RIDUTTORI A VITE SENZA FINE / *WORM GEARBOXES*

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Presentazione della gamma SATI di riduttori a vite senza fine/ *SATI worm gearbox range*

SATI ha il piacere di presentare la sua nuova gamma di riduttori a vite senza fine, che entra a far parte, della vasta gamma di prodotti per la trasmissione del moto.
I riduttori a vite senza fine SATI sono disponibili nelle seguenti versioni:
- riduttori a vite senza fine semplici, costituiti da un singolo stadio di riduzione tramite coppia vite senza fine/corona elicoidale, con **rapporti di riduzione compresi fra 7,5/1 e 100/1.**

La gamma di riduttori a vite senza fine semplici consta di **10 grandezze che vanno dalla 25 fino alla 150.**
- riduttori a vite senza fine con **precoppia**, ovvero provvisti di un ulteriore stadio di riduzione ad ingranaggi elicoidali, un prestadio, situato a monte del riduttore.

Le grandezze dello stadio di precoppia sono 4 (**63-71-80 e 90**), che possono essere accoppiate a più grandezze di riduttori, come riportato nelle tabelle che seguono.
I rapporti di riduzione dei riduttori con precoppia vanno da **73,5/1 fino a 400/1.**
-riduttori **combinati** a vite senza fine, costituiti da due riduttori accoppiati in cascata fra di loro, ovvero disposti in serie l'uno dopo l'altro, in modo tale che il rapporto di riduzione totale del combinato sia pari al prodotto dei rapporti dei due stadi singoli accoppiati.

I rapporti di riduzione dei combinati vanno **da 100/1 fino a 5000/1.**

A complemento dei riduttori SATI propone ai suoi clienti anche i **motori elettrici asincroni trifase**, a singola velocità, nelle versioni a 2, 4 e 6 poli, in forma flangiata B5 o B14 dalla grandezza IEC 56 fino alla grandezza IEC 160, per accoppiamento diretto ai riduttori o, in alternativa , in forma con piedi B3.

Tutti i riduttori singoli e combinati sono disponibili tanto con entrata PAM, ovvero predisposta per accoppiamento diretto del motore elettrico, quanto con entrata albero maschio sporgente per accoppiamento ad una trasmissione in entrata.
La designazione dei prodotti, come apparirà chiaramente anche nelle tabelle che seguono, è la seguente:
- **VP** riduttore singolo con predisposizione **PAM**
- **VI** riduttore singolo con **entrata albero maschio**
- **VC** riduttore **combinato** con predisposizione **PAM**
- **VS** riduttore **combinato** con **entrata albero maschio**
- **VR** riduttori a vite senza fine con **precoppia** fornito nella sola versione con predisposizione **PAM**

La ragione per la quale i riduttori con precoppia sono forniti esclusivamente in versione PAM è che lo stadio di precoppia funge a tutti gli effetti pratici da stadio di riduzione in entrata, alla stessa stregua delle trasmissioni meccaniche, per cui l'eventuale impiego di una trasmissione in entrata risulta superfluo.

SATI is pleased to introduce its new range of worm gearboxes, which joins its wide range of power transmission products.

***SATI worm gearboxes** are available in the following versions:*
*- single worm gearboxes, consisting of a single reduction stage through a worm/helical wormwheel pair, with **reduction ratios between 7.5/1 and 100/1.***
*The range of single worm gearboxes consists of **10 sizes, ranging from 25 to 150.***
- helical worm gearboxes, which have an additional reduction stage with helical gears, a pre-stage, located upstream of the gearbox.

*The pre-stage consists of 4 sizes (**63-71-80 and 90**), which can be fitted with a certain number of gearbox sizes, as stated in the following tables.*

*The reduction ratios of the helical worm gearboxes range from **73.5/1 to 400/1.***
*- **combination** worm gearboxes, consisting of two gearboxes fitted in cascade one after the other, that is to say arranged in series one after the other, in such a way that the total reduction ratio of the combination unit is equal to the product of the individual ratios of the two mutually connected single stages.*
*The reduction ratios of the combination gearboxes range **from 100/1 to 5000/1.***
*In addition to its gearboxes, SATI offers its customers a range of **three-phase asynchronous single-speed electric motors**, in versions with 2, 4 and 6 poles, in B5 or B14 flanged version, size IEC 56 up to size IEC 160, for direct connection to the gearboxes or, alternatively, the foot-mounting B3 version.*

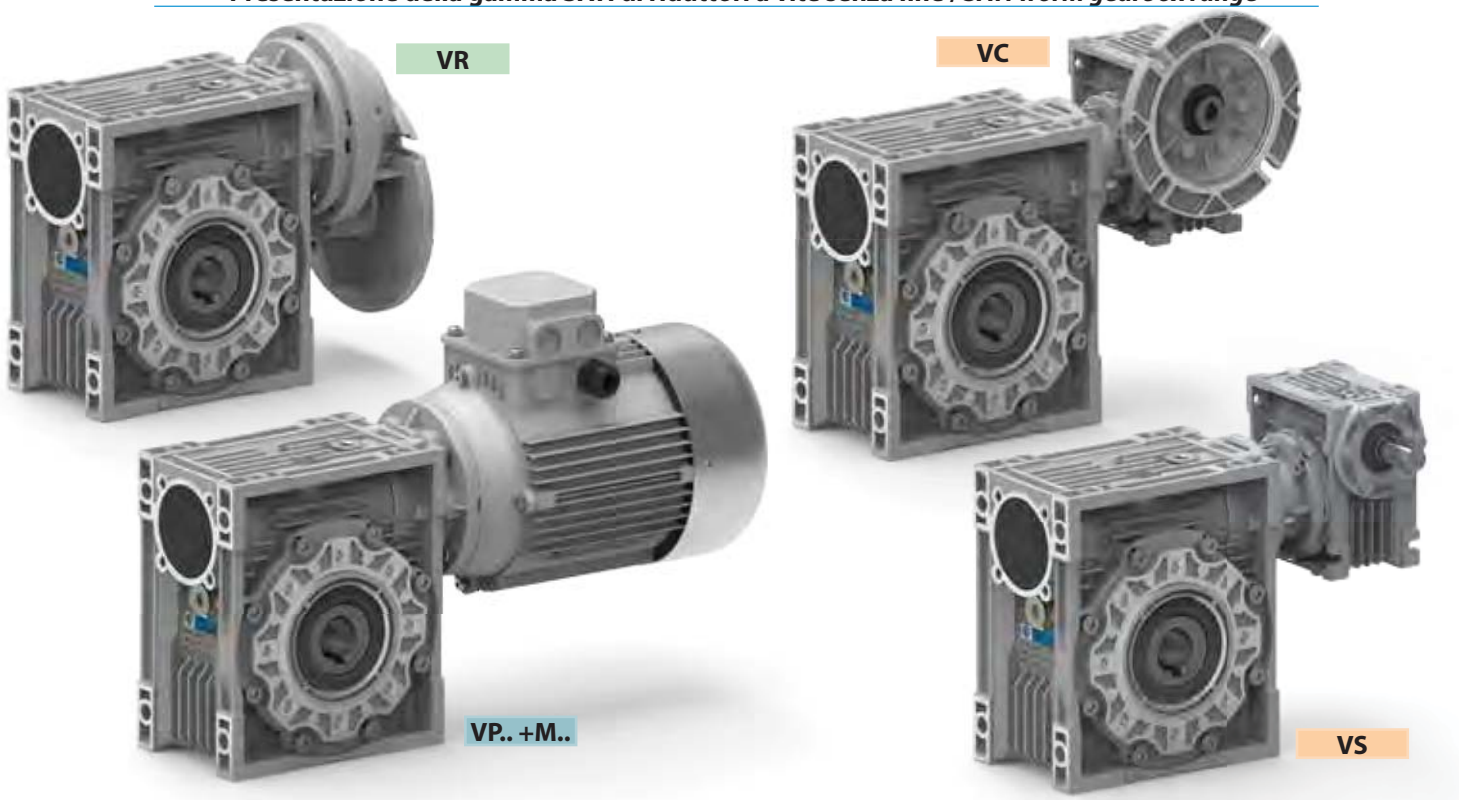
All single and combination gearboxes are available both with PAM input, in other words ready for direct connection to the electric motor, and with the extended solid input shaft for connection to an input transmission.

Product designation, as is also clearly shown in the tables below, is as follows:

- ***VP** single gearbox, with **PAM pre-arrangement***
- ***VI** single gearbox with **solid input shaft***
- ***VC** combination gearbox, with **PAM** pre-arrangement*
- ***VS combination** gearbox with solid input shaft*
- ***VR helical worm gearboxes** supplied only in the **PAM** version*

The reason why the helical worm gearboxes are supplied only in the PAM version is that the pre-stage acts, to all practical effects, as an input reduction stage, in the same way as a mechanical transmission, so that the usage of an input transmission is meaningless.

Presentazione della gamma SATI di riduttori a vite senza fine / *SATI worm gearbox range*



Gli **alberi uscita standard**, chiamati anche alberi lenti o a bassa velocità, sono cavi.
Come accessori, sono fornibili alberi uscita maschi semplici e doppi, oltreché il **braccio di reazione** per montaggio pendolare.

*The **standard output shafts**, also called low speed shafts, are hollow.*
*Single and double solid output shafts can be supplied as accessories, as well as the **torque arm** for shaft-mounting.*

Le carcasse dei riduttori della gamma a vite senza fine hanno forma quadra, consentendo una notevole flessibilità di installazione.
I piedi sono incorporati alla carcassa ed i riduttori sono idonei per montaggio su pavimento, soffitto e pareti laterali.
La versatilità e flessibilità del montaggio è uno dei reali punti di forza di questa gamma.
Come opzioni, SATI offre anche una vasta gamma di **flange in uscita**, che possono essere montate sul lato destro o sinistro dell'uscita riduttore.
Nelle pagine di catalogo dedicate ad ogni singola grandezza, è possibile prendere visione del numero e delle dimensioni delle flange uscita disponibili.

The housings of the worm gearboxes have a square shape, permitting high installation flexibility.
The feet are incorporated into the housing and the gearboxes are ideal for mounting on the floor, ceiling and side walls.
Assembly versatility and flexibility is one of the actual strong points of this range.
*As options, SATI can also offer a **wide range of output flanges**, which can be fitted on the right or left side of the gearbox output.*
You can look at the number and size of the available output flanges for each size on the pages in the catalogue devoted to each size.

I due stadi dei riduttori combinati sono accoppiati fra di loro mediante flangia di combinazione ed albero di combinazione, il che rende particolarmente agevole e flessibile l'accoppiamento.

The combination gearboxes are mutually fitted by means of a combination flange and a combination shaft, which makes fitting particularly easy and flexible.

MATERIALI E PROPRIETA'

La carcassa dei riduttori dalla grandezza 25 fino alla grandezza 90 è costruita in **alluminio** da pressofusione.
La carcassa dei riduttori dalla grandezza 110 alla grandezza 150 è costruita in **ghisa** grigia.
Tutte le viti senza fine sono in acciaio legato da cementazione ad alta resistenza e sono cementate, temprate e sottoposte a rinvenimento di distensione.
Le corone elicoidali sono in **bronzo** ad alta resistenza all'usura.
Gli alberi lenti cavi sono in ghisa grigia.

MATERIALS AND PROPERTIES

*The housing of the gearboxes from size 25 up to size 90 is made of pressure die **casting aluminium.***
*The housing of the gearboxes from size 110 up to size 150 is made of **grey cast iron.***
All worms are made of high strength, case-hardening alloy steel and are case-hardened, hardened and subjected to stress relieving.
*The helical wormwheels are made of high wear resistant **bronze.***
The hollow output shafts are made of grey cast iron.

PUNTI DI FORZA DELLA GAMMA SATI

I riduttori a vite senza fine sono i tipi di riduttore più versatili e flessibili e si prestano ad una vastissima gamma di possibili applicazioni.
I riduttori della gamma SATI hanno il grande vantaggio di essere facili da installare e disinstallare, nei quali le esigenze di manutenzione sono veramente ridotte al minimo.
Efficienti e robusti, si adattano ad ogni condizione di impiego che rientri nelle relative specifiche di funzionamento.

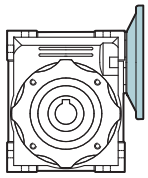
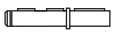
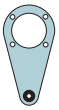
STRONG POINTS OF THE SATI RANGE

The worm gearboxes are the most versatile and flexible types of gearboxes and prove to be ideal for a wide range of possible applications.
The gearboxes in the SATI range have the great advantage of being easy to install and uninstall, where maintenance needs are really minimal.
Strong and efficient, they adapt to all conditions of use within their operating specifications.

Designazione / *Designation*

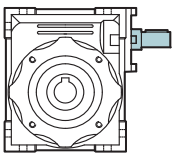
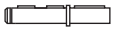
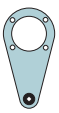
RIDUTTORE A VITE SENZA FINE QUADRO FLANGIATO / *WORM GEARBOXES WITH FLANGE*

ACCESSORI / *ACCESSORIES*

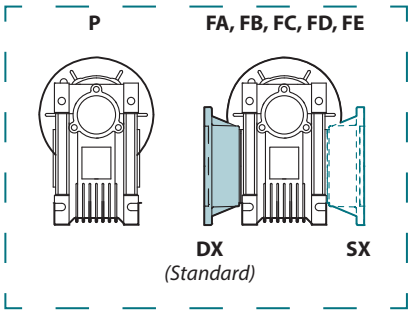
Riduttore *Gearbox*	Grandezza *Size*	Versione riduttore *Gearbox Version*	Posizione flangia uscita *Position Output flange*	Rapporto rid. = i *Ratio = i*	Predispos. attacco motore *Motor coupling*	Forma costruttiva *Version*	Posizione di mont. *Mounting position*	Seconda entrata *Additional input*	Albero uscita *Output shaft*	Braccio di reazione *Torque arm*
VP	**040**	**P**	**-**	**R10**	**63**	**B5**	**U**	**-**	**AD**	**BR**
	025 030 040 050 063 075 090 110 130 150	P FA FB FC FD FE p.60	- DX SX	R7.5 R10 R15 R20 R25 R30 R40 R50 R60 R80 R100	56 63 71 80 90 100 112 132	B5 B14	U* B3 B6 B7 B8 V5 V6 p.8	- B (1) p.92	AS  AD p.93	BR  p.93

RIDUTTORE A VITE SENZA FINE QUADRO / *WORM GEARBOXES*

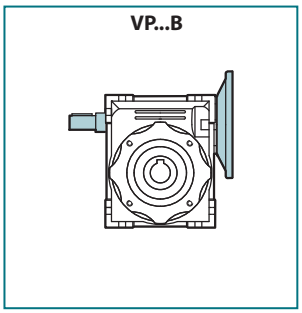
ACCESSORI / *ACCESSORIES*

Riduttore *Gearbox*	Grandezza *Size*	Versione riduttore *Gearbox Version*	Posizione flangia uscita *Position Output flange*	Rapporto rid. = i *Ratio = i*	Posizione di mont. *Mounting position*	Seconda entrata *Additional input*	Albero uscita *Output shaft*	Braccio di reazione *Torque arm*
VI	**040**	**P**	**-**	**R10**	**U**	**-**	**AD**	**BR**
	030 040 050 063 075 090 110 130 150	P FA FB FC FD FE p.60	- DX SX	R7.5 R10 R15 R20 R25 R30 R40 R50 R60 R80 R100	U* B3 B6 B7 B8 V5 V6 p.8	- B p.92	AS  AD p.93	BR  p.93

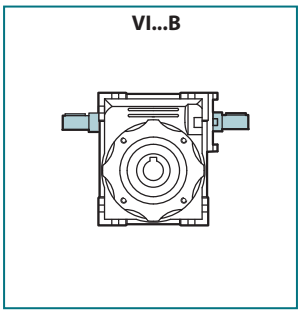
Versione riduttore / *Gearbox version*



Seconda entrata / *Additional input*



Seconda entrata / *Additional input*



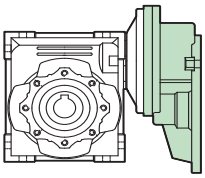
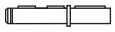
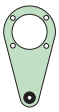
(1) Versione seconda entrata disponibile dalla gr. 30 alla 150.

* Dalla gr. 25 alla 63, i riduttori sono forniti in posizione U = Universale

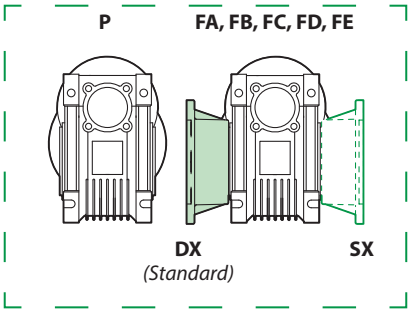
(1) Version with additional input is available from size 30 to 150.

** From size 25 to 63, the gearboxes are supplied in position U = Universal*

Designazione / *Designation*

RIDUTTORE A VITE SENZA FINE CON PRECOPPIA / *HELICAL WORM GEARBOXES*										ACCESSORI / *ACCESSORIES*	
Riduttore *Gearbox*	Grandezza precoppia *Size pre-stage*	Grandezza riduttore *Size gearboxe*	Versione riduttore *Gearbox Version*	Posizione flangia uscita *Position Output flange*	Rapporto rid. = i *Ratio = i*	Predispos. attacco motore *Motor coupling*	Forma costruttiva *Version*	Posizione di montaggio *Mounting position*		Albero uscita *Output shaft*	Braccio di reazione *Torque arm*
VR	**063/ 040**		**P**	**-**	**R73.5**	**63**	**B5**	**U**		**AD**	**BR**
	**063/040** **063/050** **071/050** **071/063** **071/075** **080/075** **080/090** **080/110** **090/090** **090/110** **090/130**		**P** **FA** **FB** **FC** **FD** **FE**	**-** **DX** **SX**	**R61.2** **R73.5** **R75** **R88.2** **R90** **R98** **R117.5** **R120** **R122.5** **R147** **R150** **R176.4** **R180** **R235.2** **R240** **R294** **R300** (1) p.20	**63** **71** **80** **90**	**B5**	**U*** **B3** **B6** **B7** **B8** **V5** **V6** p.8		**AS**  **AD** p.93	**BR**  p.93

Versione riduttore / *Gearbox version*



(1) Rapporti di riduzione reali del kit precoppia, consultare tab. p.20

* Dalla gr. 25 alla 63, i riduttori sono forniti in posizione U = Universale

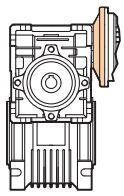
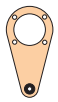
(1) Actual reduction ratios, see table p.20

** From size 25 to 63, the gearboxes are supplied in position U = Universal*

Designazione / *Designation*

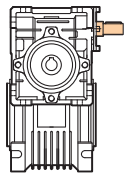
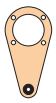
RIDUTTORE COMBINATI A VITE SENZA FINE / COMBINATION *WORM GEARBOXES*

ACCESSORI / *ACCESSORIES*

Riduttore *Gearbox*	Grandezza riduttore entrata *Size input gearbox*	Grandezza riduttore uscita *Size output gearbox*	Versione riduttore *Gearbox Version*	Posizione flangia uscita *Position Output flange*	Rapporto rid. = i *Ratio = i*	Predispos. attacco motore *Motor coupling*	Forma costruttiva *Version*	Esecuzione *Version*	Posizione di montaggio *Mounting position*	Albero uscita *Output shaft*	Braccio di reazione *Torque arm*
VC	**030/040**		**P**	**-**	**R5000**	**63**	**B5**	**ADO**	**U**	**AD**	**BR**
	025/030 025/040 030/040 030/050 030/063 040/075 040/090 050/110 063/130 063/150		P FA FB FC FD FE	- DX SX	R100 R150 R200 R250 R300 R400 R500 R600 R750 R900 R1200 R1500 R1800 R2400 R3000 R4000 R4800 R5000	56 63 71 80 90	B5 B14	ADO BDO ADV BDV ASO BSO ASV BSV p.9	U* B3 B6 B7 B8 V5 V6 (1) p.8	AS AD p.93	BR  p.93

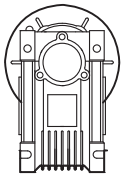
RIDUTTORE COMBINATI A VITE SENZA FINE / COMBINATION *WORM GEARBOXES*

ACCESSORI / *ACCESSORIES*

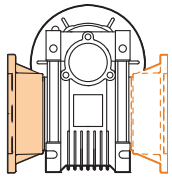
Riduttore *Gearbox*	Grandezza riduttore entrata *Size input gearbox*	Grandezza riduttore uscita *Size output gearbox*	Versione riduttore *Gearbox Version*	Posizione flangia uscita *Position Output flange*	Rapporto rid. = i *Ratio = i*	Esecuzione *Version*	Posizione di montaggio *Mounting position*	Albero uscita *Output shaft*	Braccio di reazione *Torque arm*
VS	**030/040**		**P**	**-**	**R5000**	**ADO**	**U**	**AD**	**BR**
	030/040 030/050 030/063 040/075 040/090 050/110 063/130 063/150		P FA FB FC FD FE	- DX SX	R100 R150 R200 R250 R300 R400 R500 R600 R750 R900 R1200 R1500 R1800 R2400 R3000 R4000 R4800 R5000	ADO BDO ADV BDV ASO BSO ASV BSV p.9	U* B3 B6 B7 B8 V5 V6 (1) p.8	AS AD p.93	BR  p.93

Versione riduttore / *Gearbox version*

P



FA, FB, FC, FD, FE



DX *(Standard)*

SX

(1) Posizione di montaggio riferita al riduttore uscita

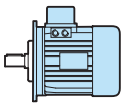
* Dalla gr. 25 alla 63, i riduttori sono forniti in posizione U = Universale

(1) Mounting position refers to output gearbox

** From size 25 to 63, the gearboxes are supplied in position U = Universal*

Designazione / *Designation*

MOTORE / *MOTOR*

Motore *Motor*	Classe energetica * *Energy class* *	Grandezza *Size*	Potenza kW *Power kW*	Numero di poli *Number of poles*	Forma costruttiva *Version*
M	**1**	**63**	**0.25**	**4P**	**B5**
 p.99	**1** **2** **3**	**56** **63** **71** **80** **90** **100** **112** **132** **160**	**0.06** **0.09** **0.12** **0.18** **0.25** **0.37** **0.55** **0.75** **1.1** **1.5** **2.2** **3** **4** **5.5** **7.5** **11** **15**	**2P** **4P** **6P**	**B3** **B5** **B14**

*

I motori rispettano la normativa IEC 60034-30:2008 in riferimento alle "Classi di rendimento dei motori asincroni trifase a gabbia ad una velocità (codice IE)".

Tale norma prevede l'introduzione delle seguenti classi energetiche:
- IE1 fino a 0.55 kW (codice 1 in designazione SATI)
- IE2 da 0.75 kW a 5.5 kW (codice 2 in designazione SATI)
- IE3 da 7.5 kW a 15 kW (codice 3 in designazione SATI)

Sono esclusi dal sistema di classificazione:

- i motori autofrenanti;
- i motori realizzati per funzionamento in ambienti potenzialmente esplosivi (ATEX)
- i motori realizzati per breve tempo di funzionamento (servizio S2) o per operazioni di commutazione (servizio da S3 con rapporto di intermittenza nominale < 80% a S10);
- i motori realizzati solo per funzionamento con convertitore in accordo con la IEC 60034-25;
- i motori completamente integrati in una macchina (per es. pompe, ventilatori e compressori) che non possono essere provati separatamente dalla macchina.

*

Motors comply with IEC 60034-30:2008 regulation, with reference to "Efficiency classes of single speed, asynchronous three-phase cage motors (IE code)".

This standard introduces the following energy classes:
- IE1 up to 0.55 kW (code 1 in SATI designation)
- IE2 from 0.75 kW to 5.5 kW (code 2 in SATI designation)
- IE3 over 7.5 kW (code 3 in SATI designation)

Our classification does not include the following types:

- brake motors
- motors designed for operation in potentially explosive environments (ATEX)

- motors designed for a short-time duty (S2 duty) or for switching operations (from S3 duty with rated intermittence ratio < 80% to S10 duty);

- motors designed for the sole operation with converter in compliance with IEC 60034-25;
- motors fully integrated in machines (i.e.. pumps, fans and compressors) which cannot be tested separately from the machine.

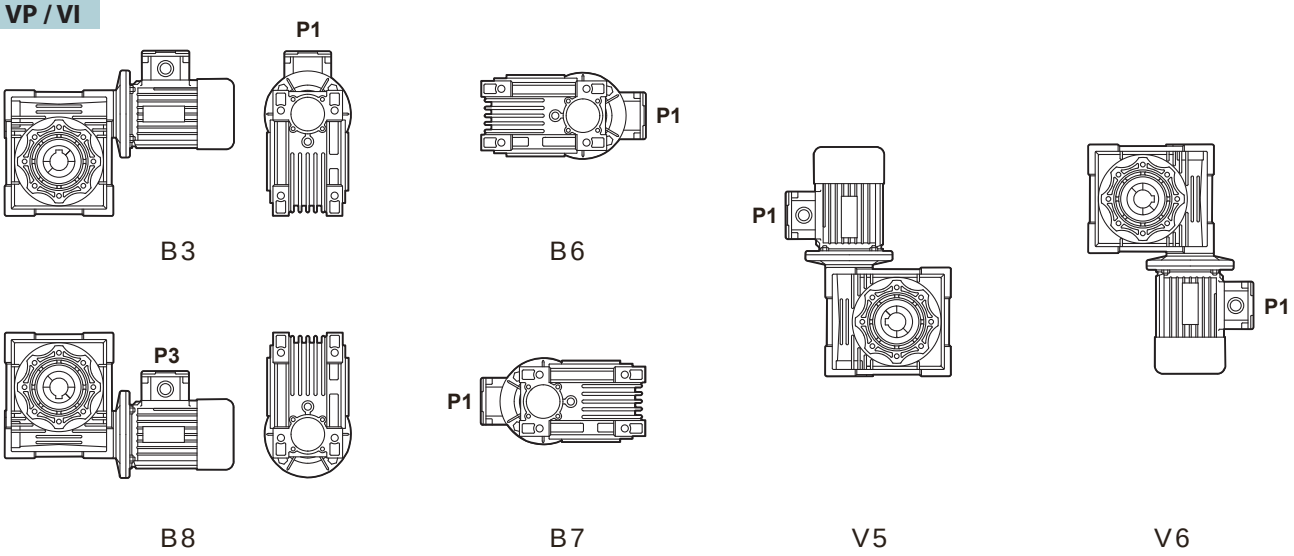
VP 040 ... + M 1 63 ... - P1

La designazione dei motoriduttori si ottiene sommando il codice riduttore al codice motore.
Per maggiori informazioni contattare il nostro l'ufficio tecnico.

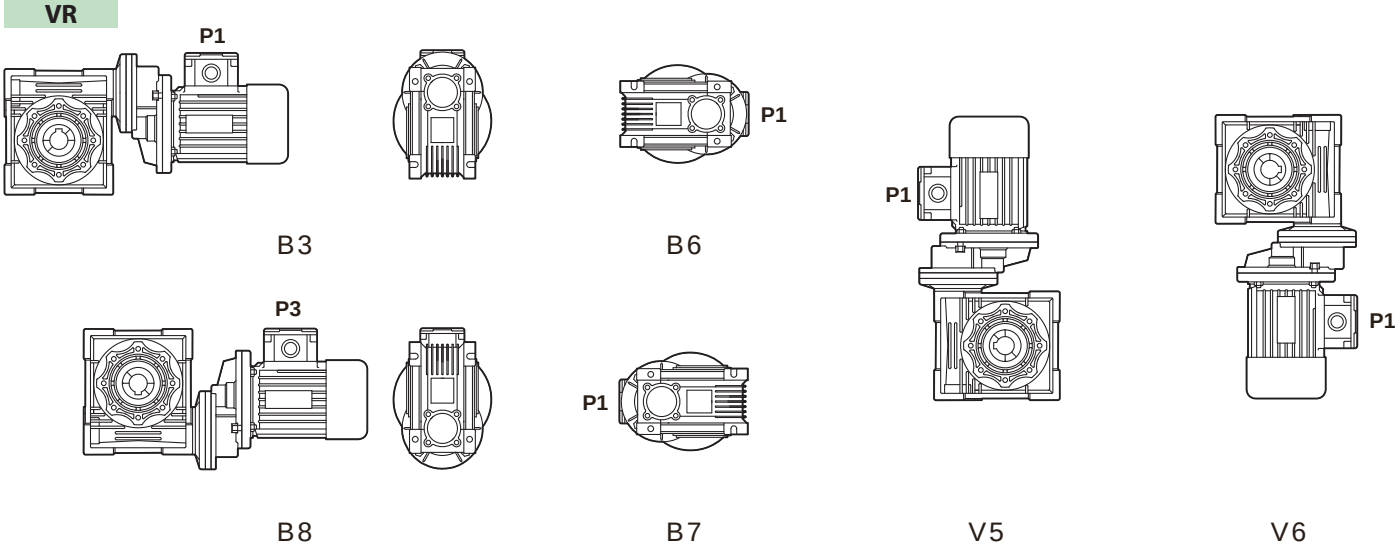
The designation of gearmotors is obtained by summing the gear code with the motor code.
For further information please contact our Technical Office.

Posizioni di montaggio / *Mounting positions*

VP / VI

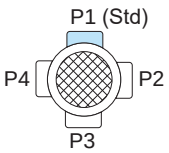


VR

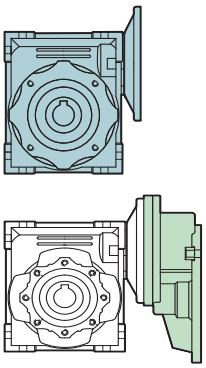


Negli schemi di montaggio del motoriduttori sopra riportati, è indicata anche la posizione standard (1) della morsettiera mediante un numero il cui significato è rappresentato nel disegno seguente. In caso di particolari esigenze specificare in fase d'ordine la posizione desiderata (P1, P2, P3 o P4) della morsettiera.

The following draw, describing the gearmotor mounting positions, shows also the standard position (1) of the terminal box. It can be identified by a number, whose meaning is described in the following drawing. For special requirements, orders must specify the position required (P1, P2, P3 or P4) of the terminal box.



Quantità olio / *Quantity of oil*



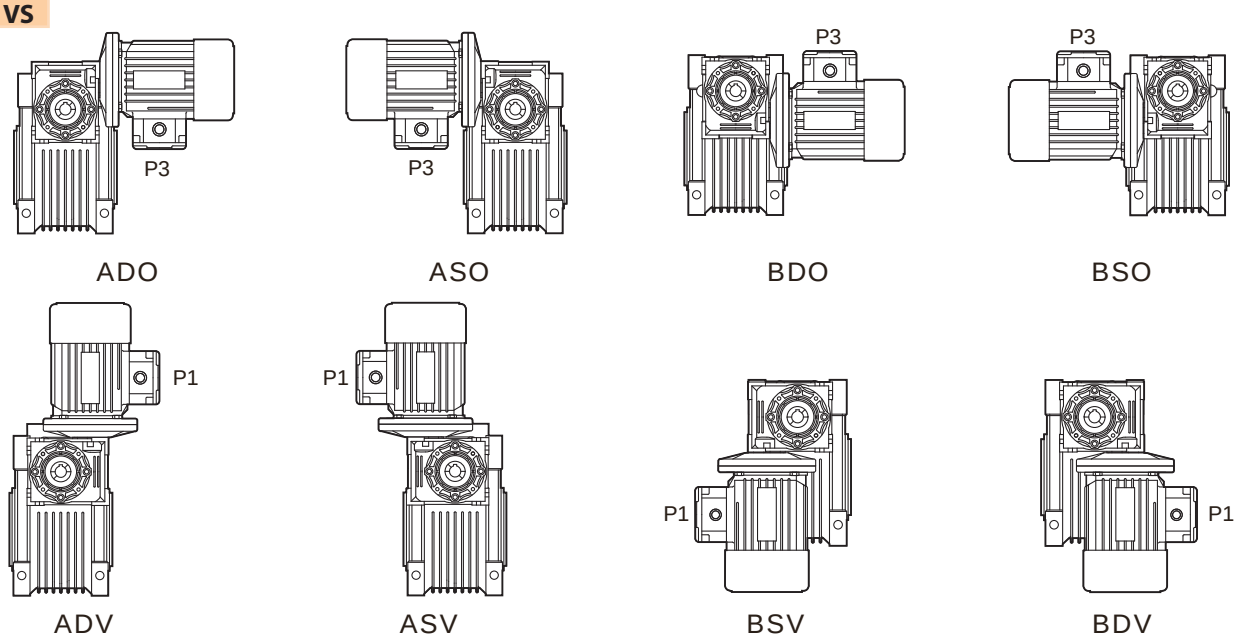
VP / VI	025	030	040	050	063	075	090	110	130	150
B3	0.02	0.04	0.08	0.15	0.3	0.55	1	3	4.5	7
B8								2.2	3.3	5.1
B6 - B7								2.5	3.5	5.4
V5								3	4.5	7
V6								2.2	3.3	5.1

VR	063	071	080	090
	0.05	0.07	0.15	0.15

Q.tà olio in litri
Oil quantity in litres

Esecuzione / *Versions*

VC / VS



Nel caso dei riduttori combinati sono importanti tanto l'esecuzione quanto la posizione di montaggio.
L'esecuzione rappresenta la posizione reciproca che i due riduttori hanno uno rispetto all'altro.
Nelle immagini che definiscono le varie forme di esecuzione, il riduttore è sempre rappresentato in posizione di montaggio B3.
Per quel che riguarda invece la posizione di montaggio, essa fa esplicito riferimento al secondo riduttore, quello situato a valle.
Le varie posizioni di montaggio (indicate con le sigle B3, V5 ecc..) si riferiscono a detto riduttore e sono conformi a quanto indicato nelle tabelle delle posizioni di montaggio dei riduttori singoli.

In the specific case of combination worm gearboxes, both the version and the mounting position have a great importance.
The version means the mutual position the two single worm gearboxes have in relation one with the other.
In the sketches that define the several possible versions, the combined unit is always shown in the mounting position B3.
On the other hand, as far as the mounting position is concerned, this one makes explicit reference to the second worm gearbox, the one located downstream.
The various mounting positions (indicated by the descriptions B3, V5 etc..) refer to said unit and wholly conform to what is stated in the tables of the mounting positions of the single worm gearboxes.

Lubrificazione / *Lubrication*

Tutti i riduttori SATI serie VP, VI, VR, VC e VS sono forniti completi di lubrificante.
Dalla grandezza 25 fino alla 90 i riduttori sono lubrificati con olio sintetico e non necessitano di manutenzione; per questa ragione sono definiti riduttori "lifetime".
Queste grandezze non richiedendo manutenzione e sono prive di tappi.
Dalla grandezza 110 alla 150 i riduttori sono lubrificati con olio minerale e vengono forniti completi di lubrificante nella quantità prevista in posizione di montaggio B3. In caso di posizione di montaggio diversa dalla B3, sarà compito del cliente adattare la quantità di olio alla posizione di montaggio (v. tab. precedenti). E' inoltre necessario al momento della messa in opera del riduttore, sostituire il tappo di carico, fornito chiuso per motivl di trasporto, con quello di sfiato fornito a corredo del riduttore stesso. La mancata installazione del tappo di sfiato può portare ad un malfunzionamento del riduttore e a possibili perdite di lubrificante.
Sarà inoltre cura del cliente installare i tappi di livello e di scarico nella corretta collocazione per la specifica posizione di montaggio adottata.
Per le grandezze dalla 110 alla 150, successivamente alla fase di rodaggio (circa 300 ore di funzionamento) si consiglia la sostituzione dell'olio.
Nelle tabelle precedenti sono riportate le quantità indicative di lubrificante contenute nei singoli riduttori in funzione delle posizioni di montaggio.
Nelle sostituzioni o nei rabbocchi, ricordarsi sempre di verificare che il lubrificante abbia raggiunto il livello corretto guardando nella spia trasparente del tappo di livello (il corretto livello è in mezzeria).

All SATI VP, VI, VR, VC and VS series gearboxes are supplied complete with lubricant.
From size 25 to 90, the gearboxes are lubricated with synthetic oil and do not require any maintenance; for this reason, they are called lifetime gearboxes.
These maintenance-free sizes have no plugs.
From size 110 to 150, the gearboxes are lubricated with mineral oil and are supplied with the required oil amount for the mounting position B3. For mounting positions other than B3, it will be the responsibility of the customer to adjust the oil amount to the needs of the specific mounting position (see previous tab.). It is also necessary, at the time of installation of the gearbox, to replace the filler plug, supplied closed for reasons of transport, with the breather plug supplied with the gearbox itself. Failure to install the breather plug can lead to gearbox malfunctioning and possibly oil leakage.

It will also be necessary to remember to install the level and unloading plugs in the correct place for the specific mounting position.
For sizes from 110 to 150, after the running-in phase (approximately 300 hours of operation) we recommend changing the oil.
The above tables give the approximate amounts of lubricant contained in the single gearboxes according to the mounting positions.
When changing the oil or topping up, always remember to check that the lubricant reaches the correct level by looking through the window in the level plug (the correct level is in the centre).

VP / VI	**025 - 030 - 040 - 050 - 063 - 075 - 090**	**110 - 130 -150**
Lubrificante / *Lubricant*	**Olio sintetico / *Synthetic oil***	**Olio minerale / *Mineral oil***
°C Ambiente / *Ambient*	-25 ° / +50 °C	-5 ° / +40 °C
ISO	VG 320	VG 220
SHELL	TIVELA OIL S 320	OMALA OIL 220
MOBIL	SHC 632	MOBILGEAR 630
BP	ENERGOL SGXP320	ENERGOL GRXP 220
CASTROL	ALPHA SYNT PG320	ALPHA MAX 220

Controllo del livello e cambi dell'olio / *Level check and oil change*

Sono richiesti e necessari solamente per i riduttori lubrificati con olio minerale.
In linea di massima, si consiglia di provvedere al cambio dell'olio con la seguente frequenza;
- Temperatura operativa minore o uguale a 60 °C:
  servizio continuo: 5000 ore
  servizio intermittente: 8000 ore
- Temperatura operativa maggiore di 60 °C:
  servizio continuo: 2500 ore
  servizio intermittente: 5000 ore

Gli attuali riduttori non richiedono più come requisito indispensabile il cambio dell'olio dopo un periodo iniziale di rodaggio.

These actions are needed only for gearboxes lubricated with mineral oil.

Generally, it is advisable to change the oil with the following frequency:

- *Operating temperature below 60°C*
  continuous service: 5000 hours
  intermittent service: 8000 hours
- *Operating temperature above 60°C*
  continuous service: 2500 hours
  intermittent service: 5000 hours

The current gearboxes no longer require an oil change as a prerequisite after an initial run-in period.

Simbologia / *Symbols*

n_1	[min^{-1}]	Velocità in ingresso / *Input speed*
n_2	[min^{-1}]	Velocità in uscita / *Output speed*
i		Rapporto di riduzione / *Ratio*
Mm_2	[Nm]	Coppia massima in uscita / Max *output torque*
M_2	[Nm]	Coppia trasmessa / *Output torque*
Mr_2	[Nm]	Coppia richiesta / Required *torque*
Pm_1	[kW]	Potenza massima in entrata / *Max input power*
Pm_2	[kW]	Potenza massima in uscita / *Max output power*
Pn_1	[kW]	Potenza nominale in entrata / *Nominal input power*
Rd		Rendimento dinamico / *Dynamic efficiency*
Rs		Rendimento statico / *Static efficiency*
fs		Fattore di servizio / *Service factor*
Fr_1	[N]	Carico radiale ammissibile in entrata / *Permitted input radial load*
Fa_1	[N]	Carico assiale ammissibile in entrata / *Permitted input axial load*
Fr_2	[N]	Carico radiale ammissibile in uscita / *Permitted output radial load*
Fa_2	[N]	Carico assiale ammissibile in uscita / *Permitted output axial load*

Introduzione / *Introduction*

La corretta selezione dei riduttori a vite senza fine avviene seguendo la successione degli argomenti esposti in questo catalogo. Di seguito vengono indicati i principali aspetti corredati delle relative indicazioni.

To select the worm gearboxes correctly, please follow the sequence of topics covered in this catalogue. Here are the main aspects along with the relevant information.

n_1 (min^{-1})

Velocità entrata / *Input speed*

Indica la velocità in entrata al riduttore vite senza fine.
Dipende dal tipo di motorizzazione prescelta.
Le velocità in ingresso si riferiscono all'impiego nei paesi in cui la frequenza della corrente alternata è 50 Hz.
Per valori di velocità diversi da quelli riportati in questo documento, contattare servizio tecnico Sati.

This indicates the worm gearbox input speed.
It depends on the type of motor drive selected.
The input speeds relate to use in countries where the alternate current frequency is 50 Hz.
For speed values other than those stated in this document, please contact the Sati technical service.

i

Rapporto di riduzione / *Reduction ratio*

In generale, esso dipende dal numero di denti degli ingranaggi accoppiati.
Nel caso di riduttori a vite senza fine, però, il rapporto di riduzione si ottiene dividendo il numero di denti della corona elicoidale per il numero di filetti, o principi, della vite.
Viene definito dalla seguente relazione:

Generally speaking, it depends on the number of teeth of the matching gears.
In the case of worm gearboxes, however, the reduction ratio is obtained by dividing the number of teeth of the helical wormwheel by the number of threads, or starts, of the worm.
It is defined by the following equation:

$$i = \frac{n_1}{n_2}$$

n_2 (min^{-1}) — Velocità in uscita / *Output speed*

Indica la velocità in uscita al riduttore vite senza fine.
Si ricava dalla relazione precedente:

This indicates the worm gearbox output speed.
It is obtained from the previous equation:

$$n_2 = \frac{n_1}{i}$$

Mm_2 (Nm) — Coppia massima in uscita / *Max output torque*

Indica la coppia in uscita massima trasmissibile dal riduttore considerando un funzionamento con servizio di carico continuo uniforme, corrispondente ad un fattore di servizio pari a 1, riferito ad un determinato valore di velocità n_1.
Tale valore corrisponde al valore di coppia trasmessa dalla versione riduttore (albero sporgente in ingresso) e può essere relazionato alla coppia trasmessa M_2 tramite la seguente formula:

This indicates the maximum output torque that can be transmitted by the gearbox considering operation with a service of continuous uniform load, corresponding to a service factor of 1, relating to a specific speed value n_1.

This value corresponds to the torque transmitted by the gearbox version (extended solid input shaft) and may be related to the transmitted torque M_2 using the following formula:

$$Mm_2 = M_2 \cdot fs$$

M_2 (Nm) — Coppia trasmessa / *Output torque*

Indica la coppia in uscita trasmessa dal riduttore.
Dipende dalla velocità n_1, dalla potenza P_1 applicata in ingresso al riduttore (nel caso del motoriduttore $P_1 = Pn_1$) e dal rendimendo dinamico Rd.
Può essere ricavata dalla seguente relazione:

This indicates the output torque transmitted by the gearbox.
It depends on the speed n_1, the power P_1 applied at the gearbox input (for gearmotor $P_1 = Pn_1$) and the dynamic efficiency Rd.
It can be obtained from the following equation:

$$M_2 = \frac{9550 \cdot P_1 \cdot Rd}{n_2}$$

Mr2 (Nm) — Coppia richiesta / *Required torque*

Indica la coppia richiesta dall'applicazione in uscita al riduttore.
E' un valore che deve essere calcolato in funzione dei dati dell'applicazione o che comunque l'utilizzatore del riduttore deve conoscere.

This indicates the torque required by the application at the gearbox output.
It is a value to be calculated as a function of the application data or data that the gearbox user must know.

Pm_1 (kW) — Potenza massima in entrata / *Max input power*

Indica la massima potenza applicabile in ingresso al riduttore considerando un funzionamento con servizio di carico continuo uniforme, corrispondente ad un fattore di servizio pari a 1, riferito ad un determinato valore di velocità n1.
Tale valore corrisponde al valore massimo di potenza applicabile in ingresso nella versione riduttore (albero sporgente in ingresso).

This indicates the maximum applicable gearbox input power considering operation with a service of continuous uniform load, corresponding to a service factor of 1, relating to a specific speed value n1.

This value corresponds to the maximum applicable input power value in the gearbox version (extended solid input shaft).

Pm_2 (kW) — Potenza massima in uscita / *Max output power*

Indica la massima potenza trasmessa in uscita al riduttore.
Si ricava dalle relazioni seguenti:

This indicates the maximum transmitted gearbox output power.
It is obtained from the following equations:

$$Pm_2 = \frac{Mm_2 \cdot n_2}{9550}$$

$$Pm_2 = Pm_1 \cdot Rd$$

Pn_1 (kW)

Potenza nominale in entrata / *Rated input power*

Indica la potenza nominale del motore applicato in ingresso al riduttore.

This indicates the rated power of the motor applied to the gearbox input.

Rd / Rs

Rendimento / *Efficiency*

Rd: rappresenta il rendimento dinamico, definito dal rapporto tra la potenza in uscita P_2 e quella in entrata P_1 al riduttore.
Le prestazioni dei riduttori sono state determinate considerando il valore di Rd il cui valore ottimale si raggiunge nel funzionamento a regime, successivo alla fase di rodaggio.

Rd: *represents the dynamic efficiency, which is defined by the ratio of the gearbox output power P_2 to the gearbox input power P_1.*
The performance of the gearboxes has been determined considering the value of Rd, whose optimal value is reached at steady operation stage, after completion of the running-in period.

Rs: rappresenta il rendimento statico presente in fase di avviamento.
Al fine della corretta selezione del riduttore da impiegare, nel caso di applicazioni in cui non si raggiungono mai le condizioni di funzionamento a regime (es. sollevamenti), è importante declassare le prestazioni del riduttore in uscita utilizzando Rs.

Rs: *represents the static efficiency in the start-up phase.*
In order to properly select the gearbox to be used, in the case of applications that never reach steady operating conditions (e.g. lifting), it is important to downgrade the performance of the output gearbox by using Rs. In practice, performance rates are downgraded by using the ratio between Rs and Rd.

Nella tabella della pagina seguente sono riportati i valori dei rendimenti riferiti ai diversi rapporti di riduzione. Nel caso di Rd, i valori sono riferiti a n_1= 1400 rpm

The table on the next page gives the values of the efficiencies referred to different reduction ratios. In the case of Rd, the values are referred to n_1= 1400 rpm

Irreversibilità / *Irreversibility*

Strettamente legata al valore del rendimento (dinamico e statico) è l'irreversibilità del riduttore vite senza fine che consiste nell'impossibilità di porre in rotazione l'albero entrata del riduttore tramite l'applicazione di una coppia sull'albero uscita. Il livello di difficoltà con cui l'albero entrata viene posto in rotazione determina il grado di irreversibilità di un riduttore. Questo aspetto del funzionamento dei riduttori a vite senza fine cresce con l'aumentare del rapporto di riduzione (strettamente legato al rendimento) e dipende da più fattori (es. lubrificazione, presenza di vibrazioni, temperatura, ecc) e nel caso di un'applicazione in cui è richiesto un non ritorno del carico è comunque necessario dotare l'applicazione di un altro dispositivo frenante esterno perchè il vite senza fine non garantisce da solo l'assoluta assenza di movimento.

Closely tied to the efficiency value (dynamic and static ones), there is the irreversibility of the worm gearbox, that consists in the inability of putting the gearbox input shaft in rotation by applying a torque on the output shaft. The level of difficulty by which the input shaft is put in rotation gives rise to the degree of irreversibility of a gearbox.
This aspect of the operation of worm gearboxes increases as the reduction ratio increases (closely related to the efficiency) and depends on several factors (e.g. lubrication, vibrations, temperature etc.) and in the case of an application that requires no return of the load, it is anyway necessary to equip the application with an additional outer braking device, because the worm alone does not assure the absolute absence of movement.

Irreversibilità dinamica / *Dynamic irreversibility*

Rappresenta la capacità di sostegno del carico in caso di arresto o assenza dell'azione motrice.
Tale condizione è di difficile ottenimento in quanto influenzata da eventuali vibrazioni che il carico può generare e dal tipo di applicazione stessa.
Nella tabella sottostante sono indicati i vari gradi di irreversibilità dinamica:

This represents the ability to support the load when stopping or when there is no driving action.
This condition is difficult to obtain, since it is affected by the presence of any vibrations that the load might generate,as well as by the type of application.
The table below shows the varying degrees of dynamic irreversibility:

Rd	Irreversibilità dinamica	*Dynamic irreversibility*
> 0.6	Reversibilità dinamica	*Dynamic reversibility*
0.5 - 0.6	Reversibilità dinamica incerta	*Low dynamic reversibility*
0.4 - 0.5	Buona irreversibilità dinamica	*Good dynamic irreversibility*
< 0.4	Irreversibilità dinamica	*Dynamic irreversibility*

Irreversibilità statica / *Static irreversibility*

Rappresenta la capacità di impedimento alla rotazione indotta dall'albero uscita senza però escludere possibili rotazioni lente nel caso in cui il carico sia sottoposto o generi vibrazioni.
Nella tabella sottostante sono indicati i vari gradi di irreversibilità statica:

It refers to the ability of prevention of the rotation induced by the output shaft, without anyway excluding possible low speed rotations just in case the load is subject to or generates vibrations.
In the table below, the various degrees of static irreversibility are given:

Rs	Irreversibilità statica	*Static irreversibility*
> 0.55	Reversibilità statica	*Static reversibility*
0.5 - 0.6	Reversibilità statica incerta	*Low static reversibility*
< 0.4	Irreversibilità statica	*Static irreversibility*

n_1 = 1400 (min^{-1})		R5	R7.5	R10	R15	R20	R25	R30	R40	R50	R60	R80	R100
025	Rd	0.86	0.84	0.82	0.78	0.74		0.66	0.61	0.57	0.54		
	Rs	0.71	0.70	0.67	0.60	0.55		0.46	0.41	0.36	0.34		
030	Rd	0.86	0.84	0.81	0.76	0.72	0.67	0.64	0.58	0.54	0.50	0.44	
	Rs	0.71	0.66	0.62	0.54	0.50	0.43	0.39	0.35	0.31	0.27	0.23	
040	Rd	0.88	0.86	0.85	0.81	0.77	0.74	0.69	0.64	0.61	0.57	0.51	0.47
	Rs	0.72	0.69	0.65	0.58	0.53	0.5	0.44	0.4	0.36	0.32	0.28	0.24
050	Rd	0.87	0.86	0.84	0.8	0.77	0.74	0.7	0.65	0.61	0.57	0.51	0.49
	Rs	0.73	0.69	0.65	0.58	0.54	0.5	0.44	0.39	0.35	0.32	0.27	0.23
063	Rd		0.87	0.86	0.82	0.8	0.77	0.73	0.69	0.65	0.61	0.56	0.5
	Rs		0.7	0.65	0.59	0.54	0.5	0.45	0.4	0.36	0.33	0.28	0.24
075	Rd		0.88	0.87	0.84	0.81	0.79	0.75	0.71	0.68	0.64	0.59	0.54
	Rs		0.7	0.67	0.6	0.57	0.52	0.46	0.42	0.38	0.35	0.29	0.26
090	Rd		0.89	0.88	0.85	0.83	0.81	0.77	0.74	0.71	0.68	0.62	0.58
	Rs		0.72	0.69	0.63	0.59	0.55	0.49	0.45	0.41	0.38	0.32	0.28
110	Rd		0.89	0.88	0.85	0.84	0.83	0.78	0.77	0.74	0.71	0.66	0.62
	Rs		0.71	0.68	0.62	0.61	0.58	0.48	0.48	0.44	0.41	0.36	0.32
130	Rd		0.9	0.88	0.86	0.85	0.83	0.79	0.77	0.74	0.71	0.67	0.63
	Rs		0.71	0.68	0.62	0.6	0.57	0.49	0.46	0.43	0.39	0.34	0.3
150	Rd		0.91	0.9	0.88	0.86	0.84	0.83	0.78	0.76	0.73	0.68	0.64
	Rs		0.73	0.71	0.66	0.6	0.57	0.54	0.45	0.42	0.39	0.33	0.29

fs

Fattore di servizio / *Service factor*

E' un valore che prende in considerazione le varie condizioni di funzionamento dell'applicazione ed indica il sovradimensionamento da applicare ad un determinato riduttore per garantire la durata richiesta e resistenza agli urti.

I valori dei fattori di servizio sono riportati nella tabella seguente in funzione della tipologia di carico (A-B-C), dal numero di avviamenti all'ora e dalla durata del funzionamento (h/gg).

Il valore del fattore di servizio così individuato deve essere confrontato con il valore del fattore di servizio garantito dal riduttore scelto per l'applicazione (indicato nelle tabelle dati tecnici). Quest'ultimo deve essere uguale o superiore a quello individuato consultando la tabella seguente.

I valori riportati in tabella si riferiscono all'azionamento con motore elettrico. Nel caso di utilizzo di motore autofrenante è necessario considerare un numero di avviamenti doppio rispetto a quello effettivamente richiesto.

This value takes into account the different operating conditions of the application and indicates the oversizing to apply to a specific gearbox in order to ensure the required duration and the necessary impact strength.

The values of the service factors are given in the following table according to the type of load (A-B-C), the number of starts per hour and the duration of operation (hours/days).

The service factor value, determined in this way, must be compared with the value of the service factor assured by the gearbox chosen for the application (indicated in the technical data tables). The latter must be equal to or greater than the one determined by referring to the following table.

The values shown in the table refer to operation with an electric motor. When using a brake motor, it is necessary to consider twice the number of starts actually required.

Classe di carico Load class	h/gg *hours/day*	N. AVVIAMENTI/ORA / *N. START-UP/HOUR*								
		2	4	8	16	32	63	125	250	500
A **Carico uniforme** ***Uniform load***	4	0.8	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.2
	8	1.0	1.0	1.1	1.1	1.3	1.3	1.3	1.3	1.3
	16	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
	24	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8

Classe di carico Load class	h/gg *hours/day*	N. AVVIAMENTI/ORA / *N. START-UP/HOUR*								
		2	4	8	16	32	63	125	250	500
B **Carico con urti moderati** ***Moderate shock load***	4	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3
	8	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
	16	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8
	24	1.8	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2

Classe di carico Load class	h/gg *hours/day*	N. AVVIAMENTI/ORA / *N. START-UP/HOUR*								
		2	4	8	16	32	63	125	250	500
C **Carico con urti forti** ***Heavy shock load***	4	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
	8	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8
	16	1.8	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2
	24	2.2	2.2	2.2	2.2	2.5	2.5	2.5	2.5	2.5

Carichi radiali / *Radial loads*

L'applicazione sull'albero entrata o uscita del riduttore di un qualsiasi tipo di organo di trasmissione (es. pignone, pulegge ecc.) determina delle spinte radiali (Fr_1 su albero entrata, Fr_2 su albero uscita) che, se non considerate, possono portare al danneggiamento del riduttore stesso.
Il carico radiale esterno Fr agente sull'albero del riduttore è ricavabile dalla seguente relazione:

Applying any type of transmission component (e.g. sprocket, pulleys, etc.) on the gearbox input or output shaft generates radial loads (Fr_1 on the input shaft, Fr_2 on the output shaft) that, if not considered, might lead to damage to the gearbox.
The outer radial load Fr acting on the shaft of the gearbox can be obtained by the following equation:

$$Fr = \frac{2000 \cdot M \cdot w}{D}$$

in cui:
- D (mm) = diametro primitivo dell'organo di trasmissione
- w = coefficiente dipendente da tipo di trasmissione
  - w = 1.1 ruota per ingranaggio
  - w = 1.4 ruota per catena
  - w = 1.5 - 2.5 puleggia per cinghia a V

where:
- *D (mm) = pitch diameter of the transmission part*
- *w = coefficient dependent on transmission type*
  - *w = 1.1 wheel for gear*
  - *w = 1.4 wheel for chain*
  - *w = 1.5 - 2.5 pulley for V belt*

Il valore del carico radiale ricavato dalla relazione precedente è da confrontare con i valori di Fr1 (se albero entrata) o Fr2 (se albero uscita) valori indicati nelle tabelle dati tecnici del riduttore.
Devono essere soddisfatte le seguenti relazioni:

The radial load value obtained from the above equation is to be compared with the values of Fr1 (in case of input shaft) or Fr2 in case of output shaft), indicated in the gearbox technical data tables.
The following equations must be satisfied:

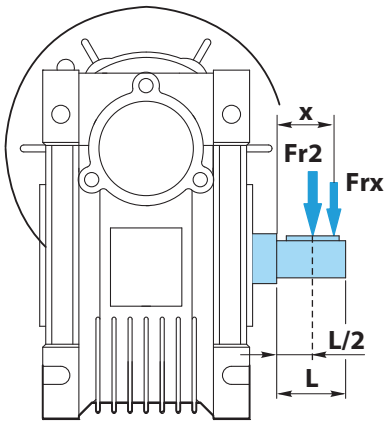
$$Fr < Fr_1 \qquad Fr < Fr_2$$

I valori di Fr1 ed Fr2 riportati nelle tabelle dati tecnici sono riferiti a carichi agenti sulla mezzeria dell'albero sporgente.
Nel caso in cui il carico sia applicato in una posizione diversa dalla mezzeria, è necessario valutarne l'effetto tramite le relazioni indicate nei paragrafi seguenti.

The values of Fr1 and Fr2 given in the technical data tables refer to loads acting on the centre line of the extended shaft.
If the load is applied at a position other than the centre line, its effect must be evaluated by using the equations given in the following paragraphs.

Fr2 (N)

Carichi radiali uscita / *Output radial loads*



VP	025	030	040	050	063	075	090	110	130	150
a (mm)	50	65	84	101	120	131	162	176	188	215
b (mm)	38	50	64	76	95	101	122	136	148	174
Fr2max (N)	1350	1830	3490	4840	6270	7380	8180	12000	13500	18000

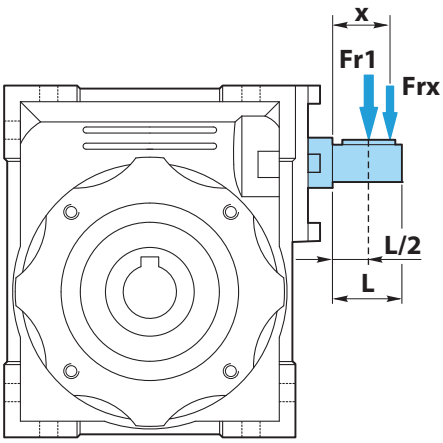
$$Frx = \frac{Fr2 \cdot a}{(b + x)} < Fr2max$$

a, b = valori riportati nella tabella
a, b = values given in the table

$$Fr < Frx$$

Fr_1 (N)

Carichi radiali entrata / *Input radial loads*



VI / VS	030	040	050	063	075	090	110	130	150
a (mm)	86	106	129	159	192	227	266	314	350
b (mm)	76	94.5	114	139	167	202	236	274	310
Fr1max (N)	210	350	490	700	980	1270	1700	2100	2800

$$Frx = \frac{Fr_1 \cdot a}{(b + x)} < Fr_1 max$$

$$Fr < Frx$$

a, b = valori riportati nella tabella
a, b = values given in the table

Fa_1 ; Fa_2 (N)

Carichi assiali / *Axial loads*

A seconda del tipo di applicazione, insieme al carico radiale può essere presente anche una forza Fa agente assialmente sull'albero (Fa_1 nel caso di albero entrata, Fa_2 nel caso di albero uscita).
Il carico assiale massimo applicabile sull'albero è da considerare pari a:

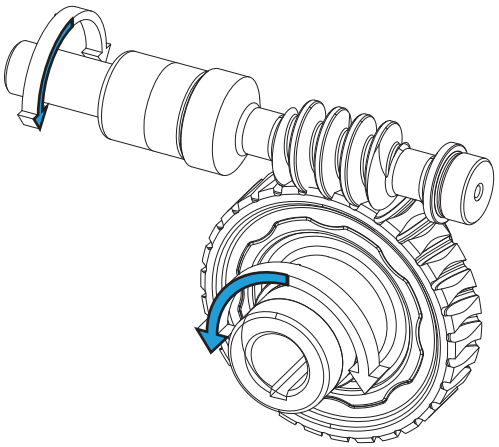
Depending on the type of application, along with the radial load there may also be a force Fa acting axially on the shaft (Fa_1 for the input shaft, Fa_2 for the output shaft).
The maximum axial load applicable to the shaft is to be considered equal to:

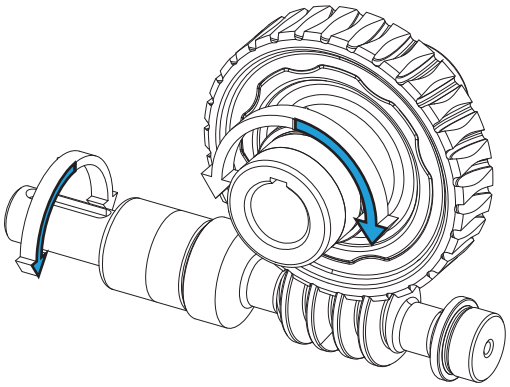
$$Fa_1 = Fr_1 \cdot 0.2$$

$$Fa_2 = Fr_2 \cdot 0.2$$

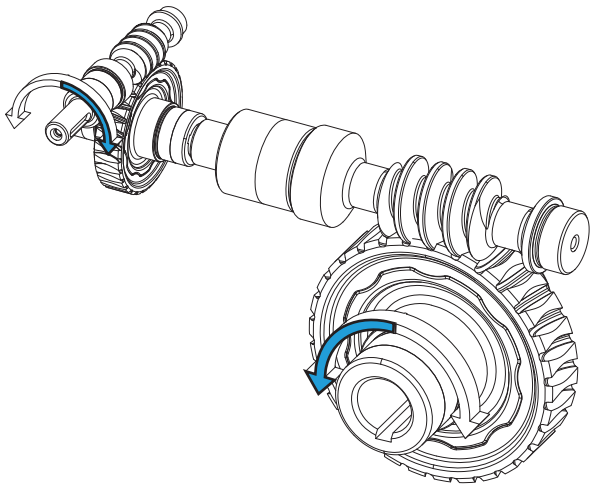
Senso di rotazione / *Direction of rotation*

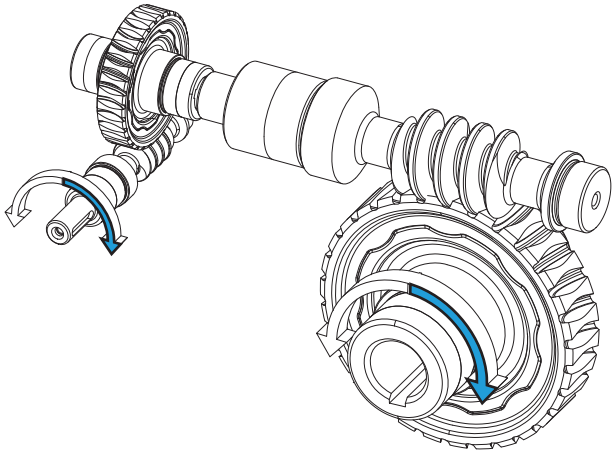
VP / VI





VC / VS





Selezione / *Selection*

Per definire il riduttore o motoriduttore idoneo per l'applicazione, come primo passo, è necessario individuare il valore del fattore di servizio fs consigliato (consultando la realtiva tabella) noti il ciclo di lavoro ed il tipo di carico.

To define the suitable gearbox or gearmotor for the application, as a first step, it is necessary to identify the recommended service factor fs (referring to the relevant table) knowing the operating cycle and the type of load.

Scelta del riduttore / *Selecting of gearbox*

Nota la velocità in entrata al riduttore n_1, dalle tabelle dati tecnici riduttore riferite a n_1= 1400 / 2800 / 900 (min^{-1}), si individuerà il prodotto che, in corrispondenza di un rapporto di riduzione prossimo a quello calcolato, ammetta una coppia:

Knowing the gearbox input speed n_1 and using the gearbox technical data tables referring to n_1= 1400 / 2800 / 900 (min^{-1}), you can identify the product that, at a reduction ratio close to the calculated one, permits a torque:

$$Mm_2 \geq Mr_2 \cdot fs$$

n_1 2800 min^{-1}

	n_2 (min^{-1})	Mm_2 (Nm)	Pm_1 (kW)	i	FR_2 (N)	FR_1 (N)
VI 090						
	373.3	210	9.0	7,5	2446	715
	280	235	7.7	10	2692	900
	186.7	270	6.0	15	3081	1034
	140	260	4.4	20	3391	1120
	112	250	3.4	25	3653	1270
	93.3	310	3.7	30	3882	1270
	70	275	2.6	40	4273	1270
	56	265	2.0	50	4603	1270
	46.7	245	1.6	60	4891	1270
	35	225	1.2	80	5383	1270

n_1 1400 min^{-1}

	n_2 (min^{-1})	Mm_2 (Nm)	Pm_1 (kW)	i	FR_2 (N)	FR_1 (N)
VI 063/150						
	9.3	1971	2.81	150	18000	500
	7.0	2084	2.28	200	18000	595
	5.6	2050	1.84	250	18000	595
	4.7	2312	1.75	300	18000	660
	3.5	2670	1.70	400	18000	595
	2.8	2330	1.27	500	18000	595
	2.3	2670	1.18	600	18000	660
	1.9	2330	0.87	750	18000	660
	1.6	2100	0.62	900	18000	700
	1.2	2670	0.66	1200	18000	700
	0.8	2100	0.37	1800	18000	700
	0.6	2670	0.39	2400	18000	700
	0.5	2330	0.29	3000	18000	700
	0.4	2330	0.24	4000	18000	700
	0.3	2330	0.21	5000	18000	700

Scelta del motoriduttore / *Selecting of gearmotor*

1 - Se è nota la potenza motore P (kW) da applicare in ingresso al riduttore e richiesta dall'applicazione, si può passare direttamente alla consultazione delle tabelle dati tecnici motoriduttori (v. p.to 2).
In alternativa, se è nota la coppia richiesta in uscita dall'applicazione Mr_2, è necessario determinare la potenza motore P con la formula:

1 - Knowing the motor power P (kW) to be applied at the gearbox input and required by the application, you can directly refer to the technical data tables for the gearmotors (see point 2).
Alternatively, if the output torque required by the application Mr_2 is known, it is necessary to determine the motor power P with the formula:

$$P = \frac{Mr_2 \cdot n_2}{9550 \cdot Rd}$$

in cui n_2 è il numero di giri richiesti in uscita al motoriduttore ed Rd è il rendimento dinamico riportato nella relativa tabella.

where n_2 is the number of revolutions required at the gearmotor output and Rd is the dynamic efficiency given in the relevant table.

2 - Consultando le tabelle dei dati tecnici dei motoriduttori, individuare la motorizzazione in cui Pn_1 risulti maggiore o uguale alla potenza P precedentemente calcolata. Con riferimento ad una velocità n_2 prossima a quella desiderata, individuare la motorizzazione in cui il fattore di servizio fs indicato sia maggiore o uguale a quello ricavato all'inizio del processo di selezione.

2 - Referring to the technical data tables for the gearmotors, identify the motor drive where Pn_1 is greater than or equal to the power P previously calculated. With reference to a speed n_2 close to the one you want, identify the motor drive where the indicated service factor fs is greater than or equal to that obtained at the beginning of the selection process.

ESEMPIO:
Dati applicazione:
P = 0.09 kW
fs = 2
$n_2 = 57\ (min^{-1})$

Motoriduttore selezionato:
VP040 i=50 -- Pn_1 = 0.09 kW -- fs = 2.8

EXAMPLE:
Application data:
P = 0.09 kW
fs = 2
$n_2 = 57\ (min^{-1})$

Selected gearmotor:
VP040 i=50 -- Pn_1 = 0.09 kW -- fs = 2.8

Pn_1 (kW)	**n_2** (min^{-1})	**M2** (Nm)	**fs**	**i**				**FR_2** (N)
0.09								
MT 056 0.09 2	**56**	9.4	1.4	50	**VP030**			1021
n1 = 2800 min^{-1}	**56**	11	2.8	50	**VP040**			1964
	46.7	11	0.7	60	**VP025**			798
	46.7	10	1.1	60	**VP030**			1085
	46.7	12	2.3	60	**VP040**			2087
	35	13	0.9	80	**VP030**			1194

Temperatura operativa / *Operating temperature*

Tutti i riduttori della nuova gamma SATI sono idonei ad operare fino ad una temperatura massima continuativa all'interno del riduttore di +85°C.

All the gearboxes in the new SATI range are suitable to operate up to a maximum continuous temperature inside the gearbox of +85°C.

Gli anelli di tenuta sono in mescole acrilonitriliche.

The shaft seals are made of acrylonitrile compounds.

Per temperature operative continuative più elevate di + 85°C, si richiede di consultare l'Ufficio Tecnico SATI per i suggerimenti del caso.
La temperatura minima a cui i riduttori possono operare è di -5°C.

For continuous operating temperatures higher than + 85°C, it is necessary to contact the SATI Engineering Department for advice.
The minimum temperature at which the gearboxes can operate is -5°C.

in caso di ambiente di lavoro con temperatura <-5 °C o > +40°C, contattare servizio tecnico SATI.

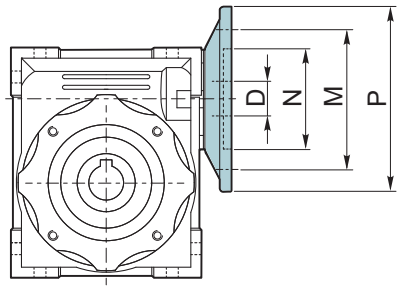
For ambient temperatures <-5°C or >+40°C, it is recommended to contact SATI technical service.

Verniciatura / *Painting*

Tutti i riduttori SATI sono verniciati a polveri epossidiche in colore grigio RAL 9006, ad esclusione delle parti lavorate per appoggi di fissaggio e accoppiamenti.

All SATI gearboxes are epoxy powder painted in the colour RAL 9006 grey, except for the machined parts, for fixing supports and couplings.

Predisposizioni IEC / *IEC Pre-arrangements*



VP	IEC	N	M	P	D											
					R5	R7.5	R10	R15	R20	R25	R30	R40	R50	R60	R80	R100
025	56B14	50	65	80	9	9	9	9	9	9	9	9	9	9	-	-
030	63B5	95	115	140	11	11	11	11	11	11	11	11	11	-	-	-
	63B14	60	75	90												
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	9	-
	56B14	50	65	80												
040	71B5	110	130	160	14	14	14	14	14	14	14	14	-	-	-	-
	71B14	70	85	105												
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	11	11	11
	63B14	60	75	90												
	56B5	80	100	120	-	-	-	-	-	-	-	-	9	9	9	9
050	80B5	130	165	200	19	19	19	19	19	19	19	19	-	-	-	-
	80B14	80	100	120												
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	14	14
	71B14	70	85	105												
	63B5	95	115	140	-	-	-	-	-	-	-	11	11	11	11	11
063	90B5	130	165	200	-	24	24	24	24	24	24	24	24	-	-	-
	90B14	95	115	140												
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	-
	80B14	80	100	120												
	71B5	110	130	160	-	14	14	14	14	14	14	14	14	14	14	14
	71B14	70	85	105												
075	100/112B5	180	215	250	-	28	28	28	28	28	28	-	-	-	-	-
	100/112B14	110	130	160												
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	24	-	-
	90B14	95	115	140												
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	19
	80B14	80	100	120												
	71B5	110	130	160	-	14	14	14	14	14	14	14	14	14	14	14
090	100/112B5	180	215	250	-	28	28	28	28	28	28	28	-	-	-	-
	100/112B14	110	130	160												
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	24	24	-
	90B14	95	115	140												
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	19
	80B14	80	100	120												
110	132B5	230	265	300	-	38	38	38	38	38	38	38	-	-	-	-
	132 B14	130	165	200												
	100/112B5	180	215	250	-	28	28	28	28	28	28	28	28	28	-	-
	100/112B14	110	130	160												
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	24	24	24
	90B14	95	115	140												
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	19
130	132B5	230	265	300	-	38	38	38	38	38	38	38	-	-	-	-
	132 B14	130	165	200												
	100/112B5	180	215	250	-	-	-	-	-	28	28	28	28	28	28	28
	100/112B14	110	130	160												
	90B5	130	165	200	-	-	-	-	-	-	-	-	-	-	24	24
150	160B5	250	300	350	-	42	42	42	42	42	-	-	-	-	-	-
	132B5	230	265	300	-	-	-	-	38	38	38	38	38	38	-	-
	100/112B5	180	215	250	-	-	-	-	-	-	-	-	28	28	28	28

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.06								
M1 056 0.06 4P... (n1 = 1400 min^{-1})	**280**	2	6.2	5	**VP025**			439
	280	2	10.1	5	**VP030**			597
	186.7	3	4.2	7.5	**VP025**			503
	186.7	3	6.9	7.5	**VP030**			683
	140	3	3.5	10	**VP025**			553
	140	3	5.4	10	**VP030**			752
	93.3	5	2.5	15	**VP025**			633
	93.3	5	3.8	15	**VP030**			861
	70	6	2	20	**VP025**			697
	70	6	3	20	**VP030**			948
	56	7	3	25	**VP030**			1021
	46.7	8	1.6	30	**VP025**			798
	46.7	8	2.5	30	**VP030**			1085
	35	10	1.3	40	**VP025**			878
	35	10	1.9	40	**VP030**			1194
	28	12*	0.9*	50	**VP025**			946
	28	11	1.5	50	**VP030**			1286
	28	13	3.3	50	**VP040**			2475
	23.3	14*	0.7*	60	**VP025**			1006
	23.3	13	1.3	60	**VP030**			1367
	23.3	14	2.6	60	**VP040**			2630
	17.5	14*	0.9*	80	**VP030**			1504
	17.5	17	1.9	80	**VP040**			2895
	14	25	1.3	100			**VC025/030**	1620
	14	20	1.5	100	**VP040**			3118
	14	26	2.7	100			**VC030/040**	2769
	9.3	32*	0.9*	150			**VC025/030**	1830
	9.3	37	1.9	150			**VC030/040**	3169
	7	41*	0.7*	200			**VC025/030**	1830
	7	47	1.4	200			**VC030/040**	3488
	7	47	2.6	200			**VC030/050**	4788
	5.6	44*	0.8*	250			**VC025/030**	1830
	5.6	55	1.1	250			**VC030/040**	3490
	5.6	55	2	250			**VC030/050**	4840
	4.7	59	1.2	300			**VC025/040**	3490
	4.7	57	1.3	300			**VC030/040**	3490
	4.7	61	2.4	300			**VC030/050**	4840
	3.5	71*	0.9*	400			**VC025/040**	3490
	3.5	70*	0.9*	400			**VC030/040**	3490
	3.5	73	1.7	400			**VC030/050**	4840
	3.5	76	3.4	400			**VC030/063**	6270
	2.8	96*	0.6*	500			**VC030/040**	3490
	2.8	82*	0.7*	500			**VC025/040**	3490
	2.8	85	1.4	500			**VC030/050**	4840
	2.8	88	2.7	500			**VC030/063**	6270
	2.3	101*	0.6*	600			**VC025/040**	3490
	2.3	104*	0.7*	600			**VC030/040**	3490
	2.3	109	1.3	600			**VC030/050**	4840
	2.3	111	2.4	600			**VC030/063**	6270
	1.9	116*	0.5*	750			**VC025/040**	3490
	1.9	121*	0.6*	750			**VC030/040**	3490
	1.9	127	1.1	750			**VC030/050**	4840
	1.9	129	2.1	750			**VC030/063**	6270
	1.6	143*	0.5*	900			**VC025/040**	3490
	1.6	139*	0.5*	900			**VC030/040**	3490
	1.6	141	1	900			**VC030/050**	4840
	1.6	148	1.8	900			**VC030/063**	6270
	1.2	171*	0.4*	1200			**VC025/040**	3490
	1.2	166*	0.4*	1200			**VC030/040**	3490
	1.2	169*	0.7*	1200			**VC030/050**	4840
	1.2	180	1.5	1200			**VC030/063**	6270
	0.93	199*	0.7*	1500			**VC030/050**	4840
	0.9	197*	0.3*	1500			**VC025/040**	3490
	0.9	196*	0.4*	1500			**VC030/040**	3490
	0.9	204	1.1	1500			**VC030/063**	6270

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.06								
M1 056 0.06 4P... (n1 = 1400 min^{-1})	**0.9**	248	1.8	1500			**VC040/075**	7380
	0.9	259	2.7	1500			**VC040/090**	8180
	0.8	217*	0.3*	1800			**VC025/040**	3490
	0.8	218*	0.3*	1800			**VC030/040**	3490
	0.8	278	1.6	1800			**VC040/075**	7380
	0.8	291	2.4	1800			**VC040/090**	8180
	0.78	222*	0.7*	1800			**VC030/050**	4840
	0.78	225*	0.9*	1800			**VC030/063**	6270
	0.6	268*	0.2*	2400			**VC025/040**	3490
	0.6	266*	0.5*	2400			**VC030/050**	4840
	0.6	330	1.1	2400			**VC040/075**	7380
	0.6	359	1.7	2400			**VC040/090**	8180
	0.58	261*	0.2*	2400			**VC030/040**	3490
	0.58	276*	0.8*	2400			**VC030/063**	6270
	0.5	324*	0.2*	3000			**VC025/040**	3490
	0.5	307*	0.4*	3000			**VC030/050**	4840
	0.5	406	1.4	3000			**VC040/090**	8180
	0.47	319*	0.7*	3000			**VC030/063**	6270
	0.47	377*	0.8*	3000			**VC040/075**	7380
	0.4	294*	0.1*	4000			**VC025/040**	3490
	0.4	279*	0.1*	4000			**VC030/040**	3490
	0.4	300*	0.2*	3200			**VC030/040**	3490
	0.35	288*	0.3*	4000			**VC030/050**	4840
	0.35	306*	0.6*	4000			**VC030/063**	6270
	0.35	355*	0.7*	4000			**VC040/075**	7380
	0.35	365	1.3	4000			**VC040/090**	8180
	0.3	356*	0.1*	5000			**VC025/040**	3490
	0.29	311*	0.3*	4800			**VC030/050**	4840
	0.28	338*	0.1*	5000			**VC030/040**	3490
	0.28	360*	0.4*	5000			**VC030/063**	6270
	0.28	419*	0.5*	5000			**VC040/075**	7380
	0.28	431	1	5000			**VC040/090**	8180
0.09								
M1 056 0.09 2P.. (n1 = 2800 min^{-1})	**373.3**	2	3.9	7.5	**VP025**			399
	373.3	2	6.5	7.5	**VP030**			542
	280	2.6	3.4	10	**VP025**			439
	280	2.6	5	10	**VP030**			597
	186.7	3.8	2.4	15	**VP025**			503
	186.7	3.7	3.5	15	**VP030**			683
	140	4.9	1.8	20	**VP025**			553
	140	4.7	2.5	20	**VP030**			752
	112	5.9	1.5	25	**VP025**			590
	112	5.5	2.9	25	**VP030**			810
	93.3	6.4	2.3	30	**VP030**			861
	93.3	6.7	13	30	**VP025**			633
	70	8.5	1.1	40	**VP025**			697
	70	8	18	40	**VP030**			948
	56	10*	0.9*	50	**VP025**			751
	56	9.4	1.4	50	**VP030**			1021
	56	11	2.8	50	**VP040**			1964
	46.7	11*	0.7*	60	**VP025**			798
	46.7	10	1.1	60	**VP030**			1085
	46.7	12	2.3	60	**VP040**			2087
	35	13*	0.9*	80	**VP030**			1194
	35	15	1.7	80	**VP040**			2298
	28	17	1.4	100	**VP040**			2475
	28	18	1.6	100			**VC025/030**	1286
	18.7	25	1.1	150			**VC025/030**	1472
	14	31*	0.9*	200			**VC025/030**	1620
	14	39	1.8	100			**VC025/040**	2769
	9.3	54	1.2	150			**VC025/040**	3488
	9.3	43	1.6	300			**VC025/040**	3490
	7	70*	0.9*	200			**VC025/040**	3488
	7	52	1.2	400			**VC025/040**	3490
	5.6	83*	0.7*	250			**VC025/040**	3490
	5.6	71*	0.8*	500			**VC025/040**	3490

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.09								
M1 056 0.09 4P.. (n1 = 1400 min^{-1})	**280**	3	4.1	5	**VP025**			439
	280	3	6.7	5	**VP030**			597
	186.7	4	2.8	7.5	**VP025**			503
	186.7	4	4.6	7.5	**VP030**			683
	140	5	2.4	10	**VP025**			553
	140	5	3.6	10	**VP030**			752
	93.3	7	1.6	15	**VP025**			633
	93.3	7	2.5	15	**VP030**			861
	70	9	1.3	20	**VP025**			697
	70	9	2	20	**VP030**			948
	56	10	2	25	**VP030**			1021
	46.7	12	1.1	30	**VP025**			798
	46.7	12	1.7	30	**VP030**			1085
	35	15*	0.9*	40	**VP025**			878
	35	14	1.2	40	**VP030**			1194
	28	17	1	50	**VP030**			1286
	28	19	2	50	**VP040**			2475
	23.3	19*	0.9*	60	**VP030**			1367
	23.3	21	1.7	60	**VP040**			2630
	17.5	26	1.3	80	**VP040**			2895
	14	38	0.8	100			**VC025/030**	1620
	14	29	1	100	**VP040**			3118
	14	39	1.8	100			**VC030/040**	2769
	14	40	3.4	100			**VC030/050**	3800
	9.3	49*	0.6*	150			**VC025/030**	1830
	9.3	56	1.3	150			**VC030/040**	3169
	9.3	56	2.4	150			**VC030/050**	4350
	7	62*	0.5*	200			**VC025/030**	1830
	7	70*	0.9*	200			**VC030/040**	3488
	7	70	1.7	200			**VC030/050**	4788
	5.6	66*	0.5*	250			**VC025/030**	1830
	5.6	83*	0.7*	250			**VC030/040**	3490
	5.6	83	1.3	250			**VC030/050**	4840
	5.6	85	2.7	250			**VC030/063**	6270
	4.7	75*	0.4*	300			**VC025/030**	1830
	4.7	88*	0.8*	300			**VC030/040**	3490
	4.7	92	1.6	300			**VC030/050**	4840
	4.7	88	2.9	300			**VC030/063**	6270
	3.5	107*	0.3*	400			**VC025/030**	1830
	3.5	107	1.2	400			**VC030/050**	4840
	3.5	114	2.2	400			**VC030/063**	6270
	2.8	115*	0.3*	500			**VC025/030**	1830
	2.8	123	1	500			**VC030/050**	4840
	2.8	132	1.8	500			**VC030/063**	6270
	2.3	135*	0.2*	600			**VC025/030**	1830
	2.3	159*	0.9*	600			**VC030/050**	4840
	2.3	166	1.6	600			**VC030/063**	6270
	1.9	151*	0.2*	750			**VC025/030**	1830
	1.9	185*	0.8*	750			**VC030/050**	4840
	1.9	194	1.4	750			**VC030/063**	6270
	1.6	178*	0.2*	900			**VC025/030**	1830
	1.6	212*	0.7*	900			**VC030/050**	4840
	1.6	200	1	900			**VC030/063**	6270
	1.2	212*	0.1*	1200			**VC025/030**	1830
	1.2	263*	0.9*	1200			**VC030/063**	6270
	0.93	305*	0.7*	1500			**VC030/063**	6270
	0.9	247*	0.1*	1500			**VC025/030**	1830
	0.9	360	1.1	1500			**VC040/075**	7380
	0.78	304*	0.1*	1800			**VC025/030**	1830
	0.78	404	1	1800			**VC040/075**	7380
	0.58	340*	0.1*	2400			**VC025/030**	1830
	0.58	496*	0.7*	2400			**VC040/075**	7380
	0.5	609*	0.9*	3000			**VC040/090**	8180
	0.47	405*	0.1*	3000			**VC025/030**	1830
	0.35	548*	0.8*	4000			**VC040/090**	8180

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

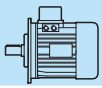
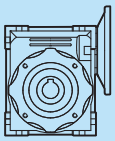
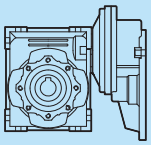
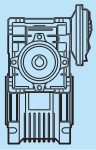
Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.12								
M1 056 0.12 2P... (n1 = 2800 min^{-1})	**373.3**	2.7	3	7.5	**VP025**			399
	280	3.5	2.6	10	**VP025**			439
	186.7	5.1	1.8	15	**VP025**			503
	186.7	5	2.6	15	**VP030**			683
	140	6.5	1.4	20	**VP025**			553
	140	6	1.9	20	**VP030**			752
	112	7.9	1.1	25	**VP025**			590
	112	8	2.1	25	**VP030**			810
	93.3	9	1	30	**VP025**			633
	93.3	9	1.7	30	**VP030**			861
	70	11*	0.8*	40	**VP025**			697
	70	11	1.3	40	**VP030**			948
	56	13	1	50	**VP030**			1021
	56	14	2.1	50	**VP040**			1964
	46.7	14*	0.8*	60	**VP030**			1085
	46.7	16	1.7	60	**VP040**			2087
	35	20	1.3	80	**VP040**			2298
	28	23	1	100	**VP040**			2475
M1 063 0.12 4P.. (n1 = 1400 min^{-1})	**280**	4	5.1	5	**VP030**			597
	186.7	5	3.4	7.5	**VP030**			683
	140	7	2.7	10	**VP030**			752
	93.3	10	1.9	15	**VP030**			861
	70	12	1.5	20	**VP030**			948
	70	13	3.3	20	**VP040**			1824
	56	14	1.5	25	**VP030**			1021
	56	16	2.5	25	**VP040**			1964
	46.7	16	1.3	30	**VP030**			1085
	46.7	17	2.6	30	**VP040**			2087
	35	19*	0.9*	40	**VP030**			1194
	35	21	1.9	40	**VP040**			2298
	28	23*	0.8*	50	**VP030**			1286
	28	25	1.5	50	**VP040**			2475
	28	26	2.9	50	**VP050**			3397
	23.3	28	1.3	60	**VP040**			2630
	23.3	29	2.3	60	**VP050**			3610
	19.1	42	1.2	73.5		**VR063/040**		2833
	17.5	34	1	80	**VP040**			2895
	17.5	35	1.9	80	**VP050**			3973
	15.9	46	1.2	88.2		**VR063/040**		3011
	14	38*	0.8*	100	**VP040**			3118
	14	52	1.4	100			**VC030/040**	2769
	14	40	1.4	100	**VP050**			4280
	14	54	2.6	100			**VC030/050**	3800
	14	54	2.8	100			**VC030/063**	4967
	11.9	57*	0.9*	117.6		**VR063/040**		3314
	11.7	58	1.8	117.6		**VR063/050**		4548
	9.5	66*	0.7*	147		**VR063/040**		3490
	9.5	68	1.3	147		**VR063/050**		4840
	9.3	74	1	150			**VC030/040**	3169
	9.3	74	1.8	150			**VC030/050**	4350
	9.3	75	2.8	150			**VC030/063**	5686
	8	75	1.1	176.4		**VR063/050**		4840
	7.9	74*	0.6*	176.4		**VR063/040**		3490
	7	94	1.3	200			**VC030/050**	4788
	7	95	2.7	200			**VC030/063**	6259
	5.8	88*	0.8*	235.2		**VR063/050**		4840
	5.6	110	1	250			**VC030/050**	4840
	5.6	114	2	250			**VC030/063**	6270
	5.6	120	3.2	250			**VC040/075**	7380

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW) 	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.12								
M1 063 0.12 4P.. (n1 = 1400 min^{-1})	**4.8**	98*	0.7*	294		**VR063/050**		4840
	4.7	119	1.2	300			**VC030/050**	4840
	4.7	117	2.2	300			**VC030/063**	6270
	4.7	134	3.3	300			**VC040/075**	7380
	3.5	142*	0.9*	400			**VC030/050**	4840
	3.5	152	1.7	400			**VC030/063**	6270
	3.5	164	2.5	400			**VC040/075**	7380
	2.8	164*	0.7*	500			**VC030/050**	4840
	2.8	171	1.3	500			**VC030/063**	6270
	2.8	188	2	500			**VC040/075**	7380
	2.8	202	2.8	500			**VC040/090**	8180
	2.3	208	1.1	600			**VC030/063**	6270
	2.3	248	1.8	600			**VC040/075**	7380
	2.3	260	2.7	600			**VC040/090**	8180
	1.9	241*	0.9*	750			**VC030/063**	6270
	1.9	299	1.5	750			**VC040/075**	7380
	1.9	313	2.2	750			**VC040/090**	8180
	1.6	297*	0.9*	900			**VC030/063**	6270
	1.6	325	1.2	900			**VC040/075**	7380
	1.6	350	2	900			**VC040/090**	8180
	1.2	360*	0.8*	1200			**VC030/063**	6270
	1.2	399*	0.9*	1200			**VC040/075**	7380
	1.2	434	1.6	1200			**VC040/090**	8180
	1.2	448	2.8	1200			**VC050/110**	10320
	0.9	495*	0.9*	1500			**VC040/075**	7380
	0.9	518	1.4	1500			**VC040/090**	8180
	0.9	527	2.4	1500			**VC050/110**	10320
	0.8	556*	0.8*	1800			**VC040/075**	7380
	0.8	547*	0.9*	1800			**VC040/090**	8180
	0.8	592	2.1	1800			**VC050/110**	10320
	0.6	766	1.5	2400			**VC050/110**	10320
	0.58	695*	0.9*	2400			**VC040/090**	8180
	0.5	884	1.2	3000			**VC050/110**	10320
	0.35	784	1	4000			**VC050/110**	10320
	0.28	928*	0.8*	5000			**VC050/110**	10320
M1 063 0.12 6P.. (n1 = 900 min^{-1})	**180**	5	3.7	5	**VP030**			692
	120	8	2.5	7.5	**VP030**			792
	90	10	2	10	**VP030**			871
	60	14	1.4	15	**VP030**			997
	60	15	3.3	15	**VP040**			1920
	45	18	1.1	20	**VP030**			1098
	45	19	2.5	20	**VP040**			2113
	36	20	1.1	25	**VP030**			1183
	36	23	1.9	25	**VP040**			2276
	30	23*	0.9*	30	**VP030**			1257
	30	25	1.9	30	**VP040**			2419
	22.5	29*	0.7*	40	**VP030**			1383
	22.5	32	1.4	40	**VP040**			2662
	22.5	32	2.6	40	**VP050**			3654
	18	36	1.2	50	**VP040**			2868
	18	38	2	50	**VP050**			3936
	15	41*	0.9*	60	**VP040**			3047
	15	42	1.7	60	**VP050**			4183
	12.3	62	1	73.5		**VR063/040**		3283
	11.3	50*	0.7*	80	**VP040**			3354
	11.3	50	1.4	80	**VP050**			4604
	10.2	68	1.1	88.2		**VR063/040**		3488
	9	56	1	100	**VP050**			4840
	7.7	83*	0.8*	117.6		**VR063/040**		3490
	7.7	84	1.5	117.6		**VR063/050**		4840
	6.1	97	1.2	147		**VR063/050**		4840
	5.1	108	1	176.4		**VR063/050**		4840
	3.8	125*	0.7*	235.2		**VR063/050**		4840

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.18								
M1 063 0.18 2P.. (n1 = 2800 min^{-1})	**373.3**	4	3.2	7.5	**VP030**			542
	280	5.2	2.5	10	**VP030**			597
	186.7	7.4	1.8	15	**VP030**			683
	140	9.5	1.3	20	**VP030**			752
	140	10	2.8	20	**VP040**			1447
	112	11	1.4	25	**VP030**			810
	112	12	2.3	25	**VP040**			1559
	93.3	13	1.2	30	**VP030**			861
	93.3	14	2.5	30	**VP040**			1657
	70	16*	0.9*	40	**VP030**			948
	70	17	1.8	40	**VP040**			1824
	70	18	3.2	40	**VP050**			2503
	56	21	1.4	50	**VP040**			1964
	56	21	2.5	50	**VP050**			2696
	46.7	24	1.2	60	**VP040**			2087
	46.7	24	2.1	60	**VP050**			2865
	35	29*	0.8*	80	**VP040**			2298
	35	30	1.5	80	**VP050**			3153
	28	34	1.2	100	**VP050**			3397
M1 063 0.18 4P.. (n1 = 1400 min^{-1})	**280**	5	3.4	5	**VP030**			597
	186.7	8	2.3	7.5	**VP030**			683
	140	10	1.8	10	**VP030**			752
	93.3	14	1.3	15	**VP030**			861
	93.3	15	2.9	15	**VP040**			1657
	70	18	1	20	**VP030**			948
	70	19	2	20	**VP040**			1824
	56	21	1	25	**VP030**			1021
	56	23	1.7	25	**VP040**			1964
	46.7	24*	0.8*	30	**VP030**			1085
	46.7	26	1.7	30	**VP040**			2087
	35	32	1.3	40	**VP040**			2298
	35	33	2.3	40	**VP050**			3153
	28	38	1	50	**VP040**			2475
	28	39	1.9	50	**VP050**			3397
	23.3	43*	0.8*	60	**VP040**			2630
	23.3	43	1.6	60	**VP050**			3610
	19.1	64*	0.8*	73.5		**VR063/040**		2833
	17.5	52	1.2	80	**VP050**			3973
	15.9	70*	0.8*	88.2		**VR063/040**		3011
	14	78*	0.9*	100			**VC030/040**	2769
	14	60*	0.9*	100	**VP050**			4280
	14	81	1.7	100			**VC030/050**	3800
	14	81	1.9	100			**VC030/063**	4967
	11.9	85*	0.6*	117.6		**VR063/040**		3314
	11.9	87	1.1	117.6		**VR063/050**		4548
	9.5	101*	0.9*	147		**VR063/050**		4840
	9.3	112	1.2	150			**VC030/050**	4350
	9.3	113	1.9	150			**VC030/063**	5686
	7.9	113*	0.7*	176.4		**VR063/050**		4840
	7	141*	0.9*	200			**VC030/050**	4788
	7	143	1.8	200			**VC030/063**	6259
	7	150	2.8	200			**VC040/075**	7380
	5.8	133*	0.6*	235.2		**VR063/050**		4840

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.18								
M1 063 0.18 4P.. (n1 = 1400 min^{-1})	**5.6**	171	1.4	250			**VC030/063**	6270
	5.6	180	2.1	250			**VC040/075**	7380
	5.6	188	3	250			**VC040/090**	8180
	4.7	183*	0.8*	300			**VC030/050**	4840
	4.7	175	1.5	300			**VC030/063**	6270
	4.7	200	2.2	300			**VC040/075**	7380
	4.7	210	3.3	300			**VC040/090**	8180
	3.5	222	1	400			**VC030/063**	6270
	3.5	246	1.7	400			**VC040/075**	7380
	3.5	259	2.4	400			**VC040/090**	8180
	2.8	257*	0.8*	500			**VC030/063**	6270
	2.8	282	1.3	500			**VC040/075**	7380
	2.8	303	1.9	500			**VC040/090**	8180
	2.3	333*	0.8*	600			**VC030/063**	6270
	2.3	362	1.1	600			**VC040/075**	7380
	2.3	390	1.8	600			**VC040/090**	8180
	1.9	435*	0.9*	750			**VC040/075**	7380
	1.9	469	1.5	750			**VC040/090**	8180
	1.6	487*	0.8*	900			**VC040/075**	7380
	1.6	526	1.3	900			**VC040/090**	8180
	1.2	622*	0.7*	1200			**VC040/075**	7380
	1.2	629	1	1200			**VC040/090**	8180
	1.2	671	1.9	1200			**VC050/110**	10320
	0.9	735*	0.8*	1500			**VC040/090**	8180
	0.9	790	1.6	1500			**VC050/110**	10320
	0.8	874*	0.8*	1800			**VC040/090**	8180
	0.8	861	1.5	1800			**VC050/110**	10320
	0.58	1113	1.1	2400			**VC050/110**	10320
	0.5	1370*	0.8*	3000			**VC050/110**	10320
M1 071 0.18 6P.. (n1 = 900 min^{-1})	**90**	16	3	10	**VP040**			1677
	60	23	2.2	15	**VP040**			1920
	45	29	1.5	20	**VP040**			2113
	45	29	2.8	20	**VP050**			2900
	36	34	1.3	25	**VP040**			2276
	36	35	2.1	25	**VP050**			3124
	30	38	1.3	30	**VP040**			2419
	30	40	2.4	30	**VP050**			3320
	22.5	47	1	40	**VP040**			2662
	22.5	49	1.8	40	**VP050**			3654
	22.5	50	3.4	40	**VP063**			4776
	18	56	1.4	50	**VP050**			3936
	18	59	2.7	50	**VP063**			5145
	15	63	1.1	60	**VP050**			4183
	15	66	2.1	60	**VP063**			5467
	15	66	2.1	60	**VP075**			5467
	12.2	95	1.2	73.5		**VR071/050**		4506
	11.3	75*	0.9*	80	**VP050**			4604
	11.3	79	1.6	80	**VP063**			6018
	11.3	79	1.6	80	**VP075**			6018
	10.2	105	1.4	88.2		**VR071/050**		4788
	9	90	1.4	100	**VP063**			6270
	9	90	1.4	100	**VP075**			6270
	7.7	126	1	117.6		**VR071/050**		4840
	7.7	131	1.8	117.6		**VR071/063**		6270
	6.1	152	1.4	147		**VR071/063**		6270
	6	148*	0.8*	147		**VR071/050**		
	5.1	168	1.2	176.4		**VR071/063**		6270
	5.1	179	1.7	176.4		**VR071/075**		7380
	3.8	197*	0.9*	235.2		**VR071/063**		6270
	3.8	211	1.2	235.2		**VR071/075**		7380
	3.1	218*	0.7*	294		**VR071/063**		6270
	3.1	235	1	294		**VR071/075**		7380

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.25								
M1 063 0.25 2P.. (n1 = 2800 min^{-1})	**373.3**	5.6	2.3	7.5	**VP030**			542
	280	7.2	1.8	10	**VP030**			597
	186.7	10	1.3	15	**VP030**			683
	186.7	11	2.9	15	**VP040**			1315
	140	13*	0.9*	20	**VP030**			752
	140	14	2	20	**VP040**			1447
	112	15	1	25	**VP030**			810
	112	17	1.6	25	**VP040**			1559
	93.3	18*	0.8*	30	**VP030**			861
	93.3	20	1.7	30	**VP040**			1657
	70	25	1.2	40	**VP040**			1824
	70	25	2.3	40	**VP040**			2503
	56	29	1	50	**VP040**			1964
	56	30	1.8	50	**VP040**			2696
	46.7	34*	0.8*	60	**VP040**			2087
	46.7	34	1.5	60	**VP040**			2865
	35	42	1.1	80	**VP040**			3153
	28	48*	0.8*	100	**VP040**			3397
	7	150	1.4	400			**VC030/063**	6270
	5.6	175	1.2	500			**VC030/063**	6270
M1 071 0.25 4P.. (n1 = 1400 min^{-1})	**280**	8	4.5	5	**VP040**			1149
	186.7	11	3.6	7.5	**VP040**			1315
	140	14	2.8	10	**VP040**			1447
	93.3	21	1.9	15	**VP040**			1657
	70	27	1.5	20	**VP040**			1824
	70	27	2.7	20	**VP050**			2503
	56	32	1.2	25	**VP040**			1964
	56	32	2.2	25	**VP050**			2696
	46.7	36	1.3	30	**VP040**			2087
	46.7	37	2.3	30	**VP050**			2865
	35	44*	0.9*	40	**VP040**			2298
	35	46	1.7	40	**VP050**			3153
	35	48	3.1	40	**VP063**			4122
	28	54	1.4	50	**VP050**			3397
	28	56	2.4	50	**VP063**			4440
	23.3	60	1.1	60	**VP050**			3610
	23.3	63	2	60	**VP063**			4719
	23.3	68	3.2	60	**VP075**			5569
	19	88	1	73.5		**VR071/050**		3889
	17.5	72*	0.9*	80	**VP050**			3973
	17.5	78	1.6	80	**VP063**			5193
	17.5	82	2.3	80	**VP075**			6130
	15.9	98	1.1	88.2		**VR071/050**		4132
	14	87	1.4	100	**VP063**			5595
	14	94	1.9	100	**VP075**			6603
	11.9	121*	0.8*	117.6		**VR071/050**		4548
	11.9	125	1.5	117.6		**VR071/063**		5945
	9.5	143	1.2	147		**VR071/063**		6270
	9.5	151	1.7	147		**VR071/075**		7380
	7.9	163	1	176.4		**VR071/063**		6270
	7.9	172	1.4	176.4		**VR071/075**		7380
	7	209	2	200			**VC040/075**	7380
	7	217	2.8	200			**VC040/090**	8174
	6	192*	0.7*	235.2		**VR071/063**		6270
	6	201	1.1	235.2		**VR071/075**		7380
	5.6	250	1.5	250			**VC040/075**	7380
	5.6	261	2.2	250			**VC040/090**	8180
	4.8	215*	0.6*	294		**VR071/063**		6270
	4.8	230*	0.9*	294		**VR071/075**		7380
	4.7	278	1.6	300			**VC040/075**	7380

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.25								
M1 071 0.25 4P.. (n1 = 1400 min^{-1})	**4.7**	291	2.4	300			**VC040/090**	8180
	3.5	336	1.1	400			**VC040/075**	7380
	3.5	359	1.7	400			**VC040/090**	8180
	3.5	386	3.1	400			**VC050/110**	10320
	2.8	384*	0.8*	500			**VC040/075**	7380
	2.8	420	1.3	500			**VC040/090**	8180
	2.8	512	2.3	500			**VC050/110**	10320
	2.8	460	3.4	500			**VC063/130**	13500
	2.3	517*	0.9*	600			**VC040/075**	7380
	2.3	512	1.2	600			**VC040/090**	8180
	2.3	548	2.3	600			**VC050/110**	10320
	2.3	571	3.1	600			**VC063/130**	13500
	1.9	622*	0.7*	750			**VC040/075**	7380
	1.9	598*	0.9*	750			**VC040/090**	8180
	1.9	660	1.9	750			**VC050/110**	10320
	1.9	687	2.6	750			**VC063/130**	13500
	1.9	666	3.5	750			**VC063/150**	18000
	1.6	667*	0.8*	900			**VC040/090**	8180
	1.6	751	1.7	900			**VC050/110**	10320
	1.6	783	2.2	900			**VC063/130**	13500
	1.6	840	2.5	900			**VC063/150**	18000
	1.2	905*	0.8*	1200			**VC040/090**	8180
	1.2	943	1.3	1200			**VC050/110**	10320
	1.2	988	1.8	1200			**VC063/130**	13500
	1.2	1013	2.6	1200			**VC063/150**	18000
	0.93	1064	1.2	1500			**VC050/110**	10320
	0.9	1165	1.5	1500			**VC063/130**	13500
	0.8	1315	1.3	1800			**VC063/130**	13500
	0.8	1199	1.8	1800			**VC063/150**	18000
	0.78	1195	1.1	1800			**VC050/110**	10320
	0.6	1676*	0.7*	2400			**VC050/110**	10320
	0.6	1624	1	2400			**VC063/130**	13500
	0.6	1446	1.8	2400			**VC063/150**	18000
	0.5	1713	1.4	3000			**VC063/150**	18000
	0.47	1935*	0.8*	3000			**VC063/130**	13500
	0.4	2026*	0.9*	4000			**VC063/150**	18000
	0.35	2046*	0.6*	4000			**VC063/130**	13500
	0.3	2251*	0.7*	5000			**VC063/150**	18000
	0.28	2430*	0.5*	5000			**VC063/130**	13500
M1 071 0.25 6P.. (n1 = 900 min^{-1})	**180**	12	3.5	5	**VP040**			1331
	120	17	2.6	7.5	**VP040**			1524
	90	22	2	10	**VP040**			1677
	60	31	1.4	15	**VP040**			1920
	60	32	2.9	15	**VP050**			2635
	45	40	1.1	20	**VP040**			2113
	45	40	1.9	20	**VP050**			2900
	36	48*	0.9*	25	**VP040**			2276
	36	48	1.5	25	**VP050**			3124
	36	50	3	25	**VP063**			4084
	30	53*	0.9*	30	**VP040**			2419
	30	54	1.7	30	**VP050**			3320
	30	57	3.1	30	**VP063**			4339
	22.5	67*	0.7*	40	**VP040**			2662
	22.5	67	1.2	40	**VP050**			3654
	22.5	70	2.4	40	**VP063**			4776
	18	78	1	50	**VP050**			3936
	18	81	1.8	50	**VP063**			5145
	18	85	3	50	**VP075**			6073
	15	88*	0.8*	60	**VP050**			4183
	15	92	1.5	60	**VP063**			5467

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

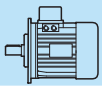
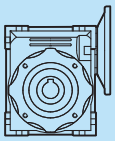
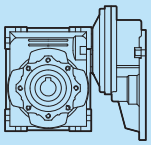
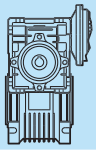
Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.25								
M1 071 0.25 6P.. (n1 = 900 min^{-1})	**15**	99	2.5	60	**VP075**			6453
	11.3	110	1.2	80	**VP063**			6018
	11.3	117	1.7	80	**VP075**			7103
	9	125	1	100	**VP063**			6270
	9	133	1.4	100	**VP075**			7380
	7.7	181	1.3	117.6		**VR071/063**		6270
	6.1	211	1	147		**VR071/063**		6270
	6.1	219	1.5	147		**VR071/075**		7380
	5.1	248	1.2	176.4		**VR071/075**		7380
0.37								
M1 071 0.37 2P.. (n1 = 2800 min^{-1})	**373.3**	8.3	3.4	7.5	**VP040**			1044
	280	11	2.6	10	**VP040**			1149
	186.7	16	1.9	15	**VP040**			1315
	140	20	1.4	20	**VP040**			1447
	112	25	1.1	25	**VP040**			1559
	112	25	2	25	**VP050**			2140
	93.3	29	1.2	30	**VP040**			1657
	93.3	29	2.2	30	**VP050**			2274
	70	37*	0.8*	40	**VP040**			1824
	70	37	1.6	40	**VP050**			2503
	70	38	2.9	40	**VP063**			3272
	56	44	1.2	50	**VP050**			2696
	56	45	2.3	50	**VP063**			3524
	56	47	3.5	50	**VP075**			4160
	46.7	50	1	60	**VP050**			2865
	46.7	52	1.9	60	**VP063**			3745
	46.7	55	2.9	60	**VP075**			4421
	35	62*	0.7*	80	**VP050**			3153
	35	65	1.4	80	**VP063**			4122
	35	68	2.1	80	**VP075**			4865
	28	74	1.1	100	**VP063**			4440
	28	78	1.7	100	**VP075**			5241
M1 071 0.37 4P.. (n1 = 1400 min^{-1})	**280**	11	3	5	**VP040**			1149
	186.7	16	2.4	7.5	**VP040**			1315
	140	21	1.9	10	**VP040**			1447
	140	22	3.3	10	**VP050**			1987
	93.3	31	1.3	15	**VP040**			1657
	93.3	31	2.4	15	**VP050**			2274
	70	39	1	20	**VP040**			1824
	70	40	1.8	20	**VP050**			2503
	56	47*	0.8*	25	**VP040**			1964
	56	48	1.5	25	**VP050**			2696
	56	50	2.7	25	**VP063**			3524
	46.7	53*	0.8*	30	**VP040**			2087
	46.7	55	1.5	30	**VP050**			2865
	46.7	57	2.8	30	**VP063**			3745
	35	68	1.1	40	**VP050**			3153
	35	71	2.1	40	**VP063**			4122
	35	74	3.3	40	**VP075**			4865
	28	80*	0.9*	50	**VP050**			3397
	28	83	1.6	50	**VP063**			4440
	28	88	2.5	50	**VP075**			5241
	23.3	89*	0.8*	60	**VP050**			3610
	23.3	94	1.4	60	**VP063**			4719
	23.3	98	2.0	60	**VP075**			5569

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW) 	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.37								
M1 071 0.37 4P.. ($n1 = 1400\ min^{-1}$)	**17.5**	115	1.1	80	**VP063**			5193
	17.5	121	1.6	80	**VP075**			6130
	14	129*	0.9*	100	**VP063**			5595
	14.0	139	1.3	100	**VP075**			6603
	11.9	185	1	117.6		**VR071/063**		5945
	9.5	212*	0.8*	147		**VR071/063**		6270
	9.5	223	1.1	147		**VR071/075**		7380
	7.9	254*	0.9*	176.4		**VR071/075**		7380
	7	309	1.4	200			**VC040/075**	7380
	7	322	1.9	200			**VC040/090**	8174
	7	338	3.4	200			**VC050/110**	10320
	5.6	370	1	250			**VC040/075**	7380
	5.6	386	1.5	250			**VC040/090**	8180
	5.6	412	2.8	250			**VC050/110**	10320
	4.7	405	1	300			**VC040/075**	7380
	4.7	402	1.5	300			**VC040/090**	8180
	4.7	441	2.9	300			**VC050/110**	10320
	3.5	498*	0.7*	400			**VC040/075**	7380
	3.5	523	1.2	400			**VC040/090**	8180
	3.5	571	2.1	400			**VC050/110**	10320
	3.5	571	2.9	400			**VC063/130**	13500
	2.8	611*	0.9*	500			**VC040/090**	8180
	2.8	757	1.5	500			**VC050/110**	10320
	2.8	681	2.3	500			**VC063/130**	13500
	2.8	681	3.4	500			**VC063/150**	18000
	2.3	757*	0.8*	600			**VC040/090**	8180
	2.3	812	1.6	600			**VC050/110**	10320
	2.3	844	2.1	600			**VC063/130**	13500
	2.3	840	3.2	600			**VC063/150**	18000
	1.9	950	1.3	750			**VC050/110**	10320
	1.9	1017	1.7	750			**VC063/130**	13500
	1.9	986	2.4	750			**VC063/150**	18000
	1.6	1079	1.2	900			**VC050/110**	10320
	1.6	1158	1.5	900			**VC063/130**	13500
	1.6	1244	1.7	900			**VC063/150**	18000
	1.2	1396*	0.8*	1200			**VC050/110**	10320
	1.2	1462	1.2	1200			**VC063/130**	13500
	1.2	1499	1.8	1200			**VC063/150**	18000
	0.9	1623*	0.8*	1500			**VC050/110**	10320
	0.9	1674	1.1	1500			**VC063/130**	13500
	0.8	1887*	0.9*	1800			**VC063/130**	13500
	0.8	1775	1.2	1800			**VC063/150**	18000
	0.6	2141	1.2	2400			**VC063/150**	18000
	0.5	2535*	0.9*	3000			**VC063/150**	18000

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

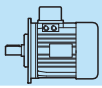
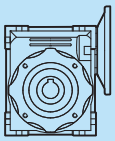
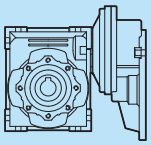
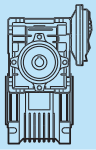
Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.37								
M1 080 0.37 6P.. ($n1 = 900\ min^{-1}$)	**180**	17	4.3	5	**VP050**			1827
	120	25	3.3	7.5	**VP050**			2091
	90	33	2.5	10	**VP050**			2302
	60	47	1.8	15	**VP050**			2635
	45	60	1.3	20	**VP050**			2900
	45	60	2.4	20	**VP063**			3791
	36	72	1	25	**VP050**			3124
	36	74	1.9	25	**VP063**			4084
	36	77	3.1	25	**VP075**			4820
	30	80	1.1	30	**VP050**			3320
	30	82	2.1	30	**VP063**			4339
	30	87	3.3	30	**VP075**			5122
	22.5	102	1.6	40	**VP063**			4776
	22.5	108	2.6	40	**VP075**			5637
	18	120	1.2	50	**VP063**			5145
	18	126	1.8	50	**VP075**			6073
	18	136	3.2	50	**VP090**			6719
	15	137	1	60	**VP063**			5467
	15	144	1.5	60	**VP075**			6453
	15	153	2.5	60	**VP090**			7140
	12	206	1.6	75		**VR080/075**		6952
	11.3	167*	0.8*	80	**VP063**			6018
	11.3	173	1.2	80	**VP075**			7103
	11.3	185	1.7	80	**VP090**			7859
	11.3	201	2.8	80	**VP110**			9931
	10	260	1.7	90		**VR080/075**		7380
	9	196	1	100	**VP075**			7380
	9	212	1.3	100	**VP090**			8180
	9	232	2.2	100	**VP110**			10320
	7.5	283	1.3	120		**VR080/075**		7380
	6	324	1	150		**VR080/075**		7380
	6	347	1.6	150		**VR080/090**		8180
	5	389	1.3	180		**VR080/090**		8180
	3.8	471	1.0	240		**VR080/090**		8180
	3.8	509	1.6	240		**VR080/110**		10320
	3	577	1.3	300		**VR080/110**		10320

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

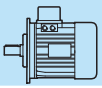
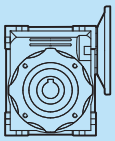
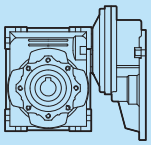
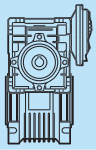
Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW) 	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.55								
M1 071 0.55 2P.. (n1 = 2800 min^{-1})	**373**	12	2.3	7.5	**VP040**			1044
	280	16	1.8	10	**VP040**			1149
	280	17	3.2	10	**VP050**			1577
	187	24	1.3	15	**VP040**			1315
	186.7	24	2.4	15	**VP050**			18,5
	140	30	1	20	**VP040**			1447
	140	31	1.7	20	**VP050**			1987
	140	32	3.3	20	**VP063**			2597
	112	37*	0.8*	25	**VP040**			1559
	112	38	1.4	25	**VP050**			2140
	112	39	2.5	25	**VP063**			2797
	93.3	43*	0.8*	30	**VP040**			1657
	93.3	43	1.5	30	**VP050**			2274
	93.3	44	2.7	30	**VP063**			2973
	70	55	1.1	40	**VP050**			2503
	70	56	1.9	40	**VP063**			3272
	70	59	3.1	40	**VP075**			3862
	56	65*	0.8*	50	**VP050**			2696
	56	68	1.5	50	**VP063**			3524
	56	70	2.3	50	**VP075**			4160
	46.7	74*	0.7*	60	**VP050**			2865
	46.7	78	1.2	60	**VP063**			3745
	46.7	81	2	60	**VP075**			4421
	35	96*	0.9*	80	**VP063**			4122
	35	99	1.3	80	**VP075**			4865
	28	111*	0.7*	100	**VP063**			4440
	28	116	1	100	**VP075**			5241
M1 080 0.55 4P.. (n1 = 1400 min^{-1})	**280**	17	3.7	5	**VP050**			1577
	186.7	25	2.9	7.5	**VP050**			1805
	140	32	2.2	10	**VP050**			1987
	93.3	46	1.6	15	**VP050**			2274
	93.3	47	3.2	15	**VP063**			2973
	70	59	1.2	20	**VP050**			2503
	70	61	2.2	20	**VP063**			3272
	56	71	1	25	**VP050**			2696
	56	73	1.8	25	**VP063**			3524
	56	76	2.8	25	**VP075**			4160
	46.7	81	1	30	**VP050**			2865
	46.7	83	1.9	30	**VP063**			3745
	46.7	87	2.9	30	**VP075**			4421
	35	97	0.8*	40	**VP050**			3153
	35	105	1.4	40	**VP063**			4122
	35	108	2	40	**VP075**			4865
	35	114	3.5	40	**VP090**			5383
	28	124	1.1	50	**VP063**			4440
	28	129	1.6	50	**VP075**			5241
	28	137	2.7	50	**VP090**			5799
	23.3	140*	0.9*	60	**VP063**			4719
	23.3	146	1.4	60	**VP075**			5569
	23.3	158	2.2	60	**VP090**			6163
	18.7	205	1.2	75		**VR080/075**		6000
	17.5	180	1.1	80	**VP075**			6130
	17.5	189	1.5	80	**VP090**			6783
	17.5	201	2.6	80	**VP110**			8571
	15.6	230	1.3	90		**VR080/075**		6375
	14	206*	0.9*	100	**VP075**			6603
	14	221	1.2	100	**VP090**			7306
	14	236	2	100	**VP110**			9232
	14	268	2.4	100			**VC050/110**	10320

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW) 	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.55								
M1 080 0.55 4P.. (n1 = 1400 min^{-1})	**11.7**	284	1	120		**VR080/075**		7017
	11.7	297	1.6	120		**VR080/090**		7764
	9.3	332*	0.8*	150		**VR080/075**		7380
	9.3	355	1.3	150		**VR080/090**		8180
	9.3	387	2.4	150			**VC050/110**	10320
	7.8	398	1	180		**VR080/090**		8180
	7	503	2.3	200			**VC050/110**	10320
	5.8	513	1.3	240		**VR080/110**		10320
	5.6	612	1.9	250			**VC050/110**	10320
	5.6	612	2.5	250			**VC063/130**	13500
	4.7	597	1	300		**VR080/110**		10320
	4.7	639	2	300			**VC050/110**	10320
	4.7	666	2.6	300			**VC063/130**	13500
	3.5	826	1.4	400			**VC050/110**	10320
	3.5	849	1.9	400			**VC063/130**	13500
	2.8	984	1.1	500			**VC050/110**	10320
	2.8	996	1.6	500			**VC063/130**	13500
	2.3	1181	1	600			**VC050/110**	10320
	1.9	1411*	0.9*	750			**VC050/110**	10320
	1.9	1471	1.2	750			**VC063/130**	13500
	1.6	1651*	0.8*	900			**VC050/110**	10320
	1.2	2132*	0.8*	1200			**VC063/130**	13500
	0.8	2638*	0.8*	1800			**VC063/150**	18000
	0.6	3182*	0.8*	2400			**VC063/150**	18000
M1 080 0.55 6P.. (n1 = 900 min^{-1})	**120**	38	2.2	7.5	**VP050**			2091
	90	49	1.7	10	**VP050**			2302
	90	50	3.1	10	**VP063**			3009
	60	69	1.2	15	**VP050**			2635
	60	71	2.2	15	**VP063**			3444
	45	89*	0.9*	20	**VP050**			2900
	45	90	1.6	20	**VP063**			3791
	45	93	2.9	20	**VP075**			4474
	36	109	1.3	25	**VP063**			4084
	36	124	2.1	25	**VP075**			4820
	36	117	3.5	25	**VP090**			5333
	30	123	1.4	30	**VP063**			4339
	30	128	2	30	**VP075**			5122
	22.5	152	1.1	40	**VP063**			4776
	22.5	159	1.5	40	**VP075**			5637
	22.5	168	2.7	40	**VP090**			6238
	18	181*	0.9*	50	**VP063**			5145
	18	187	1.2	50	**VP075**			6073
	18	198	2	50	**VP090**			6719
	15	207*	0.7*	60	**VP063**			5467
	15	214	1	60	**VP075**			6453
	15	224	1.6	60	**VP090**			7140
	15	242	2.8	60	**VP110**			9023
	12	306	1.1	75		**VR080/075**		6952
	11.3	262*	0.8*	80	**VP075**			7103
	11.3	275	1.1	80	**VP090**			7859
	11.3	294	1.9	80	**VP110**			9931
	10	341	1.1	90		**VR080/075**		7380
	9	315*	0.9*	100	**VP090**			8180
	9	338	1.5	100	**VP110**			10320
	7.5	441	1.4	120		**VR080/090**		8180
	6	516	1.1	150		**VR080/090**		8180
	5	578*	0.9*	180		**VR080/090**		8180
	3.8	756	1.1	240		**VR080/110**		10320

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

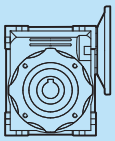
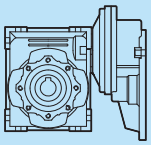
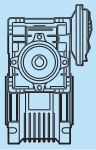
Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.75								
M2 080 0.75 2P.. (n1 = 2800 min^{-1})	**373.3**	17	3	7.5	**VP050**			1433
	280	22	2.4	10	**VP050**			1577
	186.7	31	1.7	15	**VP050**			1805
	186.7	33	3.3	15	**VP063**			2359
	140	41	1.3	20	**VP050**			1987
	140	43	2.3	20	**VP063**			2597
	112	49	1	25	**VP050**			2140
	112	52	1.8	25	**VP063**			2797
	112	54	2.9	25	**VP075**			3302
	93.3	56	1.1	30	**VP050**			2274
	93.3	60	2	30	**VP063**			2973
	93.3	62	3	30	**VP075**			3509
	70	73	0.8*	40	**VP050**			2503
	70	77	1.4	40	**VP063**			3272
	70	80	2.3	40	**VP075**			3862
	70	82	3.4	40	**VP090**			4273
	56	92	1.1	50	**VP063**			3524
	56	96	1.7	50	**VP075**			4160
	56	99	2.7	50	**VP090**			4603
	46.7	106*	0.9*	60	**VP063**			3745
	46.7	107	1.3	60	**VP075**			4421
	46.7	115	2.1	60	**VP090**			4891
	35	135	1	80	**VP075**			4865
	35	143	1.6	80	**VP090**			5383
	35	152	2.6	80	**VP110**			6803
	28	159*	0.8*	100	**VP075**			5241
	28	169	1.2	100	**VP090**			5799
	28	179	2.1	100	**VP110**			7328
	9.3	424	2.8	300			**VC050/110**	10320
	7	553	2.1	400			**VC050/110**	10320
	5.6	640	1.6	500			**VC050/110**	10320
M2 080 0.75 4P.. (n1 = 1400 min^{-1})	**280**	23	2.7	5	**VP050**			1577
	186.7	34	2.1	7.5	**VP050**			1805
	140	44	1.6	10	**VP050**			1987
	140	45	3	10	**VP063**			2567
	93.3	63	1.2	15	**VP050**			2274
	93.3	64	2.2	15	**VP063**			2973
	93	66	3.5	15	**VP075**			3509
	70	81*	0.9*	20	**VP050**			2503
	70	83	1.6	20	**VP063**			3272
	70	85	2.8	20	**VP075**			3862
	56	99*	0.7*	25	**VP050**			2696
	56	100	1.3	25	**VP063**			3524
	56	102	2	25	**VP075**			4160
	46.7	112*	0.8*	30	**VP050**			2865
	46.7	114	1.4	30	**VP063**			3745
	46.7	117	2	30	**VP075**			4421
	35	97	0.8*	40	**VP050**			2298
	35	143	1	40	**VP063**			4122
	35	147	1.5	40	**VP075**			4865
	35.0	156	3	40	**VP090**			5383
	28	171*	0.8*	50	**VP063**			4440
	28	177	1.2	50	**VP075**			5241
	28	184	1.8	50	**VP090**			5800
	28	194	3.4	50	**VP110**			7328
	23.3	200	1	60	**VP075**			5569
	23.3	212	1.5	60	**VP090**			6163
	23.3	227	2.7	60	**VP110**			7787
	18.7	280*	0.9*	75		**VR080/075**		6000
	17.5	258	1.1	80	**VP090**			6783
	17.5	274	1.9	80	**VP110**			8571
	17.5	250	80	80	**VP075**			6130
	15.6	313	1	90		**VR080/075**		6375

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
0.75								
M2 080 0.75 4P.. (n1 = 1400 min^{-1})	**14**	302*	0.9*	100	**VP090**			7306
	14	322	1.5	100	**VP110**			9232
	14	365	1.8	100			**VC050/110**	8198
	11.7	405	1.2	120		**VR080/090**		7764
	9.3	483*	0.9*	150		**VR080/090**		8180
	9.3	527	1.8	150			**VC050/110**	9384
	7.8	543*	0.7*	180		**VR080/090**		8180
	7	685	1.7	200			**VC050/110**	10320
	5.8	700*	0.9*	240		**VR080/110**		10320
	5.6	835	1.4	250			**VC050/110**	10320
	5.6	835	1.8	250			**VC063/130**	13500
	5.6	835	2.5	250			**VC063/150**	18000
	4.7	871	1.5	300			**VC050/110**	10320
	4.7	908	1.9	300			**VC063/130**	13500
	4.7	993	2.3	300			**VC063/150**	18000
	3.5	1126	1.1	400			**VC050/110**	10320
	3.5	1157	1.4	400			**VC063/130**	13500
	3.5	1175	2.3	400			**VC063/150**	18000
	2.8	1535*	0.8*	500			**VC050/110**	10320
	2.8	1358	1.1	500			**VC063/130**	13500
	2.8	1291	1.8	500			**VC063/150**	18000
	2.3	1645*	0.8*	600			**VC050/110**	10320
	2.3	1631	1	600			**VC063/130**	13500
	2.3	1529	1.7	600			**VC063/150**	18000
	1.9	2005*	0.9*	750			**VC063/130**	13500
	1.9	1783	1.3	750			**VC063/150**	18000
	1.6	2283*	0.8*	900			**VC063/130**	13500
	1.6	2215*	0.9*	900			**VC063/150**	18000
	1.2	2680	1	1200			**VC063/150**	18000
M2 090 0.75 6P.. (n1 = 900 min^{-1})	**120**	52	2.9	7.5	**VP063**			2734
	90	68	2.3	10	**VP063**			3009
	60	97	1.6	15	**VP063**			3444
	60	98	2.4	15	**VP075**			4065
	45	123	1.2	20	**VP063**			3791
	45	126	1.9	20	**VP075**			4474
	36	149*	0.9*	25	**VP063**			4084
	36	153	1.4	25	**VP075**			4820
	30	167	1	30	**VP063**			4339
	30	174	1.5	30	**VP075**			5122
	30	179	2.6	30	**VP090**			5667
	22.5	210*	0.8*	40	**VP063**			4776
	22.5	216	1.1	40	**VP075**			5637
	22.5	226	1.8	40	**VP090**			6238
	22.5	239	3.3	40	**VP110**			9931
	18	255	1	50	**VP075**			6073
	18	271	1.4	50	**VP090**			6719
	18	287	2.6	50	**VP110**			10320
	15	296*	0.8*	60	**VP075**			6453
	15	306	1.1	60	**VP090**			7140
	15	325	2.1	60	**VP110**			9023
	12.2	393	3.2	73.5		**VR090/110**		9614
	11.3	401	1.4	80	**VP110**			9931
	11.3	407	2.1	80	**VP130**			12989
	9.2	508	2.3	98		**VR090/110**		10320
	9	462	1.1	100	**VP110**			10320
	9	470	1.7	100	**VP130**			13500
	7.3	607	1.8	122.5		**VR090/110**		10320
	6.1	682	1.5	147		**VR090/110**		10320
	4.6	832	1.0	196		**VR090/110**		10320
	3.7	944	1.2	245		**VR090/130**		13500

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

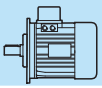
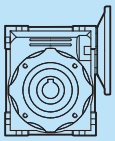
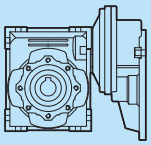
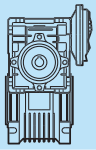
Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
1.10								
M2 080 1.10 2P.. (n1 = 2800 min^{-1})	**373.3**	25	2.1	7.5	**VP050**			1433
	280	33	1.7	10	**VP050**			1577
	280	33	3	10	**VP063**			2061
	186.7	48	1.2	15	**VP050**			1805
	186.7	46	2.1	15	**VP063**			2359
	186.7	50	3.3	15	**VP075**			2785
	140	62*	0.9*	20	**VP050**			1987
	140	60	1.6	20	**VP063**			2597
	140	65	2.7	20	**VP075**			3065
	112	72	1.2	25	**VP063**			2797
	112	77	2	25	**VP075**			3302
	112	81	3.1	25	**VP090**			3653
	93.3	87*	0.7*	30	**VP050**			2274
	93.3	82	1.4	30	**VP063**			2973
	93.3	89	1.9	30	**VP075**			3509
	93.3	93	3.3	30	**VP090**			3882
	70	104	1	40	**VP063**			3272
	70	114	1.4	40	**VP075**			3862
	70	120	2.3	40	**VP090**			4273
	56	137	1.1	50	**VP075**			4160
	56	145	1.8	50	**VP090**			4603
	56	150	3.3	50	**VP110**			5816
	46.7	158*	0.9*	60	**VP075**			4421
	46.7	169	1.5	60	**VP090**			4891
	46.7	176	2.7	60	**VP110**			6181
	35	201*	0.7*	80	**VP075**			4865
	35	210	1.1	80	**VP090**			5383
	35	222	1.8	80	**VP110**			6803
	28	248*	0.8*	100	**VP090**			5799
	28	263	1.4	100	**VP110**			7328
M2 090 1.10 6P.. (n1 = 900 min^{-1})	**120**	76	2	7.5	**VP063**			2734
	120	77	2.8	7.5	**VP075**			3227
	90	99	1.5	10	**VP063**			3009
	90	100	2.3	10	**VP075**			3551
	60	142	1.1	15	**VP063**			3444
	60	144	1.6	15	**VP075**			4065
	60	149	3.1	15	**VP090**			4498
	45	180*	0.8*	20	**VP063**			3791
	45	184	1.3	20	**VP075**			4474
	45	195	2.2	20	**VP090**			4951
	36	225	1	25	**VP075**			4820
	36	231	1.6	25	**VP090**			5333
	36	239	3.2	25	**VP110**			6739
	30	256	1	30	**VP075**			5122
	30	263	1.8	30	**VP090**			5667
	30	270	3.1	30	**VP110**			7161
	22.5	322*	0.9*	40	**VP075**			5637
	22.5	331	1.2	40	**VP090**			6238
	22.5	345	2.3	40	**VP110**			7882
	18	397	1	50	**VP090**			6719
	18	414	1.8	50	**VP110**			8491
	15	448*	0.8*	60	**VP090**			7140
	15	476	1.4	60	**VP110**			9023
	12.2	576	2.2	73.5		**VR090/110**		9614
	11.3	588	1	80	**VP110**			9931
	11.3	598	1.4	80	**VP130**			12989
	9.2	746	1.6	98		**VR090/110**		10320

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW) 	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
1.10								
M2 090 1.10 4P..	**9**	686	1.1	100	**VP130**			13500
(n1 = 1400 min^{-1})	**7.3**	890	1.2	122.5		**VR090/110**		10320
	6.1	1000	1	147		**VR090/110**		10320
	186.7	50	2.6	7.5	**VP063**			2359
	140	65	2	10	**VP063**			2597
	140	66	3	10	**VP075**			3065
	93.3	93	1.5	15	**VP063**			2973
	93.3	96	2.1	15	**VP075**			3509
	70	122	1.1	20	**VP063**			3272
	70	123	1.7	20	**VP075**			3862
	70	128	3.1	20	**VP090**			4273
	56	146*	0.9*	25	**VP063**			3524
	56	150	1.3	25	**VP075**			4160
	56	156	2.4	25	**VP090**			4603
	46.7	167	1	30	**VP063**			3745
	46.7	171	1.3	30	**VP075**			4421
	46.7	178	2.4	30	**VP090**			4891
	35	216	1	40	**VP075**			4865
	35	225	1.6	40	**VP090**			5383
	35	237	3	40	**VP110**			6803
	28	263*	0.9*	50	**VP075**			5241
	28	270	1.3	50	**VP090**			5799
	28	281	2.3	50	**VP110**			7328
	23.3	297*	0.7*	60	**VP075**			5569
	23.3	311	1	60	**VP090**			6163
	23.3	324	1.9	60	**VP110**			7787
	19	392	2.5	73.5		**VR090/110**		8298
	17.5	384	1	80	**VP090**			6783
	17.5	402	1.3	80	**VP110**			8571
	17.5	408	2.1	80	**VP130**			11210
	14.3	508	1.8	98		**VR090/110**		9133
	14	473	1	100	**VP110**			9232
	14	480	1.5	100	**VP130**			12076
	11.4	599	1.5	122.5		**VR090/110**		9838
	9.5	686	1.1	147		**VR090/110**		10320
	7.1	828*	0.8*	196		**VR090/110**		10320
	5.7	962*	0.9*	245		**VR090/130**		13500
	5.6	1224	1.2	250			**VC063/130**	13500
	5.6	1175	1.7	250			**VC063/150**	18000
	4.7	1312	1.3	300			**VC063/130**	13500
	4.7	1364	1.7	300			**VC063/150**	18000
	3.5	1671	1	400			**VC063/130**	13500
	3.5	1619	1.6	400			**VC063/150**	18000
	2.8	1991*	0.8*	500			**VC063/130**	13500
	2.8	1893	1.2	500			**VC063/150**	18000
	2.3	2510*	0.7*	600			**VC063/130**	13500
	2.3	2242	1.2	600			**VC063/150**	18000
	1.9	2616*	0.9*	750			**VC063/150**	18000

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
1.50								
M2 100 1.50 6P.. (n1 = 900 min^{-1})	**120**	105	2	7.5	**VP075**			3227
	90	137	1.7	10	**VP075**			3551
	90	138	2.7	10	**VP090**			3929
	60	196	1.2	15	**VP075**			4065
	60	201	2.1	15	**VP090**			4498
	45	255	1.1	20	**VP075**			4474
	45	258	1.5	20	**VP090**			4951
	45	264	2.7	20	**VP110**			6256
	36	311*	0.8*	25	**VP075**			4820
	36	314	1.2	25	**VP090**			5333
	36	322	2.4	25	**VP110**			6739
	36	330	3.2	25	**VP130**			8814
	30	354*	0.8*	30	**VP075**			5122
	30	358	1.3	30	**VP090**			5667
	30	363	2.3	30	**VP110**			7161
	30	377	3.1	30	**VP130**			9366
	22.5	459	1	40	**VP090**			6238
	22.5	471	1.7	40	**VP110**			7882
	22.5	478	2.3	40	**VP130**			10309
	18	565	1.3	50	**VP110**			8491
	18	573	1.8	50	**VP130**			11105
	18	589	2.7	50	**VP150**			15182
	15	649	1.1	60	**VP110**			9023
	15	659	1.4	60	**VP130**			11801
	15	678	2.1	60	**VP150**			16133
	11.3	815	1.1	80	**VP130**			12989
	11.3	841	1.5	80	**VP150**			17757
	9	955*	0.8*	100	**VP130**			13500
	9	971	1.2	100	**VP150**			18000
M2 090 1.50 4P.. (n1 = 1400 min^{-1})	**186.7**	68	1.9	7.5	**VP063**			2359
	186.7	68	2.7	7.5	**VP075**			2785
	140	89	1.5	10	**VP063**			2597
	140	90	2.2	10	**VP075**			3065
	93.3	127	1.1	15	**VP063**			2973
	93.3	130	1.5	15	**VP075**			3509
	93.3	134	3	15	**VP090**			3882
	70	166*	0.8*	20	**VP063**			3272
	70	168	1.3	20	**VP075**			3862
	70	172	2.1	20	**VP090**			4273
	56	205	1	25	**VP075**			4160
	56	210	1.6	25	**VP090**			4603
	56	218	3.1	25	**VP110**			5816
	46.7	233	1	30	**VP075**			4421
	46.7	239	1.7	30	**VP090**			4891
	46.7	246	3	30	**VP110**			6181
	35	299*	0.8*	40	**VP075**			4865
	35	307	1.2	40	**VP090**			5383
	35	319	2.2	40	**VP110**			6803
	28	368*	0.9*	50	**VP090**			5799
	28	384	1.7	50	**VP110**			7328
	23.3	424*	0.8*	60	**VP090**			6163
	23.3	442	1.4	60	**VP110**			7787
	19	535	1.9	73.5		**VR090/110**		8298
	17.5	548*	0.9*	80	**VP110**			8571
	17.5	557	1.5	80	**VP130**			11210
	14.3	693	1.3	98		**VR090/110**		9133
	14	655	1.1	100	**VP130**			12076
	11.4	817	1.1	122.5		**VR090/110**		9838
	9.5	936*	0.8*	147		**VR090/110**		10320
	7.1	1149*	0.8*	196		**VR090/130**		13500

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
1.50								
M2 090 1.50 4P.. (n1 = 1400 min^{-1})	**5.7**	962*	0.9*	245		**VR090/130**		13500
	5.6	1669*	0.9*	250			**VC063/130**	13500
	5.6	1602	1.3	250			**VC063/150**	18000
	4.7	1789	1	300			**VC063/130**	13500
	4.7	1860	1.3	300			**VC063/150**	18000
	3.5	2279*	0.7*	400			**VC063/130**	13500
	3.5	2208	1.2	400			**VC063/150**	18000
	2.8	2582*	0.9*	500			**VC063/150**	18000
	2.3	3057*	0.9*	600			**VC063/150**	18000
M2 090 1.50 2P.. (n1 = 2800 min^{-1})	**373**	35	2.7	7.5	**VP063**			1873
	280	45	2.2	10	**VP063**			2061
	280	45	3.2	10	**VP075**			2433
	186.7	66	1.6	15	**VP063**			2359
	186.7	66	2.3	15	**VP075**			2785
	140	86	1.2	20	**VP063**			2597
	140	86	1.9	20	**VP075**			3065
	140	90	2.9	20	**VP090**			3391
	112	105*	0.9*	25	**VP063**			2797
	112	105	1.4	25	**VP075**			3302
	112	110	2.3	25	**VP090**			3653
	93.3	120	1	30	**VP063**			2973
	93.3	121	1.4	30	**VP075**			3509
	93.3	127	2.4	30	**VP090**			3882
	70	156*	0.7*	40	**VP063**			3272
	70	156	1.1	40	**VP075**			3862
	70	164	1.7	40	**VP090**			4273
	70	170	3.1	40	**VP110**			5399
	56	187	1.3	50	**VP075**			4160
	56	197	1.3	50	**VP090**			4603
	56	205	2.4	50	**VP110**			5816
	46.7	215	1.1	60	**VP075**			4421
	46.7	227	1.1	60	**VP090**			4891
	46.7	236	2	60	**VP110**			6181
	35	287*	0.8*	80	**VP090**			5383
	35	299	1.3	80	**VP110**			6803
	28	358	1	100	**VP110**			7328
	9.3	878	1.9	300			**VC063/130**	13500
	7	1105	1.4	400			**VC063/130**	13500
	5.6	1305	1.1	500			**VC063/130**	13500
2.20								
M2 100 2.20 4P.. (n1 = 1400 min^{-1})	**186.7**	100	1.8	7.5	**VP075**			2785
	186.7	101	2.9	7.5	**VP090**			3081
	140	132	1.5	10	**VP075**			3065
	140	134	2.3	10	**VP090**			3391
	93.3	191	1	15	**VP075**			3509
	93.3	194	1.9	15	**VP090**			3882
	93.3	196	3.3	15	**VP110**			4905
	70	249*	0.9*	20	**VP075**			3862
	70.00	252	1.4	20	**VP090**			4273
	70	255	2.5	20	**VP110**			5399
	56	304*	0.7*	25	**VP075**			4160
	56.00	308	1.1	25	**VP090**			4603
	56	315	2.2	25	**VP110**			5816
	56	319	2.9	25	**VP130**			7607
	46.7	347*	0.7*	30	**VP075**			4421
	46.70	351	1.2	30	**VP090**			4891
	46.7	356	2	30	**VP110**			6181

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
2.20								
M2 100 2.20 4P.. (n1 = 1400 min^{-1})	**46.7**	365	2.9	30	**VP130**			8084
	35	468	1.5	40	**VP110**			6803
	35	468	2.2	40	**VP130**			8897
	30.00	456*	0.9*	40	**VP090**			5383
	28	563	1.2	50	**VP110**			7328
	28	563	1.7	50	**VP130**			9584
	28	570	2.5	50	**VP150**			13103
	23.3	648	1.0	60	**VP110**			7787
	23.3	648	1.4	60	**VP130**			10185
	23.3	657	1.9	60	**VP150**			13924
	17.5	816	1	80	**VP130**			11210
	17.5	816	1.4	80	**VP150**			15325
	14.0	976	1	100	**VP130**			12076
	14	960	1	100	**VP150**			16508
M2 112 2.20 6P.. (n1 = 900 min^{-1})	**120**	154	1.4	7.5	**VP075**			3227
	120	156	2.2	7.5	**VP090**			3570
	90	201	1.1	10	**VP075**			3551
	90	203	1.8	10	**VP090**			3929
	90	205	3.5	10	**VP110**			4965
	60	291*	0.9*	15	**VP075**			4065
	60	294	1.4	15	**VP090**			4498
	60	298	2.6	15	**VP110**			5684
	45	374*	0.7*	20	**VP075**			4474
	45	532*	0.9*	30	**VP090**			5667
	45	378	1	20	**VP090**			4951
	45	388	1.9	20	**VP110**			6256
	36	467*	0.9*	25	**VP090**			5333
	36	473	1.6	25	**VP110**			6739
	36	479	2.2	25	**VP130**			8814
	30	532	1.6	30	**VP110**			7161
	30	546	2.1	30	**VP130**			9366
	22.5	701	1.1	40	**VP110**			7882
	22.5	700	1.6	40	**VP130**			10309
	18	841*	0.9*	50	**VP110**			8491
	18	840	1.2	50	**VP130**			11105
	18	864	1.9	50	**VP150**			15182
	15	967*	0.7*	60	**VP110**			9023
	15	966	1	60	**VP130**			11801
	15	995	1.4	60	**VP150**			16133
	11.3	1214*	0.7*	80	**VP130**			12898
	11.3	1233	1.1	80	**VP150**			17757
	9	1425*	0.8*	100	**VP150**			18000
M2 090 2.20 2P.. (n1 = 2800 min^{-1})	**373.3**	51	1.8	7.5	**VP063**			1873
	373.3	50	2.6	7.5	**VP075**			2210
	280	66	1.5	10	**VP063**			2061
	280	66	2.2	10	**VP075**			2433
	280	68	3.5	10	**VP090**			2692
	186.7	97	1.1	15	**VP063**			2359
	186.7	97	1.5	15	**VP075**			2785
	186.7	100	2.7	15	**VP090**			3081
	140	128*	0.8*	20	**VP063**			2597
	140	126	1.3	20	**VP075**			3065
	140	129	2	20	**VP090**			3391
	112	154	1	25	**VP075**			3302
	112	159	1.6	25	**VP090**			3653
	112	161	3.1	25	**VP110**			4616
	93.3	178	1	30	**VP075**			3509
	93.3	185	1.7	30	**VP090**			3882
	93.3	187	3	30	**VP110**			4905

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
2.20								
M2 090 2.20 2P.. (n1 = 2800 min^{-1})	**70**	234*	0.8*	40	**VP075**			3862
	70	237	1.2	40	**VP090**			4273
	70	243	2.2	40	**VP110**			5399
	56	289*	0.9*	50	**VP090**			4603
	56	296	1.7	50	**VP110**			5816
	46.7	347	1.4	60	**VP110**			6181
	38.6	398	2.1	73.5		**VR090/110**		6586
	35	444*	0.9*	80	**VP110**			6803
	35	444	1.3	80	**VP130**			8897
	28.9	516	1.5	98		**VR090/110**		7249
	28	525*	0.7*	100	**VP110**			7328
	28	525	1	100	**VP130**			9584
	23.1	617	1.2	122.5		**VR090/110**		7809
3.00								
M2 100 3.00 2P.. (n1 = 2800 min^{-1})	**373.3**	68	1.9	7.5	**VP075**			2210
	373.3	70	3	7.5	**VP090**			2446
	280	90	1.6	10	**VP075**			2433
	280	92	2.6	10	**VP090**			2692
	186.7	135	1.2	15	**VP075**			2785
	186.7	137	2	15	**VP090**			3081
	140	176	1	20	**VP075**			3065
	140	180	1.4	20	**VP090**			3391
	140	182	2.7	20	**VP110**			4285
	112	215*	0.7*	25	**VP075**			3302
	112	220	1.1	25	**VP090**			3653
	112	225	2.2	25	**VP110**			4616
	93.3	249*	0.7*	30	**VP075**			3509
	93.3	255	1.2	30	**VP090**			3882
	93.3	258	2.1	30	**VP110**			4905
	70	328*	0.8*	40	**VP090**			4273
	70	340	1.6	40	**VP110**			5399
	56	409	1.2	50	**VP110**			5816
	46.7	479	1	60	**VP110**			6181
M2 100 3.00 4P.. (n1 = 1400 min^{-1})	**186.7**	137	1.4	7.5	**VP075**			2785
	186.7	138	2.1	7.5	**VP090**			3081
	140	180	1.1	10	**VP075**			3065
	140	182	1.7	10	**VP090**			3391
	140	182	3.3	10	**VP110**			4285
	93.3	261*	0.8*	15	**VP075**			3509
	93.3	264	1.4	15	**VP090**			3882
	93.3	264	2.5	15	**VP110**			4905
	70	344	1	20	**VP090**			4273
	70	348	1.9	20	**VP110**			5399
	56	420*	0.8*	25	**VP090**			4603
	56	430	1.6	25	**VP110**			5816
	56	430	2.2	25	**VP130**			7607
	46.7	479*	0.9*	30	**VP090**			4891
	46.7	485	1.5	30	**VP110**			6181
	46.7	491	2.1	30	**VP130**			8084
	35	638	1.1	40	**VP110**			6803
	35	638	1.6	40	**VP130**			8897
	28	767*	0.9*	50	**VP110**			7328
	28	767	1.3	50	**VP130**			9584

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\boldsymbol{M_{m2} = M_2 \times fs}$

Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
3.00								
M2 100 3.00 4P.. (n1 = 1400 min^{-1})	**28**	778	1.8	50	**VP150**			13103
	23.3	884	1	60	**VP130**			10185
	23.3	896	1.4	60	**VP150**			13924
	17.5	1113*	0.8*	80	**VP130**			11210
	17.5	1113	1	80	**VP150**			15325
	14.00	1310*	0.8*	100	**VP150**			16508
M2 132 3.00 6P.. (n1 = 900 min^{-1})	**120**	212	3.1	7.5	**VP110**			4511
	90	280	2.5	10	**VP110**			4965
	90	280	3.4	10	**VP130**			6494
	60	406	1.9	15	**VP110**			5684
	60	406	2.6	15	**VP130**			7434
	45	528	1.4	20	**VP110**			6256
	45	535	1.9	20	**VP130**			8182
	45	541	2.8	20	**VP150**			11186
	36	653	1.2	25	**VP110**			6739
	36	653	1.6	25	**VP130**			8814
	36	669	2.1	25	**VP150**			12050
	30	736	1.1	30	**VP110**			7161
	30	745	1.6	30	**VP130**			9366
	30	783	1.8	30	**VP150**			12805
	22.5	955*	0.8*	40	**VP110**			7882
	22.5	955	1.2	40	**VP130**			10309
	22.5	968	1.9	40	**VP150**			14094
	18	1178	1.4	50	**VP150**			15182
	15	1357	1.1	60	**VP150**			16133
4.00								
M2 112 4.00 2P.. (n1 = 2800 min^{-1})	**373.3**	91	1.4	7.5	**VP075**			2210
	373.3	93	2.3	7.5	**VP090**			2446
	280	120	1.2	10	**VP075**			2433
	280	123	1.9	10	**VP090**			2692
	186.7	180*	0.9*	15	**VP075**			2785
	186.7	182	1.5	15	**VP090**			3081
	140	235	0.7	20	**VP075**			3065
	140	240	1.1	20	**VP090**			3391
	112	293*	0.9*	25	**VP090**			3653
	93.3	340*	0.9*	30	**VP090**			3882
M2 112 4.00 4P.. (n1 = 1400 min^{-1})	**186.7**	180	1	7.5	**VP075**			2785
	186.7	184	1.6	7.5	**VP090**			3081
	187	184	3.0	7.5	**VP110**			3893
	140	237*	0.8*	10	**VP075**			3065
	140	243	1.3	10	**VP090**			3391
	140	243	2.5	10	**VP110**			4285
	93.3	352	1	15	**VP090**			3882
	93.3	352	1.9	15	**VP110**			4905
	70	458*	0.8*	20	**VP090**			4273
	70	464	1.4	20	**VP110**			5399
	56	573	1.2	25	**VP110**			5816
	56	573	1.6	25	**VP130**			7607
	46.7	647	1.1	30	**VP110**			6181
	46.7	655	1.6	30	**VP130**			8084
	35	863*	0.8*	40	**VP110**			6803
	35	851	1.2	40	**VP130**			8897
	28	1023	1	50	**VP130**			9584
	28	1037	1.4	50	**VP150**			13103
	23.3	1179*	0.8*	60	**VP130**			10185
	23.3	1195	1.1	60	**VP150**			13924
	17.5	1484*	0.8*	80	**VP150**			15325
M2 132 4.00 6P.. (n1 = 900 min^{-1})	**120**	283	2.3	7.5	**VP110**			4511
	120	287	3.1	7.5	**VP130**			5901
	90	374	1.9	10	**VP110**			4965
	90	374	2.6	10	**VP130**			6494
	60	541	1.4	15	**VP110**			5684

* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

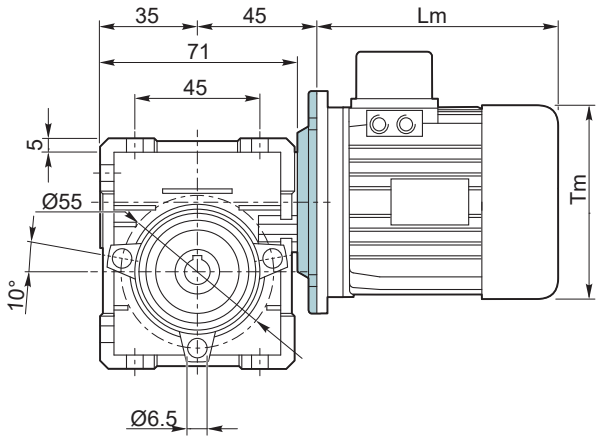
Tabella dati tecnici motoriduttori / *Table technical data gearmotors*

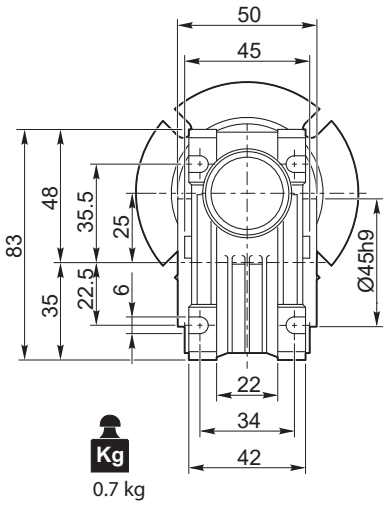
Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
4.00								
M2 132 4.00 6P..	**60**	541	2	15	**VP130**			7434
(n1 = 900 min^{-1})	**56**	580	1.2	25	**VP110**			5816
	46.7	655	1.1	30	**VP110**			6181
	45	713	1.5	20	**VP130**			8182
	45	722	2.1	20	**VP150**			11186
	36	870	1.2	25	**VP130**			8814
	36	892	1.5	25	**VP150**			12050
	35	863*	0.8*	40	**VP110**			6803
	30	1006	1.2	30	**VP130**			9366
	30	1045	1.3	30	**VP150**			12805
	22.5	1291*	0.9*	40	**VP130**			10309
	22.5	1291	1.4	40	**VP150**			14094
	18	1571	1	50	**VP150**			15182
	15	1809*	0.8*	60	**VP150**			16133
5.50								
M2 132 5.50 4P..	**186.7**	253	2.2	7.5	**VP110**			3893
(n1 = 1400 min^{-1})	**140**	334	1.8	10	**VP110**			4285
	140	334	2.5	10	**VP130**			5605
	93.3	484	1.4	15	**VP110**			4905
	93.3	490	1.9	15	**VP130**			6416
	70	638	1	20	**VP110**			5399
	70	645	1.4	20	**VP130**			7062
	70	645	2	20	**VP150**			9654
	56	798*	0.9*	25	**VP110**			5816
	56	788	1.2	25	**VP130**			7607
	56	788	1.5	25	**VP150**			10400
	46.7	901*	0.8*	30	**VP110**			6181
	46.7	900	1.2	30	**VP130**			8084
	46.7	934	1.3	30	**VP150**			11051
	35	1171*	0.9*	40	**VP130**			8897
	35	1171	1.3	40	**VP150**			12163
	28	1426	1	50	**VP150**			13103
	23.3	1643*	0.8*	60	**VP150**			13924
7.50								
M3 132 7.50 4P..	**186.7**	345	1.6	7.5	**VP110**			3893
(n1 = 1400 min^{-1})	**186.7**	349	2.1	7.5	**VP130**			5092
	140	455	1.3	10	**VP110**			4285
	140	455	1.8	10	**VP130**			5605
	93.3	660	1	15	**VP110**			4905
	93.3	668	1.4	15	**VP130**			6416
	70	880*	0.7*	20	**VP110**			5399
	70	880	1.0	20	**VP130**			7062
	70	880	1.5	20	**VP150**			9654
	56	1074*	0.9*	25	**VP130**			7607
	56	1074	1.1	25	**VP150**			10400
	46.7	1228*	0.8*	30	**VP130**			8084
	46.7	1274*	0.9*	30	**VP150**			11051
	35	1596*	0.7*	40	**VP130**			8897
	35	1596	1	40	**VP150**			12163
	28	1971*	0.7*	50	**VP150**			13103
11.0								
M3 160 11.0 4P..	**187**	512	2.3	7.5	**VP150**			6962
(n1 = 1400 min^{-1})	**140**	675	1.8	10	**VP150**			7663
	93.3	990	1.3	15	**VP150**			8771
	70	1291	1.0	20	**VP150**			9654
	56	1576*	0.8*	25	**VP150**			10400
15.0								
M3 160 15.0 4P..	**187**	698	1.7	7.5	**VP150**			6962
(n1 = 1400 min^{-1})	**140**	921	1.3	10	**VP150**			7663
	93.3	1351*	0.9*	15	**VP150**			8771
	70	1760*	0.7*	20	**VP150**			9654

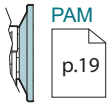
* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs: $\mathbf{M_{m2} = M_2 \times fs}$

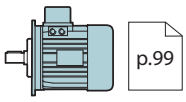
* **NOTE:** Maximun allowable torque M_{m2} must be calculated using service factor fs: $\mathbf{M_{m2} = M_2 \times fs}$

VP 025 P ...

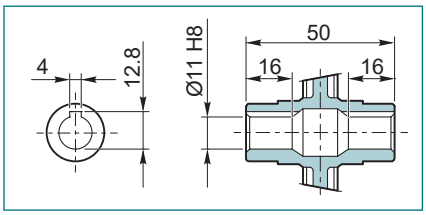




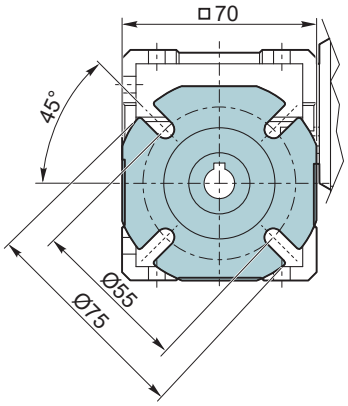


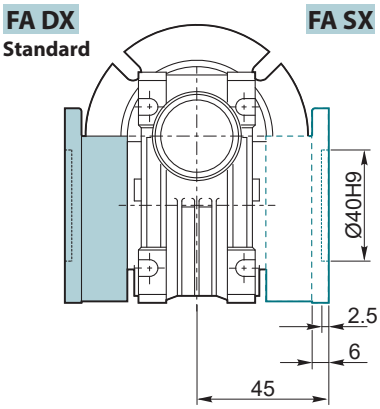


Albero uscita / Output shaft

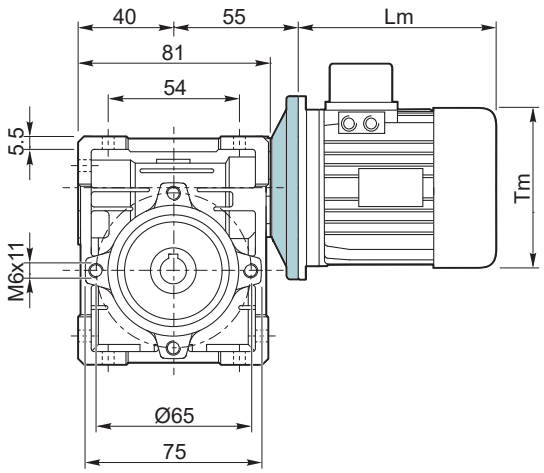


VP 025 F...

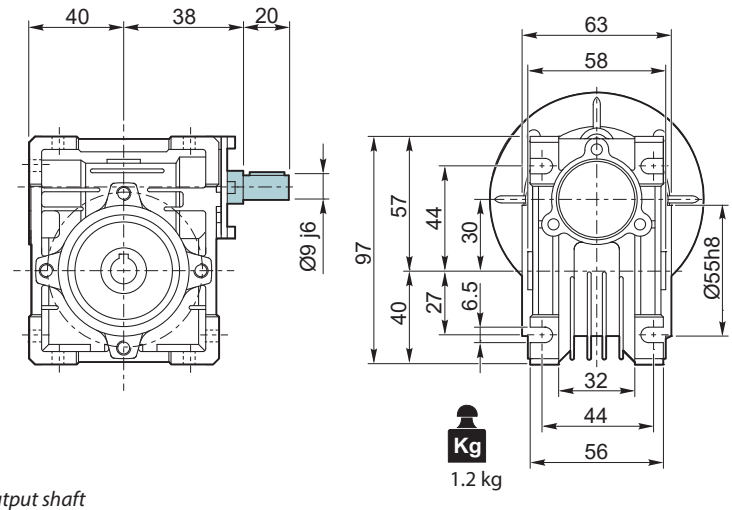


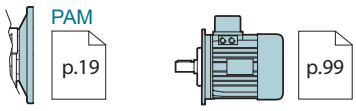


VP 030 P ...

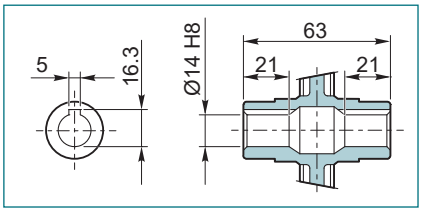


VI 030 P ...

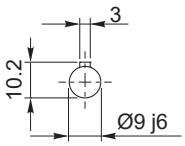




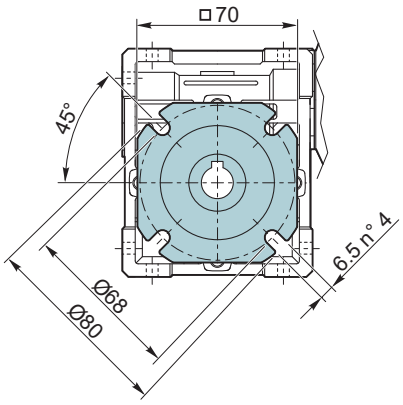
Albero uscita / Output shaft

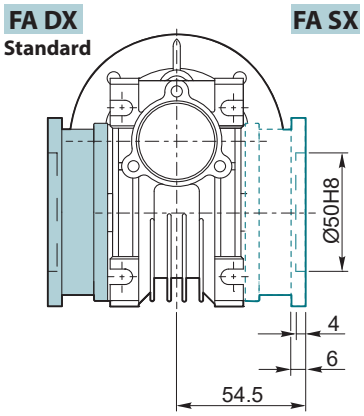


Albero entrata / Input shaft

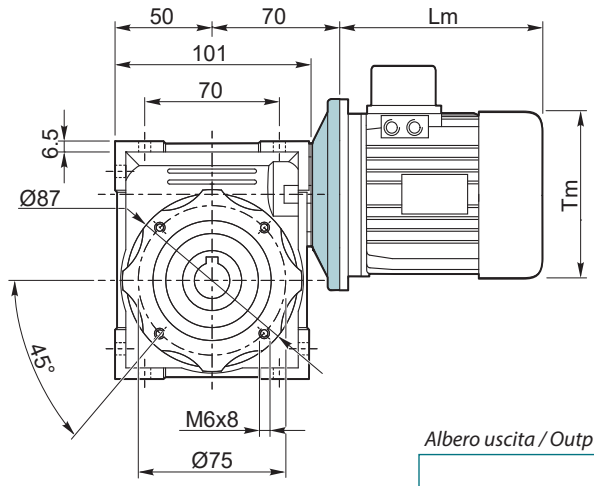


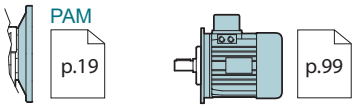
VP 030 F... / VI 030 F...



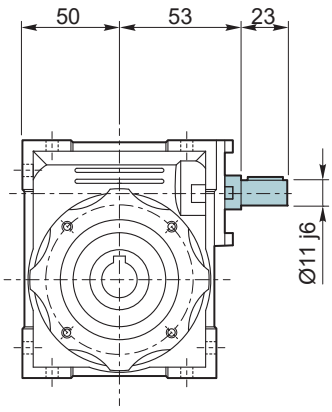


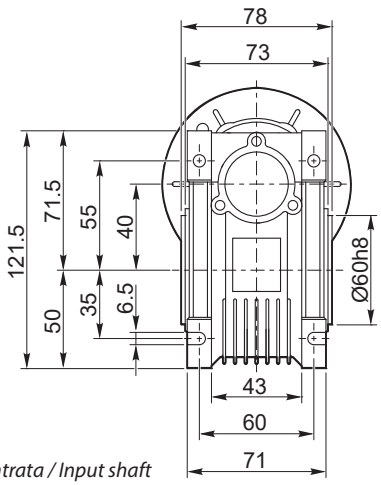
VP 040 P ...



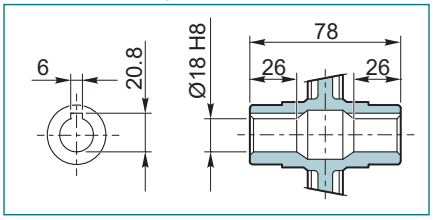


VI 040 P ...

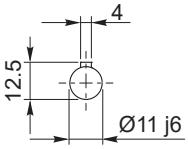




Albero uscita / Output shaft

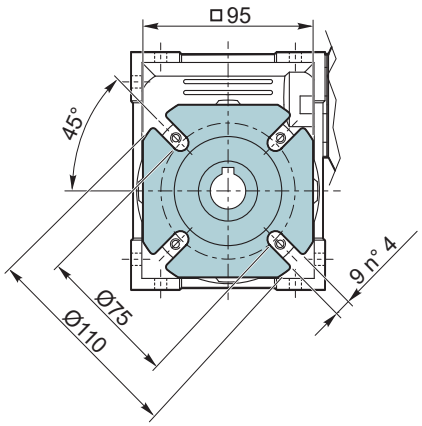


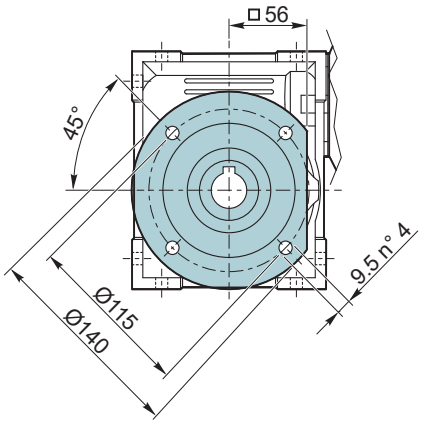
Albero entrata / Input shaft

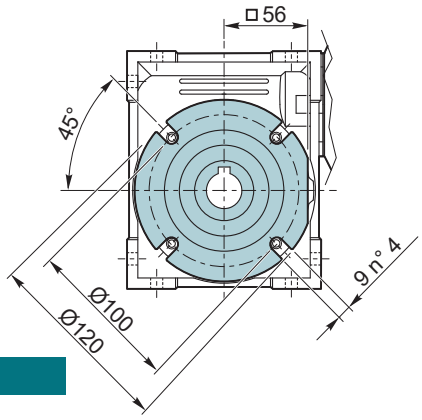


Kg
2.3 kg

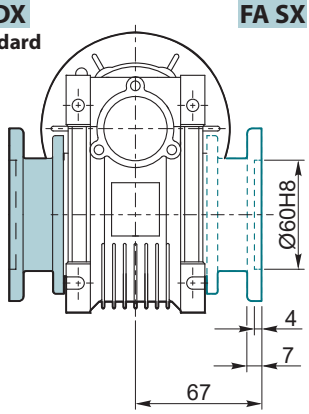
VP 040 F... / VI 040 F...



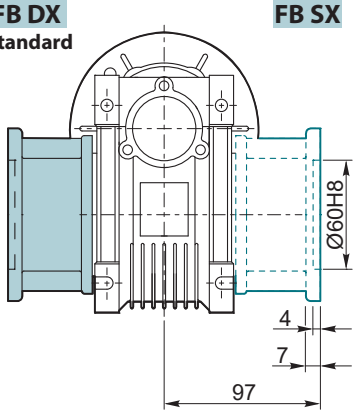




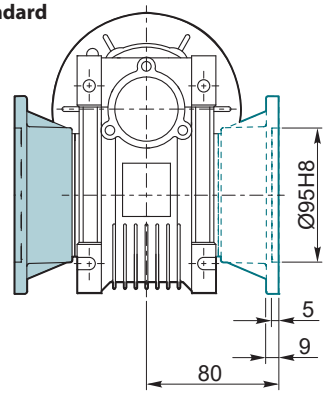
FA DX **FA SX**
Standard



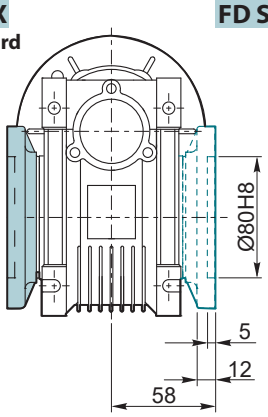
FB DX **FB SX**
Standard



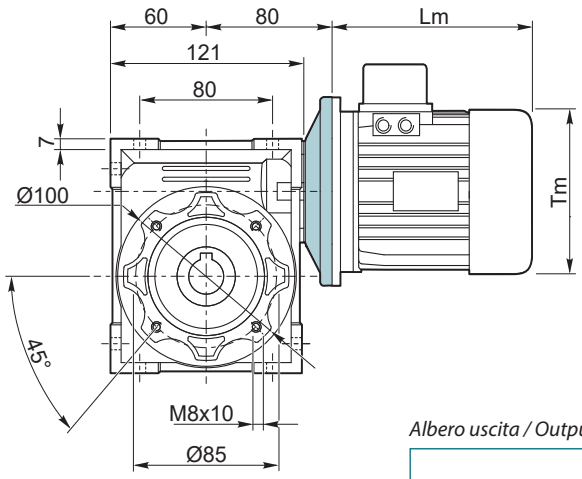
FC DX **FC SX**
Standard



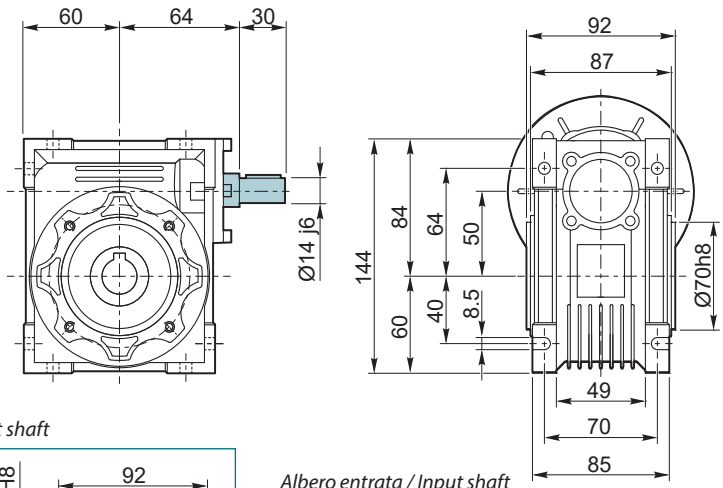
FD DX **FD SX**
Standard

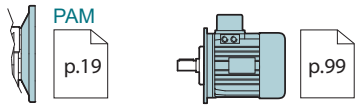


VP 050 P ...

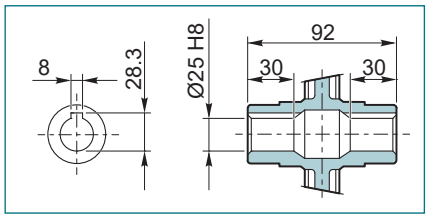


VI 050 P ...

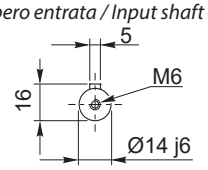




Albero uscita / Output shaft

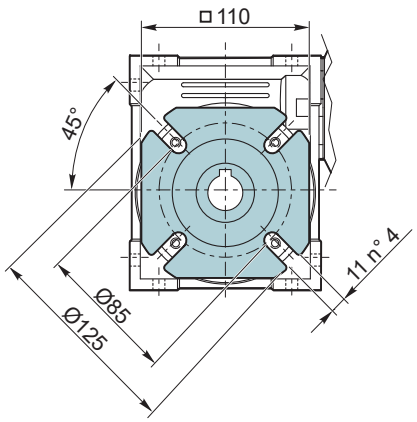


Albero entrata / Input shaft



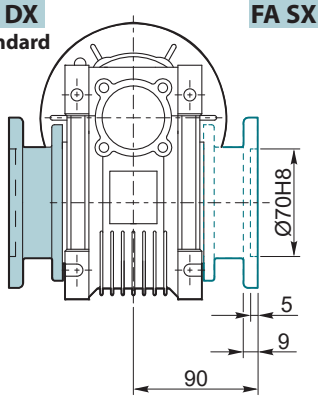
Kg
3.5 kg

VP 050 F... / VI 050 F...



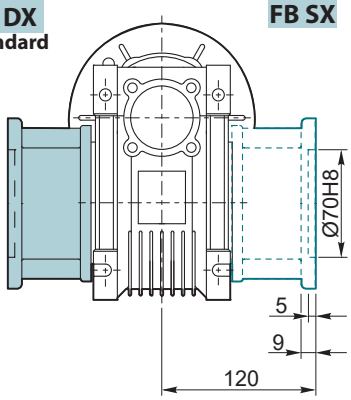
FA DX
Standard

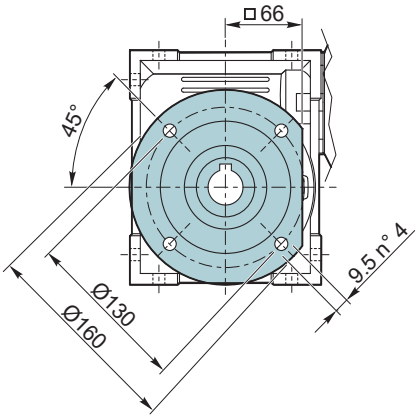
FA SX



FB DX
Standard

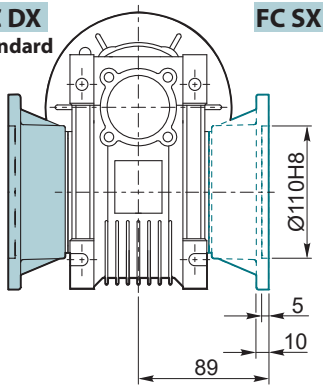
FB SX

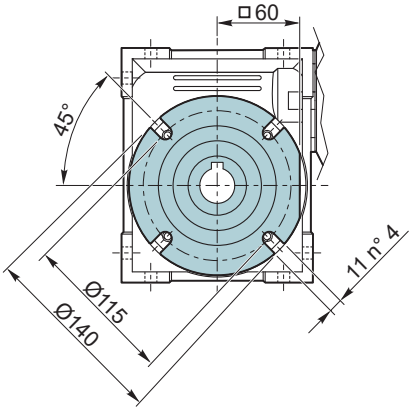




FC DX
Standard

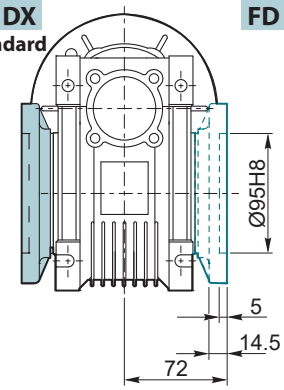
FC SX



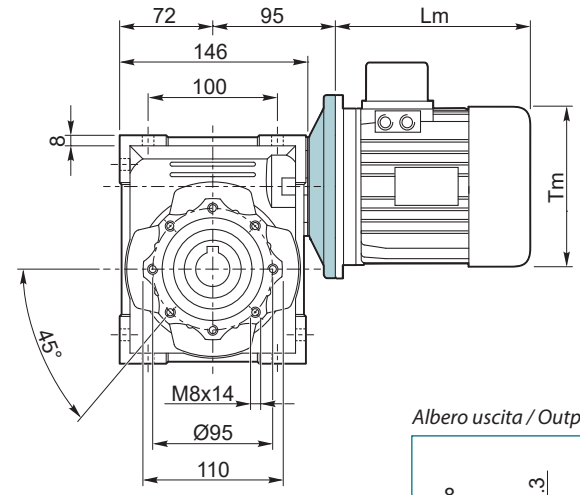


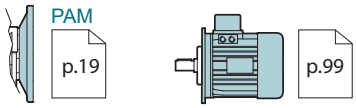
FD DX
Standard

FD SX

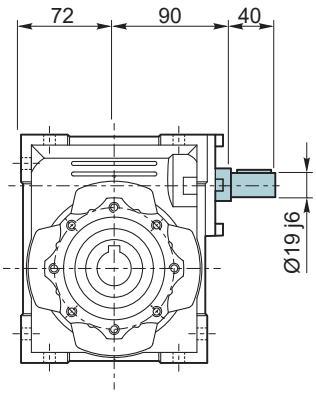


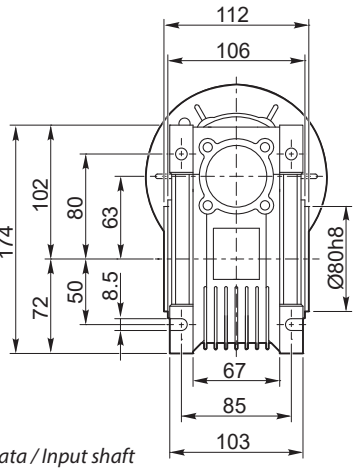
VP 063 P ...



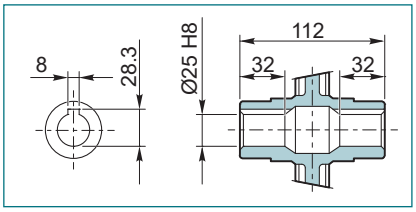


VI 063 P ...

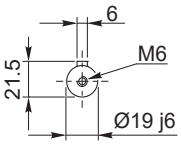




Albero uscita / Output shaft

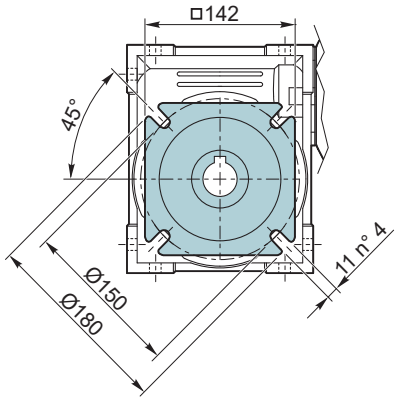


Albero entrata / Input shaft

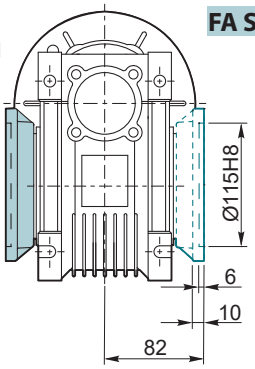


Kg
6.2 kg

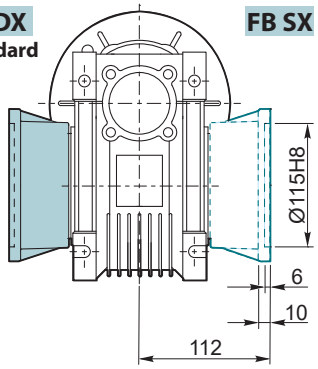
VP 063 F... / VI 063 F...

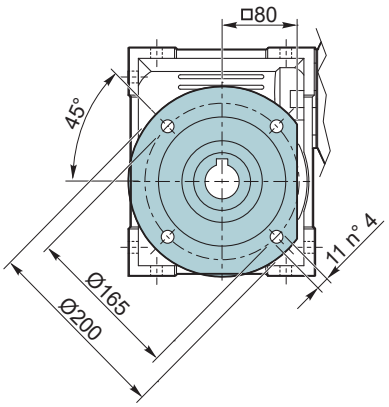


FA DX Standard **FA SX**

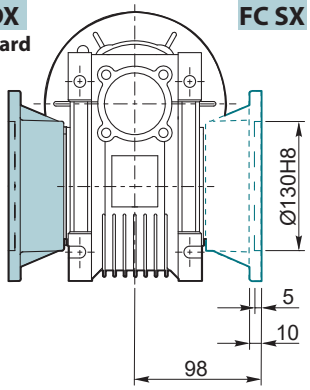


FB DX Standard **FB SX**

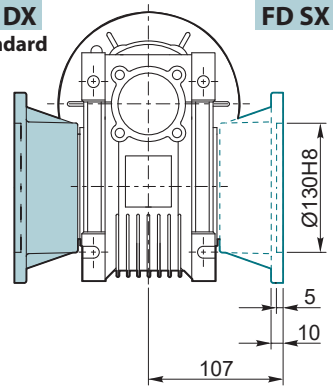


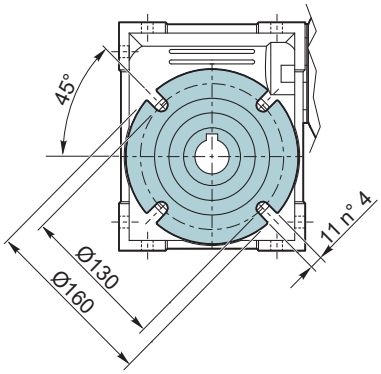


FC DX Standard **FC SX**

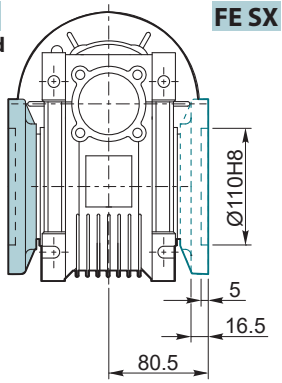


FD DX Standard **FD SX**

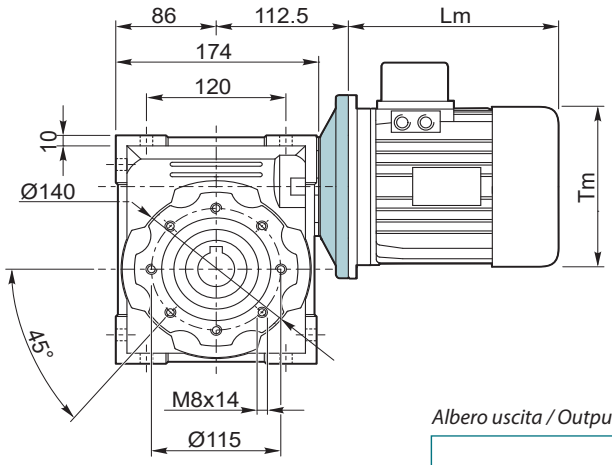




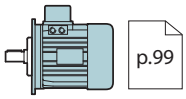
FE DX Standard **FE SX**



VP 075 P ...

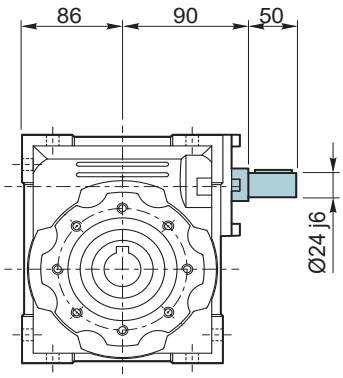


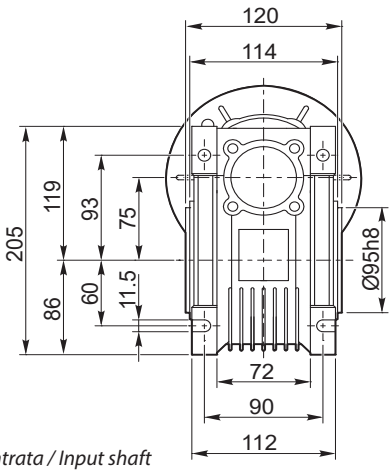
PAM p.19



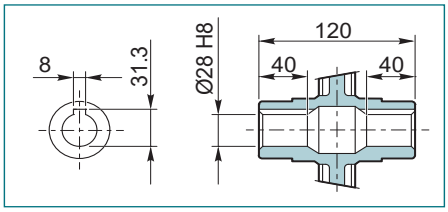
p.99

VI 075 P ...

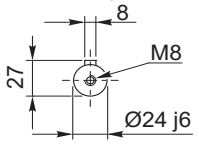




Albero uscita / Output shaft

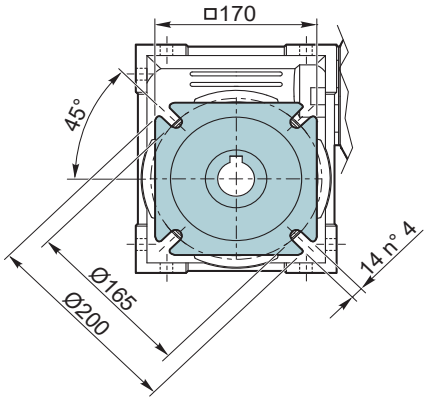


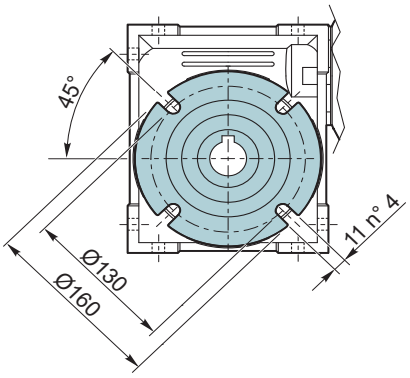
Albero entrata / Input shaft



Kg 9.0 kg

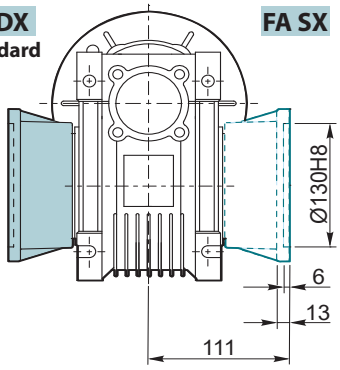
VP 075 F... / VI 075 F...





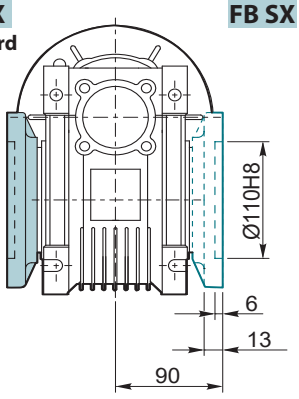
FA DX
Standard

FA SX

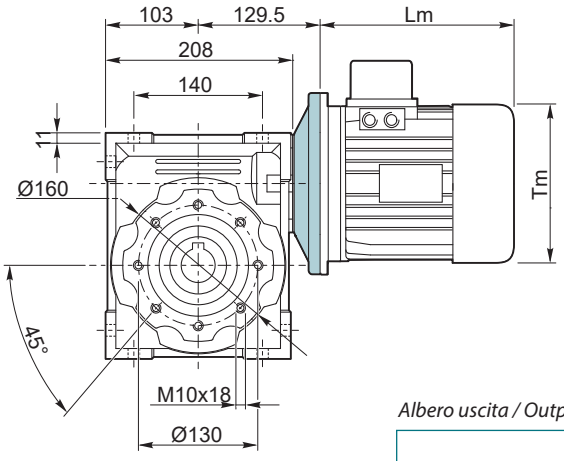


FB DX
Standard

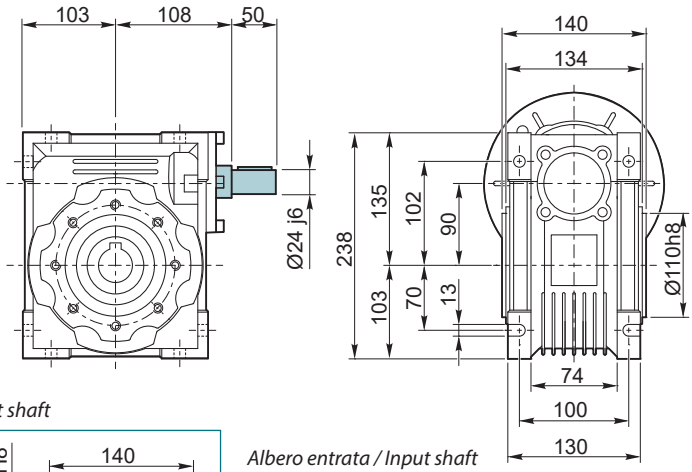
FB SX

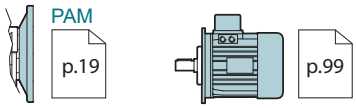


VP 090 P ...

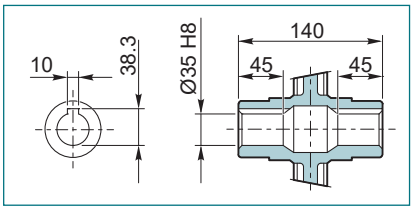


VI 090 P ...

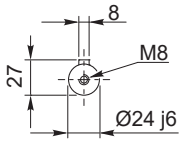




Albero uscita / Output shaft

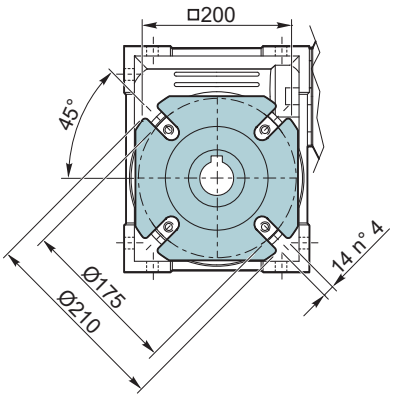


Albero entrata / Input shaft

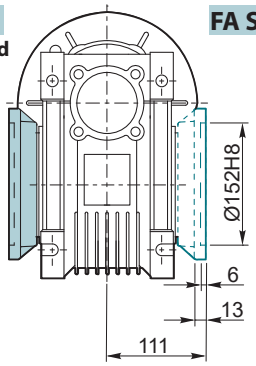


Kg
13 kg

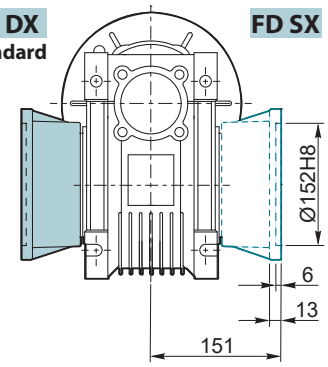
VP 090 F... / VI 090 F...

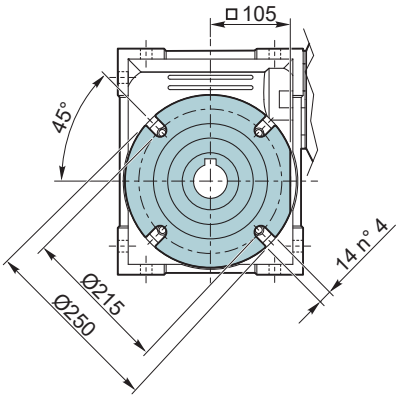


FA DX **Standard** **FA SX**

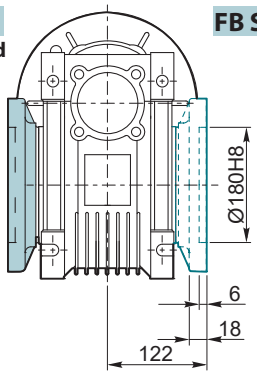


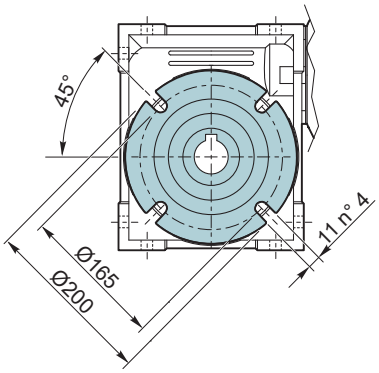
FD DX **Standard** **FD SX**



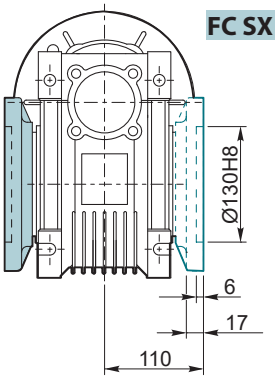


FB DX **Standard** **FB SX**

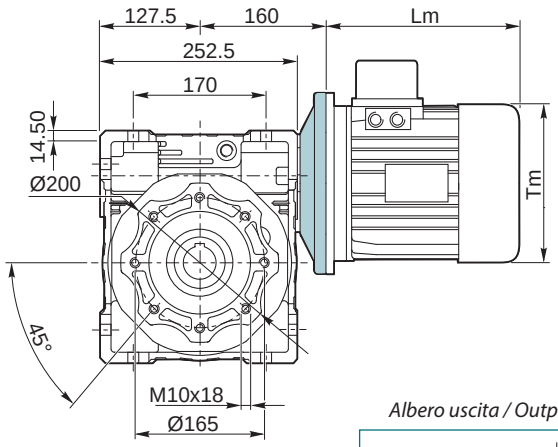




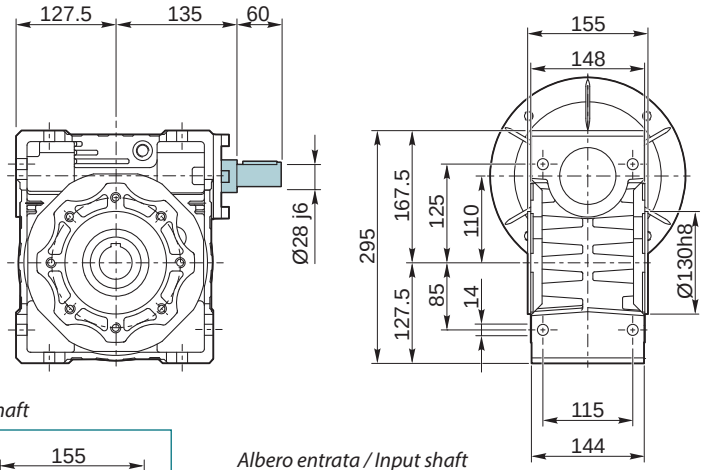
FC DX **Standard** **FC SX**

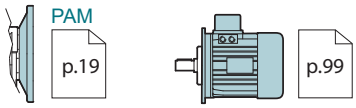


VP 110 P ...

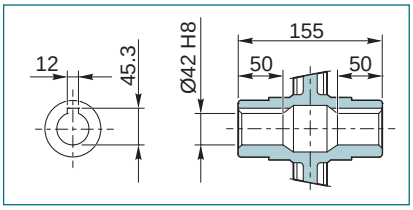


VI 110 P ...

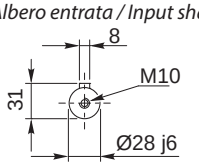




Albero uscita / Output shaft

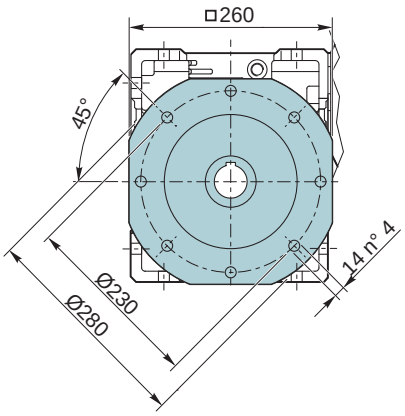


Albero entrata / Input shaft



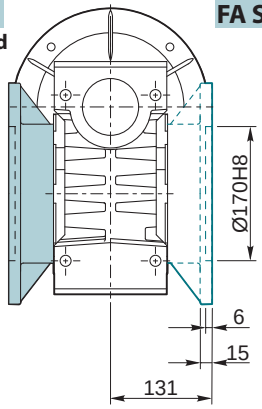
Kg
35 kg

VP 110 F... / VI 110 F...



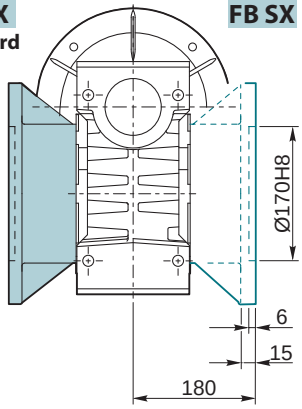
FA DX
Standard

FA SX

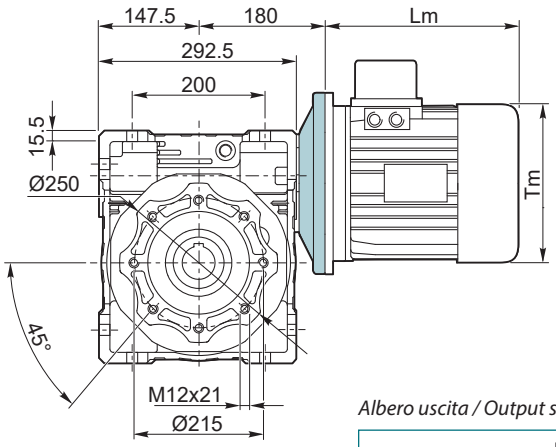


FB DX
Standard

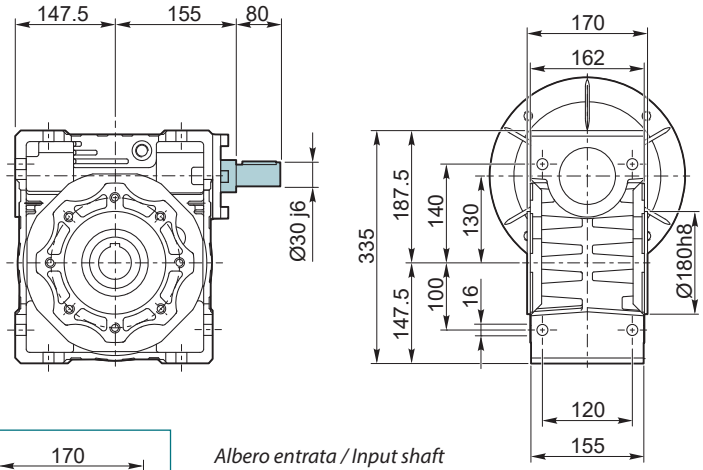
FB SX

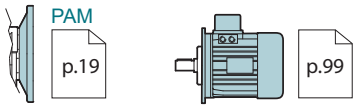


VP 130 P ...

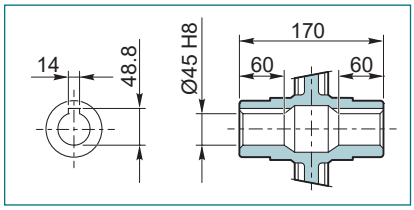


VI 130 P ...

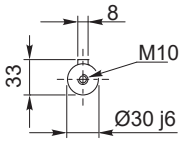




Albero uscita / Output shaft

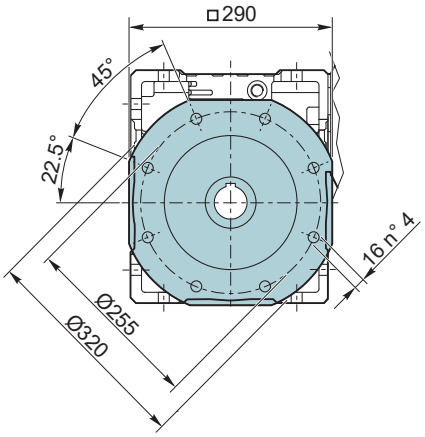


Albero entrata / Input shaft



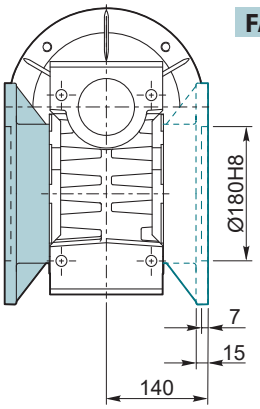
Kg
48 kg

VP 130 F... / VI 130 F...

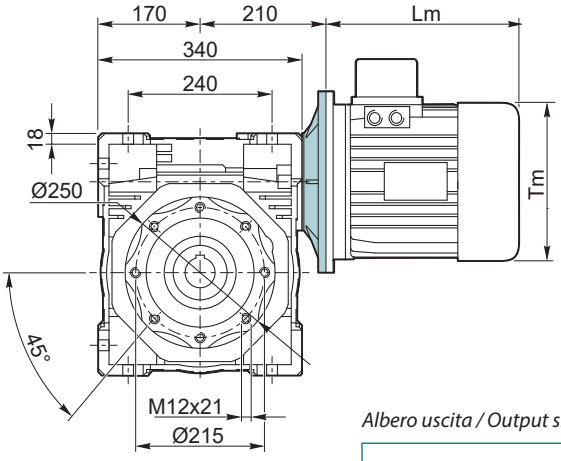


FA DX
Standard

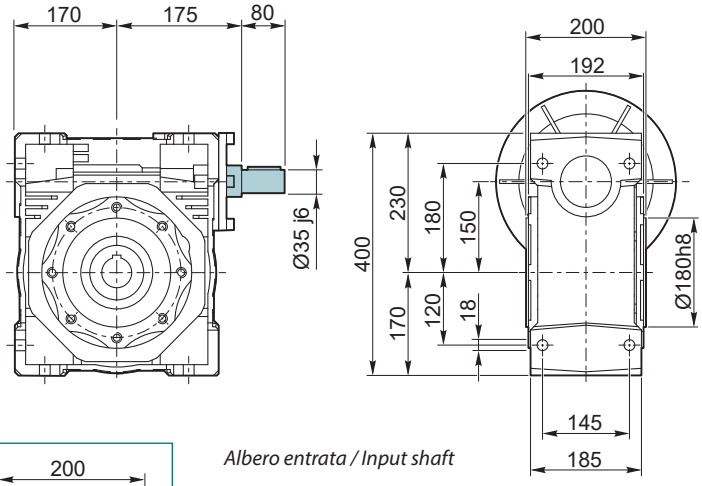
FA SX

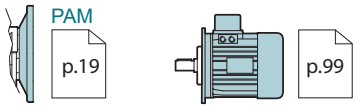


VP 150 P ...

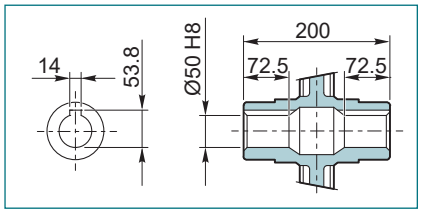


VI 150 P ...

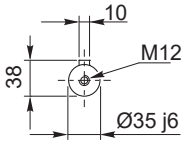




Albero uscita / Output shaft

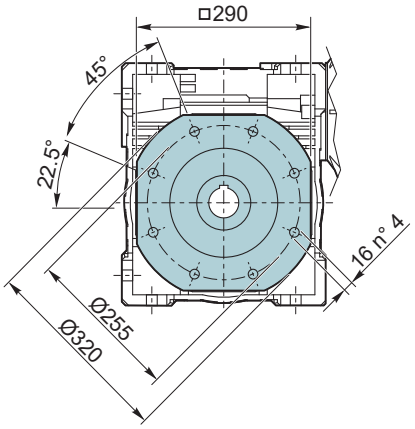


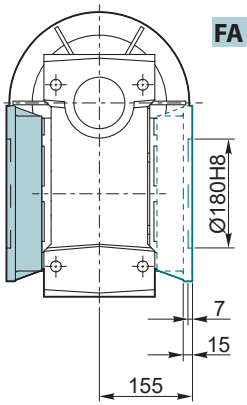
Albero entrata / Input shaft



Kg
84 kg

VP 150 F... / VI 150 F...



FA DX
Standard

FA SX