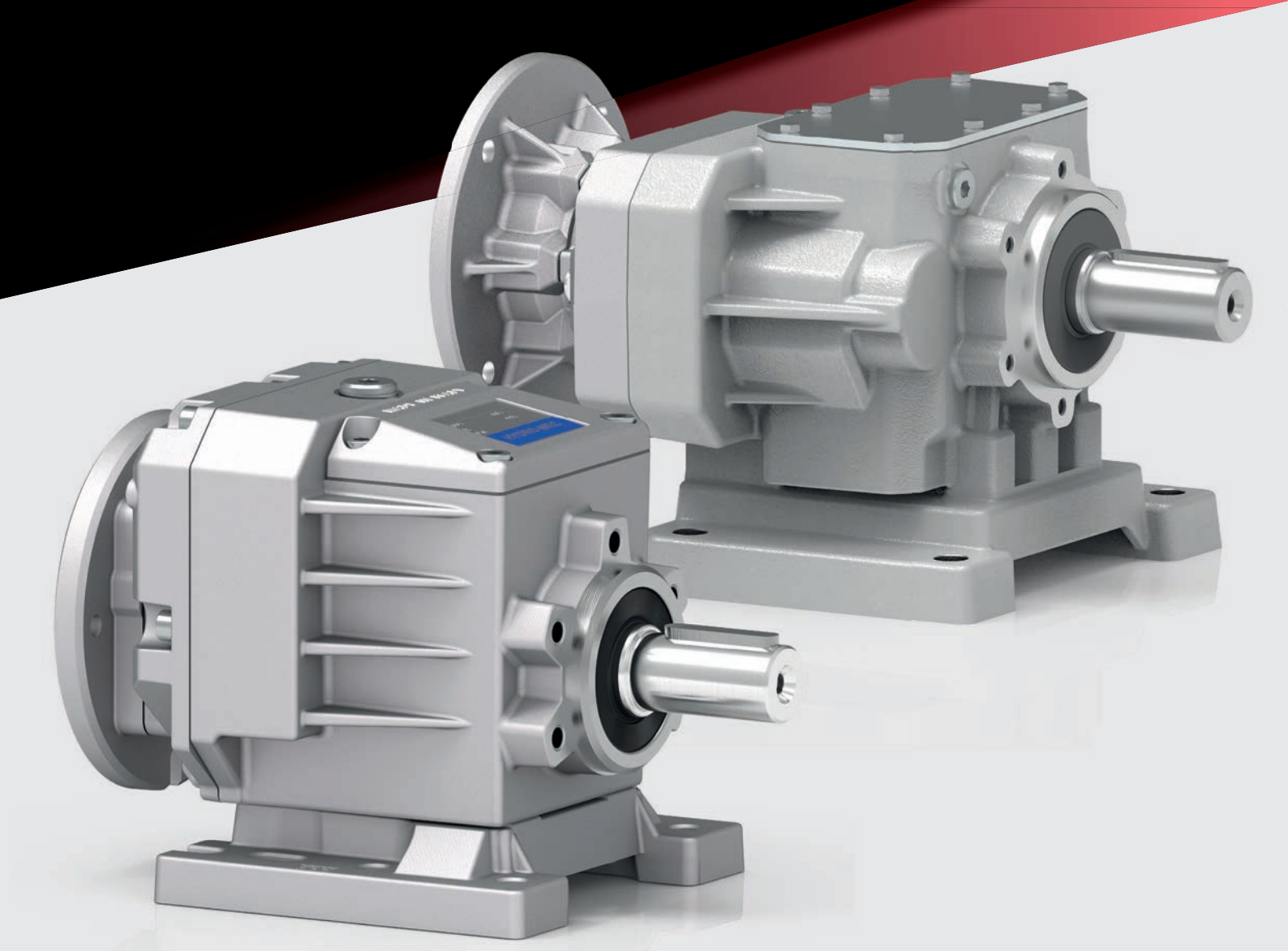
IN LINE
GEARBOXES

COAXIAL-GEARS
METRIC EDITION 2025

ITALIAN MADE
PRODUCTS



abaroadrive

HIGH EFFICENCY GEARBOXES

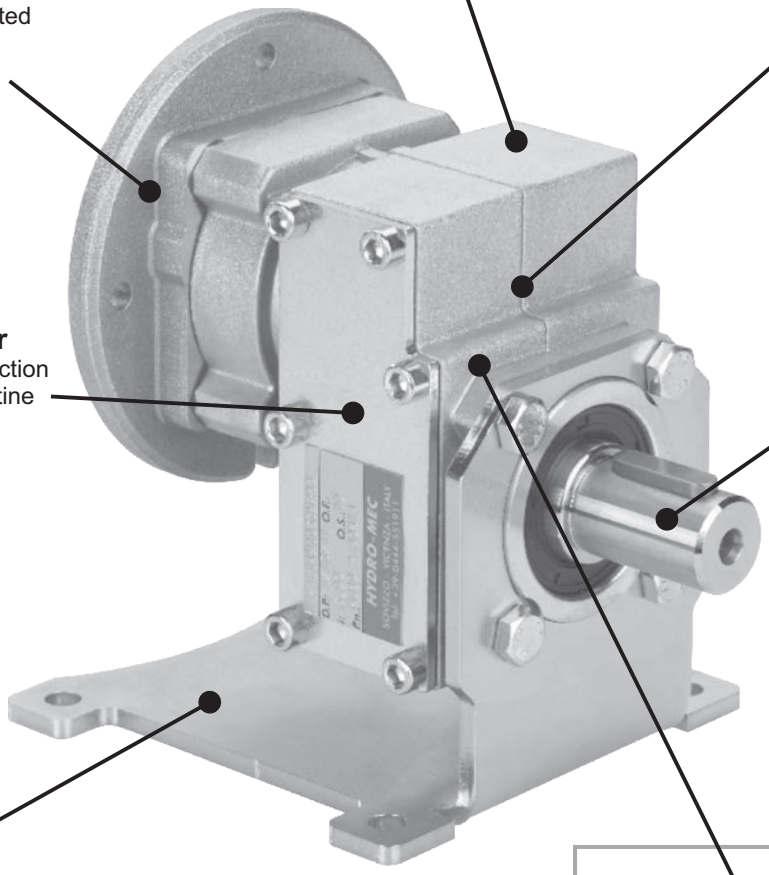
Aluminum one step gearboxes

A modular and compact product

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

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

Gears
Hardened and ground gears.

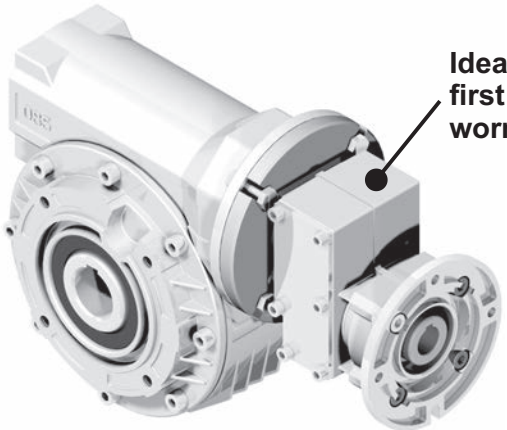


Removable inspection cover
Allows periodic inspection of gearing during routine maintenance

Output shaft
With well proportioned bearings

Feet
Removable feet.

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



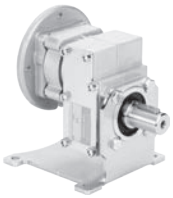
Ideal for use as first step with wormgearboxes.

World wide sales network.

Lubricated for life with synthetic oil with operative range from -15° to +130°C

Specific type datasheet on page...

On page / A pagina / Auf Seite / À la page / En la página



Types / Tipi
Tipen / Types
Tipos

4-5	4-7	4-9	4-11
211A 20Nm	**311A** 30Nm	**411A** 38Nm	**511A** 110Nm

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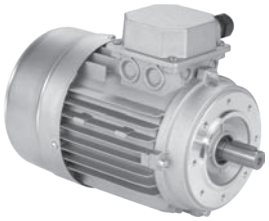


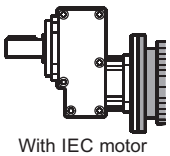
Types / Tipi
Tipen / Types
Tipos

M-1									
56A 56B	**63A 63B**	**71A 71B**	**80A 80B**	**90S 90L**	**100LA 100LB**	**112M**	**132S 132M**	**160M 160L**	**180M 180L**

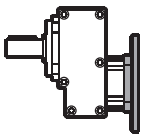
CODIFICA / HOW TO ORDER / TYPENBEZEICHNUNGEN / CODIFICATION / CODIFICACIÓN

Type - Tipo - Typ Type - Tipo	**Size** - Grandezza - Grösse Taille - Tamaño	**Mounting** - Montaggio Montage - Fixation Tipo de montaje	**Ratio** - Rapporto Untersetzung Reduction Relaciòn
P	**311A**	**-F**	**2.84**

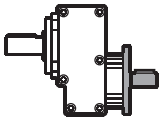
Aluminum one step gear
Riduttori in alluminio a uno stadio



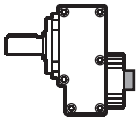
With IEC motor
M



With motor flange
P

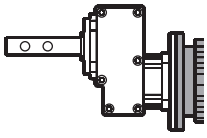


With male input shaft
R



Modular Base
B

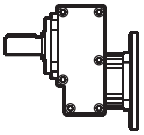
Special output shaft
Albero uscita speciale



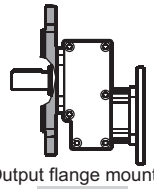
Only on request for Q.ty
A richiesta per quantità

1 Stages
Riduzioni
Stufen
Trains
Etapas

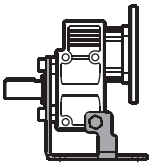
211A
311A
411A
511A



Without flange / feet
-N



Output flange mounted
-F



Mounted feet
H1

See technical data table

Vedi tabelle dati tecnici.

Technisches Datenblatt beachten

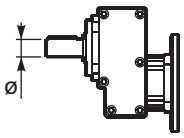
Voir Tableau données techniques

Ver tabla datos técnicos

On request we can deliver our products according to the ATEX
A richiesta possiamo fornire i nostri prodotti secondo le normative ATEX
Auf Anfrage können wir unsere Produkte den Richtlinien ATEX entsprechend liefern
Sur demande nos produits peuvent se conformer à la réglementation ATEX
A pedido, se pueden enviar nuestros productos de acuerdo con las normas ATEX.

Output shaft
Albero uscita
Abtriebswelle
Arbre de sortie
Eje en salida

S



➡ **STANDARD**

211A
S ➡ **ø14**

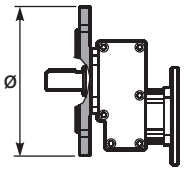
311A
S ➡ **ø14**
C ⇨ ø19
E ⇨ ø24

411A
S ⇨ ø14
C ➡ **ø19**
E ⇨ ø24

511A
C ⇨ ø19
E ⇨ ø24
G ➡ **ø28**

Output flange
Flangia uscita
Ausgangsflansch
Bride de sortie
Brida en salida

2



N Senza flangia / Without flange

211A
I ⇨ **ø105**
Flangia integrata
Integrated flange

311A
1 ⇨ ø120
2 ⇨ ø140
3 ➡ **ø160**
4 ⇨ ø200

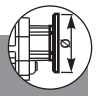
411A
1 ⇨ ø120
2 ⇨ ø140
3 ⇨ ø160
4 ➡ **ø200**

511A
1 ⇨ ø120
2 ⇨ ø140
3 ⇨ ø160
4 ⇨ ø200
5 ➡ **ø250**

Motor size - Grandezza motore
Motor Grösse
Grandeur moteur - Tamaño motor

-C

Flange
Flangia



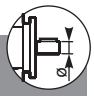
B5

-A=56 (ø120)
-B=63 (ø140)
-C=71 (ø160)
-D=80 (ø200)
-E=90 (ø200)
-F=100÷112 (ø250)
-G=132 (ø300)

B14

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

Type R
Tipo R



211A
311A
-1 ⇨ ø14

411A
-2 ⇨ ø19

511A
-3 ⇨ ø24

Without flange
Senza flangia

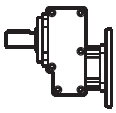
211A
311A
-Z ⇨ ø9 (IEC56)
-0 ⇨ ø11 (IEC63)
-1 ⇨ ø14 (IEC71)

411A
-1 ⇨ ø14 (IEC71)
-2 ⇨ ø19 (IEC80)
-3 ⇨ ø24 (IEC90)

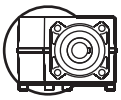
511A
-2 ⇨ ø19 (IEC80)
-3 ⇨ ø24 (IEC90)
-4 ⇨ ø28 (IEC100)

Mounting position
Posizione montaggio
Einbaulage
Position de montage
Position de montaje

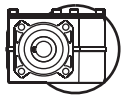
B3



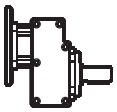
B3
STANDARD



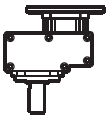
B6



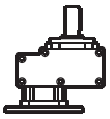
B7



B8



V5



V6

Input bore
Foro entrata
Eingangshohlwelle
Trou d'entree
Eje hueco de entrada

ST

ST
standard bore
foro standard

Terminal box position
Posizione morsettiera
Klemmkastenlage
Position boîte à bornes
Posición caja de bornes

With Type M specify terminal box position
Con tipo M specificare posizione morsettiera

A

B
STANDARD

C

D

POTENZA RICHIESTA / REQUIRED POWER / ERFORDERLICHE LEISTUNG / PUISSANCE NECESSAIRE / POTENCIA NECESARIA

Lifting / sollevamento / hubantriebe / levage / elevactión	$\mathbf{P}\ [KW] = \frac{\mathbf{M}\ [Kg] \cdot \mathbf{g}\ [9.81] \cdot \mathbf{v}\ [m/s]}{\mathbf{1000}}$
Rotation / rotazione / drehung / rotation / rotaction	$\mathbf{P}\ [KW] = \frac{\mathbf{M}\ [Nm] \cdot \mathbf{n}\ [rpm]}{\mathbf{9550}}$
Linear movement / traslazione / linearbewegung / translation / translacion	$\mathbf{P}\ [KW] = \frac{\mathbf{F}\ [N] \cdot \mathbf{v}\ [m/s]}{\mathbf{1000}}$

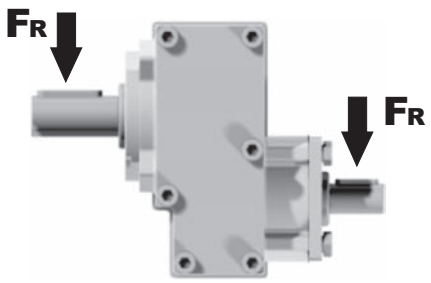
TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

	$\mathbf{M}\ [Nm] = \frac{\mathbf{9550} \cdot \mathbf{P}[KW]}{\mathbf{n}\ [rpm]}$
	$\mathbf{M}\ [lb\ in] = \frac{\mathbf{63030} \cdot \mathbf{P}[HP]}{\mathbf{n}\ [rpm]}$

4

RADIAL LOADS / CARICHI RADIALI / RADIALE - UND AXIALLASTEN / CHARGES RADIALES / CARGA RADIAL Y AXIAL

- Radial load generated by external transmissions keyed onto input and/or output shafts.
- Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.
- Belastungen der Antriebs- bzw. Abtriebswellen durch von aussen eingebrachte Radiallasten.
- Charge radiale générée par la transmissions calés sur les entrées et / ou des arbres de sortie
- Cargas radiales, generada por transmisiones externas, aplicadas sobre los ejes de entrada y/o salida



$F_R\ [N] = \frac{M\ [Nm] \cdot 2000}{d\ [mm]} \cdot f_K$	$F_R\ [N] = \frac{M\ [lb\ in] \cdot 8.9}{d\ [in]} \cdot f_K$

M	Momento torcente / Output torque / Abtriebsdrehmoment / Couple / Par torsion
d	Diametro primitivo / Diam. of driving element / Durchmesser der Abtriebseinheit / Diamètre primitif / Diámetro primitivo
f_K	Coefficiente di trasformazione / Factor / Faktor / Coefficient de transmission / Coeficiente de transmisión **1.15** Ingranaggi / Gearwheels / Zahnrad / Engrenage / Engranaje **1.25** Catena / Chain sprochets / Antriebskette / Chaîne / Cadena **1.75** Cinghia Trapezoidale / Narrow v-belt pulley / Keilriemen / Courroie trap. / Correa trapezoidal **2.50** Cinghia piatta / Flat-belt pulley / Flachzahnriem. / Courroie crantée / Correa plana

— If your application requires higher radial loads, contact our technical office. Higher load may be possible.
— Nel caso la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.
— Wenn Ihre Anwendung höhere Radialbelastungen erfordert, so wenden Sie sich bitte an unser technischen Büro.
— Si votre application demande des charges radiales supérieures, s'adresser à notre bureau technique.
— En el caso en que una aplicación exija una carga radial superior a la especificada en el catálogo, consultar a nuestra oficinas técnica.

B Output speed / Velocità in uscita / Abtriebsdrehzahl / Vitesse de sortie / Velocidad de salida

Nominal power / Potenza nominale / Max. mögliche Leistung / Poissance nominale / Potencia nominal

Gear size / Grandezza riduttore / Getriebegröße / Taille réducteur / Tamaño reductor

Motor power / Potenza motore / Motorleistung / Puissance moteur / Potencia motor

A Nominal torque / Momento torcente nominale / Nenn Drehmoment / Couple nominal / Par de torsión nominal

Flange code / Codice flangia / Flanschtype / Code bride / Código bridas

Input speed / Velocità in entrata / Eintriebsdrehzahl / Vitesse en entrée / Velocidad de entrada

311A One step 30Nm

Rating - Aluminum ONE STEP GEARBOXES

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	Available B5 motor flanges -C 71	Available B14 motor flanges -O 56	Available B14 motor flanges -P 63	Available B14 motor flanges -Q 71		Output Shaft	Ratios code
892	**1.57**	0.37	3.9	3.3	1.24	13			C	C		2844		01
493	**2.84**	0.37	7.0	3.3	1.21	23			C	C		1954		02
426	**3.29**	0.37	8.1	3.2	1.18	26			C	C		1756	**standard ø14**	03
362	**3.87**	0.37	9.6	2.9	1.08	28			C	C		1558		04

C Ratio / Rapporto / Untersetzung / Rapport de réduction / Relación

Transmitted torque / Momento torcente trasmesso / Mögliche Drehmomente / Couple de sortie / Par transmitido

Service factor / Fattore di servizio / Betriebsfaktor / Facteur de service / Factor de servicio

Output shaft diam. / Diam. albero uscita / Durchmesser abtriebswelle / Diametre arbre lent / Diametro eje de salida

Notes / Note / Anmerkungen / Note / Notas

fs

Type of load and starts per hour / Tipo di carico e avviamenti per ora		Oper. hours per day / Ore di funz. giorn. 3 h	10 h	24 h
Continuous or intermittent appl. with start / hour ≤ 10 / Applicazione cont. o interm. con n.ro operazioni/ora	Uniform / Uniforme	0.8	1	1.25
	Moderate / Moderato	1	1.25	1.5
	Heavy / Forte	1.25	1.5	1.75
Intermittent application with start / hour > 10 / Applicazione intermittente con n.ro operazioni/ora	Uniform / Uniforme	1	1.25	1.5
	Moderate / Moderato	1.25	1.5	1.75
	Heavy / Forte	1.5	1.75	2.15

D Motor flange available / Flange disponibili / Erhältliche Motorflansche / Brides disponibles / Bridas disponibles

B) Mounting with reduction ring / Montaggio con boccola di riduzione / Reduzierhülsen / Montage avec douille de réduction / Montaje con casquillo de reducción

C) Motor flangeholes position/terminal box position / Posizione fori flangia/basetta motore / Bohrungsposition am Motorflansch/-sockel / Position trous bride/barrette à bornes moteur / Posición agujeros brida / base motor

B) Available without reduction bushes / Disponibile anche senza boccola / Auch ohne Reduzierbuchse verfügbar / Disponible aussi sans douille de réduction / Disponible tambien sin casquillo

A	Select required torque (according to service factor)	Seleziona la coppia desiderata (comprensiva del fattore di servizio)	Max. Drehmoment in Bezug zum Betriebsfaktor	Sélectionner le couple souhaité (comprenant le facteur de service)	Seleccionar el par deseado (incluyendo el factor de servicio)
B	Select ouput speed	Seleziona la velocità in uscita	Ausgewählte Abtriebsdrehzahl	Sélectionner la vitesse de sortie	Seleccionar la velocidad de salida
C	On the same line of selected geared motor, you can find the gear ratio	Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione	Auf der gleichen Linie wie die ausgewählte Motorleistung steht auch die Getriebeuntersetzung	Sur la ligne correspondante à la motorisation pré-choisie on peut relever le rapport de réduction	En la línea correspondiente al motor preseleccionado es posible encontrar la relación de reducción
D	Select motor flange available (if requested)	Scegli la flangia disponibile (se richiesta)	Erhältliche Motorflansche (auf Anfrage)	Choisir la bride disponible (si elle est demandée)	Seleccionar la brida disponible (sobre pedido)

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	Available B5 motor flanges -C 71	Available B14 motor flanges -O 56	Available B14 motor flanges -P 63	Available B14 motor flanges -Q 71		Output Shaft ø	Ratios code
682	**2.05**	0.37	5	2.0	**0.73**	**10**			C	C		1939		01
595	**2.35**	0.37	6	2.1	**0.76**	**12**			C	C		1740		02
500	**2.80**	0.37	7	2.0	**0.75**	**14**			C	C		1542		03
414	**3.38**	0.37	8	2.0	**0.75**	**17**			C	C		1344	**standard**	04
298	**4.70**	0.37	12	1.7	**0.64**	**20**			C	C		1047	**ø14**	05
225	**6.22**	0.37	15	1.5	**0.55**	**23**			C	C		956		06
169	**8.29**	0.37	20	1.0	**0.36**	**20**			C	C		758		07
142	**9.83**	0.25	16	1.0	**0.24**	**16**			C	C		659		08

The dynamic efficiency is **0.98** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

4

EN Unit **211A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **211A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **211A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **211A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **211A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

▪ LUBRICATION 211A Oil Quantity 0.05 Lt.

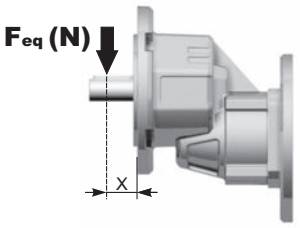
SHELL Omala S4 WE 320	**ENI** Telium VSF 320

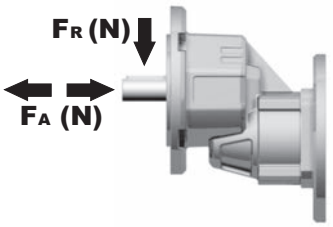
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

▪ RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

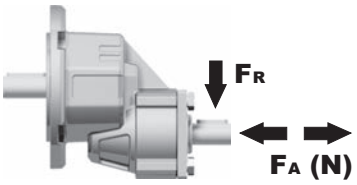
$$Feq = FR \cdot \frac{34.5}{X+19.5}$$





n_2	FA	FR
700	101	504
600	120	600
400	138	696
300	151	756
200	175	876
140	192	960

Input shaft
albero in entrata



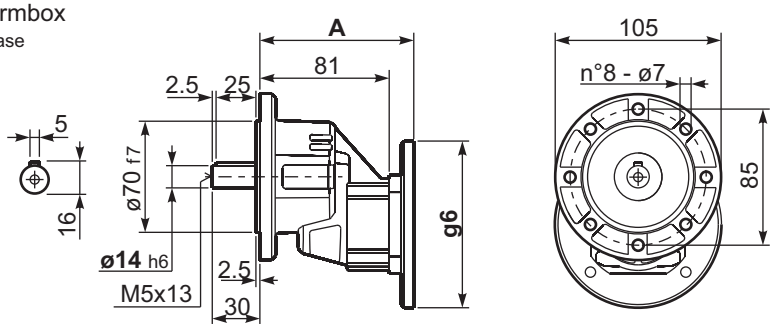
n_1	FA	FR
1400	168	840
900	192	960

***Strong axial loads in the DX direction are not allowed.**
Non sono consentiti forti carichi assiali con direzione DX

tab. 2

P211A**-F**... Basic wormbox
Riduttore base

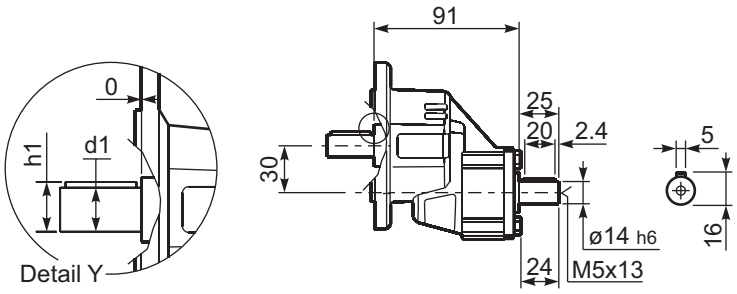
Gearbox weight peso riduttore	1.40 kg



B5 Motor Flanges	A	g6	kit code
63 B5	99.5	138	K050.4.041
71 B5	97	160	K050.4.042

B14 Motor Flanges	A	g6	kit code
56 B14	97	80	KC40.4.049
63 B14	99.5	90	K050.4.047
71 B14	97	105	K050.4.045

R211A-F... Basic wormbox
Riduttore base



***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 14x30	5	16	M5x13

4

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	Available B5 motor flanges -C 71	Available B14 motor flanges -O 56	Available B14 motor flanges -P 63	Available B14 motor flanges -Q 71		Output Shaft	Ratios code
891	**1.57**	0.37	4	3.3	**1.2**	**13**			C	C		2844		01
493	**2.84**	0.37	7	3.3	**1.2**	**23**			C	C		1954	**standard ø14**	02
425	**3.29**	0.37	8	3.2	**1.2**	**26**			C	C		1756		03
362	**3.87**	0.37	10	2.9	**1.1**	**28**			C	C		1558		04
303	**4.62**	0.37	11	2.6	**0.97**	**30**			C	C		1360	On request ø19 ø24	05
222	**6.30**	0.37	16	2.2	**0.83**	**35**			C	C		1063		06
170	**8.22**	0.37	20	1.9	**0.69**	**38**			C	C		974		07
129	**10.86**	0.37	27	1.0	**0.39**	**28**			C	C		776		08

The dynamic efficiency is **0.98** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

4

EN Unit **311A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **311A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **311A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **311A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **311A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

▪ LUBRICATION 311A Oil Quantity 0.10 Lt.

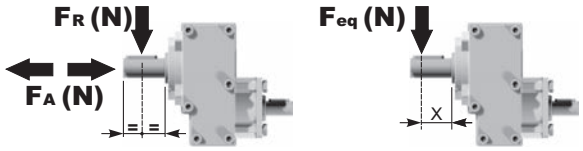
SHELL Omala S4 WE 320	**ENI** Telium VSF 320

For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

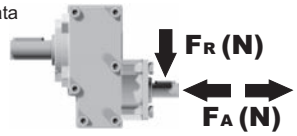
Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{38.5}{X+18.5}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
700	120	640	**400**	160	800	**200**	200	1020
600	140	700	**300**	175	880	**140**	225	1120

Input shaft
Albero in entrata

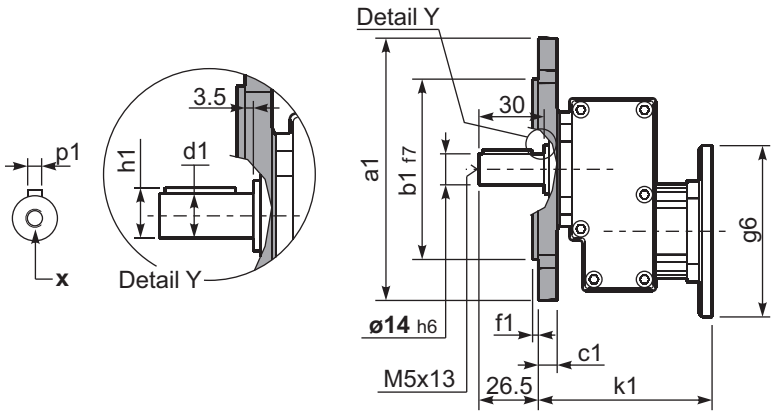


n_1	FA	FR
1400	180	860
900	200	980

tab. 2

Gearbox weight peso riduttore **2.50 kg**

P311-F... Output flange
flange di uscita



***Available output shaft** / Albero di uscita

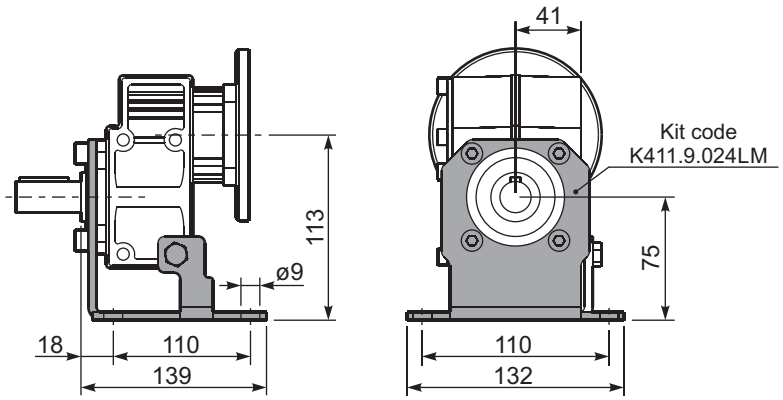
	Shaft - d1	p1	h1	x
Standard	ø 14x30	5	16	M5x13
On request A richiesta	ø 19x40 ø 24x40	6 8	21.5 27	M6x16 M6x16

Available output flanges / flange di uscita

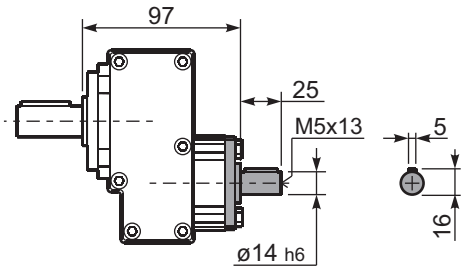
a1 ø	b1	c1	e1	f1	s1	kit code
120	80	11.5	100	3	9*	KC30.9.010
140	95	11.5	115	3	9	KC30.9.011
160	110	11.5	130	3.5	9	KC30.9.012
200	130	11.5	165	3.5	11	KC30.9.013

*Holes position
posizione fori

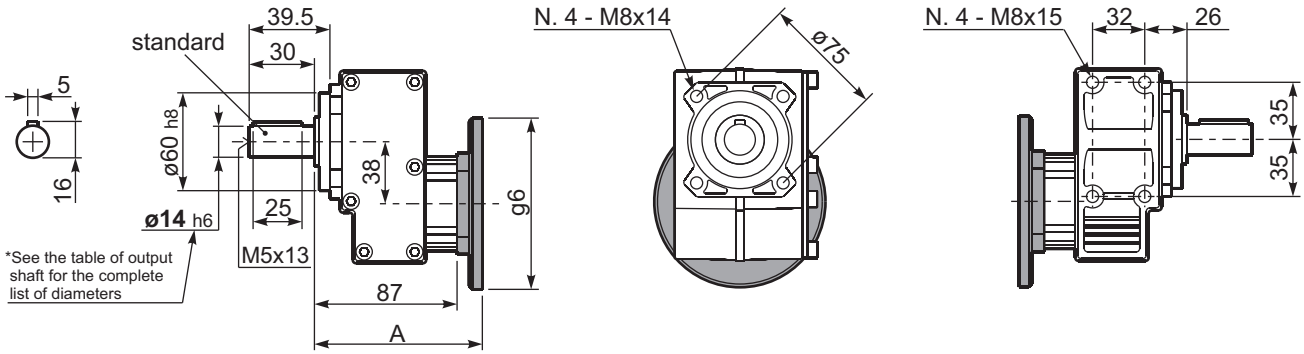
P311-H1... With feet
Con piedini



R311-N... Input Shaft
Albero in entrata



P311-N... Basic gearbox
Riduttore base



B14 Motor Flanges	A	g6	k1	kit code
56 B14	103	80	106.5	KC40.4.049
63 B14	105.5	90	109	K050.4.047
71 B14	103	105	106.5	K050.4.045

B5 Motor Flanges	A	g6	k1	kit code
63 B5	105.5	138	109	K050.4.041
71 B5	103	160	106.5	K050.4.042

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71	-D 80	-E 90	Available B14 motor flanges -Q 71	-R 80	-T 90		Output Shaft ø	Ratios code
891	**1.57**	1.5	16	1.3	**1.9**	**20**	B				C	C		2844		01
493	**2.84**	1.5	28	1.2	**1.8**	**35**	B				C	C		1954	**standard ø19**	02
425	**3.29**	1.5	33	1.2	**1.7**	**38**	B				C	C		1756		03
362	**3.87**	1.5	39	1.0	**1.5**	**40**	B				C	C		1558		04
303	**4.62**	1.5	46	1.0	**1.5**	**47**	B				C	C		1360	On request ø14 ø24	05
222	**6.30**	1.1	46	1.0	**1.1**	**46**	B				C	C		1063		06
170	**8.22**	0.55	30	1.3	**0.69**	**38**	B				C	C		974		07
129	**10.86**	0.37	27	1.0	**0.39**	**28**	B				C	C		776		08

The dynamic efficiency is **0.98** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

4

EN Unit **411A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **411A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **411A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **411A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **411A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

▪ LUBRICATION 411A Oil Quantity 0.10 Lt.

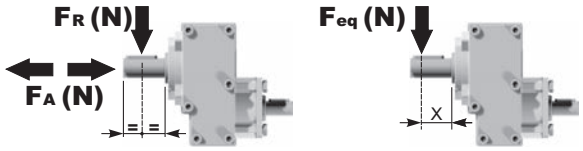
SHELL Omala S4 WE 320	**ENI** Telium VSF 320

For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

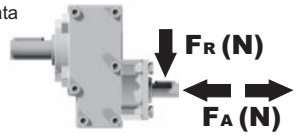
Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{40}{X+20}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
700	182	910	**400**	230	1150	**200**	290	1450
600	200	1000	**300**	250	1250	**140**	320	1600

Input shaft
Albero in entrata

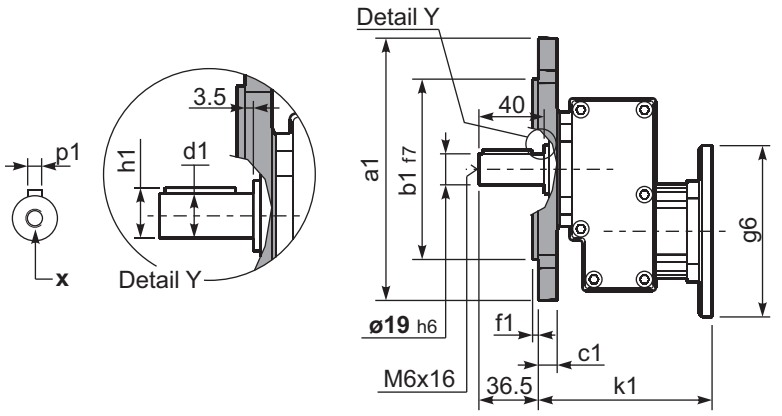


n_1	FA	FR
1400	240	1200
900	280	1400

tab. 2

P411-F... Output flange
flange di uscita

Gearbox weight peso riduttore	3.20 kg



***Available output shaft** / Albero di uscita

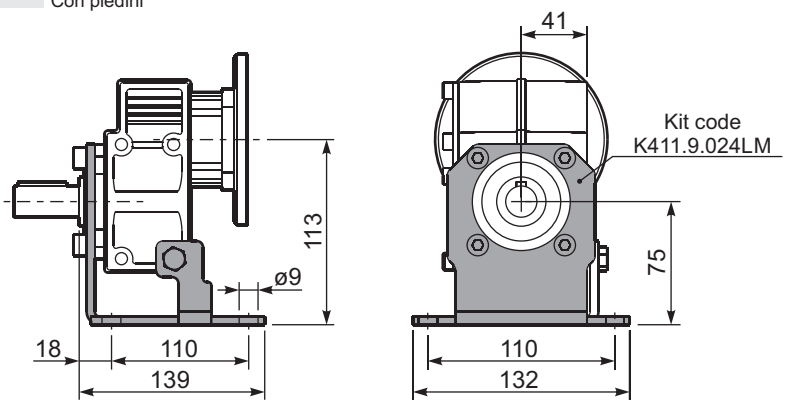
	Shaft - d1	p1	h1	x
Standard	ø 19x40	6	21.5	M6x16
On request A richiesta	ø 14x30 ø 24x40	5 8	16 27	M5x13 M6x16

Available output flanges / flange di uscita

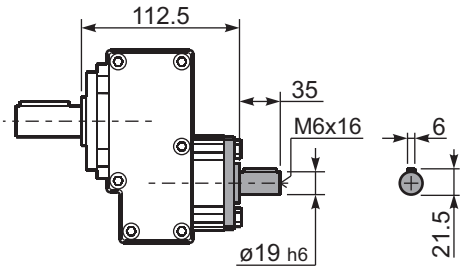
a1 ø	b1	c1	e1	f1	s1	kit code
120	80	11.5	100	3	9*	KC30.9.010
140	95	11.5	115	3	9	KC30.9.011
160	110	11.5	130	3.5	9	KC30.9.012
200	130	11.5	165	3.5	11	KC30.9.013

*Holes position
posizione fori

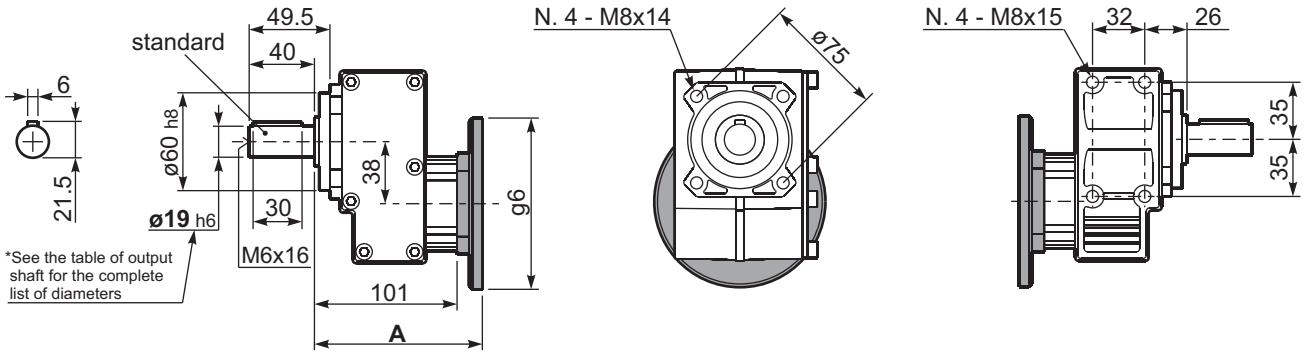
P411-H1... With feet
Con piedini



R411-N... Input Shaft
Albero in entrata



P411-N... Basic gearbox
Riduttore base



B5 Motor Flanges	A	g6	k1	kit code
63 B5	121.5	140	125	K063.4.041
71 B5	119.5	160	123	K063.4.042
80/90 B5	121.5	200	125	K063.4.043

B14 Motor Flanges	A	g6	k1	kit code
71 B14	119.5	105	123	K063.4.047
80 B14	121.5	120	125	K063.4.046
90 B14	121.5	140	125	K063.4.041

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -C 71	-D 80	-E 90	-F 100 112	-G 132	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft	Ratios code
1077	**1.30**	4	34	1.2	**4.6**	**40**	B									3039	**standard ø28**	01
571	**2.45**	4	64	1.1	**4.3**	**70**	B									2049		02
423	**3.31**	4	87	1.0	**4.1**	**90**	B									1653		03
325	**4.31**	4	113	1.0	**3.8**	**110**	B									1356	On request ø24	04
266	**5.27**	3	104	1.1	**3.1**	**110**	B									1158		05
184	**7.63**	2.2	111	1.0	**2.2**	**110**	B									861		06
133	**10.50**	1.1	77	1.0	**1.1**	**80**	B									663		07

The dynamic efficiency is **0.98** for all ratios

Motor Flanges Available / Flange Motore Disponibili

B) **Supplied with Reduction Bushing** / Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** / Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** / Posizione Fori Flangia Motore

EN Unit **511A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **511A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **511A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **511A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **511A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

▪ LUBRICATION 511A Oil Quantity 0.29 Lt.

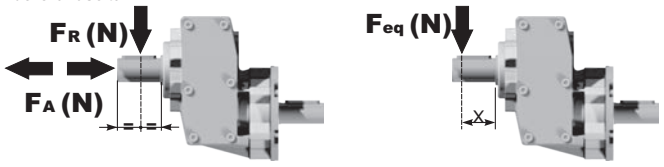
SHELL Omala S4 WE 320	**ENI** Telium VSF 320

For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

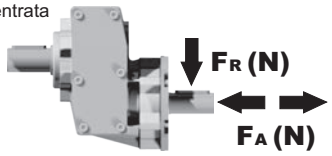
Output shaft
Albero di uscita

$F_{eq} = F_R \cdot \frac{47.5}{X+22.5}$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
700	294	1470	**400**	370	1850	**200**	460	2300
600	320	1600	**300**	400	2000	**140**	510	2550

Input shaft
Albero in entrata

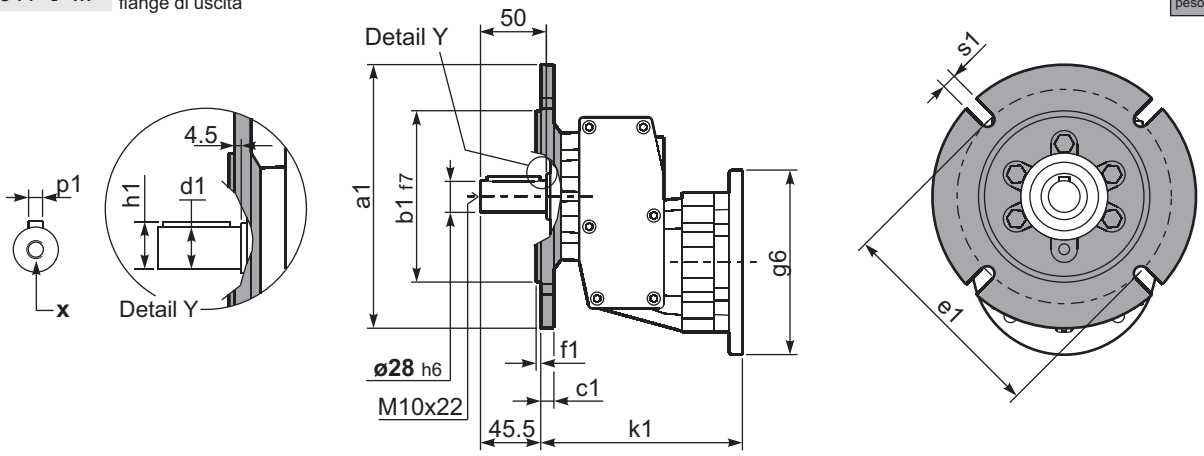


n_1	FA	FR
1400	400	2000
900	440	2200

tab. 2

Gearbox weight peso riduttore	5.00 kg

P511-F... Output flanges
flange di uscita



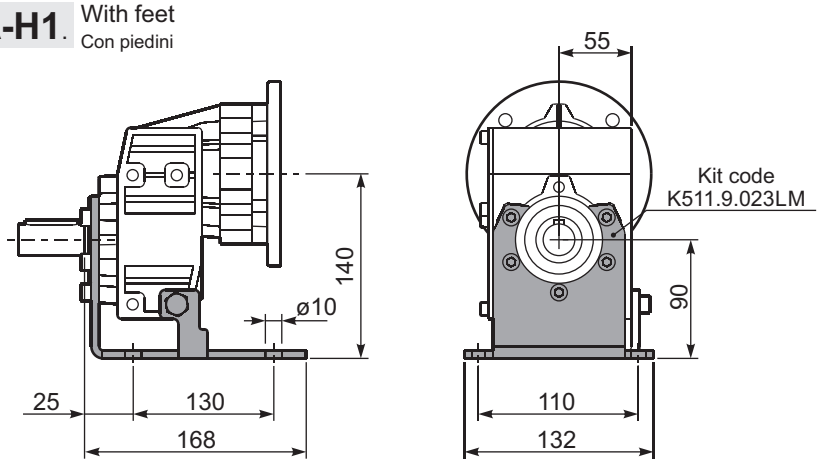
***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 28x50	8	31	M10x22
On request A richiesta	ø 24x50	8	27	M8x19

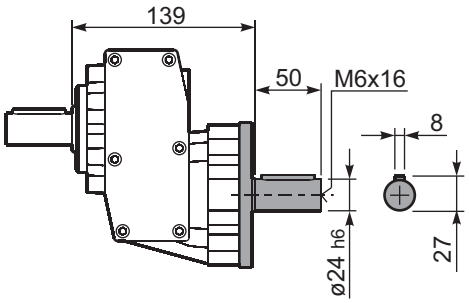
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
120	80	10	100	3	7	KC40.9.010
140	95	10	115	3	9	KC40.9.011
160	110	10	130	3.5	9	KC40.9.012
200	130	11	165	3.5	11	KC40.9.013
250	180	11.5	215	3.5	14	KC40.9.014

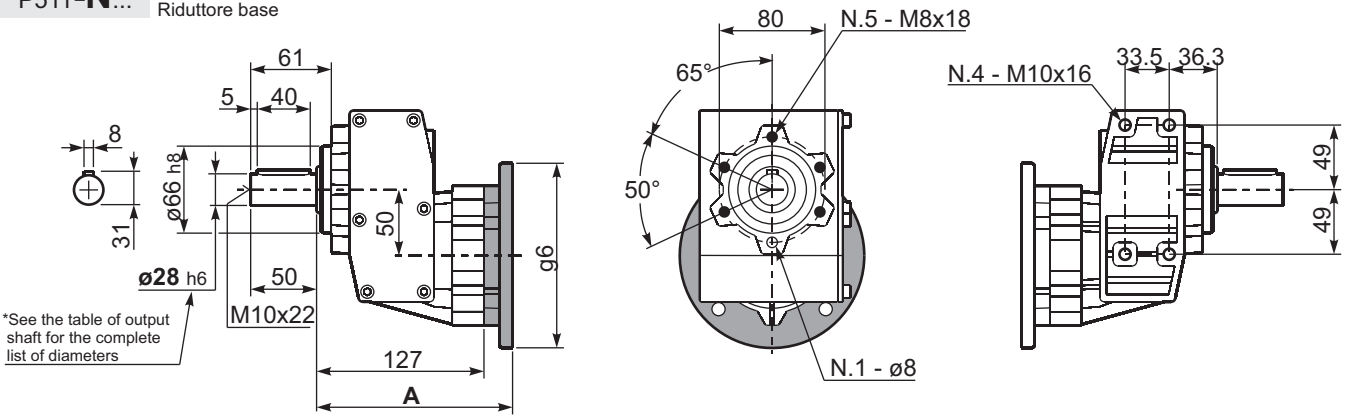
P511A-H1. With feet
Con piedini



R511A-N... Input Shaft
Albero in entrata



P511-N... Basic gearbox
Riduttore base



B5 Motor Flanges	A	g6	k1	kit code
71 B5	145.5	160	150	K023.4.041
80/90 B5	147.5	200	152	K023.4.042
100/112 B5	156.5	250	161	K023.4.043
132 B5	177.5	300	179	KC51.4.043

B14 Motor Flanges	A	g6	k1	kit code
80 B14	147.5	120	152	K085.4.046
90 B14	147.5	140	152	K085.4.045
100/112 B14	156.5	160	161	K085.4.047
132 B14	177.5	200	179	KC51.4.041

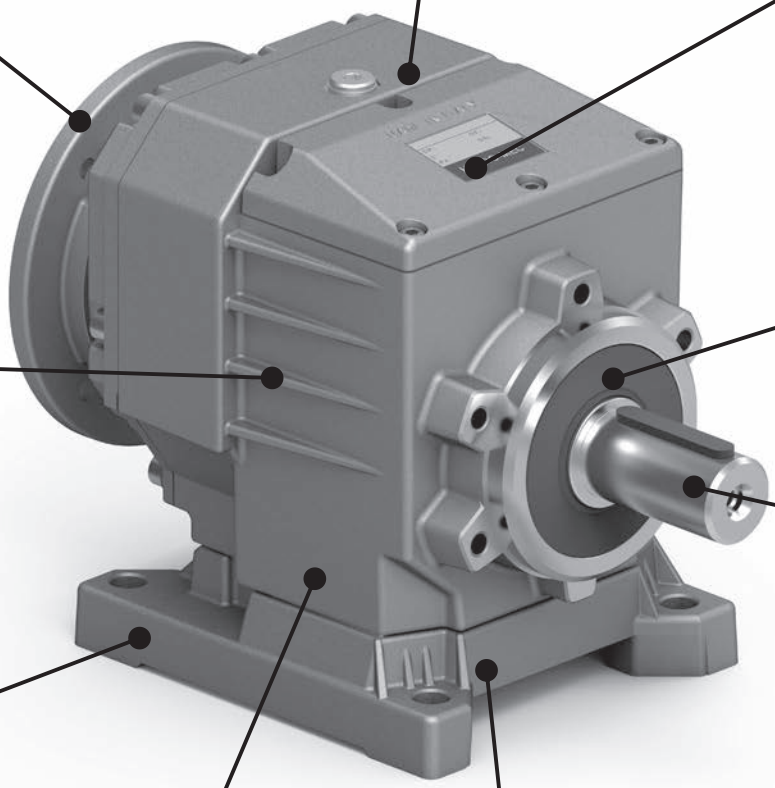
Aluminum in line gearboxes

A modular and compact product

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

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

Removable inspection cover
Allows periodic inspection of gearing during routine maintenance



Oil seals
Two oil seals on request

Gears
Hardened and ground gears.

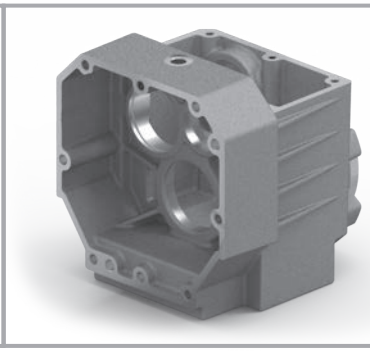
Output shaft
With well proportioned bearings

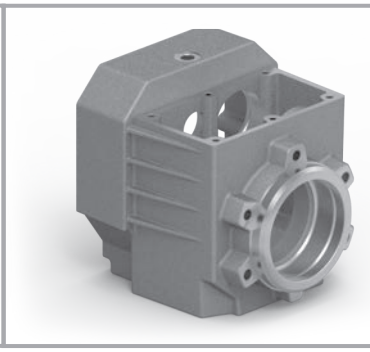
Feet
Removable feet.
With patented locking system.

Foot prints
Compatible to the main standard of the market.

Lubricated for life with synthetic oil with operative range from -15° to +130°C

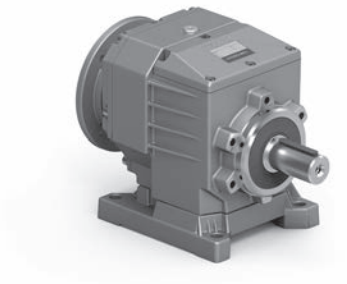
Single-piece aluminum alloy housing
Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing





World wide sales network.

Specific type datasheet on page...



Types / Tipi
Tipen / Types
Tipos

On page / A pagina / Auf Seite / À la page / En la página

5-5	5-7	5-9	5-11	5-13	5-15	5-17	5-19	5-21
202A 70Nm	**302A** 120Nm	**412A** 175Nm	**413A** 175Nm	**452A** 300Nm	**512A** 360Nm	**513A** 360Nm	**612A** 530Nm	**613A** 530Nm

Types / Tipi
Tipen / Types
Tipos

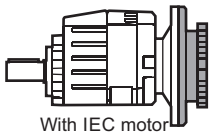
On page / A pagina / Auf Seite / À la page / En la página

M-1								
56A 56B	63A 63B	71A 71B	80A 80B	90S 90L	100LA 100LB	112M	132S 132M	160M 160L	180M 180L

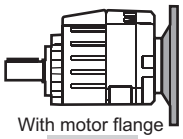
CODIFICA / HOW TO ORDER / TYPENBEZEICHNUNGEN / CODIFICATION / CODIFICACIÓN

Type - Tipo - Typ Type - Tipo	**Size** - Grandezza - Grösse Taille - Tamaño	**Mounting** - Montaggio Montage - Fixation Tipo de montaje	**Ratio** - Rapporto Untersetzung - Reduction Relaciòn
P	**412A**	**-F**	**7.33**

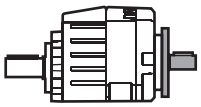
Aluminum coaxial gear boxes
Riduttori coassiali in alluminio



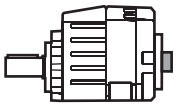
With IEC motor
M



With motor flange
P



With male input shaft
R



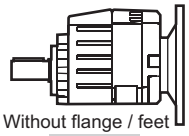
Modular base
B

2 Stages
Riduzioni
Stufen
Trains
Etapas

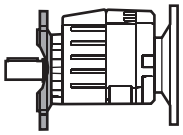
202A
302A
412A
452A
512A
612A

3 Stages
Riduzioni
Stufen
Trains
Etapas

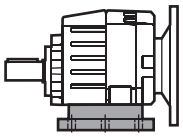
413A
513A
613A



Without flange / feet
-N



Output flange mounted
-F



Mounted feet
B..

Feet / piedini

Feet Code	Market reference	G	H	R	L	L1	S
B1	112	18	85	110	87	50	
B2	212/3	18	100	130	107.5		
S1	17	18	75	110	90+20		
S2	27	25	90	110	130		
M1	42/3	25	80	110+120	85		
L4	04	13	80	105			
L5	05	16	100	125			

You see feet code in the chart of the dimensions
Vedi codice piede nella tabella delle dimensioni

See technical data table

Vedi tabelle dati tecnici

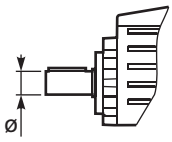
Ver tabla datos técnicos

5

On request we can deliver our products according to the ATEX
A richiesta possiamo fornire i nostri prodotti secondo le normative ATEX
Auf Anfrage können wir unsere Produkte den Richtlinien ATEX entsprechend liefern
Sur demande nos produits peuvent se conformer à la réglementation ATEX
A pedido, se pueden enviar nuestros productos de acuerdo con las normas ATEX.

Output shaft
Albero uscita
Abtriebswelle
Arbre de sortie
Eje en salida

V



➡ **STANDARD**

202A

S ⇨ Ø14
B ➡ **Ø16**
D ⇨ Ø20
V ⇨ Ø25

302A

S ⇨ ø14
B ⇨ ø16
C ⇨ ø19
D ➡ **ø20**
E ⇨ ø24
V ⇨ ø25

412A 413A

B ⇨ ø16
C ⇨ ø19
D ⇨ ø20
E ⇨ ø24
V ➡ **ø25**

452A 512A 513A

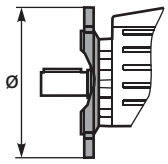
E ⇨ ø24
V ⇨ ø25
G ⇨ ø28
H ➡ **ø30**
I ⇨ ø35

612A 613A

G ⇨ ø28
H ⇨ ø30
I ➡ **ø35**
L ⇨ ø38
M ⇨ ø40

Output flange
Flangia uscita
Ausgangsflansch
Bride de sortie
Brida en salida

2



N Senza flangia
Without flange

202A 302A

1 ⇨ ø120
2 ➡ **ø140**
3 ⇨ ø160
4 ⇨ ø200

412A 413A

1 ⇨ ø120
2 ➡ **ø140**
3 ⇨ ø160
4 ⇨ ø200
5 ⇨ ø250

452A 512A 513A

3 ⇨ ø160
4 ➡ **ø200**
5 ⇨ ø250

612A 613A

3 ⇨ ø160
4 ⇨ ø200
5 ➡ **ø250**

Motor size - Grandezza motore
Motor Grösse
Grandeur moteur - Tamaño motor

-C

Flange
Flangia

B5

-A=56 (ø120)
-B=63 (ø140)
-C=71 (ø160)
-D=80 (ø200)
-E=90 (ø200)
-F=100 (ø250)
-G=132 (ø300)

B14

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

Brushless

BB=50/70-M5
BC=60/75-M5
BD=70/90-M6
BE=80/100-M6
BF=95/115-M8
BG=110/145-M8
BH=130/165-M8

Type R
Tipo R

202A 413A

-1 ⇨ ø14

302A 412A 513A 613A

-2 ⇨ ø19

452A 512A 612A

-3 ⇨ ø24

Without flange
Senza flangia

-M ⇨ With coupling

202A 413A

-Z ⇨ ø9 (IEC56)
-0 ⇨ ø11 (IEC63)
-1 ⇨ ø14 (IEC71)

302A 412A 513A 613A

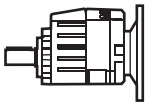
-1 ⇨ ø14 (IEC71)
-2 ⇨ ø19 (IEC80)
-3 ⇨ ø24 (IEC90)

452A 512A 612A

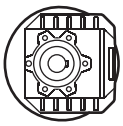
-2 ⇨ ø19 (IEC80)
-3 ⇨ ø24 (IEC90)
-4 ⇨ ø28 (IEC100)

Mounting position
Posizione montaggio
Einbaulage
Position de montage
Position de montaje

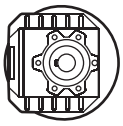
B3



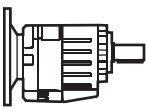
B3
STANDARD



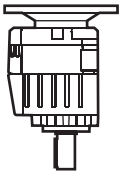
B6



B7

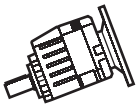


B8



V5

V6



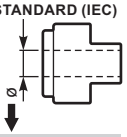
V8

Input bore
Foro entrata
Eingangshohlwelle
Trou d'entree
Eje hueco de entrada

ST

ST
standard bore
foro standard

COUPLING
STANDARD (IEC)

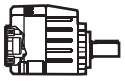


-A = 9mm
-B = 11mm
-C = 14mm
-D = 19mm
-E = 24mm
-F = 28mm

BRUSHLESS *

-2 = 11mm
-3 = 14mm
-4 = 19mm
-5 = 22mm
-6 = 24mm

-0
Ready for input coupling
Predisposto per giunto



* With reduction bushing where applicable
Con bussola di riduzione dove prevista

Terminal box position
Posizione morsettiera
Klemmkastenlage
Position boîte à bornes
Posición caja de bornes

With Type M specify terminal box position

Con tipo M specificare posizione morsettiera

A

B
STANDARD

C

D

5

POTENZA RICHIESTA / REQUIRED POWER / ERFORDERLICHE LEISTUNG / PUISSANCE NECESSAIRE / POTENCIA NECESARIA

Lifting / sollevamento / hubantriebe / levage / elevactión	$\mathbf{P}\ [KW] = \frac{\mathbf{M}\ [Kg] \cdot \mathbf{g}\ [9.81] \cdot \mathbf{v}\ [m/s]}{\mathbf{1000}}$
Rotation / rotazione / drehung / rotation / rotaction	$\mathbf{P}\ [KW] = \frac{\mathbf{M}\ [Nm] \cdot \mathbf{n}\ [rpm]}{\mathbf{9550}}$
Linear movement / traslazione / linearbewegung / translation / translacion	$\mathbf{P}\ [KW] = \frac{\mathbf{F}\ [N] \cdot \mathbf{v}\ [m/s]}{\mathbf{1000}}$

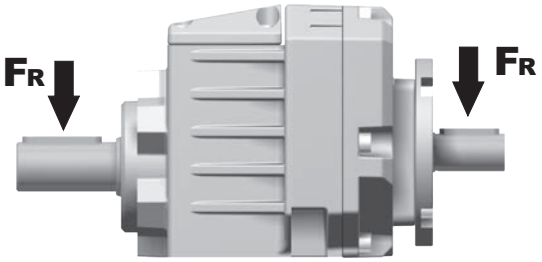
TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

	$\mathbf{M}\ [Nm] = \frac{\mathbf{9550} \cdot \mathbf{P}[KW]}{\mathbf{n}\ [rpm]}$
	$\mathbf{M}\ [lb\ in] = \frac{\mathbf{63030} \cdot \mathbf{P}[HP]}{\mathbf{n}\ [rpm]}$

5

RADIAL LOADS / CARICHI RADIALI / RADIALE - UND AXIALLASTEN / CHARGES RADIALES / CARGA RADIAL Y AXIAL

- Radial load generated by external transmissions keyed onto input and/or output shafts.
- Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.
- Belastungen der Antriebs- bzw. Abtriebswellen durch von aussen eingebrachte Radiallasten.
- Charge radiale générée par la transmissions calés sur les entrées et / ou des arbres de sortie
- Cargas radiales, generada por transmisiones externas, aplicadas sobre los ejes de entrada y/o salida



$\mathbf{F_R}\ [N] = \frac{\mathbf{M}\ [Nm] \cdot \mathbf{2000}}{\mathbf{d}\ [mm]} \cdot \mathbf{f_K}$	$\mathbf{F_R}\ [N] = \frac{\mathbf{M}\ [lb\ in] \cdot \mathbf{8.9}}{\mathbf{d}\ [in]} \cdot \mathbf{f_K}$

M	Momento torcente / Output torque / Abtriebsdrehmoment / Couple / Par torsion
d	Diametro primitivo / Diam. of driving element / Durchmesser der Abtriebseinheit / Diamètre primitif / Diámetro primitivo
$\mathbf{f_K}$	Coefficiente di trasformazione / Factor / Faktor / Coefficient de transmission / Coeficiente de transmisión **1.15** Ingranaggi / Gearwheels / Zahnrad / Engrenage / Engranaje **1.25** Catena / Chain sprochets / Antriebskette / Chaîne / Cadena **1.75** Cinghia Trapezoidale / Narrow v-belt pulley / Keilriemen / Courroie trap. / Correa trapezoidal **2.50** Cinghia piatta / Flat-belt pulley / Flachzahnriem. / Courroie crantée / Correa plana

— If your application requires higher radial loads, contact our technical office. Higher load may be possible.
— Nel caso la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.
— Wenn Ihre Anwendung höhere Radialbelastungen erfordert, so wenden Sie sich bitte an unser technischen Büro.
— Si votre application demande des charges radiales supérieures, s'adresser à notre bureau technique.
— En el caso en que una aplicación exija una carga radial superior a la especificada en el catálogo, consultar a nuestra oficinas técnica.

B Output speed / Velocità in uscita / Abtriebsdrehzahl / Vitesse de sortie / Velocidad de salida

Nominal power / Potenza nominale / Max. mögliche Leistung / Poissance nominale / Potencia nominal

Gear size / Grandezza riduttore / Getriebegröße / Taille réducteur / Tamaño reductor

Motor power / Potenza motore / Motorleistung / Puissance moteur / Potencia motor

A Nominal torque / Momento torcente nominale / Nenn Drehmoment / Couple nominal / Par de torsión nominal

Flange code / Codice flangia / Flanschtype / Code bride / Código bridas

Input speed / Velocità in entrata / Eintriebsdrehzahl / Vitesse en entrée / Velocidad de entrada

412A Coaxial - Gear 160Nm

Rating - Aluminum COAXIAL GEARBOXES

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71	-D 80*	-E 90*	Available B14 motor flanges -Q 71	-R 80	-T 90	-U 100 112		Output Shaft ø	Ratios code
398	**3.52**	3	69	1.2	3.5	80	B				C	C			2821		01
320	**4.37**	3	86	1.0	3.1	90	B				C	C			2818		02
252	**5.55**	3	109	0.9	2.8	100	B				C	C			2813		03
220	**6.36**	2.2	92	1.0	2.3	95	B				C	C			1921		04
191	**7.33**	2.2	106	1.1	2.5	120	B				C	C			2812		05

C Ratio / Rapporto / Untersetzung / Rapport de réduction / Relación

Transmitted torque / Momento torcente trasmesso / Mögliche Drehmomente / Couple de sortie / Par transmitido

Service factor / Fattore di servizio / Betriebsfaktor / Facteur de service / Factor de servicio

Output shaft diam. / Diam. albero uscita / Durchmesser abtriebswelle / Diametre arbre lent / Diametro eje de salida

Notes / Note / Anmerkungen / Note / Notas

fs

Type of load and starts per hour / Tipo di carico e avviamenti per ora		Oper. hours per day / Ore di funz. giorn. 3 h	10 h	24 h
Continuous or intermittent appl. with start / hour ≤ 10 / Applicazione cont. o interm. con n.ro operazioni/ora	Uniform / Uniforme	0.8	1	1.25
	Moderate / Moderato	1	1.25	1.5
	Heavy / Forte	1.25	1.5	1.75
Intermittent application with start / hour > 10 / Applicazione intermittente con n.ro operazioni/ora	Uniform / Uniforme	1	1.25	1.5
	Moderate / Moderato	1.25	1.5	1.75
	Heavy / Forte	1.5	1.75	2.15

D Motor flange available / Flange disponibili / Erhältliche Motorflansche / Brides disponibles / Bridas disponibles

B) Mounting with reduction ring / Montaggio con boccola di riduzione / Reduzierhülsen / Montage avec douille de réduction / Montaje con casquillo de reducción

C) Motor flangeholes position/terminal box position / Posizione fori flangia/basetta motore / Bohrungsposition am Motorflansch/-sockel / Position trous bride/barrette à bornes moteur / Posición agujeros brida / base motor

B) Available without reduction bushes / Disponibile anche senza boccola / Auch ohne Reduzierbuchse verfügbar / Disponible aussi sans douille de réduction / Disponible tambien sin casquillo

A	Select required torque (according to service factor)	Seleziona la coppia desiderata (comprensiva del fattore di servizio)	Max. Drehmoment in Bezug zum Betriebsfaktor	Sélectionner le couple souhaité (comprenant le facteur de service)	Seleccionar el par deseado (incluyendo el factor de servicio)
B	Select ouput speed	Seleziona la velocità in uscita	Ausgewählte Abtriebsdrehzahl	Sélectionner la vitesse de sortie	Seleccionar la velocidad de salida
C	On the same line of selected geared motor, you can find the gear ratio	Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione	Auf der gleichen Linie wie die ausgewählte Motorleistung steht auch die Getriebeuntersetzung	Sur la ligne correspondante à la motorisation pré-choisie on peut relever le rapport de réduction	En la línea correspondiente al motor preseleccionado es posible encontrar la relación de reducción
D	Select motor flange available (if requested)	Scegli la flangia disponibile (se richiesta)	Erhältliche Motorflansche (auf Anfrage)	Choisir la bride disponible (si elle est demandée)	Seleccionar la brida disponible (sobre pedido)

▪ QUICK SELECTION / Selezione veloce

The dynamic efficiency is **0.96** for all ratios

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	Available B5 motor flanges -C 71*	Available B14 motor flanges -O 56	Available B14 motor flanges -P 63	Available B14 motor flanges -Q 71		Output Shaft ø	Ratios code
407	**3.44**	0.55**	12	2.0	**1.1**	**25**			C	C		2821		01
327	**4.28**	0.55**	15	1.9	**1.1**	**30**			C	C		2818		02
257	**5.45**	0.55**	20	2.0	**1.1**	**40**			C	C		2815		03
225	**6.23**	0.55**	23	2.0	**1.1**	**45**			C	C		1921		04
194	**7.20**	0.55**	26	1.9	**1.1**	**50**			C	C		2812		05
181	**7.74**	0.55**	28	1.8	**0.99**	**50**			C	C		1918		06
142	**9.85**	0.55**	36	1.7	**0.93**	**60**			C	C		1915	**standard**	07
123	**11.42**	0.55**	41	1.5	**0.80**	**60**			C	C		1715	**ø16**	08
107	**13.03**	0.55**	47	1.3	**0.70**	**60**			C	C		1912		09
93	**15.10**	0.37	37	1.6	**0.61**	**60**			C	C		1712	ø14	10
86	**16.20**	0.37	39	1.5	**0.57**	**60**			C	C		1910	ø20	11
75	**18.78**	0.37	45	1.3	**0.49**	**60**			C	C		1710	ø25	12
66	**21.15**	0.37	51	1.2	**0.43**	**60**			C	C		1312	On request	13
64	**21.84**	0.37	53	1.1	**0.42**	**60**			C	C		1015		14
53	**26.31**	0.37	64	0.9	**0.35**	**60**			C	C		1310		15
48.5	**28.88**	0.37	70	1.0	**0.37**	**70**			C	C		1012		16
39	**35.91**	0.37	87	0.8	**0.30**	**70**			C	C		1010		17
37.1	**37.69**	0.25	62	1.1	**0.28**	**70**			C	C		912		18
29.9	**46.87**	0.25	77	0.9	**0.23**	**70**			C	C		910		19
28.1	**49.76**	0.25	81	0.9	**0.21**	**70**			C	C		712		20
22.6	**61.89**	0.18	77	0.9	**0.17**	**70**			C	C		710		21

**** Concerning a reduced dimensions electric motor.** Riferito a motore con grandezza ridotta

* Nel montaggio P la flangia può superare l'ingombro massimo dei piedi. Eventualmente utilizzare la flangia B14

* In the P mounting the B5 motor flange can exceed the foot maximum dimensions. Possibly use the flange B14

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) Available on Request without reduction bushing Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **202A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **202A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **202A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **202A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **202A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

▪ LUBRICATION 202A Oil Quantity 0.15 Lt.

SHELL Omala S4 WE 320	**AGIP** Telium VSF 320

For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

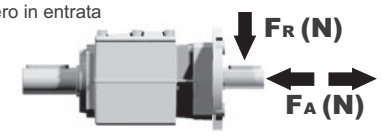
RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{35.7}{X+20.7}$$

n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	140	700	**140**	246	1320	**70**	340	1700
250	151	756	**120**	270	1350	**40**	380	1900
200	185	924	**85**	300	1500	**15**	-	-

Input shaft
Albero in entrata

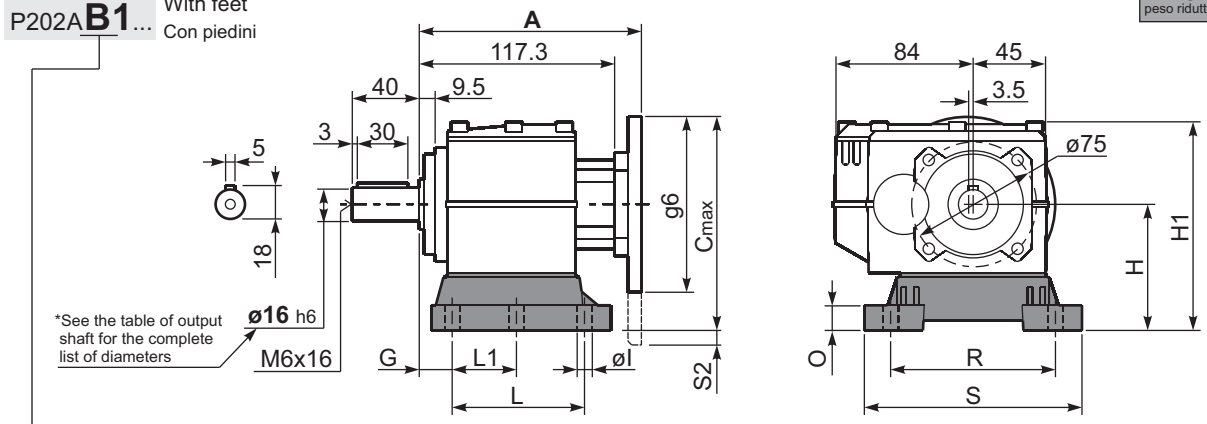


n_1	FA	FR
1400	140	700
900	160	800
500	190	950

tab. 2

Gearbox weight peso riduttore	With flange 3.3 kg With feet 3.7 Kg

P202A**B1**... With feet / Con piedini



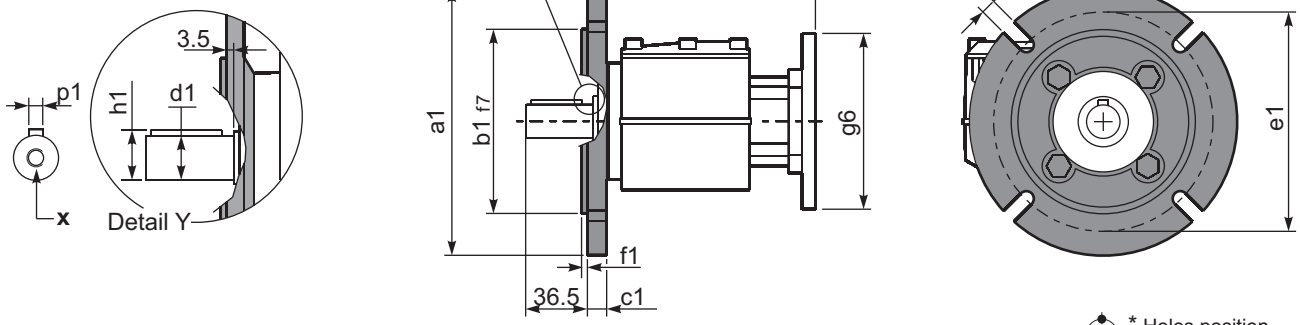
Feet Code	Market reference	G	H	R	L	L1	S	H1	O	øI	S2 only with motor flange	B5 max. Flange	kit code
B1	112	18	85	110	87	50	130	133	15	9	-	-	KC30.9.022
B2	212/3	18	100	130	107.5	60	155	145	5	11	-	-	KC30.9.023LM
S1	17-32	18	75	110	110	50	130	123	15	9	-	63B5	KC30.9.024

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P202A-**F**... Output flanges / flange di uscita



* Holes position
Posizione fori

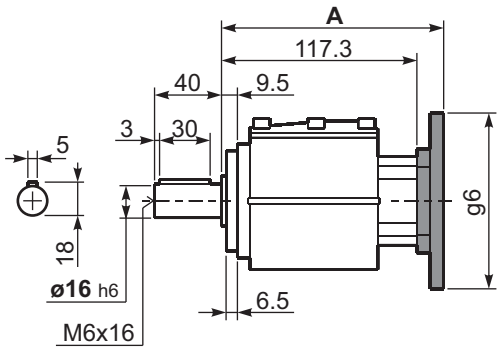
***Available output shaft** / Albero di uscita

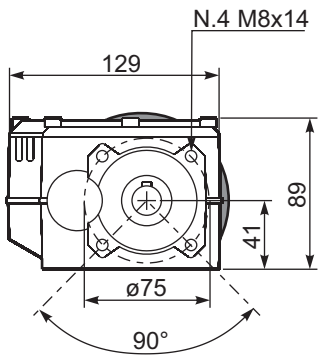
	Shaft - d1	p1	h1	x
Standard	ø 16x40	5	18	M6x16
On request A richiesta	ø 14x30 ø 20x40 ø 25x50	5 6 8	16 22.5 28	M6x16 M8x19 M8x19

Available output flanges / flange di uscita

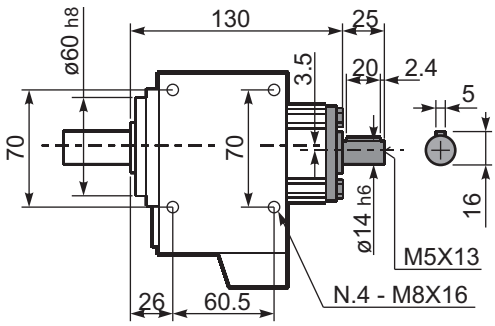
a1 ø	b1	c1	e1	f1	s1	kit code	
120	80	11.5	100	3	9*	KC30.9.010	With flange and feet only on request. Ask for compatibility
140	95	11.5	115	3	9	KC30.9.011	
160	110	11.5	130	3.5	9	KC30.9.012	
200	130	11.5	165	3.5	11	KC30.9.013	

P202A-**N**... Basic gearbox / Riduttore base





R202A-**N**... Input Shaft / Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
63 B5	135.8	170	140	139.3	K050.4.041
71 B5	133.3	180	160	136.8	K050.4.042

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
56 B14	133.3	139	80	136.8	KC40.4.049
63 B14	135.8	146	90	139.3	K050.4.047
71 B14	133.3	152.5	105	136.8	K050.4.045

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71*	-D 80*	-E 90*	Available B14 motor flanges -Q 71	-R 80	-T 90		Output Shaft	Ratios code
407	**3.44**	1.5	34	1.0	**1.6**	**35**	B				C	C		2821		01
327	**4.28**	1.5	42	1.0	**1.4**	**40**	B				C	C		2818		02
257	**5.45**	1.5	53	1.0	**1.5**	**52**	B				C	C		2815		03
225	**6.23**	1.5	61	1.1	**1.7**	**70**	B				C	C		1921		04
194	**7.20**	1.5	71	1.0	**1.5**	**70**	B				C	C		2812		05
181	**7.74**	1.5	76	1.1	**1.6**	**80**	B				C	C		1918	**standard**	06
142	**9.85**	1.5	97	1.0	**1.5**	**95**	B				C	C		1915	**ø20**	07
123	**11.42**	1.5	112	1.0	**1.5**	**115**	B				C	C		1715		08
107	**13.03**	1.1	93	1.2	**1.3**	**114**	B				C	C		1912	ø14	09
93	**15.10**	1.1	108	1.1	**1.2**	**114**	B				C	C		1712	ø16	10
86	**16.20**	0.75	80	1.3	**1.0**	**107**	B				C	C		1910	ø19	11
75	**18.78**	0.75	92	1.2	**0.87**	**107**	B				C	C		1710	ø24	12
66	**21.15**	0.75	104	1.1	**0.82**	**114**	B				C	C		1312	ø25	13
64	**21.84**	0.75	107	1.1	**0.83**	**119**	B				C	C		1015	On request	14
53	**26.31**	0.55	95	1.1	**0.62**	**107**	B				C	C		1310		15
48.5	**28.88**	0.55	105	1.1	**0.60**	**114**	B				C	C		1012		16
39	**35.91**	0.37	87	1.2	**0.46**	**107**	B				C	C		1010		17
37.1	**37.69**	0.37	91	1.1	**0.41**	**102**	B				C	C		912		18
29.9	**46.87**	0.37	113	0.9	**0.35**	**107**	B				C	C		910		19
28.1	**49.76**	0.25	81	1.2	**0.31**	**101**	B				C	C		712		20
22.6	**61.89**	0.25	101	1.1	**0.26**	**107**	B				C	C		710		21

The dynamic efficiency is **0.96** for all ratios

*Nel montaggio P la flangia può superare l'ingombro massimo dei piedi. Eventualmente utilizzare la flangia B14
* In the P mounting the B5 motor flange can exceed the foot maximum dimensions. Possibly use the flange B14

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **302A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **302A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **302A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **302A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **302A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

▪ LUBRICATION 302A Oil Quantity 0.15 Lt.

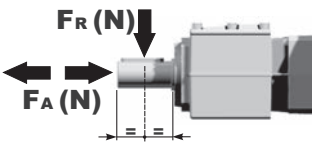
SHELL Omala S4 WE 320	**AGIP** Telium VSF 320

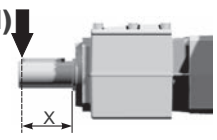
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{35.7}{X+20.7}$$



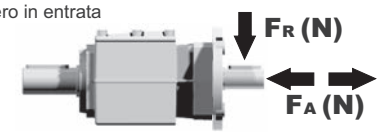


n_2	FA	FR
300	140	700
250	151	756
200	185	924

n_2	FA	FR
140	246	1320
120	270	1350
85	300	1500

n_2	FA	FR
70	340	1700
40	380	1900
15	-	-

Input shaft
Albero in entrata

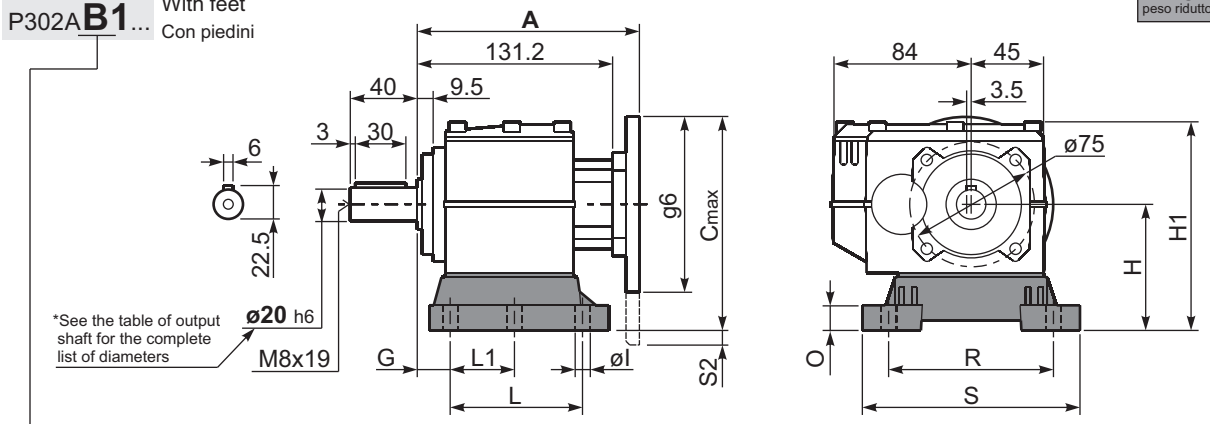


n_1	FA	FR
1400	226	1130
900	264	1320
500	322	1610

tab. 2

Gearbox weight peso riduttore	With flange **3.5 kg**
	With feet **4.0 Kg**

P302A**B1**... With feet / Con piedini



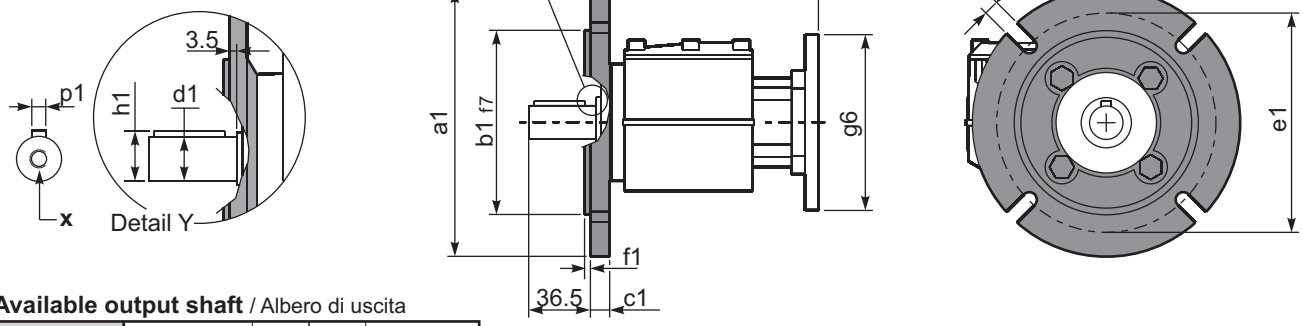
Feet Code	Market reference	G	H	R	L	L1	S	H1	O	øI	S2 only with motor flange	B5 max. Flange	kit code
B1	112	18	85	110	87	50	130	133	15	9	15 80/90B5	-	KC30.9.022
B2	212/3	18	100	130	107.5	60	155	145	5	11	3.5 80/90B5	-	KC30.9.023LM
S1	17-32	18	75	110	110	50	130	123	15	9	5 71B5	71B5	KC30.9.024

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P302A-**F**... Output flanges / flange di uscita



***Available output shaft** / Albero di uscita

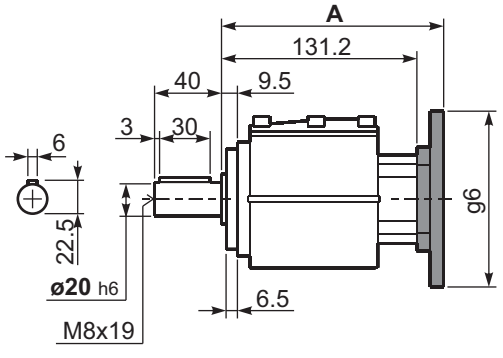
	Shaft - d1	p1	h1	x
Standard	ø 20x40	6	22.5	M8x19
On request A richiesta	ø 14x30	5	16	M6x16
	ø 16x40	5	18	M6x16
	ø 19x40	6	21.5	M6x16
	ø 24x50	8	27	M8x19
	ø 25x50	8	28	M8x19

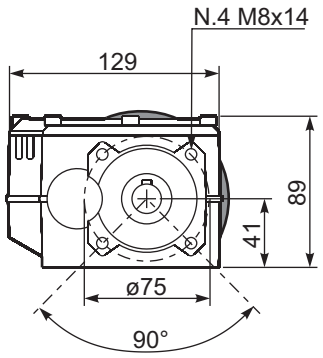
* Holes position
Posizione fori

Available output flanges / flange di uscita

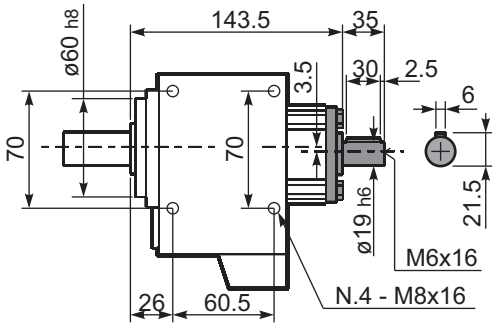
a1 ø	b1	c1	e1	f1	s1	kit code	
120	80	11.5	100	3	9*	KC30.9.010	With flange and feet only on request. Ask for compatibility
140	95	11.5	115	3	9	KC30.9.011	
160	110	11.5	130	3.5	9	KC30.9.012	
200	130	11.5	165	3.5	11	KC30.9.013	

P302A-**N**... Basic gearbox / Riduttore base





R302A-**N**... Input Shaft / Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
63 B5	151.7	170	140	155.2	K063.4.041
71 B5	149.7	180	160	153.2	K063.4.042
80/90 B5	151.7	200	200	155.2	K063.4.043

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
71 B14	149.7	152.5	105	153.2	K063.4.047
80 B14	151.7	160	120	155.2	K063.4.046
90 B14	151.7	170	140	155.2	K063.4.041

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71	-D 80*	-E 90*	-F 100* 112	Available B14 motor flanges -Q 71	-R 80	-T 90	-U 100 112		Output Shaft ø	Ratios code
398	**3.52**	3	68	1.2	**3.5**	**80**	B					C	C			2821		01
321	**4.37**	3	84	1.1	**3.1**	**90**	B					C	C			2818		02
252	**5.56**	3	107	0.9	**2.7**	**100**	B					C	C			2813		03
220	**6.36**	2.2	90	1.2	**2.5**	**105**	B					C	C			1921		04
191	**7.33**	2.2	104	1.2	**2.5**	**120**	B					C	C			2812		05
177	**7.89**	2.2	112	1.2	**2.5**	**130**	B					C	C			1918		06
139	**10.06**	2.2	143	1.2	**2.5**	**165**	B					C	C			1913		08
120	**11.66**	2.2	166	1.0	**2.2**	**165**	B					C	C			1713	**standard**	09
106	**13.26**	1.5	130	1.3	**1.9**	**165**	B					C	C			1912	**ø25**	10
102	**13.68**	1.5	134	1.2	**1.8**	**165**	B					C	C			1513		25
91	**15.37**	1.5	151	1.1	**1.6**	**165**	B					C	C			1712	ø16	11
86	**16.33**	1.5	160	1.0	**1.5**	**165**	B					C	C			1313	ø19	26
78	**18.04**	1.5	177	0.9	**1.4**	**165**	B					C	C			1512	ø20	23
65	**21.54**	1.1	154	1.1	**1.2**	**165**	B					C	C			1312	ø24	14
63	**22.29**	1.1	160	1.0	**1.1**	**165**	B					C	C			1013	On request	15
53	**26.31**	0.75	129	1.2	**0.90**	**155**	B					C	C			1310		16
47.6	**29.40**	0.75	144	1.1	**0.86**	**165**	B					C	C			1012		17
39	**35.91**	0.55	130	1.2	**0.66**	**155**	B					C	C			1010		18
36.5	**38.37**	0.55	139	1.2	**0.66**	**165**	B					C	C			912		19
29.9	**46.87**	0.55	170	0.9	**0.51**	**155**	B					C	C			910		20
27.6	**50.67**	0.37	123	1.1	**0.41**	**137**	B					C	C			712		21
22.6	**61.89**	0.37	150	1.0	**0.38**	**155**	B					C	C			710		22

The dynamic efficiency is **0.96** for all ratios

*Nel montaggio P la flangia può superare l'ingombro massimo dei piedi. Eventualmente utilizzare la flangia B14
* In the P mounting the B5 motor flange can exceed the foot maximum dimensions. Possibly use the flange B14

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

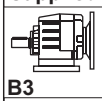
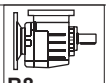
EN Unit **412A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **412A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **412A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **412A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

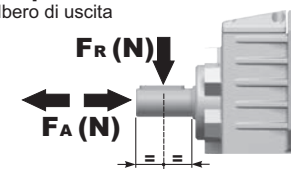
E El reductor tamaño **412A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard supplied	**For these mounting position specify in the order or add oil** Per queste posizioni specificare in fase d'ordine o aggiungere olio					
 B3	 B6	 B7	 B8	 V5	 V6	 V8
0.25 LT	0.35 LT	0.40 LT	0.45 LT	0.40 LT	0.50 LT	Ask
SHELL Omala S4 WE 320				**ENI** Telium VSF 320		

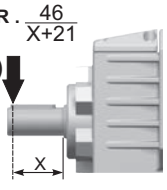
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

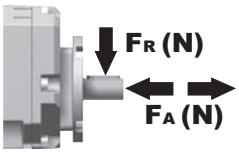


$F_{eq} = F_R \cdot \frac{46}{X+21}$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	310	1550	**140**	406	2030	**70**	540	2700
250	330	1650	**120**	448	2240	**40**	600	3000
200	360	1800	**85**	480	2400	**15**	600	3000

Input shaft
Albero in entrata

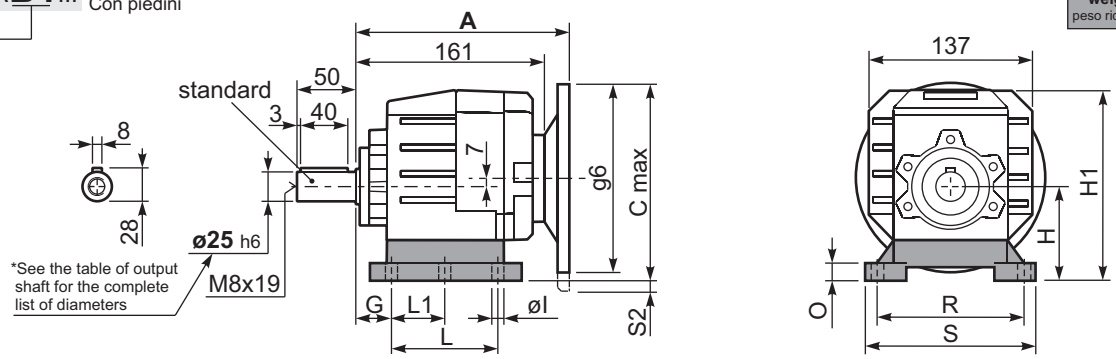


n_1	FA	FR
1400	240	1200
900	280	1400
500	340	1700

tab. 2

P412A**B1**... With feet
Con piedini

Gearbox weight peso riduttore: With flange **5.7 kg**, With feet **5.9 Kg**



Feet / piedini

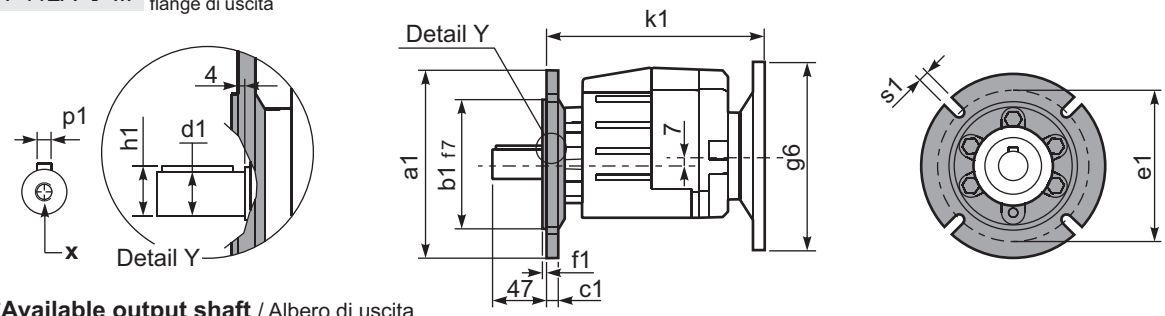
Feet Code	Market reference	G	H	R	L	L1	S	H1	O	øl	S2 only with motor flange	B5 max. Flange	kit code
B1	112	18	85	110	87	50	130	167.5	15	-	8 80/90B5 33 100/112B5	-	KC35.9.021
B2	212/3	18	100	130	107.5	60	155	182.5	17	11	18 100/112B5	-	KC40.9.025
S1	17	18	75	110	90÷110	50	145	155.5	15	9	18 80/90B5 43 100/112B5	-	KC40.9.022
S2	27	25	90	110	130	-	145	172.5	20	9	3 80/90B5 28 100/112B5	-	KC40.9.024
H2	022-223	25	100	110	115	-	145	182.5	20	9	18 100/112B5	-	KC40.9.026
M1	42/3	25	80	110÷120	85	-	145	162.5	15	9	13 80/90B5 38 100/112B5	-	KC40.9.023

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P412A**-F**... Output flanges
flange di uscita

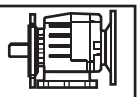


***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 25x50	8	28	M8x19
On request A richiesta	ø 16x40 ø 19x40 ø 20x40 ø 24x50	5 6 6 8	18 21.5 22.5 27	M6x16 M6x16 M8x19 M8x19

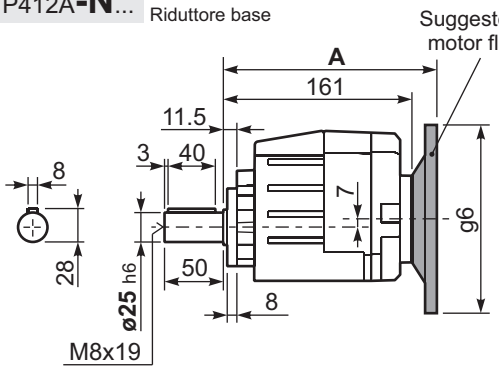
Available output flanges / flange di uscita

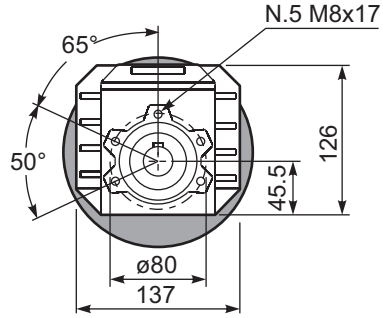
a1 ø	b1	c1	e1	f1	s1	kit code
120	80	10	100	3	7	KC40.9.010
140	95	10	115	3	9	KC40.9.011
160	110	10	130	3.5	9	KC40.9.012
200	130	10	165	3.5	11	KC40.9.013
250	180	11.5	215	3.5	14	KC40.9.014



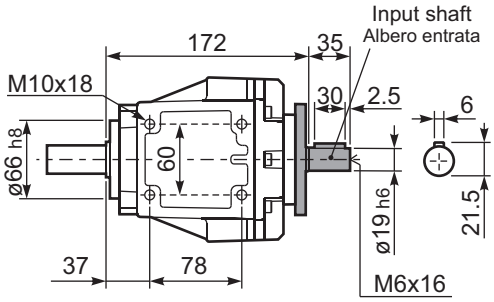
With flange and feet only on request. Ask for compatibility

P412A**-N**... Basic gearbox
Riduttore base





R412A**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
63 B5	181.5	177	140	185.5	K063.4.041
71 B5	179.5	187	160	183.5	K063.4.042
80/90 B5	181.5	207	200	185.5	K063.4.043
100/112 B5	196.5	232	250	200.5	KC40.4.043

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
71 B14	179.5	159.5	105	183.5	K063.4.047
80 B14	181.5	167	120	185.5	K063.4.046
90 B14	181.5	177	140	185.5	K063.4.041
100/112 B14	196.5	187	160	200.5	KC40.4.041

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	Available B5 motor flanges -C 71	Available B14 motor flanges -O 56	Available B14 motor flanges -P 63	Available B14 motor flanges -Q 71		Output Shaft ø	Ratios code
36.5	**38.40**	0.37	91	1.8	**0.67**	**165**			C	C		171713		02
32.0	**43.69**	0.37	104	1.6	**0.59**	**165**			C	C		191712		03
27.6	**50.64**	0.37	120	1.4	**0.51**	**165**			C	C		171712		04
26.2	**53.36**	0.37	127	1.3	**0.47**	**160**			C	C		191710		05
22.9	**61.21**	0.37	145	1.2	**0.43**	**170**			C	C		191312	**standard**	06
22.6	**61.85**	0.37	147	1.1	**0.40**	**160**			C	C		171710	**ø25**	07
19.7	**70.95**	0.37	168	1.0	**0.37**	**170**			C	C		131712		08
19.1	**73.43**	0.37	174	1.0	**0.37**	**175**			C	C		101713	ø16	09
18.7	**74.77**	0.37	177	0.9	**0.33**	**160**			C	C		191310	ø19	10
16.2	**86.66**	0.25	139	1.2	**0.29**	**160**			C	C		131710	ø20	11
14.5	**96.85**	0.25	155	1.1	**0.27**	**170**			C	C		101712	ø24	12
13.6	**102.89**	0.25	165	1.1	**0.27**	**175**			C	C		101313	On request	13
11.1	**126.40**	0.18	155	1.1	**0.21**	**170**			C	C		91712		17
10.3	**135.69**	0.18	166	1.0	**0.20**	**170**			C	C		101312		15
8.4	**165.74**	0.12	131	1.2	**0.15**	**160**			C	C		101310		16
7.9	**177.09**	0.12	140	1.2	**0.15**	**170**			C	C		91312		18
6.5	**216.31**	0.09	136	1.2	**0.12**	**160**			C	C		91310		19

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

5

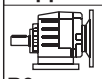
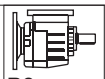
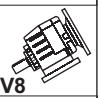
EN Unit **413A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **413A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **413A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **413A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

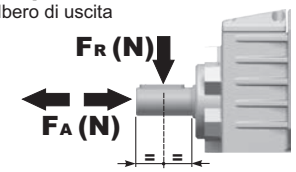
E El reductor tamaño **413A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard supplied	**For these mounting position specify in the order or add oil** Per queste posizioni specificare in fase d'ordine o aggiungere olio					
 **B3**	 **B6**	 **B7**	 **B8**	 **V5**	 **V6**	 **V8**
0.30 LT	0.35 LT	0.45 LT	0.45 LT	0.45 LT	0.55 LT	Ask
SHELL Omala S4 WE 320				**ENI** Telium VSF 320		

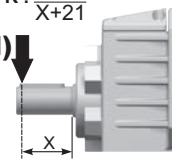
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

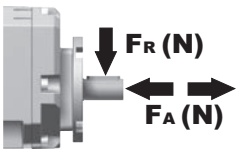


$F_{eq} = F_R \cdot \frac{46}{X+21}$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	310	1550	**140**	406	2030	**70**	540	2700
250	330	1650	**120**	448	2240	**40**	600	3000
200	360	1800	**85**	480	2400	**15**	600	3000

Input shaft
Albero in entrata

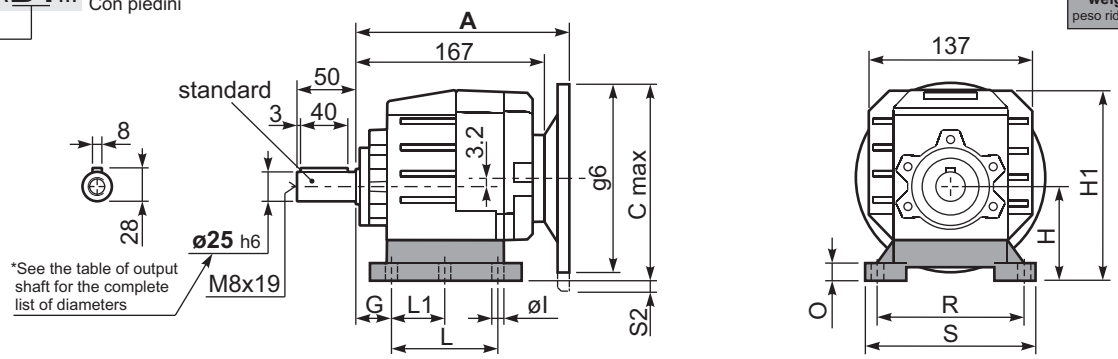


n_1	FA	FR
1400	140	700
900	160	800
500	190	950

tab. 2

P413A**B1**... With feet
Con piedini

Gearbox weight peso riduttore	With flange **6.1 kg**
	With feet **6.3 Kg**



Feet / piedini

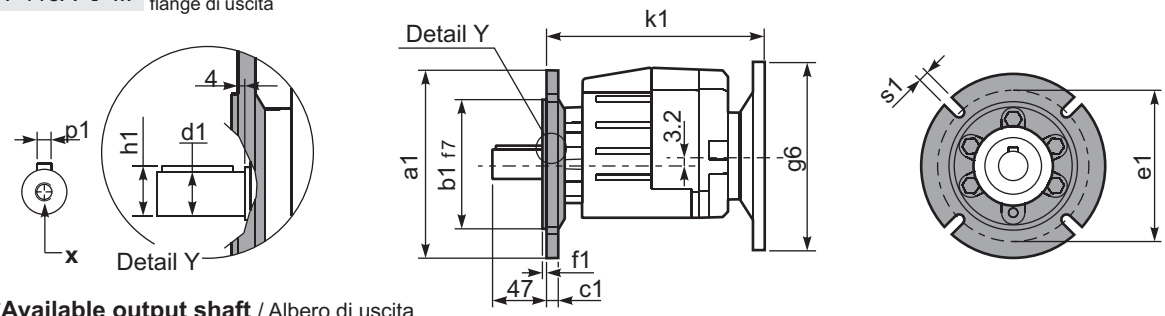
Feet Code	Market reference	G	H	R	L	L1	S	H1	O	øl	S2 only with motor flange	B5 max. Flange	kit code
B1	112	18	85	110	87	50	130	167.5	15	-	-	-	KC35.9.021
B2	212/3	18	100	130	107.5	60	155	182.5	17	11	-	-	KC40.9.025
S1	17	18	75	110	90÷110	50	145	155.5	15	9	2 80/90B5	-	KC40.9.022
S2	27	25	90	110	130	-	145	172.5	20	9	-	-	KC40.9.024
H2	022-223	25	100	110	115	-	145	182.5	20	9	-	-	KC40.9.026
M1	42/3	25	80	110÷120	85		145	162.5	15	9			KC40.9.023

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P413A**-F**... Output flanges
flange di uscita

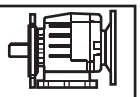


***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 25x50	8	28	M8x19
On request A richiesta	ø 16x40 ø 19x40 ø 20x40 ø 24x50	5 6 6 8	18 21.5 22.5 27	M6x16 M6x16 M8x19 M8x19

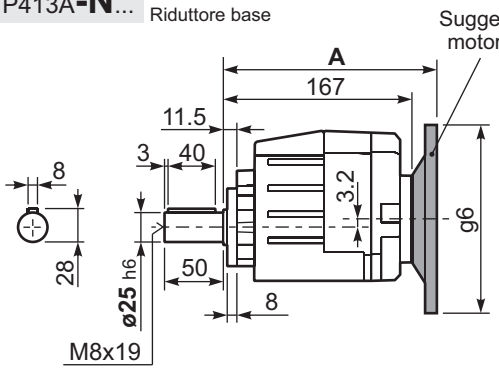
Available output flanges / flange di uscita

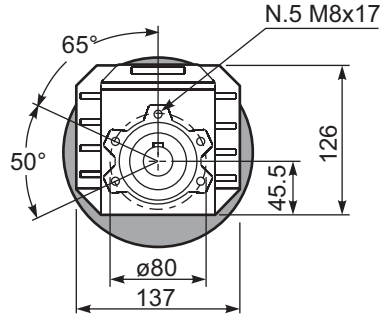
a1 ø	b1	c1	e1	f1	s1	kit code
120	80	10	100	3	7	KC40.9.010
140	95	10	115	3	9	KC40.9.011
160	110	10	130	3.5	9	KC40.9.012
200	130	10	165	3.5	11	KC40.9.013
250	180	11.5	215	3.5	14	KC40.9.014



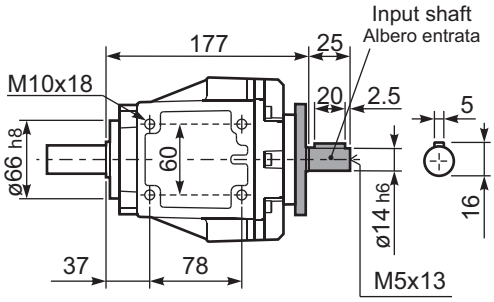
With flange and feet only on request. Ask for compatibility

P413A**-N**... Basic gearbox
Riduttore base





R413A**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
63 B5	185.5	173.2	140	189.5	K050.4.041
71 B5	183	183.2	160	187	K050.4.042

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
56 B14	183	143.2	80	187	KC40.4.049
63 B14	185.5	148.2	90	189.5	K050.4.047
71 B14	183	155.7	105	187	K050.4.045

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -C 71	-D 80	-E 90	-F 100* 112	-G 132*	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft ø	Ratios code
388	**3.61**	4	93	1.6	6.3	150	B									3018		01
331	**4.23**	4	108	1.6	6.1	170	B									3016		02
279	**5.01**	4	129	1.6	6.1	200	B									3014		03
231	**6.07**	4	156	1.6	6.3	250	B									3012		04
206	**6.81**	4	175	1.6	6.2	277	B									2018		05
176	**7.96**	4	204	1.5	5.8	300	B									2016	**standard ø30**	06
148	**9.45**	4	242	1.3	4.9	304	B									2014		07
122	**11.43**	4	293	1.0	4.0	300	B									2012		08
99	**14.21**	3	274	1.0	2.8	265	B									2010	ø24	09
84	**16.62**	3	321	0.9	2.8	304	B									1314	ø25	10
70	**20.10**	2.2	286	1.0	2.3	300	B									1312	ø28	11
56	**24.98**	1.85	302	0.9	1.6	265	B									1310	ø35	12
47.6	**29.41**	1.5	288	1.1	1.6	304	B									814	On request	13
39.3	**35.58**	1.5	349	0.9	1.3	300	B									812		14
34.6	**40.50**	1.1	290	1.0	1.1	290	B									614		15
31.7	**44.23**	1.1	316	0.8	0.92	265	B									810		16
28.6	**49.00**	0.75	240	1.2	0.93	300	B									612		17
23.0	**60.90**	0.75	299	0.9	0.66	265	B									610		18

The dynamic efficiency is **0.96** for all ratios

*Nel montaggio P la flangia può superare l'ingombro massimo dei piedi. Eventualmente utilizzare la flangia B14
* In the P mounting the B5 motor flange can exceed the foot maximum dimensions. Possibly use the flange B14

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

5

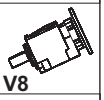
EN Unit **452A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **452A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **452A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **452A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

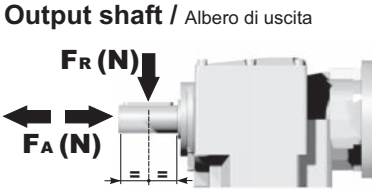
E El reductor tamaño **452A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

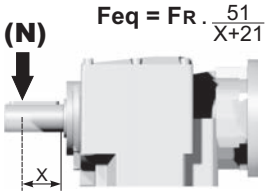
Standard supplied	**For these mounting position specify in the order or add oil** Per queste posizioni specificare in fase d'ordine o aggiungere olio					
 **B3**	 **B6**	 **B7**	 **B8**	 **V5**	 **V6**	 **V8**
0.31 LT	0.31 LT	0.31 LT	0.31 LT	0.31 LT	0.31 LT	Ask
SHELL Omala S4 WE 320			**AGIP** Telium VSF 320			

For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft / Albero di uscita





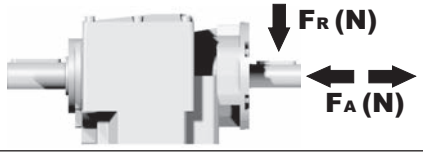
$$Feq = FR \cdot \frac{51}{X+21}$$

n_2	FA	FR
300	415	2070
250	430	2160
200	470	2340

n_2	FA	FR
140	540	2700
120	560	2790
85	630	3150

n_2	FA	FR
70	700	3510
40	810	4050
15	900	4500

Input shaft / Albero in entrata

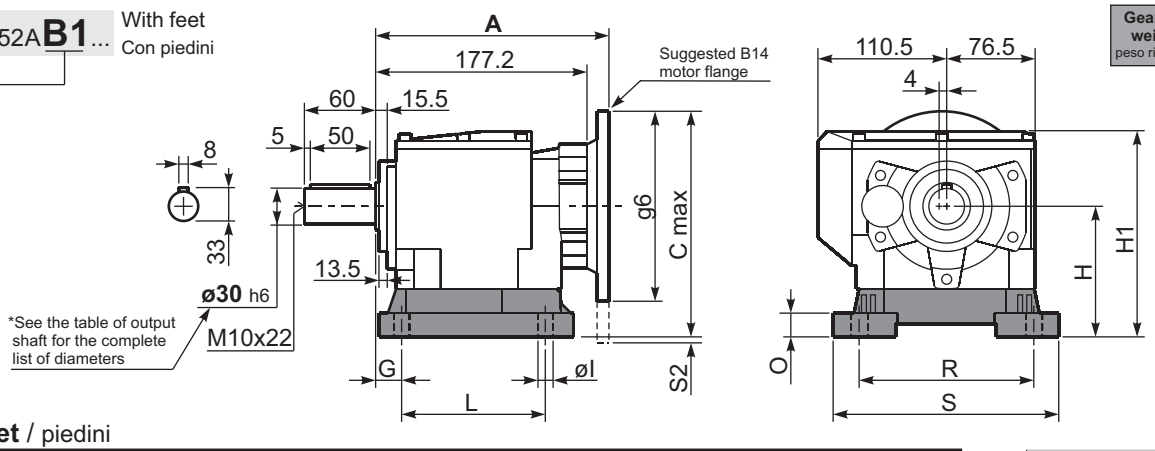


n_1	FA	FR
1400	400	2000
900	440	2200
500	440	2200

tab. 2

P452A**B1**... With feet / Con piedini

Gearbox weight / peso riduttore: With flange **8.7 kg** / With feet **8.9 Kg**



Feet / piedini

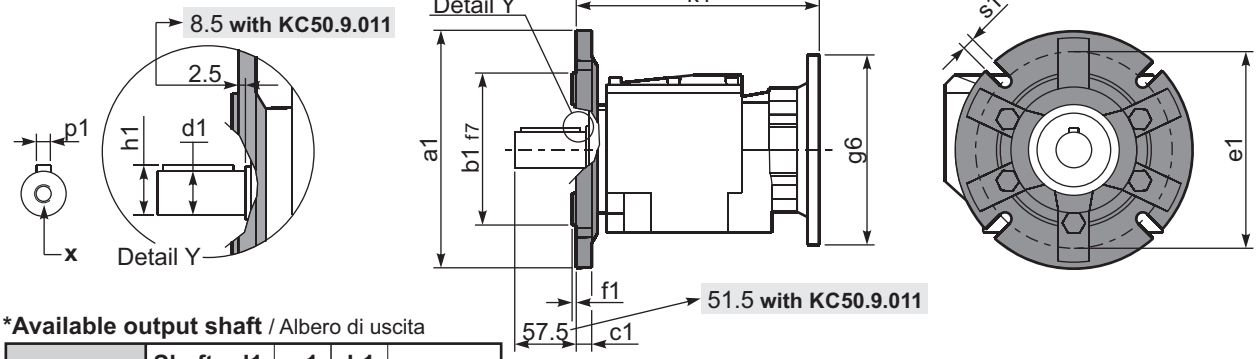
Feet Code	Market reference	G	H	R	L	S	H1	O	øl	S2 only with motor flange	B5 max. Flange	kit code
B3	312/3	18	110	160	130	190	173	20	11	15 100/112B5 40 132B5	-	KC50.9.024
B4	30/35	20	130	180	149.5	216	193	18	14	20 132B5	-	KC60.9.024
S4	47-57	30	115	135	165	170	178	24	13.5	-	80/90B5	KC50.9.022
H3	023-233	30	130	135	135	185	193	25	14	20 132B5	-	KC50.9.025
M2	52/3	30	110	135÷150	100	190	173	18	11	15 100/112B5 40 132B5	-	KC50.9.023

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P452A-**F**... Output flanges / flange di uscita



***Available output shaft** / Albero di uscita

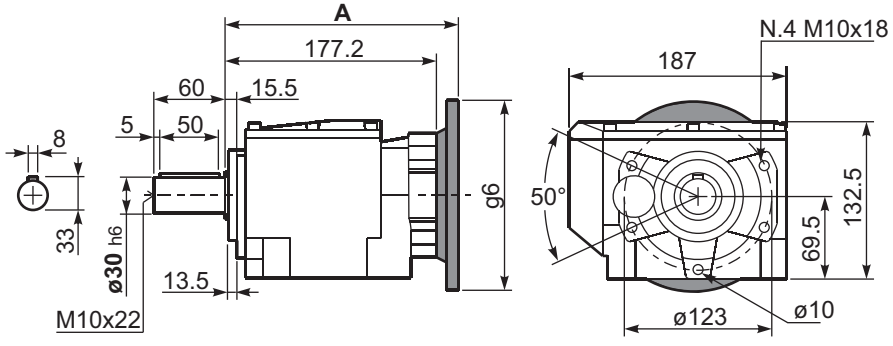
	Shaft - d1	p1	h1	x
Standard	ø 30x60	8	33	M10x22
On request / A richiesta	ø 24x50	8	27	M8x19
	ø 25x50	8	28	M8x19
	ø 28x60	8	31	M8x19
	ø 35x60	10	38	M10x22

Available output flanges / flange di uscita

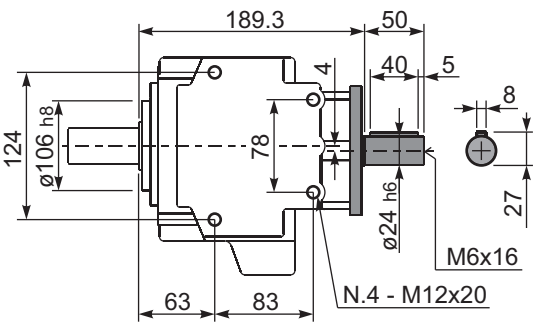
a1 ø	b1	c1	e1	f1	s1	kit code
160	110	14	130	3.5	11	KC50.9.011
200	130	13	165	3.5	11	KC50.9.012
250	180	15.5	215	4	14	KC50.9.013

With flange and feet only on request. Ask for compatibility

P452A-**N**... Basic gearbox / Riduttore base



R452A-**N**... Input Shaft / Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code	**k1** with KC50.9.011
71 B5	195.7	222	160	198.2	K023.4.041	204.2
80/90 B5	197.7	242	200	200.2	K023.4.042	206.2
100/112 B5	206.7	267	250	209.2	K023.4.043	215.2
132 B5	227.7	292	300	227.2	KC51.4.043	233.2

B14 Motor Flanges	A	C_{max}	g6	k1	kit code	**k1** with KC50.9.011
80 B14	197.7	202	120	200.2	K085.4.046	206.2
90 B14	197.7	212	140	200.2	K085.4.045	206.2
100/112 B14	206.7	222	160	209.2	K085.4.047	215.2
132 B14	227.7	242	200	227.2	KC51.4.041	233.2

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -C 71	-D 80	-E 90	-F 100* 112	-G 132*	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft ø	Ratios code
388	**3.61**	5.5	127	1.2	**6.6**	**155**	B									3018		01
331	**4.23**	5.5	148	1.2	**6.5**	**180**	B									3016		02
279	**5.01**	5.5	176	1.2	**6.4**	**210**	B									3014		03
231	**6.07**	5.5	213	1.2	**6.4**	**255**	B									3012		04
206	**6.81**	5.5	239	1.3	**6.7**	**300**	B									2018		05
176	**7.96**	5.5	279	1.2	**6.4**	**335**	B									2016		07
148	**9.45**	5.5	331	1.1	**5.8**	**360**	B									2014	**standard ø30**	08
122	**11.43**	4	293	1.1	**4.4**	**330**	B									2012		09
100	**14.00**	3	270	1.3	**3.9**	**360**	B									1316		21
84	**16.62**	3	321	1.1	**3.3**	**360**	B									1314	ø24	11
70	**20.10**	2.2	286	1.2	**2.5**	**330**	B									1312	ø25	12
57	**24.61**	2.2	350	0.9	**2.0**	**330**	B									1112	ø28	20
47.6	**29.41**	1.5	288	1.2	**1.9**	**360**	B									814	ø35	14
39.3	**35.58**	1.5	349	0.9	**1.4**	**330**	B									812	On request	15
34.6	**40.50**	1.1	290	1.1	**1.2**	**320**	B									614		16
31.7	**44.23**	1.1	316	0.8	**0.88**	**255**	B									810		17
28.6	**49.00**	1.1	351	0.9	**1.0**	**330**	B									612		18
23.0	**60.90**	0.75	299	0.8	**0.64**	**255**	B									610		19

The dynamic efficiency is **0.96** for all ratios

*Nel montaggio P la flangia può superare l'ingombro massimo dei piedi. Eventualmente utilizzare la flangia B14
* In the P mounting the B5 motor flange can exceed the foot maximum dimensions. Possibly use the flange B14

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

5

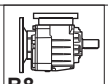
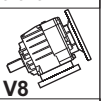
EN Unit **512A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **512A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **512A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **512A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

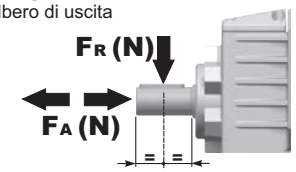
E El reductor tamaño **512A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard supplied	**For these mounting position specify in the order or add oil** Per queste posizioni specificare in fase d'ordine o aggiungere olio					
 B3	 B6	 B7	 B8	 V5	 V6	 V8
0.70 LT	0.80 LT	1.15 LT	1.20 LT	1.15 LT	1.25 LT	Ask
SHELL Omala S4 WE 320				**ENI** Telium VSF 320		

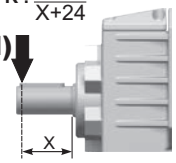
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

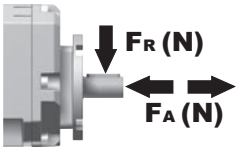


$$Feq = FR \cdot \frac{54}{X+24}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	460	2300	**140**	600	3000	**70**	780	3900
250	480	2400	**120**	620	3100	**40**	900	4500
200	520	2600	**85**	700	3500	**15**	1000	5000

Input shaft
Albero in entrata

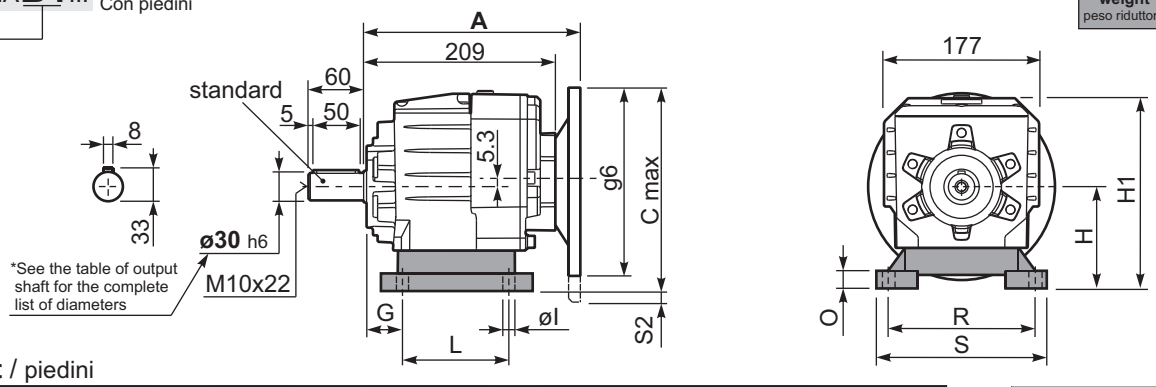


n_1	FA	FR
1400	450	2250
900	500	2500
500	600	3000

tab. 2

P512A**B1**... With feet / Con piedini

Gearbox weight / peso riduttore: With flange **11.7 kg** / With feet **11.9 Kg**



Feet / piedini

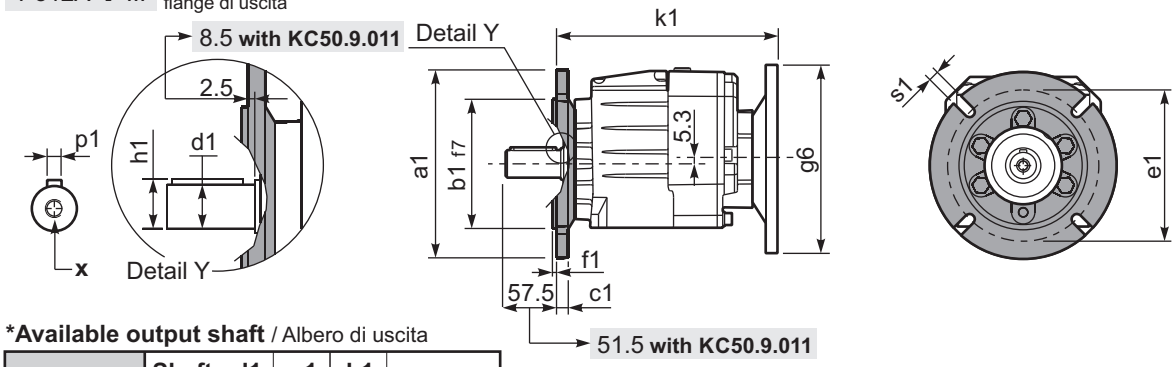
Feet Code	Market reference	G	H	R	L	S	H1	O	øl	S2 only with motor flange	B5 max. Flange	kit code
B3	312/3	18	110	160	130	190	211	20	11	10 100/112B5 35 132B5	-	KC50.9.024
B4	30/35	20	130	180	149.5	216	231	18	14	15 132B5	-	KC60.9.024
S4	47-57	30	115	135	165	170	216	25	14	5 100/112B5 30 132B5	-	KC50.9.022
H3	023-233	30	130	135	135	185	231	25	14	15 132B5	-	KC50.9.025
M2	52/3	30	110	135÷150	100	190	211	18	11	10 100/112B5 35 132B5	-	KC50.9.023

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P512A**-F**... Output flanges / flange di uscita

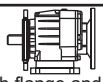


***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 30x60	8	33	M10x22
On request A richiesta	ø 24x50	8	27	M8x19
	ø 25x50	8	28	M8x19
	ø 28x60	8	31	M8x19
	ø 35x60	10	38	M10x22

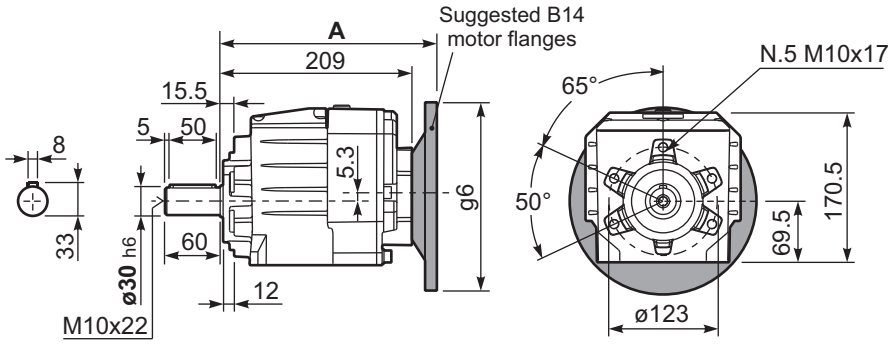
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
160	110	14	130	3.5	11	KC50.9.011
200	130	13	165	3.5	11	KC50.9.012
250	180	15.5	215	4	14	KC50.9.013

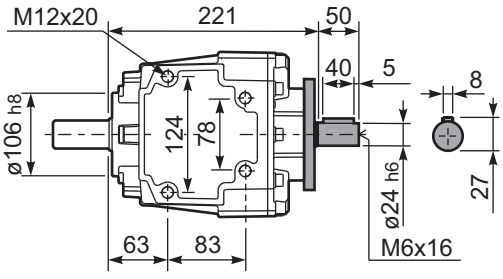


With flange and feet only on request. Ask for compatibility

P512A**-N**... Basic gearbox / Riduttore base



R512A**-N**... Input Shaft / Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
71 B5	227.5	215.3	160	230	K023.4.041	236
80/90 B5	229.5	235.3	200	232	K023.4.042	238
100/112 B5	238.5	260.3	250	241	K023.4.043	247
132 B5	259.5	285.3	300	259	KC51.4.043	265

B14 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
80 B14	229.5	195.3	120	232	K085.4.046	238
90 B14	229.5	205.3	140	232	K085.4.045	238
100/112 B14	238.5	215.3	160	241	K085.4.047	247
132 B14	259.5	235.3	200	259	KC51.4.041	265

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71	-D 80	-E 90	Available B14 motor flanges -Q 71	-R 80	-T 90		Output Shaft ø	Ratios code
35.2	**39.79**	1.5	382	0.9	**1.4**	**360**	B				C	C		191316		01
29.6	**47.22**	1.1	331	1.1	**1.2**	**360**	B				C	C		191314		02
25.6	**54.73**	1.1	384	0.9	**1.0**	**360**	B				C	C		171314		03
21.1	**66.22**	0.75	318	1.0	**0.78**	**330**	B				C	C		171312		04
18.3	**76.69**	0.75	369	1.0	**0.73**	**360**	B				C	C		131314		05
16.7	**83.59**	0.55	297	1.2	**0.67**	**360**	B				C	C		190814	**standard ø30**	06
15.1	**92.78**	0.55	329	1.0	**0.55**	**330**	B				C	C		131312		07
13.4	**104.68**	0.55	371	1.0	**0.54**	**360**	B				C	C		101314		08
11.9	**117.22**	0.37	278	1.2	**0.44**	**330**	B				C	C		170812	ø24	09
11.1	**126.65**	0.37	300	1.1	**0.41**	**330**	B				C	C		101312	ø25	10
10.2	**136.62**	0.37	324	1.1	**0.41**	**360**	B				C	C		91314	ø28	11
8.5	**165.29**	0.25	264	1.2	**0.31**	**330**	B				C	C		91312	ø35	12
7.8	**180.40**	0.25	289	1.2	**0.31**	**360**	B				C	C		71314	On request	13
6.4	**218.26**	0.25	349	0.9	**0.24**	**330**	B				C	C		71312		14
5.8	**241.82**	0.25	387	0.9	**0.23**	**360**	B				C	C		90814		15
4.8	**292.57**	0.18	358	0.9	**0.18**	**330**	B				C	C		90812		16
4.4	**319.32**	0.18	391	0.9	**0.18**	**360**	B				C	C		70814		17
3.6	**386.33**	0.12	305	1.1	**0.13**	**330**	B				C	C		70812		18
2.9	**480.16**	0.12	380	0.7	**0.08**	**255**	B				C	C		70810		19

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available / Flange Motore Disponibili

B) **Supplied with Reduction Bushing** / Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** / Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** / Posizione Fori Flangia Motore

5

EN Unit **513A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **513A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **513A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **513A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

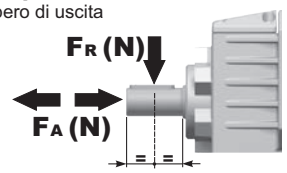
E El reductor tamaño **513A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard supplied	**For these mounting position specify in the order or add oil** Per queste posizioni specificare in fase d'ordine o aggiungere olio					
 **B3**	 **B6**	 **B7**	 **B8**	 **V5**	 **V6**	 **V8**
1.00 LT	0.90 LT	1.25 LT	1.15 LT	1.45 LT	1.40 LT	Ask
SHELL Omala S4 WE 320				**ENI** Telium VSF 320		

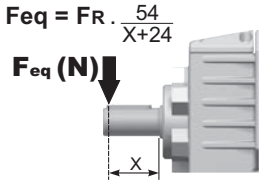
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita



$F_{eq} = F_R \cdot \frac{54}{X+24}$

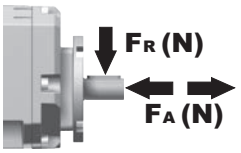


n_2	FA	FR
300	460	2300
250	480	2400
200	520	2600

n_2	FA	FR
140	600	3000
120	620	3100
85	700	3500

n_2	FA	FR
70	780	3900
40	900	4500
15	1000	5000

Input shaft
Albero in entrata

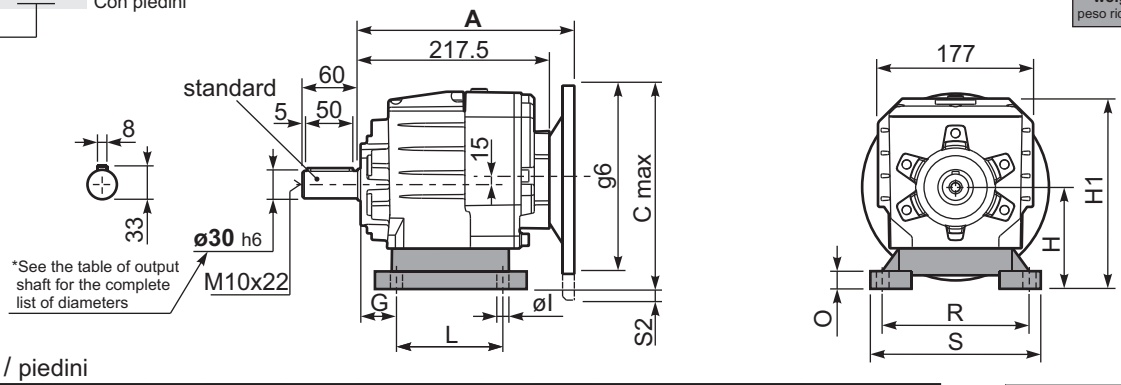


n_1	FA	FR
1400	400	2000
900	440	2200
500	440	2200

tab. 2

P513A**B1**... With feet
Con piedini

Gearbox weight peso riduttore: With flange **11.9 kg**, With feet **12.1 Kg**



Feet / piedini

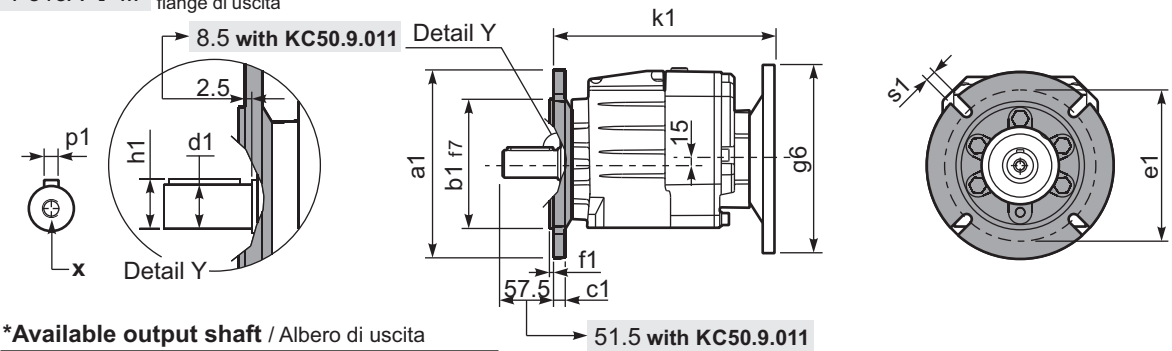
Feet Code	Market reference	G	H	R	L	S	H1	O	øl	S2 only with motor flange	B5 max. Flange	kit code
B3	312/3	18	110	160	130	190	211	20	11	-	-	KC50.9.024
B4	30/35	20	130	180	149.5	216	231	18	14	-	-	KC60.9.024
S4	47-57	30	115	135	165	170	216	25	14	-	-	KC50.9.022
H3	023-233	30	130	135	135	185	231	25	14	-	-	KC50.9.025
M2	52/3	30	110	135÷150	100	190	211	18	11	-	-	KC50.9.023

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P513A**-F**... Output flanges
flange di uscita



***Available output shaft** / Albero di uscita

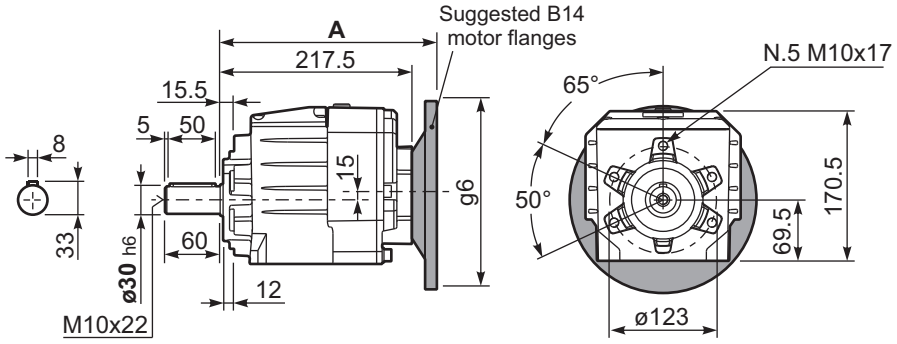
	Shaft - d1	p1	h1	x
Standard	ø 30x60	8	33	M10x22
On request A richiesta	ø 24x50	8	27	M8x19
	ø 25x50	8	28	M8x19
	ø 28x60	8	31	M8x19
	ø 35x60	10	38	M10x22

Available output flanges / flange di uscita

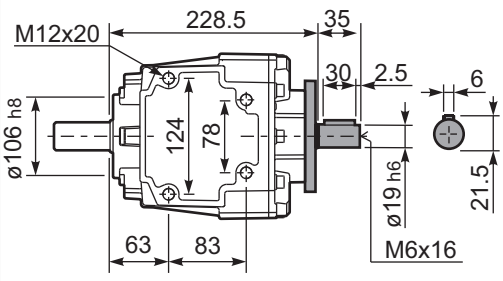
a1 ø	b1	c1	e1	f1	s1	kit code
160	110	14	130	3.5	11	KC50.9.011
200	130	13	165	3.5	11	KC50.9.012
250	180	15.5	215	4	14	KC50.9.013

With flange and feet only on request. Ask for compatibility

P513A**-N**... Basic gearbox
Riduttore base



R513A**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
63 B5	238	215	140	240.5	K063.4.041	246.5
71 B5	236	225	160	238.5	K063.4.042	244.5
80/90 B5	238	245	200	240.5	K063.4.043	246.5

B14 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
71 B14	236	197.5	105	238.5	K063.4.047	244.5
80 B14	238	205	120	240.5	K063.4.046	246.5
90 B14	238	215	140	240.5	K063.4.041	246.5

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -C 71	-D 80	-E 90	-F 100 112	-G 132*	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft	Ratios code
388	**3.61**	7.5	171	1.1	**8.0**	**190**	B									3018		01
331	**4.23**	7.5	200	1.1	**8.3**	**230**	B									3016		02
279	**5.01**	7.5	238	1.1	**7.9**	**260**	B									3014		03
231	**6.07**	7.5	288	1.1	**7.8**	**310**	B									3012		04
206	**6.81**	7.5	323	1.1	**7.9**	**350**	B									2018		05
176	**7.96**	7.5	378	1.0	**7.1**	**370**	B									2016		07
148	**9.45**	5.5	331	1.2	**6.6**	**410**	B									2014	**standard ø35**	08
122	**11.43**	5.5	401	1.1	**5.7**	**425**	B									2012		09
100	**14.00**	4	359	1.2	**4.7**	**435**	B									1316		10
84	**16.62**	4	426	1.2	**4.7**	**515**	B									1314	ø28	11
70	**20.10**	4	515	1.0	**4.0**	**530**	B									1312	ø30	12
57	**24.61**	3	475	1.1	**3.3**	**530**	B									1112	ø38	20
47.6	**29.41**	2.2	418	1.1	**2.3**	**450**	B									814	ø40	14
39.3	**35.58**	2.2	506	1.0	**2.3**	**530**	B									812	On request	15
34.6	**40.50**	1.1	290	1.1	**1.2**	**320**	B									614		16
31.7	**44.23**	1.5	433	0.9	**1.4**	**410**	B									810		17
28.6	**49.00**	1.1	351	1.1	**1.2**	**400**	B									612		18
23.0	**60.90**	1.1	436	0.9	**1.0**	**410**	B									610		19

The dynamic efficiency is **0.96** for all ratios

*Nel montaggio P la flangia può superare l'ingombro massimo dei piedi. Eventualmente utilizzare la flangia B14

* In the P mounting the B5 motor flange can exceed the foot maximum dimensions. Possibly use the flange B14

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

5

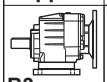
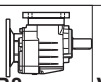
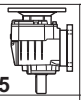
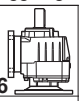
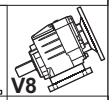
EN Unit **612A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **612A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **612A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **612A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

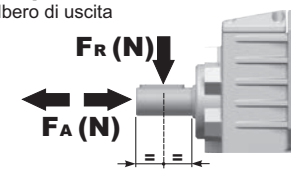
E El reductor tamaño **612A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard supplied	**For these mounting position specify in the order or add oil** Per queste posizioni specificare in fase d'ordine o aggiungere olio					
 **B3**	 **B6**	 **B7**	 **B8**	 **V5**	 **V6**	 **V8**
0.80 LT	1.00 LT	1.20 LT	1.20 LT	1.30 LT	1.35 LT	Ask
SHELL Omala S4 WE 320				**ENI** Telium VSF 320		

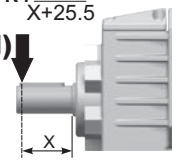
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita



$$Feq = FR \cdot \frac{60.5}{X+25.5}$$

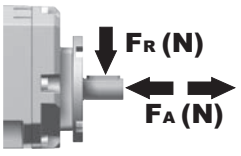


n_2	FA	FR
300	560	2800
250	600	3000
200	640	3200

n_2	FA	FR
140	740	3700
120	760	3800
85	840	4000

n_2	FA	FR
70	890	4200
40	1160	5800
15	1300	6500

Input shaft
Albero in entrata

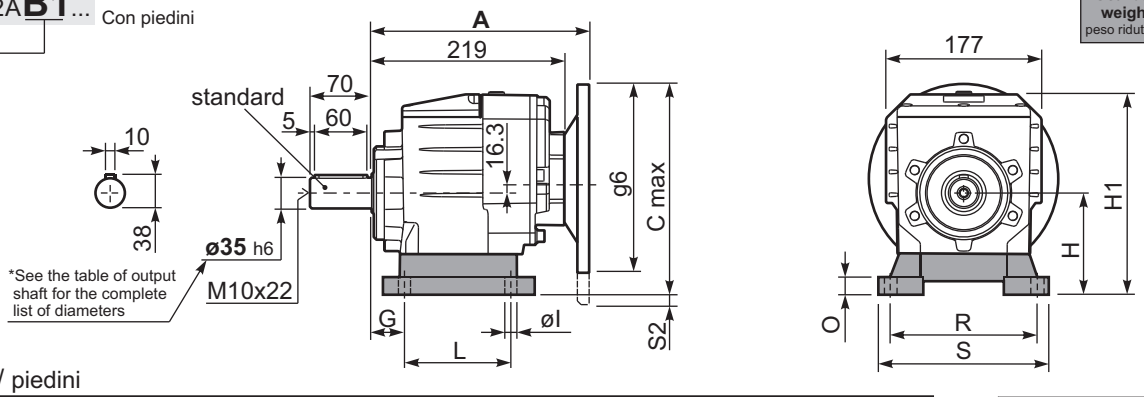


n_1	FA	FR
1400	450	2250
900	500	2500
500	600	3000

tab. 2

P612A**B1**... With feet
Con piedini

Gearbox weight peso riduttore	
With flange	**14.1 kg**
With feet	**14.5 kg**



Feet / piedini

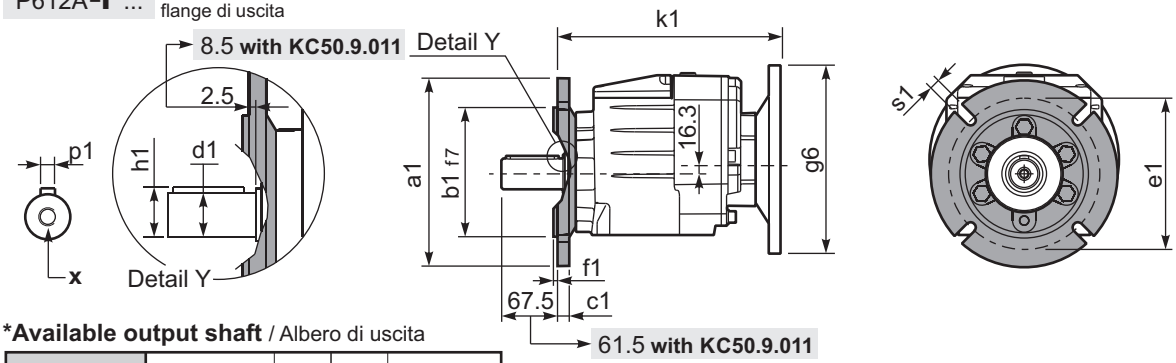
Feet Code	Market reference	G	H	R	L	S	H1	O	øl	S2 only with motor flange	B5 max. Flange	kit code
B4	412/3	20	130	180	149.5	216	242	18	14	-	-	KC60.9.024
S4	47-57	30	115	135	165	170	227	25	14	13 132B5	-	KC50.9.022
M3	62/3	35	120	170÷185	110	230	232	20	14	8 132B5	-	KC60.9.023
S7	77	35	140	170	205	204	252	8	14	-	-	KC60.9.029LM
H4	024-243	35	155	170	150	225	267	30	14	-	-	KC60.9.025

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P612A**-F**... Output flanges
flange di uscita



***Available output shaft** / Albero di uscita

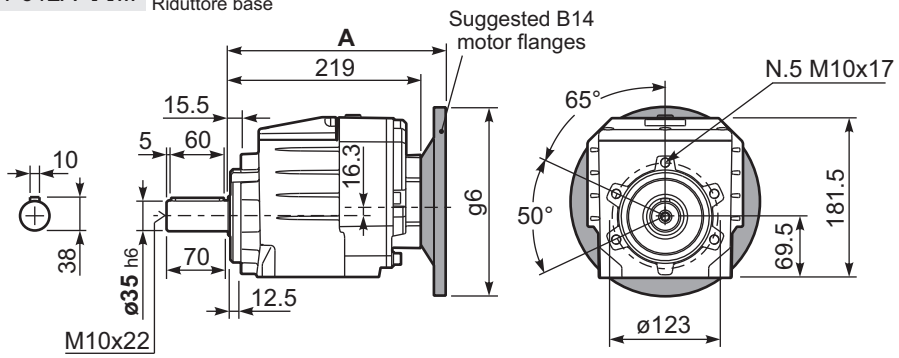
	Shaft - d1	p1	h1	x
Standard	ø 35x70	10	38	M10x22
On request A richiesta	ø 28x60	8	31	M8x20
	ø 30x60	8	33	M10x22
	ø 38x70	10	41	M10x25
	ø 40x80	12	43	M12x28

Available output flanges / flange di uscita

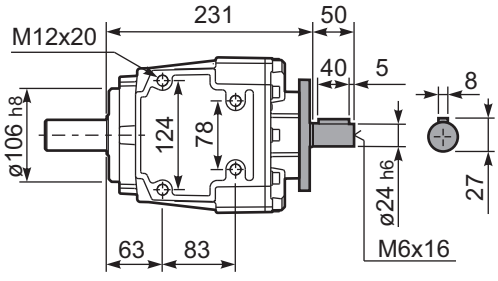
a1 ø	b1	c1	e1	f1	s1	kit code
160	110	14	130	3.5	11	KC50.9.011
200	130	13	165	3.5	11	KC50.9.012
250	180	15.5	215	4	14	KC50.9.013

With flange and feet only on request. Ask for compatibility

P612A**-N**... Basic gearbox
Riduttore base



R612A**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
71 B5	237.5	251.3	160	240	K023.4.041	246
80/90 B5	239.5	271.3	200	242	K023.4.042	248
100/112 B5	248.5	296.3	250	251	K023.4.043	257
132 B5	269.5	321.3	300	269	KC51.4.043	275

B14 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
80 B14	239.5	231.3	120	242	K085.4.046	248
90 B14	239.5	241.3	140	242	K085.4.045	248
100/112 B14	248.5	251.3	160	251	K085.4.047	257
132 B14	269.5	271.3	200	269	KC51.4.041	275

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71	-D 80	-E 90	Available B14 motor flanges -Q 71	-R 80	-T 90		Output Shaft ø	Ratios code
35.2	**39.79**	1.5	382	1.1	**1.7**	**434**	B				C	C		191316		05
29.6	**47.22**	1.5	453	1.1	**1.7**	**515**	B				C	C		191314		06
25.6	**54.73**	1.5	525	1.0	**1.5**	**515**	B				C	C		171314		07
24.5	**57.13**	1.5	548	1.0	**1.4**	**530**	B				C	C		191312		08
21.1	**66.22**	1.1	464	1.1	**1.2**	**530**	B				C	C		171312		09
19.7	**71.01**	1.1	498	0.9	**0.96**	**435**	B				C	C		191310		10
18.3	**76.69**	1.1	538	1.0	**1.0**	**515**	B				C	C		131314		11
17.0	**82.30**	0.75	396	1.1	**0.82**	**435**	B				C	C		171310		12
16.7	**83.59**	0.75	402	1.1	**0.82**	**440**	B				C	C		190814	**standard ø35**	13
15.1	**92.78**	0.75	446	1.2	**0.89**	**530**	B				C	C		131312		14
13.4	**104.68**	0.75	503	1.0	**0.77**	**515**	B				C	C		101314	ø28	15
11.9	**117.22**	0.75	564	0.9	**0.71**	**530**	B				C	C		170812	ø30	16
11.1	**126.65**	0.55	449	1.2	**0.65**	**530**	B				C	C		101312	ø38	17
10.3	**135.74**	0.55	482	0.9	**0.51**	**440**	B				C	C		130814	ø40	18
9.6	**145.68**	0.37	346	1.3	**0.47**	**435**	B				C	C		170810	On request	19
8.9	**157.40**	0.37	373	1.2	**0.43**	**435**	B				C	C		101310		20
8.5	**165.29**	0.37	392	1.3	**0.50**	**525**	B				C	C		91312		21
7.6	**185.29**	0.37	439	1.0	**0.37**	**440**	B				C	C		100814		22
6.8	**205.43**	0.37	487	0.9	**0.33**	**435**	B				C	C		91310		23
6.2	**224.18**	0.37	532	1.0	**0.37**	**530**	B				C	C		100812		24
5.8	**241.82**	0.25	387	1.1	**0.28**	**440**	B				C	C		90814		25
5.0	**278.62**	0.25	446	1.0	**0.24**	**435**	B				C	C		100810		26
4.8	**292.57**	0.25	468	1.1	**0.28**	**530**	B				C	C		90812		27
3.9	**363.63**	0.18	445	1.0	**0.19**	**435**	B				C	C		90810		28

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

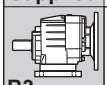
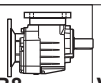
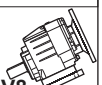
EN Unit **613A** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **613A** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **613A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **613A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

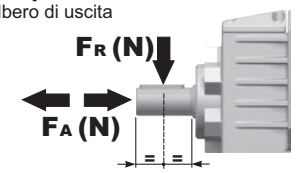
E El reductor tamaño **613A** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard supplied	**For these mounting position specify in the order or add oil** Per queste posizioni specificare in fase d'ordine o aggiungere olio					
 **B3**	 **B6**	 **B7**	 **B8**	 **V5**	 **V6**	 **V8**
1.05 LT	1.10 LT	1.25 LT	1.25 LT	1.35 LT	1.50 LT	Ask
SHELL Omala S4 WE 320				**ENI** Telium VSF 320		

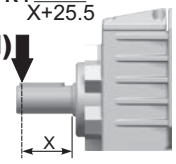
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita



$$Feq = FR \cdot \frac{60.5}{X+25.5}$$

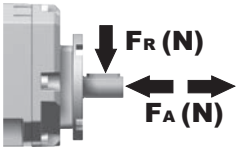


n_2	FA	FR
300	560	2800
250	600	3000
200	640	3200

n_2	FA	FR
140	740	3700
120	760	3800
85	840	4000

n_2	FA	FR
70	890	4200
40	1160	5800
15	1300	6500

Input shaft
Albero in entrata

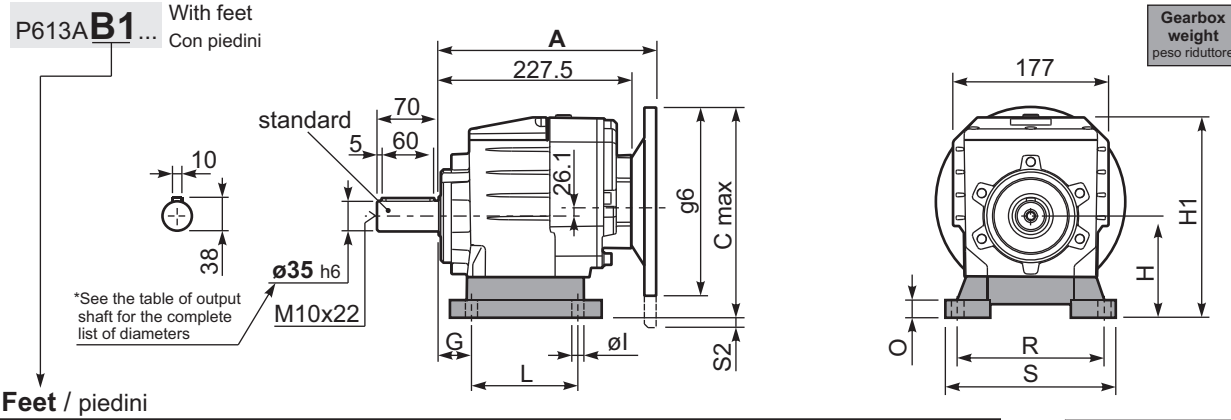


n_1	FA	FR
1400	400	2000
900	440	2200
500	440	2200

tab. 2

P613A**B1**... With feet / Con piedini

Gearbox weight / peso riduttore: With flange **14.3 kg** / With feet **14.7 Kg**



Feet / piedini

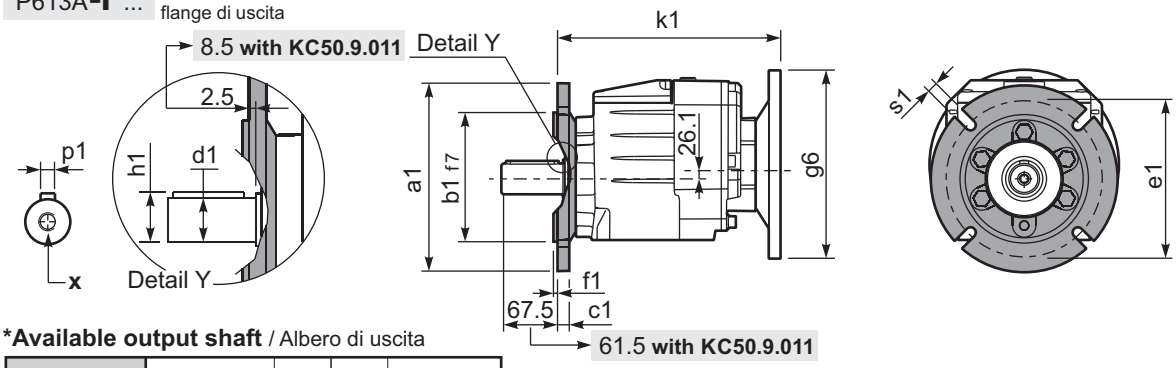
Feet Code	Market reference	G	H	R	L	S	H1	O	øl	S2 only with motor flange	B5 max. Flange	kit code
B4	412/3	20	130	180	149.5	216	242	18	14	-	-	KC60.9.024
S4	47-57	30	115	135	165	170	227	25	14	13 132B5	-	KC50.9.022
M3	62/3	35	120	170÷185	110	230	232	20	14	8 132B5	-	KC60.9.023
S7	77	35	140	170	205	204	252	8	14	-	-	KC60.9.029LM
H4	024-243	35	155	170	150	225	267	30	14	-	-	KC60.9.025

Other feet are available, see our web site
Sono disponibili altri piedini, consulta il nostro sito web

A see on page bottom

Most popular types
Tipi più diffusi

P613A**-F**... Output flanges / flange di uscita

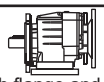


***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 35x70	10	38	M10x22
On request / A richiesta	ø 28x60	8	31	M8x20
	ø 30x60	8	33	M10x22
	ø 38x70	10	41	M10x25
	ø 40x80	12	43	M12x28

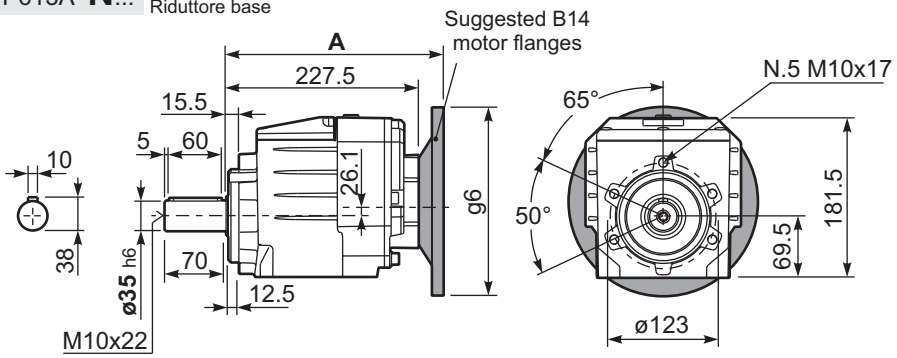
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
160	110	14	130	3.5	11	KC50.9.011
200	130	13	165	3.5	11	KC50.9.012
250	180	15.5	215	4	14	KC50.9.013

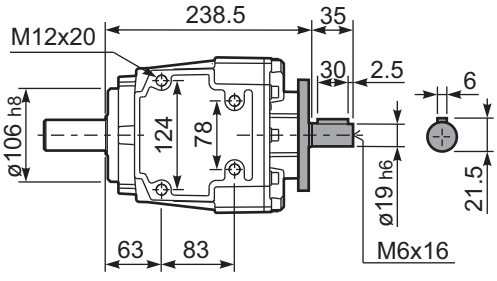


With flange and feet only on request. Ask for compatibility

P613A**-N**... Basic gearbox / Riduttore base



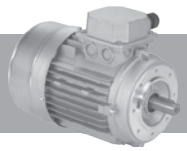
R613A**-N**... Input Shaft / Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
63 B5	248	251.1	140	250.5	K063.4.041	256.5
71 B5	246	261.1	160	248.5	K063.4.042	254.5
80/90 B5	248	281.1	200	250.5	K063.4.043	256.5

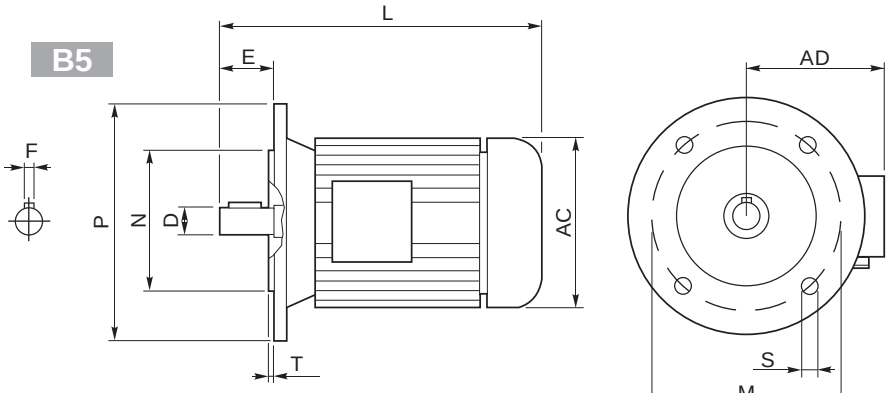
B14 Motor Flanges	A	C_{max}	g6	k1	kit code	k1 with KC50.9.011
71 B14	246	233.6	105	248.5	K063.4.047	254.5
80 B14	248	241.1	120	250.5	K063.4.046	256.5
90 B14	248	251.1	140	250.5	K063.4.041	256.5

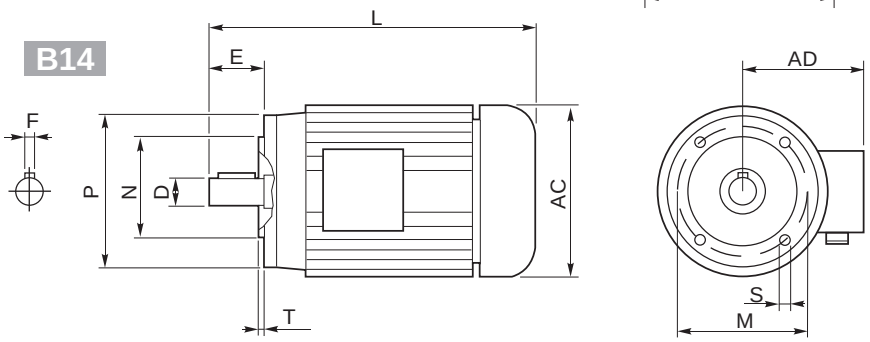
Aluminum IEC motors



1) 230/400V - 50Hz three-phase asynchronous induction motor
2) Class F insulation
3) S1 duty
4) IP 55 protection
5) Not painted
6) Hard plastic sleeve to protect output shaft during the transportation

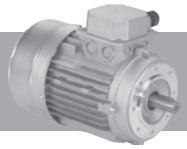
1) 230/400V - 50Hz motore trifase asincrono
2) Isolamento Classe F
3) S1 servizio continuo
4) Protezione IP 55
5) Non verniciato
6) Manicotto di protezione per l'albero motore





Outside dimensions and weight may be different according to manufacturers.
Le dimensioni esterne e il peso sono indicative, possono variare tra i vari costruttori.

	2 poli / poles			4 poli / poles			6 poli / poles			B5-B14						B5					B14					Kg
	kW	Nm	A (400V)	kW	Nm	A (400V)	kW	Nm	A (400V)	D	F	E	L	AC	AD	N	M	P	S	T	N	M	P	S	T	
56 A	**0.09**	0.32	0.38	**0.06**	0.44	0.27	**—**	—	—	9	3	20	199	108	96	80	100	120	7	2.5	50	65	80	M5	2.5	2.7
56 B	**0.12**	0.42	0.46	**0.09**	0.67	0.37	**—**	—	—																	2.9
63 A	**0.18**	0.63	0.60	**0.12**	0.84	0.50	**0.09**	0.99	0.57	11	4	23	208	120	99	95	115	140	9.5	3	60	75	90	M5	2.5	3.8
63 B	**0.25**	0.87	0.76	**0.18**	1.30	0.69	**0.12**	1.32	0.74																	4.2
71 A	**0.37**	1.30	1.00	**0.25**	1.70	0.91	**0.18**	1.90	0.80	14	5	30	-	130	104	110	130	160	9.5	3.5	70	85	105	M6	2.5	5.9
71 B	**0.55**	1.90	1.54	**0.37**	2.52	1.14	**0.25**	2.72	1.10				255	141	107											6.5
80 A	**0.75**	2.60	1.85	**0.55**	3.77	1.51	**0.37**	3.84	1.18	19	6	40	296	159	127	130	165	200	11.5	3.5	80	100	120	M6	3	8.5
80 B	**1.1**	3.90	2.64	**0.75**	5.11	2.57	**0.55**	5.84	1.80																	10
90 S	**1.5**	5.00	3.31	**1.1**	7.45	2.78	**0.75**	7.92	2.32	24	8	50	-	170	135	130	165	200	11.5	3.5	95	115	140	M8	3	12.5
90 L	**2.2**	7.50	4.46	**1.5**	10.2	3.61	**1.1**	11.6	3.45				330													15
100 LA	**3.0**	10.0	6.28	**2.2**	14.8	5.07	**1.5**	15.4	3.88	28	8	60	-	190	148	180	215	250	13	4	110	130	160	M8	3.5	20
100 LB	**—**	—	—	**3.0**	20.1	6.66	**—**	—	—																	22
112 M	**4.0**	13.4	8.10	**4.0**	26.7	8.55	**2.2**	22.6	5.30				381	210	164											35
132 S	**5.5**	18.3	11.2	**5.5**	36.5	11.4	**3.0**	30.2	7.20	38	10	80	455	244	180	230	265	300	14	4	130	165	200	M10	4	41
	7.5	24.9	15.3																							51
132 M	**—**	—	—	**7.5**	49.4	15.0	**4.0**	40.0	9.13				500													51
				9	61.4	18.5																				
160 M	**—**	—	—	**11**	72	21.5	**—**	—	—	42	12	110	613	335	246	250	300	350	18	5	—	—	—	—	—	79.2
160 L	**—**	—	—	**15**	98	29	**—**	—	—				657													97.5
180 M	**—**	—	—	**18.5**	121	35.5	**—**	—	—	48	14	110	712	366	266	250	300	350	19	5	—	—	—	—	—	170
180 L	**—**	—	—	**22**	144	42	**—**	—	—																	
200 L	**—**	—	—	**30**	196	53	**—**	—	—	55	16	110	780	405	341	300	350	400	19	5	—	—	—	—	—	240
225 S	**—**	—	—	**37**	240	69	**—**	—	—	60	18	140	888	463	360	350	400	450	19	5	—	—	—	—	—	305
225 M	**—**	—	—	**45**	292	84	**—**	—	—																	310



Protection
Standard IP55
Please specify on purchase orders if you need a higher IP protection class.

Grado di protezione
IP55 Standard
Specificare in sede di ordinazione per IP superiore.

Schutzart
IP55 Standard.
Höheren IP Grad bitte im Auftrag angeben.

Degré de protection
IP55 standard.
Au moment de la commande, spécifiez si vous souhaitez IP supérieur.

Grado de protección
IP55 standard.
Especificar en el pedido cuando necesiten protección IP superior.

Insulation
Standard CI.F
To be specified upon placing the order if different insulation is required.

Isolamento
CI.F Standard
Specificare in sede di ordinazione classe di isolamento diversa.

Isolierung
CI.F Standard.
Davon abweichende Isolierungsklas se im Auftrag angeben.

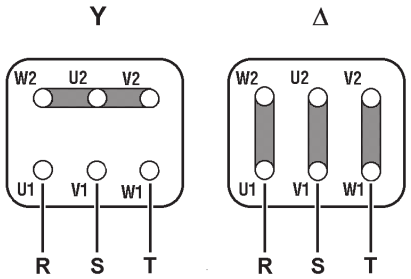
Isolement
CI.F Standard.
Au moment de la commande, spécifiez si vous souhaitez une classe d' isolement différente.

Aislamiento
CI.F standard.
Especificar al efectuar el pedido la clase diferente de aislamiento.

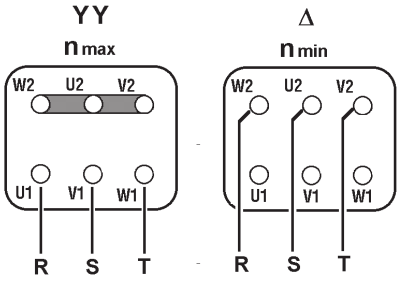
Insulation / Isolamento Isolierung /Aislamiento		E	B	F	H
Max. temp.	C°	120°	130°	155°	175°
	F*	248°	266°	311°	347°

Connections **Collegamenti** **Verbindungselemente** **Branchements** **Conexiones**

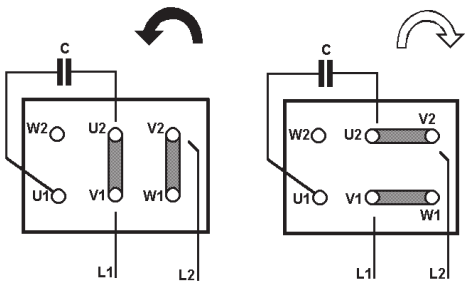
Threephase asyncronous single polarity
Asincrono trifase singola polarità
Asynchronmotor 3-ph eine Drehzahl
Moteur triphasé à une vitesse
Asincrono trifasico de una velocidad



Threephase asyncronous double polarity
Asincrono trifase doppia polarità
Asynchronmotor 3-ph doppelte Drehzahl
Moteur triphasé à deux vitesses
Asincrono trifasico de dos velocidades



Single phase asyncronous
Asincrono monofase
Einphasen-Asynchronmotor
Moteur monophasé
Asincrono monofasico



Cast iron in line gearboxes

A modular and compact product

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

Housing
Robust cast iron housing

Large center distance gears

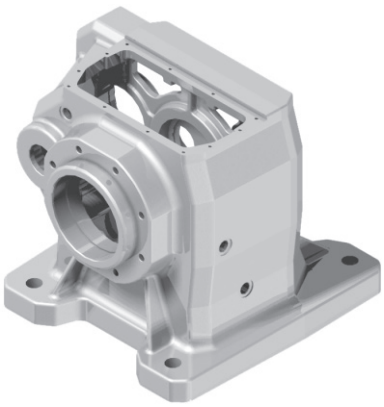
Gears
Hardened and ground gears.

Output shaft
With well proportioned bearings

Painted
RAL 7046

Foot prints
Compatible to the main standard of the market.

Single-piece Cast Iron housing
with high tensile strength. Precision machined for alignment of bearings and gearing

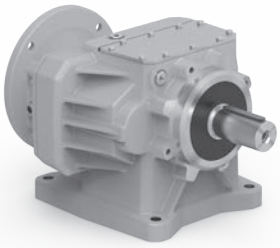


World wide sales network.

Specific type datasheet on page...

On page / A pagina / Auf Seite / À la page / En la página

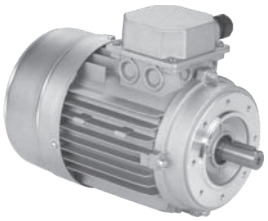
2 and 3 Stages



6-5	6-7	6-9	6-11	6-13	6-15	6-17	6-19	6-21	6-23
712C 675Nm	**713C** 675Nm	**812C** 900Nm	**813C** 900Nm	**862C** 1600Nm	**863C** 1800Nm	**1002** 2900Nm	**1003** 3000Nm	**1102** 4500Nm	**1103** 4600Nm

Types / Tipi
Tipen / Types
Tipos

On page / A pagina / Auf Seite / À la page / En la página



M-1									
56A 56B	**63A 63B**	**71A 71B**	**80A 80B**	**90S 90L**	**100LA 100LB**	**112M**	**132S 132M**	**160M 160L**	**180M 180L**

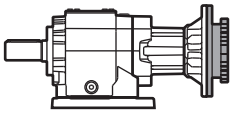
Types / Tipi
Tipen / Types
Tipos

CODIFICA / HOW TO ORDER / TYPENBEZEICHNUNGEN / CODIFICATION / CODIFICACIÓN

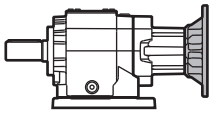
Type - Tipo - Typ Type - Tipo	**Size** - Grandezza - Grösse Taille - Tamaño	**Mounting** - Montaggio Montage - Fixation Tipo de montaje	**Ratio** - Rapporto Untersetzung Reduction Relaciòn
P	**712C**	**-F**	**6.57**

Type - Tipo - Typ - Type - Tipo

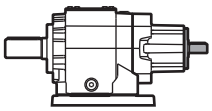
Cast iron coaxial gear boxes
Riduttori coassiali in Ghisa



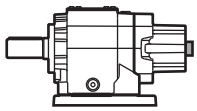
With IEC motor
M



With motor flange
P



With male input shaft
R



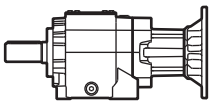
Modular base
B

Not available for:
862C,1002 , 1102,
1003 , 1103 .

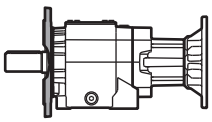
Size - Grandezza - Grösse - Taille - Tamaño

2 Stages Riduzioni Stufen Trains Etapas	3 Stages Riduzioni Stufen Trains Etapas
712C	**713C**
812C	**813C**
862C	**863C**
1002	**1003**
1102	**1103**

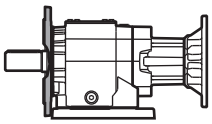
Mounting - Montaggio - Montage - Fixation - Tipo de montaje



Without flange / feet
-N

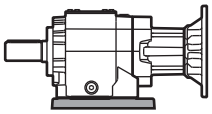


without feet
712/3C - 812/3C



with integrated feet
862/3C - 1002/3 - 1102/3

Output flange mounted
-F



Mounted feet
B..

Feet / piedini

Feet Code	Market reference	G	H	R	L
B1	112	18	85	110	
B2	212/3	18	100	130	
S1	17	18	75	110	
S2	27	25	90		
M1	42/3	25	80		
L4	04	13	80		
L5	05	16	100		

You see feet code in the chart of the dimensions
Vedi codice piede nella tabella delle dimensioni

Ratio - Rapporto - Untersetzung - Reduction - Relaciòn

See technical data table

Vedi tabelle dati tecnici.

Technisches Datenblatt beachten

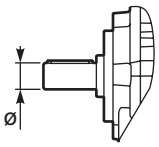
Voir Tableau données techniques

Ver tabla datos técnicos

On request we can deliver our products according to the ATEX
A richiesta possiamo fornire i nostri prodotti secondo le normative ATEX
Auf Anfrage können wir unsere Produkte den Richtlinien ATEX entsprechend liefern
Sur demande nos produits peuvent se conformer à la réglementation ATEX
A pedido, se pueden enviar nuestros productos de acuerdo con las normas ATEX.

Output shaft
Albero uscita
Abtriebswelle
Arbre de sortie
Eje en salida

I



➡ **STANDARD**

712C 713C

I ➡ **ø35**
L ⇨ ø38

812C 813C

M ➡ **ø40**
N ⇨ ø45

862C 863C

P ➡ **ø50**
J ⇨ ø60

1002 1003

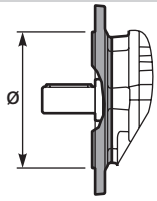
J ➡ ø60

1102 1103

A ➡ ø70

Output flange
Flangia uscita
Ausgangsflansch
Bride de sortie
Brida en salida

4



➡ **STANDARD**

N Senza flangia
Without flange

712C 713C

4 ⇨ ø200
5 ➡ **ø250**

812C 813C

5 ⇨ ø250
6 ➡ **ø300**

862C 863C

6 ⇨ ø300
7 ➡ **ø350**

1002 1003

6 ⇨ ø300
7 ➡ **ø350**
8 ⇨ ø450

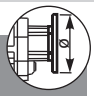
1102 1103

7 ⇨ ø350
8 ➡ **ø450**

Motor size - Grandezza motore
Motor Grösse
Grandeur moteur - Tamaño motor

-F

Flange
Flangia



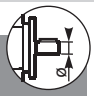
B5

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

B14

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

Type R
Tipo R



713C 813C

-2 ⇨ ø19

712C 812C 863C

-3 ⇨ ø24

862C 1003 1103

-4 ⇨ ø28

1002 1102

-6 ⇨ ø42

Without flange
Senza flangia

-M ⇨ With coupling

713C 813C

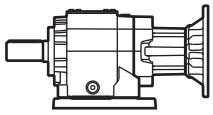
-1 ⇨ ø14 (IEC71)
-2 ⇨ ø19 (IEC80)
-3 ⇨ ø24 (IEC90)

712C 812C 863C

-2 ⇨ ø19 (IEC80)
-3 ⇨ ø24 (IEC90)
-4 ⇨ ø28 (IEC100)

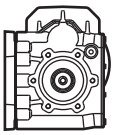
Mounting position
Posizione montaggio
Einbaulage
Position de montage
Position de montaje

B3

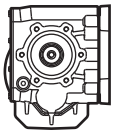


B3

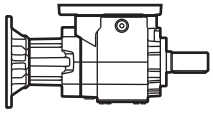
STANDARD



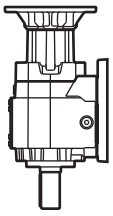
B6



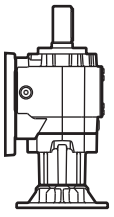
B7



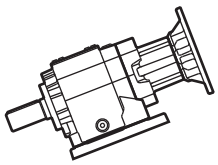
B8



V5



V6



V8

Input bore
Foro entrata
Eingangshohlwelle
Trou d'entree
Eje hueco de entrada

ST

ST

standard bore

foro standard

Terminal box position
Posizione morsettiera
Klemmkastenlage
Position boîte à bornes
Posición caja de bornes

With Type M specify terminal box position

Con tipo M specificare posizione morsettiera

A

B

STANDARD

C

D

6

POTENZA RICHIESTA / REQUIRED POWER / ERFORDERLICHE LEISTUNG / PUISSANCE NECESSAIRE / POTENCIA NECESARIA

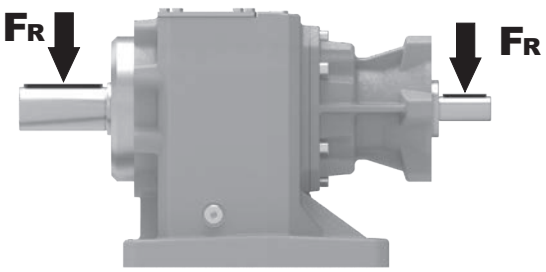
Lifting / sollevamento / hubantriebe / levage / elevactión	$\mathbf{P}\ [KW] = \frac{\mathbf{M}\ [Kg] \cdot \mathbf{g}\ [9.81] \cdot \mathbf{v}\ [m/s]}{\mathbf{1000}}$
Rotation / rotazione / drehung / rotation / rotaction	$\mathbf{P}\ [KW] = \frac{\mathbf{M}\ [Nm] \cdot \mathbf{n}\ [rpm]}{\mathbf{9550}}$
Linear movement / traslazione / linearbewegung / translation / translacion	$\mathbf{P}\ [KW] = \frac{\mathbf{F}\ [N] \cdot \mathbf{v}\ [m/s]}{\mathbf{1000}}$

TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

	$\mathbf{M}\ [Nm] = \frac{\mathbf{9550} \cdot \mathbf{P}[KW]}{\mathbf{n}\ [rpm]}$
	$\mathbf{M}\ [lb\ in] = \frac{\mathbf{63030} \cdot \mathbf{P}[HP]}{\mathbf{n}\ [rpm]}$

RADIAL LOADS / CARICHI RADIALI / RADIALE - UND AXIALLASTEN / CHARGES RADIALES / CARGA RADIAL Y AXIAL

- Radial load generated by external transmissions keyed onto input and/or output shafts.
- Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.
- Belastungen der Antriebs- bzw. Abtriebswellen durch von aussen eingebrachte Radiallasten.
- Charge radiale générée par la transmissions calés sur les entrées et / ou des arbres de sortie
- Cargas radiales, generada por transmisiones externas, aplicadas sobre los ejes de entrada y/o salida



$F_R\ [N] = \frac{M\ [Nm] \cdot 2000}{d\ [mm]} \cdot f_K$	$F_R\ [N] = \frac{M\ [lb\ in] \cdot 8.9}{d\ [in]} \cdot f_K$

M	Momento torcente / Output torque / Abtriebsdrehmoment / Couple / Par torsion
d	Diametro primitivo / Diam. of driving element / Durchmesser der Abtriebseinheit / Diamètre primitif / Diámetro primitivo
f_K	Coefficiente di trasformazione / Factor / Faktor / Coefficient de transmission / Coeficiente de transmisión **1.15** Ingranaggi / Gearwheels / Zahnrad / Engrenage / Engranaje **1.25** Catena / Chain sprochets / Antriebskette / Chaîne / Cadena **1.75** Cinghia Trapezoidale / Narrow v-belt pulley / Keilriemen / Courroie trap. / Correa trapezoidal **2.50** Cinghia piatta / Flat-belt pulley / Flachzahnriem. / Courroie crantée / Correa plana

— If your application requires higher radial loads, contact our technical office. Higher load may be possible.
— Nel caso la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.
— Wenn Ihre Anwendung höhere Radialbelastungen erfordert, so wenden Sie sich bitte an unser technischen Büro.
— Si votre application demande des charges radiales supérieures, s'adresser à notre bureau technique.
— En el caso en que una aplicación exija una carga radial superior a la especificada en el catálogo, consultar a nuestra oficinas técnica.

B Output speed / Velocità in uscita / Abtriebsdrehzahl / Vitesse de sortie / Velocidad de salida

Nominal power / Potenza nominale / Max. mögliche Leistung / Poissance nominale / Potencia nominal

Gear size / Grandezza riduttore / Getriebegröße / Taille réducteur / Tamaño reductor

Motor power / Potenza motore / Motorleistung / Puissance moteur / Potencia motor

A Nominal torque / Momento torcente nominale / Nenn Drehmoment / Couple nominal / Par de torsión nominal

Flange code / Codice flangia / Flanschtype / Code bride / Código bridas

Input speed / Velocità in entrata / Eintriebsdrehzahl / Vitesse en entrée / Velocidad de entrada

712C Coaxial - Gear 675Nm

Rating - Cast Iron COAXIAL GEARBOXES

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -D 80	-E 90	-F 100 112	-G 132	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft ø	Ratios code
364.3	**3.84**	9	227	1.5	13.91	350									3317		01
257.5	**5.44**	9	321	1.1	10.11	360									3313		02
233.3	**6.00**	9	354	1.1	9.67	380									3312		03
187.5	**7.47**	9	440	1.0	8.59	420									3310		04
165.1	**8.48**	9	500	1.0	8.64	480									2513		05

C Ratio / Rapporto / Untersetzung / Rapport de réduction / Relación

Transmitted torque / Momento torcente trasmesso / Mögliche Drehmomente / Couple de sortie / Par transmitido

Service factor / Fattore di servizio / Betriebsfaktor / Facteur de service / Factor de servicio

Output shaft diam. / Diam. albero uscita / Durchmesser abtriebswelle / Diametre arbre lent / Diametro eje de salida

Notes / Note / Anmerkungen / Note / Notas

fs

Type of load and starts per hour / Tipo di carico e avviamenti per ora		Oper. hours per day / Ore di funz. giorn. 3 h	10 h	24 h
Continuous or intermittent appl. with start / hour ≤ 10 / Applicazione cont. o interm. con n.ro operazioni/ora	Uniform / Uniforme	0.8	1	1.25
	Moderate / Moderato	1	1.25	1.5
	Heavy / Forte	1.25	1.5	1.75
Intermittent application with start / hour > 10 / Applicazione intermittente con n.ro operazioni/ora	Uniform / Uniforme	1	1.25	1.5
	Moderate / Moderato	1.25	1.5	1.75
	Heavy / Forte	1.5	1.75	2.15

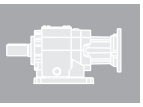
D Motor flange available / Flange disponibili / Erhältliche Motorflansche / Brides disponibles / Bridas disponibles

B) Mounting with reduction ring / Montaggio con boccola di riduzione / Reduzierhülsen / Montage avec douille de réduction / Montaje con casquillo de reducción

C) Motor flangeholes position/terminal box position / Posizione fori flangia/basetta motore / Bohrungsposition am Motorflansch/-sockel / Position trous bride/barrette à bornes moteur / Posición agujeros brida / base motor

B) Available without reduction bushes / Disponibile anche senza boccola / Auch ohne Reduzierbuchse verfügbar / Disponible aussi sans douille de réduction / Disponible tambien sin casquillo

A	Select required torque (according to service factor)	Seleziona la coppia desiderata (comprensiva del fattore di servizio)	Max. Drehmoment in Bezug zum Betriebsfaktor	Sélectionner le couple souhaité (comprenant le facteur de service)	Seleccionar el par deseado (incluyendo el factor de servicio)
B	Select ouput speed	Seleziona la velocità in uscita	Ausgewählte Abtriebsdrehzahl	Sélectionner la vitesse de sortie	Seleccionar la velocidad de salida
C	On the same line of selected geared motor, you can find the gear ratio	Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione	Auf der gleichen Linie wie die ausgewählte Motorleistung steht auch die Getriebeuntersetzung	Sur la ligne correspondante à la motorisation pré-choisie on peut relever le rapport de réduction	En la línea correspondiente al motor preseleccionado es posible encontrar la relación de reducción
D	Select motor flange available (if requested)	Scegli la flangia disponibile (se richiesta)	Erhältliche Motorflansche (auf Anfrage)	Choisir la bride disponible (si elle est demandée)	Seleccionar la brida disponible (sobre pedido)



▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -D 80	-E 90	-F 100 112	-G 132	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft ø	Ratios code
364.3	**3.84**	9	227	1.5	13.91	350	■	■	■	■	■	■	■	■	3317		01
257.5	**5.44**	9	321	1.1	10.11	360	■	■	■	■	■	■	■	■	3313		02
233.3	**6.00**	9	354	1.1	9.67	380	■	■	■	■	■	■	■	■	3312		03
187.5	**7.47**	9	440	1.0	8.59	420	■	■	■	■	■	■	■	■	3310		04
165.1	**8.48**	9	500	1.0	8.64	480	■	■	■	■	■	■	■	■	2513		05
149.6	**9.36**	7.5	444	1.1	8.16	500	■	■	■	■	■	■	■	■	2512	**standard**	06
120.2	**11.65**	7.5	553	1.1	8.00	610	■	■	■	■	■	■	■	■	2510	**ø35**	07
97.3	**14.39**	5.5	504	1.2	6.69	630	■	■	■	■	■	■	■	■	1713		08
88.1	**15.88**	5.5	557	1.2	6.35	660	■	■	■	■	■	■	■	■	1712	ø38	09
70.8	**19.76**	5.5	693	1.0	5.22	675	■	■	■		■	■	■		1710	On request	10
63.4	**22.08**	4	566	1.2	4.67	675	■	■	■		■	■	■		1213		11
57.4	**24.38**	4	625	1.1	4.23	675	■	■	■		■	■	■		1212		12
46.2	**30.33**	3	586	1.2	3.40	675	■	■	■		■	■	■		1210		13
41.2	**34.00**	3	656	1.0	3.03	675	■	■	■		■	■	■		912		14
36.1	**38.81**	2.2	552	1.2	2.66	675	■	■	■		■	■	■		812		15
33.1	**42.31**	2.2	601	1.1	2.44	675	■	■	■		■	■	■		910		16
29.0	**48.30**	2.2	687	1.0	2.13	675	■	■	■		■	■	■		810		17

The dynamic efficiency is **0.96** for all ratios

■ **Motor Flanges Available** Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **712C** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **712C** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **712C** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **712C** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **712C** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
1.50 LT	2.30 LT	1.90 LT	1.70 LT	2.60 LT	2.00 LT	Ask

SHELL Omala S4 WE 320 | **ENI** Telium VSF 320

For all details on lubrication and plugs check our website
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

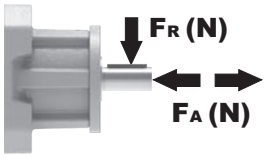
RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{78}{X+38}$$

n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	680	3400	**140**	960	4800	**70**	1300	6500
250	760	3800	**120**	1040	5200	**40**	1460	7300
200	900	4500	**85**	1120	5600	**15**	1800	9000

Input shaft
Albero in entrata

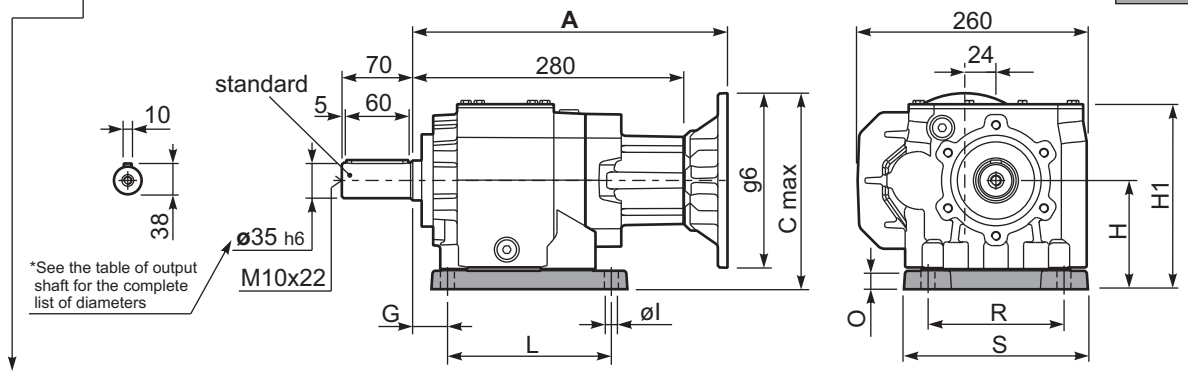


n_1	FA	FR
1400	450	2250
900	500	2500
500	600	3000

tab. 2

P712C**S6**... With feet
Con piedini

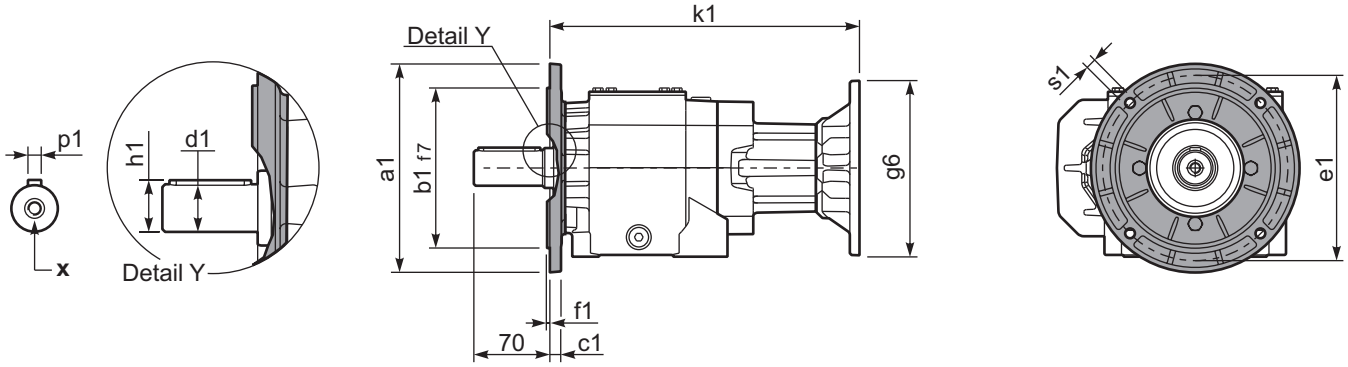
Gearbox weight peso riduttore	With flange **33.3 kg**
	With feet **35.0 kg**



Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	øl	B5 max. Flange	kit code
B4	412/3	19.5	130	180	149.5	220	220	25	14	-	KC71.9.022
S6	67	30	130	150	195	210	220	25	14	-	KC71.9.024

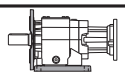
P712C**-F**... Output flanges
flange di uscita



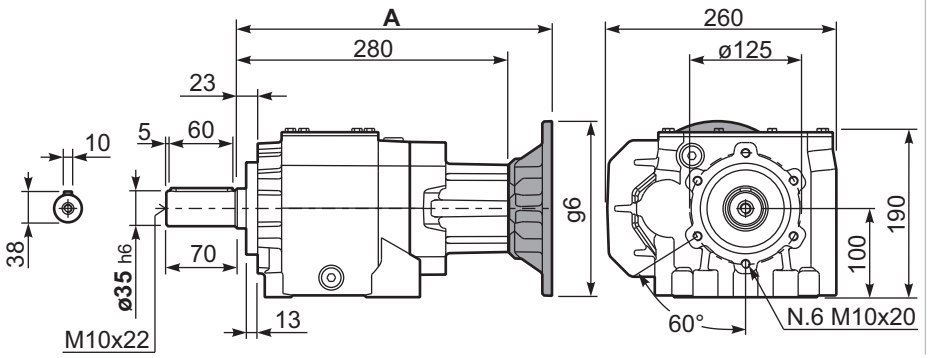
***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 35x70	10	38	M10x22
On request A richiesta	ø 38x70	10	41	M10x25

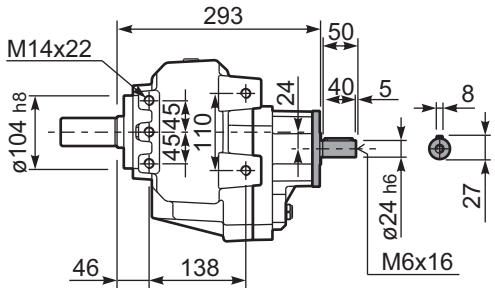
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code	
200	130	11	165	3.5	11	KC71.9.012	 With flange and feet only on request. Ask for compatibility
250	180	13	215	4	14	KC81.9.013	
-	-	-	-	-	-	-	

P712C**-N**... Basic gearbox
Riduttore base

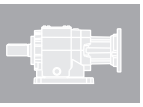


R712C**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
80/90 B5	300.5	230	200	300.5	K023.4.042
100/112 B5	309.5	255	250	309.5	K023.4.043
132 B5	331	280	300	331	KC51.4.043C

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
80 B14	300.5	190	120	300.5	K085.4.046
90 B14	300.5	200	140	300.5	K085.4.045
100/112 B14	309.5	210	160	309.5	K085.4.047
132 B14	331	230	200	331	KC51.4.041C



▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71	-D 80	-E 90	Available B14 motor flanges -Q 71	-R 80	-T 90		Output Shaft ø	Ratios code
22.3	**62.76**	1.5	603	1.1	**1.68**	**675**	B				C	C		191213		01
20.2	**69.28**	1.5	665	1.0	**1.52**	**675**	B				C	C		191212		02
19.2	**72.75**	1.5	698	1.0	**1.45**	**675**	B				C	C		171213		03
17.4	**80.29**	1.5	771	0.9	**1.31**	**675**	B				C	C		171212		04
16.4	**85.39**	1.1	599	1.1	**1.23**	**675**	B				C	C		151213		05
14.9	**94.25**	1.1	661	1.0	**1.12**	**675**	B				C	C		151212	**standard**	06
13.7	**101.92**	1.1	715	0.9	**1.03**	**675**	B				C	C		131213	**ø35**	07
12.4	**112.50**	0.75	541	1.2	**0.94**	**675**	B				C	C		131212		08
11.9	**117.29**	0.75	564	1.2	**0.90**	**675**	B				C	C		151210	ø38	09
10.1	**139.13**	0.75	669	1.0	**0.76**	**675**	B				C	C		101213	On request	10
9.1	**153.56**	0.75	739	0.9	**0.69**	**675**	B				C	C		101212		11
7.7	**181.57**	0.55	644	1.0	**0.58**	**675**	B				C	C		91213		12
7.0	**200.42**	0.55	711	0.9	**0.53**	**675**	B				C	C		91212		13
5.6	**249.41**	0.37	592	1.1	**0.42**	**675**	B				C	C		91210		14
4.3	**329.33**	0.37	781	0.9	**0.32**	**675**	B				C	C		71210		15

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **713C** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **713C** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **713C** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **713C** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **713C** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
1.60 LT	2.20 LT	1.80 LT	1.70 LT	2.80 LT	1.90 LT	Ask

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Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

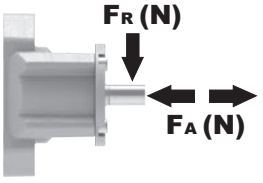
RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{78}{X+38}$$

n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	680	3400	**140**	960	4800	**70**	1300	6500
250	760	3800	**120**	1040	5200	**40**	1460	7300
200	900	4500	**85**	1120	5600	**15**	1800	9000

Input shaft
Albero in entrata

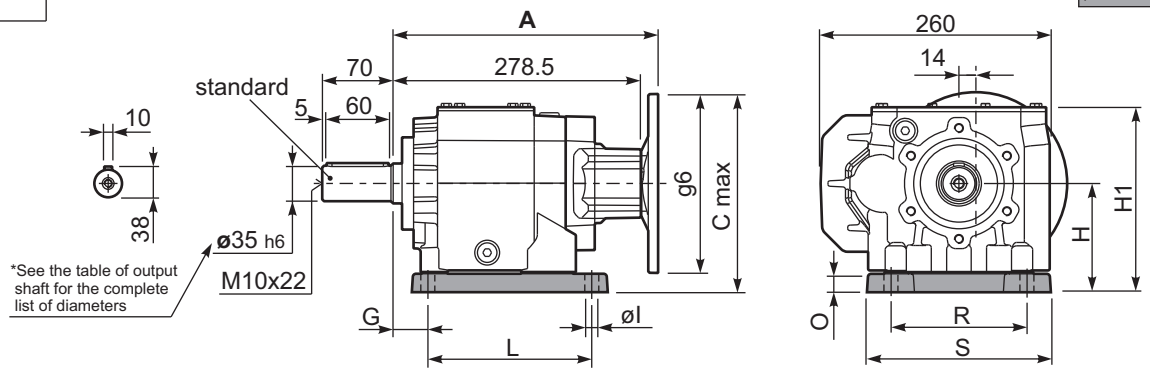


n_1	FA	FR
1400	400	2000
900	440	2200
500	440	2200

tab. 2

P713C**S6**... With feet
Con piedini

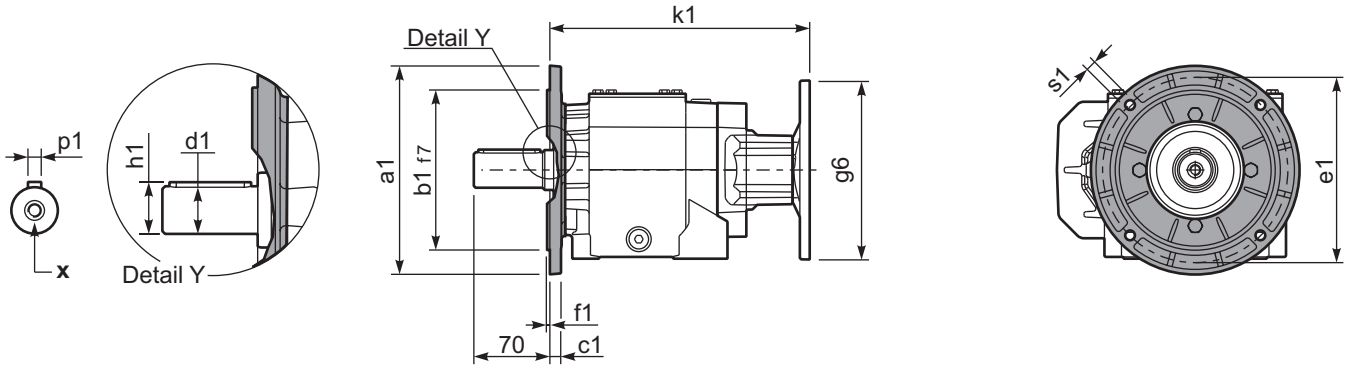
Gearbox weight peso riduttore	
With flange	**34.5 kg**
With feet	**36.2 kg**



Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	øl	B5 max. Flange	kit code
B4	412/3	19.5	130	180	149.5	220	220	25	14	-	KC71.9.022
S6	67	30	130	150	195	210	220	25	14	-	KC71.9.024

P713C**-F**... Output flanges
flange di uscita

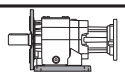


***Available output shaft** / Albero di uscita

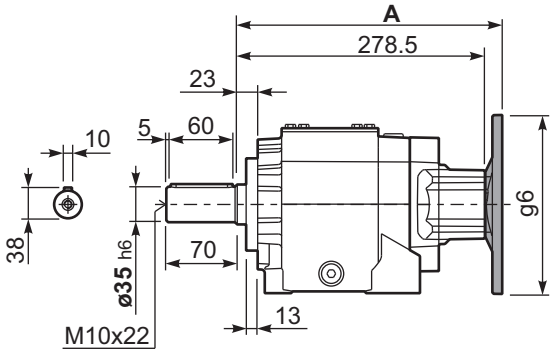
	Shaft - d1	p1	h1	x
Standard	ø 35x70	10	38	M10x22
On request A richiesta	ø 38x70	10	41	M10x25

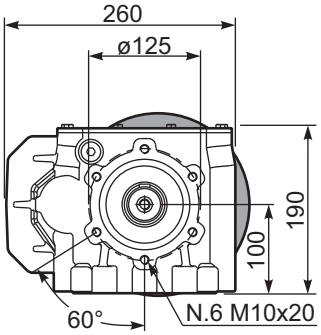
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
200	130	11	165	3.5	11	KC71.9.012
250	180	13	215	4	14	KC81.9.013
-	-	-	-	-	-	-

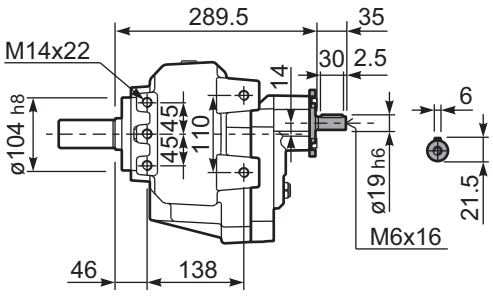

With flange and feet only on request. Ask for compatibility

P713C**-N**... Basic gearbox
Riduttore base



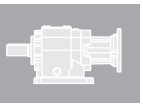


R713C**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
63 B5	299	200	140	299	K063.4.041
71 B5	297	210	160	297	K063.4.042
80/90 B5	299	230	200	299	K063.4.043

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
71 B14	297	182.5	105	297	K063.4.047
80 B14	299	190	120	299	K063.4.046
90 B14	299	200	140	299	K063.4.041



▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -D 80	-E 90	-F 100 112	-G 132	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft ø	Ratios code
364.3	**3.84**	9	227	2.2	19.47	490									3317		01
257.5	**5.44**	9	321	1.6	14.61	520									3313		02
233.3	**6.00**	9	354	1.6	14.00	550									3312		03
187.5	**7.47**	9	440	1.4	12.27	600									3310		04
165.1	**8.48**	9	500	1.3	11.43	635									2513		05
149.6	**9.36**	9	552	1.2	10.44	640									2512	**standard**	06
120.2	**11.65**	9	687	1.0	8.65	660									2510	**ø40**	07
97.3	**14.39**	7.5	683	1.1	7.64	720									1713		08
88.1	**15.88**	7.5	754	1.0	7.21	750									1712	ø45	09
70.8	**19.76**	7.5	938	0.9	6.34	820									1710	On request	10
63.4	**22.08**	5.5	774	1.1	5.98	865									1213		11
57.4	**24.38**	5.5	854	1.0	5.42	865									1212		12
46.2	**30.33**	4	778	1.1	4.35	865									1210		13
41.2	**34.00**	4	872	1.0	3.88	865									912		14
36.1	**38.81**	3	749	1.1	3.33	846									812		15
33.1	**42.31**	3	817	1.1	3.12	865									910		16
29.0	**48.30**	3	932	0.9	2.73	865									810		17

The dynamic efficiency is **0.96** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **812C** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **812C** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **812C** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **812C** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **812C** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
1.50 LT	2.30 LT	1.90 LT	1.70 LT	2.60 LT	2.00 LT	Ask

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For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

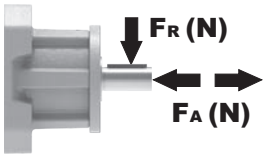
$$Feq = FR \cdot \frac{78}{X+38}$$

n_2	FA	FR
300	1300	6500
250	1420	7100
200	1600	8000

n_2	FA	FR
140	1780	8900
120	1900	9500
85	2040	10200

n_2	FA	FR
70	2200	11000
40	2360	11800
15	2400	12000

Input shaft
Albero in entrata

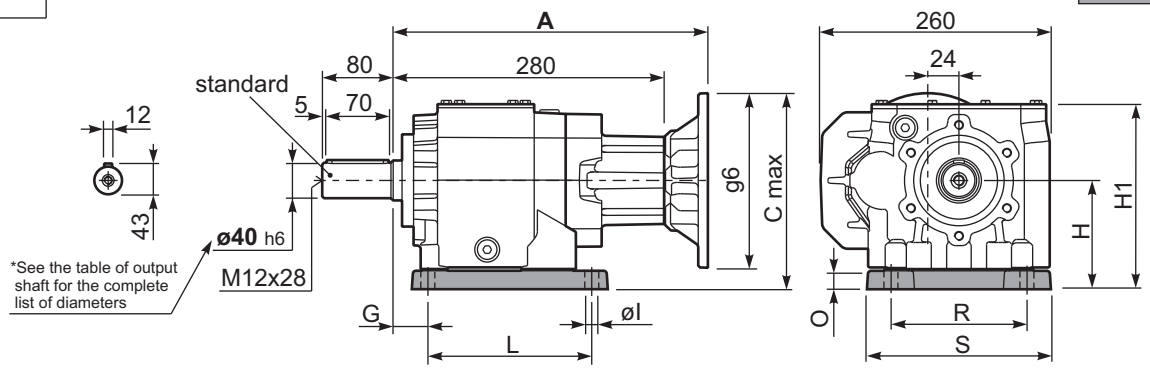


n_1	FA	FR
1400	450	2250
900	500	2500
500	600	3000

tab. 2

P812C**S7**... With feet
Con piedini

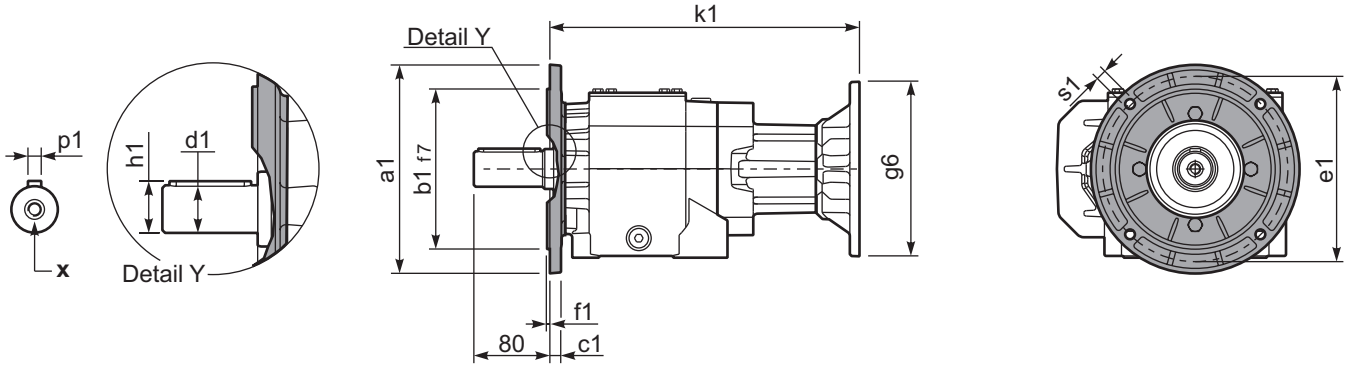
Gearbox weight peso riduttore	With flange **33.7 kg**
	With feet **39.2 kg**



Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	øI	B5 max. Flange	kit code
B5	512/3	25	155	225	156	270	245.5	30	18	-	KC81.9.022
S7	77	35	140	170	205	230	230.5	30	17.5	-	KC81.9.024

P812C**-F**... Output flanges
flange di uscita

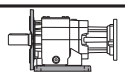


***Available output shaft** / Albero di uscita

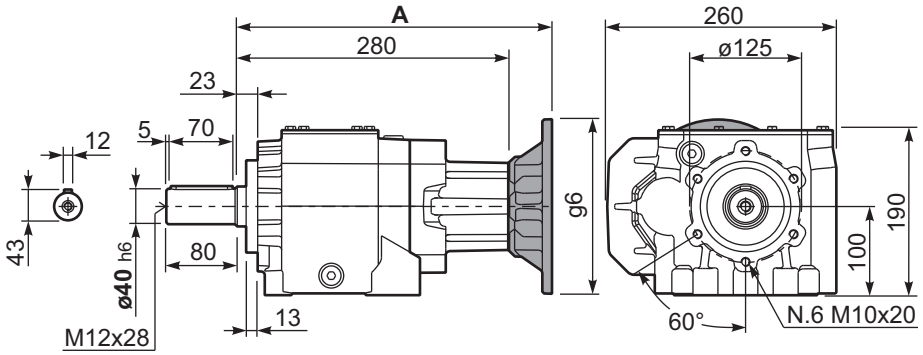
	Shaft - d1	p1	h1	x
Standard	ø 40x80	12	43	M12x28
On request A richiesta	ø 45x90	14	48.5	M14x34

Available output flanges / flange di uscita

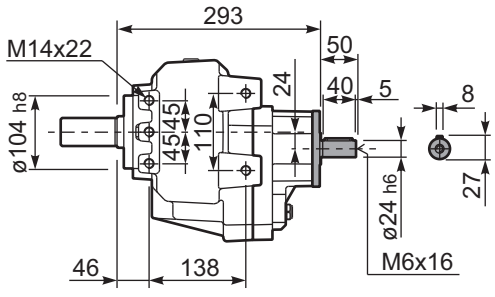
a1 ø	b1	c1	e1	f1	s1	kit code
250	180	13	215	4	14	KC81.9.013
300	230	16	265	4	14	KC81.9.014
-	-	-	-	-	-	-


With flange and feet only on request. Ask for compatibility

P812C**-N**... Basic gearbox
Riduttore base



R812C**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
80/90 B5	300.5	255	200	300.5	K023.4.042
100/112 B5	309.5	280	250	309.5	K023.4.043
132 B5	331	305	300	331	KC51.4.043C

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
80 B14	300.5	215	120	300.5	K085.4.046
90 B14	300.5	225	140	300.5	K085.4.045
100/112 B14	309.5	235	160	309.5	K085.4.047
132 B14	331	255	200	331	KC51.4.041C

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -B 63	-C 71	-D 80	-E 90	-F 100 112	Available B14 motor flanges -Q 71	-R 80	-T 90	-U 100 112		Output Shaft ø	Ratios code
22.3	**62.76**	2.2	874	1.0	**2.15**	**865**	B					C	C			191213		01
20.2	**69.28**	2.2	965	0.9	**1.95**	**865**	B					C	C			191212		02
19.2	**72.75**	1.5	698	1.2	**1.85**	**865**	B					C	C			171213		03
17.4	**80.29**	1.5	771	1.1	**1.68**	**865**	B					C	C			171212		04
16.4	**85.39**	1.5	820	1.1	**1.58**	**865**	B					C	C			151213		05
14.9	**94.25**	1.5	905	1.0	**1.43**	**865**	B					C	C			151212		06
13.7	**101.92**	1.1	715	1.2	**1.32**	**865**	B					C	C			131213	**standard ø40**	07
12.4	**112.50**	1.1	789	1.1	**1.20**	**865**	B					C	C			131212		08
11.9	**117.29**	1.1	822	1.1	**1.15**	**865**	B					C	C			151210		09
10.1	**139.13**	1.1	976	0.9	**0.97**	**865**	B					C	C			101213	ø45 On request	10
9.1	**153.56**	0.75	739	1.2	**0.88**	**865**	B					C	C			101212		11
7.7	**181.57**	0.75	873	1.0	**0.74**	**865**	B					C	C			91213		12
7.0	**200.42**	0.55	711	1.2	**0.67**	**865**	B					C	C			91212		13
5.6	**249.41**	0.55	885	1.0	**0.54**	**865**	B					C	C			91210		14
4.3	**329.33**	0.37	781	1.1	**0.41**	**865**	B					C	C			71210		15

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **813C** is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore **813C** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.
Vedi tab.1 per oli e quantità consigliati.
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

D Das Getriebe **813C** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur **813C** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

E El reductor tamaño **813C** se suministra, lubricado de por vida con aceite sintético y no requiren mantenimiento alguna.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
1.60 LT	2.20 LT	1.80 LT	1.70 LT	2.80 LT	1.90 LT	Ask

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For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

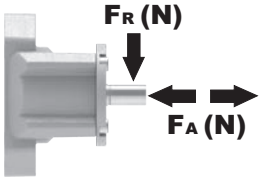
RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{78}{X+38}$$

n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	1300	6500	**140**	1780	8900	**70**	2200	11000
250	1420	7100	**120**	1900	9500	**40**	2360	11800
200	1600	8000	**85**	2040	10200	**15**	2400	12000

Input shaft
Albero in entrata

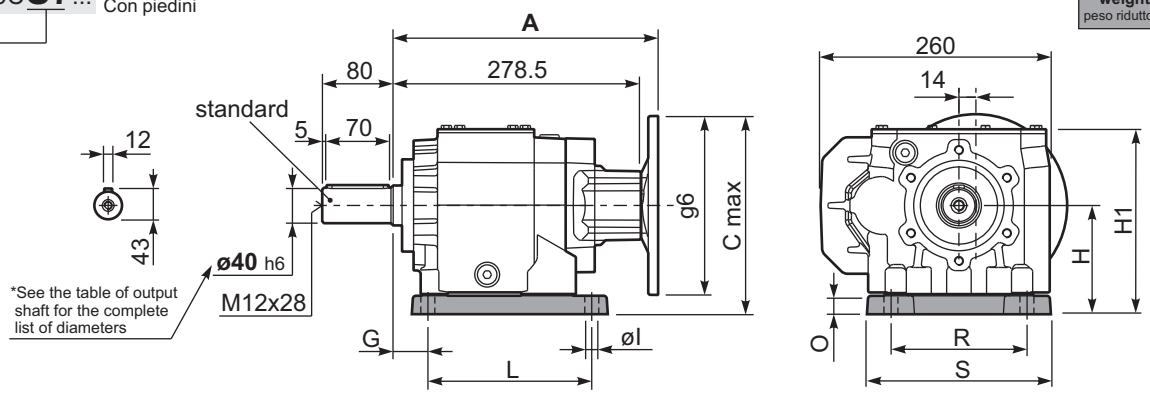


n_1	FA	FR
1400	400	2000
900	440	2200
500	440	2200

tab. 2

P813C**S7**... With feet
Con piedini

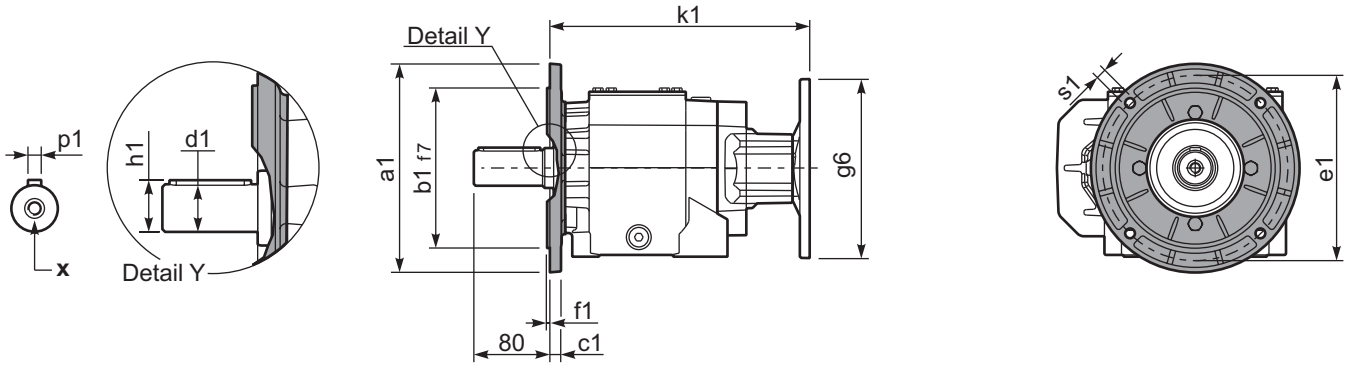
Gearbox weight peso riduttore: With flange **34.8 kg**, With feet **40.3 kg**



Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	øl	B5 max. Flange	kit code
B5	512/3	25	155	225	156	270	245.5	30	18	-	KC81.9.022
S7	77	35	140	170	205	230	230.5	30	17.5	-	KC81.9.024

P813C**-F**... Output flanges
flange di uscita



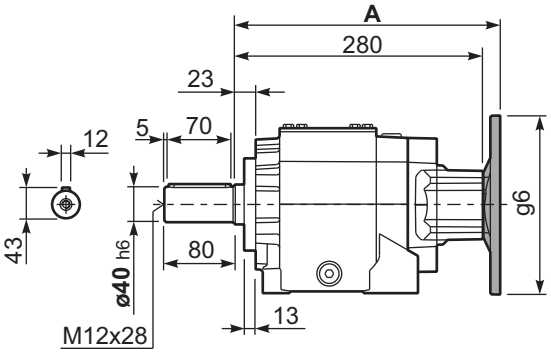
***Available output shaft** / Albero di uscita

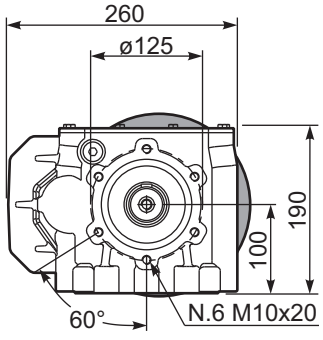
	Shaft - d1	p1	h1	x
Standard	ø 40x80	12	43	M12x28
On request A richiesta	ø 45x90	14	48.5	M14x34

Available output flanges / flange di uscita

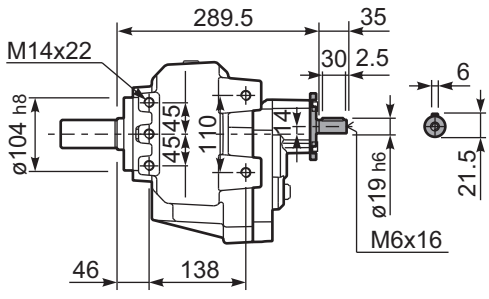
a1 ø	b1	c1	e1	f1	s1	kit code	
250	180	13	215	4	14	KC81.9.013	With flange and feet only on request. Ask for compatibility
300	230	16	265	4	14	KC81.9.014	
-	-	-	-	-	-	-	

P813C**-N**... Basic gearbox
Riduttore base





R813C**-N**... Input Shaft
Albero in entrata



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
63 B5	299	225	140	299	K063.4.041
71 B5	297	235	160	297	K063.4.042
80/90 B5	299	255	200	299	K063.4.043
100/112 B5	314	280	250	314	KC40.4.043

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
71 B14	297	207.5	105	297	K063.4.047
80 B14	299	215	120	299	K063.4.046
90 B14	299	225	140	299	K063.4.041
100/112 B14	314	235	160	314	KC40.4.041

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges -F (100 112)	B5 -G (132)	B5 -H (160)	B5 -I (180)	B14 motor flanges -U (100 112)	B14 -V (132)		Output Shaft	Ratios code
317	**4.42**	22	611	1.1	**24.2**	**700**	■	■	■		■	■	3015		01
264	**5.30**	22	733	1.0	**20.2**	**700**	■	■	■		■	■	3013		02
219	**6.38**	18.5	742	1.1	**19.1**	**800**	■	■	■		■	■	3011		03
168	**8.33**	15	784	1.0	**14.7**	**800**	■	■	■		■	■	2015		04
140	**9.99**	15	940	1.0	**13.8**	**900**	■	■	■		■	■	2013	**standard**	05
124	**11.26**	15	1060	1.0	**14.9**	**1100**	■	■	■		■	■	1615	**ø50**	06
116	**12.03**	15	1132	1.1	**15.2**	**1200**	■	■	■		■	■	2011		07
104	**13.50**	15	1271	1.1	**15.8**	**1400**	■	■	■		■	■	1613	ø60	08
96	**14.65**	15	1378	1.1	**15.6**	**1500**	■	■	■		■	■	1315	On request	09
86	**16.26**	15	1531	1.0	**14.1**	**1500**	■	■	■		■	■	1611		10
80	**17.56**	11	1214	1.2	**13.0**	**1500**	■	■	■		■	■	1313		11
65	**21.50**	11	1486	1.1	**11.4**	**1600**	■	■	■		■	■	1113		12
54	**25.88**	9	1526	1.0	**9.4**	**1600**	■	■	■		■	■	1111		13
45.0	**31.09**	7.5	1475	1.0	**7.2**	**1460**	■	■			■	■	813		14
37.4	**37.43**	5.5	1312	1.2	**6.5**	**1600**	■	■			■	■	811		15

The dynamic efficiency is **0.96** for all ratios

■ **Motor Flanges Available** Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

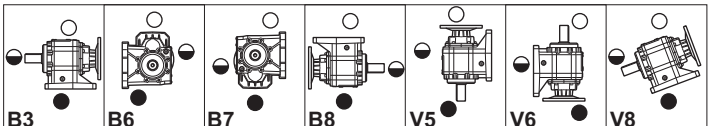
EN Unit **862C** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore tipo **862C** è fornito privo di lubrificazione con tappi di sfiato, livello e scarico olio. L'utente può immettere olio minerale mantenendo i tappi esistenti.
Se immetterà olio sintetico, dovrà sostituire i tappi esistenti con altri tipo chiuso.
Tab.1 per oli e quantità consigliati.
Tab.2 carichi radiali e assiali applicabili al riduttore.

D Das Getriebe der Baugröße **862C** wird ohne Schmiermittel geliefert. Es ist jedoch mit Einfüllschraube, Überdruckventil und Ablaßschraube ausgerüstet. Das benötigte mineralische Öl kann über die Einfüllschraube eingefüllt werden.
Sollte synthetisches Öl bevorzugt werden, so ist sind das eingebaute Überdruckventil durch eine geschlossenen Schraube zu ersetzen.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur de type **862C** est fourni sans lubrification et avec un bouchon de remplissage, de niveau et d'évacuation de l'huile. L'utilisateur peut y verser de l'huile minérale en conservant les bouchons existants. S'il y versera de l'huile synthétique, il devra substituer les bouchons existants avec d'autres bouchons de type fermé.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Voir tableau 2 concernant les charges radiales et axiales applicables au réducteur

E El reductor tamaño **862C** se suministra sin lubricante, provisto de tapones de respiración, nivel y descarga de aceite. El usuario puede utilizar aceite mineral, manteniendo los tapones existentes. Si prefiere utilizar aceite sintético deberá sustituir los tapones existentes por tapones ciegos. La prerreducción se suministra con tapones ciegos, lubricado de por vida con aceite sintético.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.



B3	B6	B7	B8	V5	V6	V8
3.10 LT	4.50 LT	2.50 LT	3.10 LT	4.90 LT	4.20 LT	Ask

SHELL Omala S2 GX 460	**ENI** Blasia 460

For all details on lubrication and plugs check our website
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

RADIAL AND AXIAL LOADS

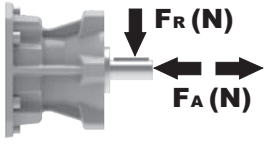
Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{88.5}{X+38.5}$$

n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	1800	9000	**140**	2400	12000	**70**	3000	15000
250	2000	10000	**120**	2600	13000	**40**	3200	16000
200	2200	11000	**85**	2800	14000	**15**	4000	20000

On request reinforced bearings to increase loads.
A richiesta cuscinetti rinforzati per aumentare i carichi.

Input shaft
Albero in entrata

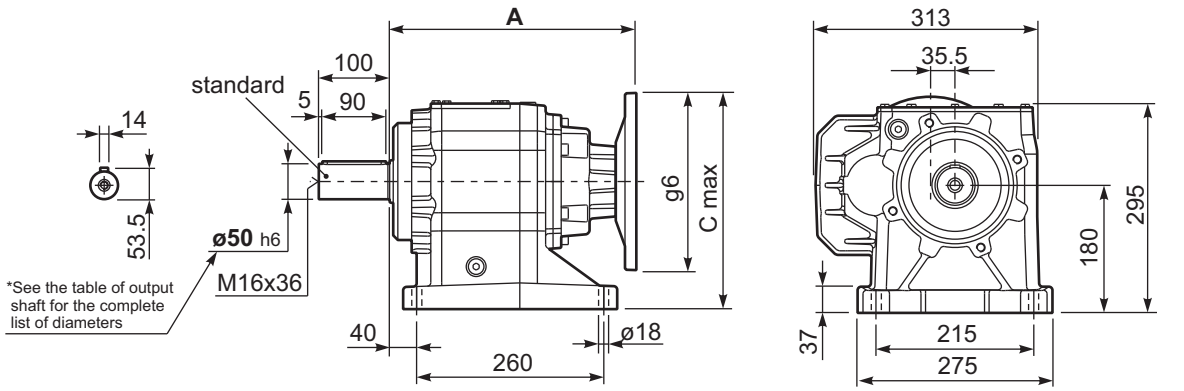


n_1	FA	FR
1400	700	3500
900	840	4200
500	900	4500

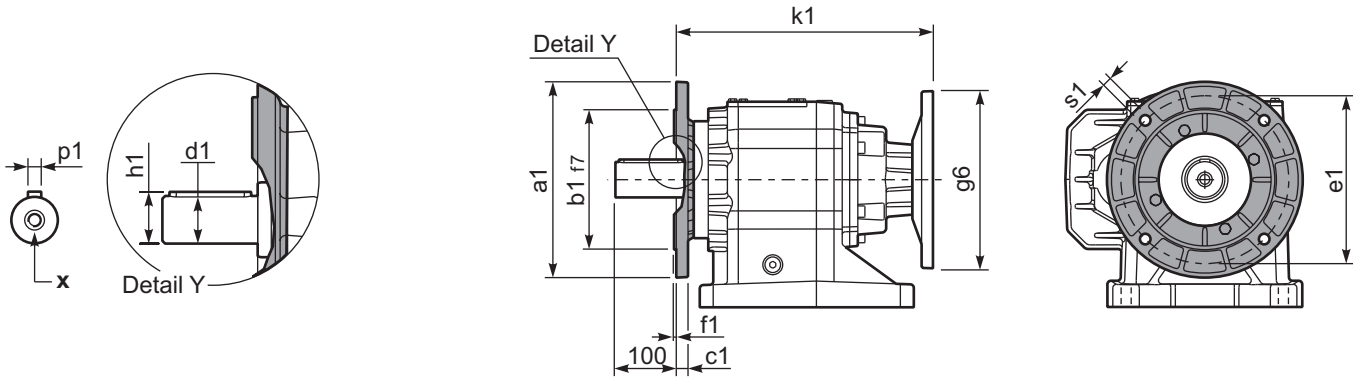
tab. 2

P862C**S8**... With foot / Con piedino

Gearbox weight / peso riduttore — With flange **84.0 kg** / With feet **74.5 kg**



P862C-**F**... Output flanges / flange di uscita



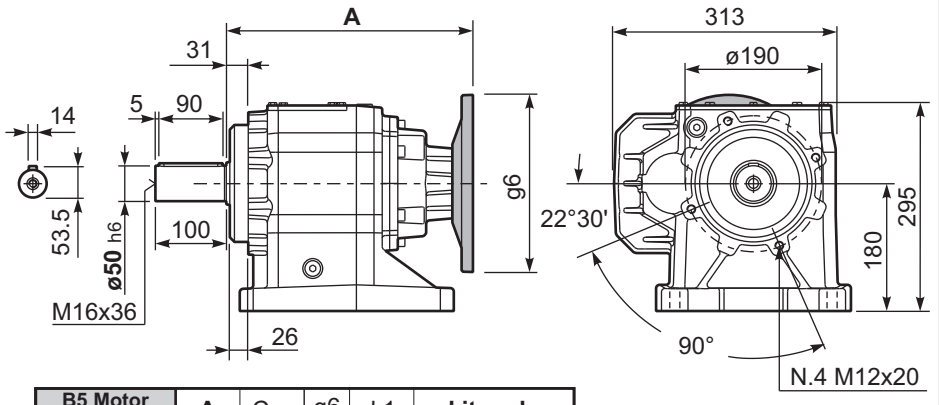
***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 50x100	14	53.5	M16x36
On request A richiesta	ø 60x120 -	18 -	64 -	M20x42 -

Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code	
300	230	21	265	4	14	KC90.9.014	 All flanges are compatible with the foot
350	250	21	300	5	18	KC90.9.015	
-	-	-	-	-	-	-	

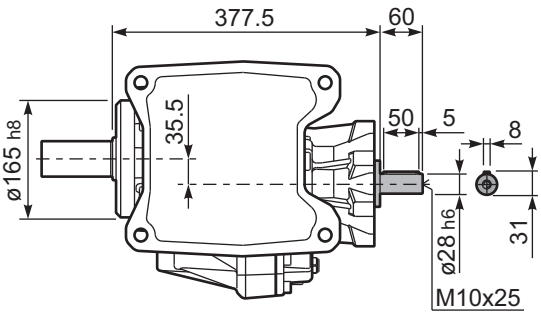
P862C**S8**... Basic gearbox / Riduttore base



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
100/112 B5	348.5	305	250	348.5	K023.4.043
132 B5	370	330	300	370	KC51.4.043C
160/180 B5	402	355	350	402	KC86.4.0.43

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
100/112 B14	348.5	260	160	348.5	K085.4.047
132 B14	370	280	200	370	KC51.4.041C
-	-	-	-	-	-

R862C**S8**... Input Shaft / Albero in entrata



▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -C 71	-D 80	-E 90	-F 100 112	-G 132	Available B14 motor flanges -R 80	-T 90	-U 100 112	-V 132		Output Shaft ø	Ratios code
32.5	**43.03**	5.5	1478	1.1	**5.8**	**1600**	B									201313		01
28.9	**48.52**	5.5	1667	0.9	**5.0**	**1550**	B									161315		02
27.0	**51.81**	4	1302	1.2	**4.8**	**1600**	B									201311		03
24.1	**58.17**	4	1462	1.1	**4.3**	**1600**	B									161313		04
22.2	**63.09**	4	1585	1.0	**3.8**	**1550**	B									131315	**standard ø50**	05
20.0	**70.05**	4	1760	1.0	**4.0**	**1800**	B									161311		06
18.5	**75.65**	4	1901	0.9	**3.7**	**1800**	B									131313	ø60	07
15.4	**91.09**	3	1723	1.0	**3.1**	**1800**	B									131311	On request	08
12.6	**111.50**	2.2	1553	1.2	**2.5**	**1800**	B									111311		09
10.5	**133.91**	2.2	1865	1.0	**2.1**	**1800**	B									81313		10
8.7	**161.24**	1.5	1548	1.2	**1.7**	**1800**	B									81311		11
7.6	**184.40**	1.1	1293	1.1	**1.2**	**1450**	B									61313		12
6.3	**222.04**	1.1	1557	1.1	**1.2**	**1750**	B									61311		13

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

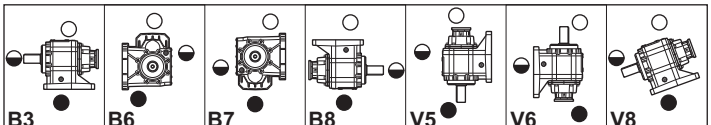
EN Unit **863C** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore tipo **863C** è fornito privo di lubrificazione con tappi di sfiato, livello e scarico olio. L'utente può immettere olio minerale mantenendo i tappi esistenti.
Se immetterà olio sintetico, dovrà sostituire i tappi esistenti con altri tipo chiuso.
Tab.1 per oli e quantità consigliati.
Tab.2 carichi radiali e assiali applicabili al riduttore.

D Das Getriebe der Baugröße **863C** wird ohne Schmiermittel geliefert. Es ist jedoch mit Einfüllschraube, Überdruckventil und Ablaßschraube ausgerüstet. Das benötigte mineralische Öl kann über die Einfüllschraube eingefüllt werden.
Sollte synthetisches Öl bevorzugt werden, so ist sind das eingebaute Überdruckventil durch eine geschlossenen Schraube zu ersetzen.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur de type **863C** est fourni sans lubrification et avec un bouchon de remplissage, de niveau et d'évacuation de l'huile. L'utilisateur peut y verser de l'huile minérale en conservant les bouchons existants. S'il y versera de l'huile synthétique, il devra substituer les bouchons existants avec d'autres bouchons de type fermé.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Voir tableau 2 concernant les charges radiales et axiales applicables au réducteur

E El reductor tamaño **863C** se suministra sin lubricante, provisto de tapones de respiración, nivel y descarga de aceite. El usuario puede utilizar aceite mineral, manteniendo los tapones existentes.
Si prefiere utilizar aceite sintético deberá sustituir los tapones existentes por tapones ciegos. La prerreducción se suministra con tapones ciegos, lubricado de por vida con aceite sintético.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.



B3	B6	B7	B8	V5	V6	V8
3.10 LT	4.60 LT	2.60 LT	3.10 LT	5.60 LT	4.30 LT	Ask

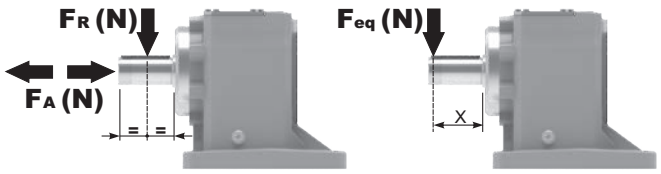
SHELL Omala S2 GX 460	**ENI** Blasia 460

For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

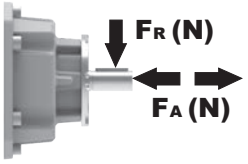
$$Feq = FR \cdot \frac{88.5}{X+38.5}$$



n_2	FA	FR
300	1800	9000
250	2000	10000
200	2200	11000
140	2400	12000
120	2600	13000
85	2800	14000
70	3000	15000
40	3200	16000
15	4000	20000

On request reinforced bearings to increase loads.
A richiesta cuscinetti rinforzati per aumentare i carichi.

Input shaft
Albero in entrata

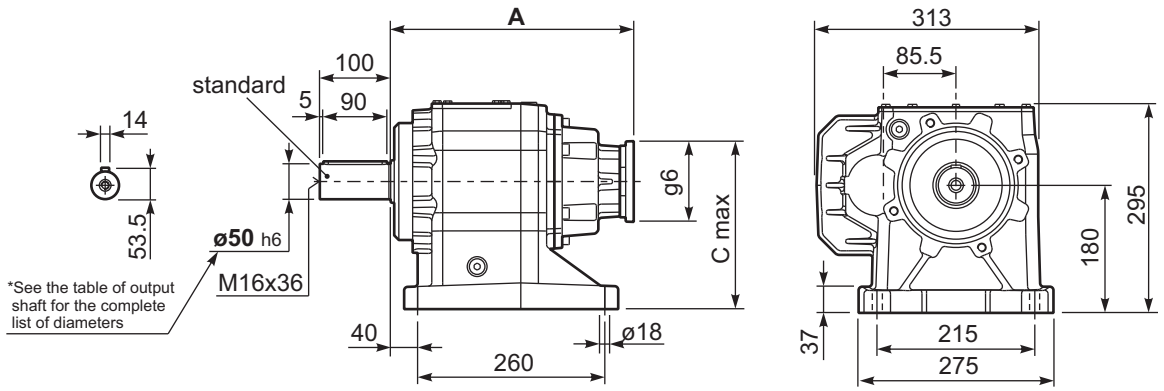


n_1	FA	FR
1400	450	2250
900	500	2500
500	600	3000

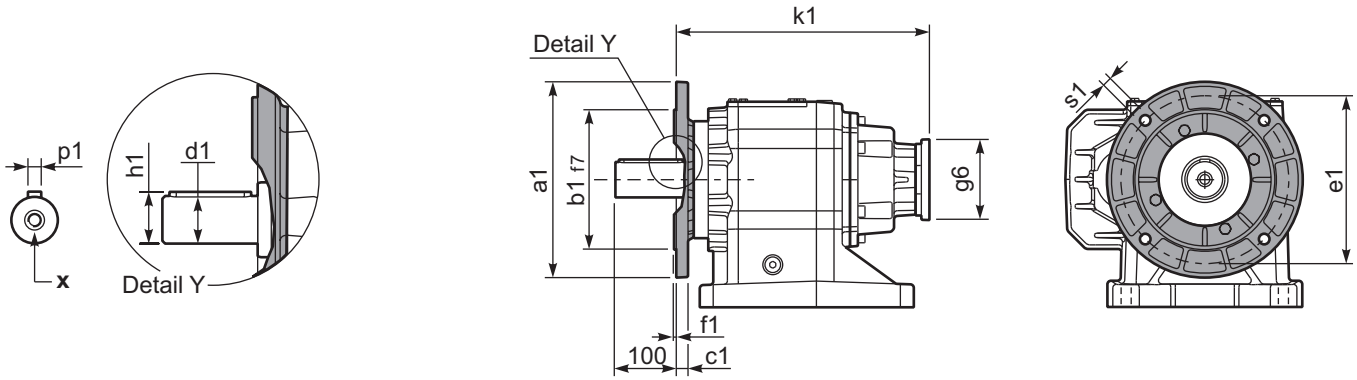
tab. 2

P863C S8... With foot
Con piedino

Gearbox weight peso riduttore		
	With flange	**78.5 kg**
	With feet	**69.0 kg**



P863C-F... Output flanges
flange di uscita



***Available output shaft** / Albero di uscita

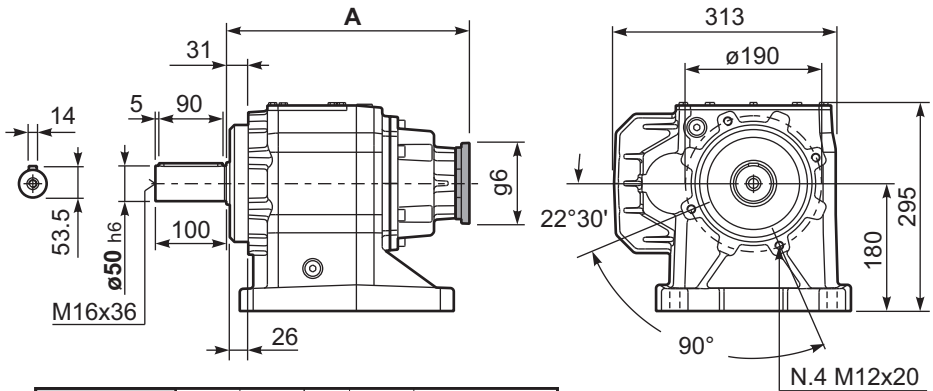
	Shaft - d1	p1	h1	x
Standard	ø 50x100	14	53.5	M16x36
On request A richiesta	ø 60x120	18	64	M20x42

Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
300	230	21	265	4	14	KC90.9.014
350	250	21	300	5	18	KC90.9.015
-	-	-	-	-	-	-


All flanges are compatible with the foot

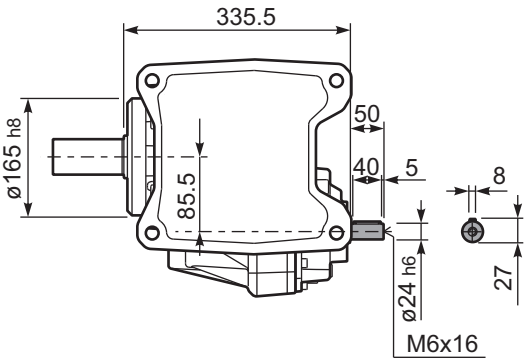
P863C S8... Basic gearbox
Riduttore base

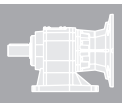


B5 Motor Flanges	A	C_{max}	g6	k1	kit code
71 B5	342	260	160	342	K023.4.041
80/90 B5	344	280	200	344	K023.4.042
100/112 B5	353	305	250	353	K023.4.043
132 B5	374	330	300	374	KC51.4.043

B14 Motor Flanges	A	C_{max}	g6	k1	kit code
80 B14	344	240	120	344	K085.4.046
90 B14	344	250	140	344	K085.4.045
100/112 B14	353	260	160	353	K085.4.047
132 B14	374	280	200	374	KC51.4.041

R863C S8... Input Shaft
Albero in entrata





▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges -G 132	-H 160	-I 180	-L 200	B14 motor flanges - - - -					Output Shaft ø	Ratios code
294	**4.75**	30	895	1.8	**53.0**	**1650**									3914		01
269	**5.21**	30	980	1.8	**51.3**	**1750**									3913		02
220	**6.36**	30	1197	1.6	**45.6**	**1900**									3911		03
188	**7.45**	30	1401	1.5	**43.1**	**2100**									3014		04
172	**8.15**	30	1535	1.4	**39.3**	**2100**									3013		05
141	**9.96**	30	1874	1.2	**33.7**	**2200**									3011		06
120	**11.69**	30	2200	1.0	**30.1**	**2300**									2214		07
109	**12.80**	30	2409	1.0	**27.4**	**2300**									2213		08
90	**15.63**	22	2161	1.1	**23.5**	**2400**					**not available**				2211	**standard ø60**	09
79	**17.65**	22	2441	1.1	**22.5**	**2600**									1614		10
72	**19.33**	22	2673	1.1	**22.9**	**2900**									1613		11
67	**20.77**	22	2872	1.0	**21.3**	**2900**									1414		12
62	**22.75**	18.5	2643	1.1	**19.5**	**2900**									1413		13
59	**23.60**	18.5	2743	1.1	**18.8**	**2900**									1611		14
50	**27.78**	15	2615	1.1	**15.9**	**2900**									1411		15
45.5	**30.76**	15	2896	1.0	**14.4**	**2900**									1014		16
41.6	**33.69**	11	2330	1.2	**13.1**	**2900**									1013		17
34.0	**41.15**	11	2845	1.0	**10.8**	**2900**									1011		18

The dynamic efficiency is **0.96** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

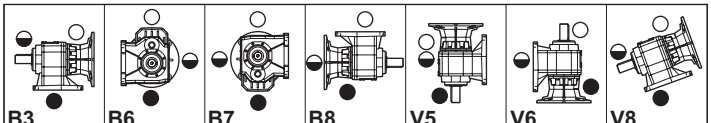
EN Unit **1002** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore tipo **1002** è fornito privo di lubrificazione con tappi di sfiato, livello e scarico olio. L'utente può immettere olio minerale mantenendo i tappi esistenti.
Se immetterà olio sintetico, dovrà sostituire i tappi esistenti con altri tipo chiuso.
Tab.1 per oli e quantità consigliati.
Tab.2 carichi radiali e assiali applicabili al riduttore.

D Das Getriebe der Baugröße **1002** wird ohne Schmiermittel geliefert. Es ist jedoch mit Einfüllschraube, Überdruckventil und Ablaßschraube ausgerüstet. Das benötigte mineralische Öl kann über die Einfüllschraube eingefüllt werden.
Sollte synthetisches Öl bevorzugt werden, so ist sind das eingebaute Überdruckventil durch eine geschlossenen Schraube zu ersetzen.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur de type **1002** est fourni sans lubrification et avec un bouchon de remplissage, de niveau et d'évacuation de l'huile. L'utilisateur peut y verser de l'huile minérale en conservant les bouchons existants. S'il y versera de l'huile synthétique, il devra substituer les bouchons existants avec d'autres bouchons de type fermé.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Voir tableau 2 concernant les charges radiales et axiales applicables au réducteur

E El reductor tamaño **1002** se suministra sin lubricante, provisto de tapones de respiración, nivel y descarga de aceite. El usuario puede utilizar aceite mineral, manteniendo los tapones existentes. Si prefiere utilizar aceite sintético deberá sustituir los tapones existentes por tapones ciegos. La prerreducción se suministra con tapones ciegos, lubricado de por vida con aceite sintético.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.



B3	B6	B7	B8	V5	V6	V8
4.50 LT	8.00 LT	5.50 LT	6.00 LT	10.00 LT	7.50 LT	Ask

SHELL Omala S2 GX 460 | **ENI** Blasia 460

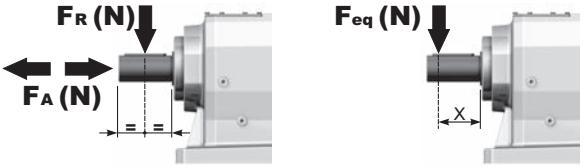
For all details on lubrication and plugs check our website
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

RADIAL AND AXIAL LOADS

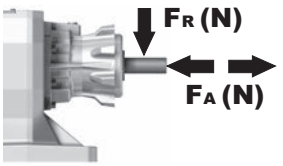
Output shaft
Albero di uscita

$$Feq = F_R \cdot \frac{117}{X+57}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2300	11500	**140**	2980	14900	**70**	3660	18300
250	2480	12400	**120**	3180	15900	**40**	4220	21100
200	2680	13400	**85**	3440	17200	**15**	4820	24100

Input shaft
Albero in entrata

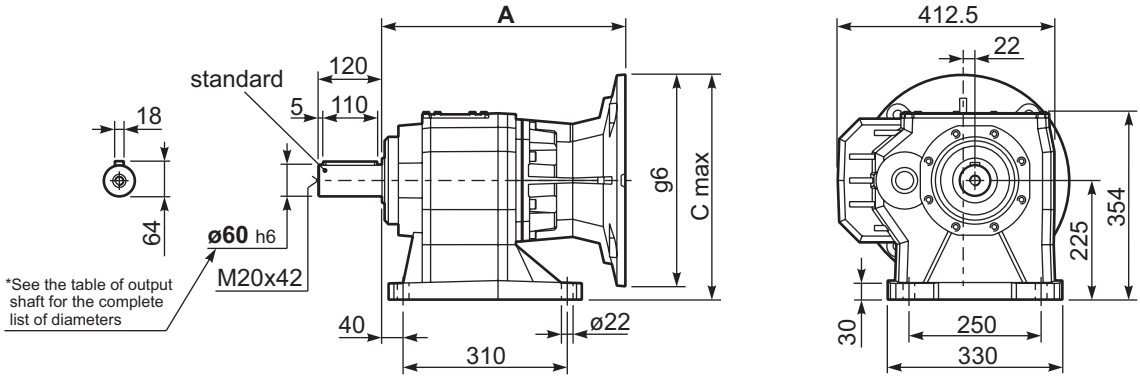


n_1	FA	FR
1400	1120	5600
900	1220	6100
500	1300	6500

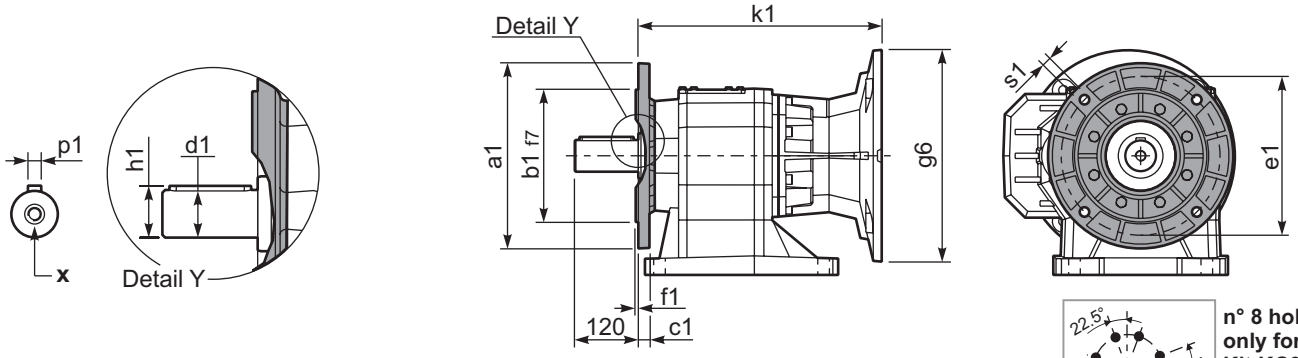
tab. 2

P1002**S9**... With foot
Con piedino

Gearbox weight peso riduttore	120.0 kg



P1002-**F**... Output flanges
flange di uscita



n° 8 holes only for Kit KC909016
Solo per il kit KC909016

***Available output shaft** / Albero di uscita

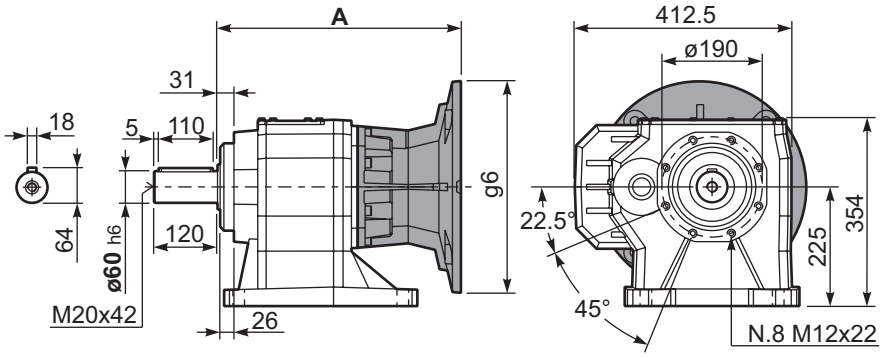
	Shaft - d1	p1	h1	x
Standard	ø 60x120	18	64	M20x42
On request A richiesta	-	-	-	-

Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
300	230	21	265	4	14	KC90.9.014
350	250	21	300	5	18	KC90.9.015
450	350	22	400	5	18	KC90.9.016

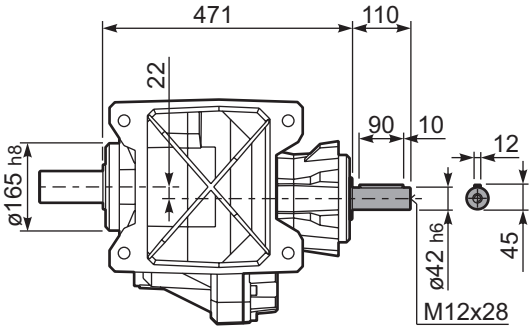
All flanges are compatible with the foot

P1002**S9**... Basic gearbox
Riduttore base



B5 Motor Flanges	A	C_{max}	g6	k1	kit code
132 B5	435	375	300	435	KC110.9.052
160 B5	460	400	350	460	KC110.9.053
180 B5	460	400	350	460	KC110.9.053_B
200 B5	460	425	400	460	KC110.9.054

R1002**S9**... Input Shaft
Albero in entrata



▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges -F 100 112	B5 motor flanges -G 132	B5 motor flanges -H 160	B14 motor flanges -U 100 112	B14 motor flanges -V 132		Output Shaft ø	Ratios code
38.8	**36.11**	11	2447	1.2	**12.5**	**2900**						301411		01
27.5	**50.89**	9	2941	1.0	**9.2**	**3000**						201414		02
25.1	**55.73**	7.5	2591	1.2	**8.4**	**3000**						201413		03
20.3	**68.80**	7.5	3199	0.9	**6.8**	**3000**						161414		04
18.6	**75.35**	5.5	2589	1.2	**6.2**	**3000**						161413		05
15.6	**89.47**	5.5	3074	1.0	**5.2**	**3000**						131414		06
15.2	**92.02**	5.5	3161	0.9	**5.1**	**3000**						161411	**standard**	07
14.3	**97.99**	4	2462	1.2	**4.8**	**3000**						131413	**ø60**	08
12.8	**109.52**	4	2752	1.1	**4.3**	**3000**						111414		09
11.7	**119.94**	4	3014	1.0	**3.9**	**3000**						111413		10
9.6	**146.47**	3	2771	1.1	**3.2**	**3000**						111411		11
8.8	**158.37**	3	2996	1.0	**3.0**	**3000**						81414		12
8.1	**173.45**	2.2	2416	1.2	**2.7**	**3000**						81413		13
6.6	**211.82**	2.2	2951	1.0	**2.2**	**3000**						81411		14

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **1003** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore tipo **1003** è fornito privo di lubrificazione con tappi di sfiato, livello e scarico olio. L'utente può immettere olio minerale mantenendo i tappi esistenti.
Se immetterà olio sintetico, dovrà sostituire i tappi esistenti con altri tipo chiuso.
Tab.1 per oli e quantità consigliati.
Tab.2 carichi radiali e assiali applicabili al riduttore.

D Das Getriebe der Baugröße **1003** wird ohne Schmiermittel geliefert. Es ist jedoch mit Einfüllschraube, Überdruckventil und Ablaßschraube ausgerüstet. Das benötigte mineralische Öl kann über die Einfüllschraube eingefüllt werden.
Sollte synthetisches Öl bevorzugt werden, so ist sind das eingebaute Überdruckventil durch eine geschlossenen Schraube zu ersetzen.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur de type **1003** est fourni sans lubrification et avec un bouchon de remplissage, de niveau et d'évacuation de l'huile. L'utilisateur peut y verser de l'huile minérale en conservant les bouchons existants. S'il y versera de l'huile synthétique, il devra substituer les bouchons existants avec d'autres bouchons de type fermé.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Voir tableau 2 concernant les charges radiales et axiales applicables au réducteur

E El reductor tamaño **1003** se suministra sin lubricante, provisto de tapones de respiración, nivel y descarga de aceite. El usuario puede utilizar aceite mineral, manteniendo los tapones existentes. Si prefiere utilizar aceite sintético deberá sustituir los tapones existentes por tapones ciegos. La prerreducción se suministra con tapones ciegos, lubricado de por vida con aceite sintético.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
5.00 LT	9.00 LT	6.50 LT	6.50 LT	11.00 LT	9.00 LT	Ask

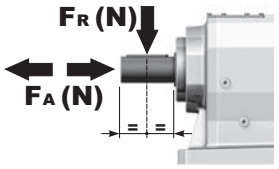
SHELL Omala S2 GX 460 | **ENI** Blasia 460

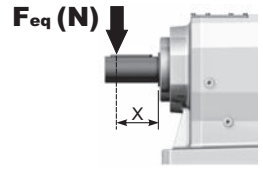
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

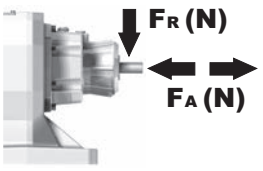
$$Feq = FR \cdot \frac{117}{X+57}$$





n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2300	11500	**140**	2980	14900	**70**	3660	18300
250	2480	12400	**120**	3180	15900	**40**	4220	21100
200	2680	13400	**85**	3440	17200	**15**	4820	24100

Input shaft
Albero in entrata

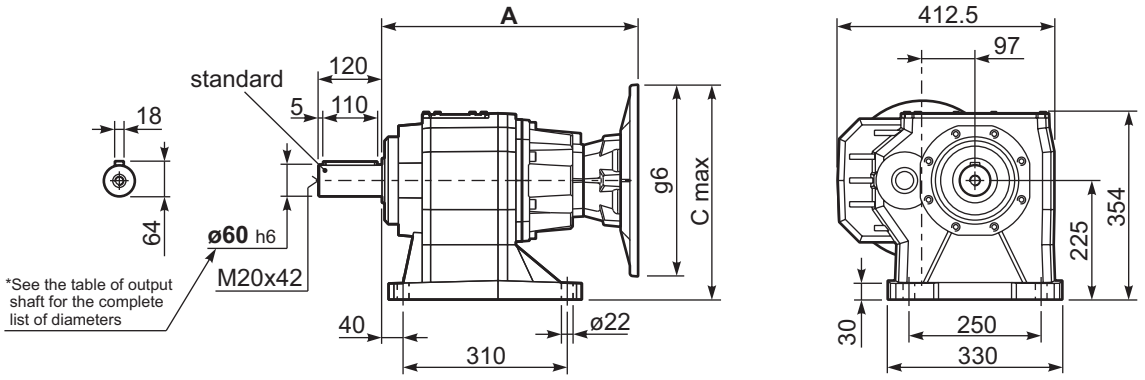


n_1	FA	FR
1400	700	3500
900	840	4200
500	900	4500

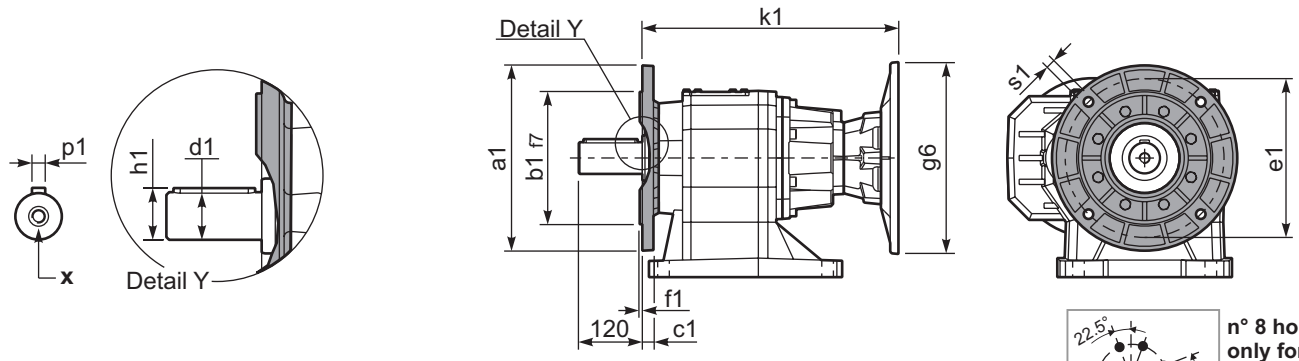
tab. 2

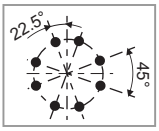
P1003**S9**... With foot
Con piedino

Gearbox weight peso riduttore	116 kg



P1003-**F**... Output flanges
flange di uscita





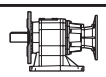
n° 8 holes only for Kit KC909016
Solo per il kit KC909016

***Available output shaft** / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 60x120	18	64	M20x42
On request A richiesta	-	-	-	-

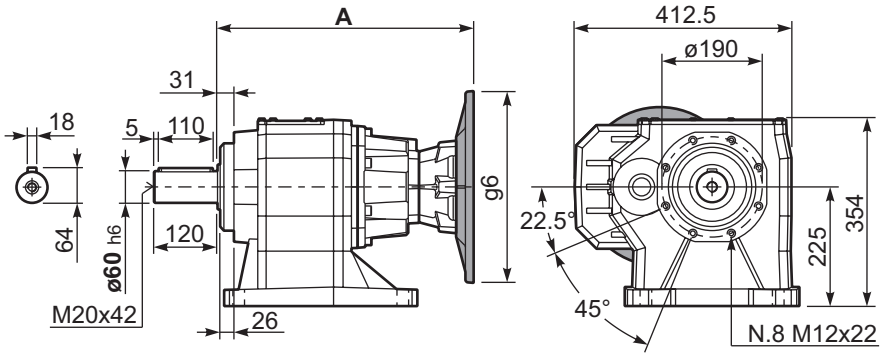
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
300	230	21	265	4	14	KC90.9.014
350	250	21	300	5	18	KC90.9.015
450	350	22	400	5	18	KC90.9.016



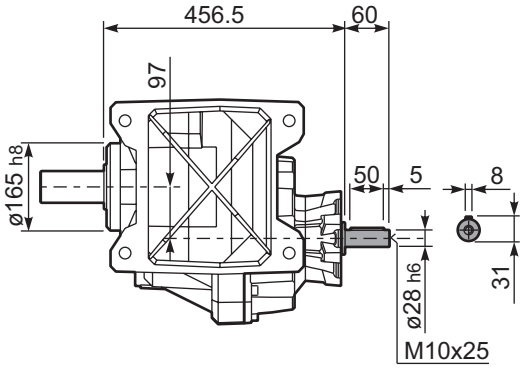
All flanges are compatible with the foot

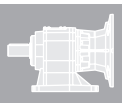
P1003**S9**... Basic gearbox
Riduttore base



Motor Flanges	A	C_{max}	g6	k1	kit code
100/112 B5	427.5	350	250	427.5	K023.4.043
132 B5	448.5	375	300	449	KC51.4.043C
160 B5	481	400	350	481	KC86.4.043
100/112B14	427.5	305	160	427.5	K085.4.047
132B14	448.5	325	200	449	KC51.4.041C

R1003**S9**... Input Shaft
Albero in entrata





▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges -G 132	-H 160	-I 180	-L 200	CA 225	B14 motor flanges – –	- -	- -		Output Shaft	Ratios code
294	**4.75**	45	1333	2.0	**86.7**	**2700**									3914		01
269	**5.21**	45	1460	1.9	**82.1**	**2800**									3913		02
220	**6.36**	45	1783	1.7	**72.0**	**3000**									3911		03
188	**7.45**	45	2088	1.6	**67.7**	**3300**									3014		04
172	**8.15**	45	2287	1.5	**63.7**	**3400**									3013		05
141	**9.96**	45	2792	1.3	**55.2**	**3600**									3011		06
120	**11.69**	45	3277	1.2	**49.7**	**3800**									2214		07
109	**12.80**	45	3589	1.1	**47.7**	**4000**									2213		08
90	**15.63**	45	4383	1.0	**42.0**	**4300**									2211	**standard**	09
79	**17.65**	37	4068	1.1	**38.9**	**4500**						**not available**			1614	**ø70**	10
72	**19.33**	37	4455	1.0	**35.6**	**4500**									1613		11
67	**20.77**	30	3910	1.2	**33.1**	**4500**									1414		12
62	**22.75**	30	4282	1.1	**30.2**	**4500**									1413		13
59	**23.60**	30	4443	1.0	**29.1**	**4500**									1611		14
50	**27.78**	22	3842	1.2	**24.7**	**4500**									1411		15
45.5	**30.76**	22	4255	1.1	**22.3**	**4500**									1014		16
41.6	**33.69**	22	4660	1.0	**20.4**	**4500**									1013		17
34.0	**41.15**	18.5	4781	0.9	**16.7**	**4500**									1011		18

The dynamic efficiency is **0.96** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

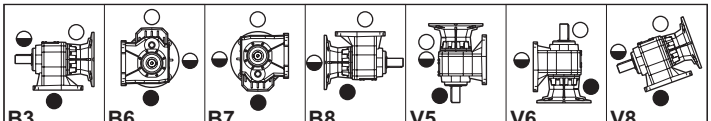
EN Unit **1102** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore tipo **1102** è fornito privo di lubrificazione con tappi di sfiato, livello e scarico olio. L'utente può immettere olio minerale mantenendo i tappi esistenti.
Se immetterà olio sintetico, dovrà sostituire i tappi esistenti con altri tipo chiuso.
Tab.1 per oli e quantità consigliati.
Tab.2 carichi radiali e assiali applicabili al riduttore.

D Das Getriebe der Baugröße **1102** wird ohne Schmiermittel geliefert. Es ist jedoch mit Einfüllschraube, Überdruckventil und Ablaßschraube ausgerüstet. Das benötigte mineralische Öl kann über die Einfüllschraube eingefüllt werden.
Sollte synthetisches Öl bevorzugt werden, so ist sind das eingebaute Überdruckventil durch eine geschlossenen Schraube zu ersetzen.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur de type **1102** est fourni sans lubrification et avec un bouchon de remplissage, de niveau et d'évacuation de l'huile. L'utilisateur peut y verser de l'huile minérale en conservant les bouchons existants. S'il y versera de l'huile synthétique, il devra substituer les bouchons existants avec d'autres bouchons de type fermé.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Voir tableau 2 concernant les charges radiales et axiales applicables au réducteur

E El reductor tamaño **1102** se suministra sin lubricante, provisto de tapones de respiración, nivel y descarga de aceite. El usuario puede utilizar aceite mineral, manteniendo los tapones existentes. Si prefiere utilizar aceite sintético deberá sustituir los tapones existentes por tapones ciegos. La prerreducción se suministra con tapones ciegos, lubricado de por vida con aceite sintético.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.



B3	B6	B7	B8	V5	V6	V8
6.50 LT	12.50 LT	7.50 LT	8.50 LT	14.50 LT	11.50 LT	Ask

SHELL Omala S2 GX 460 | **ENI** Blasia 460

For all details on lubrication and plugs check our website
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

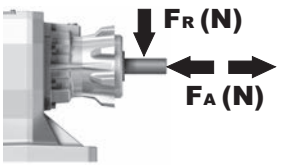
RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

$$Feq = FR \cdot \frac{138}{X+68}$$

n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2600	13000	**140**	3300	16500	**70**	4300	21500
250	2700	13500	**120**	3500	17500	**40**	5000	25000
200	3000	15000	**85**	3900	19500	**15**	5900	29500

Input shaft
Albero in entrata

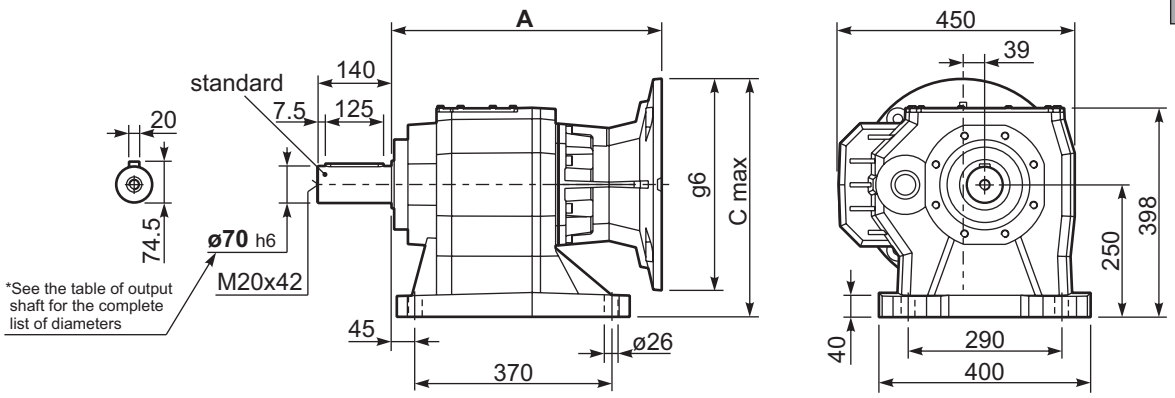


n_1	FA	FR
1400	1120	5600
900	1220	6100
500	1300	6500

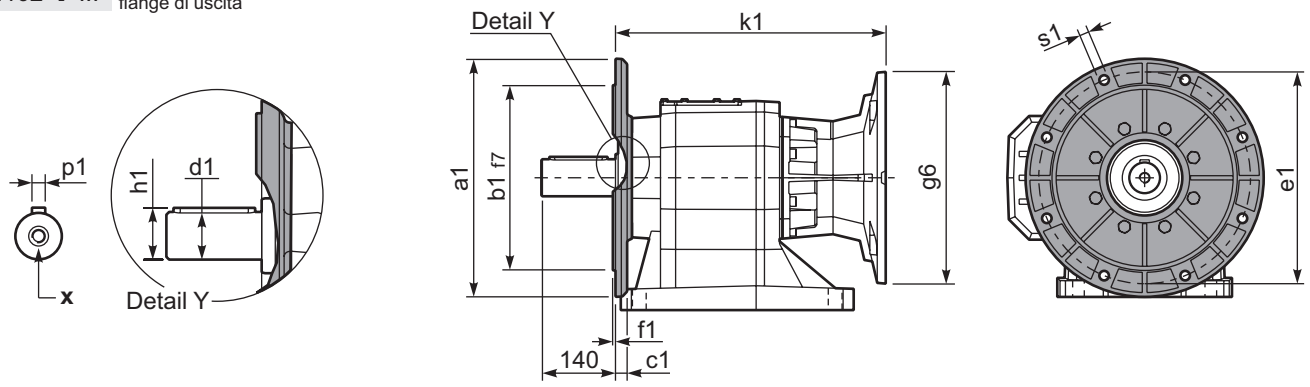
tab. 2

P1102**S0**... With foot
Con piedino

Gearbox weight peso riduttore	165 kg



P1102-**F**... Output flanges
flange di uscita

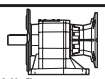


***Available output shaft** / Albero di uscita

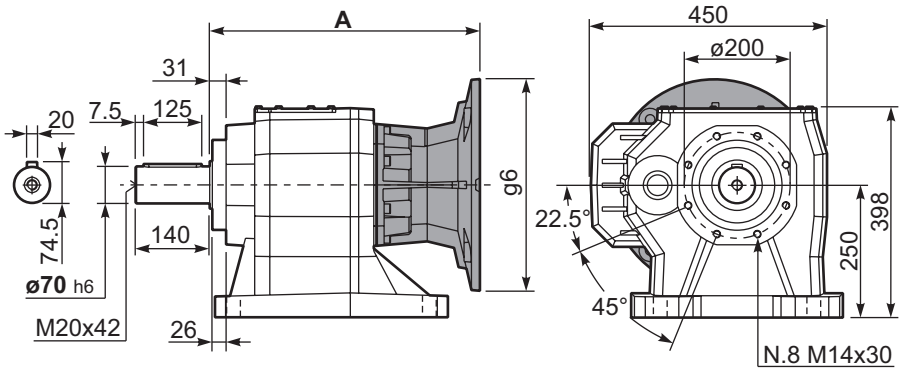
	Shaft - d1	p1	h1	x
Standard	ø 70x140	20	74.5	M20x42
On request A richiesta	-	-	-	-

Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
350	250	21	300	5	18	KC110.9.015
450	350	22	400	5	18	KC110.9.016
-	-	-	-	-	-	-

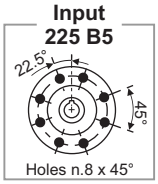

All flanges are compatible with the foot

P1102**S0**... Basic gearbox
Riduttore base

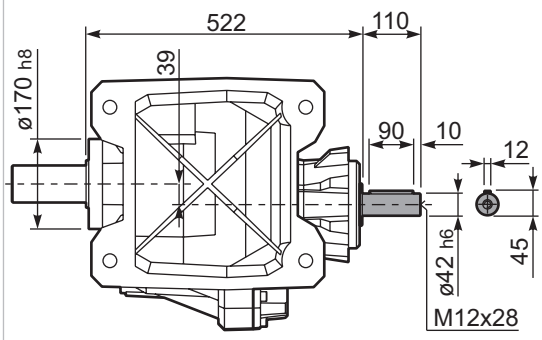


B5 Motor Flanges	A	C_{max}	g6	k1	kit code
132 B5	485.5	400	300	485.5	KC110.9.052
160 B5	510.5	425	350	510.5	KC110.9.053
180 B5	510.5	425	350	510.5	KC110.9.053_B
200 B5	510.5	450	400	510.5	KC110.9.054
225 B5	537.5	475	450	537.5	KC110.9.055

Input 225 B5



R1102**S0**... Input Shaft
Albero in entrata



6

▪ QUICK SELECTION / Selezione veloce

input speed (n_1) = 1400 min^{-1}

Output Speed n_2 [min^{-1}]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s.	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	Available B5 motor flanges -F 100 112	-G 132	-H 160	-I 180	B14 motor flanges -U 100 112	-V 132		Output Shaft ø	Ratios code
38.8	**36.11**	18.5	4113	1.1	**19.4**	**4500**							301411		01
27.5	**50.89**	15	4694	1.0	**14.1**	**4600**							201414		02
25.1	**55.73**	11	3777	1.2	**12.9**	**4600**							201413		03
20.3	**68.80**	11	4662	1.0	**10.4**	**4600**							161414		04
18.6	**75.35**	9	4354	1.1	**9.5**	**4600**							161413		05
15.6	**89.47**	7.5	4160	1.1	**8.0**	**4600**							131414		06
15.2	**92.02**	7.5	4278	1.1	**7.6**	**4500**							161411	**standard**	07
14.3	**97.99**	7.5	4556	1.0	**7.3**	**4600**							131413	**ø70**	08
12.8	**109.52**	5.5	3762	1.2	**6.6**	**4600**							111414		09
11.7	**119.94**	5.5	4120	1.1	**6.0**	**4600**							111413		10
9.6	**146.47**	4	3681	1.2	**4.8**	**4500**							111411		11
8.8	**158.37**	4	3980	1.2	**4.5**	**4600**							81414		12
8.1	**173.45**	4	4359	1.1	**4.1**	**4600**							81413		13
6.6	**211.82**	3	4007	1.1	**3.3**	**4500**							81411		14

The dynamic efficiency is **0.94** for all ratios

Motor Flanges Available Flange Motore Disponibili

B) **Supplied with Reduction Bushing** Fornito con Bussola di Riduzione

B) **Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione

C) **Motor Flange Holes Position** Posizione Fori Flangia Motore

EN Unit **1103** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.

I Il riduttore tipo **1103** è fornito privo di lubrificazione con tappi di sfiato, livello e scarico olio. L'utente può immettere olio minerale mantenendo i tappi esistenti.
Se immetterà olio sintetico, dovrà sostituire i tappi esistenti con altri tipo chiuso.
Tab.1 per oli e quantità consigliati.
Tab.2 carichi radiali e assiali applicabili al riduttore.

D Das Getriebe der Baugröße **1103** wird ohne Schmiermittel geliefert. Es ist jedoch mit Einfüllschraube, Überdruckventil und Ablaßschraube ausgerüstet. Das benötigte mineralische Öl kann über die Einfüllschraube eingefüllt werden.
Sollte synthetisches Öl bevorzugt werden, so ist sind das eingebaute Überdruckventil durch eine geschlossenen Schraube zu ersetzen.
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

F Le réducteur de type **1103** est fourni sans lubrification et avec un bouchon de remplissage, de niveau et d'évacuation de l'huile. L'utilisateur peut y verser de l'huile minérale en conservant les bouchons existants. S'il y versera de l'huile synthétique, il devra substituer les bouchons existants avec d'autres bouchons de type fermé.
Voir tableau 1 concernant les huiles et les quantités conseillées.
Voir tableau 2 concernant les charges radiales et axiales applicables au réducteur

E El reductor tamaño **1103** se suministra sin lubricante, provisto de tapones de respiración, nivel y descarga de aceite. El usuario puede utilizar aceite mineral, manteniendo los tapones existentes. Si prefiere utilizar aceite sintético deberá sustituir los tapones existentes por tapones ciegos. La prerreducción se suministra con tapones ciegos, lubricado de por vida con aceite sintético.
Ver tabla 1, para cantidades y aceites recomendados.
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
7.00 LT	13.00 LT	8.00 LT	9.00 LT	16.00 LT	13.50 LT	Ask

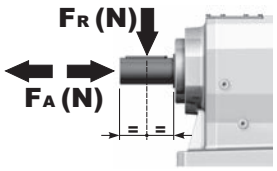
SHELL Omala S2 GX 460 | **ENI** Blasia 460

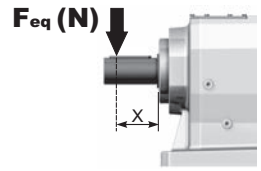
For all details on lubrication and plugs check our website **tab. 1**
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

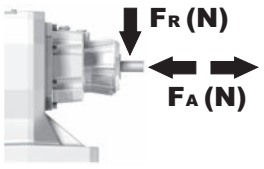
$$Feq = FR \cdot \frac{138}{X+68}$$





n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	2600	13000	**140**	3300	16500	**70**	4300	21500
250	2700	13500	**120**	3500	17500	**40**	5000	25000
200	3000	15000	**85**	3900	19500	**15**	5900	29500

Input shaft
Albero in entrata

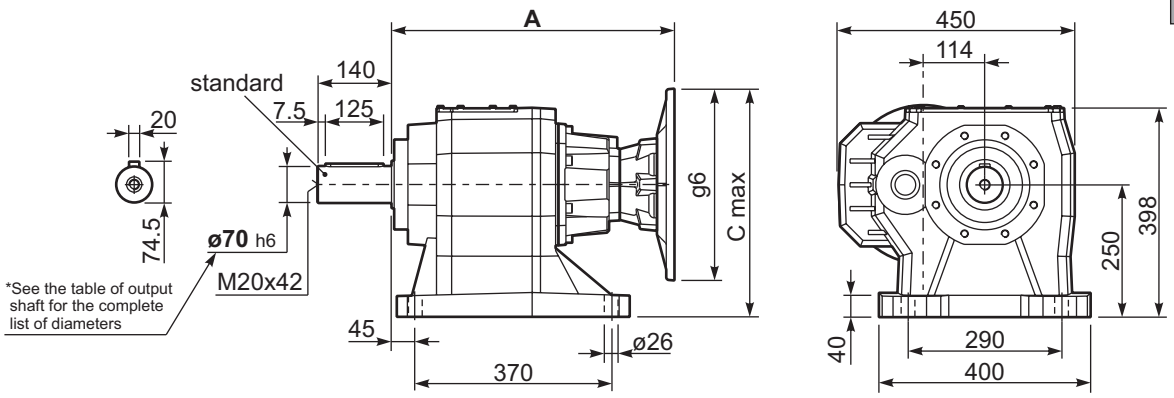


n_1	FA	FR
1400	700	3500
900	840	4200
500	900	4500

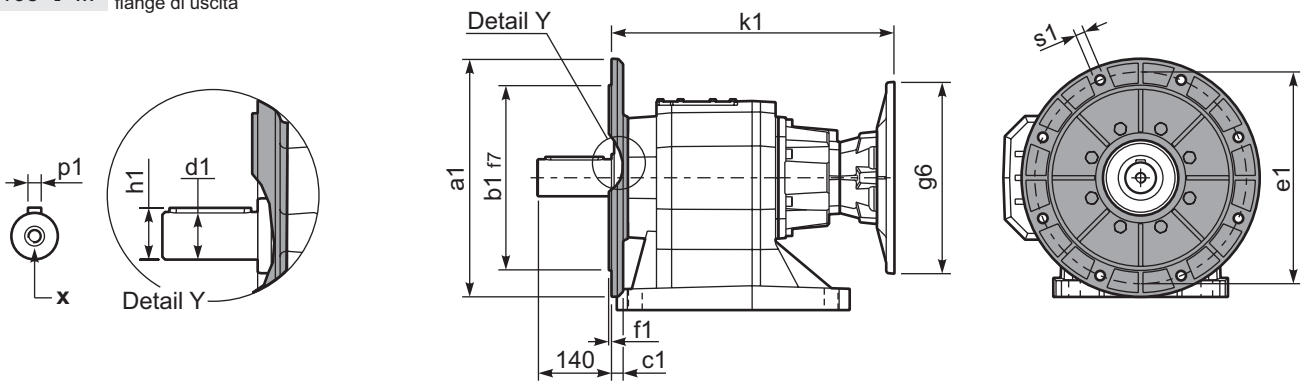
tab. 2

P1103**S0**... With foot
Con piedino

Gearbox weight peso riduttore	156 kg



P1103-**F**... Output flanges
flange di uscita



***Available output shaft** / Albero di uscita

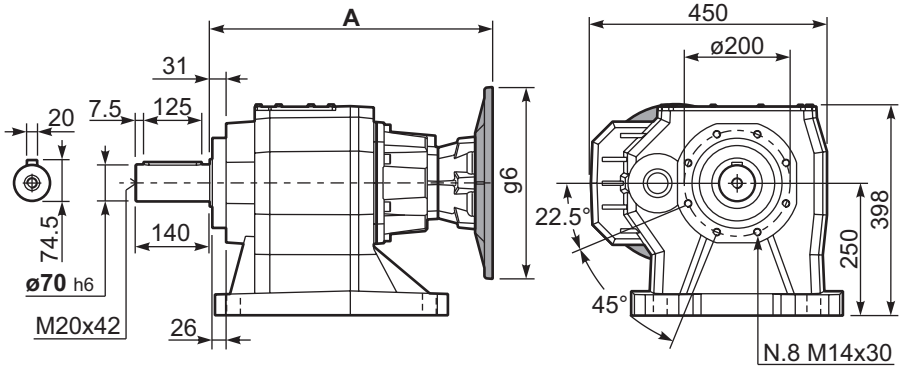
	Shaft - d1	p1	h1	x
Standard	ø 70x140	20	74.5	M20x42
On request A richiesta	-	-	-	-

Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	s1	kit code
350	250	21	300	5	18	KC110.9.015
450	350	22	400	5	18	KC110.9.016
-	-	-	-	-	-	-

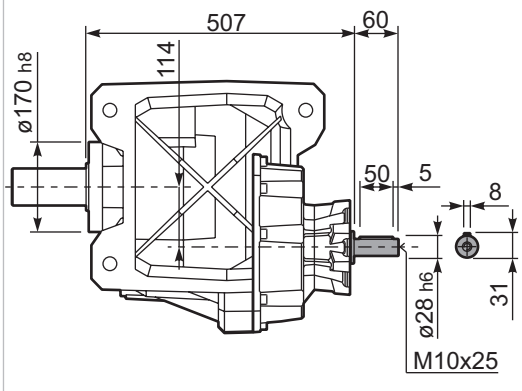
All flanges are compatible with the foot

P1103**S0**... Basic gearbox
Riduttore base



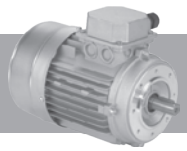
Motor Flanges	A	C_{max}	g6	k1	kit code
100/112 B5	478	375	250	478	K023.4.043
132 B5	499.5	400	300	499.5	KC51.4.043C
160-180 B5	531.5	425	350	531.5	KC864.043
100/112B14	478	330	160	478	K085.4.047
132B14	499.5	350	200	499.5	KC51.4.041C

R1103**S0**... Input Shaft
Albero in entrata



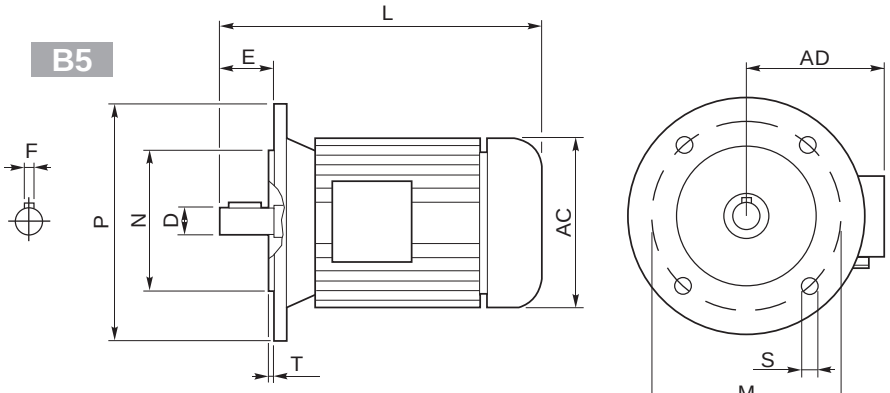
6

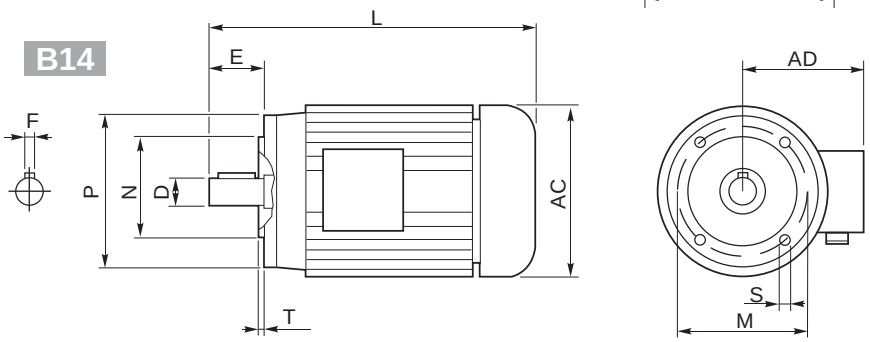
Aluminum IEC motors



1) 230/400V - 50Hz three-phase asynchronous induction motor
2) Class F insulation
3) S1 duty
4) IP 55 protection
5) Not painted
6) Hard plastic sleeve to protect output shaft during the transportation

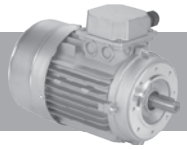
1) 230/400V - 50Hz motore trifase asincrono
2) Isolamento Classe F
3) S1 servizio continuo
4) Protezione IP 55
5) Non verniciato
6) Manicotto di protezione per l'albero motore





Outside dimensions and weight may be different according to manufacturers.
Le dimensioni esterne e il peso sono indicative, possono variare tra i vari costruttori.

	2 poli / poles			4 poli / poles			6 poli / poles			B5-B14						B5					B14					Kg
	kW	Nm	A (400V)	kW	Nm	A (400V)	kW	Nm	A (400V)	D	F	E	L	AC	AD	N	M	P	S	T	N	M	P	S	T	
56 A	**0.09**	0.32	0.38	**0.06**	0.44	0.27	**—**	—	—	9	3	20	199	108	96	80	100	120	7	2.5	50	65	80	M5	2.5	2.7
56 B	**0.12**	0.42	0.46	**0.09**	0.67	0.37	**—**	—	—																	2.9
63 A	**0.18**	0.63	0.60	**0.12**	0.84	0.50	**0.09**	0.99	0.57	11	4	23	208	120	99	95	115	140	9.5	3	60	75	90	M5	2.5	3.8
63 B	**0.25**	0.87	0.76	**0.18**	1.30	0.69	**0.12**	1.32	0.74																	4.2
71 A	**0.37**	1.30	1.00	**0.25**	1.70	0.91	**0.18**	1.90	0.80	14	5	30	-	130	104	110	130	160	9.5	3.5	70	85	105	M6	2.5	5.9
71 B	**0.55**	1.90	1.54	**0.37**	2.52	1.14	**0.25**	2.72	1.10				255	141	107											6.5
80 A	**0.75**	2.60	1.85	**0.55**	3.77	1.51	**0.37**	3.84	1.18	19	6	40	296	159	127	130	165	200	11.5	3.5	80	100	120	M6	3	8.5
80 B	**1.1**	3.90	2.64	**0.75**	5.11	2.57	**0.55**	5.84	1.80																	10
90 S	**1.5**	5.00	3.31	**1.1**	7.45	2.78	**0.75**	7.92	2.32	24	8	50	-	170	135	130	165	200	11.5	3.5	95	115	140	M8	3	12.5
90 L	**2.2**	7.50	4.46	**1.5**	10.2	3.61	**1.1**	11.6	3.45				330													15
100 LA	**3.0**	10.0	6.28	**2.2**	14.8	5.07	**1.5**	15.4	3.88	28	8	60	-	190	148	180	215	250	13	4	110	130	160	M8	3.5	20
100 LB	**—**	—	—	**3.0**	20.1	6.66	**—**	—	—																	22
112 M	**4.0**	13.4	8.10	**4.0**	26.7	8.55	**2.2**	22.6	5.30				381	210	164											35
132 S	**5.5**	18.3	11.2	**5.5**	36.5	11.4	**3.0**	30.2	7.20	38	10	80	455	244	180	230	265	300	14	4	130	165	200	M10	4	41
	7.5	24.9	15.3																							51
132 M	**—**	—	—	**7.5**	49.4	15.0	**4.0**	40.0	9.13				500													51
				9	61.4	18.5																				
160 M	**—**	—	—	**11**	72	21.5	**—**	—	—	42	12	110	613	335	246	250	300	350	18	5	—	—	—	—	—	79.2
160 L	**—**	—	—	**15**	98	29	**—**	—	—				657													97.5
180 M	**—**	—	—	**18.5**	121	35.5	**—**	—	—	48	14	110	712	366	266	250	300	350	19	5	—	—	—	—	—	170
180 L	**—**	—	—	**22**	144	42	**—**	—	—																	
200 L	**—**	—	—	**30**	196	53	**—**	—	—	55	16	110	780	405	341	300	350	400	19	5	—	—	—	—	—	240
225 S	**—**	—	—	**37**	240	69	**—**	—	—	60	18	140	888	463	360	350	400	450	19	5	—	—	—	—	—	305
225 M	**—**	—	—	**45**	292	84	**—**	—	—																	310



Protection
Standard IP55
Please specify on purchase orders if you need a higher IP protection class.

Grado di protezione
IP55 Standard
Specificare in sede di ordinazione per IP superiore.

Schutzart
IP55 Standard.
Höheren IP Grad bitte im Auftrag angeben.

Degré de protection
IP55 standard.
Au moment de la commande, spécifiez si vous souhaitez IP supérieur.

Grado de protección
IP55 standard.
Especificar en el pedido cuando necesiten protección IP superior.

Insulation
Standard CI.F
To be specified upon placing the order if different insulation is required.

Isolamento
CI.F Standard
Specificare in sede di ordinazione classe di isolamento diversa.

Isolierung
CI.F Standard.
Davon abweichende Isolierungsklas se im Auftrag angeben.

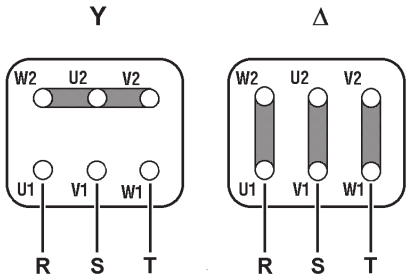
Isolement
CI.F Standard.
Au moment de la commande, spécifiez si vous souhaitez une classe d' isolement différente.

Aislamiento
CI.F standard.
Especificar al efectuar el pedido la clase diferente de aislamiento.

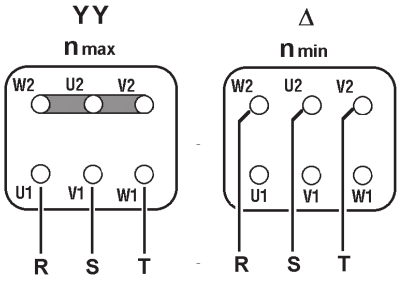
Insulation / Isolamento Isolierung /Aislamiento		E	B	F	H
Max. temp.	C°	120°	130°	155°	175°
	F*	248°	266°	311°	347°

Connections **Collegamenti** **Verbindungselemente** **Branchements** **Conexiones**

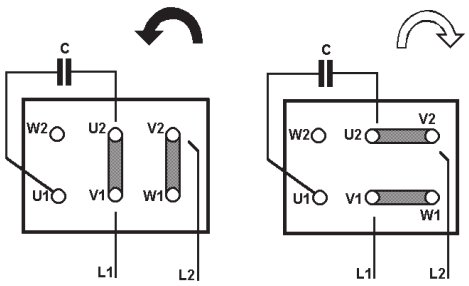
Threephase asyncronous single polarity
Asincrono trifase singola polarità
Asynchronmotor 3-ph eine Drehzahl
Moteur triphasé à une vitesse
Asincrono trifasico de una velocidad



Threephase asyncronous double polarity
Asincrono trifase doppia polarità
Asynchronmotor 3-ph doppelte Drehzahl
Moteur triphasé à deux vitesses
Asincrono trifasico de dos velocidades



Single phase asyncronous
Asincrono monofase
Einphasen-Asynchronmotor
Moteur monophasé
Asincrono monofasico



Information Informazioni

Warranty and use see complete version on the web
Garanzia e utilizzo vedi versione completa sul web

HYDROMEC SPA IS THE LEGAL RESPONSABLE FOR WARRANTY ISSUES.

PLEASE READ CAREFULLY
The following WARNING and CAUTION information are supplied to you for the proper functioning of your product.
Read ALL instructions prior to operating reducer.
Injury to personnel or reducer failure may be caused by improper installation, maintenance or operation.

WARNING:

• Written authorization is required to operate or use reducers in man lift or people moving devices.

• Check to make sure that certain applications do not exceed the allowable load capacities published in the current catalog.
• Buyer shall be solely responsible for determining the adequacy of the product for any and all uses to which Buyer shall apply the product. The application by Buyer shall not be subject to any implied warranty of fitness for a particular purpose.
• For safety, Buyer or User should provide protective guards over all shaft extensions and any moving apparatus mounted thereon. The User is responsible for checking all applicable safety codes in his area and providing suitable guards. Failure to do so may result in bodily injury and/or damage to equipment.
• Gearboxes operating in high position should have a protective shield for any possible parts falling down for casual accidents where people are moving under them.
• Hot oil and reducers can cause severe burns. Use extreme care when removing lubrication plugs and vents.
• Make certain that the power supply is disconnected before attempting to service or remove any components. Lock out the power supply and tag it to prevent unexpected application power.
• Reducers are not to be considered fail safe or self-locking devices. If these features are required, a properly sized, independent holding device should be utilized.
Reducers should not be used as a brake.
• Any brakes that are used in conjunction with a reducer must be sized or positioned in such a way so as to not subject the reducer to loads beyond the catalog rating.
• Lifting supports including eyebolts are to be used for vertically lifting the gearbox only and not other associated attachments or motors.
• Use of an oil with an EP additive on units with backstops may prevent proper operation of the backstop. Injury to personnel, damage to the reducer or other equipment may result.
• Overhung loads subject shaft bearings and shafts to stress which may cause premature bearing failure and or shaft breakage from bending fatigue, it not sized properly.

SELLING CONDITIONS
Warranty for manufacturing defects will expire one-year after the invoicing date. Hydro-Mec s.p.a. will replace or repair defective parts but will not accept any further changes for direct or indirect damages of any kind. The warraty will become null and void if repairs or changes are carried out without our prior written authorization.
Our company will not be responsible for any direct or indirect damages, caused by a wrong use of the products or for not observing the catalogue/ web indication.
If the process requires total protections the customers should consider additional measures to avoid any contaminations arising from the gearboxes.

All information shown in this catalogue are purely indicative;
Hydro-Mec s.p.a reserves the right to make any necessary variation without prior notice.

HYDROMEC SPA È LEGALMENTE IL RESPONSABILE DEI PROBLEMI DI GARANZIA.

LEGGERE ATTENTAMENTE
Le seguenti raccomandazioni sono fondamentali per un buon funzionamento del vostro prodotto.
Leggere attentamente tutte le istruzioni prima di azionare il riduttore.
L'inappropriata installazione, manutenzione o funzionamento del riduttore può causare incidenti al personale addetto edanni al riduttore stesso.

ATTENZIONE:

• E' richiesta autorizzazione scritta per azionare riduttori in ascensori o dispositivi per il movimento delle persone.

• Controllare che alcune applicazioni non eccedano la massima capacità di carico ammessa pubblicata in questo catalogo.
• L'acquirente è l'unico responsabile per la determinazione dell'adeguatezza del prodotto per qualcuna o tutte le utilizzazioni che l'acquirente stesso farà del riduttore. L'applicazione dell'acquirente non potrà essere soggetta ad alcuna implicita garanzia di montaggio per uno scopo particolare.
• Per ragioni di sicurezza l'acquirente dovrà provvedere a porre protezioni adeguate su tutta la lunghezza dell'albero a tutti gli organi in movimento.
L'utilizzatore è responsabile del controllo di tutti i codici di sicurezza e la predisposizione di protezioni adeguate. In assenza di tali precauzioni si possono verificare incidenti alle persone e danni agli apparati.
• Su riduttori installati in posizioni elevate utilizzare protezioni adeguate per qualsiasi distacco accidentale di parti nel caso di passaggio di persone al di sotto.
• Olio e riduttori bollenti possono causare gravi ustioni. Usare estrema cautela nella rimozione dei tappi e delle ventole.
• Assicurarsi che la corrente di alimentazione sia scollegata prima di riparare o rimuovere alcun componente. Chiudere l'alimentazione e contrassegnare tale operazione per evitare accensioni accidentali.
• I riduttori non devono essere considerati esenti da guasti o a bloccaggio automatico. Se sono indispensabili queste caratteristiche, deve essere utilizzato un dispositivo indipendente della dimensione adatta. I riduttori non devono essere utilizzati come freni.
• Qualsiasi freno sia utilizzato insieme al riduttore deve essere della giusta grandezza e posizionato in modo da non causare carichi eccessivi non previsti dai dati forniti nel catalogo.
• I dispositivi di sollevamento come le golfare devono essere usati solo per sollevare verticalmente il riduttore e non altri dispositivi associati o motori.
• L'utilizzo di un olio con un additivo EP su gruppi provvisti di dispositivo di arresto possono inficiare l'uso corretto del freno e provocare danni alle persone, alle cose ed al riduttore stesso nonché ad altri apparecchi.
• I Carichi sospesi assoggettano i cuscinetti della vite e la vite stessa a sollecitazioni che possono causare, se non adeguatamente dimensionati, l'usura prematura dei cuscinetti e/o larottura della vite a causa della resistenza alla flessione.

CONDIZIONI DI VENDITA
La garanzia relativa a difetti di costruzione ha la durata di un anno dalla data di fatturazione della merce. Tale garanzia comporta per Hydro-Mec s.p.a. l'onere della sostituzione o riparazione delle parti difettose ma non ammette ulteriori addebiti per eventuali danni diretti o indiretti di qualsiasi natura. La garanzia decade nel caso in cui siano state eseguite riparazioni o apportate modifiche senza nostro consenso scritto.
La nostra ditta non si ritiene responsabile per eventuali danni diretti o indiretti derivanti da un uso improprio dei prodotti e dalla mancata osservanza delle indicazioni riportate a catalogo o web.
Se il processo richiede una protezione totale, i clienti dovrebbero prendere in considerazione misure aggiuntive per evitare qualsiasi contaminazione derivante dai riduttori.
 Tutte le informazioni riportate nel presente catalogo sono puramente indicative; Hydro-Mec s.p.a si riserva il diritto di apportare qualsiasi variazione necessaria senza preavviso.

abaroadrive

HIGH EFFICENCY GEARBOXES

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www.abaroadrive.com

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