

# Aluminum one step gearboxes

A modular and compact product

## 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

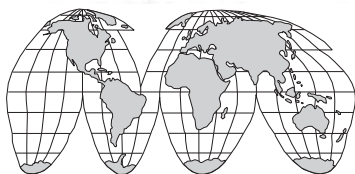
Removable feet.

## 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 / En la página



Types / Tipi /  
Arten / Tipos →

| 5-5          | 5-7          | 5-9          | 5-11          |
|--------------|--------------|--------------|---------------|
| 211A<br>20Nm | 311A<br>30Nm | 411A<br>38Nm | 511A<br>110Nm |

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



Types / Tipi /  
Arten / Tipos →

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

## ● Get on our web for the selected type/size the detailed informations

For : / Per : / Für : / Para :

**Selection guide - fs**  
Guida alla selezione

**Reversibility**  
Reversibilità

**Download 3D drawings**  
Download disegni 3D

**Mounting pos. - Lubrication**  
Pos. di montaggio - lubrificazione

**Thermal limit**  
Limite termico

**Interchangeability**  
Intercambiabilità

**2 - 6 poles selection**  
Selezione 2 - 6 poli

**Atex certification**  
Certificazione Atex

**Installation and maintenance**  
Installazione, uso e manutenzione

**Radial - axial loads**  
Carichi radiali e assiali

**Accessories**  
Accessori

**Spare parts list**  
Liste parti di ricambio

Type - Tipo - Typ - Tipo

Size - Grandezza  
Grösse - Tomaño

Mounting - Montaggio - Montage - Tipo de montaje

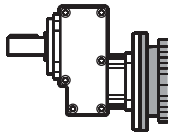
**P**

**311A**

**H1**

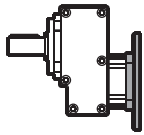
Aluminum one step gear  
Riduttori in alluminio a uno stadio

1 Stages  
Riduzioni  
Stufen  
Etapas



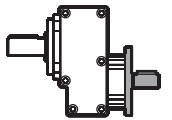
With IEC motor

**M**



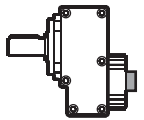
With motor flange

**P**



With male input shaft

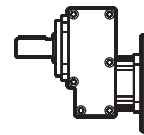
**R**



Modular Base

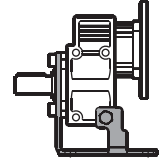
**B**

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



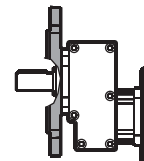
Without flange / feet

**-N**



Mounted feet

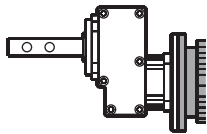
**H1**



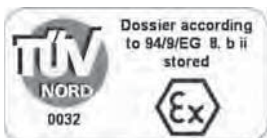
Output flange mounted

**-F**

Special output shaft  
Albero uscita speciale



Only on request for Q.ty  
A richiesta per quantità



A richiesta possiamo fornire i nostri prodotti secondo le normative ATEX

On request we can deliver our products according to the ATEX

Auf Anfrage können wir unsere Produkte den Richtlinien ATEX entsprechend liefern

A pedido, se pueden enviar nuestros productos de acuerdo con las normas ATEX.

Ratio - Rapporto  
Untersetzung  
Relación

Output shaft  
Albero uscita  
Abtriebswelle  
Eje en salida

Output flange  
Flangia uscita  
Ausgangsflansch  
Brida en salida

Motor size  
Grandezza motore  
Motor Grösse  
Tamaño motor

Terminal box position  
Posizione morsettiere  
Klemmkastenlage  
Posición caja de bornes

Mounting position  
Posizione montaggio  
Einbaulage  
Position de montage

**2.84**

**S**

**2**

**C**

**B**

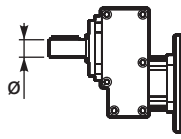
**B3**

See technical data table

Vedi tabella dati tecnici.

Technisches Datenblatt beachten.

Ver tabla datos técnicos



➔ STANDARD

211A

**S** ➔ **Ø14**

311A

**S** ➔ **Ø14**

**C** ➔ **Ø19**

**E** ➔ **Ø24**

411A

**S** ➔ **Ø14**

**C** ➔ **Ø19**

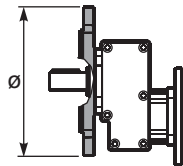
**E** ➔ **Ø24**

511A

**C** ➔ **Ø19**

**E** ➔ **Ø24**

**G** ➔ **Ø28**



**N** Senza flangia  
Without flange

311A

**1** ➔ **Ø120**

**2** ➔ **Ø140**

**3** ➔ **Ø160**

**4** ➔ **Ø200**

411A

**1** ➔ **Ø120**

**2** ➔ **Ø140**

**3** ➔ **Ø160**

**4** ➔ **Ø200**

511A

**1** ➔ **Ø120**

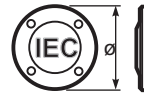
**2** ➔ **Ø140**

**3** ➔ **Ø160**

**4** ➔ **Ø200**

**5** ➔ **Ø250**

Standard Flange  
Flangia Standard



B5

**A**=56  
(Ø120)

**B**=63  
(Ø140)

**C**=71  
(Ø160)

**D**=80  
(Ø200)

**E**=90  
(Ø200)

**F**=100+112  
(Ø250)

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**

511A

**3** ➔ **Ø24**

411A

**2** ➔ **Ø19**

Without flange / Senza flangia



211A

311A

**Z** ➔ **Ø9**  
(56B5)

**0** ➔ **Ø11**  
(63B5)

**1** ➔ **Ø14**  
(71B5)

511A

**2** ➔ **Ø19**  
(80B5)

**3** ➔ **Ø24**  
(90B5)

**4** ➔ **Ø28**  
(100B5)

➔ STANDARD



**A**



**B**

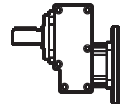
STANDARD



**C**



**D**



**B3/B5**

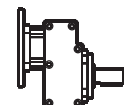
STANDARD



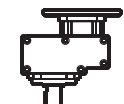
**B6**



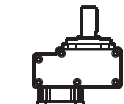
**B7**



**B8**



**V5**



**V6**

Specify only for vertical positions

Specificare solo per posizione verticale

POTENZA RICHIESTA / REQUIRED POWER / ERFORDERLICHE LEISTUNG / POTENCIA NECESARIA

Lifting / sollevamento / hubantriebe / elevación

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

Rotation / rotazione / drehung / rotation

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

Linear movement / traslazione / linearbewegung / translacion

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

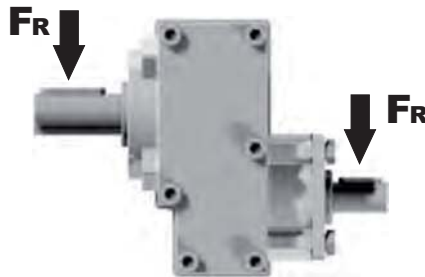
TORQUE / COPPIA / DREHMOMENT / PAR

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

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

RADIAL LOADS / CARICHI RADIALI / RADIALE - UND AXIALLASTEN / 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.
- 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 / Par torsion  |  |
| <b>d</b>             | Diametro primitivo / Diam. of driving element / Durchmesser der Abtriebseinheit / Diámetro primitivo   |  |
| <b>f<sub>k</sub></b> | Coefficiente di trasformazione / Factor / Faktor / Coefficiente de transmisión<br>1.15 Ingranaggi / Gearwheels / Zahnrad / Engranaje<br>1.25 Catena / Chain sprockets / Antriebskette / Cadena<br>1.75 Cinghia Trapezoidale / Narrow v-belt pulley / Keilriemen / Correa trapezoidal<br>2.50 Cinghia piatta / Flat-belt pulley / Flachzahnriem. / 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.
- 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 / Cómo seleccionar un reductor

**B** Output speed  
Velocità in uscita  
Abtriebsdrehzahl  
Velocidad de salida

Nominal power  
Potenza nominale  
Max. mögliche Leistung  
Potencia nominal

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

Flange code  
Codice flangia  
Flanschttype  
Código bridas

Input speed  
Velocità in entrata  
Eintriebsdrehzahl  
Velocidad de entrada

Gear size  
Grandezza riduttore  
Getriebegröße  
Tamaño reductor

Motor power  
Potenza motore  
Motorleistung  
Potencia motor

# 311A

## One step 30Nm

Rating - Aluminum ONE STEP GEARBOXES

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

**C** Ratio  
Rapporto  
Untersetzung  
Relación

Transmitted torque  
Momento torcente trasmesso  
Mögliche Drehmomente  
Par transmitido

Service factor  
Fattore di servizio  
Betriebsfaktor  
Factor de servicio

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

Notes  
Note  
Anmerkungen  
Notas

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

| D  | Motor flange available<br>Flange disponibili<br>Erhältliche Motorflansche<br>Bridas disponibles   |
|----|---|
| B) | Mounting with reduction ring<br>Montaggio con boccia di riduzione<br>Reduzierhülsen<br>Montaje con casquillo de reducción   |
| C) | Motor flangeholes position/terminal box position<br>Posizione fori flangia/basetta motore<br>Bohrungsposition am Motorflansch/-sockel<br>Posición agujeros brida / base motor |
| B) | Available without reduction bushes<br>Disponibile anche senza boccia<br>Auch ohne Reduzierbuchse verfügbar<br>Disponibile también 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  | Seleccionar el par deseado (incluyendo el factor de servicio)                                      |
| <b>B</b> | Select output speed  | Seleziona la velocità in uscita  | Ausgewählte Abtriebsdrehzahl   | 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 | 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)  | Seleccionar la brida disponible (sobre pedido)   |



#### QUICK SELECTION / Selezione veloce

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

| Output Speed<br>$n_2$<br>[min <sup>-1</sup> ] | Ratio<br>$i$ | Motor power<br>$P_{1M}$<br>[kW] | Output torque<br>$M_{2M}$<br>[Nm] | Service factor<br>f.s. | Nominal power<br>$P_{1R}$<br>[kW] | Nominal torque<br>$M_{2R}$<br>[Nm] | Available B5 motor flanges |    |    |    | Available B14 motor flanges |          |    |    | Output Shaft<br>$\varnothing$<br>standard<br>$\varnothing 14$ | Ratios code<br> |
|---|--------------|---------------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------------------|----------------------------|----|----|----|-----------------------------|----------|----|----|---|-----------------|
|   |              |                                 |                                   |                        |                                   |                                    | B                          | C  | D  | E  | O                           | P        | Q  | R  |   |                 |
|   |              |                                 |                                   |                        |                                   |                                    | 63                         | 71 | 80 | 90 | 56                          | 63       | 71 | 80 |   |                 |
| 682.1   | <b>2.05</b>  | 0.37                            | 5.1                               | 2.0                    | <b>0.73</b>                       | <b>10</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 1939  | 01              |
| 595.0   | <b>2.35</b>  | 0.37                            | 5.8                               | 2.1                    | <b>0.76</b>                       | <b>12</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 1740  | 02              |
| 500.0   | <b>2.80</b>  | 0.37                            | 6.9                               | 2.0                    | <b>0.75</b>                       | <b>14</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 1542  | 03              |
| 413.6   | <b>3.38</b>  | 0.37                            | 8.4                               | 2.0                    | <b>0.75</b>                       | <b>17</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 1344  | 04              |
| 297.9   | <b>4.70</b>  | 0.37                            | 11.6                              | 1.7                    | <b>0.64</b>                       | <b>20</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 1047  | 05              |
| 225.0   | <b>6.22</b>  | 0.37                            | 15.4                              | 1.5                    | <b>0.54</b>                       | <b>23</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 956   | 06              |
| 169.0   | <b>8.28</b>  | 0.37                            | 20.5                              | 1.0                    | <b>0.37</b>                       | <b>20</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 758   | 07              |
| 142.4   | <b>9.83</b>  | 0.25                            | 16.4                              | 1.0                    | <b>0.25</b>                       | <b>16</b>                          |                            |    |    |    | <b>C</b>                    | <b>C</b> |    |    | 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.

**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. Die komplette Dokumentation, Wartungs- und Inbetriebnahmeanleitungen finden Sie unter.

**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. Para documentación completa, consultar nuestra Web.

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

**AGIP** Telium VSF 320

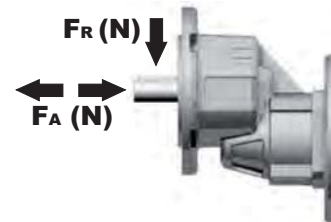
**SHELL** Omala S4 WE 320

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

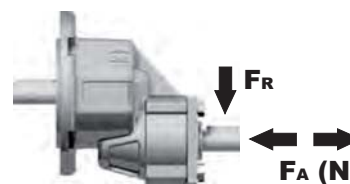
Albero di uscita



| $n_2$ | 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



| $n_2$ | FA  | FR  |
|-------|-----|-----|
| 1400  | 168 | 840 |
| 900   | 192 | 960 |

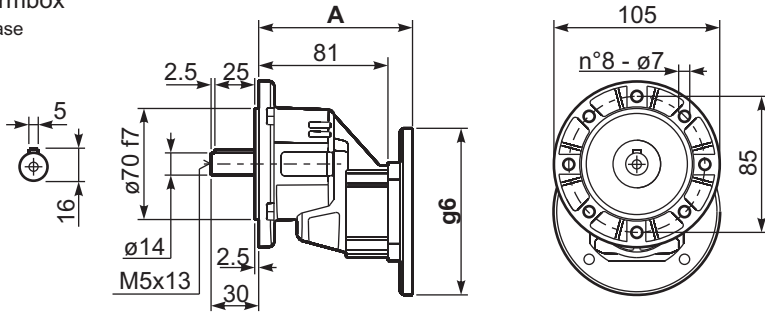
\*Strong axial loads in the DX direction are not allowed.  
Non sono consentiti forti carichi assiali con direzione DX

tab. 2

**SELECT THIS TYPE AND THIS SPECIFIC SIZE ON THE WEB PAGES TO GET COMPLETE TECHNICAL DATA.**  
Selezionare tipo e gandezza specifica nel sito web per la documentazione completa.

**P211A-F...** Basic wormbox  
Riduttore base

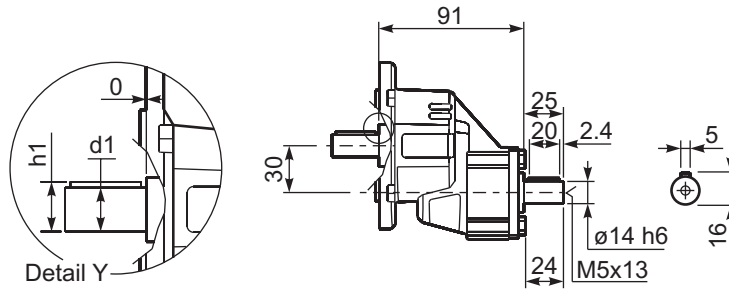
Gearbox weight  
peso riduttore **1.40 kg**



| B5 Motor Flanges | A    | g6  | kit code   |
|------------------|------|-----|------------|
| 63 B5            | 97.5 | 138 | K050.4.041 |
| 71 B5            | 95.5 | 160 | K050.4.042 |

| B14 Motor Flanges | A  | g6  | kit code   |
|-------------------|----|-----|------------|
| 56 B14            | 97 | 80  | KC40.4.049 |
| 63 B14            | 99 | 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<br>$n_2$<br>[min <sup>-1</sup> ] | Ratio<br>$i$ | Motor power<br>$P_{1M}$<br>[kW] | Output torque<br>$M_{2M}$<br>[Nm] | Service factor<br>f.s. | Nominal power<br>$P_{1R}$<br>[kW] | Nominal torque<br>$M_{2R}$<br>[Nm] | Available B5 motor flanges |   | Available B14 motor flanges |   |   | Output Shaft<br> | Ratios code                                 |    |
|---|--------------|---------------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------------------|----------------------------|---|-----------------------------|---|---|------------------|---|----|
|   |              |                                 |                                   |                        |                                   |                                    | B                          | C | O                           | P | Q |                  |   |    |
| 892   | <b>1.57</b>  | 0.37                            | 3.9                               | 3.3                    | <b>1.24</b>                       | <b>13</b>                          |                            |   | C                           | C |   | 2844             | standard<br>ø14<br>On request<br>ø19<br>ø24 | 01 |
| 493   | <b>2.84</b>  | 0.37                            | 7.0                               | 3.3                    | <b>1.21</b>                       | <b>23</b>                          |                            |   | C                           | C |   | 1954             |   | 02 |
| 426   | <b>3.29</b>  | 0.37                            | 8.1                               | 3.2                    | <b>1.18</b>                       | <b>26</b>                          |                            |   | C                           | C |   | 1756             |   | 03 |
| 362   | <b>3.87</b>  | 0.37                            | 9.6                               | 2.9                    | <b>1.08</b>                       | <b>28</b>                          |                            |   | C                           | C |   | 1558             |   | 04 |
| 303   | <b>4.62</b>  | 0.37                            | 11.4                              | 2.6                    | <b>0.97</b>                       | <b>30</b>                          |                            |   | C                           | C |   | 1360             |   | 05 |
| 222   | <b>6.30</b>  | 0.37                            | 15.6                              | 2.2                    | <b>0.83</b>                       | <b>35</b>                          |                            |   | C                           | C |   | 1063             |   | 06 |
| 170   | <b>8.22</b>  | 0.37                            | 20.3                              | 1.9                    | <b>0.69</b>                       | <b>38</b>                          |                            |   | C                           | C |   | 974              |   | 07 |
| 130   | <b>10.86</b> | 0.37                            | 26.8                              | 1.0                    | <b>0.38</b>                       | <b>28</b>                          |                            |   | 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. 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.

**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. Die komplette Dokumentation, Wartungs - und Inbetriebnahmeanleitungen finden Sie unter.

**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 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



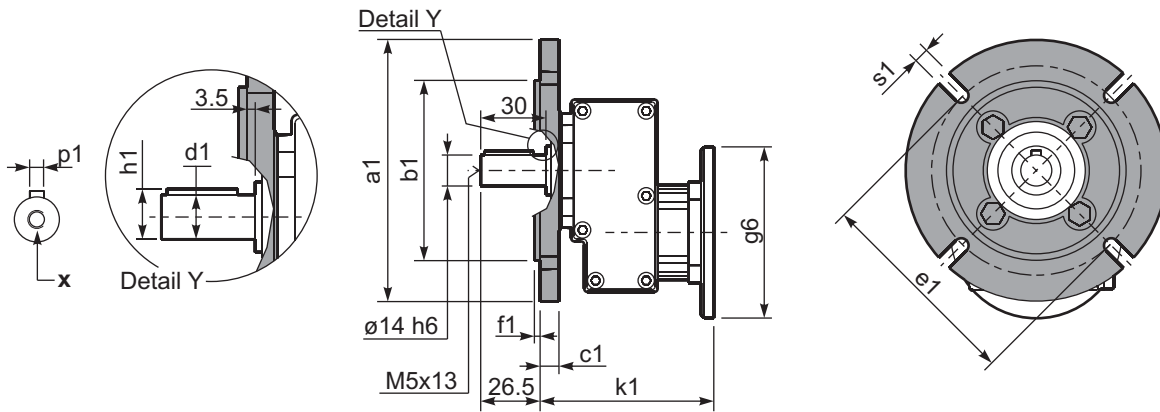
| $n_1$ | FA  | FR  |
|-------|-----|-----|
| 1400  | 180 | 860 |
| 900   | 200 | 980 |

tab. 2

**SELECT THIS TYPE AND THIS SPECIFIC SIZE ON THE WEB PAGES TO GET COMPLETE TECHNICAL DATA.**  
Selezionare tipo e gandezza specifica nel sito web per la documentazione completa.

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

Gearbox weight  
peso riduttore **2.50 kg**



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

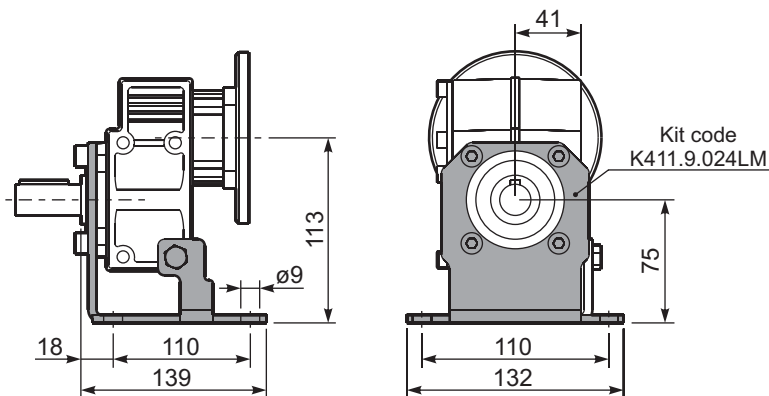
|                           | Shaft - d1         | p1     | h1         | x              |
|---------------------------|--------------------|--------|------------|----------------|
| Standard                  | ø 14x30            | 5      | 16         | M5x13          |
| On request<br>A richiesta | ø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

**Available output flanges / flange di uscita**

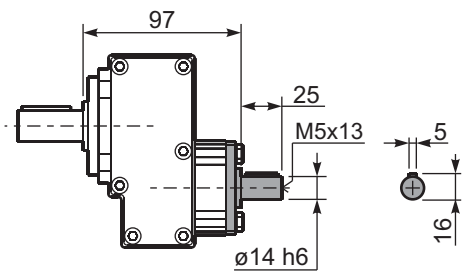
| a1 ø | b1  | c1   | e1  | f1  | s1 | kit code   |
|------|-----|------|-----|-----|----|------------|
| 120  | 80  | 11.5 | 100 | 3   | 9* | KC30.9.010 |
| 140  | 95  | 11.5 | 115 | 3   | 9  | KC30.9.011 |
| 160  | 110 | 11.5 | 130 | 3.5 | 9  | KC30.9.012 |
| 200  | 130 | 11.5 | 165 | 3.5 | 11 | KC30.9.013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

\*Holes position  
posizione fori

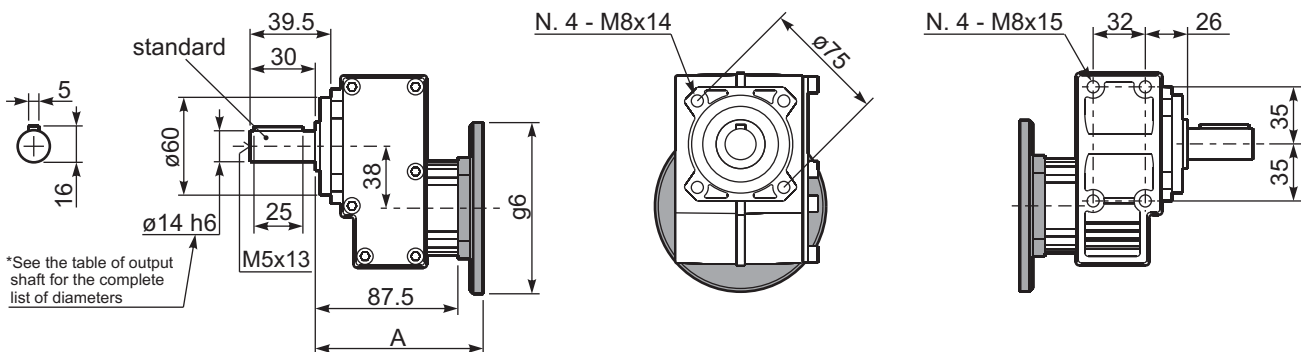
**P311-H1...** With feet  
Con piedini



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



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



| B14 Motor Flanges | A     | g6  | k1    | kit code   |
|-------------------|-------|-----|-------|------------|
| 56 B14            | 107.5 | 80  | 111   | 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            | 103.5 | 138 | 107 | K050.4.041 |
| 71 B5            | 101.5 | 160 | 105 | K050.4.042 |



▪ **QUICK SELECTION / Selezione veloce**

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

| Output Speed<br>$n_2$<br>[min <sup>-1</sup> ] | Ratio<br>$i$ | Motor power<br>$P_{1M}$<br>[kW] | Output torque<br>$M_{2M}$<br>[Nm] | Service factor<br>f.s. | Nominal power<br>$P_{1R}$<br>[kW] | Nominal torque<br>$M_{2R}$<br>[Nm] | Available B5 motor flanges |    |    |    | Available B14 motor flanges |    |    | Output Shaft<br> | Ratios code                                     |    |
|---|--------------|---------------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------------------|----------------------------|----|----|----|-----------------------------|----|----|------------------|---|----|
|   |              |                                 |                                   |                        |                                   |                                    | B                          | C  | D  | E  | Q                           | R  | T  |                  |   |    |
|   |              |                                 |                                   |                        |                                   |                                    | 63                         | 71 | 80 | 90 | 71                          | 80 | 90 |                  |   |    |
| 892   | <b>1.57</b>  | 1.5                             | 15.7                              | 1.3                    | <b>1.90</b>                       | <b>20</b>                          | B                          |    |    |    | C                           | C  |    | 2844             | standard<br>ø19<br><br>On request<br>ø14<br>ø24 | 01 |
| 493   | <b>2.84</b>  | 1.5                             | 28.4                              | 1.2                    | <b>1.84</b>                       | <b>35</b>                          | B                          |    |    |    | C                           | C  |    | 1954             |   | 02 |
| 426   | <b>3.29</b>  | 1.5                             | 32.9                              | 1.2                    | <b>1.73</b>                       | <b>38</b>                          | B                          |    |    |    | C                           | C  |    | 1756             |   | 03 |
| 362   | <b>3.87</b>  | 1.5                             | 38.7                              | 1.0                    | <b>1.54</b>                       | <b>40</b>                          | B                          |    |    |    | C                           | C  |    | 1558             |   | 04 |
| 303   | <b>4.62</b>  | 1.5                             | 46.1                              | 1.0                    | <b>1.54</b>                       | <b>47</b>                          | B                          |    |    |    | C                           | C  |    | 1360             |   | 05 |
| 222   | <b>6.30</b>  | 1.1                             | 46.0                              | 1.0                    | <b>1.10</b>                       | <b>46</b>                          | B                          |    |    |    | C                           | C  |    | 1063             |   | 06 |
| 170   | <b>8.22</b>  | 0.55                            | 30.4                              | 1.2                    | <b>0.69</b>                       | <b>38</b>                          | B                          |    |    |    | C                           | C  |    | 974              |   | 07 |
| 130   | <b>10.86</b> | 0.37                            | 26.8                              | 1.0                    | <b>0.38</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.  
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.

**D** Das Getriebe **411A** 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. Die komplette Dokumentation, Wartungs - und Inbetriebnahmeanleitungen finden Sie unter.

**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 0.20 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



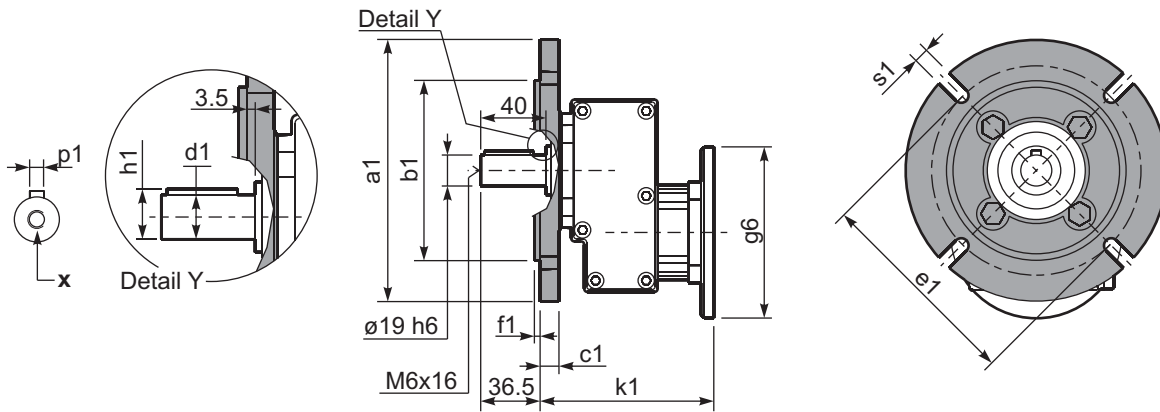
| $n_1$ | FA  | FR   |
|-------|-----|------|
| 1400  | 240 | 1200 |
| 900   | 280 | 1400 |

tab. 2

▪ **SELECT THIS TYPE AND THIS SPECIFIC SIZE ON THE WEB PAGES TO GET COMPLETE TECHNICAL DATA.**  
Selezionare tipo e gandezza specifica nel sito web per la documentazione completa.

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

Gearbox weight  
peso riduttore **3.20 kg**



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

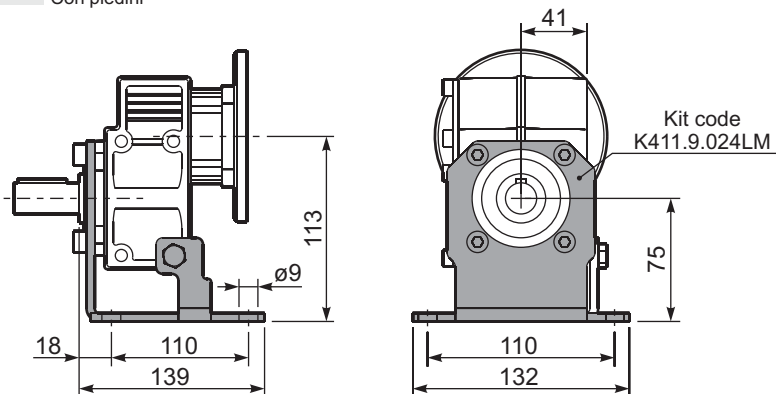
|                           | Shaft - d1         | p1     | h1       | x              |
|---------------------------|--------------------|--------|----------|----------------|
| Standard                  | ø 19x40            | 6      | 21.5     | M6x16          |
| On request<br>A richiesta | ø 14x30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

**Available output flanges / flange di uscita**

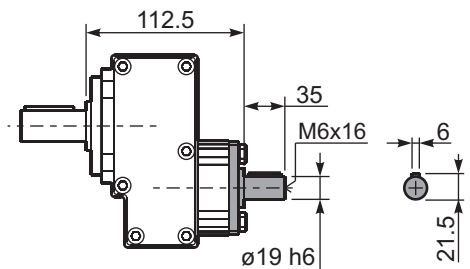
| a1 ø | b1  | c1   | e1  | f1  | s1 | kit code   |
|------|-----|------|-----|-----|----|------------|
| 120  | 80  | 11.5 | 100 | 3   | 9* | KC30.9.010 |
| 140  | 95  | 11.5 | 115 | 3   | 9  | KC30.9.011 |
| 160  | 110 | 11.5 | 130 | 3.5 | 9  | KC30.9.012 |
| 200  | 130 | 11.5 | 165 | 3.5 | 11 | KC30.9.013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

\*Holes position  
posizione fori

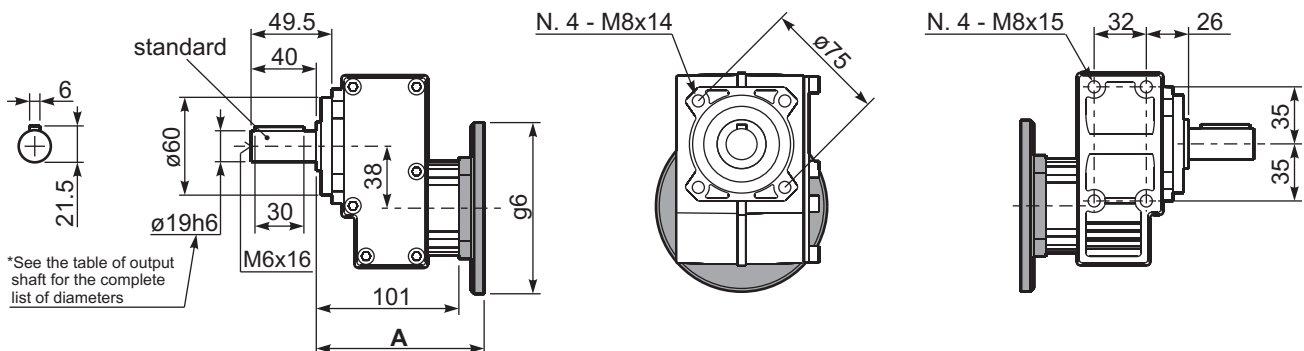
**P411-H1...** With feet  
Con piedini



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



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



| 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            | 120.5 | 120 | 124 | K063.4.046 |
| 90 B14            | 121.5 | 140 | 125 | K063.4.041 |
| 100/112 B14       | 119.5 | 160 | 123 | KC40.4.041 |



**QUICK SELECTION / Selezione veloce** input speed ( $n_1$ ) = 1400 min<sup>-1</sup>

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

**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. Die komplette Dokumentation, Wartungs- und Inbetriebnahmeanleitungen finden Sie unter.

**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. Para documentación completa, consultar nuestra Web.

**LUBRICATION 511A Oil Quantity 0.29 Lt.**

|                            |                              |
|----------------------------|------------------------------|
| <b>AGIP</b> Telium VSF 320 | <b>SHELL</b> 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

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

| $n_2$ | 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

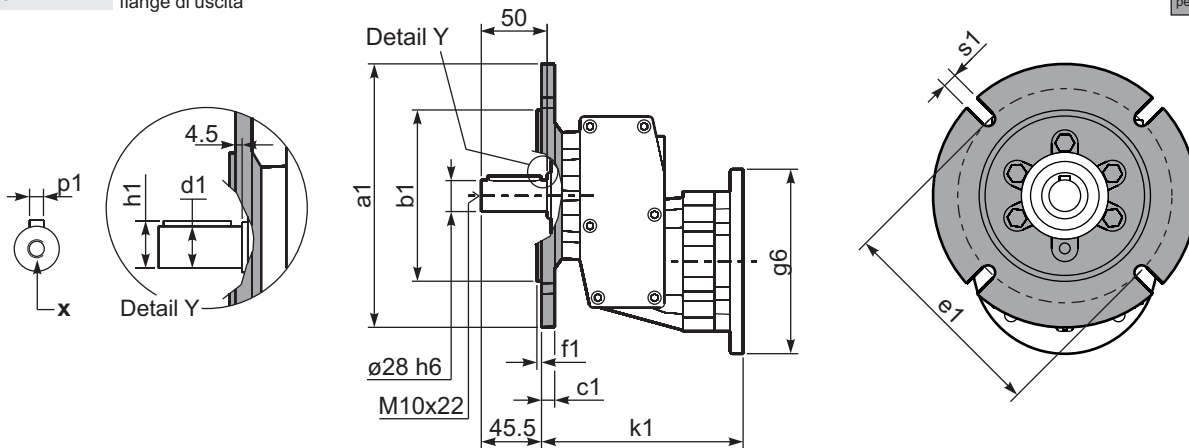
| $n_1$ | FA  | FR   |
|-------|-----|------|
| 1400  | 400 | 2000 |
| 900   | 440 | 2200 |

tab. 2

**SELECT THIS TYPE AND THIS SPECIFIC SIZE ON THE WEB PAGES TO GET COMPLETE TECHNICAL DATA.**  
Selezionare tipo e gandezza specifica nel sito web per la documentazione completa.

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

Gearbox weight  
peso riduttore **5.00 kg**



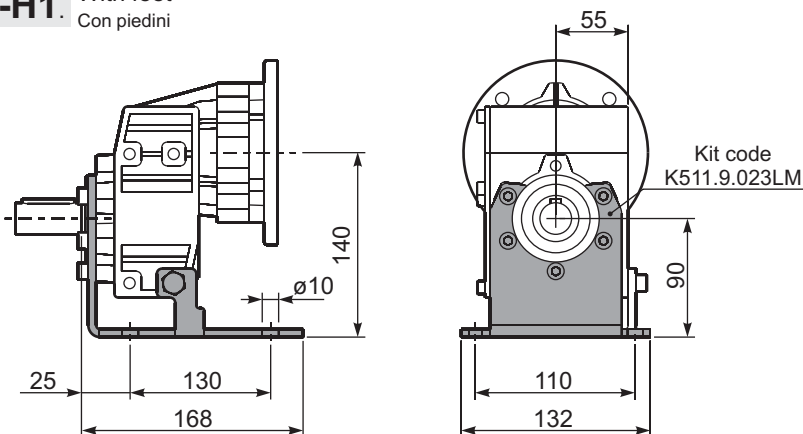
**\*Available output shaft / Albero di uscita**

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

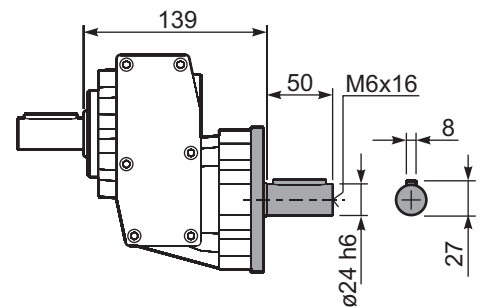
**Available output flanges / flange di uscita**

| a1 ∅ | 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 |

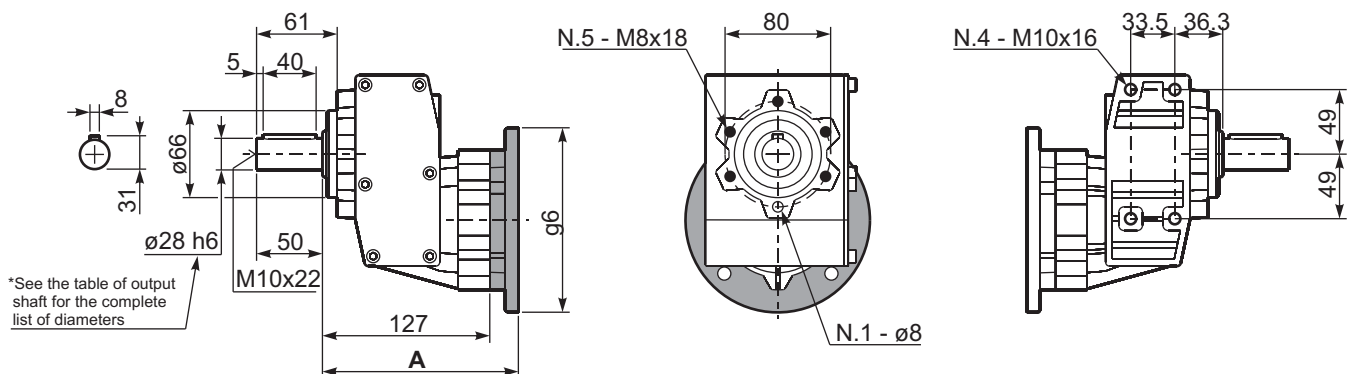
**P511A-H1.** With feet  
Con piedini



**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 | 160 | 149.5 | KC023.4.041 |
| 80/90 B5         | 147 | 200 | 151.5 | KC023.4.042 |
| 100/112 B5       | 153 | 250 | 157.5 | KC023.4.043 |

| B14 Motor Flanges | A   | g6  | k1    | kit code    |
|-------------------|-----|-----|-------|-------------|
| 80 B14            | 145 | 120 | 149.5 | KC085.4.046 |
| 90 B14            | 145 | 140 | 149.5 | KC085.4.045 |
| 100/112 B14       | 145 | 160 | 149.5 | KC085.4.047 |
| 132 B14           | 175 | 200 | 188   | KC50.4.041  |