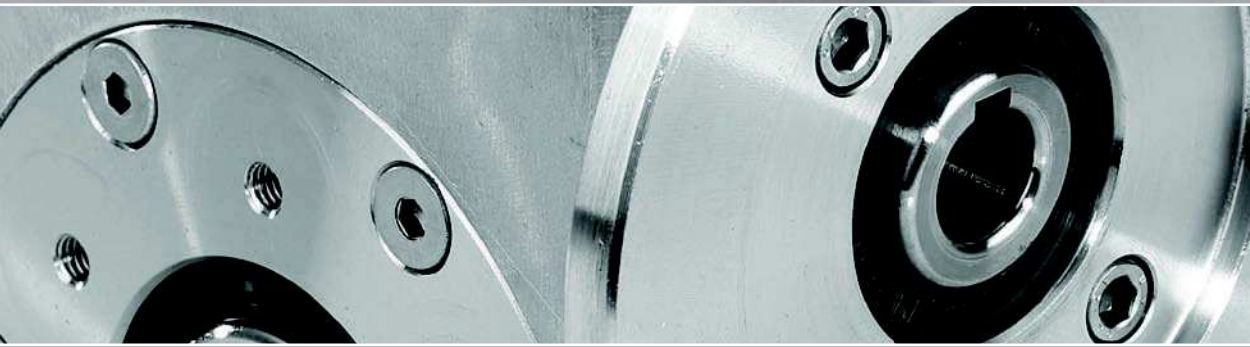


EM:ME  
YDR.O  
YDR.Y  
H



# Stainlesssteel-Gear



Gearboxes Made in Italy



DOSSIER ACCORDING  
TO 94/9/EG 8. B II  
STORED



## Worm gearboxes and ratio multiplier

Riduttori a vite senza fine e uno stadio

0.09 ÷ 4kW



Catalogue code: CT-SSM-I-HM015



## IN THIS CATALOGUE

### Full Stainless steel - Worm gearboxes

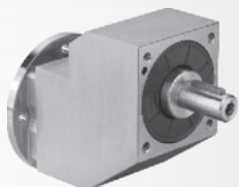


**Full stainless steel Worm gearboxes.**  
Vite senza fine completamente in acciaio inox.

See technical data table.  
*Vedi tabelle dati tecnici.*

Paragraph **8**

### Full Stainless steel - One step gearboxes



**Full stainless steel gearboxes with one stage of reduction.**  
Riduttori coassiali completamente in acciaio inox con uno stadio di riduzione.

See technical data table.  
*Vedi tabelle dati tecnici.*

Paragraph **9**

### Full Stainless steel electric motors



**Full stainless steel IEC motors.**  
Motori IEC completamente in acciaio inox.

See technical data table.  
*Vedi tabelle dati tecnici.*

Pag. M-3

# Stainless steel worm gearboxes

## STANDARD FEATURES

### Full Stainless Steel Housing

Special housing designed to keep adequate lubrication with low Oil q.ty to avoid internal pressures.

### Flange

Fully modular to IEC B14 and Compact integrated motor. NEMA C flange

### Options

Protective seals cup to stand high pressure cleaning for hollow or extended shaft version.

Output shaft interchangeable right or left hand output shafts available.

### Second bearing

Standard second bearing on motor flange side and two oil seals with vertical motor position.

**Stainless Steel Hollow shaft.**

**100 % Factory pressure leak test.**

**O-rings on all closing covers.**

**Output seals (FPM-fkm) with external dust protection lips.**

### Vent Free Design.

No breather or vents to leak! Factory lubricated for life with synthetic, semi-fluid gear lubricant with an operating range of -15°C to 130°C.

oil free



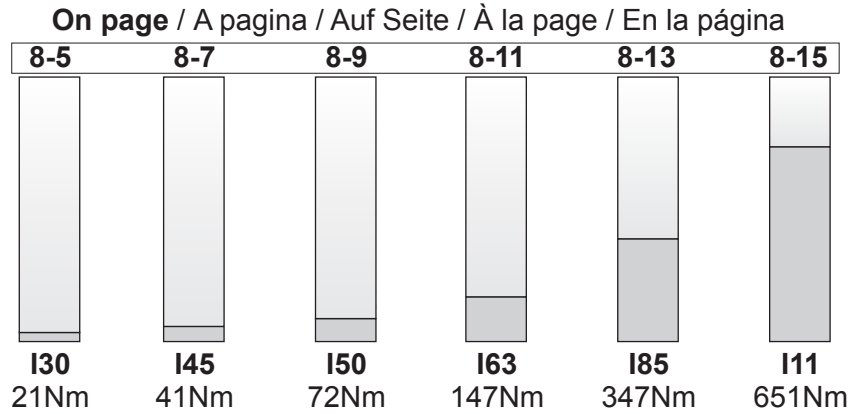
vent free



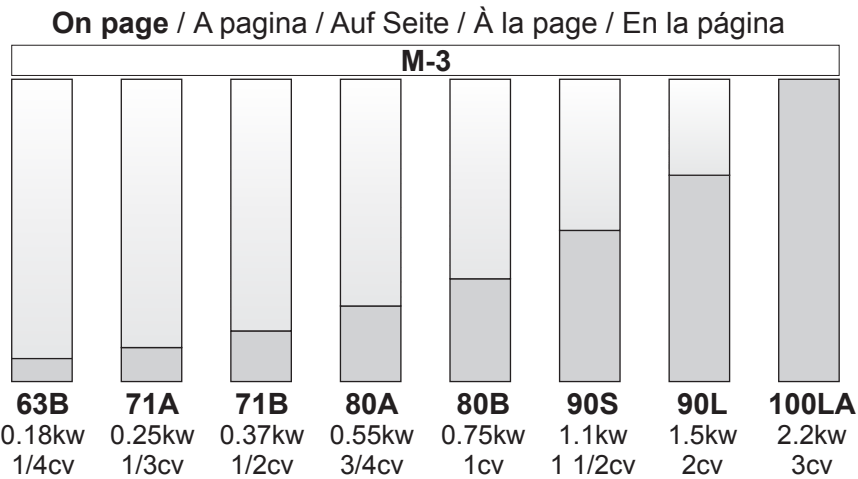
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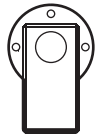
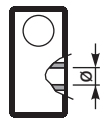
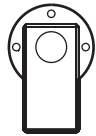
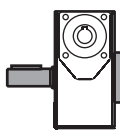
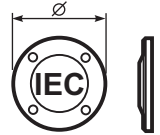
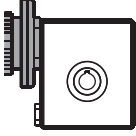
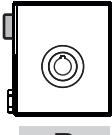
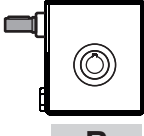
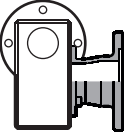
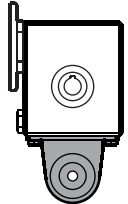
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Tipen / Types /  
Tipos →



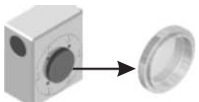
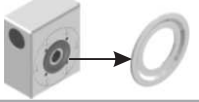
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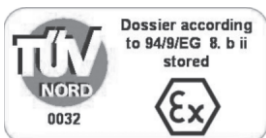
Type - Tipo - Typ Type - Tipo	Size - Grandezza Grösse - Taille Tamaño	Mounting - Montaggio Montage - Fixation Tipo de montaje	Ratio - Rapporto Untersetzung Reduction - Relación	Hub - Mozzo corona Hohlwelle - Arbre creux Nucleo corona	Output shaft Albero lento Abtriebswelle Arbre de sortie Eje solida	Motor size - Grandezza motore Motor Grösse Grandeur moteur - Tamaño motor																																								
<b>P</b>	<b>I45</b>  130 145 150 163 185 111	 <b>UN</b>	<p>See technical data table</p> <p>Vedi tabella dati tecnici.</p> <p>Technisches Datenblatt beachten</p> <p>Voir Tableau données techniques</p> <p>Ver tabla datos técnicos</p>	 <b>STANDARD</b> <b>I</b> I30 ⇨ ø14 I45 ⇨ ø18 I50 ⇨ ø25 I63 ⇨ ø25 I85 ⇨ ø35 I11 ⇨ ø42 <hr/> <b>SPECIAL SERIES</b> <b>SERIE SPECIALE</b> <b>X</b> I45 ⇨ ø19 I50 ⇨ ø24 <hr/> <b>INCH</b> <b>Z</b> I45 ⇨ ø0.750" I50 ⇨ ø1.000" I63 ⇨ ø1.125" I85 ⇨ ø1.500" I11 ⇨ ø2.000"	 <b>Ø</b>   <b>S</b>	 <b>-Q</b>  <table border="1"> <tr> <td><b>I30</b></td> <td><b>-O</b> 56B14 (ø80)</td> <td><b>-P</b> 63B14 (ø90)</td> <td><b>-W</b> 56C (ø6.5")</td> </tr> <tr> <td><b>I45</b></td> <td><b>-P</b> 63B14 (ø90)</td> <td><b>-Q</b> 71B14 (ø105)</td> <td><b>-W</b> 56C (ø6.5")</td> </tr> <tr> <td><b>I50</b></td> <td><b>-P</b> 63B14 (ø90)</td> <td><b>-Q</b> 71B14 (ø105)</td> <td><b>-R</b> 80B14 (ø120)</td> </tr> <tr> <td></td> <td><b>-W</b> 56C (ø6.5")</td> <td></td> <td></td> </tr> <tr> <td><b>I63</b></td> <td><b>-Q</b> 71B14 (ø105)</td> <td><b>-R</b> 80B14 (ø120)</td> <td><b>-T</b> 90B14 (ø140)</td> </tr> <tr> <td></td> <td><b>-W</b> 56C (ø6.5")</td> <td><b>-X</b> 143/5TC (ø6.5")</td> <td></td> </tr> <tr> <td><b>I85</b></td> <td><b>-D</b> 80B5 (ø200)</td> <td><b>-E</b> 90B5 (ø200)</td> <td><b>-U</b> 100-112B14 (ø160)</td> </tr> <tr> <td></td> <td><b>-W</b> 56C (ø6.5")</td> <td><b>-X</b> 143/5TC (ø6.5")</td> <td><b>-Y</b> 182/4TC (ø8.88")</td> </tr> <tr> <td><b>I11</b></td> <td><b>-D</b> 80B5 (ø200)</td> <td><b>-E</b> 90B5 (ø200)</td> <td><b>-U</b> 100-112B14 (ø160)</td> </tr> <tr> <td></td> <td><b>-X</b> 143/5TC (ø6.5")</td> <td><b>-Y</b> 182/4TC (ø8.88")</td> <td><b>AA</b> 213/5TC (ø8.88")</td> </tr> </table>	<b>I30</b>	<b>-O</b> 56B14 (ø80)	<b>-P</b> 63B14 (ø90)	<b>-W</b> 56C (ø6.5")	<b>I45</b>	<b>-P</b> 63B14 (ø90)	<b>-Q</b> 71B14 (ø105)	<b>-W</b> 56C (ø6.5")	<b>I50</b>	<b>-P</b> 63B14 (ø90)	<b>-Q</b> 71B14 (ø105)	<b>-R</b> 80B14 (ø120)		<b>-W</b> 56C (ø6.5")			<b>I63</b>	<b>-Q</b> 71B14 (ø105)	<b>-R</b> 80B14 (ø120)	<b>-T</b> 90B14 (ø140)		<b>-W</b> 56C (ø6.5")	<b>-X</b> 143/5TC (ø6.5")		<b>I85</b>	<b>-D</b> 80B5 (ø200)	<b>-E</b> 90B5 (ø200)	<b>-U</b> 100-112B14 (ø160)		<b>-W</b> 56C (ø6.5")	<b>-X</b> 143/5TC (ø6.5")	<b>-Y</b> 182/4TC (ø8.88")	<b>I11</b>	<b>-D</b> 80B5 (ø200)	<b>-E</b> 90B5 (ø200)	<b>-U</b> 100-112B14 (ø160)		<b>-X</b> 143/5TC (ø6.5")	<b>-Y</b> 182/4TC (ø8.88")	<b>AA</b> 213/5TC (ø8.88")
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 <b>M</b>																																														
 <b>B</b>																																														
 <b>R</b>																																														
		 <b>FL</b>																																												
		 <b>BR</b> Full stainless steel Torque arm																																												

## On request

<b>A</b>	<b>Protective seals cup</b> CLOSE TYPE	
<b>B</b>	<b>Protective seals cup</b> OPEN TYPE	
<b>C</b>	<b>Food lube</b>	
<b>D</b>	<b>Nema input flanges</b>	

**-M**  
without flange  
Senza flangia

**-O**  
Type R  
Tipo R



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.



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

Lifting / sollevamento / hubantriebe / levage / elevación

$$P \text{ [KW]} = \frac{M \text{ [Kg]} \cdot g \text{ [9.81]} \cdot v \text{ [m / s]}}{1000}$$

Rotation / rotazione / drehung / rotation / rotacion

$$P \text{ [KW]} = \frac{M \text{ [Nm]} \cdot n \text{ [rpm]}}{9550}$$

Linear movement / traslazione / linearbewegung / translation / translacion

$$P \text{ [KW]} = \frac{F \text{ [N]} \cdot v \text{ [m / s]}}{1000}$$

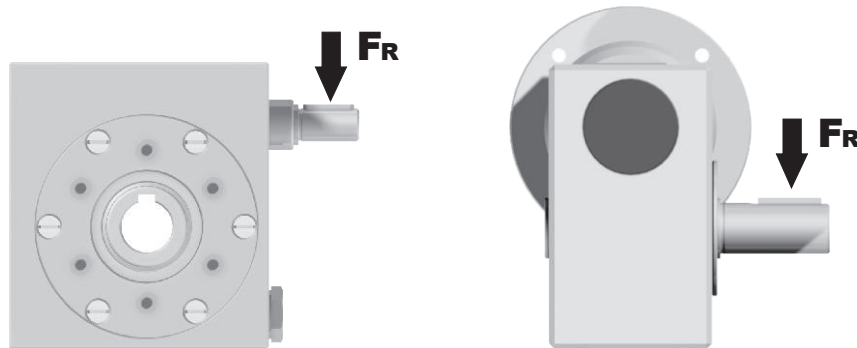
TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

$$M \text{ [Nm]} = \frac{9550 \cdot P \text{ [KW]}}{n \text{ [rpm]}}$$

$$M \text{ [lb in]} = \frac{63030 \cdot P \text{ [HP]}}{n \text{ [rpm]}}$$

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



$$F_R \text{ [N]} = \frac{M \text{ [Nm]} \cdot 2000}{d \text{ [mm]}} \cdot f_k$$

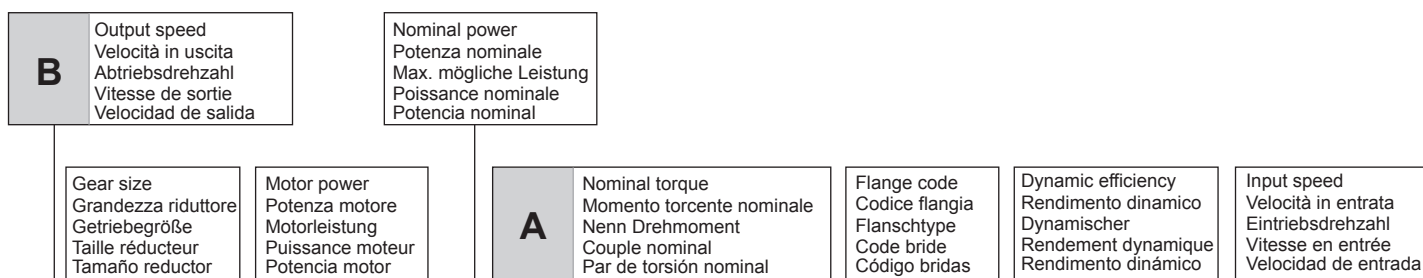
$$F_R \text{ [N]} = \frac{M \text{ [lb in]} \cdot 8.9}{d \text{ [in]}} \cdot f_k$$

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



How to select a gearbox / Come selezionare un riduttore / Wie wählt man ein Getriebe  
Comment sélectionner un réducteur / Cómo seleccionar un reductor



**145** Stainlesssteel - Gear **41Nm** Rating - Stainlesssteel WORM GEARBOXES

QUICK SELECTION / Selezione veloce

Output Speed $n_2$ [min <sup>-1</sup> ]	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 not available		Available B14 motor flanges		Dynamic efficiency RD	Tooth Module [mm]	Ratios code
							-	-	-P	-Q			
200	7	0.37	14	2.2	0.80	30	-	-	63	71	80	2.2	01
140	10	0.37	20	1.5	0.57	30	-	-	-	-	79	2.2	02
100	14	0.37	27	1.1	0.41	30	-	-	-	-	77	2.4	03

**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

Nominal module  
Modulo nominale  
Nenn modul  
Module nominale  
Módulo nominal

Notes  
Note  
Anmerkungen  
Note  
Notas

Type of load and starts per hour Tipo di carico e avviamenti per ora		Oper. hours per day Ore di funz. giorn.		
		<2 h	2 - 8 h	8 - 16 h
Continuous or intermittent appl. with start / hour Applicazione cont. o interm. con n.ro operazioni/ora	Uniform / Uniforme	0.9	1	1.25
	Moderate / Moderato	1	1.25	1.5
	Heavy / Forte	1.25	1.5	1.75
Intermittent application with start / hour Applicazione intermittente con n.ro operazioni/ora	Uniform / Uniforme	1.25	1.5	1.75
	Moderate / Moderato	1.5	1.75	2
	Heavy / Forte	1.75	2	2.25

<b>D</b>	Motor flange available Flange disponibili Erhältliche Motorflansche Brides disponibles Bridas disponibles	
<b>B)</b>	Mounting with reduction ring Montaggio con boccola di riduzione Reduzierhülsen Montage avec douille de réduction Montaje con casquillo de reducción	
<b>C)</b>	Motor flangeholes position/terminal box position Posizione fori flangia/basetta motore Bohrungsposition am Motorflansch/-socket Position trous bride/barrette à bornes moteur Posición agujeros brida / base motor	
<b>B)</b>	Available without reduction bushes Disponibile anche senza boccola Auch ohne Reduzierbuchse verfügbar Disponible aussi sans douille de réduction Disponible también sin casquillo	

<b>A</b>	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>B</b>	Select output speed	Seleziona la velocità in uscita	Ausgewählte Abtriebsdrehzahl	Sélectionner la vitesse de sortie	Seleccionar la velocidad de salida
<b>C</b>	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
<b>D</b>	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<sup>-1</sup>

Output Speed $n_2$ [min <sup>-1</sup> ]	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 not available		Available B14 motor flanges		Dynamic efficiency  RD	Tooth Module  [mm]	Ratios code 
							-	-	-O	-P			
280	5	0.18	5	3.3	0.60	17	-	-	56	63	82	1.26	01
200	7	0.18	7	2.4	0.44	17	-	-	B-C		80	1.44	02
140	10	0.18	10	1.8	0.32	17	-	-	B-C		78	1.44	03
93	15	0.18	13	1.4	0.25	19	-	-	B-C		73	1.44	04
70	20	0.18	17	1.1	0.20	19	-	-	B-C		70	1.09	05
47	30	0.12	15	1.4	0.17	21	-	-	B-C		62	1.44	06
35	40	0.12	19	1.1	0.13	20	-	-	B-C		57	1.09	07
23	61	0.09	19	1.1	0.10	20	-	-	B-C		50	0.72	08
17.5	80	0.09	16	1.0	0.06	16	-	-	B-C		48	0.56	09

\* The nominal power should be reduced if the ambient temperature is  $\geq 30^\circ\text{C}$ , or when a cooler gearbox is required.

\* Diminuire la potenza nominale in caso di temperatura ambiente  $\geq 30^\circ\text{C}$  o se è richiesta una bassa temperatura di utilizzo del riduttore.

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 I30 is supplied with synthetic oil, providing "long life" lubrication.  
See table 1 for lubrication and recommended quantity.  
In table 2 please see possible radial loads and axial loads on the gearbox.

## LUBRICATION I30 Oil Quantity 0.06 Lt.

AGIP Telium VSF 320

SHELL Omala S4 WE 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

**I** Il riduttore tipo I30 viene fornito lubrificato a vita con olio sintetico.  
Vedi tab.1 per oli e quantità consigliati.  
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

**D** Für die Lebensdauerschmierung ist das Getriebe der Größe I30 mit synthetischem Öl befüllt.  
In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben.  
In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

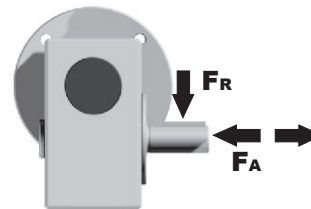
**F** Le réducteur de type I30 est fourni lubrifié à vie avec de l'huile synthétique.  
Voir tableau 1 concernant les huiles et les quantités conseillées.  
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

**E** El reductor tamaño I30 se suministra, 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.

## RADIAL AND AXIAL LOADS

### Output shaft

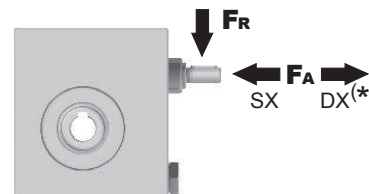
Albero di uscita



$n_2$ [min <sup>-1</sup> ]	FA [N]	FR [N]
200	120	600
150	140	700
100	160	800
75	180	900
50	200	1000
25	250	1250
15	280	1400

### Input shaft

albero in entrata



$n_1$ [min <sup>-1</sup> ]	FA [N]	FR [N]
1400	20	100

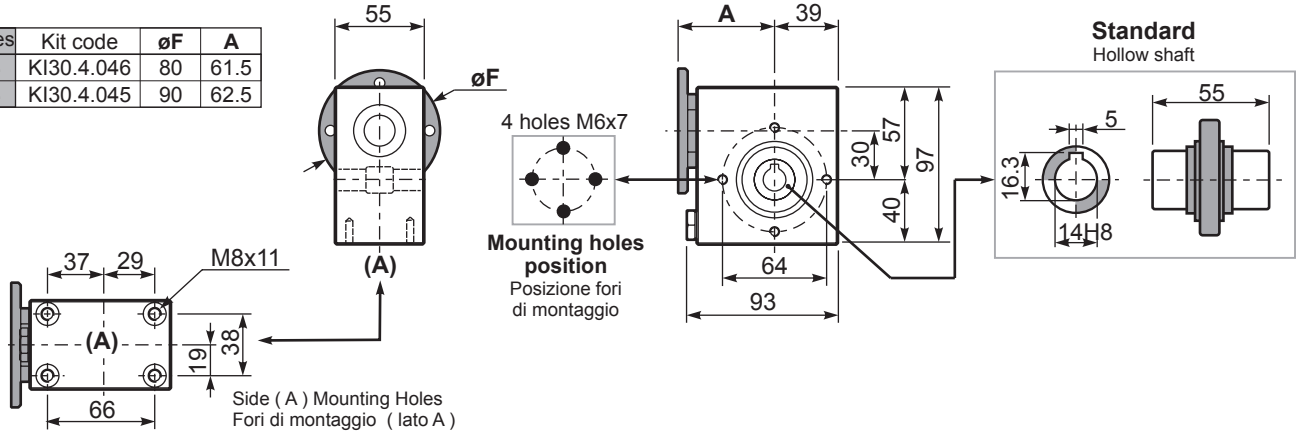
\*Strong axial loads in the DX direction are not allowed.  
Non sono consentiti forti carichi assiali con direzione DX

tab. 2

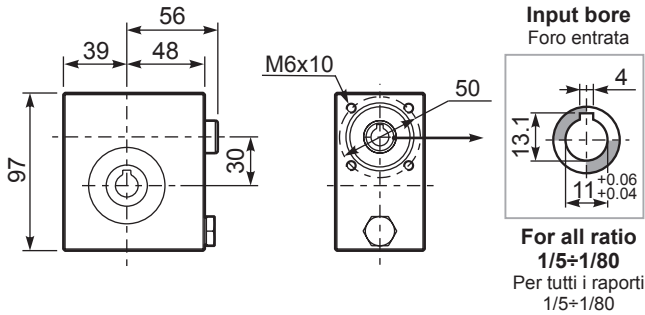
Gearbox weight **2.5 kg**  
peso riduttore

PI30UN... Basic wormbox  
Riduttore base

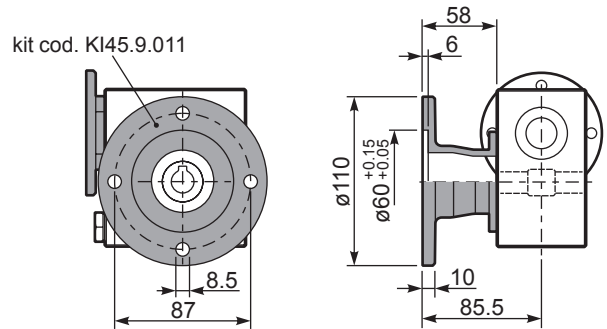
M. flanges	Kit code	øF	A
56B14	KI30.4.046	80	61.5
63B14	KI30.4.045	90	62.5



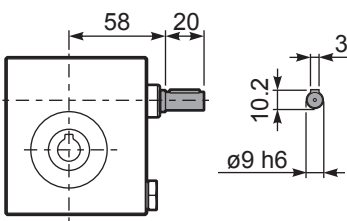
BI30UN... Modular base  
Base modulare



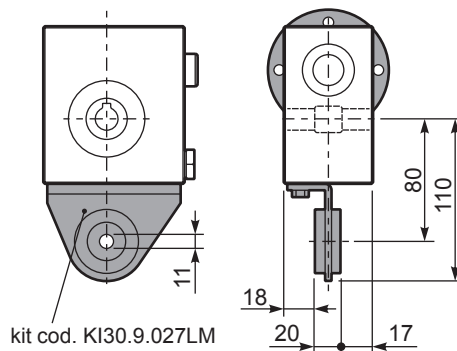
PI30FL... Output flange  
Flangia uscita



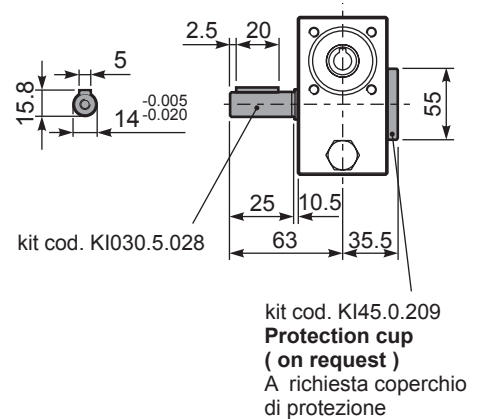
RI30UN... Input shaft  
Albero in entrata



PI30BR... Reaction arm  
Braccio di reazione



PI30.....S... Single Shaft  
Albero lento semplice





## QUICK SELECTION / Selezione veloce

input speed ( $n_1$ ) = 1400 min<sup>-1</sup>

Output Speed $n_2$ [min <sup>-1</sup> ]	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 not available		Available B14 motor flanges		Dynamic efficiency <b>RD</b>	Tooth Module  [mm]	Ratios code 
							-	-	-P	-Q			
200	<b>7</b>	0.37	14	2.2	<b>0.80</b>	<b>30</b>	-	-	B-C		80	2.2	01
140	<b>10</b>	0.37	20	1.5	<b>0.57</b>	<b>30</b>	-	-	B-C		79	2.2	02
100	<b>14</b>	0.37	27	1.1	<b>0.41</b>	<b>30</b>	-	-	B-C		77	2.4	03
67	<b>21</b>	0.37	36	1.2	<b>0.43</b>	<b>41</b>	-	-	B-C		67	1.6	04
50	<b>28</b>	0.25	31	1.3	<b>0.33</b>	<b>41</b>	-	-	B-C		65	2.5	05
38	<b>37</b>	0.25	40	1.0	<b>0.26</b>	<b>41</b>	-	-	B-C		63	1.8	06
30	<b>46</b>	0.25	46	0.9	<b>0.22</b>	<b>41</b>	-	-	B-C		59	1.5	07
23	<b>60</b>	0.18	41	1.0	<b>0.18</b>	<b>41</b>	-	-	B-C		56	1.2	08
20	<b>70</b>	0.12	31	1.0	<b>0.12</b>	<b>30</b>	-	-	B-C		54	1.0	09
13.7	<b>102</b>	0.12	41	0.7	<b>0.09</b>	<b>29</b>	-	-	B-C		49	0.72	10

\* The nominal power should be reduced if the ambient temperature is  $\geq 30^\circ\text{C}$ , or when a cooler gearbox is required.

\* Diminuire la potenza nominale in caso di temperatura ambiente  $\geq 30^\circ\text{C}$  o se è richiesta una bassa temperatura di utilizzo del riduttore.

- 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 I45 is supplied with synthetic oil, providing "long life" lubrication..  
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 I45 viene fornito lubrificato a vita con olio sintetico.  
Vedi tab.1 per oli e quantità consigliati.  
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

**D** Für die Lebensdauerschmierung ist das Getriebe der Größe I45 mit synthetischem Öl befüllt.  
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 I45 est fourni lubrifié à vie avec de l'huile synthétique.  
Voir tableau 1 concernant les huiles et les quantités conseillées.  
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

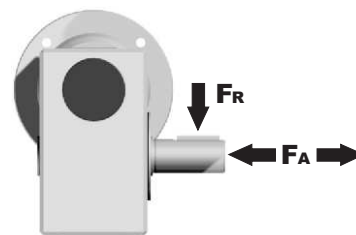
**E** El reductor tamaño I45 se suministra, lubricado de por vida con aceite sintético.  
Ver tabla 1, para cantidades y aceites recomendados.  
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard			On request		
0.15 LT	0.15 LT	0.20 LT	0.15 LT	0.15 LT	0.15 LT
AGIP Telium VSF 320			SHELL Omala S4 WE 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

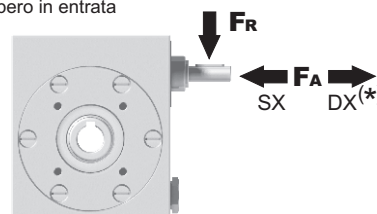
## RADIAL AND AXIAL LOADS

**Output shaft**  
Albero di uscita



$n_2$ [min <sup>-1</sup> ]	FA [N]	FR [N]
200	180	900
150	200	1000
100	220	1100
75	240	1200
50	260	1400
25	300	1800
15	400	2000

**Input shaft**  
albero in entrata



$n_1$ [min <sup>-1</sup> ]	FA [N]	FR [N]
1400	42	210

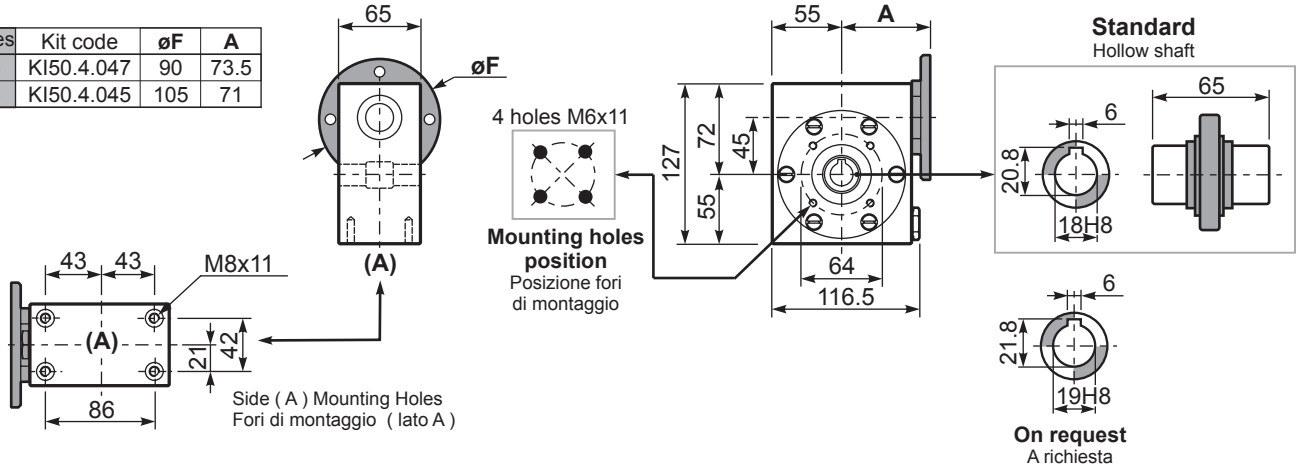
\*Strong axial loads in the DX direction are not allowed.  
Non sono consentiti forti carichi assiali con direzione DX

**tab. 2**

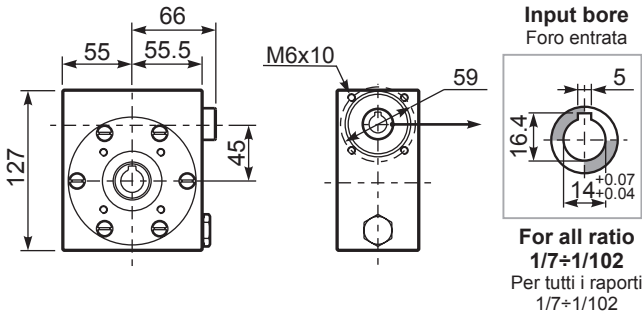
**PI45UN...** Basic wormbox  
Riduttore base

Gearbox weight  
peso riduttore **5.0 kg**

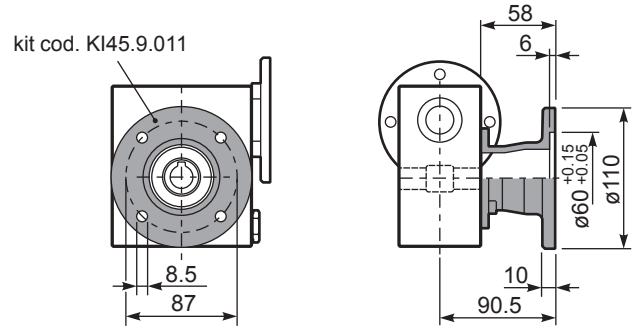
M. flanges	Kit code	øF	A
<b>63B14</b>	KI50.4.047	90	73.5
<b>71B14</b>	KI50.4.045	105	71



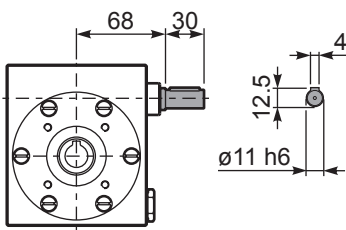
**BI45UN...** Modular base  
Base modulare



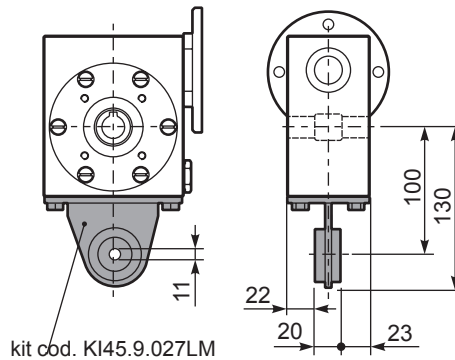
**PI45FL...** Output flange  
Flangia uscita



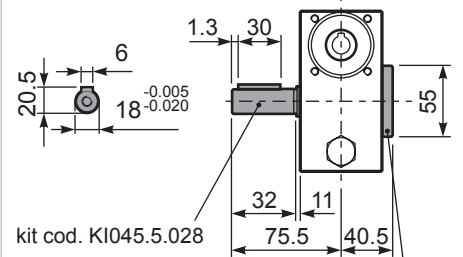
**RI45UN...** Input shaft  
Albero in entrata



**PI45BR...** Reaction arm  
Braccio di reazione



**PI45....S...** Single Shaft  
Albero lento semplice



kit cod. KI45.0.209  
**Protection cup (on request)**  
A richiesta coperchio di protezione



#### QUICK SELECTION / Selezione veloce

input speed ( $n_1$ ) = 1400 min<sup>-1</sup>

Output Speed $n_2$ [min <sup>-1</sup> ]	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 not available		Available B14 motor flanges			Dynamic efficiency  RD	Tooth Module  [mm]	Ratios code 
							-	-	-P	-Q	-R			
200	7	0.75	29	1.9	1.5	57			B-C	B		82	2.5	01
140	10	0.75	41	1.5	1.1	62			B-C	B		80	2.4	02
100	14	0.75	57	1.2	0.90	68			B-C	B		79	2.6	03
78	18	0.55	51	1.2	0.67	62			B-C	B		75	2.0	04
54	26	0.55	67	1.0	0.54	66			B-C	B		69	2.7	05
47	30	0.55	79	0.9	0.50	72			B-C	B		70	2.5	12
39	36	0.37	63	1.2	0.43	72			B-C			69	2.1	06
33	43	0.37	72	1.0	0.35	68			B-C			66	1.8	07
23	60	0.25	59	1.0	0.26	62			B-C			58	1.3	08
21	68	0.25	66	0.9	0.22	58			B-C			57	1.2	09
17.5	80	0.18	53	1.1	0.19	57			B-C			54	1.0	10
14	100	0.12	41	1.3	0.15	51			B-C			50	0.8	11

\* The nominal power should be reduced if the ambient temperature is  $\geq 30^\circ\text{C}$ , or when a cooler gearbox is required.

\* Diminuire la potenza nominale in caso di temperatura ambiente  $\geq 30^\circ\text{C}$  o se è richiesta una bassa temperatura di utilizzo del riduttore.

**Motor Flanges Available** Flange Motore Disponibili  
**Supplied with Reduction Bushing** Fornito con Bussola di Riduzione  
**Available on Request without reduction bushing** Disponibile a Richiesta senza Bussola di Riduzione  
**Motor Flange Holes Position** Posizione Fori Flangia Motore

**EN** Unit 150 is supplied with synthetic oil, providing "long life" lubrication. 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 150 viene fornito lubrificato a vita con olio sintetico. Vedi tab.1 per oli e quantità consigliati. In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

**D** Für die Lebensdauerschmierung ist das Getriebe der Größe 150 mit synthetischem Öl befüllt. 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 150 est fourni lubrifié à vie avec de l'huile synthétique. 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 150 se suministra, 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.

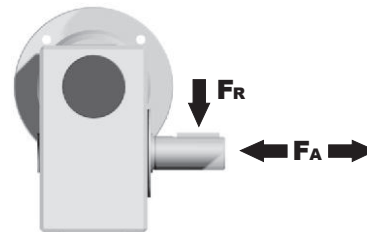
Standard	On request				
0.22 LT	0.22 LT	0.28 LT	0.22 LT	0.22 LT	0.22 LT
AGIP Telium VSF 320			SHELL Omala S4 WE 320		

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

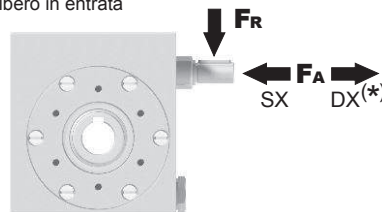
Albero di uscita



$n_2$ [min <sup>-1</sup> ]	FA [N]	FR [N]
200	240	1200
150	280	1400
100	300	1500
75	340	1700
50	380	1900
25	480	2500
15	560	2800

##### Input shaft

albero in entrata



$n_1$ [min <sup>-1</sup> ]	FA [N]	FR [N]
1400	76	380

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

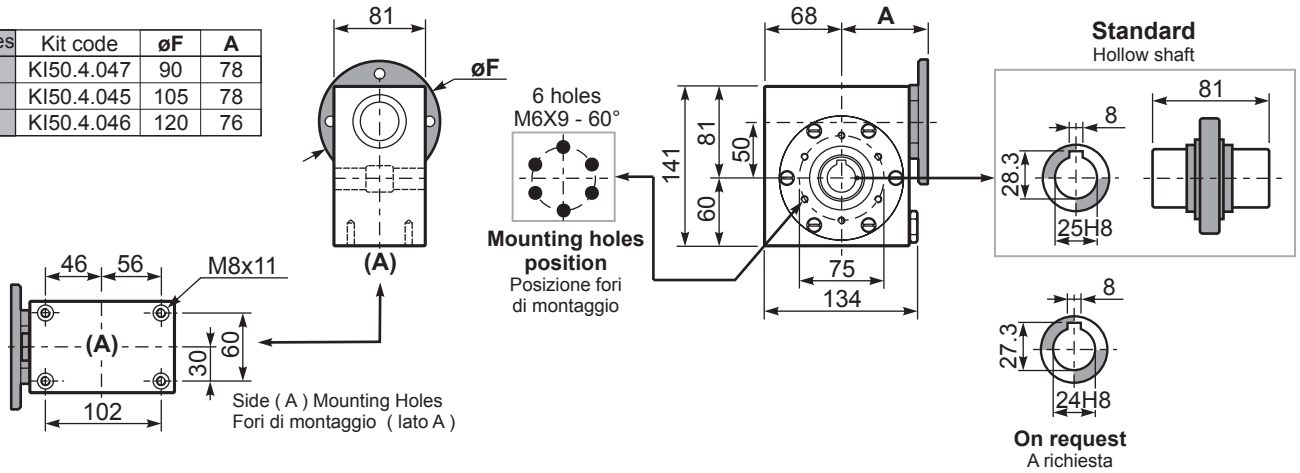
tab. 2



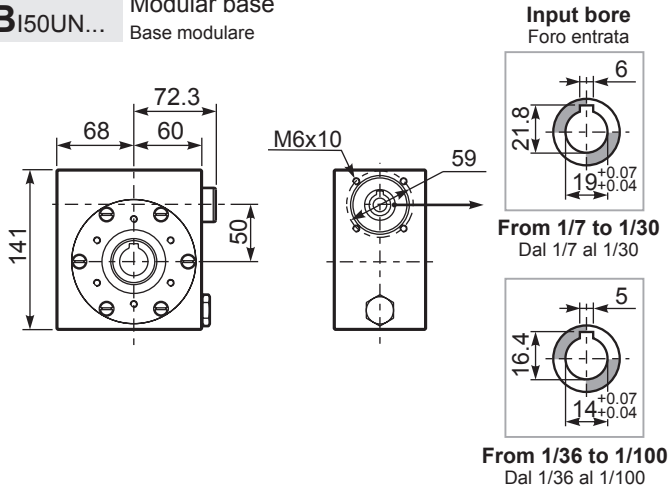
Gearbox weight **7.3 kg**  
peso riduttore

PI50**UN**... Basic wormbox  
Riduttore base

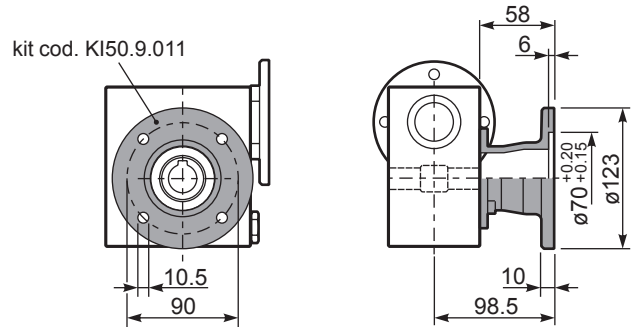
M. flanges	Kit code	øF	A
<b>63B14</b>	KI50.4.047	90	78
<b>71B14</b>	KI50.4.045	105	78
<b>80B14</b>	KI50.4.046	120	76



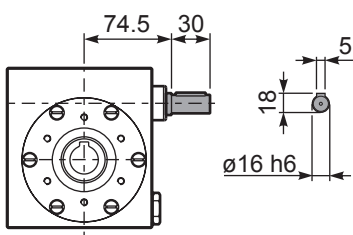
BI50UN... Modular base  
Base modulare



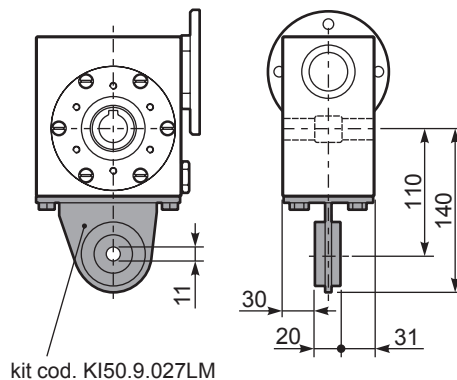
PI50FL... Output flange  
Flangia uscita



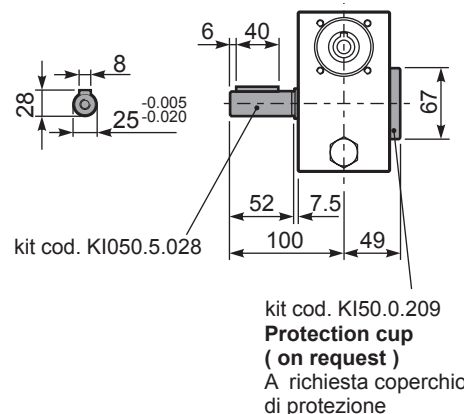
RI50UN... Input shaft  
Albero in entrata



PI50BR... Reaction arm  
Braccio di reazione



PI50...S... Single Shaft  
Albero lento semplice





**QUICK SELECTION / Selezione veloce**

input speed ( $n_1$ ) = 1400 min<sup>-1</sup>

Output Speed $n_2$ [min <sup>-1</sup> ]	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 not available		Available B14 motor flanges			Dynamic efficiency RD	Tooth Module [mm]	Ratios code
							-	-	-Q	-R	-T			
200	<b>7</b>	1.8	71	1.8	<b>3.2</b>	<b>125</b>			B-C	B-C		83	3.1	01
140	<b>10</b>	1.8	99	1.4	<b>2.4</b>	<b>134</b>			B-C	B-C		81	3.1	02
93	<b>15</b>	1.5	121	1.1	<b>1.7</b>	<b>138</b>			B-C	B-C		79	3.1	03
74	<b>19</b>	1.1	111	1.2	<b>1.4</b>	<b>138</b>			B-C	B-C		78	2.6	04
58	<b>24</b>	1.1	135	1.0	<b>1.2</b>	<b>142</b>			B-C	B-C		75	2.0	05
47	<b>30</b>	1.1	167	0.9	<b>0.96</b>	<b>146</b>			B-C	B-C		74	3.2	06
39	<b>36</b>	0.75	125	1.2	<b>0.88</b>	<b>147</b>			B-C	B-C		68	2.7	07
31	<b>45</b>	0.55	111	1.2	<b>0.67</b>	<b>135</b>			B-C	C		66	2.1	08
23	<b>60</b>	0.55	140	0.9	<b>0.51</b>	<b>130</b>			B-C	C		62	1.6	12
21	<b>67</b>	0.55	151	0.8	<b>0.45</b>	<b>124</b>			B-C	C		60	1.5	09
17.5	<b>80</b>	0.37	115	1.0	<b>0.38</b>	<b>119</b>			B-C	C		57	1.3	10
14.9	<b>94</b>	0.37	123	1.0	<b>0.36</b>	<b>119</b>			B-C	C		52	1.1	11

\* The nominal power should be reduced if the ambient temperature is  $\geq 30^\circ\text{C}$ , or when a cooler gearbox is required.

\* Diminuire la potenza nominale in caso di temperatura ambiente  $\geq 30^\circ\text{C}$  o se è richiesta una bassa temperatura di utilizzo del riduttore.

**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 I63 is supplied with synthetic oil, providing "long life" lubrication. 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 I63 viene fornito lubrificato a vita con olio sintetico. Vedi tab.1 per oli e quantità consigliati. In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

**D** Für die Lebensdauerschmierung ist das Getriebe der Größe I63 mit synthetischem Öl befüllt. 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 I63 est fourni lubrifié à vie avec de l'huile synthétique. 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 I63 se suministra, 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.

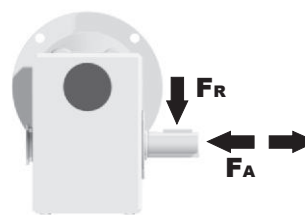
Standard	On request				
B3	B6	B7	B8	V5	V6
0.60 LT	0.60 LT	0.82 LT	0.60 LT	0.60 LT	0.60 LT
AGIP Telium VSF 320			SHELL Omala S4 WE 320		

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**

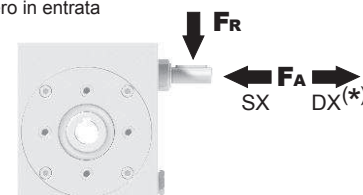
Albero di uscita



$n_2$	FA	FR
200	360	1800
150	400	2000
100	460	2300
75	500	2500
50	600	3000
25	700	3800
15	800	4000

**Input shaft**

albero in entrata



$n_1$ [min <sup>-1</sup> ]	FA [N]	FR [N]
1400	90	450

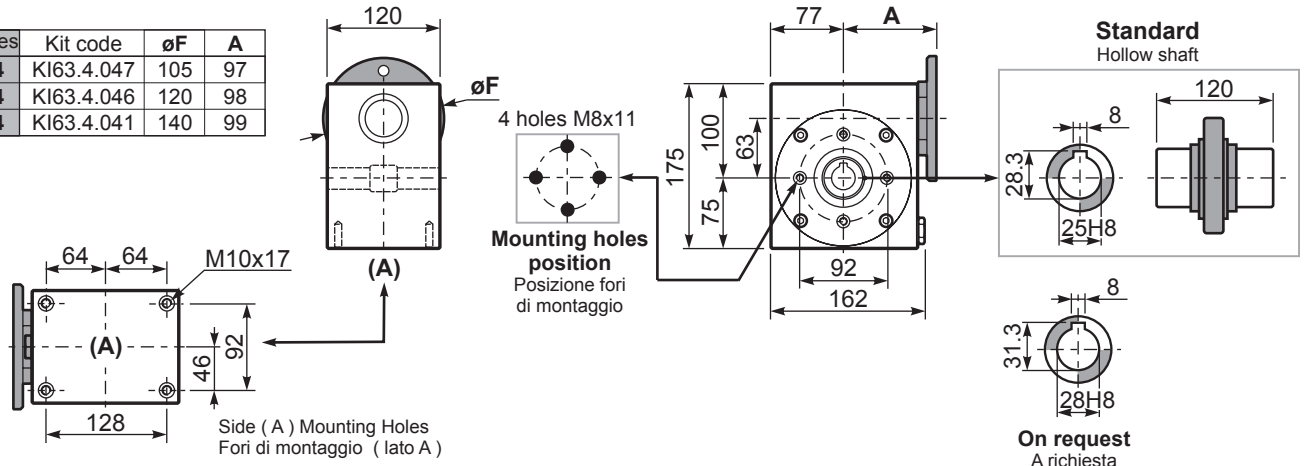
\*Strong axial loads in the DX direction are not allowed.  
Non sono consentiti forti carichi assiali con direzione DX

tab. 2

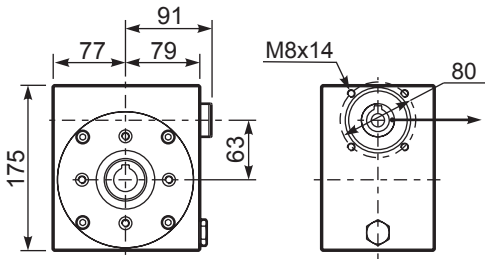
**Gearbox weight**  
peso riduttore **14.6 kg**

**PI63UN...** Basic wormbox  
Riduttore base

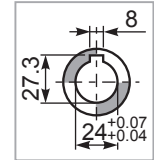
M. flanges	Kit code	øF	A
<b>71B14</b>	KI63.4.047	105	97
<b>80B14</b>	KI63.4.046	120	98
<b>90B14</b>	KI63.4.041	140	99



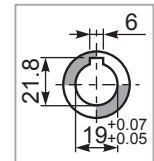
**BI63UN...** Modular base  
Base modulare



**Input bore**  
Foro entrata



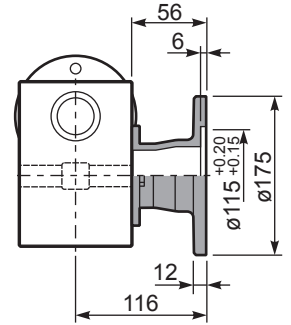
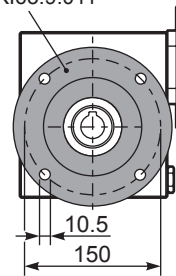
From 1/7 to 1/36  
Dal 1/7 al 1/36



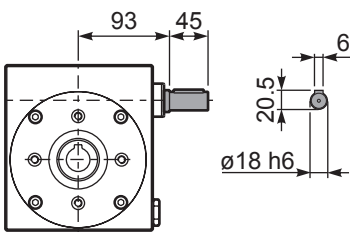
From 1/45 to 1/94  
Dal 1/45 al 1/94

**PI63FL...** Output flange  
Flangia uscita

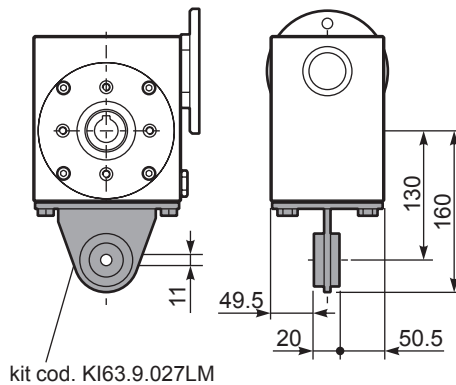
kit cod. KI63.9.011



**RI63UN...** Input shaft  
Albero in entrata



**PI63BR...** Reaction arm  
Braccio di reazione

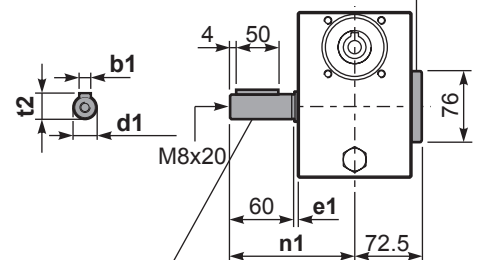


**PI63.....S...** Single Shaft  
Albero lento semplice

kit cod. KI63.0.209

**Protection cup ( on request )**

A richiesta coperchio di protezione



kit cod. KI063.5.028

kit cod. KI070.5.028 On request

	b1	e1	d1	n1	t2
Standard	8	3.2	25 <sup>-0.005</sup> / <sub>-0.020</sub>	121.9	28
On request	8	3.5	28 <sup>-0.005</sup> / <sub>-0.020</sub>	122.2	31



#### QUICK SELECTION / Selezione veloce

input speed ( $n_1$ ) = 1400 min<sup>-1</sup>

Output Speed $n_2$ [min <sup>-1</sup> ]	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		Available B14 motor flanges	Dynamic efficiency <b>RD</b>	Tooth Module  [mm]	Ratios code 
							-D	-E	-U			
							80	90	100-112			
200	<b>7</b>	4.0	168	1.5	<b>6.1</b>	<b>257</b>	B	B		88	4.23	01
140	<b>10</b>	4.0	218	1.3	<b>5.2</b>	<b>284</b>	B	B		80	4.2	02
100	<b>14</b>	3.0	223	1.4	<b>4.1</b>	<b>305</b>	B	B		78	4.5	03
70	<b>20</b>	2.2	237	1.2	<b>2.7</b>	<b>294</b>	B	B		79	3.4	04
64	<b>22</b>	2.2	258	1.1	<b>2.5</b>	<b>294</b>	B	B		78	3.1	05
50	<b>28</b>	2.2	315	1.1	<b>2.4</b>	<b>347</b>	B	B		75	4.7	06
37	<b>38</b>	1.5	276	1.2	<b>1.8</b>	<b>336</b>	B	B		71	3.5	07
30	<b>46</b>	1.5	320	1.0	<b>1.5</b>	<b>326</b>	B	B		68	3.1	08
27	<b>52</b>	1.1	258	1.1	<b>1.2</b>	<b>289</b>	B	B		66	2.7	09
21	<b>67</b>	1.1	327	0.9	<b>0.97</b>	<b>289</b>	B	B		65	2.1	10
18.9	<b>74</b>	0.75	220	1.2	<b>0.91</b>	<b>268</b>	B	B		58	1.9	11
14.6	<b>96</b>	0.55	191	1.3	<b>0.70</b>	<b>242</b>	B	B		53	1.5	12

\* The nominal power should be reduced if the ambient temperature is  $\geq 30^\circ\text{C}$ , or when a cooler gearbox is required.

\* Diminuire la potenza nominale in caso di temperatura ambiente  $\geq 30^\circ\text{C}$  o se è richiesta una bassa temperatura di utilizzo del riduttore.

**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 **185** is supplied with synthetic oil, providing "long life" lubrication.  
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 **185** viene fornito lubrificato a vita con olio sintetico.  
Vedi tab.1 per oli e quantità consigliati.  
In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

**D** Für die Lebensdauerschmierung ist das Getriebe der Größe **185** mit synthetischem Öl befüllt.  
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 **185** est fourni lubrifié à vie avec de l'huile synthétique.  
Voir tableau 1 concernant les huiles et les quantités conseillées.  
Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

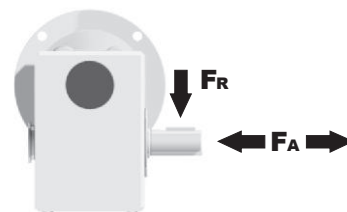
**E** El reductor tamaño **185** se suministra, lubricado de por vida con aceite sintético.  
Ver tabla 1, para cantidades y aceites recomendados.  
En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard			On request		
1.40 LT	1.40 LT	1.70LT	1.40 LT	1.40 LT	1.40 LT
AGIP Telium VSF 320			SHELL Omala S4 WE 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

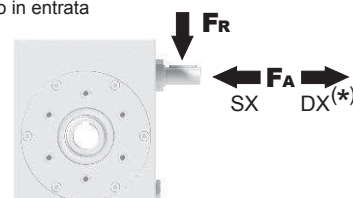
#### RADIAL AND AXIAL LOADS

**Output shaft**  
Albero di uscita



$n_2$ [min <sup>-1</sup> ]	FA [N]	FR [N]
200	500	2500
150	580	2900
100	600	3000
75	700	3500
50	800	4000
25	1000	5000
15	1160	5800

**Input shaft**  
albero in entrata



$n_1$ [min <sup>-1</sup> ]	FA [N]	FR [N]
1400	160	809

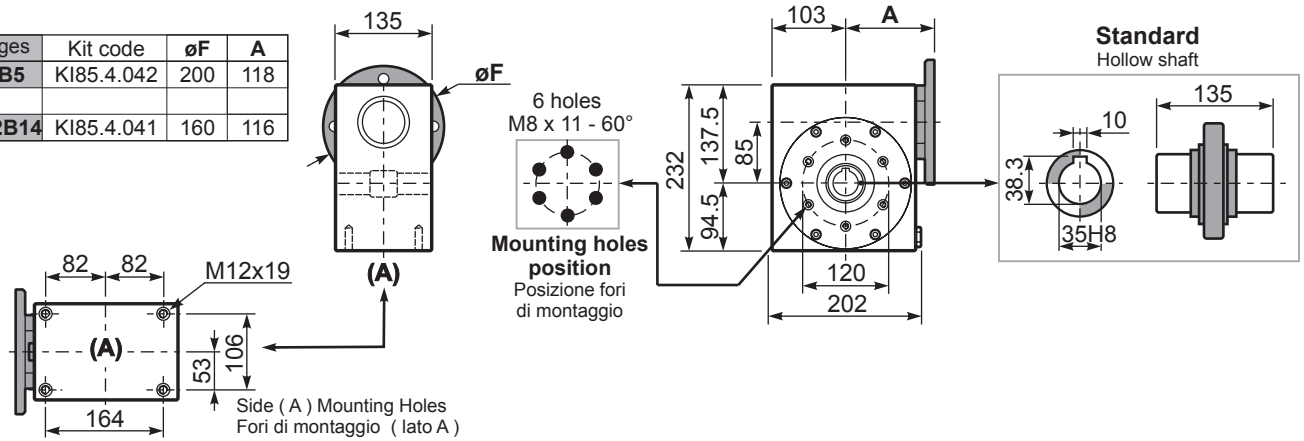
\*Strong axial loads in the DX direction are not allowed.  
Non sono consentiti forti carichi assiali con direzione DX

tab. 2

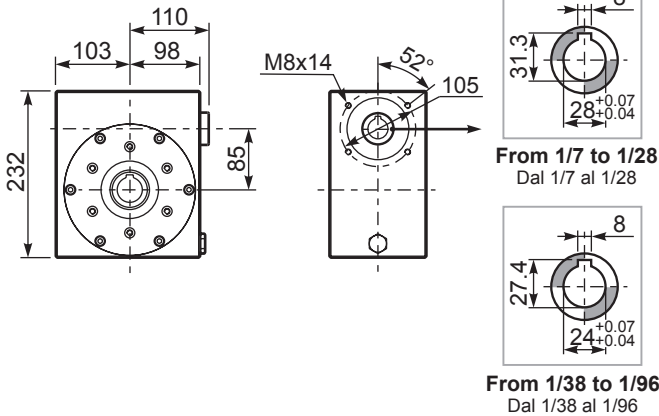
Gearbox weight **23.3 kg**  
peso riduttore

PI85UN... Basic wormbox  
Riduttore base

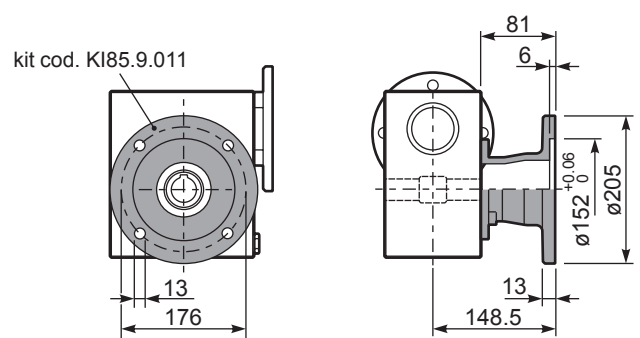
M. flanges	Kit code	øF	A
80-90B5	KI85.4.042	200	118
100-112B14	KI85.4.041	160	116



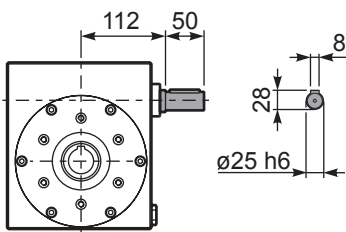
BI85UN... Modular base  
Base modulare



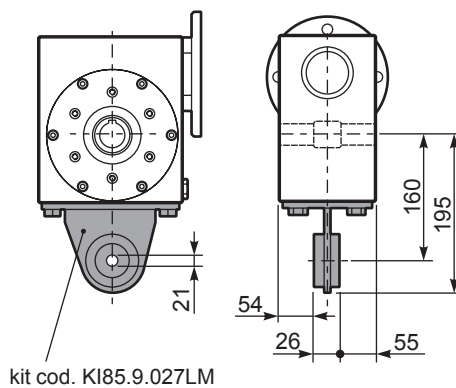
PI85FL... Output flange  
Flangia uscita



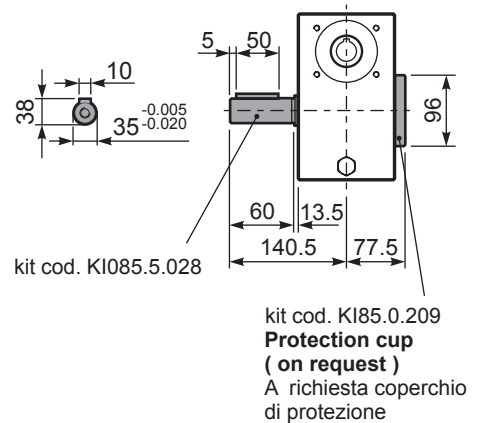
RI85UN... Input shaft  
Albero in entrata



PI85BR... Reaction arm  
Braccio di reazione



PI85.....S... Single Shaft  
Albero lento semplice





#### QUICK SELECTION / Selezione veloce

input speed ( $n_1$ ) = 1400 min<sup>-1</sup>

Output Speed $n_2$ [min <sup>-1</sup> ]	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		Available B14 motor flanges	Dynamic efficiency RD	Tooth Module [mm]	Ratios code
							-D	-E	-U			
200	<b>7</b>	4.0	168	2.9	<b>11.5</b>	<b>483</b>	B	B		88	5.5	01
140	<b>10</b>	4.0	235	2.2	<b>9.0</b>	<b>525</b>	B	B		86	5.4	02
88	<b>16</b>	4.0	358	1.5	<b>6.0</b>	<b>536</b>	B	B		82	5.3	03
70	<b>20</b>	4.0	447	1.2	<b>4.9</b>	<b>546</b>	B	B		82	4.5	04
61	<b>23</b>	3.0	377	1.4	<b>4.1</b>	<b>515</b>	B	B		80	3.9	05
47	<b>30</b>	3.0	467	1.4	<b>4.2</b>	<b>651</b>	B	B		76	5.6	06
37	<b>38</b>	3.0	583	1.1	<b>3.3</b>	<b>641</b>	B	B		75	4.7	07
31	<b>45</b>	2.2	493	1.2	<b>2.7</b>	<b>599</b>	B	B		73	4.0	08
26	<b>53</b>	2.2	557	1.1	<b>2.5</b>	<b>620</b>	B	B		70	3.5	09
22	<b>64</b>	1.5	452	1.2	<b>1.8</b>	<b>536</b>	B	B		69	2.9	10
16.7	<b>84</b>	1.1	410	1.2	<b>1.3</b>	<b>494</b>	B	B		65	2.2	11
14.1	<b>99</b>	1.1	446	1.1	<b>1.2</b>	<b>483</b>	B	B		60	1.9	12

\* The nominal power should be reduced if the ambient temperature is  $\geq 30^\circ\text{C}$ , or when a cooler gearbox is required.

\* Diminuire la potenza nominale in caso di temperatura ambiente  $\geq 30^\circ\text{C}$  o se è richiesta una bassa temperatura di utilizzo del riduttore.

**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 I11 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us. 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 I11 viene fornito lubrificato a vita con olio sintetico. Per posizioni V5-V6 contattare il ns. servizio tecnico. Vedi tab.1 per oli e quantità consigliati. In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

**D** Für die Lebensdauerschmierung ist das Getriebe der Größe I11 mit synthetischem Öl befüllt. Bei Einbaulage V5 oder V6 bitten wir um Rücksprache. 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 I11 est fourni lubrifié à vie avec de l'huile synthétique. Concernant les positions V5.V6, contactez notre service d'assistance technique. Voir tableau 1 concernant les huiles et les quantités conseillées. Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

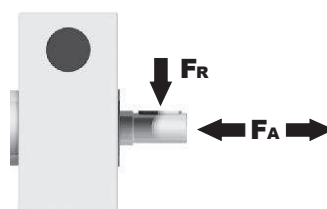
**E** El reductor tamaño I11 se suministra, lubricado de por vida con aceite sintético. Para las posiciones V5 y V6 contactar con nuestro servicio técnico. Ver tabla 1, para cantidades y aceites recomendados. En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

Standard	On request				
3.50 LT	2.50 LT	2.50 LT	2.10 LT	1.60 LT	1.60 LT
AGIP Telium VSF 320			SHELL Omala S4 WE 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

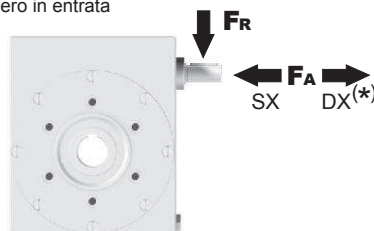
#### RADIAL AND AXIAL LOADS

**Output shaft**  
Albero di uscita



$n_2$ [min <sup>-1</sup> ]	FA [N]	FR [N]
200	600	2900
150	700	3300
100	750	3600
75	800	4000
50	920	4600
25	1200	6000
15	1400	7000

**Input shaft**  
albero in entrata



$n_1$ [min <sup>-1</sup> ]	FA [N]	FR [N]
1400	228	1140

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

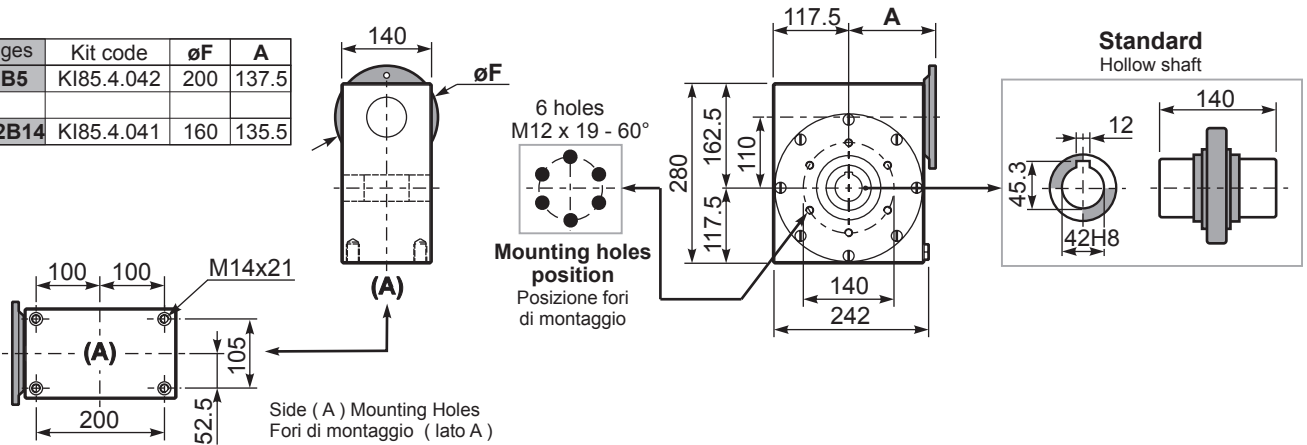
tab. 2



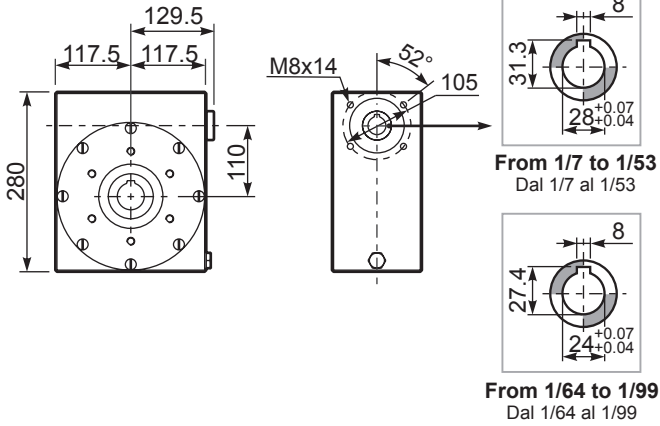
PI11UN... Basic wormbox  
Riduttore base

Gearbox weight  
peso riduttore **38.5 kg**

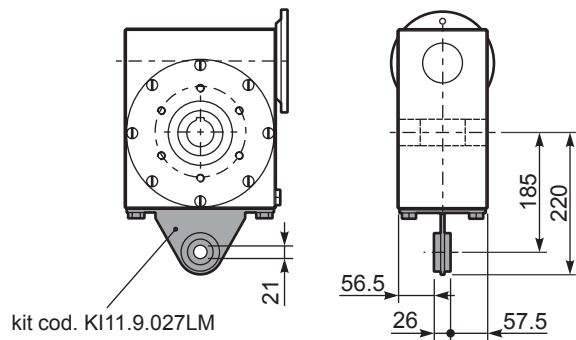
M. flanges	Kit code	øF	A
80-90B5	KI85.4.042	200	137.5
100-112B14	KI85.4.041	160	135.5



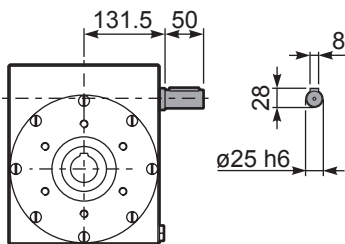
B111UN... Modular base  
Base modulare



PI11BR... Reaction arm  
Braccio di reazione

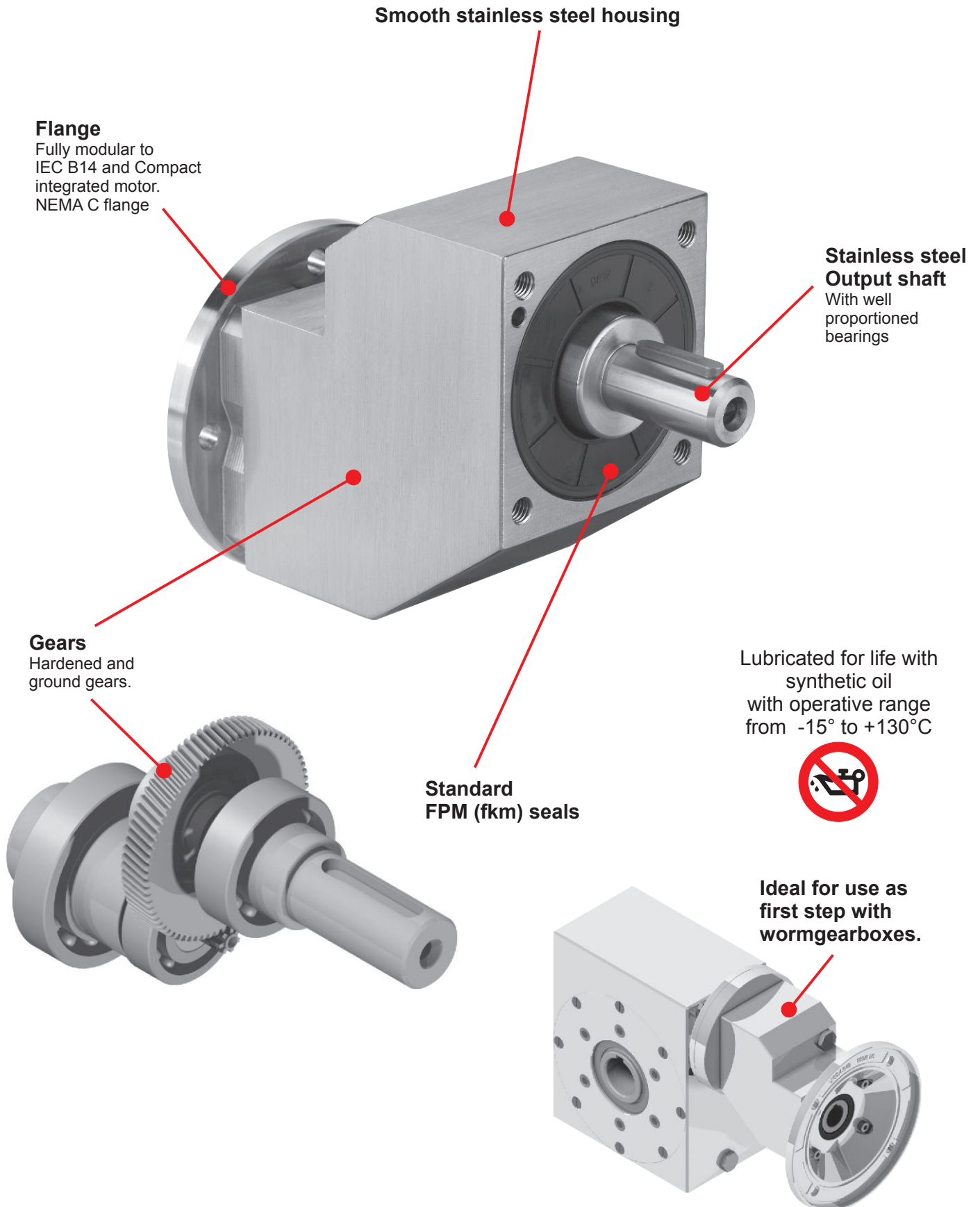


R111UN... Input shaft  
Albero in entrata



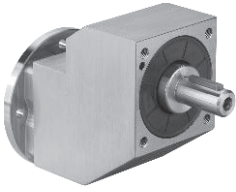
# Stainless steel one step gearboxes

A modular and compact product



# Specific type datasheet on page...

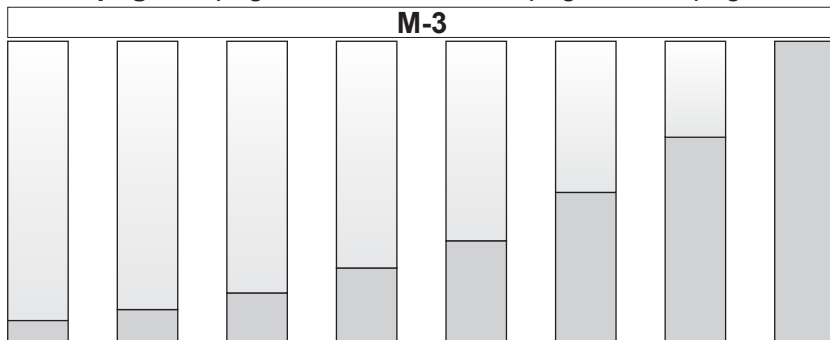
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Types / Tipi /  
Tipen / Types /  
Tipos →

**411I**  
38Nm

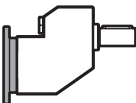
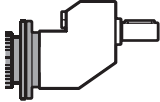
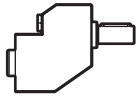
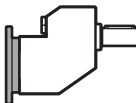

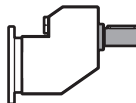
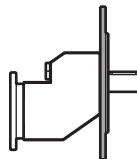
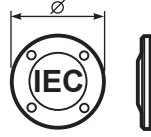
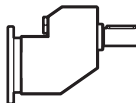
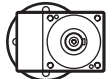

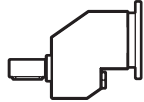
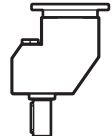
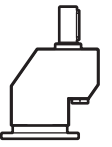
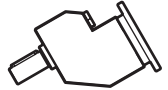
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Types / Tipi /  
Tipen / Types /  
Tipos →

M-3							
<b>63B</b>	<b>71A</b>	<b>71B</b>	<b>80A</b>	<b>80B</b>	<b>90S</b>	<b>90L</b>	<b>100LA</b>
0.18kw 1/4cv	0.25kw 1/3cv	0.37kw 1/2cv	0.55kw 3/4cv	0.75kw 1cv	1.1kw 1 1/2cv	1.5kw 2cv	2.2kw 3cv

CODIFICA / HOW TO ORDER / TYPENBEZEICHNUNGEN / CODIFICATION / CODIFICACIÓN

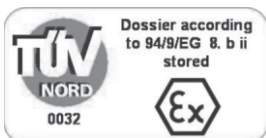
Type - Tipo Typ Type - Tipo	Size - Grandezza Grösse - Taille Tamaño	Mounting Montaggio Montage Fixation Tipo de montaje	Ratio - Rapporto Untersetzung Reduction Relación	Output shaft Albero lento Abtriebswelle Arbre de sortie Eje solida	Output flange Flangia uscita Ausgangsflansch Bride de sortie Brida en salida	Motor size Grandezza motore Motor Grösse Grandeur moteur Tamaño motor	Mounting position Posizione montaggio Einbaulage Position de montage Position de montage
<b>P</b>	<b>411I</b>	<b>-F</b>	<b>1.57</b>	<b>C</b>	<b>4</b>	<b>-Q</b>	<b>B3</b>
 <b>P</b>  <b>M</b>  <b>B</b>	<b>411I</b>	 <b>-N</b>  <b>-F</b>	<p>See technical data table</p> <p>Vedi tabelle dati tecnici.</p> <p>Technisches Datenblatt beachten</p> <p>Voir Tableau données techniques</p> <p>Ver tabla datos técnicos</p>	 <b>C</b> → STANDARD <div style="border: 1px solid black; padding: 2px; display: inline-block;">411I</div> <b>C</b> → <b>∅19</b>	 <b>N</b> Senza flangia Without flange <div style="border: 1px solid black; padding: 2px; display: inline-block;">411I</div> <b>4</b> → <b>∅200</b>	 <div style="border: 1px solid black; padding: 2px; display: inline-block;">411I</div> <b>-Q</b> 71B14 (∅105) <b>-R</b> 80B14 (∅120) <b>-T</b> 90B14 (∅140) <div style="border: 1px solid black; padding: 2px; display: inline-block;">Without flange Senza flangia</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">411I</div> <b>-1</b> → ∅14 (71B5) <b>-2</b> → ∅19 (80B5) <b>-3</b> → ∅24 (90B5)	 <b>B3</b> <b>STANDARD</b>  <b>B6</b>  <b>B7</b>  <b>B8</b>  <b>V5</b>  <b>V6</b>  <b>V8</b>

## On request

**B** Food lube

- B3 is supplied with standard oil quantity

- Please specify in the order if you required other mounting positions



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.

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

Lifting / sollevamento / hubantriebe / levage / elevación

$$P [KW] = \frac{M [Kg] \cdot g [9.81] \cdot v [m / s]}{1000}$$

Rotation / rotazione / drehung / rotation / rotation

$$P [KW] = \frac{M [Nm] \cdot n [rpm]}{9550}$$

Linear movement / traslazione / linearbewegung / translation / translacion

$$P [KW] = \frac{F [N] \cdot v [m / s]}{1000}$$

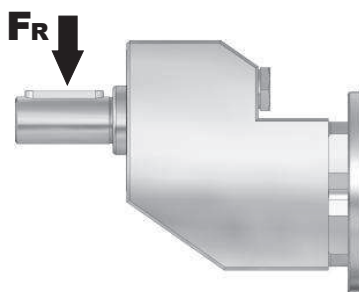
TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

$$M [Nm] = \frac{9550 \cdot P[KW]}{n [rpm]}$$

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

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



	$F_R [N] = \frac{M [Nm] \cdot 2000}{d [mm]} \cdot f_k$	$F_R [N] = \frac{M [lb in] \cdot 8.9}{d [in]} \cdot f_k$
<b>M</b>	Momento torcente / Output torque / Abtriebsdrehmoment / Couple / Par torsion	
<b>d</b>	Diametro primitivo / Diam. of driving element / Durchmesser der Abtriebseinheit / Diamètre primitif / Diámetro primitivo	
<b>f<sub>k</sub></b>	Coefficiente di trasformazione / Factor / Faktor / Coefficient de transmission / Coeficiente de transmisión <b>1.15</b> Ingranaggi / Gearwheels / Zahnrad / Engrenage / Engranaje <b>1.25</b> Catena / Chain sprockets / Antriebskette / Chaîne / Cadena <b>1.75</b> Cinghia Trapezoidale / Narrow v-belt pulley / Keilriemen / Courroie trap. / Correa trapezoidal <b>2.50</b> 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.

How to select a gearbox / Come selezionare un riduttore / Wie wählt man ein Getriebe  
Comment sélectionner un réducteur / Cómo seleccionar un reductor

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

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

**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

Gear size  
Grandezza riduttore  
Getriebegröße  
Taille réducteur  
Tamaño reductor

Motor power  
Potenza motore  
Motorleistung  
Puissance moteur  
Potencia motor

# 4111

## One step 38Nm

Rating - Stainless ONE STEP GEARBOXES

QUICK SELECTION / Selezione veloce										input speed (n <sub>1</sub> ) = 1400 min <sup>-1</sup>						
Output Speed n <sub>2</sub> [min <sup>-1</sup> ]	Ratio i	Motor power P <sub>1M</sub> [kW]	Output torque M <sub>2M</sub> [Nm]	Service factor f.s.	Nominal power P <sub>1R</sub> [kW]	Nominal torque M <sub>2R</sub> [Nm]	B5 motor flanges not available				Available B14 motor flanges			Output Shaft 	Ratios code 	
							-	-	-	-	-Q	-R	-T			71
892	1.57	1.5	15.7	1.3	1.90	20										
493	2.84	1.5	28.4	1.2	1.84	35										
426	3.29	1.5	32.9	1.2	1.73	38										
362	3.87	1.5	38.7	1.0	1.54	40										

**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		Oper. hours per day Ore di funz. giorn.		
Type of load and starts per hour Tipo di carico e avviamenti per ora		3 h	10 h	24 h
Continuous or intermittent appl. with start / hour 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 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

<b>D</b>	Motor flange available Flange disponibili Erhältliche Motorflansche Brides disponibles Bridas disponibles
<b>B)</b>	Mounting with reduction ring Montaggio con boccola di riduzione Reduzierhülsen Montage avec douille de réduction Montaje con casquillo de reducción
<b>C)</b>	Motor flangeholes position/terminal box position Posizione fori flangia/basetta motore Bohrungsposition am Motorflansch/-socket Position trous bride/barrette à bornes moteur Posición agujeros brida / base motor
<b>B)</b>	Available without reduction bushes Disponibile anche senza boccola Auch ohne Reduzierbuchse verfügbar Disponible aussi sans douille de réduction Disponible tambien sin casquillo

<b>A</b>	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>B</b>	Select output speed	Seleziona la velocità in uscita	Ausgewählte Abtriebsdrehzahl	Sélectionner la vitesse de sortie	Seleccionar la velocidad de salida
<b>C</b>	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
<b>D</b>	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<sup>-1</sup>

Output Speed $n_2$ [min <sup>-1</sup> ]	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 not available				Available B14 motor flanges			Output Shaft 	Ratios code
							-	-	-	-	Q	R	T		
891	<b>1.57</b>	1.5	16	1.3	<b>1.9</b>	<b>20</b>	-	-	-	-	71	80	90	standard $\varnothing 19$	01
493	<b>2.84</b>	1.5	28	1.2	<b>1.8</b>	<b>35</b>	-	-	-	-	-	-	2844		02
425	<b>3.29</b>	1.5	33	1.2	<b>1.7</b>	<b>38</b>	-	-	-	-	-	-	1954		03
362	<b>3.87</b>	1.5	39	1.0	<b>1.5</b>	<b>40</b>	-	-	-	-	-	-	1756		04
303	<b>4.62</b>	1.5	46	1.0	<b>1.5</b>	<b>47</b>	-	-	-	-	-	-	1558		05
222	<b>6.30</b>	1.1	46	1.0	<b>1.1</b>	<b>46</b>	-	-	-	-	-	-	1360		06
170	<b>8.22</b>	0.55	30	1.3	<b>0.69</b>	<b>38</b>	-	-	-	-	-	-	1063		07
129	<b>10.86</b>	0.37	27	1.0	<b>0.39</b>	<b>28</b>	-	-	-	-	-	-	974		08
							-	-	-	-	-	-	776		

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

\* The nominal power should be reduced if the ambient temperature is  $\geq 30^\circ\text{C}$ , or when a cooler gearbox is required.

\* Diminuire la potenza nominale in caso di temperatura ambiente  $\geq 30^\circ\text{C}$  o se è richiesta una bassa temperatura di utilizzo del riduttore.

**A) 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 4111 is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary.

**I** Il riduttore 4111 viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.

**D** Das Getriebe 4111 ist mit synthetischem Öl gefüllt und ist lebensdauer geschmiert.

**F** Le réducteur 4111 est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien.

**E** El reductor tamaño 4111 se suministra, lubricado de por vida con aceite sintético y no requieren mantenimiento alguna.

### LUBRICATION 4111 Oil Quantity 0.14 Lt.

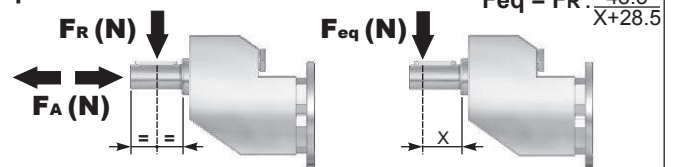
**AGIP** Telium VSF 320

**SHELL** Omala S4 WE 320

For all details on lubrication and plugs check our website

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

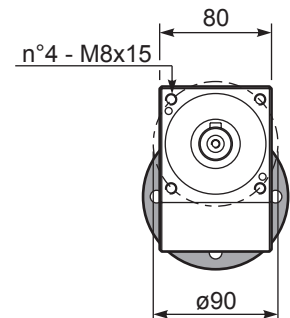
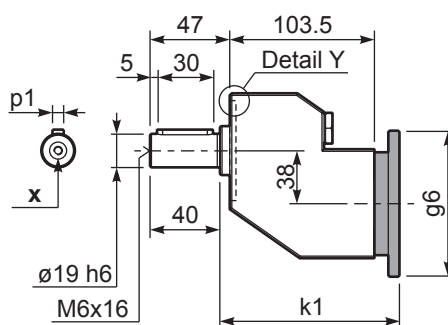
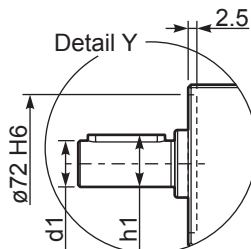
Output shaft / Albero di uscita



$n_2$	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

**P4111-N...** Basic gearbox  
Riduttore base

Gearbox weight  
peso riduttore **5.5 kg**



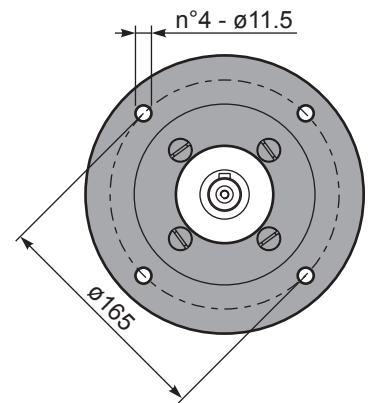
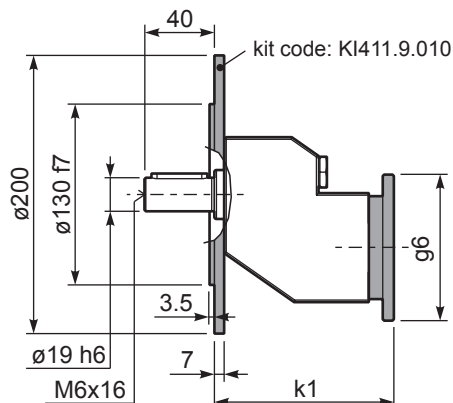
Output shafts / albero di uscita

	Shaft - d1	p1	h1	x
Standard	$\varnothing 19 \times 40$	6	21.5	M6x16

**P4111-F...** Output flange  
flangia di uscita

Input flanges / flange di entrata

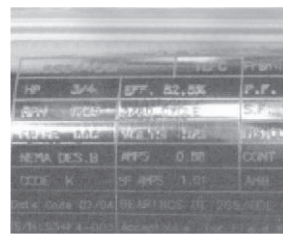
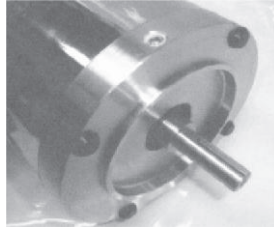
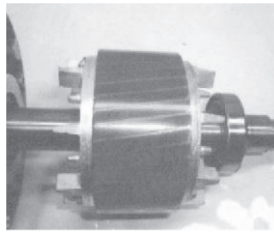
	k1	g6	kit code
71 B14	128.5	105	KI63.4.047
80 B14	129.5	120	KI63.4.046
90 B14	130.5	140	KI63.4.041



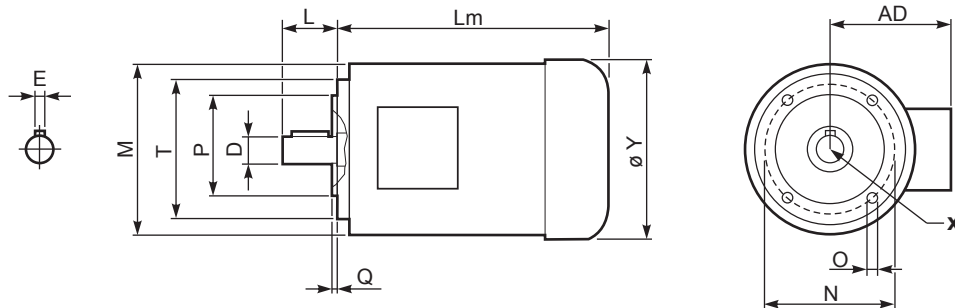


**Features**

- 1) 300 Series Stainless Steel Construction.
- 2) Inverter duty
- 3) Washdown Duty Applications.
- 4) BISSC Certified.
- 5) Corrosion Resistant.
- 6) Laser Etched Nameplate.
- 7) Oversized Bearings on both ends c/w Locked Drive-end Bearing Construction.
- 8) Oversized Conduit Box c/w Lead Seal.
- 9) Drill & Tapped Drains.
- 10) T-Drain included.
- 11) Double Lip Contact Seals.



**B14**



**Outside dimensions may be different according to manufacturers.**

Le dimensioni esterne sono indicative, possono variare tra i vari costruttori.

	4 poli / poles			D	E	L	Lm	Y	AD	P	N	M	T	O	Q	X	Kg
	kW	Nm	A <sub>(400V)</sub>														
<b>63</b>	<b>0.18</b>	1.30	0.69	11	4	23.5	252	128	106	60	75	114	90	M5	2.5	-	8.2
<b>71</b>	<b>0.25</b>	1.70	0.91	14	5	30.5	228	146	115	70	85	134	105	M6	2.5	M5x20	8.3
	<b>0.37</b>	2.52	1.14				252										10.4
<b>80</b>	<b>0.55</b>	3.77	1.51	19	6	40	300	158	115	80	100	144	120	M6	3	M6x25	17.5
	<b>0.75</b>	5.11	2.57				300										
<b>90</b>	<b>1.1</b>	7.45	2.78	24	8	50	321	174	135	95	115	165	140	M8	3	M8x25	22.4
	<b>1.5</b>	10.2	3.61				367										27.6
<b>100</b>	<b>2.2</b>	14.8	5.07	28	8	60	374	203	150	110	130	190	160	M8	3.5	M10x25	33.5

Tecnical data
- Voltage: 230 / 400V
- Phase: 3
- Frequency: 50Hz
- Poles: 4
- International protections : IP 65
- Insulation class: F
- Duty: S1





**Please Read Carefully**

The following WARNING and CAUTION information is supplied to you for your protection and to provide you with many years of trouble free and safe operation 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, if not sized properly.

**SELLING CONDITIONS**

Warranty for manufacturing defects will expire one-year the invoicing date. Hydro-Mec will replace or repair defective parts but will not accept any further changes for direct or indirect damages of any kind. The warranty 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**

**Leggere attentamente**

Le seguenti raccomandazioni sono fondamentali per la vostra protezione e per garantirvi molti anni di sicuro funzionamento del vostro prodotto senza alcun problema.

Leggere attentamente tutte le istruzioni prima di azionare il riduttore. L'inappropriata installazione, manutenzione o funzionamento del riduttore può causare incidenti al personale addetto e danni 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 la rottura 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 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..**