**
External moments of inertia reduced to the motor shaft
Externe massenträgheitsmomente reduziert auf Motorwelle

i : **Tahvil oranı**
Transmission ratio
Übersetzung

J_{rotor} : **Motorun atalet momenti**
Moments of inertia to the motor
Massenträgheitsmoment



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Radyal Yükler

Çıkış miline gelebilecek radyal ve eksenel yükler yatak ömrüne göre belirlenmiş ve tablolar halinde verilmiştir. Bu tablolarda verilen F_{qam} güvenilir radyal yükü emniyet katsayısı 1 için ve yükün mil ortasını yüklediği durum için verilmiştir. Darbeli yüklerin olması ($f_s=1$) durumunda izin verilen radyal yük değerleri servis faktörü kadar azaltılmalıdır. Verilen radyal ve eksenel yükler kuvvetin en kötü açı şartında etki ettiği durum için verilmiştir. Mil ucuna gelen kuvvetin açısına göre daha yüksek radyal yükler mümkündür (Firmamıza danışınız). Bağlantı şekline göre oluşan radyal yük F_q sayfa 23 de verilen formüller yardımı ile hesaplanır.

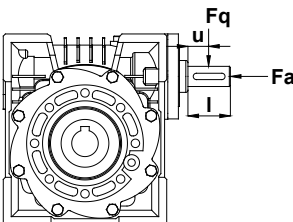
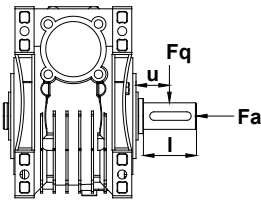
Redüktör seçiminde ;

$$\begin{aligned} F_{qa} &\leq F_{qam} \\ F_{qe} &\leq F_{qem} \end{aligned}$$

şartı göz önünde tutulmalı. Eğer etkiyen radyal kuvvet milin orta noktasında değil ise verilen güvenilir değerler aşağıda verilen formül ile düzeltilmesi gerekir.

$$\begin{aligned} F_{qam}' &= F_{qam} \cdot \frac{t}{y+u} \\ F_{qem}' &= F_{qem} \cdot \frac{t}{y+u} \end{aligned}$$

"t", "y" Değerleri aşağıda verilmiştir. "u" Değeri görüldüğü gibi kuvvetin uygulama noktasıdır.



Overhung Loads

The permissible overhung loads are calculated by considering working life and is listed on the tables. The given permissible overhung loads F_{qam} are based on safety factor 1 and are valid for forces which are applied to the midpoint of the shaft.

For shock loading ($f_s = 1$) permissible radial loads must be divided with service factor. The listed permissible overhung loads are based on the worst loading direction. Higher overhung loads can be applied for different loading directions (Please ask if requested). The effective overhung load at the gearbox shaft F_q will be determined with the given formulas on page 23.

In Selection ;

$$\begin{aligned} F_{qa} &\leq F_{qam} \\ F_{qe} &\leq F_{qem} \end{aligned}$$

these formulas must be taken into consideration. If the load is not applied at the midpoint of the shaft; the given permissible load must be corrected with the following formulas.

$$\begin{aligned} F_{qam}' &= F_{qam} \cdot \frac{t}{y+u} \\ F_{qem}' &= F_{qem} \cdot \frac{t}{y+u} \end{aligned}$$

The values "t", "y" can be taken from the below table. The value "u" is the length of the application point as shown below.

Querkräfte

Die in den nachfolgenden Tabellen angegebenen zulässigen Radialbelastungen F_{qam} gelten bei Kraftangriff auf die Mitte Wellenendes. Den Angaben liegt der Sicherheitsfaktor gleich 1 zu Grunde. Bei stoßartigen Belastungsfällen ist auch hier der entsprechende Betriebsfaktor ($f_s=1$) zu berücksichtigen. Zulässige Axialkräfte F_{ama} oder F_{ame} wurden für den Fall mit schlechter Belastungsrichtung angegeben. Bei der Ermittlung der zulässige Querkräfte sind höhere Werte möglich (Bitte Rückfragen). Die auftretende Querkraft F_q ab der Getriebewelle wird wie in der nachfolgenden Formel bestimmt.

Bei dieser Auswahl;

$$\begin{aligned} F_{qa} &\leq F_{qam} \\ F_{qe} &\leq F_{qem} \end{aligned}$$

müssen die oben angegebenen Bedingungen berücksichtigt werden. Ist der Kraftangriff nicht auf Wellenmitte, so kann die zulässige Querkraft mit Hilfe der unten stehenden Formel auf jede beliebige Stelle umgerechnet werden.

$$\begin{aligned} F_{qam}' &= F_{qam} \cdot \frac{t}{y+u} \\ F_{qem}' &= F_{qem} \cdot \frac{t}{y+u} \end{aligned}$$

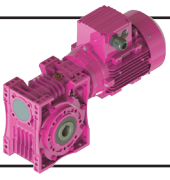
Die Werte "t" und "y" sind in den nachfolgenden Tabellen angegeben. Der Wert "u" ist die Stelle des Kraftangriffs wie auf der nächsten Seite angegeben.

Çıkış mili radyal kuvvet hesabı düzeltme katsayıları
Overhung Load correcting values on output shaft
Korrigierungszahlen für Querkraft auf Ausgangswelle

| Tip Type Typ | E.030 | E.040 | E.050 | E.063 | E..075 | E.080 | E.100 | E.125 |
|--------------------|-------|-------|-------|-------|--------|-------|-------|-------|
| t | 67 | 86 | 107 | 131 | 138,5 | 163 | 185 | 210 |
| y | 53 | 66 | 82 | 106 | 106 | 123 | 135 | 155 |
| l | 30 | 40 | 50 | 50 | 65 | 65 | 80 | 100 |

Giriş mili Radyal kuvvet hesabı düzeltme katsayıları
Overhung load correcting values on input shaft
Korrigierungszahlen für Querkraft auf Eingangswelle

| Tip Type Typ | ET030 | ET040 | ET050 | ET063 | ET075 | ET080 | ET100 | ET125 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| t | 85 | 118 | 144 | 172,5 | 195 | 207 | 247 | 310 |
| y | 75 | 103 | 129 | 152,5 | 170 | 182 | 217 | 278 |
| l | 20 | 30 | 40 | 40 | 50 | 50 | 60 | 65 |



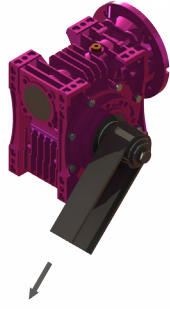
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Radyal Yüklerin Hesabı

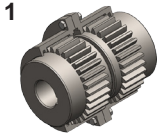
Radyal Yük F_q [N]'nin hesaplanması da, gerekli tahrik momenti M [Nm], kasnak veya dişli çapı D [mm] olmak üzere aşağıdaki formüller kullanılır.

Calc. Of Overhung Loads

Overhung Load F_q [N] is calculated with the following equations where required moment M [Nm] and hoop or gear diameter D [mm] is used.

Berechnung der Querkräfte

Der Fall der radialen Belastung F_q [N] kann mit den angegebenen Gleichungen berechnet werden. Antriebsmoment M [Nm] und Zahnrad- oder Riemenscheiben Durchmesser D [mm].



1

1. Elastik Kaplin

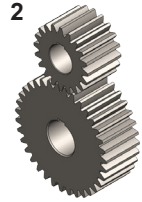
Çalışma sırasında oluşan sapmalar kaplinin güvenlik sınırları içinde ise kuvvetler ihmal edilebilir.

1. Elastic Coupling

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

1. Elastische Kupplung

Wenn die elastische Kupplung in ihrem zulässigen Arbeitsbereich arbeitet, können die radialen Belastungen vernachlässigt werden.



2

2. Düz Dişli

(20° kavrama açısı)

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

2. For Spur Gear

(Pressure angle 20°)

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

2. Stirnradgetriebe

(Angriffswinkel 20°)

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



3

3. Küçük Hızlarda Zincir Dişli (z>17)

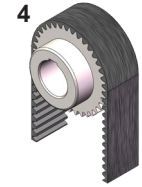
$$F_q = \frac{2100 \times M_2}{D}$$

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

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

3. Kettenantrieb mit niedriger Geschwindigkeit (z>17)

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



4

4. Triger Kayış

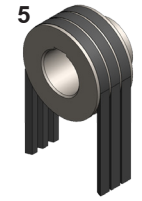
$$F_q = \frac{2500 \times M_2}{D}$$

4. For Triger Belt

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

4. Zahnriemenantrieb

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



5

5. V Kayış

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

5. For V Belt

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

5. Keilriemenantrieb

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



6

6. Gerdirme Makaralı Kayış

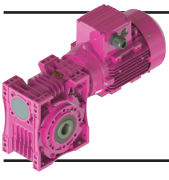
$$F_q = \frac{5000 \times M_2}{D}$$

6. Flat Belt With Spanning Pulley

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

6. Flachriemenantrieb mit Spannungstrommel

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



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Sonsuz Vidalarda Termik Güç

Güç-devir tablolarında verilen nominal termik güç P_t değerleri, 70°C yağ sıcaklığını aşmayacak şekilde 20°C maksimum çevre sıcaklığında sürekli çalışma durumu için, redüktör girişine uygulanabilir maksimum güç değeridir. Gerçek termik güç P_{tg} değeri, yukarıda bahsedilen P_t değerinden yüksek olabilir.

$$P_{tg} = P_t \times k_t$$

Burada k_t değeri çevre sıcaklığı ve yüklenme durumuna bağlı termik faktördür. Aşağıdaki tablodan k_t seçilebilir.

Redüktöre uygulanan giriş gücü P_g değeri verilen P_{tg} değerinden daha düşük olmalıdır. ($P_g < P_{tg} = P_t \times k_t$). Eğer $P_g > P_{tg}$ ise özel imkanlar araştırılmalıdır (bize danışınız).

Termik güç değeri sürekli çalışma süresi 1 - 3 saati geçmiyorsa ve bu sürekli çalışmadan sonra redüktör çevre sıcaklığına düşene kadar çalışmıyorsa ihmal edilebilir. (yaklaşık 1 - 3 saat).

Thermal Power for Worm Gearboxes

Nominal thermal power P_t , indicated in our catalogue in performance tables can be applied at the gear reducer input when operating in continuous duty at a maximum ambient temperature of 20° C without exceeding 70° C oil temperature. Thermal power P_{tg} , can be higher than the nominal P_t , described above, as per the following formula,

$$P_{tg} = P_t \times k_t$$

where k_t is the thermal factor depending on ambient temperature and type of duty as indicated in the table below.

Applied power P_g , should be less than or equal to the P_{tg} value ($P_g < P_{tg} = P_t \cdot k_t$). If $P_g > P_{tg}$, explore the possibilities and consult us.

Thermal power need not be taken into account when maximum duration of continuous running time is 1 - 3 h followed by shutdown periods long enough to restore the gear reducer to near ambient temperature (approx. 1 - 3 h).

Thermische Leistung für Schneckenradgetriebe

Die Werte in den Leistung - Drehzahl Tabellen geben die Nennwärmeleistung P_t an. Unter dieser Größe versteht man diejenige Leistung, die bei Dauerbetrieb und max. Umgebungstemperatur von 20°C an die Antriebswelle des Getriebes angelegt werden kann, ohne Getriebeöltemperatur 70°C zu überschreiten. Die Wärmeleistung P_{tg} kann höher liegen als die beschriebene Nennwärmeleistung P_t . Es gilt die Formel

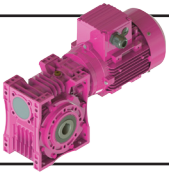
$$P_{tg} = P_t \times k_t$$

wobei k_t der Wärmefaktor ist, dessen Werte im Verhältnis zur Umgebungstemperatur und Betriebsart stehen und von der Tafel entnommen werden können.

Die P_g Werte müssen überprüft werden, ob die Leistung P_g kleiner oder gleich der Wärmeleistung P_{tg} ist ($P_g < P_{tg} = P_t \cdot k_t$). Bei $P_g > P_{tg}$ eventuelle Verwendungen bitte rückfragen.

Die Wärmeleistung braucht nicht berücksichtigt zu werden, wenn der Dauerbetrieb höchstens 1 - 3 Stunden währt und sich daran genügend lange Ruhezeiten (ca. 1 - 3 Stunden) anschließen, damit im Getriebe wieder ca. die Umgebungstemperatur herrscht.

| Maksimum Çevre Sıcaklığı [°C] Maximum Ambient Temperature [°C] Maximale Umgebungstemperatur [°C] | Çalışma Türü için k_t / k_t for Operation Type / k_t für Betriebsarten | | | | |
|--|--|---|-----|-----|-----|
| | Sürekli (S1) | Duraksamalı çalışma şekli (S3...S6) 60 dakikada çalışma yüzdesi | | | |
| | Continuously (S1) | Duty on intermittent load (S3...S6) Intermittence ratio for 60 minutes running | | | |
| | Dauerhaft (S1) | Betrieb bei unterbrochener Belastung (S3...S6) Verhältnis in Prozent bei 60 Minuten intermittierendem Betrieb | | | |
| | - | %60 | %40 | %25 | %15 |
| 40 | 0,8 | 0,9 | 1 | 1,2 | 1,3 |
| 30 | 0,9 | 1,1 | 1,2 | 1,4 | 1,5 |
| 20 | 1 | 1,2 | 1,4 | 1,5 | 1,7 |
| 10 | 1,2 | 1,4 | 1,5 | 1,7 | 1,9 |



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Verim

Redüktörlerde verim $\eta = P_{N2} / P_{N1}$ oranından elde edilir. Bu değer redüktörün normal şartlarda çalıştığı, iyi yağlama yapıldığı ve yükün nominal değere yakın olduğu taktirde geçerlidir. Sonsuz Vidalı redüktörlerde ilk 50 saatlik çalışma süresi içinde verim sonsuz vida tablolarında verilen değerlerden aşağıdaki yüzdeler kadar (ağız sayılarına bağlı olarak) daha düşük olacaktır;

z1= 1 ; %12
z1= 2 ; %6
z1= 3 ; %3

Statik verim η_s start anında oluşan verimdir ve dinamik verim η' nin çok altındadır. Motor nominal devrine ulaştığında redüktörün verimi katalogta verilen değerlere ulaşacaktır. Helisel dişli tiplerde katalogta verim değeri verilmemiştir.

Helisel dişli tiplerin (monoblok, delik milli ve yatık) verimleri kademe başına 0,98 civarındadır.

İnvers verim η_{inv} çıkış mili tarafından redüktöre tahrik gelmesi ile oluşan verimdir ve her zaman η' dan küçüktür. Bu değer aşağıdaki gibi hesaplanır.

$$\eta_{inv} = 2 - \frac{1}{\eta}$$

Benzer şekilde statik invers verim:

$$\eta_{Sinv} = 2 - \frac{1}{\eta_s}$$

Efficiency

Efficiency is derived from the $\eta = P_{N2} / P_{N1}$ ratio. The value obtained will be valid assuming normal working conditions, correct lubrication and a load near the nominal value. In worm gearboxes, during the initial working period (about 50 hours) efficiency will be less than the catalogue values (according worm start number) referred to the values below ;

z1=1 ; 12%.
z1=2 ; 6%.
z1=3 ; 3%

Static efficiency η_s is the efficiency on starting, and is less than η ; as speed picks up gradually, efficiency will rise correspondingly until the catalogue value is reached. On the helical gearboxes the efficiency is not given on the performance tables.

In these types (Monoblock, Hollow Shaft and Horizontal type gearboxes) the efficiency is about 0,98 for each stage.

Inverse efficiency η_{inv} that produced by the worm wheel as drive is always less than η . It can be calculated approximately as follow:

$$\eta_{inv} = 2 - \frac{1}{\eta}$$

Likewise Static inverse efficiency;

$$\eta_{Sinv} = 2 - \frac{1}{\eta_s}$$

Wirkungsgrad

Wirkungsgrad ergibt sich aus dem Verhältnis $\eta = P_{N2} / P_{N1}$. Die damit berechneten Werte beziehen sich auf normale Betriebsbedingungen, einwandfreie Schmierung und dem Nennwert ungefähr gleicher Belastung. Bei Schneckengetrieben der Wirkungsgrad erweist sich in den ersten Betriebsstunden (ca. 50 Std.) etwas niedriger. Es ist abhängig von Zähnezahl wie unten angegeben.

z1= 1 ; 12%
z1= 2 ; 6%
z1= 3 ; 3%

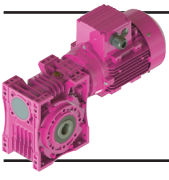
Der statische Wirkungsgrad η_s beim Anlauf liegt weit unter den Tabellenwerten; mit Anstieg der Drehzahl erhöht sich der Wirkungsgrad bis auf die Tabellenwerte. Bei Stirnradgetrieben ist Wirkungsgrad nicht angegeben. Für Stirnradgetrieben (Monoblok, Flachgetriebe und Horizontal type getrieben) Wirkungsgrad ist ungefähr 0,98 für jede Stufe.

Den umgekehrten Wirkungsgrad η_{inv} hat man, wenn der Antrieb vom Schneckenrad erteilt wird. Er ist stets kleiner und kann annäherungsweise durch die Formeln ausgedrückt werden.

$$\eta_{inv} = 2 - \frac{1}{\eta}$$

Statische umgekehrten Wirkungsgrad;

$$\eta_{Sinv} = 2 - \frac{1}{\eta_s}$$



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Sonsuz Vidada Otoblokajlık:

A) Dinamik Otoblokaj

Dinamik otoblokajlı bir sonsuz vida redüktörünün tahrik tarafında motor momenti ile sonsuz vida, pervane, kaplin gibi bağlantı elemanlarının atalet momentleri ortadan kalktıktan sonra vidanın ani olarak kilitlemesi olayıdır. Dinamik otoblokaj $\eta < 0,5$ olduğunda gerçekleşir. Fren yardımı olmadan yükü durdurmak ve tutmak istendiğinde gerekli olur. Sürekli vibrasyonlu durumlarda dinamik otoblokaj elde edilemeyebilir.

B) Statik Otoblokaj

Statik otoblokaj çıkış mili tarafından hiç bir hareketin iletilmediği durumda olan otoblokaj'dır.

Statik otoblokaj $\eta_s < 0.5$ aralığı içindedir. Fakat verimin zaman içinde yükselebileceği göz önünde tutularak $\eta_s \leq 0.4$ ($\gamma_m < 5^\circ 30'$) olarak kabul edilmesi tavsiye edilir. Sürekli vibrasyonlu durumlarda statik otoblokajlık elde edilemeyebilir.

Eğer η_s statik verimi $0.5 \leq \eta_s < 0.55$ ($7^\circ < \gamma_m \leq 11^\circ$) aralığında olursa düşük statik geri dönebilirlik (çıkış şaftı tarafına vibrasyon ve/veya yüksek moment uygulandığında döndürmek mümkün) oluşur.

Eğer $\eta_s \geq 0.55$ ($\gamma_m \geq 11^\circ$) olursa tam statik geri dönebilirlik (çıkış şaftı tarafından döndürmek mümkün) oluşur. Bu durum çıkış mili tarafından gelen yükleri otoblokaj etmesi gerekmeyen yumuşak kalkışlı durumlar için geçerlidir.

Irreversibility by Wormgears:

A) Dynamic Irreversibility

Dynamic irreversibility is a self blocking event on the driving side, directly after the moment of inertia of driving motor and moment of the driving side elements (like coupling, rotor shaft, cooling fan etc.) settles down to zero. There is dynamic irreversibility if $\eta < 0,5$. This state becomes necessary wherever there is a need for stopping and holding the load, even without the aid of a brake. Where continuous vibration occurs, dynamic irreversibility may not be obtainable.

B) Static Irreversibility

A gear unit or geared motor is statically irreversible (that is, rotation cannot be imparted by way of the low speed shaft) when $\eta_s < 0.5$. This is a state necessary to keeping the load standstill; taking into account, however, that efficiency can increase with time spent in operation, it would be advisable to assume $\eta_s \leq 0.4$ ($\gamma_m < 5^\circ 30'$). Where continuous vibration occurs, static irreversibility may not be obtainable.

A gear reducer or geared motor has low static reversibility (i.e. rotation may be imparted by way of the low speed shaft with high torque and / or vibration) when $0.5 < \eta_s < 0.55$ ($7^\circ < \gamma_m < 11^\circ$).

A gear reducer or geared motor has complete static reversibility (i.e. rotation may be imparted by way of the low speed shaft) when $\eta_s \geq 0.55$ ($\gamma_m \geq 11^\circ$). This state is advisable where there is a need for easy startup of the gear reducer by way of the low speed shaft.

Schneckengetriebe Selbsthemmung:

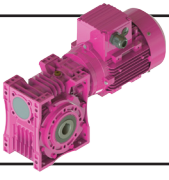
A) Dynamische Selbsthemmung

Schneckengetriebe oder Getriebemotoren sind dynamisch selbsthemmend wenn $\eta < 0,5$ ist. Sofortiges Einwirkung der Selbsthemmung, sobald die Drehung der Schneckenwelle aufhört und Motormoment Trägheit der Schnecke, Schwungräder, Kupplungen und des Lüfters, Motors usw. überwindet. Diese Bedingung benötigt man in allen Fällen, wo man eine Last ohne Bremsvorrichtung stoppen und halten will. Bei ständig auftretenden Vibrationen lässt sich die dynamische Selbsthemmung nur schwer verwirklichen.

B) Stillstand Selbsthemmung

Schneckengetriebe oder -getriebemotoren sind im Stillstand selbsthemmend, wenn $\eta_s < 0.5$ ist (Drehung von langsam laufender Welle aus nicht möglich). Diese Bedingung benötigt man in allen Fällen, wo man eine Last halten will. Da der Wirkungsgrad sich im Laufe des Betriebs erhöhen kann, sollte $\eta_s \leq 0.4$ ($\gamma_m < 5^\circ 30'$) am besten eingehalten werden. Bei ständig auftretenden Vibrationen lässt sich die Selbsthemmung im Stillstand nur schwer verwirklichen. Schneckengetrieben sind im Stillstand kaum selbsthemmend (Drehung von langsam laufender Welle aus nur mittels hoher Drehmomente und / oder durch das Auftreten von Vibrationen möglich) wenn $0.5 < \eta_s < 0.55$ ($7^\circ < \gamma_m < 11^\circ$) ist.

Schneckengetrieben sind nicht statisch selbsthemmend (Drehung von langsam laufender Welle aus möglich), wenn $\eta_s \geq 0.55$ ($\gamma_m \geq 11^\circ$) ist. Diese Bedingung ist ratsam, wo das Getriebe leichtgängig über die langsam laufende Welle angetrieben werden muss.



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Eşdeğer Güç Hesabı

Sabit devirde, ancak değişken momentlerde (güçlerde) çalışan redüktörler için eşdeğer tork altındaki, eşdeğer güç hesaplanabilir. Bu eşdeğer güç kullanılarak bilinen sabit güçteki redüktör seçim yöntemi kullanılarak seçim yapılabilir. Burada ağırlıklı torka göre eşdeğer anma torku belirlenmektedir. Hesaplanan bu güçte çalışan redüktör, teorik olarak, değişken yüklerde çalışan redüktör ile aynı emniyet değerine ve ömre sahiptir.

Bir çevrim boyunca oluşan değişken torklar, en yüksek torktan, en düşüğe doğru yatay zaman eksenini boyunca sıralanır (bakınız alttaki şekil). Bu şekile göre eşdeğer tork şu formül ile hesaplanır;

$$T_e = \left(\frac{\Delta t_1 \times T_1^{6.6} + \dots + \Delta t_n \times T_n^{6.6}}{t} \right)^{\frac{1}{6.6}}$$

Eğer T_n değerleri (en düşük tork), T_e 'nin 0,5 katının altında ise, bu tork dilimi yok sayılarak, işlem tekrarlanır;

Eğer $T_n < T_e \times 0.5$ ise

$$T_e = \left(\frac{\Delta t_1 \times T_1^{6.6} + \dots + \Delta t_{n-1} \times T_{n-1}^{6.6}}{t - \Delta t_n} \right)^{\frac{1}{6.6}}$$

Tüm T_n değerleri T_e 'nin 0,5 katının üzerinde ise, eşdeğer güç aşağıdaki gibi hesaplanır;

$$P_{eq} = P_N = \frac{T_e \times n}{9550}$$

Eşdeğer gücün bulunmasından sonra eşdeğer güç değeri kullanılarak, bu katalogta verilen redüktör seçimi bölümünde anlatılan adımlar uygulanarak redüktör seçimi tamamlanır.

Equivalent Power Rating Calculation

The equivalent power by an equivalent constant torque can be calculated for gearboxes working in constant speed but variable torques (or powers). Using this equivalent power it is possible to make a gearbox selection according to the usual gearbox selection method with constant torques. The equivalent torque will be determined according to the mean of dominating torques. The gearbox working in constant equivalent torque will theoretically have the same lifetime and safety compared to the variable torque one.

To calculate the equivalent torques, the variable torques in a cycle must be sorted from the maximal to the minimal on a horizontal time line (Check the graphic below). According to the graphic below the equivalent torque can be calculated with the following formula;

$$T_e = \left(\frac{\Delta t_1 \times T_1^{6.6} + \dots + \Delta t_n \times T_n^{6.6}}{t} \right)^{\frac{1}{6.6}}$$

If T_n (the lowest torque) is lower than 50 % of T_e , this torque part must be taken out of the torque graph and the calculation must be repeated;

If $T_n < T_e \times 0.5$ then

$$T_e = \left(\frac{\Delta t_1 \times T_1^{6.6} + \dots + \Delta t_{n-1} \times T_{n-1}^{6.6}}{t - \Delta t_n} \right)^{\frac{1}{6.6}}$$

If all T_n values are higher than 50% of T_e then the equivalent power can be calculated by the following formula;

$$P_{eq} = P_N = \frac{T_e \times n}{9550}$$

After the equivalent power is determined the selection of gearbox is made according to the selection procedures given on the gearbox selection part in this catalogue.

Berechnung Äquivalenter Leistung

Die äquivalente Leistung bei äquivalenten Drehmoment kann für Getrieben mit konstanten Drehzahl und variablen Momente berechnet werden. Mit dieser Leistung kann das Getriebe ausgelegt werden, wie bei konstanten Leistung. Man bestimmt hiermit also die maßgebende Belastung. Das ausgelegte Getriebe erreicht theoretisch dem gleichen Lebensdauer und hat die gleiche Sicherheit.

Für die Berechnung der äquivalenten Drehmoment müssen die einzelnen Drehmomentanteile auf eine Zeitachse von größten bis zu kleinsten angeordnet werden (siehe unteres Bild). Das äquivalente Drehmoment wird nach folgender Formel berechnet;

$$T_e = \left(\frac{\Delta t_1 \times T_1^{6.6} + \dots + \Delta t_n \times T_n^{6.6}}{t} \right)^{\frac{1}{6.6}}$$

Wenn T_n (niedrigstes Drehmoment) kleiner als 50% von T_e ist, muss dieser Anteil vernachlässigt werden und die Berechnung soll neu durchgeführt werden;

Wenn $T_n < T_e \times 0.5$ dann

$$T_e = \left(\frac{\Delta t_1 \times T_1^{6.6} + \dots + \Delta t_{n-1} \times T_{n-1}^{6.6}}{t - \Delta t_n} \right)^{\frac{1}{6.6}}$$

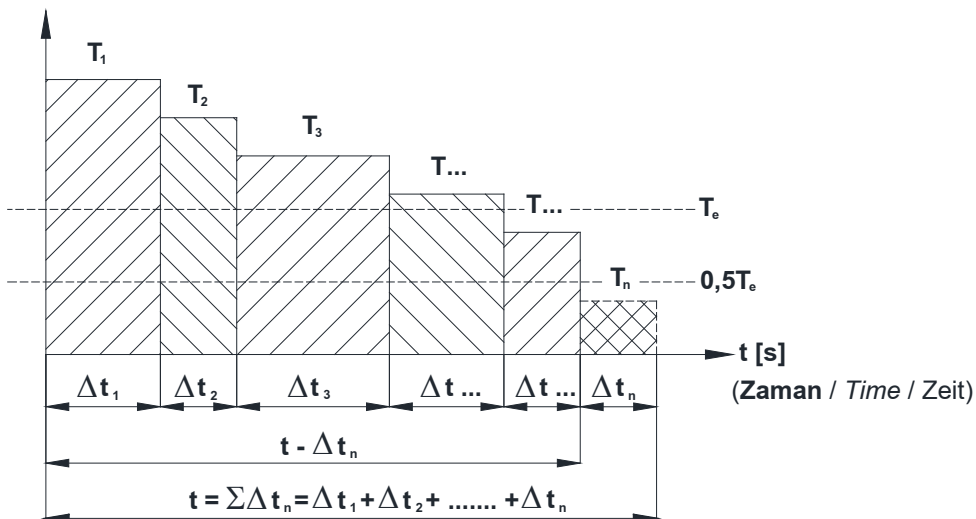
Wenn alle T_n Werte höher als 50% von T_e sind, dann wird die äquivalente Leistung nach folgender Formel berechnet;

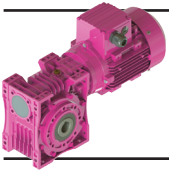
$$P_{eq} = P_N = \frac{T_e \times n}{9550}$$

Nach Bestimmung der äquivalenter Leistung, erfolgt die Getriebeauslegung wie bei konstanter Leistung. Die Auswahlverfahren für konstante Leistung ist in diesem Katalog angegeben.

(Moment / Torque / Moment)

T [Nm]





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Eşdeğer Güç Hesabı Örneği

Çift yönlü çalışan ham demir haddesi için aşağıdaki çalışma koşulları belirlenmiş;

Veriler:

Toplam bir iş çevrimi: 2 dak.

1. Yük kademesi: 48 kNm, 30 s
2. Yük Kademesi: 32 kNm, 22 s
3. Yük Kademesi: 28 kNm, 15 s
4. Yük Kademesi: 16 kNm, 10 s
5. Yük Kademesi: 5 kNm, 43 s

Makina sabit devri: 50 d/dak

Redüktör seçimine esas olacak eşdeğer yük aranmaktadır.

Çözüm:

Bir çevrimin toplam zamanı;

$$t = t_1 + t_2 + t_3 + t_4 + t_5 = 120 \text{ sn}$$

Eşdeğer Tork;

$$T_e = \left(\frac{30 \times 48^{6.6} + \dots + 43 \times 5^{6.6}}{120} \right)^{\frac{1}{6.6}}$$
$$= 39,2 \text{ kNm}$$

%50 eşdeğer tork;

$$0.5 \times T_e = 19.6 \text{ kNm}$$

Her bir tork dilimi bu değer üzerinde olmalı

$$T_4, T_5 < 0.5 \times T_e$$

%50 torkun altındakileri çıkararak hesabı tekrarlayalım;

$$t' = t - t_4 - t_5 = 120 - 43 - 10 = 67 \text{ s}$$

$$T_e = \left(\frac{30 \times 48^{6.6} + \dots + 15 \times 28^{6.6}}{67} \right)^{\frac{1}{6.6}}$$
$$= 42,9 \text{ kNm}$$

Moment ve devir değerlerini kullanarak eşdeğer gücümüzü hesaplayalım ;

$$P_{eq} = \frac{T_e \times n}{9550} = \frac{42,9 \times 1000 \times 50}{9550} \cong 225 \text{ kW}$$

Yukarıdaki güç ve devir değeri kullanılarak bu katalogta anlatılan seçim presüdüğü ile redüktör seçimi yapılabilir.

Equivalent Power Rating Sample

The following data is given for a reversing blooming mill;

Torque steps:

Total one cycle time: 2 min.

1st torque part: 48 kNm, 30 s

2nd torque part: 32 kNm, 22 s

3th torque part: 28 kNm, 15 s

4th torque part: 16 kNm, 10 s

5th torque part: 5 kNm, 43 s

Machine constant speed: 50 rpm

The equivalent power, which is required for gear unit selection, is to determine.

Solution:

Total time in a cycle;

$$t = t_1 + t_2 + t_3 + t_4 + t_5 = 120 \text{ sn}$$

Equivalent Torque;

$$T_e = \left(\frac{30 \times 48^{6.6} + \dots + 43 \times 5^{6.6}}{120} \right)^{\frac{1}{6.6}}$$
$$= 39,2 \text{ kNm}$$

50% of Equivalent torque;

$$0.5 \times T_e = 19.6 \text{ kNm}$$

Every torque part must be lower then this value;

$$T_4, T_5 < 0.5 \times T_e$$

We are repeating the calculation by taking out the torque parts, which are below 50%;

$$t' = t - t_4 - t_5 = 120 - 43 - 10 = 67 \text{ s}$$

$$T_e = \left(\frac{30 \times 48^{6.6} + \dots + 15 \times 28^{6.6}}{67} \right)^{\frac{1}{6.6}}$$
$$= 42,9 \text{ kNm}$$

By using the equivalent torque and constant speed we calculate the equivalent power ;

$$P_{eq} = \frac{T_e \times n}{9550} = \frac{42,9 \times 1000 \times 50}{9550} \cong 225 \text{ kW}$$

Now by using the above calculated equivalent power and constant speed we can make the gearbox selection with the procedures described in this catalogue.

Beispiel für Äquivalente Leistung

Die nachfolgenden Angaben sind für eine Blechreversierwalze;

Drehmoment stufen:

Gesamte Zeit für einem Arbeitszyklus: 2 min.

Drehmomentanteil 1: 48 kNm 30 s

Drehmomentanteil 2: 32 kNm 22 s

Drehmomentanteil 3: 28 kNm 15 s

Drehmomentanteil 4: 16 kNm 10 s

Drehmomentanteil 5: 5 kNm 43 s

Maschine hat konstante Drehzahl: 50 U/min

Gesucht ist die äquivalente Leistung, die für die Getriebeauslegung nötig ist.

Lösung:

Gesamte Zeit für einem Arbeitszyklus;

$$t = t_1 + t_2 + t_3 + t_4 + t_5 = 120 \text{ sn}$$

Äquivalentes Drehmoment;

$$T_e = \left(\frac{30 \times 48^{6.6} + \dots + 43 \times 5^{6.6}}{120} \right)^{\frac{1}{6.6}}$$
$$= 39,2 \text{ kNm}$$

50% von äquivalenten Drehmoment;

$$0.5 \times T_e = 19.6 \text{ kNm}$$

Drehmomentanteile müssen größer als dieser Wert sein;

$$T_4, T_5 < 0.5 \times T_e$$

Wir wiederholen die Berechnung nochmals ohne die kleine Drehmomentanteile;

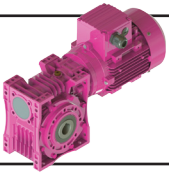
$$t' = t - t_4 - t_5 = 120 - 43 - 10 = 67 \text{ s}$$

$$T_e = \left(\frac{30 \times 48^{6.6} + \dots + 15 \times 28^{6.6}}{67} \right)^{\frac{1}{6.6}}$$
$$= 42,9 \text{ kNm}$$

Mit Hilfe von äquivalenten Drehmoment und konstanter Drehzahl berechnet man die äquivalente Leistung ;

$$P_{eq} = \frac{T_e \times n}{9550} = \frac{42,9 \times 1000 \times 50}{9550} \cong 225 \text{ kW}$$

Nach Bestimmung der äquivalente Leistung und konstanter Drehzahl, erfolgt die Getriebeauslegung dann wie die Getriebeauswahl gemäß dem in diesem Katalog beschriebenen Verfahren für konstante Leistung.



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Redüktör Seçimi

Bir redüktör seçiminde aşağıdaki yol izlenmelidir.

1. Çalışma şartlarına bağlı olarak servis faktörünü (fs) belirleyiniz. (Servis Faktörü Sayfa 19).
2. Makinanız için gerekli olan momenti belirleyiniz M_2 (redüktör gerekli çıkış momentini).
3. Makinanızın devrini belirleyiniz n_2 (redüktör gerekli çıkış devri).
4. Makinanızın güç ihtiyacını (Redüktör çıkış gücünü) "P₂" hesaplayınız.

$$P_2 = \frac{M_2 \times n_2}{9550}$$

5. Redüktör ile makina arasında kullanılan bağlantı elemanına göre radyal yükü hesaplayınız. (Sayfa 22). Yukarıdaki verilere uygun olarak çıkış devri, değerlerine uyan servis faktörü ve radyal yükü bulduğunuzdan daha yüksek veya eşit olan redüktörü, güç-devir seçim tablolarından seçiniz. Helisel tip redüktörlerde verim yüksek olduğundan çıkış gücü verilmemiştir. Hesapladığınız güç değerini giriş gücü olarak kabul edip seçiminizi yapınız. Tablolarda verilen M_2 çıkış momentinin hesapladığınız M_2 den büyük olmasına dikkat ediniz. Eğer seçilen redüktörünki daha ufak ise bir üst motor gücüne geçiniz.

Örnek

1. Makina Cinsi:

Lastik bantlı konveyör , dökme yük taşıyor.

2. Makina için gerekli moment:

Makina için hesaplanan moment $M_2 = 470 \text{ Nm}$.

3. Makina gerekli çıkış devri:

$n_2 = 54 \text{ dev/dak}$.

4. Günlük çalışma süresi:

16 saat.

5. Saatte start sayısı:

Saatte 1 start

6. Makina ile bağlantı şekli:

Zincir dişli (çap -130 mm)

- Yük sınıflandırma tablosundan yük sınıfı M olarak seçilir (sayfa 20-21)

- Günlük çalışma süresi 16 saat Saatte start sayısı 1 ve yük sınıfı M'ye tekabül eden servis faktörü tablosundan, servis faktörü için fs= 1.3 değeri bulunur.(sayfa 19)

- Makinanızın güç ihtiyacı (Redüktör Çıkış Gücü) :

$$P_2 = \frac{M_2 \times n_2}{9550} = \frac{470 \times 50}{9550} = 2,46 \text{ kW}$$

Gearbox Selection

For the correct selection of the appropriate gear units follow this steps.

1. Determine service factor (fs) on the basis of running conditions (Page 19).
2. Determine the required Torque M_2 (required output torque of gearbox) for the driven machine.
3. Determine required speed (output speed of gearbox) for the driven machine.
4. Calculate the required power for your machine (Calculate power "P₂" required at output side of gear reducer using the formula);

$$P_2 = \frac{M_2 \times n_2}{9550}$$

5. Calculate overhung load required at output shaft according to type of connection between gear unit and machine (Refer to directions and values given on page 22). After determining the above mentioned values, the gear reducer which corresponds to our requirements can be selected from the performance tables (the service factor and the permissible overhung load should be less than or equal to our requirement). For Helical gears the output power is not given on the performance tables because they have high efficiency and the output power can be taken as input power. The output torque should be checked if it meets to our requirements. If the output torque is low, search for a higher input power gearbox.

Example:

1. Machine Type:

Belt Conveyor (Bulk Load)

2. Required Torque:

Required Torque calculated for the driven machine is $M_2=470 \text{ Nm}$.

3. Required speed:

$n_2 = 50 \text{ rpm}$

4. Running time:

16 hours per day

5. Frequency of starting:

1 start per hour

6. Connection type between gear reducer

Chain drive (output dimension-130 mm)

- From the load classification table (on page 20-21), the load class M can be selected for the known application.

- The service factor can be selected as fs =1,3 from the service factor table (page 19) by taking into consideration 16 hours running time, one start per hour, and load class M.

-Required power for your machine(Power at output side of gear reducer) :

$$P_2 = \frac{M_2 \times n_2}{9550} = \frac{470 \times 50}{9550} = 2,46 \text{ kW}$$

Getriebeauswahl

Für die korrekte Auswahl des Antriebes;

1. Den Betriebsfaktor(fs) in Abhängigkeit von den Betriebsbedingungen bestimmen.(Bezug auf Seite 19).
2. Die erforderte Drehmoment M_2 für die angetriebene Maschine (Abtriebsdrehmoment für die Getriebe) bestimmen.
3. Erforderte Drehzahl bestimmen (Abtriebsdrehzahl für die Getriebe).
4. Berechnen der erforderte Leistung der angetriebene Maschine (Die an der Abtriebswelle erforderte Leistung "P₂") mit der unten angegebenen Formel.

$$P_2 = \frac{M_2 \times n_2}{9550}$$

5. Die an der Getriebeabtriebswelle erforderte Querkraft in Abhängigkeit von Antriebsselement bestimmen (Bezug auf Seite 22). Nach Bestimmen der oben angegebenen Werte, die passende Getriebe kann von den angegebenen Leistungstabellen entnommen werden. Dabei soll darauf geachtet werden, dass der Betriebsfaktor und Querkraft stets unterhalb von angegebenen Werten liegt. Weil Stirnradgetrieben einen hohen Wirkungsgrad haben, sind die Abtriebsleistungen für Stirnradgetrieben nicht angegeben. Bei dieser Getrieben die erforderte Leistung kann als Antriebsleistung benutzt werden. Achten sie darauf, dass der Abtriebsmoment größer als die erforderte Drehmoment ist.

Beispiel:

1. Maschinentyp:

Gurtbandförderer (Schüttgut)

2. Erforderte Drehmoment:

Für die Maschine berechnete Drehmoment $M_2 = 470 \text{ Nm}$.

3. Erforderte Drehzahl:

$n_2 = 50 \text{ upm}$

4. Betriebsdauer:

16 stunden pro Tag

5. Schalthäufigkeit:

1 Start pro Stunde

6. Antriebsselement für Verbindung mit Getriebe:

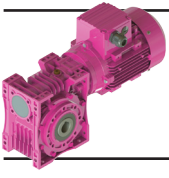
Kettentrieb(Durchmesser- 130 mm)

- Von den Belastungsart Tabellen(Seite 20-21) nimmt man Belastungsart M

- Für den Schaltungszahl 1 und die Laufzeit 16 und für den passenden Belastungsart erhält man Betriebsfaktor fs =1,3 von Tabelle auf Seite 19.

- Erforderte Leistung der angetriebe Maschine (Die an der Getriebeabtriebswelle erforderte Leistung)

$$P_2 = \frac{M_2 \times n_2}{9550} = \frac{470 \times 50}{9550} = 2,46 \text{ kW}$$



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- Zincir dişli uygulaması için (Sayfa 23) Fq değeri;

$$Fq = \frac{2100 \times M_2}{D} = \frac{2100 \times 400}{130} = 6461,53 \text{ N}$$

- Ortaya çıkan redüktör ihtiyacı

$$\begin{aligned} P_2 &\geq 2,46 \text{ kW} \\ M_2 &\geq 400 \text{ Nm} \\ fs &\geq 1,3 \\ n_2 &\approx 50 \text{ d/dak} \\ Fq &\geq 6461,53 \text{ N} \end{aligned}$$

Güç ve devir sayfalarından,

EV125-3E100L/4D seçilir (Sayfa 65).

$$\begin{aligned} P_2 &= 3 \text{ kW} > 2,46 \text{ kW} \\ M_2 &= 433 \text{ Nm} > 400 \text{ Nm} \\ fs &= 1,7 \\ n_2 &= 56 \text{ d/dak} \\ fq &= 6461,53 \text{ Nm} < 8498 \text{ Nm} \\ i &= 26 \end{aligned}$$

- For chain drive application the requested overhang load can be calculated from (page 23).;

$$Fq = \frac{2100 \times M_2}{D} = \frac{2100 \times 400}{130} = 6461,53 \text{ N}$$

- The required gearbox is as follows:

$$\begin{aligned} P_2 &\geq 2,46 \text{ kW} \\ M_2 &\geq 400 \text{ Nm} \\ fs &\geq 1,3 \\ n_2 &\approx 50 \text{ rpm} \\ Fq &\geq 6461,53 \text{ N} \end{aligned}$$

From the performance table,

EV125-3E100L/4D selected (Page 65).

$$\begin{aligned} P_2 &= 3 \text{ kW} > 2,46 \text{ kW} \\ M_2 &= 433 \text{ Nm} > 400 \text{ Nm} \\ fs &= 1,7 \\ n_2 &= 56 \text{ rpm} \\ fq &= 6461,53 \text{ Nm} < 8498 \text{ Nm} \\ i &= 26 \end{aligned}$$

- Für Kettentrieb die erforderte Querkraft (seite 23);

$$Fq = \frac{2100 \times M_2}{D} = \frac{2100 \times 400}{130} = 6461,53 \text{ N}$$

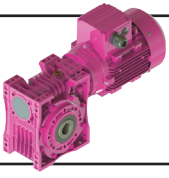
- Von den oben angegebenen Berechnungen die erforderte Getriebe ist wie folgt;

$$\begin{aligned} P_2 &\geq 2,46 \text{ kW} \\ M_2 &\geq 400 \text{ Nm} \\ fs &\geq 1,3 \\ n_2 &\approx 50 \text{ U/min} \\ Fq &\geq 6461,53 \text{ N} \end{aligned}$$

Von der Leistung- Drehzahltable ,

wurde **EV125-3E100L/4D** gewählt (Seite 65).

$$\begin{aligned} P_2 &= 3 \text{ kW} > 2,46 \text{ kW} \\ M_2 &= 433 \text{ Nm} > 400 \text{ Nm} \\ fs &= 1,7 \\ n_2 &= 56 \text{ u/min} \\ fq &= 6461,53 \text{ Nm} < 8498 \text{ Nm} \\ i &= 26 \end{aligned}$$



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Redüktör Seçim Formu

Kullanıldığı Sektör.....
Kullanıldığı Yer.....
Gerekli Ortalama Devir.....d/dak

Makina ihtiyaç gücü:

-Normal..... kW
-En çok..... kW
-En az..... kW

Tahrik Şekli:

AC Motor []
AC Motor + Invertör []
DC Motor []
Hidrolik Motor []
1-3 silindirli içten yanmalı []
2-4 silindirli içten yanmalı []

Motor Bağlantı Şekli (Elektrik Motorları):

IEC B5/B14 Flanşlı []
NEMA Flanşlı []
Motorsuz Giriş Mili []

IEC veya NEMA flanş kodu.

Motor Gücü:

-Nominal..... kW

Motor Devri:

-Normal..... d/dak
-En çok..... d/dak
-En az..... d/dak

Motor Torku:

-Normal..... Nm
-En çok..... Nm
-En az..... Nm

Dönüş şekli:

saat yönü [] saat yönüne ters [] değişken []

Günlük çalışma süresi:

<4 [] 4-8 [] 8-16 [] >16 []

Saatdeki start sayısı:

0-50 [] 50-100 [] 100-200 []
200-300 [] 300-500 [] 500-700 []
700-1000 [] >1000 []

Motor Redüktör Arası Tahvil Oranı.....

Kalkış için gerekli moment.....Nm

Saatdeki pik moment adedi:

1-5 [] 6-30 [] 31-100 [] >100 []

Bir çevrimde aktif çalışma oranı (ED):

%100 [] %80 [] %60 [] 40% [] %20 []

Deniz seviyesinden yükseklik:

<1000 [] <2000 [] <3000 []
<4000 [] <5000 []

Montaj yeri:

Küçük kapalı oda (w<1m/sn) []
Kapalı oda (w<3m/sn) []
Büyük oda ve holler (w>=3m/sn) []
Tamamen açık ortam []

Çevre Şartları:

Normal [] Tozlu [] Nemli []
Korozif [] Kuru []

Çevre Sıcaklığı:

Ortalama..... °C
En Yüksek..... °C
En Düşük..... °C

Kilit İhtiyacı:

Var [] Yok []

Redüktör Giriş Opsiyonu:

R.[] V.[] N.[] T.[]

Redüktör Çıkış Opsiyonu:

00 [] 01 [] 02 [] 03 [] 04 [] 05 [] 08 []

Montaj Pozisyonu:

M1 [] M2 [] M3 [] M4 [] M5 [] M6 []

Giriş mili bağlantı şekli:

Elastik kaplin []
Fıçı tipi kaplin []
Rijit kaplin []
Hidrolik Kaplin []
Kayış kasnak []
Zincir dişli []
Pinyon dişli []
Bağlantı elemanı çapı.....mm
Radyal yükü.....N
Radyal yük "u" mesafesi.....mm
Aksiyal yükü (mile doğru +).....N

Çıkış mili bağlantı şekli:

Elastik kaplin []
Fıçı tipi kaplin []
Rijit kaplin []
Kayış kasnak []
Zincir dişli []
Pinyon dişli []
Delik milli tork kolu []
Sıkma bilezikli tork kolu []
Bağlantı elemanı çapı.....mm
Radyal yükü.....N
Radyal yük "u" mesafesi.....mm
Aksiyal yükü (mile doğru +).....N

Çıkış Mili Özelliği:

Dolu Mil Kamalı []
Dolu Mil Kamasız []
Delik Milli []
Özel Mil []

Giriş Mili Özelliği:

Kamalı []
Kamasız düz mil []
Özel Mil []
Tork kolu [] Var [] Yok

Elektrik Gerilimi:

AC-Monofaze [] AC-Trifaze [] DC []
Voltaj.....Volt
Frekans.....Hz

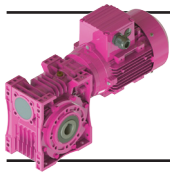
Koruma Sınıfı:

IP55 [] IP65 [] Exproof []
Diğer IP.....

Ekler:

Yük diyagramı []
Proje []
İstenen ana boyutlar []
Teknik veriler []

Diğer Notlar:



Genel Bilgiler

General Information

Einführung



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Gearbox Selection Form

Field of Industry.....
 Application.....
 Required Average Speed..... rpm

Required Power on Driven Machine:

-Normal..... kW
 -Maximum..... kW
 -Minimum..... kW

Driving Machine:

AC Motor []
 AC Motor + Inverter []
 DC Motor []
 Hydraulic Motor []
 Piston Engine with 1-3 cylinder []
 Piston Engine with 4-24 cylinder []

Motor Connection Type (Electric Motors):

IEC B5/B14 Flange []
 NEMA Flange []
 Solid Input Shaft Without Motor []

IEC or NEMA Flange Code.....

Motor Power:

-Nominal..... kW

Motor Speed:

-Normal..... rpm
 -Maximum..... rpm
 -Minimum..... rpm

Motor Torque:

-Normal..... Nm
 -Maximum..... Nm
 -Minimum..... Nm

Direction of Rotation:

cw [] ccw [] variable []

Working hours per day:

<4 [] 4-8 [] 8-16 [] >16 []

Startings per cycle:

0-50 [] 50-100 [] 100-200 []
 200-300 [] 300-500 [] 500-700 []
 700-1000 [] >1000 []

Transmission ratio between motor and gear unit.....

Required Starting Torque.....Nm

Peak torques per hour:

1-5 [] 6-30 [] 31-100 [] >100 []

Effective working time in a cycle (ED):

%100 [] %80 [] %60 [] 40% []
 20% []

Altitude:

<1000 [] <2000 [] <3000 []
 <4000 [] <5000 []

Mounting Place:

Small closed room (w<1m/sn) []
 Closed room (w<3m/sn) []
 Big rooms and halls (w>=3m/sn) []
 Outdoor []

Ambient Conditions:

Normal [] Dusty [] Humid []
 Corrosive [] Dry []

Ambient Temperature:

Average.....°C
 Maximum.....°C
 Minimum.....°C

Backstop Required:

Yes [] No []

Gearbox input options:

V.[] N.[] T.[]

Gearbox output options:

00 [] 01 [] 02 [] 03 [] 04 [] 05 [] 08 []

Mounting Position:

M1 [] M2 [] M3 [] M4 [] M5 [] M6 []

Input Shaft Connection Type:

Elastic Coupling []
 Barrel Type Coupling []
 Hydraulic Coupling []
 Rigid Flange Coupling []
 Pulley []
 Chain Sprocket []
 Pinion []
 Diameter of Connection element.....mm
 Radial Load.....N
 "u" Distance of Radial Load.....mm
 Axial Load (Towards Shaft)N

Output Shaft Connection Type:

Elastic Coupling []
 Barrel Type Coupling []
 Rigid Flange Coupling []
 Pulley []
 Chain Sprocket []
 Pinion []
 Hollow Shaft with Torque Arm []
 Schrink disc with Torque Arm []
 Diameter of Connection Element.....mm
 Radial Load.....N
 "u" Distance of Radial Load.....mm
 Axial Load (Towards Shaft)N

Gearbox assembled by:

Foot [] Flange [] Torque Arm []

Output Shaft Specification:

Solid Shaft with Keyway []
 Solid Shaft without Keyway []
 Hollow Shaft []
 Special Shaft []

Input Shaft Specification:

Solid Shaft with Keyway []
 Solid Shaft without Keyway []
 Special Shaft []
 Torque arm required Yes [] No []

Electrical Supply:

AC-1 Phase [] AC-3 Phase [] DC []
 Voltage.....Volt
 Frequency..... Hz

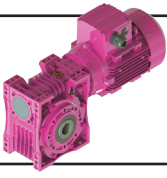
Protection Class:

IP55 [] IP65 [] Exproof []
 Other IP.....

Attachments:

Load Diagram []
 Project []
 Required Dimensions []
 Technical Specifications []

Notes:



Genel Bilgiler

General Information

Einführung



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Formular für Getriebeauswahl

Industriebereich.....
 Anwendung.....
 Erforderliche Drehzahl.....U/min

Erforderliche Leistung für die Maschine:

-Normal.....kW
 -Minimal.....kW
 -Maximal.....kW

Antriebsmaschine:

AC Motor []
 AC Motor mit Frequenzumrichter []
 DC Motor []
 Hydromotor []
 Kolbenmaschinen mit 1-3 Zylinder []
 Kolbenmaschinen mit 2-4 Zylinder []

Motorverbindungsart (Elektromotoren):

IEC B5/B14 Flansch []
 NEMA Flansch []
 Antriebsvollwelle ohne Motor []

IEC oder NEMA Flanschcode.....

Motorleistung:

-Nominal.....kW

Motordrehzahl:

-Normal.....U/min
 -Maximal.....U/min
 -Minimal.....U/min

Motordrehmoment:

-Normal.....Nm
 -Maximal.....Nm
 -Minimal.....Nm

Drehrichtung:

in Uhrzeigersinn [] gegen Uhrzeigersinn []
 veränderlich []

Betriebsdauer in Stunden pro Tag:

<4 [] 4-8 [] 8-16 [] >16 []

Anzahl der Anläufe pro Stunde:

0-50 [] 50-100 [] 100-200 []
 200-300 [] 300-500 [] 500-700 []
 700-1000 [] >1000 []

Übersetzung zwischen Motor und Antriebswelle.....

Erforderliches Anlaufmoment.....Nm

Häufigkeit von Lastspitzen pro Stunde:

1-5 [] 6-30 [] 31-100 [] >100 []

Einschaltdauer je Stunde (ED):

%100 [] %80 [] %60 [] 40% [] %20 []

Höhenlage über Meeresspiegel (m):

<1000 [] <2000 [] <3000 []
 <4000 [] <5000 []

Betriebsort:

Kleine geschlossene Räume (w<1m/sn) []
 Geschlossene Räume (w<3m/sn) []
 Große Räume und Hallen (w>=3m/sn) []
 im Freien []

Umgebungsbedingungen:

Normal [] Staubig [] Feucht []
 Korrodierend [] Trocken [] Verklebend []

Umgebungstemperatur:

Mittelwert.....°C
 Maximal.....°C
 Minimal.....°C

Rücklauf Sperre erforderlich:

Ja [] Nein []

Getriebeeingangsvarianten:

V.[] N.[] T.[]

Getriebeausgangsvarianten:

00 [] 01 [] 02 [] 03 [] 04 [] 05 [] 08 []

Montageposition:

M1 [] M2 [] M3 [] M4 [] M5 [] M6 []

Antriebswellenanschluss:

Elastische Kupplung []
 Trommelkupplung []
 Hydrokupplung []
 Starre Flanschkupplung []
 Riementrieb []
 Kettenrad []
 Ritzel []
 Durchmesser von Anschlusselement.....mm
 Querkraft.....N
 "u" Abstand von der Wellenschulter.....mm
 Axialkraft (in Richtung der Welle +)N

Abtriebswellenanschluss:

Elastische Kupplung []
 Trommelkupplung []
 Starre Flanschkupplung []
 Riementrieb []
 Kettenrad []
 Ritzel []
 Hohlwelle mit Drehmomentstütze []
 Schrumpfscheibe mit Drehmomentstütze []
 Durchmesser von Anschlusselement.....mm
 Querkraft.....N
 "u" Abstand von der Wellenschulter.....mm
 Axialkraft (in Richtung der Welle +)N

Montage zur Getriebegehäuse mit:

Fuß [] Flansch [] Drehmomentstütze []

Eigenschaften der Abtriebswelle:

Vollwelle mit Passfeder []
 Vollwelle ohne Passfeder []
 Hohlwelle []
 Sonderwelle []

Eigenschaften der Antriebswelle:

Vollwelle mit Paßfeder []
 Vollwelle ohne Paßfeder []
 Sonderwelle []
 Drehmomentstütze erforderlich Ja [] Nein []

Spannungsversorgung:

AC-1 phasig [] AC-3 phasig [] DC []
 Spannung.....Volt
 Frequenz.....Hz

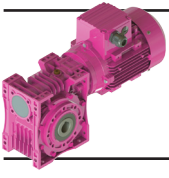
Schutzart:

IP55 [] IP65 [] Exproof []
 Andere IP.....

Anhang:

Lastdiagramm []
 Projekt []
 Erforderliche Abmessungen []
 Technische Spezifikationen []

Andere Merkmale:



Genel Bilgiler General Information Einführung



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Yağlama

Redüktörlerin uzun ömürlü olması ve iyi performansla çalışabilmesi için, kullanılan yağın seçimi doğru olmalı ve belirtilen zamanlarda değişimleri yapılmalıdır.

Yağın seçiminde devir, çevre sıcaklığı, re-
düktör yağ sıcaklığı, çalışma koşulları ve yağ
ömrü önem taşımaktadır. Redüktörler yağ
doldurulmuş olarak sevkedilmektedir. Redük-
törler uzun süre depolanacakları zaman veya
çalışmaya başlanacağı zaman çalışma konu-
muna göre üstte kalan tapa sökülmeli ve redük-
törün beraberinde verilen havalandırma tapası
kullanılmalıdır. Bu redüktörün iç basıncından
dolayı oluşacak yağ sızmalarını önleyecektir.

Redüktörlerde standart olarak kullanılan yağlar
yan sayfadaki tabloda verilmiştir. Eğer Sipari-
şte belirtilmezse Sonsuz Redüktörler M1
pozisyonuna göre yağ ile doldurulmuştur. Bu
pozisyonlar dışındaki çalışma durumlarında
tablolarda verilen yağ miktarlarına göre ilave
veya eksiltme yapılmalıdır. Özel çalışma
koşullarında firmamıza danışmanız tavsiye edilir.

Mineral yağlar her 10.000 çalışma saatinde,
sentetik yağlar ise her 20.000 çalışma saa-
tinde değiştirilmelidir. Ağır çevre koşullarında
(ani ısı değişiklikleri, yüksek nemlilik v.b) yağ
değiştirme periyotlarının kısaltılması tavsiye
edilir. Mineral yağlar ile sentetik yağlar birbirine
kesinlikle karıştırılmamalıdır. Değiştirme işlemi
bir çalışma periyodunun hemen peşinden ve yağ
sıcakken yapılmalıdır. Bu şekilde bir değiştirme,
redüktör içindeki partiküllerin yağa karışmış
olarak bulunmasından dolayı iyi bir temizleme
ve yağın rahat boşalması neticesini verecektir.

Redüktörlerde kullanılan yağ tipi için etiketine
bakınız.

Lubrication

*To work in perfect condition and to have long life
for the gearbox the lubricant must be chosen
correctly and changed in time.*

*In selection of oil it is important to consider speed,
ambient temperature, gear box oil temperature,
working conditions and the life required from the
lubricant. All units are filled with lubricant before
shipping. Before the gearbox is stored for a long
time or before starting up, the top plug (accord-
ing to the working position) must be removed
and the extra given vent plug must be replaced.
This prevents excessive pressure which causes
oil leakages.*

*The lubricant in the standard line is given
for standard fillings on the table below. If
the mounting position not indicated on or-
der Worm Geared gearboxes are filled with
mounting position of M1 . For other mounting
positions please filling oil or draining oil re-
fer to the table given on the next pages. For
special working conditions please contact us.*

*The mineral lubricant should be changed after
every 10.000 service hours and the synthetic
lubricant should be changed after every 20.000
working hours. If the operation conditions are
very heavy (e.g. high temperature differences,
high humidity) shorter intervals between changes
are recommended. Mineral and synthetic oils
must not be mixed up. By changing the lubricant
complete cleaning is advised. The oil change
should be done after a working period. Because
oil is hot in this condition and impurities are mixed
with it the changing of oil will be done in best
result and the oil will drain easily.*

*Please look at the label of your gear unit to check
the filled oil type of gear unit.*

Schmierung

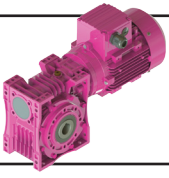
Um eine lange Lebensdauer zu gewährleis-
ten muss der Schmierstoff richtig ausgewählt
werden.

Für die richtige Ölauswahl müssen Drehzahl,
Umgebungstemperatur, Belastungsart und
Lebensdauer des Öls berücksichtigt werden.
Die mitgelieferte Entlüftungsschraube ist vor
Inbetriebnahme oder längeren Lagern gegen
die Einfüllschraube auszutauschen, um einen
Überdruck im Getriebe und damit eine Undich-
tigkeit des Getriebes zu vermeiden. Getriebe
und Getriebemotoren sind bei Auslieferung
betriebsfertig gefüllt.

Ohne besondere Bestellangaben werden die
Getriebe grundsätzlich mit den auf der folgenden
Seite in der grau unterlegten Spalte angegebene
Schmierstoffen gefüllt. Die fußbefestigten
Getriebe sind befüllt für Bauform und die flansch-
befestigten Getriebe für Bauform M1. Für andere
Bauformen sind die auf der nächsten Seite
angegebenen Füllmengen zu beachten.

Ein Schmierstoffwechsel sollte alle 10.000
Betriebsstunden durchgeführt werden. Für
synthetische Produkte verdoppeln sich diese
Fristen. Bei extremen Betriebsbedingungen,
z.B. hohe Luftfeuchtigkeit, aggressiver Umgebung
und hohen Temperatur-schwankungen sind
kürzere Schmierstoffintervalle vorteilhaft. Es
ist empfehlenswert, dem Schmierstoffwechsel
mit einer gründlichen Reinigung des Getriebes
zu verbinden. Synthetische und mineralische
Schmierstoffe dürfen nicht miteinander vermischt
werden. Das Ablassen des Öls soll unmittelbar
nach dem Stillsetzen erfolgen, solange das Öl
noch warm ist. In dieser Zustand ist das Öl mit
den Smutzpartickeln vermischt, so dass eine Ent-
fernung des Altöls eine gute Reinigung garantiert.

Bitte im Getriebe verwendetes Öl von dem Na-
menschild ablesen.



Genel Bilgiler

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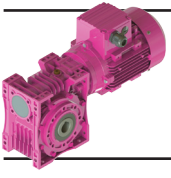
Einführung



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Yağ Tipleri / Oil Types / Schmierstoffe

| Yağ Cinsi Lubricant Art des Schmierers | DIN 51517-3 | Çevre Sıcaklığı (°C) Ambient Temperature (°C) Umgebungstemperatur (°C) | | ISO VG | Aral | Beyond Petroleum | Castrol | Klüber Lubrication | Mobil | Shell | Total |
|---|----------------|--|---|-----------|------------------|-----------------------|------------------------------|----------------------------|-------------------------|----------------------------|------------------------------|
| | | Daldırma Yağlama Dip Lubrication Tauchschnier. | Basınçlı Yağlama Forced Lubrication Druckschnier. | | | | | | | | |
| Mineral Yağlar Mineral Oil Mineralöl | CLP | 0 ... +50 | - | 680 | Degol BG 680 | Energol GR-XP 680 | Alpha SP 680 | Klüberoil GEM 1-680 N | Mobilgear 600 XP 680 | Omala 680 | Carter EP 680 |
| | | -5 ... +45 | - | 460 | Degol BG 460 | Energol GR-XP 460 | Alpha SP 460 | Klüberoil GEM 1-460 N | Mobilgear 600 XP 460 | Omala F460 | Carter EP 460 |
| | | -10 ... +40 | +15 ... +40 | 320 | Degol BG 320 | Energol GR-XP 320 | Alpha SP 320 | Klüberoil GEM 1-320 N | Mobilgear 600 XP 320 | Omala F320 | Carter EP 320 |
| | | -15 ... +30 | +10 ... +30 | 220 | Degol BG 220 | Energol GR-XP 220 | Alpha SP 220 | Klüberoil GEM 1-220 N | Mobilgear 600 XP 220 | Omala F220 | Carter EP 220 |
| | | -20 ... +20 | +5 ... +20 | 150 | Degol BG 150 | Energol GR-XP 150 | Alpha SP 150 | Klüberoil GEM 1-150 N | Mobilgear 600 XP 150 | Omala 150 | Carter EP 150 |
| | | -25 ... +10 | +3 ... +10 | 100 | Degol BG 100 | Energol GR-XP 100 | Alpha SP 100 | Klüberoil GEM 1-100 N | Mobilgear 600 XP 100 | Omala 100 | Carter EP 100 |
| Sentetik Yağlar Synthetic Oil Synthetisches Öl | CLP PG | -10 ... +60 | - | 680 | Degol GS 680 | Energyn SG-XP 680 | - | Klübersynth GH 6 -680 | Mobil Glygoyle 680 | Tivela S 680 | Carter SY 680 |
| | | -20 ... +50 | - | 460 | Degol GS 460 | Energyn SG-XP 460 | Aphasyn PG 460 | Klübersynth GH 6 -460 | Mobil Glygoyle 460 | Tivela S 460 | Carter SY 460 |
| | | -25 ... +40 | +5 ... +40 | 320 | Degol GS 320 | Energyn SG-XP 320 | Aphasyn PG 320 | Klübersynth GH 6 -320 | Mobil Glygoyle 320 | Tivela S 320 | Carter SY 320 |
| | | -30 ... +30 | 0 ... +30 | 220 | Degol GS 220 | Energyn SG-XP 220 | Aphasyn PG 220 | Klübersynth GH 6 -220 | Mobil Glygoyle 30 | Tivela S 220 | Carter SY 220 |
| | | -35 ... +20 | -5 ... +20 | 150 | Degol GS 150 | Energyn SG-XP 150 | Aphasyn PG 150 | Klübersynth GH 6 -150 | Mobil Glygoyle 22 | Tivela S 150 | Carter SY 150 |
| | | -40 ... +10 | -8 ... +10 | 100 | - | - | - | Klübersynth GH 6 -100 | Mobil Glygoyle 100 | - | - |
| | CLP HC | -10 ... +60 | - | 680 | - | - | - | Klübersynth GEM 4-680 N | Mobil SHC Gear 680 | - | Carter SH 680 |
| | | -20 ... +50 | - | 460 | Degol PAS 460 | Energyn EP-XF 460 | Alphasyn T 460 | Klübersynth GEM 4-460 N | Mobil SHC Gear 460 | Omala HD 460 | Carter SH 460 |
| | | -25 ... +40 | +5 ... +40 | 320 | Degol PAS 320 | Energyn EP-XF 320 | Alphasyn T 320 | Klübersynth GEM 4-320 N | Mobil SHC Gear 320 | Omala HD 320 | Carter SH 320 |
| | | -30 ... +30 | 0 ... +30 | 220 | Degol PAS 220 | Energyn EP-XF 220 | Alphasyn T 220 | Klübersynth GEM 4-220 N | Mobil SHC Gear 220 | Omala HD 220 | Carter SH 220 |
| | | -35 ... +20 | -5 ... +20 | 150 | Degol PAS 150 | Energyn EP-XF 150 | Alphasyn T 150 | Klübersynth GEM 4-150 N | Mobil SHC Gear 150 | Omala HD 150 | Carter SH 150 |
| | | -40 ... +10 | -8 ... +10 | 100 | - | - | - | Klübersynth GEM 4-100 N | Mobil SHC 627 | - | - |
| Gıda Uyumlu Yağ Food Grade Oil Lebensmittellöl | CLP NSF H1 | -15 ... +25 | +5 ... +25 | 220 | - | - | Optileb GT 220 | Klüberoil 4 UH1-220 N | Mobil SHC Cibus 220 | Cassida Fluid GL-220 | Nevastane SL 220 |
| Çevre Dostu Yağ Biodegradable Oil Biologisch abbaubares Öl | CLP E | -25 ... +40 | +5 ... +40 | 320 | - | - | Tribol BioTop 1418-320 | Klübersynth GEM 2-320 | - | - | Carter Bio 320 |
| Mineral Gresler [-20 ... +120 °C Çalışma Sıcaklığı] Mineral Grease [-20 ... +120 °C Working Temperature] Mineral-Fett [-20 ... +120 °C Betriebstemperatur] | | | | | Aralub HL3 | Energrease LS 3 | Spheerol AP3 | Centoplex 2 EP | Mobilux EP 3 | Alvania RL3 | Multis Complex EP 2 |
| Sentetik Gresler [-30 ... +100 °C Çalışma Sıcaklığı] Synthetic Grease [-30 ... +100 °C Working Temperature] Synthetisches Fett [-30 ... +100 °C Betriebstemperatur] | | | | | - | Energrease SY 2202 | - | Petamo GHY 133 N | Mobiltemp SHC 100 | Cassida RLS 2 | Multis Complex SHD 220 |



Genel Bilgiler

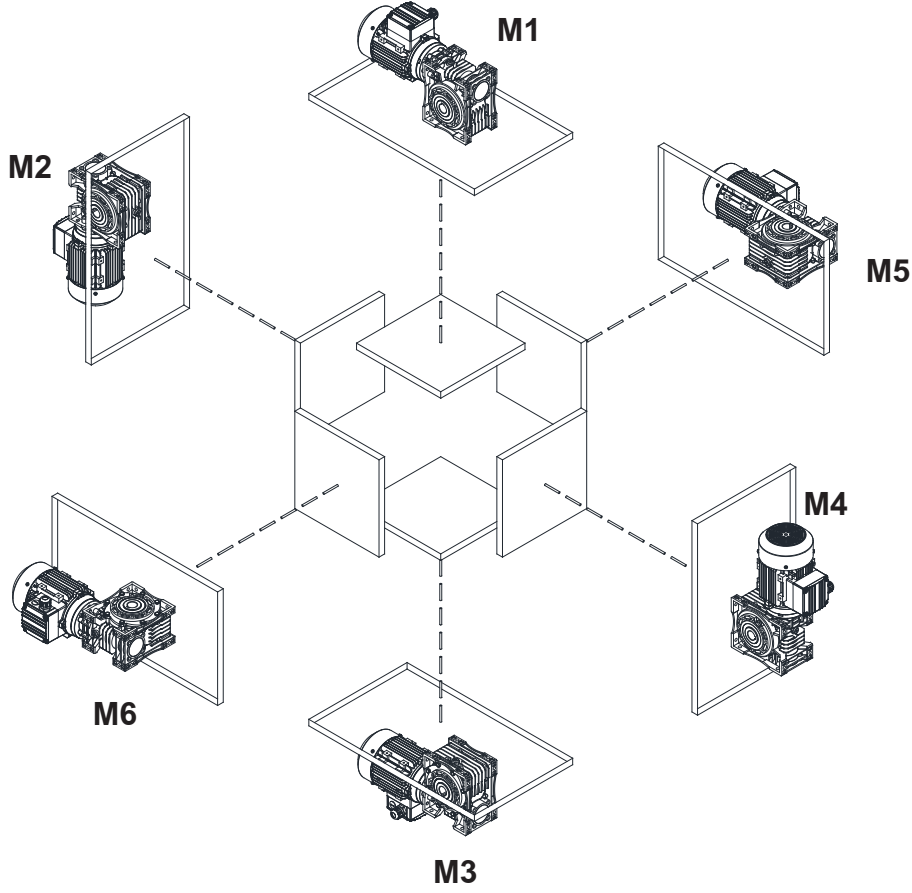
General Information

Einführung



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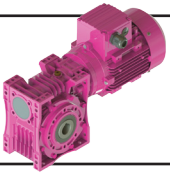
Montaj Pozisyonları / Mounting Positions / Bauformen



M1....M6 'ya kadar belirtilen montaj pozisyonları redüktörün duruş yönü referans alınarak belirlenmiştir. Montaj yüzeyleri bağlayıcı değildir.

Figured mounting positions of M1 to M6 are determined as reference of directional position of the gearbox. Mounting surfaces are not binding.

Dargestellte Montagepositionen M1 bis M6 wurden nach der Stehrichtung von Getriebe bestimmt. Montageoberflächen sind unverbindlich.



Genel Bilgiler

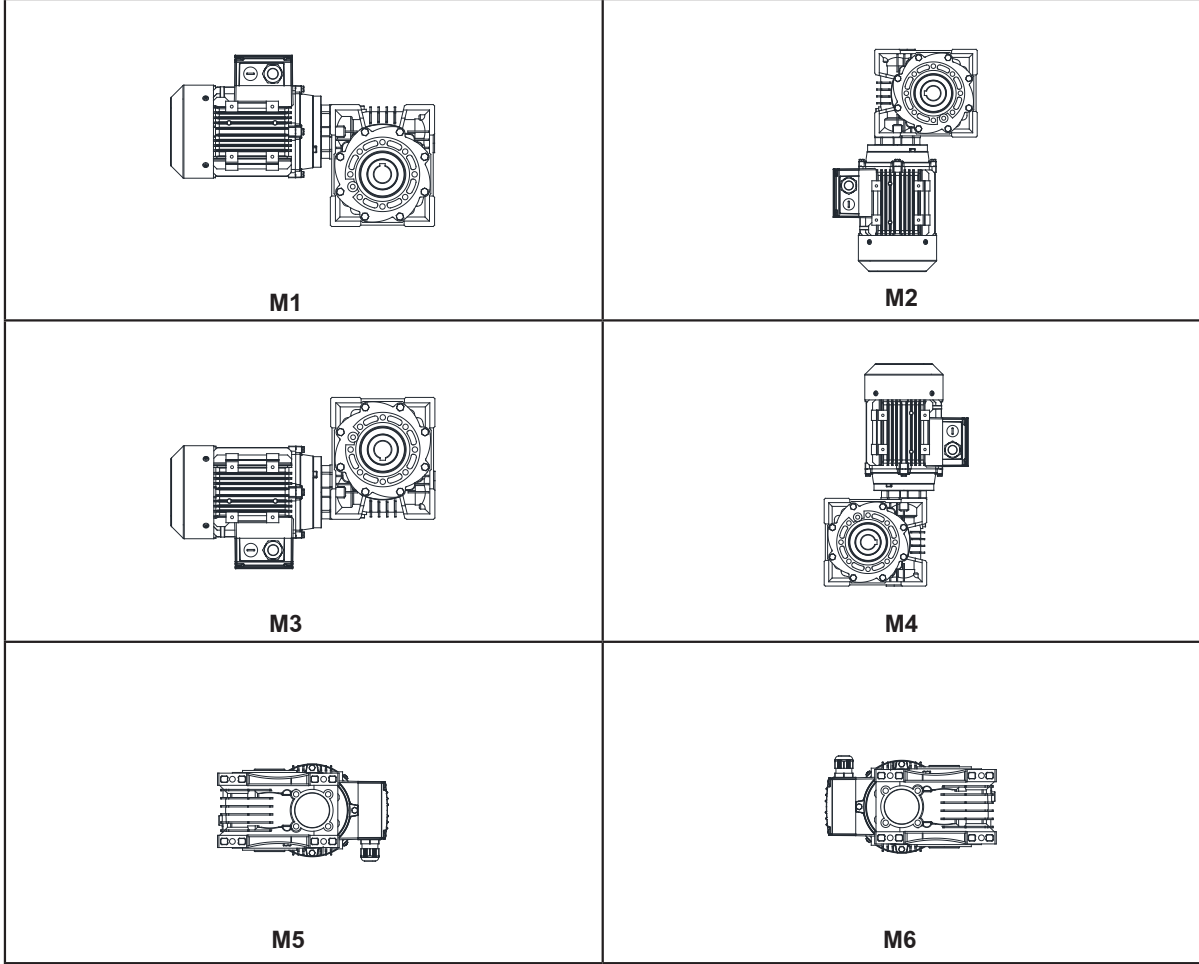
General Information

Einführung



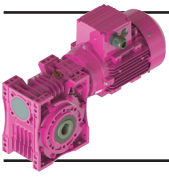
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Yağ Miktarları (lt) / Oil Quantities (lt) / Ölmengen (liter)



Yağ Miktarları (lt) / Oil Quantities (lt) / Ölmengen (liter)

| Tip / Type / Typ | M1 | M2 | M3 | M4 | M5 | M6 |
|------------------|-------|------|------|------|------|------|
| E.30 | 0,025 | 0,04 | 0,02 | 0,04 | 0,04 | 0,04 |
| E.40 | 0,07 | 0,10 | 0,12 | 0,10 | 0,10 | 0,10 |
| E.50 | 0,15 | 0,15 | 0,15 | 0,15 | 0,15 | 0,15 |
| E.63 | 0,30 | 0,40 | 0,26 | 0,40 | 0,50 | 0,40 |
| E.75 | 0,45 | 0,65 | 0,35 | 0,65 | 0,65 | 0,65 |
| E.80 | 0,60 | 0,80 | 0,50 | 0,80 | 0,80 | 0,80 |
| E.100 | 1,7 | 2,1 | 1,2 | 2,1 | 2,1 | 2,1 |
| E.125 | 3,1 | 3,6 | 2,0 | 3,6 | 3,6 | 3,6 |



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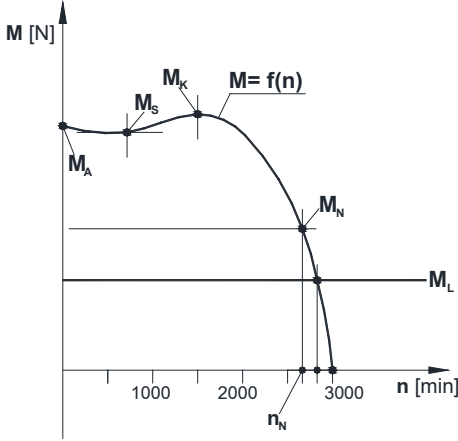
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MOTORLAR

AC Motorlar

a- Genel Özellikler:

Basit konstrüksiyonlu, bakım gerektirmez, güvenilirliği yüksek ve uygun fiyatlı olmaları nedeni ile trifaze asenkron motorlar en çok kullanılan motor cinsidir. Bu motorların çalışma karakteristikleri moment-hız eğrisi ile belirlenir. Aşağıda bu karakteristik eğrisine bir örnek verilmiştir.



Motorun her start yapılmasında bu eğriye uygun hareket eder ve yük momenti M_L ile bu eğrinin çakıştığı nokta, motorun çalışma anındaki moment ve devirini verir.

Statorun manyetik alanı senkron hızla n_s döner. Kutuplar arasındaki faz kayması 3 fazlı motorlarda 120° 'dir.

$$n_s = 120 \times \frac{f}{p_s}$$

f.....: şebeke frekansı [Hz]
p_s.....: statorun kutup sayısı

Rotorun değişken manyetik alanı rotorun statorun manyetik alanının dönüşü yönünde dönmeye başlamasını sağlar. Rotor bu hareketinde statorun manyetik alanını takip eder ama hiçbir zaman yakalayamaz. Rotor statorun manyetik alanının hızından yavaş döner. Rotorun bu hızına baz hız n_N denir. Yükün azalması rotorun hızının artmasını sağlar, aynı zamanda sapma azalmış olur. Sapma aşağıdaki gibi belirlenmiştir:

$$s = \frac{n_s - n_N}{n_s} \times 100$$

Sapmanın miktarına göre motorun nominal değerlerinde şu farklılıklar olabilir.

Sapma s: $\pm 20\%$
Kalkış Akımı.....: $\pm 20\%$
Kalkış Momenti.....: $-15 / +25 \%$
Kütle Atalet Momenti.....: $\pm 10\%$
Verim (37 kW'a kadar).....: $-0,15 (1-\eta)$

MOTORS

AC Motors

a- General Specifications:

On account of its simple and maintenance free construction, good reliability and price, the three phase squirrel cage motor is one of the most frequently employed electric motors. The run up behavior of a three phase squirrel cage motor is described by the torque-speed characteristic curve. An example is shown below.

M_A : Start momenti / Starting torque / Anlaufmoment

M_S : Demeraj momenti / Pull-up torque / Anziehungsmoment

M_K : Frenleme momenti / Pull-out torque / Bremsmoment

M_N : Motorun ilettiği moment / Motor rated torque / Treibmoment

M_L : Yük momenti / Load torque / Lastmoment

The motor follows this torque characteristics up to its stable operating point every time, when it is switched on. Operating point is that point, where the moment speed curve intersects with load torque M_L line.

The magnetic field in the stator rotates at a synchronous speed n_s . Phase shift of each pole is 120° at 3 phase motors.

$$n_s = 120 \times \frac{f}{p_s}$$

f.....: supply frequency [Hz]
p_s.....: number of stator poles

Because of the alternating magnetic field in the rotor, the rotor starts running in the same direction of the stator flux and tries to catch up with the rotating flux. The rotor never catches up the stator field. The rotor runs slower than the speed of the stator field. This speed is called the base speed n_N .

A decrease in load will cause the rotor to speed up or decrease slip. The slip is defined as follows:

$$s = \frac{n_s - n_N}{n_s} \times 100$$

According to the slip, the nominal values of the electric motor can alter as follows:

Slip s: $\pm 20\%$
Starting current: $\pm 20\%$
Starting torque: $-15 / +25 \%$
Moment of inertia.....: $\pm 10\%$
Efficiency (up to 37 kW).....: $-0,15 (1-\eta)$

MOTOREN

Drehstrommotoren:

a- Allgemeine Eigenschaften

Wegen die wartungsarme und leichte Konstruktion, hohe Sicherheit bei Nutzung und günstige Preise werden die asynchrone Drehstrommotoren am meisten benutzt. Motoranlaufverhalten wird mit Moment-Drehzahl-Kurve charakterisiert. Ein Beispiel ist unten angegeben.

Der Drehstrommotor läuft diese Kurve bei jeder Anlauf, bis dem stabilen Betriebspunkt erreicht wird. Betriebspunkt ist der Zustand, bei dem die Moment-Drehzahl-Kurve sich mit der Linie von erforderlichen Moment M_L schneidet.

Magnetisches Feld von Stator dreht sich mit synchroner Geschwindigkeit n_s . Phasenverschiebung von den Polen ist 120° bei 3 phasigen Drehstrommotoren.

$$n_s = 120 \times \frac{f}{p_s}$$

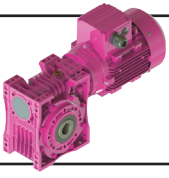
f.....: Frequenz der Spannung [Hz]
p_s.....: Anzahl der Polen von Stator

Durch das magnetische Wechselfeld in den Rotor, beginnt der Rotor sich in der gleichen Richtung des Statorflusses zu drehen und versucht diese Bewegung aufzuholen. Der Rotor kann den Statorfeld nie aufholen. Die Rotorgeschwindigkeit nennt man Basisgeschwindigkeit n_N . Eine Abnahme der Belastung bewirkt, dass der Rotor sich beschleunigt und der Schlupf sich verringert. Der Schlupf wird wie folgt definiert:

$$s = \frac{n_s - n_N}{n_s} \times 100$$

Für die nominale Werte der Drehstrommotoren sind folgende Abweichungen zulässig:

Schlupf s: $\pm 20\%$
Anzugsstrom: $\pm 20\%$
Anzugsmoment: $-15 / +25 \%$
Massenträgheitsmoment: $\pm 10\%$
Wirkungsgrad (bis 37 kW).....: $-0,15 (1-\eta)$



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b- Çalışma Türleri

Katalogta verilen tüm redüktörlerin motorları S1 çalışma türüne uygun verilmektedir. Diğer çalışma türleri aşağıdaki tabloda gösterilmiştir.

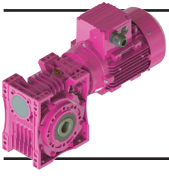
b-Modes of Operation

All motors of the catalogue have been laid out for duty S1 (continuous operation). Other duty types are given on the following table.

b-Betriebsarten

Die im Katalog angeführten Motoren sind für Betriebsart S1 (Dauerbetrieb) ausgelegt. Andere Betriebsarten sind unten angegeben.

| Çalışma Türü Operation Betriebsarten | Açıklama Explanation Erläuterung | Yük Grafiği Load Graphic Lastverläufe |
|--|---|---|
| S1 | Sabit yükte sürekli çalışma <i>Continuous operation under constant load</i> Dauerbetrieb mit konstanter Belastung | |
| S2 | Sabit yükte kısa süreli çalışma <i>Short-time duty under constant load</i> Kurzbetrieb mit konstanter Belastung | |
| S3 | Yolvermede sıcaklık artımı olmadan periyodik çalışma <i>Periodic duty without influence of start-up on temperature</i> Aussetzbetrieb ohne Einfluß des Anlaufens auf die Temperatur | |
| S4 | Yolvermede sıcaklık artımı olan periyodik çalışma <i>Periodic duty with influence of start up on temperature</i> Aussetzbetrieb mit Einfluß des Anlaufens auf die Temperatur | |
| S5 | Yolvermede ve frenlemede sıcaklık artımı periyodik çalışma <i>Periodic duty with influence of startup and braking on temp.</i> Aussetzbetrieb mit Einfluß des Anlaufens / Bremsung auf die Temp. | |
| S6 | Sürekli orta darbeleri çalışma <i>Continuous operation with intermittent loading</i> Durchlaufbetrieb mit Aussetzungsbelastung | |
| S7 | Elektriksel frenlemeli sürekli orta darbeleri çalışma <i>Continuous operation with intermittent loading and braking</i> Ununterbrochener Betrieb mit Anlauf und Bremsung | |
| S8 | Devir ve yük değişimli sürekli çalışma <i>Continuous operation duty type with related load-speed changes</i> Ununterbrochener periodischer Betrieb mit Drehzahländerung | |



Genel Bilgiler

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c- Koruma Sınıfı:

Yılmaz Redüktörde standart olarak IP54 (IEC 34-5) koruma sınıfı motorlar kullanılmaktadır. Diğer koruma sınıfları istendiğinde firmamıza danışınız.

d- İzolasyon Sınıfı:

Yılmaz Redüktörde kullanılan standart izolasyon sınıfı F (IEC 317-8) dir. İstek üzerine H sınıfı yapılabilmektedir.

e- Verim Sınıfları:

Üç fazlı az gerilim asenkron motorların verim sınıfı ölçümü IEC 60034-2-1:2007 normu ile belirlenmiştir. Yeni IE verim sınıfı 0,75 kW'tan 375 kW'a kadar güç aralığında çalışan AC motorlar için geçerlidir. EFF verim sınıfından farklı olarak IE verim sınıfı 6 kutup sayılı motorlar içinde kullanılabilir. Aşağıda verim sınıfları sıralanmıştır. Bölgeler dışında verim sınıfı zorunlulukları ülkelere görede farklılık gösterebilir. Lütfen firmamıza danışınız. Başka ürünlere entegre olmuş ve bu nedenle motorun veriminin bağımsız belirlenemediği sistemlerde (redüktör pompa gibi) verim sınıflandırması geçerli değildir.

c- Protection Class:

Yılmaz Redüktör uses IP54 (IEC 34-5) protection class electric motors for standard products. If different kind of protection class is requested please contact us.

d- Insulation Class:

Yılmaz Redüktör uses F (IEC 317-8) insulation class electric motors for standard products. H insulation class is available upon request.

e- Efficiency Classes:

The method for measuring the efficiency of low voltage three-phase asynchronous motors was revised with the new IEC 60034-2-1:2007 standard. The new IE classes is valid for AC Motors in power range from 0,75 to 375 kW. Unlike the EFF classes IE classes can be used for 6-pole AC motors. Below is the table of efficiency classes. The instructions for efficiency classes can differ from country to country. Please contact with us for more information. For the motors, which are fully integrated into a product (for example gear, pump) so their energy efficiency can not be recognized independently, the requirements of efficiency are not valid in Europe.

c- Schutzarten:

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Yılmaz Redüktör Getriebemotoren werden serienmäßig mit Schutzart IP54 (IEC34-5) ausgeführt. Für andere Schutzarten bitte rückfragen.

d- Isolationsklasse:

Yılmaz Redüktör Getriebemotoren werden serienmäßig in Wärmeklasse F (IEC317-8) ausgeführt. H Wärmeklasse ist möglich auf Kundenwunsch.

e- Energieeffizienzklassen:

Die Methode für Messung der Effizienz von drei phasigen gering Spannung Asynchronmotoren hat neu mit IEC 60034-2-1:2007 Norm festgestellt. Die neue IE-Klassen gelten für alle Drehstrommotoren im Leistungsbereich von 0,75 bis 375 kW. Anders als EFF-Klassen die IE-Klassen können auch für 6-polige Drehstrommotoren verwendet werden. Unten steht die Tabelle der Effizienzklassen. Die Richtlinien für Effizienzklassen können sich je nach dem Land unterscheiden. Bitte mit unserem Firma Kontakt aufnehmen. Für die Motoren, die vollständig in ein Produkt (zum Beispiel Getriebe, Pumpe) eingebaut sind und deren Energieeffizienz nicht unabhängig von diesem Produkt erfasst werden kann, gelten in Europa die Anforderungen der Effizienzklassen nicht.

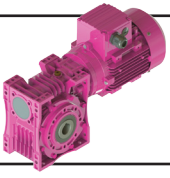
| Verim Sınıfları Efficiency Classes Energieeffizienzklassen | | 4 Kutuplu Motor Verim Değeri Hesabı Calculating Efficiency Values of Motors with 4 Poles Berechnung der Wirkungsgrade von Elektromotoren mit 4 Polen | |
|--|-------|--|---|
| IE1 | EFF 2 | Standart Verim Standart Efficiency Standarte Energieeffizienz | A=0,5234 B=-5,0499 C=17,4180 D=74,3171 |
| IE2 | EFF 1 | Yüksek Verim High Efficiency Hohe Energieeffizienz | A=0,0278 B=-1,9247 C=10,4395 D=80,9761 |
| IE3 | - | Premium Verim Premium Efficiency Premium Energieeffizienz | A=0,0773 B=-1,8951 C=9,2984 D=83,7025 |
| IE4 | - | Süper Premium Verim Super Premium Efficiency Super Premium Energieeffizienz | - |

$$\eta_{Mn} = A \times [\log_{10}(P_L)] + B \times [\log_{10}(P_L)]^2 + C \times \log_{10}(P_L) + D$$

P_L :Anma Yüğü [kW] / Nominal Load [kW] / Nennlast [kW]

η_{Mn} :Nominal verim / Nominal Efficiency / Sollwirkungsgrad

| 4 Kutuplu Motor Verim Değeri Efficiency Values of Motor with 4 poles Sollwirkungsgrad des Motors mit 4 Polen | Anma Yüğü [kW] Nominal Load [kW] Nennlast [kW] | Verim Sınıfı / Efficiency Class / Energieeffizienzklassen | | |
|--|--|---|--------|--------|
| | | IE1 | IE2 | IE3 |
| | 0,75 | 72,1 % | 79,6 % | 82,5 % |
| | 1,5 | 77,2 % | 82,8 % | 85,3 % |
| | 3 | 81,5 % | 85,5 % | 87,7 % |
| | 7,5 | 86 % | 88,7 % | 90,4 % |
| | 15 | 88,7 % | 90,6 % | 92,1 % |
| | 22 | 89,9 % | 91,6 % | 93 % |
| | 37 | 91,2 % | 92,7 % | 93,9 % |
| | 45 | 91,7 % | 93,1 % | 94,2 % |
| | 75 | 92,7 % | 94 % | 95 % |
| | 90 | 93 % | 94,2 % | 95,2 % |
| | 330 | 94 % | 95,1 % | 96 % |



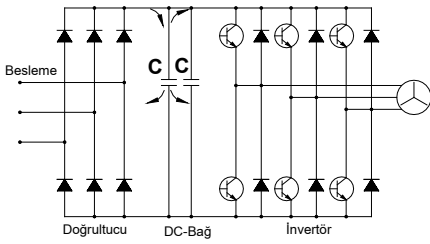
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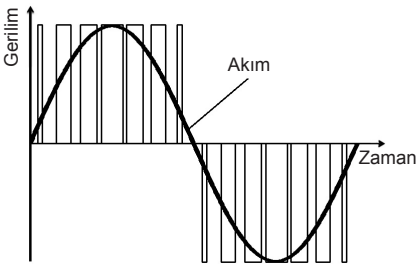
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f- AC Frekans İnvörtörler

Doğru Akımı (DC), alternatif akıma (AC) çeviren elektronik çeviricilere invörtör denilmektedir. AC motorlar için elektronik hız kontrol cihazları genellikle AC giriş akımını doğrultucu diyotlarla DC akıma çevirir ve daha sonra çevirici diyotlar vasıtasıyla bu akımı tekrar AC akıma çevirir. Doğrultucu diyotlar ile çevirici diyotlar arasındaki bağlantı DC-bağ olarak tanımlanmaktadır. DC kontrol cihazının (genellikle invörtör olarak isimlendirilir) elektriksel blok şeması aşağıda verilmiştir.

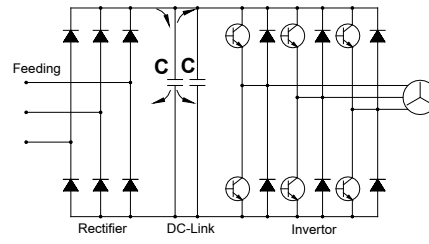


Tam dalga doğrultucuları besleyen üç faz besleme akımı DC-bağ kapasitörlerine iletilir. Kapasitörler voltajdaki dalgalanmaları azaltır ve kısa süreli ağdaki akım kesintilerinde enerji sağlar. Kapasitörlerdeki voltaj kontrolsüzdür ve gelen AC akımın pik akım değerlerine bağlıdır. DC akım tekrar AC akıma, Puls genişliği modülasyonu (PWM) kullanılarak çevrilir. İstenen dalga formu, sabit bir frekansta (Puls frekansında), çıkış transistörlerinin (İzole edilmiş geçit Bipolar transistörleri; IGBT 'ler) açılıp kapatılması ile oluşturulur. IGBT'lerin açma kapama zamanlarının değişimi ile istenen akım oluşturulabilir. Çıkış voltajı bir seri kare dalga pulslardır ve motor sargılarının indüktansı ile sinusoidal bir motor akımı oluşur. Puls genişliği modülasyonu aşağıda gösterilmiştir.

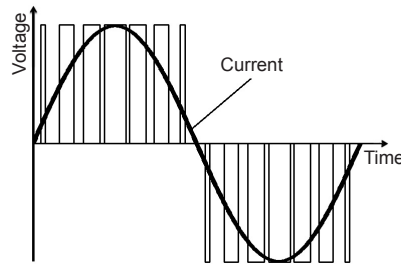


f- AC Frequency Inverters

An electronic converter is a device which converts Direct Current (DC) to Alternating Current (AC) is known as an inverter. Electronic speed controllers for AC motors usually convert the AC supply to DC using a rectifier, and then convert it back to a variable frequency, variable voltage AC supply using an inverter bridge. The connection between the rectifier and inverter is called the DC link. The block diagram of a speed controller (often called an inverter) is shown below.

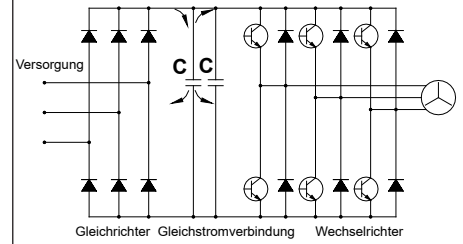


The three phase supply is fed into a full wave rectifier which supplies the DC link capacitors. The capacitors reduce the voltage ripple (especially on single supplies) and supply energy for short mains breaks. The voltage on the capacitors is uncontrolled and depends on the peak AC supply voltage. The DC voltage is converted back to AC using Pulse Width Modulation (PWM). The desired waveform is built up by switching the output transistors (Insulated Gate Bipolar Transistors; IGBTs) on and off at a fixed frequency (the switching frequency). By varying the on and off time of the IGBTs the desired current can be generated. The output voltage is still a series of square wave pulses and the inductance of the motor windings results in a sinusoidal motor current. Pulse Width Modulation is shown in the figure below.

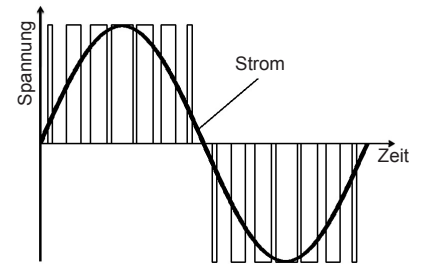


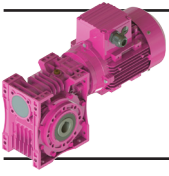
f- AC Frequenz Umrichter

Ein elektronischer Wandler, der den Gleichstrom (DC) in Wechselstrom (AC) umwandelt, wird als Umrichter bezeichnet. Ein Frequenzumrichter benutzt einen ungesteuerten Eingangsgleichrichter, um die Netzspannung in Gleichspannung umzuwandeln. Diese wird dann in den Zwischenkreiskondensatoren gespeichert. An diesem Gleichspannungszwischenkreis ist ein Wechselrichter angeschlossen. Dieser Wechselrichter erzeugt am Ausgang eine variable Frequenz und eine variable Spannung. Der Anschluss zwischen dem Gleichrichter und dem Wechselrichter nennt man Gleichstromverbindung. Das Blockschaltbild von diesem System wurde unten dargestellt:



Auch bei dreiphasiger Versorgung wird die gleichrichtete Netzspannung den Zwischenkreiskondensatoren zugeführt. Die Kondensatoren reduzieren die Oberwelligkeit der Spannung (was besonders bei einphasiger Versorgung entscheidend ist) und liefern Energie, die kurze Unterbrechungen der Netzstromversorgung ermöglicht. Die Spannung der Kondensatoren ist vom Spitzenwert der Wechselspannung abhängig. Die Gleichspannung wird im Wechselrichter durch Pulsweitenmodulation (PWM) in Wechselspannung umgewandelt. Die gewünschte Wellenform wird durch Ein- und Ausschalten der Ausgangstransistoren (IGBT's Isolierte Gate Bipolar Transistoren) mit einer festen Frequenz (der Pulsfrequenz) erzeugt. Der gewünschte Strom kann durch die Variation der Ein- und Ausschaltzeit der Ausgangstransistoren generiert werden. Die Ausgangsspannung ist dadurch eine Reihe von Spannungsimpulsen, die in Verbindung mit der Induktivität der Motorspulen zu einem sinusförmigen Motorstrom führt. Die Pulsweitenmodulation wird wie folgt dargestellt





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DC MOTORLAR

a- Genel Özellikler

DC motorlar, elektronik parçalardaki gelişmeler nedeni ile yeni uygulama alanları bulmuştur. Daha önce çok pahalı olan ve ekonomik olmayan kontrol sistemlerinin yerini ucuz ve kompakt güç kontrol üniteleri almıştır. Yol vermenin kontrol altına alınabildiği, tork ve akım izlenebilirliği, aşırı yüklenmeye karşı elektronik koruma sağlanabilmesi ve daha birçok pahalı olmayan uygulamalar DC motorlarını cazip kılmaya başlamıştır.

b- DC Motorların Çalışma İlkeleri

DC motorlar için DC çıkış veren bir doğrultucuya ihtiyaç vardır. Motor armatür sargıları, alan sargıları, komutasyon sargıları ve kompanse sargılar olmak üzere rotorda ve statorda bulunan sargılardan oluşur. Rotora voltaj ve akım karbon fırçalar ve komutator sargılarla ulaştırılır. Bu karbon fırçalar aşındığından DC motorlar belirli periyotlarla bakıma alınmalıdır. İyi kontrol edilebilir özelliklerinden dolayı DC motorlar otomasyon teknolojisinde sıkça kullanılmaktadır.

c- DC Motor Çeşitleri

Temel olarak Şönt (Shunt) ve seri sargılı DC motorlar bulunmaktadır. Bu sargıların çeşidine göre moment eğrisi değişmektedir.

d- DC Motorlarda Hız Kontrolü

Bu motorlarda devir değişimi DC voltajın değiştirilmesi ile yapılır. Şönt sarımlı DC motorların sıfır yük ile maximum yük arasındaki davranışı AC motorlara benzer. Devir artan yüklerle beraber düşer. Bu devir farkı ufak güçlü motorlarda büyük, büyük güçlü motorlarda ise ufaktır. Fakat bu hız farkı DC doğrultucu cihazda armatür voltajı ($I \times R$) ile oynanarak kompanse edilebilir. Hassas hız kontrol gereksinimi olduğunda, tako jeneratörler kullanılabilir. DC motorların gücü aşağıdaki formülden hesaplanır;

$$P_g = U \times I = \frac{P_c}{\eta}$$

P_g : Giriş gücü W
 P_c : Çıkış gücü W
 U : Armatür gerilimi V
 I : Armatür akımı A
 η : Motor verimi

DC MOTORS

a- General Specifications of DC Motors

DC drive systems have found new possible applications with the development of the electronic components sector. What was previously extremely expensive and in some cases not economically feasible is nowadays realized by miniaturized power converter technology. Additional functions such as guided startup after a predetermined time, torque and current monitoring with electronic protection against overloading, and many inexpensive special applications have made DC drive systems more attractive.

b- Operating principles of the DC Motors

The DC motor requires, a converter with DC output. The motor includes windings, such as armature, field, commutation and compensation windings, which are arranged in the stator as well as on rotor. Voltage and current are supplied to the rotor via the carbon brushes and the commutator. The carbon brushes are wearing parts therefore a DC motor requires maintenance at service intervals. While its good control properties, the DC motor is an essential item in automation technology.

c- Types of DC Motors

Depending on the wiring of the exciting winding or field winding, two basically different variants are regards torque speed characteristics may be distinguished.

d- Speed Control of DC motors

In DC motors the speed is adjusted by altering the DC voltage. DC shunt wounded motors behave similar to three phase induction motors between no load operation and maximum load. The speed drops with increasing loading of the motor. This difference is greater in small motors and smaller in larger motors. The speed difference can be compensated in the DC converter device by adjusting ($I \times R$). If great control accuracy is required, a speed control with measurement of the actual values by a tachogenerator can be used. The power of DC motor;

$$P_g = U \times I = \frac{P_c}{\eta}$$

P_g : Input Power W
 P_c : Output Power W
 U : Armature Voltage V
 I : Armature Current A
 η : Motor efficiency

DC MOTOREN

a- Eigenschaften von DC Motoren

Mit den Entwicklungen bei elektronischen Komponenten haben DC Motoren neue Anwendungsbereiche gefunden. Regelungssysteme, die früher sehr teuer und im manchen Anwendungsfällen ungünstig waren, sind jetzt kompakt und günstig. Bei den DC Motoren ist kontrolliertes Anlauf, Moment- und Stromüberwachung mit Überlastschutz möglich. Es gibt viele günstige Sonderanwendungen für diese Motoren. Wegen oben genannten Eigenschaften werden die DC Motoren immer mehr bei unterschiedlichen Anwendungen benutzt.

b- Funktionsprinzip der DC Motoren

Bei DC Motoren ist eine Kommutatorwicklung im Rotor angeordnet, während der magnetische Fluss vom Stator erzeugt wird. Dies kann wiederum mittels einer Erregerwicklung oder durch Permanentmagnete geschehen. Wie bei der Synchronmaschine wird durch das Erregerfeld in der Ankerwicklung eine Wechselspannung, die bei der Gleichstrommaschine jedoch durch den mechanischen Kommutator und die darauf schleifenden Bürsten in eine Gleichspannung umgeformt wird, induziert.

c- Arten von DC Motoren

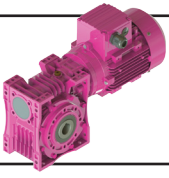
Es gibt zwei verschiedene Wicklungen, nämlich Shunt- und Serial-Wicklung. Das Drehmoment-Drehzahl-Verhältnis ist für beide Wicklungen unterschiedlich.

d- Drehzahl Kontrolle für DC Motoren

Drehzahl von DC Motoren kann man mit Steuerung der DC Spannung ändern. DC Motoren mit Shunt Wicklungen ist ähnlich zu drei phasen AC Motoren zwischen maximalen Last und ohne Last. Drehzahl wird mit der Last reduziert. Mit kleineren Motoren wird dieser Differenz höher mit größeren Motoren kleiner. Der Drehzahlunterschied kann geregelt werden mit ($I \times R$) Veränderung. Wenn eine genaue Kontrolle gebraucht, soll ein Tachogenerator benutzt werden. Leistung des DC Motors;

$$P_g = U \times I = \frac{P_c}{\eta}$$

P_g : Eingangsleistung W
 P_c : Ausgangsleistung W
 U : Ankerspannung V
 I : Ankerstrom A
 η : Wirkungsgrad des Motors



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Elektromanyetik Frenler

Bu tip frenlerin iki sürtünme yüzeyi vardır. Fren torku, voltaj uygulanmadığı zaman yayların kuvveti ile oluşturulur. Fren elektromanyetik alanın oluşumu ile serbest kalır. Bobinin beslenmesi ile mıknatıslanan balata baskı pulu, elektromıknatısa doğru çekilir. Bu hareket yayları baskı altına alır ve rotor mili üzerine takılan çoklu kama üzerinde aksiyal yönde serbest hareket edebilen balata serbest kalır. Akım kesildiğinde yayların baskısıyla, balata baskı pulu fren balatasına doğru itilir ve bu hareket rotoru frenler.

Fren Çeşitleri

a) Soğutmasız tip frenler

Motor fanı çıkarılıp motor kapağı arkasına akuple edilerek kullanılan frenler; genellikle sıkça açılıp kapanmayan ve kısa zaman aralıklarında çalışan sistemlerde tercih edilir.

b) Soğutmalı tip frenler

Motor fanı çıkarılıp motor kapağı arkasına akuple edilen ve motorun mili uzatılarak fren ve motorun arkasına alınan fan sayesinde daimi bir hava sirkülasyonu sağlanarak kullanılan frenlerdir. Genellikle uzun süreli çalışan ve kapalı mekanlarda kullanılan sistemlerde tercih edilirler.

c) Manuel kol sistemli frenler

Çalışma sistemi olarak her iki fren tipinde de kullanılabilir (soğutmalı veya soğutmasız). Özel durumlarda (elektrik kesilmesi; mekanik problemler) üzerinde bulunan bir kol vasıtası ile sistemi yay baskısından kurtararak serbest kalmasını sağlayan frenlerdir. Genellikle manuel olarak sistemin açılması gereken yerlerde (otomatik giriş kapıları, dış cepe boyama asansörleri v.b.) tercih edilir.

Fren çalışma voltajları

Elektromanyetik frenler 230V AC veya 400V AC beslemeli olarak sipariş edilebilir. Frenler DC fren olmaları nedeni ile besleme ile fren bobini arasında fren tipine bağlı olarak, yarım dalga, tam dalga doğrultucular veya trafolar kullanılır. Özel olarak belirtilmedikçe 230V beslemeli ve yarım dalga doğrultuculu frenler kullanılmaktadır. Özel durumlar için YILMAZ Redüktöre danışınız.

a) 98V DC Frenler:

Motor klemens kutusundan alınan 230V'luk AC besleme yarım dalga doğrultucu ile 98V DC'ye dönüştürülür. Fren bobin DC voltajı etiketi üzerinde belirtilmiştir.

b) 198V DC Frenler

Motor klemens kutusundan alınan 400V'luk AC besleme, yarım dalga doğrultucu ile 198V DC'ye düşürülür. Fren bobininin DC voltajı etiket üzerinde belirtilmiştir.

c) 24V DC Frenler

Kullanılan fren momentinin büyüklüğüne göre besleme transformatörü seçilir. Şebekeden veya motorun klemens kutusundan alınan besleme voltajı transformatörde 29 V'a çevrilen gerilim tam dalga doğrultuculardan geçerek 24V DC'ye çevrilir ve fren bobini beslenir. İstenirse 24 VDC güç kaynağı da kullanılabilir.

Electromagnetic Brakes

This type of brakes has two friction surfaces. Brake torque is generated by springs when no voltage is applied. The brake is electromagnetically released. On exciting the electromagnet means of the current, the armature plate is pulled towards the electromagnet itself, thrust loading the pressure spring and enabling the friction disc which is axially movable on the key, to turn freely. When current fails, the pressured springs drive the armature plate towards the disc, thus braking the motor shaft.

Brake Types

a) Brakes without cooling

This type of brakes are assembled on the back cover of the electric motor. There is no fan on the backside. This brake type is mostly preferred in short working times and short working cycles.

b) Fan cooled brakes

This type of brakes are assembled on the back cover of electric motor by removing the electric motor fan. A fan is coupled to the backside of the brake by extending the rotor shaft of the electric motor. Fan cooled brakes are preferred in long working times and closed places without airflow.

c) Brakes with hand release

This brakes can be released by help of an arm. It can be applied to both of the above mentioned brakes and used in special cases (fail of electric current, mechanical problems etc.) These brakes are mostly preferred if operation (releasing) without a current is needed (automatic controlled doors, gates, building wall painting elevators etc.).

Working Voltages

Electromagnetic brakes can be ordered with 230V AC or 400V AC supply voltage. The coil of brakes needs DC voltage and therefore depending on brake type a half wave, a full wave rectifier or transformer should be used between supply and coil voltage. As standard the brakes will be delivered with 230V supply voltage and half wave rectifier, if there is no special request. For special cases please contact YILMAZ Redüktör.

a) 98V DC Brakes:

230V AC supply voltage from the motor terminal box reduces to the 98V DC with half-wave rectifier. DC brake coil voltage is indicated on the label.

b) 198V DC Brakes:

400V AC supply voltage from the motor terminal box reduces to the 198V DC with half-wave rectifier. DC brake coil voltage indicated on the label.

c) 24V DC Brakes

The transformer's size is selected according to value of brake torque. The current is taken from the electric motor terminal box or from the electric panel and is transformed to 29V DC current. This current is transferred to 24V DC current with full-wave rectifier and supplies brake coil. Separated 24V DC Power supply usable.

Elektromagnetische Bremsen

Die Bremse hat zwei Reibflächen und arbeitet nach dem Ruhestromprinzip. Im stromlosen Zustand wird das Bremsmoment durch den Druck der Feder erzeugt, während die Bremse beim Betrieb elektromagnetisch losgelassen wird. Durch die Erregung der Elektromagneten wird die Ankerscheibe zu den Elektromagneten gezogen und die Feder zusammengedrückt. Dadurch kann sich die Bremsscheibe, die axial beweglich auf dem Mitnehmer angeordnet ist, frei drehen. Wird der Strom unterbrochen, drücken die Feder die Ankerscheibe gegen die Bremsscheibe und halten die Motorwelle an.

Bremsearten:

a) Bremsen ohne Kühlung

Diese Bremsen sind für Kurzlaufzeiten geeignet. Die Lüfterhaube und Lüfter des Motors ist ausgebaut und die Bremse ist an dem Ende der Motorwelle befestigt.

b) Bremsen mit Kühlung

Diese Bremsen sind für lange Laufzeiten und kleine, abgedeckte Räume geeignet. Durch die Verlängerung der Motorwelle wurde Lüfter hinter dem Bremse und dem Motor verbunden. Somit wurde eine konstante Lüftung ermöglicht.

c) Bremsen mit Hebelarm

Diese Bremsenart kann mit oder ohne Kühlung verwendet werden. Diese Bremsen sind bei der speziellen Fälle, wie keine Spannung an der Leitung, mechanische Probleme usw., anwendbar. Die Bremse wird mit einem Hebelarm manuell betätigt. Diese Bremsen werden am meisten an den Stellen, wo die Lüftung ohne Spannung erfolgen soll, benutzt (automatische Türe, Wandaufzüge).

Betriebsspannungen

Elektromagnetische Bremsen können mit 230V AC oder 400V AC Versorgungsspannung bestellt werden. Die Wicklungen der Bremsen brauchen Gleichspannung und deswegen abhängig von Bremsenart zwischen Versorgungsspannung und Wicklungsspannung soll Halbwellen-, Vollweggleichrichter oder Transformator verwendet werden. Als Standard die Bremsen werden mit 230V Versorgungsspannung und Halbwellengleichrichter geliefert.

a) 98V DC Bremsen

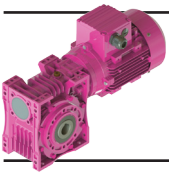
230V AC Versorgungsspannung von Klemmenkasten wird auf die Wicklungsspannung 98V DC mit Halbwellengleichrichter reduziert. Wicklungsspannung ist auf dem Etikett angegeben.

b) 198V DC Bremsen

400V AC Versorgungsspannung von Klemmenkasten wird auf die Wicklungsspannung 198V DC mit Halbwellengleichrichter reduziert. Wicklungsspannung ist auf dem Etikett angegeben.

c) 24 V DC Bremsen

Die Spannung wird von den Klemmkasten des Motors oder Elektrischrank entnommen. Diese Spannung wird zuerst mittels Transformator zu 24 V reduziert. Danach wird diese Spannung mit Hilfe von Gleichrichter zu Gleichstromspannung umgewandelt. Die Größe des Transformators ist abhängig von der Größe des Bremsmoments. Es kann auch ein 24V DC Netzgerät benutzt werden.



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d) Şok ikazlı trafolar

Büyük güçteki ve momentteki frenlerin manyetik doyuma ulaşmaları uzun zaman alır. Şok ikazlı trafolar frenin yay baskısını yenmede gecikmesini engellemek için kullanılır ve zaman rölesi yardımı ile çok kısa bir süre normal besleme voltajının iki katı ile (48V DC) beslenip sistemin ani açılmasını sağlar. Bu sayede gecikmeli açılmada ortaya çıkacak sürtünmeyi engellemeye yarayan bir trafo şeklindedir.

Fren bağlantı şekli

a) Gecikmeli frenleme

Genellikle sistemin yavaş ve kaydırılarak durması gereken yerlerde tercih edilen bağlantı şeklindedir. Vinç yürütme motorlarındaki sarsıntıyı önlemek için gecikmeli bağlantı şekli kullanılır. Frenler fabrika çıkışında gecikmeli bağlantıya uygun ayarlanır.

b) Ani frenleme

Genellikle sistemin enerjisi kesildiği anda ani olarak durdurulması gereken sistemlerde kullanılan bağlantı şeklindedir. Vinç kaldırma sistemleri, asansör motorlarında kullanılan bağlantı şeklindedir.

d) Shock voltage supply transformer

Brakes which consist of high power and torques take long time to get in electromagnetic field. Shock voltage supply transformers with time relay are aiming to overcome spring pressure delaying for brakes. Also this transformers provide to open system suddenly by feeding double(48V DC) voltage in a short time and preventing to frictional loses occurring in delayed opening.

Connection Types

a) Delayed Braking

Generally this type of connection uses in slow and sliding brake intended systems. Delayed connection type using to prevent shock loadings in crane driving systems. Brakes are setting up to delayed connection if any other types are not specified by customer

b) Sudden Braking

This type of connections are mostly used in systems when short braking times are needed. The braking torque will be produced as soon as the current fails. These brakes are mostly used in hoisting of lifting units and elevators.

d) Trafos mit Schock-Spannung

Diese Transformatoren werden bei großen Bremsen mit hohen Momenten verwendet. Da die große Bremsen eine lange Zeit braucht, um die erforderliche magnetische Feld zu erzeugen, wird an der Bremse kurz 48V Gleichstromspannung angelegt, um die Zeit zur Bildung von magnetischem Feld zu kürzen. Dies ermöglicht kürzere Reibungszeiten beim Start.

Schaltungsarten:

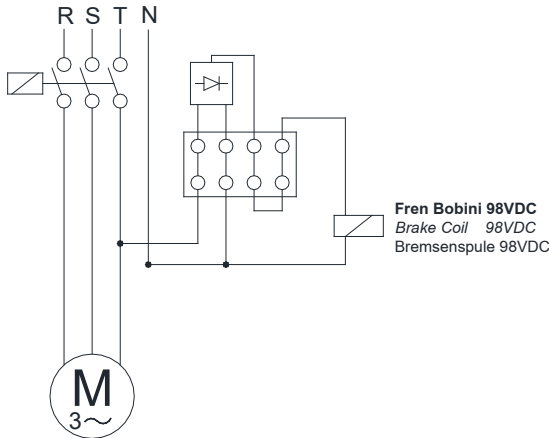
a) Verspätetes Bremsen

Diese Schaltung wird benutzt, wenn ein langsames und gleitendes Bremsen erforderlich ist. Am meisten wird es bei Fahrtriebmotoren von Aufzügen verwendet. Wenn keine Angabe bei der Bestellung gegeben wird, werden die Bremsen mit verspäteter Schaltung geliefert.

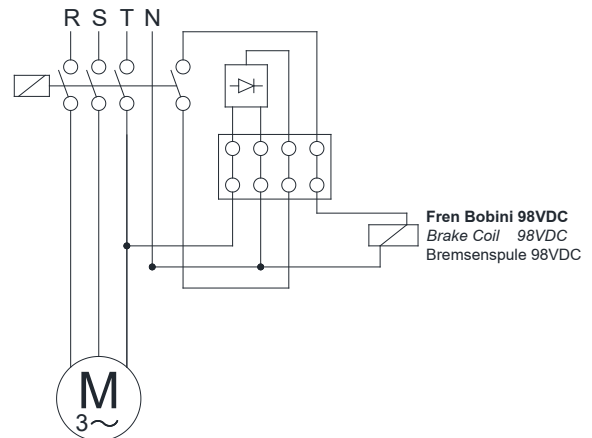
b) Schnelles Bremsen:

Allgemein verwendet man diese Schaltung bei Bedarf an plötzlichen Bremsen in dem Augenblick, in dem das System keine Energie mehr erhält. Diese Schaltungsart wird meist bei Kränen und Motoren von Aufzüge verwendet.

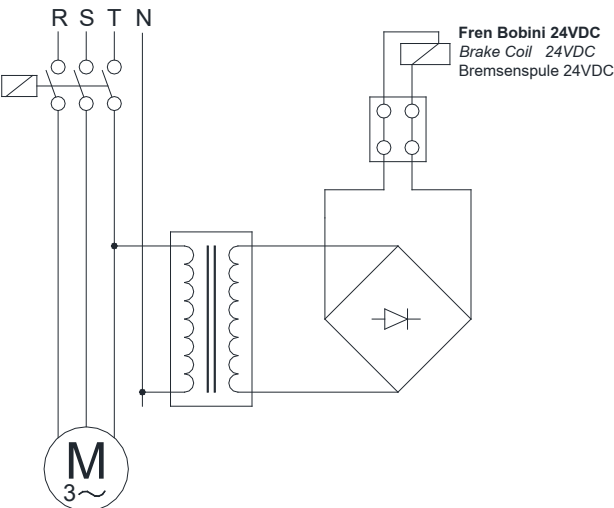
Gecikmeli Frenleme / Delayed Running Brake / Verspätete Bremsung
(230 V AC-98V DC)



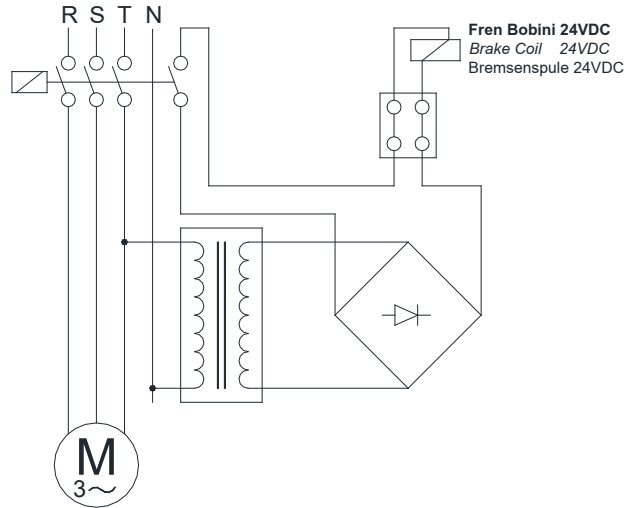
Ani Frenleme / Sudden Brake / Plötzliche Bremsung
(230 V AC-98V DC)

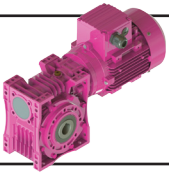


Gecikmeli Frenleme / Delayed Running Brake / Verspätete Bremsung
(230 V AC-24V DC)



Ani Frenleme / Sudden Brake / Plötzliche Bremsung
(230 V AC-24V DC)





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Fren Seçimi:

Doğru bir fren seçimi için aşağıdaki parametreler bilinmelidir.

- I_{tot} [kg.m²] : Motor miline indirgenmiş toplam atalet momenti
- n_0 [d/dak] : Maksimum motor devir sayısı
- t_f [s] : İstenilen en uzun frenleme zamanı
- c_t : Anahtarın devreye girme zamanı katsayısı (ortalama 0,995).
- M_L [Nm] : Sistemin statik tork ihtiyacı.
- C_s : Emniyet katsayısı ($C_s \geq 2$ olmalı)

Gerekli fren momenti aşağıdaki şekilde hesaplanır:

a) M_L Statik yük torku, motor dönüş yönünde (motorun dönüşüne yardımcı olarak, yükün indirilmesi veya hızlandırıcı sabit yük momenti hali):

$$M_{fc} = \frac{(2 \pi \times n_0 \div 60) \times I_{tot}}{t_f \times C_t} + M_L$$

b) M_L Statik yük torku, motor aksi dönüş yönünde (motorun dönüşüne engel olarak, yükün yukarı kaldırılması veya frenleyici sabit yük/direnç momenti hali):

$$M_{fc} = \frac{(2 \pi \times n_0 \div 60) \times I_{tot}}{t_f \times C_t} - M_L$$

Yukarıda bulunan sonuç C_s katsayısı ile çarpılarak ($C_s \geq 2$), fren momenti seçilir;

$$M_f = M_{fc} \times C_s$$

Yaklaşım Yolu ile Fren Seçimi:

Eğer yalnızca motorun gücü ve en yüksek devri biliniyor ise :

W [Watt]: Motorun nominal gücü

$$M_f = \frac{W}{\frac{2\pi \times n_0}{60}} \times C_s \quad (C_s \geq 2)$$

Brake Selection:

To select a brake correctly the following data are necessary;

- I_{tot} [kg . m²] : The total inertia of rotating parts reduced at the motor shaft
- n_0 [rpm] : Maximum motor speed.
- t_f [s] : The maximum admitted time of the braking.
- c_t : Coefficient of switch on time (average 0,995).
- M_L [Nm] : Required static torque of system.
- C_s : Safety coefficient ($C_s \geq 2$)

The necessary braking torque calculates below;

a) The static load torque M_L , same direction of motor rotation (Descent of a load or steady resisting torque which favours the rotation of the motor)

$$M_{fc} = \frac{(2 \pi \times n_0 \div 60) \times I_{tot}}{t_f \times C_t} + M_L$$

b) The static load torque M_L , opposes the rotation of the motor (Lifting of a load or steady resisting torque which opposes the rotation of the motor)

$$M_{fc} = \frac{(2 \pi \times n_0 \div 60) \times I_{tot}}{t_f \times C_t} - M_L$$

The necessary braking torque will result from the following equation using C_s ($C_s \geq 2$);

$$M_f = M_{fc} \times C_s$$

Approximated Brake Selection

Its only the motor power and its maximum speed are known:

W [Watt]: Motor Nominal Power

$$M_f = \frac{W}{\frac{2\pi \times n_0}{60}} \times C_s \quad (C_s \geq 2)$$

Bremswahl:

Um die richtige Bremse auszuwählen, braucht man unten aufgelistete Variablen;

- I_{tot} [kg . m²] : Die Gesamtträgheit der rotierenden Teile (siehe Anwendungsbeispiele)
- n_0 [U/min] : Die höchste Drehzahl des Motors
- t_f [s] : Die längste zulässige Bremszeit
- c_t : Reduktionskoeffizient der Tätigkeitszeit (gemittelt 0,995).
- M_L [Nm] : Vom system benötigtes, statisches Drehmoment.
- C_s : Sicherheitskoeffizient ($C_s \geq 2$)

Die benötigte Bremskraft wird wie folgt berechnet:

a) konstantes Belastungsmoment M_L , das die Motordrehung fördert (konstante Erhöhung der Motorgeschwindigkeit oder Herunterlassen der Last)

$$M_{fc} = \frac{(2 \pi \times n_0 \div 60) \times I_{tot}}{t_f \times C_t} + M_L$$

b) konstantes Belastungsmoment M_L , das sich entgegen der Motordrehung widersetzt (konstante Verminderung der Motorgeschwindigkeit oder Aufheben der Last)

$$M_{fc} = \frac{(2 \pi \times n_0 \div 60) \times I_{tot}}{t_f \times C_t} - M_L$$

Wenn die Bremskraft mit dem Sicherheitskoeffizient C_s ($C_s \geq 2$) multipliziert wird, erhält man die erforderliche Bremskraft;

$$M_f = M_{fc} \times C_s$$

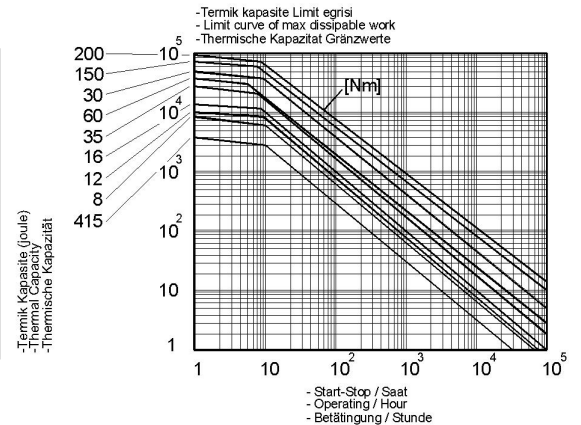
Abschätzung zur Bremswahl

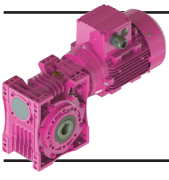
Wenn man nur die Motorleistung und die höchste Drehzahl kennt, kann die Bremskraft mit der folgenden Formel annähernd berechnet werden: W [Watt] : Nennleistung des Motors

$$M_f = \frac{W}{\frac{2\pi \times n_0}{60}} \times C_s \quad (C_s \geq 2)$$

Standart Frener / Standard Brakes / Standart Bremsen

| Fren statik momenti [Nm] Brake Static Torque [Nm] Statische Bremskraft [Nm] | 4,5 | 8 | 12 | 16 | 35 | 60 | 80 | 150 | 200 |
|--|------|------|------|------|------|------|------|------|------|
| Fren Dinamik Momenti [Nm] Brake Dynamic Torque [Nm] Dynamische Bremskraft [Nm] | 3,6 | 6,4 | 9,6 | 12,8 | 28 | 48 | 64 | 120 | 160 |
| Maksimum Motor Hızı [d/dak] Maximum Motor Speed [rpm] Maximale Motordrehzahl [U/min] | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 1500 | 1500 |
| Giriş Gücü [W] Input Power [W] Antriebsleistung [W] | 15 | 20 | 25 | 30 | 45 | 50 | 55 | 60 | 65 |





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Frenin Termik Kapasitesi

Yukarıdaki seçime ek olarak frenin termik kapasitesinin kontrol edilmesi gerekir. L (joule) olarak gerekli soğutma işi aşağıdaki formüller ile hesaplanır ve "Termik kapasite limit eğrisi" kullanılarak eğrinin altında kalıp kalmadığı kontrol edilir.

a) M_L Statik yük torku motor dönüş yönünde (motorun dönüşüne yardımcı olarak, yükün indirilmesi hali)

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2} \times \left(\frac{M_f}{M_f - M_L} \right)$$

b) M_L Statik yük torku motor aksi dönüş yönünde (motorun dönüşüne engel olarak, yükün kaldırılması hali):

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2} \times \frac{M_f}{M_f + M_L}$$

c) M_L Statik yük torku sabit, motor yönünde veya aksi yönde (kaldırma ve indirme harici hızlandırıcı veya frenleyici sabit bir yük momenti hali).

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2}$$

Fren Hava Boşluğunun Ayarı:

Frenin sürekli aynı performansın alınabilmesi için, fren balatasının aşınmasına bağlı olarak, fren hava boşluğu belirli zaman aralıklarında yeniden ayarlanmalıdır. Fren hava boşluğu ayar zaman aralığı ve ayarın yapılması için firmamıza danışınız.

Fren Seçim Örneği:

İstenilen en uzun frenleme zamanı: 0,5 sn.
Motor devri: 1400 d/dak
Motora indirgenmiş toplam atalet momenti: 0,08 kgm²

Gerekli çalışma momenti: 50 Nm

Yük Durumu: Yük motor dönüş yönü ile aynı (Vinçten yük indirmesi: Saatte dur-kalk sayısı:30)

$$M_{fc} = \frac{(2 \pi \times 1400 \div 60)}{0,5 \times 0,995} + 50 = 73,6 \text{ Nm}$$

$$M_f = 73,6 \times 2 = 147,2 \text{ Nm}$$

Standart frenler tablosundan 150 Nm lik fren seçilebilir.

Gerekli termik kapasite;

$$L = \frac{0,08 \times (2 \pi \times 1400 \div 60)^2}{2} \times \left(\frac{147,2}{147,2 - 50} \right)$$

=1302,0 < 18000 Joule (150 Nm eğrisinden)
150 Nm lik fren uygun görülüyor.

The Thermal Capacity of Brake

The thermal capacity of the brake must also be checked after the above mentioned calculations heat dissipation energy L (joule) can be calculated from the following equation and must be checked if the result is under the limit curve shown on "Limit curve of may dissipated work".

a) The static load torque M_L , favours the rotation of the motor (Descent of a load which favours the rotation of the motor)

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2} \times \left(\frac{M_f}{M_f - M_L} \right)$$

b) The static load torque M_L , opposes the rotation of the motor (Lifting of a load which opposes the rotation of the motor)

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2} \times \frac{M_f}{M_f + M_L}$$

c) The static load torque M_L , is constant and opposes or favours the rotation of the motor (except lifting of a load)

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2}$$

Adjustment of the air-gap:

In order to obtain the same performance from the brake during its lifetime, the air-gap of the brake must be re-adjusted after a limited time of operation. For the air-gap and the time interval of the adjustment please contact us.

Selection Example:

The maximum admitted time for braking 0,5 s
Motor speed: 1400 rpm
Total inertia reduced at motor shaft: 0,08 kgm²

Required operating torque: 50 Nm

Nature of load: Load direction is same as motor direction (Unloading process: Start-stop time per hour :30)

$$M_{fc} = \frac{(2 \pi \times 1400 \div 60)}{0,5 \times 0,995} + 50 = 73,6 \text{ Nm}$$

$$M_f = 73,6 \times 2 = 147,2 \text{ Nm}$$

From the brake selection table a standard brake of 150 Nm is selected.

Necessary thermal capacity

$$L = \frac{0,08 \times (2 \pi \times 1400 \div 60)^2}{2} \times \left(\frac{147,2}{147,2 - 50} \right)$$

=1302,0 < 18000 Joule (from 150 Nm curve)
The selected brake with 150 Nm is suitable.

Thermische Kapazität der Bremsen

Nach den oben genannten Berechnungen muss die thermische Kapazität überprüft werden. Die Wärme, d.h. die gebrauchte Energie L, werden mit den folgenden Formeln berechnet. Die gerechnete Werte von Kapazitäten sollen unter dem Grenzkurve "Thermische Kapazität Grenzwerte" der gewählten Bremse liegen.

a) Konstantes Belastungsmoment M_L , das die Motordrehung fördert (Herunterlassen der Last)

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2} \times \left(\frac{M_f}{M_f - M_L} \right)$$

b) Konstantes Belastungsmoment M_L , das sich entgegen der Motordrehung widersetzt (Aufheben der Last)

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2} \times \frac{M_f}{M_f + M_L}$$

c) Konstantes Belastungsmoment M_L , das sich gegen der Motorbewegung widersetzt oder die Motorrotation fördert (Konstante Verminderung oder Erhöhung der Motorgeschwindigkeit, kein Herunterlassen oder Aufheben der Last)

$$L = \frac{I_{tot} \times (2 \pi \times n_0 \div 60)^2}{2}$$

Einstellung des Luftspaltes:

Um eine immer konstant bleibende Bremsfähigkeit zu erhalten, muss das Luftspalt nach einer bestimmten Arbeitszeit neu eingestellt werden. Für die Bestimmung des Luftspaltes und die Einstellzeiten bitten wir Sie um Rückfrage.

Beispiel für eine Auswahl:

Die höchste zulässige Bremszeit: 0,5 s
Motordrehzahl: 1400 U/min
Gesamtträgheit der rotierenden Teile: 0,08 kgm²

Das auf das System wirkende Drehmoment: 50 Nm

Belastungsart: Drehmoment, das die Motorrotation fördert (Herunterlassen der Last)
Betätigungen pro Stunde:30

$$M_{fc} = \frac{(2 \pi \times 1400 \div 60)}{0,5 \times 0,995} + 50 = 73,6 \text{ Nm}$$

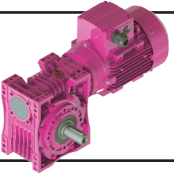
$$M_f = 73,6 \times 2 = 147,2 \text{ Nm}$$

Eine Bremse von 150 Nm kann man auswählen.

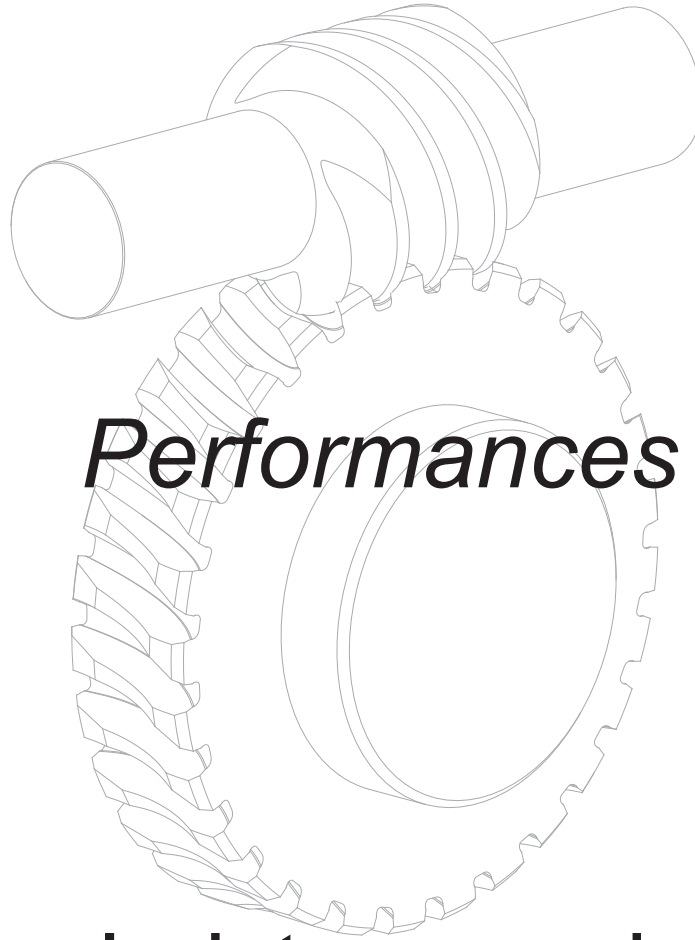
Die thermische Kapazität;

$$L = \frac{0,08 \times (2 \pi \times 1400 \div 60)^2}{2} \times \left(\frac{147,2}{147,2 - 50} \right)$$

=1302,0 < 18000 Joule (von 150 Nm Kurve) Die ausgewählte 150 Nm Bremse ist ausreichend.

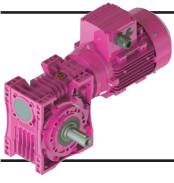


Güç ve Devir Tabloları



Performances

**Leistung und
Drehzahlübersicht**



E Serisi Motorlu Güç Devir Sayfaları

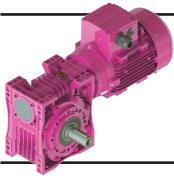
E Series Geared Motors Performance Tables

E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | Çıkış Devri | Çıkış Momenti | Çıkış Gücü | Çevrim Oranı | Güv. Rad. Yük Çıkış | Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf. |
|--|--|--|-----------------------------------|------------------|--|----------------------------------|-------------------|------------------|----------------------|--------------|------------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung P _g [KW] P _g [HP] | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P2 [kW] | Übersetzung i | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | Typ | Nennstrom [A] | Gewicht ~ [kg] | Maß Seite | Motor Effizienz-klasse |
| 0,06 0,08 | 0,28 | 199 | 0,01 | 4920 | 6200 | 0,5 | EV063-E030-G56/4a | 0,25 | 10,3 | 102 | IE1 |
| | 0,37 | 152 | 0,01 | 3660 | 6200 | 0,7 | | | | | |
| | 0,45 | 187 | 0,01 | 3060 | 6200 | 0,7 | | | | | |
| | 0,59 | 149 | 0,01 | 2340 | 6200 | 0,8 | | | | | |
| | 0,79 | 110 | 0,01 | 1740 | 6200 | 0,9 | | | | | |
| | 0,94 | 100 | 0,01 | 1450 | 6200 | 1,0 | | | | | |
| | 1,1 | 124 | 0,01 | 1218 | 6200 | 1,1 | | | | | |
| | 1,4 | 105 | 0,02 | 986 | 6200 | 1,3 | | | | | |
| | 1,6 | 97 | 0,02 | 841 | 6200 | 1,4 | | | | | |
| | 1,9 | 87 | 0,02 | 725 | 6200 | 1,5 | | | | | |
| | 2,2 | 78 | 0,02 | 609 | 6200 | 1,7 | | | | | |
| | 2,8 | 66 | 0,02 | 493 | 6200 | 1,9 | | | | | |
| | 3,3 | 60 | 0,02 | 420,5 | 6200 | 2,1 | | | | | |
| | 4,5 | 46 | 0,02 | 304,5 | 6200 | 2,7 | | | | | |
| | 0,28 | 214 | 0,01 | 4980 | 4800 | 0,3 | | | | | |
| 0,37 | | 152 | 0,01 | 3720 | 4800 | 0,3 | | | | | |
| 0,46 | | 162 | 0,01 | 3000 | 4800 | 0,3 | | | | | |
| 0,60 | | 139 | 0,01 | 2280 | 4800 | 0,5 | | | | | |
| 0,79 | | 111 | 0,01 | 1740 | 4800 | 0,5 | | | | | |
| 0,94 | | 100 | 0,01 | 1450 | 4800 | 0,5 | | | | | |
| 1,1 | | 88 | 0,01 | 1218 | 4800 | 0,6 | | | | | |
| 1,4 | | 105 | 0,02 | 986 | 4800 | 0,7 | | | | | |
| 1,6 | | 85 | 0,01 | 870 | 4800 | 0,9 | | | | | |
| 1,9 | | 77 | 0,02 | 725 | 4800 | 1,0 | | | | | |
| 2,2 | | 67 | 0,02 | 609 | 4800 | 1,1 | | | | | |
| 2,8 | | 72 | 0,02 | 493 | 4800 | 1,3 | | | | | |
| 3,3 | | 67 | 0,02 | 420,5 | 4800 | 1,4 | | | | | |
| 3,8 | | 60 | 0,02 | 362,5 | 4800 | 1,6 | | | | | |
| 4,5 | | 54 | 0,03 | 304,5 | 4800 | 1,7 | | | | | |
| 5,5 | 46 | 0,03 | 246,5 | 4800 | 2,0 | | | | | | |
| 6,5 | 41 | 0,03 | 210,25 | 4800 | 2,2 | | | | | | |
| 7,9 | 37 | 0,03 | 174 | 4800 | 2,5 | | | | | | |
| 10 | 32 | 0,03 | 137,75 | 4800 | 2,8 | | | | | | |
| 0,37 | 141 | 0,01 | 3720 | 3400 | 0,2 | EV040-E030-G56/4a | 0,25 | 6,2 | 100 | IE1 | |
| | 0,46 | 154 | 0,01 | 3000 | 3400 | | | | | | 0,2 |
| | 0,54 | 153 | 0,01 | 2520 | 3400 | | | | | | 0,2 |
| | 0,71 | 149 | 0,01 | 1920 | 3400 | | | | | | 0,2 |
| | 0,86 | 134 | 0,01 | 1600 | 3400 | | | | | | 0,2 |
| | 1,0 | 118 | 0,01 | 1344 | 3400 | | | | | | 0,3 |
| | 1,3 | 99 | 0,01 | 1088 | 3400 | | | | | | 0,3 |
| | 1,4 | 106 | 0,02 | 960 | 3400 | | | | | | 0,5 |
| | 1,7 | 96 | 0,02 | 800 | 3400 | | | | | | 0,5 |
| | 2,0 | 84 | 0,02 | 672 | 3400 | | | | | | 0,6 |
| | 2,5 | 71 | 0,02 | 544 | 3400 | | | | | | 0,7 |
| | 2,9 | 65 | 0,02 | 480 | 3400 | | | | | | 1,0 |
| | 3,4 | 58 | 0,02 | 400 | 3400 | | | | | | 1,1 |
| | 4,1 | 51 | 0,02 | 336 | 3400 | | | | | | 1,2 |
| | 5,0 | 43 | 0,02 | 272 | 3400 | | | | | | 1,4 |
| 5,9 | 40 | 0,02 | 232 | 3400 | 1,5 | | | | | | |
| 6,9 | 42 | 0,03 | 200 | 3400 | 1,7 | | | | | | |
| 8,2 | 37 | 0,03 | 168 | 3400 | 1,8 | | | | | | |
| 10 | 32 | 0,03 | 136 | 3400 | 2,1 | | | | | | |
| 12 | 29 | 0,04 | 116 | 3400 | 2,3 | | | | | | |
| 16 | 22 | 0,04 | 84 | 3400 | 2,8 | | | | | | |



E Serisi Motorlu Güç Devir Sayfaları

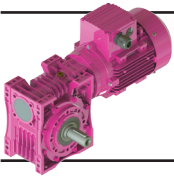
E Series Geared Motors Performance Tables

E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | Çıkış Devri | Çıkış Momenti | Çıkış Gücü | Çevrim Oranı | Güv. Rad. Yük Çıkış | Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf. |
|--------------------------|--------------------------|---------------------------|------------------------|---------------|--------------------------|---------------------|--------------------------|---------------|-----------|--------------|------------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | Übersetzung | Zul.Querkräfte (Abtrieb) | Betriebsfaktor | Typ | Nennstrom | Gewicht ~ | Maß Seite | Motor Effizienz-klasse |
| P_g [kW] P_g [HP] | n_2 [r.p.m] | M_2 [Nm] | $P2$ [kW] | i | F_{qam} [N] | f_s | | [A] | [kg] | | |
| 0,06 0,08 | 17 | 8 | 0,01 | 80 | 1830 | 0,6 | EV030-G56/4a | 0,25 | 3,9 | 68 | IE1 |
| | 23 | 12 | 0,03 | 60 | 1830 | 0,8 | | | | | |
| | 27 | 11 | 0,03 | 50 | 1830 | 1,3 | | | | | |
| | 33 | 10 | 0,03 | 42 | 1830 | 1,6 | | | | | |
| | 40 | 8 | 0,03 | 34 | 1830 | 2,1 | | | | | |
| | 47 | 8 | 0,04 | 29 | 1830 | 2,3 | | | | | |
| | 55 | 7 | 0,04 | 25 | 1830 | 2,6 | | | | | |
| | 65 | 6 | 0,04 | 21 | 1743 | 2,8 | | | | | |
| | 81 | 5 | 0,04 | 17 | 1631 | 3,5 | | | | | |
| | 94 | 5 | 0,05 | 14,5 | 1551 | 3,9 | | | | | |
| | 130 | 4 | 0,05 | 10,5 | 1396 | 4,7 | | | | | |
| | 189 | 3 | 0,05 | 7,25 | 1241 | 6,5 | | | | | |
| | 261 | 2 | 0,05 | 5,25 | 1115 | 9,6 | | | | | |
| 0,09 0,12 | 1,1 | 185 | 0,02 | 1218 | 6200 | 0,7 | EV063-E030-G56/4b | 0,63 | 10,4 | 102 | IE1 |
| | 1,4 | 156 | 0,02 | 986 | 6200 | 0,9 | | | | | |
| | 1,6 | 145 | 0,02 | 841 | 6200 | 0,9 | | | | | |
| | 1,9 | 130 | 0,03 | 725 | 6200 | 1,0 | | | | | |
| | 2,3 | 117 | 0,03 | 609 | 6200 | 1,1 | | | | | |
| | 2,8 | 99 | 0,03 | 493 | 6200 | 1,3 | | | | | |
| | 3,3 | 89 | 0,03 | 420,5 | 6200 | 1,4 | | | | | |
| | 4,5 | 68 | 0,03 | 304,5 | 6200 | 1,8 | | | | | |
| | 6,5 | 60 | 0,04 | 210,25 | 6200 | 2,4 | | | | | |
| | 2,3 | 100 | 0,02 | 609 | 4800 | 0,8 | | | | | |
| | 2,8 | 108 | 0,03 | 493 | 4800 | 0,9 | | | | | |
| | 3,3 | 101 | 0,03 | 420,5 | 4800 | 0,9 | | | | | |
| | 3,8 | 90 | 0,04 | 362,5 | 4800 | 1,0 | | | | | |
| | 4,5 | 81 | 0,04 | 304,5 | 4800 | 1,1 | | | | | |
| | 5,6 | 69 | 0,04 | 246,5 | 4800 | 1,3 | | | | | |
| | 6,5 | 62 | 0,04 | 210,25 | 4800 | 1,4 | | | | | |
| | 7,9 | 55 | 0,05 | 174 | 4800 | 1,7 | | | | | |
| | 10 | 48 | 0,05 | 137,75 | 4800 | 1,9 | | | | | |
| | 4,1 | 76 | 0,03 | 336 | 3400 | 0,8 | EV040-E030-G56/4b | 0,63 | 6,3 | 100 | IE1 |
| | 5,1 | 64 | 0,03 | 272 | 3400 | 1,0 | | | | | |
| | 5,9 | 60 | 0,04 | 232 | 3400 | 1,0 | | | | | |
| 6,9 | 62 | 0,04 | 200 | 3400 | 1,1 | | | | | | |
| 8,2 | 56 | 0,05 | 168 | 3400 | 1,2 | | | | | | |
| 10 | 48 | 0,05 | 136 | 3400 | 1,4 | | | | | | |
| 12 | 43 | 0,05 | 116 | 3400 | 1,5 | | | | | | |
| 16 | 33 | 0,06 | 84 | 3400 | 1,9 | | | | | | |
| 23 | 18 | 0,04 | 60 | 1830 | 0,5 | EV030-G56/4b | 0,63 | 4 | 68 | IE1 | |
| 28 | 16 | 0,05 | 50 | 1830 | 0,9 | | | | | | |
| 33 | 14 | 0,05 | 42 | 1830 | 1,1 | | | | | | |
| 40 | 12 | 0,05 | 34 | 1830 | 1,4 | | | | | | |
| 47 | 11 | 0,06 | 29 | 1830 | 1,5 | | | | | | |
| 55 | 10 | 0,06 | 25 | 1784 | 1,7 | | | | | | |
| 65 | 9 | 0,06 | 21 | 1686 | 1,9 | | | | | | |
| 81 | 8 | 0,07 | 17 | 1580 | 2,3 | | | | | | |
| 95 | 7 | 0,07 | 14,5 | 1504 | 2,6 | | | | | | |
| 131 | 5 | 0,07 | 10,5 | 1356 | 3,2 | | | | | | |
| 190 | 4 | 0,08 | 7,25 | 1209 | 4,3 | | | | | | |
| 262 | 3 | 0,08 | 5,25 | 1087 | 6,4 | | | | | | |



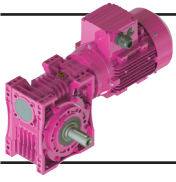
E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

E Serien Getriebemotoren Leistung und Drehzahlübersicht



| Güç Power | Çıkış Devri Output Speeds | Çıkış Momenti Output Torque | Çıkış Gücü Output Power | Çevrim Oranı Ratio | Güv. Rad. Yük Çıkış Per.O. Loads (Output) | Servis Faktörü Service Factors | Tipi Type | Anma Akımı Rated Current | Ağırlık Weight | Ölçü Sayfası Dim. Page | Motor Verim Snf. Motor Eff. Class |
|---|---|---|--------------------------------------|--------------------------|---|---|-------------------|-----------------------------------|----------------------|---------------------------------|--|
| Leistung P _g [kW] P _g [HP] | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P2 [kW] | Übersetzung i | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | Typ | Nennstrom [A] | Gewicht ~ [kg] | Maß Seite | Motor Effizienz- klasse |
| 0,12 0,16 | 0,73 | 265 | 0,02 | 1860 | 7400 | 0,8 | EV080-E040-G63/4a | 0,41 | 16,6 | 104 | IE1 |
| | 0,91 | 346 | 0,03 | 1500 | 7400 | 0,8 | | | | | |
| | 1,1 | 315 | 0,04 | 1260 | 7400 | 0,9 | | | | | |
| | 1,5 | 141 | 0,02 | 930 | 7400 | 2,1 | | | | | |
| | 1,8 | 235 | 0,04 | 750 | 7400 | 1,6 | | | | | |
| | 2,2 | 214 | 0,05 | 630 | 7400 | 1,7 | | | | | |
| | 2,8 | 180 | 0,05 | 480 | 7400 | 2,0 | | | | | |
| | 3,6 | 147 | 0,06 | 375 | 7400 | 2,4 | | | | | |
| 1,1 1,5 1,8 2,2 2,8 3,6 4,3 5,7 7,6 | 1,1 | 349 | 0,04 | 1260 | 7000 | 0,6 | EV075-E040-G63/4a | 0,41 | 15 | 103 | IE1 |
| | 1,5 | 154 | 0,02 | 930 | 7000 | 1,5 | | | | | |
| | 1,8 | 203 | 0,04 | 750 | 7000 | 1,1 | | | | | |
| | 2,2 | 228 | 0,05 | 630 | 7000 | 1,3 | | | | | |
| | 2,8 | 192 | 0,06 | 480 | 7000 | 1,5 | | | | | |
| | 3,6 | 157 | 0,06 | 375 | 7000 | 1,8 | | | | | |
| | 4,3 | 135 | 0,06 | 315 | 7000 | 2,0 | | | | | |
| | 5,7 | 107 | 0,06 | 240 | 7000 | 2,5 | | | | | |
| 7,6 | 83 | 0,07 | 180 | 7000 | 3,1 | | | | | | |
| 1,9 2,2 2,8 3,2 4,5 6,5 | 1,9 | 175 | 0,03 | 725 | 6200 | 0,8 | EV063-E030-G63/4a | 0,41 | 10,8 | 102 | IE1 |
| | 2,2 | 157 | 0,04 | 609 | 6200 | 0,8 | | | | | |
| | 2,8 | 133 | 0,04 | 493 | 6200 | 1,0 | | | | | |
| | 3,2 | 120 | 0,04 | 420,5 | 6200 | 1,1 | | | | | |
| | 4,5 | 92 | 0,04 | 304,5 | 6200 | 1,4 | | | | | |
| | 6,5 | 81 | 0,05 | 210,25 | 6200 | 1,8 | | | | | |
| 3,7 4,5 5,8 7,8 8,9 12 | 3,7 | 122 | 0,05 | 366 | 6200 | 0,8 | EV063-NR01-G63/4a | 0,41 | 15,6 | 108 | IE1 |
| | 4,5 | 131 | 0,06 | 306 | 6200 | 0,9 | | | | | |
| | 5,8 | 103 | 0,06 | 234 | 6200 | 1,2 | | | | | |
| | 7,8 | 77 | 0,06 | 174 | 6200 | 1,9 | | | | | |
| | 8,9 | 85 | 0,08 | 153 | 6200 | 1,6 | | | | | |
| | 12 | 67 | 0,08 | 117 | 6200 | 2,2 | | | | | |
| 2,8 3,2 3,8 4,5 5,5 6,5 7,8 10 | 2,8 | 145 | 0,04 | 493 | 4800 | 0,7 | EV050-E030-G63/4a | 0,41 | 8,5 | 101 | IE1 |
| | 3,2 | 135 | 0,05 | 420,5 | 4800 | 0,7 | | | | | |
| | 3,8 | 121 | 0,05 | 362,5 | 4800 | 0,8 | | | | | |
| | 4,5 | 109 | 0,05 | 304,5 | 4800 | 0,9 | | | | | |
| | 5,5 | 93 | 0,05 | 246,5 | 4800 | 1,0 | | | | | |
| | 6,5 | 83 | 0,06 | 210,25 | 4800 | 1,1 | | | | | |
| | 7,8 | 74 | 0,06 | 174 | 4800 | 1,2 | | | | | |
| | 10 | 65 | 0,07 | 137,75 | 4800 | 1,4 | | | | | |
| 7,8 9,1 12 16 | 7,8 | 77 | 0,06 | 174 | 4800 | 1,0 | EV050-NR01-G63/4a | 0,41 | 13,3 | 107 | IE1 |
| | 9,1 | 80 | 0,08 | 150 | 4800 | 1,0 | | | | | |
| | 12 | 64 | 0,08 | 114 | 4800 | 1,3 | | | | | |
| | 16 | 50 | 0,08 | 87 | 4800 | 1,8 | | | | | |
| 5,0 5,9 6,8 8,1 10 12 16 | 5,0 | 87 | 0,05 | 272 | 3400 | 0,7 | EV040-E030-G63/4a | 0,41 | 6,7 | 100 | IE1 |
| | 5,9 | 80 | 0,05 | 232 | 3400 | 0,8 | | | | | |
| | 6,8 | 84 | 0,06 | 200 | 3400 | 0,8 | | | | | |
| | 8,1 | 75 | 0,06 | 168 | 3400 | 0,9 | | | | | |
| | 10 | 64 | 0,07 | 136 | 3400 | 1,0 | | | | | |
| | 12 | 57 | 0,07 | 116 | 3400 | 1,1 | | | | | |
| | 16 | 44 | 0,07 | 84 | 3400 | 1,4 | | | | | |



E Serisi Motorlu Güç Devir Sayfaları

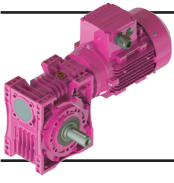
E Series Geared Motors Performance Tables

E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | Çıkış Devri | Çıkış Momenti | Çıkış Gücü | Çevrim Oranı | Güv. Rad. Yük Çıkış | Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Sınıf. | | | | | | |
|--------------------------|--------------------------|---------------------------|------------------------|---------------|---------------------------|--------------------------|--------------------------|--------------------------|---------|--------------|-----------------------|---------------------|------|-----|-----|-----|-----|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class | | | | | | |
| Leistung | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | Übersetzung | Zul. Querkräfte (Abtrieb) | Betriebsfaktor | Typ | Nennstrom | Gewicht | Maß Seite | Motor Effizienzklasse | | | | | | |
| P_g [kW] P_g [HP] | n_2 [r.p.m] | M_2 [Nm] | $P2$ [kW] | i | F_{qam} [N] | f_s | | [A] | ~ [kg] | | | | | | | | |
| 0,12 0,16 | 14 | 14 | 0,02 | 100 | 3400 | 0,7 | EV040-G63/4a | 0,41 | 5,6 | 72 | IE1 | | | | | | |
| | 17 | 17 | 0,03 | 80 | 3340 | 0,9 | | | | | | | | | | | |
| | 22 | 19 | 0,04 | 62 | 3026 | 1,4 | | | | | | | | | | | |
| | 27 | 25 | 0,07 | 50 | 2734 | 1,5 | | | | | | | | | | | |
| | 33 | 23 | 0,08 | 42 | 2586 | 1,7 | | | | | | | | | | | |
| | 43 | 19 | 0,09 | 32 | 2375 | 2,0 | | | | | | | | | | | |
| | 55 | 16 | 0,09 | 25 | 2198 | 2,6 | | | | | | | | | | | |
| | 65 | 13 | 0,09 | 21 | 2084 | 3,0 | | | | | | | | | | | |
| | 85 | 11 | 0,10 | 16 | 1914 | 3,8 | | | | | | | | | | | |
| | 114 | 8 | 0,10 | 12 | 1746 | 5,4 | | | | | | | | | | | |
| | 130 | 7 | 0,10 | 10,5 | 1673 | 5,5 | | | | | | | | | | | |
| | 171 | 6 | 0,10 | 8,0 | 1531 | 7,2 | | | | | | | | | | | |
| | 27 | 22 | 0,06 | 50 | 1830 | 0,6 | | | | | | EV030-G63/4a | 0,41 | 4,4 | 64 | IE1 | |
| | | 33 | 19 | 0,07 | 42 | 1830 | | | | | | | | | | | 0,8 |
| | | 40 | 16 | 0,07 | 34 | 1830 | | | | | | | | | | | 1,0 |
| | | 47 | 15 | 0,07 | 29 | 1830 | | | | | | | | | | | 1,1 |
| | | 55 | 14 | 0,08 | 25 | 1787 | | | | | | | | | | | 1,3 |
| 65 | | 12 | 0,08 | 21 | 1689 | 1,4 | | | | | | | | | | | |
| 80 | | 10 | 0,09 | 17 | 1583 | 1,7 | | | | | | | | | | | |
| 94 | | 9 | 0,09 | 14,5 | 1507 | 1,9 | | | | | | | | | | | |
| 130 | | 7 | 0,10 | 10,5 | 1359 | 2,4 | | | | | | | | | | | |
| 188 | | 5 | 0,10 | 7,25 | 1212 | 3,2 | | | | | | | | | | | |
| 260 | | 4 | 0,11 | 5,25 | 1089 | 4,8 | | | | | | | | | | | |
| 0,18 0,25 | | 1,5 | 318 | 0,05 | 930 | 7400 | 0,9 | EV080-E040-G63/4b | 0,6 | 17,1 | 104 | | | | | | IE1 |
| | | 1,8 | 240 | 0,07 | 750 | 7400 | 1,0 | | | | | | | | | | |
| | 2,1 | 215 | 0,07 | 630 | 7400 | 1,1 | | | | | | | | | | | |
| | 2,8 | 183 | 0,08 | 480 | 7400 | 1,3 | | | | | | | | | | | |
| | 3,6 | 150 | 0,08 | 375 | 7400 | 1,6 | | | | | | | | | | | |
| | 4,3 | 129 | 0,09 | 315 | 7400 | 1,8 | | | | | | | | | | | |
| | 5,6 | 103 | 0,09 | 240 | 7400 | 2,2 | | | | | | | | | | | |
| | 7,4 | 80 | 0,09 | 180 | 7400 | 2,7 | | | | | | | | | | | |
| | 1,4 | 154 | 0,03 | 930 | 7000 | 1,0 | EV075-E040-G63/4b | | | | | 0,6 | 15 | 103 | IE1 | | |
| | | 1,8 | 207 | 0,06 | 750 | 7000 | | | | | | | | | | 0,8 | |
| | | 2,1 | 229 | 0,08 | 630 | 7000 | | | | | | | | | | 0,8 | |
| | | 2,8 | 195 | 0,09 | 480 | 7000 | | | | | | | | | | 1,0 | |
| | | 3,6 | 160 | 0,09 | 375 | 7000 | | | | | | | | | | 1,2 | |
| | | 4,3 | 138 | 0,09 | 315 | 7000 | | | | | | | | | | 1,3 | |
| 5,6 | | 109 | 0,10 | 240 | 7000 | 1,6 | | | | | | | | | | | |
| 7,4 | | 85 | 0,10 | 180 | 7000 | 2,0 | | | | | | | | | | | |
| 3,6 | | 158 | 0,09 | 372,5 | 7000 | 0,8 | | EV075-NR11-G63/4b | 0,6 | 16 | 109 | | | | | IE1 | |
| | | 4,5 | 138 | 0,10 | 298 | 7000 | | | | | | | | | | | 1,0 |
| | 6,0 | 111 | 0,10 | 223,5 | 7000 | 1,4 | | | | | | | | | | | |
| | 7,2 | 103 | 0,12 | 186,25 | 7000 | 1,6 | | | | | | | | | | | |
| | 9,0 | 87 | 0,12 | 149 | 7000 | 1,9 | | | | | | | | | | | |
| | 12 | 69 | 0,13 | 111,75 | 7000 | 2,6 | | | | | | | | | | | |
| | 4,4 | 93 | 0,06 | 304,5 | 6200 | 0,9 | EV063-E030-G63/4b | | | | | 0,6 | 11,3 | 102 | IE1 | | |
| 6,4 | | 82 | 0,08 | 210,25 | 6200 | 1,2 | | | | | | | | | | | |
| 5,7 | 105 | 0,09 | 234 | 6200 | 0,8 | EV063-NR01-G63/4b | 0,6 | 16,1 | 108 | IE1 | | | | | | | |



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

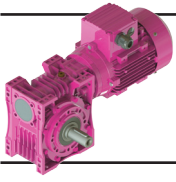
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç Power Leistung P _g [kW] P _g [HP] | IE3 | IE3 | IE3 | Çevrim Oranı Übersetzung i | IE3 | IE3 | Tipi Type Typ | Anma Akımı Rated Current Nennstrom [A] | Ağırlık Weight Gewicht ~ [kg] | Ölçü Sayfası Dim. Page Maß Seite | Motor Verim Snf.* Motor Eff. Class Motor Effizienz- klasse | |
|--|--|--|---|-------------------------------------|---|---|---------------------|---|---|---|--|----------------|
| | Çıkış Devri Output Speeds Abtriebswelle Drehzahlen n ₂ [r.p.m] | Çıkış Momenti Output Torque Abtriebswelle Drehmomente M ₂ [Nm] | Çıkış Gücü Output Power Abtriebswelle Leistung P ₂ [kW] | | Güv. Rad. Yük Çıkış Per.O. Loads (Output) Zul.Querkräfte (Abtrieb) F _{qam} [N] | Servis Faktörü Service Factors Betriebsfaktor f _s | | | | | Motor Verim Snf.* | |
| 0,18 0,25 | 7,7 | 78 | 0,09 | 174 | 6200 | 1,2 | EV063-NR01-G63/4b | 0,6 | 16,1 | 108 | IE1 | |
| | 8,8 | 86 | 0,12 | 153 | 6200 | 1,0 | | | | | | |
| | 11 | 68 | 0,12 | 117 | 6200 | 1,4 | | | | | | |
| | 9,3 | 52 | 0,08 | 100 | 6200 | 1,0 | E063-3E71M/6C | 0,55 | 13,5 | 80 | IE3 | |
| | 11 | 50 | 0,09 | 82 | 6200 | 1,4 | E063-2E71M/6B | 0,60 | 12,7 | | IE2 | |
| | 15 | 40 | 0,10 | 61 | 6200 | 2,1 | | | | | | |
| | 18 | 39 | 0,11 | 51 | 6200 | 2,1 | | | | | | |
| | 24 | 31 | 0,11 | 39 | 5936 | 3,0 | | | | | | |
| | | | | | | | | | | | | |
| | 7,7 | 75 | 0,09 | 174 | 4800 | 0,8 | EV050-E030-G63/4b | 0,6 | 10,7 | 101 | IE1 | |
| | 9,7 | 66 | 0,10 | 137,75 | 4800 | 0,9 | | | | | | |
| | 12 | 65 | 0,12 | 114 | 4800 | 0,8 | EV050-NR01-G63/4b | 0,6 | 13,8 | 107 | IE1 | |
| | 15 | 51 | 0,12 | 87 | 4800 | 1,2 | | | | | | |
| | 11 | 52 | 0,09 | 83 | 4800 | 0,7 | EV050-3E71M/6C | 0,55 | 11,2 | 76 | IE3 | |
| | 15 | 39 | 0,09 | 62 | 4778 | 1,1 | | | | | | EV050-2E71M/6B |
| | 19 | 36 | 0,10 | 50 | 4467 | 1,3 | | | | | | |
| | 24 | 29 | 0,11 | 38 | 4092 | 1,7 | | | | | | |
| | 32 | 23 | 0,12 | 29 | 3755 | 2,3 | | | | | | |
| | 37 | 22 | 0,13 | 25 | 3591 | 2,4 | | | | | | |
| | 49 | 18 | 0,14 | 19 | 3290 | 2,9 | | | | | | |
| | | | | | | | | | | | | |
| | 13 | 35 | 0,07 | 100 | 4800 | 0,7 | EV050-G63/4b | 0,6 | 7,8 | 76 | IE1 | |
| | 16 | 38 | 0,10 | 83 | 4723 | 0,9 | | | | | | |
| | 22 | 30 | 0,10 | 62 | 4297 | 1,3 | | | | | | |
| | 27 | 26 | 0,11 | 50 | 4028 | 1,6 | | | | | | |
| | 35 | 21 | 0,12 | 38 | 3685 | 2,1 | | | | | | |
| | 46 | 17 | 0,13 | 29 | 3376 | 2,8 | | | | | | |
| | 54 | 16 | 0,14 | 25 | 3236 | 2,9 | | | | | | |
| | | | | | | | | | | | | |
| | 12 | 58 | 0,11 | 116 | 3400 | 0,7 | EV040-E030-G63/4b | 0,6 | 7,2 | 100 | IE1 | |
| | 16 | 45 | 0,11 | 84 | 3400 | 0,9 | | | | | | |
| | 19 | 34 | 0,10 | 50 | 2856 | 0,8 | EV040-3E71M/6C | 0,55 | 9,4 | 72 | IE3 | |
| | 22 | 32 | 0,11 | 42 | 2703 | 0,9 | | | | | | EV040-2E71M/6B |
| | 29 | 27 | 0,12 | 32 | 2491 | 1,1 | | | | | | |
| | 37 | 22 | 0,13 | 25 | 2315 | 1,4 | | | | | | |
| | 44 | 19 | 0,13 | 21 | 2203 | 1,6 | | | | | | |
| | 58 | 16 | 0,14 | 16 | 2030 | 2,1 | | | | | | |
| | 78 | 12 | 0,14 | 12 | 1863 | 2,9 | | | | | | |
| | 89 | 11 | 0,15 | 10,5 | 1786 | 3,0 | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | 17 | 18 | 0,05 | 80 | 3270 | 0,6 | EV040-G63/4b | 0,6 | 6,5 | 72 | IE1 | |
| | 22 | 19 | 0,06 | 62 | 2945 | 0,9 | | | | | | |
| | 27 | 25 | 0,11 | 50 | 2610 | 1,0 | | | | | | |
| | 32 | 23 | 0,11 | 42 | 2477 | 1,1 | | | | | | |
| | 42 | 19 | 0,13 | 32 | 2278 | 1,3 | | | | | | |
| | 54 | 16 | 0,13 | 25 | 2114 | 1,7 | | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

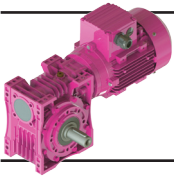
E Series Geared Motors Performance Tables

E Serien Getriebemotoren Leistung und Drehzahlübersicht



| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf.* | |
|--|--------------------------|---------------------------|------------------------|--------------|--------------------------|--------------------|---------------------|---------------------|---------|--------------|------------------------|-----|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class | |
| Leistung | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | Übersetzung | Zul.Querkräfte (Abtrieb) | Betriebsfaktor | Typ | Nennstrom | Gewicht | Maß Seite | Motor Effizienz-klasse | |
| P _g [kW] P _g [HP] | n ₂ [r.p.m] | M ₂ [Nm] | P2 [kW] | i | F _{qam} [N] | f _s | | [A] | [kg] | | | |
| 0,18 0,25 | 64 | 14 | 0,14 | 21 | 2010 | 2,0 | EV040-G63/4b | 0,6 | 6,5 | 72 | IE1 | |
| | 84 | 11 | 0,14 | 16 | 1853 | 2,5 | | | | | | |
| | 112 | 8 | 0,15 | 12 | 1694 | 3,6 | | | | | | |
| | 128 | 8 | 0,15 | 10,5 | 1625 | 3,6 | | | | | | |
| | 168 | 6 | 0,16 | 8,0 | 1488 | 4,8 | | | | | | |
| | 0,25 0,34 | 39 | 17 | 0,10 | 34 | 1762 | 0,7 | EV030-G63/4b | 0,6 | 4 | 64 | IE1 |
| | | 46 | 15 | 0,11 | 29 | 1688 | 0,8 | | | | | |
| | | 54 | 14 | 0,12 | 25 | 1610 | 0,9 | | | | | |
| | | 64 | 12 | 0,12 | 21 | 1525 | 0,9 | | | | | |
| | | 79 | 11 | 0,13 | 17 | 1440 | 1,1 | | | | | |
| 92 | | 9 | 0,14 | 14,5 | 1378 | 1,3 | | | | | | |
| 128 | | 7 | 0,15 | 10,5 | 1249 | 1,5 | | | | | | |
| 185 | | 5 | 0,15 | 7,25 | 1125 | 2,1 | | | | | | |
| 255 | | 4 | 0,16 | 5,25 | 1013 | 3,1 | | | | | | |
| 0,25 0,34 | | 1,0 | 742 | 0,07 | 1640 | 13000 | 1,1 | | | | | |
| | 1,2 | 682 | 0,09 | 1189 | 13000 | 1,7 | EV125-E063-2E71M/4B | 0,71 | 74,5 | | IE2 | |
| | 1,6 | 553 | 0,09 | 884,5 | 13000 | 2,1 | | | | | | |
| | 1,9 | 513 | 0,10 | 739,5 | 13000 | 2,2 | | | | | | |
| | 2,5 | 410 | 0,11 | 565,5 | 13000 | 2,8 | | | | | | |
| | 1,2 | 590 | 0,07 | 1240 | 8200 | 0,7 | EV100-E050-3E71M/4C | 0,67 | 42,6 | 105 | IE3 | |
| | | 1,5 | 562 | 0,09 | 930 | 8200 | 1,1 | EV100-E050-2E71M/4B | 0,71 | 41,7 | | IE2 |
| | | 1,9 | 489 | 0,10 | 750 | 8200 | 1,3 | | | | | |
| | | 2,5 | 400 | 0,11 | 570 | 8200 | 1,6 | | | | | |
| | | 3,3 | 324 | 0,11 | 435 | 8200 | 1,9 | | | | | |
| | | 3,8 | 299 | 0,12 | 375 | 8200 | 2,0 | | | | | |
| | | 5,0 | 239 | 0,13 | 285 | 8200 | 2,5 | | | | | |
| | 3,1 | 322 | 0,10 | 469,35 | 8200 | 1,0 | EV100-NR11-3E71M/4C | 0,67 | 48,5 | 111 | IE3 | |
| | | 3,7 | 335 | 0,13 | 387,4 | 8200 | 1,2 | EV100-NR11-2E71M/4B | 0,71 | 47,6 | | IE2 |
| | | 4,8 | 267 | 0,13 | 298 | 8200 | 1,7 | | | | | |
| | | 6,4 | 220 | 0,15 | 223,5 | 8200 | 2,5 | | | | | |
| | | 7,4 | 219 | 0,17 | 193,7 | 8200 | 2,2 | | | | | |
| | | 9,6 | 172 | 0,17 | 149 | 8200 | 3,1 | | | | | |
| | 1,9 | 474 | 0,09 | 750 | 7400 | 0,8 | EV080-E040-3E71M/4C | 0,67 | 20,2 | 104 | IE3 | |
| | | 2,3 | 425 | 0,10 | 630 | 7400 | 0,9 | EV080-E040-2E71M/4B | 0,71 | 19,3 | | IE2 |
| | | 3,0 | 361 | 0,11 | 480 | 7400 | 1,0 | | | | | |
| | | 3,8 | 294 | 0,12 | 375 | 7400 | 1,2 | | | | | |
| | | 4,6 | 251 | 0,12 | 315 | 7400 | 1,4 | | | | | |
| | | 6,0 | 201 | 0,13 | 240 | 7400 | 1,7 | | | | | |
| | | 8,0 | 176 | 0,15 | 180 | 7400 | 2,1 | | | | | |
| 4,8 | | 261 | 0,13 | 298 | 7400 | 1,0 | EV080-NR11-3E71M/4C | 0,67 | 23,8 | 110 | IE3 | |
| | 6,4 | 202 | 0,14 | 223,5 | 7400 | 1,5 | EV080-NR11-2E71M/4B | 0,71 | 22,9 | | IE2 | |
| | 7,3 | 220 | 0,17 | 197,43 | 7400 | 1,3 | | | | | | |
| | 9,6 | 167 | 0,17 | 149 | 7400 | 1,9 | | | | | | |
| | 13 | 129 | 0,17 | 111,75 | 7400 | 2,7 | | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

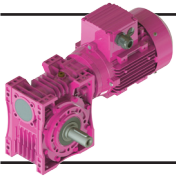
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf.* |
|---|--------------------------|---------------------------|------------------------|--------------|--------------------------|--------------------|---------------------|---------------|---------|--------------|-----------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | Übersetzung | Zul.Querkräfte (Abtrieb) | Betriebsfaktor | Typ | Nennstrom | Gewicht | Maß Seite | Motor Effizienzklasse |
| P _g [kW] | n ₂ [r.p.m] | M ₂ [Nm] | P2 [kW] | i | F _{qam} [N] | f _s | | [A] | [kg] | | |
| P _g [HP] | | | | | | | | | | | |
| 0,25 0,34 | 3 | 384 | 0,12 | 480 | 7000 | 0,7 | EV075-040-3E71M/4C | 0,67 | 19,9 | 103 | IE3 |
| | 4 | 313 | 0,13 | 375 | 7000 | 0,9 | EV075-040-2E71M/4B | 0,71 | 19,0 | | IE2 |
| | 5 | 268 | 0,13 | 315 | 7000 | 1,0 | | | | | |
| | 6 | 214 | 0,13 | 240 | 7000 | 1,2 | | | | | |
| | 8 | 166 | 0,14 | 180 | 7000 | 1,5 | | | | | |
| | 9 | 149 | 0,14 | 158 | 7000 | 1,7 | | | | | |
| | 12 | 130 | 0,16 | 120 | 7000 | 2,1 | | | | | |
| | 18 | 93 | 0,18 | 80 | 7000 | 2,9 | | | | | |
| 5 | 5 | 267 | 0,13 | 298 | 7000 | 0,8 | EV075-NR11-3E71M/4C | 0,67 | 20,9 | 109 | IE3 |
| | 6 | 217 | 0,15 | 223,5 | 7000 | 1,1 | EV075-NR11-2E71M/4B | 0,71 | 20,0 | | IE2 |
| | 8 | 201 | 0,16 | 186,25 | 7000 | 1,2 | | | | | |
| | 10 | 170 | 0,17 | 149 | 7000 | 1,5 | | | | | |
| | 13 | 135 | 0,18 | 111,75 | 7000 | 2,0 | | | | | |
| 8,2 9,4 12 | 8,2 | 152 | 0,13 | 174 | 6200 | 0,9 | EV063-NR01-3E71M/4C | 0,67 | 19,2 | 108 | IE3 |
| | 9,4 | 168 | 0,17 | 153 | 6200 | 0,8 | EV063-NR01-2E71M/4B | 0,71 | 18,3 | | IE2 |
| | 12 | 133 | 0,17 | 117 | 6200 | 1,1 | | | | | |
| 9,3 11 15 18 24 32 36 | 9,3 | 109 | 0,11 | 100 | 6200 | 0,7 | EV063-3E71M/6D | 0,77 | 14,5 | 80 | IE3 |
| | 11 | 104 | 0,12 | 82 | 6200 | 1,0 | EV063-2E71M/6C | 0,78 | 13,6 | | IE2 |
| | 15 | 84 | 0,13 | 61 | 6200 | 1,5 | | | | | |
| | 18 | 80 | 0,15 | 51 | 6200 | 1,5 | | | | | |
| | 24 | 64 | 0,16 | 39 | 5779 | 2,1 | | | | | |
| | 32 | 51 | 0,17 | 29 | 5249 | 3,1 | | | | | |
| | 36 | 49 | 0,19 | 25,5 | 5055 | 2,7 | | | | | |
| 14 18 24 28 37 | 14 | 80 | 0,12 | 100 | 6200 | 1,0 | EV063-3E71M/4C | 0,67 | 13,2 | 80 | IE3 |
| | 18 | 75 | 0,14 | 82 | 6200 | 1,4 | EV063-2E71M/4B | 0,71 | 12,3 | | IE2 |
| | 24 | 61 | 0,15 | 61 | 5862 | 2,0 | | | | | |
| | 28 | 56 | 0,17 | 51 | 5544 | 2,0 | | | | | |
| | 37 | 45 | 0,17 | 39 | 5092 | 2,8 | | | | | |
| 15 19 24 32 37 49 64 | 15 | 82 | 0,13 | 62 | 4569 | 0,8 | EV050-3E71M/6D | 0,77 | 9,8 | 76 | IE3 |
| | 19 | 74 | 0,14 | 50 | 4279 | 0,9 | EV050-2E71M/6C | 0,78 | 8,9 | | IE2 |
| | 24 | 60 | 0,15 | 38 | 3927 | 1,2 | | | | | |
| | 32 | 49 | 0,16 | 29 | 3610 | 1,7 | | | | | |
| | 37 | 47 | 0,18 | 25 | 3460 | 1,7 | | | | | |
| | 49 | 37 | 0,19 | 19 | 3175 | 2,1 | | | | | |
| | 64 | 29 | 0,20 | 14,5 | 2923 | 2,9 | | | | | |
| 23 29 38 49 57 76 | 23 | 59 | 0,14 | 62 | 4058 | 1,0 | EV050-3E71M/4C | 0,67 | 9,9 | 76 | IE3 |
| | 29 | 52 | 0,16 | 50 | 3817 | 1,2 | EV050-2E71M/4B | 0,71 | 9,0 | | IE2 |
| | 38 | 42 | 0,17 | 38 | 3495 | 1,6 | | | | | |
| | 49 | 34 | 0,18 | 29 | 3206 | 2,1 | | | | | |
| | 57 | 32 | 0,19 | 25 | 3083 | 2,2 | | | | | |
| | 76 | 25 | 0,20 | 19 | 2824 | 2,7 | | | | | |
| 22 29 37 44 | 22 | 66 | 0,15 | 42 | 2502 | 0,7 | EV040-3E71M/6D | 0,77 | 10,5 | 72 | IE3 |
| | 29 | 56 | 0,17 | 32 | 2316 | 0,8 | EV040-2E71M/6C | 0,78 | 9,6 | | IE2 |
| | 37 | 46 | 0,18 | 25 | 2162 | 1,0 | | | | | |
| | 44 | 40 | 0,19 | 21 | 2065 | 1,2 | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

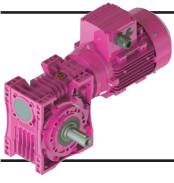
E Series Geared Motors Performance Tables

E Serien Getriebemotoren Leistung und Drehzahlübersicht



| Güç Power Leistung P _g [kW] P _g [HP] | IE3 | IE3 | IE3 | Çevrim Oranı Ratio Übersetzung i | IE3 | IE3 | Tipi Type Typ | Anma Akımı Rated Current Nennstrom [A] | Ağırlık Weight Gewicht ~ [kg] | Ölçü Sayfası Dim. Page Maß Seite | Motor* |
|--|--|--|-----------------------------------|--|--|----------------------------------|-----------------------------|---|---|---|------------------------|
| | Çıkış Devri | Çıkış Momenti | Çıkış Gücü | | Güv. Rad. Yük Çıkış | Servis Faktörü | | | | | Motor Verim Snf. |
| | Output Speeds | Output Torque | Output Power | | Per.O. Loads (Output) | Service Factors | | | | | Motor Eff. Class |
| | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P2 [kW] | | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | | | | | Motor Effizienz-klasse |
| 0,25 0,34 | 58 | 32 | 0,20 | 16 | 1912 | 1,5 | EV040-3E71M/6D | 0,77 | 10,5 | 72 | IE3 |
| | 78 | 25 | 0,20 | 12 | 1763 | 2,1 | EV040-2E71M/6C | 0,78 | 9,6 | | IE2 |
| | 89 | 22 | 0,21 | 10,5 | 1692 | 2,1 | | | | | |
| | 116 | 18 | 0,22 | 8,0 | 1553 | 2,8 | | | | | |
| | 23 | 37 | 0,09 | 62 | 2778 | 0,7 | EV040-3E71M/4C | 0,67 | 9,2 | 72 | IE3 |
| | 29 | 50 | 0,15 | 50 | 2411 | 0,8 | EV040-2E71M/4B | 0,71 | 8,3 | | IE2 |
| | 34 | 45 | 0,16 | 42 | 2295 | 0,9 | | | | | |
| | 45 | 38 | 0,18 | 32 | 2118 | 1,0 | | | | | |
| | 57 | 31 | 0,19 | 25 | 1972 | 1,3 | | | | | |
| | 68 | 27 | 0,19 | 21 | 1884 | 1,5 | | | | | |
| | 90 | 21 | 0,20 | 16 | 1741 | 1,9 | | | | | |
| | 120 | 17 | 0,21 | 12 | 1595 | 2,7 | | | | | |
| | 137 | 15 | 0,21 | 10,5 | 1533 | 2,7 | | | | | |
| | 179 | 12 | 0,22 | 8,0 | 1406 | 3,6 | | | | | |
| 0,37 0,50 | 1,2 | 1009 | 0,13 | 1189 | 13000 | 1,2 | EV125-E063-3E71M/4D | 0,97 | 76,2 | 106 | IE3 |
| | 1,6 | 819 | 0,14 | 884,5 | 13000 | 1,4 | EV125-E063-2E71M/4C | 1,00 | 75,4 | | IE2 |
| | 1,9 | 759 | 0,15 | 739,5 | 13000 | 1,5 | | | | | |
| | 2,5 | 607 | 0,16 | 565,5 | 13000 | 1,9 | | | | | |
| | 3,4 | 474 | 0,17 | 420,5 | 13000 | 2,3 | | | | | |
| | 3,9 | 443 | 0,18 | 369,75 | 13000 | 2,5 | | | | | |
| | 5,1 | 363 | 0,19 | 282,75 | 13000 | 3,0 | | | | | |
| | 1,5 | 831 | 0,13 | 930 | 8200 | 0,8 | EV100-E050-3E71M/4D | 0,97 | 43,4 | 105 | IE3 |
| | 1,9 | 724 | 0,15 | 750 | 8200 | 0,9 | EV100-E050-2E71M/4C | 1,00 | 42,6 | | IE2 |
| | 2,5 | 592 | 0,16 | 570 | 8200 | 1,1 | | | | | |
| | 3,3 | 479 | 0,17 | 435 | 8200 | 1,3 | | | | | |
| | 3,8 | 442 | 0,18 | 375 | 8200 | 1,4 | | | | | |
| | 5,0 | 353 | 0,19 | 285 | 8200 | 1,7 | | | | | |
| | 6,6 | 313 | 0,22 | 217,5 | 8200 | 2,1 | | | | | |
| | 8,0 | 263 | 0,22 | 180 | 8200 | 2,4 | | | | | |
| | 3,1 | 476 | 0,15 | 469,35 | 8200 | 0,7 | EV100-NR11-3E71M/4D | 0,97 | 49,3 | 111 | IE3 |
| | 3,7 | 495 | 0,19 | 387,4 | 8200 | 0,9 | EV100-NR11-2E71M/4C | 1,00 | 48,5 | | IE2 |
| | 4,8 | 395 | 0,20 | 298 | 8200 | 1,3 | | | | | |
| | 6,4 | 325 | 0,22 | 223,5 | 8200 | 1,7 | | | | | |
| | 7,4 | 325 | 0,25 | 193,7 | 8200 | 2,0 | | | | | |
| | 10 | 254 | 0,26 | 149 | 8200 | 2,9 | | | | | |
| | 8,7 | 216 | 0,20 | 107 | 8200 | 0,9 | EV100-3E80M/6B | 1,03 | 41,5 | 92 | IE3 |
| | 11 | 184 | 0,22 | 82 | 8200 | 1,8 | EV100-2E80M/6A | 1,08 | 40,8 | | IE2 |
| | 15 | 148 | 0,23 | 63 | 8200 | 3,4 | | | | | |
| | 3,8 | 435 | 0,17 | 375 | 7400 | 0,8 | EV080-E040-3E71M/4D | 0,97 | 21,0 | 104 | IE3 |
| | 4,6 | 372 | 0,18 | 315 | 7400 | 0,9 | EV080-E040-2E71M/4C | 1,00 | 20,2 | | IE2 |
| | 6,0 | 298 | 0,19 | 240 | 7400 | 1,1 | | | | | |
| | 8,0 | 260 | 0,22 | 180 | 7400 | 1,4 | | | | | |
| | 6,4 | 298 | 0,20 | 223,5 | 7400 | 1,0 | EV080-NR11-3E71M/4D | 0,97 | 28,6 | 110 | IE3 |
| | 7,3 | 326 | 0,25 | 197,43 | 7400 | 0,8 | EV080-NR11-2E71M/4C | 1,00 | 27,8 | | IE2 |
| 9,6 | 248 | 0,25 | 149 | 7400 | 1,3 | | | | | | |
| 13 | 190 | 0,26 | 111,75 | 7400 | 1,8 | | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

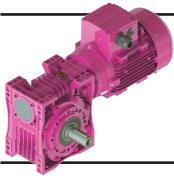
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf.* |
|---------------------|--------------------------|---------------------------|------------------------|--------------|---------------------------|--------------------|---------------------|---------------|-----------|--------------|------------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | Übersetzung | Zul. Querkräfte (Abtrieb) | Betriebsfaktor | Typ | Nennstrom | Gewicht ~ | Maß Seite | Motor Effizienz-klasse |
| P _g [kW] | n ₂ [r.p.m] | M ₂ [Nm] | P2 [kW] | i | F _{qam} [N] | f _s | | [A] | [kg] | | |
| P _g [HP] | | | | | | | | | | | |
| 0,37 0,50 | 11 | 167 | 0,20 | 82 | 7400 | 0,9 | EV080-3E80M/6B | 1,03 | 28,6 | 88 | IE3 |
| | 15 | 137 | 0,22 | 62 | 7400 | 1,8 | EV080-2E80M/6A | 1,08 | 27,9 | | IE2 |
| | 18 | 129 | 0,24 | 53 | 7400 | 1,9 | | | | | |
| | 23 | 104 | 0,25 | 40 | 7395 | 2,9 | | | | | |
| | 5 | 396 | 0,19 | 315 | 7000 | 0,7 | EV075-E040-3E71M/4D | 0,97 | 19,7 | 103 | IE3 |
| | 6 | 317 | 0,20 | 240 | 7000 | 0,8 | EV075-E040-2E71M/4C | 1,00 | 18,9 | | IE2 |
| | 8 | 245 | 0,20 | 180 | 7000 | 1,0 | | | | | |
| | 8 | 298 | 0,24 | 186,25 | 7000 | 0,8 | EV075-NR11-3E71M/4D | 0,97 | 20,7 | 109 | IE3 |
| | 10 | 251 | 0,25 | 149 | 7000 | 1,0 | EV075-NR11-2E71M/4C | 1,00 | 19,9 | | IE2 |
| | 13 | 199 | 0,27 | 111,75 | 7000 | 1,3 | | | | | |
| | 9 | 180 | 0,18 | 100 | 7000 | 0,9 | EV075-3E80M/6B | 1,03 | 21,7 | 84 | IE3 |
| | 12 | 163 | 0,20 | 80 | 7000 | 1,2 | EV075-2E80M/6A | 1,08 | 21,0 | | IE2 |
| | 16 | 129 | 0,21 | 60 | 7000 | 1,6 | | | | | |
| | 19 | 120 | 0,23 | 50 | 7000 | 1,9 | | | | | |
| | 23 | 102 | 0,25 | 40 | 7000 | 2,3 | | | | | |
| | 31 | 80 | 0,26 | 30 | 7000 | 3,1 | | | | | |
| | 37 | 71 | 0,28 | 25 | 7000 | 3,3 | | | | | |
| | 1,1 | 349 | 0,04 | 1260 | 7000 | 0,6 | EV075-3E71M/4D | 0,97 | 19,4 | 84 | IE3 |
| | 1,5 | 154 | 0,02 | 930 | 7000 | 1,5 | EV075-2E71M/4C | 1,00 | 18,6 | | IE2 |
| | 1,8 | 203 | 0,04 | 750 | 7000 | 1,1 | | | | | |
| | 2,2 | 228 | 0,05 | 630 | 7000 | 1,3 | | | | | |
| | 2,8 | 192 | 0,06 | 480 | 7000 | 1,5 | | | | | |
| | 3,6 | 157 | 0,06 | 375 | 7000 | 1,8 | | | | | |
| | 4,3 | 135 | 0,06 | 315 | 7000 | 2,0 | | | | | |
| | 5,7 | 107 | 0,06 | 240 | 7000 | 2,5 | | | | | |
| | 7,6 | 83 | 0,07 | 180 | 7000 | 3,1 | | | | | |
| | 11 | 153 | 0,18 | 82 | 6200 | 0,7 | EV063-3E80M/6B | 1,03 | 16,2 | 80 | IE3 |
| | 15 | 124 | 0,20 | 61 | 6200 | 1,0 | EV063-2E80M/6A | 1,08 | 15,5 | | IE2 |
| | 18 | 119 | 0,23 | 51 | 5970 | 1,0 | | | | | |
| | 24 | 95 | 0,24 | 39 | 5510 | 1,4 | | | | | |
| | 32 | 75 | 0,25 | 29 | 5012 | 2,1 | | | | | |
| | 36 | 72 | 0,27 | 25,5 | 4841 | 1,8 | | | | | |
| | 48 | 59 | 0,29 | 19,5 | 4447 | 2,4 | | | | | |
| | 64 | 45 | 0,30 | 14,5 | 4065 | 3,6 | | | | | |
| | 14 | 119 | 0,18 | 100 | 6200 | 0,7 | EV063-3E71M/4D | 0,97 | 14,0 | 80 | IE3 |
| | 18 | 110 | 0,20 | 82 | 6180 | 0,9 | EV063-2E71M/4C | 1,00 | 13,2 | | IE2 |
| | 24 | 90 | 0,22 | 61 | 5618 | 1,3 | | | | | |
| | 28 | 83 | 0,24 | 51 | 5325 | 1,3 | | | | | |
| | 37 | 67 | 0,26 | 39 | 4903 | 1,9 | | | | | |
| | 49 | 52 | 0,27 | 29 | 4464 | 2,7 | | | | | |
| | 56 | 49 | 0,29 | 25,5 | 4316 | 2,4 | | | | | |
| | 74 | 40 | 0,31 | 19,5 | 3958 | 3,1 | | | | | |
| | 24 | 89 | 0,23 | 38 | 3644 | 0,8 | EV050-3E80M/6B | 1,03 | 13,9 | 76 | IE3 |
| | 32 | 72 | 0,24 | 29 | 3361 | 1,1 | EV050-2E80M/6A | 1,08 | 13,2 | | IE2 |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

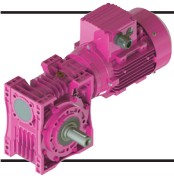
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Sınıfı* |
|--|--------------------------|---------------------------|------------------------|--------------|--------------------------|---------------------|---------------------|---------------|-----------|--------------|------------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | Übersetzung | Zul.Querkräfte (Abtrieb) | Betriebsfaktor | Typ | Nennstrom | Gewicht ~ | Maß Seite | Motor Effizienz-klasse |
| P _g [kW] P _g [HP] | n ₂ [r.p.m] | M ₂ [Nm] | P2 [kW] | i | F _{qam} [N] | f _s | | [A] | [kg] | | |
| 0,37 0,50 | 37 | 69 | 0,27 | 25 | 3235 | 1,2 | EV050-3E80M/6B | 1,03 | 13,9 | 76 | IE3 |
| | 49 | 55 | 0,28 | 19 | 2979 | 1,4 | EV050-2E80M/6A | 1,08 | 13,2 | | IE2 |
| | 64 | 43 | 0,29 | 14,5 | 2754 | 1,9 | | | | | |
| | 78 | 37 | 0,30 | 12 | 2609 | 2,2 | | | | | |
| | 98 | 31 | 0,31 | 9,5 | 2434 | 2,4 | | | | | |
| | 128 | 24 | 0,32 | 7,25 | 2248 | 3,3 | | | | | |
| | 23 | 88 | 0,21 | 62 | 3796 | 0,7 | EV050-3E71M/4D | 0,97 | 11,7 | 76 | IE3 |
| | 29 | 77 | 0,23 | 50 | 3592 | 0,8 | EV050-2E71M/4C | 1,00 | 10,9 | | IE2 |
| | 38 | 63 | 0,25 | 38 | 3296 | 1,1 | | | | | |
| | 49 | 51 | 0,26 | 29 | 3030 | 1,5 | | | | | |
| | 57 | 47 | 0,28 | 25 | 2931 | 1,5 | | | | | |
| | 76 | 37 | 0,30 | 19 | 2691 | 1,8 | | | | | |
| | 99 | 29 | 0,30 | 14,5 | 2482 | 2,5 | | | | | |
| | 120 | 25 | 0,31 | 12 | 2348 | 2,8 | | | | | |
| | 151 | 20 | 0,32 | 9,5 | 2189 | 3,1 | | | | | |
| 198 | 16 | 0,33 | 7,25 | 2016 | 4,2 | | | | | | |
| 0,55 0,75 | 57 | 46 | 0,28 | 25 | 1793 | 0,9 | EV040-3E71M/4D | 0,97 | 10,0 | 72 | IE3 |
| | 68 | 40 | 0,28 | 21 | 1727 | 1,0 | EV040-2E71M/4C | 1,00 | 9,2 | | IE2 |
| | 90 | 32 | 0,30 | 16 | 1607 | 1,3 | | | | | |
| | 120 | 25 | 0,31 | 12 | 1480 | 1,8 | | | | | |
| | 137 | 22 | 0,31 | 10,5 | 1426 | 1,8 | | | | | |
| | 179 | 17 | 0,32 | 8,0 | 1310 | 2,4 | | | | | |
| | 1,2 | 1514 | 0,19 | 1189 | 13000 | 0,8 | EV125-E063-3E80M/4C | 1,34 | 78,0 | 106 | IE3 |
| | 1,6 | 1204 | 0,21 | 884,5 | 13000 | 1,0 | EV125-E063-2E80M/4B | 1,45 | 77,2 | | IE2 |
| | 2,0 | 1133 | 0,23 | 739,5 | 13000 | 1,0 | | | | | |
| | 2,6 | 893 | 0,24 | 565,5 | 13000 | 1,3 | | | | | |
| | 3,4 | 698 | 0,25 | 420,5 | 13000 | 1,6 | | | | | |
| | 3,9 | 652 | 0,27 | 369,75 | 13000 | 1,7 | | | | | |
| | 5,1 | 603 | 0,32 | 282,75 | 13000 | 2,0 | | | | | |
| | 6,9 | 459 | 0,33 | 210,25 | 13000 | 2,6 | | | | | |
| | 7,8 | 414 | 0,34 | 184,88 | 13000 | 2,8 | | | | | |
| 4,8 | 544 | 0,28 | 299,46 | 13000 | 1,4 | EV125-NR21-3E80M/4C | 1,34 | 90,8 | 112 | IE3 | |
| 5,8 | 551 | 0,33 | 251,16 | 13000 | 1,4 | EV125-NR21-2E80M/4B | 1,45 | 90,0 | | IE2 | |
| 7,5 | 434 | 0,34 | 193,2 | 13000 | 2,0 | | | | | | |
| 10 | 322 | 0,35 | 140,07 | 13000 | 3,2 | | | | | | |
| 12 | 335 | 0,41 | 125,58 | 13000 | 2,6 | | | | | | |
| 3,3 | 705 | 0,25 | 435 | 8200 | 0,9 | EV100-E050-3E80M/4C | 1,34 | 46,4 | 105 | IE3 | |
| 3,9 | 656 | 0,27 | 375 | 8200 | 0,9 | EV100-E050-2E80M/4B | 1,45 | 45,6 | | IE2 | |
| 5,1 | 520 | 0,28 | 285 | 8200 | 1,1 | | | | | | |
| 6,7 | 460 | 0,32 | 217,5 | 8200 | 1,4 | | | | | | |
| 8,1 | 386 | 0,33 | 180 | 8200 | 1,6 | | | | | | |
| 4,9 | 580 | 0,30 | 298 | 8200 | 0,8 | EV100-NR11-3E80M/4C | 1,34 | 52,3 | 111 | IE3 | |
| 6,5 | 479 | 0,33 | 223,5 | 8200 | 1,2 | EV100-NR11-2E80M/4B | 1,45 | 51,5 | | IE2 | |
| 7,5 | 477 | 0,37 | 193,7 | 8200 | 1,4 | | | | | | |
| 10 | 374 | 0,38 | 149 | 8200 | 1,9 | | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

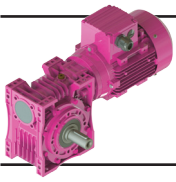
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf.* |
|--|--------------------------|---------------------------|------------------------|--------------|---------------------------|--------------------|----------------|---------------|-----------|--------------|-----------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | Übersetzung | Zul. Querkräfte (Abtrieb) | Betriebsfaktor | Typ | Nennstrom | Gewicht ~ | Maß Seite | Motor Effizienzklasse |
| P _g [kW] P _g [HP] | n ₂ [r.p.m] | M ₂ [Nm] | P2 [kW] | i | F _{qam} [N] | f _s | | [A] | [kg] | | |
| 0,55 0,75 | 8,7 | 320 | 0,29 | 107 | 8200 | 0,6 | EV100-3E80M/6C | 1,47 | 42,4 | 92 | IE3 |
| | 11 | 272 | 0,32 | 82 | 8200 | 1,2 | EV100-2E80M/6B | 1,50 | 41,7 | | IE2 |
| | 15 | 219 | 0,34 | 63 | 8200 | 2,3 | | | | | |
| | 18 | 195 | 0,37 | 52 | 8200 | 2,4 | | | | | |
| | 23 | 159 | 0,39 | 40 | 8200 | 3,3 | | | | | |
| | 14 | 231 | 0,33 | 107 | 8200 | 0,9 | EV100-3E80M/4C | 1,34 | 42,3 | 92 | IE3 |
| | 18 | 191 | 0,35 | 82 | 8200 | 1,7 | EV100-2E80M/4B | 1,45 | 41,5 | | IE2 |
| | 23 | 149 | 0,36 | 63 | 8200 | 3,0 | | | | | |
| | 28 | 133 | 0,39 | 52 | 8200 | 3,1 | | | | | |
| | 15 | 203 | 0,32 | 62 | 7400 | 1,2 | EV080-3E80M/6C | 1,47 | 21,7 | 88 | IE3 |
| | 18 | 193 | 0,36 | 53 | 7400 | 1,3 | EV080-2E80M/6B | 1,50 | 21,0 | | IE2 |
| | 23 | 153 | 0,38 | 40 | 7078 | 1,9 | | | | | |
| | 31 | 121 | 0,39 | 30 | 6471 | 2,7 | | | | | |
| | 35 | 113 | 0,42 | 26,5 | 6268 | 2,4 | | | | | |
| | 47 | 89 | 0,43 | 20 | 5747 | 3,4 | | | | | |
| | 18 | 178 | 0,33 | 82 | 7400 | 0,9 | EV080-3E80M/4C | 1,34 | 21,6 | 88 | IE3 |
| | 23 | 142 | 0,35 | 62 | 7169 | 1,7 | EV080-2E80M/4B | 1,45 | 20,8 | | IE2 |
| | 27 | 133 | 0,38 | 53 | 6859 | 1,7 | | | | | |
| | 36 | 106 | 0,40 | 40 | 6279 | 2,5 | | | | | |
| | 16 | 191 | 0,31 | 60 | 7000 | 1,1 | EV075-3E80M/6C | 1,47 | 21,2 | 84 | IE3 |
| 19 | 178 | 0,35 | 50 | 7000 | 1,3 | EV075-2E80M/6B | 1,50 | 20,5 | | IE2 | |
| 23 | 151 | 0,37 | 40 | 7000 | 1,5 | | | | | | |
| 31 | 119 | 0,39 | 30 | 7000 | 2,1 | | | | | | |
| 37 | 105 | 0,41 | 25 | 7000 | 2,2 | | | | | | |
| 47 | 88 | 0,43 | 20 | 7000 | 2,7 | | | | | | |
| 62 | 70 | 0,45 | 15 | 6895 | 3,5 | | | | | | |
| 15 | 198 | 0,30 | 100 | 7000 | 0,9 | EV075-3E80M/4C | 1,34 | 22,0 | 84 | IE3 | |
| 18 | 173 | 0,33 | 80 | 7000 | 1,1 | EV075-2E80M/4B | 1,45 | 21,2 | | IE2 | |
| 24 | 134 | 0,34 | 60 | 7000 | 1,5 | | | | | | |
| 29 | 123 | 0,37 | 50 | 7000 | 1,6 | | | | | | |
| 36 | 104 | 0,40 | 40 | 7000 | 2,0 | | | | | | |
| 48 | 81 | 0,41 | 30 | 7000 | 2,7 | | | | | | |
| 58 | 71 | 0,43 | 25 | 7000 | 2,9 | | | | | | |
| 15 | 183 | 0,29 | 61 | 5815 | 0,7 | EV063-3E80M/6C | 1,47 | 17,1 | 80 | IE3 | |
| 18 | 178 | 0,34 | 51 | 5476 | 0,7 | EV063-2E80M/6B | 1,50 | 16,4 | | IE2 | |
| 24 | 142 | 0,36 | 39 | 5085 | 1,0 | | | | | | |
| 32 | 111 | 0,37 | 29 | 4652 | 1,4 | | | | | | |
| 37 | 106 | 0,41 | 25,5 | 4515 | 1,2 | | | | | | |
| 48 | 87 | 0,44 | 19,5 | 4158 | 1,6 | | | | | | |
| 64 | 66 | 0,45 | 14,5 | 3821 | 2,4 | | | | | | |
| 73 | 61 | 0,46 | 12,75 | 3670 | 2,1 | | | | | | |
| 96 | 47 | 0,47 | 9,75 | 3406 | 2,9 | | | | | | |
| 24 | 132 | 0,33 | 61 | 5243 | 0,9 | EV063-3E80M/4C | 1,34 | 17,0 | 80 | IE3 | |
| 28 | 124 | 0,37 | 51 | 4973 | 0,9 | EV063-2E80M/4B | 1,45 | 16,2 | | IE2 | |
| 37 | 98 | 0,38 | 39 | 4610 | 1,3 | | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



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E Series Geared Motors Performance Tables

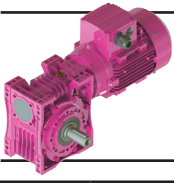
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç Power Leistung P _g [kW] P _g [HP] | IE3 Çıkış Devri Output Speeds Abtriebswelle Drehzahlen n ₂ [r.p.m] | IE3 Çıkış Momenti Output Torque Abtriebswelle Drehmomente M ₂ [Nm] | IE3 Çıkış Gücü Output Power Abtriebswelle Leistung P2 [kW] | Çevrim Oranı Ratio Übersetzung i | IE3 Güv. Rad. Yük Çıkış Per.O. Loads (Output) Zul.Querkräfte (Abtrieb) F _{qam} [N] | IE3 Servis Faktörü Service Factors Betriebsfaktor f _s | Tipi Type Typ | Anma Akımı Rated Current Nennstrom [A] | Ağırlık Weight Gewicht ~ [kg] | Ölçü Sayfası Dim. Page Maß Seite | Motor Verim Snf. Motor Eff. Class Motor Effizienz- klasse |
|--|---|---|--|--|--|--|---------------------|---|---|---|--|
| 0,55 0,75 | 50 | 76 | 0,40 | 29 | 4209 | 1,9 | EV063-3E80M/4C | 1,34 | 17,0 | 80 | IE3 |
| | 57 | 71 | 0,43 | 25,5 | 4089 | 1,6 | EV063-2E80M/4B | 1,45 | 16,2 | | IE2 |
| | 74 | 59 | 0,46 | 19,5 | 3757 | 2,1 | | | | | |
| | 100 | 45 | 0,47 | 14,5 | 3441 | 3,1 | | | | | |
| | 32 | 108 | 0,36 | 29 | 2971 | 0,8 | EV050-3E80M/6C | 1,47 | 14,8 | 76 | IE3 |
| | 37 | 102 | 0,40 | 25 | 2896 | 0,8 | EV050-2E80M/6B | 1,50 | 14,1 | | IE2 |
| | 49 | 81 | 0,42 | 19 | 2682 | 1,0 | | | | | |
| | 64 | 64 | 0,43 | 14,5 | 2498 | 1,3 | | | | | |
| | 78 | 54 | 0,44 | 12 | 2380 | 1,5 | | | | | |
| | 98 | 45 | 0,46 | 9,5 | 2231 | 1,6 | | | | | |
| | 129 | 35 | 0,47 | 7,25 | 2075 | 2,2 | | | | | |
| | 38 | 94 | 0,37 | 38 | 2981 | 0,7 | EV050-3E80M/4C | 1,34 | 14,7 | 76 | IE3 |
| | 50 | 75 | 0,39 | 29 | 2763 | 1,0 | EV050-2E80M/4B | 1,45 | 13,9 | | IE2 |
| | 58 | 69 | 0,42 | 25 | 2692 | 1,0 | | | | | |
| | 76 | 55 | 0,44 | 19 | 2486 | 1,2 | | | | | |
| | 100 | 43 | 0,45 | 14,5 | 2306 | 1,7 | | | | | |
| | 121 | 36 | 0,46 | 12 | 2192 | 1,9 | | | | | |
| | 153 | 30 | 0,48 | 9,5 | 2050 | 2,1 | | | | | |
| | 200 | 23 | 0,49 | 7,25 | 1898 | 2,9 | | | | | |
| 0,75 1,0 | 2,6 | 1218 | 0,33 | 565,5 | 13000 | 0,9 | EV125-E063-3E80M/4D | 1,77 | 80,3 | 106 | IE3 |
| | 3,4 | 952 | 0,34 | 420,5 | 13000 | 1,2 | EV125-E063-2E80M/4C | 1,89 | 79,2 | | IE2 |
| | 3,9 | 889 | 0,37 | 369,75 | 13000 | 1,2 | | | | | |
| | 3,8 | 1113 | 0,44 | 282,75 | 13000 | 1,5 | | | | | |
| | 6,9 | 625 | 0,45 | 210,25 | 13000 | 1,9 | | | | | |
| | 7,8 | 564 | 0,46 | 184,88 | 13000 | 2,1 | | | | | |
| | 4,8 | 742 | 0,38 | 299,46 | 13000 | 1,0 | EV125-NR21-3E80M/4D | 1,77 | 91,9 | 112 | IE3 |
| | 5,8 | 751 | 0,45 | 251,16 | 13000 | 1,0 | EV125-NR21-2E80M/4C | 1,89 | 90,8 | | IE2 |
| | 7,5 | 592 | 0,47 | 193,2 | 13000 | 1,5 | | | | | |
| | 10 | 440 | 0,48 | 140,07 | 13000 | 2,3 | | | | | |
| | 12 | 457 | 0,55 | 125,58 | 13000 | 1,9 | | | | | |
| | 8,8 | 479 | 0,44 | 107 | 13000 | 0,9 | EV125-3E90S/6B | 1,96 | 77,1 | 96 | IE3 |
| | 11 | 393 | 0,47 | 83 | 13000 | 1,7 | EV125-2E90S/6A | 2,00 | 75,8 | | IE2 |
| | 15 | 307 | 0,49 | 62 | 13000 | 3,1 | | | | | |
| | 18 | 287 | 0,55 | 52 | 13000 | 2,9 | | | | | |
| | 5,1 | 709 | 0,38 | 285 | 8200 | 0,8 | EV100-E050-3E80M/4D | 1,77 | 47,5 | 105 | IE3 |
| | 6,7 | 627 | 0,44 | 217,5 | 8200 | 1,0 | EV100-E050-2E80M/4C | 1,89 | 46,4 | | IE2 |
| | 8,1 | 527 | 0,44 | 180 | 8200 | 1,2 | | | | | |
| | 7,5 | 651 | 0,51 | 193,7 | 8200 | 0,9 | EV100-NR11-3E80M/4D | 1,77 | 53,4 | 111 | IE3 |
| | 10 | 510 | 0,52 | 149 | 8200 | 1,4 | EV100-NR11-2E80M/4C | 1,89 | 52,3 | | IE2 |
| | 12 | 367 | 0,44 | 82 | 8200 | 0,9 | EV100-3E90S/6B | 1,96 | 46,6 | 92 | IE3 |
| | 15 | 299 | 0,47 | 63 | 8200 | 1,7 | EV100-2E90S/6A | 2,00 | 45,3 | | IE2 |
| | 18 | 263 | 0,50 | 52 | 8200 | 1,8 | | | | | |
| | 24 | 214 | 0,53 | 40 | 8200 | 2,4 | | | | | |
| | 32 | 172 | 0,57 | 30 | 8200 | 3,5 | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

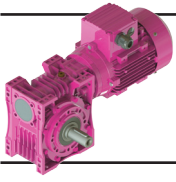
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç Power Leistung P _g [kW] P _g [HP] | IE3 | IE3 | IE3 | Çevrim Oranı Ratio Übersetzung i | IE3 | IE3 | Tipi Type Typ | Anma Akımı Rated Current Nennstrom [A] | Ağırlık Weight Gewicht ~ [kg] | Ölçü Sayfası Dim. Page Maß Seite | Motor |
|--|--|--|---|--|---|---|---------------------|---|---|---|--|
| | Çıkış Devri Output Speeds Abtriebswelle Drehzahlen n ₂ [r.p.m] | Çıkış Momenti Output Torque Abtriebswelle Drehmomente M ₂ [Nm] | Çıkış Gücü Output Power Abtriebswelle Leistung P2 [kW] | | Güv. Rad. Yük Çıkış Per.O. Loads (Output) Zul.Querkräfte (Abtrieb) F _{qam} [N] | Servis Faktörü Service Factors Betriebsfaktor f _s | | | | | Verim Snf. Motor Eff. Class Motor Effizienz- klasse |
| 0,75 1,0 | 18 | 260 | 0,48 | 82 | 8200 | 1,2 | EV100-3E80M/4D | 1,77 | 43,4 | 92 | IE3 |
| | 23 | 203 | 0,49 | 63 | 8200 | 2,2 | EV100-2E80M/4C | 1,89 | 42,3 | | IE2 |
| | 28 | 182 | 0,53 | 52 | 8200 | 2,3 | | | | | |
| | 36 | 144 | 0,55 | 40 | 8200 | 3,1 | | | | | |
| | 48 | 113 | 0,57 | 30 | 8044 | 4,4 | | | | | |
| | 56 | 107 | 0,63 | 26 | 7697 | 3,8 | | | | | |
| | 15 | 274 | 0,44 | 62 | 7400 | 0,9 | EV080-3E90S/6B | 1,96 | 25,9 | 88 | IE3 |
| | 18 | 260 | 0,49 | 53 | 7313 | 1,0 | EV080-2E90S/6A | 2,00 | 24,6 | | IE2 |
| | 24 | 207 | 0,51 | 40 | 6722 | 1,4 | | | | | |
| | 32 | 163 | 0,54 | 30 | 6162 | 2,0 | | | | | |
| 36 | 152 | 0,57 | 26,5 | 5992 | 1,7 | | | | | | |
| 47 | 120 | 0,59 | 20 | 5511 | 2,5 | | | | | | |
| 63 | 94 | 0,62 | 15 | 5044 | 3,5 | | | | | | |
| 23 | 193 | 0,47 | 62 | 6862 | 1,3 | EV080-3E80M/4D | 1,77 | 22,7 | 88 | IE3 | |
| 27 | 182 | 0,52 | 53 | 6587 | 1,3 | EV080-2E80M/4C | 1,89 | 21,6 | | IE2 | |
| 36 | 144 | 0,55 | 40 | 6044 | 1,8 | | | | | | |
| 48 | 110 | 0,56 | 30 | 5551 | 2,6 | | | | | | |
| 55 | 102 | 0,59 | 26,5 | 5383 | 2,2 | | | | | | |
| 73 | 80 | 0,61 | 20 | 4938 | 3,2 | | | | | | |
| 16 | 257 | 0,42 | 60 | 7000 | 0,8 | EV075-3E90S/6B | 1,96 | 25,5 | 84 | IE3 | |
| 19 | 240 | 0,47 | 50 | 7000 | 0,9 | EV075-2E90S/6A | 2,00 | 24,2 | | IE2 | |
| 24 | 204 | 0,51 | 40 | 7000 | 1,1 | | | | | | |
| 32 | 160 | 0,53 | 30 | 7000 | 1,5 | | | | | | |
| 38 | 142 | 0,56 | 25 | 7000 | 1,7 | | | | | | |
| 47 | 119 | 0,59 | 20 | 7000 | 2,0 | | | | | | |
| 63 | 94 | 0,62 | 15 | 6585 | 2,6 | | | | | | |
| 18 | 235 | 0,45 | 80 | 7000 | 0,8 | EV075-3E80M/4D | 1,77 | 22,0 | 84 | IE3 | |
| 24 | 182 | 0,46 | 60 | 7000 | 1,1 | EV075-2E80M/4C | 1,89 | 20,9 | | IE2 | |
| 29 | 167 | 0,51 | 50 | 7000 | 1,2 | | | | | | |
| 36 | 142 | 0,54 | 40 | 7000 | 1,5 | | | | | | |
| 48 | 110 | 0,56 | 30 | 7000 | 2,0 | | | | | | |
| 58 | 96 | 0,58 | 25 | 6904 | 2,1 | | | | | | |
| 73 | 80 | 0,61 | 20 | 6460 | 2,6 | | | | | | |
| 97 | 63 | 0,63 | 15 | 5928 | 3,3 | | | | | | |
| 24 | 191 | 0,49 | 39 | 4629 | 0,7 | EV063-3E90S/6B | 1,96 | 21,3 | 80 | IE3 | |
| 33 | 150 | 0,51 | 29 | 4255 | 1,1 | EV063-2E90S/6A | 2,00 | 20,0 | | IE2 | |
| 37 | 144 | 0,56 | 25,5 | 4153 | 0,9 | | | | | | |
| 48 | 117 | 0,59 | 19,5 | 3838 | 1,2 | | | | | | |
| 65 | 89 | 0,61 | 14,5 | 3550 | 1,8 | | | | | | |
| 74 | 82 | 0,63 | 12,75 | 3413 | 1,5 | | | | | | |
| 97 | 63 | 0,64 | 9,75 | 3185 | 2,1 | | | | | | |
| 130 | 49 | 0,67 | 7,25 | 2935 | 3,1 | | | | | | |
| 37 | 133 | 0,52 | 39 | 4298 | 0,9 | EV063-3E80M/4D | 1,77 | 18,1 | 80 | IE3 | |
| 50 | 104 | 0,55 | 29 | 3938 | 1,4 | EV063-2E80M/4C | 1,89 | 17,0 | | IE2 | |
| 57 | 97 | 0,58 | 25,5 | 3851 | 1,2 | | | | | | |
| 74 | 80 | 0,62 | 19,5 | 3545 | 1,5 | | | | | | |
| 100 | 61 | 0,64 | 14,5 | 3263 | 2,3 | | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

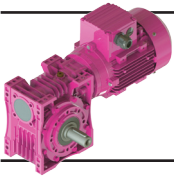
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf.* |
|--|--|--|-----------------------------------|------------------|--|----------------------------------|---------------------|---------------------|----------------------|--------------|------------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung P _g [kW] P _g [HP] | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P2 [kW] | Übersetzung i | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | Typ | Nennstrom [A] | Gewicht ~ [kg] | Maß Seite | Motor Effizienz-klasse |
| 0,75 1,0 | 114 | 55 | 0,65 | 12,75 | 3143 | 1,9 | EV063-3E80M/4D | 1,77 | 18,1 | 80 | IE3 |
| | 149 | 42 | 0,66 | 9,75 | 2922 | 2,7 | EV063-2E80M/4C | 1,89 | 17,0 | | IE2 |
| | 50 | 110 | 0,57 | 19 | 2356 | 0,7 | EV050-3E90S/6B | 1,96 | 19,0 | 76 | IE3 |
| | 65 | 87 | 0,59 | 14,5 | 2216 | 1,0 | EV050-2E90S/6A | 2,00 | 17,7 | | IE2 |
| | 79 | 73 | 0,60 | 12 | 2129 | 1,1 | | | | | |
| | 99 | 61 | 0,63 | 9,5 | 2009 | 1,2 | | | | | |
| | 130 | 48 | 0,65 | 7,25 | 1881 | 1,7 | | | | | |
| | 50 | 102 | 0,53 | 29 | 2473 | 0,7 | EV050-3E80M/4D | 1,77 | 15,8 | 76 | IE3 |
| | 58 | 95 | 0,58 | 25 | 2439 | 0,7 | EV050-2E80M/4C | 1,89 | 14,7 | | IE2 |
| | 76 | 75 | 0,60 | 19 | 2266 | 0,9 | | | | | |
| | 100 | 59 | 0,62 | 14,5 | 2117 | 1,2 | | | | | |
| | 121 | 49 | 0,63 | 12 | 2024 | 1,4 | | | | | |
| | 153 | 41 | 0,65 | 9,5 | 1903 | 1,5 | | | | | |
| | 200 | 32 | 0,66 | 7,25 | 1773 | 2,1 | | | | | |
| | 1,1 1,5 | 3,4 | 1396 | 0,50 | 420,5 | 13000 | 0,8 | EV125-E063-3E90S/4C | 2,46 | 78,6 | 106 |
| 3,9 | | 1304 | 0,54 | 369,75 | 13000 | 0,8 | EV125-E063-2E90S/4B | 2,60 | 76,7 | | IE2 |
| 5,1 | | 1206 | 0,65 | 282,75 | 13000 | 1,0 | | | | | |
| 6,9 | | 917 | 0,66 | 210,25 | 13000 | 1,3 | | | | | |
| 7,8 | | 827 | 0,68 | 184,88 | 13000 | 1,4 | | | | | |
| 7,5 | | 868 | 0,68 | 193,2 | 13000 | 1,0 | EV125-NR21-3E90S/4C | 2,46 | 96,6 | 112 | IE3 |
| 10 | | 645 | 0,70 | 140,07 | 13000 | 1,6 | EV125-NR21-2E90S/4B | 2,60 | 94,7 | | IE2 |
| 12 | | 671 | 0,81 | 125,58 | 13000 | 1,3 | | | | | |
| 8,8 | | 706 | 0,65 | 107 | 13000 | 0,6 | EV125-3E90L/6C | 2,75 | 79,6 | 96 | IE3 |
| 11 | | 574 | 0,68 | 83 | 13000 | 1,2 | EV125-2E90L/6B | 2,90 | 77,4 | | IE2 |
| 15 | | 453 | 0,72 | 62 | 13000 | 2,1 | | | | | |
| 18 | | 424 | 0,80 | 52 | 13000 | 2,0 | | | | | |
| 24 | | 337 | 0,83 | 40 | 12396 | 2,9 | | | | | |
| 6,7 | | 920 | 0,64 | 217,5 | 8200 | 0,7 | EV100-E050-3E90S/4C | 2,46 | 52,2 | 105 | IE3 |
| 8,1 | | 772 | 0,65 | 180 | 8200 | 0,8 | EV100-E050-2E90S/4B | 2,60 | 50,3 | | IE2 |
| 15 | | 436 | 0,68 | 63 | 8200 | 1,1 | EV100-3E90L/6C | 2,75 | 49,1 | 92 | IE3 |
| 18 | | 387 | 0,73 | 52 | 8200 | 1,2 | EV100-2E90L/6B | 2,90 | 46,9 | | IE2 |
| 24 | | 316 | 0,78 | 40 | 8200 | 1,7 | | | | | |
| 31 | | 253 | 0,83 | 30 | 8200 | 2,3 | | | | | |
| 36 | | 234 | 0,88 | 26 | 8200 | 2,0 | | | | | |
| 47 | | 186 | 0,92 | 20 | 7701 | 2,8 | | | | | |
| 18 | | 381 | 0,71 | 82 | 8200 | 0,8 | EV100-3E90S/4C | 2,46 | 48,1 | 92 | IE3 |
| 23 | | 297 | 0,72 | 63 | 8200 | 1,5 | EV100-2E90S/4B | 2,60 | 46,2 | | IE2 |
| 28 | | 267 | 0,78 | 52 | 8200 | 1,6 | | | | | |
| 36 | | 212 | 0,80 | 40 | 8200 | 2,1 | | | | | |
| 48 | | 165 | 0,84 | 30 | 7755 | 3,0 | | | | | |
| 24 | | 305 | 0,75 | 40 | 6136 | 1,0 | EV080-3E90L/6C | 2,75 | 28,4 | 88 | IE3 |
| 31 | 241 | 0,79 | 30 | 5656 | 1,4 | EV080-2E90L/6B | 2,90 | 26,2 | | IE2 | |
| 35 | 224 | 0,83 | 26,5 | 5543 | 1,2 | | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



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E Series Geared Motors Performance Tables

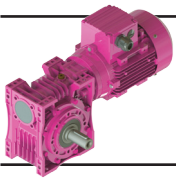
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç Power Leistung P _g [kW] P _g [HP] | IE3 | IE3 | IE3 | Çevrim Oranı Ratio Übersetzung i | IE3 | IE3 | Tipi Type Typ | Anma Akımı Rated Current Nennstrom [A] | Ağırlık Weight Gewicht ~ [kg] | Ölçü Sayfası Dim. Page Maß Seite | Motor* |
|--|--|--|-----------------------------------|--|--|----------------------------------|-----------------------------|---|---|---|------------------------|
| | Çıkış Devri | Çıkış Momenti | Çıkış Gücü | | Güv. Rad. Yük Çıkış | Servis Faktörü | | | | | Verim Snf. |
| | Output Speeds | Output Torque | Output Power | | Per.O. Loads (Output) | Service Factors | | | | | Motor Eff. Class |
| | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P2 [kW] | | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | | | | | Motor Effizienz-klasse |
| 1,1 1,5 | 47 | 176 | 0,87 | 20 | 5129 | 1,7 | EV080-3E90L/6C | 2,75 | 28,4 | 88 | IE3 |
| | 63 | 139 | 0,91 | 15 | 4715 | 2,4 | EV080-2E90L/6B | 2,90 | 26,2 | | IE2 |
| | 71 | 127 | 0,94 | 13,25 | 4527 | 2,0 | | | | | |
| | 94 | 98 | 0,97 | 10 | 4197 | 2,9 | | | | | |
| | 23 | 284 | 0,69 | 62 | 6324 | 0,9 | EV080-3E90S/4C | 2,46 | 27,4 | 88 | IE3 |
| | 27 | 267 | 0,76 | 53 | 6111 | 0,9 | EV080-2E90S/4B | 2,60 | 25,5 | | IE2 |
| | 36 | 211 | 0,80 | 40 | 5633 | 1,3 | | | | | |
| | 48 | 162 | 0,82 | 30 | 5205 | 1,8 | | | | | |
| | 55 | 150 | 0,86 | 26,5 | 5078 | 1,5 | | | | | |
| | 73 | 118 | 0,90 | 20 | 4678 | 2,2 | | | | | |
| | 97 | 91 | 0,92 | 15 | 4299 | 3,0 | | | | | |
| | | | | | | | | | | | |
| | 24 | 301 | 0,74 | 40 | 7000 | 0,8 | EV075-3E90L/6C | 2,75 | 26,7 | 84 | IE3 |
| | 31 | 237 | 0,78 | 30 | 7000 | 1,0 | EV075-2E90L/6B | 2,90 | 24,5 | | IE2 |
| | 38 | 210 | 0,83 | 25 | 6965 | 1,1 | | | | | |
| | 47 | 176 | 0,87 | 20 | 6562 | 1,4 | | | | | |
| | 63 | 138 | 0,91 | 15 | 6080 | 1,8 | | | | | |
| | 94 | 97 | 0,95 | 10 | 5439 | 2,4 | | | | | |
| | 125 | 74 | 0,97 | 7,5 | 5012 | 3,0 | | | | | |
| | | | | | | | | | | | |
| | 24 | 267 | 0,68 | 60 | 7000 | 0,7 | EV075-3E90S/4C | 2,46 | 25,9 | 84 | IE3 |
| | 29 | 245 | 0,75 | 50 | 7000 | 0,8 | EV075-2E90S/4B | 2,60 | 24,0 | | IE2 |
| | 36 | 209 | 0,79 | 40 | 7000 | 1,0 | | | | | |
| | 48 | 161 | 0,82 | 30 | 6759 | 1,4 | | | | | |
| | 58 | 141 | 0,86 | 25 | 6443 | 1,5 | | | | | |
| | 73 | 118 | 0,89 | 20 | 6056 | 1,8 | | | | | |
| | 97 | 92 | 0,93 | 15 | 5588 | 2,3 | | | | | |
| | 145 | 64 | 0,97 | 10 | 4969 | 3,1 | | | | | |
| | | | | | | | | | | | |
| | 48 | 173 | 0,87 | 19,5 | 3292 | 0,8 | EV063-3E90L/6C | 2,75 | 23,8 | 80 | IE3 |
| | 65 | 132 | 0,89 | 14,5 | 3091 | 1,2 | EV063-2E90L/6B | 2,90 | 21,6 | | IE2 |
| | 74 | 120 | 0,93 | 12,75 | 2979 | 1,0 | | | | | |
| | 96 | 93 | 0,94 | 9,75 | 2824 | 1,4 | | | | | |
| | 130 | 72 | 0,98 | 7,25 | 2627 | 2,1 | | | | | |
| | | | | | | | | | | | |
| | 50 | 153 | 0,80 | 29 | 3464 | 0,9 | EV063-3E90S/4C | 2,46 | 22,8 | 80 | IE3 |
| | 57 | 143 | 0,85 | 25,5 | 3433 | 0,8 | EV063-2E90S/4B | 2,60 | 20,9 | | IE2 |
| | 74 | 117 | 0,91 | 19,5 | 3174 | 1,1 | | | | | |
| | 100 | 89 | 0,93 | 14,5 | 2951 | 1,6 | | | | | |
| | 114 | 80 | 0,96 | 12,75 | 2851 | 1,3 | | | | | |
| | 149 | 62 | 0,96 | 9,75 | 2678 | 1,8 | | | | | |
| | 200 | 47 | 0,99 | 7,25 | 2474 | 2,6 | | | | | |
| | | | | | | | | | | | |
| | 78 | 108 | 0,88 | 12 | 1692 | 0,8 | EV050-3E90L/6C | 2,75 | 21,5 | 76 | IE3 |
| | 99 | 90 | 0,93 | 9,5 | 1623 | 0,8 | EV050-2E90L/6B | 2,90 | 19,3 | | IE2 |
| | 130 | 70 | 0,95 | 7,25 | 1556 | 1,1 | | | | | |
| | | | | | | | | | | | |
| | 100 | 86 | 0,90 | 14,5 | 1786 | 0,8 | EV050-3E90S/4C | 2,46 | 20,5 | 76 | IE3 |
| | 121 | 72 | 0,92 | 12 | 1730 | 1,0 | EV050-2E90S/4B | 2,60 | 18,6 | | IE2 |
| | 153 | 60 | 0,96 | 9,5 | 1646 | 1,0 | | | | | |
| | 200 | 46 | 0,97 | 7,25 | 1554 | 1,4 | | | | | |
| | | | | | | | | | | | |
| 1,5 2,0 | 6,9 | 1251 | 0,90 | 210,25 | 13000 | 0,9 | EV125-E063-3E90L/4D | 3,30 | 86,7 | 106 | IE3 |
| | 7,8 | 1128 | 0,93 | 184,88 | 13000 | 1,0 | EV125-E063-2E90L/4C | 3,40 | 85,9 | | IE2 |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

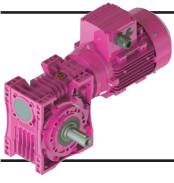
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç Power Leistung P _g [kW] P _g [HP] | IE3 | IE3 | IE3 | Çevrim Oranı Ratio Übersetzung i | IE3 | IE3 | Tipi Type Typ | Anma Akımı Rated Current Nennstrom [A] | Ağırlık Weight Gewicht ~ [kg] | Ölçü Sayfası Dim. Page Maß Seite | Motor* |
|--|--|--|---|--|--|----------------------------------|--|---|---|---|------------------------|
| | Çıkış Devri | Çıkış Momenti | Çıkış Gücü | | Güv. Rad. Yük Çıkış | Servis Faktörü | | | | | Motor Verim Sınıf. |
| | Output Speeds | Output Torque | Output Power | | Per.O. Loads (Output) | Service Factors | | | | | Motor Eff. Class |
| | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P ₂ [kW] | | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | | | | | Motor Effizienz-klasse |
| 1,5 2,0 | 10 | 879 | 0,95 | 140,07 125,58 | 13000 | 1,2 | EV125-NR21-3E90L/4D EV125-NR21-2E90L/4C | 3,30 3,40 | 98,3 97,5 | 112 | IE3 |
| | 12 | 915 | 1,11 | | 13000 | 0,9 | | | | | IE2 |
| | 12 | 778 | 0,94 | 83 62 52 40 29 26 20 | 13000 | 0,9 | EV125-3E100L/6B EV125-2E100L/6A | 3,50 3,72 | 85,0 82,7 | 96 | IE3 |
| | 15 | 608 | 0,98 | | 13000 | 1,6 | | | | | IE2 |
| | 18 | 573 | 1,10 | | 12823 | 1,5 | | | | | |
| | 24 | 456 | 1,14 | | 11858 | 2,1 | | | | | |
| | 33 | 331 | 1,14 | | 10764 | 3,2 | | | | | |
| | 37 | 323 | 1,24 | | 10487 | 2,6 | | | | | |
| | 48 | 257 | 1,28 | | 9687 | 3,7 | | | | | |
| | 15 | 591 | 0,94 | | 63 52 40 30 26 20 15 13 10 | 8200 | | 0,9 | EV100-3E100L/6B EV100-2E100L/6A | 3,50 3,72 | 54,5 52,2 |
| 18 | 520 | 1,00 | 8200 | 0,9 | | IE2 | | | | | |
| 24 | 426 | 1,07 | 8200 | 1,2 | | | | | | | |
| 32 | 342 | 1,14 | 8075 | 1,7 | | | | | | | |
| 37 | 316 | 1,22 | 7832 | 1,5 | | | | | | | |
| 48 | 250 | 1,25 | 7297 | 2,1 | | | | | | | |
| 64 | 193 | 1,28 | 6702 | 3,0 | | | | | | | |
| 73 | 169 | 1,30 | 6431 | 2,6 | | | | | | | |
| 96 | 133 | 1,33 | 5973 | 3,6 | | | | | | | |
| | 23 | 406 | 0,98 | 63 52 40 30 26 20 | 8200 | 1,1 | EV100-3E90L/4D EV100-2E90L/4C | 3,30 3,40 | 49,8 49,0 | 92 | IE3 |
| | 28 | 364 | 1,06 | | 8200 | 1,1 | | | | | IE2 |
| | 36 | 288 | 1,09 | | 8113 | 1,6 | | | | | |
| | 48 | 225 | 1,14 | | 7424 | 2,2 | | | | | |
| | 56 | 214 | 1,25 | | 7133 | 1,9 | | | | | |
| | 73 | 167 | 1,27 | | 6629 | 2,6 | | | | | |
| | 24 | 409 | 1,02 | 40 30 26,5 20 15 13,25 10 7,5 | 5456 | 0,7 | EV080-3E100L/6B EV080-2E100L/6A | 3,50 3,72 | 33,8 31,5 | 92 | IE3 |
| | 32 | 325 | 1,08 | | 5051 | 1,0 | | | | | IE2 |
| | 36 | 301 | 1,14 | | 5016 | 0,9 | | | | | |
| | 48 | 238 | 1,19 | | 4665 | 1,3 | | | | | |
| | 64 | 186 | 1,24 | | 4324 | 1,8 | | | | | |
| | 72 | 171 | 1,29 | | 4146 | 1,5 | | | | | |
| | 96 | 132 | 1,32 | | 3882 | 2,1 | | | | | |
| | 127 | 100 | 1,33 | | 3612 | 2,6 | | | | | |
| | 36 | 288 | 1,09 | 40 30 26,5 20 15 13,25 10 7,5 | 5163 | 0,9 | EV080-3E90L/4D EV080-2E90L/4C | 3,30 3,40 | 29,1 28,3 | 88 | IE3 |
| | 48 | 221 | 1,12 | | 4810 | 1,3 | | | | | IE2 |
| | 55 | 205 | 1,17 | | 4730 | 1,1 | | | | | |
| | 73 | 161 | 1,22 | | 4381 | 1,6 | | | | | |
| | 97 | 124 | 1,26 | | 4047 | 2,2 | | | | | |
| | 109 | 115 | 1,31 | | 3878 | 1,9 | | | | | |
| | 145 | 88 | 1,34 | | 3604 | 2,7 | | | | | |
| | 193 | 66 | 1,33 | | 3340 | 3,8 | | | | | |
| | 32 | 321 | 1,07 | 30 25 20 15 10 7,5 | 6397 | 0,8 | EV075-3E100L/6B EV075-2E100L/6A | 3,50 3,72 | 33,4 31,1 | 84 | IE3 |
| | 38 | 281 | 1,13 | | 6178 | 0,8 | | | | | IE2 |
| | 48 | 236 | 1,18 | | 5865 | 1,0 | | | | | |
| | 64 | 186 | 1,24 | | 5488 | 1,3 | | | | | |
| | 96 | 130 | 1,30 | | 4966 | 1,8 | | | | | |
| | 127 | 99 | 1,32 | | 4606 | 2,2 | | | | | |
| | 36 | 285 | 1,08 | 40 30 | 6502 | 0,7 | EV075-3E90L/4D EV075-2E90L/4C | 3,30 3,40 | 25,5 24,7 | 84 | IE3 |
| | 48 | 220 | 1,11 | | 6166 | 1,0 | | | | | IE2 |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

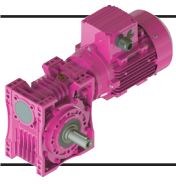
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç Power Leistung P _g [kW] P _g [HP] | IE3 | IE3 | IE3 | Çevrim Oranı Übersetzung i | IE3 | IE3 | Tipi Type Typ | Anma Akımı Rated Current Nennstrom [A] | Ağırlık Weight Gewicht ~ [kg] | Ölçü Sayfası Dim. Page Maß Seite | Motor |
|--|--------------------------|---------------------------|------------------------|---|--------------------------|-----------------|-----------------------------|---|---|---|-----------------------|
| | Çıkış Devri | Çıkış Momenti | Çıkış Gücü | | Güv. Rad. Yük Çıkış | Servis Faktörü | | | | | Verim Snf.* |
| | Output Speeds | Output Torque | Output Power | | Per.O. Loads (Output) | Service Factors | | | | | Motor Eff. Class |
| | Abtriebswelle Drehzahlen | Abtriebswelle Drehmomente | Abtriebswelle Leistung | | Zul.Querkräfte (Abtrieb) | Betriebsfaktor | | | | | Motor Effizienzklasse |
| n ₂ [r.p.m] | M ₂ [Nm] | P2 [kW] | F _{qam} [N] | f _s | | | | | | | |
| 1,5 2,0 | 58 | 193 | 1,17 | 25 | 5914 | 1,1 | EV075-3E90L/4D | 3,30 | 25,5 | 84 | IE3 |
| | 73 | 160 | 1,22 | 20 | 5593 | 1,3 | EV075-2E90L/4C | 3,40 | 24,7 | | IE2 |
| | 97 | 125 | 1,27 | 15 | 5200 | 1,7 | | | | | |
| | 145 | 87 | 1,33 | 10 | 4662 | 2,2 | | | | | |
| | 193 | 66 | 1,33 | 7,5 | 4309 | 2,8 | | | | | |
| | 74 | 160 | 1,24 | 19,5 | 2749 | 0,8 | EV063-3E90L/4D | 3,30 | 24,5 | 80 | IE3 |
| | 100 | 121 | 1,27 | 14,5 | 2594 | 1,1 | EV063-2E90L/4C | 3,40 | 23,7 | | IE2 |
| | 114 | 109 | 1,30 | 12,75 | 2518 | 1,0 | | | | | |
| | 149 | 84 | 1,31 | 9,75 | 2399 | 1,3 | | | | | |
| | 200 | 65 | 1,36 | 7,25 | 2239 | 1,9 | | | | | |
| | 153 | 82 | 1,30 | 9,5 | 1352 | 0,8 | EV050-3E90L/4D | 3,30 | 22,2 | 76 | IE3 |
| | 200 | 63 | 1,33 | 7,25 | 1303 | 1,1 | EV050-2E90L/4C | 3,40 | 21,4 | | IE2 |
| 2,2 3,0 | 16 | 883 | 1,44 | 62 | 12348 | 1,1 | EV125-3E112M/6B | 4,95 | 91,9 | 96 | IE3 |
| | 19 | 831 | 1,61 | 52 | 11835 | 1,0 | EV125-2E112M/6A | 5,32 | 89,7 | | IE2 |
| | 24 | 662 | 1,67 | 40 | 11003 | 1,5 | | | | | |
| | 33 | 480 | 1,67 | 29 | 10046 | 2,2 | | | | | |
| | 37 | 469 | 1,82 | 26 | 9843 | 1,8 | | | | | |
| | 48 | 373 | 1,88 | 20 | 9133 | 2,6 | | | | | |
| | 67 | 270 | 1,88 | 14,5 | 8315 | 3,9 | | | | | |
| | 17 | 784 | 1,43 | 83 | 12442 | 0,8 | EV125-3E100L/4C | 4,65 | 86,6 | 96 | IE3 |
| | 23 | 587 | 1,44 | 62 | 11485 | 1,4 | EV125-2E100L/4B | 4,85 | 84,9 | | IE2 |
| | 28 | 573 | 1,67 | 52 | 10887 | 1,3 | | | | | |
| | 36 | 440 | 1,67 | 40 | 10145 | 1,9 | | | | | |
| | 50 | 319 | 1,67 | 29 | 9222 | 2,8 | | | | | |
| | 56 | 317 | 1,85 | 26 | 8975 | 2,3 | | | | | |
| | 73 | 248 | 1,88 | 20 | 8319 | 3,2 | | | | | |
| | 24 | 619 | 1,56 | 40 | 7869 | 0,8 | EV100-3E112M/6B | 4,95 | 61,4 | 92 | IE3 |
| | 32 | 496 | 1,67 | 30 | 7190 | 1,2 | EV100-2E112M/6A | 5,32 | 59,2 | | IE2 |
| | 37 | 459 | 1,78 | 26 | 7047 | 1,0 | | | | | |
| | 48 | 362 | 1,83 | 20 | 6634 | 1,4 | | | | | |
| | 64 | 280 | 1,88 | 15 | 6133 | 2,1 | | | | | |
| | 74 | 245 | 1,91 | 13 | 5903 | 1,8 | | | | | |
| | 97 | 193 | 1,95 | 10 | 5529 | 2,5 | | | | | |
| | 129 | 147 | 1,98 | 7,5 | 5117 | 3,6 | | | | | |
| | 28 | 534 | 1,56 | 52 | 7935 | 0,8 | EV100-3E100L/4C | 4,65 | 56,1 | 92 | IE3 |
| | 36 | 423 | 1,61 | 40 | 7449 | 1,1 | EV100-2E100L/4B | 4,85 | 54,4 | | IE2 |
| | 48 | 330 | 1,67 | 30 | 6845 | 1,5 | | | | | |
| | 56 | 315 | 1,84 | 26 | 6606 | 1,3 | | | | | |
| | 73 | 245 | 1,86 | 20 | 6191 | 1,8 | | | | | |
| | 97 | 186 | 1,88 | 15 | 5717 | 2,6 | | | | | |
| | 112 | 165 | 1,93 | 13 | 5477 | 2,3 | | | | | |
| | 145 | 129 | 1,95 | 10 | 5104 | 3,1 | | | | | |
| | 193 | 97 | 1,97 | 7,5 | 4706 | 4,5 | | | | | |
| | 48 | 346 | 1,75 | 20 | 3896 | 0,9 | EV080-3E112M/6B | 4,95 | 40,7 | 88 | IE3 |
| | 64 | 270 | 1,82 | 15 | 3666 | 1,2 | EV080-2E112M/6A | 5,32 | 38,5 | | IE2 |
| | 73 | 248 | 1,89 | 13,25 | 3511 | 1,0 | | | | | |
| | 97 | 192 | 1,94 | 10 | 3349 | 1,5 | | | | | |
| | 129 | 145 | 1,95 | 7,5 | 3171 | 2,1 | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

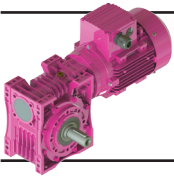
E Serien Getriebemotoren Leistung und Drehzahlübersicht



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| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf.* |
|--|---|---|--|------------------|---|----------------------------------|-----------------|------------------|----------------------|--------------|-------------------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung P _g [kW] P _g [HP] | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P ₂ [kW] | Übersetzung i | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | Typ | Nennstrom [A] | Gewicht ~ [kg] | Maß Seite | Motor Effizienz- klasse |
| 2,2 3,0 | 48 | 324 | 1,64 | 30 | 4119 | 0,9 | EV080-3E100L/4C | 4,65 | 35,4 | 88 | IE3 |
| | 55 | 300 | 1,72 | 26,5 | 4119 | 0,8 | EV080-2E100L/4B | 4,85 | 33,7 | | IE2 |
| | 73 | 236 | 1,79 | 20 | 3860 | 1,1 | | | | | |
| | 97 | 182 | 1,85 | 15 | 3605 | 1,5 | | | | | |
| | 109 | 168 | 1,93 | 13,25 | 3451 | 1,3 | | | | | |
| | 145 | 129 | 1,96 | 10 | 3251 | 1,8 | | | | | |
| | 193 | 97 | 1,96 | 7,5 | 3049 | 2,6 | | | | | |
| | 48 | 343 | 1,73 | 20 | 4676 | 0,7 | EV075-3E112M/6B | 4,95 | 36,7 | 84 | IE3 |
| | 64 | 269 | 1,82 | 15 | 4482 | 0,9 | EV075-2E112M/6A | 5,32 | 34,5 | | IE2 |
| | 97 | 190 | 1,92 | 10 | 4153 | 1,2 | | | | | |
| | 129 | 144 | 1,94 | 7,5 | 3923 | 1,5 | | | | | |
| | 48 | 323 | 1,63 | 30 | 5125 | 0,7 | EV075-3E100L/4C | 4,65 | 34,1 | 84 | IE3 |
| | 58 | 282 | 1,72 | 25 | 4987 | 0,7 | EV075-2E100L/4B | 4,85 | 32,4 | | IE2 |
| | 73 | 235 | 1,79 | 20 | 4781 | 0,9 | | | | | |
| | 97 | 183 | 1,86 | 15 | 4518 | 1,1 | | | | | |
| | 145 | 128 | 1,95 | 10 | 4123 | 1,5 | | | | | |
| | 193 | 97 | 1,96 | 7,5 | 3854 | 1,9 | | | | | |
| | 3,0 4,0 | 24 | 898 | 2,28 | 40 | 10053 | 1,1 | EV125-3E132S/6B | 6,55 | 113,7 | 96 |
| 33 | | 651 | 2,28 | 29 | 9251 | 1,6 | EV125-2E132S/6A | 6,85 | 109,2 | | IE2 |
| 37 | | 636 | 2,49 | 26 | 9131 | 1,3 | | | | | |
| 49 | | 506 | 2,57 | 20 | 8522 | 1,9 | | | | | |
| 67 | | 367 | 2,57 | 14,5 | 7806 | 2,8 | | | | | |
| 75 | | 340 | 2,65 | 13 | 7576 | 2,3 | | | | | |
| 97 | | 266 | 2,70 | 10 | 7081 | 3,3 | | | | | |
| 23 | | 801 | 1,96 | 62 | 10664 | 1,0 | EV125-3E100L/4D | 6,26 | 88,8 | 96 | IE3 |
| 28 | | 781 | 2,28 | 52 | 10132 | 0,9 | EV125-2E100L/4C | 6,42 | 86,3 | | IE2 |
| 36 | | 601 | 2,28 | 40 | 9517 | 1,4 | | | | | |
| 50 | | 435 | 2,28 | 29 | 8696 | 2,1 | | | | | |
| 56 | | 433 | 2,53 | 26 | 8498 | 1,7 | | | | | |
| 73 | | 338 | 2,57 | 20 | 7918 | 2,4 | | | | | |
| 100 | | 245 | 2,57 | 14,5 | 7213 | 3,5 | | | | | |
| 112 | | 228 | 2,67 | 13 | 6983 | 2,9 | | | | | |
| 145 | | 177 | 2,69 | 10 | 6499 | 4,1 | | | | | |
| 36 | | 577 | 2,19 | 40 | 6689 | 0,8 | EV100-3E100L/4D | 6,26 | 58,3 | 92 | IE3 |
| 48 | | 450 | 2,28 | 30 | 6184 | 1,1 | EV100-2E100L/4C | 6,42 | 55,8 | | IE2 |
| 56 | | 429 | 2,50 | 26 | 6003 | 1,0 | | | | | |
| 73 | | 334 | 2,54 | 20 | 5690 | 1,3 | | | | | |
| 97 | | 254 | 2,57 | 15 | 5295 | 1,9 | | | | | |
| 112 | | 225 | 2,63 | 13 | 5084 | 1,7 | | | | | |
| 145 | | 175 | 2,66 | 10 | 4776 | 2,3 | | | | | |
| 193 | | 133 | 2,69 | 7,5 | 4432 | 3,3 | | | | | |
| 73 | | 322 | 2,44 | 20 | 3264 | 0,8 | EV080-3E100L/4D | 6,26 | 37,6 | 88 | IE3 |
| 97 | | 249 | 2,52 | 15 | 3101 | 1,1 | EV080-2E100L/4C | 6,42 | 35,1 | | IE2 |
| 109 | | 229 | 2,63 | 13,25 | 2963 | 0,9 | | | | | |
| 145 | | 176 | 2,68 | 10 | 2847 | 1,3 | | | | | |
| 193 | | 132 | 2,67 | 7,5 | 2717 | 1,9 | | | | | |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.



E Serisi Motorlu Güç Devir Sayfaları

E Series Geared Motors Performance Tables

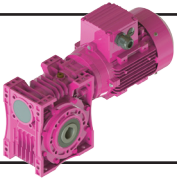
E Serien Getriebemotoren Leistung und Drehzahlübersicht



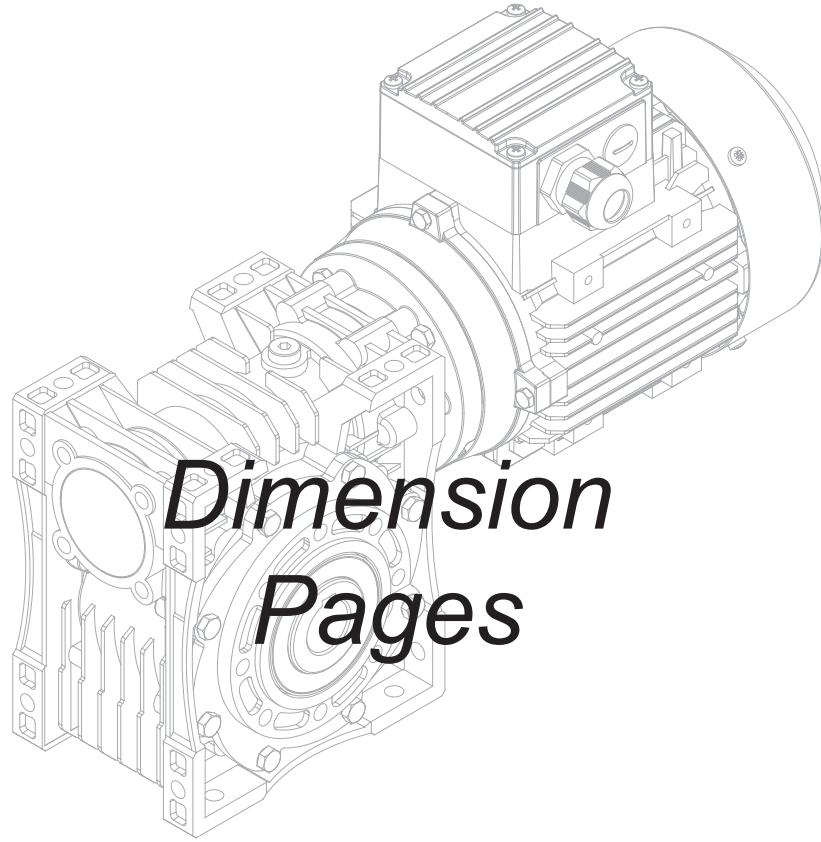
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| Güç | IE3 Çıkış Devri | IE3 Çıkış Momenti | IE3 Çıkış Gücü | Çevrim Oranı | IE3 Güv. Rad. Yük Çıkış | IE3 Servis Faktörü | Tipi | Anma Akımı | Ağırlık | Ölçü Sayfası | Motor Verim Snf.* |
|--|--|--|--|--|--|---|------------------------------------|------------------|----------------------|--------------|-------------------------------|
| Power | Output Speeds | Output Torque | Output Power | Ratio | Per.O. Loads (Output) | Service Factors | Type | Rated Current | Weight | Dim. Page | Motor Eff. Class |
| Leistung P _g [kW] P _g [HP] | Abtriebswelle Drehzahlen n ₂ [r.p.m] | Abtriebswelle Drehmomente M ₂ [Nm] | Abtriebswelle Leistung P ₂ [kW] | Übersetzung i | Zul.Querkräfte (Abtrieb) F _{qam} [N] | Betriebsfaktor f _s | Typ | Nennstrom [A] | Gewicht ~ [kg] | Maß Seite | Motor Effizienz- klasse |
| 3,0 4,0 | 97 145 193 | 250 175 132 | 2,53 2,65 2,67 | 15 10 7,5 | 3738 3506 3333 | 0,8 1,1 1,4 | EV075-3E100L/4D EV075-2E100L/4C | 6,26 6,42 | 36,4 33,9 | 84 | IE3 IE2 |
| 4,0 5,5 | 24 33 37 49 67 75 97 134 | 1197 868 848 674 489 453 354 260 | 3,04 3,04 3,31 3,42 3,43 3,54 3,60 3,65 | 40 29 26 20 14,5 13 10 7,25 | 8878 8269 8254 7771 7181 6990 6590 6043 | 0,8 1,2 1,0 1,4 2,1 1,7 2,5 3,6 | EV125-3E132M/6C EV125-2E132M/6B | 8,52 8,80 | 114,6 109,6 | 96 | IE3 IE2 |
| | 28 37 50 56 73 101 112 146 201 | 1034 795 577 573 448 325 302 234 176 | 3,04 3,04 3,04 3,37 3,42 3,43 3,55 3,58 3,72 | 52 40 29 26 20 14,5 13 10 7,25 | 9185 8725 8033 7894 7408 6787 6581 6164 5594 | 0,7 1,0 1,5 1,3 1,8 2,7 2,2 3,1 4,5 | EV125-3E112M/4D EV125-2E112M/4C | 8,05 8,20 | 93,6 91,7 | 96 | IE3 IE2 |
| | 49 56 73 97 112 146 195 | 597 568 443 336 298 232 176 | 3,04 3,34 3,38 3,42 3,50 3,55 3,58 | 30 26 20 15 13 10 7,5 | 5360 5251 5063 4767 4591 4363 4087 | 0,8 0,7 1,0 1,4 1,3 1,7 2,5 | EV100-3E112M/4D EV100-2E112M/4C | 8,05 8,20 | 67,8 65,9 | 92 | IE3 IE2 |
| | 97 110 146 195 | 329 304 234 174 | 3,36 3,51 3,57 3,56 | 15 13,25 10 7,5 | 2476 2358 2345 2304 | 0,8 0,7 1,0 1,4 | EV080-3E112M/4D EV080-2E112M/4C | 8,05 8,20 | 47,1 45,2 | 88 | IE3 IE2 |
| | 97 146 195 | 332 231 174 | 3,39 3,54 3,56 | 15 10 7,5 | 2757 2741 2688 | 0,6 0,8 1,1 | EV075-3E112M/4D EV075-2E112M/4C | 8,05 8,20 | 45,6 43,7 | 84 | IE3 IE2 |
| 5,5 7,5 | 37 50 56 73 101 112 146 201 | 1094 793 788 616 447 415 322 242 | 4,18 4,18 4,63 4,71 4,71 4,89 4,93 5,11 | 40 29 26 20 14,5 13 10 7,25 | 7554 7055 7005 6659 6165 5994 5677 5177 | 0,7 1,1 0,9 1,3 1,9 1,6 2,2 3,3 | EV125-3E132S/4C EV125-2E132S/4B | 10,65 11,05 | 117,6 112,0 | 96 | IE3 IE2 |
| 7,5 10 | 73 101 113 147 202 | 836 607 565 438 330 | 6,42 6,42 6,66 6,72 6,97 | 20 14,5 13 10 7,25 | 5664 5336 5213 5028 4622 | 0,9 1,4 1,2 1,6 2,4 | EV125-3E132M/4D EV125-2E132M/4C | 14,40 15,00 | 121,7 117,0 | 96 | IE3 IE2 |

*: IE2 ve IE3 motorlu redüktör fiyatları farklıdır. / Geared motor prices are different for IE2 and IE3 motors. / Preise von Getrieben mit IE2 und IE3 Motoren sind unterschiedlich.

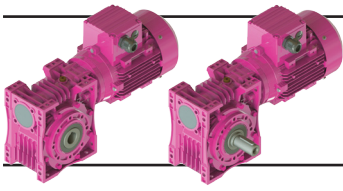


Ölçü Sayfaları



*Dimension
Pages*

Abmessungenseiten



Ölçü Sayfaları

Dimension Pages

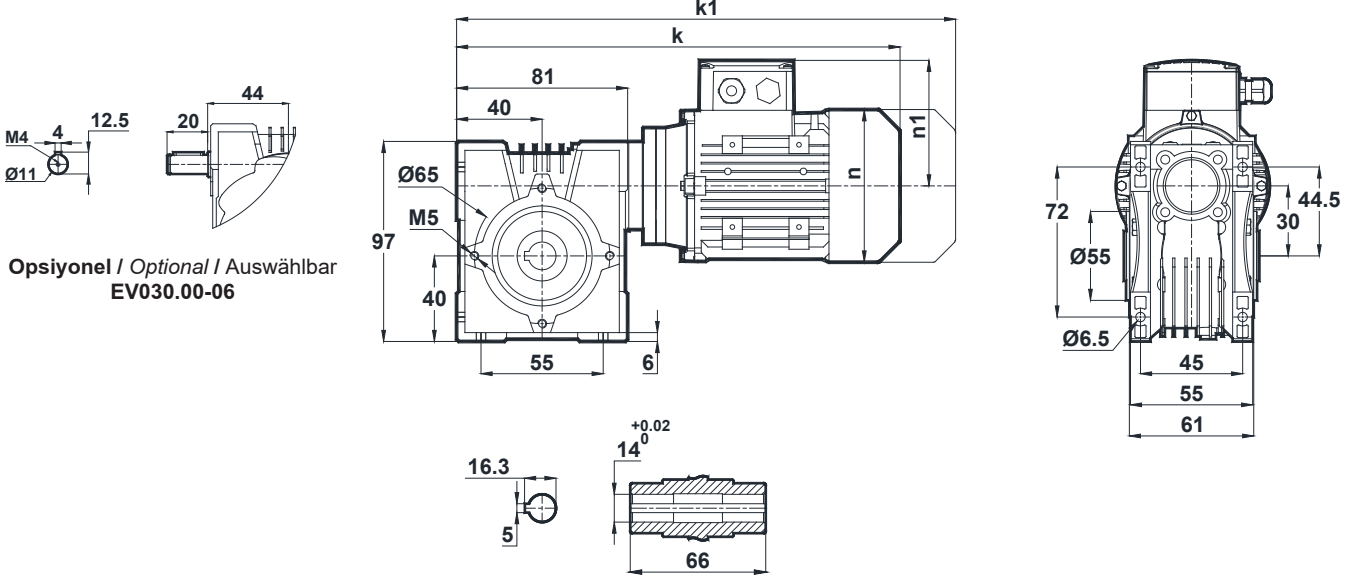
Abmessungsseiten



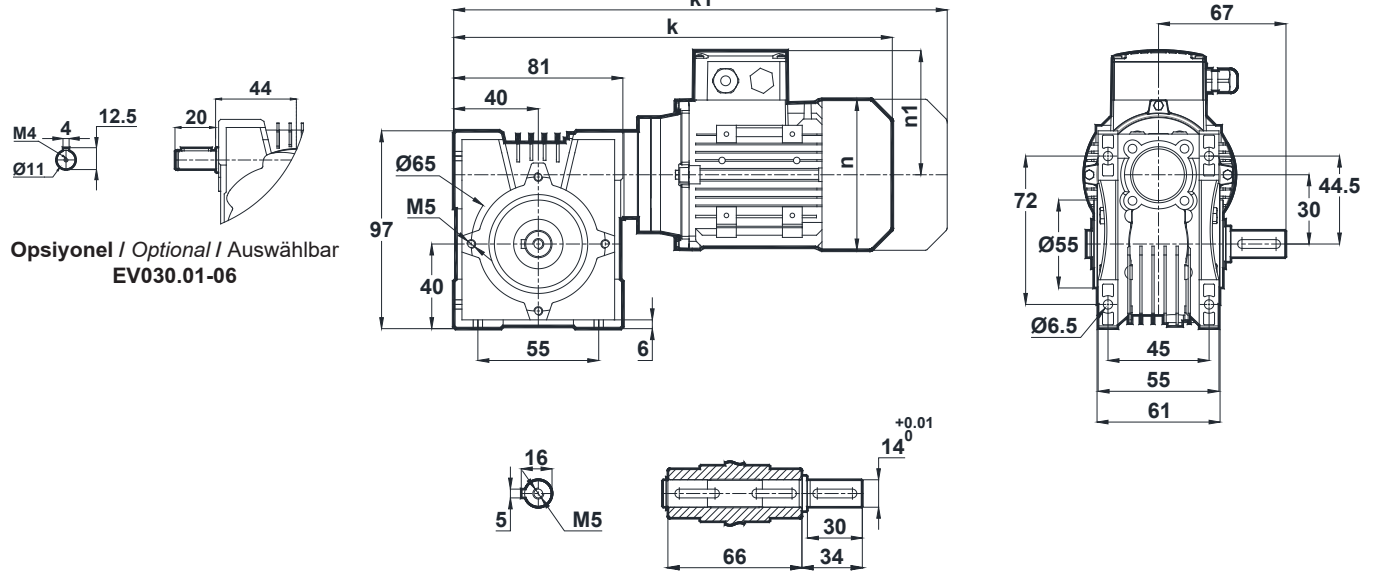
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV030.00

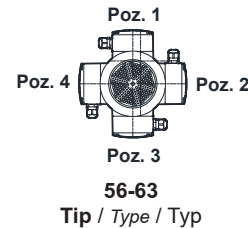


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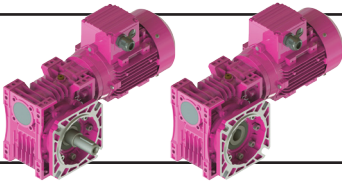


| IEC B14 / B5 | 56 | 63 |
|--------------|-------|-------|
| k | 235.2 | 287.2 |
| k1 | - | 248.2 |
| n | 105 | 121 |
| n1 | 96 | 97 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

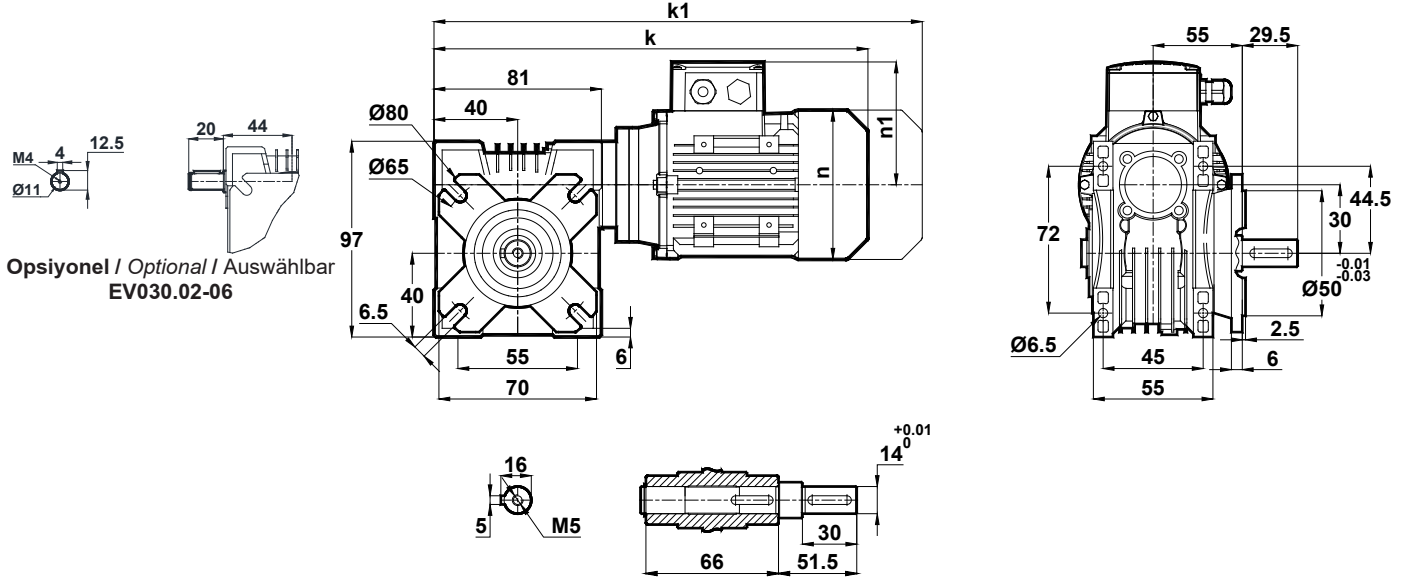
Abmessungsseiten



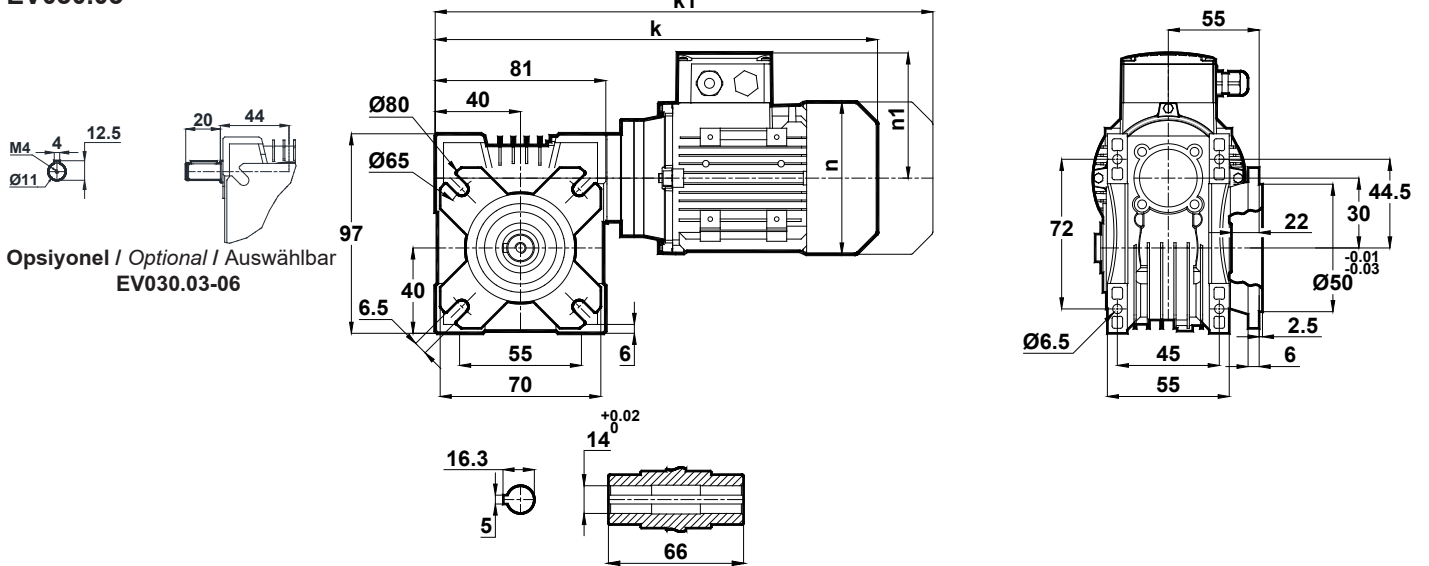
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV030.02

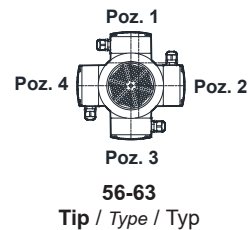


EV030.03



| IEC B14 / B5 | 56 | 63 |
|--------------|-------|-------|
| k | 235.2 | 287.2 |
| k1 | - | 248.2 |
| n | 105 | 121 |
| n1 | 96 | 97 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

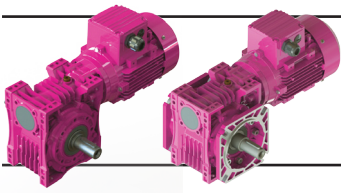


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

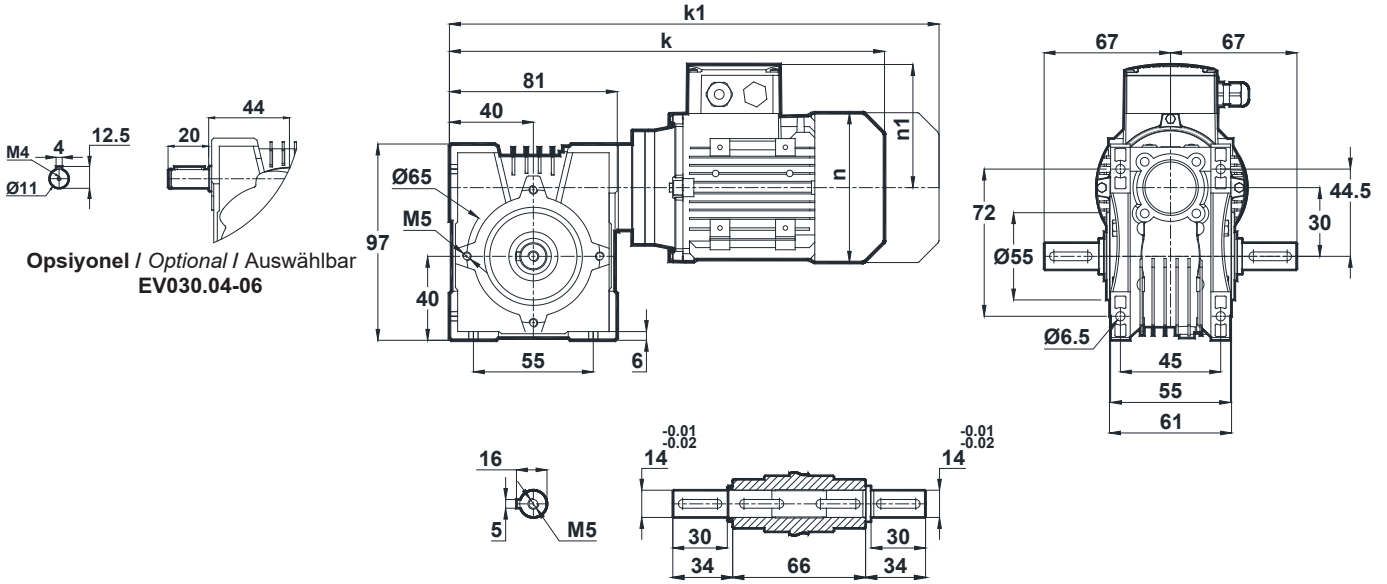
Abmessungsseiten



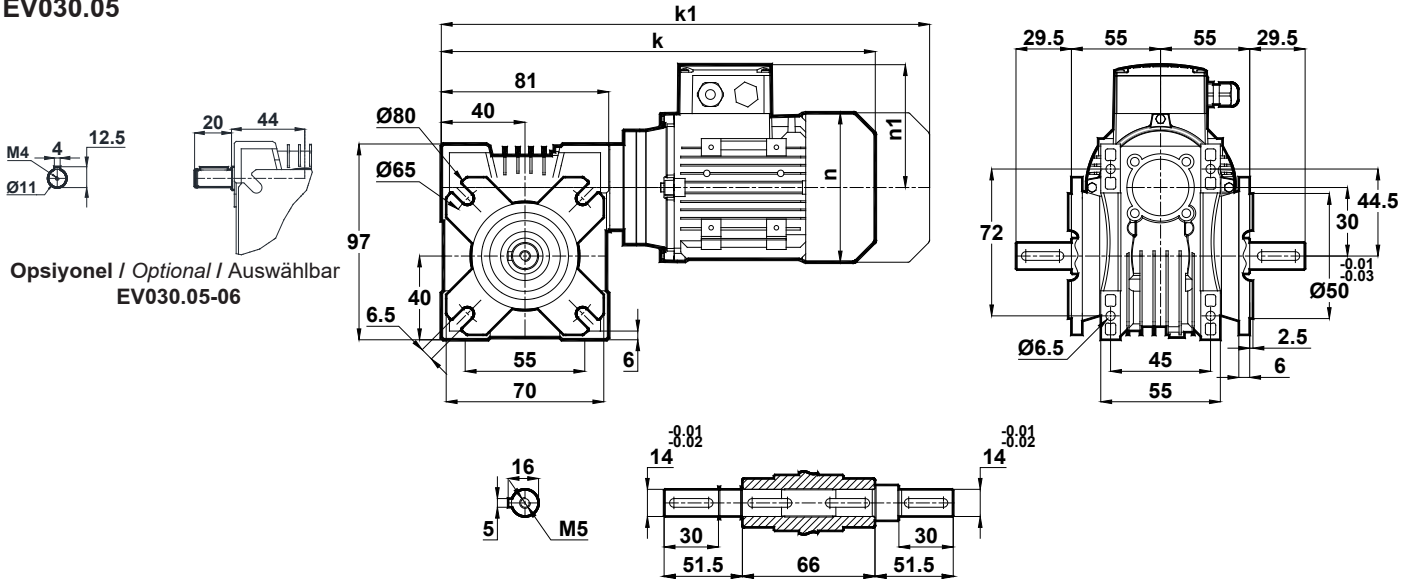
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV030.04

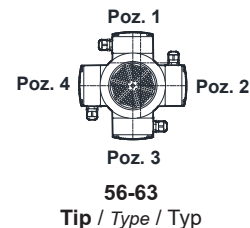


EV030.05



| IEC B14 / B5 | 56 | 63 |
|--------------|-------|-------|
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| n | 105 | 121 |
| n1 | 96 | 97 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

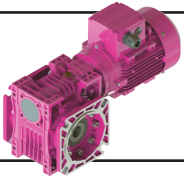


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



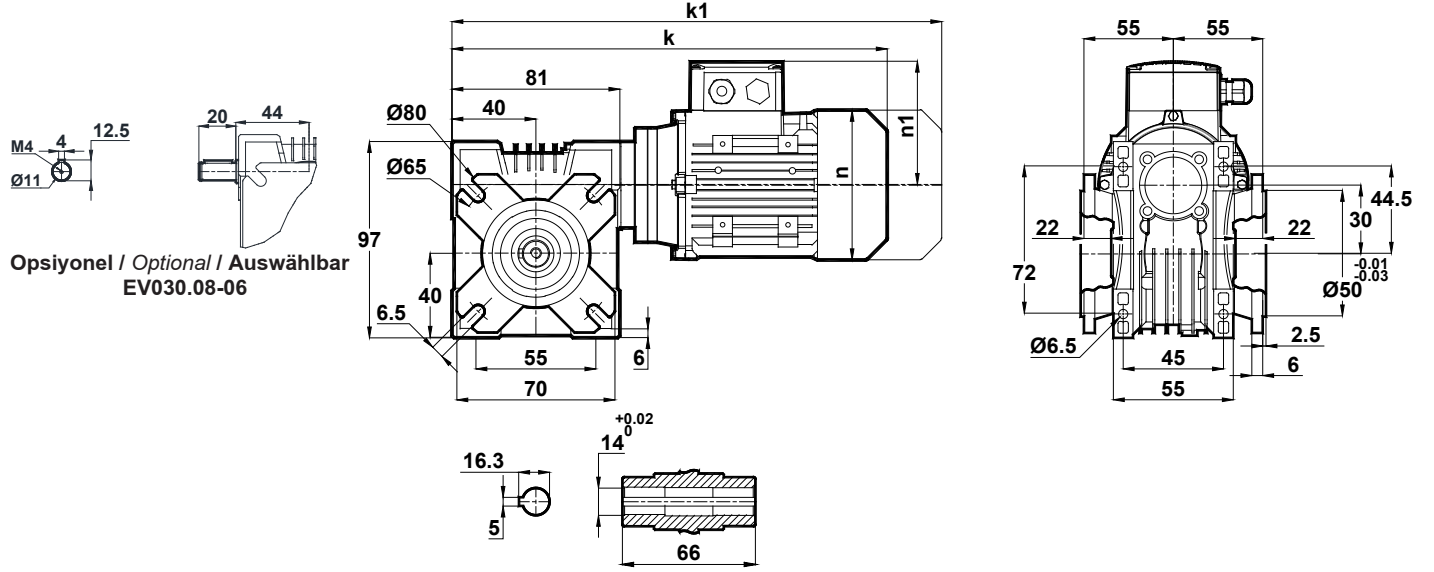
Ölçü Sayfaları Dimension Pages Abmessungsseiten



Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

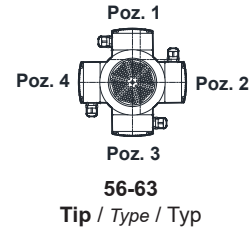
EV030.08



Opsiyonel / Optional / Auswählbar
EV030.08-06

| IEC B14 / B5 | 56 | 63 |
|--------------|-------|-------|
| k | 235.2 | 287.2 |
| k1 | - | 248.2 |
| n | 105 | 121 |
| n1 | 96 | 97 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

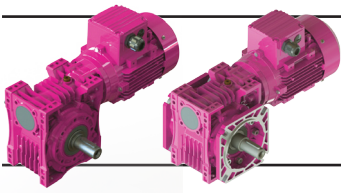


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

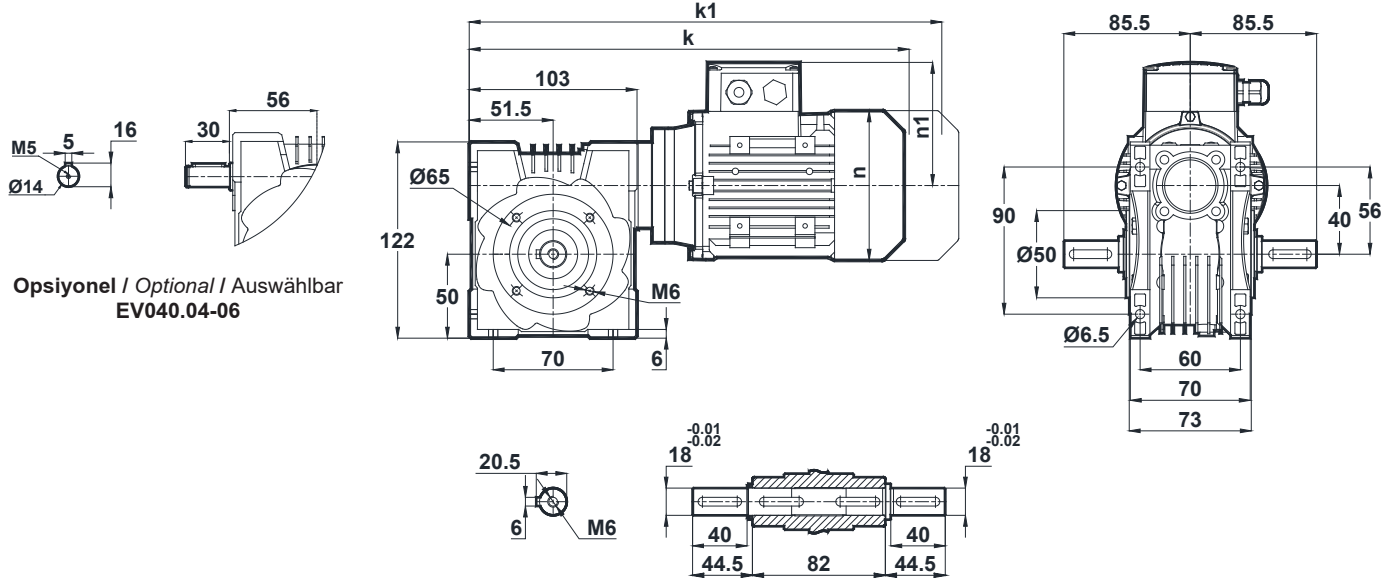
Abmessungsseiten



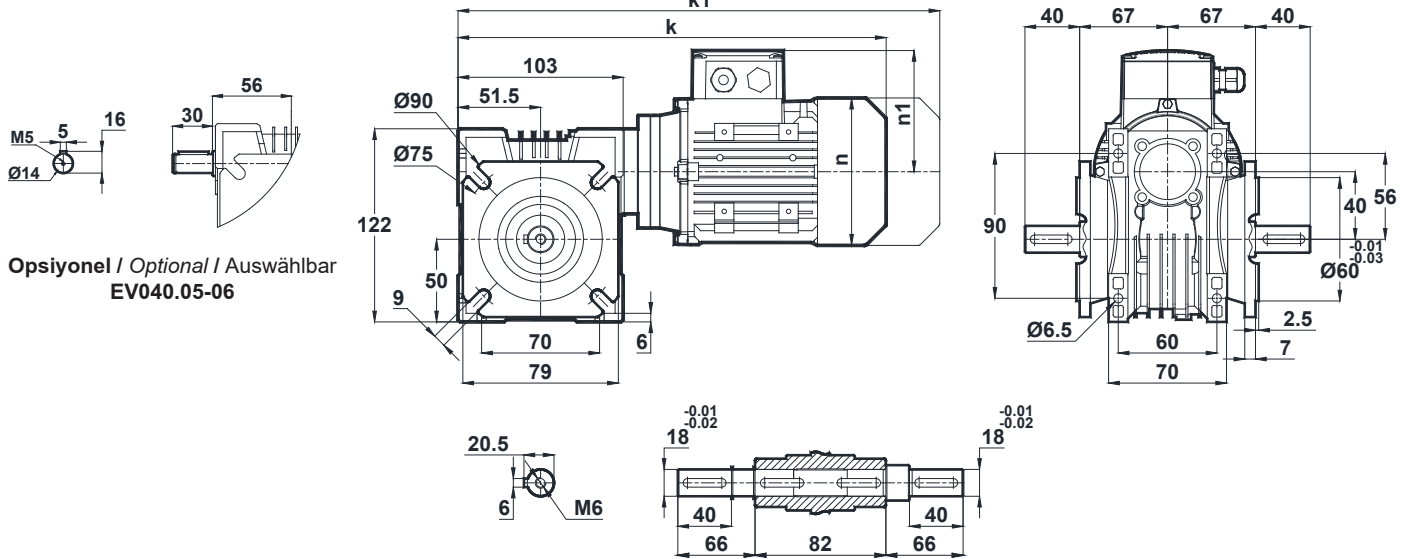
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV040.04

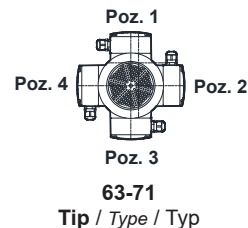


EV040.05



| IEC B14 / B5 | 63 | 71 |
|--------------|-----|-----|
| k | 321 | 339 |
| k1 | 382 | 430 |
| n | 121 | 137 |
| n1 | 97 | 112 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

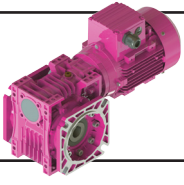


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



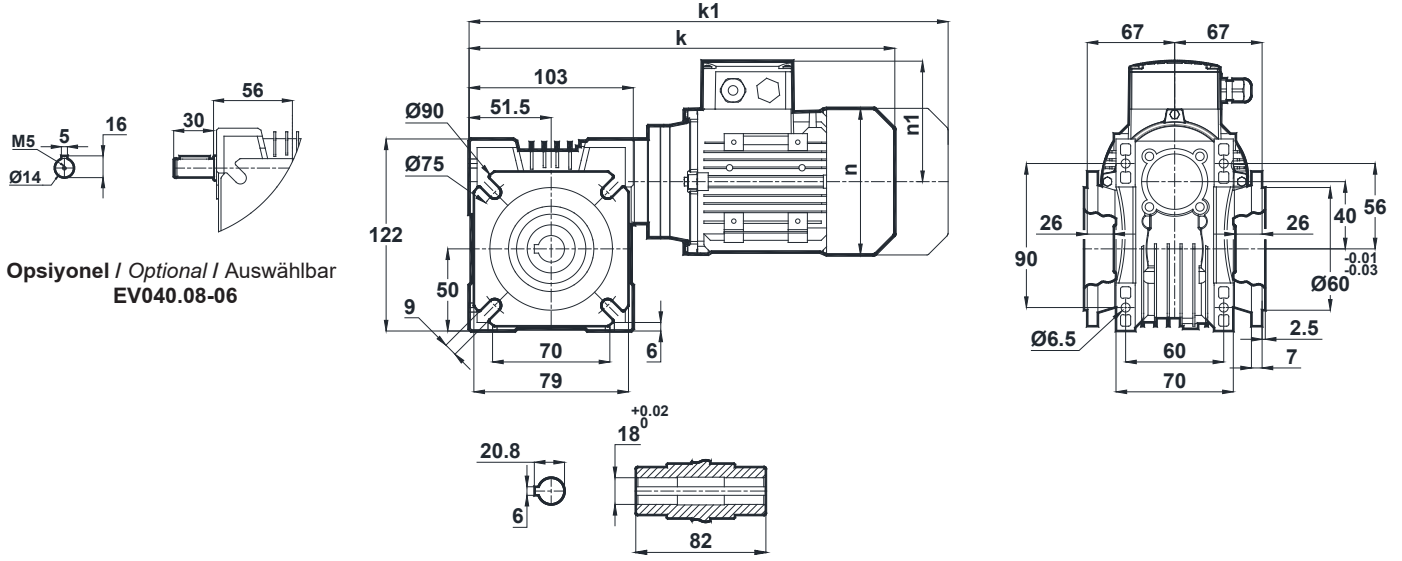
Ölçü Sayfaları Dimension Pages Abmessungsseiten



Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

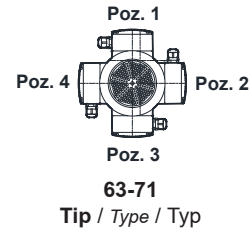
EV040.08



Opsiyonel / Optional / Auswählbar
EV040.08-06

| IEC B14 / B5 | 63 | 71 |
|--------------|-----|-----|
| k | 321 | 339 |
| k1 | 382 | 430 |
| n | 121 | 137 |
| n1 | 97 | 112 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



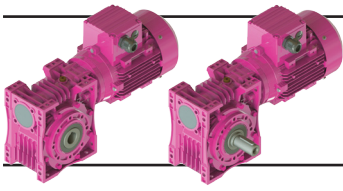
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

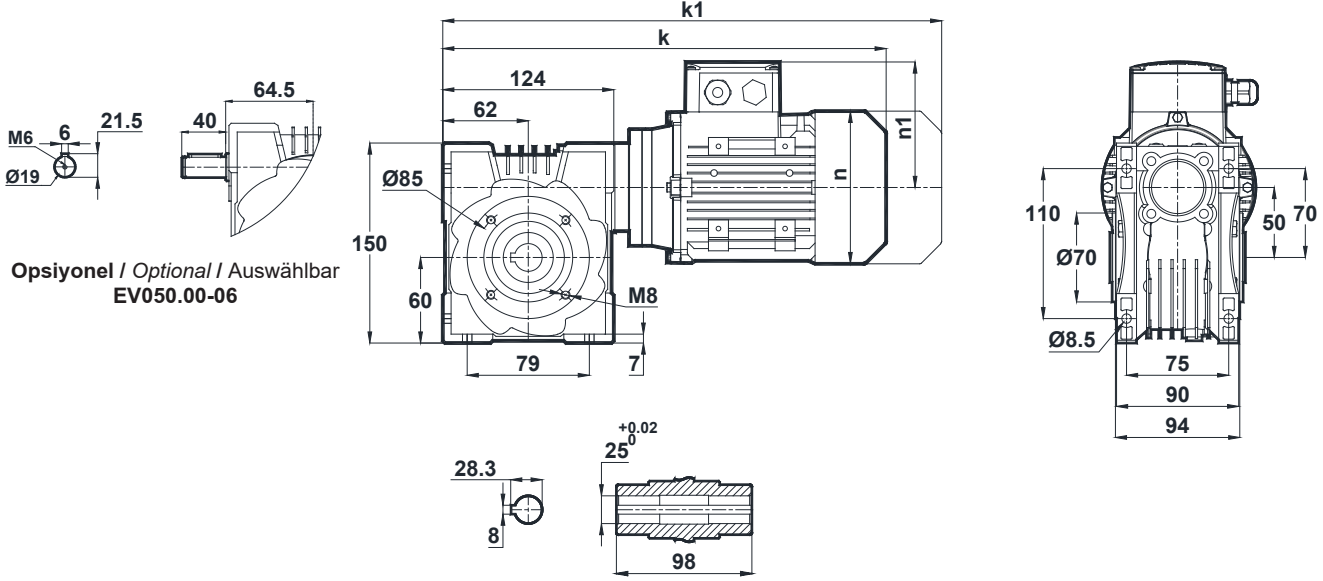
Abmessungsseiten



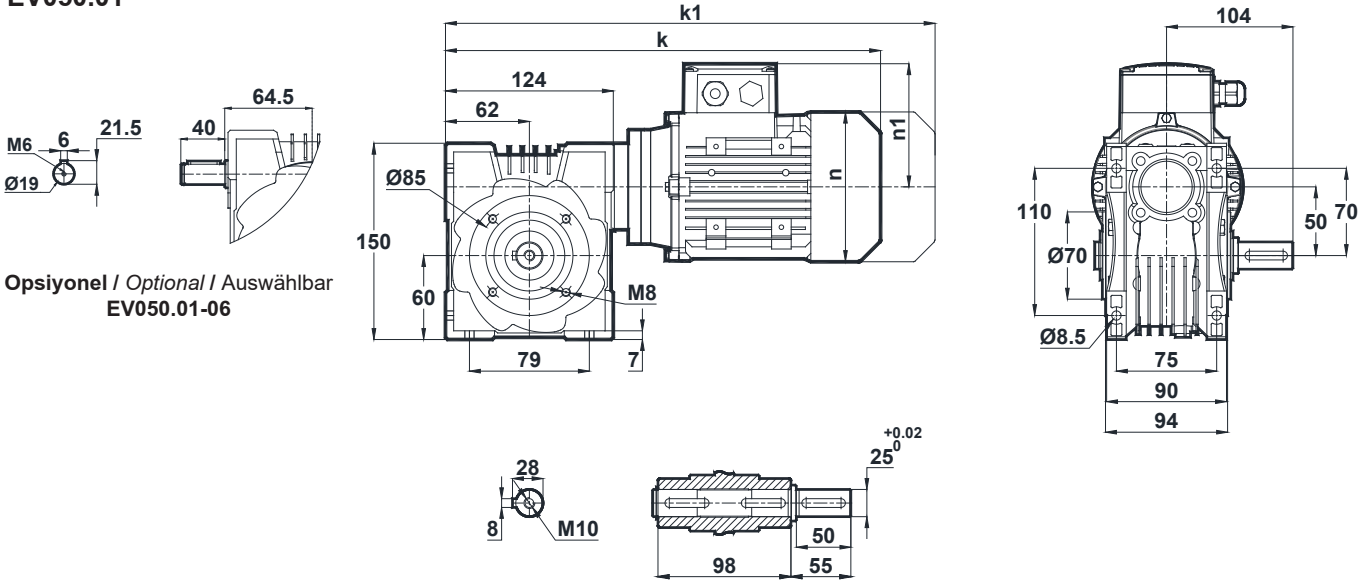
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV050.00

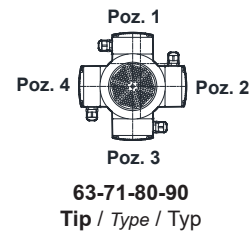


EV050.01

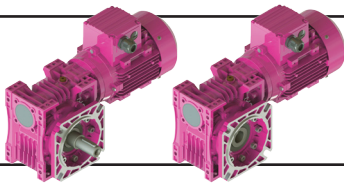


| IEC B14 / B5 | 63 | 71 | 80 | 90S | 90L |
|--------------|-------|-------|-------|-------|-------|
| k | 341.7 | 359.7 | 382.7 | 423.7 | 423.7 |
| k1 | 402.7 | 450.7 | 475.7 | 527.2 | 527.2 |
| n | 121 | 137 | 155 | 176 | 176 |
| n1 | 97 | 112 | 121 | 132 | 132 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
 "k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
 Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
 Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

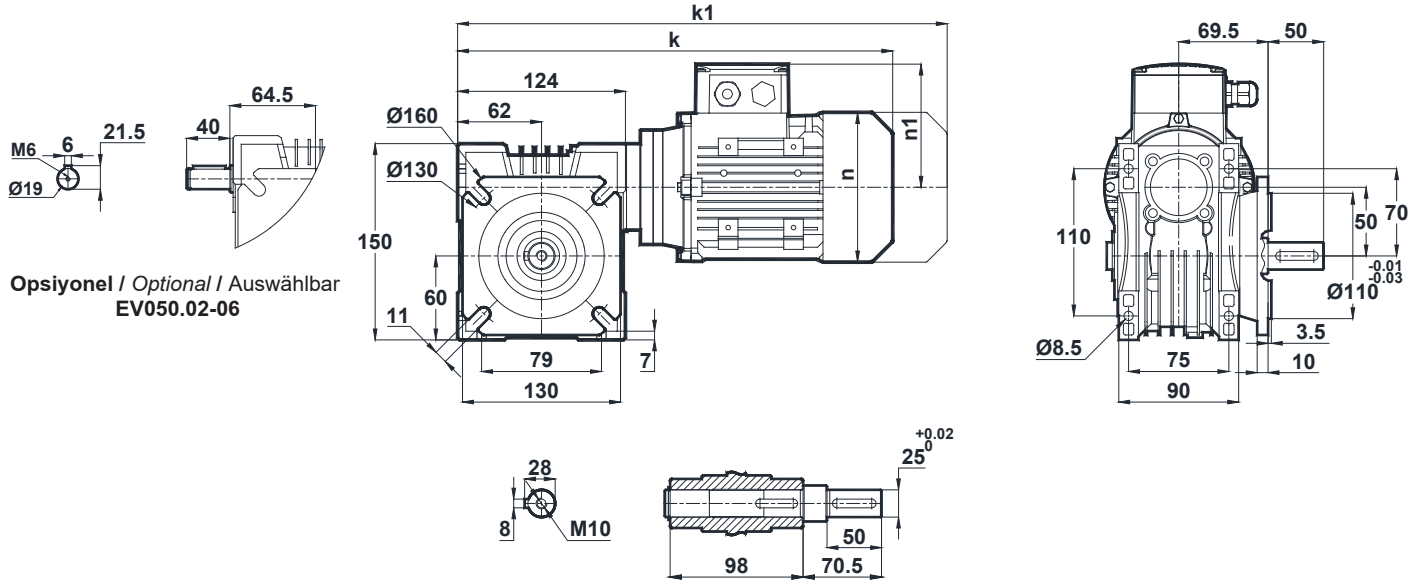
Abmessungsseiten



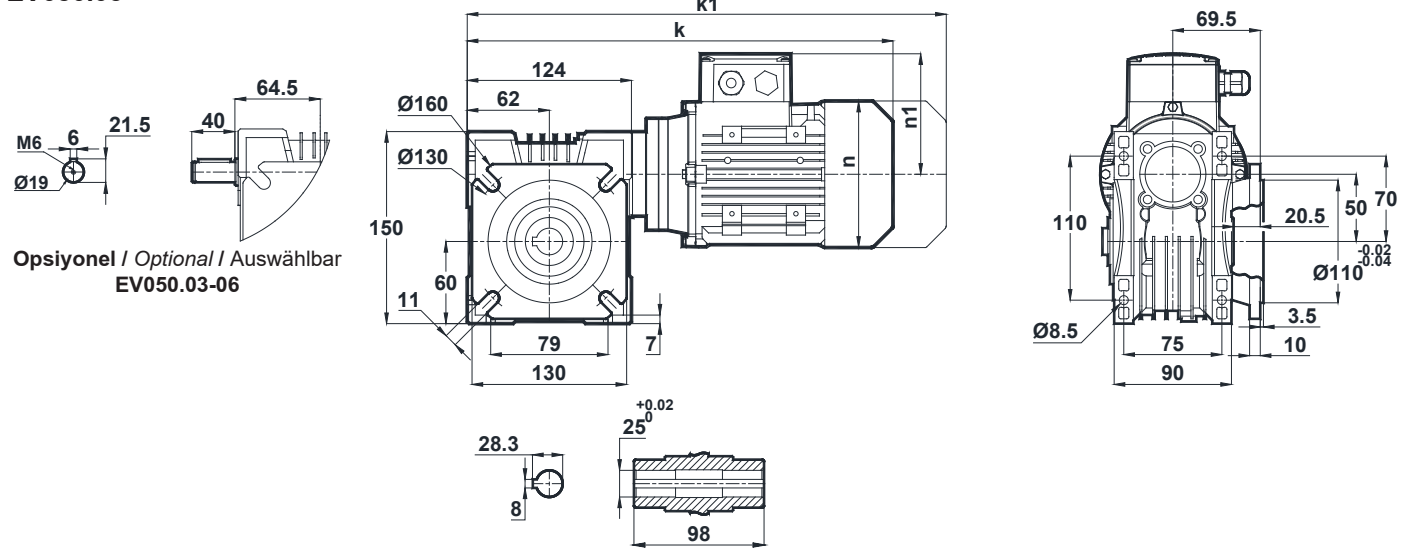
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV050.02

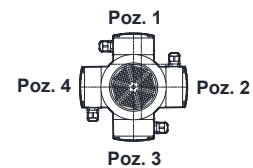


EV050.03



| IEC B14 / B5 | 63 | 71 | 80 | 90S | 90L |
|--------------|-------|-------|-------|-------|-------|
| k | 341.7 | 359.7 | 382.7 | 423.7 | 423.7 |
| k1 | 402.7 | 450.7 | 475.7 | 527.2 | 527.2 |
| n | 121 | 137 | 155 | 176 | 176 |
| n1 | 97 | 112 | 121 | 132 | 132 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



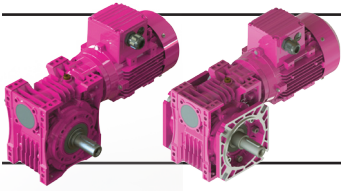
63-71-80-90
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

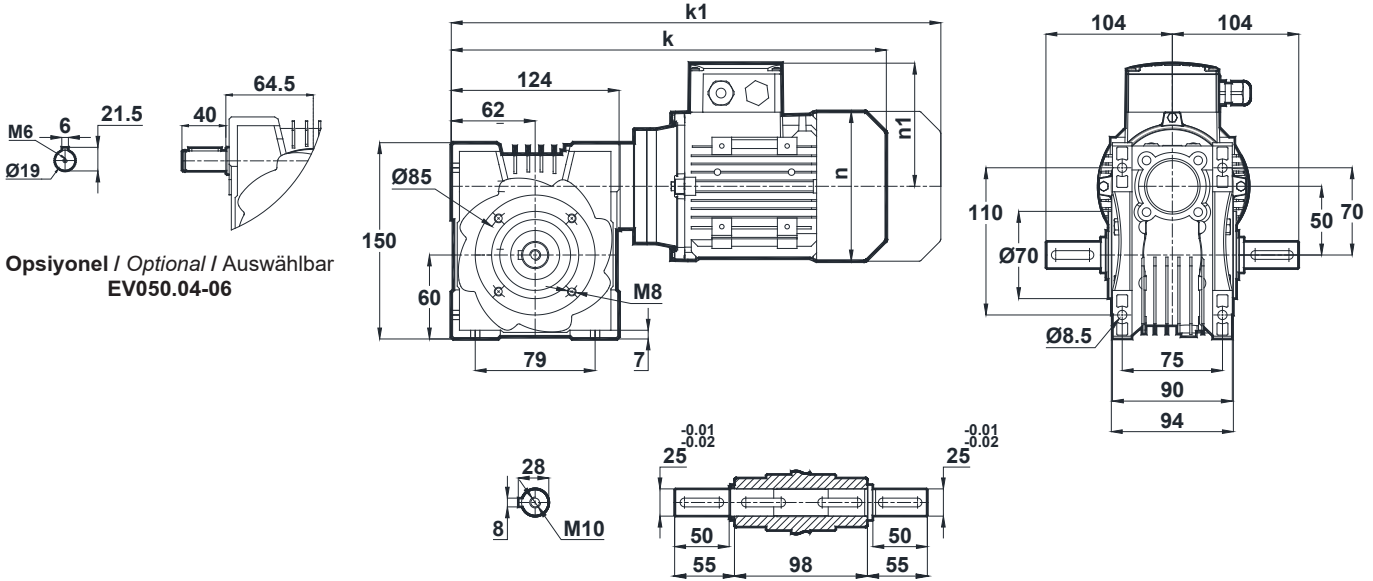
Abmessungsseiten



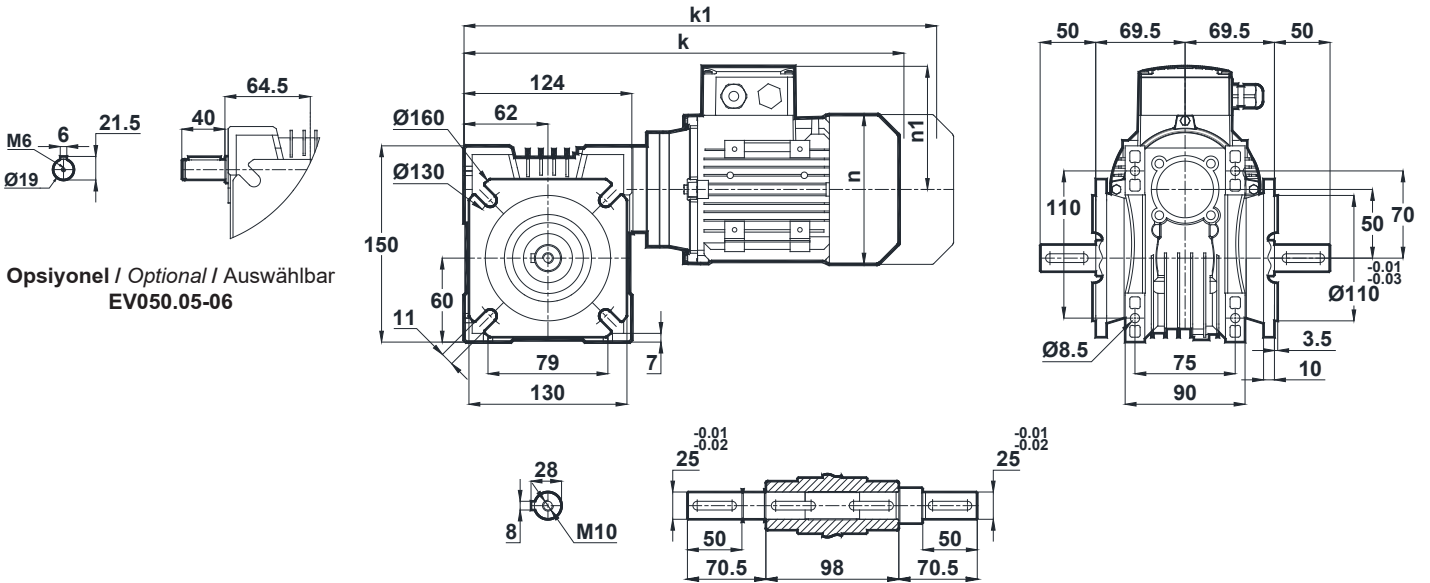
Kalasanati.com

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EV050.04

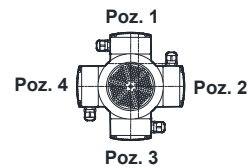


EV050.05



| IEC B14 / B5 | 63 | 71 | 80 | 90S | 90L |
|--------------|-------|-------|-------|-------|-------|
| k | 341.7 | 359.7 | 382.7 | 423.7 | 423.7 |
| k1 | 402.7 | 450.7 | 475.7 | 527.2 | 527.2 |
| n | 121 | 137 | 155 | 176 | 176 |
| n1 | 97 | 112 | 121 | 132 | 132 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



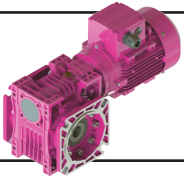
63-71-80-90
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

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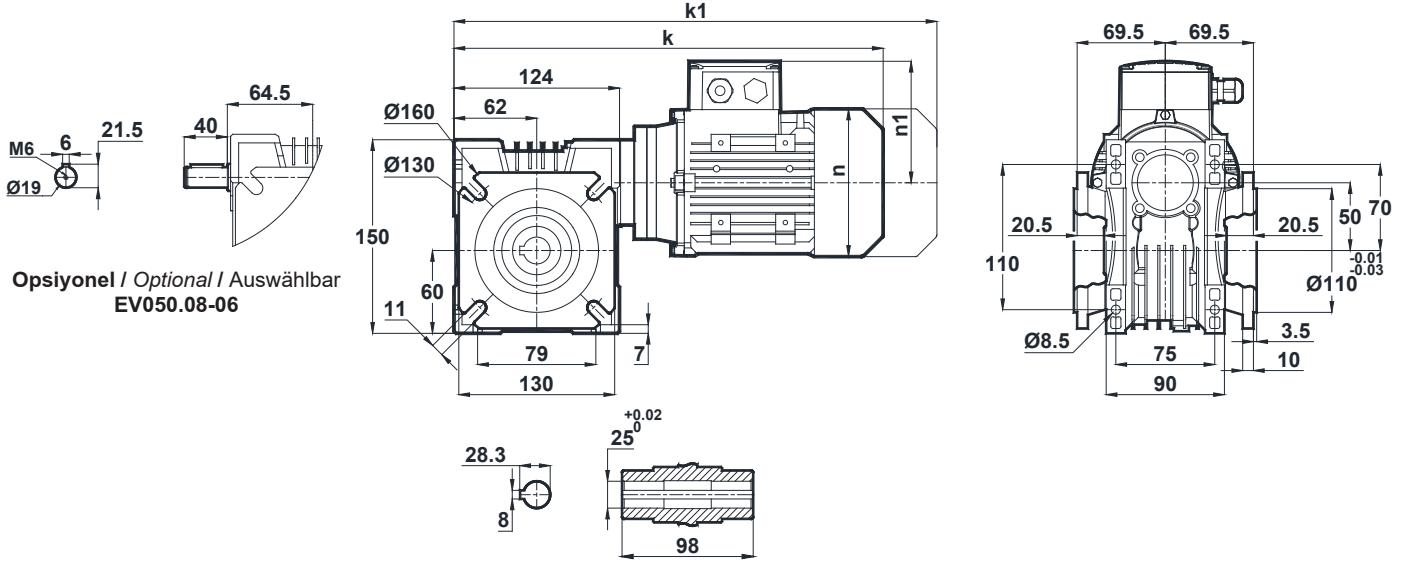
Ölçü Sayfaları Dimension Pages Abmessungsseiten



Kalasanati.com

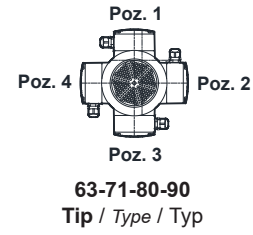
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV050.08



| IEC B14 / B5 | 63 | 71 | 80 | 90S | 90L |
|--------------|-------|-------|-------|-------|-------|
| k | 341.7 | 359.7 | 382.7 | 423.7 | 423.7 |
| k1 | 402.7 | 450.7 | 475.7 | 527.2 | 527.2 |
| n | 121 | 137 | 155 | 176 | 176 |
| n1 | 97 | 112 | 121 | 132 | 132 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

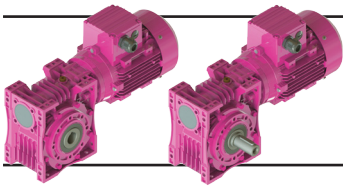


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

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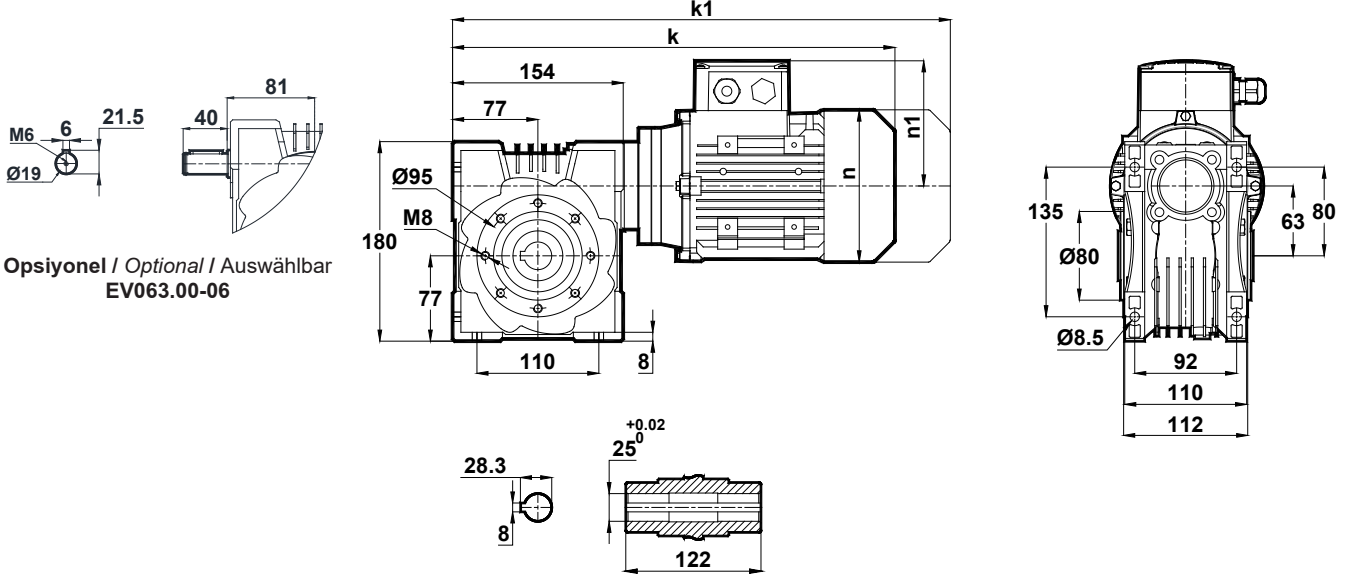
Ölçü Sayfaları Dimension Pages Abmessungsseiten



Kalasanati.com

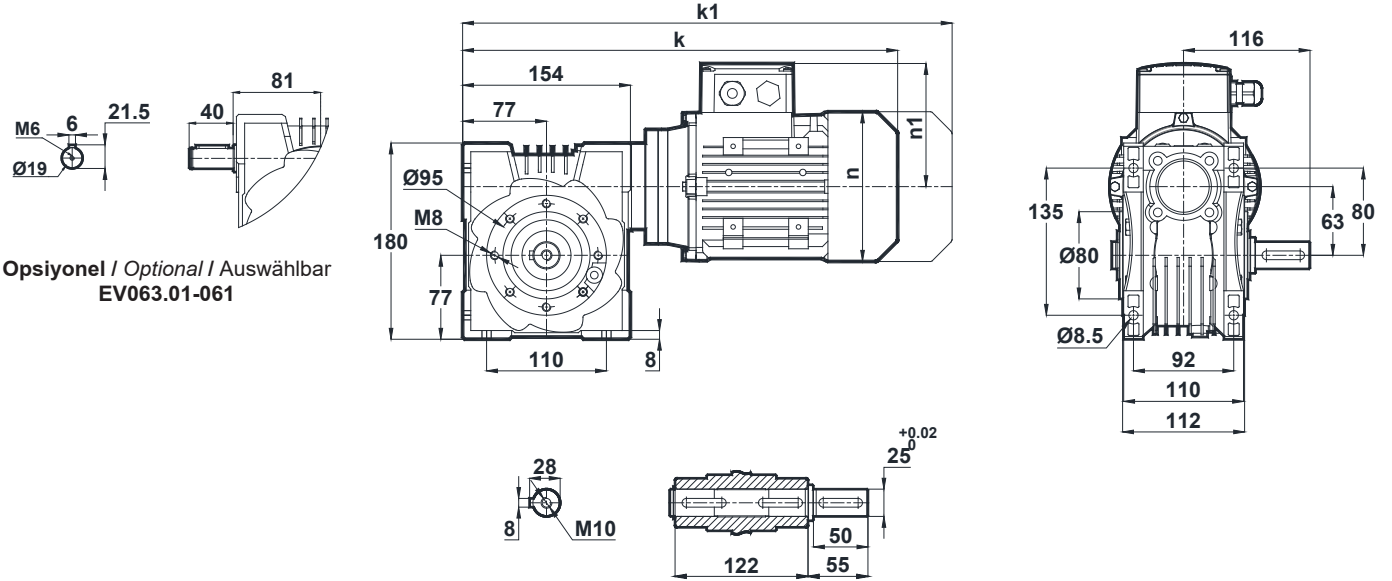
-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV063.00



Opsiyonel / Optional / Auswählbar
EV063.00-06

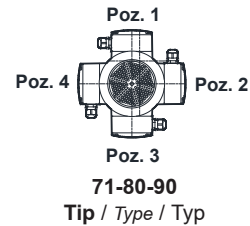
EV063.01



Opsiyonel / Optional / Auswählbar
EV063.01-061

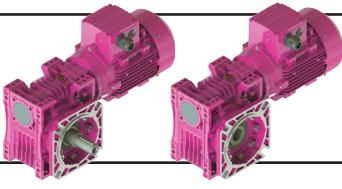
| IEC B14 / B5 | 71 | 80 | 90S | 90L |
|--------------|-------|-------|-------|-------|
| k | 389.7 | 412.7 | 453.7 | 453.7 |
| k1 | 480.7 | 505.7 | 557.2 | 557.2 |
| n | 137 | 155 | 176 | 176 |
| n1 | 112 | 121 | 132 | 132 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



71-80-90
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
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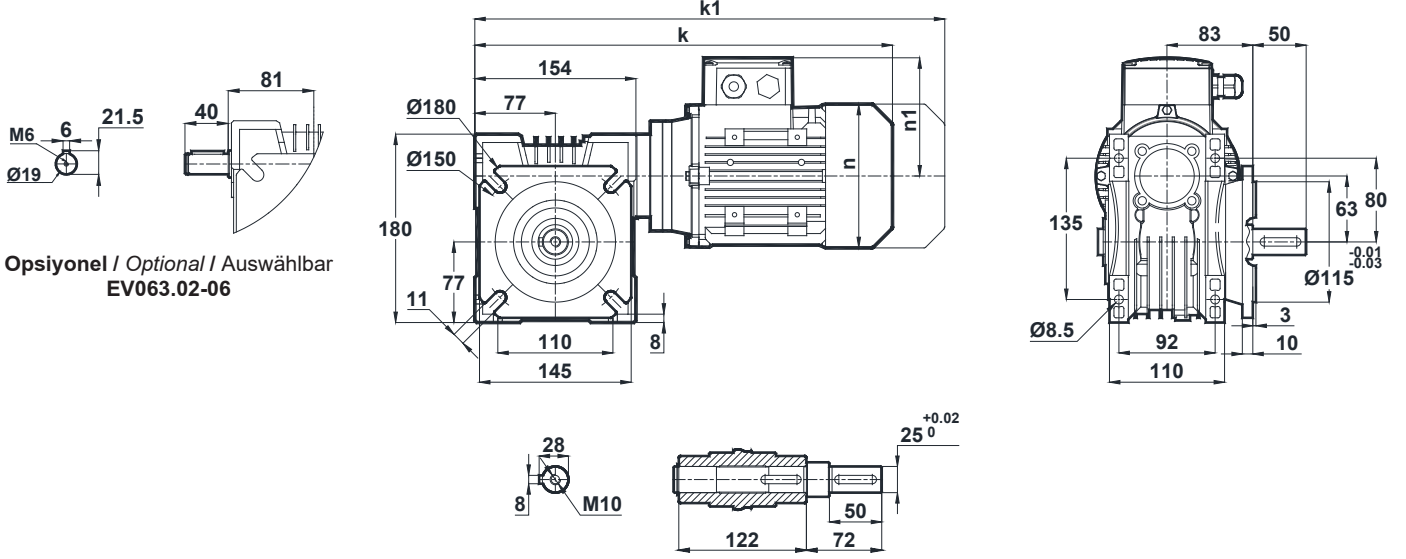
Ölçü Sayfaları Dimension Pages Abmessungsseiten



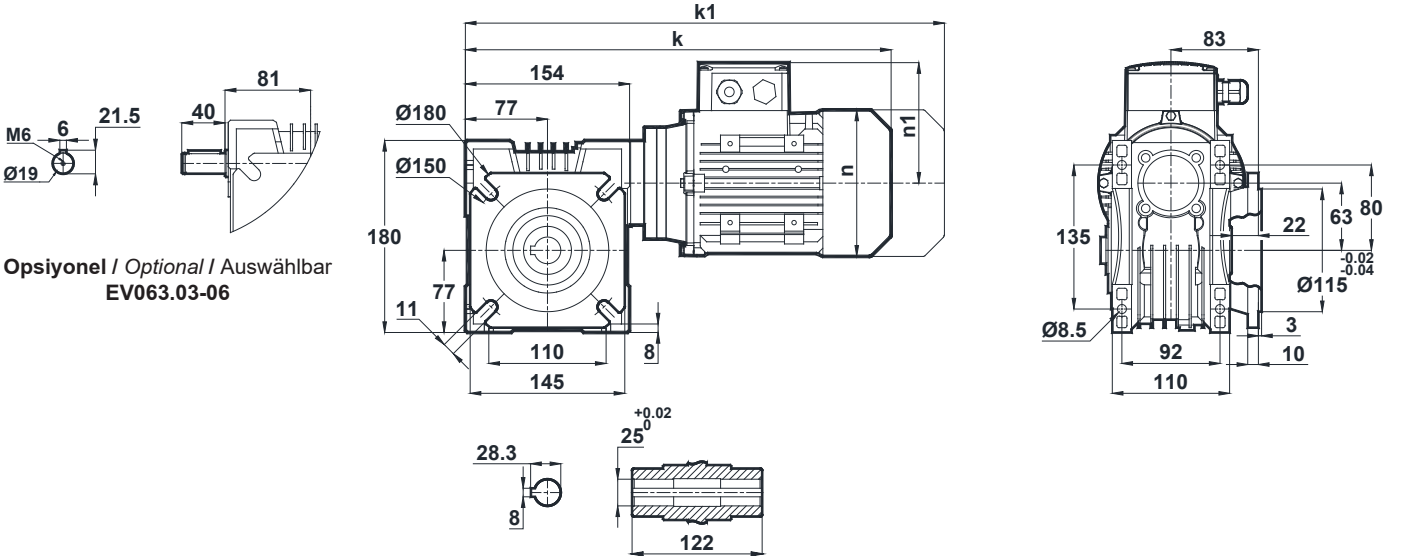
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV063.02

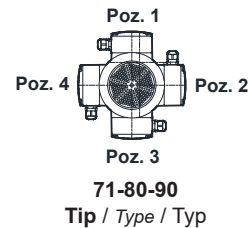


EV063.03



| IEC B14 / B5 | 71 | 80 | 90S | 90L |
|--------------|-------|-------|-------|-------|
| k | 389.7 | 412.7 | 453.7 | 453.7 |
| k1 | 480.7 | 505.7 | 557.2 | 557.2 |
| n | 137 | 155 | 176 | 176 |
| n1 | 112 | 121 | 132 | 132 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

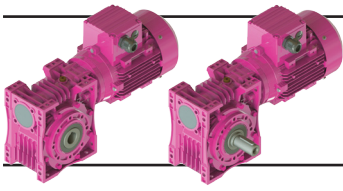


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

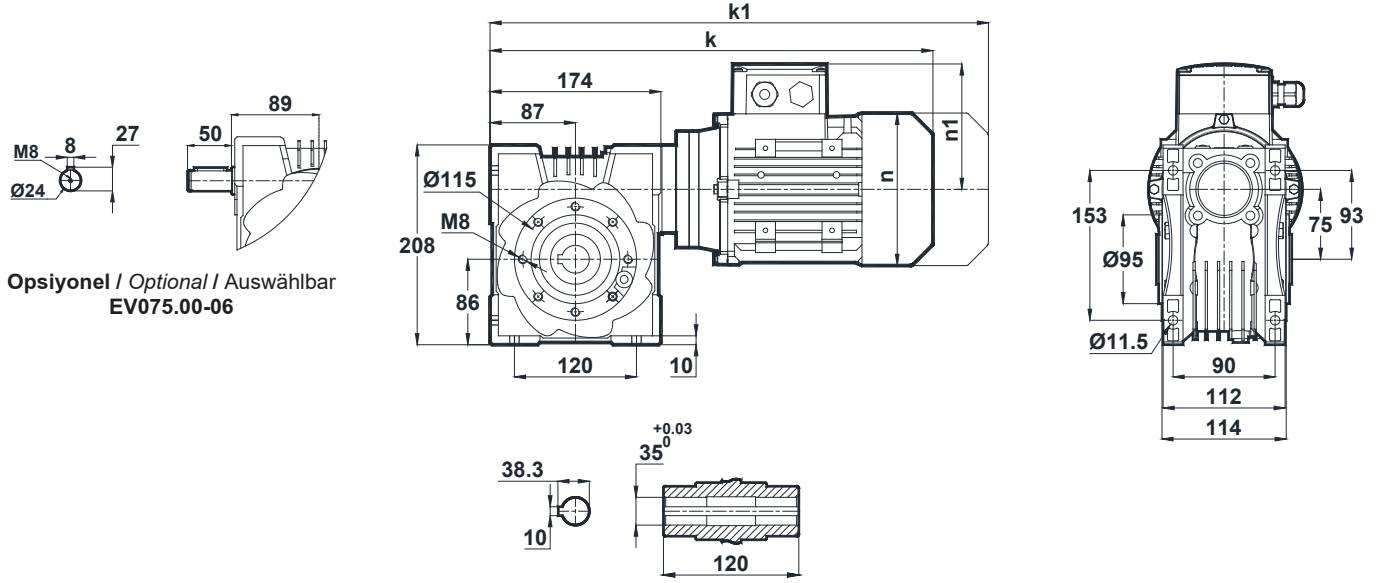
Abmessungsseiten



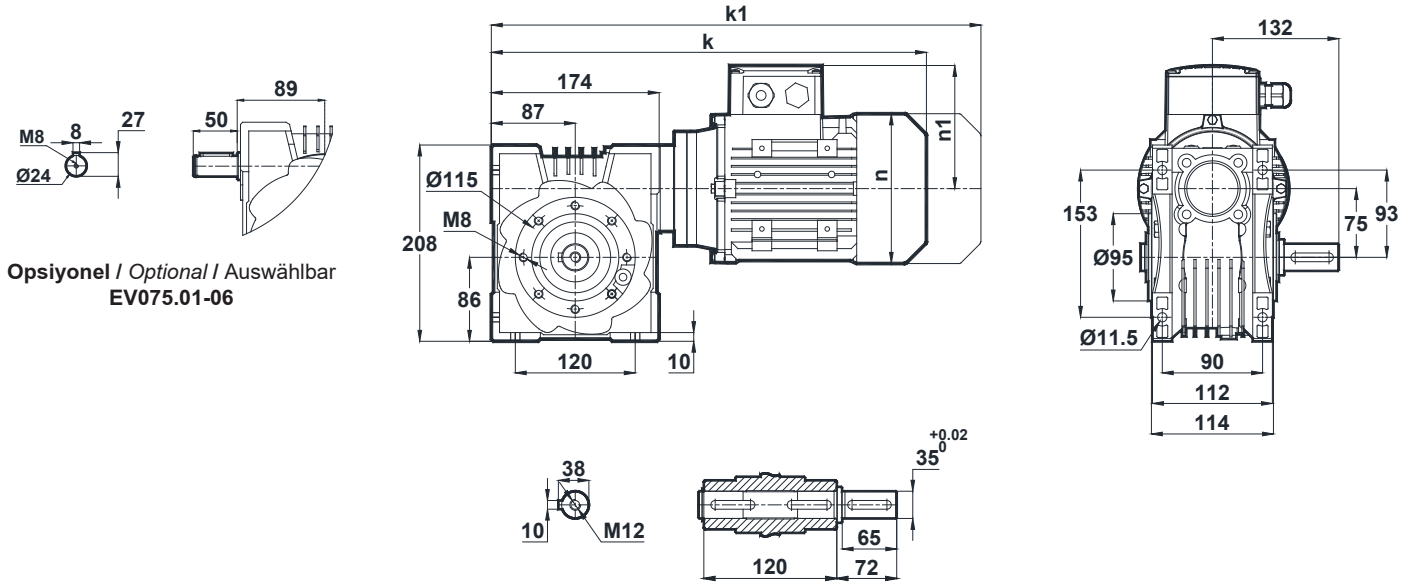
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV075.00

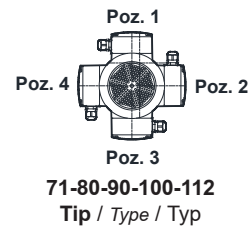


EV075.01

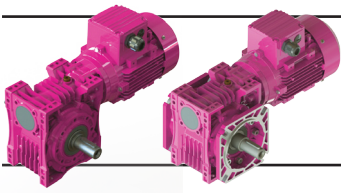


Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

| IEC B14 / B5 | 71 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|-------|
| k | 411.5 | 434.5 | 475.5 | 475.5 | 511 | 531.5 |
| k1 | 502.5 | 527.5 | 579 | 579 | 619.5 | 636 |
| n | 137 | 155 | 176 | 176 | 193 | 215 |
| n1 | 112 | 121 | 132 | 132 | 147 | 158 |



Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

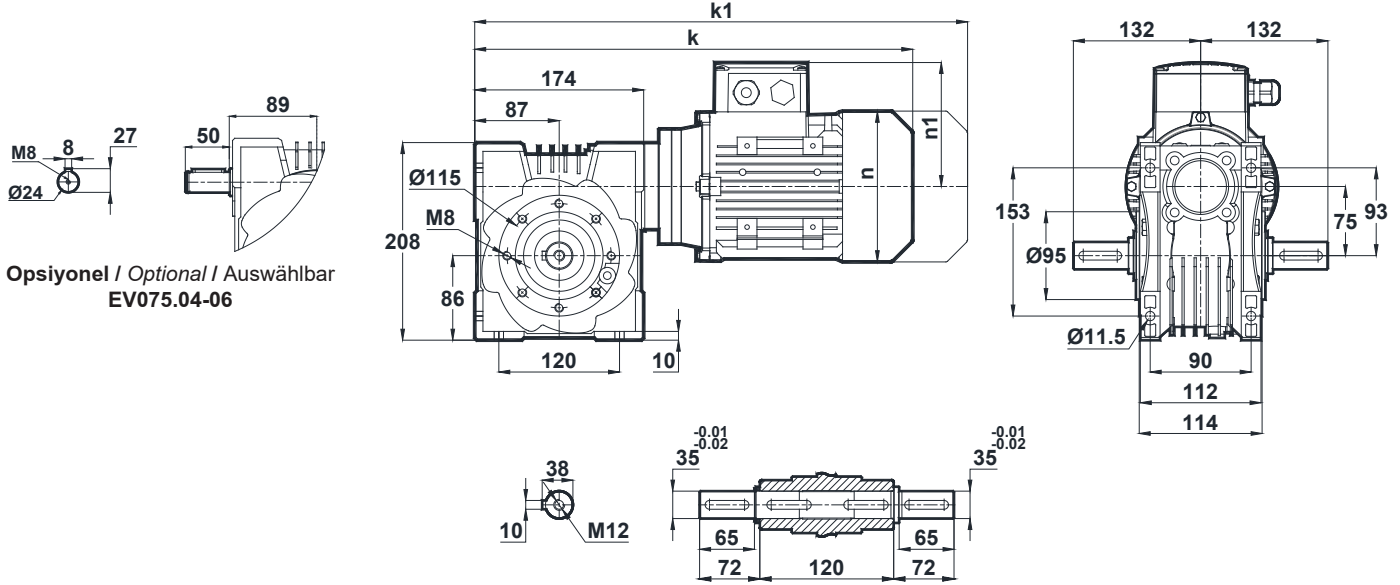
Abmessungsseiten



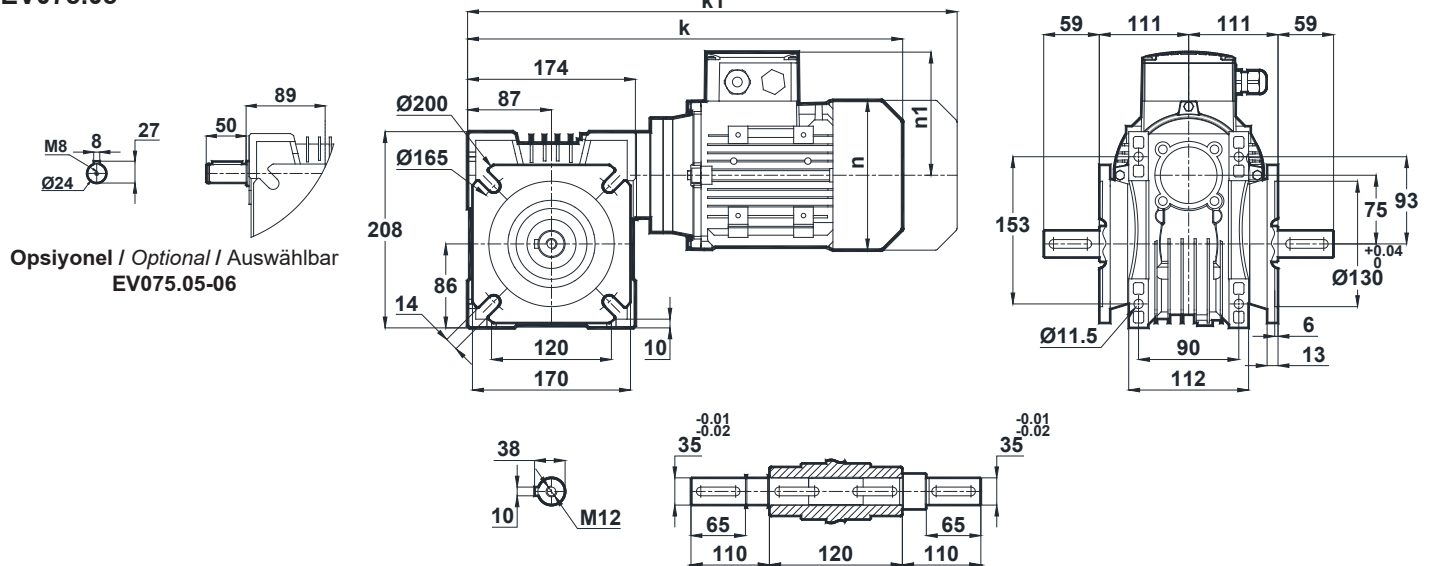
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV075.04

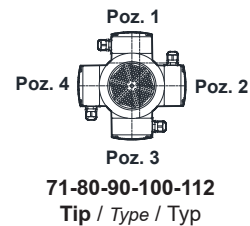


EV075.05



Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

| IEC B14 / B5 | 71 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|-------|
| k | 411.5 | 434.5 | 475.5 | 475.5 | 511 | 531.5 |
| k1 | 502.5 | 527.5 | 579 | 579 | 619.5 | 636 |
| n | 137 | 155 | 176 | 176 | 193 | 215 |
| n1 | 112 | 121 | 132 | 132 | 147 | 158 |

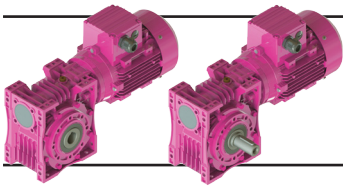


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

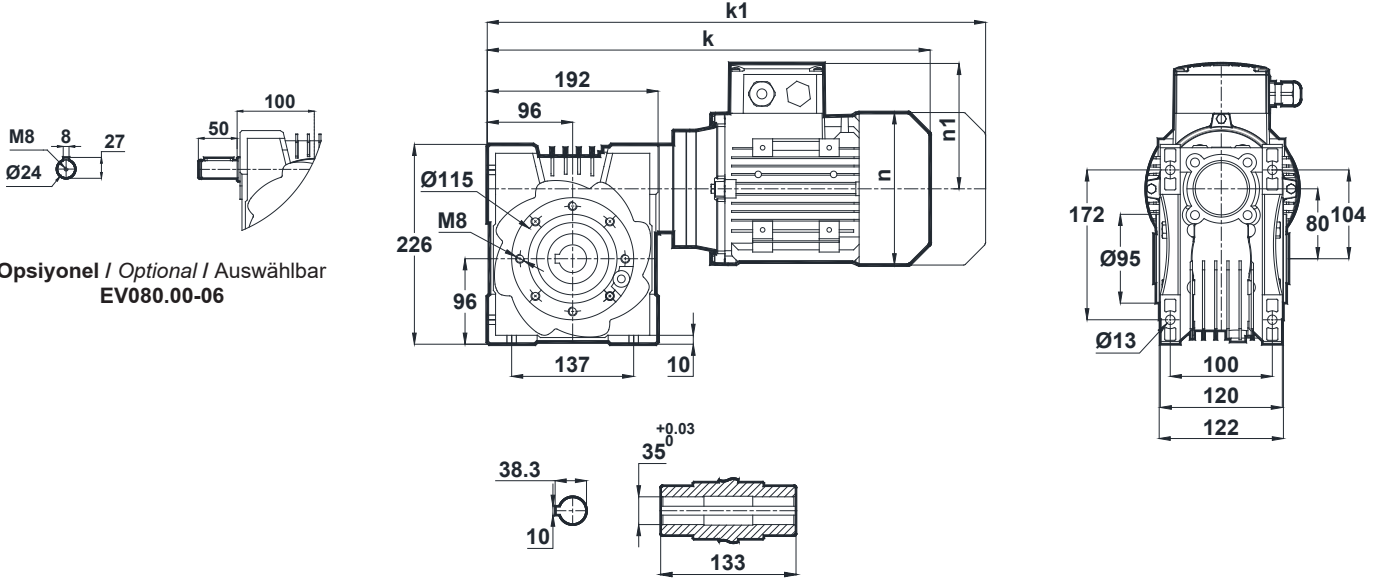
Abmessungsseiten



Kalasanati.com

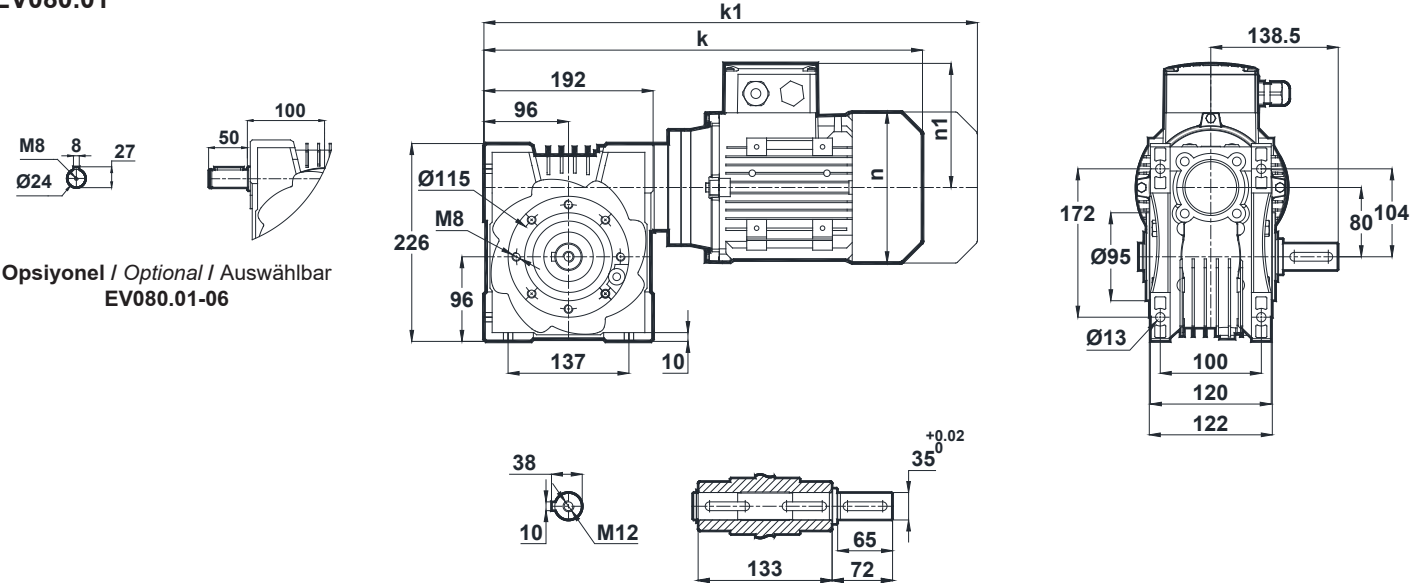
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV080.00



Opsiyonel / Optional / Auswählbar
EV080.00-06

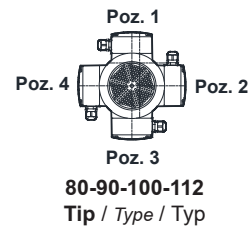
EV080.01



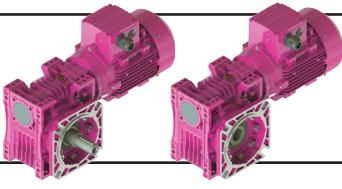
Opsiyonel / Optional / Auswählbar
EV080.01-06

| IEC B14 / B5 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|
| k | 452.5 | 493.5 | 493.5 | 529 | 549.5 |
| k1 | 545.5 | 597 | 597 | 637.5 | 654 |
| n | 155 | 176 | 176 | 193 | 215 |
| n1 | 121 | 132 | 132 | 147 | 158 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

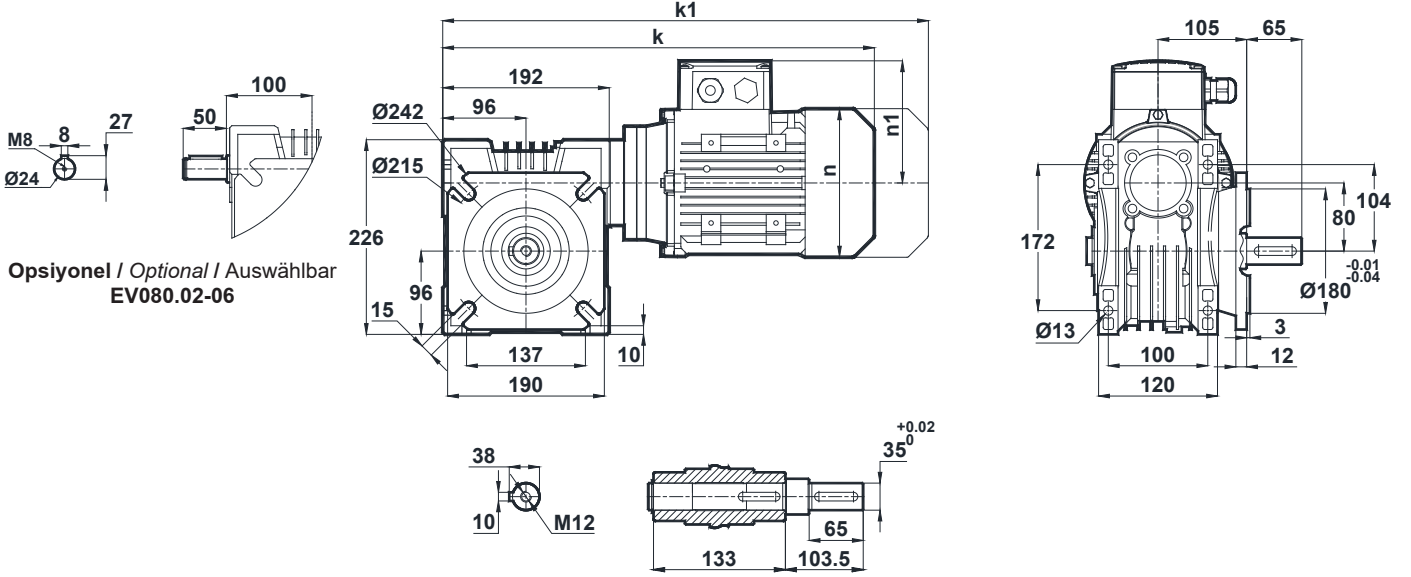
Abmessungsseiten



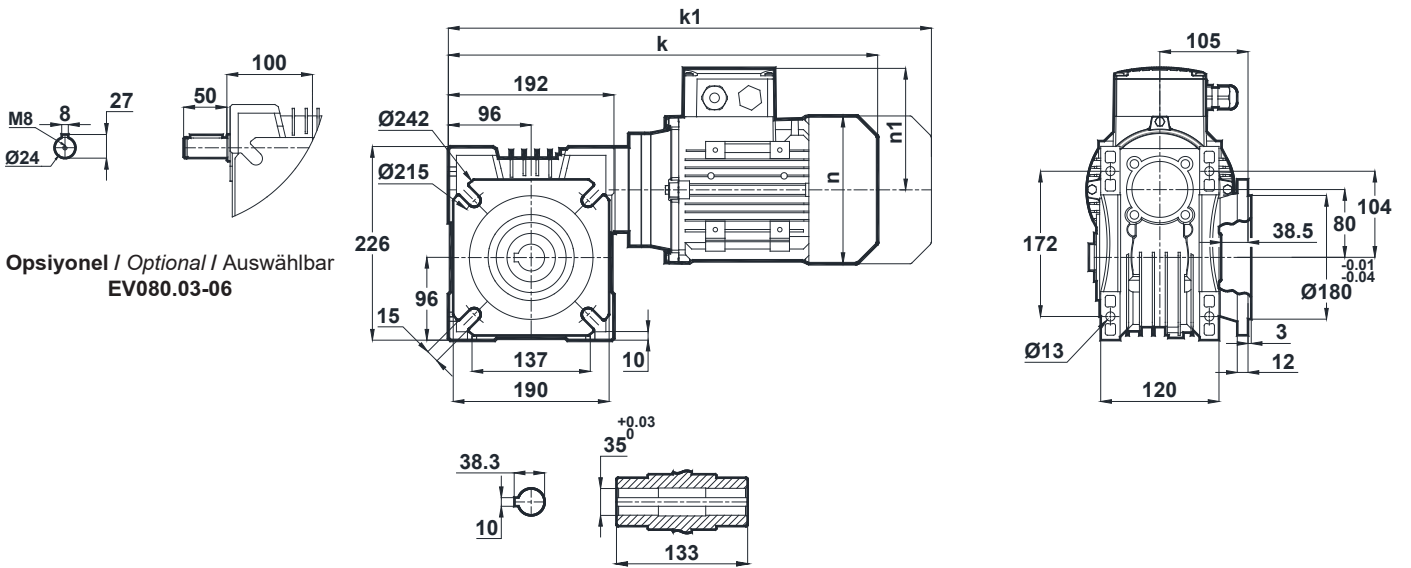
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV080.02

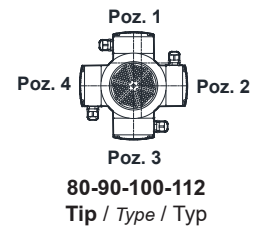


EV080.03



| IEC B14 / B5 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|
| k | 452.5 | 493.5 | 493.5 | 529 | 549.5 |
| k1 | 545.5 | 597 | 597 | 637.5 | 654 |
| n | 155 | 176 | 176 | 193 | 215 |
| n1 | 121 | 132 | 132 | 147 | 158 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

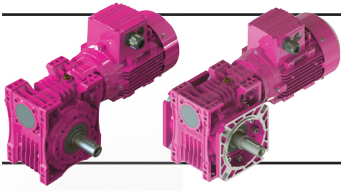


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

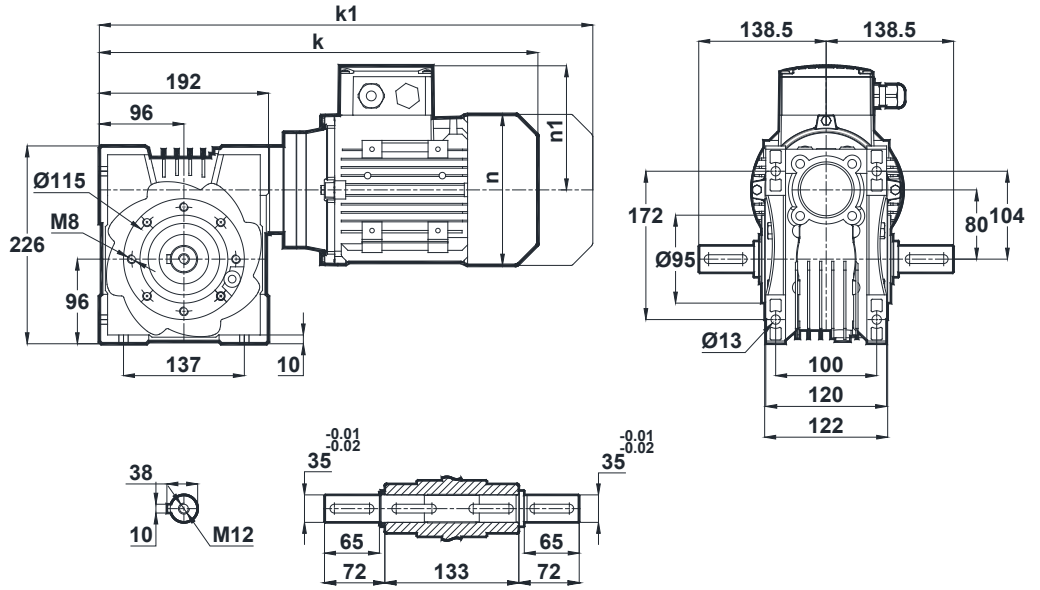
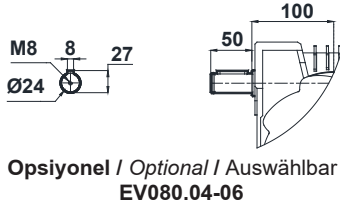
Abmessungsseiten



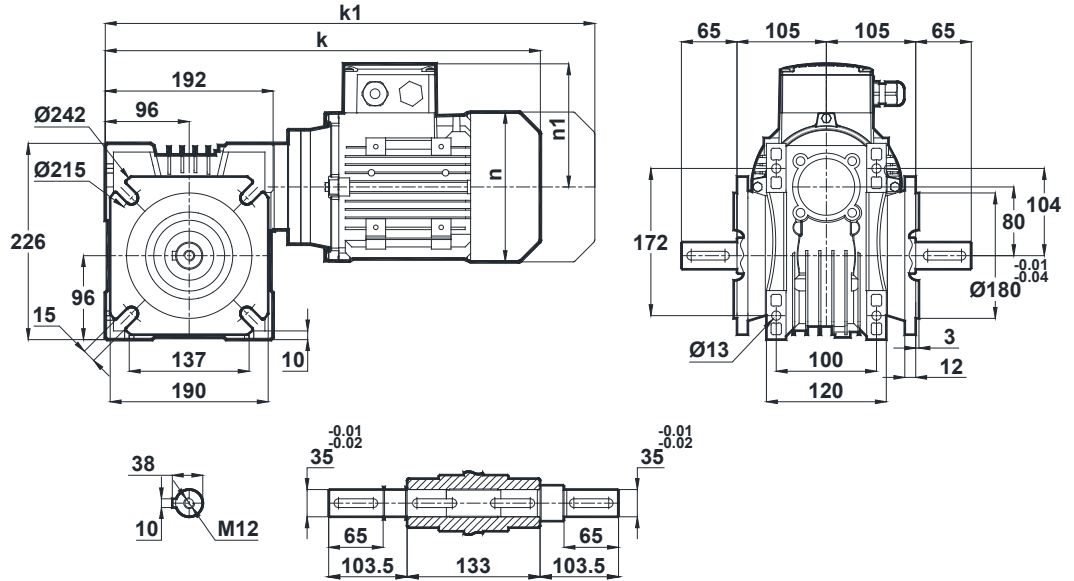
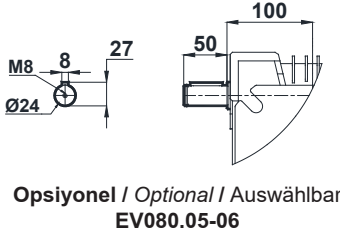
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV080.04

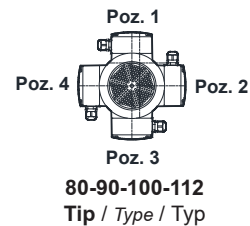


EV080.05

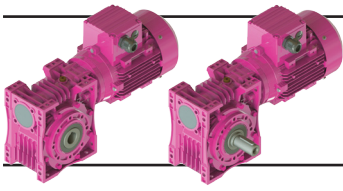


| IEC B14 / B5 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|
| k | 452.5 | 493.5 | 493.5 | 529 | 549.5 |
| k1 | 545.5 | 597 | 597 | 637.5 | 654 |
| n | 155 | 176 | 176 | 193 | 215 |
| n1 | 121 | 132 | 132 | 147 | 158 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

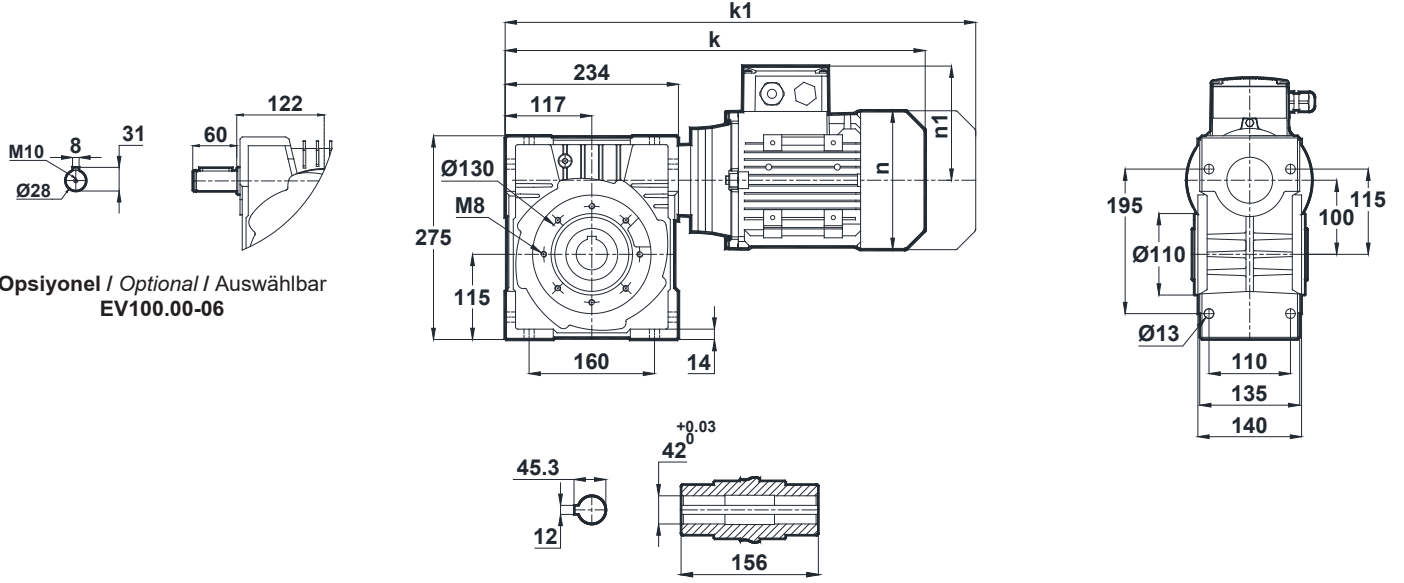
Abmessungsseiten



Kalasanati.com

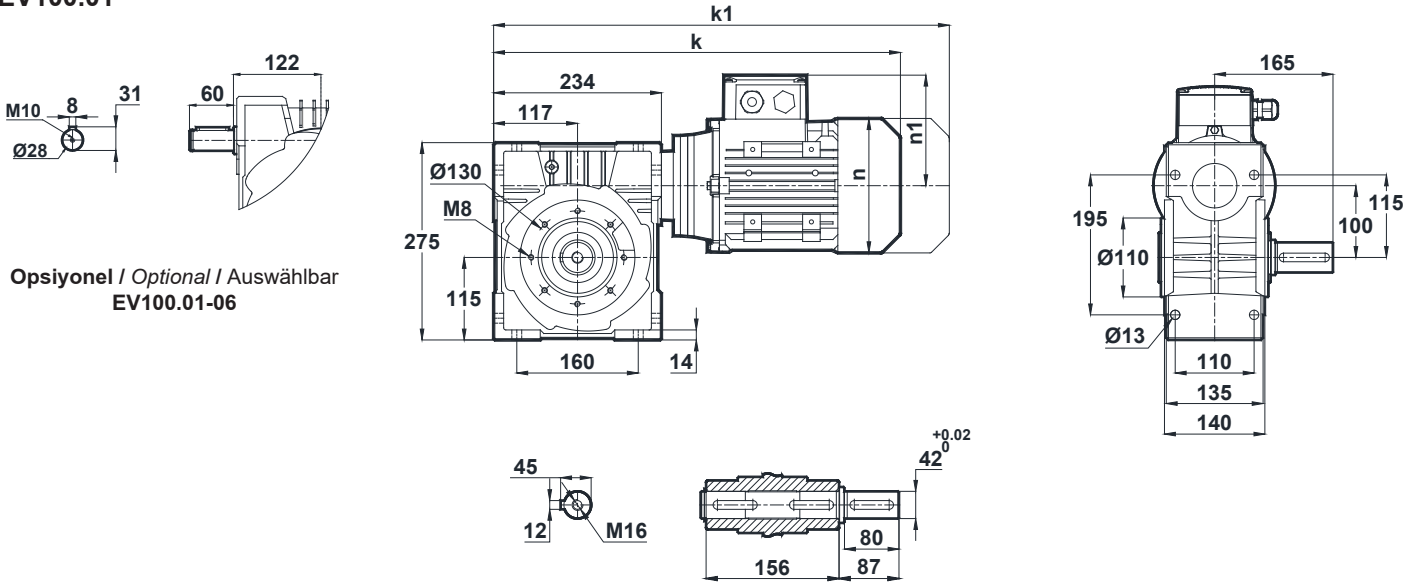
-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV100.00



Opsiyonel / Optional / Auswählbar
EV100.00-06

EV100.01



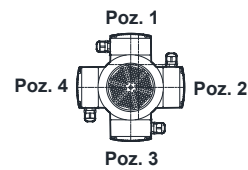
Opsiyonel / Optional / Auswählbar
EV100.01-06

| IEC B14 / B5 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|
| k | 494.5 | 535.5 | 535.5 | 571 | 591.5 |
| k1 | 587.5 | 639 | 639 | 679.5 | 696 |
| n | 155 | 176 | 176 | 193 | 215 |
| n1 | 121 | 132 | 132 | 147 | 158 |

Klemens Pozisyonları

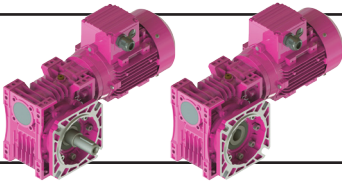
Terminal Box Positions

Klemmenkasten



80-90-100-112
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

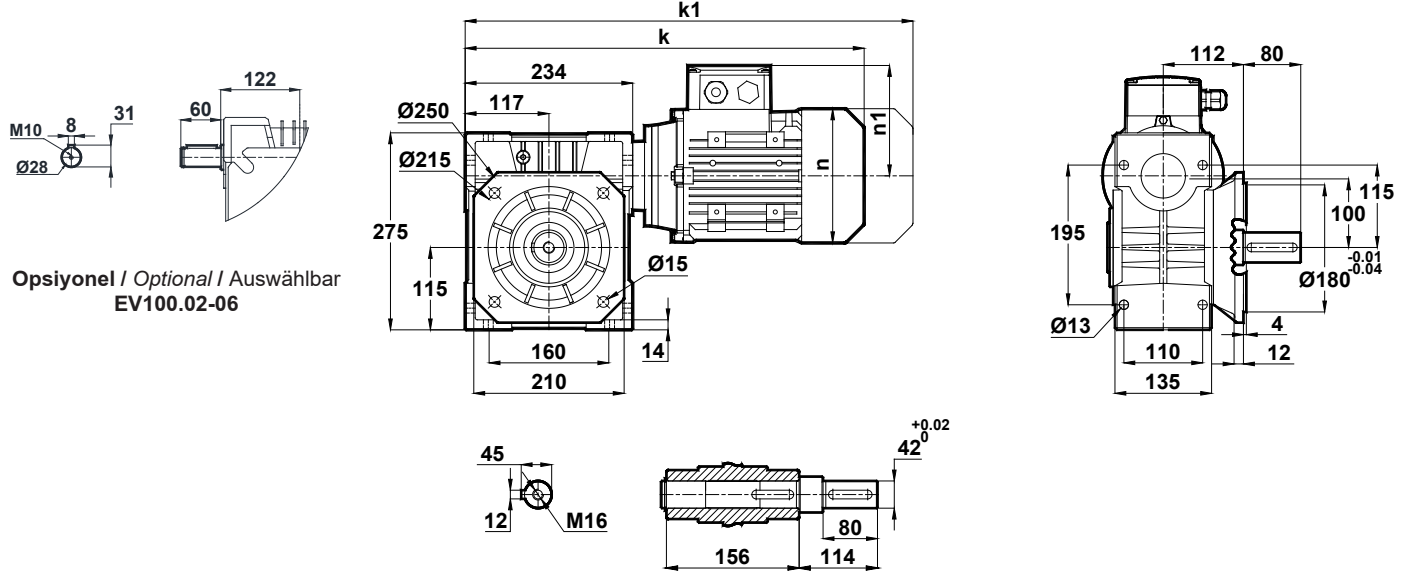
Abmessungsseiten



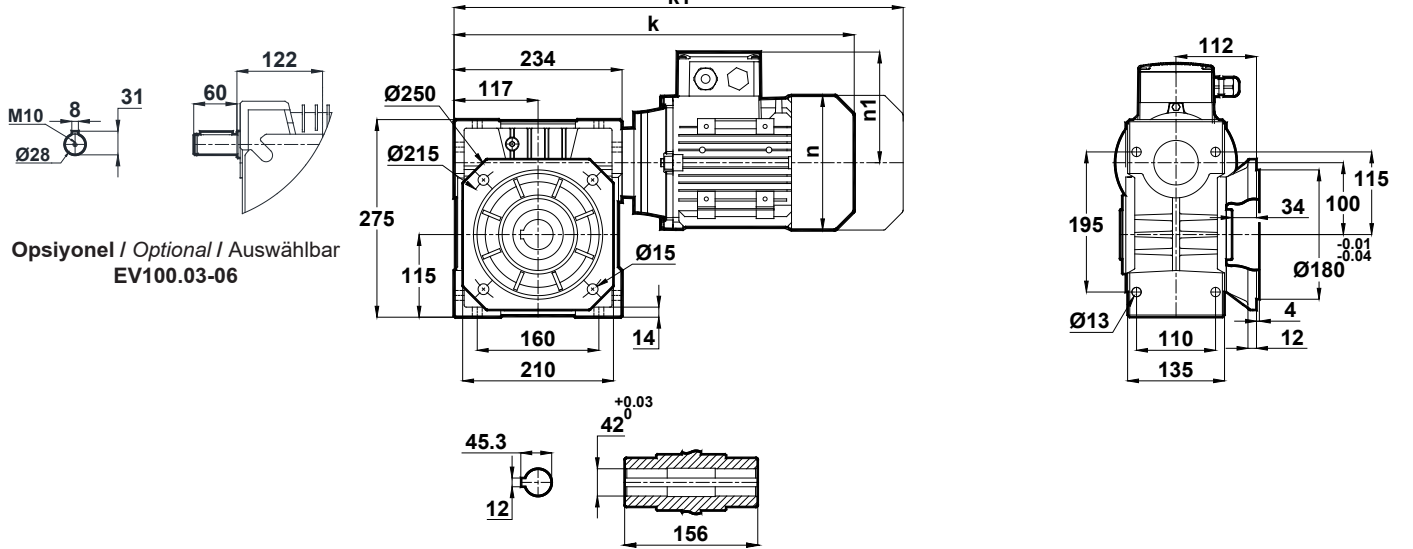
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV100.02



EV100.03

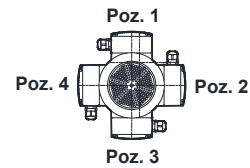


| IEC B14 / B5 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|
| k | 494.5 | 535.5 | 535.5 | 571 | 591.5 |
| k1 | 587.5 | 639 | 639 | 679.5 | 696 |
| n | 155 | 176 | 176 | 193 | 215 |
| n1 | 121 | 132 | 132 | 147 | 158 |

Klemens Pozisyonları

Terminal Box Positions

Klemmenkasten



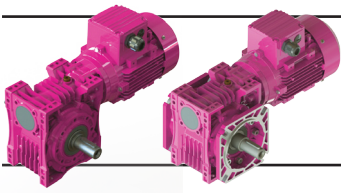
80-90-100-112
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

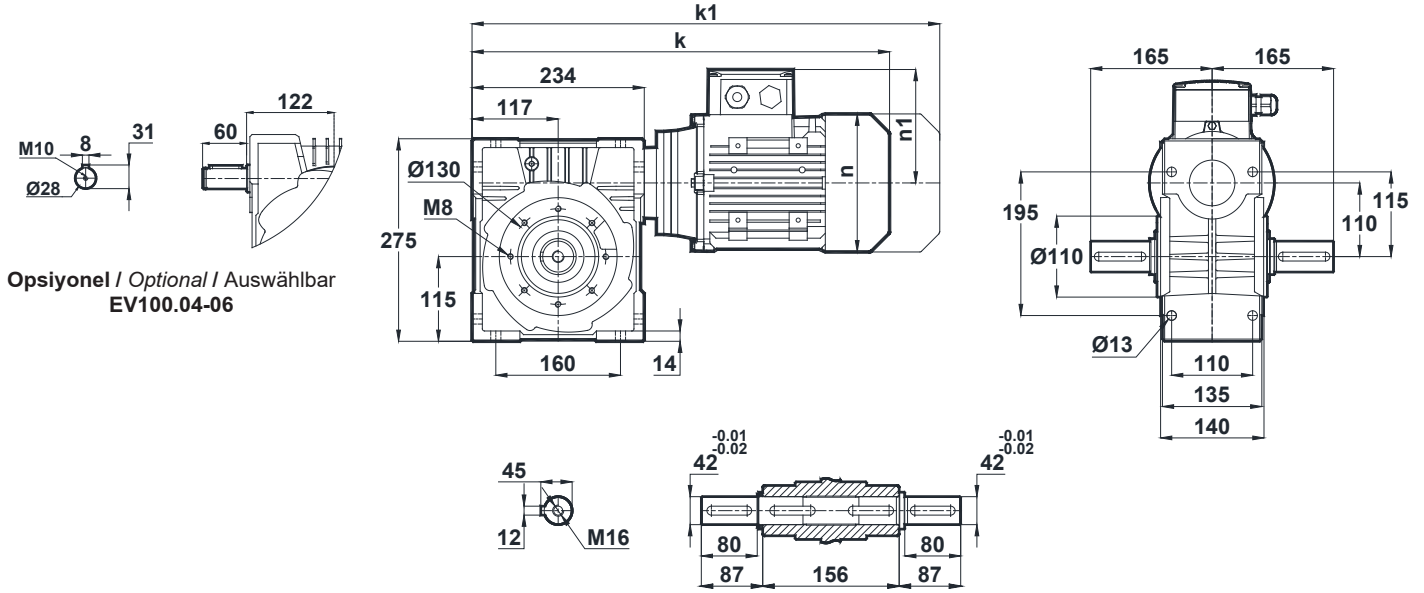
Abmessungsseiten



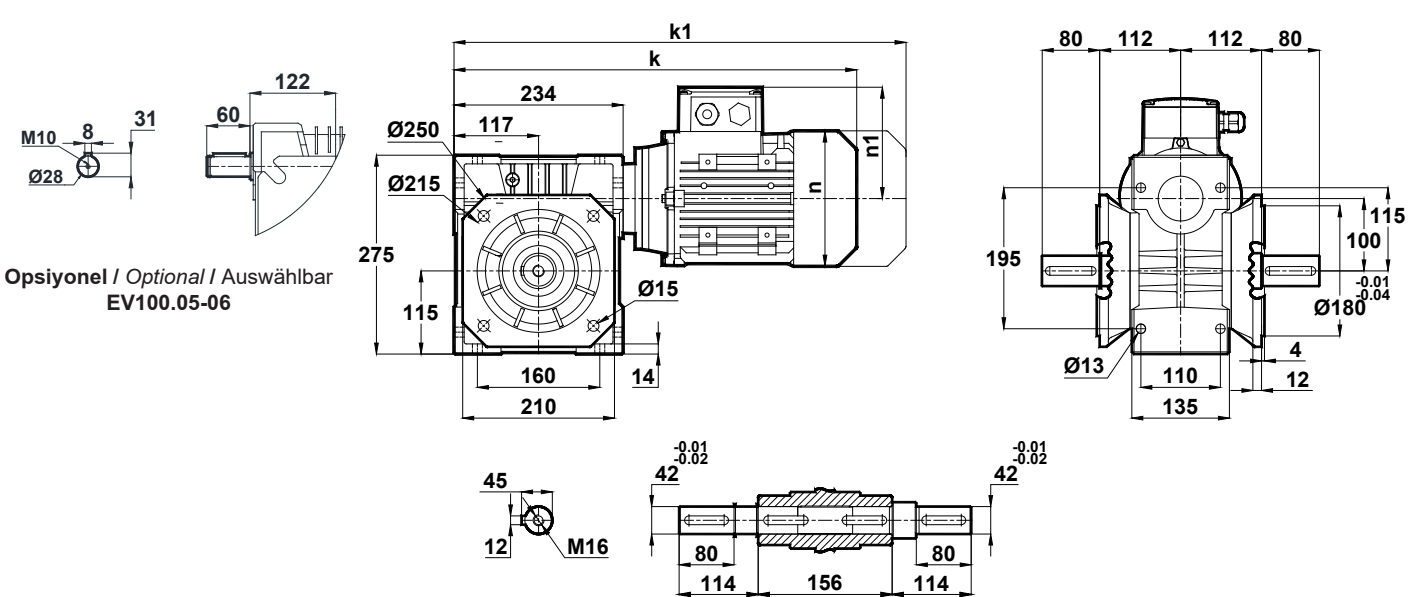
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV100.04

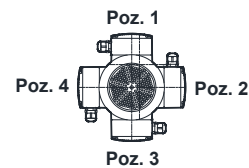


EV100.05



Klemens Pozisyonları

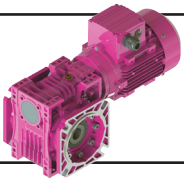
Terminal Box Positions
Klemmenkasten



80-90-100-112
Tip / Type / Typ

| IEC B14 / B5 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|
| k | 494.5 | 535.5 | 535.5 | 571 | 591.5 |
| k1 | 587.5 | 639 | 639 | 679.5 | 696 |
| n | 155 | 176 | 176 | 193 | 215 |
| n1 | 121 | 132 | 132 | 147 | 158 |

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



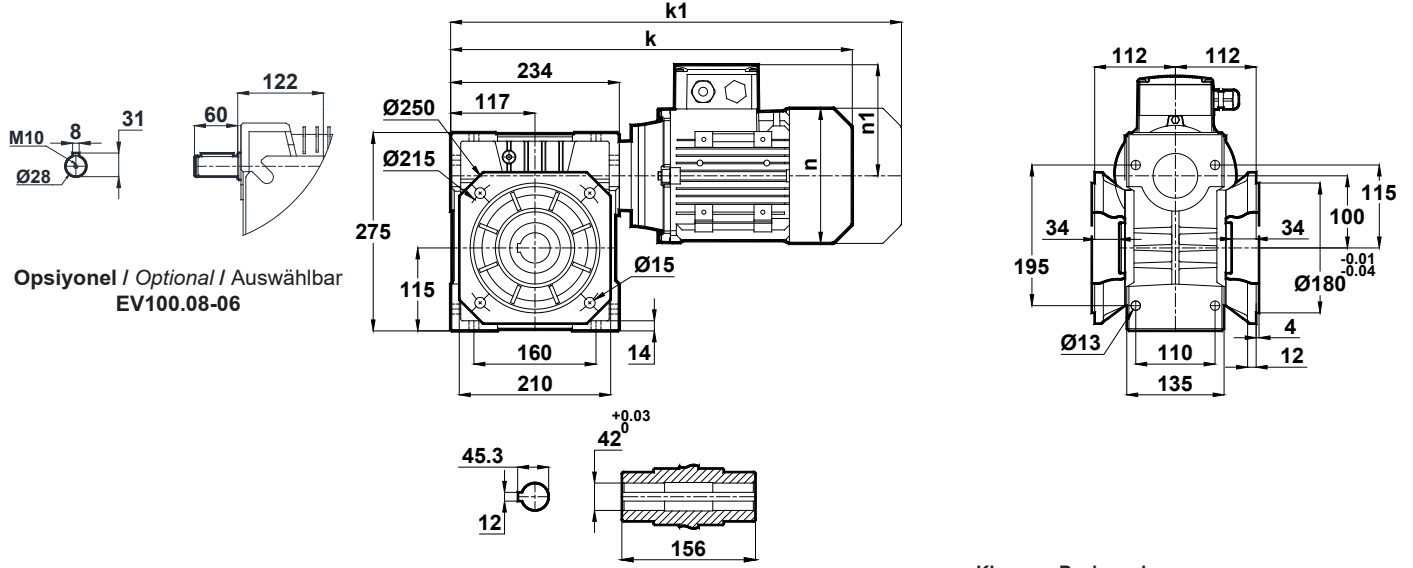
Ölçü Sayfaları Dimension Pages Abmessungsseiten



Kalasanati.com

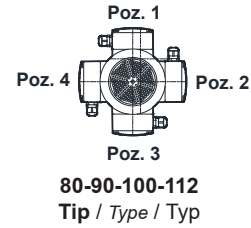
-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV100.08



| IEC B14 / B5 | 80 | 90S | 90L | 100L | 112M |
|--------------|-------|-------|-------|-------|-------|
| k | 494.5 | 535.5 | 535.5 | 571 | 591.5 |
| k1 | 587.5 | 639 | 639 | 679.5 | 696 |
| n | 155 | 176 | 176 | 193 | 215 |
| n1 | 121 | 132 | 132 | 147 | 158 |

Klemens Pozisyonları
Terminal Box Positions
Klemmenkasten

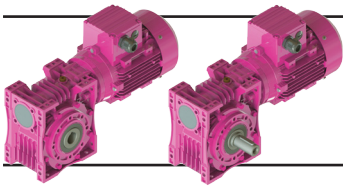


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

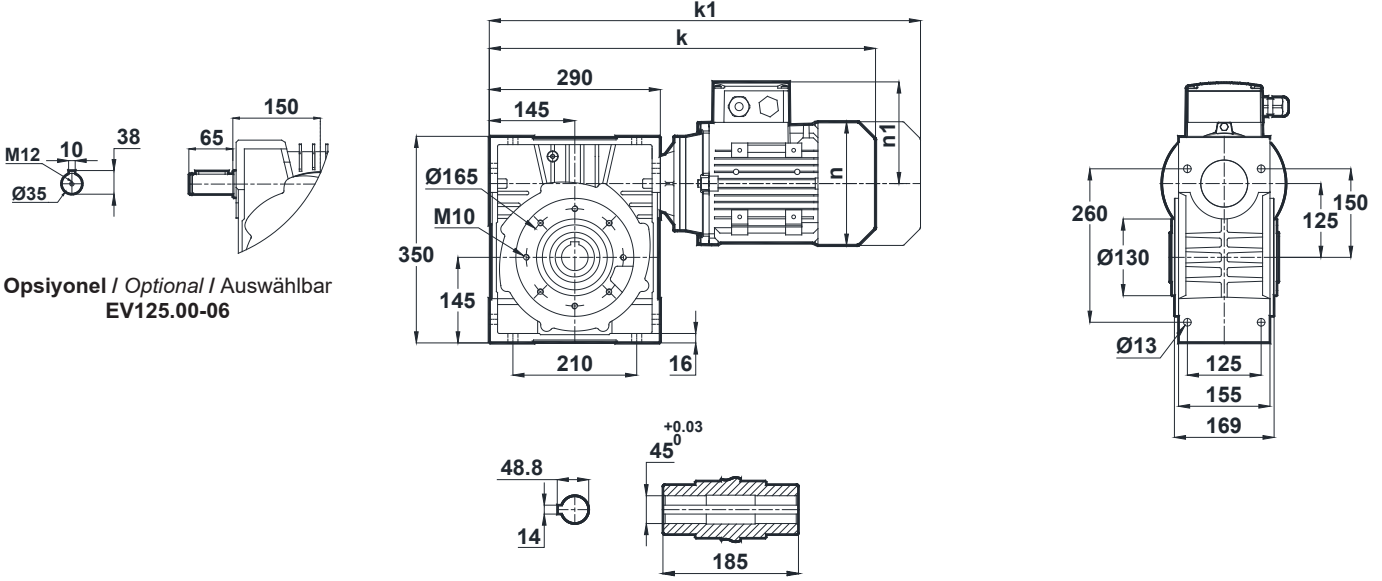
Abmessungsseiten



Kalasanati.com

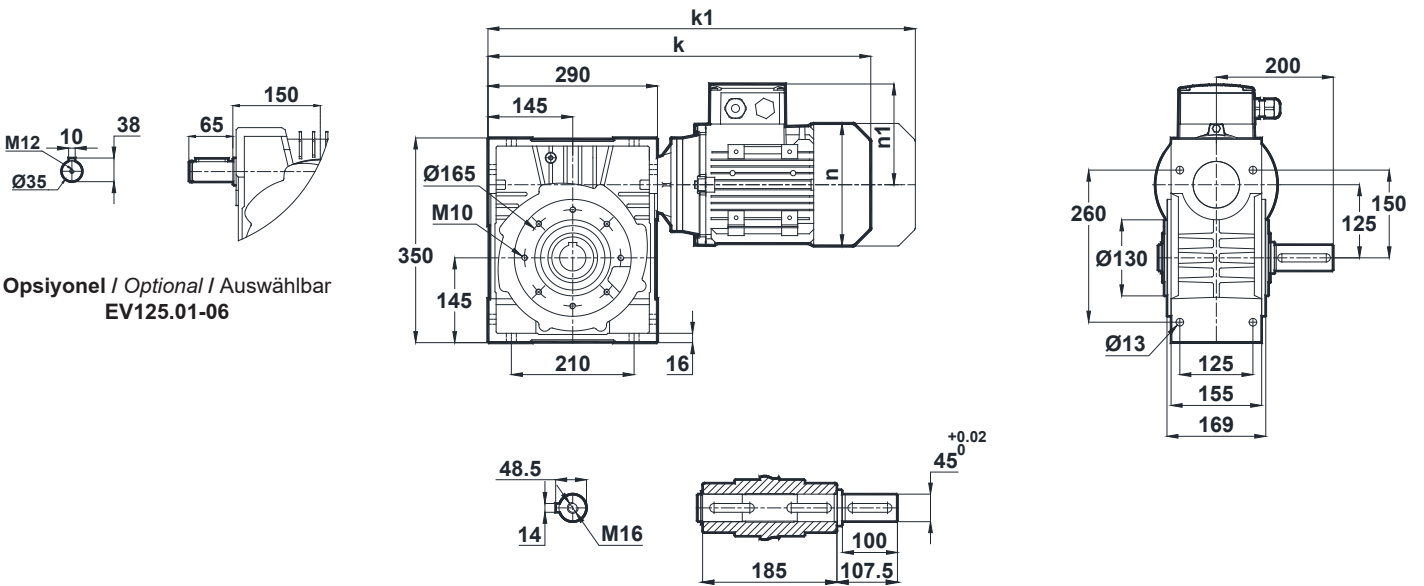
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV125.00



Opsiyonel / Optional / Auswählbar
EV125.00-06

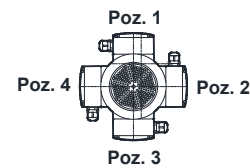
EV125.01



Opsiyonel / Optional / Auswählbar
EV125.01-06

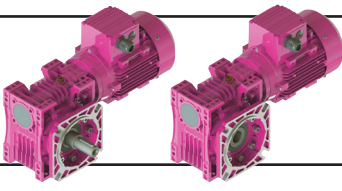
| IEC | 90S/B5 | 90L/B5 | 100L/B14 | 112M/B14 | 132S/B14 | 132M/B14 |
|-----|--------|--------|----------|----------|----------|----------|
| k | 598 | 598 | 633.5 | 654 | 738 | 738 |
| k1 | 701.5 | 701.5 | 742 | 758.5 | 868 | 868 |
| n | 176 | 176 | 193 | 215 | 257 | 257 |
| n1 | 132 | 132 | 147 | 158 | 179 | 179 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



90-100-112-132
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.
"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

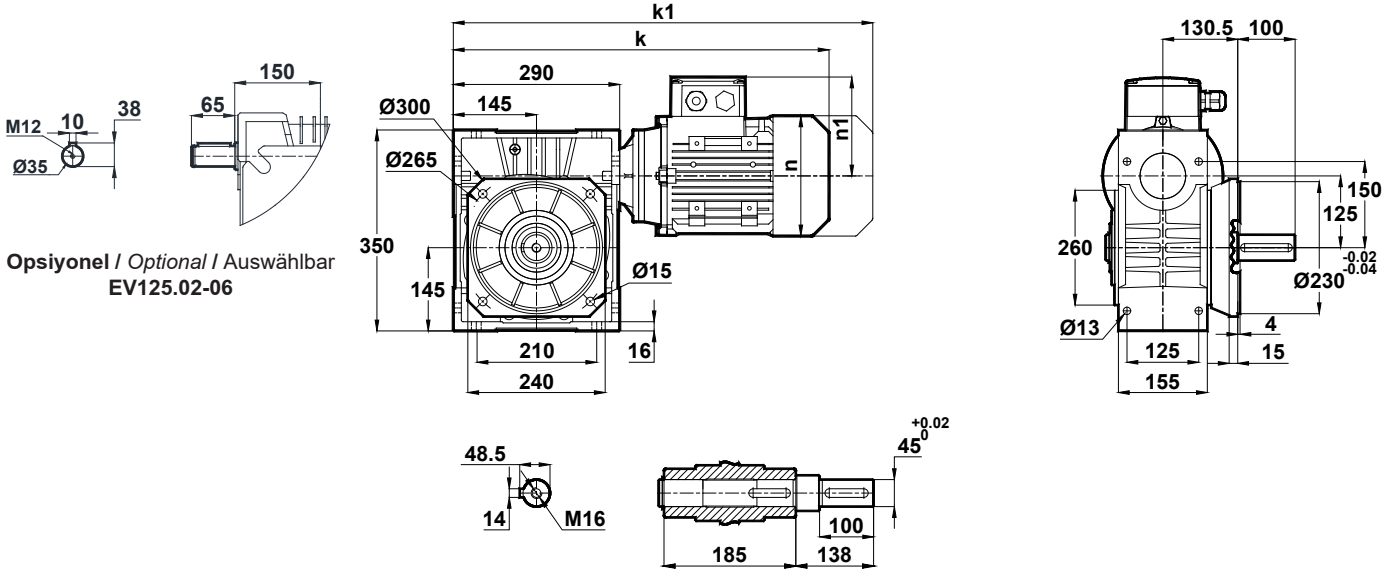
Abmessungsseiten



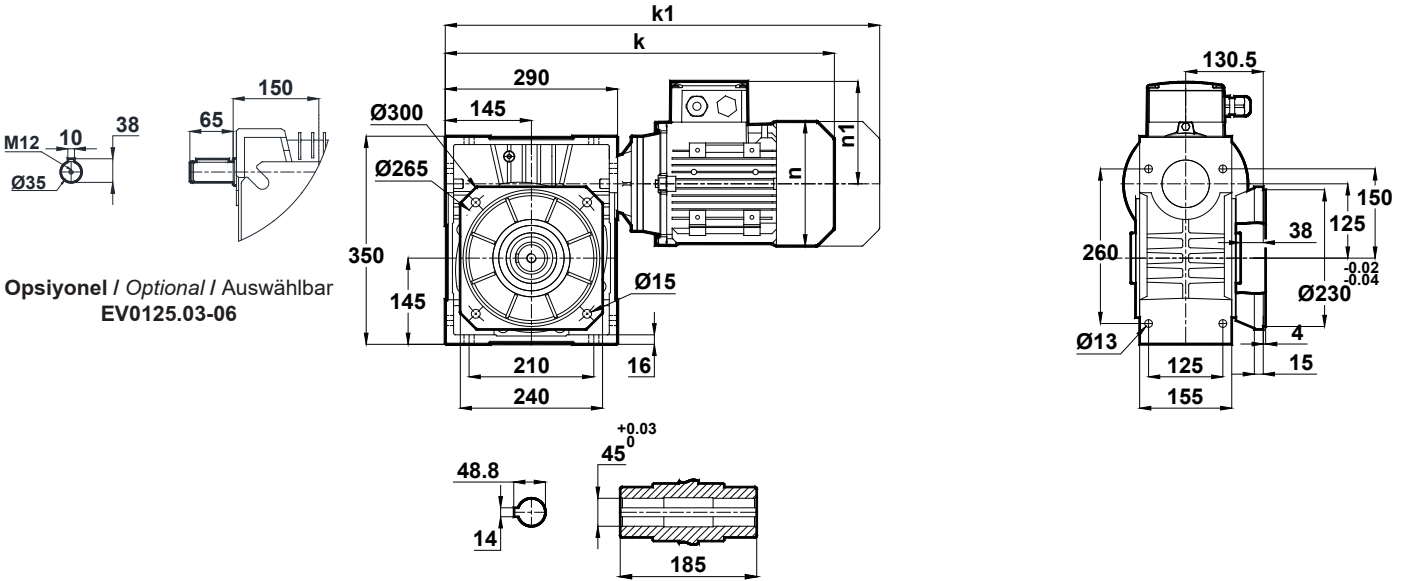
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV125.02

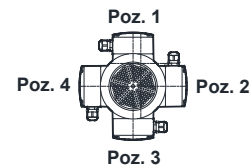


EV125.03



| IEC | 90S/B5 | 90L/B5 | 100L/B14 | 112M/B14 | 132S/B14 | 132M/B14 |
|-----|--------|--------|----------|----------|----------|----------|
| k | 598 | 598 | 633.5 | 654 | 738 | 738 |
| k1 | 701.5 | 701.5 | 742 | 758.5 | 868 | 868 |
| n | 176 | 176 | 193 | 215 | 257 | 257 |
| n1 | 132 | 132 | 147 | 158 | 179 | 179 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



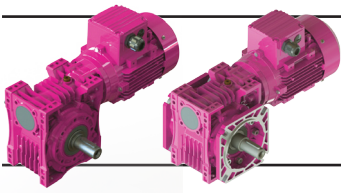
90-100-112-132
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

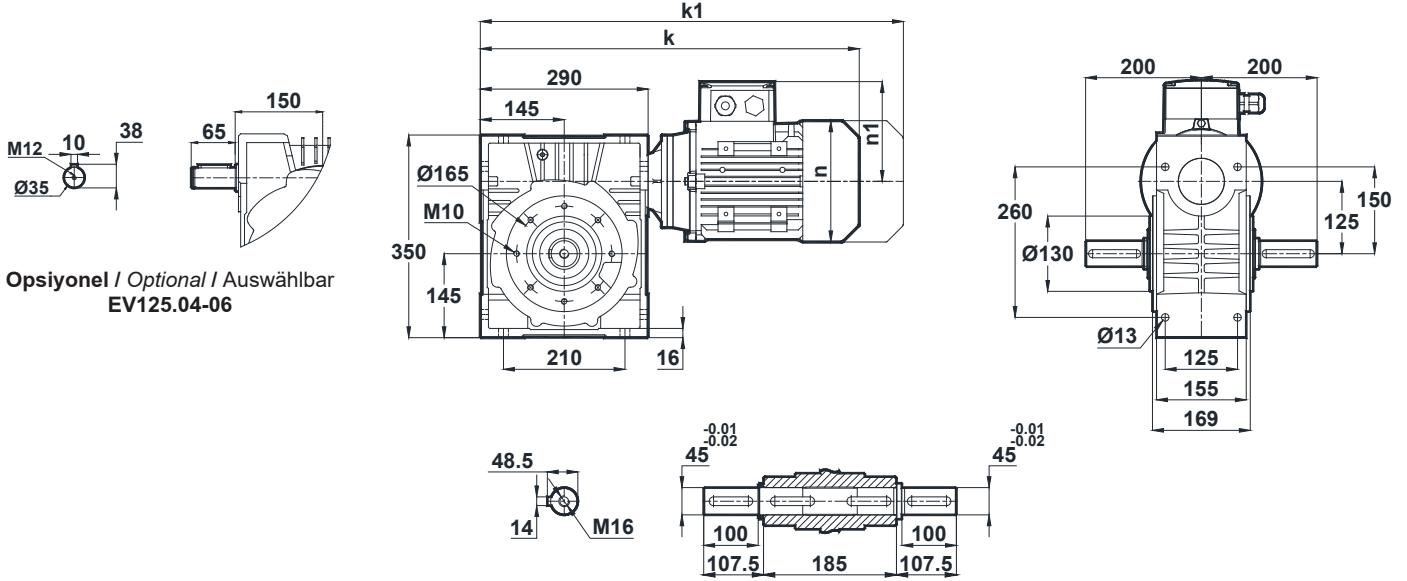
Abmessungsseiten



Kalasanati.com

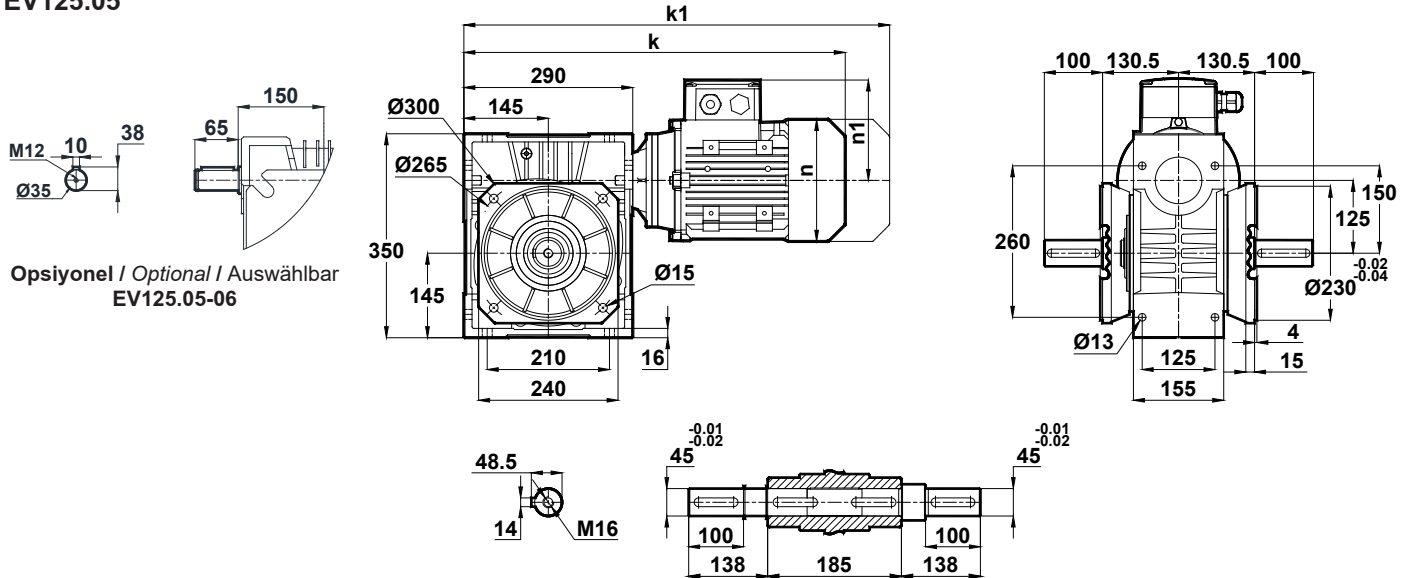
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV125.04



Opsiyonel / Optional / Auswählbar
EV125.04-06

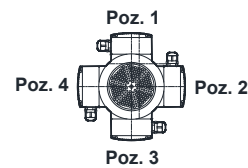
EV125.05



Opsiyonel / Optional / Auswählbar
EV125.05-06

| IEC | 90S/B5 | 90L/B5 | 100L/B14 | 112M/B14 | 132S/B14 | 132M/B14 |
|-----|--------|--------|----------|----------|----------|----------|
| k | 598 | 598 | 633.5 | 654 | 738 | 738 |
| k1 | 701.5 | 701.5 | 742 | 758.5 | 868 | 868 |
| n | 176 | 176 | 193 | 215 | 257 | 257 |
| n1 | 132 | 132 | 147 | 158 | 179 | 179 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten



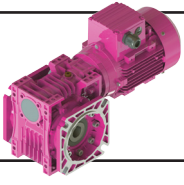
90-100-112-132
Tip / Type / Typ

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



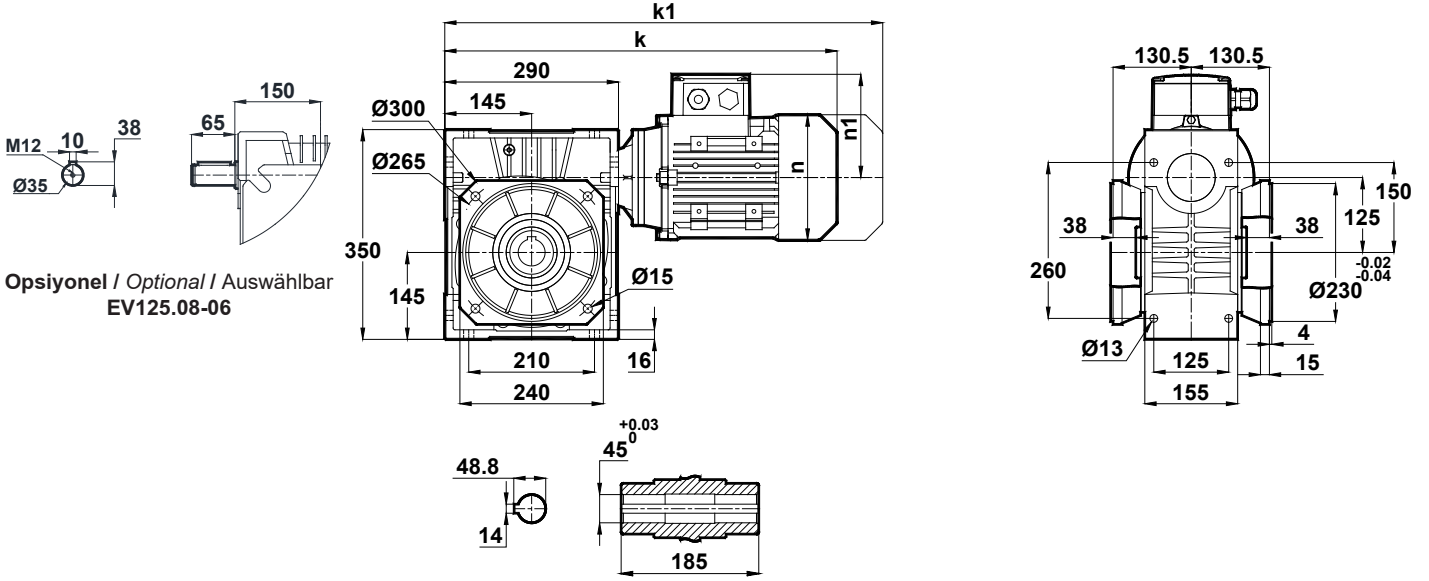
Ölçü Sayfaları Dimension Pages Abmessungenseiten



Kalasanati.com

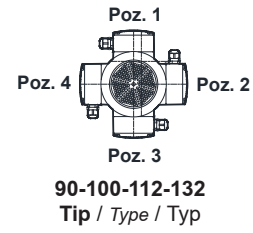
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EV125.08



| IEC | 90S/B5 | 90L/B5 | 100L/B14 | 112M/B14 | 132S/B14 | 132M/B14 |
|-----|--------|--------|----------|----------|----------|----------|
| k | 598 | 598 | 633.5 | 654 | 738 | 738 |
| k1 | 701.5 | 701.5 | 742 | 758.5 | 868 | 868 |
| n | 176 | 176 | 193 | 215 | 257 | 257 |
| n1 | 132 | 132 | 147 | 158 | 179 | 179 |

Klemens Pozisyonları / Terminal Box Positions / Klemmenkasten

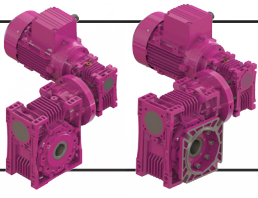


Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motorbefestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" sind für Bremsmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

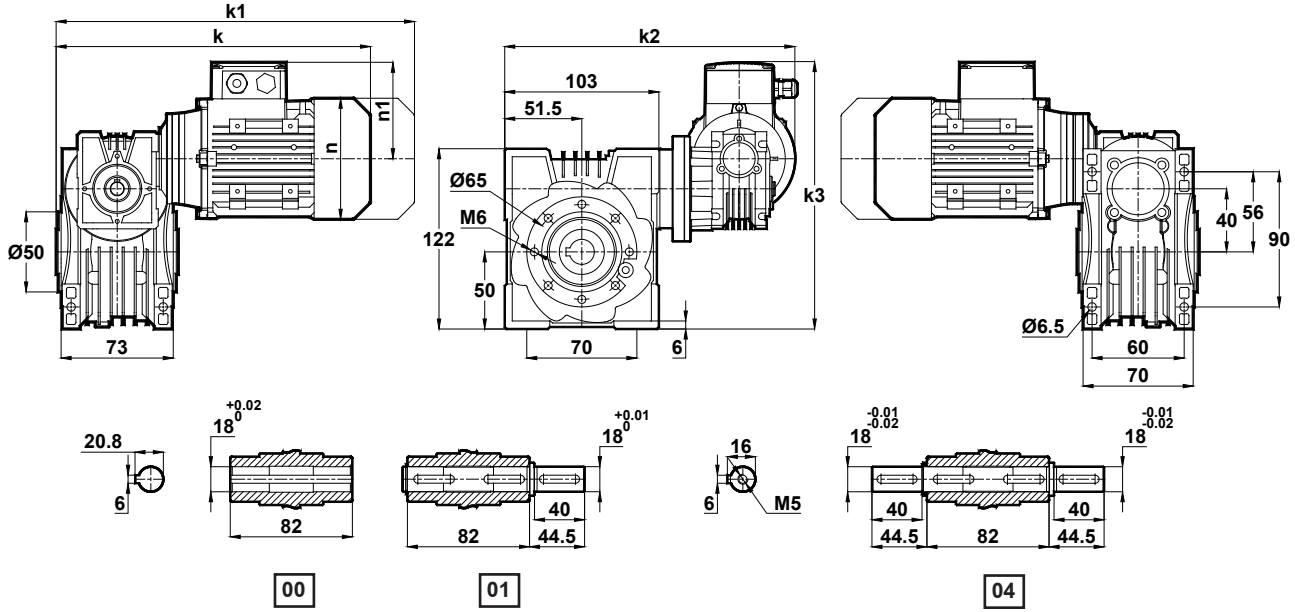
Abmessungsseiten



Kalasanati.com

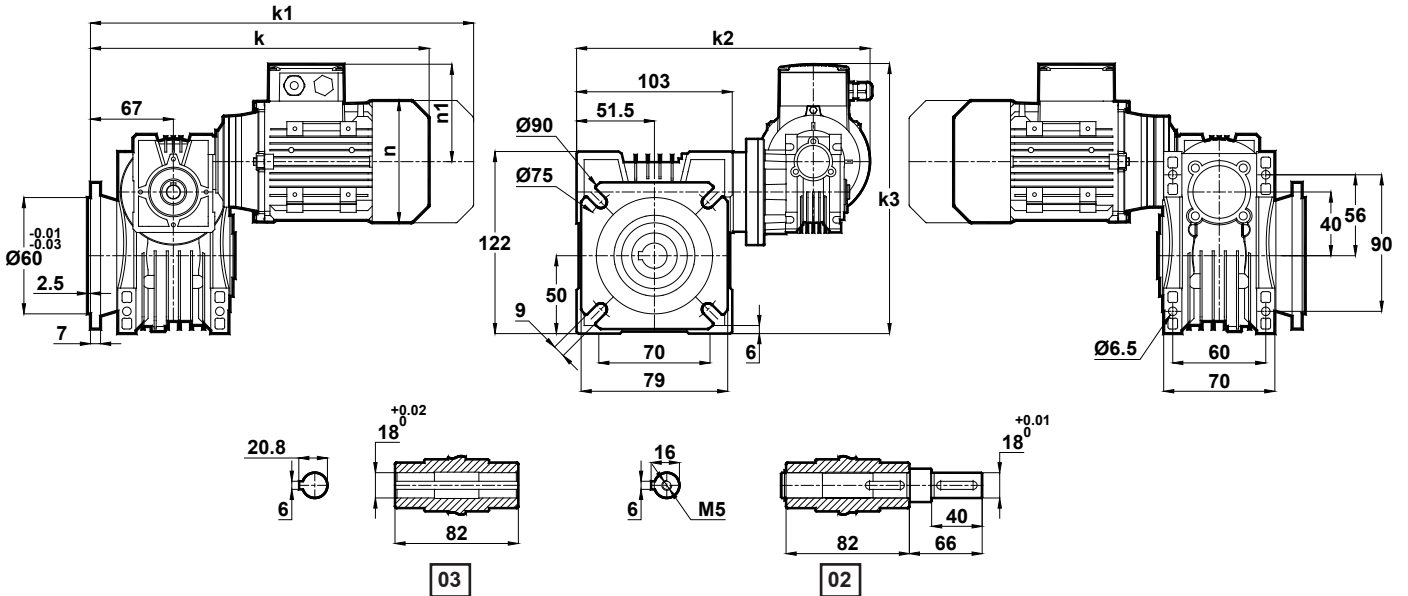
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV040.□ - 030



| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-----|-----|-------|-----|-----|----|
| 56 | 247 | - | 235.5 | 216 | 105 | 96 |
| 63 | 299 | 352 | 243.5 | 217 | 121 | 97 |

EV040.□ - 030



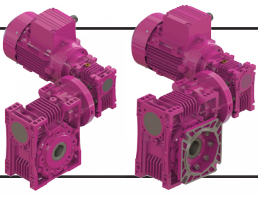
| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|----|
| 56 | 261.5 | - | 235.5 | 216 | 105 | 96 |
| 63 | 313.5 | 366.5 | 243.5 | 217 | 121 | 97 |

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motor Befestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

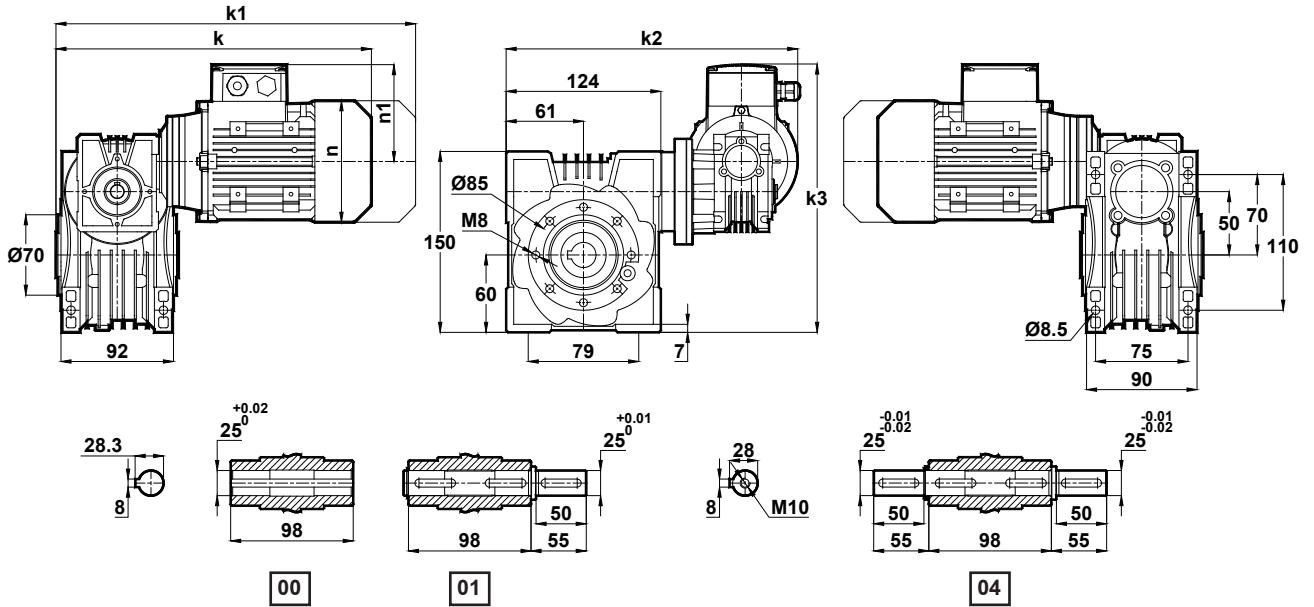
Abmessungsseiten



Kalasanati.com

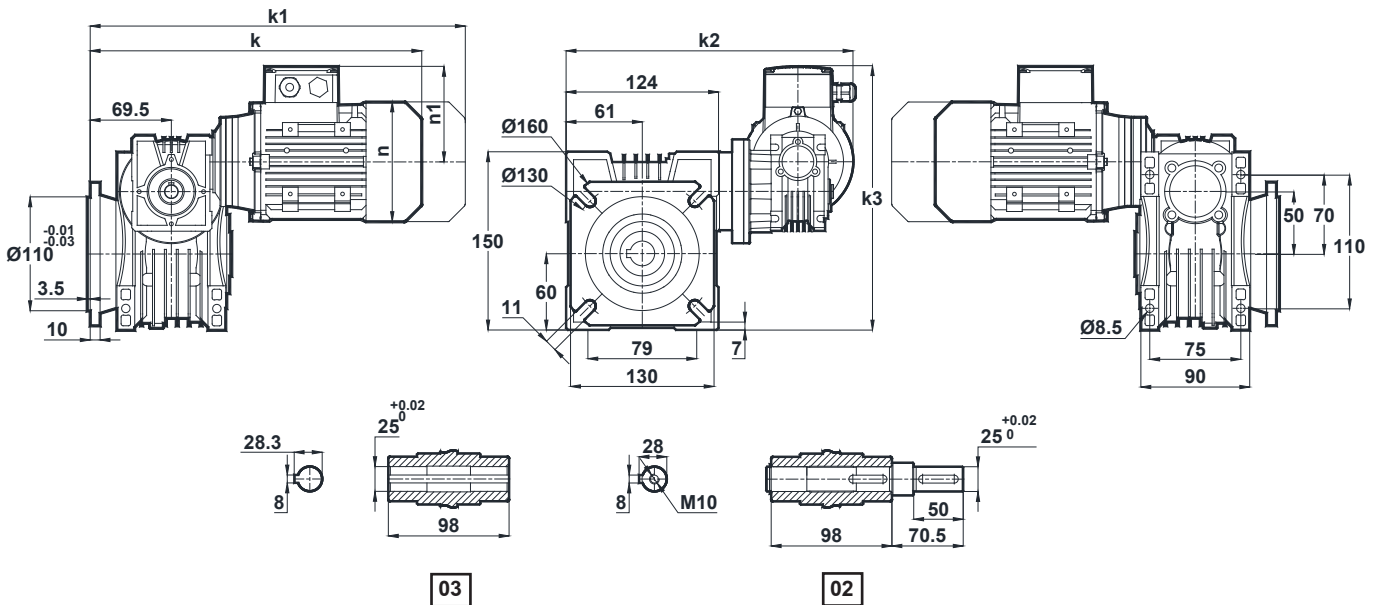
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EV050.□ - 030



| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-----|-----|-------|-----|-----|----|
| 56 | 247 | - | 256.5 | 236 | 105 | 96 |
| 63 | 299 | 352 | 264.5 | 237 | 121 | 97 |

EV050.□ - 030



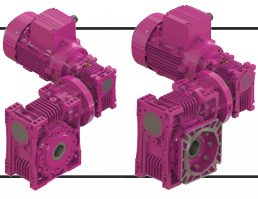
| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|----|
| 56 | 265.5 | - | 256.5 | 236 | 105 | 96 |
| 63 | 317.5 | 370.5 | 264.5 | 237 | 121 | 97 |

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motor Befestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getriebe mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

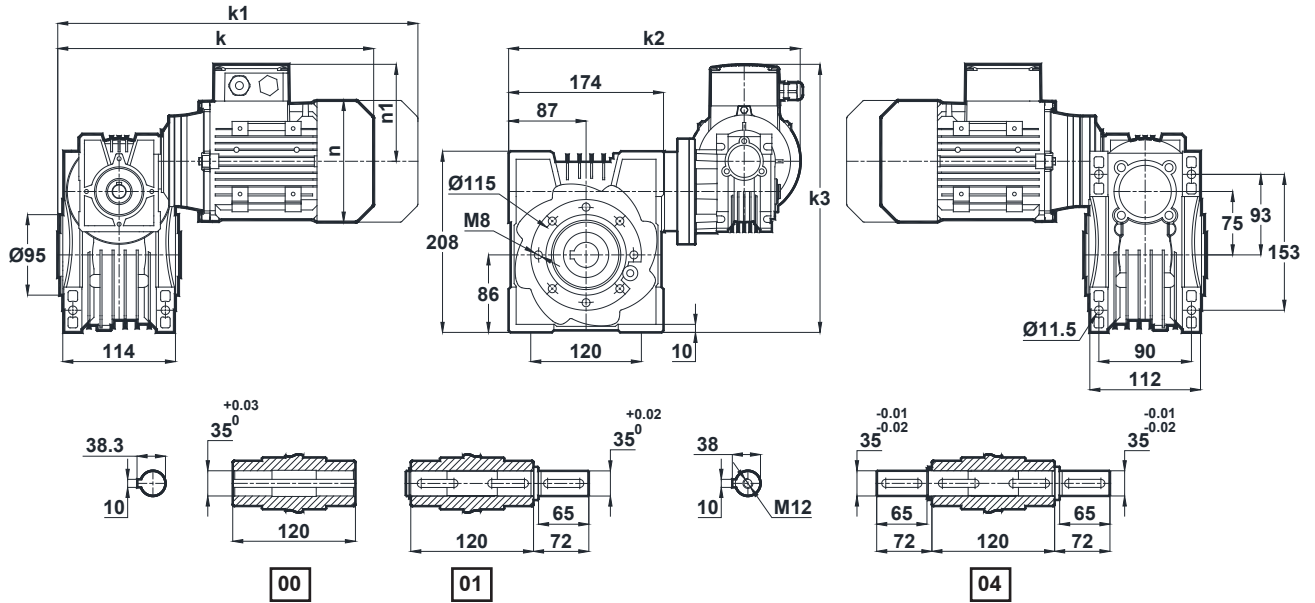
Abmessungsseiten



Kalasanati.com

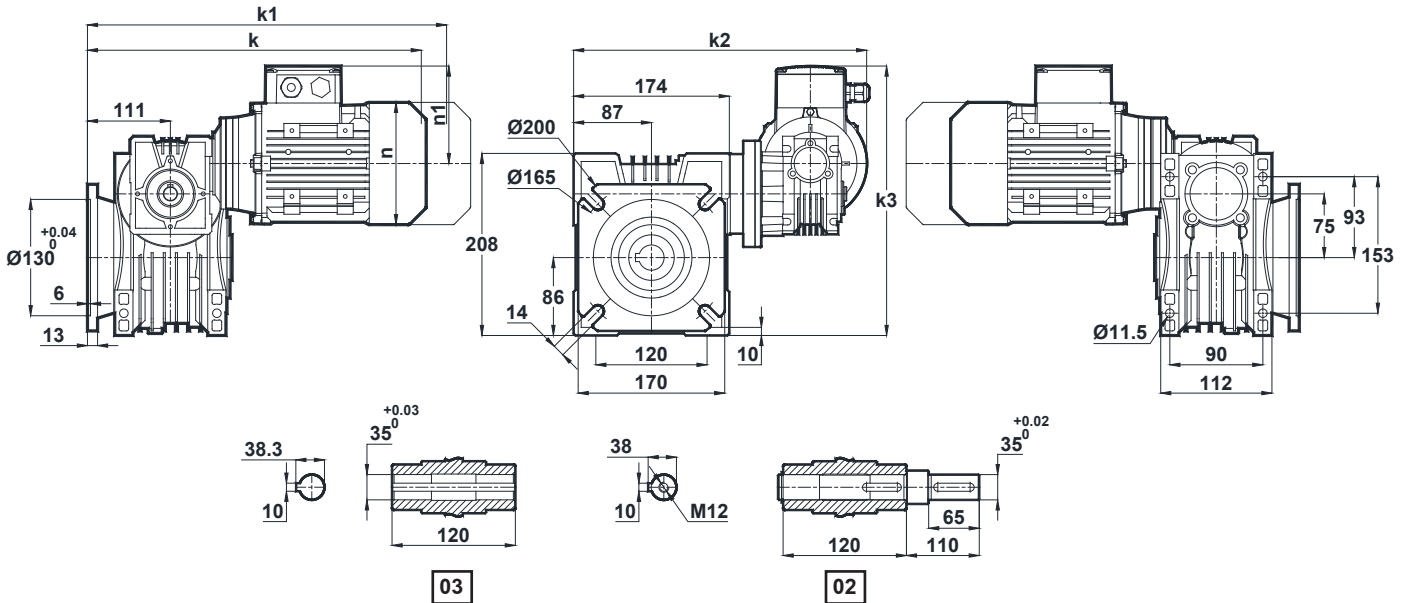
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EV075.□ - 040



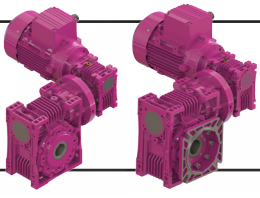
| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 63 | 339.5 | 392.5 | 333.5 | 298 | 121 | 97 |
| 71 | 347.5 | 438.5 | 341.5 | 313 | 137 | 112 |

EV075.□ - 040



| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 63 | 380.5 | 433.5 | 333.5 | 298 | 121 | 97 |
| 71 | 398.5 | 489.5 | 341.5 | 313 | 137 | 112 |

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motor Befestigung mit IEC B14 Flansch.
 "k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
 Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
 Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

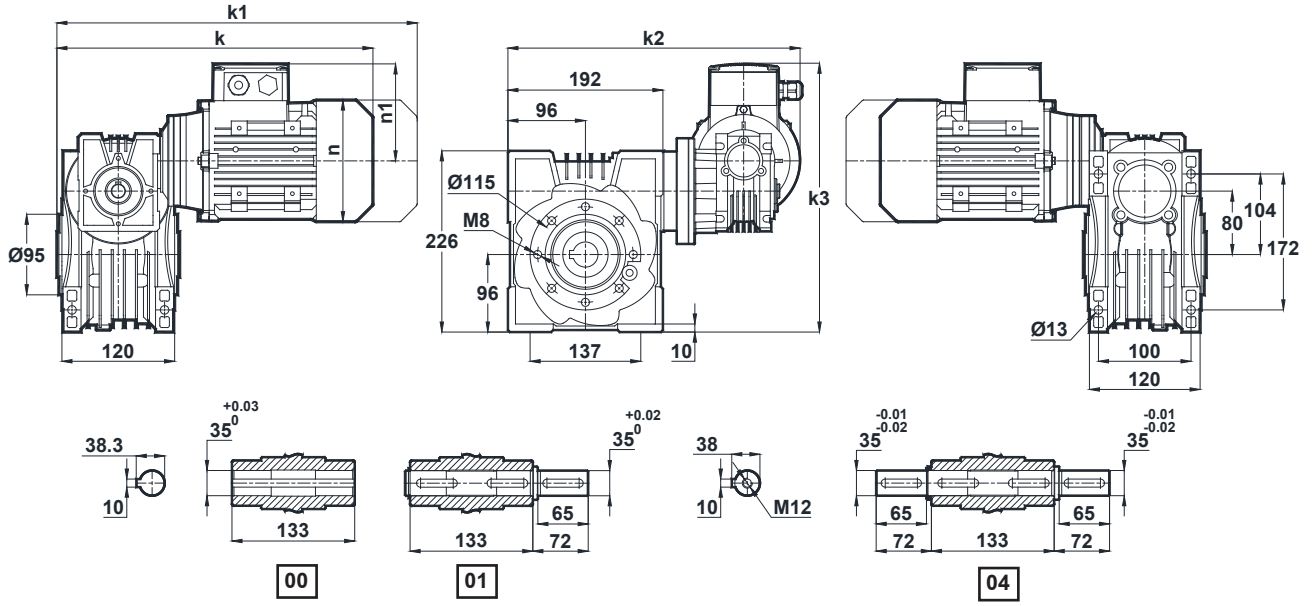
Abmessungsseiten



Kalasanati.com

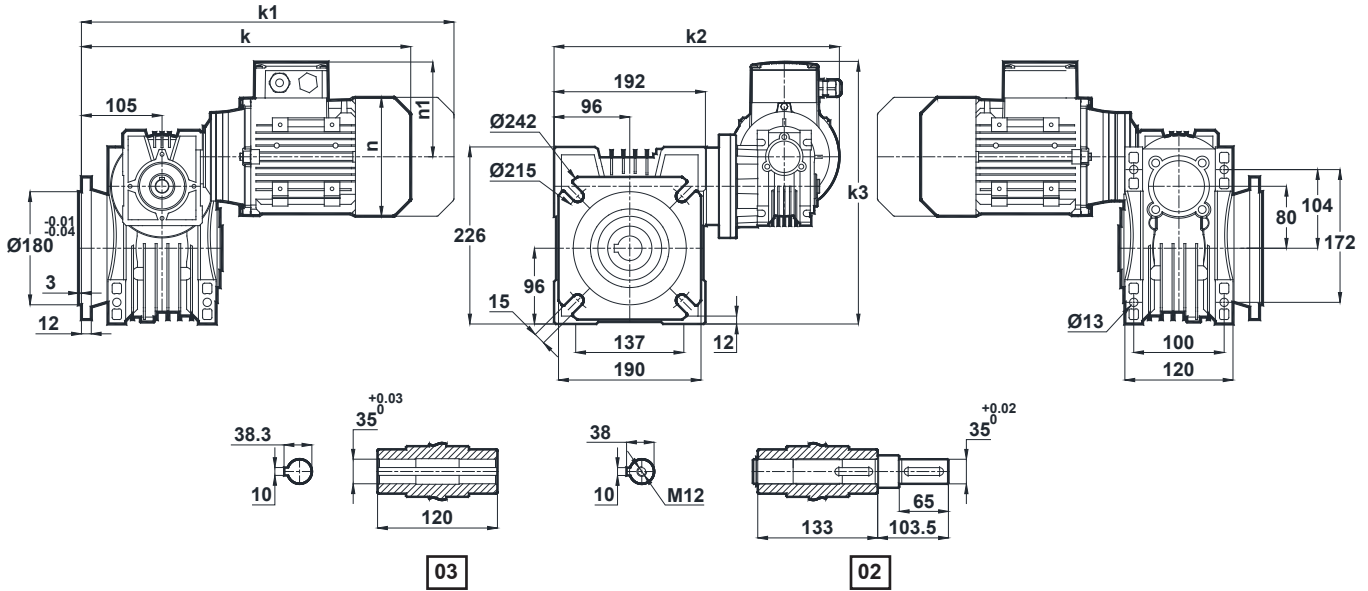
-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV080.□ - 040



| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 63 | 339.5 | 392.5 | 333.5 | 298 | 121 | 97 |
| 71 | 354 | 445 | 341.5 | 313 | 137 | 112 |

EV080.□ - 040



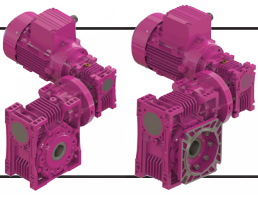
| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 63 | 374.5 | 427.5 | 351.5 | 313 | 121 | 97 |
| 71 | 392.5 | 483.5 | 341.5 | 313 | 137 | 112 |

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motor Befestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

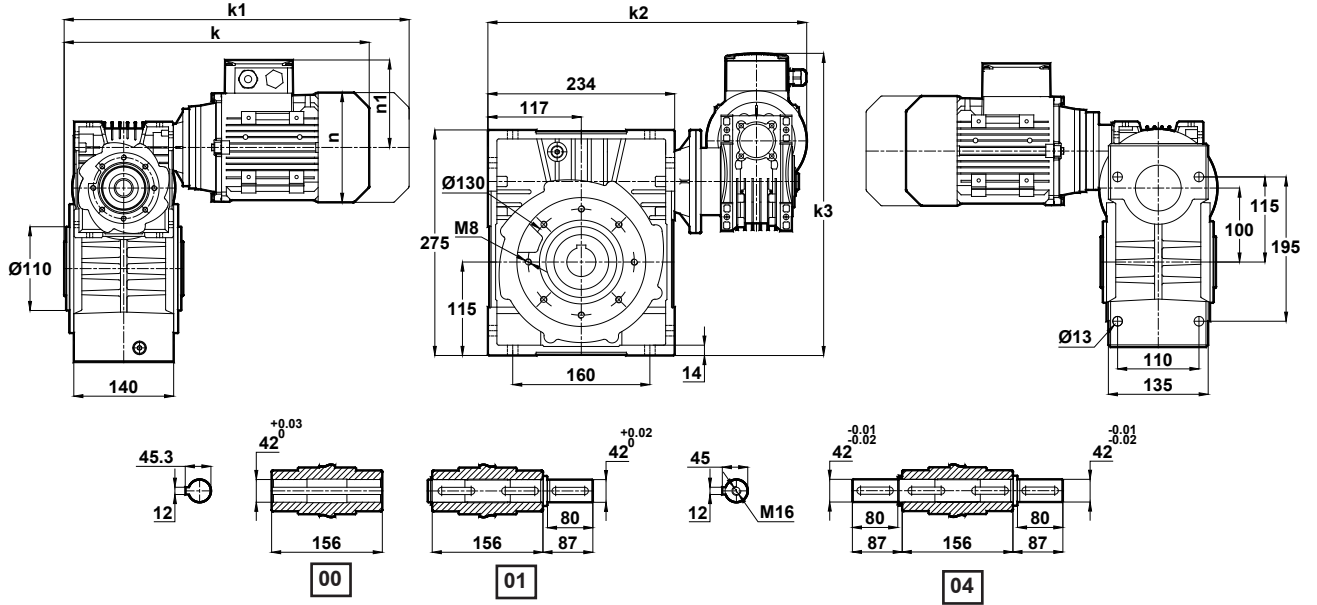
Abmessungsseiten



Kalasanati.com

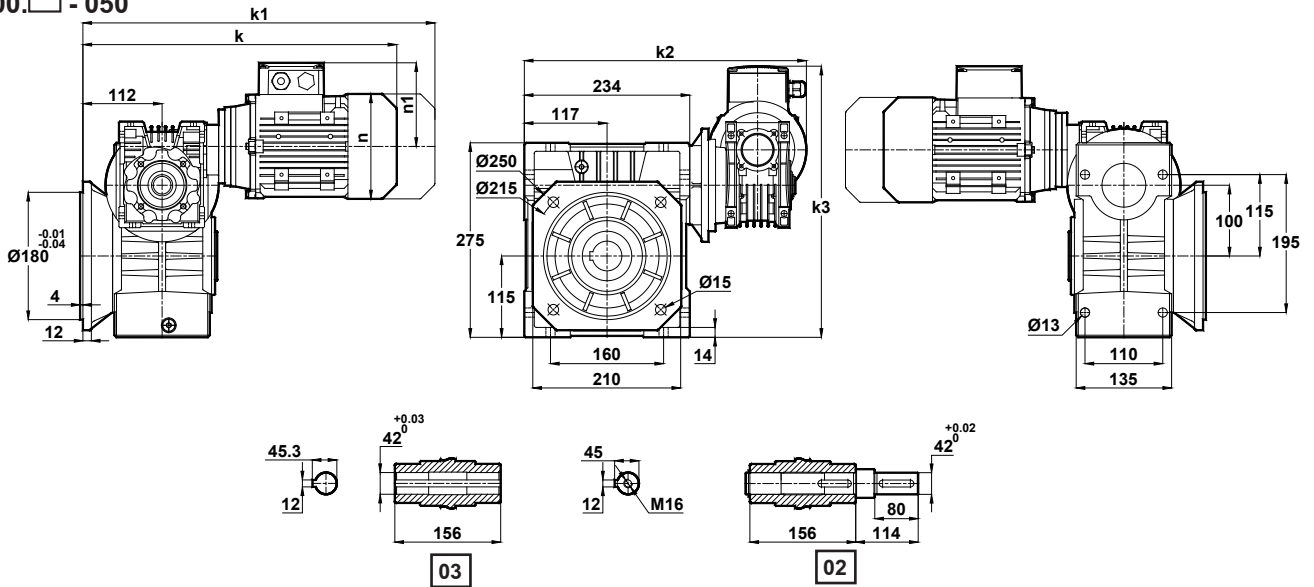
-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV100.□ - 050



| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 63 | 361 | 414 | 390.5 | 362 | 121 | 97 |
| 71 | 375.7 | 466.7 | 398.5 | 377 | 137 | 112 |
| 80 | 398.7 | 491.7 | 407.5 | 386 | 155 | 121 |
| 90S | 439.7 | 544.2 | 418 | 397 | 176 | 132 |
| 90L | 439.7 | 544.2 | 418 | 397 | 176 | 132 |

EV100.□ - 050



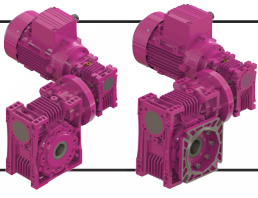
| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 63 | 393 | 446 | 390.5 | 362 | 121 | 97 |
| 71 | 409.7 | 500.7 | 398.5 | 377 | 137 | 112 |
| 80 | 432.7 | 525.7 | 407.5 | 386 | 155 | 121 |
| 90S | 473.7 | 578.2 | 418 | 397 | 176 | 132 |
| 90L | 473.7 | 578.2 | 418 | 397 | 176 | 132 |

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motor Befestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

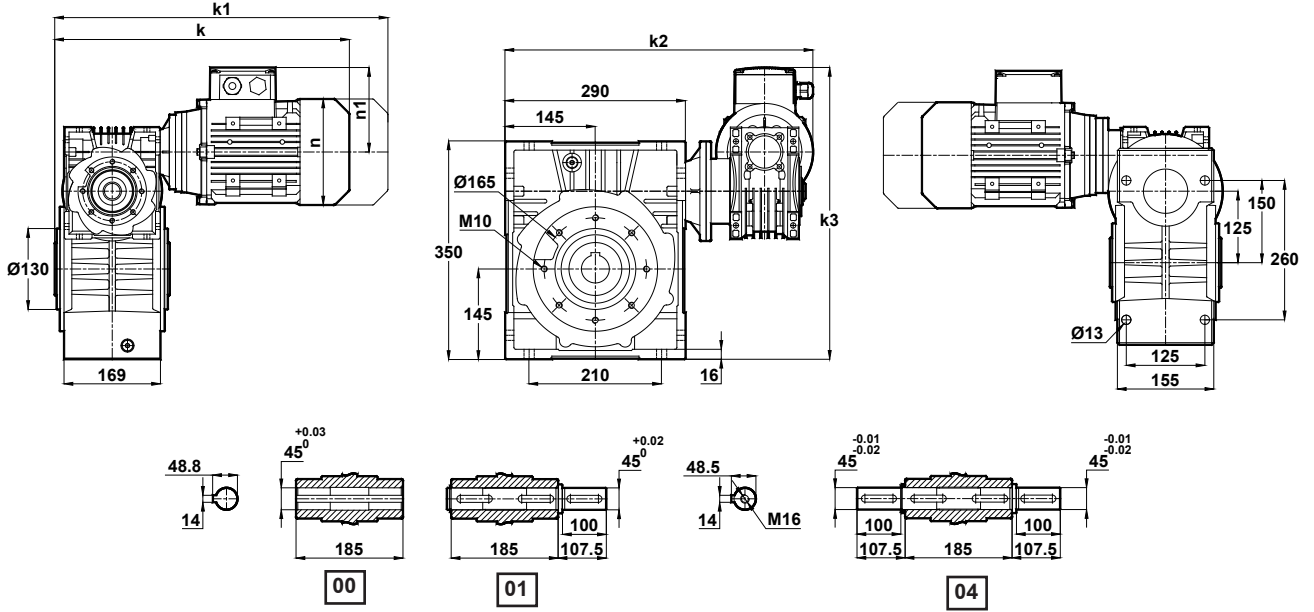
Abmessungsseiten



Kalasanati.com

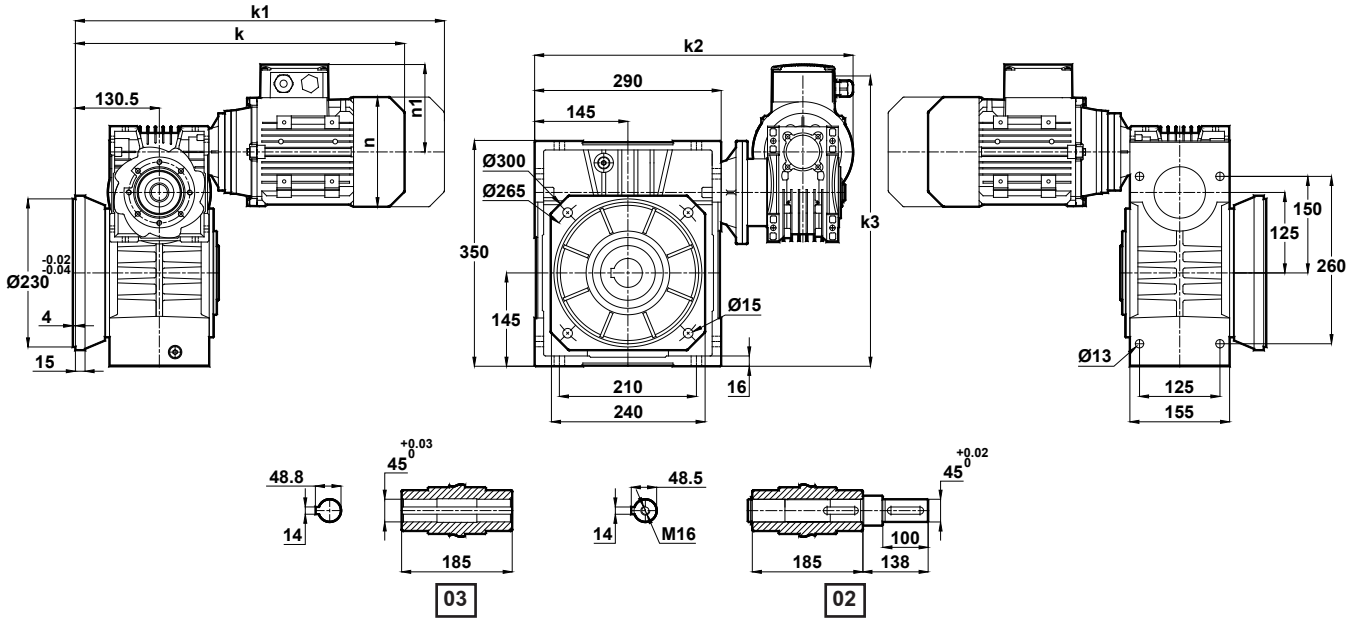
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EV125.□ - 063



| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 71 | 405.2 | 496.2 | 485.5 | 445 | 137 | 112 |
| 80 | 428.2 | 521.2 | 494.5 | 454 | 155 | 121 |
| 90S | 469.2 | 573.7 | 505 | 465 | 176 | 132 |
| 90L | 469.2 | 573.7 | 505 | 465 | 176 | 132 |

EV125.□ - 063



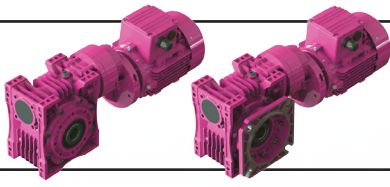
| IEC B14 | k | k1 | k2 | k3 | n | n1 |
|---------|-------|-------|-------|-----|-----|-----|
| 71 | 443.2 | 534.2 | 485.5 | 445 | 137 | 112 |
| 80 | 466.2 | 559.2 | 494.5 | 454 | 155 | 121 |
| 90S | 507.2 | 611.7 | 505 | 465 | 176 | 132 |
| 90L | 507.2 | 611.7 | 505 | 465 | 176 | 132 |

Motorlar B14 flanş ile bağlanmıştır. / Motor connections are with IEC B14 Flange / Motor Befestigung mit IEC B14 Flansch.

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.

Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.

Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



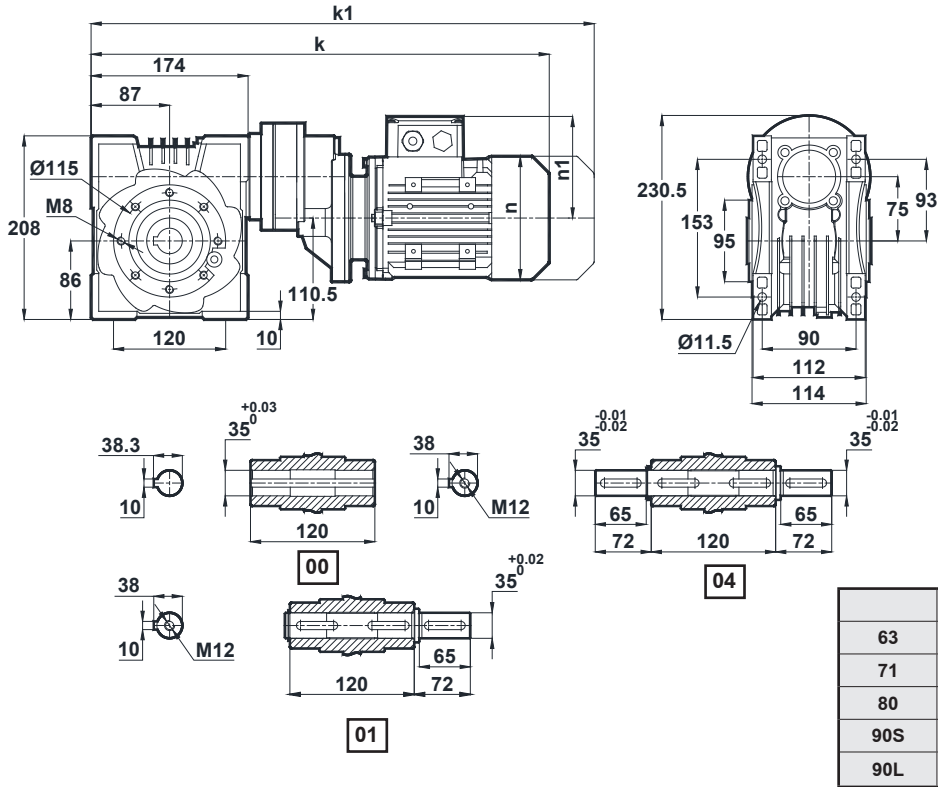
Ölçü Sayfaları Dimension Pages Abmessungsseiten



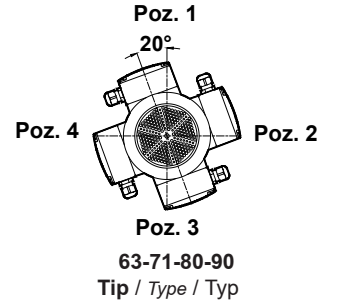
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

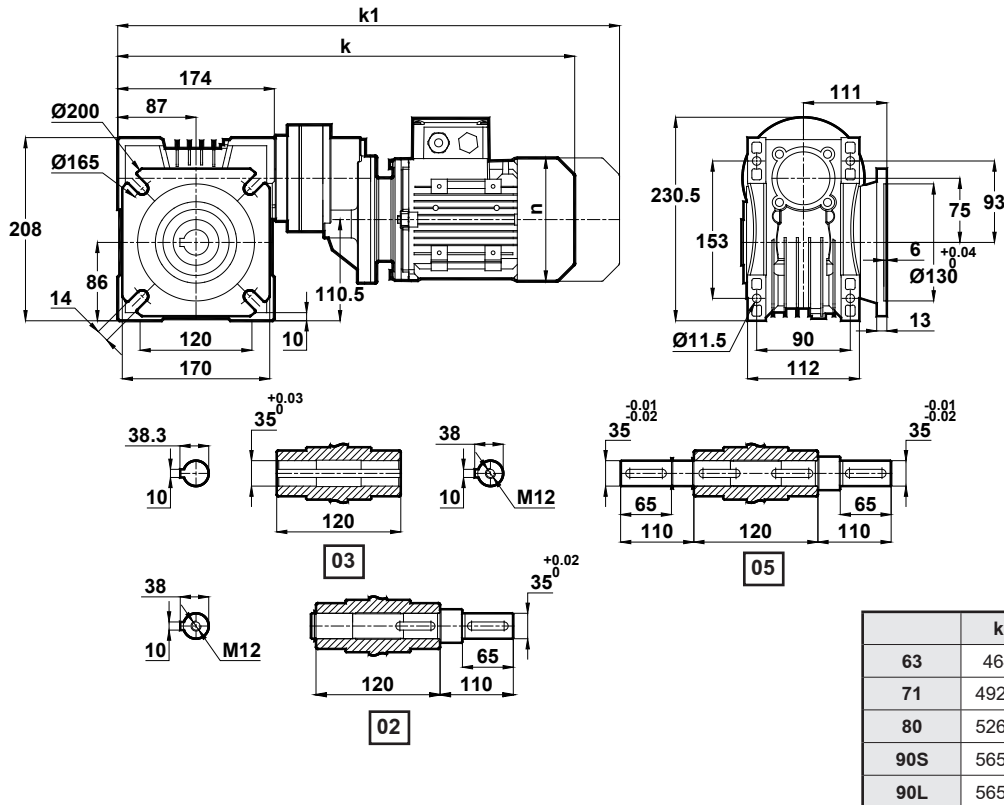
EV075.□ - NR11



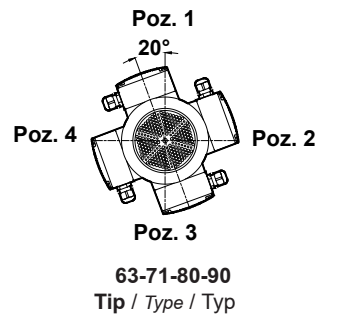
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



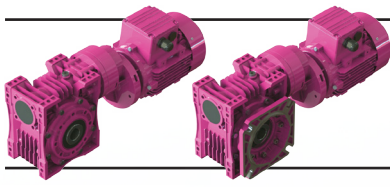
EV075.□ - NR11



Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

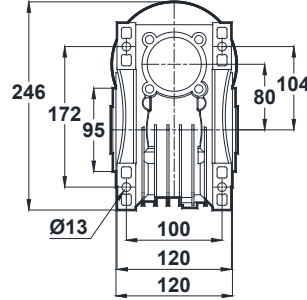
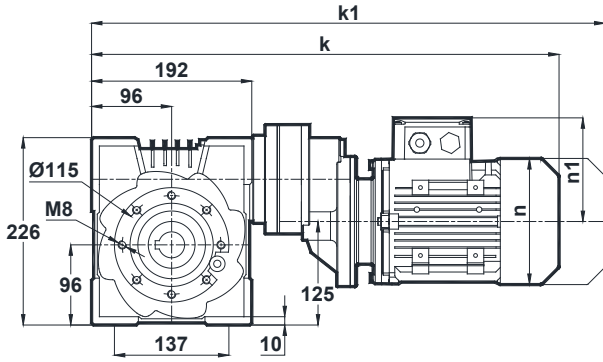
Abmessungsseiten



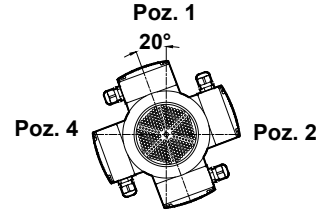
Kalasanati.com

-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV080.□ - NR11

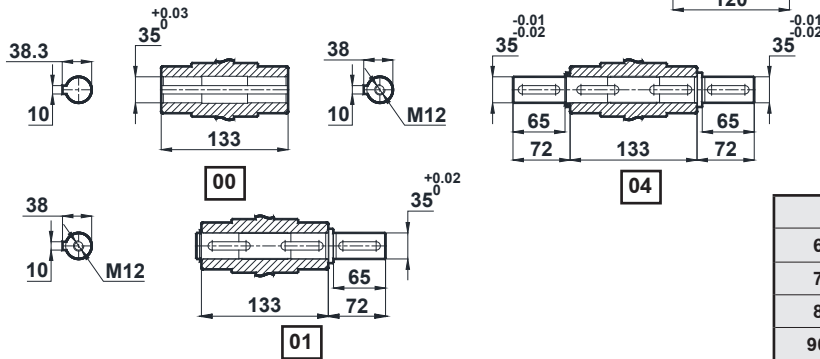


Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



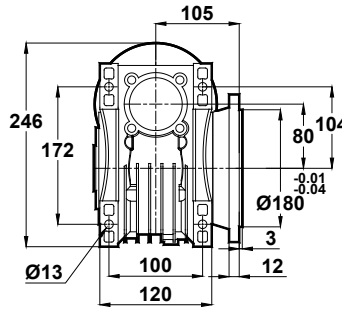
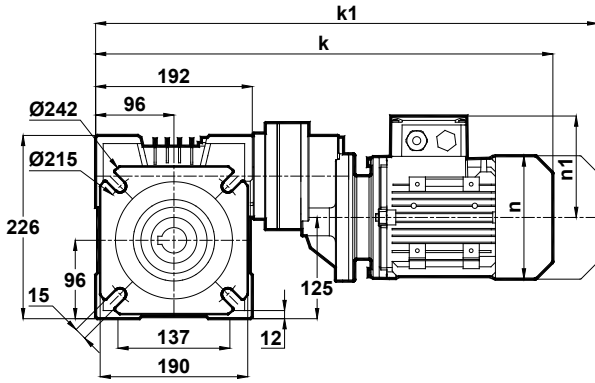
Poz. 1

63-71-80-90
Tip / Type / Typ

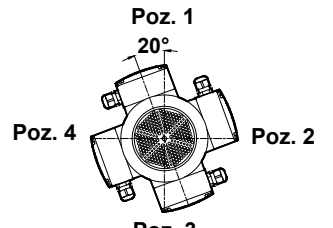


| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 482 | 543 | 121 | 97 |
| 71 | 510.5 | 601.5 | 137 | 112 |
| 80 | 544.5 | 637.5 | 155 | 121 |
| 90S | 583.5 | 687 | 176 | 132 |
| 90L | 583.5 | 687 | 176 | 132 |

EV080.□ - NR11

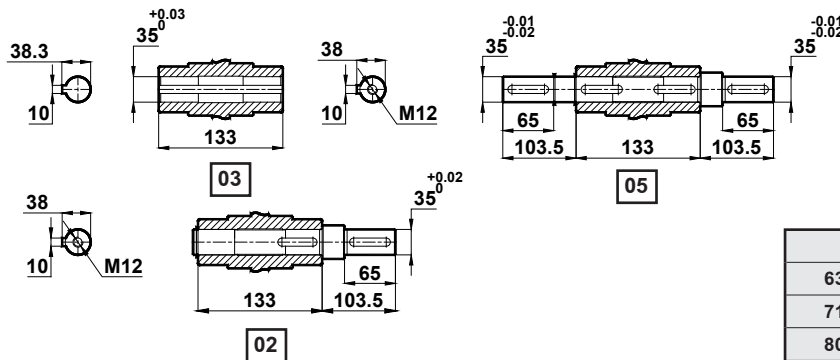


Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



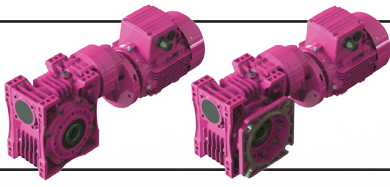
Poz. 1

63-71-80-90
Tip / Type / Typ



| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 482 | 543 | 121 | 97 |
| 71 | 510.5 | 601.5 | 137 | 112 |
| 80 | 544.5 | 637.5 | 155 | 121 |
| 90S | 583.5 | 687 | 176 | 132 |
| 90L | 583.5 | 687 | 176 | 132 |

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



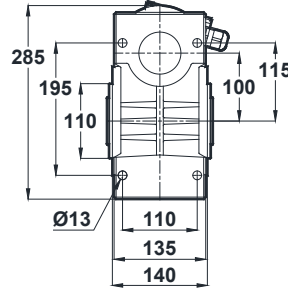
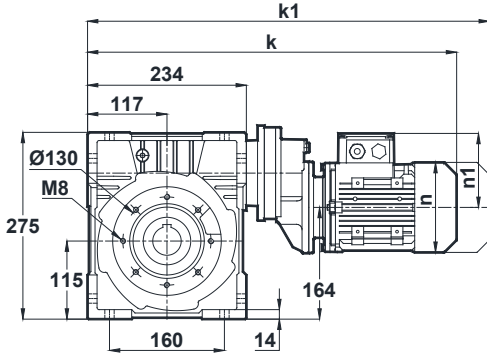
Ölçü Sayfaları Dimension Pages Abmessungenseiten



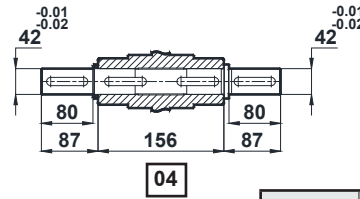
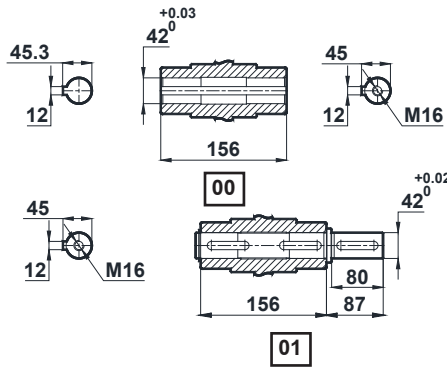
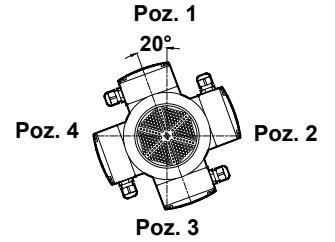
Kalkanatı.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV100.□ - NR11



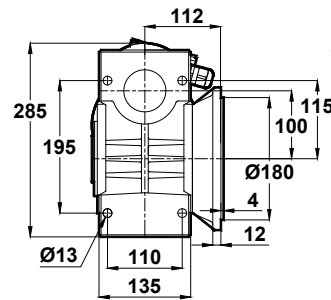
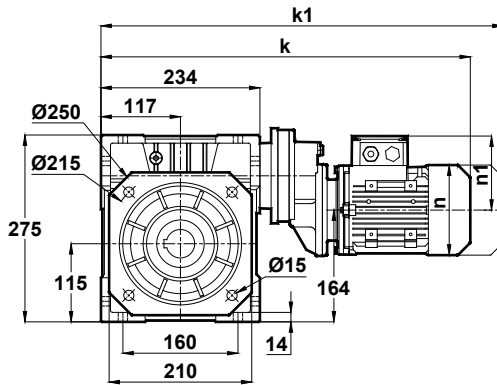
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



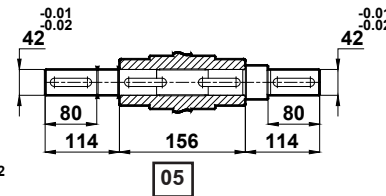
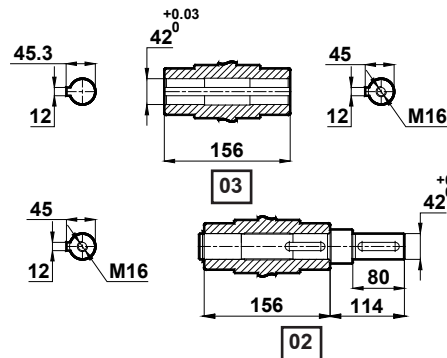
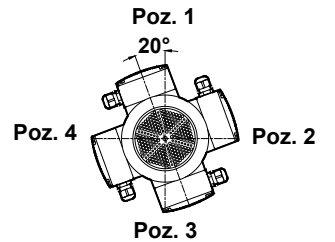
63-71-80-90
Tip / Type / Typ

| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 524 | 585 | 121 | 97 |
| 71 | 552.5 | 643.5 | 137 | 112 |
| 80 | 586.5 | 679.5 | 155 | 121 |
| 90S | 625.5 | 729 | 176 | 132 |
| 90L | 625.5 | 729 | 176 | 132 |

EV100.□ - NR11



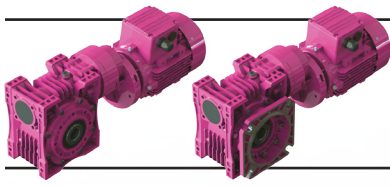
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



63-71-80-90
Tip / Type / Typ

| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 524 | 585 | 121 | 97 |
| 71 | 552.5 | 643.5 | 137 | 112 |
| 80 | 586.5 | 679.5 | 155 | 121 |
| 90S | 625.5 | 729 | 176 | 132 |
| 90L | 625.5 | 729 | 176 | 132 |

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

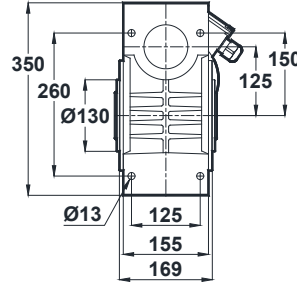
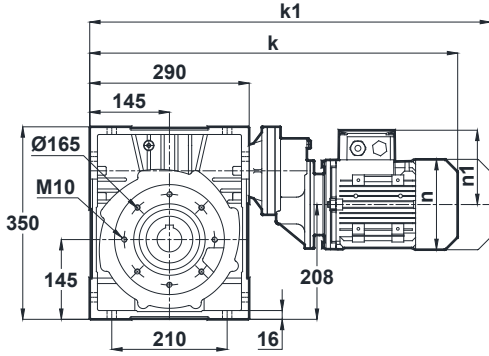
Abmessungsseiten



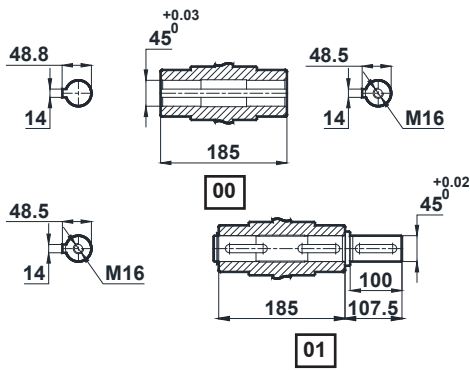
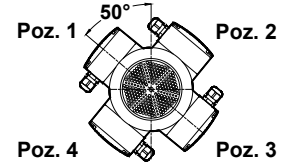
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV125.□ - NR21



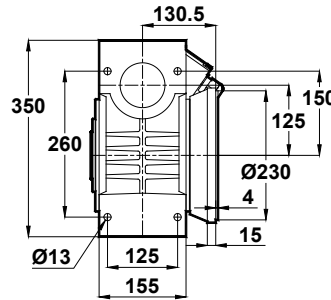
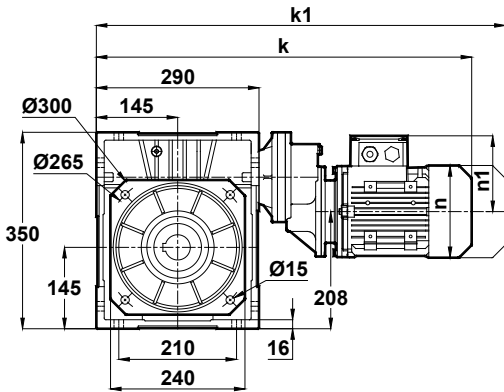
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



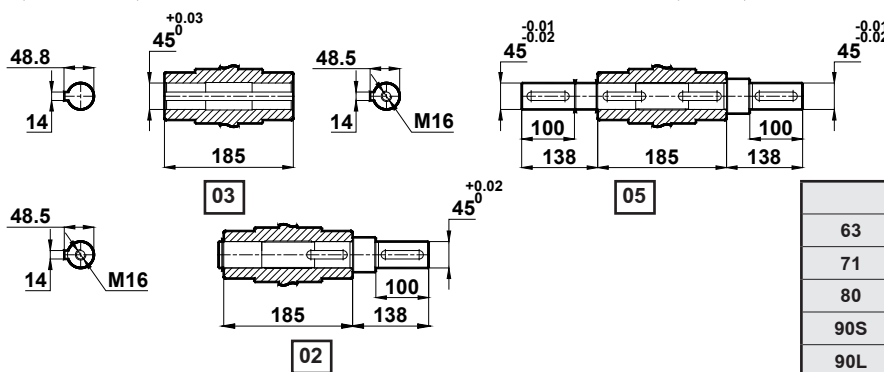
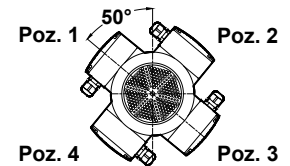
63-71-80-90-100-112
Tip / Type / Typ

| | k | k1 | n | n1 |
|------|-----|-------|-----|-----|
| 63 | 595 | 656 | 121 | 97 |
| 71 | 622 | 713 | 137 | 112 |
| 80 | 656 | 749 | 155 | 121 |
| 90S | 695 | 798.5 | 176 | 132 |
| 90L | 695 | 798.5 | 176 | 132 |
| 100L | 743 | 851.5 | 193 | 147 |
| 112M | 767 | 871.5 | 215 | 158 |

EV125.□ - NR21



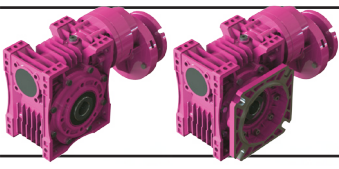
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



63-71-80-90-100-112
Tip / Type / Typ

| | k | k1 | n | n1 |
|------|-----|-------|-----|-----|
| 63 | 595 | 656 | 121 | 97 |
| 71 | 622 | 713 | 138 | 112 |
| 80 | 656 | 749 | 156 | 121 |
| 90S | 695 | 798.5 | 176 | 132 |
| 90L | 695 | 798.5 | 176 | 132 |
| 100L | 743 | 851.5 | 193 | 147 |
| 112M | 767 | 871.5 | 215 | 158 |

"k1" Ölçüsü frenli redüktörlere aittir. 56 tip elektrik motorlu redüktörler soğutmasız, diğerleri soğutmalıdır.
Dimensions "k1" is for motors with brake. Gearboxes with 56 type electrical motors are not fan cooled, other types are fan cooled.
Maße "k1" ist für Bremsenmotoren. Getrieben mit 56 Motortypen sind ohne Kühlung, andere Typen sind mit Ventilator gekühlt.



Ölçü Sayfaları

Dimension Pages

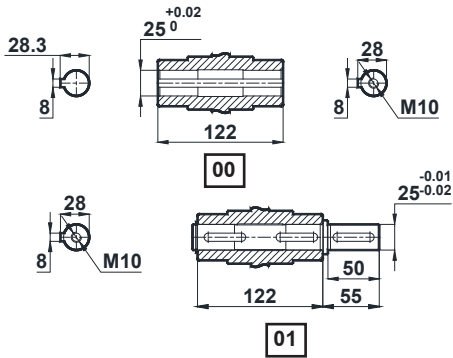
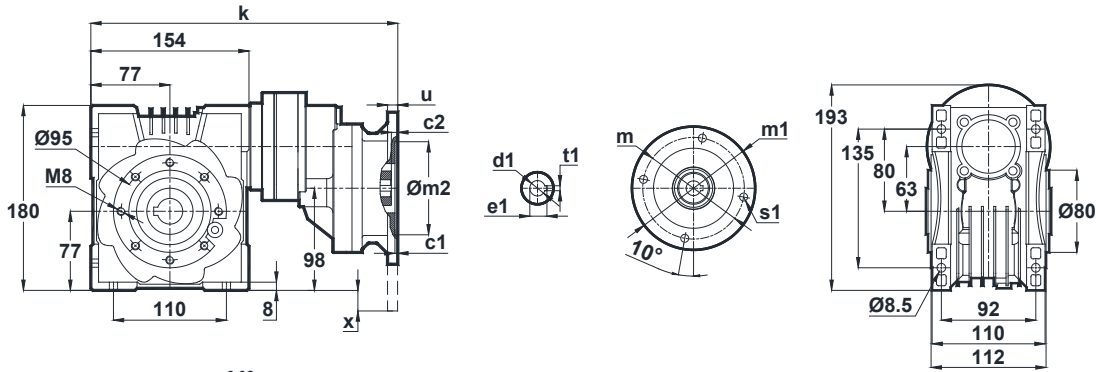
Abmessungsseiten



Kalasanati.com

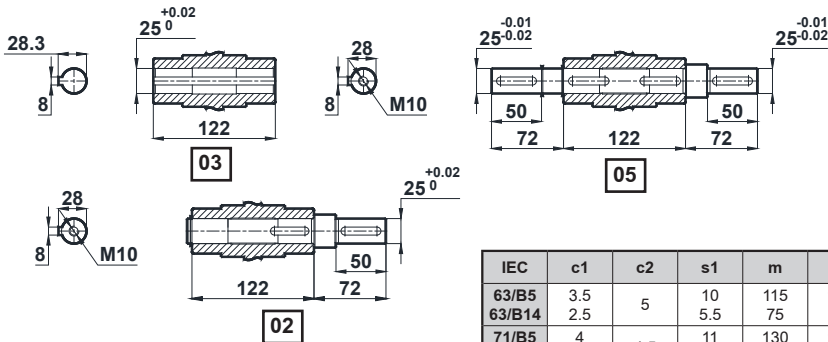
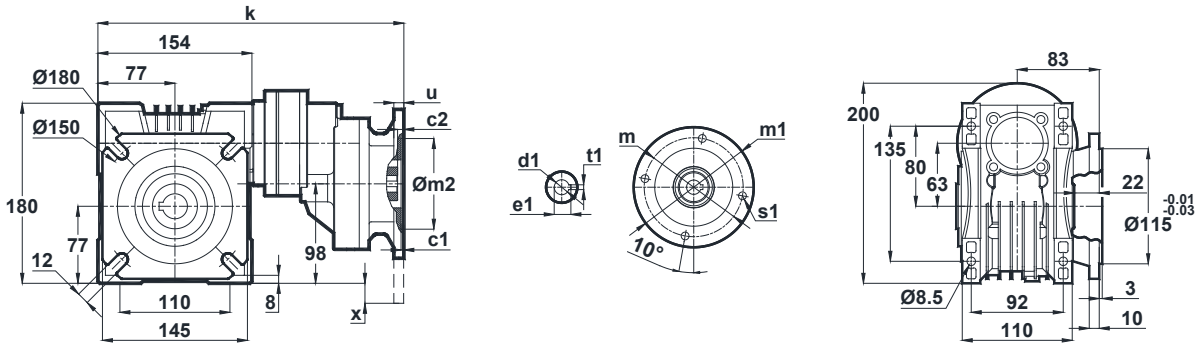
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV063.□ - NN01

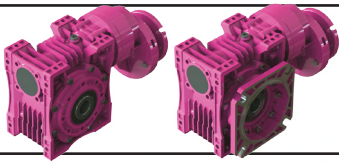


| IEC | c1 | c2 | s1 | m | m1 | m2 | u | k | d1 | t1 | e1 | x |
|--------|-----|-----|-----|-----|-----|-----|----|-------|----|----|------|---|
| 63/B5 | 3.5 | 5 | 10 | 115 | 140 | 95 | 10 | 291.7 | 11 | 4 | 12.8 | - |
| 63/B14 | 2.5 | 5 | 5.5 | 75 | 90 | 60 | 10 | 291.7 | 11 | 4 | 12.8 | - |
| 71/B5 | 4 | 4.5 | 11 | 130 | 160 | 110 | 12 | 293.2 | 14 | 5 | 16.3 | - |
| 71/B14 | 3 | 4.5 | 7 | 85 | 105 | 70 | 10 | 293.2 | 14 | 5 | 16.3 | - |
| 80/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 308.2 | 19 | 6 | 21.8 | 2 |
| 80/B14 | 4 | 5 | 7 | 100 | 120 | 80 | 12 | 308.2 | 19 | 6 | 21.8 | - |
| 90/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 308.2 | 24 | 8 | 27.3 | 2 |
| 90/B14 | 4 | 5 | 9 | 115 | 140 | 95 | 12 | 308.2 | 24 | 8 | 27.3 | - |

EV063.□ - NN01



| IEC | c1 | c2 | s1 | m | m1 | m2 | u | k | d1 | t1 | e1 | x |
|--------|-----|-----|-----|-----|-----|-----|----|-------|----|----|------|---|
| 63/B5 | 3.5 | 5 | 10 | 115 | 140 | 95 | 10 | 291.7 | 11 | 4 | 12.8 | - |
| 63/B14 | 2.5 | 5 | 5.5 | 75 | 90 | 60 | 10 | 291.7 | 11 | 4 | 12.8 | - |
| 71/B5 | 4 | 4.5 | 11 | 130 | 160 | 110 | 12 | 293.2 | 14 | 5 | 16.3 | - |
| 71/B14 | 3 | 4.5 | 7 | 85 | 105 | 70 | 10 | 293.2 | 14 | 5 | 16.3 | - |
| 80/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 308.2 | 19 | 6 | 21.8 | 2 |
| 80/B14 | 4 | 5 | 7 | 100 | 120 | 80 | 12 | 308.2 | 19 | 6 | 21.8 | - |
| 90/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 308.2 | 24 | 8 | 27.3 | 2 |
| 90/B14 | 4 | 5 | 9 | 115 | 140 | 95 | 12 | 308.2 | 24 | 8 | 27.3 | - |



Ölçü Sayfaları

Dimension Pages

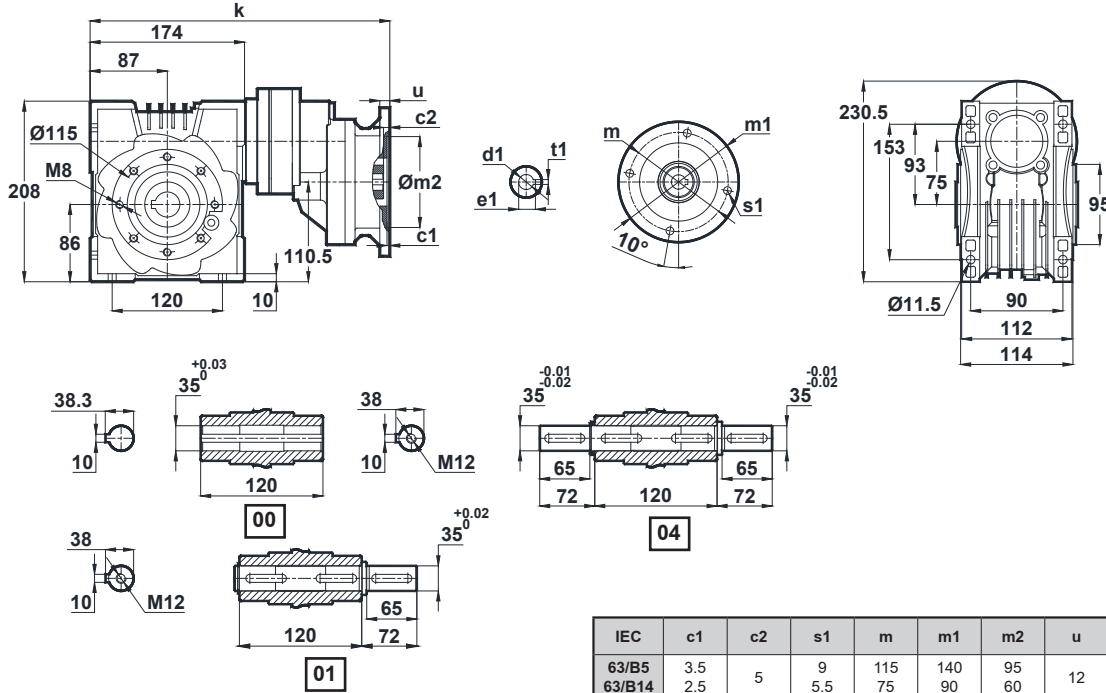
Abmessungsseiten



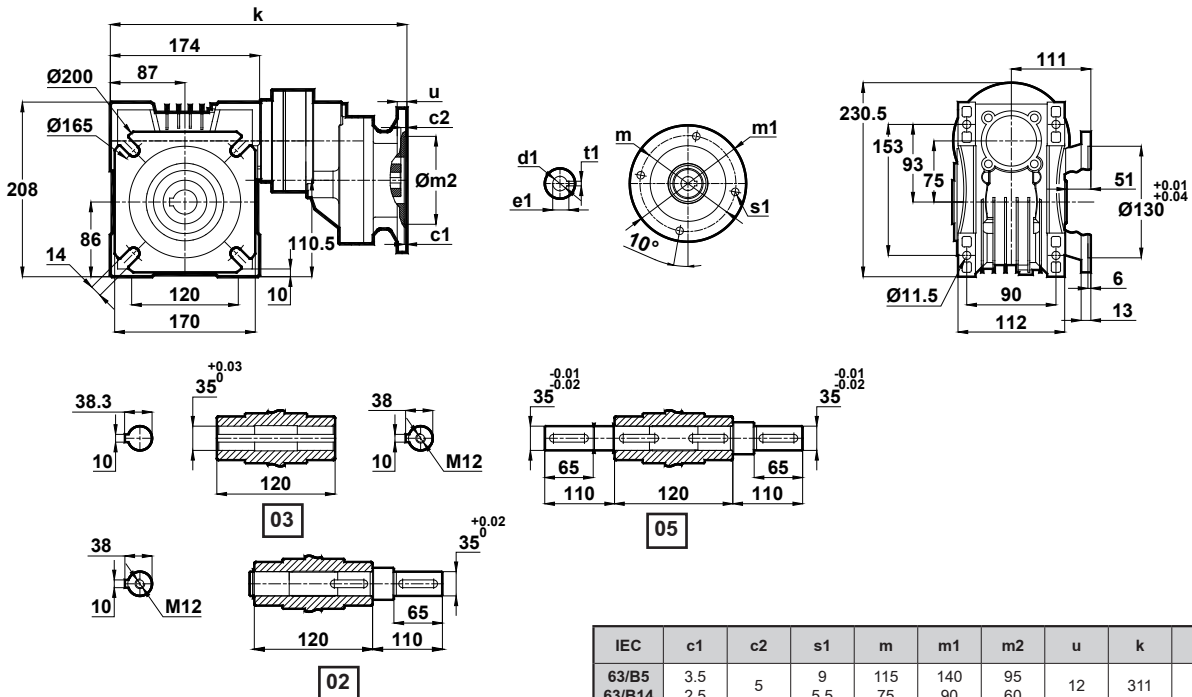
Kalasanati.com

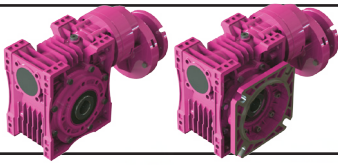
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EV075.□ - NN11



EV075.□ - NN11





Ölçü Sayfaları

Dimension Pages

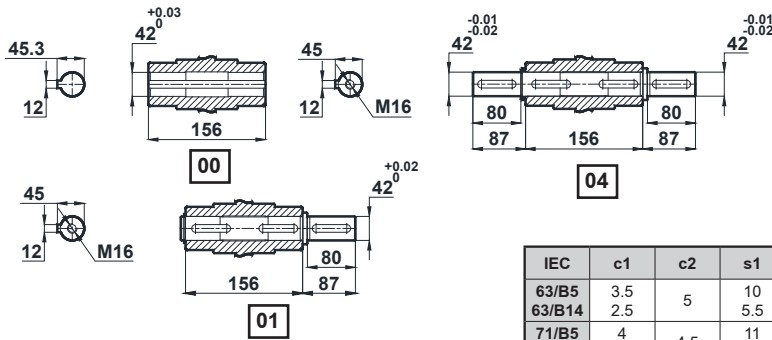
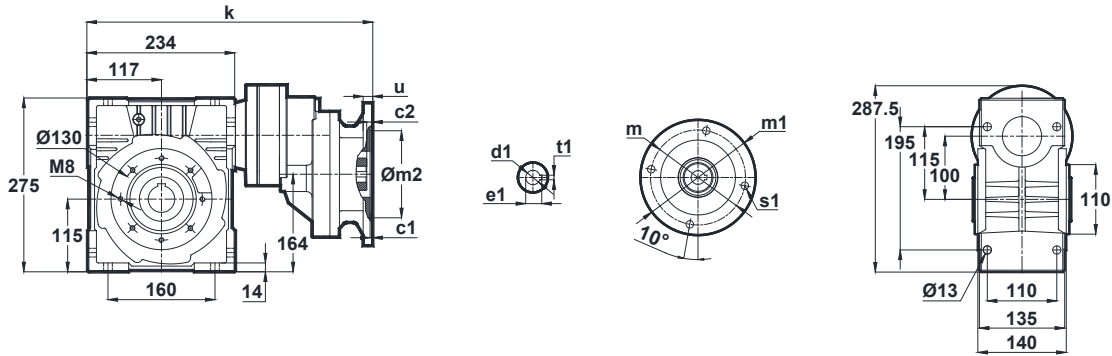
Abmessungsseiten



Kalasanati.com

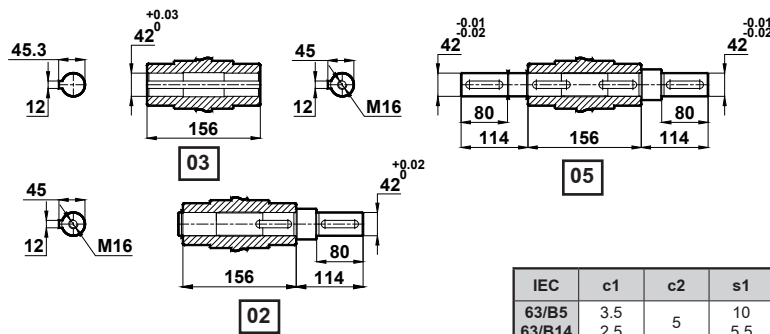
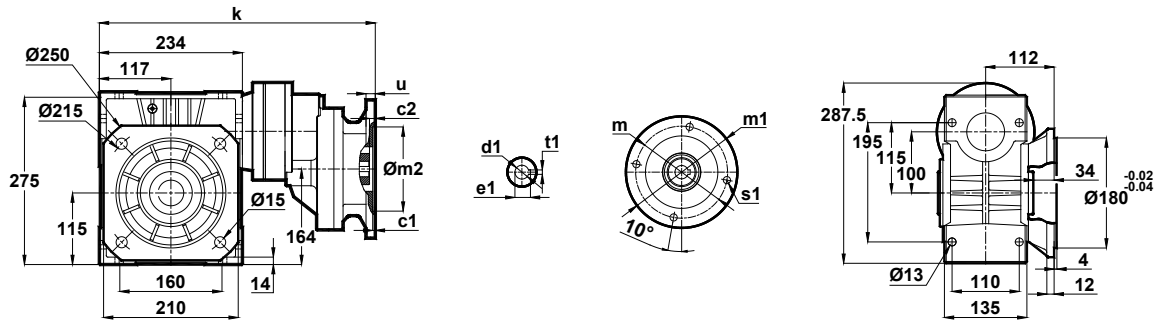
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EV100.□ - NN11

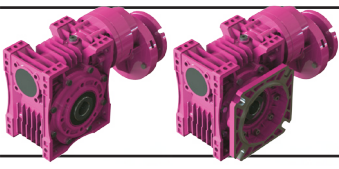


| IEC | c1 | c2 | s1 | m | m1 | m2 | u | k | d1 | t1 | e1 |
|--------|-----|-----|-----|-----|-----|-----|----|-----|----|----|------|
| 63/B5 | 3.5 | 5 | 10 | 115 | 140 | 95 | 10 | 371 | 11 | 4 | 12.8 |
| 63/B14 | 2.5 | 5 | 5.5 | 75 | 90 | 60 | 10 | 371 | 11 | 4 | 12.8 |
| 71/B5 | 4 | 4.5 | 11 | 130 | 160 | 110 | 12 | 371 | 14 | 5 | 16.3 |
| 71/B14 | 3 | 4.5 | 7 | 85 | 105 | 70 | 10 | 371 | 14 | 5 | 16.3 |
| 80/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 386 | 19 | 6 | 21.8 |
| 80/B14 | 4 | 5 | 7 | 100 | 120 | 80 | 12 | 386 | 19 | 6 | 21.8 |
| 90/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 386 | 24 | 8 | 27.3 |
| 90/B14 | 4 | 5 | 9 | 115 | 140 | 95 | 12 | 386 | 24 | 8 | 27.3 |

EV100.□ - NN11



| IEC | c1 | c2 | s1 | m | m1 | m2 | u | k | d1 | t1 | e1 |
|--------|-----|-----|-----|-----|-----|-----|----|-----|----|----|------|
| 63/B5 | 3.5 | 5 | 10 | 115 | 140 | 95 | 10 | 371 | 11 | 4 | 12.8 |
| 63/B14 | 2.5 | 5 | 5.5 | 75 | 90 | 60 | 10 | 371 | 11 | 4 | 12.8 |
| 71/B5 | 4 | 4.5 | 11 | 130 | 160 | 110 | 12 | 371 | 14 | 5 | 16.3 |
| 71/B14 | 3 | 4.5 | 7 | 85 | 105 | 70 | 10 | 371 | 14 | 5 | 16.3 |
| 80/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 386 | 19 | 6 | 21.8 |
| 80/B14 | 4 | 5 | 7 | 100 | 120 | 80 | 12 | 386 | 19 | 6 | 21.8 |
| 90/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 386 | 24 | 8 | 27.3 |
| 90/B14 | 4 | 5 | 9 | 115 | 140 | 95 | 12 | 386 | 24 | 8 | 27.3 |



Ölçü Sayfaları

Dimension Pages

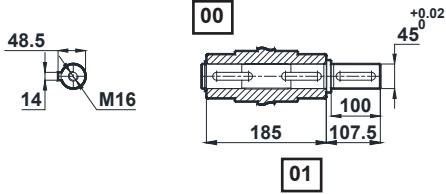
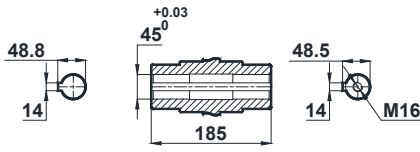
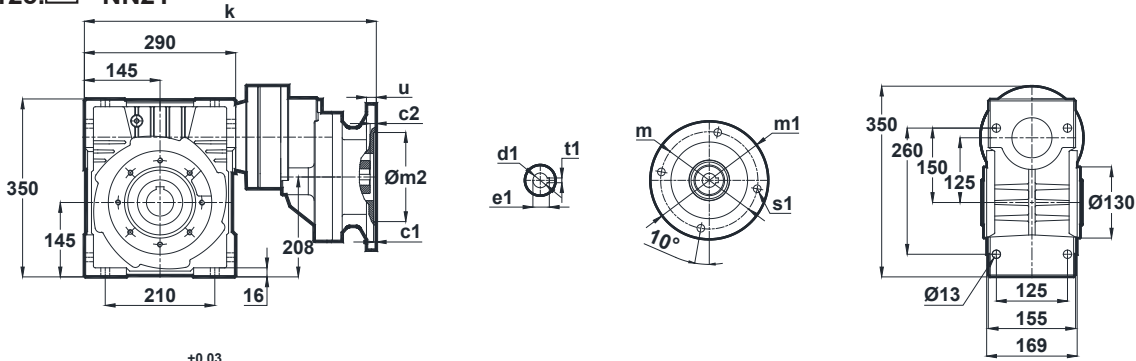
Abmessungenseiten



Kalasanati.com

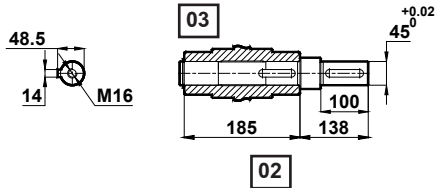
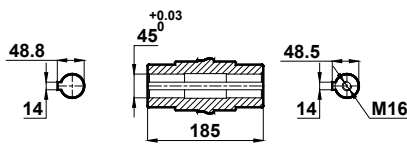
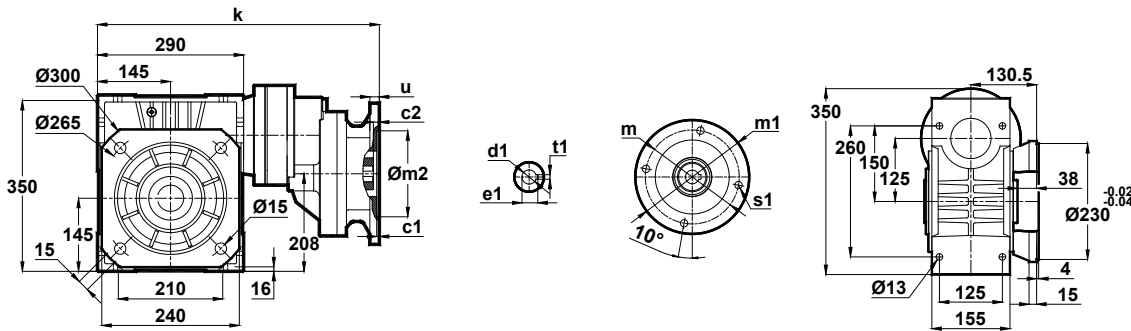
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV125.□ - NN21

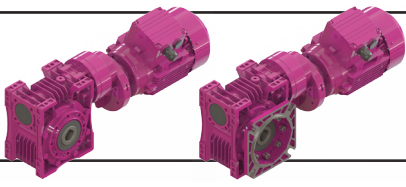


| IEC | c1 | c2 | s1 | m | m1 | m2 | u | k | d1 | t1 | e1 |
|---------|-----|-----|----|-----|-----|-----|----|-------|----|----|------|
| 63/B5 | 3.5 | 5 | 9 | 115 | 140 | 95 | 12 | 474.5 | 11 | 4 | 12.8 |
| 71/B5 | 4 | 8.5 | 11 | 130 | 160 | 110 | 12 | 445.5 | 14 | 5 | 16.3 |
| 80/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 474.5 | 19 | 6 | 21.8 |
| 90/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 474.5 | 24 | 8 | 27.3 |
| 100/B5 | 4.5 | 5.5 | 15 | 215 | 250 | 180 | 12 | 467.5 | 28 | 8 | 31.3 |
| 112/B5 | 4.5 | 5.5 | 15 | 215 | 250 | 180 | 12 | 467.5 | 28 | 8 | 31.3 |
| 112/B14 | 3.5 | 5.5 | 9 | 130 | 160 | 110 | | | | | |

EV125.□ - NN21



| IEC | c1 | c2 | s1 | m | m1 | m2 | u | k | d1 | t1 | e1 |
|---------|-----|-----|----|-----|-----|-----|----|-------|----|----|------|
| 63/B5 | 3.5 | 5 | 9 | 115 | 140 | 95 | 12 | 474.5 | 11 | 4 | 12.8 |
| 71/B5 | 4 | 8.5 | 11 | 130 | 160 | 110 | 12 | 445.5 | 14 | 5 | 16.3 |
| 80/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 474.5 | 19 | 6 | 21.8 |
| 90/B5 | 4 | 5 | 12 | 165 | 200 | 130 | 12 | 474.5 | 24 | 8 | 27.3 |
| 100/B5 | 4.5 | 5.5 | 15 | 215 | 250 | 180 | 12 | 467.5 | 28 | 8 | 31.3 |
| 112/B5 | 4.5 | 5.5 | 15 | 215 | 250 | 180 | 12 | 467.5 | 28 | 8 | 31.3 |
| 112/B14 | 3.5 | 5.5 | 9 | 130 | 160 | 110 | | | | | |



Ölçü Sayfaları

Dimension Pages

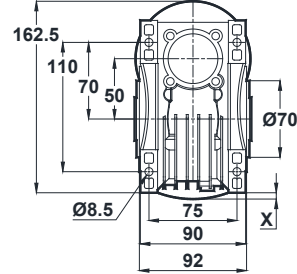
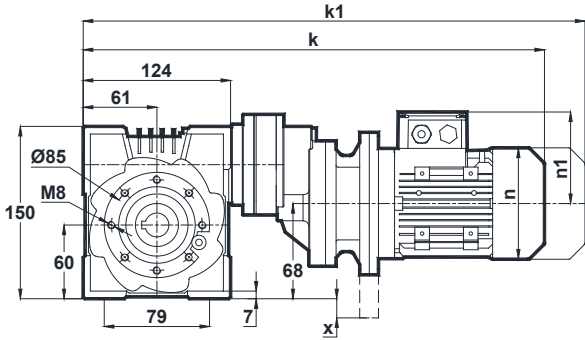
Abmessungsseiten



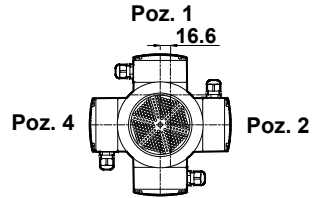
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EV050.□ - NV01

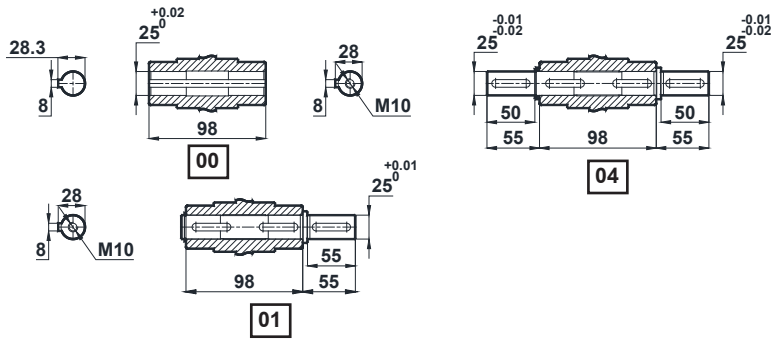


Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



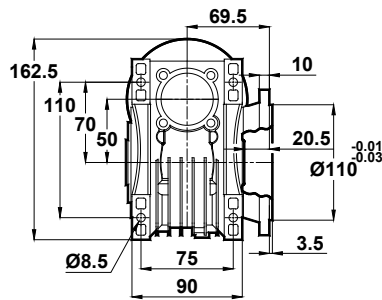
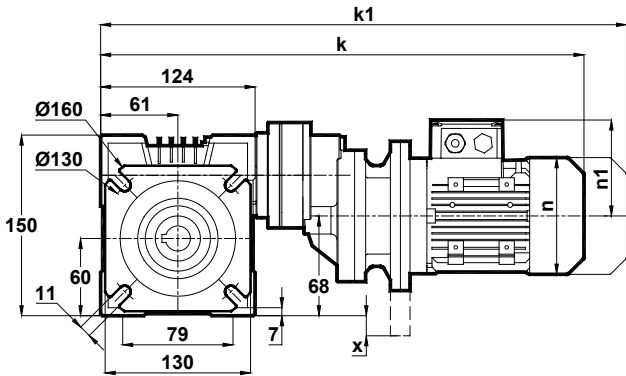
Poz. 3

63-71-80-90
Tip / Type / Typ

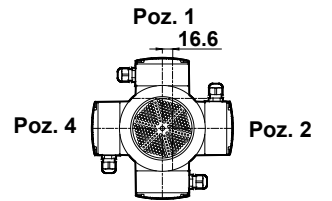


| | k | k1 | n | n1 | x |
|-----|-------|-------|-----|-----|-----|
| 63 | 416.2 | 477.2 | 121 | 97 | - |
| 71 | 444.7 | 535.7 | 137 | 112 | 0.5 |
| 80 | 478.7 | 571.7 | 155 | 121 | 9.5 |
| 90S | 517.7 | 621.2 | 176 | 132 | 20 |
| 90L | 517.7 | 621.2 | 176 | 132 | 20 |

EV050.□ - NV01

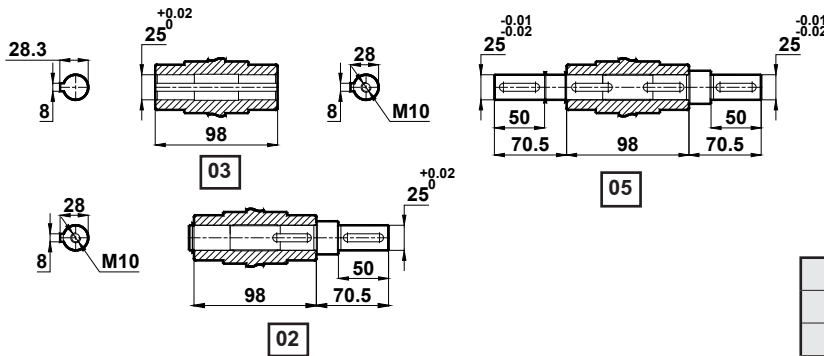


Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten

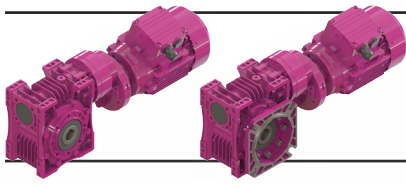


Poz. 3

63-71-80-90
Tip / Type / Typ



| | k | k1 | n | n1 | x |
|-----|-------|-------|-----|-----|-----|
| 63 | 416.2 | 477.2 | 121 | 97 | - |
| 71 | 444.7 | 535.7 | 137 | 112 | 0.5 |
| 80 | 478.7 | 571.7 | 155 | 121 | 9.5 |
| 90S | 517.7 | 621.2 | 176 | 132 | 20 |
| 90L | 517.7 | 621.2 | 176 | 132 | 20 |



Ölçü Sayfaları

Dimension Pages

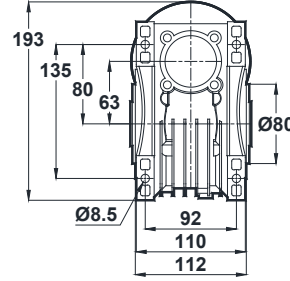
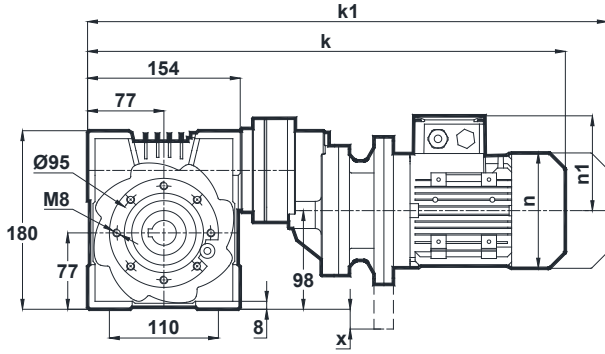
Abmessungsseiten



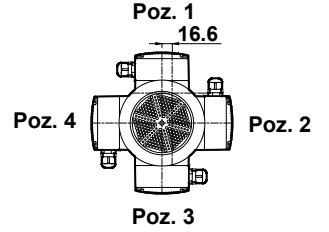
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

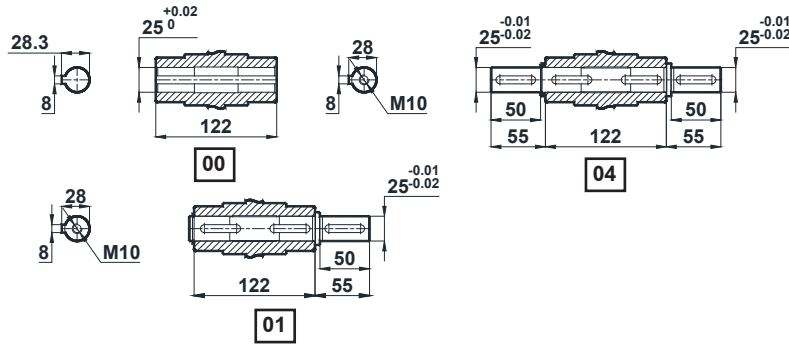
EV063.□ - NV01



Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten

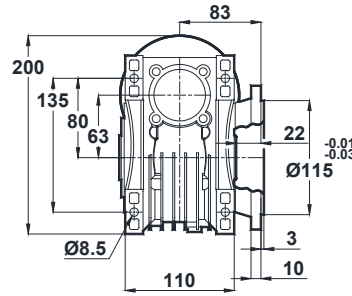
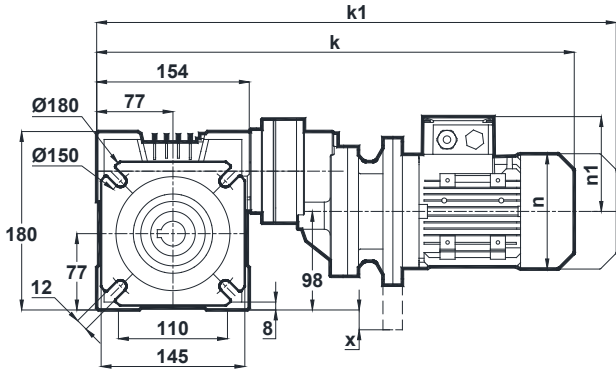


63-71-80-90
Tip / Type / Typ

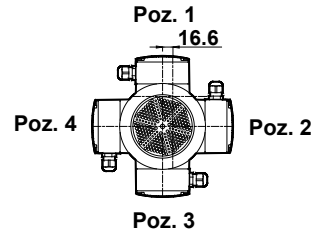


| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 446.2 | 507.2 | 121 | 97 |
| 71 | 474.7 | 565.7 | 137 | 112 |
| 80 | 508.7 | 601.7 | 155 | 121 |
| 90S | 547.7 | 651.2 | 176 | 132 |
| 90L | 547.7 | 651.2 | 176 | 132 |

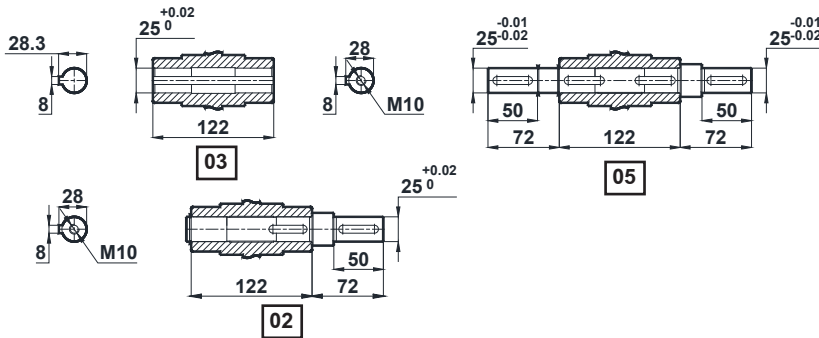
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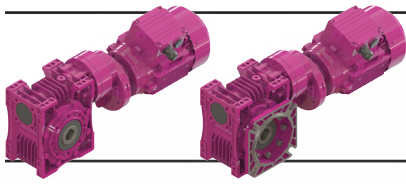
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



63-71-80-90
Tip / Type / Typ



| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 446.2 | 507.2 | 121 | 97 |
| 71 | 474.7 | 565.7 | 137 | 112 |
| 80 | 508.7 | 601.7 | 155 | 121 |
| 90S | 547.7 | 651.2 | 176 | 132 |
| 90L | 547.7 | 651.2 | 176 | 132 |



Ölçü Sayfaları

Dimension Pages

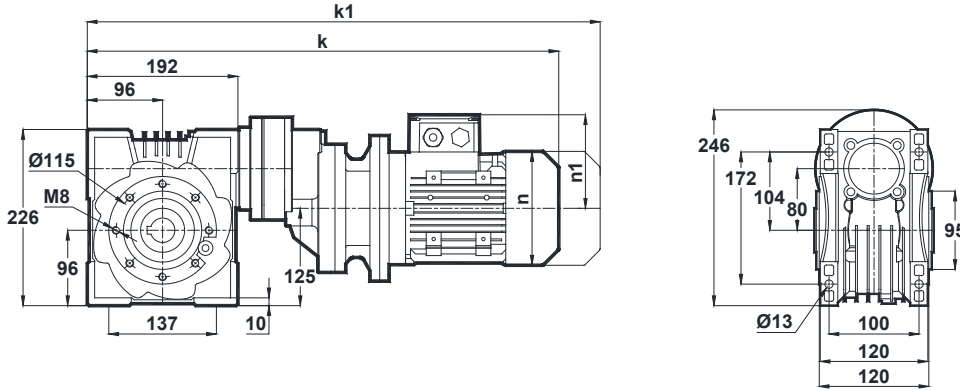
Abmessungsseiten



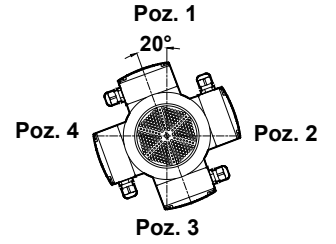
Kalasanati.com

-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

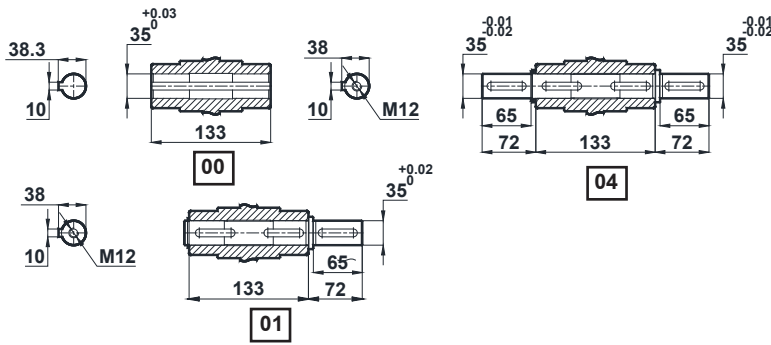
EV080.□ - NV11



Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten

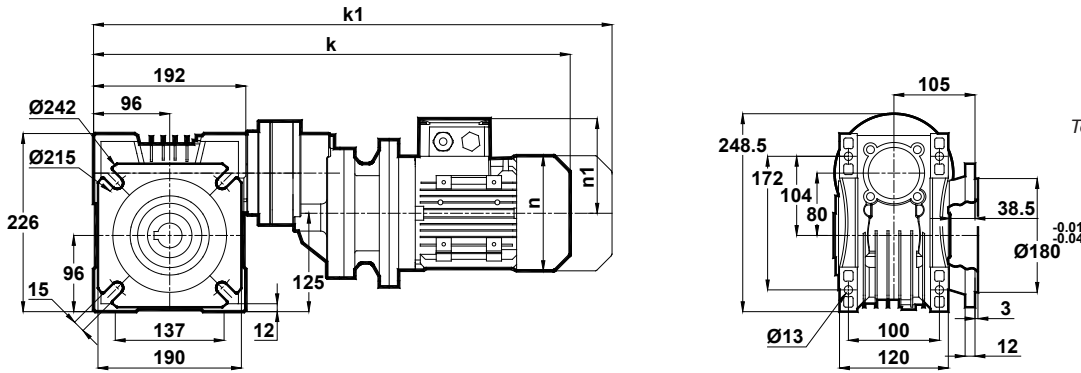


63-71-80-90
Tip / Type / Typ

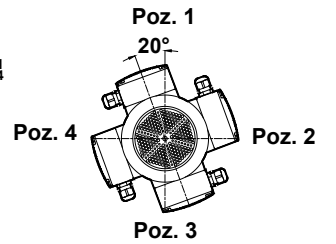


| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 482 | 543 | 121 | 97 |
| 71 | 510.5 | 601.5 | 137 | 112 |
| 80 | 544.5 | 637.5 | 155 | 121 |
| 90S | 583.5 | 687 | 176 | 132 |
| 90L | 583.5 | 687 | 176 | 132 |

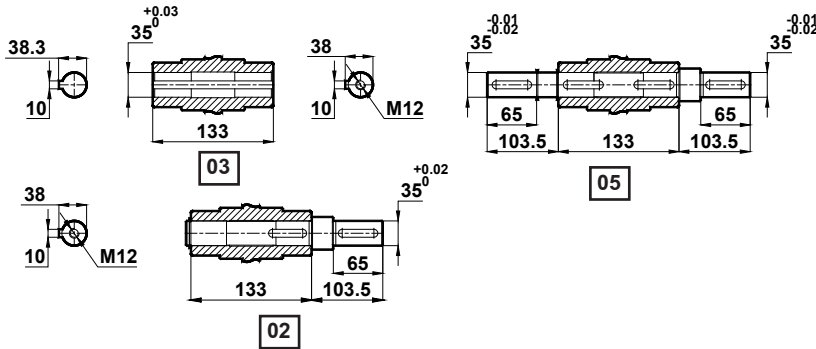
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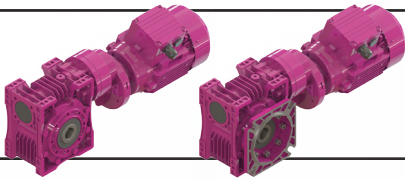
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



63-71-80-90
Tip / Type / Typ



| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 482 | 543 | 121 | 97 |
| 71 | 510.5 | 601.5 | 137 | 112 |
| 80 | 544.5 | 637.5 | 155 | 121 |
| 90S | 583.5 | 687 | 176 | 132 |
| 90L | 583.5 | 687 | 176 | 132 |



Ölçü Sayfaları

Dimension Pages

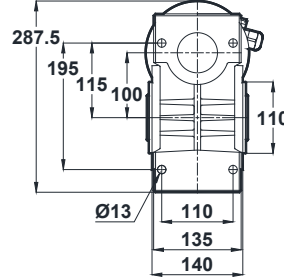
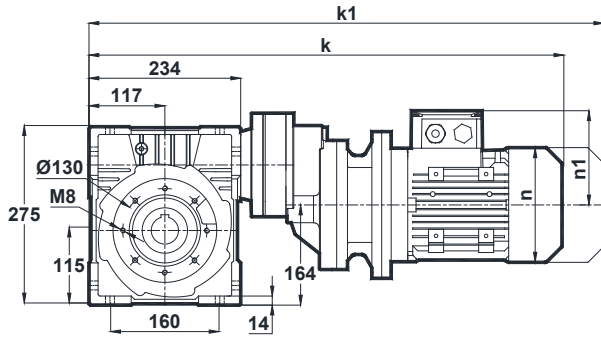
Abmessungsseiten



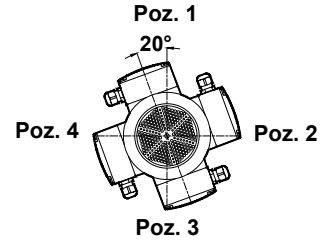
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

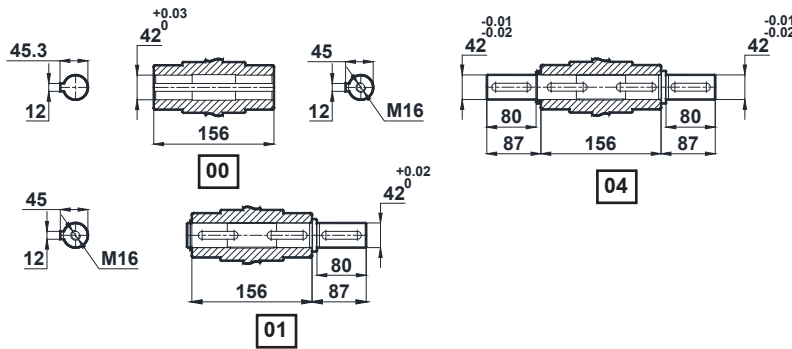
EV100.□ - NV11



Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten

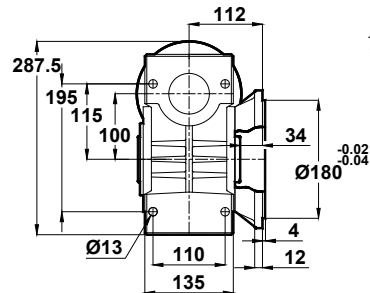
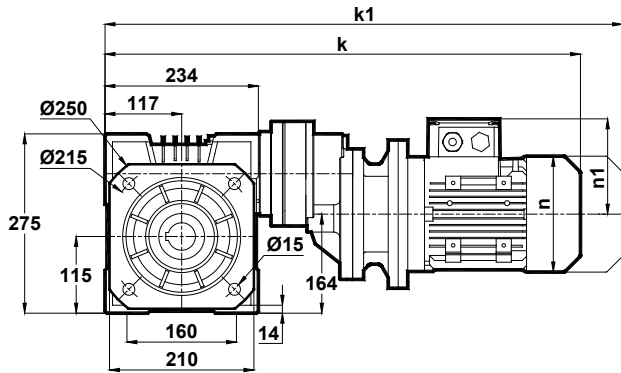


63-71-80-90
Tip / Type / Typ

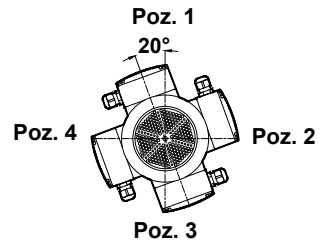


| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 524 | 585 | 121 | 97 |
| 71 | 552.5 | 643.5 | 137 | 112 |
| 80 | 586.5 | 679.5 | 155 | 121 |
| 90S | 625.5 | 729 | 176 | 132 |
| 90L | 625.5 | 729 | 176 | 132 |

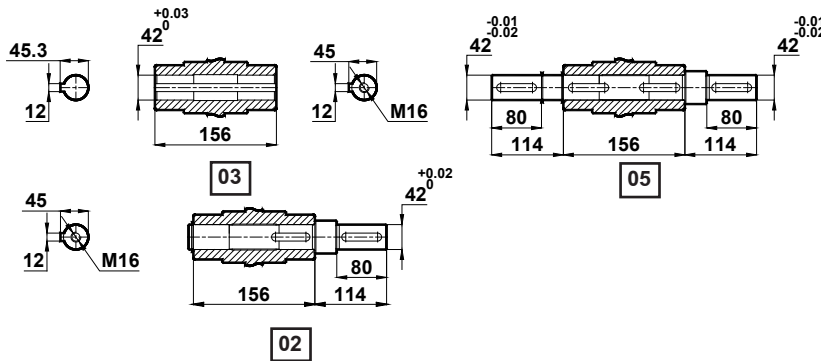
EV100.□ - NV11



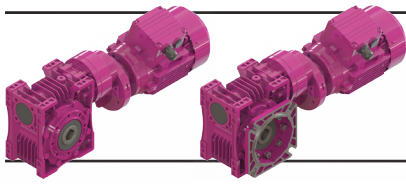
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



63-71-80-90
Tip / Type / Typ



| | k | k1 | n | n1 |
|-----|-------|-------|-----|-----|
| 63 | 524 | 585 | 121 | 97 |
| 71 | 552.5 | 643.5 | 137 | 112 |
| 80 | 586.5 | 679.5 | 155 | 121 |
| 90S | 625.5 | 729 | 176 | 132 |
| 90L | 625.5 | 729 | 176 | 132 |



Ölçü Sayfaları

Dimension Pages

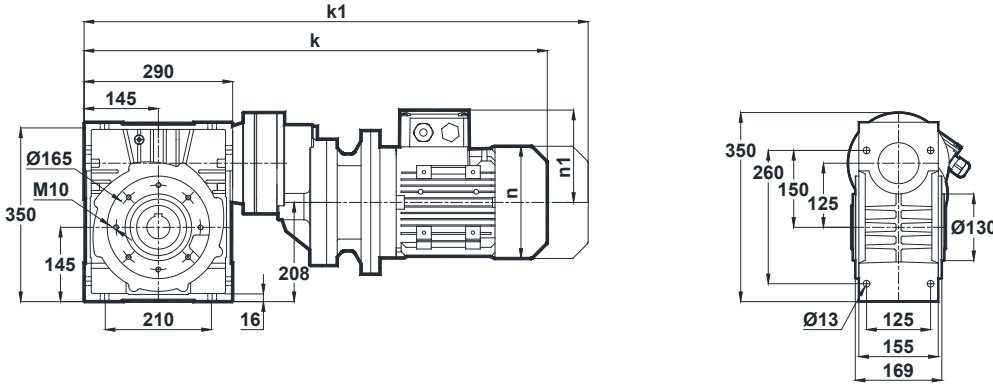
Abmessungsseiten



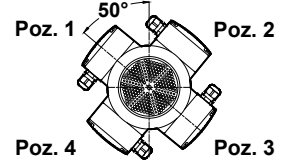
Kalasanati.com

-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

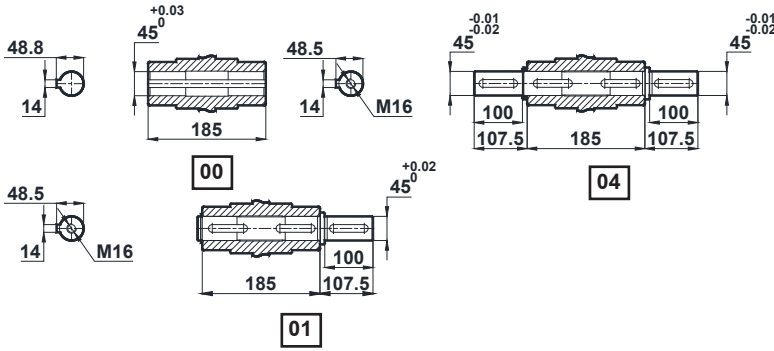
EV125.□ - NV21



Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten

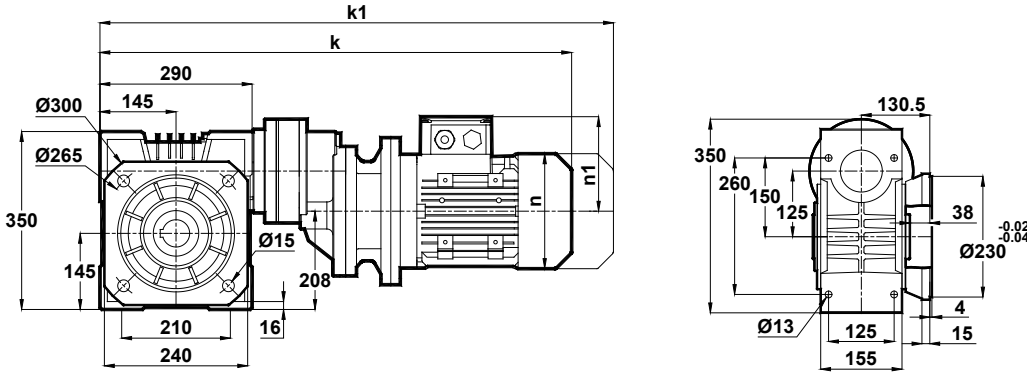


63-71-80-90-100-112
Tip / Type / Typ

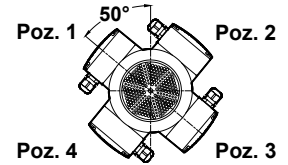


| | k | k1 | n | n1 |
|------|-----|-------|-----|-----|
| 63 | 595 | 656 | 121 | 97 |
| 71 | 622 | 713 | 137 | 112 |
| 80 | 656 | 749 | 155 | 121 |
| 90S | 695 | 798.5 | 176 | 132 |
| 90L | 695 | 798.5 | 176 | 132 |
| 100L | 743 | 851.5 | 193 | 147 |
| 112M | 767 | 871.5 | 215 | 158 |

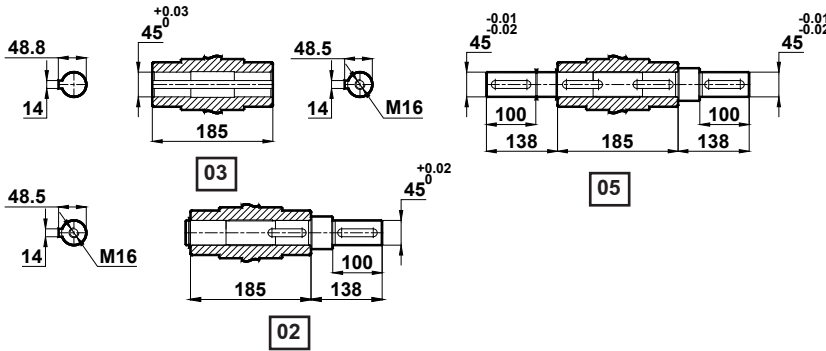
EV125.□ - NV21



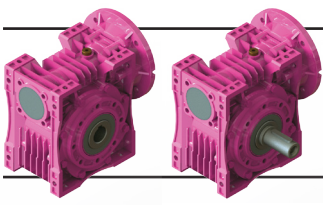
Klemens Pozisyonları
Terminal Box Positions / Klemmenkasten



63-71-80-90-100-112
Tip / Type / Typ



| | k | k1 | n | n1 |
|------|-----|-------|-----|-----|
| 63 | 595 | 656 | 121 | 97 |
| 71 | 622 | 713 | 138 | 112 |
| 80 | 656 | 749 | 156 | 121 |
| 90S | 695 | 798.5 | 176 | 132 |
| 90L | 695 | 798.5 | 176 | 132 |
| 100L | 743 | 851.5 | 194 | 147 |
| 112M | 767 | 871.5 | 218 | 158 |



Ölçü Sayfaları

Dimension Pages

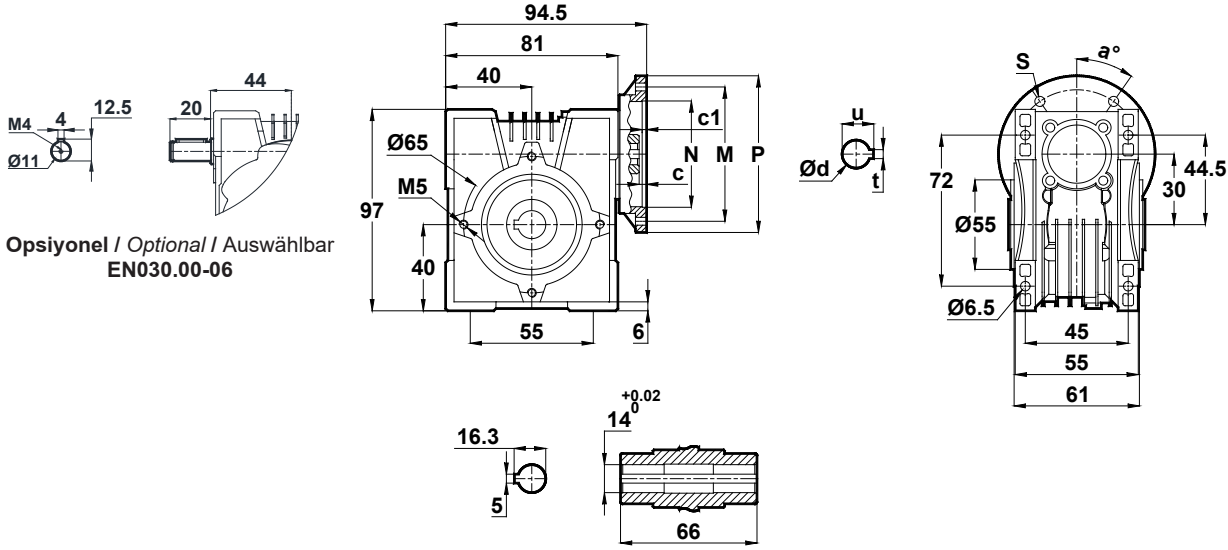
Abmessungsseiten



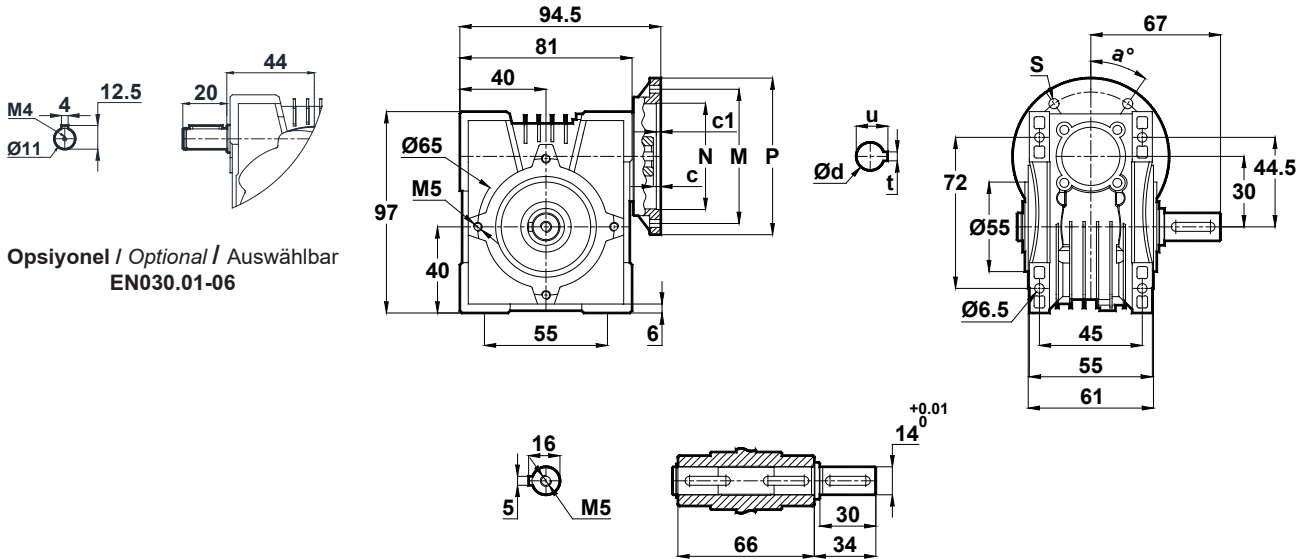
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

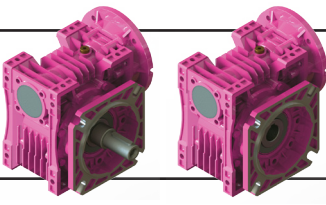
EN030.00



EN030.01



| EN030 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|-----|----|-----|-----|----|------|---|-----|-----|
| 56/B14 | 4.2 | 3 | 50 | 65 | 80 | 9 | 10.4 | 3 | 45° | 5.5 |
| 63/B14 | 4.2 | 2.5 | 60 | 75 | 90 | 11 | 12.8 | 4 | 45° | 5.5 |
| 63/B5 | 4.2 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |



Ölçü Sayfaları

Dimension Pages

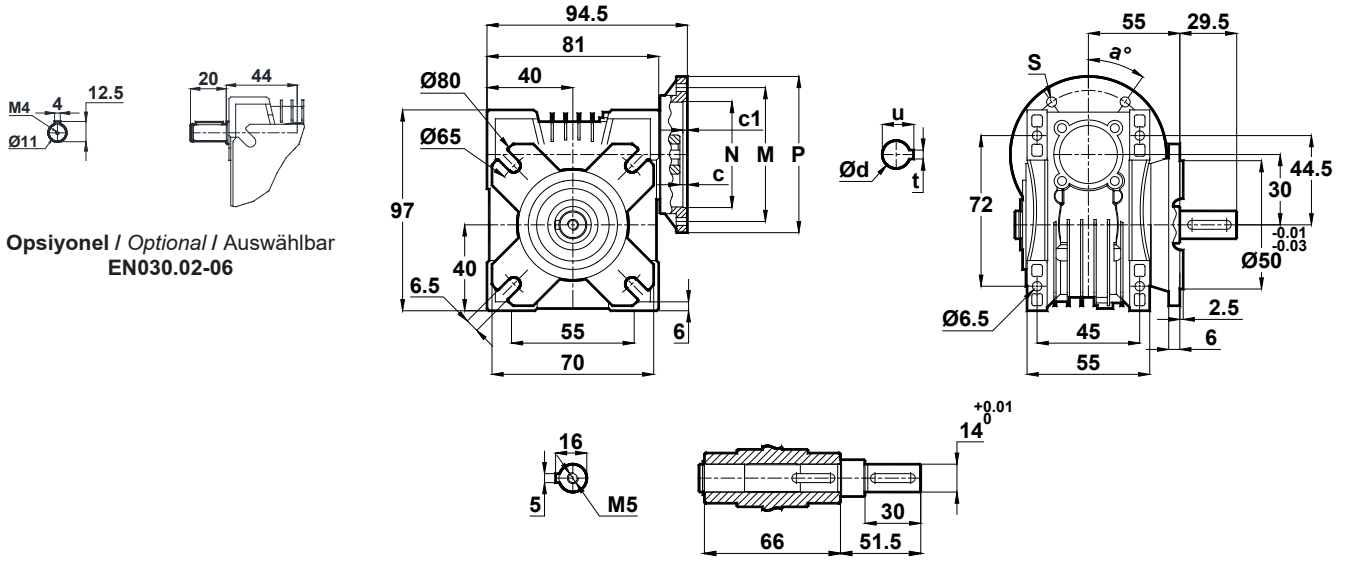
Abmessungsseiten



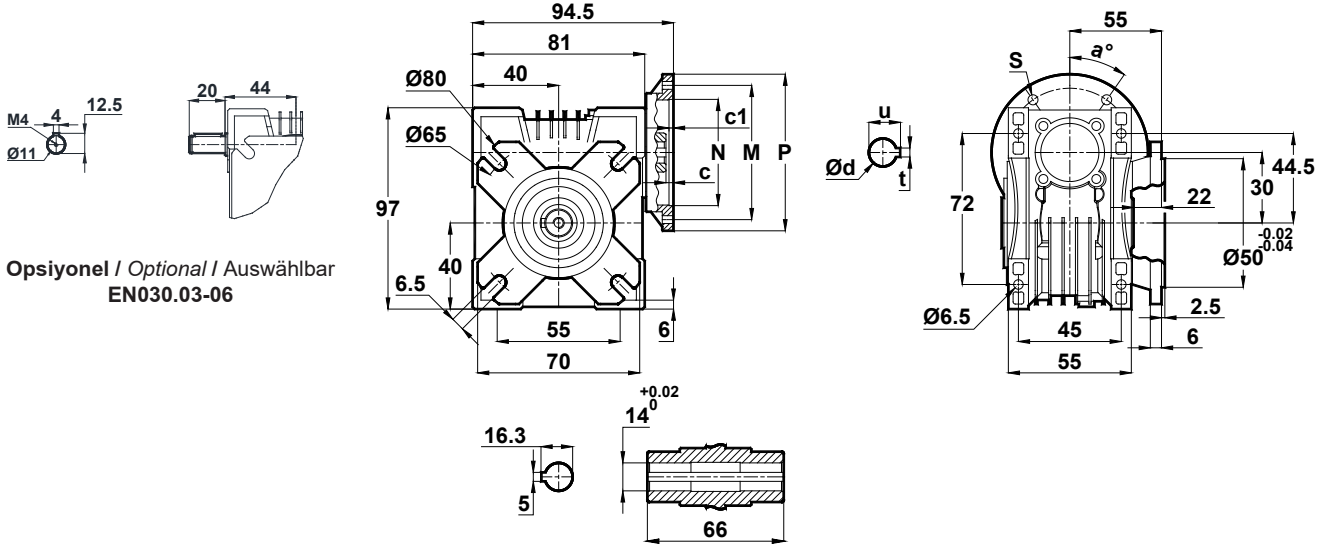
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

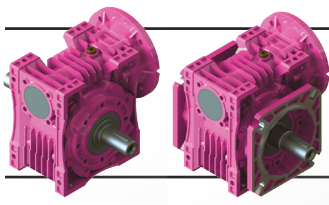
EN030.02



EN030.03



| EN030 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|-----|----|-----|-----|----|------|---|-----|-----|
| 56/B14 | 4.2 | 3 | 50 | 65 | 80 | 9 | 10.4 | 3 | 45° | 5.5 |
| 63/B14 | 4.2 | 2.5 | 60 | 75 | 90 | 11 | 12.8 | 4 | 45° | 5.5 |
| 63/B5 | 4.2 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |



Ölçü Sayfaları

Dimension Pages

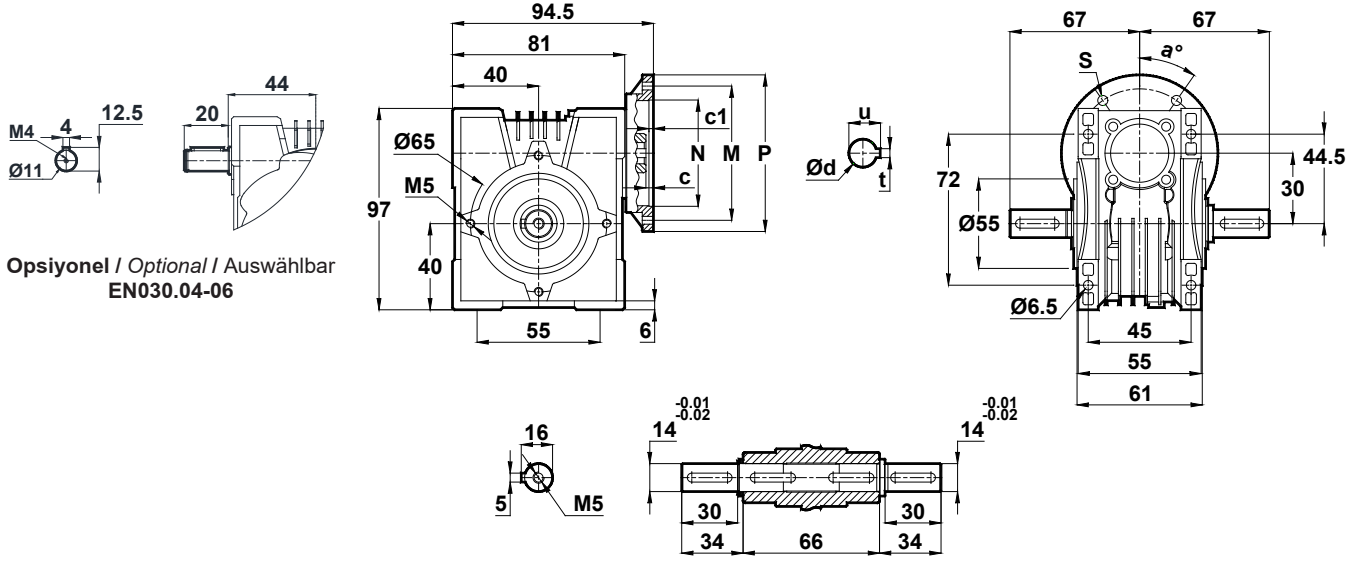
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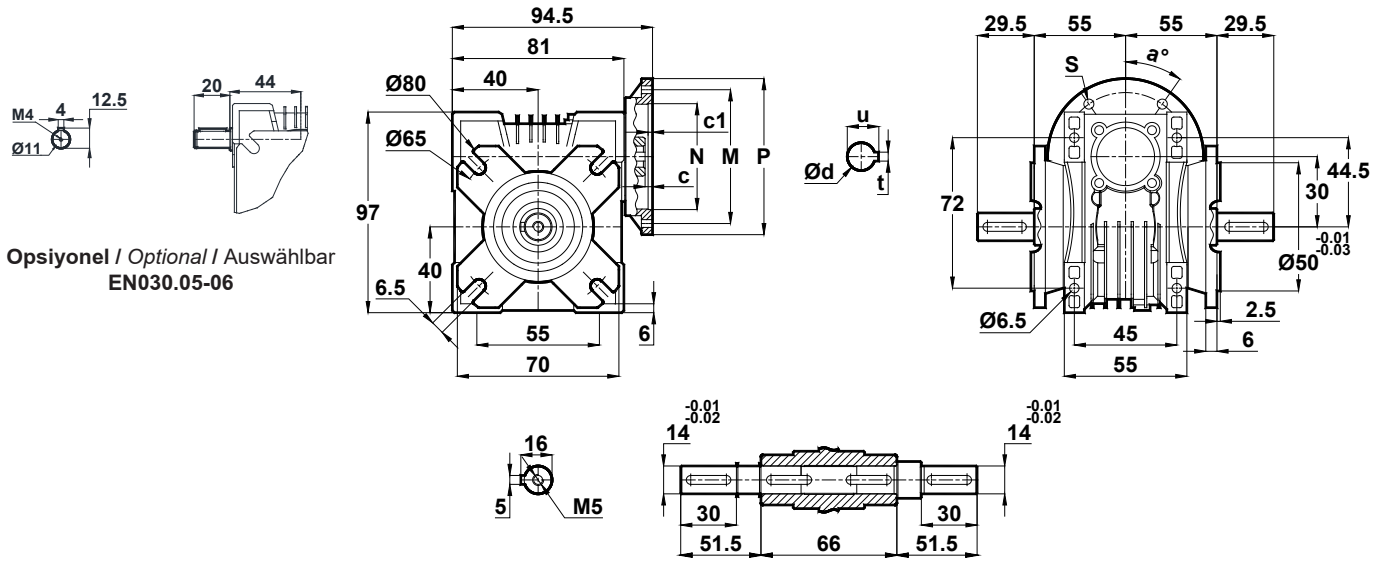
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

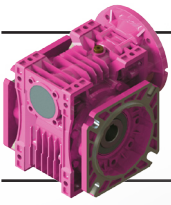
EN030.04



EN030.05



| EN030 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|-----|----|-----|-----|----|------|---|-----|-----|
| 56/B14 | 4.2 | 3 | 50 | 65 | 80 | 9 | 10.4 | 3 | 45° | 5.5 |
| 63/B14 | 4.2 | 2.5 | 60 | 75 | 90 | 11 | 12.8 | 4 | 45° | 5.5 |
| 63/B5 | 4.2 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |



Ölçü Sayfaları

Dimension Pages

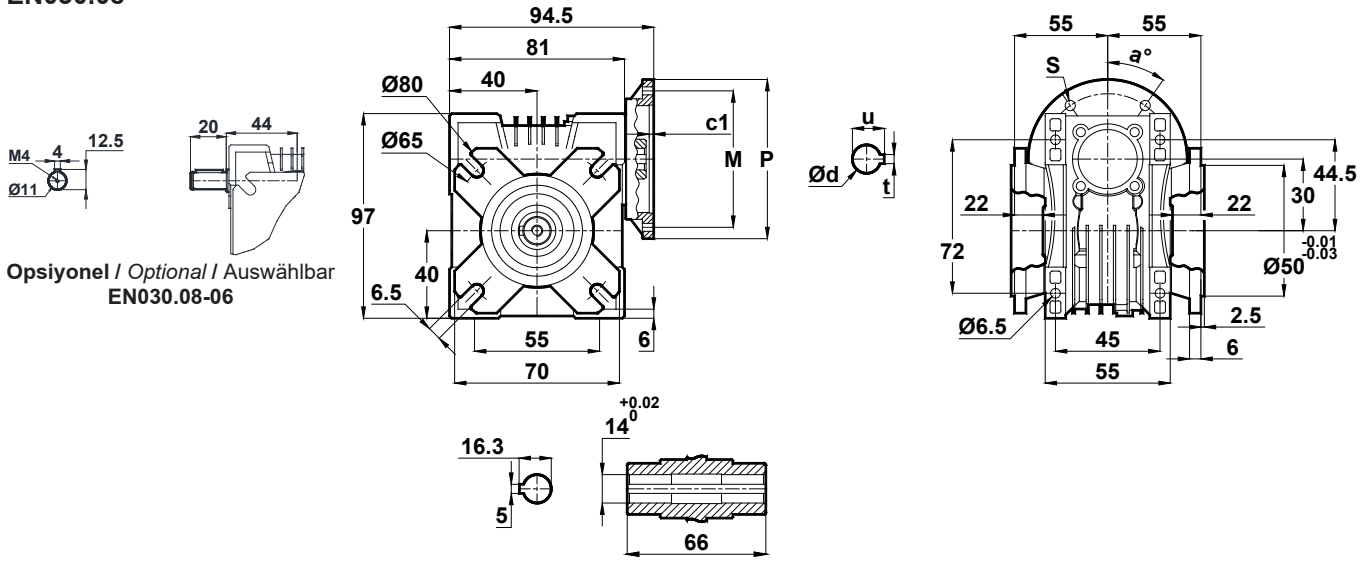
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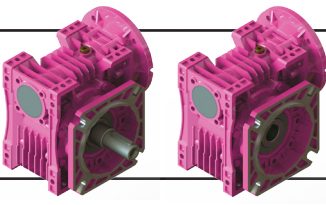
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN030.08



| EN030 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|-----|----|-----|-----|----|------|---|-----|-----|
| 56/B14 | 4.2 | 3 | 50 | 65 | 80 | 9 | 10.4 | 3 | 45° | 5.5 |
| 63/B14 | 4.2 | 2.5 | 60 | 75 | 90 | 11 | 12.8 | 4 | 45° | 5.5 |
| 63/B5 | 4.2 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |



Ölçü Sayfaları

Dimension Pages

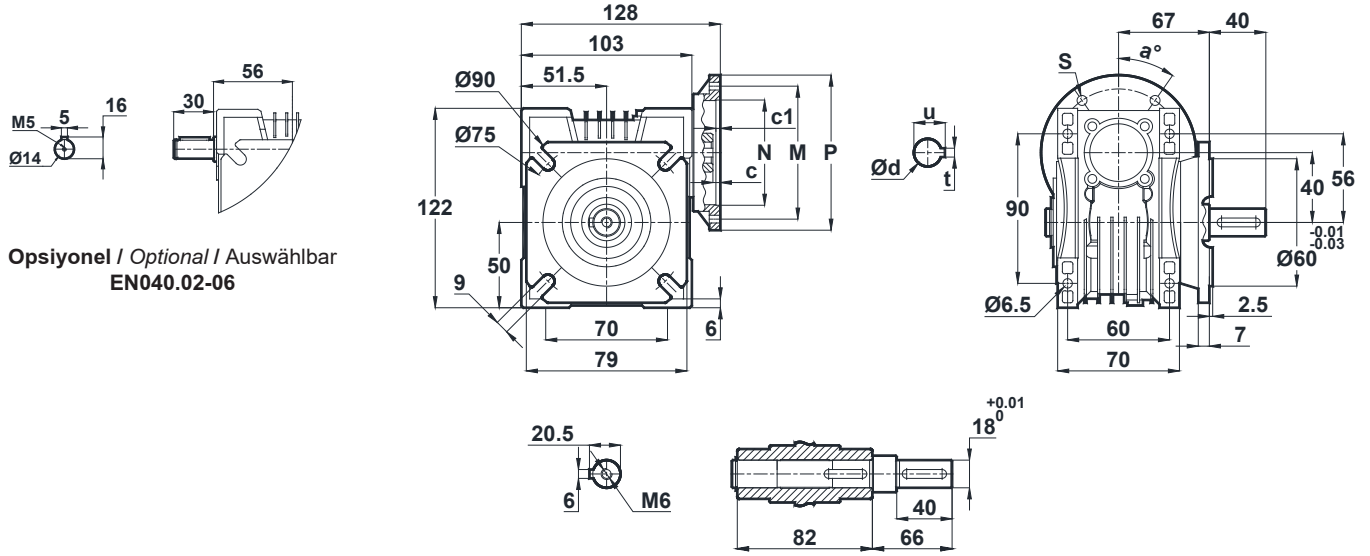
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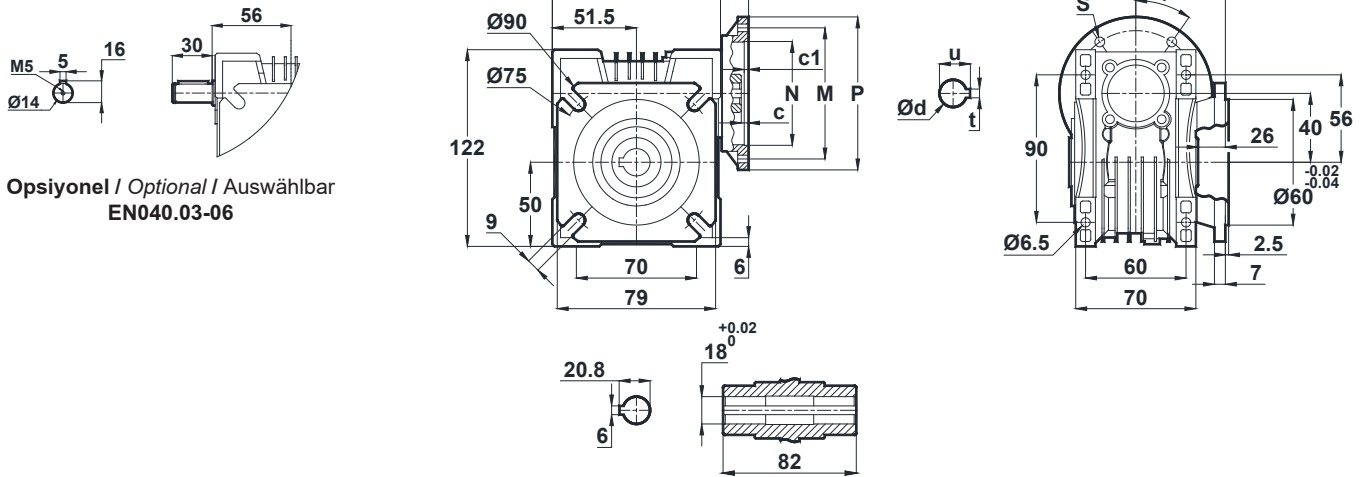
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

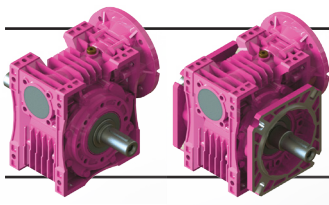
EN040.02



EN040.03



| EN040 | c | c1 | N | M | P | d | u | t | a | s |
|--------|---|-----|-----|-----|-----|----|------|---|-----|-----|
| 63/B14 | 4 | 2.5 | 60 | 75 | 90 | 11 | 12.8 | 4 | 45° | 5.5 |
| 71/B14 | 4 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 10 |
| 63/B5 | 4 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |
| 71/B5 | 4 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |



Ölçü Sayfaları

Dimension Pages

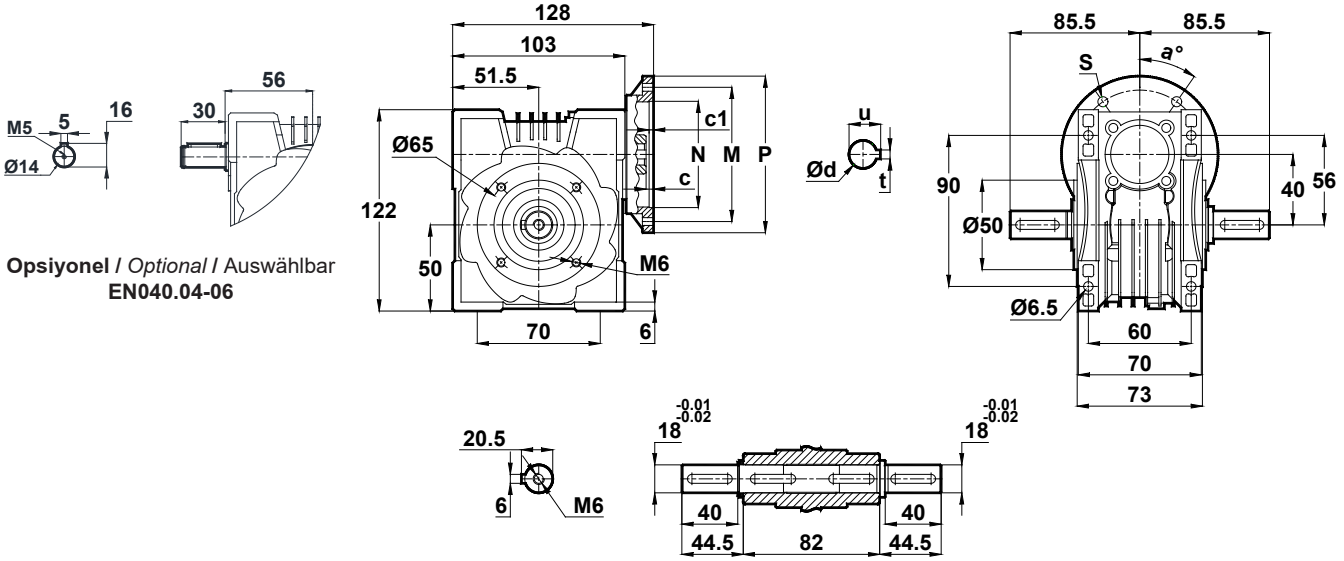
Abmessungsseiten



Kalasanati.com

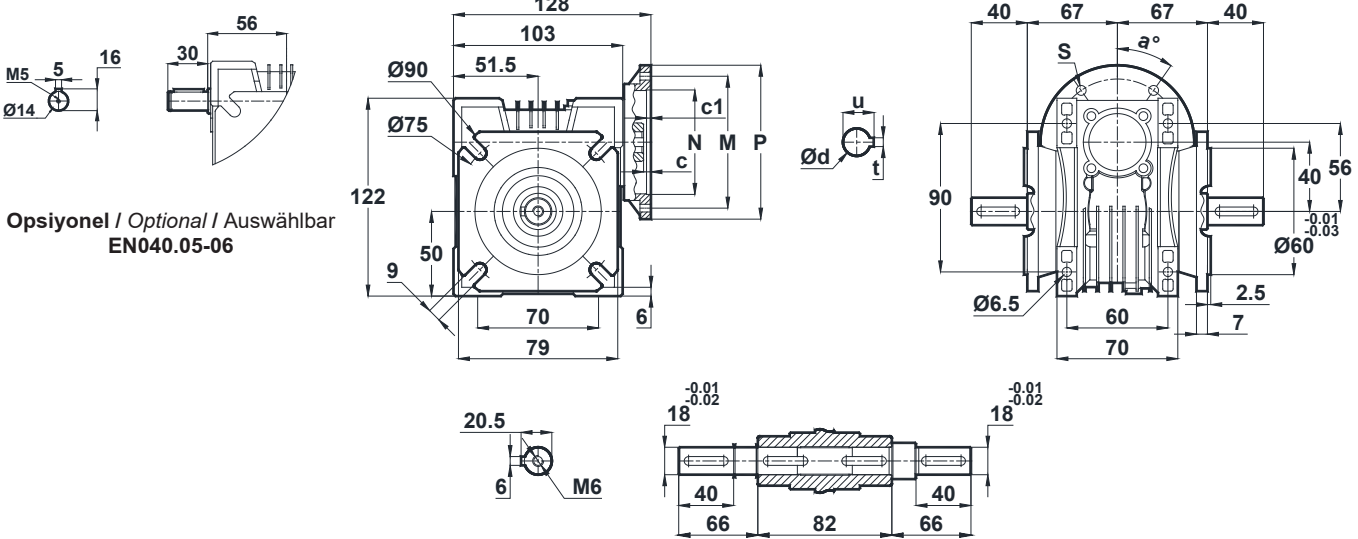
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN040.04



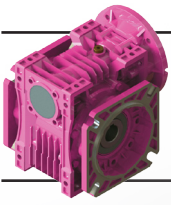
Opsiyonel / Optional / Auswählbar
EN040.04-06

EN040.05



Opsiyonel / Optional / Auswählbar
EN040.05-06

| EN040 | c | c1 | N | M | P | d | u | t | a | s |
|--------|---|-----|-----|-----|-----|----|------|---|-----|-----|
| 63/B14 | 4 | 2.5 | 60 | 75 | 90 | 11 | 12.8 | 4 | 45° | 5.5 |
| 71/B14 | 4 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 10 |
| 63/B5 | 4 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |
| 71/B5 | 4 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |



Ölçü Sayfaları

Dimension Pages

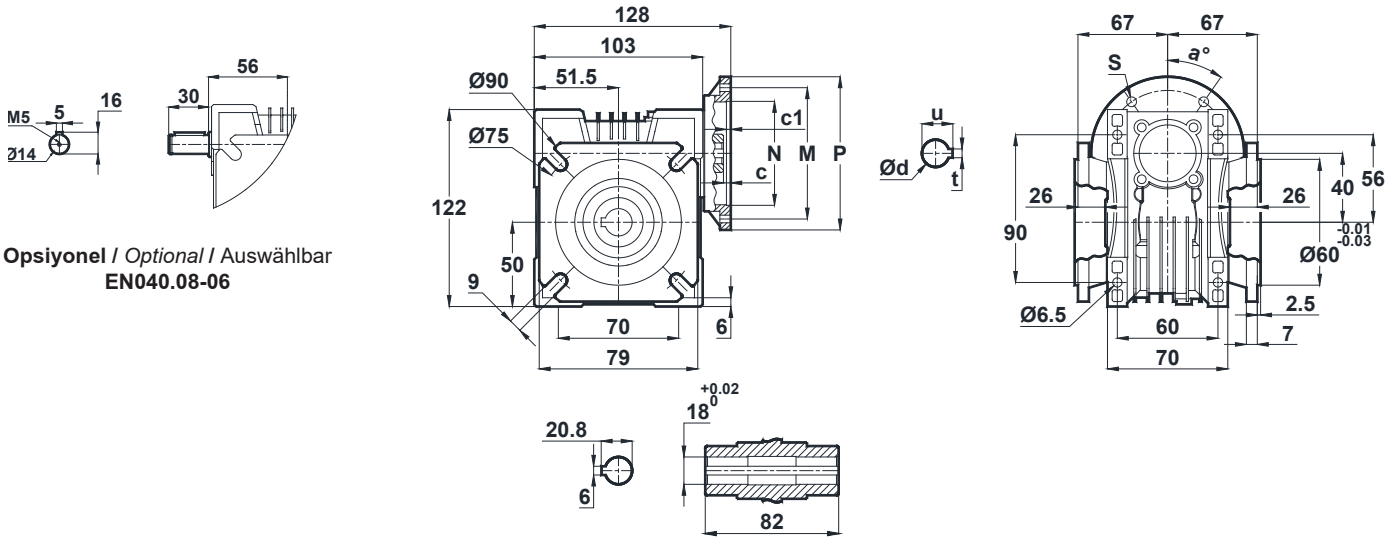
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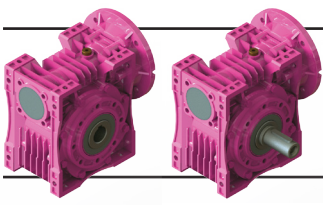
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN040.08



| EN040 | c | c1 | N | M | P | d | u | t | a | s |
|--------|---|-----|-----|-----|-----|----|------|---|-----|-----|
| 63/B14 | 4 | 2.5 | 60 | 75 | 90 | 11 | 12.8 | 4 | 45° | 5.5 |
| 71/B14 | 4 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 10 |
| 63/B5 | 4 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |
| 71/B5 | 4 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |



Ölçü Sayfaları

Dimension Pages

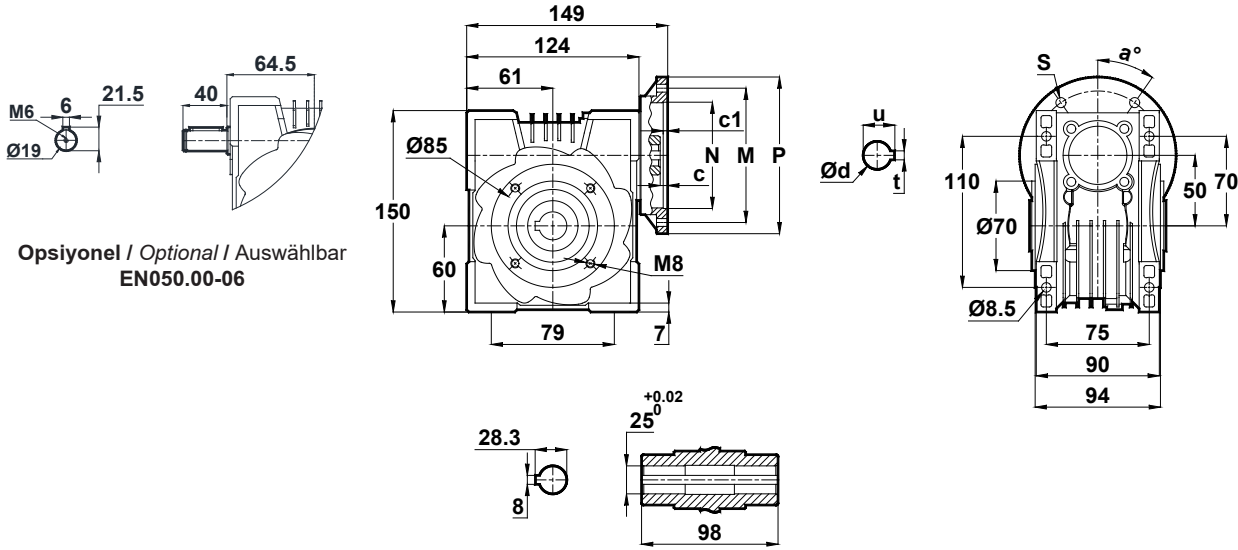
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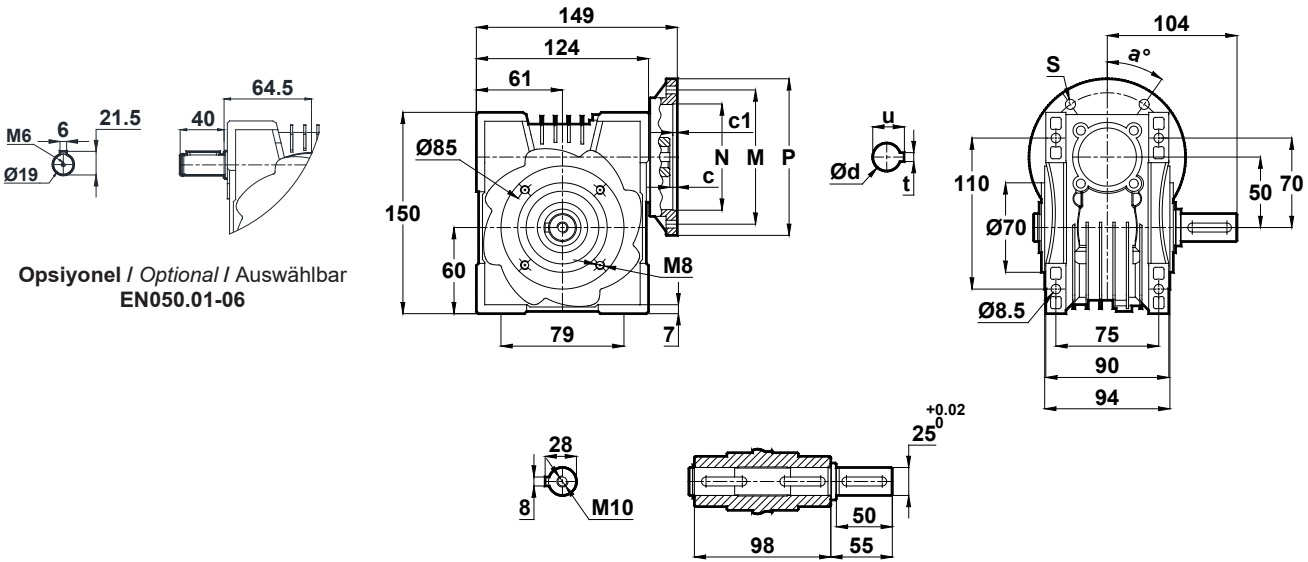
Kalasanati.com

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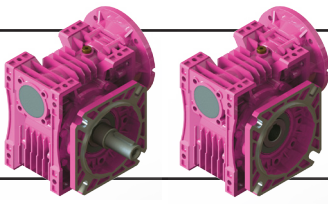
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EN050.01



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| 71/B14 | 10.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 10.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 10.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 63/B5 | 10.7 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |
| 71/B5 | 10.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 10.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 10.7 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |



Ölçü Sayfaları

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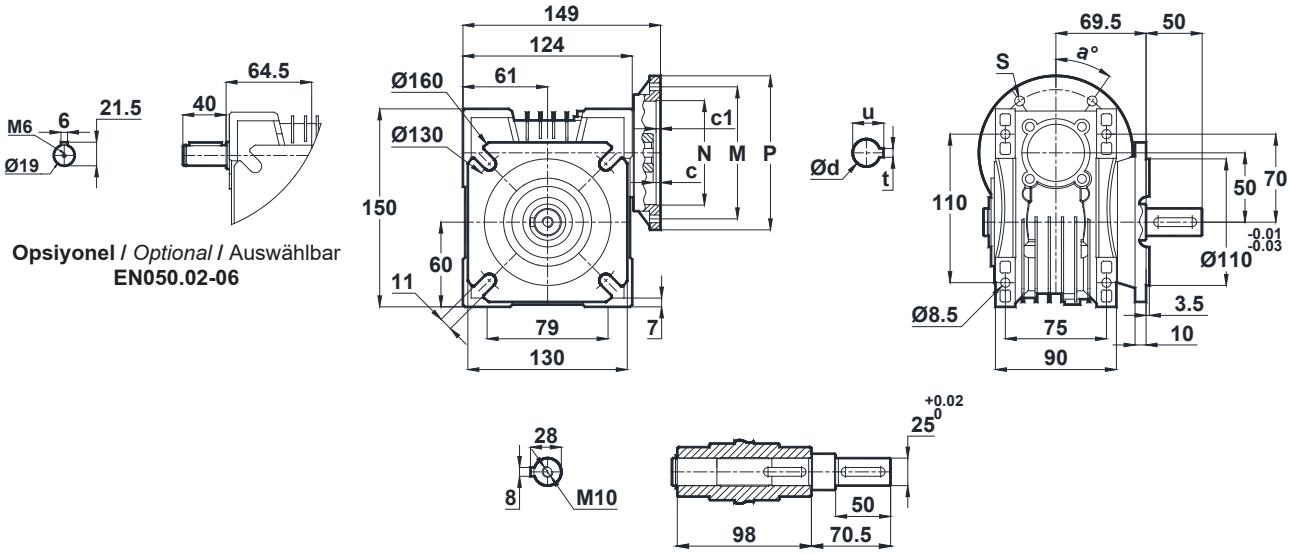
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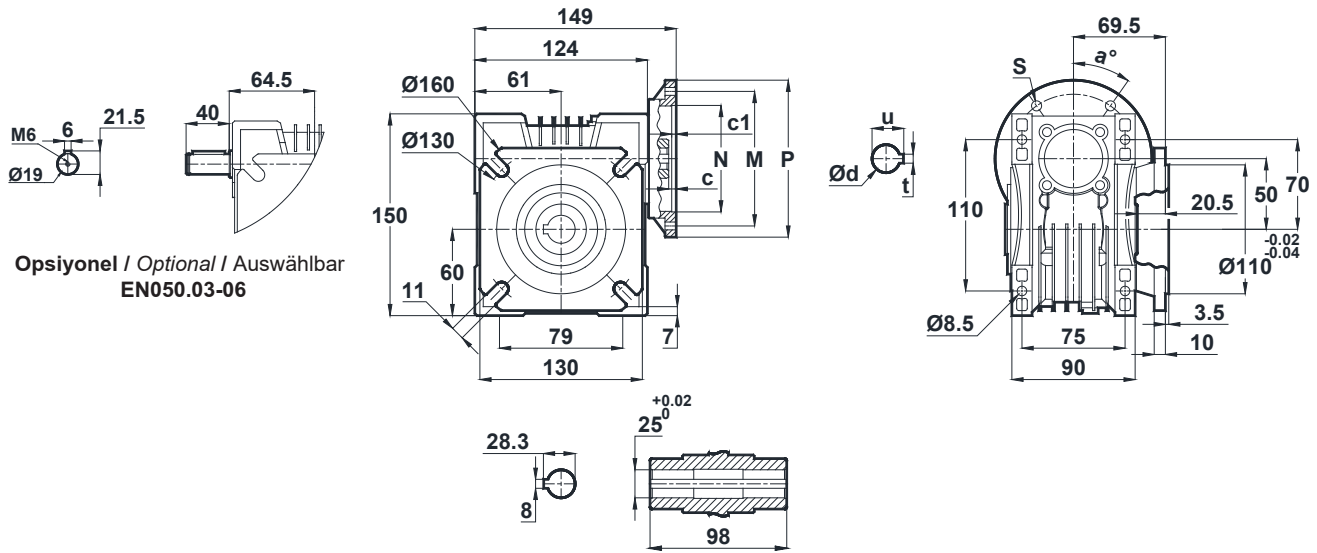
Kalasanati.com

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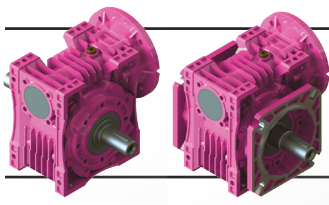
EN050.02



EN050.03



| EN050 | c | c1 | N | M | P | d | u | t | a | s |
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| 71/B14 | 10.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 10.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 10.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 63/B5 | 10.7 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |
| 71/B5 | 10.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 10.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 10.7 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |



Ölçü Sayfaları

Dimension Pages

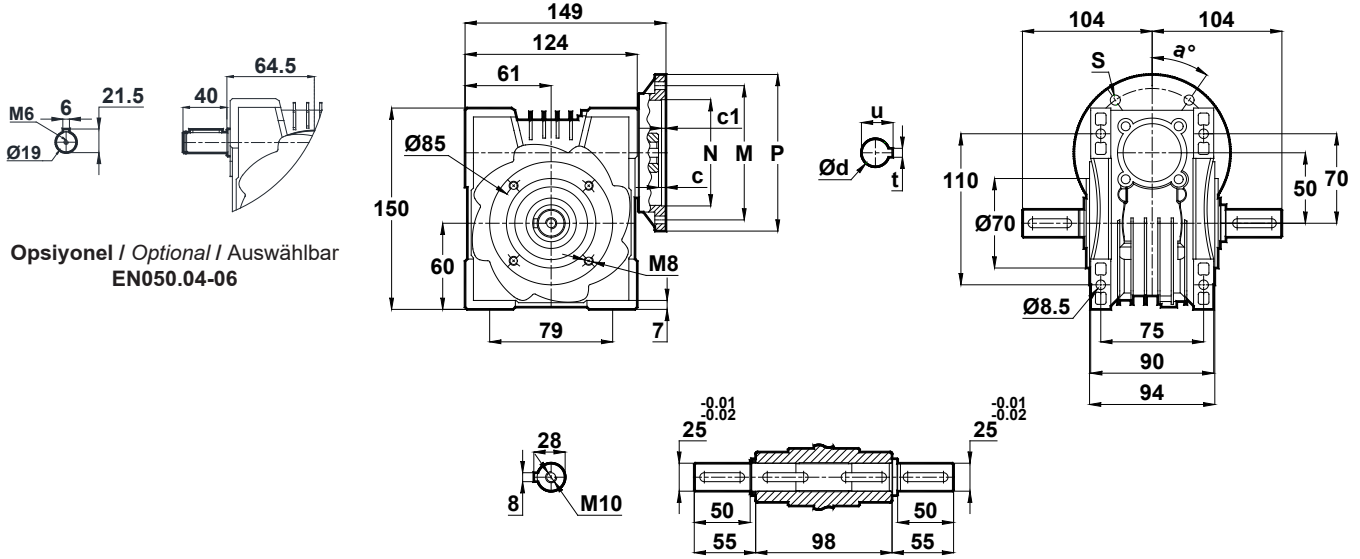
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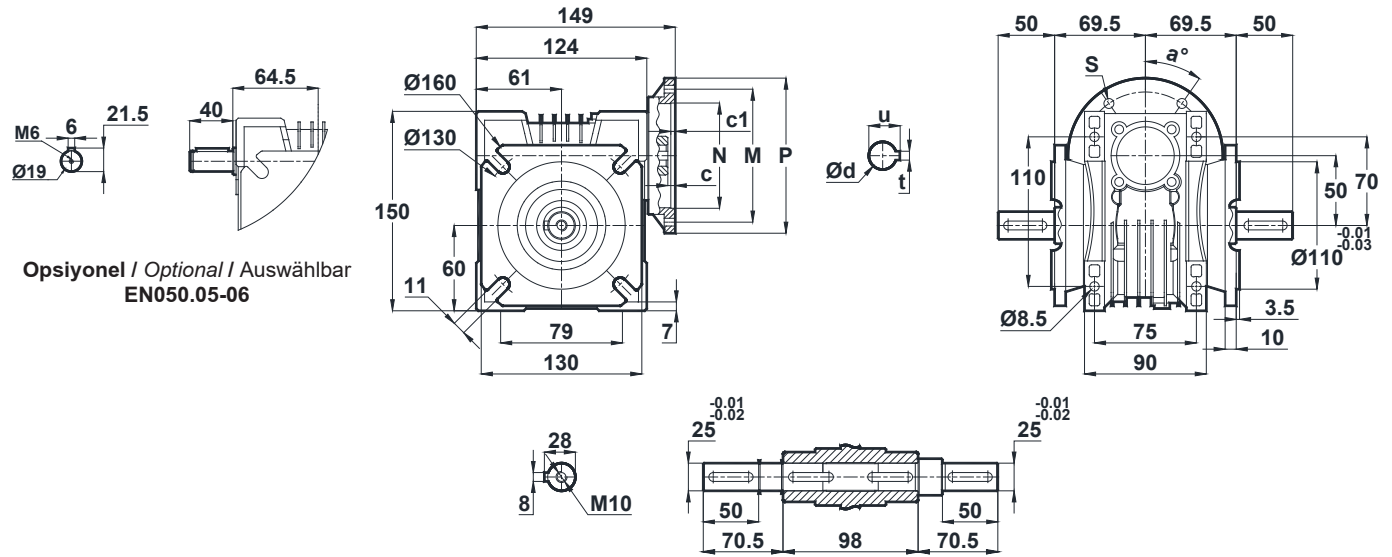
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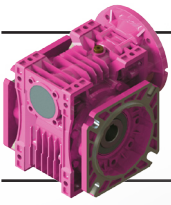
EN050.04



EN050.05



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| 71/B14 | 10.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 10.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 10.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 63/B5 | 10.7 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |
| 71/B5 | 10.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 10.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 10.7 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |



Ölçü Sayfaları

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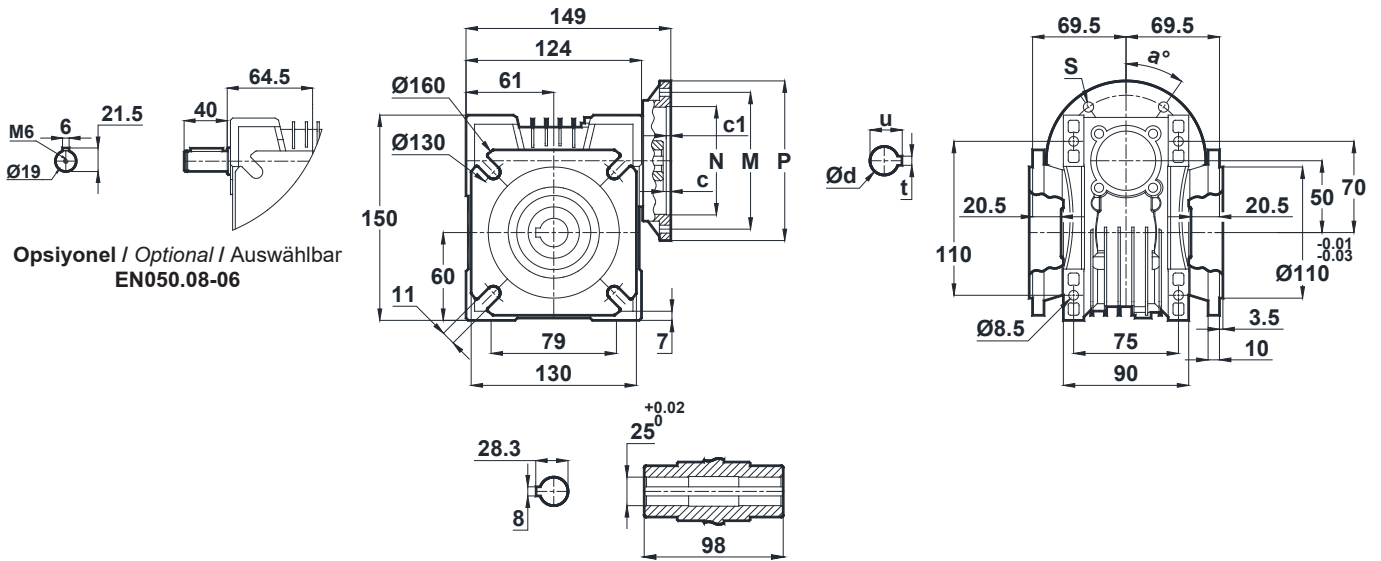
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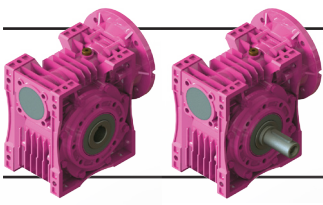
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN050.08



| EN050 | c | c1 | N | M | P | d | u | t | a | s |
|--------|------|-----|-----|-----|-----|----|------|---|-----|----|
| 71/B14 | 10.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 10.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 10.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 63/B5 | 10.7 | 3.5 | 95 | 115 | 140 | 11 | 12.8 | 4 | 45° | 10 |
| 71/B5 | 10.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 10.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 10.7 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |



Ölçü Sayfaları

Dimension Pages

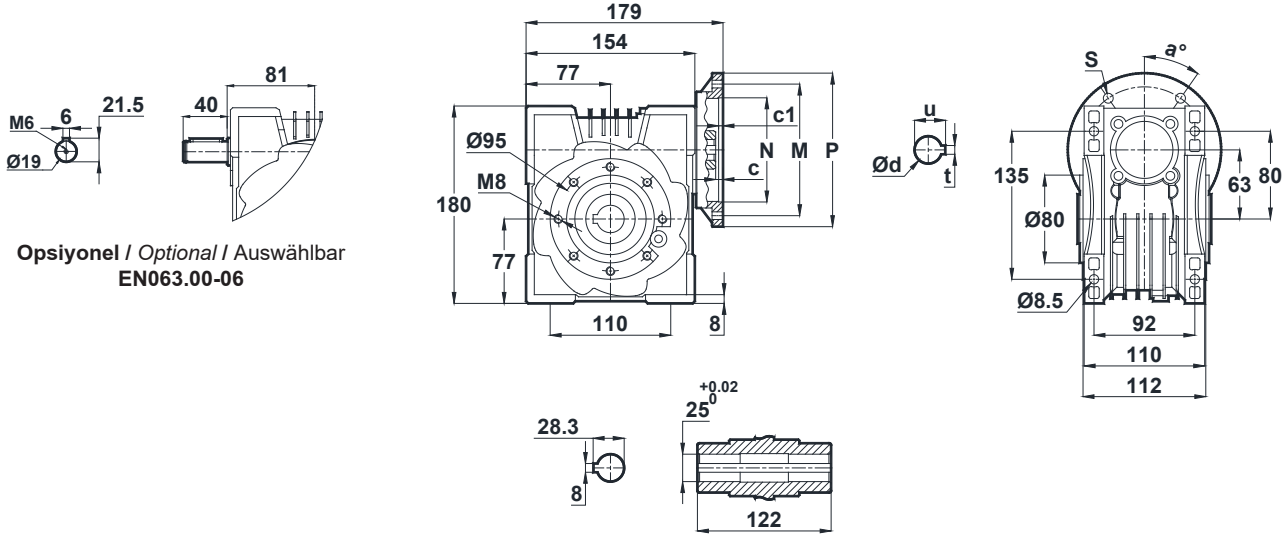
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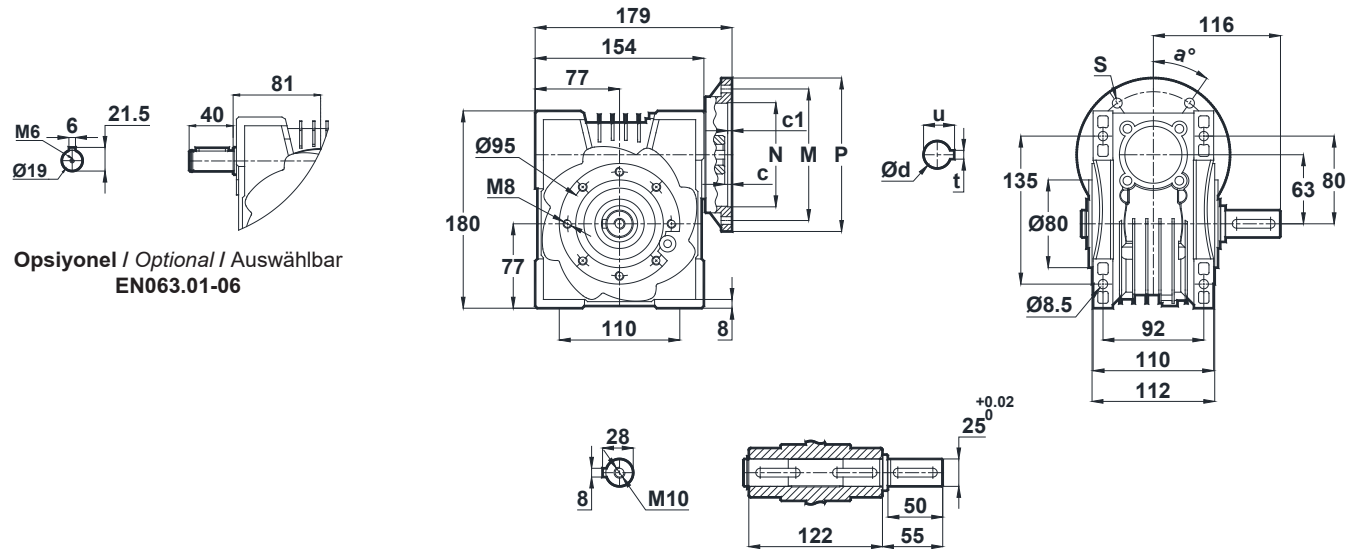
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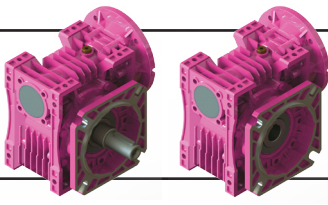
EN063.00



EN063.01



| EN063 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|----|-----|-----|-----|----|------|---|-----|----|
| 71/B14 | 5.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 5.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 71/B5 | 5.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 5.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
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Ölçü Sayfaları

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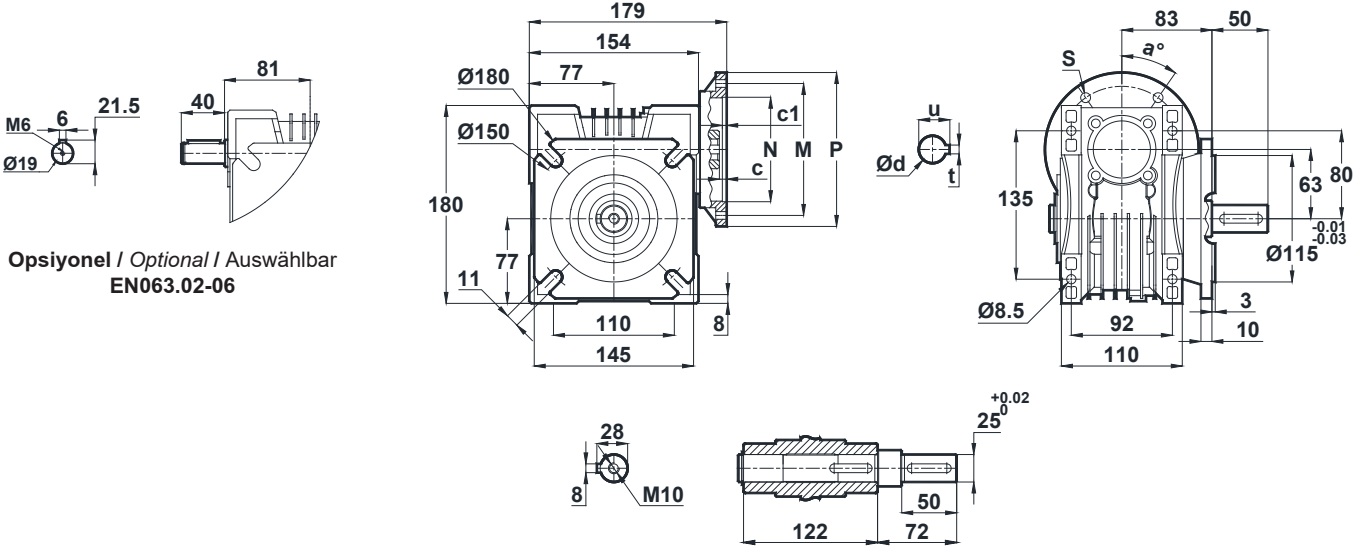
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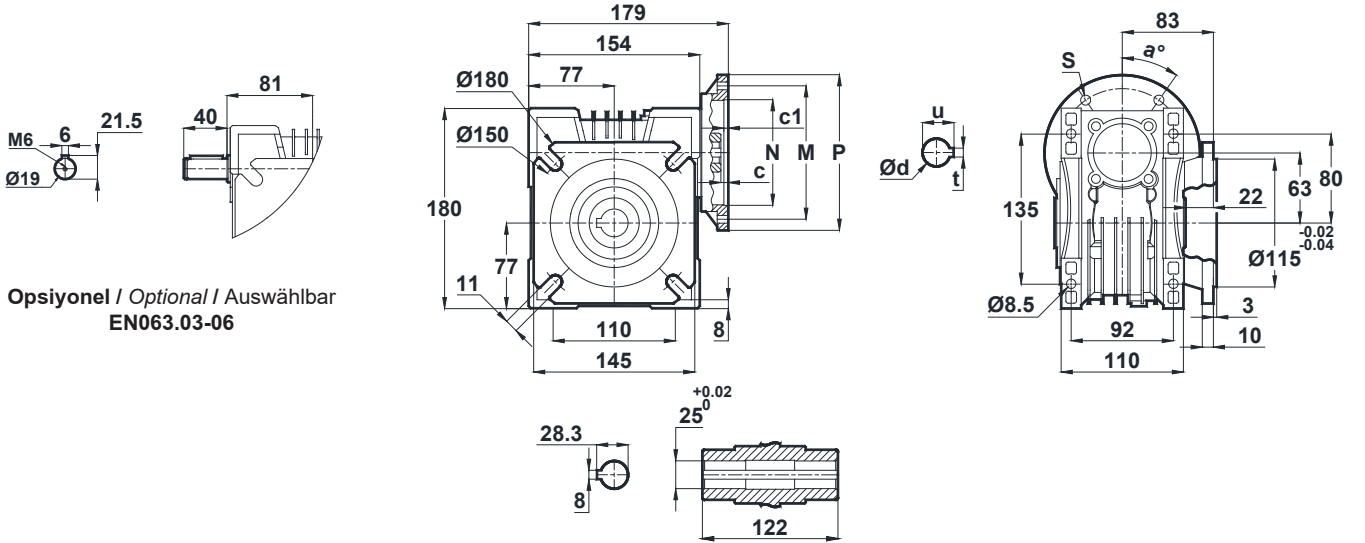
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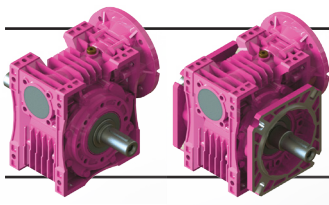
EN063.02



EN063.03



| EN063 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|----|-----|-----|-----|----|------|---|-----|----|
| 71/B14 | 5.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 5.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 71/B5 | 5.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 5.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.7 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |



Ölçü Sayfaları

Dimension Pages

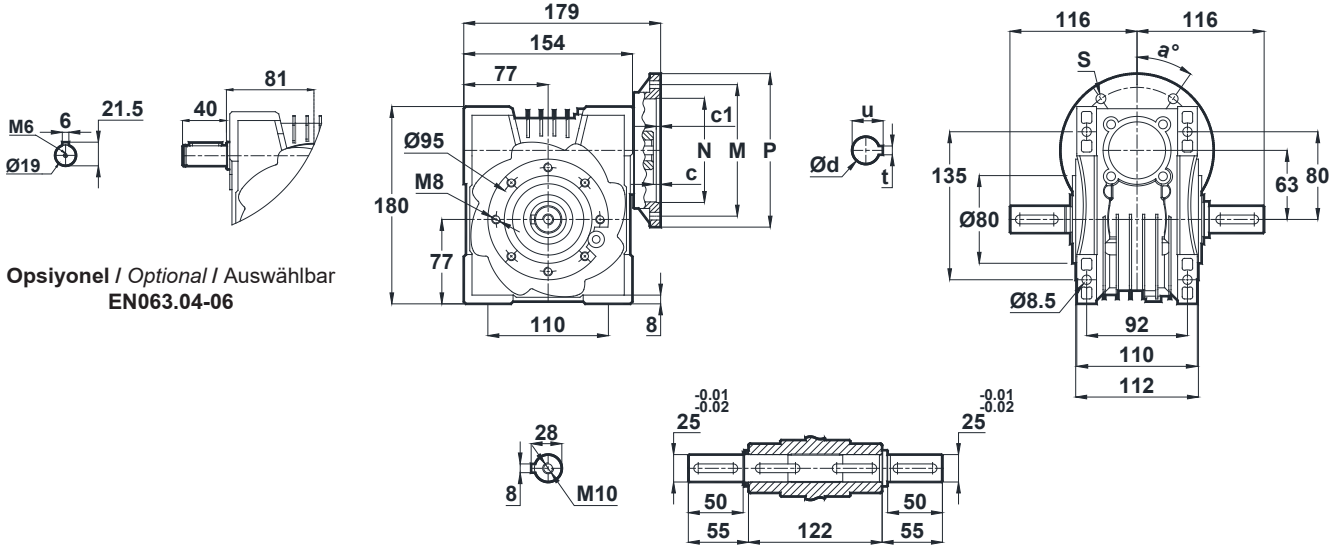
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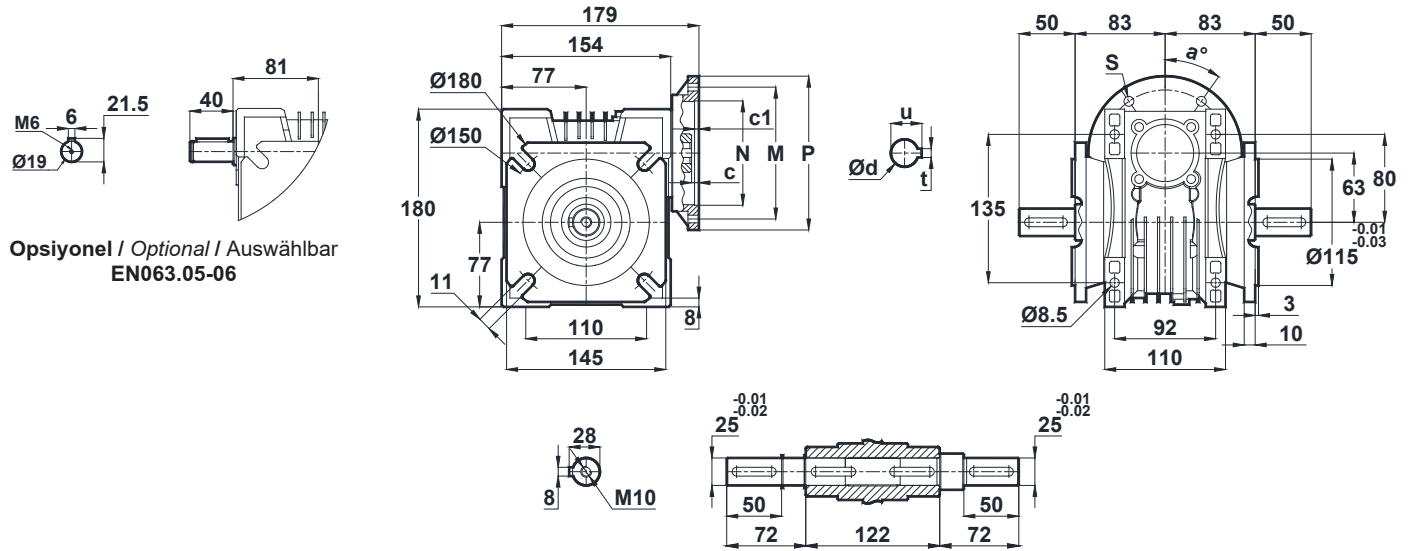
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

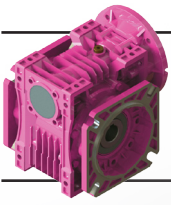
EN063.04



EN063.05



| EN063 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|----|-----|-----|-----|----|------|---|-----|----|
| 71/B14 | 5.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 5.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 71/B5 | 5.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 5.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.7 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |



Ölçü Sayfaları

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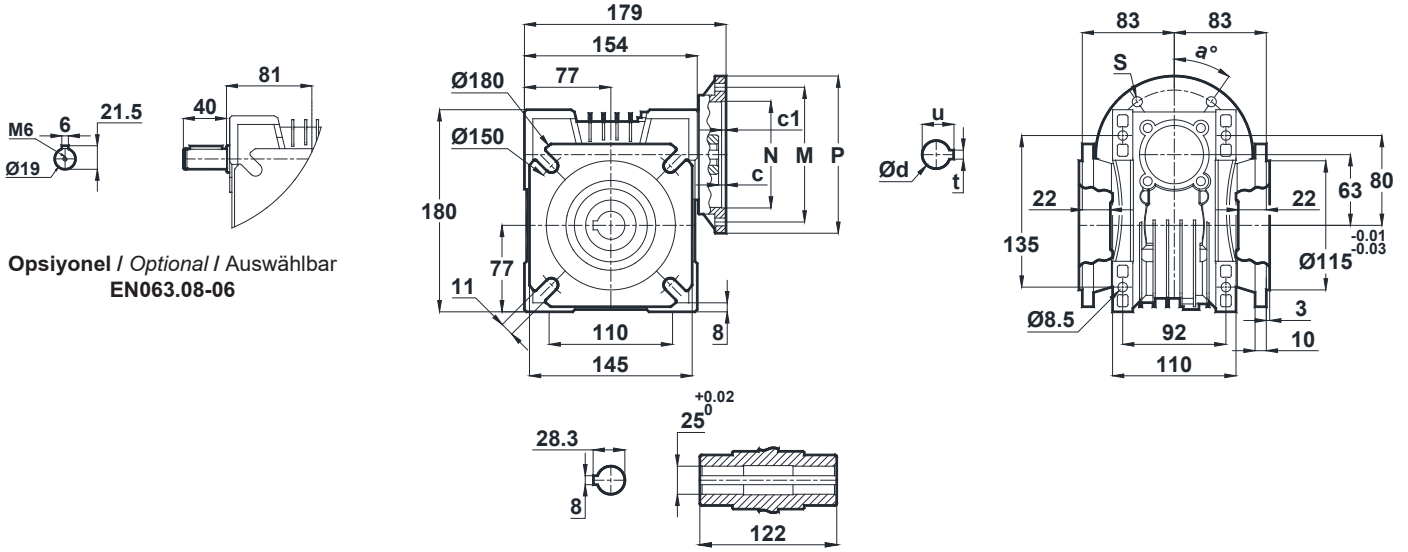
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Kalasanati.com

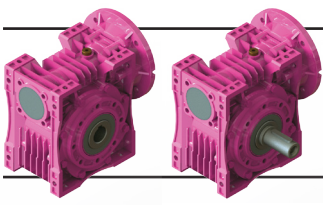
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EN063.08



Opsiyonel / Optional / Auswählbar
EN063.08-06

| EN063 | c | c1 | N | M | P | d | u | t | a | s |
|--------|-----|----|-----|-----|-----|----|------|---|-----|----|
| 71/B14 | 5.7 | 3 | 70 | 85 | 105 | 14 | 16.3 | 5 | 45° | 7 |
| 80/B14 | 5.7 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.7 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 71/B5 | 5.7 | 4 | 110 | 130 | 160 | 14 | 16.3 | 5 | 45° | 10 |
| 80/B5 | 5.7 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.7 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |



Ölçü Sayfaları

Dimension Pages

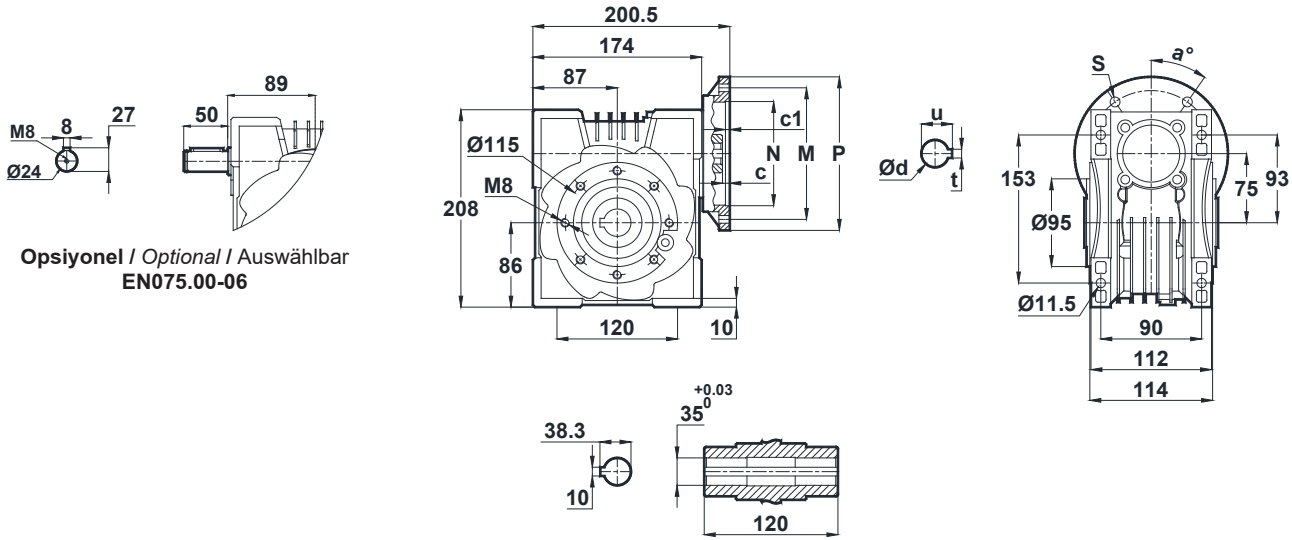
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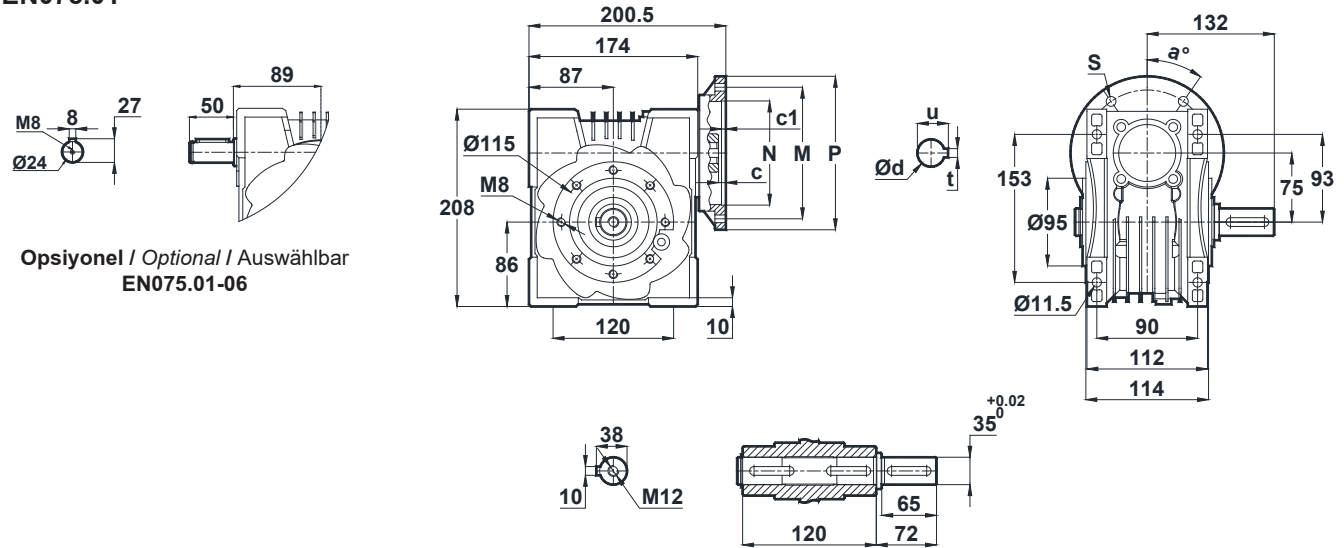
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

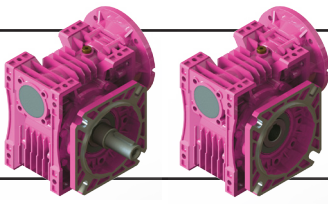
EN075.00



EN075.01



| EN075 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|------|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 10.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 10.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 10.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 10.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 10.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 10.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

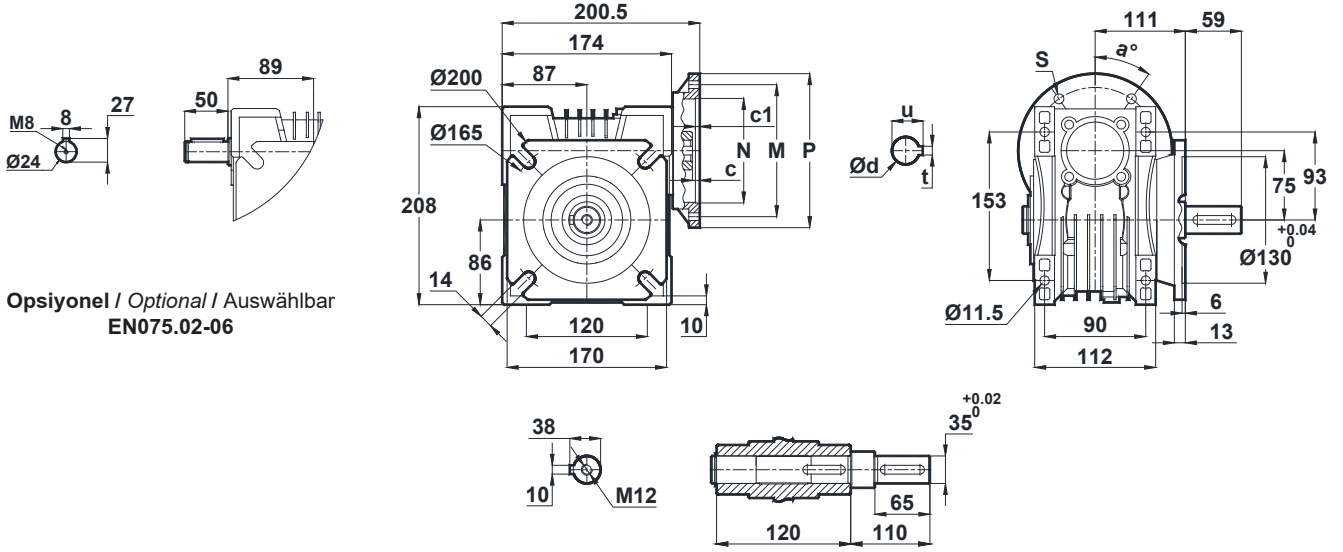
Abmessungsseiten



Kalasanati.com

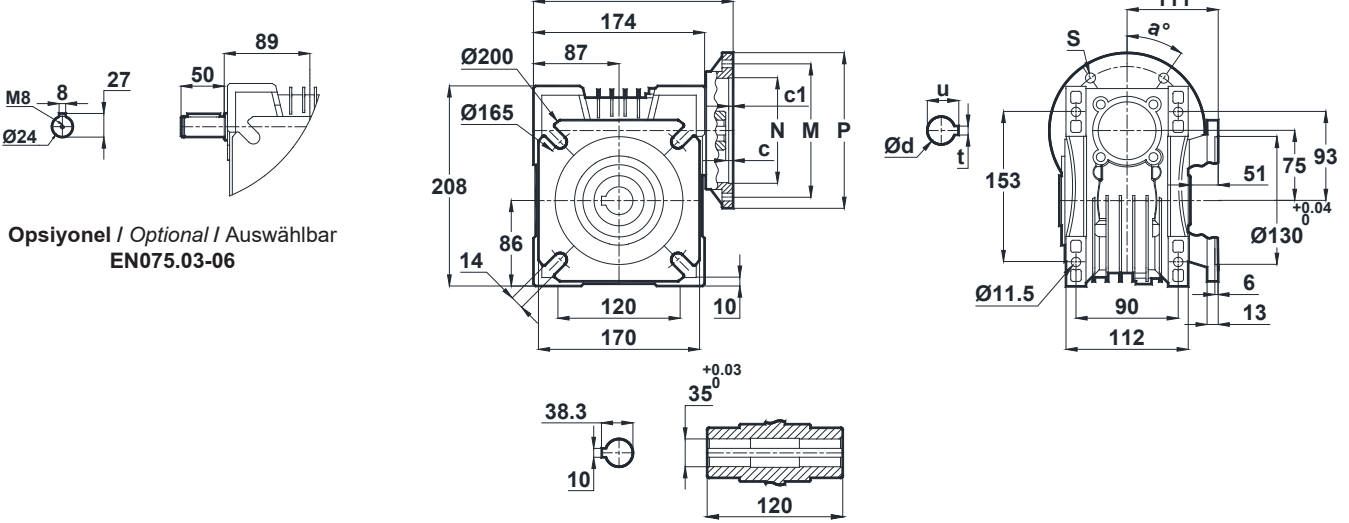
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EN075.02



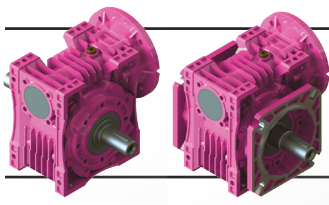
Opsiyonel / Optional / Auswählbar
EN075.02-06

EN075.03



Opsiyonel / Optional / Auswählbar
EN075.03-06

| EN075 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|------|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 10.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 10.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 10.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 10.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 10.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 10.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

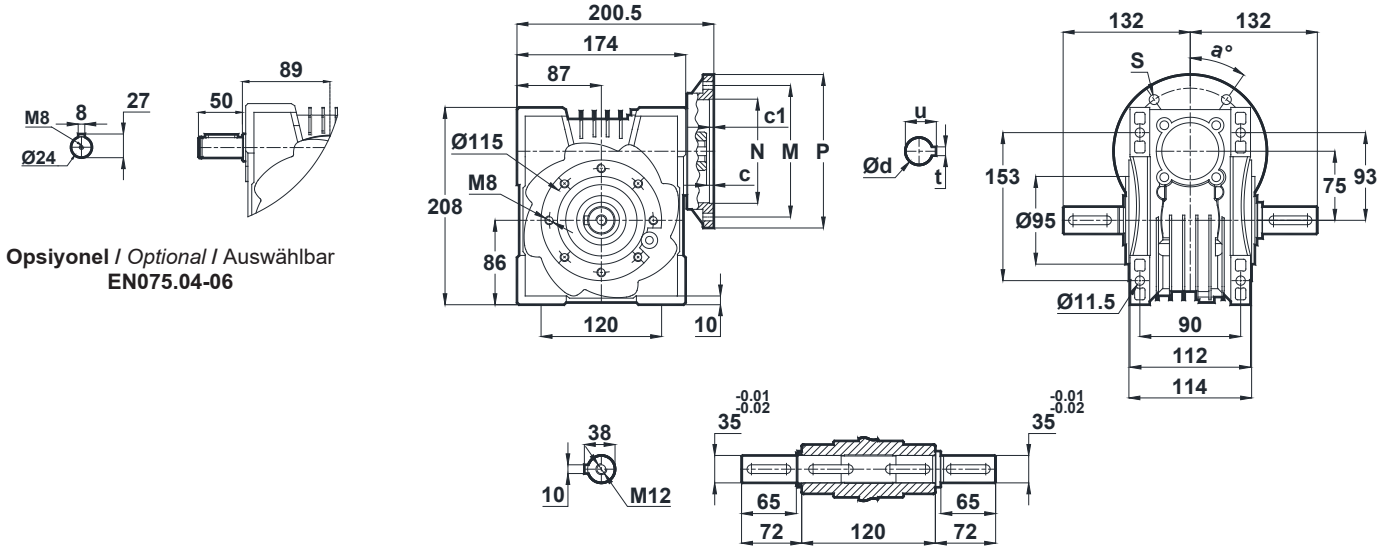
Abmessungsseiten



Kalasanati.com

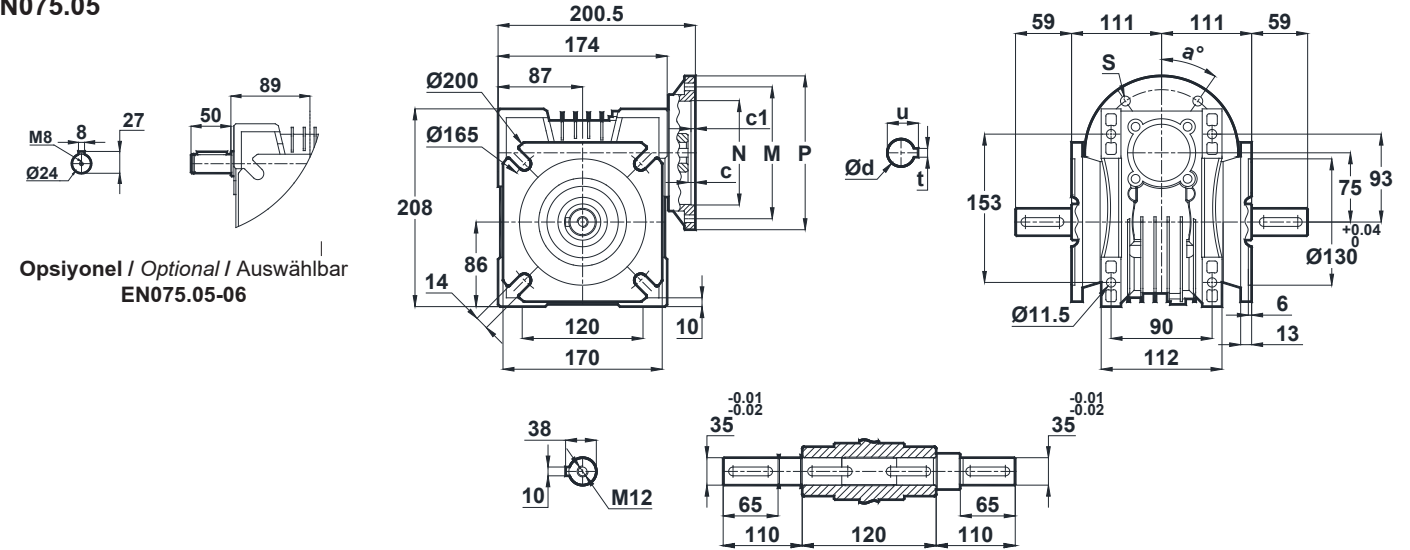
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EN075.04



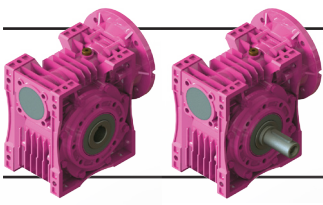
Opsiyonel / Optional / Auswählbar
EN075.04-06

EN075.05



Opsiyonel / Optional / Auswählbar
EN075.05-06

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|-------------|------|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 10.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 10.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 10.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 10.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 10.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 10.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

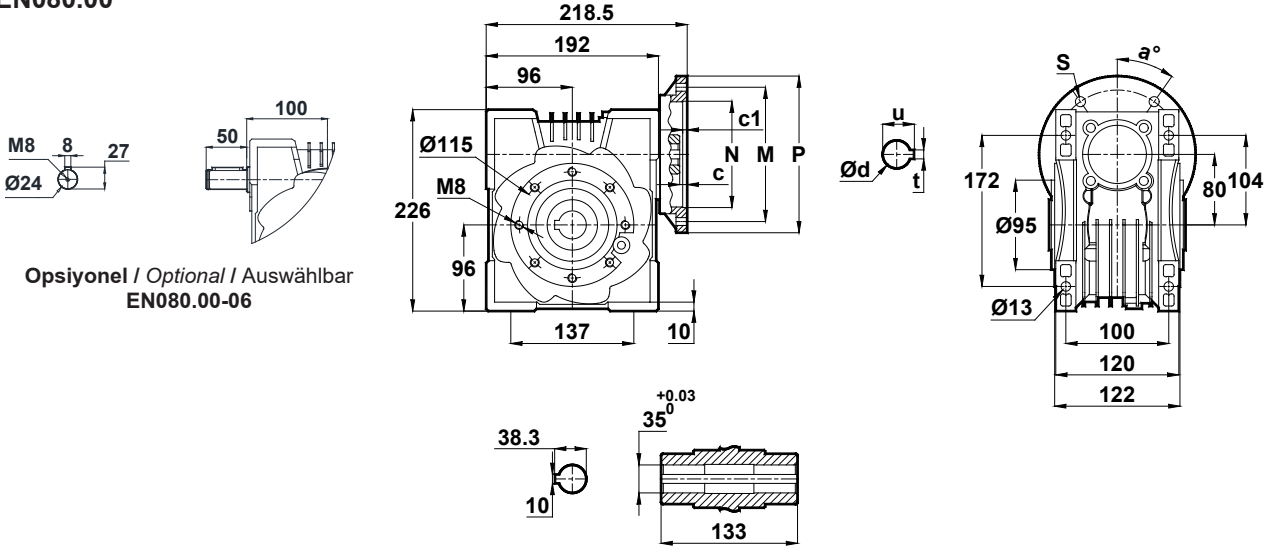
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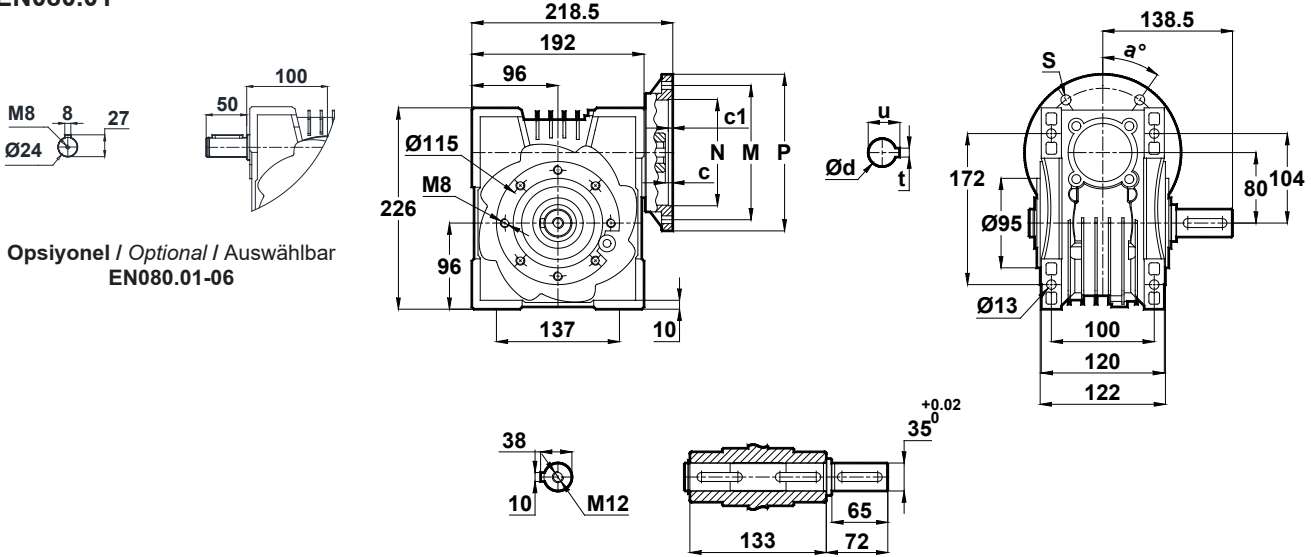
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

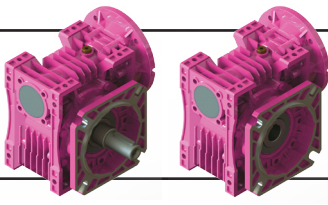
EN080.00



EN080.01



| EN080 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|-----|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 5.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 5.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 5.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 13 |
| 90/B5 | 5.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 13 |
| 100-112/B5 | 5.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

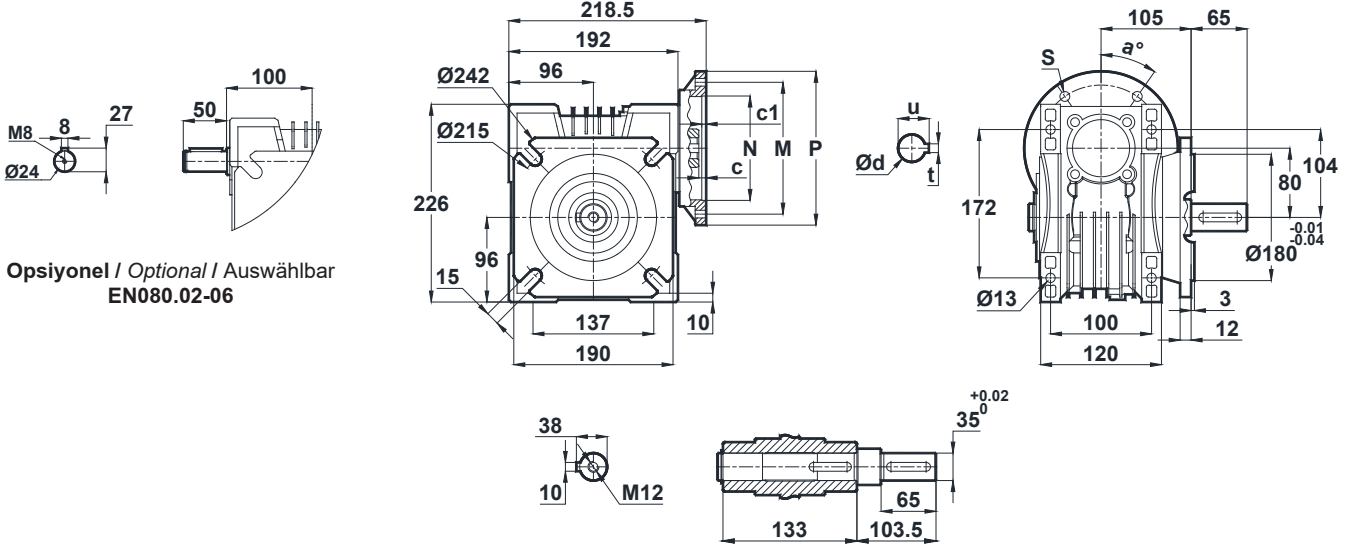
Abmessungsseiten



Kalasanati.com

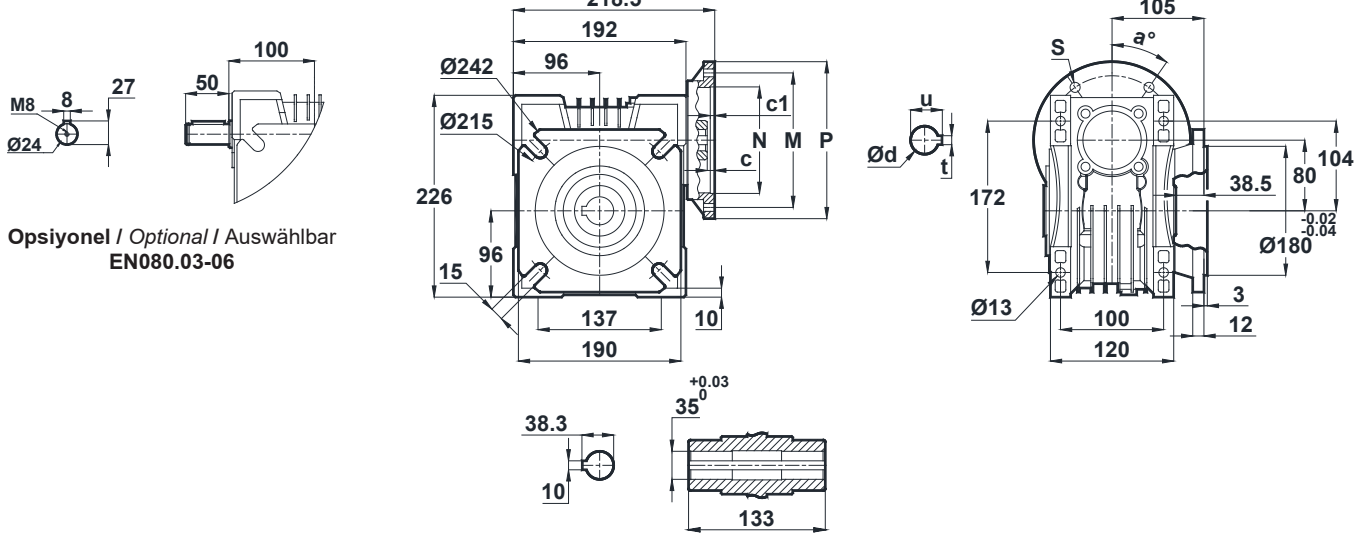
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EN080.02



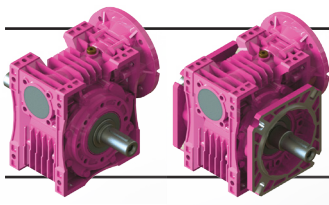
Opsiyonel / Optional / Auswählbar
EN080.02-06

EN080.03



Opsiyonel / Optional / Auswählbar
EN080.03-06

| EN080 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|-----|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 5.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 5.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 5.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 13 |
| 90/B5 | 5.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 13 |
| 100-112/B5 | 5.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

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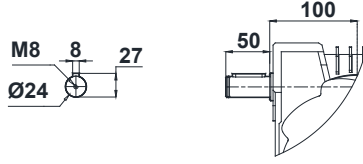
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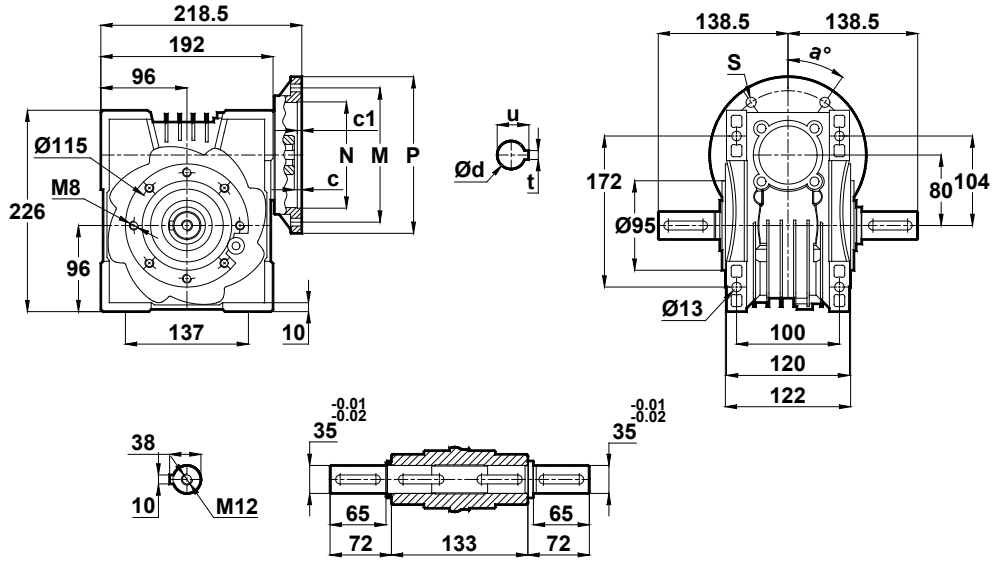
Kalasanati.com

-Mil ucu çektirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

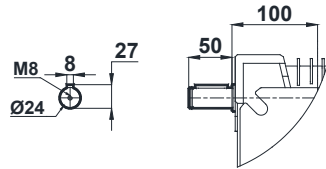
EN080.04



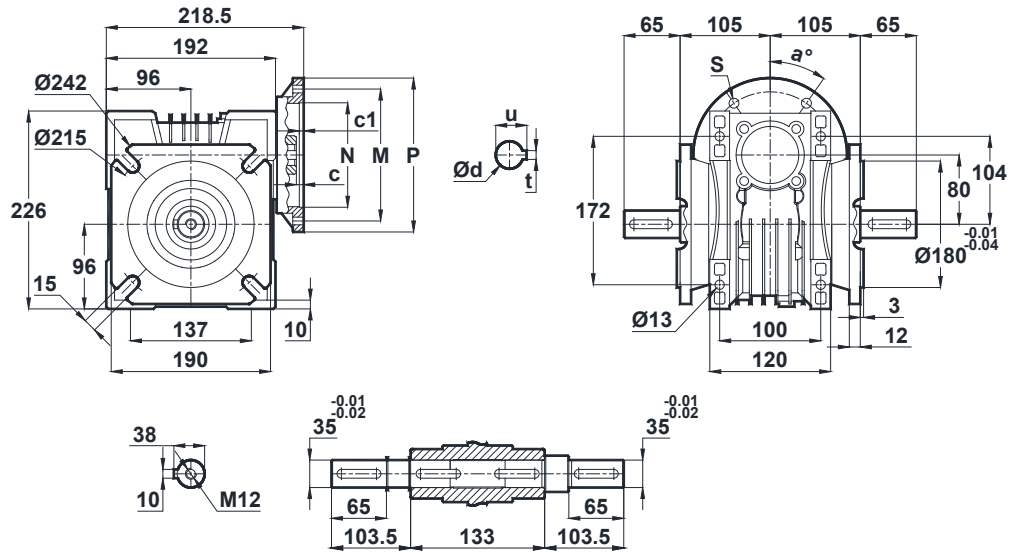
Opsiyonel / Optional / Auswählbar
EN080.04-06



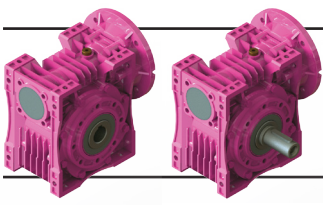
EN080.05



Opsiyonel / Optional / Auswählbar
EN080.05-06



| EN080 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|-----|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 5.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 5.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 5.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 5.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

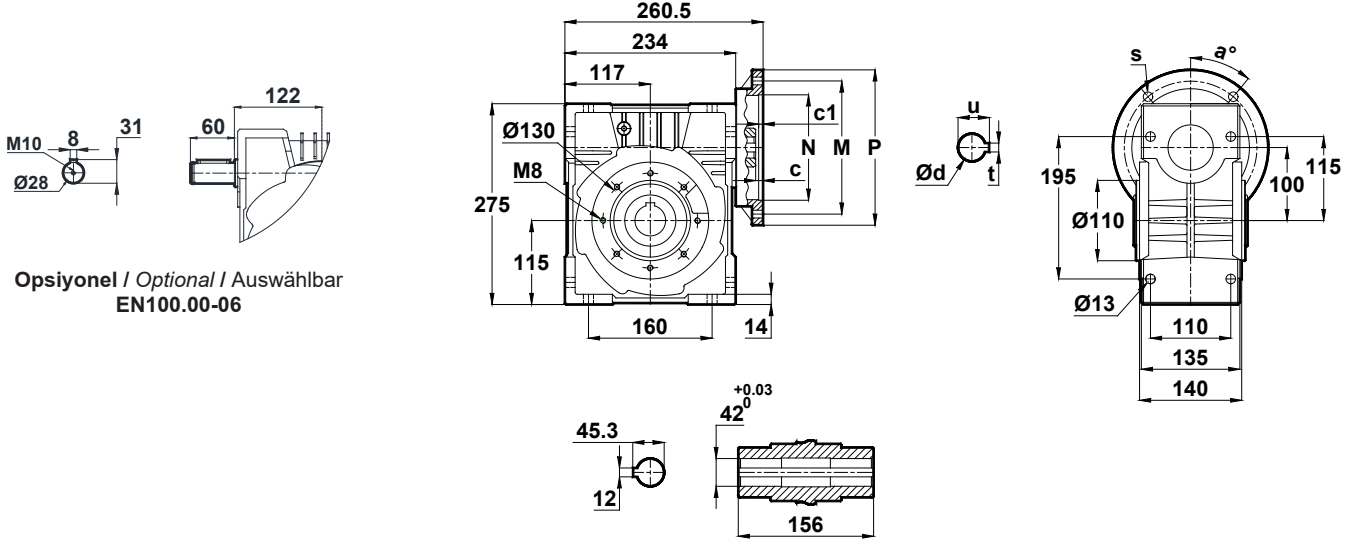
Abmessungsseiten



Kalasanati.com

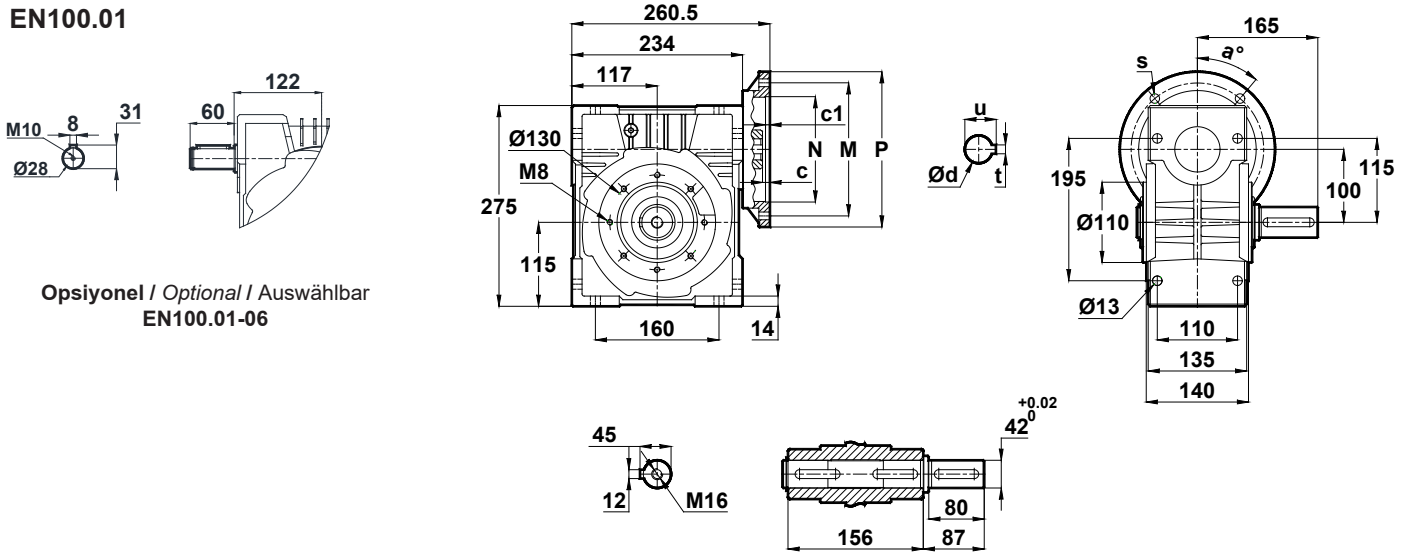
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN100.00



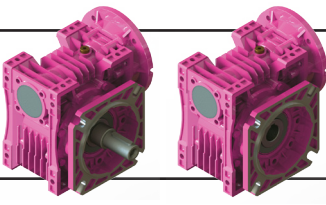
Opsiyonel / Optional / Auswählbar
EN100.00-06

EN100.01



Opsiyonel / Optional / Auswählbar
EN100.01-06

| EN100 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|-----|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 5.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 5.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 5.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 5.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

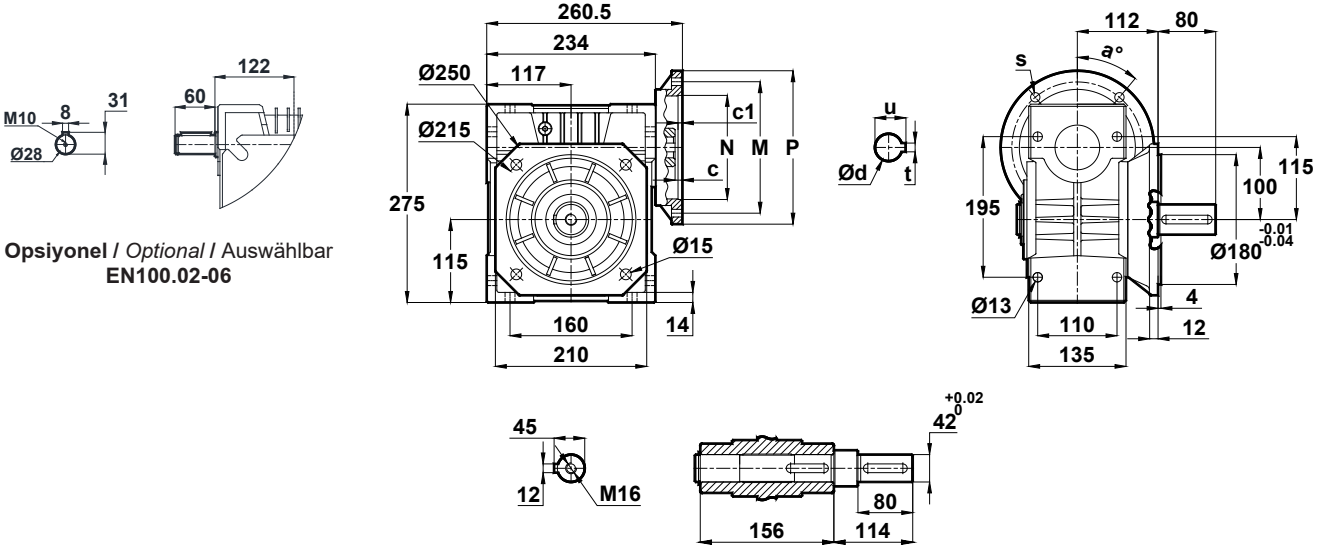
Abmessungsseiten



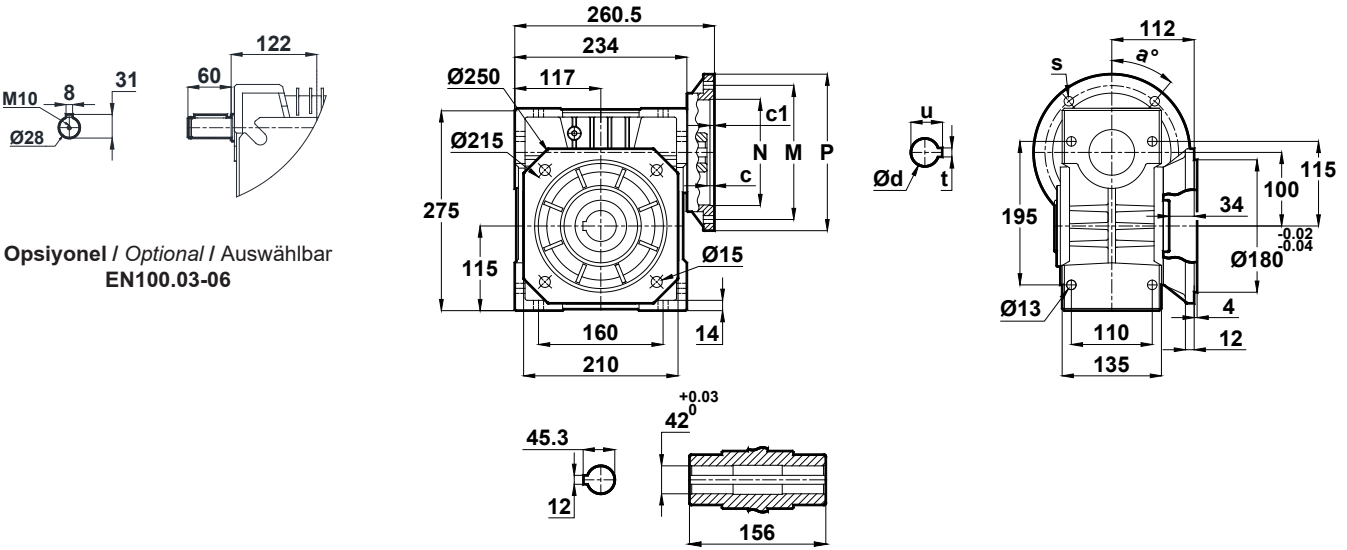
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

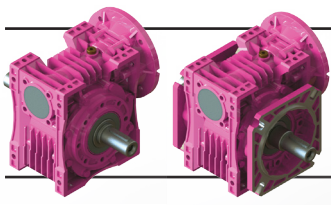
EN100.02



EN100.03



| EN100 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|-----|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 5.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 5.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 5.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 5.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

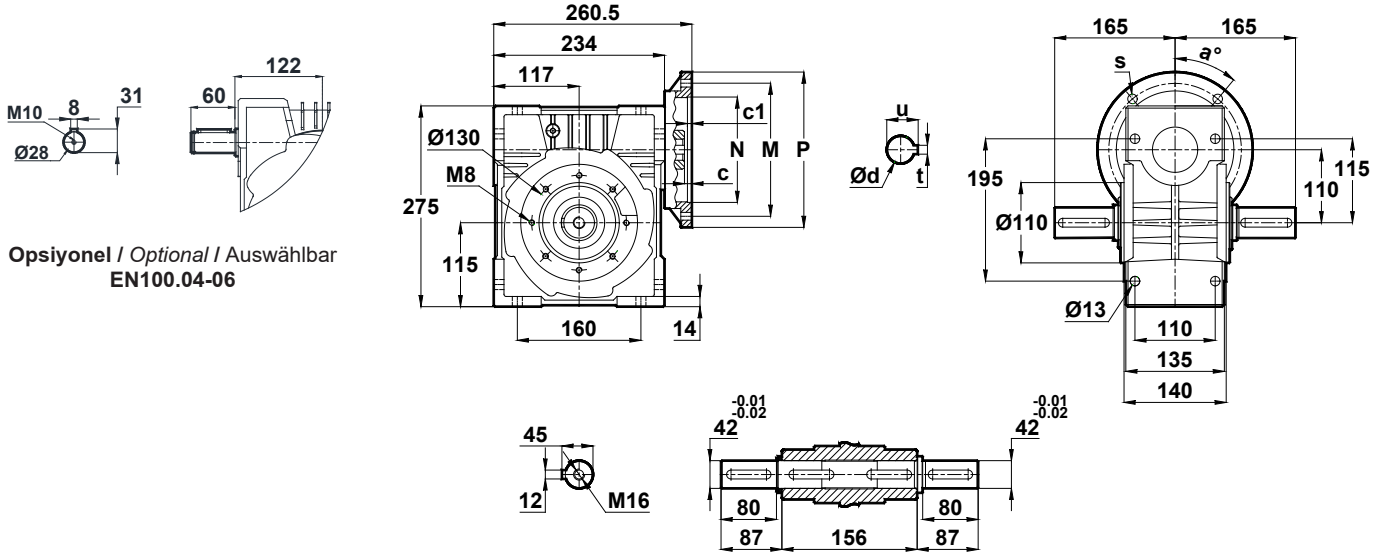
Abmessungsseiten



Kalasanati.com

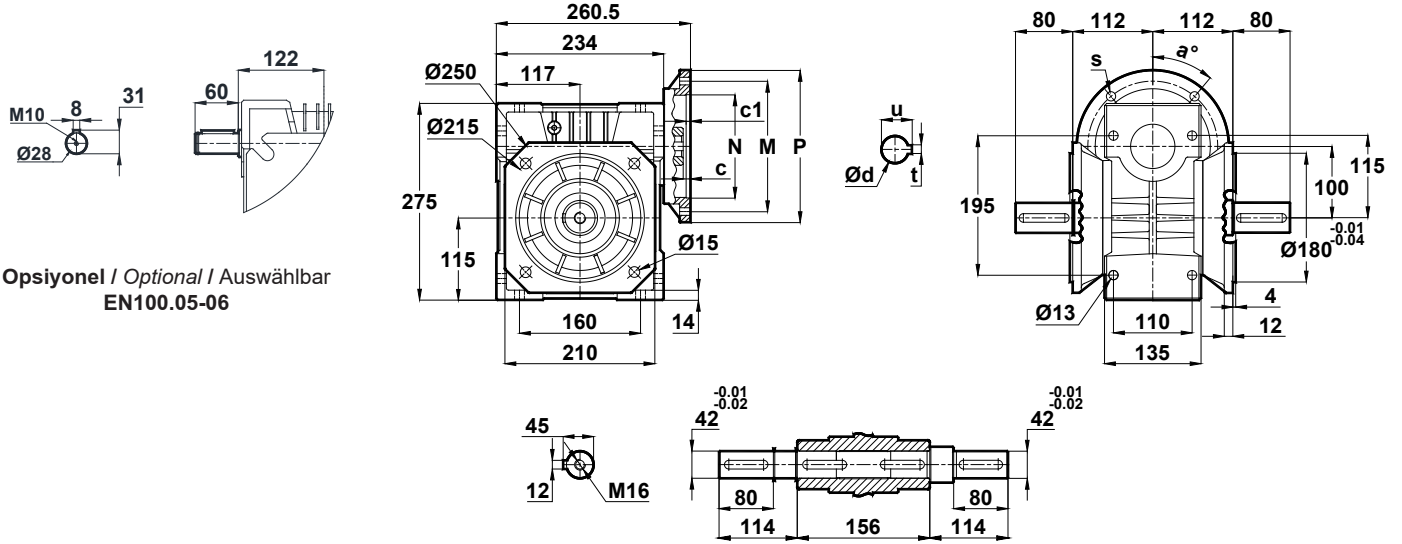
-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN100.04



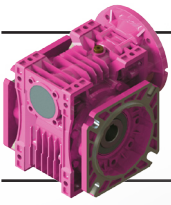
Opsiyonel / Optional / Auswählbar
EN100.04-06

EN100.05



Opsiyonel / Optional / Auswählbar
EN100.05-06

| EN100 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|-----|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 5.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 5.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 5.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 5.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

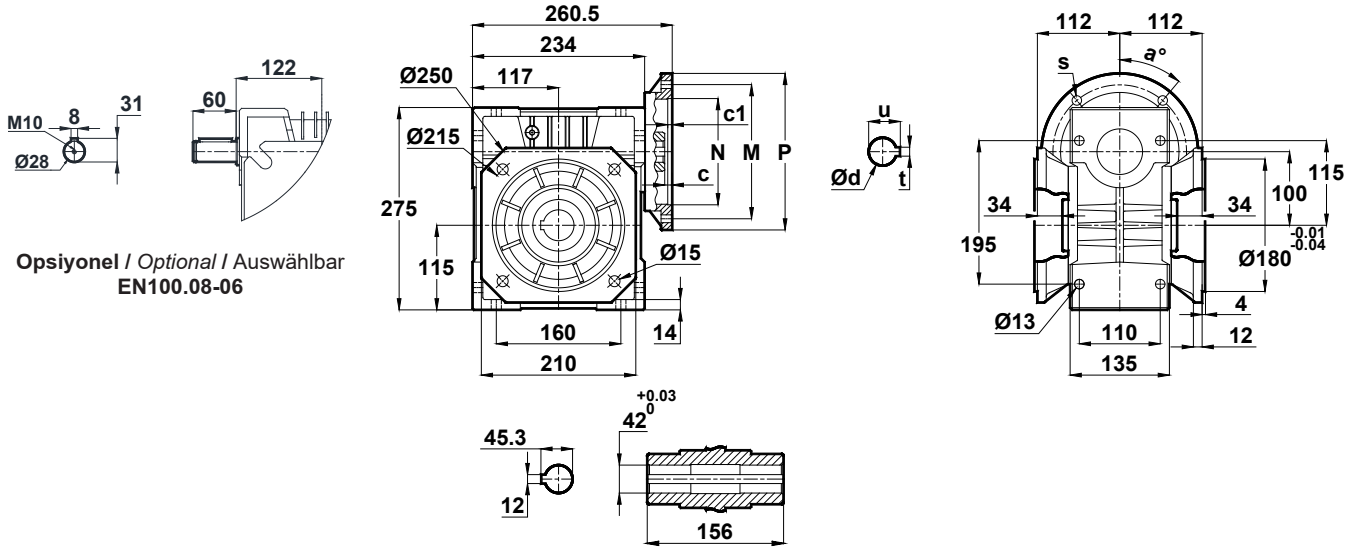
Abmessungsseiten



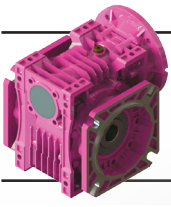
Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN100.08



| EN100 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|-----|-----|-----|-----|-----|----|------|---|-----|----|
| 80/B14 | 5.5 | 4 | 80 | 100 | 120 | 19 | 21.8 | 6 | 45° | 7 |
| 90/B14 | 5.5 | 4 | 95 | 115 | 140 | 24 | 27.3 | 8 | 45° | 9 |
| 100-112/B14 | 5.5 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 80/B5 | 5.5 | 4 | 130 | 165 | 200 | 19 | 21.8 | 6 | 45° | 12 |
| 90/B5 | 5.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 5.5 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 13 |



Ölçü Sayfaları

Dimension Pages

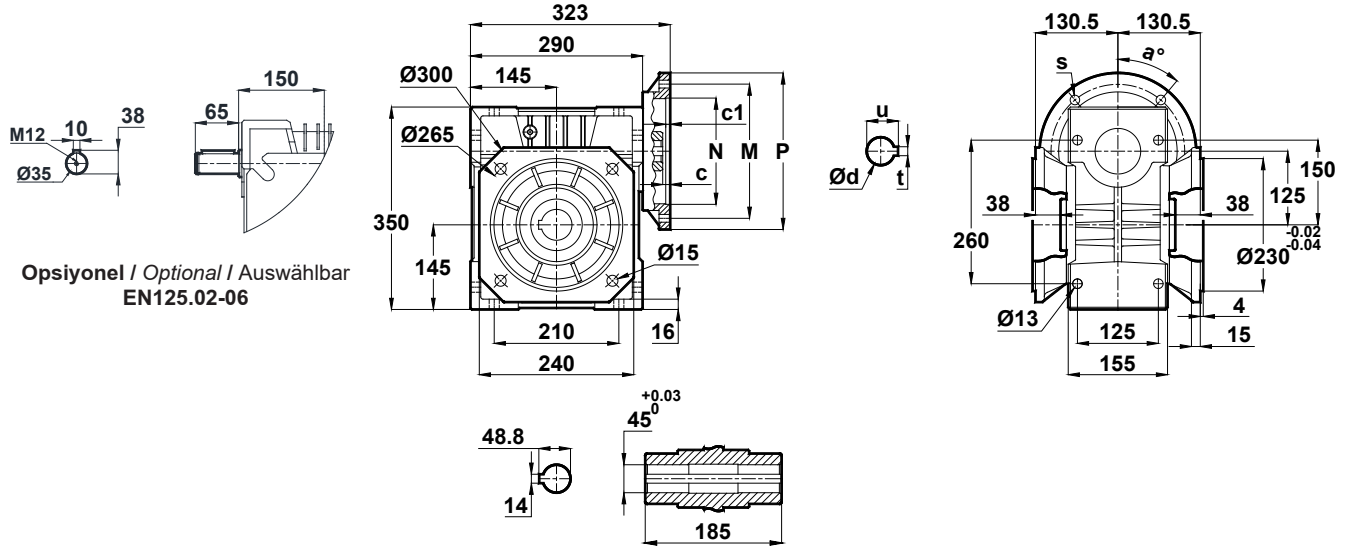
Abmessungsseiten



Kalasanati.com

-Mil ucu çekirme deliği DIN 332 sayfa 2 / Tapped center hole to DIN 332, sheet 2 / Zentrierung mit Gewinde DIN 332, Blatt 2

EN125.08



| EN125 | c | c1 | N | M | P | d | u | t | a | s |
|-------------|------|-----|-----|-----|-----|----|------|----|-----|----|
| 100-112/B14 | 12.8 | 3.5 | 110 | 130 | 160 | 28 | 31.3 | 8 | 45° | 9 |
| 132/B14 | 12.8 | 4.5 | 130 | 165 | 200 | 38 | 41.3 | 10 | 45° | 11 |
| 90/B5 | 13.5 | 4 | 130 | 165 | 200 | 24 | 27.3 | 8 | 45° | 12 |
| 100-112/B5 | 15.8 | 4.5 | 180 | 215 | 250 | 28 | 31.3 | 8 | 45° | 15 |
| 132/B5 | 15.8 | 4.5 | 230 | 265 | 300 | 38 | 41.3 | 10 | 45° | 15 |