

# Aluminum one step gearboxes

A modular and compact product

3

## Alloy housing

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

## Flange

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

## Gears

Hardened and ground gears.

## Removable inspection cover

Allows periodic inspection of gearing during routine maintenance

## Output shaft

With well proportioned bearings

## Feet

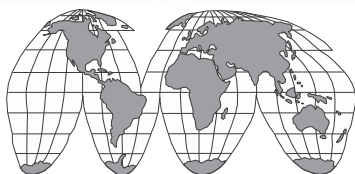
Removable feet.

## Single-piece aluminum alloy housing

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

Ideal for use as first step with wormgearboxes.

Lubricated for life with synthetic oil with operative range from -15° to +130°C



World wide sales network.



# Specific type datasheet on page...

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



Types / Tipi  
Tipen / Types  
Tipos



3-5	3-7	3-9	3-11
211A 20Nm	311A 30Nm	411A 38Nm	511A 110Nm

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



Types / Tipi  
Tipen / Types  
Tipos



M-1									
56A 56B	63A 63B	71A 71B	80A 80B	90S 90L	100LA 100LB	112M	132S 132M	160M 160L	180M 180L

Type - Tipo - Typ  
Type - Tipo

Size - Grandezza - Grösse  
Taille - Tomaño

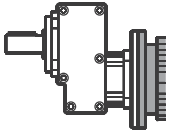
Mounting - Montaggio  
Montage - Fixation  
Tipo de montaje

**P**

**311A**

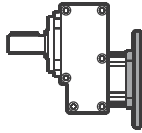
**-F**

Aluminum one step gear  
Riduttori in alluminio a uno stadio



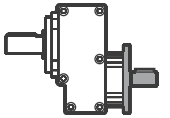
With IEC motor

**M**



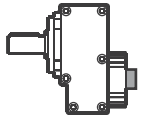
With motor flange

**P**



With male input shaft

**R**

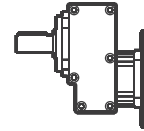


Modular Base

**B**

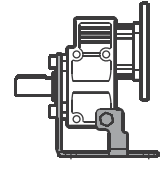
**1** Stages  
Riduzioni  
Stufen  
Trains  
Etapas

**211A**  
**311A**  
**411A**  
**511A**



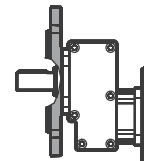
Without flange / feet

**-N**



Mounted feet

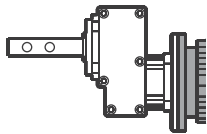
**H1**



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  
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.

Ratio - Rapporto  
Untersetzung  
Reduction  
Relación

Output shaft  
Albero uscita  
Abtriebswelle  
Arbre de sortie  
Eje en salida

Output flange  
Flangia uscita  
Ausgangsflansch  
Bride de sortie  
Brida en salida

Motor size - Grandezza motore  
Motor Größe  
Grandeur moteur - Tamaño motor

Terminal box position  
Posizione morsetteria  
Klemmkastenlage  
Position boîte à bornes  
Posición caja de bornes

Mounting position  
Posizione montaggio  
Einbaulage  
Position de montage  
Posición de montaje

**2.84**

**S**

**2**

**-C**

**B**

**B3**

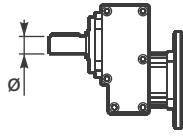
See technical data table

Vedi tabella dati tecnici.

Technisches Datenblatt beachten

Voir Tableau données techniques

Ver tabla datos técnicos



→ STANDARD

211A

**S** → Ø14

311A

**S** → Ø14

**C** ⇒ Ø19

**E** ⇒ Ø24

411A

**S** ⇒ Ø14

**C** → Ø19

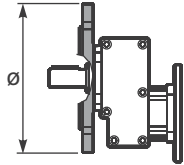
**E** ⇒ Ø24

511A

**C** ⇒ Ø19

**E** ⇒ Ø24

**G** → Ø28



**N** Senza flangia  
Without flange

211A

**I** ⇒ Ø105

Flangia integrata  
Integrated flange

311A

**1** ⇒ Ø120

**2** ⇒ Ø140

**3** → Ø160

**4** ⇒ Ø200

411A

**1** ⇒ Ø120

**2** ⇒ Ø140

**3** ⇒ Ø160

**4** → Ø200

511A

**1** ⇒ Ø120

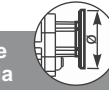
**2** ⇒ Ø140

**3** ⇒ Ø160

**4** ⇒ Ø200

**5** → Ø250

Flange  
Flangia



B5

**-A**=56  
(Ø120)

**-B**=63  
(Ø140)

**-C**=71  
(Ø160)

**-D**=80  
(Ø200)

**-E**=90  
(Ø200)

**-F**=100+112  
(Ø250)

**-G**=132  
(Ø300)

B14

**-O**=56  
(Ø80)

**-P**=63  
(Ø90)

**-Q**=71  
(Ø105)

**-R**=80  
(Ø120)

**-T**=90  
(Ø140)

**-U**=100+112  
(Ø160)

**-V**=132  
(Ø200)

Type R  
Tipo R



211A  
311A

**-1** ⇒ Ø14

411A

**-2** ⇒ Ø19

511A

**-3** ⇒ Ø24

Without flange  
Senza flangia



211A  
311A

**-Z** ⇒ Ø9  
(56B5)

**-0** ⇒ Ø11  
(63B5)

**-1** ⇒ Ø14  
(71B5)

411A

**-1** ⇒ Ø14  
(71B5)

**-2** ⇒ Ø19  
(80B5)

**-3** ⇒ Ø24  
(90B5)

511A

**-2** ⇒ Ø19  
(80B5)

**-3** ⇒ Ø24  
(90B5)

**-4** ⇒ Ø28  
(100B5)



**A**



**B**

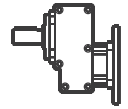
STANDARD



**C**



**D**

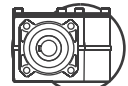


**B3**

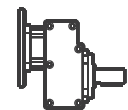
STANDARD



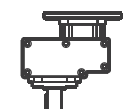
**B6**



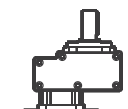
**B7**



**B8**



**V5**



**V6**

Specify only for vertical positions

Specificare solo per posizione verticale

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

Lifting / sollevamento / hubantriebe / levage / elevación

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

Rotation / rotazione / drehung / rotation / rotation

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

Linear movement / traslazione / linearbewegung / translation / translacion

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

3

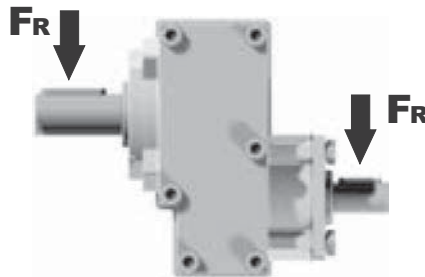
TORQUE / COPPIA / DREHMOMENT / COUPLE / PAR

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

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

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

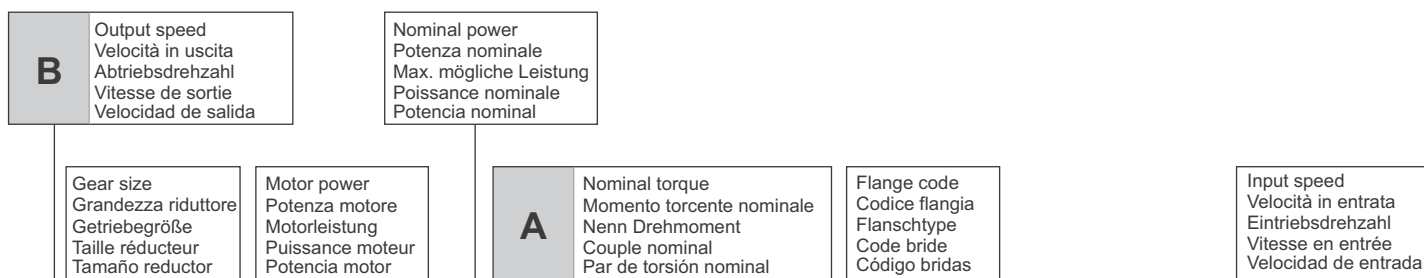
- Radial load generated by external transmissions keyed onto input and/or output shafts.
- Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.
- Belastungen der Antriebs- bzw. Abtriebswellen durch von aussen eingebrachte Radiallasten.
- Charge radiale générée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



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

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

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



# 311A One step 30Nm

## Rating - Aluminum ONE STEP GEARBOXES



3

QUICK SELECTION / Selezione veloce							input speed (n <sub>1</sub> ) = 1400 min <sup>-1</sup>							
Output Speed n <sub>2</sub> [min <sup>-1</sup> ]	Ratio i	Motor power P <sub>1M</sub> [kW]	Output torque M <sub>2M</sub> [Nm]	Service factor f.s.	Nominal power P <sub>1R</sub> [kW]	Nominal torque M <sub>2R</sub> [Nm]	Available B5 motor flanges		Available B14 motor flanges			Output Shaft		
							-B	-C	-O	-P	-Q	Output Shaft	Ratios code	
892	1.57	0.37	3.9	3.3	1.24	13	63	71	C	C		2844	standard ø14	01
493	2.84	0.37	7.0	3.3	1.21	23			C	C		1954		02
426	3.29	0.37	8.1	3.2	1.18	26			C	C		1756		03
362	3.87	0.37	9.6	2.9	1.08	28			C	C		1558		04



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



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

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



#### QUICK SELECTION / Selezione veloce

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

Output Speed $n_2$ [min <sup>-1</sup> ]	Ratio $i$	Motor power $P_{1M}$ [kW]	Output torque $M_{2M}$ [Nm]	Service factor f.s.	Nominal power $P_{1R}$ [kW]	Nominal torque $M_{2R}$ [Nm]	Available B5 motor flanges				Available B14 motor flanges				Output Shaft  standard ø14	Ratios code 
							-B	-C	-D	-E	-O	-P	-Q	-R		
							63	71	80	90	56	63	71	80		
682	2.05	0.37	5	2.0	0.73	10					C	C			1939	01
595	2.35	0.37	6	2.1	0.76	12					C	C			1740	02
500	2.80	0.37	7	2.0	0.75	14					C	C			1542	03
414	3.38	0.37	8	2.0	0.75	17					C	C			1344	04
298	4.70	0.37	12	1.7	0.64	20					C	C			1047	05
225	6.22	0.37	15	1.5	0.55	23					C	C			956	06
169	8.29	0.37	20	1.0	0.36	20					C	C			758	07
142	9.83	0.25	16	1.0	0.24	16					C	C			659	08

The dynamic efficiency is **0.98** 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 **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.

**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.

**D** Das Getriebe **211A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert. In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben. In Tabelle 2 sind die zulässigen Radial- und Axialbelastungen des Getriebes aufgeführt.

**F** Le réducteur **211A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien. Voir tableau 1 concernant les huiles et les quantités conseillées. Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

**E** El reductor tamaño **211A** 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.

#### LUBRICATION 211A Oil Quantity 0.05 Lt.

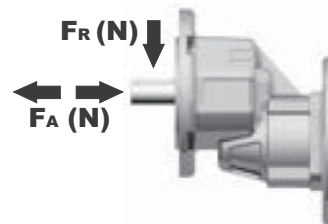
**AGIP** Telium VSF 320

**SHELL** Omala S4 WE 320

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

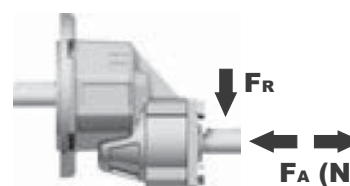
#### RADIAL AND AXIAL LOADS

**Output shaft**  
Albero di uscita



$n_2$	FA	FR
700	101	504
600	120	600
400	138	696
300	151	756
200	175	876
140	192	960

**Input shaft**  
albero in entrata



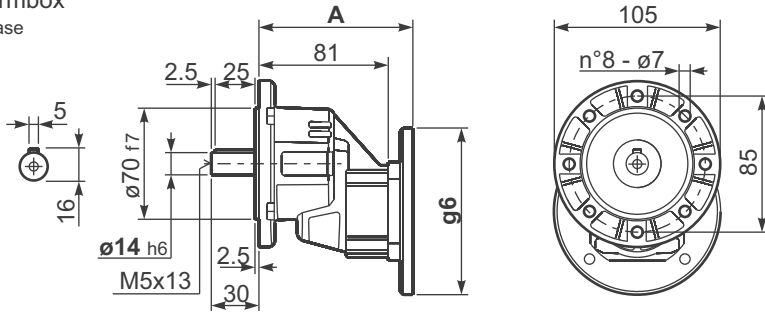
$n_1$	FA	FR
1400	168	840
900	192	960

\*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 base

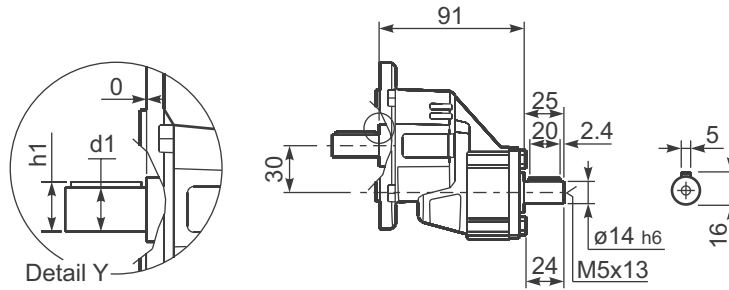
Gearbox weight  
peso riduttore **1.40 kg**



B5 Motor Flanges	A	g6	kit code
63 B5	99.5	138	K050.4.041
71 B5	97	160	K050.4.042

B14 Motor Flanges	A	g6	kit code
56 B14	97	80	KC40.4.049
63 B14	99.5	90	K050.4.047
71 B14	97	105	K050.4.045

**R211A-F...** Basic wormbox  
Riduttore base



\*Available output shaft / Albero di uscita

	Shaft - d1	p1	h1	x
Standard	$\phi 14 \times 30$	5	16	M5x13





### QUICK SELECTION / Selezione veloce

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

Output Speed $n_2$ [min <sup>-1</sup> ]	Ratio $i$	Motor power $P_{1M}$ [kW]	Output torque $M_{2M}$ [Nm]	Service factor f.s.	Nominal power $P_{1R}$ [kW]	Nominal torque $M_{2R}$ [Nm]	Available B5 motor flanges		Available B14 motor flanges			Output Shaft 	Ratios code	
							-B	-C	-O	-P	-Q			
891	<b>1.57</b>	0.37	4	3.3	1.2	13			C	C		2844	standard ø14 On request ø19 ø24	01
493	<b>2.84</b>	0.37	7	3.3	1.2	23			C	C		1954		02
425	<b>3.29</b>	0.37	8	3.2	1.2	26			C	C		1756		03
362	<b>3.87</b>	0.37	10	2.9	1.1	28			C	C		1558		04
303	<b>4.62</b>	0.37	11	2.6	0.97	30			C	C		1360		05
222	<b>6.30</b>	0.37	16	2.2	0.83	35			C	C		1063		06
170	<b>8.22</b>	0.37	20	1.9	0.69	38			C	C		974		07
129	<b>10.86</b>	0.37	27	1.0	0.39	28			C	C		776		08

The dynamic efficiency is **0.98** 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 **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.

**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.

**D** Das Getriebe **311A** ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert. In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben. In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

**F** Le réducteur **311A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien. Voir tableau 1 concernant les huiles et les quantités conseillées. Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

**E** El reductor tamaño **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.

### LUBRICATION 311A Oil Quantity 0.10 Lt.

**AGIP** Telium VSF 320

**SHELL** Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

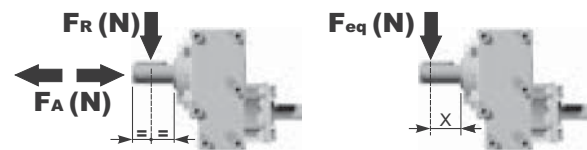
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

### RADIAL AND AXIAL LOADS

#### Output shaft

Albero di uscita

$$F_{eq} = F_R \cdot \frac{38.5}{X+18.5}$$



$n_2$	FA	FR	$n_2$	FA	FR	$n_2$	FA	FR
700	120	640	400	160	800	200	200	1020
600	140	700	300	175	880	140	225	1120

#### Input shaft

Albero in entrata

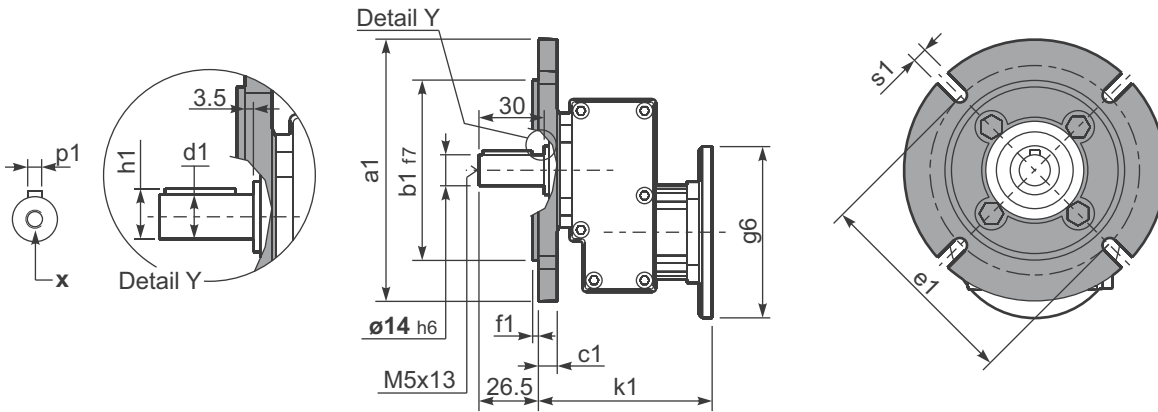


$n_1$	FA	FR
1400	180	860
900	200	980

tab. 2

**P311-F...** Output flange  
flange di uscita

Gearbox weight **2.50 kg**  
peso riduttore



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

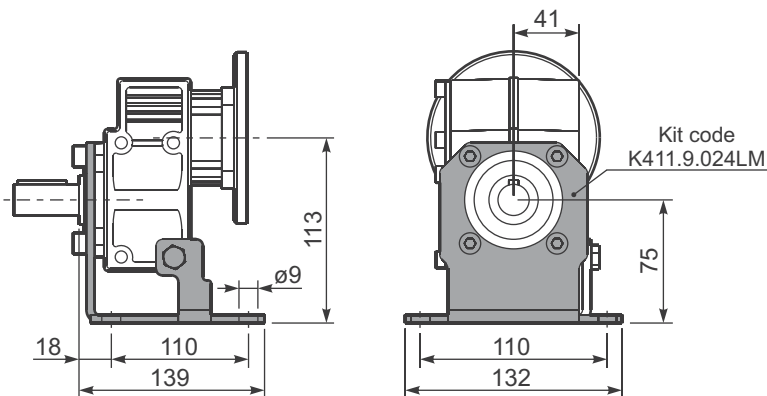
	Shaft - d1	p1	h1	x
Standard	∅ 14x30	5	16	M5x13
On request A richiesta	∅ 19x40 ∅ 24x40	6 8	21.5 27	M6x16 M6x16

**Available output flanges / flange di uscita**

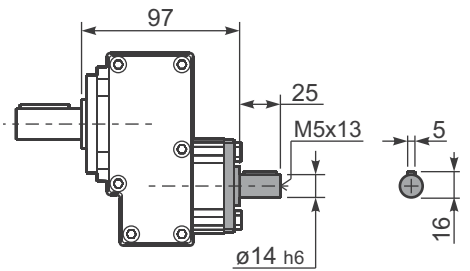
a1 ∅	b1	c1	e1	f1	s1	kit code
120	80	11.5	100	3	9*	KC30.9.010
140	95	11.5	115	3	9	KC30.9.011
160	110	11.5	130	3.5	9	KC30.9.012
200	130	11.5	165	3.5	11	KC30.9.013

\*Holes position  
posizione fori

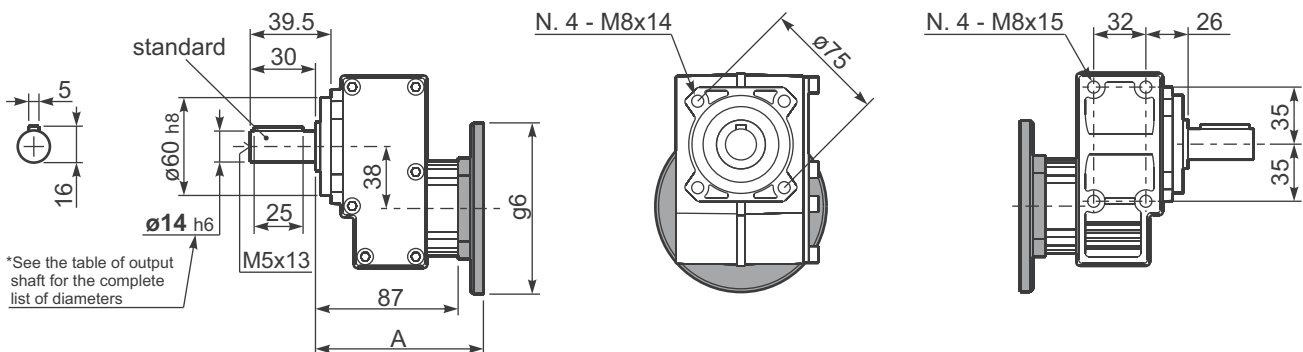
**P311-H1...** With feet  
Con piedini



**R311-N...** Input Shaft  
Albero in entrata



**P311-N...** Basic gearbox  
Riduttore base



B14 Motor Flanges	A	g6	k1	kit code
56 B14	103	80	106.5	KC40.4.049
63 B14	105.5	90	109	K050.4.047
71 B14	103	105	106.5	K050.4.045

B5 Motor Flanges	A	g6	k1	kit code
63 B5	105.5	138	109	K050.4.041
71 B5	103	160	106.5	K050.4.042



**QUICK SELECTION / Selezione veloce**

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

Output Speed $n_2$ [min <sup>-1</sup> ]	Ratio $i$	Motor power $P_{1M}$ [kW]	Output torque $M_{2M}$ [Nm]	Service factor f.s.	Nominal power $P_{1R}$ [kW]	Nominal torque $M_{2R}$ [Nm]	Available B5 motor flanges				Available B14 motor flanges			Output Shaft 	Ratios code	
							-B	-C	-D	-E	-Q	-R	-T			
							63	71	80	90	71	80	90			
891	<b>1.57</b>	1.5	16	1.3	<b>1.9</b>	<b>20</b>	B				C	C		2844	standard ø19  On request ø14 ø24	01
493	<b>2.84</b>	1.5	28	1.2	<b>1.8</b>	<b>35</b>	B				C	C		1954		02
425	<b>3.29</b>	1.5	33	1.2	<b>1.7</b>	<b>38</b>	B				C	C		1756		03
362	<b>3.87</b>	1.5	39	1.0	<b>1.5</b>	<b>40</b>	B				C	C		1558		04
303	<b>4.62</b>	1.5	46	1.0	<b>1.5</b>	<b>47</b>	B				C	C		1360		05
222	<b>6.30</b>	1.1	46	1.0	<b>1.1</b>	<b>46</b>	B				C	C		1063		06
170	<b>8.22</b>	0.55	30	1.3	<b>0.69</b>	<b>38</b>	B				C	C		974		07
129	<b>10.86</b>	0.37	27	1.0	<b>0.39</b>	<b>28</b>	B				C	C		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.

**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.

**D** Das Getriebe **411A** ist mit synthetischem Öl gefüllt und ist lebensdauer geschmiert. In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben. In Tabelle 2 sind die zulässigen Radial - und Axialbelastungen des Getriebes aufgeführt.

**F** Le réducteur **411A** est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien. Voir tableau 1 concernant les huiles et les quantités conseillées. Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

**E** El reductor tamaño **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.

**LUBRICATION 411A Oil Quantity 0.10 Lt.**

**AGIP** Telium VSF 320

**SHELL** Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

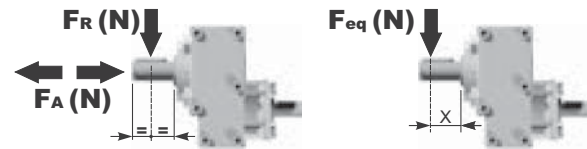
Per maggiori dettagli su lubrificazione e tappi olio vedi il nostro sito web

**RADIAL AND AXIAL LOADS**

**Output shaft**

Albero di uscita

$$F_{eq} = F_R \cdot \frac{40}{X+20}$$



$n_2$	FA	FR	$n_2$	FA	FR	$n_2$	FA	FR
700	182	910	400	230	1150	200	290	1450
600	200	1000	300	250	1250	140	320	1600

**Input shaft**

Albero in entrata

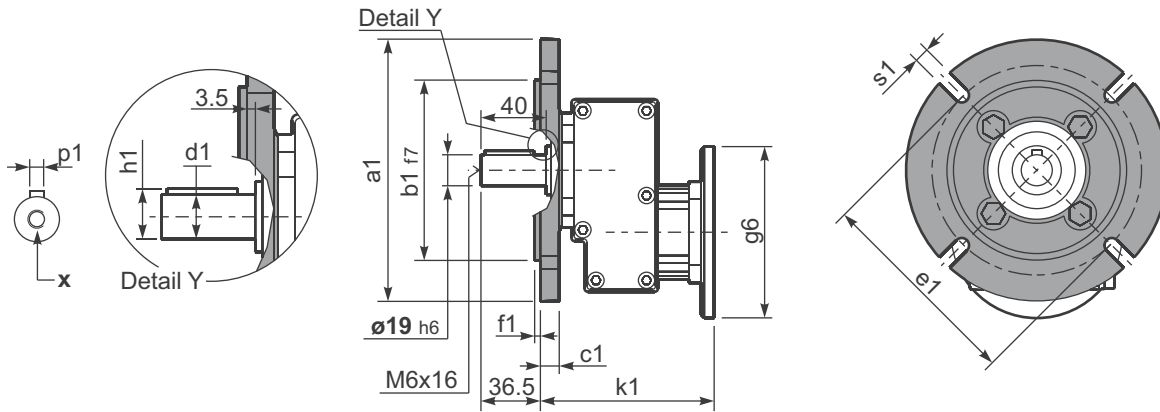


$n_1$	FA	FR
1400	240	1200
900	280	1400

tab. 2

**P411-F...** Output flange  
flange di uscita

Gearbox weight  
peso riduttore **3.20 kg**



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

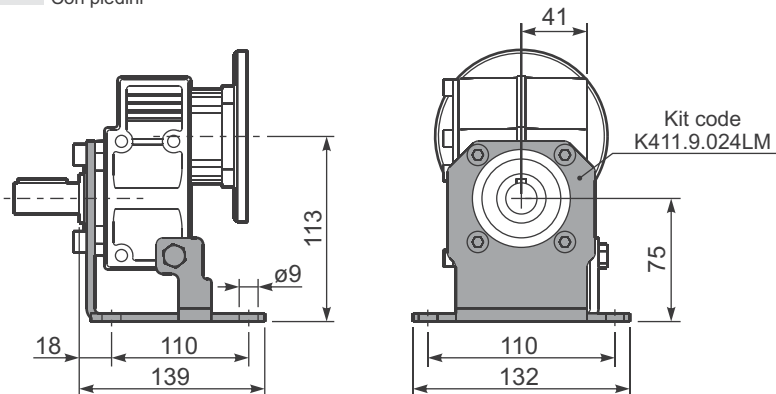
	Shaft - d1	p1	h1	x
Standard	ø 19x40	6	21.5	M6x16
On request A richiesta	ø 14x30 ø 24x40	5 8	16 27	M5x13 M6x16

**Available output flanges / flange di uscita**

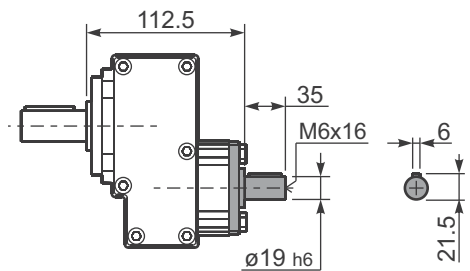
a1 ø	b1	c1	e1	f1	s1	kit code
120	80	11.5	100	3	9*	KC30.9.010
140	95	11.5	115	3	9	KC30.9.011
160	110	11.5	130	3.5	9	KC30.9.012
200	130	11.5	165	3.5	11	KC30.9.013

\*Holes position  
posizione fori

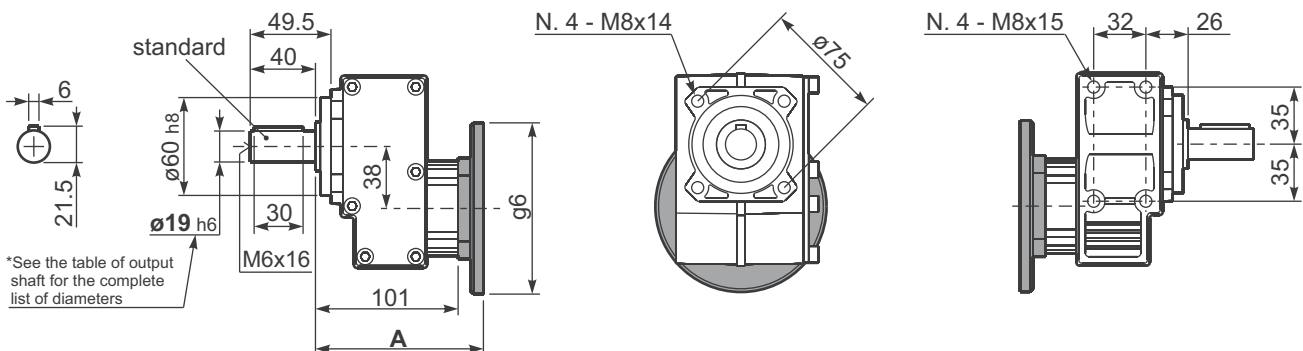
**P411-H1...** With feet  
Con piedini



**R411-N...** Input Shaft  
Albero in entrata



**P411-N...** Basic gearbox  
Riduttore base



\*See the table of output shaft for the complete list of diameters

B5 Motor Flanges	A	g6	k1	kit code
63 B5	121.5	140	125	K063.4.041
71 B5	119.5	160	123	K063.4.042
80/90 B5	121.5	200	125	K063.4.043

B14 Motor Flanges	A	g6	k1	kit code
71 B14	119.5	105	123	K063.4.047
80 B14	121.5	120	125	K063.4.046
90 B14	121.5	140	125	K063.4.041



### QUICK SELECTION / Selezione veloce

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

Output Speed $n_2$ [min <sup>-1</sup> ]	Ratio $i$	Motor power $P_{1M}$ [kW]	Output torque $M_{2M}$ [Nm]	Service factor f.s.	Nominal power $P_{1R}$ [kW]	Nominal torque $M_{2R}$ [Nm]	Available B5 motor flanges					Available B14 motor flanges				Output Shaft			
							-C	-D	-E	-F	-G	-R	-T	-U	-V			Ratios code	
							71	80	90	100 112	132	80	90	100 112	132				
1077	1.30	4	34	1.2	4.6	40	B										3039	standard ø28	01
571	2.45	4	64	1.1	4.3	70	B										2049		02
423	3.31	4	87	1.0	4.1	90	B										1653	03	
325	4.31	4	113	1.0	3.8	110	B										1356	04	
266	5.27	3	104	1.1	3.1	110	B										1158	On request	05
184	7.63	2.2	111	1.0	2.2	110	B										861	ø19	06
133	10.50	1.1	77	1.0	1.1	80	B										663	ø24	07

The dynamic efficiency is 0.98 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 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.

**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.

**D** Das Getriebe 511A ist mit synthetischem Öl gefüllt und ist lebensdauergeschmiert. In Tabelle 1 ist die Schmiermenge und das empfohlene Schmiermittel angegeben. In Tabelle 2 sind die zulässigen Radial- und Axialbelastungen des Getriebes aufgeführt.

**F** Le réducteur 511A est fourni complet avec de l'huile synthétique pour la lubrification permanente et ne nécessite aucun entretien. Voir tableau 1 concernant les huiles et les quantités conseillées. Les charges radiales et axiales applicables au réducteur sont précisées dans le tableau 2.

**E** El reductor tamaño 511A 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.

### LUBRICATION 511A Oil Quantity 0.29 Lt.

AGIP Telium VSF 320

SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

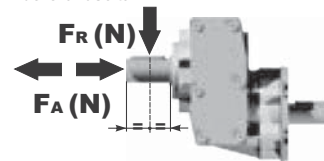
tab. 1

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

### RADIAL AND AXIAL LOADS

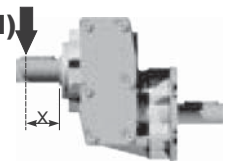
Output shaft

Albero di uscita



$$F_{eq} = FR \cdot \frac{52.5}{X+22.5}$$

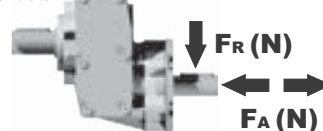
$F_{eq}$  (N)



$n_2$	FA	FR	$n_2$	FA	FR	$n_2$	FA	FR
700	294	1470	400	370	1850	200	460	2300
600	320	1600	300	400	2000	140	510	2550

Input shaft

Albero in entrata

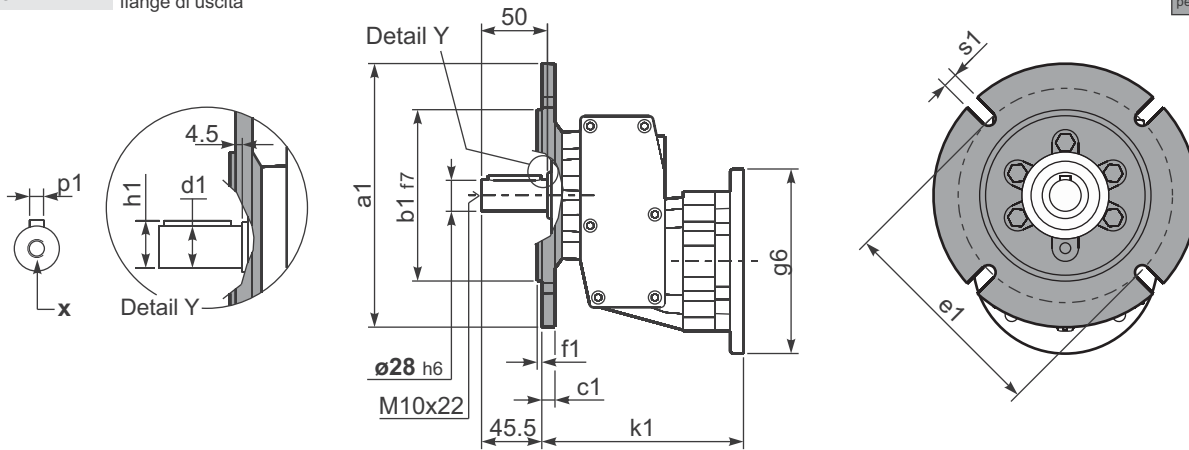


$n_1$	FA	FR
1400	400	2000
900	440	2200

tab. 2

**P511-F...** Output flanges  
flange di uscita

Gearbox weight  
peso riduttore **5.00 kg**



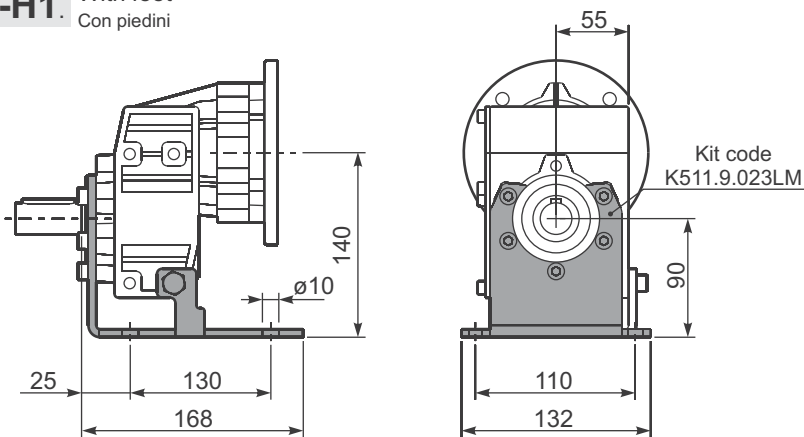
**\*Available output shaft / Albero di uscita**

	Shaft - d1	p1	h1	x
Standard	ø 28x50	8	31	M10x22
On request A richiesta	ø 24x50	8	27	M8x19
	ø 19x40	6	21.5	M6x16

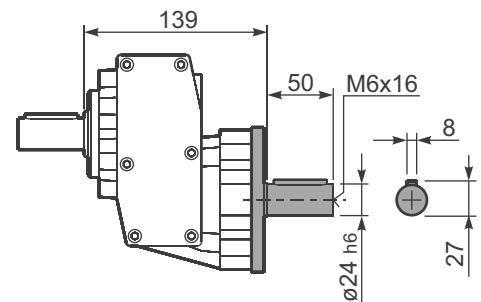
**Available output flanges / flange di uscita**

a1 ø	b1	c1	e1	f1	s1	kit code
120	80	10	100	3	9	KC40.9.010
140	95	10	115	3	9	KC40.9.011
160	110	10	130	3	9	KC40.9.012
200	130	11	165	3.5	11	KC40.9.013
250	180	11.5	215	3.5	14	KC40.9.014

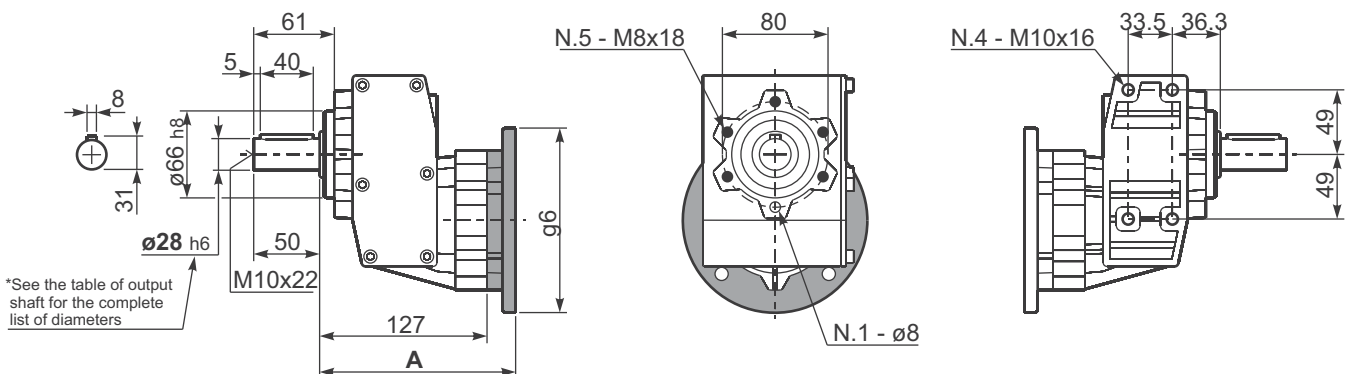
**P511A-H1.** With feet  
Con piedini



**R511A-N...** Input Shaft  
Albero in entrata



**P511-N...** Basic gearbox  
Riduttore base



\*See the table of output shaft for the complete list of diameters

B5 Motor Flanges	A	g6	k1	kit code
71 B5	145.5	160	150	KC023.4.041
80/90 B5	147.5	200	152	KC023.4.042
100/112 B5	156.5	250	161	KC023.4.043
132 B5	174.5	300	179	KC50.4.043

B14 Motor Flanges	A	g6	k1	kit code
80 B14	147.5	120	152	KC085.4.046
90 B14	147.5	140	152	KC085.4.045
100/112 B14	156.5	160	161	KC085.4.047
132 B14	174.5	200	179	KC50.4.041