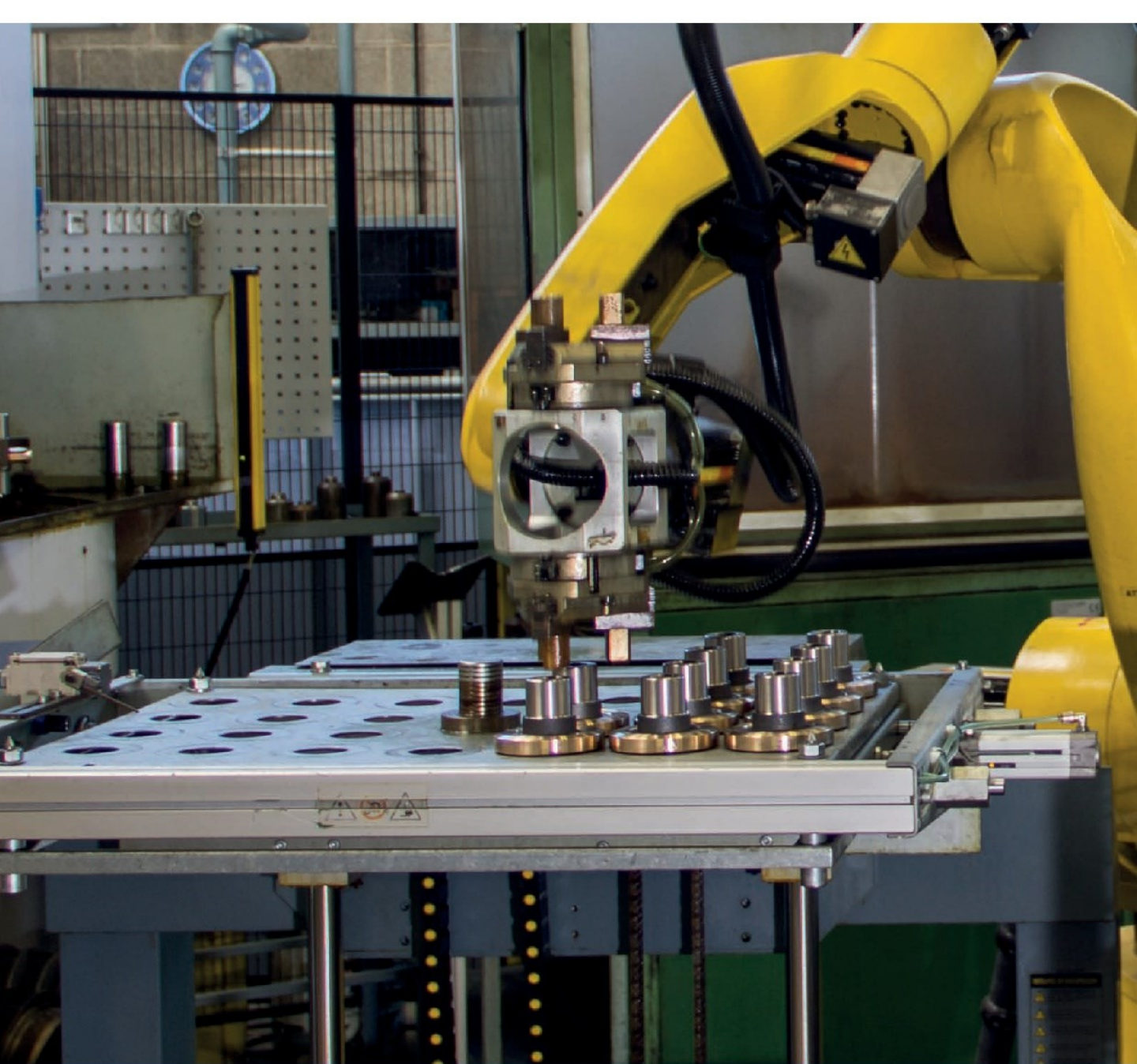


HELICAL BEVEL GEARBOXES - WORM GEARBOXES - RATIO MULTIPLIER - MOTORS



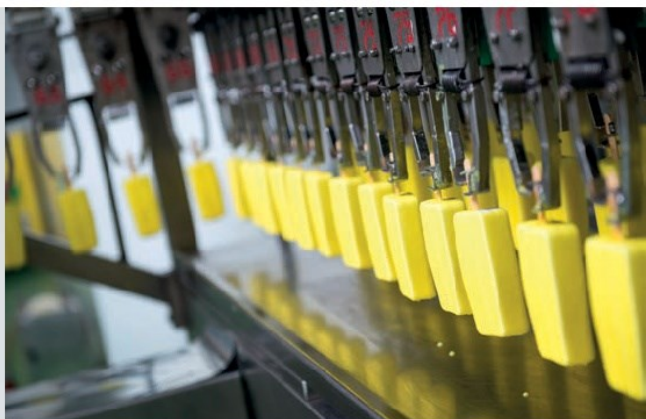
FULLY AUTOMATED ITALIAN MANUFACTURING





Food packaging processing

Imballaggio alimentare



Meat & Poultry

Industria della carne



Seafood Processing

Mercato del pesce



Fruit, Vegetables

Frutta e vegetali

Beverage

Bevande



Dairy

Latte e derivati



Highly corrosive and harsh environment

Ambiente altamente corrosivo



Hygienic applications

Applicazioni igieniche



Pharmaceutical & Chemical

Farmaceutica & Chimica



Marine

Marino





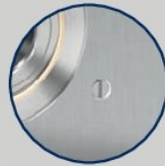
POOLING FREE MOUNTING

HIGH PRESSURE
CLEAN UP

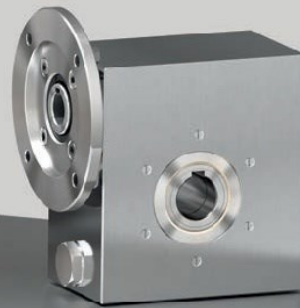
SIMPLE WASHING

HYGIENIC DESIGN

SEALED HOLES



NO PLASTIC PLUGS



SEALED OIL PLUGS

SMOOTH SURFACES

In this catalogue

In questo catalogo

VFZ series - Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio



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HCWseries - Aluminum premium electric motors

Motori elettrici in alluminio



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Input coupling - Giunto in entrata	C-1
------------------------------------	-----

VFI series - Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox



Section 2

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HYW series - Stainless steel premium electric motors

Motori elettrici in acciaio inox



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VFZ series - Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

Section **1**
Sezione 1



FEATURES

Caratteristiche

Hygienic design Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

Type Tipo	Torque Coppia	Center distance Interasse	Input power Potenza in entrata	Hollow output shaft Albero cavo in uscita
Z30	21 Nm	30 mm	0.09 ÷ 0.18 kW	ø14 mm
Z45	41 Nm	45 mm	0.09 ÷ 0.37 kW	ø18 mm
Z50	72 Nm	50 mm	0.12 ÷ 0.75 kW	ø25 mm
Z63	147 Nm	63 mm	0.37 ÷ 1.8 kW	ø25 mm
Z85	347 Nm	85 mm	0.55 ÷ 4.0 kW	ø35 mm



This product is:



Twin viton seals with stainless steel shield.

Anelli di tenuta in viton con schermo protettivo in acciaio inox.



NTT™ stands for a special surface treatment which results in modified external properties of the mechanical parts with complex geometry.

NTT™ è uno speciale trattamento che come risultato ha la modifica delle proprietà superficiali delle parti meccaniche con geometria complessa.

FEATURES

Caratteristiche



Output shaft and hollow shaft in AISI 316L.

Mozzo e albero in uscita in AISI 316L.



All stainless steel hardware.

Viteria in acciaio inox.



Nickel bronze worm gears CuSn12Ni (C91700) is centrifugally cast onto an iron hub for maximum strength and superior life.

Mozzo/corona in bronzo al Nickel CuSn12Ni (C91700) centrifugato; mozzo in acciaio per massima resistenza e durata superiore.































Housing with special smooth surfaces.

Cassa con finitura speciale liscia.

How to order

Codifica

P	Z50	UN	10	I
Type <i>Tipo</i>	Size <i>Grandezza</i>	Mounting <i>Montaggio</i>	Ratio <i>Rapporto</i>	Hub <i>Mozzo corona</i>
<p>P</p> 	<p>Z30 Z45 Z50 Z63 Z85</p>	<p>UN</p> 	 <p>See technical data table <i>Vedi tabelle dati tecnici</i></p>	<p>I</p> 
<p>M</p> 		<p>FC</p> 		<p>Standard</p> <p>Z30 -> $\varnothing 14$ Z45 -> $\varnothing 18$ Z50 -> $\varnothing 25$ Z63 -> $\varnothing 25$ Z85 -> $\varnothing 35$</p>
<p>B</p> 		<p>FL</p> 		<p>Z Inch</p> <p>Z45 -> $\varnothing 0.750''$ Z50 -> $\varnothing 1.000''$ Z63 -> $\varnothing 1.125''$ Z85 -> $\varnothing 1.500''$</p>
<p>R</p> 		<p>BR</p> 		
		<p>PA</p> 		
	<p>PV</p> 			

S	-Q	B	B3	-
Output shaft <i>Albero lento</i>	Motor size <i>Grandezza motore</i>	Terminal box position <i>Posizione morsetti</i>	Mounting position <i>Posizione di montaggio</i>	Coupling <i>Giunto</i>
<p>Ø</p> 	<p>IEC B5</p> <p>-A -> 56 B5 (Ø120) -B -> 63 B5 (Ø140) -C -> 71 B5 (Ø160) -D -> 80 B5 (Ø200) -E -> 90 B5 (Ø200) -F -> 100-112B5 (Ø250)</p>	<p>A</p> 	<p>B3</p> 	<p>-</p> <p>No indication Standard bore <i>Nessuna indicazione</i> Foro standard</p>
<p>S</p> 	<p>IEC B14</p> <p>-O -> 56 B14 (Ø80) -P -> 63 B14 (Ø90) -Q -> 71 B14 (Ø105) -R -> 80 B14 (Ø120) -T -> 90 B14 (Ø140) -U -> 100-112B14 (Ø160)</p>	<p>B</p> 	<p>B8</p> 	<p>P</p> <p>Input bore reduced one size <i>Foro entrata</i> <i>ridotto di una entrata</i></p>
	<p>NEMA</p> <p>-W -> 56C (Ø6.5") -X -> 143/5TC (Ø6.5") -Y -> 182/4TC (Ø8.88") AA -> 213/5TC (Ø8.88")</p>	<p>C</p> 	<p>B6</p> 	<p>Q</p> <p>Input bore reduced two size <i>Foro entrata</i> <i>ridotto di due misure</i></p>
	<p>-M</p> 	<p>D</p> 	<p>B7</p> 	<p>With coupling</p> 
	<p>-O</p> 		<p>V5</p> 	<p>A -> 9mm B -> 11mm C -> 14mm D -> 19mm E -> 24mm F -> 28mm</p>
			<p>V6</p> 	<p>O</p> <p>Without coupling <i>Senza giunto</i></p> 

Useful formulas

Formule utili

Required power - Potenza richiesta

Lifting - Sollevamento

$$P_{[kW]} = \frac{M_{[Kg]} \cdot g_{[9.81]} \cdot v_{[m/s]}}{1000}$$

Rotation - Rotazione

$$P_{[kW]} = \frac{M_{[Nm]} \cdot n_{[rpm]}}{9550}$$

Linear movement - Traslazione

$$P_{[kW]} = \frac{F_{[N]} \cdot v_{[m/s]}}{1000}$$

Torque - Coppia

$$M_{[Nm]} = \frac{9550 \cdot P_{[kW]}}{n_{[rpm]}}$$

$$M_{[lb\ in]} = \frac{63030 \cdot P_{[HP]}}{n_{[rpm]}}$$

Radial loads - Carichi radiali

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.

$$F_{R[N]} = \frac{M_{[Nm]} \cdot 2000}{d_{[mm]}} \cdot f_k$$

$$F_{R[N]} = \frac{M_{[lb\ in]} \cdot 8.9}{d_{[in]}} \cdot f_k$$

M: Output torque - *Momento torcente*

d: Diam. of driving element - *Diametro primitivo*

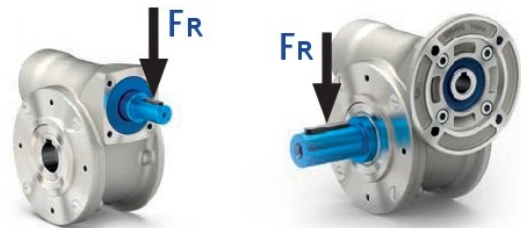
f_k: Factor - *Coefficiente di trasformazione*

1.15: Gearwheels - *Ingranaggi*

1.25: Chain sprockets - *Catena*

1.75: Narrow v-belt pulley - *Cinghia Trapezoidale*

2.50: Flat-belt pulley - *Cinghia piatta*



If your application requires higher radial loads, contact our technical office. Higher loads may be possible.

Nei casi in cui la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.

How to select a gearbox

Come selezionare un riduttore

A Select required torque (according to service factor)

Seleziona la coppia desiderata (comprensiva del fattore di servizio)

B Select output speed

Seleziona la velocità in uscita

C Select gear ratio in the line corresponding to the chosen motor power

Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione

D Select motor flange available (if requested)

Scegli la flangia disponibile (se richiesta)

Gear size
Grandezza
riduttore

C

Ratio
Rapporto

Transmitted torque
Momento torcente
trasmesso

Nominal power
Potenza nominale

Flange code
Codice flangia

Dynamic efficiency
Rendimento dinamico

Input speed
Velocità in entrata

Z 30

21
Nm

Hygienic design
Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

Input speed (n₁) = 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		B14 motor flanges		Dynamic efficiency RD	Tooth module [mm]	Ratio code
							-A 56	-B 63	-O 56	-P 63			
280	5	0.18	5	3.3	0.60	17	B		B-C		82	1.26	09
200	7	0.18	7	2.4	0.44	17	B		B-C		80	1.44	01
140	10	0.18	10	1.8	0.32	17	B		B-C		78	1.44	02
93	15	0.18	13	1.4	0.25	19	B		B-C		73	1.44	03
70	20	0.18	17	1.1	0.20	19	B		B-C		70	1.09	04
47	30	0.12	15	1.4	0.17	21	B		B-C		62	1.44	05
35	40	0.12	19	1.1	0.13	20	B		B-C		57	1.09	06
23	61	0.09	19	1.1	0.10	20	B		B-C		50	0.72	07
17.5	80	0.09	16	1.0	0.06	16	B		B-C		48	0.56	08

B

Output speed
Velocità in uscita

Motor power
Potenza motore

Service factor
Fattore di servizio

A

Nominal torque
Momento torcente
nominale

Nominal module
Modulo nominale

Notes
Note

Type of load and starts per hour

Tipo di carico e avviamenti per ora


Oper. hours per day
Ore di funz. giorn.

<2h 2÷8h 8÷16h

Continuous or intermittent application with start /hour Applicazione continua o intermittente con numero operazioni/ora	≤ 10	Uniform - <i>Uniforme</i> Moderate - <i>Moderato</i> Heavy - <i>Forte</i>	Oper. hours per day		
			<2h	2÷8h	8÷16h
Intermittent application with start /hour Applicazione intermittente con numero operazioni/ora	> 10	Uniform - <i>Uniforme</i>	1.25	1.5	1.75
		Moderate - <i>Moderato</i>	1.5	1.75	2
		Heavy - <i>Forte</i>	1.75	2	2.25

D Motor flange available

Flange disponibili

B) Mounting with reduction bushing
Montaggio con boccola di riduzione 

C) Motor flange holes position/terminal box position
Posizione fori flangia/basetta motore 

B) Available without reduction bushing
Disponibile anche senza boccola

Z30

21 Nm

Hygienic design Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

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		B14 motor flanges		Dynamic efficiency RD	Tooth module  [mm]	Ratio code 
							-A 56	-B 63	-O 56	-P 63			
280	5	0.18	5	3.3	0.60	17	B		B-C		82	1.26	09
200	7	0.18	7	2.4	0.44	17	B		B-C		80	1.44	01
140	10	0.18	10	1.8	0.32	17	B		B-C		78	1.44	02
93	15	0.18	13	1.4	0.25	19	B		B-C		73	1.44	03
70	20	0.18	17	1.1	0.20	19	B		B-C		70	1.09	04
47	30	0.12	15	1.4	0.17	21	B		B-C		62	1.44	05
35	40	0.12	19	1.1	0.13	20	B		B-C		57	1.09	06
23	61	0.09	19	1.1	0.10	20	B		B-C		50	0.72	07
17.5	80	0.09	16	1.0	0.06	16	B		B-C		48	0.56	08

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

Lubrication

Lubrificazione

Unit Z30 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo Z30 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.03Lt.	Agip Tetrium VSF 320	Shell Omala S4 WE 320
Quantità olio per tutte le posizioni: 0.03Lt.		

Tab. 1

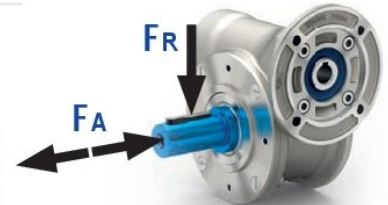
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [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 ⁻¹]	F_A [N]	F_R [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

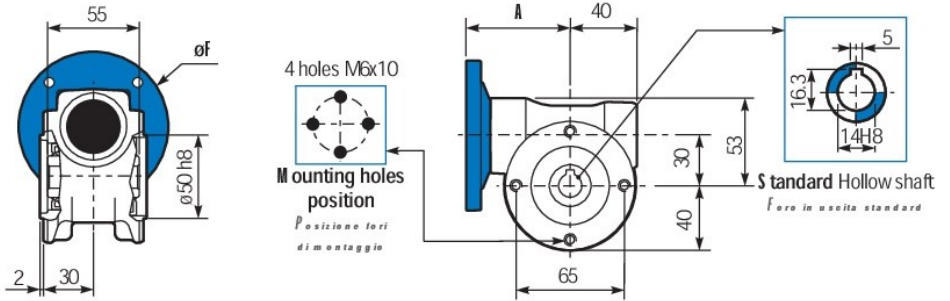
21
Nm

Z30

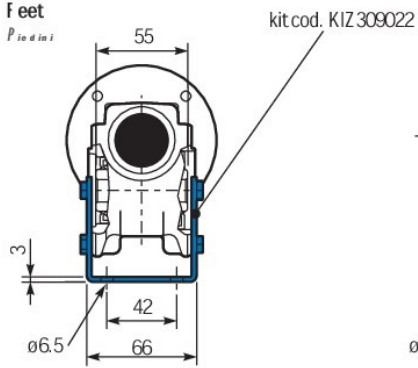
PZ30UN.. Basic gearbox
Riduttore base

6 earbox weight 1.25 kg
www.ribatoni.com

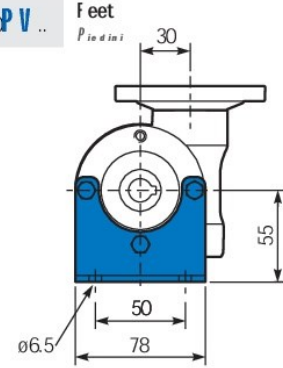
M. flanges	Kit code	øF	A
56B5	KZ304041	120	62
63B5	KZ304042	140	63
56B14	KZ304046	80	62
63B14	KZ304045	90	63



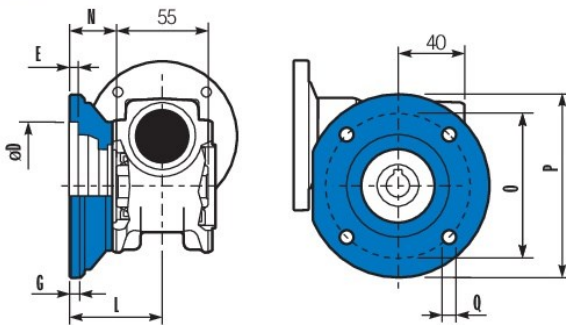
PZ30PA.. Feet
Piedini



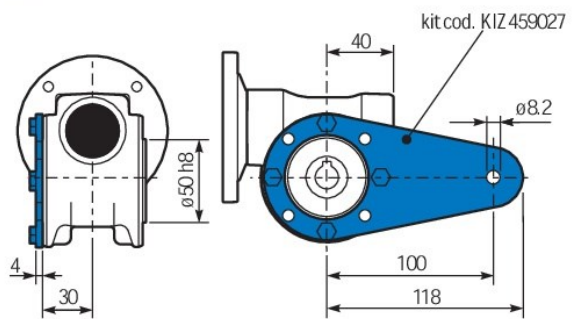
PZ30PV.. Feet
Piedini



PZ30FC.. Output flange
Flangia uscita

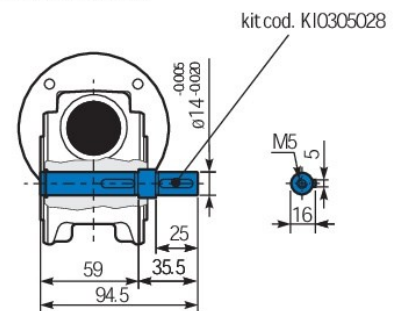


PZ30BR.. Reaction arm
Braccio di reazione

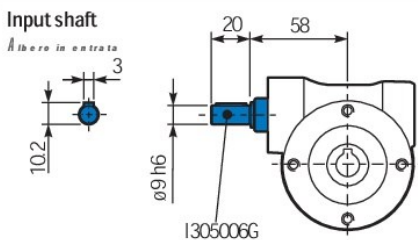


Type	øD	E	G	L	N	O	P	Q	Kit code
FC	50 ^{+0.15} / _{-0.45}	6	6	50.5	23	68	80	7	KZ309010
FL	60 ^{+0.15} / _{-0.45}	6	6	55.5	28	87	110	8.5	KZ459010

PZ30S.. Single output shaft
Albero semplice in uscita



R Z30UN.. Input shaft
Albero in entrata





Z45

41 Nm

Hygienic design Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

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		B14 motor flanges			Dynamic efficiency RD	Tooth module  [mm]	Ratio code 
							-B 63	-C 71	-O 56	-P 63	-Q 71			
200	7	0.37	14	2.2	0.80	30	B		B-C	B-C		80	2.2	01
140	10	0.37	20	1.5	0.57	30	B		B-C	B-C		79	2.2	02
100	14	0.37	27	1.1	0.41	30	B		B-C	B-C		77	2.4	03
67	21	0.37	36	1.2	0.43	41	B		B-C	B-C		67	1.6	04
50	28	0.25	31	1.3	0.33	41	B		B-C	B-C		65	2.5	05
38	37	0.25	40	1.0	0.26	41	B		B-C	B-C		63	1.8	06
30	46	0.25	46	0.9	0.22	41	B		B-C	B-C		59	1.5	07
23	60	0.18	41	1.0	0.18	41	B		B-C	B-C		56	1.2	08
20	70	0.12	31	1.0	0.12	30	B		B-C	B-C		54	1.0	09
13.7	102	0.09	31	1.0	0.09	29	B		B-C	B-C		49	0.72	10

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

Lubrication

Lubrificazione

Unit Z45 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo Z45 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.09Lt.	Agip Tellium VSF 320	Shell Omala S4 WE 320
Quantità olio per tutte le posizioni: 0.09Lt.		

Tab. 1

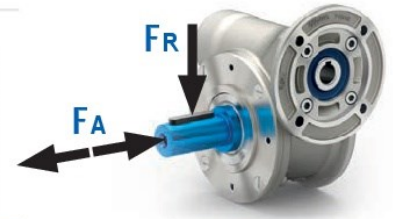
Radial and axial loads

Carichi radiali e assiali

Output shaft

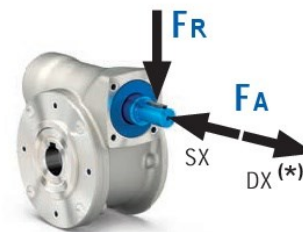
Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [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 ⁻¹]	F_A [N]	F_R [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

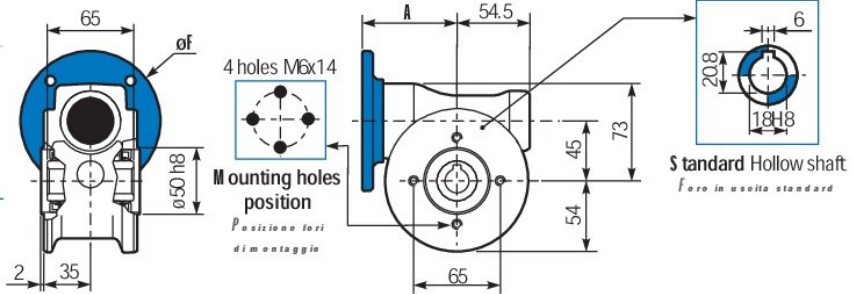
41 Nm

Z45

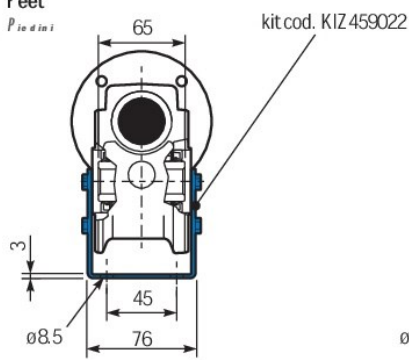
PZ45UN.. Basic gearbox
Riduttore base

6 earbox weight 2.50 kg
www.robotech.it

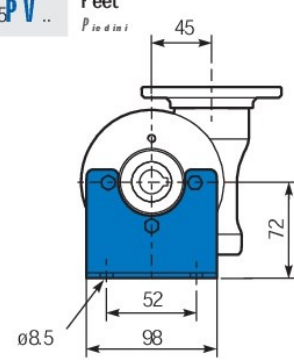
M. flanges	Kit code	øf	A
63B5	KZ454041	138	74
71B5	KZ454042	160	71.5
56B14	KZ454049	80	71.5
63B14	KZ454047	90	74
71B14	KZ454045	105	71.5



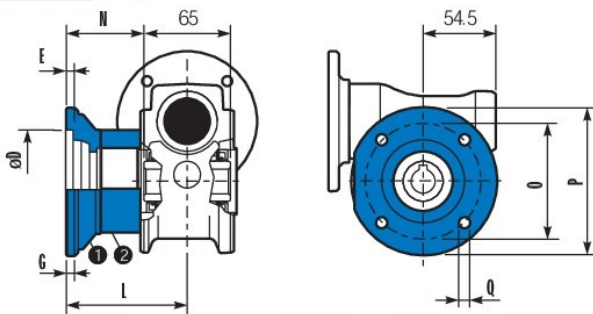
PZ45PA.. Feet
Piedini



PZ45PV.. Feet
Piedini

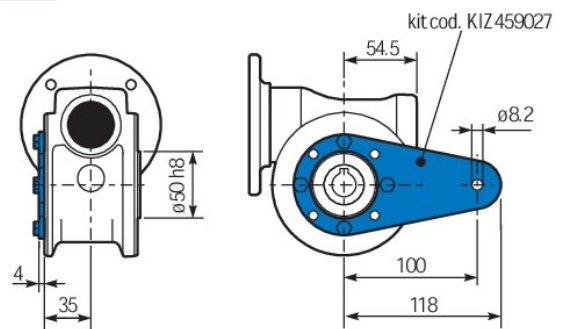


PZ45FC.. Output flange
Flangia uscita

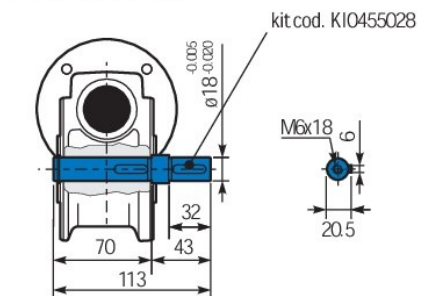


Type	øD	E	G	L	N	O	P	Q	Kit code
FC	60 ^{+0.15} / _{-0.05}	9	9	60.5	28	87	110	8.5	1 KZ459010 2 -
FL	60 ^{+0.15} / _{-0.05}	9	9	90.5	58	87	110	8.5	1 KZ459010 2 KZ450200

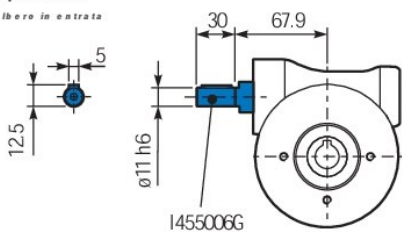
PZ45BR.. Reaction arm
Braccio di reazione



PZ45.S.. Single output shaft
Albero semplice in uscita



R Z45UN.. Input shaft
Albero in entrata





Z50

72 Nm

Hygienic design Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

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			B14 motor flanges				Dynamic efficiency RD	Tooth module  [mm]	Ratio code 
							-B 63	-C 71	-D 80	-O 56	-P 63	-Q 71	-R 80			
200	7	0.75	29	1.9	1.5	57	B	B			B-C	B		82	2.5	01
140	10	0.75	41	1.5	1.1	62	B	B			B-C	B		80	2.4	02
100	14	0.75	57	1.2	0.90	68	B	B			B-C	B		79	2.6	03
78	18	0.55	51	1.2	0.67	62	B	B			B-C	B		75	2.0	04
54	26	0.55	67	1.0	0.54	66	B	B			B-C	B		69	2.7	05
47	30	0.55	79	0.9	0.50	72	B	B			B-C	B		70	2.5	12
39	36	0.37	63	1.2	0.43	72	B			B-C	B-C		69	2.1	06	
33	43	0.37	72	1.0	0.35	68	B			B-C	B-C		66	1.8	07	
28	50	0.25	53	1.2	0.31	66	B			B-C	B-C		62	1.5	13	
23	60	0.25	59	1.0	0.26	62	B			B-C	B-C		58	1.3	08	
21	68	0.25	66	0.9	0.22	58	B			B-C	B-C		57	1.2	09	
17.5	80	0.18	53	1.1	0.19	57	B			B-C	B-C		54	1.0	10	
14	100	0.12	41	1.3	0.15	51	B			B-C	B-C		50	0.8	11	

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

Lubrication

Lubrificazione

Unit Z50 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo Z50 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.14Lt.	Agip Telium VSF 320	Shell Omala S4 WE 320
Quantità olio per tutte le posizioni: 0.14Lt.		

Tab. 1

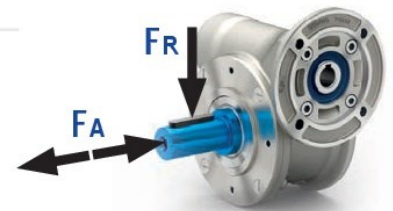
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

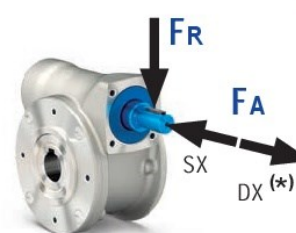
n_2 [min ⁻¹]	F_A [N]	F_R [N]
200	240	1200
150	280	1400
100	300	1500
75	340	1700
50	380	1900
25	480	2500
15	560	2800



Input shaft

Albero in entrata

n_1 [min ⁻¹]	F_A [N]	F_R [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

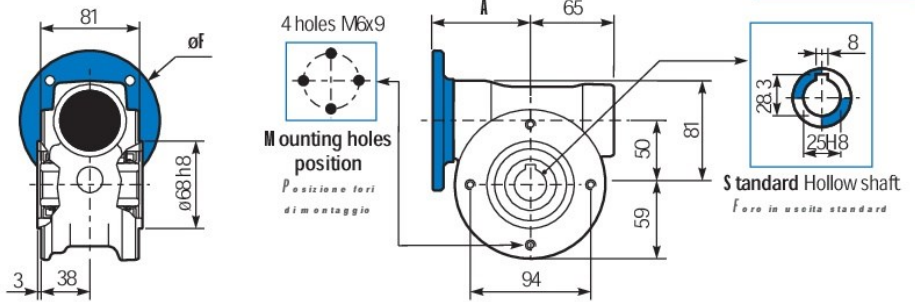
72
Nm

Z50

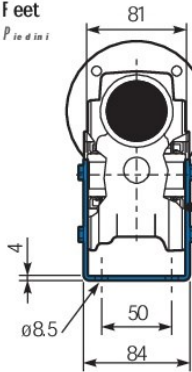
PZ50UN.. Basic gearbox
Riduttore base

6 gearbox weight **3.70 kg**
www.vibramec.it

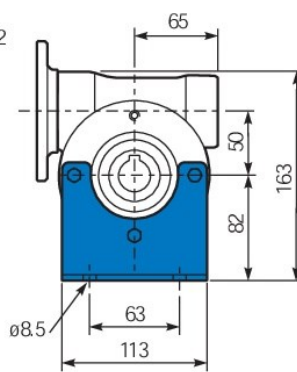
M. flanges	Kit code	øf	A
63B5	KZ504041	138	78.5
71B5	KZ504042	160	76
80B5	KZ504043	200	76.5
56B14	KZ504049	80	76
63B14	KZ504047	90	78.5
71B14	KZ504045	105	76
80B14	KZ504046	120	76.5



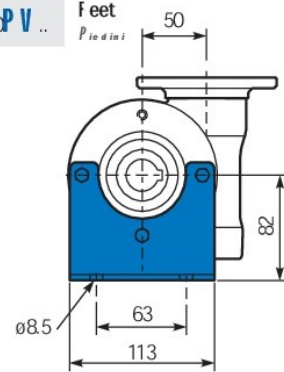
PZ50PA.. Feet
Piedini



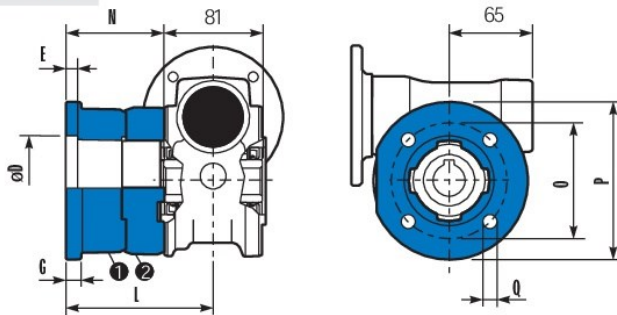
kit cod. KIZ509022



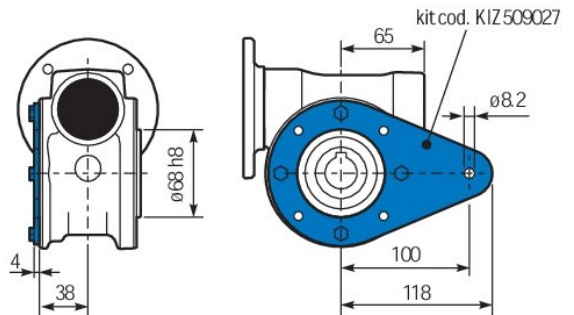
PZ50PV.. Feet
Piedini



PZ50FC.. Output flange
Flangia uscita

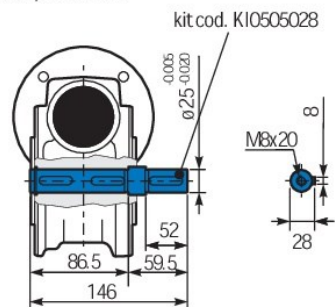


PZ50BR.. Reaction arm
Braccio di reazione

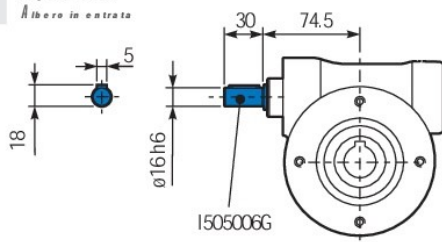


Type	øD	E	G	L	N	0	P	Q	Kit code
FC	70 ^{+0.20} _{-0.15}	9	12	85	44.5	90	123	10.5	● KZ509010 ● -
FL	70 ^{+0.20} _{-0.15}	9	12	114.5	74	90	123	10.5	● KZ509010 ● KZ500200

PZ50S.. Single output shaft
Albero semplice in uscita



RZ50UN.. Input shaft
Albero in entrata



Z63

147 Nm

Hygienic design Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

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				B14 motor flanges			Dynamic efficiency RD	Tooth module $\frac{1}{2}$ [mm]	Ratio code
							-B 63	-C 71	-D 80	-E 90	-Q 71	-R 80	-T 90			
200	7	1.8	71	1.8	3.2	125		B	B		B-C	B-C		83	3.1	01
140	10	1.8	99	1.4	2.4	134		B	B		B-C	B-C		81	3.1	02
93	15	1.5	121	1.1	1.7	138		B	B		B-C	B-C		79	3.1	03
74	19	1.1	111	1.2	1.4	138		B	B		B-C	B-C		78	2.6	04
58	24	1.1	135	1.0	1.2	142		B	B		B-C	B-C		75	2.0	05
47	30	1.1	167	0.9	0.96	146		B	B		B-C	B-C		74	3.2	06
39	36	0.75	125	1.2	0.88	147		B	B		B-C	B-C		68	2.7	07
35	40	0.75	135	1.0	0.78	140		B	B		B-C	B-C		66	2.5	13
31	45	0.55	111	1.2	0.67	135	B	B		B-C	C		66	2.1	08	
23	60	0.55	140	0.9	0.51	130	B	B		B-C	C		62	1.6	12	
21	67	0.55	151	0.8	0.45	124	B	B		B-C	C		60	1.5	09	
17.5	80	0.37	115	1.0	0.38	119	B	B		B-C	C		57	1.3	10	
14.9	94	0.37	123	1.0	0.36	119	B	B		B-C	C		52	1.1	11	

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

Lubrication

Lubrificazione

Unit Z63 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo Z63 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.40Lt.	Agip Tetrium VSF 320	Shell Omala S4 WE 320
Quantità olio per tutte le posizioni: 0.40Lt.		

Tab. 1

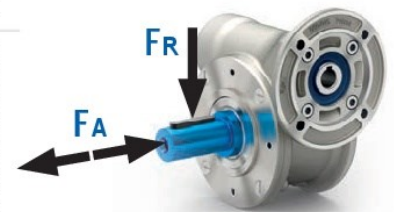
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [N]
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 ⁻¹]	F_A [N]	F_R [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

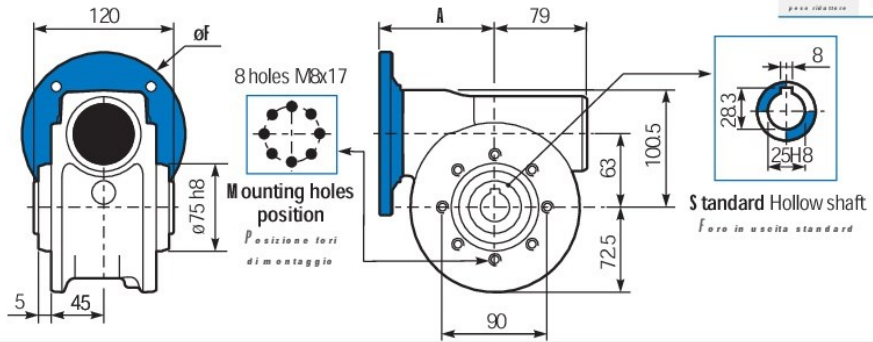
147
Nm

Z63

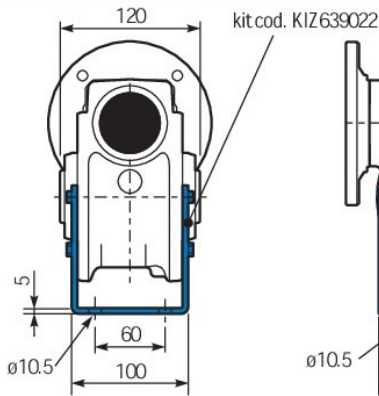
PZ63UN.. Basic gearbox
Riduttore base

6 gearbox weight **6.70 kg**
www.italmac.com

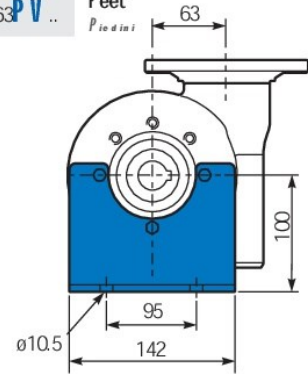
M. flanges	Kit code	øf	A
63B5	KZ634041	140	99.5
71B5	KZ634042	160	97.5
80/90B5	KZ634043	200	99.5
71B14	KZ634047	105	97.5
80B14	KZ634046	120	99.5
90B14	KZ634041	140	99.5



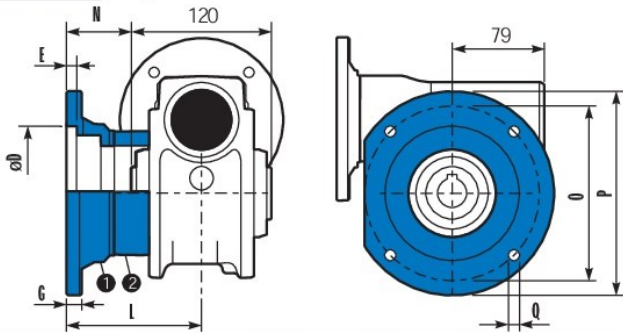
PZ63PA.. Feet
Piedini



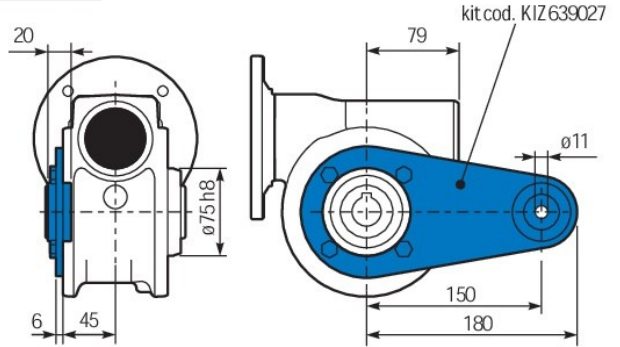
PZ63PV.. Feet
Piedini



PZ63FC.. Output flange
Flangia uscita

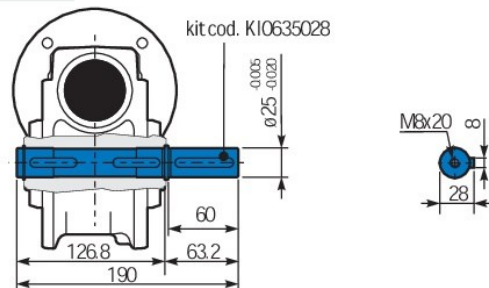


PZ63BR.. Reaction arm
Braccio di reazione

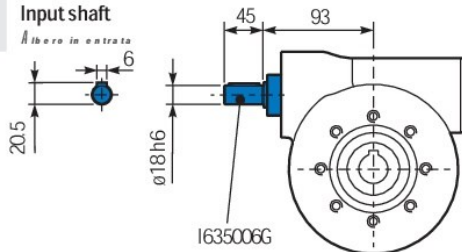


Type	øD	E	G	L	N	O	P	Q	Kit code
FC	115 ^{+0.20} _{-0.15}	7	13	86	26	150	175	11	● KZ639010 ● KZ639011
FL	115 ^{+0.20} _{-0.15}	7	13	116	56	150	175	11	● KZ639010 ● KZ630200

PZ63.S... Single output shaft
Albero semplice in uscita



R Z63UN.. Input shaft
Albero in entrata





Z85

347 Nm

Hygienic design Aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

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

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

Lubrication

Lubrificazione

Unit Z85 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo Z85 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 1.20Lt. <i>Quantità olio per tutte le posizioni: 1.20Lt.</i>	Agip Tellium VSF 320	Shell Omala S4 WE 320
---	--------------------------------	---------------------------------

Tab. 1

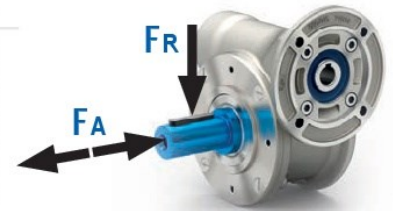
Radial and axial loads

Carichi radiali e assiali

Output shaft

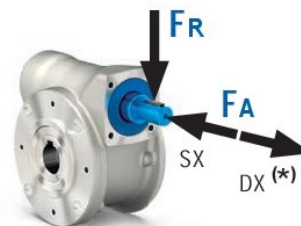
Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [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 ⁻¹]	F_A [N]	F_R [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

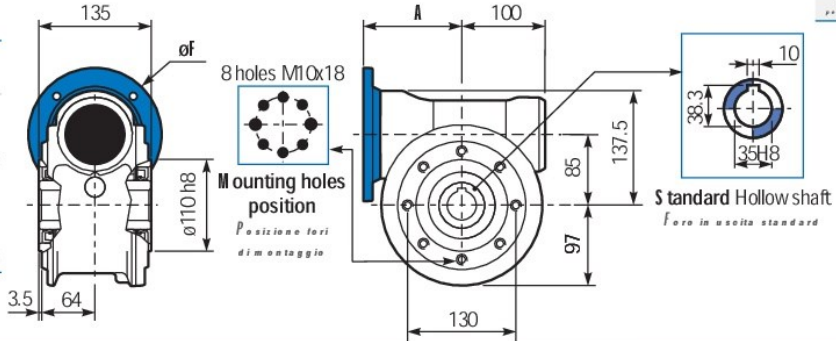
347
Nm

Z85

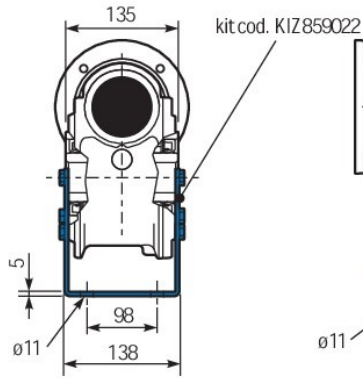
PZ85UN.. Basic gearbox
Riduttore base

6 earbox weight
www.italmac.com
13.00 kg

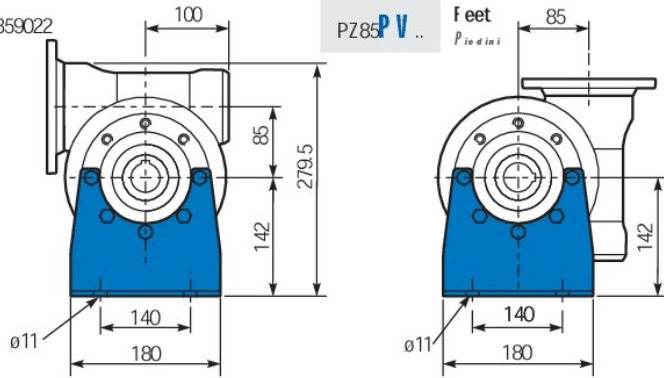
M. flanges	Kit code	øf	A
71B 5	KZ234041	160	116.5
80/90B 5	KZ234042	200	118.5
100/112B 5	KZ234043	250	127.5
80B 14	KZ854046	120	118.5
90B 14	KZ854045	140	118.5
100/112B 14	KZ854047	160	127.5



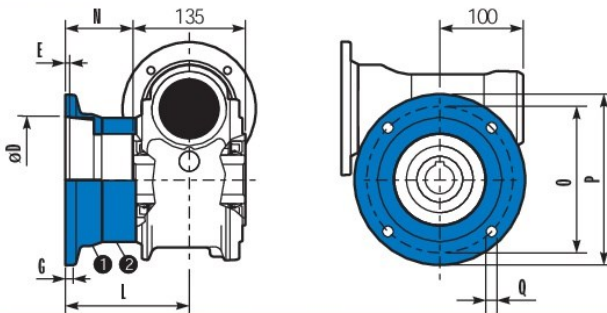
PZ85PA.. Feet
Piedini



PZ85PV.. Feet
Piedini

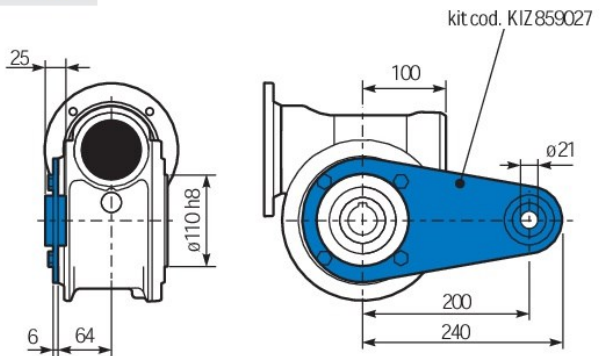


PZ85FC.. Output flange
Flangia uscita

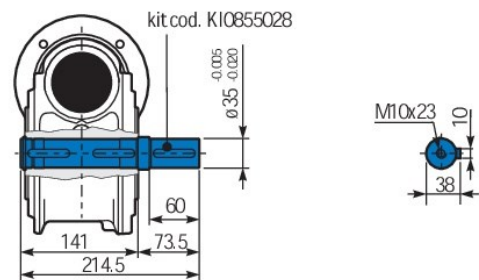


Type	øD	E	G	L	N	P	Q	Kit code
FC	152 ^{+0.06} _{-0.00}	5	16	108	40.5	176	205	1 ● KZ859010 2 ● KZ859010 3 ● KZ850201
FL	152 ^{+0.06} _{-0.00}	5	16	148.5	81	176	205	13

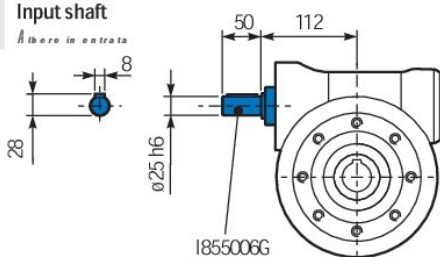
PZ85BR.. Reaction arm
Braccio di reazione



PZ85.S.. Single output shaft
Albero semplice in uscita



R Z85UN.. Input shaft
Albero in entrata







VFI series - Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

Section **2**
Sezione 2



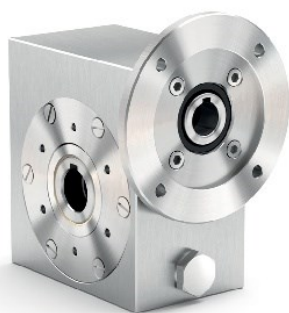
FEATURES

Caratteristiche

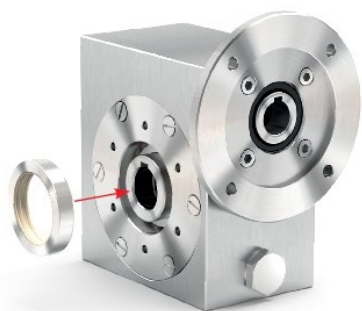
Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

Type <i>Tipo</i>	Torque <i>Coppia</i>	Center distance <i>Interasse</i>	Input power <i>Potenza in entrata</i>	Hollow output shaft <i>Albero cavo in uscita</i>
I30	21 Nm	30 mm	0.09 ÷ 0.18 kW	ø14 mm
I45	41 Nm	45 mm	0.12 ÷ 0.37 kW	ø18 mm ø19 mm
I50	72 Nm	50 mm	0.12 ÷ 0.75 kW	ø25 mm ø24 mm
I63	147 Nm	63 mm	0.37 ÷ 1.8 kW	ø25 mm ø28 mm
I85	347 Nm	85 mm	0.55 ÷ 4.0 kW	ø35 mm
I11	651 Nm	110 mm	1.1 ÷ 4.0 kW	ø42 mm

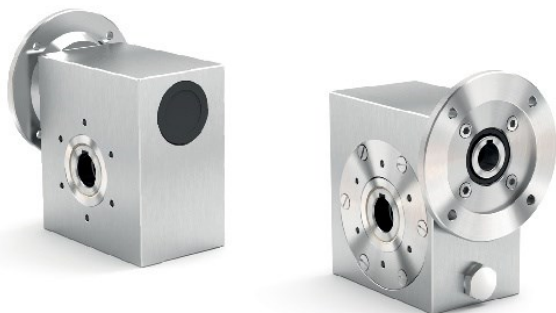


This product is:



Twin viton seals with stainless steel shield.

Anelli di tenuta in viton con schermo protettivo in acciaio inox.



Mounting holes on both sides of the housing for versatile mounting.

Fori di montaggio in entrambi i lati della cassa.

FEATURES

Caratteristiche



**Output shaft is produced in AISI 316L.
Special cover assures full protection of oil seals.**

Mozzo e albero in uscita in AISI 316L e coperchietto protettivo per anelli paraolio.



O-ring closure is used for a new oil seals cover.

Nuovo coperchietto protettivo per anelli paraolio chiuso con o-ring.



Removable hollow shaft with key for safe torque transmissions.

Albero cavo removibile con chiavetta mozzo/corona.
































Special high tech housing finishing.

Finitura speciale sulla cassa.

How to order

Codifica

P	150	UN	10	I	
Type <i>Tipo</i>	Size <i>Grandezza</i>	Mounting <i>Montaggio</i>	Ratio <i>Rapporto</i>	Hub <i>Mozzo corona</i>	
P 	130 145 150 163 185 111	UN 	 See technical data table <i>Vedi tabelle dati tecnici</i>	I  Standard 130 -> $\varnothing 14$ 145 -> $\varnothing 18$ 150 -> $\varnothing 25$ 163 -> $\varnothing 25$ 185 -> $\varnothing 35$ 111 -> $\varnothing 42$	
M 		FL 		X Special series 145 -> $\varnothing 19$ 150 -> $\varnothing 24$	
B 		BR 		Z Inch 145 -> $\varnothing 0.750''$ 150 -> $\varnothing 1.000''$ 163 -> $\varnothing 1.250''$ 185 -> $\varnothing 1.500''$ 111 -> $\varnothing 2.000''$	
R 					

S	-Q	B	B3	-
Output shaft <i>Albero lento</i>	Motor size <i>Grandezza motore</i>	Terminal box position <i>Posizione morsetteria</i>	Mounting position <i>Posizione di montaggio</i>	Coupling <i>Giunto</i>
Ø 	IEC B5  -D -> 80B5 (ø200) -E -> 90B5 (ø200)	A 	B3 	- No indication Standard bore <i>Nessuna indicazione</i> Foro standard
S 	IEC B14  -O -> 56B14 (ø80) -P -> 63B14 (ø90) -Q -> 71 B14 (ø105) -R -> 80 B14 (ø120) -T -> 90 B14 (ø140) -U -> 100-112B14 (ø160)	B 	B8 	P Input bore reduced one size <i>Foro entrata ridotto di una entrata</i>
NEMA  -W -> 56C (ø6.5") -X -> 143/5TC (ø6.5") -Y -> 182/4TC (ø8.88") AA -> 213/5TC (ø8.88")	D 	B6 	Q Input bore reduced two sizes <i>Foro entrata ridotto di due misure</i>	
-M 	-M 	B7 	COUPLING  A -> 9mm B -> 11mm C -> 14mm D -> 19mm E -> 24mm F -> 28mm	
-O 	-O 	V5  V6 	O Without coupling <i>Senza giunto</i> 	

Useful formulas

Formule utili

Required power - Potenza richiesta

Lifting - Sollevamento

$$P_{[kW]} = \frac{M_{[Kg]} \cdot g_{[9.81]} \cdot v_{[m/s]}}{1000}$$

Rotation - Rotazione

$$P_{[kW]} = \frac{M_{[Nm]} \cdot n_{[rpm]}}{9550}$$

Linear movement - Traslazione

$$P_{[kW]} = \frac{F_{[N]} \cdot v_{[m/s]}}{1000}$$

Torque - Coppia

$$M_{[Nm]} = \frac{9550 \cdot P_{[kW]}}{n_{[rpm]}}$$

$$M_{[lb\ in]} = \frac{63030 \cdot P_{[HP]}}{n_{[rpm]}}$$

Radial loads - Carichi radiali

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.

$$F_{R[N]} = \frac{M_{[Nm]} \cdot 2000}{d_{[mm]}} \cdot f_k$$

$$F_{R[N]} = \frac{M_{[lb\ in]} \cdot 8.9}{d_{[in]}} \cdot f_k$$

M: Output torque - *Momento torcente*

d: Diam. of driving element - *Diametro primitivo*

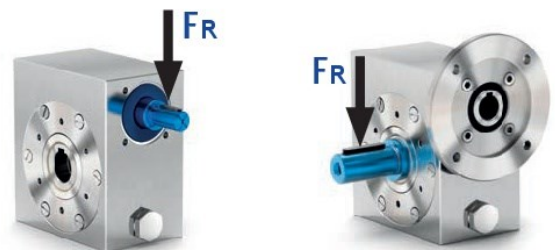
f_k: Factor - *Coefficiente di trasformazione*

1.15: Gearwheels - *Ingranaggi*

1.25: Chain sprockets - *Catena*

1.75: Narrow v-belt pulley - *Cinghia Trapezoidale*

2.50: Flat-belt pulley - *Cinghia piatta*



If your application requires higher radial loads, contact our technical office. Higher loads may be possible.

Nei casi in cui la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.

How to select a gearbox

Come selezionare un riduttore

A Select required torque (according to service factor)

Seleziona la coppia desiderata (comprensiva del fattore di servizio)

B Select output speed

Seleziona la velocità in uscita

C Select gear ratio in the line corresponding to the chosen motor power

Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione

D Select motor flange available (if requested)

Scegli la flangia disponibile (se richiesta)

Gear size <i>Grandezza riduttore</i>	C Ratio <i>Rapporto</i>	Transmitted torque <i>Momento torcente trasmesso</i>	Nominal power <i>Potenza nominale</i>	Flange code <i>Codice flangia</i>	Dynamic efficiency <i>Rendimento dinamico</i>	Input speed <i>Velocità in entrata</i>
130	21 Nm					

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

Output speed n_2 [min ⁻¹]	Ratio <i>i</i>	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor <i>f.s</i>	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges		B14 motor flanges		Dynamic efficiency <i>RD</i>	Tooth module [mm]	Ratios code
							-	-	-0	-P			
280	5	0.18	5	3.3	0.60	17	-	-	-0	-P	82	1.26	01
200	7	0.18	7	2.4	0.44	17	-	-	56	63	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

B Output speed <i>Velocità in uscita</i>	Motor power <i>Potenza motore</i>	Service factor <i>Fattore di servizio</i>	A Nominal torque <i>Momento torcente nominale</i>	Nominal module <i>Modulo nominale</i>	Notes <i>Note</i>
--	--------------------------------------	--	---	--	----------------------

Type of load and starts per hour <i>Tipo di carico e avviamenti per ora</i>	Oper. hours per day <i>Ore di funz. giorn.</i>				
		<2h	2÷8h	8÷16h	
Continuous or intermittent application with start /hour <i>Applicazione continua o intermittente con numero operazioni/ora</i>	≤ 10	Uniform - <i>Uniforme</i>	0.9	1	1.25
		Moderate - <i>Moderato</i>	1	1.25	1.5
		Heavy - <i>Forte</i>	1.25	1.5	1.75
Intermittent application with start /hour <i>Applicazione intermittente con numero operazioni/ora</i>	> 10	Uniform - <i>Uniforme</i>	1.25	1.5	1.75
		Moderate - <i>Moderato</i>	1.5	1.75	2
		Heavy - <i>Forte</i>	1.75	2	2.25

D Motor flange available
Flange disponibili

B) Mounting with reduction bushing
Montaggio con boccola di riduzione

C) Motor flange holes position/terminal box position
Posizione fori flangia/basetta motore

B) Available without reduction bushing
Disponibile anche senza boccola

130

21 Nm

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

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		B14 motor flanges		Dynamic efficiency RD	Tooth module [mm]	Ratios code
							-	-	-0	-P			
280	5	0.18	5	3.3	0.60	17			B-C		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

Lubrication

Lubrificazione

Unit 130 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 130 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.06Lt.	Agip Teium VSF 320	Shell Omala S4 WE 320
Quantità olio per tutte le posizioni: 0.06Lt		

* For more details on lubrication and plugs check our website. **Tab. 1**

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

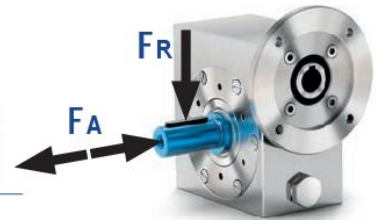
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [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 ⁻¹]	F_A [N]	F_R [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

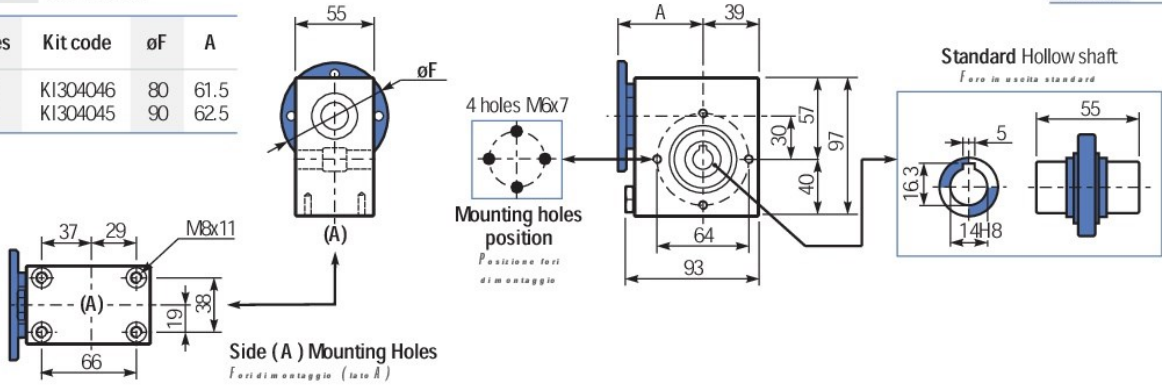
21
Nm

130

PI30UN... Basic gearbox
Riduttore base

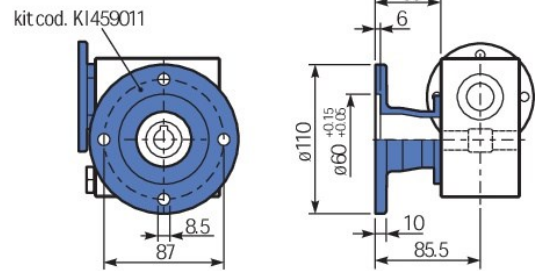
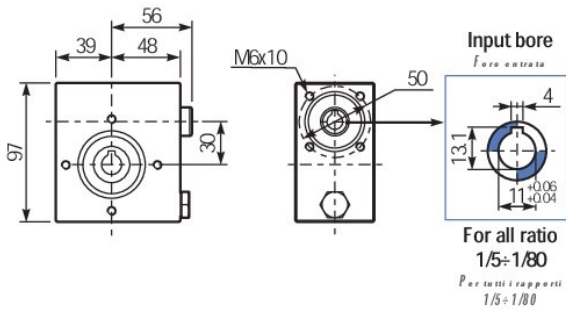
Gearbox weight
peso riduttore 25 kg

M flanges	Kit code	øF	A
56B14	K1304046	80	61.5
63B14	K1304045	90	62.5



B130UN... Modular base
Baso modulare

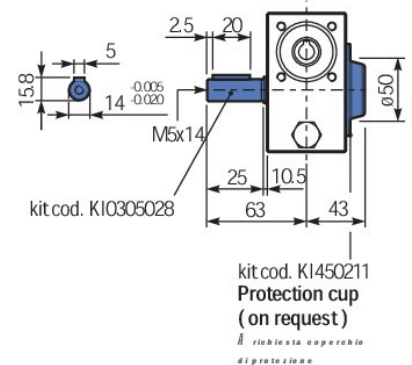
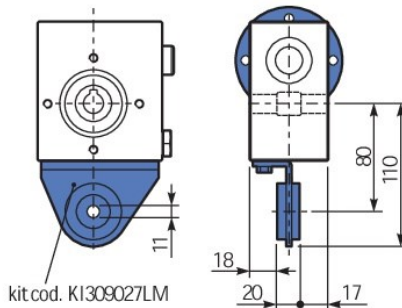
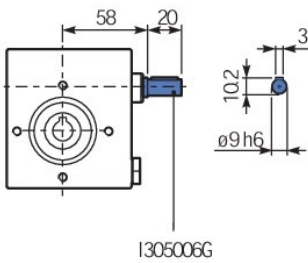
PI30FL... Output flange
Flangia uscita



R130UN... Input shaft
Albero in entrata

PI30BR... Reaction arm
Braccio di reazione

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



145

41 Nm

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

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		B14 motor flanges		Dynamic efficiency RD	Tooth module [mm]	Ratios code
							-	-	-P 63	-Q 71			
200	7	0.37	14	2.2	0.80	30			B-C		80	2.2	01
140	10	0.37	20	1.5	0.57	30			B-C		79	2.2	02
100	14	0.37	27	1.1	0.41	30			B-C		77	2.4	03
67	21	0.37	36	1.2	0.43	41			B-C		67	1.6	04
50	28	0.25	31	1.3	0.33	41			B-C		65	2.5	05
38	37	0.25	40	1.0	0.26	41			B-C		63	1.8	06
30	46	0.25	46	0.9	0.22	41			B-C		59	1.5	07
23	60	0.18	41	1.0	0.18	41			B-C		56	1.2	08
20	70	0.12	31	1.0	0.12	30			B-C		54	1.0	09
13.7	102	0.12	41	0.7	0.09	29			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 B) Supplied with reduction bushing B) Available on request without reduction bushing C) Motor flange holes position
- Flange motore disponibili *Fornito con bussola di riduzione* *Disponibile a richiesta senza bussola di riduzione* *Posizione fori flangia motore*

Lubrication

Lubrificazione

Unit 145 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 145 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

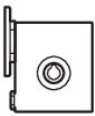
Agip

Telium VSF 320

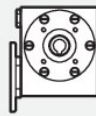
Shell

Omala S4 WE 320

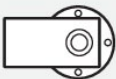
B3
Standard
0.15 LT



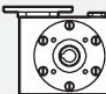
B8
On request
0.15 LT



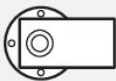
B6
On request
0.15 LT



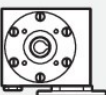
V5
On request
0.15 LT



B7
On request
0.20 LT



V6
On request
0.15 LT



For more details on lubrication and plugs check our website.

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

Tab. 1

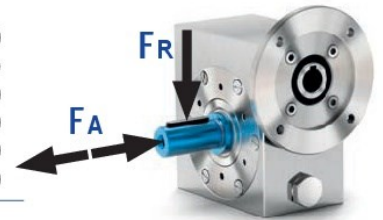
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

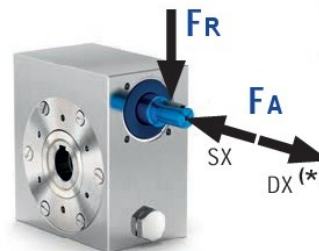
n_2 [min ⁻¹]	F_A [N]	F_R [N]
200	180	900
150	200	1000
100	220	1100
75	240	1200
50	260	1400
25	300	1800
15	400	2000



Input shaft

Albero in entrata

n_1 [min ⁻¹]	F_A [N]	F_R [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

41
Nm

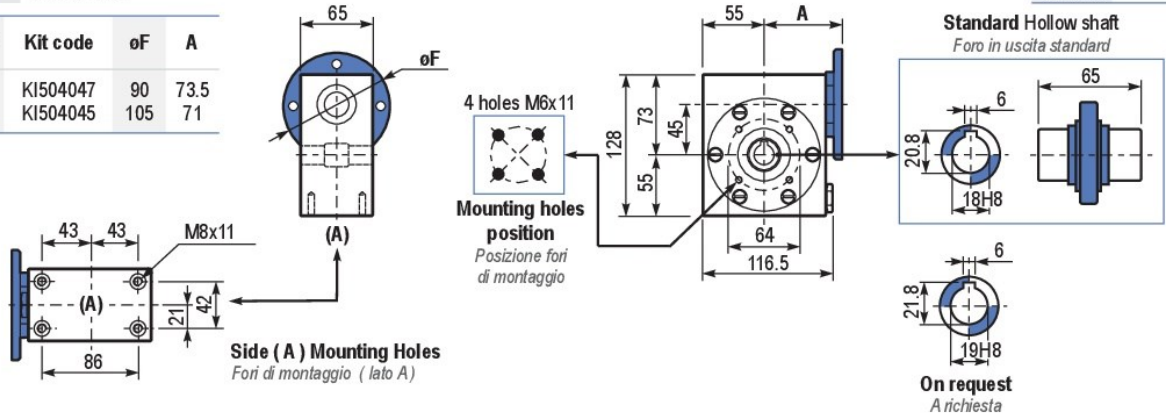
145

PI45UN...

Basic gearbox
Riduttore base

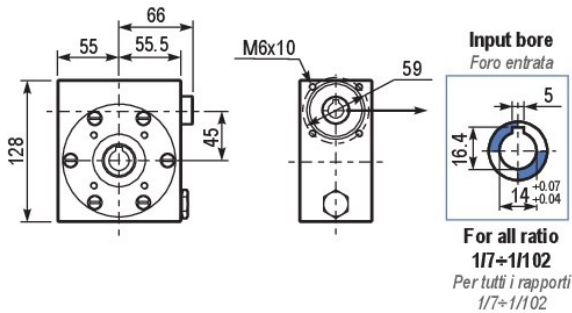
Gearbox weight
peso riduttore **5.0 kg**

M. flanges	Kit code	øF	A
63B14	KI504047	90	73.5
71B14	KI504045	105	71



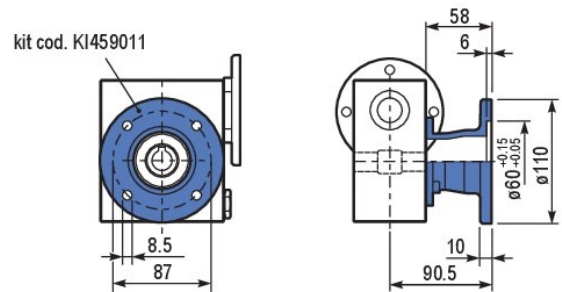
BI45UN...

Modular base
Base modulare



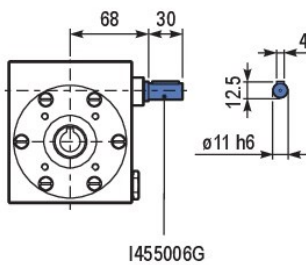
PI45FL...

Output flange
Flangia uscita



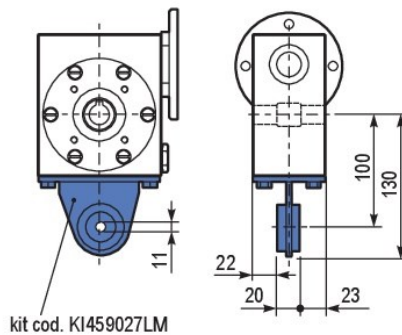
RI45UN...

Input shaft
Albero in entrata



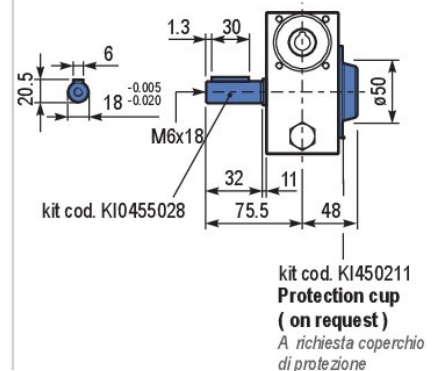
PI45BR...

Reaction arm
Braccio di reazione



PI45.....S...

Single Shaft
Albero lento semplice



150

72 Nm

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

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			B14 motor flanges			Dynamic efficiency RD	Tooth module [mm]	Ratios code
							-	-	-	-P 63	-Q 71	-R 80			
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
28	50	0.25	53	1.2	0.31	66				B-C			62	1.5	13
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* 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*

Lubrication

Lubrificazione

Unit 150 is supplied with synthetic oil to assure long life lubrication. Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 150 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip

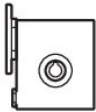
Tellium VSF 320

Shell

Omala S4 WE 320

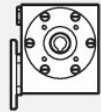
B3

Standard
0.22 LT



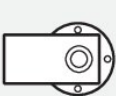
B8

On request
0.22 LT



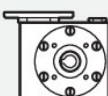
B6

On request
0.22 LT



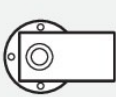
V5

On request
0.22 LT



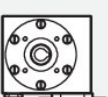
B7

On request
0.28 LT



V6

On request
0.22 LT



For more details on lubrication and plugs check our website.

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

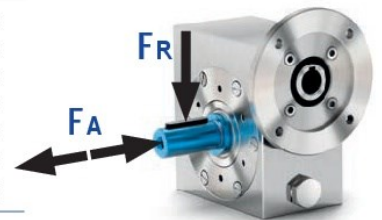
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [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 ⁻¹]	F_A [N]	F_R [N]
1400	76	380

* Strong axial loads in the DX direction are not allowed.

* Non sono consentiti forti carichi assiali con direzione DX

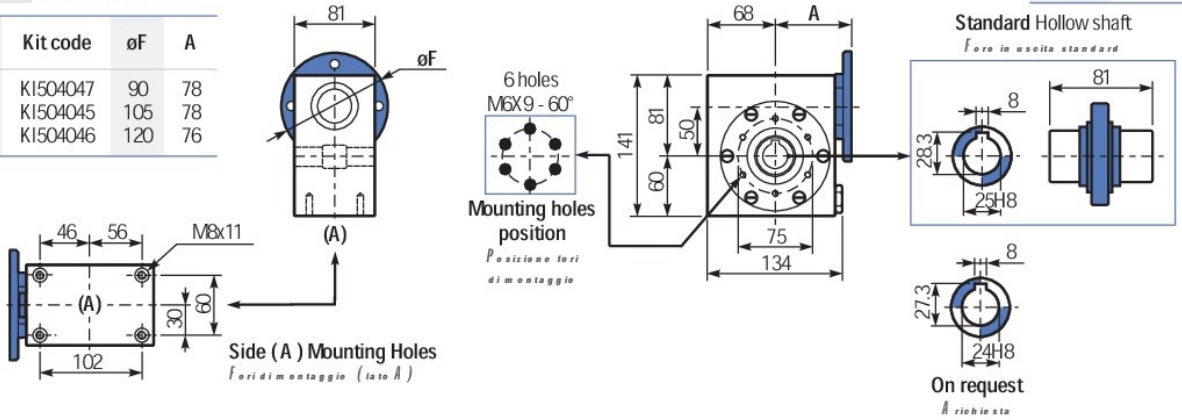
72
Nm

150

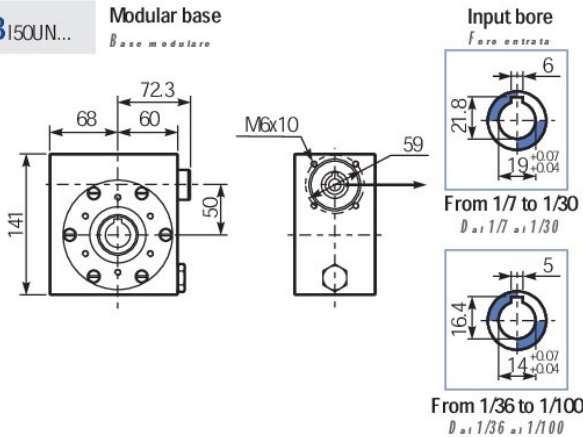
PI50UN... Basic gearbox
Riduttore base

Gearbox weight
peso riduttore 7.3 kg

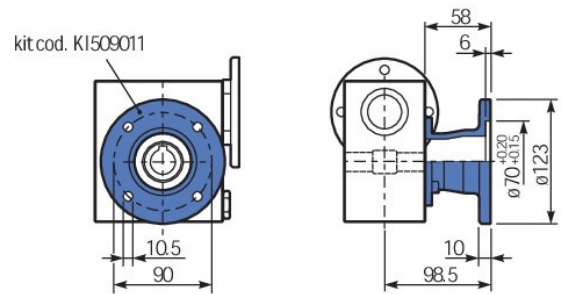
M flanges	Kit code	øF	A
63B14	KI504047	90	78
71B14	KI504045	105	78
80B14	KI504046	120	76



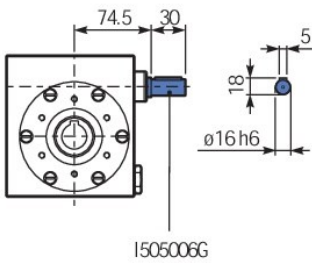
BI50UN... Modular base
Base modulare



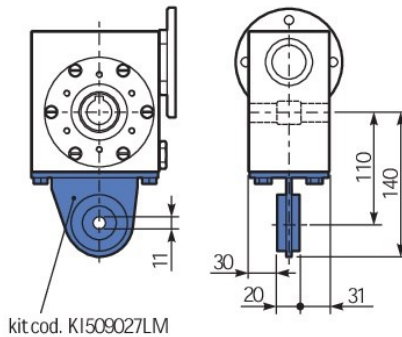
PI50FL... Output flange
Flangia uscita



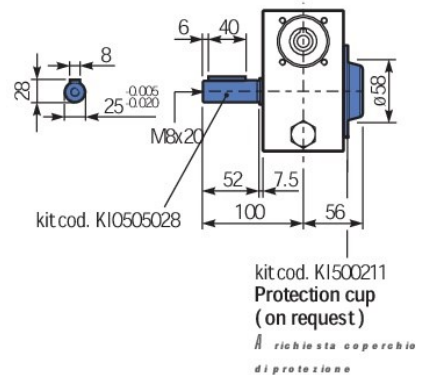
RI50UN... Input shaft
Albero in entrata



PI50BR... Reaction arm
Braccio di reazione



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



163

147

Nm

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

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			B14 motor flanges			Dynamic efficiency RD	Tooth module [mm]	Ratios code
							-	-	-	-Q	-R	-T			
200	7	1.8	71	1.8	3.2	125	-	-	-	B-C	B-C		83	3.1	01
140	10	1.8	99	1.4	2.4	134	-	-	-	B-C	B-C		81	3.1	02
93	15	1.5	121	1.1	1.7	138	-	-	-	B-C	B-C		79	3.1	03
74	19	1.1	111	1.2	1.4	138	-	-	-	B-C	B-C		78	2.6	04
58	24	1.1	135	1.0	1.2	142	-	-	-	B-C	B-C		75	2.0	05
47	30	1.1	167	0.9	0.96	146	-	-	-	B-C	B-C		74	3.2	06
39	36	0.75	125	1.2	0.88	147	-	-	-	B-C	B-C		68	2.7	07
35	40	0.75	135	1.0	0.78	140	-	-	-	B-C	B-C		66	2.5	13
31	45	0.55	111	1.2	0.67	135	-	-	-	B-C	C		66	2.1	08
23	60	0.55	140	0.9	0.51	130	-	-	-	B-C	C		62	1.6	12
21	67	0.55	151	0.8	0.45	124	-	-	-	B-C	C		60	1.5	09
17.5	80	0.37	115	1.0	0.38	119	-	-	-	B-C	C		57	1.3	10
14.9	94	0.37	123	1.0	0.36	119	-	-	-	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 B) Supplied with reduction bushing B) Available on request without reduction bushing C) Motor flange holes position

Lubrication

Lubrificazione

Unit 163 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 163 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip

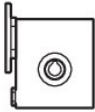
Tellium VSF 320

Shell

Omala S4 WE 320

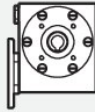
B3

Standard
0.60 LT



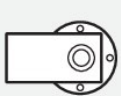
B8

On request
0.60 LT



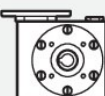
B6

On request
0.60 LT



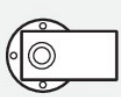
V5

On request
0.60 LT



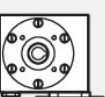
B7

On request
0.82 LT



V6

On request
0.60 LT



For more details on lubrication and plugs check our website.

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

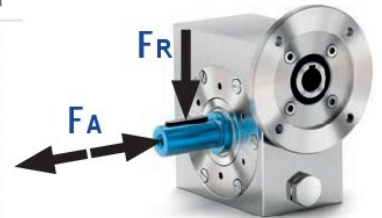
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [N]
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 ⁻¹]	F_A [N]	F_R [N]
1400	90	450

* Strong axial loads in the DX direction are not allowed.

* Non sono consentiti forti carichi assiali con direzione DX

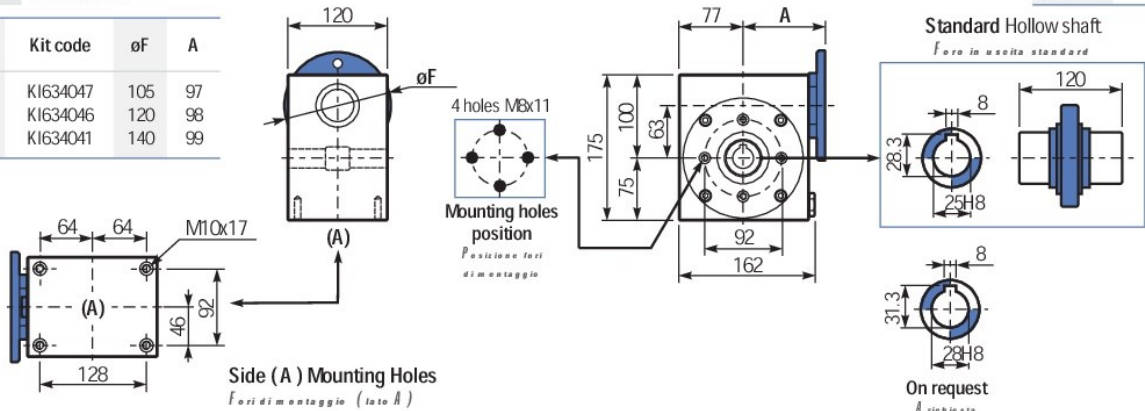
147
Nm

163

PI63UN... Basic gearbox
Riduttore base

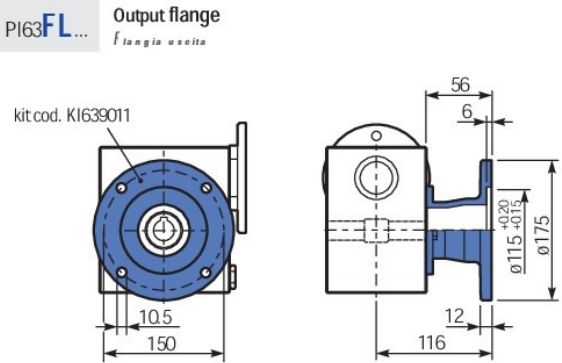
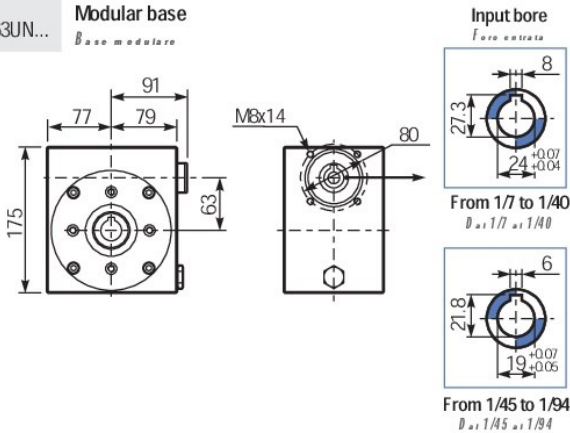
Gearbox weight
peso riduttore 14.6 kg

M flanges	Kit code	øF	A
71B14	KI634047	105	97
80B14	KI634046	120	98
90B14	KI634041	140	99



BI63UN... Modular base
Basso modulare

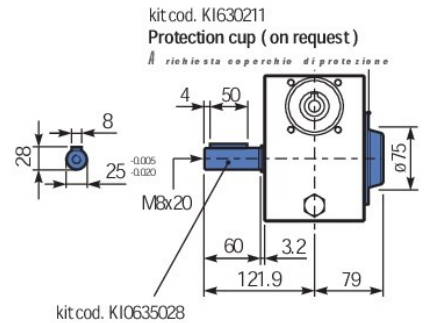
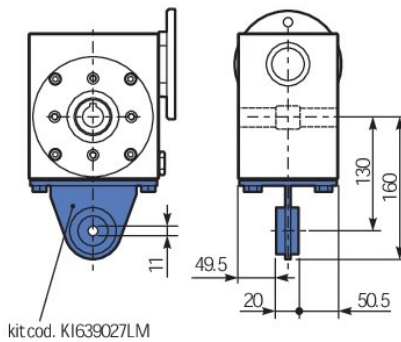
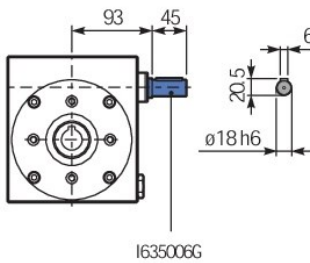
PI63FL... Output flange
Flangia uscita



RI63UN... Input shaft
Albero in entrata

PI63BR... Reaction arm
Braccio di reazione

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



185

347

Nm

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

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

Lubrication

Lubrificazione

Unit 185 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 185 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip

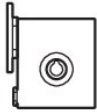
Tellium VSF 320

Shell

Omala S4 WE 320

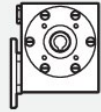
B3

Standard
1.40LT



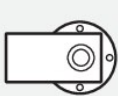
B8

On request
1.40LT



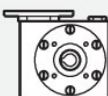
B6

On request
1.40LT



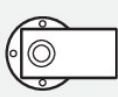
V5

On request
1.40LT



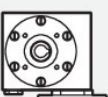
B7

On request
1.70LT



V6

On request
1.40LT



For more details on lubrication and plugs check our website.

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

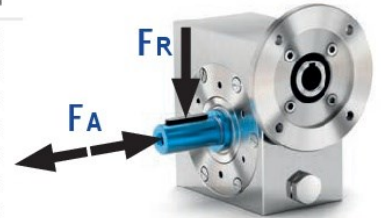
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [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 ⁻¹]	F_A [N]	F_R [N]
1400	160	809

* Strong axial loads in the DX direction are not allowed.

* Non sono consentiti forti carichi assiali con direzione DX

111

651

Nm

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox

Input speed (n₁) = 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		B14 motor flanges	Dynamic efficiency RD	Tooth module [mm]	Ratios code
							-D 80	-E 90	-U 100 - 112			
200	7	4.0	168	2.9	11.5	483	B	B		88	5.5	01
140	10	4.0	235	2.2	9.0	525	B	B		86	5.4	02
88	16	4.0	358	1.5	6.0	536	B	B		82	5.3	03
70	20	4.0	447	1.2	4.9	546	B	B		82	4.5	04
61	23	3.0	377	1.4	4.1	515	B	B		80	3.9	05
47	30	3.0	467	1.4	4.2	651	B	B		76	5.6	06
37	38	3.0	583	1.1	3.3	641	B	B		75	4.7	07
31	45	2.2	493	1.2	2.7	599	B	B		73	4.0	08
26	53	2.2	557	1.1	2.5	620	B	B		70	3.5	09
22	64	1.5	452	1.2	1.8	536	B	B		69	2.9	10
16.7	84	1.1	410	1.2	1.3	494	B	B		65	2.2	11
14.1	99	1.1	446	1.1	1.2	483	B	B		60	1.9	12

* The nominal power should be reduced if the ambient temperature is ≥ 30°C, or when a cooler gearbox is required.

* Diminuire la potenza nominale in caso di temperatura ambiente ≥ 30°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

Lubrication

Lubrificazione

Unit 111 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 111 viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip

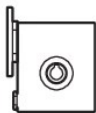
Tellium VSF 320

Shell

Omala S4 WE 320

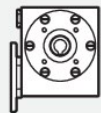
B3

Standard
3.50LT



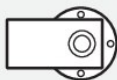
B8

On request
2.10LT



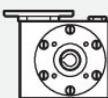
B6

On request
2.50LT



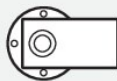
V5

On request
1.60LT



B7

On request
2.50LT



V6

On request
1.60LT



For more details on lubrication and plugs check our website.

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

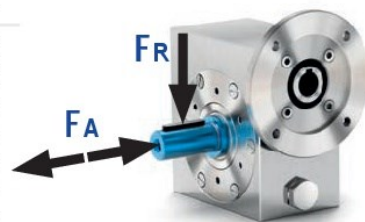
Radial and axial loads

Carichi radiali e assiali

Output shaft

Albero di uscita

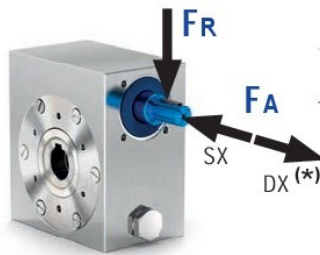
n ₂ [min ⁻¹]	FA [N]	FR [N]
200	600	2900
150	700	3300
100	750	3600
75	800	4000
50	920	4600
25	1200	6000
15	1400	7000



Input shaft

Albero in entrata

n ₁ [min ⁻¹]	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

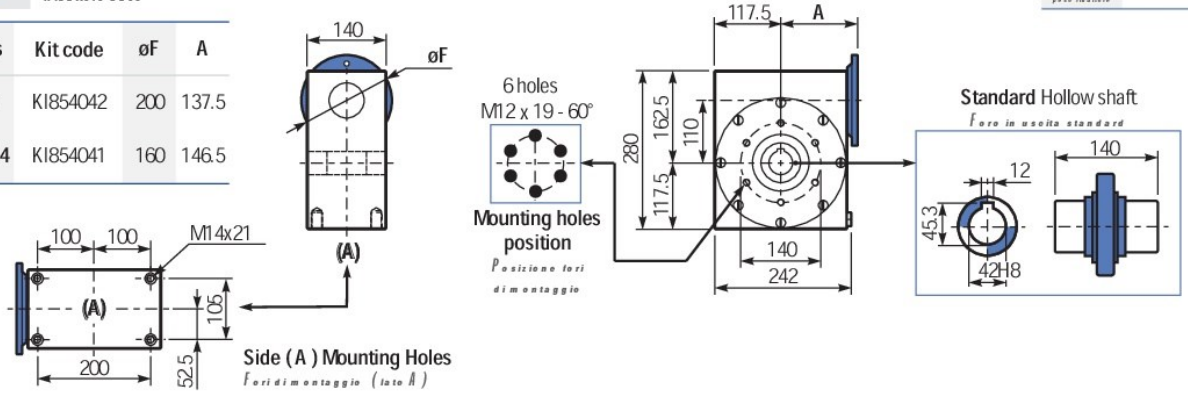
651
Nm

111

PI11UN... Basic gearbox
Riduttore base

Gearbox weight
peso riduttore 38.5 kg

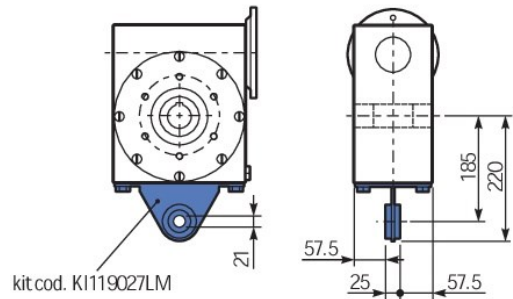
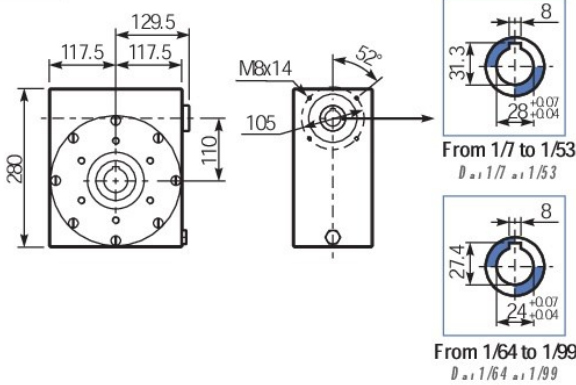
M flanges	Kit code	øF	A
80-90B5	K1854042	200	137.5
100-112B14	K1854041	160	146.5



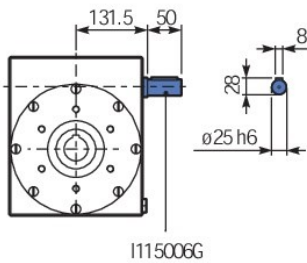
B111UN... Modular base
Baso modulare

Input bore
Foro entrata

PI11BR... Reaction arm
Braccio di reazione



R111UN... Input shaft
Albero in entrata





FEATURES

Caratteristiche

Stainless steel ratio multiplier

Riduttori ad uno stadio completamente in acciaio inox

Type <i>Tipo</i>	Torque <i>Coppia</i>	Center distance <i>Interasse</i>	Input power <i>Potenza in entrata</i>	Hollow output shaft <i>Albero cavo in uscita</i>
4111	38 Nm	38 mm	0.37 ÷ 1.5 kW	ø19 mm



This product is:



Stainless steel output shaft.

Albero in uscita in acciaio inox.



Hardened and ground gears.

Ingranaggi temprati e rettificati.

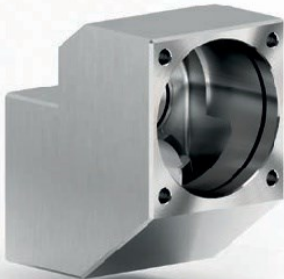
FEATURES

C a r a t t e r i s t i c h e



Fully modular IEC flanges and compact NEMA C motor flanges.

Flange IEC e NEMA completamente modulari.



Smooth stainless steel housing.

Cassa in acciaio inox.













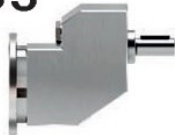









Standard FPM (fkm) seals.

Anelli di tenuta FPM(fkm) standard.

How to order

Codifica

P	411I	-F	1.57
Type <i>Tipo</i>	Size <i>Grandezza</i>	Mounting <i>Montaggio</i>	Ratio <i>Rapporto</i>
P 	411I	-N 	
M 		-F 	See technical data table <i>Vedi tabelle dati tecnici</i>
B 			

C	4	-Q	B	B3
Output shaft <i>Albero lento</i>	Output flange <i>Flangia uscita</i>	Motor size <i>Grandezza motore</i>	Terminal box position <i>Posizione morsetti</i>	Mounting position <i>Posizione di montaggio</i>
 <p>C -> $\varnothing 19$</p>	 <p>N Without flange <i>Senza flangia</i></p> <p>4 -> $\varnothing 200$</p>	<p>IEC B14</p>  <p>-Q -> 71 B14 ($\varnothing 105$) -R -> 80 B14 ($\varnothing 120$) -T -> 90 B14 ($\varnothing 140$)</p>	<p>A</p> 	<p>B3</p> 
		<p>B</p> 	<p>B6</p> 	
		<p>C</p> 	<p>B7</p> 	
		<p>D</p> 	<p>B8</p> 	
			<p>V5</p> 	
			<p>V6</p> 	
	<p>V8</p> 			

Useful formulas

Formule utili

Required power - Potenza richiesta

Lifting - Sollevamento

$$P_{[kW]} = \frac{M_{[Kg]} \cdot g_{[9.81]} \cdot v_{[m/s]}}{1000}$$

Rotation - Rotazione

$$P_{[kW]} = \frac{M_{[Nm]} \cdot n_{[rpm]}}{9550}$$

Linear movement - Traslazione

$$P_{[kW]} = \frac{F_{[N]} \cdot v_{[m/s]}}{1000}$$

Torque - Coppia

$$M_{[Nm]} = \frac{9550 \cdot P_{[kW]}}{n_{[rpm]}}$$

$$M_{[lb\ in]} = \frac{63030 \cdot P_{[HP]}}{n_{[rpm]}}$$

Radial loads - Carichi radiali

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.

$$F_{R[N]} = \frac{M_{[Nm]} \cdot 2000}{d_{[mm]}} \cdot f_k$$

$$F_{R[N]} = \frac{M_{[lb\ in]} \cdot 8.9}{d_{[in]}} \cdot f_k$$

M: Output torque - *Momento torcente*

d: Diam. of driving element - *Diametro primitivo*

f_k: Factor - *Coefficiente di trasformazione*

1.15: Gearwheels - *Ingranaggi*

1.25: Chain sprockets - *Catena*

1.75: Narrow v-belt pulley - *Cinghia Trapezoidale*

2.50: Flat-belt pulley - *Cinghia piatta*



If your application requires higher radial loads, contact our technical office. Higher loads may be possible.

Nei casi in cui la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.

How to select a gearbox

Come selezionare un riduttore

- A** Select required torque (according to service factor)
Seleziona la coppia desiderata (comprensiva del fattore di servizio)
- B** Select output speed
Seleziona la velocità in uscita
- C** Select gear ratio in the line corresponding to the chosen motor power
Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione
- D** Select motor flange available (if requested)
Scegli la flangia disponibile (se richiesta)

Gear size
Grandezza riduttore

C Ratio
R rapporto

Transmitted torque
Momento torcente trasmesso

Nominal power
Potenza nominale

Flange code
Codice flangia

Input speed
Velocità in entrata

4111

38

Nm

Stainless steel ratio multiplier

Riduttori ad uno stadio completamente in acciaio inox

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

B Output speed
Velocità in uscita

Motor power
Potenza motore

Service factor
Fattore di servizio

A Nominal torque
Momento torcente nominale

Output shaft diam.
Diametro albero uscita

Notes
Note

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

- D** Motor flange available
Flange disponibili
- B)** Mounting with reduction bushing
Montaggio con boccola di riduzione
- C)** Motor flange holes position/terminal box position
Posizione fori flangia/basetta motore
- B)** Available without reduction bushing
Disponibile anche senza boccola

4111




38 Nm

Stainless steel ratio multiplier

Riduttori ad uno stadio completamente in acciaio inox

The dynamic efficiency is **0.98** 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]	B5 motor flanges			B14 motor flanges			Output shaft 	Output shaft 	Ratios code 
							-	-	-	-Q	-R	-T			
891	1.57	1.5	16	1.3	1.9	20	-	-	-	C	C		2844	standard ø19	01
493	2.84	1.5	28	1.2	1.8	35	-	-	-	C	C		1954		02
425	3.29	1.5	33	1.2	1.7	38	-	-	-	C	C		1756		03
362	3.87	1.5	39	1.0	1.5	40	-	-	-	C	C		1558		04
303	4.62	1.5	46	1.0	1.5	47	-	-	-	C	C		1360		05
222	6.30	1.1	46	1.0	1.1	46	-	-	-	C	C		1063		06
170	8.22	0.55	30	1.3	0.69	38	-	-	-	C	C		974		07
129	10.86	0.37	27	1.0	0.39	28	-	-	-	C	C		776		08

* 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

Lubrication

Lubrificazione

Unit 4111 is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo 4111 viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Oil quantity for all positions: 0.14Lt.	Agip Te llum VSF 320	Shell Omala S4 WE 320
Quantità olio per tutte le posizioni: 0.14Lt		

Tab. 1

Radial and axial loads

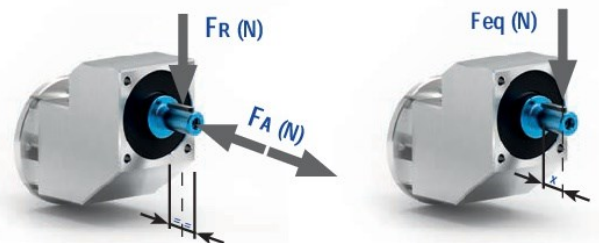
Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [N]
700	182	910
600	200	1000
400	230	1150
300	250	1250
200	290	1450
140	320	1600

$$F_{eq} = F_R \cdot \frac{48.5}{X + 28.5}$$



Tab. 2

38
Nm

4111

P4111-N ... Basic gearbox
Riduttore base

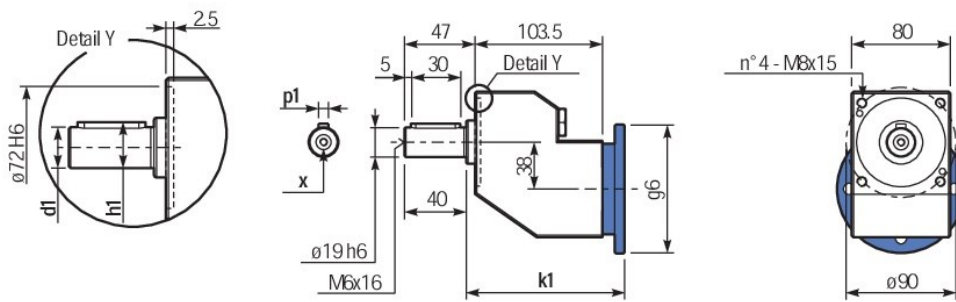
6 earbox
weight
5.5 kg

0 utput shafts / albero di uscita

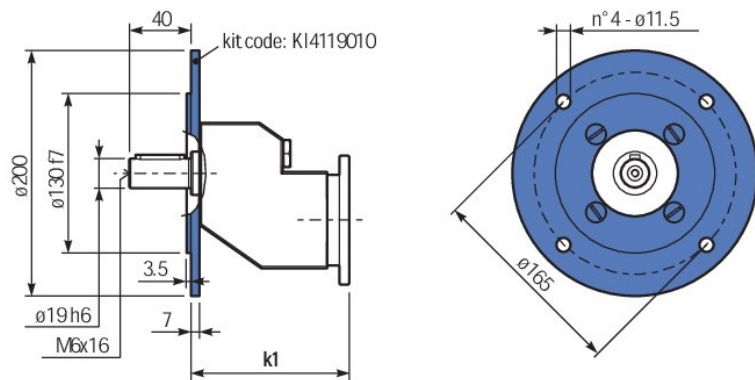
	Shaft - d1	p1	h1	x
Standard	ø 19x40	6	21.5	M6x16

Input flanges / flange di entrata

	Kit code	k1	g6
71 B 14	KI634047	128.5	105
80 B 14	KI634046	129.5	120
90 B 14	KI634041	130.5	140



P4111-F ... Output flange
Flangia di uscita





BVI series - Stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

Section **4**
Sezione 4



FEATURES

Caratteristiche

Stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

Type <i>Tipo</i>	Torque <i>Coppia</i>	Center distance <i>Interasse</i>	Input power <i>Potenza in entrata</i>	Hollow output shaft <i>Albero cavo in uscita</i>
X42I	150 Nm	21.8 mm	0.25 ÷ 1.5 kW	ø25
X62I	410 Nm	30 mm	0.75 ÷ 4.0 kW	ø35



This product is:



Output shaft in AISI 316L and special cover for full seals protection.

Mozzo e albero in uscita in AISI 316L e coperchietto protettivo per anelli paraolio.



New cover with O-ring.

Nuovo coperchietto protettivo per anelli paraolio chiuso con o-ring.



Smooth stainless steel housing.

Cassa in acciaio inox.



Fully modular IEC flanges and compact NEMA C motor flanges.

Flange IEC e NEMA completamente modulari.



**Stainless steel hollow input/output shaft.
Viton seals with stainless steel shield.**

*Albero cavo in entrata/uscita in acciaio inox.
Anelli di tenuta in viton con schermo protettivo in acciaio inox.*





















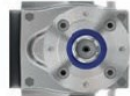










Hardened and ground gears.

Ingranaggi temprati e rettificati.

How to order

Codifica

M	X42I	I	7.29	-C	BR
Type <i>Tipo</i>	Size <i>Grandezza</i>	Mounting <i>Montaggio</i>	Ratio <i>Rapporto</i>	Hub <i>Mozzo corona</i>	Type <i>Tipo</i>
P 	X42I X62I	I Hollow output shaft <i>Foro albero uscita</i> 	 See technical data table <i>Vedi tabelle dati tecnici</i>	Hollow output shaft <i>Foro albero uscita</i> 	FB Universal <i>Forma base</i> 
M 		A Single output shaft <i>Albero uscita singolo</i> 		→ Standard X42I -C → $\varnothing 25$ X62I -E → $\varnothing 35$	BR Reaction arm <i>Braccio di reazione</i> 
B 		Single output shaft <i>Albero uscita singolo</i> 		X42I -L → $\varnothing 25$ X62I -N → $\varnothing 35$	-F Output flange <i>Flangia uscita</i> 

N	-Q	B	B3	-
Output flange <i>Flangia in uscita</i>	Motor size <i>Grandezza motore</i>	Terminal box position <i>Posizione morsetti</i>	Mounting position <i>Posizione di montaggio</i>	Coupling <i>Giunto</i>
<p>N Without flange <i>Senza flangia</i></p> 	<p>IEC B5</p>  <p>-D -> 80 B5 (ø200) -E -> 90 B5 (ø200)</p>	<p>A</p> 	<p>B3</p> 	<p>-</p> <p>No indication Standard bore <i>Nessuna indicazione</i> Foro standard</p>
 <p>2 X42 -> ø175</p> <p>3 X62 -> ø205</p>	<p>IEC B14</p>  <p>-Q -> 71 B14 (ø105) -R -> 80 B14 (ø120) -T -> 90 B14 (ø140) -U -> 100+ 112 B14 (ø160)</p>	<p>B</p> 	<p>B6</p> 	<p>COUPLING</p>  <p>A -> 9mm B -> 11mm C -> 14mm D -> 19mm E -> 24mm F -> 28mm</p>
<p>Without flange <i>Senza flangia</i></p>  <p>-M With coupling <i>Con giunto</i></p> <p>X42</p> <p>-1 -> ø14 (71 B5) -2 -> ø19 (80 B5) -3 -> ø24 (90 B5)</p> <p>X62</p> <p>-2 -> ø19 (80 B5) -3 -> ø24 (90 B5) -4 -> ø28 (100 B5)</p>		<p>C</p> 	<p>B7</p> 	<p>0</p> <p>Without coupling <i>Senza giunto</i></p> 
		<p>D</p> 	<p>B8</p> 	<p>V5</p> 
			<p>V6</p> 	<p>V8</p> 

Useful formulas

Formule utili

Required power - Potenza richiesta

Lifting - Sollevamento

$$P_{[kW]} = \frac{M_{[Kg]} \cdot g_{[9.81]} \cdot v_{[m/s]}}{1000}$$

Rotation - Rotazione

$$P_{[kW]} = \frac{M_{[Nm]} \cdot n_{[rpm]}}{9550}$$

Linear movement - Traslazione

$$P_{[kW]} = \frac{F_{[N]} \cdot v_{[m/s]}}{1000}$$

Torque - Coppia

$$M_{[Nm]} = \frac{9550 \cdot P_{[kW]}}{n_{[rpm]}}$$

$$M_{[lb\ in]} = \frac{63030 \cdot P_{[HP]}}{n_{[rpm]}}$$

Radial loads - Carichi radiali

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.

$$F_{R[N]} = \frac{M_{[Nm]} \cdot 2000}{d_{[mm]}} \cdot f_k$$

$$F_{R[N]} = \frac{M_{[lb\ in]} \cdot 8.9}{d_{[in]}} \cdot f_k$$

M: Output torque - *Momento torcente*

d: Diam. of driving element - *Diametro primitivo*

f_k: Factor - *Coefficiente di trasformazione*

1.15: Gearwheels - *Ingranaggi*

1.25: Chain sprockets - *Catena*

1.75: Narrow v-belt pulley - *Cinghia Trapezoidale*

2.50: Flat-belt pulley - *Cinghia piatta*



If your application requires higher radial loads, contact our technical office. Higher loads may be possible.

Nei casi in cui la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.

How to select a gearbox

Come selezionare un riduttore

A Select required torque (according to service factor)

Seleziona la coppia desiderata (comprensiva del fattore di servizio)

B Select output speed

Seleziona la velocità in uscita

C Select gear ratio in the line corresponding to the chosen motor power

Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione

D Select motor flange available (if requested)

Scegli la flangia disponibile (se richiesta)

Gear size
*Grandezza
riduttore*

C

Ratio
R rapporto

Transmitted torque
*Momento torcente
trasmesse*

Nominal power
Potenza nominale

Flange code
Codice flangia

Input speed
Velocità in entrata

X42I



150
Nm

Stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

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

Input speed (n_1) = 1400 min⁻¹

Output speed n_2 [min ⁻¹]	Ratio <i>i</i>	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor <i>f.s</i>	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges			B14 motor flanges			Output shaft 	Ratio code 
							-	-	-	Q	-R	-T		
192	7.29	1.5	71	1.3	2.0	95	-	-	-	C	C	2811	Standard ø25 On Request ø30	01
125	11.20	1.5	110	1.4	2.0	150	-	-	-	C	C	288		02
106	13.18	1.5	129	1.2	1.7	150	-	-	-	C	C	1911		03
92	15.27	1.1	109	1.4	1.5	150	-	-	-	C	C	1711		04
78	17.93	1.1	128	1.2	1.3	150	-	-	-	C	C	1511		05
69	20.25	1.1	145	1.0	1.1	150	-	-	-	C	C	198		06
65	21.40	1.1	153	1.0	1.1	150	-	-	-	C	C	1311		07
60	23.47	0.75	115	1.3	0.98	150	-	-	-	C	C	178		08
51	27.55	0.75	135	1.1	0.83	150	-	-	-	C	C	158		09
...	-	-	-

B

Output speed
Velocità in uscita

Motor power
Potenza motore

Service factor
Fattore di servizio

A

Nominal torque
*Momento torcente
nominale*

Output shaft diam.
Diametro albero uscita

Notes
Note

Type of load and starts per hour

Tipo di carico e avviamenti per ora

Oper. hours per day
Ore di funz. giorn.

3h 10h 24h

Continuous or intermittent application with start /hour <i>Applicazione continua o intermittente con numero operazioni/ora</i>	≤ 10	Uniform - <i>Uniforme</i>	0.8	1	1.25
		Moderate - <i>Moderato</i>	1	1.25	1.5
		Heavy - <i>Forte</i>	1.25	1.5	1.75
Intermittent application with start /hour <i>Applicazione intermittente con numero operazioni/ora</i>	> 10	Uniform - <i>Uniforme</i>	1	1.25	1.5
		Moderate - <i>Moderato</i>	1.25	1.5	1.75
		Heavy - <i>Forte</i>	1.5	1.75	2.15

D Motor flange available
Flange disponibili

B) Mounting with reduction bushing
Montaggio con boccola di riduzione

C) Motor flange holes position/terminal box position
Posizione fori flangia/basetta motore

B) Available without reduction bushing
Disponibile anche senza boccola

X42i



150 Nm

Stainless steel helical bevel gearboxes


Riduttori a coppia conica completamente in acciaio inox

The dynamic efficiency is 0.96 for all ratios

Input speed (n₁) = 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			B14 motor flanges			Output shaft 	Ratio code 	
							-	-	-Q	-R	-T	-Q			-R
192	7.29	1.5	71	1.3	2.0	95	-	-	-Q	-R	-T	Standard ø25	01		
125	11.20	1.5	110	1.4	2.0	150	-	-	71	80	90			2811	02
106	13.18	1.5	129	1.2	1.7	150			C	C				288	03
92	15.27	1.1	109	1.4	1.5	150			C	C				1911	04
78	17.93	1.1	128	1.2	1.3	150			C	C				1711	05
69	20.25	1.1	145	1.0	1.1	150			C	C				1511	06
65	21.40	1.1	153	1.0	1.1	150			C	C				198	07
60	23.47	0.75	115	1.3	0.98	150			C	C				1311	08
51	27.55	0.75	135	1.1	0.83	150			C	C				178	09
47.9	29.21	0.75	143	1.0	0.78	150			C	C				158	10
42.6	32.88	0.75	161	0.9	0.70	150			C	C				1011	11
36.7	38.12	0.55	138	1.1	0.60	150			C	C				138	12
31.2	44.89	0.55	163	0.9	0.51	150			C	C				911	13
27.8	50.34	0.37	122	1.1	0.40	131			C	C				108	14
23.9	58.58	0.37	142	1.1	0.39	150			C	C				711	15
18.1	77.36	0.25	126	1.2	0.30	150			C	C				98	16

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

Lubrication

Lubrificazione

Unit X42i is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

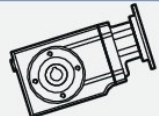
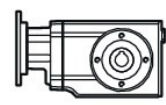
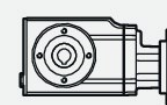



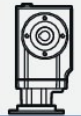
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo X42i viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip Telim VSF 320	Shell Omala S4 WE 320	V8 On request ASK	
B3 Standard 0.85 LT		B8 On request 1.00 LT	
B6 On request 0.95 LT		V5 On request 1.60 LT	
B7 On request 0.85 LT		V6 On request 1.00 LT	

For more details on lubrication and plugs check our website.

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

Radial and axial loads

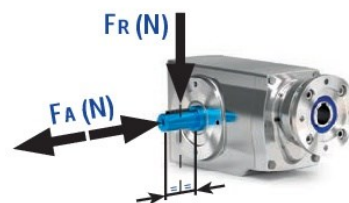
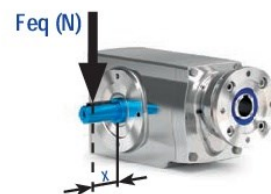
Carichi radiali e assiali

Output shaft

Albero di uscita

n ₂ [min ⁻¹]	F _A [N]	F _R [N]
250	500	2500
150	600	3000
100	700	3500
75	800	4000
50	960	4800
25	960	4800
15	960	4800

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



Tab. 1

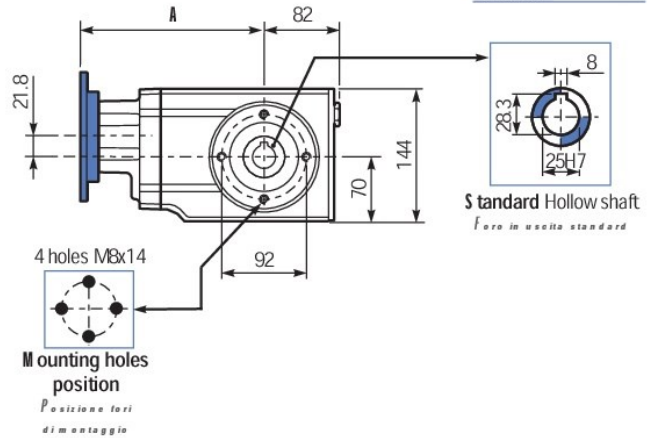
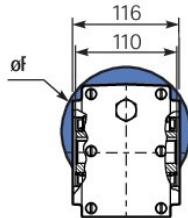
Tab. 2

150
Nm

X42I

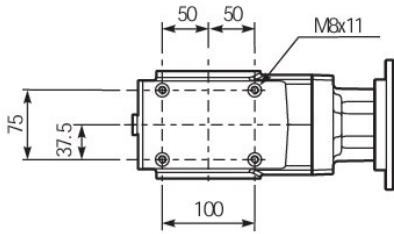
P X42I... **B**asic gearbox
Riduttore base

M. flanges	Kit code	øf	A
71B 14	KI634047	105	197.5
80B 14	KI634046	120	198.5
90B 14	KI634041	140	

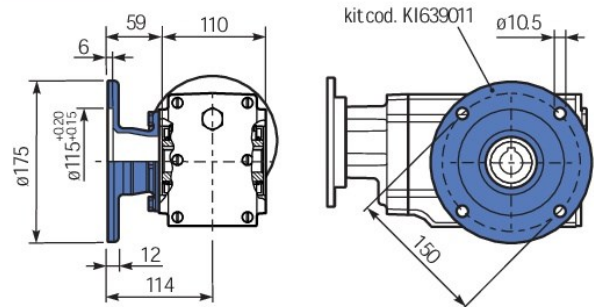


6 earbox weight **13.0 kg**
peso riduttore

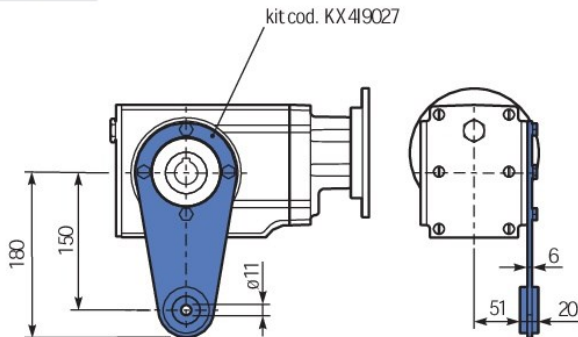
PX42I-**F B** .. **F**eet
Piedini



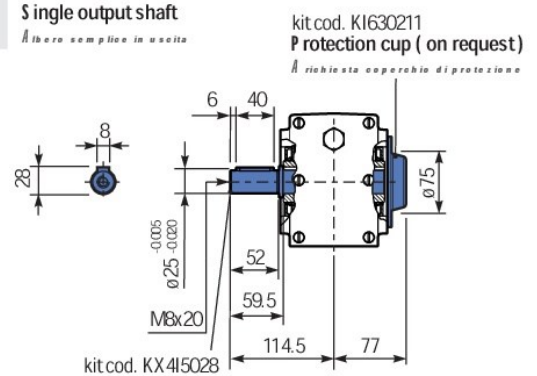
PX42I-**F L** .. **O**utput flange
Fiangia uscita



PX42I-**B R** .. **R**eaction Arm
Braccio di reazione



PX42I-**A** .. **S**ingle output shaft
Albero semplice in uscita



X62I




410 Nm

Stainless steel helical bevel gearboxes


Riduttori a coppia conica completamente in acciaio inox

The dynamic efficiency is 0.96 for all ratios

Input speed (n₁) = 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		B14 motor flanges		Output shaft 	Ratio code 	
							-D 80	-E 90	-U 100-112				
232	6.03	4	155	1.6	6.1	240					3011	01	
151	9.26	4	238	1.1	4.5	270					308	02	
123	11.36	4	291	1.2	4.7	350					2011	03	
91	15.36	4	394	1.0	3.8	385					1611	04	
80	17.46	4	448	0.9	3.5	400					208	05	
70	19.97	3	386	1.1	3.1	410					1311	06	
59	23.60	3	456	0.9	2.7	410					168	07	
57	24.45	3	472	0.9	2.6	410					Standard ø35	1111	08
45.6	30.69	2.2	436	0.9	2.0	410					138	09	
39.6	35.35	1.5	346	1.2	1.8	410					811	10	
37.3	37.57	1.5	368	1.1	1.7	410					118	11	
28.8	48.68	1.1	348	1.0	1.1	365					611	12	
25.8	54.33	1.1	389	1.1	1.2	410					88	13	
18.7	74.81	0.75	367	1.0	0.73	360					68	14	

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

Lubrication

Lubrificazione

Unit X62I is supplied with synthetic oil to assure long life lubrication.

Food grade oil is available on request.

See Table 1 for lubrication and recommended quantity.

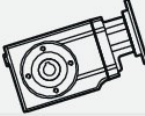
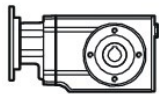
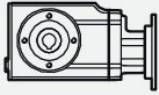
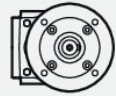

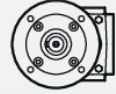
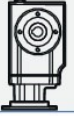
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo X62I viene fornito con olio sintetico e lubrificazione tipo "long life".

Disponibile a richiesta olio alimentare.

Vedi Tabella 1 per oli e quantità consigliati.

Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Agip	Shell	V8	
Telium VSF 320	Omala S4 WE 320	On request ASK	
B3		B8	
Standard 1.85 LT		On request 2.00 LT	
B6		V5	
On request 2.00 LT		On request 3.35 LT	
B7		V6	
On request 1.70 LT		On request 2.30 LT	

For more 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

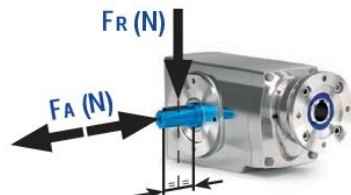
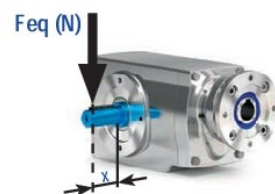
Carichi radiali e assiali

Output shaft

Albero di uscita

n ₂ [min ⁻¹]	F _A [N]	F _R [N]
250	600	3000
150	700	3500
100	780	3900
75	890	4450
50	1140	5700
25	1330	6650
15	1660	8300

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



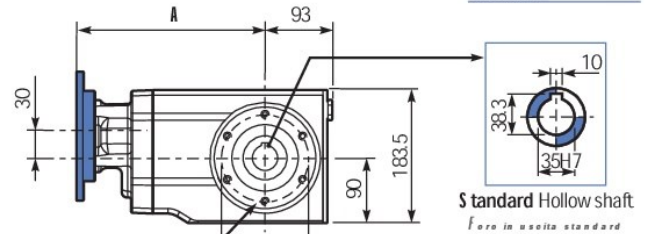
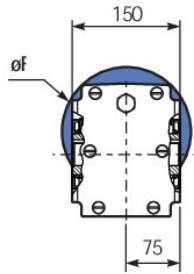
Tab. 2

410
Nm

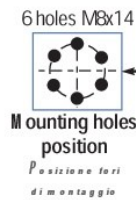
X62I

P X62I... **B**asic gearbox
Riduttore base

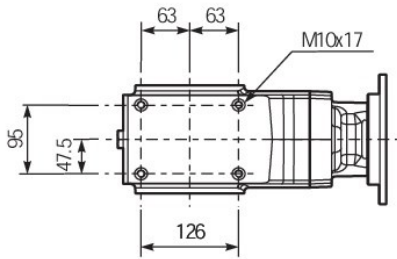
M. flanges	Kit code	of	A
80-90B 5	K 1854042	200	255
100-112B 14	K 1854041	160	264



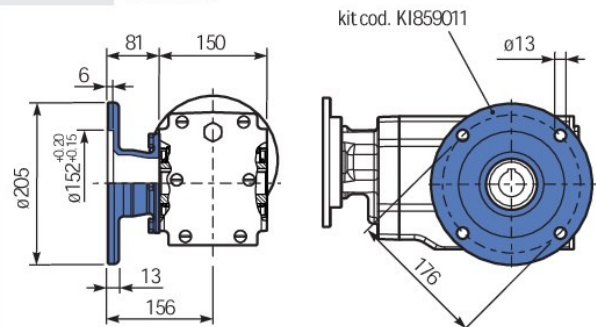
6 earbox weight **25.8 kg**
peso riduttore



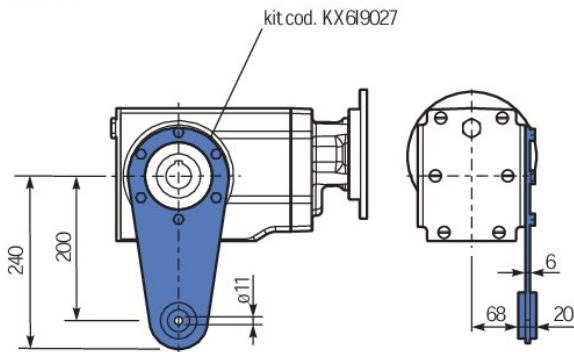
PX62I-**F B**... **F**eet
Piedini



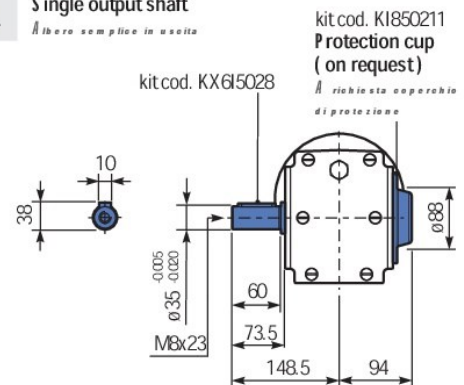
PX62I-**F L**... **O**utput flange
Flangia uscita



PX62I-**B R**... **R**eaction Arm
Braccio di reazione



PX62I-**A**... **S**ingle output shaft
Albero semplice in uscita





ON REQUEST

Input coupling *Direct mounting - No settings - No screw*

Giunto in entrata Montaggio diretto - No settaggi - No viti

1



PATENTED

2



3



Available as an option for the motor range from IEC 56 to IEC 112
Disponibile come opzione per motori da IEC 56 a IEC 112

* Do not mount oil seals on motor flange *Non montare anelli di tenuta nella flangia motore*



MATERIAL
P = Polymer
Z = Zamak

INPUT
DIAMETER Ø

GROUP

**ON
REQUEST**

Z30	I30	-	KA	09	P	
				11	P	
Z45	I45	-	KB	09	P	
				11	P	
				14	P	*
Z50	I50	-	KC	09	P	
				11	P	
				14	P	
				19	Z	*
Z63	I63	X42I	KD	11	P	
				14	P	
				19	P	*
				24	Z	*
Z85	-	X62I	KE	14	P	
				19	P	
				24	Z	*
				28	Z	*

* While using these couplings, replace the motor shaft key with the shorter one supplied with the kit.

Stainless steel worm gearboxes

Riduttori a vite senza fine completamente in acciaio inox



IP69k is a rating of German standard DIN 40050-9 extending the IEC 60529 that provides the maximum protection degree against close range high pressure (100 bar), high temperature (80°C) spray downs, applied at a variety of angles, as well as against dust penetration. In many industries, where dust and dirt can be an issue or where hygiene and cleanliness are essential, like in food and beverage industry, this certification is indispensable for the equipment that must be sanitized, withstanding rigorous high pressure and high temperature wash-down procedures.

Il codice IP indica il grado di protezione del prodotto contro l'intrusione di particelle solide e di liquidi. IP69K è il massimo grado di protezione: il riduttore resiste alla penetrazione della polvere e dei getti d'acqua/vapore ad alta pressione (100 bar) ed alta temperatura (80°C), da angolazioni differenti.

In molte industrie dove la polvere e la sporcizia possono essere un problema oppure dove l'igiene e la pulizia sono essenziali, come nell'industria alimentare, questa certificazione è indispensabile per la sanitizzazione dell'apparecchiatura, in grado di sopportare le procedure di lavaggio ad alta pressione e temperatura.



Products marked cCSAus are certified to be manufactured in accordance with the requirements of Canadian CSA and American UL and approved to be used in Canada and USA.

This certification means that the products were tested and resulted compliant regarding potential flammability, electrical shock and mechanical hazard.

I prodotti marchiati cCSAus hanno la certificazione di essere stati costruiti in accordo ai requisiti della CSA Canadese e UL Americana, sono approvati per l'uso in Canada e Stati Uniti. Significa che sono stati testati e risultano idonei, in relazione ai loro potenziali rischi di incendio, shock elettrico e pericoli meccanici.



NTT™ stands for a special treatment which results in modified external properties of the mechanical parts with complex geometry.

It is a highly technological process which benefits from the expertise in many industrial and scientific fields. An excellent resistance to corrosion and long durability are the main features of NNT™ finishing, which makes NNT™ treated products a first choice and unique solution for variety of applications in many industries.

NTT™ è uno speciale trattamento che come risultato ha la modifica delle proprietà superficiali delle parti meccaniche con geometria complessa. E' un processo altamente tecnologico che trae benefici dalle competenze in vari campi sia industriali che scientifici. Ottima resistenza alla corrosione e durabilità sono le caratteristiche principali della finitura NTT™ che fa del trattamento la soluzione unica e di prima scelta per la molteplicità delle applicazioni in numerosi settori industriali.



By applying CE mark a manufacture declares the conformity of the product to the safety requirements settled in European regulations. It means that the product is compliant to all the directives of European Community regarding its usage: from design and manufacturing to release to the market, functioning and recycling.

Mediante l'applicazione della marcatura CE al prodotto, si dichiara alle autorità che esso è conforme ai requisiti di sicurezza previsti dalle norme Europee.

La marcatura CE indica che il prodotto è conforme a tutte le disposizioni della Comunità Europea che prevedono il suo utilizzo: dalla progettazione, alla fabbricazione, all'immissione sul mercato, alla messa in servizio del prodotto fino allo smaltimento.



IE sing indicates the efficiency class for electrical motor (Standard IEC 60034-30:2008 for three-phase low tension motors) “IE” code stands for “International Efficiency”: IE1 = Standard Efficiency; IE2 = High Efficiency; IE3 = Premium Efficiency.

Starting from the 1st January 2017 IE3 efficiency is mandatory for the motors between 0,75 and 375 kW and IE2 in case the motor powered by inverter.

Con la sigla IE si definisce la classe di rendimento del motore elettrico (Norma IEC 60034-30:2008, per motori trifase a bassa tensione). Il Codice “IE” sta per “Efficienza Internazionale”: IE1 = Rendimento Standard; IE2 = Rendimento Elevato; IE3 = Rendimento Premium. Dall’1 Gennaio 2017 i motori con potenza da 0,75 a 375 kW dovranno avere efficienza IE3, o IE2 nel caso il motore sia alimentato da inverter.

ATEX abbreviation, which stands for French “Atmosphere Explosible”, identifies the Directive 2014/34/UE that replaced the previous 94/9/CE. The field of application of ATEX Directive extends to all equipment exploited in a potentially explosive environment on the territory of European Union. ATEX Directive appoints the notified European bodies (CESI, TÜV, KEMA, INERIS, Nemko, etc.) qualified for examination and verification of technical documentation, special testing and filing of relative documentation; once this procedure terminated successfully a manufacture is authorized to declare the conformity of its products to ATEX and use the ATEX mark on them.

Con ATEX si identifica la Direttiva 2014/34/UE, che ha sostituito la precedente 94/9/CE (il nome deriva dalla contrazione delle parole francesi “Atmosphere Explosible”). Il campo di applicazione della Direttiva ATEX comprende tutti gli apparecchi che devono essere installati, all’interno della Unione Europea, in ambienti potenzialmente a rischio di esplosione. La Direttiva ATEX stabilisce gli organismi europei notificati in EU (CESI, TÜV, KEMA, INERIS, Nemko, etc.) abilitati all’esame e verifica della documentazione tecnica, esecuzione di test specifici ed archiviazione della relativa documentazione; la procedura a seguito della quale, il produttore è autorizzato a rilasciare la dichiarazione di conformità dei propri prodotti alla normativa ATEX e l’utilizzo del marchio ATEX su di essi.





