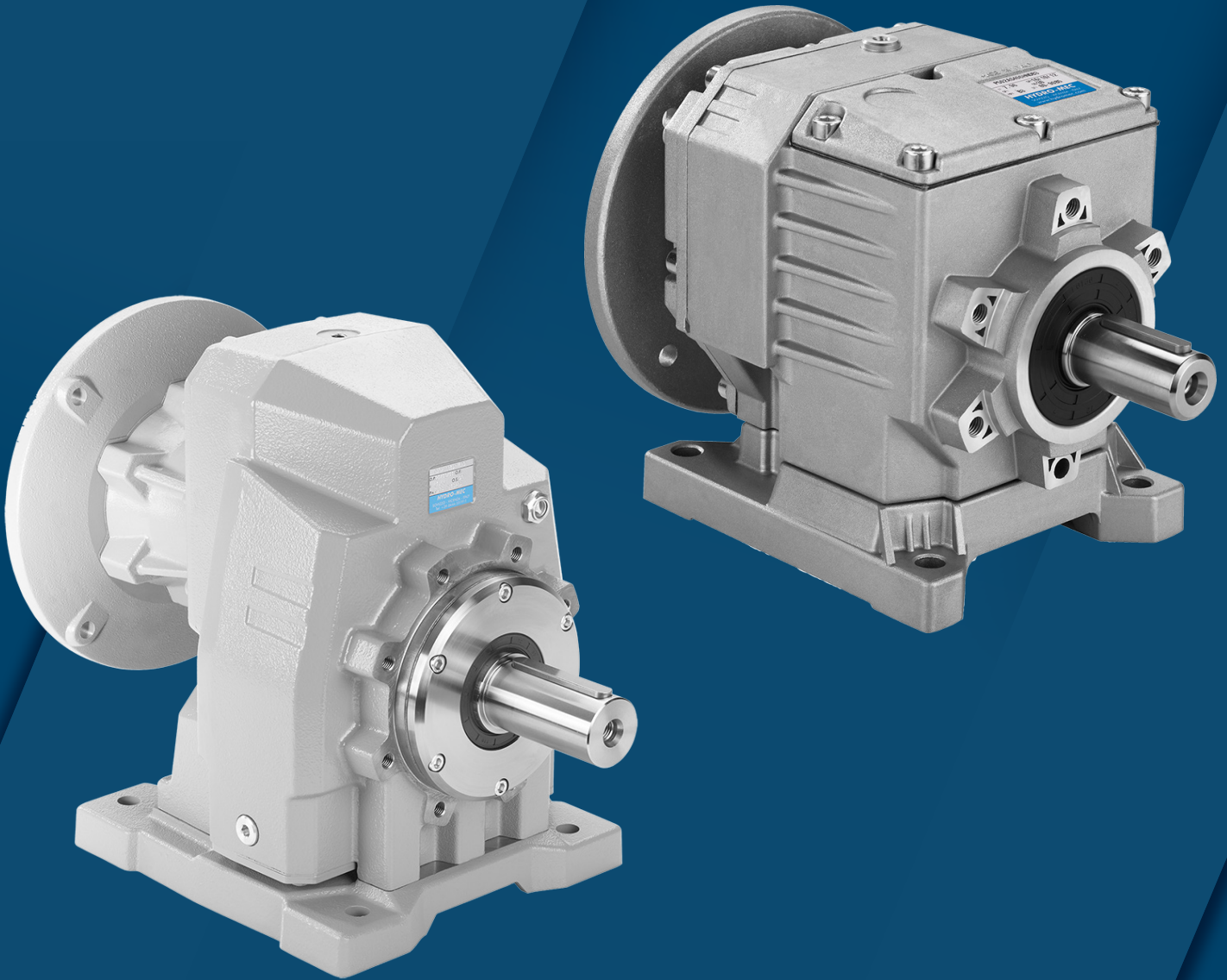


HYDRO·MEC

bj·gear



Helical gearboxes

Customisation is our standard

Aluminum one step gearboxes

A modular and compact product

Flange

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

Alloy housing

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

Gears

Hardened and ground gears.

Removable inspection cover

Allows periodic inspection of gearing during routine maintenance

Output shaft

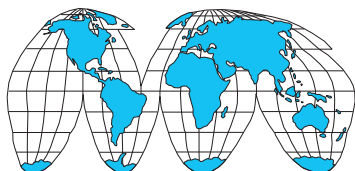
With well proportioned bearings

Feet

Removable feet.

Single-piece aluminum alloy housing

Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing

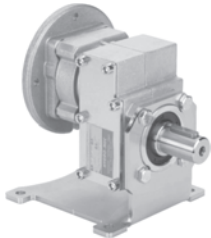


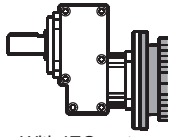
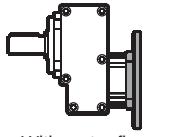
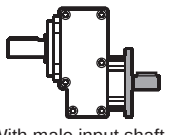
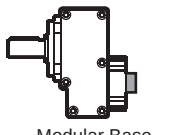
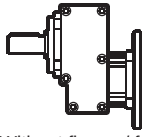
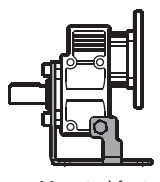
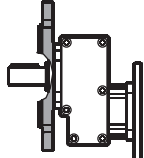
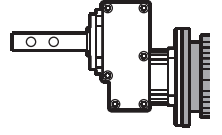
World wide sales network.

Lubricated for life with synthetic oil with operative range from -15° to $+130^{\circ}\text{C}$



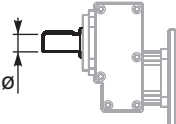
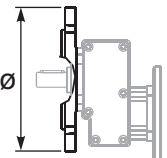
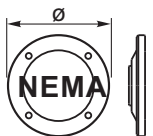
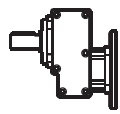
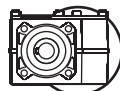
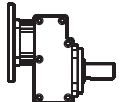
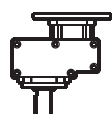
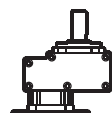
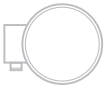
Specific type datasheet on page...

On page / A pagina / En la página				
 Types / Tipi / Tipos ➡	4-5	4-7	4-9	4-11
	211A 177lb in	311A 266lb in	411A 336lb in	511A 970lb in

Type - Tipo - Tipo	Size - Grandezza - Tamaño	Mounting - Montaggio Tipo de montaje
P	311A	-F
Aluminum one step gear Riduttori in alluminio a uno stadio  With IEC motor M  With motor flange P  With male input shaft R  Modular Base B	1 Stages Riduzioni Etapas 211A 311A 411A 511A	 Without flange / feet -N  Mounted feet H1  Output flange mounted -F
Special output shaft Albero uscita speciale  Only on request for Q.ty A richiesta per quantità		



On request we can deliver our products according to the ATEX
A richiesta possiamo fornire i nostri prodotti secondo le normative ATEX
A pedido, se pueden enviar nuestros productos de acuerdo con las normas ATEX.

Output shaft Albero uscita Eje en salida	Output flange Flangia uscita Brida en salida	Motor size - Grandezza motore Tamaño motor	Mounting position Posizione montaggio Posición de montaje	Input bore Foro entrata Eingangshohlwelle Trou d'entree Eje hueco de entrada	Terminal box position Posizione morsetti Posición caja de bornes
X	U	-W	B3	ST	
Output shaft diameter Diametro albero uscita  → STANDARD 211A X → ø0.625 311A X → ø0.625 O → ø0.750 W → ø0.875 411A X → ø0.625 O → ø0.750 W → ø0.875 511A Y → ø1.125	Output flange diameter Diametro flangia uscita  N Senza flangia Without flange 211A I → ø4.13 Flangia integrata Integrated flange 311A U → ø6.50 2 → ø5.51 3 → ø6.30 4 → ø7.87 411A U → ø6.50 2 → ø5.51 3 → ø6.30 4 → ø7.87 511A U → ø6.50 2 → ø5.51 3 → ø6.30 4 → ø7.87 5 → ø9.84	 With Flange for type P -W → 56C -X → 143/5TC -Y → 182/4TC → STANDARD Without flange Senza flangia  211A 311A -K → ø0.625 411A -K → ø0.625 -N → ø0.875 511A -K → ø0.625 -N → ø0.875 -S → ø1.125 Type R Tipo R  211A 311A -K → ø0.625 411A -J → ø0.750 511A -J → ø0.750 -N → ø0.875	 B3 STANDARD  B6  B7  B8  V5  V6 Specify only for vertical positions Specificare solo per posizione verticale	ST Nothing indication: standard bore Nessuna indicazione: foro standard	With Type M specify terminal box position Con tipo M specificare posizione morsetti  A  B STANDARD  C  D

POTENZA RICHIESTA / REQUIRED POWER / POTENCIA NECESARIA

Lifting / sollevamento / elevación

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

Rotation / rotazione / rotation

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

Linear movement / traslazione / translacion

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

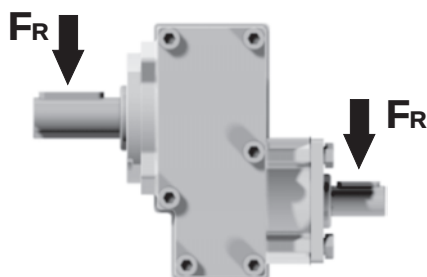
TORQUE / COPPIA / PAR

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

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

RADIAL LOADS / CARICHI RADIALI / CARGA RADIAL Y AXIAL

- Radial load generated by external transmissions keyed onto input and/or output shafts.
- Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.
- Cargas radiales, generada por transmisiones externas, aplicadas sobre los ejes de entrada y/o salida



$F_R [N] = \frac{M [Nm] \cdot 2000}{d [mm]} \cdot f_k$		$F_R [N] = \frac{M [lb\ in] \cdot 8.9}{d [in]} \cdot f_k$	
M	Momento torcente / Output torque / Par torsion		
d	Diametro primitivo / Diam. of driving element / Diámetro primitivo		
f _k	Coefficiente di trasformazione / Factor / Coeficiente de transmisión 1.15 Ingranaggi / Gearwheels / Engranaje 1.25 Catena / Chain sprockets / Cadena 1.75 Cinghia Trapezoidale / Narrow v-belt pulley / Correa trapezoidal 2.50 Cinghia piatta / Flat-belt pulley / Correa plana		

- If your application requires higher radial loads, contact our technical office. Higher load may be possible.
- Nel caso la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.
- En el caso en que una aplicación exija una carga radial superior a la especificada en el catálogo, consultar a nuestra oficinas técnica.

How to select a gearbox / Come selezionare un riduttore Cómo seleccionar un reductor

B Output speed
Velocità in uscita
Velocidad de salida

Nominal power
Potenza nominale
Potencia nominal

Gear size
Grandezza riduttore
Tamaño reductor

Motor power
Potenza motore
Potencia motor

A Nominal torque
Momento torcente nominale
Par de torsión nominal

Flange code
Codice flangia
Código bridas

Preferential ratio
Rapporto preferenziale
Relación preferente

Input speed
Velocità in entrata
Velocidad de entrada

311A

One step
266lb in

Rating - Alluminum ONE STEP GEARBOXES

QUICK SELECTION / Selezione veloce							input speed (n _i) = 1750 min ⁻¹		
Output Speed n ₂ [min ⁻¹]	Ratio i	Motor power P _{1M} [HP]	Output torque M _{2M} [lb in]	Service factor f.s.	Nominal power P _{1R} [HP]	Nominal torque M _{2R} [lb in]	Available NEMA motor flanges		Output Shaft
							-W	-	
							56C	-	
1113.6	1.57	0.75	56	2.1	2.07	115			2844
615.7	2.84	0.75	100	2.0	2.03	204			1954
531.3	3.29	0.75	115	2.0	1.98	230			1756
									standard Ø0.625

C Ratio
Rapporto
Relación

Transmitted torque
Momento torcente trasmesso
Par transmitido

Service factor
Fattore di servizio
Factor de servicio

Output Shaft diam.
Diam. albero uscita
Diametro eje de salida

Notes
Note
Notas

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

D	Motor flange available Flange disponibili Bridas disponibles
B)	Mounting with reduction ring Montaggio con boccola di riduzione Montaje con casquillo de reducción
C)	Motor flangeholes position/terminal box position Posizione fori flangia/basetta motore Posición agujeros brida / base motor
B)	Available without reduction bushes Disponibile anche senza boccola Disponibile tambien sin casquillo

A	Select required torque (according to service factor)	Seleziona la coppia desiderata (comprensiva del fattore di servizio)	Seleccionar el par deseado (incluyendo el factor de servicio)
B	Select ouput speed	Seleziona la velocità in uscita	Seleccionar la velocidad de salida
C	On the same line of selected geared motor, you can find the gear ratio	Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione	En la línea correspondiente al motor preseleccionado es posible encontrar la relación de reducción
D	Select motor flange available (if requested)	Scegli la flangia disponibile (se richiesta)	Seleccionar la brida disponible (sobre pedido)



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges	Output Shaft	Ratios code
							-W 56C		
853	2.05	0.75	54	1.6	1.22	89		1939	01
744	2.35	0.75	62	1.7	1.28	106		1740	02
625	2.80	0.75	74	1.7	1.25	124		1542	03
517	3.38	0.75	90	1.7	1.26	150		1344	04
372	4.70	0.75	124	1.4	1.07	177		1047	05
281	6.22	0.75	165	1.2	0.93	204		956	06
211	8.29	0.5	146	1.2	0.61	177		758	07
178	9.83	0.33	115	1.2	0.41	142		659	08

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

E El reductor tamaño **211A** se suministra, lubricado de por vida con aceites sintéticos y no requieren mantenimiento alguna. Ver tabla 1, para cantidades y aceites recomendados. En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.
Para documentación completa, consultar nuestra Web.

LUBRICATION 211A Oil Quantity 1.76 ounces

SHELL Omala S4 WE 320

ENI Telium VSF 320

For all details on lubrication and plugs check our website

tab. 1

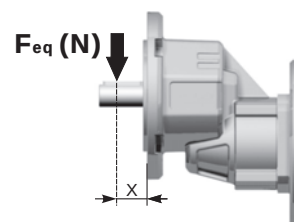
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

RADIAL AND AXIAL LOADS

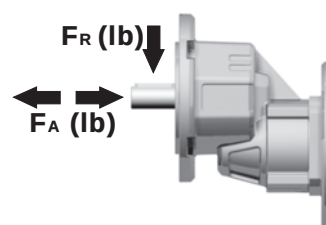
Output shaft

Albero di uscita

$$F_{eq} = F_R \cdot \frac{1.54}{X+0.77}$$

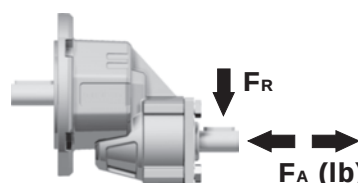


n_2	FA	FR
700	22.7	113.3
600	27.0	134.9
400	31.0	156.5
300	33.9	170.0
200	39.3	196.9
140	43.2	215.8



Input shaft

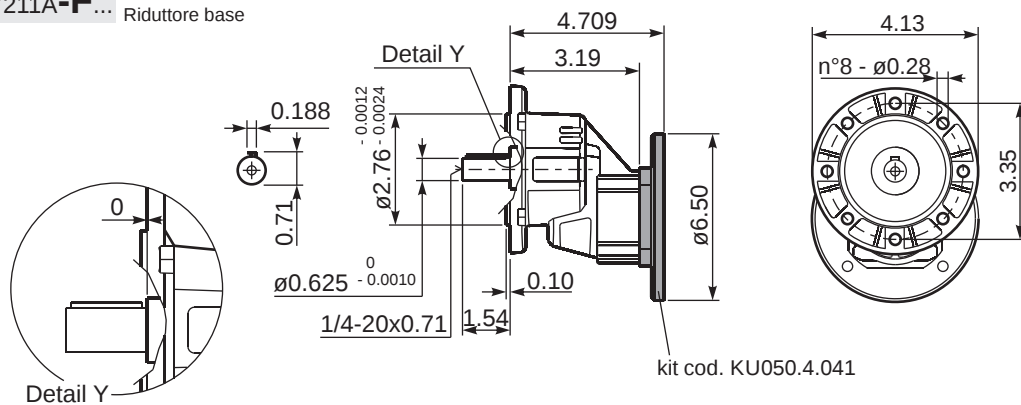
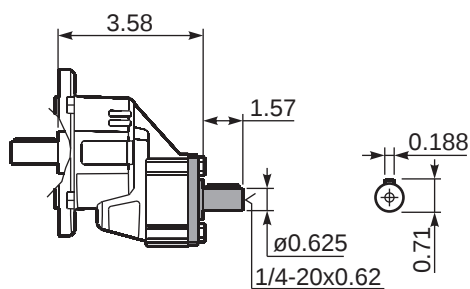
albero in entrata



n_2	FA	FR
1750	37.8	188.8
1140	43.2	215.8

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

tab. 2

P211A-F...Basic wormbox
Riduttore baseGearbox
weight
peso riduttore**3.09 lb****R211A-F...**Basic wormbox
Riduttore base



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges	Output Shaft	Ratios code
							-W 56C		
1114	1.57	1	55	2.1	2.07	115		2844	01
616	2.84	1	100	2.0	2.03	204		1954	02
531	3.29	1	116	2.0	1.98	230		1756	03
453	3.87	1	136	1.8	1.82	248		1558	04
379	4.62	1	163	1.6	1.63	266		1360	05
278	6.30	1	222	1.4	1.39	310		1063	06
213	8.22	0.75	218	1.5	1.16	336		974	07
161	10.86	0.50	192	1.3	0.65	248		776	08

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

LUBRICATION 311A Oil Quantity 3.52 Ounces

SHELL Omala S4 WE 320

ENI Telium VSF 320

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

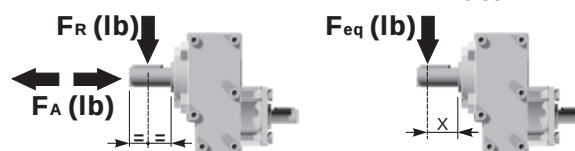
tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

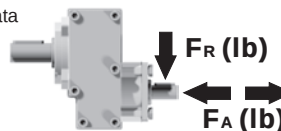
$$F_{eq} = F_R \cdot \frac{1.61}{X+0.83}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
700	18.9	94.4	400	25.8	130.3	200	32.8	164.0
600	22.5	112.3	300	28.3	141.5	140	35.9	179.7

Input shaft

Albero in entrata



n_1	FA	FR
1750	31.4	157.3
1140	35.9	179.7

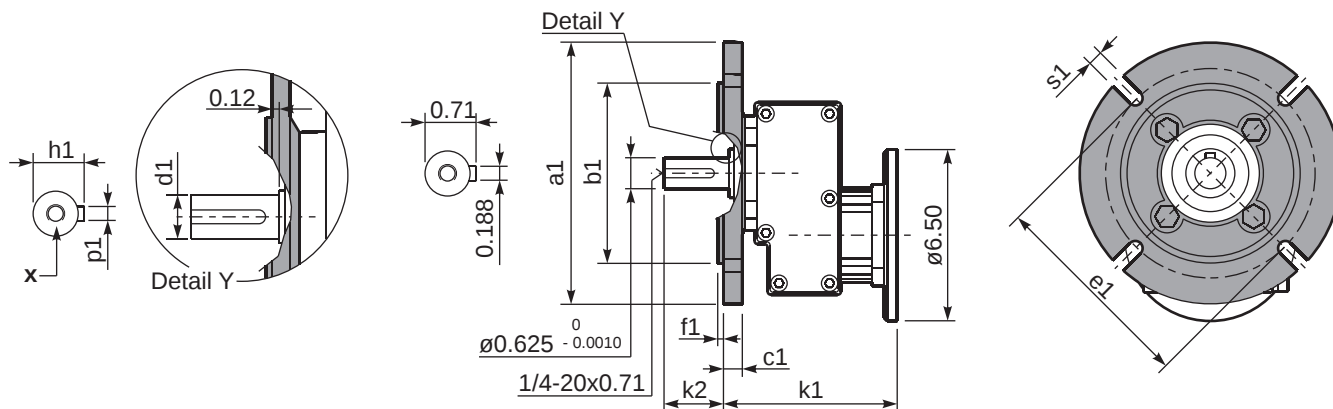
tab. 2

P311-F... Output flange
flange di uscita

Gearbox weight
peso riduttore

Mold base
With flange

4.41 lb
5.29 lb



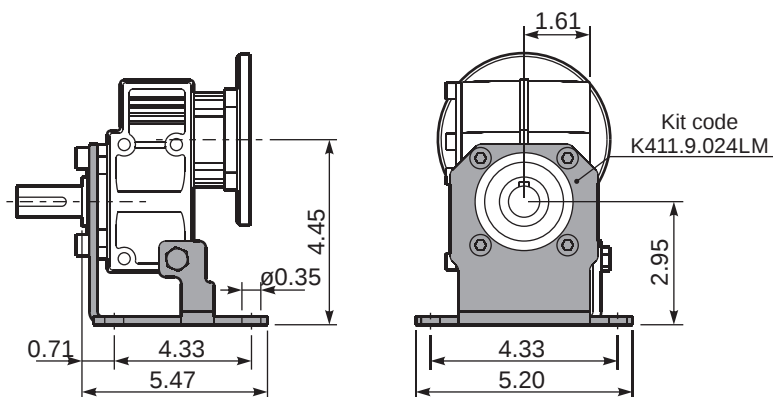
***Available output shaft / Albero di uscita**

	Shaft - d1	p1	h1	x
Standard	ø0.625x2.06	0.188	0.71	1/4-20x0.71
On request A richiesta	ø0.750x2.125	0.188	0.83	1/4-20x0.71
	ø0.875x2.125	0.188	0.96	1/4-20x0.71

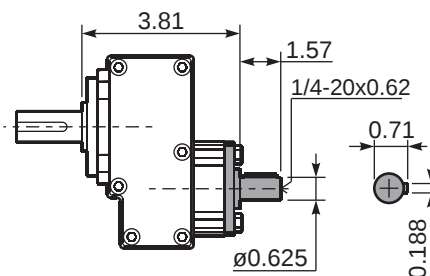
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1	k1	k2	s1	kit code	Type
6.50	4.50 ^{-0.0017} _{-0.0033}	0.39	5.87	0.13	5.19	1.84	0.41	KU311.9.012	Nema
5.51	3.74 ^{-0.0014} _{-0.0028}	0.45	4.53	0.12	5.09	1.92	0.35	KC30.9.011	Metric
6.30	4.33 ^{-0.0014} _{-0.0028}	0.45	5.12	0.14	5.09	1.92	0.35	KC30.9.012	
7.87	5.12 ^{-0.0017} _{-0.0033}	0.45	6.50	0.14	5.09	1.92	0.43	KC30.9.013	

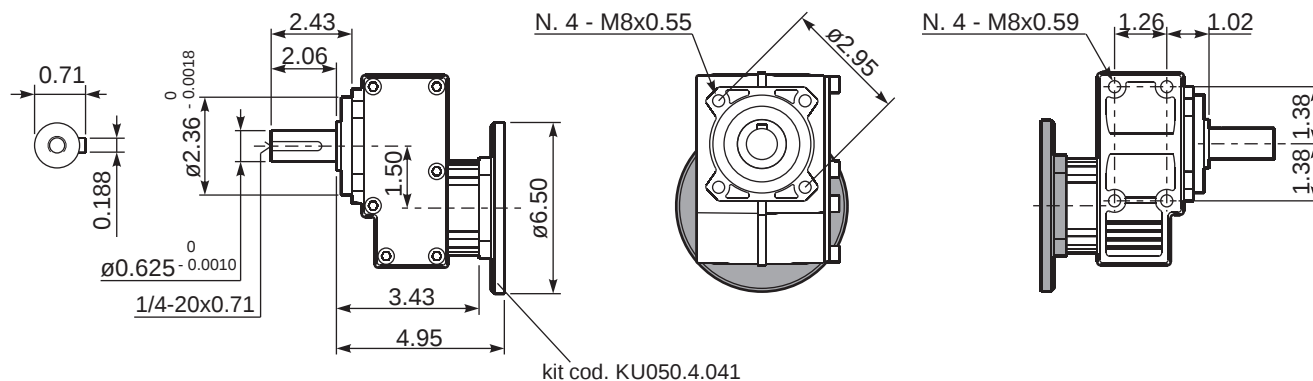
P311-H1... With feet
Con piedini



R311-N... Input Shaft
Albero in entrata



P311-N... Basic gearbox
Riduttore base





QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft		Ratios code
							-W	-X			
							56C	143/5TC			
1114	1.57	2	111	1.6	3.19	177			2844		01
616	2.84	2	201	1.5	3.09	310			1954	standard	02
531	3.29	2	233	1.4	2.89	336			1756	ø0.750	03
453	3.87	2	273	1.3	2.59	354			1558		04
379	4.62	2	326	1.3	2.55	416			1360	On request	05
278	6.30	1.5	334	1.2	1.83	407			1063	ø0.625	06
213	8.22	0.75	218	1.5	1.16	336			974	ø0.875	07
161	10.86	0.5	192	1.3	0.65	248			776		08

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

LUBRICATION 411A Oil Quantity 3.52 Ounces

SHELL Omala S4 WE 320

ENI Telium VSF 320

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

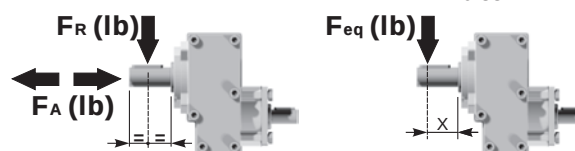
tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

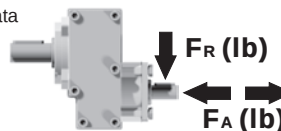
$$F_{eq} = F_R \cdot \frac{1.81}{X+0.83}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
700	40.9	204.4	400	51.7	258.4	200	65.1	325.8
600	44.9	224.7	300	56.2	280.8	140	71.9	359.5

Input shaft

Albero in entrata



n_1	FA	FR
1750	53.9	269.6
1140	62.9	314.5

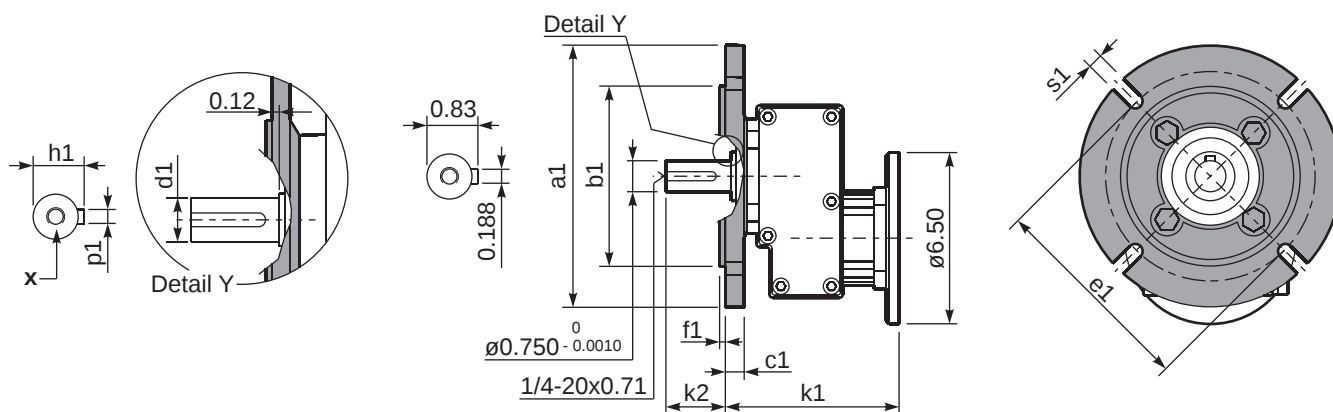
tab. 2

P411-F... Output flange
flange di uscita

Gearbox weight
peso riduttore

Mold base **6.39 lb**

With flange **7.27 lb**



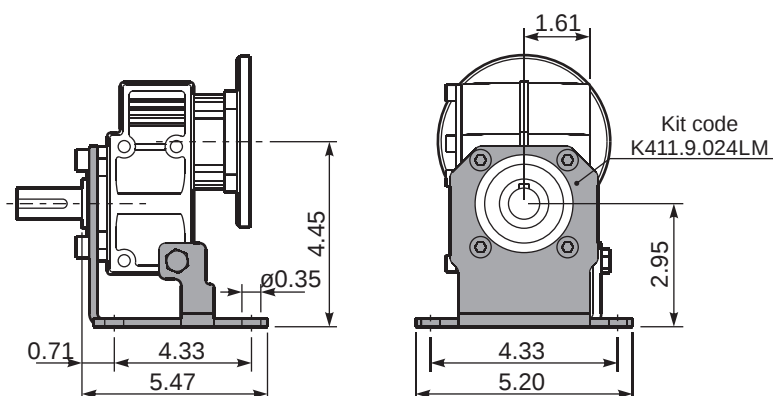
***Available output shaft / Albero di uscita**

	Shaft - d1	p1	h1	x
Standard	Ø0.750x2.125	0.188	0.83	1/4-20x0.71
On request A richiesta	Ø0.625x2.06	0.188	0.71	1/4-20x0.71
	Ø0.875x2.125	0.188	0.96	1/4-20x0.71

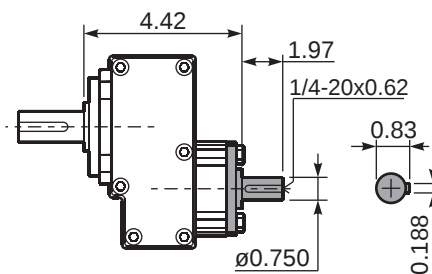
Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	k1	k2	s1	kit code	Type
6.50	4.50 ^{-0.0017} _{-0.0033}	0.39	5.87	0.13	5.51	1.91	0.41	KU311.9.012	Nema
5.51	3.74 ^{-0.0014} _{-0.0028}	0.45	4.53	0.12	5.42	1.99	0.35	KC30.9.011	Metric
6.30	4.33 ^{-0.0014} _{-0.0028}	0.45	5.12	0.14	5.42	1.99	0.35	KC30.9.012	
7.87	5.12 ^{-0.0017} _{-0.0033}	0.45	6.50	0.14	5.42	1.99	0.43	KC30.9.013	

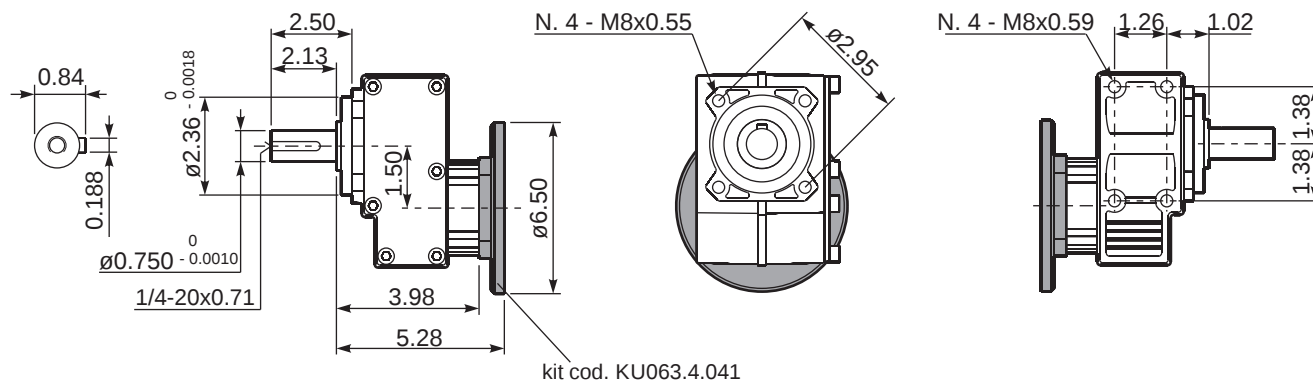
P411-H1... With feet
Con piedini



R411-N... Input Shaft
Albero in entrata



P411-N... Basic gearbox
Riduttore base





QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft		Ratios code
							-X	-Y			
							143/5TC	182/4TC			
1346	1.30	5	229	1.5	7.72	354			3039		01
714	2.45	5	432	1.4	7.16	620			2049		02
528	3.31	5	585	1.4	6.81	797			1653		03
406	4.31	3	456	2.1	6.40	974			1356		04
332	5.27	3	558	1.7	5.23	974			1158		05
230	7.63	2	538	1.8	3.62	974			861		06
167	10.50	1.5	556	1.3	1.91	708			663		07

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

LUBRICATION 511A Oil Quantity 10.21 Ounces

SHELL Omala S4 WE 320

ENI Telium VSF 320

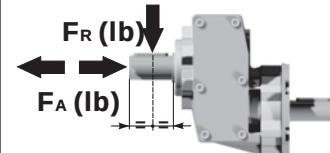
For all details on lubrication and plugs check our website
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

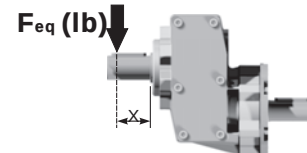
RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita



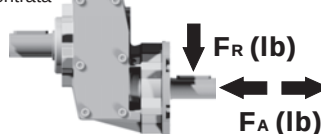
$$F_{eq} = F_R \cdot \frac{1.88}{X+0.90}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
700	66.0	330.3	400	83.1	415.6	200	103.3	516.7
600	71.9	359.5	300	89.9	449.3	140	114.6	572.9

Input shaft

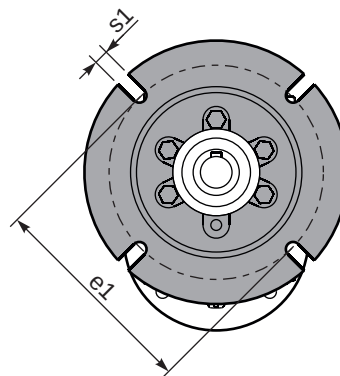
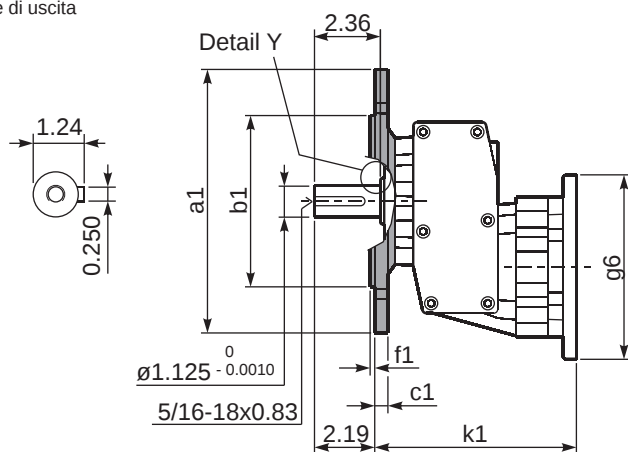
Albero in entrata



n_1	FA	FR
1750	89.9	449.3
1140	98.8	494.3

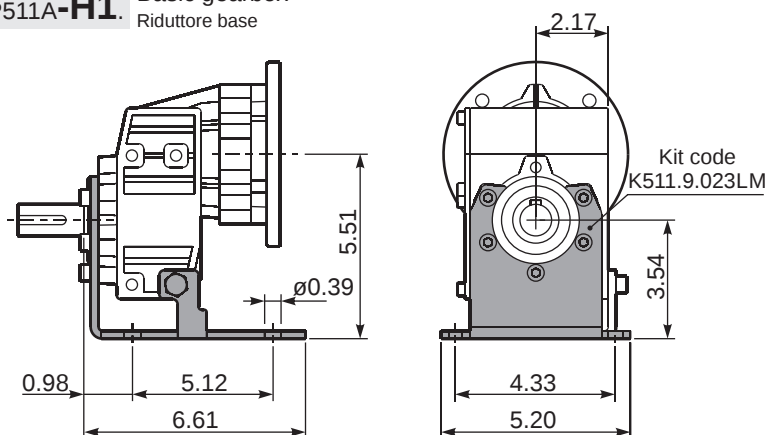
tab. 2

P511-F...

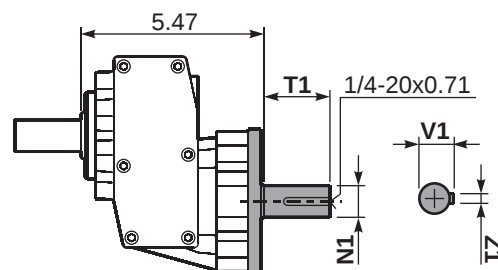
Output flanges
flange di uscitaGearbox
weight
peso riduttoreMold base **10.8 lb**
With flange **12.8 lb**

Available output flanges / flange di uscita

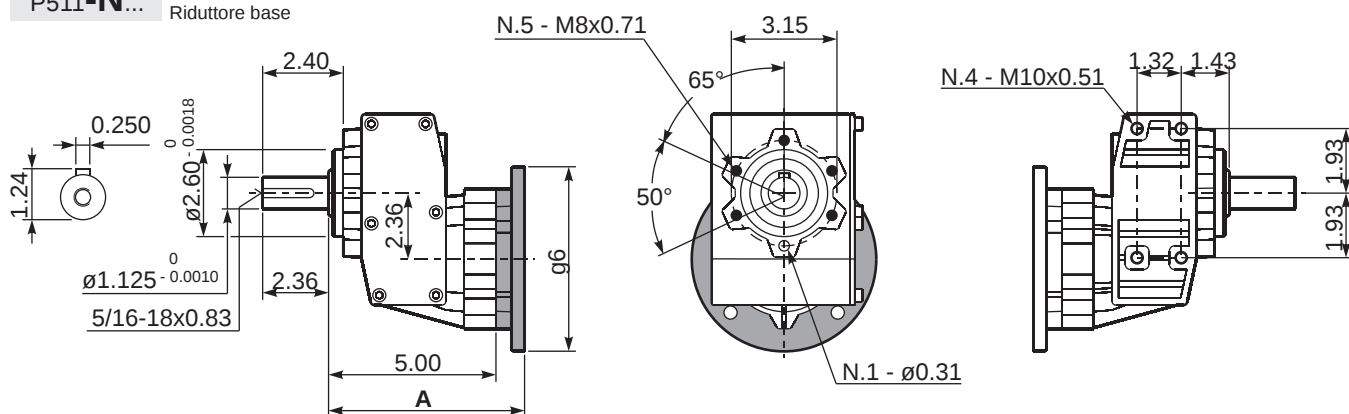
a1 Ø	b1	c1	e1	f1	s1	kit code	Type
6.50	4.50 ^{+0.0017} _{-0.0033}	0.61	5.87	0.13	0.41	KU511.9.012	Nema
5.51	3.74 ^{+0.0014} _{-0.0028}	0.39	4.53	0.12	0.35	KC40.9.011	Metric
6.30	4.33 ^{+0.0014} _{-0.0028}	0.39	5.12	0.14	0.35	KC40.9.012	
7.87	5.12 ^{+0.0014} _{-0.0028}	0.43	6.50	0.14	0.43	KC40.9.013	
9.84	7.09 ^{+0.0017} _{-0.0033}	0.45	8.46	0.14	0.55	KC40.9.014	

P511A-H1. Basic gearbox
Riduttore base

R511A-N...

Input Shaft
Albero in entrata

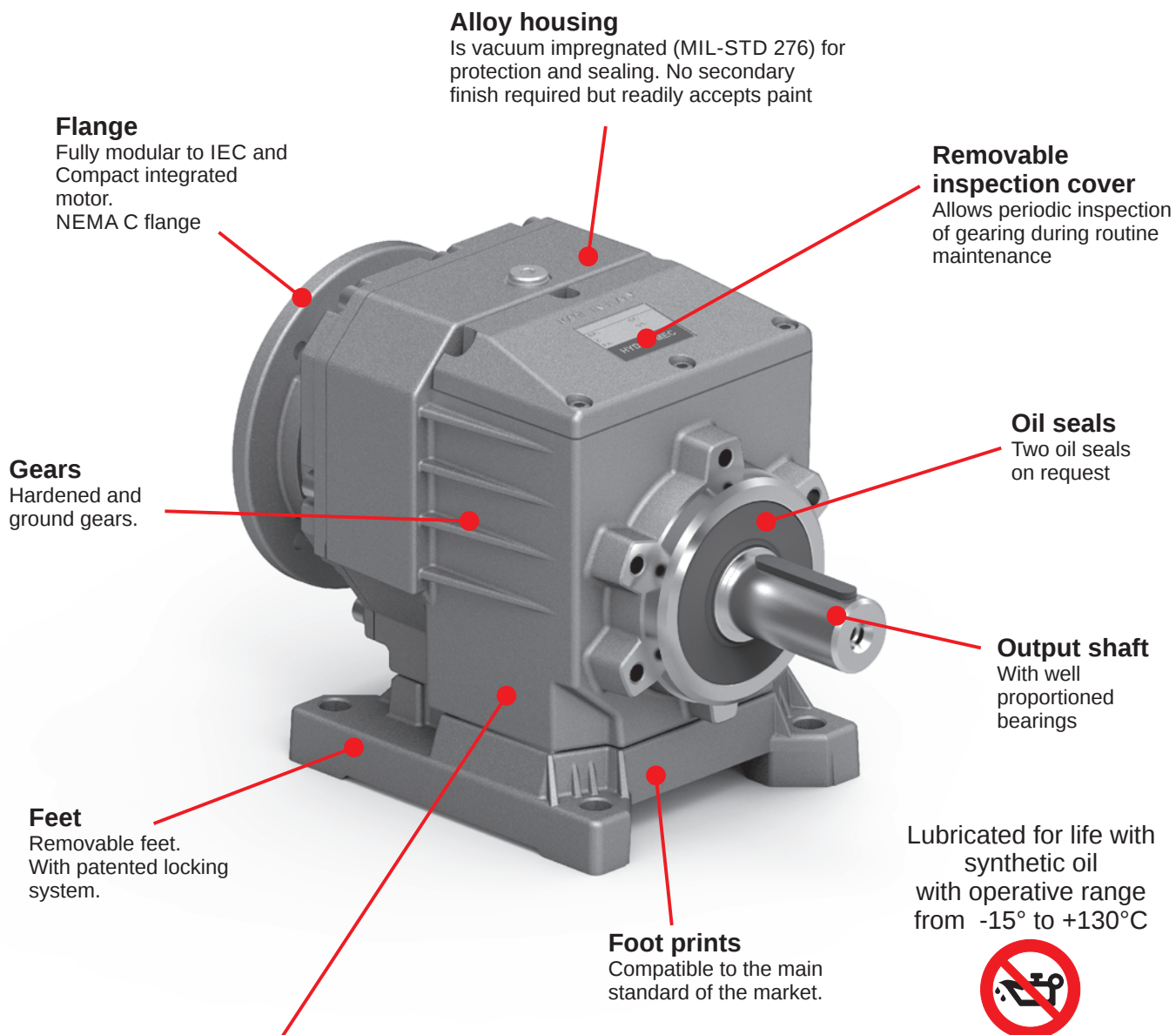
Input shaft	N1	T1	V1	Z1	kit code
Standard	0.875	1.97	0.96	0.188	KC50.5.070U
On request	0.750	1.97	0.83	0.188	KC50.5.069U

P511-N... Basic gearbox
Riduttore base

Nema flanges	A	k1	g6	kit code
143/5TC	5.98	6.15	6.50	KU085.4.041
182/4TC	6.69	6.86	8.88	KU085.4.042

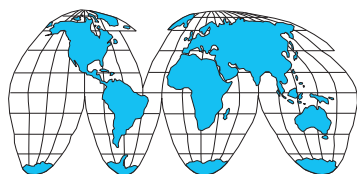
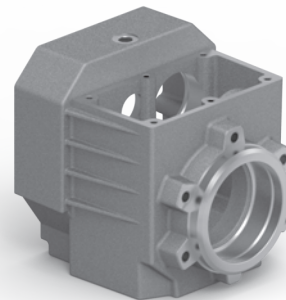
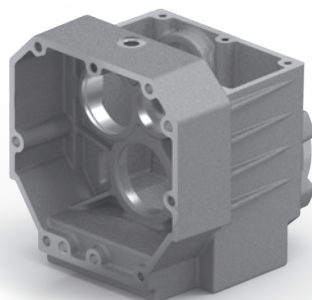
Aluminum in line gearboxes

A modular and compact product



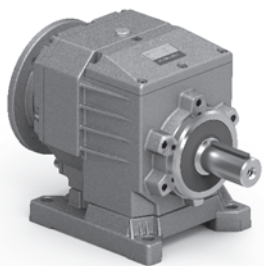
Single-piece aluminum alloy housing

Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing



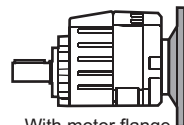
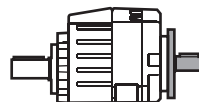
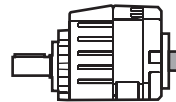
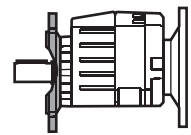
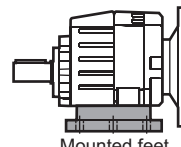
World wide sales network.

Specific type datasheet on page...



Types / Tipi /
Tipos ➡

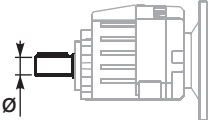
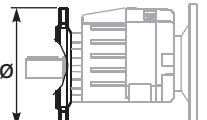
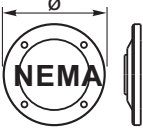
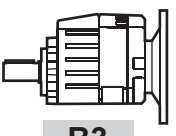
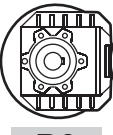
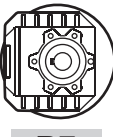
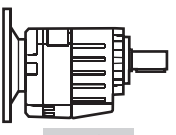
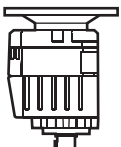
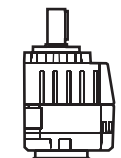
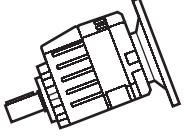
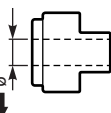
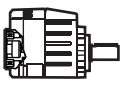
On page / A pagina / En la página								
5-5	5-7	5-9	5-11	5-13	5-15	5-17	5-19	5-21
202A 620lb in	302A 1062lb in	412A 1550lb in	413A 1550lb in	452A 2600lb in	512A 3180lb in	513A 3180lb in	612A 4690lb in	613A 4690lb in

Type - Tipo - Typ Type - Tipo	Size - Grandezza - Grösse Taille - Tamaño	Mounting - Montaggio Montage - Fixation Tipo de montaje	Ratio - Rapporto Untersetzung Reduction - Relación																																																																
P	412A	-F	7.33																																																																
Aluminum coaxial gear boxes Riduttori coassiali in alluminio  With IEC motor M  With motor flange P  With male input shaft R  Modular base B	2 Stages Riduzioni Stufen Trains Etapas 3 Stages Riduzioni Stufen Trains Etapas 202A 302A 412A 452A 512A 612A 413A 513A 613A	 Without flange / feet -N  Output flange mounted -F  Mounted feet B.. Feet / piedini<table><tr><th>Feet Code</th><th>Market reference</th><th>G</th><th>H</th><th>R</th><th>L</th><th>L1</th><th>S</th></tr><tr><td>B1</td><td>112</td><td>18</td><td>85</td><td>110</td><td>87</td><td>50</td><td></td></tr><tr><td>B2</td><td>212/3</td><td>18</td><td>100</td><td>130</td><td>107.5</td><td></td><td></td></tr><tr><td>S1</td><td>17</td><td>18</td><td>75</td><td>110</td><td>90+20</td><td></td><td></td></tr><tr><td>S2</td><td>27</td><td>25</td><td>90</td><td>110</td><td>130</td><td></td><td></td></tr><tr><td>M1</td><td>42/3</td><td>25</td><td>80</td><td>110+120</td><td>85</td><td></td><td></td></tr><tr><td>L4</td><td>04</td><td>13</td><td>80</td><td>105</td><td></td><td></td><td></td></tr><tr><td>L5</td><td>05</td><td>16</td><td>100</td><td>125</td><td></td><td></td><td></td></tr></table> You see feet code in the chart of the dimensions Vedi codice piede nella tabella delle dimensioni	Feet Code	Market reference	G	H	R	L	L1	S	B1	112	18	85	110	87	50		B2	212/3	18	100	130	107.5			S1	17	18	75	110	90+20			S2	27	25	90	110	130			M1	42/3	25	80	110+120	85			L4	04	13	80	105				L5	05	16	100	125				See technical data table Vedi tabelle dati tecnici Ver tabla datos técnicos
Feet Code	Market reference	G	H	R	L	L1	S																																																												
B1	112	18	85	110	87	50																																																													
B2	212/3	18	100	130	107.5																																																														
S1	17	18	75	110	90+20																																																														
S2	27	25	90	110	130																																																														
M1	42/3	25	80	110+120	85																																																														
L4	04	13	80	105																																																															
L5	05	16	100	125																																																															



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

CODIFICA / HOW TO ORDER / CODIFICACIÓN

Output shaft Albero uscita Eje en salida	Output flange Flangia uscita Brida en salida	Motor size - Grandezza motore Tamaño motor	Mounting position Posizione montaggio Posición de montaje	Input bore Foro entrata Eingangshohlwelle Trou d'entree Eje hueco de entrada	Terminal box position Posizione morsettiera Posición caja de bornes
X	U	-W	B3	ST	
Output shaft diameter Diametro albero uscita  → STANDARD 202A X → Ø0.625 O → Ø0.750 302A O → Ø0.750 X → Ø0.625 412A 413A Q → Ø1.000 O → Ø0.750 452A 512A 513A T → Ø1.250 612A 613A Z → Ø1.375 T → Ø1.250	Output flange diameter Diametro flangia uscita  N Senza flangia Without flange 202A 302A U → Ø6.50 2 → Ø5.51 3 → Ø6.30 4 → Ø7.87 412A 413A U → Ø6.50 2 → Ø5.51 3 → Ø6.30 4 → Ø7.87 452A 512A 513A 612A 613A U → Ø6.50 2 → Ø5.51 3 → Ø6.30 4 → Ø7.87 5 → Ø9.84	 With Flange for type P -W → 56C -X → 143/5TC -Y → 182/4TC → STANDARD Without flange Senza flangia  -M With coupling Con giunto 202A 413A -K → Ø0.625 302A 412A 513A 613A -K → Ø0.625 -N → Ø0.875 452A 512A 612A -K → Ø0.625 -N → Ø0.875 -S → Ø1.125 Type R Tipo R  202A 413A -K → Ø0.625 302A -J → Ø0.750 412A 513A 613A -K → Ø0.625 -J → Ø0.750 452A 512A 612A -J → Ø0.750 -N → Ø0.875	 B3 STANDARD  B6  B7  B8  V5  V6  V8 Specify only for vertical positions Specificare solo per posizione verticale	ST Nothing indication: standard bore Nessuna indicazione: foro standard COUPLING  -W = Ø0.625" -X = Ø0.875" -Y = Ø1.125" 0 Ready for input coupling Predisposto per giunto 	With Type M specify terminal box position Con tipo M specificare posizione morsettiera A B STANDARD C D

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

Lifting / sollevamento / hubantriebe / levage / elevación

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

Rotation / rotazione / drehung / rotation / rotation

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

Linear movement / traslazione / linearbewegung / translation / translacion

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

TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

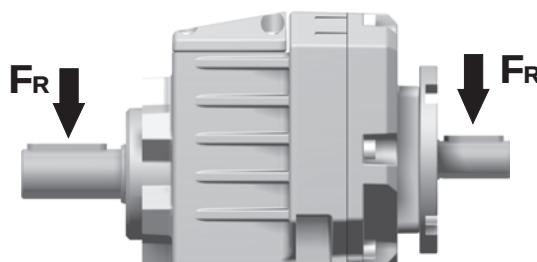
$$M [Nm] = \frac{9550 \cdot P [KW]}{n [rpm]}$$

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

5

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

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



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

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

How to select a gearbox / Come selezionare un riduttore Cómo seleccionar un reductor

B
Output speed
Velocità in uscita
Velocidad de salida

Nominal power
Potenza nominale
Potencia nominal

Gear size
Grandezza riduttore
Tamaño reductor

Motor power
Potenza motore
Potencia motor

A
Nominal torque
Momento torcente nominale
Par de torsión nominal

Flange code
Codice flangia
Código bridas

Preferential ratio
Rapporto preferenziale
Relación preferente

Input speed
Velocità in entrata
Velocidad de entrada

412A Coaxial - Gear 1550lb in Rating - Alluminum COAXIAL GEAR BOXES

QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft		Ratio code
							-W	-X			
							56C	143/5 TC			
498	3.52	2	243	2.9	5.82	708			2821		01
401	4.37	2	302	2.6	5.28	797			2818		02
315	5.56	2	385	2.3	4.60	885			2813		03
275	6.36	2	410	2.1	4.23	929			1921		04
239	7.33	2	507	2.1	4.19	1062			2812		05

C
Ratio
Rapporto
Relación

Transmitted torque
Momento torcente trasmesso
Par transmitido

Service factor
Fattore di servizio
Factor de servicio

Output Shaft diam.
Diam. albero uscita
Diametro eje de salida

Notes
Note
Notas

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

D	Motor flange available Flange disponibili Bridas disponibles
B)	Mounting with reduction ring Montaggio con boccola di riduzione Montaje con casquillo de reducción
C)	Motor flangeholes position/terminal box position Posizione fori flangia/basetta motore Posición agujeros brida / base motor
B)	Available without reduction bushes Disponibile anche senza boccola Disponibile tambien sin casquillo

A	Select required torque (according to service factor)	Seleziona la coppia desiderata (comprensiva del fattore di servizio)	Seleccionar el par deseado (incluyendo el factor de servicio)
B	Select output speed	Seleziona la velocità in uscita	Seleccionar la velocidad de salida
C	On the same line of selected geared motor, you can find the gear ratio	Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione	En la línea correspondiente al motor preseleccionado es posible encontrar la relación de reducción
D	Select motor flange available (if requested)	Scegli la flangia disponibile (se richiesta)	Seleccionar la brida disponible (sobre pedido)



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft	Ratios code
							-W	-		
							56C	-		
508	3.44	1	119	1.9	1.86	221			2821	01
409	4.28	1	148	1.8	1.80	266			2818	02
321	5.45	1	188	1.9	1.88	354			2815	03
281	6.23	1	215	1.9	1.85	398			1921	04
243	7.20	1	249	1.8	1.78	443			2812	05
226	7.74	1	268	1.7	1.65	443			1918	06
178	9.85	1	341	1.6	1.56	531			1915	07
153	11.42	1	395	1.3	1.34	531			1715	08
134	13.03	0.75	338	1.6	1.18	531			1912	09
116	15.10	0.75	392	1.4	1.02	531			1712	10
108	16.20	0.75	420	1.3	0.95	531			1910	11
93	18.78	0.75	487	1.1	0.82	531			1710	12
83	21.15	0.75	549	1.0	0.73	531			1312	13
80	21.84	0.5	378	1.4	0.70	531			1015	14
67	26.31	0.5	455	1.2	0.58	531			1310	15
61	28.88	0.5	499	1.2	0.62	620			1012	16
48.7	35.91	0.5	621	1.0	0.50	620			1010	17
46.4	37.69	0.33	430	1.4	0.48	620			912	18
37.3	46.87	0.33	535	1.2	0.38	620			910	19
35.2	49.76	0.33	568	1.1	0.36	620			712	20
28.3	61.89	0.25	535	1.2	0.29	620			710	21

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

Standard supplied	Oil capacities for all mounting positions is 5.28 Ounces					
AGIP Telium VSF 320			SHELL Omala S4 WE 320			

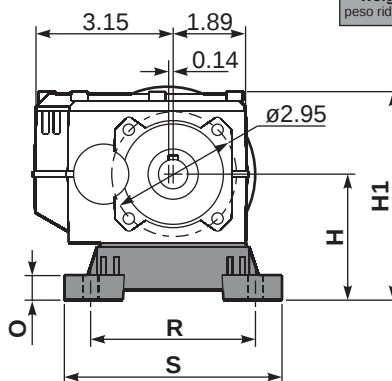
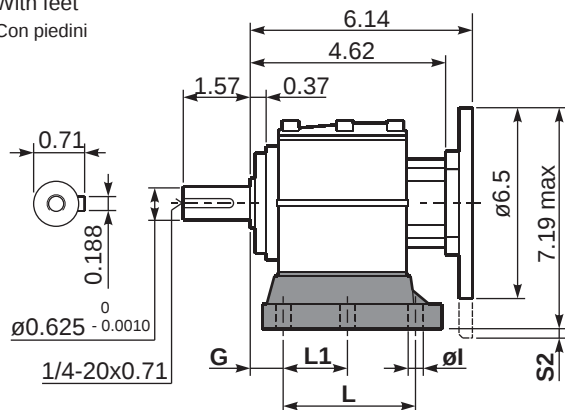
For all details on lubrication and plugs check our website
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

RADIAL AND AXIAL LOADS								
Output shaft Albero di uscita			$F_{eq} = F_R \cdot \frac{1.52}{X+0.73}$					
n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	31.4	157.3	140	55.3	296.6	70	76.4	381.9
250	33.9	169.8	120	60.7	303.3	40	85.4	426.9
200	41.6	207.6	85	67.4	337.0	15	-	-
Input shaft Albero in entrata								
n_1	FA	FR	n_1	FA	FR	n_1	FA	FR
1750	31.5	157.4	1750	31.5	157.4	1140	36.0	179.8
1140	36.0	179.8	1140	36.0	179.8	1140	36.0	179.8

tab. 2

P202A-B1...

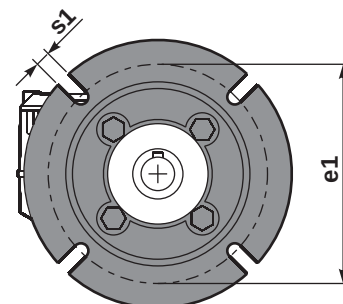
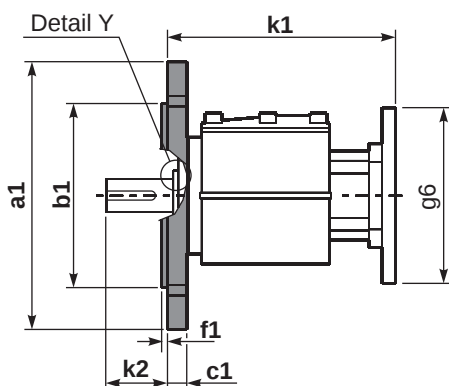
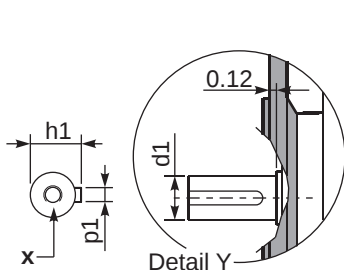
With feet
Con piediniGearbox
weight
peso riduttoreWith flange 7.27 lb
With feet 7.05 lb

Feet Code	Market reference	G	H	R	L	L1	S	H1	O	Ø	S2 only with motor flange
B1	112	0.71	3.35	4.33	3.43	1.97	5.24	4.92	0.59	0.35	-
B2	212/3	0.71	3.94	5.12	4.23	2.36	6.10	5.71	0.20	0.43	-
S1	17-32	0.71	2.95	4.33	4.33	1.97	4.84	4.55	0.59	0.35	0.30

Other feet are available, see
www.hydromec.com
Sono disponibili altri piedini in
www.hydromec.com

Most popular types
Tipi più diffusi

P202A-F...

Output flanges
flange di uscita

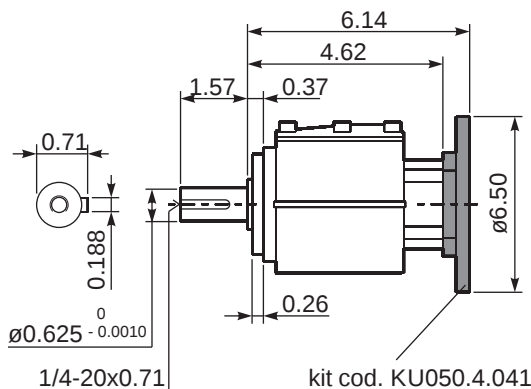
*Available output shaft / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	Ø0.625x1.57	0.188	0.71	1/4-20x0.71
On request A richiesta	Ø0.750x1.57	0.188	0.83	1/4-20x0.71

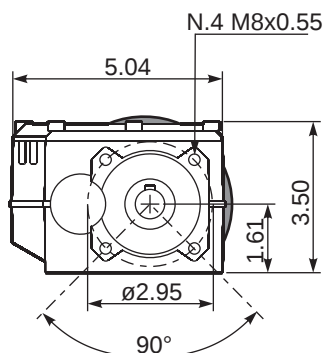
Available output flanges / flange di uscita

Standard output ranges (mm) at 2000rpm										 With flange and feet only on request. Ask for compatibility
a1 Ø	b1	c1	e1	f1	k1	k2	s1	kit code	Type	
6.50	4.50 ^{-0.0017/-0.0033}	0.39	5.87	0.13	6.38	1.33	0.41	KU311.9.012	Nema	
5.51	3.74 ^{-0.0014/-0.0028}	0.45	4.53	0.12	6.28	1.44	0.35	KC30.9.011	Metric	
6.30	4.33 ^{-0.0014/-0.0028}	0.45	5.12	0.14	6.28	1.44	0.35	KC30.9.012		
7.87	5.12 ^{-0.0017/-0.0033}	0.45	6.50	0.14	6.28	1.44	0.43	KC30.9.013		

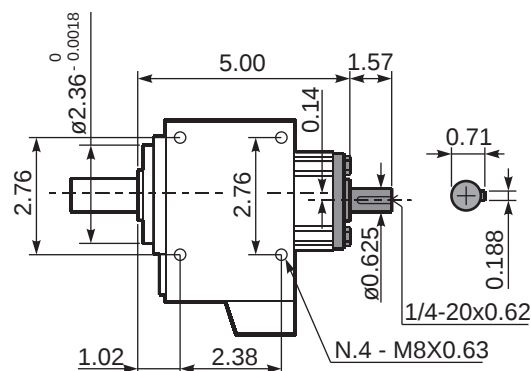
P202A-N...

Basic gearbox
Riduttore base

kit cod. KU050.4.041



R202A-N...

Input Shaft
Albero in entrata



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft 	Output Shaft $\varnothing$ 	Ratios code 
							-W 56C	-X 143/5 TC			
508	3.44	2	238	1.2	2.47	294			2821		01
409	4.28	2	296	1.1	2.27	336			2818		02
321	5.45	2	377	1.2	2.32	437			2815		03
281	6.23	2	431	1.4	2.73	589			1921		04
243	7.20	2	498	1.2	2.36	589			2812		05
226	7.74	2	535	1.3	2.51	673			1918		06
178	9.85	2	681	1.2	2.34	799			1915		07
153	11.42	2	790	1.2	2.45	967			1715		08
134	13.03	1.5	676	1.4	2.13	959			1912	standard $\varnothing 0.750$	09
116	15.10	1.5	783	1.2	1.84	959			1712		10
108	16.20	1	560	1.6	1.61	900			1910	On request $\varnothing 0.625$	11
93	18.78	1	649	1.4	1.39	900			1710		12
83	21.15	1	731	1.3	1.31	959			1312		13
80	21.84	1	755	1.3	1.33	1001			1015		14
67	26.31	0.75	682	1.3	0.99	900			1310		15
61	28.88	0.75	749	1.3	0.96	959			1012		16
48.7	35.91	0.5	621	1.4	0.72	900			1010		17
46.4	37.69	0.5	652	1.3	0.66	858			912		18
37.3	46.87	0.5	810	1.1	0.56	900			910		19
35.2	49.76	0.33	568	1.5	0.49	849			712		20
28.3	61.89	0.33	706	1.3	0.42	900			710		21

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

*With "P" mounting, it's not possible to use these flanges; possibly, mount a B14 flange
Nel montaggio P non è possibile utilizzare queste flange; eventualmente utilizzare la flangia B14

A Motor Flanges Available
Flange Motore Disponibili

B Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

Standard supplied	Oil capacities for all mounting positions is 5.28 Ounces					
						
B3	B6	B7	B8	V5	V6	V8
SHELL Omala S4 WE 320			AGIP Telium VSF 320			

For all details on lubrication and plugs check our website

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

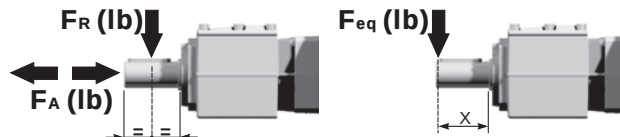
tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

$$F_{eq} = F_R \cdot \frac{1.52}{X+0.73}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	31.4	157.3	140	55.3	296.6	70	76.4	381.9
250	33.9	169.8	120	60.7	303.3	40	85.4	426.9
200	41.6	207.6	85	67.4	337.0	15	-	-

Input shaft

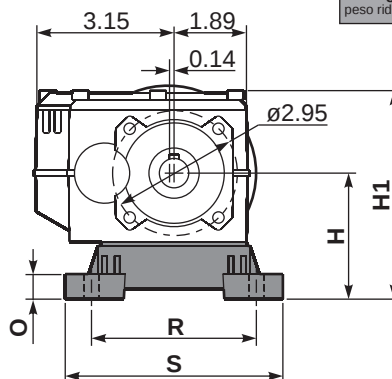
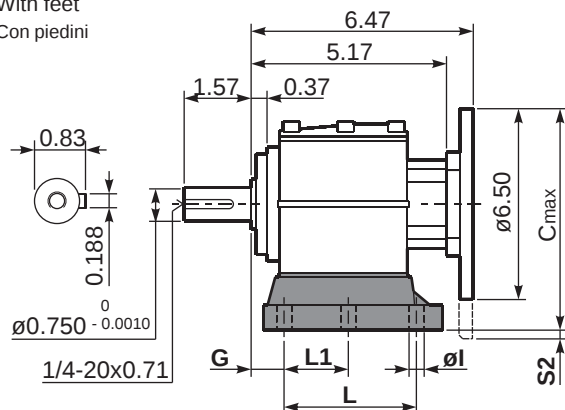
Albero in entrata



n_1	FA	FR
1750	31.5	157.4
1140	36.0	179.8

tab. 2

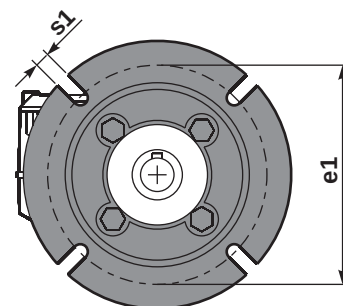
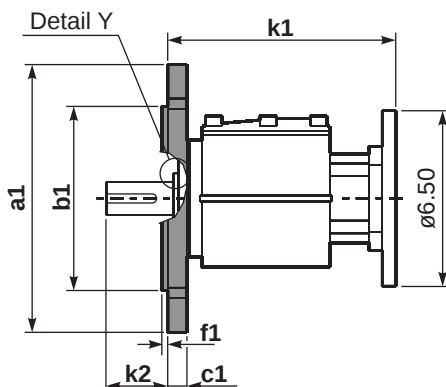
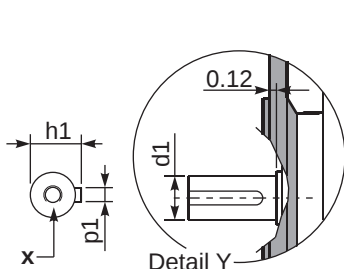
P302A-B1...

With feet
Con piediniGearbox weight
peso riduttore With flange **8.37 lb**
With feet **8.37 lb**

Feet Code	Market reference	G	H	R	L	L1	S	H1	O	Ø1	S2 only with motor flange
B1	112	0.71	3.35	4.33	3.42	1.97	5.12	5.24	0.59	0.35	-
B2	212/3	0.71	3.94	5.12	4.23	2.36	6.10	5.71	0.20	0.43	-
S1	17-32	0.71	2.95	4.33	4.33	1.97	5.12	4.84	0.59	0.35	0.3

Other feet are available, see
www.hydromec.comSono disponibili altri piedini in
www.hydromec.comMost popular types
Tipi più diffusi

P302A-F...

Output flanges
flange di uscita

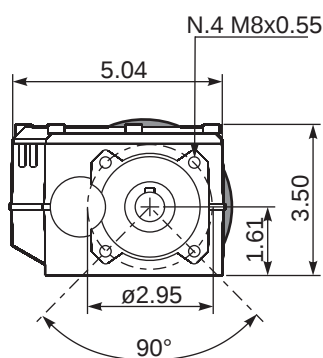
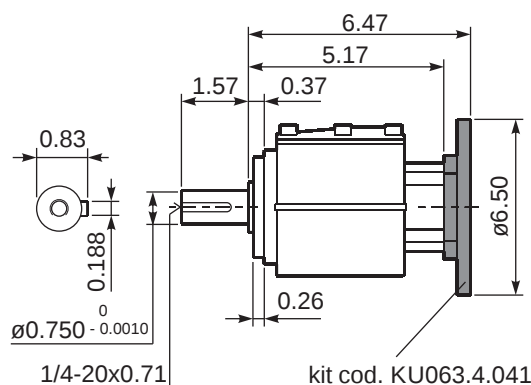
*Available output shaft / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	Ø0.750x1.57	0.188	0.83	1/4-20x0.71
On request A richiesta	Ø0.625x1.57	0.188	0.71	1/4-20x0.71

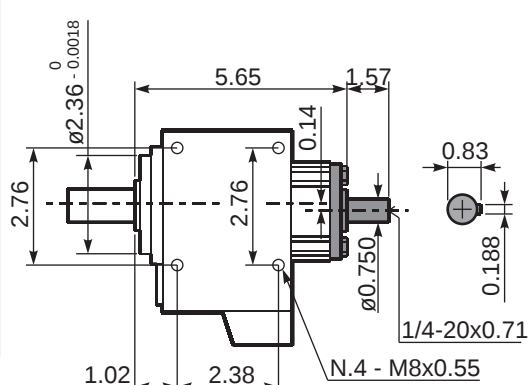
Available output flanges / flange di uscita

Flange Output Range 1 - Range 11 output										
a1 ø	b1	c1	e1	f1	k1	k2	s1	kit code	Type	 With flange and feet only on request. Ask for compatibility
6.50	4.50 ^{-0.0017} _{-0.0033}	0.39	5.87	0.13	6.70	1.33	0.41	KU311.9.012	Nema	
5.51	3.74 ^{-0.0014} _{-0.0028}	0.45	4.53	0.12	6.60	1.44	0.35	KC30.9.011	Metric	
6.30	4.33 ^{-0.0014} _{-0.0028}	0.45	5.12	0.14	6.60	1.44	0.35	KC30.9.012		
7.87	5.12 ^{-0.0017} _{-0.0033}	0.45	6.50	0.14	6.60	1.44	0.43	KC30.9.013		

P302A-N...

Basic gearbox
Riduttore base

R302A-N...

Input Shaft
Albero in entrata



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft		
							-W	-X			Ratios code
							56C	143/5 TC			
498	3.52	2	243	2.9	5.82	708			2821		01
401	4.37	2	302	2.6	5.28	797			2818		02
315	5.56	2	385	2.3	4.60	885			2813		03
275	6.36	2	440	2.1	4.23	929			1921		04
239	7.33	2	507	2.1	4.19	1062			2812		05
222	7.89	2	546	2.1	4.22	1151			1918		06
174	10.06	2	695	2.1	4.20	1460			1913		08
150	11.66	2	806	1.8	3.62	1460			1713		09
132	13.26	2	917	1.6	3.18	1460			1912	standard ø1.00	10
128	13.68	2	946	1.5	3.09	1460			1513		25
114	15.37	2	1063	1.4	2.75	1460			1712	On request ø0.750	11
107	16.33	2	1129	1.3	2.59	1460			1313		26
97	18.04	2	1248	1.2	2.34	1460			1512		23
81	21.54	1.5	1117	1.3	1.96	1460			1312		14
79	22.29	1.5	1156	1.3	1.89	1460			1013		15
67	26.31	1	910	1.5	1.51	1372			1310		16
60	29.40	1	1017	1.4	1.44	1460			1012		17
48.7	35.91	0.75	931	1.5	1.10	1372			1010		18
45.6	38.37	0.75	995	1.5	1.10	1460			912		19
37.3	46.87	0.75	1215	1.1	0.85	1372			910		20
34.5	50.67	0.5	876	1.4	0.69	1213			712		21
28.3	61.89	0.5	1070	1.3	0.64	1372			710		22

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

Standard supplied	For these mounting position specify in the order or add oil Per queste posizioni specificare in fase d'ordine o aggiungere olio					
B3	B6	B7	B8	V5	V6	V8
8.80 oz	12.32 oz	14.08 oz	15.85 oz	14.08 oz	17.61 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

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

tab. 1

RADIAL AND AXIAL LOADS								
Output shaft Albero di uscita			$F_{eq} = F_R \cdot \frac{1.81}{X+0.83}$					
n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	69.6	348.2	140	91.2	456.1	70	121.3	606.6
250	74.1	370.7	120	100.6	503.3	40	134.8	674.0
200	80.9	404.4	85	107.8	539.2	15	134.8	674.0
Input shaft Albero in entrata								
n_1	FA	FR	n_1	FA	FR	n_1	FA	FR
1750	53.9	269.8	1750	53.9	269.8	1140	62.9	314.7
			1140	62.9	314.7			

tab. 2

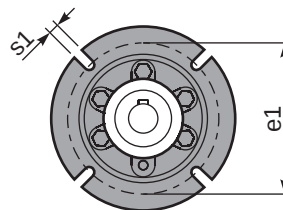
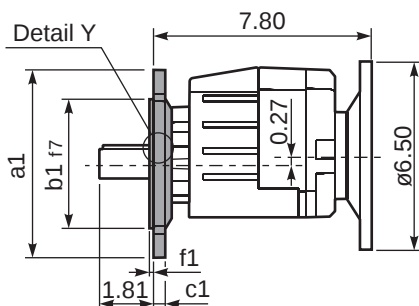
Gearbox weight peso riduttore	With flange	13.11lb
	With feet	14.10lb



Feet Code	Market reference	G	H	R	L	L1	S	H1	O	ØI	S2 only with motor flange	kit code
B1	112	0.71	3.35	4.33	3.43	1.97	5.12	6.59	0.69	-	-	KC35.9.021
B2	212/3	0.71	3.94	5.12	4.23	2.36	6.10	7.18	0.67	0.43	-	KC40.9.025
S1	17	0.71	2.95	4.33	4.33	1.97	5.71	6.12	0.59	0.35	0.03	KC40.9.022
S2	27	0.98	3.54	4.33	5.12	-	5.71	6.79	0.79	0.35	-	KC40.9.024

Sono disponibili altri piedini in
www.hydromec.com

5

**Available output flanges** / flange di uscita

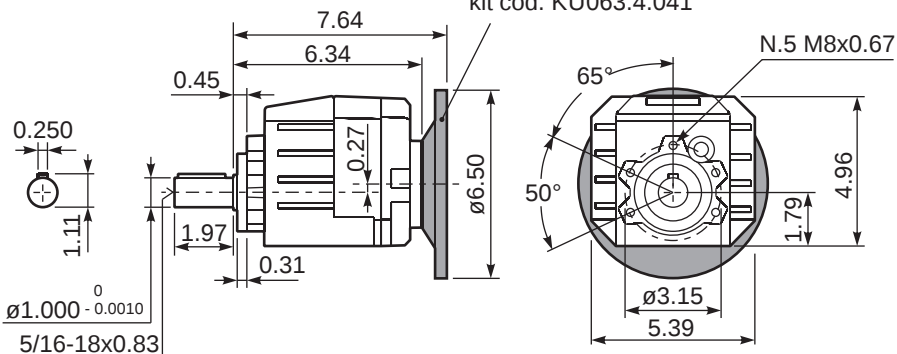
	Shaft - d1	p1	h1	x
Standard	ø1.000x1.97	0.250	1.11	5/16-18x0.83
On request A richiesta	ø0.750x1.57	0.188	0.83	1/4-20x0.71

a1 ø	b1	c1	e1	f1	s1	kit code	Type
6.50	4.500 ^{-0.0017} _{-0.0033}	0.39	5.87	0.13	3/8-16	KU511.9.012	Nema
5.51	3.740 ^{-0.0014} _{-0.0028}	0.39	4.53	0.12	0.35	KC40.9.011	Metric
6.30	4.331 ^{-0.0014} _{-0.0028}	0.39	5.12	0.14	0.35	KC40.9.012	
7.87	5.118 ^{-0.0014} _{-0.0028}	0.39	6.50	0.14	0.43	KC40.9.013	
9.84	7.087 ^{-0.0017} _{-0.0033}	0.45	8.46	0.14	0.55	KC40.9.014	

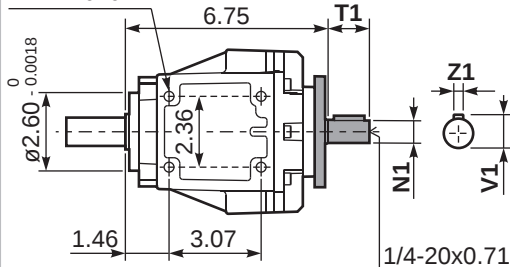


With flange and feet only on request.
Ask for compatibility

kit cod. KU063.4.041



N.4 M10x0.71



Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.750	1.97	0.83	0.188	KC40.5.070U
On request	0.625	1.57	0.71	0.188	KC40.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft		
							-W	-			Ratios code
							56C	-			
45.6	38.40	0.75	975	1.5	1.12	1460			171713	standard ø1.00	02
40.1	43.69	0.75	1109	1.3	0.99	1460			191712		03
34.6	50.64	0.75	1286	1.1	0.85	1460			171712		04
32.8	53.36	0.50	903	1.6	0.78	1416			191710		05
28.6	61.21	0.50	1036	1.5	0.73	1505			191312		06
28.3	61.85	0.50	1047	1.4	0.68	1416			171710		07
24.7	70.95	0.50	1201	1.3	0.63	1505			131712		08
23.8	73.43	0.50	1243	1.2	0.62	1549			101713		09
23.4	74.77	0.50	1266	1.1	0.56	1416			191310		10
20.2	86.66	0.33	968	1.5	0.48	1416			131710		11
18.1	96.85	0.33	1082	1.4	0.46	1505			101712	On request ø0.750	12
17.0	102.89	0.33	1150	1.3	0.44	1549			101313		13
13.8	126.40	0.33	1412	1.1	0.35	1505			91712		17
12.9	135.69	0.25	1149	1.3	0.33	1505			101312		15
10.6	165.74	0.25	1403	1.0	0.25	1416			101310		16
9.9	177.09	0.25	1499	1.0	0.25	1505			91312		18
8.1	216.31	0.25	1831	0.8	0.19	1416			91310		19

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

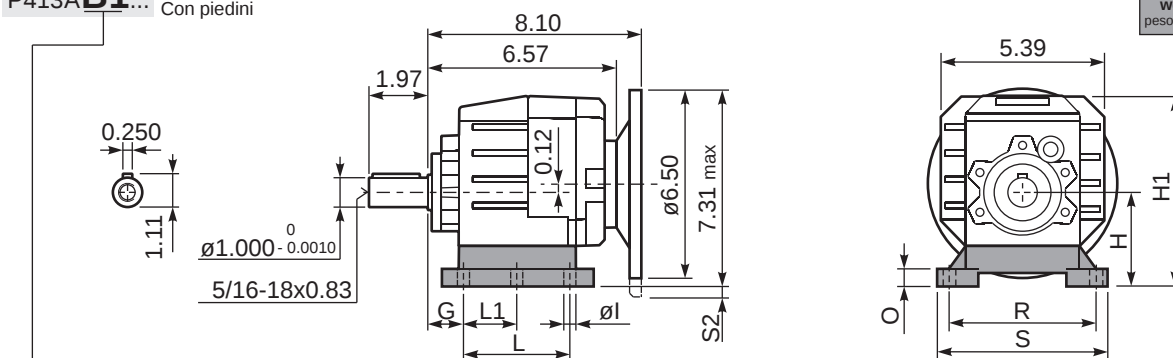
Standard supplied	For these mounting position specify in the order or add oil Per queste posizioni specificare in fase d'ordine o aggiungere olio						
B3	B6	B7	B8	V5	V6	V8	
10.56 oz	12.32 oz	15.85 oz	15.85 oz	15.85 oz	19.37 oz	Ask	
SHELL Omala S4 WE 320				ENI Telium VSF 320			

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

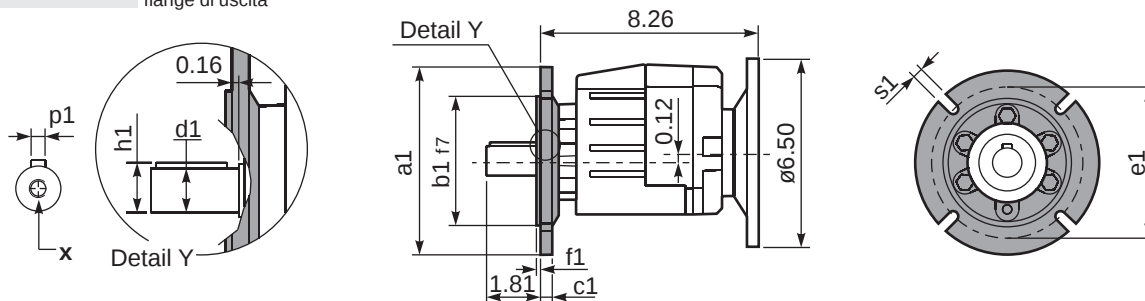
tab. 1

RADIAL AND AXIAL LOADS									
Output shaft Albero di uscita					$F_{eq} = F_R \cdot \frac{1.81}{X+0.83}$				
n_2	F_A	F_R	n_2	F_A	F_R	n_2	F_A	F_R	
300	69.6	348.2	140	91.2	456.1	70	121.3	606.6	
250	74.1	370.7	120	100.6	503.3	40	134.8	674.0	
200	80.9	404.4	85	107.8	539.2	15	134.8	674.0	
Input shaft Albero in entrata									
n_1	F_A	F_R	n_1	F_A	F_R	n_1	F_A	F_R	
1750	31.5	157.4	1140	36.0	179.8				

tab. 2

P413A-B1... With feet
Con piediniGearbox weight
peso riduttore With flange 14.65lb
With feet 15.42lb

Feet Code	Market reference	G	H	R	L	L1	S	H1	O	Ø	S2 only with motor flange	kit code
B1	112	0.71	3.35	4.33	3.43	1.97	5.12	6.59	0.59	-	-	KC35.9.021
B2	212/3	0.71	3.94	5.12	4.23	2.36	6.10	7.19	0.67	0.43	-	KC40.9.025
S1	17	0.71	2.95	4.33	4.33	1.97	5.71	6.12	0.59	0.35	0.03	KC40.9.022
S2	27	0.98	3.54	4.33	5.12	-	5.71	6.79	0.79	0.35	-	KC40.9.024

Other feet are available, see
www.hydromec.comSono disponibili altri piedini in
www.hydromec.comMost popular types
Tipi più diffusiP413A-F... Output flanges
flange di uscita

*Available output shaft / Albero di uscita

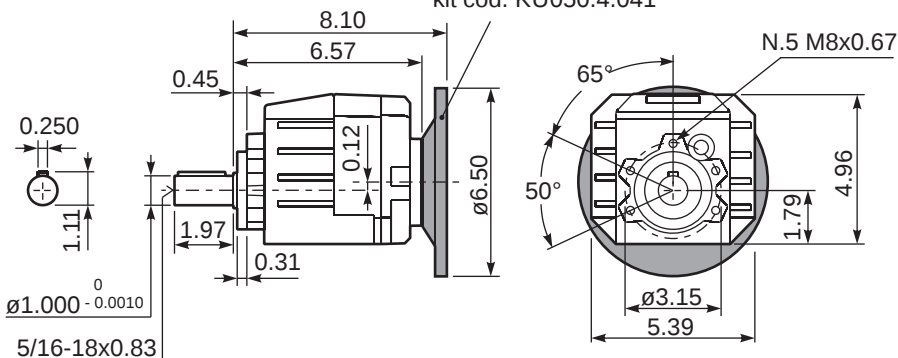
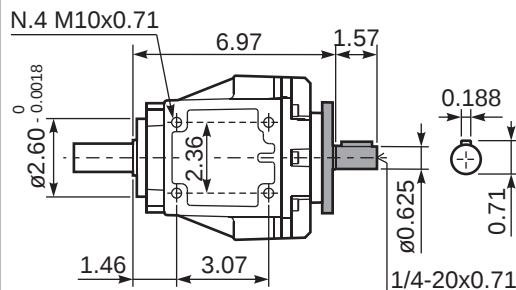
	Shaft - d1	p1	h1	x
Standard	Ø1.000x1.97	0.250	1.11	5/16-18x0.83
On request A richiesta	Ø0.750x1.57	0.188	0.83	1/4-20x0.71

Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code	Type
6.50	4.50 ^{-0.0017} _{-0.0033}	0.39	5.87	0.13	3/8-16	KU511.9.012	Nema
5.51	3.74 ^{-0.0014} _{-0.0028}	0.39	4.53	0.12	0.35	KC40.9.011	Metric
6.30	4.33 ^{-0.0014} _{-0.0028}	0.39	5.12	0.14	0.35	KC40.9.012	
7.87	5.12 ^{-0.0014} _{-0.0028}	0.39	6.50	0.14	0.43	KC40.9.013	
9.84	7.09 ^{-0.0017} _{-0.0033}	0.45	8.46	0.14	0.55	KC40.9.014	

With flange and feet only on request.
Ask for compatibilityP413A-N... Basic gearbox
Riduttore base

kit cod. KU050.4.041

R413A-N... Input Shaft
Albero in entrata



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft 	Ratios code 
							-W	-X	-Y		
							56C	143/5TC	182/4TC		
485	3.61	5	624	2.1	10.31	1288				3018	01
414	4.23	5	730	2.0	9.99	1459				3016	02
349	5.01	5	867	2.0	9.90	1717				3014	03
288	6.07	5	1049	2.0	10.23	2146				3012	04
257	6.81	5	1177	2.0	10.11	2378				2018	05
220	7.96	5	1377	1.9	9.35	2576				2016	06
185	9.45	5	1634	1.6	7.99	2610				2014	07
153	11.43	5	1977	1.3	6.52	2576				2012	08
123	14.21	3	1474	1.5	4.63	2275				2010	09
105	16.62	3	1724	1.5	4.54	2610				1314	10
87	20.10	3	2085	1.2	3.71	2576				1312	11
70	24.98	2	1728	1.3	2.63	2275				1310	12
60	29.41	2	2034	1.3	2.57	2610				814	13
49.2	35.58	2	2461	1.0	2.09	2576				812	14
43.2	40.50	1.5	2101	1.2	1.78	2490				614	15
39.6	44.23	1.5	2294	1.0	1.49	2275				810	16
35.7	49.00	1	1694	1.5	1.52	2576				612	17
28.7	60.90	1	2106	1.1	1.08	2275				610	18

The dynamic efficiency is 0.96 for all ratios

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

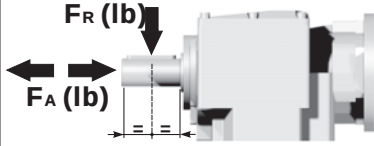
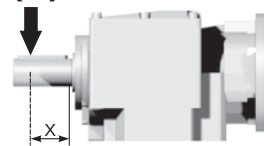
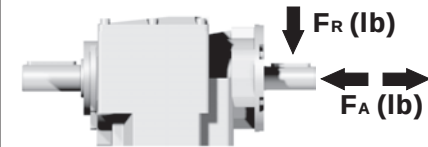
EN Unit 452A is supplied with synthetic oil for lifetime lubrication, no maintenance is necessary. See table 1 for lubrication and recommended quantity. In table 2 please see possible radial loads and axial loads on the gearbox.
For complete documentation please visit our web site.

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

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

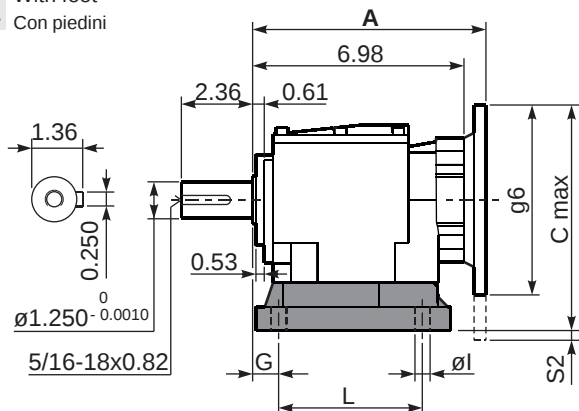
Standard supplied	For these mounting position specify in the order or add oil Per queste posizioni specificare in fase d'ordine o aggiungere olio					
						
10.91 oz	10.91 oz	10.91 oz	10.91 oz	10.91 oz	10.91 oz	Ask
SHELL Omala S4 WE 320				AGIP Telium VSF 320		

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

RADIAL AND AXIAL LOADS									
Output shaft / Albero di uscita					$F_{eq} = F_R \cdot \frac{2.01}{X+0.83}$				
									
n_2	FA	FR	n_2	FA	FR	n_2	FA	FR	
300	93.2	465.1	140	121.3	606.7	70	157.3	788.6	
250	96.6	485.3	120	125.8	626.8	40	181.9	909.9	
200	105.6	525.7	85	141.5	707.7	15	202.2	1011	
Input shaft / Albero in entrata									
									
n_1	FA	FR	n_1	FA	FR	n_1	FA	FR	
1750	89.9	449.6	1140	98.9	494.6				

tab. 2

P452A-B1...

With feet
Con piediniGearbox
weight
peso riduttoreWith flange **19.16lb**
With feet **19.71lb**

Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	ØI	S2 only with motor flange
B3	312/3	0.71	4.33	6.30	5.12	7.48	6.81	0.79	0.43	0.11 182/4TC
B4	30/35	0.79	5.12	7.09	5.89	8.50	7.60	0.71	0.55	-
S4	47-57	1.18	4.53	5.31	6.50	6.69	7.01	0.94	0.53	-
H3	023-233	1.18	5.12	5.31	5.31	7.28	7.60	0.98	0.55	-
M2	52/3	1.18	4.33	5.31-5.91	3.94	7.48	6.81	0.71	0.43	-

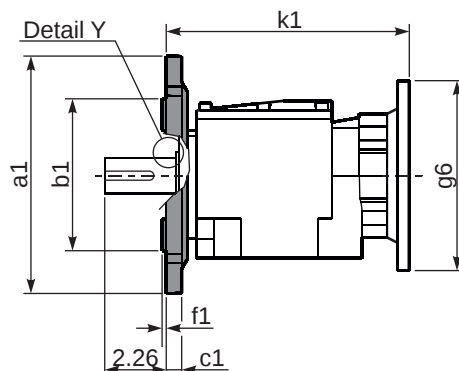
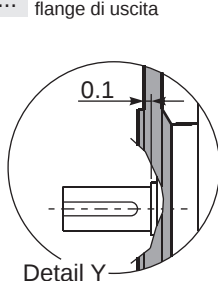
Other feet are available, see
www.hydromec.comSono disponibili altri piedini in
www.hydromec.com

Dimension (A) see on page bottom

Most popular types
Tipi più diffusi

5

P452A-F...

Output flanges
flange di uscita

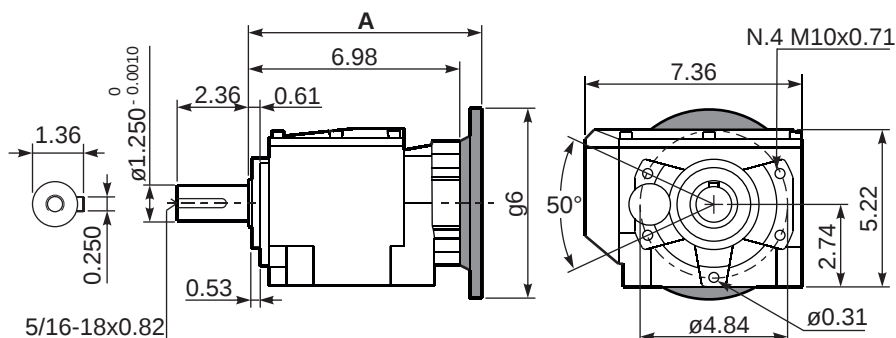
Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code	Type
7.87	5.12 ^{-0.0017} / _{-0.0033}	0.43	6.50	0.18	0.43	KC50.9.012	Metric
9.87	9.84 ^{-0.0017} / _{-0.0033}	0.61	8.46	0.16	0.55	KC50.9.013	

With flange and feet only on request. Ask for compatibility

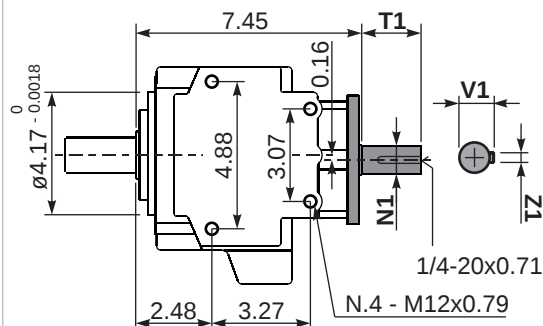
Nema flanges	k1	g6	kit code
56C-143/5TC	8.06	6.50	KU085.4.041
182/4TC	8.76	8.88	KU085.4.042

P452A-N...

Basic gearbox
Riduttore base

Nema flanges	A	g6	kit code
56C-143/5TC	7.96	6.50	KU085.4.041
182/4TC	8.67	8.88	KU085.4.042

R452A-N...

Input Shaft
Albero in entrata

Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.875	1.97	0.96	0.188	KC50.5.070U
On request	0.750	1.97	0.83	0.188	KC50.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft 	Ratios code 
							-W	-X	-Y		
							56C	143/5TC	182/4TC		
485	3.61	5	624	2.1	10.66	1331				3018	01
414	4.23	5	730	2.1	10.58	1545				3016	02
349	5.01	5	867	2.1	10.40	1803				3014	03
288	6.07	5	1049	2.1	10.44	2189				3012	04
257	6.81	5	1177	2.2	10.95	2576				2018	05
220	7.96	5	1377	2.1	10.45	2876				2016	07
185	9.45	5	1634	1.9	9.46	3091				2014	08
153	11.43	5	1977	1.4	7.17	2833				2012	09
125	14.00	5	2420	1.3	6.38	3091				1316	21
105	16.62	5	2873	1.1	5.38	3091				1314	11
87	20.10	3	2085	1.4	4.08	2833				1312	12
71	24.61	3	2552	1.1	3.33	2833				1112	20
60	29.41	3	3051	1.0	3.04	3091				814	14
49.2	35.58	2	2461	1.2	2.30	2833				812	15
43.2	40.50	1.5	2101	1.3	1.96	2747				614	16
39.6	44.23	1.5	2294	1.0	1.43	2189				810	17
35.7	49.00	1.5	2541	1.1	1.67	2833				612	18
28.7	60.90	1	2106	1.0	1.04	2189				610	19

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

 **Motor Flanges Available**
Flange Motore Disponibili

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

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

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

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

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

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

Standard supplied	For these mounting position specify in the order or add oil Per queste posizioni specificare in fase d'ordine o aggiungere olio					
						
B3	B6	B7	B8	V5	V6	V8
24.65 oz	28.17 oz	40.49 oz	42.25 oz	40.49 oz	44.01 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

For all details on lubrication and plugs check our website

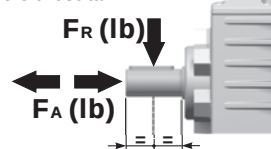
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

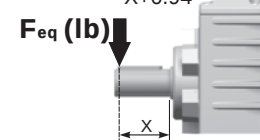
RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita



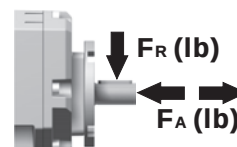
$$F_{eq} = F_R \cdot \frac{2.13}{X+0.94}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	103.3	516.7	140	134.8	674.0	70	175.2	876.2
250	107.8	539.2	120	139.3	696.5	40	202.2	1011
200	116.8	584.1	85	157.3	786.3	15	224.7	1123.3

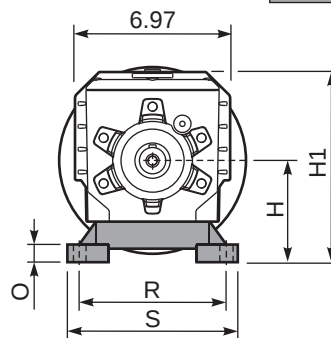
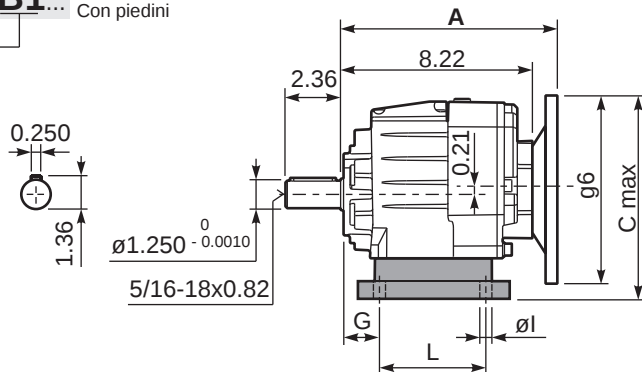
Input shaft

Albero in entrata



n_1	FA	FR
1750	101.2	505.8
1140	112.4	562

tab. 2

P512A-B1... With feet
Con piediniGearbox weight
peso riduttore With flange 25.55lb
With feet 25.99lb

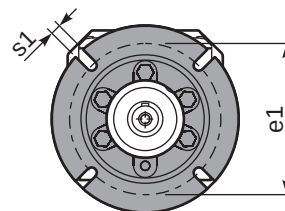
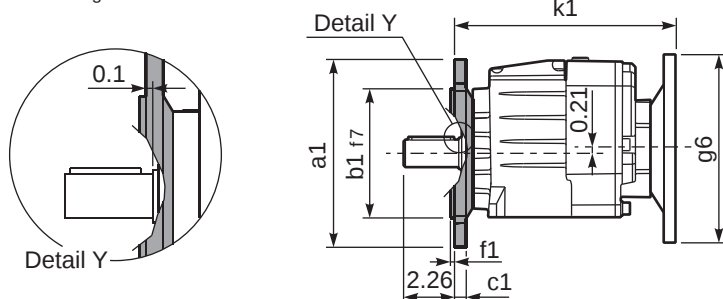
Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	Øl	kit code
B3	312/3	0.71	4.33	6.30	5.12	7.48	8.31	0.79	0.43	KC50.9.024
B4	30/35	0.79	5.12	7.09	5.89	8.50	9.09	0.71	0.55	KC60.9.024
S4	47-57	1.18	4.53	5.31	6.50	6.69	8.50	0.98	0.53	KC50.9.022

Nema flanges	C max	g6	kit code
56C-143/5TC	8.58	6.50	KU085.4.041
182/4TC	9.77	8.88	KU085.4.042

Other feet are available, see
www.hydromec.comSono disponibili altri piedini in
www.hydromec.com

Dimension (A) see on page bottom

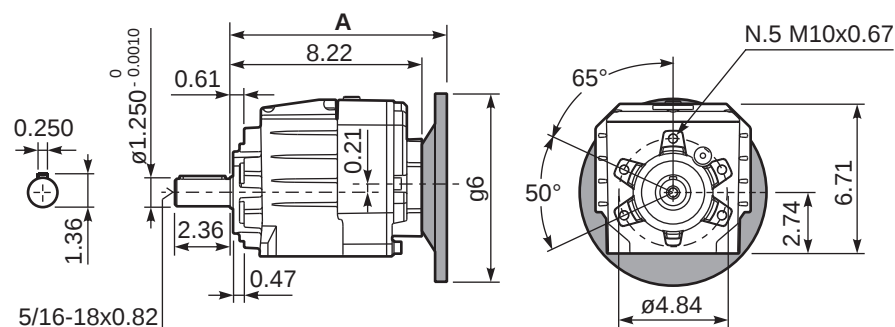
Most popular types
Tipi più diffusiP512A-F... Output flanges
flange di uscita

Available output flanges / flange di uscita

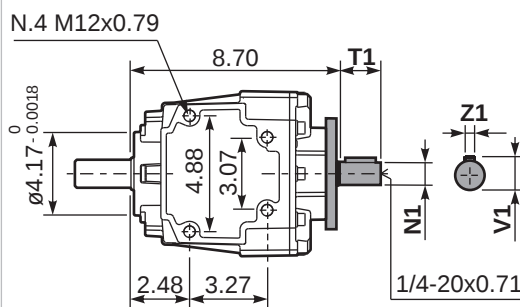
a1 Ø	b1	c1	e1	f1	s1	kit code	Type
7.87	5.118 -0.0017 -0.0033	0.51	6.50	0.14	0.43	KC50.9.012	Metric
9.84	7.087 -0.0017 -0.0033	0.61	8.46	0.16	0.55	KC50.9.013	

With flange and feet only on request. Ask for compatibility

Nema flanges	k1	g6	kit code
56C-143/5TC	9.31	6.50	KU085.4.041
182/4TC	10.01	8.88	KU085.4.042

P512A-N... Basic gearbox
Riduttore base

Nema flanges	A	g6	kit code
56C-143/5TC	9.21	6.50	KU085.4.041
182/4TC	9.91	8.88	KU085.4.042

R512A-N... Input Shaft
Albero in entrata

Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.875	1.97	0.96	0.188	KC50.5.070U
On request	0.750	1.97	0.83	0.188	KC50.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft	
							-W 56C	-X 143/5 TC		
44.0	39.79	1.5	2021	1.5	2.29	3091			191316	01
37.1	47.22	1.5	2398	1.3	1.93	3091			191314	02
32.0	54.73	1.5	2780	1.1	1.67	3091			171314	03
26.4	66.22	1	2242	1.3	1.26	2833			171312	04
22.8	76.69	1	2596	1.2	1.19	3091			131314	05
20.9	83.59	1	2830	1.1	1.09	3091			190814	06
18.9	92.78	0.75	2356	1.2	0.90	2833			131312	07
16.7	104.68	0.75	2658	1.2	0.87	3091			101314	08
14.9	117.22	0.75	2976	1.0	0.71	2833			170812	09
13.8	126.65	0.5	2144	1.3	0.66	2833			101312	10
12.8	136.62	0.5	2313	1.3	0.67	3091			91314	11
10.6	165.29	0.5	2798	1.0	0.51	2833			91312	12
9.7	180.40	0.5	3054	1.0	0.51	3091			71314	13
8.0	218.26	0.33	2438	1.2	0.38	2833			71312	14
7.2	241.82	0.33	2702	1.1	0.38	3091			90814	15
6.0	292.57	0.25	2476	1.1	0.29	2833			90812	16
5.5	319.32	0.25	2703	1.1	0.29	3091			70814	17
4.5	386.33	0.25	3270	0.9	0.22	2833			70812	18
3.6	480.16	0.25	4064	0.5	0.13	2189			70810	19

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

A) Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

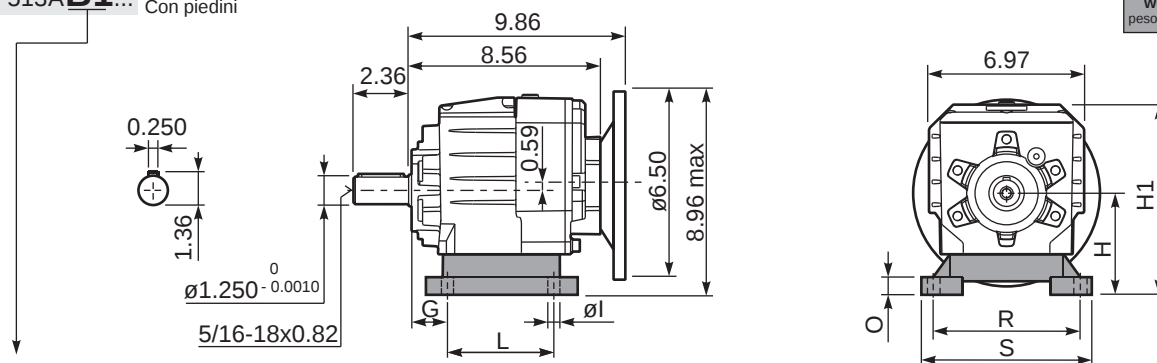
Standard supplied	For these mounting position specify in the order or add oil Per queste posizioni specificare in fase d'ordine o aggiungere olio						
B3	B6	B7	B8	V5	V6	V8	
35.21 oz	31.69 oz	44.01 oz	40.49 oz	51.06 oz	49.30 oz	Ask	
SHELL Omala S4 WE 320				ENI Telium VSF 320			

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

tab. 1

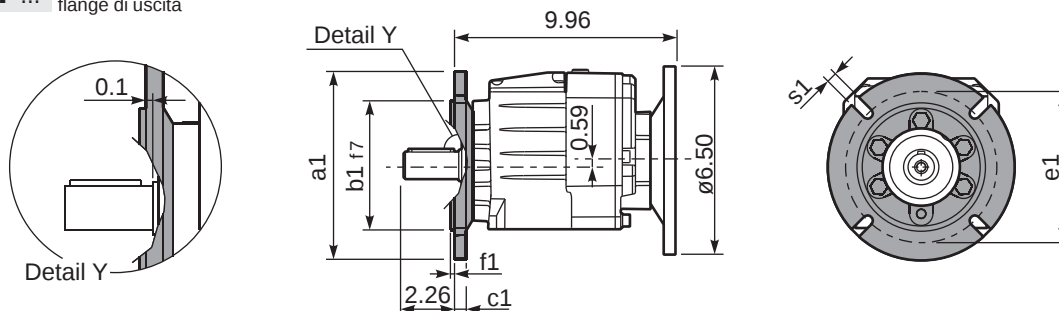
RADIAL AND AXIAL LOADS									
Output shaft Albero di uscita		$F_{eq} = F_R \cdot \frac{2.13}{X+0.94}$							
n_2	FA	FR	n_2	FA	FR	n_2	FA	FR	
300	103.3	516.7	140	134.8	674.0	70	175.2	876.2	
250	107.8	539.2	120	139.3	696.5	40	202.2	1011	
200	116.8	584.1	85	157.3	786.3	15	224.7	1123.3	
Input shaft Albero di entrata									
n_1	FA	FR							
1750	89.9	449.3							
1140	98.9	494.6							

tab. 2

P513A-B1... With feet
Con piediniGearbox weight
peso riduttore With flange 27.53lb
With feet 27.09lb

Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	Øl	kit code
B3	312/3	0.71	4.33	6.30	5.12	7.48	8.31	0.79	0.43	KC50.9.024
B4	30/35	0.79	5.12	7.09	5.89	8.50	9.09	0.71	0.55	KC60.9.024
S4	47-57	1.18	4.53	5.31	6.50	6.69	8.50	0.98	0.55	KC50.9.022

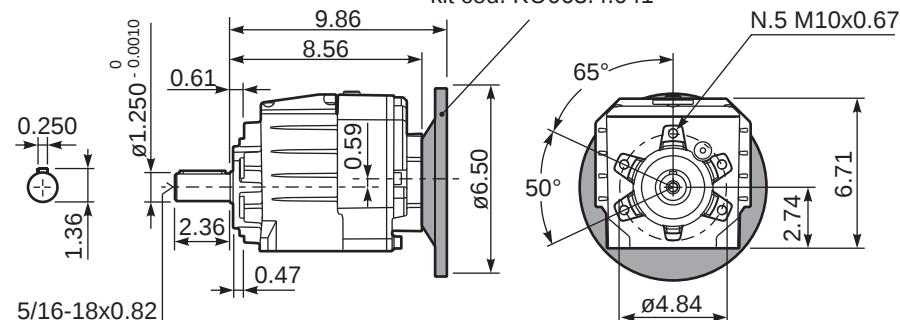
Other feet are available, see
www.hydromec.comSono disponibili altri piedini in
www.hydromec.comMost popular types
Tipi più diffusiP513A-F... Output flanges
flange di uscita

Available output flanges / flange di uscita

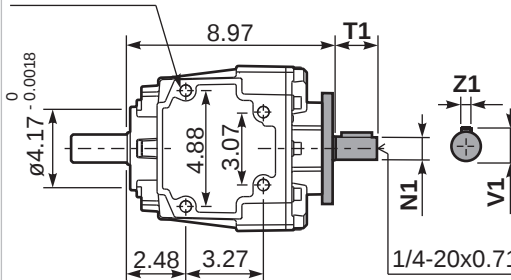
a1 Ø	b1	c1	e1	f1	s1	kit code	Type		With flange and feet only on request. Ask for compatibility
7.87	5.118 ^{-0.0017} _{-0.0033}	0.51	6.50	0.18	0.43	KC50.9.012	Metric		
9.84	7.087 ^{-0.0017} _{-0.0033}	0.61	8.46	0.16	0.55	KC50.9.013			

P513A-N... Basic gearbox
Riduttore base

kit cod. KU063.4.041

R513A-N... Input Shaft
Albero in entrata

N.4 M12x0.79



Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.750	1.97	0.83	0.188	KC40.5.070U
On request	0.625	1.57	0.71	0.188	KC40.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges					Output Shaft $\varnothing$	Ratios code
							-W	-X	-Y				
							56C	143/5TC	182/4TC				
485	3.61	5	624	2.6	13.06	1631				3018			01
414	4.23	5	730	2.7	13.52	1975				3016			02
349	5.01	5	867	2.6	12.87	2232				3014			03
288	6.07	5	1049	2.5	12.69	2661				3012			04
257	6.81	5	1177	2.6	12.77	3005				2018			05
220	7.96	5	1377	2.3	11.54	3177				2016			07
185	9.45	5	1634	2.2	10.77	3520				2014			08
153	11.43	5	1977	1.8	9.23	3649				2012		standard $\varnothing 1.375$	09
125	14.00	5	2420	1.5	7.71	3735				1316			10
105	16.62	5	2873	1.5	7.70	4421				1314			11
87	20.10	5	3475	1.3	6.55	4550				1312		On request 1.250	12
71	24.61	5	4254	1.1	5.35	4550				1112			20
60	29.41	3	3051	1.3	3.80	3863				814			14
49.2	35.58	3	3691	1.2	3.70	4550				812			15
43.2	40.50	2	2801	1.0	1.96	2747				614			16
39.6	44.23	2	3058	1.2	2.30	3520				810			17
35.7	49.00	2	3388	1.0	2.03	3434				612			18
28.7	60.90	1.5	3159	1.1	1.64	3520				610			19

The dynamic efficiency is 0.96 for all ratios

A) Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

E El reductor tamaño 612A se suministra, lubricado de por vida con aceites sintéticos y no requieren mantenimiento alguna. Ver tabla 1, para cantidades y aceites recomendados. En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.
Para documentación completa, consultar nuestra Web.

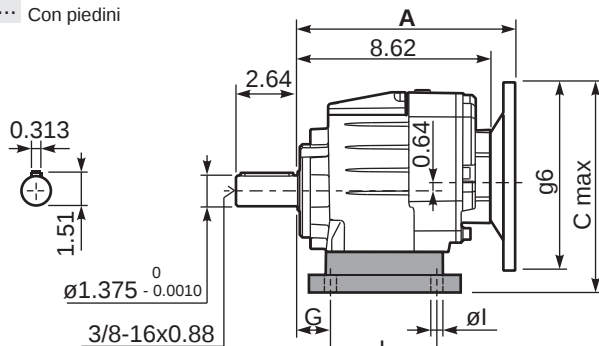
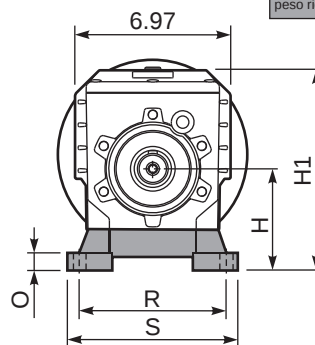
Standard supplied	For these mounting position specify in the order or add oil Per queste posizioni specificare in fase d'ordine o aggiungere olio					
B3	B6	B7	B8	V5	V6	V8
28.17 oz	35.21 oz	42.25 oz	42.25 oz	45.77 oz	47.54 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

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

tab. 1

RADIAL AND AXIAL LOADS									
Output shaft Albero di uscita					$F_{eq} = F_R \cdot \frac{2.38}{X+1.01}$				
n_2	FA	FR	n_2	FA	FR	n_2	FA	FR	
300	125.8	629.1	140	166.3	831.3	70	200.0	943.6	
250	134.8	674.0	120	170.7	853.7	40	260.6	1303.1	
200	143.8	718.9	85	188.7	898.7	15	292.1	1460.3	
Input shaft Albero in entrata									
n_1	FA	FR	n_1	FA	FR	n_1	FA	FR	
1750	101.2	505.8	1750	101.2	505.8	1140	112.4	562	

tab. 2

P612A-B1... With feet
Con piediniGearbox weight
peso riduttore With flange 31.50lb
With feet 32.60lb

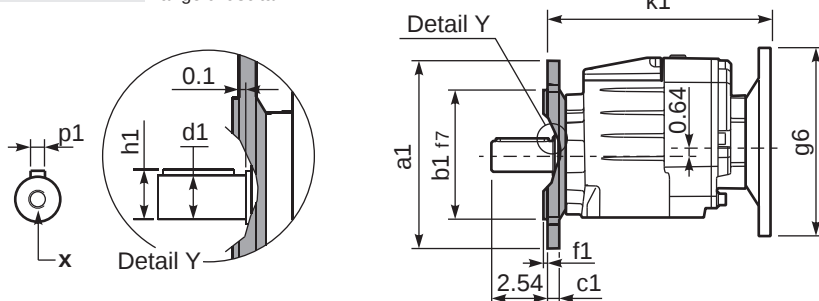
Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	Øl	kit code
B4	412/3	0.79	5.12	7.09	5.89	8.50	9.53	0.71	0.55	KC60.9.024
S4	47-57	1.18	4.53	5.31	6.50	6.69	8.94	0.98	0.55	KC50.9.022
S7	77	1.38	5.51	6.69	8.07	8.03	9.92	0.31	0.55	KC60.9.029LM

Nema flanges	C max	g6	kit code
56C-143/5TC	9.40	6.50	KU085.4.041
182/4TC	10.59	8.88	KU085.4.042

Other feet are available, see
www.hydromec.comSono disponibili altri piedini in
www.hydromec.com

Dimension (A) see on page bottom

Most popular types
Tipi più diffusiP612A-F... Output flanges
flange di uscita

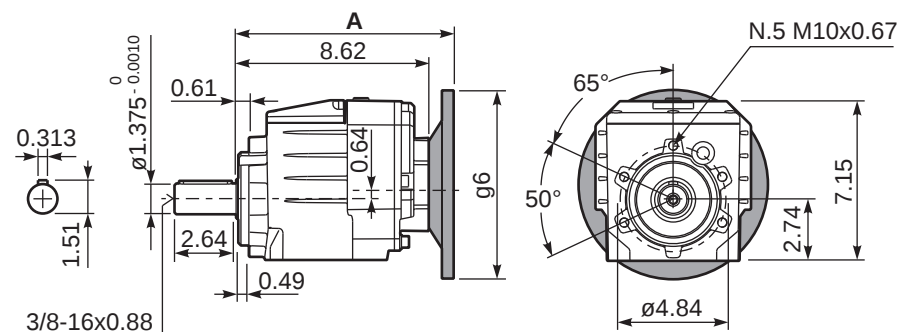
*Available output shaft / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	Ø1.375x2.64	0.313	1.51	3/8-16x0.88
On request A richiesta	Ø1.250x2.64	0.250	1.36	5/16-18x0.82

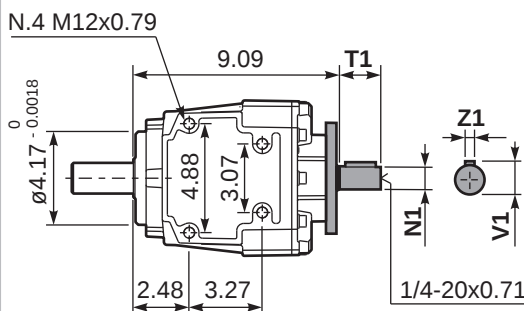
Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code	Type
7.87	5.118 ^{-0.0017} _{-0.0033}	0.51	6.50	0.14	0.43	KC50.9.012	Metric
9.84	7.087 ^{-0.0017} _{-0.0033}	0.61	8.46	0.16	0.55	KC50.9.013	

Nema flanges	k1	g6	kit code
56C-143/5TC	9.70	6.50	KU085.4.041
182/4TC	10.41	8.88	KU085.4.042

With flange and feet only on request.
Ask for compatibilityP612A-N... Basic gearbox
Riduttore base

Nema flanges	A	g6	kit code
56C-143/5TC	9.60	6.50	KU085.4.041
182/4TC	10.31	8.88	KU085.4.042

R612A-N... Input Shaft
Albero in entrata

Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.875	1.97	0.96	0.188	KC50.5.070U
On request	0.750	1.97	0.83	0.188	KC50.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft		
							-W	-X			Ratio code
							56C	143/5 TC		$\varnothing$	
44.0	39.79	2	2694	1.4	2.77	3726			191316		05
37.1	47.22	2	3198	1.4	2.77	4421			191314		06
32.0	54.73	2	3706	1.2	2.39	4421			171314		07
30.6	57.13	2	3869	1.2	2.35	4550			191312		08
26.4	66.22	2	4484	1.0	2.03	4550			171312		09
24.6	71.01	1.5	3606	1.0	1.55	3735			191310		10
22.8	76.69	1.5	3894	1.1	1.70	4421			131314		11
21.3	82.30	1	2786	1.3	1.34	3735			171310		12
20.9	83.59	1	2830	1.3	1.33	3777			190814		13
18.9	92.78	1	3141	1.4	1.45	4550			131312		14
16.7	104.68	1	3544	1.2	1.25	4421			101314	standard $\varnothing 1.375$	15
14.9	117.22	1	3968	1.1	1.15	4550			170812	On request 1.250	16
13.8	126.65	1	4288	1.1	1.06	4550			101312		17
12.9	135.74	0.75	3447	1.1	0.82	3777			130814		18
12.0	145.68	0.75	3699	1.0	0.76	3735			170810		19
11.1	157.40	0.5	2665	1.4	0.70	3735			101310		20
10.6	165.29	0.5	2798	1.6	0.81	4507			91312		21
9.4	185.29	0.5	3137	1.2	0.60	3777			100814		22
8.5	205.43	0.5	3478	1.1	0.54	3735			91310		23
7.8	224.18	0.5	3795	1.2	0.60	4550			100812		24
7.2	241.82	0.33	2702	1.4	0.46	3777			90814		25
6.3	278.62	0.33	3113	1.2	0.40	3735			100810		26
6.0	292.57	0.33	3269	1.4	0.46	4550			90812		27
4.8	363.63	0.25	3078	1.2	0.30	3735			90810		28

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

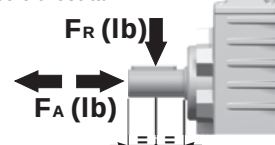
Standard supplied	For these mounting position specify in the order or add oil Per queste posizioni specificare in fase d'ordine o aggiungere olio					
B3	B6	B7	B8	V5	V6	V8
36.97 oz	38.73 oz	44.01 oz	44.01 oz	47.54 oz	52.82 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

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

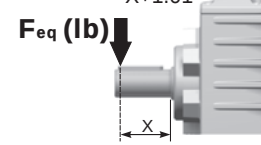
RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita



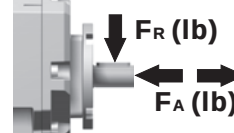
$$F_{eq} = F_R \cdot \frac{2.38}{X+1.01}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	125.8	629.1	140	166.3	831.3	70	200.0	943.6
250	134.8	674.0	120	170.7	853.7	40	260.6	1303.1
200	143.8	718.9	85	188.7	898.7	15	292.1	1460.3

Input shaft

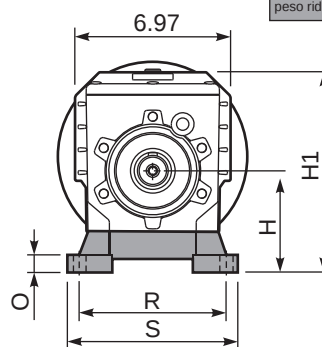
Albero in entrata



n_1	FA	FR
1750	89.9	449.3
1140	98.9	494.6

tab. 2

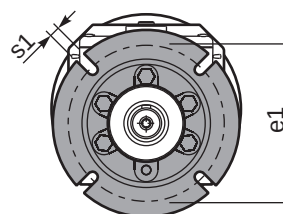
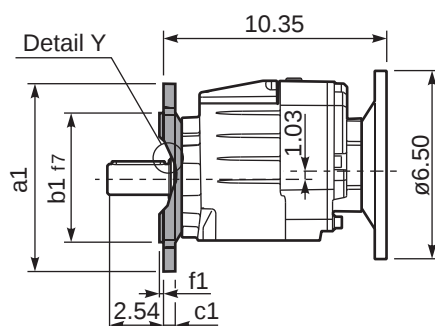
Gearbox weight	With flange	31.94lb
peso riduttore	With feet	34.80lb



Feet Code	Market reference	G	H	R	L	S	H1	O	øl	kit code
B4	412/3	0.79	5.12	7.09	5.89	8.50	9.53	0.71	0.55	KC60.9.024
S4	47-57	1.18	4.53	5.31	6.50	6.69	8.94	0.98	0.55	KC50.9.022
S7	77	1.38	5.51	6.69	8.07	8.03	9.92	0.31	0.55	KC60.9.029LM

Sono disponibili altri piedini in
www.hydromec.com

 Most popular types
Tipi più diffusi



	Shaft - d1	p1	h1	x
Standard	ø1.375x2.64	0.313	1.51	3/8-16x0.88
On request A richiesta	ø1.250x2.64	0.250	1.36	5/16-18x0.82

a1 Ø	b1	c1	e1	f1	s1	kit code	Type
7.87	5.118 ^{+0.0017} _{-0.0033}	0.51	6.50	0.14	0.43	KC50.9.012	Metric
9.84	7.087 ^{+0.0017} _{-0.0033}	0.61	8.46	0.16	0.55	KC50.9.013	



With flange and feet only on request. Ask for compatibility

Technical drawing of the KIT COD. KU063.4.041, showing side and front views with dimensions.

Side View Dimensions:

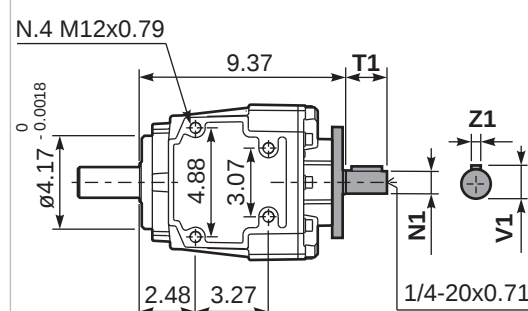
- Overall length: 10.26
- Distance from mounting face to center of mounting hole: 8.96
- Mounting hole diameter: $\varnothing 1.375$ (tolerance: -0.0010)
- Distance from mounting face to center of mounting hole: 0.61
- Distance from mounting face to center of mounting hole: 2.64
- Distance from mounting face to center of mounting hole: 0.49
- Distance from mounting face to center of mounting hole: 1.03
- Distance from mounting face to center of mounting hole: 0.313
- Distance from mounting face to center of mounting hole: 1.51
- Mounting hole thread: 3/8-16x0.88

Front View Dimensions:

- Overall width: 7.15
- Distance from center to mounting hole center: 2.74
- Distance from center to mounting hole center: 0.484
- Distance from center to mounting hole center: 6.50
- Distance from center to mounting hole center: 65°
- Distance from center to mounting hole center: 50°

Kit Information:

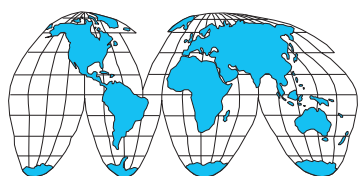
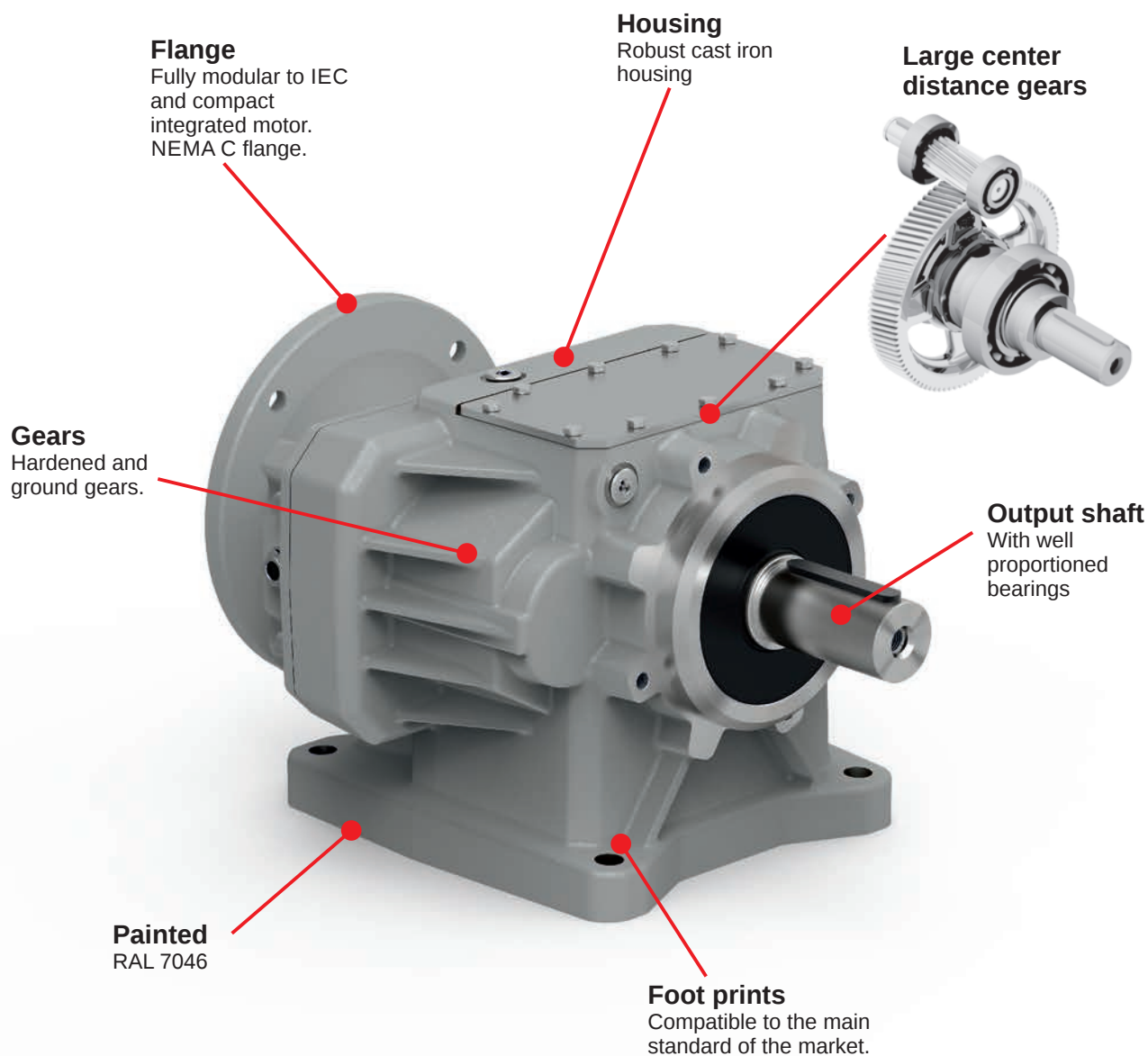
- Kit cod. KU063.4.041
- N.5 M10x0.67



Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.750	1.97	0.83	0.188	KC40.5.070U
On request	0.625	1.57	0.71	0.188	KC40.5.069U

Cast iron in line gearboxes

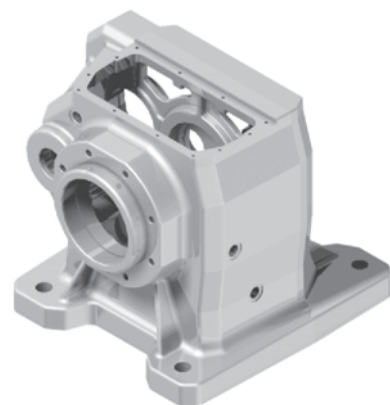
A modular and compact product



World wide sales network.

Single-piece Cast Iron housing

with high tensile strength.
Precision machined for alignment of bearings and gearing



Specific type datasheet on page...

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

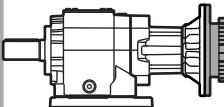
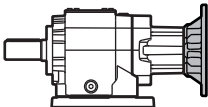
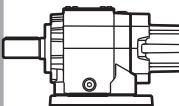
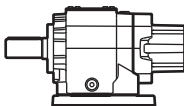
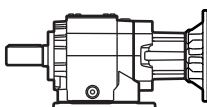
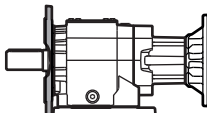
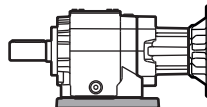
2 and 3 Stages



Types / Tipi
Tipen / Types
Tipos



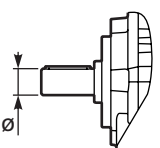
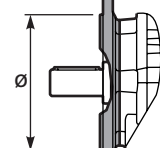
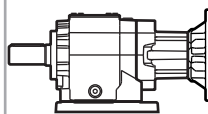
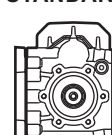
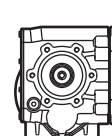
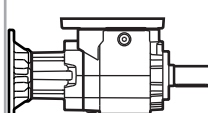
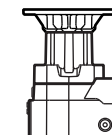
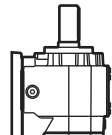
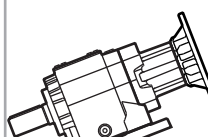
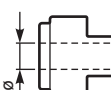
6-5	6-7	6-9	6-11	6-13	6-15	6-17	6-19	6-21	6-23
712C 5974 lb in	713C 5974 lb in	812C 7656 lb in	813C 7956 lb in	862C 14161 lb in	863C 15931 lb in	1002 25667 lb in	1003 26552 lb in	1102 39828 lb in	1103 40713 lb in

Type - Tipo - Typ	Size - Grandezza - Tomaño	Mounting - Montaggio Tipo de montaje																																																														
P	702C	-F																																																														
Cast iron coaxial gear boxes Riduttori coassiali in Ghisa  With IEC motor M  With motor flange P  With male input shaft R  Modular base B 2 Stages Riduzioni Etapas 712C 812C 862C 1002 1102 3 Stages Riduzioni Etapas 713C 813C 863C 1003 1103  Without flange / feet -N  Output flange mounted -F  Mounted feet B.. Feet / piedini <table><tr><th>Feet Code</th><th>Market reference</th><th>G</th><th>H</th><th>R</th><th>L</th><th>L1</th><th>S</th></tr><tr><td>B1</td><td>112</td><td>18</td><td>85</td><td>110</td><td>87</td><td>50</td><td></td></tr><tr><td>B2</td><td>212/3</td><td>18</td><td>100</td><td>130</td><td>107.5</td><td></td><td></td></tr><tr><td>S1</td><td>17</td><td>18</td><td>75</td><td>110</td><td>90+20</td><td></td><td></td></tr><tr><td>S2</td><td>27</td><td>25</td><td>90</td><td>110</td><td>130</td><td></td><td></td></tr><tr><td>M1</td><td>42/3</td><td>25</td><td>80</td><td>110+120</td><td>85</td><td></td><td></td></tr><tr><td>L4</td><td>04</td><td>13</td><td>80</td><td>105</td><td></td><td></td><td></td></tr><tr><td>L5</td><td>05</td><td>16</td><td>100</td><td>125</td><td></td><td></td><td></td></tr></table> You see feet code in the chart of the dimensions Vedi codice piede nella tabella delle dimensioni	Feet Code	Market reference	G	H	R	L	L1	S	B1	112	18	85	110	87	50		B2	212/3	18	100	130	107.5			S1	17	18	75	110	90+20			S2	27	25	90	110	130			M1	42/3	25	80	110+120	85			L4	04	13	80	105				L5	05	16	100	125			
Feet Code	Market reference	G	H	R	L	L1	S																																																									
B1	112	18	85	110	87	50																																																										
B2	212/3	18	100	130	107.5																																																											
S1	17	18	75	110	90+20																																																											
S2	27	25	90	110	130																																																											
M1	42/3	25	80	110+120	85																																																											
L4	04	13	80	105																																																												
L5	05	16	100	125																																																												



On request we can deliver our products according to the ATEX
A richiesta possiamo fornire i nostri prodotti secondo le normative ATEX
A pedido, se pueden enviar nuestros productos de acuerdo con las normas ATEX.

CODIFICA / HOW TO ORDER / CODIFICACIÓN

Ratio - Rapporto Relación	Output shaft Albero uscita Eje en salida	Output flange Flangia uscita Brida en salida	Motor size Grandezza motore Tamaño motor	Mounting position Posizione montaggio Posición de montaje	Input bore Foro entrata Eingangshohlwelle Trou d'entree Eje hueco de entrada	Terminal box position Posizione morsettiera Posición caja de bornes
6.57	H	4	-W	B3	ST	
See technical data table Vedi tabelle dati tecnici. Ver tabla datos técnicos	 → STANDARD 712C 713C Z → ø1.375 812C 813C 0 → ø1.625 862C 863C 1 → ø2.125 1002 1003 3 → ø2.375 1102 1103 4 → ø2.875	 N Senza flangia Without flange 712C 713C 4 → ø7.874 5 → ø9.843 812C 813C 5 → ø9.843 6 → ø11.811 862C 863C 6 → ø11.811 7 → ø13.780 8 → ø17.717 1002 1003 6 → ø11.811 7 → ø13.780 8 → ø17.717 1102 1103 7 → ø13.780 8 → ø17.717 → STANDARD	Flange Flangia  Nema -W=56C -X=143/5TC -Y=182/4TC AA=213/5TC AB=254/6TC AC=284/6TC AD=324/6TC Type R Tipo R  713C 813C -K → ø0.625 -J → ø0.750 712C 812C 863C -J → ø0.750 -N → ø0.875 Without flange Senza flangia  -M With coupling Con giunto 713C 813C -K → ø0.625 -N → ø0.875 712C 812C 863C -K → ø0.625 -N → ø0.875 -S → ø1.125 862C 1003 1103 -S → ø1.125 UA → ø1.375 UB → ø1.625 1002 1102 UC → ø1.875 UD → ø2.125	 B3 STANDARD  B6  B7  B8  V5  V6  V8	ST Nothing indication: standard bore Nessuna indicazione: foro standard COUPLING  -W = ø0.625" -X = ø0.875" -Y = ø1.125" -0 Ready for input coupling Predisposto per giunto 	With Type M specify terminal box position Con tipo M specificare posizione morsettiera A B STANDARD C D

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

Lifting / sollevamento / hubantriebe / levage / elevación

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

Rotation / rotazione / drehung / rotation / rotation

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

Linear movement / traslazione / linearbewegung / translation / translacion

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

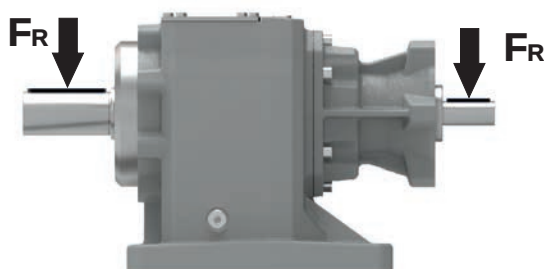
TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

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

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

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

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



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

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

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

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

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

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

Flange code
Codice flangia
Flanschtype
Code bride
Código bridas

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

Gear size
Grandezza riduttore
Getriebegröße
Taille réducteur
Tamaño reductor

Motor power
Potenza motore
Motorleistung
Puissance moteur
Potencia motor

712C Coaxial - Gear

5974lb in

Rating - Cast Iron COAXIAL GEARBOXES

QUICK SELECTION / Selezione veloce input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft 	Ratios code
							-X 143/5TC	-Y 182/4TC	AA 213/5TC		
455.4	3.84	10	1329	2.3	23.31	3098				3317	01
321.9	5.44	10	1880	1.7	16.95	3186				3313	02
291.7	6.00	10	2075	1.6	16.21	3363				3312	03
234.4	7.47	10	2582	1.4	14.40	3717				3310	04
206.4	8.48	10	2932	1.4	14.49	4248				2513	05

C Ratio
Rapporto
Untersetzung
Rapport de réduction
Relación

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

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

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

Notes
Note
Anmerkungen
Note
Notas

fs

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

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

B)	Mounting with reduction ring Montaggio con boccia di riduzione Reduzierhülsen Montage avec douille de réduction Montaje con casquillo de reducción	
C)	Motor flangeholes position/terminal box position Bohrungsposition am Motorflansch/-sockel Position trous bride/barrette à bornes moteur Posición agujeros brida / base motor	
B)	Available without reduction bushes Disponibile anche senza boccia Auch ohne Reduzierbuchse verfügbar Disponible aussi sans douille de réduction Disponible tambien sin casquillo	

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



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft  standard ø1.375	Ratios code 
							-X	-Y	AA		
							143/5TC	182/4TC	213/5TC		
455.4	3.84	10	1329	2.3	23.31	3098				3317	01
321.9	5.44	10	1880	1.7	16.95	3186				3313	02
291.7	6.00	10	2075	1.6	16.21	3363				3312	03
234.4	7.47	10	2582	1.4	14.40	3717				3310	04
206.4	8.48	10	2932	1.4	14.49	4248				2513	05
187.0	9.36	10	3236	1.4	13.67	4425				2512	06
150.2	11.65	10	4027	1.3	13.41	5399				2510	07
121.6	14.39	10	4975	1.1	11.21	5576				1713	08
110.2	15.88	10	5492	1.1	10.64	5841				1712	09
88.5	19.76	7.5	5125	1.2	8.74	5974				1710	10
79.2	22.08	7.5	5727	1.0	7.82	5974				1213	11
71.8	24.38	7.5	6321	0.9	7.09	5974				1212	12
57.7	30.33	5	5244	1.1	5.70	5974				1210	13
51.5	34.00	5	5878	1.0	5.08	5974				912	14
45.1	38.81	5	6710	0.9	4.45	5974				812	15
41.4	42.31	3	4389	1.4	4.08	5974				910	16
36.2	48.30	3	5010	1.2	3.58	5974				810	17

The dynamic efficiency is 0.96 for all ratios

A) Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

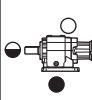
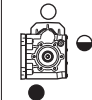
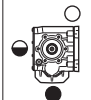
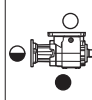
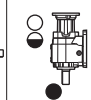
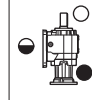
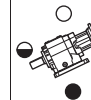
B) Available on Request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

						
B3	B6	B7	B8	V5	V6	V8
52.82 oz	80.99 oz	66.90 oz	59.86 oz	91.55 oz	70.42 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

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

tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

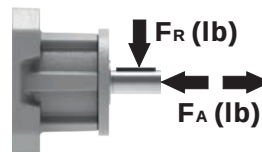
$$F_{eq} = F_R \cdot \frac{3.07}{X+1.50}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	153	764	140	216	1079	70	292	1461
250	171	854	120	234	1169	40	328	1641
200	202	1012	85	252	1259	15	405	2023

Input shaft

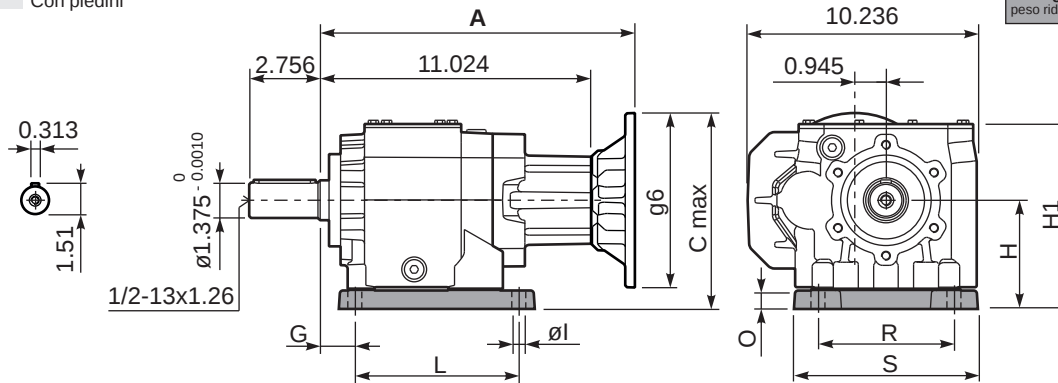
Albero in entrata



n_1	FA	FR
1750	101	506
1140	112	562

tab. 2

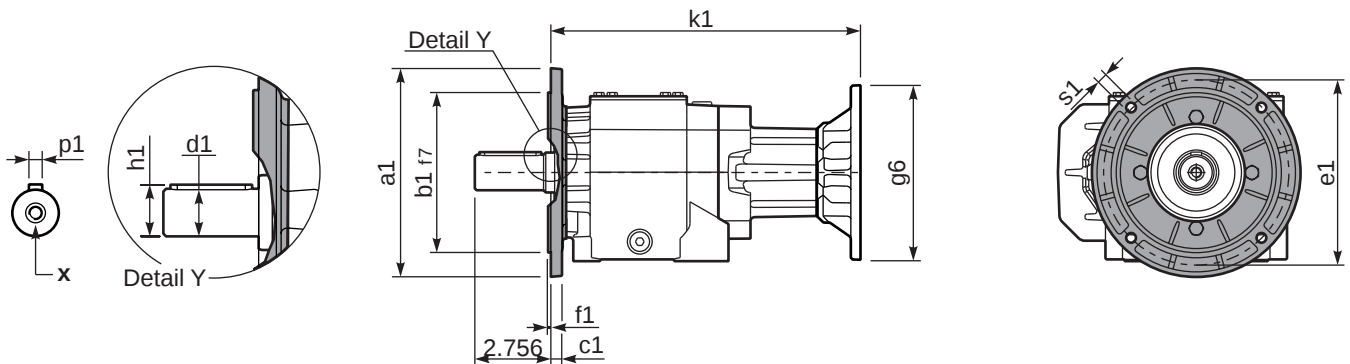
P712C-S6...

With feet
Con piediniGearbox
weight
peso riduttoreWith flange **73.4 lb**
With feet **77.2 lb**

Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	Øl	B5 max. Flange	kit code
B4	412/3	0.768	5.118	7.087	5.886	8.661	8.661	0.984	0.551	-	KC71.9.022
S6	67	1.181	5.118	5.906	7.677	8.628	8.661	0.984	0.551	-	KC71.9.024

P712C-F...

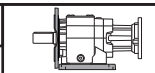
Output flanges
flange di uscita

Output shaft / Albero di uscita

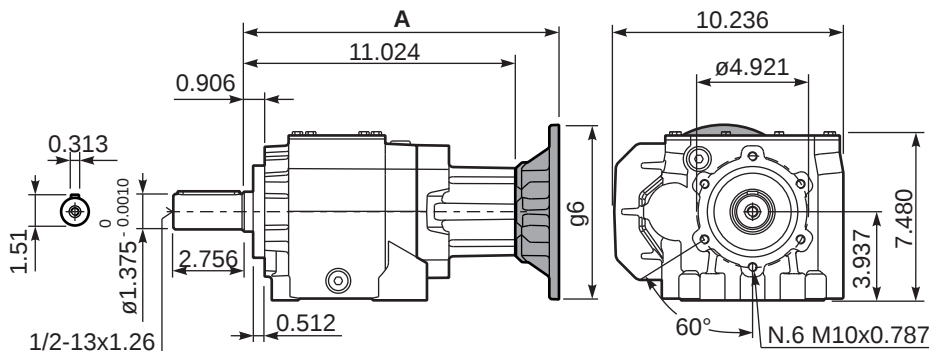
	Shaft - d1	p1	h1	x
Standard	Ø 1.375	0.313	1.51	1/2-13x1.26

Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code
7.874	5.118 ^{-0.0017} _{-0.0033}	0.433	6.496	0.138	0.433	KC71.9.012
9.843	7.087 ^{-0.0017} _{-0.0033}	0.512	8.465	0.157	0.551	KC81.9.013
-	-	-	-	-	-	-

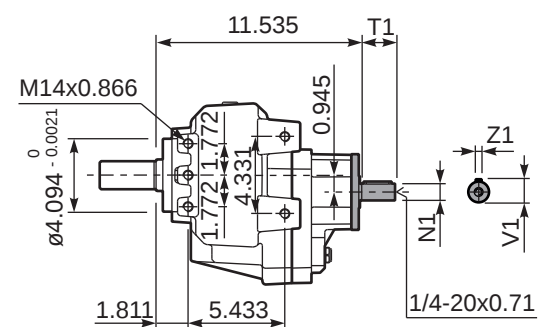
With flange and feet
only on request.
Ask for compatibility

P712C-N...

Basic gearbox
Riduttore base

Nema flanges	A	C _{max}	g6	k1	kit code
56C-143/5TC	12.008	8.368	6.50	12.008	KU085.4.041
182/4TC	12.713	9.559	8.88	12.713	KU085.4.042
213/5TC	13.248	9.559	8.88	13.248	KUC50.4.041C

R712C-N...

Input Shaft
Albero in entrata

Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.875	1.97	0.96	0.188	KC81.5.070U
On request	0.750	1.97	0.83	0.188	KC81.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges				
							-W	-X			
							56C	143/5 TC			
27.9	62.76	2	4250	1.4	2.81	5974			191213	standard Ø1.375	01
25.3	69.28	2	4691	1.3	2.55	5974			191212		02
24.1	72.75	2	4926	1.2	2.43	5974			171213		03
21.8	80.29	2	5437	1.1	2.20	5974			171212		04
20.5	85.39	2	5782	1.0	2.07	5974			151213		05
18.6	94.25	1.5	4786	1.2	1.87	5974			151212		06
17.2	101.92	1.5	5176	1.2	1.73	5974			131213		07
15.6	112.50	1.5	5713	1.0	1.57	5974			131212		08
14.9	117.29	1.5	5956	1.0	1.50	5974			151210		09
12.6	139.13	1.5	7065	0.8	1.27	5974			101213		10
11.4	153.56	1	5199	1.1	1.15	5974			101212		11
9.6	181.57	1	6147	1.0	0.97	5974			91213		12
8.7	200.42	0.75	5089	1.2	0.88	5974			91212		13
7.0	249.41	0.75	6333	0.9	0.71	5974			91210		14
5.3	329.33	0.55	6132	1.0	0.54	5974			71210		15

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

A Motor Flanges Available
Flange Motore Disponibili

B Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C Motor Flange Holes Position
Posizione Fori Flangia Motore

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

I Il riduttore **713C** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.

Vedi tab.1 per oli e quantità consigliati.

In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

E El reductor tamaño **713C** se suministra, lubricado de por vida con aceite sintético y no requieren mantenimiento alguna.

Ver tabla 1, para cantidades y aceites recomendados.

En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
56.34 oz	77.46 oz	63.38 oz	59.86 oz	98.59 oz	66.90 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

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

tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

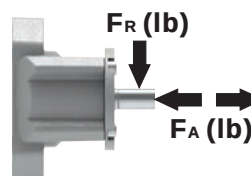
$$F_{eq} = F_R \cdot \frac{3.07}{X+1.50}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	153	764	140	216	1079	70	292	1461
250	171	854	120	234	1169	40	328	1641
200	202	1012	85	252	1259	15	405	2023

Input shaft

Albero in entrata



n_1	FA	FR
1750	90	450
1140	99	495

tab. 2

Gearbox weight peso riduttore	With flange	76.1 lb
	With feet	79.8 lb



Feet Code	Market reference	G	H	R	L	S	H1	O	øI	B5 max. Flange	kit code
B4	412/3	0.768	5.118	7.087	5.886	8.661	8.661	0.984	0.551	-	KC71.9.022
S6	67	1.181	5.118	5.906	7.677	8.628	8.661	0.984	0.551	-	KC71.9.024

Technical drawing of the 1000 series motor showing front, side, and detail views with dimensions.

Front View (Left): Shows the motor's profile with dimensions $p1$ (top flange width), $h1$ (height), and $d1$ (diameter). The center of gravity is marked with 'x'.

Side View (Middle): Shows the motor's length with dimensions $a1$ (total length), $b1$ (motor body length), $f1$ (flange thickness), $c1$ (mounting bracket length), and 2.756 (distance from center to mounting bracket). The total length is 12.264 . The diameter of the mounting bracket is $\varnothing 6.500$.

Detail Y (Right): A detailed view of the motor's end flange, showing the mounting bracket and the central shaft. The dimension $s1$ indicates the distance from the center to the mounting bracket.

Available output flanges / flange di uscita

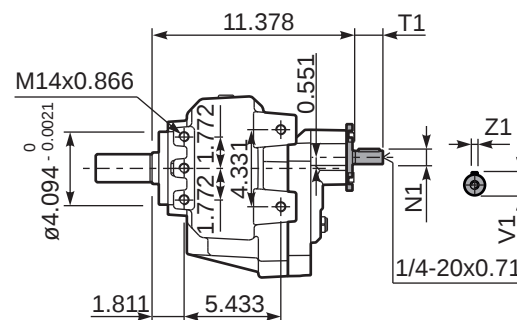
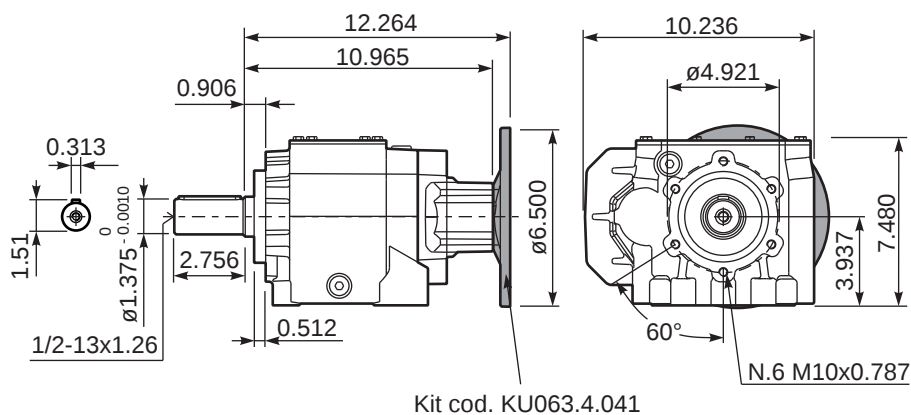
	Shaft - d1	p1	h1	x
Standard	Ø 1.375	0.313	1.51	1/2-13x1.26

a1 ø	b1	c1	e1	f1	s1	kit code
7.874	5.118 ^{-0.0017} _{-0.0033}	0.433	6.496	0.138	0.433	KC71.9.012
9.843	7.087 ^{-0.0017} _{-0.0033}	0.512	8.465	0.157	0.551	KC81.9.013
-	-	-	-	-	-	-



With flange and feed screw
only on request.
Ask for compatibility

Input Shaft
Albero in entrata



Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.750	1.97	0.83	0.188	KC40.5.070U
On request	0.625	1.57	0.71	0.188	KC40.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft  standard ø1.625	Ratios code 
							-X	-Y	AA		
							143/5TC	182/4TC	213/5TC		
455.4	3.84	10	1329	3.3	32.64	4337				3317	01
321.9	5.44	10	1880	2.4	24.49	4602				3313	02
291.7	6.00	10	2075	2.3	23.46	4868				3312	03
234.4	7.47	10	2582	2.1	20.57	5310				3310	04
206.4	8.48	10	2932	1.9	19.17	5620				2513	05
187.0	9.36	10	3236	1.8	17.50	5664				2512	06
150.2	11.65	10	4027	1.5	14.50	5841				2510	07
121.6	14.39	10	4975	1.3	12.81	6373				1713	08
110.2	15.88	10	5492	1.2	12.09	6638				1712	09
88.5	19.76	10	6834	1.1	10.62	7258				1710	10
79.2	22.08	10	7636	1.0	10.03	7656				1213	11
71.8	24.38	7.5	6321	1.2	9.08	7656				1212	12
57.7	30.33	7.5	7866	1.0	7.30	7656				1210	13
51.5	34.00	7.5	8817	0.9	6.51	7656				912	14
45.1	38.81	5	6710	1.1	5.58	7488				812	15
41.4	42.31	5	7315	1.0	5.23	7656				910	16
36.2	48.30	5	8350	0.9	4.58	7656				810	17

The dynamic efficiency is 0.96 for all ratios

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

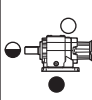
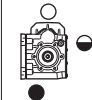
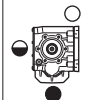
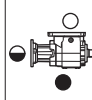
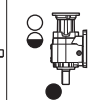
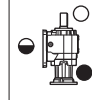
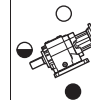
B) Available on Request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

						
B3	B6	B7	B8	V5	V6	V8
52.82 oz	80.99 oz	66.90 oz	59.86 oz	91.55 oz	70.42 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

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tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

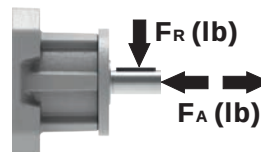
$$F_{eq} = F_R \cdot \frac{3.07}{X+1.50}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	292	1461	140	400	2001	70	495	2473
250	319	1596	120	427	2136	40	531	2653
200	360	1798	85	459	2293	15	540	2698

Input shaft

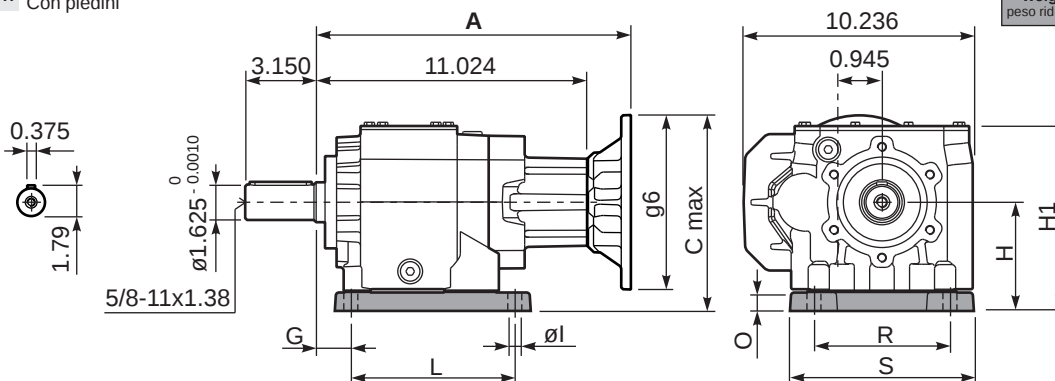
Albero in entrata



n_1	FA	FR
1750	101	506
1140	112	562

tab. 2

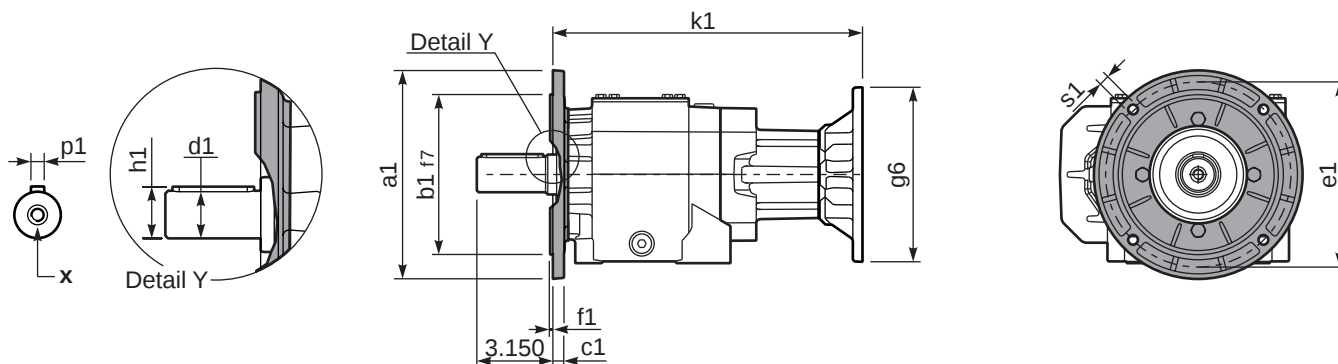
P812C-S7...

With feet
Con piediniGearbox
weight
peso riduttoreWith flange **74.3 lb**
With feet **86.4 lb**

Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	Øl	B5 max. Flange	kit code
B5	512/3	0.984	6.102	8.858	6.142	10.630	9.665	1.181	0.709	-	KC81.9.022
S7	77	1.378	5.512	6.693	8.071	9.055	9.075	1.181	0.689	-	KC81.9.024

P812C-F...

Output flanges
flange di uscita

Output shaft / Albero di uscita

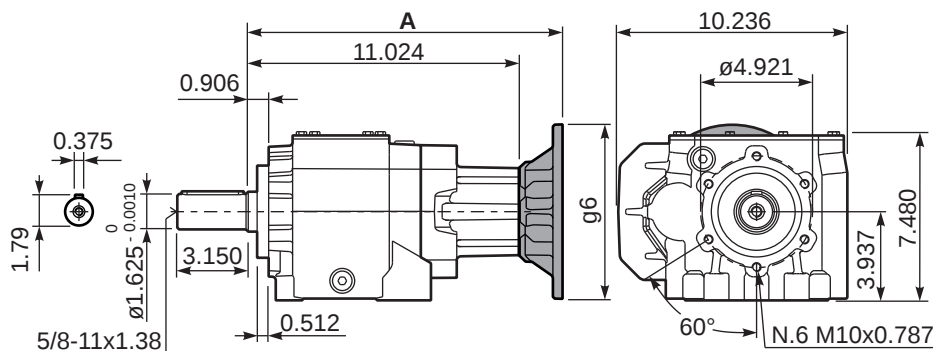
	Shaft - d1	p1	h1	x
Standard	Ø 1.625	0.375	1.79	5/8-11x1.38

Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code
9.843	7.087 ^{-0.0017} _{-0.0033}	0.512	8.465	0.157	0.551	KC81.9.013
11.811	9.055 ^{-0.0020} _{-0.0038}	0.630	10.433	0.157	0.551	KC81.9.014
-	-	-	-	-	-	-

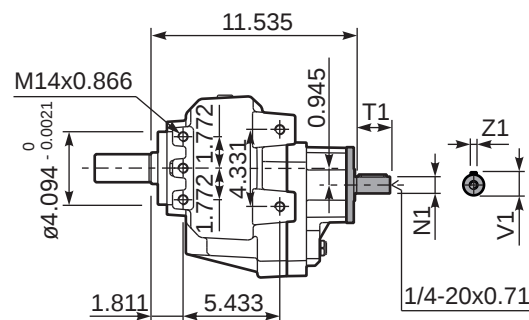
With flange and feet only on request. Ask for compatibility

P812C-N...

Basic gearbox
Riduttore base

Nema flanges	A	C _{max}	g6	k1	kit code
56C-143/5TC	12.008	9.352	6.50	12.008	KU085.4.041
182/4TC	12.713	10.543	8.88	12.713	KU085.4.042
213/5TC	13.248	10.543	8.88	13.248	KUC50.4.041C

R812C-N...

Input Shaft
Albero in entrata

Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.875	1.97	0.96	0.188	KC81.5.070U
On request	0.750	1.97	0.83	0.188	KC81.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n ₂ [min ⁻¹]	Ratio i	Motor power P _{1M} [HP]	Output torque M _{2M} [lb in]	Service factor f.s.	Nominal power P _{1R} [HP]	Nominal torque M _{2R} [lb in]	Available NEMA motor flanges			Output Shaft 	 Ratios code
							-W	-X			
							56C	143/5 TC			
27.9	62.76	2	4250	1.8	3.60	7656			191213	standard ø1.625	01
25.3	69.28	2	4691	1.6	3.26	7656			191212		02
24.1	72.75	2	4926	1.6	3.11	7656			171213		03
21.8	80.29	2	5437	1.4	2.82	7656			171212		04
20.5	85.39	2	5782	1.3	2.65	7656			151213		05
18.6	94.25	2	6382	1.2	2.40	7656			151212		06
17.2	101.92	2	6901	1.1	2.22	7656			131213		07
15.6	112.50	2	7618	1.0	2.01	7656			131212		08
14.9	117.29	2	7942	1.0	1.93	7656			151210		09
12.6	139.13	1.5	7065	1.1	1.63	7656			101213		10
11.4	153.56	1.5	7799	1.0	1.47	7656			101212		11
9.6	181.57	1	6147	1.2	1.25	7656			91213		12
8.7	200.42	1	6785	1.1	1.13	7656			91212		13
7.0	249.41	0.75	6333	1.2	0.91	7656			91210		14
5.3	329.33	0.75	8362	0.9	0.69	7656			71210		15

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

I Il riduttore **813C** viene fornito completo di olio sintetico per la lubrificazione permanente e non necessita di alcuna manutenzione.

Vedi tab.1 per oli e quantità consigliati.

In tab.2 sono presenti i carichi radiali e assiali applicabili al riduttore.

E El reductor tamaño **813C** se suministra, lubricado de por vida con aceites sintético y no requieren mantenimiento alguna.

Ver tabla 1, para cantidades y aceites recomendados.

En la tabla 2, se encuentran las cargas radiales y axiales admitidas por el reductor.

B3	B6	B7	B8	V5	V6	V8
56.34 oz	77.46 oz	63.38 oz	59.86 oz	98.59 oz	66.90 oz	Ask
SHELL Omala S4 WE 320				ENI Telium VSF 320		

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

tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

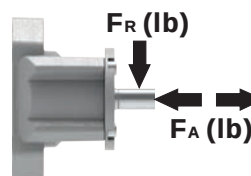
$$F_{eq} = F_R \cdot \frac{3.07}{X+1.50}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	292	1461	140	400	2001	70	495	2473
250	319	1596	120	427	2136	40	531	2653
200	360	1798	85	459	2293	15	540	2698

Input shaft

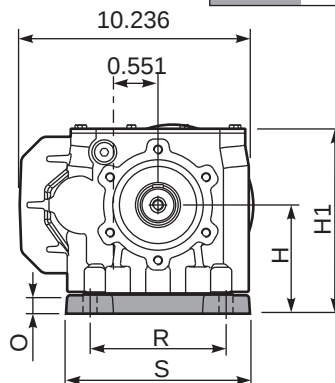
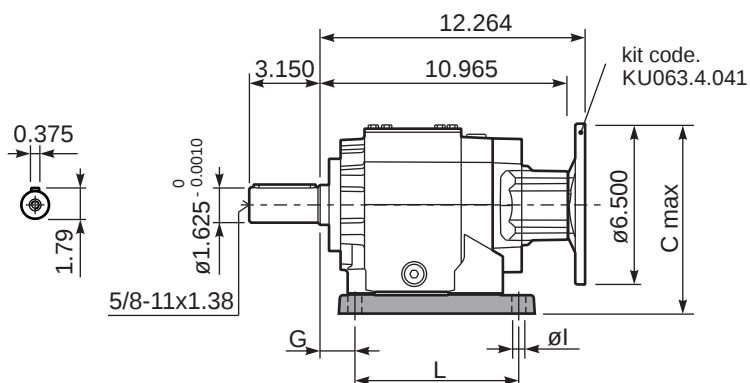
Albero in entrata



n_1	FA	FR
1750	90	450
1140	99	495

tab. 2

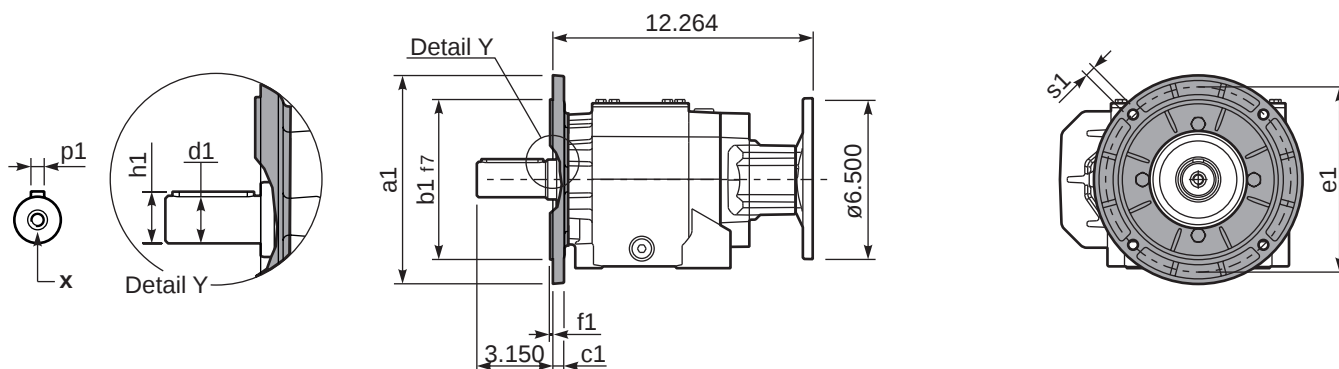
P813C-S7...

With feet
Con piediniGearbox
weight
peso riduttoreWith flange **76.7 lb**
With feet **88.8 lb**

Feet / piedini

Feet Code	Market reference	G	H	R	L	S	H1	O	ØI	B5 max. Flange	kit code
B5	512/3	0.984	6.102	8.858	6.142	10.630	9.665	1.181	0.709	-	KC81.9.022
S7	77	1.378	5.512	6.693	8.071	9.055	9.075	1.181	0.689	-	KC81.9.024

P813C-F...

Output flanges
flange di uscita

Output shaft / Albero di uscita

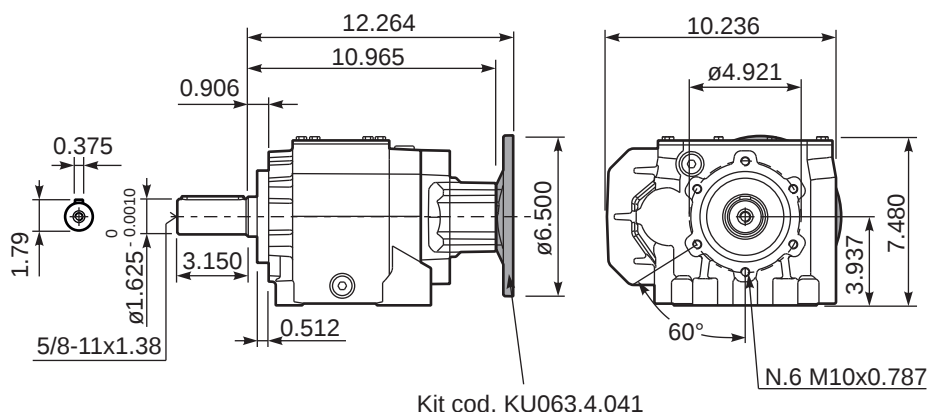
	Shaft - d1	p1	h1	x
Standard	Ø 1.625	0.375	1.79	5/8-11x1.38

Available output flanges / flange di uscita

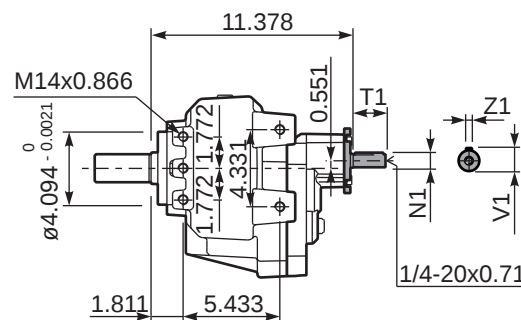
a1 Ø	b1	c1	e1	f1	s1	kit code
9.843	7.087 ^{+0.0017} _{-0.0033}	0.512	8.465	0.157	0.551	KC81.9.013
11.811	9.055 ^{+0.0020} _{-0.0038}	0.630	10.433	0.157	0.551	KC81.9.014
-	-	-	-	-	-	-

With flange and feet only on request.
Ask for compatibility

P813C-N...

Basic gearbox
Riduttore base

R813C-N...

Input Shaft
Albero in entrata

Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.750	1.97	0.83	0.188	KC40.5.070U
On request	0.625	1.57	0.71	0.188	KC40.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges				Output Shaft  $\varnothing$	 Ratios code
							-Y	AA	AB			
							182/4TC	213/5TC	254/6TC			
396	4.42	20	3057	2.0	40.54	6196				3015	standard $\varnothing 2.125$	01
330	5.30	20	3665	1.7	33.81	6196				3013		02
274	6.38	20	4413	1.6	32.09	7081				3011		03
210	8.33	20	5760	1.2	24.58	7081				2015		04
175	9.99	20	6907	1.2	23.06	7966				2013		05
155	11.26	20	7788	1.3	25.00	9736				1615		06
146	12.03	20	8317	1.3	25.54	10621				2011		07
130	13.50	20	9339	1.3	26.54	12391				1613		08
119	14.65	20	10128	1.3	26.22	13276				1315		09
108	16.26	20	11245	1.2	23.61	13276				1611		10
100	17.56	20	12145	1.1	21.86	13276				1313		11
81	21.50	20	14865	1.0	19.05	14161				1113		12
68	25.88	15	13425	1.1	15.82	14161				1111		13
56	31.09	10	10749	1.2	12.02	12922				813		14
46.8	37.43	10	12943	1.1	10.94	14161				811		15

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

 **Motor Flanges Available**
Flange Motore Disponibili

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

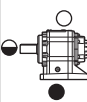
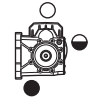
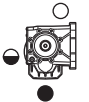
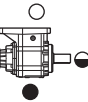
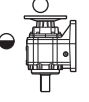
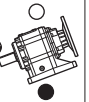
B) Available on Request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

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

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

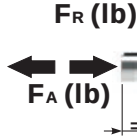
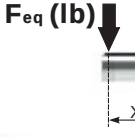
I Il riduttore tipo **862C** è fornito privo di lubrificazione con tappi di sfiato, livello e scarico olio. L'utente può immettere olio minerale mantenendo i tappi esistenti. Se immetterà olio sintetico, dovrà sostituire i tappi esistenti con altri tipo chiuso.
Tab.1 per oli e quantità consigliati.
Tab.2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

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

						
B3	B6	B7	B8	V5	V6	V8
109.15 oz	158.45 oz	88.03 oz	109.15 oz	172.54 oz	147.89 oz	Ask
SHELL Omala S2 GX 460				ENI Blasias 460		

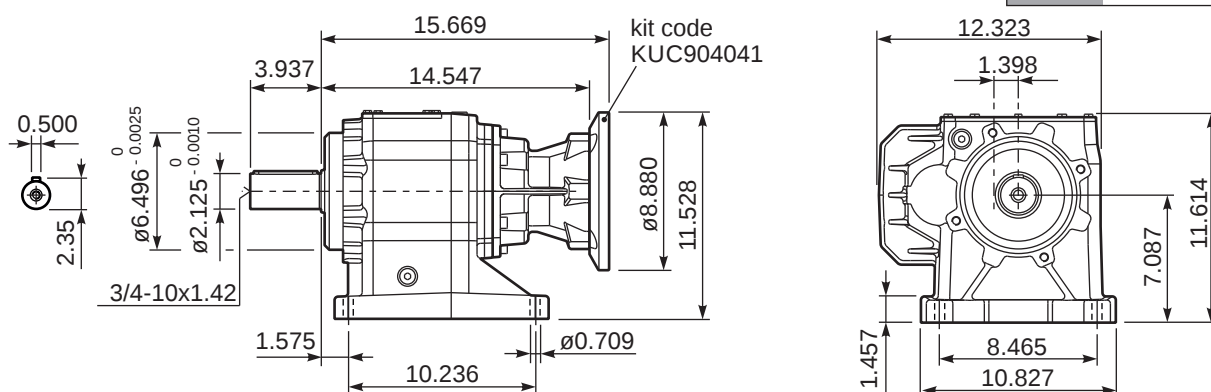
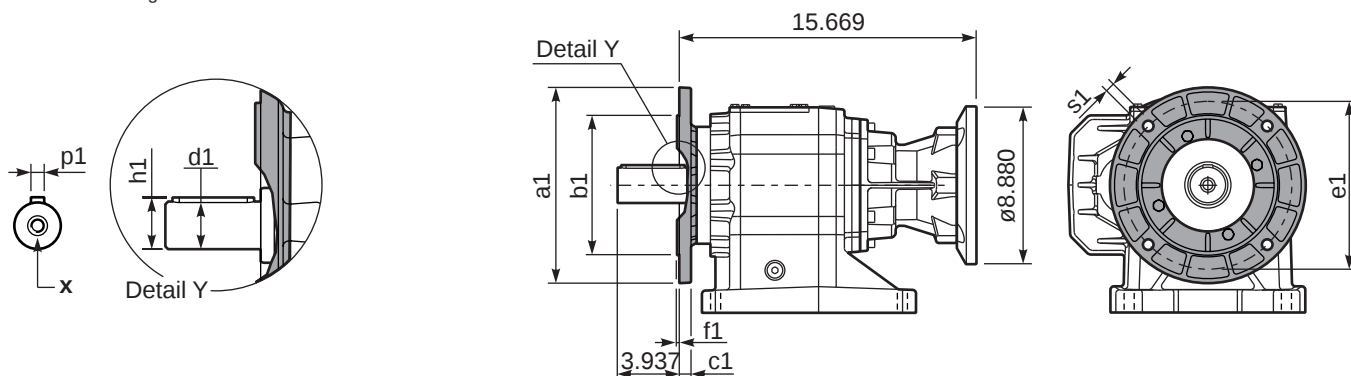
For all details on lubrication and plugs check our website
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

tab. 1

RADIAL AND AXIAL LOADS								
Output shaft Albero di uscita			$F_{eq} = F_R \cdot \frac{3.48}{X+1.52}$					
								
n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	405	2023	140	540	2698	70	674	3372
250	450	2248	120	585	2923	40	719	3597
200	495	2473	85	629	3147	15	899	4496

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

tab. 2

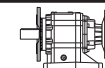
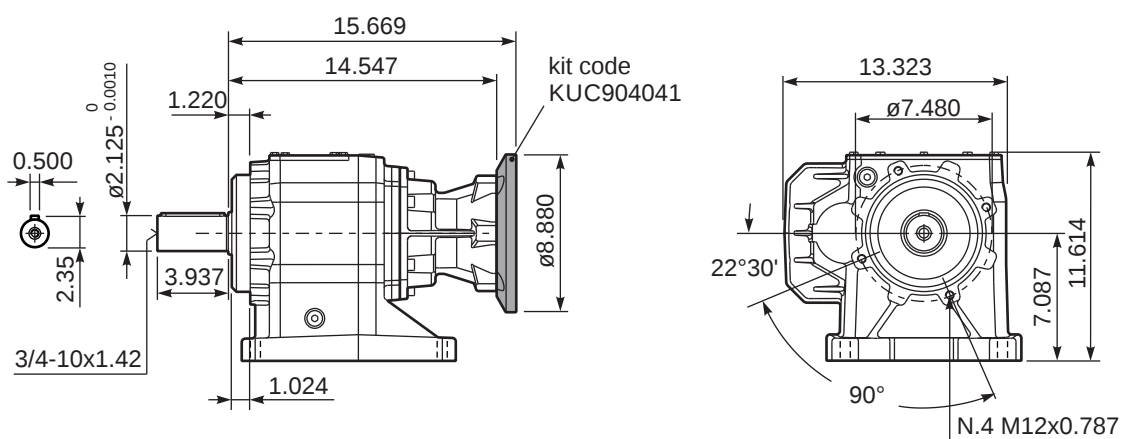
P862C-S8...With foot
Con piedinoGearbox
weight
peso riduttoreWith flange **185 lb**
With feet **164 lb****P862C-F...**Output flanges
flange di uscita

*Available output shaft / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	Ø 2.125	0.500	2.35	3/4-10x1.42

Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code
11.811	9.055 ^{-0.0020} _{-0.0038}	0.827	10.433	0.157	0.551	KC90.9.014
13.780	9.843 ^{-0.0020} _{-0.0038}	0.827	11.811	0.197	0.709	KC90.9.015
-	-	-	-	-	-	-

All flanges are
compatible
with the foot**P862C-S8...**Basic gearbox
Riduttore base



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft  standard Ø2.125	Ratios code 
							-X	-Y	AA		
							143/5TC	182/4TC	213/5TC		
40.7	43.03	10	14567	1.0	9.72	14161				201313	01
36.1	48.52	7.5	12319	1.1	8.35	13719				161315	02
33.8	51.81	7.5	13156	1.1	8.07	14161				201311	03
30.1	58.17	7.5	14772	1.0	7.19	14161				161313	04
27.7	63.09	7.5	16020	0.9	6.42	13719				131315	05
25.0	70.05	7.5	17787	0.9	6.72	15931				161311	06
23.1	75.65	5	12806	1.2	6.22	15931				131313	07
19.2	91.09	5	15420	1.0	5.17	15931				131311	08
15.7	111.50	3	11325	1.4	4.22	15931				111311	09
13.1	133.91	3	13601	1.2	3.51	15931				81313	10
10.9	161.24	3	16377	1.0	2.92	15931				81311	11
9.5	184.40	2	12486	1.0	2.06	12834				61313	12
7.9	222.04	2	15035	1.0	2.06	15489				61311	13

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

 **Motor Flanges Available**
Flange Motore Disponibili

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

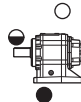
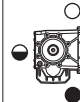
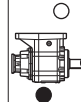
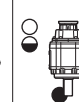
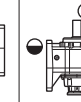
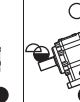
B) Available on Request without reduction bushing
Disponibile a Richiesta senza Bussola di Riduzione

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

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

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

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

						
B3	B6	B7	B8	V5	V6	V8
109.15 oz	161.97 oz	91.55 oz	109.15 oz	197.18 oz	151.41 oz	Ask
SHELL Omala S2 GX 460				ENI Blasias 460		

For all details on lubrication and plugs check our website

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

tab. 1

RADIAL AND AXIAL LOADS

Output shaft
Albero di uscita

$$F_{eq} = F_R \cdot \frac{3.48}{X+1.52}$$

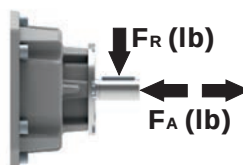


n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	405	2023	140	540	2698	70	674	3372
250	450	2248	120	585	2923	40	719	3597
200	495	2473	85	629	3147	15	899	4496

On request reinforced bearings to increase loads.

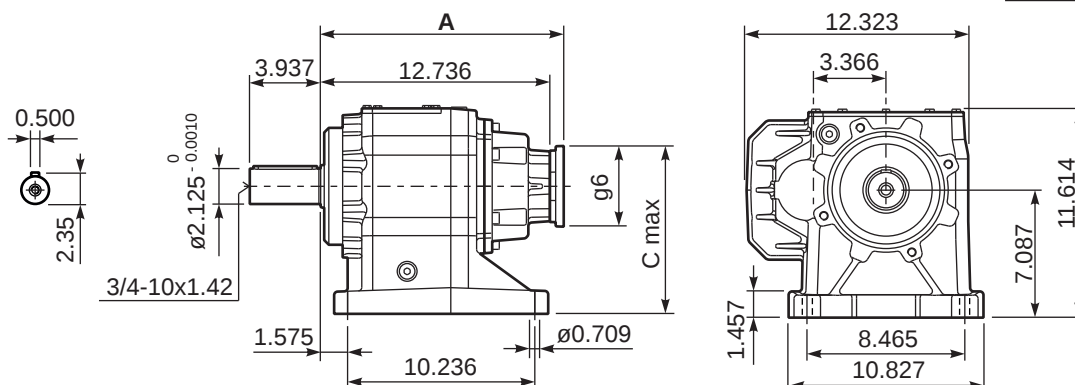
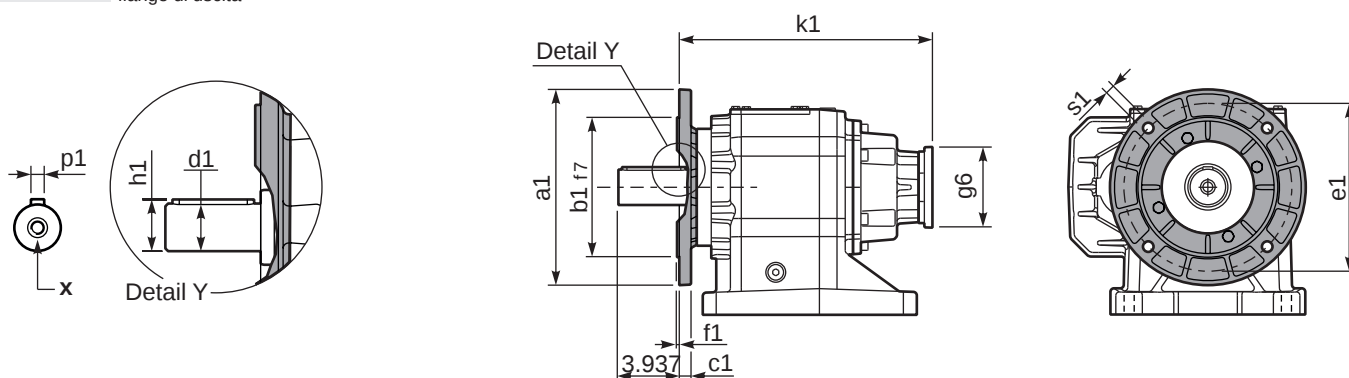
A richiesta cuscinetti rinforzati per aumentare i carichi.

Input shaft
Albero in entrata



n_1	FA	FR
1750	101	506
1140	112	562

tab. 2

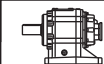
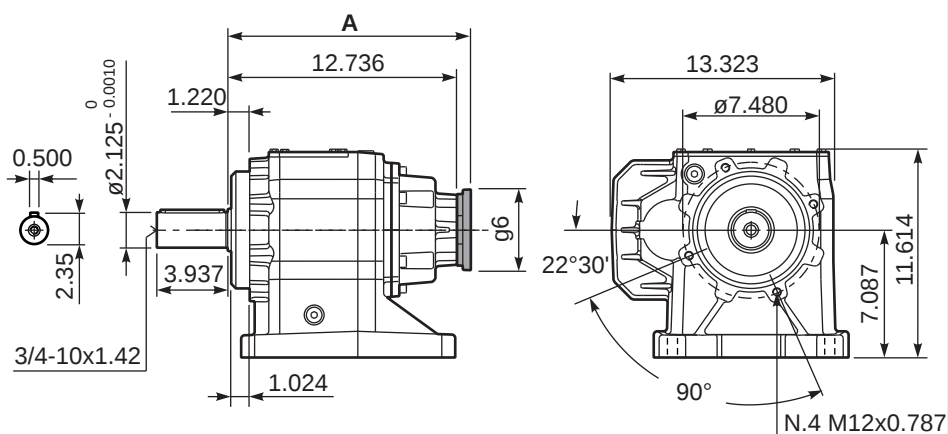
P863C**S8**...With foot
Con piedinoGearbox
weight
peso riduttoreWith flange **173 lb**
With feet **152 lb**P863C-**F**...Output flanges
flange di uscita

Output shaft / Albero di uscita

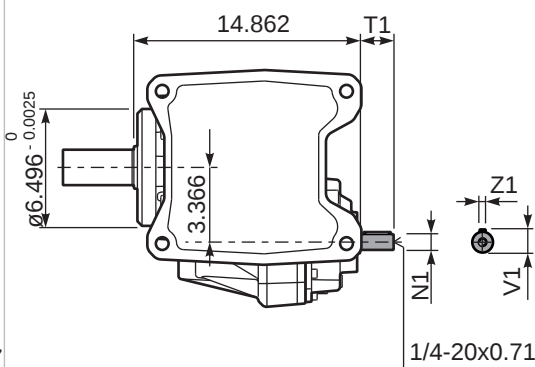
	Shaft - d1	p1	h1	x
Standard	Ø 2.125	0.500	2.35	3/4-10x1.42

Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code
11.811	9.055 ^{-0.0020} _{-0.0038}	0.827	10.433	0.157	0.551	KC90.9.014
13.780	9.843 ^{-0.0020} _{-0.0038}	0.827	11.811	0.197	0.709	KC90.9.015
-	-	-	-	-	-	-

All flanges are
compatible
with the footP863C**S8**...Basic gearbox
Riduttore base

Nema flanges	A	C _{max}	g6	k1	kit code
56C-143/5TC	13.720	10.337	6.50	13.720	KU085.4.041
182/4TC	14.425	11.528	8.88	14.425	KU085.4.042
213/5TC	14.941	11.528	8.88	14.941	KUC50.4.041

R863C**S8**...Input Shaft
Albero in entrata

Nema flanges	N1	T1	V1	Z1	kit code
Standard	0.875	1.97	0.96	0.188	KC50.5.070U
On request	0.750	1.97	0.83	0.188	KC50.5.069U



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft  standard ø2.375	Ratios code 
							AC	AD		
							284/6 TC	324/6 TC		
368	4.75	50	8220	1.8	88.83	14604			3914	01
336	5.21	50	9002	1.7	86.03	15489			3913	02
275	6.36	50	10994	1.5	76.48	16816			3911	03
235	7.45	50	12872	1.4	72.20	18587			3014	04
215	8.15	50	14097	1.3	65.93	18587			3013	05
176	9.96	50	17215	1.1	56.55	19472			3011	06
150	11.69	50	20201	1.0	50.38	20357			2214	07
137	12.80	40	17699	1.2	46.01	20357			2213	08
112	15.63	40	21615	1.0	39.31	21242			2211	09
99	17.65	40	24407	0.9	37.71	23012			1614	10
91	19.33	40	26730	1.0	38.41	25667			1613	11
84	20.77	30	21545	1.2	35.74	25667			1414	12
77	22.75	30	23596	1.1	32.63	25667			1413	13
74	23.60	30	24483	1.0	31.45	25667			1611	14
63	27.78	25	24013	1.1	26.72	25667			1411	15
57	30.76	25	26593	1.0	24.13	25667			1014	16
52	33.69	25	29124	0.9	22.03	25667			1013	17
42.5	41.15	25*	35567	0.7	18.04	25667			1011	18

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

* 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

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

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

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

						
B3	B6	B7	B8	V5	V6	V8
158.4 oz	281.6 oz	193.6 oz	211.2 oz	352.0 oz	264.0 oz	Ask
SHELL Omala S2 GX 460				ENI Blasias 460		

For all details on lubrication and plugs check our website

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

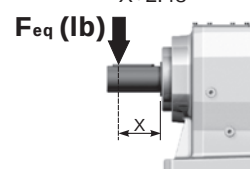
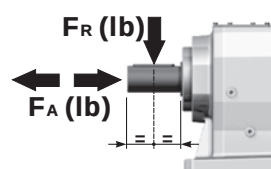
tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

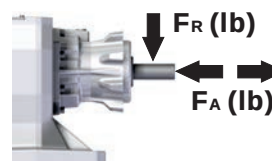
$$F_{eq} = F_R \cdot \frac{4.84}{X+2.48}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	517	2585	140	670	3350	70	823	4114
250	557	2788	120	715	3574	40	949	4743
200	602	3012	85	773	3867	15	1084	5418

Input shaft

Albero in entrata

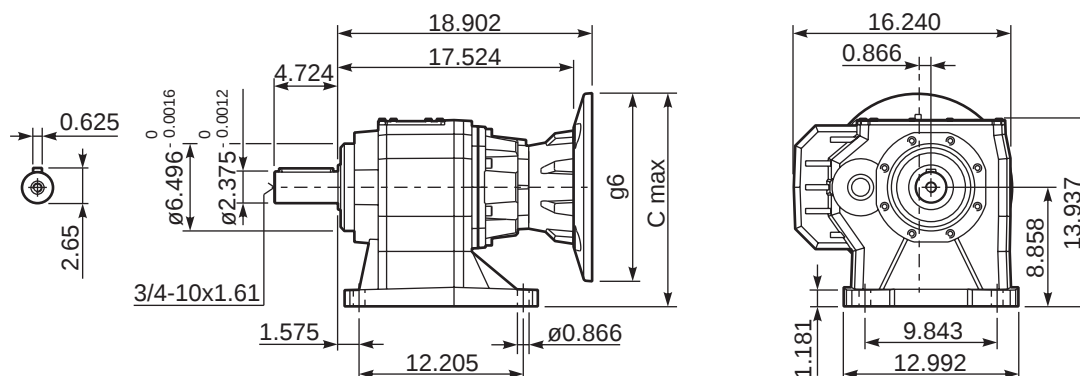
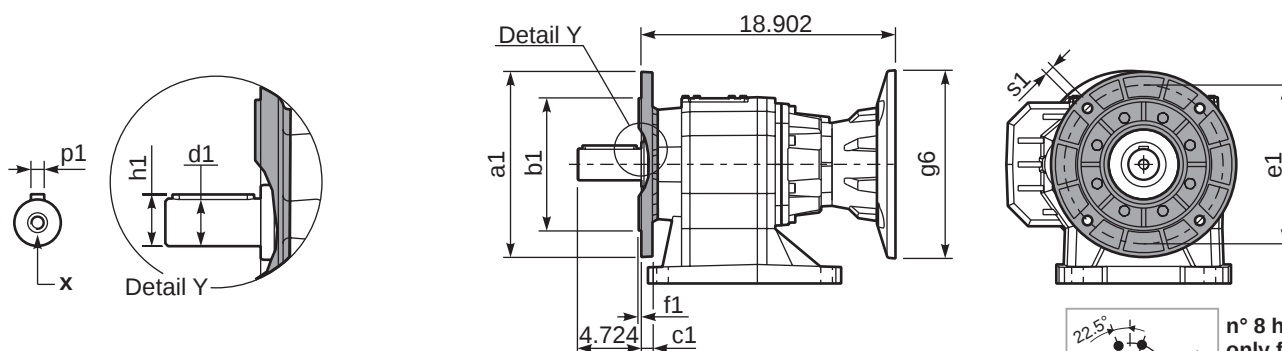


n_1	FA	FR
1750	252	1259
1140	274	1371

tab. 2

P1002**S9**...With foot
Con piedinoGearbox
weight
peso riduttore

269 lb

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

Output shaft / Albero di uscita

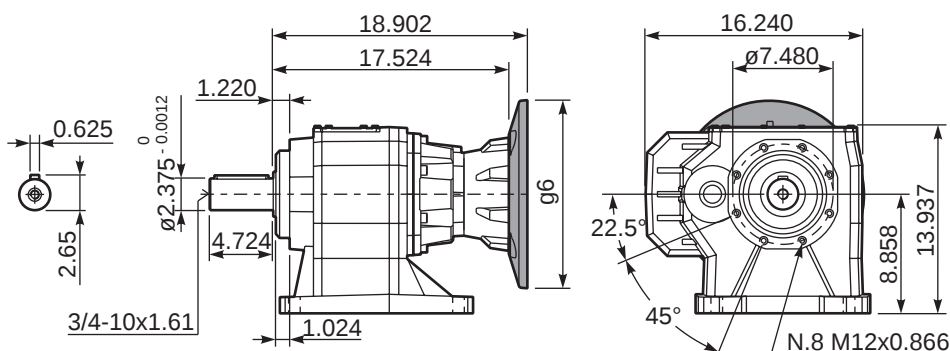
	Shaft - d1	p1	h1	x
Standard	$\varnothing 2.375$	0.625	2.65	3/4-10x1.61

Available output flanges / flange di uscita

a1 $\varnothing$	b1	c1	e1	f1	s1	kit code
11.811	9.055 -0.0020 -0.0038	0.827	10.433	0.157	0.551	KC90.9.014
13.780	9.843 -0.0020 -0.0038	0.827	11.811	0.197	0.709	KC90.9.015
17.717	13.780 -0.0024 -0.0047	0.866	15.748	0.197	0.709	KC90.9.016

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

All flanges are
compatible
with the foot

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

NEMA Motor Flanges	C _{max}	g6	kit code
284/6 TC	14.488	11.250	UC110.4.042
324/6 TC	15.866	14.000	UC110.4.043



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft  $\varnothing$ standard ø2.375	Ratios code 
							-Y	AA	AB		
							182/4TC	213/5TC	254/6TC		
48.5	36.11	20	24453	1.0	20.99	25667				301411	01
34.4	50.89	15	25843	1.0	15.41	26552				201414	02
31.4	55.73	15	28302	0.9	14.07	26552				201413	03
25.4	68.80	10	23294	1.1	11.40	26552				161414	04
23.2	75.35	10	25511	1.0	10.41	26552				161413	05
19.6	89.47	10	30292	0.9	8.77	26552				131414	06
19.0	92.02	7.5	23365	1.1	8.52	26552				161411	07
17.9	97.99	7.5	24881	1.1	8.00	26552				131413	08
16.0	109.52	7.5	27809	1.0	7.16	26552				111414	09
14.6	119.94	5	20304	1.3	6.54	26552				111413	10
11.9	146.47	5	24795	1.1	5.35	26552				111411	11
11.0	158.37	5	26810	1.0	4.95	26552				81414	12
10.1	173.45	5	29361	0.9	4.52	26552				81413	13
8.3	211.82	3	21514	1.2	3.70	26552				81411	14

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

						
B3	B6	B7	B8	V5	V6	V8
176.0 oz	316.8 oz	228.8 oz	228.8 oz	387.1 oz	316.8 oz	Ask
SHELL Omala S2 GX 460				ENI Blasias 460		

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

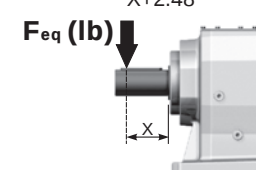
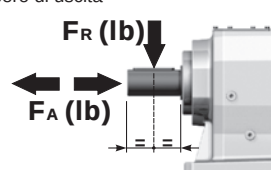
tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

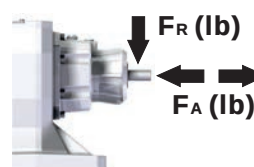
$$F_{eq} = F_R \cdot \frac{4.84}{X+2.48}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	517	2585	140	670	3350	70	823	4114
250	557	2788	120	715	3574	40	949	4743
200	602	3012	85	773	3867	15	1084	5418

Input shaft

Albero in entrata



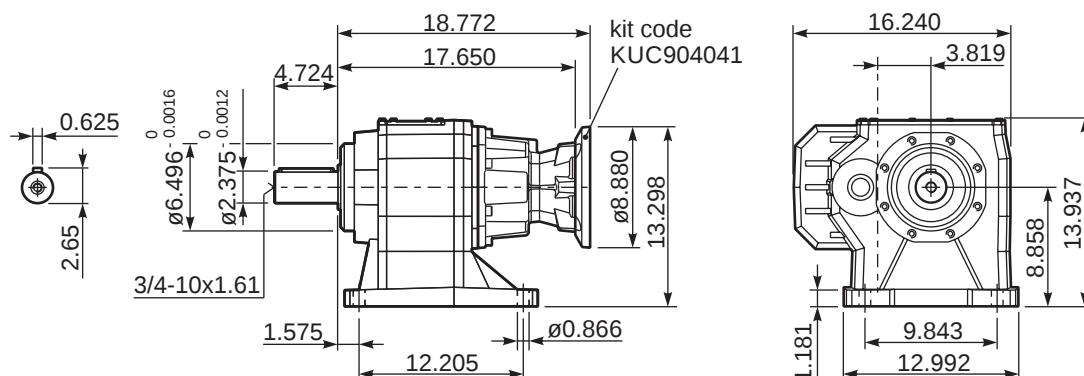
n_1	FA	FR
1750	157	787
1140	189	944

tab. 2

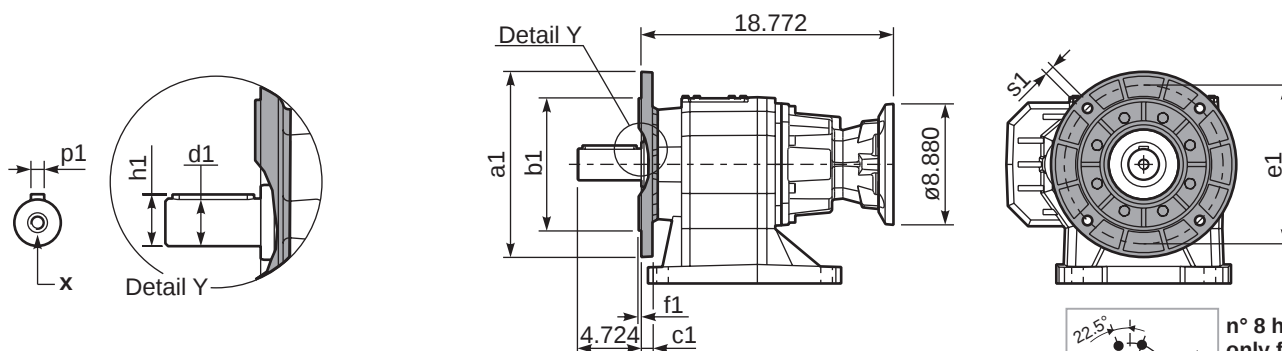
P1003S9...

With foot
Con piedinoGearbox
weight
peso riduttore

246 lb



P1003-F...

Output flanges
flange di uscita

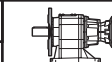
Output shaft / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	Ø 2.375	0.625	2.65	3/4-10x1.61

Available output flanges / flange di uscita

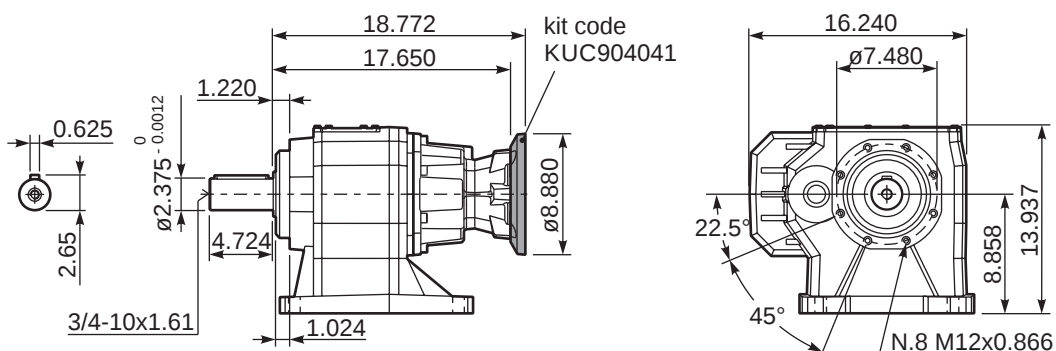
a1 Ø	b1	c1	e1	f1	s1	kit code
11.811	9.055 -0.0020 -0.0038	0.827	10.433	0.157	0.551	KC90.9.014
13.780	9.843 -0.0020 -0.0038	0.827	11.811	0.197	0.709	KC90.9.015
17.717	13.780 -0.0024 -0.0047	0.866	15.748	0.197	0.709	KC90.9.016

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



All flanges are
compatible
with the foot

P1003S9...

Basic gearbox
Riduttore base



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Output Shaft  $\varnothing$	Ratios code 
							AC	AD		
							284/6 TC	324/6 TC		
368	4.75	50	8820	2.9	145.36	23897			3914	01
336	5.21	50	9002	2.8	137.65	24782			3913	02
275	6.36	50	10994	2.4	120.76	26552			3911	03
235	7.45	50	12872	2.3	113.46	29207			3014	04
215	8.15	50	14097	2.1	106.74	30093			3013	05
176	9.96	50	17215	1.9	92.54	31863			3011	06
150	11.69	50	20201	1.7	83.24	33633			2214	07
137	12.80	50	22124	1.6	80.01	35403			2213	08
112	15.63	50	27018	1.4	70.43	38058			2211	09
99	17.65	50	30509	1.3	65.27	39828			1614	10
91	19.33	50	33413	1.2	59.60	39828			1613	11
84	20.77	50	35908	1.1	55.46	39828			1414	12
77	22.75	50	39326	1.0	50.64	39828			1413	13
74	23.60	40	32643	1.2	48.80	39828			1611	14
63	27.78	40	38420	1.0	41.47	39828			1411	15
57	30.76	30	31912	1.2	37.44	39828			1014	16
52	33.69	30	34949	1.1	34.19	39828			1013	17
42.5	41.15	25	35567	1.1	28.00	39828			1011	18

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

C) Motor Flange Holes Position
Posizione Fori Flangia Motore

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

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

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

						
B3	B6	B7	B8	V5	V6	V8
228.8 oz	439.9 oz	264.0 oz	299.2 oz	510.3 oz	404.7 oz	Ask
SHELL Omala S2 GX 460				ENI Blasias 460		

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

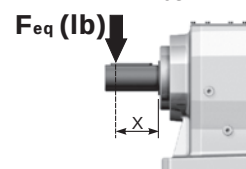
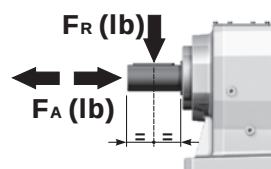
tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

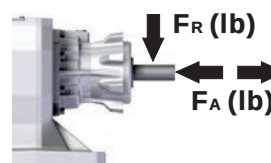
$$F_{eq} = F_R \cdot \frac{5.43}{X+2.68}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	584	2922	140	742	3709	70	967	4833
250	607	3035	120	787	3934	40	1124	5620
200	674	3372	85	877	4384	15	1326	6632

Input shaft

Albero in entrata



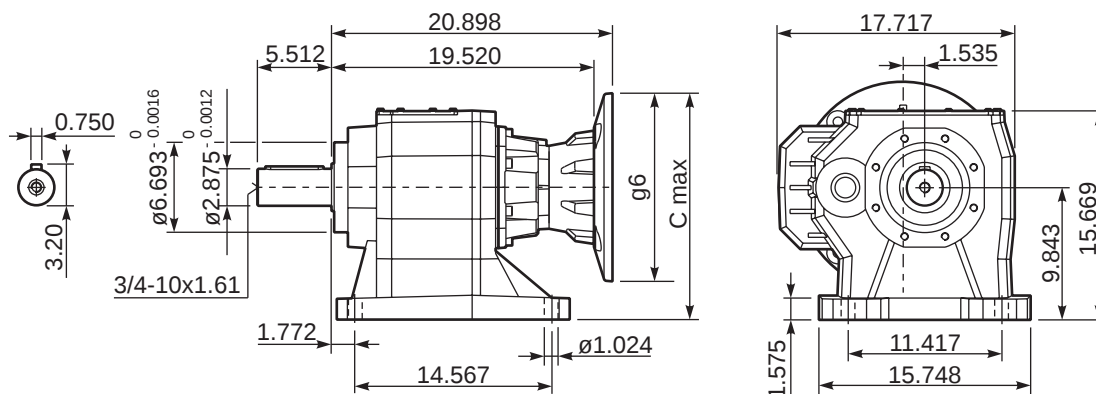
n_1	FA	FR
1750	252	1258
1140	274	1371

tab. 2

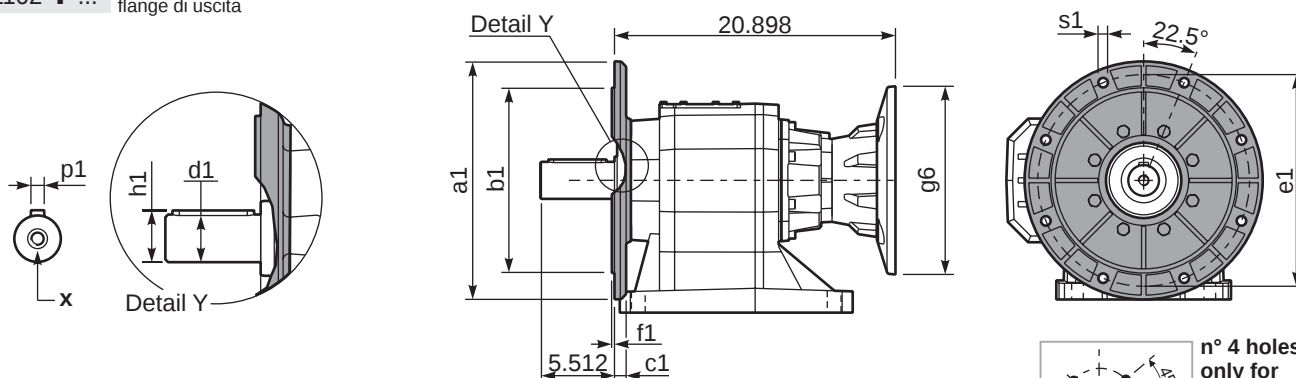
P1102S0...

With foot
Con piedinoGearbox
weight
peso riduttore

359 lb



P1102-F...

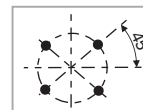
Output flanges
flange di uscita

Output shaft / Albero di uscita

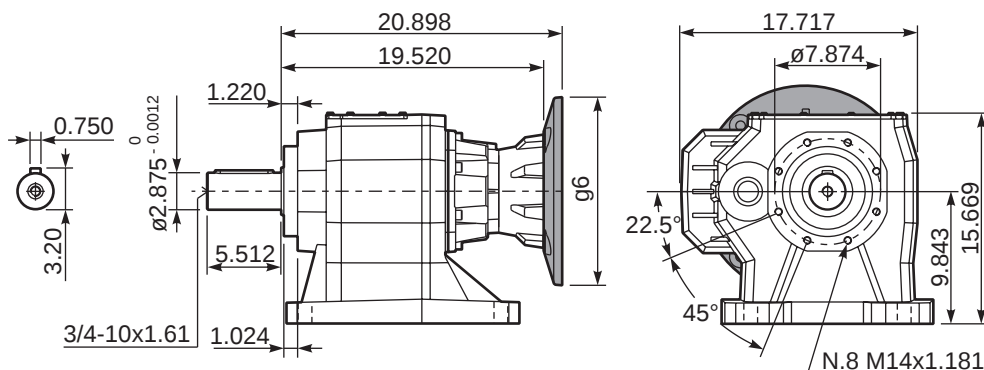
	Shaft - d1	p1	h1	x
Standard	Ø 2.875	0.750	3.20	3/4-10x1.61

Available output flanges / flange di uscita

a1 Ø	b1	c1	e1	f1	s1	kit code
13.780	9.843 -0.0020 -0.0038	0.827	11.811	0.197	0.709	KC110.9.015
17.717	13.780 -0.0024 -0.0047	0.866	15.748	0.197	0.709	KC110.9.016
-	-	-	-	-	-	-

n° 4 holes
only for
Kit KC1109015
Solo per il
kit KC1109015All flanges are
compatible
with the foot

P1102S0...

Basic gearbox
Riduttore base

NEMA Motor Flanges	C _{max}	g6	kit code
284/6 TC	15.469	11.250	UC110.4.042
324/6 TC	16.843	14.000	UC110.4.043



QUICK SELECTION / Selezione veloce

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Output Shaft  $\varnothing$ standard ø2.875	Ratios code 
							-Y	AA	AB		
							182/4TC	213/5TC	254/6TC		
48.5	36.11	20	24453	1.6	32.58	39828				301411	01
34.4	50.89	20	34457	1.2	23.63	40713				201414	02
31.4	55.73	20	37737	1.1	21.58	40713				201413	03
25.4	68.80	15	34941	1.2	17.48	40713				161414	04
23.2	75.35	15	38266	1.1	15.96	40713				161413	05
19.6	89.47	15	45438	0.9	13.44	40713				131414	06
19.0	92.02	10	31154	1.3	12.78	39828				161411	07
17.9	97.99	10	33175	1.2	12.27	40713				131413	08
16.0	109.52	10	37078	1.1	10.98	40713				111414	09
14.6	119.94	10	40607	1.0	10.03	40713				111413	10
11.9	146.47	7.5	37192	1.1	8.03	39828				111411	11
11.0	158.37	7.5	40215	1.0	7.59	40713				81414	12
10.1	173.45	7.5	44042	0.9	6.93	40713				81413	13
8.3	211.82	5	35856	1.1	5.55	39828				81411	14

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

Motor Flanges Available
Flange Motore Disponibili

B) Supplied with Reduction Bushing
Fornito con Bussola di Riduzione

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

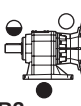
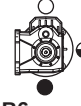
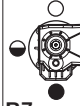
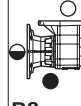
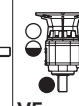
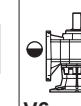
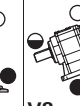
C) Motor Flange Holes Position
Posizione Fori Flangia Motore

EN Unit **1103** is supplied without lubricant and equipped with a breather, level and drain plugs. User can add mineral oil keeping existing plugs. Should the user wish to fill it with synthetic oil, it is recommended to replace the existing plugs with a closed plug.

See table 1 for lubrication and recommended quantity. In table 2 please see possible radial loads and axial loads on the gearbox.

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

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

						
B3	B6	B7	B8	V5	V6	V8
246.4 oz	457.5 oz	281.6 oz	316.8 oz	563.1 oz	475.1 oz	Ask
SHELL Omala S2 GX 460				ENI Blasias 460		

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

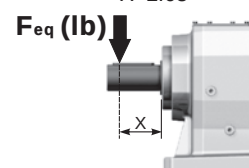
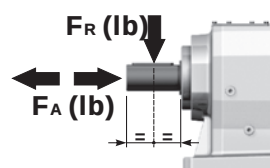
tab. 1

RADIAL AND AXIAL LOADS

Output shaft

Albero di uscita

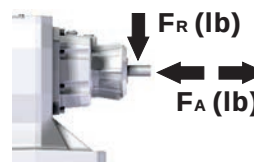
$$F_{eq} = F_R \cdot \frac{5.43}{X+2.68}$$



n_2	FA	FR	n_2	FA	FR	n_2	FA	FR
300	584	2922	140	742	3709	70	967	4833
250	607	3035	120	787	3934	40	1124	5620
200	674	3372	85	877	4384	15	1326	6632

Input shaft

Albero in entrata



n_1	FA	FR
1750	157	787
1140	189	944

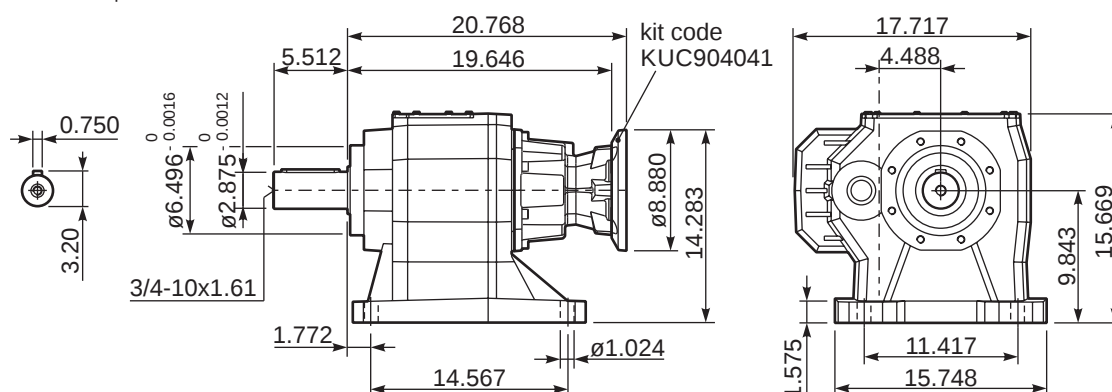
tab. 2

P1103**S0**...

With foot
Con piedino

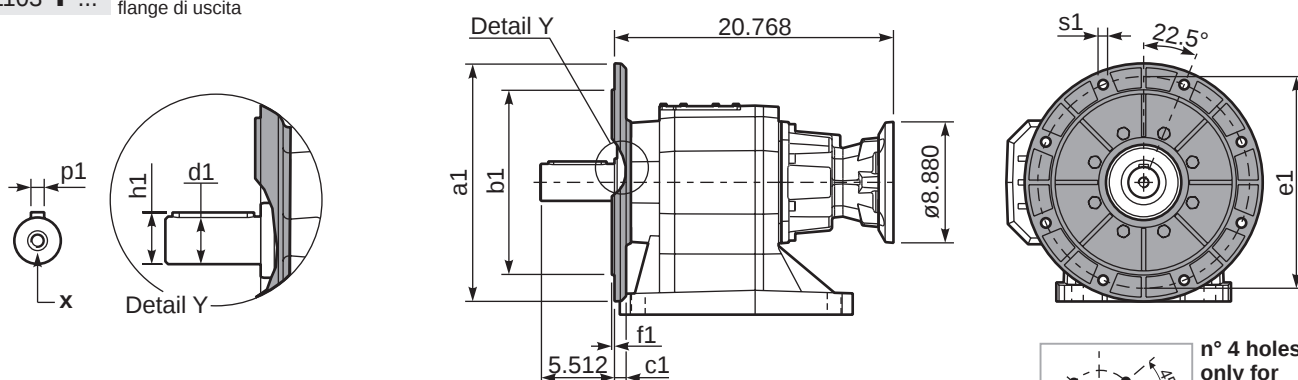
Gearbox weight
peso riduttore

364 lb



P1103-F...

Output flanges
flange di uscita



Output shaft / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	ø 2.875	0.750	3.20	3/4-10x1.61

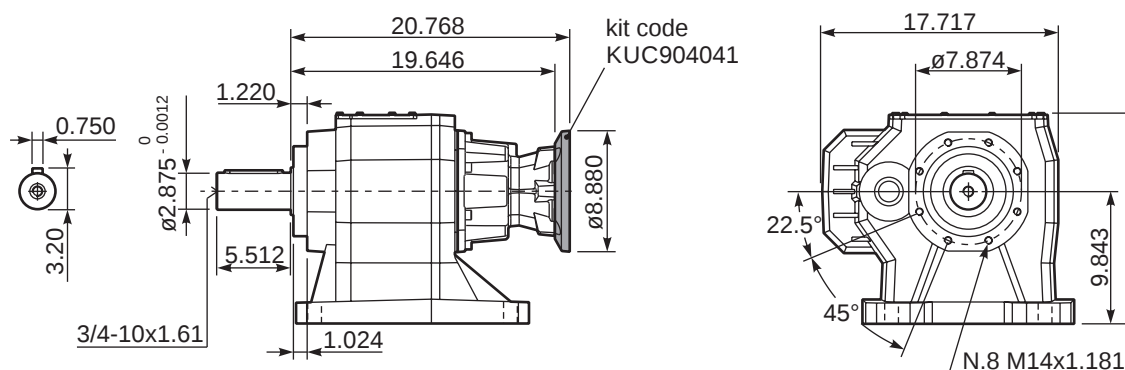
Available output flanges / flange di uscita

a1 ø	b1	c1	e1	f1		
13.780	9.843 ^{-0.0020} -0.0038	0.827	11.811	0.197	0.709	KC110.9.015
17.717	13.780 ^{-0.0024} -0.0047	0.866	15.748	0.197	0.709	KC110.9.016
-	-	-	-	-	-	-

All flanges are compatible with the foot

P1103S0...

Basic gearbox
Riduttore base



Quotations:

Unless differently agreed, the validity of all quotations is 2 months. The quotations are provided according the RFQ (request for quotation) which shall contain the complete and detailed specification of the Product, the correctness of which is fully under responsibility of RFQ applicant.

Orders:

Only official orders issued on the Customer's letter-head are accepted. The Order Confirmation (OC) is issued within 2 working days from the order receipt unless the Products configuration issues arise. The OC shall be confirmed in writing within 2 working days from the OC date and in all its parts the product code and description, quantities and price, other specific information, if any. The OC is considered confirmed by tacit approval in case no written confirmation is provided by the Customer.

Production time:

An average production time for the standard Products is 3-4 weeks and 2-3 weeks for kits from the OC confirmation date and/or payment receipt in case of advanced payment term. For some configurations of the standard Products the production time can be different and shall be advised in the quotation and/or in any case in OC. In the period of Christmas holidays and August holidays the days of company closure are excluded from the abovementioned production term.

Delivery terms:

FCA Sovizzo, Italy (Incoterms 2016)

Packaging:

The products are packed in wooden boxes as a standard packaging. Europallets can be also used on request. The prices and details of the packaging are indicated in the apposite section of the Price List. Payment terms: the payment should be performed in terms indicated in the invoice and by wire transfer. Prices: the prices are indicated in the invoice and intended ex-works, unless differently specified, and do not include any kind of taxes, shipment or other type of costs.

Standard Products orders cancellation:

Modification or cancellation of the orders is accepted only if notified to Hydro-Mec S.p.A. in writing and not later than 3 days from the Order Confirmation and in any case before the production of the ordered Products is launched.

Special execution of customized products:

The Products that are not included in the catalogue or configurations of the products that can not be realized using catalogue, options and accessories brochure and/or online configurator (www.cleangeartech.com) are considered Customized Products.

(a) Hydro-Mec S.p.A. is entitled to examine feasibility of Special Execution of Customized Products and define the minimum quantity, production time and eventually other special sales and production conditions issuing thereafter a Special Execution Quotation that shall be confirmed by the Customer in writing.

(b) Once the Quotation is confirmed, Hydro-Mec S.p.A. shall realize a Special Execution (SE) data sheet with its unique code for each Customized product. The SE data sheet shall be confirmed in full and in writing by The Customer.

(c) The production time of SE is definitely settled by Hydro-Mec S.p.A. and notified to the Customer after the SE data sheet confirmation. As a rule, the production time for SE of Customized products is longer than standard.

(d) The orders of Special Execution of Customized products can not be cancelled unless special written agreement is made before the production of SE is launched.

WARRANTY Conditions:

(a) Warranty period is 12 months form the shipment date.

(b) Warranty period could be extended to 18 months prior written agreement of the parties and in any case excluding wearable parts.

(c) Warranty covers only manufacturing defects. Wearable parts (for example, oil seals or lubricants leakages caused by normal wear) and failures due to the wrong assembling by the Customer are not covered by warranty.

(d) This warranty is also void in any case in which the products have been misused, used in improper environment conditions, configurated beyond design limits indicated in the catalogue (especially service factor, loads and type of motors) or damaged, even accidentally or whenever installation instructions have not been strictly followed and in case of any natural disasters, in case of negligence of the Customer and the end user.

(e) The Customer is fully responsible to assure the compatibility of applications and correct mechanical couplings and electrical connections with the specifications of the Products according to Hydro-Mec S.p.A. catalogues and technical documentation

(f) The liability of Hydro-Mec S.p.A. is strictly limited to the above-stated obligations and it is therefore clearly agreed that Hydro-Mec S.p.A. take on no responsibility for any damage to persons and/or property deriving from accidents of any nature that may occur during use of the Products, whether the warranty is confirmed or otherwise, also in cases of the choice of the Product configuration being recommended by Hydro-Mec S.p.A.

WARRANTY Procedure:

(a) The Customer shall fill in the COMPLAINT FORM and forward it to Hydro-Mec S.p.A. along with other relevant information.

(b) Hydro-Mec S.p.A. examines the COMPLAINT FORM and confirms or declines the warranty.

(c) Hydro-Mec S.p.A. has the right to ask the Customer to send the malfunctioning product to Hydro-Mec S.p.A. for further examination. In case the warranty is not confirmed the Product will be shipped back to the Customer at the Customer expense. If the warranty is confirmed, Hydro-Mec S.p.A. shall compensate the shipment costs to the Customer within the limits of the best shipment quotation.

(d) In case the warranty is confirmed the Products shall be substituted at Hydro-Mec S.p.A. expense using ordinary shipment procedure. The express shipment can be used prior the agreement of the parties.

(e) In case the Product can not be substituted Hydro-Mec S.p.A. shall reimburse the value of the Product by issuing of Credit Note or in any other way agreed by the Parties.

WARNING (Please Read Carefully):

The following WARNING and CAUTION information is supplied to you for your protection and to provide you with many years of trouble free and safe operation of your product. Read ALL instructions prior to operating reducer. Injury to personnel or reducer failure may be caused by improper installation, maintenance or operation.

- (a) Written authorization is required to operate or use reducers in man lift or people moving devices.
- (b) Check to make sure that certain applications do not exceed the allowable load capacities published in the current catalog.
- (c) 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.
- (d) 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.
- (e) 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.
- (f) Hot oil and reducers can cause severe burns. Use extreme care when removing lubrication plugs and vents.
- (g) 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.
- (h) 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.
- (i) 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.
- (l) Lifting supports including eyebolts are to be used for vertically lifting the gearbox only and not other associated attachments or motors.
- (m) Use of an oil with an EP additive on units with backstops may prevent proper operation of the back-stop. Injury to personnel, damage to the reducer or other equipment may result.
- (n) Overhung loads subject shaft bearings and shafts to stress which may cause premature bearing failure and or shaft breakage from bending fatigue, if not sized properly.

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.

1) Definizioni

1.1 Ai fini delle presenti condizioni generali di vendita (di seguito denominate “Condizioni di Vendita”), i seguenti termini avranno il significato di seguito ad essi attribuito:

- “HM”: Hydro-Mec S.p.A.;
- “Cliente”: qualunque società, ente o entità giuridica che acquisti i Prodotti di HM da quest’ultima;
- “Prodotti”: i beni prodotti, assemblati e/o venduti da HM;
- “Ordine/i”: ciascuna proposta di acquisto dei Prodotti inoltrata dal Cliente ad HM esclusivamente tramite e-mail, fax o web;
- “Vendita/e”: ciascun contratto di vendita concluso tra HM e il Cliente a seguito del ricevimento da parte del Cliente dell’accettazione scritta dell’Ordine da parte di HM;

2) Scopi

2.1 Le presenti Condizioni di Vendita si applicano a tutte le Vendite di Prodotti. Nel caso di contrasto tra le condizioni e i termini di cui alle presenti Condizioni di Vendita e le condizioni e i termini pattuiti nella singola Vendita, quest’ultimi prevarranno. HM non sarà vincolata da condizioni generali di acquisto del Cliente (di seguito, “CGA”), neanche nell’ipotesi in cui si faccia loro riferimento o siano contenute negli ordini o in qualsiasi altra documentazione di provenienza del Cliente, senza il preventivo consenso scritto di HM. Le CGA non saranno vincolanti per HM neppure per effetto di tacito consenso.

2.2 HM si riserva il diritto di aggiungere, modificare o eliminare qualsiasi previsione delle presenti Condizioni di Vendita, restando inteso che tali aggiunte, modifiche o cancellazioni si applicheranno a tutte le Vendite concluse a partire dal trentesimo giorno successivo alla notifica al Cliente delle nuove Condizioni di Vendita.

3) Ordini e Vendite

3.1 Il Cliente dovrà inoltrare a HM Ordini specifici contenenti la descrizione dei Prodotti, la quantità richiesta, il prezzo ed i termini richiesti per la consegna.

3.2 La Vendita dovrà ritenersi conclusa: (i) nel momento in cui il Cliente riceva da parte di HM una conferma scritta (tale conferma potrà essere inviata via e-mail, fax o mezzi telematici) conforme ai termini e alle condizioni dell’Ordine (ii) o, nel caso in cui il Cliente riceva da parte di HM una conferma scritta contenente termini difforni da quelli contenuti nell’Ordine, decorsi tre giorni lavorativi dalla data di ricezione della conferma contenente termini difforni senza che nel suddetto periodo pervenga a HM contestazione scritta da parte del Cliente; (iii) o, in assenza di conferma scritta da parte di HM, nel momento in cui i Prodotti saranno consegnati al Cliente.

3.3 Gli Ordini regolarmente accettati da HM non potranno essere annullati dal Cliente senza il consenso scritto di HM.

4) Prezzo dei Prodotti

4.1 I prezzi dei Prodotti saranno quelli indicati nel listino prezzi di HM in vigore al momento dell'inoltro dell'Ordine da parte del Cliente o, qualora il Prodotto non sia inserito nel listino prezzi o il listino prezzi non sia disponibile, quelli indicati nell'Ordine e confermati per iscritto da HM al momento dell'accettazione dell'Ordine. Eccetto quanto diversamente concordato per iscritto tra le parti, i predetti prezzi saranno calcolati franco fabbrica, al netto dell'IVA e degli sconti. Tali prezzi non comprendono i costi di imballaggio, spedizione e trasporto dai locali di HM a quelli del Cliente. Tali costi dovranno essere sostenuti separatamente dal Cliente.

4.2 HM manterrà la proprietà dei Prodotti fino alla completa corresponsione del prezzo degli stessi. Il Cliente dovrà compiere tutti gli adempimenti richiesti dalle leggi locali al fine di rendere valida ed eseguibile nei confronti di tutti i terzi la presente clausola di riserva della proprietà anche operando l'iscrizione in ogni apposito registro, ove localmente richiesto.

5) Termini di consegna

5.1 Eccetto quanto eventualmente diversamente concordato per iscritto tra le parti, HM consegnerà i prodotti franco fabbrica presso i propri stabilimenti, così come questo termine è definito negli INCOTERMS 2010 pubblicati dalla Camera di Commercio internazionale nella loro versione più aggiornata, in vigore al momento della consegna. Se richiesto, HM si occuperà del trasporto dei Prodotti a rischio, costi e spese del Cliente.

5.2 La consegna dovrà avvenire entro il termine indicato nell'Ordine come accettato nella conferma d'ordine. I termini di consegna sono indicativi e non sono termini essenziali ai sensi dell'art. 1457 del Codice Civile e, in ogni caso, non includono i tempi di trasporto.

5.3 Salvo quanto previsto dal precedente art. 5.2, HM non sarà considerata responsabile dei ritardi o della mancata consegna ascrivibili a circostanze che siano fuori dal suo controllo, quali a titolo meramente esemplificativo e senza pretesa di esaustività:

- a) dati tecnici inadeguati o imprecisioni o ritardi del Cliente nella trasmissione a HM di informazioni o dati necessari alla spedizione dei Prodotti;
- b) difficoltà nell'ottenere rifornimenti delle materie prime;
- c) problemi legati alla produzione o alla pianificazione degli ordini;
- d) scioperi parziali o totali, mancanza di energia elettrica, calamità naturali, misure imposte dalle autorità pubbliche, difficoltà nel trasporto, cause di forza maggiore, disordini, attacchi terroristici e tutte le altre cause di forza maggiore;
- e) ritardi da parte dello spedizioniere.

5.4 Il verificarsi di alcuni degli eventi sopra elencati non darà diritto al Cliente di richiedere il risarcimento degli eventuali danni o indennizzi di alcun genere.

6) Trasporto

6.1 Eccetto quanto eventualmente diversamente concordato per iscritto tra le parti, il trasporto avverrà sempre a spese e rischio del Cliente. Nel caso in cui a HM, ai sensi dell'art. 5.1, venga richiesto di occuparsi del trasporto dei Prodotti, HM sceglierà il mezzo di trasporto che riterrà più appropriato in mancanza di specifiche istruzioni del Cliente.

7) Pagamenti

7.1 Salvo diverso accordo scritto tra le parti, HM emetterà le fatture al momento della consegna dei Prodotti.

7.2 Il mancato pagamento nel tempo concordato darà diritto a HM di chiedere al Cliente il pagamento degli interessi scaduti al tasso stabilito dal Decreto Legislativo n. 231/02.

7.3 Il mancato pagamento o il ritardo nei pagamenti superiore a 30 giorni daranno a HM il diritto di sospendere la consegna dei Prodotti e risolvere ogni singola Vendita sottoscritta. La sospensione della consegna dei Prodotti o la risoluzione delle Vendite non darà il diritto al Cliente di pretendere alcun risarcimento dei danni.

7.4 Ogni reclamo relativo ai Prodotti e/o alla consegna dei medesimi non potrà in alcun caso giustificare la sospensione o il ritardo nel pagamento.

8) Non-conformità

8.1 Qualsiasi difformità dei Prodotti consegnati al Cliente rispetto al tipo ed alla quantità indicata nell'Ordine dovrà essere denunciata per iscritto a HM entro cinque giorni dalla data di consegna. Qualora la denuncia non venga comunicata entro il predetto termine, i Prodotti consegnati verranno considerati come conformi a quelli ordinati dal Cliente.

9) Garanzia

9.1 Salvo diverso accordo scritto tra le parti, HM garantisce che i Prodotti sono esenti da vizi/difetti (con esclusione di quelle parti dei Prodotti che non sono prodotte da HM) per un periodo di 12 mesi decorrente dalla data di consegna dei medesimi al Cliente.

9.2 La garanzia non opererà con riferimento a quei Prodotti i cui difetti sono dovuti a

- danni causati durante il trasporto;
- un uso negligente o improprio degli stessi;
- inosservanza delle istruzioni di HM relative al funzionamento, manutenzione ed alla conservazione dei Prodotti;
- riparazioni o modifiche apportate dal Cliente o da soggetti terzi senza la previa autorizzazione scritta di HM.

9.3 A condizione che il reclamo del Cliente sia coperto dalla garanzia e notificato nei termini di cui al presente articolo, HM si impegnerà, a sua discrezione, a sostituire o riparare ciascun Prodotto o le parti di questo che presentino vizi o difetti.

9.4 Il Cliente dovrà denunciare per iscritto a HM, la presenza di vizi o difetti entro 8 giorni dalla consegna dei Prodotti se si tratta di vizi o difetti palesi, oppure, entro 8 giorni dalla scoperta in caso di vizi o difetti occulti o non rilevabili da una persona di media diligenza.

9.5 I Prodotti oggetto di denuncia dovranno essere immediatamente inviati presso la fabbrica di HM, o in qualsiasi altro luogo che quest'ultima indicherà di volta in volta, a costi e spese a carico del Cliente salvo diverso accordo tra le parti, al fine di consentire a HM l'espletamento dei necessari controlli. La garanzia non copre danni e/o difetti dei Prodotti derivanti da anomalie causate da, o connesse a, parti assemblate/aggiunte direttamente dal Cliente o dal consumatore finale. Qualora, nell'ambito della presente garanzia, un Prodotto o un componente difettoso venisse sostituito, la proprietà del Prodotto o del componente sostituito sarà ritrasferita dal Cliente a HM.

9.6 In ogni caso il Cliente non potrà far valere i diritti di garanzia verso HM se il prezzo dei Prodotti non sia stato corrisposto alle condizioni e nei termini pattuiti, anche nel caso in cui la mancata corresponsione del prezzo alle condizioni e nei termini pattuiti si riferisca a Prodotti diversi da quelli per i quali il Cliente intende far valere la garanzia.

9.7 HM non riconosce alcuna garanzia circa la conformità dei Prodotti alle norme e ai regolamenti di Paesi che non rientrano o non appartengono all'Unione Europea. Nessun'altra garanzia, espressa o implicita, quale, a titolo esemplificativo, la garanzia di buon funzionamento o di idoneità per uno scopo specifico, è concessa con riferimento ai Prodotti.

9.8 Senza pregiudizio a quanto indicato nel precedente art. 9.3 e salvo il caso di dolo o colpa grave, HM non sarà responsabile per qualsivoglia danno derivante e/connesso ai vizi dei Prodotti. In ogni caso, HM non sarà ritenuto responsabile per danni indiretti o consequenziali di qualsiasi natura quali, a titolo esemplificativo, le perdite derivanti dall'inattività del Cliente o il mancato guadagno.

10) Diritti di Proprietà Intellettuale

10.1 I Diritti di Proprietà Intellettuale sono di totale ed esclusiva proprietà di HM e la loro comunicazione o utilizzo nell'ambito delle presenti Condizioni di Vendita non crea, in relazione ad essi, alcun diritto o pretesa in capo al Cliente. Il Cliente si obbliga a non compiere alcun atto incompatibile con la titolarità dei Diritti di Proprietà Intellettuale.

11) Clausola risolutiva espressa

11.1 HM avrà facoltà di risolvere, ai sensi e per gli effetti dell'art. 1456 del Codice Civile Italiano, in qualsiasi momento mediante comunicazione scritta da inviare al Cliente, la singola Vendita nel caso di inadempimento delle obbligazioni previste dagli articoli: 4 (Prezzo dei Prodotti); 7 (Pagamenti); 10 (Diritti di Proprietà Intellettuale).

12) Mutamento nelle condizioni patrimoniali del Cliente

12.1 HM avrà diritto a sospendere l'adempimento delle obbligazioni derivanti dalla Vendita dei prodotti, in base all'art. 1461 del Codice Civile Italiano, nel caso in cui le condizioni patrimoniali del Cliente divenissero tali da porre in serio pericolo il conseguimento della controprestazione salvo che sia prestata idonea garanzia.

13) Domicilio legale, legge applicabile e giurisdizione

13.1 HM è legalmente domiciliata presso la sua sede principale.

13.2 Le Condizioni di Vendita e ogni singola Vendita saranno regolate e interpretate in conformità alla Legge Italiana.

13.3 Tutte le controversie derivanti da o connesse alle presenti Condizioni di Vendita e/o ad ogni Vendita saranno soggette alla esclusiva giurisdizione del Tribunale di Vicenza.

13.4 Salvo quanto pattuito nel precedente art. 13.3, HM si riserva il diritto, quando promotore di una azione legale in qualità di attore, di promuovere tale azione nel luogo di residenza del Cliente.

14) ATTENZIONE (Leggere attentamente):

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

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

14.1 E' richiesta autorizzazione scritta per azionare riduttori in ascensori o dispositivi per il movimento delle persone.

14.2 Controllare che alcune applicazioni non eccedano la massima capacità di carico ammessa pubblicata in questo catalogo.

14.3 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.

14.4 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.

14.5 Su riduttori installati in posizioni elevate utilizzare protezioni adeguate per qualsiasi distacco accidentale di parti nel caso di passaggio di persone al di sotto.

14.6 Olio e riduttori bollenti possono causare gravi ustioni. Usare estrema cautela nella rimozione dei tappi e delle ventole.

14.7 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.

14.8 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.

14.9 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.

14.10 I dispositivi di sollevamento come le golfare devono essere usati solo per sollevare verticalmente il riduttore e non altri dispositivi associati o motori.

14.11 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.

14.12 I Carichi sospesi assoggettano i cuscinetti della vite e la vite stessa a sollecitazioni che possono causare, se non adeguatamente dimensionati, l'usura prematura dei cuscinetti e/o la rottura della vite a causa della resistenza alla flessione.

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.