

GEARBOXES

POWER AT WORK.



Worm
Gearboxes
Variators
Motors



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 pre-stadio, 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.

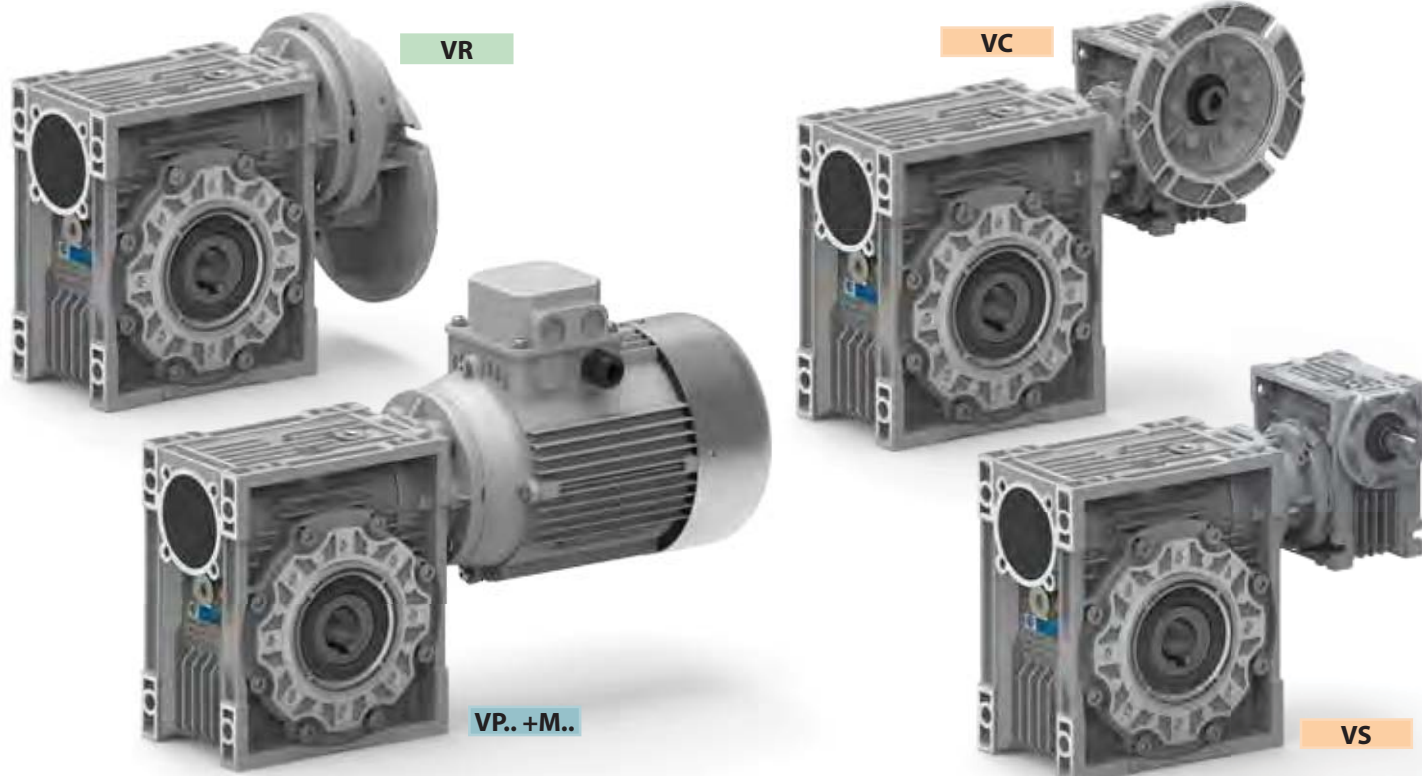
All single and combination gearboxes are available both with PAM input, in other words ready for direct connection to the electric motor, and with the extended solid input shaft for connection to an input transmission.

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.

Le carcasse dei riduttori della gamma a vite senza fine hanno forma quadrata, 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.

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.

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.

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.

*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.*

*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.*

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

MATERIALS AND PROPERTIES

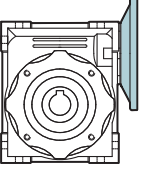
*The housing of the gearboxes from size 25 up to size 90 is made of pressure die casting aluminium. The housing of the gearboxes from size 110 up to size 150 is made of **grey cast iron**. All worms are made of high strength, case-hardening alloy steel and are case-hardened, hardened and subjected to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

STRONG POINTS OF THE SATI RANGE

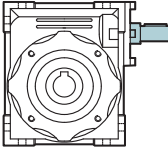
The worm gearboxes are the most versatile and flexible types of gearboxes and prove to be ideal for a wide range of possible applications. The gearboxes in the SATI range have the great advantage of being easy to install and uninstall, where maintenance needs are really minimal. Strong and efficient,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

Designazione / Designation

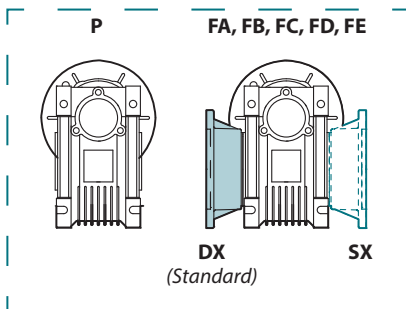
RIDUTTORE A VITE SENZA FINE QUADRO FLANGIATO / WORM GEARBOXES WITH FLANGE ACCESSORI / ACCESSORIES

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 p.92	- B (1) p.93	AS AD p.93	BR p.93

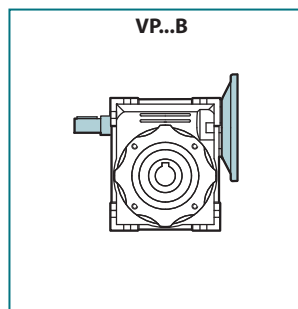
RIDUTTORE A VITE SENZA FINE QUADRO / WORM GEARBOXES ACCESSORI / ACCESSORIES

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 p.92	- B p.93	AS AD p.93	BR p.93

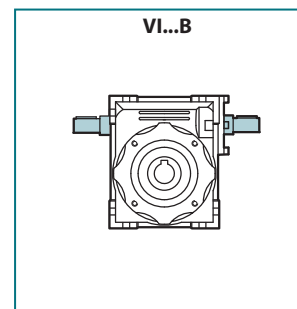
Versione riduttore / Gearbox version



Seconda entrata / Additional input



Seconda entrata / Additional input



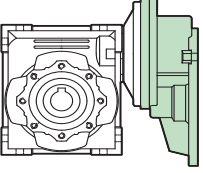

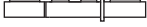
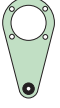




(1) Versione seconda entrata disponibile dalla gr. 30 alla 150.

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

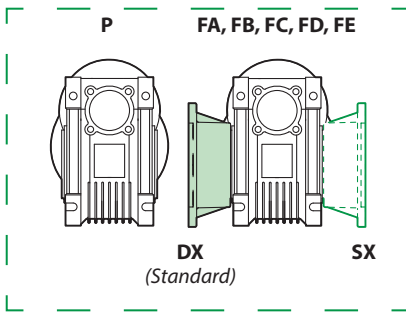
* Dalla gr. 25 alla 63, i riduttori sono forniti in posizione U = Universale

* 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 gearbox	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)	63 71 80 90	B5	U* B3 B6 B7 B8 V5 V6	AS  AD 	BR 	 p.20	 p.8	 p.93	 p.93

Versione riduttore / Gearbox version



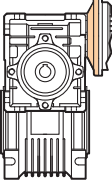

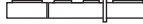

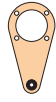

(1) Rapporti di riduzione reali del kit precoppia, consultare tab. p.20

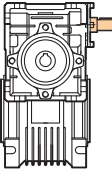
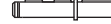




* Dalla gr. 25 alla 63, i riduttori sono forniti in posizione U = Universale

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

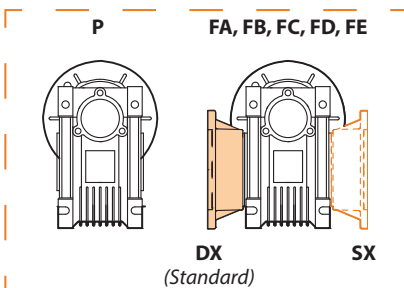
* From size 25 to 63, the gearboxes are supplied in position U = Universal

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	U* B3 B6 B7 B8 V5 V6 (1)	  	 	

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	U* B3 B6 B7 B8 V5 V6 (1)	  	 

Versione riduttore / Gearbox version



(1) Posizione di montaggio riferita al riduttore uscita

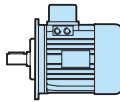

* Dalla gr. 25 alla 63, i riduttori sono forniti in posizione U = Universale

(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
 	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.

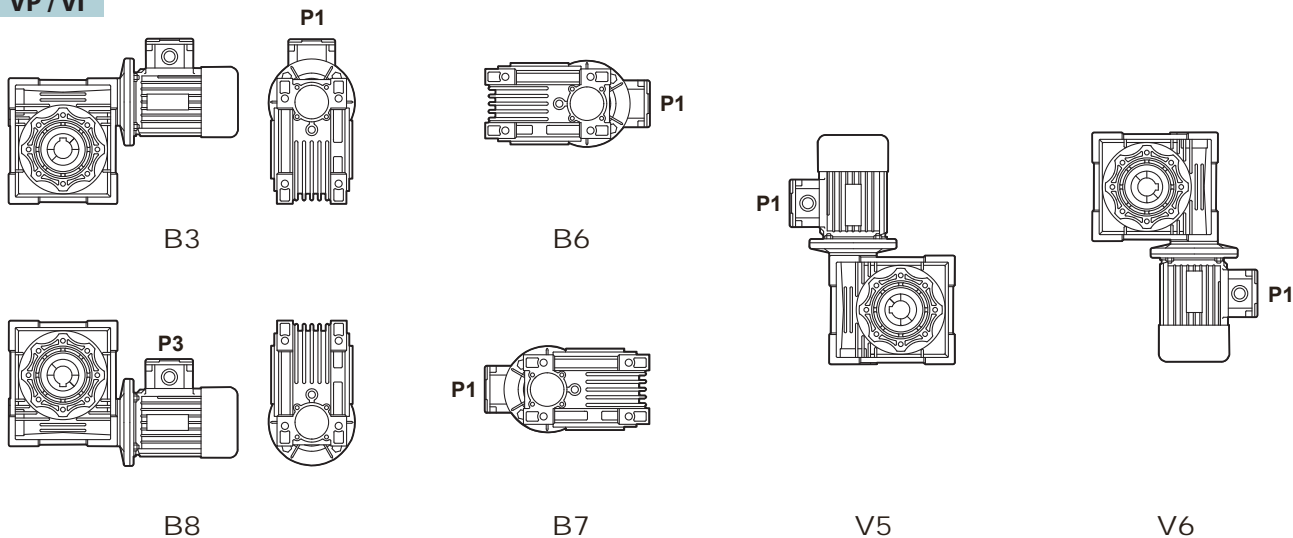
VP 040 ... + M 1 63 ... - P1

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

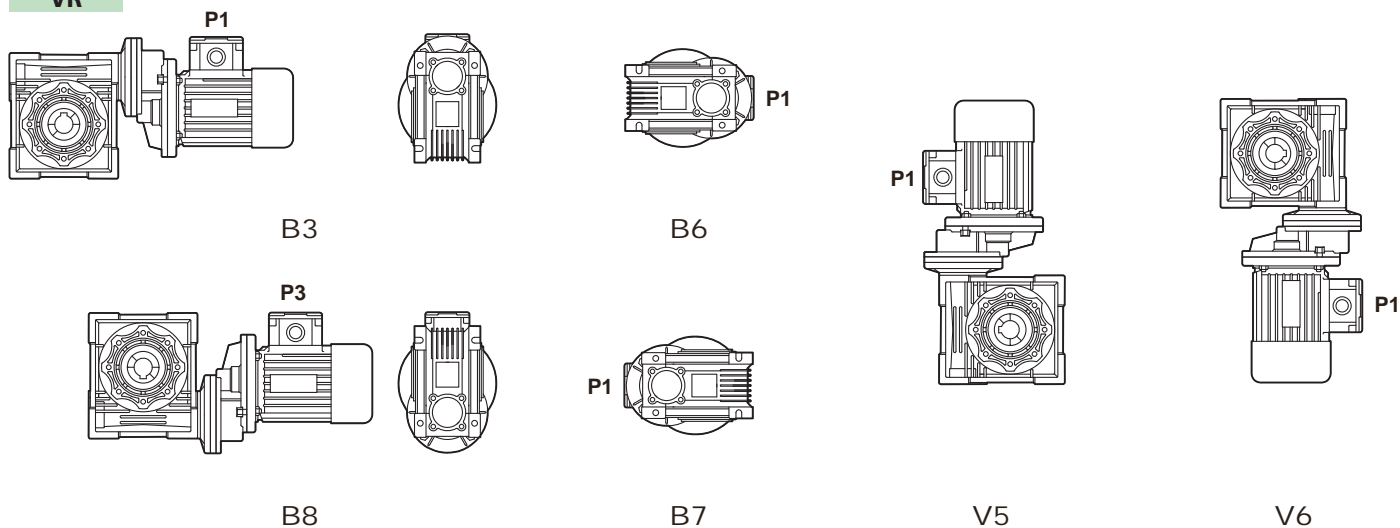
The designation of gearmotors is obtained by summing the gear code with the motor code.
 For further information please contact our Technical Office.

Posizioni di montaggio / Mounting positions

VP / VI

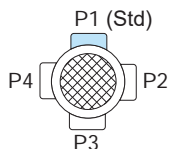


VR

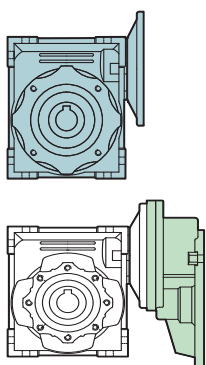


Negli schemi di montaggio dei motoriduttori sopra riportati, è indicata anche la posizione standard (1) della morsetteria mediante un numero il cui significato è rappresentato nel disegno seguente. In caso di particolari esigenze specificare in fase d'ordine la posizione desiderata (P1, P2, P3 o P4)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

The following drawing, 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



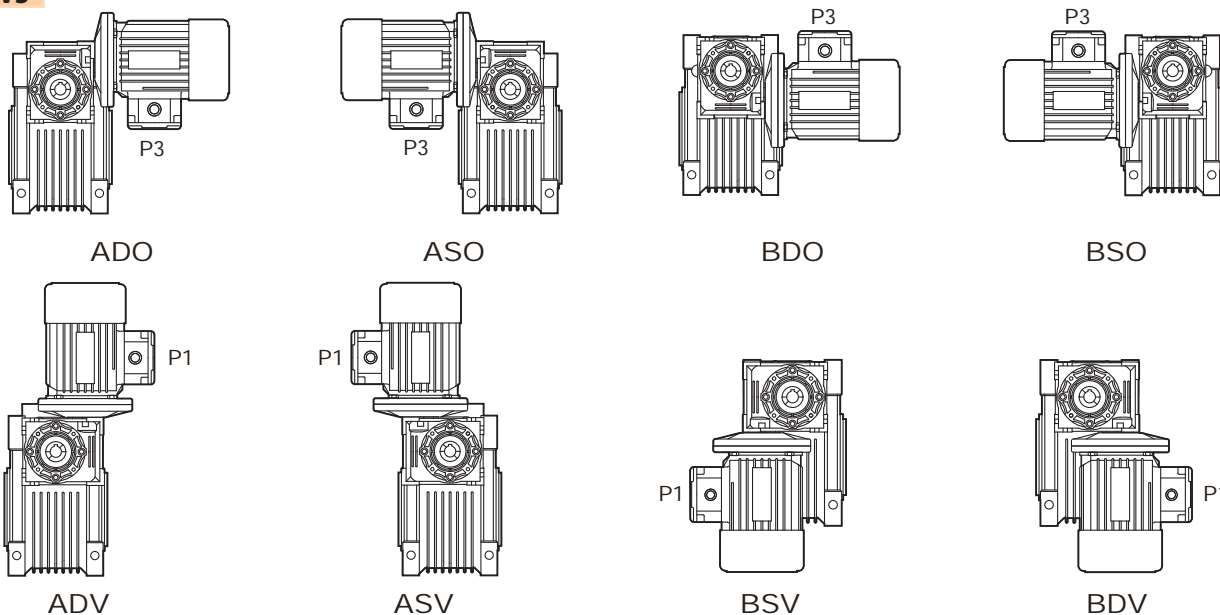
VP / VI	025	030	040	050	063	075	090	110	130	150
B3								3	4.5	7
B8								2.2	3.3	5.1
B6 - B7	0.02	0.04	0.08	0.15	0.3	0.55	1	2.5	3.5	5.4
V5								3	4.5	7
V6								2.2	3.3	5.1

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 motivi 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 mezzzeria).

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

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 correlati 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)

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.

Velocità entrata / Input speed

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 relazionata 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 rendimento 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 gear-motor $P_1 = Pn_1$) and the dynamic efficiency Rd .
It can be obtained from the following equation:*

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

Mr_2 (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 n_1 .
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 n_1 .

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:*

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

$$Pm_2 = Pm_1 \cdot Rd$$

P_{n_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

$n_1 = 1400 \text{ (min}^{-1}\text{)}$		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

È 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.

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.

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).

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).

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.

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.

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.

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:

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

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 Fr_1 (se albero entrata) o Fr_2 (se albero uscita) valori indicati nelle tabelle dati tecnici del riduttore. Devono essere soddisfatte le seguenti relazioni:

$$Fr < Fr_1$$

I valori di Fr_1 ed Fr_2 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.

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:

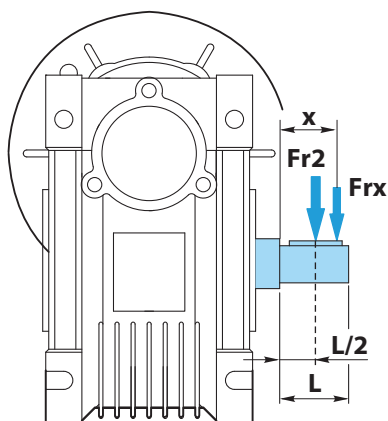
The radial load value obtained from the above equation is to be compared with the values of Fr_1 (in case of input shaft) or Fr_2 in case of output shaft), indicated in the gearbox technical data tables. The following equations must be satisfied:

$$Fr < Fr_2$$

The values of Fr_1 and Fr_2 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

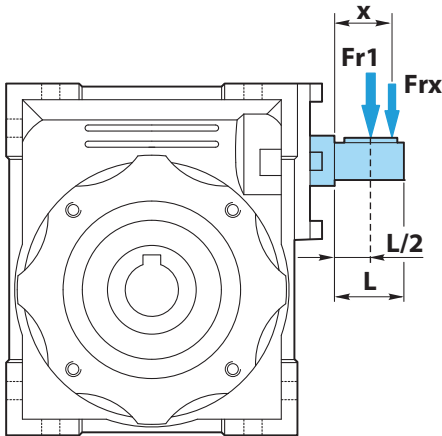
$$Fr_x = \frac{Fr_2 \cdot a}{(b + x)} < Fr_{2max}$$

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

$$Fr < Fr_x$$

Fr₁ (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
Fr _{1max} (N)	210	350	490	700	980	1270	1700	2100	2800

$$Fr_x = \frac{Fr_1 \cdot a}{(b + x)} < Fr_{1max}$$

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

$$Fr < Fr_x$$

Fa₁ ; Fa₂ (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 (Fa₁ nel caso di albero entrata, Fa₂ nel caso di albero uscita).
Il carico assiale massimo applicabile sull'albero è da considerare pari a:

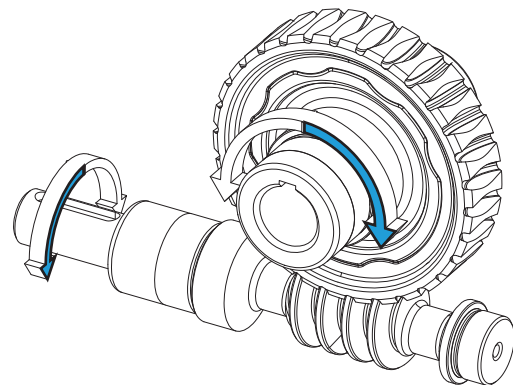
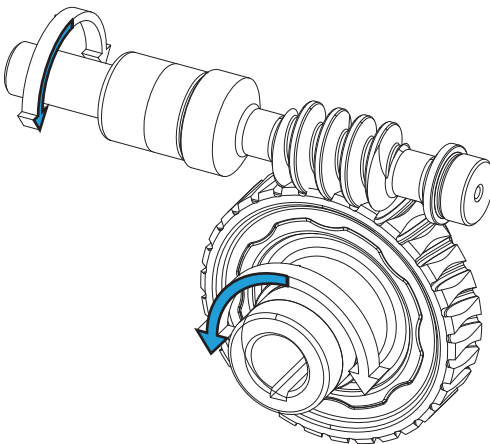
Depending on the type of application, along with the radial load there may also be a force Fa acting axially on the shaft (Fa₁ for the input shaft, Fa₂ for the output shaft).
The maximum axial load applicable to the shaft is to be considered equal to:

$$Fa_1 = Fr_1 \cdot 0.2$$

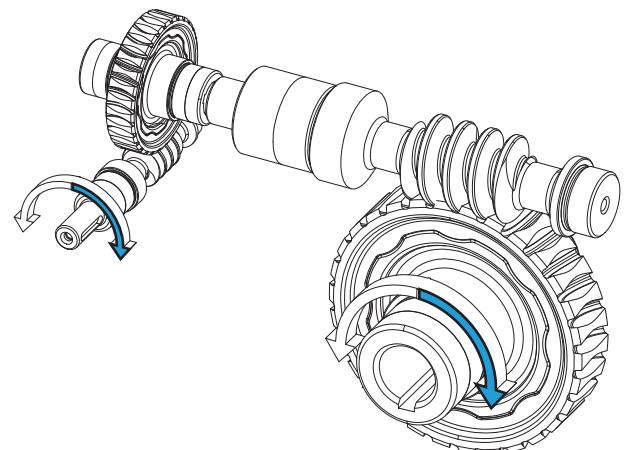
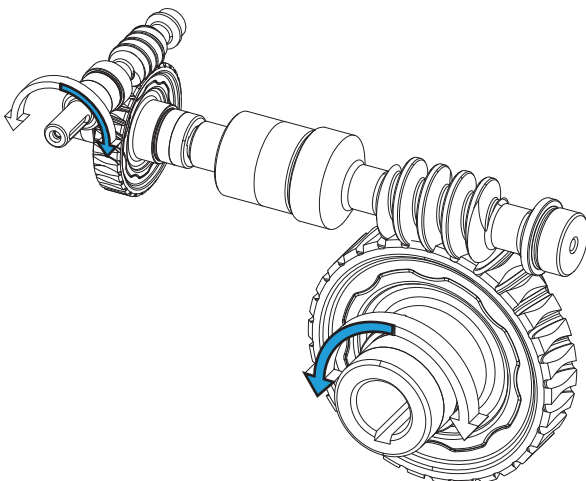
$$Fa_2 = Fr_2 \cdot 0.2$$

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 f_s consigliato (consultando la relativa 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 f_s (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:

$$Mm_2 \geq Mr_2 \cdot f_s$$

 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 Mr₂, è necessario determinare la potenza motore P con la formula:

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

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 Mr₂ is known, it is necessary to determine the motor power P with the formula:

in cui n₂ è il numero di giri richiesti in uscita al motoriduttore ed Rd è il rendimento dinamico riportato nella relativa tabella.

where n₂ 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 Pn₁ risulti maggiore o uguale alla potenza P precedentemente calcolata. Con riferimento ad una velocità n₂ 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 Pn₁ is greater than or equal to the power P previously calculated. With reference to a speed n₂ 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:

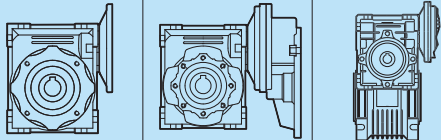
Dati applicazione:
 P = 0.09 kW
 fs = 2
 n₂ = 57 (min⁻¹)

EXAMPLE:

Application data:
 P = 0.09 kW
 fs = 2
 n₂ = 57 (min⁻¹)

Motoriduttore selezionato:
 VP040 i=50 -- Pn₁ = 0.09 kW -- fs = 2.8

Selected gearmotor:
 VP040 i=50 -- Pn₁ = 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 n1 = 2800 min ⁻¹	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

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.

Installazione / Installation

In fase d'installazione si consiglia di:

- allineare correttamente il riduttore con il motore e l'utenza rispettando la corretta posizione di montaggio definita in fase d'ordine;
- verificare che eventuali organi di trasmissione montati sull'albero entrata o uscita del riduttore siano calettati correttamente così da non generare spinte superiori a quelle ammesse;
- controllare che i dati in targhetta corrispondano al prodotto selezionato
- verificare che l'ambiente di lavoro non sia corrosivo;
- verificare, nel caso dei riduttori dalla gr. 110 alla 150, la presenza della giusta quantità di lubrificante in funzione della posizione di montaggio e montare il tappo di sfiato nella posizione prevista;
- verificare che il senso di rotazione in uscita dal riduttore sia quello desiderato preventivamente al montaggio sull'applicazione;
- prevedere un avviamento graduale evitando l'applicazione della massima potenza;
- montare il riduttore stabilmente evitando qualsiasi vibrazione.

Pur potendo essere impiegati anche con motore a 2 poli, velocità in entrata di 2800 RPM, i riduttori a vite senza fine non sono in generale particolarmente indicati per un impiego ad alta velocità in entrata.

Nei limiti del possibile, si consiglia ai clienti di preferire motoriduttori a 4 oppure a 6 poli. Qualora si renda indispensabile l'utilizzo di un motoriduttore a 2 poli, si consiglia di attenersi scrupolosamente alle prestazioni indicate sul catalogo e possibilmente di scegliere un riduttore che abbia un fattore di servizio decisamente più alto di quello presunto per l'applicazione. L'impiego dei riduttori con motori 2 poli ed a 60 Hz è fortemente sconsigliato.

Sono inoltre sconsigliati:

- Impiego del riduttore come moltiplicatore
- Utilizzo del riduttore per argani di sollevamento ed in generale per applicazioni in cui è in gioco la sicurezza di persone o cose
- Applicazioni che prevedono una immersione parziale o totale del riduttore

Non fare mai affidamento sulla reale irreversibilità di un riduttore ed in caso di necessità impiegare motori auto frenanti o altri dispositivi di sicurezza. L'eventuale rottura di organi del riduttore non deve mai determinare rischi gravi per la sicurezza soprattutto di persone.

During installation it is recommended to:

- properly align the gearbox with the motor and the user and comply with the correct mounting position defined in the order;
- verify that any transmission components fitted on the input or output shaft of the gearbox are correctly locked, so as not to generate higher thrust loads than the acceptable ones;
- check that the name plate data match the selected product
- ensure that the work environment is not corrosive;
- verify, in the case of gearboxes from size 110 to 150, there is the correct amount of lubricant according to the mounting position and install the breather plug in the required position;
- Prior to installation on the application make sure that the direction of rotation at the gearbox output is the desired one;
- provide for a gradual start without applying the maximum power;
- fit the gearbox in a stable manner to avoid any vibration.

While worm gearboxes can also be used with a 2-pole motor, input speed of 2800 rpm, they are generally not particularly suitable for use at high input speed.

As far as possible, customers are recommended to prefer gearmotors with 4 or 6 poles. If it is necessary to use a 2-pole gearmotor, it is advisable to strictly comply with the performance indicated in the catalogue and preferably choose a gearbox that has a definitely higher service factor than the one assumed for the application.

Using gearboxes with 2-pole and 60 Hz motors is strongly discouraged.

It is also advised against:

- Using the gearbox as a multiplier
- Using the gearbox for hoisting winches and, generally, for applications where safety is at stake for people and property
- Applications involving a total or partial immersion of the gearbox

Never rely on the actual irreversibility of a gearbox and if necessary use brake motors or other safety devices.

Any breakage of parts of the gearbox must never result in serious risks for safety especially of people.

Identificazione / Identification

Tutti i riduttori SATI sono identificati da una targhetta contenente i dati relativi alla tipologia di prodotto a cui si riferiscono oltre che da un identificativo numerico per la rintracciabilità.

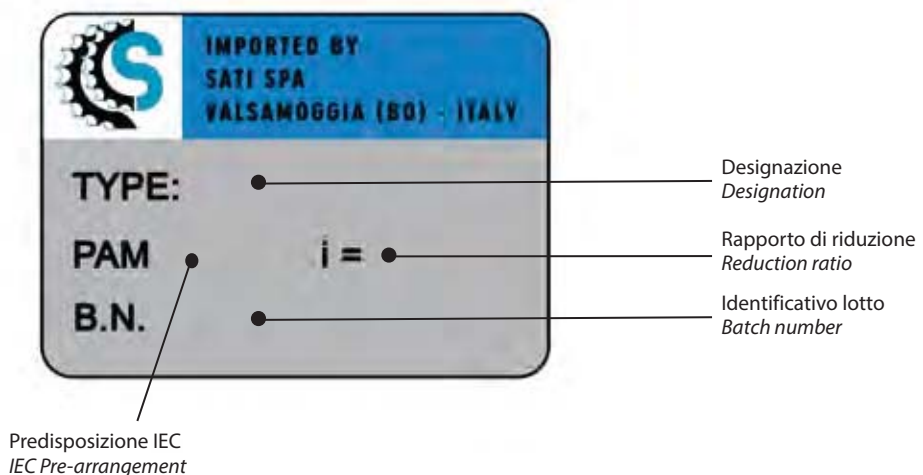
Si presti pertanto attenzione a non danneggiare né rimuovere tale etichetta.

Si riporta di seguito un esempio di targhetta.

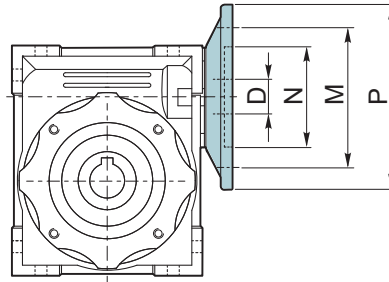
All SATI gearboxes are identified by a name plate containing the data related to the type of product to which they refer, as well as numeric identification for traceability.

For the above reasons, take care that this name plate does never get damaged or removed.

An example of a name plate is given below.

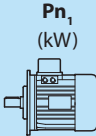
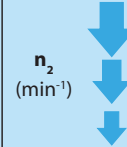
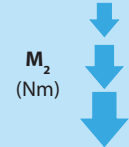
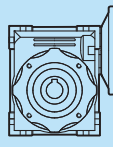
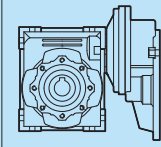
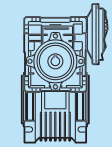


Predisposizioni IEC / IEC Pre-arrangements



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	9	9	9	9	9	9	9	9	9	9	9	-
	56B5	80	100	120	-	-	-	-	-	-	-	-	9	9	9	9
	56B14	50	65	80	9	9	9	9	9	9	9	9	9	9	9	-
040	71B5	110	130	160	14	14	14	14	14	14	14	14	-	-	-	-
	71B14	70	85	105	11	11	11	11	11	11	11	11	11	11	11	11
	63B5	95	115	140	-	-	-	-	-	-	-	-	9	9	9	9
	63B14	60	75	90	9	9	9	9	9	9	9	9	9	9	9	-
	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	14	14	14	14	14	14	14	14	14	14	14	14
	71B5	110	130	160	-	-	-	-	-	-	-	-	11	11	11	11
	71B14	70	85	105	14	14	14	14	14	14	14	14	14	14	14	14
	63B5	95	115	140	-	-	-	-	-	-	-	-	11	11	11	11
063	90B5	130	165	200	-	24	24	24	24	24	24	24	24	-	-	-
	90B14	95	115	140	-	19	19	19	19	19	19	19	19	19	19	-
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	19
	80B14	80	100	120	-	14	14	14	14	14	14	14	14	14	14	14
	71B5	110	130	160	-	14	14	14	14	14	14	14	14	14	14	14
	71B14	70	85	105	-	14	14	14	14	14	14	14	14	14	14	14
075	100/112B5	180	215	250	-	28	28	28	28	28	28	-	-	-	-	-
	100/112B14	110	130	160	-	24	24	24	24	24	24	24	24	24	-	-
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	24	-	-
	90B14	95	115	140	-	19	19	19	19	19	19	19	19	19	19	19
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	19
	80B14	80	100	120	-	14	14	14	14	14	14	14	14	14	14	14
	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	-	-	-	-	-
	100/112B14	110	130	160	-	24	24	24	24	24	24	24	24	24	24	-
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	24	24	-
	90B14	95	115	140	-	19	19	19	19	19	19	19	19	19	19	19
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	19
	80B14	80	100	120	-	14	14	14	14	14	14	14	14	14	14	14
110	132B5	230	265	300	-	38	38	38	38	38	38	38	-	-	-	-
	132 B14	130	165	200	-	28	28	28	28	28	28	28	28	28	-	-
	100/112B5	180	215	250	-	28	28	28	28	28	28	28	28	28	28	28
	100/112B14	110	130	160	-	24	24	24	24	24	24	24	24	24	24	24
	90B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	19
	90B14	95	115	140	-	14	14	14	14	14	14	14	14	14	14	14
	80B5	130	165	200	-	14	14	14	14	14	14	14	14	14	14	14
130	132B5	230	265	300	-	38	38	38	38	38	38	38	-	-	-	-
	132 B14	130	165	200	-	28	28	28	28	28	28	28	28	28	28	28
	100/112B5	180	215	250	-	-	-	-	-	28	28	28	28	28	28	28
	100/112B14	110	130	160	-	-	-	-	-	-	-	-	-	-	24	24
	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

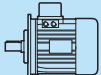
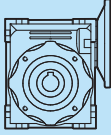
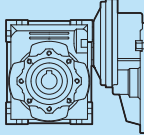
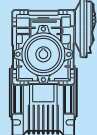
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	f_s	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 f_s : $M_{m2} = M_2 \times f_s$

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

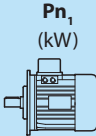
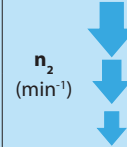
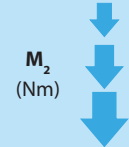
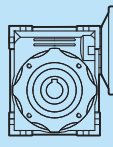
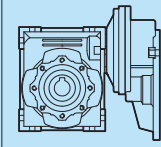
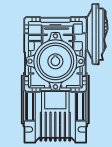
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	n_2 (min ⁻¹)	M_2 (Nm)	fs	i				FR_2 (N)
0.06								
M1 056 0.06 4P... ($n_1 = 1400 \text{ min}^{-1}$)	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... ($n_1 = 2800 \text{ min}^{-1}$)	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 : $M_{m2} = M_2 \times fs$

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

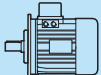
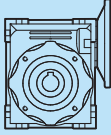
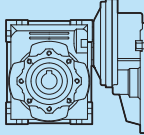
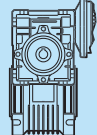
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	f_s	i				FR_2 (N)
0.09								
M1 056 0.09 4P. (n ₁ = 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 f_s : $M_{m2} = M_2 \times f_s$

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

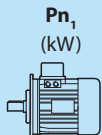
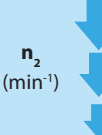
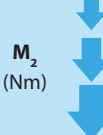
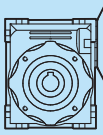
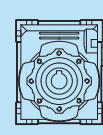
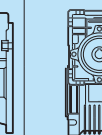
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 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 : $M_{m2} = M_2 \times fs$

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

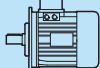
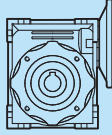
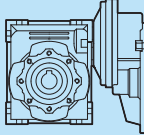
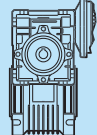
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	fs	i				FR_2 (N)
0.12								
M1 063 0.12 4P. ($n_1 = 1400 \text{ min}^{-1}$)	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.. ($n_1 = 900 \text{ min}^{-1}$)	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			
	11.3	50	1.4	80	VP050			4604
	10.2	68	1.1	88.2		VR063/040		3488
	9	56	1	100	VP050			
	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 : $M_{m2} = M_2 \times fs$

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

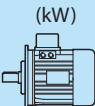
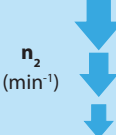
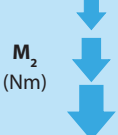
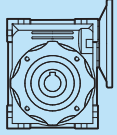
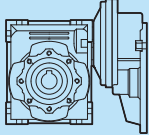
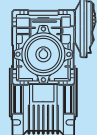
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	n_2 (min ⁻¹)	M_2 (Nm)	f_s	i				FR_2 (N)
0.18								
M1 063 0.18 2P. ($n_1 = 2800 \text{ min}^{-1}$)	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. ($n_1 = 1400 \text{ min}^{-1}$)	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 f_s : $M_{m2} = M_2 \times f_s$

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

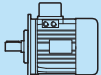
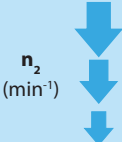

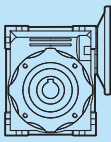
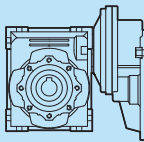
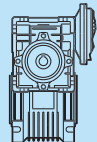
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 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		4840
	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 : $M_{m2} = M_2 \times fs$

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

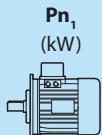
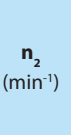
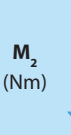
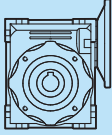
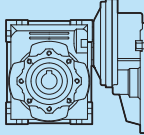
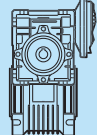
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	f_s	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 f_s : $M_{m2} = M_2 \times f_s$

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

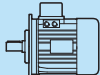
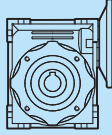
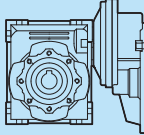
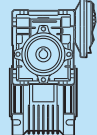
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	f_s	i				FR_2 (N)
0.25								
M1 071 0.25 4P. ($n_1 = 1400 \text{ min}^{-1}$)	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. ($n_1 = 900 \text{ min}^{-1}$)	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 f_s : $M_{m2} = M_2 \times f_s$

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

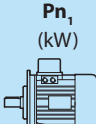
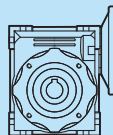
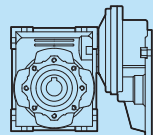
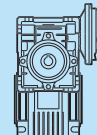
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	n_2 (min^{-1})	M_2 (Nm)	f_s	i				FR_2 (N)
0.25								
M1 071 0.25 6P. ($n_1 = 900 \text{ min}^{-1}$)	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.. ($n_1 = 2800 \text{ min}^{-1}$)	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.. ($n_1 = 1400 \text{ min}^{-1}$)	280	11	3	5	VP040		
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 f_s : $M_{m2} = M_2 \times f_s$

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

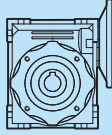
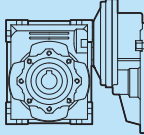
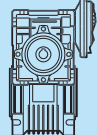
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	n_2 (min ⁻¹)	M_2 (Nm)	f_s	i				FR_2 (N)
0.37								
M1 071 0.37 4P. ($n_1 = 1400 \text{ min}^{-1}$)	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 f_s : $M_{m2} = M_2 \times f_s$

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

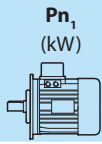
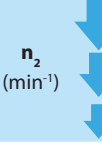
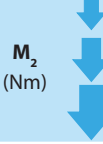
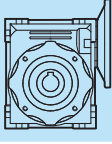
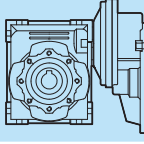
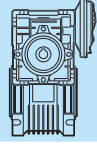
Tabella dati tecnici motoriduttori / Table technical data gearmotors

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 : $M_{m2} = M_2 \times fs$

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

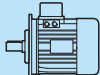
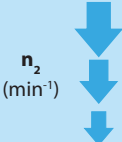

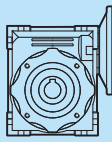
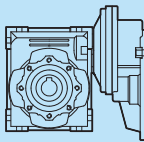
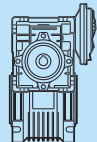
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 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		
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 : $M_{m2} = M_2 \times fs$

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


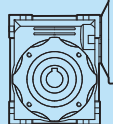
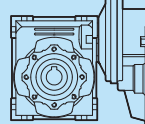
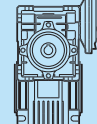
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	f_s	i				FR_2 (N)
0.55								
M1 080 0.55 4P. ($n_1 = 1400 \text{ min}^{-1}$)	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. ($n_1 = 900 \text{ min}^{-1}$)	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 f_s : $M_{m2} = M_2 \times f_s$

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

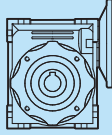
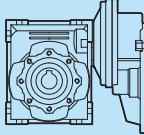
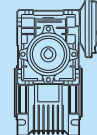
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	n_2 (min ⁻¹)	M_2 (Nm)	fs	i				FR_2 (N)
0.75								
M2 080 0.75 2P. ($n_1 = 2800 \text{ min}^{-1}$)	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. ($n_1 = 1400 \text{ min}^{-1}$)	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 : $M_{m2} = M_2 \times fs$

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

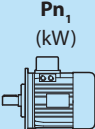
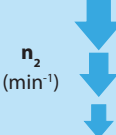
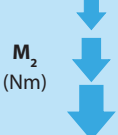
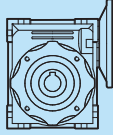
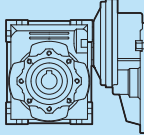
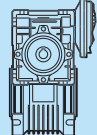
Tabella dati tecnici motoriduttori / Table technical data gearmotors

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 VP110			7306			
	14	322	1.5	100				9232			
	14	365	1.8	100					VR080/090	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					VR080/090	9384	
	7.8	543*	0.7*	180					VR080/090	8180	
	7	685	1.7	200					VR080/110	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						VC050/110	10320
	5.6	835	2.5	250						VC063/130	13500
	4.7	871	1.5	300						VC063/150	18000
	4.7	908	1.9	300						VC050/110	10320
	4.7	993	2.3	300						VC063/130	13500
	3.5	1126	1.1	400						VC063/150	18000
	3.5	1157	1.4	400						VC050/110	10320
	3.5	1175	2.3	400						VC063/130	13500
	2.8	1535*	0.8*	500						VC063/150	18000
	2.8	1358	1.1	500						VC050/110	10320
	2.8	1291	1.8	500						VC063/130	13500
	2.3	1645*	0.8*	600						VC063/150	18000
	2.3	1631	1	600						VC050/110	10320
	2.3	1529	1.7	600						VC063/130	13500
	1.9	2005*	0.9*	750						VC063/150	18000
	1.9	1783	1.3	750						VC050/110	10320
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 VP063 VP063 VP075 VP063 VP075 VP063 VP075 VP063 VP075 VP063 VP075 VP090 VP063 VP075 VP110 VP075 VP090 VP110 VP075 VP090 VP110 VP075 VP090 VP110 VP110 VP130 VP110 VP130			2734			
	90	68	2.3	10				3009			
	60	97	1.6	15				3444			
	60	98	2.4	15				4065			
	45	123	1.2	20				3791			
	45	126	1.9	20				4474			
	36	149*	0.9*	25				4084			
	36	153	1.4	25				4820			
	30	167	1	30				4339			
	30	174	1.5	30				5122			
	30	179	2.6	30				5667			
	22.5	210*	0.8*	40				4776			
	22.5	216	1.1	40				5637			
	22.5	226	1.8	40				6238			
	22.5	239	3.3	40				9931			
	18	255	1	50				6073			
	18	271	1.4	50				6719			
	18	287	2.6	50				10320			
	15	296*	0.8*	60				6453			
	15	306	1.1	60				7140			
	15	325	2.1	60				9023			
	12.2	393	3.2	73.5				9614			
	11.3	401	1.4	80				9931			
	11.3	407	2.1	80				12989			
	9.2	508	2.3	98				10320			
	9	462	1.1	100				10320			
	9	470	1.7	100				13500			
	7.3	607	1.8	122.5				10320			
6.1	682	1.5	147	10320							
4.6	832	1.0	196	10320							
3.7	944	1.2	245	13500							

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

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

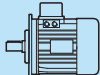
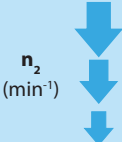

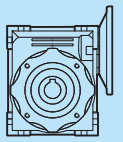
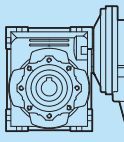
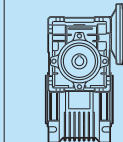
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 P_{n1} (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	f_s	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 f_s : $M_{m2} = M_2 \times f_s$

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

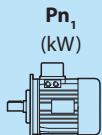
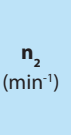
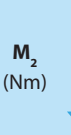
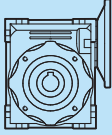
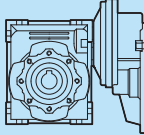
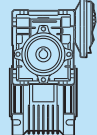
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	fs	i				FR_2 (N)
1.10								
M2 090 1.10 4P. ($n_1 = 1400 \text{ min}^{-1}$)	9	686	1.1	100	VP130			13500
	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 : $M_{m2} = M_2 \times fs$

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

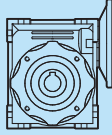
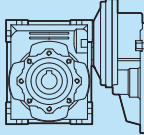
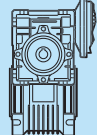
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	fs	i				FR_2 (N)
1.50								
M2 100 1.50 6P. ($n_1 = 900 \text{ min}^{-1}$)	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. ($n_1 = 1400 \text{ min}^{-1}$)	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 : $M_{m2} = M_2 \times fs$

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

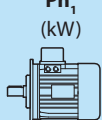
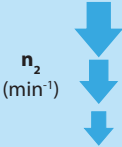
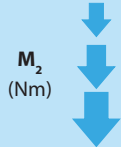
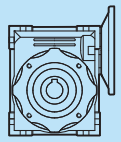
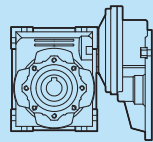
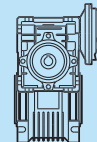
Tabella dati tecnici motoriduttori / Table technical data gearmotors

Pn_1 (kW)	n_2 (min ⁻¹)	M_2 (Nm)	fs	i				FR_2 (N)
1.50								
M2 090 1.50 4P. ($n_1 = 1400 \text{ min}^{-1}$)	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. ($n_1 = 2800 \text{ min}^{-1}$)	373	35	2.7	7.5		VP063	
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. ($n_1 = 1400 \text{ min}^{-1}$)	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 : $M_{m2} = M_2 \times fs$

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

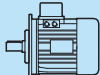
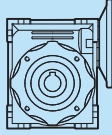
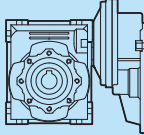
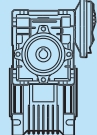
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	 n_2 (min ⁻¹)	 M_2 (Nm)	fs	i				FR_2 (N)
2.20								
M2 100 2.20 4P. ($n_1 = 1400 \text{ min}^{-1}$)	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. ($n_1 = 900 \text{ min}^{-1}$)	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.. ($n_1 = 2800 \text{ min}^{-1}$)	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 : $M_{m2} = M_2 \times fs$

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

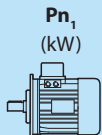
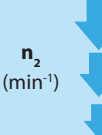
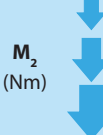
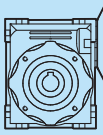
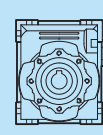
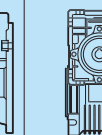
Tabella dati tecnici motoriduttori / Table technical data gearmotors

 Pn_1 (kW)	n_2 (min^{-1})	M_2 (Nm)	fs	i				FR_2 (N)
2.20								
M2 090 2.20 2P. ($n_1 = 2800 \text{ min}^{-1}$)	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. ($n_1 = 2800 \text{ min}^{-1}$)	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. ($n_1 = 1400 \text{ min}^{-1}$)	186.7	137	1.4	7.5	VP075		
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 : $M_{m2} = M_2 \times fs$

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

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. ($n_1 = 1400 \text{ min}^{-1}$)	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. ($n_1 = 900 \text{ min}^{-1}$)	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. ($n_1 = 2800 \text{ min}^{-1}$)	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. ($n_1 = 1400 \text{ min}^{-1}$)	186.7	180	1	7.5	VP075		
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. ($n_1 = 900 \text{ min}^{-1}$)	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 : $M_{m2} = M_2 \times fs$

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

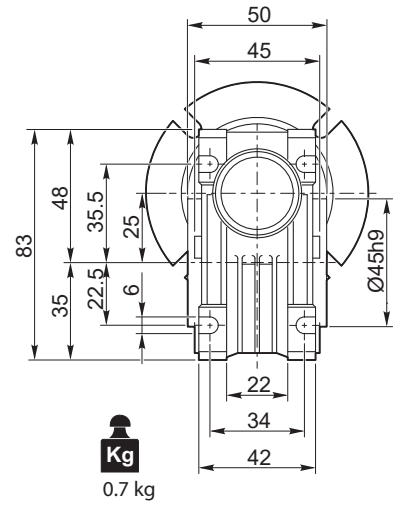
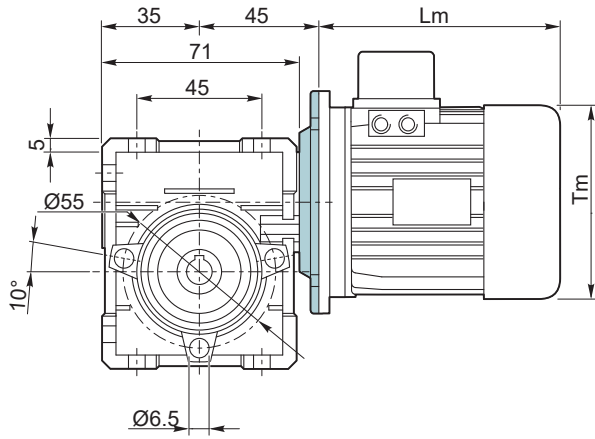
Tabella dati tecnici motoriduttori / Table technical data gearmotors

Pn_1 (kW)	n_2 (min ⁻¹)	M_2 (Nm)	fs	i		FR_2 (N)	
4.00							
M2 132 4.00 6P. (n1 = 900 min ⁻¹)	60	541	2	15	VP130	7434	
	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. (n1 = 1400 min ⁻¹)	186.7	253	2.2	7.5	VP110	3893	
	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. (n1 = 1400 min ⁻¹)	186.7	345	1.6	7.5	VP110	3893
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. (n1 = 1400 min ⁻¹)		187	512	2.3	7.5	VP150	6962
	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. (n1 = 1400 min ⁻¹)	187	698	1.7	7.5	VP150	6962	
	140	921	1.3	10	VP150	7663	
	93.3	1351*	0.9*	15	VP150	8771	
	70	1760*	0.7*	20	VP150	9654	

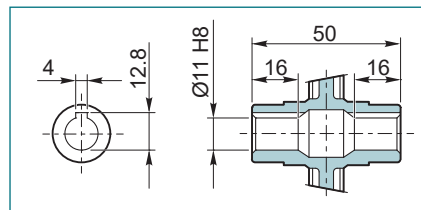
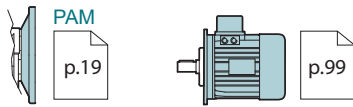
* **NOTA:** la coppia massima utilizzabile M_{m2} deve essere determinata utilizzando il fattore di servizio fs : $M_{m2} = M_2 \times fs$

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

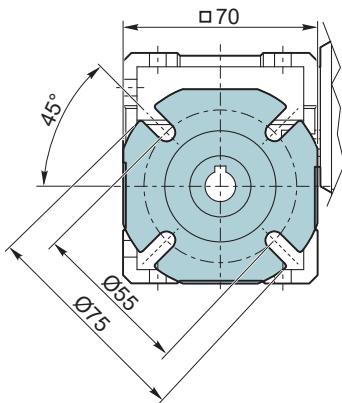
VP 025 P...



Albero uscita / Output shaft

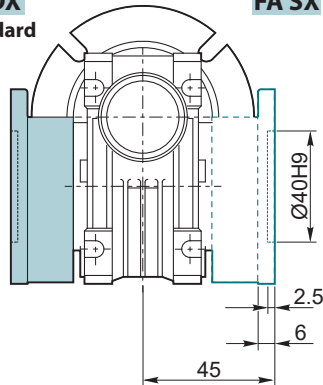


VP 025 F...

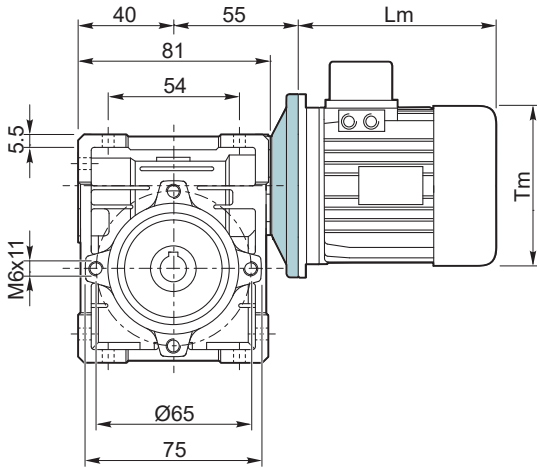


FA DX
Standard

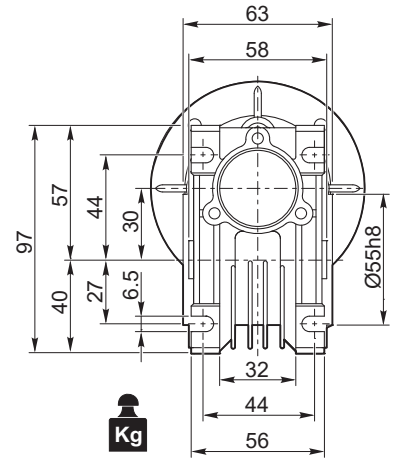
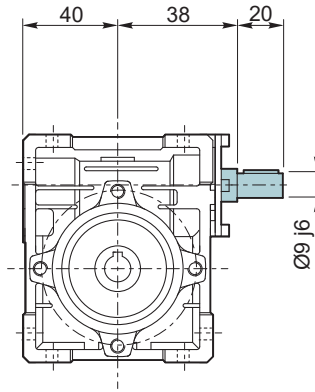
FA SX



VP 030 P ...

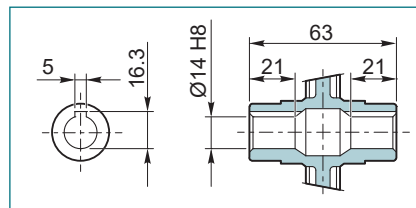


VI 030 P ...

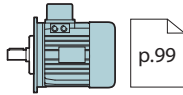
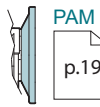
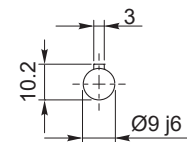


Kg
1.2 kg

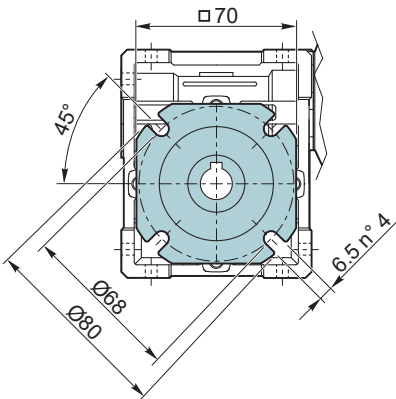
Albero uscita / Output shaft



Albero entrata / Input shaft

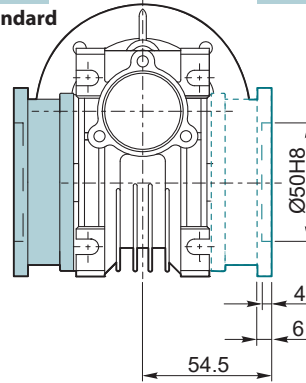


VP 030 F... / VI 030 F...

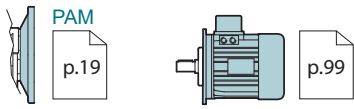
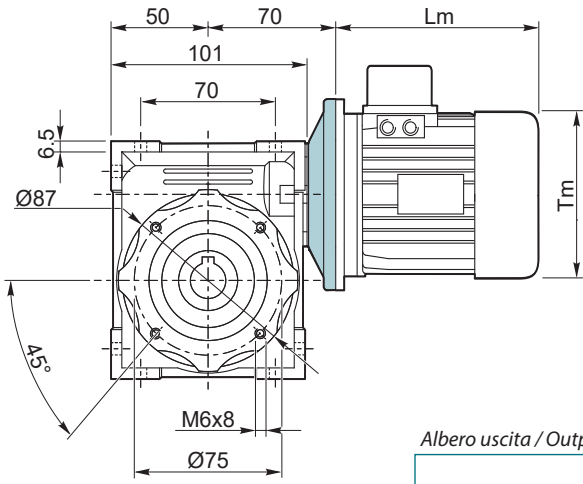


FA DX
Standard

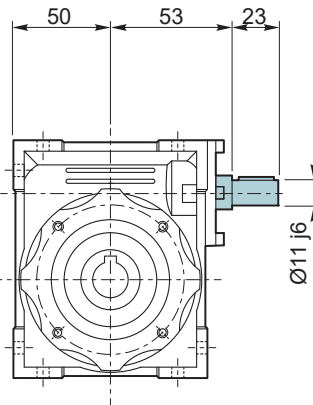
FA SX



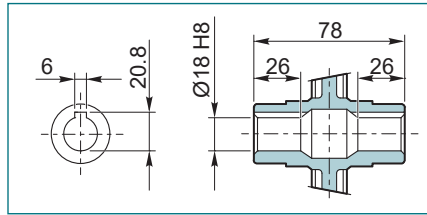
VP 040 P ...



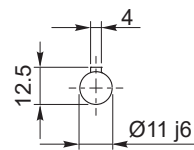
VI 040 P ...



Albero uscita / Output shaft

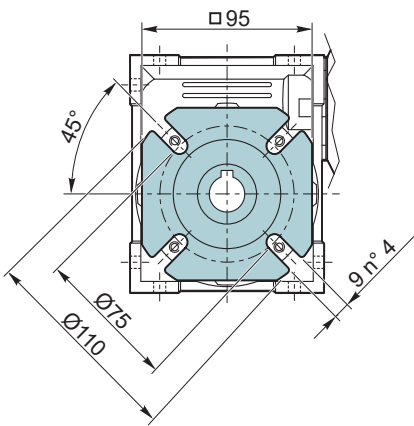


Albero entrata / Input shaft

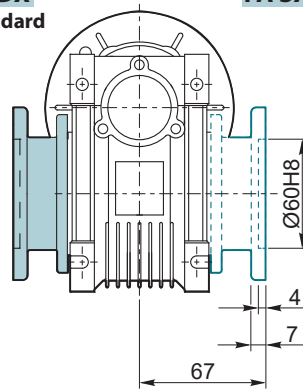


Kg
2.3 kg

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

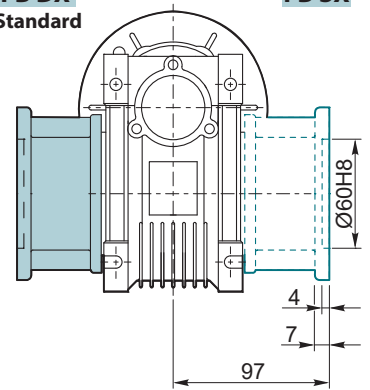


FA DX
Standard



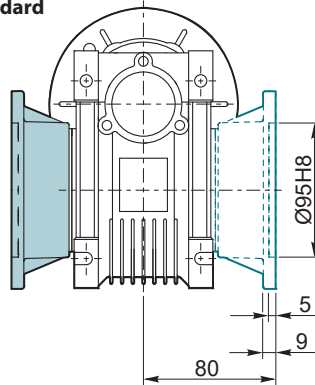
FA SX

FB DX
Standard



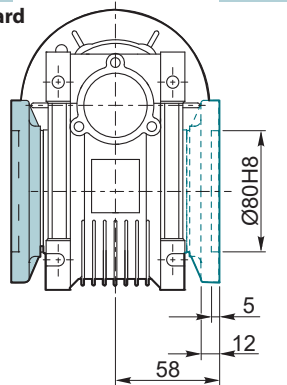
FB SX

FC DX
Standard

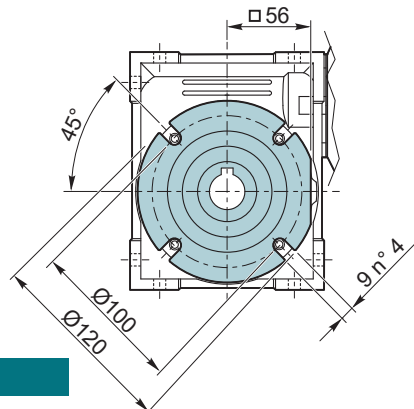
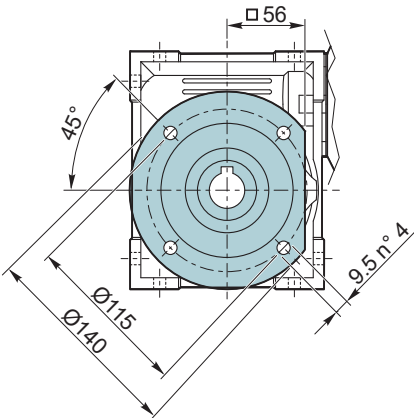


FC SX

FD DX
Standard

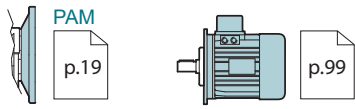
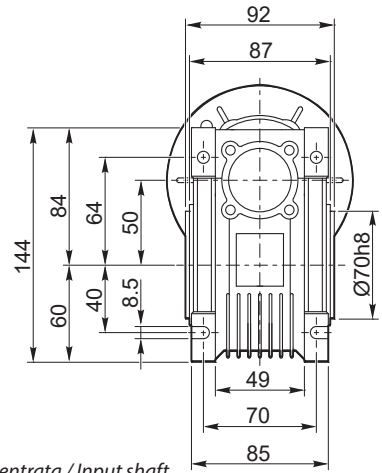
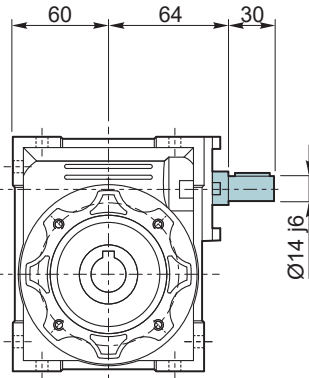
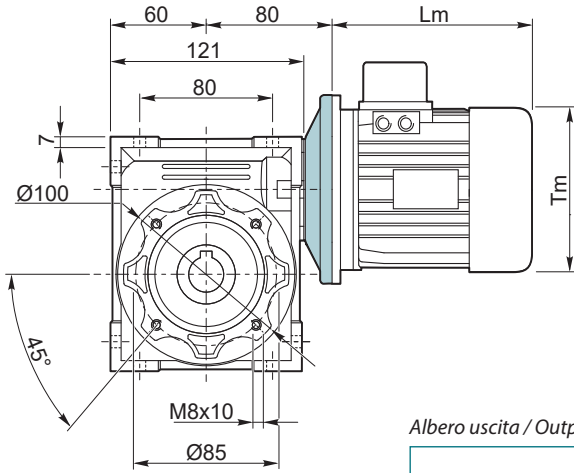


FD SX

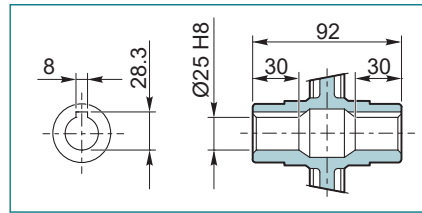


VP 050 P ...

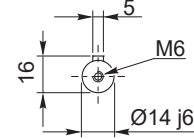
VI 050 P ...



Albero uscita / Output shaft

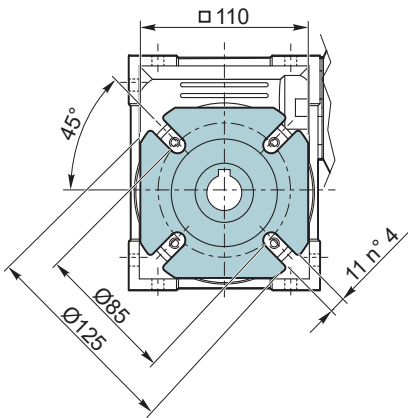


Albero entrata / Input shaft

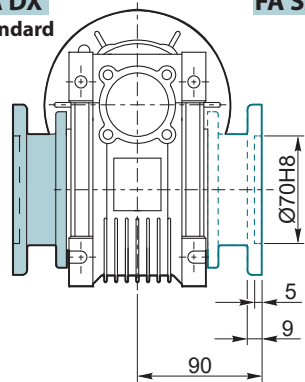


Kg
3.5 kg

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

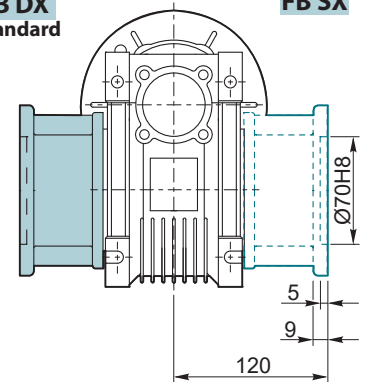


FA DX
Standard

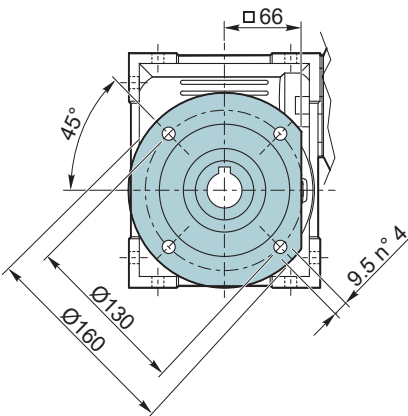


FA SX

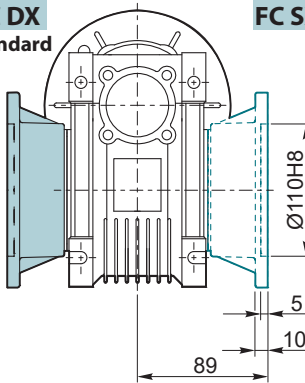
FB DX
Standard



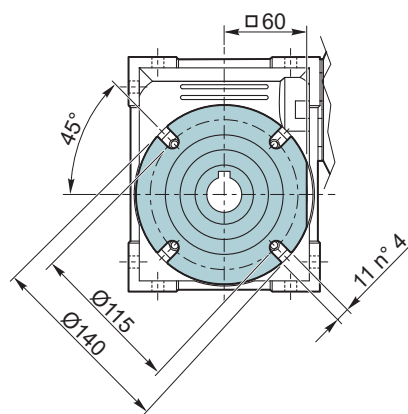
FB SX



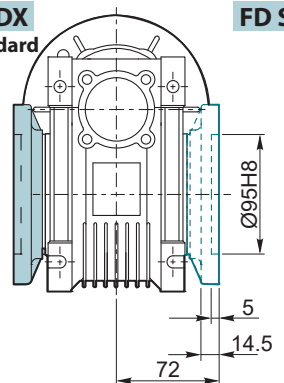
FC DX
Standard



FC SX

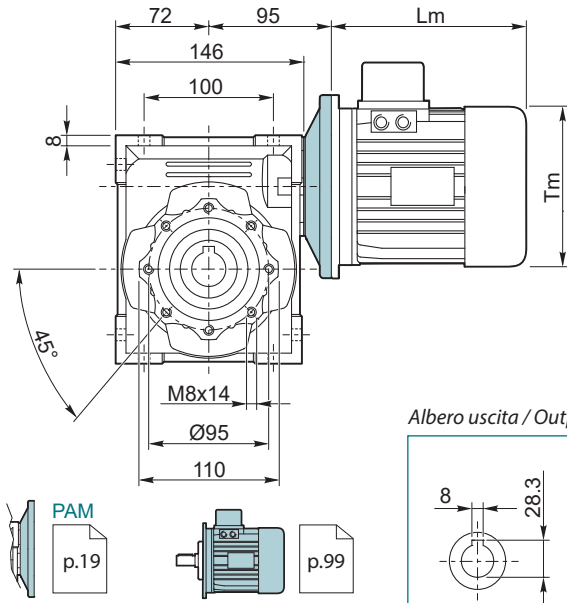


FD DX
Standard

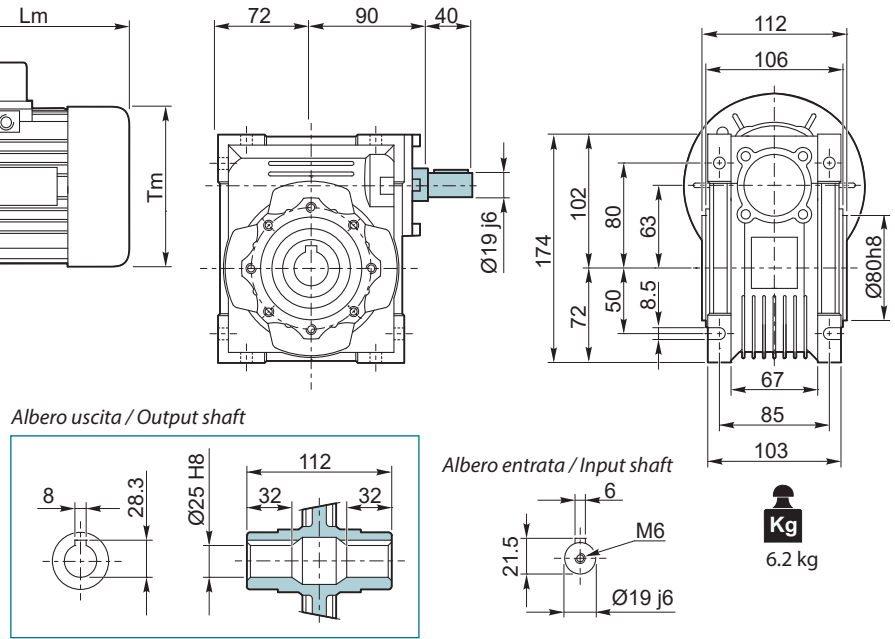


FD SX

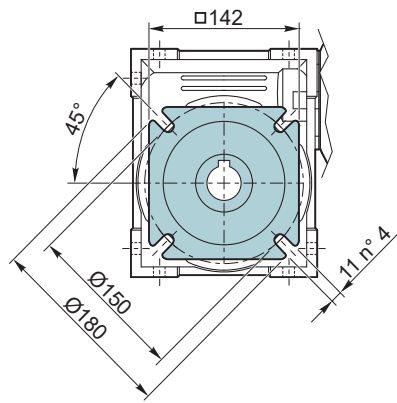
VP 063 P ...



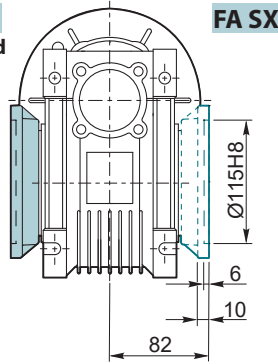
VI 063 P ...



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

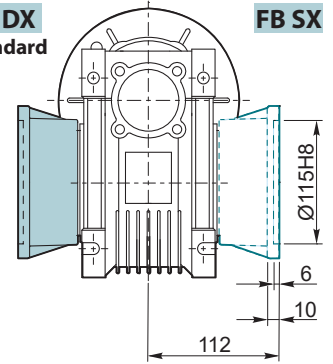


FA DX Standard

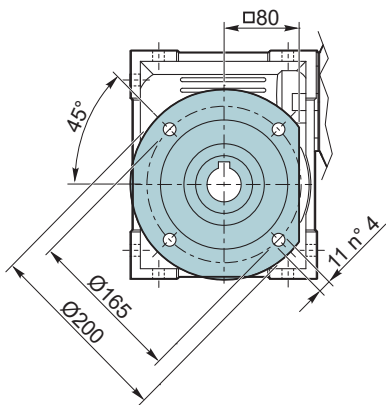


FA SX

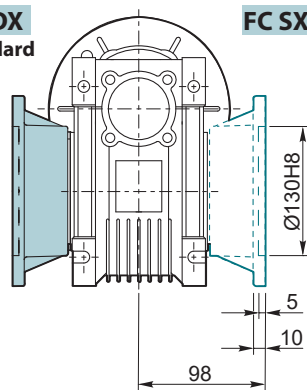
FB DX Standard



FB SX

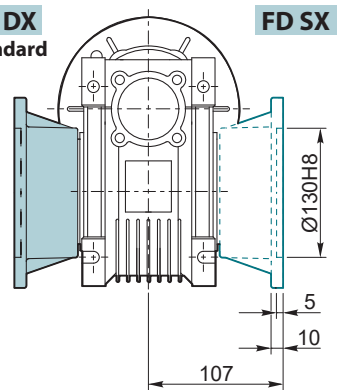


FC DX Standard

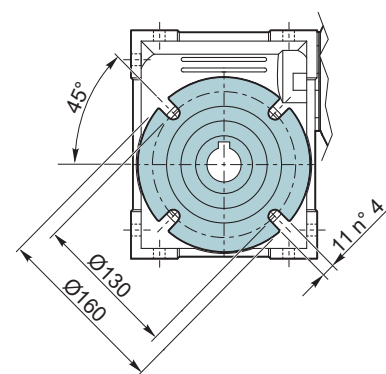


FC SX

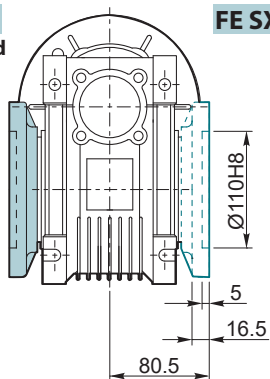
FD DX Standard



FD SX



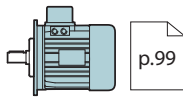
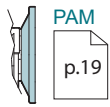
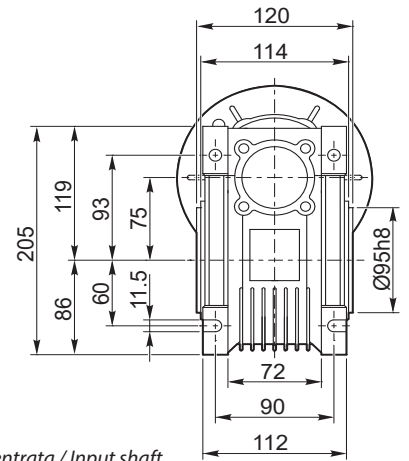
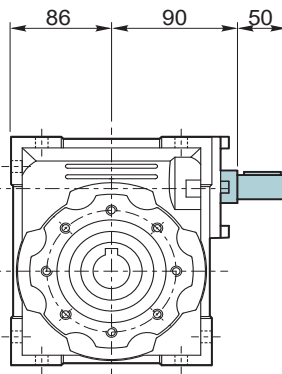
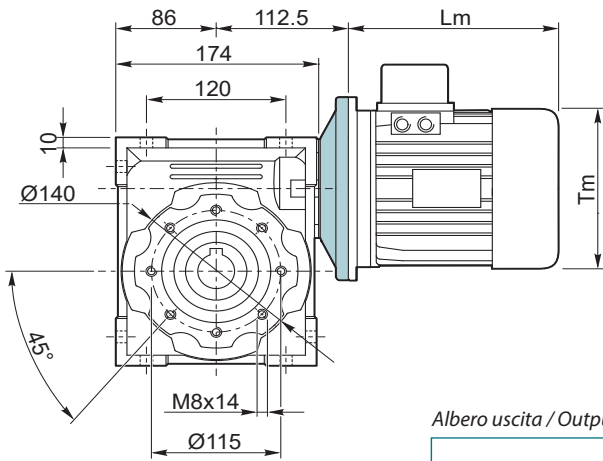
FE DX Standard



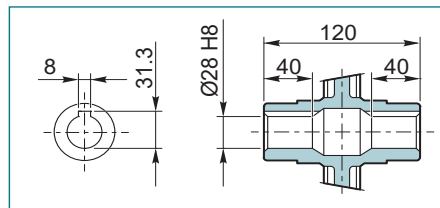
FE SX

VP 075 P...

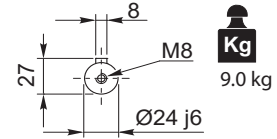
VI 075 P...



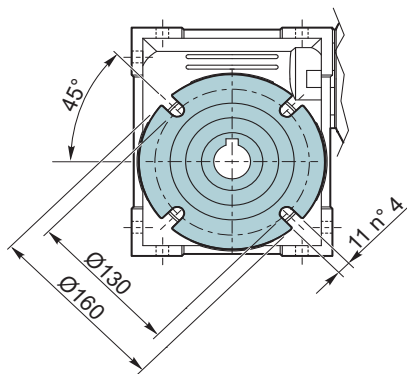
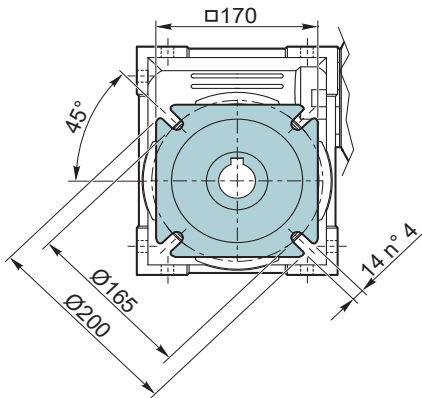
Albero uscita / Output shaft



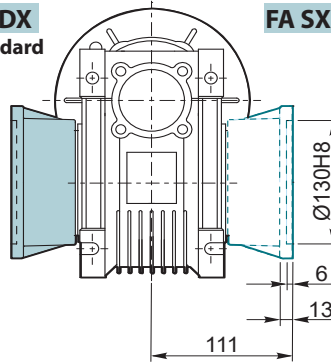
Albero entrata / Input shaft



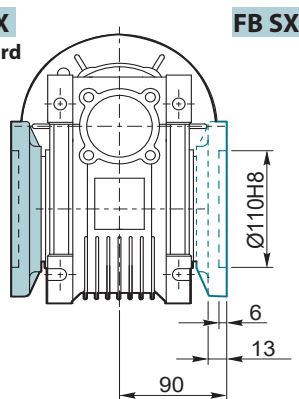
VP 075 F... / VI 075 F...



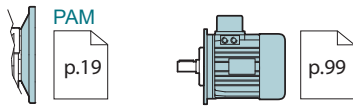
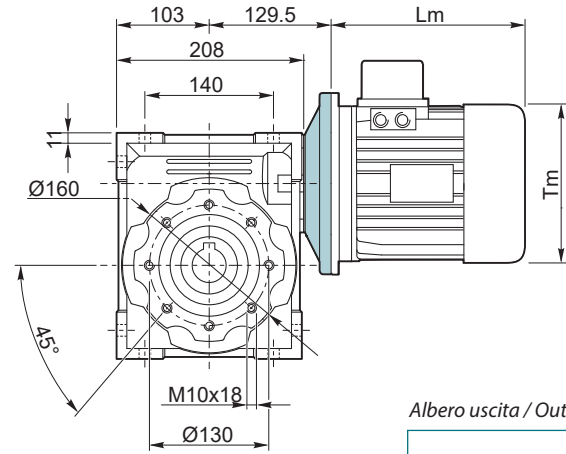
FA DX
Standard



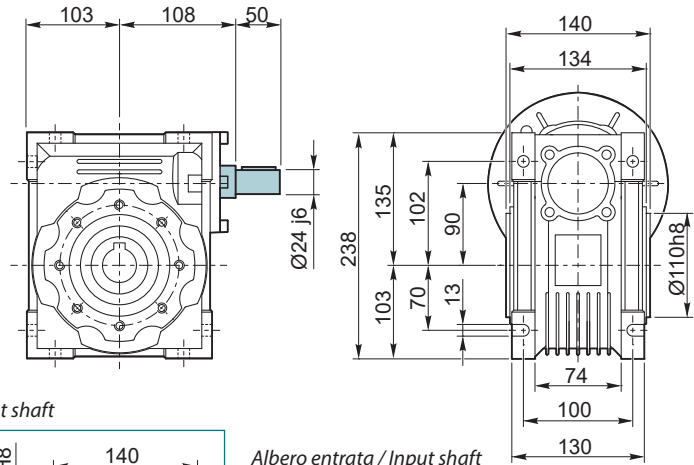
FB DX
Standard



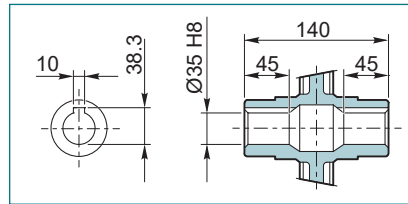
VP 090 P ...



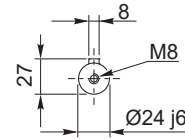
VI 090 P ...



Albero uscita / Output shaft

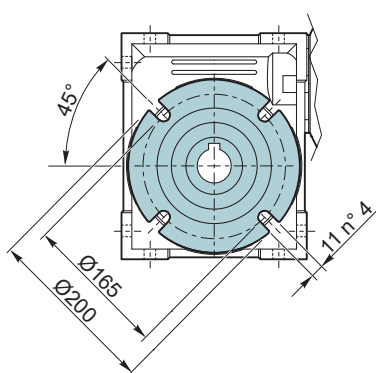
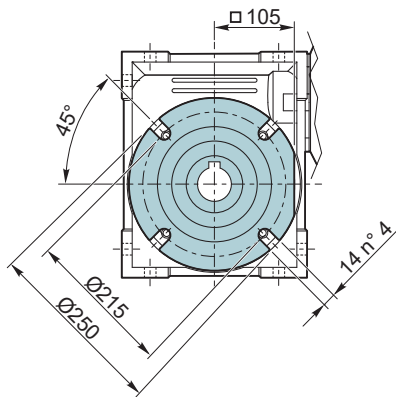
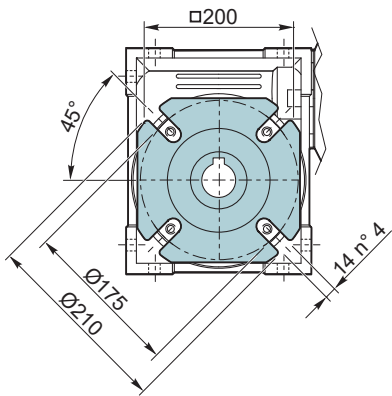


Albero entrata / Input shaft

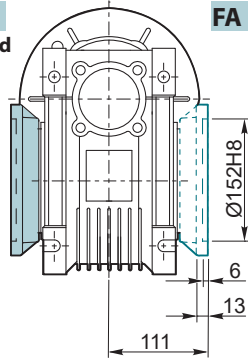


Kg
13 kg

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

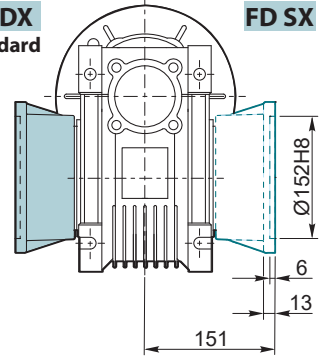


FA DX
Standard



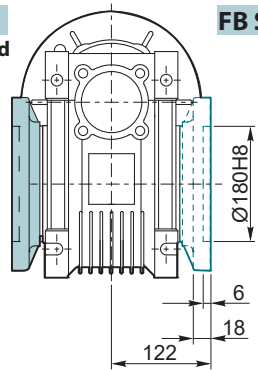
FA SX

FD DX
Standard



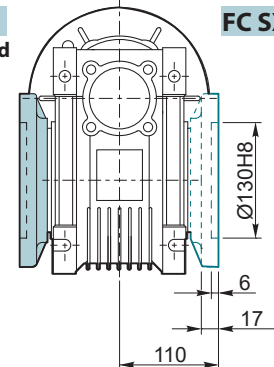
FD SX

FB DX
Standard



FB SX

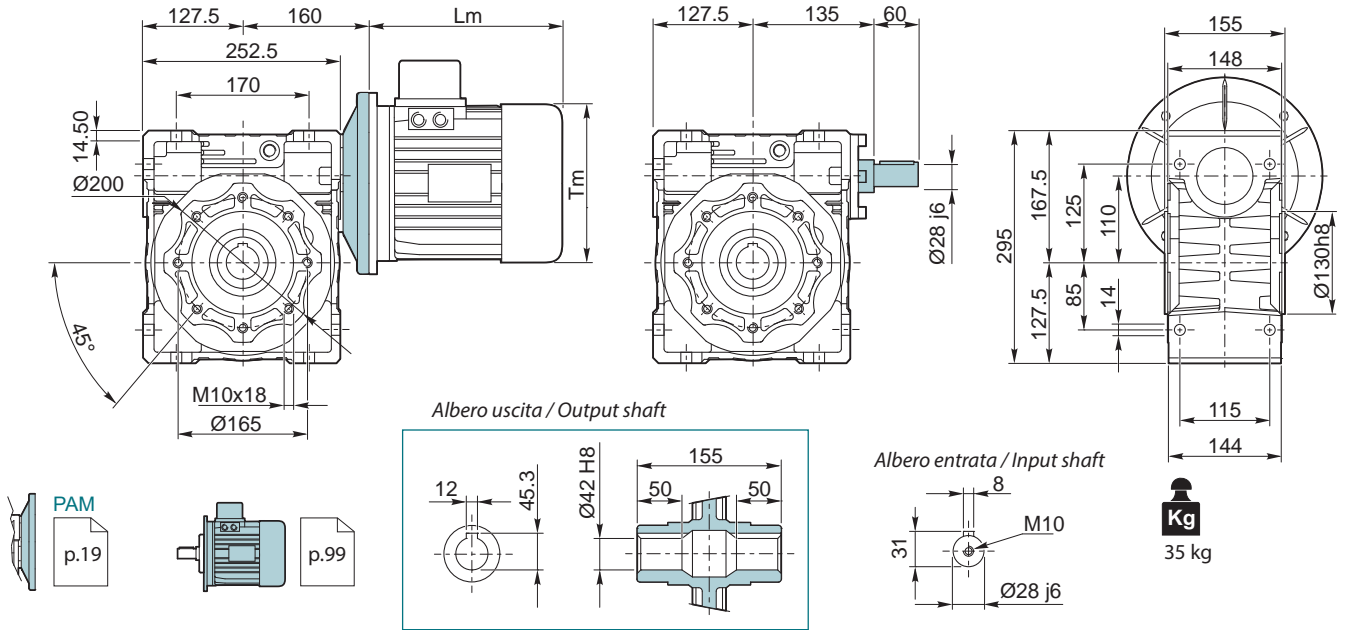
FC DX
Standard



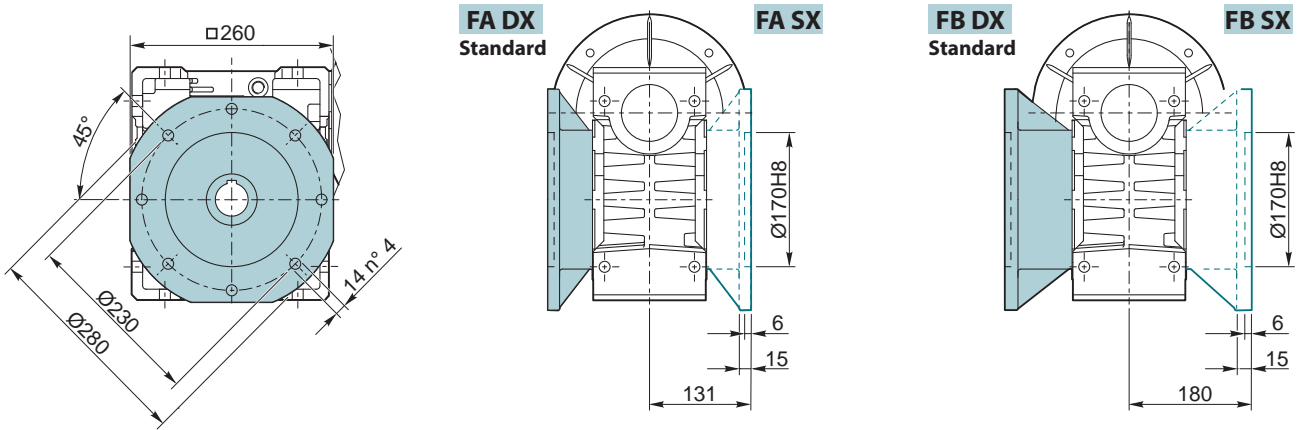
FC SX

VP 110 P...

VI 110 P...

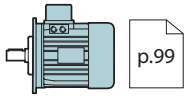
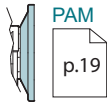
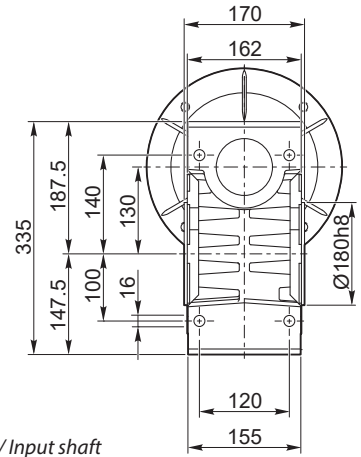
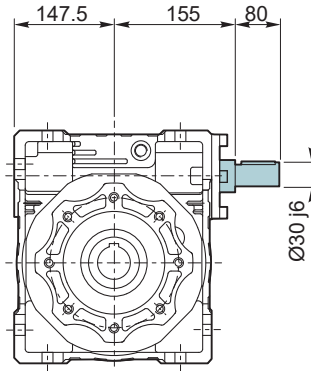
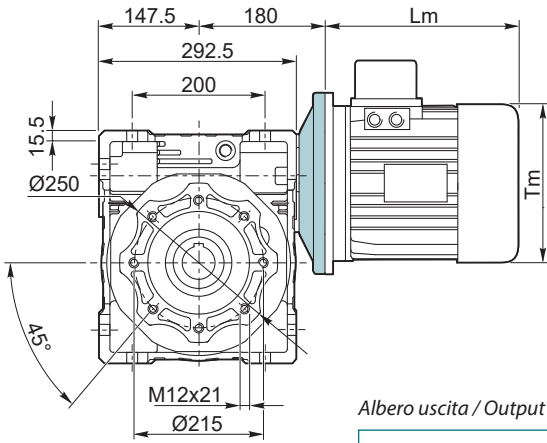


VP 110 F... / VI 110 F...

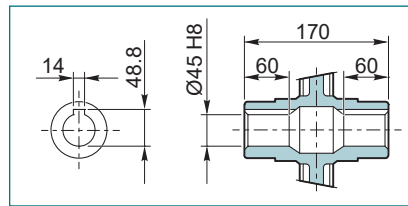


VP 130 P ...

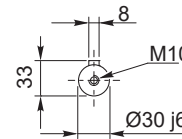
VI 130 P ...



Albero uscita / Output shaft

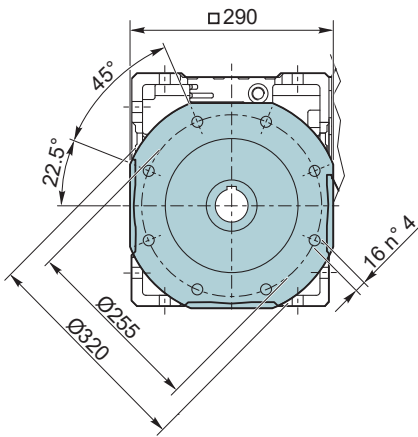


Albero entrata / Input shaft



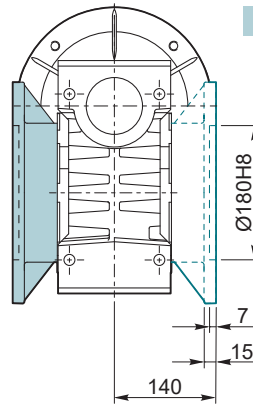
Kg
48 kg

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



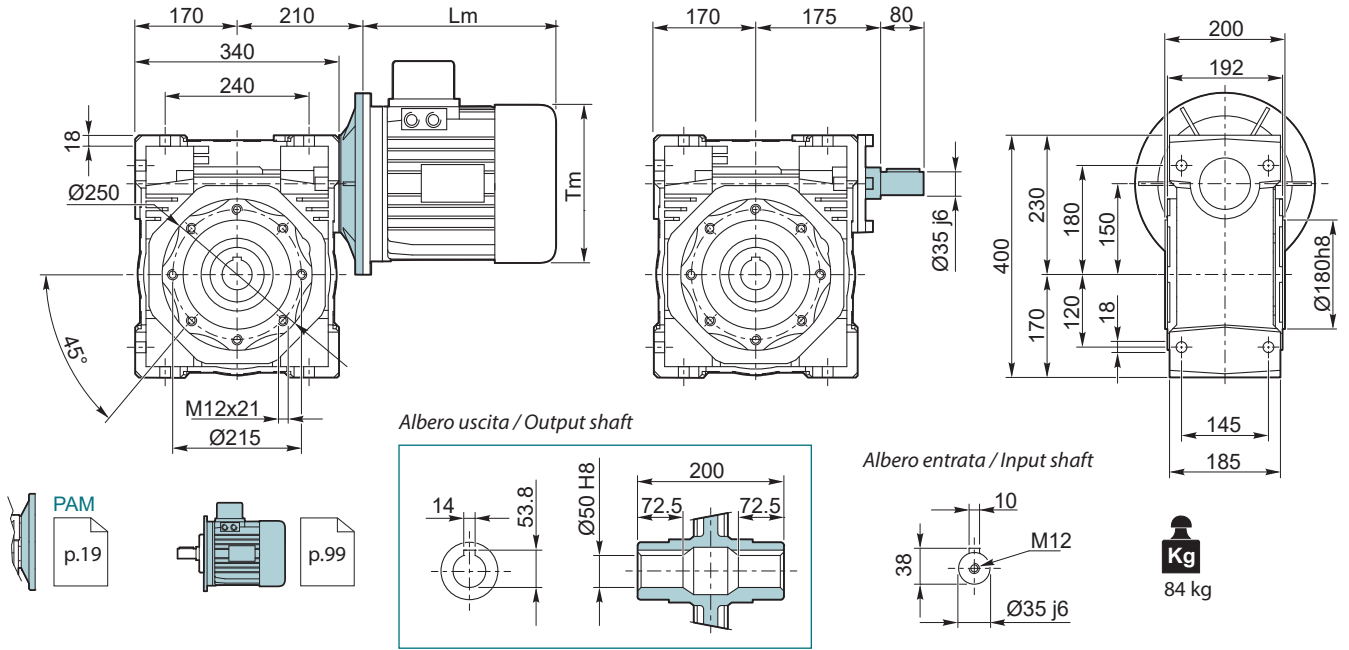
FA DX
Standard

FA SX



VP 150 P ...

VI 150 P ...



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

