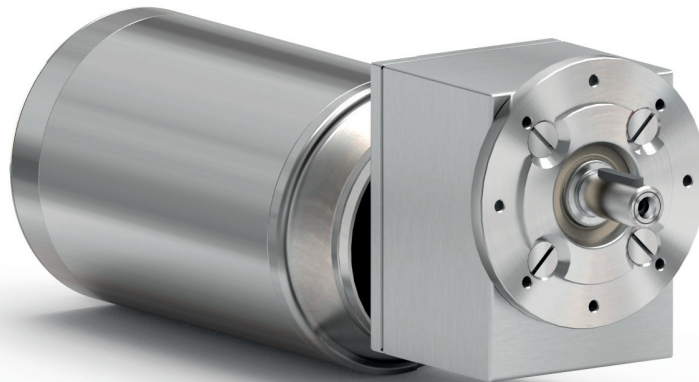


L RCL series Stainless steel shielded ratio multipliers

Riduttori ad uno stadio schermati in acciaio inox

Section **4**
Sezione 4

This range is **CE** **NSF** certified



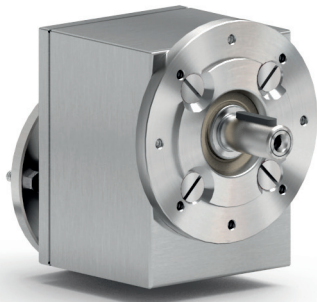
FEATURES

Caratteristiche

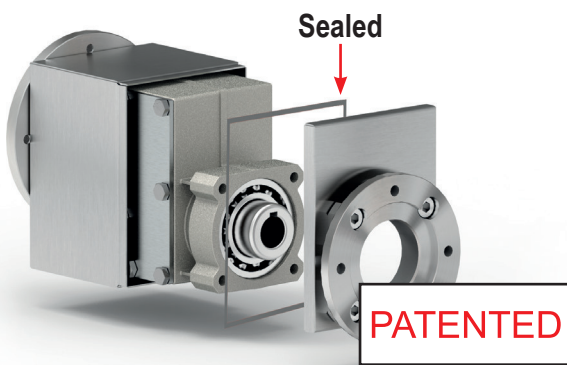
RCL series Stainless steel shielded ratio multipliers

Riduttori ad uno stadio schermati in acciaio inox

Type <i>Tipo</i>	Torque <i>Coppia</i>	Center distance <i>Interasse</i>	Input power <i>Potenza in entrata</i>	Hollow output shaft <i>Albero cavo in uscita</i>
411L	38 Nm	38 mm	0.37 ÷ 1.5 kW	ø19 mm
511L	110 Nm	50 mm	1.1 ÷ 4.0 kW	ø28 mm



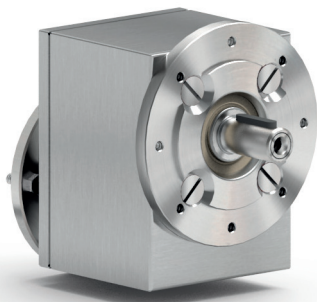
This product is:



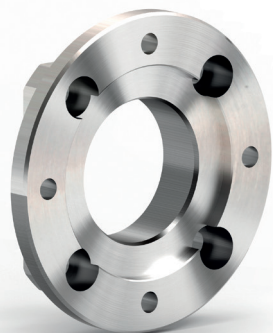
The "L" series is an already totally enclosed aluminum gearboxes, that is shielded and sealed by stainless steel 316L case.

La serie "L" è ottenuta da un riduttore in alluminio che viene incapsulato all'interno di un carter sigillato in acciaio inox 316L.

Output shaft is produced in AISI 316L.

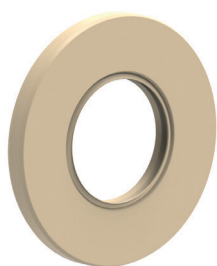


Albero in uscita in AISI 316L.

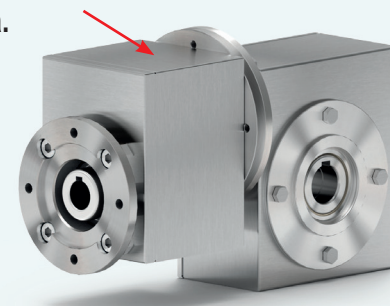


Fully modular IEC flanges and compact NEMA C motor flanges.

Flange IEC e NEMA completamente modulari.



Standard FPM (fkm) seals are used, since seals will be in a closed area.



Anelli di tenuta FPM(fkm) standard.



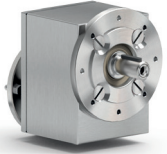
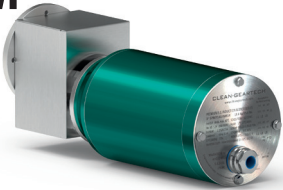
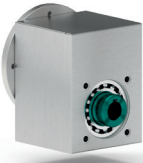


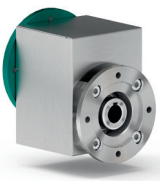
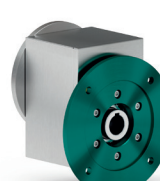


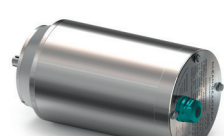
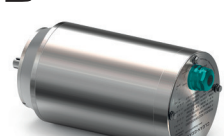



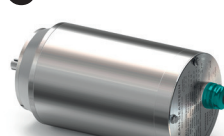
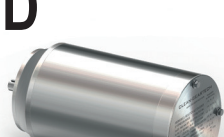
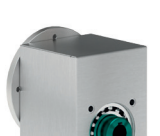



Hardened and ground gears.

Ingranaggi temprati e rettificati.

How to order

Codifica

P	411L	-F	1.57	C
Type <i>Tipo</i>	Size <i>Grandezza</i>	Mounting <i>Montaggio</i>	Ratio <i>Rapporto</i>	Output shaft <i>Albero lento</i>
P 	411L 511L	-F 	See technical data table <i>Vedi tabelle dati tecnici</i>	
M 		411L C -> $\varnothing 19$		
B 		511L G -> $\varnothing 28$		

1	-T	B3	-	With Type M specify terminal box position Con tipo M specificare posizione morsetteria
Output flange <i>Flangia uscita</i>	Motor size <i>Grandezza motore</i>	Mounting position <i>Posizione di montaggio</i>	Input bore <i>Foro entrata</i>	Terminal box position <i>Posizione morsetteria</i>
 <p>411L 1 -> $\varnothing 120$</p> <p>511L 3 -> $\varnothing 160$</p>	<p>Flange <i>Flange</i></p>  <p>IEC B5 -D -> 80 B5 ($\varnothing 200$) -E -> 90 B5 ($\varnothing 200$)</p>	<p>B3</p>  <p>B6</p> 	<p>- Standard bore <i>Foro standard</i></p>	<p>A</p>  <p>B</p> 
	 <p>IEC B14 -Q -> 71 B14 ($\varnothing 105$) -R -> 80 B14 ($\varnothing 120$) -T -> 90 B14 ($\varnothing 140$) -U -> 100-122 B14 ($\varnothing 160$)</p>	<p>B7</p>  <p>B8</p> 		<p>C</p>  <p>D</p> 
	<p>Without flange <i>Senza flangia</i></p>  <p>411L -1 -> $\varnothing 14$ (71 B5) -2 -> $\varnothing 19$ (80 B5) -3 -> $\varnothing 24$ (90 B5) 511L -2 -> $\varnothing 19$ (80 B5) -3 -> $\varnothing 24$ (90 B5) -4 -> $\varnothing 28$ (100 B5)</p>	<p>V5</p>  <p>V6</p>  <p>V8</p> 		

Useful formulas

Formule utili

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*

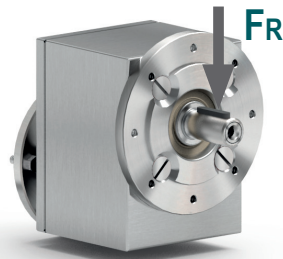
f_k: Factor - *Coefficiente di trasformazione*

1.15: Gearwheels - *Ingranaggi*

1.25: Chain sprochets - *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.

How to select a gearbox

Come selezionare un riduttore

A Select required torque (according to service factor)

Seleziona la coppia desiderata (comprensiva del fattore di servizio)

B Select output speed

Seleziona la velocità in uscita

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

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

D Select motor flange available (if requested)

Scegli la flangia disponibile (se richiesta)

Gear size
Grandezza
riduttore

C

Ratio
Rapporto

Transmitted torque
Momento torcente
trasmesso

Nominal power
Potenza nominale

Flange code
Codice flangia

Input speed
Velocità in entrata

411L

38
Nm



RCL series

Stainless steel shielded ratio multipliers

Riduttori ad uno stadio schermati in acciaio inox

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

Input speed (n_1) = 1400 min⁻¹

Output speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor $f.s$	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges			B14 motor flanges			Output shaft  standard ø19	Ratios code 
							-	-	-	-Q	-R	-T		
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	04
303	4.62	1.5	46	1.0	1.5	47	-	-	-	C	C		1360	05
222	6.30	1.1	46	1.0	1.1	46	-	-	-	C	C		1063	06
170	8.22	0.55	30	1.3	0.69	38	-	-	-	C	C		974	07
129	10.86	0.37	27	1.0	0.39	28	-	-	-	C	C		776	08

B Output speed
Velocità in uscita

Motor power
Potenza motore

Service factor
Fattore di servizio

A Nominal torque
Momento torcente
nominale

Output shaft diam.
Diametro albero uscita

Notes
Note

Type of load and starts per hour

Tipo di carico e avviamenti per ora

Oper. hours per day
Ore di funz. giorn.

		Oper. hours per day		
		3h	10h	24h
Continuous or intermittent application with start / hour ≤ 10 Applicazione continua o intermittente con numero operazioni/ora	Uniform - <i>Uniforme</i>	0.8	1	1.25
	Moderate - <i>Moderato</i>	1	1.25	1.5
	Heavy - <i>Forte</i>	1.25	1.5	1.75
Intermittent application with start / hour > 10 Applicazione intermittente con numero operazioni/ora	Uniform - <i>Uniforme</i>	1	1.25	1.5
	Moderate - <i>Moderato</i>	1.25	1.5	1.75
	Heavy - <i>Forte</i>	1.5	1.75	2.15

D Motor flange available
Flange disponibili

B) Mounting with reduction bushing
Montaggio con boccia di riduzione

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

B) Available without reduction bushing
Disponibile anche senza boccia

411L



38
Nm

RCL series Stainless steel shielded ratio multipliers

Riduttori ad uno stadio schermati in acciaio inox

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

Input speed (n_1) = 1400 min⁻¹

Output speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [kW]	Output torque M_{2M} [Nm]	Service factor f.s	Nominal power P_{1R} [kW]	Nominal torque M_{2R} [Nm]	B5 motor flanges			B14 motor flanges			Output shaft 	Ratios code 
							-	-	-	-Q	-R	-T		
891	1.57	1.5	16	1.3	1.9	20	-	-	-	71	80	90	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	04
303	4.62	1.5	46	1.0	1.5	47				C	C	standard ø19	1360	05
222	6.30	1.1	46	1.0	1.1	46				C	C		1063	06
170	8.22	0.55	30	1.3	0.69	38				C	C		974	07
129	10.86	0.37	27	1.0	0.39	28				C	C		776	08

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 411L 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 411L 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:
0.10Lt.**

Quantità olio per tutte
le posizioni: 0.10Lt

Agip
Telium VSF 320

Shell
Omala S4 WE 320

Radial and axial loads

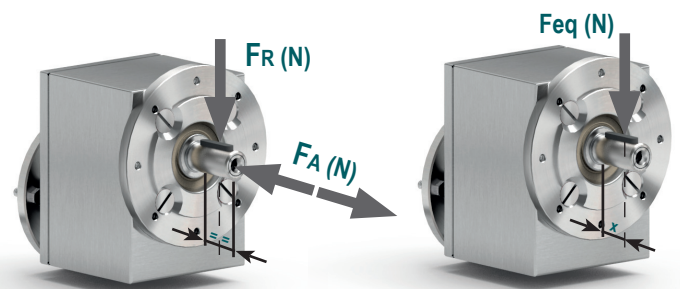
Carichi radiali e assiali

Output shaft

Albero di uscita

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

$$F_{eq} = F_R \cdot \frac{41}{X + 21}$$



Tab. 1

Tab. 2

38
Nm

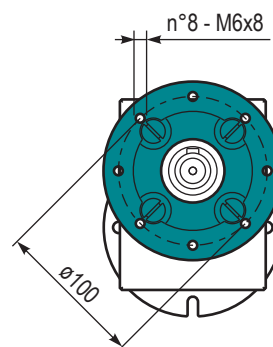
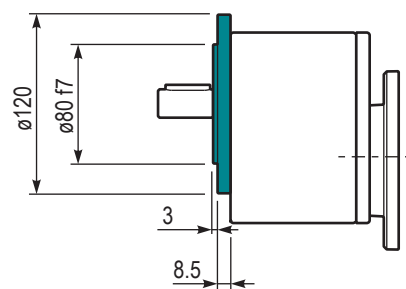
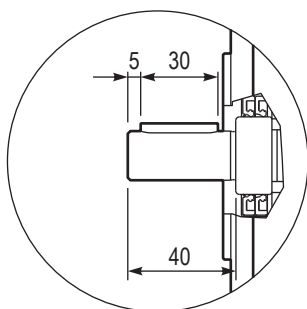
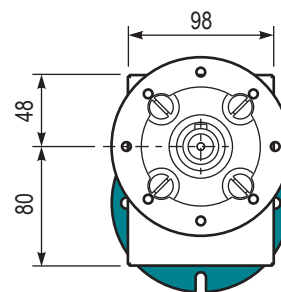
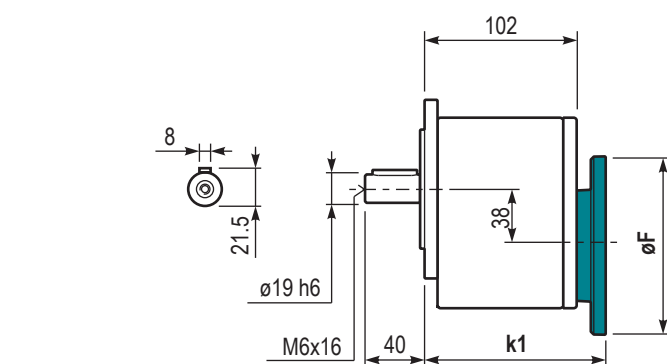
411L

P411L-F ... **Output flange**
Flangia di uscita

Gearbox weight 5.0 kg
Peso riduttore

Input flanges / flange di entrata

	Kit code	øF	k1
71 B14	KI634047	105	120
80 B14	KI634046	120	122
90 B14	KI634041	140	122



511L




110 Nm

RCL series Stainless steel shielded ratio multipliers

Riduttori ad uno stadio schermati in acciaio inox

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

Input speed (n_1) = 1400 min⁻¹

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

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 511L 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 511L 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:
0.29Lt.**

Quantità olio per tutte
le posizioni: 0.29Lt

Agip

Telium VSF 320

Shell

Omala S4 WE 320

Radial and axial loads

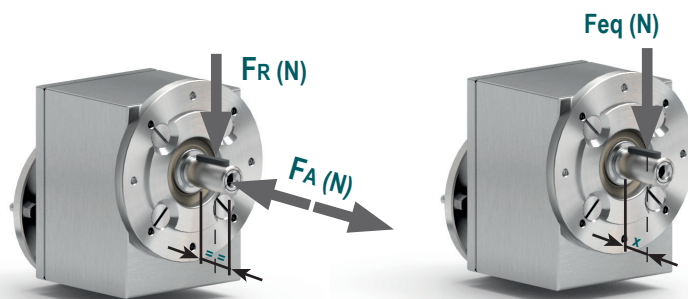
Carichi radiali e assiali

Output shaft

Albero di uscita

n_2 [min ⁻¹]	F_A [N]	F_R [N]
700	294	1470
600	320	1600
400	370	1850
300	400	2000
200	460	2300
140	510	2550

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



Tab. 1

Tab. 2

110
Nm

511L

P511L-F ... **Output flange**
Flangia di uscita

Gearbox weight 9.0 kg
Peso riduttore

Input flanges / flange di entrata

	Kit code	øF	k1
80-90 B5	KI854042	200	148.5
100-112 B14	KI854041	160	157.5

