WASHDOWN HYGIENIC DRIVES

HYGIENIC GEARBOXES 316L STAINLESS STEEL

ITALIAN PRODUCTS
REGISTERED DESIGN

General Catalogue

IP66 CE NSF COMPONENT IP69k On request

abaroadrive

CLEAN-GEARTECH

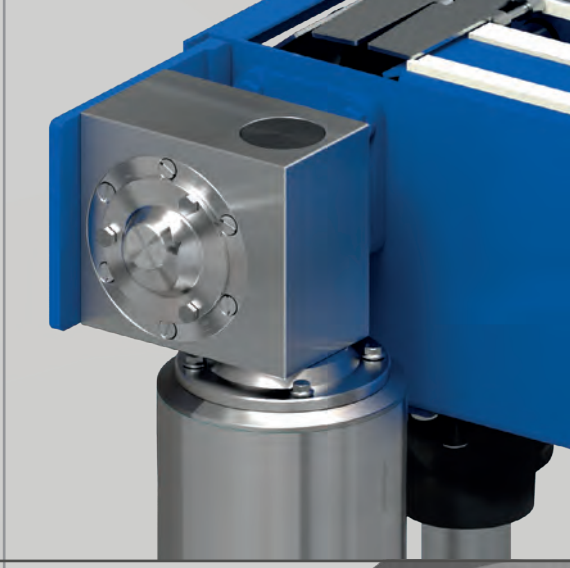
HYGIENIC DESIGN GEARBOXES

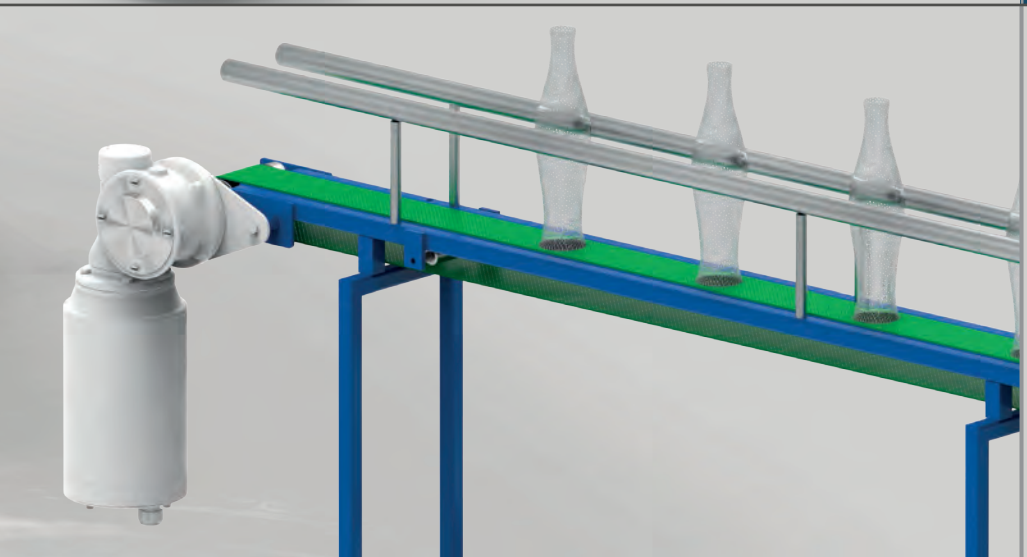
MAIN FEATURES

High pressure clean up
Pooling free mounting
Sealed holes
Sealed oil plugs
Simple washing
Smooth surfaces
No plastic plugs

SECTORS OF USE

Meat&Poultry
Beverage
Fruits & Vegetables
Animal food
Seafood / Fish farming
Bakery
Confectionery
Cleaning systems
Conveyors
Dairy
Food packaging
Food processing
Freezing Systems
Mixers Agitators
Pumps
Ventilators
Chemical
Cosmetics
Pharmaceutical
Marine and fishing





The CLEAN-GEARTECH philosophy

Protection level

BEST

AISI 316L
AISI 304

Full stainless steel, the best for every application.

Completamente in acciaio inox, la miglior soluzione per qualsiasi applicazione.

Smooth surface aluminum worm gearboxes with additional white protective paint.

Riduttori a vite senza fine in alluminio a superficie liscia con ulteriore vernice protettiva bianca.

The starting base for avoiding dust accumulation.

Design adatto a consentire la miglior pulizia del prodotto. La base di partenza per evitare l'accumulo di polvere.

VFN

MEDIUM

VFD on request

BASIC

VFD

These gearboxes are fully interchangeable on dimensions

ALUMINUM		AISI 316L
STANDARD	**PAINTED**	
Smooth surface worm gearboxes for basic cleaning applications *Riduttori a vite senza fine a superficie liscia per applicazioni base*	With white protective paint for outdoors and light detergents *Con vernice protettiva bianca per esterni e lavaggi con detergenti leggeri*	Stainless Steel worm gearboxes *Riduttori a vite senza fine in acciaio inox*

The APM Series

Hygienic aluminum electric motors with protective high resistance coating

Motori elettrici igienici in alluminio con rivestimento protettivo ad alta resistenza

Smooth surface and different materials

RCN

BVN

VFI

RCI

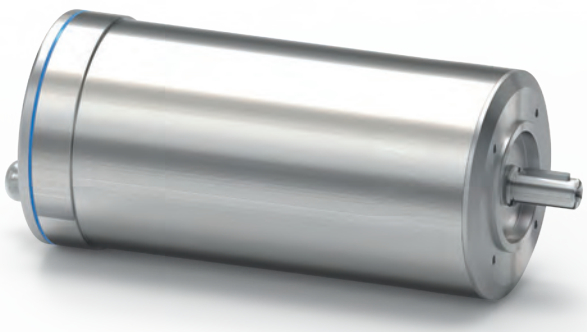
Full stainless steel: the best solution for the resistance to corrosion. Suitable for all applications.

Interamente in acciaio inox: la migliore soluzione per la resistenza alla corrosione. Adatto a tutte le applicazioni.

AISI 316L | AISI 304

FULL STAINLESS FOR THE MOST HARSH APPLICATIONS

Stainless Steel ratio multipliers *Riduttori ad uno stadio in acciaio inox*	Stainless Steel helical bevel gearboxes *Riduttori a coppia conica in acciaio inox*	Stainless Steel square worm gearboxes *Riduttori a vite senza fine quadrato in acciaio inox*	Stainless Steel ratio multipliers *Riduttori ad uno stadio in acciaio inox*



The SPM Series

Hygienic stainless steel 316L electric motors

Motori elettrici igenici in acciaio inox 316L

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For the complete documentation please visit our website: www.cleangeartech.com

Per la documentazione completa si prega di visitare il nostro sito web: www.cleangeartech.com

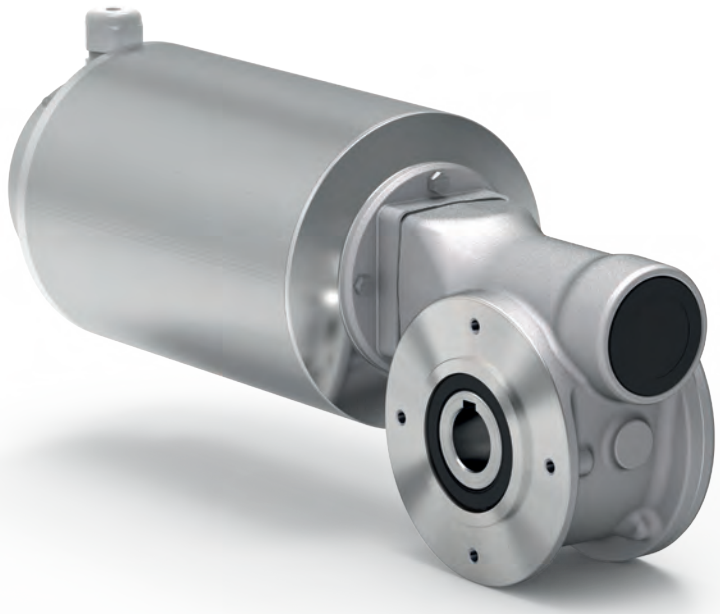
The starting base for avoiding dust accumulation

(Clean aluminum motors also available)

La base di partenza per evitare l'accumulo di polvere
(disponibili anche con motori in alluminio)

ALUMINUM IP66 CE

On req. *A rich.* IP69k Ex ATEX



The VFD Series Smooth surface aluminum worm gearboxes

The VFD - STANDARD Series

It is our most economical basic solution to reduce dust accumulation.
Also available with aluminum electric motor APM series without ribs.

La serie VFD - STANDARD
E' la soluzione più economica per ridurre l'accumulo di polvere.
Disponibile anche con motore in alluminio senza alette, serie APM.

The VFD - PAINTED Series — On request

It is also available with protective white paint, providing a good level of protection in medium aggressive environments.
See the graph in the next page.

La serie VFD - PAINTED
E' disponibile anche con vernice protettiva bianca che permette un livello di protezione medio per ambienti aggressivi.
Vedere il grafico nella prossima pagina.

VFD certification
worm gearboxes

IP66 CE — On request / *A richiesta* — IP69k Ex ATEX

RCD certification
ratio multiplier

IP66 CE — On request / *A richiesta* — Ex ATEX — Ratio: 1 / 2.05 ÷ 1 / 9.83

IP69k when combined with on other gearbox

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*	
				Standard	*On request*
D30	21 Nm	30 mm	0.06 ÷ 0.18 kW	ø14 mm	-
D45	41 Nm	45 mm	0.09 ÷ 0.37 kW	ø18 mm	ø19 ø20 mm
D50	72 Nm	50 mm	0.12 ÷ 0.75 kW	ø25 mm	ø24 mm
D63	147 Nm	63 mm	0.37 ÷ 1.8 kW	ø25 mm	ø28 ø30 mm
D85	347 Nm	85 mm	0.55 ÷ 4.0 kW	ø35 mm	ø38 mm
211D	20 Nm	30 mm	0.37 ÷ 1.5 kW	ø14 mm	-

THE BASIC PROTECTION

Vacuum impregnated housing

Single piece aluminum alloy housing vacuum impregnated MIL-STD 276.

Design adatto a consentire la miglior pulizia del prodotto.
Cassa monoblocco impregnata sotto vuoto MIL-STD 276.

Hardened and ground worm

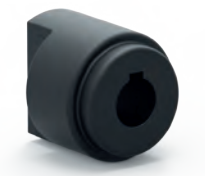
Hardened and ground worm, teeth radiused for noise reduction.

La vite senza fine è temprata ed i denti sono profilati e raggiati per ridurre il rumore.

Options Coupling

Premium input coupling:
- Direct mounting
- No settings
- No screw

Giunto in entrata:
- Montaggio diretto
- No settaggi - No viti.



Output hollow shaft

Cast iron hollow shaft. CuSn12Ni (C91700) Nickel bronze worm gear for superior life.

Mozzo in ghisa. Corona in bronzo al Nickel CuSn12Ni (C91700) centrifugato per massima resistenza e durata superiore.

Options Stainless steel hollow shaft in AISI 316L

Mozzo in uscita in AISI 316L.

Hardware

Output male shaft in carbon steel. Zinc plated: feet screws and reaction arms.

Albero maschio in uscita removibile in acciaio.
Piedi, viteria e bracci di reazione zincati.

Options Stainless steel hardware

Stainless steel output male shaft, protection cap, feet, screws and reaction arms.

Albero maschio in uscita removibile, coperchietto di protezione, piedi, viteria e bracci di reazione in AISI 316L.

NBR seals

NBR seals on hollow output shaft.

Anelli di tenuta in NBR su mozzo in uscita.

Options Viton seals

Single viton seal for harsh enviroment.

Anelli di tenuta in viton per ambienti aggressivi.

Twin viton seals with stainless steel 316L shield for IP69k protection.

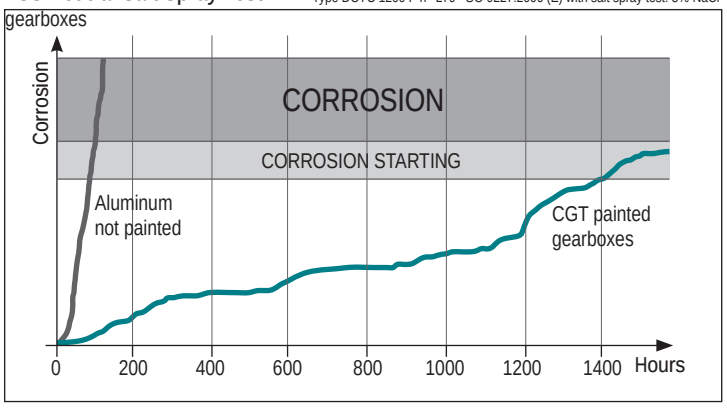
Doppi anelli di tenuta in viton con schermo protettivo in acciaio inox AISI 316L per protezione IP69k.

On request White protective painting RAL 7035

The graph below shows the behavior of an aluminum gearbox (not painted) and of a gearbox with protective paint during the salt spray test. The time (hours spent in the test) is indicated on the horizontal axis, while the degree of corrosion on the surface of the reducer is indicated on the vertical axis. The curve of the aluminum reducer (not painted) shows that only after about 100 hours of testing the first signs of corrosion are formed (the curve enters the " corrosion starting" zone) and then spreads rapidly ("corrosion" zone). The curve of the reducer with protective coating instead shows that after 1200 hours of permanence in saline mist, there are still no signs of corrosion.

Il grafico seguente riporta il comportamento di un riduttore in alluminio (non verniciato) e di un riduttore con vernice bianca protettiva durante il test in nebbia salina.
Sull'asse orizzontale è indicato il tempo (ore di permanenza nel test) mentre sull'asse verticale il grado di corrosione sulla superficie del riduttore.
La curva del riduttore in alluminio (non verniciato) evidenzia come solo dopo circa 100 ore di test si formano già i primi segni di corrosione (la curva entra nella zona "corrosion starting") e poi si propaga rapidamente (zona "corrosion").
La curva del riduttore con verniciatura protettiva mostra invece come dopo 1200 ore di permanenza in nebbia salina, non vi siano ancora segni di corrosione.

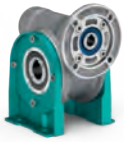
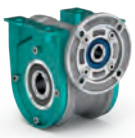
NSS Neutral Salt Spray Test — Type DCTC 1200 P n° L79 SO 9227:2006 (E) witn salt spray test: 5% NaCl gearboxes



This graph is an indication, since some chemical components may be more aggressive than the salt spray test. Test are suggested on special cases (in case use type "N series", full stainless steel gearboxes).

Il grafico va considerato come indicativo perchè altri agenti chimici potrebbero risultare più aggressivi del test in nebbia salina. Suggeriamo prove specifiche nell'ambiente di lavoro e nel caso non vengano soddisfatti i requisiti minimi si consiglia di utilizzare la gamma in acciaio inox "Serie N".

How to order *Codifica*

P	D45	UNI	N	10	0	MA	C
Type *Tipo*	Size *Grandezza*	Mounting *Montaggio*	Position *Posizione*	Ratio *Rapporto*	Hub Output shaft *Mozzo corona* *Albero uscita*	Diameter *Diametro*	Input / output shaft material *Materiale alberi in entrata e uscita*
P 	Worm gearboxes *Riduttori a vite senza fine*	UNI 	N 	See technical data table *Vedi tabelle dati tecnici*	0 Hollow *Mozzo* 	→ Standard	C Cast iron / Carbon steel *Ghisa*
M 		FLC 			S Solid output shaft *Albero in uscita* 	D30 - 3D3 MA → ø14 D45 - 4D3 MB → ø18 MC → ø19 MD → ø20 D50 - 5D3 ME → ø24 MF → ø25 D63 - 6D3 6D4 MF → ø25 MG → ø28 MH → ø30 D85 - 8D4 MK → ø35 ML → ø38	I Stainless steel (Output hollow shaft ø38 is not available in stainless steel) *(L'albero cavo ø38 non è disponibile in acciaio inox)*
B 	D30 D45 D50 D63 D85	FLL 					The quill input hollow bore is always in carbon steel *Il foro cavo in entrata è sempre in acciaio*
R 	Combined worm gearboxes not available for type B *Riduttori a vite senza fine combinati non disponibili per tipo B*	BRI Stainless steel *Acciaio inox* BRZ Zinc plated *Zincato* 	Select L or R position for output flange *Selezionare la posizione L o R per la flangia in uscita*			Output male shaft is available only for standard bore *Albero maschio in uscita è disponibile solo per fori standard*	
		PAI Stainless steel *Acciaio inox* PAB Zinc plated *Zincato* 	L Left *Sinistra* 				
	3D3 4D3 5D3 6D3 6D4 8D4	PVI Stainless steel *Acciaio inox* PVB Zinc plated *Zincato* 	R Right *Destra* 				
		PBB Zinc plated *Zincato* 					

N	C	-R	B3	ST	A	---	For M type specify terminal box position
Protection cap *Coperchio di protezione*		Motor size *Grandezza motore*	Mounting position *Posizione di montaggio*	Input bore *Foro entrata*	Coating *Trattamento*	Mounting position *Posizione di montaggio*	*Per tipo M specificare posizione morsettiera*

Left *Sinistra*

N Without protection cap
Senza coperchietto di protezione

C Closed *Chiuso*

Right *Destra*

N Without protection cap
Senza coperchietto di protezione

C Closed *Chiuso*

Motor flanges *Flange motore*

IEC B5

- -A → 56 B5 (ø120)
- -B → 63 B5 (ø140)
- -C → 71 B5 (ø160)
- -D → 80 B5 (ø200)
- -E → 90 B5 (ø200)
- -F → 100-112B5 (ø250)

IEC B14

- -O → 56 B14 (ø80)
- -P → 63 B14 (ø90)
- -Q → 71 B14 (ø105)
- -R → 80 B14 (ø120)
- -T → 90 B14 (ø140)
- -U → 100-112B14 (ø160)

BRUSHLESS

- BA → 40/63-M5
- BB → 50/70-M5
- BC → 60/75-M5
- BD → 70/90-M6
- BE → 80/100-M6
- BF → 95/115-M8
- BG → 110/145-M8
- BH → 130/165-M8

Brushless-Tech catalogue is available in our website
Catalogo Brushless-Tech è disponibile nel nostro sito web

Without flange *Senza flangia*

-M → Metric

Type R *Tipo R*

-0 → Metric

B3

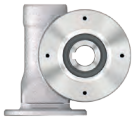
B8

B6

B7

V5

V6



ST Standard bore * Kit R standard

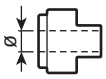
*Foro standard * Kit R standard*

Input bore without reduction bushing

- -O → 9mm
- -P → 11mm
- -Q → 14mm
- -R → 19mm
- -T → 24mm
- -U → 28mm

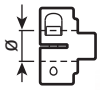
Coupling

Standard (IEC)



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

Brushless *



- -1 → 9mm
- -2 → 11mm
- -3 → 14mm
- -4 → 19mm
- -5 → 22mm
- -6 → 24mm

Ready for input coupling
Predisposto per giunto

-0 Type B
Tipo B

-0 Type R
Tipo R

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

A Standard in aluminum *Standard in alluminio*

N NTT coating *NTT Rivestimento*

Not available for combined gearboxes
Non disponibile per riduttori combinati

V Painted *Verniciato*

Ral 7035

--- Mounting position *Posizione di montaggio*

Only for combined units
See technical data table
Solo per i riduttori combinati Vedi tabelle dati tecnici.

For M type specify terminal box position

Per tipo M specificare posizione morsettiera

A

B

C

D

D30

21 Nm

VFD series
Smooth surface aluminum worm gearboxes

Riduttori a vite senza fine in alluminio con superficie liscia

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	Ratio code
							-A	-B	-O	-P			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	56	63	56	63	RD	[mm]	
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	0.06	16	1.0	0.06	16	B		B-C		48	0.56	08
14	100	0.06*	16	0.5	0.03	8	B		B-C		40	0.45	10

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

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 D30 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 D30 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: 0.03 L *Quantità olio per tutte le posizioni: 0.03 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

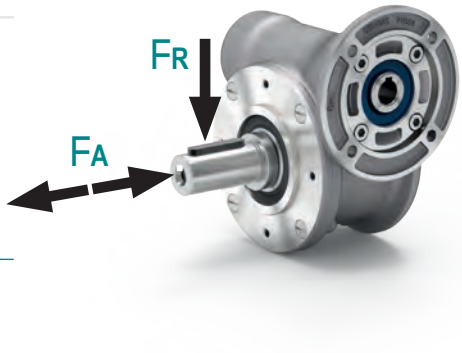
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN300209

Radial and axial loads
Carichi radiali e assiali

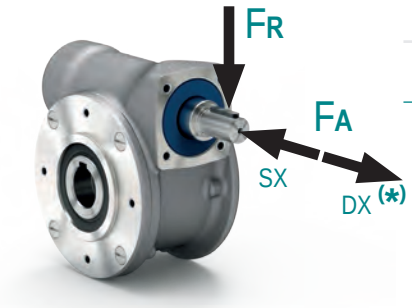
Output shaft
Albero di uscita

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



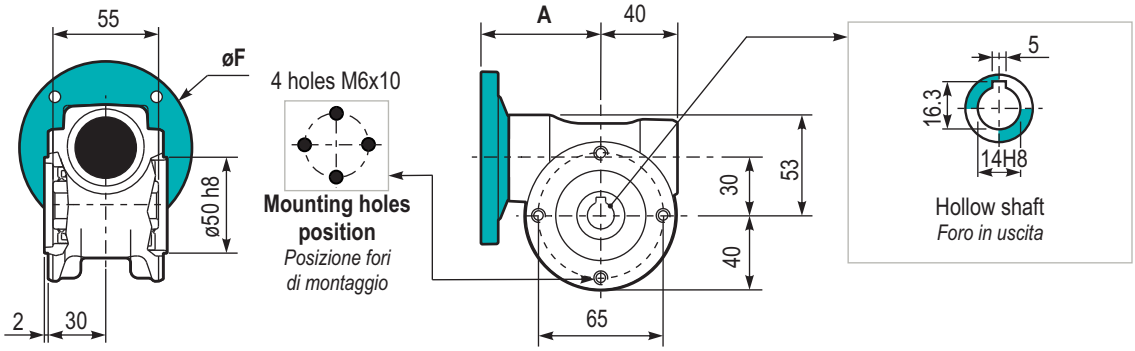
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

PD30UNI.. Basic gearbox
Riduttore base

Gearbox weight *Peso riduttore* **1.05 kg**

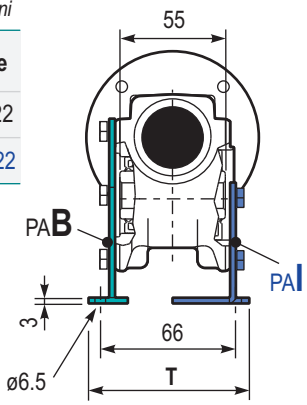
M. flanges	Kit code	øF	A
56B5	KD304041	120	62
63B5	KD304042	140	63
56B14	KD304046	80	62
63B14	KD304045	90	63



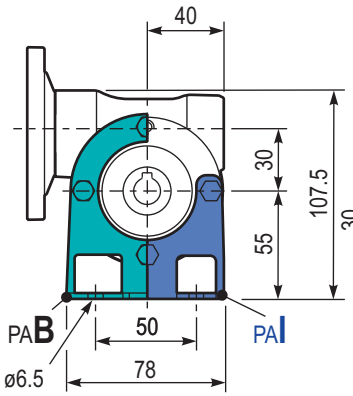
PD30PA... Feet
Piedini

Type	T	Kit code
B**	87	K0309022
I *	80	KN309022

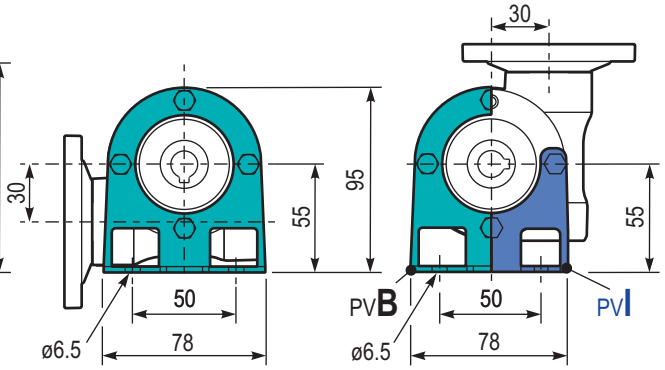
** Zink plated
* Stainless steel



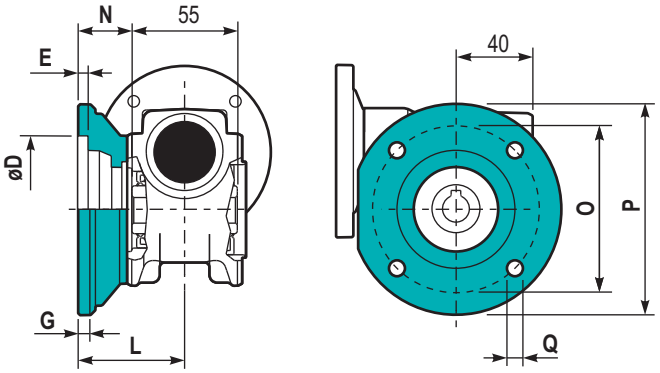
PD30PBB.. Feet
Piedini



PD30PV... Feet
Piedini

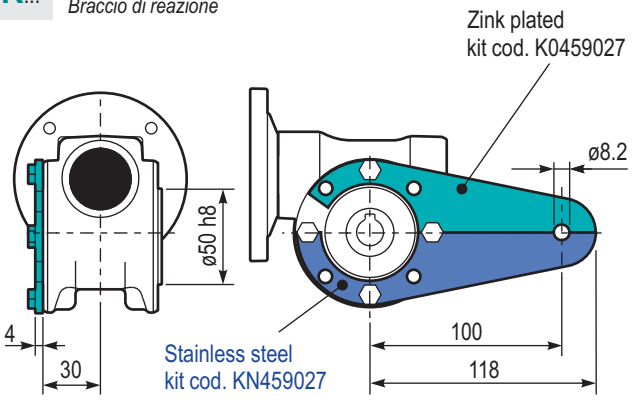


PD30FL.. Output flange
Flangia uscita

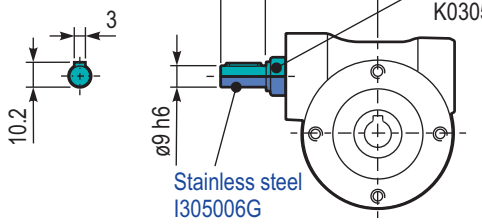


Type	øD	E	G	L	N	O	P	Q	Kit code
C	$50^{+0.15}_{+0.05}$	6	6	50.5	23	68	80	7	K0309010
L	$60^{+0.15}_{+0.05}$	6	6	55.5	28	87	110	8.5	K0459010

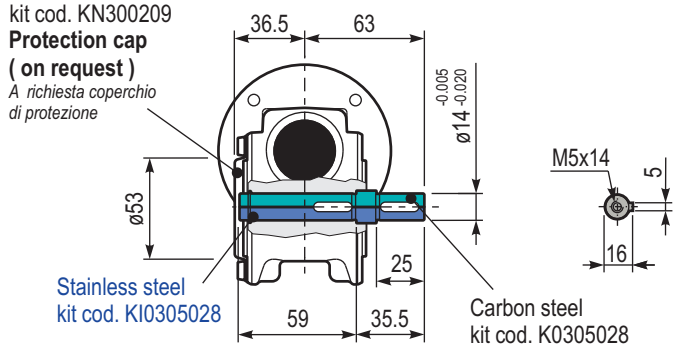
PD30BR... Reaction arm
Braccio di reazione



RD30UNI.. Input shaft
Albero in entrata



PD30..SMA Single output shaft
Albero semplice in uscita



D45

41 Nm

VFD series
Smooth surface aluminum worm gearboxes

Riduttori a vite senza fine in alluminio con superficie liscia

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges			Dynamic efficiency	Tooth module	Ratio code
							-B	-C	-O	-P	-Q			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	63	71	56	63	71	RD	[mm]	
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 D45 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 D45 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: 0.09 L *Quantità olio per tutte le posizioni: 0.09 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

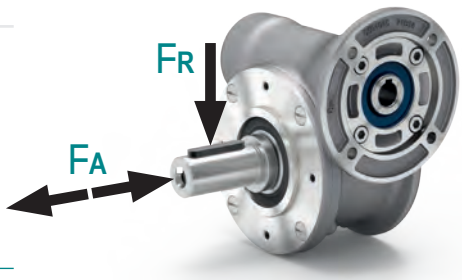
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN300209

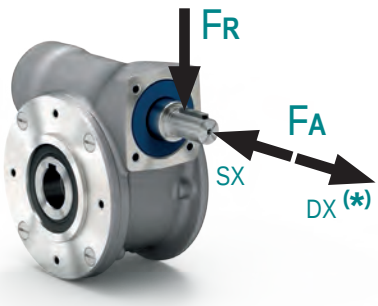
Radial and axial loads
Carichi radiali e assiali

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



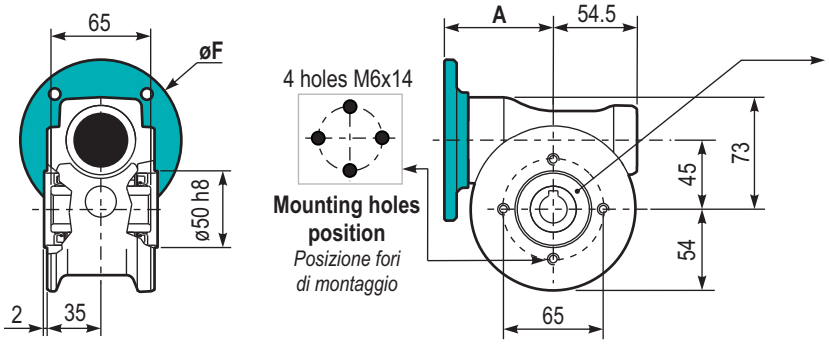
n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	42	210

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

Tab. 2

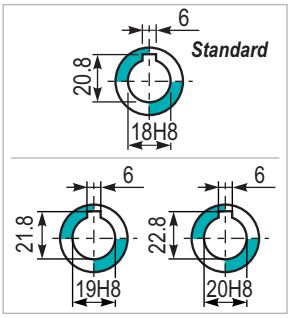
PD45UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
63B5	KD454041	138	74
71B5	KD454042	160	71.5
56B14	KD454049	80	71.5
63B14	KD454047	90	74
71B14	KD454045	105	71.5



Gearbox weight *Peso riduttore* **2.40 kg**

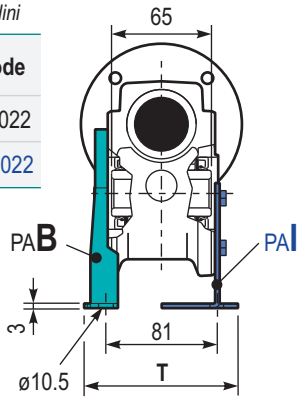
Hollow shaft
Foro in uscita

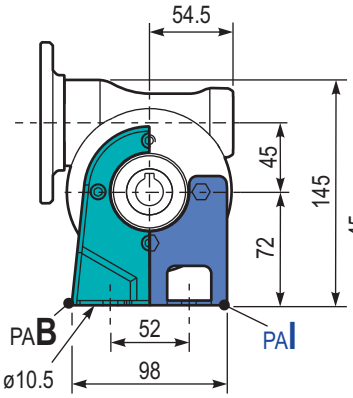


PD45PA... Feet
Piedini

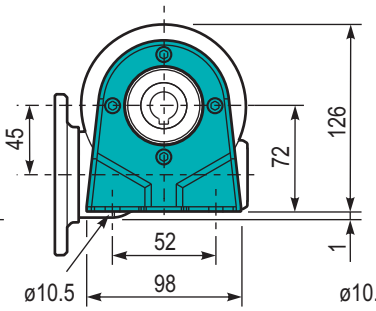
Type	T	Kit code
B**	102	K0459022
I *	100	KN459022

** Zink plated
* Stainless steel

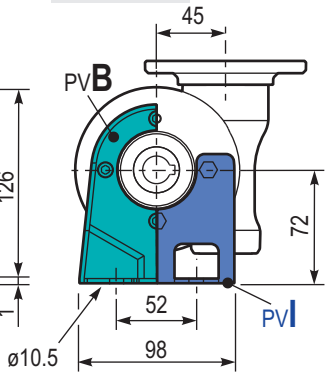




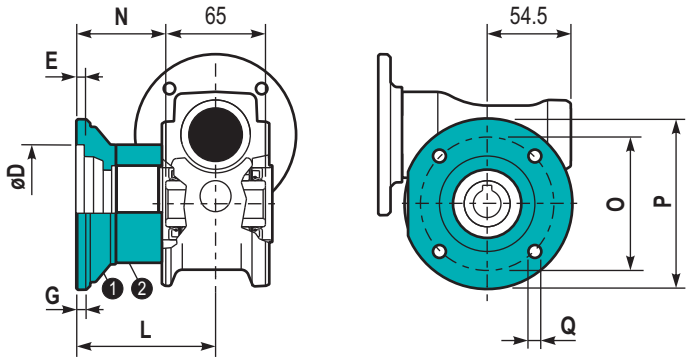
PD45PBB.. Feet
Piedini



PD45PV... Feet
Piedini

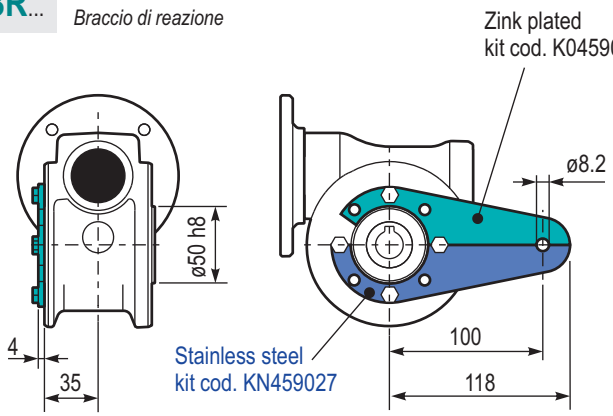


PD45FL.. Output flange
Flangia uscita



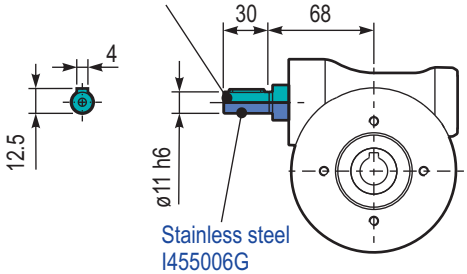
Type	øD	E	G	L	N	O	P	Q	Kit code
C	$60^{+0.15}_{+0.05}$	9	9	60.5	28	87	110	8.5	❶ K0459010 ❷ -
L	$60^{+0.15}_{+0.05}$	9	9	90.5	58	87	110	8.5	❶ K0459010 ❷ K0450200

PD45BR... Reaction arm
Braccio di reazione



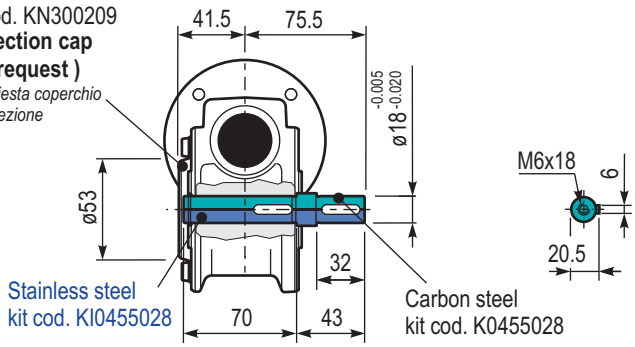
RD45UNI.. Input shaft
Albero in entrata

Carbon steel
kit cod. K0455006



PD45..SMB Single output shaft
Albero semplice in uscita

kit cod. KN300209
Protection cap
(on request)
A richiesta coperchio di protezione



D50

72 Nm

VFD series
Smooth surface aluminum worm gearboxes

Riduttori a vite senza fine in alluminio con superficie liscia

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges			B14 motor flanges				Dynamic efficiency	Tooth module	Ratio code
							-B	-C	-D	-O	-P	-Q	-R			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	63	71	80	56	63	71	80	RD	[mm]	
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 D50 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 D50 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: 0.14 L *Quantità olio per tutte le posizioni: 0.14 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

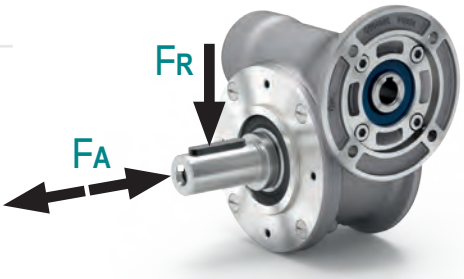
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN500209

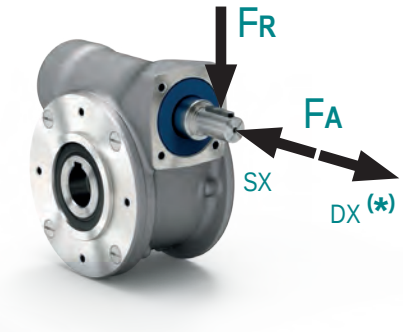
Radial and axial loads
Carichi radiali e assiali

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



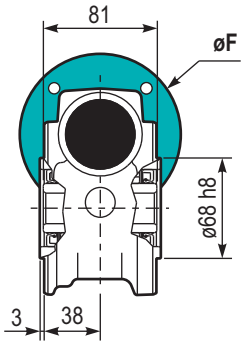
n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	76	380

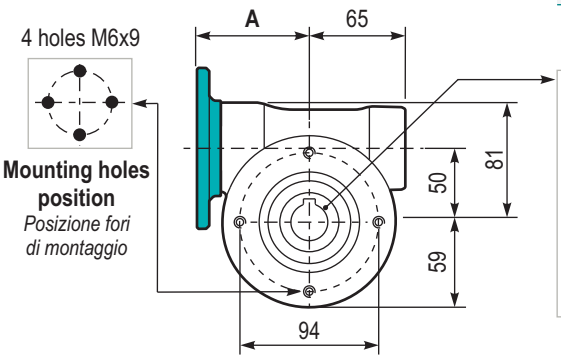
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

PD50UNI.. Basic gearbox
Riduttore base

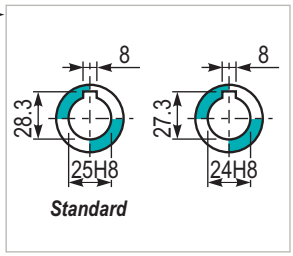
M. flanges	Kit code	øF	A
63B5	KD504041	138	78.5
71B5	KD504042	160	76
80B5	KD504043	200	76.5
56B14	KD504049	80	76
63B14	KD504047	90	78.5
71B14	KD504045	105	76
80B14	KD504046	120	76.5





Gearbox weight *Peso riduttore* **3.00 kg**

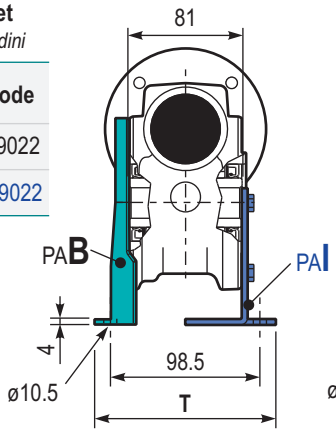
Hollow shaft
Foro in uscita

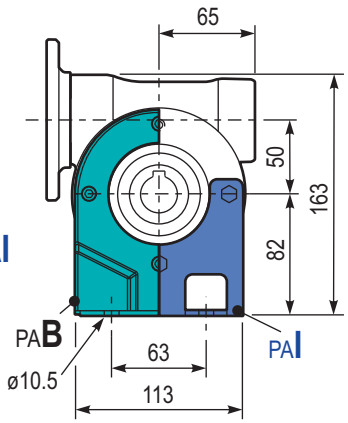


PD50PA... Feet
Piedini

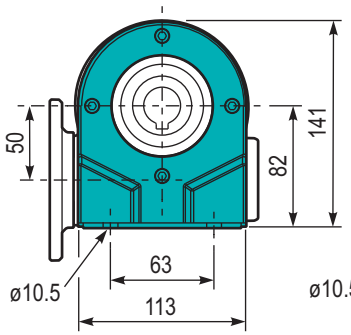
Type	T	Kit code
B**	123	K0509022
I *	122	KN509022

** Zink plated
* Stainless steel

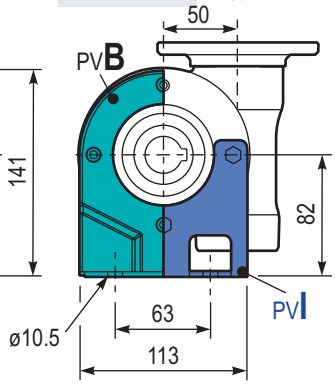




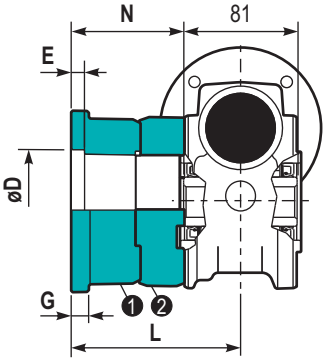
PD50PBB.. Feet
Piedini

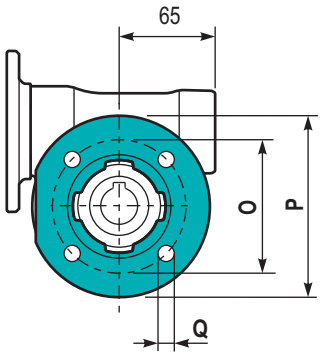


PD50PV... Feet
Piedini



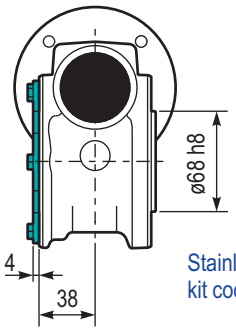
PD50FL.. Output flange
Flangia uscita

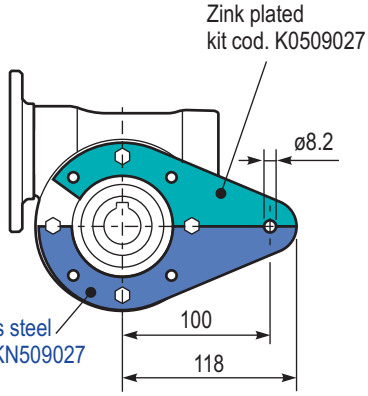




Type	øD	E	G	L	N	O	P	Q	Kit code
C	70 +0.20 +0.15	9	12	85	44.5	90	123	10.5	❶ K0509010 ❷ -
L	70 +0.20 +0.15	9	12	114.5	74	90	123	10.5	❶ K0509010 ❷ K0500200

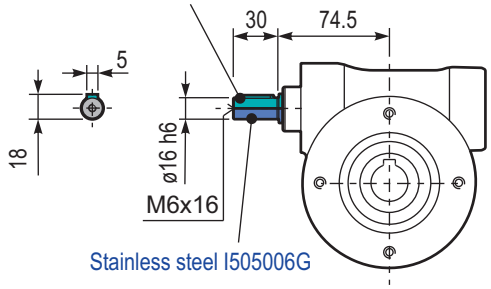
PD50BR... Reaction arm
Braccio di reazione





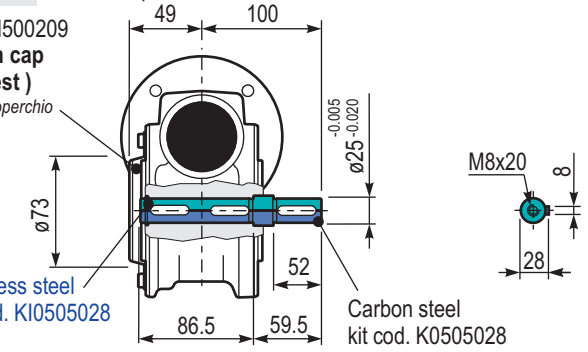
RD50UNI.. Input shaft
Albero in entrata

Carbon steel kit cod. K0505006 PAM71
Carbon steel kit cod. K0505007 PAM80



PD50..SMF Single output shaft
Albero semplice in uscita

kit cod. KN500209
Protection cap (on request)
A richiesta coperchio di protezione



D63

147 Nm

VFD series
Smooth surface aluminum worm gearboxes

Riduttori a vite senza fine in alluminio con superficie liscia

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 -B 63	B5 motor flanges -C 71	B5 motor flanges -D 80	B5 motor flanges -E 90	B14 motor flanges -Q 71	B14 motor flanges -R 80	B14 motor flanges -T 90	Dynamic efficiency RD	Tooth module [mm]	Ratio code
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 D63 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 D63 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: 0.40 L *Quantità olio per tutte le posizioni: 0.40 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

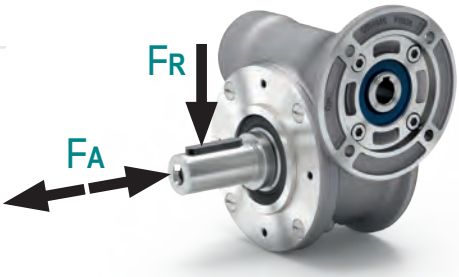
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN630209

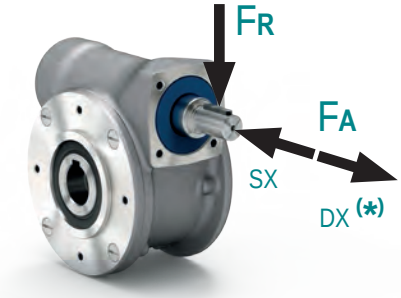
Radial and axial loads
Carichi radiali e assiali

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



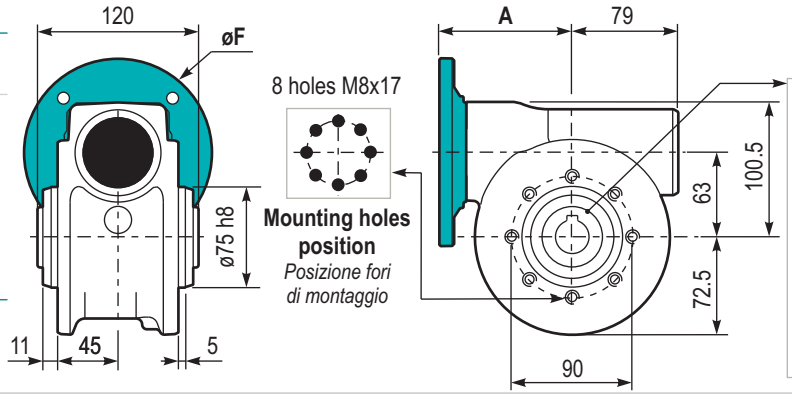
n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	90	450

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

Tab. 2

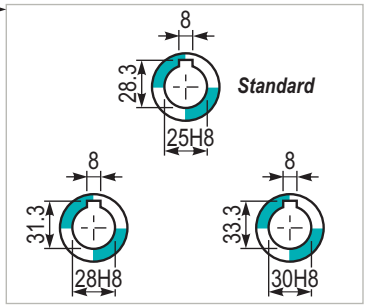
PD63UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
63B5	KD634041	140	99.5
71B5	KD634042	160	97.5
80/90B5	KD634043	200	99.5
71B14	KD634047	105	97.5
80B14	KD634046	120	99.5
90B14	KD634041	140	99.5



Gearbox weight *Peso riduttore* **6.00 kg**

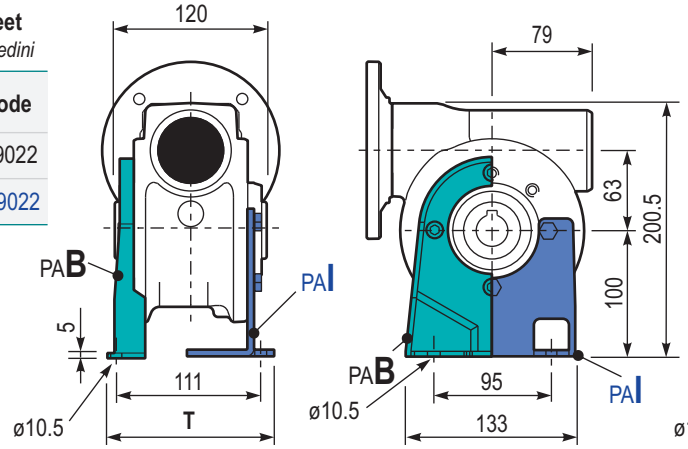
Hollow shaft
Foro in uscita



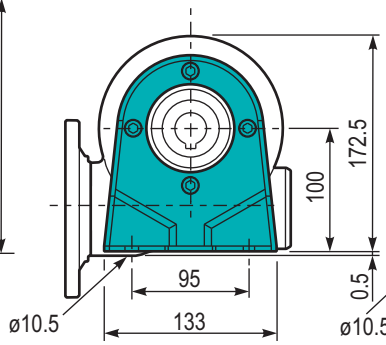
PD63PA... Feet
Piedini

Type	T	Kit code
B**	144	K0639022
I *	130	KN639022

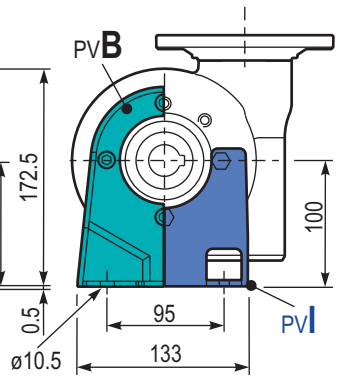
** Zink plated
* Stainless steel



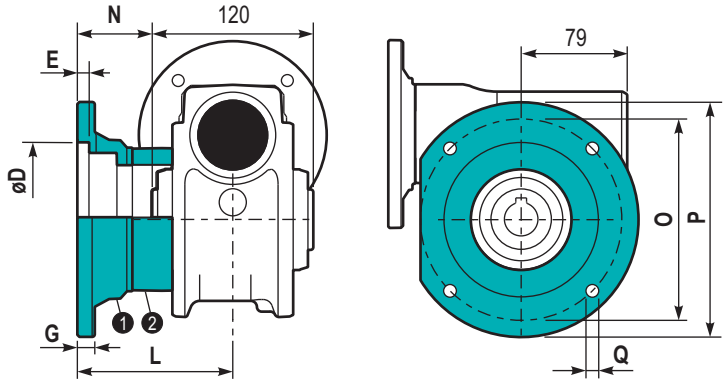
PD63PBB.. Feet
Piedini



PD63PV... Feet
Piedini

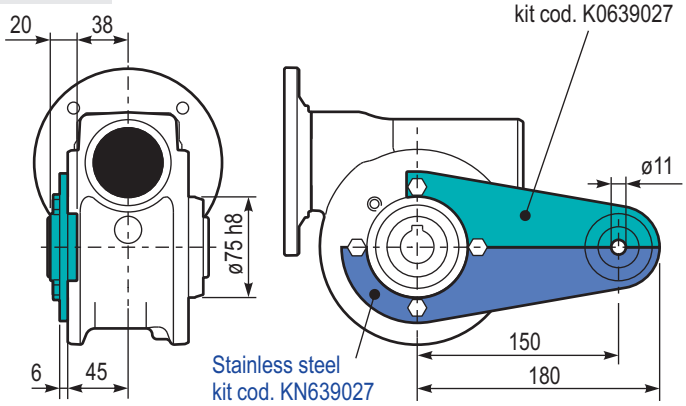


PD63FL.. Output flange
Flangia uscita

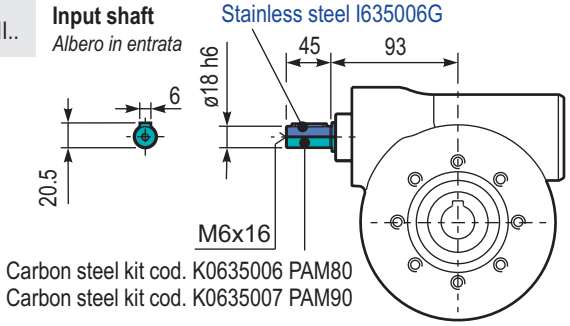


Type	øD	E	G	L	N	O	P	Q	Kit code
C	$115^{+0.20}_{+0.15}$	7	13	86	26	150	175	11	❶ K0639010 ❷ -
L	$115^{+0.20}_{+0.15}$	7	13	116	56	150	175	11	❶ K0639010 ❷ K0630200

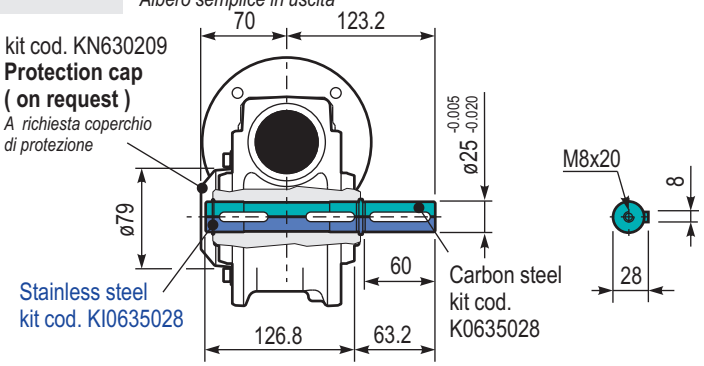
PD63BR... Reaction arm
Braccio di reazione



RD63UNI.. Input shaft
Albero in entrata



PD63..SMF Single output shaft
Albero semplice in uscita



D85

347 Nm

VFD series
Smooth surface aluminum worm gearboxes

Riduttori a vite senza fine in alluminio con superficie liscia

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 -C 71	B5 motor flanges -D 80	B5 motor flanges -E 90	B5 motor flanges -F 100 112	B14 motor flanges -R 80	B14 motor flanges -T 90	B14 motor flanges -U 100 112	Dynamic efficiency RD	Tooth module [mm]	Ratio code
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			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 D85 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 D85 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: 1.20 L *Quantità olio per tutte le posizioni: 1.20 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

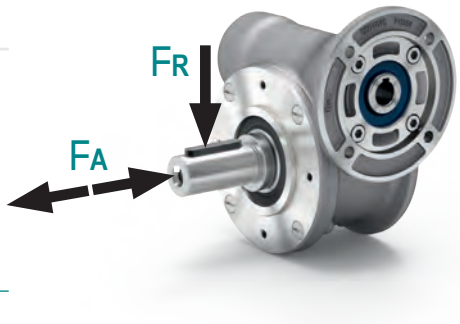
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN850209

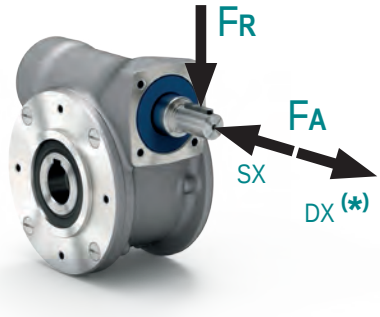
Radial and axial loads
Carichi radiali e assiali

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



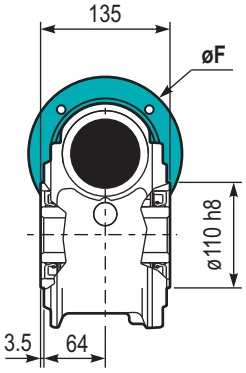
n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	130	650

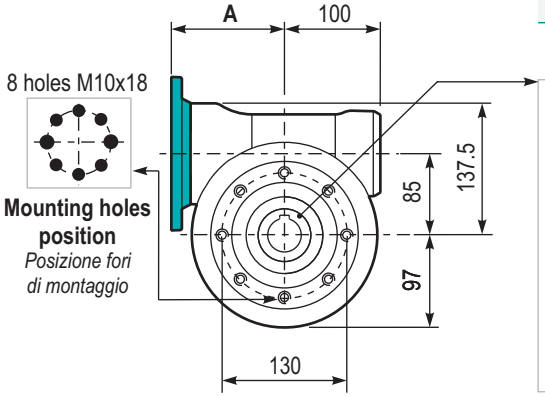
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

PD85UNI.. Basic gearbox
Riduttore base

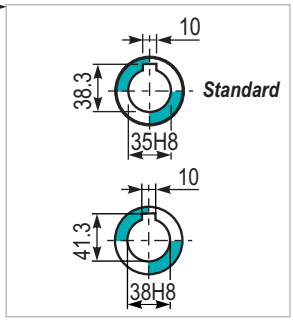
M. flanges	Kit code	øF	A
71B5	KD234041	160	116.5
80/90B65	KD234042	200	118.5
100/112B5	KD234043	250	127.5
80B14	KD854046	120	118.5
90B14	KD854045	140	118.5
100/112B14	KD854047	160	127.5





Gearbox weight *Peso riduttore* **11.00 kg**

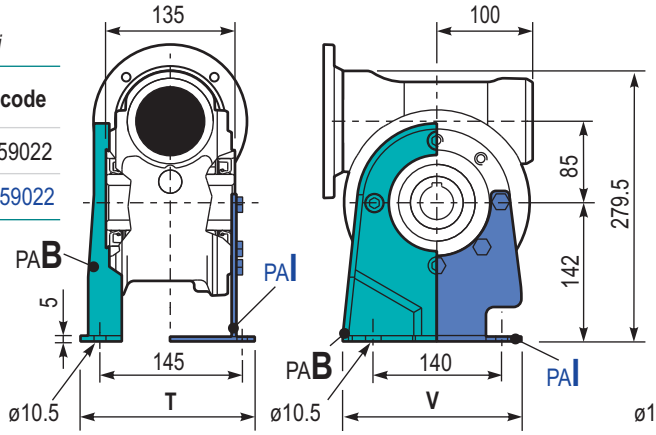
Hollow shaft
Foro in uscita



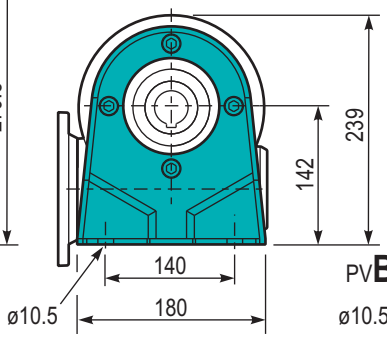
PD85PA... Feet
Piedini

Type	T	V	Kit code
B**	182	180	K0859022
I *	176	172	KN859022

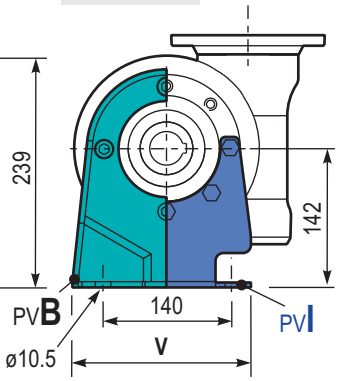
** Zink plated
* Stainless steel



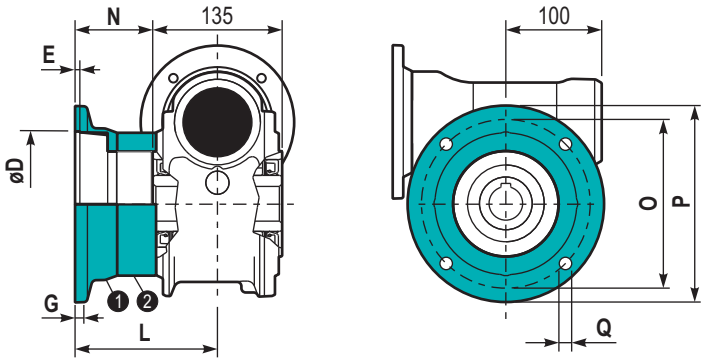
PD85PBB.. Feet
Piedini



PD85PV... Feet
Piedini

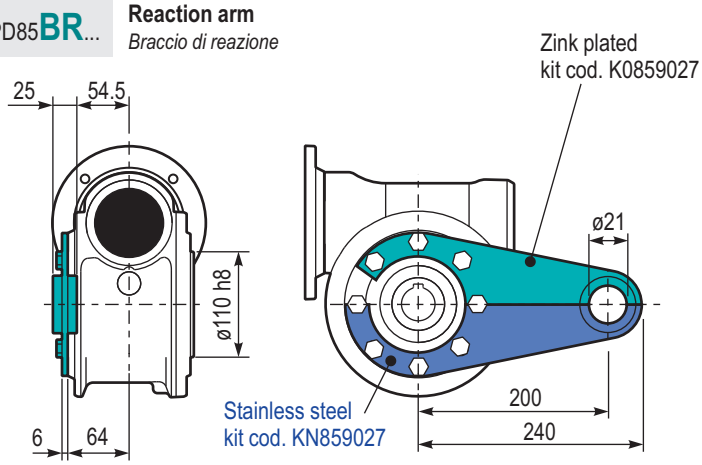


PD85FL.. Output flange
Flangia uscita



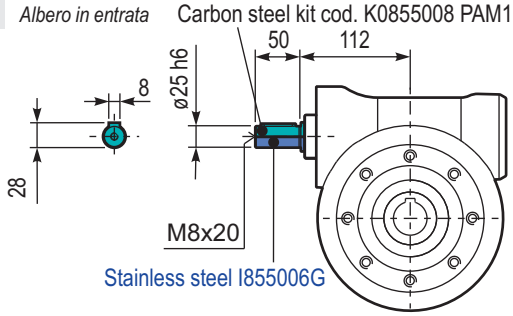
Type	øD	E	G	L	N	O	P	Q	Kit code
C	$152^{+0.06}_{+0.00}$	5	16	108	40.5	176	205	13	❶ K0859010 ❷ -
L	$152^{+0.06}_{+0.00}$	5	16	148.5	81	176	205	13	❶ K0859010 ❷ K0850201

PD85BR... Reaction arm
Braccio di reazione



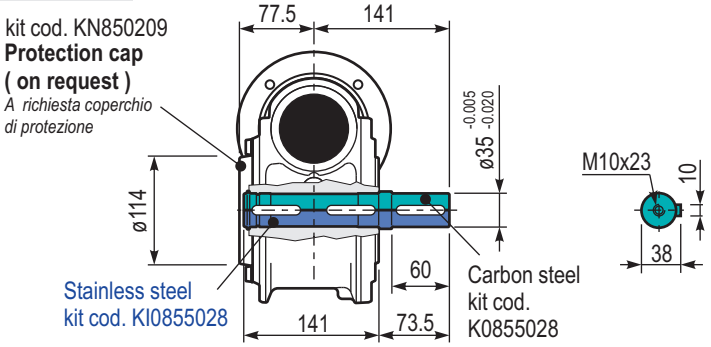
RD85UNI.. Input shaft
Albero in entrata

Carbon steel kit cod. K0855007 PAM90
Carbon steel kit cod. K0855008 PAM100



PD85..SMK Single output shaft
Albero semplice in uscita

kit cod. KN850209
Protection cap (on request)
A richiesta coperchio di protezione



D45
211D

VFD series
with ratio multiplier RCD series

Riduttori a vite senza fine in alluminio con precoppia serie RCD

D45 Ratios/Rating
Rapporti/Selezione D45

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	35	2.2	ø14	01
10	35	2.2	ø14	02
14	35	2.4	ø14	03
21	47	1.6	ø14	04
28	47	2.5	ø14	05
37	47	1.8	ø14	06
46	47	1.5	ø14	07
60	47	1.2	ø14	08
70	35	1.0	ø14	09
102	34	0.72	ø14	10

D45 weight *Peso D45*	2.40 kg

211D Ratios/Power
Rapporti/potenza 211D

Ratio i_b	Max input power ** P_{1M} [kW]	Standard output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

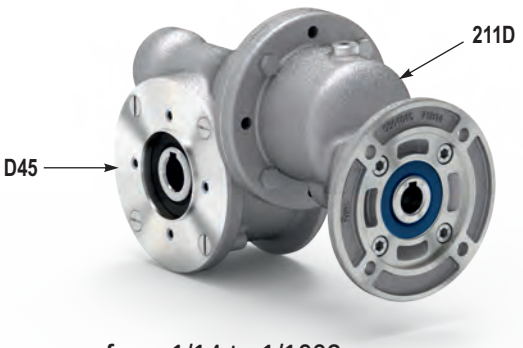
211D weight *Peso 211D*	1.40 kg

211D Motor flanges
Flange motore 211D

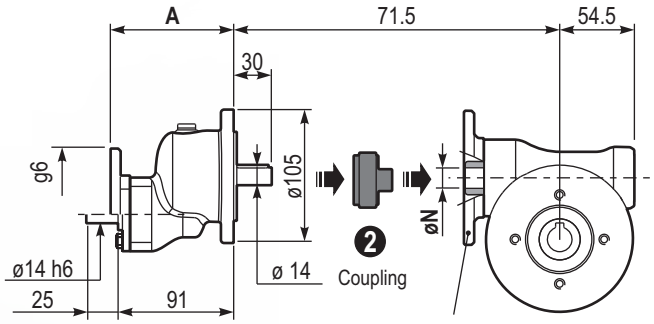
	Kit code	g6	A
63B5	KD454041	138	99.5
71B5	KD454042	160	97
56B14	KD454049	80	97
63B14	KD454047	90	99.5
71B14	KD454045	105	97

How to connect D45+211D
Come collegare D45 + 211D

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
D45	øN	211D		
Ratios from 1/7÷1/102	ø14	ø14	Reduction bushing is not necessary	KB14P



Ratios range: from 1/14 to 1/1003
Range rapporti: da 1/14 a 1/1003



Lubrication
Lubrificazione

Unit D45+211D 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.

Il riduttore tipo D45+211D viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

D45: 0.09 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211D: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/1003
Range rapporti: da 1/14 a 1/1003

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/102 x 1/9.83 = 1/1003 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 1003 = 1.44 rpm

i_a : D45 ratio - *Rapporto D45*
i_b : 211D ratio - *Rapporto 211D*

** Make sure input power for 211D and output torque for D45 is as catalogue ratios.

** *Prestare attenzione a selezionare la potenza in entrata del 211D ed il momento torcente del D45 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

D50 Ratios/Rating
Rapporti/Selezione D50

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	65	2.5	ø19	01
10	71	2.4	ø19	02
14	78	2.6	ø19	03
18	71	2.0	ø19	04
26	76	2.7	ø19	05
30	83	2.5	ø19	12
36	83	2.1	ø14	06
43	78	1.8	ø14	07
50	76	1.5	ø14	13
60	71	1.3	ø14	08
68	66	1.2	ø14	09
80	65	1.0	ø14	10
100	59	0.8	ø14	11

D50 weight *Peso D50*	3.00 kg

211D Ratios/Power
Rapporti/potenza 211D

Ratio i_b	Max input power ** P_{1M} [kW]	Output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

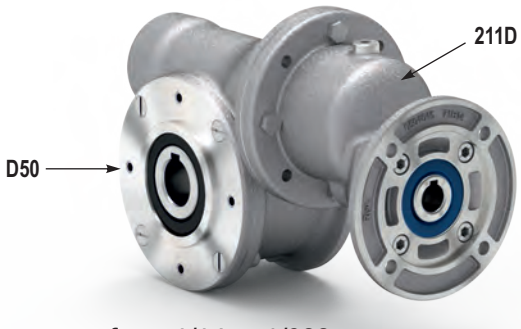
211D weight *Peso 211D*	1.40 kg

211D Motor flanges
Flange motore 211D

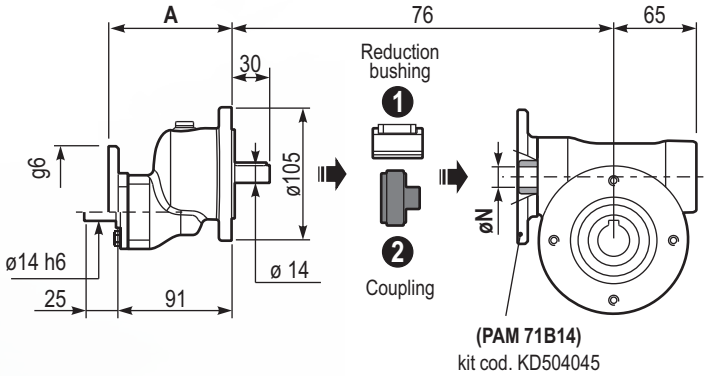
	kit code	g6	A
63B5	KD454041	138	99.5
71B5	KD454042	160	97
56B14	KD454049	80	97
63B14	KD454047	90	99.5
71B14	KD454045	105	97

How to connect D50+211D
Come collegare D50 + 211D

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
D50	øN	211D		
Ratios from 1/7÷1/30	ø19	ø14	KBR14/19	KC14P
Ratios from 1/36÷1/100	ø14		Reduction bushing is not necessary	



Ratios range: from 1/14 to 1/983
Range rapporti: da 1/14 a 1/983



Lubrication
Lubrificazione

Unit D50+211D 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.

Il riduttore tipo D50+211D viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

D50: 0.14 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211D: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/983
Range rapporti: da 1/14 a 1/983

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/100 x 1/9.83 = 1/983 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 983 = 1.47 rpm

i_a : D50 ratio - *Rapporto D50*
i_b : 211D ratio - *Rapporto 211D*

** Make sure input power for 211D and output torque for D50 is as catalogue ratios.
** *Prestare attenzione a selezionare la potenza in entrata del 211D ed il momento torcente del D50 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

D63
211D

VFD series
with ratio multiplier RCD series

Riduttori a vite senza fine in alluminio con precoppia serie RCD

D63 Ratios/Rating
Rapporti/Selezione D63

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	144	3.1	ø24	01
10	155	3.1	ø24	02
15	158	3.1	ø24	03
19	158	2.6	ø24	04
24	163	2.0	ø24	05
30	168	3.2	ø24	06
36	169	2.7	ø24	07
40	161	2.5	ø24	13
45	156	2.1	ø19	08
60	150	1.6	ø19	12
67	142	1.5	ø19	09
80	136	1.3	ø19	10
94	136	1.1	ø19	11

D63 weight *Peso D63*	6.00 kg

211D Ratios/Power
Rapporti/potenza 211D

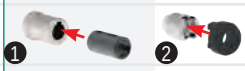
Ratio i_b	Max input power ** P_{1M} [kW]	Standard output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

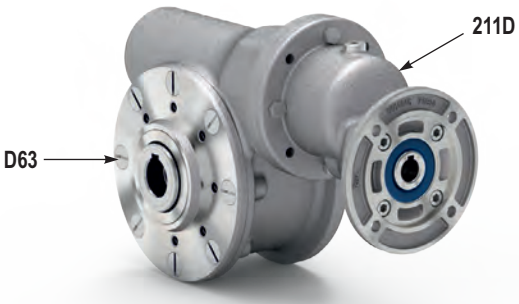
211D weight *Peso 211D*	1.40 kg

211D Motor flanges
Flange motore 211D

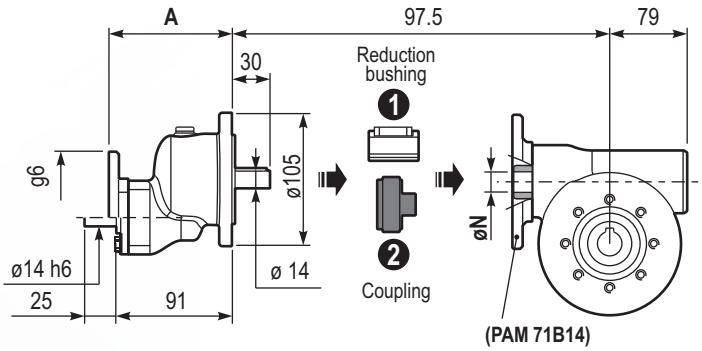
	kit code	g6	A
63B5	KD454041	138	99.5
71B5	KD454042	160	97
56B14	KD454049	80	97
63B14	KD454047	90	99.5
71B14	KD454045	105	97

How to connect D63+211D
Come collegare D63 + 211D

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
D63	øN	211D		
Ratios from 1/7÷1/40	ø24	ø14	KBR14/24	KD14P
Ratios from 1/45÷1/94	ø19		KBR14/19	



Ratios range: from 1/14 to 1/924
Range rapporti: da 1/14 a 1/924



Lubrication
Lubrificazione

Unit D63+211D 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.

Il riduttore tipo D63+211D viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

D63: 0.40 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211D: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/924
Range rapporti: da 1/14 a 1/924

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/94 x 1/9.83 = 1/924 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 924 = 1.57 rpm

i_a : D63 ratio - *Rapporto D63*
i_b : 211D ratio - *Rapporto 211D*

** Make sure input power for 211D and output torque for D63 is as catalogue ratios.
** *Prestare attenzione a selezionare la potenza in entrata del 211D ed il momento torcente del D63 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

D85 Ratios/Rating
Rapporti/Selezione D85

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	296	4.23	ø28	01
10	326	4.2	ø28	02
14	350	4.5	ø28	03
20	338	3.4	ø28	04
22	338	3.1	ø28	05
28	398	4.7	ø28	06
38	386	3.5	ø24	07
46	374	3.1	ø24	08
52	332	2.7	ø24	09
67	332	2.1	ø24	10
74	308	1.9	ø24	11
96	278	1.5	ø24	12

D85 weight *Peso D85*	11.0 kg

211D Ratios/Power
Rapporti/potenza 211D

Ratio i_b	Max input power ** P_{1M} [kW]	Standard output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

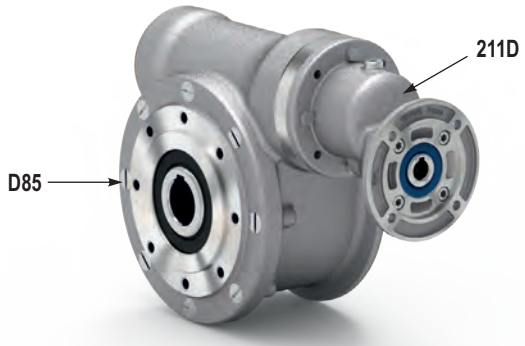
211D weight *Peso 211D*	1.40 kg

211D Motor flanges
Flange motore 211D

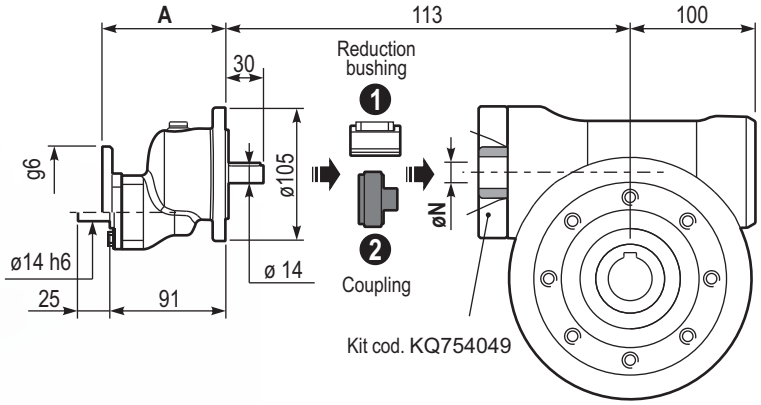
	kit code	g6	A
63B5	KD454041	138	99.5
71B5	KD454042	160	97
56B14	KD454049	80	97
63B14	KD454047	90	99.5
71B14	KD454045	105	97

How to connect D85+211D
Come collegare D85 + 211D

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
D85	øN	211D		
Ratios from 1/7÷1/28	ø28	ø14	KBR14/28	KE14P
Ratios from 1/38÷1/96	ø24	ø14	KBR14/24	KE14P



Ratios range: from 1/14 to 1/944
Range rapporti: da 1/14 a 1/924



Lubrication
Lubrificazione

Unit D85+211D 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.

Il riduttore tipo D85+211D viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

D85: 1.20 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211D: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/944
Range rapporti: da 1/14 a 1/924

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/96 x 1/9.83 = 1/944 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 944 = 1.53 rpm

i_a : D85 ratio - *Rapporto D85*
i_b : 211D ratio - *Rapporto 211D*

** Make sure input power for 211D and output torque for D85 is as catalogue ratios.
** *Prestare attenzione a selezionare la potenza in entrata del 211D ed il momento torcente del D85 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

3D3

35 Nm

VFD series
Combined worm gearboxes

Riduttori a vite senza fine combinati 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 -A 56	B5 motor flanges -B 63	B14 motor flanges -O 56	B14 motor flanges -P 63	Dynamic efficiency RD	Tooth module [mm]	Ratio code
9.3	150	0.06	29	1.2	0.07	35	B		B-C		48	1.44	01
6.7	210	0.06	39	0.9	0.05	35	B		B-C		45	1.44	02
4.7	300	0.06*	35	<0.8	0.05	35	B		B-C		36	1.44	03
3.1	450	0.06*	35	<0.8	0.03	35	B		B-C		33	1.44	04
2.3	600	0.06*	35	<0.8	0.03	35	B		B-C		30	1.44	05
1.6	900	0.06*	35	<0.8	0.02	35	B		B-C		27	1.44	06
1.2	1200	0.06*	35	<0.8	0.02	35	B		B-C		26	1.44	07
0.8	1830	0.06*	35	<0.8	0.01	35	B		B-C		24	1.44	08
0.6	2400	0.06*	35	<0.8	0.01	35	B		B-C		22	1.44	09

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}

Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

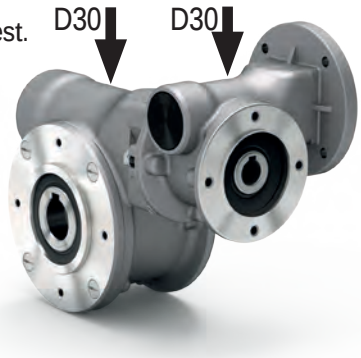
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit 3D3 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 3D3 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.



D30: 0.03 L	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

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

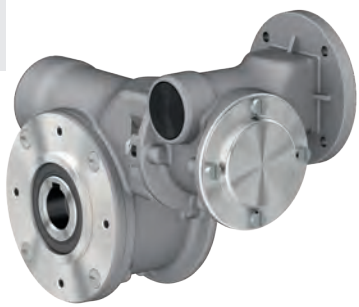
Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

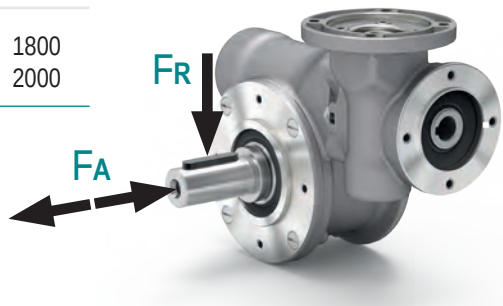
Kit cod. KN300209



Radial and axial loads
Carichi radiali e assiali

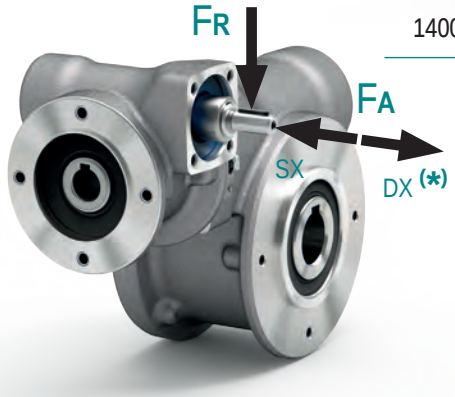
Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
25	300	1800
15	400	2000



Input shaft
Albero in entrata

n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	20	100

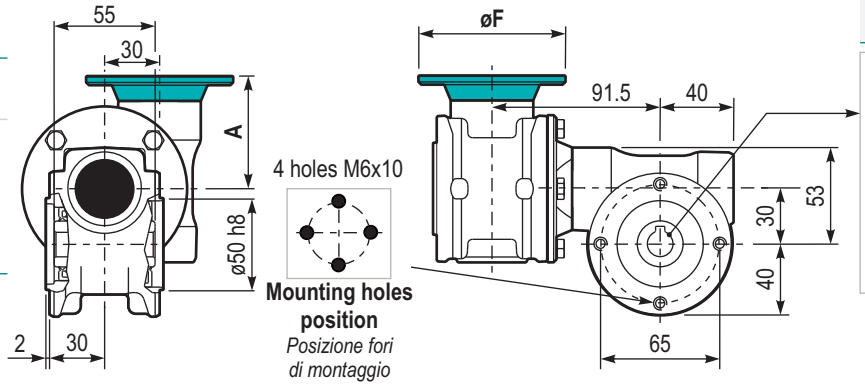


* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

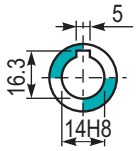
Tab. 2

P3D3UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
56B5	KD304041	120	62
63B5	KD304042	140	63
56B14	KD304046	80	62
63B14	KD304045	90	63



Gearbox weight *Peso riduttore* **2.15 kg**

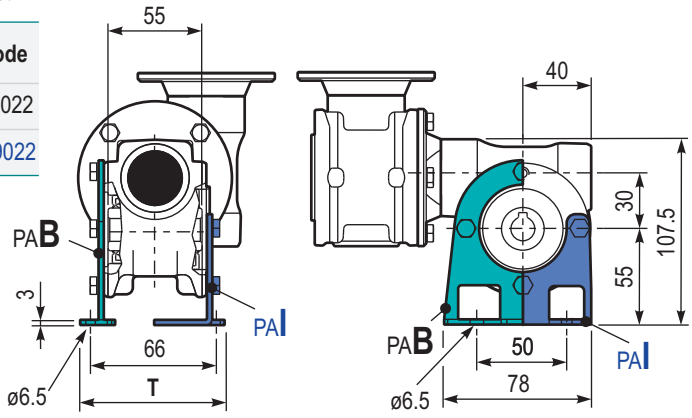


Hollow shaft
Foro in uscita

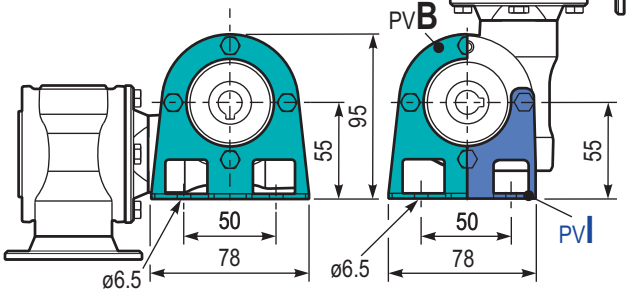
P3D3PA... Feet
Piedini

Type	T	Kit code
B**	87	K0309022
I *	80	KN309022

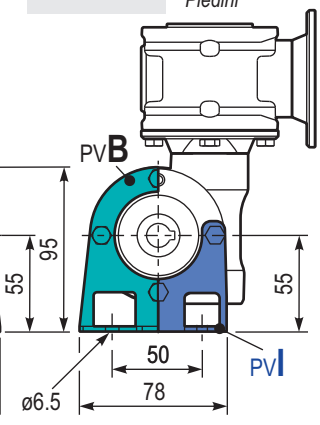
** Zink plated
* Stainless steel



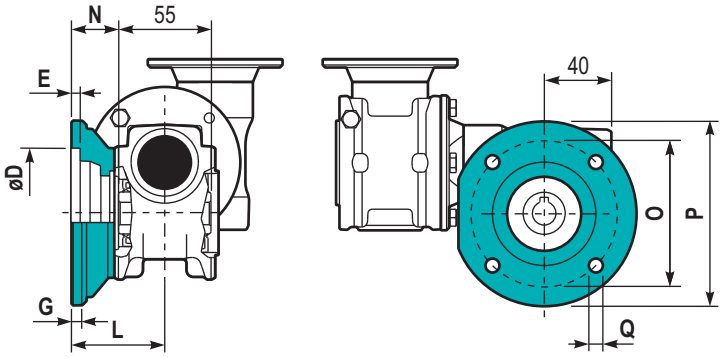
P3D3PBB.. Feet
Piedini



P3D3PV... Feet
Piedini

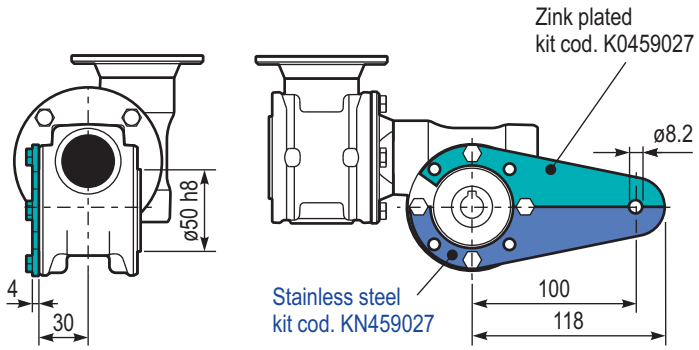


P3D3FL.. Output flange
Flangia uscita

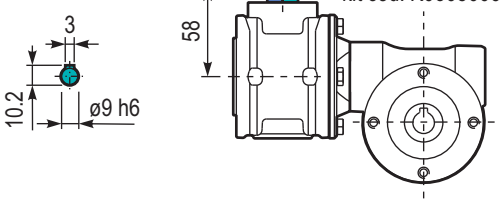


Type	øD	E	G	L	N	O	P	Q	Kit code
C	$50^{+0.15}_{+0.05}$	6	6	50.5	23	68	80	7	K0309010
L	$60^{+0.15}_{+0.05}$	6	6	55.5	28	87	110	8.5	K0459010

P3D3BR... Reaction arm
Braccio di reazione

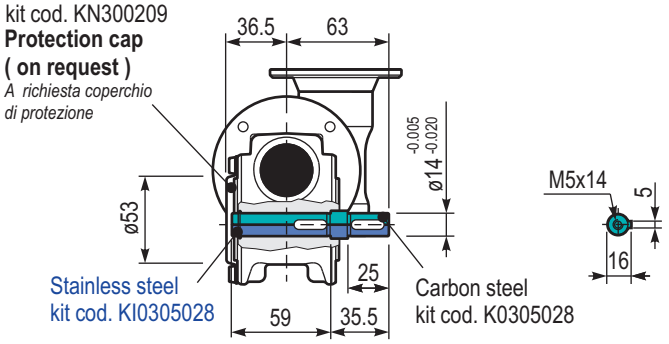


R3D3UNI.. Input shaft
Albero in entrata



P3D3..SMA Single output shaft
Albero semplice in uscita

kit cod. KN300209
Protection cap
(on request)
A richiesta coperchio di protezione



4D3

69 Nm

VFD series
Combined worm gearboxes

Riduttori a vite senza fine combinati in alluminio

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	Ratio code
							-A	-B	-O	-P			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	56	63	56	63	RD	[mm]	
10.0	140	0.12	57	1.2	0.14	69	B		B-C		50	2.2	01
7.0	200	0.12	79	0.9	0.11	69	B		B-C		48	2.2	02
5.0	280	0.06	52	1.3	0.08	69	B		B-C		45	2.4	03
3.3	420	0.06	62	1.1	0.07	69	B		B-C		36	1.6	04
2.5	560	0.06	76	0.9	0.05	69	B		B-C		33	2.5	05
1.9	740	0.06	91	0.8	0.05	69	B		B-C		30	1.8	06
1.5	920	0.06*	69	<0.8	0.04	69	B		B-C		27	1.5	07
1.3	1120	0.06*	69	<0.8	0.03	69	B		B-C		26	2.5	08
0.9	1480	0.06*	69	<0.8	0.03	69	B		B-C		24	1.8	09
0.8	1840	0.06*	69	<0.8	0.02	69	B		B-C		22	1.5	10
0.6	2400	0.06*	69	<0.8	0.02	69	B		B-C		21	1.2	11

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}

Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

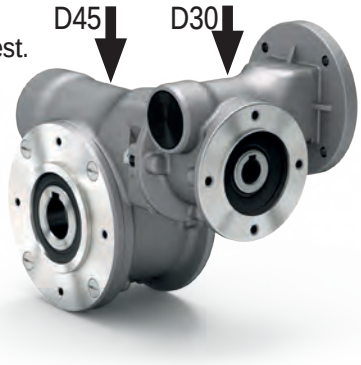
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit 4D3 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 4D3 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.



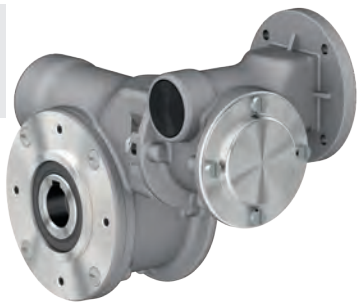
D45: 0.09 L D30: 0.03 L	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

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

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

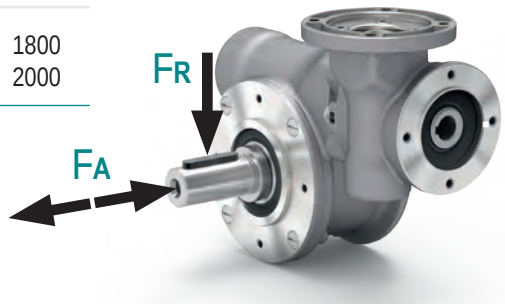


Kit cod. KN300209

Radial and axial loads
Carichi radiali e assiali

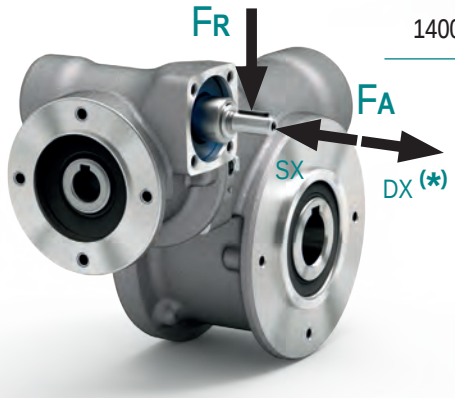
Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
25	300	1800
15	400	2000



Input shaft
Albero in entrata

n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	20	100

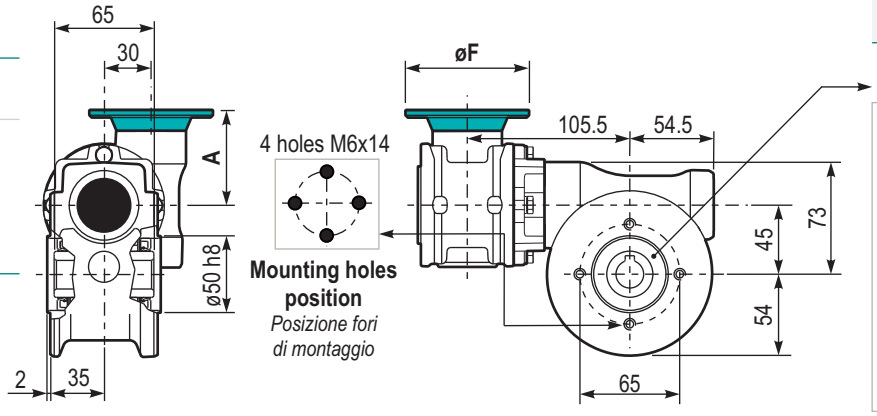


* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

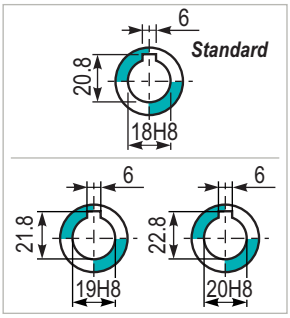
P4D3UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
56B5	KD304041	120	62
63B5	KD304042	140	63
56B14	KD304046	80	62
63B14	KD304045	90	63



Gearbox weight *Peso riduttore* **3.60 kg**

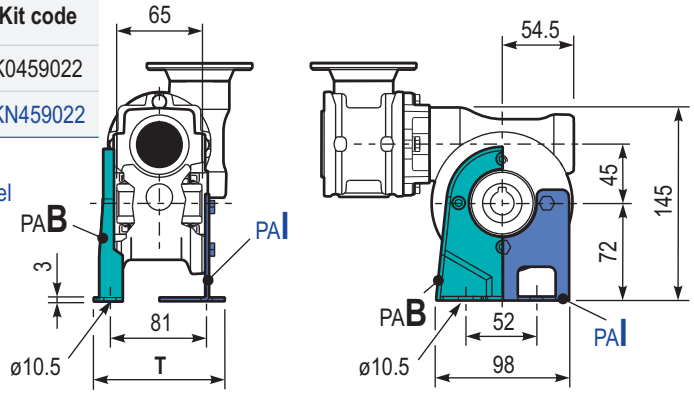
Hollow shaft
Foro in uscita



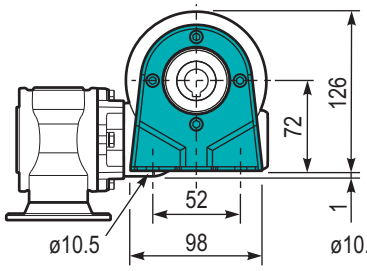
P4D3PA... Feet
Piedini

Type	T	Kit code
B**	102	K0459022
I *	100	KN459022

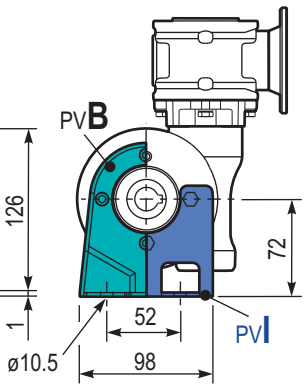
** Zink plated
* Stainless steel



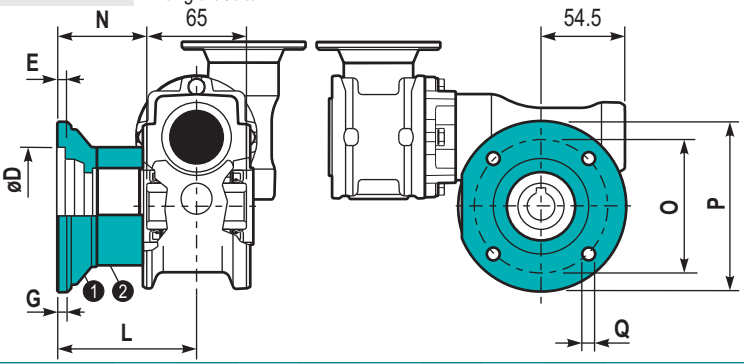
P4D3PBB.. Feet
Piedini



P4D3PV... Feet
Piedini

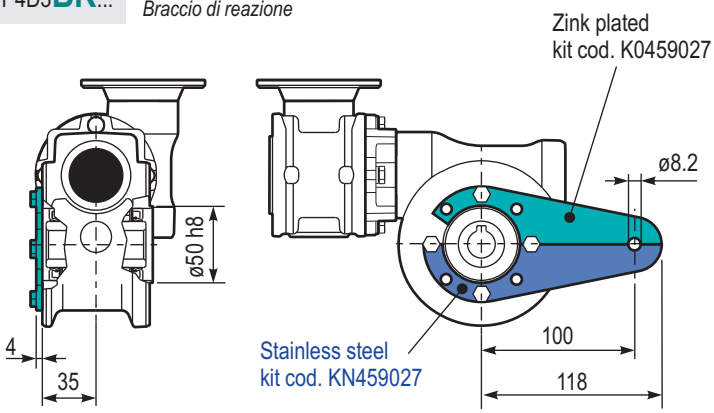


P4D3FL.. Output flange
Flangia uscita

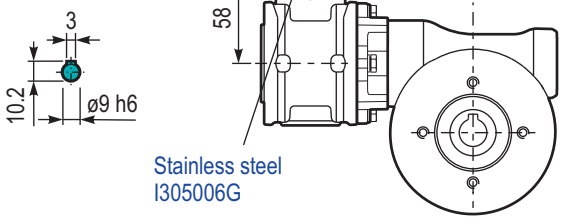


Type	øD	E	G	L	N	O	P	Q	Kit code
C	60 +0.15 +0.05	9	9	60.5	28	87	110	8.5	1 K0459010 2 -
L	60 +0.15 +0.05	9	9	90.5	58	87	110	8.5	1 K0459010 2 K0450200

P4D3BR... Reaction arm
Braccio di reazione

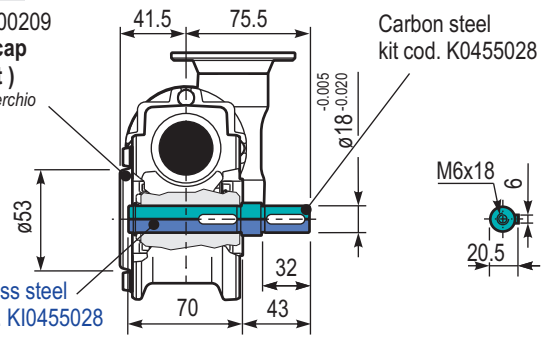


R4D3UNI.. Input shaft
Albero in entrata



P4D3..SMB Single output shaft
Albero semplice in uscita

kit cod. KN300209
Protection cap
(on request)
A richiesta coperchio di protezione



5D3

109 Nm

VFD series
Combined worm gearboxes

Riduttori a vite senza fine combinati 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 -A 56	B5 motor flanges -B 63	B14 motor flanges -O 56	B14 motor flanges -P 63	Dynamic efficiency RD	Tooth module [mm]	Ratio code
5.6	252	0.12	97	1.1	0.14	109	B		B-C		47	2.1	01
3.9	360	0.12	124	0.9	0.11	109	B		B-C		42	2.1	02
2.6	540	0.09	129	0.8	0.08	109	B		B-C		39	2.1	03
1.9	720	0.06	106	1.0	0.06	109	B		B-C		36	2.1	04
1.6	860	0.06	113	1.0	0.06	109	B		B-C		32	1.8	05
1.2	1200	0.06	133	0.8	0.05	109	B		B-C		27	1.3	06
1.0	1440	0.06*	109	<0.8	0.04	109	B		B-C		26	2.1	07
0.8	1720	0.06*	109	<0.8	0.04	109	B		B-C		25	1.8	08
0.6	2400	0.06*	109	<0.8	0.03	104	B		B-C		21	1.3	09

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

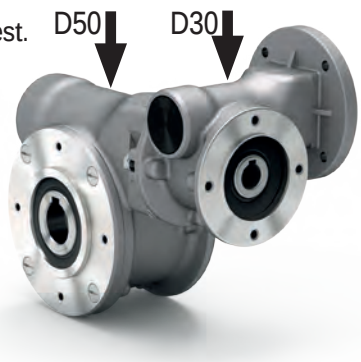
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit 5D3 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 5D3 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.



D50: 0.14 L D30: 0.03 L	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

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

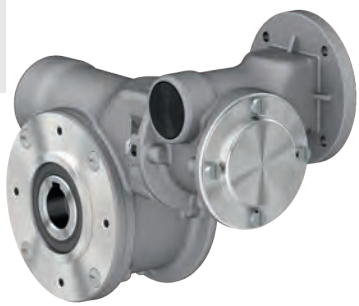
Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

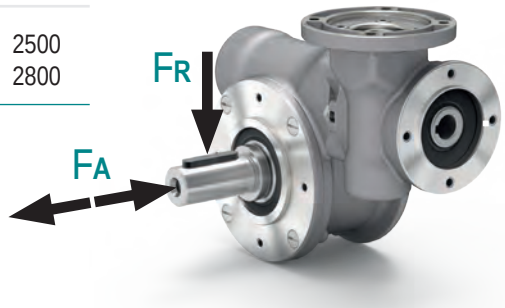
Kit cod. KN300209



Radial and axial loads
Carichi radiali e assiali

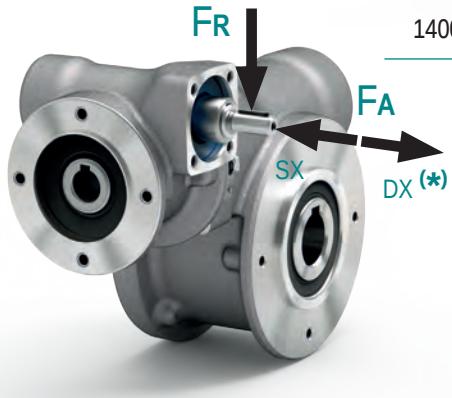
Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
25	480	2500
15	560	2800



Input shaft
Albero in entrata

n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	20	100

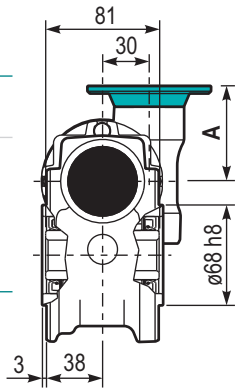


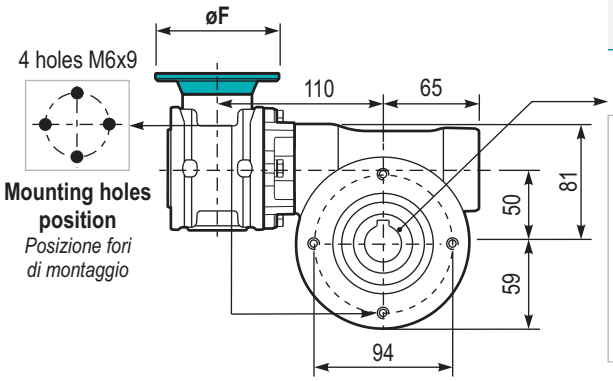
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

P5D3UNI.. Basic gearbox
Riduttore base

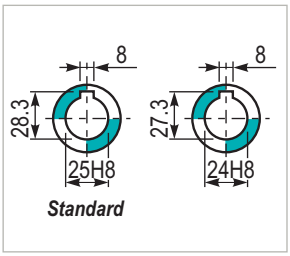
M. flanges	Kit code	øF	A
56B5	KD304041	120	62
63B5	KD304042	140	63
56B14	KD304046	80	62
63B14	KD304045	90	63





Gearbox weight *Peso riduttore* **4.20 kg**

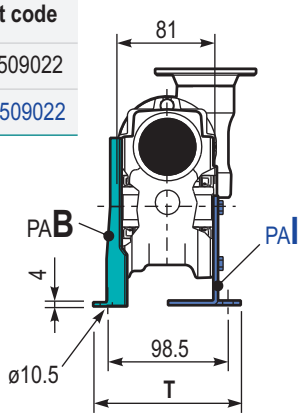
Hollow shaft
Foro in uscita



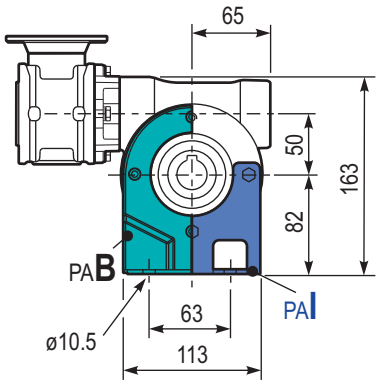
P5D3PA... Feet
Piedini

Type	T	Kit code
B**	123	K0509022
I *	122	KN509022

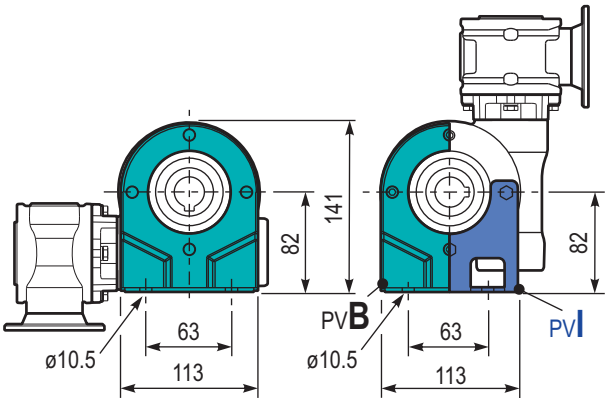
** Zink plated
* Stainless steel



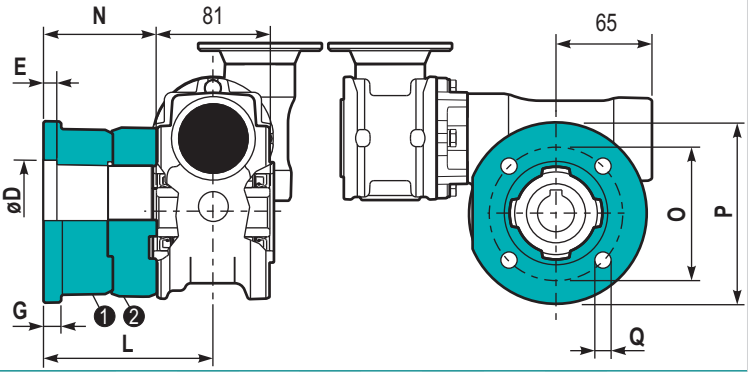
P5D3PBB.. Feet
Piedini



P5D3PV... Feet
Piedini

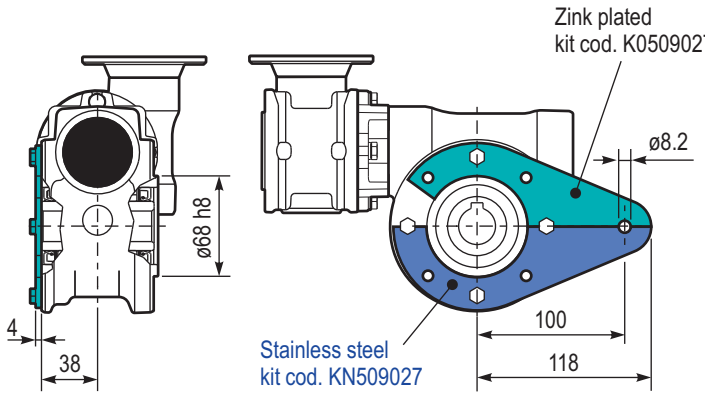


P5D3FL.. Output flange
Flangia uscita

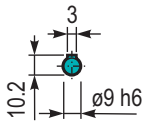


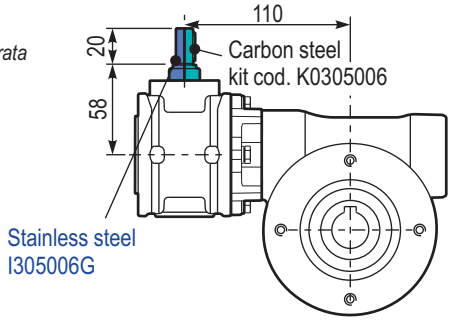
Type	øD	E	G	L	N	O	P	Q	Kit code
C	70 +0.20 +0.15	9	12	85	44.5	90	123	10.5	❶ K0509010 ❷ -
L	70 +0.20 +0.15	9	12	114.5	74	90	123	10.5	❶ K0509010 ❷ K0500200

P5D3BR... Reaction arm
Braccio di reazione



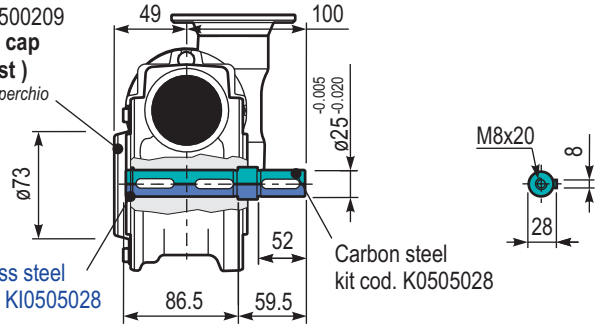
R5D3UNI.. Input shaft
Albero in entrata





P5D3..SMF Single output shaft
Albero semplice in uscita

kit cod. KN500209
Protection cap
(on request)
A richiesta coperchio di protezione



6D3

230 Nm

VFD series
Combined worm gearboxes

Riduttori a vite senza fine combinati 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 -A 56	B5 motor flanges -B 63	B14 motor flanges -O 56	B14 motor flanges -P 63	Dynamic efficiency RD	Tooth module [mm]	Ratio code
5.6	252	0.18	142	1.6	0.29	230	B		B-C		46	2.7	01
3.9	360	0.18	181	1.3	0.23	230	B		B-C		41	2.7	02
2.6	540	0.12	164	1.4	0.17	230	B		B-C		37	2.7	03
1.9	720	0.12	200	1.1	0.14	230	B		B-C		34	2.7	04
1.3	1080	0.12	265	0.9	0.10	230	B		B-C		30	2.7	05
1.0	1440	0.12*	230	<0.8	0.09	230	B		B-C		27	2.7	06
0.5	2745	0.12*	230	<0.8	0.05	230	B		B-C		23	2.1	07

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

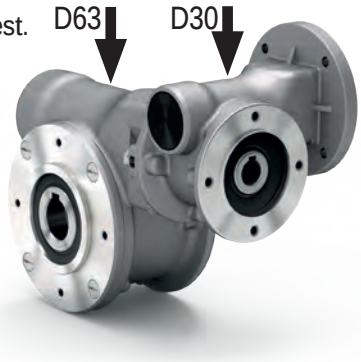
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit 6D3 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 6D3 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.



D63: 0.40 L D30: 0.03 L	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

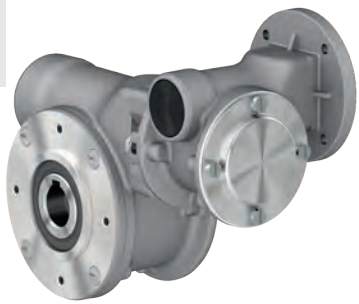
For all details on lubrication and plugs check our website. Tab. 1
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

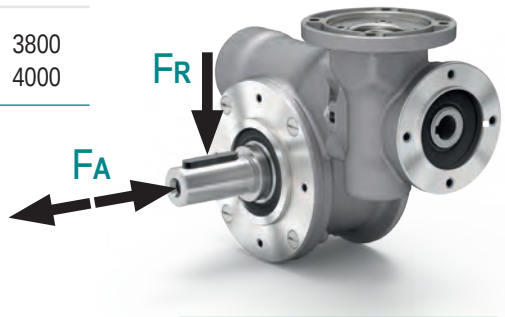
Kit cod. KN300209



Radial and axial loads
Carichi radiali e assiali

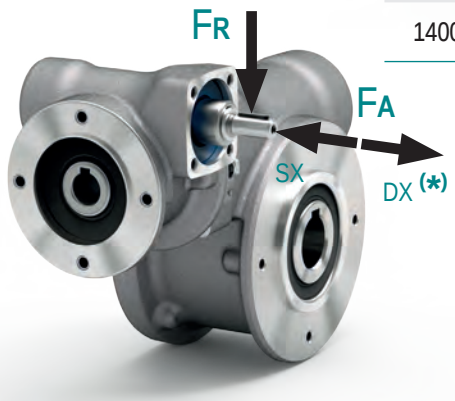
Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
25	700	3800
15	800	4000



Input shaft
Albero in entrata

n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	20	100

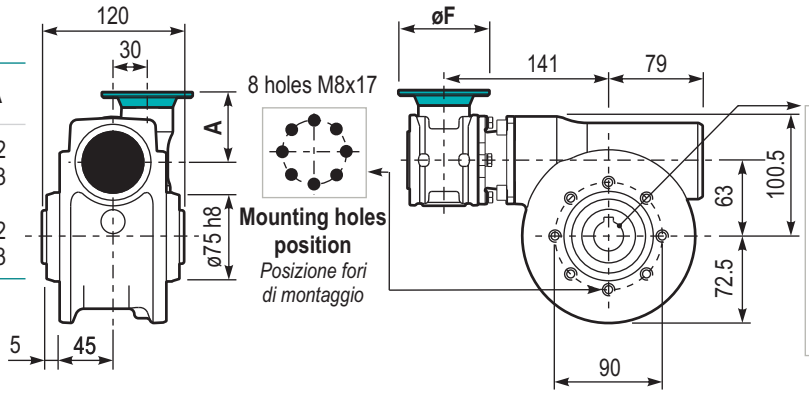


* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

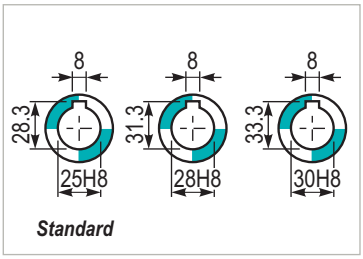
P6D3UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
56B5	KD304041	120	62
63B5	KD304042	140	63
56B14	KD304046	80	62
63B14	KD304045	90	63



Gearbox weight *Peso riduttore* **7.50 kg**

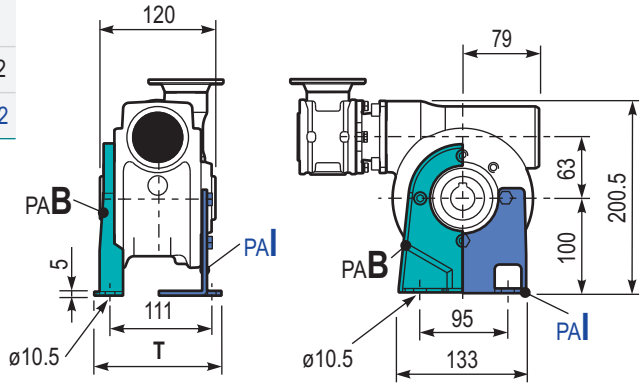
Hollow shaft
Foro in uscita



P6D3PA... Feet
Piedini

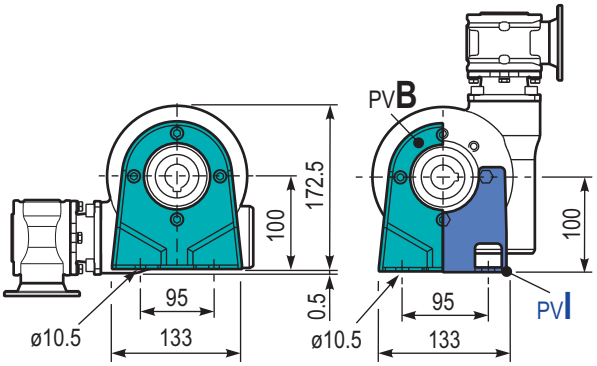
Type	T	Kit code
B**	144	K0639022
I *	130	KN639022

** Zink plated
* Stainless steel

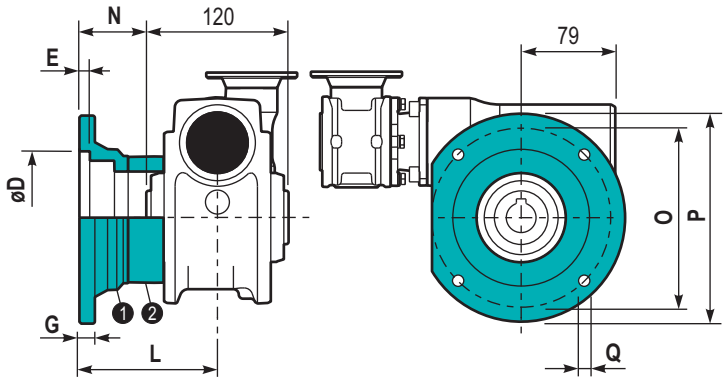


P6D3PBB.. Feet
Piedini

P6D3PV... Feet
Piedini

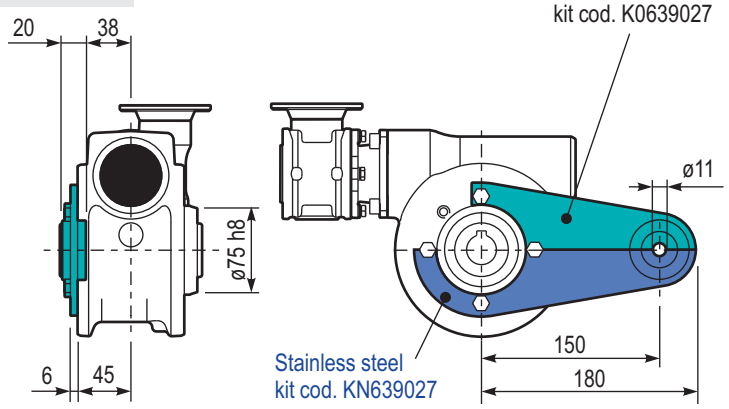


P6D3FL.. Output flange
Flangia uscita

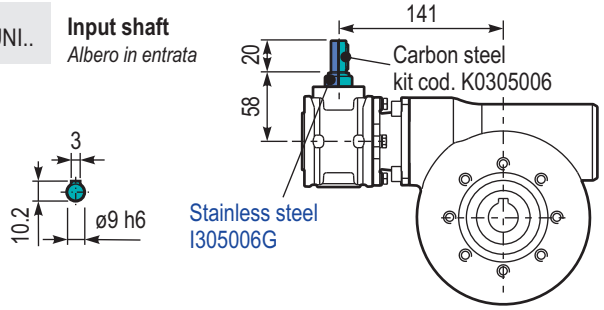


Type	øD	E	G	L	N	O	P	Q	Kit code
C	$115^{+0.20}_{+0.15}$	7	13	86	26	150	175	11	❶ K0639010 ❷ -
L	$115^{+0.20}_{+0.15}$	7	13	116	56	150	175	11	❶ K0639010 ❷ K0630200

P6D3BR... Reaction arm
Braccio di reazione

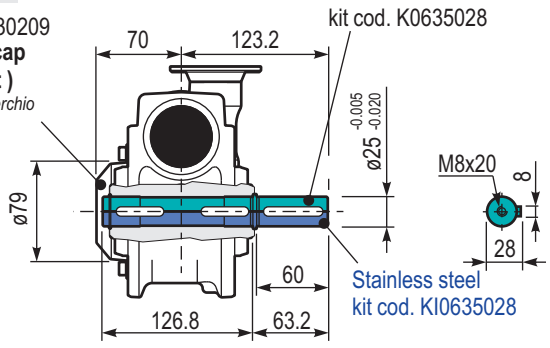


R6D3UNI.. Input shaft
Albero in entrata



P6D3..SMF Single output shaft
Albero semplice in uscita

kit cod. KN630209
Protection cap (on request)
A richiesta coperchio di protezione



6D4

265 Nm

VFD series
Combined worm gearboxes

Riduttori a vite senza fine combinati in alluminio

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges			Dynamic efficiency	Tooth module	Ratio code
							-B	-C	-O	-P	-Q			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	63	71	56	63	71	RD	[mm]	
5.6	252	0.25	198	1.3	0.33	265	B		B-C	B-C		46	2.7	01
3.9	360	0.18	186	1.4	0.26	265	B		B-C	B-C		42	2.7	02
2.8	504	0.18	241	1.1	0.20	265	B		B-C	B-C		39	2.7	03
1.9	756	0.12	204	1.3	0.16	265	B		B-C	B-C		33	2.7	04
1.4	1008	0.12	256	1.0	0.12	265	B		B-C	B-C		31	2.7	05
1.1	1332	0.12*	265	<0.8	0.10	265	B		B-C	B-C		30	2.7	06
0.8	1656	0.12*	265	<0.8	0.08	265	B		B-C	B-C		28	2.7	07
0.6	2160	0.12*	265	<0.8	0.07	265	B		B-C	B-C		26	2.7	08
0.6	2520	0.12*	265	<0.8	0.06	265	B		B-C	B-C		25	2.7	09

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}

Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

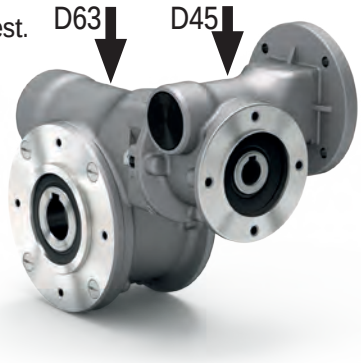
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit 6D4 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 6D4 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.



D63: 0.40 L D45: 0.09 L	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

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

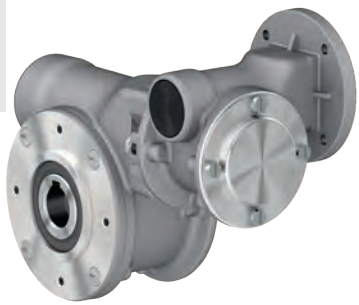
Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

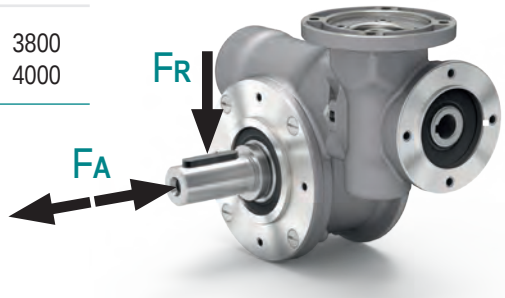
Kit cod. KN300209



Radial and axial loads
Carichi radiali e assiali

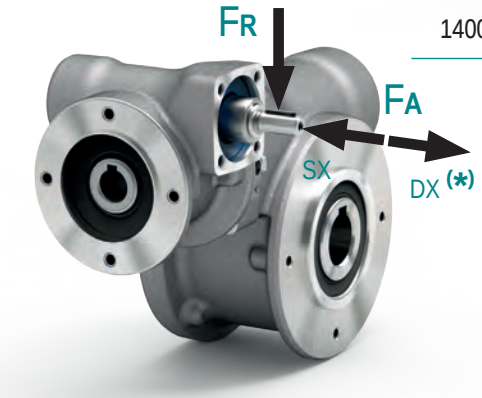
Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
25	700	3800
15	800	4000



Input shaft
Albero in entrata

n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	42	210

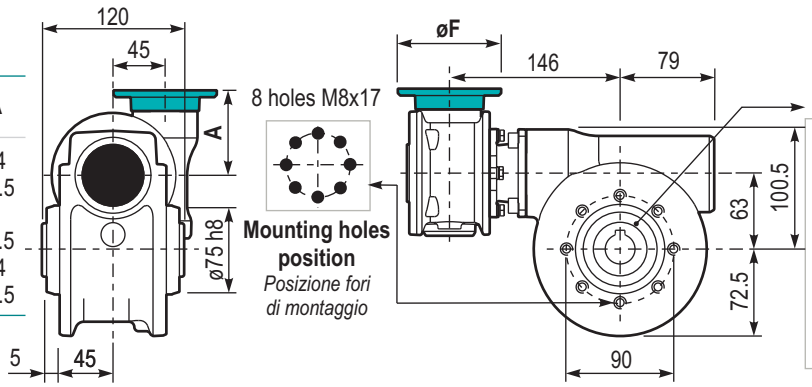


* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

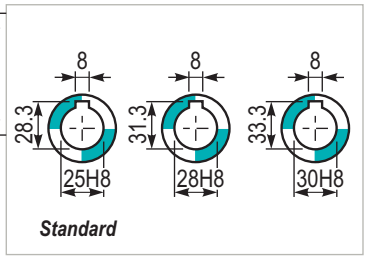
P6D4UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
63B5	KD454041	138	74
71B5	KD454042	160	71.5
56B14	KD454049	80	71.5
63B14	KD454047	90	74
71B14	KD454045	105	71.5



Gearbox weight *Peso riduttore* **8.90 kg**

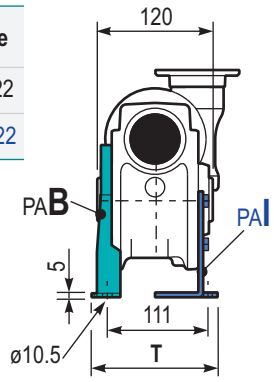
Hollow shaft
Foro in uscita



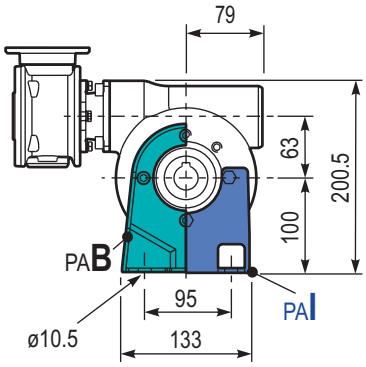
P6D4PA... Feet
Piedini

Type	T	Kit code
B**	144	K0639022
I *	130	KN639022

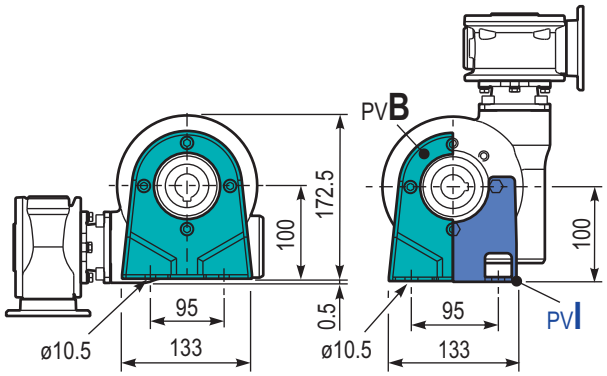
** Zink plated
* Stainless steel



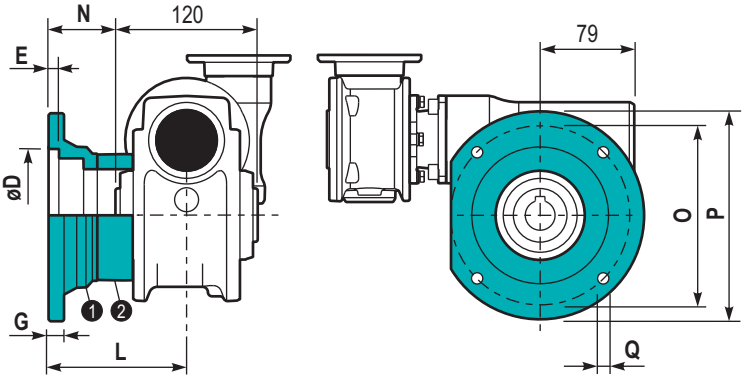
P6D4PBB.. Feet
Piedini



P6D4PV... Feet
Piedini

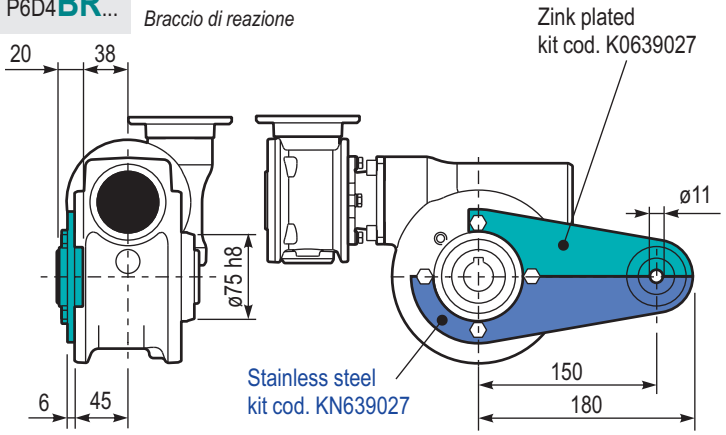


P6D4FL.. Output flange
Flangia uscita

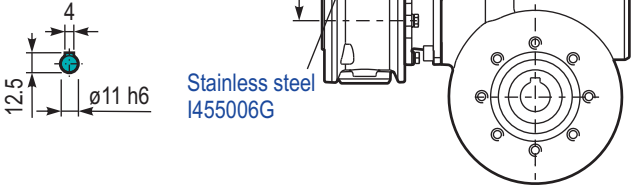


Type	øD	E	G	L	N	O	P	Q	Kit code
C	$115^{+0.20}_{+0.15}$	7	13	86	26	150	175	11	❶ K0639010 ❷ -
L	$115^{+0.20}_{+0.15}$	7	13	116	56	150	175	11	❶ K0639010 ❷ K0630200

P6D4BR... Reaction arm
Braccio di reazione

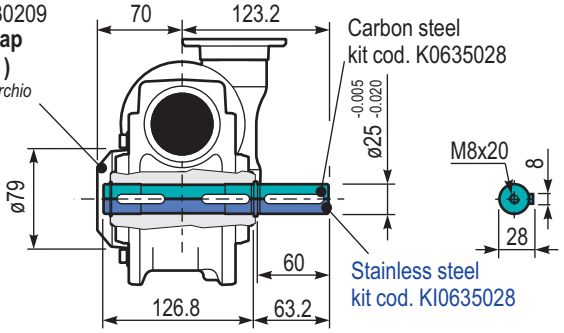


R6D4UNI.. Input shaft
Albero in entrata



P6D4..SMF Single output shaft
Albero semplice in uscita

kit cod. KN630209
Protection cap
(on request)
A richiesta coperchio di protezione



8D4

518 Nm

VFD series
Combined worm gearboxes

Riduttori a vite senza fine combinati 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 -B 63	B5 motor flanges -C 71	B14 motor flanges -O 56	B14 motor flanges -P 63	B14 motor flanges -Q 71	Dynamic efficiency RD	Tooth module [mm]	Ratio code
10	140	0.37	205	1.8	0.66	368	B		B-C	B-C		58	4.5	01
7.1	196	0.37	257	1.4	0.53	368	B		B-C	B-C		52	4.7	02
5.0	280	0.37	332	1.6	0.58	518	B		B-C	B-C		47	4.7	03
3.6	392	0.37	435	1.2	0.44	518	B		B-C	B-C		44	4.7	04
2.4	588	0.25	371	1.4	0.35	518	B		B-C	B-C		37	4.7	05
1.8	784	0.25	455	1.1	0.28	518	B		B-C	B-C		34	4.7	06
1.4	1036	0.18	420	1.2	0.22	518	B		B-C	B-C		33	4.7	07
1.1	1288	0.18	474	1.1	0.20	518	B		B-C	B-C		30	4.7	08
0.7	1960	0.12	449	1.2	0.14	518	B		B-C	B-C		28	4.7	09
0.5	2856	0.12	584	0.9	0.11	518	B		B-C	B-C		25	4.7	10

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

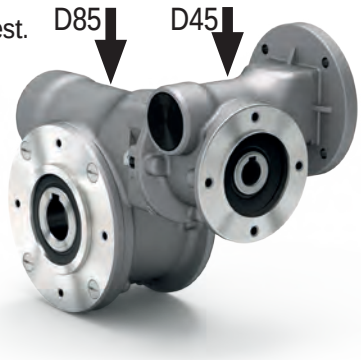
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit 8D4 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 8D4 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.



D85: 1.20 L D45: 0.09 L	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

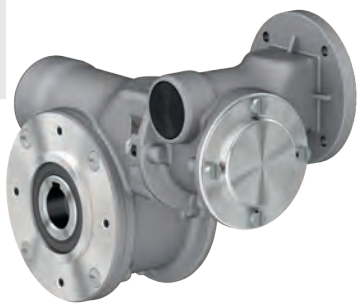
For all details on lubrication and plugs check our website. Tab. 1
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

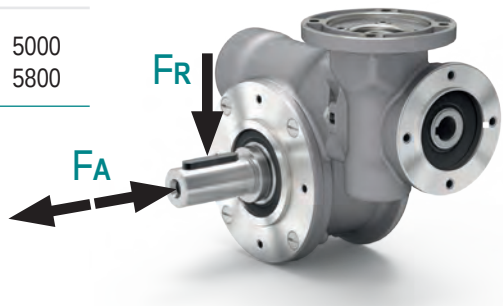
Kit cod. KN300209



Radial and axial loads
Carichi radiali e assiali

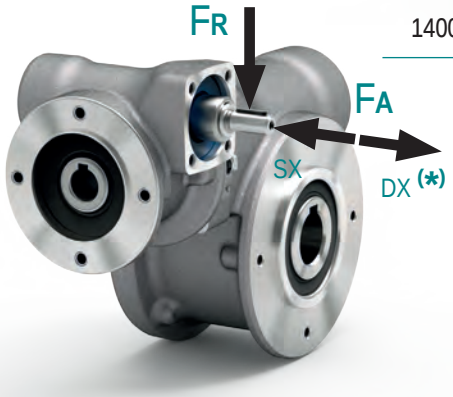
Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
25	1000	5000
15	1160	5800



Input shaft
Albero in entrata

n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	42	210

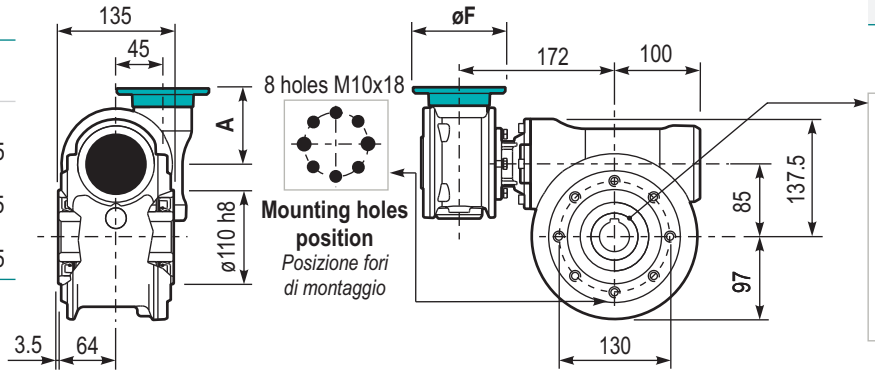


* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

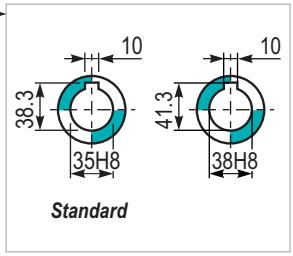
P8D4UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
63B5	KD454041	138	74
71B5	KD454042	160	71.5
56B14	KD454049	80	71.5
63B14	KD454047	90	74
71B14	KD454045	105	71.5



Gearbox weight *Peso riduttore* **19.50 kg**

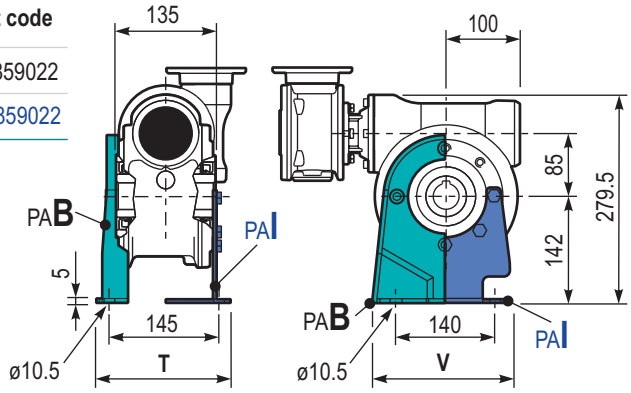
Hollow shaft
Foro in uscita



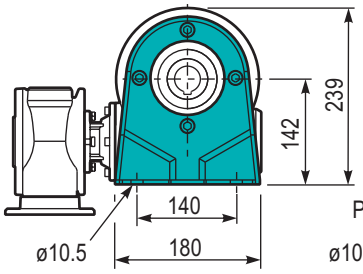
P8D4PA... Feet
Piedini

Type	T	V	Kit code
B**	182	180	K0859022
I *	176	172	KN859022

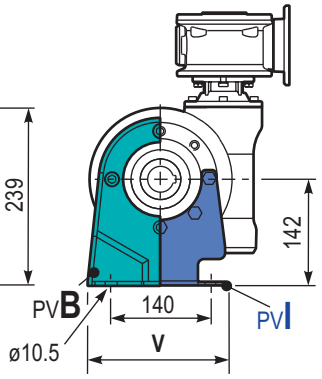
** Zink plated
* Stainless steel



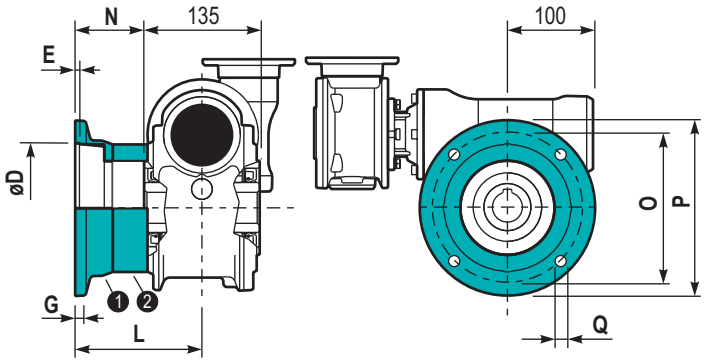
P8D4PBB.. Feet
Piedini



P8D4PV... Feet
Piedini

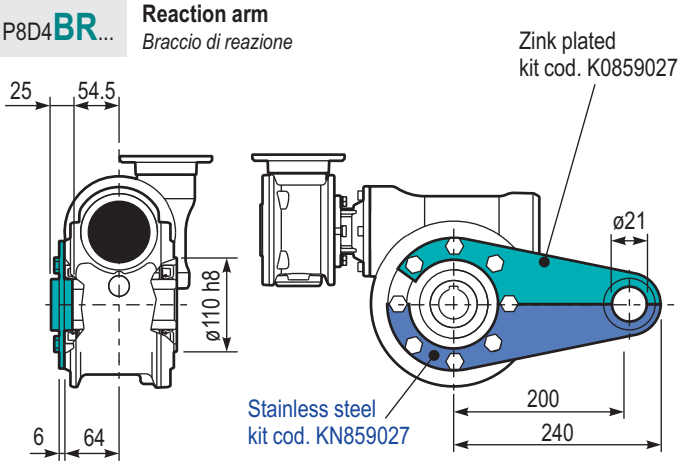


P8D4FL.. Output flange
Flangia uscita

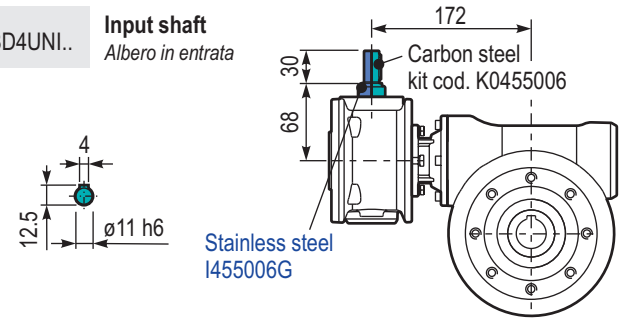


Type	øD	E	G	L	N	O	P	Q	Kit code
C	$152^{+0.06}_{+0.00}$	5	16	108	40.5	176	205	13	❶ K0859010 ❷ -
L	$152^{+0.06}_{+0.00}$	5	16	148.5	81	176	205	13	❶ K0859010 ❷ K0850201

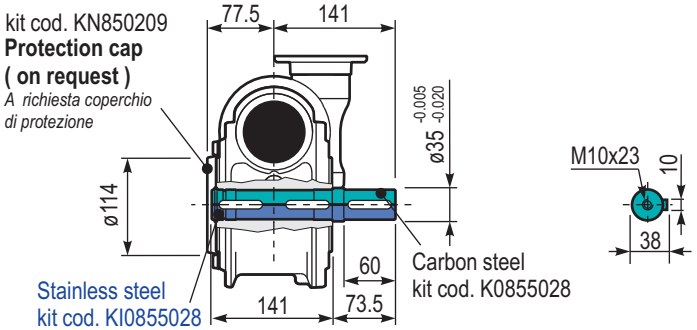
P8D4BR... Reaction arm
Braccio di reazione



R8D4UNI.. Input shaft
Albero in entrata



P8D4..SMK Single output shaft
Albero semplice in uscita



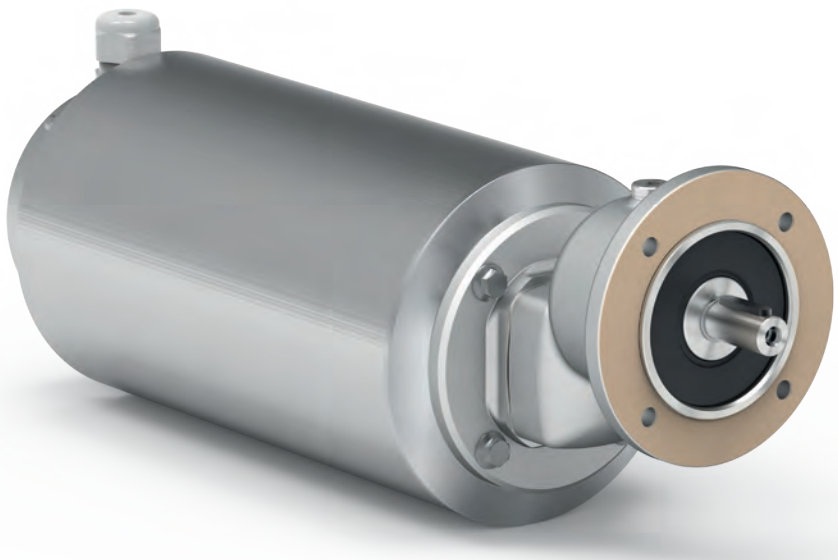
ALUMINUM

IP66

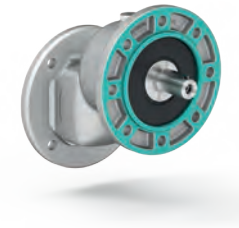
CE

On req.
A rich.

ATEX



How to order *Codifica*

P	211D	-F	2.05	S	C
Type *Tipo*	Size *Grandezza*	Mounting *Montaggio*	Ratio *Rapporto*	Output shaft *Albero lento*	Shaft material *Materiale albero*
P 	211D	-F 	See technical data table *Vedi tabelle dati tecnici*	 → Standard S → ø14	 C Carbon steel *Acciaio* I Stainless steel (Only for standard shaft) *Acciaio inox* *(Solo per albero standard)*
M 					
B 					
R 					

I	-Q	B3	ST	A	For M type specify terminal box position
Output flange *Flangia uscita*	Motor size *Grandezza motore*	Mounting position *Posizione di montaggio*	Input bore *Foro entrata*	Coating *Trattamento*	*Per tipo M specificare posizione morsettiera*
 I → ø105	**Motor flanges** *Flange motore*  IEC B5 -B → 63 B5 (ø140) -C → 71 B5 (ø160) IEC B14 -O → 56 B14 (ø80) -P → 63 B14 (ø90) -Q → 71 B14 (ø105) **Without flange** *Senza flangia*  -Z → ø9 (IEC 56) -0 → ø11 (IEC 63) -1 → ø14 (IEC 71) Type R *Tipo R*  211D -1 → ø14	B3  B6  B7  B8  V5  V6 	ST Standard bore *Foro standard*	A Standard in aluminum *Standard in alluminio*  N NTT coating *NTT Rivestimento*  V Painted *Verniciato* 	A  B  C  D 

211D

20 Nm

RCD series
Aluminum ratio multipliers

Riduttori ad uno stadio in alluminio

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 -B 63	B5 motor flanges -C 71	B14 motor flanges -O 56	B14 motor flanges -P 63	B14 motor flanges -Q 71		Output shaft ø	Ratios code
682	2.05	0.37	5	2.0	0.73	10			C	C		1939		01
595	2.35	0.37	6	2.1	0.76	12			C	C		1740		02
500	2.80	0.37	7	2.0	0.75	14			C	C		1542		03
414	3.38	0.37	8	2.0	0.75	17			C	C		1344	standard	04
298	4.70	0.37	12	1.7	0.64	20			C	C		1047	ø14	05
225	6.22	0.37	15	1.5	0.55	23			C	C		956		06
169	8.29	0.37	20	1.0	0.36	20			C	C		758		07
142	9.83	0.25	16	1.0	0.24	16			C	C		659		08

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 211D 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 211D 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: 0.05 L *Quantità olio per tutte le posizioni: 0.05 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

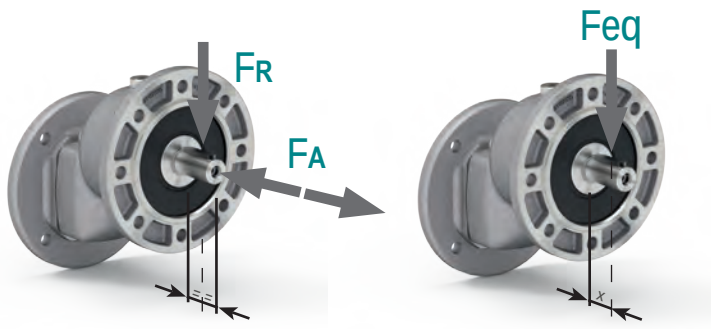
Tab. 1

Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
700	101	504
600	120	600
400	138	696
300	151	756
200	175	876
140	192	960

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



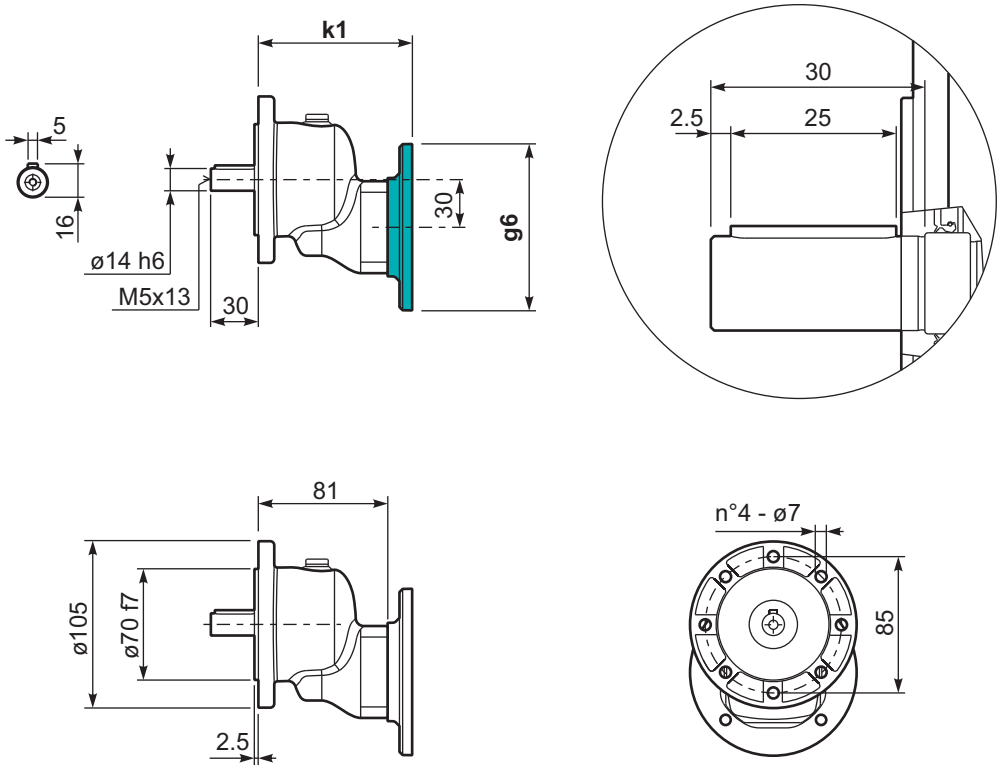
Tab. 2

P211D-**F**...

Basic gearbox
Riduttore base

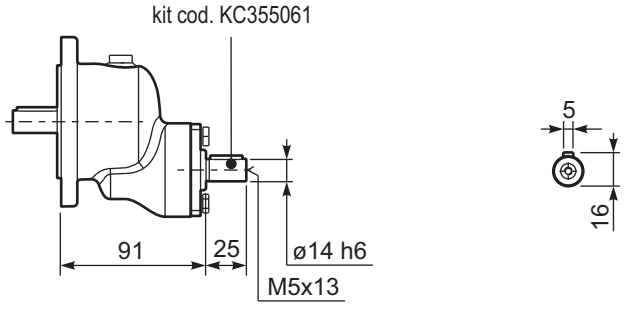
Gearbox weight
Peso riduttore
1.40 kg

M. flanges	Kit code	k1	g6
63 B5	KD454041	99.5	138
71 B5	KD454042	97	160
56 B14	KD454049	97	80
63 B14	KD454047	99.5	90
71 B14	KD454045	97	105



R211D-**F**...

Basic gearbox
Riduttore base



The best solution for the resistance to the corrosion. Suitable for all applications.

La migliore soluzione per la resistenza alla corrosione. Adatto a tutte le applicazioni.

AISI 316L IP66 CE NSF COMPONENT

On req. *A rich.* IP69k Ex ATEX

The VFN Series Stainless steel worm gearboxes

The VFN Series

It is the best solution for the resistance to corrosion.
Suitable for all applications.
Entirely in stainless steel with smooth surfaces for easy cleaning.
Also available with stainless steel motor SPM series.

La serie VFN
E' la migliore soluzione per la resistenza alla corrosione.
Adatto a tutte le applicazioni.
Interamente in acciaio inox con superfici lisce per facilitare la pulizia.
Disponibile anche con motore in acciaio inox, serie SPM.

The RCN Series

It is the best solution where hygiene and cleanliness are required.
The ratio multiplier gearbox has smooth surfaces for easy cleaning.
Also available with stainless steel motor SPM series.

La serie RCN
E' la migliore soluzione dove è richiesta igiene e pulizia.
Il riduttore ad uno stadio ha superfici lisce per facilitare la pulizia.
Disponibile anche con motore in acciaio inox, serie SPM.

VFN certification
worm gearboxes

IP66 CE NSF COMPONENT — On request *A richiesta* — IP69k ATEX

RCN certification
ratio multiplier

IP66 CE NSF COMPONENT — On request *A richiesta* — ATEX

Ratio: 1 / 1.57 ÷ 1 / 10.86

IP69k when combined with on other gearbox

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*	
				Standard	*On request*
N30	21 Nm	30 mm	0.06 ÷ 0.18 kW	ø14 mm	-
N45	41 Nm	45 mm	0.12 ÷ 0.37 kW	ø18 mm	ø19 ø20 mm
N50	72 Nm	50 mm	0.12 ÷ 0.75 kW	ø25 mm	ø24 mm
N63	147 Nm	63 mm	0.37 ÷ 1.8 kW	ø25 mm	ø28 ø30 mm
N85	347 Nm	85 mm	0.55 ÷ 4.0 kW	ø35 mm	-
211N	20 Nm	30 mm	0.25 ÷ 0.37 kW	ø14 mm	-
411N	38 Nm	38 mm	0.37 ÷ 1.5 kW	ø19 mm	-

THE BEST PROTECTION IN 316L

Housing

Special high tech full stainless steel housing **with accurate polished finishing and strong** rigidity.

Cassa speciale interamente in acciaio inox estremamente rigida e con finitura lucida accurata.

Viton seals

Single viton seal for harsh enviroment.

Anelli di tenuta in viton per ambienti aggressivi.

Options Twin viton seals

Twin viton seals with stainless steel 316L shield for IP69k protection.

Doppi anelli di tenuta in viton con schermo protettivo in acciaio inox AISI 316L per protezione IP69k.

Hardened and ground worm

Hardened and ground worm, teeth radiused for noise reduction.

La vite senza fine è temprata ed i denti sono profilati e raggiati per ridurre il rumore.

Options Coupling

Premium input coupling with direct mounting
No settings - No screw.

*Giunto in entrata: Montaggio diretto
No settaggi - No viti.*

STANDARD POLISHED FINISHING

Finitura lucida standard

Output hollow shaft

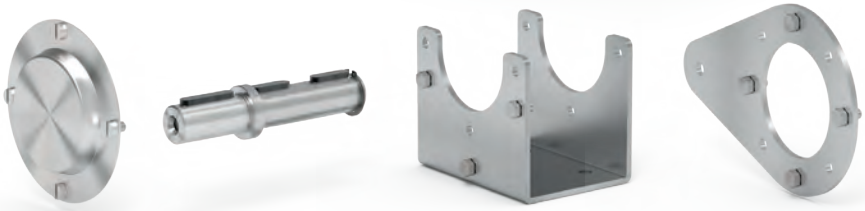
Stainless steel hollow shaft in AISI 316L.
CuSn12Ni (C91700) Nickel bronze for superior life.

*Mozzo in acciaio inox 316L.
Corona in bronzo al Nickel CuSn12Ni (C91700) centrifugato per massima resistenza e durata superiore.*

Stainless steel hardware

Stainless steel output male shaft, protection cap, feet, screws and reaction arms.

Albero maschio in uscita removibile, coperchietto di protezione, piedi, viteria e bracci di reazione in AISI 316L.



How to order *Codifica*

P	N45	UNI	N	10	0	MB	I
Type *Tipo*	Size *Grandezza*	Mounting *Montaggio*	Position *Posizione*	Ratio *Rapporto*	Hub Output shaft *Mozzo corona Albero uscita*	Diameter *Diametro*	Input / output shaft material *Materiale albero in entrata e uscita*
P 	Worm gearboxes *Riduttori a vite senza fine*	UNI 	N 	See technical data table *Vedi tabelle dati tecnici*	0 Hollow *Mozzo* 	→ Standard	I Stainless steel *Acciaio inox*
M 		FLL 			S Solid output shaft *Albero in uscita* 	N30 MA → ø14	The quill input hollow bore is always in carbon steel *Il foro cavo in entrata è sempre in acciaio*
B 	N30 N45 N50 N63 N85	BRI Stainless steel *Acciaio inox* 	Select L or R position for output flange *Selezionare la posizione L o R per la flangia in uscita*			N45 MB → ø18 MC → ø19 MD → ø20	
R 		PAI Stainless steel *Acciaio inox* 	L Left *Sinistra* 			N50 ME → ø24 MF → ø25	
		PVI Stainless steel *Acciaio inox* 	R Right *Destra* 			N63 MF → ø25 MG → ø28 MH → ø30	
						N85 MK → ø35	
						Output male shaft is available only for standard bore *Albero maschio in uscita è disponibile solo per fori standard*	

N	C	-R	B3	ST	For M type specify terminal box position
Protection cap *Coperchio di protezione*		Motor size *Grandezza motore*	Mounting position *Posizione di montaggio*	Input bore *Foro entrata*	*Per tipo M specificare posizione morsettiera*

Left
Sinistra

N Without protection cap
Senza coperchietto di protezione

C Closed
Chiuso

Right
Destra

N Without protection cap
Senza coperchietto di protezione

C Closed
Chiuso

Motor flanges
Flange motore

IEC B14

-O → 56 B14 (ø80)
-P → 63 B14 (ø90)
-Q → 71 B14 (ø105)
-R → 80 B14 (ø120)
-T → 90 B14 (ø140)
-U → 100-112B14 (ø160)

Brushless

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

Brushless-Tech catalogue is available in our website
Catalogo Brushless-Tech è disponibile nel nostro sito web

Without flange *Senza flangia*

-M → Metric

Type R *Tipo R*

-0 → Metric

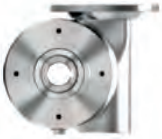
B3

B8

B6

B7

V5



V6

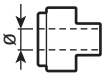
ST Standard bore*
*Foro standard**

Input bore without reduction bushing

-O → 9mm
-P → 11mm
-Q → 14mm
-R → 19mm
-T → 24mm
-U → 28mm
-V → 38mm

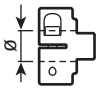
Coupling

Standard (IEC)



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

Brushless *



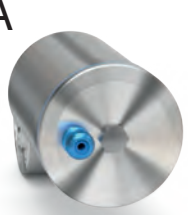
-2 → 11mm
-3 → 14mm
-4 → 19mm
-5 → 22mm
-6 → 24mm

Ready for input coupling
Predisposto per giunto

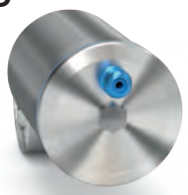
-0 Type B
Tipo B

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

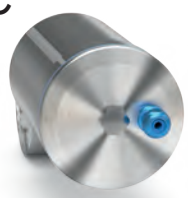
A



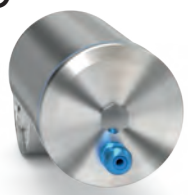
B



C



D



N30

21 Nm

VFN series
Full stainless steel round worm gearboxes

Riduttori a vite senza fine tondo completamente in acciaio inox

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	Ratio code
							-	-	-O	-P			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	56	63	RD	[mm]	
280	5	0.18	5	3.3	0.60	17			B-C		82	1.26	09
200	7	0.18	7	2.4	0.44	17			B-C		80	1.44	01
140	10	0.18	10	1.8	0.32	17			B-C		78	1.44	02
93	15	0.18	13	1.4	0.25	19			B-C		73	1.44	03
70	20	0.18	17	1.1	0.20	19			B-C		70	1.09	04
47	30	0.12	15	1.4	0.17	21			B-C		62	1.44	05
35	40	0.12	19	1.1	0.13	20			B-C		57	1.09	06
23	61	0.09	19	1.1	0.10	20			B-C		50	0.72	07
17.5	80	0.06	16	1.0	0.06	16			B-C		48	0.56	08
14	100	0.06*	16	0.5	0.03	8			B-C		40	0.45	10

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

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 N30 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 N30 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: 0.04 L *Quantità olio per tutte le posizioni: 0.04 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

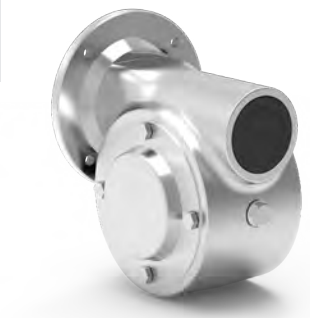
Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

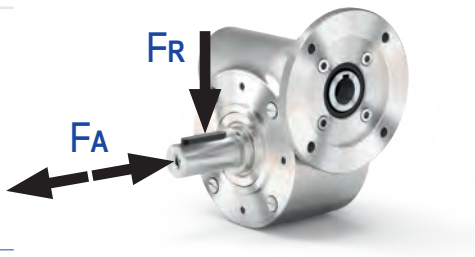
Kit cod. KN300209



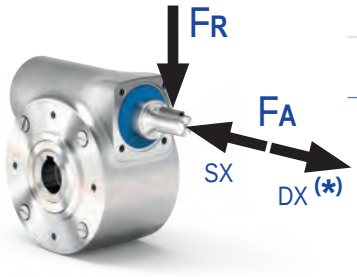
Radial and axial loads
Carichi radiali e assiali

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

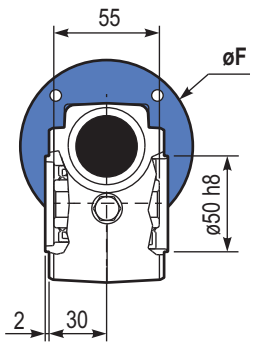
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

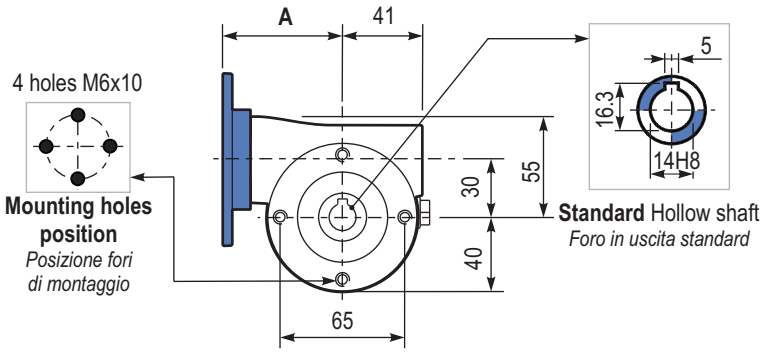
Tab. 2

PN30**UNI**.. Basic gearbox
Riduttore base

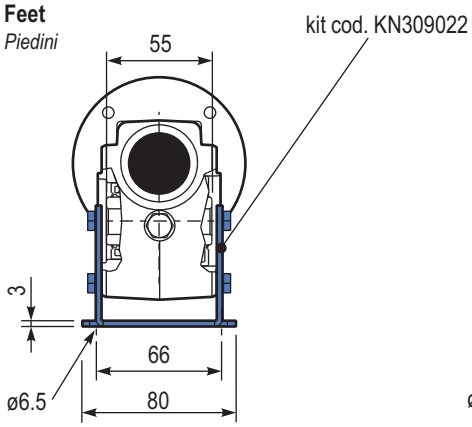
Gearbox weight *Peso riduttore* **2.2 kg**

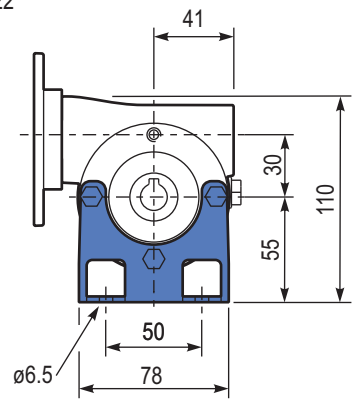
M. flanges	Kit code	øF	A
56B14	KI304046	80	61.5
63B14	KI304045	90	62.5



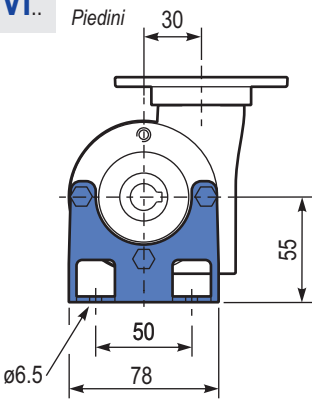


PN30**PAI**.. Feet
Piedini

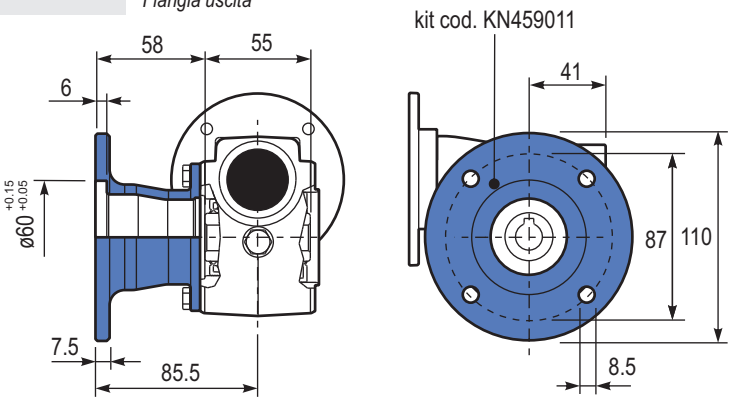




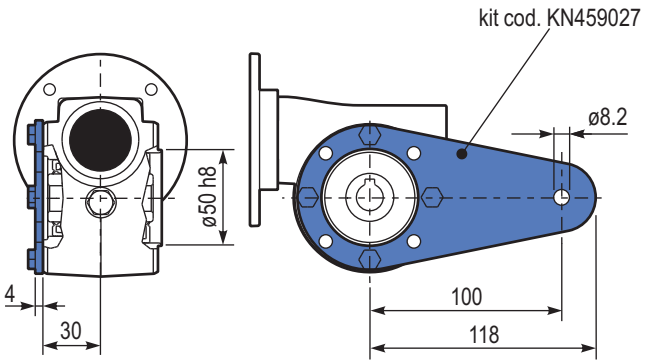
PN30**PVI**.. Feet
Piedini



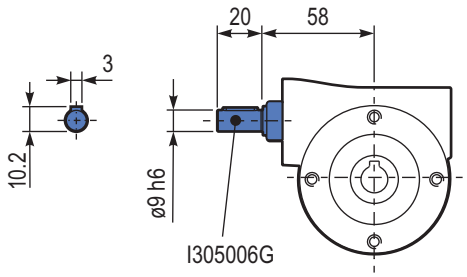
PN30**FLL**.. Output flange
Flangia uscita



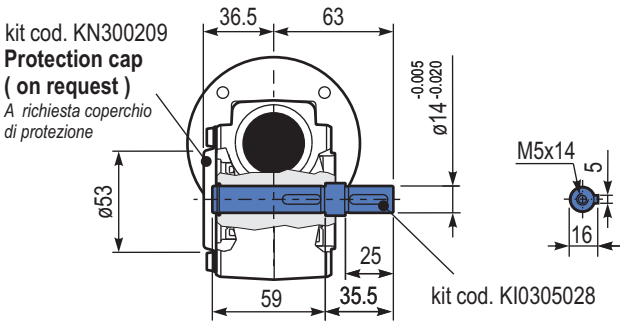
PN30**BRI**.. Reaction arm
Braccio di reazione



R**N30UNI**.. Input shaft
Albero in entrata



PN30..**SMA** Single output shaft
Albero semplice in uscita



N45

41 Nm

VFN series
Full stainless steel round worm gearboxes

Riduttori a vite senza fine tondo completamente in acciaio inox

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	Ratio code
							-	-	-P	-Q			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	63	71	RD	[mm]	
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

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 N45 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 N45 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: 0.13 L *Quantità olio per tutte le posizioni: 0.13 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

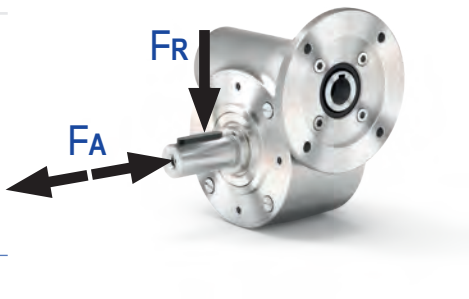
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN300209

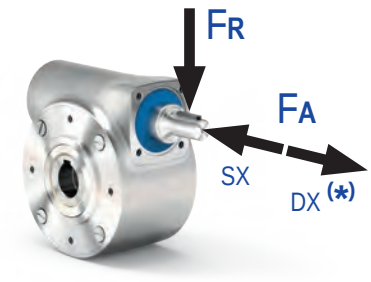
Radial and axial loads
Carichi radiali e assiali

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



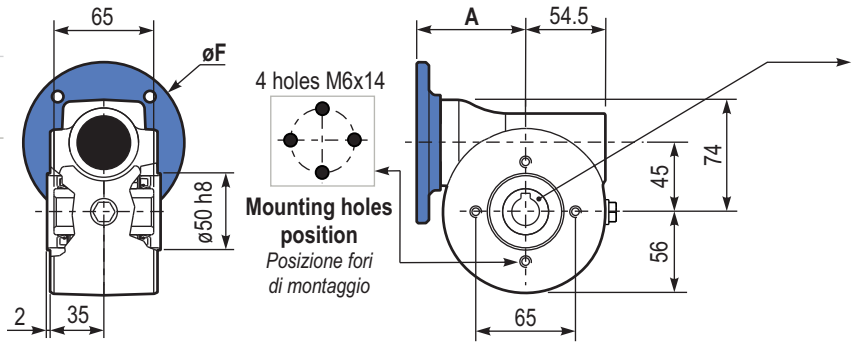
n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	42	210

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

Tab. 2

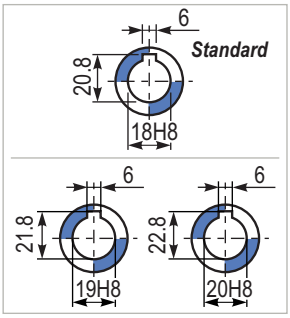
PN45UNI.. Basic gearbox
Riduttore base

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

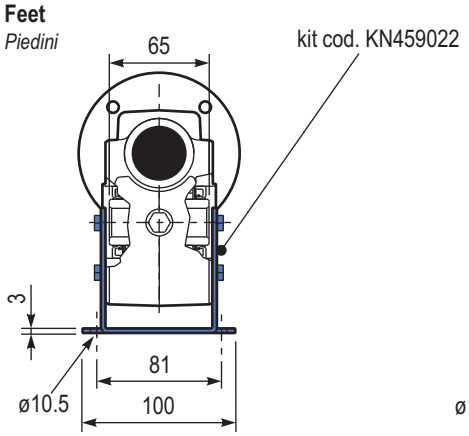


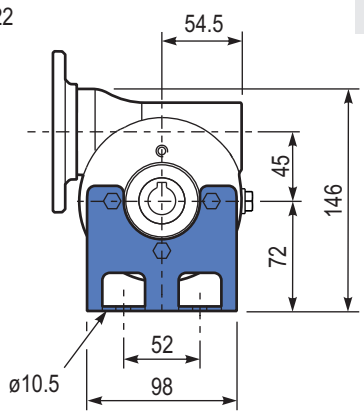
Gearbox weight *Peso riduttore* **4.1 kg**

Hollow shaft
Foro in uscita

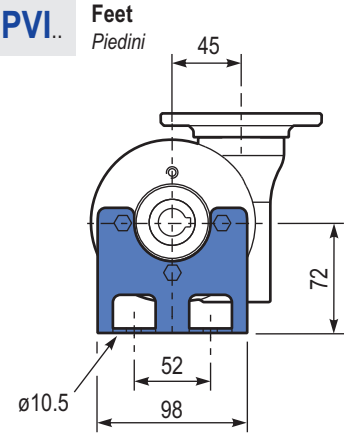


PN45PAI.. Feet
Piedini

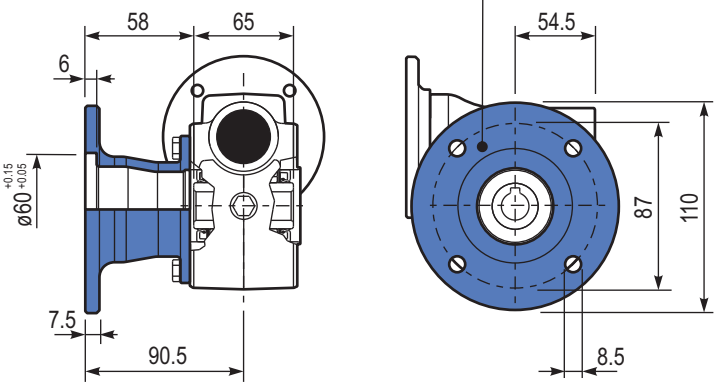




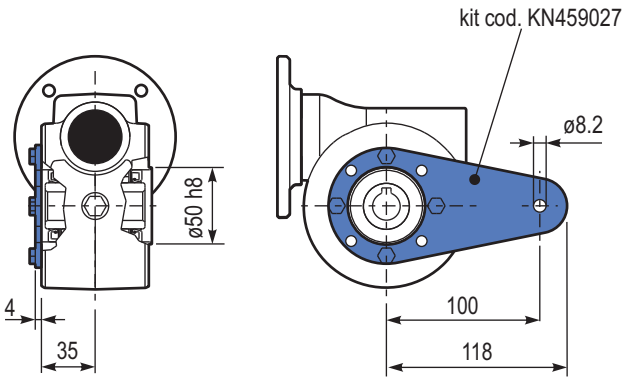
PN45PVI.. Feet
Piedini



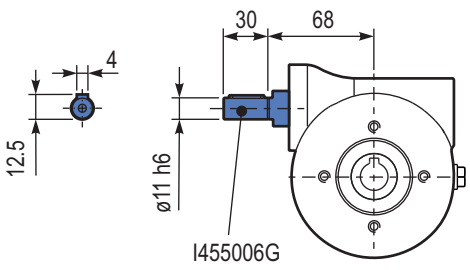
PN45FLL.. Output flange
Flangia uscita



PN45BRI.. Reaction arm
Braccio di reazione

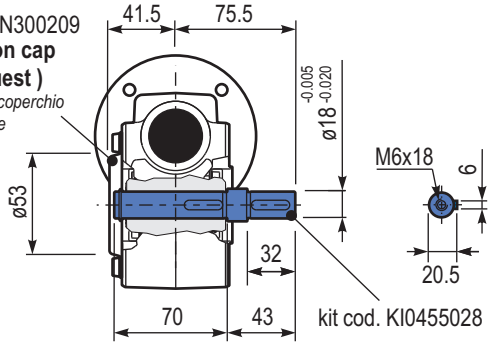


RN45UNI.. Input shaft
Albero in entrata



PN45..SMB Single output shaft
Albero semplice in uscita

kit cod. KN300209
Protection cap
(on request)
A richiesta coperchio di protezione



N50

72 Nm

VFN series
Full stainless steel round worm gearboxes

Riduttori a vite senza fine tondo completamente in acciaio inox

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges			B14 motor flanges			Dynamic efficiency	Tooth module	Ratio code
							-	-	-	-P	-Q	-R			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	-	63	71	80	RD	[mm]	
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

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 N50 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 N50 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: 0.18 L *Quantità olio per tutte le posizioni: 0.18 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

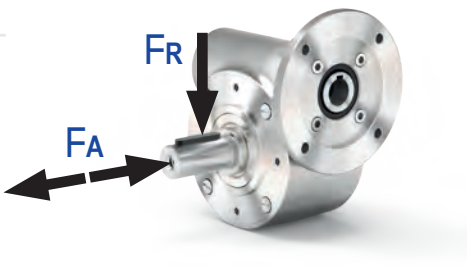
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN500209

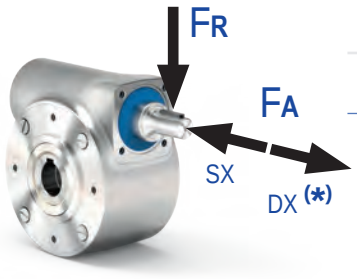
Radial and axial loads
Carichi radiali e assiali

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



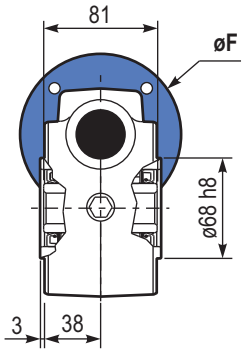
n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	76	380

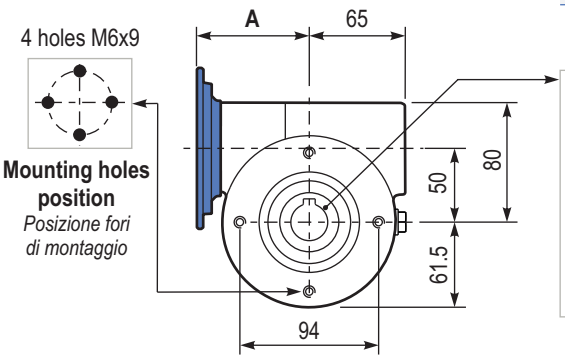
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

PN50UNI..
Basic gearbox
Riduttore base

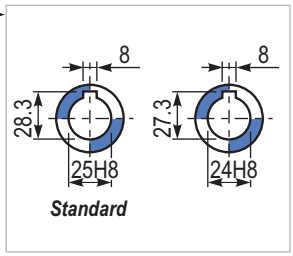
M. flanges	Kit code	øF	A
63B14	KI504047	90	78
71B14	KI504045	105	75.5
80B14	KI504046	120	76



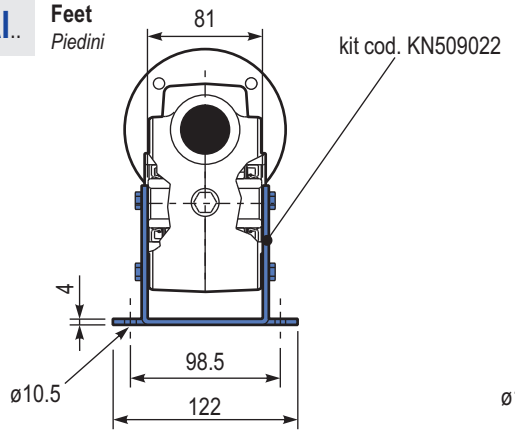


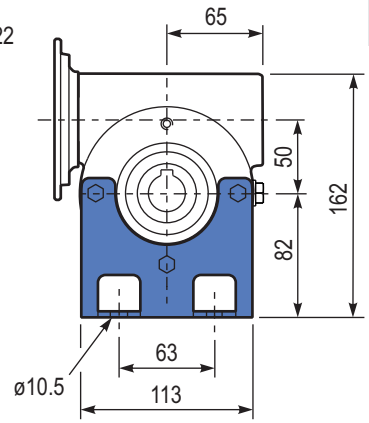
Gearbox weight *Peso riduttore* **5.3 kg**

Hollow shaft
Foro in uscita

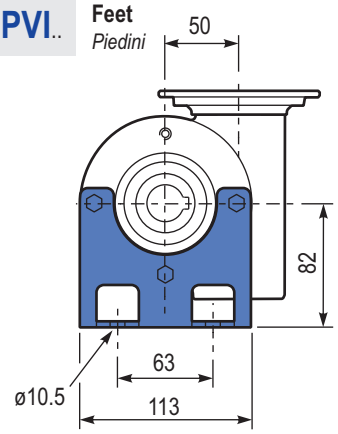


PN50PAI..
Feet
Piedini

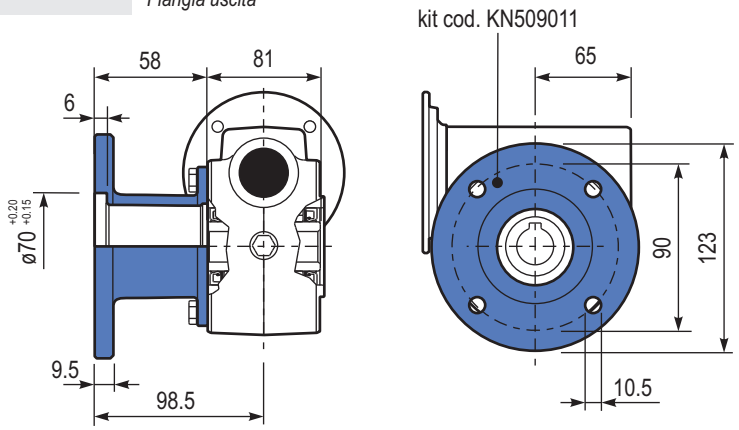




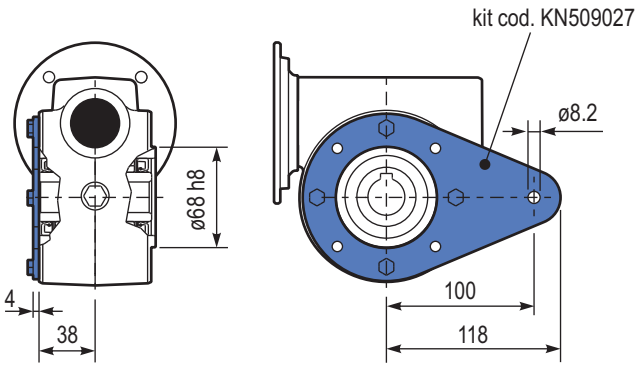
PN50PVI..
Feet
Piedini



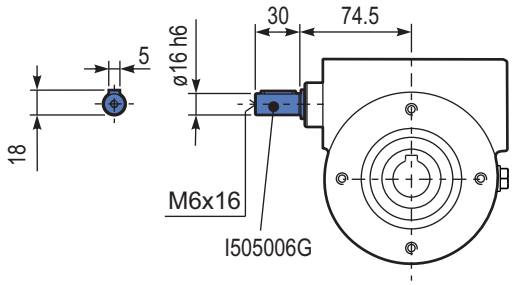
PN50FLL..
Output flange
Flangia uscita



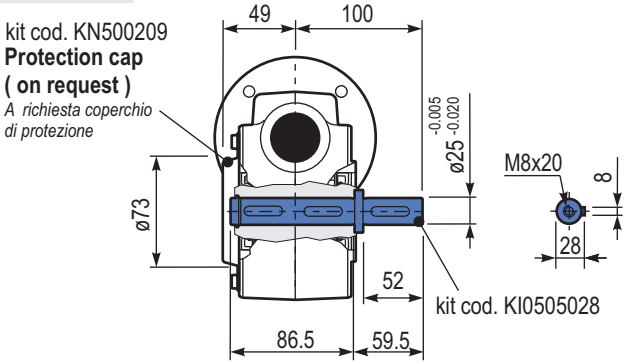
PN50BRI..
Reaction arm
Braccio di reazione



RN50UNI..
Input shaft
Albero in entrata



PN50..SMF
Single output shaft
Albero semplice in uscita



N63

147 Nm

VFN series
Full stainless steel round worm gearboxes

Riduttori a vite senza fine tondo 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 -Q 71	-R 80	-T 90	Dynamic efficiency RD	Tooth module [mm]	Ratio code
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

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 N63 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 N63 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: 0.45 L *Quantità olio per tutte le posizioni: 0.45 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

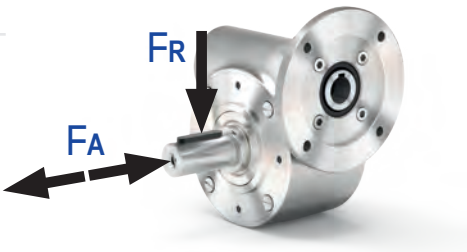
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN630209

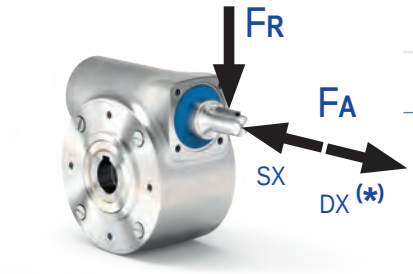
Radial and axial loads
Carichi radiali e assiali

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



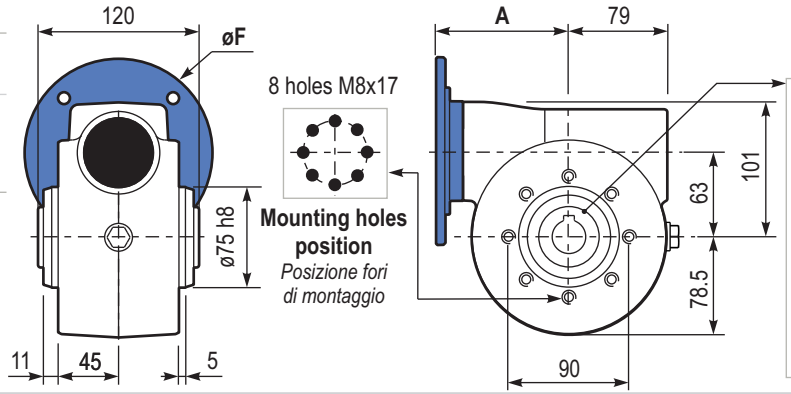
n_1 [min^{-1}]	F_A [N]	F_R [N]
1400	90	450

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

Tab. 2

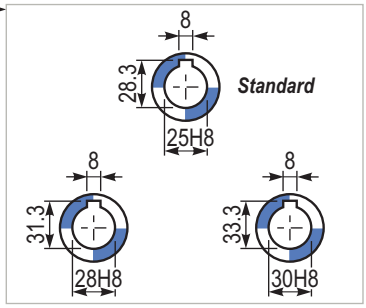
PN63UNI.. Basic gearbox
Riduttore base

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

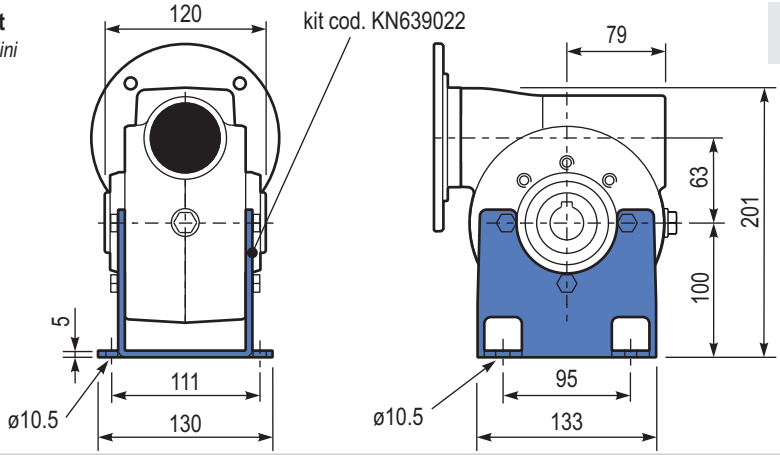


Gearbox weight *Peso riduttore* **10.0 kg**

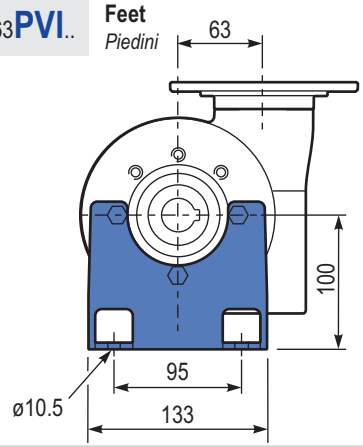
Hollow shaft
Foro in uscita



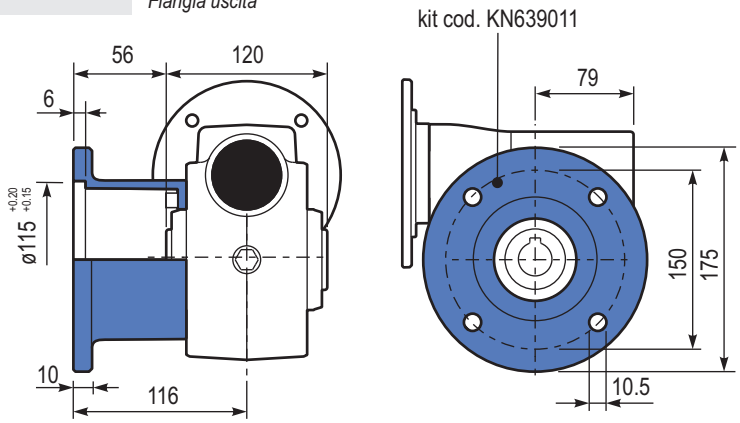
PN63PAI.. Feet
Piedini



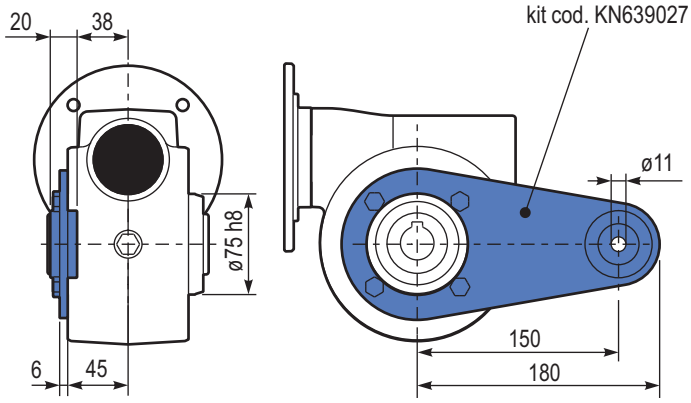
PN63PVI.. Feet
Piedini



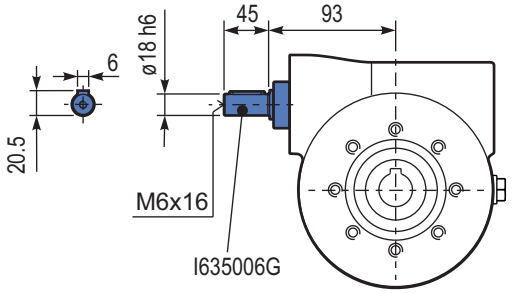
PN63FLL.. Output flange
Flangia uscita



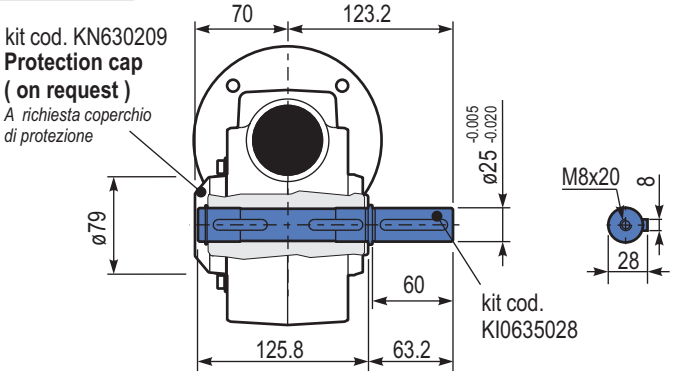
PN63BRI.. Reaction arm
Braccio di reazione



RN63UNI.. Input shaft
Albero in entrata



PN63..SMF Single output shaft
Albero semplice in uscita



N85

347 Nm

VFN series
Full stainless steel round worm gearboxes

Riduttori a vite senza fine tondo 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 -R 80	-T 90	-U 100 112	Dynamic efficiency RD	Tooth module [mm]	Ratio code
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

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 N85 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 N85 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: 1.0 L *Quantità olio per tutte le posizioni: 1.0 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

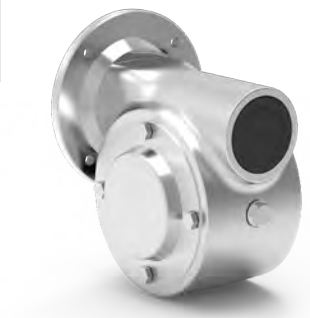
Tab. 1

Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

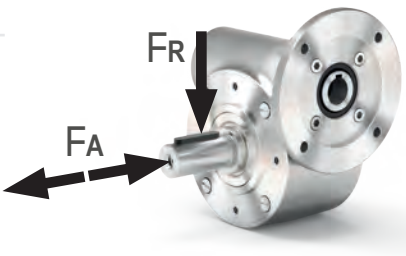
Kit cod. KN850209



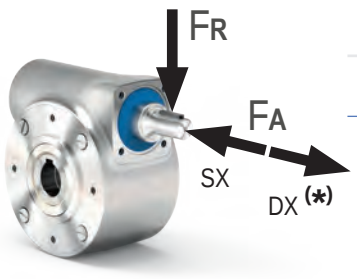
Radial and axial loads
Carichi radiali e assiali

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	130	650

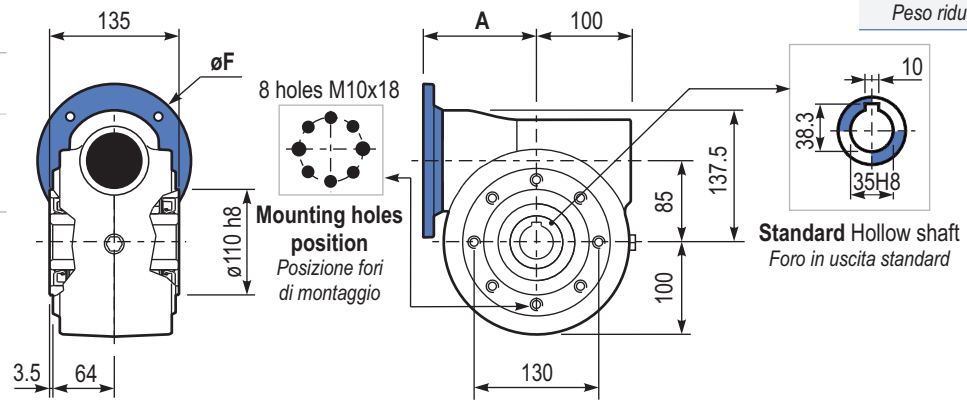
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

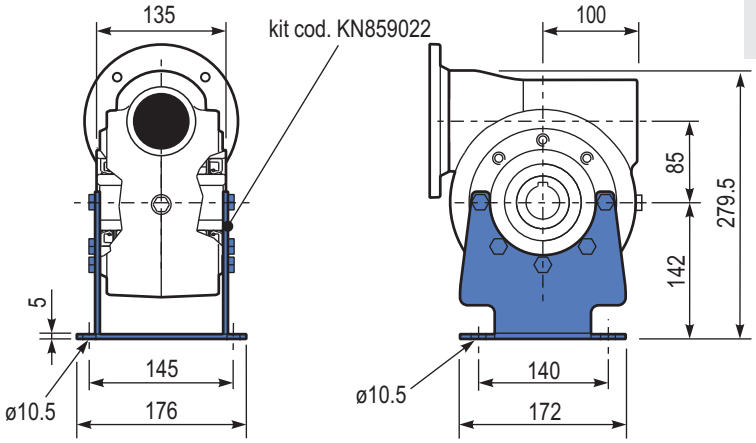
PN85UNI.. Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80B14	KI854046	120	118
90B14	KI854045	140	118
100/112B14	KI854041	160	127

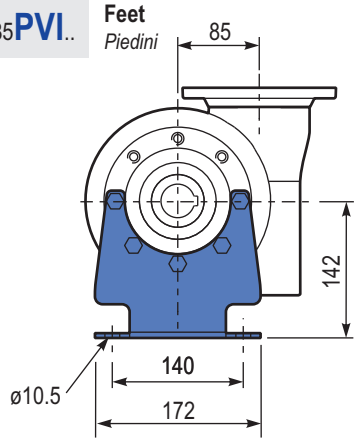
Gearbox weight *Peso riduttore* **21.0 kg**



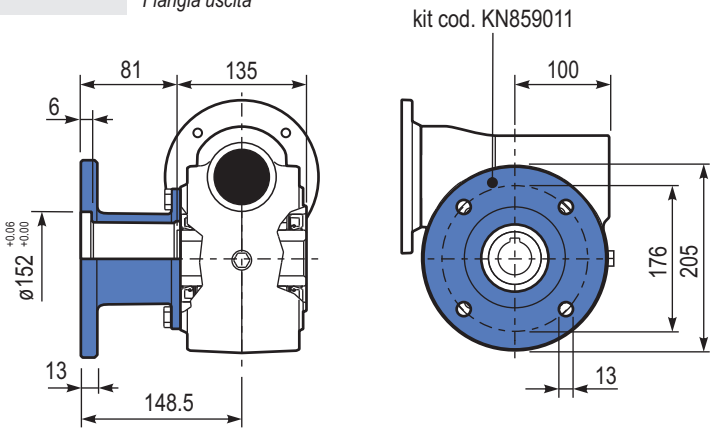
PN85PAI.. Feet
Piedini



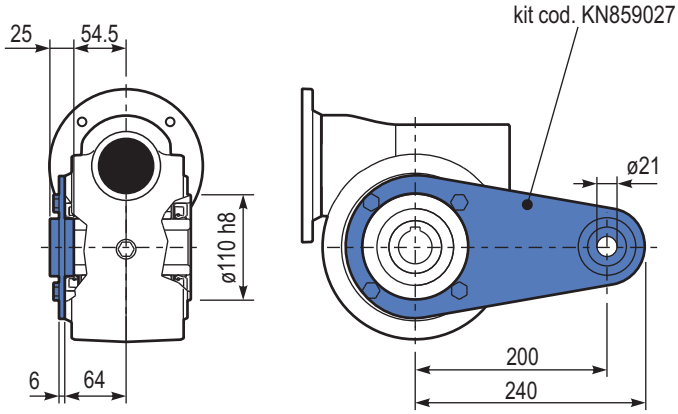
PN85PVI.. Feet
Piedini



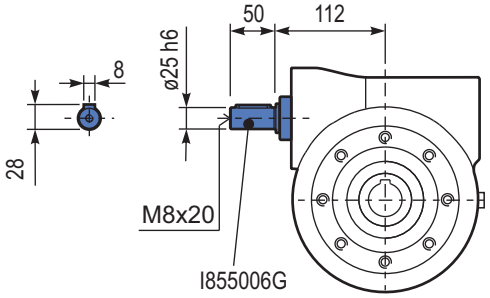
PN85FLL.. Output flange
Flangia uscita



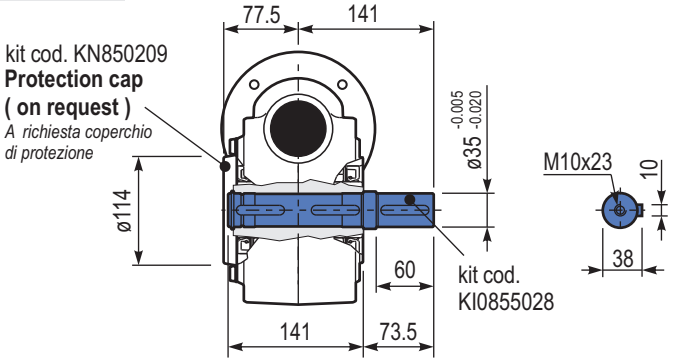
PN85BRI.. Reaction arm
Braccio di reazione



RN85UNI.. Input shaft
Albero in entrata



PN85..SMK Single output shaft
Albero semplice in uscita



N45
211N

VFN series
with ratio multiplier RCN series

Riduttori a vite senza fine serie VFN in acciaio inox con precoppia serie RCN

N45 Ratios/Rating
Rapporti/Selezione N45

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	35	2.2	ø14	01
10	35	2.2	ø14	02
14	35	2.4	ø14	03
21	47	1.6	ø14	04
28	47	2.5	ø14	05
37	47	1.8	ø14	06
46	47	1.5	ø14	07
60	47	1.2	ø14	08
70	35	1.0	ø14	09
102	34	0.72	ø14	10

N45 weight *Peso N45*	4.10 kg

211N Ratios/Power
Rapporti/potenza 211N

Ratio i_b	Max input power ** P_{1M} [kW]	Standard output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

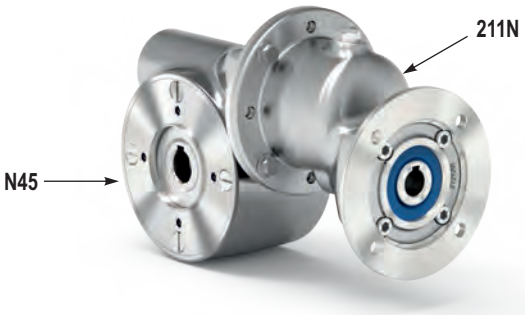
211N weight *Peso 211N*	2.50 kg

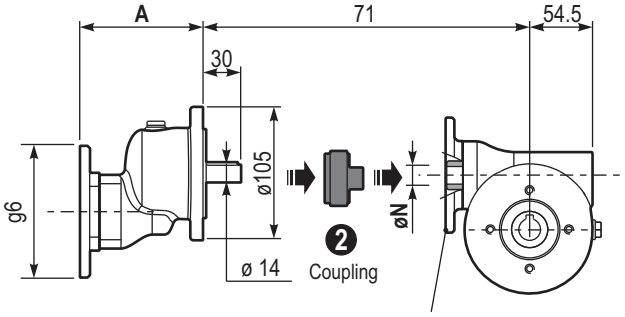
211N Motor flanges
Flange motore 211N

	kit code	g6	A
63B14	KI504047	90	99.5
71B14	KI504045	105	97

How to connect N45+211N
Come collegare N45 + 211N

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
N45	øN	211N		
Ratios from 1/7÷1/102	ø14	ø14	Reduction bushing is not necessary	KB14P





(PAM 71B14)
kit cod. KI504045

Ratios range: from 1/14 to 1/1003
Range rapporti: da 1/14 a 1/1003

Lubrication
Lubrificazione

Unit N45+211N 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.

Il riduttore tipo N45+211N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

N45: 0.13 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211N: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/1003
Range rapporti: da 1/14 a 1/1003

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/102 x 1/9.83 = 1/1003 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 1003 = 1.44 rpm

i_a : N45 ratio - *Rapporto N45*
i_b : 211N ratio - *Rapporto 211N*

** Make sure input power for 211N and output torque for N45 is as catalogue ratios.

** *Prestare attenzione a selezionare la potenza in entrata del 211N ed il momento torcente del N45 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

N50 Ratios/Rating
Rapporti/Selezione N50

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	65	2.5	ø19	01
10	71	2.4	ø19	02
14	78	2.6	ø19	03
18	71	2.0	ø19	04
26	76	2.7	ø19	05
30	83	2.5	ø19	12
36	83	2.1	ø14	06
43	78	1.8	ø14	07
50	76	1.5	ø14	13
60	71	1.3	ø14	08
68	66	1.2	ø14	09
80	65	1.0	ø14	10
100	59	0.8	ø14	11

N50 weight *Peso N50*	5.30 kg

211N Ratios/Power
Rapporti/potenza 211N

Ratio i_b	Max input power ** P_{1M} [kW]	Output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

211N weight *Peso 211N*	2.50 kg

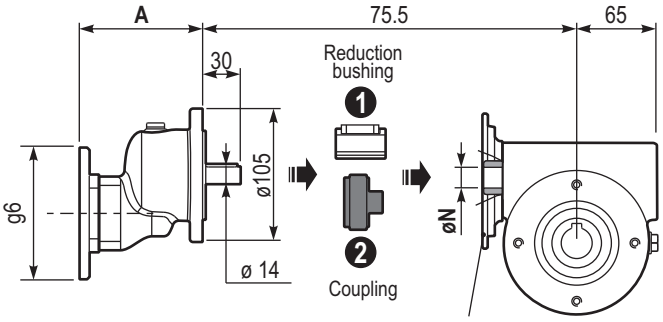
211N Motor flanges
Flange motore 211N

	kit code	g6	A
63B14	KI504047	90	99.5
71B14	KI504045	105	97

How to connect N50+211N
Come collegare N50 + 211N

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
N50	øN	211N		
Ratios from 1/7÷1/30	ø19	ø14	KBR14/19	KC14P
Ratios from 1/36÷1/100	ø14		Reduction bushing is not necessary	

Ratios range: from 1/14 to 1/983
Range rapporti: da 1/14 a 1/983



Lubrication
Lubrificazione

Unit N50+211N 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.

Il riduttore tipo N50+211N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

N50: 0.18 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211N: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/983
Range rapporti: da 1/14 a 1/983

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/100 x 1/9.83 = 1/983 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 983 = 1.47 rpm

i_a : N50 ratio - *Rapporto N50*
i_b : 211N ratio - *Rapporto 211N*

** Make sure input power for 211N and output torque for N50 is as catalogue ratios.

** *Prestare attenzione a selezionare la potenza in entrata del 211N ed il momento torcente del N50 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

N63
211N

VFN series
with ratio multiplier RCN series

Riduttori a vite senza fine serie VFN in acciaio inox con precoppia serie RCN

N63 Ratios/Rating
Rapporti/Selezione N63

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	144	3.1	ø24	01
10	155	3.1	ø24	02
15	158	3.1	ø24	03
19	158	2.6	ø24	04
24	163	2.0	ø24	05
30	168	3.2	ø24	06
36	169	2.7	ø24	07
40	161	2.5	ø24	13
45	156	2.1	ø19	08
60	150	1.6	ø19	12
67	142	1.5	ø19	09
80	136	1.3	ø19	10
94	136	1.1	ø19	11

N63 weight *Peso N63*	10.00 kg

211N Ratios/Power
Rapporti/potenza 211N

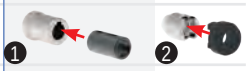
Ratio i_b	Max input power ** P_{1M} [kW]	Standard output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

211N weight *Peso 211N*	2.50 kg

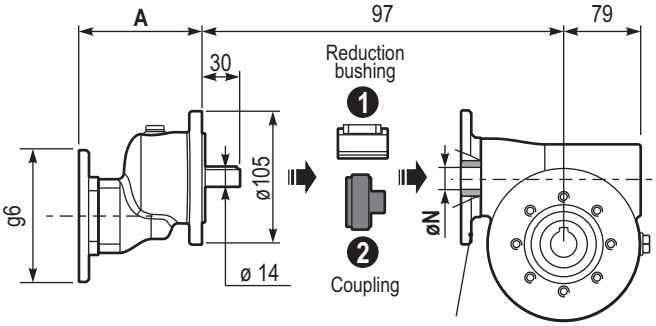
211N Motor flanges
Flange motore 211N

	kit code	g6	A
63B14	KI504047	90	99.5
71B14	KI504045	105	97

How to connect N63+211N
Come collegare N63 + 211N

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
N63	øN	211N		
Ratios from 1/7÷1/40	ø24	ø14	KBR14/24	KD14P
Ratios from 1/45÷1/94	ø19		KBR14/19	

Ratios range: from 1/14 to 1/924
Range rapporti: da 1/14 a 1/924



Lubrication
Lubrificazione

Unit N63+211N 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.

Il riduttore tipo N63+211N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

N63: 0.45 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211N: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/924
Range rapporti: da 1/14 a 1/924

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/94 x 1/9.83 = 1/924 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 924 = 1.57 rpm

i_a : N63 ratio - *Rapporto N63*
i_b : 211N ratio - *Rapporto 211N*

** Make sure input power for 211N and output torque for N63 is as catalogue ratios.
** *Prestare attenzione a selezionare la potenza in entrata del 211N ed il momento torcente del N63 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

N85 Ratios/Rating
Rapporti/Selezione N85

Ratio i_a	Max output torque ** M_{2R} [Nm]	Tooth module [mm]	Standard input bore	Ratio code
7	296	4.23	ø28	01
10	326	4.2	ø28	02
14	350	4.5	ø28	03
20	338	3.4	ø28	04
22	338	3.1	ø28	05
28	398	4.7	ø28	06
38	386	3.5	ø24	07
46	374	3.1	ø24	08
52	332	2.7	ø24	09
67	332	2.1	ø24	10
74	308	1.9	ø24	11
96	278	1.5	ø24	12

N85 weight *Peso N85*	21.00 kg

211N Ratios/Power
Rapporti/potenza 211N

Ratio i_b	Max input power ** P_{1M} [kW]	Output shaft	Ratios code
2.05	0.37	ø14	01
2.35	0.37	ø14	02
2.80	0.37	ø14	03
3.38	0.37	ø14	04
4.70	0.37	ø14	05
6.22	0.37	ø14	06
8.29	0.37	ø14	07
9.83	0.25	ø14	08

211N weight *Peso 211N*	2.50 kg

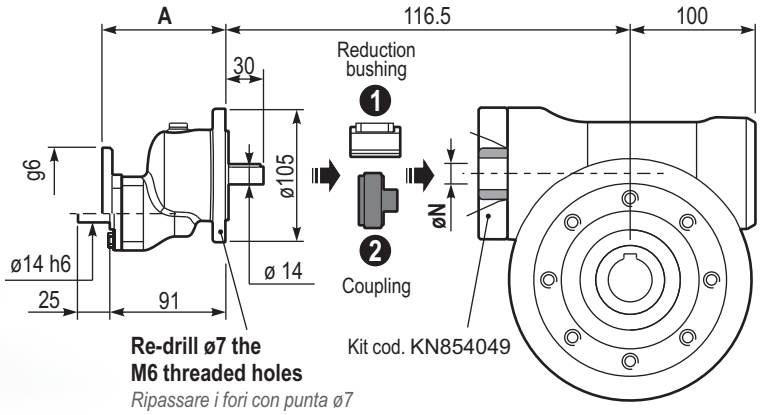
211N Motor flanges
Flange motore 211N

	kit code	g6	A
63B14	KI504047	90	99.5
71B14	KI504045	105	97

How to connect N85+211N
Come collegare N85 + 211N

Worm gearbox		Ratio multiplier	Connection kit	
Standard input bore		Output shaft	With standard input bore	With coupling
N85	øN	211N	1	2
Ratios from 1/7÷1/28	ø28	ø14	KBR14/28	KE14P
Ratios from 1/38÷1/96	ø24	ø14	KBR14/24	KE14P

Ratios range: from 1/14 to 1/944
Range rapporti: da 1/14 a 1/924



Lubrication
Lubrificazione

Unit N85+211N 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.

Il riduttore tipo N85+211N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.

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

N85: 1.00 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320
211N: 0.05 L	SHELL: Omala S4 WE 320	ENI: Telium VSF 320

tab. 1

Calculate total ratio and output speed
Calcola il rapporto totale e la velocità di uscita

Ratios range: from 1/14 to 1/944
Range rapporti: da 1/14 a 1/924

$$i_{TOT} = i_a \cdot i_b$$

Ex.: 1/96 x 1/9.83 = 1/944 (Max ratio)

Output speed (n_2)
Velocità di uscita

$$n_2 = n_1 : i_{TOT}$$

Ex.: 1448 : 944 = 1.53 rpm

i_a : N85 ratio - *Rapporto N85*
i_b : 211N ratio - *Rapporto 211N*

** Make sure input power for 211N and output torque for N85 is as catalogue ratios.

** *Prestare attenzione a selezionare la potenza in entrata del 211N ed il momento torcente del N85 secondo le tabelle del catalogo.*

n_1 Input speed
Velocità di ingresso

Full stainless steel ratio multipliers

Riduttori ad uno stadio completamente in acciaio inox

AISI 316L IP66 CE NSF COMPONENT

On req.
A rich. ATEX

How to order *Codifica*

P	411N	-F	1.57	C
Type *Tipo*	Size *Grandezza*	Mounting *Montaggio*	Ratio *Rapporto*	Output shaft *Albero lento*
P 	211N 411N	-F 	See technical data table *Vedi tabelle dati tecnici*	→ Standard  211N S → ø14 411N C → ø19
M 				
B 				

I	-T	B3	ST	For M type specify terminal box position
Output flange *Flangia uscita*	Motor size *Grandezza motore*	Mounting position *Posizione di montaggio*	Input bore *Foro entrata*	*Per tipo M specificare posizione morsettiera*

I → ø105

Motor flanges
Flange motore

IEC B14

-P → 63 B14 (ø90)
-Q → 71 B14 (ø105)
-R → 80 B14 (ø120)
-T → 90 B14 (ø140)

Without flange
Senza flangia

211N

-Z → ø9 (IEC 56)
-0 → ø11 (IEC 63)
-1 → ø14 (IEC 71)

411N

-1 → ø14 (IEC 71)
-2 → ø19 (IEC 80)
-3 → ø24 (IEC 90)

B3

B6

B7

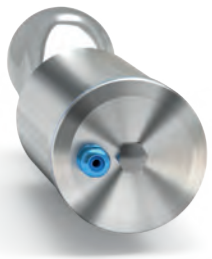
B8

V5

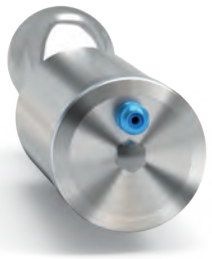
V6

ST Standard bore
Foro standard

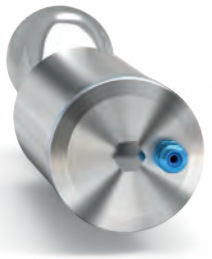
A



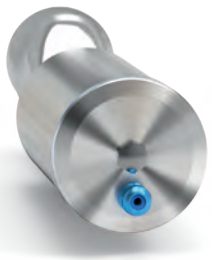
B



C



D



211N

20 Nm

RCN series
Full stainless steel ratio multipliers

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	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges			Output shaft	Ratios code
							-	-	-P	-Q			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	63	71			
682	2.05	0.37	5	2.0	0.73	10			C		1939		01
595	2.35	0.37	6	2.1	0.76	12			C		1740		02
500	2.80	0.37	7	2.0	0.75	14			C		1542		03
414	3.38	0.37	8	2.0	0.75	17			C		1344	standard	04
298	4.70	0.37	12	1.7	0.64	20			C		1047	ø14	05
225	6.22	0.37	15	1.5	0.55	23			C		956		06
169	8.29	0.37	20	1.0	0.36	20			C		758		07
142	9.83	0.25	16	1.0	0.24	16			C		659		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 211N 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 211N 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: 0.05 L *Quantità olio per tutte le posizioni: 0.05 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

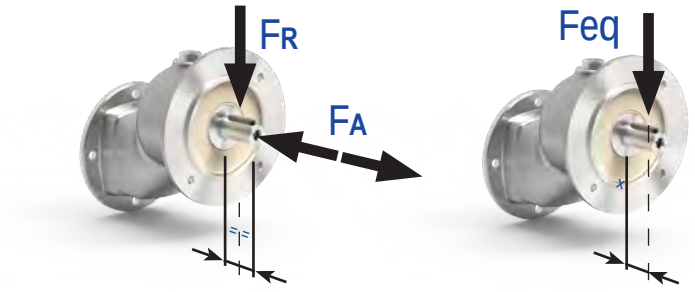
Tab. 1

Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
700	101	504
600	120	600
400	138	696
300	151	756
200	175	876
140	192	960

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



Tab. 2

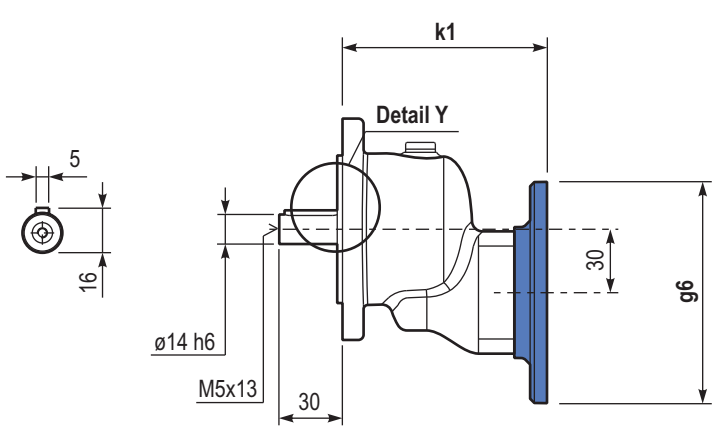
P211N-**F**...

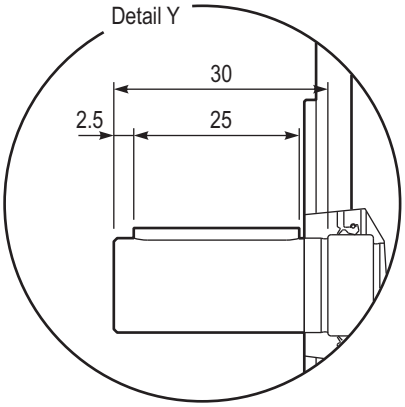
Basic gearbox
Riduttore base

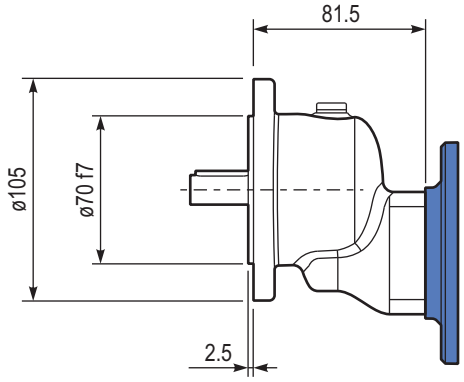
Gearbox weight *peso riduttore*	2.50 kg

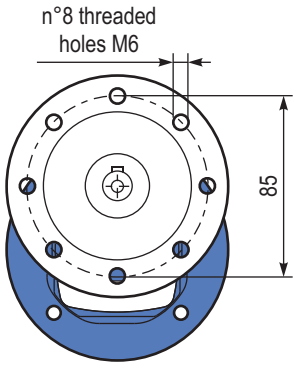
Input flanges / *flange di entrata*

	Kit code	k1	g6
63 B14	KI504047	99.5	90
71 B14	KI504045	97	105









411N

38 Nm

RCN series
Full stainless steel ratio multipliers

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 -Q 71	B14 motor flanges -R 80	B14 motor flanges -T 90		Output shaft ø	Ratios code
891	1.57	1.5	16	1.3	1.9	20		C	C		2844		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	standard	04
303	4.62	1.5	46	1.0	1.5	47		C	C		1360	ø19	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

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 411N 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 411N 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: 0.14 L *Quantità olio per tutte le posizioni: 0.14 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

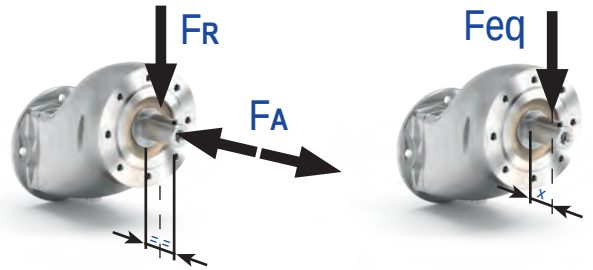
Tab. 1

Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

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

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



Tab. 2

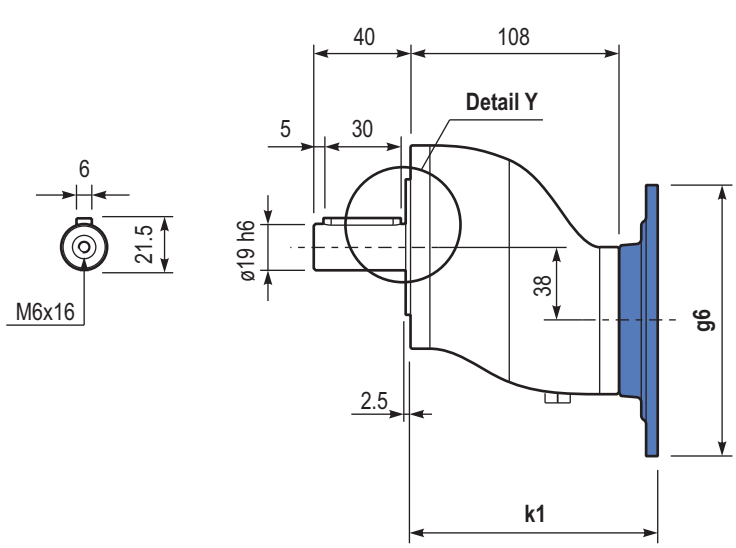
P411N-**F**...

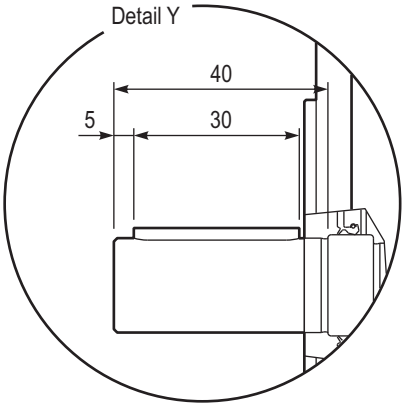
Basic gearbox
Riduttore base

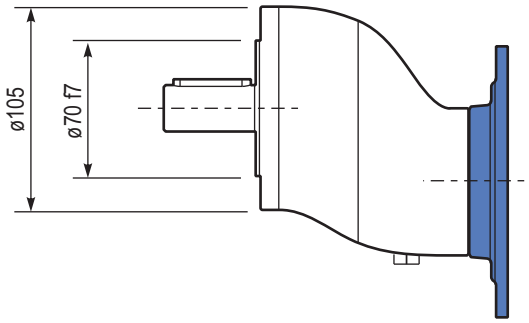
Gearbox weight *peso riduttore*	5.3 kg

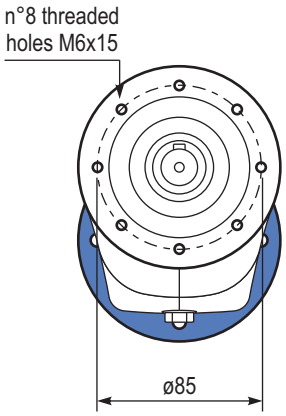
Input flanges / *flange di entrata*

	Kit code	k1	g6
71 B14	KI634047	126	105
80 B14	KI634046	128	120
90 B14	KI634041	128	140







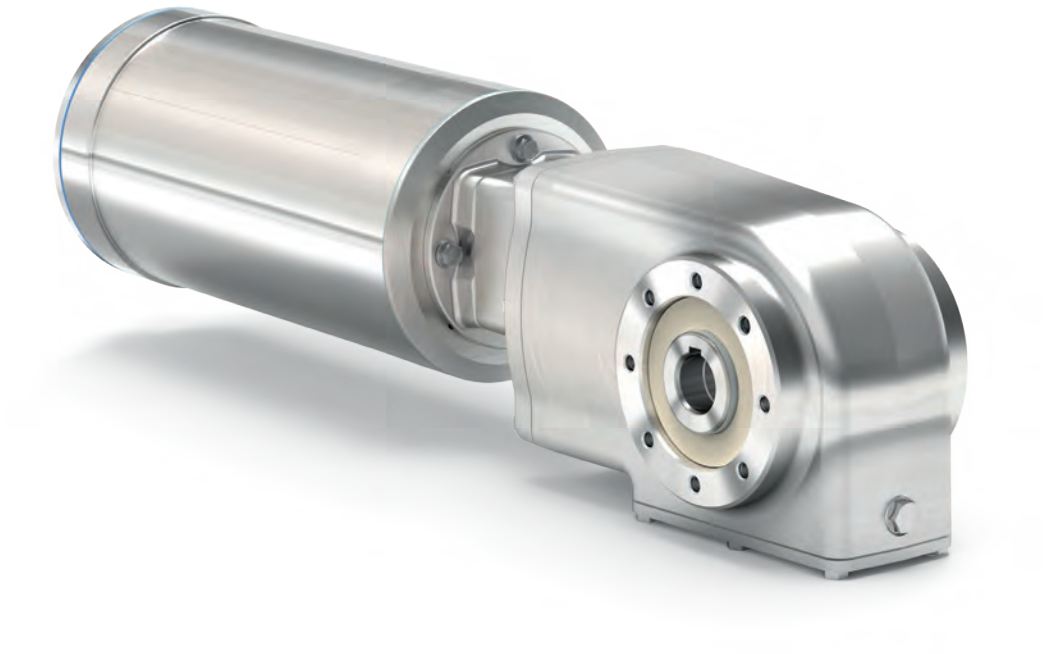


The best high efficiency solution to resist corrosion.
Suitable for all applications.

La migliore soluzione ad alta efficienza per la resistenza alla corrosione.
Adatto a tutte le applicazioni.

AISI 316L IP66 CE NSF COMPONENT

On req. *A rich.* IP69k ATEX



The BVN Series Stainless steel helical bevel gearboxes

The BVN Series

The best high efficiency solution for the resistance to corrosion. Suitable for all applications.
It is a strong and clean helical bevel gear.
Entirely in stainless steel with smooth surfaces for easy cleaning.
Also available with stainless steel motor SPM series.

La serie BVN
La migliore soluzione ad alta efficienza per la resistenza alla corrosione. Adatto a tutte le applicazioni.
Riduttore a coppia conica resistente e dal design pulito.
Interamente in acciaio inox con superfici lisce per facilitare la pulizia.
Disponibile anche con motore in acciaio inox, serie SPM.

BVN certification

Helical bevel gearboxes

IP66 CE NSF COMPONENT

On request
A richiesta
IP69k ATEX

Type *Tipo*	Torque *Coppia*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*	
			Standard	*On request*
X42N	130 Nm	0.25 ÷ 1.5 kW	ø25 mm	ø20 mm
X43N	136 Nm	0.12 ÷ 0.37 kW	ø25 mm	ø20 mm
X62N	410 Nm	0.75 ÷ 4.0 kW	ø35 mm	ø30 mm
X63N	410 Nm	0.25 ÷ 1.1 kW	ø35 mm	ø30 mm
X73N	675 Nm	1.1 ÷ 4.0 kW	ø40 mm	-
X74N	675 Nm	0.25 ÷ 1.5 kW	ø40 mm	-

THE BEST PROTECTION IN 316L

Housing

Special high tech full stainless steel housing **with accurate polished finishing and strong** rigidity.

Cassa speciale interamente in acciaio inox estremamente rigida e con finitura lucida accurata.

Viton seals

Single viton seal for harsh enviroment.

Anelli di tenuta in viton per ambienti aggressivi.

Options Twin viton seals

Twin viton seals with stainless steel 316L shield for IP69k protection.

Doppi anelli di tenuta in viton con schermo protettivo in acciaio inox AISI 316L per protezione IP69k.

Input bore

Input bore is available for IEC and NEMA versions.

Albero in entrata disponibile per versioni IEC e NEMA.

Options Coupling

Premium input coupling with direct mounting No settings - No screw.

Giunto in entrata: Montaggio diretto - No settaggi - No viti.

STANDARD POLISHED FINISHING

Finitura lucida standard

Gears

Hardened and ground gears.

Ingranaggi temprati e rettificati.

Output hollow shaft

Stainless steel hollow shaft in AISI 316L.

Mozzo in acciaio inox 316L

Stainless steel hardware

Stainless steel output male shaft, protection cap, feet, screws and reaction arms.

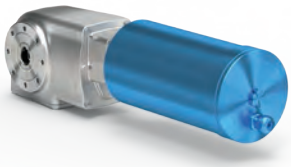
Albero maschio in uscita removibile, coperchietto di protezione, piedi, viteria e bracci di reazione in AISI 316L.

How to order *Codifica*

M	X42N	I	7.29	-C	BR
Type *Tipo*	Size *Grandezza*	Hub *Mozzo*	Ratio *Rapporto*	Output shaft *Albero uscita*	Type *Tipo*

P

M



B

2 Stages
2 Riduzioni

X42N
X62N

3 Stages
3 Riduzioni

X43N
X63N
X73N

4 Stages
4 Riduzioni

X74N

I Stainless steel hollow output shaft
Foro albero uscita in acciaio inox

S Stainless steel single output shaft
Albero uscita singolo in acciaio inox

See technical data table
Vedi tabelle dati tecnici

Hollow output shaft
Foro albero uscita

→ Standard

X42N - X43N

-B → ø20

-C → ø25

X62N - X63N

-D → ø30

-E → ø35

X73N - X74N

-F → ø40

Single output shaft
Albero uscita singolo

→ Standard

X42N - X43N

-L → ø25

X62N - X63N
X73N - X74N

-N → ø35

FB Universal
Forma base

BR Reaction arm
Braccio di reazione

-F Output flange
Flangia uscita

PA

PV

N

Output flange
Flangia in uscita

N Without flange
Senza flangia

X42N - X43N

2 → ø175

X62N - X63N
X73N - X74N

3 → ø205

-T

Motor size
Grandezza motore

Motor flanges *Flange motore*

IEC B14

-P → 63 B14 (ø90)
-Q → 71 B14 (ø105)
-R → 80 B14 (ø120)
-T → 90 B14 (ø140)
-U →100÷112 B14 (ø160)

Brushless

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

Brushless-Tech catalogue is available in our website
Catalogo Brushless-Tech è disponibile nel nostro sito web

Without flange *Senza flangia*

-M Ready for coupling
Predisposto per giunto

X43N

-0 → ø11 (IEC 63)
-1 → ø14 (IEC 71)

X42N - X63N - X74N

-1 → ø14 (IEC 71)
-2 → ø19 (IEC 80)
-3 → ø24 (IEC 90)

X62N - X73N

-2 → ø19 (IEC 80)
-3 → ø24 (IEC 90)
-4 → ø28 (IEC 100)

B3

Mounting position
Posizione di montaggio

B3

B6

B7

B8

V5

V6

V8

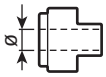
ST

Input bore
Foro entrata

ST Standard bore
Foro standard

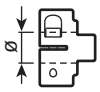
Coupling

Standard (IEC)



-B → 11mm
-C → 14mm
-D → 19mm
-E → 24mm
-F → 28mm

Brushless



-3 → 14mm
-4 → 19mm
-5 → 22mm
-6 → 24mm

With reduction bushing where applicable
Con bussola di riduzione dove prevista

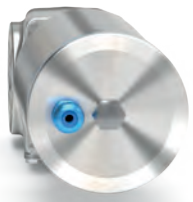
Ready for input coupling
Predisposto per giunto

-0 Type B
Tipo B

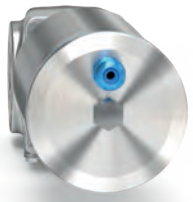
For M type specify terminal box position

Per tipo M specificare posizione morsettiera

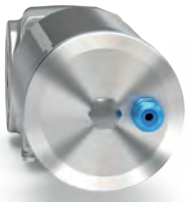
A



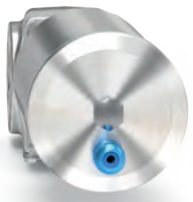
B



C



D



X42N

130 Nm

BVN series
Full 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	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 -Q 71	-R 80	-T 90		Output shaft ø	Ratio code
192	7.29	1.5	71	1.1	1.7	80		C	C		2811		01
125	11.20	1.5	110	1.2	1.8	130		C	C		288		02
106	13.18	1.5	129	1.0	1.5	130		C	C		1911		03
92	15.27	1.1	109	1.2	1.3	130		C	C		1711		04
78	17.93	1.1	128	1.0	1.1	130		C	C		1511		05
69	20.25	1.1	145	0.9	0.98	130		C	C		198		06
65	21.40	0.75	105	1.2	0.93	130		C	C		1311		07
60	23.47	0.75	115	1.1	0.85	130		C	C		178	**Standard ø25**	08
51	27.55	0.75	135	1.0	0.72	130		C	C		158		09
47.9	29.21	0.75	143	0.9	0.68	130		C	C		1011		10
42.6	32.88	0.55	119	1.1	0.60	130		C	C		138		11
36.7	38.12	0.55	138	0.9	0.52	130		C	C		911		12
31.2	44.89	0.37	109	1.2	0.44	130		C	C		108		13
27.8	50.34	0.37	122	0.9	0.33	110		C	C		711		14
23.9	58.58	0.37	142	0.9	0.34	130		C	C		98		15
18.1	77.36	0.25	126	1.0	0.26	130		C	C		78		16

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

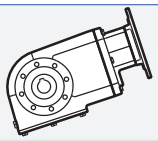
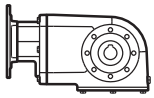
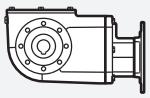
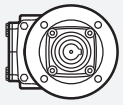
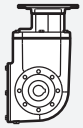
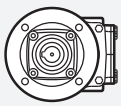
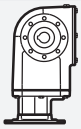
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit X42N 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 X42N 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.

Shell *Omala S4 WE 320* — **Eni** *Telium VSF 320*	V8 *On request* ASK 
B3 *Standard* 0.50 L 	B8 *On request* 0.85 L 
B6 *On request* 0.80 L 	V5 *On request* 1.30 L 
B7 *On request* 0.75 L 	V6 *On request* 0.90 L 

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

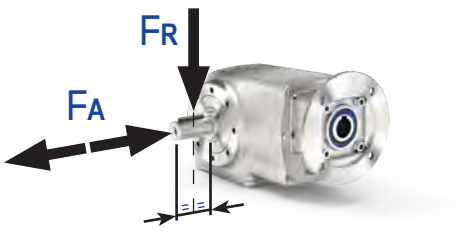
Tab. 1

Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
250	500	2500
150	600	3000
100	700	3500
75	800	4000
50	960	4800
25	960	4800
15	960	4800

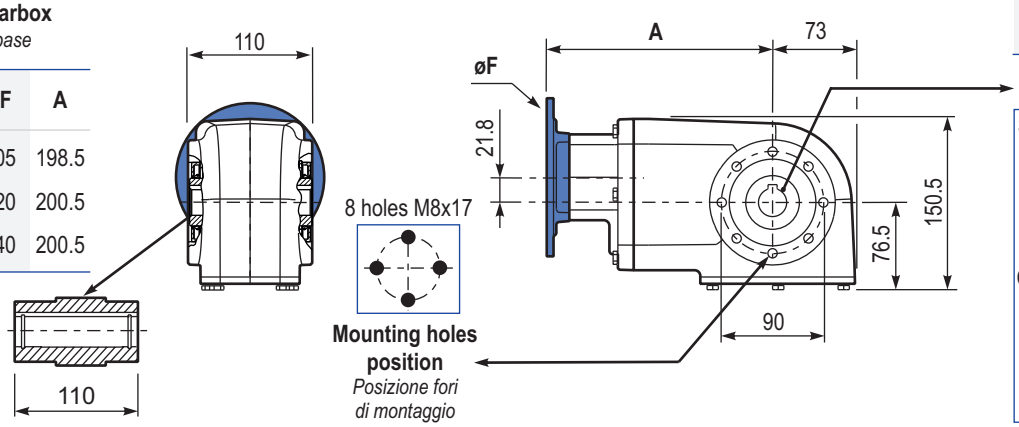
$$Feq = F_R \cdot \frac{123}{X + 97}$$



Tab. 2

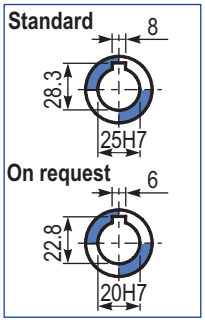
PX42NI...FB Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
71B14	KI634047	105	198.5
80B14	KI634046	120	200.5
90B14	KI634041	140	200.5

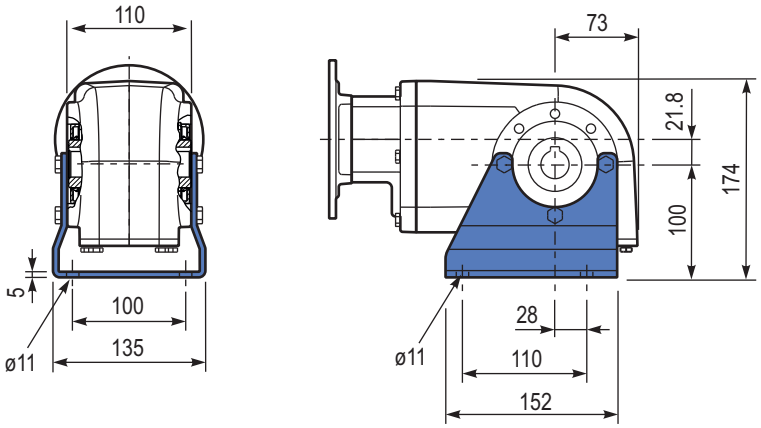


Gearbox weight *peso riduttore* 12.8 kg

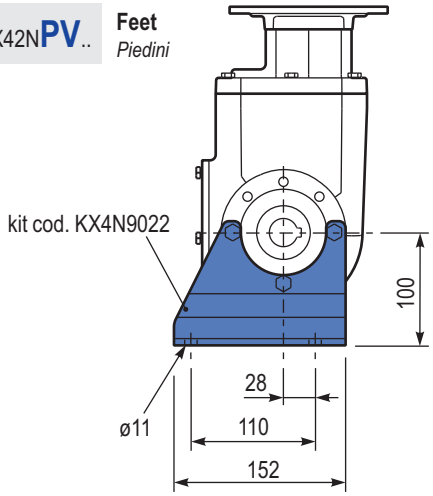
Hollow shaft
Foro in uscita



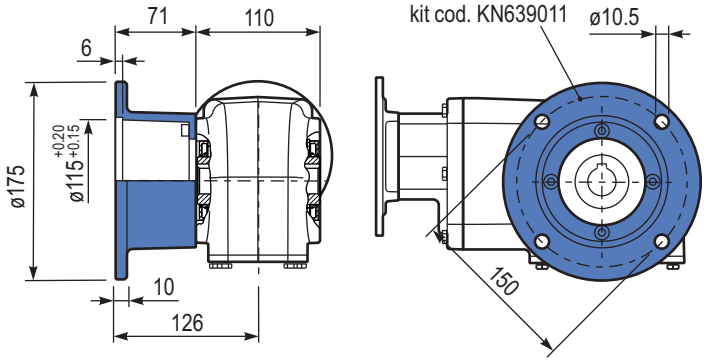
PX42NPA.. Feet
Piedini



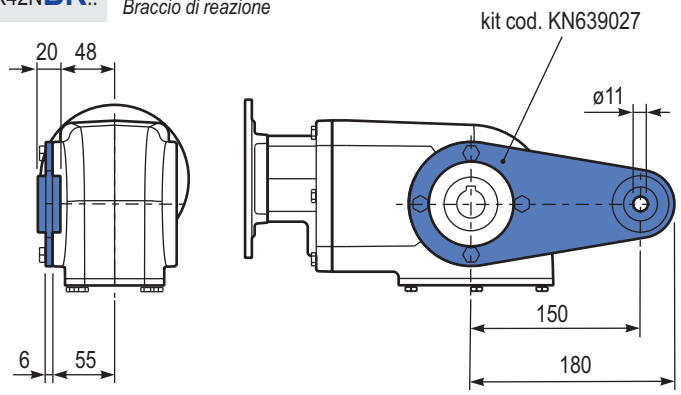
PX42NPV.. Feet
Piedini



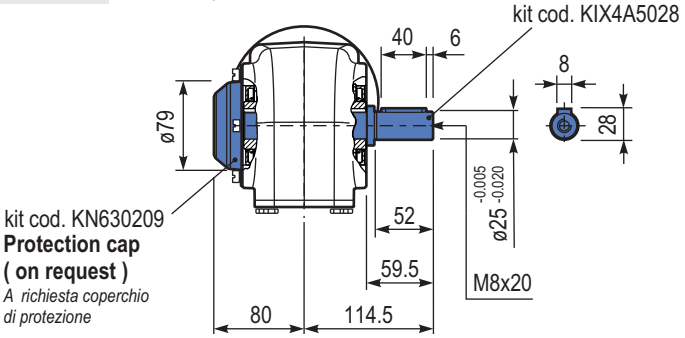
PX42N-FL.. Output flange
Flangia uscita



PX42NBR.. Reaction Arm
Braccio di reazione



PX42N..A.. Single output shaft
Albero semplice in uscita



Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN630209

X43N

136 Nm

BVN series
Full stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

The dynamic efficiency is **0.94** 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 -P 63	B14 motor flanges -Q 71		Output shaft ø	Ratio code
27.8	50.35	0.37	119	1.1	0.40	130		C		171311		01
25.4	55.22	0.37	131	1.0	0.37	130		C		17178		02
23.4	59.92	0.37	142	0.9	0.34	130		C		151311		03
21.3	65.72	0.25	105	1.2	0.31	130		C		15178		04
19.5	71.78	0.25	115	1.1	0.28	130		C		101711		05
17.6	79.44	0.25	127	1.0	0.26	130		C		13178		06
15.2	92.08	0.25	147	0.9	0.22	130		C		15138		07
14.7	95.03	0.25	152	0.9	0.21	130		C		91711	**Standard ø25**	08
11.1	126.55	0.18	155	0.9	0.17	136		C		71711		09
10.5	133.15	0.12	105	1.3	0.16	136		C		91311		10
9.3	150.18	0.12	119	1.1	0.14	136		C		61711		11
7.9	177.30	0.12	140	1.0	0.12	136		C		71311		12
6.7	210.42	0.12*	166	0.8	0.10	136		C		61311		13
6.1	230.79	0.12*	182	0.7	0.09	136		C		6178		14
5.1	272.47	0.12*	215	0.6	0.08	136		C		7138		15
4.3	323.37	0.12*	256	0.5	0.07	136		C		6138		16

* Power higher than the maximum one which can be supported by the gearbox. Select according to the torque M_{2R}

** Potenza superiore a quella massima sopportabile dal riduttore. Selezionare in base al momento torcente M_{2R}*

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*

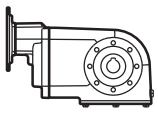
Lubrication
Lubrificazione

Unit X43N 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.

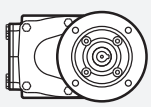
Il riduttore tipo X43N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Shell *Omala S4 WE 320* — **Eni** *Telium VSF 320*

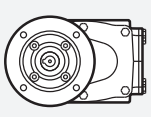
B3 *Standard* 0.90 L



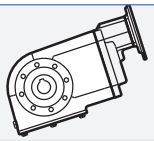
B6 *On request* 0.80 L



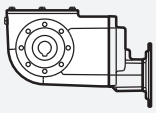
B7 *On request* 0.75 L



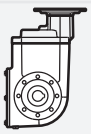
V8 *On request* ASK



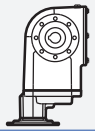
B8 *On request* 0.85 L



V5 *On request* 1.40 L



V6 *On request* 0.90 L



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

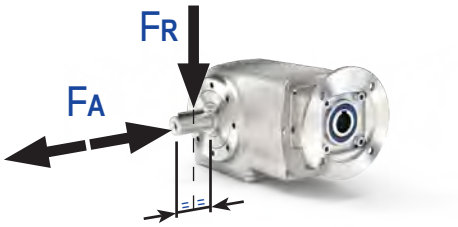
Tab. 1

Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
250	500	2500
150	600	3000
100	700	3500
75	800	4000
50	960	4800
25	960	4800
15	960	4800

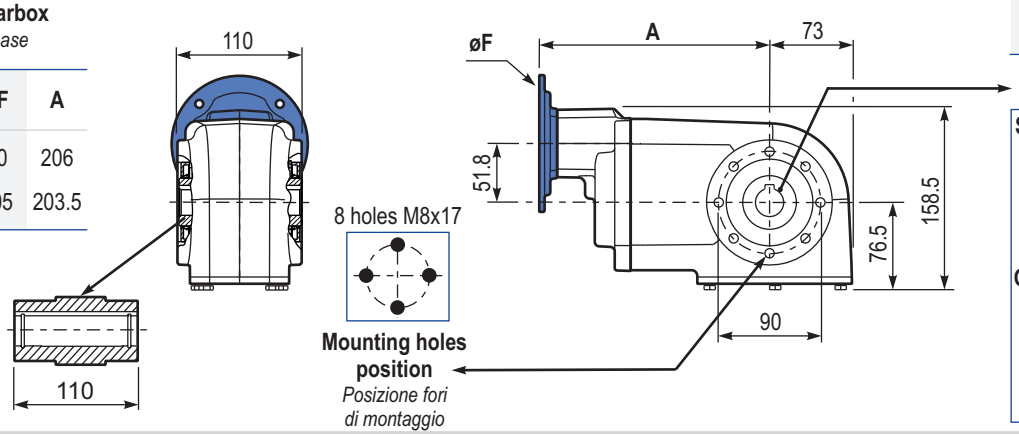
$$Feq = F_R \cdot \frac{123}{X + 97}$$



Tab. 2

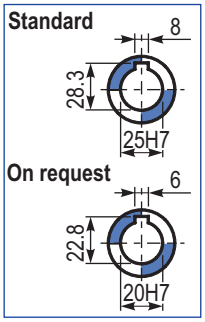
PX43NI...FB Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
63B14	KI504047	90	206
71B14	KI504045	105	203.5

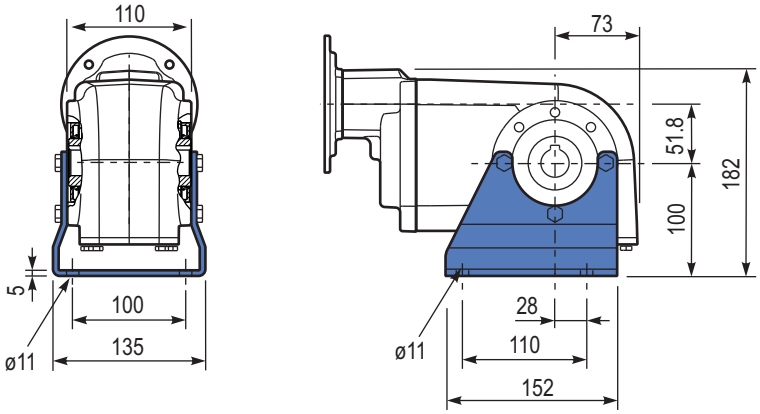


Gearbox weight *peso riduttore* 13.0 kg

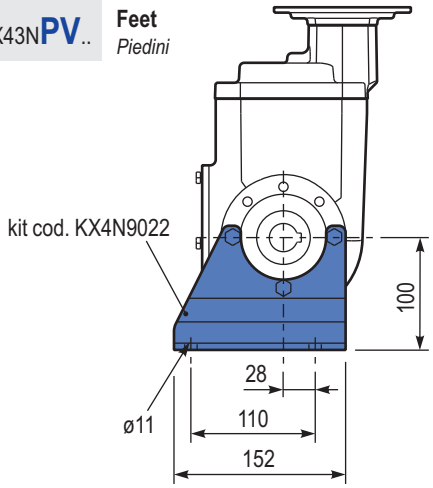
Hollow shaft
Foro in uscita



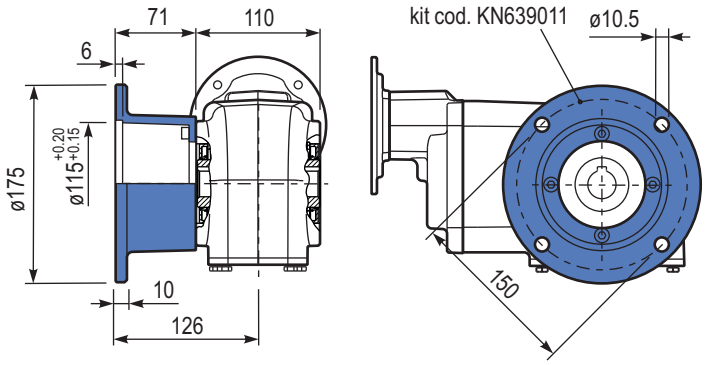
PX43NPA.. Feet
Piedini



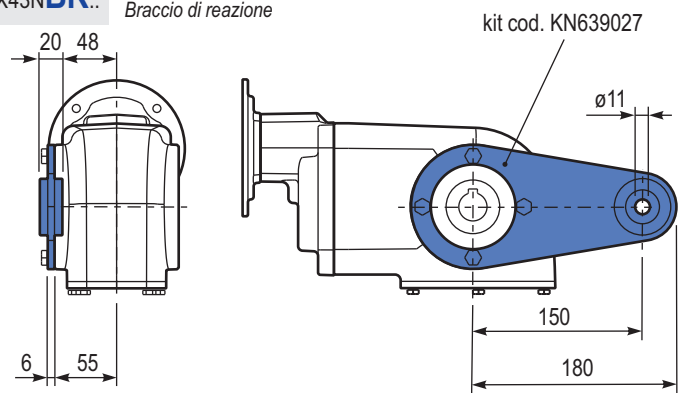
PX43NPV.. Feet
Piedini



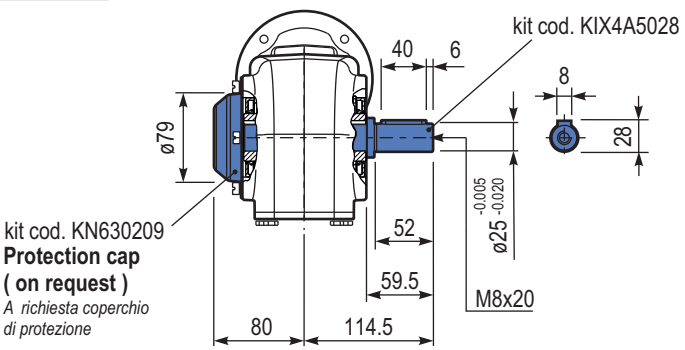
PX43N-FL.. Output flange
Flangia uscita



PX43NBR.. Reaction Arm
Braccio di reazione



PX43N..A.. Single output shaft
Albero semplice in uscita



Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN630209

X62N

410 Nm

BVN series
Full 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	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 -R 80	B14 motor flanges -T 90	B14 motor flanges -U 100-112		Output shaft ø	Ratio code
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	**Standard ø35**	07
57	24.45	3	472	0.9	2.6	410					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

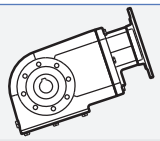
Lubrication
Lubrificazione

Unit X62N 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.

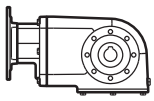
Il riduttore tipo X62N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Shell *Omala S4 WE 320* — **Eni** *Telium VSF 320*

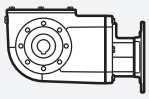
V8
On request
ASK



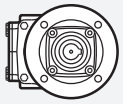
B3
Standard
1.05 L



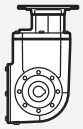
B8
On request
1.90 L



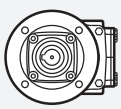
B6
On request
1.85 L



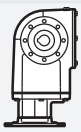
V5
On request
3.20 L



B7
On request
1.70 L



V6
On request
2.25 L



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

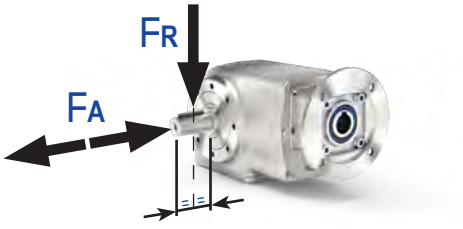
Tab. 1

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

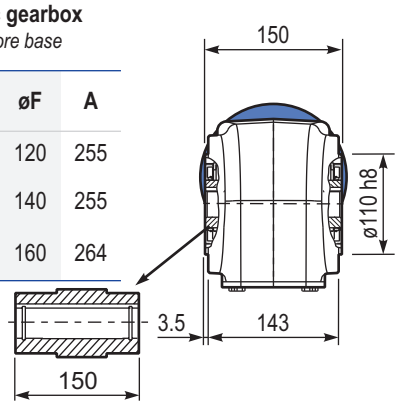
$$Feq = F_R \cdot \frac{168}{X + 138}$$

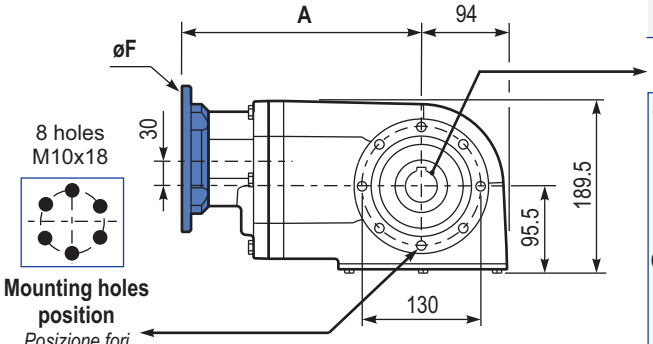


Tab. 2

PX62NI...FB Basic gearbox
Riduttore base

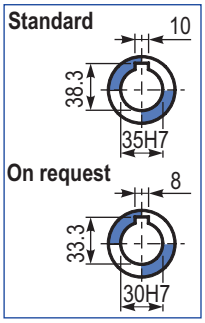
M. flanges	Kit code	øF	A
80B14	KI854046	120	255
90B14	KI854045	140	255
100-112B14	KI854041	160	264



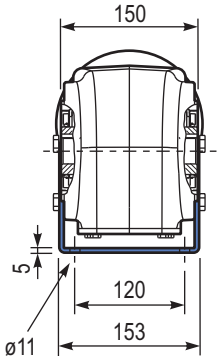


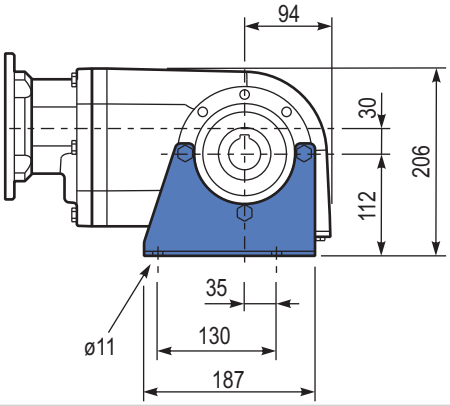
Gearbox weight *peso riduttore* **23.2 kg**

Hollow shaft
Foro in uscita

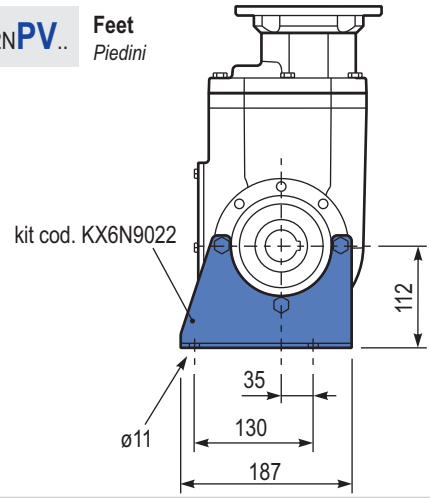


PX62NPA.. Feet
Piedini

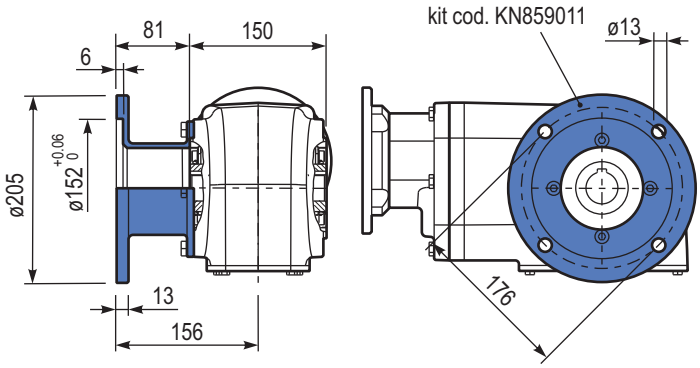




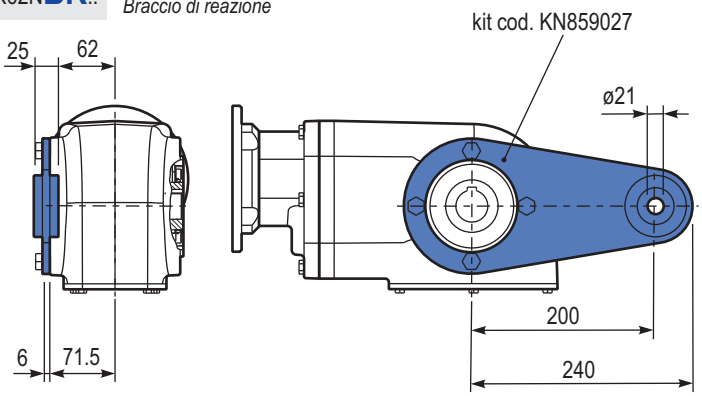
PX62NPV.. Feet
Piedini



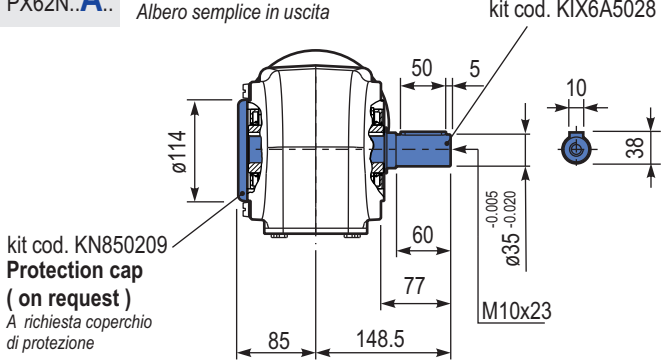
PX62N-FL.. Output flange
Flangia uscita



PX62NBR.. Reaction Arm
Braccio di reazione



PX62N..A.. Single output shaft
Albero semplice in uscita



Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN850209

X63N

410 Nm

BVN series
Full stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

The dynamic efficiency is **0.94** 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 -Q 71	-R 80	-T 90		Output shaft ø	Ratio code
24.7	56.76	1.1	398	1.0	1.1	410		C	C		191311		01
21.3	65.79	0.75	316	1.3	0.97	410		C	C		171311		02
18.1	77.23	0.75	371	1.1	0.83	410		C	C		151311		03
16.0	87.23	0.75	420	1.0	0.73	410		C	C		19138		04
15.2	92.18	0.75	443	0.9	0.69	410		C	C		131311		05
13.9	100.47	0.55	357	1.2	0.64	410		C	C		19811		06
12.0	116.45	0.55	413	1.0	0.55	410		C	C		17811		07
11.1	125.82	0.55	446	0.9	0.51	410		C	C		101311		08
9.9	141.66	0.37	336	1.2	0.45	410		C	C		13138	**Standard ø35**	09
8.6	163.16	0.37	387	1.1	0.39	410		C	C		13811		10
7.8	178.96	0.37	424	1.0	0.36	410		C	C		1788		11
7.2	193.36	0.37	459	0.9	0.33	410		C	C		10138		12
6.5	216.84	0.25	347	1.2	0.29	410		C	C		71311		13
5.5	252.36	0.25	404	1.0	0.25	410		C	C		9138		14
4.8	290.67	0.25	465	0.9	0.22	410		C	C		9811		15
4.2	333.23	0.25	533	0.8	0.19	410		C	C		7138		16
3.6	383.82	0.25*	614	0.7	0.17	410		C	C		7811		17
3.1	446.70	0.25*	715	0.6	0.14	410		C	C		988		18
2.4	589.85	0.25*	944	0.4	0.11	410		C	C		788		19

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}

Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

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*

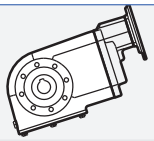
Lubrication
Lubrificazione

Unit X63N 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.

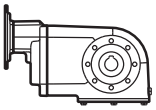
Il riduttore tipo X63N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Shell *Omala S4 WE 320* — **Eni** *Telium VSF 320*

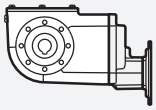
V8 *On request* ASK



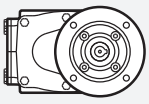
B3 *Standard* 2.05 L



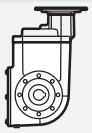
B8 *On request* 1.90 L



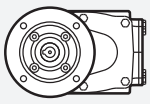
B6 *On request* 1.85 L



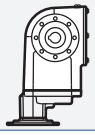
V5 *On request* 3.40 L



B7 *On request* 1.70 L



V6 *On request* 2.25 L



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

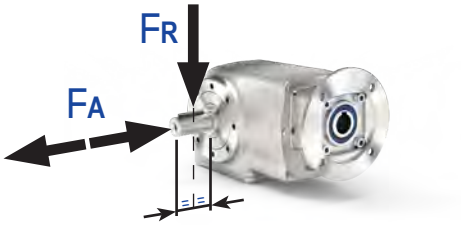
Tab. 1

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

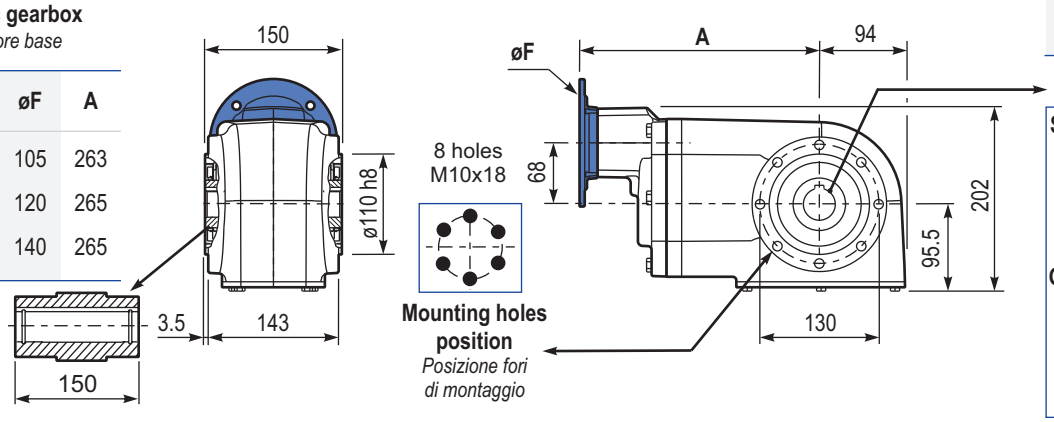
$$Feq = F_R \cdot \frac{168}{X + 138}$$



Tab. 2

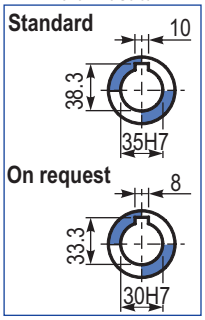
PX63NI...FB Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
71B14	KI634047	105	263
80B14	KI634046	120	265
90B14	KI634041	140	265

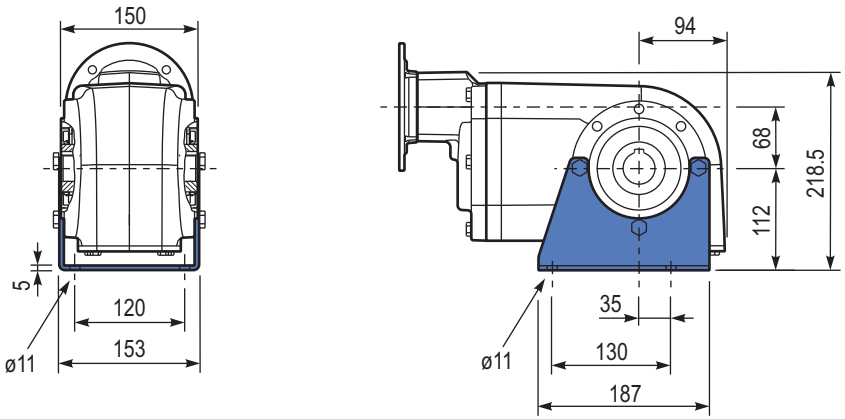


Gearbox weight *peso riduttore* 23.2 kg

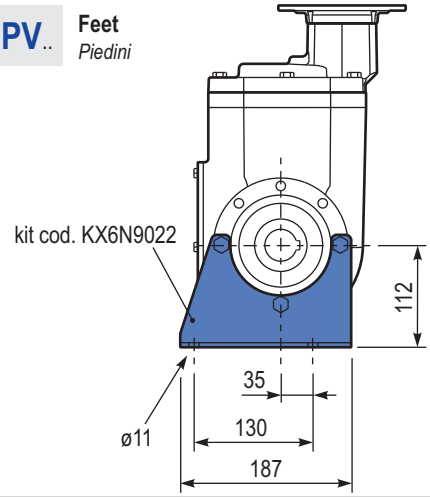
Hollow shaft
Foro in uscita



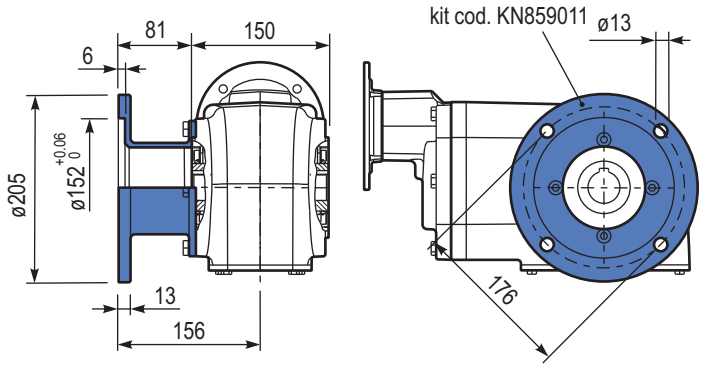
PX63NPA.. Feet
Piedini



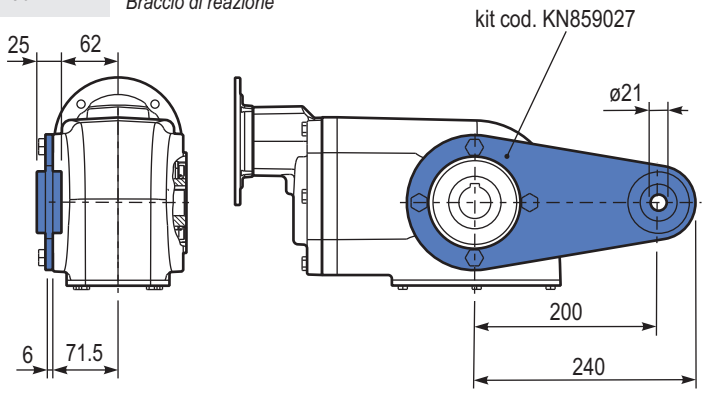
PX63NPV.. Feet
Piedini



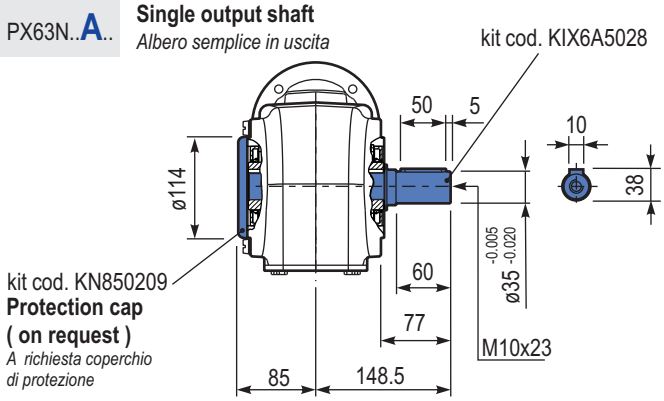
PX63N-FL.. Output flange
Flangia uscita



PX63NBR.. Reaction Arm
Braccio di reazione



PX63N..A.. Single output shaft
Albero semplice in uscita



Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN850209

X73N

675 Nm

BVN series
Full stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

The dynamic efficiency is **0.94** 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 -R 80	-T 90	-U 100-112		Output shaft ø	Ratio code
176	7.94	4	200	1.9	7.5	380					302418	**Standard ø40**	01
153	9.13	4	229	1.7	6.7	390					302416		02
131	10.66	4	268	1.5	6.0	410					302414		03
94	14.97	4	376	1.5	6.0	580					202418		04
81	17.21	4	432	1.4	5.4	600					202416		05
69	20.24	4	509	1.3	5.2	675					162418		06
60	23.27	4	585	1.2	4.5	675					162416		07
53	26.31	4	661	1.0	4.0	675					132418		08
46.3	30.25	4	760	0.9	3.5	675					132416		09
39.6	35.32	3	668	1.0	3.0	675					132414		10
37.8	37.03	3	701	1.0	2.8	675					112416		11
32.4	43.23	2.2	602	1.1	2.4	675					112414		12
30.1	46.58	2.2	649	1.0	2.3	675					82418		13
26.1	53.55	2.2	746	0.9	2.0	675					82416		14
22.4	62.52	1.5	600	1.1	1.7	675					82414		15
19.0	73.75	1.1	517	1.1	1.2	580					62416		16
16.3	86.09	1.1	604	1.1	1.2	675					62414		17

Motor flanges available
Flange motore disponibili

B) Supplied with reduction bushing
Fornito con bussola di riduzione

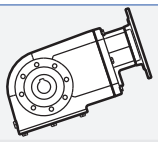
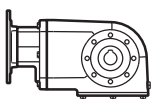
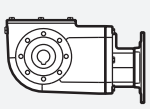
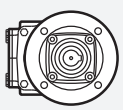
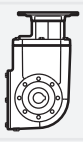
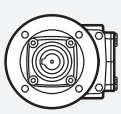
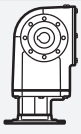
B) Available on request without reduction bushing
Disponibile a richiesta senza bussola di riduzione

C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit X73N 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 X73N 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.

Shell *Omala S4 WE 320* — **Eni** *Telium VSF 320*	**V8** *On request* ASK 
B3 *Standard* 1.60 L 	**B8** *On request* 2.90 L 
B6 *On request* 2.80 L 	**V5** *On request* 4.60 L 
B7 *On request* 2.10 L 	**V6** *On request* 3.30 L 

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

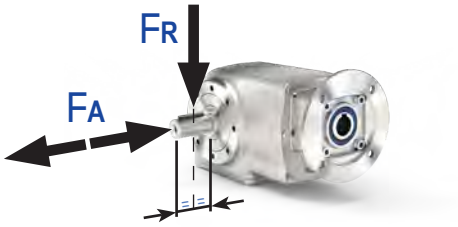
Tab. 1

Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
300	1360	6800
250	1400	7000
200	1440	7200
140	1480	7400
120	1520	7600
85	1560	7800
70	1720	8600
40	1840	9200
15	1920	9600

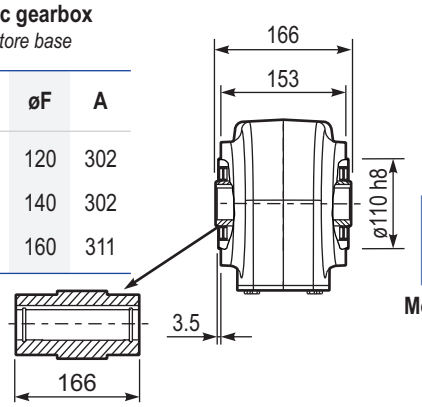
$$Feq = F_R \cdot \frac{178.5}{X + 145.5}$$

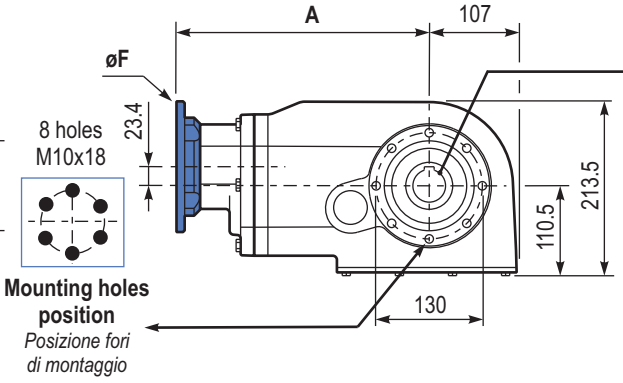


Tab. 2

PX73NI...FB Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80B14	KI854046	120	302
90B14	KI854045	140	302
100-112B14	KI854041	160	311

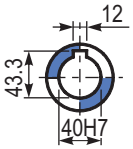




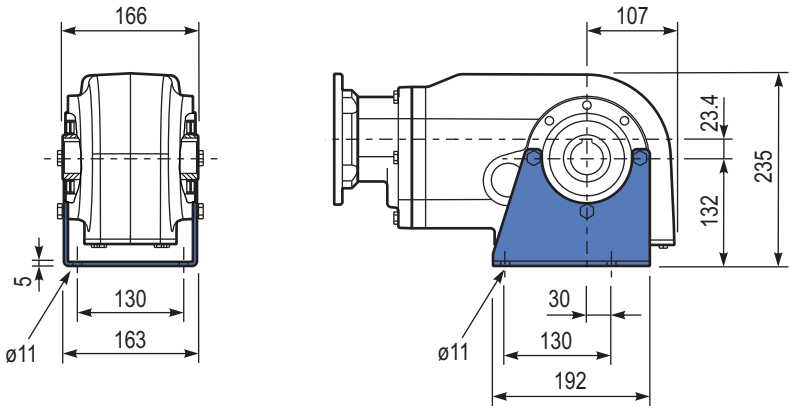
Gearbox weight *peso riduttore* 31.0 kg

Hollow shaft
Foro in uscita

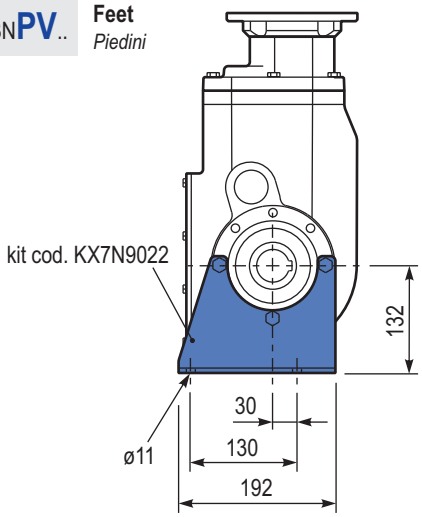
Standard



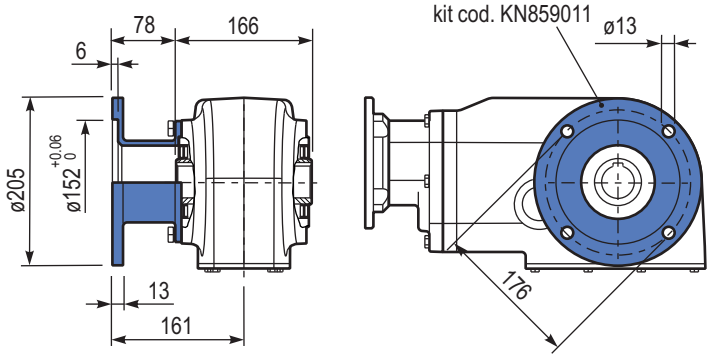
PX73NPA.. Feet
Piedini



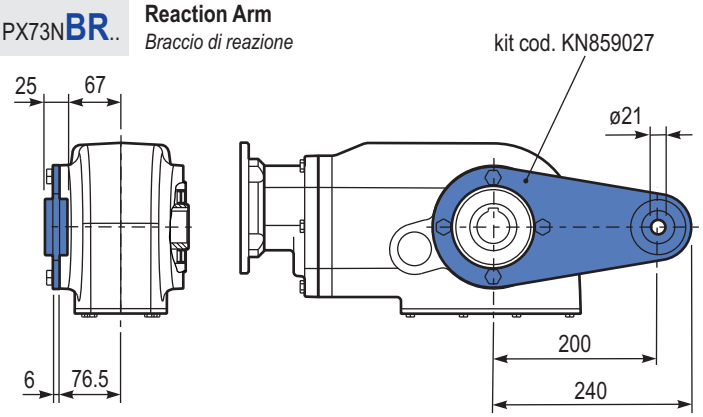
PX73NPV.. Feet
Piedini



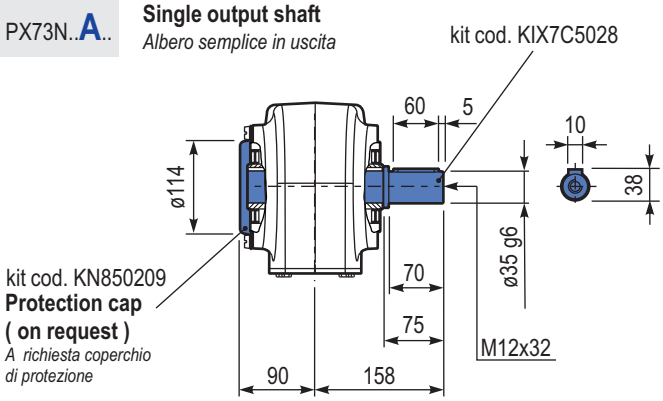
PX73N-FL.. Output flange
Flangia uscita



PX73NBR.. Reaction Arm
Braccio di reazione



PX73N..A.. Single output shaft
Albero semplice in uscita



Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KN850209

X74N

675 Nm

BVN series
Full stainless steel helical bevel gearboxes

Riduttori a coppia conica completamente in acciaio inox

The dynamic efficiency is **0.92** 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 -Q 71	-R 80	-T 90		Output shaft ø	Ratio code
18.7	74.79	1.5	704	1.0	1.4	675		C	C		19132418		01
16.3	85.99	1.1	591	1.1	1.3	675		C	C		19132416		02
14.0	99.66	1.1	685	1.0	1.1	675		C	C		17132416		03
12.0	116.35	0.75	548	1.2	0.92	675		C	C		17132414		04
11.5	121.45	0.75	572	1.2	0.89	675		C	C		13132418		05
10.0	139.64	0.75	658	1.0	0.77	675		C	C		13132416		06
9.2	152.21	0.75	717	0.9	0.71	675		C	C		19082416		07
8.6	163.02	0.55	567	1.2	0.66	675		C	C		13132414		08
7.9	177.69	0.55	618	1.1	0.61	675		C	C		19082414	**Standard ø35**	09
6.8	205.95	0.55	716	0.9	0.52	675		C	C		17082414		10
6.3	222.52	0.55	774	0.9	0.48	675		C	C		10132414		11
5.6	248.76	0.37	578	1.2	0.43	675		C	C		9132416		12
4.8	290.41	0.37	675	1.0	0.37	675		C	C		9132414		13
4.1	337.39	0.37	784	0.9	0.32	675		C	C		10082416		14
3.6	393.88	0.25	618	1.1	0.27	675		C	C		10082414		15
3.2	440.33	0.25	690	1.0	0.24	675		C	C		9082416		16
2.7	514.06	0.25	806	0.8	0.21	675		C	C		9082414		17
2.4	581.44	0.25*	912	0.7	0.18	675		C	C		7082416		18
2.1	678.79	0.25*	1064	0.6	0.16	675		C	C		7082414		19

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}

Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

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*

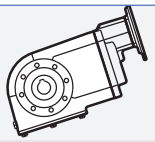
Lubrication
Lubrificazione

Unit X74N 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.

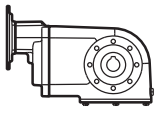
Il riduttore tipo X74N viene fornito con olio sintetico e lubrificazione tipo "long life".
Disponibile a richiesta olio alimentare.
Vedi Tabella 1 per oli e quantità consigliati.
Vedi Tabella 2 per i carichi radiali e assiali applicabili al riduttore.

Shell *Omala S4 WE 320* **Eni** *Telium VSF 320*

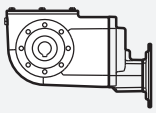
V8 *On request* ASK



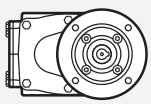
B3 *Standard* 2.60 L



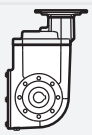
B8 *On request* 2.90 L



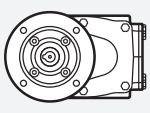
B6 *On request* 2.80 L



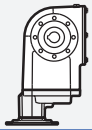
V5 *On request* 4.80 L



B7 *On request* 2.10 L



V6 *On request* 3.30 L



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

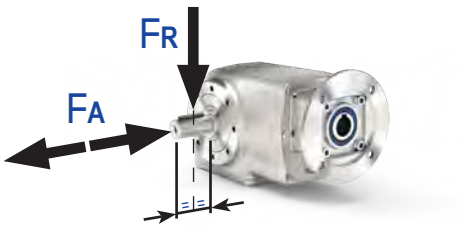
Tab. 1

Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
300	1360	6800
250	1400	7000
200	1440	7200
140	1480	7400
120	1520	7600
85	1560	7800
70	1720	8600
40	1840	9200
15	1920	9600

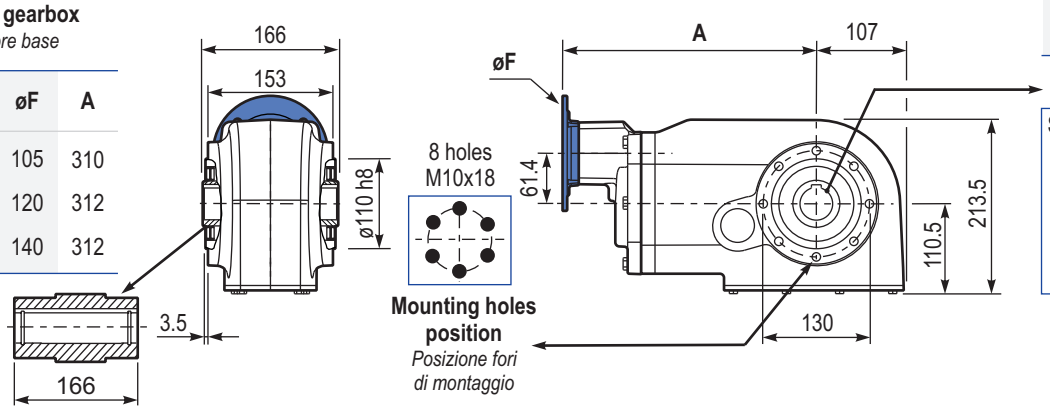
$$Feq = F_R \cdot \frac{178.5}{X + 143.5}$$



Tab. 2

PX74NI...FB Basic gearbox
Riduttore base

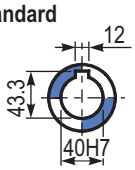
M. flanges	Kit code	øF	A
71B14	KI634047	105	310
80B14	KI634046	120	312
90B14	KI634041	140	312



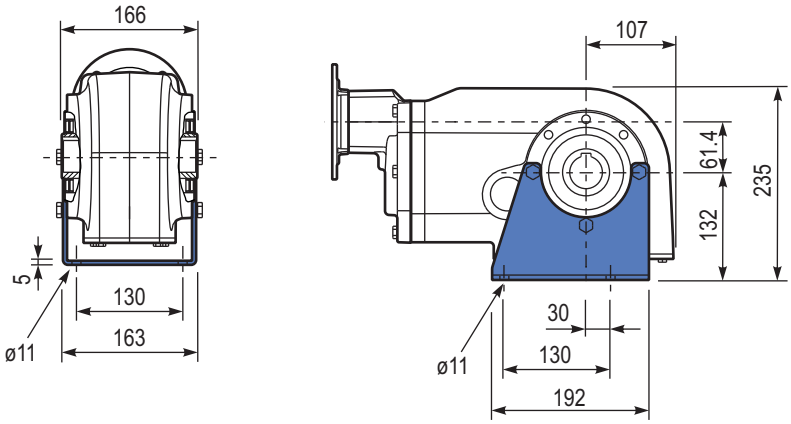
Gearbox weight *peso riduttore* 31.0 kg

Hollow shaft
Foro in uscita

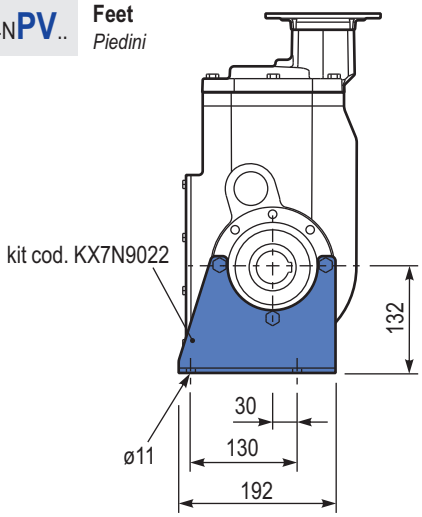
Standard



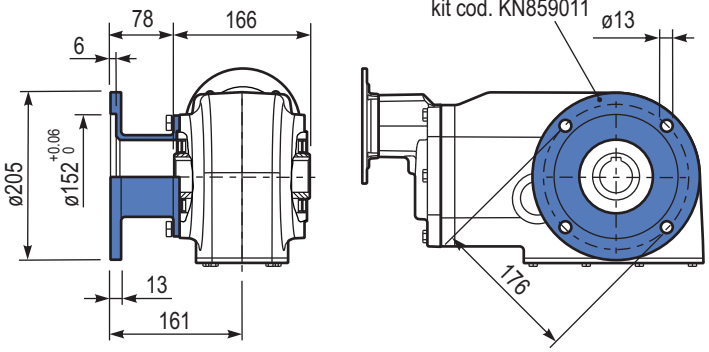
PX74NPA.. Feet
Piedini



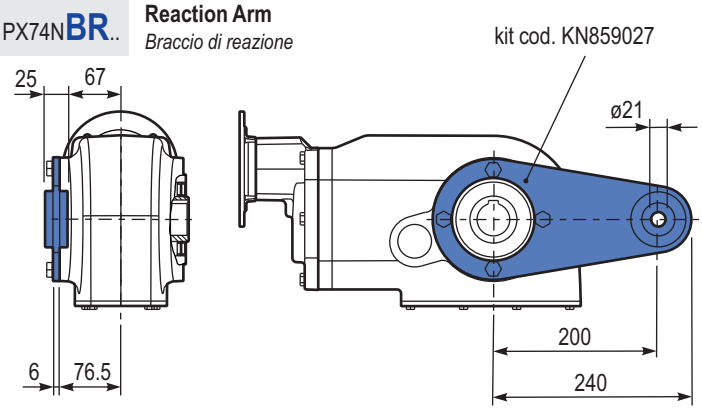
PX74NPV.. Feet
Piedini



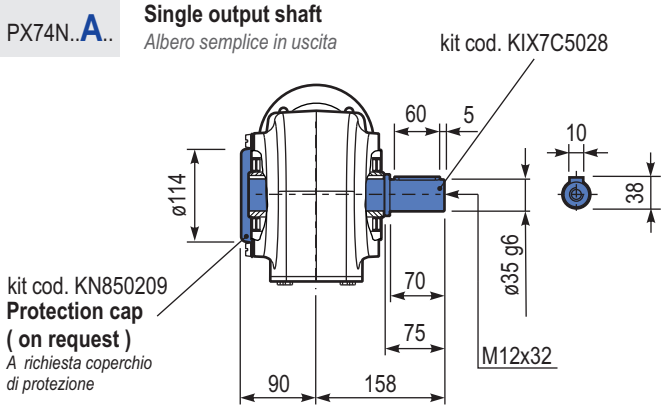
PX74N-FL.. Output flange
Flangia uscita



PX74NBR.. Reaction Arm
Braccio di reazione



PX74N..A.. Single output shaft
Albero semplice in uscita



Suggested
Suggerito

Stainless steel protection cap (on request).

Coperchio di protezione in acciaio inox a richiesta.

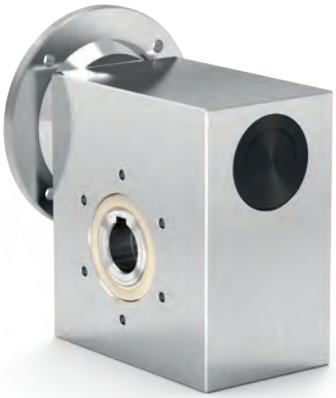
Kit cod. KN850209

Uniblock design.
Suitable for all applications.

Design compatto.
Adatto a tutte le applicazioni.

AISI 304 | IP66 | CE | NSF COMPONENT | On req. *A rich.* IP69k | Ex ATEX

The VFI Series Stainless steel worm gearboxes



The VFI Series

It is the best solution for the resistance to corrosion.
Suitable for all applications.
Entirely in stainless steel, the surfaces do not have grooves or other elements that could attract dirt.
Also available with stainless steel motor SPM series.

La serie VFI
E' la migliore soluzione per la resistenza alla corrosione.
Adatto a tutte le applicazioni.
Interamente in acciaio inox, le superfici non presentano solchi o altri elementi che potrebbero attirare lo sporco.
Disponibile anche con motore in acciaio inox, serie SPM.

The RCI Series

The best solution where hygiene and cleanliness are required.
The ratio multiplier gearbox with smooth surfaces for easy cleaning.
Also available with stainless steel motor SPM series.

La serie RCI
La migliore soluzione dove è richiesta igiene e pulizia.
Il riduttore ad uno stadio con superfici lisce per facilitare la pulizia.
Disponibile anche con motore in acciaio inox, serie SPM.

VFI certification
worm gearboxes

IP66 CE NSF COMPONENT — On request *A richiesta* — IP69k ATEX

RCI certification
ratio multiplier

IP66 CE NSF COMPONENT — On request *A richiesta* — ATEX

Ratio: 1 / 1.57 ÷ 1 / 10.86

IP69k when assembled with on other gearbox

Type *Tipo*	Torque *Coppia*	Center distance *Interasse*	Input power *Potenza in entrata*	Hollow output shaft *Albero cavo in uscita*	
				Standard	*On request*
I30	21 Nm	30 mm	0.06 ÷ 0.18 kW	ø14 mm	-
I45	41 Nm	45 mm	0.12 ÷ 0.37 kW	ø18 mm	ø19 ø20 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 ø30 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	-
411I	38 Nm	38 mm	0.37 ÷ 1.5 kW	ø19 mm	-

THE BEST PROTECTION IN 304

Housing

Strong and modular square housing.

Cassa con forma quadrata robusta e modulare.

Viton seals

Single viton seal for harsh enviroment.

Anelli di tenuta in viton per ambienti aggressivi.

Options Twin viton seals

Twin viton seals with stainless steel 316L shield for IP69k protection.

Doppi anelli di tenuta in viton con schermo protettivo in acciaio inox AISI 316L per protezione IP69k.

Hardened and ground worm

Hardened and ground worm, teeth radiused for noise reduction.

La vite senza fine è temprata ed i denti sono profilati e raggiati per ridurre il rumore.

Options Coupling

Premium input coupling with direct mounting
No settings - No screw.

Giunto in entrata:
Montaggio diretto - No settaggi - No viti.

STRONG SQUARE DESIGN

Solida forma quadrata

Output hollow shaft

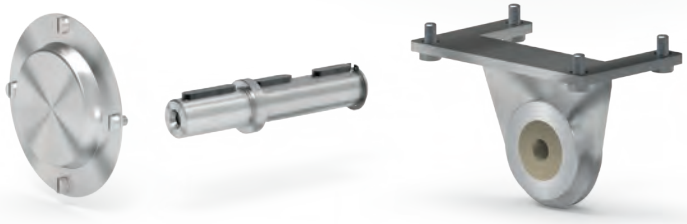
Stainless steel hollow shaft in AISI 316L.
CuSn12Ni (C91700) Nickel bronze for superior life.

Mozzo in acciaio inox 316L.
Corona in bronzo al Nickel CuSn12Ni (C91700) centrifugato per massima resistenza e durata superiore.

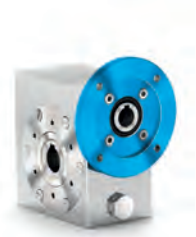
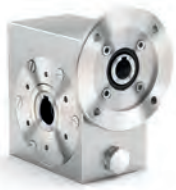
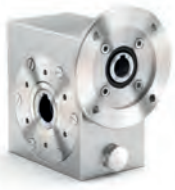
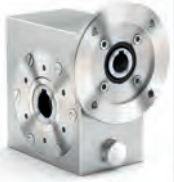
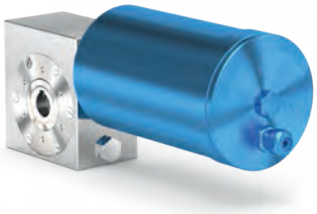
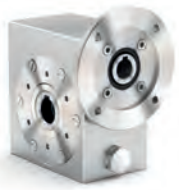
Stainless steel hardware

Stainless steel output male shaft, protection cap, feet, screws and reaction arms.

Albero maschio in uscita removibile, coperchietto di protezione, piedi, viteria e bracci di reazione in AISI 316L.



How to order *Codifica*

P	I45	UNI	N	10	0	MB
Type *Tipo*	Size *Grandezza*	Mounting *Montaggio*	Position *Posizione*	Ratio *Rapporto*	Hub Output shaft *Mozzo corona* *Albero uscita*	Diameter *Diametro*
P 	Worm gearboxes *Riduttori a vite senza fine*	UNI 	N 	See technical data table *Vedi tabelle dati tecnici*	0 Hollow *Mozzo* 	→ Standard
M 		FLL 	Select L or R position for output flange *Selezionare la posizione L o R per la flangia in uscita*		S Solid output shaft *Albero in uscita* 	I30 MA → ø14
B 	I30 I45 I50 I63 I85 I11	BRI Stainless steel *Acciaio inox* 	L Left *Sinistra* 			I45 MB → ø18 MC → ø19 MD → ø20
R 			R Right *Destra* 			I50 ME → ø24 MF → ø25
						I63 MF → ø25 MG → ø28 MH → ø30
						I85 MK → ø35
						I11 MM → ø42
						Output male shaft is available only for standard bore *Albero maschio in uscita è disponibile solo per fori standard*

I	N	C	-R	B3	ST	For M type specify terminal box position
Input / output shaft material *Materiale albero in entrata e uscita*	Protection cap *Coperchio di protezione*		Motor size *Grandezza motore*	Mounting position *Posizione di montaggio*	Input bore *Foro entrata*	*Per tipo M specificare posizione morsettiera*

I — Input / output shaft material

I Stainless steel
Acciaio inox

The quill input hollow bore is always in carbon steel
Il foro cavo in entrata è sempre in acciaio

N / C — Protection cap

Left *Sinistra*

N Without protection cap
Senza coperchietto di protezione

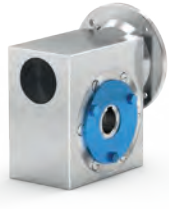
C Closed cap
Tappo chiuso

O Open cap
Tappo aperto

Right *Destra*

N Without protection cap
Senza coperchietto di protezione

C Closed cap
Tappo chiuso



O Open cap
Tappo aperto

-R — Motor size

Motor flanges *Flange motore*

IEC B14

-O → 56 B14 (ø80)
-P → 63 B14 (ø90)
-Q → 71 B14 (ø105)
-R → 80 B14 (ø120)
-T → 90 B14 (ø140)
-U → 100-112B14 (ø160)

Brushless

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

Brushless-Tech catalogue is available in our website
Catalogo Brushless-Tech è disponibile el nostro sito web

Without flange

-M → Metric

Type R *Tipo R*

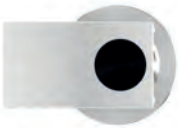
-0 → Metric

B3 — Mounting position *Posizione di montaggio*

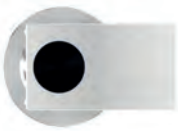
B3

B8

B6



B7



V5

V6

ST — Input bore *Foro entrata*

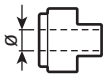
ST Standard bore* *Foro standard **

Input bore without reduction bushing

-O → 9mm
-P → 11mm
-Q → 14mm
-R → 19mm
-T → 24mm
-U → 28mm

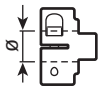
Coupling

Standard (IEC)



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

Brushless *



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

Ready for input coupling
Predisposto per giunto

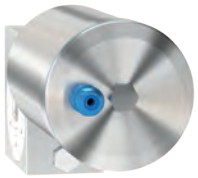
-0 Type B
Tipo B

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

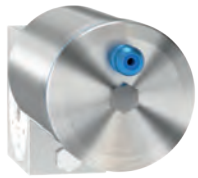
For M type specify terminal box position

Per tipo M specificare posizione morsettiera

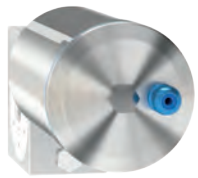
A



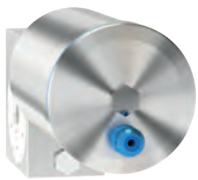
B



C



D



I30

21 Nm

VFI series
Full stainless steel square worm gearboxes

Riduttori a vite senza fine quadrati completamente in acciaio inox

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	Ratios code
							-	-	-O	-P			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	56	63	RD	[mm]	
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	0.06	16	1.0	0.06	16			B-C		48	0.56	09
14	100	0.06*	16	0.5	0.03	8			B-C		40	0.45	10

* Power higher than the maximun one which can be supported by the gearbox. Select according to the torque M_{2R}
Potenza superiore a quella massima sopportabile dal riduttore.Selezionare in base al momento torcente M_{2R}

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 I30 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 I30 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: 0.06 L *Quantità olio per tutte le posizioni: 0.06 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

* 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

Suggested
Suggerito

Stainless steel protection cap (on request).

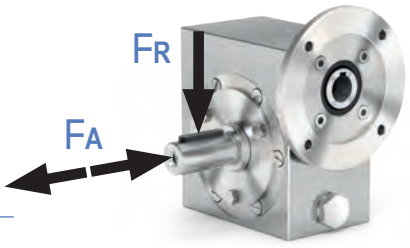
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KI450211

Radial and axial loads
Carichi radiali e assiali

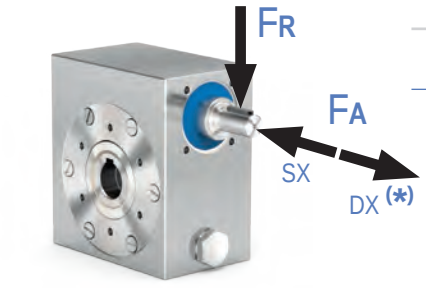
Output shaft
Albero di uscita

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



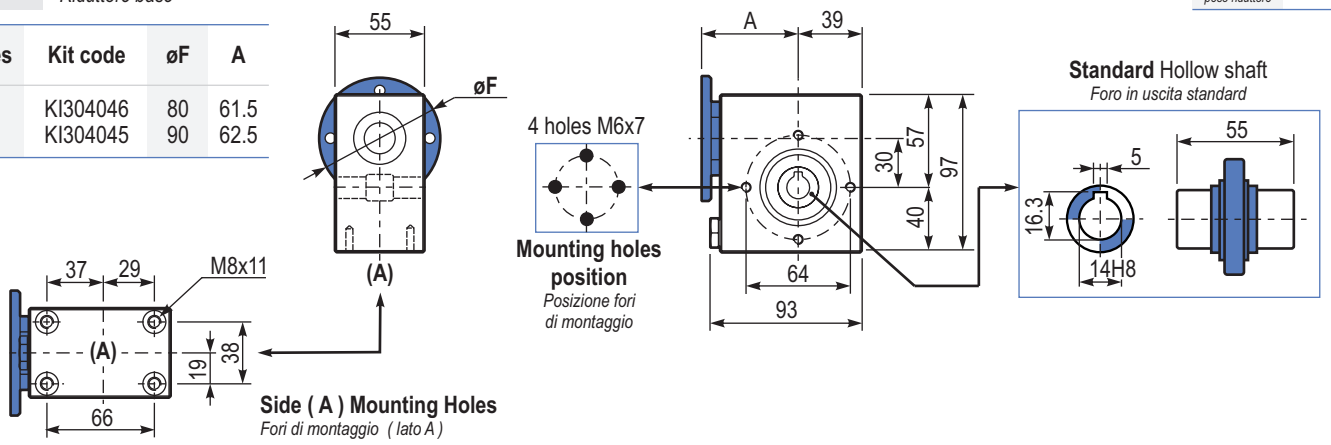
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

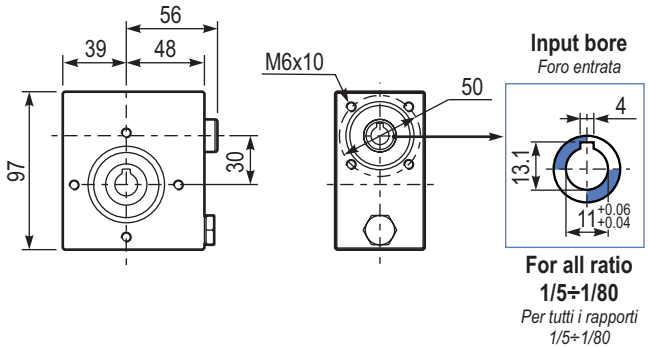
PI30UNI... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
56B14	KI304046	80	61.5
63B14	KI304045	90	62.5

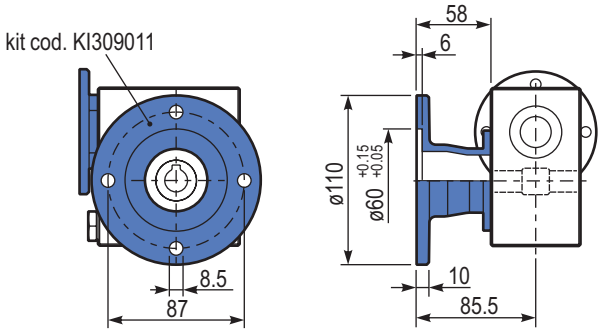
Gearbox weight *peso riduttore* 2.5 kg



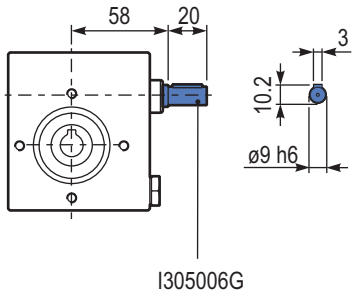
BI30UNI... Modular base
Base modulare



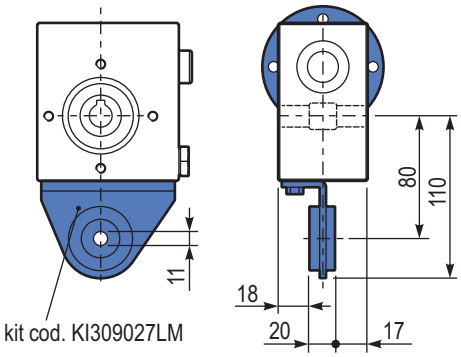
PI30FLL... Output flange
Flangia uscita



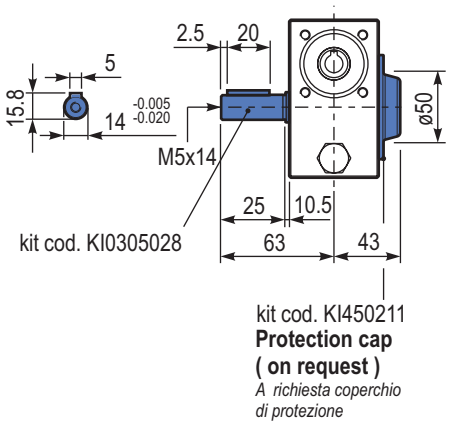
RI30UNI... Input shaft
Albero in entrata



PI30BRI... Reaction arm
Braccio di reazione



PI30..SMA.. Single Shaft
Albero lento semplice



I45

41 Nm

VFI series
Full stainless steel square worm gearboxes

Riduttori a vite senza fine quadrati completamente in acciaio inox

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	Ratios code
							-	-	-P	-Q			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	63	71	RD	[mm]	
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

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

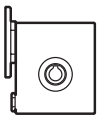
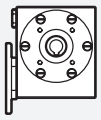
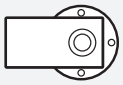
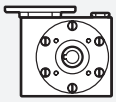
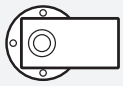
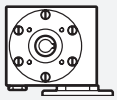
C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit I45 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 I45 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.

Shell *Omala S4 WE 320* **Eni** *Telium VSF 320*

B3 *Standard* 0.15 L		**B8** *On request* 0.15 L	
B6 *On request* 0.15 L		**V5** *On request* 0.15 L	
B7 *On request* 0.20 L		**V6** *On request* 0.15 L	

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

Suggested *Suggerito*

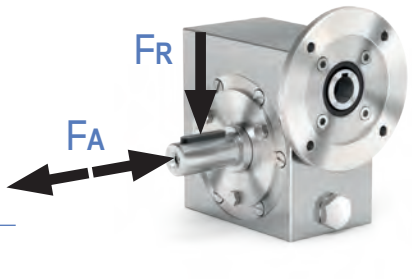
Stainless steel protection cap (on request).
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KI450211

Radial and axial loads
Carichi radiali e assiali

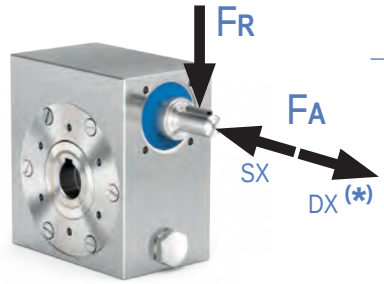
Output shaft
Albero di uscita

n_2 [min^{-1}]	FA [N]	FR [N]
200	180	900
150	200	1000
100	220	1100
75	240	1200
50	260	1400
25	300	1800
15	400	2000



Input shaft
Albero in entrata

n_1 [min^{-1}]	FA [N]	FR [N]
1400	42	210



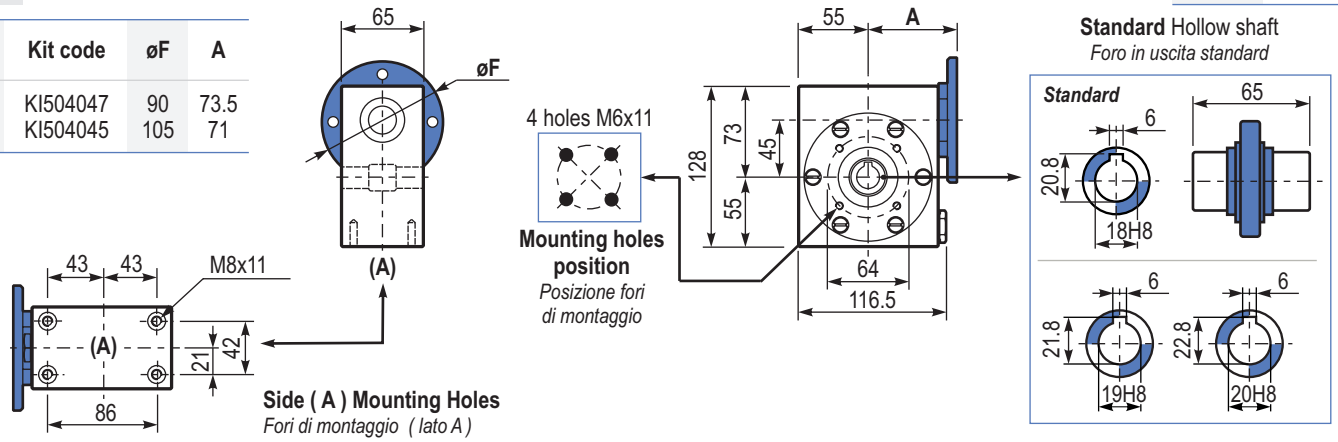
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

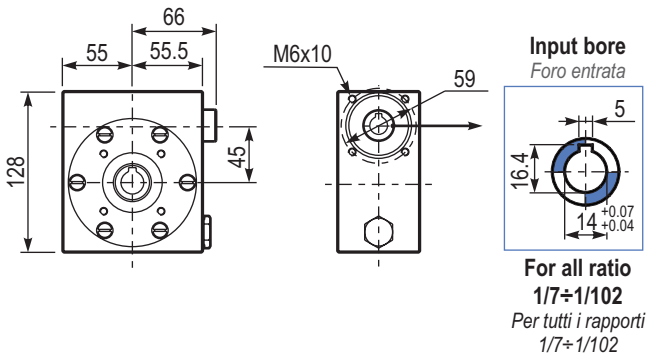
PI45UNI... Basic gearbox
Riduttore base

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

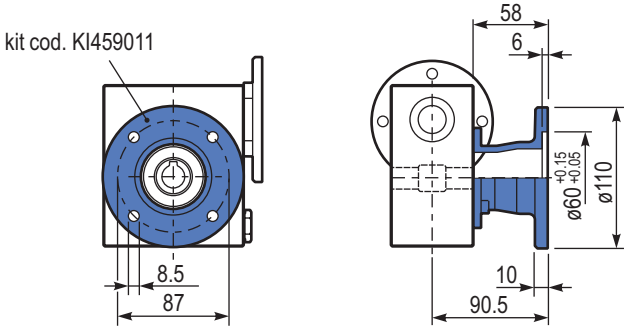
Gearbox weight *peso riduttore* 5.0 kg



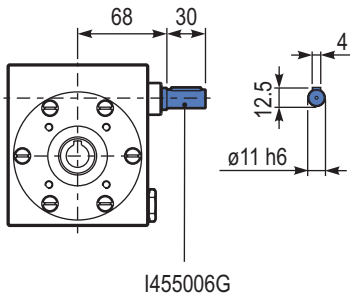
BI45UNI... Modular base
Base modulare



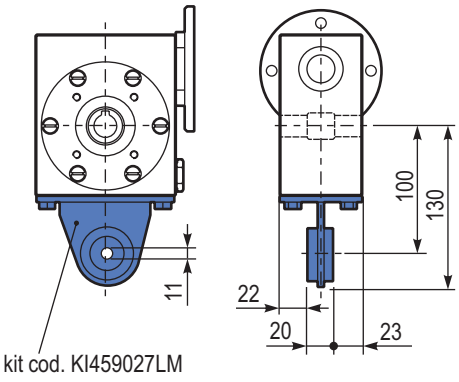
PI45FLL... Output flange
Flangia uscita



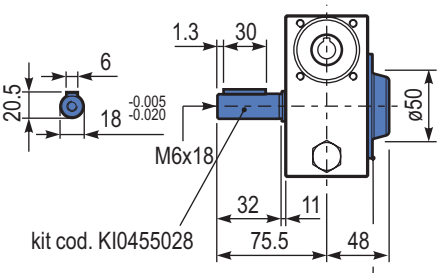
RI45UNI... Input shaft
Albero in entrata



PI45BRI... Reaction arm
Braccio di reazione



PI45...SMB.. Single Shaft
Albero lento semplice



I50

72 Nm

VFI series
Full stainless steel square worm gearboxes

Riduttori a vite senza fine quadrati completamente in acciaio inox

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges			Dynamic efficiency	Tooth module	Ratios code
							-	-	-P	-Q	-R			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	63	71	80	RD	[mm]	
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

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

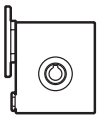
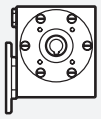
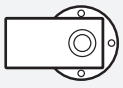
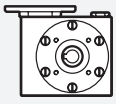
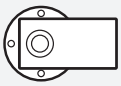
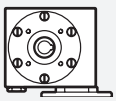
C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit I50 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 I50 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.

Shell *Omala S4 WE 320* Eni *Telium VSF 320*

B3 *Standard* 0.22 L		B8 *On request* 0.22 L	
B6 *On request* 0.22 L		V5 *On request* 0.22 L	
B7 *On request* 0.28 L		V6 *On request* 0.22 L	

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

Suggested *Suggerito*

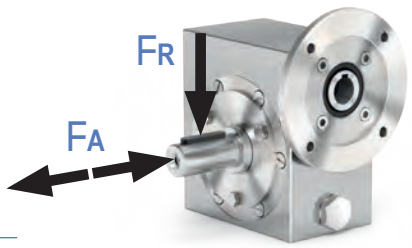
Stainless steel protection cap (on request).
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KI500211

Radial and axial loads
Carichi radiali e assiali

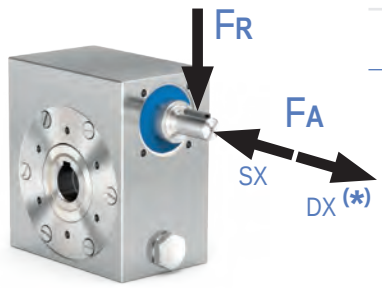
Output shaft
Albero di uscita

n_2 [min^{-1}]	FA [N]	FR [N]
200	240	1200
150	280	1400
100	300	1500
75	340	1700
50	380	1900
25	480	2500
15	560	2800



Input shaft
Albero in entrata

n_1 [min^{-1}]	FA [N]	FR [N]
1400	76	380



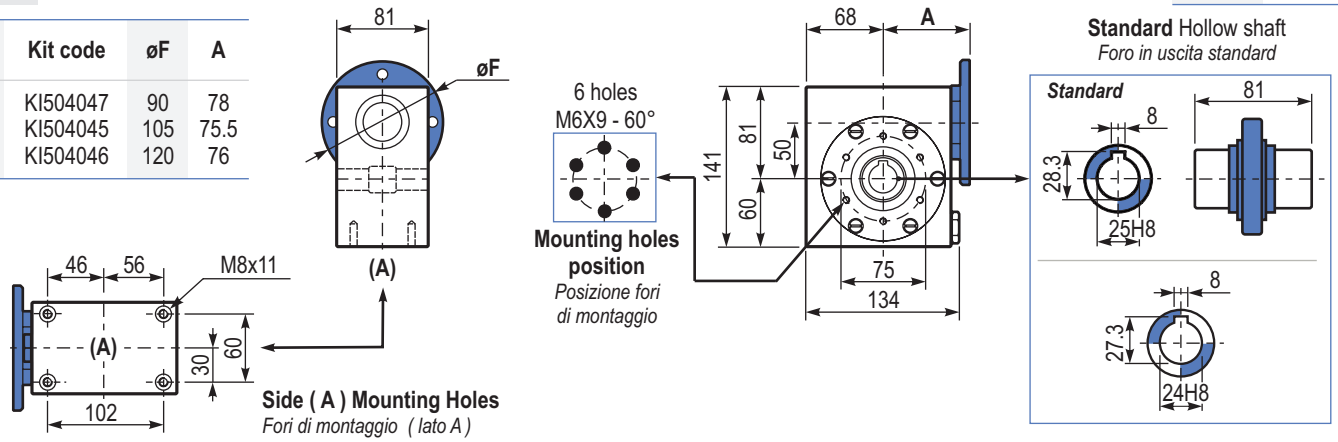
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

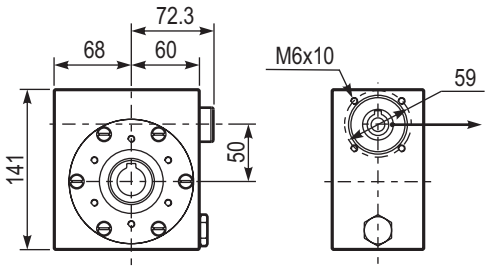
PI50UNI... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
63B14	KI504047	90	78
71B14	KI504045	105	75.5
80B14	KI504046	120	76

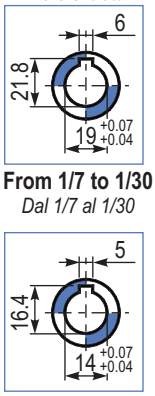
Gearbox weight / *peso riduttore*: 7.3 kg



BI50UNI... Modular base
Base modulare



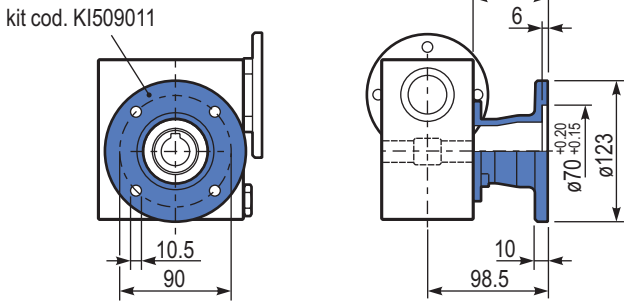
Input bore
Foro entrata



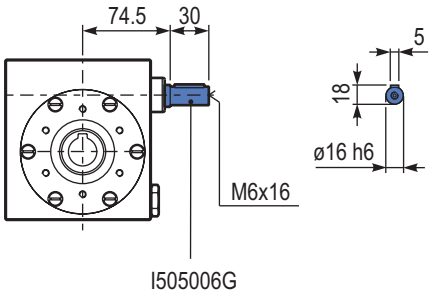
From 1/7 to 1/30
Dal 1/7 al 1/30

From 1/36 to 1/100
Dal 1/36 al 1/100

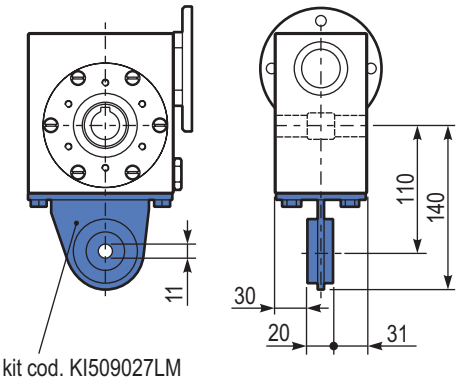
PI50FLL... Output flange
Flangia uscita



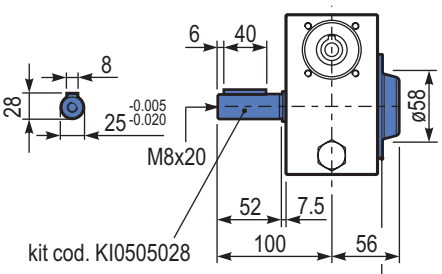
RI50UNI... Input shaft
Albero in entrata



PI50BRI... Reaction arm
Braccio di reazione



PI50...SMF.. Single Shaft
Albero lento semplice



kit cod. KI500211
Protection cap (on request)
A richiesta coperchio di protezione

I63

147 Nm

VFI series
Full stainless steel square worm gearboxes

Riduttori a vite senza fine quadrati 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 -Q 71	B14 motor flanges -R 80	B14 motor flanges -T 90	Dynamic efficiency RD	Tooth module [mm]	Ratios code
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

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

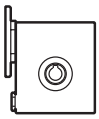
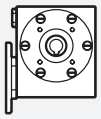
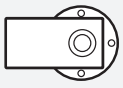
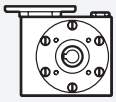
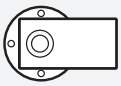
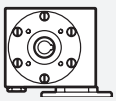
C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit I63 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 I63 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.

Shell *Omala S4 WE 320* **Eni** *Telium VSF 320*

B3 *Standard* 0.60 L		B8 *On request* 0.60 L	
B6 *On request* 0.60 L		V5 *On request* 0.60 L	
B7 *On request* 0.82 L		V6 *On request* 0.60 L	

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

Suggested *Suggerito*

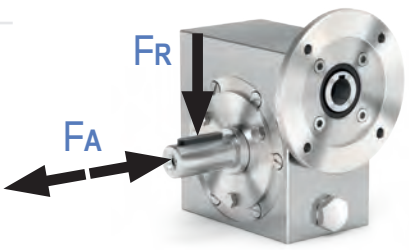
Stainless steel protection cap (on request).
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KI630211

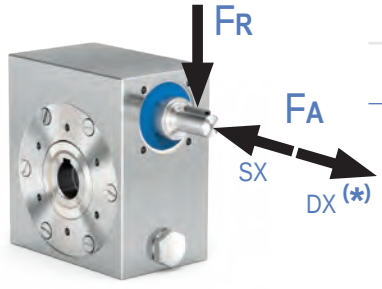
Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	FA [N]	FR [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}]	FA [N]	FR [N]
1400	90	450

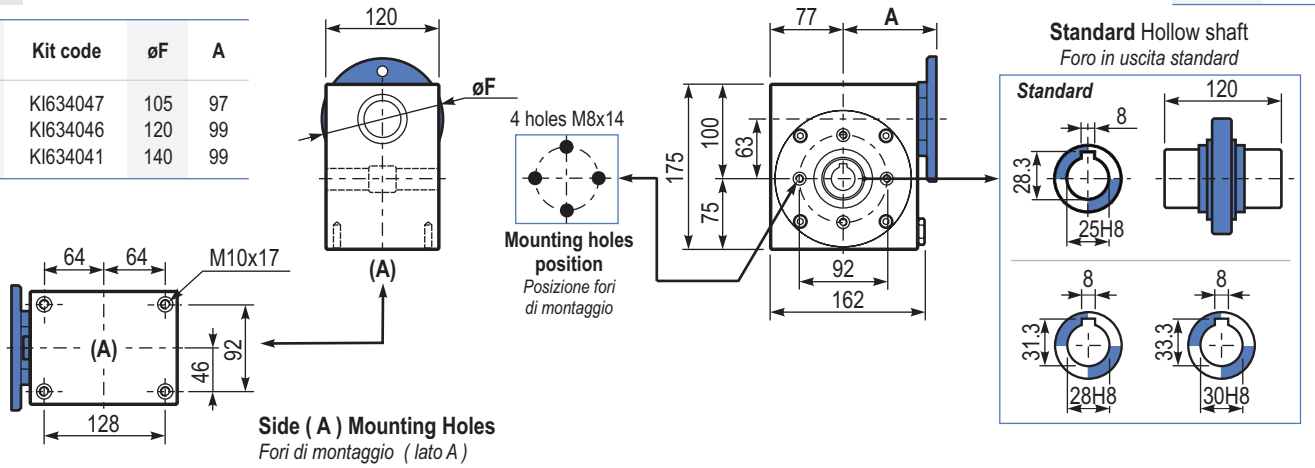
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

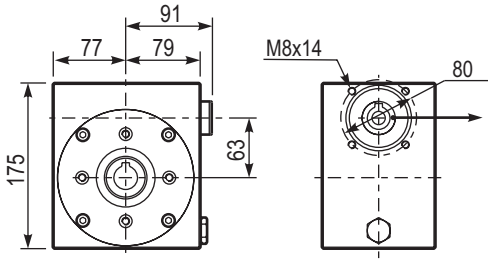
PI63UNI... Basic gearbox
Riduttore base

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

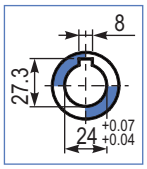
Gearbox weight *peso riduttore* 14.6 kg



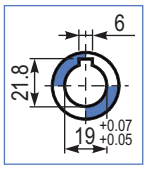
BI63UNI... Modular base
Base modulare



Input bore
Foro entrata

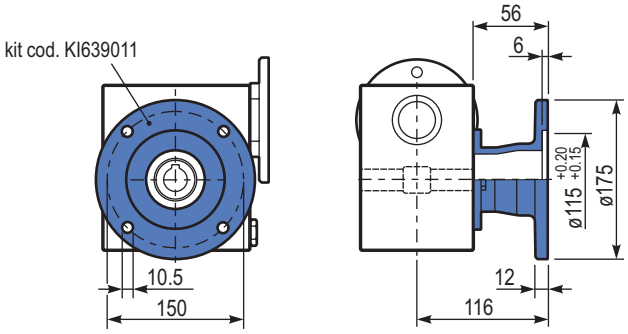


From 1/7 to 1/40
Dal 1/7 al 1/40

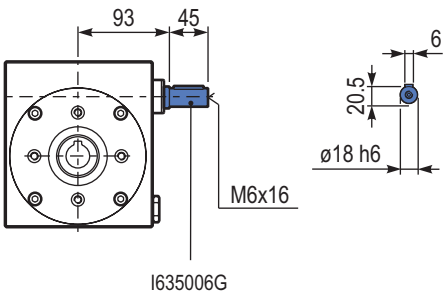


From 1/45 to 1/94
Dal 1/45 al 1/94

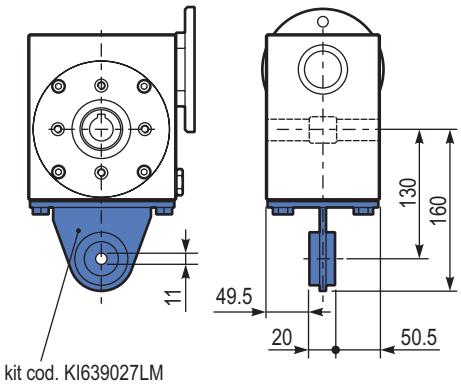
PI63FLL... Output flange
Flangia uscita



RI63UNI... Input shaft
Albero in entrata

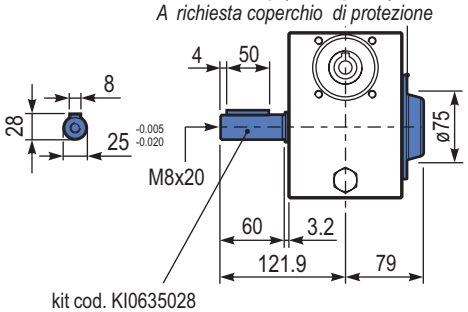


PI63BRI... Reaction arm
Braccio di reazione



PI63...SMF.. Single Shaft
Albero lento semplice

kit cod. KI630211
Protection cap (on request)
A richiesta coperchio di protezione



I85

347 Nm

VFI series
Full stainless steel square worm gearboxes

Riduttori a vite senza fine quadrati completamente in acciaio inox

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges				B14 motor flanges			Dynamic efficiency	Tooth module	Ratios code
							-	-	-	-	-R	-T	-U			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	-	-	80	90	100-112	RD	[mm]	
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

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

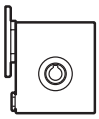
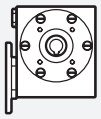
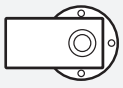
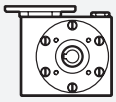
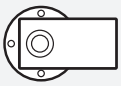
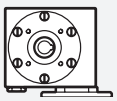
C) **Motor flange holes position**
Posizione fori flangia motore

Lubrication
Lubrificazione

Unit I85 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 I85 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.

Shell *Omala S4 WE 320* — **Eni** *Telium VSF 320*

B3 *Standard* 1.40 L		**B8** *On request* 1.40 L	
B6 *On request* 1.40 L		**V5** *On request* 1.40 L	
B7 *On request* 1.70 L		**V6** *On request* 1.40 L	

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

Suggested *Suggerito*

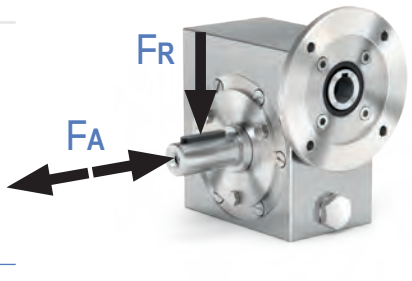
Stainless steel protection cap (on request).
Coperchio di protezione in acciaio inox a richiesta.

Kit cod. KI850211

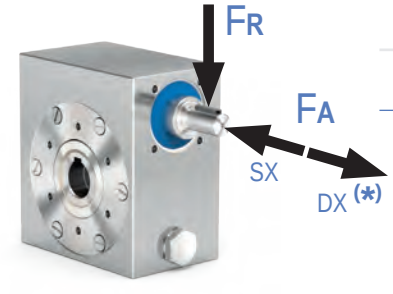
Radial and axial loads
Carichi radiali e assiali

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	130	650

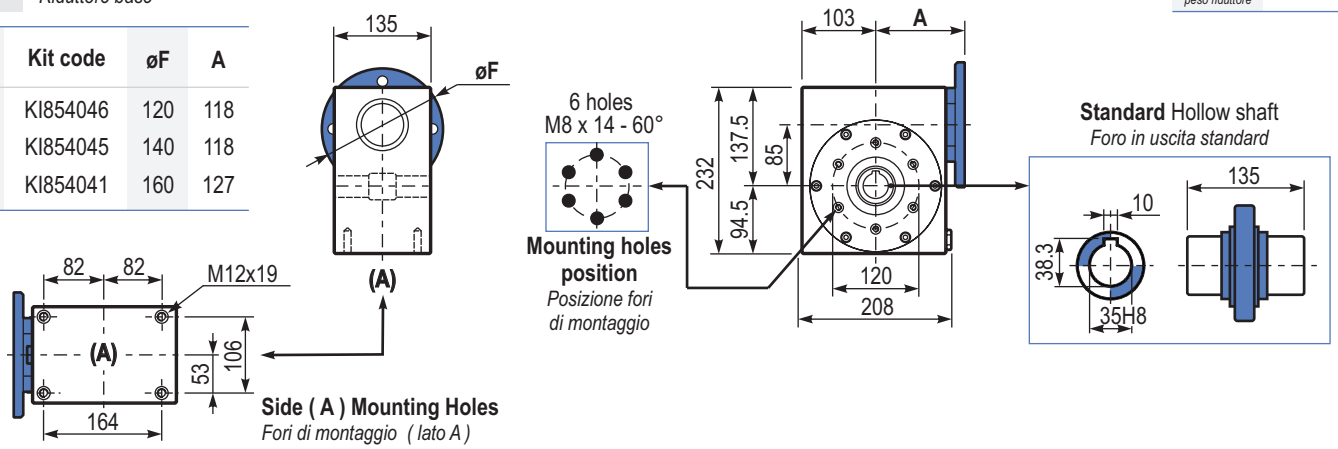
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

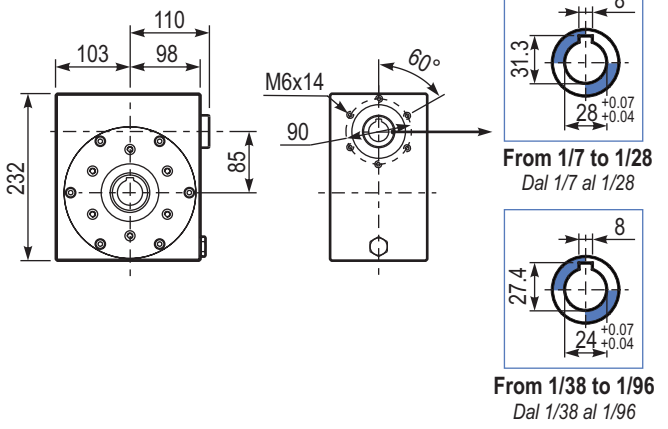
PI85UNI... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80B14	KI854046	120	118
90B14	KI854045	140	118
100-112B14	KI854041	160	127

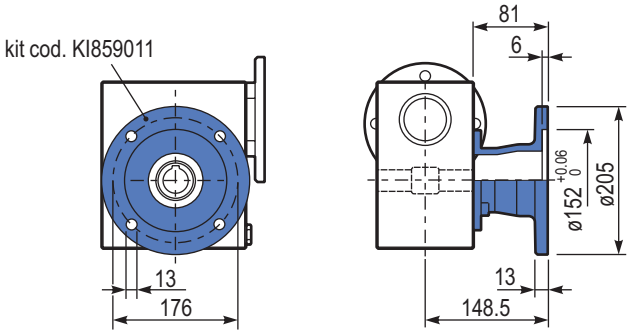
Gearbox weight *peso riduttore* **23.3 kg**



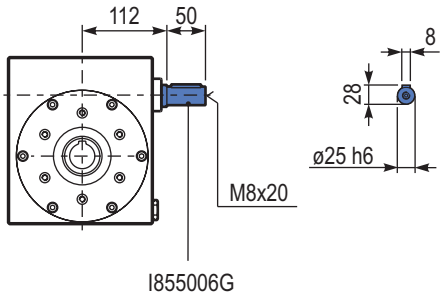
BI85UNI... Modular base
Base modulare



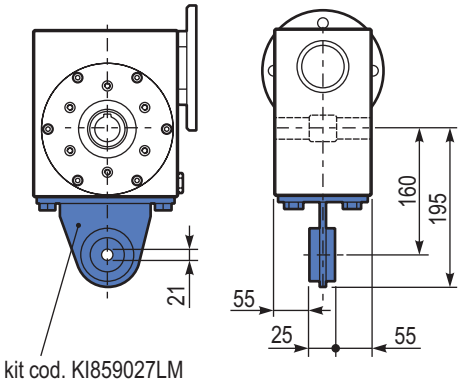
PI85FLL... Output flange
Flangia uscita



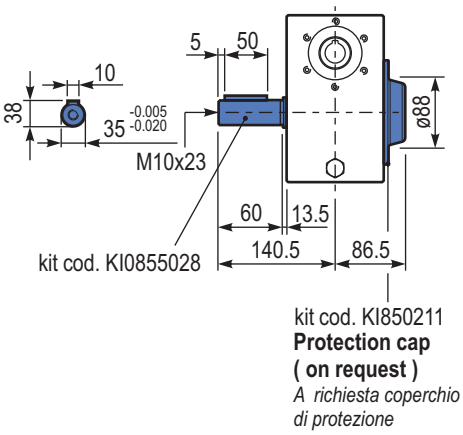
RI85UNI... Input shaft
Albero in entrata



PI85BRI... Reaction arm
Braccio di reazione



PI85...SMK.. Single Shaft
Albero lento semplice



I11 — 651 Nm

VFI series
Full stainless steel square worm gearboxes

Riduttori a vite senza fine quadrati 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 -R 80	B14 motor flanges -T 90	B14 motor flanges -U 100-112	Dynamic efficiency RD	Tooth module [mm]	Ratios code
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			69	2.9	10
16.7	84	1.1	410	1.2	1.3	494		B			65	2.2	11
14.1	99	1.1	446	1.1	1.2	483		B			60	1.9	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

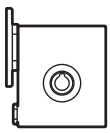
Unit I11 is supplied with synthetic oil to assure long life lubrication.
Food grade oil is available on request.
See Table 1 for lubrication and recommended quantity.
See Table 2 for possible radial and axial loads on the gearbox.

Il riduttore tipo I11 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.

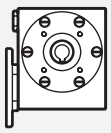
Shell
Omala S4 WE 320

Eni
Telium VSF 320

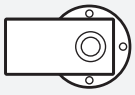
B3
Standard
3.50 L



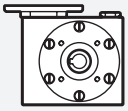
B8
On request
2.10 L



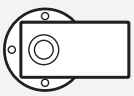
B6
On request
2.50 L



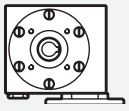
V5
On request
1.60 L



B7
On request
2.50 L



V6
On request
1.60 L



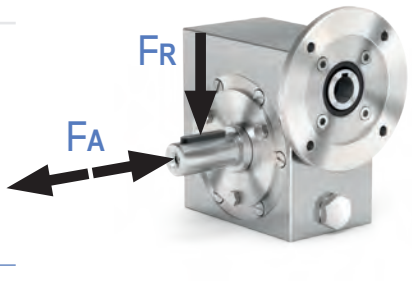
For more details on lubrication and plugs check our website.
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web.

Tab. 1

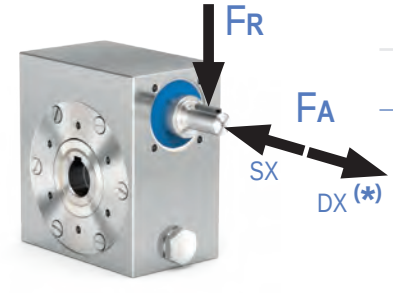
Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

n_2 [min^{-1}]	F_A [N]	F_R [N]
200	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}]	F_A [N]	F_R [N]
1400	228	1140

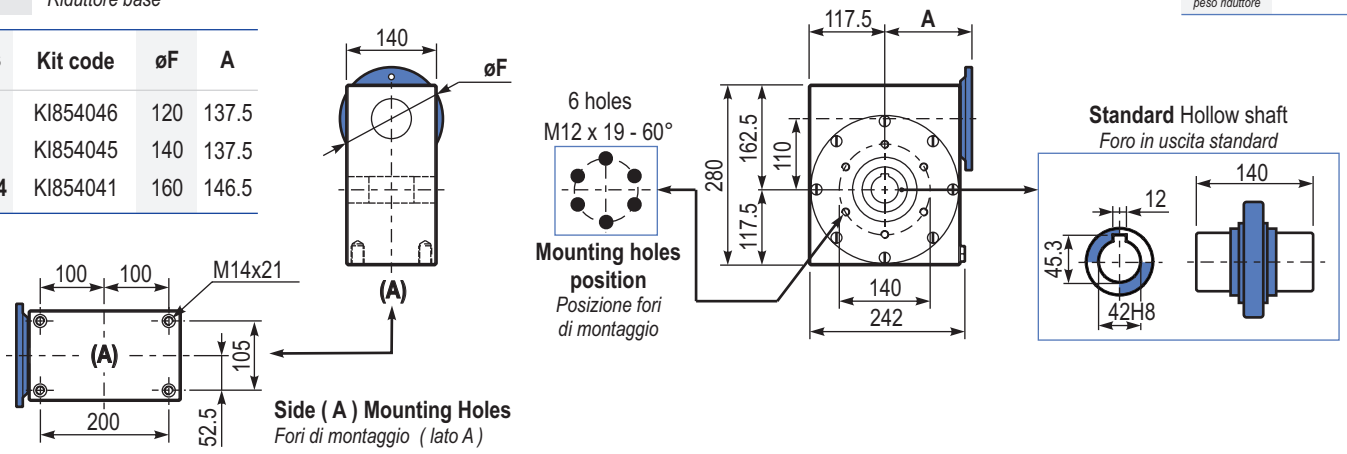
* Strong axial loads in the DX direction are not allowed.
** Non sono consentiti forti carichi assiali con direzione DX*

Tab. 2

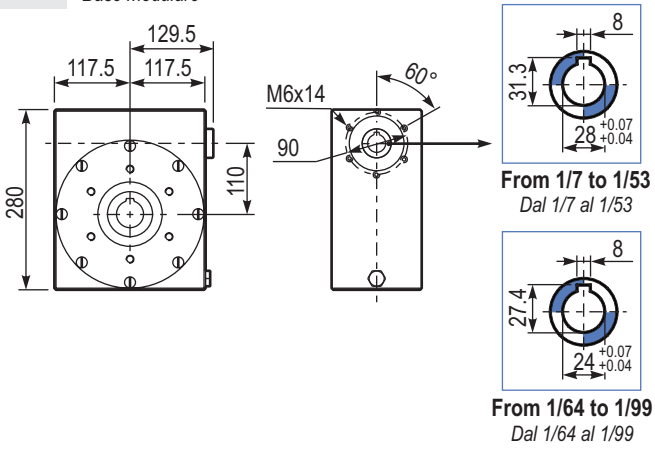
PI11UNI... Basic gearbox
Riduttore base

M. flanges	Kit code	øF	A
80B14	KI854046	120	137.5
90B14	KI854045	140	137.5
100-112B14	KI854041	160	146.5

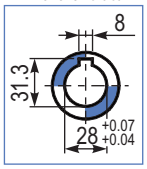
Gearbox weight *peso riduttore* **38.5 kg**



BI11UNI... Modular base
Base modulare



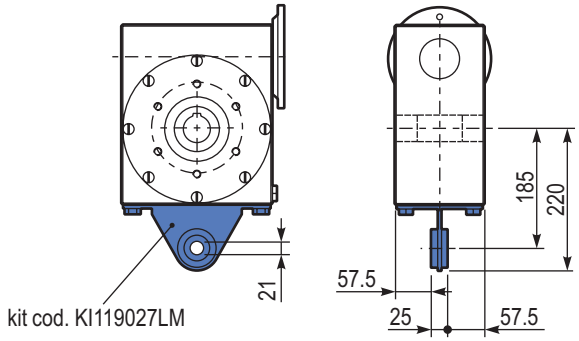
Input bore
Foro entrata



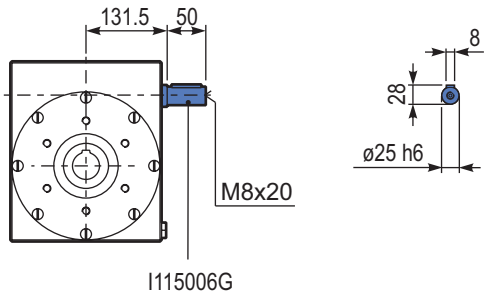
From 1/7 to 1/53
Dal 1/7 al 1/53

From 1/64 to 1/99
Dal 1/64 al 1/99

PI11BRI... Reaction arm
Braccio di reazione



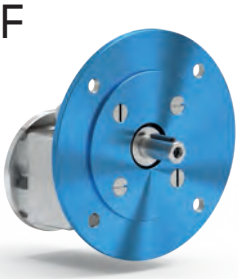
RI11UNI... Input shaft
Albero in entrata



AISI 304 IP66 CE NSF COMPONENT

On req.
A rich. ATEX

How to order *Codifica*

P	411I	-F	1.57	C
Type *Tipo*	Size *Grandezza*	Mounting *Montaggio*	Ratio *Rapporto*	Output shaft *Albero lento*
P 	411I	-N 	See technical data table *Vedi tabelle dati tecnici*	
M 		-F 		→ Standard C → ø19
B 				

4	-T	B3	ST	For M type specify terminal box position
Output flange *Flangia uscita*	Motor size *Grandezza motore*	Mounting position *Posizione di montaggio*	Input bore *Foro entrata*	*Per tipo M specificare posizione morsettiera*

N **Without flange**
Senza flangia

4 → ø200

Motor flanges
Flange motore

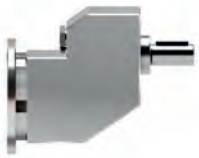
IEC B14

-Q → 71 B14 (ø105)
-R → 80 B14 (ø120)
-T → 90 B14 (ø140)

Without flange
Senza flangia

-1 → ø14 (IEC 71)
-2 → ø19 (IEC 80)
-3 → ø24 (IEC 90)

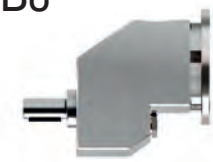
B3



B6

B7

B8



V5

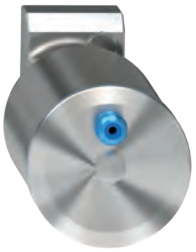
V6

V8

ST Standard bore
Foro standard

A

B



C

D

411I

38 Nm

RCI series
Full stainless steel ratio multipliers

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 -Q 71	B14 motor flanges -R 80	B14 motor flanges -T 90		Output shaft ø	Ratios code
891	1.57	1.5	16	1.3	1.9	20		C	C		2844		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	standard	04
303	4.62	1.5	46	1.0	1.5	47		C	C		1360	ø19	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

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 411I 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 411I 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: 0.14 L *Quantità olio per tutte le posizioni: 0.14 L*	Shell *Omala S4 WE 320*	Eni *Telium VSF 320*

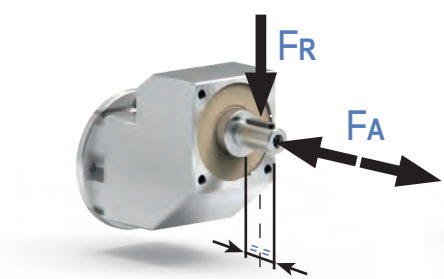
Tab. 1

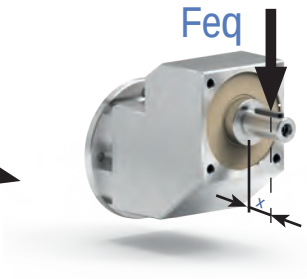
Radial and axial loads
Carichi radiali e assiali

Output shaft
Albero di uscita

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

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





Tab. 2

P411I-**N**...

Basic gearbox
Riduttore base

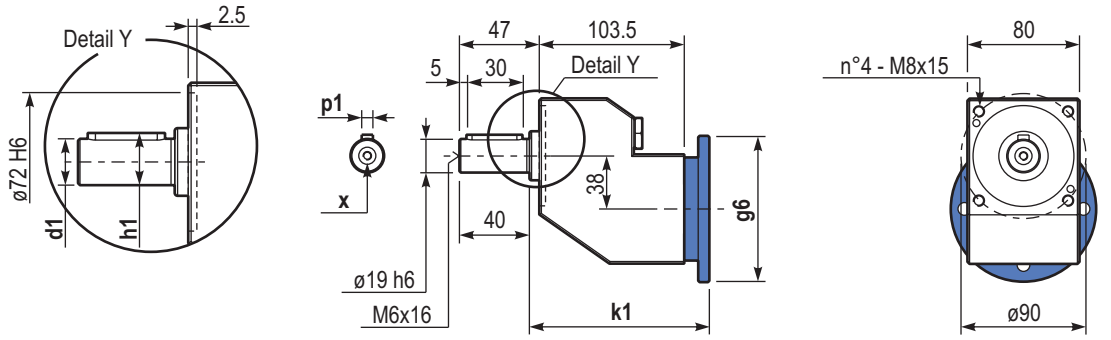
Gearbox weight *peso riduttore*	5.5 kg

Output shafts / *albero di uscita*

	Shaft - d1	p1	h1	x
Standard	ø19x40	6	21.5	M6x16

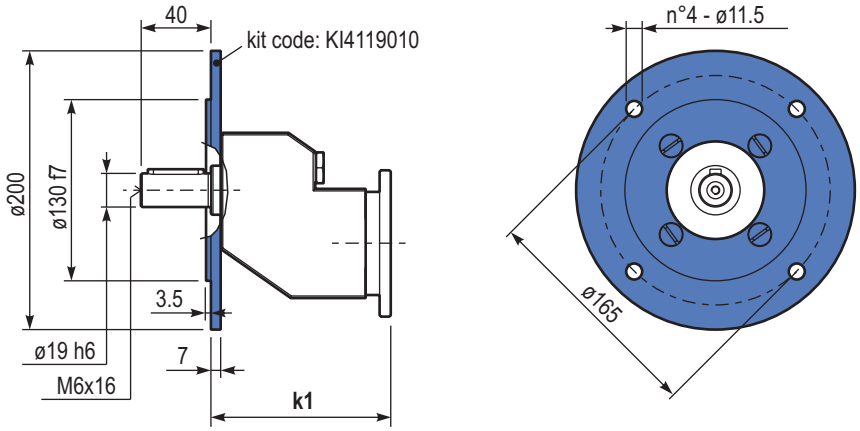
Input flanges / *flange di entrata*

	Kit code	k1	g6
71 B14	KI634047	128.5	105
80 B14	KI634046	130.5	120
90 B14	KI634041	130.5	140



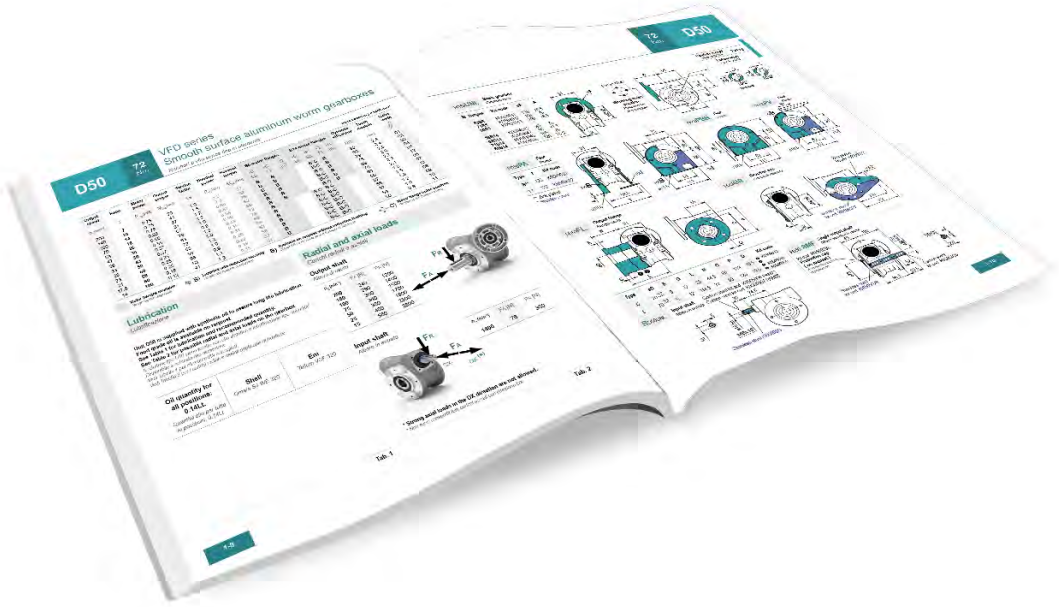
P411I-**F**...

Output flange
Flangia di uscita



For the complete documentation please visit our website: www.cleangeartech.com

Per la documentazione completa si prega di visitare il nostro sito web: www.cleangeartech.com



Section 8
Sezione 8

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

D Select motor flange available (if requested)
Scegli la flangia disponibile (se richiesta)

Worm gearboxes

Technical data example *Esempio di dati tecnici*

C Ratio *Rapporto* | Transmitted torque *Momento torcente* | Nominal power *Potenza nominale* | Flange code *Codice flangia* | Dynamic efficiency *Rendimento dinamico* | Nominal module *Modulo nominale* | Input speed *Velocità in entrata*

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges		Dynamic efficiency	Tooth module	Ratio code
							-A	-B	-O	-P			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	56	63	56	63	RD	[mm]	
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

Type of load and starts per hour *Tipo di carico e avviamenti per ora*			Worm gearboxes Vite senza fine		
Opererating hours per day - *Ore di funzionamento giornaliero*			<2h	2÷8h	8÷16h
Continuous or intermittent application with start / hour *Applicazione continua o intermittente con numero operazioni/ora*	≤ 10	Uniform - *Uniforme*	0.9	1	1.25
		Moderate - *Moderato*	1	1.25	1.5
		Heavy - *Forte*	1.25	1.5	1.75
Intermittent application with start / hour *Applicazione intermittente con numero operazioni/ora*	> 10	Uniform - *Uniforme*	1.25	1.5	1.75
		Moderate - *Moderato*	1.5	1.75	2
		Heavy - *Forte*	1.75	2	2.25

Ratio multipliers and Helical bevel gearboxes

Technical data example *Esempio di dati tecnici*

B Output speed *Velocità in uscita* | Motor power *Potenza motore* | Service factor *Fattore di servizio* | **A** Nominal torque *Momento torcente nominale* | Output shaft diam. *Diam. albero uscita* | Notes *Note*

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

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

Output speed	Ratio	Motor power	Output torque	Service factor	Nominal power	Nominal torque	B5 motor flanges		B14 motor flanges				Output shaft	Ratio code
							-	-	-Q	-R	-T			
n_2 [min^{-1}]	i	P_{1M} [kW]	M_{2M} [Nm]	f.s	P_{1R} [kW]	M_{2R} [Nm]	-	-	71	80	90			
192	7.29	1.5	71	1.1	1.7	80			C	C		2811		01
125	11.20	1.5	110	1.2	1.8	130			C	C		288		02
106	13.18	1.5	129	1.0	1.5	130			C	C		1911		03
92	15.27	1.1	109	1.2	1.3	130			C	C		1711		04

Type of load and starts per hour *Tipo di carico e avviamenti per ora*			Ratio multipliers Riduttori ad uno stadio Helical bevel gearboxes Coppia conica		
Opererating hours per day - *Ore di funzionamento giornaliero*			3h	10h	24h
Continuous or intermittent application with start / hour *Applicazione continua o intermittente con numero operazioni/ora*	≤ 10	Uniform - *Uniforme*	0.8	1	1.25
		Moderate - *Moderato*	1	1.25	1.5
		Heavy - *Forte*	1.25	1.5	1.75
Intermittent application with start / hour *Applicazione intermittente con numero operazioni/ora*	> 10	Uniform - *Uniforme*	1	1.25	1.5
		Moderate - *Moderato*	1.25	1.5	1.75
		Heavy - *Forte*	1.5	1.75	2.15

Required power - *Potenza richiesta*

Lifting - *Sollevamento*	Rotation - *Rotazione*	Linear movement - *Traslazione*
$P_{[kW]} = \frac{M_{[Kg]} \cdot g_{[9.81]} \cdot v_{[m/s]}}{1000}$	$P_{[kW]} = \frac{M_{[Nm]} \cdot n_{[rpm]}}{9550}$	$P_{[kW]} = \frac{F_{[N]} \cdot v_{[m/s]}}{1000}$

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*

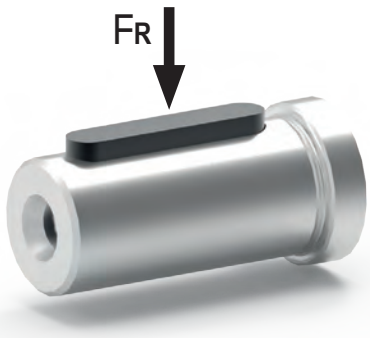
Radial load generated by external transmissions keyed onto input and/or output shafts.
Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.

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

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

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.
Nel caso la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.

Notes on protective white paint

Note sulla vernice bianca protettiva

RAL 7035 painted
Verniciato RAL 7035

Comparison on salt mist corrosion tests after 1000 hours.
Confronto sulle prove di corrosione in nebbia salina dopo 1000 ore.

0 hours — 1000 hours

Standard aluminum worm gearboxes

Riduttori a vite senza fine in alluminio

After short time it deteriorates
Dopo poco tempo si deteriorano

Same product with white protective paint

Stesso prodotto con vernice protettiva bianca

It allows acceptable results
Consente risultati accettabili

Beginning of the catalogue see the VFD series protective coating graph
All'inizio del catalogo vedere il grafico del rivestimento protettivo della serie VFD

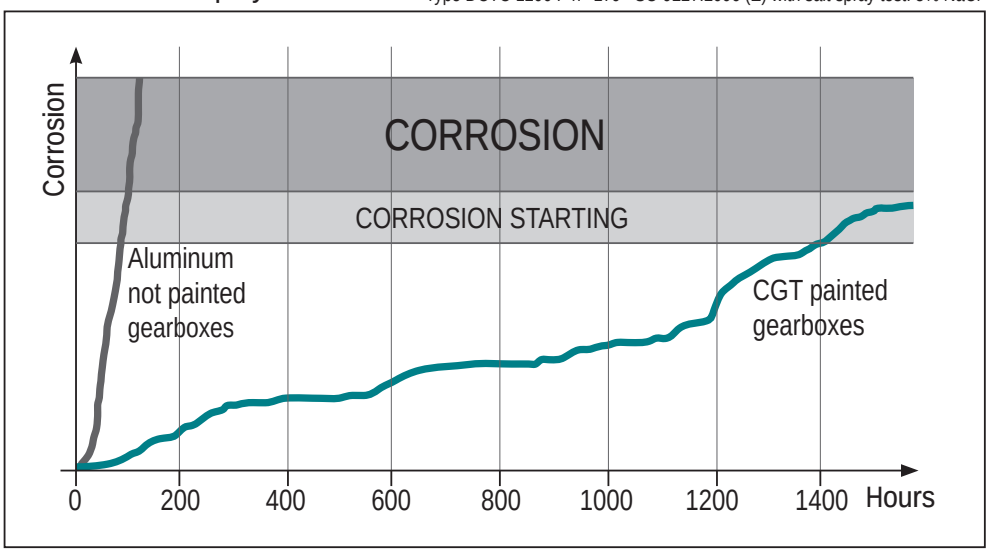
Two-component polyurethane product formulated with unmodified hydroxylated acrylic resin, to be crosslinked exclusively with an aliphatic isocyanic catalyst which gives rise to more elastic and non-yellowing films.
It can be applied in thick layers with limited solvent emission.This product guarantees excellent adhesion on steel, galvanized steel and other metals, excellent wetting of the substrate and high chemical resistance, hardness and flexibility.
The presence of zinc phosphate allows a high protection against anodic dissolution and delay in the formation of rust.
Show tolerance to non-optimal application and substrate conditions.
It remains strongly recommended where you want to offer high level protection in various painting cycles a different degree of resistance.
The primer also has, together with an excellent resistance to abrasion, a high adhesion.

Prodotto poliuretanico bicomponente formulato con resina acrilica ossidrilata non modificata, da reticolare esclusivamente con catalizzatore isocianico alifatico che dà luogo a film più elastici e non ingiallenti.
Può essere applicato ad alto spessore con contenuta emissione di solventi.
Tale prodotto garantisce eccellente adesione su acciaio, acciaio zincato ed altri metalli, ottima bagnatura del substrato ed elevata resistenza chimica, durezza e flessibilità.
La presenza di fosfato di zinco permette un' elevata protezione contro la dissoluzione anodica e ritardo nella formazione della ruggine.
Mostra tolleranza a condizioni di applicazione e del supporto non ottimali.
Resta decisamente raccomandato ove si desideri offrire protezione ad alto livello in vari cicli di verniciatura a diverso grado di resistenza.
Il fondo possiede inoltre, unitamente ad un'ottima resistenza all'abrasione, una elevata adesione.

Finish *Aspetto*	Satin, 30-40 gloss according to ISO 2813 Satinato, 30-40 gloss secondo norma ISO 2813
Finish *Colore*	RAL 7035 Ral 7035
Specific gravity *Peso specifico*	1,44 ± 0,05 kg/dm³ at 23°C, referring to 7721933 red RAL 3009 cured according to ISO 2811-1 1,44 ± 0,05 kg/dm³ a 23°C, riferito al 7721933 rosso RAL 3009 catalizzato

NSS Neutral Salt Spray Test

Type DCTC 1200 P n° L79 SO 9227:2006 (E) witn salt spray test: 5% NaCl



This graph is an indication, since some chemical components may be more aggressive than the salt spray test. Test are suggested on special cases (in case use type “N series”, full stainless steel gearboxes).

Il grafico va considerato come indicativo perchè altri agenti chimici potrebbero risultare più aggressivi del test in nebbia salina.
Suggeriamo prove specifiche nell’ambiente di lavoro e nel caso non vengano soddisfatti i requisiti minimi si consiglia di utilizzare la gamma in acciaio inox “Serie N”.

Suggestions on application of the gearboxes

Suggerimenti sull’applicazione dei riduttori

Close protection cap

Coperchio di protezione chiuso

Closed protection cap seals the ouput hollow shaft end and provides protection against the rotating shaft.
The cover can be mounted on both sides of the housing, matching screws are included in the scope of delivery.

Il coperchio di protezione chiuso sigilla l’estremità dell’albero cavo di uscita e fornisce protezione contro l’albero rotante.
Il coperchio può essere montato su entrambi i lati dell’alloggiamento, le viti corrispondenti sono incluse nella fornitura.

Continuous duty on bevel gear

Servizio continuo su coppie coniche

If the application requires a gearbox for continuous duty operation, then choose a torque rating that is higher than the expected application torque and avoid if possible vertical positions.
For more information, contact our technical service.

Se l’applicazione richiede un riduttore per servizio continuo, sceglierne un valore di coppia superiore alla coppia di applicazione prevista evitare se possibile posizioni verticali.
Per maggiori informazioni, contattare il nostro servizio tecnico.

Input speed

Velocità di ingresso

When choosing a gearbox for a specific application, consider that with the input speed exceeding 1800 rpm, the temperature can rise.

Quando si sceglie un riduttore per un’applicazione specifica, considerare la velocità di ingresso superiore ai 1800 giri/min la temperatura può salire.

Coupling possible combination

Tabella combinazione giunti possibili




ALUMINUM	STAINLESS STEEL			GROUP	INPUT DIAMETER Ø	P = Polymer Z = Zamak Material	Kit Code	
D30	N30	I30	-	KA	09	P	K0305090P	
					11	P	K0305091P	
D45	N45	I45	X43N	KB	09	P	KC355090P	
					11	P	KC355091P	
					14	P	KC355092P	
D50	N50	I50	-	KC	09	P	K0505090P	
					11	P	K0505091P	
					14	P	K0505092P	
					19	Z	K0505093Z	
D63	N63	I63	X42N X63N X74N	KD	11	P	KC405091P	
					14	P	KC405092P	
					19	P	KC405093P	
					24	Z	KC405094Z	
D85	N85	I85	X62N X73N	KE	14	P	KC505092P	
					19	P	KC505093P	
					24	Z	KC505094Z	
					28	Z	KC505095Z	

Input coupling assembly *Montaggio Giunto in entrata*

PATENTED

The coupling is only suitable for the use of standard IEC / NEMA motors. The motor shaft must always have the shoulder to hold the coupling in position. The diameter of the coupling must always correspond to the IEC / NEMA flange applied to the reducer, reduced or increased dimensions of the hole are not allowed (ex. IEC 71 flange with hole ø11).

Il giunto è adatto solo per l'utilizzo di motori standard IEC / NEMA. L'albero motore deve avere sempre lo spallamento per tenere in posizione il giunto. Il diametro del giunto deve sempre corrispondere alla flangia IEC / NEMA applicata al riduttore, non sono consentite dimensioni ridotte o maggiorate del foro (es. flangia IEC 71 con foro ø11).

Direct mounting - No settings - No screw

Montaggio diretto - No settaggi - No viti

1

** Do not mount oil seals on motor flange

Non montare anelli di tenuta nella flangia motore

* Only Zamak coupling Apply a small quantity of antifriction grease

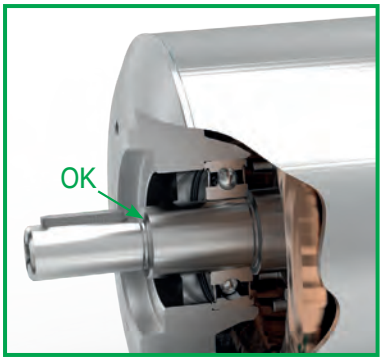
Solo con giunto in Zama Applicare una piccola quantità di grasso antifrizione

* Coupling orientation

Orientamento giunto

Motor shaft only allowed with shoulder

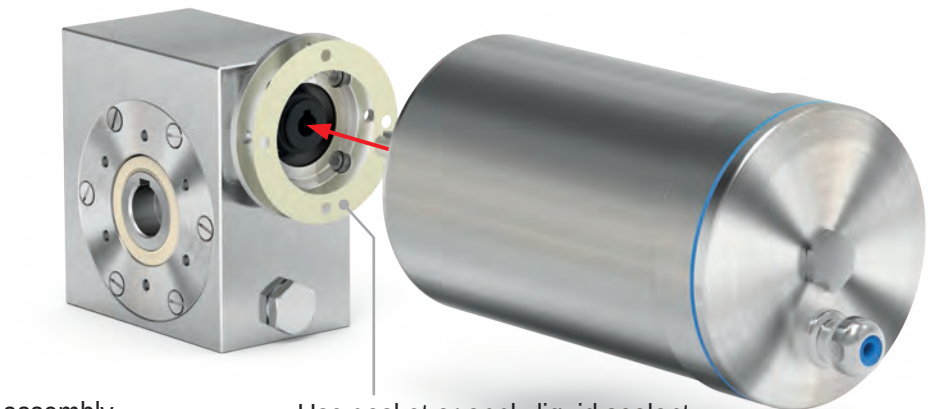
Usare un albero motore solo con spallamento



Do not use motor shaft without shoulder

Non utilizzare un albero motore senza spallamento

2



Motor assembly

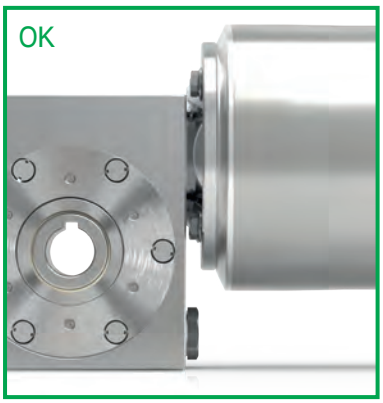
Assemblaggio motore

Use gasket or apply liquid sealant

Usare la guarnizione o pasta sigillante

Motor assembly

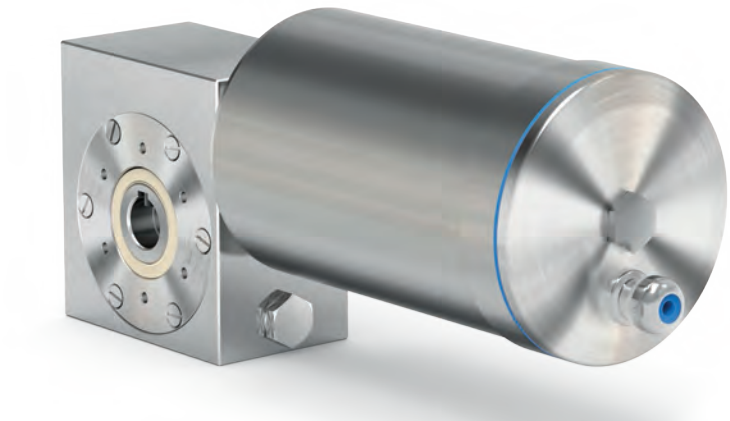
Assemblaggio motore

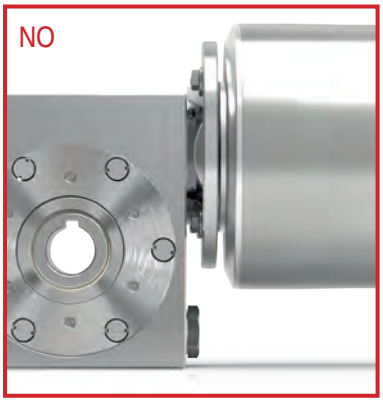


Make sure easily motor in full **contact with gearbox flange** before tightening the screws.

Prima di serrare le viti, assicurarsi che il motore sia completamente a contatto con la flangia del riduttore.

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

Certifications on the Clean-Geartech products

Certificazioni sui prodotti Clean-Geartech

IP69K

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: contro la 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.

c UL us

Products marked cRUus are certified to be manufactured in accordance with the requirements of UL and approved to be used in Usa and Canada.
This certification means that the products were tested and resulted compliant regarding potential flammability, electrical shock and mechanical hazard.

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

CE

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.

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.

NSF International is an accredited, independent third-party certification organization that tests and certifies products to verify they meet these public health and safety standards. The NSF certification mark on a product means that the product complies with all standard requirements referring to the hygienic and health. NSF conducts periodic unannounced inspections and product testing to verify that the product continues to comply with the standard.

NSF International è un'organizzazione indipendente accreditata di certificazione che testa e certifica i prodotti per verificare che essi garantiscano i requisiti delle norme di Salute e Sicurezza. Il marchio NSF su un prodotto significa che il prodotto stesso è conforme agli standard richiesti in riferimento alle norme di igiene e salute. NSF esegue controlli periodici non annunciati per verificare che il prodotto continui ad essere conforme agli standard delle norme.

Important information as warranty and use

see complete version on the web

Informazioni importanti come garanzia e utilizzo vedi versione completa sul web

SINCE CLEAN-GEARTECH IS A DIVISION OF HYDRO-MEC SPA.
HYDROMEC SPA IS THE LEGAL RESPONSABLE FOR WARRANTY ISSUES.

PLEASE READ CAREFULLY
The following WARNING and CAUTION information are supplied to you for the proper functioning of your product.
Read ALL instructions prior to operating reducer.
Injury to personnel or reducer failure may be caused by improper installation, maintenance or operation.

CLEAN-GEARTECH È UNA DIVISIONE DI HYDRO-MEC SPA PER QUESTO MOTIVO HYDROMEC SPA È LEGALMENTE IL RESPONSABILE DEI PROBLEMI DI GARANZIA.

LEGGERE ATTENTAMENTE
Le seguenti raccomandazioni sono fondamentali per un buon funzionamento del vostro prodotto.
Leggere attentamente tutte le istruzioni prima di azionare il riduttore.
L'inappropriata installazione, manutenzione o funzionamento del riduttore può causare incidenti al personale addetto edanni al riduttore stesso.

WARNING:

• Written authorization is required to operate or use reducers in man lift or people moving devices.
• Check to make sure that certain applications do not exceed the allowable load capacities published in the current catalog.
• Buyer shall be solely responsible for determining the adequacy of the product for any and all uses to which Buyer shall apply the product. The application by Buyer shall not be subject to any implied warranty of fitness for a particular purpose.
• For safety, Buyer or User should provide protective guards over all shaft extensions and any moving apparatus mounted thereon. The User is responsible for checking all applicable safety codes in his area and providing suitable guards. Failure to do so may result in bodily injury and/or damage to equipment.
• Gearboxes operating in high position should have a protective shield for any possible parts falling down for casual accidents where people are moving under them.
• Hot oil and reducers can cause severe burns. Use extreme care when removing lubrication plugs and vents.
• Make certain that the power supply is disconnected before attempting to service or remove any components. Lock out the power supply and tag it to prevent unexpected application power.
• Reducers are not to be considered fail safe or self-locking devices. If these features are required, a properly sized, independent holding device should be utilized.
Reducers should not be used as a brake.
• Any brakes that are used in conjunction with a reducer must be sized or positioned in such a way so as to not subject the reducer to loads beyond the catalog rating.
• Lifting supports including eyebolts are to be used for vertically lifting the gearbox only and not other associated attachments or motors.
• Use of an oil with an EP additive on units with backstops may prevent proper operation of the backstop. Injury to personnel, damage to the reducer or other equipment may result.
• Overhung loads subject shaft bearings and shafts to stress which may cause premature bearing failure and or shaft breakage from bending fatigue, it not sized properly.

ATTENZIONE:

• E' richiesta autorizzazione scritta per azionare riduttori in ascensori o dispositivi per il movimento delle persone.
• Controllare che alcune applicazioni non eccedano la massima capacità di carico ammessa pubblicata in questo catalogo.
• L'acquirente è l'unico responsabile per la determinazione dell'adeguatezza del prodotto per qualcuna o tutte le utilizzazioni che l'acquirente stesso farà del riduttore. L'applicazione dell'acquirente non potrà essere soggetta ad alcuna implicita garanzia di montaggio per uno scopo particolare.
• Per ragioni di sicurezza l'acquirente dovrà provvedere a porre protezioni adeguate su tutta la lunghezza dell'albero a tutti gli organi in movimento.
L'utilizzatore è responsabile del controllo di tutti i codici di sicurezza e la predisposizione di protezioni adeguate. In assenza di tali precauzioni si possono verificare incidenti alle persone e danni agli apparati.
• Su riduttori installati in posizioni elevate utilizzare protezioni adeguate per qualsiasi distacco accidentale di parti nel caso di passaggio di persone al di sotto.
• Olio e riduttori bollenti possono causare gravi ustioni. Usare estrema cautela nella rimozione dei tappi e delle ventole.
• Assicurarsi che la corrente di alimentazione sia scollegata prima di riparare o rimuovere alcun componente. Chiudere l'alimentazione e contrassegnare tale operazione per evitare accensioni accidentali.
• I riduttori non devono essere considerati esenti da guasti o a bloccaggio automatico. Se sono indispensabili queste caratteristiche, deve essere utilizzato un dispositivo indipendente della dimensione adatta. I riduttori non devono essere utilizzati come freni.
• Qualsiasi freno sia utilizzato insieme al riduttore deve essere della giusta grandezza e posizionato in modo da non causare carichi eccessivi non previsti dai dati forniti nel catalogo.
• I dispositivi di sollevamento come le golfare devono essere usati solo per sollevare verticalmente il riduttore e non altri dispositivi associati o motori.
• L'utilizzo di un olio con un additivo EP su gruppi provvisti di dispositivo di arresto possono inficiare l'uso corretto del freno e provocare danni alle persone, alle cose ed al riduttore stesso nonché ad altri apparecchi.
• I Carichi sospesi assoggettano i cuscinetti della vite e la vite stessa a sollecitazioni che possono causare, se non adeguatamente dimensionati, l'usura prematura dei cuscinetti e/o larottura della vite a causa della resistenza alla flessione.

SELLING CONDITIONS
Warranty for manufacturing defects will expire one-year after the invoicing date. Cleangeartech will replace or repair defective parts but will not accept any further changes for direct or indirect damages of any kind. The warraty will become null and void if repairs or changes are carried out without our prior written authorization.
Our company will not be responsible for any direct or indirect damages, caused by a wrong use of the products or for not observing the catalogue/ web indication.
If the process requires total protections the customers should consider additional measures to avoid any contaminations arising from the gearboxes.

All information shown in this catalogue are purely indicative; Hydro-Mec s.p.a reserves the right to make any necessary variation without prior notice.

CONDIZIONI DI VENDITA
La garanzia relativa a difetti di costruzione ha la durata di un anno dalla data di fatturazione della merce. Tale garanzia comporta per Cleangeartech l'onere della sostituzione o riparazione delle parti difettose ma non ammette ulteriori addebiti per eventuali danni diretti o indiretti di qualsiasi natura. La garanzia decade nel caso in cui siano state eseguite riparazioni o apportate modifiche senza nostro consenso scritto.
La nostra ditta non si ritiene responsabile per eventuali danni diretti o indiretti derivanti da un uso improprio dei prodotti e dalla mancata osservanza delle indicazioni riportate a catalogo o web.
Se il processo richiede una protezione totale, i clienti dovrebbero prendere in considerazione misure aggiuntive per evitare qualsiasi contaminazione derivante dai riduttori.
 Tutte le informazioni riportate nel presente **catalogo sono puramente indicative; Hydro-Mec s.p.a si riserva il diritto di** apportare qualsiasi variazione necessaria senza preavviso.

NOTES

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CLEAN-GEARTECH

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