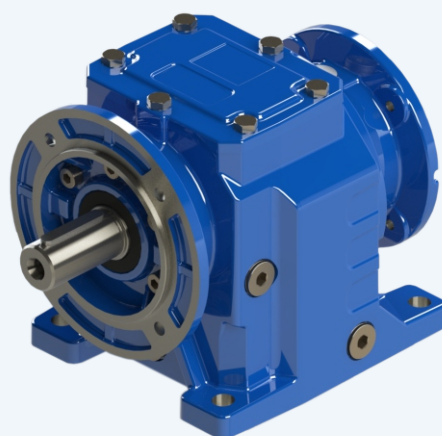
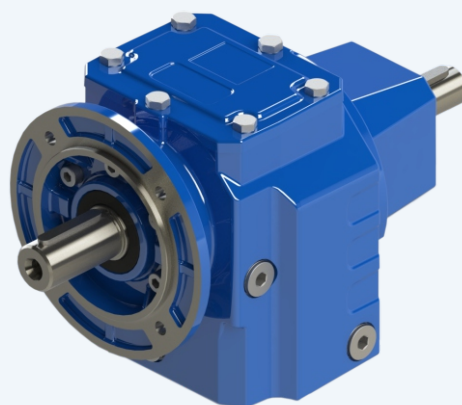
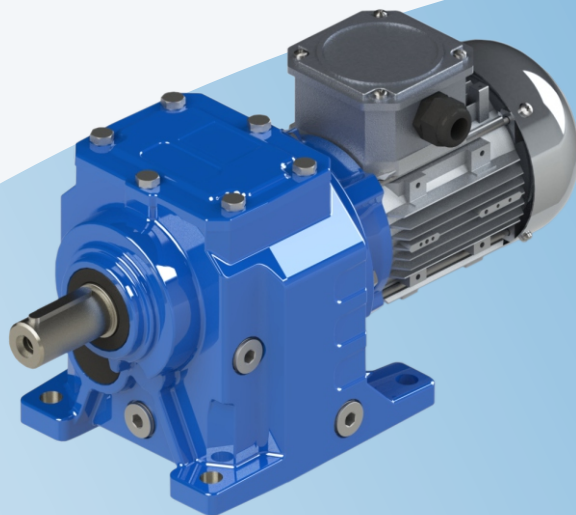


NRW[®]

DRIVE TECHNOLOGIES

A/F SERIE



Stirnradtriebmotoren
Helical Geared Motors
Helisel Dişlili Redüktör
Motoriduttori Coassiali
Motoréducteurs Coaxiaux
Motorreductores Coaxiales



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DRIVE TECHNOLOGIES

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DE ZEICHEN

IT SIMBOLOGIA

Zeichen

P	= Leistung in	(kW)
M	= Drehmoment in	(Nm)
n	= Drehzahl in	(rpm)
i	= Übersetzung	
F	= Kraft in	(N)
m	= Masse in	(kg)
f_B	= Betriebsfaktor	

Symbols

P	= Power	(kW)
M	= Torque	(Nm)
n	= Speed	(rpm)
i	= Reduction ratio	
F	= Load	(N)
m	= Weight	(kg)
f_B	= Service factor	

Semboller

P	= Güç	(kW)
M	= Moment	(Nm)
n	= Devir	(d/d)
i	= Tahvil Oranı	
F	= Kuvvet	(N)
m	= Ağırlık	(kg)
f_B	= Servis Faktörü	

Simbologia

P	= Potenza	(kW)
M	= Momento torcente	(Nm)
n	= Numero giri	(giri / 1')
i	= Rapporto di riduzione	
F	= Forza	(N)
m	= Peso	(kg)
f_B	= Fattore di servizio	

Symboles

P	= Puissance	(kW)
M	= Moment de torsion	(Nm)
n	= Nombre de tours	(tours/min)
i	= Rapport de réduction	
F	= Force	(N)
m	= Poids	(kg)
f_B	= Facteur de service	

Simbologia

P	= Potencia	(kW)
M	= Momento torsor	(Nm)
n	= Número de revoluciones	(rpm)
i	= Relación de reducción	
F	= Fuerza	(N)
m	= Peso	(kg)
f_B	= Factor de servicio	

EN SYMBOLS

FR SYMBOLES

TR SEMBOLLER

ES SIMBOLOGIA

1	= Antriebswelle
2	= Abtriebswelle
R	= Radial
A	= Axial
s	= Statisch
d	= Dynamisch
max	= Maximal
min	= Minimal

1	= Input shaft
2	= Output shaft
R	= Radial
A	= Axial
s	= Static
d	= Dynamic
max	= Maximum
min	= Minimum

1	= Giriş Şaftı
2	= Çıkış Şaftı
R	= Radyal
A	= Eksenel
s	= Statik
d	= Dinamik
max	= Maksimum
min	= Minimum

1	= Albero ingresso
2	= Albero uscita
R	= Radiale
A	= Assiale
s	= Statico
d	= Dinamico
max	= Massimo
min	= Minimo

1	= Arbre d'entrée
2	= Arbre de sortie
R	= Radial
A	= Axial
s	= Statique
d	= Dynamique
max	= Maximum
min	= Minimum

1	= Eje de entrada
2	= Eje de salida
R	= Radial
A	= Axial
s	= Estático
d	= Dinámico
max	= Máximo
min	= Mínimo

DE TECHNISCHE INFORMATIONEN

Für die korrekte Auswahl eines Getriebes oder eines Getriebemotors müssen einige grundsätzliche Daten bekannt sein, wie:

- A.** Die Antriebsdrehzahl am Getriebeeingang (n_1) und die gewünschte Abtriebsdrehzahl (n_2).
Mit diesen beiden Werten kann das Übersetzungsverhältnis (i) des Getriebes mit der folgenden Formel ausgerechnet werden:

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

- B.** Das für die Anwendung erforderliche Drehmoment (MH)
Wenn diese Daten bekannt sind, kann mit der Auswahl des Getriebemotors oder des Getriebes fortgefahren werden.

Auswahl der Getriebemotoren

Dieser Ratgeber führt in wenigen Schritten durch die Auswahl des geeigneten Antriebes:

1. Den Betriebsfaktor der Anwendung bestimmen (f_b) Dieser Parameter ist eine Funktion aus der Belastungsart der angetriebenen Maschine, der Anzahl der Anläufe pro Stunde und der Betriebsstundenzahl (siehe Absatz "Betriebsfaktor" S.8)
2. Die Eingangsleistung PH über das erforderliche Drehmoment MH, die Geschwindigkeit n_2 und den dynamischen Wirkungsgrad ermitteln.
Der Wert des dynamischen Wirkungsgrads hängt von der Art des Getriebes und von der Anzahl der Übersetzungsstufen ab. Für die Stirnradgetriebe der Serie A/F gilt ein mittlerer Wert von: (η_d)
A/F..1 Übersetzungsstufen = 0,97
A/F..2 Übersetzungsstufen = 0,96
A/F..3 Übersetzungsstufen = 0,94

$$PH = \frac{MH \cdot n_2}{9550 \cdot \eta_d}$$

3. Eine genormte Leistung P1 aus der Tabelle der Getriebemotorenleistungen aussuchen, die höher ist als die erforderliche PH, sodass:

$$P1 \geq PH$$

4. Nach dem Ermitteln der geeigneten genormten Leistung den Getriebemotor auswählen, der die Abtriebsdrehzahl zur Verfügung stellt, die der gewünschten n_2 am nächsten kommt, und der einen gleich hohen oder größeren Betriebsfaktor f_b besitzt als durch die Anwendung gefordert.

In den Auswahltabellen der Getriebemotoren sind die Kombinationen mit 50Hz - Motoren mit 4 oder 6 Polen dargestellt. Für abweichende Antriebsgeschwindigkeiten berücksichtigen Sie bitte die Daten aus den Getriebetabellen.

EN TECHNICAL INFORMATION

For correctly selecting a gear reducer or geared motor, several essential pieces of data are required:

- A.** The rotational input speed to the gear reducer (n_1) and the rotational output speed (n_2).
Through these two values it is possible to calculate the reduction ratio (i) of the gear reducer using the following formula:

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

- B.** The torque required by the application (MH) The geared motor or gear reducer can be once this data is known.

Geared motor selection

This guide indicates a brief sequence of steps for selecting a suitable product:

1. Determine the application's actual service factor (f_b) This parameter depends on the type of load of the powered machine, the number of starts per hour and the hours of operation (refer to the "Service factor" paragraph on page 8)
2. Calculate the input power PH using the required torque value MH, the speed n_2 and dynamic efficiency value. The dynamic efficiency value depends on the type of gear reducer and on the number of gear reduction stages. A/F-range helical gear reducers have an average value equal to: (η_d)
A/F..1 stages = 0,97
A/F..2 stages = 0,96
A/F..3 stages = 0,94

$$PH = \frac{MH \cdot n_2}{9550 \cdot \eta_d}$$

3. Consult the geared motor performance tables and identify a normalised power value P1 exceeding the required power PH, such that:

$$P1 \geq PH$$

4. Once the suitable normalised power has been identified, select the geared motor capable of generating the rotational speed closest to the desired n_2 value and with service factor f_b greater or equal to that required by the application.

In the geared motor selection tables the combinations include 4-pole and 6-pole motors powered at 50Hz; for different drive speeds refer to the nominal data provided for the gear reducers.

TR TEKNİK BİLGİLER

Doğru ürünü seçebilmek için, Redüktörün belirlenmiş olan verilerinin bilinmesi gerekir

- A.** Redüktörün giriş devri (n_1) ve istenilen çıkış devri (n_2), ise verilmesi gereken tahvil (i) tahvil formülü ile hesaplanır:

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

- B.** Kullanılacak yer için istenilen Moment bilinmeli ve böylece redüktör seçimine devam edebilirsiniz.

Redüktör seçimi

Bu kılavuz size birkaç adımda doğru redüktör seçiminde yardımcı olacaktır.

1. Kullanılacak uygulamalarda Servis faktörünün (f_b) belirlenmesi; Servis faktörünün belirlenmesi redüktörün kullanımına bağlı, yani hareket ettirdiği makinenin yük tipi, bir saatteki start-stop sayısı ve çalışma saatidir ("servis faktörü" S.8 bkz).
2. Giriş gücü (PH) gerekli olan Moment (MH), çıkış devri n_2 ve dinamik verimlilik derecesini bilmek gerekir. Dinamik verimlilik değeri redüktörün tipi ve dişli kademelerine bağlıdır.
A/F serisi Helisel dişli redüktörlerde verim (η_d) yaklaşık olarak:
A/F..1 kademe = 0,97
A/F..2 kademe = 0,96
A/F..3 kademe = 0,94

$$PH = \frac{MH \cdot n_2}{9550 \cdot \eta_d}$$

3. Tablodan Redüktör için Normlanmış güç P1, gerekli olan PH den daha yüksek olacak şekilde seçiniz, böylece:

$$P1 \geq PH$$

4. Motorlu redüktörler için belirlenmiş standart güçler ile redüktörü seçebilirsiniz. İstenilen çıkış devrine yakın olan değer seçilir. Fakat servis faktörü istenilen ile aynı, veya daha büyük olmalıdır. (Kullanım alanı için gerekli olan servis faktörü f_b)

Motorlu seçim sayfalarında, verilen değerler 50Hz'de 4 ve 6 kutuplu motorları içermektedir. Diğer motor devirleri için motorların nominal verilerini gözönüne alınız.

IT INFORMAZIONI TECNICHE

Per la corretta selezione di un riduttore o di un motoriduttore occorre disporre di alcuni dati fondamentali quali:

A. La velocità angolare in entrata al riduttore (n1) e la velocità angolare in uscita (n2).
Attraverso questi due valori è possibile calcolare il rapporto di riduzione (i) del riduttore attraverso la formula:

$$i = \frac{n1}{n2}$$

B. Il momento torcente richiesto dall'applicazione (MH).
Noti questi dati, si può procedere nella selezione del motoriduttore o del riduttore.

Selezione dei motoriduttori

Questa guida conduce alla selezione del prodotto attraverso pochi passi:

1. Determinare il fattore di servizio effettivo dell'applicazione (fb). Questo parametro è funzione del tipo di carico della macchina azionata, del numero di azionamenti per ora e del numero di ore di funzionamento (vedi paragrafo "Fattore di servizio" pag. 9).
2. Ricavare la potenza in entrata PH mediante il momento torcente richiesto MH, la velocità n2 e il rendimento dinamico.
Il valore di rendimento dinamico dipende dalla tipologia del riduttore e dal numero di stadi d'ingranaggi di riduzione. I riduttori coaxiali della serie A/F presentano un valore medio pari a: (ηd)
A/F..1 stadi = 0,97
A/F..2 stadi = 0,96
A/F..3 stadi = 0,94

$$PH = \frac{MH \cdot n2}{9550 \cdot \eta d}$$

3. Consultare le tabelle delle prestazioni dei motoriduttori ricercando una potenza normalizzata P1 superiore a quella richiesta PH tale che:

$$P1 \geq PH$$

4. Individuata la potenza normalizzata idonea, selezionare dunque il motoriduttore in grado di sviluppare la velocità angolare più vicina a quella n2 desiderata e con fattore di servizio fb. maggiore o uguale richiesto dall'applicazione.

Nelle tabelle di selezione dei motoriduttori gli abbinamenti sono realizzati con motori 4,6 poli alimentati a 50Hz, per velocità di azionamento diverse riferirsi ai dati nominali forniti per i riduttori.

FR INFORMACION TECNICA

Pour choisir correctement un réducteur ou un motoréducteur, il est nécessaire de disposer de certaines données fondamentales telles que:

A. La vitesse angulaire en entrée du réducteur (n1) et la vitesse angulaire en sortie (n2).
Grâce à ces deux valeurs, il est possible de calculer le rapport de réduction (i) du réducteur en utilisant la formule:

$$i = \frac{n1}{n2}$$

B. Le moment de torsion requis par l'application (MH).
Une fois ces données, il est possible de procéder au choix du motoréducteur ou du réducteur.

Selection des motoréducteur

Ce guide permet de procéder à la sélection du produit en suivant quelques étapes:

1. Déterminer le facteur de service effectif de l'application (fb). Ce paramètre dépend du nombre d'actionnements par heure et du nombre d'heures de fonctionnement (voir paragraphe "Facteur de service" page 9).
2. Déterminer la puissance en entrée PH à l'aide du moment de torsion requis MH de la vitesse n2 et du rendement dynamique.
La valeur du rendement dynamique dépend du type de réducteur et du nombre de trains d'engrenages de réduction. Les réducteurs coaxiaux de la série A/F présentent une valeur moyenne égale à: (ηd)
A/F..1 trains = 0,97
A/F..2 trains = 0,96
A/F..3 trains = 0,94

$$PH = \frac{MH \cdot n2}{9550 \cdot \eta d}$$

3. Consulter le tableau des performances des motoréducteurs en recherchant une puissance normalisée P1 supérieure à la puissance PH demandée telle que:

$$P1 \geq PH$$

4. Une fois identifiée la puissance normalisée adéquate, sélectionner le motoréducteur en mesure de développer la vitesse angulaire la plus proche de la vitesse n2 désirée et présentant un facteur de service fb. supérieur ou égal à celui demandé par l'application.

Dans les tableaux de sélection des motoréducteurs, les combinaisons sont réalisées avec des moteurs 4,6 pôles alimentés à 50Hz. Pour des vitesses d'actionnement différentes, se référer aux données nominales fournis par les réducteurs

ES INFORMACIÓN TÉCNICO

Para la correcta selección de un reductor o de un motorreductor es necesario disponer de algunos datos fundamentales como:

A. La velocidad angular a la entrada del reductor (n1) y la velocidad angular a la salida (n2). A través de reducción (i) del reductor utilizando la fórmula:

$$i = \frac{n1}{n2}$$

B. El momento de torsión requerido por la aplicación (MH).
Conocidos estos datos, se puede proceder a la selección del motorreductor o del reductor.

Selección de los motorreductores

Esta guía conduce a la selección del producto a través de unos pocos pasos:

1. Determinar el factor de servicio efectivo de la aplicación (fb). Este parámetro es función del tipo de carga de la máquina accionada, del número de accionamientos por hora y de la cantidad de horas de funcionamiento (ver el párrafo "Factor de servicio" pág. 9).
2. Obtener la potencia a la entrada PH utilizando el momento de torsión requerido MH, la velocidad n2 el rendimiento dinámico.
El valor del rendimiento dinámico depende del tipo de reductor y del número de etapas de engranajes de reducción. Los reductores coaxiales de la serie A/F presentan un valor medio igual a:
A/F..1 trenes = 0,97
A/F..2 trenes = 0,96
A/F..3 trenes = 0,94

$$PH = \frac{MH \cdot n2}{9550 \cdot \eta d}$$

3. Consultar las tablas de las prestaciones de los motorreductores buscando una potencia normalizada P1 superior a la requerida PH tal que:

$$P1 \geq PH$$

4. Una vez identificada la potencia normalizada adecuada, seleccionar el motorreductor capaz de desarrollar la velocidad angular más cercana a la n2 deseada y con un factor de servicio fb mayor o igual que el necesario para la aplicación

En las tablas de selección de los motorreductores, las combinaciones se realizan con motores de 4,6 polos alimentados con 50Hz. Para velocidades de accionamiento diferentes, consultar los datos nominales suministrados para los reductores.

DE TECHNISCHE INFORMATIONEN

Auswahl der Getriebe

1. Den Betriebsfaktor der Anwendung bestimmen (fb) (siehe Absatz "Betriebsfaktor" S.8).
2. Das benötigte Übersetzungsverhältnis i aus der erforderlichen Abtriebsdrehzahl n2 und der Antriebsdrehzahl n1 bestimmen.

$$i = \frac{n1}{n2}$$

3. Das Drehmoment MG für die Auswahl des Getriebes über das von der Anwendung erforderliche Drehmoment MH und den Betriebsfaktor f.s. ermitteln:

$$MG = MH \cdot (fb)$$

4. Das Getriebe mit dem Übersetzungsverhältnis aus der tabelle der Getriebedaten auswählen, das dem bestimmten Übersetzungsverhältnis am nächsten kommt und über ein ausreichendes Nennmoment M2 verfügt, sodass:

$$M2 \geq MG$$

Überprüfungen

Nach der Auswahl des Getriebes oder des Getriebemotors ist es ratsam, die folgenden Überprüfungen durchzuführen:

A. Thermische Leistung

Die thermische Leistung des Getriebes muss gleich oder größer als die installierte mechanische Leistung sein oder als die von der Anwendung gemäß den im Abschnitt anhaltenen Angaben erforderliche Leistung (siehe Abschnitt "thermische Leistung" S.12).

B. Maximales Drehmoment

Grundsätzlich darf das maximale Drehmoment (momentane Spitzenbelastung), das an das Getriebe angewendet werden kann, nicht mehr als 200% des Nennmoments Mmax betragen.

C. Radiale Belastungen

Überprüfen Sie bitte das die radialen Belastungen auf den Eingangs - und / oder Ausgangswellen die zu gelassenen Katalogwerte nicht überschreiten.

Wenn diese größer sind, bitte die Getriebegröße anpassen oder die Auslegung für die externe Last anpassen.

In der Prüfphase berücksichtigen bitte berücksichtigen, dass die im Katalog angegebenen Werte sich auf Lasten beziehen, die auf die Mittelachse des Wellenüberstands wirken. Daher ist es notwendig mit den entsprechenden Formeln die zugelassene Last in der gewünschten Position zu bestimmen, falls diese in einer davon abweichenden Position angebracht wird (siehe Absatz "Radiale Belastungen S. 20).

EN TECHNICAL INFORMATION

Gear reducer selection

1. Determine the application's service factor (fb) (consult to the "Servico factor" paragraph on page 8).
2. Calculate the reduction ratio i from the requested output speed n2 and from the input speed n1.

$$i = \frac{n1}{n2}$$

3. Calculate the torque MG for selecting the gear reducer through the torque required by the application MH and the service factor s.f.:

$$MG = MH \cdot (fb)$$

4. Consult the gear reducer performance tables and identify the gear reducer that - with a reduction ratio closest to the calculated ratio - has a nominal torque M2 such that

$$M2 \geq MG$$

Checks

Once the gear reducer or geared motor has been selected, the following checks should be performed:

A. Thermal Power

The gear reducer's thermal power must be equal to or greater than the installed mechanical power, or the power required by the application according to the indications contained in the section (refer to the "Thermal power" paragraph on page 12).

B. Maximum Torque

Generally, the maximum torque (peak instantaneous load) that can be applied to the gear reducer must not exceed 200% of the nominal torque Mmax.

C. Radial Loas

Verify that the loads acting on the input and/or output shaft are within with the values indicated in the catalogue. If they exceed these values, increase the size of the gear reducer or modify the external load capacity.

During the checking phase, it is important to remember that the values indicated in the catalogue refer to loads acting on the mid-point of the shaft protrusion, therefore, if the load is applied to a different position, appropriate formulas must be used to calculate the admissible load in the desired position (refer to the "Radial loads" paragraph on page 20).

TR TEKNİK BİLGİLER

Redüktör seçimi

1. Uygulama alanı için servis faktörünü (fb) belirleyiniz. (Sayfa 8 "servis faktörü" bakınız)
2. Giriş (n1) ve çıkış (n2) devirlerinden hesaplanan tahvilin belirlenmesi.

$$i = \frac{n1}{n2}$$

3. Redüktörün momenti ve uygulama için gerekli olan moment ve servis faktörünü belirleyiniz.

$$MG = MH \cdot (fb)$$

4. İstemiş olduğunuz tahvile ve moment (M2) değerine yakın olan redüktörü performans tablolarından seçiniz. Böylece;

$$M2 \geq MG$$

Kontrol ediniz

Redüktör veya motorlu redüktör seçiminin sonra, altta sıralanmış maddeleri kontrol etmenizi tavsiye ederiz.

A. Termik Güç

Redüktörün termik gücü mekanik güç ile aynı ve daha büyük olmalıdır veya aplikasyona uygun olarak verilen değerler kısmında belirlenmiş verilere uygun olmalı (Sayfa 12 termik güç kısmına bakınız)

B. Maximum Moment

Redüktöre uygulanabilen genelde maximum moment (Anlık pik moment), %200 den daha fazla olmamalıdır.

C. Radyal Yük

Lütfen giriş ve çıkış millerinde radyal yüklerin katalog değerlerinin dışına çıkmaması için kontrol ediniz. Eğer yük daha büyük ise redüktörün büyüklüğünü ona göre seçiniz veya dış yükü ona göre uygulayınız.

Kontrol aşamasında katalogta verilen radyal yüklerin çıkış millerinin orta noktasına geldiğine dikkat ediniz. Bu nedenle yükü uygun formüller ile istenilen pozisyona getirmeniz gerekir. Eğer yük pozisyonunuz uygun değil ise sayfa 20 "Radyal yükler" kısmına bakınız.

IT INFORMAZIONI TECNICHE

Selezione dei riduttori

1. Determinare il fattore di servizio dell'applicazione (f_b) (vedi paragrafo "Fattore di servizio" pag. 9)
2. Calcolare il rapporto di riduzione i dalla velocità in uscita n_2 richiesta e dalla quella in entrata n_1 .

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

3. Ricavare il momento torcente MG per la selezione del riduttore attraverso la coppia richiesta dall'applicazione MH ed il fattore di servizio f.s.:

$$MG = MH \cdot (f_b)$$

4. Consultare le tabelle delle prestazioni dei riduttori cercando il riduttore che, col rapporto di riduzione più prossimo a quello calcolato, dispone di una coppia nominale M_2 tale che:

$$M_2 \geq MG$$

Verifiche

Esguita la selezione del riduttore o del motoriduttore è opportuno effettuare le seguenti verifiche:

A. Potenza Termica

La potenza termica del riduttore deve essere uguale o maggiore della potenza meccanica installata o della potenza richiesta dall'applicazione secondo le indicazioni contenute nella sezione (vedi paragrafo "Potenza termica" pag 13).

B. Coppia Massima

Generalmente la coppia massima (picco di carico istantaneo) che può essere applicata al riduttore non deve superare il 200% della coppia nominale M_{max} .

C. Carichi radiali

Verificare che i carichi radiali agenti sugli alberi di entrata e/o di uscita rispettino i valori ammessi a catalogo. Se superiori, aumentare la grandezza del riduttore o modificare la supportazione del carico esterno.

Nella fase di verifica occorre tenere conto che i valori indicati a catalogo si riferiscono a carichi agenti sulla mezzeria della sporgenza dell'albero per cui, nel caso il carico sia applicato in posizione diversa è necessario determinare con le apposite formule il carico ammissibile nella posizione desiderata (vedi paragrafo "Carichi Radiali" pag 21).

FR INFORMACION TECNICA

Sélection des réducteurs

1. Déterminer le facteur de service de l'application (f_b) (voir paragraphe "Facteur de service" page 9).
2. Calculer le rapport de réduction (i) à partir de la vitesse n_2 requise en sortie et de la vitesse en entrée n_1

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

3. Déterminer le moment de torsion MG pour la sélection du réducteur à l'aide du couple MH requis par l'application et du facteur de service f.s.:

$$MG = MH \cdot (f_b)$$

4. Consulter les tableaux des performances des réducteurs en recherchant le réducteur disposant du rapport de réduction le plus proche du rapport calculé et présentant un couple nominal M_2 tel que:

$$M_2 \geq MG$$

Vérifications

Une fois sélectionné le réducteur ou le motoréducteur, il convient d'effectuer les vérifications suivantes:

A. Puissance Thermique

La puissance thermique doit être égale ou supérieure à la puissance mécanique installée, ou à la puissance requise par l'application, conformément aux indications contenues dans la section (voir paragraphe "Puissance thermique" page 13).

B. Couple Maximal

Généralement, le couple maximal (pic de charge instantanée) pouvant être appliqué au réducteur, ne doit pas dépasser 200% du couple nominal M_{max} .

C. Charges Radiales

Vérifier que les charges radiales agissant sur les arbres d'entrée et/ou de sortie respectent les valeurs admises dans le catalogue. Si elles sont supérieures, augmenter la taille du réducteur ou modifier le palier de la charge extérieure.

Durant la phase de vérification, il est nécessaire de tenir compte du fait que les valeurs indiquées dans le catalogue se réfèrent à des charges agissant sur la moitié de la partie saillante de l'arbre; par conséquent, en cas d'application de la charge dans une position différente, il est nécessaire de déterminer la charge admissible dans la position désirée à l'aide des formules spéciales (voir paragraphe "Charges radiales" page 21).

ES INFORMACIÓN TÉCNICO

Selección de los reductores

1. Determinar el factor de servicio de la aplicación (f_b) (ver el párrafo "Factor de servicio" pág. 9).
2. Calcular la relación de reducción i entre la velocidad de salida n_2 requerida y la de entrada n_1

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

3. Obtener el momento de torsión MG para seleccionar el reductor a través del par necesario para la aplicación MH y el factor de servicio f.s.:

$$MG = MH \cdot (f_b)$$

4. Consultar las tablas de las prestaciones de los reductores buscando el reductor que, con la relación de reducción más próxima a la calculada, disponga de un par nominal M_2 tal que:

$$M_2 \geq MG$$

Verificaciones

Una vez realiza la selección del reductor o del motorreductor es conveniente efectuar las siguientes verificaciones:

A. Potencia Térmica

La potencia térmica del reductor debe ser mayor o igual que la potencia mecánica instalada o que la potencia requerida por la aplicación según las indicaciones contenidas en la sección (ver el párrafo "Potencia térmica" pág 13).

B. Par Máximo

Generalmente el par máximo (pico de carga instantáneo) que se puede aplicar al reductor no debe superar el 200% del par nominal M_{max} .

C. Cargas Radiales

Verificar que las cargas radiales que actúan sobre los árboles de entrada y/o de salida respeten los valores admitidos según el catálogo. Si son mayores, aumentar el tamaño del reductor o modificar la capacidad de soportar la carga externa. En la fase de verificación, es necesario tener en cuenta que los valores indicados en el catálogo se refieren a carga está aplicada en una posición diferente, es necesario determinar la carga admisible en la posición deseada con las fórmulas correspondientes (ver el párrafo "Cargas Radiales" pág. 21).

DE BETRIEBSFAKTOR

Der Betriebsfaktor (f_B) hängt von den Betriebsbedingungen ab, unter denen das Getriebe betrieben wird.
Die Parameter, die für eine korrekte Auswahl des Betriebsfaktors zu berücksichtigen sind, sind folgende:

- Belastungsart der angetriebenen Maschine: **U - M - H**
- Tägliche Betriebsdauer: **Std./Tag (Δ)**
- Anlaufrequenz: **Anl./Std. (*)**

LAST :	U - Gleichförmig	$maf \leq 0.3$
	M - Mittlere Überlast	$maf \leq 3$
	H - Hohe Überlast	$maf \leq 10$

maf = Je/Jm

- maf Massenträgheitswert
 - Je (kgm^2) äußeres Trägheitsmoment reduziert auf die Motorwelle
 - Jm (kgm^2) Motor-Trägheitsmoment
- Bei $maf > 10$ bitte mit unserem Kundendienst Kontakt aufnehmen.

U- Schneckenförderer für Leichtmaterial, Gebläse, Montagebänder, Bandförderer für Leichtmaterial, kleine Rührwerke, Kleinlastenaufzüge, Kreiselpumpen, Hebebühnen, Reinigungsmaschinen, Abfüllmaschinen, Prüfmaschinen, Bandförderer.

M- Wickelmaschinen, Vorrichtungen zur Zuführung bei Holzbearbeitungsmaschinen, Lastaufzüge, Auswuchtmaschinen, Gewindeschneidmaschinen, mittlere Rührwerke und Mischer, Bandförderer für schwere Materialien, Winden, Schiebetore, Dünger Abkratzer, Verpackungsmaschinen, Betonmischmaschinen, Kranfahrund Kranhubwerke, Fräsmaschinen, Biegemaschinen, Zahnrad-pumpen, Hubstapler, Drehtische.

H- Rührwerke für schwere Materialien, Scheren, Pressen, Schleudern, Winden und Aufzüge für schwere Materialien, Schleifmaschinen, Steinbrecher, Kettenbecherwerke, Bohrmaschinen, Hammerröhren, Exzenterpressen, Biegemaschinen, Drehtische, Scheuertrommeln, Vibrationsrüttler, Schneidmaschinen, Stanzen, Walzwerke, Zementmühlen.

EN SERVICE FACTOR

The service factor (f_B) depends on the operating conditions the reduction unit is subjected to.
The parameters that need to be taken into consideration to select the most adequate service factor correctly comprise:

- Type of load of the operated machine: **U - M - H**
- Length of daily operating time: **hours/day (Δ)**
- Start-up frequency: **starts/hour (*)**

TYPE OF LOAD:	U - Uniform	$maf \leq 0.3$
	M - Moderate shocks	$maf \leq 3$
	H - Heavy shocks	$maf \leq 10$

maf = Je/Jm

- maf Factor of inertia
 - Je (kgm^2) moment of reduced external inertia at the drive - shaft
 - Jm (kgm^2) moment of inertia of motor
- If $maf > 10$ call our Technical Service.

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

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

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

TR SERVİS FAKTÖRÜ

Servis faktörü (f_B) redüktörün maruz kaldığı çalışma koşullarına göre değişkenlik gösterir.
En etkin servis faktörünü seçmek için göz önüne alınması gereken parametreler aşağıdaki hususlara bağlıdır:

- Çalışan makinedeki yükün tipi: **U - M - H**
- Günlük çalışma süresi: **saat / gün (Δ)**
- Start-Stop sıklığı: **başlangıç / saatler (*)**

YÜK TİPİ :	U - Uniform	$maf \leq 0.3$
	M - Orta seviyeli şoklar	$maf \leq 3$
	H - Ağır şoklar	$maf \leq 10$

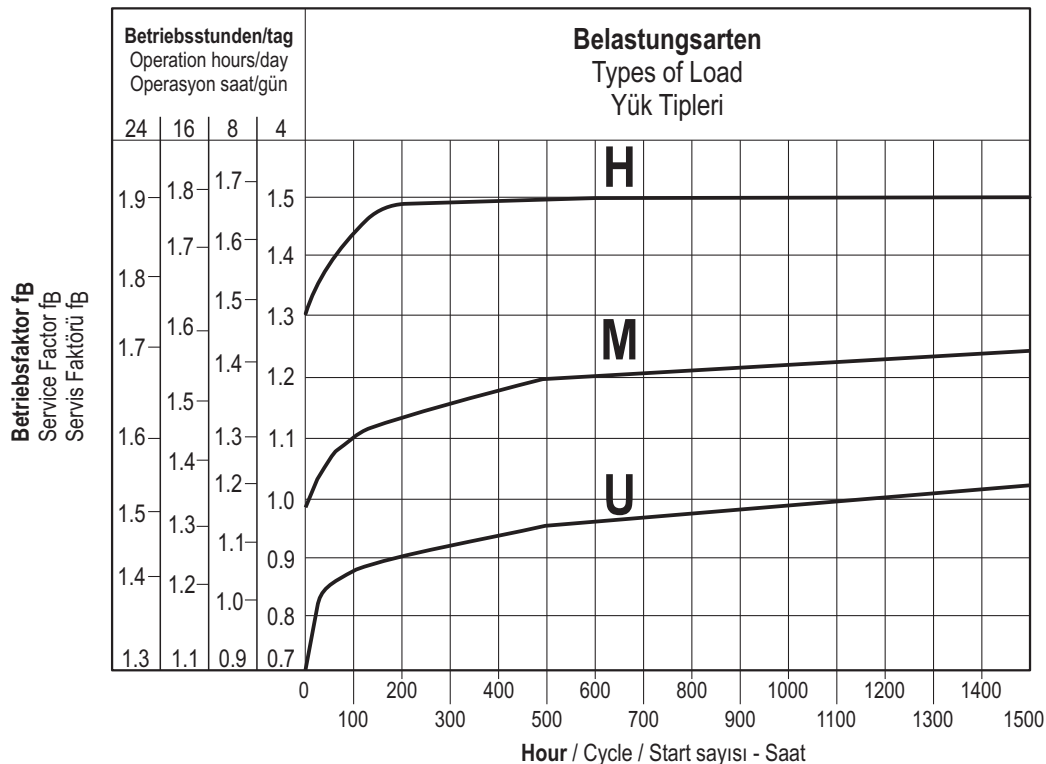
maf = Je/Jm

- maf Kuvvet hız faktörü
 - Je (kgm^2) sürüm şaftındaki indirgenmiş harici atalet momenti
 - Jm (kgm^2) motor atalet momenti
- Eğer maf değeri > 10 ise durumu Teknik Servisimize bildirin.

U- Hafif malzemeler için vida besleme aparatları, fanlar, montaj hatları hafif malzemeler naklinde kullanılan kemerler, küçük mikserler, lifter temizleme makinaları, dolgu makinaları, kontrol makinaları.

M- Helezonlar, açığa işleme makinaları, besleme aparatları, malzeme lift makinaları, balans makinaları, pafta makinaları, orta boy mikserler, ağır malzeme naklinde kullanılan kemerler, vinçler, raylı kapılar, suni gübre spatulası, paketleme makinaları, beton mikserleri, vinç mekanizmaları, freze makinaları, bükme-kıvrırma makinaları, dişli pompalar.

H- Ağır malzemeler için mikserler, kırkma makası, presler, santrifüj makinaları, ayna destek aparatları, ağır malzemeler için lift ve vinçler, taşlama tezgahları, bileme taşları, pistonlu asansörler, matkap tezgahları, çekiç milleri, mil dirsek presleri, bükme-kıvrırma makinaları, döner levhalar, silindir variller, vibratörler, kağıt öğütücüler.



IT FATTORE DI SERVIZIO

Il fattore di servizio (f_B) dipende dalle condizioni di funzionamento alle quali il riduttore è sottoposto.

I parametri che occorre considerare per una corretta selezione del fattore di servizio più adeguato sono:

- Tipo del carico della macchina azionata: **U - M - H**
- Durata di funzionamento giornaliero: **ore/giorno (Δ)**
- Frequenza di avviamento: **avv/ora (*)**

TIPO DEL CARICO:	U - Uniforme	$maf \leq 0.3$
	M - Medio	$maf \leq 3$
	H - Forte	$maf \leq 10$

$maf = Je/Jm$

- maf fattore d'inerzia
 - Je (kgm²) momento d'inerzia esterno ridotto all'albero motore
 - Jm (kgm²) momento d'inerzia motore
- Se maf > 10 interpellare il ns. Servizio Tecnico.

FR FACTEUR DE SERVICE

Le facteur de service (f_B) est subordonné aux conditions de fonctionnement auxquelles le réducteur est soumis.

Les paramètres qu'il faut considérer pour un choix correct du facteur de service adéquat sont les suivants:

- Type de charge de la machine actionnée: **U - M - H**
- Durée de fonctionnement journalière: **heures / jour (Δ)**
- Fréquence de démarrage: **dém / heure (*)**

TYPE DE CHARGE:	U - Uniforme	$maf \leq 0.3$
	M - Surcharge moyenne	$maf \leq 3$
	H - Surcharge forte	$maf \leq 10$

$maf = Je/Jm$

- maf facteur d'inerzia
 - Je (kgm²) moment d'inertie extérieur ramené à l'arbre-moteur
 - Jm (kgm²) moment d'inertie moteur
- En cas de maf > 10, contacter notre S.ce Technique.

ES FACTOR DE SERVICIO

El factor de servicio (f_B) deende de las condiciones de funcionamiento a las cuales está sometido el reductor.

Los parámetros que deben ser considerados para una correcta selección del factor de servicio más adecuado son:

- Tipo de carga de la máquina accionada: **U - M - H**
- Duración de funcionamiento diario: **horas/día (Δ)**
- Frecuencia de arranques: **arr/hora (*)**

TIPO DE CARGA:	U - Uniforme	$maf \leq 0.3$
	M - Sobrecarga media	$maf \leq 3$
	H - Sobrecarga fuerte	$maf \leq 10$

$maf = Je/Jm$

- maf factor de inercia
 - Je (kgm²) inercia externa reducida al eje motor
 - Jm (kgm²) inercia motor
- En caso de maf > 10, ponerse en contacto con nuestro Servicio Técnico.

U- Coclee per materiali leggeri, ventole, linee di montaggio, nastri trasportatori per materiali leggeri, piccoli agitatori, elevatori, macchine pulitrici, macchine riempitrici, macchine per il controllo, nastri trasportatori.

M- Dispositivi di avvolgimento, apparecchi per l'alimentazione delle macchine per il legno, montacarichi, equilibratrici, filettatrici, agitatori medi e mescolatori, nastri trasportatori per materiali pesanti, verricelli, porte scorrevoli, raschiatore di concime, macchine per l'imballaggio, betoniere, meccanismi per il movimento delle gru, frese, piegatrici, pompe a ingranaggi.

H- Agitatori per materiali pesanti, cesoie, presse, centrifughe, supporti rotanti, verricelli ed ascensori per materiali pesanti, torni per la rettifica, frantoi da pietre, elevatori a tazze, perforatrici, mulini martello, presse ad eccentrico, piegatrici, tavole rotanti, barilatrici, vibratori, trinciatrici.

U- Vis d'Archimède pour matériaux légers, ventilateurs, lignes de montage, convoyeurs pour matériaux légers, petits agitateurs, élévateurs, machines à nettoyer, machines à remplir, machines pour le contrôle, convoyeurs.

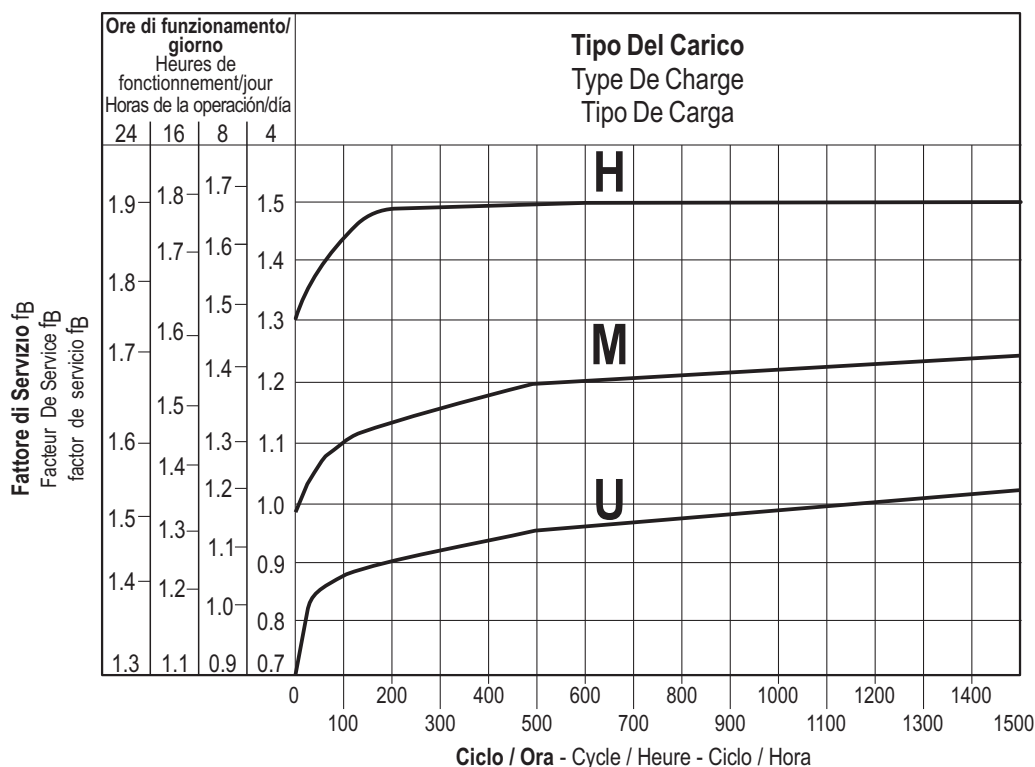
M- Dispositifs d'enroulement, appareils pour l'alimentation des machines pour le bois, monte-charges, équilibreuses, taraudeuses, agitateurs moyens et mélangeurs, convoyeurs pour matériaux lourds, treuils, portes coulissantes, racleurs d'engrais, machines à emballer, bétonnières, mécanismes pour le mouvement des grues, fraises, plieuses, pompes à engranages.

H- Agitateurs pour matériaux lourds, cisailles, presses, centrifugeuses, supports rotatifs, treuils et ascenseurs pour matériaux lourds, tours pour la rectification, concasseurs de pierres, élévateurs à godets, perceuses, moulins à marteau, presses à excentrique, plieuses, tables tournantes, polisseuses, vibreurs, machines à hacher.

U- Tornillos de Arquímedes para materiales ligeros, ventiladores, líneas de montaje, cintas transportadoras para materiales ligeros, pequeños agitadores, elevadores, máquinas limpiadoras, máquinas llenadoras, máquinas comprobadoras, cintas transportadoras.

M- Dispositivos de enrollado, alimentadores de las máquinas para la madera, montacargas, equilibradores, roscadoras, agitadores medios y mezcladores, cintas transportadoras para materiales pesados, cabrestantes, puertas corredizas, raspadores de abono, máquinas empaquetadoras, hormigoneras, mecanismos para el movimiento de las grúas, fresadoras, plegadoras, bombas de engranajes.

H- Agitadores para materiales pesados, cizallas, prensas, centrifugadoras, soportes rotativos, cabrestantes y elevadores para materiales pesados, tornos para la rectificación, molinos de piedras, elevadores de cangilones, perforadoras, moledores a percusión, prensas de excéntrica, plegadoras, mesas giratorias, pulidoras, vibradores, cortadoras.



DE KRISTISCHE ANWENDUNGEN

Die im Katalog aufgeführten Leistungsdaten gelten für die Einbaulage M1 oder gleichwertig, wenn das Ritzel nicht völlig mit Öl geschmiert wird.

Für andere Einbaulagen und / oder besondere Antriebsdrehzahlen sind die Tafeln zu beachten, die verschiedene kritische Zustände für jede Getriebegröße darstellen. Darüber hinaus sind nachstehende Anwendungen zu beachten und eventuell sollte mit unserem Kundendienst Kontakt aufgenommen werden:

- Anwendungen mit sehr hohen Trägheitsmomenten.
- Anwendungen mit hohen dynamischen Beanspruchungen auf Getriebegehäuse.
- Einsatz bei Umgebungstemperaturen unter -5°C oder über 40°C.
- Nicht im Katalog vorgesehene Einbaulagen.
- Anwendungen, die bei Bruch des Getriebes für den Menschen gefährlich sein könnten.
- Einsatz als Übersetzungsgetriebe (Übersetzung ins Schnelle).
- Einsatz als Hebewinde.
- Einsatz unter einem Druck, der nicht dem normalen Luftdruck entspricht.
- Einsatz in Verbindung mit aggressiven chemischen Substanzen.
- Einsatz unter Salzwassereinwirkung.
- Einsatz unter radioaktiver Strahlung.

Anwendungen, bei denen das Eintauchen des Getriebes in Wasser vorgesehen ist (auch teilweise), sollen vermieden werden. Das max. zulässige Drehmoment (*) des Getriebes, darf nicht den zweifachen Wert des in der Leistungstabelle angegebenen nominalen Wert des Drehmomentes ($f_b = 1$) übersteigen.

(*) Hierbei sind Überlasten gemeint, welche durch Anlaufen unter Vollast, Bremsungen, Stöße und weiter dynamische Ursachen, hervorgerufen werden.

EN CRITICAL APPLICATIONS

The performance given in the catalogue correspond to mounting position M1 or similar, ie. when the first stage is not entirely immersed in oil. For other mounting positions and/or particular input speeds, refer to the tables that highlight different critical situations for each size of reduction unit. It is also necessary to take due consideration of and carefully assess the following applications by calling our Technical Service:

- Applications with especially high inertia.
- Applications with high dynamic strain on the case of the reduction unit.
- In places with T° under -5°C or over 40°C
- Mounting positions not envisaged in the catalogue.
- Use in services that could be hazardous for people if the reduction unit fails..
- As a speed increasing.
- Use as a lifting winch.
- Use in environments pressures other than atmospheric pressure.
- Use in chemically aggressive environments.
- Use in a salty environment
- Use in radioactive environments.

Avoid applications where even partial immersion of the reduction unit is required.

The maximum torque (*) that the gear reducer can support must not exceed two times the nominal torque ($f_b = 1$) stated in the performance tables.

(*) intended for momentary overloads due to starting at full load, braking, shocks or other causes, particularly those that are dynamic.

TR KRİTİK UYGULAMALAR

Katalogta verilen performans değerleri M1 montaj pozisyonu ve buna benzer durumlar içindir. Örneğin: İlk kademe komple yağ içinde olmadığı durumlar. Diğer montaj pozisyonu değişik giriş hızları ve herbir redüktör gövdesi için kritik uygulama durumları tabloda sunulmuştur. Aşağıdaki uygulamalar için de teknik servisimize danışılması gerekir.

- Yüksek ataletli uygulamalar.
- Redüktörde yüksek dinamik gerilmelere sebep olabilecek uygulamalar.
- -5°C altında veya 40°C üzerindeki iş ortamında yapılan uygulamalar.
- Katalogta belirtilmeyen montaj pozisyonlarında kullanım.
- Redüktör ünitesinin sorun yaşanmasında canlılara zarar verebileceği uygulamalar.
- Hız artışı durumunda.
- Kaldırma vinci olarak kullanım.
- Atmosferik basınçtan farklı basınç tiplerinin bulunduğu ortamlarda kullanım.
- Kimyasal aşındırıcı çevrelerde kullanım.
- Tuzlu ortamlarda kullanım.
- Radyoaktif ortamlarda kullanım.

Redüktörün bir kısmının batırılması gerektiği uygulama ortamlarından sakının.

Redüktörün dayanabileceği maksimum moment değeri (*) performans tablolarında belirtilen nominal moment değerinin ($f_b = 1$) iki katı bir değeri aşmamalıdır.

(*) Maksimum kapasiteli yük değerleri ile yapılan başlatmalarda, frenlemede, özellikle dinamik olan şok ve diğer nedenlerde, momente bağlı aşırı yüklerde geçerlidir.

A/F	202	202 G	252 - 253	301-302-303	351-352-353	401-402-403	501-502-503	601-602-603	701-702-703	902-903
M4 : 1500 < n1 < 3000	P	P	-	-	-	-	-	-	P	P
n1 > 3000	X	X	P	P	P	P	P	P	X	X
M2	P	P	P	P	P	P	P	P	P	P

X Nicht empfohlene Anwendung
Application not recommended
Uygulama yapılması tavsiye edilmez

P Anwendung überprüfen und/oder mit unserem Kundendienst Kontakt aufnehmen.
Check the application and/or call our technical service.
Yapılan uygulamayı kontrol edin ve/veya Teknik Servisimize durumu bildirin.

IT APLICAZIONI CRITICHE

Le prestazioni indicate a catalogo corrispondono alla posizione M1 o similari, quando cioè il primo stadio non è interamente immerso in olio. Per situazioni di piazzamento diverse e/o velocità di ingresso particolari attenersi alle tabelle che evidenziano situazioni critiche diverse per ciascuna taglia di riduttore. Occorre anche tenere nella giusta considerazione e valutare attentamente le seguenti applicazioni consultando il ns. Servizio Tecnico:

- Applicazioni con inerzie particolarmente elevate.
- Applicazioni con elevate sollecitazioni dinamiche sulla cassa del riduttore.
- Utilizzo in ambiente con T° inferiore a -5°C o superiore a 40°C
- Posizioni di piazzamento non previste a catalogo.
- Utilizzo in servizi che potrebbero risultare pericolosi per l'uomo in caso di rottura del riduttore.
- Utilizzo come moltiplicatore.
- Utilizzo come argano di sollevamento.
- Utilizzo in ambiente con pressione diversa da quella atmosferica.
- Utilizzo in ambiente con presenza di aggressivi chimici.
- Utilizzo in ambiente salmastro.
- Utilizzo in ambiente radioattivo.

Evitare applicazioni dove è prevista l'immersione, anche parziale, del riduttore. La coppia massima (*) sopportabile dal riduttore non deve superare il doppio della coppia nominale ($f_B = 1$) riportata nelle tabelle delle prestazioni. (*) intesa come sovraccarico istantaneo dovuto a avviamenti a pieno carico, frenature, urti ed altre cause soprattutto dinamiche.

FR APPLICATIONS CRITIQUES

Les performances indiquées sur le catalogue correspondent à la position M1 ou similaires, lorsque le premier train d'engrenage n'est pas entièrement immergé dans l'huile. Pour les combinaisons d'assemblage différentes et/ou les vitesses d'entrée particulières, se conformer aux tableaux qui mettent en évidence les différentes situations critiques pour chaque taille de réducteur. Il faut aussi prendre en considération et évaluer attentivement les applications suivantes, en consultant notre S.ce Technique:

- Applications avec inerties particulièrement élevées.
- Applications avec sollicitations dynamiques sur la carcasse du réducteur.
- Emploi en milieu avec température au - dessous de -5°C ou au-dessus de 40°C.
- Positions de montage non prévues sur le catalogue.
- Emploi en services qui pourraient être dangereux pour l'homme en cas de rupture du réducteur.
- Emploi comme multiplicateur.
- Emploi comme treuil, en cas de soulèvement.
- Emploi en milieu ayant une pression différente de celle atmosphérique.
- Emploi en milieu en présence d'agents chimiques agressifs.
- Emploi en milieu saumâtre.
- Emploi en milieu radioactif.

Eviter les applications dans lesquelles l'immersion du réducteur, même si partielle, est prévue. Le couple maximum (*) supporté par le réducteur ne doit pas être supérieur au double du couple nominal ($f_B=1$) suivant notre table de prestation. (*) Entendu comme surcouple instantané dû à démarrages en pleine charge, freinages, chocs et autres causes surtout dynamiques.

ES APLICACIONES CRITICAS

Las prestaciones indicadas en el catálogo corresponden a la posición M1 o similares, cuando el primer tren de engranajes no está completamente inmerso en el aceite. Para posiciones de montaje distintas y/o de velocidades particulares a la entrada, atenerse a las tablas que ponen en evidencia las distintas situaciones críticas por cada tamaño de reductor. Además es necesario considerar y evaluar cuidadosamente las siguientes aplicaciones, poniéndose en contacto con nuestro Servicio técnico:

- Aplicaciones con inercias particularmente elevadas.
- Aplicaciones con esfuerzos dinámicos elevados sobre la carcasa del reductor.
- Utilización en ambiente con T° inferior a -5°C o superior a 40°C.
- Posiciones en montaje no previstas en el catálogo.
- Utilización en servicios que, en caso de ruptura del reductor, podrían resultar peligrosos para el hombre.
- Utilización como multiplicador.
- Utilización como cabrestante de levantamiento.
- Utilización en ambiente con presión distinta de la atmosférica.
- Utilización en ambiente con presencia de agentes químicos agresivos.
- Utilización en ambiente salino.
- Utilización en ambiente radioactivo.

Evitar aplicaciones donde es prevista la inmersión, aún parcial, del reductor. El par máximo (*) soportable por el reductor no debe superar el doble del par nominal ($f_B=1$) indicado en la tabla de prestaciones. (*) Entendida como sobrecarga instantánea debida a puestas en marcha a plena carga, frenados, impactos y otras causas sobretodo dinamicas.B

A/F	202	202 G	252 - 253	301-302-303	351-352-353	401-402-403	501-502-503	601-602-603	701-702-703	902-903
M4 : 1500 < n1 < 3000	P	P	-	-	-	-	-	-	P	P
n1 > 3000	X	X	P	P	P	P	P	P	X	X
M2	P	P	P	P	P	P	P	P	P	P

X Applicazione sconsigliata
Application non conseillée
Aplicación desaconsejada

P Verificare l'applicazione e/o contattare il ns. servizio tecnico.
Verifier l'application et/ou contacter notre s.ce technique.
Controlar la aplicación y/o ponerse en contacto con nuestro servicio técnico.

DE THERMISCHE LESITUNG Pt [kW]

Die folgende Tabelle enthält die Werte der thermischen Nennleistung in kW unter den folgenden Referenzbedingungen:

- Montageposition M1
- Dauerbetrieb mit Eingangsgeschwindigkeit ≤1500rpm
- Umgebungstemperatur von 25°C
- Höhe über dem Meeresspiegel
- Geschwindigkeit der Luft im Getriebeinneren ≥=1/s
- Abwesenheit von radialen und/oder axialen externen Belastungen

EN THERMAL POWER Pt [kW]

The table below list the nominal thermal power values expressed in kW, in the following reference conditions:

- mounting position M1
- continuous operation at input speed ≤1500 rpm
- ambient temperature 25°C
- sea level altitude
- air speed near the gear reducer ≥=1m/s
- absence of external radial and/or axial loads

TR TERMAL GÜÇ Pt [kW]

Tabloda referans verilen koşullara göre termal güç kW olarak belirtilmiştir.

- Montaj pozisyonu M1
- Sürekli çalışma ≤1500 d/d
- Çevre sıcaklığı 25°C
- Deniz seviyesinin üzerindeki yükseklik
- Redüktör üzerindeki rüzgar hızı ≥=1m/s
- Radyal ve/veya eksenel kuvvet olmadan

Thermische Leistungen bei 1500 rpm / Thermal power values at 1500 rpm / 1500d/d Termal güç	
Getriebe / Gear reducer / Redüktör	Pt [kW]
202	-
202 G	-
252 - 253	5.0
301	6.0
302 - 303	7.0
351	8.5
352 - 353	9.0
401	13.5
402 - 403	15.5
502 - 503	24.0
501	27.2
602 - 603	30.0
601	51.5
702 - 703	36.0
701	67.5
902 - 903	49.0

Durch die Anwendung einer die Pt nicht übersteigenden Leistung an das Getriebe wird eine ausreichende Schmierung und eine gute Funktionsweise des Getriebes gewährleistet.

Prüfung der Anwendung

Mit Ausnahme von durchgängigen Betriebszeiten unter zwei (2) Stunden und anschließenden Pausen, bei denen das Getriebe auf die Umgebungstemperatur abkühlt, ist es ratsam bei jeder Anwendung die thermische Grenze des Getriebes mit der folgenden Formel zu überprüfen:

$$P1 < Pt * Fc * Fv * Fa$$

dabei ist :

- P1** = Eingangleistung des Getriebes 1400 rpm (Motor mit 4 Polen)
- Pt** = Thermische Leistung unter Referenzbedingungen (siehe Tabelle oben)
- Fc** = Korrekturfaktor für Umgebungstemperatur und Betrieb
- Fv** = Korrekturfaktor für Belüftung
- Fa** = Korrekturfaktor für Höhe über NN

Die Korrekturfaktoren beziehen sich auf Betriebsbedingungen, die von den Referenzbedingungen abweichen und werden in den folgenden ISO14179 Tabellen aufgeführt:

Applying a power level not exceeding Pt at the above mentioned reference conditions guarantees the correct lubrication and efficient operation of the gear reducer.

Application check

Except for continuous operating times below two (2) hours and successive pauses capable of bringing the gear reducer back to ambient temperature, for each application it is advisable to verify the gear reducer's thermal limit according to the following formula:

$$P1 < Pt * Fc * Fv * Fa$$

where:

- P1**= input power to the gear reducer at 1.400 rpm (4-pole motors)
- Pt** = thermal power at reference conditions (see above table)
- Fc** = ambient and operating temperature correction factor
- Fv** = ventilation correction factor
- Fa** = altitude correction factor

The correction factors refer to different operating conditions compared to the reference conditions, and are provided by following ISO 14179 tables:

Redüktöre uygulanan Pt değerlerin üzerine çıkmaz ise yeterli yağlama ile redüktörün düzenli çalışması garanti edilir.

Kullanımın kontrolü

Sürekli çalıştırma dışında, yani 2 saat altında çalıştırma durumunda ve ardından gelen dinlendirme, böylece redüktör çevre sıcaklığı ile soğuması, her bir uygulama için redüktörün termal sınırını aşağıdaki formül ile kontrol etmenizi tavsiye ederiz.

$$P1 < Pt * Fc * Fv * Fa$$

- P1**= Redüktörün giriş gücü 1400 d/d (4 kutuplu Motor)
- Pt** = Referans verilen termal güç (yukarıdaki tabloya bakınız)
- Fc**= Çevre sıcaklığı ve kullanım düzeltme faktörü
- Fv**= Fan düzeltme faktörü
- Fa**= Rakım düzeltme faktörü (Sıfır seviyesi).

Düzeltilme faktörleri çalışma şartlarına göre, ancak referans verilen şartlara göre değişiklik gösteren değerler ISO14179 tabloda gösterilir.

IT POTENZA TERMICA Pt [kW]

La seguente tabella riporta i valori di potenza termica nominale espressa in kW nelle seguenti condizioni di riferimento:

- posizione di montaggio M1
- funzionamento continuo con velocità di entrata ≤1500 rpm
- temperatura ambiente di 25°C
- altitudine pari al livello del mare
- velocità dell'intorno del riduttore ≥1m/s
- assenza di carichi radiali e/o assiali esterni

FR PUISSANCE THERMIQUE Pt [kW]

Le tableau suivant présente les valeurs de puissance thermique nominale exprimées en kW dans les conditions de référence suivantes:

- position de montage M1
- fonctionnement continu avec vitesse d'entrée ≤ 1500tr/min
- température ambiante de 25°C
- altitude égale au niveau de la mer
- vitesse de l'air à proximité du réducteur ≥= 1m/s
- absence de charges radiales et/ou axiales externes

ES POTENCIA TÉRMICA Pt [kW]

La siguiente tabla contiene los valores de potencia térmica nominal expresada en kW en las siguientes condiciones de referencia:

- posición de montaje M1
- funcionamiento continuo con velocidad de entrada ≤1500rpm
- temperatura ambiente de 25°C
- altura sobre el nivel del mar
- velocidad del aire en torno al reductor ≥=1m/s
- ausencia de cargas radiales y/o axiales externas

Potenza termiche a 1500 rpm / Puissances thermiques à 1500 rpm / Potencias térmicas a 1500 rpm	
Riduttore / Réducteur / Reductor	Pt [kW]
202	-
202 G	-
252 - 253	5.0
301	6.0
302 - 303	7.0
351	8.5
352 - 353	9.0
401	13.5
402 - 403	15.5
502 - 503	24.0
501	27.2
602 - 603	30.0
601	51.5
702 - 703	36.0
701	67.5
902 - 903	49.0

Applicando al riduttore, nelle suddette condizioni di riferimento una potenza non superiore a Pt, risultano garantiti una corretta lubrificazione ed il buon funzionamento del riduttore.

Verifica della applicazione

Fatta eccezione per tempi di funzionamento continuo inferiori a due (2) ore e successive pause in grado di riportare il riduttore a temperatura ambiente, per ogni applicazione è consigliabile eseguire la verifica del limite termico del riduttore, secondo la seguente formula:

$$P1 < Pt * Fc * Fv * Fa$$

dove:

P1 = potenza in ingresso al riduttore a 1400 rpm (motori a 4 poli)

Pt = potenza termica in condizioni di riferimento (vedi tabella sopra)

Fc = fattore correttivo di temperatura ambiente e servizio

Fv = fattore correttivo di aerazione

Fa = fattore correttivo dell'altitudine

I fattori correttivi sono relativi a condizioni operative differenti da quelle di riferimento, e sono forniti dalle seguenti tabelle ISO14179:

L'application au réducteur d'une puissance inférieure à la Pt, dans les conditions de référence indiquées ci-dessus, garantit une lubrification correcte et le bon fonctionnement du réducteur.

Vérification de l'application

À l'exception de périodes de fonctionnement continu inférieures à deux (2) heures et de pauses successives permettant au réducteur de redescendre à une température ambiante pour toute application, il est conseillé d'effectuer une vérification de la limite thermique du réducteur, selon la formule suivante

$$P1 < Pt * Fc * Fv * Fa$$

où:

P1 = puissance d'entrée au réducteur à 1400tr/min (moteurs à 4 o-pôles)

Pt = puissance thermique dans les conditions de référence (voir tableau ci-dessus)

Fc = facteur de correction de température ambiante et de service

Fv = facteur de correction d'aération

Fa = facteur de correction de l'altitude

Les facteurs de correction correspondent à des conditions de fonctionnement différentes de celles de référence, et sont fournis par les tableaux ISO14179 suivants:

En las condiciones de referencia mencionadas, aplicando al reductor una potencia no mayor que la Pt, se garantiza una correcta lubricación y el buen funcionamiento del reductor.

Controlar la aplicación

Salvo cuando los tiempos de funcionamiento continuo son menores que dos (2) horas y se producen pausas capaces de llevar el reductor a la temperatura ambiente, para cada aplicación es aconsejable realizar la verificación del límite térmico del reductor, según la siguiente fórmula:

$$P1 < Pt * Fc * Fv * Fa$$

donde:

P1 = potencia a la entrada del reductor a 1400rpm (motores de 4 polos)

Pt = potencia térmica en condiciones de referencia (ver la tabla de arriba)

Fc = factor de corrección de la temperatura ambiente y servicio

Fv = factor de corrección de aireación

Fa = factor de corrección de la altitud

Los factores de corrección son relativos a condiciones operativas diferentes a las de referencia y se encuentran en las siguientes tablas ISO14179:

DE THERMISCHE LEISTUNG Pt [kW]

EN THERMAL POWER Pt [kW]

TR TERMAL GÜÇ Pt [kW]

Fc		Betriebszeit in % pro Stunde / Duty per hour of operation % / Çalışma saati % olarak saatte				
		100	80	70	40	20
Umgebungstemperatur Ambient temperature Ortam sıcaklığı	10°C	1.15	1.21	1.32	1.55	2.07
	18°C	1.07	1.12	1.23	1.44	1.93
	25°C	1.00	1.05	1.15	1.35	1.80
	30°C	0.93	0.98	1.07	1.26	1.67
	40°C	0.83	0.87	0.95	1.12	1.49
	43°C	0.75	0.79	0.86	1.01	1.35
	50°C	0.67	0.70	0.77	0.90	1.21

Geschwindigkeit der Umgebungsluft / Ventilation correction factor / Havalandırma düzeltme faktörü	Fv
Stehende Luft (<0,5 m/s) / Stagnant air (<0,5 m/s) / Durgun hava (<0,5 m/s)	0.75
Installation in geschlossenen Räumen mit geringer Luftzirkulation / Indoor installation with slight ventilation / Kapalı alandaki kurulum düşük hava sirkülasyonu	1
Installation in geschlossenen Räumen mit guter Luftzirkulation (>1,4 m/s) / Indoor Installation with good ventilation (>1,4 m/s) / Kapalı alandaki kurulum iyi hava sirkülasyonu (>1,4 m/s)	1.4
Installation im Freien (>3,7 m/s) / Outdoor installation (>3,7 m/s) / Serbest alanda kurulum (>3,7 m/s)	1.9

Höhe über NN / Altitude correction factor / Rakım düzeltme faktörü	Fa
0*	1
750	0.95
1500	0.90
2250	0.85
3000	0.81

*Meeresniveau

*Sea level

* Deniz seviyesi

Im Fall eines Betriebs mit Eingangsgeschwindigkeiten über 2000 rpm oder bei Umgebungstemperaturen über 40°C wird empfohlen, den Kundendienst zu kontaktieren.

In caso of operation at input speeds exceeding 2000 rpm, or ambient temperatures greater than 40°C it is advisable to contact out technical department.

Giriş devrinin 2000 d/d olması durumunda veya çevre sıcaklığının 40°C'nin üstünde olduğu durumlarda teknik departmanımıza danışmanızı tavsiye ederiz.

IT POTENZA TERMICA Pt [kW]

FR PUISSANCE THERMIQUE Pt [kW]

ES POTENCIA TÉRMICA Pt [kW]

Fc		Servizio a carico ora di funzionamento % / Facteur de marche par heure de fonctionnement % / Servicio con carga por hora de funcionamiento %				
		100	80	70	40	20
Temperatura ambiente	10°C	1.15	1.21	1.32	1.55	2.07
	18°C	1.07	1.12	1.23	1.44	1.93
	25°C	1.00	1.05	1.15	1.35	1.80
Température ambiante	30°C	0.93	0.98	1.07	1.26	1.67
	40°C	0.83	0.87	0.95	1.12	1.49
Temperatura ambiente	43°C	0.75	0.79	0.86	1.01	1.35
	50°C	0.67	0.70	0.77	0.90	1.21

Velocità dell'aria ambientale / Vitesse de l'air ambiant / Velocidad del arie ambiental	Fv
Aria stagnante (<0,5 m/s) / Air stagnant (<0,5 m/s) / Aire estancado (<0,5 m/s)	0.75
Installazione al chiuso con lieve aerazione / Installation en intérieur avec une légère aération / Instalación cubierta con poca aireación	1
Installazione al chiuso con aerazione (>1,4 m/s) / Installation en intérieur avec une aération correcte (>1,4 m/s) / Instalación cubierta con buena aireación (>1,4 m/s)	1.4
Installazione all'aperto (>3,7 m/s) / Installation en extérieur (>3,7 m/s) / Instalación al aire libre (>3,7 m/s)	1.9

Altitudine / Altitude / Altitud	Fa
0*	1
750	0.95
1500	0.90
2250	0.85
3000	0.81

*Livello del mare

*Niveau de la mer

*Nivel del mar

In caso di funzionamento con velocità di ingresso maggiori di 2000 rpm, o temperature ambiente maggiori di 40°C è consigliabile contattare il ns servizio di assistenza.

En cas de fonctionnement avec des vitesses d'entrée supérieures à 2000 tr/min ou en présence de températures ambiantes supérieures à 40°C, il est conseillé de contacter notre service d'assistance.

En el caso de funcionamiento con velocidades de entrada mayores que 2000 rpm o temperaturas ambiente mayores que 40°C es aconsejable llamar a nuestro servicio de asistencia técnica.

DE MONTAGE DES MOTORS AN DEN
PAM-IEC FLANSCH B5

Bei Getriebenen, welche ohne motor geliefert werden, sind folgende Vorsichtsmaßnahmen zu beachten, um eine korrekte Montage des Elektromotors zu gewährleisten.

Übereinstimmung der Toleranzen von Welle und Motorflansch überprüfen.

Diese sollten mindestens DIN 42955 N entsprechen. Welle, Passung und Flanschfläche sind sorgfältig von Schmutz, Späne oder Lackresten zu säubern.

Halbkupplung auf Motor (sehen Bild) einsetzen, andernfalls sind die korrekte Ausrichtung und die Toleranz der Paßfeder zu überprüfen. In jedem Fall sind solche Montageverfahren anzuwenden, die Schäden an den Motorlagern ausschließen.

Motor anbauen, wobei es zuerst darauf beachtet werden muß, dass die Halbkupplung auf dem Motor und der elastische.

Zwischenring auf der Getriebehalbkupplung frei eingreifen können.

Keine Anpassung der Motorpaßfeder ist in diesem Fall erforderlich.

EN MOTOR MOUNTING WITH PAM FLANGE B5

When the unit is supplied without motor, it is necessary to follow these recommendation to ensure the correct assembly of the electric motor.

Check that the tolerances for the motor shaft and flange correspond to the standard.

Carefully clean the shaft, spigot and surfaces of the flange removing traces of paint and dirt, and confirm the key is fitted correctly.

Fit the half coupling to the motor shaft (see picture) taking care to ensure the motor shaft and bearings are not damaged by avoiding excessive force and where necessary using assembly equipment.

Place the couplings elastic element on to the motor half coupling and position the motor up to the gear unit ensuring the coupling element is aligned with the driven half coupling.

Complete the assembly using the fixing bolts. Key-ways with tightened tolerances.

TR PAM B5 FLANŞI İLE MOTOR MONTAJI

Redüktör motorsuz olarak tedarik edildiğinde elektrik motorunun doğru olarak monte edildiğinden emin olmak için aşağıdaki tavsiyelere uyulmak zorundadır.

Motor şaftı ve flanş toleranslarının standartla uygun olup olmadığını kontrol edin. Dikkatlice şaftı, tapayı ve flanş yüzeylerini, boyadan arta kalan parçacıkları ve tozları temizleyip, kamanın doğru olarak yerleştirilip yerleştirilmediğini kontrol edin. Flanş montajlı motorun Pam flanşlı redüktöre montajında kaplin kullanılır.

Gerekli montaj ekipmanı kullanıp motor milinin ve rulmanları zedelenmesinin önlenmesi sağlanarak motor miline kaplin montaj edilir.

Kaplinin elastik elemanı motor milinde bulunan yarım kapline yerleştirilir ve motor dikey pozisyonda yarım kaplinli sürücü çevirilerek kaplin elemanı hizalanır. Kama kanalları toleransla montajlanmalıdır.

IT MONTAGGIO MOTORE SU FLANGE
PAM-IEC B5

Quando il gruppo viene fornito senza motore occorre osservare le seguenti raccomandazioni per garantire un corretto montaggio del motore elettrico.

Controllare che le tolleranze dell'albero e della flangia motore siano corrispondenti almeno a una classe di qualità "normale".

Pulire accuratamente l'albero, il centraggio ed il piano della flangia da sporco o tracce di vernice.

Procedere al montaggio del semigiunto (vedi figura) sull'albero del motore elettrico che deve avvenire senza eccessiva forzatura, in caso diverso controllare la coretta posizione e la tolleranza della linguetta motore;

Procedere quindi al montaggio del motore completo di semigiunto fasando i denti di trascinamento del semigiunto lato motore con quelli dell'elemento elastico presente sul semigiunto fisso lato riduttore.

Non è previsto nessun adattamento della linguetta motore.

FR INSTALLATION MOTEUR SUR BRIDE
PAM-IEC B5

Quand le groupe est fourni sans moteur, observez les recommandations suivantes pour garantir un montage correct du moteur électrique.

Contrôler que les tolérances de l'arbre et de la bride du moteur correspondent au moins à une classe de qualité "normale".

Nettoyer soigneusement l'arbre, le centrage et le plan de la bride des traces de saleté et de peinture.

Procéder au montage de demi-accouplement sur l'arbre moteur électrique sans forcer (voir image), dans le cas contraire, vérifier la position correcte et la tolérance de la clavette du moteur.

Utiliser, toutefois, des systèmes appropriés qui garantissent un montage correct sans risquer de détériorer les roulements du moteur. Procéder de la même façon pour le montage du moteur avec le demiaccouplement coté moteur avec de l'élément élastique du demiaccouplement coté réducteur.

Rainures clavette moteur avec tolérances réduites.

ES MONTAJE DE MOTORES CON BRIDA B5

Si al equipo se suministra sin motor es preciso observar las siguientes recomendaciones para garantizar un correcto montaje del motor eléctrico.

Verificar que la tolerancia del eje y de la brida motor se correspondan al menos a una clase de calidad "normal".

Limpiar cuidadosamente el eje, el centrado y el plano de asiento de restos de barniz o suciedad.

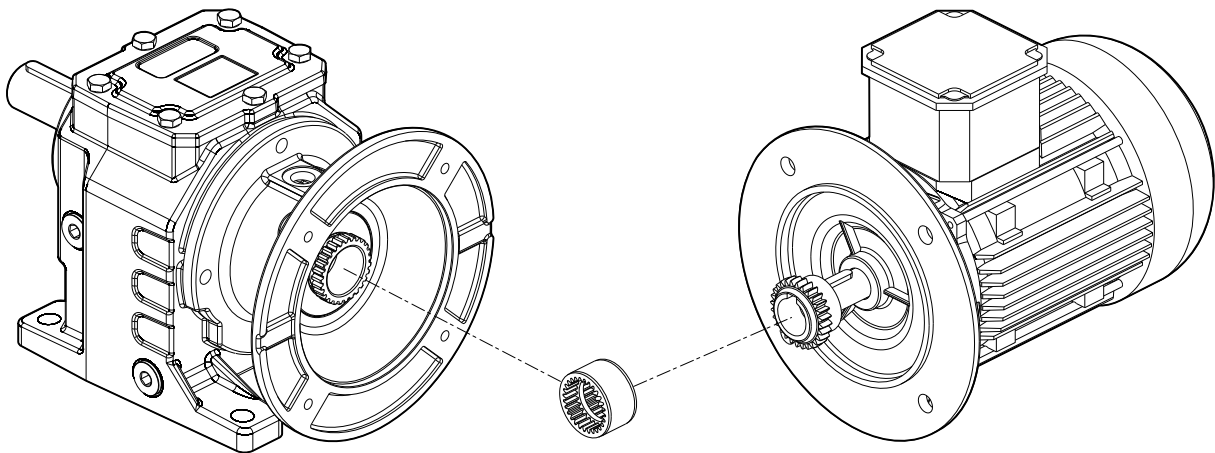
Proceder al montaje del semiacoplamiento en el eje del motor eléctrico sin excesiva fuerza, si no entra con suavidad verificar la correcta tolerancia de la claveta del motor (ver imagen), utilizar en cualquier caso métodos de montaje que no dañen los rodamientos del motor.

Proceder a continuación al montaje del motor con el semiacoplamiento en el reductor, evitando la interferencia de los dientes del acoplamiento.

No se prevé ninguna adaptación de la claveta del motor.

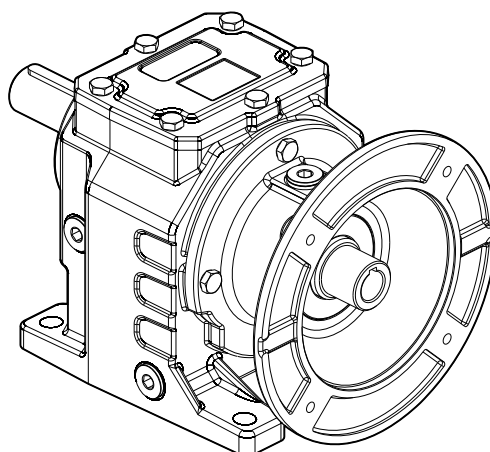
ELASTISCHE KUPPLUNG / FLEXIBLE JOINT / IEC BAĞLANTILI / GIUNTO ELASTICO / ACCOUP. ÉLASTIQUE / ACOPL. ELÁSTICO

A - F IEC



PAM BUCHSE / PAM SLEEVE / PAM BAĞLANTILI / MANICOTTO PAM / MANCHON PAM / MANGUÍTO PAM

A - F PAM



DE MONTAGE

Der korrekte Einbau des Getriebes in die entsprechende Vorrichtung der Applikation ist Voraussetzung, um einen einwandfreien und dauerhaften Betrieb zu gewährleisten. Vorallem die Oberflächen der Zentrierungen/Aufnahme sind in einer Toleranz H8 zu fertigen, damit die einwandfreie Uebereinstimmung mit der Getriebeachse garantiert wird. Für die Montage des Getriebes sind nachstehende Anweisungen zu beachten:

- Für im Freien betriebene Maschinen wird empfohlen, das Getriebe soweit wie möglich vor Witterungseinflüssen zu schützen sowie mit Rostschutzmittel zu behandeln. Die Dichtringe sind mit wasserabweisendem Fett zu versehen.
- Für die Befestigung sind die Schrauben zu verwenden, die in der Zeichnung / Teileliste des Modells vorgesehen sind. Dazu sind alle vorgesehenen Befestigungsbohrungen zu verwenden
- Der Anbau des Getriebes an Elektro oder Hydraulikmotoren erfolgt normalerweise direkt über Flansche, wenn keine außerge-wöhnliche Situation vorliegt, die nach erfolgtem Einbau Schäden verursachen könnte.
- Die Befestigung an der Maschine muß absolut stabil sein, um jegliche Vibrationen zu vermeiden.
- Vor der Montage des Getriebes an der Maschine ist die Abtriebswelle des Getriebes auf die richtige Drehrichtung zu prüfen.
- Nach besonders langer Einlagerung (4/6 Monate) ist zu überprüfen, ob die Wellendichtringe vom Schmiermittel des Getriebes vollständig benetzt wurden; andernfalls ist ein Austausch anzuraten, da die Dichtlippe auf der Welle festkleben kann oder die zum einwandfreien Betrieb notwendige Elastizität nicht mehr vorhanden ist.
- Die Motorkühlung muß durch eine gute Belüftung auf der Seite des Lüfters gewährleistet werden. Bei Umgebungstemperaturen < -5°C oder > +40°C setzen Sie sich bitte mit dem Kundendienst in Verbindung.
- Zur Montage der unterschiedlichen Anbauteile (Riemenscheiben, Zahnräder, Kupplungen, Wellen usw.) auf den Hohl- oder Vollwellen sind die vorgesehenen Gewindebohrungen oder Aufziehvorrichtungen zu verwenden.
- Diese gewährleisten eine einwandfreie Montage, ohne die Lager oder die Außenteile des Getriebes zu beschädigen. Die in Berührung kommenden Passungen und Oberflächen der Wellen sind zu fetten/ölen, um ein Festfressen durch Passungsrost zu vermeiden.
- Bei Lackierung ist darauf zu achten, daß alle Gummitteile und fallweise die in den Entlüftungsdeckeln vorhandenen Bohrungen nicht überlackiert werden.
- Bei Getrieben mit Ölstopfen ist die zum Transport verwendete Verschlusschraubendurch die beigelegte Entlüftungsschraube zu ersetzen.
- Der Schmierölstand ist an der Füllstandsanzeige zu überprüfen, sofern vorhanden. Der Antrieb ist stufenweise in Betrieb zu nehmen, wobei zunächst mit Teillast angefahren werden sollte.
- Sind unter dem Antrieb Geräteteile oder Materialien angeordnet, die durch geringe Mengen austretenden Öls beschädigt werden könnten, so ist eine geeignete Schutzvorrichtung vorzusehen.

EN INSTALLATION

For the longest and most efficient service life, drives must be correctly mounted on the application structure. Therefore, all structure faces must be machined with H8 spigots so that they are flat and perpendicular to the drive axis. To install the reduction unit it is necessary to note the following Recommendations:

- For outdoor installations, drives must be protected against bad weather, treated with anticorrosive agents and oil seals protected with water-repellent grease.
- To secure the drive, use the nuts and bolts shown under each technical drawing on the product technical sheets. Make sure to use all the fixing holes on the flanges.
- Drives are usually connected directly to what are mainly electric or hydraulic motors by means of flanges when there are particularly critical conditions that might cause damage after installation.
- The mounting on the machine must be stable to avoid any vibration.
- Before installing gearbox to your machine, please check rotation direction of output shaft is correct or not.
- Check the correct direction of rotation of the storage (4/6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
- Ensure the motor cools correctly by assuring good passage of air from the fan side. In the case of ambient temperatures < -5°C or > +40°C call the Technical Service.
- The various parts (pulleys, gear wheels, couplings, shafts, etc.) must be mounted on the solid or hollow shafts using special threaded holes or other systems that anyhow ensure correct operation without risking damage to the bearings or external parts of the units. Lubricate the surfaces in contact to avoid seizure or oxidation.
- Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
- For units equipped with oil plugs, replace the closed plug used for shipping with the special breather plug.
- Check the correct level of the lubricant through the indicator, if there is one. Starting must take place gradually, without immediately applying the maximum load.
- When there are parts, objects or materials under the motor drive that can be damaged by even limited spillage of oil, special protection should be fitted.

TR MONTAJ

Redüktör ünitesinden en uzun ve en verimli servis ömrü sağlamak için, uygulanacak makinaların üzerlerine doğru montaj yapılması gerekmektedir. Redüktörü monte etmek için aşağıdaki verilen tavsiyeleri uygulamamanız gerekmektedir.

- Dışarıda yapılacak olan montajlarda, redüktör ünitesini kötü hava koşullarından koruyunuz. Korozyon önleyici madde kullanınız. Keçeleri su geçirmez gresle koruyunuz.
- Redüktör ünitesini sabitlemek için, seçim sayfalarındaki teknik çizimlerde belirtilen uygun civata ve somun kullanınız. Flanslar üzerindeki bağlama deliklerinin hepsini kullandığınızdan emin olunuz.
- Redüktör üniteleri genellikle elektrik motorlarına flansla direkt bağlanır. Özellikle montajdan sonra hasara neden olabilecek kritik uygulamalarda bu durum söz konusudur.
- Yapılacak olan montaj işleminde makinada olabilecek bir titreşimi engellemek için sabit olmalıdır.
- Cihazı makinaya monte etmeden önce redüktör çıkışı şaftının dönme yönünün doğru olup olmadığını kontrol edin.
- Belirgin düzeyde uzun süreli olarak yapılacak depolama işlemlerinde (4/6 ay) şayet yağ keçesi cihaz içindeki yağa batık konumda değilse kauçuk parçanın şafta yapışma riski bulunduğundan veya doğru olarak çalışmasını engelleyebilecek şekilde elastikliğini kaybetme riski bulunduğundan parçanın değiştirilmesini tavsiye ederiz.
- Fan kısmından iyi bir hava akışı sağlanarak motor soğutmasının uygun bir şekilde yapıldığından emin olun. < -5°C veya > +40°C gibi aşırı ısı değerlerinin bulunduğu ortamda Teknik Servise başvurunuz.
- Değişik parçalar (makaralar, şanzuman, kaplin, şaft vb.) özel olarak açılmış delikler kullanılarak rulman yatağı veya harici parçalarına zarar vermeyecek şekilde tasarlanmış sistemler kullanmak suretiyle hasar riski olmadan mil yada delik millii üzerine monte edilmelidir. Birbirleriyle temas eden yüzeyleri aşınma veya paslanma riskine karşı yağlayınız.
- Yapılacak boyama işlemi kesinlikle keçe (kauçuk) parçaların alt kısımlarına nüfuz edecek şekilde veya varsa havalandırma deliklerini kapatacak şekilde olmamalıdır.
- Yağ tapası gönderilen redüktörlerin sevkiyatı için kullanılan kör tapa özel havalandırma tapası ile değiştirilir.
- Mümkünse yağ seviyesini indikatörle kontrol ediniz. Başlatma işi kademeli olarak maksimum güç yüklemesine hemen geçilmeden yapılmalıdır.
- Sınırlı düzeyde bile olsa yağ sızıntısı ile hasara uğrayabilecek motor altında parçalar, nesnelere veya malzemeler olması halinde bu durum için özel koruma yöntemleri geliştirilmelidir.

IT

INSTALLAZIONE

Per garantire un buon funzionamento de riduttori ed una miglior durata nel tempo è necessario un corretto accoppiamento alla struttura cui viene fissato il gruppo.

Pertanto le superfici di tale struttura dovranno essere lavorate con centraggi in H8 ed in modo da garantire un'ottima planarità e perpendicolarità con l'asse del riduttore. Per l'installazione del riduttore è consigliabile attenersi alle seguenti indicazioni:

- Per gruppi installati all'aperto si consiglia dove possibile, di proteggere i riduttori dalle intemperie, di trattarli con sistemi anticorrosivi e di proteggere i paraoli con grasso idrorepellente.
- Per il fissaggio del riduttore usare la bulloneria indicata sotto ogni disegno nelle schede tecniche di prodotto. Usare inoltre tutti i fori di fissaggio previsti sulle flange dei riduttori.
- L'abbinamento fra riduttori e motori, principalmente elettrici o idraulici, viene normalmente fatto mediante flangiatura diretta quando non si presentano particolari condizioni di criticità, che possono provocare danni dopo l'installazione.
- Il fissaggio sulla macchina deve essere stabile per evitare qualsiasi vibrazione.
- Verificare il corretto senso di rotazione dell'albero di uscita del riduttore prima del montaggio del gruppo sulla macchina.
- In caso di periodi particolarmente lunghi di stoccaggio (4/6 mesi) se l'anello di tenuta non è immerso nel lubrificante contenuto all'interno del gruppo si consiglia la sua sostituzione in quanto la gomma potrebbe essersi incollata all'albero o addirittura aver perso quelle caratteristiche di elasticità necessarie al corretto funzionamento.
- Garantire un corretto raffreddamento del motore assicurando un buon passaggio d'aria dal lato ventola. Nel caso di temperature ambiente <-5°C o >+40°C contattare il servizio Assistenza Tecnica.
- Il montaggio dei vari organi (pulegge, ruote dentate, giunti, alberi, ecc.) sugli alberi pieni o cavi deve essere eseguito utilizzando appositi fori filettati o altri sistemi che comunque garantiscano una corretta operazione senza rischiare il danneggiamento dei cusci netti o delle parti esterne dei gruppi.
- Lubrificare le superfici a contatto per evitare grippaggi o ossidazioni.
- La verniciatura non deve assolutamente interessare le parti in gomma e i fori esistenti sui tappi di sfianto, quando presenti.
- Per i gruppi provvisti di tappi per olio sostituire il tappo chiuso utilizzato per la spedizione con l'apposito tappo di sfianto.
- Controllare il corretto livello del lubrificante tramite, quando prevista, l'apposita spia. La messa in funzione deve avvenire in maniera graduale, evitando l'applicazione immediata del carico massimo.
- Quando sotto alla motorizzazione sono presenti organi, cose o materiali danneggiabili dall'eventuale fuoriuscita, anche limitata, di olio è opportuno prevedere un'apposita protezione.

FR

INSTALLATION

Pour garantir le bon fonctionnement des réducteurs et leur durée de vie maximum, il est indispensable d'assurer un bon accouplement à la structure sur laquelle le groupe doit être fixé. Aussi, les surfaces de cette structure doivent être usinées par des centrages en H8 et de façon à garantir une planéité optimale et une perpendicularité par rapport à l'axe du réducteur. Pour l'installation du réducteur, il faut se conformer aux indications suivantes:

- Pour les groupes installés à ciel ouvert, il est conseillé, dans la mesure du possible, de mettre les réducteurs à l'abri des intempéries, de les traiter avec des produits anti-corrosion et de protéger les joints d'étanchéité à l'aide de la graisse hydrofuge.
- Pour effectuer la fixation du réducteur, utiliser les boulons indiqués sous chaque dessins de s fiches techniques du produit. En outre, utiliser tous les trous de fixation prévus sur les brides des réducteurs.
- L'assemblage des réducteurs aux moteurs principalement électriques ou hydrauliques, est généralement assuré par bridage direct en l'absence de conditions critiques particulières susceptibles d'endommager l'installation.
- La fixation sur la machine doit être stable pour éviter toute vibration.
- Avant le montage du groupe sur la machine, vérifier que le sens de rotation de l'arbre de sortie du réducteur soit correct.
- En cas de périodes de stockage particulièrement longues (4/6 mois), si la bague d'étanchéité n'est pas immergée dans le lubrifiant contenu à l'intérieur du groupe, on conseille son remplacement, car le caoutchouc pourrait être collé à l'arbre ou avoir perdu les caractéristiques d'élasticité nécessaires à un fonctionnement correct.
- Vérifier que le refroidissement du moteur soit suffisant, en assurant un bon passage d'air du côté ventilateur. En cas de températures ambiante <-5°C ou >+40°C, contacter le S.ce techniques.
- Le montage de différents organes (poules, roues dentées, accouplements, arbres, etc.) sur les arbres pleins ou creux doit être effectué en utilisant les trous filetés ou d'autres systèmes assurant de toute façon une opération correcte, sans risquer d'endommager les roulements ou les parties extérieures des groupes. Lubrifier les surfaces en contact, afin d'éviter le grippage ou l'oxydation.
- La peinture ne doit absolument pas toucher les parties en caoutchouc et, si présents, les trous sur les bouchons d'évent.
- Pour les groupes avec bouchons d'huile, remplacer le bouchon, utilisé l'ors de l'expédition, par le bouchon d'évent.
- Contrôler, grâce au voyant (si prévu), que le niveau du lubrifiant correspond. La mise en marche doit s'effectuer d'une façon graduelle, en évitant l'application immédiate de la charge maximale.
- Si des organes, des choses ou des matériels pouvant être endommagés par l'éventuelle sortie d'huile, même si limitée, sont présents sous la motorisation, il faut prévoir une protection adéquate.

ES

INSTALACIÓN

Para garantizar un buen funcionamiento de los reductores y una mayo duración se deberá realizar un correcto acoplamiento a la estructura en la que se fija el grupo. Por tanto las superficies de dicha estructura tendrán que estar bien planas y los ejes de los agujeros respetar una tolerancia H8, de este modo se podrá garantizar una óptima planaridad y perpendicularidad con el ejedel reductor. Para la instalación del reductor, atenerse a las siguientes indicaciones:

- Para los grupos instalados al aire libre se aconseja, donde sea posible, proteger los reductores contra la intemperie, tratarlos con sistemas contra la corrosión y proteger los sellos de lubricación con grasa hidrófuga.
- Pour effectuer la fixation du réducteur, utiliser les boulons indiqués sous chaque dessins des fiches techniques du produit. En outre, utiliser tous les trous de fixation prévus sur les brides des réducteurs.
- El montaje entre los reductores y los motores, principalmente eléctricos o hidráulicos, generalmente se realiza con embridado directo siempre que no se presenten particulares condiciones críticas que podrían ocasionar daños después de la instalación.
- Para evitar las vibraciones, la fijación sobre la máquina tiene que ser estable.
- Antes del montaje del grupo sobre la máquina, controlar que el sentido de rotación del eje de salida del reductor sea correcto.
- En caso de periodos de almacenamiento muy largos (4/6 meses), si el retén no está sumergido en el lubricante contenido en el grupo, se aconseja su reemplazo porque la goma podría estar pegada al eje o haber perdido las características de elasticidad necesarias para un funcionamiento correcto.
- Controlar que la refrigeración del motor sea suficiente, asegurando una correcta transferencia de aire del lado ventilador. En caso de temperatura ambiente de <-5°C o >+40°C, ponerse en contacto con el Servicio técnico.
- El montaje de distintos órganos (poleas, ruedas dentadas, acoplamientos, ejes, etc.) sobre los ejes llenos o huecos debe ser efectuado utilizando los agujeros roscados correspondientes u otros sistemas, asegurando de todas maneras una operación correcta sin correr el riesgo de dañar los cojinetes o las partes externas de los grupos.
- Lubricar las superficies en contacto para evitar los gripados olas oxidaciones.
- El barnizado no debe cubrir las partes de goma y los agujeros en los existentes tapones - respiraderos. Para los grupos equipados de tapones de aceite, reemplazar el tapón cerrado, utilizado durante el transporte, por el tapón respiradero.
- Controlar, por medio del indicador (si previsto), que el nivel del lubricante corresponda. La puesta en marcha se debe producir de manera gradual evitando la aplicación súbita de la carga máxima.
- Si bajo el reductor hay mecanismos, cosas ó materiales que puedan dañarse por una eventual pérdida de aceite, deberá preverse una protección adecuada.

DE QUERBELASTUNGEN - TECHNISCHE BESCHREIBUNGEN

Der Wert der zulässigen Querbelastrung (N) wird in den Tafeln über die Leistungen des betreffenden Getriebes aufgeführt und ist die Kraft, die auf die Mittellinie der Wellen unter ungünstigsten Bedingungen wie Anwendungswinkel und Drehrichtung einwirkt.

Die zulässigen Axialbelastungen betragen 1/5 der aufgeführten Querbelastrungen, wenn diese gleichzeitig einwirken.

Die Tafeln über die Abtriebswellen geben den für die Lager bzw. das Gehäuse zulässigen Höchstwert an; dieser Wert darf nie überschritten werden.

Falls die im Katalog aufgeführten Grenzwerte doch überschritten werden sollen, setzen Sie sich bitte mit unserem Kundendienst in Verbindung und nennen Sie ihm alle Anwendungsdaten wie Belastungsrichtung, Drehrichtung der Welle, Anwendungsart.

Sofern die Anwendung mit einer beiseitigen Einleitung der Querkraft arbeitet, ist die Anwendung hinsichtlich der Einsatzbedingungen zu überprüfen. Hierzu kontaktieren Sie bitte unser technisches Büro.

Die Querbelastrung (Querkraft) auf der Welle wird durch nachstehende Formel berechnet:

$$FR_{XL} = \frac{2000 \cdot M_2 \cdot fz}{d_o} \leq FR_1 \text{ o } FR_2$$

FR_{XL} (N)
Resultierende Querkraft
M₂ (Nm)
Wellendrehmoment
d_o (mm)
Durchmesser des an der Welle montierten Antriebselements
FR (N)
Max. zul. Querkraft FR₁ - FR₂ (siehe entspr. Tafel).

fz = 1,1 Zahnrad
1,4 Rad für Kette
1,7 Flanschscheibe
2,5 Flachriemenscheibe

Sofern die resultierende Querkraft nicht auf die mitte der welle bezogen ist, ist die effektive Kraft FR₁₋₂ durch formel zu berechnen:

$$FR_X = \frac{FR_{1-2} \cdot z}{(y + x)}$$

y, z = siehe Tafeln auf seite 22.
x = Abstand der Querkraft zur Wellenschulter.

EN RADIAL LOADS - TECHNICAL DESCRIPTIONS

The value of the admissible radial load (N) is given in the tables relating to the performance of the reduction unit at is sue. It is related to the load applied on the centre line of the shaft and in the most unfavourable conditions of angle of application and direction of rotation.

The maximum admissible axial loads are 1/5 of the value of the given radial load when are applied in combination with the radial load.

The tables relating to the output shafts give the maximum admissible value.

This value must never be exceeded since it relates to the strength of the case.

Particular conditions of radial load higher than the limits of the catalogue may occur. In this case, call our Technical Service and provide details on the application: direction of the load, direction of rotation of the shaft, type of service.

In case of double extension shafts with radial load applied on both ends, the max. admissible radial loads must be defined according to the specific running conditions, in this case call our Technical Service.

The radial load on the shaft is calculated with the following formula:

$$FR_{XL} = \frac{2000 \cdot M_2 \cdot fz}{d_o} \leq FR_1 \text{ o } FR_2$$

FR_{XL} (N)
Resulting radial load
M₂ (Nm)
Torque on the shaft
d_o (mm)
Diameter of the transmission member mounted on the shaft
FR (N)
Value of the maximum admitted radial load FR₁ - FR₂ (see relative tables).

fz = 1,1 Gear pinion
1,4 Chain wheel
1,7 V-pulley
2,5 Flat pulley

When the resulting radial load is not applied on the centre line of the shaft it is necessary to adjust the admissible radial load FR₁₋₂ with the following formula:

$$FR_X = \frac{FR_{1-2} \cdot z}{(y + x)}$$

y, z = values given in the tables on page 22.
x = distance from the point of application of the load to the shaft shoulder.

TR RADYAL YÜKLER - TEKNİK TANIMLAR

Kabul edilebilir Radyal yük (N) değeri motorlu seçim sayfalarında ilgili tablolarda verilmiştir.

Bu şaftın merkez hattına binen yüklerle ve en uygunsuz durumlarda uygulama açısı ve yönü ile ilgili bir olgudur.

Kombinasyonlu uygulamalarda max. müsaade edilen eksenel yük radyal yükün 1/5'i kadar olmalıdır.

Çıkış şaftları ile ilgili olarak hazırlanan tablolarda max. kabul edilebilir değerler verilmiştir.

Gövde mukavemeti ile ilgili olduğundan bu değer çok aşılmamalıdır. Bazı istisnai durumlarda katalogta verilen yük değerleri aşılabılır. Bu durumda Teknik Servisimiz uygulama ile ilgili detay sağlar; yükün yönü, şaftın dönüş yönü, verilecek servisin tipi.

Çalıştırıldığında iki türlü enine kuvvet geldiği takdirde, kurulum çalışma koşuluna göre kontrol ediniz. Bu durum için teknik departmana başvurunuz.

Şaft üzerindeki radyal yük aşağıdaki formülle hesaplanır:

$$FR_{XL} = \frac{2000 \cdot M_2 \cdot fz}{d_o} \leq FR_1 \text{ o } FR_2$$

FR_{XL} (N)
İzin verilen radyal yük
M₂ (Nm)
Şaft üzerindeki moment
d_o (mm)
Şaft üzerine monte edilmiş transmisyon elemanın çapı
FR (N)
Uygulanan maksimum radyal yük değeri FR₁ - FR₂ (ilgili tablolara bakınız).

fz = 1,1 Dişliler
1,4 Zincir dişliler
1,7 v-makarası
2,5 Düz makara

Sonuç radyal yük şaftın merkez hattına uygulanmadığında aşağıdaki formülle etkin yükün hesaplanması gerekir:

$$FR_X = \frac{FR_{1-2} \cdot z}{(y + x)}$$

y, z = sayfa 22' deki tablolarda verilen değerler
x = Yükün uygulandığı nokta ile çıkış mili faturası arasındaki mesafe.

IT CARICHI RADIALI -
DESCRIZIONI TECNICHE

Il valore del carico radiale (N) ammissibile viene riportato nelle tabelle relative alle prestazioni del riduttore in same, ed è relativo al carico applicato sulla mezzeria dell'albero e nelle condizioni più sfavorevoli come angolo di applicazione e senso di rotazione.

I carichi assiali massimi ammissibili sono 1/5 del valore del carico radiale indicato quando sono applicati in combinazione col carico radiale stesso.

Nelle tabelle relative agli alberi di uscita viene indicato il valore massimo ammissibile, questo valore non deve mai essere superato in quanto è relativo alla resistenza della cassa. Possono essere verificate condizioni particolari di carico radiale superiori ai limiti di catalogo, in questo caso contattare il ns.

Servizio Tecnico e fornire tutti i dati applicativi: direzione del carico, senso di rotazione dell'albero, tipo di servizio.

Nel caso di alberi bisporgenti e cavi in cui è previsto l'applicazione di carichi radiali su entrambe le estremità, i carichi massimi ammissibili sono da definire in funzione delle condizioni di esercizio specifiche, in questo caso contattare il ns. Servizio Tecnico.

Il carico radiale sull'albero si calcola con la seguente formula:

$$FR_{XL} = \frac{2000 \cdot M_2 \cdot fz}{d_o} \leq FR_1 \text{ o } FR_2$$

FR_{XL} (N)
Carico radiale risultante
M₂ (Nm)
Momento torcente sull'albero
d_o (mm)
Diametro dell'elemento di trasmissione montato sull'albero
F_R (N)
Valore di carico radiale massimo ammesso FR₁ - FR₂
(ved. tab.relative)

fz = 1,1 Pignone dentato
1,4 Ruota per catena
1,7 Puleggia a gola
2,5 Puleggia piana

Quando il carico radiale risultante non è applicato in mezzeria dell'albero occorre correggere il carico radiale ammissibile FR₁₋₂ con la seguente formula:

$$FR_X = \frac{FR_1 \cdot 2 \cdot z}{(y + x)}$$

y, z = valori riportati nelle tabelle pag. 14
x = distanza del punto di applicazione del carico da spallamento albero.

FR CHARGES RADIALES -
DESCRIPTIONS TECHNIQUES

La valeur de la charge radiale (N) admissible est indiquée dans les tableaux concernant les performances du réducteur examiné et correspond à la charge appliquée sur la ligne médiane de l'arbre, dans les conditions les plus défavorables au niveau de l'angle d'application et du sens de rotation.

Les charges axiales maximales admissibles sont 1/5 de la valeur de la charge radiale indiquée, au cas où elles seraient appliquées en combinaison avec la charge radiale même.

Les tableaux concernant les arbres de sortie indiquent la valeur maximale admissible, valeur qui ne doit jamais être dépassée car elle correspond à la résistance de la carcasse.

Des conditions particulières de charges radiales supérieures aux limites de catalogue peuvent être vérifiées; dans ce cas, contacter notre S.c Technique en donnant toutes les données d'application: direction de la charge, sens de rotation de l'arbre, type de service.

Dans le cas d'arbre double avec une charge radiale appliquée aux deux extrémités, la charge radiale maxi admissible doit être définie selon les conditions de fonctionnement spécifiques, dans ce cas contacter notre service technique.

La charge radiale sur l'arbre doit être calculée selon la formule suivante:

$$FR_{XL} = \frac{2000 \cdot M_2 \cdot fz}{d_o} \leq FR_1 \text{ o } FR_2$$

FR_{XL} (N)
Charge radiale résultante
M₂ (Nm)
Torque on the shaft
d_o (mm)
Diameter of the transmission member mounted on the shaft
F_R (N)
Valeur de charge radiale maximum admise FR₁ - FR₂
(voir table aux correspondants)

fz = 1,1 Pignon denté
1,4 Roue pour chaîne
1,7 Pouile à gorge
2,5 Pouile plate

Quand la charge radiale résultante n'est pas appliquée au milieu de l'arbre, il est nécessaire de corriger la charge radiale admissible FR₁₋₂ avec la formule suivante:

$$FR_X = \frac{FR_1 \cdot 2 \cdot z}{(y + x)}$$

y, z = valeurs indiquées dans les tableaux à page 14.
x = distance entre le point d'application de la charge et l'épaule - ment de l'arbre.

ES CARGAS RADIALES -
DESCRIPCIONES TÉCNICAS

El valor de carga radial (N) admisible es indicado en las tablas relacionadas a las prestaciones del reductor examinado y se refiere a la carga aplicada sobre la línea de centro del eje y en las condiciones más desfavorables como ángulo de aplicación y sentido de rotación.

Las cargas axiales máximas admisibles son 1/5 del valor de carga radial indicado, cuando están aplicadas en combinación con la carga radial misma.

En las tablas relacionadas a los ejes de salida se indica el valor máximo admisible; nunca se debe superar este valor, porque se refiere a la resistencia de la carcasa.

Podrían presentarse condiciones particulares de carga radial superiores a los límites de catálogo; en este caso, ponerse en contacto con nuestro Servicio técnico e indicar todos los datos de la aplicación: dirección de carga, sentido de rotación del eje, tipo de servicio.

En caso de ejes dobles o huecos sobre los que se prevea la aplicación de cargas radiales sobre ambos extremos, las cargas máximas admisibles se deben definir en función de las características de la aplicación, en ese caso contactar a nuestro Servicio Técnico.

La carga radial sobre el eje se calcula con la siguiente fórmula:

$$FR_{XL} = \frac{2000 \cdot M_2 \cdot fz}{d_o} \leq FR_1 \text{ o } FR_2$$

FR_{XL} (N)
Carga radial resultante
M₂ (Nm)
Par de torsión sobre el eje
d_o (mm)
Diamètre de l'élément de transmission monté sur l'arbre
F_R (N)
Valor de carga radial máximo admitido FR₁ - FR₂ (ver tablas correspondientes)

fz = 1,1 Piñon dentado
1,4 Piñon de cadena
1,7 Polea para correa trapezoidal
2,5 Polea plana

Quando la carga radial resultante no se aplica sobre el centro del eje de salida, se debe corregir la carga radial admisible FR₁₋₂ mediante la siguiente fórmula:

$$FR_X = \frac{FR_1 \cdot 2 \cdot z}{(y + x)}$$

y, z = valores indicados en las tablas pag. 14.
x = distancia desde el punto de aplicación de la carga hasta la base del eje.

DE QUERBELASTUNGEN - TECHNISCHE BESCHREIBUNGEN

IT CARICHI RADIALI - DESCRIZIONI TECNICHE

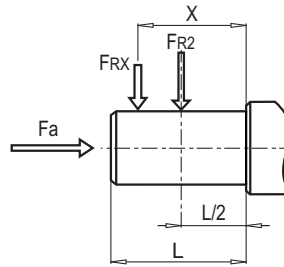
Abtriebswellen

Sofern die radiale Querkraft nicht auf die Mitte der welle bezogen ist, ist die effektive zulässige kraft FRX durch formel zu berechnen:

Ejes de Salida

Si la carga radial resultante no se aplica sobre el centro del eje, corregir la carga radial admisible FRX mediante la siguiente fórmula:

$$FRX = \frac{FR2 \cdot z}{(y + x)} \quad (N)$$



EN RADIAL LOADS - TECHNICAL DESCRIPTIONS

FR CHARGES RADIALES - DESCRIPTIONS TECHNIQUES

Output Shafts

When the radial load is not on the centre line of the shaft, it is necessary to adjust the admissible radial load FRX with the following formula:

Arbres de Sortie

Quand la charge radiale n'est pas au milieu de l'arbre, il est nécessaire de corriger la charge radiale admisible FRX avec la formule suivante:

TR RADYAL YÜKLER - TEKNİK TANIMLAR

ES CARGAS RADIALES - DESCRIPCIONES TECNICAS

Çıkış Şaftı

Radyal kuvvet çıkış şaftının orta noktasına gelmediğinde kabul edilebilir radyal yük FRX aşağıdaki formül ile hesaplanır.

Alberi in Uscita

Con carico radiale risultante non in mezzeria dell'albero, correggere il carico radiale ammissibile FRX con la formula:

A/F	301	351	401	501	601	701
z	89	98	115	151	210	232
y	79	73	85	111	155	177
FR2 max (**)	1000	2500	3700	4000	5000	6000
Fa max (*)	5500	6500	7000	8500	11500	13500

A/F	202	202 G	252-253	302-303	352-353	402-403	502-503	602-603	702-703	902-903
z	86,5	103	120	138	169	195	238	281	331	367
y	66,5	83	96	108	134	155	188	221	261	282
FR2 max(**)	2500	2800	5500	6600	8000	12000	18000	22000	30000	55000

(**FR2) Entspricht dem max. zulässigem getriebe wert; bitte beachten sie den max. wert de tabelle.

(**FR2) Max. admissible value of the reducer; verify max. admissible value on performance tables.

(**FR2) Redüktörün kabul edilen max. değerini performans tablolarından doğrulayınız.

(**FR2) Valore massimo ammesso dal riduttore; verificare valore massimo ammesso su tabelle di prestazioni.

(**FR2) Valeur maximale admissible du réducteur; vérifier la valeur maxi admissible dans les tableaux de performances.

(**FR2) Valor máximo admisible por el reductor; verificar el valor máximo admisible en las tablas de preestaciones.

(*) Die Werte der maximal zulässigen Axialkräfte beziehen sich auf eine Drehrichtung bei verbautem Axiallager (auf Anfrage).

(*) Maximum axial load values admissible in only one direction with the use of a thrust bearing (on request).

(*) Tek yönlü maksimum aksinel yük değerleri bir basma yatağı kullanılarak (talebe bağlı) kabul edilebilir.

(*) Valori di carico assiale massimo ammissibile in una sola direzione per versione con cuscinetto reggispira (a richiesta).

(*) Valeurs de charge axiale maximum admissible dans une seule direction pour la version avec roulements coniques (sur demande).

(*) Valores de la fuerza axial maxima admissible en un unico sentido con rodamiento axial (bajo demanda).

DE QUERBELASTUNGEN -
TECHNISCHE BESCHREIBUNGEN

IT CARICHI RADIALI -
DESCRIZIONI TECNICHE

Antriebswellen

Sofern die radiale Querkraft nicht auf die Mitte der welle bezogen ist, ist die effektive zulässige kraft FRX durch formel zu berechnen:

Alberi in Entrada

Con carico radiale risultante non in mezzera dell'albero, correggere il carico radiale ammissibile FRX con la formula:

EN RADIAL LOADS -
TECHNICAL DESCRIPTIONS

FR CHARGES RADIALES -
DESCRIPTIONS TECHNIQUES

Input Shafts

When the radial load is not on the centre line of the shaft, it is necessary to adjust the admissible radial load FRX with the following formula:

Arbres D'entree

Quand la charge radiale n'est pas au milieu de l'arbre, il est nécessaire de corriger la charge radiale admissible FRX avec la formule suivante:

TR RADYAL YÜKLER - TEKNİK TANIMLAR

ES CARGAS RADIALES -
DESCRIPCIONES TECNICAS

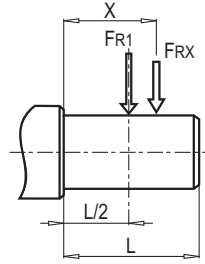
Giriş Şaftı

Radyal kuvvet çıkış şaftının orta noktasına gelmediğinde kabul edilebilir radyal yük FRX aşağıdaki formül ile hesaplanır.

Ejes de Entrada

Si la carga radial resultante no se aplica sobre el centro del eje, corregir la carga radial admissible FRX mediante la siguiente fórmula:

$$FRX = \frac{FR1 \cdot z}{(y + x)} \quad (N)$$



A/F - W	301	351	401	501	601	701
z	105	105	105	137	175	175
y	80	80	80	108	135	135
FR1 max (**)	1320	1800	2200	2500	3000	3000

A/F - W	202	202 G	252-253	302-303	352-353	402-403	502-503	602-603	702-703	902-903
z	-	-	105	105	105	137	137	175	175	225
y	-	-	80	80	80	108	108	135	135	170
FR1 max (**)	-	-	2200	2200	2500	3600	3600	7200	7200	15000

(**FR1) Entspricht dem max. zulässigem getriebe wert; bitte beachten sie den max. wert de tabelle.

(**FR1) Max. admissible value of the reducer; verify max. admissible value on performance tables.

(**FR1) Redüktörün kabul edilen max. değerini performans tablolarından doğrulayınız.

(**FR1) Valore massimo ammesso dal riduttore; verificare valore massimo ammesso su tabelle di prestazioni.

(**FR1) Valeur maximale admissible du réducteur; vérifier la valeur maxi admissible dans les tableaux de performances.

(**FR1) Valor máximo admisible por el reductor; verificar el valor máximo admisible en las tablas de preestaciones.

DE TRÄGHEITSMOMENTE

Die angegebenen Werte sind Richtwerte und beziehen sich auf Getriebe mit IEC Eingangsflansch.
Die angegebenen Werte beziehen sich jeweils auf das max. Massenträgheitsmoment.

EN MOMENTS OF INERTIA

Following values are indicative only and refer to gear reducers fitted with input PAM.
These values refer to maximum moment of inertia.

TR ATALET MOMENTİ

Aşağıdaki değerler sadece gösterge niteliğindedir ve PAM girişli redüktörler içindir. Bu değerler, maximum atalet momentini ifade eder.

IT MOMENTI D'INERZIA

I seguenti valori sono solo indicativi. Sono riferiti a riduttori già predisposti con l'attacco motore PAM.
I valori in tabelle sono riferiti al massimo di quelli calcolati.

FR MOMENTS D'INERTIE

Les valeurs suivantes sont seulement indicatives et se rapportent à des réducteurs de vitesse équipés avec l'entrée PAM.
Ces valeurs sont relatives au moment d'inertie maximum.

ES MOMENTOS DE INERCIA

Los valores siguientes son sólo indicativos y se refieren a los reductores con PAM de entrada.
Estos valores están referidos al momento de inercia máximo.

A - F - AF	J*1E-4 [Kg*m2]
202	-
202 G	-
252 - 253	0,7
301	0,8
302 - 303	0,7
351	1,9
352 - 353	0,9
401	4,6
402 - 403	2,0
502 - 503	6,8
501	11,0
602 - 603	10,6
601	34,5
702 - 703	28,2
701	76,4
902 - 903	44,2

DE

SCHMIERUNG

Bei in der Tafel nicht vorgesehene Umgebungstemperaturen setzen Sie sich bitte mit unserem Kundendienst in Verbindung.

Bei Temperaturen unter -30°C oder über 60°C werden Dichtringe aus besonderen Elastomeren benötigt.

Bei Betrieb mit Temperaturen unter 0°C ist folgendes zu berücksichtigen:

- 1- Die Motoren müssen für den Betrieb mit der vorgesehenen niedrigen Raumtemperatur geeignet sein.
- 2- Die Leistung des Elektromotors muß so ausgelegt werden, daß die höheren benötigten Anlaufdrehmomente aufgebracht werden können.
- 3- Bei Getriebeghäusen aus Guß sind die Stoßbelastungen zu beachten, weil der Guß bei Temperaturen unter -15°C verpröden könnte.
- 4- Bei Betriebsbeginn könnten Schmierungsprobleme infolge der hohen Ölviskosität auftreten, daher ist es sinnvoll, für einige Minuten einen Leerlauf auszuführen. Je nach Umgebungsbedingungen und Betriebsart ist nach etwa 10.000 Betriebsstunden ein Ölwechsel durchzuführen.

EN

LUBRICATION

In cases of ambient temperatures not envisaged in the table, call our Technical Service.

In the case of temperatures under -30°C or over 60°C it is necessary to use oil seals with special properties.

For operating ranges with temperatures under 0°C it is necessary to consider the following:

- 1- The motors need to be suitable for operation at the envisaged ambient temperature.
- 2- The power of the electric motor needs to be adequate for exceeding the higher starting torques required.
- 3- In case of cast-iron gear reducers, pay attention to impact loads since cast iron may have problems of fragility at temperatures under -15°C.
- 4- During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

The oil needs to be changed after approximately 10,000 hours. This period depends on the type of service and the environment where the reduction unit works.

TR

YAĞLAMA

Tabloda belirtilmeyen aşırı ısı ortamlarında Teknik Servisimize arayınız.

-30°C altındaki bir ısı değerinde veya 60°C üzerindeki bir ısı değerinde hassas özelliklere sahip yağ keçesi kullanmak gerekir.

0°C'nin altındaki sıcaklık değerlerinde çalışmak gerekiyorsa aşağıdakileri göz önünde tutmak gerekir:

- 1- Motorlar tahmin edilen ortam sıcaklıklarındaki operasyonlara uygunluk gerektirir.
- 2- Elektrik motorunun gücü gerekli olan yüksek başlama tork değerlerini aşabilmesi için yeterli olmalıdır.
- 3- Redüktörlerin dökme demirden imal edildiği durumlarda -15°C sıcaklığın altında dökme demirin kırılma riski bulunduğundan darbe yüklerine özen gösterin.
- 4- Servis hizmetinin ilk aşamalarında yağın sahip olduğu aşırı akışkanlık olayından dolayı birtakım yağlama problemleri meydana gelebilir, bu durumda yüksüz olarak birkaç dakika boyunca çalıştırmak gerekir.

Yağ değişimi yaklaşık 10.000 saatlik kullanımdan sonra yapılmalıdır. Bu süre servis tipine ve redüktörün çalıştığı ortama göre değişir.

IT

LUBRIFICAZIONE

Nei casi con temperature ambiente non previste in tabella contattare il ns. Servizio Tecnico.

In caso di temperature inferiori a -30°C o superiori a 60°C occorre utilizzare anelli di tenuta con mescole speciali.

Per i campi di funzionamento con temperature inferiori a 0°C occorre considerare quanto segue:

- 1- I motori devono essere idonei al funzionamento con temperatura ambiente prevista.
- 2- La potenza del motore elettrico deve essere adeguata al superamento delle maggiori coppie di avviamento richieste.
- 3- Nel caso di riduttori con cassa in ghisa prestare attenzione ai carichi d'urto in quanto la ghisa può presentare problemi di fragilità a temperature inferiori ai -15°C.
- 4- Durante le prime fasi di servizio possono insorgere problemi di lubrificazione cause l'elevata viscosità che assume l'olio e quindi è opportuno procedere ad alcuni minuti di rotazione a "vuoto".

Il cambio olio deve essere eseguito dopo circa 10.000 ore, questo periodo è in funzione del tipo di servizio e dell'ambiente in cui opera il riduttore.

FR

LUBRIFICATION

En cas de températures ambiantes non prévues dans le tableau, contacter notre S.ce Technique.

En cas de température au-dessous de -30°C ou au-dessus de 60°C, il faut utiliser des bagues d'étanchéité avec mélanges spéciaux.

Pour les champs de fonctionnement avec température au-dessus de 0°C, il faut considérer ce qui suit:

- 1- Les moteurs doivent être aptes au fonctionnement à la température ambiante prévue.
- 2- La puissance du moteur électrique doit être au dépassement de la plupart des couples de démarrage demandés.
- 3- En cas de réducteurs avec carcasse en fonte, faire attention aux charges de choc, car la fonte peut présenter des problèmes de fragilité à températures au-dessous de -15°C.
- 4- Lors des premières phases de service, des problèmes de lubrification dus à la viscosité élevée, que l'huile assume, pourraient se vérifier; il faut donc procéder à une rotation "à vide" de quelques minutes.

Le changement d'huile doit être effectué après 10,000 heures environ; cette période est en fonction du type de service et du milieu dans lequel le réducteur travaille.

ES

LUBRICACIÓN

En caso de temperaturas no previstas en la tabla, ponerse en contacto con nuestro Servicio técnico.

En caso de temperaturas inferiores a -30°C o superiores a 60°C, es necesario utilizar anillos de retén con mezclas especiales.

Para los campos de funcionamiento con temperaturas inferiores a 0°C, es necesario cumplir con lo que sigue:

- 1- Los motores tienen que ser idóneos al funcionamiento con la temperatura ambiente prevista.
- 2- La potencia del motor eléctrico tiene que ser idónea para superar los mayores pares de arranque pedidos.
- 3- En caso de reductores con carcasa de fundición, cuidado con las cargas de choque porque la fundición puede presentar problemas de fragilidad con temperaturas inferiores a los -15°C.
- 4- Durante las primeras fases de servicio podrían surgir unos problemas de lubricación debidos a la elevada viscosidad del aceite y es por lo tanto oportuno efectuar una rotación en "vacío" por algunos minutos.

El cambio de aceite tiene que ser efectuado aproximadamente después de 10.000 horas; claramente, este periodo es en función del tipo de ambiente en el que trabaja el reductor.

DE	SCHMIERUNG
IT	LUBRIFICAZIONE

EN	LUBRICATION
FR	LUBRIFICATION

TR	YAĞLAMA
ES	LUBRICACIÓN

Mineralöl / Mineral Oil / Mineral Yağ / Olio Minerale / Huile Minérale / Aceite Mineral							
	T°C ISO SAE...	ENI	SHELL	KLUBER	MOBIL	CASTROL	BP
A/F 301-701 A/F 202-902 A/F 253-903	(-5) / (+40) ISO VG220	BLASIA 220	OMALA OIL220	KLUBEROIL GEM 1-220N	MOBILGEAR 600 XP 220	ALPHA MAX 220	ENERGOL GR-XP220
	(-15) / (+25) ISO VG150	BLASIA 150	OMALA OIL150	KLUBEROIL GEM 1-150N	MOBILGEAR 600 XP 150	ALPHA MAX 150	ENERGOL GR-XP150

- Spezifische Schmierstoffangabe erfragen Sie bei NRW Drive Technologies.
- Specifications of lubricants recommended by NRW Drive Technologies.
- Yağlayıcılar ile ilgili özellikler NRW Drive Technologies tarafından tavsiye edilmektedir.
- Specifiche dei lubrificanti consigliati da NRW Drive Technologies.
- Especificaciones de lubricante aconsejados por NRW Drive Technologies.
- Spécification des lubrifiants suivant NRW Drive Technologies.
- Für die Ölmengen siehe die Seiten. (Seite 27)
- For the quantity of oil, please refer to the pages relating. (page 27)
- Yağ miktarı için ilgili sayfalara bakınız. (sayfa 27)
- Per le quantità di olio si rimanda alle pagine relative. (pagina 27)
- Pour les quantités d'huile, voir pages concernant. (page 27)
- Para las cantidades de aceite, ver a las páginas. (página 27)

Spezierschmierstoffe / Special lubricants / Özel yağlayıcılar / Lubrificanti speciali / Lubrifiants spéciaux / Lubricantes especiales			
		*T°C	Synthetisches Öl / Synthetic oil / Sentetik yağ / Olio sintético / Huile synthétique / Aceite sintético
Öle für niedrige Temperaturen Oils for low temperature Düşük sıcaklık için yağlar Oli per basse temperature Huiles pour basse température Aceites para bajas temperaturas	ENI	(-25) - (+20)	BLASIA 150 S (ISO VG150)
	KLUBER	(-35) - (+10)	KLUBERSYNTH GH 6-80 (ISO VG68)
	MOBIL	(-40) - (+5)	SCH 624 (ISO VG32)
	KLUBER	(-40) - (+5)	KLUBERSYNTH GH 6-32 (ISO VG32)
Öle für niedrige Temperaturen - Food-Sektor Oils for low temperature - Food sector Düşük sıcaklık için yağlar - Gıda sektörü Oli per basse temperature - Settore alimentare Huiles pour basse température - Secteur de l'alimentation Aceites para bajas temperaturas - Sector alimentario	KLUBER	(-30) - (+10)	KLUBERSYNTH UH1-6 100 (ISO VG100)
	Öle für hohe Temperaturen / Oils for high temperature / Yüksek sıcaklık için yağlar / Oli per alte temperature / Huiles pour haute température / Aceites de alta temperatura	KLUBER	(-10) - (+50)
KLUBER		(-10) - (+70)	KLUBERSYNTH GH 6-680 (ISO VG680)
Öle für hohe Temperaturen - Food-Sektor Oils for high temperature - Food sector Yüksek sıcaklık için yağlar - Gıda sektörü Oli per alte temperature - Settore alimentare Huiles pour haute température - Secteur de l'alimentation Aceites de alta temperatura - Sector alimentario /	KLUBER	(-10) - (+50)	KLUBERSYNTH UH1-6 460 (ISO VG460)
	Food-Sektor / Food sector / Gıda sektörü / Settore alimentare / Secteur de l'alimentation / Sector alimentario	KLUBER	(-15) - (+40)

Falls spezielles Öl verwendet werden soll kontaktieren sie bitte unseren Kundendienst
If 'special' lubricant is required please contact for Technical Assistance
'Özel' yağlayıcı gerekiyorsa Teknik Yardım için lütfen irtibata geçiniz
Per l'utilizzo di lubrificanti speciali, contattare l'assistenza tecnica
Si un Lubrifiant spécial est demandé, merci de contacter notre service technique.
Para el uso de lubricantes especiales contactar con la asistencia técnica

- * Working ambient temperature
- * Temperatura ambiente di funzionamento
- * Çalışma ortam sıcaklığı
- * Température ambiante de fonctionnement
- * Betriebsumgebungstemperatur
- * Temperatura ambiente de funcionamiento

DE SCHMIERUNG

- Für die Getriebe der Serie A/F ist die Einbaulage anzugeben.
- Serie A/F mit 1 Übersetzungsstufe in den Baugrößen 30, 35, 40 und mit 2,3 Übersetzungsstufen in den Baugrößen 25, 30, 35, werden werkseitig mit Schmieröl befüllt. Sie bedürfen keinerlei Wartung und sind serienmäßig mit Ölstopfen ausgestattet.
- Die Getriebe der Serie A/F mit 1 Übersetzungsstufe in den Baugrößen 50, 60, 70 und mit 2,3 Übersetzungsstufen in den Baugrößen 40, 50, 60, 70, 90 werden werkseitig mit Schmieröl, sowie Ölschaugläsern ausgeliefert.
Die erforderliche Ölmenge und die Positionen der Ölschaugläser entsprechen der werkseitig vorgeschlagenen Position. Vor der Inbetriebnahme sind die Verschlussstopfen, durch entsprechende Entlüftungsventile, gemäß der Einbaulage, auszutauschen.
Die angegebenen Ölmenge sind Richtwerte. Diese müssen je nach Einbaulage, über Ölschaugläser, Ölstandsbohrungen der Ölmesstäbe (je nach Type) regelmässig überprüft werden. Ölstandsunterschiede können aus verschiedenen Einbaulagen bei Applikationen resultieren. Nach jeder Montage, sind alle Ölstände sind zwingend zu prüfen und gegebenenfalls anzupassen.

EN LUBRICATION

- For the reduction units A/F series it is always necessary to specify the mounting position.
- A/F 1 stage 30, 35, 40 and 2,3 stage 25, 30, 35, are supplied complete with lubricant, have no oil plugs and need no maintenance
- The gear reducer A/F series 1 stage 50, 60, 70 and 2,3 stage 40, 50, 60, 70, 90 are supplied complete with lubricant and are fitted with oil plugs to suit any mounting position included in the catalogue.
It is recommended, after installation, to replace the closed plug used for transportation with the supplied breather plug. Lubricant quantities are only indicative, For correct filling always refer to the sight glass or the dipstick, when this is supplied.
Any oil level differences can be caused by constructive tolerances but also on the mounting position or the assembly scheme of the customer Therefore it is very important for the customer to check oil level and if necessary to add the necessary quantity.

TR YAĞLAMA

- A/F serisi redüktörlerin montaj pozisyonu verilmelidir.
- A/F serisi 1 kademe 30, 35, 40 ve 2,3 kademe 25, 30, 35 gövde redüktörler yağ içine konmuş vaziyette gönderilir. Redüktörler herhangi bir bakıma gerek duymamakta ve fabrika çıkışlı yağ tapası ile verilir.
- A/F serisi redüktörlerin 1 kademe 50, 60, 70 ve 2,3 kademe 40, 50, 60, 70, 90 gövde büyüklükleri montaj pozisyonları istenildiği gibi yapılabilir.
İstek üzerine redüktörler tarafımızca gres yağlı verilebilir, bu durumda yağ tapası ile gönderilen redüktörü havalandırma tapası ile değiştirmesini tavsiye ederiz. Redüktör yağsız istendiğinde istenilen montaj pozisyonuna göre yağ dolumu yapılmalıdır, bu tabloları katalogta bulabilirsiniz veya bize danışınız.
Verilen yağ miktarları montaj pozisyonuna göre değişiklik gösterir ve yağ göstergesi, yada yağ çubuğu (tipe göre) ile sürekli kontrol edilmesi gerekir. Yağ seviye değişikliği farklı montaj pozisyonlarına göre değişir. Montaj-demontaj dan sonra yağ seviyeleri kontrol edilmeli ve duruma göre ilave yağ konulması gerekebilir.

IT LUBRIFICAZIONE

- Per i riduttori serie A/F occorre sempre specificare la posizione di piazzamento prevista.
- Serie A/F 1 stadio nelle grandezze 30,35,40 e serie A/F 2,3 stadi nelle grandezze 25,30,35 vengono forniti completi di lubrificante sono sprovvisti dei tappi olio e non hanno necessità di alcuna manutenzione
- I riduttori serie A/F a 1 stadio nelle grandezze 50,60,70 e a 40,50,60,70,90 vengano forniti completi di lubrificante a dei tappi olio necessari a garantire la corretta lubrificazione nella posizione si piazzamento richiesta.
Si raccomanda, effettuata l'installazione, di sostituire il tappo chiuso utilizzato per il trasporto con il tappo di sfianto fornito a corredo.
Le quantità di olio in tabella sono solo indicative e per il corretto riempimento si dovrà fare riferimento al tappo o all'astina di livello, se presente.
Eventuali scostamenti di livello possono dipendere da tolleranze costruttive ma anche dal piazzamento del riduttore o dal piano di montaggio presso cliente. Per tale motivo è opportuno che il cliente verifichi e, se necessario, ristabilisca il livello a riduttore installato.

FR LUBRIFICATION

- Pour les réducteurs série A/F il faut toujours spécifier la position de montage.
- Série A/F à 1 train pour les grandeurs, 30,35,40 et série A/F 2,3 trains pour les grandeurs 25,30,35 sont fournis avec lubrifiant et sans bouchons et ne nécessitent, donc, aucun entretien.
- Les réducteurs série A/F à 1 train pour les grandeurs 50,60,70 et à 2,3 trains pour les grandeurs 40,50,60,70,90 sont fournis avec tous les bouchons nécessaires pour garantir toutes les positions de montage prévues au catalogue.
On recommande, après l'installation, de changer le bouchon livré pour le transport contre celui fourni avec trou d'évent.
Les quantités d'huile indiquées en tableau sont seulement indicatives et pour un remplissage correct il faut faire référence au bouchon de niveau ou à la jauge à huile, si présents.
Toutes les différences de niveau d'huile peuvent être causées par des tolérances de constructions, ou par la position de montage, ou le schéma d'assemblage du client. Par conséquent il est très important que le client vérifie le niveau d'huile et au besoin ajoute la quantité nécessaire.

ES LUBRICACIÓN

- Para los reductores serie A/F es necesario especificar siempre la posición de montaje.
- Serie A/F de 1tren en los tamaños, 30,35,40 y serie A/F de 2,3 trenes en los tamaños, 25,30,35 se suministran con lubricante, no disponen de tapón aceite y no necesitan ningún mantenimiento.
- Los reductores serie A/F de 1 tren en los tamaños 50,60,70 y de 2,3 trenes en los tamaños 40,50,60,70,90 se suministran con lubricante y disponen de tapones para todas las posiciones de montaje previstas en el catálogo.
Es necesario, una vez instalado el reductor en la máquina, sustituir el tapón cerrado, utilizado durante el transporte, por el tapón respiradero que se adjunta.
Las cantidades de lubricante en la tabla son indicativas y para un correcto llenado hay que tomar de referencia el centra del visor o del asta de nivel si están instaladas.
Eventuales diferencias del nivel de aceite pueden depender de tolerancias constructivas perotambién de la posición de montaje o del esquema de montaje del cliente. Por tanto es muy importante que el cliente compruebe el nivel de aceite y si es necesario agregue la cantidad adecuada.

A/F	301	351	401	501	601	701
M1	0.5	0.7	0.7	1.45	3.5	4.7
M2	0.5	0.7	0.7	1.5	3.5	4.1
M3	0.5	0.5	0.5	1.5	3.5	3.9
M4	0.5	0.7	0.9	1.5	3.5	4.7
M5-M6	0.5	0.7	0.7	1.5	3.5	4.1

- Ölmenge (Liter) ~
- Quantity of oil in litres ~
- Litre cinsinden yağ miktarı ~
- Quantità olio in litri ~
- Quantité d'huile en litres ~
- Cantidad de aceite en litros ~

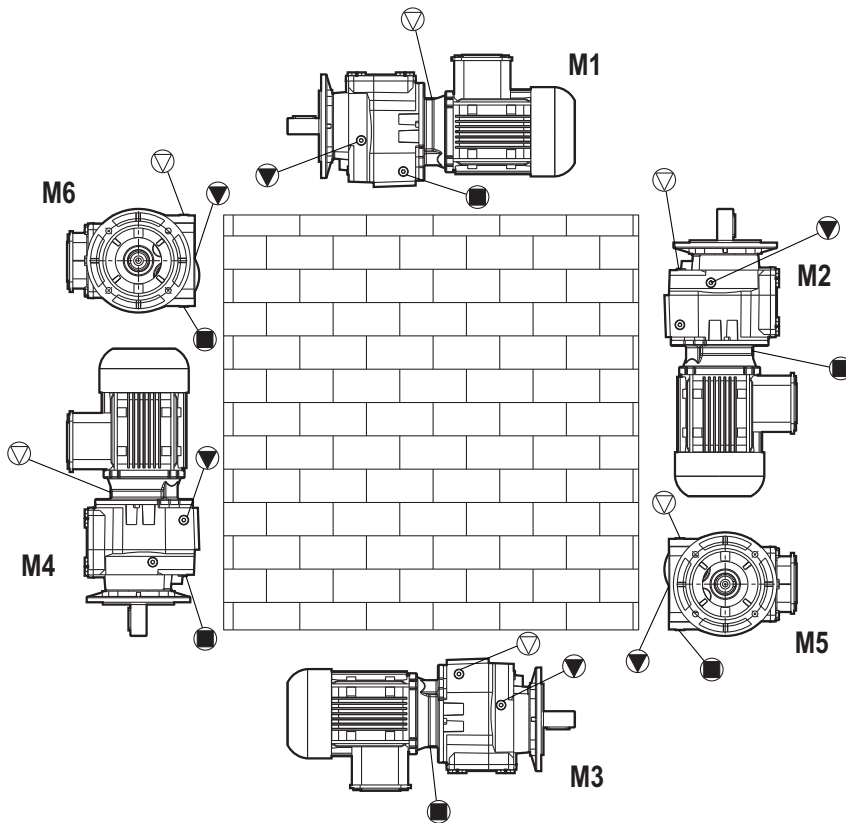
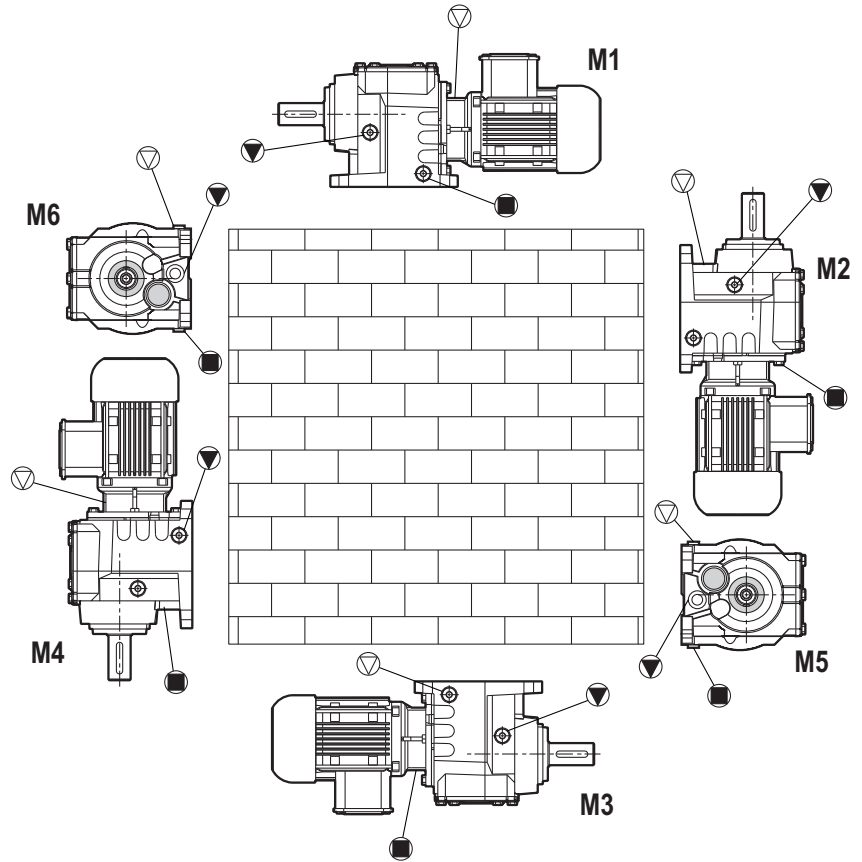
A/F	202	202 G	252 - 253	302 - 303	352 - 353	402 - 403	502 - 503	602 - 603	702 - 703	902 - 903
M1	0.16	0.27	0.8	1.2	1.5	3	5.7	10	16.7	29
M2	0.32	0.59	1.2	1.7	2	4.4	7.9	14.3	22.2	40
M3	0.21	0.42	1.1	1.3	1.8	3.6	6.2	11.2	16.9	28.5
M4	0.23	0.45	1.3	1.7	2.2	4.1	7.8	13.4	21.2	34.5
M5-M6	0.20	0.39	1	1.2	1.8	3.4	6.6	11	18.2	27.5

DE EINBAULAGE
IT PIAZZAMENTO

EN MOUNTING POSITIONS
EN POS. DE MONTAGE

TR MONTAJ POZİSYONLARI
DE POS. DE MONTAJE

A...
202
202 G
252 - 253
302 - 303
352 - 353
402 - 403
502 - 503
602 - 603
702 - 703
902 - 903



F...	AF...
202	202
202 G	202 G
252 - 253	252 - 253
302 - 303	302 - 303
352 - 353	352 - 353
402 - 403	402 - 403
502 - 503	502 - 503
602 - 603	602 - 603
702 - 703	702 - 703
902 - 903	902 - 903

△ Entlüftung / Vent plug / Havalandırma tapası
Tappo di sfiato / Évent / Ventilación

● Öbläss / Drain plug / Boşaltma tapası / Tappo di
scarico dell'olio / Vidange d'huile / Vaciado de aceite

▽ Ölstand / Oil level / Yağ Seviye tapası / Tappo di livello
dell'olio / Niveau d'huile / Nivel de aceite

DE

EINBAULAGE

- Für die vertikalen einbaulagen siehe seite 10-11.
- Falls nicht anders angegeben, sind M1 die standard einbaulagen.
- Für nicht angegebene einbaulagen setzen sie sich bitte mit unserem kundendienst in verbindung.

EN

MOUNTING POSITIONS

- For vertical positions, check with pages 10-11.
- Unless specified otherwise, the standard positions are M1.
- For positions not envisaged, it is necessary to call our Technical Service.

TR

MONTAJ POZİSYONLARI

- Dikey pozisyonlar için, 10-11. sayfalarda verilen bilgileri kontrol ediniz.
- Herhangi bir seçenek sunulmazsa standart pozisyonumuz M1'dir.
- Farklı pozisyon belirtildiği takdirde, Teknik Servisimize başvurmanız gerekmektedir.

IT

PIAZZAMENTO

- Per le posizioni di piazzamento verticali verificare quanto detto a pag. 10-11.
- Se non diversamente specificato le posizioni standard sono M1.
- Per le posizioni di piazzamento non previste occorre rivolgersi al ns. Servizio tecnico.

FR

POS. DE MONTAGE

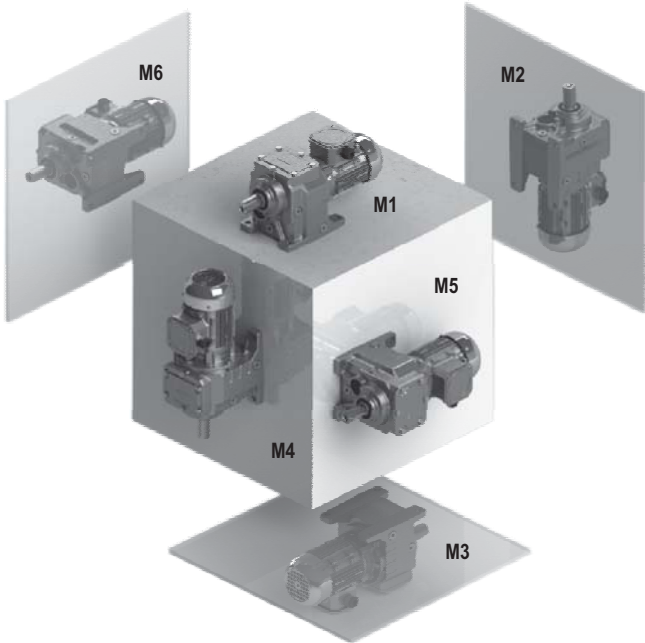
- Pour les positions de montage verticales, voir pages 10 et 11.
- Si non spécifié, les positions standard sont M1.
- Pour les positions de montage non prévues, contacter notre S.ce technique.

ES

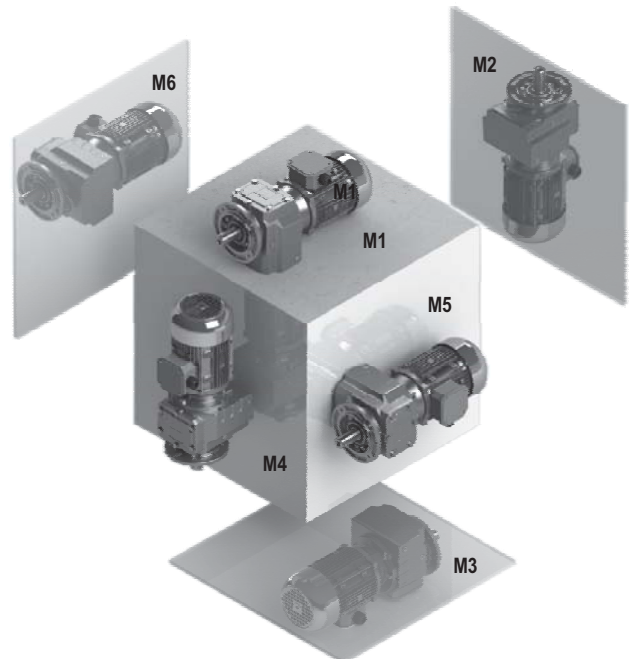
POS. DE MONTAJE

- Para las posiciones de montaje verticales, ver las páginas 10-11.
- Si no se especifica el contrario, las posiciones estándar son M1.
- Para las posiciones demontajenoprevistas, es necesario ponerse en contacto con nuestro Servicio técnico.

A301...701
A202...902
A253...903



F301...701
F202...902
F253...903



DE EINBAULAGE

- Im Falle von sonderanforderungen ist bei Auftragserteilung die Lage des Klemmenkastens gemäß dem schema genau anzugeben.
- Sofern nichts gegenteiliges angegeben, wird der schneckengetriebemotor mit klemmkastenlage 1 geliefert.
- Falls nicht anders angegeben, sind M1 die Standardeinbaulagen.
- Für nicht angegebene Einbaulagen setzen sie sich bitte mit unserem kundendienst in verbinding.

EN MOUNTING POSITIONS

- In the case of specific requirements, when ordering, specify the position of the terminal box as shown in the diagram.
- Unless other wise specified, the gear reducer is supplied with terminal box in position 1.
- Unless specified otherwise, the standard positions are M1.
- For positions not envisaged, it is necessary to call our Technical Service.

TR MONTAJ POZİSYONLARI

- Sipariş sırasında özel istekleriniz olacaksa şekilde gösterildiği üzere terminal kutusunun pozisyonunu belirtiniz.
- Aksi belirtilmediği taktirde redüktörlerin klemens kutusu pozisyonu 1 olarak verilir.
- Aksi belirtilmediği taktirde standart pozisyon M1'dir.
- Öngörülen montaj pozisyonları dışında kalan durumlar için teknik servisimize danışınız.

IT PIAZZAMENTO

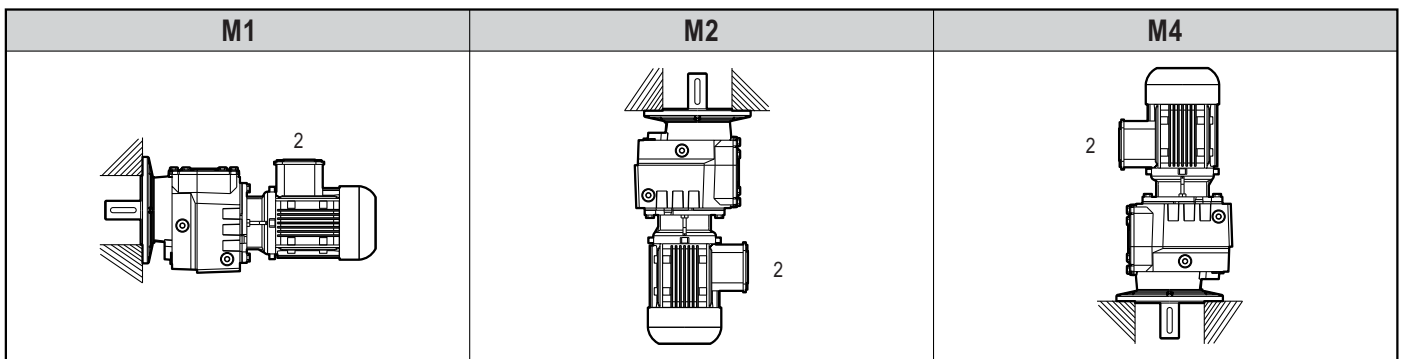
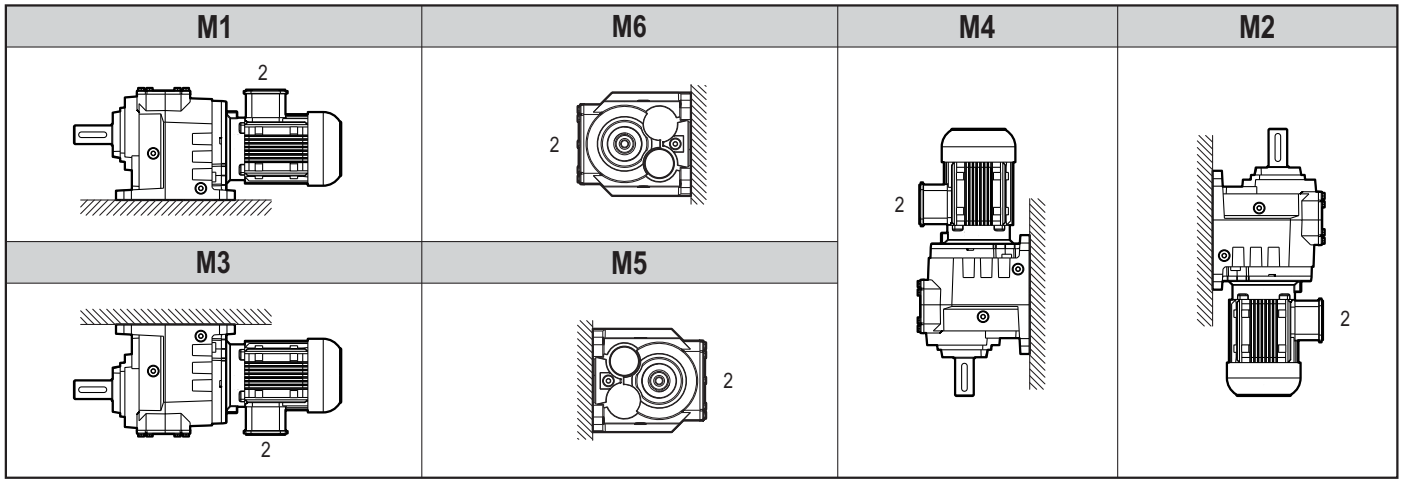
- Nel caso di particolari esigenze specificare in fase di ordine la posizione della morsetteria come da schema.
- Se non diversamente specificato, il gruppo viene fornito con morsetteria in pos. 1.
- Se non diversamente specificato le posizioni standard sono M1.
- Per le posizioni di piazzamento non previste to call our Technical Service.

FR POS. DE MONTAGE

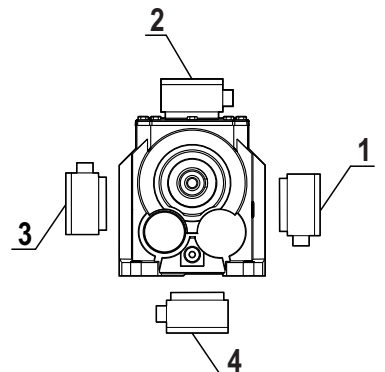
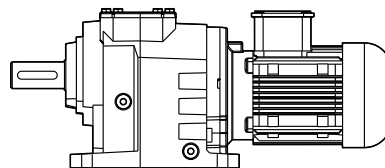
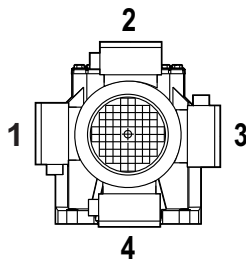
- En cas d'exigences particulières, spécifier, lors de la commande, la position du bornier comme d'après le schéma.
- Sauf indications contraires, le réducteur est fourni avec boîte à borne en position 1.
- Si non spécifié, les positions standard sont M1.
- Pour les positions de montage non prévues, contacter notre S.ce technique.

ES POS. DE MONTAJE

- En caso de exigencias particulares, detallar en el pedido, la posición de la caja de bornes según el esquema.
- Si non esta diferentemente especificado, el motorreductor se monta con la caja de bornes en posición 1.
- Si no se especifica el contrario, las posiciones estándar son M1.
- Para las posiciones de montaje no previstas, es necesario ponerse en contacto con nuestro Servicio técnico.



Klemmenkastenlage
Position of terminal box
Terminal kutusunun pozisyonu
Posizione morsetteria
Position du bornier
Posición caja de bornes



DE MODULARES BAUKASTENSYSYSTEM

EN MODULARITY

TR MODÜLER SİSTEM

IT MODULARITA

FR MODULARITE

ES MODULARIDAD

Serie in ghisa grigia / Grey cast iron series / Gri Demir Döküm Serisi / Serie aus GG. / Série en fonte grise / Serie en fundición gris

A / F...PAM 100

- Ausführungen zum anbau von PAM - Motoren.
- Fitted for motor coupling version (PAM).
- PAM bağlantılı versiyon.
- Versione con predisposizione per attacco motore PAM.
- Version avec prédisposition pour moteur PAM.
- Versión motorreductor (PAM).

A / F...100L/4A

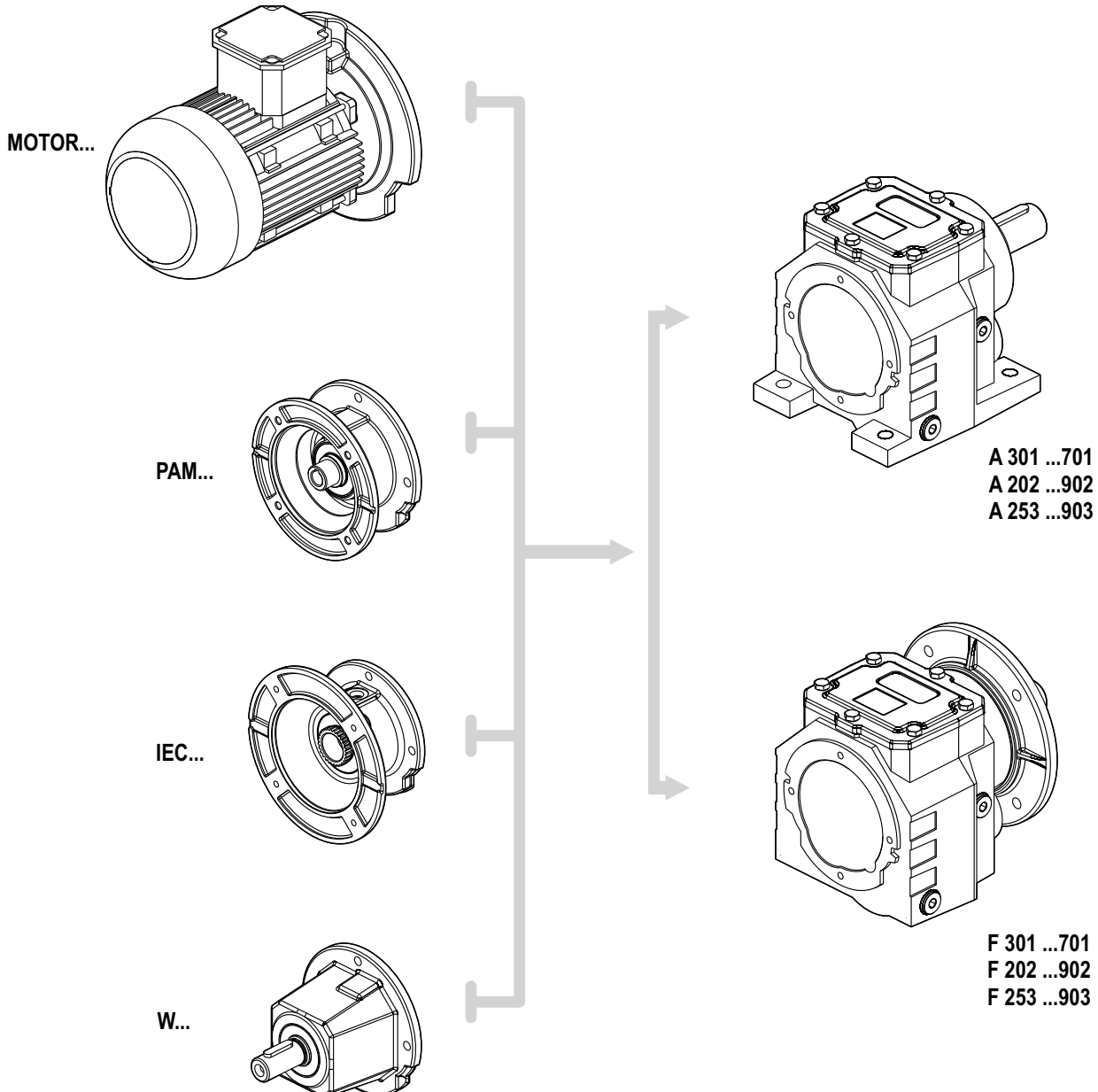
- Ausführungen mit kompakt elektro motoren.
- Compact electric motor versions.
- Akuple elektrik motor versiyonu.
- Versioni con motore elettrico compatto.
- Version avec moteur électrique compact.
- Versión motorreductor compacto.

A / F...W

- Ausführungen mit antriebsvollwelle.
- Input shaft versions.
- Serbest giriş millî versiyon.
- Versioni con albero maschio in ingresso.
- Version avec arbre en entrée.
- Versión con eje macho de entrada.

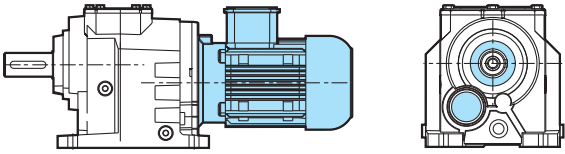
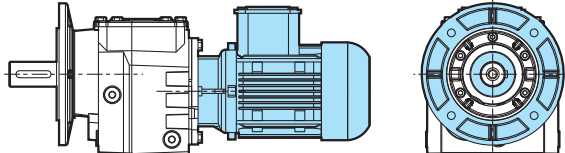
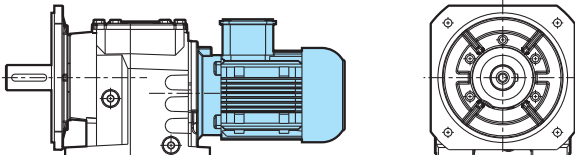
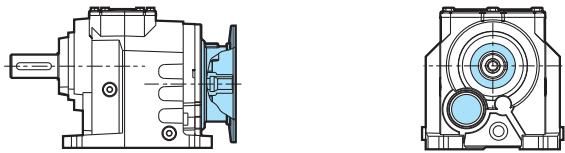
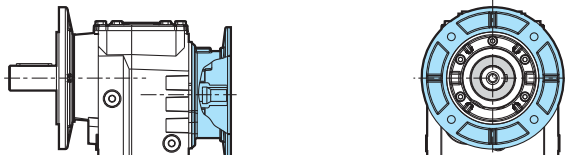
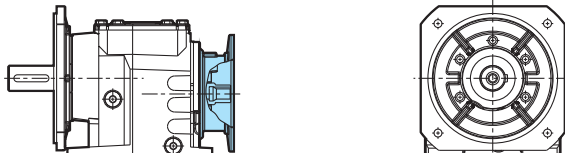
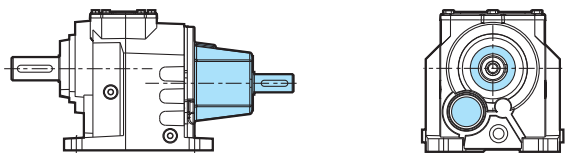
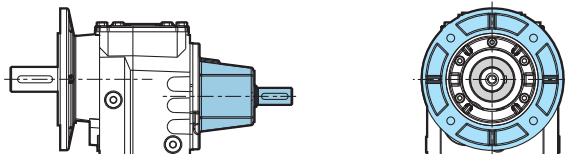
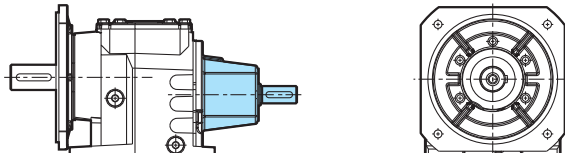
A / F...IEC 100

- Die verbindung motor getriebe erfolgt über kupplung.
- Fitted for motor mounting with flexible coupling.
- Kaplinli motor bağlantısı.
- Predisposto per attacco motore con giunto.
- Prédisposé pour montage moteur avec joint.
- Predisuesto para montaje motor con acoplamiento.



DE	PRODUKTE	EN	PRODUCTS	TR	ÜRÜNLERİMİZ
IT	PRODOTTI	FR	PRODUITS	ES	PRODUCTOS

202 - 202 G - 252, 253 - 301, 302, 303 - 351, 352, 353 - 401, 402, 403 - 501, 502, 503 - 601, 602, 603 - 701, 702, 703 - 902, 903

	A... / MOTOR Fußbefestigung Foot mounting Ayak montajlı Fissaggio piede Fixation à pattes Fijación por patas
	F... / MOTOR Flanschbefestigung Flange mounting Flanş montajlı Fissaggio flangia Fixation à bride Fijación por brida
	AF... / MOTOR Fuß-Flanschbefestigung Foot-flange mounting Ayak-flanş montajlı Fissaggio piede-flangia Fixation à paaes et bride Fijación patas-brida
	A... / PAM Fußbefestigung Foot mounting Ayak montajlı Fissaggio piede Fixation à pattes Fijación por patas
	F... / PAM Flanschbefestigung Flange mounting Flanş montajlı Fissaggio flangia Fixation à bride Fijación por brida
	AF... / PAM Fuß-Flanschbefestigung Foot-flange mounting Ayak-flanş montajlı Fissaggio piede-flangia Fixation à paaes et bride Fijación patas-brida
	A... / W Fußbefestigung Foot mounting Ayak montajlı Fissaggio piede Fixation à pattes Fijación por patas
	F... / W Flanschbefestigung Flange mounting Flanş montajlı Fissaggio flangia Fixation à bride Fijación por brida
	AF... / W Fuß-Flanschbefestigung Foot-flange mounting Ayak-flanş montajlı Fissaggio piede-flangia Fixation à paaes et bride Fijación patas-brida

DE BEISPIEL BESTELLBESCHREIBUNG

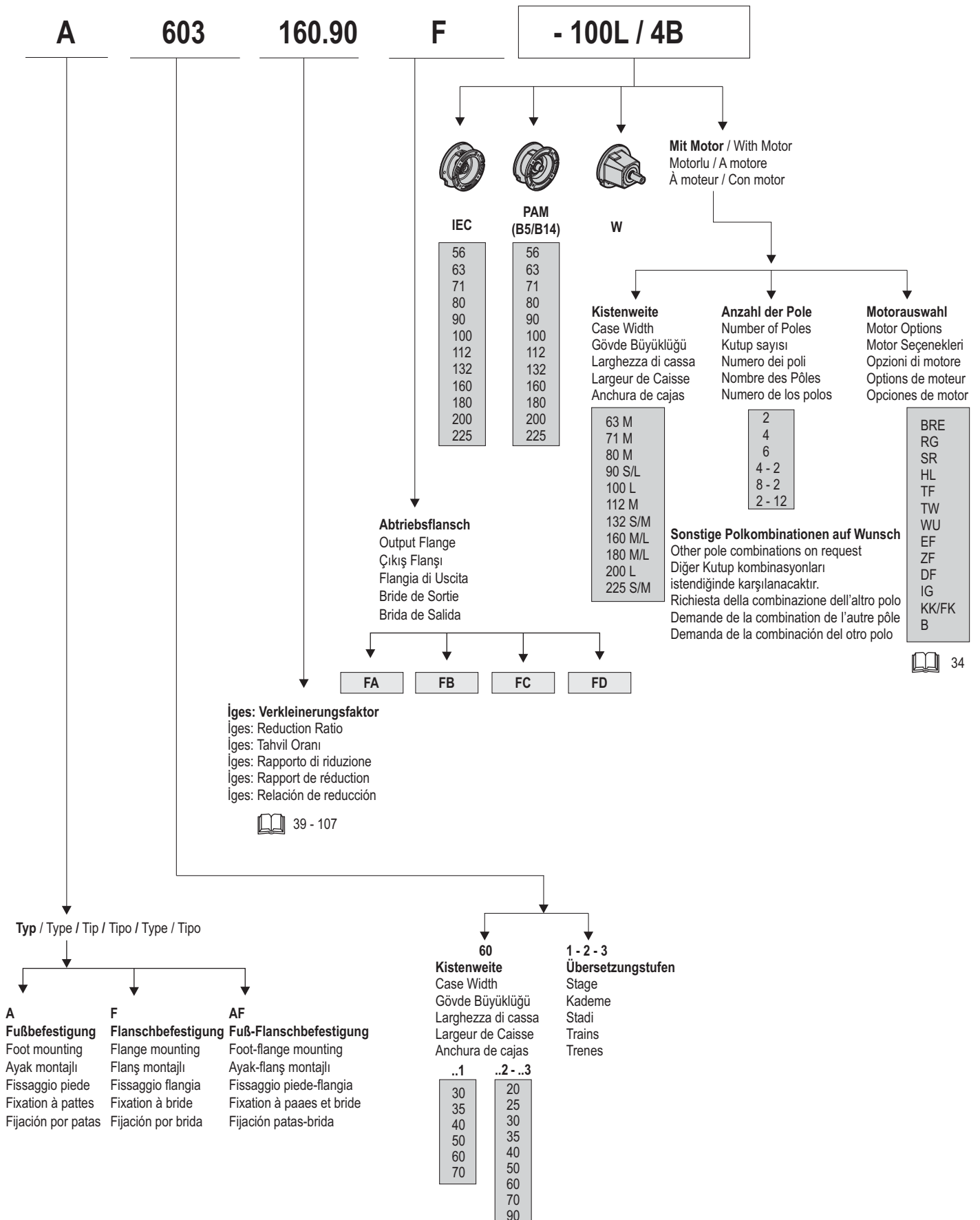
EN EXAMPLE FOR ORDERING

TR SİPARİŞ ÖRNEĞİ

IT ESEMPIO DI ORDINAZIONE

FR EXEMPLE DE COMMANDE

ES EJEMPLO ORDEN DE COMPRA



DE	BEZEICHNUNG	EN	DESIGNATION	TR	TASARIM
IT	DESIGNAZIONE	FR	DÉSIGNATION	ES	DESIGNACIÓN

A / F

A / F	Kompakter stirnradgetriebemotor (mit motor geliefert) Compact geared motor with helical gears (supplied complete with motor) Akuple motorlu helisel dişli redüktör Motoriduttore ad ingranaggi cilindrici compatto (fornito completo di motore) Motoréducteur à engrenages cylindriques compact (livré avec moteur) Motorreductor de engranajes cilíndricos compacto (motor y reductor compacto)		
252	Baugröße 25 - 2 Übersetzungsstufen - Ausführung in Grauguss Size 25, 2 reduction stages, cast iron series Boyut 25, 2 kademeli - Gri demir döküm serisi Grandezza 25, 2 stadi di riduzione, serie in ghisa Grandeur 25, 2 trains d'engrenages, série en fonte Tamaño 25, 2 trenes de engranajes, gama de fundición		
FA - FB FC - FD	Abtriebsflansch Output flange Çıkış flanşı Flangia di uscita Bride de sortie Brida de salida		
44.7	Übersetzungsverhältnis Reduction ratio Tahvil oranı Rapporto di riduzione Rapport de réduction Relación de reducción		
M1	Einbaulage Mounting position Montaj Pozisyonu Posizione di piazzamento Position de montage Posición de montaje		
Abmessungen antriebsseitig / Input dimensions / Giriş ölçüleri / Dimensioni di entrata / Dimensions d'entrée / Dimensiones de entrada			
PAM	Für motoranbau vorbereitet Fitted for motor coupling Motor bağlantısı için Predisposto per attacco motore Prédisposé pour montage moteur standard Predisuesto para montaje motor		
160	Motorflansch - Durchmesser Motor flange diameter Motor flanş çapı Diametro flangia motore Diamètre bride moteur Diámetro brida motor	14	Motorwellen - Durchmesser Drive - shaft diameter Motor giriş şaftı çapı Diametro albero motore Diamètre arbre moteur Diámetro eje motor
Abmessungen abtriebsseitig / Output dimensions / Çıkış ölçüleri / Dimensioni di uscita / Dimensions de sortie / Dimensiones de salida			
200	Durchmesser Abtriebsflansch Output flange diameter Çıkış flanşı çapı Diametro flangia uscita Diamètre de la bride de sortie Diámetro brida de salida	25	Durchmesser abtriebsschwelle Output shaft diameter Çıkış mili çapı Diametro albero uscita Diamètre de l'arbre de sortie Diámetro eje de salida

DE	NOMENKLATUR	EN	NOMENCLATURE	TR	KULLANILAN TERİMLER
IT	NOMENCLATURA	FR	NOMENCLATURE	ES	NOMENCLATURA

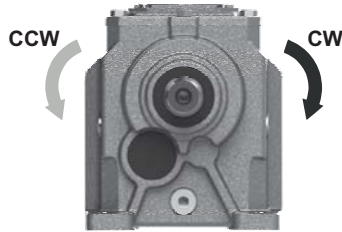
<p>Eingabeoptionen Input Options Giriş Aksamları Opzioni di ingresso Options d'entrée Opciones de entrada</p>	<p>W = Ausführungen mit antriebsvollwelle / Input shaft versions / Motorsuz girişli redüktörler için aksam / Versioni con albero maschio in ingresso / Version avec arbre en entrée / Versión con eje macho de entrada.</p> <p>IEC = Die Verbindung Motor Getriebe erfolgt über Kupplung / Fitted for motor mounting with flexible coupling. DIN 42677' ye göre standart motorlar için aksamlar / Predisposto per attacco motore con giunto. Prédisposé pour montage moteur avec joint. / Predispuesto para montaje motor con acoplamiento.</p> <p>PAM = Für motoranbau vorbereitet / Fitted for motor coupling / Motor bağlantısı için / Predisposto per attacco motore Prédisposé pour montage moteur standard / Predispuesto para montaje motor</p> <p>T = Turbokupplung / Turbo coupling / Turbo kaplin / Turbogunto / Coupleur hydraulique / Turboacoplador</p>
<p>Motor Motor Motor Motore Moteur Motor</p>	<p>Drehstrommotor Motorgröße 63 - 225 / Three phase motor Motor size 63 - 225 / Üç fazlı motor, Motor boyutu 63 - 225 / Motori trifase, Grandezze 63 - 225 / Motore thriphasé, taille moteur 63 - 225 / Motores trifásicos, Tamaño de carcasas 63 - 225</p>
<p>Anzahl der Pole Number of Poles Kutup Numarası Numero dei poli Nombre des Pôles Numero de los polos</p>	<p>2 = 2 Pole / 2 Poles / 2 Kutuplu / 2 Poli / 2 Pôles / 2 Polos</p> <p>4 = 4 Pole / 4 Poles / 4 Kutuplu / 2 Poli / 4 Pôles / 4 Polos</p> <p>6 = 6 Pole / 6 Poles / 6 Kutuplu / 2 Poli / 6 Pôles / 6 Polos</p> <p>Sonstige Polkombinationen auf Wunsch / Other pole combinations on request / Diğer Kutup kombinasyonları istendiğinde karşılanacaktır / Richiesta della combinazione dell'altro polo / Demande de la combinaison de l'autre pôle / Demanda de la combinación del otro polo</p>
<p>Motorauswahl Motor Options Motor Seçenekleri Opzioni di motore Options de moteur Opciones de motor</p>	<p>BRE = Mit Bremsen / With brake / Frenli / Freno / avec frein / Freno</p> <p>EF = Separate Lüfter, einphasig / Separate fan, single phase / Tek fazlı, fanlı / Ventilatore separato, monofase / Ventilateur séparé, une phase / Ventilador por separado de una sola fase</p> <p>ZF = Separate Lüfter, Doppel-phase / Separate fan, double phase / Çift fazlı, fanlı / Ventilatore separato, doppia fase Ventilateur séparé, double-phase / Ventilador por separado, de doble fase</p> <p>DF = Separate Lüfter, drei-phase / Separate fan, three phase / Üç fazlı, fanlı / Ventilatore separato, trifase / Ventilateur séparé, trois phases / Ventilador por separado, tres de fase</p> <p>IG = Mit Encoder / With encoder / Enkoderli / Con encoder / avec codeur / con codificador</p> <p>KK/FK = Kupplungs / With clutches / Debriyajlı / Con frizioni / embrayage / embrague</p> <p>SR = Bremsstaub - Nachweis / Brake dust - proof / Toza karşı korumalı fren / Freno a prova di polvere / Frein à l'épreuve de la poussière / De frenos a prueba de polvo</p> <p>TF = Thermistor / Thermistor / Termistörülü / Termistore / Thermistance / Termistor</p> <p>RG = Bremse auf Korrosion geschützt / Brake corrosion - protected / Korozyon korumalı frenli / Freno resistente alla corrosione / Frein à la corrosion protégées / Freno protegida contra la corrosión</p> <p>WU = Soft-start-rotor / Soft start rotor / Yumuşak kalkışlı rotor / Soft start rotore / Démarrage en douceur du rotor Soft desde el rotor</p> <p>B = Rücklaufsperr / Backstop / Geri dönmeye karşı kilitle / Bloccato contro il ritorno / Verrouillé contre le retour Bloqueado en contra de devolución</p> <p>TW = Eine wärmeempfindliche / Thermal trip / Isıya duyarlı / Un sensible al calore / A sensible à la chaleur / Un sensible al calor</p> <p>HL = Handbremsmotoren / Brake motor with hand release / Manuel frenli motor / Motore autofrenante mano / Moteur de frein à main / motores freno manuales</p>

DE ZUBEHÖR
IT ACCESSORI

EN ACCESSORIES
FR ACCESSOIRES

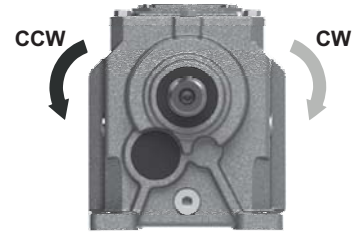
TR AKSESUARLAR
ES ACCESORIOS

1-3 Übersetzungsstufen / 1-3 Stage / 1-3 Kademe /
1-3 Stadi / 1-3 Trains / 1-3 Trenes



Ausgangseite / Output side / Çıkış tarafı /
Lato uscita / Côté sortie / Lado de salida

2 Übersetzungsstufen / 2 Stage / 2 Kademe /
2 Stadi / 2 Trains / 2 Trenes



Ausgangseite / Output side / Çıkış tarafı /
Lato uscita / Côté sortie / Lado de salida

Rücklaufsperre

Das Getriebe ist mit Rücklaufsperre auf der Antriebswelle erhältlich. Die Rücklaufsperre verhindert die Rotation in die falsche Drehrichtung. Entsprechend der Größe ist sie im Antriebsflansch oder dem Motor integriert. Wichtig ist die Angabe der gewünschten abtriebsdrehrichtung.

Backstop device

The gear reducer can be supplied with backstop device on input shaft. Backstop device allows output shaft rotation in only one sense of direction; according to the size, it is available in the input flange or in the motor with the same dimensions. It is important to specify the required sense of direction on the order.

Kilit

Kilit redüktörün giriş miline takılabilir. Kilit çıkış kısmının istenilmeyen yöne doğru dönmesini engeller. Redüktörün büyüklüğüne göre kilit giriş flanşında veya motora takılır. İstenilen çıkış dönüş yönü bilgisi verilmelidir.

Dispositivo antiretro

Il riduttore può essere fornito munito di dispositivo antiretro sull'asse veloce. L'antiretro permette la rotazione degli alberi in un solo senso, a seconda della grandezza è disponibile nella flangia PAM oppure nel motore, senza ingombri aggiuntivi. È molto importante, in fase di ordine, specificare il senso di rotazione richiesto.

Système antidéviour

Le réducteur de vitesse peut être fourni avec le dispositif anti-retour sur l'axe d'entrée. Le dispositif anti retour permet la rotation des arbres de sortie dans un seul sens; selon la taille, il est disponible dans la bride d'entrée ou dans le moteur avec les mêmes dimensions. Il est important de spécifier le sens de la direction demandé sur l'ordre.

Dispositivo antirretorno

El reductor puede suministrarse con un dispositivo antirretorno en el eje veloz. El antirretorno permite la rotación de los ejes en un solo sentido, según el tamaño está disponible en la brida PAM o en el motor, sin incremento de dimensiones. Es muy importante especificar en el pedido el sentido de rotación requerido.

Motor	063	071	080	090	100 - 112	132	160	180	200	225
Größe Size Gövde Boyutu Grandezza Taille Tamaño	140x11	160x14	200x19	200x24	250x28	300x38	350x42	350x48	400x55	450x60
202	B5	B5								
202 G	B5	B5	B5	B5						
252		B5	B5	B5	B5					
253	B5	B5	B5	B5						
301		B5	B5	B5						
302		B5	B5	B5	B5					
303	B5	B5	B5	B5						
351		B5	B5	B5	B5					
352		B5	B5	B5	B5					
353	B5	B5	B5	B5						
401			B5	B5	B5					
402			B5	B5	B5	B5				
403		B5	B5	B5	B5					
501			B5	B5	B5	B5				
502			B5	B5	B5	B5	B5			
503			B5	B5	B5	B5				
601					B5	B5	B5	B5		
602					B5	B5	B5	B5		
603				B5	B5	B5	B5			
701						B5	B5	B5	B5	
702						B5	B5	B5	B5	
703					B5	B5	B5	B5	B5	
902							B5	B5	B5	B5
903						B5	B5	B5	B5	



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Auswahltabellen der
Getriebemotoren

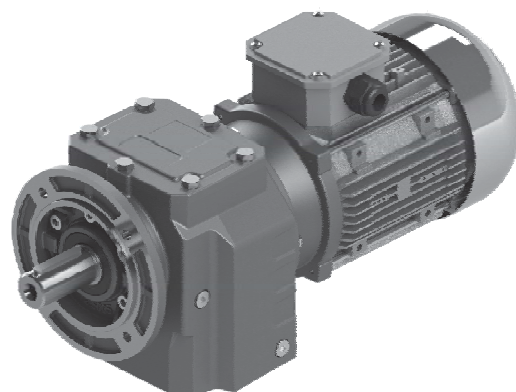
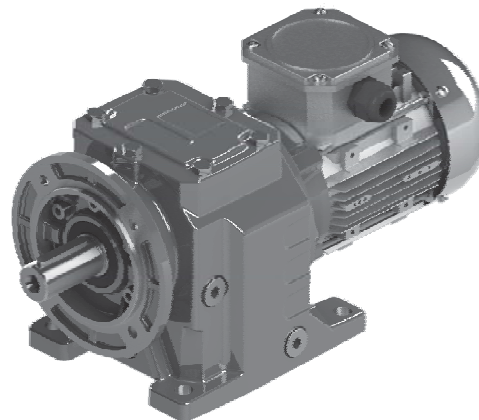
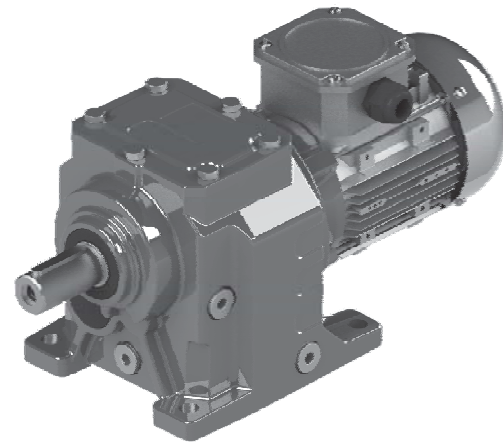
Selection Tables of
Gearedmotors

Motorlu Seçim Tabloları

Tabelle di selezione dei
motoriduttori

Tables de Gearedmotors de
sélection

Tablas de selección de
gearedmotors



A/F

A/F 301 ... 701

A/F 202 ... 902

A/F 253 ... 903

DE TECHNISCHE BESCHREIBUNGEN
IT DESCRIZIONI TECNICHE

EN TECHNICAL DESCRIPTIONS
FR DESCRIPTIONS TECHNIQUES

TR TEKNİK TANIMLAR
ES DESCRIPCIONES TECNICAS

Mitteilung über Leistungstafeln für Getriebemotor

Notify about performance tables for Geared motor.

Motorlu redüktör performans tablolarının yapısı

Notificare sulle tabelle di performance per i motoriduttori

Aviser sur les tableaux de performance pour le motoréducteur

Notificar sobre la tabla de performance para los motoreductores.

1.10 kW →

Potenza motore riduttore

Gear unit motor power

Redüktör motor gücü

Potencia del motor del reductor

Réducteur puissance du moteur

Getriebe Motorleistung

Motormennleistung

Rated motor power

Motor gücü

Potenza nominale del motore

Puissance nominale du moteur

Potencia nominal del motor

Factor de servicio

Service factor

Servis faktörü

Fattore di servizio

Facteur de service

Servicefaktor

Untersetzungsverhältnis

Reduction ratio

Tahvil oranı

Rapporto di riduzione

Rapport de réduction

Relación de reducción

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm
1.10	6.3	1559	1.2	222.59	18.0	A503 - 90S/4A F503 - 90S/4A	60	130
	7.2	1365	1.3	194.86	18.0			
	7.9	1253	1.4	178.98	18.0			
	8.7	1136	1.6	162.21	18.0			
	9.1	1082	1.7	154.52	18.0			
	9.9	994	1.8	142.00	18.0			
	11.3	870	2.1	124.25	18.0			
	12.5	789	2.3	112.61	18.0			
	14.4	685	2.6	97.80	18.0			

Abtriebsdrehzahl

Output speed

Çıkış devri

Vitesse de sortie

Velocità di uscita

Velocidad de salida

Abtriebsdrehmoment

Output torque

Çıkış momenti

Coppia di uscita

Par de salida

Couple de sortie

Zulässige Radialkraft

Permissible radial force

Müsaade edilebilir radyal yükler

Force radiale admissible

Fuerza radial admisible

Forza radiale ammessa

Getriebe Motortyp

Gear unit motor type

Redüktör tipi

Réducteur type de moteur

Reductor tipo de motor

Riduttore tipo di motore

Zeichenblatt



Drawing page



Ölçü sayfaları

La page de dessin

Página de dibujo



Zeichenblatt



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.09	3.7	221	0.9	245.76	5.5	A253 - 63M/6 F253 - 63M/6	15	114
	4.6	177	1.1	197.21	5.5			
	5.0	160	1.2	178.56	5.5			
	6.3	129	1.6	143.29	5.5			
	7.3	111	1.8	123.58	5.5			
	8.3	97	2.1	108.02	5.5			
	9.1	89	2.2	99.17	5.5			
	12.0	67	3.0	74.76	5.5			
13.5	60	3.3	66.56	5.5				
0.12	3.2	334	1.5	268.00	8.0	A353 - 63M/6B F353 - 63M/6B	23	122
	4.0	270	1.9	216.67	8.0			
	4.4	242	2.1	194.72	8.0			
	5.5	196	2.6	157.42	8.0			
	6.4	168	3.0	134.76	8.0			
	7.9	136	3.7	108.95	8.0			
	5.1	212	2.4	268.00	8.0	A353 - 63M/4A F353 - 63M/4A	23	122
	6.3	171	2.9	216.67	8.0			
	7.0	154	3.3	194.72	8.0			
	3.1	351	0.9	282.17	6.6	A303 - 63M/6B F303 - 63M/6B	18	118
	3.8	283	1.1	227.56	6.6			
	4.2	255	1.2	205.01	6.6			
	5.2	206	1.5	165.33	6.6			
	6.1	177	1.7	141.89	6.6			
	6.9	156	1.9	125.65	6.6			
	7.6	142	2.1	114.42	6.6			
	9.9	108	2.8	86.96	6.6			
	11.3	95	3.2	76.42	6.6			
	4.8	223	1.3	282.17	6.6	A303 - 63M/4A F303 - 63M/4A	18	118
	6.0	180	1.7	227.56	6.6			
	6.7	162	1.9	205.01	6.6			
	8.3	130	2.3	165.33	6.6			
	9.6	112	2.7	141.89	6.6			
	10.9	99	3.0	125.65	6.6			
	11.9	90	3.3	114.42	6.6			
	4.8	222	0.9	178.56	5.5	A253 - 63M/6B F253 - 63M/6B	15	114
	6.0	178	1.1	143.29	5.5			
	7.0	154	1.3	123.58	5.5			
	8.0	135	1.5	108.02	5.5			
	8.7	124	1.6	99.17	5.5			
	11.6	93	2.1	74.76	5.5			
	13.0	83	2.4	66.56	5.5			
16.2	67	3.0	53.41	5.5				
5.6	194	1.0	245.76	5.5	A253 - 63M/4A F253 - 63M/4A	15	114	
6.9	156	1.3	197.21	5.5				
7.6	141	1.4	178.56	5.5				
9.5	113	1.8	143.29	5.5				
11.0	98	2.1	123.58	5.5				
12.6	85	2.3	108.02	5.5				
13.8	78	2.6	99.17	5.5				
18.3	59	3.4	74.76	5.5				
20.5	53	3.8	66.56	5.5				
16.8	68	1.2	81.41	2.8	A 202 G - 63M/4A F 202 G - 63M/4A	9	112	
19.5	59	1.2	70.05	2.8				
21.9	52	1.2	62.38	2.8				
25.3	45	1.9	54.05	2.8				
29.4	39	2.2	46.41	2.8				
33.0	35	2.4	41.38	2.8				
35.3	33	2.6	38.72	2.8				
39.5	29	3.0	34.55	2.8				
21.5	53	0.9	63.59	2.5	A202 - 63M/4A F202 - 63M/4A	7	110	
24.8	46	1.1	55.03	2.5				
27.8	41	1.1	49.05	2.5				
32.3	35	1.4	42.20	2.5				
37.4	31	1.8	36.45	2.5				
42.1	27	2.0	32.41	2.5				
49.2	23	2.3	27.75	2.5				
55.1	21	2.6	24.78	2.5				
61.3	19	2.9	22.26	2.5				



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.12	63.9	18	3.1	21.36	2.5	A202 - 63M/4A F202 - 63M/4A	7	110
	71.0	16	3.4	19.23	2.5			
	78.6	15	3.8	17.37	2.5			
	86.7	13	4.2	15.75	2.5			
	94.7	12	4.2	14.42	2.5			
	103.2	11	4.2	13.23	2.5			
	118.5	10	5.2	11.52	2.5			
	136.1	8	6.5	10.03	2.5			
	152.9	7	7.3	8.93	2.5			
	170.0	7	8.2	8.03	2.5			
	189.3	6	9.1	7.21	2.5			
	208.4	5	9.6	6.55	2.5			
	228.3	5	11.0	5.98	2.5			
	248.6	5	11.9	5.49	2.5			
	256.1	4	12.3	5.33	2.5			
	285.0	4	13.2	4.79	2.5			
	318.2	4	13.9	4.29	2.5			
	350.0	3	13.7	3.90	2.5			
	383.4	3	16.1	3.56	2.5			
	418.7	3	16.8	3.26	2.5			
	459.6	2	16.9	2.97	2.5			
482.3	2	16.8	2.83	2.5				
535.3	2	17.1	2.55	2.5				
590.9	2	16.8	2.31	2.5				
643.9	2	16.8	2.12	2.5				
0.15	3.4	401	1.2	268.00	8.0	A 353 - 63M/6C F 353 - 63M/6C	23	122
	4.2	324	1.5	216.67	8.0			
	4.6	291	1.7	194.72	8.0			
	5.7	236	2.1	157.42	8.0			
	6.7	202	2.5	134.76	8.0			
	8.3	163	3.1	108.95	8.0			
	9.9	135	3.7	90.51	8.0			
	4.0	340	0.9	227.56	6.6	A 303 - 63M/6C F 303 - 63M/6C	18	118
	4.4	307	1.0	205.01	6.6			
	5.4	247	1.2	165.33	6.6			
	6.3	212	1.4	141.89	6.6			
	7.2	188	1.6	125.65	6.6			
	7.9	171	1.8	114.42	6.6			
	10.3	130	2.3	86.96	6.6			
	11.8	114	2.6	76.42	6.6			
	14.6	92	3.3	61.63	6.6			
	6.3	214	0.9	143.29	5.5	A 253 - 63M/6C F 253 - 63M/6C	15	114
	7.3	185	1.1	123.58	5.5			
8.3	162	1.2	108.02	5.5				
9.1	148	1.3	99.17	5.5				
12.0	112	1.8	74.76	5.5				
13.5	100	2.0	66.56	5.5				
16.9	80	2.5	53.41	5.5				
0.18	3.4	267.75	1.8	267.75	12.0	A 403 - 71M/6A F 403 - 71M/6A	37	126
	3.8	234.50	2.0	234.50	12.0			
	4.2	215.01	2.2	215.01	12.0			
	4.8	186.14	2.5	186.14	12.0			
	5.3	170.55	2.8	170.55	12.0			
	6.0	149.47	3.2	149.47	12.0			
	6.6	135.37	3.5	135.37	12.0			
	3.4	481	1.0	268.00	8.0	A353 - 71M/6A F353 - 71M/6A	27	122
	4.2	389	1.3	216.67	8.0			
	4.6	350	1.4	194.72	8.0			
	5.7	283	1.8	157.42	8.0			
	6.7	242	2.1	134.76	8.0			
	8.3	196	2.6	108.95	8.0			
	9.9	163	3.1	90.51	8.0			
	12.4	130	3.8	72.58	8.0			
	5.1	314	1.6	268.00	8.0	A353 - 63M/4B F353 - 63M/4B	23	122
	6.4	254	2.0	216.67	8.0			
	7.1	228	2.2	194.72	8.0			
8.8	184	2.7	157.42	8.0				
10.2	158	3.2	134.76	8.0				
12.7	128	3.9	108.95	8.0				



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
0.18	10.4	155	2.4	268.00	8.0	A353 - 63M/2A F353 - 63M/2A	23	122
	12.9	125	3.0	216.67	8.0			
	14.4	112	3.3	194.72	8.0			
	5.4	297	1.0	165.33	6.6	A303 - 71M/6A F303 - 71M/6A	22	118
	6.3	255	1.2	141.89	6.6			
	7.2	226	1.3	125.65	6.6			
	7.9	205	1.5	114.42	6.6			
	10.3	156	1.9	86.96	6.6			
	11.8	137	2.2	76.42	6.6			
	14.6	111	2.7	61.63	6.6			
	4.9	330	0.9	282.17	6.6	A303 - 63M/4B F303 - 63M/4B	18	118
	6.1	266	1.1	227.56	6.6			
	6.7	240	1.2	205.01	6.6			
	8.3	194	1.5	165.33	6.6			
	9.7	166	1.8	141.89	6.6			
	11.0	147	2.0	125.65	6.6			
12.1	134	2.2	114.42	6.6				
15.9	102	2.9	86.96	6.6				
18.1	89	3.4	76.42	6.6				
9.9	163	1.4	282.17	6.6	A303 - 63M/2A F303 - 63M/2A	18	118	
12.3	131	1.7	227.56	6.6				
13.7	118	1.9	205.01	6.6				
16.9	95	2.4	165.33	6.6				
19.7	82	2.7	141.89	6.6				
22.3	73	3.1	125.65	6.6				
24.5	66	3.4	114.42	6.6				
16.4	101	2.8	55.03	6.6	A302 - 71M/6A F302 - 71M/6A	22	118	
18.7	88	3.2	48.22	6.6				
20.3	81	3.4	44.38	6.6				
101.4	16	3.3	8.88	1.0	A301 - 71M/6A F301 - 71M/6A	18	116	
115.7	14	3.5	7.78	1.0				
7.3	222	0.9	123.58	5.5	A253 - 71M/6A F253 - 71M/6A	19	114	
8.3	194	1.0	108.02	5.5				
9.1	178	1.1	99.17	5.5				
12.0	134	1.5	74.76	5.5				
13.5	120	1.7	66.56	5.5				
16.9	96	2.1	53.41	5.5				
7.7	209	1.0	178.56	5.5	A253 - 63M/4B F253 - 63M/4B	15	114	
9.6	168	1.2	143.29	5.5				
11.2	145	1.4	123.58	5.5				
12.8	126	1.6	108.02	5.5				
13.9	116	1.7	99.17	5.5				
18.5	88	2.3	74.76	5.5				
20.7	78	2.6	66.56	5.5				
25.8	63	3.2	53.41	5.5				
11.4	142	1.1	245.76	5.5	A253 - 63M/2A F253 - 63M/2A	15	114	
14.2	114	1.4	197.21	5.5				
15.7	103	1.5	178.56	5.5				
19.5	83	1.9	143.29	5.5				
22.7	71	2.2	123.58	5.5				
25.9	62	2.5	108.02	5.5				
28.2	57	2.7	99.17	5.5				
37.5	43	3.6	74.76	5.5				
18.8	88	2.3	47.93	5.5	A252 - 71M/6A F252 - 71M/6A	19	114	
21.4	77	2.6	42.00	5.5				
23.4	71	2.8	38.46	5.5				
27.0	61	3.3	33.38	5.5				
29.9	55	3.6	30.15	5.5				



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
0.18	17.0	101	0.8	81.41	2.8	A 202 G - 63M/4B F 202 G - 63M/4B	9	112
	19.7	87	0.8	70.05	2.8			
	22.1	78	0.8	62.38	2.8			
	25.5	67	1.3	54.05	2.8			
	29.7	58	1.5	46.41	2.8			
	33.3	52	1.6	41.38	2.8			
	35.6	48	1.8	38.72	2.8			
	39.9	43	2.0	34.55	2.8			
	44.5	39	2.4	31.03	2.8			
	49.9	34	2.7	27.66	2.8			
	55.6	31	3.0	24.83	2.8			
	32.7	53	1.0	42.20	2.5	A202 - 63M/4B F202 - 63M/4B	8	110
	37.9	45	1.2	36.45	2.5			
	42.6	40	1.4	32.41	2.5			
	49.7	35	1.6	27.75	2.5			
	55.7	31	1.8	24.78	2.5			
	62.0	28	2.0	22.26	2.5			
	64.6	27	2.1	21.36	2.5			
	71.8	24	2.3	19.23	2.5			
	79.4	22	2.5	17.37	2.5			
	87.6	20	2.8	15.75	2.5			
	95.7	18	2.8	14.42	2.5			
	104.3	16	2.9	13.23	2.5			
	119.8	14	3.5	11.52	2.5			
	137.6	12	4.4	10.03	2.5			
	154.5	11	4.9	8.93	2.5			
	171.9	10	5.5	8.03	2.5			
	191.4	9	6.1	7.21	2.5			
	210.7	8	6.5	6.55	2.5			
	230.8	7	7.4	5.98	2.5			
	251.4	7	8.0	5.49	2.5			
	258.9	7	8.3	5.33	2.5			
	288.1	6	8.9	4.79	2.5			
	321.7	5	9.4	4.29	2.5			
	353.8	5	9.3	3.90	2.5			
387.6	4	10.8	3.56	2.5				
423.3	4	11.2	3.26	2.5				
464.6	4	11.4	2.97	2.5				
487.6	4	11.2	2.83	2.5				
541.2	3	11.6	2.55	2.5				
597.4	3	11.3	2.31	2.5				
650.9	3	11.4	2.12	2.5				
0.22	5.2	378	1.3	268.00	8.0	A353 - 63M/4D F353 - 63M/4D	24	122
	6.5	306	1.6	216.67	8.0			
	7.2	275	1.8	194.72	8.0			
	8.9	222	2.3	157.42	8.0			
	10.4	190	2.6	134.76	8.0			
	12.8	154	3.3	108.95	8.0			
	15.5	128	3.9	90.51	8.0			
	6.2	321	0.9	227.56	6.6	A303 - 63M/4D F303 - 63M/4D	19	118
	6.8	289	1.0	205.01	6.6			
	8.5	233	1.3	165.33	6.6			
	9.9	200	1.5	141.89	6.6			
	11.1	177	1.7	125.65	6.6			
	12.2	161	1.9	114.42	6.6			
	16.1	123	2.4	86.96	6.6			
	18.3	108	2.8	76.42	6.6			
	22.7	87	3.5	61.63	6.6			
	9.8	202	1.0	143.29	5.5	A253 - 63M/4D F253 - 63M/4D	16	114
	11.3	174	1.1	123.58	5.5			
	13.0	152	1.3	108.02	5.5			
	14.1	140	1.4	99.17	5.5			
18.7	105	1.9	74.76	5.5				
21.0	94	2.1	66.56	5.5				
26.2	75	2.7	53.41	5.5				



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm			
0.25	3.4	660	1.3	267.75	12.0	A403 - 71M/6B F403 - 71M/6B	41	126			
	3.9	578	1.5	234.50	12.0						
	4.2	530	1.6	215.01	12.0						
	4.9	459	1.9	186.14	12.0						
	5.3	421	2.0	170.55	12.0						
	6.1	369	2.3	149.47	12.0						
	6.7	334	2.5	135.37	12.0						
	7.7	291	2.9	118.13	12.0						
	9.6	234	3.6	94.86	12.0						
	5.2	432	2.0	267.75	12.0				A403 - 71M/4A F403 - 71M/4A	36	126
	5.9	379	2.2	234.50	12.0						
	6.5	347	2.4	215.01	12.0						
	7.5	301	2.8	186.14	12.0						
	8.2	275	3.1	170.55	12.0						
	9.3	241	3.5	149.47	12.0						
	10.3	219	3.9	135.37	12.0						
	4.2	534	0.9	216.67	8.0	A353 - 71M/6B F353 - 71M/6B	31	122			
	4.7	480	1.0	194.72	8.0						
	5.8	388	1.3	157.42	8.0						
	6.8	332	1.5	134.76	8.0						
	8.4	269	1.9	108.95	8.0						
	10.1	223	2.2	90.51	8.0						
	12.5	179	2.8	72.58	8.0						
	15.5	145	3.5	58.68	8.0						
	5.2	433	1.2	268.00	8.0	A/F 353 - 63M/4C A/F 353 - 71M/4A	26	122			
	6.4	350	1.4	216.67	8.0						
	7.1	314	1.6	194.72	8.0						
	8.8	254	2.0	157.42	8.0						
	10.3	218	2.3	134.76	8.0						
	12.8	176	2.8	108.95	8.0						
	15.4	146	3.4	90.51	8.0						
	10.4	215	1.8	268.00	8.0	A353 - 63M/2B F353 - 63M/2B	24	122			
	12.9	174	2.2	216.67	8.0						
	14.4	156	2.5	194.72	8.0						
	17.8	126	3.1	157.42	8.0						
	20.8	108	3.6	134.76	8.0						
	16.0	143	3.4	56.95	8.0	A352 - 71M/6B F352 - 71M/6B	31	122			
	7.2	310	1.0	125.65	6.6	A303 - 71M/6B F303 - 71M/6B	26	118			
	8.0	282	1.1	114.42	6.6						
	10.5	214	1.4	86.96	6.6						
	11.9	188	1.6	76.42	6.6						
	14.8	152	2.0	61.63	6.6						
6.8	331	0.9	205.01	6.6	A/F 303 - 63M/4C A/F 303 - 71M/4A	21	118				
8.4	267	1.1	165.33	6.6							
9.8	229	1.3	141.89	6.6							
11.1	203	1.5	125.65	6.6							
12.1	185	1.6	114.42	6.6							
16.0	140	2.1	86.96	6.6							
18.2	123	2.4	76.42	6.6							
22.6	100	3.0	61.63	6.6							
9.9	226	1.0	282.17	6.6	A303 - 63M/2B F303 - 63M/2B	19	118				
12.3	182	1.3	227.56	6.6							
13.7	164	1.4	205.01	6.6							
16.9	133	1.7	165.33	6.6							
19.7	114	2.0	141.89	6.6							
22.3	101	2.3	125.65	6.6							
24.5	92	2.5	114.42	6.6							
32.2	70	3.3	86.96	6.6							
36.6	61	3.8	76.42	6.6							
16.5	139	2.0	55.03	6.6				A302 - 71M/6B F302 - 71M/6B	26	118	
18.9	121	2.3	48.22	6.6							
20.5	112	2.5	44.38	6.6							
23.7	97	2.9	38.33	6.6							
26.3	87	3.2	34.62	6.6							
29.4	78	3.6	30.91	6.6							



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.25	25.3	91	3.1	55.03	6.6	A302 - 71M/4A F302 - 71M/4A	21	118
	28.8	80	3.5	48.22	6.6			
	31.3	73	3.8	44.38	6.6			
	102.5	23	2.4	8.88	1.0	A301 - 71M/6B F301 - 71M/6B	19	116
	117.0	20	2.5	7.78	1.0			
	147.2	16	3.2	6.18	1.0			
	163.0	14	3.5	5.58	1.0			
	179.2	13	3.5	5.08	1.0			
	156.6	15	3.7	8.88	1.0	A301 - 71M/4A F301 - 71M/4A	14	116
	178.7	13	3.9	7.78	1.0			
	12.2	184	1.1	74.76	5.5	A253 - 71M/6B F253 - 71M/6B	23	114
	13.7	164	1.2	66.56	5.5			
	17.0	132	1.5	53.41	5.5			
	11.2	200	1.0	123.58	5.5	A/F 253 - 63M/4C A/F 253 - 71M/4A	18	114
	12.9	174	1.1	108.02	5.5			
	13.9	162	1.2	100.12	5.5			
	18.6	121	1.7	74.76	5.5			
	20.9	107	1.9	66.56	5.5			
	26.0	86	2.3	53.41	5.5			
	15.7	143	1.1	178.56	5.5	A253 - 63M/2B F253 - 63M/2B	16	114
	19.5	115	1.4	143.29	5.5			
	22.7	99	1.6	123.58	5.5			
	25.9	87	1.8	108.02	5.5			
	28.0	80	1.9	100.12	5.5			
	37.5	60	2.6	74.76	5.5			
	42.1	53	2.9	66.56	5.5			
	52.4	43	3.6	53.41	5.5			
	19.0	121	1.7	47.93	5.5	A252 - 71M/6B F252 - 71M/6B	23	114
21.7	106	1.9	42.00	5.5				
23.7	97	2.1	38.46	5.5				
27.3	84	2.4	33.38	5.5				
30.2	76	2.6	30.15	5.5				
34.0	67	3.0	26.79	5.5				
37.6	61	3.3	24.19	5.5				
39.5	58	3.4	23.04	5.5				
29.0	79	2.5	47.93	5.5	A252 - 71M/4A F252 - 71M/4A			
33.1	69	2.9	42.00	5.5				
36.1	63	3.2	38.46	5.5				
41.6	55	3.6	33.38	5.5				
25.7	93	0.9	54.05	2.8	A 202 G - 71M/4A F 202 G - 71M/4A	11	112	
30.0	80	1.1	46.41	2.8				
33.6	71	1.2	41.38	2.8				
35.9	67	1.3	38.72	2.8				
40.2	59	1.4	34.55	2.8				
44.8	53	1.7	31.03	2.8				
50.3	48	1.9	27.66	2.8				
56.0	43	2.2	24.83	2.8				
61.9	39	2.4	22.44	2.8				
68.3	35	2.4	20.35	2.8				
74.6	32	2.6	18.63	2.8				
50.1	48	1.1	27.75	2.5	A202 - 71M/4A F202 - 71M/4A	8	110	
56.1	43	1.3	24.78	2.5				
62.4	38	1.4	22.26	2.5				
65.1	37	1.5	21.36	2.5				
72.3	33	1.7	19.23	2.5				
80.0	30	1.8	17.37	2.5				
88.3	27	2.0	15.75	2.5				
96.4	25	2.1	14.42	2.5				
105.1	23	2.1	13.23	2.5				
120.7	20	2.5	11.52	2.5				
138.6	17	3.2	10.03	2.5				
155.7	15	3.6	8.93	2.5				
173.1	14	4.0	8.03	2.5				
192.8	12	4.4	7.21	2.5				
212.2	11	4.7	6.55	2.5				
232.4	10	5.4	5.98	2.5				
253.2	9	5.8	5.49	2.5				



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.25	260.8	9	6.0	5.33	2.5	A202 - 71M/4A F202 - 71M/4A	8	110
	290.2	8	6.4	4.79	2.5			
	324.0	7	6.8	4.29	2.5			
	356.4	7	6.7	3.90	2.5			
	390.4	6	7.8	3.56	2.5			
	426.4	6	8.2	3.26	2.5			
	468.0	5	8.2	2.97	2.5			
	491.2	5	8.2	2.83	2.5			
	545.1	4	8.3	2.55	2.5			
	601.7	4	8.2	2.31	2.5			
655.7	4	8.2	2.12	2.5				
0.37	4.1	804	2.2	222.59	18.0	A503 - 80M/6A F503 - 80M/6A	57	130
	4.7	704	2.6	194.86	18.0			
	5.1	646	2.8	178.98	18.0			
	5.7	586	3.1	162.21	18.0			
	6.0	558	3.2	154.52	18.0			
	6.5	513	3.5	142.00	18.0			
	3.9	847	1.0	234.50	12.0	A/F 403 - 71M/6 A/F 403 - 80M/6A	40	126
	4.3	776	1.1	215.01	12.0			
	4.9	672	1.3	186.14	12.0			
	5.4	616	1.4	170.55	12.0			
	6.2	540	1.6	149.47	12.0			
	6.8	489	1.7	135.37	12.0			
	7.8	426	2.0	118.13	12.0			
	9.7	342	2.5	94.86	12.0			
	10.7	310	2.7	85.91	12.0			
	5.2	640	1.3	267.75	12.0	A403 - 71M/4B F403 - 71M/4B	38	126
	5.9	560	1.5	234.50	12.0			
	6.5	514	1.7	215.01	12.0			
	7.5	445	1.9	186.14	12.0			
	8.2	408	2.1	170.55	12.0			
	9.3	357	2.4	149.47	12.0			
	10.3	323	2.6	135.37	12.0			
	11.8	282	3.0	118.13	12.0			
	14.7	227	3.7	94.86	12.0			
	10.4	306	2.1	267.75	12.0	A403 - 71M/2A F403 - 71M/2A	36	126
	11.9	266	2.4	234.50	12.0			
	13.0	244	2.6	215.01	12.0			
	15.0	211	3.0	186.14	12.0			
	16.4	194	3.3	170.55	12.0			
	18.7	170	3.8	149.47	12.0			
	6.8	487	1.0	134.76	8.0	A/F 353 - 71M/6 A/F 353 - 80M/6A	29	122
	8.4	393	1.3	108.95	8.0			
	10.2	327	1.5	90.51	8.0			
	12.7	262	1.9	72.58	8.0			
	15.7	212	2.4	58.68	8.0			
	6.4	518	1.0	216.67	8.0	A353 - 71M/4B F353 - 71M/4B	28	122
7.1	465	1.1	194.72	8.0				
8.8	376	1.3	157.42	8.0				
10.3	322	1.6	134.76	8.0				
12.8	260	1.9	108.95	8.0				
15.4	216	2.3	90.51	8.0				
19.2	173	2.9	72.58	8.0				
23.7	140	3.6	58.68	8.0				
10.4	304	1.2	268.00	8.0	A/F 353 - 63M/2D A/F 353 - 71M/2A	26	122	
12.9	246	1.5	216.67	8.0				
14.4	221	1.7	194.72	8.0				
17.8	179	2.1	157.42	8.0				
20.8	153	2.5	134.76	8.0				
25.7	124	3.0	108.95	8.0				
30.9	103	3.6	90.51	8.0				
16.2	210	2.3	56.95	8.0	A/F 352 - 71M/6 A/F 352 - 80M/6A	29	122	
18.4	184	2.7	49.88	8.0				
20.0	170	2.9	46.04	8.0				
23.2	146	3.4	39.59	8.0				
24.4	139	3.5	56.95	8.0	A352 - 71M/4B F352 - 71M/4B	28	122	

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.37	109.8 125.5	31 27	3.2 3.7	8.38 7.33	2.5 2.5	A/F 351 - 71M/6 A/F 351 - 80M/6A	18	120
	10.6 12.0 14.9	314 276 223	1.0 1.1 1.3	86.96 76.42 61.63	6.6 6.6 6.6	A/F 303 - 71M/6 A/F 303 - 80M/6A	24	118
	11.1 12.1 16.0 18.2 22.6	300 273 208 183 147	1.0 1.1 1.4 1.6 2.0	125.65 114.42 86.96 76.42 61.63	6.6 6.6 6.6 6.6 6.6	A303 - 71M/4B F303 - 71M/4B	23	118
	16.9 19.7 22.3 24.5 32.2 36.6 45.4	188 161 143 130 99 87 70	1.2 1.4 1.6 1.7 2.3 2.6 3.2	165.33 141.89 125.65 114.42 86.96 76.42 61.63	6.6 6.6 6.6 6.6 6.6 6.6 6.6	A/F 303 - 63M/2D A/F 303 - 71M/2A	21	118
	16.7 19.1 20.7 24.0 26.6 29.8 33.0 34.8 39.2 43.1 47.7	203 178 164 141 128 114 103 98 87 79 71	1.4 1.6 1.7 2.0 2.2 2.5 2.7 2.7 3.0 3.2 3.5	55.03 48.22 44.38 38.33 34.62 30.91 27.92 26.45 23.49 21.33 19.29	6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.3 6.1 5.8	A/F 302 - 71M/6 A/F 302 - 80M/6A	24	118
	25.3 28.8 31.3 36.3 40.2 45.0	134 118 108 94 84 75	2.1 2.4 2.6 3.0 3.3 3.7	55.03 48.22 44.38 38.33 34.62 30.91	6.6 6.6 6.6 6.6 6.6 6.6	A302 - 71M/4B F302 - 71M/4B	24	118
	50.9 58.1	63 55	3.4 3.8	55.03 48.22	6.6 6.6	A302 - 71M/2A F302 - 71M/2A	21	118
	103.7 118.3 148.9 164.8 181.2 215.6 252.3 291.3 333.1 355.1 451.3	33 29 23 21 19 16 14 12 10 10 8	1.7 1.7 2.2 2.4 2.4 2.8 3.3 3.4 2.9 3.1 3.3	8.87 7.78 6.18 5.58 5.08 4.27 3.65 3.16 2.76 2.59 2.04	1.0 1.0 0.9 0.9 0.9 0.8 0.8 0.7 0.7 0.7 0.7	A301 - 80M/6A F301 - 80M/6A	17	116
	156.7 178.7 224.9 249.0 273.8	22 19 15 14 13	2.5 2.6 3.3 3.6 3.6	8.87 7.78 6.18 5.58 5.08	1.0 1.0 0.9 0.9 0.9	A301 - 71M/4B F301 - 71M/4B	17	116
	315.7	11	3.9	8.87	1.0	A301 - 71M/2A F301 - 71M/2A	14	116
	17.2	193	1.0	53.41	5.5	A/F 253 - 71M/6 A/F 253 - 80M/6A	21	114
	18.6 20.9 26.0	179 159 128	1.1 1.3 1.6	74.76 66.56 53.41	5.5 5.5 5.5	A253 - 71M/4B F253 - 71M/4B	20	114
	22.7 25.9 28.0 37.5 42.1 52.4	147 128 119 89 79 63	1.1 1.2 1.3 1.8 2.0 2.5	123.58 108.02 100.12 74.76 66.56 53.41	5.5 5.5 5.5 5.5 5.5 5.5	A/F 253 - 63M/2D A/F 253 - 71M/2A	18	114



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg 	mm 
0.37	19.2	177	1.1	47.93	5.5	A/F 252 - 71M/6 A/F 252 - 80M/6A	21	114
	21.9	155	1.3	42.00	5.5			
	23.9	142	1.4	38.46	5.5			
	27.6	123	1.6	33.38	5.5			
	30.5	111	1.8	30.15	5.3			
	34.3	99	2.0	26.79	5.0			
	38.0	89	2.2	24.19	4.8			
	39.9	85	2.4	23.04	4.7			
	45.6	74	2.7	20.19	4.4			
	49.8	68	2.9	18.49	4.2			
	54.0	63	3.0	17.05	4.1			
	61.7	55	3.1	14.91	4.1			
	66.0	51	3.3	13.94	3.9			
	76.9	44	3.3	11.97	3.9			
	89.1	38	3.7	10.32	3.7			
	29.0	117	1.7	47.93	5.5	A252 - 71M/4B F252 - 71M/4B	20	114
	33.1	102	2.0	42.00	5.5			
	36.1	94	2.1	38.46	5.5			
	41.6	81	2.5	33.38	5.5			
	46.1	74	2.7	30.15	5.5			
	51.9	65	3.1	26.79	5.5			
	57.5	59	3.4	24.19	5.5			
	60.3	56	3.6	23.04	5.5			
	58.4	56	2.7	47.93	5.5	A252 - 71M/2A F252 - 71M/2A	18	114
	66.7	51	2.9	42.00	5.5			
	72.8	47	3.2	38.46	5.5			
	83.9	40	3.7	33.38	5.5			
	35.9	98	0.9	38.72	2.8	A 202 G - 71M/4B F 202 G - 71M/4B	11	112
	40.2	88	1.0	34.55	2.8			
	44.8	79	1.2	31.03	2.8			
	50.3	70	1.3	27.66	2.8			
	56.0	63	1.5	24.83	2.8			
	61.9	57	1.6	22.44	2.8			
	68.3	52	1.6	20.35	2.8			
	74.6	47	1.8	18.63	2.8			
	88.3	40	2.1	15.74	2.8			
	102.5	34	2.5	13.56	2.8			
	115.0	31	2.8	12.09	2.8			
	121.8	29	2.9	11.41	2.8			
	128.1	28	3.1	10.85	2.8			
	50.1	71	0.8	27.75	2.5			
	56.1	63	0.9	24.78	2.5			
	62.4	57	1.0	22.26	2.5			
	65.1	54	1.0	21.36	2.5			
	72.3	49	1.1	19.23	2.5			
	80.0	44	1.2	17.37	2.5			
	88.3	40	1.4	15.75	2.5			
	96.4	37	1.4	14.42	2.5			
	105.1	34	1.4	13.23	2.5			
	120.7	29	1.7	11.52	2.5			
	138.6	25	2.2	10.03	2.5			
	155.7	23	2.4	8.93	2.5			
	173.1	20	2.7	8.03	2.5			
	192.8	18	3.0	7.21	2.5			
	212.2	17	3.2	6.55	2.5			
	232.4	15	3.6	5.98	2.5			
	253.2	14	3.9	5.49	2.5			
	260.8	14	4.1	5.33	2.5			
	290.2	12	4.4	4.79	2.5			
	324.0	11	4.6	4.29	2.5			
	356.4	10	4.5	3.90	2.5			
	390.4	9	5.3	3.56	2.5			
	426.4	8	5.6	3.26	2.5			
	468.0	8	5.6	2.97	2.5			
	491.2	7	5.6	2.83	2.5			
	545.1	6	5.7	2.55	2.5			
	601.7	6	5.6	2.31	2.5			
	655.7	5	5.6	2.12	2.5			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm
0.55	4.1	1195	1.5	222.59	18.0	A503 - 80M/6B F503 - 80M/6B	58	130
	4.7	1046	1.7	194.86	18.0			
	5.1	961	1.9	178.98	18.0			
	5.7	871	2.1	162.21	18.0			
	6.0	829	2.2	154.52	18.0			
	6.5	762	2.4	142.00	18.0			
	7.4	667	2.7	124.25	18.0			
	8.2	604	3.0	112.61	18.0			
	9.4	525	3.4	97.80	18.0			
	10.8	458	3.9	85.33	18.0			
	6.3	785	2.3	222.59	18.0	A503 - 80M/4A F503 - 80M/4A	55	130
	7.2	687	2.6	194.86	18.0			
	7.8	631	2.9	178.98	18.0			
	8.6	572	3.1	162.21	18.0			
	9.1	545	3.3	154.52	18.0			
	9.9	501	3.6	142.00	18.0			
	5.4	915	0.9	170.55	12.0	A403 - 80M/6B F403 - 80M/6B	41	126
	6.2	802	1.1	149.47	12.0			
	6.8	726	1.2	135.37	12.0			
	7.8	634	1.3	118.13	12.0			
	9.7	509	1.7	94.86	12.0			
	10.7	461	1.8	85.91	12.0			
	5.2	944	0.9	267.75	12.0	A/F 403 - 71M/4C A/F 403 - 80M/4A	38	126
	6.0	827	1.0	234.50	12.0			
	6.5	758	1.1	215.01	12.0			
	7.5	656	1.3	186.14	12.0			
	8.2	601	1.4	170.55	12.0			
	9.4	527	1.6	149.47	12.0			
	10.3	477	1.8	135.37	12.0			
	11.9	417	2.0	118.13	12.0			
	14.8	335	2.5	94.86	12.0			
	16.3	303	2.8	85.91	12.0			
	10.5	449	1.4	267.75	12.0	A403 - 71M/2B F403 - 71M/2B	38	126
	12.0	393	1.6	234.50	12.0			
	13.1	360	1.8	215.01	12.0			
	15.1	312	2.0	186.14	12.0			
	16.5	286	2.2	170.55	12.0			
	18.9	251	2.5	149.47	12.0			
	20.8	227	2.8	135.37	12.0			
	23.9	198	3.2	118.13	12.0			
	29.7	159	4.0	94.86	12.0			
	20.3	249	3.4	45.38	12.0	A402 - 80M/6B F402 - 80M/6B	41	126
	23.2	218	3.9	39.72	12.0			
	111.5	46	3.7	8.25	1.0	A401 - 80M/6B F401 - 80M/6B	20	124
	10.2	486	1.0	90.51	8.0	A353 - 80M/6B F353 - 80M/6B	30	122
	12.7	390	1.3	72.58	8.0			
	15.7	315	1.6	58.68	8.0			
	10.4	475	1.1	134.76	8.0	A/F 353 - 71M/4C A/F 353 - 80M/4A	30	122
	12.8	384	1.3	108.95	8.0			
	15.5	319	1.6	90.51	8.0			
	19.3	256	2.0	72.58	8.0			
	23.9	207	2.4	58.68	8.0			
	8.9	555	0.9	157.42	8.0	A353 - 71M/4C F353 - 71M/4C	30	122
	13.0	363	1.0	216.67	8.0	A353 - 71M/2B F353 - 71M/2B	30	122
	14.5	326	1.1	194.72	8.0			
	17.9	264	1.4	157.42	8.0			
	20.9	226	1.7	134.76	8.0			
	25.9	183	2.1	108.95	8.0			
	31.2	152	2.5	90.51	8.0			
	38.9	122	3.1	72.58	8.0			
	48.1	98	3.8	58.68	8.0			



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg 	mm 
0.55	16.2	312	1.6	56.95	8.0	A352 - 80M/6B F352 - 80M/6B	30	122
	18.4	273	1.8	49.88	8.0			
	20.0	252	1.9	46.04	8.0			
	23.2	217	2.3	39.59	8.0			
	27.5	184	2.7	33.50	8.0			
	28.7	175	2.8	32.01	8.0			
	31.8	158	3.1	28.89	8.0			
	34.6	146	3.4	26.59	8.0			
	36.6	138	3.4	25.13	8.0			
	24.6	201	2.4	56.95	8.0			
	28.1	176	2.8	49.88	8.0			
	30.4	162	3.0	46.04	8.0			
	35.4	140	3.5	39.59	8.0			
	49.5	100	3.8	56.95	8.0	A352 - 71M/2B F352 - 71M/2B	28	122
	108.2	47	2.1	8.50	2.5	A351 - 80M/6B F351 - 80M/6B	20	120
	123.6	41	2.4	7.44	2.5			
	155.7	33	3.1	5.91	2.5			
	172.5	30	3.4	5.33	2.5			
	189.8	27	3.5	4.85	2.5			
	164.7	31	3.2	8.50	2.5	A/F 351 - 71M/4C A/F 351 - 80M/4A	18	120
	188.1	27	3.7	7.44	2.5			
	14.9	331	0.9	61.63	6.6	A303 - 80M/6B F303 - 80M/6B	25	118
	16.1	307	1.0	86.96	6.6	A/F 303 - 71M/4C A/F 303 - 80M/4A	23	118
	18.3	270	1.1	76.42	6.6			
	22.7	217	1.4	61.63	6.6			
	12.2	404	0.7	114.42	6.6	A303 - 71M/4C F303 - 71M/4C	23	118
	22.4	211	1.1	125.65	6.6	A303 - 71M/2B F303 - 71M/2B	23	118
	24.6	192	1.2	114.42	6.6			
	32.4	146	1.5	86.96	6.6			
	36.9	128	1.8	76.42	6.6			
	45.8	103	2.2	61.63	6.6			
	16.7	302	0.9	55.03	6.6	A302 - 80M/6B F302 - 80M/6B	25	118
	19.1	264	1.1	48.22	6.6			
	20.7	243	1.2	44.38	6.6			
	24.0	210	1.3	38.33	6.6			
	26.6	190	1.5	34.62	6.6			
	29.8	169	1.7	30.91	6.6			
	33.0	153	1.8	27.92	6.6			
	34.8	145	1.8	26.45	6.6			
	39.2	129	2.0	23.49	6.6			
	43.1	117	2.1	21.33	6.6			
	47.7	106	2.4	19.29	6.6			
56.8	89	2.8	16.21	6.6				
66.6	76	3.3	13.81	6.6				
76.7	66	3.8	12.00	6.6				
25.4	198	1.4	55.03	6.6	A/F 302 - 71M/4C A/F 302 - 80M/4A			
29.0	174	1.6	48.22	6.6				
31.5	160	1.8	44.38	6.6				
36.5	138	2.0	38.33	6.6				
40.4	125	2.2	34.62	6.6				
45.3	111	2.5	30.91	6.6				
50.1	101	2.8	27.92	6.6				
52.9	95	2.7	26.45	6.6				
59.6	85	3.1	23.49	6.6				
65.6	77	3.3	21.33	6.6				
72.6	69	3.6	19.29	6.6				
51.2	94	2.2	55.03	6.6	A302 - 71M/2B F302 - 71M/2B	23	118	
58.5	83	2.5	48.22	6.6				
63.5	76	2.8	44.38	6.6				
73.6	66	3.2	38.33	6.6				
81.5	59	3.5	34.62	6.6				
91.2	53	4.0	30.91	6.6				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.55	103.7	49	1.1	8.87	1.0	A301 - 80M/6B F301 - 80M/6B	18	116
	118.3	43	1.2	7.78	1.0			
	148.9	34	1.5	6.18	1.0			
	164.9	31	1.6	5.58	1.0			
	181.1	28	1.6	5.08	1.0			
	215.5	24	1.9	4.27	1.0			
	252.1	20	2.2	3.65	1.0			
	291.1	17	2.3	3.16	1.0			
	333.3	15	2.0	2.76	0.9			
	355.2	14	2.1	2.59	0.9			
451.0	11	2.2	2.04	0.9				
625.9	8	3.1	1.47	0.8				
	157.8	32	1.7	8.87	1.0	A/F 301 - 71M/4C A/F 301 - 80M/4A	16	116
	179.9	28	1.8	7.78	1.0			
	226.5	22	2.2	6.18	1.0			
	250.9	20	2.5	5.58	1.0			
	275.6	18	2.4	5.08	1.0			
	327.9	16	2.9	4.27	1.0			
	383.6	13	3.4	3.65	1.0			
	443.0	11	3.5	3.16	1.0			
	507.2	10	3.0	2.76	0.9			
	540.5	9	3.2	2.59	0.9			
686.3	7	3.4	2.04	0.9				
	317.9	16	2.7	8.87	1.0	A301 - 71M/2B F301 - 71M/2B	16	116
	362.5	14	2.8	7.78	1.0			
	456.3	11	3.5	6.18	1.0			
	505.4	10	3.8	5.58	1.0			
	555.1	9	3.8	5.08	1.0			
	26.2	192	1.0	53.41	5.5	A/F 253 - 71M/4C A/F 253 - 80M/4A	20	114
	37.7	125	1.2	74.76	5.5	A253 - 71M/2B F253 - 71M/2B	20	114
	42.4	112	1.3	66.56	5.5			
52.8	90	1.7	53.41	5.5				
	23.7	213	0.9	38.46	5.5	A252 - 80M/6B F252 - 80M/6B	22	114
	27.6	183	1.1	33.38	5.5			
	30.5	165	1.2	30.15	5.5			
	34.3	147	1.4	26.79	5.5			
	38.0	133	1.5	24.19	5.5			
	39.9	126	1.6	23.04	5.5			
	45.6	111	1.8	20.19	5.5			
	49.8	101	2.0	18.49	5.5			
	54.0	93	2.0	17.05	5.5			
	61.7	82	2.1	14.91	5.5			
	66.0	76	2.2	13.94	5.5			
	76.9	66	2.2	11.97	5.5			
	89.1	57	2.5	10.32	5.4			
	102.0	49	2.6	9.02	5.2			
	116.0	43	2.9	7.93	5.0			
	144.7	35	3.0	6.36	4.7			
	191.7	26	3.6	4.80	4.4			
	29.2	173	1.2	47.93	5.5	A/F 252 - 71M/4C A/F 252 - 80M/4A	20	114
	33.3	151	1.3	42.00	5.5			
	36.4	139	1.4	38.46	5.5			
	41.9	120	1.7	33.38	5.5			
	46.4	109	1.8	30.15	5.5			
	52.3	96	2.1	26.79	5.5			
	57.9	87	2.3	24.19	5.5			
	60.8	83	2.4	23.04	5.5			
	69.3	73	2.8	20.19	5.5			
	75.7	67	3.0	18.49	5.5			
	82.1	61	3.1	17.05	5.5			
	93.9	54	3.2	14.91	5.5			
	100.4	50	3.4	13.94	5.5			
	117.0	43	3.4	11.97	5.5			
	135.7	37	3.8	10.32	5.4			

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm	
0.55	58.8	82	1.8	47.93	5.5	A252 - 71M/2B F252 - 71M/2B	20	114	
	67.1	72	2.1	42.00	5.5				
	73.3	66	2.3	38.46	5.5				
	84.5	57	2.6	33.38	5.5				
	93.5	52	2.9	30.15	5.5				
	105.3	46	3.3	26.79	5.5				
	116.6	41	3.6	24.19	5.5				
	122.4	39	3.8	23.04	5.5				
	50.6	104	0.9	27.66	2.8				A 202 G - 80M/4A F 202 G - 80M/4A
	56.4	93	1.0	24.83	2.8				
	62.4	84	1.1	22.44	2.8				
	68.8	76	1.1	20.35	2.8				
	75.1	70	1.2	18.63	2.8				
	88.9	59	1.4	15.74	2.8				
	103.2	51	1.7	13.56	2.8				
	115.8	45	1.9	12.09	2.8				
	122.7	43	2.0	11.41	2.8				
	129.0	41	2.1	10.85	2.8				
	142.7	37	2.3	9.81	2.8				
	160.0	33	2.7	8.75	2.8				
	179.3	29	2.8	7.81	2.8				
	80.6	65	0.8	17.37	2.5	A202 - 71M/4C F202 - 71M/4C	10	110	
	88.9	59	0.9	15.75	2.5				
	97.1	54	0.9	14.42	2.5				
	105.8	50	0.9	13.23	2.5				
	121.5	43	1.2	11.52	2.5				
	139.6	38	1.5	10.03	2.5				
	156.8	34	1.6	8.93	2.5				
	174.3	30	1.8	8.03	2.5				
	194.2	27	2.0	7.21	2.5				
	213.7	25	2.2	6.55	2.5				
	234.1	22	2.5	5.98	2.5				
	255.0	21	2.7	5.49	2.5				
262.7	20	2.8	5.33	2.5					
292.3	18	2.9	4.79	2.5					
326.3	16	3.1	4.29	2.5					
359.0	15	3.1	3.90	2.5					
393.3	13	3.6	3.56	2.5					
429.4	12	3.8	3.26	2.5					
471.4	11	3.8	2.97	2.5					
494.7	11	3.7	2.83	2.5					
549.0	10	3.8	2.55	2.5					
606.1	9	3.7	2.31	2.5					
660.4	8	3.8	2.12	2.5					
0.75	3.8	1766	2.0	242.67	22.0	A603 - 90S/6A F603 - 90S/6A	88	134	
	4.3	1569	2.2	215.56	22.0				
	4.8	1414	2.5	194.31	22.0				
	5.1	1318	2.7	181.13	22.0				
	5.7	1171	3.0	160.90	22.0				
	6.4	1045	3.3	143.57	22.0				
	4.2	1620	1.1	222.59	18.0	A/F 503 - 80C/6 A/F 503 - 90S/6A	60	130	
	4.7	1418	1.3	194.86	18.0				
	5.2	1303	1.4	178.98	18.0				
	5.7	1181	1.5	162.21	18.0				
	6.0	1125	1.6	154.52	18.0				
	6.5	1034	1.7	142.00	18.0				
	7.4	904	2.0	124.25	18.0				
	8.2	820	2.2	112.61	18.0				
	9.5	712	2.5	97.80	18.0				
	10.8	621	2.9	85.33	18.0				
	11.8	572	3.1	78.64	18.0				
	13.0	519	3.5	71.27	18.0				
	16.5	409	3.9	56.21	18.0				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.75	6.3	1070	1.7	222.59	18.0	A503 - 80M/4B F503 - 80M/4B	57	130
	7.2	937	1.9	194.86	18.0			
	7.8	861	2.1	178.98	18.0			
	8.6	780	2.3	162.21	18.0			
	9.1	743	2.4	154.52	18.0			
	9.9	683	2.6	142.00	18.0			
	11.3	598	3.0	124.25	18.0			
	12.4	542	3.3	112.61	18.0			
	14.3	470	3.8	97.80	18.0			
	12.8	505	2.7	222.59	18.0	A503 - 80M/2A F503 - 80M/2A	57	130
	14.6	442	3.1	194.86	18.0			
	15.9	406	3.3	178.98	18.0			
	17.5	368	3.7	162.21	18.0			
	18.4	351	3.8	154.52	18.0			
	13.6	497	1.7	68.25	12.0	A403 - 90S/6A F403 - 90S/6A	43	126
	16.9	399	2.1	54.81	12.0			
	18.6	361	2.4	49.64	12.0			
	7.8	860	1.0	118.13	12.0	A/F 403 - 80C/6 A/F 403 - 90S/6A	43	126
	9.8	690	1.2	94.86	12.0			
	10.8	625	1.4	85.91	12.0			
	7.5	895	0.9	186.14	12.0	A403 - 80M/4B F403 - 80M/4B	40	126
	8.2	820	1.0	170.55	12.0			
	9.4	719	1.2	149.47	12.0			
	10.3	651	1.3	135.37	12.0			
	11.9	568	1.5	118.13	12.0			
	14.8	456	1.9	94.86	12.0			
	16.3	413	2.1	85.91	12.0			
	12.1	533	1.2	234.67	12.0	A/F 403 - 71M/2C A/F 403 - 80M/2A	38	126
13.2	488	1.3	215.21	12.0				
15.3	423	1.5	186.14	12.0				
16.7	387	1.6	170.55	12.0				
19.0	339	1.9	149.47	12.0				
21.0	307	2.1	135.37	12.0				
24.0	268	2.4	118.13	12.0				
29.9	215	3.0	94.86	12.0				
33.1	195	3.3	85.91	12.0				
10.6	608	1.0	267.75	12.0	A403 - 71M/2C F403 - 71M/2C	38	126	
20.4	337	2.5	45.38	12.0	A/F 402 - 80C/6 A/F 402 - 90S/6A	43	126	
23.3	295	2.9	39.72	12.0				
25.4	271	3.1	36.44	12.0				
29.4	234	3.6	31.50	12.0				
32.0	215	4.0	28.89	12.0				
30.9	223	3.8	45.38	12.0	A402 - 80M/4B F402 - 80M/4B	40	126	
112.1	62	2.7	8.25	3.7	A/F 401 - 80C/6 A/F 401 - 90S/6A	22	124	
128.1	54	3.1	7.22	3.7				
161.5	43	4.0	5.73	3.7				
12.7	528	0.9	72.58	8.0	A/F 353 - 80C/6 A/F 353 - 90S/6A	32	122	
15.8	427	1.2	58.68	8.0				
12.8	524	1.0	108.95	8.0	A353 - 80M/4B F353 - 80M/4B	29	122	
15.5	435	1.1	90.51	8.0				
19.3	349	1.4	72.58	8.0				
23.9	282	1.8	58.68	8.0				
21.1	306	1.2	134.76	8.0	A/F 353 - 80C/6 A/F 353 - 90S/6A	32	122	
26.1	247	1.5	108.95	8.0				
31.4	205	1.8	90.51	8.0				
39.1	165	2.3	72.58	8.0				
48.4	133	2.8	58.68	8.0				
18.0	357	1.0	157.42	8.0				A353 - 71M/2C F353 - 71M/2C

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm				
0.75	16.2	423	1.2	56.95	8.0	A/F 352 - 80C/6 A/F 352 - 90S/6A	32	122				
	18.5	371	1.3	49.88	8.0							
	20.1	342	1.4	46.04	8.0							
	23.4	294	1.7	39.59	8.0							
	27.6	249	2.0	33.50	8.0							
	28.9	238	2.1	32.01	8.0							
	32.0	215	2.3	28.89	8.0							
	34.8	198	2.5	26.59	8.0							
	36.8	187	2.5	25.13	8.0							
	42.0	164	2.9	22.03	8.0							
	45.5	151	3.0	20.31	8.0							
	50.5	136	3.4	18.30	8.0							
	54.8	125	3.6	16.88	8.0							
		24.6	280	1.8	56.95				8.0	A352 - 80M/4B F352 - 80M/4B	29	122
		28.1	245	2.0	49.88				8.0			
	30.4	226	2.2	46.04	8.0							
	35.4	194	2.5	39.59	8.0							
	41.8	165	3.0	33.50	8.0							
	43.7	157	3.1	32.01	8.0							
	48.5	142	3.5	28.89	8.0							
	52.6	131	3.8	26.59	8.0							
	55.7	123	3.8	25.13	8.0							
	49.9	132	2.8	56.95	8.0	A/F 352 - 71M/2C A/F 352 - 80M/2A	28	122				
	56.9	116	3.2	49.88	8.0							
	61.7	107	3.4	46.04	8.0							
	71.7	92	4.0	39.59	8.0							
	108.8	64	1.6	8.50	2.5	A/F 351 - 80C/6 A/F 351 - 90S/6A	22	120				
	124.3	56	1.8	7.44	2.5							
	156.5	44	2.3	5.91	2.5							
	173.4	40	2.5	5.33	2.5							
	190.9	36	2.6	4.85	2.5							
	227.5	31	2.9	4.07	2.5							
	246.7	28	3.2	3.75	2.5							
	287.1	24	3.3	3.22	2.5							
	353.2	20	3.6	2.62	2.3							
	426.9	16	3.7	2.17	2.2							
	164.7	42	2.4	8.50	2.5	A351 - 80M/4B F351 - 80M/4B	19	120				
	188.1	37	2.7	7.44	2.5							
	236.9	29	3.4	5.91	2.5							
	262.5	26	3.8	5.33	2.5							
	334.1	21	3.8	8.50	2.5	A/F 351 - 71M/2C A/F 351 - 80M/2A	18	120				
	22.7	296	1.0	61.63	6.6	A303 - 80M/4B F303 - 80M/4B	24	118				
	32.7	206	1.1	86.96	6.6	A/F 303 - 71M/2C A/F 303 - 80M/2A	23	118				
	37.2	181	1.3	76.42	6.6							
	46.1	146	1.6	61.63	6.6							
	24.1	285	1.0	38.33	6.6	A/F 302 - 80C/6 A/F 302 - 90S/6A	27	118				
	26.7	257	1.1	34.62	6.6							
	29.9	230	1.2	30.91	6.6							
	33.1	208	1.3	27.92	6.6							
	35.0	197	1.3	26.45	6.6							
	39.4	175	1.5	23.49	6.6							
	43.4	159	1.6	21.33	6.6							
	47.9	143	1.7	19.29	6.6							
	57.1	121	2.1	16.21	6.6							
	67.0	103	2.4	13.81	6.6							
	77.1	89	2.8	12.00	6.6							
	88.1	78	3.1	10.50	6.6							
	101.6	68	3.1	9.11	6.6							
	126.0	55	2.9	7.34	6.2							
	165.7	41	3.9	5.58	5.7							



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
0.75	25.4	270	1.0	55.03	6.6	A302 - 80M/4B F302 - 80M/4B	24	118
	29.0	237	1.2	48.22	6.6			
	31.5	218	1.3	44.38	6.6			
	36.5	188	1.5	38.33	6.6			
	40.4	170	1.6	34.62	6.6			
	45.3	152	1.8	30.91	6.6			
	50.1	137	2.0	27.92	6.6			
	52.9	130	2.0	26.45	6.6			
	59.6	115	2.3	23.49	6.6			
	65.6	105	2.4	21.33	6.6			
72.6	95	2.6	19.29	6.6				
86.3	80	3.1	16.21	6.6				
101.4	68	3.7	13.81	6.6				
	51.6	128	1.6	55.03	6.6	A/F 302 - 71M/2C A/F 302 - 80M/2A	23	118
	58.9	112	1.9	48.22	6.6			
	64.0	103	2.0	44.38	6.6			
	74.1	89	2.4	38.33	6.6			
	82.0	80	2.6	34.62	6.6			
	91.9	72	2.9	30.91	6.6			
	101.7	65	3.2	27.92	6.6			
	107.4	61	3.2	26.45	6.6			
	120.9	55	3.6	23.49	6.6			
	133.1	49	3.8	21.33	6.6			
	118.9	58	0.9	7.78	1.0	A/F 301 - 80C/6 A/F 301 - 90S/6A	20	116
	149.6	46	1.1	6.18	1.0			
	165.7	42	1.2	5.58	1.0			
	182.2	38	1.2	5.08	1.0			
	216.8	32	1.4	4.27	1.0			
	253.6	27	1.6	3.65	1.0			
	292.9	24	1.7	3.16	1.0			
	334.9	21	1.4	2.76	0.9			
	357.0	19	1.5	2.59	0.9			
	453.8	15	1.6	2.04	0.8			
629.8	11	2.3	1.47	0.8				
	157.8	44	1.2	8.87	1.0	A301 - 80M/4B F301 - 80M/4B	17	116
	179.9	39	1.3	7.78	1.0			
	226.5	31	1.6	6.18	1.0			
	250.9	28	1.8	5.58	1.0			
	275.6	25	1.8	5.08	1.0			
	327.9	21	2.1	4.27	1.0			
	383.9	18	2.5	3.65	1.0			
	443.3	16	2.6	3.16	1.0			
	506.9	14	2.2	2.76	0.9			
	540.4	13	2.3	2.59	0.9			
686.8	10	2.5	2.04	0.8				
953.2	7	3.4	1.47	0.8				
	320.2	21	2.0	8.87	1.0	A/F 301 - 71M/2C A/F 301 - 80M/2A	16	116
	365.0	18	2.0	7.78	1.0			
	459.5	15	2.6	6.18	1.0			
	509.0	13	2.8	5.58	1.0			
	559.1	12	2.8	5.08	1.0			
	665.1	10	3.3	4.27	1.0			
	778.7	9	3.9	3.65	1.0			
	899.3	7	4.0	3.16	1.0			
	1028.3	7	3.4	2.76	0.9			
	1096.1	6	3.7	2.59	0.9			
1393.2	5	3.9	2.04	0.8				
53.2	121	1.2	53.41	5.5	A/F 253 - 71M/2C A/F 253 - 80M/2A	20	114	

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm	
0.75	30.7	224	0.9	30.15	5.5	A/F 252 - 80C/6 A/F 252 - 90S/6A	21	114	
	34.5	199	1.0	26.79	5.5				
	38.2	180	1.1	24.19	5.5				
	40.1	171	1.2	23.04	5.5				
	45.8	150	1.3	20.19	5.5				
	50.0	137	1.5	18.49	5.5				
	54.2	127	1.5	17.05	5.5				
	62.0	111	1.5	14.91	5.5				
	66.4	104	1.6	13.94	5.5				
	77.3	89	1.6	11.97	5.3				
	89.7	77	1.8	10.32	5.2				
	102.5	67	1.9	9.02	5.0				
	116.6	59	2.1	7.93	4.9				
	145.3	47	2.2	6.36	4.6				
	192.8	36	2.7	4.80	4.3				
		33.3	206	1.0	42.00	5.5	A252 - 80M/4B F252 - 80M/4B	21	114
		36.4	189	1.1	38.46	5.5			
		41.9	164	1.2	33.38	5.5			
		46.4	148	1.4	30.15	5.5			
		52.3	132	1.5	26.79	5.5			
		57.9	119	1.7	24.19	5.5			
		60.8	113	1.8	23.04	5.5			
		69.3	99	2.0	20.19	5.4			
		75.7	91	2.2	18.49	5.5			
		82.1	84	2.3	17.05	5.5			
		93.9	73	2.3	14.91	5.5			
		100.4	68	2.5	13.94	5.5			
		117.0	59	2.5	11.97	5.3			
		135.7	51	2.8	10.32	5.2			
		155.2	44	2.9	9.02	5.0			
		176.5	39	3.2	7.93	4.9			
		220.0	31	3.4	6.36	4.6			
		59.3	111	1.3	47.93	5.5	A/F 252 - 71M/2C A/F 252 - 80M/2A	20	114
		67.6	97	1.5	42.00	5.5			
		73.8	89	1.7	38.46	5.5			
		85.1	77	1.9	33.38	5.5			
	94.2	70	2.1	30.15	5.5				
	106.0	62	2.4	26.79	5.5				
	117.4	56	2.7	24.19	5.5				
	123.3	53	2.8	23.04	5.5				
	140.6	47	3.2	20.19	5.4				
	153.6	43	3.5	18.49	5.5				
	166.5	40	3.6	17.05	5.5				
	190.4	35	3.7	14.91	5.5				
	203.8	32	3.9	13.94	5.5				
	237.3	28	3.9	11.97	5.3				
	62.4	115	0.8	22.44	2.8	A 202 G - 80M/4B F 202 G - 80M/4B			
	68.8	104	0.8	20.35	2.8				
	75.1	95	0.9	18.63	2.8				
	88.9	81	1.1	15.74	2.8				
	103.2	69	1.2	13.56	2.8				
	115.8	62	1.4	12.09	2.8				
	122.7	58	1.5	11.41	2.8				
	129.0	56	1.5	10.85	2.8				
	142.7	50	1.7	9.81	2.8				
	160.0	45	2.0	8.75	2.8				
	179.3	40	2.1	7.81	2.8				
	198.9	36	2.3	7.04	2.8				
	218.4	33	2.5	6.41	2.8				
	243.9	29	2.6	5.74	2.8				
	271.3	26	3.1	5.16	2.8				
	302.4	24	3.0	4.63	2.8				
	334.1	21	3.0	4.19	2.8				
	367.5	19	3.0	3.81	2.8				
	407.0	18	3.1	3.44	2.8				
	432.1	17	3.3	3.24	2.8				
	474.6	15	3.3	2.95	2.8				
	510.9	14	3.3	2.74	2.8				
	557.8	13	3.3	2.51	2.8				
	606.1	12	3.6	2.31	2.8				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
0.92	6.3	1304	1.4	222.59	18.0	A503 - 80M/4 F503 - 80M/4	57	130
	7.2	1141	1.6	194.86	18.0			
	7.9	1048	1.7	178.98	18.0			
	8.7	950	1.9	162.21	18.0			
	9.1	905	2.0	154.52	18.0			
	9.9	941	1.9	142.00	18.0			
	11.3	824	2.2	124.25	18.0			
	12.5	746	2.4	112.61	18.0			
	14.4	648	2.8	97.80	18.0			
	16.5	566	3.2	85.33	18.0			
17.9	521	3.5	78.64	18.0				
	9.4	875	1.0	149.47	12.0	A403 - 80M/4 F403 - 80M/4	40	126
	10.4	793	1.1	135.37	12.0			
	11.9	692	1.2	118.13	12.0			
	14.9	556	1.5	94.86	12.0			
	31.1	295	2.9	45.38	12.0	A402 - 80M/4 F402 - 80M/4	29	126
	35.5	258	3.3	39.72	12.0			
	38.7	237	3.4	36.44	12.0			
	170.9	53	3.2	8.25	3.7	A401 - 80M/4 F401 - 80M/4	29	124
	195.2	46	3.7	7.22	3.7			
	15.6	530	0.9	90.51	8.0	A353 - 80M/4 F353 - 80M/4	29	122
	19.4	425	1.2	72.58	8.0			
	24.0	344	1.5	58.68	8.0			
	24.8	341	1.4	56.95	8.0	A352 - 80M/4 F352 - 80M/4	29	122
	28.3	298	1.6	49.88	8.0			
	30.6	275	1.8	46.04	8.0			
	35.6	237	2.1	39.59	8.0			
	42.1	200	2.4	33.50	8.0			
	44.1	191	2.6	32.01	8.0			
	48.8	173	2.8	28.89	8.0			
	53.0	159	3.1	26.59	8.0			
	56.1	150	3.1	25.13	8.0			
	64.0	132	3.6	22.03	8.0			
69.4	122	3.8	20.31	8.0				
	165.9	51	1.9	8.50	2.5	A351 - 80M/4 F351 - 80M/4	19	120
	189.5	45	2.2	7.44	2.5			
	238.6	36	2.8	5.91	2.5			
	264.4	32	3.1	5.33	2.5			
	291.0	29	3.2	4.85	2.5			
	346.7	25	3.7	4.07	2.3			
	29.2	288	1.0	48.22	6.6	A302 - 80M/4 F302 - 80M/4	24	118
	31.8	265	1.1	44.38	6.6			
	36.8	229	1.2	38.33	6.6			
	40.7	207	1.4	34.62	6.6			
	45.6	185	1.5	30.91	6.6			
	50.5	167	1.7	27.92	6.6			
	53.3	158	1.6	26.45	6.6			
	60.0	141	1.9	23.49	6.6			
	66.1	128	2.0	21.33	6.6			
	73.1	115	2.2	19.29	6.6			
	87.0	97	2.6	16.21	6.6			
	102.1	83	3.0	13.81	6.4			
	117.5	72	3.5	12.00	6.2			
	134.3	63	3.8	10.50	5.9			
	154.8	54	3.9	9.11	5.7			
	192.0	44	3.6	7.34	5.4			



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm			
0.92	159.0	54	1.0	8.87	1.0	A301 - 80M/4 F301 - 80M/4	17	116			
	181.2	47	1.1	7.78	1.0						
	228.1	37	1.3	6.18	1.0						
	252.7	34	1.5	5.58	1.0						
	277.6	31	1.5	5.08	0.9						
	330.2	26	1.7	4.27	0.9						
	386.3	22	2.0	3.65	0.9						
	446.2	19	2.1	3.16	0.8						
	510.9	17	1.8	2.76	0.8						
	544.4	16	1.9	2.59	0.8						
	691.2	12	2.0	2.04	0.7						
	959.2	9	2.8	1.47	0.7						
	42.2	200	1.0	33.38	5.5				A252 - 80M/4 F252 - 80M/4	21	114
	46.8	180	1.1	30.15	5.5						
	52.6	160	1.2	26.79	5.4						
	58.3	145	1.4	24.19	5.4						
	61.2	138	1.5	23.04	5.3						
	69.8	121	1.7	20.19	5.2						
	76.3	111	1.8	18.49	5.1						
	94.6	89	1.9	14.91	4.9						
	101.1	83	2.0	13.94	4.9						
	117.8	72	2.0	11.97	4.7						
	136.7	62	2.3	10.32	4.5						
	156.3	54	2.4	9.02	4.4						
	177.8	47	2.6	7.93	4.2						
	221.5	38	2.8	6.36	4.0						
293.9	29	3.3	4.80	3.7							
1.10	5.8	1699	2.1	242.67	22.0	A603 - 90S/4A F603 - 90S/4A	88	134			
	6.5	1510	2.3	215.56	22.0						
	7.3	1361	2.6	194.31	22.0						
	7.8	1269	2.8	181.13	22.0						
	8.8	1127	3.1	160.90	22.0						
	9.8	1005	3.5	143.57	22.0						
	3.9	2563	1.4	242.67	22.0	A603 - 90L/6B F603 - 90L/6B	92	134			
	4.3	2277	1.5	215.56	22.0						
	4.8	2052	1.7	194.31	22.0						
	5.2	1913	1.8	181.13	22.0						
	5.8	1699	2.1	160.90	22.0						
	6.5	1516	2.3	143.57	22.0						
	5.2	1890	1.0	178.98	18.0	A503 - 90L/6B F503 - 90L/6B	64	130			
	5.8	1713	1.1	162.21	18.0						
	6.1	1632	1.1	154.52	18.0						
	6.6	1500	1.2	142.00	18.0						
	7.5	1312	1.4	124.25	18.0						
	8.3	1189	1.5	112.61	18.0						
	9.6	1033	1.7	97.80	18.0						
	11.0	901	2.0	85.33	18.0						
	11.9	831	2.2	78.64	18.0						
	13.1	753	2.4	71.27	18.0						
	16.6	594	2.7	56.21	18.0						
	6.3	1559	1.2	222.59	18.0	A/F 503 - 80M/4C A/F 503 - 90S/4A	60	130			
	7.2	1365	1.3	194.86	18.0						
	7.9	1253	1.4	178.98	18.0						
	8.7	1136	1.6	162.21	18.0						
	9.1	1082	1.7	154.52	18.0						
	9.9	994	1.8	142.00	18.0						
	11.3	870	2.1	124.25	18.0						
	12.5	789	2.3	112.61	18.0						
	14.4	685	2.6	97.80	18.0						
	16.5	598	3.0	85.33	18.0						
	17.9	551	3.3	78.64	18.0						
19.8	499	3.6	71.27	18.0							

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm	
1.10	12.8	738	1.8	222.59	18.0	A503 - 80M/2B F503 - 80M/2B	55	130	
	14.6	646	2.1	194.86	18.0				
	15.9	594	2.3	178.98	18.0				
	17.6	538	2.5	162.21	18.0				
	18.4	513	2.6	154.52	18.0				
	20.1	471	2.9	142.00	18.0				
	22.9	412	3.3	124.25	18.0				
	25.3	374	3.6	112.61	18.0				
	19.2	526	3.0	48.77	18.0	A502 - 90L/6B F502 - 90L/6B	64	130	
	21.6	467	3.4	43.32	18.0				
	23.8	423	3.8	39.21	18.0				
	109.3	93		3.8	8.56	4.0	A501 - 90L/6B F501 - 90L/6B	37	128
	20.7	478		1.8	68.25	12.0	A403 - 90S/4A F403 - 90S/4A	43	126
	25.7	384		2.2	54.81	12.0			
	28.4	348		2.4	49.64	12.0			
	10.9	907		0.9	85.91	12.0	A403 - 90L/6B F403 - 90L/6B	47	126
	13.7	721		1.2	68.25	12.0			
	17.1	579		1.5	54.81	12.0			
	18.8	524		1.6	49.64	12.0			
	11.9	827		1.0	118.13	12.0	A/F 403 - 80M/4C A/F 403 - 90S/4A	43	126
	14.9	664		1.3	94.86	12.0			
	16.4	602		1.4	85.91	12.0			
	15.3	617		1.0	186.14	12.0	A403 - 80M/2B F403 - 80M/2B	40	126
	16.7	566		1.1	170.55	12.0			
	19.1	496		1.3	149.47	12.0			
	21.1	449		1.4	135.37	12.0			
	24.1	392		1.6	118.13	12.0			
	30.0	315		2.0	94.86	12.0			
	33.2	285		2.2	85.91	12.0			
	20.6	489		1.7	45.38	12.0			
	23.5	428		2.0	39.72	12.0			
	25.7	393		2.0	36.44	12.0			
	29.7	340		2.5	31.50	12.0			
	32.4	312		2.6	28.89	12.0			
	37.0	273		3.1	25.30	12.0			
	40.8	247		3.4	22.91	12.0			
46.9	215		4.0	19.94	12.0				
31.1	325		2.6	45.38	12.0	A/F 402 - 80M/4C A/F 402 - 90S/4A	43	126	
35.5	284		3.0	39.72	12.0				
38.7	261		3.1	36.44	12.0				
44.8	225		3.8	31.50	12.0				
48.8	207		3.9	28.89	12.0				
62.8	161		4.1	45.38	12.0	A402 - 80M/2B F402 - 80M/2B	40	126	
113.3	90		1.9	8.25	3.7	A401 - 90L/6B F401 - 90L/6B	26	124	
129.5	79		2.2	7.22	3.7				
163.3	62		2.7	5.73	3.7				
181.0	56		3.0	5.17	3.7				
199.3	51		3.1	4.69	3.7				
237.7	43		3.5	3.93	3.7				
257.9	40		3.8	3.63	3.7				
300.5	34		3.8	3.11	3.7				
170.9	60		2.9	8.25	3.7				A/F 401 - 80M/4C A/F 401 - 90S/4A
195.2	52		3.3	7.22	3.7				
19.4	508		1.0	72.58	8.0	A/F 353 - 80M/4C A/F 353 - 90S/4A	32	122	
24.0	411		1.2	58.68	8.0				
26.2	361		1.0	108.95	8.0	A353 - 80M/2B F353 - 80M/2B	29	122	
31.5	300		1.2	90.51	8.0				
39.3	241		1.6	72.58	8.0				
48.6	195		1.9	58.68	8.0				

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg 	mm 				
1.10	18.7	538	0.9	49.88	8.0	A352 - 90L/6B F352 - 90L/6B	36	122				
	20.3	497	1.0	46.04	8.0							
	23.6	427	1.1	39.59	8.0							
	27.9	361	1.4	33.50	8.0							
	29.2	345	1.4	32.01	8.0							
	32.4	312	1.6	28.89	8.0							
	35.2	287	1.7	26.59	8.0							
	37.2	271	1.7	25.13	8.0							
	42.4	238	2.0	22.03	8.0							
	46.0	219	2.1	20.31	8.0							
	51.1	197	2.3	18.30	8.0							
	55.4	182	2.5	16.88	8.0							
	64.4	157	2.7	14.52	8.0							
	79.7	127	3.1	11.74	8.0							
	95.9	105	3.5	9.75	8.0							
107.1	94	3.6	8.73	8.0								
132.5	76	3.8	7.06	7.6								
	24.8	407	1.2	56.95	8.0	A/F 352 - 80M/4C A/F 352 - 90S/4A	32	122				
	28.3	357	1.4	49.88	8.0							
	30.6	329	1.5	46.04	8.0							
	35.6	283	1.7	39.59	8.0							
	42.1	240	2.0	33.50	8.0							
	44.0	229	2.1	32.01	8.0							
	48.8	207	2.4	28.89	8.0							
	53.0	190	2.6	26.59	8.0							
	56.1	180	2.6	25.13	8.0							
	64.0	158	3.0	22.03	8.0							
	69.4	145	3.2	20.31	8.0							
	77.0	131	3.5	18.30	8.0							
	83.6	121	3.7	16.88	8.0							
		50.0	193	1.9	56.95				8.0	A352 - 80M/2B F352 - 80M/2B	29	122
		57.1	169	2.2	49.88				8.0			
61.9		156	2.4	46.04	8.0							
72.0		134	2.7	39.59	8.0							
85.1		114	3.2	33.50	8.0							
89.0		109	3.4	32.01	8.0							
98.7		98	3.8	28.89	8.0							
		110.0	93	1.1	8.50	2.5	A351 - 90L/6B F351 - 90L/6B	26	120			
	125.6	81	1.2	7.44	2.5							
	158.2	64	1.6	5.91	2.5							
	175.3	58	1.7	5.33	2.5							
	192.9	53	1.8	4.85	2.5							
	229.9	44	2.0	4.07	2.5							
	249.3	41	2.2	3.75	2.5							
	290.2	35	2.3	3.22	2.4							
	357.0	29	2.5	2.62	2.3							
	431.5	24	2.5	2.17	2.2							
	644.1	16	3.8	1.45	1.9							
	717.6	14	2.8	1.30	1.9							
	165.9	61	1.6	8.50	2.5	A/F 351 - 80M/4C A/F 351 - 90S/4A	22	120				
	189.4	54	1.9	7.44	2.5							
	238.6	43	2.3	5.91	2.5							
	264.4	39	2.6	5.33	2.5							
	291.0	35	2.7	4.85	2.5							
	346.7	29	3.1	4.07	2.5							
	376.0	27	3.3	3.75	2.5							
	437.6	23	3.4	3.22	2.4							
	538.4	19	3.7	2.62	2.3							
	650.8	16	3.8	2.17	2.2							
		335.3	29	2.5	8.50				2.5	A351 - 80M/2B F351 - 80M/2B	19	120
		382.8	26	2.9	7.44				2.5			
482.3		20	3.7	5.91	2.5							
	46.2	204	1.1	61.63	6.6	A303 - 80M/2B F303 - 80M/2B	24	118				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
1.10	33.5	27.92	0.9	27.92	6.6	A302 - 90L/6B F302 - 90L/6B	31	118
	35.3	26.45	0.9	26.45	6.6			
	39.8	23.49	1.0	23.49	6.6			
	43.8	21.33	1.1	21.33	6.6			
	48.5	19.29	1.2	19.29	6.6			
	57.7	16.21	1.4	16.21	6.6			
	67.7	13.81	1.7	13.81	6.6			
	77.9	12.00	1.9	12.00	6.6			
	89.1	10.50	2.1	10.50	6.5			
	102.7	9.11	2.1	9.11	6.3			
127.3	7.34	2.0	7.34	6.0				
167.5	5.58	2.7	5.58	5.5				
	36.8	274	1.0	38.33	6.6	A/F 302 - 80M/4C A/F 302 - 90S/4A	27	118
	40.7	248	1.1	34.62	6.6			
	45.6	221	1.3	30.91	6.6			
	50.5	200	1.4	27.92	6.6			
	53.3	189	1.4	26.45	6.6			
	60.0	168	1.5	23.49	6.6			
	66.1	153	1.6	21.33	6.6			
	73.1	138	1.8	19.29	6.6			
	87.0	116	2.2	16.21	6.5			
	102.1	99	2.5	13.81	6.3			
	117.5	86	2.9	12.00	6.1			
	134.3	75	3.2	10.50	5.8			
	154.8	65	3.2	9.11	5.6			
	192.0	53	3.0	7.34	5.3			
	51.8	187	1.1	55.03	6.6	A302 - 80M/2B F302 - 80M/2B	24	118
	59.1	164	1.3	48.22	6.6			
	64.2	150	1.4	44.38	6.6			
	74.4	130	1.6	38.33	6.6			
	82.3	117	1.8	34.62	6.6			
	92.2	105	2.0	30.91	6.6			
	102.1	95	2.2	27.92	6.6			
	107.7	90	2.2	26.45	6.6			
	121.3	80	2.4	23.49	6.6			
	133.6	72	2.6	21.33	6.6			
	147.7	65	2.9	19.29	6.6			
	175.8	55	3.4	16.21	6.5			
	206.4	47	4.0	13.81	6.3			
		219.0	47	1.0	4.27			
256.2		40	1.1	3.65	0.9			
295.9		34	1.2	3.16	0.9			
338.8		30	1.0	2.76	0.9			
361.0		28	1.1	2.59	0.9			
458.3		22	1.1	2.04	0.8			
636.1		16	1.6	1.47	0.7			
	181.2	56	0.9	7.78	1.0	A/F 301 - 80M/4C A/F 301 - 90S/4A	20	116
	228.2	45	1.1	6.18	0.9			
	252.7	40	1.2	5.58	0.9			
	277.6	37	1.2	5.08	0.9			
	330.2	31	1.5	4.27	0.9			
	386.3	26	1.7	3.65	0.8			
	446.2	23	1.8	3.16	0.8			
	510.9	20	1.5	2.76	0.8			
	544.4	19	1.6	2.59	0.8			
	691.2	15	1.7	2.04	0.7			
959.2	11	2.4	1.47	0.7				
	321.1	31	1.3	8.88	0.9	A301 - 80M/2B F301 - 80M/2B	17	116
	366.3	27	1.4	7.78	0.9			
	461.2	21	1.8	6.18	0.8			
	510.8	19	1.9	5.58	0.8			
	561.0	18	1.9	5.08	0.8			
	667.4	15	2.3	4.27	0.7			
	780.8	13	2.7	3.65	0.7			
	901.9	11	2.7	3.16	0.7			
	1032.6	10	2.4	2.76	0.7			
	1100.4	9	2.5	2.59	0.6			
	1397.1	7	2.7	2.04	0.6			
	1938.8	5	3.7	1.47	0.5			

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
1.10	46.3	220	0.9	20.19	5.1	A252 - 90L/6B F252 - 90L/6B	28	114
	50.6	201	1.0	18.49	5.1			
	54.8	186	1.0	17.05	5.1			
	62.7	163	1.0	14.91	5.0			
	67.1	152	1.1	13.94	5.0			
	78.1	130	1.1	11.97	4.9			
	90.6	112	1.2	10.32	4.8			
	103.6	98	1.3	9.02	4.7			
	117.9	86	1.4	7.93	4.6			
	146.9	69	1.5	6.36	4.4			
194.9	52	1.8	4.80	4.1				
	46.8	216	0.9	30.15	5.1	A/F 252 - 80M/4C A/F 252 - 90S/4A	24	114
	52.6	192	1.0	26.79	5.1			
	58.3	173	1.2	24.19	5.1			
	61.2	165	1.2	23.04	5.0			
	69.8	144	1.4	20.19	5.0			
	76.3	132	1.5	18.49	4.9			
	82.7	122	1.6	17.05	4.8			
	94.6	107	1.6	14.91	4.7			
	101.1	100	1.7	13.94	4.7			
	117.8	86	1.7	11.97	4.5			
	136.6	74	1.9	10.32	4.4			
	156.3	65	2.0	9.02	4.3			
	177.8	57	2.2	7.93	4.2			
	221.5	46	2.3	6.36	3.9			
293.9	34	2.8	4.80	3.7				
	67.9	142	1.1	42.00	5.0	A252 - 80M/2B F252 - 80M/2B	21	114
	74.1	130	1.2	38.46	5.0			
	85.4	113	1.3	33.38	4.9			
	94.5	102	1.5	30.15	4.8			
	106.4	91	1.7	26.79	4.7			
	117.8	82	1.8	24.19	4.6			
	123.7	78	1.9	23.04	4.5			
	141.1	68	2.2	20.19	4.4			
	154.1	63	2.4	18.49	4.3			
	167.1	58	2.5	17.05	4.2			
	191.1	51	2.5	14.91	4.1			
	204.5	47	2.7	13.94	4.0			
	238.1	41	2.7	11.97	3.9			
	276.3	35	3.0	10.32	3.7			
	315.9	31	3.2	9.02	3.6			
	359.3	27	3.5	7.93	3.5			
	447.8	22	3.6	6.36	3.3			
		123.6	85	1.0	11.41			
143.7		73	1.2	9.81	2.8			
161.1		65	1.3	8.75	2.8			
180.5		58	1.4	7.81	2.8			
200.3		52	1.6	7.04	2.8			
220.0		48	1.7	6.41	2.8			
245.6		43	1.8	5.74	2.8			
273.3		38	2.2	5.16	2.8			
304.5		34	2.1	4.63	2.8			
336.5		31	2.1	4.19	2.8			
370.1		28	2.1	3.81	2.8			
409.9		26	2.1	3.44	2.8			
435.2		24	2.2	3.24	2.8			
478.0		22	2.3	2.95	2.8			
514.6		20	2.3	2.74	2.8			
561.8		19	2.3	2.51	2.8			
610.4	17	2.5	2.31	2.8				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm
1.50	3.6	3727	1.3	260.15	30.0	A703 - 100L/6A F703 - 100L/6A	126	138
	4.1	3314	1.5	231.34	30.0			
	4.5	2976	1.7	207.78	30.0			
	5.0	2715	1.8	189.54	30.0			
	5.4	2480	2.0	173.11	30.0			
	6.0	2227	2.2	155.48	30.0			
	6.5	2076	2.4	144.94	30.0			
	7.3	1839	2.7	128.35	30.0			
	7.9	1701	2.9	118.75	30.0			
	8.7	1554	3.2	108.46	30.0			
9.4	1438	3.5	100.38	30.0				
10.4	1289	3.9	89.95	30.0				
	11.8	1094	2.5	242.67	22.0	A603 - 90S/2A F603 - 90S/2A	86	134
	13.3	972	2.7	215.56	22.0			
	14.7	876	3.0	194.31	22.0			
	15.8	817	3.2	181.13	22.0			
	17.8	725	3.6	160.90	22.0			
	19.9	647	4.1	143.57	22.0			
	5.9	2301	1.6	242.67	22.0	A603 - 90L/4A F603 - 90L/4A	90	134
	6.6	2044	1.7	215.56	22.0			
	7.3	1843	1.9	194.31	22.0			
	7.8	1718	2.0	181.13	22.0			
	8.8	1526	2.3	160.90	22.0			
	9.9	1361	2.6	143.57	22.0			
	3.9	3476	1.0	242.67	22.0	A603 - 100L/6A F603 - 100L/6A	97	134
	4.4	3088	1.1	215.56	22.0			
	4.8	2783	1.3	194.31	22.0			
	5.2	2595	1.3	181.13	22.0			
	5.8	2305	1.5	160.90	22.0			
	6.5	2057	1.7	143.57	22.0			
	7.0	1923	1.8	134.25	22.0			
	7.8	1734	2.0	121.02	22.0			
	9.4	1436	2.4	100.21	22.0			
	10.0	1341	2.6	93.60	22.0			
	11.1	1209	2.9	84.37	22.0			
	11.8	1146	3.1	79.98	22.0			
13.5	1001	3.5	69.87	22.0				
	7.3	1848	1.0	194.86	18.0	A503 - 90L/4A F503 - 90L/4A	62	130
	7.9	1697	1.1	178.98	18.0			
	8.8	1538	1.2	162.21	18.0			
	9.2	1465	1.2	154.52	18.0			
	10.0	1347	1.3	142.00	18.0			
	11.4	1178	1.5	124.25	18.0			
	12.6	1068	1.7	112.61	18.0			
	14.5	927	1.9	97.80	18.0			
	18.1	746	2.4	78.64	18.0			
	19.9	676	2.7	71.27	18.0			
25.3	533	3.0	56.21	18.0				
	12.8	1003	1.3	222.59	18.0	A/F 503 - 80M/2C A/F 503 - 90S/2A	58	130
	14.7	878	1.5	194.86	18.0			
	16.0	807	1.7	178.98	18.0			
	17.6	731	1.8	162.21	18.0			
	18.5	697	1.9	154.52	18.0			
	20.1	640	2.1	142.00	18.0			
	23.0	560	2.4	124.25	18.0			
	25.4	508	2.7	112.61	18.0			
	29.2	441	3.1	97.80	18.0			
	33.5	385	3.5	85.33	18.0			
36.4	355	3.8	78.64	18.0				
	7.6	1780	1.0	124.25	18.0	A503 - 100L/6A F503 - 100L/6A	69	130
	8.3	1613	1.1	112.61	18.0			
	9.6	1401	1.3	97.80	18.0			
	11.0	1222	1.5	85.33	18.0			
	12.0	1127	1.6	78.64	18.0			
	13.2	1021	1.8	71.27	18.0			
	16.7	805	2.0	56.21	18.0			
	29.1	472	3.4	48.77	18.0	A502 - 90L/4A F502 - 90L/4A	62	130
	32.8	420	3.8	43.32	18.0			

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
1.50	19.3	699	2.3	48.77	18.0	A502 - 100L/6A F502 - 100L/6A	69	130
	21.7	621	2.6	43.32	18.0			
	24.0	562	2.8	39.21	18.0			
	27.0	499	3.2	34.83	18.0			
	29.8	452	3.5	31.57	18.0			
	33.3	405	4.0	28.26	18.0			
	109.9	126	2.8	8.56	4.0	A501 - 100L/6A F501 - 100L/6A	42	128
	123.7	112	3.1	7.60	4.0			
	152.4	91	3.7	6.17	4.0			
	41.9	308	2.1	68.25	12.0	A403 - 90S/2A F403 - 90S/2A	41	126
	52.2	247	2.6	54.81	12.0			
	57.6	224	2.8	49.64	12.0			
	15.0	900	0.9	94.86	12.0	A403 - 90L/4A F403 - 90L/4A	45	126
	16.5	815	1.0	85.91	12.0			
	20.8	647	1.3	68.25	12.0			
	25.9	520	1.6	54.81	12.0			
	28.6	471	1.8	49.64	12.0			
	24.2	532	1.2	118.13	12.0	A/F 403 - 80M/2C A/F 403 - 90S/2A	41	126
	30.2	428	1.5	94.86	12.0			
	33.3	387	1.6	85.91	12.0			
	21.1	610	1.0	135.37	12.0	A403 - 80M/2C F403 - 80M/2C	40	126
	17.2	785	1.1	54.81	12.0	A403 - 100L/6A F403 - 100L/6A	52	126
	18.9	711	1.2	49.64	12.0			
	31.3	439	1.9	45.38	12.0	A402 - 90L/4A F402 - 90L/4A	45	126
	35.8	385	2.2	39.72	12.0			
	39.0	353	2.3	36.44	12.0			
	45.1	305	2.8	31.50	12.0			
	49.2	280	2.9	28.89	12.0			
	56.1	245	3.5	25.30	12.0			
	62.0	222	3.8	22.91	12.0			
	63.0	209	3.0	45.38	12.0			
	72.0	183	3.5	39.72	12.0			
	78.5	168	3.6	36.44	12.0			
20.7	664	1.3	45.38	12.0	A402 - 100L/6A F402 - 100L/6A	52	126	
23.7	581	1.5	39.72	12.0				
25.8	533	1.5	36.44	12.0				
29.8	461	1.8	31.50	12.0				
32.5	423	1.9	28.89	12.0				
37.2	370	2.3	25.30	12.0				
41.0	335	2.5	22.91	12.0				
47.1	292	2.9	19.94	12.0				
54.1	254	3.3	17.37	12.0				
58.7	234	3.4	16.01	12.0				
64.8	212	3.3	14.50	12.0				
75.5	182	3.8	12.44	12.0				
82.0	168	3.9	11.46	12.0				
172.1	81	2.1	8.25	3.7				A401 - 90L/4A F401 - 90L/4A
196.6	71	2.4	7.22	3.7				
247.9	56	3.0	5.73	3.7				
274.8	51	3.4	5.17	3.7				
302.6	46	3.5	4.69	3.7				
361.0	38	3.9	3.93	3.6				
346.7	39	3.3	8.25	3.7	A/F 401 - 80M/2C A/F 401 - 90S/2A	20	124	
396.0	34	3.7	7.22	3.7				
113.9	122	1.4	8.25	3.7	A401 - 100L/6A F401 - 100L/6A	31	124	
130.2	107	1.6	7.22	3.7				
164.1	85	2.0	5.73	3.7				
181.9	76	2.2	5.17	3.7				
200.3	69	2.3	4.69	3.7				
239.0	58	2.6	3.93	3.7				
259.3	54	2.8	3.63	3.7				
302.1	46	2.8	3.11	3.7				
372.5	37	3.2	2.52	3.6				
451.2	31	3.9	2.08	3.4				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm	
1.50	39.4 48.7	327 265	1.1 1.4	72.58 58.68	8.0 8.0	A/F 353 - 80M/2C A/F 353 - 90S/2A	30	122	
	28.5 30.8 35.9 42.4 44.4 49.2 53.4 56.5 64.5 69.9 77.6 84.1 97.8 121.0 145.6	483 446 383 324 310 280 258 243 213 197 177 163 141 114 94	1.0 1.1 1.3 1.5 1.6 1.8 1.9 1.9 2.2 2.3 2.6 2.8 3.1 3.4 3.9	49.88 46.04 39.59 33.50 32.01 28.89 26.59 25.13 22.03 20.31 18.30 16.88 14.52 11.74 9.75	8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 7.5 7.2	A352 - 90L/4A F352 - 90L/4A	34	122	
	50.2 57.3 62.1 72.2 85.4 89.4 99.0 107.6 113.8 129.8 140.8	262 230 212 182 154 147 133 123 116 102 94	1.4 1.6 1.7 2.0 2.4 2.5 2.8 3.0 3.0 3.5 3.7	56.95 49.88 46.04 39.59 33.50 32.01 28.89 26.59 25.13 22.03 20.31	8.0 8.0 8.0 8.0 8.0 8.0 8.0 7.8 7.7 7.4 7.3	A/F 352 - 80M/2C A/F 352 - 90S/2A	30	122	
	29.4 32.5 35.4 37.4 42.7 46.3 51.4 55.7 64.8 80.1 96.4 107.7 133.2 160.3	468 423 389 368 322 297 268 247 212 172 143 128 103 86	1.0 1.2 1.3 1.3 1.5 1.5 1.7 1.8 2.0 2.3 2.6 2.7 2.8 3.0	32.01 28.89 26.59 25.13 22.03 20.31 18.30 16.88 14.52 11.74 9.75 8.73 7.06 5.86	8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 7.8 7.4 7.0	A352 - 100L/6A F352 - 100L/6A	41	122	
	167.1 190.9 240.3 266.4 292.8 349.2 378.7 440.7 542.2 655.4 1089.8	83 73 58 52 47 40 37 32 26 21 13	1.2 1.4 1.7 1.9 2.0 2.3 2.5 2.5 2.7 2.8 3.1	8.50 7.44 5.91 5.33 4.85 4.07 3.75 3.22 2.62 2.17 1.30	2.5 2.5 2.5 2.4 2.4 2.3 2.2 2.1 2.0 1.9 1.6	A351 - 90L/4A F351 - 90L/4A	24	120	
	336.5 384.4 483.9 536.6 589.7 703.3 762.7 887.6	40 35 28 25 23 19 18 15	1.9 2.1 2.7 3.0 3.1 3.5 3.8 4.0	8.50 7.44 5.91 5.33 4.85 4.07 3.75 3.22	2.3 2.2 2.1 2.0 2.0 1.9 1.8 1.7	A/F 351 - 80M/2C A/F 351 - 90S/2A	20	120	

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm			
1.50	159.1	87	1.1	5.91	2.5	A351 - 100L/6A F351 - 100L/6A	31	120			
	176.3	79	1.3	5.33	2.5						
	194.0	72	1.3	4.85	2.5						
	231.1	60	1.5	4.07	2.5						
	250.7	55	1.6	3.75	2.5						
	291.7	48	1.7	3.22	2.4						
	358.9	39	1.8	2.62	2.3						
	433.8	32	1.9	2.17	2.1						
	647.6	21	2.8	1.45	1.9						
	721.4	19	2.1	1.30	1.8						
	45.9	299	0.9	30.91	6.6	A302 - 90L/4A F302 - 90L/4A	29	118			
	50.9	270	1.0	27.92	6.6						
	53.7	256	1.0	26.45	6.6						
	60.5	227	1.1	23.49	6.6						
	66.6	207	1.2	21.33	6.5						
	73.6	187	1.3	19.29	6.4						
	87.6	157	1.6	16.21	6.2						
	102.8	134	1.9	13.81	6.0						
	118.3	116	2.2	12.00	5.8						
	135.3	102	2.4	10.50	5.6						
	155.9	88	2.4	9.11	5.4						
	193.4	71	2.2	7.34	5.2						
254.4	54	3.0	5.58	4.8							
	74.6	177	1.2	38.33	6.4	A/F 302 - 80M/2C A/F 302 - 90S/2A	25	118			
	82.6	160	1.3	34.62	6.3						
	92.5	142	1.5	30.91	6.2						
	102.4	129	1.6	27.92	6.0						
	108.1	122	1.6	26.45	6.0						
	121.8	108	1.8	23.49	5.8						
	134.1	98	1.9	21.33	5.7						
	148.3	89	2.1	19.29	5.5						
	176.4	75	2.5	16.21	5.3						
	207.1	64	2.9	13.81	5.1						
	238.3	55	3.4	12.00	4.9						
	272.5	48	3.7	10.50	4.7						
	314.1	42	3.8	9.11	4.5						
	389.4	34	3.5	7.34	4.3						
59.3	222	0.9	48.22	6.6	A302 - 80M/2C F302 - 80M/2C	24	118				
	58.0	237	1.1	16.21	6.2	A302 - 100L/6A F302 - 100L/6A	36	118			
	68.1	202	1.2	13.81	6.0						
	78.3	176	1.4	12.00	5.8						
	89.6	154	1.6	10.50	5.6						
	103.2	133	1.6	9.11	5.4						
	128.0	107	1.5	7.34	5.2						
168.4	82	2.0	5.58	4.8							
	254.5	55	0.9	5.58	0.9	A301 - 90L/4A F301 - 90L/4A	22	116			
	279.5	50	0.9	5.08	0.8						
	332.6	42	1.1	4.27	0.8						
	389.0	36	1.3	3.65	0.8						
	449.4	31	1.3	3.16	0.8						
	514.5	27	1.1	2.76	0.8						
	548.3	25	1.2	2.59	0.7						
	696.1	20	1.3	2.04	0.7						
	966.0	14	1.7	1.47	0.6						
	367.7	37	1.0	7.78	0.8	A/F 301 - 80M/2C A/F 301 - 90S/2A	18	116			
	462.6	29	1.3	6.18	0.8						
	512.2	26	1.4	5.58	0.8						
	563.3	24	1.4	5.08	0.7						
	670.3	20	1.7	4.27	0.7						
	784.2	17	2.0	3.65	0.7						
	905.7	15	2.0	3.16	0.7						
	1035.5	13	1.7	2.76	0.6						
	1103.9	12	1.8	2.59	0.6						
	1403.0	10	2.0	2.04	0.6						
	1947.2	7	2.7	1.47	0.5						
	322.3	42	1.0	8.88	0.8				A301 - 80M/2C F301 - 80M/2C	17	116

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm			
1.50	70.3	196	1.0	20.19	4.4	A252 - 90L/4A F252 - 90L/4A	26	114			
	76.8	179	1.1	18.49	4.4						
	83.3	165	1.2	17.05	4.4						
	95.2	144	1.2	14.91	4.3						
	101.9	135	1.3	13.94	4.3						
	118.6	116	1.3	11.97	4.2						
	137.6	100	1.4	10.32	4.1						
	157.4	87	1.5	9.02	4.0						
	179.1	77	1.6	7.93	3.9						
	223.3	62	1.7	6.36	3.8						
	295.8	46	2.0	4.80	3.5						
	94.9	139	1.1	30.15	4.4				A/F 252 - 80M/2C A/F 252 - 90S/2A	22	114
	106.8	123	1.2	26.79	4.3						
	118.2	111	1.3	24.19	4.3						
	124.1	106	1.4	23.04	4.2						
	141.6	93	1.6	20.19	4.2						
	154.7	85	1.8	18.49	4.1						
	167.7	79	1.8	17.05	4.0						
	191.8	69	1.9	14.91	3.9						
	205.2	64	2.0	13.94	3.9						
	239.0	55	2.0	11.97	3.7						
	277.2	48	2.2	10.32	3.6						
	317.0	42	2.3	9.02	3.5						
	360.6	37	2.6	7.93	3.4						
	449.4	29	2.7	6.36	3.2						
	596.1	22	3.2	4.80	3.0						
	91.1	151	0.9	10.32	4.4	A252 - 100L/6A F252 - 100L/6A	33	114			
	104.2	132	1.0	9.02	4.3						
	118.5	116	1.1	7.93	4.2						
	147.7	93	1.1	6.36	4.1						
	195.9	70	1.4	4.80	3.9						
	144.8	99	0.9	9.81	2.8	A 202 G - 90L/4A F 202 G - 90L/4A	19	112			
	162.3	88	1.0	8.75	2.8						
	181.8	79	1.0	7.81	2.8						
	201.7	71	1.2	7.04	2.8						
	221.5	65	1.3	6.41	2.8						
	247.4	58	1.3	5.74	2.8						
	275.2	52	1.6	5.16	2.8						
	306.7	47	1.5	4.63	2.8						
	338.9	42	1.5	4.19	2.8						
372.7	38	1.5	3.81	2.8							
412.8	35	1.6	3.44	2.8							
438.3	33	1.7	3.24	2.8							
481.4	30	1.7	2.95	2.8							
518.2	28	1.7	2.74	2.8							
565.7	25	1.7	2.51	2.8							
614.7	23	1.8	2.31	2.8							
1.85	3.6	4572	1.1	260.15	30.0	A703 - 100L/6 F703 - 100L/6	131	138			
	4.1	4066	1.2	231.34	30.0						
	4.5	3652	1.4	207.78	30.0						
	5.0	3331	1.5	189.54	30.0						
	5.5	3042	1.6	173.11	30.0						
	6.1	2732	1.8	155.48	30.0						
	6.5	2547	2.0	144.94	30.0						
	7.4	2256	2.2	128.35	30.0						
	8.0	2087	2.4	118.75	30.0						
	8.7	1906	2.6	108.46	30.0						
	9.4	1764	2.8	100.38	30.0						
	10.5	1581	3.2	89.95	30.0						
	11.3	1465	3.4	83.35	30.0						
	12.8	1295	3.9	73.70	30.0						
	5.8	2858	1.3	242.67	22.0	A603 - 90L/4 F603 - 90L/4	90	134			
	6.5	2539	1.4	215.56	22.0						
	7.3	2289	1.5	194.31	22.0						
	7.8	2133	1.6	181.13	22.0						
	8.8	1895	1.8	160.90	22.0						
	9.8	1691	2.1	143.57	22.0						

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm			
1.85	4.4	3788	0.9	215.56	22.0	A603 - 100L/6 F603 - 100L/6	101	134			
	4.9	3415	1.0	194.31	22.0						
	5.2	3183	1.1	181.13	22.0						
	5.9	2828	1.2	160.90	22.0						
	6.6	2523	1.4	143.57	22.0						
	7.0	2359	1.5	134.25	22.0						
	7.8	2127	1.6	121.02	22.0						
	9.4	1761	2.0	100.21	22.0						
	10.1	1645	2.1	93.60	22.0						
	11.2	1483	2.4	84.37	22.0						
	11.8	1406	2.5	79.98	22.0						
	13.5	1228	2.9	69.87	22.0						
	18.6	914	3.6	50.91	22.0	A602 - 100L/6 F602 - 100L/6	101	134			
	20.9	813	4.1	45.27	22.0						
	8.7	1911	0.9	162.21	18.0	A503 - 90L/4 F503 - 90L/4	62	130			
	9.1	1820	1.0	154.52	18.0						
	9.9	1673	1.1	142.00	18.0						
	11.3	1463	1.2	124.25	18.0						
	12.5	1326	1.4	112.61	18.0						
	14.4	1152	1.6	97.80	18.0						
	16.5	1005	1.8	85.33	18.0						
	17.9	926	1.9	78.64	18.0						
	19.8	839	2.1	71.27	18.0						
	25.1	662	2.4	56.21	18.0						
	9.7	1719	1.0	97.80	18.0	A503 - 100L/6 F503 - 100L/6	73	130			
	11.1	1500	1.2	85.33	18.0						
	12.0	1382	1.3	78.64	18.0						
	13.3	1253	1.4	71.27	18.0						
	16.8	988	1.6	56.21	18.0						
	28.9	587	2.7	48.77	18.0	A502 - 90L/4 F502 - 90L/4	62	130			
	32.5	521	3.1	43.32	18.0						
	36.0	472	3.4	39.21	18.0						
	40.5	419	3.8	34.83	18.0						
	19.4	875	1.8	48.77	18.0	A502 - 100L/6 F502 - 100L/6	73	130			
	21.8	778	2.1	43.32	18.0						
	24.1	704	2.3	39.21	18.0						
	27.1	625	2.6	34.83	18.0						
	29.9	567	2.8	31.57	18.0						
	33.4	507	3.2	28.26	18.0						
	35.0	484	3.3	26.98	18.0						
	40.8	415	3.9	23.14	18.0						
	164.8	104	3.4	8.56	4.0				A501 - 90L/4 F501 - 90L/4	35	128
	185.5	92	3.8	7.60	4.0						
	110.5	154	2.3	8.56	4.0	A501 - 100L/6 F501 - 100L/6	46	128			
	124.3	136	2.6	7.60	4.0						
	153.2	111	3.1	6.17	4.0						
	168.3	101	3.3	5.62	4.0						
	199.6	85	3.8	4.73	4.0						
	20.7	804	1.1	68.25	12.0	A403 - 90L/4 F403 - 90L/4	45	126			
	25.7	646	1.3	54.81	12.0						
	28.4	585	1.5	49.64	12.0						
	28.4	585	1.5	49.64	12.0	A403 - 100L/6 F403 - 100L/6	56	126			
	31.1	546	1.6	45.38	12.0	A402 - 90L/4 F402 - 90L/4	45	126			
	35.5	478	1.8	39.72	12.0						
	38.7	438	1.8	36.44	12.0						
	44.8	379	2.2	31.50	12.0						
	48.8	348	2.3	28.89	12.0						
	55.7	304	2.8	25.30	12.0						
	61.5	276	3.1	22.91	12.0						
	70.7	240	3.5	19.94	12.0						
	81.2	209	4.0	17.37	12.0						
	97.2	174	4.0	14.50	12.0						



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm
1.85	20.8	814	1.0	45.38	12.0	A402 - 100L/6 F402 - 100L/6	56	126
	23.8	713	1.2	39.72	12.0			
	25.9	654	1.2	36.44	12.0			
	30.0	565	1.5	31.50	12.0			
	32.7	518	1.5	28.89	12.0			
	37.4	454	1.9	25.30	12.0			
	41.3	411	2.1	22.91	12.0			
	47.4	358	2.4	19.94	12.0			
	54.4	312	2.7	17.37	12.0			
	59.0	287	2.8	16.01	12.0			
	65.2	260	2.7	14.50	12.0			
	75.9	223	3.1	12.44	12.0			
	82.5	206	3.2	11.46	12.0			
	102.7	165	3.6	9.20	12.0			
	113.4	150	4.0	8.33	12.0			
	170.9	100	1.7	8.25	3.7	A401 - 90L/4 F401 - 90L/4	24	124
	195.3	88	1.9	7.22	3.7			
	246.2	70	2.4	5.73	3.7			
	272.9	63	2.7	5.17	3.7			
	300.5	57	2.8	4.69	3.7			
	358.5	48	3.1	3.93	3.6			
	389.0	44	3.4	3.63	3.5			
	453.2	38	3.4	3.11	3.3			
	558.7	31	3.9	2.52	3.1			
	114.5	150	1.1	8.25	3.7			
	130.8	131	1.3	7.22	3.7			
	165.0	104	1.6	5.73	3.7			
	182.9	94	1.8	5.17	3.7			
	201.4	85	1.9	4.69	3.7			
	240.3	71	2.1	3.93	3.7			
	260.7	66	2.3	3.63	3.7			
	303.8	56	2.3	3.11	3.7			
	374.4	46	2.6	2.52	3.5			
	453.6	38	3.2	2.08	3.4			
	720.0	24	3.4	1.31	2.9			
	35.6	476	1.0	39.59	8.0	A352 - 90L/4 F352 - 90L/4	34	122
	42.1	403	1.2	33.50	8.0			
	44.0	385	1.3	32.01	8.0			
	48.8	348	1.4	28.89	8.0			
	53.0	320	1.5	26.59	8.0			
	56.1	302	1.6	25.13	8.0			
	64.0	265	1.8	22.03	8.0			
	69.4	244	1.9	20.31	8.0			
	77.0	220	2.1	18.30	8.0			
	83.6	203	2.2	16.88	8.0			
	97.1	175	2.5	14.52	7.7			
	120.1	141	2.8	11.74	7.4			
	144.6	117	3.2	9.75	7.0			
	161.5	105	3.2	8.73	6.8			
	199.8	85	3.4	7.06	6.4			
	240.5	71	3.7	5.86	6.1			
	32.7	519	0.9	28.89	8.0	A352 - 100L/6 F352 - 100L/6	45	122
	35.5	477	1.0	26.59	8.0			
	37.6	451	1.0	25.13	8.0			
	42.9	395	1.2	22.03	8.0			
	46.5	365	1.3	20.31	8.0			
	51.6	328	1.4	18.30	8.0			
	56.0	303	1.5	16.88	8.0			
	65.1	261	1.7	14.52	8.0			
	80.5	211	1.9	11.74	8.0			
	96.9	175	2.1	9.75	7.8			
	108.2	157	2.2	8.73	7.6			
	133.9	127	2.3	7.06	7.2			
	161.2	105	2.5	5.86	6.9			

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
1.85	165.9	103	1.0	8.50	2.5	A351 - 90L/4 F351 - 90L/4	24	120
	189.5	90	1.1	7.44	2.5			
	238.6	72	1.4	5.91	2.4			
	264.5	65	1.5	5.33	2.4			
	290.7	59	1.6	4.85	2.3			
	346.4	49	1.8	4.07	2.2			
	376.0	46	2.0	3.75	2.2			
	437.9	39	2.0	3.22	2.1			
	538.4	32	2.2	2.62	2.1			
	650.8	26	2.3	2.17	1.9			
971.3	18	3.4	1.45	1.7				
1082.1	16	2.5	1.30	1.6				
	159.9	107	0.9	5.91	2.5	A351 - 100L/6 F351 - 100L/6	35	120
	177.3	97	1.0	5.33	2.5			
	194.8	88	1.1	4.85	2.5			
	232.2	74	1.2	4.07	2.5			
	252.0	68	1.3	3.75	2.4			
	293.5	58	1.4	3.22	2.3			
	360.8	47	1.5	2.62	2.2			
	436.2	39	1.5	2.17	2.1			
	651.0	26	2.3	1.45	1.9			
	725.2	24	1.7	1.30	1.8			
	60.0	283	0.9	23.49	6.1	A302 - 90L/4 F302 - 90L/4	29	118
	66.1	257	1.0	21.33	6.1			
	73.1	232	1.1	19.29	6.0			
	87.0	195	1.3	16.21	5.9			
	102.1	166	1.5	13.81	5.7			
	117.5	144	1.7	12.00	5.6			
	134.3	126	1.9	10.50	5.4			
	154.8	110	1.9	9.11	5.3			
	192.1	88	1.8	7.34	5.0			
	252.6	67	2.4	5.58	4.7			
	68.4	248	1.0	13.81	6.0	A302 - 100L/6 F302 - 100L/6	40	118
	78.8	215	1.2	12.00	5.9			
	90.0	188	1.3	10.50	5.8			
	103.7	164	1.3	9.11	5.7			
	128.7	132	1.2	7.34	5.5			
	169.3	100	1.6	5.58	5.2			
	386.6	44	1.0	3.65	0.8	A301 - 90L/4 F301 - 90L/4	22	116
	446.5	38	1.0	3.16	0.7			
	510.5	34	0.9	2.76	0.7			
	544.2	31	1.0	2.59	0.7			
	691.7	25	1.0	2.04	0.7			
	960.0	18	1.4	1.47	0.6			
	76.3	222	0.9	18.49	4.0	A252 - 90L/4 F252 - 90L/4	26	114
	82.7	205	0.9	17.05	4.0			
	94.6	179	0.9	14.91	4.0			
	101.1	168	1.0	13.94	4.0			
	117.8	144	1.0	11.97	4.0			
	136.6	124	1.1	10.32	3.9			
	156.3	109	1.2	9.02	3.8			
	177.8	95	1.3	7.93	3.8			
	221.7	77	1.4	6.36	3.6			
	293.8	58	1.6	4.80	3.4			
	148.6	114	0.9	6.36	3.9	A252 - 100L/6 F252 - 100L/6	37	114
	196.9	86	1.1	4.80	3.7			
2.20	4.5	4342	1.2	207.78	30.0	A703 - 112M/6A F703 - 112M/6A	135	138
	5.0	3961	1.3	189.54	30.0			
	5.5	3618	1.4	173.11	30.0			
	6.1	3249	1.5	155.48	30.0			
	6.5	3029	1.7	144.94	30.0			
	7.4	2682	1.9	128.35	30.0			
	8.0	2482	2.0	118.75	30.0			
	8.7	2267	2.2	108.46	30.0			
	9.4	2098	2.4	100.38	30.0			
	10.5	1880	2.7	89.95	30.0			
	11.3	1742	2.9	83.35	30.0			
	12.8	1540	3.2	73.70	30.0			
	14.0	1407	3.6	67.31	30.0			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm			
2.20	5.4	3644	1.4	260.15	30.0	A703 - 100L/4A F703 - 100L/4A	128	138			
	6.1	3240	1.5	231.34	30.0						
	6.8	2910	1.7	207.78	30.0						
	7.4	2655	1.9	189.54	30.0						
	8.1	2425	2.1	173.11	30.0						
	9.1	2178	2.3	155.48	30.0						
	9.7	2030	2.5	144.94	30.0						
	11.0	1798	2.8	128.35	30.0						
	11.9	1663	3.0	118.75	30.0						
	13.0	1519	3.3	108.46	30.0						
14.0	1406	3.6	100.38	30.0							
15.7	1260	4.0	89.95	30.0							
	11.8	1604	1.7	242.67	22.0	A603 - 90L/2A F603 - 90L/2A	91	134			
	13.3	1425	1.8	215.56	22.0						
	14.7	1285	2.0	194.31	22.0						
	15.8	1198	2.2	181.13	22.0						
	17.8	1064	2.5	160.90	22.0						
	19.9	949	2.8	143.57	22.0						
	6.6	3000	1.2	143.57	22.0	A603 - 112M/6A F603 - 112M/6A	106	134			
	7.0	2806	1.2	134.25	22.0						
	7.8	2529	1.4	121.02	22.0						
	9.4	2094	1.7	100.21	22.0						
	10.1	1956	1.8	93.60	22.0						
	11.2	1763	2.0	84.37	22.0						
	11.8	1672	2.1	79.98	22.0						
	13.5	1460	2.4	69.87	22.0						
	5.8	3399	1.1	242.67	22.0	A603 - 100L/4A F603 - 100L/4A	98	134			
	6.5	3019	1.2	215.56	22.0						
	7.3	2722	1.3	194.31	22.0						
	7.8	2537	1.4	181.13	22.0						
	8.8	2254	1.6	160.90	22.0						
	9.8	2011	1.7	143.57	22.0						
	10.5	1880	1.9	134.25	22.0						
	11.7	1695	2.1	121.02	22.0						
	14.1	1404	2.5	100.21	22.0						
	15.1	1311	2.7	93.60	22.0						
	16.7	1182	3.0	84.37	22.0						
	17.6	1120	3.1	79.98	22.0						
	20.2	979	3.6	69.87	22.0						
	18.6	1087	3.0	50.91	22.0				A602 - 112M/6A F602 - 112M/6A	106	134
	20.9	966	3.4	45.27	22.0						
	23.2	871	3.8	40.81	22.0						
	24.9	811	3.5	38.00	22.0						
	113.9	179	3.6	8.30	5.0	A601 - 112M/6A F601 - 112M/6A	63	132			
	126.8	161	4.0	7.45	5.0						
	14.7	1288	1.0	194.86	18.0	A503 - 90L/2A F503 - 90L/2A	63	130			
	16.0	1183	1.1	178.98	18.0						
	17.6	1072	1.3	162.21	18.0						
	18.5	1022	1.3	154.52	18.0						
	20.1	939	1.4	142.00	18.0						
	23.0	821	1.6	124.25	18.0						
	25.4	745	1.8	112.61	18.0						
	29.2	647	2.1	97.80	18.0						
	33.5	564	2.4	85.33	18.0						
	36.4	520	2.6	78.64	18.0						
	40.1	471	2.9	71.27	18.0						
	50.9	372	3.2	56.21	18.0						
	13.3	1490	1.2	71.27	18.0				A503 - 112M/6A F503 - 112M/6A	78	130
	16.8	1175	1.4	56.21	18.0						
	11.3	1740	1.0	124.25	18.0	A503 - 100L/4A F503 - 100L/4A	70	130			
	12.5	1577	1.1	112.61	18.0						
	14.4	1370	1.3	97.80	18.0						
	16.5	1195	1.5	85.33	18.0						
	17.9	1101	1.6	78.64	18.0						
	19.8	998	1.8	71.27	18.0						
	25.1	787	2.0	56.21	18.0						

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm
2.20	58.6	330	3.6	48.77	18.0	A502 - 90L/2A F502 - 90L/2A	63	130
	19.4	1041	1.5	48.77	18.0	A502 - 112M/6A F502 - 112M/6A	78	130
	21.8	925	1.7	43.32	18.0			
	24.1	837	1.9	39.21	18.0			
	27.1	743	2.2	34.83	18.0			
	29.9	674	2.4	31.57	18.0			
	33.4	603	2.7	28.26	18.0			
	35.0	576	2.8	26.98	18.0			
	40.8	494	3.2	23.14	18.0			
	43.6	463	3.5	21.69	18.0			
	48.1	420	3.8	19.66	18.0			
	50.2	401	3.7	18.81	18.0			
	28.9	698	2.3	48.77	18.0	A502 - 100L/4A F502 - 100L/4A	70	130
	32.5	620	2.6	43.32	18.0			
	36.0	561	2.9	39.21	18.0			
	40.5	498	3.2	34.83	18.0			
	44.7	452	3.5	31.57	18.0			
	49.9	404	4.0	28.26	18.0			
	110.5	185	1.9	8.56	4.0	A501 - 112M/6A F501 - 112M/6A	51	128
	124.3	164	2.1	7.60	4.0			
	153.2	133	2.6	6.17	4.0			
	168.3	121	2.7	5.62	4.0			
	199.6	102	3.1	4.73	4.0			
	232.8	88	3.7	4.06	4.0			
	250.1	81	3.8	3.78	4.0			
	164.8	124	2.8	8.56	4.0	A501 - 100L/4A F501 - 100L/4A	43	128
	185.5	110	3.2	7.60	4.0			
	228.6	89	3.8	6.17	4.0			
	33.3	568	1.1	85.91	12.0	A403 - 90L/2A F403 - 90L/2A	46	126
	41.9	451	1.4	68.25	12.0			
	52.2	362	1.8	54.81	12.0			
	57.6	328	1.9	49.64	12.0			
	25.7	768	1.1	54.81	12.0	A403 - 100L/4A F403 - 100L/4A	53	126
	28.4	695	1.2	49.64	12.0			
	63.0	307	2.1	45.38	12.0	A402 - 90L/2A F402 - 90L/2A	46	126
	72.0	268	2.4	39.72	12.0			
	78.5	246	2.4	36.44	12.0			
	90.8	213	3.0	31.50	12.0			
	99.0	195	3.1	28.89	12.0			
	113.1	171	3.7	25.30	12.0			
	124.8	155	4.1	22.91	12.0			
	30.0	672	1.3	31.50	12.0	A402 - 112M/6A F402 - 112M/6A	56	126
	32.7	617	1.3	28.89	12.0			
	37.4	540	1.6	25.30	12.0			
	41.3	489	1.7	22.91	12.0			
	47.4	426	2.0	19.94	12.0			
	54.4	371	2.2	17.37	12.0			
59.0	342	2.3	16.01	12.0				
65.2	309	2.3	14.50	12.0				
75.9	266	2.6	12.44	12.0				
82.5	245	2.7	11.46	12.0				
102.7	196	3.1	9.20	12.0				
113.4	178	3.4	8.33	12.0				
130.9	154	3.6	7.22	12.0				
31.1	649	1.3	45.38	12.0	A402 - 100L/4A F402 - 100L/4A			
35.5	568	1.5	39.72	12.0				
38.7	521	1.5	36.44	12.0				
44.8	451	1.9	31.50	12.0				
48.8	413	1.9	28.89	12.0				
55.7	362	2.3	25.30	12.0				
61.5	328	2.6	22.91	12.0				
70.7	285	3.0	19.94	12.0				
81.2	249	3.3	17.37	12.0				
88.1	229	3.5	16.01	12.0				
97.2	207	3.4	14.50	12.0				
113.3	178	3.9	12.44	12.0				
123.1	164	4.0	11.46	12.0				



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
2.20	346.7	57	2.2	8.25	3.6	A401 - 90L/2A F401 - 90L/2A	25	124
	396.0	50	2.6	7.22	3.4			
	499.4	40	3.2	5.73	3.2			
	553.5	36	3.6	5.17	3.1			
	609.5	32	3.7	4.69	3.0			
	165.0	124	1.4	5.73	3.7	A401 - 112M/6A F401 - 112M/6A	40	124
	182.9	111	1.5	5.17	3.7			
	201.4	101	1.6	4.69	3.7			
	240.3	85	1.8	3.93	3.7			
	260.7	78	1.9	3.63	3.7			
	303.8	67	1.9	3.11	3.7			
	374.4	54	2.2	2.52	3.5			
	453.6	45	2.7	2.08	3.3			
	720.0	28	2.8	1.31	2.9			
	170.9	119	1.4	8.25	3.7	A401 - 100L/4A F401 - 100L/4A	32	124
	195.3	104	1.6	7.22	3.7			
	246.1	83	2.1	5.73	3.7			
	272.7	75	2.3	5.17	3.7			
	300.6	68	2.4	4.69	3.7			
	358.5	57	2.6	3.93	3.5			
	389.0	52	2.9	3.63	3.4			
	453.2	45	2.9	3.11	3.3			
	558.7	36	3.3	2.52	3.1			
	676.8	30	4.0	2.08	2.9			
	57.3	337	1.1	49.88	8.0	A352 - 90L/2A F352 - 90L/2A	35	122
	62.1	311	1.2	46.04	8.0			
	72.2	268	1.4	39.59	8.0			
	85.4	226	1.6	33.50	7.8			
89.4	216	1.7	32.01	7.7				
99.0	195	1.9	28.89	7.6				
107.6	180	2.0	26.59	7.4				
113.8	170	2.1	25.13	7.3				
129.8	149	2.4	22.03	7.1				
140.8	137	2.5	20.31	7.0				
156.3	124	2.8	18.30	6.8				
169.5	114	3.0	16.88	6.7				
197.0	98	3.3	14.52	6.4				
243.7	79	3.7	11.74	6.1				
51.6	391	1.2	18.30	8.0	A352 - 112M/6A F352 - 112M/6A	50	122	
56.0	360	1.2	16.88	8.0				
65.1	310	1.4	14.52	8.0				
80.5	250	1.6	11.74	7.8				
96.9	208	1.8	9.75	7.6				
108.2	186	1.8	8.73	7.4				
133.9	151	1.9	7.06	7.1				
161.2	125	2.1	5.86	6.7				
44.0	458	1.1	32.01	8.0	A352 - 100L/4A F352 - 100L/4A	42	122	
48.8	413	1.2	28.89	8.0				
53.0	380	1.3	26.59	8.0				
56.1	359	1.3	25.13	8.0				
64.0	315	1.5	22.03	8.0				
69.4	291	1.6	20.31	8.0				
77.0	262	1.8	18.30	7.9				
83.5	241	1.9	16.88	7.8				
97.1	208	2.1	14.52	7.5				
120.1	168	2.3	11.74	7.2				
144.6	139	2.7	9.75	6.9				
161.5	125	2.7	8.73	6.7				
199.8	101	2.9	7.06	6.3				
240.5	84	3.1	5.86	6.0				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm			
2.20	336.5	59	1.3	8.50	2.2	A351 - 90L/2A F351 - 90L/2A	25	120			
	384.2	51	1.5	7.44	2.1						
	484.0	41	1.8	5.91	2.0						
	536.3	37	2.0	5.33	2.0						
	590.2	33	2.1	4.85	1.9						
	703.3	28	2.4	4.07	1.8						
	762.7	26	2.6	3.75	1.8						
	887.6	22	2.7	3.22	1.7						
	1092.0	18	2.9	2.62	1.6						
	1320.0	15	3.0	2.17	1.5						
	2194.9	9	3.3	1.30	1.3						
	252.0	81	1.1	3.75	2.4				A351 - 112M/6A F351 - 112M/6A	40	120
	293.3	69	1.2	3.22	2.3						
	360.8	56	1.2	2.62	2.2						
	436.2	47	1.3	2.17	2.1						
	651.0	31	1.9	1.45	1.9						
	725.2	28	1.4	1.30	1.8						
	238.6	85	1.2	5.91	2.4	A351 - 100L/4A F351 - 100L/4A	32	120			
	264.5	77	1.3	5.33	2.3						
	290.7	70	1.4	4.85	2.3						
	346.4	59	1.5	4.07	2.2						
	376.0	54	1.7	3.75	2.1						
	437.9	47	1.7	3.22	2.1						
	538.2	38	1.8	2.62	1.9						
	649.8	31	1.9	2.17	1.8						
	972.4	21	2.9	1.45	1.6						
	1084.6	19	2.1	1.30	1.6						
	102.4	189	1.1	27.92	5.5				A302 - 90L/2A F302 - 90L/2A	30	118
	108.1	179	1.1	26.45	5.5						
	121.7	159	1.2	23.49	5.4						
	134.1	144	1.3	21.33	5.3						
	148.2	130	1.4	19.29	5.2						
	176.4	110	1.7	16.21	5.0						
	207.1	93	2.0	13.81	4.8						
	238.3	81	2.3	12.00	4.7						
	272.5	71	2.5	10.50	4.5						
	314.1	62	2.6	9.11	4.4						
	389.4	50	2.4	7.34	4.1						
	512.4	38	3.2	5.58	3.9						
	169.3	119	1.3	5.58	5.0	A302 - 112M/6A F302 - 112M/6A	45	118			
	73.1	276	0.9	19.29	5.6	A302 - 100L/4A F302 - 100L/4A	37	118			
	87.0	232	1.1	16.21	5.6						
	102.1	198	1.3	13.81	5.5						
	117.5	172	1.5	12.00	5.3						
	134.3	150	1.6	10.50	5.2						
	154.8	130	1.6	9.11	5.1						
	192.1	105	1.5	7.34	4.9						
	252.7	80	2.0	5.58	4.6						
670.3	29	1.1	4.27	0.7	A301 - 90L/2A F301 - 90L/2A				30	116	
784.2	25	1.3	3.65	0.6							
905.7	22	1.4	3.16	0.6							
1035.5	19	1.2	2.76	0.6							
1103.9	18	1.3	2.59	0.6							
1403.0	14	1.3	2.04	0.6							
1947.2	10	1.8	1.47	0.5							
141.6	136	1.1	20.19	3.7	A252 - 90L/2A F252 - 90L/2A	27	114				
154.7	125	1.2	18.49	3.7							
167.7	115	1.2	17.05	3.6							
191.8	101	1.3	14.91	3.6							
205.2	94	1.4	13.94	3.6							
239.0	81	1.3	11.97	3.5							
277.2	70	1.5	10.32	3.4							
317.0	61	1.6	9.02	3.3							
360.6	54	1.7	7.93	3.2							
449.4	43	1.8	6.36	3.1							
596.1	32	2.2	4.80	2.9							

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm
2.20	136.7	148	0.9	10.32	3.6	A252 - 100L/4A F252 - 100L/4A	34	114
	156.3	129	1.0	9.02	3.6			
	177.8	113	1.1	7.93	3.6			
	221.7	91	1.2	6.36	3.5			
	293.8	69	1.4	4.80	3.3			
3.00	4.6	5802	1.4	205.73	55.0	A903 - 132S/6B F903 - 132S/6B	218	140
	5.1	5235	1.5	185.64	55.0			
	6.2	4345	1.8	154.07	55.0			
	6.9	3931	2.0	139.41	55.0			
	7.4	3620	2.2	128.36	55.0			
	8.2	3266	2.4	115.83	55.0			
	9.1	2944	2.7	104.41	55.0			
	9.9	2711	3.0	96.13	55.0			
	11.0	2437	3.3	86.43	55.0			
	12.1	2231	3.6	79.13	55.0			
	13.4	2013	4.0	71.40	55.0			
	17.1	1572	3.2	55.75	30.0	A703 - 132S/6B F703 - 132S/6B	151	138
	20.9	1288	3.9	45.67	30.0			
	6.1	4385	1.1	155.48	30.0	A/F 703 - 112M/6 A/F 703 - 132S/6B	151	138
	6.6	4087	1.2	144.94	30.0			
	7.4	3620	1.4	128.35	30.0			
	8.0	3349	1.5	118.75	30.0			
	8.8	3058	1.6	108.46	30.0			
	9.5	2831	1.8	100.38	30.0			
	10.6	2537	2.0	89.95	30.0			
	11.5	2350	2.1	83.35	30.0			
	13.0	2078	2.4	73.70	30.0			
	14.2	1898	2.6	67.31	30.0			
	5.0	5345	0.9	189.54	30.0			
	5.5	4882	1.0	173.11	30.0			
	5.4	4969	1.0	260.15	30.0	A703 - 100L/4B F703 - 100L/4B	131	138
	6.1	4419	1.1	231.34	30.0			
	6.8	3969	1.3	207.78	30.0			
	7.4	3620	1.4	189.54	30.0			
	8.1	3306	1.5	173.11	30.0			
	9.1	2970	1.7	155.48	30.0			
	9.7	2768	1.8	144.94	30.0			
	11.0	2451	2.0	128.35	30.0			
	11.9	2268	2.2	118.75	30.0			
	13.0	2072	2.4	108.46	30.0			
	14.0	1917	2.6	100.38	30.0			
	15.7	1718	2.9	89.95	30.0			
16.9	1592	3.1	83.35	30.0				
19.1	1408	3.6	73.70	30.0				
20.9	1286	3.9	67.31	30.0				
11.1	2321	1.6	260.15	30.0	A703 - 100L/2A F703 - 100L/2A	128	138	
12.5	2064	1.8	231.34	30.0				
13.9	1854	2.0	207.78	30.0				
15.2	1691	2.2	189.54	30.0				
16.7	1545	2.4	173.11	30.0				
18.6	1387	2.7	155.48	30.0				
19.9	1293	2.9	144.94	30.0				
22.5	1145	3.3	128.35	30.0				
24.3	1060	3.5	118.75	30.0				
26.6	968	3.9	108.46	30.0				
21.4	1287	3.9	44.67	30.0	A702 - 132S/6B F702 - 132S/6B	151	138	
17.1	1572	2.2	55.75	22.0	A603 - 132S/6B F603 - 132S/6B	121	134	
9.5	2826	1.2	100.21	22.0	A/F 603 - 112M/6 A/F 603 - 132S/6B	121	134	
10.2	2640	1.3	93.60	22.0				
11.3	2379	1.5	84.37	22.0				
11.9	2255	1.6	79.98	22.0				
13.7	1970	1.8	69.87	22.0				
7.1	3786	0.9	134.25	22.0	A603 - 132S/6B F603 - 132S/6B	121	134	
7.9	3413	1.0	121.02	22.0				

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
3.00	7.3	3711	0.9	194.31	22.0	A603 - 100L/4B F603 - 100L/4B	101	134
	7.8	3460	1.0	181.13	22.0			
	8.8	3073	1.1	160.90	22.0			
	9.8	2742	1.3	143.57	22.0			
	10.5	2564	1.4	134.25	22.0			
	11.7	2311	1.5	121.02	22.0			
	14.1	1914	1.8	100.21	22.0			
	15.1	1788	2.0	93.60	22.0			
	16.7	1611	2.2	84.37	22.0			
	17.6	1528	2.3	79.98	22.0			
	20.2	1334	2.6	69.87	22.0			
	11.9	2165	1.2	242.67	22.0			
	13.4	1923	1.4	215.56	22.0			
	14.9	1734	1.5	194.31	22.0			
	16.0	1616	1.6	181.13	22.0			
	18.0	1436	1.8	160.90	22.0			
	20.1	1281	2.0	143.57	22.0			
	21.5	1198	2.2	134.25	22.0			
	23.9	1080	2.4	121.02	22.0			
	28.8	894	2.9	100.21	22.0			
	30.9	835	3.1	93.60	22.0			
	34.3	753	3.5	84.37	22.0			
	36.1	714	3.7	79.98	22.0			
	18.8	1466	2.3	50.91	22.0	A/F 602 - 112M/6 A/F 602 - 132S/6B	121	134
	21.1	1304	2.5	45.27	22.0			
	23.4	1175	2.8	40.81	22.0			
	25.1	1094	2.6	38.00	22.0			
	28.3	973	3.3	33.79	22.0			
	31.5	874	3.7	30.35	22.0			
	33.7	817	4.0	28.36	22.0			
	27.7	993	3.3	50.91	22.0	A602 - 100L/4B F602 - 100L/4B	101	134
	31.1	883	3.7	45.27	22.0			
	37.1	741	3.8	38.00	22.0			
	115.1	242	2.7	8.30	5.0	A/F 601 - 112M/6 A/F 601 - 132S/6B	78	132
	128.1	217	3.0	7.45	5.0			
	155.2	179	3.6	6.15	5.0			
	183.7	151	4.1	5.20	5.0			
	169.9	164	4.0	8.30	5.0	A601 - 100L/4B F601 - 100L/4B	58	132
	17.0	1585	1.0	56.21	18.0	A503 - 132S/6B F503 - 132S/6B	93	130
	14.4	1868	1.0	97.80	18.0	A503 - 100L/4B F503 - 100L/4B	73	130
	16.5	1630	1.1	85.33	18.0			
	17.9	1502	1.2	78.64	18.0			
19.8	1361	1.3	71.27	18.0				
25.1	1074	1.5	56.21	18.0				
23.3	1109	1.2	124.25	18.0	A503 - 100L/2A F503 - 100L/2A	70	130	
25.7	1005	1.3	112.61	18.0				
29.5	873	1.5	97.80	18.0				
33.9	761	1.8	85.33	18.0				
36.7	702	1.9	78.64	18.0				
40.5	636	2.1	71.27	18.0				
51.4	501	2.4	56.21	18.0				
85.2	323	3.4	11.20	17.5				A502 - 132S/6B F502 - 132S/6B
106.0	259	3.5	9.01	16.5				
117.0	235	3.4	8.16	16.1				
126.5	217	3.7	7.55	15.7				



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
3.00	19.6	1404	1.1	48.77	18.0	A/F 502 - 112M/6 A/F 502 - 132S/6B	93	130
	22.0	1248	1.3	43.32	18.0			
	24.4	1129	1.4	39.21	18.0			
	27.4	1003	1.6	34.83	18.0			
	30.3	909	1.8	31.57	18.0			
	33.8	814	2.0	28.26	18.0			
	35.4	777	2.1	26.98	18.0			
	41.3	666	2.4	23.14	18.0			
	44.0	625	2.6	21.69	18.0			
	48.6	566	2.8	19.66	18.0			
	50.8	542	2.8	18.81	18.0			
	56.6	486	3.1	16.86	18.0			
	63.1	436	3.4	15.13	18.0			
	69.7	395	3.5	13.71	18.0			
		28.9	951	1.7	48.77			
	32.5	845	1.9	43.32	18.0			
	36.0	765	2.1	39.21	18.0			
	40.5	679	2.4	34.83	18.0			
	44.7	616	2.6	31.57	18.0			
	49.9	551	2.9	28.26	18.0			
	52.3	526	3.0	26.98	18.0			
	60.9	451	3.5	23.14	18.0			
	65.0	423	3.8	21.69	18.0			
	59.3	445	2.7	48.77	18.0	A502 - 100L/2A F502 - 100L/2A	70	130
	66.7	395	3.0	43.32	18.0			
	73.7	358	3.4	39.21	18.0			
	83.0	318	3.8	34.83	17.6			
	111.6	249	1.4	8.56	4.0	A/F 501 - 112M/6 A/F 501 - 132S/6B	66	128
	125.7	221	1.6	7.60	4.0			
	154.9	179	1.9	6.17	4.0			
	170.1	163	2.0	5.62	4.0			
	201.8	138	2.3	4.73	4.0			
	235.3	118	2.7	4.06	4.0			
	252.8	110	2.8	3.78	4.0			
	289.4	96	3.2	3.30	4.0			
	369.7	75	3.7	2.58	4.0			
	164.7	169	2.1	8.56	4.0			
	185.5	150	2.3	7.60	4.0			
	228.6	122	2.8	6.17	4.0			
	251.1	111	3.0	5.62	4.0			
	297.9	93	3.4	4.73	4.0			
	337.6	80	3.3	8.56	4.0	A501 - 100L/2A F501 - 100L/2A	43	128
	380.3	71	3.7	7.60	4.0			
	52.7	489	1.3	54.81	12.0	A403 - 100L/2A F403 - 100L/2A	53	126
	58.2	443	1.4	49.64	12.0			
	37.8	729	1.2	25.30	12.0	A/F 402 - 112M/6 A/F 402 - 132S/6B	76	126
	41.7	660	1.3	22.91	12.0			
	47.9	574	1.5	19.94	12.0			
	55.0	500	1.7	17.37	12.0			
	59.6	461	1.7	16.01	12.0			
	65.9	418	1.7	14.50	12.0			
	76.7	358	2.0	12.44	12.0			
	83.3	330	2.0	11.46	12.0			
	103.8	265	2.3	9.20	12.0			
	114.6	240	2.5	8.33	12.0			
	132.3	208	2.6	7.22	12.0			
	164.7	167	3.3	5.80	11.8			
	181.9	151	3.3	5.25	11.5			
	30.3	907	0.9	31.50	12.0			
	33.1	832	1.0	28.89	12.0			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm
3.00	31.1	885	1.0	45.38	12.0	A402 - 100L/4B F402 - 100L/4B	56	126
	35.5	775	1.1	39.72	12.0			
	38.7	711	1.1	36.44	12.0			
	44.8	614	1.4	31.50	12.0			
	48.8	564	1.4	28.89	12.0			
	55.7	494	1.7	25.30	12.0			
	61.5	447	1.9	22.91	12.0			
	70.7	389	2.2	19.94	12.0			
	81.2	339	2.4	17.37	12.0			
	88.1	312	2.6	16.01	12.0			
97.2	283	2.5	14.50	12.0				
113.3	243	2.9	12.44	12.0				
123.1	224	2.9	11.46	12.0				
153.2	179	3.3	9.20	11.8				
169.2	163	3.7	8.33	11.5				
195.3	141	3.9	7.22	11.1				
	63.7	414	1.5	45.38	12.0	A402 - 100L/2A F402 - 100L/2A	53	126
	72.8	362	1.8	39.72	12.0			
	79.3	332	1.8	36.44	12.0			
	91.7	287	2.2	31.50	12.0			
	100.0	263	2.3	28.89	12.0			
	114.2	231	2.8	25.30	12.0			
	126.1	209	3.1	22.91	12.0			
	144.9	182	3.5	19.94	12.0			
	166.4	158	3.9	17.37	11.7			
	180.5	146	4.1	16.01	11.4			
199.3	132	4.0	14.50	11.1				
	166.7	167	1.0	5.73	3.7	A401 - 112M/6 F401 - 112M/6	41	124
	184.8	150	1.1	5.17	3.7			
	203.5	137	1.2	4.69	3.7			
	242.8	114	1.3	3.93	3.7			
	263.4	105	1.4	3.63	3.7			
	307.0	91	1.4	3.11	3.5			
	378.4	73	1.6	2.52	3.4			
	458.4	61	2.0	2.08	3.2			
	727.6	38	2.1	1.31	2.9			
	170.9	163	1.0	8.25	3.7	A401 - 100L/4B F401 - 100L/4B	35	124
	195.3	142	1.2	7.22	3.7			
	246.1	113	1.5	5.73	3.7			
	272.7	102	1.7	5.17	3.6			
	300.6	92	1.7	4.69	3.5			
	358.8	77	1.9	3.93	3.4			
	389.5	71	2.1	3.62	3.3			
	453.4	61	2.1	3.11	3.2			
	559.5	50	2.4	2.52	3.0			
	676.8	41	2.9	2.08	2.9			
1074.3	26	3.1	1.31	2.5				
	350.3	77	1.7	8.25	3.4	A401 - 100L/2A F401 - 100L/2A	32	124
	400.3	67	1.9	7.22	3.3			
	504.4	53	2.4	5.73	3.1			
	559.0	48	2.6	5.17	3.0			
	616.2	44	2.7	4.69	3.0			
	735.4	37	3.1	3.93	2.8			
	798.3	34	3.3	3.62	2.8			
	929.3	29	3.4	3.11	2.6			
	1146.8	23	3.8	2.52	2.5			
		56.6	486	0.9	16.88			
65.8		418	1.0	14.52	7.3			
81.3		338	1.2	11.74	7.2			
97.9		281	1.3	9.75	7.0			
109.4		251	1.4	8.73	6.9			
135.3		203	1.4	7.06	6.7			
163.0		169	1.5	5.86	6.4			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
3.00	53.0	519	0.9	26.59	7.4	A352 - 100L/4B F352 - 100L/4B	45	122
	56.1	490	1.0	25.13	7.4			
	64.0	430	1.1	22.03	7.4			
	69.4	396	1.2	20.31	7.3			
	77.0	357	1.3	18.30	7.2			
	83.5	329	1.4	16.88	7.2			
	97.1	283	1.5	14.52	7.0			
	120.1	229	1.7	11.74	6.8			
	144.6	190	1.9	9.75	6.5			
	161.5	170	2.0	8.73	6.4			
199.7	138	2.1	7.06	6.1				
240.6	114	2.3	5.86	5.8				
	90.3	292	1.3	32.01	7.2	A352 - 100L/2A F352 - 100L/2A	42	122
	100.0	263	1.4	28.89	7.1			
	108.7	243	1.5	26.59	7.0			
	115.0	229	1.5	25.13	6.9			
	131.2	201	1.8	22.03	6.8			
	142.3	185	1.9	20.31	6.6			
	157.9	167	2.1	18.30	6.5			
	171.3	154	2.2	16.88	6.4			
	199.1	132	2.4	14.52	6.2			
	246.2	107	2.7	11.74	5.9			
	296.4	89	3.1	9.75	5.6			
	331.0	80	3.2	8.73	5.4			
	409.5	64	3.4	7.06	5.1			
492.9	53	3.6	5.86	4.9				
	364.6	76	0.9	2.62	2.1	A351 - 112M/6 F351 - 112M/6	42	120
	440.8	63	1.0	2.17	2.0			
	657.9	42	1.4	1.45	1.8			
	732.9	38	1.1	1.30	1.8			
	264.5	105	1.0	5.33	2.2	A351 - 100L/4B F351 - 100L/4B	35	120
	290.7	96	1.0	4.85	2.2			
	346.4	80	1.1	4.07	2.1			
	376.0	74	1.2	3.75	2.0			
	437.9	63	1.3	3.22	2.0			
	538.2	52	1.4	2.62	1.9			
	649.8	43	1.4	2.17	1.8			
	972.4	29	2.1	1.45	1.6			
	1084.6	26	1.6	1.30	1.6			
		489.1	55	1.4	5.91			
542.2		50	1.5	5.33	1.9			
595.9		45	1.6	4.85	1.9			
710.1		38	1.8	4.07	1.8			
770.7		35	1.9	3.75	1.7			
897.5		30	2.0	3.22	1.7			
1103.1		24	2.2	2.62	1.6			
1331.8		20	2.2	2.17	1.5			
1993.1		14	3.3	1.45	1.3			
2223.1		12	2.5	1.30	1.3			
171.1	161	1.0	5.58	4.7	A302 - 132S/6B F302 - 132S/6B	61	118	
	102.1	269	0.9	13.81	4.9	A302 - 100L/4B F302 - 100L/4B	40	118
	117.5	234	1.1	12.00	4.8			
	134.3	205	1.2	10.50	4.8			
	154.8	178	1.2	9.11	4.7			
	192.1	143	1.1	7.34	4.6			
252.7	109	1.5	5.58	4.3				
	149.8	176	1.1	19.29	4.8	A302 - 100L/2A F302 - 100L/2A	37	118
	178.2	148	1.3	16.21	4.7			
	209.3	126	1.5	13.81	4.6			
	240.8	109	1.7	12.00	4.4			
	275.4	96	1.9	10.50	4.3			
	317.4	83	1.9	9.11	4.2			
	393.5	67	1.8	7.34	4.0			
517.8	51	2.4	5.58	3.7				
293.8	94	1.0	4.80	3.1	A252 - 100L/4B F252 - 100L/4B	37	114	

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm
3.00	280.2	94	1.1	10.32	3.1	A252 - 100L/2A F252 - 100L/2A	34	114
	320.3	82	1.2	9.02	3.1			
	364.4	72	1.3	7.93	3.0			
	454.1	58	1.4	6.36	2.9			
	602.3	44	1.6	4.80	2.7			
4.00	4.7	7834	1.0	205.73	55.0	A903 - 132M/6A F903 - 132M/6A	235	140
	5.2	7069	1.1	185.64	55.0			
	6.2	5867	1.4	154.07	55.0			
	6.9	5309	1.5	139.41	55.0			
	7.5	4888	1.6	128.36	55.0			
	8.3	4411	1.8	115.83	55.0			
	9.2	3976	2.0	104.41	55.0			
	10.0	3661	2.2	96.13	55.0			
	11.1	3291	2.4	86.43	55.0			
	12.1	3013	2.7	79.13	55.0			
4.00	13.4	2719	2.9	71.40	55.0	A703 - 132M/6A F703 - 132M/6A	158	138
	15.2	2400	3.3	63.02	55.0			
	16.2	2257	3.5	59.26	55.0			
	17.9	2043	3.9	53.66	55.0			
	7.5	4888	1.0	128.35	30.0			
	8.1	4522	1.1	118.75	30.0			
	8.9	4130	1.2	108.46	30.0			
	9.6	3822	1.3	100.38	30.0			
	10.7	3425	1.5	89.95	30.0			
	11.5	3174	1.6	83.35	30.0			
4.00	13.0	2806	1.8	73.70	30.0	A703 - 112M/4B F703 - 112M/4B	137	138
	14.3	2563	2.0	67.31	30.0			
	17.2	2123	2.4	55.75	30.0			
	21.0	1739	2.9	45.67	30.0			
	6.9	5217	1.0	207.78	30.0			
	7.5	4759	1.1	189.54	30.0			
	8.3	4347	1.2	173.11	30.0			
	9.2	3904	1.3	155.48	30.0			
	9.9	3640	1.4	144.94	30.0			
	11.1	3223	1.6	128.35	30.0			
4.00	12.0	2982	1.7	118.75	30.0	A/F 703 - 100L/2C A/F 703 - 112M/2A	135	138
	13.2	2723	1.8	108.46	30.0			
	14.2	2521	2.0	100.38	30.0			
	15.9	2259	2.2	89.95	30.0			
	17.2	2093	2.4	83.35	30.0			
	19.4	1851	2.7	73.70	30.0			
	21.2	1690	3.0	67.31	30.0			
	13.9	2472	1.5	207.78	30.0			
	15.2	2255	1.7	189.54	30.0			
	16.7	2059	1.8	173.11	30.0			
4.00	18.6	1850	2.0	155.48	30.0	A703 - 100L/2C F703 - 100L/2C	129	138
	19.9	1724	2.2	144.94	30.0			
	22.5	1527	2.5	128.35	30.0			
	24.3	1413	2.7	118.75	30.0			
	26.6	1290	2.9	108.46	30.0			
	28.8	1194	3.1	100.38	30.0			
	32.1	1070	3.5	89.95	30.0			
	34.7	992	3.8	83.35	30.0			
	11.1	3095	1.2	260.15	30.0			
	12.5	2752	1.4	231.34	30.0			
4.00	21.5	1706	2.9	44.67	30.0	A702 - 132M/6A F702 - 132M/6A	158	138
	26.2	1398	3.6	36.60	30.0			
	28.7	1277	3.9	33.43	30.0			
4.00	123.1	301	3.3	7.80	6.0	A701 - 132M/6A F701 - 132M/6A	88	136
	151.6	244	3.7	6.33	6.0			
4.00	9.6	3748	0.9	100.21	22.0	A603 - 132M/6A F603 - 132M/6A	128	134
	10.3	3501	1.0	93.60	22.0			
	11.4	3156	1.1	84.37	22.0			
	12.0	2992	1.2	79.98	22.0			
	13.7	2613	1.3	69.87	22.0			
17.2	2085	1.7	55.75	22.0				



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
4.00	10.0	3605	1.0	143.57	22.0	A603 - 112M/4B F603 - 112M/4B	108	134
	10.7	3371	1.0	134.25	22.0			
	11.8	3039	1.2	121.02	22.0			
	14.3	2516	1.4	100.21	22.0			
	15.3	2350	1.5	93.60	22.0			
	16.9	2119	1.7	84.37	22.0			
	17.9	2008	1.7	79.98	22.0			
	20.5	1754	2.0	69.87	22.0			
	20.1	1708	1.5	143.57	22.0	A/F 603 - 100L/2C A/F 603 - 112M/2A	106	134
	21.5	1597	1.6	134.25	22.0			
	23.9	1440	1.8	121.02	22.0			
	28.8	1192	2.2	100.21	22.0			
	30.9	1113	2.4	93.60	22.0			
	34.3	1004	2.6	84.37	22.0			
	36.1	951	2.8	79.98	22.0			
	41.4	831	3.2	69.87	22.0			
	14.9	2312	1.1	194.31	22.0	A603 - 100L/2C F603 - 100L/2C	99	134
	16.0	2155	1.2	181.13	22.0			
	18.0	1914	1.4	160.90	22.0			
	18.9	1965	1.7	50.91	22.0	A602 - 132M/6A F602 - 132M/6A	128	134
	21.2	1747	1.9	45.27	22.0			
	23.5	1575	2.1	40.81	22.0			
	25.3	1467	1.9	38.00	22.0			
	28.4	1304	2.5	33.79	22.0			
	31.6	1171	2.7	30.35	22.0			
	33.8	1095	3.0	28.36	22.0			
	37.5	987	3.3	25.57	22.0			
	40.6	913	3.6	23.66	22.0			
45.3	817	3.9	21.17	22.0				
28.1	1306	2.5	50.91	22.0	A602 - 112M/4B F602 - 112M/4B	108	134	
31.6	1161	2.8	45.27	22.0				
35.0	1047	3.2	40.81	22.0				
37.6	975	2.9	38.00	22.0				
42.3	867	3.7	33.79	22.0				
47.1	778	4.1	30.35	22.0				
56.8	619	4.0	50.91	22.0	A/F 602 - 100L/2C A/F 602 - 112M/2A	106	134	
115.7	320	2.0	8.30	5.0	A601 - 132M/6A F601 - 132M/6A	85	132	
128.8	288	2.3	7.45	5.0				
156.0	238	2.7	6.15	5.0				
184.6	201	3.1	5.20	5.0				
199.5	186	3.3	4.81	5.0				
224.4	165	3.7	4.28	5.0				
172.3	215	3.0	8.30	5.0	A601 - 112M/4B F601 - 112M/4B	65	132	
191.8	193	3.4	7.45	5.0				
232.4	159	4.0	6.15	5.0				
20.1	1790	1.0	71.27	18.0	A503 - 112M/4B F503 - 112M/4B	80	130	
25.4	1411	1.1	56.21	18.0				
40.6	848	1.6	71.27	18.0	A/F 503 - 100L/2C A/F 503 - 112M/2A	78	130	
51.4	669	1.8	56.21	18.0				
29.5	1163	1.2	97.80	18.0	A503 - 100L/2C F503 - 100L/2C	71	130	
33.9	1015	1.3	85.33	18.0				
36.7	936	1.4	78.64	18.0				



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg 	mm 
4.00	22.2	1655	1.0	43.32	18.0	A502 - 132M/6A F502 - 132M/6A	100	130
	24.5	1498	1.1	39.21	18.0			
	27.6	1331	1.2	34.83	18.0			
	30.4	1206	1.3	31.57	18.0			
	34.0	1080	1.5	28.26	18.0			
	35.6	1031	1.6	26.98	18.0			
	41.5	884	1.8	23.14	18.0			
	44.3	829	1.9	21.69	18.0			
	48.8	751	2.1	19.66	18.0			
	51.0	719	2.1	18.81	18.0			
	56.9	644	2.3	16.86	18.0			
	63.5	578	2.6	15.13	18.0			
	70.0	524	2.7	13.71	17.9			
	85.7	428	2.6	11.20	17.0			
	106.6	344	2.6	9.01	16.1			
	117.6	312	2.6	8.16	15.7			
	127.2	288	2.8	7.55	15.4			
158.2	232	3.0	6.07	14.5				
174.5	210	3.3	5.50	14.1				
	29.3	1251	1.3	48.77	18.0	A502 - 112M/4B F502 - 112M/4B	80	130
	33.0	1111	1.4	43.32	18.0			
	36.5	1006	1.6	39.21	18.0			
	41.1	893	1.8	34.83	18.0			
	45.3	810	2.0	31.57	18.0			
	50.6	725	2.2	28.26	18.0			
	53.0	692	2.3	26.98	18.0			
	61.8	593	2.7	23.14	18.0			
	65.9	556	2.9	21.69	18.0			
	72.7	504	3.2	19.66	17.6			
	76.0	482	3.1	18.81	17.4			
	84.8	432	3.5	16.86	16.9			
	94.5	388	3.9	15.13	16.5			
	104.3	352	4.0	13.71	16.0			
	59.3	593	2.0	48.77	18.0	A/F 502 - 100L/2C A/F 502 - 112M/2A	78	130
	66.7	527	2.3	43.32	18.0			
	73.7	477	2.5	39.21	17.7			
	83.0	424	2.8	34.83	17.1			
	91.5	384	3.1	31.57	16.7			
	102.3	344	3.5	28.26	16.2			
	107.1	328	3.7	26.98	16.0			
	112.2	330	1.1	8.56	4.0	A501 - 132M/6A F501 - 132M/6A	73	128
	126.3	293	1.2	7.60	4.0			
	155.7	238	1.4	6.17	4.0			
	171.0	217	1.5	5.62	4.0			
	202.8	183	1.8	4.73	4.0			
	236.5	157	2.0	4.06	4.0			
	254.1	146	2.1	3.78	4.0			
	290.9	127	2.4	3.30	4.0			
	371.6	100	2.8	2.58	4.0			
	488.4	76	3.0	1.97	4.0			
	658.8	56	3.9	1.46	4.0			
	724.9	51	3.9	1.32	4.0			
	167.1	222	1.6	8.56	4.0			
	188.2	197	1.8	7.60	4.0			
	231.9	160	2.1	6.17	4.0			
	254.7	146	2.3	5.62	4.0			
	302.1	123	2.6	4.73	4.0			
	352.3	105	3.0	4.06	4.0			
	378.5	98	3.2	3.78	4.0			
	433.3	86	3.6	3.30	3.9			
	337.6	106	2.5	8.56	4.0	A/F 501 - 100L/2C A/F 501 - 112M/2A	51	128
	380.3	94	2.8	7.60	4.0			
	468.6	77	3.3	6.17	4.0			
	514.7	70	3.5	5.62	4.0			
	58.2	591	1.1	49.64	3.1			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
4.00	41.9	875	1.0	22.91	12.0	A402 - 132M/6A F402 - 132M/6A	63	126
	48.2	762	1.1	19.94	12.0			
	55.3	664	1.3	17.37	12.0			
	60.0	612	1.3	16.01	12.0			
	66.2	554	1.3	14.50	12.0			
	77.1	475	1.5	12.44	12.0			
	83.8	438	1.5	11.46	12.0			
	104.3	351	1.7	9.20	12.0			
	115.2	318	1.9	8.33	12.0			
	133.0	276	2.0	7.22	12.0			
165.6	221	2.5	5.80	11.4				
182.9	201	2.5	5.25	11.1				
	45.4	808	1.1	31.50	12.0	A402 - 112M/4B F402 - 112M/4B	63	126
	49.5	741	1.1	28.89	12.0			
	56.5	649	1.3	25.30	12.0			
	62.4	588	1.4	22.91	12.0			
	71.7	511	1.7	19.94	12.0			
	82.3	445	1.9	17.37	12.0			
	89.3	411	1.9	16.01	12.0			
	98.6	372	1.9	14.50	12.0			
	115.0	319	2.2	12.44	12.0			
	124.8	294	2.2	11.46	12.0			
	155.4	236	2.5	9.20	11.5			
	171.6	214	2.8	8.33	11.2			
	198.1	185	3.0	7.22	10.8			
	246.7	149	3.7	5.80	10.2			
272.4	135	3.7	5.25	9.9				
	91.7	383	1.7	31.50	12.0	A/F 402 - 100L/2C A/F 402 - 112M/2A	60	126
	100.0	351	1.7	28.89	12.0			
	114.2	308	2.1	25.30	12.0			
	126.1	279	2.3	22.91	12.0			
	144.9	242	2.6	19.94	11.7			
	166.4	211	2.9	17.37	11.3			
	180.5	195	3.1	16.01	11.1			
	199.3	176	3.0	14.50	10.8			
	232.3	151	3.5	12.44	10.4			
	252.2	139	3.5	11.46	10.2			
	314.1	112	4.0	9.20	9.6			
	63.7	552	1.2	45.38	12.0	A402 - 100L/2C F402 - 100L/2C	54	126
	72.8	483	1.3	39.72	12.0			
	79.3	443	1.4	36.44	12.0			
	249.6	148	1.1	5.73	3.5	A401 - 112M/4B F401 - 112M/4B	42	124
	276.6	134	1.3	5.17	3.4			
	304.9	122	1.3	4.69	3.3			
	363.9	102	1.5	3.93	3.2			
	395.0	94	1.6	3.62	3.2			
	459.8	81	1.6	3.11	3.1			
	567.5	65	1.8	2.52	2.9			
	687.5	54	2.2	2.08	2.8			
	1091.6	34	2.4	1.31	2.5			
		504.4	71	1.8	5.73			
559.0		64	2.0	5.17	3.0			
616.2		58	2.1	4.69	2.9			
735.4		49	2.3	3.93	2.8			
798.3		45	2.5	3.62	2.7			
929.3		39	2.5	3.11	2.6			
1146.8		31	2.9	2.52	2.4			
1389.4		26	3.5	2.08	2.3			
2206.1		16	3.7	1.31	2.0			
	350.3	103	1.2	8.25	3.3	A401 - 100L/2C F401 - 100L/2C	33	124
	400.2	90	1.4	7.22	3.2			
	78.1	469	1.0	18.30	6.5	A352 - 112M/4B F352 - 112M/4B	52	122
	84.7	433	1.0	16.88	6.4			
	98.5	372	1.2	14.52	6.4			
	121.8	301	1.3	11.74	6.3			
	146.7	250	1.5	9.75	6.1			
	163.8	224	1.5	8.73	6.0			
	202.5	181	1.6	7.06	5.8			
	244.0	150	1.7	5.86	5.6			



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
4.00	157.9	223	1.6	18.30	6.1	A/F 352 - 100L/2C A/F 352 - 112M/2A	50	122
	171.2	205	1.6	16.88	6.0			
	199.0	177	1.8	14.52	5.9			
	246.2	143	2.0	11.74	5.6			
	296.4	119	2.3	9.75	5.4			
	331.0	106	2.4	8.73	5.3			
	409.3	86	2.5	7.06	5.0			
	493.2	71	2.7	5.86	4.8			
	100.0	351	1.0	28.89	6.2			
	108.7	323	1.1	26.59	6.3			
	115.0	306	1.2	25.13	6.4			
	131.2	268	1.3	22.03	6.4			
	142.3	247	1.4	20.31	6.5			
	381.3	97	0.9	3.75	1.9	A351 - 112M/4B F351 - 112M/4B	42	120
	443.8	83	1.0	3.22	1.9			
	545.8	68	1.0	2.62	1.8			
	659.0	56	1.1	2.17	1.7			
	986.2	38	1.6	1.45	1.6			
1100.0	34	1.2	1.30	1.5				
770.7	47	1.4	3.75	1.7	A/F 351 - 100L/2C A/F 351 - 112M/2A	40	120	
896.9	40	1.5	3.22	1.6				
1103.1	33	1.6	2.62	1.5				
1331.8	27	1.7	2.17	1.5				
1993.1	18	2.5	1.45	1.3				
2223.1	16	1.9	1.30	1.3				
489.1	73	1.0	5.91	1.9	A351 - 100L/2C F351 - 100L/2C	33	120	
541.9	66	1.1	5.33	1.8				
596.3	60	1.2	4.85	1.8				
710.7	51	1.3	4.07	1.7				
256.3	143	1.1	5.58	4.1	A302 - 112M/4B F302 - 112M/4B	47	118	
517.9	68	1.8	5.58	3.6	A/F 302 - 100L/2C A/F 302 - 112M/2A	45	118	
209.3	168	1.1	13.81	4.2	A302 - 100L/2C F302 - 100L/2C	38	118	
240.8	146	1.3	12.00	4.1				
275.2	128	1.4	10.50	4.1				
317.2	111	1.4	9.11	4.0				
393.7	89	1.3	7.34	3.8				
454.1	77	1.0	6.36	2.7	A252 - 100L/2C F252 - 100L/2C	36	114	
602.3	58	1.2	4.80	2.6				
4.80	8.3	5162	1.0	173.11	30.0	A703 - 112M/4 F703 - 112M/4	137	138
	9.3	4636	1.1	155.48	30.0			
	10.0	4322	1.2	144.94	30.0			
	11.3	3827	1.3	128.35	30.0			
	12.2	3541	1.4	118.75	30.0			
	13.3	3234	1.5	108.46	30.0			
	14.4	2993	1.7	100.38	30.0			
	16.1	2682	1.9	89.95	30.0			
	17.3	2485	2.0	83.35	30.0			
	19.6	2198	2.3	73.70	30.0			
	21.5	2007	2.5	67.31	30.0			
	11.9	3609	1.0	121.02	22.0			
	14.4	2988	1.2	100.21	22.0			
	15.4	2791	1.3	93.60	22.0			
	17.1	2516	1.4	84.37	22.0			
	18.1	2385	1.5	79.98	22.0			
	20.7	2084	1.7	69.87	22.0			
	28.4	1550	2.1	50.91	22.0	A602 - 112M/4 F602 - 112M/4	108	134
	31.9	1379	2.4	45.27	22.0			
	35.4	1243	2.7	40.81	22.0			
	38.0	1157	2.4	38.00	22.0			
	42.8	1029	3.1	33.79	22.0			
	47.6	924	3.5	30.35	22.0			
	50.9	864	3.8	28.36	22.0			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
4.80	174.1	255	2.5	8.30	5.0	A601 - 112M/4 F601 - 112M/4	108	132
	193.8	229	2.8	7.45	5.0			
	234.8	189	3.4	6.15	5.0			
	277.9	160	3.9	5.20	5.0			
	25.7	1676	1.0	56.21	18.0	A503 - 112M/4 F503 - 112M/4	80	130
	29.6	1485	1.1	48.77	18.0	A502 - 112M/4 F502 - 112M/4	80	130
	33.4	1292	1.2	43.32	18.0			
	36.9	1169	1.4	39.21	18.0			
	41.5	1039	1.5	34.83	18.0			
	45.8	941	1.7	31.57	18.0			
	51.1	843	1.9	28.26	18.0			
	53.6	805	2.0	26.98	18.0			
	62.5	690	2.3	23.14	17.7			
	66.6	647	2.5	21.69	17.5			
	73.5	586	2.7	19.66	17.1			
	76.8	561	2.7	18.81	16.9			
	85.7	503	3.0	16.86	16.5			
	95.5	451	3.3	15.13	16.1			
	105.4	409	3.4	13.71	15.7			
	168.8	263	1.3	8.56	4.0	A501 - 112M/4 F501 - 112M/4	53	128
	190.1	234	1.5	7.60	4.0			
	234.2	190	1.8	6.17	4.0			
	257.1	173	1.9	5.62	4.0			
	305.3	146	2.2	4.73	4.0			
	356.0	125	2.6	4.06	4.0			
	382.5	116	2.7	3.78	4.0			
	437.9	102	3.1	3.30	3.8			
559.4	79	3.5	2.58	3.6				
57.1	770	1.1	25.30	12.0	A402 - 112M/4 F402 - 112M/4	63	126	
63.1	698	1.2	22.91	12.0				
72.5	607	1.4	19.94	12.0				
83.2	529	1.6	17.37	12.0				
90.3	488	1.6	16.01	12.0				
99.7	442	1.6	14.50	12.0				
116.2	379	1.8	12.44	11.9				
126.1	349	1.9	11.46	11.7				
157.1	280	2.1	9.20	11.2				
173.5	254	2.4	8.33	10.9				
200.1	220	2.5	7.22	10.6				
149.1	177	3.1	5.80	10.0				
275.2	160	3.1	5.25	9.8				
252.2	176	1.0	5.73	3.3	A401 - 112M/4 F401 - 112M/4	42	124	
279.5	159	1.1	5.17	3.2				
308.1	144	1.1	4.69	3.2				
367.7	121	1.2	3.93	3.1				
399.2	111	1.3	3.62	3.1				
464.6	96	1.4	3.11	3.0				
573.4	78	1.5	2.52	2.8				
694.7	64	1.9	2.08	2.7				
1103.1	40	2.0	1.31	2.4				
99.5	442	1.0	14.52	5.9	A352 - 112M/4 F352 - 112M/4	52	122	
123.1	358	1.1	11.74	5.9				
148.2	297	1.2	9.75	5.8				
165.5	266	1.3	8.73	5.7				
204.7	215	1.3	7.06	5.5				
246.6	178	1.5	5.86	5.4				
995.4	44	1.4	1.45	1.5	A351 - 112M/4 F351 - 112M/4	42	120	
1109.0	40	1.0	1.30	1.5				
259.0	170	0.9	5.58	3.8	A302 - 112M/4 F302 - 112M/4	47	118	



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm			
5.50	14.1	3354	1.8	205.73	55.0	A903 - 132S/2A F903 - 132S/2A	216	140			
	15.6	3026	2.0	185.64	55.0						
	18.8	2511	2.4	154.07	55.0						
	20.8	2273	2.6	139.41	55.0						
	22.6	2092	2.9	128.36	55.0						
	25.0	1888	3.2	115.83	55.0						
	27.8	1702	3.5	104.41	55.0						
	30.2	1567	3.8	96.13	55.0						
	7.0	7029	1.1	205.73	55.0				A903 - 132S/4C F903 - 132S/4C	221	140
	7.8	6343	1.3	185.64	55.0						
	9.4	5264	1.5	154.07	55.0						
	10.4	4763	1.7	139.41	55.0						
	11.3	4386	1.8	128.36	55.0						
	12.5	3958	2.0	115.83	55.0						
	13.8	3568	2.2	104.41	55.0						
	15.0	3285	2.4	96.13	55.0						
	16.7	2953	2.7	86.43	55.0						
	18.3	2704	3.0	79.13	55.0						
	20.2	2440	3.3	71.40	55.0						
	22.9	2153	3.7	63.02	55.0						
	24.4	2025	4.0	59.26	55.0						
	6.2	7966	1.0	154.07	55.0	A903 - 132M/6B F903 - 132M/6B	238	140			
	6.9	7208	1.1	139.41	55.0						
	7.5	6637	1.2	128.36	55.0						
	8.3	5989	1.3	115.83	55.0						
	9.2	5398	1.5	104.41	55.0						
	10.0	4970	1.6	96.13	55.0						
	11.1	4469	1.8	86.43	55.0						
	12.1	4091	2.0	79.13	55.0						
	13.4	3692	2.2	71.40	55.0						
	15.2	3258	2.5	63.02	55.0						
	16.2	3064	2.6	59.26	55.0						
	17.9	2775	2.9	53.66	55.0						
	52.0	949	3.9	55.75	30.0				A703 - 132S/2A F703 - 132S/2A	149	138
	9.3	5313	0.9	155.48	30.0				A703 - 132S/4C F703 - 132S/4C	154	138
	10.0	4952	1.0	144.94	30.0						
	11.3	4386	1.1	128.35	30.0						
	12.2	4058	1.2	118.75	30.0						
	13.3	3706	1.3	108.46	30.0						
	14.4	3430	1.5	100.38	30.0						
	16.1	3073	1.6	89.95	30.0						
	17.3	2848	1.8	83.35	30.0						
	19.6	2518	2.0	73.70	30.0						
	21.5	2300	2.2	67.31	30.0						
	25.9	1905	2.6	55.75	30.0						
	31.6	1561	3.2	45.67	30.0						
	9.6	5218	1.0	100.38	30.0	A703 - 132M/6B F703 - 132M/6B	163	138			
10.7	4675	1.1	89.95	30.0							
11.5	4332	1.2	83.35	30.0							
13.0	3831	1.3	73.70	30.0							
14.3	3499	1.4	67.31	30.0							
17.2	2898	1.7	55.75	30.0							
21.0	2374	2.1	45.67	30.0							
18.7	2534	1.5	155.48	30.0	A/F 703 - 112M/2C A/F 703 - 132S/2A	149	138				
20.0	2363	1.6	144.94	30.0							
22.6	2092	1.8	128.35	30.0							
24.4	1936	1.9	118.75	30.0							
26.7	1768	2.1	108.46	30.0							
28.9	1636	2.3	100.38	30.0							
32.2	1466	2.6	89.95	30.0							
34.8	1359	2.8	83.35	30.0							
39.3	1201	3.1	73.70	30.0							
43.1	1097	3.4	67.31	30.0							
14.0	3387	1.1	207.78	30.0				A703 - 112M/2C F703 - 112M/2C	135	138	
15.3	3090	1.2	189.54	30.0							
16.8	2822	1.3	173.11	30.0							



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
5.50	32.3 39.5	1559 1277	3.2 3.9	44.67 36.60	30.0 30.0	A702 - 132S/4C F702 - 132S/4C	154	138
	21.5 26.2 28.7 31.7 34.4 38.7	2346 1922 1756 1590 1464 1303	2.1 2.6 2.8 3.1 3.4 3.8	44.67 36.60 33.43 30.27 27.87 24.80	30.0 30.0 30.0 30.0 30.0 30.0	A702 - 132M/6B F702 - 132M/6B	163	138
	185.3 228.2	275 223	3.6 4.0	7.80 6.33	6.0 6.0	A701 - 132S/4C F701 - 132S/4C	84	136
	123.1 151.6 181.6 197.3 229.9	414 336 281 258 222	2.4 2.7 3.1 3.4 3.8	7.80 6.33 5.29 4.87 4.18	6.0 6.0 6.0 6.0 6.0	A701 - 132M/6B F701 - 132M/6B	93	136
	52.0	909	2.9	55.75	22.0	A603 - 132S/2A F603 - 132S/2A	119	134
	14.4 15.4 17.1 18.1 20.7 25.9	3424 3198 2883 2733 2387 1905	1.0 1.1 1.2 1.3 1.5 1.8	100.21 93.60 84.37 79.98 69.87 55.75	22.0 22.0 22.0 22.0 22.0 22.0	A603 - 132S/4C F603 - 132S/4C	135	134
	13.7 17.2	3593 2867	1.0 1.2	69.87 55.75	22.0 22.0	A603 - 132M/6B F603 - 132M/6B	133	134
	28.9 31.0 34.4 36.3 41.5	1634 1526 1375 1304 1139	1.6 1.7 1.9 2.0 2.3	100.21 93.60 84.37 79.98 69.87	22.0 22.0 22.0 22.0 22.0	A/F 603 - 112M/2C A/F 603 - 132S/2A	119	134
	20.2 21.6 24.0	2340 2188 1973	1.1 1.2 1.3	143.57 134.25 121.02	22.0 22.0 22.0	A603 - 112M/2C F603 - 112M/2C	106	134
	28.4 31.9 35.4 38.0 42.8 47.6 50.9 56.5 61.1	1777 1580 1424 1326 1179 1059 990 892 826	1.9 2.1 2.3 2.1 2.7 3.0 3.3 3.7 4.0	50.91 45.27 40.81 38.00 33.79 30.35 28.36 25.57 23.66	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	A602 - 132S/4C F602 - 132S/4C	135	134
	18.9 21.2 23.5 25.3 28.4 31.6 33.8 37.5 40.6 45.3 49.0 54.5 60.5	2674 2378 2143 1996 1775 1594 1490 1343 1243 1112 1029 925 833	1.2 1.4 1.5 1.4 1.8 2.0 2.2 2.5 2.7 2.9 3.1 3.5 3.8	50.91 45.27 40.81 38.00 33.79 30.35 28.36 25.57 23.66 21.17 19.59 17.60 15.87	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0	A602 - 132M/6B F602 - 132M/6B	133	134
	57.0 64.1 71.1 76.3	848 754 680 633	2.9 3.3 3.6 3.3	50.91 45.27 40.81 38.00	22.0 22.0 22.0 22.0	A/F 602 - 112M/2C A/F 602 - 132S/2A	119	134
	174.1 193.8 234.8 277.9 300.3 337.8	293 263 217 183 170 151	2.2 2.5 2.9 3.4 3.7 4.0	8.30 7.45 6.15 5.20 4.81 4.28	5.0 5.0 5.0 5.0 5.0 5.0	A601 - 132S/4C F601 - 132S/4C	92	132



P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm			
5.50	115.7	440	1.5	8.30	5.0	A601 - 132M/6B F601 - 132M/6B	90	132			
	128.8	396	1.6	7.45	5.0						
	156.0	327	2.0	6.15	5.0						
	184.6	276	2.2	5.20	5.0						
	199.5	255	2.4	4.81	5.0						
	224.4	227	2.7	4.28	5.0						
	263.0	194	3.1	3.65	5.0						
	297.5	171	3.5	3.23	5.0						
	349.4	141	3.4	8.30	5.0				A/F 601 - 112M/2C A/F 601 - 132S/2A	76	132
	389.0	127	3.8	7.45	5.0						
	40.7	1162	1.2	71.27	18.0	A503 - 112M/2C F503 - 112M/2C	78	130			
	51.6	916	1.3	56.21	18.0						
	29.6	1702	0.9	48.77	18.0	A502 - 132S/4C F502 - 132S/4C	96	130			
	33.4	1512	1.1	43.32	18.0						
	36.9	1368	1.2	39.21	18.0						
	41.5	1215	1.3	34.83	18.0						
	45.8	1102	1.5	31.57	18.0						
	51.1	986	1.6	28.26	17.8						
	53.6	941	1.7	26.98	17.7						
	62.4	807	2.0	23.14	17.2						
	66.6	757	2.1	21.69	17.0						
	73.5	686	2.3	19.66	16.7						
	76.8	656	2.3	18.81	16.6						
	85.7	588	2.5	16.86	16.2						
	95.5	528	2.8	15.13	15.8						
	105.4	478	2.9	13.71	15.4						
	129.0	391	2.8	11.20	14.7						
	160.4	314	2.9	9.01	13.9						
	177.0	285	2.8	8.16	13.6						
	191.4	263	3.0	7.55	13.3						
	238.1	212	3.3	6.07	12.5						
	262.7	192	3.6	5.50	12.2						
	30.4	1658	1.0	31.57	18.0	A502 - 132M/6B F502 - 132M/6B	105	130			
	34.0	1484	1.1	28.26	18.0						
	35.6	1417	1.1	26.98	18.0						
	41.5	1215	1.3	23.14	18.0						
	44.3	1139	1.4	21.69	18.0						
	48.8	1033	1.5	19.66	18.0						
	51.0	988	1.5	18.81	17.9						
	56.9	886	1.7	16.86	17.6						
63.5	794	1.9	15.13	17.3							
70.0	720	1.9	13.71	16.9							
85.7	588	1.9	11.20	16.3							
106.6	473	1.9	9.01	15.5							
117.6	429	1.9	8.16	15.1							
127.2	396	2.0	7.55	14.8							
158.2	319	2.2	6.07	14.1							
174.5	289	2.4	5.50	13.7							
59.5	813	1.5	48.77	17.5	A/F 502 - 112M/2C A/F 502 - 132S/2A	91	130				
66.9	722	1.7	43.32	17.2							
74.0	653	1.8	39.21	16.8							
83.3	580	2.1	34.83	16.4							
91.9	526	2.3	31.57	16.0							
102.6	471	2.5	28.26	15.6							
107.5	450	2.7	26.98	15.5							
125.3	386	3.1	23.14	14.9							
133.7	361	3.3	21.69	14.7							
147.5	328	3.7	19.66	14.3							
154.2	313	3.6	18.81	14.1							
172.0	281	4.0	16.86	13.7							

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm
5.50	168.8	302	1.2	8.56	4.0	A501 - 132S/4C F501 - 132S/4C	69	128
	190.1	268	1.3	7.60	4.0			
	234.2	218	1.6	6.17	4.0			
	257.1	198	1.7	5.62	4.0			
	305.5	167	1.9	4.73	4.0			
	355.9	143	2.2	4.06	4.0			
	382.3	133	2.3	3.78	3.9			
	437.9	116	2.7	3.30	3.8			
	560.1	91	3.1	2.58	3.5			
	733.5	69	3.3	1.97	3.3			
	155.7	327	1.0	6.17	4.0	A501 - 132M/6B F501 - 132M/6B	78	128
	171.0	298	1.1	5.62	4.0			
	202.8	251	1.3	4.73	4.0			
	236.5	215	1.5	4.06	4.0			
	254.1	200	1.5	3.78	4.0			
	290.9	175	1.8	3.30	4.0			
	371.6	137	2.0	2.58	3.9			
	488.4	104	2.2	1.97	3.7			
	658.8	77	2.8	1.46	3.4			
724.9	70	2.8	1.32	3.3				
338.8	146	1.8	8.56	4.0	A/F 501 - 112M/2C A/F 501 - 132S/2A	64	128	
381.6	129	2.0	7.60	3.9				
470.0	105	2.4	6.17	3.7				
516.0	96	2.6	5.62	3.6				
613.1	81	3.0	4.73	3.5				
714.3	69	3.5	4.06	3.3				
767.2	64	3.6	3.78	3.3				
57.1	883	1.0	25.30	12.0	A402 - 132S/4C F402 - 132S/4C	79	126	
63.1	799	1.1	22.91	12.0				
72.5	696	1.2	19.94	12.0				
83.2	606	1.4	17.37	12.0				
90.3	559	1.4	16.01	12.0				
99.7	506	1.4	14.50	11.9				
116.2	434	1.6	12.44	11.6				
126.1	400	1.6	11.46	11.4				
157.1	321	1.9	9.20	10.9				
173.5	291	2.1	8.33	10.7				
200.1	252	2.2	7.22	10.4				
249.1	202	2.7	5.80	9.8				
275.2	183	2.7	5.25	9.6				
60.0	841	1.0	16.01	12.0	A402 - 132M/6B F402 - 132M/6B	88	126	
77.2	653	1.1	12.44	12.0				
83.8	602	1.1	11.46	12.0				
104.3	483	1.2	9.20	11.8				
115.2	438	1.4	8.33	11.6				
133.0	379	1.5	7.22	11.3				
165.5	305	1.8	5.80	10.9				
182.9	276	1.8	5.25	10.6				
114.6	422	1.5	25.30	11.7	A/F 402 - 112M/2C A/F 402 - 132S/2A	74	126	
126.6	382	1.7	22.91	11.5				
145.4	332	1.9	19.94	11.2				
167.0	289	2.2	17.37	10.9				
181.1	267	2.2	16.01	10.7				
200.0	242	2.2	14.50	10.4				
233.1	207	2.5	12.44	10.0				
253.1	191	2.6	11.46	9.9				
315.2	153	2.9	9.20	9.3				
348.1	139	3.2	8.33	9.1				
401.7	120	3.4	7.22	8.7				
552.4	87	4.3	5.25	8.2				
92.1	525	1.2	31.50	12.0				A402 - 112M/2C F402 - 112M/2C
100.4	481	1.2	28.89	12.0				

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm			
5.50	506.3	98	1.3	5.73	2.9	A401 - 112M/2C F401 - 112M/2C	40	124			
	561.3	88	1.4	5.17	2.8						
	618.0	80	1.5	4.69	2.8						
	737.3	67	1.7	3.93	2.6						
	800.0	62	1.8	3.63	2.6						
	932.1	53	1.8	3.11	2.5						
	1149.1	43	2.1	2.52	2.4						
	1392.0	35	2.5	2.08	2.3						
	2209.5	22	2.7	1.31	2.0						
	158.5	305	1.1	18.30	5.6				A352 - 112M/2C F352 - 112M/2C	50	122
	171.9	281	1.2	16.88	5.5						
	199.8	242	1.3	14.52	5.4						
	247.1	196	1.5	11.74	5.3						
	297.4	162	1.7	9.75	5.1						
	332.2	145	1.8	8.73	5.0						
	410.9	118	1.8	7.06	4.8						
	494.6	98	2.0	5.86	4.6						
	773.3	64	1.1	3.75	1.6	A351 - 112M/2C F351 - 112M/2C	43	120			
	900.0	55	1.1	3.22	1.5						
	1107.3	45	1.2	2.62	1.5						
1338.5	37	1.2	2.17	1.4							
1997.8	25	1.8	1.45	1.3							
2225.6	22	1.4	1.30	1.2							
519.6	93	1.3	5.58	3.4	A302 - 112M/2C F302 - 112M/2C	45	118				
7.50	8.3	8210	1.0	115.83	55.0	A903 - 160M/6B F903 - 160M/6B	266	140			
	9.2	7400	1.1	104.41	55.0						
	10.0	6813	1.2	96.13	55.0						
	11.1	6126	1.3	86.43	55.0						
	12.1	5608	1.4	79.13	55.0						
	13.4	5061	1.6	71.40	55.0						
	15.2	4467	1.8	63.02	55.0						
	16.2	4200	1.9	59.26	55.0						
	17.9	3803	2.1	53.66	55.0						
	19.8	3437	2.3	48.50	55.0						
	14.1	4573	1.3	205.73	55.0				A903 - 132S/2C F903 - 132S/2C	223	140
	15.6	4126	1.5	185.64	55.0						
	18.8	3425	1.8	154.07	55.0						
	20.8	3099	1.9	139.41	55.0						
	22.6	2853	2.1	128.36	55.0						
	25.0	2575	2.3	115.83	55.0						
	27.8	2321	2.6	104.41	55.0						
	30.2	2137	2.8	96.13	55.0						
	33.6	1921	3.1	86.43	55.0						
	36.6	1759	3.4	79.13	55.0						
	40.6	1587	3.8	71.40	55.0						
	9.4	7154	1.1	154.07	55.0	A903 - 132M/4B F903 - 132M/4B	227	140			
	10.4	6473	1.2	139.41	55.0						
	11.3	5960	1.3	128.36	55.0						
	12.5	5378	1.5	115.83	55.0						
	13.9	4848	1.7	104.41	55.0						
	15.1	4464	1.8	96.13	55.0						
	16.8	4013	2.0	86.43	55.0						
	18.3	3674	2.2	79.13	55.0						
	20.3	3315	2.4	71.40	55.0						
	23.0	2926	2.7	63.02	55.0						
	24.5	2751	2.9	59.26	55.0						
	27.0	2492	3.2	53.66	55.0						
	22.6	3042	2.6	42.47	55.0	A902 - 160M/6B F902 - 160M/6B	266	140			
	25.0	2745	2.9	38.33	55.0						
	30.2	2278	3.5	31.81	55.0						
	13.0	5169	1.0	73.70	30.0	A703 - 160M/6B F703 - 160M/6B	199	138			
	14.3	4721	1.1	67.31	30.0						
	17.2	3910	1.3	55.75	30.0						
	21.0	3203	1.6	45.67	30.0						

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm
7.50	18.7	3456	1.1	155.48	30.0	A703 - 132S/2C F703 - 132S/2C	156	138
	20.0	3222	1.2	144.94	30.0			
	22.6	2853	1.3	128.35	30.0			
	24.4	2640	1.4	118.75	30.0			
	26.7	2411	1.6	108.46	30.0			
	28.9	2231	1.7	100.38	30.0			
	32.2	2000	1.9	89.95	30.0			
	34.8	1853	2.0	83.35	30.0			
	39.3	1638	2.3	73.70	30.0			
	43.1	1496	2.5	67.31	30.0			
	52.0	1239	3.0	55.75	30.0			
	63.5	1015	3.7	45.67	30.0			
	13.4	5036	1.0	108.46	30.0	A703 - 132M/4B F703 - 132M/4B	165	138
	14.4	4661	1.1	100.38	30.0			
	16.1	4177	1.2	89.95	30.0			
	17.4	3870	1.3	83.35	30.0			
	19.7	3422	1.5	73.70	30.0			
	21.5	3125	1.6	67.31	30.0			
	26.0	2588	1.9	55.75	30.0			
	31.7	2121	2.4	45.67	30.0			
	21.5	3200	1.6	44.67	30.0	A702 - 160M/6B F702 - 160M/6B	199	138
	26.2	2621	1.9	36.60	30.0			
	28.7	2394	2.1	33.43	30.0			
	31.7	2168	2.3	30.27	30.0			
	34.4	1996	2.5	27.87	30.0			
	38.7	1776	2.8	24.80	30.0			
	42.0	1636	3.1	22.84	30.0			
	46.0	1494	3.3	20.86	30.0			
	49.0	1404	3.6	19.60	30.0			
	55.9	1231	3.9	17.18	30.0			
	64.9	1015	3.7	44.67	30.0	A702 - 132S/2C F702 - 132S/2C	156	138
	32.5	2118	2.4	44.67	30.0	A702 - 132M/4B F702 - 132M/4B	165	138
	39.6	1736	2.9	36.60	30.0			
	43.4	1585	3.2	33.43	30.0			
	47.9	1436	3.5	30.27	30.0			
	52.0	1322	3.8	27.87	30.0			
	123.1	564	1.8	7.80	6.0	A701 - 160M/6B F701 - 160M/6B	129	136
	151.6	458	2.0	6.33	6.0			
	181.6	383	2.3	5.29	6.0			
	197.3	352	2.5	4.87	6.0			
	229.9	302	2.8	4.18	6.0			
	264.3	263	3.2	3.63	6.0			
	300.9	231	3.6	3.19	6.0			
	320.0	217	3.7	3.00	6.0			
	185.9	374	2.7	7.80	6.0			
	228.9	303	3.0	6.33	6.0			
	274.3	253	3.5	5.29	6.0			
	297.9	233	3.7	4.87	6.0			
	28.9	2228	1.2	100.21	22.0	A603 - 132S/2C F603 - 132S/2C	126	134
	31.0	2081	1.3	93.60	22.0			
	34.4	1875	1.4	84.37	22.0			
	36.3	1778	1.5	79.98	22.0			
	41.5	1553	1.7	69.87	22.0			
	52.0	1239	2.1	55.75	22.0			
	18.1	3714	0.9	79.98	22.0	A603 - 132M/4B F603 - 132M/4B	135	134
	20.8	3244	1.1	69.87	22.0			
	26.0	2589	1.4	55.75	22.0			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg	 mm			
7.50	21.2	3243	1.0	45.27	22.0	A602 - 160M/6B F602 - 160M/6B	169	134			
	23.5	2923	1.1	40.81	22.0						
	25.3	2722	1.0	38.00	22.0						
	28.4	2420	1.3	33.79	22.0						
	31.6	2174	1.5	30.35	22.0						
	33.8	2032	1.6	28.36	22.0						
	37.5	1831	1.8	25.57	22.0						
	40.6	1695	1.9	23.66	22.0						
	45.3	1516	2.1	21.17	22.0						
	49.0	1403	2.3	19.59	22.0						
	54.5	1261	2.5	17.60	22.0						
	60.5	1137	2.8	15.87	22.0						
	73.1	941	3.3	13.14	22.0						
	88.0	781	3.8	10.91	22.0						
	97.6	704	4.0	9.83	21.8						
	57.0	1157	2.1	50.91	22.0				A602 - 132S/2C F602 - 132S/2C	126	134
	64.1	1029	2.4	45.27	22.0						
	71.1	927	2.7	40.81	22.0						
	76.3	863	2.4	38.00	22.0						
	85.8	768	3.1	33.79	22.0						
	95.5	690	3.5	30.35	21.9						
	102.2	644	3.8	28.36	21.6						
	28.5	2414	1.4	50.91	22.0	A602 - 132M/4B F602 - 132M/4B	135	134			
	32.0	2147	1.5	45.27	22.0						
	35.5	1935	1.7	40.81	22.0						
	38.2	1802	1.6	38.00	22.0						
	42.9	1602	2.0	33.79	22.0						
	47.8	1439	2.2	30.35	22.0						
	51.1	1345	2.5	28.36	22.0						
	56.7	1212	2.7	25.57	22.0						
	61.3	1122	2.9	23.66	22.0						
	68.5	1004	3.2	21.17	22.0						
	74.0	929	3.4	19.59	22.0						
	82.4	835	3.8	17.60	22.0						
	115.7	601	1.1	8.30	5.0	A601 - 160M/6B F601 - 160M/6B	92	132			
	128.8	539	1.2	7.45	5.0						
	156.0	445	1.4	6.15	5.0						
	184.6	376	1.6	5.20	5.0						
	199.5	348	1.8	4.81	5.0						
	224.4	310	2.0	4.28	5.0						
	263.0	264	2.3	3.65	5.0						
	297.5	234	2.6	3.23	5.0						
	392.7	177	3.1	2.44	5.0						
	480.0	145	3.1	2.00	4.8						
	349.4	193	2.5	8.30	5.0	A601 - 132S/2C F601 - 132S/2C	83	132			
	389.0	173	2.8	7.45	5.0						
	471.3	143	3.4	6.15	4.8						
	557.7	121	3.9	5.20	4.6						
	602.6	112	4.2	4.81	4.5						
	174.7	398	1.6	8.30	5.0	A601 - 132M/4B F601 - 132M/4B	92	132			
	194.6	357	1.8	7.45	5.0						
	235.8	295	2.2	6.15	5.0						
	278.8	249	2.5	5.20	5.0						
	301.3	231	2.7	4.81	5.0						
	339.0	205	3.0	4.28	5.0						
	397.3	175	3.4	3.65	5.0						
	449.3	155	3.9	3.23	4.8						
	41.5	1657	1.0	23.14	16.2				A502 - 160M/6B F502 - 160M/6B	139	130
	44.3	1554	1.0	21.69	16.2						
	48.8	1408	1.1	19.66	16.2						
	51.0	1347	1.1	18.81	16.1						
	56.9	1208	1.2	16.86	16.0						
	63.5	1083	1.4	15.13	15.9						
	70.0	982	1.4	13.71	15.7						
	85.7	802	1.4	11.20	15.2						
	106.6	645	1.4	9.01	14.7						
	117.6	585	1.4	8.16	14.4						
	127.2	541	1.5	7.55	14.1						
	158.2	435	1.6	6.07	13.5						
	174.5	394	1.8	5.50	13.2						

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm	
7.50	59.5	1108	1.1	48.77	16.2	A502 - 132S/2C F502 - 132S/2C	98	130	
	66.9	984	1.2	43.32	15.9				
	74.0	891	1.3	39.21	15.7				
	83.3	791	1.5	34.83	15.4				
	91.9	717	1.7	31.57	15.1				
	102.6	642	1.9	28.26	14.8				
	107.5	613	2.0	26.98	14.7				
	125.3	526	2.3	23.14	14.2				
	133.7	493	2.4	21.69	14.0				
	147.5	447	2.7	19.66	13.7				
	154.2	427	2.6	18.81	13.6				
	172.0	383	2.9	16.86	13.2				
	191.7	344	3.3	15.13	12.9				
	211.6	311	3.4	13.71	12.6				
	258.8	255	3.2	11.20	11.9				
	321.9	205	3.3	9.01	11.3				
	355.2	186	3.2	8.16	11.0				
	384.2	172	3.5	7.55	10.7				
	477.8	138	3.8	6.07	10.1				
		41.6	1652	1.0	34.83	16.3	A502 - 132M/4B F502 - 132M/4B	107	130
		45.9	1497	1.1	31.57	16.3			
		51.3	1340	1.2	28.26	16.2			
		53.7	1279	1.3	26.98	16.1			
		62.7	1097	1.5	23.14	15.9			
		66.9	1029	1.6	21.69	15.8			
		73.8	932	1.7	19.66	15.5			
		77.1	892	1.7	18.81	15.4			
		86.0	800	1.9	16.86	15.2			
		95.8	717	2.1	15.13	14.9			
		105.8	650	2.2	13.71	14.6			
		129.5	531	2.1	11.20	14.0			
		160.9	427	2.1	9.01	13.4			
		177.7	387	2.1	8.16	13.1			
		192.1	358	2.2	7.55	12.8			
		238.9	288	2.4	6.07	12.1			
		263.6	261	2.7	5.50	12.1			
	338.8	199	1.3	8.56	3.8	A501 - 132S/2C F501 - 132S/2C	71	128	
	381.6	176	1.5	7.60	3.7				
	470.0	143	1.8	6.17	3.6				
	516.0	130	1.9	5.62	3.5				
	613.1	110	2.2	4.73	3.4				
	714.3	94	2.5	4.06	3.2				
	767.2	88	2.6	3.78	3.2				
	878.8	77	3.0	3.30	3.1				
	1124.0	60	3.5	2.58	2.9				
	1472.1	46	3.8	1.97	2.7				
	190.8	364	1.0	7.60	4.0	A501 - 132M/4B F501 - 132M/4B	80	128	
	235.0	296	1.2	6.17	4.0				
	258.0	269	1.2	5.62	4.0				
	306.6	227	1.4	4.73	3.9				
	357.1	195	1.6	4.06	3.8				
	383.6	181	1.7	3.78	3.7				
	439.4	158	2.0	3.30	3.6				
	562.0	124	2.3	2.58	3.4				
	736.0	94	2.4	1.97	3.2				
	993.2	70	3.1	1.46	3.0				
	1098.5	63	3.2	1.32	2.9				
	126.6	521	1.2	22.91	10.6	A402 - 132S/2C F402 - 132S/2C	81	126	
	145.5	453	1.4	19.94	10.4				
	166.9	395	1.6	17.37	10.2				
	181.1	364	1.6	16.01	10.1				
	200.0	329	1.6	14.50	9.9				
	233.0	283	1.9	12.44	9.6				
	253.1	260	1.9	11.46	9.4				
	315.2	209	2.2	9.20	9.0				
	348.0	189	2.4	8.33	8.8				
	401.7	164	2.5	7.22	8.5				
	500.3	132	3.1	5.80	8.0				
	552.4	119	3.1	5.25	7.8				

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm
7.50	83.5	824	1.0	17.37	10.8	A402 - 132M/4B F402 - 132M/4B	90	126
	90.6	759	1.1	16.01	10.8			
	100.0	688	1.0	14.50	10.8			
	116.6	590	1.2	12.44	10.6			
	126.5	543	1.2	11.46	10.5			
	157.6	436	1.4	9.20	10.2			
	174.1	395	1.5	8.33	10.1			
	200.8	342	1.6	7.22	9.8			
	250.0	275	2.0	5.80	9.4			
	276.2	249	2.0	5.25	9.2			
9.20	10.4	7940	1.0	139.41	55.0	A903 - 132M/4 F903 - 132M/4	227	140
	11.3	7311	1.1	128.36	55.0			
	12.5	6597	1.2	115.83	55.0			
	13.9	5947	1.3	104.41	55.0			
	15.1	5475	1.5	96.13	55.0			
	16.8	4923	1.6	86.43	55.0			
	18.3	4507	1.8	79.13	55.0			
	20.3	4067	2.0	71.40	55.0			
	23.0	3589	2.2	63.02	55.0			
	24.5	3375	2.4	59.26	55.0			
	27.0	3056	2.6	53.66	55.0			
	14.1	5610	1.1	205.73	55.0	A903 - 132M/2 F903 - 132M/2	227	140
	15.6	5062	1.2	185.64	55.0			
	18.8	4201	1.4	154.07	55.0			
	20.8	3801	1.6	139.41	55.0			
	22.6	3500	1.7	128.36	55.0			
	25.0	3158	1.9	115.83	55.0			
	27.8	2847	2.1	104.41	55.0			
	30.2	2621	2.3	96.13	55.0			
	33.6	2357	2.5	86.43	55.0			
	36.6	2158	2.8	79.13	55.0			
	40.6	1947	3.1	71.40	55.0			
	46.0	1718	3.5	63.02	54.4			
	48.9	1616	3.7	59.26	53.5			
	54.0	1463	4.1	53.66	52.1			
	16.1	5123	1.0	89.95	30.0	A703 - 132M/4 F703 - 132M/4	165	138
	17.4	4747	1.1	83.35	30.0			
	19.7	4198	1.2	73.70	30.0			
	21.5	3834	1.3	67.31	30.0			
	26.0	3175	1.6	55.75	30.0			
	31.7	2601	1.9	45.67	30.0			
	22.6	3500	1.1	128.35	30.0	A703 - 132M/2 F703 - 132M/2	165	138
	24.4	3238	1.2	118.75	30.0			
	26.7	2957	1.3	108.46	30.0			
	28.9	2737	1.4	100.38	30.0			
	32.2	2453	1.5	89.95	30.0			
	34.8	2273	1.7	83.35	30.0			
	39.3	2010	1.9	73.70	30.0			
	43.1	1835	2.0	67.31	30.0			
	52.0	1520	2.5	55.75	30.0			
	63.5	1245	3.0	45.67	30.0			
	32.5	2598	1.9	44.67	30.0	A702 - 132M/4 F702 - 132M/4	165	138
39.6	2129	2.3	36.60	30.0				
43.4	1945	2.6	33.43	30.0				
47.9	1761	2.8	30.27	30.0				
52.0	1621	3.1	27.87	30.0				
58.5	1443	3.5	24.80	30.0				
63.5	1328	3.8	22.84	30.0				
64.9	1245	3.0	44.67	30.0	A702 - 132M/2 F702 - 132M/2	165	138	
79.2	1020	3.7	36.60	30.0				
86.8	932	4.0	33.43	30.0				
185.9	458	2.2	7.80	6.0	A701 - 132M/4 F701 - 132M/4	95	136	
229.1	372	2.4	6.33	6.0				
274.3	311	2.8	5.29	6.0				
297.9	286	3.0	4.87	6.0				
347.2	245	3.5	4.18	6.0				
399.3	213	4.0	3.63	6.0				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm	
9.20	371.8 458.1	222 180	3.4 3.7	7.80 6.33	6.0 6.0	A701 - 132M/2 F701 - 132M/2	95	136	
	26.0	3175	1.1	55.75	22.0	A603 - 132M/4 F603 - 132M/4	135	134	
	34.4 36.3 41.5 52.0	2301 2181 1905 1520	1.1 1.2 1.4 1.7	84.37 79.98 69.87 55.75	22.0 22.0 22.0 22.0	A603 - 132M/2 F603 - 132M/2	135	134	
	28.5 32.0 35.5 38.2 42.9 47.8 51.1 56.7 61.3 68.5 74.0 82.4 91.4 110.4	2961 2633 2374 2210 1966 1765 1650 1487 1376 1232 1140 1024 923 764	1.1 1.3 1.4 1.3 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.1 3.5 4.1	50.91 45.27 40.81 38.00 33.79 30.35 28.36 25.57 23.66 21.17 19.59 17.60 15.87 13.14	22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 21.9 21.4 20.5	A602 - 132M/4 F602 - 132M/4	135	134	
	57.0 64.1 71.1 76.3 85.8 95.6 102.3 113.4 122.6 137.0	1419 1262 1137 1059 942 846 790 713 660 590	1.7 2.0 2.2 2.0 2.5 2.8 3.1 3.5 3.8 4.1	50.91 45.27 40.81 38.00 33.79 30.35 28.36 25.57 23.66 21.17	22.0 22.0 22.0 22.0 21.8 21.3 21.0 20.5 20.1 19.6	A602 - 132M/2 F602 - 132M/2	135	134	
	174.7 194.6 235.8 278.8 301.5 339.0 397.3 449.3 593.2 725.0	488 438 361 306 283 251 215 190 144 118	1.3 1.5 1.8 2.0 2.2 2.4 2.8 3.2 3.8 3.8	8.30 7.45 6.15 5.20 4.81 4.28 3.65 3.23 2.44 2.00	5.0 5.0 5.0 5.0 5.0 5.0 4.9 4.7 4.4 4.2	A601 - 132M/4 F601 - 132M/4	92	132	
	349.4 389.3 471.5 557.7 602.9 677.9	236 212 175 148 137 122	2.1 2.3 2.7 3.1 3.4 3.8	8.30 7.45 6.15 5.20 4.81 4.28	5.0 4.9 4.7 4.5 4.4 4.2	A601 - 132M/2 F601 - 132M/2	92	132	
	51.3 53.7 62.7 66.9 73.8 77.1 86.0 95.8 105.8 129.5 160.9 177.7 192.1 238.9 263.6	1644 1569 1346 1262 1144 1094 981 880 798 651 524 475 439 353 320	1.0 1.0 1.2 1.3 1.4 1.4 1.5 1.7 1.8 1.7 1.7 1.7 1.8 2.0 2.2	28.26 26.98 23.14 21.69 19.66 18.81 16.86 15.13 13.71 11.20 9.01 8.16 7.55 6.07 5.50	14.8 14.8 14.7 14.7 14.6 14.5 14.3 14.1 13.9 13.5 12.9 12.7 12.4 11.8 11.6	A502 - 132M/4 F502 - 132M/4	107	130	

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm			
9.20	74.0	1093	1.1	39.21	14.7	A502 - 132M/2 F502 - 132M/2	107	130			
	83.3	971	1.2	34.83	14.6						
	91.9	880	1.4	31.57	14.4						
	102.6	788	1.5	28.26	14.1						
	107.5	752	1.6	26.98	14.0						
	125.3	645	1.9	23.14	13.7						
	133.7	605	2.0	21.69	13.5						
	147.5	548	2.2	19.66	13.3						
	154.2	524	2.1	18.81	13.1						
	172.0	470	2.4	16.86	12.8						
	191.7	422	2.7	15.13	12.5						
	211.6	382	2.7	13.71	12.3						
	258.8	312	2.6	11.20	11.7						
	321.9	251	2.7	9.01	11.0						
	355.2	228	2.6	8.16	10.8						
	384.2	210	2.9	7.55	10.5						
	477.8	169	3.1	6.07	9.9						
	527.2	153	3.4	5.50	9.7						
	235.0	363	0.9	6.17	3.7				A501 - 132M/4 F501 - 132M/4	80	128
	258.0	330	1.0	5.62	3.7						
	306.6	278	1.2	4.73	3.6						
	357.1	239	1.3	4.06	3.6						
	383.6	222	1.4	3.78	3.5						
	439.4	194	1.6	3.30	3.5						
	562.0	152	1.8	2.58	3.3						
	736.0	116	2.0	1.97	3.1						
	993.2	86	2.6	1.46	2.9						
	1098.5	78	2.6	1.32	2.8						
	339.0	244	1.1	8.56	3.6	A501 - 132M/2 F501 - 132M/2	80	128			
	381.6	216	1.2	7.60	3.6						
	470.3	176	1.5	6.17	3.4						
	516.4	160	1.5	5.62	3.4						
	612.7	135	1.8	4.73	3.3						
	714.5	116	2.1	4.06	3.1						
	767.6	108	2.2	3.78	3.1						
878.8	94	2.5	3.30	3.0							
1122.6	74	2.9	2.58	2.8							
1475.4	56	3.1	1.97	2.6							
1990.2	41	4.0	1.46	2.4							
2189.8	38	4.0	1.32	2.3							
116.5	724	1.0	12.44	9.8	A402 - 132M/4 F402 - 132M/4	90	126				
126.5	667	1.0	11.46	9.8							
157.6	535	1.1	9.20	9.6							
174.1	485	1.2	8.33	9.5							
200.8	420	1.3	7.22	9.3							
250.0	337	1.6	5.80	9.0							
276.2	305	1.6	5.25	8.8							
181.1	446	1.3	16.01	9.6	A402 - 132M/2 F402 - 132M/2	90	126				
200.0	404	1.3	14.50	9.4							
233.0	347	1.5	12.44	9.2							
253.1	319	1.5	11.46	9.1							
315.2	256	1.8	9.20	8.7							
348.0	232	1.9	8.33	8.5							
401.7	201	2.1	7.22	8.2							
500.3	162	2.6	5.80	7.8							
552.4	146	2.6	5.25	7.6							
11.0	29.9	3303	2.4	48.50				55.0	A903 - 160M/4B F903 - 160M/4B	266	140
	12.1	8226	1.0	79.13	55.0	A903 - 160L/6B F903 - 160L/6B	284	140			
	13.4	7422	1.1	71.40	55.0						
	15.2	6551	1.2	63.02	55.0						
	16.2	6160	1.3	59.26	55.0						
	17.9	5578	1.4	53.66	55.0						
19.8	5042	1.6	48.50	55.0							



P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm			
11.0	12.5	7888	1.0	115.83	55.0	A/F 903 - 132M/4C A/F 903 - 160M/4B	266	140			
	13.9	7110	1.1	104.41	55.0						
	15.1	6547	1.2	96.13	55.0						
	16.8	5886	1.4	86.43	55.0						
	18.3	5389	1.5	79.13	55.0						
	20.3	4862	1.6	71.40	55.0						
	23.0	4292	1.9	63.02	55.0						
	24.5	4036	2.0	59.26	55.0						
	27.0	3654	2.2	53.66	55.0						
	18.8	5023	1.2	154.07	55.0				A903 - 132M/2A F903 - 132M/2A	237	140
	20.8	4545	1.3	139.41	55.0						
	22.6	4185	1.4	128.36	55.0						
	25.0	3776	1.6	115.83	55.0						
	27.8	3404	1.8	104.41	55.0						
	30.2	3134	1.9	96.13	55.0						
	33.6	2818	2.1	86.43	55.0						
	36.6	2580	2.3	79.13	55.0						
	40.6	2328	2.6	71.40	55.0						
	46.0	2055	2.9	63.02	55.0						
	48.9	1932	3.1	59.26	55.0						
	54.0	1749	3.4	53.66	55.0						
	34.1	2954	2.7	42.47	55.0	A902 - 160M/4B F902 - 160M/4B	266	140			
	37.8	2666	3.0	38.33	55.0						
	45.6	2212	3.6	31.81	53.3						
	22.6	4462	1.8	42.47	55.0	A902 - 160L/6B F902 - 160L/6B	284	140			
	25.0	4026	2.0	38.33	55.0						
	30.2	3341	2.4	31.81	55.0						
	36.4	2771	2.9	26.38	55.0						
	40.3	2500	3.2	23.80	55.0						
	48.6	2075	3.9	19.75	52.8						
	21.0	4798	1.0	45.67	30.0	A703 - 160L/6B F703 - 160L/6B	212	138			
	19.7	5019	1.0	73.70	30.0	A/F 703 - 132M/4C A/F 703 - 160M/4B	199	138			
	21.5	4584	1.1	67.31	30.0						
	26.0	3797	1.3	55.75	30.0						
	31.7	3110	1.6	45.67	30.0						
	26.7	3536	1.1	108.46	30.0	A703 - 132M/2A F703 - 132M/2A	160	138			
	28.9	3272	1.1	100.38	30.0						
	32.2	2933	1.3	89.95	30.0						
	34.8	2717	1.4	83.35	30.0						
	39.3	2403	1.6	73.70	30.0						
	43.1	2194	1.7	67.31	30.0						
	52.0	1817	2.1	55.75	30.0						
63.5	1489	2.5	45.67	30.0							
21.5	4693	1.1	44.67	30.0	A702 - 160L/6B F702 - 160L/6B	199	138				
26.2	3845	1.3	36.60	30.0							
28.7	3512	1.4	33.43	30.0							
31.7	3180	1.6	30.27	30.0							
34.4	2928	1.7	27.87	30.0							
38.7	2605	1.9	24.80	30.0							
42.0	2399	2.1	22.84	30.0							
46.0	2191	2.3	20.86	30.0							
49.0	2059	2.4	19.60	30.0							
55.9	1805	2.7	17.18	30.0							
68.2	1479	3.1	14.08	30.0							
74.7	1351	3.3	12.86	30.0							
91.2	1106	3.6	10.53	30.0							
32.5	3107	1.6	44.67	30.0				A/F 702 - 132M/4C A/F 702 - 160M/4B	199	138	
39.6	2546	2.0	36.60	30.0							
43.4	2325	2.2	33.43	30.0							
47.9	2105	2.4	30.27	30.0							
52.0	1939	2.6	27.87	30.0							
58.5	1725	2.9	24.80	30.0							
63.5	1588	3.1	22.84	30.0							
69.5	1451	3.4	20.86	30.0							
74.0	1363	3.7	19.60	30.0							
84.4	1195	4.0	17.18	30.0							

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
11.0	64.9	1489	2.5	44.67	30.0	A702 - 132M/2A F702 - 132M/2A	160	138
	79.2	1220	3.1	36.60	30.0			
	86.7	1114	3.4	33.43	30.0			
	95.8	1009	3.7	30.27	30.0			
	104.0	929	4.0	27.87	30.0			
	123.1	828	1.2	7.80	6.0	A701- 160L/6B F701 - 160L/6B	129	136
	151.6	672	1.3	6.33	6.0			
	181.6	561	1.6	5.29	6.0			
	197.3	517	1.7	4.87	6.0			
	229.9	443	1.9	4.18	6.0			
	264.3	385	2.2	3.63	6.0			
	300.9	339	2.4	3.19	6.0			
	320.0	318	2.5	3.00	6.0			
	381.0	267	3.0	2.52	6.0			
	471.9	216	3.5	2.03	6.0			
	522.1	195	3.6	1.84	5.9			
	185.9	548	1.8	7.80	6.0	A/F 701 - 132M/4C A/F 701 - 160M/4B	128.5	136
	229.1	445	2.0	6.33	6.0			
	274.1	372	2.4	5.29	6.0			
	297.9	342	2.5	4.87	6.0			
	347.2	294	2.9	4.18	6.0			
	399.3	255	3.3	3.63	6.0			
	454.5	224	3.7	3.19	6.0			
	483.3	211	3.8	3.00	6.0			
	371.8	266	2.8	7.80	6.0	A701 - 132M/2A F701 - 132M/2A	90	136
	458.1	216	3.1	6.33	6.0			
	548.2	180	3.7	5.29	5.8			
	595.9	166	3.9	4.87	5.7			
41.5	2278	1.2	69.87	22.0	A603 - 132M/2A F603 - 132M/2A	130	134	
52.0	1818	1.4	55.75	22.0				
31.6	3188	1.0	30.35	22.0	A602 - 160L/6B F602 - 160L/6B	182	134	
33.8	2980	1.1	28.36	22.0				
37.5	2686	1.2	25.57	22.0				
40.6	2486	1.3	23.66	22.0				
45.3	2224	1.4	21.17	22.0				
49.0	2058	1.6	19.59	22.0				
54.5	1849	1.7	17.60	22.0				
60.5	1667	1.9	15.87	22.0				
73.1	1380	2.2	13.14	21.5				
88.0	1146	2.6	10.91	20.9				
97.6	1033	2.7	9.83	20.5				
117.9	855	2.9	8.14	19.7				
138.8	727	3.2	6.92	19.1				
154.0	655	3.1	6.24	18.6				
185.9	542	3.3	5.16	17.8				
32.0	3149	1.0	45.27	22.0	A/F 602 - 132M/4C A/F 602 - 160M/4B	169	134	
35.5	2838	1.2	40.81	22.0				
42.9	2350	1.4	33.79	22.0				
47.8	2111	1.5	30.35	22.0				
51.1	1972	1.7	28.36	22.0				
56.7	1778	1.9	25.57	22.0				
61.3	1646	2.0	23.66	22.0				
68.5	1472	2.2	21.17	21.7				
74.0	1362	2.3	19.59	21.4				
82.4	1224	2.6	17.60	21.1				
91.4	1104	2.9	15.87	20.7				
110.4	914	3.4	13.14	19.9				
132.9	759	4.0	10.91	19.1				
147.5	684	4.1	9.83	18.7				
38.2	2643	1.1	38.00	22.0				A602 - 132M/4C F602 - 132M/4C

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm			
11.0	57.0	1697	1.5	50.91	22.0	A602 - 132M/2A F602 - 132M/2A	130	134			
	64.1	1509	1.6	45.27	22.0						
	71.1	1360	1.8	40.81	21.8						
	76.3	1266	1.7	38.00	21.5						
	85.8	1126	2.1	33.79	21.1						
	95.5	1011	2.4	30.35	20.6						
	102.2	945	2.6	28.36	20.3						
	113.4	852	2.9	25.57	19.9						
	122.6	789	3.1	23.66	19.6						
	137.0	706	3.4	21.17	19.1						
148.0	653	3.7	19.59	18.7							
164.7	587	4.1	17.60	18.3							
	156.0	653	1.0	6.15	5.0	A601 - 160L/6B F601 - 160L/6B	139	132			
	184.6	552	1.1	5.20	5.0						
	199.5	511	1.2	4.81	5.0						
	224.4	454	1.3	4.28	5.0						
	263.0	387	1.5	3.65	5.0						
	297.5	343	1.8	3.23	5.0						
	392.7	259	2.1	2.44	4.8						
	480.0	212	2.1	2.00	4.6						
	693.3	147	3.1	1.38	4.2						
	756.9	135	3.0	1.27	4.1						
	174.7	583	1.1	8.30	5.0	A/F 601 - 132M/4C A/F 601 - 160M/4B	126	132			
	194.6	524	1.2	7.45	5.0						
	235.8	432	1.5	6.15	5.0						
	278.8	365	1.7	5.20	5.0						
	301.5	338	1.8	4.81	5.0						
	338.8	301	2.0	4.28	4.9						
	397.3	257	2.3	3.65	4.8						
	449.3	227	2.6	3.23	4.6						
	593.2	172	3.2	2.44	4.2						
	725.0	141	3.2	2.00	4.1						
	349.4	283	1.7	8.30	5.0	A601 - 132M/2A F601 - 132M/2A	87	132			
	389.3	254	1.9	7.45	4.8						
	471.5	209	2.3	6.15	4.6						
	557.7	177	2.6	5.20	4.4						
	602.9	164	2.8	4.81	4.3						
	677.6	146	3.1	4.28	4.2						
	794.5	124	3.6	3.65	4.0						
	898.6	110	4.1	3.23	3.9						
	63.5	1589	0.9	15.13	13.4	A502 - 160L/6B F502 - 160L/6B	152	130			
	70.0	1440	1.0	13.71	13.4						
	85.7	1177	0.9	11.20	13.4						
	106.5	947	1.0	9.01	13.2						
	117.6	857	0.9	8.16	13.1						
	127.2	793	1.0	7.55	12.9						
	158.2	638	1.1	6.07	12.5						
	174.5	578	1.2	5.50	12.3						
	62.7	1609	1.0	23.14	13.5	A/F 502 - 132M/4C A/F 502 - 160M/4B	139	130			
	66.9	1509	1.1	21.69	13.5						
	73.8	1367	1.2	19.66	13.5						
	77.1	1308	1.1	18.81	13.5						
	86.0	1173	1.3	16.86	13.4						
	95.8	1052	1.4	15.13	13.3						
	105.8	954	1.5	13.71	13.2						
	129.5	779	1.4	11.20	12.9						
	160.9	627	1.4	9.01	12.4						
	177.7	568	1.4	8.16	12.2						
	192.1	525	1.5	7.55	12.0						
	238.9	422	1.7	6.07	11.5						
	263.6	383	1.8	5.50	11.3						

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm	
11.0	83.3	1161	1.0	34.83	13.7	A502 - 132M/2A F502 - 132M/2A	102	130	
	91.9	1052	1.1	31.57	13.6				
	102.6	942	1.3	28.26	13.4				
	107.5	899	1.3	26.98	13.3				
	125.3	771	1.6	23.14	13.1				
	133.7	723	1.7	21.69	13.0				
	147.5	655	1.8	19.66	12.8				
	154.2	627	1.8	18.81	12.7				
	172.0	562	2.0	16.86	12.4				
	191.7	504	2.2	15.13	12.1				
	211.6	457	2.3	13.71	11.9				
	258.8	373	2.2	11.20	11.4				
	321.9	300	2.2	9.01	10.8				
	355.2	272	2.2	8.16	10.6				
	384.2	252	2.4	7.55	10.3				
	477.8	202	2.6	6.07	9.8				
	527.2	183	2.9	5.50	9.5				
		306.3	333	1.0	4.73				3.4
		357.2	285	1.1	4.06	3.4			
		383.8	265	1.2	3.78	3.4			
		439.4	232	1.3	3.30	3.3			
		561.3	182	1.5	2.58	3.2			
		737.7	138	1.7	1.97	3.0			
		995.1	102	2.1	1.46	2.8			
		1094.9	93	2.1	1.32	2.8			
		470.3	210	1.2	6.17	3.3	A501 - 132M/2A F501 - 132M/2A	75	128
		516.4	191	1.3	5.62	3.2			
		612.7	161	1.5	4.73	3.1			
		714.5	138	1.7	4.06	3.1			
		767.6	129	1.8	3.78	3.0			
		878.8	112	2.1	3.30	2.9			
		1122.6	88	2.4	2.58	2.8			
		1475.4	67	2.6	1.97	2.6			
		1990.2	50	3.3	1.46	2.4			
		2189.8	45	3.3	1.32	2.3			
		174.0	580	1.0	8.33	8.9	A402 - 132M/4C F402 - 132M/4C	89	126
	200.9	502	1.1	7.22	8.8				
	250.1	403	1.4	5.80	8.6				
	276.2	365	1.4	5.25	8.5				
	315.2	307	1.5	9.20	8.4	A402 - 132M/2A F402 - 132M/2A	86	126	
	348.0	278	1.6	8.33	8.2				
	401.7	241	1.7	7.22	7.6				
	500.3	193	2.1	5.80	7.5				
15.0	16.3	8269	1.0	59.26	55.0	A903 - 180L/6A F903 - 180L/6A	305	140	
	18.0	7488	1.1	53.66	55.0				
	19.9	6768	1.2	48.50	55.0				
		16.8	8026	1.0	86.43	55.0	A903 - 160L/4A F903 - 160L/4A	284	140
		18.3	7348	1.1	79.13	55.0			
		20.3	6631	1.2	71.40	55.0			
		23.0	5852	1.4	63.02	55.0			
		24.5	5503	1.5	59.26	55.0			
		27.0	4983	1.6	53.66	55.0			
		29.9	4504	1.8	48.50	54.9			
		22.7	6052	1.3	42.47	55.0	A902 - 180L/6A F902 - 180L/6A	305	140
		25.2	5462	1.5	38.33	55.0			
		30.3	4533	1.8	31.81	54.8			
		36.6	3759	2.1	26.38	53.1			
		40.5	3392	2.4	23.80	52.2			
		48.9	2815	2.8	19.75	50.3			
		56.2	2448	3.2	17.18	48.8			
		62.3	2209	3.5	15.50	47.7			
		75.0	1833	4.0	12.86	45.7			
		34.1	4028	2.0	42.47	53.6			
		37.8	3635	2.2	38.33	52.6			
		45.6	3017	2.7	31.81	50.7			
		55.0	2502	3.2	26.38	48.7			
		60.9	2257	3.5	23.80	47.6			

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm			
15.0	26.0	5177	1.0	55.75	30.0	A703 - 160L/4A F703 - 160L/4A	208	138			
	31.7	4241	1.2	45.67	30.0						
	26.4	5216	1.0	36.60	30.0	A702 - 180L/6A F702 - 180L/6A	240	138			
	28.9	4764	1.0	33.43	30.0						
	31.9	4314	1.2	30.27	30.0						
	34.6	3972	1.3	27.87	30.0						
	38.9	3535	1.4	24.80	30.0						
	42.3	3254	1.5	22.84	30.0						
	46.3	2972	1.7	20.86	30.0						
	49.2	2793	1.8	19.60	30.0						
	56.2	2449	2.0	17.18	30.0						
	68.6	2006	2.3	14.08	30.0						
	75.1	1832	2.4	12.86	30.0						
	91.6	1501	2.7	10.53	30.0						
	111.8	1230	3.1	8.63	29.5						
	122.5	1123	3.3	7.88	28.8						
	134.1	1025	3.5	7.20	28.2						
	163.7	840	3.8	5.90	26.8						
	179.2	767	3.9	5.38	26.2						
	32.5	4237	1.2	44.67	30.0	A702 - 160L/4A F702 - 160L/4A	208	138			
	39.6	3471	1.4	36.60	30.0						
	43.4	3171	1.6	33.43	30.0						
	47.9	2871	1.7	30.27	30.0						
	52.0	2643	1.9	27.87	30.0						
	58.5	2352	2.1	24.80	30.0						
	63.5	2166	2.3	22.84	30.0						
	69.5	1978	2.5	20.86	30.0						
	74.0	1859	2.7	19.60	30.0						
	84.4	1630	2.9	17.18	30.0						
	103.0	1335	3.4	14.08	29.8						
	112.8	1219	3.6	12.86	29.2						
	137.7	999	4.0	10.53	27.8						
	152.4	912	1.0	6.33	6.0	A701 - 180L/6A F701 - 180L/6A	170	136			
	182.6	761	1.2	5.29	6.0						
	198.3	701	1.2	4.87	6.0						
	231.1	601	1.4	4.18	6.0						
	265.7	523	1.6	3.63	6.0						
	302.5	459	1.8	3.19	6.0						
	321.7	432	1.9	3.00	6.0						
	382.9	363	2.2	2.52	6.0						
	474.3	293	2.6	2.03	5.9						
	524.8	265	2.6	1.84	5.8						
	668.1	208	3.4	1.44	5.4						
	768.1	181	3.6	1.26	5.2						
	185.9	747	1.3	7.80	6.0				A701 - 160L/4A F701 - 160L/4A	138	136
	229.1	607	1.5	6.33	6.0						
	274.1	507	1.7	5.29	6.0						
	297.7	467	1.9	4.87	6.0						
346.9	401	2.1	4.18	6.0							
399.3	348	2.4	3.63	6.0							
454.5	306	2.7	3.19	5.9							
483.3	287	2.8	3.00	5.8							
575.4	241	3.3	2.52	5.6							
712.7	195	3.8	2.03	5.3							
788.6	176	4.0	1.84	5.1							
40.8	3372	1.0	23.66	19.0	A602 - 180L/6A F602 - 180L/6A	210	134				
45.6	3017	1.1	21.17	19.3							
49.3	2792	1.1	19.59	19.5							
54.8	2508	1.3	17.60	19.6							
60.8	2262	1.4	15.87	19.6							
73.4	1873	1.7	13.14	19.4							
88.5	1555	1.9	10.91	19.1							
98.2	1401	2.0	9.83	18.9							
118.6	1160	2.2	8.14	18.4							
139.5	986	2.3	6.92	18.0							
154.6	889	2.2	6.24	17.6							
187.0	735	2.4	5.16	17.0							

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	 Kg ~	 mm
15.0	42.9	3205	1.0	33.79	19.4	A602 - 160L/4A F602 - 160L/4A	178	134
	47.8	2878	1.1	30.35	19.6			
	51.1	2690	1.2	28.36	19.6			
	56.7	2425	1.4	25.57	19.7			
	61.3	2244	1.5	23.66	19.7			
	68.5	2008	1.6	21.17	19.6			
	74.0	1858	1.7	19.59	19.5			
	82.4	1669	1.9	17.60	19.3			
	91.4	1505	2.1	15.87	19.1			
	110.4	1246	2.5	13.14	18.6			
	132.9	1035	2.9	10.91	18.0			
	147.5	932	3.0	9.83	17.7			
	178.1	772	3.2	8.14	17.0			
	209.5	656	3.5	6.92	16.5			
	232.4	592	3.4	6.24	16.1			
	281.0	489	3.7	5.16	15.4			
	225.6	616	1.0	4.28	4.9	A601 - 180L/6A F601 - 180L/6A	167	132
	264.4	526	1.1	3.65	4.9			
	299.0	465	1.3	3.23	4.8			
	394.8	352	1.6	2.44	4.6			
	482.5	288	1.6	2.00	4.4			
	696.9	199	2.3	1.38	4.0			
	760.9	183	2.2	1.27	4.0			
	235.8	589	1.1	6.15	4.9	A601 - 160L/4A F601 - 160L/4A	135	132
	278.8	498	1.2	5.20	4.8			
	301.5	461	1.3	4.81	4.8			
	338.8	410	1.5	4.28	4.6			
	397.3	350	1.7	3.65	4.5			
	448.9	310	1.9	3.23	4.4			
	593.2	234	2.3	2.44	4.2			
	725.0	192	2.3	2.00	4.0			
	1047.2	133	3.4	1.38	3.6			
	1143.3	122	3.3	1.27	3.5			
86.0	1599	0.9	16.86	11.4	A502 - 160L/4A F502 - 160L/4A	148	130	
95.8	1435	1.0	15.13	11.6				
105.8	1300	1.1	13.71	11.6				
129.5	1062	1.0	11.20	11.6				
160.9	855	1.1	9.01	11.4				
177.7	774	1.0	8.16	11.3				
192.1	716	1.1	7.55	11.2				
238.9	576	1.2	6.07	10.8				
263.6	522	1.3	5.50	10.6				
18.5	20.3	8178	1.0	71.40	52.9	A903 - 180M/4B F903 - 180M/4B	309	140
	23.0	7218	1.1	63.02	52.7			
	24.5	6787	1.2	59.26	52.6			
	27.0	6146	1.3	53.66	52.2			
	29.9	5555	1.4	48.50	51.7			
	22.8	7427	1.1	42.47	52.1	A902 - 200L/6B F902 - 200L/6B	360	140
	25.3	6701	1.2	38.33	51.9			
	30.5	5562	1.4	31.81	51.3			
	36.8	4612	1.7	26.38	50.3			
	40.8	4162	1.9	23.80	49.6			
	49.1	3454	2.3	19.75	48.1			
	56.5	3004	2.6	17.18	46.9			
	62.6	2710	2.9	15.50	46.0			
	75.4	2249	3.2	12.86	44.3			
	94.4	1797	4.0	10.28	42.1			
	104.6	1622	4.0	9.28	41.1			
	126.0	1346	3.9	7.70	39.2			
	140.8	1205	4.2	6.89	38.2			
	34.1	4968	1.6	42.47	50.6	A902 - 180M/4B F902 - 180M/4B	309	140
	37.8	4483	1.8	38.33	49.9			
	45.6	3721	2.2	31.81	48.5			
55.0	3085	2.6	26.38	46.9				
60.9	2784	2.9	23.80	46.0				
73.4	2310	3.5	19.75	44.2				
84.4	2009	3.9	17.18	42.8				

P_1 [kW]	n_2 [Min ⁻¹]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg	mm
18.5	31.7	5231	1.0	45.67	30.0	A703 - 180M/4B F703 - 180M/4B	244	138
	34.8	4873	1.0	27.87	30.0	A702 - 200L/6B F702 - 200L/6B	289	138
	42.5	3994	1.3	22.84	30.0			
	46.5	3647	1.4	20.86	30.0			
	49.5	3427	1.5	19.60	30.0			
	56.5	3004	1.6	17.18	30.0			
	68.9	2462	1.9	14.08	30.0			
	75.4	2249	2.0	12.86	30.0			
	92.1	1841	2.2	10.53	29.6			
	112.4	1509	2.5	8.63	28.5			
	123.1	1378	2.7	7.88	27.9			
	134.7	1259	2.9	7.20	27.4			
	164.4	1032	3.1	5.90	26.1			
	180.3	941	3.2	5.38	25.6			
	32.5	5225	1.0	44.67	30.0	A702 - 180M/4B F702 - 180M/4B	244	138
	39.6	4281	1.2	36.60	30.0			
	43.4	3910	1.3	33.43	30.0			
	47.9	3541	1.4	30.27	30.0			
	52.0	3260	1.5	27.87	30.0			
	58.5	2901	1.7	24.80	30.0			
	63.5	2672	1.9	22.84	30.0			
	69.5	2440	2.0	20.86	30.0			
	74.0	2293	2.2	19.60	30.0			
	84.4	2010	2.4	17.18	30.0			
	103.0	1647	2.8	14.08	28.8			
	112.8	1504	2.9	12.86	28.3			
	137.7	1232	3.2	10.53	27.0			
	168.0	1009	3.8	8.63	25.8			
	184.0	922	4.0	7.88	25.2			
	199.3	860	1.0	4.87	6.0	A701 - 200L/6B F701 - 200L/6B	219	136
	232.3	738	1.2	4.18	6.0			
	267.1	642	1.3	3.63	6.0			
	304.0	564	1.5	3.19	6.0			
	323.3	530	1.5	3.00	6.0			
	384.9	445	1.8	2.52	6.0			
	476.8	359	2.1	2.03	5.7			
	527.5	325	2.2	1.84	5.6			
	671.5	255	2.7	1.44	5.3			
	772.0	222	2.9	1.26	5.1			
	185.9	922	1.1	7.80	6.0	A701 - 180M/4B F701 - 180M/4B	174	136
	229.1	748	1.2	6.33	6.0			
	274.1	625	1.4	5.29	6.0			
	297.7	576	1.5	4.87	6.0			
	346.9	494	1.7	4.18	6.0			
	399.4	429	2.0	3.63	5.9			
	454.5	377	2.2	3.19	5.8			
	483.3	355	2.3	3.00	5.7			
575.4	298	2.7	2.52	5.4				
712.7	240	3.1	2.03	5.2				
788.6	217	3.2	1.84	5.0				
51.1	3317	1.0	28.36	17.1	A602 - 180M/4B F602 - 180M/4B	214	134	
56.7	2991	1.1	25.57	17.4				
61.3	2768	1.2	23.66	17.6				
68.5	2476	1.3	21.17	17.7				
74.0	2291	1.4	19.59	17.7				
82.4	2059	1.6	17.60	17.7				
91.4	1856	1.7	15.87	17.7				
110.4	1537	2.0	13.14	17.4				
132.9	1276	2.4	10.91	17.1				
147.5	1150	2.4	9.83	16.8				
178.1	952	2.6	8.14	16.3				
209.5	809	2.8	6.92	15.8				
232.4	730	2.7	6.24	15.5				
281.0	604	3.0	5.16	14.9				

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm
18.5	278.8	615	1.0	5.20	4.5	A601 - 180M/4B F601 - 180M/4B	171	132
	301.5	568	1.1	4.81	4.5			
	338.8	506	1.2	4.28	4.4			
	397.3	431	1.4	3.65	4.3			
	448.9	382	1.6	3.23	4.2			
	594.3	288	1.9	2.44	4.0			
	725.0	236	1.9	2.00	3.9			
	1050.7	163	2.8	1.38	3.5			
	1141.7	150	2.7	1.27	3.5			
22.0	23.1	8554	0.9	63.02	48.5	A903 - 180L/4B F903 - 180L/4B	317	140
	24.6	8044	1.0	59.26	48.6			
	27.1	7284	1.1	53.66	48.6			
	30.0	6583	1.2	48.50	48.4			
	25.3	7970	1.0	38.33	47.3	A902 - 200L/6C F902 - 200L/6C	370	140
	30.5	6614	1.2	31.81	46.3			
	36.8	5485	1.5	26.38	45.1			
	40.8	4949	1.6	23.80	44.3			
	49.1	4107	1.9	19.75	46.0			
	56.5	3572	2.2	17.18	45.1			
	62.6	3223	2.4	15.50	44.3			
	75.4	2675	2.7	12.86	42.9			
	94.4	2137	3.4	10.28	41.0			
	104.6	1929	3.4	9.28	40.1			
	126.0	1601	3.3	7.70	38.4			
	140.8	1433	3.5	6.89	37.4			
	156.0	1293	3.8	6.22	36.5			
	34.3	5888	1.4	42.47	47.7			
	38.0	5313	1.5	38.33	47.3			
	45.7	4410	1.8	31.81	46.3			
	55.2	3657	2.2	26.38	45.1			
	61.1	3299	2.4	23.80	44.3			
	73.7	2738	2.9	19.75	42.8			
	84.7	2381	3.3	17.18	41.6			
	93.9	2149	3.6	15.50	40.7			
	113.1	1783	4.1	12.86	39.1			
	42.5	4749	1.1	22.84	30.0	A702 - 200L/6C F702 - 200L/6C	299	138
	46.5	4338	1.2	20.86	30.0			
	49.5	4076	1.2	19.60	30.0			
	56.5	3572	1.3	17.18	30.0			
	68.9	2928	1.6	14.08	29.5			
	75.4	2674	1.6	12.86	29.2			
	92.1	2190	1.8	10.53	28.4			
	112.4	1794	2.1	8.63	27.5			
	123.1	1639	2.3	7.88	27.0			
	134.7	1497	2.4	7.20	26.5			
	164.4	1227	2.6	5.90	25.5			
	180.3	1119	2.7	5.38	25.0			
	39.8	5074	1.0	36.60	30.0	A702 - 180L/4B F702 - 180L/4B	252	138
	43.5	4634	1.1	33.43	30.0			
	48.1	4196	1.2	30.27	30.0			
	52.2	3863	1.3	27.87	30.0			
	58.7	3438	1.5	24.80	29.9			
	63.7	3166	1.6	22.84	29.7			
	69.8	2892	1.7	20.86	29.4			
74.2	2717	1.8	19.60	29.2				
84.7	2382	2.0	17.18	28.7				
103.3	1952	2.4	14.08	27.8				
113.1	1783	2.5	12.86	27.3				
138.2	1460	2.7	10.53	26.3				
168.6	1196	3.2	8.63	25.2				
184.6	1092	3.4	7.88	24.7				
202.1	998	3.6	7.20	24.1				
246.6	818	3.9	5.90	23.0				
270.4	746	4.0	5.38	22.4				

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	Kg ~	mm			
22.0	232.3	877	1.0	4.18	6.0	A701 - 200L/6C F701 - 200L/6C	229	136			
	267.1	763	1.1	3.63	6.0						
	304.0	670	1.2	3.19	6.0						
	323.3	630	1.3	3.00	6.0						
	384.9	529	1.5	2.52	5.8						
	476.8	427	1.8	2.03	5.6						
	527.5	386	1.8	1.84	5.5						
	671.5	303	2.3	1.44	5.2						
	772.0	264	2.5	1.26	5.0						
	229.9	887	1.0	6.33	6.0				A701 - 180L/4B F701 - 180L/4B	182	136
	275.0	741	1.2	5.29	6.0						
	298.8	682	1.3	4.87	6.0						
	348.1	585	1.5	4.18	5.9						
	400.8	508	1.7	3.63	5.7						
	456.1	447	1.8	3.19	5.6						
	485.0	420	1.9	3.00	5.5						
	577.4	353	2.3	2.52	5.3						
	716.7	284	2.6	2.03	5.1						
	790.8	258	2.7	1.84	4.9						
	1007.3	202	3.5	1.44	4.6						
	1158.1	176	3.7	1.26	4.5						
	61.5	3280	1.0	23.66	15.5	A602 - 180L/4B F602 - 180L/4B	222	134			
	68.7	2935	1.1	21.17	15.8						
	74.3	2716	1.2	19.59	16.0						
	82.7	2440	1.3	17.60	16.2						
	91.7	2200	1.5	15.87	16.3						
	110.7	1822	1.7	13.14	16.3						
	133.4	1512	2.0	10.91	16.1						
	148.0	1363	2.1	9.83	16.0						
	178.7	1128	2.2	8.14	15.6						
	210.3	959	2.4	6.92	15.2						
	233.2	865	2.3	6.24	15.0						
	282.0	715	2.5	5.16	14.5						
	398.6	511	1.2	3.65	4.1	A601 - 180L/4B F601 - 180L/4B	179	132			
	450.8	452	1.3	3.23	4.0						
	596.3	342	1.6	2.44	3.9						
727.5	280	1.6	2.00	3.7							
1054.3	193	2.3	1.38	3.5							
1145.7	178	2.2	1.27	3.4							
30.0	34.4	8001	1.0	42.47	40.9				A902 - 200L/4C F902 - 200L/4C	381	140
	38.1	7221	1.1	38.33	41.2						
	45.9	5992	1.3	31.81	41.3						
	55.3	4970	1.6	26.38	40.9						
	61.3	4484	1.8	23.80	40.5						
	73.9	3721	2.2	19.75	39.7						
	85.0	3236	2.4	17.18	38.9						
	94.2	2920	2.7	15.50	38.3						
	113.5	2423	3.0	12.86	37.0						
	142.0	1936	3.7	10.28	35.4						
	157.4	1747	3.7	9.28	34.6						
	189.7	1450	3.7	7.70	33.1						
	211.9	1298	3.9	6.89	32.3						
	234.8	1171	4.2	6.22	31.5						
	52.4	5250	1.0	27.87	25.5	A702 - 200L/4C F702 - 200L/4C	310	138			
	63.9	4303	1.2	22.84	25.9						
	70.0	3930	1.3	20.86	26.0						
	74.5	3692	1.4	19.60	26.0						
	85.0	3236	1.5	17.18	25.8						
	103.7	2652	1.7	14.08	25.5						
	113.5	2423	1.8	12.86	25.2						
	138.7	1984	2.0	10.53	24.5						
	169.2	1626	2.3	8.63	23.7						
	185.3	1484	2.5	7.88	23.3						
	202.8	1356	2.7	7.20	22.9						
	247.5	1111	2.9	5.90	22.0						
	271.4	1014	3.0	5.38	21.5						

P₁ [kW]	n₂ [Min ⁻¹]	M₂ [Nm]	f_B	i_{ges}	F_R [kN]	Typ / Type / Tip Tipo / Type / Tipo	kg ~	mm
30.0	299.8	927	0.9	4.87	5.5	A701 - 200L/4C F701 - 200L/4C	240	136
	349.3	796	1.1	4.18	5.4			
	402.2	691	1.2	3.63	5.3			
	457.7	607	1.4	3.19	5.2			
	486.7	571	1.4	3.00	5.2			
	579.4	480	1.7	2.52	5.0			
	719.2	386	1.9	2.03	4.8			
	793.5	350	2.0	1.84	4.7			
	1013.9	274	2.6	1.44	4.5			
	1158.7	240	2.7	1.26	4.3			
	37.0	45.9	7391	1.1	31.81			
55.3		6129	1.3	26.38	37.2			
61.3		5530	1.4	23.80	37.2			
73.9		4589	1.7	19.75	36.9			
85.0		3992	2.0	17.18	36.5			
94.2		3601	2.2	15.50	36.1			
113.5		2988	2.4	12.86	35.2			
142.0		2388	3.0	10.28	33.9			
157.3		2156	3.0	9.28	33.3			
189.6		1789	3.0	7.70	32.1			
211.9		1601	3.1	6.89	31.3			
234.7		1445	3.4	6.22	30.6			
282.9		1199	3.8	5.16	29.3			
45.0		55.3	7454	1.1	26.38	33.0	A902 - 225M/4C F902 - 225M/4C	468
	61.3	6725	1.2	23.80	33.4			
	73.9	5581	1.4	19.75	33.8			
	85.0	4855	1.6	17.18	33.8			
	94.2	4380	1.8	15.50	33.6			
	113.5	3634	2.0	12.86	33.2			
	142.0	2905	2.5	10.28	32.3			
	157.3	2622	2.5	9.28	31.8			
	189.6	2176	2.4	7.70	30.8			
	211.9	1947	2.6	6.89	30.2			
	234.7	1758	2.8	6.22	29.6			
	282.9	1458	3.2	5.16	28.5			

Maßtabellen

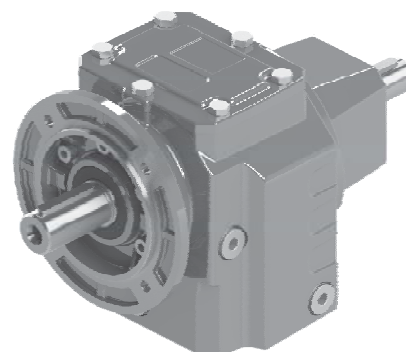
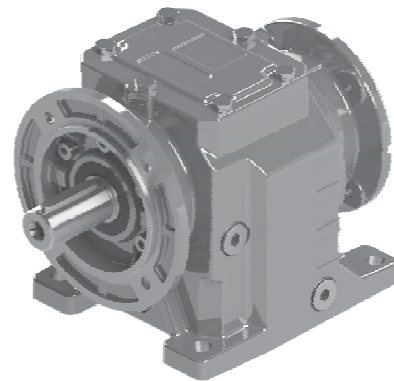
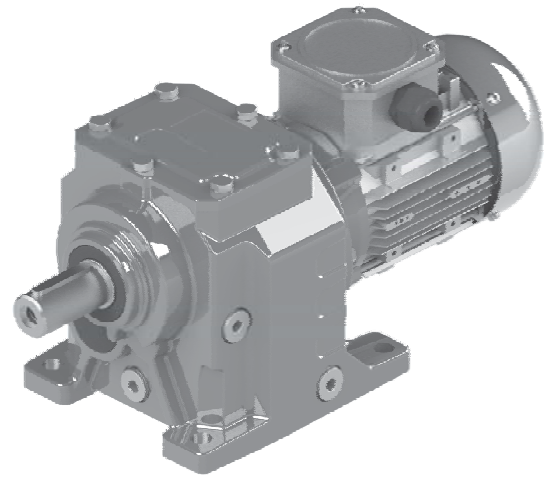
Dimension Tables

Ölçü Tabloları

Dimensione Tabelle

Tables De Dimension

Tablas De Dimensiones



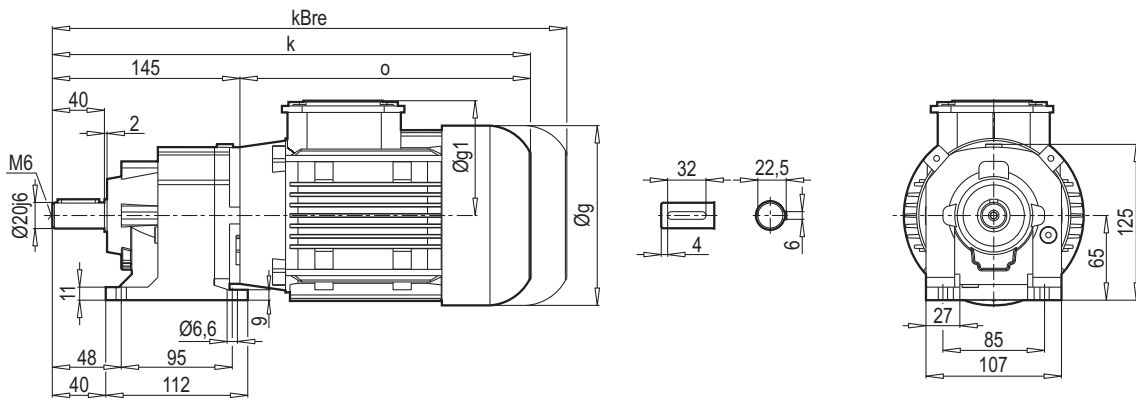
A/F 301 ... 701

A/F 202 ... 902

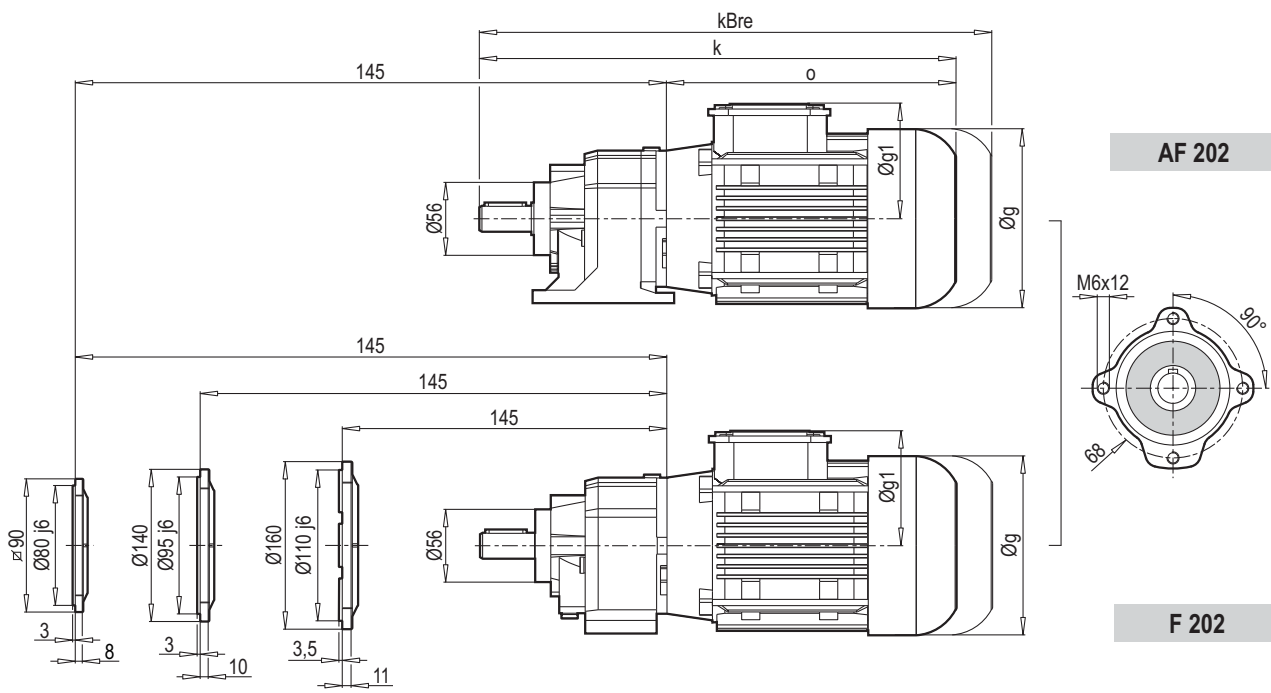
A/F 253 ... 903

A/F

A 202



AF 202

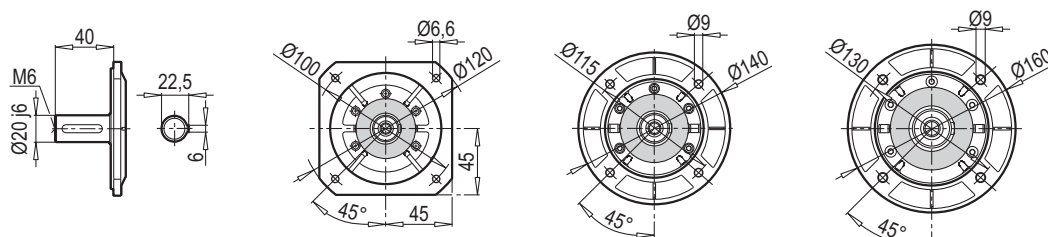


F 202

FA

FB

FC



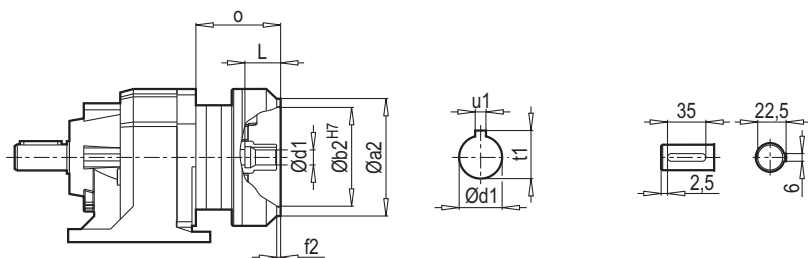
FA

FB

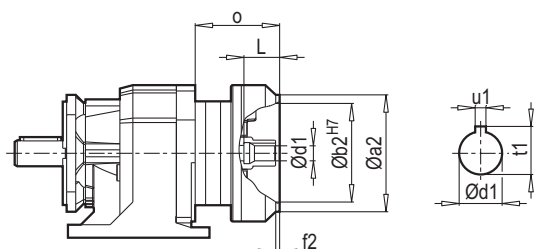
FC

	63 M	71 M					
g	124	140					
g1	111	119					
k	342	368					
kBre	394	428					
o	197	223					

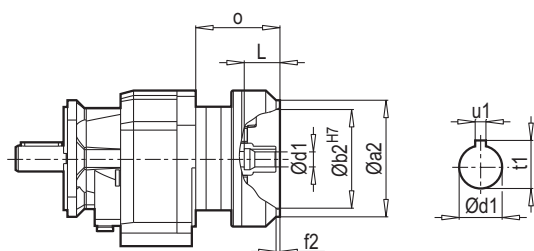
A - PAM



AF - PAM

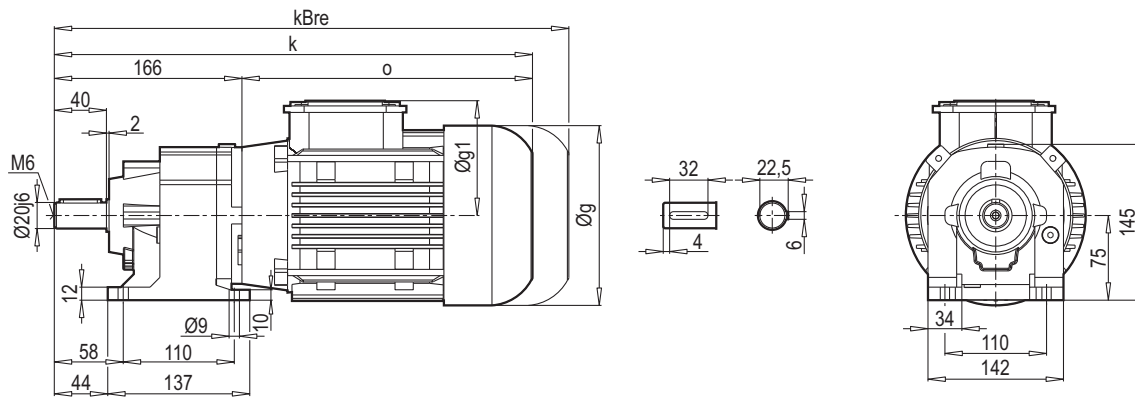


F - PAM

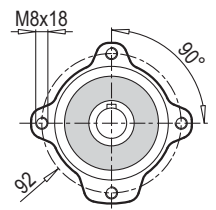
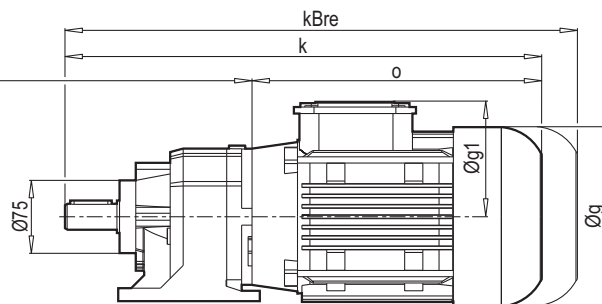


	PAM 56 - B14 Ø105	PAM 56 - B5 Ø120	PAM 63 - B14 Ø90	PAM 63 - B14 Ø120	PAM 63 - B5 Ø140	PAM 71 - B14 Ø105	PAM 71 - B14 Ø140	
a2	105	120	90	120	140	105	140	
b2	70	80	60	80	95	70	95	
d1	9	9	11	11	11	14	14	
f2	3	3,5	3	3,5	3,5	3	3,5	
L	20	20	23	23	23	30	30	
u1	3	3	4	4	4	5	5	
t1	11,4	11,4	12,8	12,8	12,8	16,3	16,3	
o	59,5	59,5	59,5	59,5	59,5	59,5	59,5	

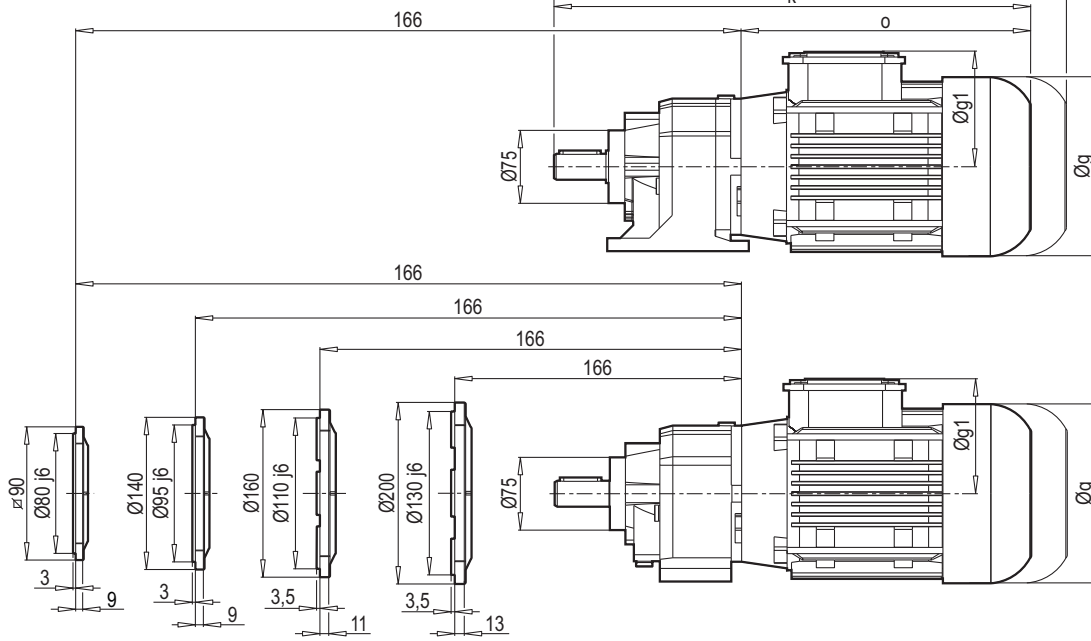
A 202 G



AF 202 G



F 202 G

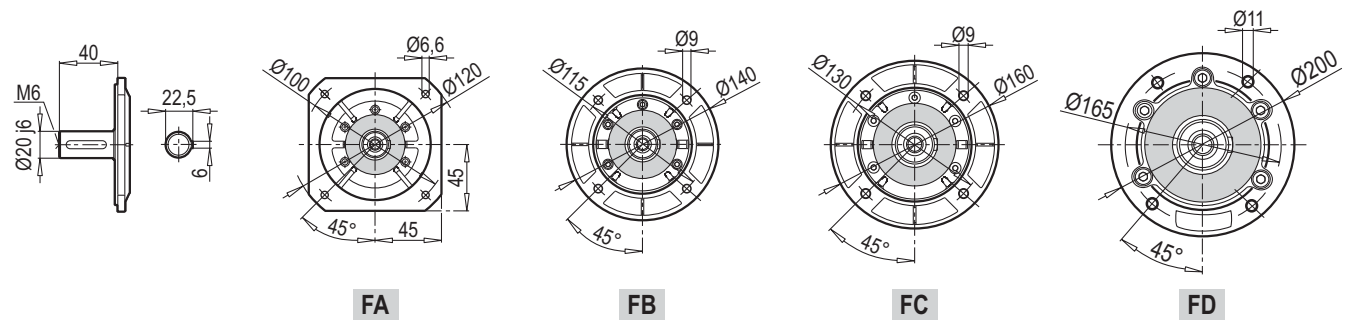


FA

FB

FC

FD



FA

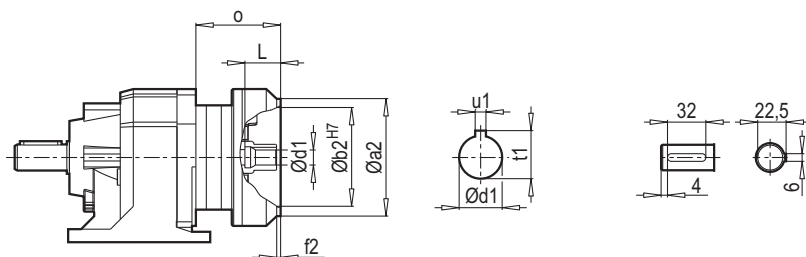
FB

FC

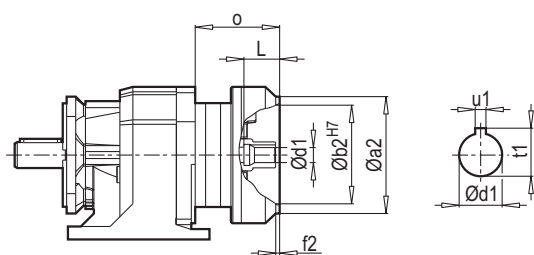
FD

	63 M	71 M	80 M	90 S	90 L			
g	124	140	159	193	193			
g1	111	119	127	151	151			
k	378	407	433	479	499			
kBre	430	467	495	552	572			
o	212	241	267	313	333			

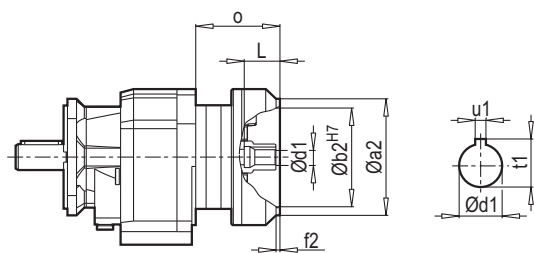
A - PAM



AF - PAM



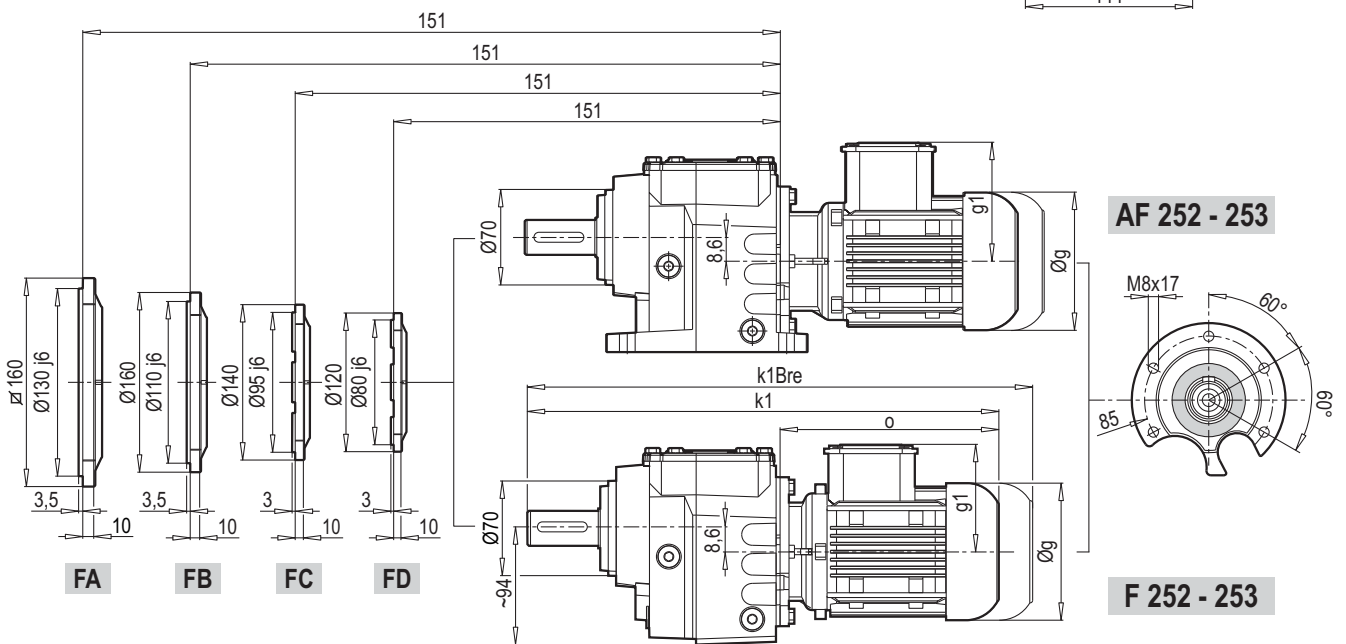
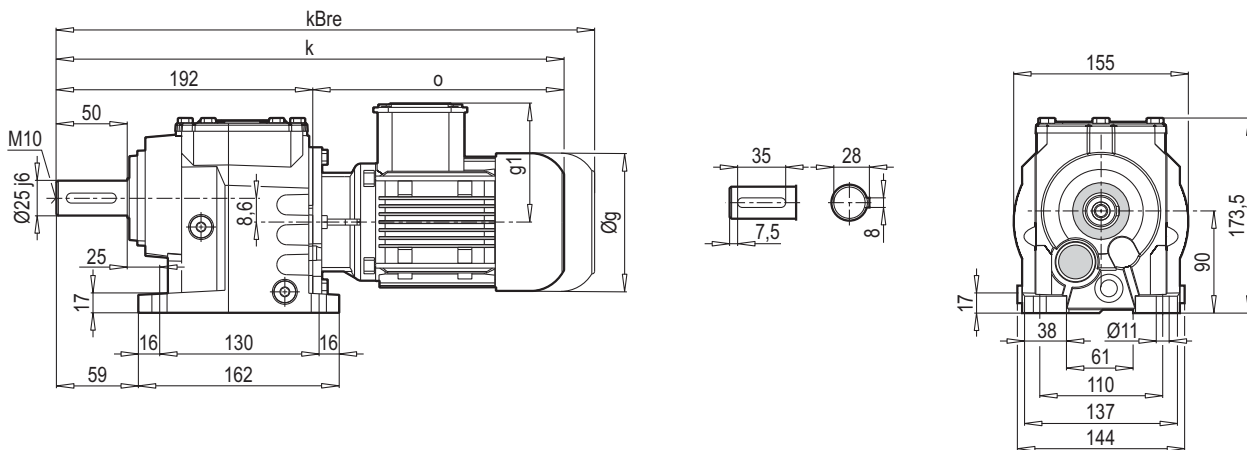
F - PAM



	PAM 56 - B14 Ø105	PAM 63 - B14 Ø90	PAM 63 - B14 Ø120	PAM 71 - B14 Ø105	PAM 71 - B14 Ø140	PAM 80 - B14 Ø120	PAM 80 - B14 Ø160	PAM 90 - B14 Ø140	PAM 90 - B14 Ø160
a2	105	90	120	105	140	120	160	140	160
b2	70	60	80	70	95	80	110	95	110
d1	9	11	11	14	14	19	19	24	24
f2	3	3	3,5	3	3,5	3,5	4	3,5	4
L	20	23	23	30	30	40	40	50	50
u1	3	4	4	5	5	6	6	8	8
t1	11,4	12,8	12,8	16,3	16,3	21,8	21,8	27,3	27,3
o	74,5	74,5	74,5	74,5	74,5	74,5	74,5	87,5	87,5

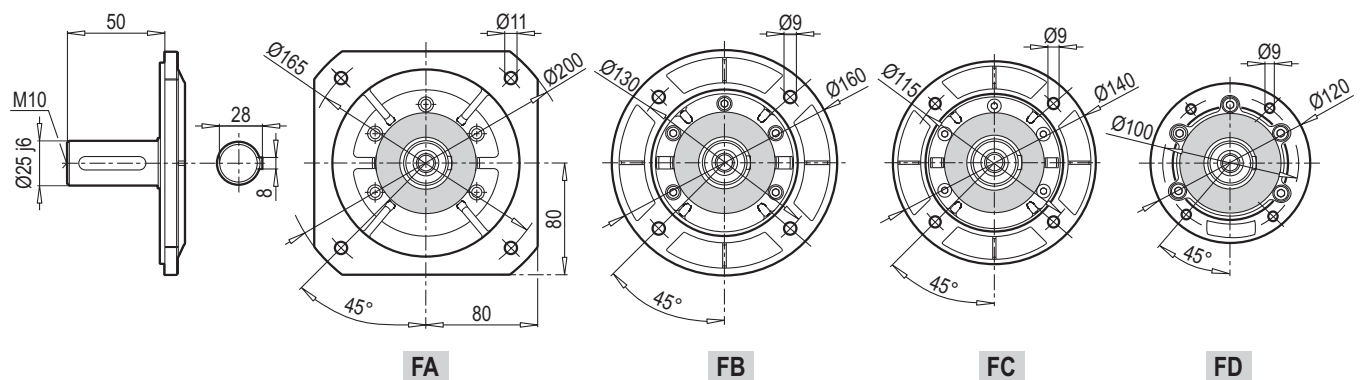
	PAM 56 - B5 Ø120	PAM 63 - B5 Ø140	PAM 71 - B5 Ø160	PAM 80 - B5 Ø200	PAM 90 - B5 Ø200			
a2	120	140	160	200	200			
b2	80	95	110	130	130			
d1	9	11	14	19	24			
f2	3,5	3,5	4	4	4			
L	20	23	30	40	50			
u1	3	4	5	6	8			
t1	11,4	12,8	16,3	21,8	27,3			
o	74,5	74,5	74,5	74,5	87,5			

A 252 - 253



AF 252 - 253

F 252 - 253



FA

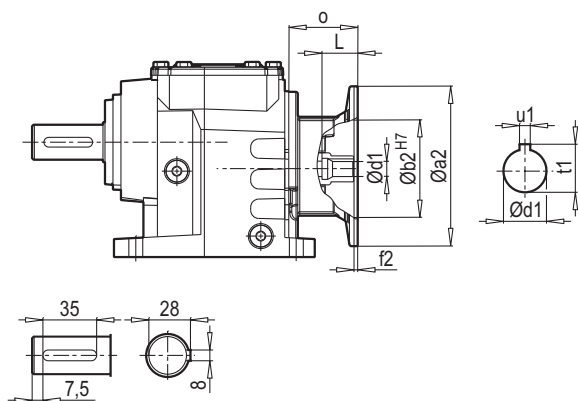
FB

FC

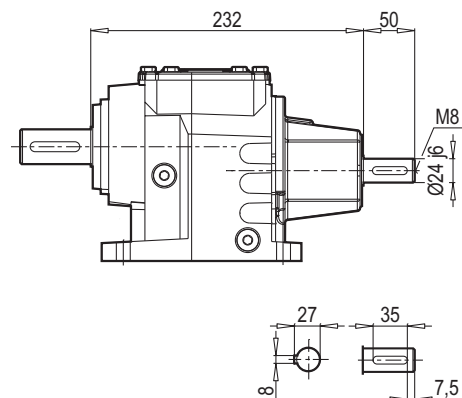
FD

	63 M	71 M	80 M	90 S	90 L	100 L	112 M
g	124	140	159	193	193	217	232
g1	111	119	127	151	151	160	168
k	404	433	459	505	525	526	585
kBre	456	493	521	578	598	607	665
o	212	241	267	313	333	334	393
k1	413	442	468	514	534	535	594
k1Bre	465	502	590	587	607	616	674

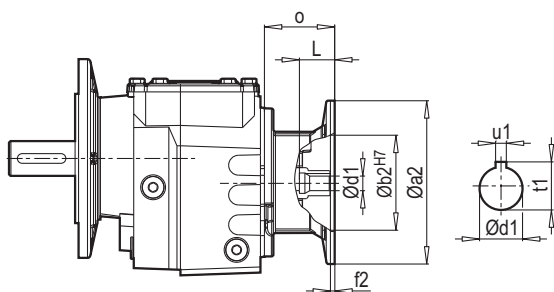
A - PAM



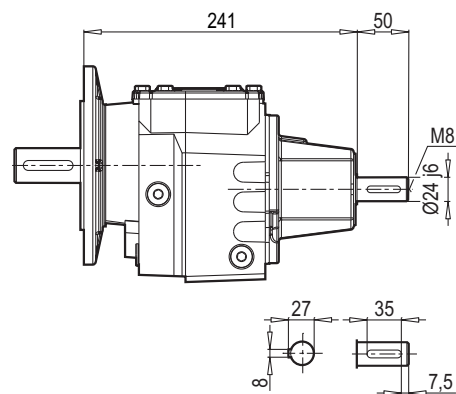
A - W



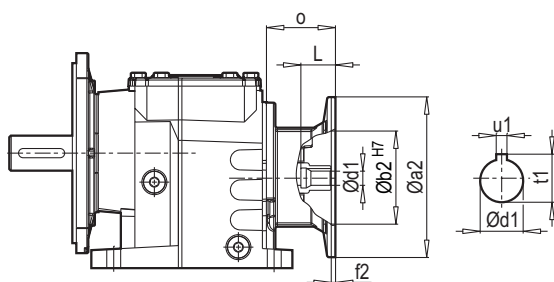
F - PAM



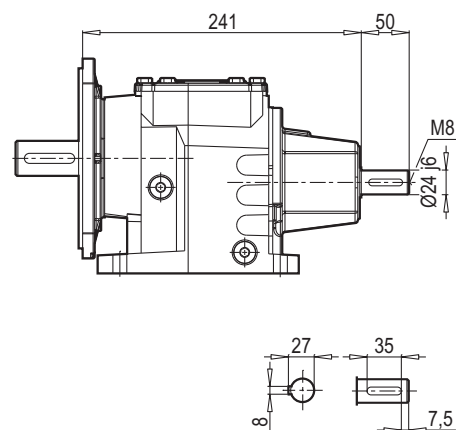
F - W



AF - PAM

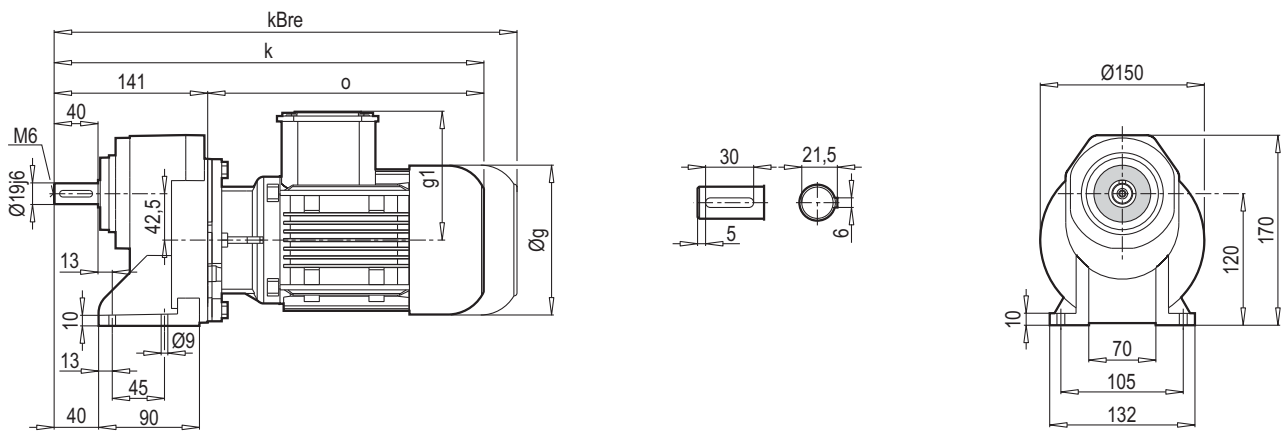


AF - W

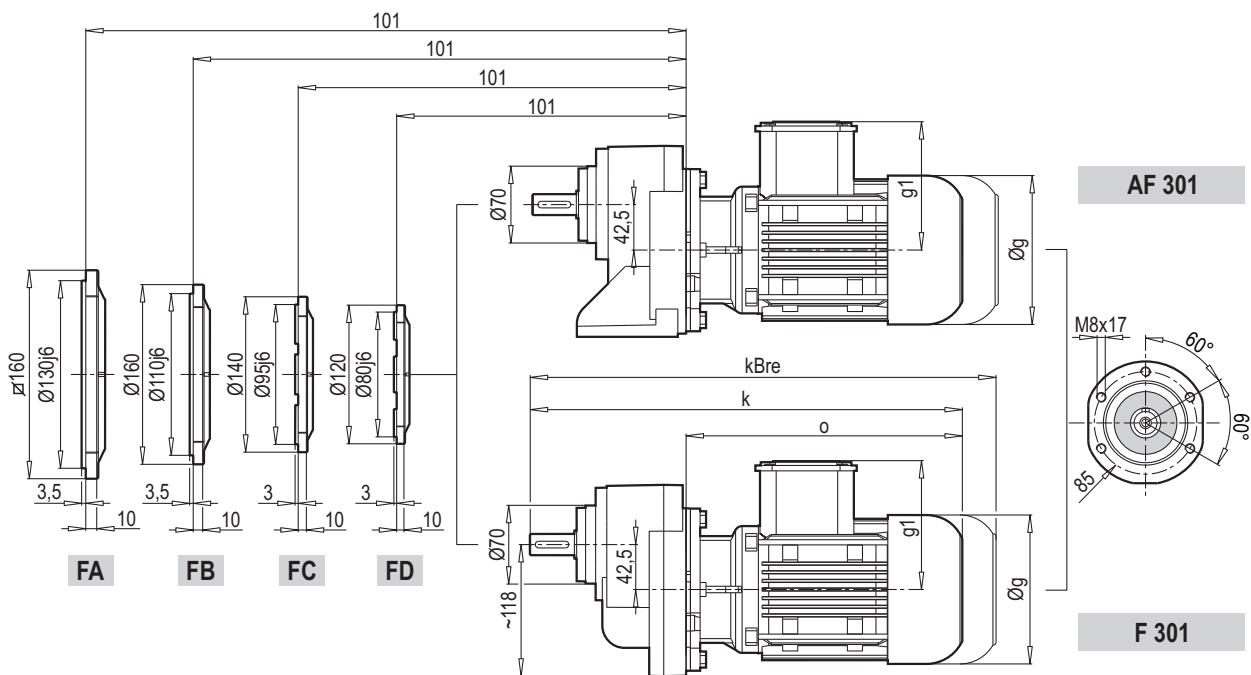


	63	71	80	90	100	112		
a2	140	160	200	200	250	250		
b2	95	110	130	130	180	180		
d1	11	14	19	24	28	28		
f2	4,5	5	5	5	5,5	5,5		
L	25	32	42	52	62	62		
u1	4	5	6	8	8	8		
t1	12,8	16,3	21,8	27,3	31,3	31,3		
o	57	69	90	90	105	105		

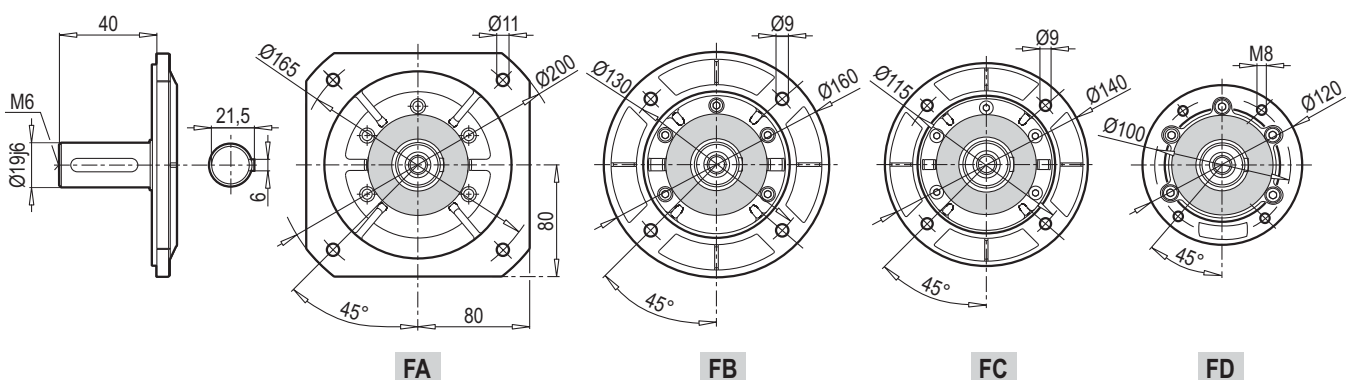
A 301



AF 301



F 301



FA

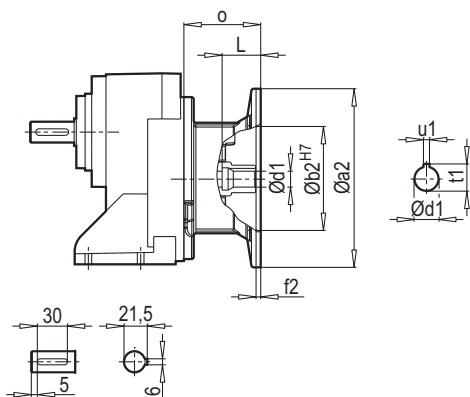
FB

FC

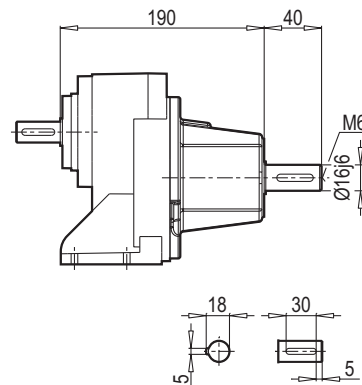
FD

	71 M	80 M	90 S	90 L			
g	140	159	193	193			
g1	119	127	151	151			
k	382	408	454	474			
kBre	442	470	527	547			
o	241	267	313	333			

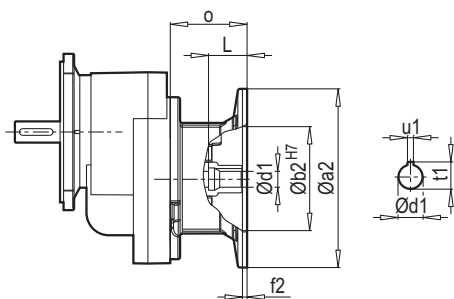
A - PAM



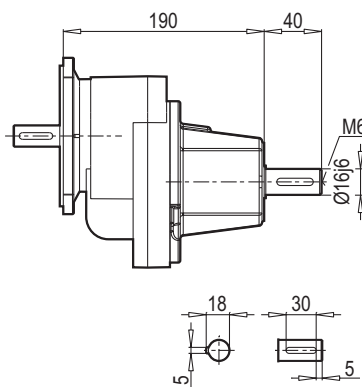
A - W



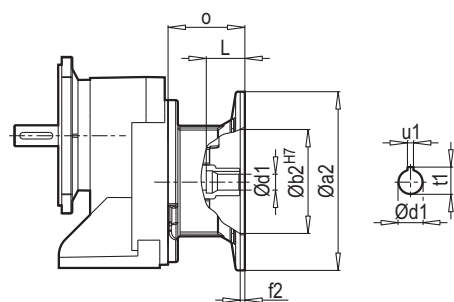
F - PAM



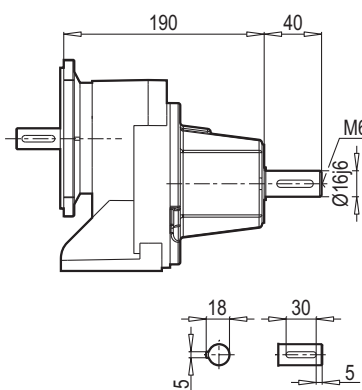
F - W



AF - PAM

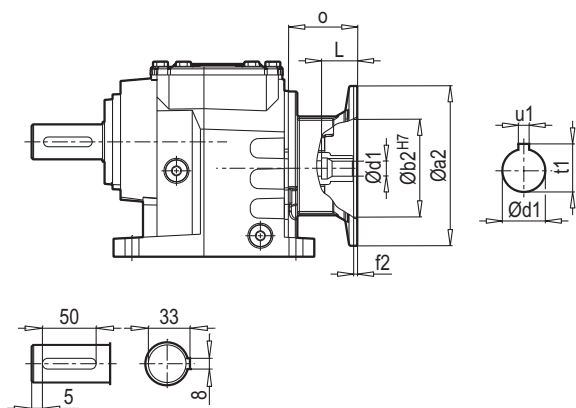


AF - W

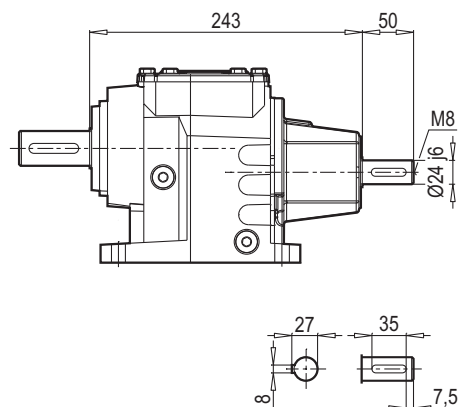


	71	80	90				
a2	160	200	200				
b2	110	130	130				
d1	14	19	24				
f2	5	5	5				
L	32	42	52				
u1	5	6	8				
t1	16,3	21,8	27,3				
o	69	90	90				

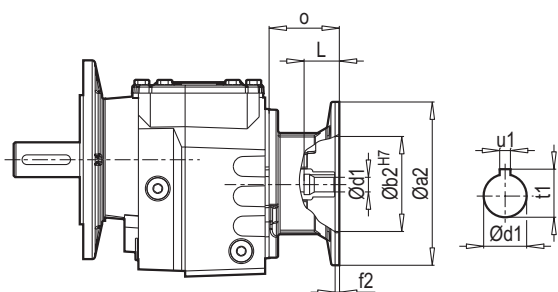
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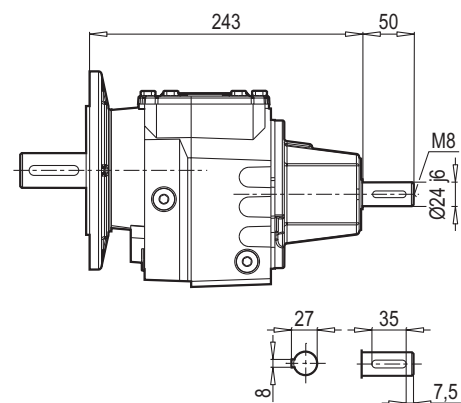
A - W



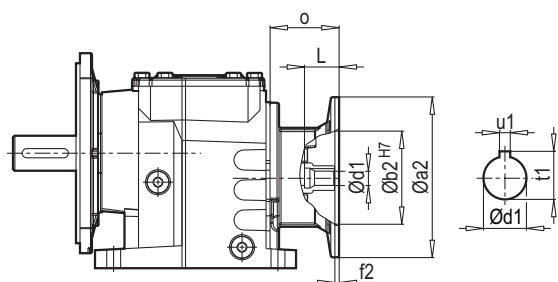
F - PAM



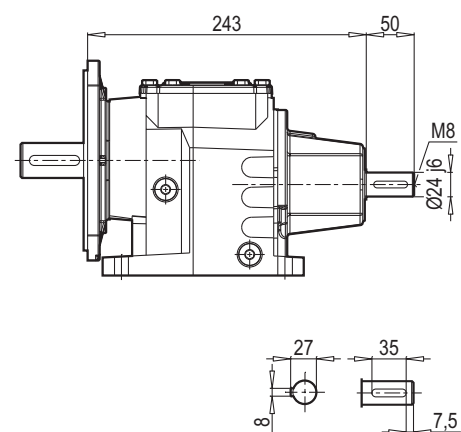
F - W



AF - PAM

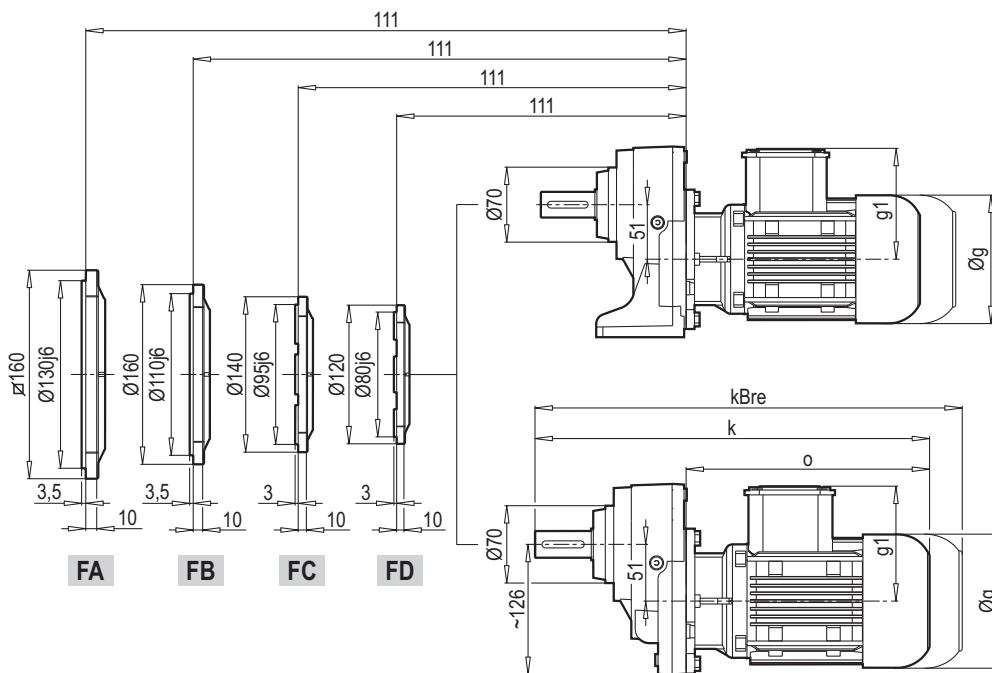
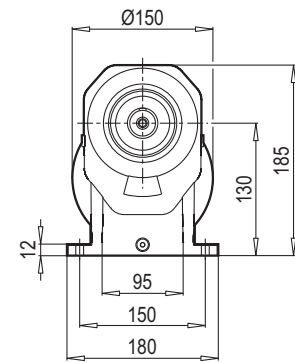
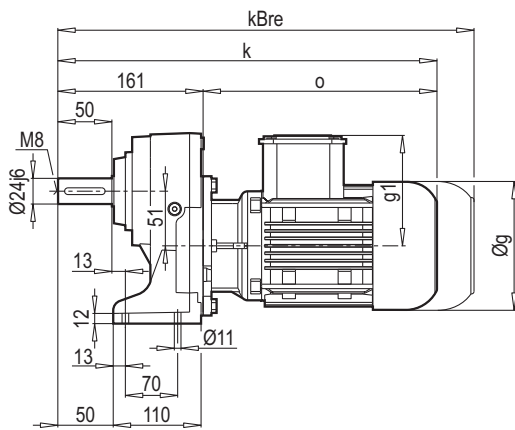


AF - W

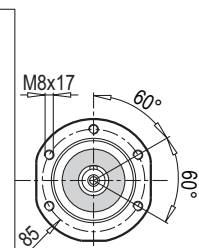


	63	71	80	90	100	112		
a2	140	160	200	200	250	250		
b2	95	110	130	130	180	180		
d1	11	14	19	24	28	28		
f2	4,5	5	5	5	5,5	5,5		
L	25	32	42	52	62	62		
u1	4	5	6	8	8	8		
t1	12,8	16,3	21,8	27,3	31,3	31,3		
o	57	69	90	90	105	105		

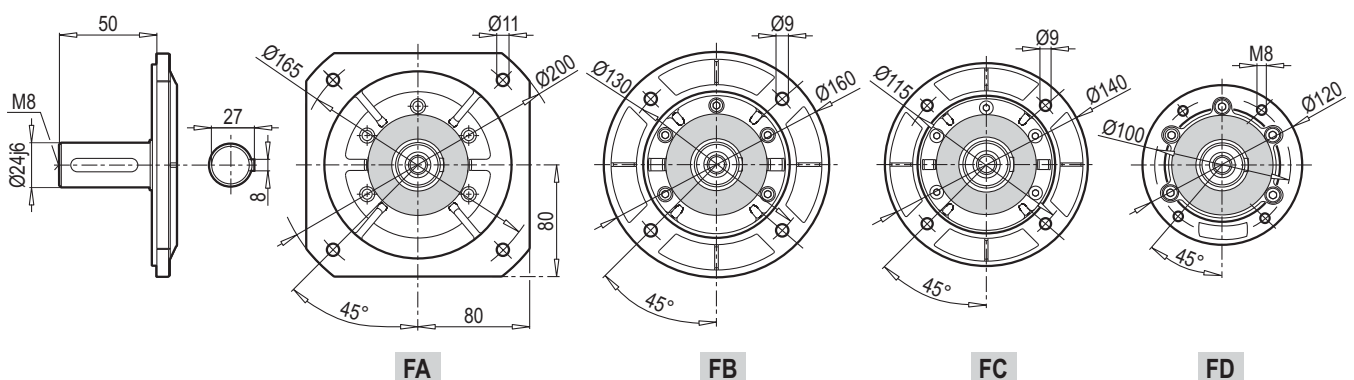
A 351



AF 351

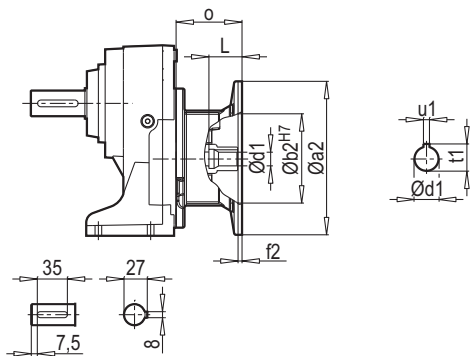


F 351

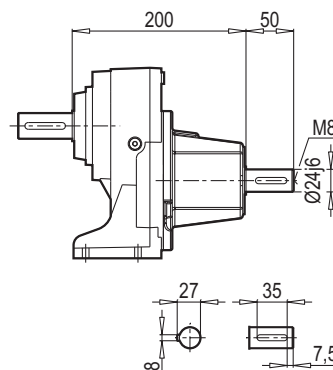


	71 M	80 M	90 S	90 L	100 L	112 M		
g	140	159	193	193	217	232		
g1	119	127	151	151	160	168		
k	402	428	474	494	495	554		
kBre	462	490	547	567	576	634		
o	241	267	313	333	334	393		

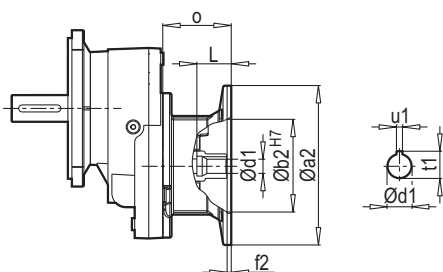
A - PAM



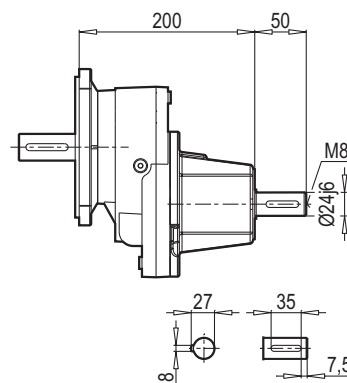
A - W



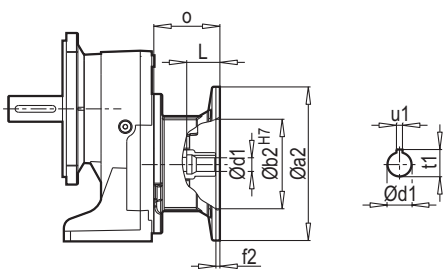
F - PAM



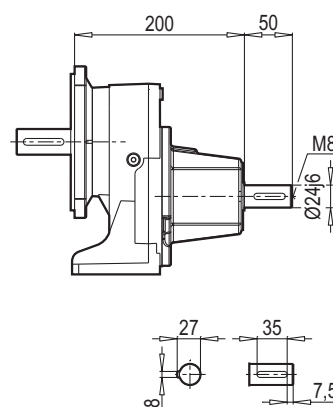
F - W



AF - PAM

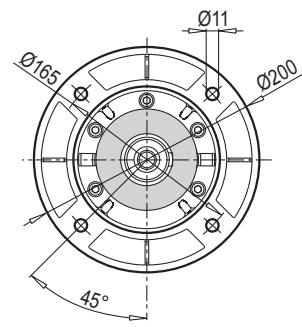
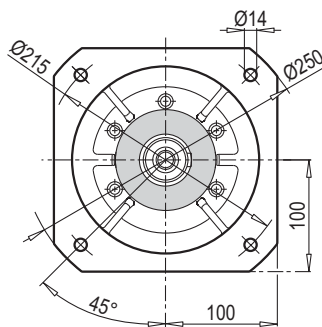
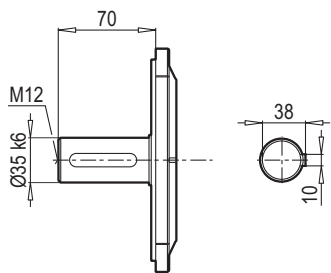
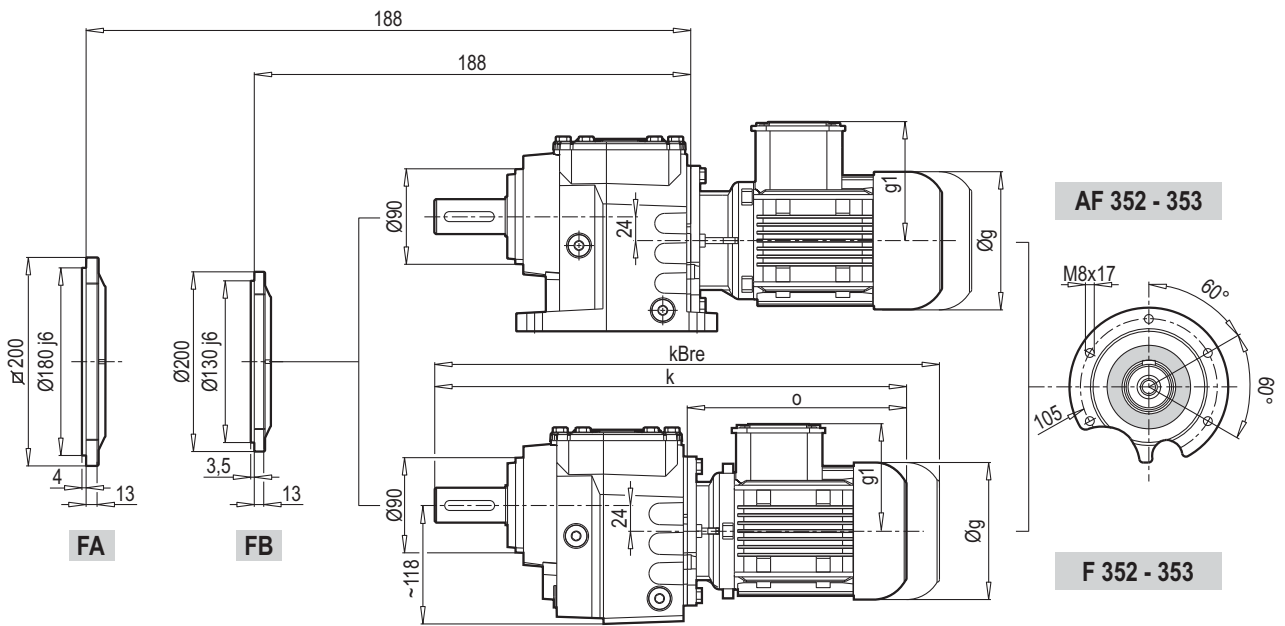
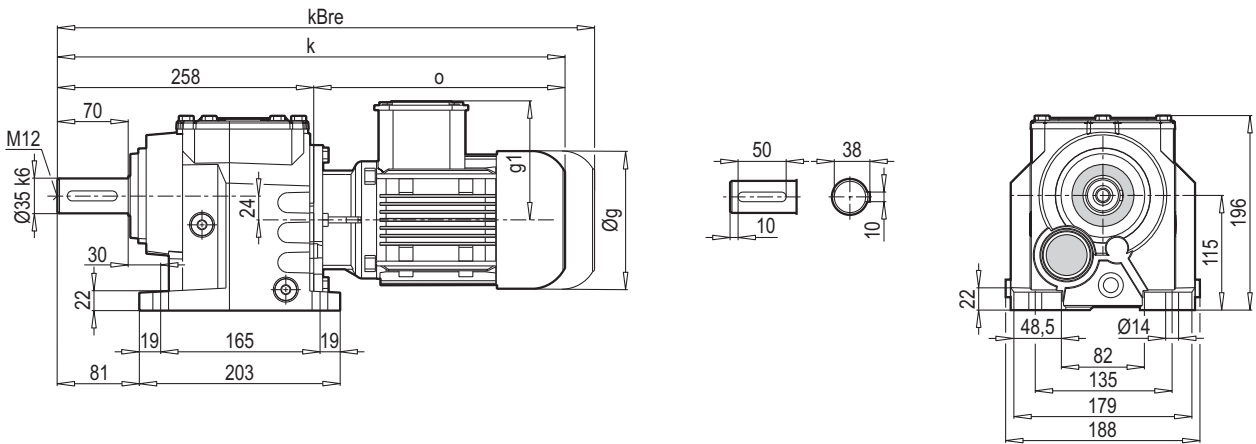


AF - W



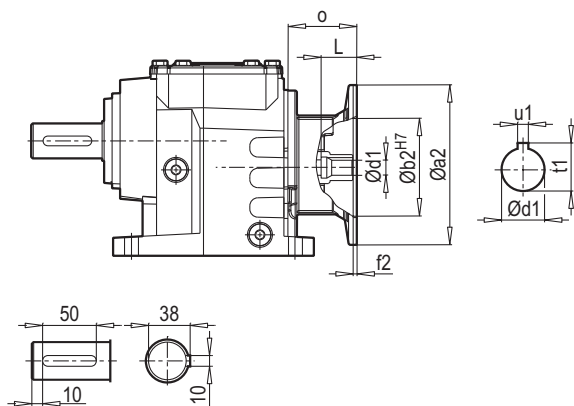
	71	80	90	100	112			
a2	160	200	200	250	250			
b2	110	130	130	180	180			
d1	14	19	24	28	28			
f2	5	5	5	5,5	5,5			
L	32	42	52	62	62			
u1	5	6	8	8	8			
t1	16,3	21,8	27,3	31,3	31,3			
o	69	90	90	105	105			

A 352 - 353

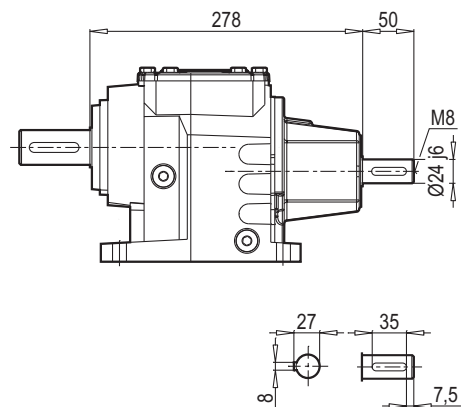


	63 M	71 M	80 M	90 S	90 L	100 L	112 M
g	124	140	159	193	193	217	232
g1	111	119	127	151	151	160	168
k	470	499	525	571	591	592	651
kBre	522	559	587	644	664	673	731
o	212	241	267	313	333	334	393

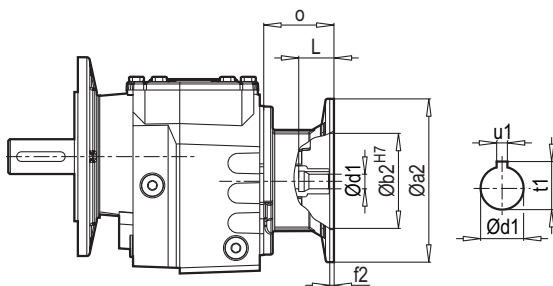
A - PAM



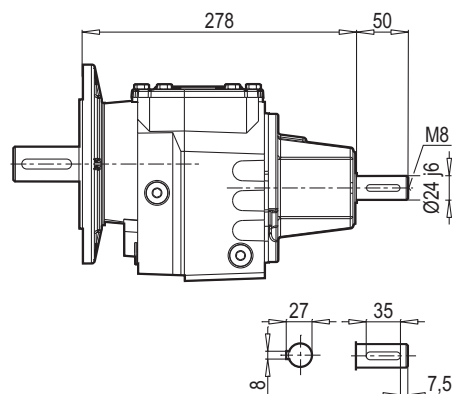
A - W



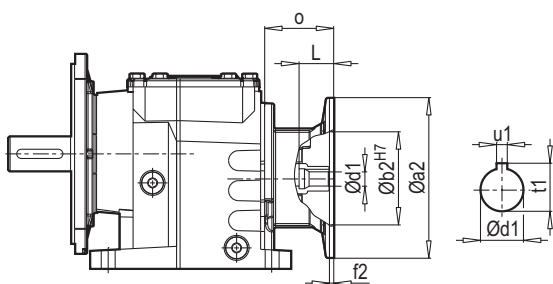
F - PAM



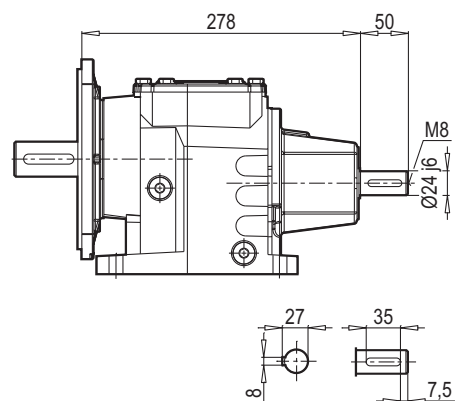
F - W



AF - PAM

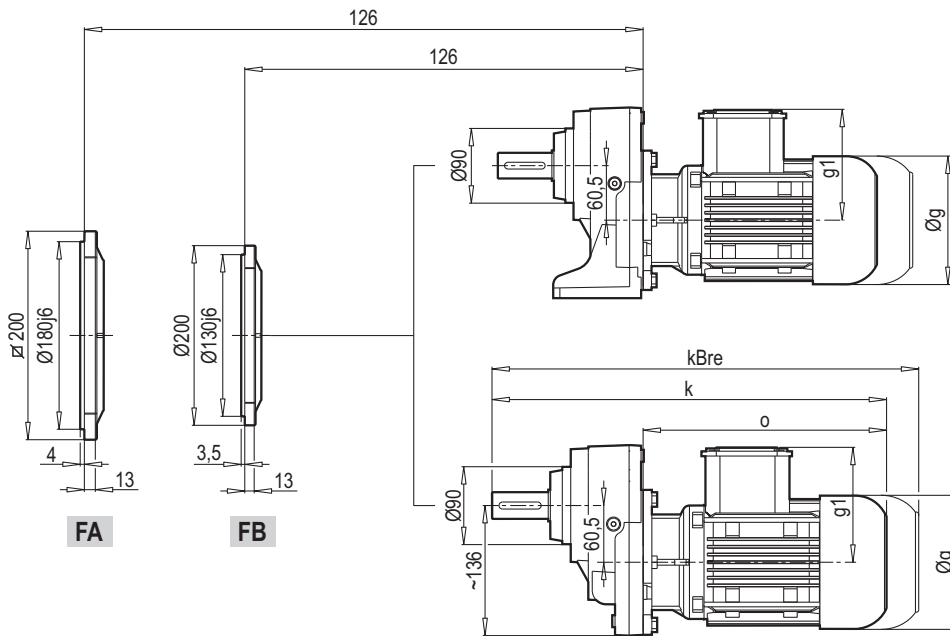
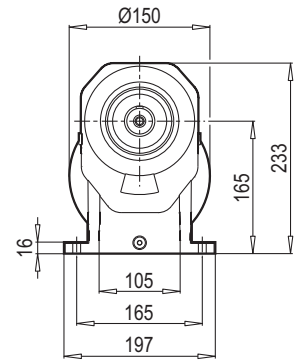
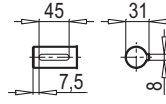
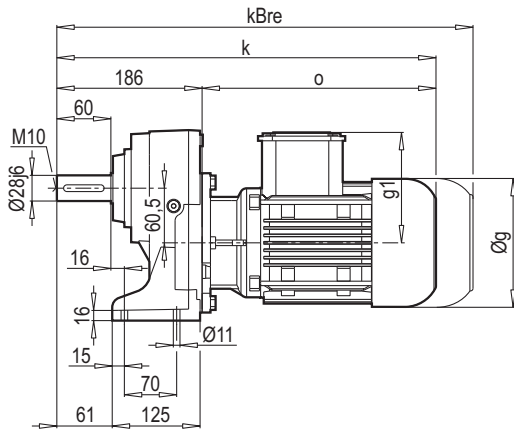


AF - W

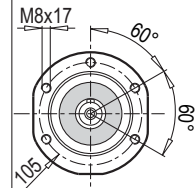


	63	71	80	90	100	112		
a2	140	160	200	200	250	250		
b2	95	110	130	130	180	180		
d1	11	14	19	24	28	28		
f2	4,5	5	5	5	5,5	5,5		
L	25	32	42	52	62	62		
u1	4	5	6	8	8	8		
t1	12,8	16,3	21,8	27,3	31,3	31,3		
o	57	69	90	90	105	105		

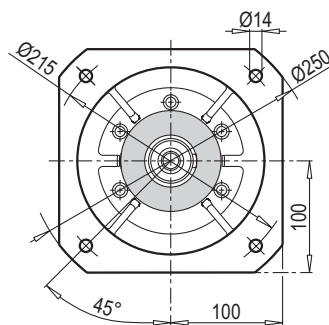
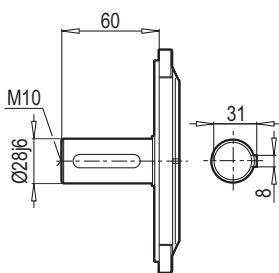
A 401



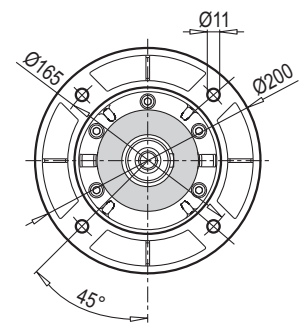
AF 401



F 401



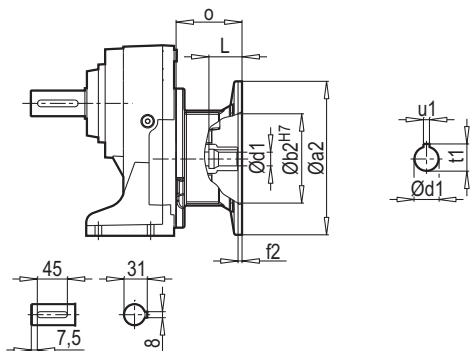
FA



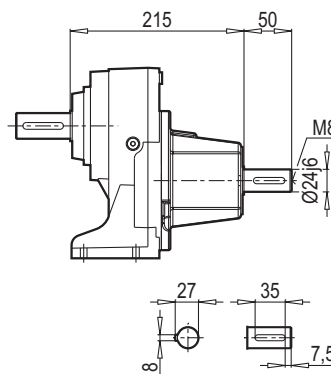
FB

	80 M	90 S	90 L	100 L	112 M		
g	159	193	193	217	232		
g1	127	151	151	160	168		
k	453	499	519	520	579		
kBre	515	572	592	601	659		
o	267	313	333	334	393		

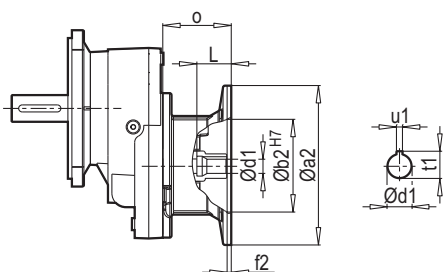
A - PAM



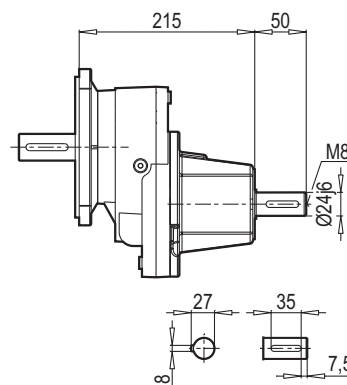
A - W



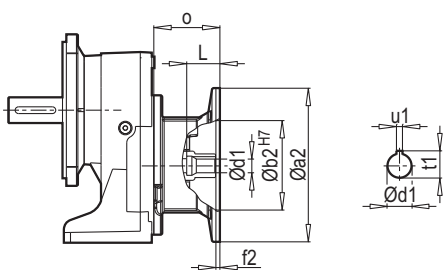
F - PAM



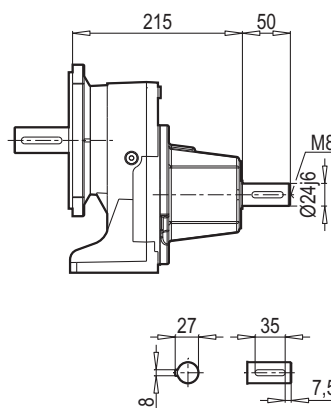
F - W



AF - PAM

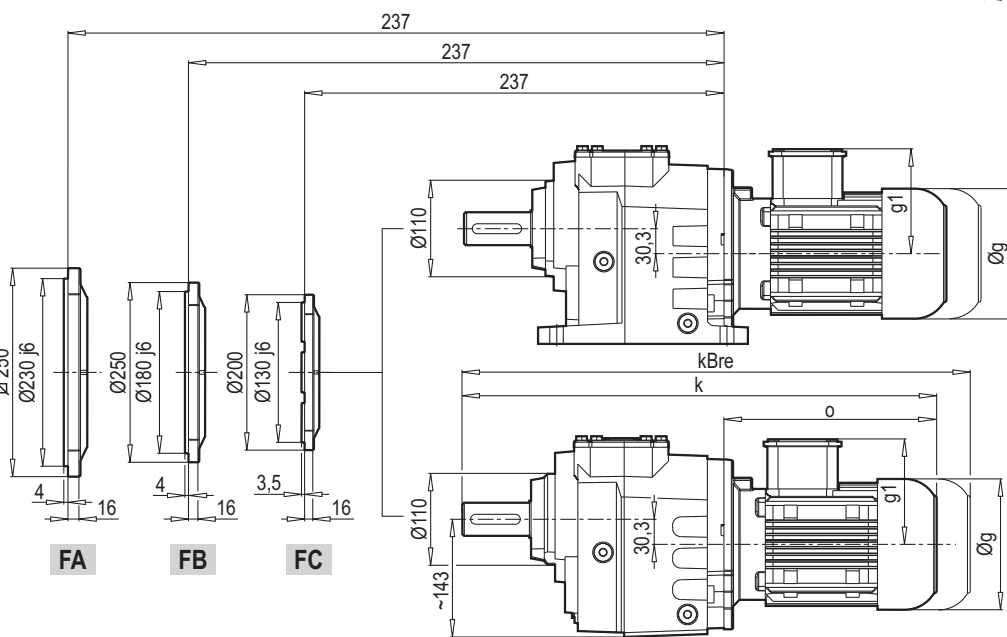
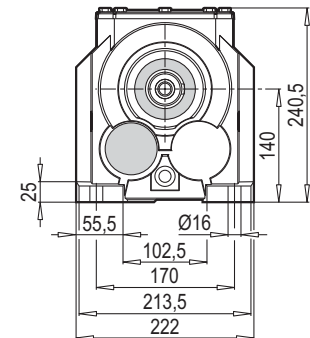
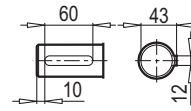
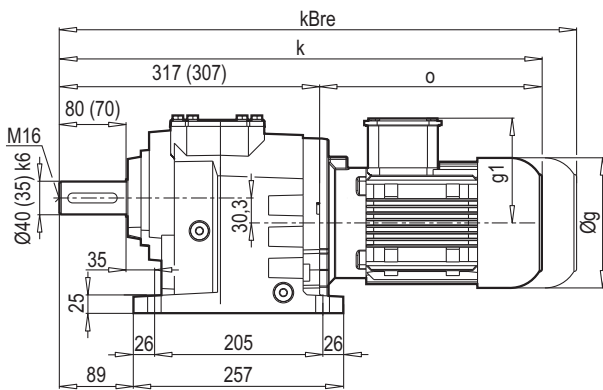


AF - W



	80	90	100	112			
a2	200	200	250	250			
b2	130	130	180	180			
d1	19	24	28	28			
f2	5	5	5,5	5,5			
L	42	52	62	62			
u1	6	8	8	8			
t1	21,8	27,3	31,3	31,3			
o	90	90	105	105			

A 402 - 403

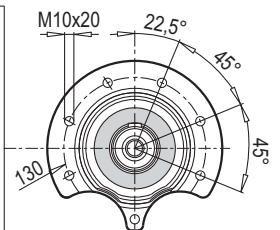


FA

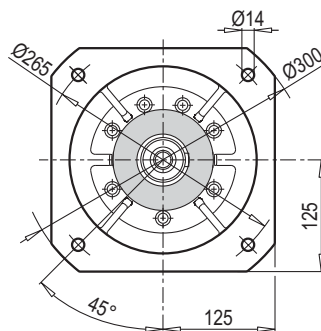
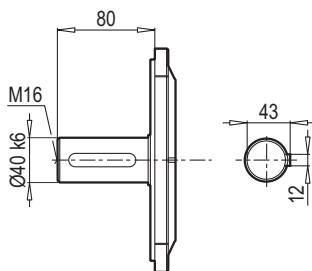
FB

FC

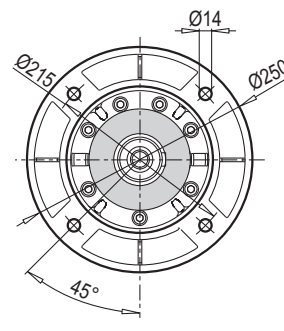
AF 402 - 403



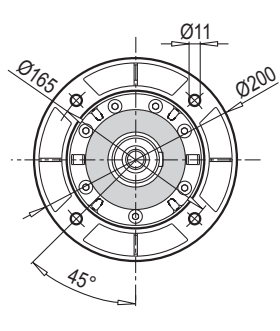
F 402 - 403



FA



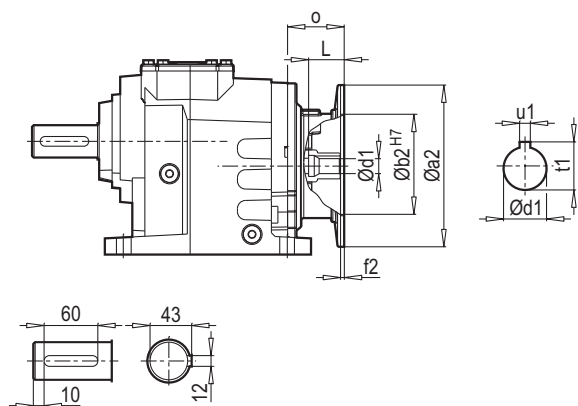
FB



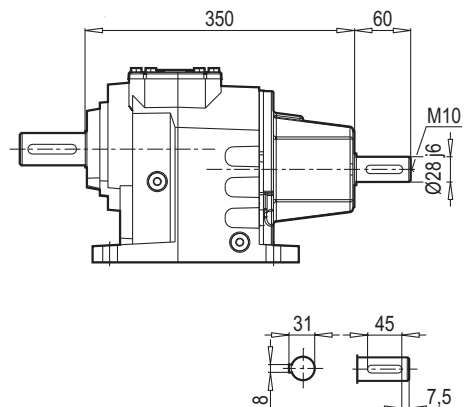
FC

	71 M	80 M	90 S	90 L	100 L	112 M	132 S	132 M
g	140	159	193	193	217	232	279	279
g1	119	127	151	151	160	168	182	182
k	538 (528)	564 (554)	610 (600)	630 (620)	653 (643)	706 (696)	713 (703)	748 (738)
kBre	598 (588)	626 (616)	683 (673)	703 (693)	734 (724)	786 (776)	821 (811)	889 (879)
o	221	247	293	313	336	389	396	431

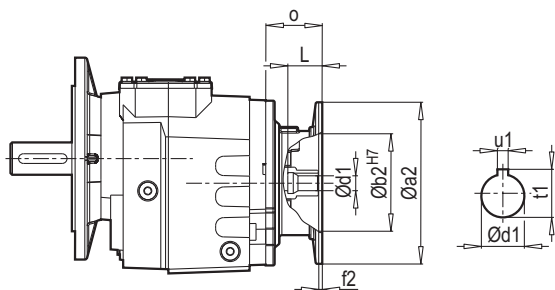
A - PAM



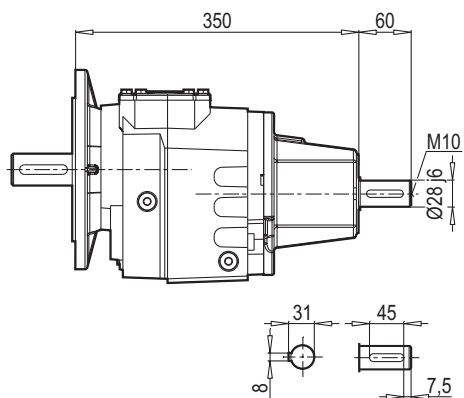
A - W



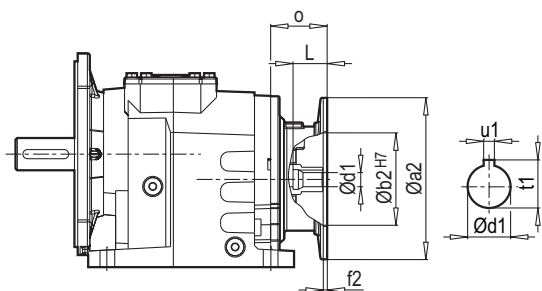
F - PAM



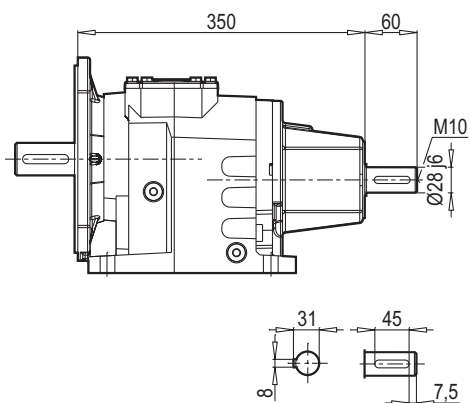
F - W



AF - PAM

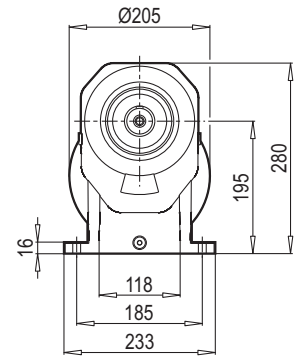
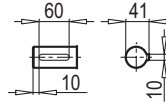
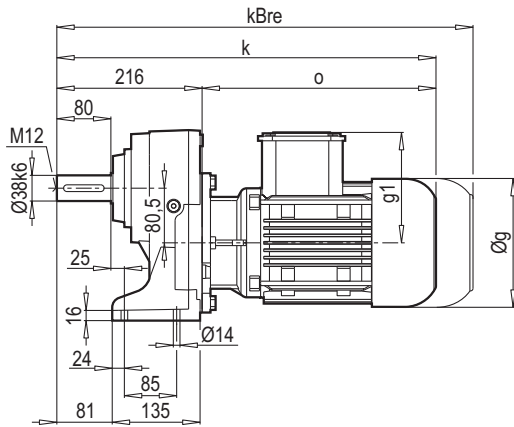


AF - W

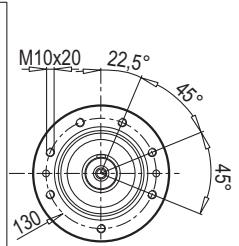
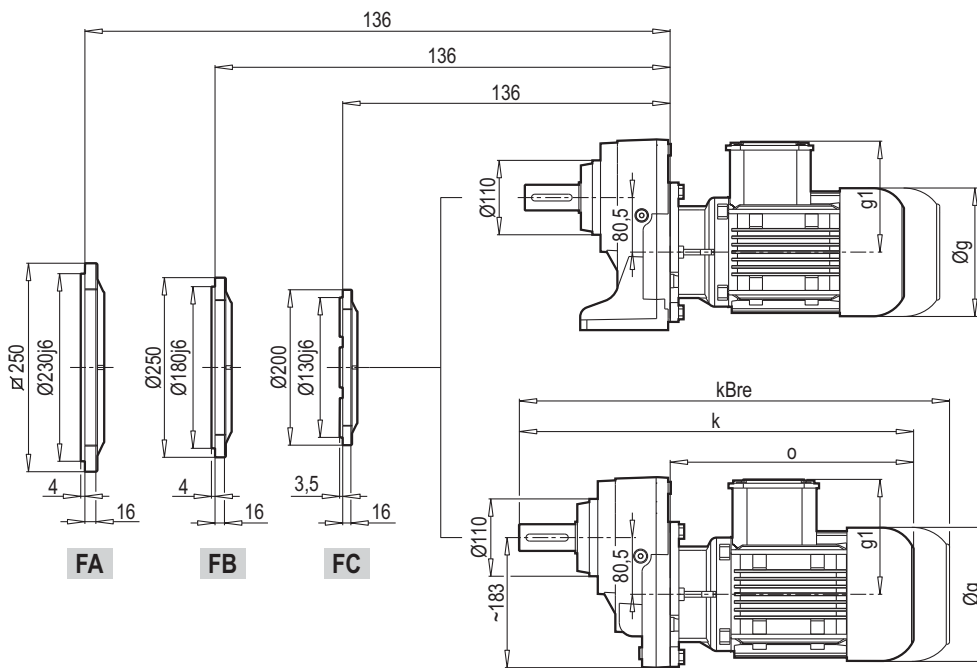


	71	80	90	100	112	132		
a2	160	200	200	250	250	300		
b2	110	130	130	180	180	230		
d1	14	19	24	28	28	38		
f2	5	5	5	5,5	5,5	5,5		
L	32	42	52	62	62	82		
u1	5	6	8	8	8	10		
t1	16,3	21,8	27,3	31,3	31,3	41,3		
o	49	70	70	85	85	110		

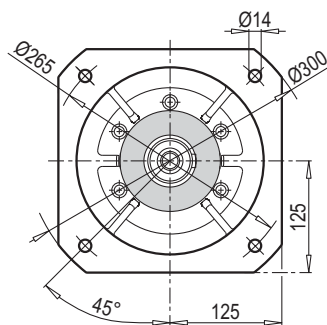
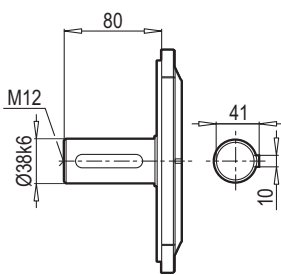
A 501



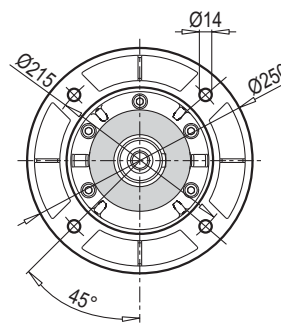
AF 501



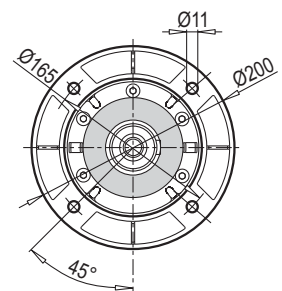
F 501



FA



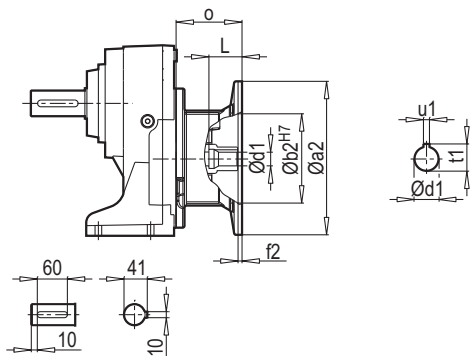
FB



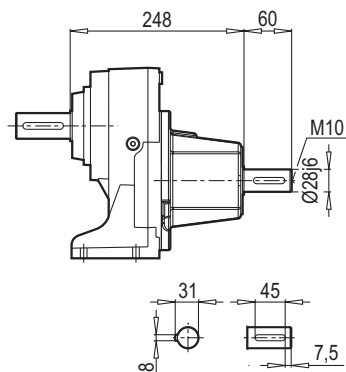
FC

	80 M	90 S	90 L	100 L	112 M	132 S	132 M	
g	159	193	193	217	232	279	279	
g1	127	151	151	160	168	182	182	
k	463	509	529	552	605	612	647	
kBre	525	582	602	633	685	720	788	
o	247	293	313	336	389	396	431	

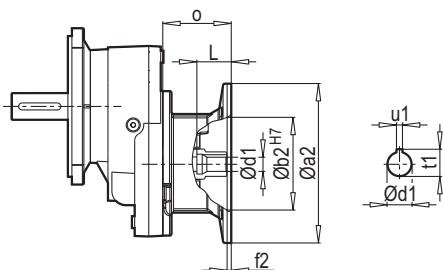
A - PAM



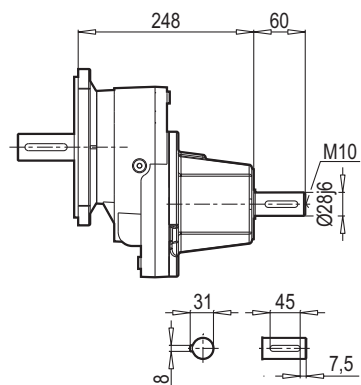
A - W



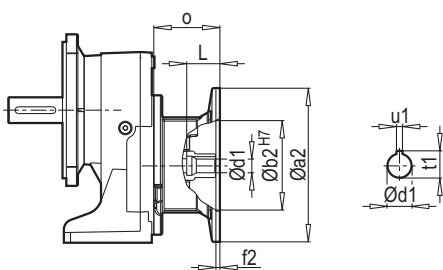
F - PAM



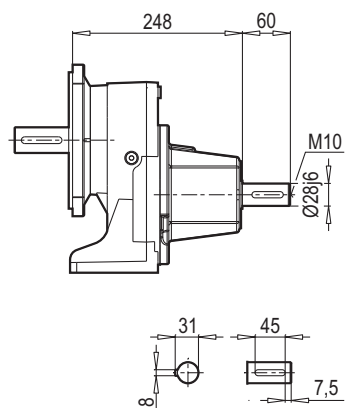
F - W



AF - PAM

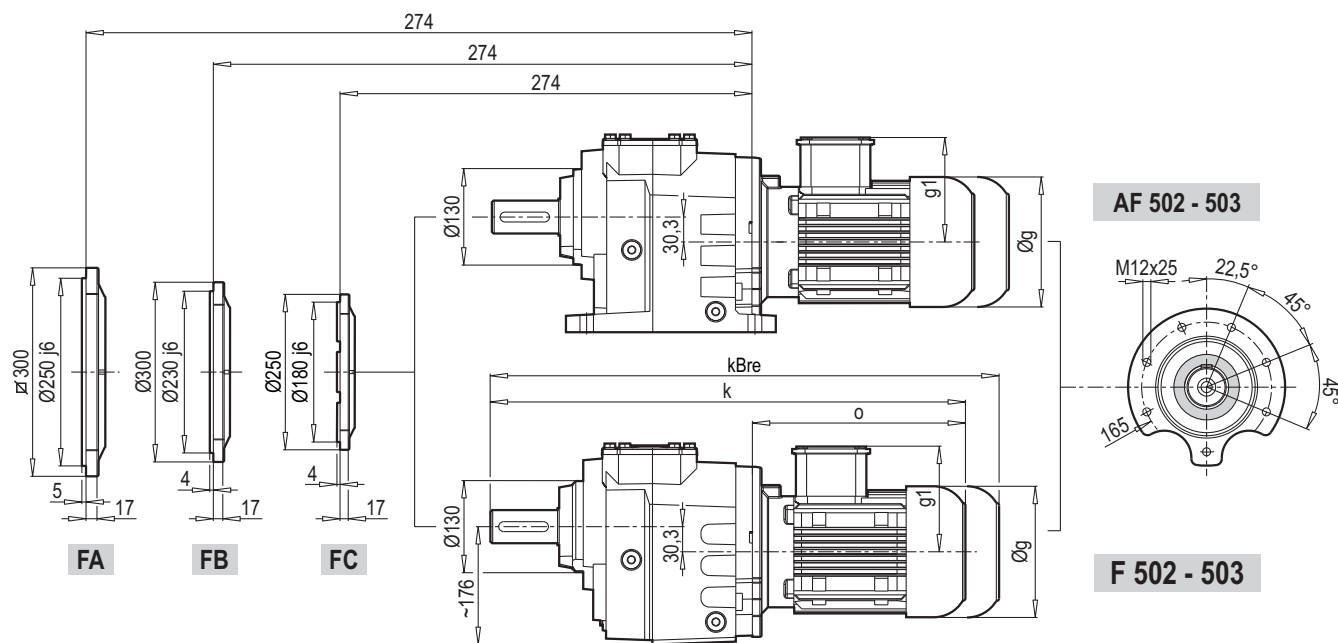
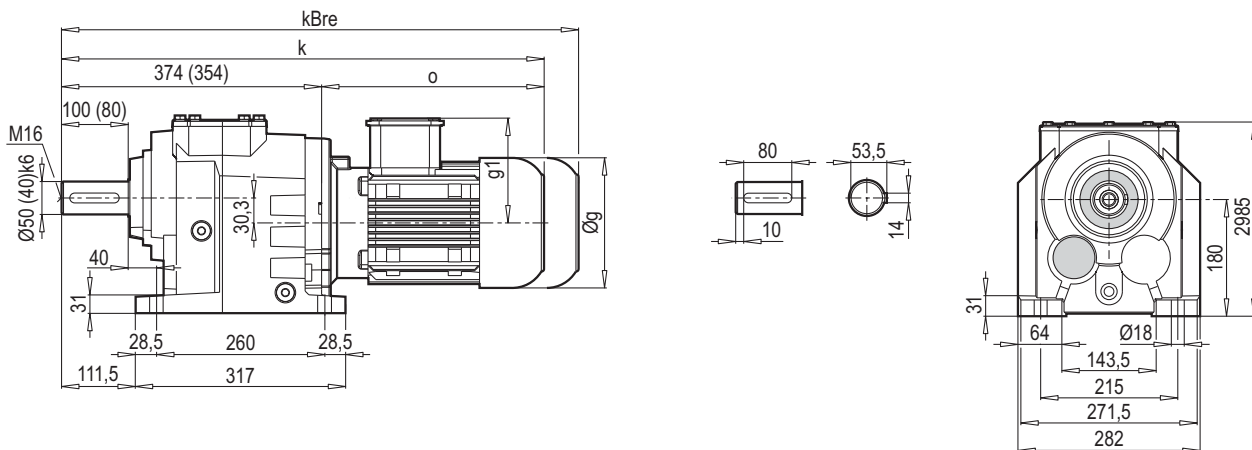


AF - W



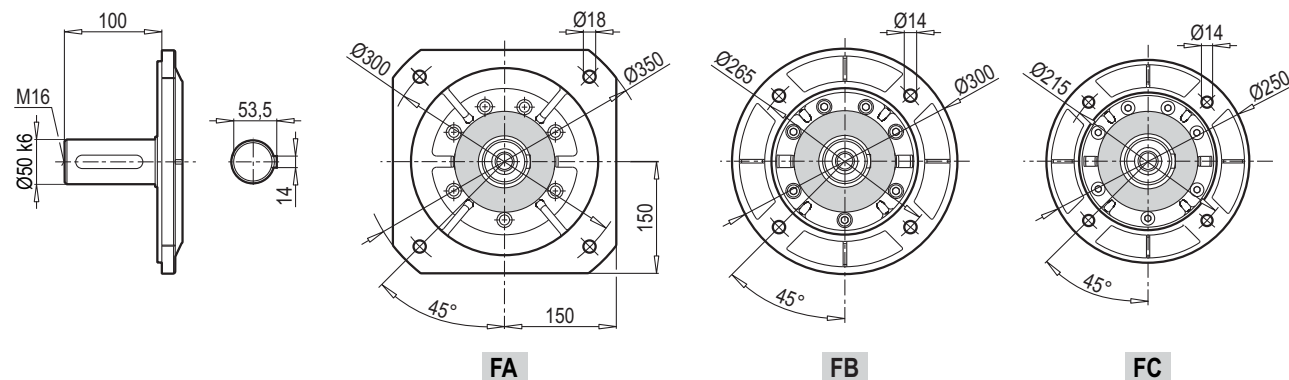
	80	90	100	112	132			
a2	200	200	250	250	300			
b2	130	130	180	180	230			
d1	19	24	28	28	38			
f2	5	5	5,5	5,5	5,5			
L	42	52	62	62	82			
u1	6	8	8	8	10			
t1	21,8	27,3	31,3	31,3	41,3			
o	70	70	85	85	110			

A 502 - 503



AF 502 - 503

F 502 - 503



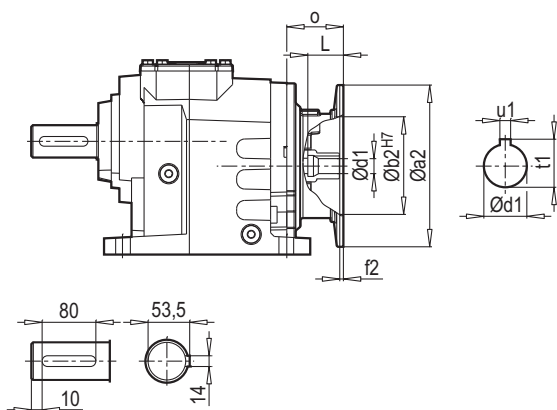
FA

FB

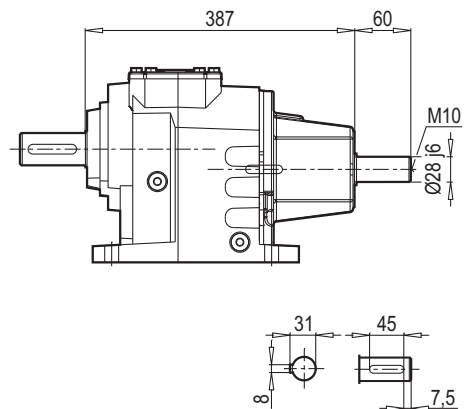
FC

	80 M	90 S	90 L	100 L	112 M	132 S	132 M	160 M/L
g	159	193	193	217	232	279	279	323
g1	127	151	151	160	168	182	182	200
k	621 (601)	667 (647)	687 (667)	710 (690)	763 (743)	770 (750)	805 (785)	892 (872)
kBre	683 (663)	740 (720)	760 (740)	791 (771)	843 (823)	878 (858)	946 (926)	1044 (1024)
o	247	293	313	336	389	396	431	518

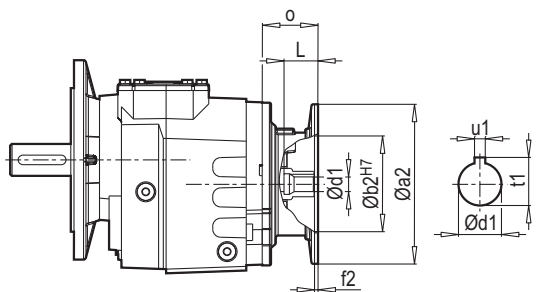
A - PAM



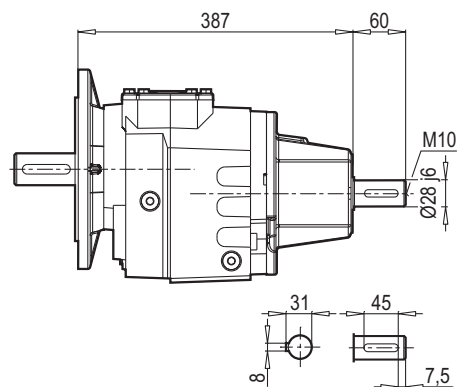
A - W



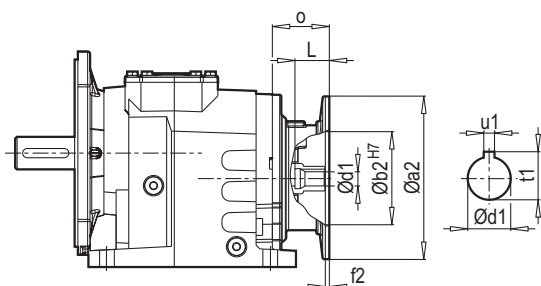
F - PAM



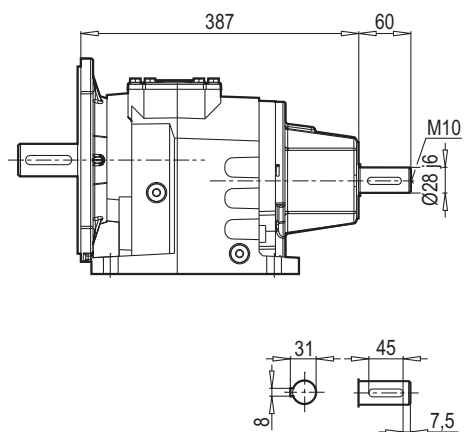
F - W



AF - PAM

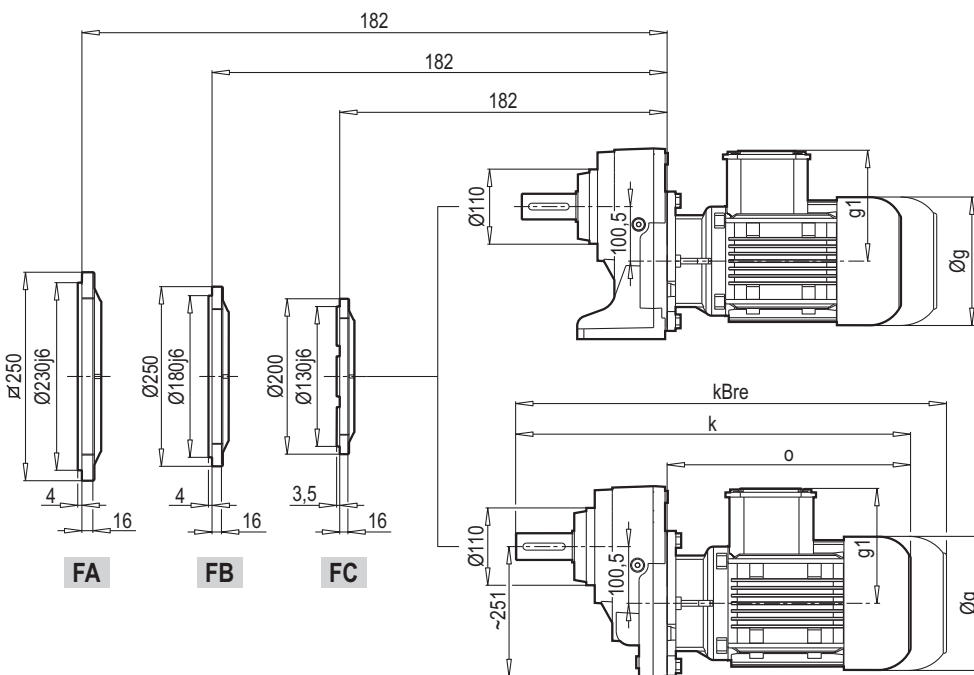
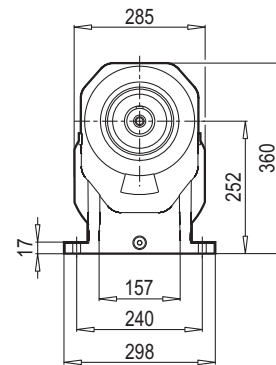
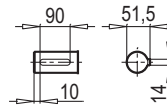
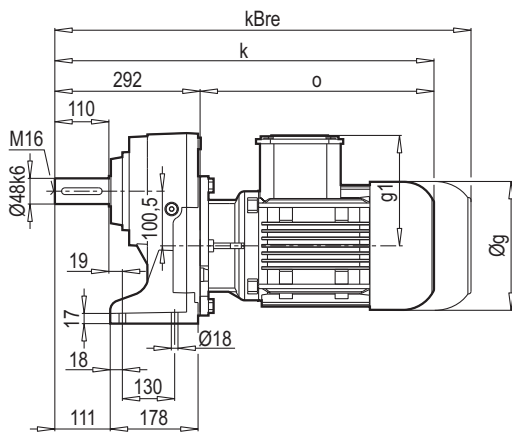


AF - W

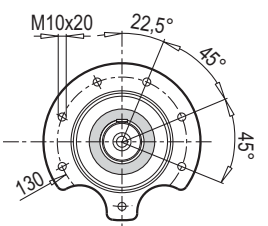


	80	90	100	112	132	160			
a2	200	200	250	250	300	350			
b2	130	130	180	180	230	250			
d1	19	24	28	28	38	42			
f2	5	5	5,5	5,5	5,5	7			
L	42	52	62	62	82	112			
u1	6	8	8	8	10	12			
t1	21,8	27,3	31,3	31,3	41,3	45,3			
o	70	70	85	85	110	158			

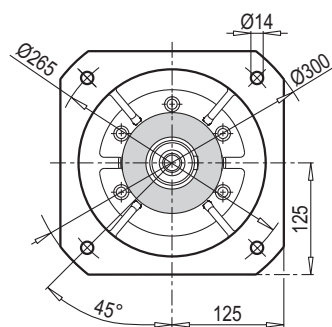
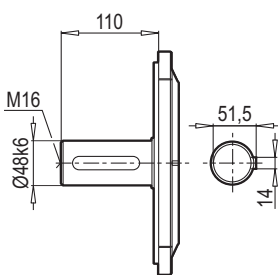
A 601



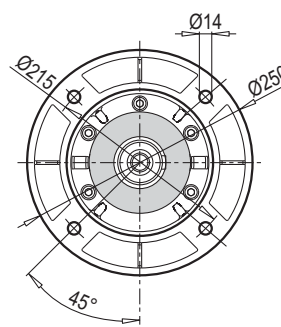
AF 601



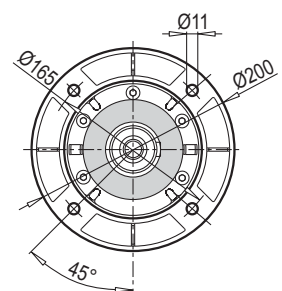
F 601



FA



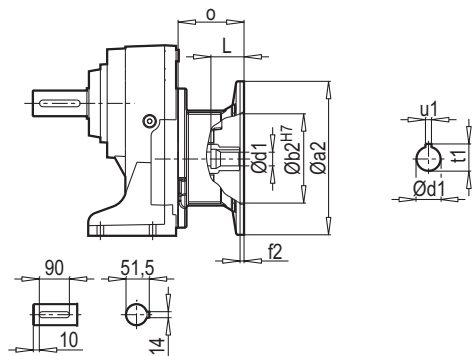
FB



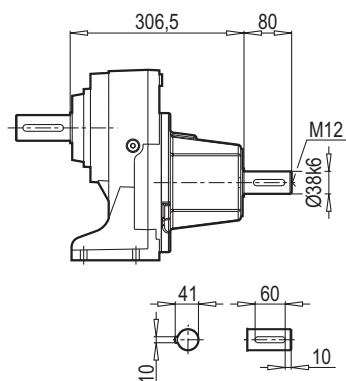
FC

	100 L	112 M	132 S	132 M	160 M/L	180 M/L		
g	217	232	279	279	323	370		
g1	160	168	182	182	200	248		
k	618	672	678	713	800	865		
kBre	699	752	786	854	952	1027		
o	326	380	386	421	508	573		

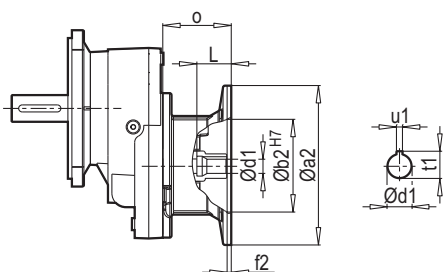
A - PAM



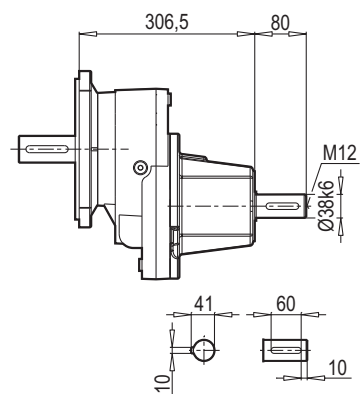
A - W



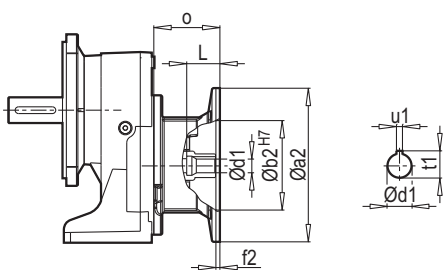
F - PAM



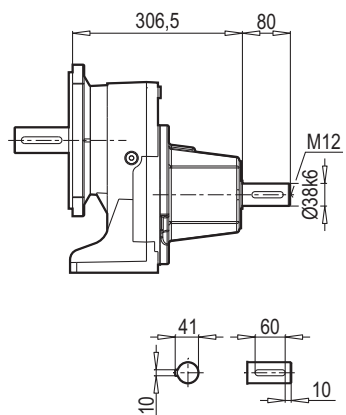
F - W



AF - PAM

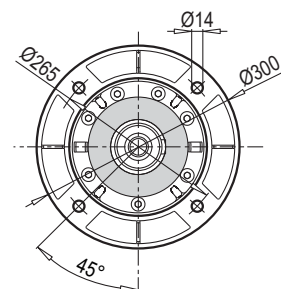
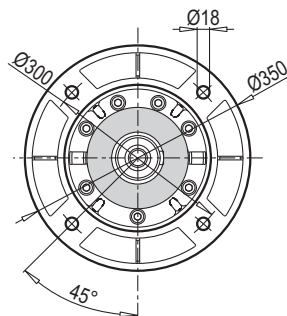
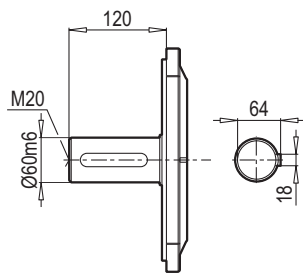
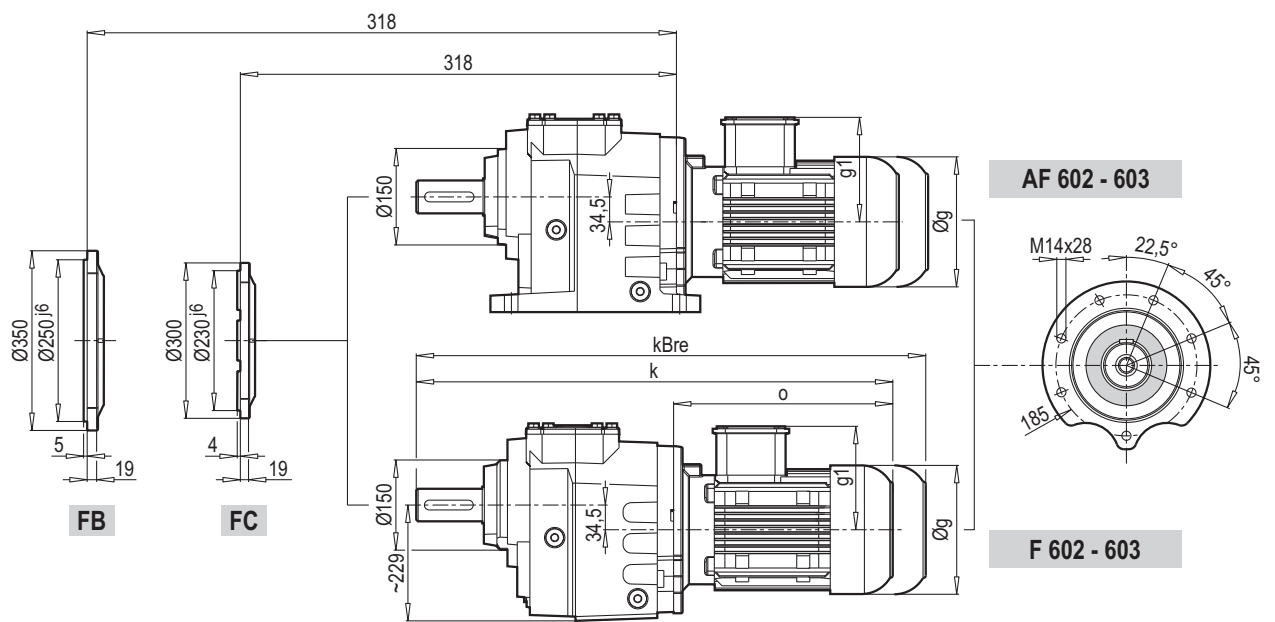
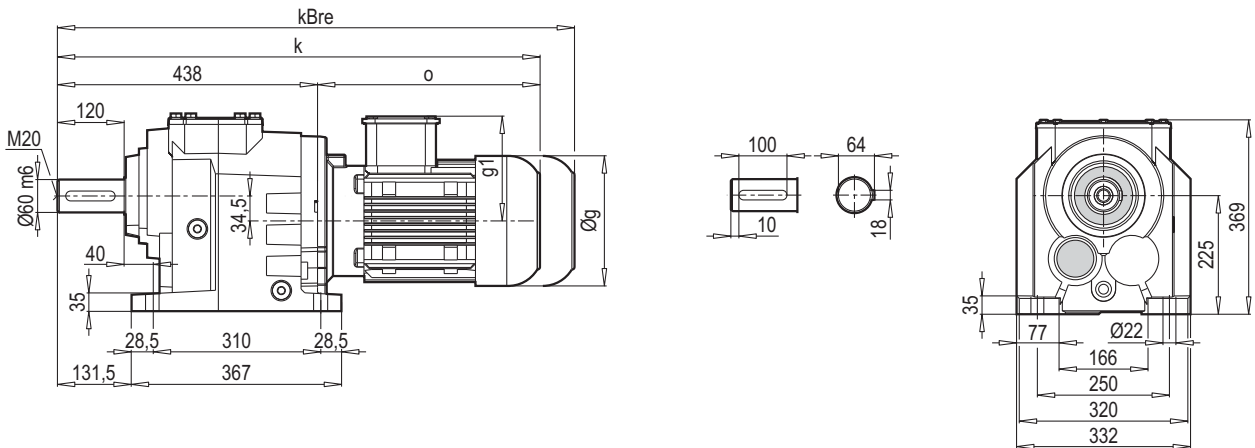


AF - W



	100	112	132	160	180			
a2	250	250	300	350	350			
b2	180	180	230	250	250			
d1	28	28	38	42	48			
f2	5,5	5,5	5,5	7	7			
L	62	62	82	112	112			
u1	8	8	10	12	14			
t1	31,3	31,3	41,3	45,3	51,8			
o	76	76	101	148	148			

A 602 - 603

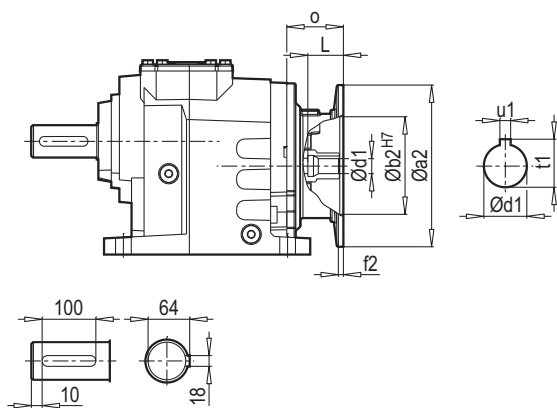


FB

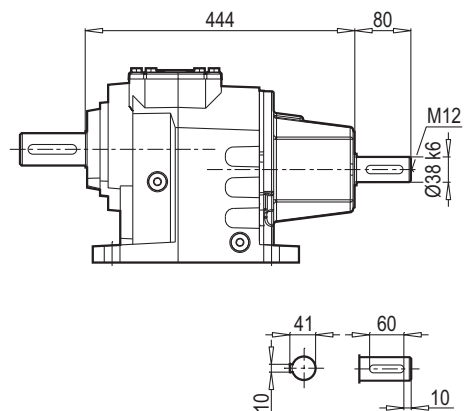
FC

	90 L	100 L	112 M	132 S	132 M	160 M/L	180 M/L
g	193	217	232	279	279	323	370
g1	151	160	168	182	182	200	248
k	741	764	818	824	859	946	1011
kBre	814	845	898	932	1000	1098	1173
o	303	326	380	386	421	508	573

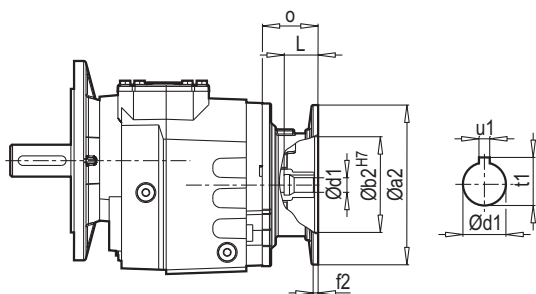
A - PAM



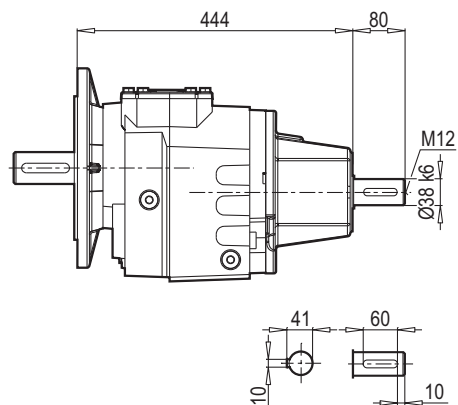
A - W



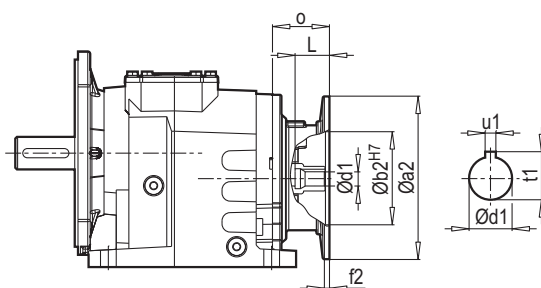
F - PAM



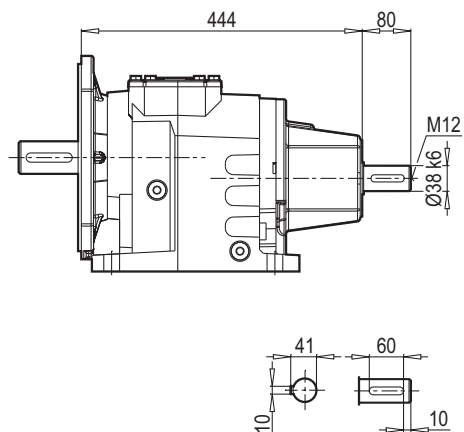
F - W



AF - PAM

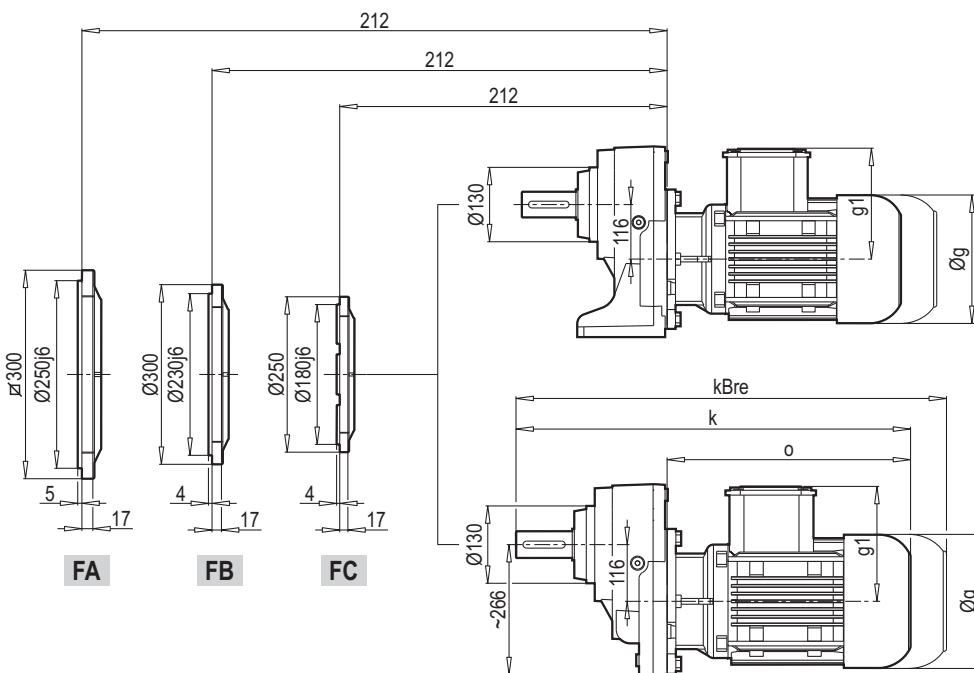
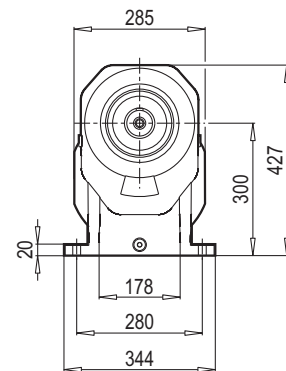
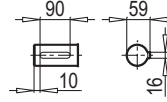
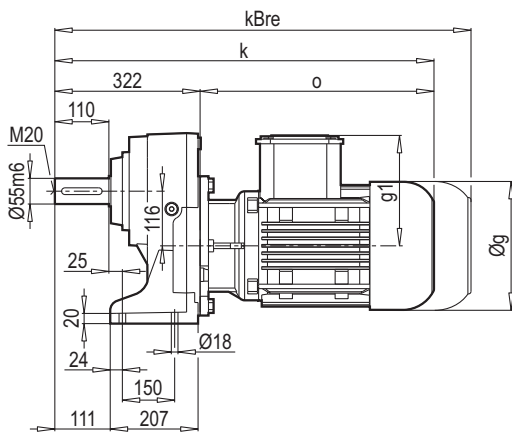


AF - W

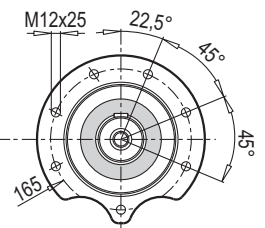


	90	100	112	132	160	180			
a2	200	250	250	300	350	350			
b2	130	180	180	230	250	250			
d1	24	28	28	38	42	48			
f2	5	5,5	5,5	5,5	7	7			
L	52	62	62	82	112	112			
u1	8	8	8	10	12	14			
t1	27,3	31,3	31,3	41,3	45,3	51,8			
o	61	76	76	101	148	148			

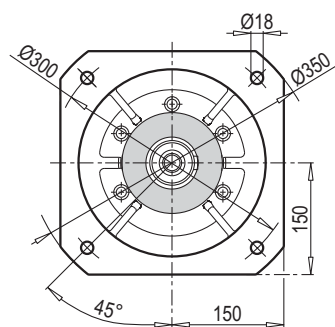
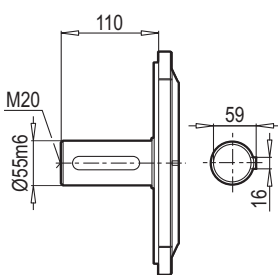
A 701



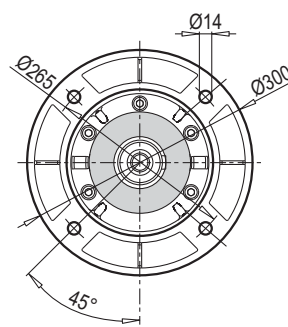
AF 701



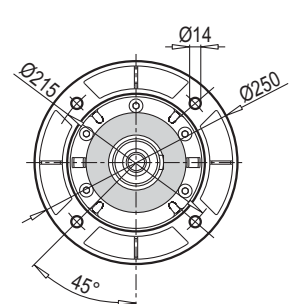
F 701



FA



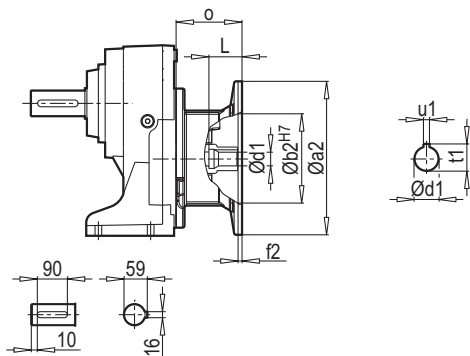
FB



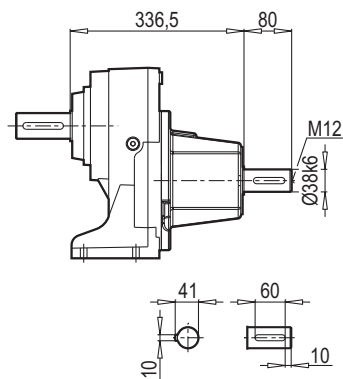
FC

	132 S	132 M	160 M/L	180 M/L	200 L			
g	279	279	323	370	415			
g1	182	182	200	248	260			
k	708	743	830	895	932			
kBre	816	884	982	1057	1079			
o	386	421	508	573	610			

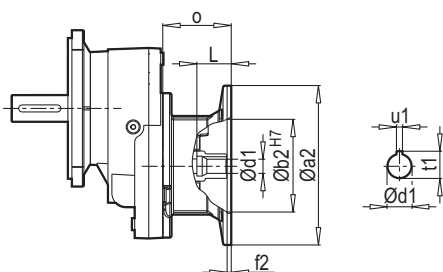
A - PAM



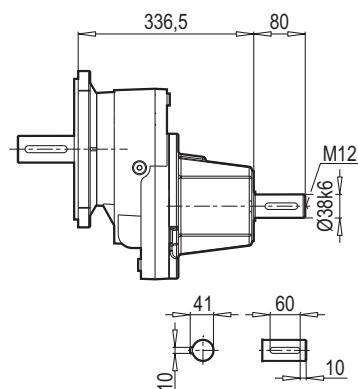
A - W



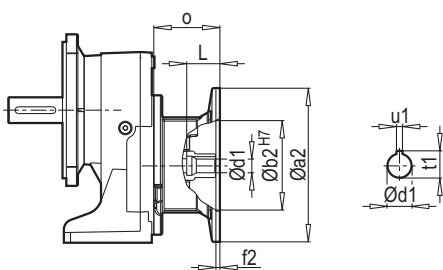
F - PAM



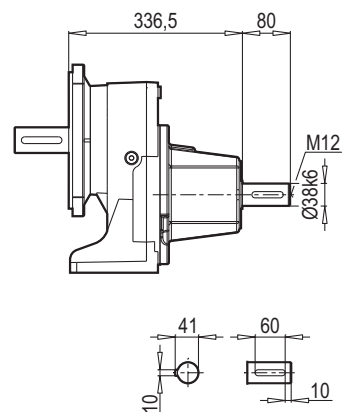
F - W



AF - PAM

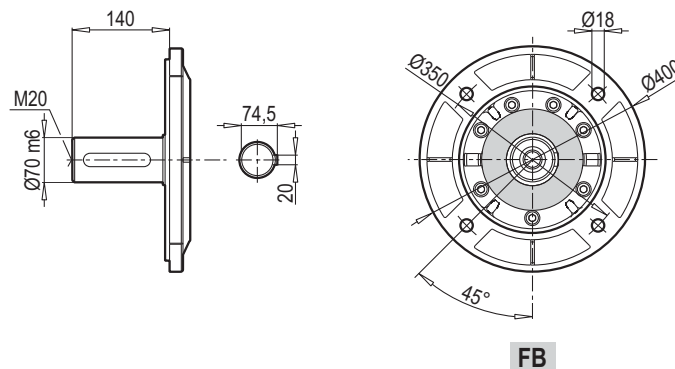
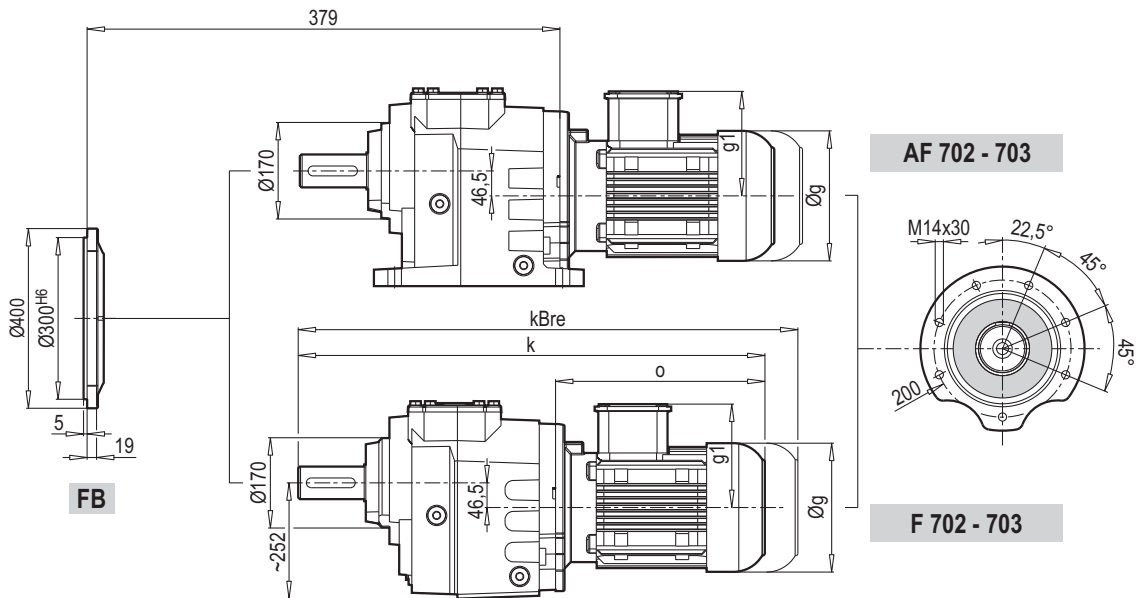
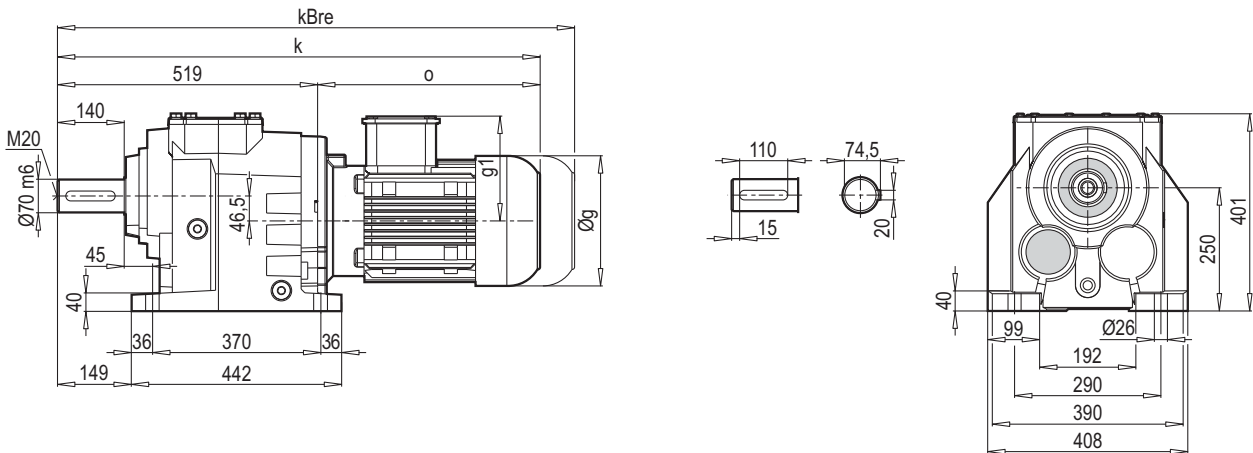


AF - W



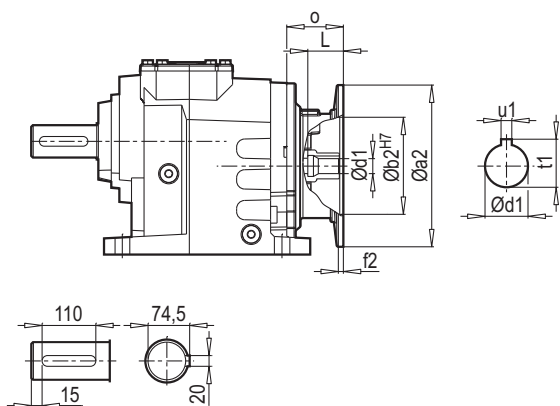
	132	160	180	200				
a2	300	350	350	400				
b2	230	250	250	300				
d1	38	42	48	55				
f2	5,5	7	7	7				
L	82	112	112	112				
u1	10	12	14	16				
t1	41,3	45,3	51,8	59,3				
o	101	148	148	185				

A 702 - 703

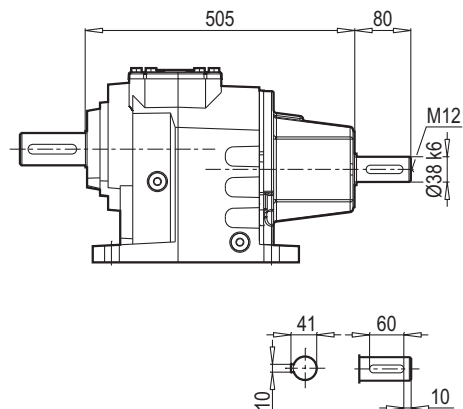


	100 L	112 M	132 S	132 M	160 M/L	180 M/L	200 L	
g	217	232	279	279	323	370	415	
g1	160	168	182	182	200	248	260	
k	845	899	905	940	1027	1092	1129	
kBre	926	979	1013	1081	1179	1254	1276	
o	326	380	386	421	508	573	610	

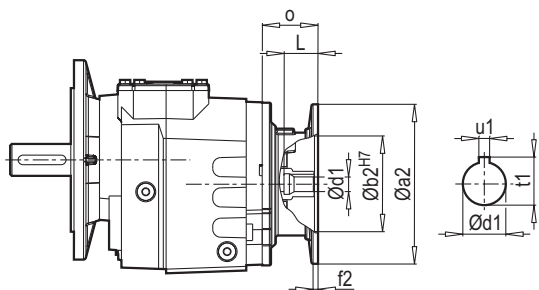
A - PAM



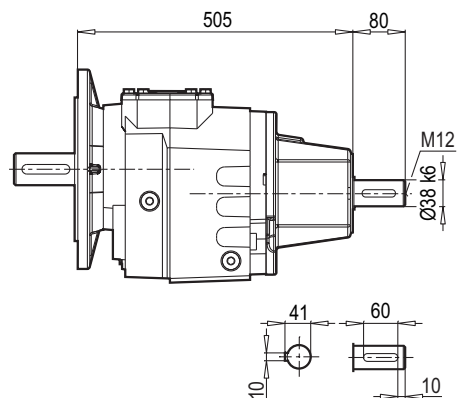
A - W



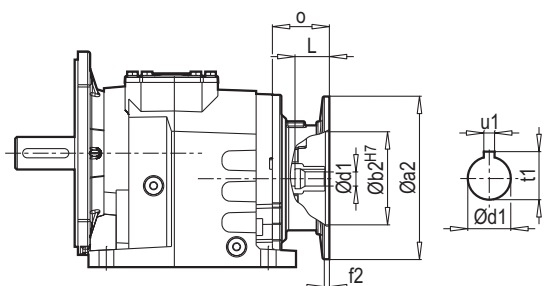
F - PAM



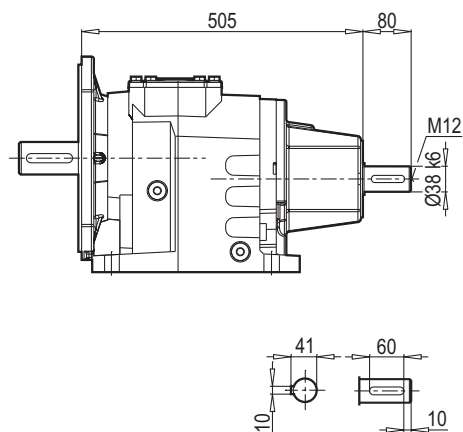
F - W



AF - PAM

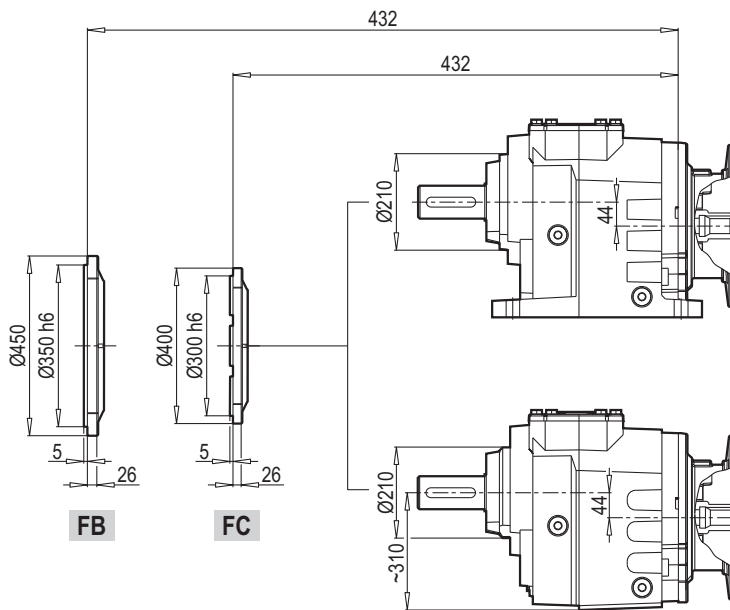
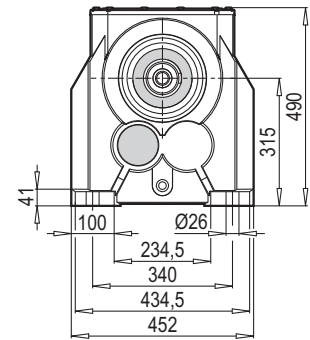
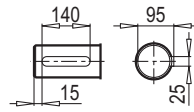
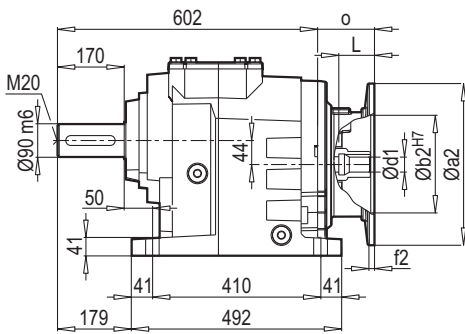


AF - W

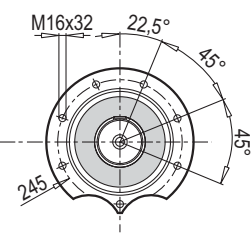


	100	112	132	160	180	200		
a2	250	250	300	350	350	400		
b2	180	180	230	250	250	300		
d1	28	28	38	42	48	55		
f2	5,5	5,5	5,5	7	7	7		
L	62	62	82	112	112	112		
u1	8	8	10	12	14	16		
t1	31,3	31,3	41,3	45,3	51,8	59,3		
o	76	76	101	148	148	185		

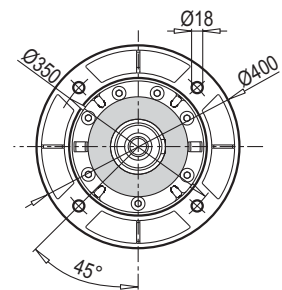
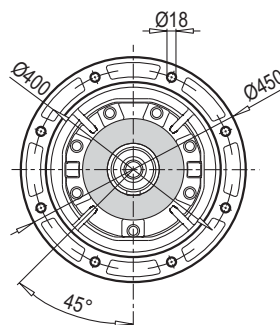
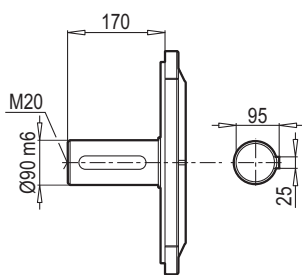
A 902 - 903



AF 902 - 903



F 902 - 903

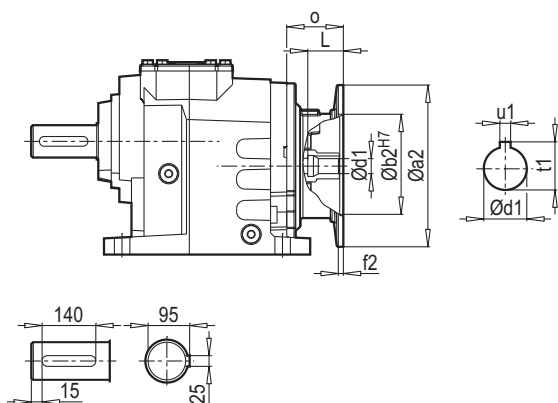


FB

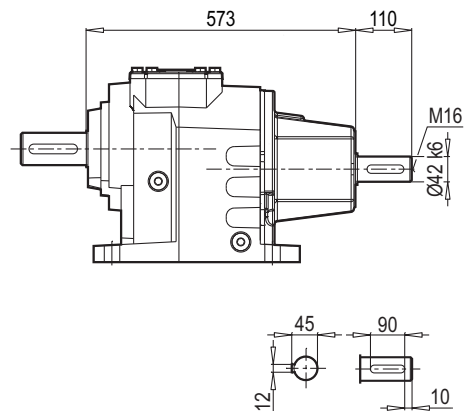
FC

	132	160	180	200	225			
a2	300	350	350	400	450			
b2	230	250	250	300	350			
d1	38	42	48	55	60			
f2	5,5	7	7	7	7			
L	82	112	112	112	142			
u1	10	12	14	16	18			
t1	41,3	45,3	51,8	59,3	64,4			
o	76	124	124	161	161			

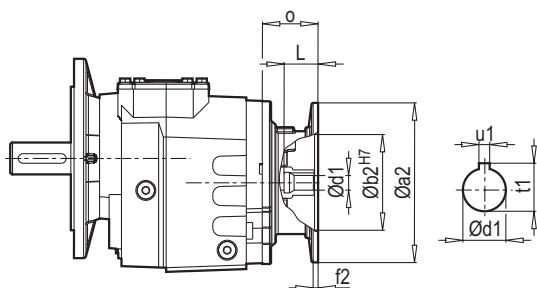
A - PAM



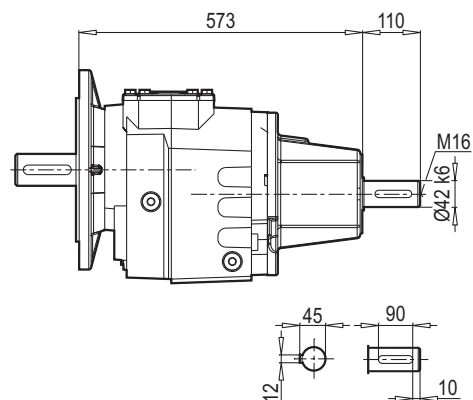
A - W



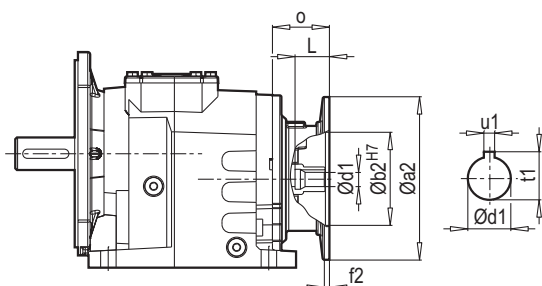
F - PAM



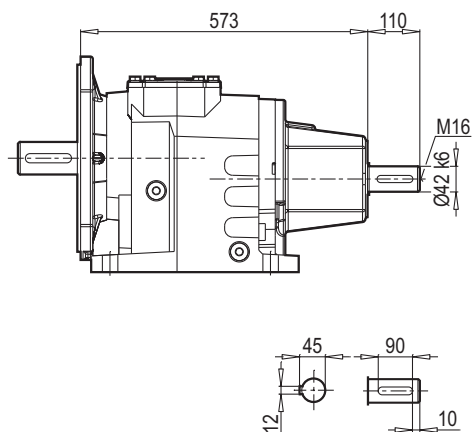
F - W



AF - PAM

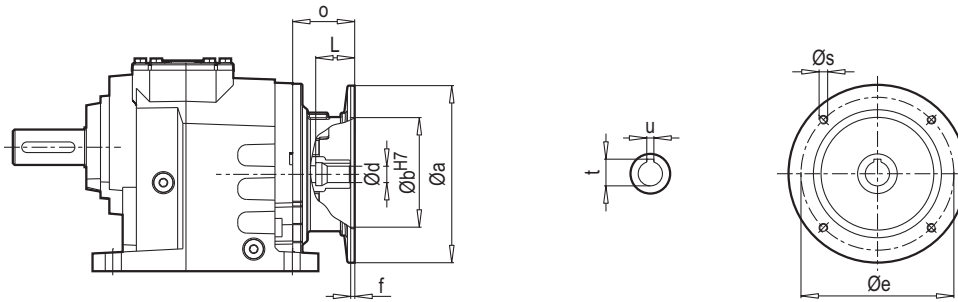


AF - W



	132	160	180	200	225			
a2	300	350	350	400	450			
b2	230	250	250	300	350			
d1	38	42	48	55	60			
f2	5,5	7	7	7	7			
L	82	112	112	112	142			
u1	10	12	14	16	18			
t1	41,3	45,3	51,8	59,3	64,4			
o	76	124	124	161	161			

PAM / B14



Typ / Type / Tip Tipo / Type / Tipo	PAM / B14	Øa	Øb	Øe	f	Øs	Ød	L	t	u	o
AF 202	56	105	70	85	3	7	9	20	11.4	3	59.5
	63	90	60	75	2.5	6	11	23	12.8	4	59.5
	71	105	70	85	2.5	7	14	30	16.3	5	59.5
AF 202 G	56	105	70	85	3	7	9	20	11.4	3	74.5
	63	90	60	75	2.5	6	11	23	12.8	4	74.5
	71	105	70	85	2.5	7	14	30	16.3	5	74.5
	80	120	80	100	3	7	19	40	21.8	6	74.5
	90	140	95	115	3	9	24	50	27.3	8	87.5
AF 252 AF 253	63	90	60	75	2.5	6	11	25	12.8	4	57
	71	105	70	85	2.5	7	14	32	16.3	5	69
	80	120	80	100	3	7	19	42	21.8	6	90
	90	140	95	115	3	9	24	52	27.3	8	90
	100	160	110	130	3.5	9	28	62	31.3	8	105
AF 301	63	90	60	75	2.5	6	11	32	16.3	5	69
	71	105	70	85	2.5	7	14	42	21.8	6	90
	80	120	80	100	3	7	19	52	27.3	8	90
	63	90	60	75	2.5	6	11	25	12.8	4	57
	71	105	70	85	2.5	7	14	32	16.3	5	69
AF 302 AF 303	80	120	80	100	3	7	19	42	21.8	6	90
	90	140	95	115	3	9	24	52	27.3	8	90
	100	160	110	130	3.5	9	28	62	31.3	8	105
	112	160	110	130	3.5	9	28	62	31.3	8	105
	AF 351 AF 352 AF 353	63	90	60	75	2.5	6	11	25	12.8	4
71		105	70	85	2.5	7	14	32	16.3	5	69
80		120	80	100	3	7	19	42	21.8	6	90
90		140	95	115	3	9	24	52	27.3	8	90
100		160	110	130	3.5	9	28	62	31.3	8	105
AF 401	112	160	110	130	3.5	9	28	62	31.3	8	105
	80	120	80	100	3	7	19	42	21.8	6	90
	90	140	95	115	3	9	24	52	27.3	8	90
	100	160	110	130	3.5	9	28	62	31.3	8	105
	112	160	110	130	3.5	9	28	62	31.3	8	105
AF 402 AF 403	71	105	70	85	2.5	7	14	32	16.3	5	49
	80	120	80	100	3	7	19	42	21.8	6	70
	90	140	95	115	3	9	24	52	27.3	8	70
	100	160	110	130	3.5	9	28	62	31.3	8	85
	112	160	110	130	3.5	9	28	62	31.3	8	85
AF 501 AF 502 AF 503	132	200	130	165	3.5	11	38	82	41.3	10	110
	80	120	80	100	3	7	19	42	21.8	6	70
	90	140	95	115	3	9	24	52	27.3	8	70
	100	160	110	130	3.5	9	28	62	31.3	8	85
	112	160	110	130	3.5	9	28	62	31.3	8	85
AF 601 AF 602 AF 603	132	200	130	165	3.5	11	38	82	41.3	10	110
	90	140	95	115	3	9	24	52	27.3	8	61
	100	160	110	130	3.5	9	28	62	31.3	8	76
	112	160	110	130	3.5	9	28	62	31.3	8	76
AF 701 AF 702 AF 703	132	200	130	165	3.5	11	38	82	41.3	10	101
	100	160	110	130	3.5	9	28	62	31.3	8	76
	112	160	110	130	3.5	9	28	62	31.3	8	76
AF 903	132	200	130	165	3.5	11	38	82	41.3	10	76

**Auswahltable von
W - PAM - IEC Adapters**

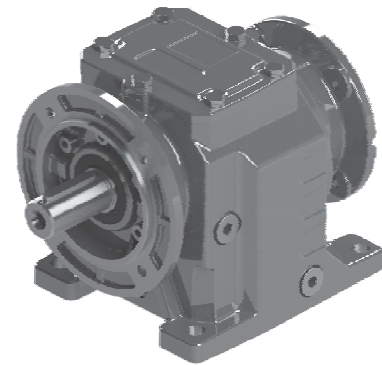
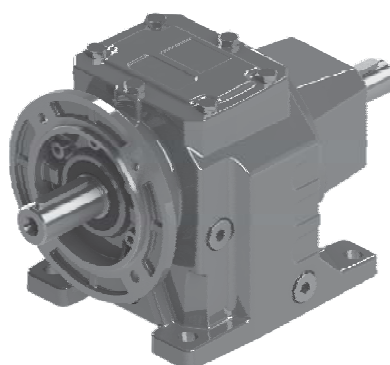
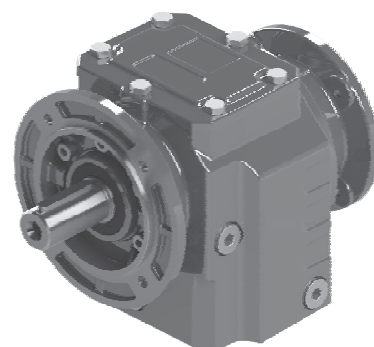
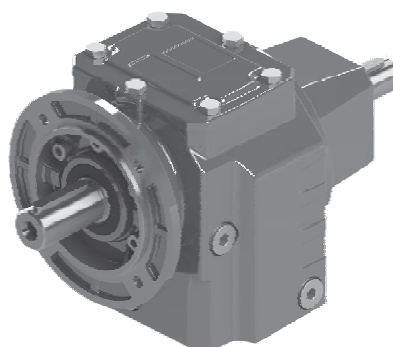
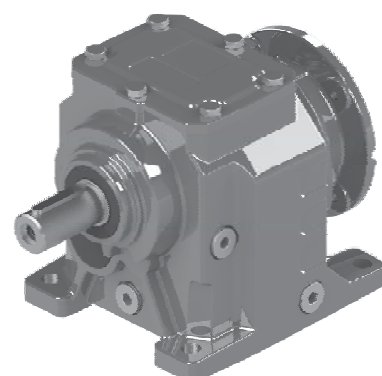
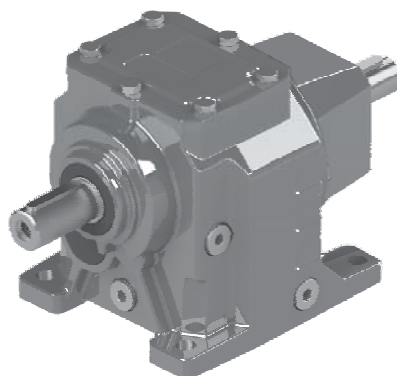
Selection Tables
of W - PAM - IEC Adapters

W - PAM - IEC Adaptörü
Seçim Tabloları

Tabella si Selezione di
W - PAM - IEC Adattatore

Tableau de Sélection du
W - PAM - IEC Adaptateur

Tabla de Selección de
W - PAM - IEC Adaptador



A/F

**A/F 301 ... 701
A/F 202 ... 902
A/F 253 ... 903**

Der Aufbau der Leistungstabelle für W - IEC und PAM-Adapter

Notify about performance tables for W and IEC adapter type

W ve IEC adaptörü için performans tablolarının yapısı

Struttura delle tabelle delle prestazioni degli adattatori W – IEC e PAM

La structure de la table de performance pour W - Adaptateur IEC et PAM

Estructura de Tablas de Rendimiento para Adaptador de W – IEC ve PAM

A 253
F 253

Getriebemotortyp / Gear unit motor type /
Redüktör Tipi / Tipo del motore con ingranaggi /
Type du moteur à engrenages / Tipo del motor con engranje

Betriebsfaktor f_B aus dem Motorauswahl Seite genommen werden, für die IEC montiert Reduzierungen der Motor Körpergröße und IEC Körpergröße sind die gleichen.

Service factor f_B could be seen from selection of geared motor tables. Because this value is same for geared motor and geared motor with IEC adapters.

Motor gövde büyüklüğü ile IEC gövde büyüklüğü aynı olan IEC montajlı redüktörler için Servis faktörü f_B motor seçim sayfalarından alınabilir.

Peri riduttori a montaggio IEC con grandezza del corpo motore uguale alla grandezza del corpo motore IEC il fattore di Servizio puo' essere rilevato dalle scelte di motori f_B .

Facteur de service f_B peut être prise à partir de la page de sélection de moteur, pour réducteurs IEC montée dont moteur taille du corps et IEC taille du corps sont les mêmes.

Factor de servicio para reductores con IEC montado, y con mismo tamaño de cuerpo de IEC y el cuerpo de motor, se puede encontrar en paginas de elección f_B motor.

Typ / Type Tip / Tipo Type / Tipo	i_{ges}	4-pol 50Hz 1400rpm n2 [min-1]	Mamax $f_B=1$ 4 - pol. [Nm]	P_{1max} W $f_B \geq 1$			PAM - IEC					
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	$f_B \rightarrow$ 39 - 107					
A253	245.76	5.7	200	0.12	1.4	5.5	63	71				
F253	197.21	7.1	200	0.15	1.4	5.5	63	71				
W	178.56	7.8	200	0.16	1.4	5.5	63	71				
115	143.29	9.8	200	0.20	1.4	5.5	63	71				
115	123.58	11.3	200	0.24	1.3	5.5	63	71	80	90		
+ PAM - IEC	108.02	13.0	200	0.27	1.3	5.5	63	71				
115	100.12	14.0	200	0.29	1.3	5.5	63	71	80	90		
115	74.76	18.7	200	0.39	1.3	5.5	63	71	80	90		
115	66.56	21.0	200	0.44	1.3	5.5	63	71	80	90		
115	53.41	26.2	200	0.55	1.3	5.5	63	71	80	90		

Verkleinerungsfaktor
Reduction ratio
Tahvil oranı
Rapporto di riduzione
Rapport de réduction
Relación de de reducción

Leistungsgeschwindigkeit
Output speed
Çıkış devri
Velocità di uscita
Vitesse de sortie
Velocidad de salida

Abtriebsdrehmoment
Output torque
Çıkış momenti
Momento di uscita
Moment de sortie
Momento de salida

Bei der Berechnung P_{1max} wird $f_B > 1$ kursiv Werte übernommen.

P_{1max} value which is *italic*, is calculated when service factor f_B is greater than one.
 P_{1max} hesaplanırken *italic* olan değerlerde $f_B > 1$ alınmıştır.
Nel calcolo della P_{1max} per i valori non in corsivo si è preso $f_B > 1$
Bien que P_{1max} est calculé, $f_B > 1$ est pris dans les valeurs italiques.
Al calcular P_{1max} en valores cursivos $f_B > 1$ se ha tomado.

IEC Motorgrößen und IEC-Standard-Ausgänge sind nach DIN 50347.






According to DIN EN 50347 IEC motor sizes. IEC motor büyüklükleri ve IEC standart çıkışları DIN 50347' e göre dir.
Le grandezze dei motori IEC e le uscite standard IEC sono conformi a DIN 50347.
Tailles de moteurs IEC et les sorties standards IEC est selon la norme DIN 50347.
Tamaño de motores de IEC y salidas estandares de IEC son conformes a DIN 50347.

Digitale Bereichen zeigen, dass IEC-Adapter für IEC Motorgröße und der Wechselkurse ist.










This area which is colorless is shown IEC adapter is applicable for this IEC motor size and reduction ratio.
Rakamlı alanlar IEC adaptörünün, IEC motor büyüklüğü ve tahvil oranına uygun olduğunu belirtir.
Gli spazi con cifre degli adattatori IEC, indicano che la grandezza del motore IEC é conforme al rapporto di trasmissione.
Zones numériques indiquent que l'adaptateur IEC est adapté pour IEC taille du moteur et taux de change.
Áreas con números indican que es adaptador de IEC, es conforme a tamaño del motor IEC y al ratio de cambios.

Bei der Berechnung maximale Antriebskraft vom Typ W wird keine kursiv Werte übernommen. f_B mit $P_{1max} = 1$


























P_{1max} value which is *non-italic* is calculated when service factor f_B is equal to one.
Tip W azami tahrik gücü hesaplanırken *italic* olmayan değerler alınmıştır.
 P_{1max} ile $f_B = 1$
Nel calcolo della forza motrice massima tipo W sono stati presi valori non in corsivo.
 P_{1max} e $f_B = 1$
Bien que la force maximale de conduite de type W est calculé, les valeurs italiques ne sont pas prises. f_B avec $P_{1max} = 1$
Los valores no cursivos fueron tomados al calcular la fuerza motriz tipo W.
 P_{1max} con $f_B = 1$

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1		PAM - IEC f _B →  39 - 107									
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]									
A202	63.59	22.0	50	0.12	-	2.5	56	63	71						
F202	55.03	25.4	50	0.13	-	2.5	56	63	71						
W	49.05	28.5	46	0.14	-	2.5	56	63	71						
	42.20	33.2	50	0.17	-	2.5	56	63	71						
 111	36.45	38.4	54	0.22	-	2.5	56		71						
+	32.41	43.2	55	0.25	-	2.5	56		71						
PAM - IEC	27.75	50.5	54	0.29	-	2.5	56		71						
	24.78	56.5	55	0.33	-	2.5	56		71						
 111	22.26	62.9	55	0.36	-	2.5	56		71						
	21.36	65.5	55	0.38	-	2.5	56								
	19.23	72.8	55	0.42	-	2.5	56								
	17.37	80.6	55	0.46	-	2.5	56								
	15.75	88.9	55	0.51	-	2.5	56								
	14.42	97.1	51	0.52	-	2.5	56								
	13.23	105.8	47	0.52	-	2.5	56								
	11.52	121.5	50	0.55	-	2.5	56								
	10.03	139.6	55	0.55	-	2.5	56								
	8.93	156.8	55	0.55	-	2.5	56								
	8.03	174.3	55	0.55	-	2.5	56								
	7.21	194.2	55	0.55	-	2.5	56								
	6.55	213.7	53	0.55	-	2.5	56								
	5.98	234.1	55	0.55	-	2.5	56								
	5.49	255.0	55	0.55	-	2.5	56								
	5.33	262.7	55	0.55	-	2.5	56								
	4.79	292.3	53	0.55	-	2.5	56								
	4.29	326.3	50	0.55	-	2.5	56								
	3.90	359.0	45	0.55	-	2.5	56								
	3.56	393.3	48	0.55	-	2.5	56								
	3.26	429.4	47	0.55	-	2.5	56								
	2.97	471.4	46	0.55	-	2.5	56								
	2.83	494.7	45	0.55	-	2.5	56								
	2.55	549.0	41	0.55	-	2.5	56								
	2.31	606.1	39	0.55	-	2.5	56								
	2.12	660.4	36	0.55	-	2.5	56								

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC								
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B → 39 - 107								
A 202 G	81.41	17.2	83	0.15	1.2	2.8	56	63	71	80	90				
F 202 G	70.05	20.0	72	0.15	1.2	2.8	56	63	71	80	90				
W	62.38	22.4	64	0.15	1.2	2.8	56	63	71	80	90				
54.05	54.05	25.9	85	0.23	1.2	2.8	56		71	80	90				
113	46.41	30.2	85	0.27	1.2	2.8	56		71	80	90				
+	41.38	33.8	85	0.30	1.2	2.8	56		71	80	90				
PAM - IEC	38.72	36.2	85	0.32	1.2	2.8	56		71	80	90				
34.55	34.55	40.5	86	0.36	1.2	2.8	56			80	90				
113	31.03	45.1	92	0.43	1.2	2.8	56			80	90				
	27.66	50.6	92	0.49	1.2	2.8	56			80	90				
	24.83	56.4	92	0.54	1.2	2.8	56			80	90				
	22.44	62.4	92	0.60	1.2	2.8	56			80	90				
	20.35	68.8	85	0.61	1.2	2.8	56			80	90				
	18.63	75.1	84	0.66	1.2	2.8	56			80	90				
	15.74	88.9	85	0.79	1.2	2.8	56				90				
	13.56	103.2	85	0.92	1.2	2.8	56				90				
	12.09	115.8	87	1.05	1.2	2.8	56				90				
	11.41	122.7	85	1.09	1.2	2.8	56				90				
	10.85	129.0	86	1.16	1.2	2.8	56				90				
	9.81	142.7	85	1.27	1.2	2.8	56				90				
	8.75	160.0	88	1.47	1.2	2.8	56				90				
	7.81	179.3	82	1.50	1.2	2.8	56								
	7.04	198.9	82	1.50	1.2	2.8	56								
	6.41	218.4	82	1.50	1.2	2.8	56								
	5.74	243.9	77	1.50	1.2	2.8	56								
	5.16	271.3	83	1.50	1.2	2.8	56								
	4.63	302.4	72	1.50	1.2	2.8	56								
	4.19	334.1	65	1.50	1.2	2.8	56								
	3.81	367.5	59	1.50	1.2	2.8	56								
	3.44	407.0	54	1.50	1.2	2.8	56								
	3.24	432.1	54	1.50	1.2	2.8	56								
	2.95	474.6	50	1.50	1.2	2.8	56								
	2.74	510.9	46	1.50	1.2	2.8	56								
	2.51	557.8	43	1.50	1.2	2.8	56								
	2.31	606.1	43	1.50	1.2	2.8	56								

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC							
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B →  39 - 107							
A253 F253 W   115 + PAM - IEC   115	245.76	5.7	200	0.12	1.4	5.5	63	71						
	197.21	7.1	200	0.15	1.4	5.5	63	71						
	178.56	7.8	200	0.16	1.4	5.5	63	71						
	143.29	9.8	200	0.20	1.4	5.5	63	71						
	123.58	11.3	200	0.24	1.3	5.5	63	71	80	90				
	108.02	13.0	200	0.27	1.3	5.5	63	71						
	100.12	14.0	200	0.29	1.3	5.5	63	71	80	90				
	74.76	18.7	200	0.39	1.3	5.5	63	71	80	90				
	66.56	21.0	200	0.44	1.3	5.5	63	71	80	90				
	53.41	26.2	200	0.55	1.3	5.5	63	71	80	90				
A252 F252 W   115 + PAM - IEC   115	47.93	29.2	200	0.61	1.3	5.5	71	80	90					
	42.00	33.3	200	0.70	1.2	5.5	71	80	90					
	38.46	36.4	200	0.76	1.2	5.5	71	80	90					
	33.38	41.9	200	0.88	1.2	5.5	71	80	90					
	30.15	46.4	200	0.97	1.2	5.3	71	80	90					
	26.79	52.3	200	1.09	1.1	5.0	71	80	90					
	24.19	57.9	200	1.21	1.1	4.8	71	80	90					
	23.04	60.8	200	1.27	1.1	4.7	71	80	90	100	112			
	20.19	69.3	200	1.45	1.1	4.4	71	80	90					
	18.49	75.7	200	1.59	1.0	4.2	71	80	90	100	112			
	17.05	82.1	190	1.63	1.0	4.1	71	80	90	100	112			
	14.91	93.9	170	1.67	1.0	4.1	71	80	90	100	112			
	13.94	100.4	170	1.79	1.0	3.9	71	80	90	100	112			
	11.97	117.0	145	1.78	1.0	3.9	71	80	90	100	112			
	10.32	135.7	140	1.99	0.9	3.7	71	80	90	100	112			
	9.02	155.2	130	2.11	0.9	3.6	71	80	90	100	112			
	7.93	176.5	125	2.31	0.8	3.4	71	80	90	100	112			
	6.36	220.0	105	2.42	0.8	3.3	71	80	90	100	112			
4.80	291.8	95	2.90	0.7	3.0	71	80	90	100	112				














Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC											
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B → 39 - 107											
A303 F303 W 165.33 119 + PAM - IEC 86.96 119	282.17	5.0	300	0.16	1.4	6.6	63	71										
	227.56	6.2	300	0.19	1.4	6.6	63	71										
	205.01	6.8	300	0.21	1.4	6.6	63	71										
	165.33	8.5	300	0.27	1.4	6.6	63	71										
	141.89	9.9	300	0.31	1.4	6.6	63	71	80	90								
	125.65	11.1	300	0.35	1.3	6.6	63	71										
	114.42	12.2	300	0.38	1.3	6.6	63	71	80	90								
	86.96	16.1	300	0.51	1.3	6.6	63	71	80	90								
	76.42	18.3	300	0.58	1.3	6.6	63	71	80	90								
	61.63	22.7	300	0.71	1.3	6.6	63	71	80	90								
A302 F302 W 38.33 119 + PAM - IEC 26.45 119	55.03	25.4	280	0.75	1.3	6.6	71	80	90									
	48.22	29.0	280	0.85	1.2	6.6	71	80	90									
	44.38	31.5	280	0.93	1.2	6.6	71	80	90									
	38.33	36.5	280	1.07	1.2	6.6	71	80	90									
	34.62	40.4	280	1.19	1.2	6.6	71	80	90									
	30.91	45.3	280	1.33	1.1	6.6	71	80	90									
	27.92	50.1	280	1.47	1.1	6.6	71	80	90									
	26.45	52.9	260	1.44	1.1	6.6	71	80	90	100	112							
	23.49	59.6	260	1.62	1.0	6.3	71	80	90									
	21.33	65.6	250	1.72	1.0	6.1	71	80	90	100	112							
	19.29	72.6	250	1.90	1.0	5.8	71	80	90	100	112							
	16.21	86.3	250	2.26	0.9	5.4	71	80	90	100	112							
	13.81	101.4	250	2.65	0.8	5.0	71	80	90	100	112							
	12.00	116.7	250	3.05	0.7	4.7	71	80	90	100	112							
	10.50	133.4	240	3.35	0.6	4.5	71	80	90	100	112							
9.11	153.7	210	3.38	0.6	4.4	71	80	90	100	112								
7.34	190.6	160	3.19	0.7	4.4	71	80	90	100	112								
5.58	250.8	160	4.20	0.4	3.9	71	80	90	100	112								
A301 F301 W 5.58 117 + PAM - IEC 3.16 117	8.88	157.7	55	0.91	1.2	1.0	71	80	90									
	7.78	180.0	50	0.94	1.2	1.0	71	80	90									
	6.18	226.5	50	1.19	1.2	0.9	71	80	90									
	5.58	250.7	50	1.31	1.2	0.9	71	80	90									
	5.08	275.8	45	1.30	1.2	0.9	71	80	90									
	4.27	328.1	45	1.55	1.1	0.8	71	80	90									
	3.65	383.9	45	1.81	1.1	0.8	71	80	90									
	3.16	443.3	40	1.86	1.1	0.7	71	80	90									
	2.76	506.9	30	1.59	1.1	0.7	71	80	90									
	2.59	540.4	30	1.70	1.1	0.7	71	80	90									
2.04	686.8	25	1.80	1.1	0.7	71	80	90										
1.47	953.2	25	2.50	1.0	0.6	71	80	90										

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC										
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B →  39 - 107										
A353 F353 W   123 + PAM - IEC   123	268.00	5.2	500	0.27	1.4	8.0	63	71									
	216.67	6.5	500	0.34	1.3	8.0	63	71									
	194.72	7.2	500	0.38	1.3	8.0	63	71									
		157.42	8.9	500	0.47	1.3	8.0	63	71								
	 123	134.76	10.4	500	0.54	1.3	8.0	63	71	80	90						
	+	108.95	12.9	500	0.67	1.3	8.0	63	71	80	90						
	PAM - IEC	90.51	15.5	500	0.81	1.3	8.0	63	71	80	90						
		72.58	19.3	500	1.01	1.2	8.0	63	71	80	90						
	 123	58.68	23.9	500	1.25	1.2	8.0	63	71	80	90						
A352 F352 W   123 + PAM - IEC   123	56.95	24.6	490	1.26	1.2	8.0	71	80	90								
	49.88	28.1	490	1.44	1.1	8.0	71	80	90								
	46.04	30.4	490	1.56	1.1	8.0	71	80	90								
		39.59	35.4	490	1.81	1.1	8.0	71	80	90	100	112					
	 123	33.50	41.8	490	2.14	1.0	8.0	71	80	90							
	+	32.01	43.7	490	2.24	1.0	8.0	71	80	90	100	112					
	PAM - IEC	28.89	48.5	490	2.49	1.0	7.9	71	80	90	100	112					
		26.59	52.6	490	2.70	0.9	7.6	71	80	90	100	112					
	 123	25.13	55.7	470	2.74	0.9	7.5	71	80	90	100	112					
		22.03	63.6	470	3.13	0.9	7.1	71	80	90	100	112					
		20.31	68.9	460	3.32	0.8	6.9	71	80	90	100	112					
		18.30	76.5	460	3.68	0.8	6.5	71	80	90	100	112					
		16.88	83.0	450	3.91	0.7	6.3	71	80	90	100	112					
		14.52	96.4	430	4.34	0.6	6.0		80	90	100	112					
		11.74	119.3	390	4.87	0.6	5.7		80	90	100	112					
		9.75	143.6	370	5.56	0.4	5.3		80	90	100	112					
		8.73	160.4	340	5.71	0.4	5.2		80	90	100	112					
		7.06	198.4	290	6.02	0.3	5.1		80	90	100	112					
	5.86	238.8	260	6.50	0.3	4.8		80	90	100	112						
A351 F351 W   121 + PAM - IEC   121	8.50	164.7	100	1.72	1.2	2.5	71	80	90								
	7.44	188.1	100	1.97	1.1	2.5	71	80	90								
	5.91	236.9	100	2.48	1.1	2.3	71	80	90	100	112						
		5.33	262.5	100	2.75	1.0	2.2	71	80	90	100	112					
	 121	4.85	288.9	95	2.87	1.0	2.2	71	80	90	100	112					
	+	4.07	344.3	90	3.24	1.0	2.0	71	80	90	100	112					
	PAM - IEC	3.75	373.3	90	3.52	1.0	2.0	71	80	90	100	112					
		3.22	434.5	80	3.64	0.9	1.9	71	80	90	100	112					
	 121	2.62	534.5	70	3.92	0.9	1.8	71	80	90	100	112					
		2.17	646.2	60	4.06	0.9	1.7		80	90	100	112					
	1.45	964.4	60	6.06	0.6	1.5		80	90	100	112						
	1.30	1074.4	40	4.50	0.8	1.5		80	90	100	112						

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC								
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B → 39 - 107								
A403 F403 W 186.14 127 + PAM - IEC 118.13 127	267.75	5.2	850	0.47	2.8	12.0	71	80	90						
	234.50	6.0	850	0.53	2.8	12.0	71	80	90						
	215.01	6.5	850	0.58	2.8	12.0	71	80	90						
	186.14	7.5	850	0.67	2.7	12.0	71	80	90	100	112				
	170.55	8.2	850	0.73	2.7	12.0	71	80	90						
	149.47	9.4	850	0.83	2.7	12.0	71	80	90	100	112				
	135.37	10.3	850	0.92	2.7	12.0	71	80	90	100	112				
	118.13	11.9	850	1.05	2.7	12.0	71	80	90	100	112				
	94.86	14.8	850	1.31	2.7	12.0	71	80	90	100	112				
	85.91	16.3	850	1.45	2.6	12.0	71	80	90	100	112				
	68.25	20.5	850	1.83	2.6	12.0		80	90	100	112				
	54.81	25.5	850	2.27	2.5	12.0		80	90	100	112				
	49.64	28.2	850	2.51	2.5	12.0		80	90	100	112				
	A402 F402 W 31.50 127 + PAM - IEC 19.94 127	45.38	30.9	850	2.75	2.4	12.0	80	90	100	112				
39.72		35.2	850	3.14	2.4	12.0	80	90	100	112					
36.44		38.4	800	3.22	2.4	12.0	80	90	100	112					
31.50		44.4	850	3.96	2.3	12.0	80	90	100	112	132				
28.89		48.5	800	4.06	2.3	12.0	80	90	100	112					
25.30		55.3	850	4.93	2.1	12.0	80	90	100	112	132				
22.91		61.1	850	5.44	2.1	12.0	80	90	100	112	132				
19.94		70.2	850	6.25	1.9	11.7	80	90	100	112	132				
17.37		80.6	830	7.00	1.8	11.1	80	90	100	112	132				
16.01		87.4	800	7.33	1.8	10.8	80	90	100	112	132				
14.50		96.6	700	7.08	1.8	10.9	80	90	100	112	132				
12.44		112.5	700	8.25	1.7	10.2	80	90	100	112	132				
11.46		122.2	650	8.32	1.7	10.1	80	90	100	112	132				
9.20		152.2	600	9.56	1.5	9.4	80	90	100	112	132				
8.33	168.0	600	10.55	1.3	9.0	80	90	100	112	132					
7.22	193.9	550	11.17	1.3	8.7	80	90	100	112	132					
5.80	241.5	550	13.91	0.9	7.9	80	90	100	112	132					
5.25	266.7	500	13.96	0.9	7.8	80	90	100	112	132					
A401 F401 W 5.17 125 + PAM - IEC 3.11 125	8.25	169.7	170	3.02	2.7	3.7	80	90	100	112					
	7.22	193.8	170	3.45	2.6	3.7	80	90	100	112					
	5.73	244.4	170	4.35	2.5	3.4	80	90	100	112					
	5.17	271.0	170	4.82	2.5	3.2	80	90	100	112					
	4.69	298.4	160	5.00	2.5	3.1	80	90	100	112					
	3.93	355.9	150	5.59	2.4	3.0	80	90	100	112					
	3.63	386.2	150	6.07	2.4	2.9	80	90	100	112					
	3.11	450.0	130	6.13	2.4	2.8	80	90	100	112					
2.52	554.7	120	6.97	2.3	2.6	80	90	100	112						
2.08	672.0	120	8.44	2.1	2.4	80	90	100	112						
1.31	1066.7	80	8.94	2.1	2.2	80	90	100	112						

Typ / Type Tip / Tipo Type / Tipo	i _{ges}	4-pol 50Hz 1400rpm n ₂ [min ⁻¹]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max}		W	f _B ≥ 1	PAM - IEC									
				4 - pol. 1400rpm [kW]	FR1 [kN]			FR2 [kN]	f _B → 39 - 107								
A503 F503 W 131 + PAM - IEC 131	222.59	6.3	1800	1.19	2.9	18.0	80	90	90								
	194.86	7.2	1800	1.35	2.9	18.0	80	90	90								
	178.98	7.8	1800	1.47	2.8	18.0	80	90	90								
	162.21	8.6	1800	1.63	2.8	18.0	80	90	90								
	154.52	9.1	1800	1.71	2.8	18.0	80	90	90	100	112	132					
	142.00	9.9	1800	1.86	2.8	18.0	80	90	90	100	112						
	+ PAM - IEC	124.25	11.3	1800	2.12	2.8	18.0	80	90	90	100	112	132				
	112.61	12.4	1800	2.34	2.7	18.0	80	90	90	100	112	132					
	97.80	14.3	1800	2.70	2.7	18.0	80	90	90	100	112	132					
	85.33	16.4	1800	3.09	2.7	18.0	80	90	90	100	112	132					
	78.64	17.8	1800	3.36	2.6	18.0	80	90	90	100	112	132					
	71.27	19.6	1800	3.70	2.6	18.0	80	90	90	100	112	132					
	56.21	24.9	1600	4.17	2.5	18.0	80	90	90	100	112	132					
	A502 F502 W 131 + PAM - IEC 131	48.77	28.7	1600	4.81	2.4	18.0	80	90	100	112	132					
43.32		32.3	1600	5.41	2.4	18.0	80	90	100	112	132						
39.21		35.7	1600	5.98	2.3	17.7	80	90	100	112	132						
34.83		40.2	1600	6.73	2.2	16.7	80	90	100	112	132						
31.57		44.3	1600	7.43	2.1	16.0	80	90	100	112	132						
28.26		49.5	1600	8.30	2.0	15.1	80	90	100	112	132						
+ PAM - IEC		26.98	51.9	1600	8.69	2.0	14.8			100	112	132	160				
23.14		60.5	1600	10.14	1.8	13.7			100	112	132	160					
21.69		64.5	1600	10.81	1.7	13.2			100	112	132	160					
19.66		71.2	1600	11.93	1.6	12.6			100	112	132	160					
18.81		74.4	1500	11.69	1.6	12.7			100	112	132	160					
16.86		83.0	1500	13.04	1.5	12.1			100	112	132	160					
15.13		92.6	1500	14.54	1.3	11.4			100	112	132	160					
13.71		102.1	1400	14.97	1.3	11.3			100	112	132	160					
11.20		125.0	1100	14.39	1.3	11.5					132	160					
9.01		155.4	900	14.65	1.3	11.2					132	160					
8.16		171.5	800	14.36	1.3	11.2					132	160					
7.55	185.5	800	15.54	1.2	10.8					132	160						
6.07	230.6	700	16.91	1.0	10.3					132	160						
5.50	254.5	700	18.65	0.8	9.8					132	160						
A501 F501 W 129 + PAM - IEC 129	8.56	163.6	350	6.00	2.5	4.0	80	90	100	112	132						
	7.60	184.2	350	6.75	2.4	4.0	80	90	100	112	132						
	6.17	227.0	340	8.08	2.3	3.9	80	90	100	112	132						
	5.62	249.3	330	8.62	2.2	3.7	80	90	100	112	132						
	4.73	295.8	320	9.91	2.1	3.5			100	112	132						
	4.06	344.9	320	11.56	1.9	3.3			100	112	132						
	+ PAM - IEC	3.78	370.6	310	12.03	1.9	3.2			100	112	132					
	3.30	424.2	310	13.77	1.7	3.0			100	112	132						
	2.58	541.9	280	15.89	1.5	2.8			100	112	132						
	1.97	712.3	230	17.15	1.4	2.7					132						
1.46	960.8	220	22.13	0.9	2.4					132							
1.32	1057.1	200	22.14	0.9	2.3					132							

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC										
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B → 39 - 107										
A603 F603 W 181.13 135 + PAM - IEC 121.02 135	242.67	5.8	3600	2.17	4.0	22.0	90	100	112	132							
	215.56	6.5	3500	2.38	4.0	22.0	90	100	112	132							
	194.31	7.2	3500	2.64	4.0	22.0	90	100	112	132							
	181.13	7.7	3500	2.83	4.0	22.0	90	100	112	132							
	160.90	8.7	3500	3.19	3.9	22.0	90	100	112	132							
	143.57	9.8	3500	3.57	3.9	22.0	90	100	112	132							
	134.25	10.4	3500	3.82	3.9	22.0		100	112	132	160						
	121.02	11.6	3500	4.24	3.9	22.0		100	112	132	160						
	100.21	14.0	3500	5.12	3.9	22.0		100	112	132	160						
	93.60	15.0	3500	5.48	3.8	22.0		100	112	132	160						
	84.37	16.6	3500	6.08	3.8	22.0		100	112	132	160						
	79.98	17.5	3500	6.42	3.8	22.0		100	112	132	160						
	69.87	20.0	3500	7.34	3.7	22.0		100	112	132	160						
	55.75	25.1	3500	9.20	3.7	22.0				132	160						
	A602 F602 W 38.00 135 + PAM - IEC 25.57 135	50.91	27.5	3300	9.50	3.6	22.0	100	112	132							
45.27		30.9	3300	10.69	3.6	22.0	100	112	132	160							
40.81		34.3	3300	11.85	3.5	21.7	100	112	132	160							
38.00		36.8	2800	10.80	3.6	22.0	100	112	132								
33.79		41.4	3200	13.88	3.4	20.0	100	112	132	160							
30.35		46.1	3200	15.46	3.4	18.9	100	112	132	160							
28.36		49.4	3300	17.06	3.3	17.8	100	112	132	160	180						
25.57		54.8	3300	18.92	3.2	16.8	100	112	132	160	180						
23.66		59.2	3300	20.45	3.1	16.1	100	112	132	160	180						
21.17		66.1	3200	22.16	3.1	15.4	100	112	132	160	180						
19.59		71.5	3200	23.94	3.0	14.7	100	112	132	160	180						
17.60		79.5	3200	26.65	2.9	13.8	100	112	132	160	180						
15.87		88.2	3200	29.56	2.7	12.9	100	112	132	160	180						
13.14		106.5	3100	34.59	2.5	11.8	100	112	132	160	180						
10.91		128.3	3000	40.31	2.2	10.8			132	160	180						
9.83		142.4	2800	41.74	2.2	10.8			132	160	180						
8.14		171.9	2500	45.01	2.0	10.6			132	160	180						
6.92		202.4	2300	48.74	1.8	10.4			132	160	180						
6.24		224.5	2000	47.02	1.9	10.9			132	160	180						
5.16	271.1	1800	51.10	1.7	10.5			132	160	180							
A601 F601 W 5.20 133 + PAM - IEC 3.23 133	8.30	168.7	650	11.48	3.4	5.0	100	112	132	160							
	7.45	187.8	650	12.78	3.4	5.0	100	112	132	160							
	6.15	227.5	640	15.25	3.3	4.9	100	112	132	160							
	5.20	269.2	620	17.48	3.1	4.6	100	112	132	160	180						
	4.81	290.9	620	18.89	3.1	4.4	100	112	132	160	180						
	4.28	327.3	610	20.90	3.0	4.2			132	160	180						
	3.65	383.6	600	24.10	2.8	3.9	100	112	132	160	180						
	3.23	433.8	600	27.25	2.7	3.7	100	112	132	160	180						
	2.44	572.7	550	32.98	2.4	3.4			132	160	180						
	2.00	700.0	450	32.98	2.4	3.3			132	160	180						
1.38	1011.1	450	47.64	1.7	2.8			132	160	180							
1.27	1103.8	400	46.23	1.8	2.8			132	160	180							

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC									
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B →  39 - 107									
A703 F703 W   139 + PAM - IEC   139	260.15	5.4	5000	2.82	3.9	30.0	100	112	132							
	231.34	6.1	5000	3.17	3.9	30.0	100	112	132	160	180					
	207.78	6.7	5000	3.53	3.9	30.0	100	112	132	160	180					
	189.54	7.4	5000	3.87	3.9	30.0	100	112	132	160	180					
	173.11	8.1	5000	4.23	3.9	30.0	100	112	132	160	180					
	155.48	9.0	5000	4.71	3.8	30.0	100	112	132	160	180					
	144.94	9.7	5000	5.06	3.8	30.0	100	112	132	160	180	200				
	128.35	10.9	5000	5.71	3.8	30.0	100	112	132	160	180					
	118.75	11.8	5000	6.17	3.8	30.0	100	112	132	160	180	200				
	108.46	12.9	5000	6.76	3.8	30.0	100	112	132	160	180	200				
	100.38	13.9	5000	7.30	3.7	30.0	100	112	132	160	180	200				
	89.95	15.6	5000	8.15	3.7	30.0	100	112	132	160	180	200				
	83.35	16.8	5000	8.79	3.7	30.0	100	112	132	160	180	200				
	73.70	19.0	5000	9.95	3.6	30.0	100	112	132	160	180	200				
	67.31	20.8	5000	10.89	3.6	30.0	100	112	132	160	180	200				
	55.75	25.1	5000	13.15	3.5	30.0			132	160	180	200				
	45.67	30.7	5000	16.05	3.4	30.0			132	160	180	200				
	A702 F702 W   139 + PAM - IEC   139	44.67	31.3	5000	16.41	3.4	30.0	132	160	180						
36.60		38.3	5000	20.03	3.2	30.0	132	160	180							
33.43		41.9	5000	21.93	3.2	29.5	132	160	180							
30.27		46.2	5000	24.21	3.1	28.0	132	160	180							
27.87		50.2	5000	26.30	3.0	26.8	132	160	180	200						
24.80		56.4	5000	29.55	2.9	25.2	132	160	180							
22.84		61.3	5000	32.10	2.8	24.1	132	160	180	200						
20.86		67.1	5000	35.14	2.6	22.9	132	160	180	200						
19.60		71.4	5000	37.40	2.6	22.1	132	160	180	200						
17.18		81.5	4800	40.95	2.4	21.1	132	160	180	200						
14.08		99.5	4600	47.90	2.1	19.4	132	160	180	200						
12.86		108.9	4400	50.17	2.0	19.0	132	160	180	200						
10.53		132.9	4000	55.68	1.8	18.2		160	180	200						
8.63		162.3	3800	64.57	1.5	16.9		160	180	200						
7.88		177.7	3700	68.83	1.3	16.3		160	180	200						
7.20		194.6	3600	73.34	1.1	15.8		160	180	200						
5.90		237.5	3200	79.57	0.9	15.3		160	180	200						
5.38		260.0	3000	81.68	0.8	15.2		160	180	200						
A701 F701 W   137 + PAM - IEC   137	7.80	179.5	1000	18.79	3.2	6.0	132	160	180							
	6.33	221.1	900	20.83	3.1	6.0	132	160	180							
	5.29	264.9	880	24.41	3.0	5.8	132	160	180							
	4.87	287.7	870	26.21	2.9	5.6	132	160	180	200						
	4.18	335.2	850	29.84	2.7	5.3	132	160	180	200						
	3.63	385.5	850	34.31	2.6	5.0	132	160	180	200						
	3.19	438.8	820	37.68	2.4	4.8	132	160	180	200						
	3.00	466.7	800	39.09	2.4	4.7	132	160	180	200						
	2.52	555.6	800	46.54	2.1	4.3	132	160	180	200						
	2.03	688.1	750	54.04	1.8	4.0	132	160	180	200						
	1.84	761.4	700	55.81	1.7	3.9		160	180	200						
	1.44	969.2	700	71.04	1.1	3.5		160	180	200						
	1.26	1114.3	650	75.84	0.9	3.4		160	180	200						

Typ / Type Tip / Tipo Type / Tipo	iges	4-pol 50Hz 1400rpm n2 [min-1]	M _{amax} f _B =1 4 - pol. [Nm]	P _{1max} W f _B ≥ 1			PAM - IEC									
				4 - pol. 1400rpm [kW]	FR1 [kN]	FR2 [kN]	f _B → 39 - 107									
A903 F903 W 141 + PAM - IEC 141	205.73	6.8	8000	5.70	8.0	55.0	132	160	180							
	185.64	7.5	8000	6.32	8.0	55.0	132	160	180							
	154.07	9.1	8000	7.61	8.0	55.0	132	160	180							
		139.41	10.0	8000	8.41	8.0	55.0	132	160	180						
	141	128.36	10.9	8000	9.14	8.0	55.0	132	160	180	200					
	+	115.83	12.1	8000	10.13	8.0	55.0	132	160	180	200					
	PAM - IEC	104.41	13.4	8000	11.23	8.0	55.0	132	160	180						
		96.13	14.6	8000	12.20	8.0	55.0	132	160	180	200					
	141	86.43	16.2	8000	13.57	8.0	55.0	132	160	180	200					
		79.13	17.7	8000	14.82	8.0	55.0	132	160	180	200					
		71.40	19.6	8000	16.43	8.0	54.3	132	160	180	200					
		63.02	22.2	8000	18.61	8.0	51.2	132	160	180	200					
		59.26	23.6	8000	19.79	8.0	49.6	132	160	180	200					
		53.66	26.1	8000	21.86	8.0	47.2	132	160	180	200					
		48.50	28.9	8000	24.18	8.0	44.9		160	180	200					
	A902 F902 W 141 + PAM - IEC 141	42.47	33.0	8000	27.61	5.1	42.3	160	180	200	225					
		38.33	36.5	8000	30.60	5.1	40.1	160	180	200	225					
31.81		44.0	8000	36.87	5.1	36.3	160	180	200	225						
		26.38	53.1	8000	44.46	5.1	32.3	160	180	200	225					
141		23.80	58.8	8000	49.28	5.1	30.8	160	180	200	225					
+		19.75	70.9	8000	59.37	5.1	27.5	160	180	200	225					
PAM - IEC		17.18	81.5	7900	67.42	5.1	25.5	160	180	200	225					
		15.50	90.3	7800	73.77	5.1	24.2	160	180	200	225					
141		12.86	108.8	7300	83.19	5.1	22.9	160	180	200	225					
		10.28	136.2	7200	102.69	5.0	20.0	160	180	200	225					
		9.28	150.9	6500	102.74	5.0	20.7	160	180	200	225					
		7.70	181.9	5300	100.94	5.0	21.9	160	180	200	225					
		6.89	203.2	5000	106.38	4.0	21.5	160	180	200	225					
		6.22	225.2	4900	115.54	4.0	20.6	160	180	200	225					
		5.16	271.3	4600	130.69	4.0	19.4	160	180	200	225					

DE GEWICHTTABELLE VON W UND IEC ADAPTERS

EN WEIGHT TABLE OF W AND IEC ADAPTERS

TR W VE IEC ADAPTÖRLERİN AĞIRLIK TABLOSU

IT TABELLA DI PESO DI W E IEC ADATTATORE

FR TABLEAU DE POIDS DU W ET IEC ADAPTATEUR

ES TABLA DE PESO DE W Y IEC ADAPTADOR

Gewichte (ca. kg) / Weights (approx. kg) / Ağırlıklar (Yaklaşık kg) / Pesi (ca. kg) / Poids (Environ kg) / Pesos (Aprox kg)													
Typ / Type Tip / Tipo Type / Tipo	W	PAM											
		56	63	71	80	90	100	112	132	160	180	200	225
A/F 202	-	5	5	5	-	-	-	-	-	-	-	-	-
A/F 202 G	8	8	8	8	8	8	-	-	-	-	-	-	-
A/F 253	14	-	12	13	14	14	18	18	-	-	-	-	-
A/F 252	14	-	12	13	14	14	18	18	-	-	-	-	-
A/F 303	17	-	15	16	17	17	21	21	-	-	-	-	-
A/F 302	17	-	15	16	17	17	21	21	-	-	-	-	-
A/F 301	10	-	8	8	13	13	-	-	-	-	-	-	-
A/F 353	22	-	20	21	22	22	26	26	-	-	-	-	-
A/F 352	22	-	20	21	22	22	26	26	-	-	-	-	-
A/F 351	12	-	-	11	12	12	16	16	-	-	-	-	-
A/F 403	37	-	-	32	35	35	37	37	41	48	48	-	-
A/F 402	37	-	-	32	35	35	37	37	41	48	48	-	-
A/F 401	14	-	-	-	14	14	18	18	-	-	-	-	-
A/F 503	54	-	-	49	52	52	54	54	58	65	65	-	-
A/F 502	54	-	-	49	52	52	54	54	58	65	65	-	-
A/F 501	26	-	-	-	24	24	26	26	-	-	-	-	-
A/F 603	90	-	-	-	81	81	85	85	88	94	94	110	-
A/F 602	90	-	-	-	81	81	85	85	88	94	94	110	-
A/F 601	45	-	-	-	-	-	38	38	44	50	50	-	-
A/F 703	119	-	-	-	110	110	114	114	117	123	123	139	-
A/F 702	119	-	-	-	110	110	114	114	117	123	123	139	-
A/F 701	49	-	-	-	-	-	-	-	47	53	53	69	-
A/F 903	195	-	-	-	-	-	-	-	182	190	190	205	208
A/F 902	195	-	-	-	-	-	-	-	182	190	190	205	208

DE ALLGEMEINE STUCKLISTE

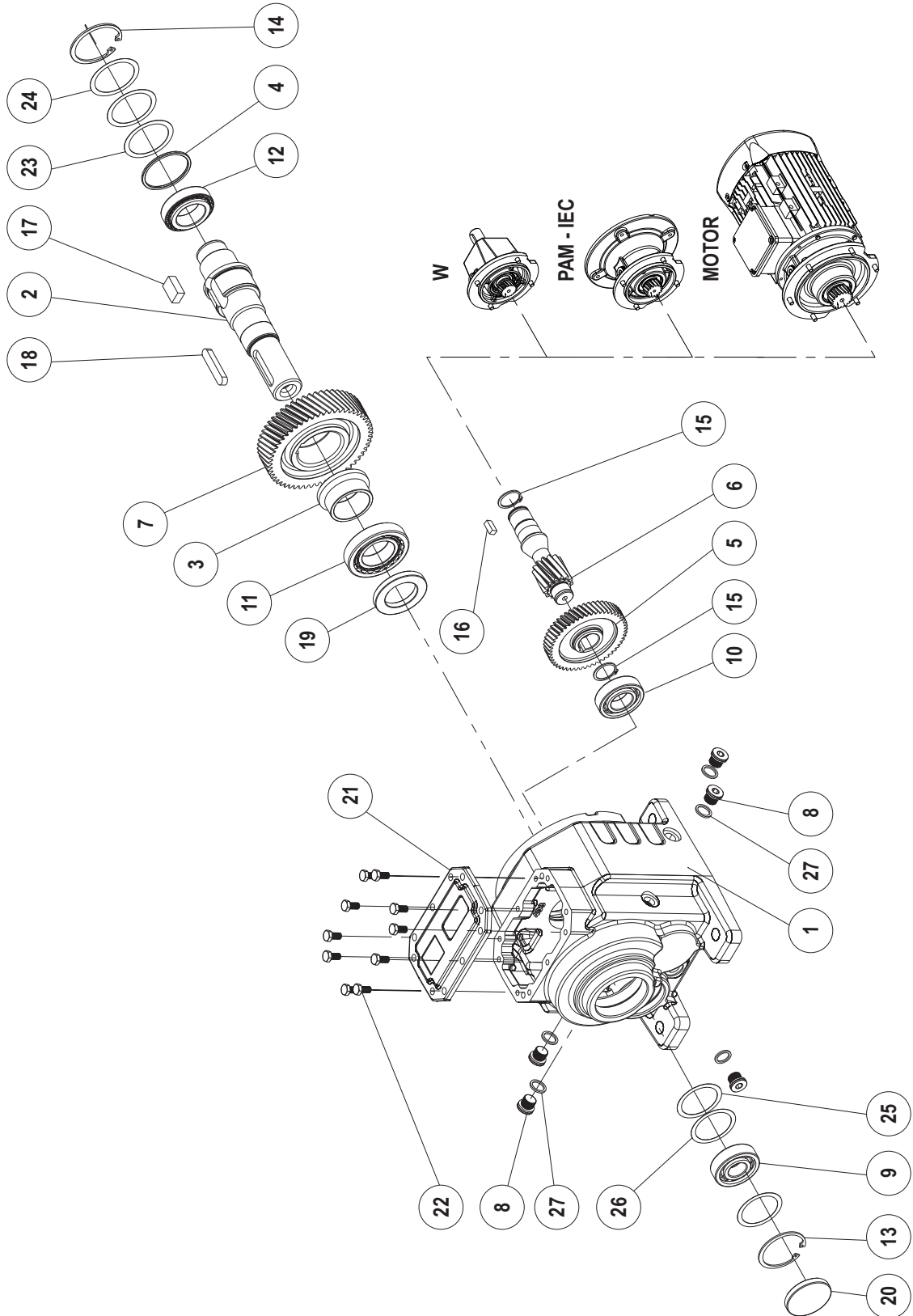
EN GENERAL PART LIST

TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL



A 252...902

DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

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IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL

01 Getriebegehäuse
02 Abtriebswelle
03 Distanzbuchse
04 Stützscheibe
05 Abtriebsrad
06 Ritzel Welle
07 Abtriebsrad
08 Verschlussschraube
09 Kugellager
10 Kugellager
11 Kugellager
12 Kugellager
13 Sicherungsring
14 Sicherungsring
15 Sicherungsring
16 Paßfeder
17 Paßfeder
18 Paßfeder
19 Wellendichtring
20 Verschlusß kappe
21 Gehäusedeckel
22 Verschrauben
23 Shim
24 Shim
25 Shim
26 Shim
27 Dichtung

Gear Case
Solid Shaft
Spacer
Supportingdisc
Driving Gear
Pinion Shaft
Driven Gear
Oil Plug
Bearing
Bearing
Bearing
Bearing
Circlip
Circlip
Circlip
Key
Key
Key
Shaft Seal
Locking cap
Case Cover
Bolt
Shim
Shim
Shim
Shim
Shim
Seal

Gövde
Çıkış Mili
Burç
Rondela
Z2 Dişlisi
Z3 Dişlisi
Z4 Dişlisi
Yağ Tapası
Rulman
Rulman
Rulman
Rulman
Rulman
Segman
Segman
Segman
Kama
Kama
Kama
Keçe
Yağ Kapağı
Gövde Kapağı
Civata
Layner
Layner
Layner
Layner
Tapa Contası

01 Ingranaggi Box
02 Albero di uscita
03 Distanziatore
04 Rondella
05 Ingranaggio Conduttore
06 Pignone
07 Ingranaggio Condotto
08 Olio Tappo
09 Cuscinetto
10 Cuscinetto
11 Cuscinetto
12 Cuscinetto
13 Anello di sicurezza
14 Anello di sicurezza
15 Anello di sicurezza
16 Chiavetta
17 Chiavetta
18 Chiavetta
19 Tenuta Albero
20 Tappo di chiusura
21 Coperchio della custodia
22 Bullone
23 Shim
24 Shim
25 Shim
26 Shim
27 Sigillo

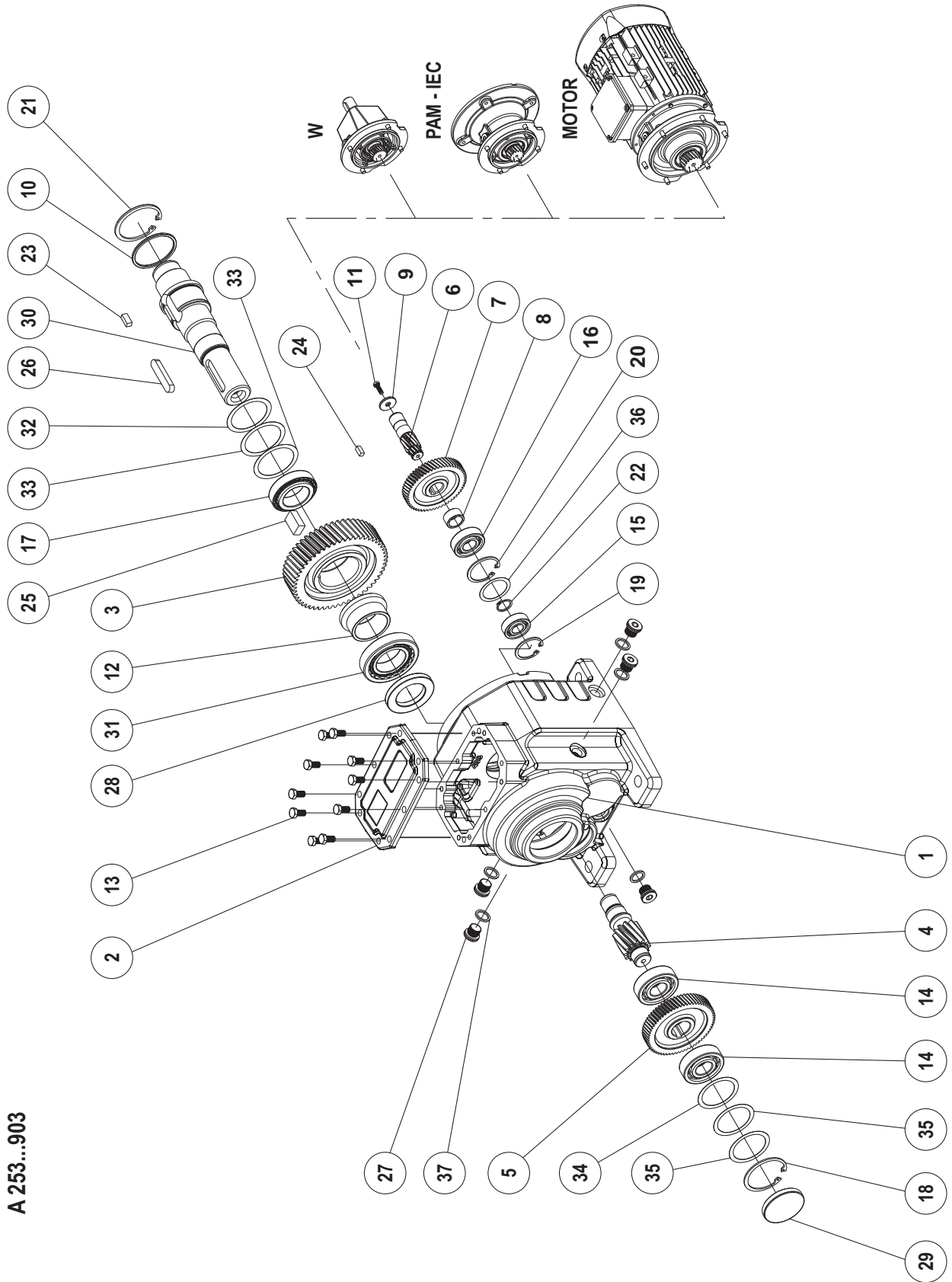
Carter d'engrenage
Arbre de sortie
Doville entretoise
Rondelle support
Rove d'entrée
Arbre intermédiaire
Rove desortie
Visde vidange
Roulement a billes
Roulement a billes
Roulement a billes
Roulement a billes
Circlip
Circlip
Circlip
Clavette
Clavette
Clavette
Bague d'étancheite
Bouchon
Couvercle du carter
Boulonner
Rondella d'ajustage
Rondella d'ajustage
Rondella d'ajustage
Rondella d'ajustage
Joint

La caja de engranajes
Eje salida
Espaciador
El apoyo el disco
Engranaje conducido
Deleje del piñón
Engranaje conducido
Tapón
Rodamiento de bolas
Rodamiento de bolas
Rodamiento de bolas
Rodamiento de bolas
Anillo de seguridad
Anillo de seguridad
Anillo de seguridad
Clave
Clave
Clave
Sello del eje
Tapón de cierre
Tapá de la carcasa
Atornillar
Calce
Calce
Calce
Calce
Sellar

DE ALLGEMEINE STUCKLISTE
IT GENERALE ELENCO DELLE PARTI

EN GENERAL PART LIST
FR GÉNÉRALE LA LISTE DES PIÈCES

TR GENEL PARÇA LİSTESİ
ES LISTE DE PIEZAS EN GENERAL



A 253...903

DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL

01	Getriebegehäuse	31	Kugellager	Gear Case	Bearing	Gövde	Rulman
02	Gehäusedeckel	32	Shim	Case Cover	Shim	Gövde Kapağı	Layner
03	Ausgangswelle	33	Shim	Output Shaft	Shim	Z6 Dişlisi	Layner
04	Abtriebsritzelle	34	Shim	Output Pinion Shaft	Shim	Z5 Dişlisi	Layner
05	Abtriebsrad	35	Shim	Driven Gear	Shim	Z4 Dişlisi	Layner
06	Ritzel Welle	36	Shim	Pinion Shaft	Shim	Z3 Dişlisi	Layner
07	Abtriebsrad	37	Dichtung	Driving Gear	Seal	Z2 Dişlisi	Tapa Contası
08	Abstandhalter			Spacer		Burç	
09	Stützscheibe			Supporting disc		Rondela	
10	Stützscheibe			Supporting disc		Rondela	
11	Verschrauben			Bolt		Civata	
12	Distanzbuchse			Spacer		Burç	
13	Verschrauben			Bolt		Civata	
14	Kugellager			Bearing		Rulman	
15	Kugellager			Bearing		Rulman	
16	Kugellager			Bearing		Rulman	
17	Kugellager			Bearing		Rulman	
18	Sicherungsring			Circlip		Segman	
19	Sicherungsring			Circlip		Segman	
20	Sicherungsring			Circlip		Segman	
21	Sicherungsring			Circlip		Segman	
22	Sicherungsring			Circlip		Segman	
23	Paßfeder			Key		Kama	
24	Paßfeder			Key		Kama	
25	Paßfeder			Key		Kama	
26	Paßfeder			Key		Kama	
27	Verschlussschraube			Oil Plug		Yağ Tapası	
28	Wellendichtring			Shaft Seal		Keçe	
29	Öleinfüllstutzen Tasse			Locking cap		Yağ Kapağı	
30	Abtriebswelle			Solid Shaft		Çıkış Mili	
01	Ingranaggi Box	31	Cuscinetto	Carter d'engrenage	Roulement a billes	La caja de engranajes	Rodamiento de bolas
02	Coperchio della custodia	32	Shim	Couvercle du carter	Rondelle d'ajustage	Tapá de la carcasa	Calce
03	Albero di uscita	33	Shim	l'arbre de sortie	Rondelle d'ajustage	Eje de salida	Calce
04	Pignone di uscita	34	Shim	Arbre de pignon de sortie	Rondelle d'ajustage	El eje de piñón de salida	Calce
05	Ingranaggio Condotta	35	Shim	Rove de sortie	Rondelle d'ajustage	Engranaje conducido	Calce
06	Pignone	36	Shim	Arbre intermédiaire	Rondelle d'ajustage	Deleje del piñón	Calce
07	Ingranaggio Conduttore	37	Sigillo	Rove d'entrée	Joint	Engranaje con ducido	Sellar
08	Distanziatore			Doville entretoise		Espaciador	
09	Rondella			Rondelle support		El apoyo a disco	
10	Rondella			Rondelle support		El apoyo a disco	
11	Bullone			Boulonner		Atornillar	
12	Distanziatore			Doville entretoise		Espaciador	
13	Bullone			Boulonner		Atornillar	
14	Cuscinetto			Roulement a billes		Rodamiento de bolas	
15	Cuscinetto			Roulement a billes		Rodamiento de bolas	
16	Cuscinetto			Roulement a billes		Rodamiento de bolas	
17	Cuscinetto			Roulement a billes		Rodamiento de bolas	
18	Anello di sicurezza			Circlip		Anillo de seguridad	
19	Anello di sicurezza			Circlip		Anillo de seguridad	
20	Anello di sicurezza			Circlip		Anillo de seguridad	
21	Anello di sicurezza			Circlip		Anillo de seguridad	
22	Anello di sicurezza			Circlip		Anillo de seguridad	
23	Chiavetta			Clavette		Clave	
24	Chiavetta			Clavette		Clave	
25	Chiavetta			Clavette		Clave	
26	Chiavetta			Clavette		Clave	
27	Olio Tappo			Visde vidange		Tapón	
28	Tenuta Albero			Bague d'étancheite		Sello del eje	
29	Tappo di chiusura			Bouchon		Tapón de cierre	
30	Albero di uscita			Arbre de sortie		Eje de salida	

DE ALLGEMEINE STUCKLISTE

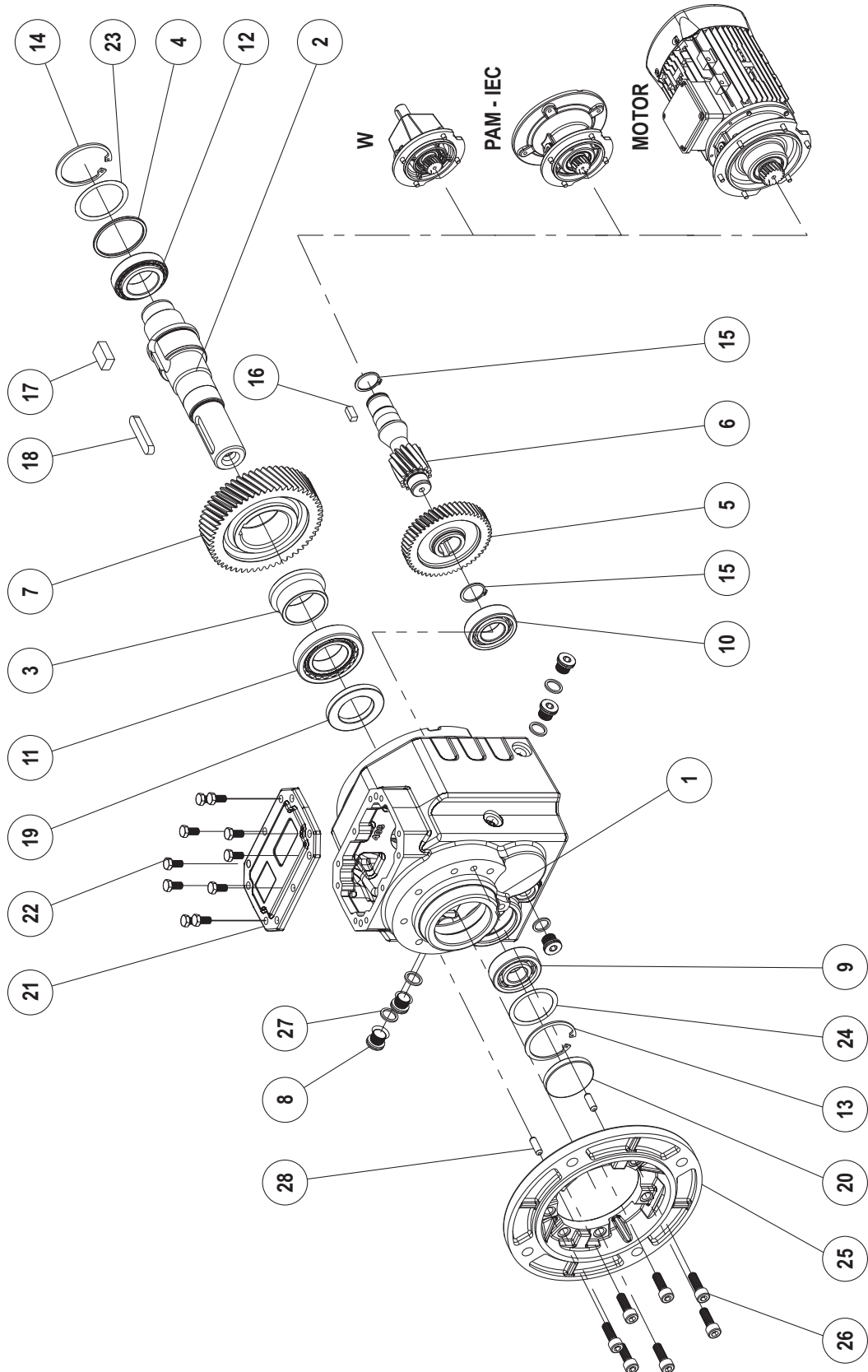
EN GENERAL PART LIST

TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL



F 252...902

DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

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ES LISTE DE PIEZAS EN GENERAL

01 **Getriebegehäuse**
02 **Abtriebswelle**
03 **Distanzbuchse**
04 **Stützscheibe**
05 **Abtriebsrad**
06 **Ritzel Welle**
07 **Abtriebsrad**
08 **Verschlussschraube**
09 **Kugellager**
10 **Kugellager**
11 **Kugellager**
12 **Kugellager**
13 **Sicherungsring**
14 **Sicherungsring**
15 **Sicherungsring**
16 **Paßfeder**
17 **Paßfeder**
18 **Paßfeder**
19 **Wellendichtring**
20 **Verschlusßkappe**
21 **Gehäusedeckel**
22 **Verschrauben**
23 **Shim**
24 **Shim**
25 **B5 Flansch**
26 **Verschrauben**
27 **Dichtung**
28 **Spannstift**

Gear Case
Solid Shaft
Spacer
Supporting disc
Driving Gear
Pinion Shaft
Driven Gear
Oil Plug
Bearing
Bearing
Bearing
Bearing
Circlip
Circlip
Circlip
Key
Key
Key
Shaft Seal
Locking Cap
Case Cover
Bolt
Shim
Shim
Flange B5
Bolt
Seal
Dowel Pin

Gövde
Çıkış Mili
Burç
Rondela
Z2 Dişlisi
Z3 Dişlisi
Z4 Dişlisi
Yağ Tapası
Rulman
Rulman
Rulman
Rulman
Segman
Segman
Segman
Kama
Kama
Kama
Keçe
Yağ Kapağı
Gövde Kapağı
Civata
Layner
Layner
B5 Flanşı
Civata
Tapa Contası
Pin

01 Ingranaggi Box
02 Albero di uscita
03 Distanziatore
04 Rondella
05 Ingranaggio Conduttore
06 Pignone
07 Ingranaggio Condotto
08 Olio Tappo
09 Cuscinetto
10 Cuscinetto
11 Cuscinetto
12 Cuscinetto
13 Anello di sicurezza
14 Anello di sicurezza
15 Anello di sicurezza
16 Chiavetta
17 Chiavetta
18 Chiavetta
19 Tenuta Albero
20 Tappo di chiusura
21 Coperchiodella custodia
22 Bullone
23 Shim
24 Shim
25 Flangia B5
26 Bullone
27 Sigillo
28 Tassello Pin

Carter d'engrenage
Arbre de sortie
Doville entretoise
Rondelle support
Rove d'entrée
Arbre intermédiaire
Rove de sortie
Visde vidange
Roulement a billes
Roulement a billes
Roulement a billes
Roulement a billes
Circlip
Circlip
Circlip
Clavette
Clavette
Clavette
Bague d'értancheite
Bouchon
Couvercle de carter
Boulonner
Rondelle d'ajustage
Rondelle d'ajustage
B5 à bride
Boulonner
Joint
Goupille

La caja de engranajes
Eje de salida
Espaciador
El apoyo a disco
Engraneje conducido
Deleje del piñón
Engranaje conducido
Tapón
Rodamientode bolas
Rodamientode bolas
Rodamientode bolas
Rodamientode bolas
Anillo de seguridad
Anillo de seguridad
Anillo de seguridad
Clave
Clave
Clave
Sello del eje
Tapón de cierre
Tapá de la carcasa
Atornillor
Calce
Calce
Brida B5
Atornillor
Sellar
Pasador

DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

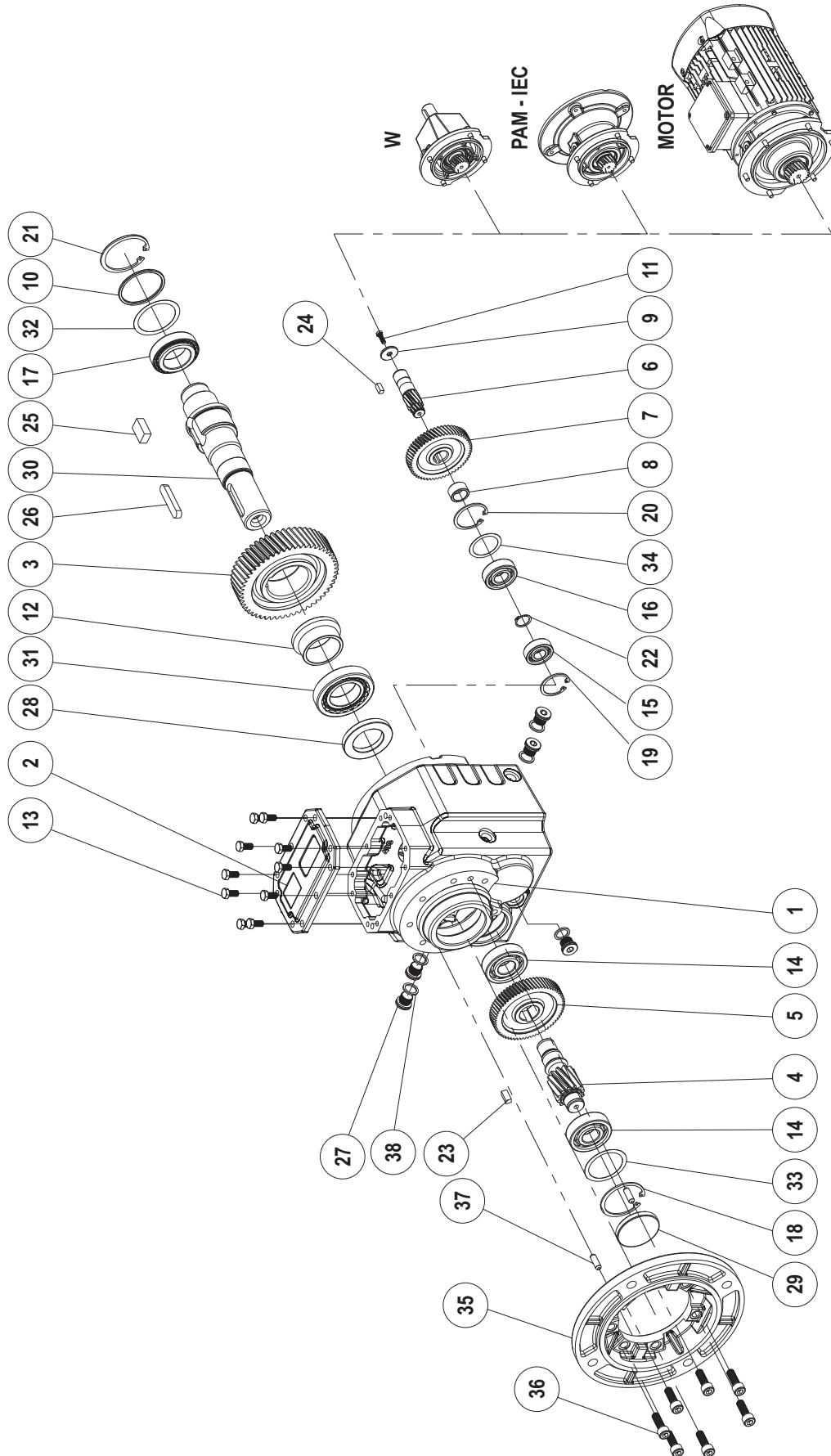
TR GENEL PARÇA LİSTESİ

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ES LISTE DE PIEZAS EN GENERAL

F 253...903



DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL

01	Getriebegehäuse	31	Verschlusschraube	Gear Case	Bearing	Gövde	Rulman
02	Gehäusedeckel	32	Shim	Case Cover	Shim	Gövde Kapağı	Layner
03	Abtriebsrad	33	Shim	Driving Gear	Shim	Z6 Dişlisi	Layner
04	Ritzel welle	34	Shim	Pinion Shaft	Shim	Z5 Dişlisi	Layner
05	Abtriebsrad	35	B5 Flansch	Driven Gear	Flange B5	Z4 Dişlisi	B5 Flanş
06	Pinion Gear	36	Verschrauben	Pinion Gear	Bolt	Z3 Dişlisi	Civata
07	Abtriebsrad	37	Pin	Driving Gear	Dowel Pin	Z2 Dişlisi	Pim
08	Distanzbuchse	38	Dichtung	Spacer	Seal	Burç	Tapa Contası
09	Stützscheibe			Supporting disc		Rondela	
10	Stützscheibe			Supporting disc		Rondela	
11	Verschrauben			Bolt		Civata	
12	Distanzbuchse			Spacer		Burç	
13	Verschrauben			Bolt		Civata	
14	Kugellager			Bearing		Rulman	
15	Kugellager			Bearing		Rulman	
16	Kugellager			Bearing		Rulman	
17	Kugellager			Bearing		Rulman	
18	Sicherungsring			Circlip		Segman	
19	Sicherungsring			Circlip		Segman	
20	Sicherungsring			Circlip		Segman	
21	Sicherungsring			Circlip		Segman	
22	Sicherungsring			Circlip		Segman	
23	Paßfeder			Key		Kama	
24	Paßfeder			Key		Kama	
25	Paßfeder			Key		Kama	
26	Paßfeder			Key		Kama	
27	Verschlusschraube			Oil Plug		Yağ Tapası	
28	Wellendichtring			Shaft Seal		Keçe	
29	Verschlusskappe			Locking cap		Yağ Kapağı	
30	Abtriebswelle			Solid Shaft		Çıkış Mili	
01	Ingranaggi Box	31	Cuscinetto	Carter d'engrenage	Roulement a billes	La caja de engranajes	Rodamiento de bolas
02	Coperchiodella custodia	32	Shim	Couvercle du carter	Rondelle d'ajustage	Tapá de la carcasa	Calce
03	Ingranaggio Conduttore	33	Shim	Rove d'entrée	Rondelle d'ajustage	Engranaje conducido	Calce
04	Pignone	34	Shim	Arbre intermédiaire	Rondelle d'ajustage	Deleje del piñón	Calce
05	Ingranaggio condotto	35	Flangia B5	Rove de sortie	Brida B5	Engranaje conducido	Brida B5
06	Pignone	36	Bullone	Arbre intermédiaire	Boulonner	Deleje del piñón	Atornillar
07	Ingranaggio conduttore	37	Pin	Rove d'entrée	Pin	Engranaje conducido	Pin
08	Distanziatore	38	Sigillo	Doville entretoise	Joint	Espaciador	Sellar
09	Rondella			Rondelle support		El apoyo a disco	
10	Rondella			Rondelle support		El apoyo a disco	
11	Bullone			Boulonner		Atornillar	
12	Distanziatore			Doville entretoise		Espaciador	
13	Bullone			Boulonner		Atornillar	
14	Cuscinetto			Roulement		Rodamiento de bolas	
15	Cuscinetto			Roulement		Rodamiento de bolas	
16	Cuscinetto			Roulement		Rodamiento de bolas	
17	Cuscinetto			Roulement		Rodamiento de bolas	
18	Anello di sicurezza			Circlip		Anillo de seguridad	
19	Anello di sicurezza			Circlip		Anillo de seguridad	
20	Anello di sicurezza			Circlip		Anillo de seguridad	
21	Anello di sicurezza			Circlip		Anillo de seguridad	
22	Anello di sicurezza			Circlip		Anillo de seguridad	
23	Chiavetta			Clavette		Clave	
24	Chiavetta			Clavette		Clave	
25	Chiavetta			Clavette		Clave	
26	Chiavetta			Clavette		Clave	
27	Olio Tappo			Visde vidange		Tapón	
28	Tenuta Albero			Bague d'étanchéité		Sello del eje	
29	Tappo di chiusura			Bouchon		Tapón de cierre	
30	Albero di uscita			Arbre de sortie		Eje de salida	

DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

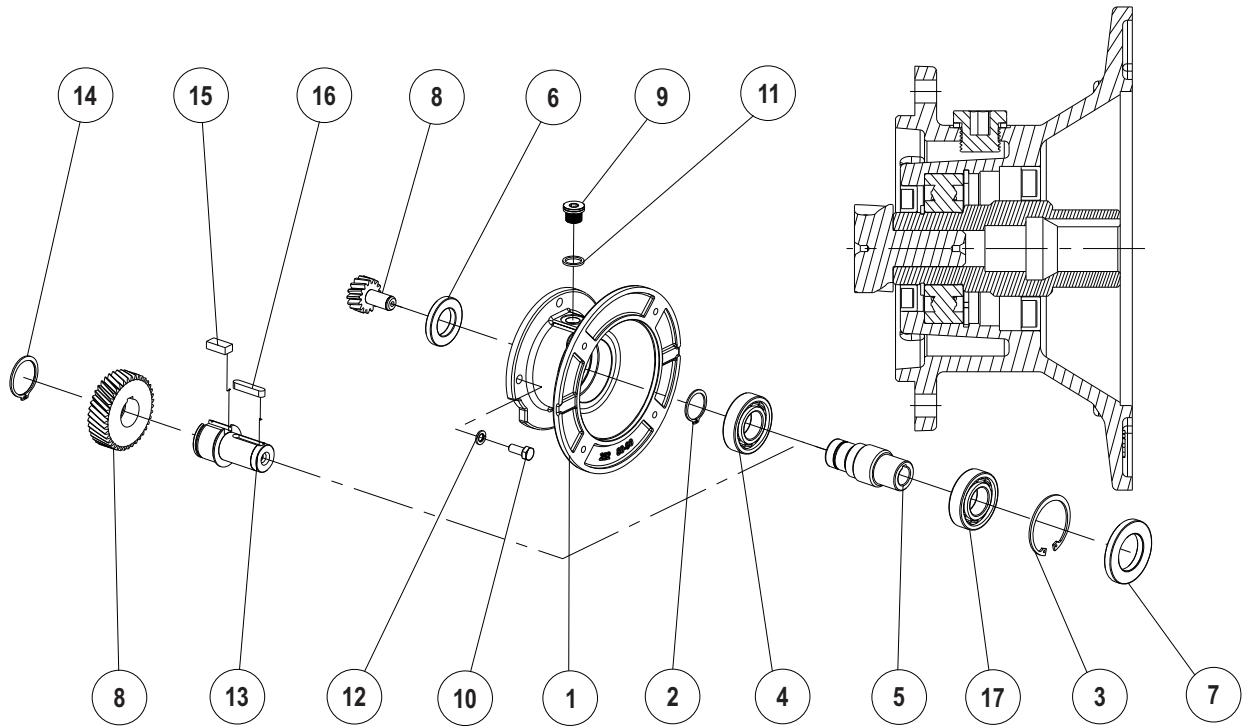
TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL

A/F 252...502 PAM
A/F 253...503 PAM



01	PAM Box	PAM Case	PAM Gövdesi	PAM Box	PAM Boite	PAM Caja
02	Sicherungsring	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
03	Sicherungsring	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
04	Kugellager	Bearing	Rulman	Cuscinetto	Roulement	Rodamiento de bolas
05	PAM Welle	PAM Shaft	Pam Mili	PAM Albero	PAM Arbre	PAM Eje
06	Wellendichtring	Shaft Seal	Keçe	Tenuta Albero	Bague d'étancheite	Sello del eje
07	Wellendichtring	Shaft Seal	Keçe	Tenuta Albero	Bague d'étancheite	Sello del eje
08	Antriebsritzel	Input Pinion	Z1 Dişlisi	Ingresso Pignone	Pignon d'entrée	Piñón de entrada
09	Verschlussschraube	Oil Plug	Yağ Tapası	Olio Tappo	Visde vidange	Tapón
10	Verschrauben	Bolt	Civata	Bullone	Boulonner	Atornillor
11	Dichtung	Seal	Tapa Contası	Sigillo	Joint	Sellar
12	Federscheibe	Spring Washer	Yaylı Rondela	Rondella elastica	Rondella élastique	Arandela
13	Z1 Welle	Z1 Shaft	Çakma Z1 Mili	Z1 Albero	Z1 Arbre	Z1 Eje
14	Circlip	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
15	Paßfeder	Key	Kama	Chiavetta	Clavette	Clave
16	Paßfeder	Key	Kama	Chiavetta	Clavette	Clave
17	Kugellager	Bearing	Rulman	Cuscinetto	Roulement	Rodamiento de bolas

DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

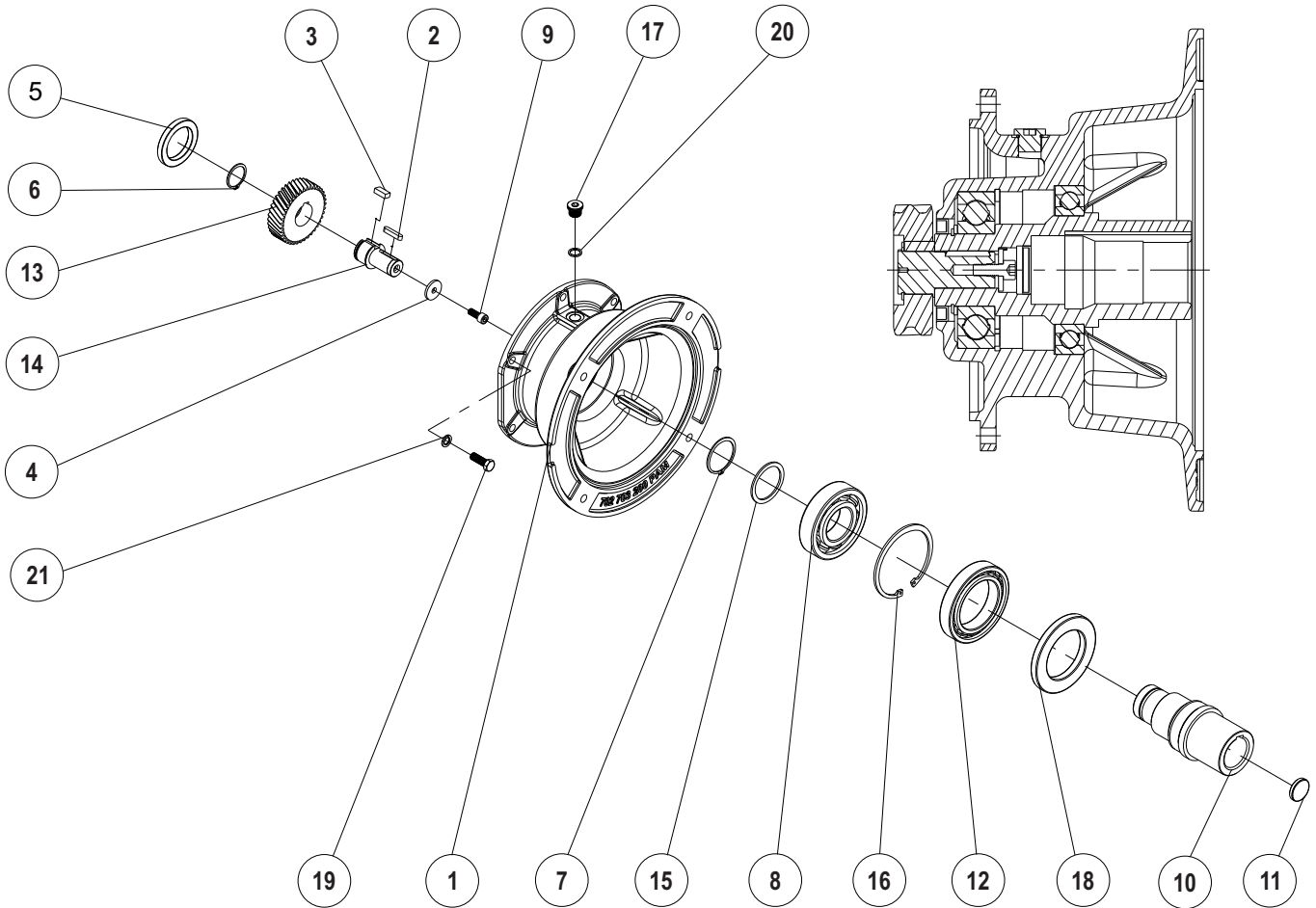
TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL

A/F 602...902 PAM
A/F 603...903 PAM



01 PAM Box	PAM Case	PAM Gövdesi	PAM Box	PAM Boite	PAM Caja
02 Paßfeder	Key	Kama	Chiavetta	Clavette	Clave
03 Paßfeder	Key	Kama	Chiavetta	Clavette	Clave
04 Stützscheibe	Supporting disc	Rondela	Rondella	Rondelle support	Al apoyo a disco
05 Wellendichtring	Shaft Seal	Keçe	Tenuta Albero	Bague d'étancheite	Sello del eje
06 Sicherungsring	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
07 Sicherungsring	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
08 Kugellager	Bearing	Rulman	Cuscinetto	Roulement	Rodamiento de bolas
09 Verschrauben	Bolt	Civata	Bullone	Boulonner	Atornillar
10 PAM Welle	PAM Shaft	PAM Mili	PAM Albero	PAM Arbre	PAM Eje
11 Verschuß kappe	Locking cap	Yağ Kapağı	Tappo di chiusura	Bouchon	Tapón de cierre
12 Kugellager	Bearing	Rulman	Cuscinetto	Roulement	Rodamiento de bolas
13 Antriebsritzel	Input Pinion	Z1 Dişlisi	Ingresso Pignone	Pignon d'entrée	Piñón de entrada
14 Z1 Welle	Z1 Shaft	Çakma Z1 Mili	Z1 Albero	Z1 Arbre	Z1 Eje
15 Shim	Shim	Layner	Shim	Rondelle d'ajustage	Rondelle d'ajustage
16 Sicherungsring	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
17 Verschlußschraube	Oil Plug	Yağ Tapası	Olio Tappo	Visde vidange	Tapón
18 Wellendichtring	Shaft Seal	Keçe	Tenuta Albero	Bague d'étancheite	Sello del eje
19 Verschrauben	Bolt	Civata	Bullone	Boulonner	Atornillar
20 Dichtung	Seal	Tapa Contası	Sigillo	Joint	Sellar
21 Federscheibe	Spring Washer	Yaylı Rondela	Rondella Elastica	Rondella élastique	Arandela

DE ALLGEMEINE STUCKLISTE

EN GENERAL PART LIST

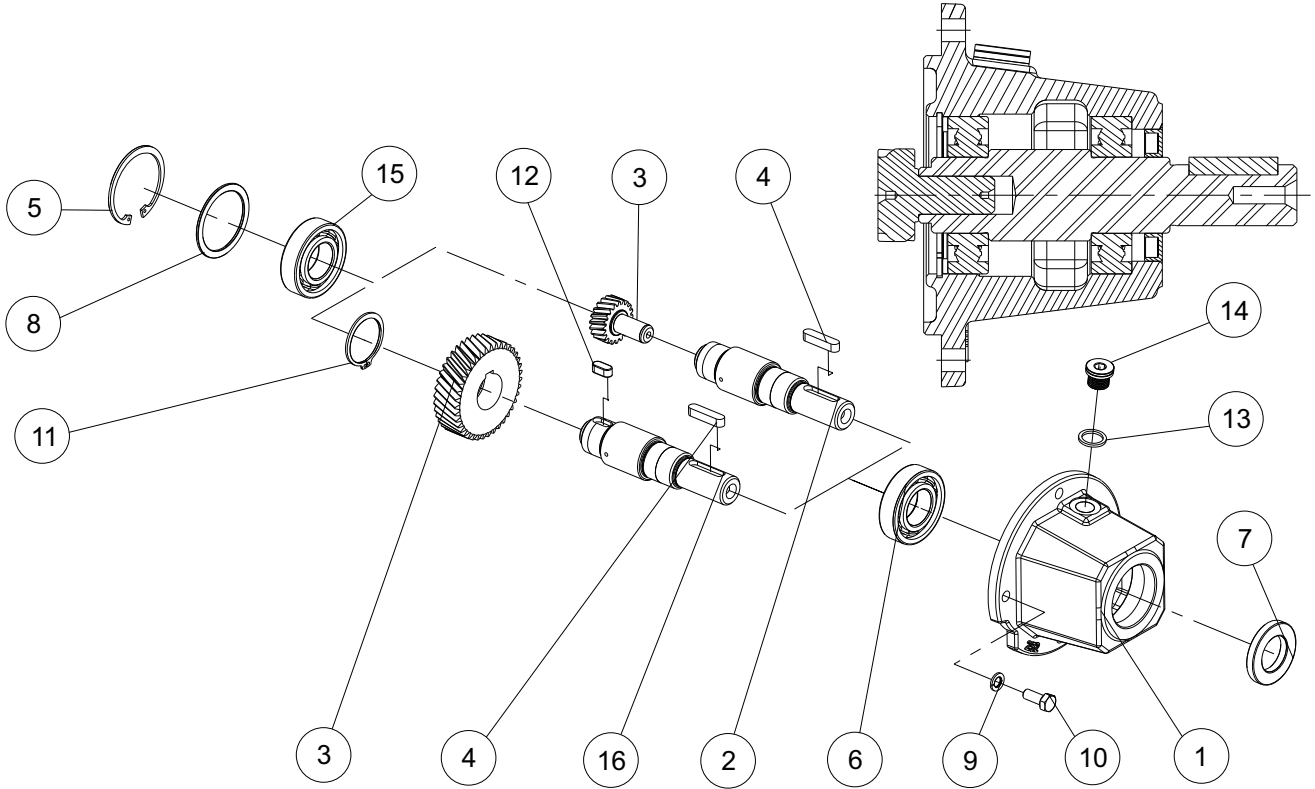
TR GENEL PARÇA LİSTESİ

IT GENERALE ELENCO DELLE PARTI

FR GÉNÉRALE LA LISTE DES PIÈCES

ES LISTE DE PIEZAS EN GENERAL

A/F 252...253 / 902...903 W



1	W Box	W Case	W Gövdesi	W Box	W Boite	W Caja
2	W Welle mit Getriebe	W Shaft with gear	W Mili Yekpare	W Albero con ingranaggio	W Arbre avec des engins	W Eje col el engranaje
3	Antriebsritzel	Input Pinion	Z1 Dişlisi	Ingresso Pignone	Pignon d'entrée	Piñón de entrada
4	Paßfeder	Key	Kama	Chiavetta	Clavette	Clave
5	Sicherungsring	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
6	Kugellager	Bearing	Rulman	Cuscinetto	Roulement	Rodamiento de bolas
7	Wellendichtring	Shaft Seal	Keçe	Tenuta Albero	Bague d'étancheite	Sello del eje
8	Shim	Shim	Layner	Shim	Rondelle d'ajustage	Rondelle d'ajustage
9	Federscheibe	Spring Washer	Yaylı Rondela	Rondella elastica	Rondella élastique	Arandela
10	Bullone	Bolt	Civata	Bullone	Boulonner	Atornillor
11	Sicherungsring	Circlip	Segman	Anello di sicurezza	Circlip	Anillo de seguridad
12	Paßfeder	Key	Kama	Chiavetta	Clavette	Clave
13	Dichtung	Seal	Tapa Contası	Sigillo	Joint	Sellar
14	Verschlussschraube	Oil Plug	Yağ Tapası	Olio Tappo	Visde vidange	Tapón
15	Kugellager	Bearing	Rulman	Cuscinetto	Roulement	Rodamiento de bolas
16	W Welle	W Shaft	W Mili Çakma	W Albero	W Arbre	W Eje



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EN

THREE PHASE MOTORS IE1

TR

ÜÇ FAZLI MOTORLAR IE1

DIMENSIONS / BOYUTLAR - B14a, B34a

Power Güç (kW)	Number of poles Kutup Sayısı	Motor Type Motor Tipi	Case Type Gövde Tipi	Main Dimensions Ana Boyutlar			Foot mounted motors Ayaklı Motorlar					Shaft Mil				Bearing Rulman		Seal Keçe		Flange (FC) (B14a) Flanş (FC) (B14a)				
				AC	L	O	B	A	H	HD	K	D ⁽¹⁾	E	GA	F ⁽²⁾	Drive side Kasnak Taraflı	Non Drive Side Kasnak Taraflı Aksı	Drive side Kasnak Taraflı	Non Drive Side Kasnak Taraflı Aksı	P	N ⁽³⁾	M	R	S
3	2	Q1E 90L2C	Alüminyum	193	316.5	1*M25	125	140	90	222	10	24	50	27	8	6305-2Z	6205-2Z	25*40*7	25*40*7	140	95	115	0	M8
	4	Q1E 90L4D	Alüminyum	193	344.5	1*M25	125	140	90	222	10	24	50	27	8	6305-2Z	6205-2Z	25*40*7	25*40*7	140	95	115	0	M8
	2	Q1E 100L2A	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	160	110	130	0	M8
	4	Q1E 100L4B	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	160	110	130	0	M8
	6	Q1E 132S6B	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
4	2	Q1E 100L2C	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	160	110	130	0	M8
	4	Q1E 100L4C	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	160	110	130	0	M8
	2	Q1E 112M2A	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	160	110	130	0	M8
	4	Q1E 112M4B	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	160	110	130	0	M8
	6	Q1E 132M6A	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
5.5	2	Q1E 112M2C	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	160	110	130	0	M8
	2	Q1E 132S2A	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
	4	Q1E 112M4C	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	160	110	130	0	M8
	4	Q1E 132S4C	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
	6	Q1E 132M6B	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
7.5	2	Q1E 112M2D	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	160	110	130	0	M8
	2	Q1E 132S2C	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
	4	Q1E 132M4B	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
11	2	Q1E 132M2A	Alüminyum	279	476	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10
	4	Q1E 132M4C	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	200	130	165	0	M10

- (1) Tolerance DIN EN 50347 "j6", up to 28mm, "k6" above 28mm
(2) According to DIN 6885
(3) Tolerance DIN EN 50347 "j6"

- (1) Toleranslar 28 mm'ye kadar DIN EN 50347 "j6", 28 mm ve üzeri "k6"
(2) DIN 6885'e göre
(3) Tolerans DIN EN 50347 "j6"

EN

THREE PHASE MOTORS IE1

TR

ÜÇ FAZLI MOTORLAR IE1

DIMENSIONS / BOYUTLAR - B14b, B34b

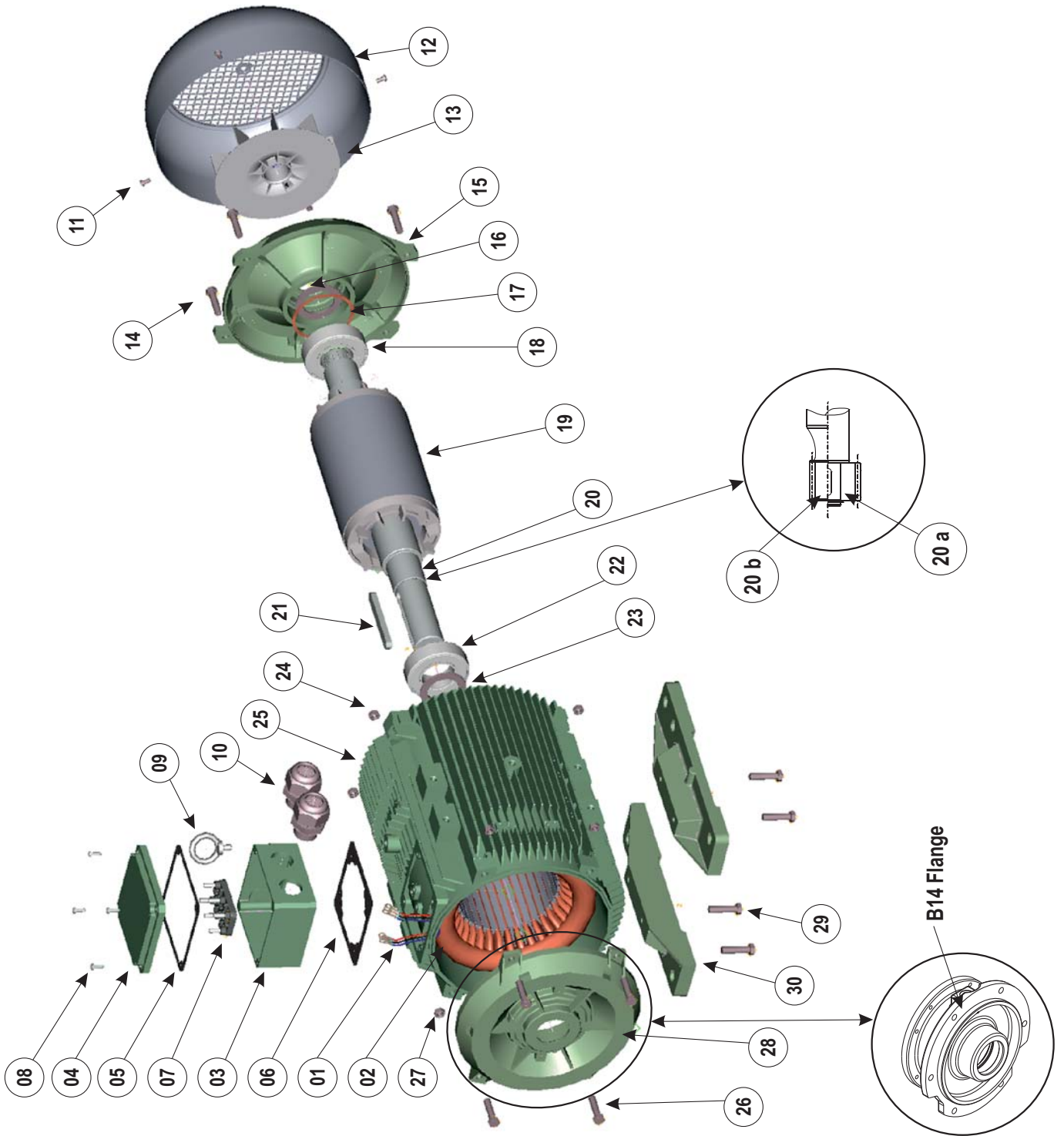
Power Güç (kW)	Number of poles Kutup Sayısı	Motor Type Motor Tipi	Case Type Gövde Tipi	Main Dimensions Ana Boyutlar			Foot mounted motors Ayaklı Motorlar					Shaft Mil				Bearing Rulman		Seal Keçe		Flange (FB) (B14b) Flanş (FB) (B14b)				
				AC	L	O	B	A	H	HD	K	D ⁽¹⁾	E	GA	F ⁽²⁾	Drive side Kasnak Taraflı	Non Drive Side Kasnak Taraflı Aksı	Drive side Kasnak Taraflı	Non Drive Side Kasnak Taraflı Aksı	P	N ⁽³⁾	M	R	S
3	2	Q1E 90L2C	Alüminyum	193	316.5	1*M25	125	140	90	222	10	24	50	27	8	6305-2Z	6205-2Z	25*40*7	25*40*7	160	110	130	0	M8
	4	Q1E 90L4D	Alüminyum	193	344.5	1*M25	125	140	90	222	10	24	50	27	8	6305-2Z	6205-2Z	25*40*7	25*40*7	160	110	130	0	M8
	2	Q1E 100L2A	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	200	130	165	0	M10
	4	Q1E 100L4B	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	200	130	165	0	M10
	6	Q1E 132S6B	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
4	2	Q1E 100L2C	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	200	130	165	0	M10
	4	Q1E 100L4C	Alüminyum	217	352	1*M25	140	160	100	241	12	28	60	31	8	6306-2Z	6205-2Z	30*47*7	25*40*7	200	130	165	0	M10
	2	Q1E 112M2A	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	200	130	165	0	M10
	4	Q1E 112M4B	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	200	130	165	0	M10
	6	Q1E 132M6A	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
5.5	2	Q1E 112M2C	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	200	130	165	0	M10
	2	Q1E 132S2A	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
	4	Q1E 112M4C	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	200	130	165	0	M10
	4	Q1E 132S4C	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
	6	Q1E 132M6B	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
7.5	2	Q1E 112M2D	Alüminyum	232	395.5	2*M25	140	190	112	261	12	28	60	31	8	6306-2Z	6206-2Z	30*47*7	30*47*7	200	130	165	0	M10
	2	Q1E 132S2C	Alüminyum	279	440.5	2*M32	140	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
	4	Q1E 132M4B	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
11	2	Q1E 132M2A	Alüminyum	279	476	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15
	4	Q1E 132M4C	Alüminyum	279	475.5	2*M32	178	216	132	314	12	38	80	41	10	6208-2Z	6208-2Z	40*62*10	40*62*10	250	180	215	0	M12 veya15

- (1) Tolerance DIN EN 50347 "j6", up to 28mm, "k6" above 28mm
(2) According to DIN 6885
(3) Tolerance DIN EN 50347 "j6"

- (1) Toleranslar 28 mm'ye kadar DIN EN 50347 "j6", 28 mm ve üzeri "k6"
(2) DIN 6885'e göre
(3) Tolerans DIN EN 50347 "j6"

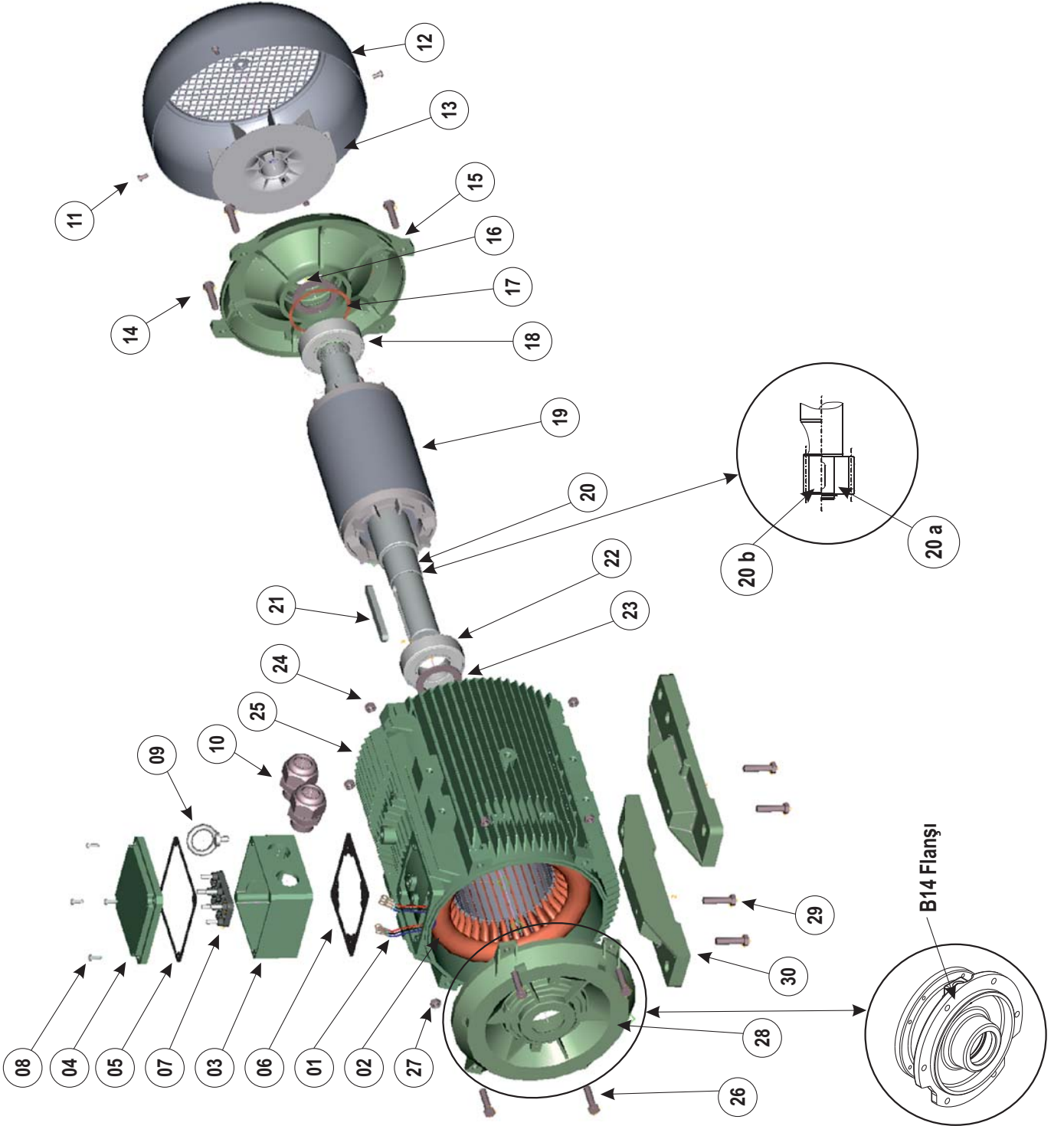
MOTOR PART LIST

01. Lead cables
02. Wound stator
03. Terminal box
04. Terminal box cover
05. Terminal gasket down
06. Terminal gasket up
07. Terminal plate
08. Terminal box screws
09. Eyebolt
10. Conduit
11. Fan cover screws
12. Fan cover
13. Fan
14. Endshield screws
15. Nondrive- endshield
16. Seal ring (back)
17. Bearing shim
18. Bal bearing (non-drive-side)
19. Rotor
20. Shaft
 - a. Drive Shaft (plain)
 - b. Drive Shaft (gearcut)
21. Key
22. Ballbearing (drive-side)
23. Seal ring (front)
24. Bolt nut (endshield)
25. Housing
26. Endshield screws (drive-side)
27. Bolt nut (drive endshield)
28. Drive endshield
29. Foot screws
30. Foot



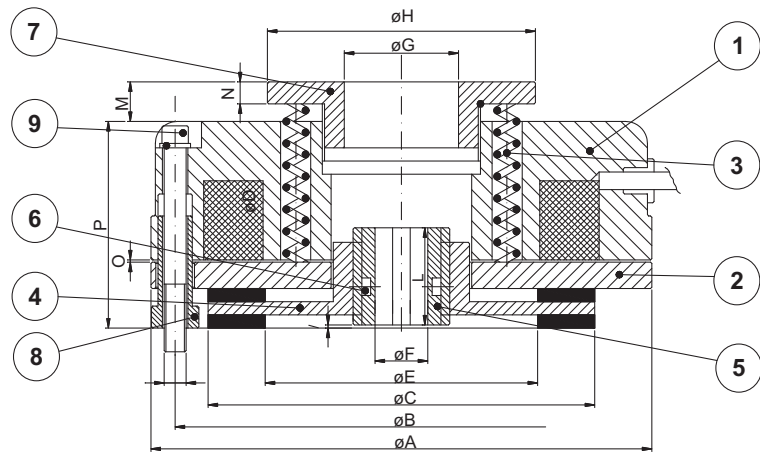
MOTOR PARÇA LİSTESİ

01. Kamçı grubu
02. Sargılı stator
03. Terminal kutusu
04. Terminal kutu kapağı
05. Terminal contası alt
06. Terminal contası üst
07. Klemens plakası
08. Terminal kutu vidaları
09. Kaldırma halkası
10. Rakor
11. Fan kapağı vidaları
12. Fan kapağı
13. Fan
14. Arka kapak vidaları
15. Motor arka kapağı
16. Keçe (arka)
17. Rulman gergi yayı
18. Arka rulman
19. Rotor
20. Mil
 - a. Çakma
 - b. Yekpare
21. Kama
22. Ön rulman
23. Keçe (ön)
24. Arka kapak bağlantı somun
25. Gövde
26. Ön kapak vidaları
27. Ön kapak bağlantı somunu
28. Ön kapak
29. Ayak bağlantı vidası
30. Ayak



BRAKE PART LIST AND PROPERTIES

- 1 Electromagnet
- 2 Armature plate
- 3 Torque springs
- 4 Disc
- 5 Splined hub
- 6 O-ring
- 7 Adjuster ring
- 8 Adjuster nuts
- 9 Fixing screws



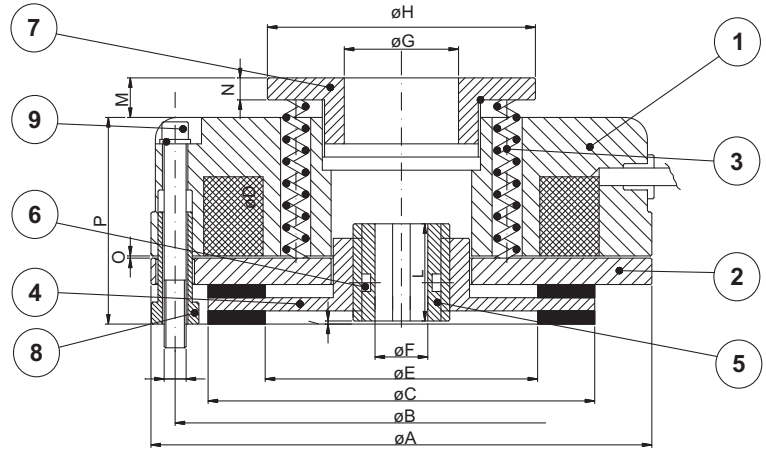
Typo Brake Model	K1	K2	K3	K4	K5	K6	K7	K7/D	K8	K8/D	K9	K9/D	K9/T
Static Braking Torque (Nm)	5	12	16	20	40	60	90	180	200	400	300	600	900
Max Speed of the motor (rpm)	3000	3000	3000	3000	3000	3000	3000	3000	1500	1500	1500	1500	1500
Input Power (W)	15	20	25	30	45	50	55	55	60	60	65	65	65
Max noisiness (≤dB-A)	68	69	68	69	70	70	70	70	70	69	69	69	70
Weight (Kg.)	1,1	1,85	2,55	2,84	4,8	7	12	15	14,3	18	23	28	34
A	84	104	114	124	148	159	189	189	218	218	248	248	248
B	72	90	103	112	132	145	170	170	196	196	230	230	230
C	61	77	88	98	119	128	151	151	176	176	204	204	204
D	3XM4	3xM5	3xM5	3xM6	3xM6	3xM8	3xM8	3xM8	6xM10	6xM10	6xM10	6xM10	9xM10
E	35	44	62	69	79	80	90	90	103	103	132	132	132
Tolerance hole till size K3 H7, others +0,01/-0,01	F 10-11 12	11-14 15	11-15	14-25	24-25 28	25-30 34	25-30 34	25 H40 34 H60	24-34	34 H60 48	44-45 48	44-45 48	44-45 48-50
G	20	26	26	42	60	60	60	60	60	60	60	60	60
H	50	61	61	79	104	104	104	104	104	104	104	104	104
I	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
L	18	20	20	20	25	30	30	60	40	60	40	60	80
M (max)	9	9	9	9,5	18	16	14	14	18	18	18	18	18
N	4	4	4	5,5	8	8	8	8	8	8	8	8	8
O	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,4	0,4±0,5
P	38,5	41,5	47	46,5	64	69,5	79	101,5	78	98	80	105	130

Note

- The brake before running in, the static braking torque value could change by +20% from the reported value.

FREN PARÇA LİSTESİ VE ÖZELLİKLERİ

- 1 Elektro mıknatıs
- 2 Endüvi plakası
- 3 Tork yayı
- 4 Disk
- 5 Kamalı burç
- 6 O-ring
- 7 Ayar halkası
- 8 Ayar somunu
- 9 Bağlantı civataları



Tip Fren Modeli	K1	K2	K3	K4	K5	K6	K7	K7/D	K8	K8/D	K9	K9/D	K9/T
Statik Fren Momenti (Nm)	5	12	16	20	40	60	90	180	200	400	300	600	900
Motorun Max. Hızı (rpm)	3000	3000	3000	3000	3000	3000	3000	3000	1500	1500	1500	1500	1500
Giriş Gücü (W)	15	20	25	30	45	50	55	55	60	60	65	65	65
Max. Ses (≤dB-A)	68	69	68	69	70	70	70	70	70	69	69	69	70
Ağırlık (Kg.)	1,1	1,85	2,55	2,84	4,8	7	12	15	14,3	18	23	28	34
A	84	104	114	124	148	159	189	189	218	218	248	248	248
B	72	90	103	112	132	145	170	170	196	196	230	230	230
C	61	77	88	98	119	128	151	151	176	176	204	204	204
D	3xM4	3xM5	3xM5	3xM6	3xM6	3xM8	3xM8	3xM8	6xM10	6xM10	6xM10	6xM10	9xM10
E	35	44	62	69	79	80	90	90	103	103	132	132	132
Delik toleransı K3'e kadar H7, diğerleri +0,01/-0,01	F 10-11 12	11-14 15	11-15	14-25	24-25 28	25-30 34	25-30 34	25 H40 34 H60	24-34	34 H60 48	44-45 48	44-45 48	44-45 48-50
G	20	26	26	42	60	60	60	60	60	60	60	60	60
H	50	61	61	79	104	104	104	104	104	104	104	104	104
I	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
L	18	20	20	20	25	30	30	60	40	60	40	60	80
M (max)	9	9	9	9,5	18	16	14	14	18	18	18	18	18
N	4	4	4	5,5	8	8	8	8	8	8	8	8	8
O	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,4	0,4±0,5
P	38,5	41,5	47	46,5	64	69,5	79	101,5	78	98	80	105	130

Note

- Fren çalıştırılmadan önce statik fren momentini tabloda verilen değerlere göre ± % 20 değişiklik gösterebilir.



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