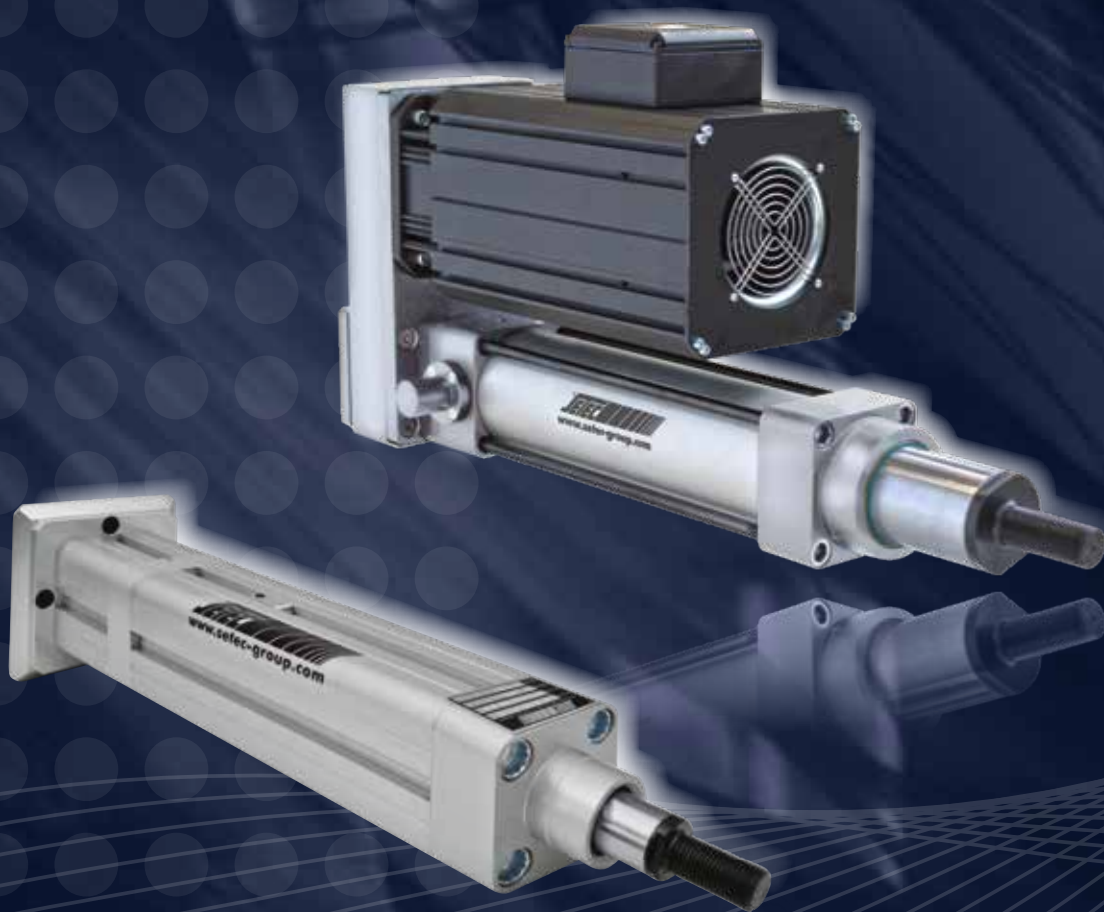


ISO MOVE



ATTUATORI LINEARI MECCANICI DI PRECISIONE PER ALTA DINAMICA
PRECISION MECHANICAL LINEAR ACTUATORS FOR HIGH DYNAMICS

[®]
JEDEC
COMPONENTS CONTROLS MOTION SYSTEMS

ISO MOVE-E the evolution
ISO MOVE-E the evolution

AVVERTENZE - RESPONSABILITÀ

- **L'ATTUATORE MECCANICO LINEARE ISOMOVE È UN COMPONENTE DI MACCHINA, ESSO STESSO NON SVOLGE ALCUNA FUNZIONE PROPRIA AUTONOMAMENTE, PERTANTO NON È DA CONSIDERARSI NÉ QUASI-MACCHINA NÉ MACCHINA.**

Esso deve essere integrato all'interno di una macchina o di una quasi-macchina nel rispetto delle Normative, delle Direttive e delle Leggi in vigore nel Paese del costruttore della macchina/impianto, a carico e cura di quest'ultimo.

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WARNINGS - LIABILITIES

- **THE MECHANICAL LINEAR ACTUATOR ISOMOVE IS A PURE MACHINE COMPONENT, IT DOESN'T CARRY OUT ANY FUNCTION AUTONOMOUSLY, THUS IT IS NOT A MACHINE OR A HEMI-MACHINE ITSELF.**

The actuator must be integrated into the machine or into the hemi-machine according to the Standards, the Directives and the Laws of the Country to whom the Manufacturer of the machine belongs. The Manufacturer must do it at its expenses and with great care.

- All the contents of this catalogue and all the separate information related to it supplied by SETEC S.p.A. and/or SERVOSYSTEM s.r.l. and by the Authorized Distributors are only possible options of products which will then have to be analysed very carefully by the Customers/Users with a deep technical knowledge.
- The Customer/User, through his analysis and check processes, is entirely liable for his final selection of the component/sub-assembly. He will act in order to have all the service requirements of the application met, considering the requested performances, the needed maintenance activities, the structural resistance of the parts of the machine connected to the actuator. He will take care about the proper installation of the actuator itself and of the safety devices related to it.
- The Customer/User is obliged to provide SETEC / SERVOSYSTEM / ANY AUTHORIZED DISTRIBUTOR with all the important and decisive information about the application under analysis and must respect all the Standards of his market. Furthermore the Customer/User must properly follow all the information supplied by SETEC / SERVOSYSTEM / ANY AUTHORIZED DISTRIBUTOR by this or other related documents.
- The Customer/User is liable for checking that all the supplied information and the technical specification of the products herein included are valid for his machine.
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ISOMOVE - E: L'evoluzione

ISOMOVE - E: The evolution

Presentazione generale

General description

Il GRUPPO SETEC da OLTRE 40 ANNI progetta e produce una ampia gamma di attuatori lineari industriali elettromeccanici per tutti i settori dell'industria e dell'automazione in generale.

Decine di migliaia di nostri attuatori, sia STANDARD che SPECIALI sono installati sul campo, nei più svariati settori applicativi:

- SIDERURGIA
- LEGNO
- MARMO
- PIETRA
- PACKAGING
- STAMPA
- CONVERTING
- MACCHINE UTENSILI
- VETRO
- TUBO
- FILO METALLICO
- PLASTICA
- SALDATURA
- ROBOTICA
- SOLARE
- HANDLING

Gli attuatori lineari meccanici di precisione per alta dinamica ISOMOVE-E costituiscono la naturale EVOLUZIONE della prima serie, in produzione ormai da più di 20 ANNI, beneficiando quindi di tutta l'esperienza progettuale, produttiva ed applicativa su tutti i principali mercati mondiali ed in tutti i settori industriali più importanti della costruzione di macchine ed impianti.

SETEC GROUP has been designing and manufacturing for MORE THAN 40 YEARS a wide range of industrial electromechanical linear actuators for all industry and automation markets.

Many thousands of our actuators, both STANDARD and SPECIAL ones, are working in the many different industrial sectors:

- STEEL
- WOOD
- MARBLE
- STONE
- PACKAGING
- PRINTING
- CONVERTING
- MACHINE TOOLS
- GLASS
- PIPING
- METAL WIRE
- PLASTICS
- WELDING
- ROBOTICS
- SOLAR PANELS
- HANDLING

Precision mechanical linear actuators for high dynamics ISOMOVE-E are the natural EVOLUTION of the first series, produced for more than 20 YEARS; they thus have the great benefit of our long experience in conceiving, manufacturing and using them worldwide in the most demanding machine builders sectors.

La particolare cura realizzativa dei particolari fondamentali per garantire tolleranze dimensionali, di forma e di posizione molto strette e le soluzioni progettuali adottate per ottenere un assieme con linearità e concentricità degli elementi in movimento molto buone fanno sì che essi sono il miglior prodotto per le applicazioni di automazione dove sono richieste ALTE DINAMICHE ed ELEVATE PRECISIONI.

I nostri PRINCIPALI VANTAGGI sono:

- TENSIONAMENTO CINGHIA REGOLABILE
- ELEVATA PERSONALIZZAZIONE possibile
- ELEVATA DENSITÀ DI FORZE
- GRANDI VELOCITÀ LINEARI
- COMPORTAMENTO per ALTA DINAMICA
- ELEVATA PRECISIONE
- FUNZIONAMENTO IN SERVIZIO CONTINUO
- ELEVATA RIGIDEZZA ASSIALE
- CONTROLLABILITÀ tramite SERVOAZIONAMENTI
- PROGRAMMABILITÀ tramite PLC / CONTROLLI ASSE
- NUMEROSE VERSIONI STANDARD disponibili

We take extreme care to make all the parts in order to get very tight dimensional, position and form tolerances.

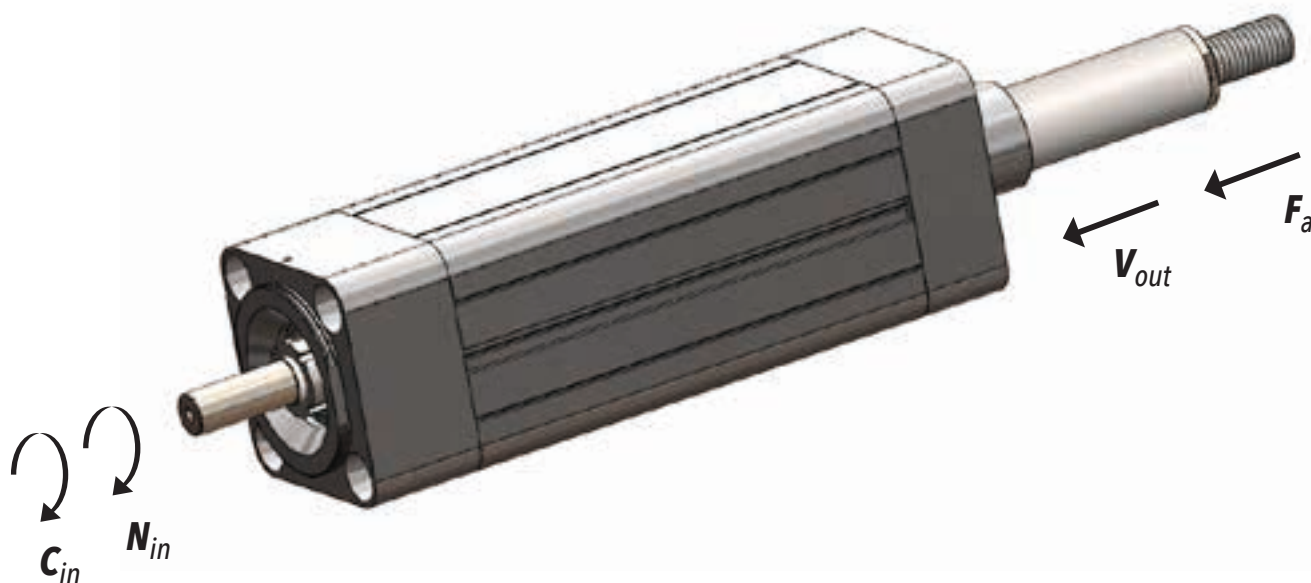
All this together with innovative design solutions allow us to reach very good linearity and concentricity values of the assembled unit moving parts, thus obtaining the best product for HIGH DYNAMICS and HIGH ACCURACIES in automation applications.

Our MAIN ADVANTAGES are:

- ADJUSTABLE BELT TENSIONING
- HIGH CUSTOMIZATION possible
- HIGH FORCE DENSITY
- HIGH OUTPUT LINEAR SPEED
- SUITABLE for HIGH DYNAMICS BEHAVIOUR
- HIGH ACCURACY
- CONTINUOUS DUTY CYCLE possible
- HIGH AXIAL STIFFNESS
- CONTROLLABILITY by SERVODRIVES
- PROGRAMMABLE by PLC / AXIS CONTROLS
- MANY STANDARD VERSIONS AVAILABLE

Il nuovo elemento costitutivo dell'attuatore è il MODULO BASE:

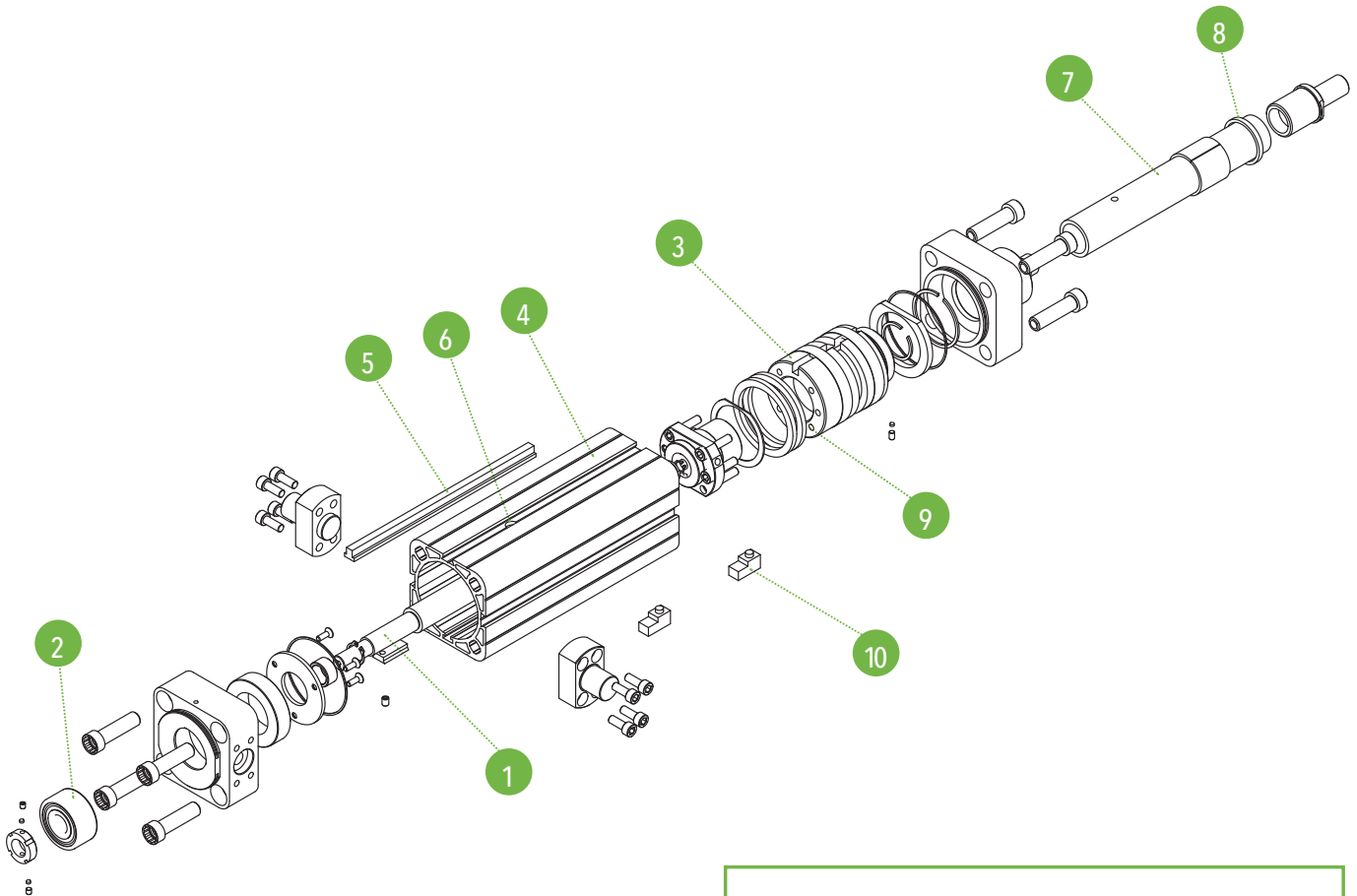
The first new element of the actuator is the BASIC MODULE:



MODULO BASE
BASIC MODULE

I particolari costitutivi fondamentali del
MODULO BASE sono:

BASIC MODULE main parts are as follows:



- | | | |
|----|---------------------|----------------------|
| 1 | vite a sfere | ballscrew |
| 2 | cuscinetto a sfera | ballbearing |
| 3 | pistone | piston |
| 4 | camicia | outer profile |
| 5 | asta antirotazione | antirotation device |
| 6 | foro lubrificazione | lubrication hole |
| 7 | stelo cromato | chrome push/pull rod |
| 8 | guarnizione | seal |
| 9 | magnete | magnet |
| 10 | sensore reed | reed sensor |

Per costruire, misurare e testare i nostri prodotti ci avvaliamo delle tecnologie più moderne e delle macchine ed attrezzature più sofisticate, spesso ricorrendo a soluzioni da noi progettate e costruite per avere esattamente quello che serve per garantire le migliori prestazioni:

We use the most modern technologies and the most sophisticated machines and equipments, often making them by ourselves to have exactly what is needed.

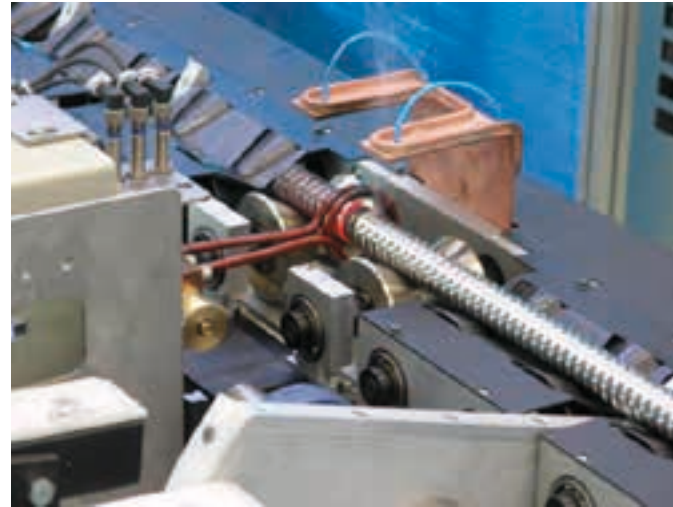
By all this we can make, measure and test all our products:



Stock semilavorati / Raw materials warehouse



Linea automatica taglio di precisione viti/cromati / Chrome tubes/screws precision cutting automated machine



Rinvenimento ad induzione terminali / Journal ends induction annealing



Raddrizzatura di precisione / Precision straightening



Lavorazione particolari su centro CNC /
Mechanical parts machining on CNC milling machine

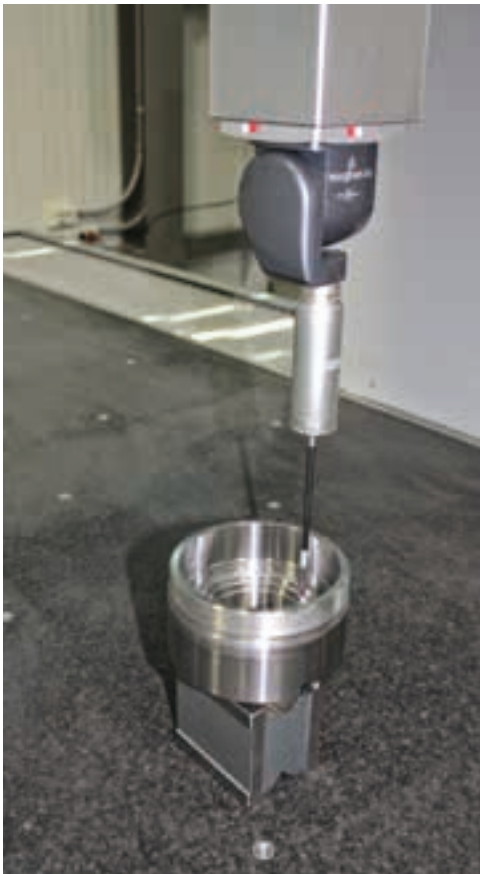


Lavorazione terminali viti / tubi cromati /
Chrome tubes/screws journal ends machinings





Sala metrologica /
Measurement room





Controllo precarico assieme vite - madrevite /
Ballscrew preload torque measurement bench



Area test / Testing area





Magazzino automatico /
Automated warehouse

Area test / Testing area



Campi di impiego

Field of applications

MANIPOLAZIONE / HANDLING



Ribaltatore lastre in vetro / Glass panel tilter

SIMULATORI / SIMULATORS



Simulatore di volo / Flight simulator



Campi di impiego

Field of applications

PLASTICA / PLASTICS

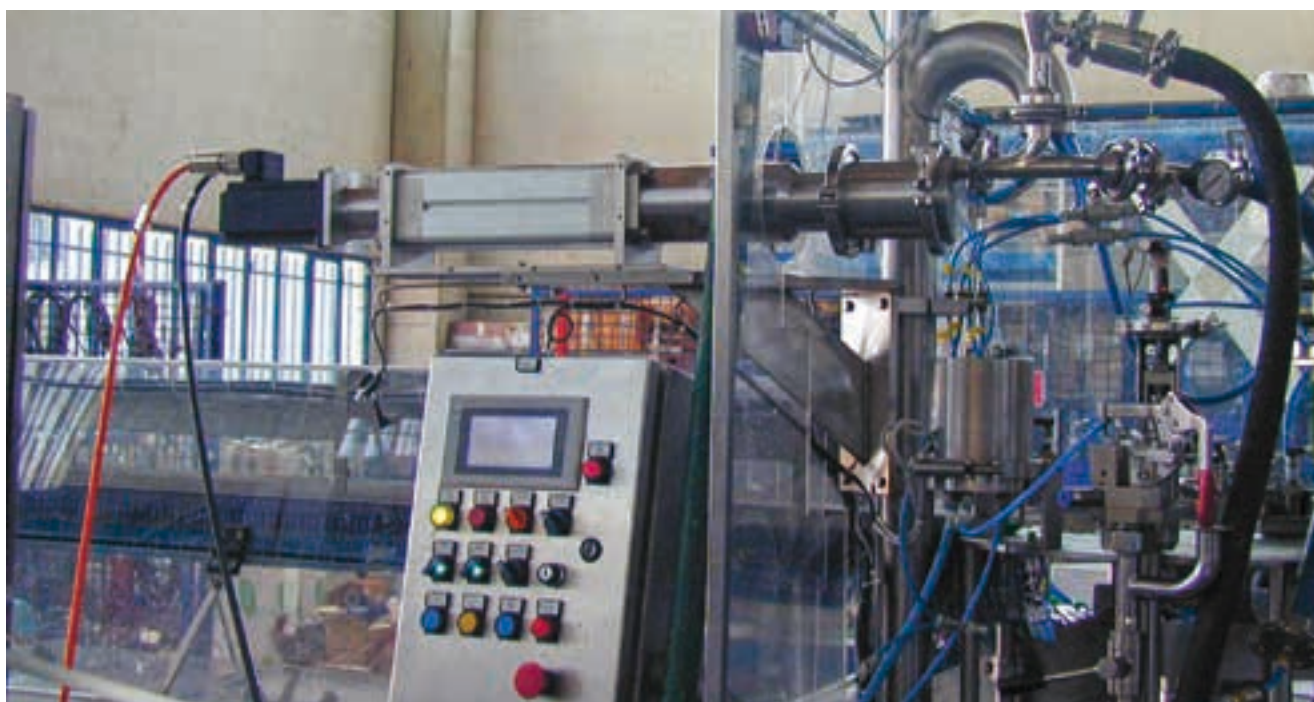


Macchine soffiaggio plastica / Blow moulding machines

Campi di impiego

Field of applications

ALIMENTARI / BEVERAGE



Macchina riempimento con dosatrice volumetrica / Filling machines by metering volumetric system

LOGISTICA / LOGISTICS



Carrello elevatore automatico /
Automated forklift truck

Campi di impiego

Field of applications

SISTEMI DI TRASPORTO / MATERIAL HANDLING



Sistema di tensionamento nastro / Band tensioning system

Campi di impiego

Field of applications

IMBALLAGGIO / PACKAGING



Incartonatrice /
Corrugated board packaging machine

SOLLEVAMENTO / LIFTING



Sistemi di
sollevamento /
Lifting equipments

Campi di impiego

Field of applications

VEICOLI / MOBILE



Azionamento freno veicoli senza uomo a bordo /
Brake driving of unmanned vehicle

CONVERTING / CONVERTING



Macchina converting
sistema taglia bobine /
Converting machinery
roller cutter system



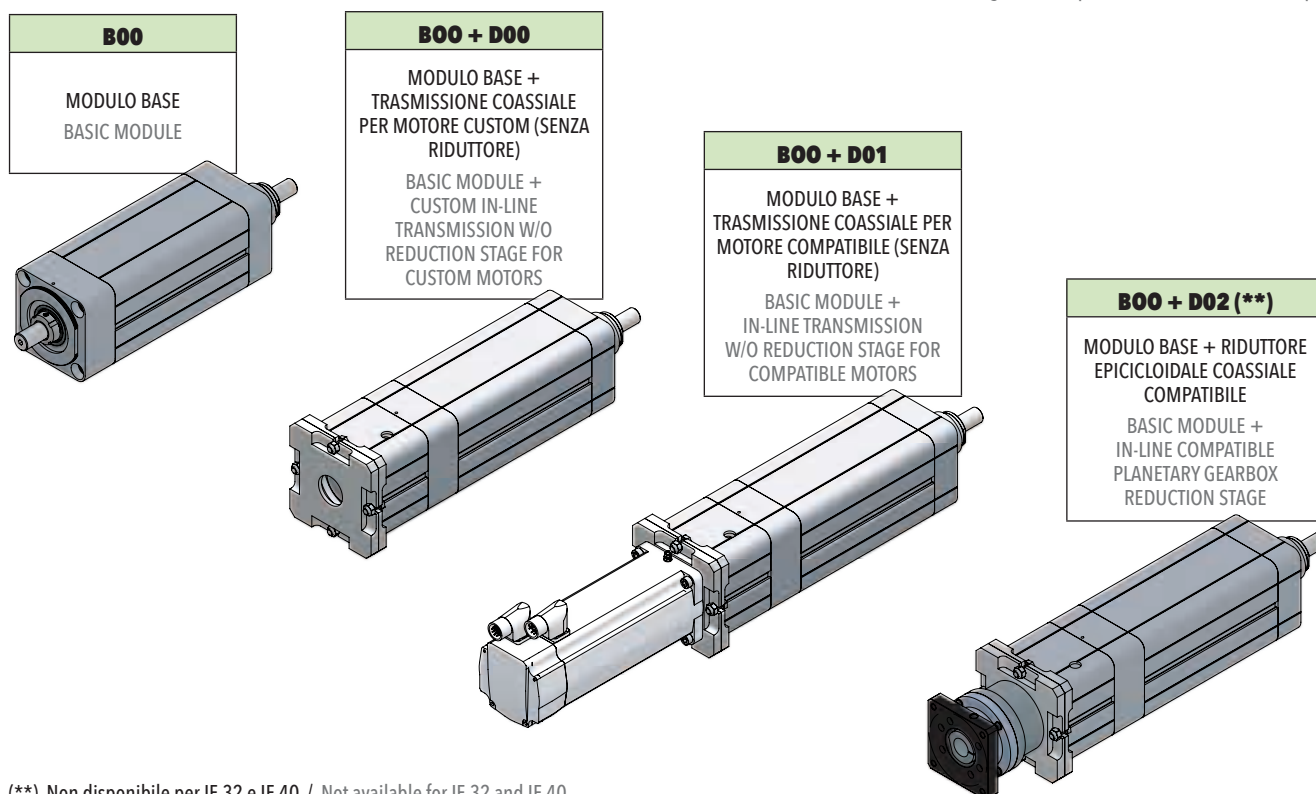
Sinottico

Overview

IE 32 ÷ IE 100 XL

| GRANDEZZA / SIZES | | | IE 32 | | IE 40 | | IE 50 | | | IE 63 | | |
|----------------------------|---|-----------------------|-------|------|-------|------|-------|------|------|-------|------|------|
| P | PASSO VITE SCREW LEAD | [mm] | 4 | 12 | 4 | 12 | 5 | 10 | 16 | 5 | 10 | 20 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 3000 | 2000 | 3000 | 2000 | 4500 | 4500 | 4000 | 7500 | 7500 | 7500 |
| V_{out,max} | VELOCITÀ MASSIMA IN USCITA MAX OUTPUT SPEED | [mm/sec] | 200 | 600 | 200 | 600 | 250 | 500 | 800 | 250 | 500 | 1000 |
| N_{in,max} | VELOCITÀ MASSIMA ROTAZIONE VITE A RICIRCOLO MAX BALLSCREW ROTATING INPUT SPEED | [rpm] | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 |
| S_{max} | CORSA MASSIMA STANDARD* MAX STANDARD STROKE* | [mm] | 500 | 500 | 500 | 500 | 700 | 700 | 700 | 800 | 800 | 800 |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION | [m/sec ²] | 1 | 2 | 1 | 2 | 1 | 2 | 2,5 | 1 | 2 | 3 |

* Per corse superiori, contattare il nostro servizio tecnico.
For longer strokes please contact our technical dept.



(**) Non disponibile per IE 32 e IE 40 / Not available for IE 32 and IE 40

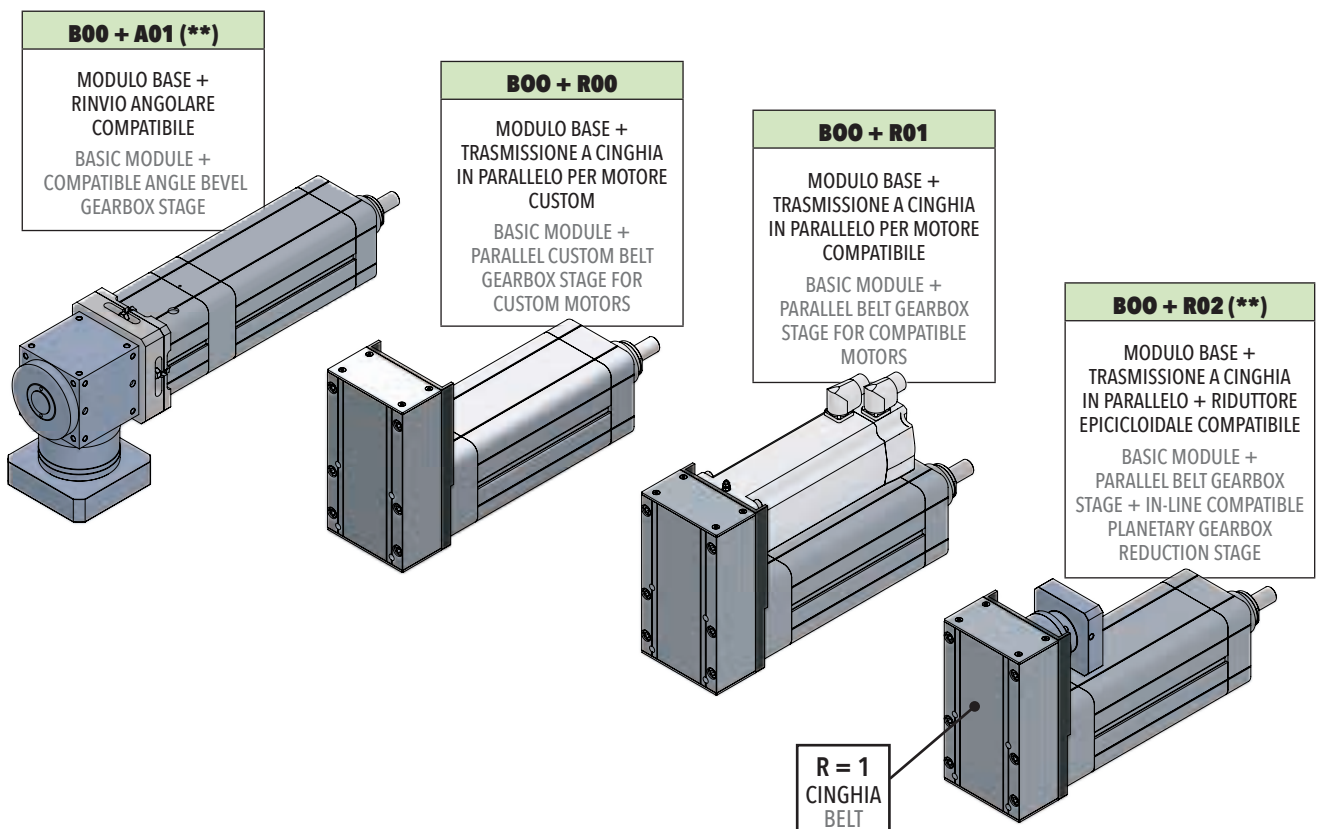
Sinottico

Overview

IE 32 ÷ IE 100 XL

| IE 80 | | | IE 80HL | | | IE 100 | | | | IE 100HL | | | | IE100XL |
|-------|-------|-------|---------|-------|-------|--------|-------|-------|-------|-----------------|-----------------|-----------------|-----------------|---------|
| 5 | 10 | 25 | 5 | 10 | 32 | 5 | 10 | 20 | 32 | 5 | 10 | 20 | 40 | 10 |
| 12000 | 12000 | 12000 | 21000 | 25000 | 18000 | 21000 | 25000 | 30000 | 16000 | 23000 23000* | 30000 41000* | 30000 40000* | 30000 40000* | 52000 |
| 250 | 500 | 1250 | 250 | 500 | 1600 | 250 | 500 | 1000 | 1600 | 208 | 416 | 833 | 1660 | 333 |
| 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 2496 | 2496 | 2496 | 2490 | 1998 |
| 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1100 | 1000 |
| 1 | 2 | 4 | 1 | 2 | 5 | 1 | 2 | 3 | 5 | 1 | 2 | 3 | 6 | 2 |

* Versione con tiranti / Tension rods version



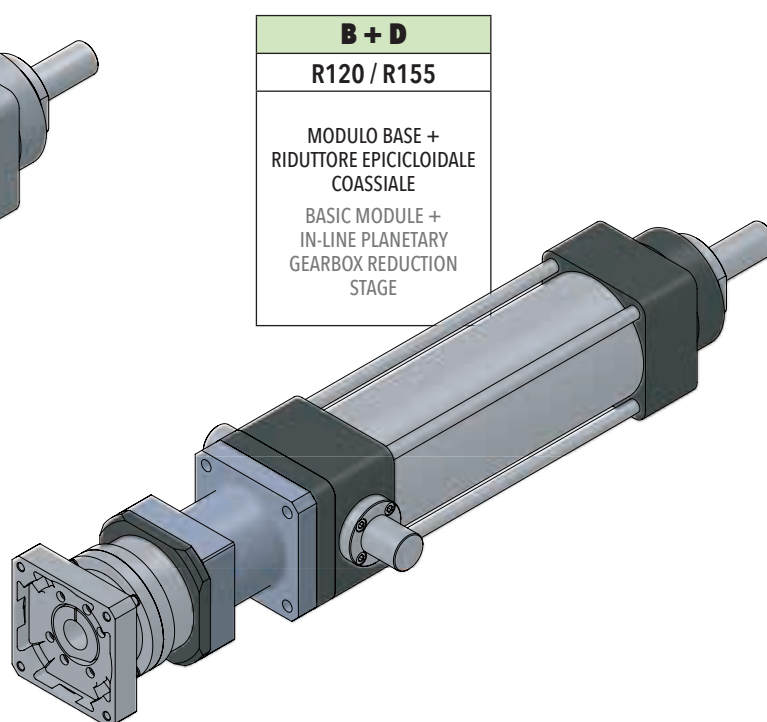
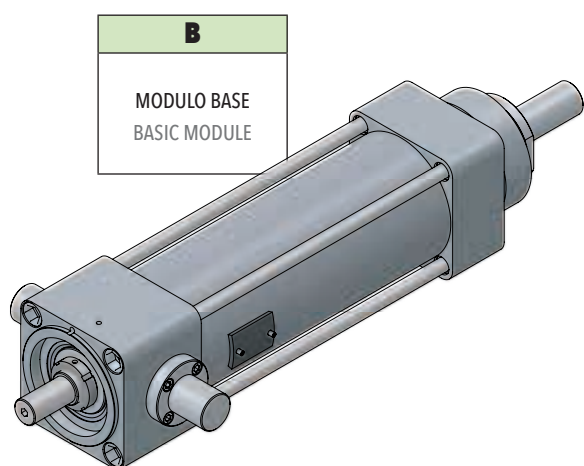
Sinottico

Overview

IE 125 / IE 160

| GRANDEZZA / SIZES | | | IE 125 | | IE 160 | |
|----------------------------|--|-----------------------|--------|-------|--------|--------|
| P | PASSO VITE SCREW LEAD | [mm] | 10 | 20 | 10 | 20 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 80000 | 80000 | 100000 | 120000 |
| V_{out,max} | VELOCITÀ MASSIMA IN USCITA MAX OUTPUT SPEED | [mm/sec] | 265 | 667 | 208 | 417 |
| N_{in,max} | VELOCITÀ MASSIMA ROTAZIONE VITE A RICIRCOLO MAX BALLSCREW ROTATING INPUT SPEED | [rpm] | 1590 | 2000 | 1248 | 1251 |
| S_{max} | CORSA MASSIMA STANDARD* MAX STANDARD STROKE* | [mm] | 1200 | 1200 | 1600 | 1600 |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION | [m/sec ²] | 2 | 3 | 2 | 3 |

* Per corse superiori, contattare il nostro servizio tecnico.
For longer strokes please contact our technical dpt.

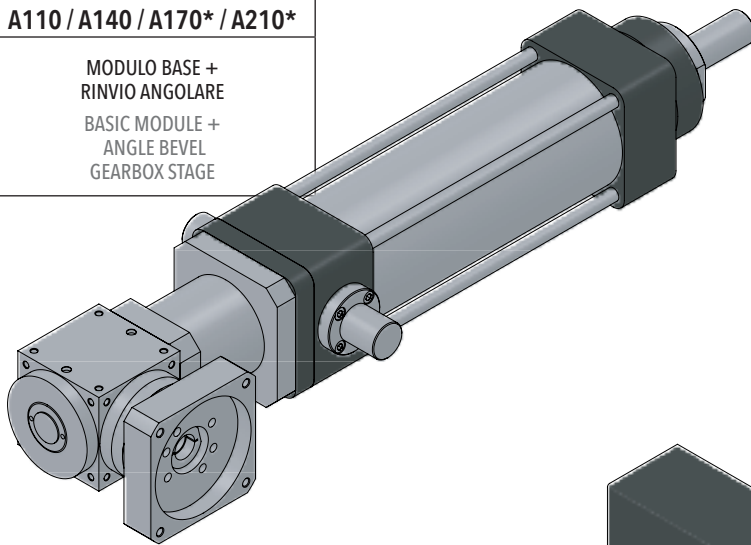


Sinottico

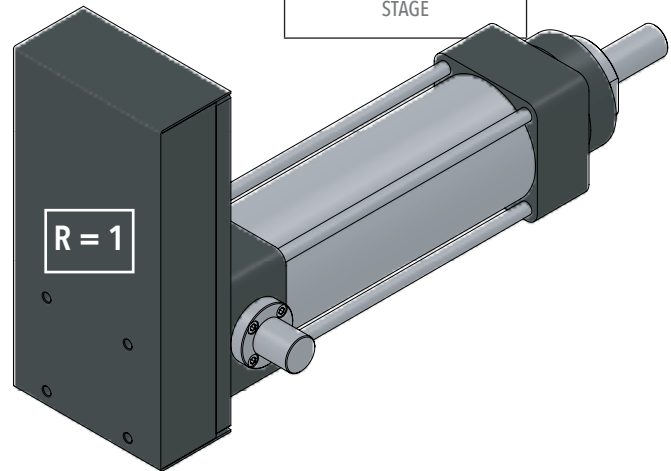
Overview

IE 125 / IE 160

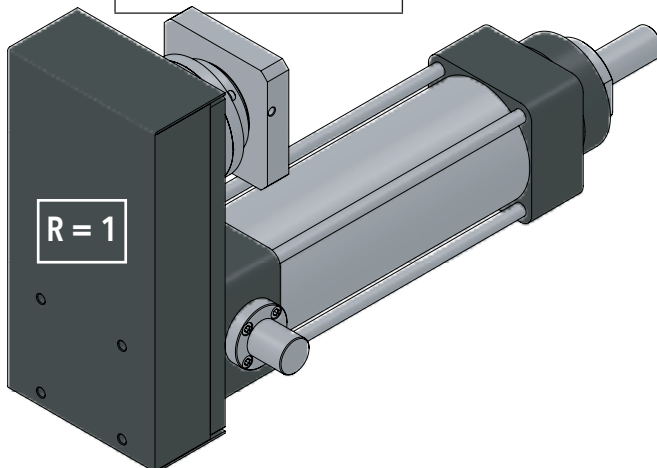
| B + A |
|--|
| A110 / A140 / A170* / A210* |
| MODULO BASE + RINVIO ANGOLARE BASIC MODULE + ANGLE BEVEL GEARBOX STAGE |



| B + R |
|---|
| R00 |
| MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM BASIC MODULE + PARALLEL FOR CUSTOM MOTORS BELT GEARBOX STAGE |



| B + R |
|---|
| R120 / R155* |
| MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO + RIDUTTORE EPICICLOIDALE BASIC MODULE + PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE |



* Solo per IE 160 / Only for IE 160.

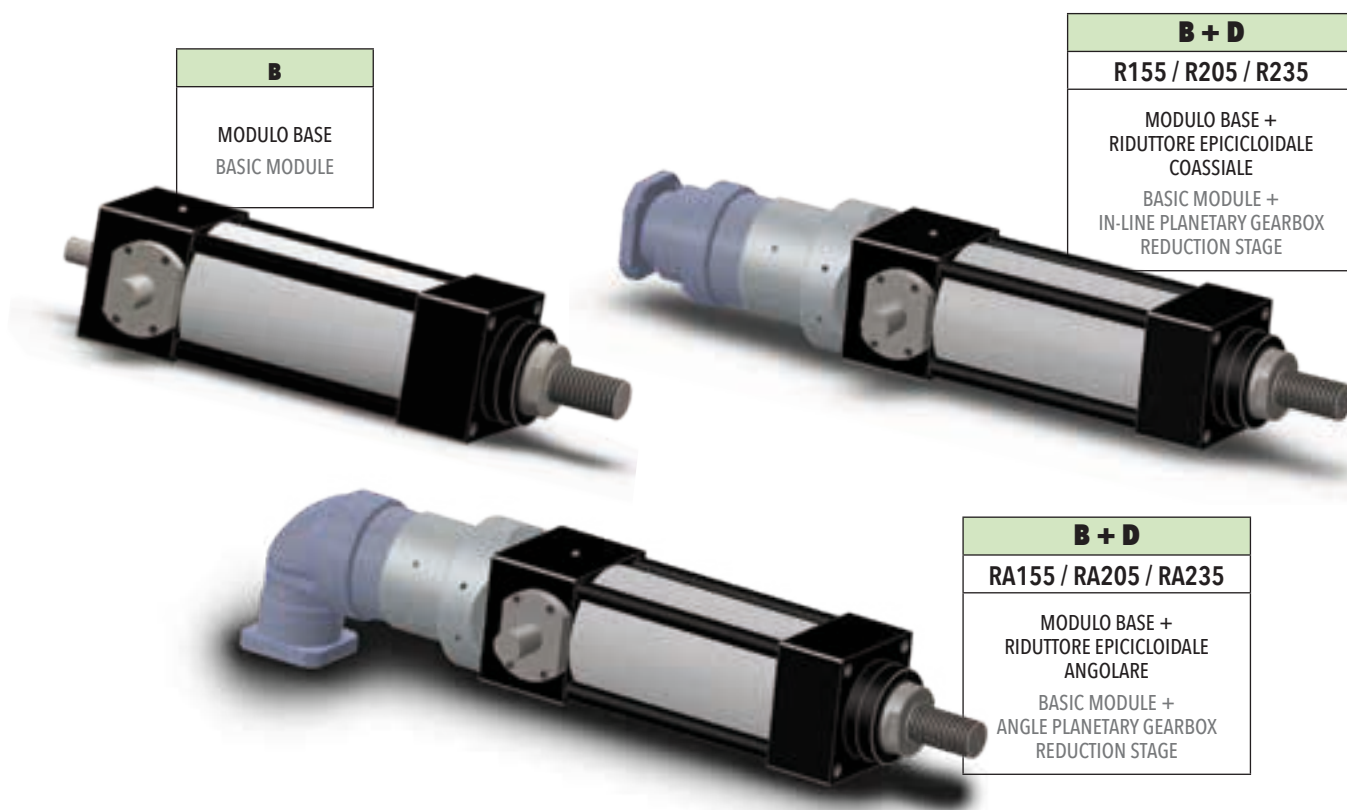
Sinottico

Overview

IE 240

| GRANDEZZA / SIZES | | | IE 240 |
|----------------------------|--|-----------------------|--------|
| P | PASSO VITE SCREW LEAD | [mm] | 25 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 350000 |
| V_{out,max} | VELOCITÀ MASSIMA IN USCITA MAX OUTPUT SPEED | [mm/sec] | 417 |
| N_{in,max} | VELOCITÀ MASSIMA ROTAZIONE VITE A RICIRCOLO MAX BALLSCREW ROTATING INPUT SPEED | [rpm] | 1000 |
| S_{max} | CORSA MASSIMA STANDARD* MAX STANDARD STROKE* | [mm] | 1000 |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION | [m/sec ²] | 3 |

* Per corse superiori, contattare il nostro servizio tecnico.
For longer strokes please contact our technical dept.



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| | | |
|-------|---|---------|
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| | |
|--|--|
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1.

Informazioni tecniche per il calcolo

Technical information
for calculations

1.1

Forza assiale e velocità equivalenti
Equivalent axial force and equivalent linear speed

L'attuatore ISOMOVE è progettato e costruito per essere sollecitato solo ed esclusivamente da forze esterne assiali (dirette lungo il suo asse longitudinale).

Qualunque forza esterna radiale (ortogonale all'asse dell'attuatore) è vietata e compromette il corretto funzionamento dello stesso. In questo caso decade ogni forma di garanzia.

Nel seguito quando parleremo di forza in generale intenderemo un carico puramente assiale.

Per effettuare la scelta corretta dell'attuatore si deve determinare la massima forza esterna reale risultante agente $F_{a,max}$.

Essa è la somma vettoriale di tutte le forze esterne agenti (forza di lavoro, forza di attrito, forza inerziale, forza peso, forze altre varie) nella condizione di lavoro più gravosa.

Tale condizione, così come i valori massimi di ciascun tipo di forza, deve esserci comunicata dal cliente.

Nella realtà applicativa le forze hanno un andamento nel tempo (grafico di forza) variabile e di conseguenza la forza esterna reale risultante F_a ha anch'essa un andamento variabile nel tempo:

$$F_a = f(t)$$

Per calcolare la durata statistica dell'attuatore, determinata dai suoi elementi volventi (cuscinetti e vite a ricircolo), dobbiamo calcolare la forza esterna media equivalente F_{eq} dal grafico di forza esterna reale risultante ed ancor prima la velocità lineare media equivalente V_{eq} dal profilo di moto reale del ciclo considerato.

Essi sono i valori equivalenti ai reali, ai fini del calcolo di durata statistica dell'attuatore, con probabilità pari al 90%. Essi sono definiti nel modo seguente:

ISOMOVE actuator has been conceived and is built to be loaded by purely external axial forces (i.e. whose axis is exactly actuator's axis).

Any external radial force (orthogonal to the actuator's axis) is not allowed because it jeopardizes its proper working. In this case there is no warranty on the product.

In the next pages we will generally write force meaning that it is a purely axial force.

To make actuator's proper choice you must first determine the max external actual resultant force acting on the actuator $F_{a,max}$.

It is the vectorial sum of all external acting forces (working force, friction force, inertial force, weight force and all other possible forces) in the worst possible condition.

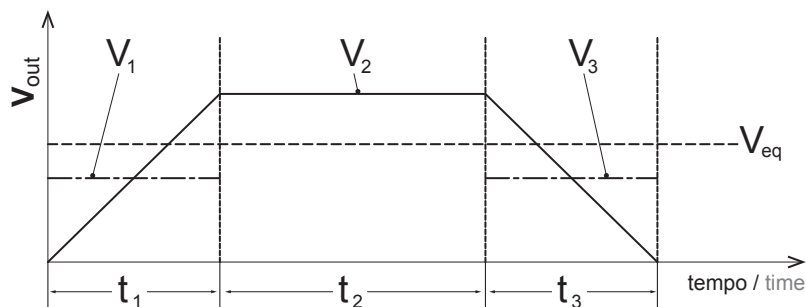
This specific condition, as well as all the max values of each kind of force, must be communicated to SETEC GROUP in a clear way by the Customer/User.

In real applications forces vary during time (force graph) thus also the resultant external actual force F_a vary during time:

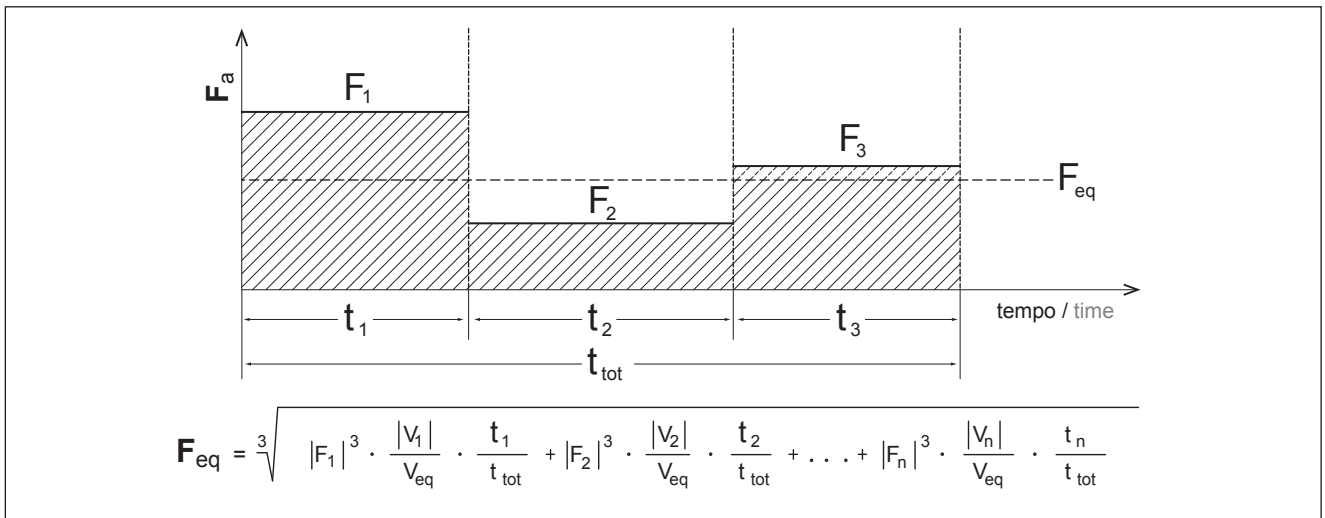
$$F_a = f(t)$$

To calculate the statistical lifetime of the actuator at 90% probability, which depends on its rolling elements (bearings and ballscrews) we must first determine 2 equivalent values of the actual force F_a and of the actual output linear speed V_{out} : F_{eq} and V_{eq} .

They are calculated with the following formulas:



$$V_{eq} = \frac{1}{t_{tot}} \cdot (|V_1| \cdot t_1 + |V_2| \cdot t_2 + \dots + |V_n| \cdot t_n)$$



Nel tratto lineare crescente/decrescente il valore medio è la media aritmetica del valore minimo e massimo.

In the linear increasing/decreasing values (force or speed) the mean value is the arithmetical mean between the minimum and the maximum value of the line section considered.

1.2 Capacità dinamica modulo base e durata statistica attuatore Basic module dynamic load rating and Isomove statistical lifetime

Il parametro costruttivo del modulo base che caratterizza la durata statistica con probabilità al 90% dell'attuatore completo (modulo base + trasmissione eventuale) è la

CAPACITÀ DI CARICO DINAMICO **C_{am}**

Esso è il valore di forza equivalente **F_{eq}**, costante nel tempo, agente sull'attuatore, che determina una durata statistica pari ad 1 MILIONE DI GIRI della vite e dei supporti. Nel catalogo, in seguito, nelle sezioni relative a ciascuna grandezza, riportiamo nelle formule di durata il valore di questo parametro per ciascuna versione di modulo base. Esso è il valore numerico minore tra supporti e vite a sfere, quindi il più cautelativo.

La DURATA STATISTICA al 90% di PROBABILITÀ è calcolata nel modo seguente:

The characteristic constructive figure which determines the 90% probability lifetime of the complete actuator (basic module + transmission stage) is the

DYNAMIC LOAD RATING **C_{am}**

It is the equivalent force **F_{eq}** value, constant in time, acting on the actuator and determining a statistical lifetime of 1 MILLION TURNS of its rolling elements.

In the following sections dedicated to each single actuator size we indicate in the lifetime formulas this value for each specific type.

Of course it is the minimum value between bearings and ballscrews, thus a conservative one.

90% PROBABILITY LIFETIME is calculated as follows:

$$L_{10} = \left[\frac{C_{am}}{F_{eq}} \right]^3 \cdot 10^6 \quad \text{[milioni di giri]}$$

Che espressa in corsa dell'asta traslante diventa:

In terms of stroke:

$$L_{10,Km} = \left[\frac{C_{am}}{F_{eq}} \right]^3 \cdot P \quad \text{[Km]} \quad P = \text{passo vite / ballscrew pitch} \quad \text{[mm]}$$

I valori ricavati dalle formule precedenti sono puramente indicativi e sono validi nelle seguenti condizioni di esercizio:

- assenza di urti e vibrazioni
- lubrificazione dell'attuatore secondo ns. indicazioni
- montaggio con allineamenti di precisione
- assenza di carichi radiali
- temperatura ambiente compresa tra i -20°C e +70°C
- assenza di aggressivi chimici e di grandi depositi di polveri sull'attuatore
- funzionamento sempre per una corsa minima di lubrificazione adeguata

Esso rimane un valore statistico, ossia vero per il 90% di una quantità statisticamente rilevante di attuatori tutti uguali operanti in condizioni identiche; utile per avere un ordine di grandezza. Non può essere considerato un valore impegnativo e vincolante per il GRUPPO SETEC.

NOTA: quanto sopra è valido solo ed esclusivamente nel caso gli elementi di trasmissione siano gli "STANDARD SETEC GROUP DISPONIBILI" contenuti in questo catalogo. Qualora la trasmissione fosse a cura e carico del cliente quanto sopra non è più vero.

Al fine di facilitare il calcolo, nei paragrafi relativi ad ogni grandezza e versione sono riportate le formule specifiche della durata $L_{10,Km}$ dove inserire il solo valore F_{eq} :

Results of those above formulas are valid only if the actuator is used in the following operating conditions:

- no shocks and no vibrations
- respect of lubrication rules
- installation of the actuator with proper alignment tolerances
- no radial loads
- environmental temperature between -20° and + 70°C
- nor chemical products on/into the actuator neither big dust deposit on it
- always working with the minimum lubrication stroke

Lifetime value result is anyway a statistical value, thus true at 90% probability, for a relevant batch of all-the-same actuators operating in identical conditions. It is the of use only to have an idea of quantity and not an exact value. Thus it cannot be binding for SETEC GROUP.

TO BE NOTICED: all what above written is valid only in case the many available transmission stages are exactly the "AVAILABLE STANDARD SETEC GROUP" ones included in this catalogues. If Customer/User wants to use a something different from that all what above indicated will not be true anymore.

To make calculation easier, in each actuator size paragraph you can find the adapted specific formulas for $L_{10,Km}$ calculation, where you just put in the F_{eq} value:

ESEMPIO:

EXAMPLE:

| CALCOLO CALCULATION | $L_{10,Km}$ | [Km] |
|----------------------------------|---|----------------|
| IE 32 P = 4 mm | $L_{10,Km} = \left[\frac{3370}{F_{eq}} \right]^3 \cdot 4$ | $F_{eq} = [N]$ |
| IE 32 P = 12 mm | $L_{10,Km} = \left[\frac{2200}{F_{eq}} \right]^3 \cdot 12$ | $F_{eq} = [N]$ |

1.3 Forza reale risultante massima ammissibile in dinamica ed in statica Max admissible actual resultant force in dynamic and static use

Ciascuna grandezza e versione di attuatore è caratterizzata da 2 valori di forza da non superare mai:

Each actuator type has 2 characteristic force values never to exceed:

ATTUATORE IN MOVIMENTO

F_d = carico massimo dinamico applicabile.

È il valore di forza reale risultante massimo applicabile in movimento, ovvero in condizioni dinamiche.

ACTUATOR DURING MOTION

F_d = max admissible dynamic load.

It is the max admissible load that can act on the actuator during motion.

$$F_{a,max} \leq F_d$$

ATTUATORE FERMO

F_{st} = carico massimo statico applicabile

È il valore di forza reale risultante massimo applicabile in assenza di movimento, ovvero in condizioni statiche.

IDLE ACTUATOR

F_{st} = max admissible static load

It is the max admissible load that can act on the actuator without motion.

$$F_{a,max} \leq F_{st}$$

1.4 Coppia in ingresso al modulo base Torque at basic module input shaft

La coppia in ingresso al MODULO BASE C_{in} viene convertita in forza assiale in uscita F_a all'asta traslante dello stesso.

Essa è legata alla forza assiale in uscita dalla seguente relazione generale:

Input torque at BASIC MODULE shaft C_{in} is converted in output axial force F_a at its rod.

Formula linking those two figures is as follows:

$$C_{in} = \left[\frac{F_a \cdot P}{5652} \right]$$

P = passo vite / ballscrew pitch [mm]
 F_a = forza esterna reale risultante (forza da erogare) / external actual resultant force (to deliver) [N]

Per il modulo base standard si considera un rendimento meccanico pari a 0,90.

Basic module's MECHANICAL EFFICIENCY is 0,90.

Nelle tabelle relative ad ogni grandezza e versione è riportato il valore di coppia massima in ingresso al modulo base $C_{in,max}$, ovvero il massimo valore di coppia fornibile al modulo base, da non superare mai, corrispondente al valore che genera una forza pari al carico massimo dinamico applicabile F_d .

In each type's datasheet you will find the max admissible value of input torque at basic module shaft, never to exceed, $C_{in,max}$.

This torque value generates $F_a = F_d$.

Al fine di facilitare il calcolo, nei paragrafi relativi ad ogni grandezza e versione sono riportate le formule specifiche per calcolare la coppia in ingresso al modulo base C_{in} , inserendo il valore di F_a :

To make calculations easier in each model paragraph you will find the formula to get C_{in} , given a value of F_a :

ESEMPIO:

EXAMPLE:

| CALCOLO CALCULATION | C_{in} | [Nm] |
|-------------------------------------|---|--------------------|
| IE 32 $P = 4 \text{ mm}$ | $C_{in} = \left[\frac{F_a \cdot 4}{5652} \right]$ | $F_a = [\text{N}]$ |
| IE 32 $P = 12 \text{ mm}$ | $C_{in} = \left[\frac{F_a \cdot 12}{5652} \right]$ | $F_a = [\text{N}]$ |

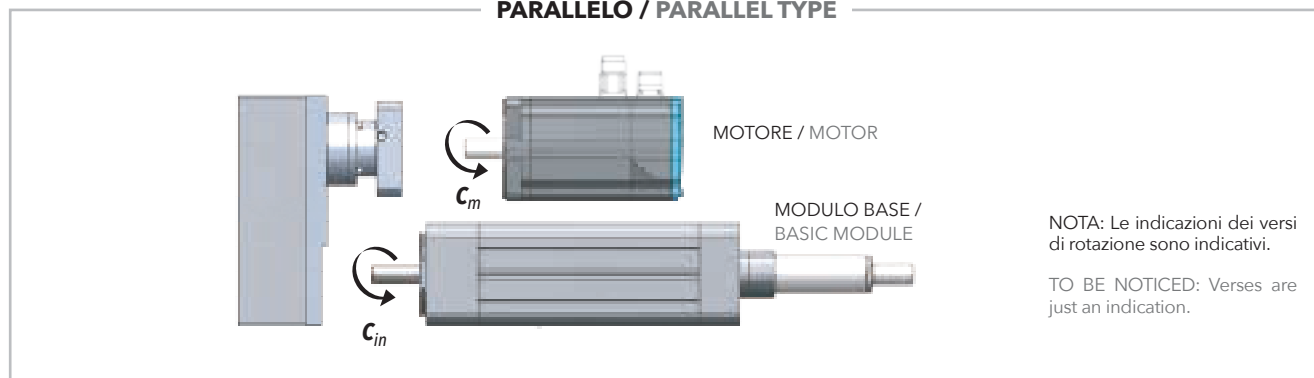
1.5

Coppia motore C_m Motor torque C_m

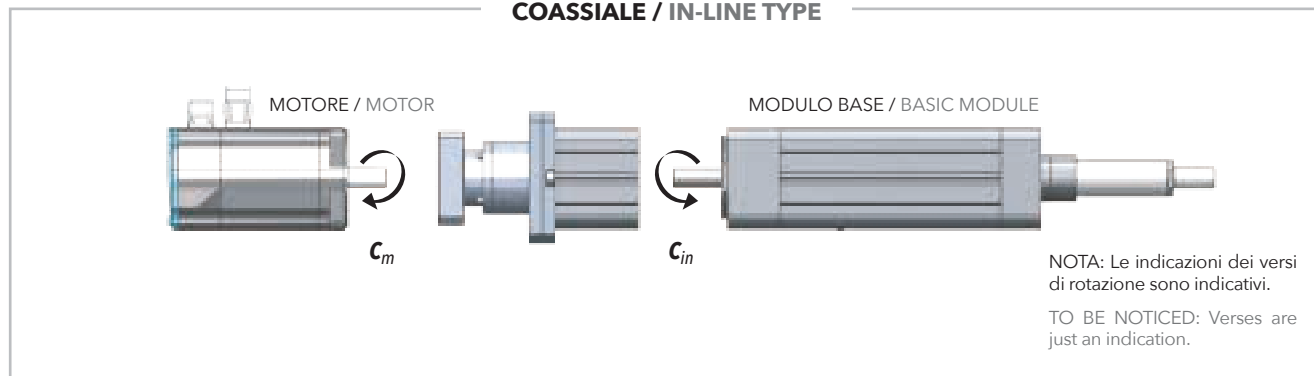
È la coppia che deve erogare il motore all'ingresso all'attuatore, ovvero in ingresso alla trasmissione dell'Isomove per erogare la forza F_a necessaria.

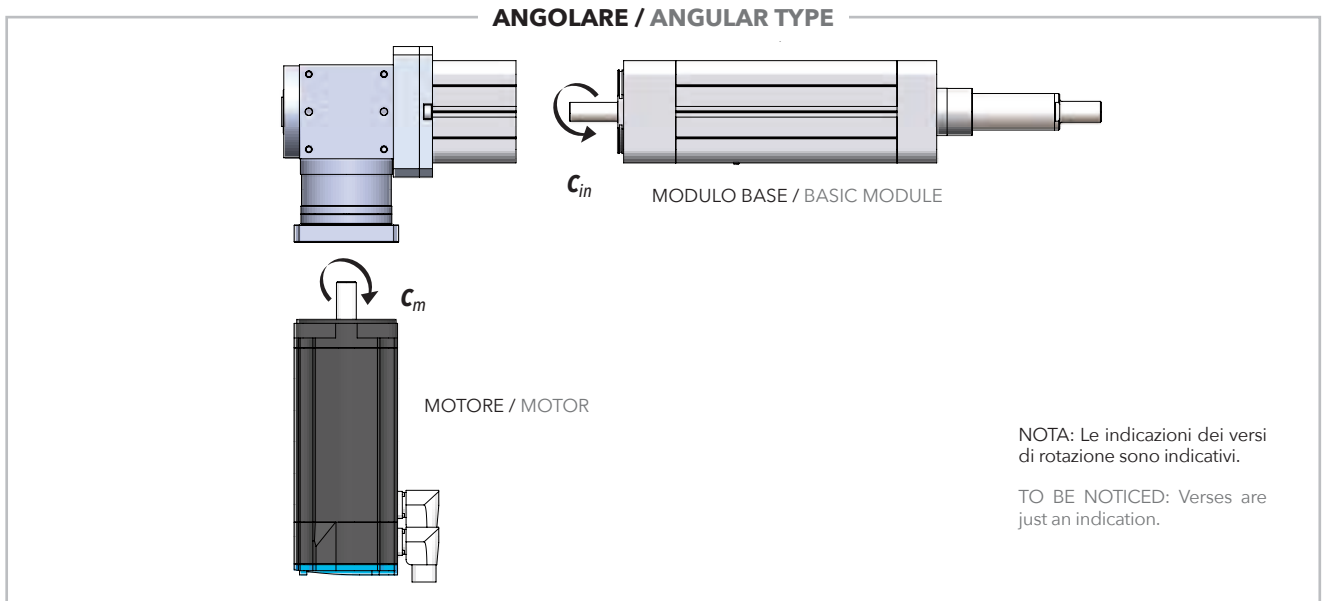
It is the torque the motor has to provide to the actuator, i.e. at the trasmission stage input, to deliver the requested F_a .

PARALLELO / PARALLEL TYPE



COASSIALE / IN-LINE TYPE





NOTA: Le formule seguenti non tengono in conto le inerzie proprie dell'attuatore, quindi i valori ottenuti saranno inferiori ai reali. Per un calcolo che le includa contattare il nostro ufficio tecnico.

REMARK: The following formulas do not take into account the inertias of the actuator, thus the calculated values are lower than actual ones. To get the actual values please take contact with our technical dept.

A seconda del tipo di trasmissione essa è definita nel modo seguente:

According to the types the motor torque is defined as follows:

CASO 1 / CASE 1

| ISOMOVE B00 + D00 / D01 | |
|--|--|
| <p>MODULO BASE / MODULO BASE + TRASMISSIONE COASSIALE SENZA RIDUZIONE</p> <p>In questo caso la coppia motore coincide con la coppia in ingresso al modulo base:</p> | <p>BASIC MODULE / BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE</p> <p>In this case the motor torque is the input torque at basic module shaft:</p> |
| $C_m = C_{in} \quad [Nm]$ | |

CASO 2 / CASE 2

| ISOMOVE B00 + D02 / A01 | |
|--|--|
| <p>MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE / MODULO BASE + RINVIO ANGOLARE</p> <p>In questo caso la coppia motore è legata alla coppia in ingresso al modulo base dalla relazione seguente:</p> | <p>BASIC MODULE + IN-LINE PLANETARY GEARBOX / BASIC MODULE + ANGLE BEVEL GEARBOX STAGE</p> <p>In this case the motor torque is related to the input torque at basic module shaft as follows:</p> |
| $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ | <p>R = rapporto di riduzione riduttore/rinvio angolare / planetary/angle bevel gearbox reduction ratio</p> <p>η = rendimento meccanico del riduttore/rinvio / planetary/angle bevel gearbox mechanical efficiency = 0,90</p> <p>C_s = coppia a vuoto assorbita dal riduttore/rinvio / planetary/angle bevel gearbox idle torque [Nm]</p> |

CASO 3 / CASE 3

ISOMOVE B00 + R00 / R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO

In questo caso la coppia motore è legata alla coppia in ingresso al modulo base dalla relazione seguente:

$$C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [\text{Nm}]$$

BASIC MODULE + PARALLEL BELT GEARBOX STAGE

In this case the motor torque is related to the input torque at basic module shaft as follows:

- R = rapporto di riduzione trasmissione a cinghia, disponibili R=1 oppure R=2 / belt gearbox reduction ratio, available R=1 or R=2
 η = rendimento meccanico trasmissione a cinghia = 0,90
 belt gear stage mechanical efficiency

CASO 4 / CASE 4

ISOMOVE B00 + R02

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO R=1 + RIDUTTORE

In questo caso la coppia motore è legata alla coppia in ingresso al modulo base dalla relazione seguente:

$$C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [\text{Nm}]$$

BASIC MODULE + PARALLEL BELT GEARBOX STAGE R=1 + IN-LINE PLANETARY GEARBOX REDUCTION STAGE

In this case the motor torque is related to the input torque at basic module shaft as follows:

- R = rapporto di riduzione riduttore / planetary gearbox reduction ratio
 η = rendimento meccanico totale (cinghia + epicicloidale) / (planetary gearbox + belt gear) total mechanical efficiency = 0,81
 C_s = coppia a vuoto assorbita dal riduttore / planetary gearbox idle torque

Nelle tabelle relative ad ogni grandezza e versione è riportato il valore di coppia massima motore in ingresso all'attuatore $C_{m,max}$ ovvero il massimo valore di coppia fornibile all'attuatore dal motore, da non superare mai, corrispondente al valore che genera una forza pari al carico massimo dinamico applicabile C_d .

In each type datasheet you will find the max admissible value of motor torque $C_{m,max}$ at actuator's input.

Never exceed it.

$C_{m,max}$ generates C_d .

1.6

Velocità lineare in uscita V_{out}
Output linear speed V_{out}

La velocità assiale dell'asta traslante dell'attuatore V_{out} è legata alla velocità angolare di ingresso all'attuatore N_{out} dalla seguente relazione:

$$V_{out} = \left[\frac{N_{mot} \cdot P}{60 \cdot R} \right] \quad [\text{mm/s}]$$

Actuator's rod output linear speed V_{out} is related to input motor speed N_{out} as follows:

- P = passo vite / ballscrew pitch [mm]
 N_{mot} = velocità angolare del motore (in ingresso all'attuatore) [rpm]
 rotational motor speed (at actuator's input)
 R = rapporto di riduzione tra motore e modulo base (è il rapporto di riduzione dello stadio di riduzione dell'attuatore) reduction ratio between motor and basic module (it is the total reduction gear of the ISOMOVE)

Nelle tabelle relative ad ogni grandezza e versione è riportato il valore di velocità angolare massima ammissibile $N_{in,max}$ in ingresso al modulo base, da non superare mai, corrispondente al valore che genera una velocità assiale dell'asta traslante massima $V_{out,max}$.

In each type datasheet you will find the max admissible input speed at the basic module shaft $N_{in,max}$ never to exceed, which delivers the max admissible output linear speed of the rod $V_{out,max}$.

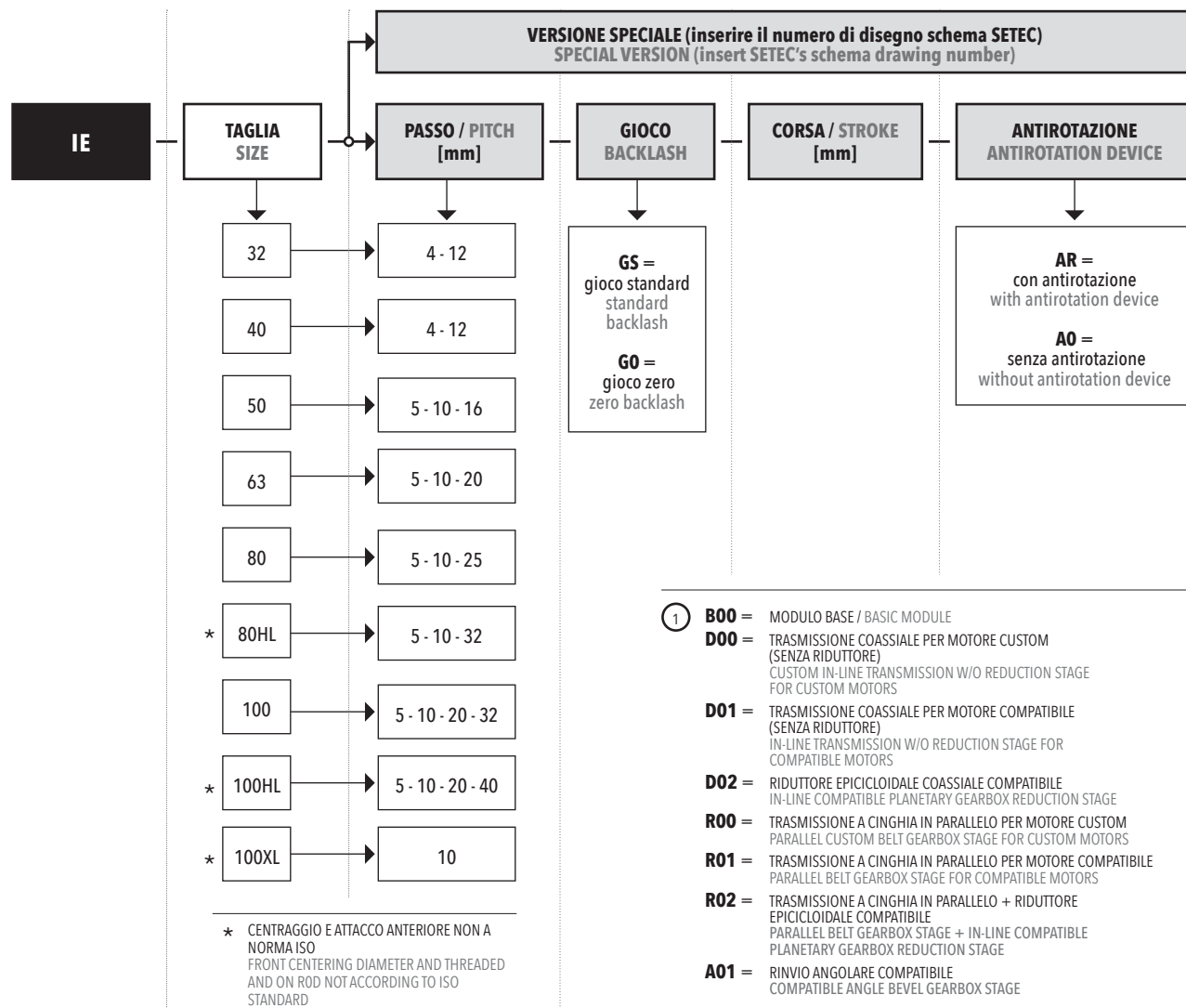
2.

Sigla di ordinazione

Ordering identification

2.1

Grandezze da 32 a 100XL
From 32 to 100XL type



- ① **B00** = MODULO BASE / BASIC MODULE
- D00** = TRASMISSIONE COASSIALE PER MOTORE CUSTOM (SENZA RIDUTTORE)
CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR CUSTOM MOTORS
- D01** = TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE (SENZA RIDUTTORE)
IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR COMPATIBLE MOTORS
- D02** = RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE
- R00** = TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM
PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS
- R01** = TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE
PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS
- R02** = TRASMISSIONE A CINGHIA IN PARALLELO + RIDUTTORE EPICICLOIDALE COMPATIBILE
PARALLEL BELT GEARBOX STAGE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE
- A01** = RINVIO ANGOLARE COMPATIBILE
COMPATIBLE ANGLE BEVEL GEARBOX STAGE

- ② PER LE DIMENSIONI DEI MOTORI VEDERE CAPITOLO 4
FOR MOTOR DIMENSIONS SEE CHAPTER 4
- ③ PER LE DIMENSIONI DEI RIDUTTORI VEDERE CAPITOLO 4
FOR PLANETARY GEARBOX DIMENSIONS SEE CHAPTER 4
- ④ PER LE DIMENSIONI DEI RINVII ANGOLARI VEDERE CAPITOLO 4
FOR ANGLE BEVEL GEARBOX DIMENSIONS SEE CHAPTER 4

Esempi di designazione prodotto STANDARD:

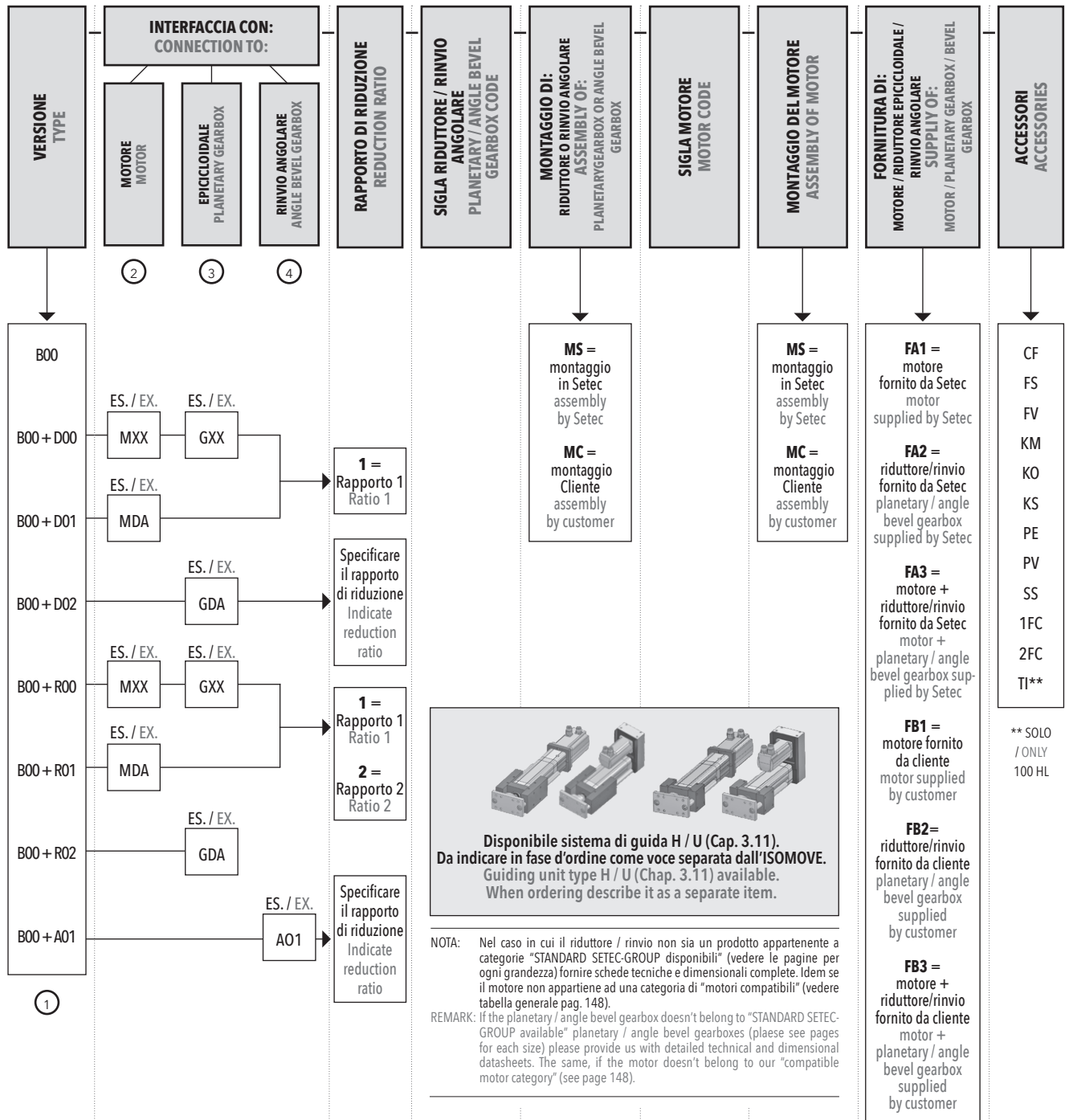
| | | | | | |
|----|-------|----|----|-----|----|
| IE | 63 | 5 | GS | 360 | A0 |
| IE | 50 | 5 | GS | 250 | AR |
| IE | 100HL | 10 | GS | 450 | A0 |
| IE | 80 | 10 | GO | 500 | AR |

STANDARD product designation examples:

Esempio di designazione prodotto SPECIALE:

| | | | | | |
|----|----|-----------------------------------|--|--|--|
| IE | 32 | I-E032-XXXX-XXX-XXXX-REVXX | | | |
|----|----|-----------------------------------|--|--|--|

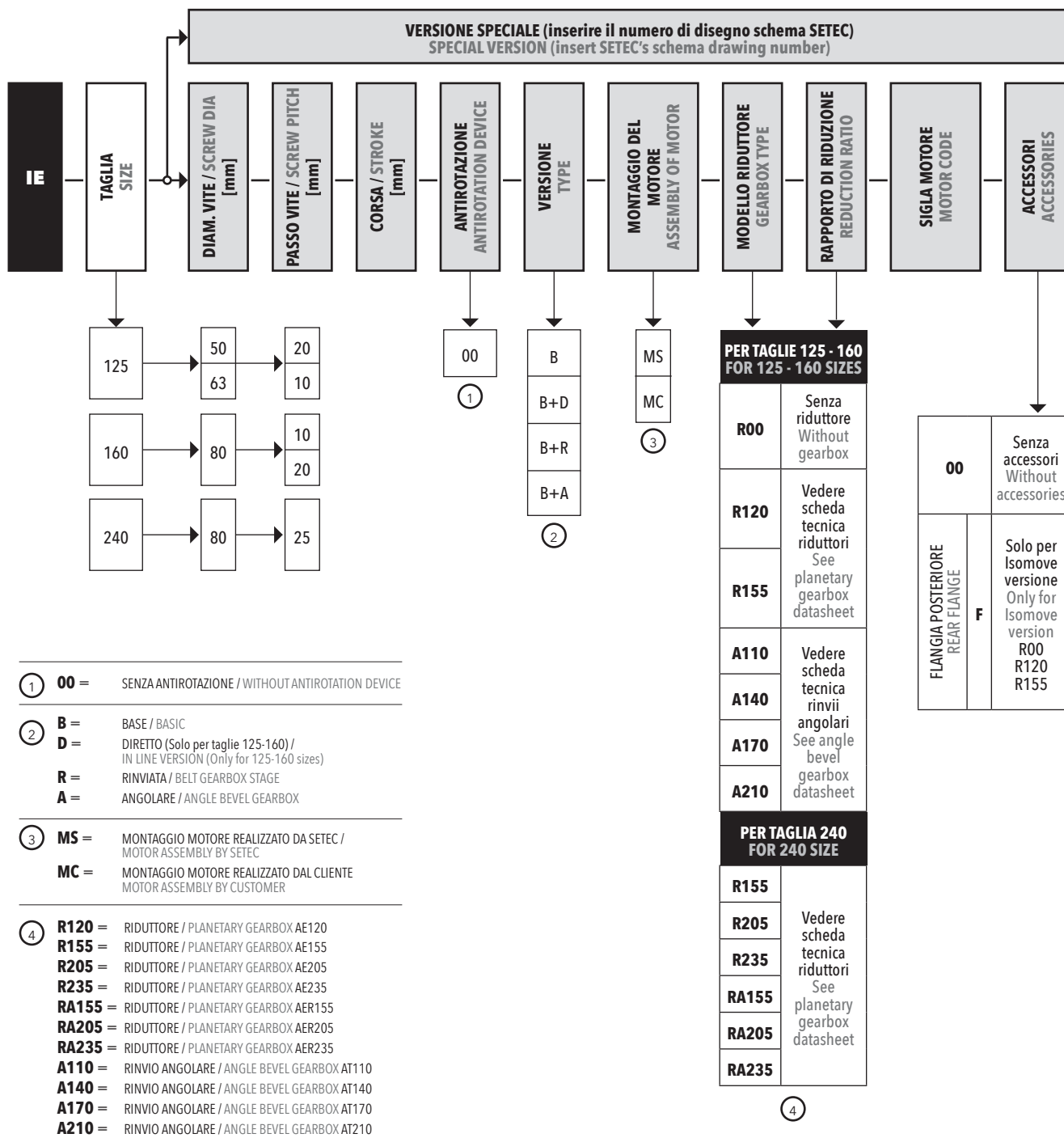
SPECIAL product designation example:



| | | | | | | | | |
|-----------|-----|----|--------|----|----------|----|---------|-------|
| B00 + D02 | GCA | 10 | LP070 | MC | 1FK7022 | MC | FB3 | FV |
| B00 + D01 | MCC | 1 | | | MCS09 | MS | FA1 | |
| B00 + A01 | ADA | 3 | ATB110 | MS | BMH1003P | MC | FA2+FB1 | |
| B00 + R02 | GDA | 5 | AE090 | MS | BSH703P | MS | FA2+FB1 | FS-PE |

2.2

Grandezze 125 - 160 - 240 125 - 160 - 240 type



Esempio di designazione prodotto STANDARD:

STANDARD product designation example:

IE - **125** - **63** - **10** - **300** - **00** - **B+A** - **MC** - **A110** - **4** - **BSH1004P** - **00**

Esempio di designazione prodotto SPECIALE:

SPECIAL product designation example:

IE - **125** - **I-E125-XXXX - XXX - XXXX - REVXX**

3.

Grandezze da 32 a 100XL

32 to 100XL Sizes

| | |
|----------------------------|---------|
| IE 32 | pg. 38 |
| IE 40 | pg. 44 |
| IE 50 | pg. 50 |
| IE 63 | pg. 62 |
| IE 80 | pg. 74 |
| IE 80HL | pg. 86 |
| IE 100 | pg. 98 |
| IE 100HL | pg. 110 |
| IE 100XL | pg. 124 |
| Accessori / Accessories | pg. 136 |

3.1

IE 32

3.1.1 Caratteristiche tecniche

3.1.1 Technical features

| ISOMOVE IE 32 | | | 4 | 12 |
|---|---|-----------------------|---|-----------------|
| P | PASSO VITE / SCREW LEAD | [mm] | 4 | 12 |
| D | DIAMETRO VITE / SCREW DIAMETER | [mm] | 12 | 12 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 3000* | 2000* |
| C_{in,max} | PER AVERE F_a = F_d TO GET | [Nm] | 2,1 | 4,2 |
| C_{m,max} | "CASO 1" / "CASE 1": B00 + D00/D01 | [Nm] | 2,1 | 4,2 |
| | "CASO 3" / "CASE 3": B00 + R00/R01 | [Nm] | 2,3 | 4,6 |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD | [N] | 3400 | 3400 |
| V_{out,max} N_{in,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED | [mm/sec] [rpm] | 200 / 3000 | 600 / 3000 |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA / MAX OUTPUT ACCELERATION | [m/sec ²] | 1 | 2 |
| S_{max} | CORSA MASSIMA STANDARD / MAX STANDARD STROKE | [mm] | 500** | 500** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE | [Kg] | 1,2 / 0,3 | 1,2 / 0,3 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY | [mm] | 0,02 | 0,02 |
| G_Z | GIOCO "0" DELLA CHIOCCIOLA / "0" BACKLASH BALLSCREW ASSEMBLY | | NON DISPONIBILE / NOT AVAILABLE | |
| L_{10,Km} | DURATA / LIFETIME | [Km] | VEDI TABELLA / SEE TABLE | |
| | VERSIONI DISPONIBILI / AVAILABLE TYPES | | D00/D01/R00/R01 | D00/D01/R00/R01 |
| | ACCESSORI DISPONIBILI / AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | |

* Per le versioni R00/R01 controllare con il grafico di pagina 40. / For R00/R01 types please check graph at page 40.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

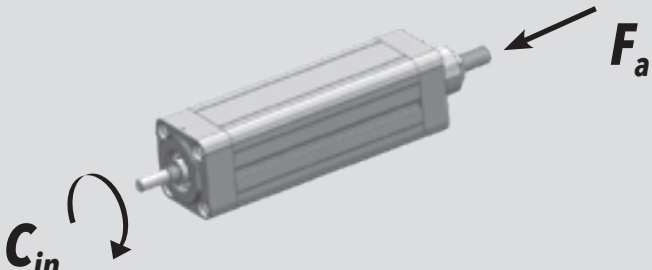
3.1.2 Calcolo durata

3.1.2 Lifetime calculation

| | | |
|----------------------------------|---|--|
| IE 32 P = 4 mm | $L_{10,Km} = \left[\frac{3370}{F_{eq}} \right]^3 \cdot 4$ | L_{10,Km} = [Km] F_{eq} = [N] |
| IE 32 P = 12 mm | $L_{10,Km} = \left[\frac{2200}{F_{eq}} \right]^3 \cdot 12$ | L_{10,Km} = [Km] F_{eq} = [N] |

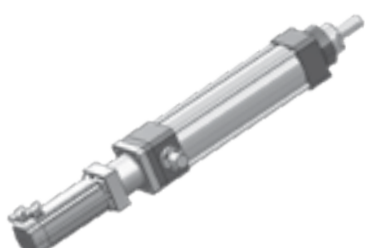
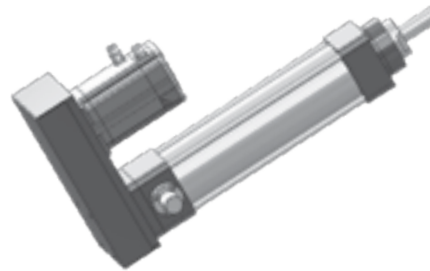
3.1.3 Calcolo coppia in ingresso al modulo base

3.1.3 Torque calculation at basic module input shaft

| | | |
|--|---|--|
|  | | |
| <p>IE 32 P = 4 mm</p> | $C_{in} = \left[\frac{F_a \cdot 4}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |
| <p>IE 32 P = 12 mm</p> | $C_{in} = \left[\frac{F_a \cdot 12}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |

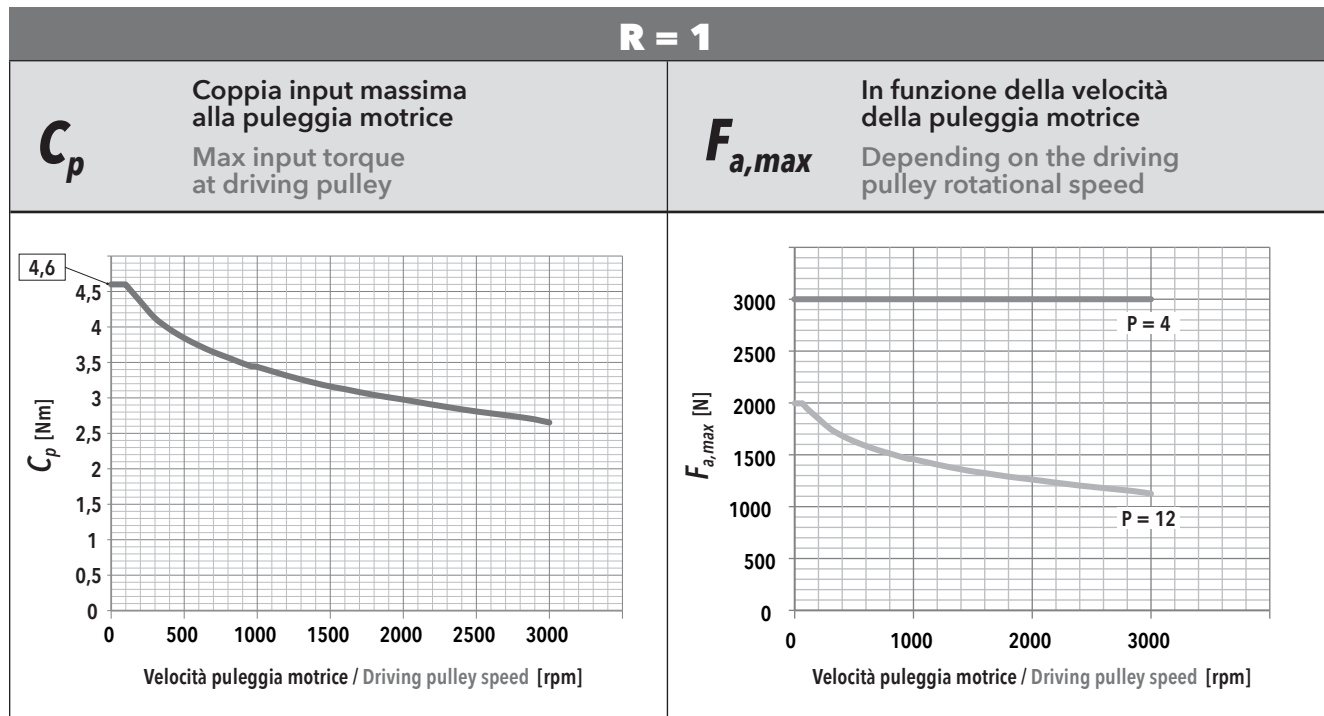
3.1.4 Calcolo coppia motore

3.1.4 Motor torque calculation

| | |
|---------------------------------|--|
| <p>CASO / CASE 1</p> | <p style="text-align: center;">ISOMOVE B00 + D00 / D01</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="text-align: center;"> $C_m = C_{in}$ <p>[Nm]</p> </div> </div> |
| <p>CASO / CASE 3</p> | <p style="text-align: center;">ISOMOVE B00 + R00 / R01</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="text-align: center;"> $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right]$ <p>[Nm]</p> </div> </div> <p>R = rapporto di riduzione trasmissione a cinghia, disponibile R=1 belt gearbox reduction ratio, available R=1 η = rendimento meccanico / mechanical efficiency = 0,90</p> |

3.1.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

3.1.5 Mechanical input power at belt gear stage (R type)



F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 32 - PASSO / PITCH 4 | | | | | |
|-------------------------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 20 | 80 | 140 | 200 |
| 3000 | F_r [N] | 140 | 141 | 142 | 143 |
| | f_t [Hz] | 328 | 329 | 330 | 331 |
| 2700 | F_r [N] | 127 | 127 | 127 | 129 |
| | f_t [Hz] | 312 | 312 | 313 | 314 |
| 2400 | F_r [N] | 112 | 112 | 113 | 114 |
| | f_t [Hz] | 293 | 294 | 295 | 296 |
| 2100 | F_r [N] | 98 | 99 | 100 | 101 |
| | f_t [Hz] | 276 | 276 | 277 | 278 |
| 1800 | F_r [N] | 84 | 85 | 86 | 87 |
| | f_t [Hz] | 253 | 254 | 256 | 258 |
| 1500 | F_r [N] | 70 | 70 | 71 | 73 |
| | f_t [Hz] | 232 | 233 | 234 | 236 |
| 1200 | F_r [N] | 57 | 57 | 58 | 58 |
| | f_t [Hz] | 209 | 209 | 210 | 212 |
| 900 | F_r [N] | 41 | 42 | 43 | 44 |
| | f_t [Hz] | 179 | 180 | 182 | 184 |
| 600 | F_r [N] | 28 | 28 | 29 | 30 |
| | f_t [Hz] | 147 | 148 | 149 | 152 |
| 300 | F_r [N] | 13 | 14 | 15 | 16 |
| | f_t [Hz] | 101 | 105 | 108 | 111 |

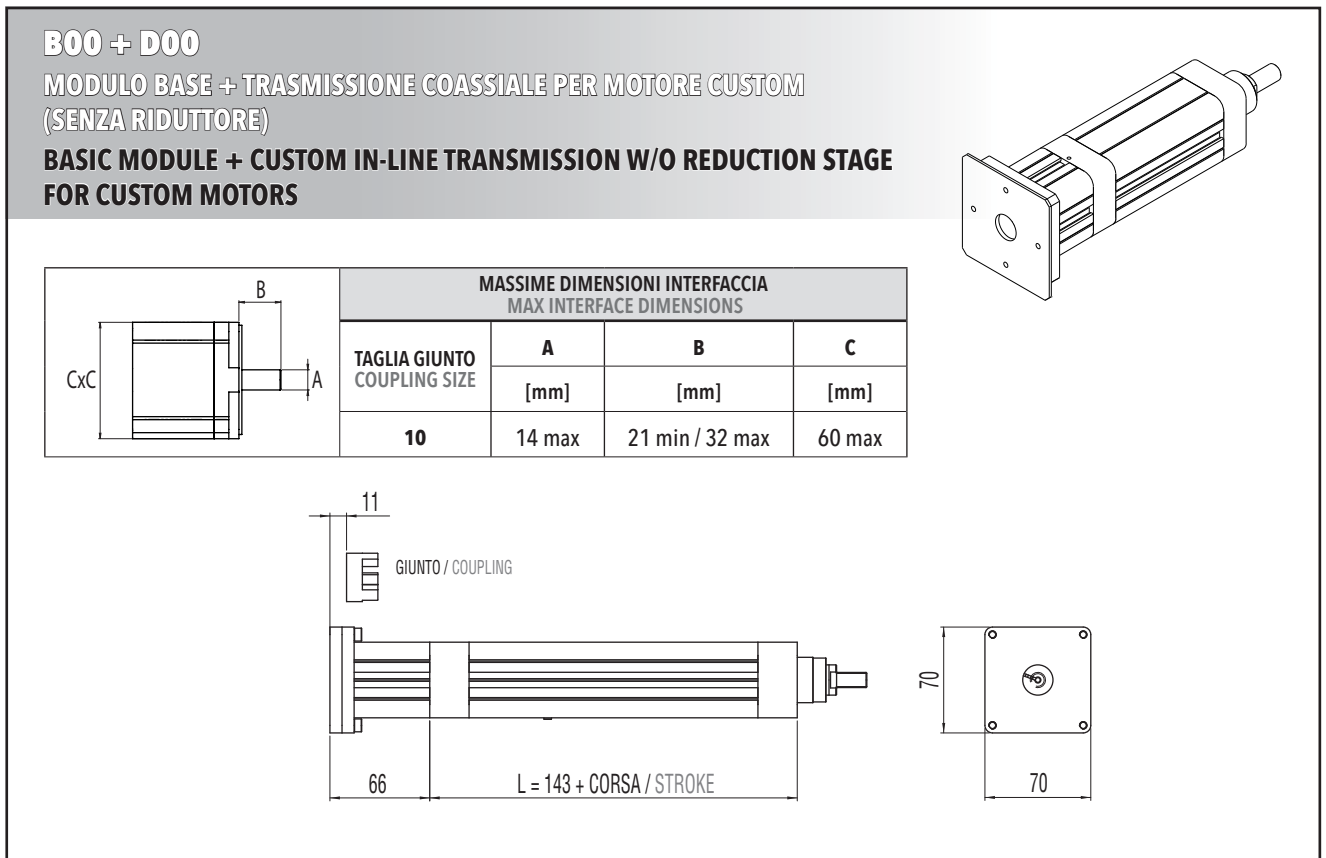
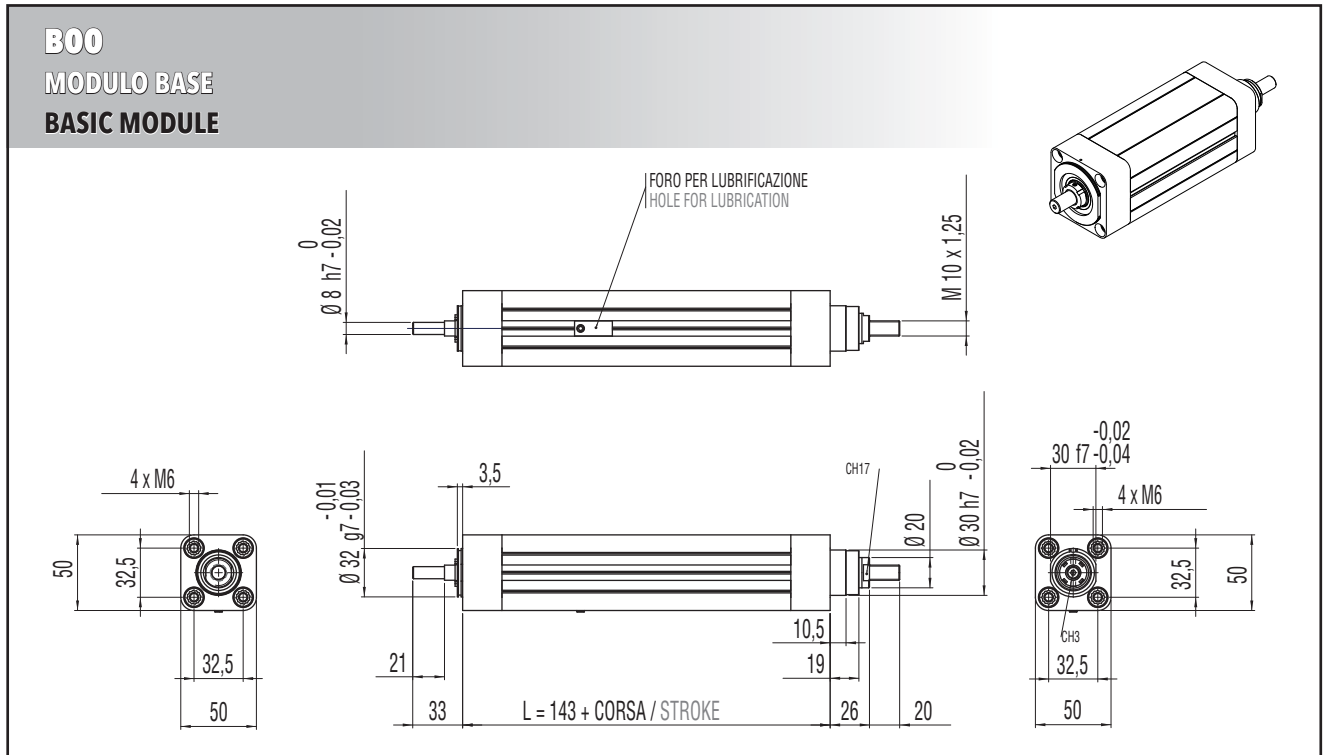
| IE 32 - PASSO / PITCH 12 | | | | | |
|--------------------------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 60 | 240 | 420 | 600 |
| 2000 | F_r [N] | 282 | | | |
| | f_t [Hz] | 465 | | | |
| 1800 | F_r [N] | 253 | | | |
| | f_t [Hz] | 441 | | | |
| 1600 | F_r [N] | 225 | 226 | | |
| | f_t [Hz] | 416 | 416 | | |
| 1400 | F_r [N] | 197 | 197 | | |
| | f_t [Hz] | 389 | 389 | | |
| 1200 | F_r [N] | 169 | 169 | 170 | |
| | f_t [Hz] | 360 | 360 | 361 | |
| 1000 | F_r [N] | 141 | 141 | 142 | 143 |
| | f_t [Hz] | 329 | 329 | 330 | 331 |
| 800 | F_r [N] | 113 | 113 | 114 | 115 |
| | f_t [Hz] | 294 | 294 | 295 | 297 |
| 600 | F_r [N] | 85 | 85 | 86 | 87 |
| | f_t [Hz] | 255 | 255 | 256 | 258 |
| 400 | F_r [N] | 56 | 57 | 57 | 59 |
| | f_t [Hz] | 208 | 209 | 210 | 212 |
| 200 | F_r [N] | 28 | 29 | 29 | 30 |
| | f_t [Hz] | 147 | 148 | 150 | 153 |

3.1.6 Caratteristiche dimensionali

3.1.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvii al capitolo 4.

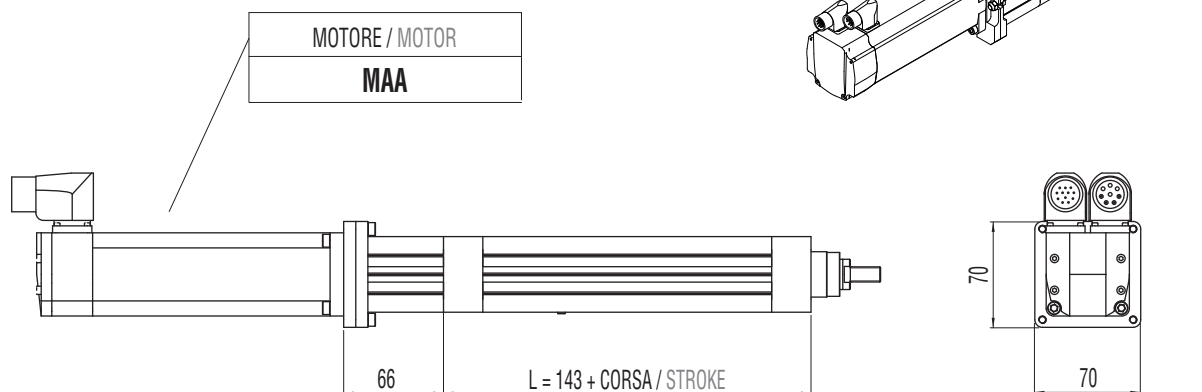
REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.



B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

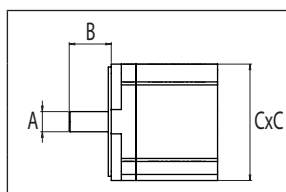
**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



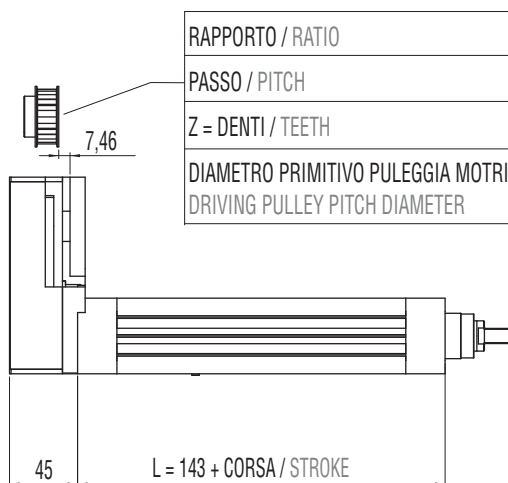
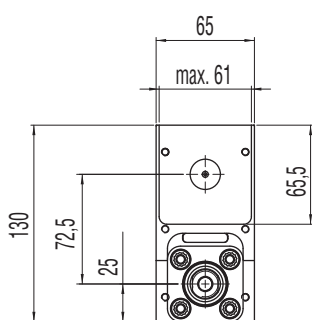
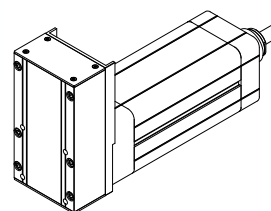
B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

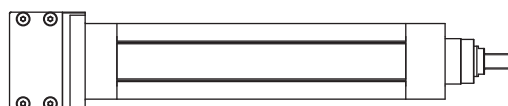
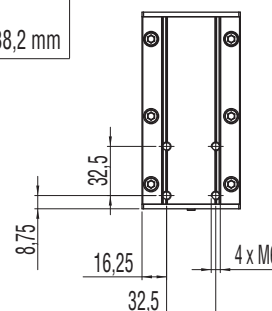
BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS



| MASSIME DIMENSIONI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|--|--------|-----------------|--------|
| | A | B | C |
| | [mm] | [mm] | [mm] |
| R=1:1 | 14 max | 24 min / 42 max | 60 max |



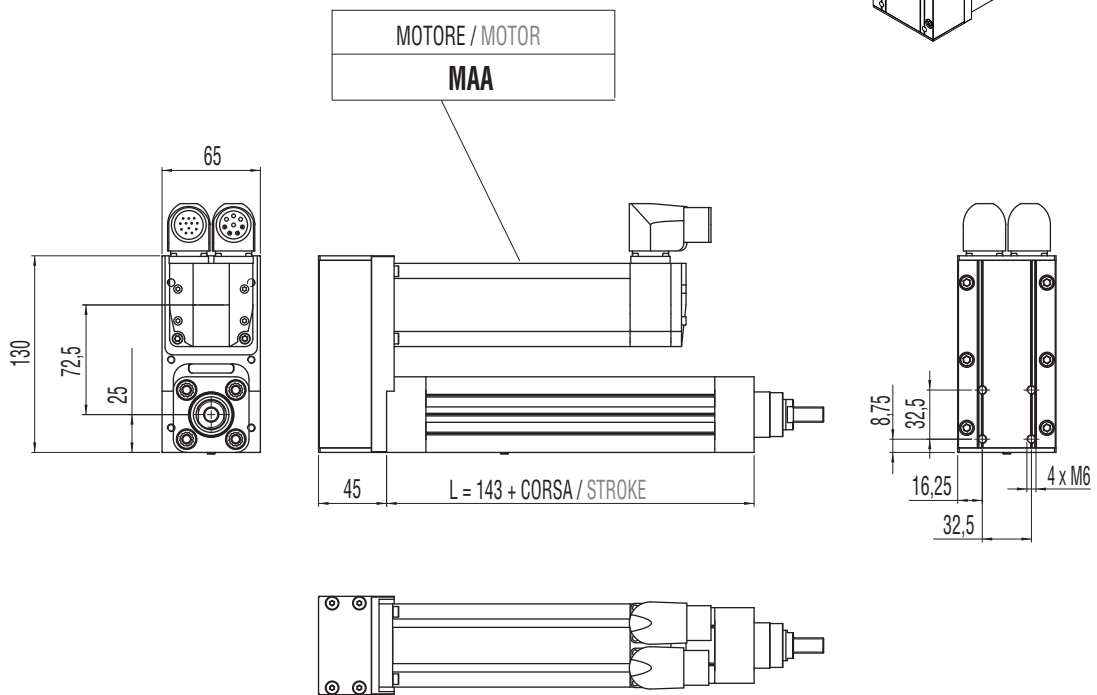
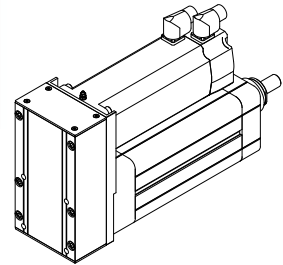
| | |
|--|---------|
| RAPPORTO / RATIO | 1:1 |
| PASSO / PITCH | 5 mm |
| Z = DENTI / TEETH | 24 |
| DIAMETRO PRIMITIVO PULEGGIA MOTRICE DRIVING PULLEY PITCH DIAMETER | 38,2 mm |



B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



3.1.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.1.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.2

IE 40

3.2.1 Caratteristiche tecniche

3.2.1 Technical features

| ISOMOVE IE 40 | | | 4 | 12 |
|---|---|-----------------------|---|-----------------|
| P | PASSO VITE / SCREW LEAD | [mm] | 4 | 12 |
| D | DIAMETRO VITE / SCREW DIAMETER | [mm] | 12 | 12 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 3000* | 2000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET | [Nm] | 2,1 | 4,2 |
| C_{m,max} | "CASO 1" / "CASE 1": B00 + D00/D01 | [Nm] | 2,1 | 4,2 |
| | "CASO 3" / "CASE 3": B00 + R00/R01 | [Nm] | 2,3 | 4,6 |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD | [N] | 3400 | 3400 |
| V_{out,max} N_{in,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED | [mm/sec] [rpm] | 200 / 3000 | 600 / 3000 |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA / MAX OUTPUT ACCELERATION | [m/sec ²] | 1 | 2 |
| S_{max} | CORSA MASSIMA STANDARD / MAX STANDARD STROKE | [mm] | 500** | 500** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE | [Kg] | 1,2 / 0,3 | 1,2 / 0,3 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY | [mm] | 0,02 | 0,02 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA / "0" BACKLASH BALLSCREW ASSEMBLY | | NON DISPONIBILE / NOT AVAILABLE | |
| L_{10,Km} | DURATA / LIFETIME | [Km] | VEDI TABELLA / SEE TABLE | |
| | VERSIONI DISPONIBILI / AVAILABLE TYPES | | D00/D01/R00/R01 | D00/D01/R00/R01 |
| | ACCESSORI DISPONIBILI / AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | |

* Per le versioni R00/R01 controllare con il grafico di pagina 46. / For R00/R01 types please check graph at page 46.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

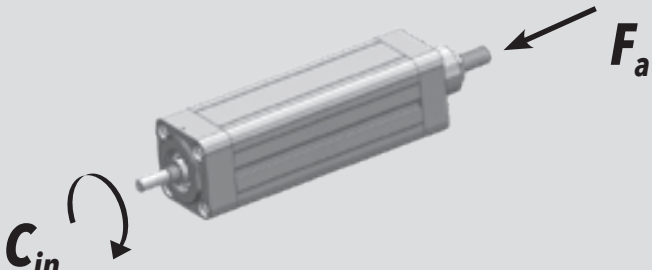
3.2.2 Calcolo durata

3.2.2 Lifetime calculation

| | | |
|----------------------------------|---|--|
| IE 40 P = 4 mm | $L_{10,Km} = \left[\frac{3370}{F_{eq}} \right]^3 \cdot 4$ | L_{10,Km} = [Km] F_{eq} = [N] |
| IE 40 P = 12 mm | $L_{10,Km} = \left[\frac{2200}{F_{eq}} \right]^3 \cdot 12$ | L_{10,Km} = [Km] F_{eq} = [N] |

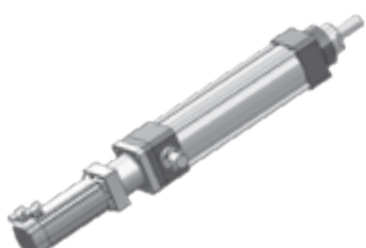
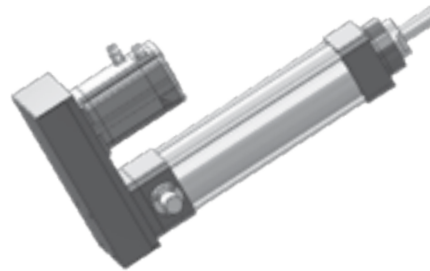
3.2.3 Calcolo coppia in ingresso al modulo base

3.2.3 Torque calculation at basic module input shaft

| | | |
|--|---|--|
|  | | |
| <p>IE 40 P = 4 mm</p> | $C_{in} = \left[\frac{F_a \cdot 4}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |
| <p>IE 40 P = 12 mm</p> | $C_{in} = \left[\frac{F_a \cdot 12}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |

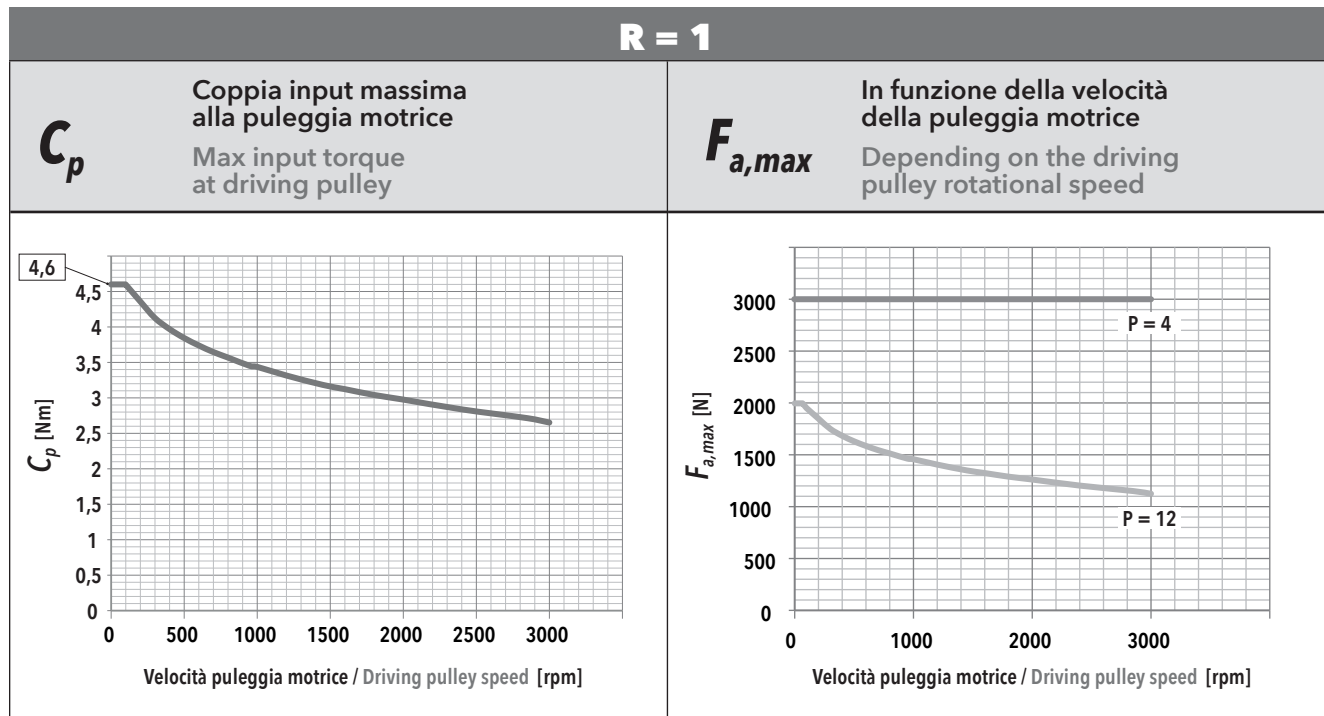
3.2.4 Calcolo coppia motore

3.2.4 Motor torque calculation

| | |
|---------------------------------|--|
| <p>CASO / CASE 1</p> | <p style="text-align: center;">ISOMOVE B00 + D00 / D01</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="text-align: center;"> $C_m = C_{in}$ <p>[Nm]</p> </div> </div> |
| <p>CASO / CASE 3</p> | <p style="text-align: center;">ISOMOVE B00 + R00 / R01</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="text-align: center;"> $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right]$ <p>[Nm]</p> </div> </div> <p>R = rapporto di riduzione trasmissione a cinghia, disponibile R=1 belt gearbox reduction ratio, available R=1 η = rendimento meccanico / mechanical efficiency = 0,90</p> |

3.2.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

3.2.5 Mechanical input power at belt gear stage (R type)



F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 40 - PASSO / PITCH 4 | | | | | |
|-------------------------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 20 | 80 | 140 | 200 |
| 3000 | F_r [N] | 140 | 141 | 142 | 143 |
| | f_t [Hz] | 328 | 329 | 330 | 331 |
| 2700 | F_r [N] | 127 | 127 | 127 | 129 |
| | f_t [Hz] | 312 | 312 | 313 | 314 |
| 2400 | F_r [N] | 112 | 112 | 113 | 114 |
| | f_t [Hz] | 293 | 294 | 295 | 296 |
| 2100 | F_r [N] | 98 | 99 | 100 | 101 |
| | f_t [Hz] | 276 | 276 | 277 | 278 |
| 1800 | F_r [N] | 84 | 85 | 86 | 87 |
| | f_t [Hz] | 253 | 254 | 256 | 258 |
| 1500 | F_r [N] | 70 | 70 | 71 | 73 |
| | f_t [Hz] | 232 | 233 | 234 | 236 |
| 1200 | F_r [N] | 57 | 57 | 58 | 58 |
| | f_t [Hz] | 209 | 209 | 210 | 212 |
| 900 | F_r [N] | 41 | 42 | 43 | 44 |
| | f_t [Hz] | 179 | 180 | 182 | 184 |
| 600 | F_r [N] | 28 | 28 | 29 | 30 |
| | f_t [Hz] | 147 | 148 | 149 | 152 |
| 300 | F_r [N] | 13 | 14 | 15 | 16 |
| | f_t [Hz] | 101 | 105 | 108 | 111 |

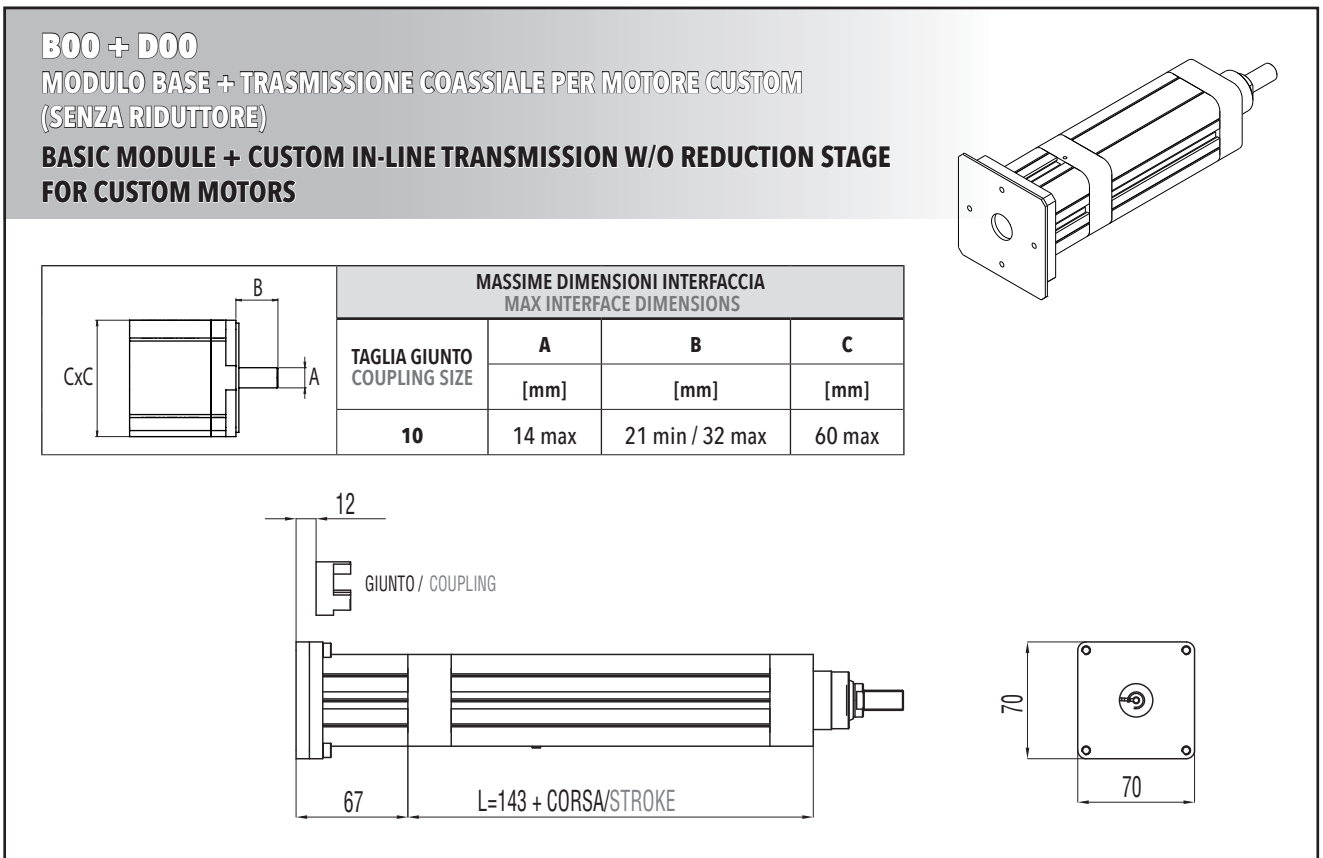
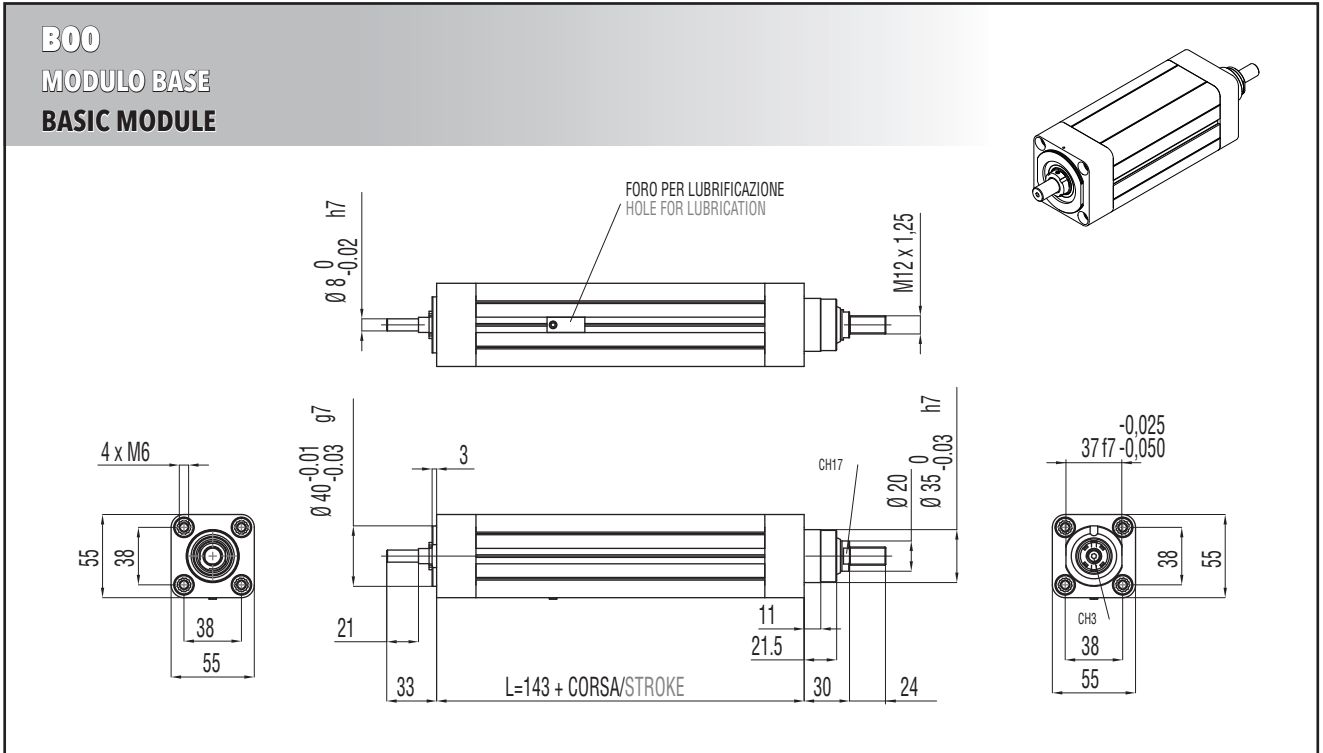
| IE 40 - PASSO / PITCH 12 | | | | | |
|--------------------------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 60 | 240 | 420 | 600 |
| 2000 | F_r [N] | 282 | | | |
| | f_t [Hz] | 465 | | | |
| 1800 | F_r [N] | 253 | | | |
| | f_t [Hz] | 441 | | | |
| 1600 | F_r [N] | 225 | 226 | | |
| | f_t [Hz] | 416 | 416 | | |
| 1400 | F_r [N] | 197 | 197 | | |
| | f_t [Hz] | 389 | 389 | | |
| 1200 | F_r [N] | 169 | 169 | 170 | |
| | f_t [Hz] | 360 | 360 | 361 | |
| 1000 | F_r [N] | 141 | 141 | 142 | 143 |
| | f_t [Hz] | 329 | 329 | 330 | 331 |
| 800 | F_r [N] | 113 | 113 | 114 | 115 |
| | f_t [Hz] | 294 | 294 | 295 | 297 |
| 600 | F_r [N] | 85 | 85 | 86 | 87 |
| | f_t [Hz] | 255 | 255 | 256 | 258 |
| 400 | F_r [N] | 56 | 57 | 57 | 59 |
| | f_t [Hz] | 208 | 209 | 210 | 212 |
| 200 | F_r [N] | 28 | 29 | 29 | 30 |
| | f_t [Hz] | 147 | 148 | 150 | 153 |

3.2.6 Caratteristiche dimensionali

3.2.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvii al capitolo 4.

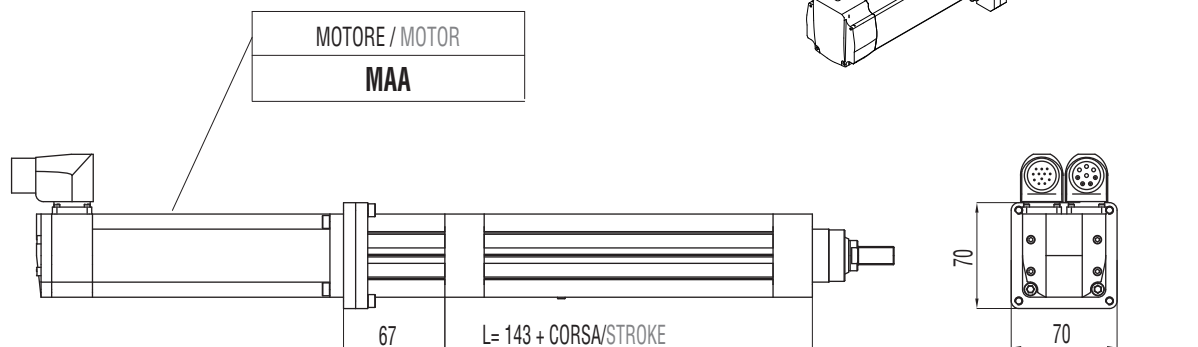
REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.



B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS

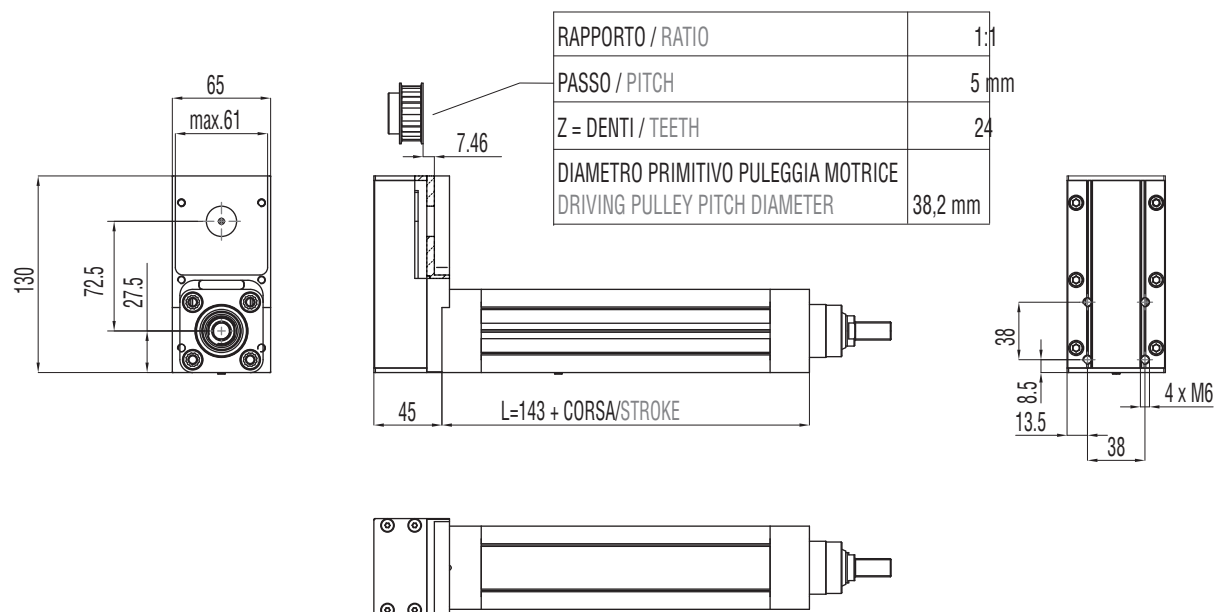


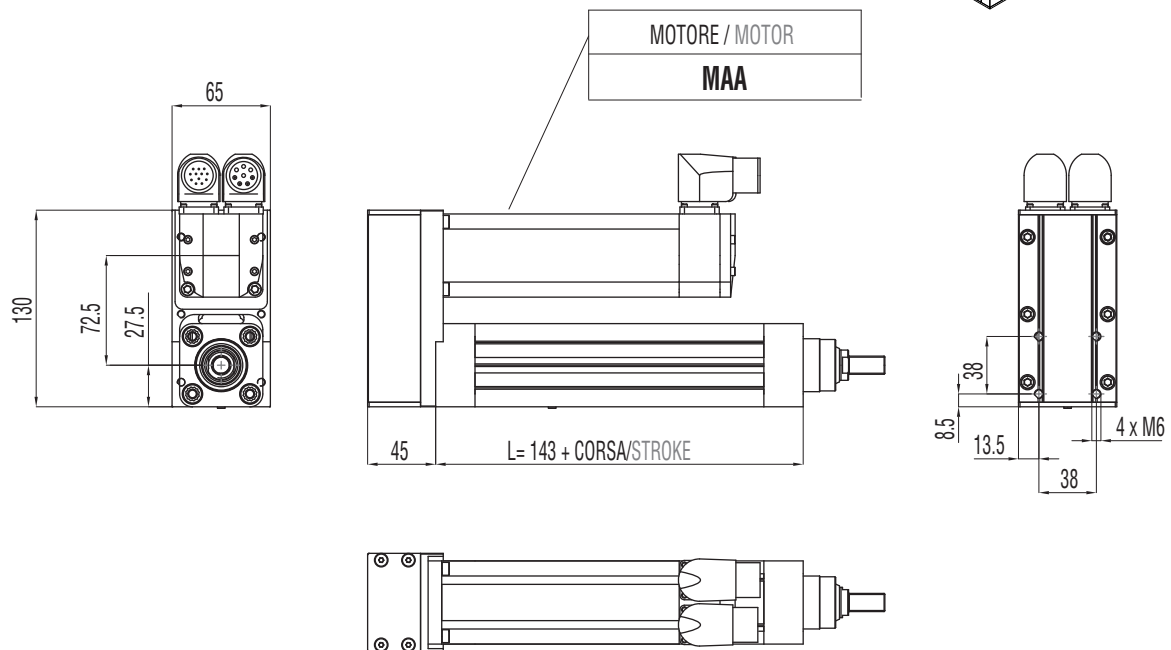
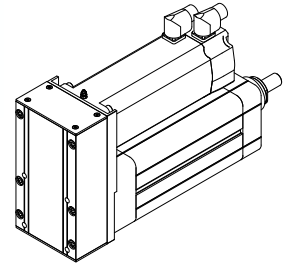
B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS

| | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|-------|---|-----------------|-----------|
| | A [mm] | B [mm] | C [mm] |
| R=1:1 | 14 max | 24 min / 42 max | 60 max |



B00 + R01**MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE****BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS****3.2.7 Accessori disponibili**

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.2.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.3

IE 50

3.3.1 Caratteristiche tecniche

3.3.1 Technical features



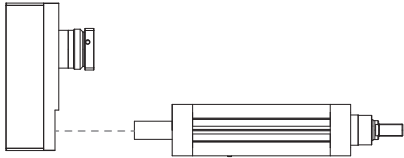
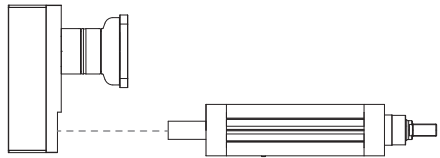

| ISOMOVE IE 50 | | 5 | 10 | 16 |
|----------------------------|--|--|--------------------------------------|---------------------------------------|
| P | PASSO VITE SCREW LEAD [mm] | 5 | 10 | 16 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 16 | 16 | 16 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 4500* | 4500* | 4000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 3,9 | 7,9 | 11,3 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 [Nm] | 3,9 | 7,9 | 11,3 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 [Nm] | $\left[\frac{4,3}{R} \right] + C_s$ | $\left[\frac{8,7}{R} \right] + C_s$ | $\left[\frac{12,5}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | | |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 [Nm] | $\frac{4,3}{R}$ | $\frac{8,7}{R}$ | $\frac{12,5}{R}$ |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) | | |
| | "CASO 4" / "CASE 4": B00 + R02 [Nm] | $\frac{4,7}{R}$ | $\frac{9,6}{R}$ | $\frac{13,8}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 4500 | 4500 | 4500 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 250 / 3000 | 500 / 3000 | 800 / 3000 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 1 | 2 | 2,5 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 700** | 700** | 700** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE [Kg] | 1,5 / 0,5 | 1,5 / 0,5 | 1,5 / 0,5 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY mm | 0,04 | 0,07 | 0,07 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | DISPONIBILE / AVAILABLE | | |
| L_{10,Km} | DURATA LIFETIME Km | VEDI TABELLA / SEE TABLE pg. 52 | | |

* Per le versioni R00/R01 controllare con i grafici delle pagine 54/55. / For R00/R01 types please check graph at page 54/55.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

| ISOMOVE IE 50 | | 5 | 10 | 16 |
|--|--|---|-----------------------------|--|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | D00 / D01 / D02 / R00 / R01 / R02 / A01 | | |
| $F_{a,p}$ | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX | [N] | AE050/4500 PGII-060/4500 | AE050/4500 PGII-060/4500 AE050/4500 PGII-060/4500 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX | [N] | ATB065/4500 | ATB065/4500 ATB065/4500 |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | | |

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | | |
|--|---|---|
| <p>TRASMISSIONE COASSIALE CON RIDUTTORE</p> <p>IN-LINE PLANETARY GEARBOX STAGE</p> |  <p>AE050</p> <p>MODULO BASE BASIC MODULE</p> |  <p>PGII-060</p> <p>MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE PARALLELA CON RIDUTTORE</p> <p>PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE</p> |  <p>AE050</p> <p>MODULO BASE BASIC MODULE</p> |  <p>PGII-060</p> <p>MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE ANGOLARE CON RINVIO</p> <p>ANGLE BEVEL GEARBOX STAGE</p> |  <p>ATB065</p> <p>MODULO BASE BASIC MODULE</p> | |

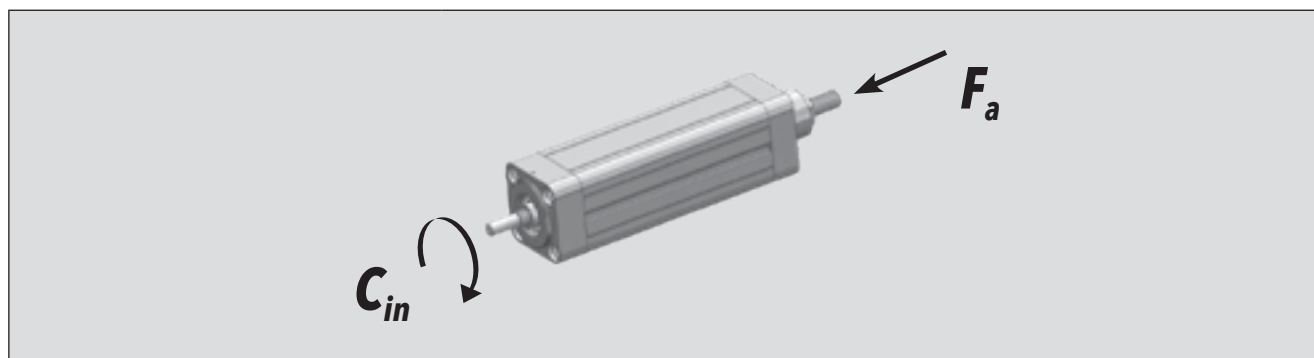
3.3.2 Calcolo durata

3.3.2 Lifetime calculation

| | | |
|--|---|--|
| <p>IE 50 P = 5 mm</p> | $L_{10,Km} = \left[\frac{6640}{F_{eq}} \right]^3 \cdot 5$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |
| <p>IE 50 P = 10 mm</p> | $L_{10,Km} = \left[\frac{6670}{F_{eq}} \right]^3 \cdot 10$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |
| <p>IE 50 P = 16 mm</p> | $L_{10,Km} = \left[\frac{4430}{F_{eq}} \right]^3 \cdot 16$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |

3.3.3 Calcolo coppia in ingresso al modulo base



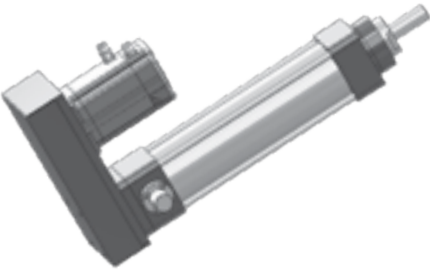
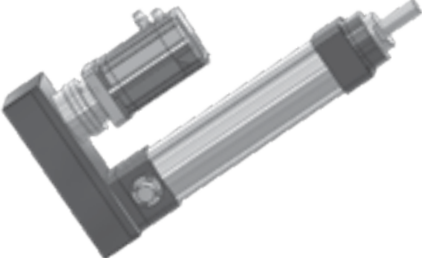
3.3.3 Torque calculation at basic module input shaft



| | | |
|--|---|--|
| <p>IE 50 P = 5 mm</p> | $C_{in} = \left[\frac{F_a \cdot 5}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |
| <p>IE 50 P = 10 mm</p> | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |
| <p>IE 50 P = 16 mm</p> | $C_{in} = \left[\frac{F_a \cdot 16}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |

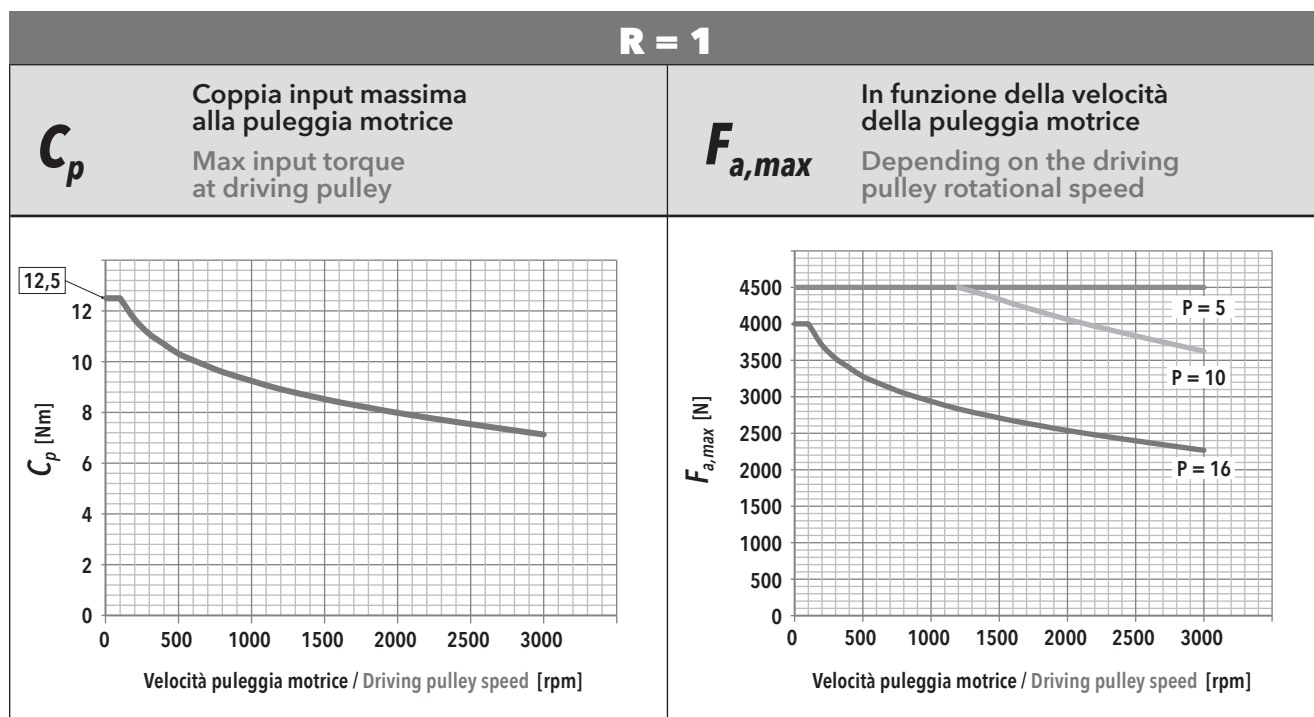
3.3.4 Calcolo coppia motore

3.3.4 Motor torque calculation

| | |
|---------------------------------|--|
| <p>CASO / CASE 1</p> | <p>ISOMOVE B00 + D00 / D01</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE 2</p> | <p>ISOMOVE B00 + D02 / A01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 3</p> | <p>ISOMOVE B00 + R00 / R01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p>R = rapporto di riduzione trasmissione a cinghia, disponibile R=1 o R=2 belt gearbox reduction ratio, available R=1 or R=2 η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 4</p> | <p>ISOMOVE B00 + R02</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,81</p> |

3.3.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

3.3.5 Mechanical input power at belt gear stage (R type)

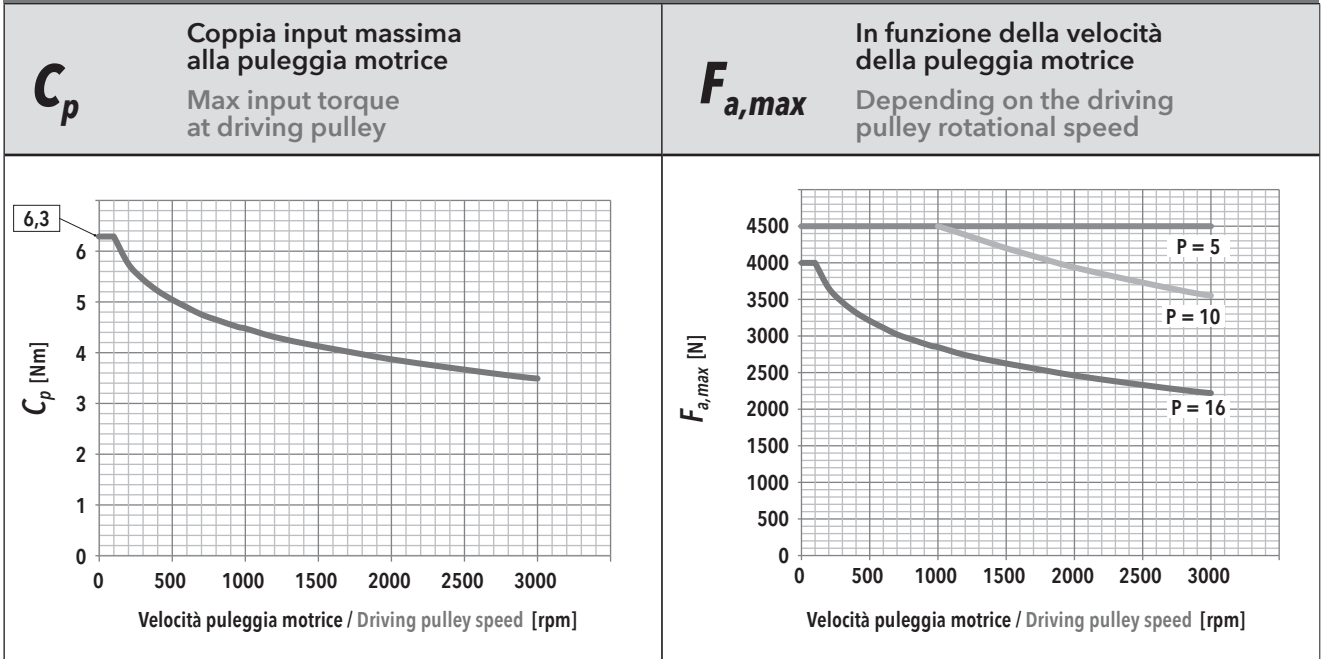


F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 50 - PASSO / PITCH 5 | | | | | IE 50 - PASSO / PITCH 10 | | | | | IE 50 - PASSO / PITCH 16 | | | | | | | |
|-------------------------|------------|------------------|-----|-----|--------------------------|-----------|------------|------------------|-----|--------------------------|-----|-----------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 25 | 100 | 175 | 250 | | | 50 | 200 | 350 | 500 | | | 80 | 320 | 560 | 800 |
| 4500 | F_r [N] | 211 | 212 | 214 | 217 | 4500 | F_r [N] | 422 | | | | 4000 | F_r [N] | 601 | | | |
| | f_t [Hz] | 226 | 227 | 228 | 229 | | f_t [Hz] | 320 | | | | | f_t [Hz] | 382 | | | |
| 4050 | F_r [N] | 190 | 191 | 193 | 196 | 4050 | F_r [N] | 380 | 381 | | | 3600 | F_r [N] | 541 | 542 | | |
| | f_t [Hz] | 215 | 215 | 216 | 218 | | f_t [Hz] | 304 | 304 | | | | f_t [Hz] | 362 | 362 | | |
| 3600 | F_r [N] | 169 | 170 | 172 | 175 | 3600 | F_r [N] | 338 | 339 | 341 | | 3200 | F_r [N] | 481 | 482 | | |
| | f_t [Hz] | 202 | 203 | 204 | 206 | | f_t [Hz] | 286 | 287 | 287 | | | f_t [Hz] | 341 | 342 | | |
| 3150 | F_r [N] | 148 | 149 | 151 | 154 | 3150 | F_r [N] | 296 | 297 | 299 | 301 | 2800 | F_r [N] | 421 | 421 | 423 | |
| | f_t [Hz] | 189 | 190 | 191 | 193 | | f_t [Hz] | 268 | 268 | 269 | 270 | | f_t [Hz] | 319 | 320 | 320 | |
| 2700 | F_r [N] | 127 | 128 | 130 | 133 | 2700 | F_r [N] | 254 | 254 | 256 | 259 | 2400 | F_r [N] | 361 | 361 | 363 | 366 |
| | f_t [Hz] | 175 | 176 | 177 | 179 | | f_t [Hz] | 248 | 248 | 249 | 251 | | f_t [Hz] | 296 | 296 | 297 | 298 |
| 2250 | F_r [N] | 106 | 107 | 108 | 111 | 2250 | F_r [N] | 211 | 212 | 214 | 217 | 2000 | F_r [N] | 300 | 301 | 303 | 306 |
| | f_t [Hz] | 160 | 161 | 162 | 164 | | f_t [Hz] | 226 | 227 | 228 | 229 | | f_t [Hz] | 270 | 270 | 271 | 272 |
| 1800 | F_r [N] | 85 | 85 | 87 | 90 | 1800 | F_r [N] | 169 | 170 | 172 | 175 | 1600 | F_r [N] | 240 | 241 | 243 | 246 |
| | f_t [Hz] | 143 | 144 | 145 | 148 | | f_t [Hz] | 202 | 203 | 204 | 206 | | f_t [Hz] | 241 | 242 | 243 | 244 |
| 1350 | F_r [N] | 63 | 64 | 66 | 69 | 1350 | F_r [N] | 127 | 128 | 130 | 133 | 1200 | F_r [N] | 180 | 181 | 183 | 186 |
| | f_t [Hz] | 124 | 125 | 127 | 129 | | f_t [Hz] | 175 | 176 | 177 | 179 | | f_t [Hz] | 209 | 210 | 211 | 212 |
| 900 | F_r [N] | 42 | 43 | 45 | 48 | 900 | F_r [N] | 85 | 85 | 87 | 90 | 800 | F_r [N] | 120 | 121 | 123 | 126 |
| | f_t [Hz] | 101 | 102 | 105 | 108 | | f_t [Hz] | 143 | 144 | 145 | 148 | | f_t [Hz] | 171 | 171 | 173 | 175 |
| 450 | F_r [N] | 21 | 22 | 24 | 27 | 450 | F_r [N] | 42 | 43 | 45 | 48 | 400 | F_r [N] | 60 | 61 | 63 | 66 |
| | f_t [Hz] | 72 | 73 | 76 | 81 | | f_t [Hz] | 101 | 102 | 105 | 108 | | f_t [Hz] | 121 | 122 | 123 | 126 |

R = 2



F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 50 - PASSO / PITCH 5 | | | | | IE 50 - PASSO / PITCH 10 | | | | | IE 50 - PASSO / PITCH 16 | | | | | | | |
|-------------------------|------------|------------------|-----|------|--------------------------|-----------|------------|------------------|-----|--------------------------|------------|-----------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 12,5 | 50 | 87,5 | 125 | | | 25 | 100 | 175 | 250 | | | 40 | 160 | 280 | 400 |
| 4500 | F_r [N] | 182 | 182 | 183 | 184 | 4500 | F_r [N] | 364 | 364 | | | 4000 | F_r [N] | | | | |
| | f_t [Hz] | 200 | 200 | 200 | 201 | | f_t [Hz] | 283 | 283 | | | | f_t [Hz] | | | | |
| 4050 | F_r [N] | 164 | 164 | 165 | 166 | 4050 | F_r [N] | 328 | 328 | 329 | | 3600 | F_r [N] | | | | |
| | f_t [Hz] | 190 | 190 | 190 | 191 | | f_t [Hz] | 268 | 268 | 268 | f_t [Hz] | | | | | | |
| 3600 | F_r [N] | 146 | 146 | 147 | 148 | 3600 | F_r [N] | 291 | 291 | 292 | 293 | 3200 | F_r [N] | 414 | | | |
| | f_t [Hz] | 179 | 179 | 179 | 180 | | f_t [Hz] | 253 | 253 | 254 | 254 | | f_t [Hz] | 301 | | | |
| 3150 | F_r [N] | 127 | 128 | 129 | 130 | 3150 | F_r [N] | 255 | 255 | 256 | 257 | 2800 | F_r [N] | 363 | 363 | | |
| | f_t [Hz] | 167 | 167 | 168 | 169 | | f_t [Hz] | 236 | 236 | 237 | 237 | | f_t [Hz] | 282 | 282 | | |
| 2700 | F_r [N] | 109 | 109 | 110 | 111 | 2700 | F_r [N] | 218 | 218 | 219 | 221 | 2400 | F_r [N] | 311 | 311 | 312 | |
| | f_t [Hz] | 155 | 155 | 156 | 156 | | f_t [Hz] | 219 | 219 | 220 | 220 | | f_t [Hz] | 261 | 261 | 262 | |
| 2250 | F_r [N] | 91 | 92 | 92 | 93 | 2250 | F_r [N] | 182 | 182 | 184 | 184 | 2000 | F_r [N] | 259 | 259 | 261 | 261 |
| | f_t [Hz] | 141 | 141 | 142 | 143 | | f_t [Hz] | 200 | 200 | 201 | 201 | | f_t [Hz] | 238 | 238 | 239 | 239 |
| 1800 | F_r [N] | 73 | 73 | 74 | 75 | 1800 | F_r [N] | 146 | 147 | 148 | 148 | 1600 | F_r [N] | 207 | 207 | 209 | 209 |
| | f_t [Hz] | 126 | 127 | 127 | 128 | | f_t [Hz] | 179 | 179 | 180 | 180 | | f_t [Hz] | 213 | 214 | 214 | 214 |
| 1350 | F_r [N] | 55 | 55 | 56 | 57 | 1350 | F_r [N] | 109 | 110 | 111 | 111 | 1200 | F_r [N] | 155 | 155 | 157 | 157 |
| | f_t [Hz] | 109 | 110 | 111 | 112 | | f_t [Hz] | 155 | 154 | 156 | 156 | | f_t [Hz] | 185 | 185 | 186 | 186 |
| 900 | F_r [N] | 36 | 37 | 37 | 38 | 900 | F_r [N] | 73 | 73 | 75 | 75 | 800 | F_r [N] | 104 | 105 | 106 | 106 |
| | f_t [Hz] | 89 | 89 | 90 | 92 | | f_t [Hz] | 126 | 126 | 128 | 128 | | f_t [Hz] | 151 | 151 | 152 | 152 |
| 450 | F_r [N] | 18 | 19 | 20 | 20 | 450 | F_r [N] | 36 | 36 | 37 | 38 | 400 | F_r [N] | 52 | 53 | 54 | 54 |
| | f_t [Hz] | 63 | 64 | 65 | 67 | | f_t [Hz] | 89 | 89 | 90 | 92 | | f_t [Hz] | 107 | 108 | 109 | 109 |

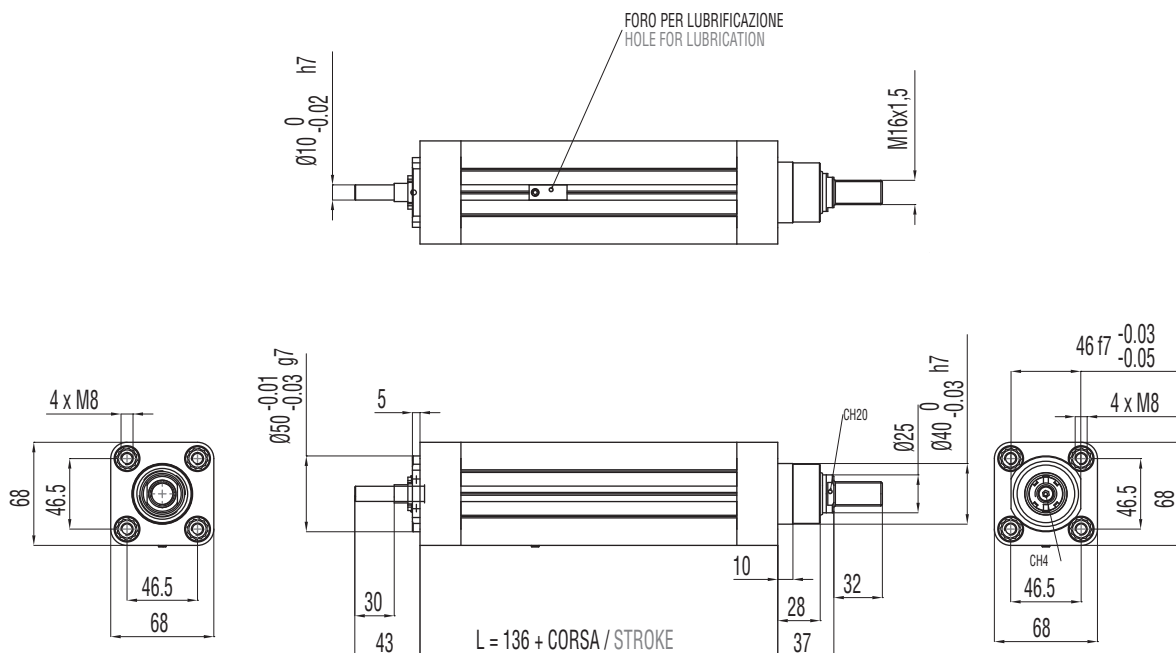
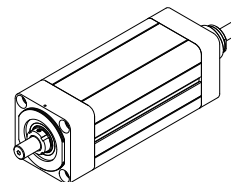
3.3.6 Caratteristiche dimensionali

3.3.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvi al capitolo 4.

REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.

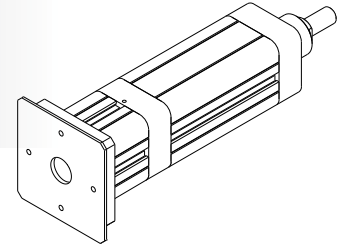
B00
MODULO BASE
BASIC MODULE

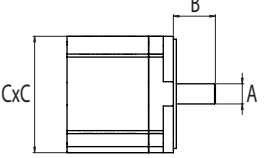


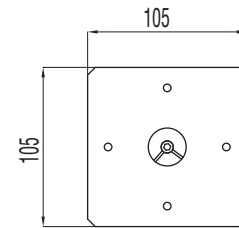
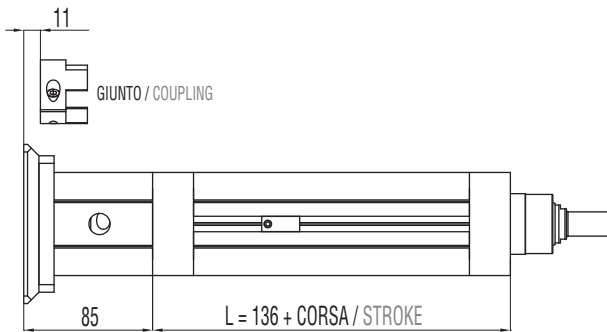
B00 + D00

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE CUSTOM
(SENZA RIDUTTORE)

**BASIC MODULE + CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE
FOR CUSTOM MOTORS**



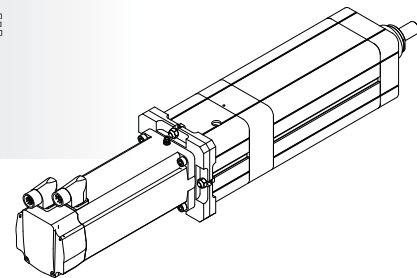
|  | MASSIME DIMENSIONI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|---|--|-----------|-----------------|-----------|
| | TAGLIA GIUNTO COUPLING SIZE | A [mm] | B [mm] | C [mm] |
| | 20 | 22 max | 28 min / 40 max | 100 max |



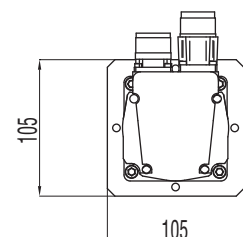
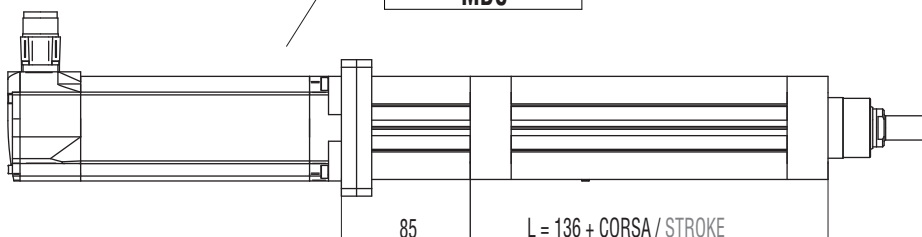
B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



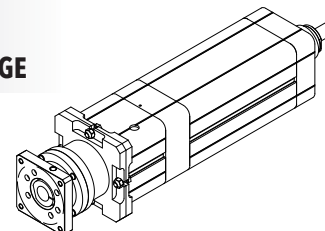
- | |
|------------|
| MOTORE |
| MOTOR |
| MCA |
| MCB |
| MCC |
| MCD |
| MDA |
| MDB |
| MDC |



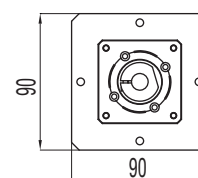
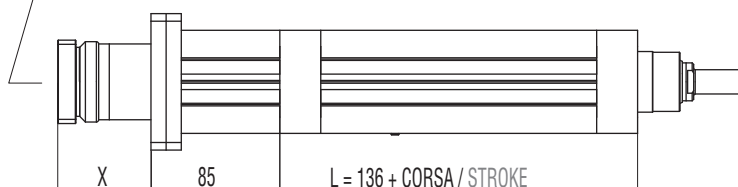
B00 + D02

MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE

BASIC MODULE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE



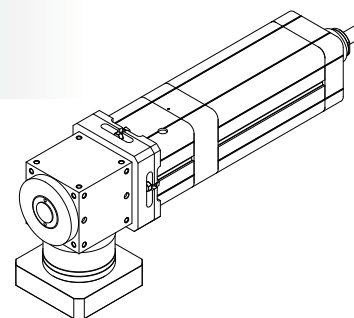
RIDUTTORE
PLANETARY GEARBOX
GBA
GBB



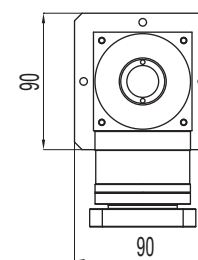
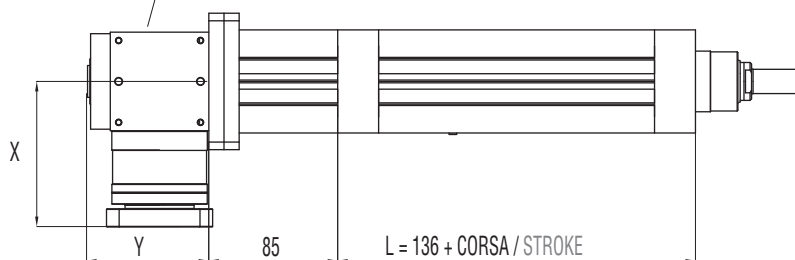
B00 + A01

MODULO BASE + RINVIO ANGOLARE COMPATIBILE

BASIC MODULE + COMPATIBLE ANGLE BEVEL GEARBOX STAGE



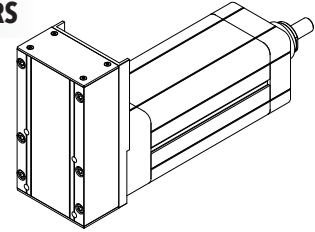
RINVIO
BEVEL GEARBOX
AAA



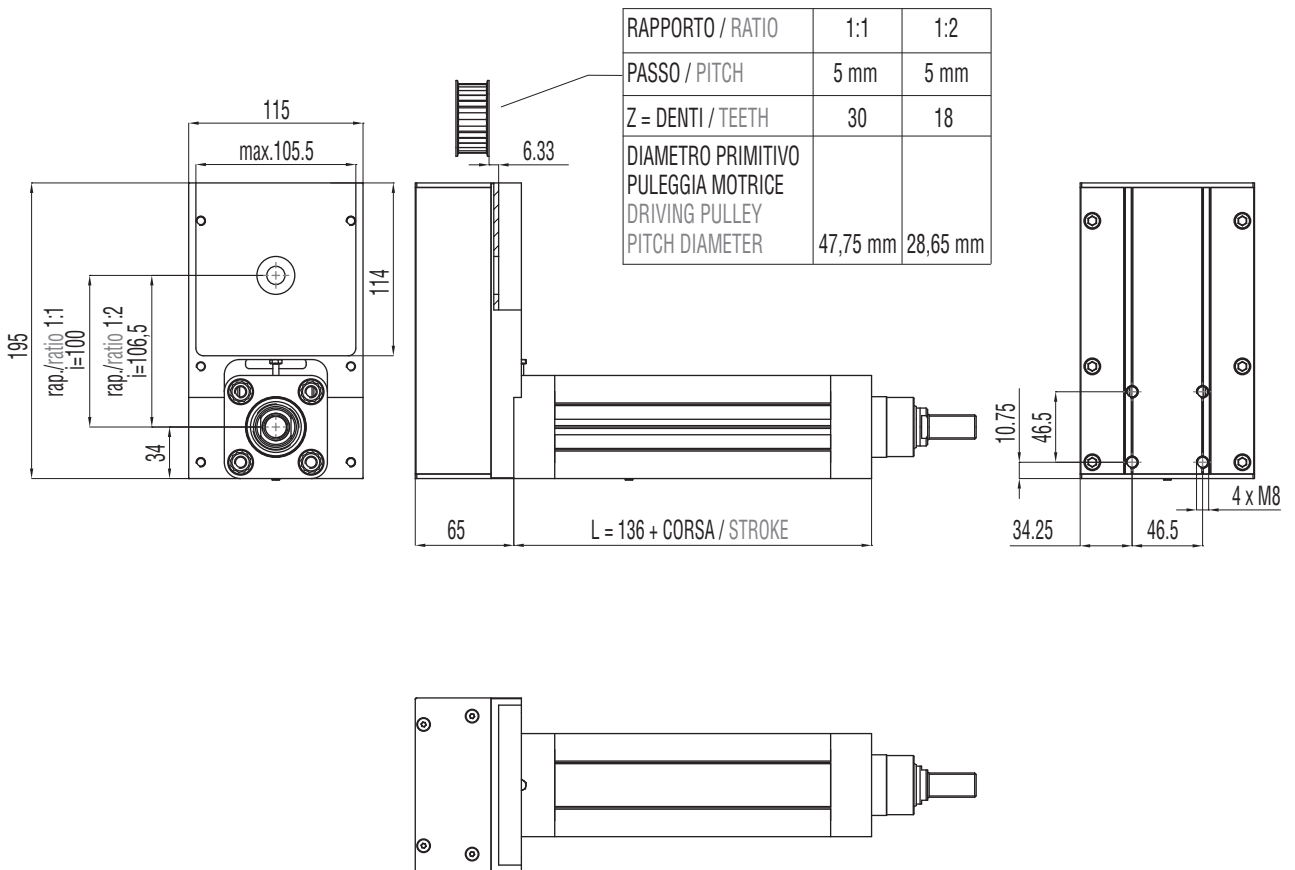
B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS



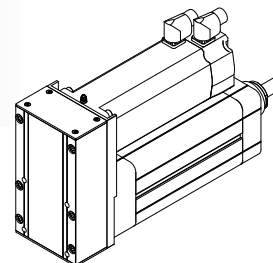
| | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|--------------|---|-----------------|---------|
| | A | B | C |
| | [mm] | [mm] | [mm] |
| R=1:1 | 16 max | 28 min / 42 max | 100 max |
| R=1:2 | 13 max | 30 min / 40 max | 100 max |



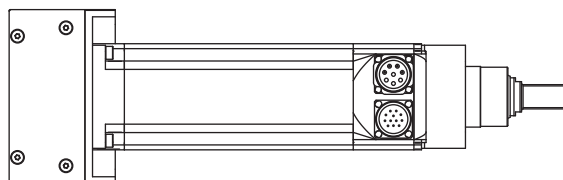
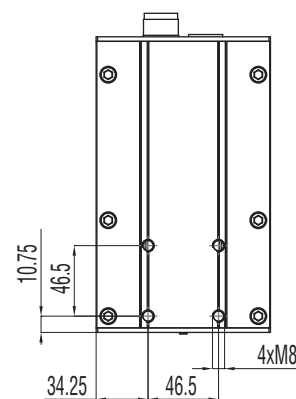
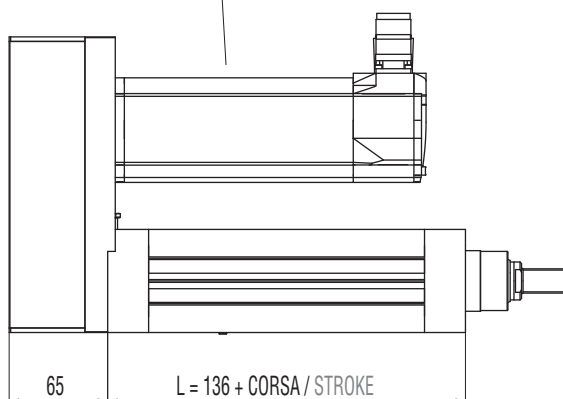
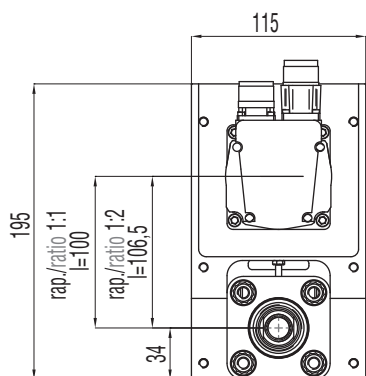
B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



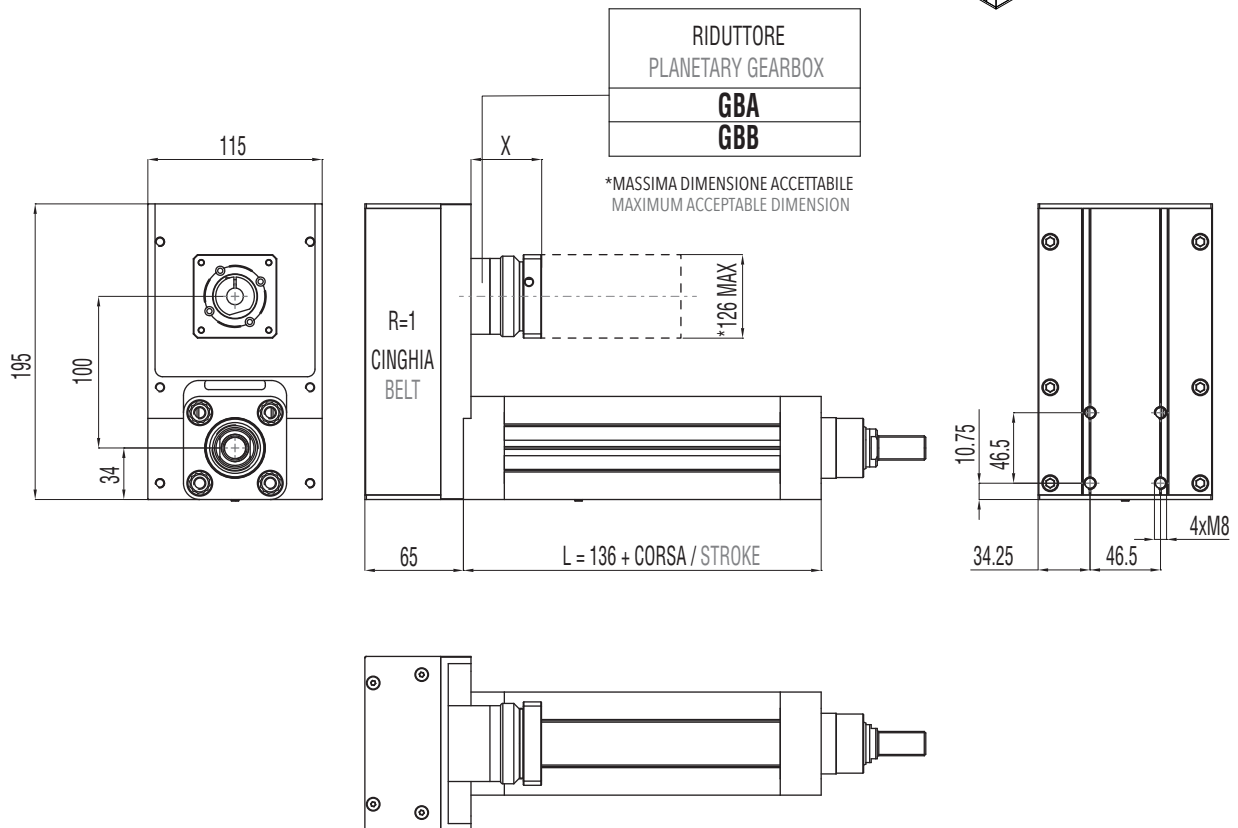
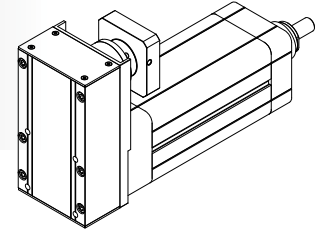
| |
|------------|
| MOTORE |
| MOTOR |
| MCA |
| MCB |
| MCC |
| MCD |
| MDA |
| MDB |
| MDC |



B00 + R02

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO +
RIDUTTORE EPICICLOIDALE COMPATIBILE

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE +
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE**



3.3.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.3.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.4

IE 63

3.4.1 Caratteristiche tecniche

3.4.1 Technical features

| ISOMOVE IE 63 | | 5 | 10 | 20 |
|----------------------------|--|--|---------------------------------------|---------------------------------------|
| P | PASSO VITE SCREW LEAD [mm] | 5 | 10 | 20 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 20 | 20 | 20 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 7500* | 7500* | 7500* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 6,6 | 12,2 | 26,5 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 [Nm] | 6,6 | 12,2 | 26,5 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 [Nm] | $\left[\frac{7,3}{R} \right] + C_s$ | $\left[\frac{13,5}{R} \right] + C_s$ | $\left[\frac{29,4}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | | |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 [Nm] | $\frac{7,3}{R}$ | $\frac{13,5}{R}$ | $\frac{29,4}{R}$ |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) | | |
| | "CASO 4" / "CASE 4": B00 + R02 [Nm] | $\frac{8,1}{R}$ | $\frac{15}{R}$ | $\frac{32,6}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 7500 | 7500 | 7500 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 250/3000 | 500/3000 | 1000/3000 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 1 | 2 | 3 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 800** | 800** | 800** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE [Kg] | 2,6 / 0,8 | 2,6 / 0,8 | 2,6 / 0,8 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY mm | 0,06 | 0,02 | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | DISPONIBILE / AVAILABLE | | |
| L_{10,Km} | DURATA LIFETIME Km | VEDI TABELLA / SEE TABLE pag. 64 | | |








* Per le versioni R00/R01 controllare con i grafici delle pagine 66/67. / For R00/R01 types please check graph at pages 66/67.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

| ISOMOVE IE 63 | | 5 | 10 | 20 | |
|--|--|---|--|--|---|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | D00 / D01 / D02 / R00 / R01 / R02 / A01 | | | |
| $F_{a,p}$ | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX | [N] | AE070/7500 PGII-060/7500 PGII-080/7500 | AE070/7500 PGII-060/7500 PGII-080/7500 | AE070/7500 PGII-060/5700*** PGII-080/7500 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX | [N] | ATB075/7500 | ATB075/4500 | ATB065/7500 |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | | | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

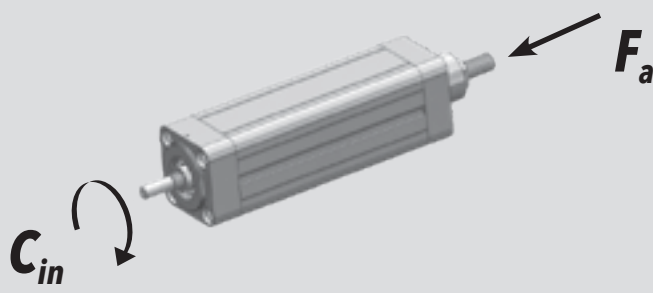
| | | | |
|--|--|--|--|
| <p>TRASMISSIONE COASSIALE CON RIDUTTORE</p> <p>IN-LINE PLANETARY GEARBOX STAGE</p> |  <p>AE070</p> |  <p>PGII-060</p> |  <p>PGII-080</p> |
| | MODULO BASE BASIC MODULE | MODULO BASE BASIC MODULE | MODULO BASE BASIC MODULE |
| <p>TRASMISSIONE PARALLELA CON RIDUTTORE</p> <p>PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE</p> |  <p>AE070</p> |  <p>PGII-060</p> |  <p>PGII-080</p> |
| | MODULO BASE BASIC MODULE | MODULO BASE BASIC MODULE | MODULO BASE BASIC MODULE |
| <p>TRASMISSIONE ANGOLARE CON RINVIO</p> <p>ANGLE BEVEL GEARBOX STAGE</p> |  <p>ATB075</p> | <p>MODULO BASE BASIC MODULE</p> | |

3.4.2 Calcolo durata

3.4.2 Lifetime calculation



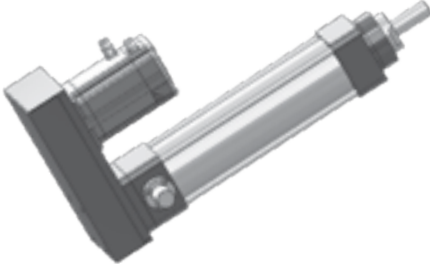
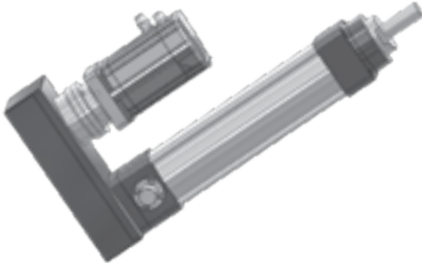
| | | |
|----------------------------------|--|--------------------------------------|
| IE 63 P = 5 mm | $L_{10,Km} = \left[\frac{12100}{F_{eq}} \right]^3 \cdot 5$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 63 P = 10 mm | $L_{10,Km} = \left[\frac{9910}{F_{eq}} \right]^3 \cdot 10$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 63 P = 20 mm | $L_{10,Km} = \left[\frac{14700}{F_{eq}} \right]^3 \cdot 20$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |

3.4.3 Calcolo coppia in ingresso
al modulo base3.4.3 Torque calculation at basic
module input shaft

| | | |
|--|---|--------------------------------|
|  | | |
| IE 63 P = 5 mm | $C_{in} = \left[\frac{F_a \cdot 5}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 63 P = 10 mm | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 63 P = 20 mm | $C_{in} = \left[\frac{F_a \cdot 20}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |

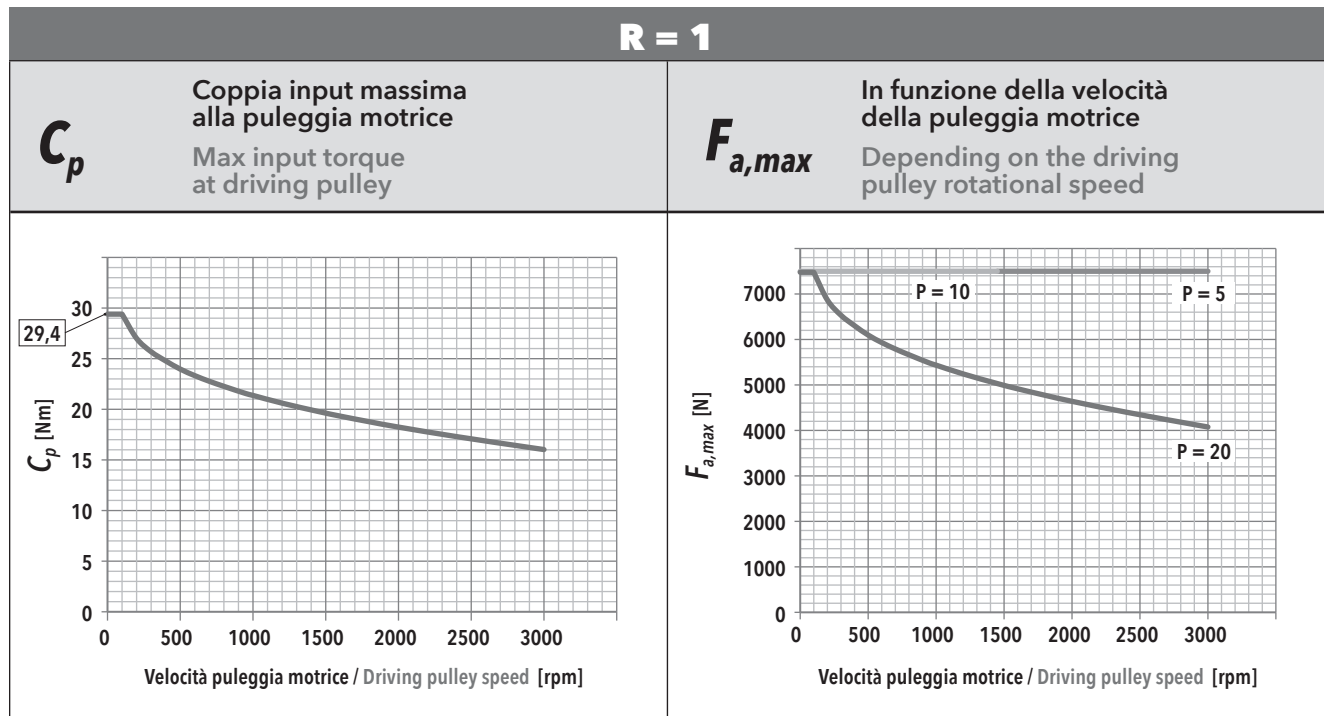
3.4.4 Calcolo coppia motore

3.4.4 Motor torque calculation

| | |
|------------------------------------|--|
| <p>CASO / CASE</p> <p>1</p> | <p>ISOMOVE B00 + D00 / D01</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE</p> <p>2</p> | <p>ISOMOVE B00 + D02 / A01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE</p> <p>3</p> | <p>ISOMOVE B00 + R00 / R01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p>R = rapporto di riduzione trasmissione a cinghia, disponibile $R=1$ o $R=2$ belt gearbox reduction ratio, available $R=1$ or $R=2$ η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE</p> <p>4</p> | <p>ISOMOVE B00 + R02</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,81</p> |

3.4.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

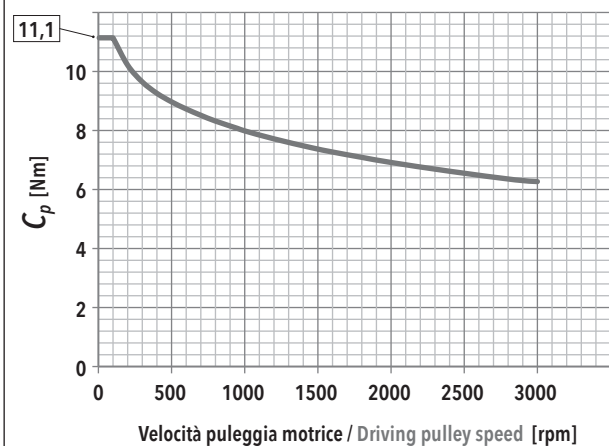
3.4.5 Mechanical input power at belt gear stage (R type)



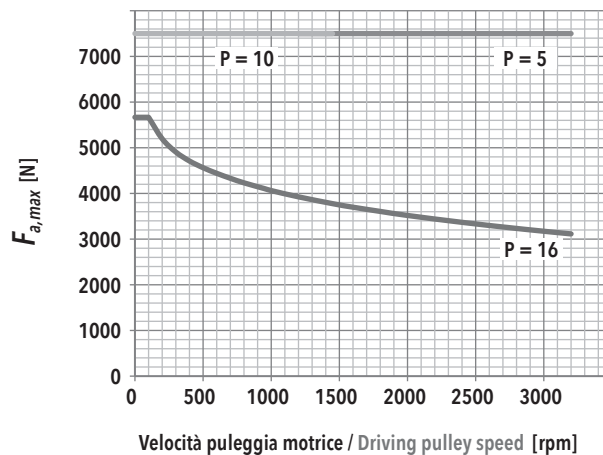
| IE 63 - PASSO / PITCH 5 | | | | | IE 63 - PASSO / PITCH 10 | | | | | IE 63 - PASSO / PITCH 20 | | | | | | | |
|-------------------------|------------|------------------|-----|-----|--------------------------|-----------|------------|------------------|-----|--------------------------|-----|-----------|------------|------------------|-----|-----|------|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 25 | 100 | 175 | 250 | | | 50 | 200 | 350 | 500 | | | 100 | 400 | 700 | 1000 |
| 7500 | F_r [N] | 264 | 267 | 272 | 281 | 7500 | F_r [N] | 528 | 531 | 537 | 545 | 7500 | F_r [N] | | | | |
| | f_t [Hz] | 196 | 197 | 199 | 202 | | f_t [Hz] | 277 | 278 | 279 | 282 | | f_t [Hz] | | | | |
| 6750 | F_r [N] | 238 | 240 | 246 | 255 | 6750 | F_r [N] | 475 | 478 | 484 | 492 | 6750 | F_r [N] | 951 | | | |
| | f_t [Hz] | 186 | 187 | 189 | 192 | | f_t [Hz] | 263 | 264 | 265 | 268 | | f_t [Hz] | 372 | | | |
| 6000 | F_r [N] | 211 | 214 | 220 | 228 | 6000 | F_r [N] | 423 | 425 | 431 | 440 | 6000 | F_r [N] | 845 | 846 | | |
| | f_t [Hz] | 175 | 176 | 179 | 182 | | f_t [Hz] | 248 | 249 | 250 | 253 | | f_t [Hz] | 350 | 351 | | |
| 5250 | F_r [N] | 185 | 188 | 193 | 202 | 5250 | F_r [N] | 370 | 372 | 378 | 387 | 5250 | F_r [N] | 739 | 742 | 748 | |
| | f_t [Hz] | 164 | 165 | 168 | 171 | | f_t [Hz] | 232 | 233 | 234 | 237 | | f_t [Hz] | 328 | 328 | 330 | |
| 4500 | F_r [N] | 159 | 161 | 167 | 176 | 4500 | F_r [N] | 317 | 320 | 325 | 334 | 4500 | F_r [N] | 634 | 636 | 642 | 651 |
| | f_t [Hz] | 152 | 153 | 156 | 160 | | f_t [Hz] | 215 | 216 | 217 | 220 | | f_t [Hz] | 304 | 304 | 305 | 308 |
| 3750 | F_r [N] | 132 | 135 | 140 | 149 | 3750 | F_r [N] | 264 | 267 | 272 | 281 | 3750 | F_r [N] | 528 | 531 | 537 | 545 |
| | f_t [Hz] | 139 | 140 | 143 | 147 | | f_t [Hz] | 196 | 197 | 199 | 202 | | f_t [Hz] | 277 | 278 | 279 | 282 |
| 3000 | F_r [N] | 106 | 108 | 114 | 123 | 3000 | F_r [N] | 211 | 214 | 220 | 228 | 3000 | F_r [N] | 423 | 425 | 431 | 440 |
| | f_t [Hz] | 124 | 125 | 129 | 134 | | f_t [Hz] | 175 | 176 | 179 | 182 | | f_t [Hz] | 248 | 249 | 250 | 253 |
| 2250 | F_r [N] | 79 | 82 | 88 | 96 | 2250 | F_r [N] | 159 | 161 | 167 | 176 | 2250 | F_r [N] | 317 | 320 | 325 | 334 |
| | f_t [Hz] | 107 | 109 | 113 | 118 | | f_t [Hz] | 152 | 153 | 156 | 160 | | f_t [Hz] | 215 | 216 | 217 | 220 |
| 1500 | F_r [N] | 53 | 56 | 61 | 70 | 1500 | F_r [N] | 106 | 108 | 114 | 123 | 1500 | F_r [N] | 211 | 214 | 220 | 228 |
| | f_t [Hz] | 88 | 90 | 94 | 101 | | f_t [Hz] | 124 | 125 | 129 | 134 | | f_t [Hz] | 175 | 176 | 179 | 182 |
| 750 | F_r [N] | 27 | 29 | 35 | 44 | 750 | F_r [N] | 53 | 56 | 61 | 70 | 750 | F_r [N] | 106 | 108 | 114 | 123 |
| | f_t [Hz] | 62 | 65 | 71 | 80 | | f_t [Hz] | 88 | 90 | 94 | 101 | | f_t [Hz] | 124 | 125 | 129 | 134 |

R = 2

C_p Coppia input massima alla puleggia motrice
Max input torque at driving pulley



$F_{a,max}$ In funzione della velocità della puleggia motrice
Depending on the driving pulley rotational speed



F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 63 - PASSO / PITCH 5 | | | | | IE 63 - PASSO / PITCH 10 | | | | | IE 63 - PASSO / PITCH 20 | | | | | | | |
|-------------------------|------------|------------------|-----|------|--------------------------|-----------|------------|------------------|-----|--------------------------|------------|-----------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 12,5 | 50 | 87,5 | 125 | | | 25 | 100 | 175 | 250 | | | 50 | 200 | 350 | 500 |
| 7500 | F_r [N] | 272 | 273 | 275 | 276 | 7500 | F_r [N] | 544 | 545 | | | 7500 | F_r [N] | | | | |
| | f_t [Hz] | 205 | 205 | 207 | 207 | | f_t [Hz] | 291 | 291 | | | | f_t [Hz] | | | | |
| 6750 | F_r [N] | 245 | 246 | 248 | 249 | 6750 | F_r [N] | 490 | 490 | 492 | | 6750 | F_r [N] | | | | |
| | f_t [Hz] | 195 | 195 | 197 | 197 | | f_t [Hz] | 276 | 276 | 276 | f_t [Hz] | | | | | | |
| 6000 | F_r [N] | 218 | 219 | 220 | 222 | 6000 | F_r [N] | 435 | 436 | 438 | 439 | 6000 | F_r [N] | | | | |
| | f_t [Hz] | 184 | 184 | 186 | 186 | | f_t [Hz] | 260 | 261 | 261 | 261 | | f_t [Hz] | | | | |
| 5250 | F_r [N] | 190 | 192 | 194 | 195 | 5250 | F_r [N] | 381 | 382 | 384 | 385 | 5250 | F_r [N] | | | | |
| | f_t [Hz] | 172 | 172 | 173 | 174 | | f_t [Hz] | 243 | 243 | 244 | 244 | | f_t [Hz] | | | | |
| 4500 | F_r [N] | 163 | 164 | 166 | 167 | 4500 | F_r [N] | 326 | 328 | 330 | 331 | 4500 | F_r [N] | 653 | | | |
| | f_t [Hz] | 159 | 160 | 160 | 161 | | f_t [Hz] | 225 | 226 | 227 | 227 | | f_t [Hz] | 318 | | | |
| 3750 | F_r [N] | 136 | 137 | 138 | 140 | 3750 | F_r [N] | 272 | 273 | 274 | 276 | 3750 | F_r [N] | 544 | 545 | | |
| | f_t [Hz] | 145 | 145 | 146 | 148 | | f_t [Hz] | 205 | 205 | 206 | 207 | | f_t [Hz] | 291 | 291 | | |
| 3000 | F_r [N] | 109 | 110 | 112 | 113 | 3000 | F_r [N] | 218 | 218 | 219 | 222 | 3000 | F_r [N] | 435 | 436 | 437 | 439 |
| | f_t [Hz] | 130 | 130 | 132 | 132 | | f_t [Hz] | 184 | 184 | 186 | 186 | | f_t [Hz] | 260 | 260 | 260 | 261 |
| 2250 | F_r [N] | 82 | 83 | 84 | 86 | 2250 | F_r [N] | 163 | 164 | 165 | 167 | 2250 | F_r [N] | 326 | 327 | 328 | 331 |
| | f_t [Hz] | 113 | 114 | 115 | 115 | | f_t [Hz] | 159 | 159 | 160 | 161 | | f_t [Hz] | 225 | 226 | 227 | 227 |
| 1500 | F_r [N] | 54 | 56 | 58 | 59 | 1500 | F_r [N] | 109 | 110 | 112 | 113 | 1500 | F_r [N] | 218 | 219 | 220 | 222 |
| | f_t [Hz] | 92 | 93 | 95 | 95 | | f_t [Hz] | 130 | 131 | 132 | 132 | | f_t [Hz] | 184 | 185 | 186 | 186 |
| 750 | F_r [N] | 27 | 28 | 30 | 31 | 750 | F_r [N] | 54 | 55 | 58 | 59 | 750 | F_r [N] | 109 | 110 | 112 | 113 |
| | f_t [Hz] | 65 | 66 | 68 | 70 | | f_t [Hz] | 92 | 93 | 94 | 95 | | f_t [Hz] | 130 | 131 | 132 | 132 |

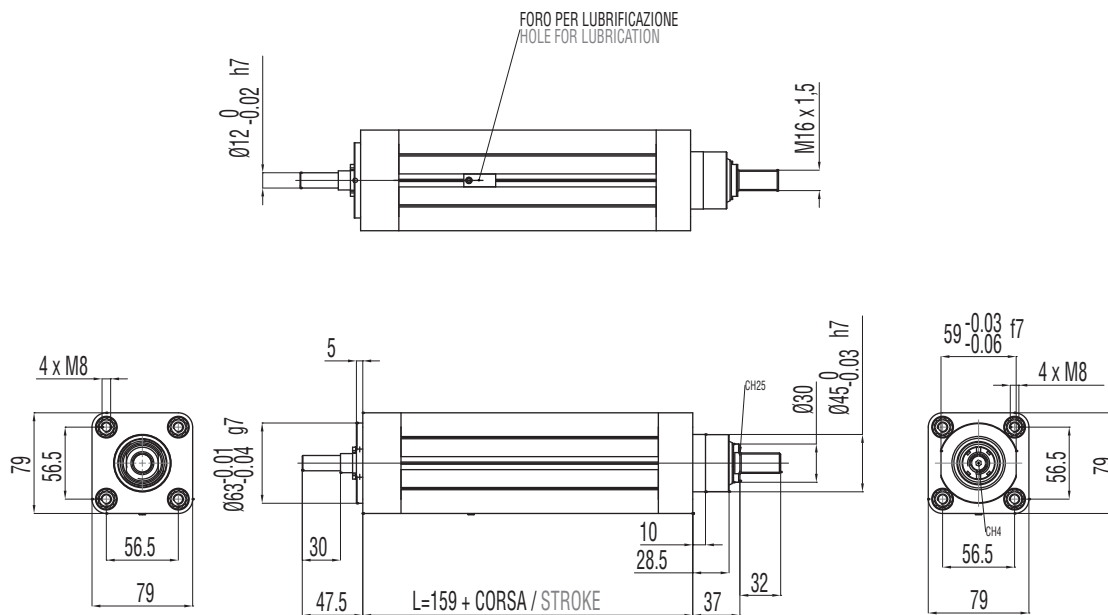
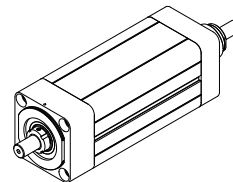
3.4.6 Caratteristiche dimensionali

3.4.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvii al capitolo 4.

REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.

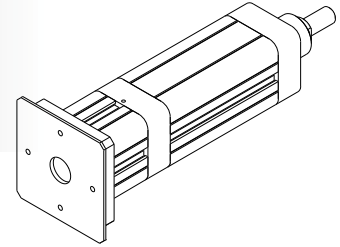
B00
MODULO BASE
BASIC MODULE

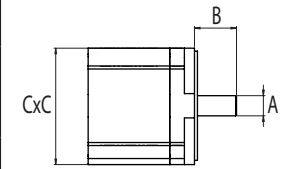


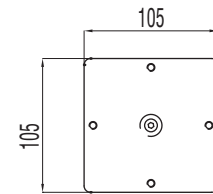
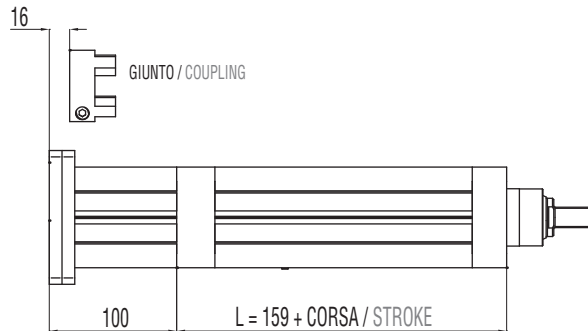
B00 + D00

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE CUSTOM
(SENZA RIDUTTORE)

**BASIC MODULE + CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE
FOR CUSTOM MOTORS**



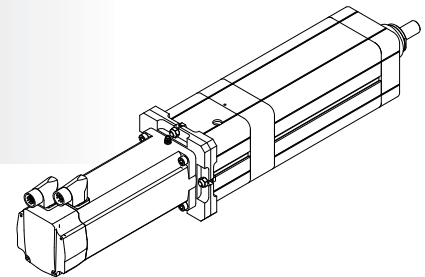
|  | MASSIME DIMENSIONI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|---|--|-----------|-----------------|-----------|
| | TAGLIA GIUNTO COUPLING SIZE | A [mm] | B [mm] | C [mm] |
| | 60 | 30 max | 28 min / 42 max | 100 max |



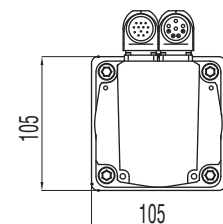
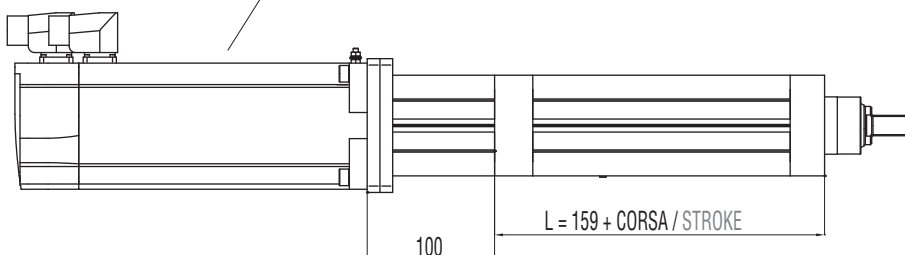
B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



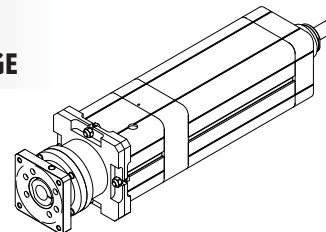
- | |
|-----------------|
| MOTORE MOTOR |
| MDA |
| MDB |
| MDC |
| MEA |



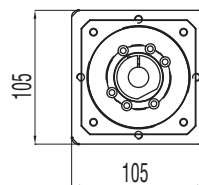
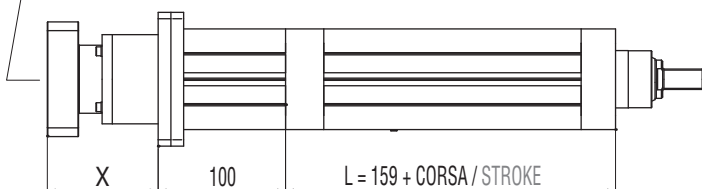
B00 + D02

MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE

BASIC MODULE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE



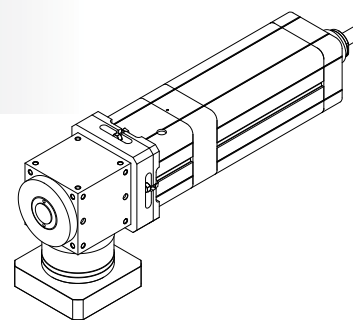
| |
|--------------------------------|
| RIDUTTORE PLANETARY GEARBOX |
| GBA |
| GBB |
| GCB |



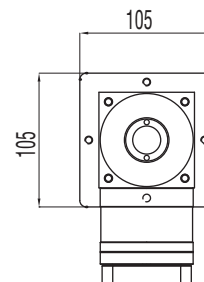
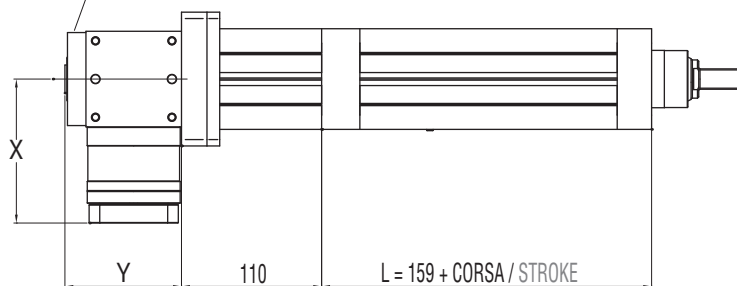
B00 + A01

MODULO BASE + RINVIO ANGOLARE COMPATIBILE

BASIC MODULE + COMPATIBLE ANGLE BEVEL GEARBOX STAGE



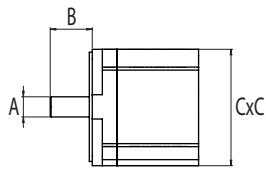
| |
|-------------------------|
| RINVIO BEVEL GEARBOX |
| ABA |

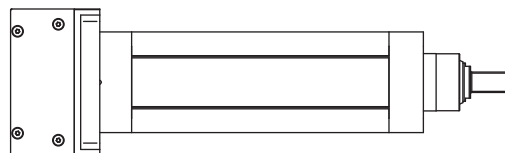
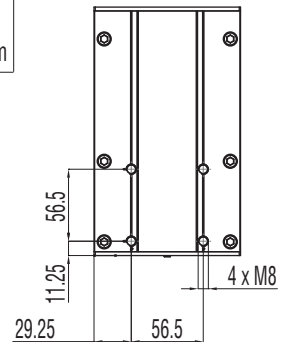
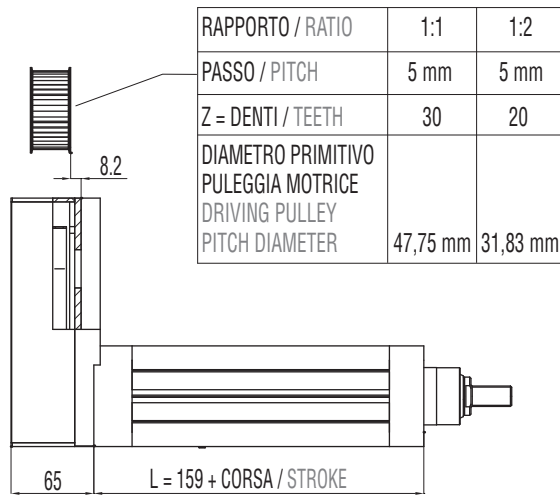
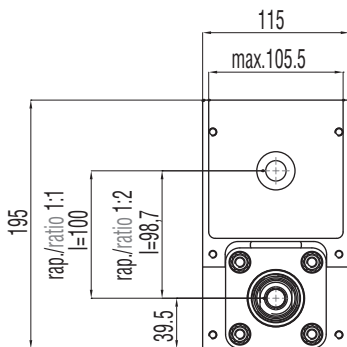
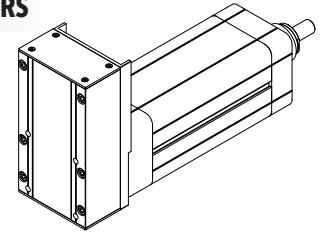


B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS

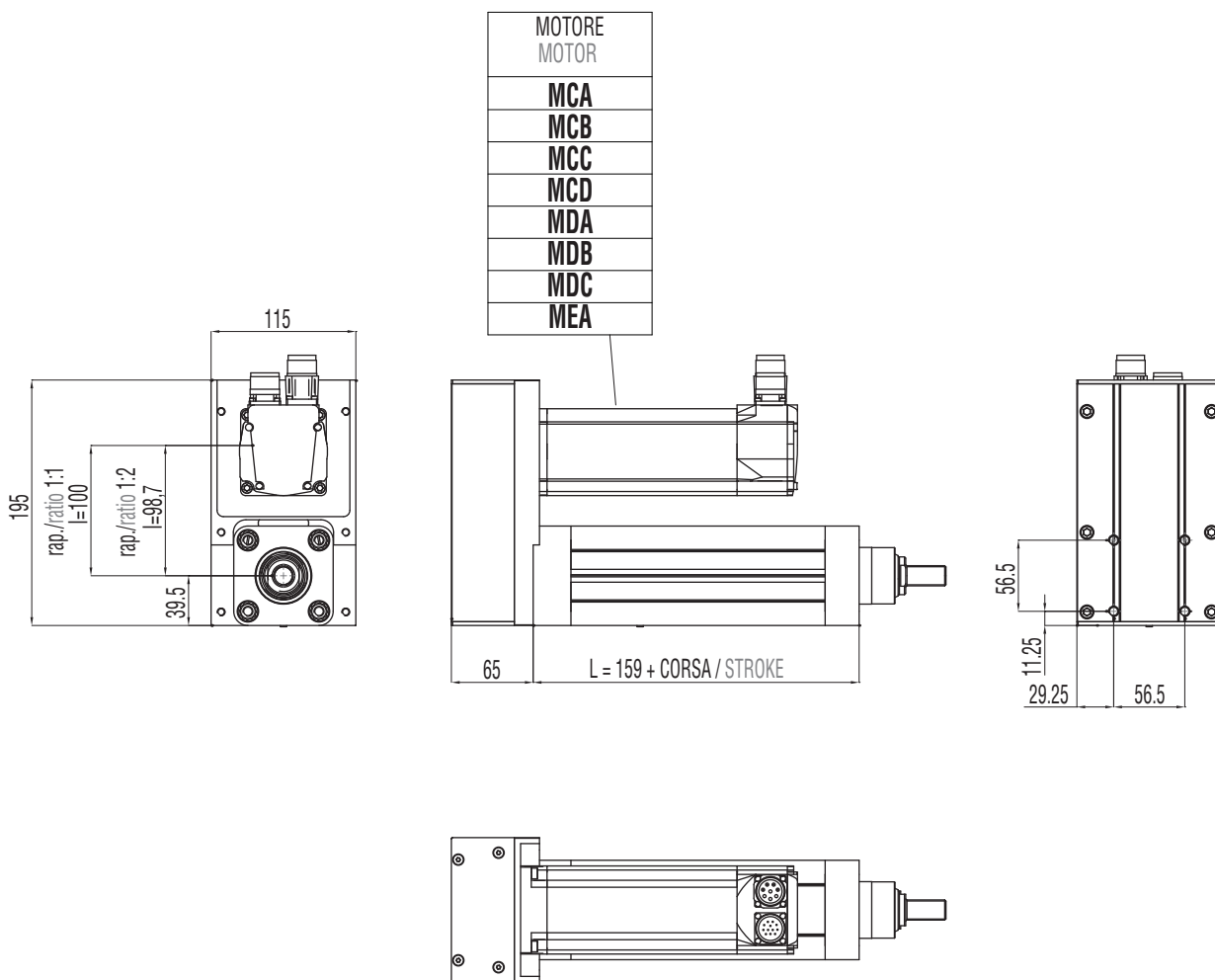
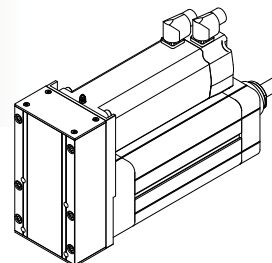
|  | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|---|---|-----------------|-----------|
| | A [mm] | B [mm] | C [mm] |
| R=1:1 | 16 max | 28 min / 42 max | 100 max |
| R=1:2 | 14 max | 30 min / 40 max | 100 max |



B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

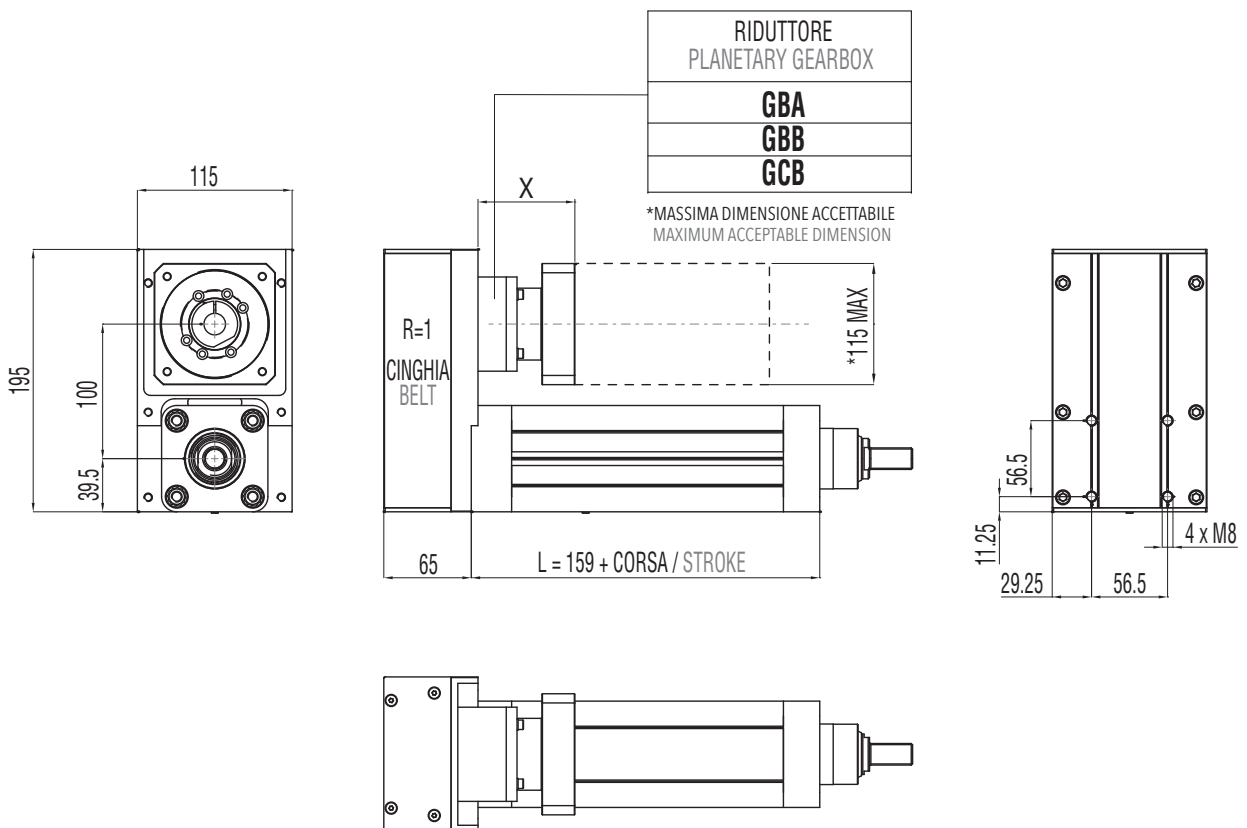
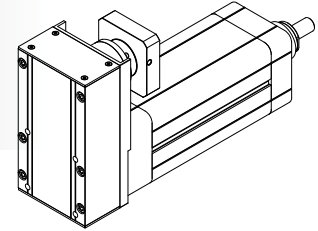
BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



B00 + R02

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO +
RIDUTTORE EPICICLOIDALE COMPATIBILE

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE +
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE**



3.4.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.4.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.5

IE 80

3.5.1 Caratteristiche tecniche

3.5.1 Technical features

| ISOMOVE IE 80 | | 5 | 10 | 25 |
|----------------------------|--|--|---------------------------------------|---------------------------------------|
| P | PASSO VITE SCREW LEAD [mm] | 5 | 10 | 25 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 25 | 25 | 25 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 12000* | 12000* | 12000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 10,6 | 21,3 | 53 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 [Nm] | 10,6 | 21,3 | 53 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 [Nm] | $\left[\frac{11,7}{R} \right] + C_s$ | $\left[\frac{23,6}{R} \right] + C_s$ | $\left[\frac{58,8}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | | |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 [Nm] | $\frac{11,7}{R}$ | $\frac{23,6}{R}$ | $\frac{58,8}{R}$ |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) | | |
| | "CASO 4" / "CASE 4": B00 + R02 [Nm] | $\frac{13}{R}$ | $\frac{26,2}{R}$ | $\frac{65,3}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 12000 | 12000 | 12000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 250/3000 | 500/3000 | 1250/3000 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 1 | 2 | 4 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 1000** | 1000** | 1000** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE [Kg] | 3,4 / 1,2 | 3,4 / 1,2 | 3,4 / 1,2 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY [mm] | 0,06 | 0,06 | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | DISPONIBILE / AVAILABLE | | |
| L_{10,Km} | DURATA LIFETIME [Km] | VEDI TABELLA / SEE TABLE pg. 76 | | |

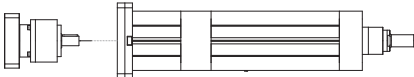
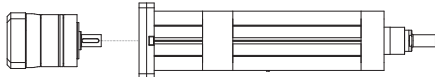
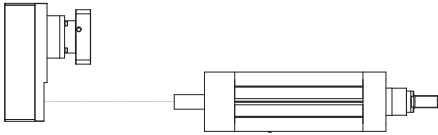
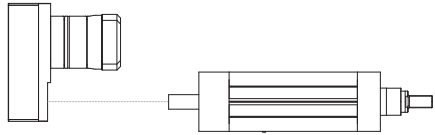
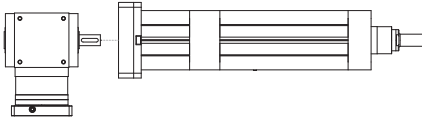
* Per le versioni R00/R01 controllare con i grafici delle pagine 78/79. / For R00/R01 types please check graph at pages 78/79.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dept.

| ISOMOVE IE 80 | | 5 | 10 | 25 |
|--|--|---|-------------------------------|---|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | D00 / D01 / D02 / R00 / R01 / R02 / A01 | | |
| $F_{a,p}$ | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX | [N] | AE070/12000 PGII-080/12000 | AE070/12000 PGII-080/12000 AE070/7000 *** PGII-080/12000 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX | [N] | ATB090/12000 | ATB090/12000 ATB090/5800 *** |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

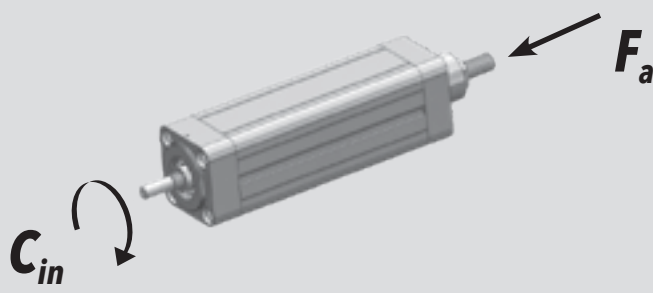
| | | |
|--|---|--|
| <p>TRASMISSIONE COASSIALE CON RIDUTTORE</p> <p>IN-LINE PLANETARY GEARBOX STAGE</p> |  <p>AE070</p> <p>MODULO BASE BASIC MODULE</p> |  <p>PGII-080</p> <p>MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE PARALLELA CON RIDUTTORE</p> <p>PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE</p> |  <p>AE070</p> <p>MODULO BASE BASIC MODULE</p> |  <p>PGII-080</p> <p>MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE ANGOLARE CON RINVIO</p> <p>ANGLE BEVEL GEARBOX STAGE</p> |  <p>ATB090</p> <p>MODULO BASE BASIC MODULE</p> | |

3.5.2 Calcolo durata

3.5.2 Lifetime calculation



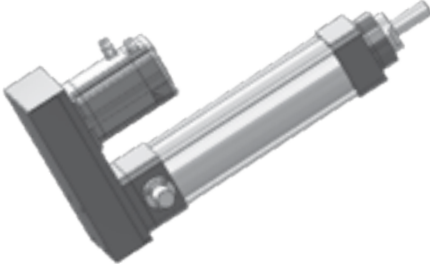
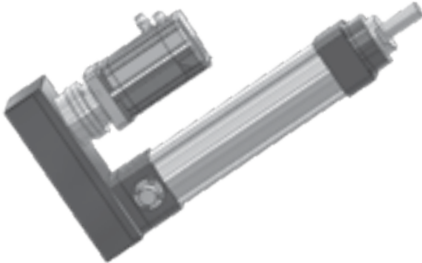
| | | |
|----------------------------------|--|--------------------------------------|
| IE 80 P = 5 mm | $L_{10,Km} = \left[\frac{13700}{F_{eq}} \right]^3 \cdot 5$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 80 P = 10 mm | $L_{10,Km} = \left[\frac{25200}{F_{eq}} \right]^3 \cdot 10$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 80 P = 25 mm | $L_{10,Km} = \left[\frac{16700}{F_{eq}} \right]^3 \cdot 25$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |

3.5.3 Calcolo coppia in ingresso
al modulo base3.5.3 Torque calculation at basic
module input shaft

| | | |
|--|---|--------------------------------|
|  | | |
| IE 80 P = 5 mm | $C_{in} = \left[\frac{F_a \cdot 5}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 80 P = 10 mm | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 80 P = 25 mm | $C_{in} = \left[\frac{F_a \cdot 25}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |

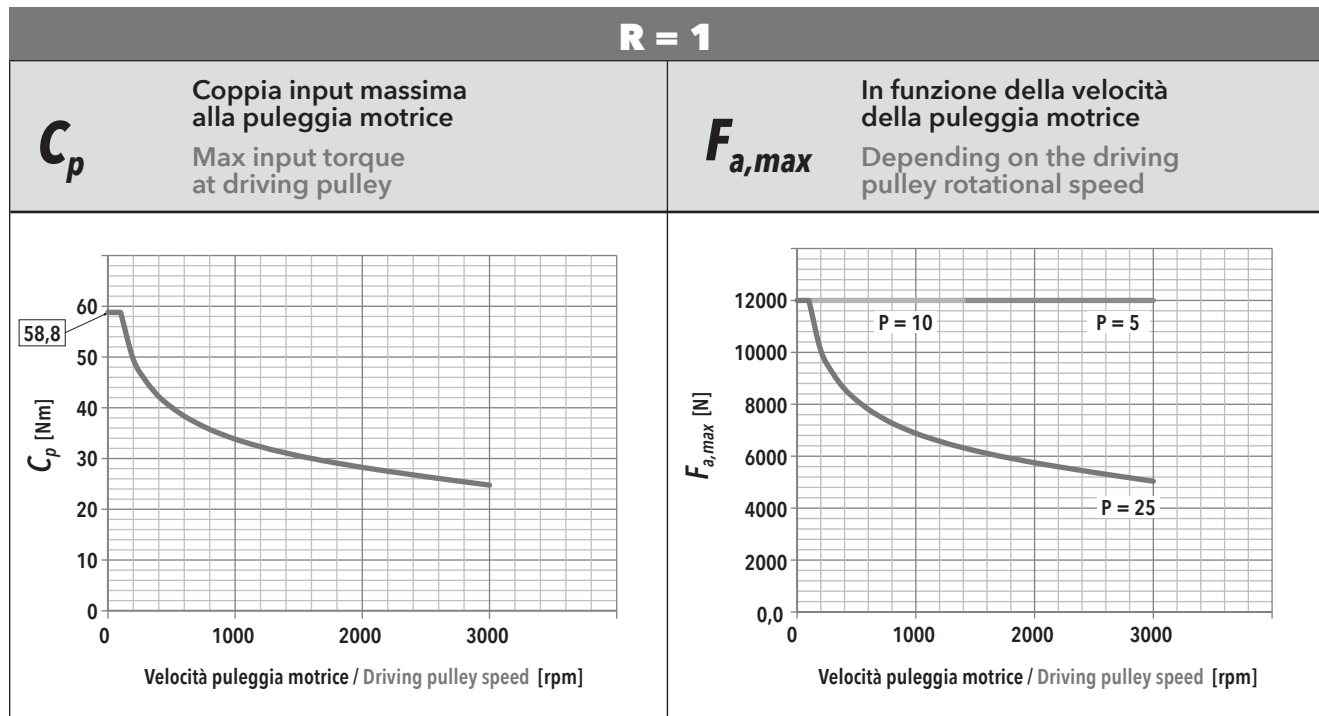
3.5.4 Calcolo coppia motore

3.5.4 Motor torque calculation

| | |
|---------------------------------|--|
| <p>CASO / CASE 1</p> | <p>ISOMOVE B00 + D00 / D01</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE 2</p> | <p>ISOMOVE B00 + D02 / A01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 3</p> | <p>ISOMOVE B00 + R00 / R01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p>R = rapporto di riduzione trasmissione a cinghia, disponibile R=1 o R=2 belt gearbox reduction ratio, available R=1 or R=2 η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 4</p> | <p>ISOMOVE B00 + R02</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,81</p> |

3.5.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

3.5.5 Mechanical input power at belt gear stage (R type)



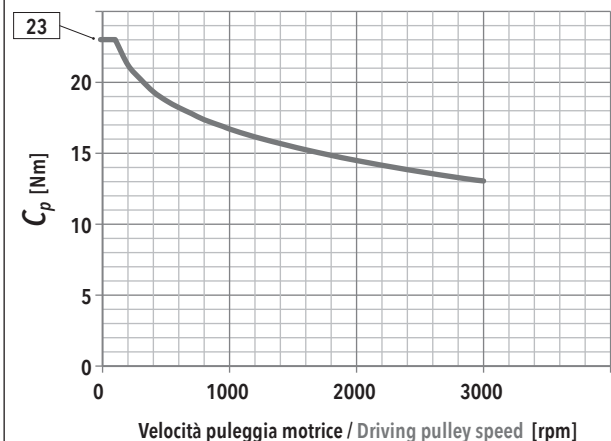
F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

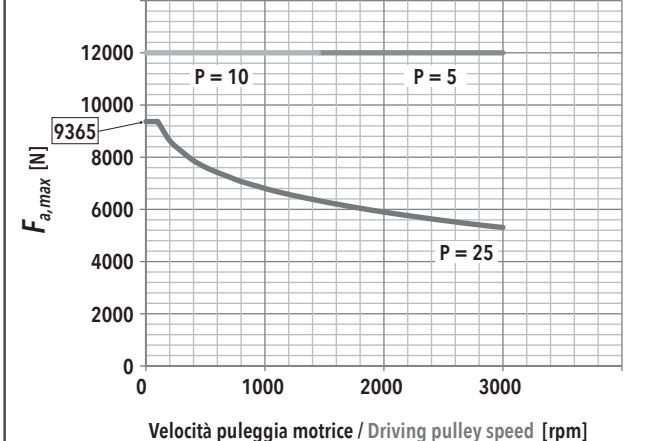
| IE 80 - PASSO / PITCH 5 | | | | | IE 80 - PASSO / PITCH 10 | | | | | IE 80 - PASSO / PITCH 25 | | | | | | | |
|-------------------------|------------|------------------|-----|-----|--------------------------|-----------|------------|------------------|-----|--------------------------|-----|-----------|------------|------------------|------|-----|------|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 25 | 100 | 175 | 250 | | | 50 | 200 | 350 | 500 | | | 125 | 500 | 870 | 1250 |
| 12000 | F_r [N] | 353 | 360 | 376 | 402 | 12000 | F_r [N] | 705 | 712 | 728 | 754 | 12000 | F_r [N] | | | | |
| | f_t [Hz] | 156 | 157 | 160 | 174 | | f_t [Hz] | 223 | 225 | 226 | 230 | | f_t [Hz] | | | | |
| 10800 | F_r [N] | 317 | 325 | 341 | 366 | 10800 | F_r [N] | 634 | 642 | 658 | 683 | 10800 | F_r [N] | | | | |
| | f_t [Hz] | 148 | 150 | 152 | 156 | | f_t [Hz] | 212 | 215 | 218 | 220 | | f_t [Hz] | | | | |
| 9600 | F_r [N] | 282 | 290 | 306 | 331 | 9600 | F_r [N] | 564 | 571 | 588 | 613 | 9600 | F_r [N] | 1409 | | | |
| | f_t [Hz] | 138 | 141 | 145 | 147 | | f_t [Hz] | 199 | 200 | 202 | 205 | | f_t [Hz] | 315 | | | |
| 8400 | F_r [N] | 247 | 254 | 271 | 296 | 8400 | F_r [N] | 493 | 495 | 517 | 542 | 8400 | F_r [N] | 1233 | | | |
| | f_t [Hz] | 132 | 135 | 138 | 140 | | f_t [Hz] | 190 | 191 | 193 | 195 | | f_t [Hz] | 295 | | | |
| 7200 | F_r [N] | 212 | 219 | 236 | 261 | 7200 | F_r [N] | 423 | 430 | 447 | 472 | 7200 | F_r [N] | 1057 | 1064 | | |
| | f_t [Hz] | 128 | 130 | 133 | 135 | | f_t [Hz] | 174 | 175 | 178 | 180 | | f_t [Hz] | 273 | 275 | | |
| 6000 | F_r [N] | 177 | 184 | 200 | 226 | 6000 | F_r [N] | 353 | 360 | 376 | 402 | 6000 | F_r [N] | 881 | 888 | | |
| | f_t [Hz] | 118 | 120 | 122 | 125 | | f_t [Hz] | 164 | 165 | 168 | 170 | | f_t [Hz] | 248 | 250 | | |
| 4800 | F_r [N] | 141 | 149 | 165 | 190 | 4800 | F_r [N] | 282 | 290 | 306 | 331 | 4800 | F_r [N] | 705 | 712 | 728 | 754 |
| | f_t [Hz] | 105 | 108 | 108 | 110 | | f_t [Hz] | 144 | 146 | 148 | 150 | | f_t [Hz] | 220 | 222 | 225 | 226 |
| 3600 | F_r [N] | 106 | 114 | 130 | 155 | 3600 | F_r [N] | 212 | 219 | 236 | 261 | 3600 | F_r [N] | 529 | 536 | 552 | 578 |
| | f_t [Hz] | 95 | 96 | 98 | 100 | | f_t [Hz] | 130 | 132 | 133 | 135 | | f_t [Hz] | 194 | 195 | 196 | 198 |
| 2400 | F_r [N] | 71 | 78 | 95 | 120 | 2400 | F_r [N] | 141 | 149 | 165 | 190 | 2400 | F_r [N] | 353 | 360 | 376 | 402 |
| | f_t [Hz] | 80 | 82 | 84 | 85 | | f_t [Hz] | 109 | 110 | 113 | 115 | | f_t [Hz] | 160 | 161 | 163 | 165 |
| 1200 | F_r [N] | 36 | 43 | 59 | 85 | 1200 | F_r [N] | 71 | 78 | 95 | 120 | 1200 | F_r [N] | 177 | 184 | 200 | 226 |
| | f_t [Hz] | 64 | 65 | 68 | 70 | | f_t [Hz] | 84 | 85 | 88 | 90 | | f_t [Hz] | 118 | 120 | 122 | 125 |

R = 2

C_p Coppia input massima alla puleggia motrice
Max input torque at driving pulley



$F_{a,max}$ In funzione della velocità della puleggia motrice
Depending on the driving pulley rotational speed



F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 80 - PASSO / PITCH 5 | | | | | IE 80 - PASSO / PITCH 10 | | | | | IE 80 - PASSO / PITCH 25 | | | | | | | |
|-------------------------|------------|------------------|-----|------|--------------------------|-----------|------------|------------------|-----|--------------------------|-----|-----------|------------|------------------|------|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 12,5 | 50 | 87,5 | 125 | | | 25 | 100 | 175 | 250 | | | 62,5 | 250 | 438 | 625 |
| 12000 | F_r [N] | 363 | 365 | 367 | 369 | 12000 | F_r [N] | 726 | 728 | 730 | 732 | 12000 | F_r [N] | | | | |
| | f_t [Hz] | 193 | 194 | 195 | 195 | | f_t [Hz] | 274 | 274 | 274 | 275 | | f_t [Hz] | | | | |
| 10800 | F_r [N] | 327 | 329 | 331 | 333 | 10800 | F_r [N] | 653 | 656 | 658 | 659 | 10800 | F_r [N] | | | | |
| | f_t [Hz] | 184 | 184 | 185 | 185 | | f_t [Hz] | 260 | 260 | 261 | 261 | | f_t [Hz] | | | | |
| 9600 | F_r [N] | 290 | 292 | 295 | 296 | 9600 | F_r [N] | 581 | 582 | 585 | 587 | 9600 | F_r [N] | | | | |
| | f_t [Hz] | 173 | 173 | 175 | 175 | | f_t [Hz] | 245 | 245 | 246 | 246 | | f_t [Hz] | | | | |
| 8400 | F_r [N] | 254 | 256 | 258 | 260 | 8400 | F_r [N] | 508 | 510 | 512 | 514 | 8400 | F_r [N] | 1270 | | | |
| | f_t [Hz] | 162 | 162 | 164 | 164 | | f_t [Hz] | 229 | 229 | 230 | 230 | | f_t [Hz] | 362 | | | |
| 7200 | F_r [N] | 218 | 220 | 222 | 224 | 7200 | F_r [N] | 436 | 438 | 440 | 442 | 7200 | F_r [N] | 1089 | 1090 | | |
| | f_t [Hz] | 150 | 151 | 152 | 152 | | f_t [Hz] | 212 | 212 | 213 | 213 | | f_t [Hz] | 335 | 335 | | |
| 6000 | F_r [N] | 182 | 185 | 197 | 188 | 6000 | F_r [N] | 363 | 365 | 367 | 369 | 6000 | F_r [N] | 907 | 908 | 910 | |
| | f_t [Hz] | 137 | 137 | 138 | 139 | | f_t [Hz] | 193 | 194 | 195 | 195 | | f_t [Hz] | 306 | 306 | 306 | |
| 4800 | F_r [N] | 145 | 147 | 150 | 151 | 4800 | F_r [N] | 290 | 292 | 294 | 296 | 4800 | F_r [N] | 726 | 728 | 730 | 732 |
| | f_t [Hz] | 122 | 123 | 124 | 125 | | f_t [Hz] | 173 | 173 | 174 | 175 | | f_t [Hz] | 274 | 274 | 275 | 275 |
| 3600 | F_r [N] | 109 | 111 | 112 | 115 | 3600 | F_r [N] | 218 | 220 | 221 | 224 | 3600 | F_r [N] | 544 | 546 | 548 | 551 |
| | f_t [Hz] | 106 | 107 | 108 | 109 | | f_t [Hz] | 150 | 150 | 152 | 152 | | f_t [Hz] | 237 | 237 | 238 | 238 |
| 2400 | F_r [N] | 73 | 75 | 78 | 79 | 2400 | F_r [N] | 145 | 147 | 150 | 151 | 2400 | F_r [N] | 363 | 365 | 368 | 369 |
| | f_t [Hz] | 87 | 88 | 89 | 90 | | f_t [Hz] | 122 | 123 | 124 | 125 | | f_t [Hz] | 193 | 193 | 195 | 195 |
| 1200 | F_r [N] | 36 | 37 | 39 | 42 | 1200 | F_r [N] | 73 | 73 | 79 | 79 | 1200 | F_r [N] | 182 | 184 | 186 | 188 |
| | f_t [Hz] | 61 | 63 | 65 | 66 | | f_t [Hz] | 87 | 88 | 89 | 90 | | f_t [Hz] | 137 | 137 | 139 | 139 |

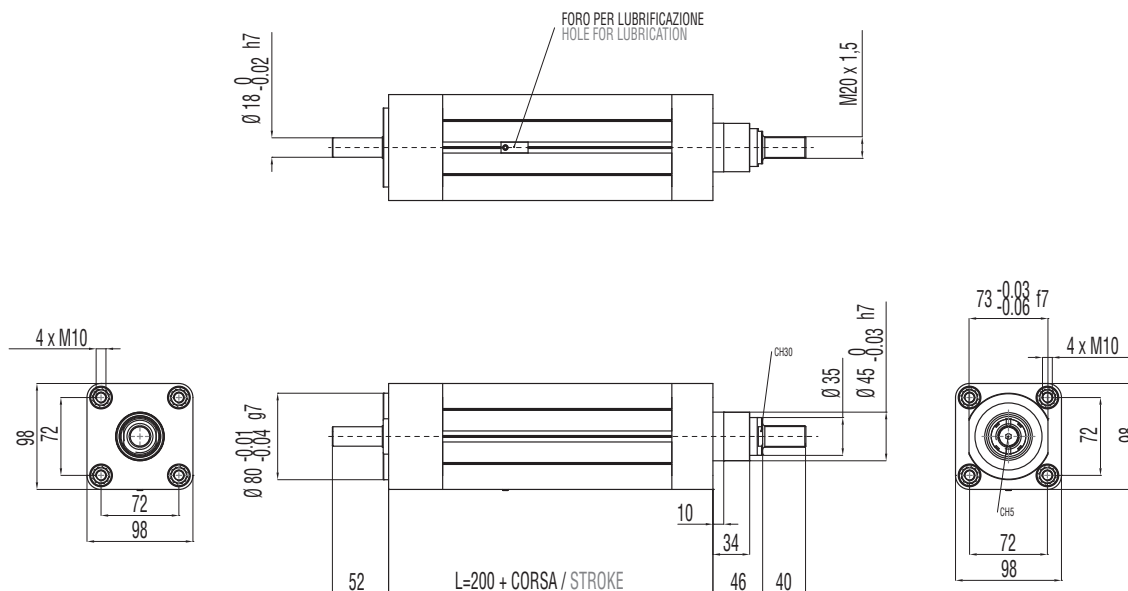
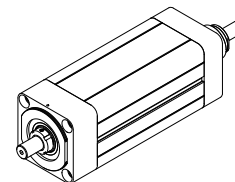
3.5.6 Caratteristiche dimensionali

3.5.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvii al capitolo 4.

REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.

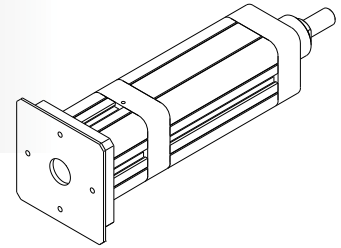
B00
MODULO BASE
BASIC MODULE

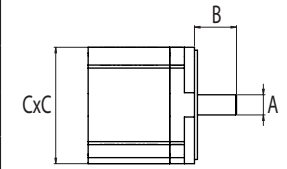


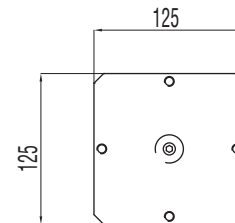
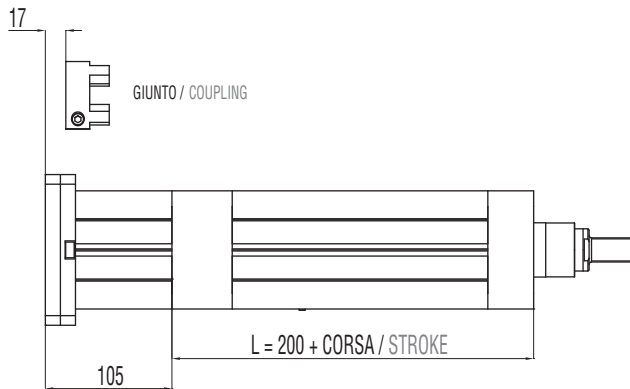
B00 + D00

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE CUSTOM
(SENZA RIDUTTORE)

**BASIC MODULE + CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE
FOR CUSTOM MOTORS**



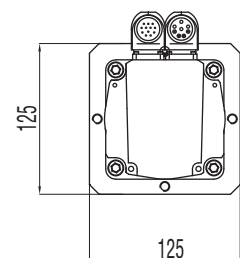
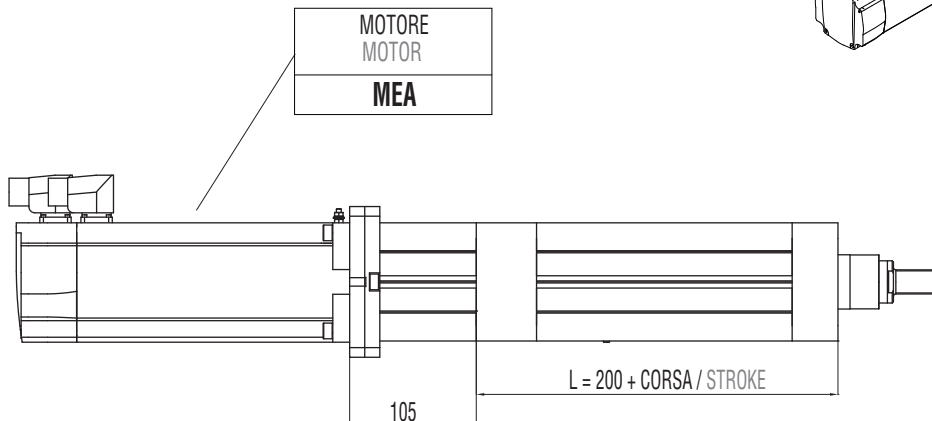
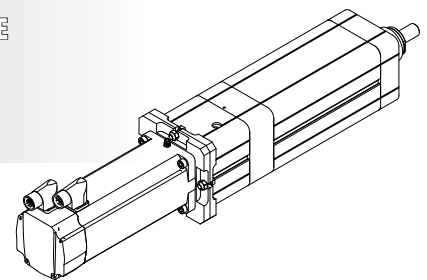
|  | MASSIME DIMENSIONI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|---|--|-----------|-----------------|-----------|
| | TAGLIA GIUNTO COUPLING SIZE | A [mm] | B [mm] | C [mm] |
| | 60 | 26 max | 42 min / 50 max | 110 max |



B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

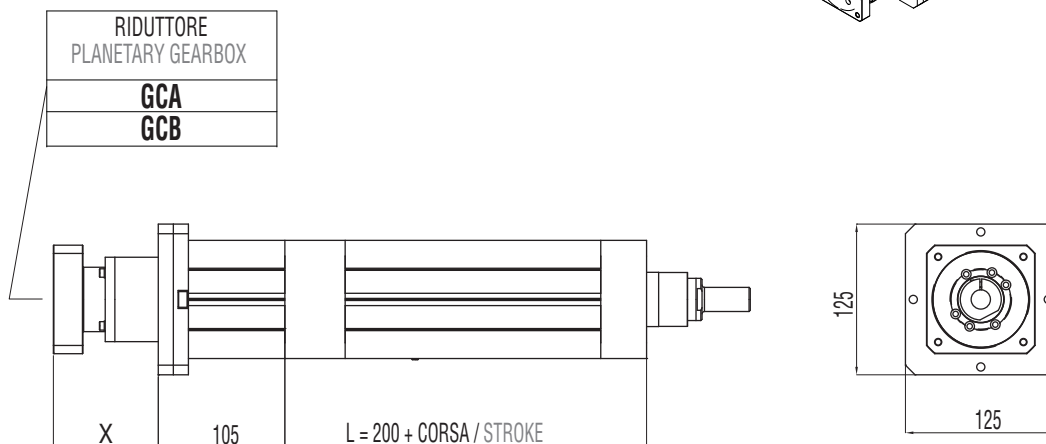
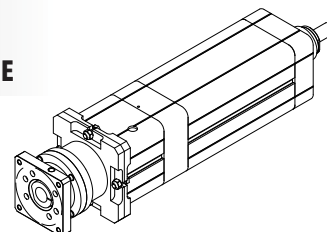
**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



B00 + D02

MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE

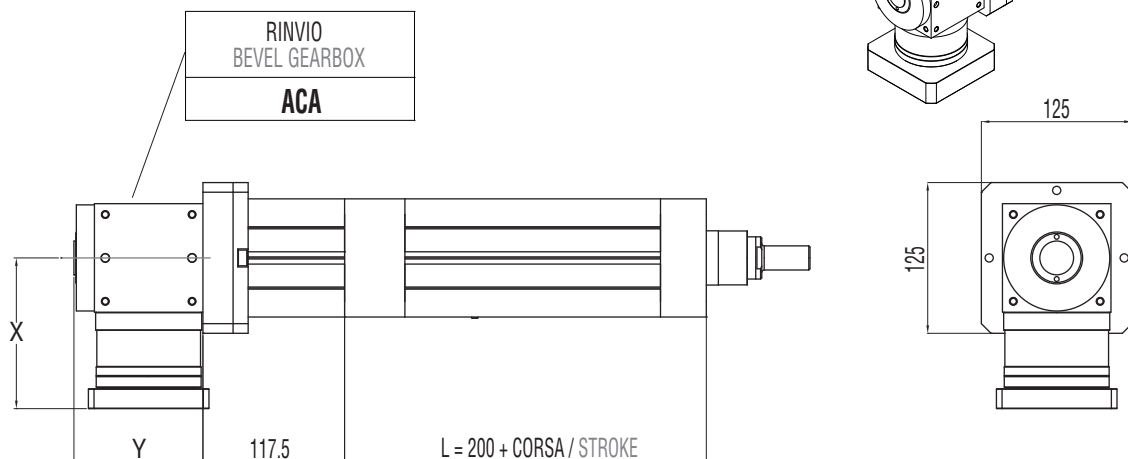
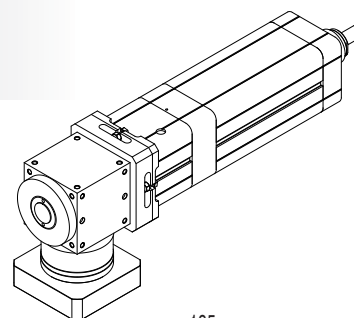
BASIC MODULE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE



B00 + A01

MODULO BASE + RINVIO ANGOLARE COMPATIBILE

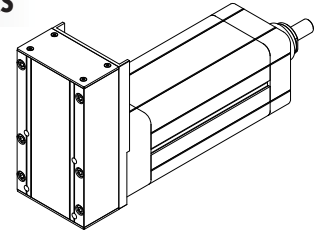
BASIC MODULE + COMPATIBLE ANGLE BEVEL GEARBOX STAGE



B00 + R00

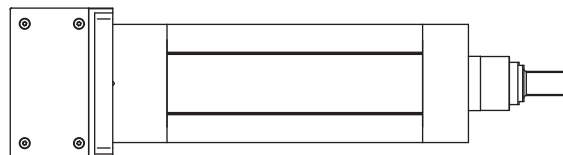
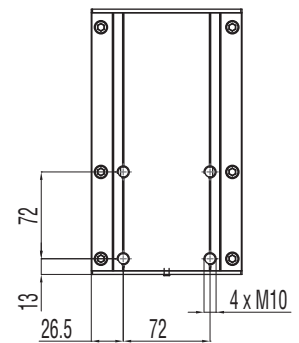
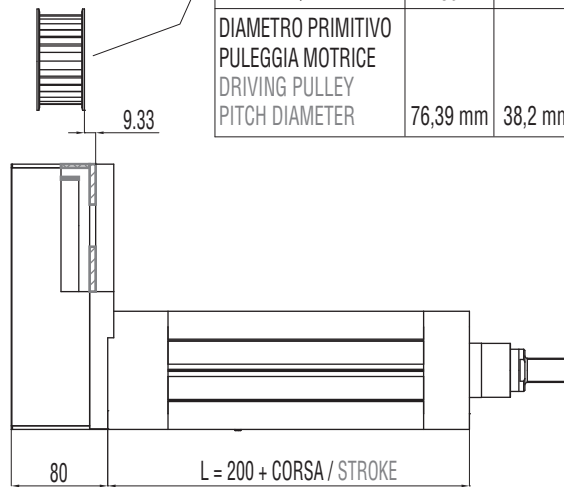
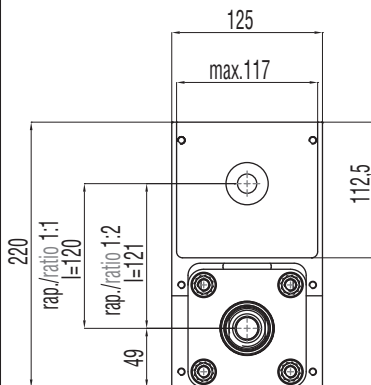
MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS



| | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|-------|---|-----------------|-----------|
| | A [mm] | B [mm] | C [mm] |
| R=1:1 | 24 max | 42 min / 58 max | 110 max |
| R=1:2 | 19 max | 36 min / 50 max | 110 max |

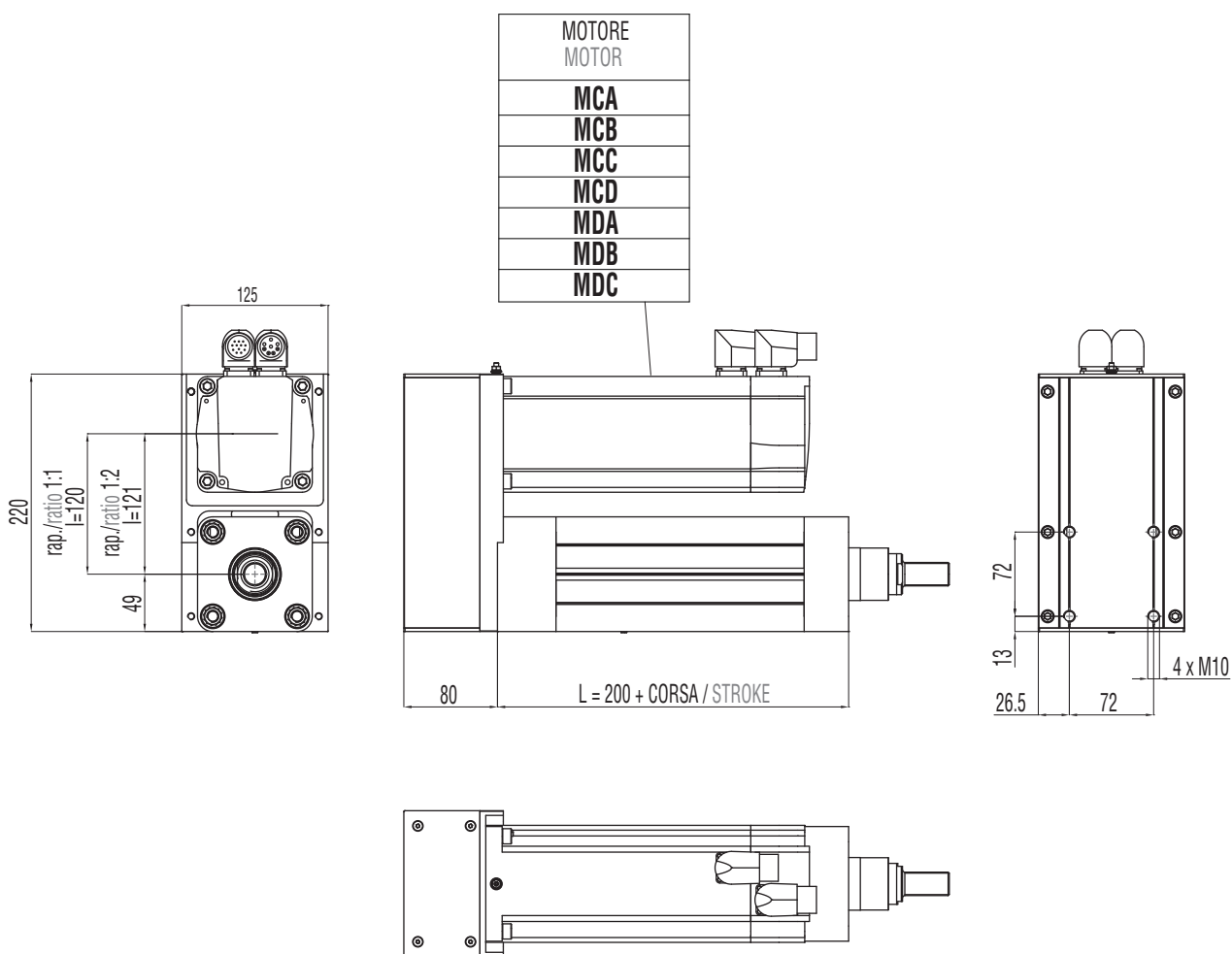
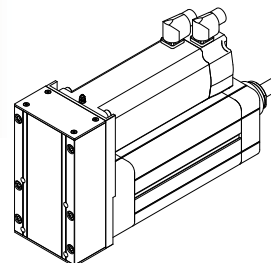
| | | |
|--|----------|---------|
| RAPPORTO / RATIO | 1:1 | 1:2 |
| PASSO / PITCH | 8 mm | 5 mm |
| Z = DENTI / TEETH | 30 | 24 |
| DIAMETRO PRIMITIVO PULEGGIA MOTRICE DRIVING PULLEY PITCH DIAMETER | 76,39 mm | 38,2 mm |



B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

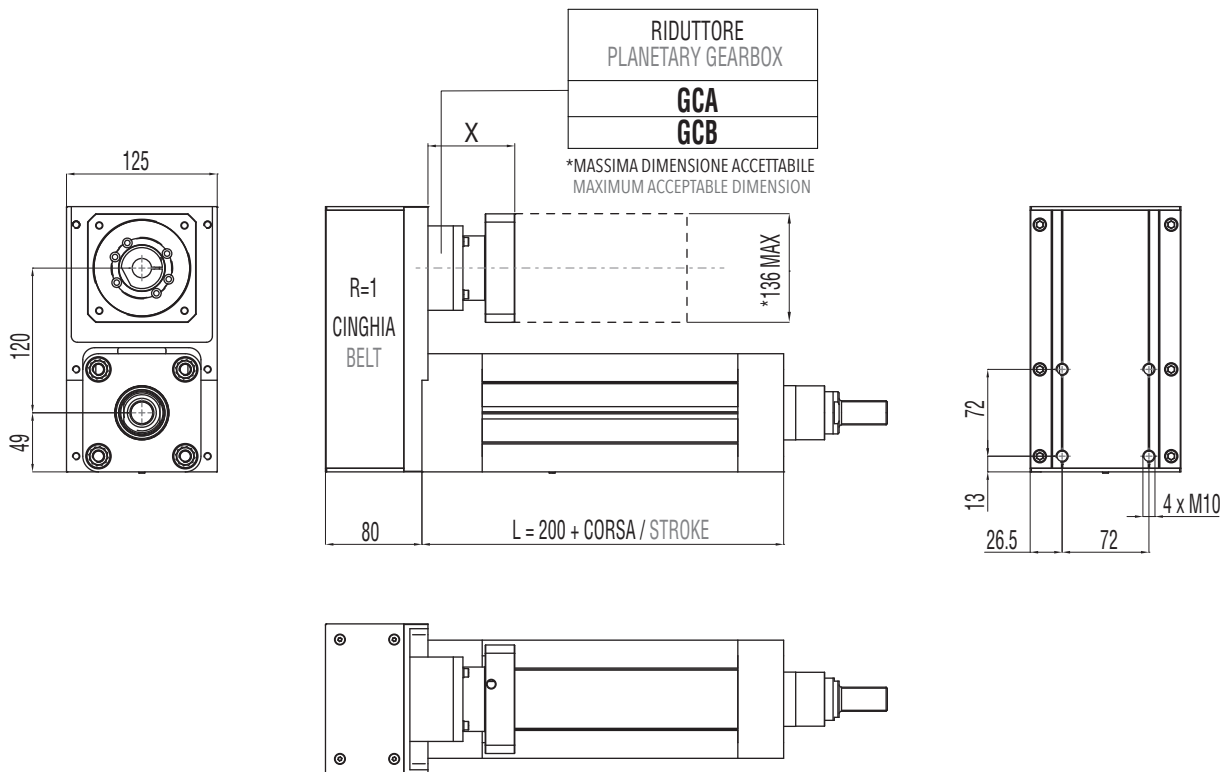
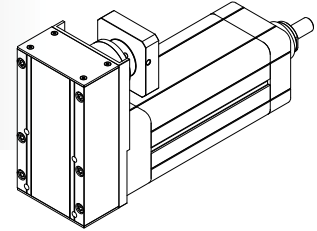
BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



B00 + R02

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO +
RIDUTTORE EPICICLOIDALE COMPATIBILE

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE +
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE**



3.5.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.5.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.6

IE 80 HL

3.6.1 Caratteristiche tecniche

3.6.1 Technical features

| ISOMOVE IE 80 HL | | 5 | 10 | 32 |
|----------------------------|--|--|---------------------------------------|--|
| P | PASSO VITE SCREW LEAD [mm] | 5 | 10 | 32 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 32 | 32 | 32 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 21000* | 25000* | 18000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 18,5 | 44,3 | 101,9 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 [Nm] | 18,5 | 44,3 | 101,9 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 [Nm] | $\left[\frac{20,5}{R} \right] + C_s$ | $\left[\frac{49,2}{R} \right] + C_s$ | $\left[\frac{113,2}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | | |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 [Nm] | $\frac{20,5}{R}$ | $\frac{49,2}{R}$ | $\frac{113,2}{R}$ |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) | | |
| | "CASO 4" / "CASE 4": B00 + R02 [Nm] | $\frac{22,7}{R}$ | $\frac{54,6}{R}$ | $\frac{125,7}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 30000 | 30000 | 30000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 250/3000 | 500/3000 | 1600/3000 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 1 | 2 | 5 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 1000** | 1000** | 1000** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE [Kg] | 5,6 / 1,8 | 5,6 / 1,8 | 5,6 / 1,8 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY [mm] | 0,06 | 0,06 | 0,02 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | DISPONIBILE / AVAILABLE | | |
| L_{10,Km} | DURATA LIFETIME [Km] | VEDI TABELLA / SEE TABLE pg. 88 | | |









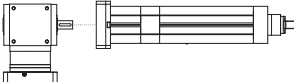
* Per le versioni R00/R01 controllare con i grafici delle pagine 90/91. / For R00/R01 types please check graph at pages 90/91.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dept.

| ISOMOVE IE 80 HL | | 5 | 10 | 32 |
|--|--|--|--|---|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | D00 / D01 / D02 / R00 / R01 / R02 / A01 | | |
| F_{a,p} | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX [N] | AE070/21000 AE090/21000 PGII-080/21000 PGII-120/21000 | AE070/18000 AE090/25000 PGII-080/25000 PGII-120/25000 | AE070/5500 *** AE090/13800*** PGII-080/8900 *** PGII-120/18000 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX [N] | ATB090/21000 ATB110/21000 | ATB090/21000 ATB110/25000 | ATB090/4500 *** ATB110/11600 *** |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | | |
|--|--|---|
| <p>TRASMISSIONE COASSIALE CON RIDUTTORE</p> <p>IN-LINE PLANETARY GEARBOX STAGE</p> |  AE070 MODULO BASE BASIC MODULE |  AE090 MODULO BASE BASIC MODULE |
| |  PGII-080 MODULO BASE BASIC MODULE |  PGII-120 MODULO BASE BASIC MODULE |
| <p>TRASMISSIONE PARALLELA CON RIDUTTORE</p> <p>PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE</p> |  AE070 MODULO BASE BASIC MODULE |  AE090 MODULO BASE BASIC MODULE |
| |  PGII-080 MODULO BASE BASIC MODULE | |
| <p>TRASMISSIONE ANGOLARE CON RINVIO</p> <p>ANGLE BEVEL GEARBOX STAGE</p> |  ATB090 MODULO BASE BASIC MODULE |  ATB110 MODULO BASE BASIC MODULE |

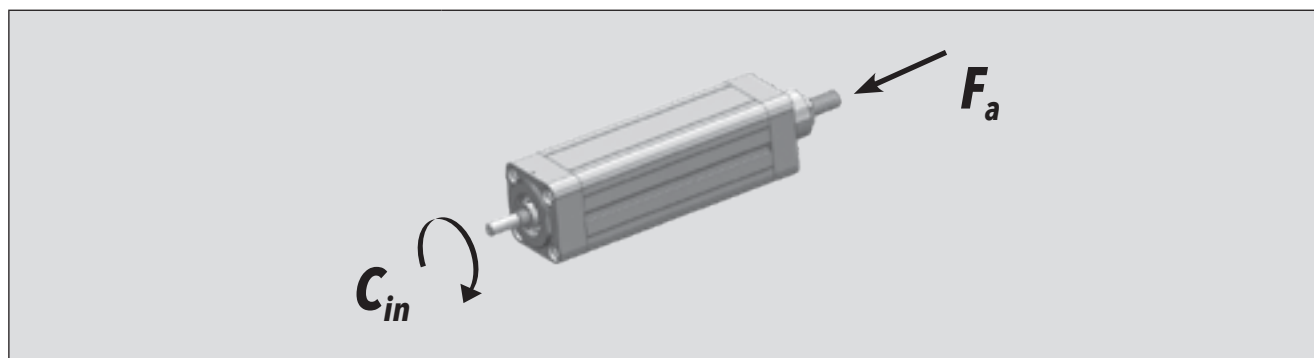
3.6.2 Calcolo durata

3.6.2 Lifetime calculation

| | | |
|---|--|--|
| <p>IE 80 HL P = 5 mm</p> | $L_{10,Km} = \left[\frac{23900}{F_{eq}} \right]^3 \cdot 5$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |
| <p>IE 80 HL P = 10 mm</p> | $L_{10,Km} = \left[\frac{31500}{F_{eq}} \right]^3 \cdot 10$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |
| <p>IE 80 HL P = 32 mm</p> | $L_{10,Km} = \left[\frac{20600}{F_{eq}} \right]^3 \cdot 32$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |

3.6.3 Calcolo coppia in ingresso al modulo base



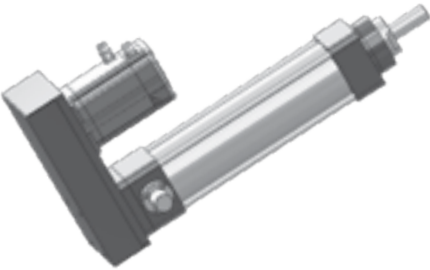
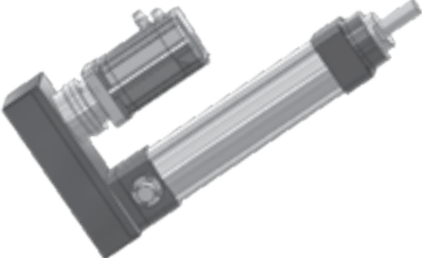
3.6.3 Torque calculation at basic module input shaft



| | | |
|---|---|--|
| <p>IE 80 HL P = 5 mm</p> | $C_{in} = \left[\frac{F_a \cdot 5}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |
| <p>IE 80 HL P = 10 mm</p> | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |
| <p>IE 80 HL P = 32 mm</p> | $C_{in} = \left[\frac{F_a \cdot 32}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |

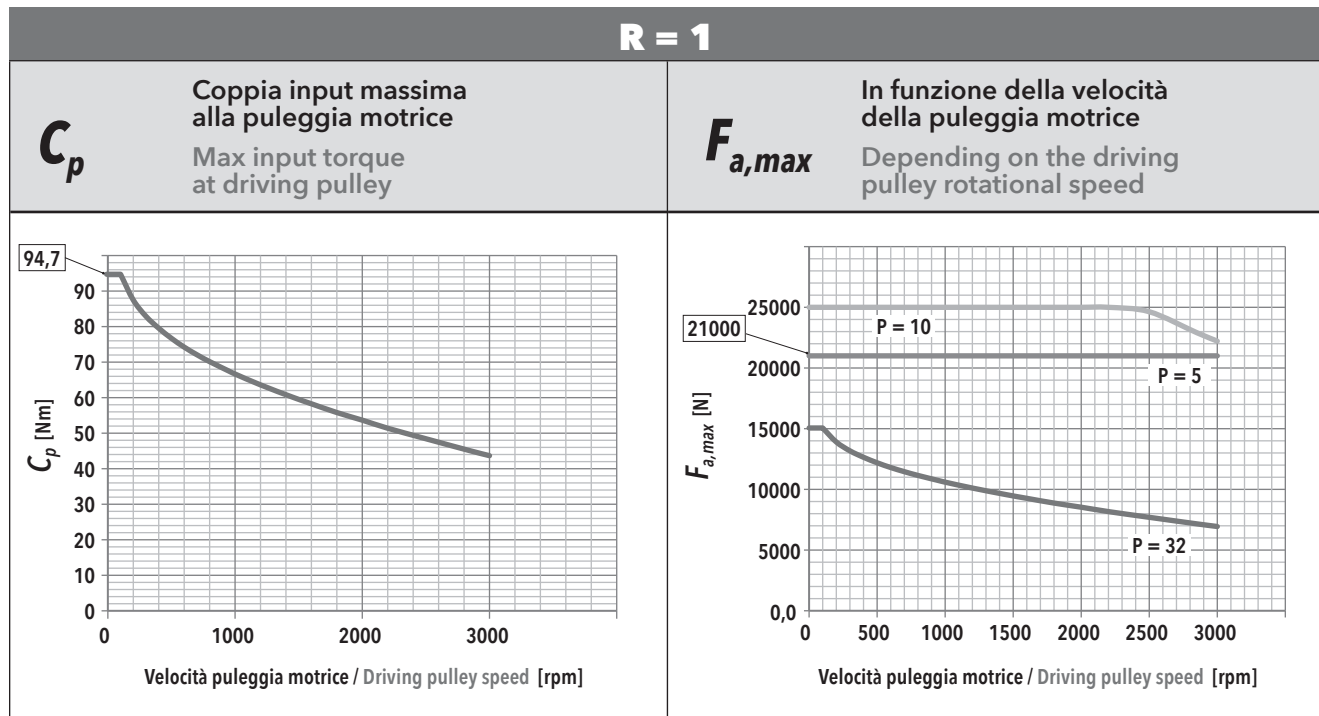
3.6.4 Calcolo coppia motore

3.6.4 Motor torque calculation

| | |
|---------------------------------|---|
| <p>CASO / CASE 1</p> | <p style="text-align: center;">ISOMOVE B00 + D00 / D01</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE 2</p> | <p style="text-align: center;">ISOMOVE B00 + D02 / A01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p><i>R</i> = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio <i>η</i> = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 3</p> | <p style="text-align: center;">ISOMOVE B00 + R00 / R01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p><i>R</i> = rapporto di riduzione trasmissione a cinghia, disponibile R=1 o R=2 belt gearbox reduction ratio, available R=1 or R=2 <i>η</i> = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 4</p> | <p style="text-align: center;">ISOMOVE B00 + R02</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p><i>R</i> = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio <i>η</i> = rendimento meccanico / mechanical efficiency = 0,81</p> |

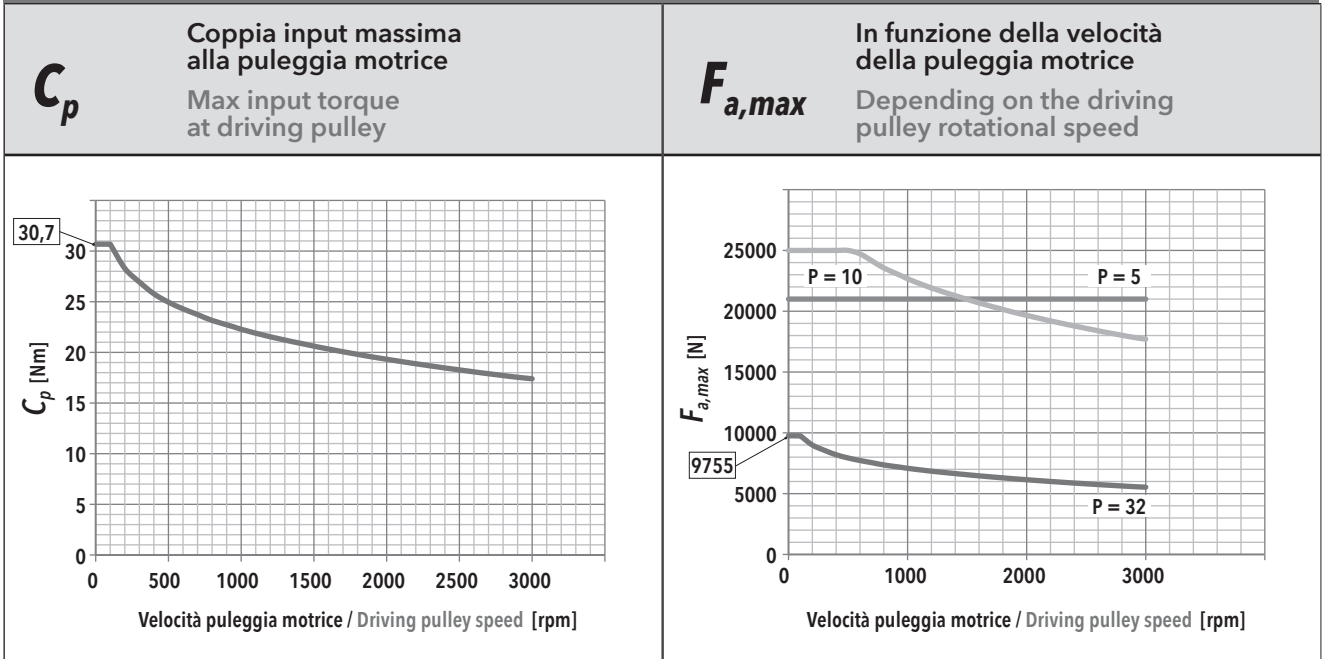
3.6.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

3.6.5 Mechanical input power at belt gear stage (R type)



| IE 80 HL - PASSO / PITCH 5 | | | | | | IE 80 HL - PASSO / PITCH 10 | | | | | | IE 80 HL - PASSO / PITCH 32 | | | | | |
|----------------------------|------------|------------------|-----|-----|-----|-----------------------------|------------|------------------|------|------|------|-----------------------------|------------|------------------|------|------|------|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 25 | 100 | 175 | 250 | | | 50 | 200 | 350 | 500 | | | 160 | 640 | 1120 | 1600 |
| 21000 | F_r [N] | 616 | 622 | 634 | 652 | 25000 | F_r [N] | 1467 | 1469 | 1473 | | 18000 | F_r [N] | | | | |
| | f_t [Hz] | 207 | 208 | 210 | 213 | | f_t [Hz] | 320 | 320 | 320 | | | f_t [Hz] | | | | |
| 18900 | F_r [N] | 555 | 560 | 572 | 590 | 22500 | F_r [N] | 1321 | 1322 | 1326 | 1356 | 16200 | F_r [N] | | | | |
| | f_t [Hz] | 197 | 198 | 200 | 203 | | f_t [Hz] | 303 | 304 | 304 | 307 | | f_t [Hz] | | | | |
| 16800 | F_r [N] | 493 | 499 | 510 | 529 | 20000 | F_r [N] | 1174 | 1176 | 1179 | 1209 | 14400 | F_r [N] | | | | |
| | f_t [Hz] | 185 | 186 | 189 | 192 | | f_t [Hz] | 286 | 286 | 287 | 290 | | f_t [Hz] | | | | |
| 14700 | F_r [N] | 432 | 437 | 449 | 467 | 17500 | F_r [N] | 1027 | 1029 | 1033 | 1063 | 12600 | F_r [N] | 2366 | | | |
| | f_t [Hz] | 173 | 175 | 177 | 180 | | f_t [Hz] | 268 | 268 | 268 | 272 | | f_t [Hz] | 406 | | | |
| 12600 | F_r [N] | 370 | 375 | 387 | 406 | 15000 | F_r [N] | 881 | 882 | 886 | 916 | 10800 | F_r [N] | 2028 | 2034 | | |
| | f_t [Hz] | 161 | 162 | 164 | 168 | | f_t [Hz] | 248 | 248 | 249 | 253 | | f_t [Hz] | 376 | 377 | | |
| 10500 | F_r [N] | 308 | 314 | 326 | 344 | 12500 | F_r [N] | 734 | 736 | 739 | 769 | 9000 | F_r [N] | 1690 | 1696 | 1707 | |
| | f_t [Hz] | 147 | 148 | 151 | 155 | | f_t [Hz] | 226 | 226 | 227 | 232 | | f_t [Hz] | 343 | 344 | 345 | |
| 8400 | F_r [N] | 247 | 252 | 264 | 282 | 10000 | F_r [N] | 587 | 589 | 593 | 623 | 7200 | F_r [N] | 1352 | 1358 | 1369 | 1388 |
| | f_t [Hz] | 131 | 133 | 136 | 140 | | f_t [Hz] | 202 | 203 | 203 | 208 | | f_t [Hz] | 307 | 308 | 309 | 311 |
| 6300 | F_r [N] | 185 | 191 | 202 | 221 | 7500 | F_r [N] | 440 | 442 | 446 | 476 | 5400 | F_r [N] | 1050 | 1020 | 1031 | 1050 |
| | f_t [Hz] | 114 | 115 | 119 | 124 | | f_t [Hz] | 175 | 176 | 176 | 182 | | f_t [Hz] | 271 | 267 | 268 | 271 |
| 4200 | F_r [N] | 124 | 129 | 141 | 159 | 5000 | F_r [N] | 294 | 296 | 299 | 329 | 3600 | F_r [N] | 676 | 682 | 694 | 712 |
| | f_t [Hz] | 93 | 95 | 99 | 105 | | f_t [Hz] | 143 | 144 | 144 | 152 | | f_t [Hz] | 217 | 218 | 220 | 223 |
| 2100 | F_r [N] | 62 | 67 | 79 | 97 | 2500 | F_r [N] | 147 | 149 | 152 | 183 | 1800 | F_r [N] | 676 | 682 | 694 | 712 |
| | f_t [Hz] | 66 | 69 | 74 | 82 | | f_t [Hz] | 101 | 102 | 103 | 113 | | f_t [Hz] | 217 | 218 | 220 | 223 |

R = 2



F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 80 HL - PASSO / PITCH 5 | | | | | IE 80 HL - PASSO / PITCH 10 | | | | | IE 80 HL - PASSO / PITCH 32 | | | | | | | |
|----------------------------|------------|------------------|-----|------|-----------------------------|-----------|------------|------------------|------|-----------------------------|------|-----------|------------|------------------|------|------|-----|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 12,5 | 50 | 87,5 | 125 | | | 25 | 100 | 175 | 250 | | | 80 | 320 | 560 | 800 |
| 21000 | F_r [N] | 635 | 637 | 638 | 641 | 25000 | F_r [N] | 1512 | | | | 18000 | F_r [N] | | | | |
| | f_t [Hz] | 256 | 256 | 257 | 257 | | f_t [Hz] | 395 | | | | | f_t [Hz] | | | | |
| 18900 | F_r [N] | 572 | 574 | 576 | 578 | 22500 | F_r [N] | 1361 | 1362 | | | 16200 | F_r [N] | | | | |
| | f_t [Hz] | 243 | 243 | 244 | 244 | | f_t [Hz] | 375 | 375 | | | | f_t [Hz] | | | | |
| 16800 | F_r [N] | 508 | 510 | 512 | 514 | 20000 | F_r [N] | 1210 | 1211 | 1213 | | 14400 | F_r [N] | | | | |
| | f_t [Hz] | 229 | 229 | 230 | 230 | | f_t [Hz] | 353 | 353 | 354 | | | f_t [Hz] | | | | |
| 14700 | F_r [N] | 445 | 448 | 450 | 451 | 17500 | F_r [N] | 1059 | 1061 | 1063 | 1065 | 12600 | F_r [N] | | | | |
| | f_t [Hz] | 214 | 214 | 216 | 216 | | f_t [Hz] | 330 | 330 | 331 | 331 | | f_t [Hz] | | | | |
| 12600 | F_r [N] | 381 | 384 | 386 | 387 | 15000 | F_r [N] | 907 | 910 | 911 | 913 | 10800 | F_r [N] | | | | |
| | f_t [Hz] | 198 | 198 | 200 | 200 | | f_t [Hz] | 306 | 306 | 307 | 307 | | f_t [Hz] | | | | |
| 10500 | F_r [N] | 318 | 320 | 322 | 324 | 12500 | F_r [N] | 756 | 758 | 760 | 762 | 9000 | F_r [N] | 1742 | | | |
| | f_t [Hz] | 181 | 181 | 182 | 183 | | f_t [Hz] | 279 | 279 | 280 | 280 | | f_t [Hz] | 424 | | | |
| 8400 | F_r [N] | 254 | 254 | 260 | 260 | 10000 | F_r [N] | 605 | 608 | 610 | 611 | 7200 | F_r [N] | 1394 | 1395 | | |
| | f_t [Hz] | 162 | 162 | 164 | 164 | | f_t [Hz] | 250 | 250 | 251 | 251 | | f_t [Hz] | 379 | 379 | | |
| 6300 | F_r [N] | 191 | 194 | 196 | 197 | 7500 | F_r [N] | 454 | 456 | 458 | 460 | 5400 | F_r [N] | 1045 | 1046 | 1048 | |
| | f_t [Hz] | 140 | 140 | 142 | 142 | | f_t [Hz] | 216 | 216 | 218 | 218 | | f_t [Hz] | 328 | 328 | 329 | |
| 4200 | F_r [N] | 127 | 130 | 131 | 133 | 5000 | F_r [N] | 303 | 306 | 307 | 309 | 3600 | F_r [N] | 697 | 698 | 700 | 703 |
| | f_t [Hz] | 114 | 114 | 117 | 117 | | f_t [Hz] | 177 | 177 | 178 | 178 | | f_t [Hz] | 268 | 268 | 269 | 269 |
| 2100 | F_r [N] | 64 | 66 | 68 | 70 | 2500 | F_r [N] | 151 | 153 | 155 | 157 | 1800 | F_r [N] | 348 | 350 | 352 | 355 |
| | f_t [Hz] | 81 | 81 | 85 | 85 | | f_t [Hz] | 125 | 125 | 127 | 127 | | f_t [Hz] | 190 | 190 | 191 | 191 |

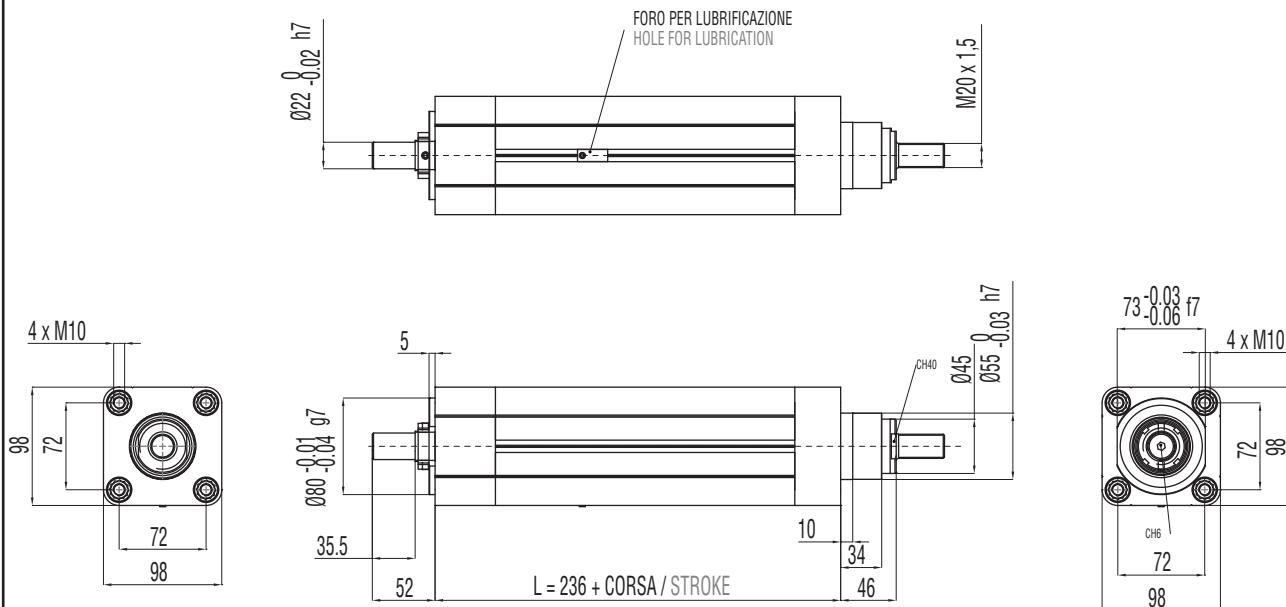
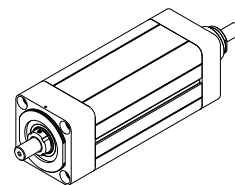
3.6.6 Caratteristiche dimensionali

3.6.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvi al capitolo 4.

REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.

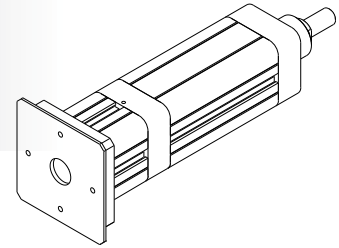
B00
MODULO BASE
BASIC MODULE



B00 + D00

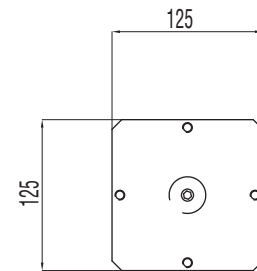
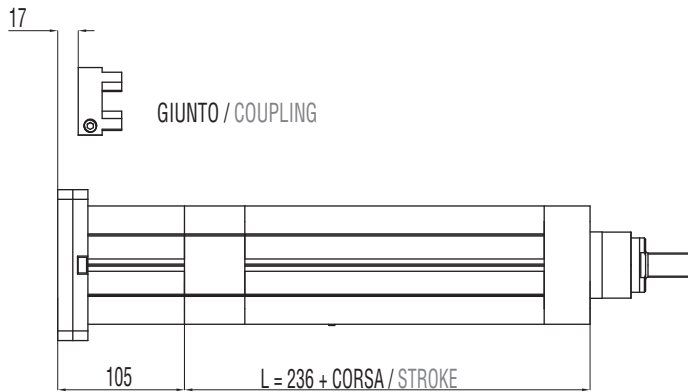
MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE CUSTOM
(SENZA RIDUTTORE)

**BASIC MODULE + CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE
FOR CUSTOM MOTORS**



| CxC | B | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|-----|---|---|-----------------|---------|
| | | A | B | C |
| | | [mm] | [mm] | [mm] |
| | | 30 max | 28 min / 50 max | 110 max |

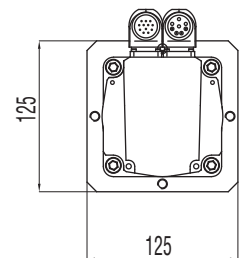
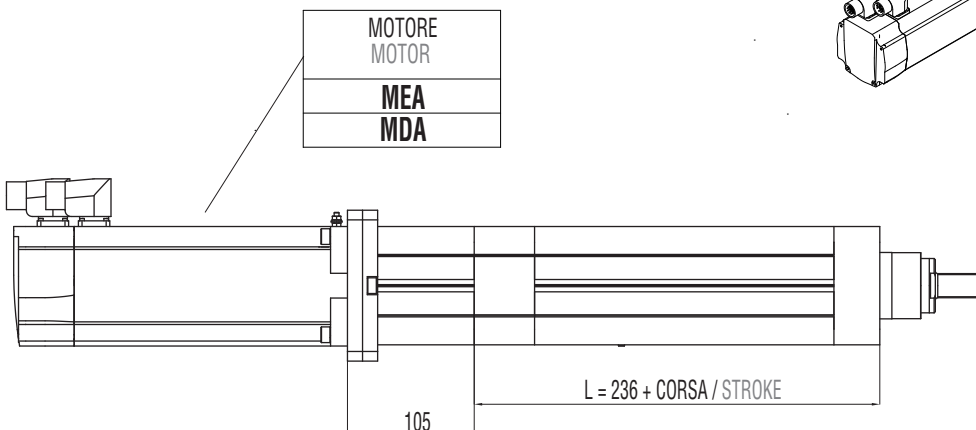
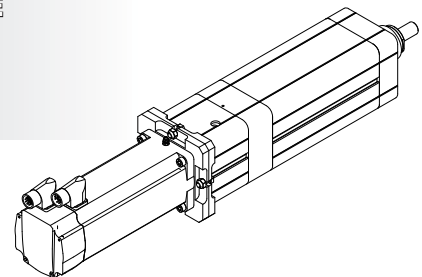
NOTA: Massima coppia in ingresso al giunto pari a 75 Nm.
REMARK: Max admissible input torque at coupling = 75 Nm.



B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

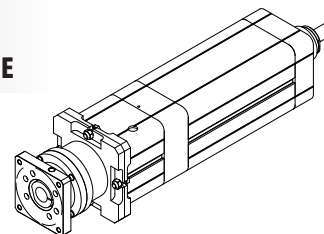
**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



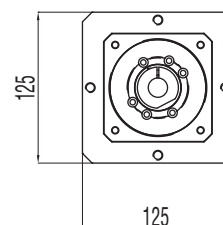
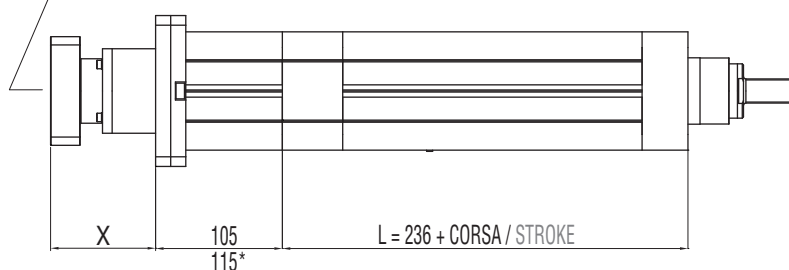
B00 + D02

MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE

BASIC MODULE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE



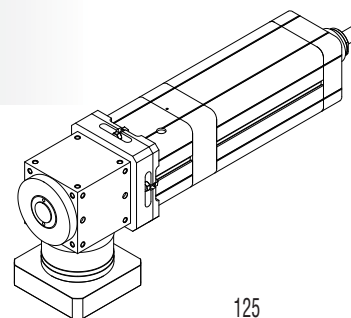
| |
|--------------------------------|
| RIDUTTORE PLANETARY GEARBOX |
| GCA |
| GDA |
| GCB |
| GEB* |



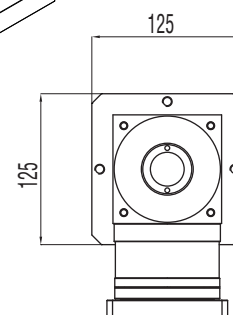
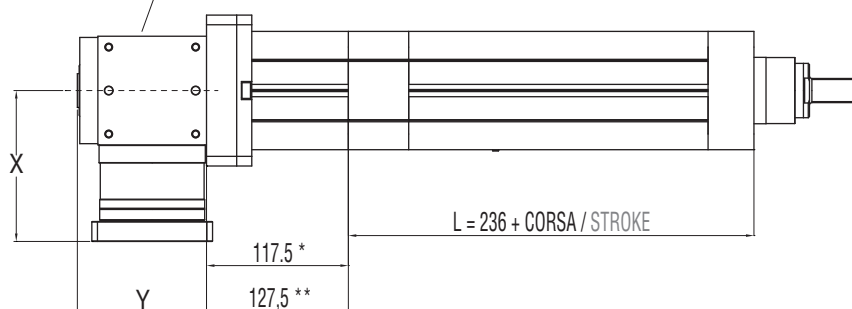
B00 + A01

MODULO BASE + RINVIO ANGOLARE COMPATIBILE

BASIC MODULE + COMPATIBLE ANGLE BEVEL GEARBOX STAGE



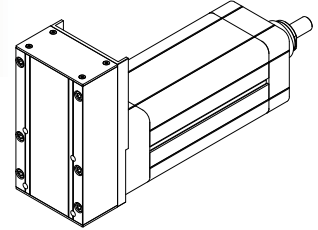
| |
|--|
| RINVIO ANGOLARE ANGLE BEVEL GEARBOX |
| ACA* |
| ADA** |



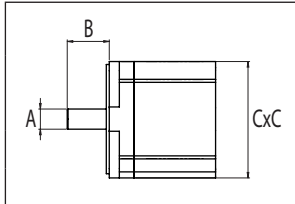
B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

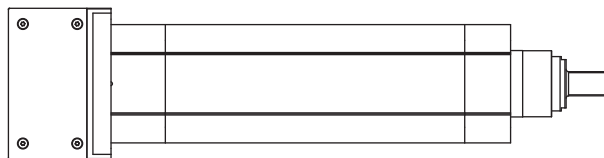
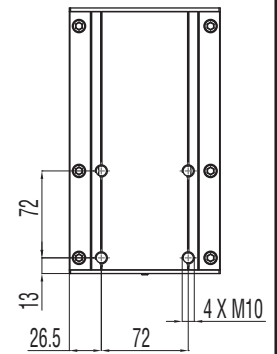
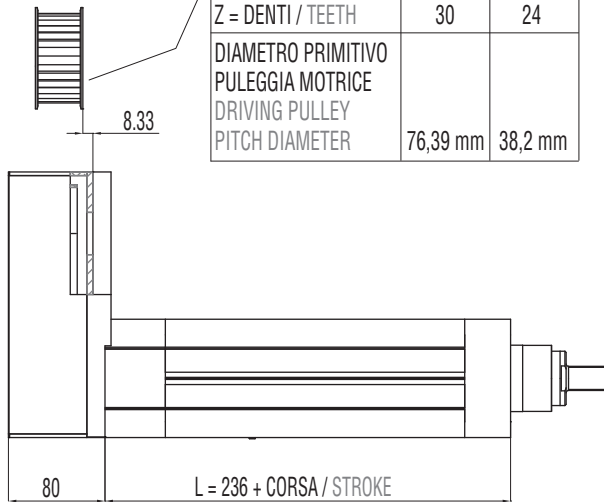
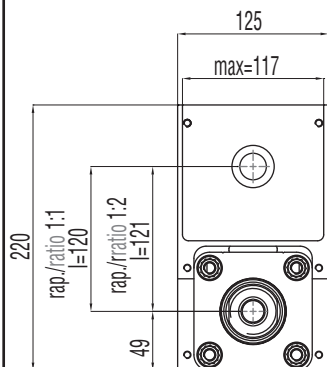
BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS



| | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|--------------|---|-----------------|---------|
| | A | B | C |
| | [mm] | [mm] | [mm] |
| R=1:1 | 24 max | 42 min / 58 max | 110 max |
| R=1:2 | 19 max | 36 min / 50 max | 110 max |



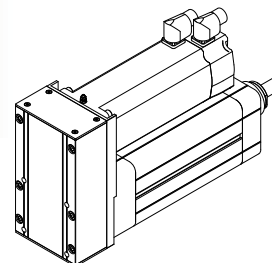
| | | |
|--|----------|---------|
| RAPPORTO / RATIO | 1:1 | 1:2 |
| PASSO / PITCH | 8 mm | 5 mm |
| Z = DENTI / TEETH | 30 | 24 |
| DIAMETRO PRIMITIVO PULEGGIA MOTRICE DRIVING PULLEY PITCH DIAMETER | 76,39 mm | 38,2 mm |



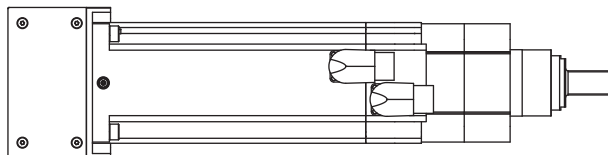
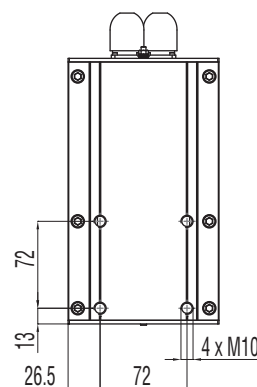
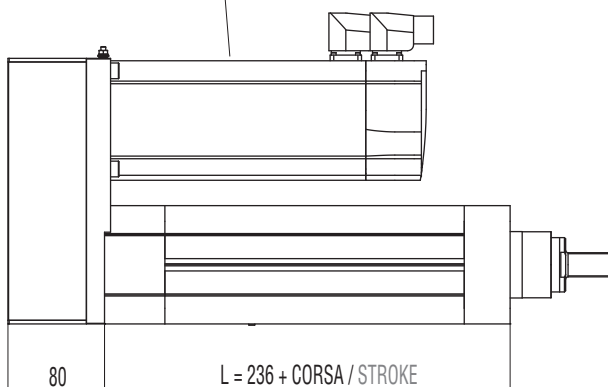
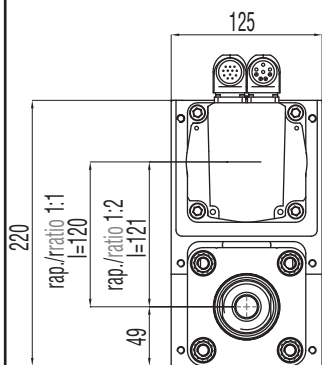
B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



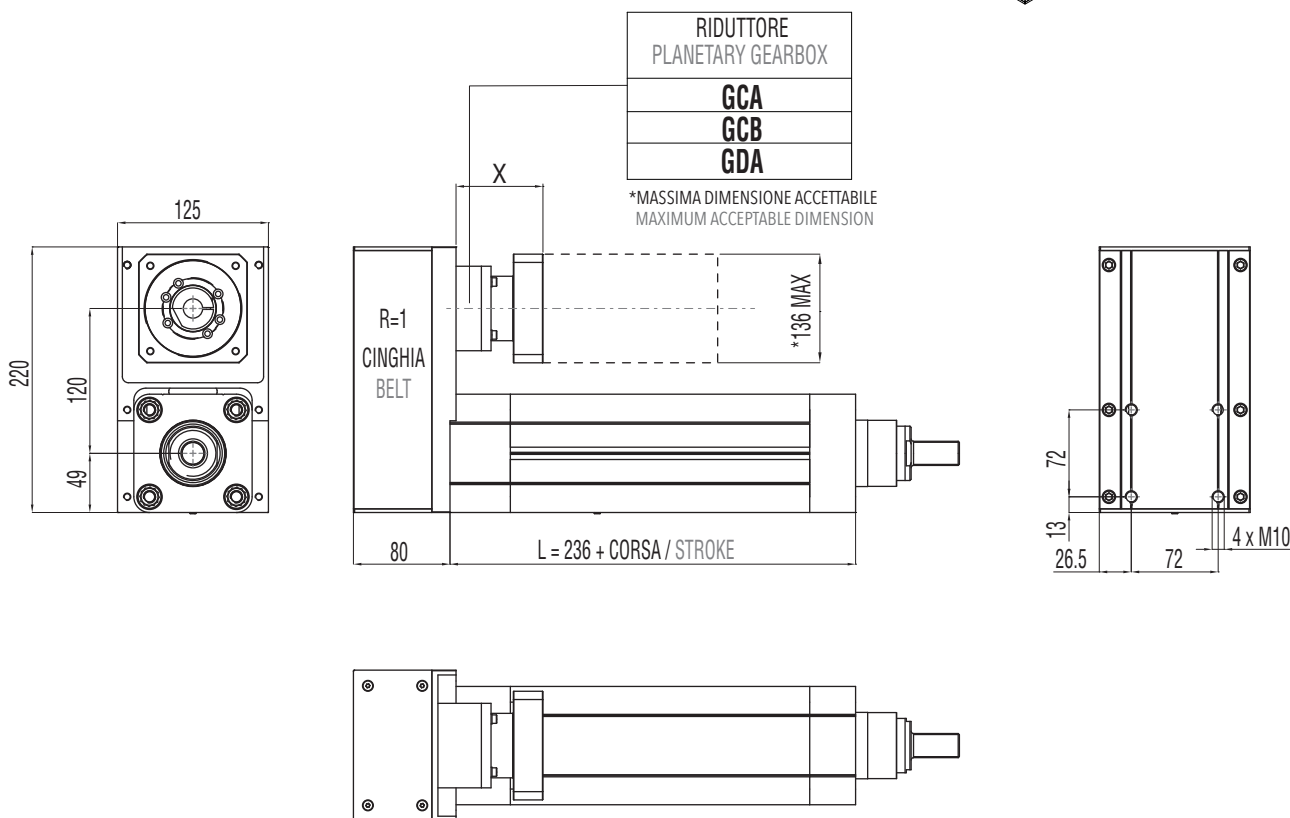
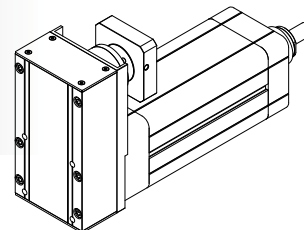
| |
|-----------------|
| MOTORE MOTOR |
| MCA |
| MCB |
| MCC |
| MCD |
| MDA |
| MDB |
| MDC |



B00 + R02

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO +
RIDUTTORE EPICICLOIDALE COMPATIBILE

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE +
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE**



3.6.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.6.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.7

IE 100

3.7.1 Caratteristiche tecniche

3.7.1 Technical features

| ISOMOVE IE 100 | | 5 | 10 | 20 | 32 |
|----------------------------|---|--|---------------------------------------|--------------------------------------|--------------------------------------|
| P | PASSO VITE SCREW LEAD [mm] | 5 | 10 | 20 | 32 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 32 | 32 | 32 | 32 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 21000* | 25000* | 30000* | 16000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 18,5 | 44,3 | 106 | 90,5 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 [Nm] | 18,5 | 44,3 | 106 | 90,5 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 [Nm] | $\left[\frac{20,5}{R} \right] + C_s$ | $\left[\frac{49,2}{R} \right] + C_s$ | $\left[\frac{117}{R} \right] + C_s$ | $\left[\frac{100}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | | | |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 [Nm] | $\frac{20,5}{R}$ | $\frac{49,2}{R}$ | $\frac{117}{R}$ | $\frac{100}{R}$ |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) | | | |
| | "CASO 4" / "CASE 4": B00 + R02 [Nm] | $\frac{22,7}{R}$ | $\frac{54,6}{R}$ | $\frac{130}{R}$ | $\frac{111}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | | | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 30000 | 30000 | 30000 | 30000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 250/3000 | 500/3000 | 1000/3000 | 1600/3000 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | 250/3000 | 500/3000 | 1000/3000 | 1600/3000 |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 1 | 2 | 3 | 5 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 1100** | 1100** | 1100** | 1100** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA [Kg] BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE | 7,1 / 2,3 | 7,1 / 2,3 | 7,1 / 2,3 | 7,1 / 2,3 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY mm | 0,06 | 0,06 | 0,06 | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | DISPONIBILE / AVAILABLE | | | |
| L_{10,Km} | DURATA LIFETIME Km | VEDI TABELLA / SEE TABLE pg. 100 | | | |






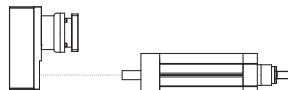

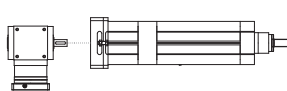
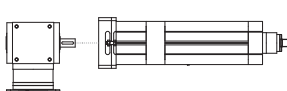
* Per le versioni R00/R01 controllare con i grafici delle pagine 102/103. / For R00/R01 types please check graph at pages 102/103.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

| ISOMOVE IE 100 | | 5 | 10 | 20 | 32 |
|--|--|--|--|--|--|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | D00 / D01 / D02 / R00 / R01 / R02 / A01 | | | |
| F_{a,p} | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX [N] | AE070/21000 AE090/21000 PGII-080/21000 PGII-120/21000 | AE070/18000 AE090/25000 PGII-080/25000 PGII-120/25000 | AE070/8800 *** AE090/21900*** PGII-080/14300 *** PGII-120/30000 | AE070/8800 *** AE090/21900*** PGII-080/14300 *** PGII-120/30000 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX [N] | ATB090/21000 ATB110/21000 | ATB090/21000*** ATB110/25000 | ATB090/4500 *** ATB110/11600 *** | ATB090/4500 *** ATB110/11600 *** |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | | | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

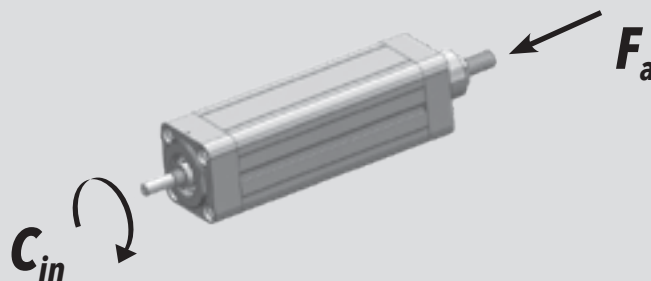
RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | | | | |
|---|---|--|---|--|
| <p>TRASMISSIONE COASSIALE CON RIDUTTORE IN-LINE PLANETARY GEARBOX STAGE</p> |  AE070 MODULO BASE BASIC MODULE |  AE090 MODULO BASE BASIC MODULE |  PGII-080 MODULO BASE BASIC MODULE |  PGII-120 MODULO BASE BASIC MODULE |
| <p>TRASMISSIONE PARALLELA CON RIDUTTORE PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE</p> |  AE070 MODULO BASE BASIC MODULE |  AE090 MODULO BASE BASIC MODULE |  PGII-080 MODULO BASE BASIC MODULE | |
| <p>TRASMISSIONE ANGOLARE CON RINVIO ANGLE BEVEL GEARBOX STAGE</p> |  ATB090 MODULO BASE BASIC MODULE |  ATB110 MODULO BASE BASIC MODULE | | |

3.7.2 Calcolo durata

3.7.2 Lifetime calculation



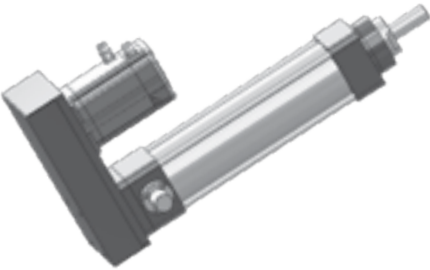
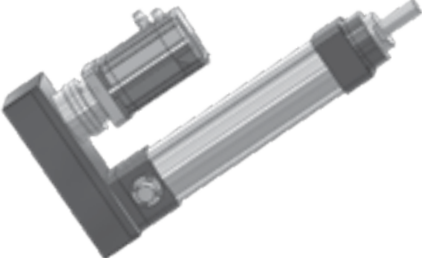
| | | |
|-----------------------------------|--|--------------------------------------|
| IE 100 P = 5 mm | $L_{10,Km} = \left[\frac{23900}{F_{eq}} \right]^3 \cdot 5$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 100 P = 10 mm | $L_{10,Km} = \left[\frac{31500}{F_{eq}} \right]^3 \cdot 10$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 100 P = 20 mm | $L_{10,Km} = \left[\frac{39300}{F_{eq}} \right]^3 \cdot 20$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 100 P = 32 mm | $L_{10,Km} = \left[\frac{18200}{F_{eq}} \right]^3 \cdot 32$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |

3.7.3 Calcolo coppia in ingresso
al modulo base3.7.3 Torque calculation at basic
module input shaft

| | | |
|-----------------------------------|---|--------------------------------|
| IE 100 P = 5 mm | $C_{in} = \left[\frac{F_a \cdot 5}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 100 P = 10 mm | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 100 P = 20 mm | $C_{in} = \left[\frac{F_a \cdot 20}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 100 P = 32 mm | $C_{in} = \left[\frac{F_a \cdot 32}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |

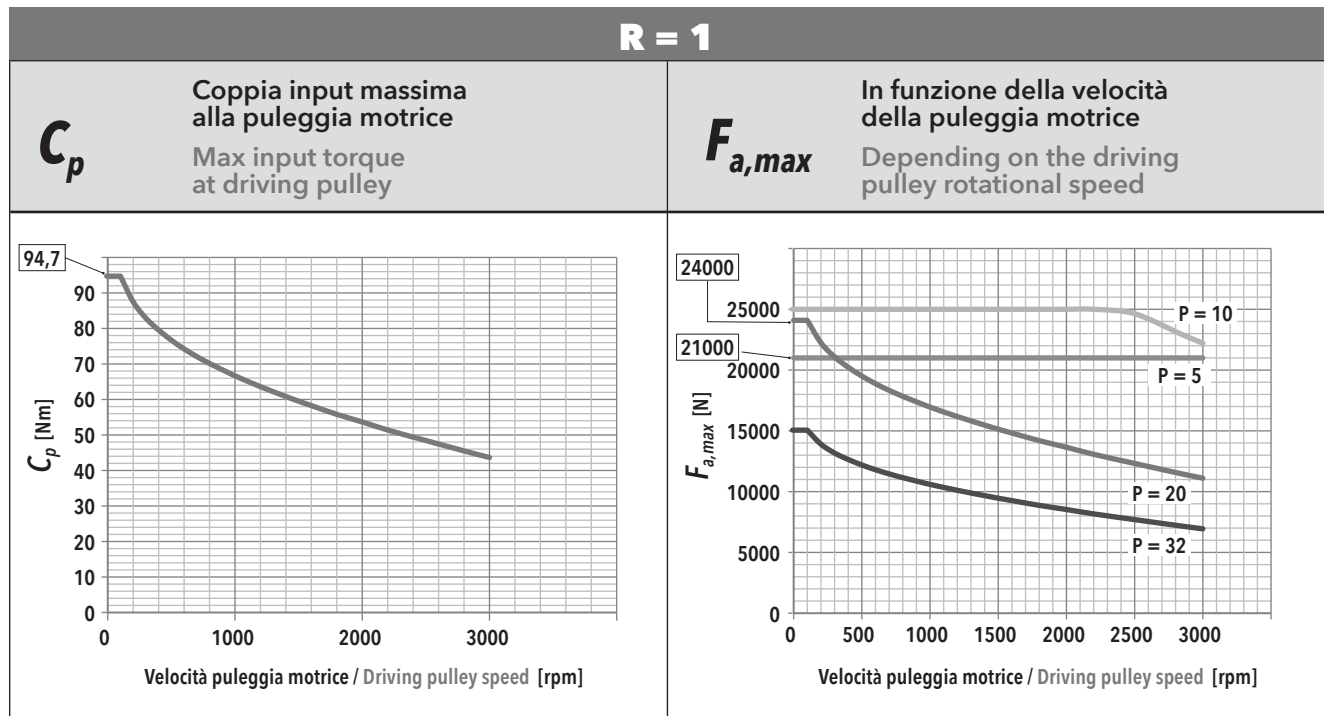
3.7.4 Calcolo coppia motore

3.7.4 Motor torque calculation

| | |
|---------------------------------|---|
| <p>CASO / CASE 1</p> | <p>ISOMOVE B00 + D00 / D01</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE 2</p> | <p>ISOMOVE B00 + D02 / A01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p><i>R</i> = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio <i>η</i> = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 3</p> | <p>ISOMOVE B00 + R00 / R01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p><i>R</i> = rapporto di riduzione trasmissione a cinghia, disponibile R=1 o R=2 belt gearbox reduction ratio, available R=1 or R=2 <i>η</i> = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 4</p> | <p>ISOMOVE B00 + R02</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p><i>R</i> = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio <i>η</i> = rendimento meccanico / mechanical efficiency = 0,81</p> |

3.7.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

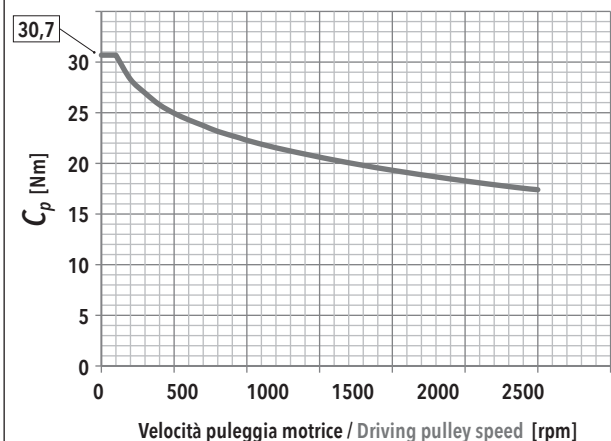
3.7.5 Mechanical input power at belt gear stage (R type)



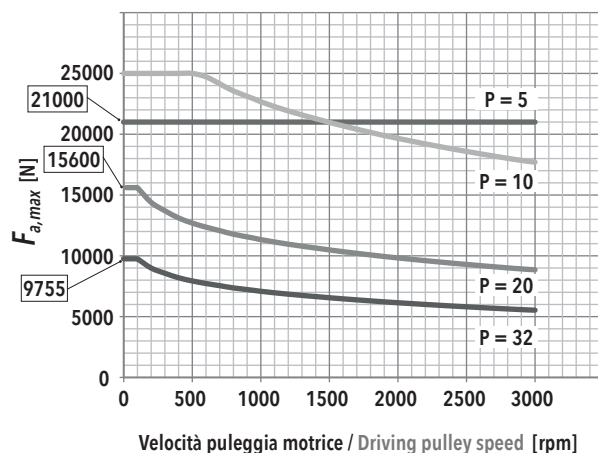
| IE 100 - PASSO / PITCH 5 | | | | | IE 100 - PASSO / PITCH 10 | | | | | IE 100 - PASSO / PITCH 20 | | | | | IE 100 - PASSO / PITCH 32 | | | | | | | | |
|--------------------------|------------|------------------|-----|-----|---------------------------|-----------|------------|------------------|------|---------------------------|-------|------------|------------|------------------|---------------------------|------|-------|-----------|-----------|------------------|------------|------|------|
| F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | | F_a [N] | | V_{out} [mm/s] | | | |
| | | 25 | 100 | 175 | 250 | | | 50 | 200 | 350 | 500 | | | 100 | 400 | 700 | 1000 | | | 160 | 640 | 1120 | 1600 |
| 21000 | F_r [N] | 616 | 622 | 634 | 652 | 25000 | F_r [N] | 1467 | 1469 | 1473 | 30000 | F_r [N] | | | | | 16000 | F_r [N] | | | | | |
| | f_t [Hz] | 207 | 208 | 210 | 213 | | f_t [Hz] | 320 | 320 | 320 | | f_t [Hz] | | | | | | | | f_t [Hz] | | | |
| 18900 | F_r [N] | 555 | 560 | 572 | 590 | 22500 | F_r [N] | 1321 | 1322 | 1326 | 1356 | 27000 | F_r [N] | | | | | 14400 | F_r [N] | | | | |
| | f_t [Hz] | 197 | 198 | 200 | 203 | | f_t [Hz] | 303 | 304 | 304 | 307 | | f_t [Hz] | | | | | | | | F_r [N] | 2404 | |
| 16800 | F_r [N] | 493 | 499 | 510 | 529 | 20000 | F_r [N] | 1174 | 1176 | 1179 | 1209 | 24000 | F_r [N] | | | | | 12800 | F_r [N] | | | | |
| | f_t [Hz] | 185 | 186 | 189 | 192 | | f_t [Hz] | 286 | 286 | 287 | 290 | | f_t [Hz] | | | | | | | | f_t [Hz] | 409 | |
| 14700 | F_r [N] | 432 | 437 | 449 | 467 | 17500 | F_r [N] | 1027 | 1029 | 1033 | 1063 | 21000 | F_r [N] | 2465 | | | | 11200 | F_r [N] | 2103 | | | |
| | f_t [Hz] | 173 | 175 | 177 | 180 | | f_t [Hz] | 268 | 268 | 268 | 272 | | f_t [Hz] | 415 | | | | | | | f_t [Hz] | 383 | |
| 12600 | F_r [N] | 370 | 375 | 387 | 406 | 15000 | F_r [N] | 881 | 882 | 886 | 916 | 18000 | F_r [N] | 2113 | 2118 | | | 9600 | F_r [N] | 1803 | 1808 | | |
| | f_t [Hz] | 161 | 162 | 164 | 168 | | f_t [Hz] | 248 | 248 | 249 | 253 | | f_t [Hz] | 384 | 384 | | | | | | f_t [Hz] | 355 | 355 |
| 10500 | F_r [N] | 308 | 314 | 326 | 344 | 12500 | F_r [N] | 734 | 736 | 739 | 769 | 15000 | F_r [N] | 1761 | 1766 | 1768 | | 8000 | F_r [N] | 1502 | 1508 | 1520 | |
| | f_t [Hz] | 147 | 148 | 151 | 155 | | f_t [Hz] | 226 | 226 | 227 | 232 | | f_t [Hz] | 350 | 351 | 351 | | | | | f_t [Hz] | 324 | 324 |
| 8400 | F_r [N] | 247 | 252 | 264 | 282 | 10000 | F_r [N] | 587 | 589 | 593 | 623 | 12000 | F_r [N] | 1409 | 1414 | 1416 | 1444 | 6400 | F_r [N] | 1202 | 1207 | 1219 | 1238 |
| | f_t [Hz] | 131 | 133 | 136 | 140 | | f_t [Hz] | 202 | 203 | 203 | 208 | | f_t [Hz] | 313 | 314 | 314 | 317 | | | | f_t [Hz] | 289 | 290 |
| 6300 | F_r [N] | 185 | 191 | 202 | 221 | 7500 | F_r [N] | 440 | 442 | 446 | 476 | 9000 | F_r [N] | 1057 | 1062 | 1064 | 1092 | 4800 | F_r [N] | 902 | 907 | 919 | 937 |
| | f_t [Hz] | 114 | 115 | 119 | 124 | | f_t [Hz] | 175 | 176 | 176 | 182 | | f_t [Hz] | 271 | 272 | 272 | 276 | | | | f_t [Hz] | 251 | 251 |
| 4200 | F_r [N] | 124 | 129 | 141 | 159 | 5000 | F_r [N] | 294 | 296 | 299 | 329 | 6000 | F_r [N] | 704 | 710 | 712 | 740 | 3200 | F_r [N] | 601 | 607 | 618 | 637 |
| | f_t [Hz] | 93 | 95 | 99 | 105 | | f_t [Hz] | 143 | 144 | 144 | 152 | | f_t [Hz] | 222 | 222 | 223 | 227 | | | | f_t [Hz] | 205 | 206 |
| 2100 | F_r [N] | 62 | 67 | 79 | 97 | 2500 | F_r [N] | 147 | 149 | 152 | 183 | 3000 | F_r [N] | 352 | 358 | 360 | 388 | 1600 | F_r [N] | 301 | 306 | 318 | 336 |
| | f_t [Hz] | 66 | 69 | 74 | 82 | | f_t [Hz] | 101 | 102 | 103 | 113 | | f_t [Hz] | 157 | 158 | 158 | 164 | | | | f_t [Hz] | 145 | 146 |

R = 2

C_p Coppia input massima alla puleggia motrice
Max input torque at driving pulley



$F_{a,max}$ In funzione della velocità della puleggia motrice
Depending on the driving pulley rotational speed



F_r Forza radiale su asse puleggia motrice in funzione di Cin
Radial force on driving pulley as a function of Cin

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 100 - PASSO / PITCH 5 | | | | | |
|--------------------------|------------|------------------|-----|------|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 12,5 | 50 | 87,5 | 125 |
| 21000 | F_r [N] | 635 | 637 | 638 | 641 |
| | f_t [Hz] | 256 | 256 | 257 | 257 |
| 18900 | F_r [N] | 572 | 574 | 576 | 578 |
| | f_t [Hz] | 243 | 243 | 244 | 244 |
| 16800 | F_r [N] | 508 | 510 | 512 | 514 |
| | f_t [Hz] | 229 | 229 | 230 | 230 |
| 14700 | F_r [N] | 445 | 448 | 450 | 451 |
| | f_t [Hz] | 214 | 214 | 216 | 216 |
| 12600 | F_r [N] | 381 | 384 | 386 | 387 |
| | f_t [Hz] | 198 | 198 | 200 | 200 |
| 10500 | F_r [N] | 318 | 320 | 322 | 324 |
| | f_t [Hz] | 181 | 181 | 182 | 183 |
| 8400 | F_r [N] | 254 | 254 | 260 | 260 |
| | f_t [Hz] | 162 | 162 | 164 | 164 |
| 6300 | F_r [N] | 191 | 194 | 196 | 197 |
| | f_t [Hz] | 140 | 140 | 142 | 142 |
| 4200 | F_r [N] | 127 | 130 | 131 | 133 |
| | f_t [Hz] | 114 | 114 | 117 | 117 |
| 2100 | F_r [N] | 64 | 66 | 68 | 70 |
| | f_t [Hz] | 81 | 81 | 85 | 85 |

| IE 100 - PASSO / PITCH 10 | | | | | |
|---------------------------|------------|------------------|------|------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 25 | 100 | 175 | 250 |
| 25000 | F_r [N] | 1512 | | | |
| | f_t [Hz] | 395 | | | |
| 22500 | F_r [N] | 1361 | 1362 | | |
| | f_t [Hz] | 375 | 375 | | |
| 20000 | F_r [N] | 1210 | 1211 | 1213 | |
| | f_t [Hz] | 353 | 353 | 354 | |
| 17500 | F_r [N] | 1059 | 1061 | 1063 | 1065 |
| | f_t [Hz] | 330 | 330 | 331 | 331 |
| 15000 | F_r [N] | 907 | 910 | 911 | 913 |
| | f_t [Hz] | 306 | 306 | 307 | 307 |
| 12500 | F_r [N] | 756 | 758 | 760 | 762 |
| | f_t [Hz] | 279 | 279 | 280 | 280 |
| 10000 | F_r [N] | 605 | 608 | 610 | 611 |
| | f_t [Hz] | 250 | 250 | 251 | 251 |
| 7500 | F_r [N] | 454 | 456 | 458 | 460 |
| | f_t [Hz] | 216 | 216 | 218 | 218 |
| 5000 | F_r [N] | 303 | 306 | 307 | 309 |
| | f_t [Hz] | 177 | 177 | 178 | 178 |
| 2500 | F_r [N] | 151 | 153 | 155 | 157 |
| | f_t [Hz] | 125 | 125 | 127 | 127 |

| IE 100 - PASSO / PITCH 20 | | | | | |
|---------------------------|------------|------------------|------|------|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 50 | 200 | 350 | 500 |
| 30000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 27000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 24000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 21000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 18000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 15000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 12000 | F_r [N] | 1452 | | | |
| | f_t [Hz] | 387 | | | |
| 9000 | F_r [N] | 1089 | 1090 | 1092 | |
| | f_t [Hz] | 335 | 335 | 336 | |
| 6000 | F_r [N] | 726 | 727 | 729 | 732 |
| | f_t [Hz] | 274 | 274 | 274 | 275 |
| 3000 | F_r [N] | 363 | 364 | 366 | 369 |
| | f_t [Hz] | 193 | 194 | 194 | 195 |

| IE 100 - PASSO / PITCH 32 | | | | | |
|---------------------------|------------|------------------|------|------|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 80 | 320 | 560 | 800 |
| 16000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 14400 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 12800 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 11200 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 9600 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 8000 | F_r [N] | | 1549 | | |
| | f_t [Hz] | | 400 | | |
| 6400 | F_r [N] | | 1239 | 1240 | |
| | f_t [Hz] | | 357 | 358 | |
| 4800 | F_r [N] | 929 | 930 | 932 | 935 |
| | f_t [Hz] | 310 | 310 | 310 | 311 |
| 3200 | F_r [N] | 619 | 620 | 622 | 626 |
| | f_t [Hz] | 253 | 253 | 253 | 254 |
| 1600 | F_r [N] | 310 | 311 | 313 | 316 |
| | f_t [Hz] | 179 | 179 | 180 | 180 |

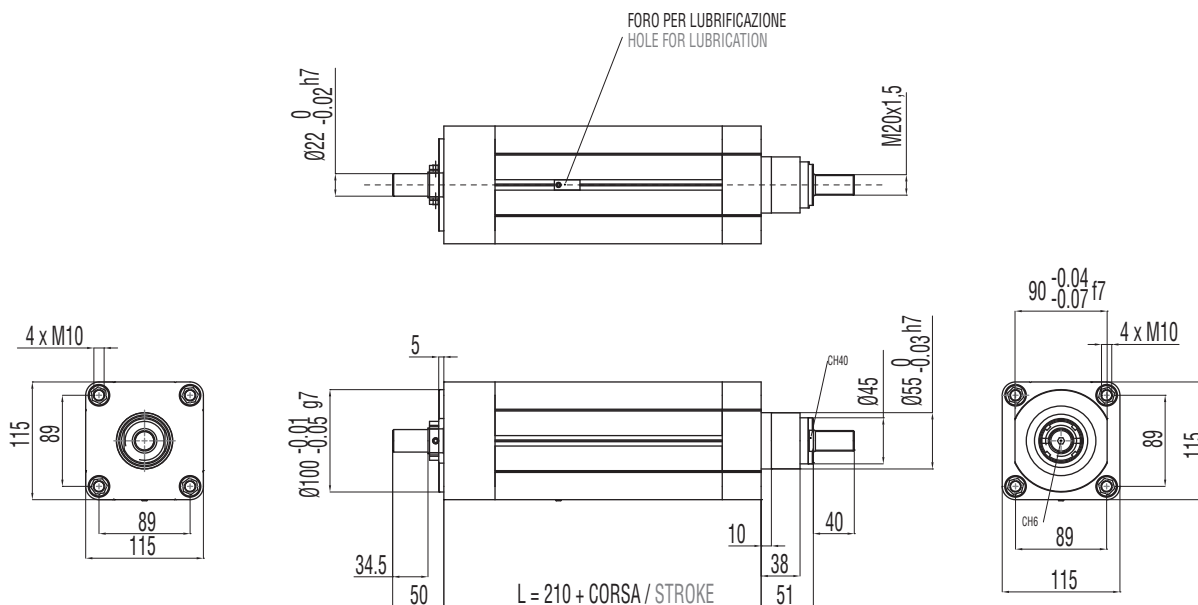
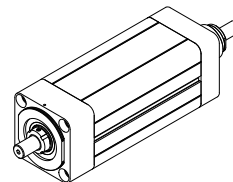
3.7.6 Caratteristiche dimensionali

3.7.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvii al capitolo 4.

REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.

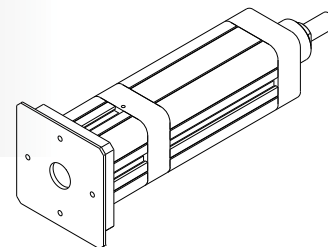
B00
MODULO BASE
BASIC MODULE



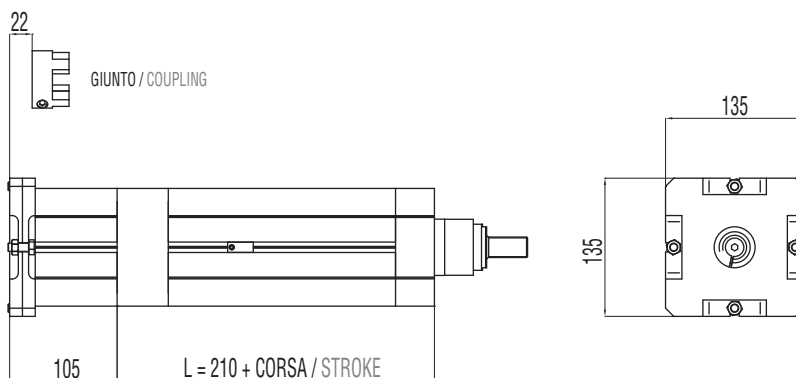
B00 + D00

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE CUSTOM
(SENZA RIDUTTORE)

**BASIC MODULE + CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE
FOR CUSTOM MOTORS**



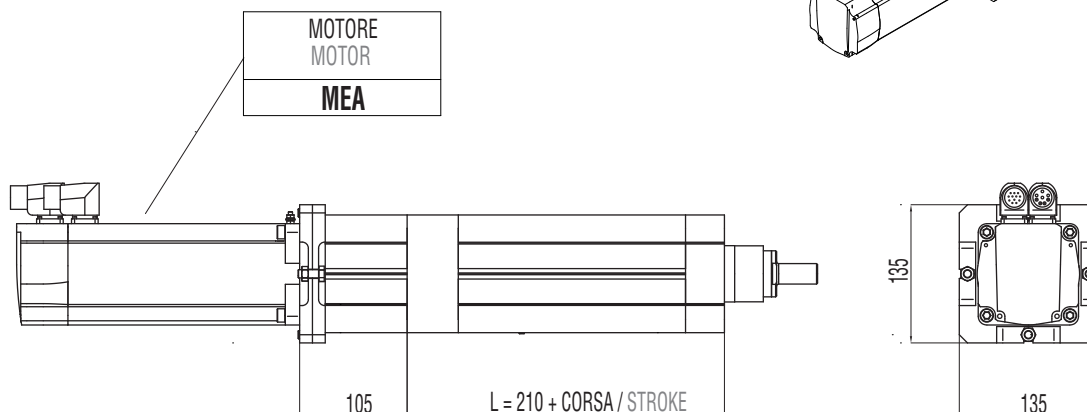
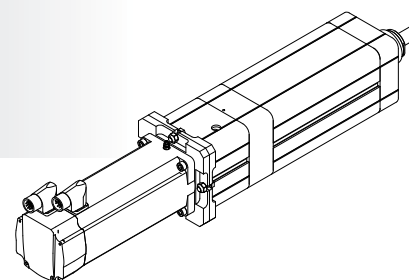
| Cx C | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|------|---|-----------------|-----------|
| | TAGLIA GIUNTO COUPLING SIZE | A [mm] | B [mm] |
| 150 | 30 max | 40 min / 52 max | 130 max |



B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

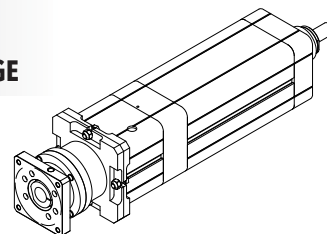
**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



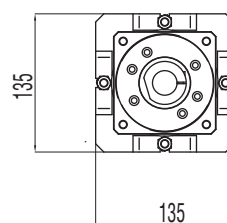
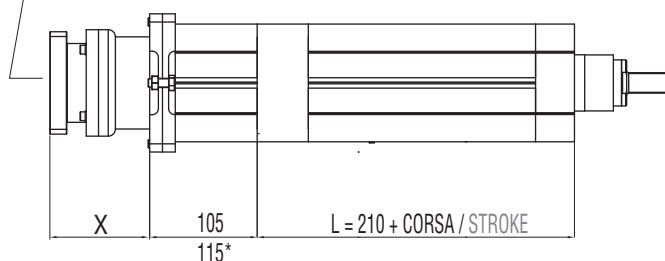
B00 + D02

MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE

BASIC MODULE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE



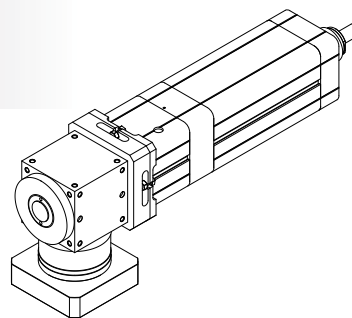
| |
|--------------------------------|
| RIDUTTORE PLANETARY GEARBOX |
| GCA |
| GDA |
| GCB |
| GEB* |



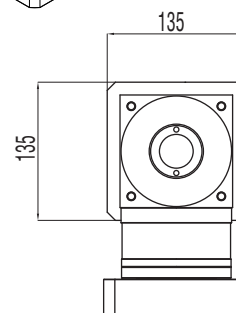
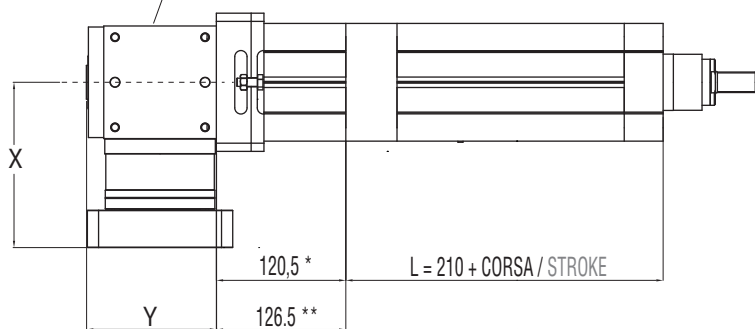
B00 + A01

MODULO BASE + RINVIO ANGOLARE COMPATIBILE

BASIC MODULE + COMPATIBLE ANGLE BEVEL GEARBOX STAGE



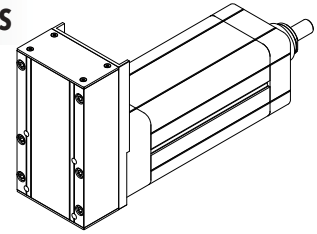
| |
|--|
| RINVIO ANGOLARE ANGLE BEVEL GEARBOX |
| ACA* |
| ADA** |



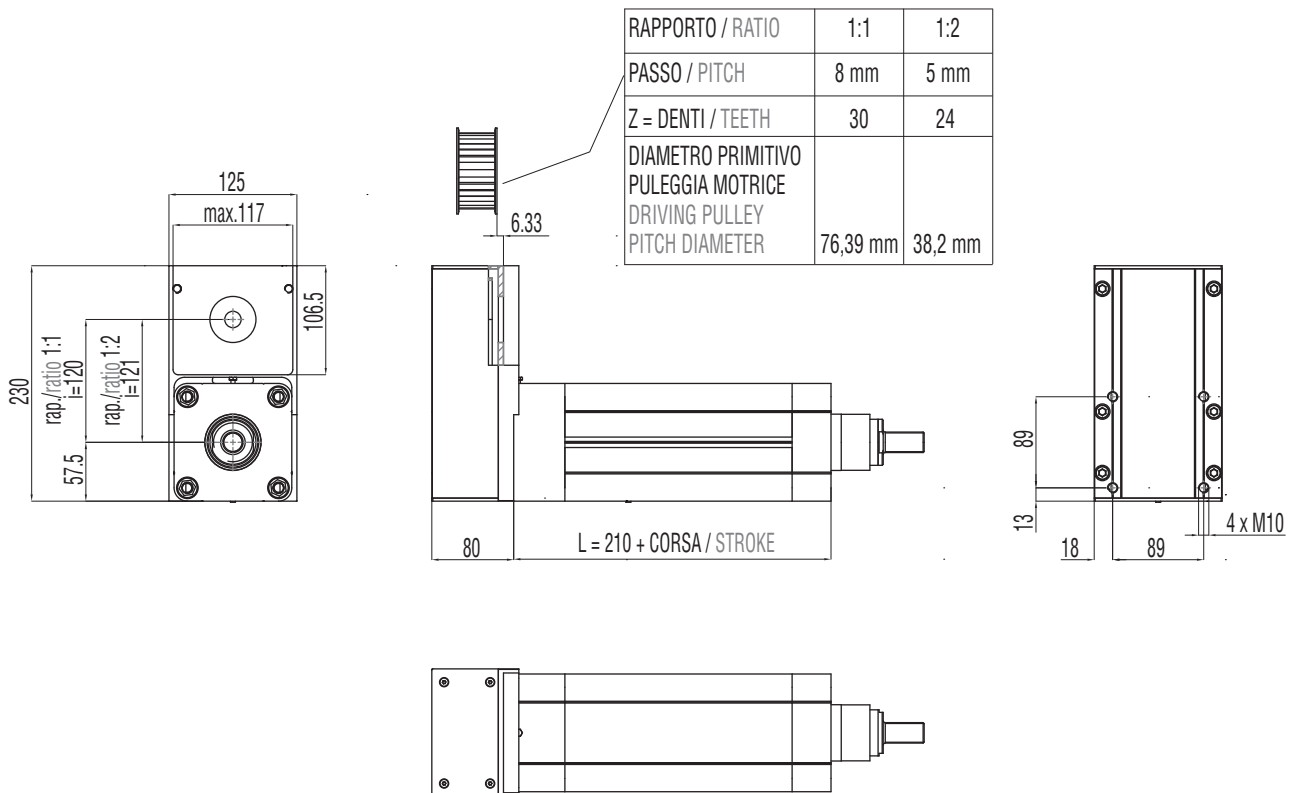
B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS



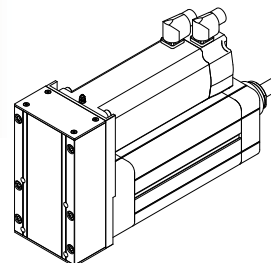
| | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | |
|-------|---|-----------------|-----------|
| | A [mm] | B [mm] | C [mm] |
| R=1:1 | 24 max | 42 min / 58 max | 110 max |
| R=1:2 | 19 max | 36 min / 50 max | 110 max |



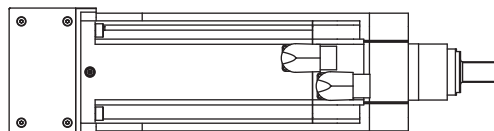
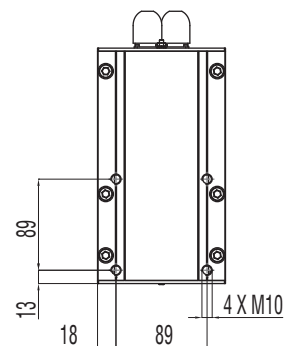
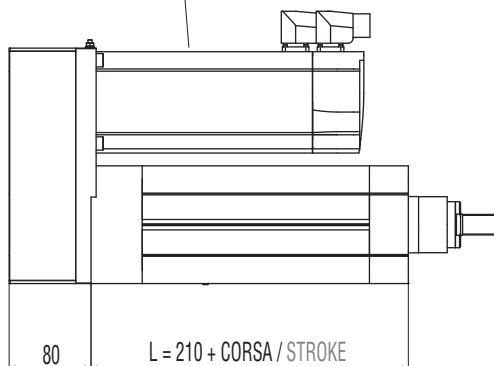
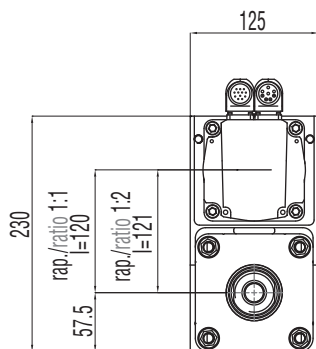
B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



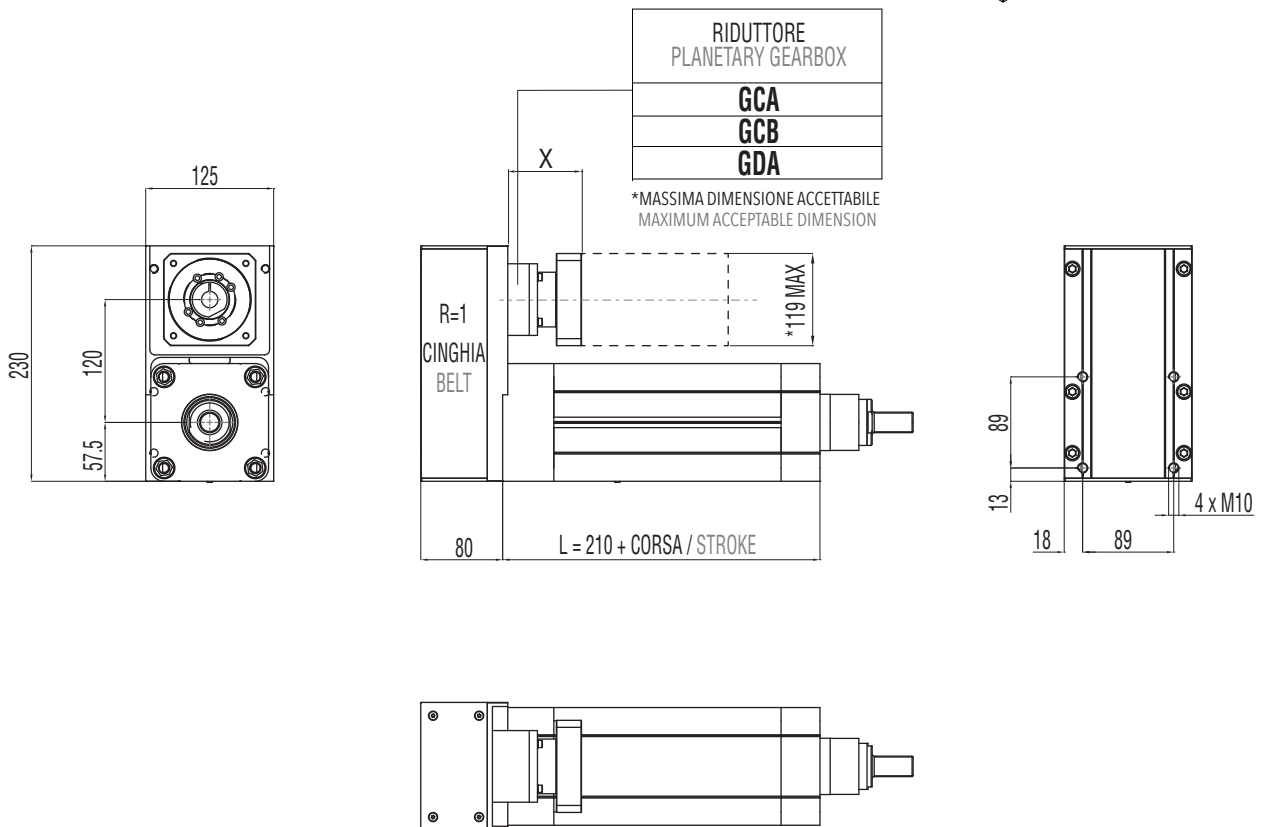
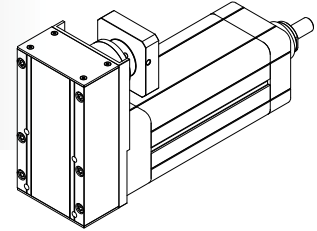
| MOTORE MOTOR |
|-----------------|
| MEA |
| MCA |
| MCB |
| MCC |
| MCD |
| MDA |
| MDB |
| MDC |



B00 + R02

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO +
RIDUTTORE EPICICLOIDALE COMPATIBILE

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE +
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE**



3.7.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.7.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.8

IE 100 HL

3.8.1 Caratteristiche tecniche

3.8.1 Technical features

| ISOMOVE IE 100 HL SENZA TIRANTI ISOMOVE IE 100 HL W/O TENSION RODS | | 5 | 10 | 20 | 40 |
|---|---|--|---------------------------------------|--|--|
| P | PASSO VITE SCREW LEAD [mm] | 5 | 10 | 20 | 40 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 40 | 40 | 40 | 40 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 23000* | 30000* | 30000* | 30000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 20,3 | 53 | 106 | 212 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 [Nm] | 20,3 | 53 | 106 | 212 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 [Nm] | $\left[\frac{22,5}{R} \right] + C_s$ | $\left[\frac{58,8}{R} \right] + C_s$ | $\left[\frac{117,7}{R} \right] + C_s$ | $\left[\frac{235,5}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | | | |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 [Nm] | $\frac{22,5}{R}$ | $\frac{58,8}{R}$ | $\frac{117,7}{R}$ | $\frac{235,5}{R}$ |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) | | | |
| | "CASO 4" / "CASE 4": B00 + R02 [Nm] | $\frac{25}{R}$ | $\frac{65,3}{R}$ | $\frac{130,7}{R}$ | $\frac{261,6}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | | | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 30000 | 30000 | 30000 | 30000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 208/2496 | 416/2496 | 833/2496 | 1660/2490 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | | | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 1 | 2 | 3 | 6 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 1100** | 1100** | 1100** | 1100** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA [Kg] | 9,3 / 2,9 | 9,3 / 2,9 | 9,3 / 2,9 | 9,3 / 2,9 |
| | BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE | | | | |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY mm | 0,06 | 0,06 | 0,06 | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | DISPONIBILE / AVAILABLE | | | |
| L_{10,Km} | DURATA LIFETIME Km | VEDI TABELLA / SEE TABLE pg. 114 | | | |



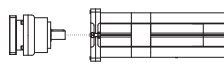
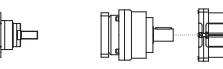
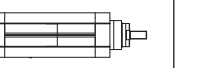


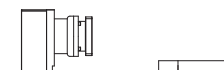


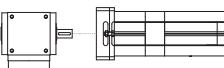
* Per le versioni R00/R01 controllare con i grafici delle pagine 116/117. / For R00/R01 types please check graph at pages 116/117.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dept.

| ISOMOVE IE 100 HL SENZA TIRANTI ISOMOVE IE 100 HL W/O TENSION RODS | | 5 | 10 | 20 | 40 |
|---|--|---|---|---|---|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | D00 / D01 / D02 / R00 / R01 / R02 / A01 | | | |
| F_{a,p} | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX [N] | AE070/23000 AE090/23000 AE120/23000 PGII-080/23000 PGII-120/23000 | AE070/21750*** AE090/30000 AE120/30000 PGII-080/28000*** PGII-120/30000 | AE070/8800*** AE090/21900*** AE120/30000 PGII-080/14300*** PGII-120/30000 | AE070/4400*** AE090/11000*** AE120/23000*** PGII-080/7150*** PGII-120/16500 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX [N] | ATB090/23000 ATB110/23000 ATB140/23000 | ATB090/18650*** ATB110/30000 ATB140/30000 | ATB090/9350*** ATB110/18630*** ATB140/20000*** | ATB090/4390*** ATB110/18630*** ATB140/21540*** |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) | | | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | | | | | |
|---|--|--|---|--|--|
| TRASMISSIONE COASSIALE CON RIDUTTORE IN-LINE PLANETARY GEARBOX STAGE |  AE070 |  AE090 |  AE120 |  PGII-080 |  PGII-120 |
| | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE |
| TRASMISSIONE PARALLELA CON RIDUTTORE PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE |  AE070 |  AE090 |  PGII-080 | | |
| | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE |
| TRASMISSIONE ANGOLARE CON RINVIO ANGLE BEVEL GEARBOX STAGE |  ATB090 |  ATB110 |  ATB140 | | |
| | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE |

| ISOMOVE IE 100 HL CON TIRANTI ISOMOVE IE 100 HL WITH TENSION RODS | | | 5 | 10 | 20 | 40 |
|--|--|-----------------------|--|---------------------------------------|--|--|
| P | PASSO VITE SCREW LEAD | [mm] | 5 | 10 | 20 | 40 |
| D | DIAMETRO VITE SCREW DIAMETER | [mm] | 40 | 40 | 40 | 40 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 23000* | 41000* | 40000* | 40000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET | [Nm] | 20,3 | 72,5 | 142 | 283 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 | [Nm] | 20,3 | 72,5 | 142 | 283 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 | [Nm] | $\left[\frac{22,5}{R} \right] + C_s$ | $\left[\frac{80,5}{R} \right] + C_s$ | $\left[\frac{117,7}{R} \right] + C_s$ | $\left[\frac{235,5}{R} \right] + C_s$ |
| | | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | | | |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 | [Nm] | $\frac{22,5}{R}$ | $\frac{80,5}{R}$ | $\frac{117,7}{R}$ | $\frac{235,5}{R}$ |
| | | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) | | | |
| | "CASO 4" / "CASE 4": B00 + R02 | [Nm] | $\frac{25}{R}$ | $\frac{89}{R}$ | $\frac{130,7}{R}$ | $\frac{261,6}{R}$ |
| | | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | | | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD | [N] | 41000 | 41000 | 40000 | 40000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS | [mm/sec] | 208/2496 | 416/2496 | 833/2496 | 1660/2490 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED | [rpm] | | | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION | [m/sec ²] | 1 | 2 | 3 | 6 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE | [mm] | 1100** | 1100** | 1100** | 1100** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE | [Kg] | 9,6 / 4,2 | 9,6 / 4,2 | 9,6 / 4,2 | 9,6 / 4,2 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY | mm | 0,06 | 0,06 | 0,06 | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | | DISPONIBILE / AVAILABLE | | | |
| L_{10,Km} | DURATA LIFETIME | Km | VEDI TABELLA / SEE TABLE pg. 114 | | | |
















* Per le versioni R00/R01 controllare con i grafici delle pagine 116/117. / For R00/R01 types please check graph at pages 116/117.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

| ISOMOVE IE 100 HL CON TIRANTI ISOMOVE IE 100 HL WITH TENSION RODS | | 5 | 10 | 20 | 40 |
|--|--|---|---|---|---|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | D00 / D01 / D02 / R00 / R01 / R02 / A01 | | | |
| F_{a,p} | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX [N] | AE070/23000 AE090/23000 AE120/23000 PGII-080/23000 PGII-120/23000 | AE070/21750*** AE090/30000 AE120/30000 PGII-080/28000*** PGII-120/30000 | AE070/8800*** AE090/21900*** AE120/30000 PGII-080/14300*** PGII-120/30000 | AE070/4400*** AE090/11000*** AE120/23000*** PGII-080/7150*** PGII-120/16500 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX [N] | ATB090/23000 ATB110/23000 ATB140/23000 | ATB090/18650*** ATB110/30000 ATB140/30000 | ATB090/9350*** ATB110/18630*** ATB140/20000*** | ATB090/4390*** ATB110/18630*** ATB140/21540*** |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 134) | | | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

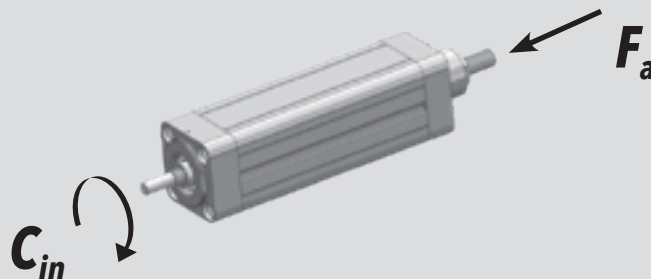
RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | | | | | |
|---|--|--|--|--|--|
| TRASMISSIONE COASSIALE CON RIDUTTORE IN-LINE PLANETARY GEARBOX STAGE |  AE070 |  AE090 |  AE120 |  PGII-080 |  PGII-120 |
| | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE |
| TRASMISSIONE PARALLELA CON RIDUTTORE PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE |  AE070 |  AE090 |  PGII-080 |  AE070 |  AE090 |
| | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE |
| TRASMISSIONE ANGOLARE CON RINVIO ANGLE BEVEL GEARBOX STAGE |  ATB090 |  ATB110 |  ATB140 |  ATB090 |  ATB110 |
| | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE | | MODULO BASE BASIC MODULE |

3.8.2 Calcolo durata

3.8.2 Lifetime calculation



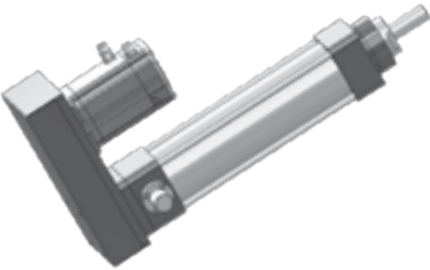
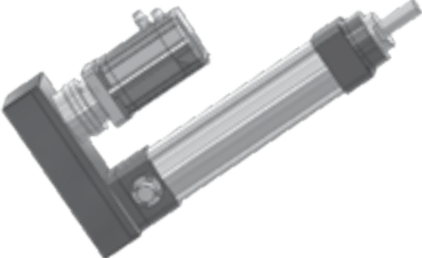
| | | |
|--------------------------------------|--|--------------------------------------|
| IE 100 HL P = 5 mm | $L_{10,Km} = \left[\frac{25900}{F_{eq}} \right]^3 \cdot 5$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 100 HL P = 10 mm | $L_{10,Km} = \left[\frac{59200}{F_{eq}} \right]^3 \cdot 10$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 100 HL P = 20 mm | $L_{10,Km} = \left[\frac{59200}{F_{eq}} \right]^3 \cdot 20$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 100 HL P = 40 mm | $L_{10,Km} = \left[\frac{59200}{F_{eq}} \right]^3 \cdot 40$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |

3.8.3 Calcolo coppia in ingresso
al modulo base3.8.3 Torque calculation at basic
module input shaft

| | | |
|--------------------------------------|---|--------------------------------|
| IE 100 HL P = 5 mm | $C_{in} = \left[\frac{F_a \cdot 5}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 100 HL P = 10 mm | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 100 HL P = 20 mm | $C_{in} = \left[\frac{F_a \cdot 20}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 100 HL P = 40 mm | $C_{in} = \left[\frac{F_a \cdot 40}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |

3.8.4 Calcolo coppia motore

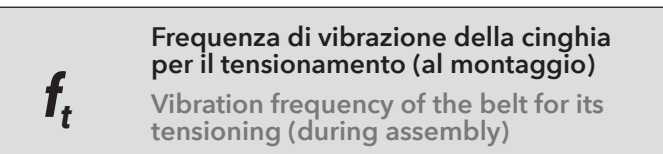
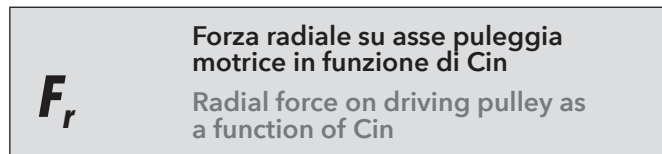
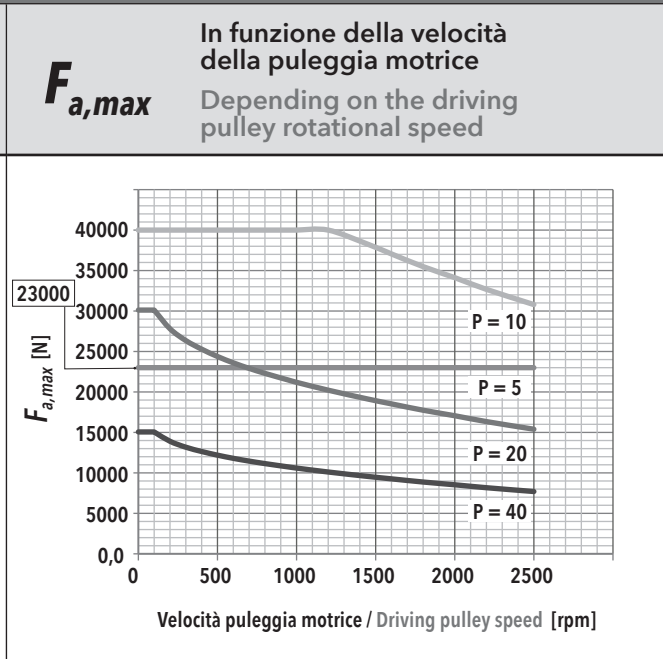
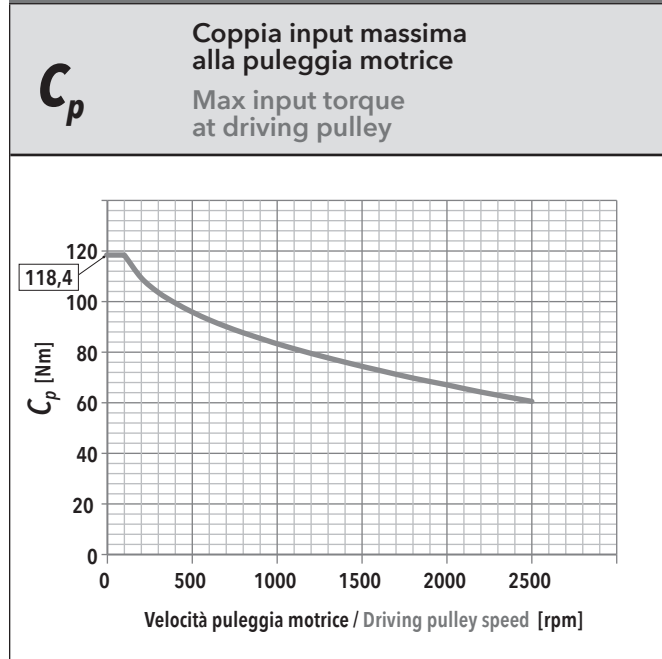
3.8.4 Motor torque calculation

| | |
|------------------------------------|--|
| <p>CASO / CASE</p> <p>1</p> | <p>ISOMOVE B00 + D00 / D01</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE</p> <p>2</p> | <p>ISOMOVE B00 + D02 / A01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE</p> <p>3</p> | <p>ISOMOVE B00 + R00 / R01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p>R = rapporto di riduzione trasmissione a cinghia, disponibile R=1 o R=2 belt gearbox reduction ratio, available R=1 or R=2 η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE</p> <p>4</p> | <p>ISOMOVE B00 + R02</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,81</p> |

3.8.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

3.8.5 Mechanical input power at belt gear stage (R type)

R = 1



| IE 100 HL - PASSO / PITCH 5 | | | | | |
|-----------------------------|------------|------------------|------|-------|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 20,8 | 83,2 | 145,6 | 208 |
| 23000 | F_r [N] | 675 | 679 | 687 | 700 |
| | f_t [Hz] | 217 | 218 | 219 | 221 |
| 20700 | F_r [N] | 608 | 611 | 619 | 632 |
| | f_t [Hz] | 206 | 206 | 208 | 210 |
| 18400 | F_r [N] | 540 | 544 | 552 | 565 |
| | f_t [Hz] | 194 | 195 | 196 | 198 |
| 16100 | F_r [N] | 473 | 476 | 485 | 497 |
| | f_t [Hz] | 182 | 182 | 184 | 186 |
| 13800 | F_r [N] | 405 | 409 | 417 | 430 |
| | f_t [Hz] | 168 | 169 | 171 | 173 |
| 11500 | F_r [N] | 338 | 341 | 350 | 362 |
| | f_t [Hz] | 153 | 154 | 156 | 159 |
| 9200 | F_r [N] | 270 | 274 | 282 | 295 |
| | f_t [Hz] | 137 | 138 | 140 | 143 |
| 6900 | F_r [N] | 203 | 206 | 215 | 227 |
| | f_t [Hz] | 119 | 120 | 122 | 126 |
| 4600 | F_r [N] | 135 | 139 | 147 | 160 |
| | f_t [Hz] | 97 | 98 | 101 | 106 |
| 2300 | F_r [N] | 68 | 71 | 80 | 92 |
| | f_t [Hz] | 69 | 71 | 75 | 80 |

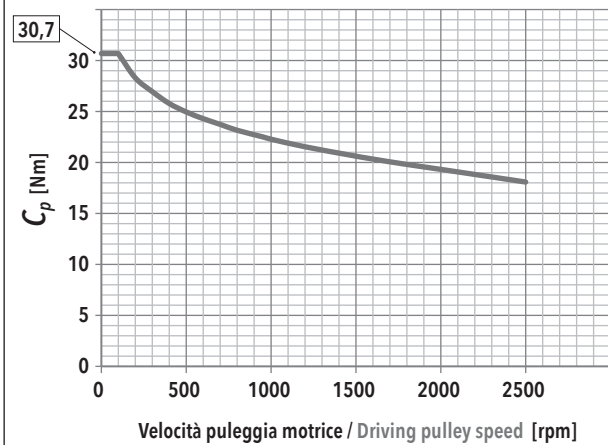
| IE 100 HL - PASSO / PITCH 10 | | | | | |
|------------------------------|------------|------------------|-------|-------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 41,6 | 166,4 | 291,2 | 416 |
| 41000 | F_r [N] | 2406 | 2410 | | |
| | f_t [Hz] | 410 | 410 | | |
| 36900 | F_r [N] | 2165 | 2169 | 2177 | |
| | f_t [Hz] | 389 | 389 | 390 | |
| 32800 | F_r [N] | 1925 | 1929 | 1937 | 1949 |
| | f_t [Hz] | 366 | 367 | 367 | 369 |
| 28700 | F_r [N] | 1684 | 1688 | 1696 | 1709 |
| | f_t [Hz] | 343 | 343 | 344 | 345 |
| 24600 | F_r [N] | 1444 | 1447 | 1456 | 1468 |
| | f_t [Hz] | 317 | 318 | 319 | 320 |
| 20500 | F_r [N] | 1203 | 1207 | 1215 | 1228 |
| | f_t [Hz] | 290 | 290 | 291 | 293 |
| 16400 | F_r [N] | 963 | 966 | 974 | 987 |
| | f_t [Hz] | 259 | 260 | 261 | 262 |
| 12300 | F_r [N] | 722 | 726 | 734 | 747 |
| | f_t [Hz] | 224 | 225 | 226 | 228 |
| 8200 | F_r [N] | 481 | 485 | 493 | 506 |
| | f_t [Hz] | 183 | 184 | 185 | 188 |
| 4100 | F_r [N] | 241 | 245 | 253 | 265 |
| | f_t [Hz] | 130 | 131 | 133 | 136 |

| IE 100 HL - PASSO / PITCH 20 | | | | | |
|------------------------------|------------|------------------|------|------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 83 | 333 | 583 | 833 |
| 40000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 36000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 32000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 28000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 24000 | F_r [N] | 2817 | | | |
| | f_t [Hz] | 443 | | | |
| 20000 | F_r [N] | 2347 | 2351 | | |
| | f_t [Hz] | 405 | 405 | | |
| 16000 | F_r [N] | 1878 | 1882 | 1890 | |
| | f_t [Hz] | 362 | 362 | 363 | |
| 12000 | F_r [N] | 1408 | 1412 | 1420 | 1433 |
| | f_t [Hz] | 313 | 314 | 315 | 316 |
| 8000 | F_r [N] | 939 | 943 | 951 | 964 |
| | f_t [Hz] | 256 | 256 | 257 | 259 |
| 4000 | F_r [N] | 470 | 473 | 482 | 494 |
| | f_t [Hz] | 181 | 182 | 183 | 186 |

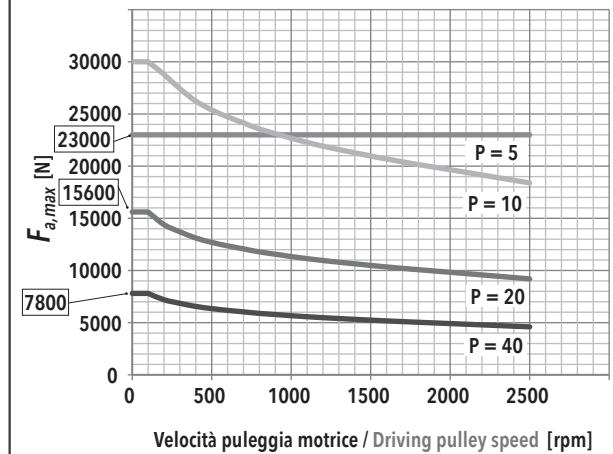
| IE 100 HL - PASSO / PITCH 40 | | | | | |
|------------------------------|------------|------------------|------|------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 166 | 664 | 1162 | 1660 |
| 40000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 36000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 32000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 28000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 24000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 20000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 16000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 12000 | F_r [N] | 2817 | | | |
| | f_t [Hz] | 443 | | | |
| 8000 | F_r [N] | 1878 | 1882 | 1890 | |
| | f_t [Hz] | 362 | 362 | 363 | |
| 4000 | F_r [N] | 939 | 943 | 951 | 964 |
| | f_t [Hz] | 256 | 256 | 257 | 259 |

R = 2

C_p Coppia input massima alla puleggia motrice
Max input torque at driving pulley



$F_{a,max}$ In funzione della velocità della puleggia motrice
Depending on the driving pulley rotational speed



F_r Forza radiale su asse puleggia motrice in funzione di Cin
Radial force on driving pulley as a function of Cin

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 100 HL - PASSO / PITCH 5 | | | | | |
|-----------------------------|------------|------------------|------|------|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 10,4 | 41,6 | 72,8 | 104 |
| 23000 | F_r [N] | 696 | 696 | 700 | 700 |
| | f_t [Hz] | 268 | 268 | 269 | 269 |
| 20700 | F_r [N] | 626 | 626 | 630 | 630 |
| | f_t [Hz] | 254 | 254 | 255 | 255 |
| 18400 | F_r [N] | 557 | 557 | 561 | 561 |
| | f_t [Hz] | 240 | 240 | 240 | 240 |
| 16100 | F_r [N] | 487 | 487 | 491 | 491 |
| | f_t [Hz] | 224 | 224 | 225 | 225 |
| 13800 | F_r [N] | 417 | 417 | 422 | 422 |
| | f_t [Hz] | 207 | 207 | 208 | 208 |
| 11500 | F_r [N] | 348 | 348 | 352 | 352 |
| | f_t [Hz] | 189 | 189 | 191 | 191 |
| 9200 | F_r [N] | 278 | 278 | 282 | 282 |
| | f_t [Hz] | 169 | 169 | 171 | 171 |
| 6900 | F_r [N] | 209 | 209 | 213 | 213 |
| | f_t [Hz] | 147 | 147 | 148 | 148 |
| 4600 | F_r [N] | 139 | 139 | 143 | 143 |
| | f_t [Hz] | 120 | 120 | 122 | 122 |
| 2300 | F_r [N] | 70 | 70 | 74 | 74 |
| | f_t [Hz] | 85 | 85 | 87 | 87 |

| IE 100 HL - PASSO / PITCH 10 | | | | | |
|------------------------------|------------|------------------|------|-------|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 20,8 | 83,2 | 145,6 | 208 |
| 41000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 36900 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 32800 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 28700 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 24600 | F_r [N] | 1488 | | | |
| | f_t [Hz] | 392 | | | |
| 20500 | F_r [N] | 1240 | 1241 | 1242 | |
| | f_t [Hz] | 358 | 358 | 358 | |
| 16400 | F_r [N] | 992 | 993 | 994 | 996 |
| | f_t [Hz] | 320 | 320 | 320 | 320 |
| 12300 | F_r [N] | 744 | 744 | 748 | 748 |
| | f_t [Hz] | 277 | 277 | 278 | 278 |
| 8200 | F_r [N] | 496 | 496 | 500 | 500 |
| | f_t [Hz] | 226 | 227 | 227 | 227 |
| 4100 | F_r [N] | 248 | 248 | 252 | 252 |
| | f_t [Hz] | 160 | 160 | 161 | 161 |

| IE 100 HL - PASSO / PITCH 20 | | | | | |
|------------------------------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 41 | 166 | 291 | 416 |
| 40000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 36000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 32000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 28000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 24000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 20000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 16000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 12000 | F_r [N] | 1452 | | | |
| | f_t [Hz] | 387 | | | |
| 8000 | F_r [N] | 968 | 969 | 970 | |
| | f_t [Hz] | 316 | 316 | 316 | |
| 4000 | F_r [N] | 484 | 485 | 486 | 488 |
| | f_t [Hz] | 223 | 224 | 224 | 224 |

| IE 100 HL - PASSO / PITCH 40 | | | | | |
|------------------------------|------------|------------------|-----|-----|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 83 | 332 | 581 | 830 |
| 40000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 36000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 32000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 28000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 24000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 20000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 16000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 12000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 8000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 4000 | F_r [N] | 968 | 969 | 970 | 972 |
| | f_t [Hz] | 316 | 316 | 316 | 317 |

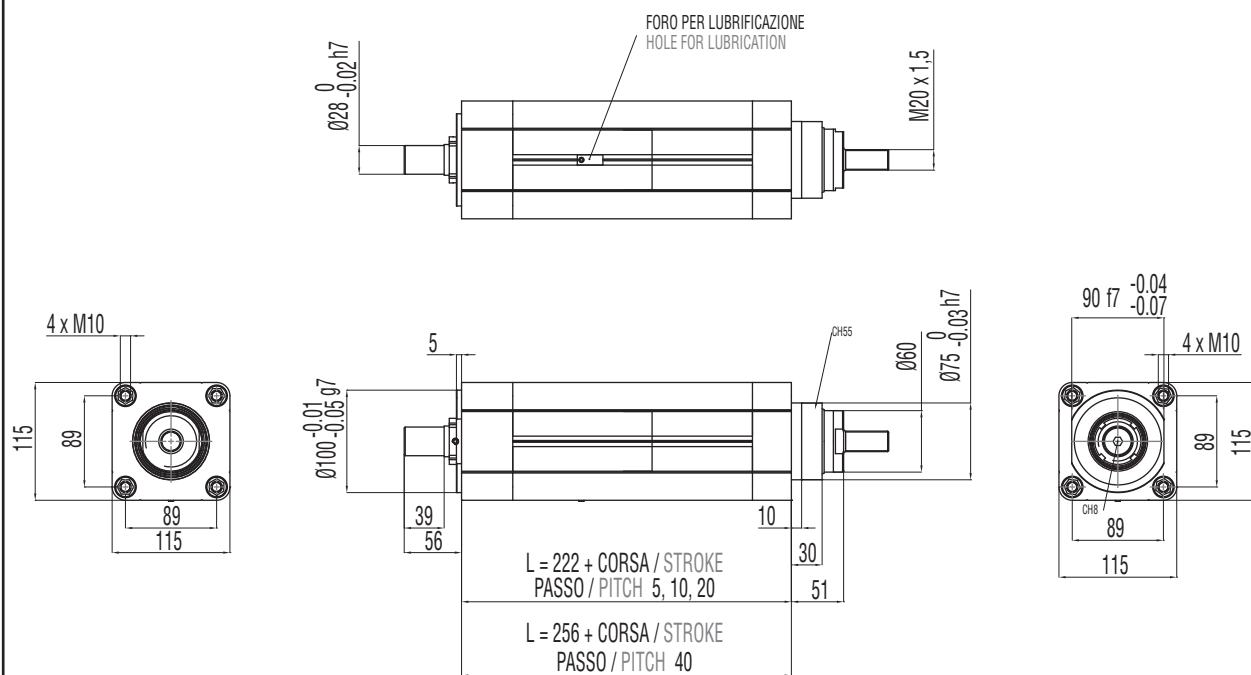
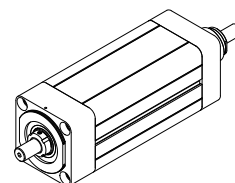
3.8.6 Caratteristiche dimensionali

3.8.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvii al capitolo 4.

REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.

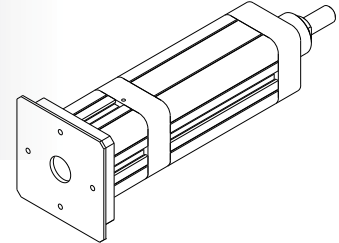
B00
MODULO BASE
BASIC MODULE



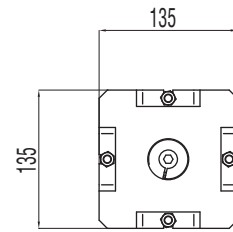
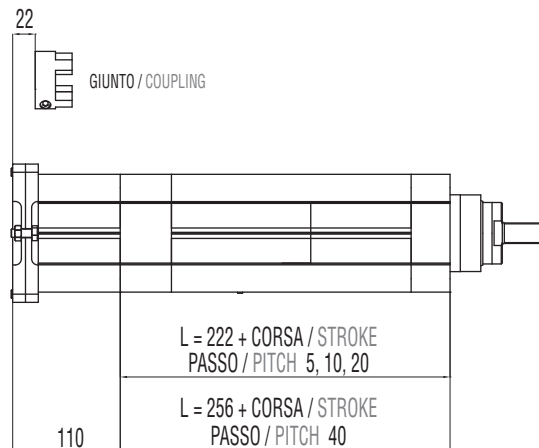
B00 + D00

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE CUSTOM
(SENZA RIDUTTORE)

**BASIC MODULE + CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE
FOR CUSTOM MOTORS**



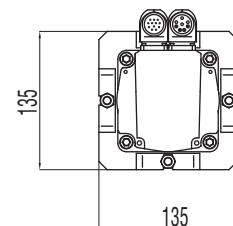
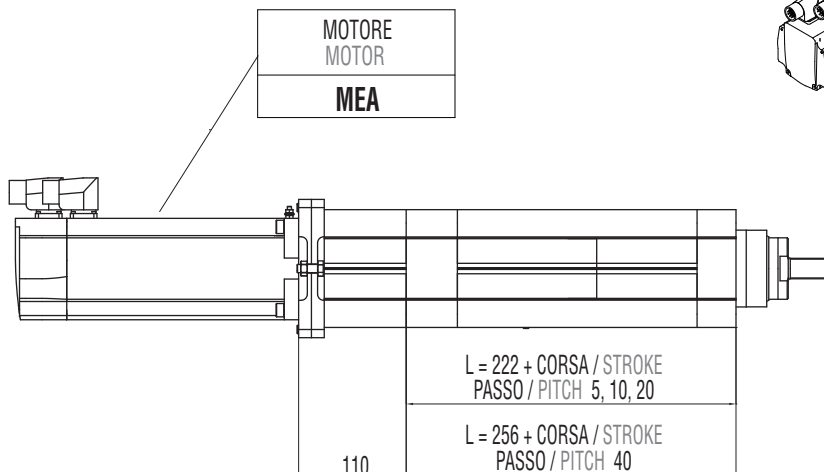
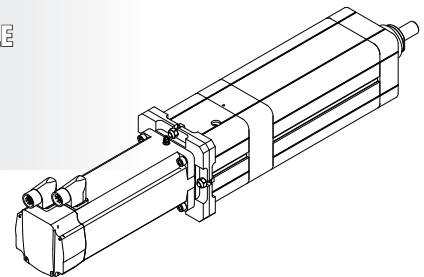
| CxC | B | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|-----|---|---|-----------|-----------------|-----------|
| | | TAGLIA GIUNTO COUPLING SIZE | A [mm] | B [mm] | C [mm] |
| | | 150 | 30 max | 40 min / 52 max | 130 max |



B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

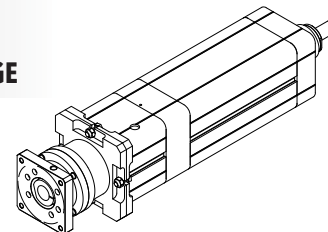
**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



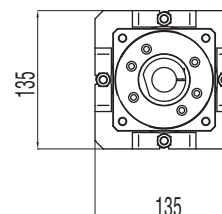
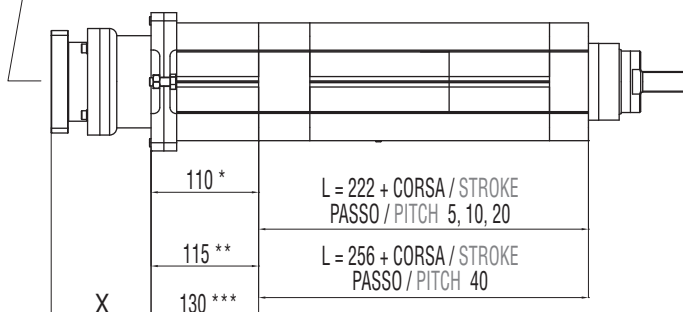
B00 + D02

MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE

BASIC MODULE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE



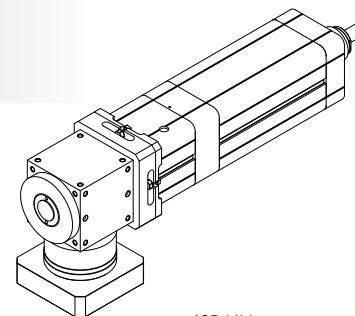
| |
|----------------------------------|
| RIDUTTORE / PLANETARY GEARBOX |
| GCA* |
| GDA** |
| GEA*** |
| GCB* |
| GEB** |



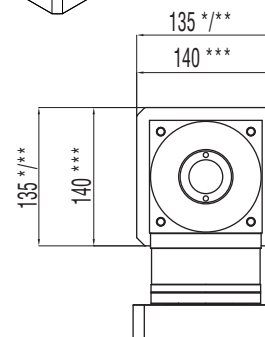
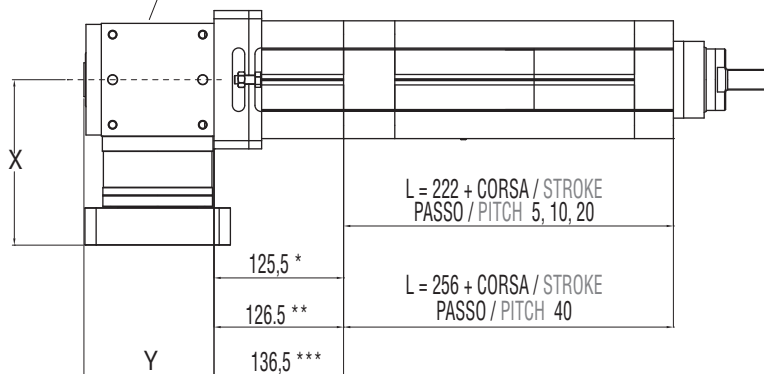
B00 + A01

MODULO BASE + RINVIO ANGOLARE COMPATIBILE

BASIC MODULE + COMPATIBLE ANGLE BEVEL GEARBOX STAGE



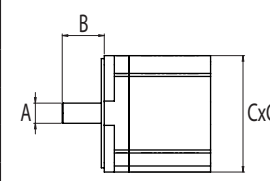
| |
|--|
| RINVIO ANGOLARE ANGLE BEVEL GEARBOX |
| ACA* |
| ADA** |
| AEA*** |



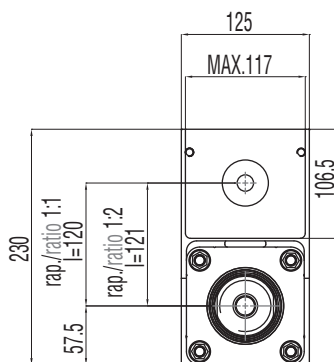
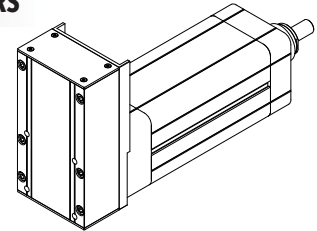
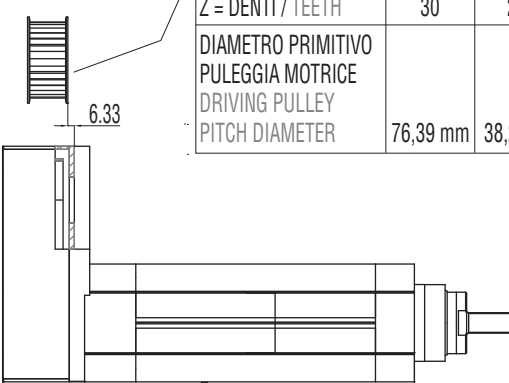
B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS



| DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|---|--------|-----------------|---------|
| | A | B | C |
| | [mm] | [mm] | [mm] |
| R=1:1 | 24 max | 42 min / 58 max | 110 max |
| R=1:2 | 19 max | 36 min / 50 max | 110 max |

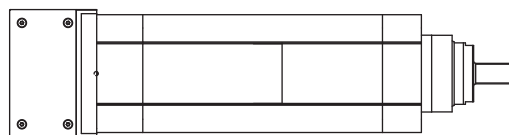
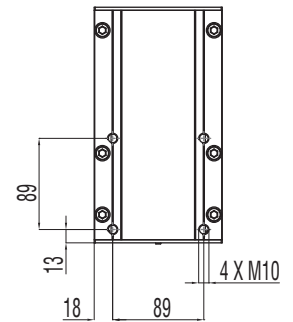



| RAPPORTO / RATIO | 1:1 | 1:2 |
|--|----------|---------|
| PASSO / PITCH | 8 mm | 5 mm |
| Z = DENTI / TEETH | 30 | 24 |
| DIAMETRO PRIMITIVO PULEGGIA MOTRICE DRIVING PULLEY PITCH DIAMETER | 76,39 mm | 38,2 mm |

80

L = 222 + CORSA / STROKE
PASSO / PITCH 5, 10, 20

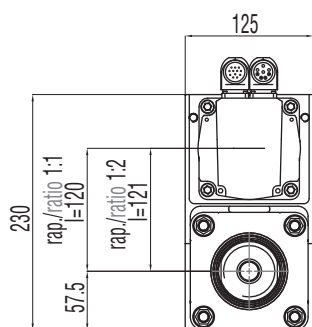
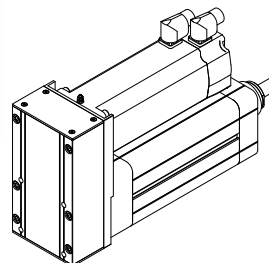
L = 256 + CORSA / STROKE
PASSO / PITCH 40



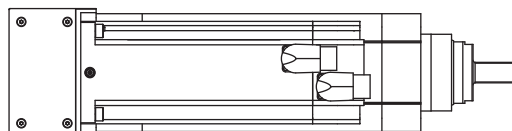
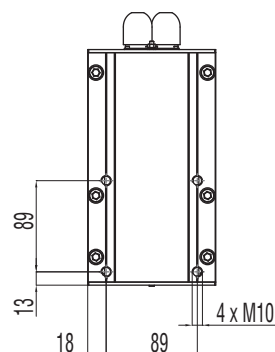
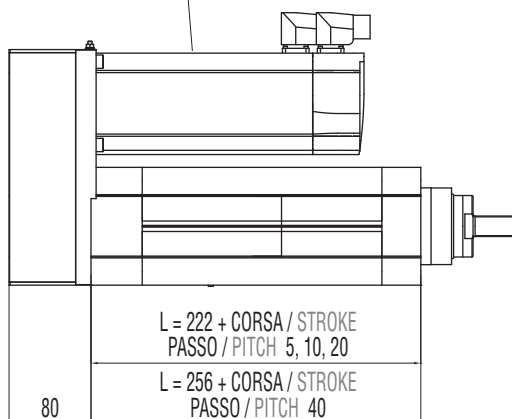
B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



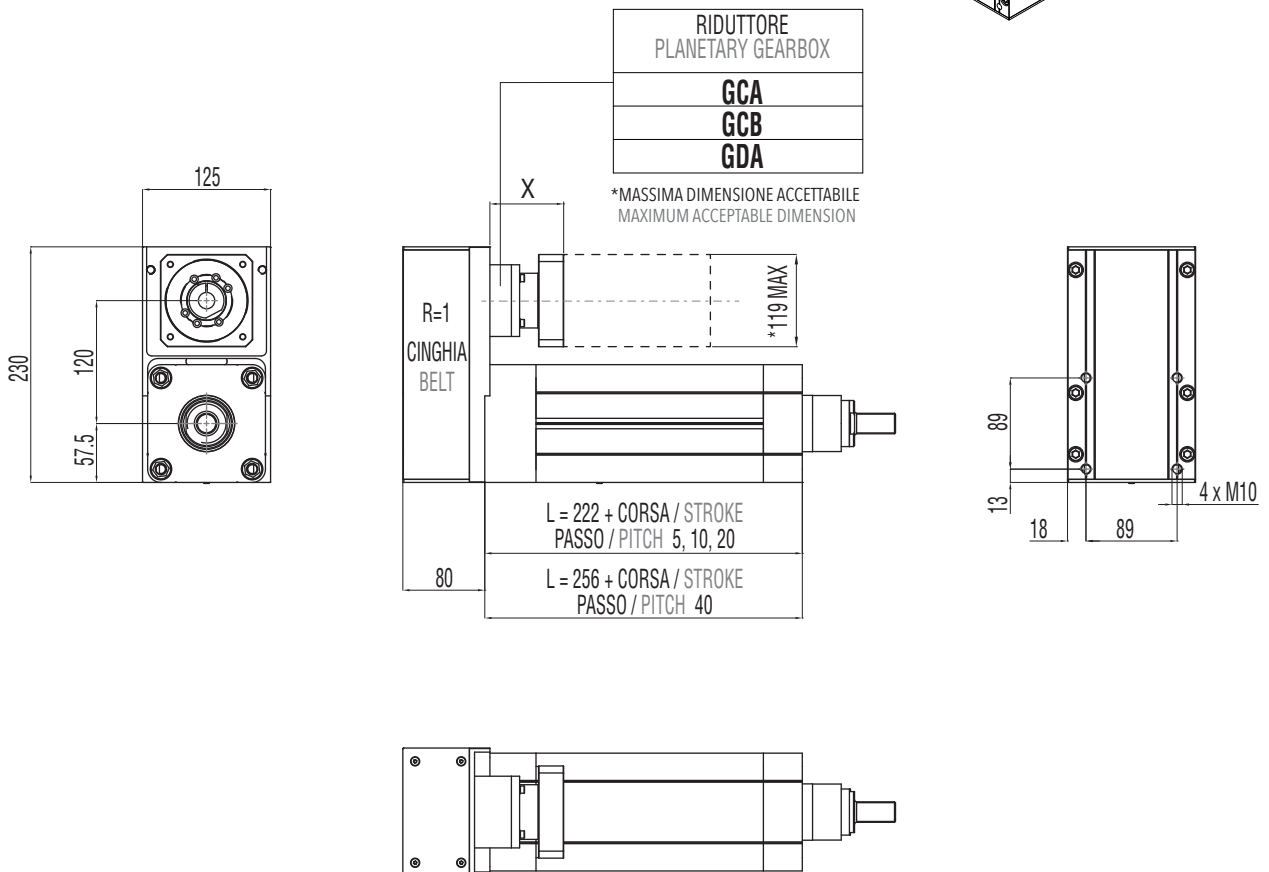
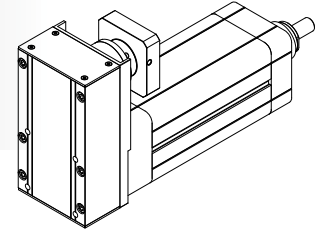
| |
|-----------------|
| MOTORE MOTOR |
| MEA |
| MCA |
| MCB |
| MCC |
| MCD |
| MDA |
| MDB |
| MDC |



B00 + R02

**MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO +
RIDUTTORE EPICICLOIDALE COMPATIBILE**

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE +
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE**



3.8.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.8.7 Available accessories

For tables and drawings please refer to paragraph 3.10 (from page 136).

3.9

IE 100 XL

3.9.1 Caratteristiche tecniche

3.9.1 Technical features

| ISOMOVE IE 100 XL CON TIRANTI ISOMOVE IE 100 XL WITH TENSION RODS | | | 10 |
|--|---|-----------------------|---|
| P | PASSO VITE SCREW LEAD | [mm] | 10 |
| D | DIAMETRO VITE SCREW DIAMETER | [mm] | 50 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 52000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET | [Nm] | 92 |
| | "CASO 1" / "CASE 1": B00 + D00/D01 | [Nm] | 92 |
| | "CASO 2" / "CASE 2": B00 + D02/A01 | [Nm] | $\left[\frac{102,2}{R} \right] + C_s$ R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio |
| C_{m,max} | "CASO 3" / "CASE 3": B00 + R00/R01 | [Nm] | $\frac{102,2}{R}$ R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1 oppure R=2) R = belt gearbox reduction ratio (available R=1 or R=2) |
| | "CASO 4" / "CASE 4": B00 + R02 | [Nm] | $\frac{113,5}{R}$ R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD | [N] | 52000* |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS | [mm/sec] | 333/1998 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED | [rpm] | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION | [m/sec ²] | 2 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE | [mm] | 1100** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE | [Kg] | 11,6 / 4,8 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY | mm | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | | DISPONIBILE / AVAILABLE |
| L_{10,Km} | DURATA LIFETIME | Km | VEDI TABELLA / SEE TABLE pg. 126 |












* Per le versioni R00/R01 controllare con i grafici delle pagine 128/129. / For R00/R01 types please check graph at pages 128/129.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

| ISOMOVE IE 100 XL CON TIRANTI ISOMOVE IE 100 XL WITH TENSION RODS | 10 |
|--|--|
| VERSIONI DISPONIBILI AVAILABLE TYPES | D00 / D01 / D02 / R00 / R01 / R02 / A01 |
| F_{a,p} POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX [N] | AE070/17600*** AE090/43960*** AE120/52000 PGII-080/28575*** PGII-120/52000 |
| POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX [N] | ATB090/17600*** ATB0110/37400*** ATB0140/52000 |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | VEDI PARAGRAFO / SEE PARAGRAPH 3.10 (pg. 136) |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | | | |
|---|---|--|---|
| TRASMISSIONE COASSIALE CON RIDUTTORE IN-LINE PLANETARY GEARBOX STAGE |  AE070 MODULO BASE BASIC MODULE |  AE090 MODULO BASE BASIC MODULE |  AE120 MODULO BASE BASIC MODULE |
| |  PGII-080 MODULO BASE BASIC MODULE |  PGII-120 MODULO BASE BASIC MODULE | |
| TRASMISSIONE PARALLELA CON RIDUTTORE PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE |  AE070 MODULO BASE BASIC MODULE |  AE090 MODULO BASE BASIC MODULE |  PGII-080 MODULO BASE BASIC MODULE |
| TRASMISSIONE ANGOLARE CON RINVIO ANGLE BEVEL GEARBOX STAGE |  ATB090 MODULO BASE BASIC MODULE |  ATB110 MODULO BASE BASIC MODULE |  ATB140 MODULO BASE BASIC MODULE |

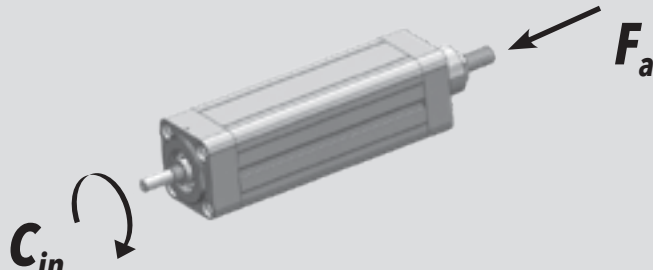
3.9.2 Calcolo durata

3.9.2 Lifetime calculation

| | |
|--|--|
| <p>IE 100 XL P = 10 mm</p> | $L_{10,Km} = \left[\frac{79300}{F_{eq}} \right]^3 \cdot 10$ <p style="text-align: right;">$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |
|--|--|



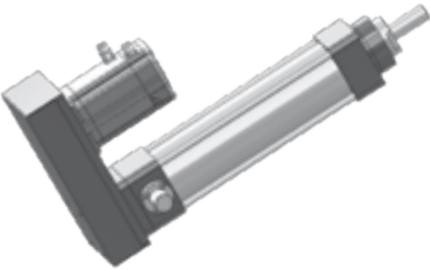
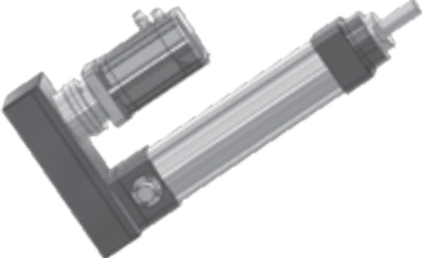
3.9.3 Calcolo coppia in ingresso al modulo base

3.9.3 Torque calculation at basic module input shaft

| | |
|--|---|
|  <p>The diagram shows a perspective view of a motor module. A curved arrow labeled C_{in} indicates the input torque at the front shaft. A straight arrow labeled F_a points towards the rear shaft, representing the axial force.</p> | |
| <p>IE 100 XL P = 10 mm</p> | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ <p style="text-align: right;">$C_{in} = [Nm]$ $F_a = [N]$</p> |

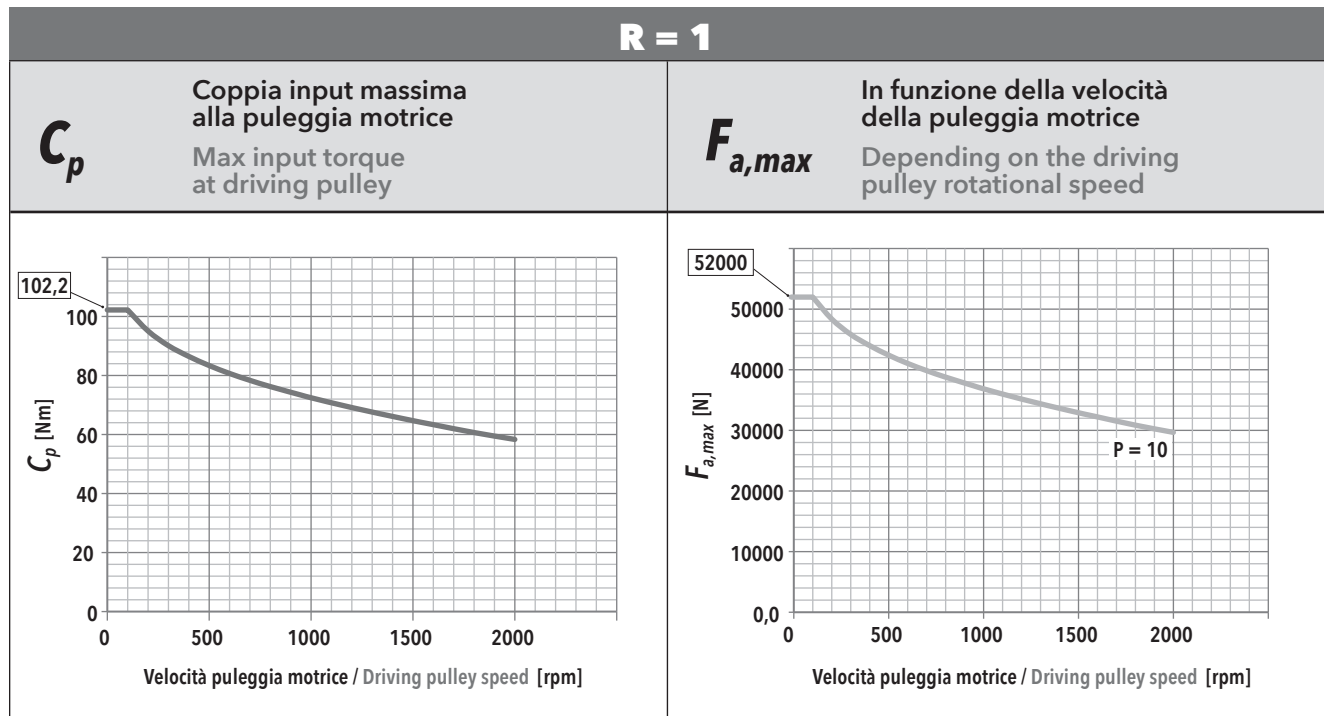
3.9.4 Calcolo coppia motore

3.9.4 Motor torque calculation

| | |
|------------------------------------|--|
| <p>CASO / CASE</p> <p>1</p> | <p>ISOMOVE B00 + D00 / D01</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE</p> <p>2</p> | <p>ISOMOVE B00 + D02 / A01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE</p> <p>3</p> | <p>ISOMOVE B00 + R00 / R01</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p>R = rapporto di riduzione trasmissione a cinghia, disponibile R=1 o R=2 belt gearbox reduction ratio, available R=1 or R=2 η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE</p> <p>4</p> | <p>ISOMOVE B00 + R02</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,81</p> |

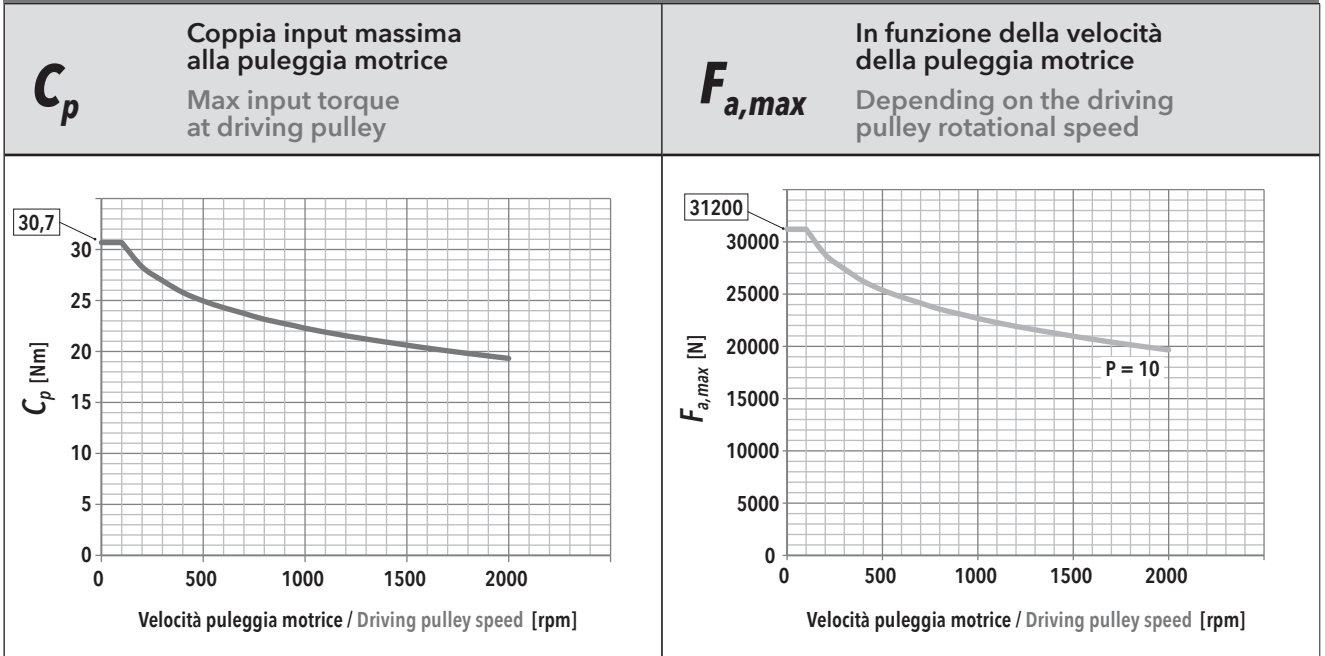
3.9.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

3.9.5 Mechanical input power at belt gear stage (R type)



| | |
|--|---|
| <p>F_r Forza radiale su asse puleggia motrice in funzione di C_{in} Radial force on driving pulley as a function of C_{in}</p> | <p>f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio) Vibration frequency of the belt for its tensioning (during assembly)</p> |
| IE 100 XL - PASSO / PITCH 10 | |
| F_a [N] | V_{out} [mm/s] |
| | 33 133 233 333 |
| 52000 | F_r [N] 3051 |
| | f_t [Hz] 461 |
| 46800 | F_r [N] 2746 |
| | f_t [Hz] 438 |
| 41600 | F_r [N] 2441 2443 |
| | f_t [Hz] 413 413 |
| 36400 | F_r [N] 2136 2138 |
| | f_t [Hz] 386 386 |
| 31200 | F_r [N] 1831 1833 1838 |
| | f_t [Hz] 357 357 358 |
| 26000 | F_r [N] 1526 1528 1533 1541 |
| | f_t [Hz] 326 326 327 328 |
| 20800 | F_r [N] 1221 1223 1228 1236 |
| | f_t [Hz] 292 292 293 294 |
| 15600 | F_r [N] 916 918 923 931 |
| | f_t [Hz] 253 253 254 255 |
| 10400 | F_r [N] 610 613 618 626 |
| | f_t [Hz] 206 207 208 209 |
| 5200 | F_r [N] 309 311 317 325 |
| | f_t [Hz] 147 147 149 150 |

R = 2



F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 100 XL - PASSO / PITCH 10 | | | | | |
|------------------------------|------------|------------------|------|-------|-----|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 16,6 | 66,4 | 116,2 | 166 |
| 52000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 46800 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 41600 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 36400 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 31200 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 26000 | F_r [N] | 1573 | | | |
| | f_t [Hz] | 403 | | | |
| 20800 | F_r [N] | 1258 | 1259 | 1260 | |
| | f_t [Hz] | 360 | 360 | 360 | |
| 15600 | F_r [N] | 944 | 944 | 946 | 946 |
| | f_t [Hz] | 312 | 312 | 312 | 312 |
| 10400 | F_r [N] | 629 | 630 | 631 | 632 |
| | f_t [Hz] | 255 | 255 | 255 | 255 |
| 5200 | F_r [N] | 315 | 315 | 317 | 317 |
| | f_t [Hz] | 180 | 180 | 181 | 181 |

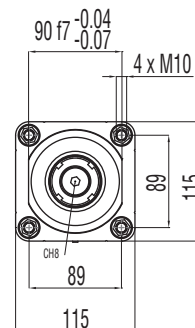
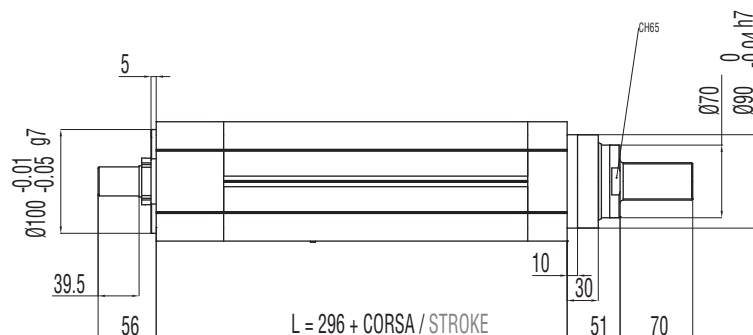
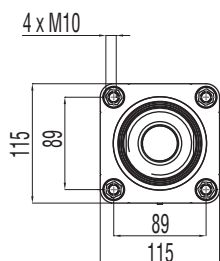
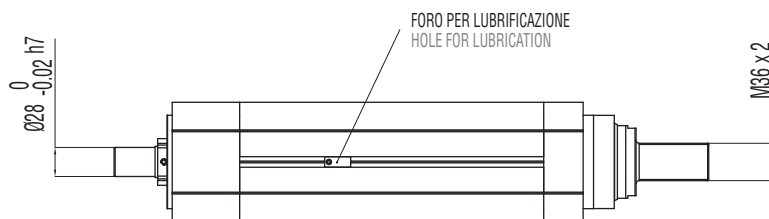
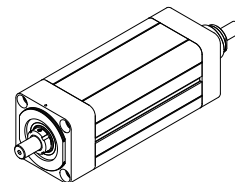
3.9.6 Caratteristiche dimensionali

3.9.6 Overall dimensions

NOTA: Dati categorie motori / riduttori / rinvii al capitolo 4.

REMARK: Motors / Planetary / Angle bevel gearbox categories data at chapter 4.

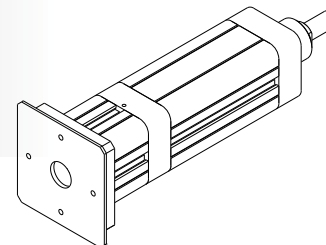
B00
MODULO BASE
BASIC MODULE

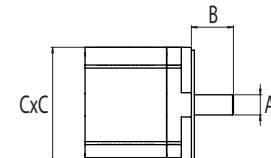


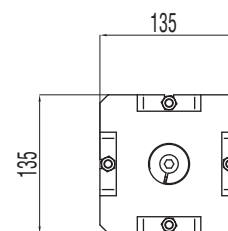
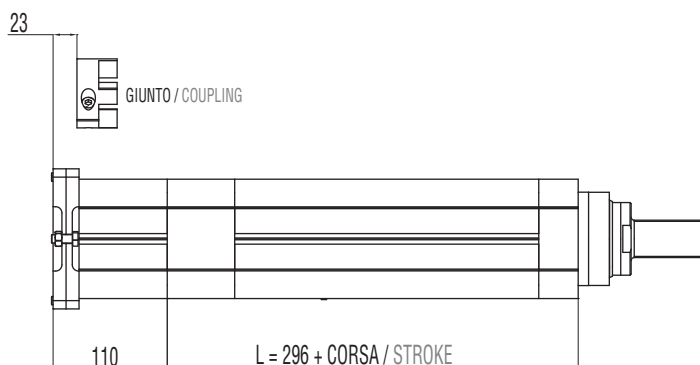
B00 + D00

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE CUSTOM
(SENZA RIDUTTORE)

**BASIC MODULE + CUSTOM IN-LINE TRANSMISSION W/O REDUCTION STAGE
FOR CUSTOM MOTORS**



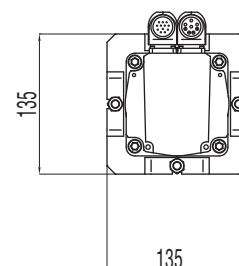
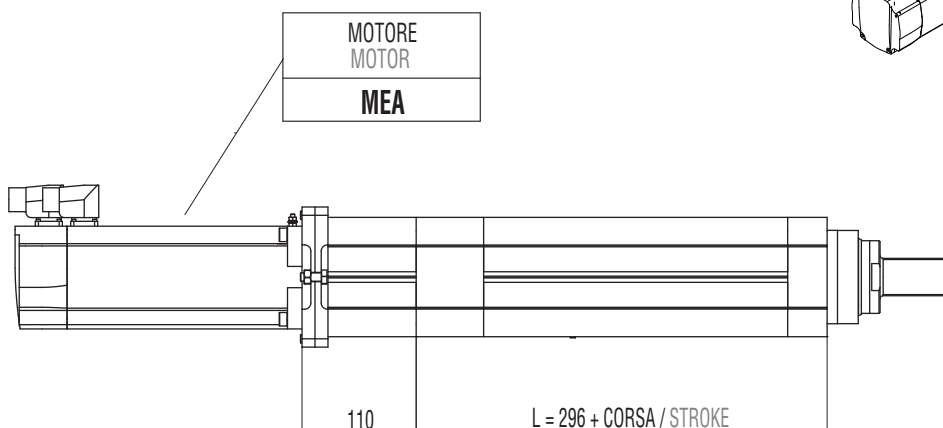
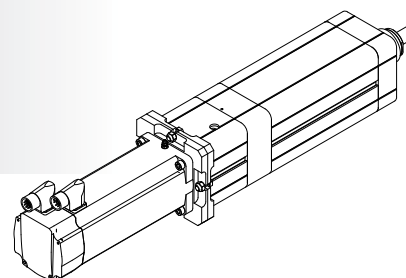
|  | DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|---|---|-----------|-----------------|-----------|
| | TAGLIA GIUNTO COUPLING SIZE | A [mm] | B [mm] | C [mm] |
| | 150 | 30 max | 40 min / 52 max | 130 max |



B00 + D01

MODULO BASE + TRASMISSIONE COASSIALE PER MOTORE COMPATIBILE
(SENZA RIDUTTORE)

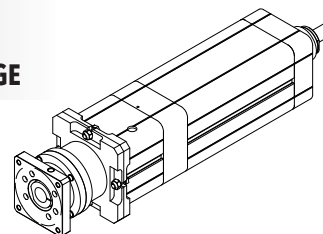
**BASIC MODULE + IN-LINE TRANSMISSION W/O REDUCTION STAGE FOR
COMPATIBLE MOTORS**



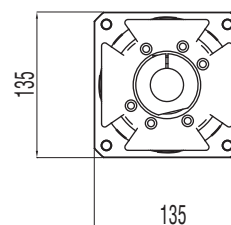
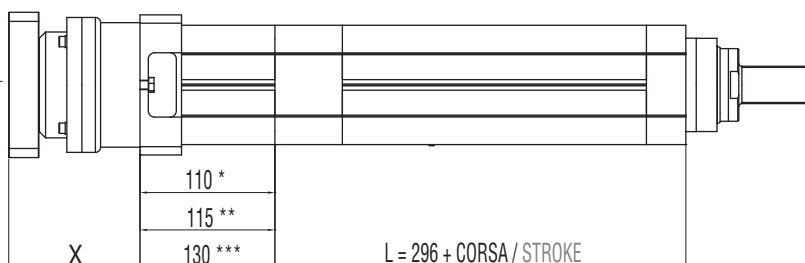
B00 + D02

MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE COMPATIBILE

BASIC MODULE + IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE



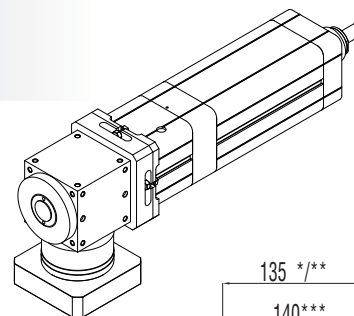
| |
|----------------------------------|
| RIDUTTORE / PLANETARY GEARBOX |
| GCA* |
| GDA** |
| GEA*** |
| GCB* |
| GEB** |



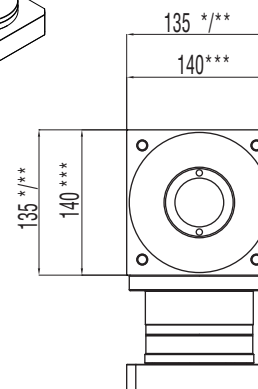
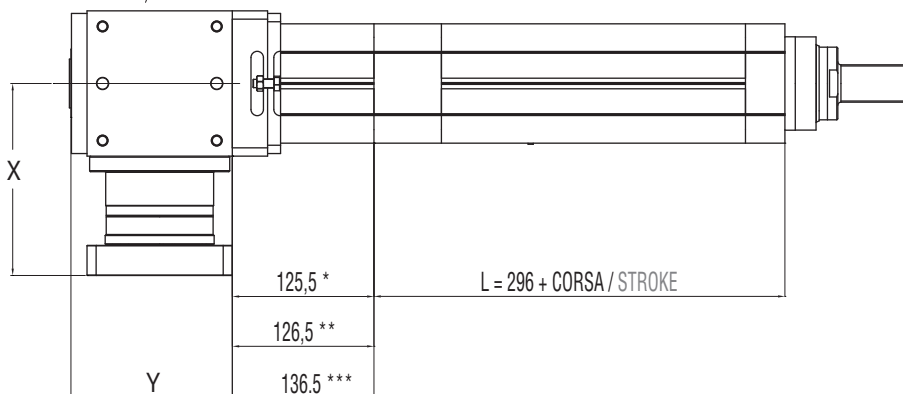
B00 + A01

MODULO BASE + RINVIO ANGOLARE COMPATIBILE

BASIC MODULE + COMPATIBLE ANGLE BEVEL GEARBOX STAGE



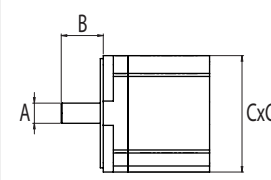
| |
|--|
| RINVIO ANGOLARE ANGLE BEVEL GEARBOX |
| ACA* |
| ADA** |
| AEA*** |



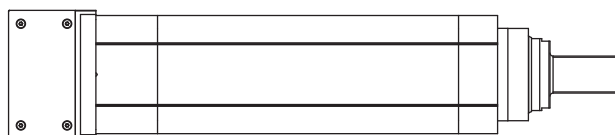
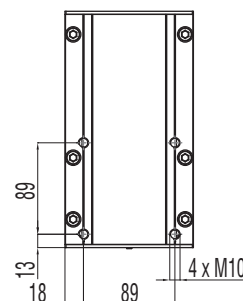
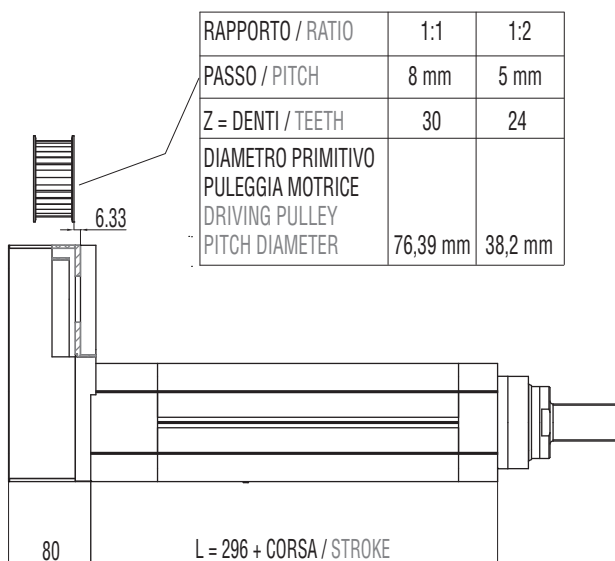
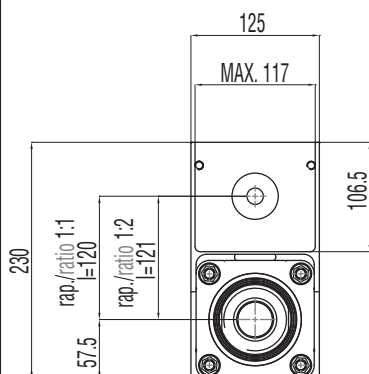
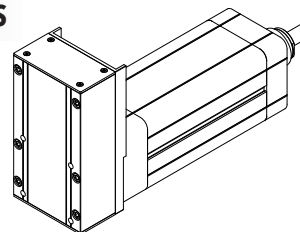
B00 + R00

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE CUSTOM

BASIC MODULE + PARALLEL CUSTOM BELT GEARBOX STAGE FOR CUSTOM MOTORS



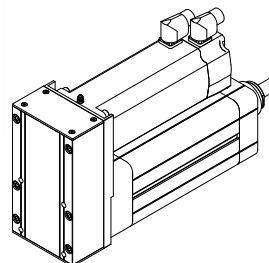
| DIMENSIONI LIMITI INTERFACCIA MAX INTERFACE DIMENSIONS | | | |
|---|--------|-----------------|---------|
| | A | B | C |
| | [mm] | [mm] | [mm] |
| R=1:1 | 24 max | 42 min / 58 max | 110 max |
| R=1:2 | 19 max | 36 min / 50 max | 110 max |



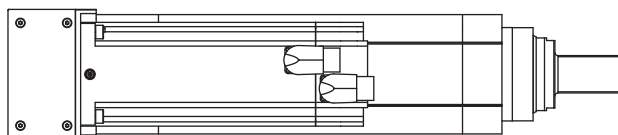
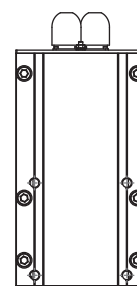
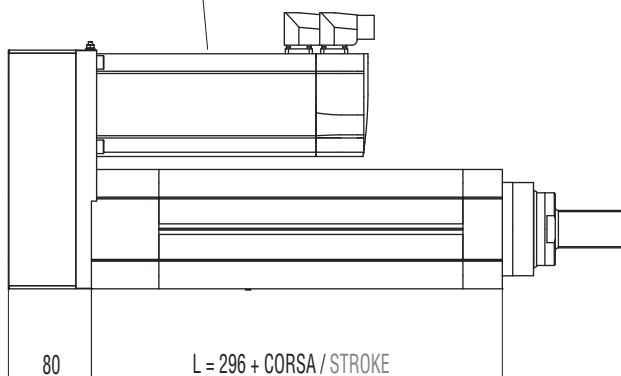
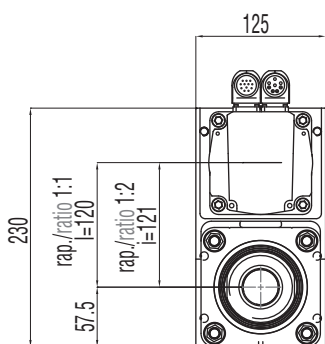
B00 + R01

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO PER MOTORE COMPATIBILE

BASIC MODULE + PARALLEL BELT GEARBOX STAGE FOR COMPATIBLE MOTORS



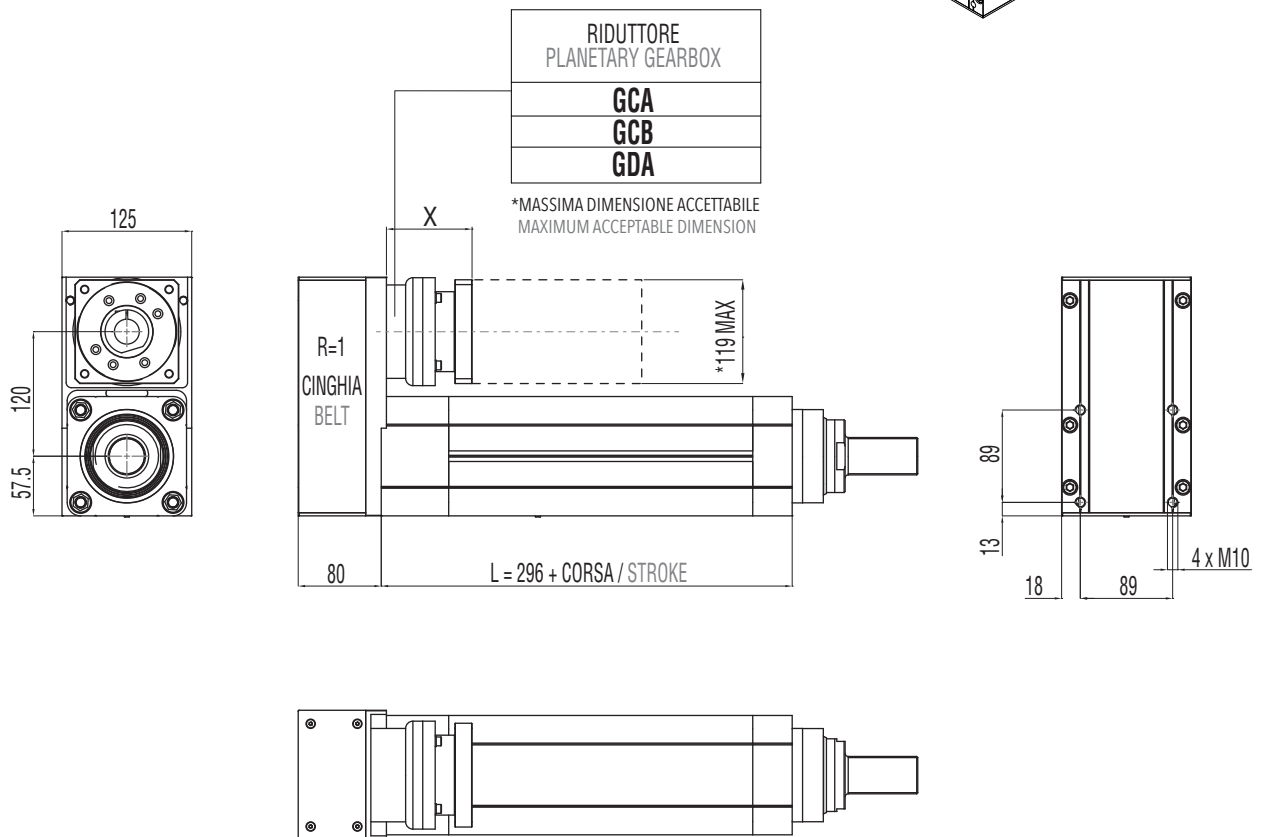
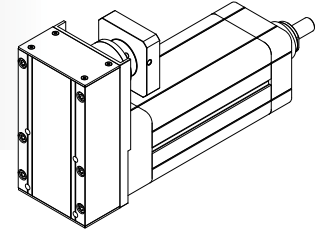
| MOTORE MOTOR |
|-----------------|
| MEA |
| MCA |
| MCB |
| MCC |
| MCD |
| MDA |
| MDB |
| MDC |



B00 + R02

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO +
RIDUTTORE EPICICLOIDALE COMPATIBILE

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE +
IN-LINE COMPATIBLE PLANETARY GEARBOX REDUCTION STAGE**



3.9.7 Accessori disponibili

Per le tabelle e i disegni tecnici degli accessori disponibili fare riferimento al paragrafo 3.10 (da pag. 136).

3.9.7 Available accessories

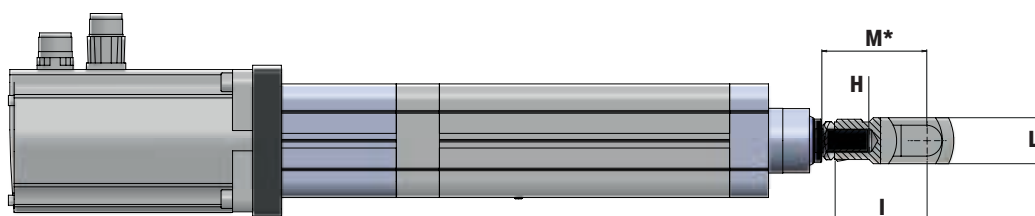
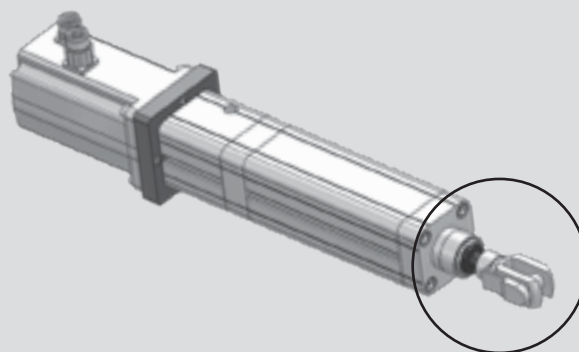
For tables and drawings please refer to paragraph 3.10 (from page 136).

3.10

Accessori da grandezze IE 32 a IE 100 XL
Accessories from IE 32 to IE 100 XL sizes

3.10.1

FS Forcella Stelo
Rod Fork

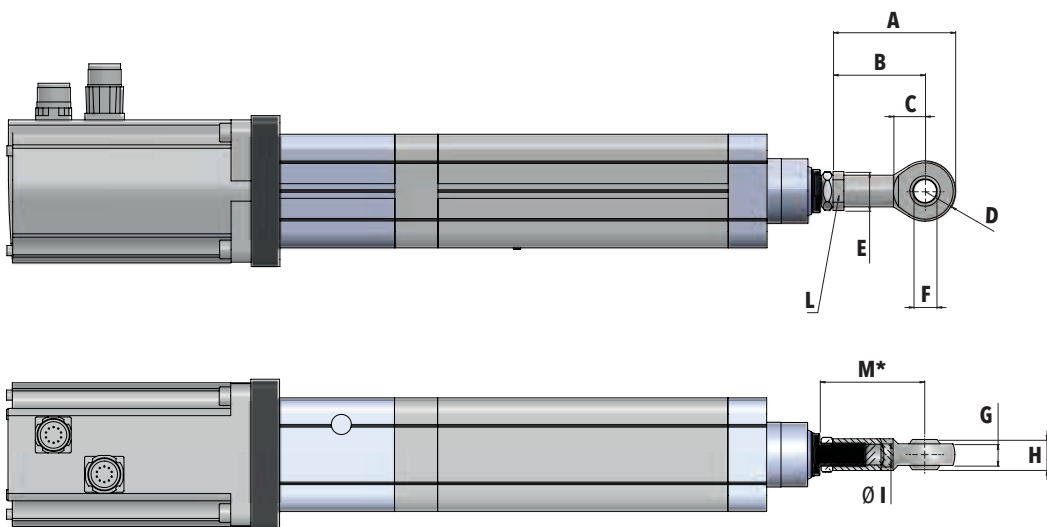
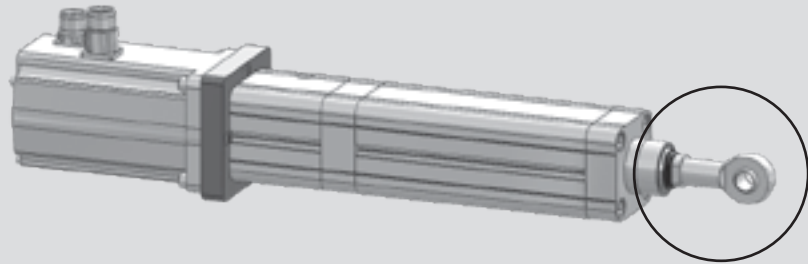


*QUOTA MINIMA, REGOLAZIONE A CARICO DEL CLIENTE
MINIMUM DIMENSION, REGULATION MADE BY THE CUSTOMER

| TAGLIA / SIZES | A | B | C | D | E | F | G | H | I | L | M |
|----------------|-----|----|----|----|----|------|----------|------------|-----|----|-----|
| 32 | 52 | 20 | 10 | 20 | 26 | Ø 18 | Ø 10 h 8 | M10 x 1.25 | 40 | 20 | 48 |
| 40 | 62 | 24 | 12 | 24 | 32 | Ø 20 | Ø 12 h 8 | M12 x 1.25 | 48 | 24 | 57 |
| 50 | 83 | 32 | 16 | 32 | 40 | Ø 26 | Ø 16 h 8 | M16 x 1.5 | 64 | 32 | 74 |
| 63 | 83 | 32 | 16 | 32 | 40 | Ø 26 | Ø 16 h 8 | M16 x 1.5 | 64 | 32 | 74 |
| 80 | 105 | 40 | 20 | 40 | 48 | Ø 34 | Ø 20 h 8 | M20 x 1.5 | 80 | 40 | 92 |
| 80HL | 105 | 40 | 20 | 40 | 48 | Ø 34 | Ø 20 h 8 | M20 x 1.5 | 80 | 40 | 92 |
| 100 | 105 | 40 | 20 | 40 | 48 | Ø 34 | Ø 20 h 8 | M20 x 1.5 | 80 | 40 | 92 |
| 100HL | 105 | 40 | 20 | 40 | 48 | Ø 34 | Ø 20 h 8 | M20 x 1.5 | 80 | 40 | 92 |
| 100XL | 188 | 72 | 35 | 70 | 83 | Ø 60 | Ø 35 h 8 | M36 x 2 | 144 | 70 | 162 |

3.10.2

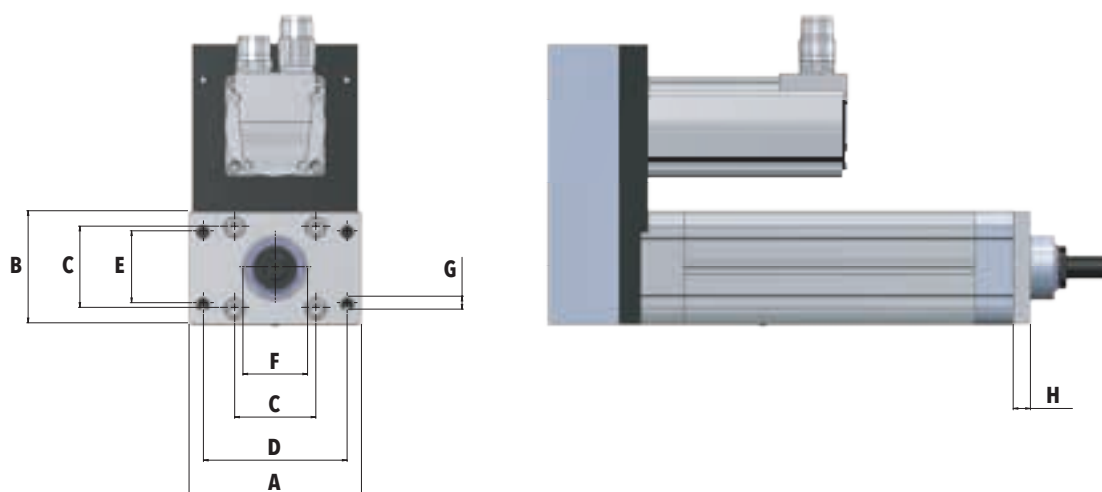
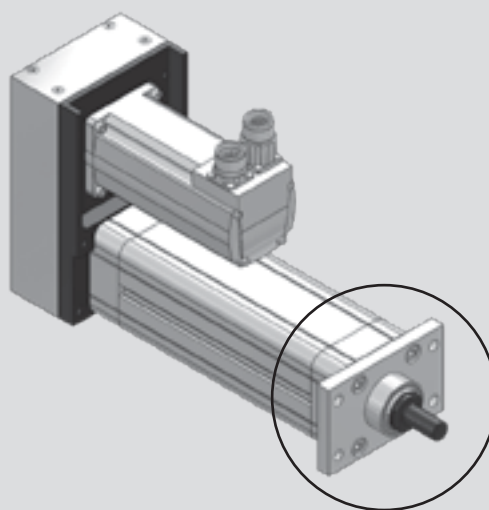
SS Snodo Sferico
Swivel Joint



*QUOTA MINIMA, REGOLAZIONE A CARICO DEL CLIENTE
MINIMUM DIMENSION, REGULATION MADE BY THE CUSTOMER

| TAGLIA / SIZES | A | B | C | D | E | F | G | H | I | L | M |
|----------------|-----|-----|----|----|------|----------|------|----|------------|------|-----|
| 32 | 57 | 43 | 15 | 14 | Ø 19 | Ø 10 H 7 | 10.5 | 14 | M10 x 1.25 | CH17 | 51 |
| 40 | 66 | 50 | 16 | 16 | Ø 22 | Ø 12 H 7 | 12 | 16 | M12 x 1.25 | CH19 | 59 |
| 50 | 85 | 64 | 22 | 21 | Ø 27 | Ø 16 H 7 | 15 | 21 | M16 x 1.5 | CH22 | 74 |
| 63 | 85 | 64 | 22 | 21 | Ø 27 | Ø 16 H 7 | 15 | 21 | M16 x 1.5 | CH22 | 74 |
| 80 | 102 | 77 | 26 | 25 | Ø 34 | Ø 20 H 7 | 18 | 25 | M20 x 1.5 | CH30 | 89 |
| 80HL | 102 | 77 | 26 | 25 | Ø 34 | Ø 20 H 7 | 18 | 25 | M20 x 1.5 | CH30 | 89 |
| 100 | 102 | 77 | 26 | 25 | Ø 34 | Ø 20 H 7 | 18 | 25 | M20 x 1.5 | CH30 | 89 |
| 100HL | 102 | 77 | 26 | 25 | Ø 34 | Ø 20 H 7 | 18 | 25 | M20 x 1.5 | CH30 | 89 |
| 100XL | 165 | 125 | 41 | 40 | Ø 58 | Ø 35 H 7 | 28 | 43 | M36 x 2 | CH50 | 143 |

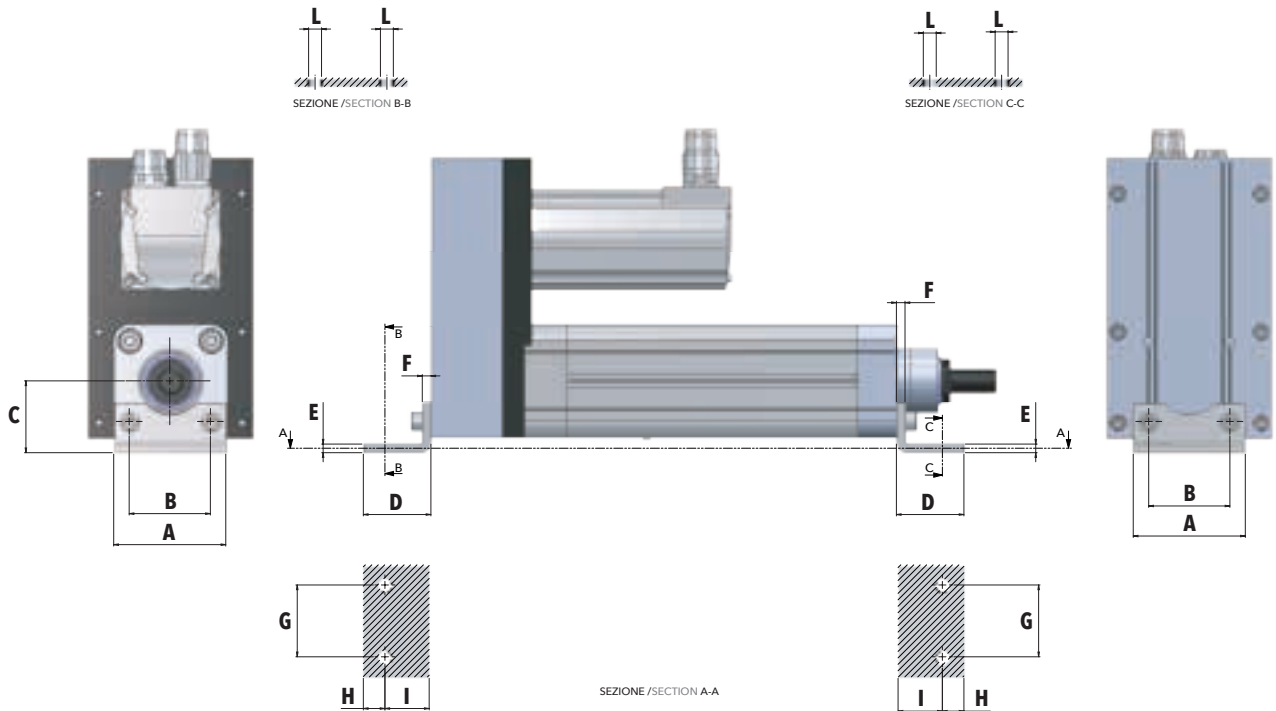
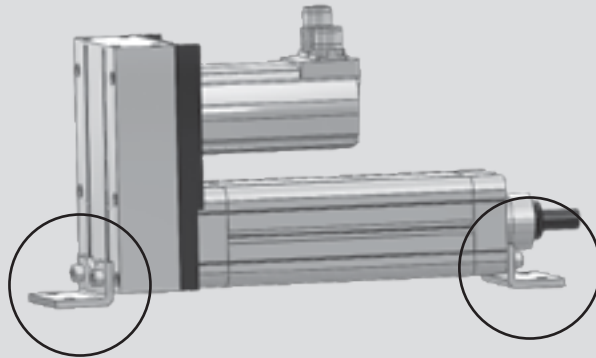
3.10.3

FV Flangia Frontale
Front Flange

| TAGLIA / SIZES | A | B | C | D | E | F | G | H |
|----------------|-----|-----|------|-----|----|---------|----------|----|
| 32 | 80 | 50 | 32,5 | 64 | 32 | Ø 30 H7 | 4 x Ø 7 | 10 |
| 40 | 90 | 55 | 38 | 72 | 36 | Ø 35 H7 | 4 x Ø 9 | 10 |
| 50 | 110 | 66 | 46,5 | 90 | 45 | Ø 40 H7 | 4 x Ø 9 | 12 |
| 63 | 120 | 78 | 56,5 | 100 | 50 | Ø 45 H7 | 4 x Ø 9 | 12 |
| 80 | 153 | 98 | 72 | 126 | 63 | Ø 45 H7 | 4 x Ø 12 | 16 |
| 80HL | 153 | 98 | 72 | 126 | 63 | Ø 55 H7 | 4 x Ø 12 | 16 |
| 100 | 178 | 115 | 89 | 150 | 75 | Ø 55 H7 | 4 x Ø 14 | 16 |
| 100HL | 178 | 115 | 89 | 150 | 75 | Ø 75 H7 | 4 x Ø 14 | 16 |
| 100XL | 178 | 115 | 89 | 150 | 75 | Ø 90 H7 | 4 x Ø 14 | 16 |

3.10.4

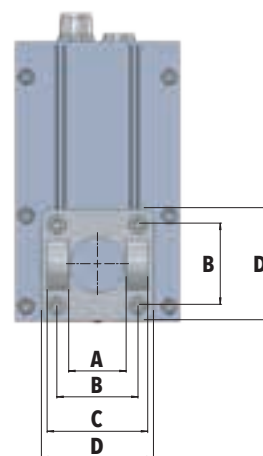
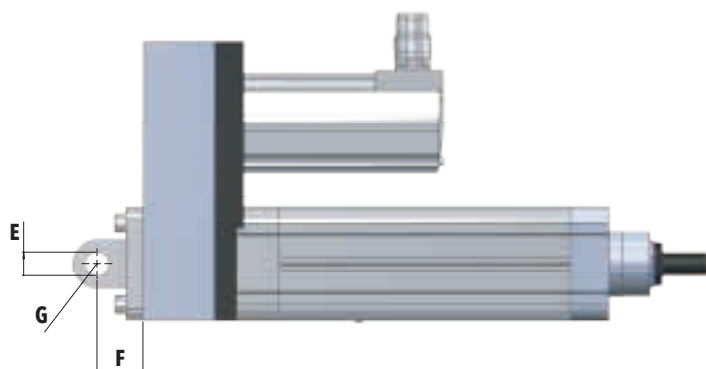
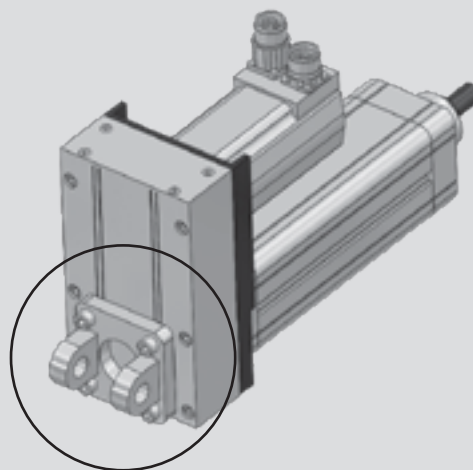
PV Piedino Verticale
Angle Foot



| TAGLIA / SIZES | A | B | C | D | E | F | G | H | I | L |
|----------------|-----|------|----|----|---|---|----|----|----|------|
| 32 | 47 | 32,5 | 32 | 35 | 5 | 5 | 32 | 11 | 24 | Ø 7 |
| 40 | 54 | 38 | 36 | 43 | 5 | 5 | 36 | 15 | 28 | Ø 9 |
| 50 | 66 | 46,5 | 45 | 47 | 6 | 6 | 45 | 15 | 32 | Ø 9 |
| 63 | 78 | 56,5 | 50 | 47 | 6 | 6 | 50 | 15 | 32 | Ø 9 |
| 80 | 98 | 72 | 63 | 61 | 7 | 7 | 63 | 20 | 41 | Ø 12 |
| 80HL | 98 | 72 | 63 | 61 | 7 | 7 | 63 | 20 | 41 | Ø 12 |
| 100 | 115 | 89 | 71 | 66 | 7 | 7 | 75 | 25 | 41 | Ø 14 |
| 100HL | 115 | 89 | 71 | 66 | 7 | 7 | 75 | 25 | 41 | Ø 14 |
| 100XL | 115 | 89 | 71 | 66 | 7 | 7 | 75 | 25 | 41 | Ø 14 |

3.10.5

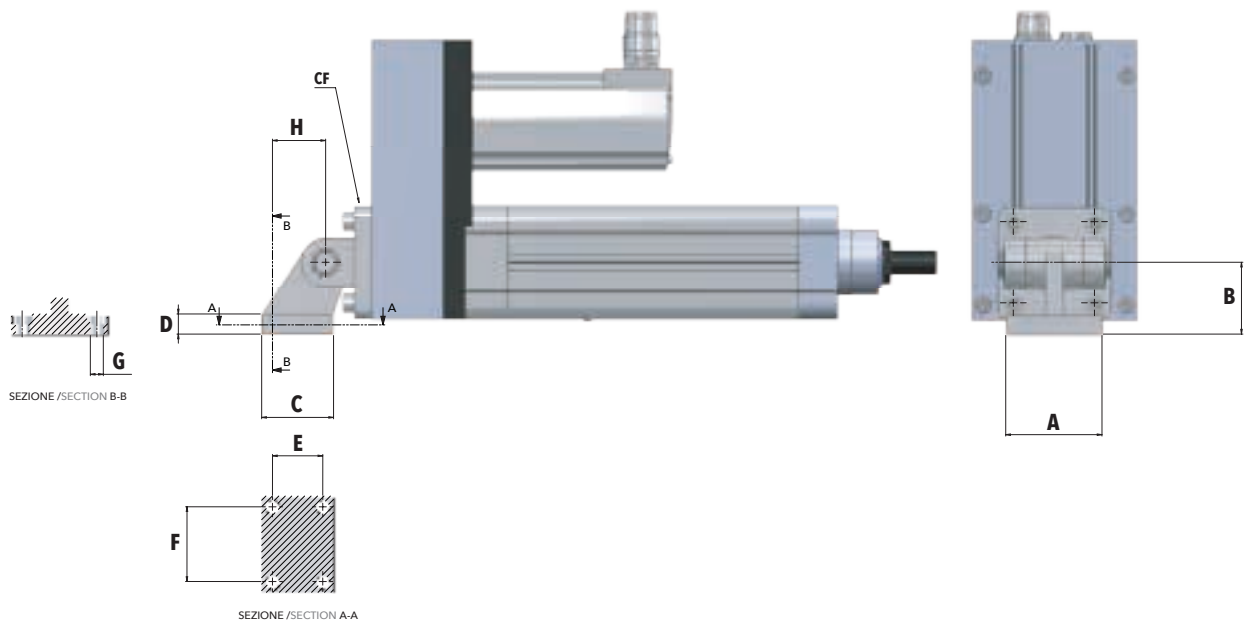
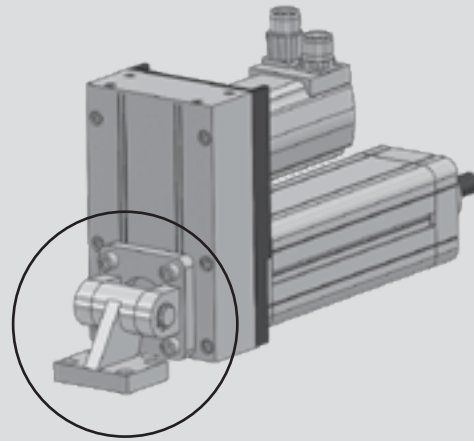
CF Cerniera Femmina
Rear Female Clevis with Pin



| TAGLIA / SIZES | A | B | C | D | E | F | G |
|----------------|----|------|-----|-----|---------|----|----|
| 32 | 26 | 32,5 | 45 | 47 | Ø 10 H9 | 22 | 11 |
| 40 | 28 | 38 | 52 | 54 | Ø 12 H9 | 25 | 13 |
| 50 | 32 | 46,5 | 60 | 66 | Ø 12 H9 | 27 | 13 |
| 63 | 40 | 56,5 | 70 | 78 | Ø 16 H9 | 32 | 17 |
| 80 | 50 | 72 | 90 | 98 | Ø 16 H9 | 36 | 17 |
| 80HL | 50 | 72 | 90 | 98 | Ø 16 H9 | 36 | 17 |
| 100 | 60 | 89 | 110 | 115 | Ø 20 H9 | 41 | 21 |
| 100HL | 60 | 89 | 110 | 115 | Ø 20 H9 | 41 | 21 |
| 100XL | 60 | 89 | 110 | 115 | Ø 20 H9 | 41 | 21 |

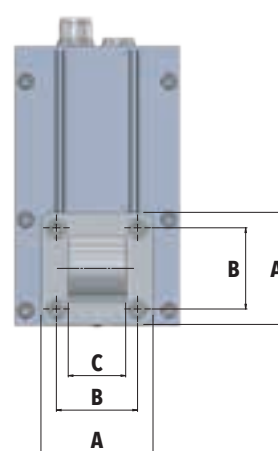
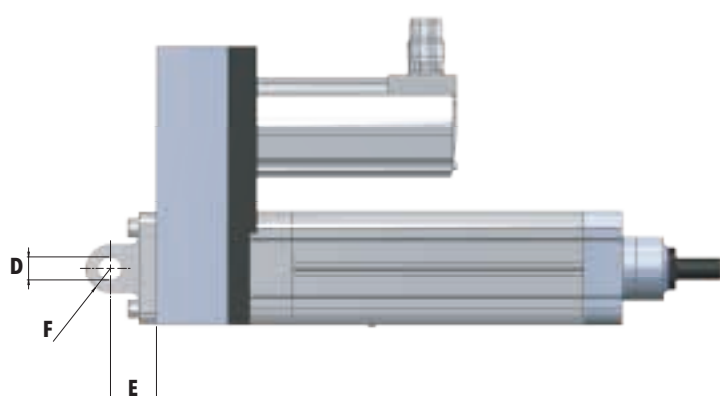
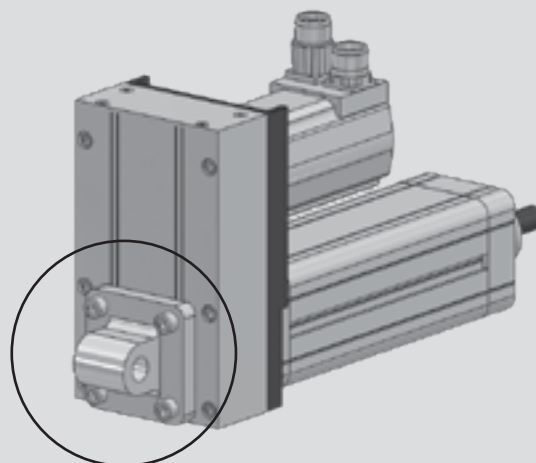
3.10.6

KO Controcerniera Orizzontale
Square Horizontal Counterclevis



| TAGLIA / SIZES | A | B | C | D | E | F | G | H |
|----------------|----|----|----|----|----|----|-------|----|
| 32 | 51 | 32 | 31 | 8 | 18 | 38 | Ø 6,6 | 21 |
| 40 | 54 | 36 | 35 | 10 | 22 | 41 | Ø 6,6 | 24 |
| 50 | 65 | 45 | 45 | 12 | 30 | 50 | Ø 9 | 33 |
| 63 | 67 | 50 | 50 | 14 | 35 | 52 | Ø 9 | 37 |
| 80 | 86 | 63 | 60 | 14 | 40 | 66 | Ø 11 | 47 |
| 80HL | 86 | 63 | 60 | 14 | 40 | 66 | Ø 11 | 47 |
| 100 | 96 | 71 | 70 | 17 | 50 | 76 | Ø 11 | 55 |
| 100HL | 96 | 71 | 70 | 17 | 50 | 76 | Ø 11 | 55 |
| 100XL | 96 | 71 | 70 | 17 | 50 | 76 | Ø 11 | 55 |

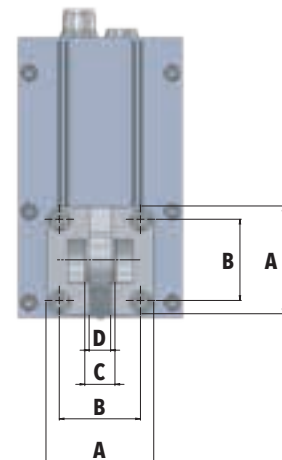
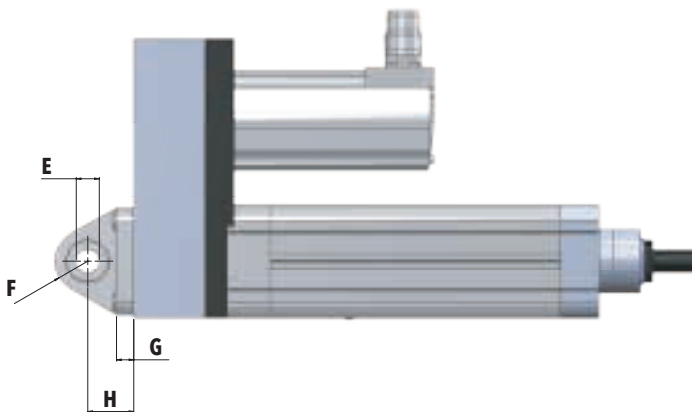
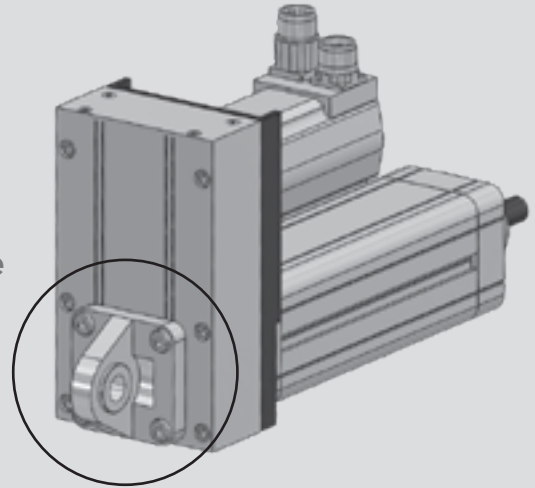
3.10.7

KM Controcerniera Maschio
Male Clevis

| TAGLIA / SIZES | A | B | C | D | E | F |
|----------------|-----|------|----|---------|----|----|
| 32 | 47 | 32,5 | 26 | Ø 10 H7 | 22 | 11 |
| 40 | 54 | 38 | 28 | Ø 12 H7 | 25 | 13 |
| 50 | 66 | 46,5 | 32 | Ø 12 H7 | 27 | 13 |
| 63 | 78 | 56,5 | 40 | Ø 16 H7 | 32 | 17 |
| 80 | 98 | 72 | 50 | Ø 16 H7 | 36 | 17 |
| 80HL | 98 | 72 | 50 | Ø 16 H7 | 36 | 17 |
| 100 | 115 | 89 | 60 | Ø 20 H7 | 41 | 21 |
| 100HL | 115 | 89 | 60 | Ø 20 H7 | 41 | 21 |
| 100XL | 115 | 89 | 60 | Ø 20 H7 | 41 | 21 |

3.10.8

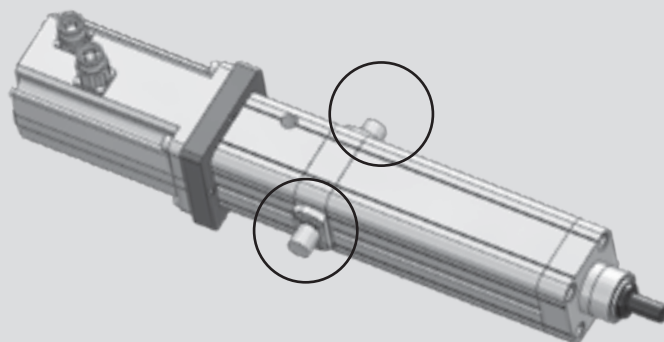
KS Controcerniera Sferica
Male Clevis with Spherical Knuckle



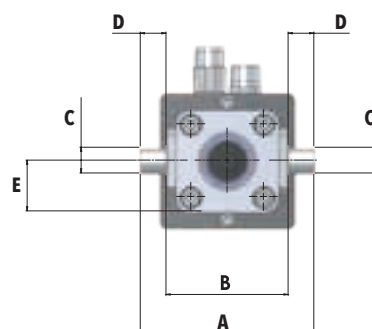
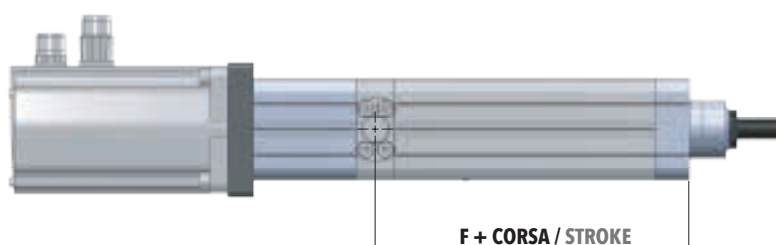
| TAGLIA / SIZES | A | B | C | D | E | F | G | H |
|----------------|-----|------|----|------|---------|----|----|----|
| 32 | 45 | 32,5 | 14 | 10,5 | Ø 10 H7 | 15 | 10 | 22 |
| 40 | 55 | 38 | 16 | 12 | Ø 12 H7 | 18 | 10 | 25 |
| 50 | 65 | 46,5 | 21 | 15 | Ø 16 H7 | 20 | 10 | 27 |
| 63 | 75 | 56,5 | 21 | 15 | Ø 16 H7 | 23 | 12 | 32 |
| 80 | 95 | 72 | 25 | 18 | Ø 20 H7 | 27 | 14 | 36 |
| 80HL | 95 | 72 | 25 | 18 | Ø 20 H7 | 27 | 14 | 36 |
| 100 | 115 | 89 | 25 | 18 | Ø 20 H7 | 30 | 16 | 41 |
| 100HL | 115 | 89 | 25 | 18 | Ø 20 H7 | 30 | 16 | 41 |
| 100XL | 115 | 89 | 25 | 18 | Ø 20 H7 | 30 | 16 | 41 |

3.10.9

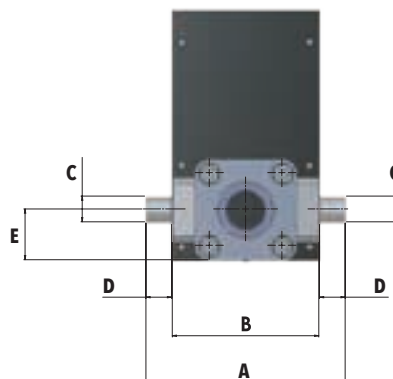
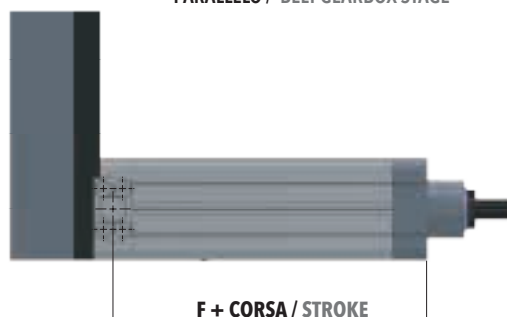
PE Perni Oscillanti
Pivoting Pins



COASSIALE / IN-LINE VERSION



PARALLELO / BELT GEARBOX STAGE



| TAGLIA / SIZES | A | A | B | B | C | D | E | F |
|----------------|------------------------------|---------------------------------|------------------------------|---------------------------------|---------|----|------|-------|
| | COASSIALE IN-LINE VERSION | PARALLELO BELT GEARBOX STAGE | COASSIALE IN-LINE VERSION | PARALLELO BELT GEARBOX STAGE | | | | |
| 32 | 91 | 91 | 67 | 67 | Ø 12 g7 | 12 | 25 | 130 |
| 40 | 96 | 96 | 72 | 72 | Ø 12 g7 | 12 | 27,5 | 130 |
| 50 | 120 | 147 | 88 | 115 | Ø 16 g7 | 16 | 34 | 122,5 |
| 63 | 135 | 155 | 95 | 115 | Ø 20 g7 | 20 | 39,5 | 144 |
| 80 | 169 | 169 | 129 | 129 | Ø 20 g7 | 20 | 49 | 175 |
| 80HL | 169 | 169 | 129 | 129 | Ø 20 g7 | 20 | 49 | 211 |
| 100 | 190 | 190 | 140 | 140 | Ø 25 g7 | 25 | 57,5 | 185 |
| 100HL* | 190 | 190 | 140 | 140 | Ø 25 g7 | 25 | 57,5 | 197 |
| 100HL** | 190 | 190 | 140 | 140 | Ø 25 g7 | 25 | 57,5 | 231 |
| 100XL | 190 | 190 | 140 | 140 | Ø 25 g7 | 25 | 57,5 | 263,5 |

* Vite Ø 40 con passo 5, 10, 20 / Ballscrew Ø 40 with pitch 5, 10, 20

** Vite Ø 40 con passo 40 / Ballscrew Ø 40 with pitch 40

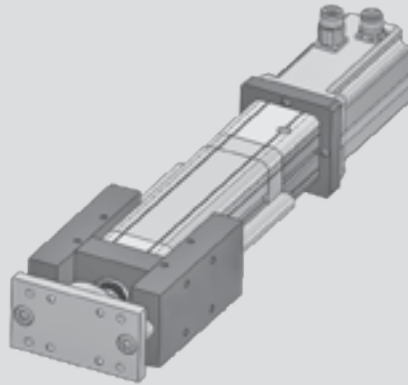
3.11

Sistemi di guida
Guiding unit

3.11.1

Tipo "H"
"H" Type

COASSIALE / IN-LINE VERSION



PARALLELO / BELT GEARBOX STAGE

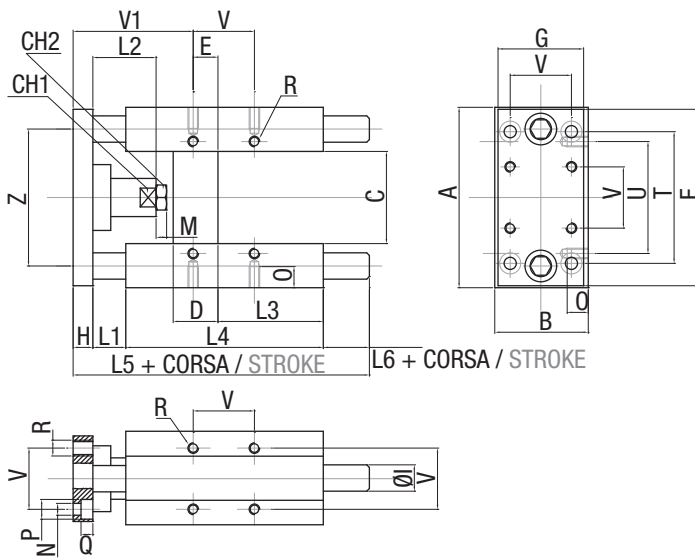
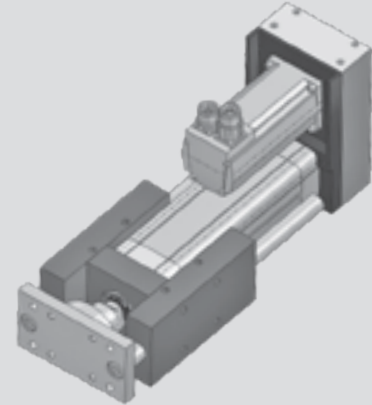


TABELLA PESI / WEIGHT

| TAGLIA SIZES | PESO CORSA WEIGHT STROKE | PESO ogni 100 mm di CORSA WEIGHT a 100 mm STROKE |
|-------------------------|-----------------------------|---|
| Ø [mm] | [kg] | [kg] |
| 32 | 1,3 | 0,18 |
| 40 | 2,4 | 0,31 |
| 50 | 3,5 | 0,48 |
| 63 | 4,6 | 0,48 |
| 80 80 HL | 8,4 | 0,77 |
| 100 100 HL 100 XL | 11,8 | 0,77 |

TABELLA DIMENSIONALE / OVERALL DIMENSION

| TAGLIA SIZES | GIUNTO LUNGO LONG COUPLING | | | | | | | | | | | | | | | | | | | | GIUNTO CORTO SHORT COUPLING | | | | | | | | | | | |
|-------------------------|-------------------------------|-----|-----|-----|-----|----|------|-----|-----|----|----|----|----|-----|-----|-----|----|---|-----|----|--------------------------------|-----|-----|-----|-----|------|------|-----|----|----|----|------|
| | A | B | C | CH1 | CH2 | D | E | F | G | H | I | L1 | L2 | L3 | L4 | L5 | L6 | M | N | O | P | Q | R | T | U | V | V1 | Z | L1 | L2 | L6 | V |
| Ø [mm] | [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 97 | 49 | 51 | 15 | 17 | 24 | 4,3 | 93 | 45 | 12 | 12 | 25 | 42 | 75 | 125 | 187 | 25 | 6 | 6,6 | 12 | 11 | 6,5 | M6 | 78 | 61 | 32,5 | 82,7 | 74 | 3 | 19 | 47 | 60,7 |
| 40 | 115 | 58 | 58 | 15 | 19 | 28 | 11 | 112 | 55 | 12 | 16 | 25 | 42 | 80 | 140 | 207 | 30 | 7 | 6,6 | 12 | 11 | 6,5 | M6 | 84 | 69 | 38 | 86 | 87 | 3 | 24 | 52 | 64 |
| 50 | 137 | 70 | 70 | 20 | 24 | 34 | 18,8 | 134 | 65 | 15 | 20 | 25 | 50 | 78 | 148 | 223 | 35 | 8 | 9 | 16 | 15 | 9 | M8 | 100 | 85 | 46,5 | 92 | 104 | 3 | 27 | 57 | 70 |
| 63 | 152 | 85 | 85 | 20 | 24 | 34 | 15,3 | 147 | 80 | 15 | 20 | 25 | 50 | 106 | 178 | 243 | 25 | 8 | 9 | 16 | 15 | 9 | M8 | 105 | 100 | 56,5 | 96,7 | 119 | 3 | 27 | 47 | 74,7 |
| 80 80 HL | 189 | 105 | 105 | 26 | 30 | 50 | 25 | 180 | 100 | 20 | 25 | 25 | 50 | 111 | 195 | 267 | 27 | 9 | 11 | 20 | 18 | 11 | M10 | 130 | 130 | 72 | 104 | 148 | 3 | 27 | 49 | 82 |
| 100 100 HL 100 XL | 213 | 130 | 131 | 26 | 30 | 55 | 30 | 206 | 120 | 20 | 25 | 25 | 50 | 128 | 218 | 290 | 27 | 9 | 11 | 20 | 18 | 11 | M10 | 150 | 150 | 89 | 105 | 173 | 3 | 27 | 49 | 83 |

3.11.2

COASSIALE / IN-LINE VERSION

PARALLELO / BELT GEARBOX STAGE

Tipo "U"
"U" Type

TABELLA DIMENSIONALE / OVERALL DIMENSION

| TAGLIA SIZES | GIUNTO LUNGO / LONG COUPLING | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|------------------------------|----|------|----|----|------|-----|----|----|----|----|----|----|-----|----|-----|----|----|-----|----|-----|-----|------|-------|-----|
| | A | B | C | CH | D | E | F | G | H | I | L1 | L2 | L3 | L4 | L5 | N | O | P | Q | R | T | U | V | V1 | Z |
| ∅ [mm] | [mm] | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 97 | 49 | 51 | 15 | 17 | 9,25 | 93 | 45 | 12 | 12 | 42 | 25 | 48 | 102 | 18 | 6,6 | 12 | 11 | 6,5 | M6 | 78 | 61 | 32,5 | 61,75 | 74 |
| 40 | 115 | 58 | 58,2 | 15 | 21 | 11 | 112 | 55 | 12 | 16 | 43 | 25 | 58 | 113 | 17 | 6,6 | 12 | 11 | 6,5 | M6 | 84 | 69 | 38 | 65 | 87 |
| 50 | 137 | 70 | 70,2 | 20 | 25 | 18,8 | 134 | 65 | 15 | 20 | 49 | 29 | 59 | 123 | 20 | 9 | 16 | 15 | 8,5 | M8 | 100 | 85 | 46,5 | 70,2 | 104 |
| 63 | 152 | 85 | 85,2 | 20 | 25 | 15,3 | 147 | 80 | 15 | 20 | 49 | 29 | 76 | 140 | 21 | 9 | 16 | 15 | 9 | M8 | 105 | 100 | 56,5 | 73,7 | 119 |

3.11.3 Codice di ordinazione

3.11.3 Designation code

| VERSIONE TYPE | ALESAGGIO CILINDRO BORE CYLINDER | CORSA / STROKE [mm] | CARATTERISTICHE SPECIALI SPECIAL FEATURES |
|---|---|------------------------|--|
| SUGM Unità tipo "H" con manicotti a ricircolo di sfere Guiding unit type "H" with vall sleeves | 32 40 50 63 80 / 80 HL 100 / 100 HL / 100 XL | | |
| SUGB Unità tipo "H" con bussole sinterizzate autolubrificanti Guiding unit type "H" with self lubricating sintered bronze | | | |
| SUGU Unità tipo "U" con bussole sinterizzate autolubrificanti Guiding unit type "U" with self lubricating sintered bronze | | | |

ESEMPIO / EXAMPLE

| | | | | | | |
|------|---|----|---|-----|---|---|
| SUGB | - | 63 | - | 200 | - | - |
|------|---|----|---|-----|---|---|

4.

Categorie Motori/Riduttori/Rinvii angolari compatibili (32 ÷ 100XL)

Compatible Motors/ Planetary
gearboxes/Angle bevel gearboxes
categories (32 ÷ 100XL Sizes)

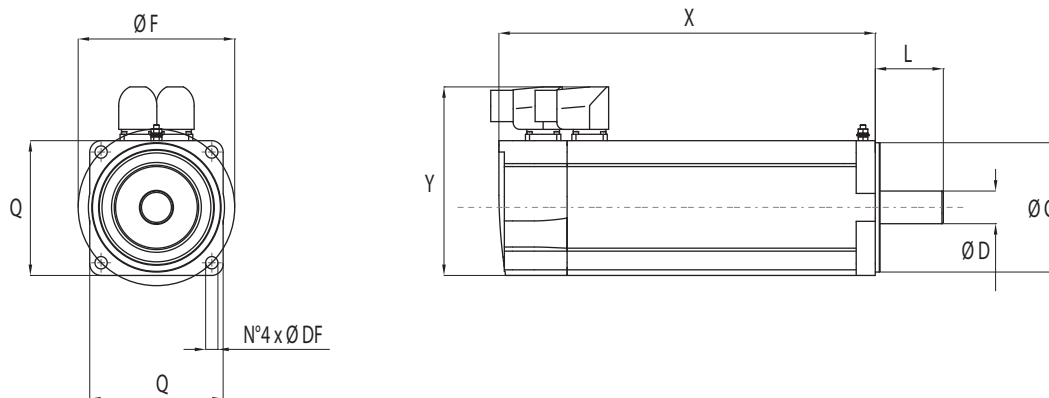
Motori / Motors pg. 148

Riduttori / Planetary gearboxes pg. 149

Rinvii angolari / Angle bevel gearboxes pg. 150

4.1

Motori Motors



| MOTORE MOTOR | D | L | C | F | DF | Q* | X** | Y** |
|-----------------|----|----|-----|-----|-----|-----|-----|-----|
| MAA | 9 | 20 | 40 | 63 | 5,5 | 55 | | |
| MBA | 11 | 23 | 60 | 75 | 5,5 | 70 | | |
| MBB | 11 | 23 | 60 | 90 | 5,8 | 75 | | |
| MBC | 11 | 30 | 50 | 70 | 4,5 | 60 | | |
| MCA | 14 | 30 | 60 | 75 | 5,5 | 70 | | |
| MCB | 14 | 30 | 60 | 90 | 5,8 | 75 | | |
| MCC | 14 | 30 | 80 | 100 | 6,5 | 92 | | |
| MCD | 14 | 30 | 50 | 70 | 4,5 | 60 | | |
| MCE | 14 | 30 | 60 | 75 | 6,5 | 72 | | |
| MCF | 14 | 30 | 50 | 70 | 5,5 | 60 | | |
| MDA | 19 | 40 | 95 | 115 | 9 | 105 | | |
| MDB | 19 | 40 | 80 | 100 | 7 | 96 | | |
| MDC | 19 | 35 | 70 | 90 | 6 | 80 | | |
| MDD | 19 | 35 | 70 | 90 | 7 | 80 | | |
| MEA | 24 | 50 | 95 | 115 | 9 | 100 | | |
| MEB | 24 | 50 | 110 | 130 | 10 | 115 | | |
| MFA | 16 | 40 | 80 | 100 | 7 | 90 | | |
| MFB | 16 | 40 | 70 | 90 | 7 | 80 | | |
| MGA | 10 | 32 | 80 | 100 | 6,6 | 90 | | |

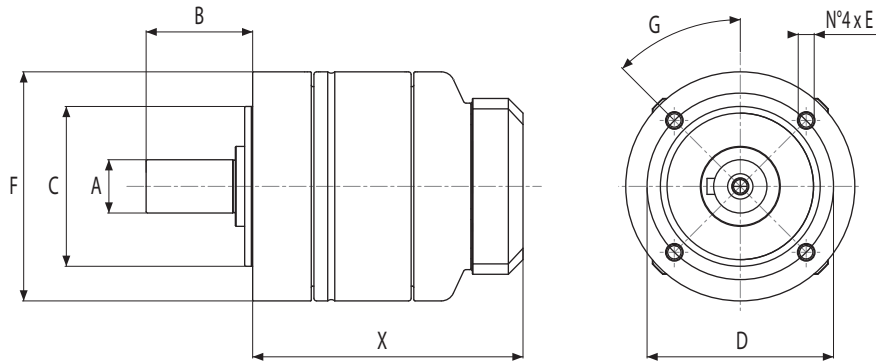
* Il valore "Q" è indicativo e varia a seconda della sigla e marca del motore. /
"Q" value is indicative and it depends on the motor type and brand.

** I valori "X" e "Y" variano a seconda della sigla e marca del motore. / "X" and
"Y" values depend on the motor type and brand.

| MOTORE MOTOR | ESEMPIO DI MARCA E MODELLO BRAND AND TYPE EXAMPLE |
|-----------------|--|
| MAA | SCHNEIDER (BSH/BMH 0551 / 0552 / 0553) SIEMENS (1FK7022) PARKER (SMB60.9X20) DANAHER (DBL2) OSAI (B28) |
| MBA | SCHNEIDER (BSH/BMH 0701 / 0702) PARKER (SMB60.11x23 / SMB82.11x23) OSAI (B36) LENZE (MCS06) SEW (CMP 50S M L BP) |
| MBB | DANAHER (DBL 3-11x23) |
| MBC | OMRON (R88M-K20030 11x23) |
| MCA | SCHNEIDER (BSH/BMH 0703) ELAU (iSH070-60-030) PARKER (SMB 82. 14x30) |
| MCB | DANAHER (DBL3. 14x30) |
| MCC | OSAI (B56) LENZE (MCS09) SEW (DFS 56) |
| MCD | OMRON (R88M-K20030 14x30) |
| MCE | SIEMENS (1FK7032 / 1FK7034) |
| MCF | DENSO (R2AA080) |
| MDA | SCHNEIDER (BSH/BMH 1001 / 1002 / 1003) PARKER (SMB82.19x40 / SMB100.19x40) DANAHER (DBL4) OSAI (B63) OMRON (R88M-K1K030) |
| MDB | SIEMENS (1FK 7040 / 1FK 7041) |
| MDC | OMRON (R88M.K75030) |
| MDD | DELTA ELECTRONICS (ECMA C0807) SIBONI (S 080 2B) |
| MEA | SCHNEIDER (BSH/BMH 1004) PARKER (SMB 100.24x50) |
| MEB | EMERSON - CONTROLTECHNIQUE 115 STOBER - EZ503U ALLEN-BRADLEY MPL-B4560 |
| MFA | ALLEN-BRADLEY MPL-B 330P |
| MFB | DELTA ECMA C20807 YASKAWA SGMP H07 |
| MGA | FANUC ALPHA IS2-5000 |

4.2

Riduttori epicicloidali Planetary gearboxes

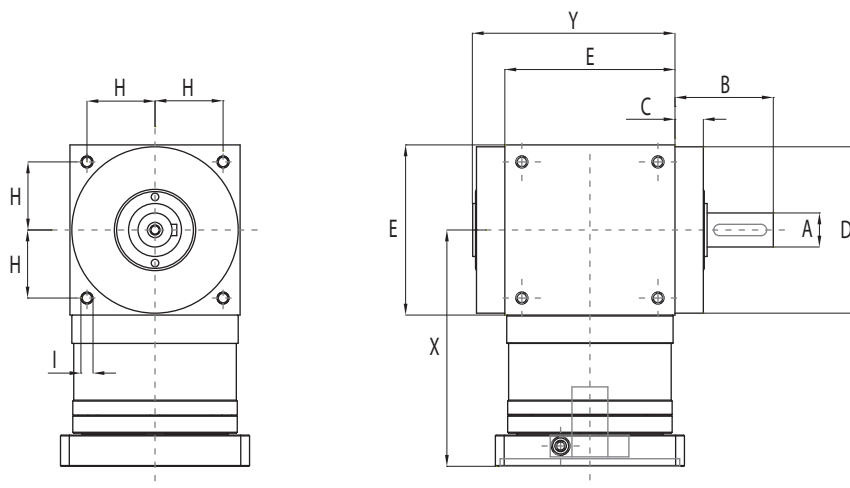


| RIDUTTORE PLANETARY GEARBOX | A | B | C | D | E | F | G | X* 1 STAGE | X* 2 STAGES |
|--|----------|----------|----------|----------|----------|----------|----------|-----------------------|------------------------|
| GBA | 12 | 24,5 | 35 | 44 | M4 | 50 | 0° | 66,5 | 93,5 |
| GBB | 14 | 35 | 40 | 52 | M5 | 60 | 45° | 90 | 123 |
| GCA | 16 | 36 | 52 | 62 | M5 | 70 | 0° | 81 | 107 |
| GCB | 20 | 40 | 60 | 70 | M6 | 86 | 45° | 115 | 154,5 |
| GDA | 22 | 46 | 68 | 80 | M6 | 90 | 0° | 97,5 | 132,5 |
| GEA | 32 | 70 | 90 | 108 | M8 | 120 | 0° | 116,5 | 155,5 |
| GEB | 25 | 55 | 80 | 100 | M10 | 114 | 45° | 149 | 202 |

* Il valore "X" varia a seconda della sigla della marca e del rapporto di riduzione del riduttore.
"X" value depends on the planetary gearbox type, brand and reduction ratio.

| RIDUTTORE PLANETARY GEARBOX | ESEMPIO DI MARCA E MODELLO BRAND AND TYPE EXAMPLE |
|--|---|
| GBA | APEX (AE 050) WITTENSTEIN (LP 050) NEUGART (PLPE 050) |
| GBB | APEX (PGII 060) WITTENSTEIN (CP 060) NEUGART (PLE 060) SCHNEIDER (GBX 060) |
| GCA | APEX (AE 070) WITTENSTEIN (LP 070) NEUGART (PLPE 070) |
| GCB | APEX (PGII 080) WITTENSTEIN (CP 080) NEUGART (PLE 080) SCHNEIDER (GBX 080) |
| GDA | APEX (AE090) WITTENSTEIN (LP 090) NEUGART (PLPE 090) |
| GEA | APEX (AE 120) WITTENSTEIN (LP120) NEUGART (PLE 120) |
| GEB | APEX (PGII 120) WITTENSTEIN (CP 115) NEUGART (PLE 120) SCHNEIDER (GBX 120) |

4.3 Rinvii angolari Angle bevel gearboxes



| RINVIO ANGOLORE ANGLE BEVEL GEARBOX | A | B | C | D | E | H | I | X* 1 STAGE | X* 2 STAGES | Y |
|--|----------|----------|----------|----------|----------|----------|----------|-----------------------|------------------------|----------|
| AAA | 13 | 19,5 | 13 | 63 | 65 | 27 | M4 | 101 | 129 | 80 |
| ABA | 16 | 30 | 14,5 | 73 | 75 | 30 | M6 | 117 | 143,5 | 91,5 |
| ACA | 18 | 35 | 15 | 88 | 90 | 36 | M6 | 125 | 165,5 | 107 |
| ADA | 22 | 40 | 15 | 108 | 110 | 44 | M8 | 141,5 | 197 | 127 |
| AEA | 32 | 50 | 15 | 135 | 140 | 55 | M10 | 175 | 234,5 | 157 |

* Il valore "X" varia a seconda della sigla della marca e del rapporto di riduzione del rinvio angolare.
"X" value depends on the bevel gearbox type, brand and reduction ratio.

| RINVIO ANGOLORE ANGLE BEVEL GEARBOX | ESEMPIO DI MARCA E MODELLO BRAND AND TYPE EXAMPLE |
|--|--|
| AAA | APEX ATB065 |
| ABA | APEX ATB075 |
| ACA | APEX ATB090 |
| ADA | APEX ATB110 |
| AEA | APEX ATB140 |

5.

Grandezze 125 / 160 / 240

125 / 160 / 240 Sizes

| | |
|--------|---------|
| IE 125 | pg. 152 |
| IE 160 | pg. 162 |
| IE 240 | pg. 174 |

5.1

IE 125

5.1.1 Caratteristiche tecniche

5.1.1 Technical features

| ISOMOVE IE 125 | | 10 | 20 |
|----------------------------|--|--|--------------------------------------|
| P | PASSO VITE SCREW LEAD [mm] | 10 | 20 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 63 | 50 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 80000* | 80000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 141,5 | 283 |
| | "CASO 1" / "CASE 1": B [Nm] | 141,5 | 283 |
| | "CASO 2" / "CASE 2": B+D / B+A [Nm] | $\left[\frac{157}{R} \right] + C_s$ | $\left[\frac{314}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | |
| C_{m,max} | "CASO 3" / "CASE 3": B+R (R00) [Nm] | 157 | 314 |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1) R = belt gearbox reduction ratio (available R=1) | |
| | "CASO 4" / "CASE 4": B+R (R120) [Nm] | $\frac{174}{R}$ | $\frac{349}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 100000 | 100000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 265/1590 | 667/2000 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 2 | 3 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 1200** | 1200** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE [Kg] | 15 / 5,3 | 14 / 4,8 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY mm | 0,06 | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | A RICHIESTA / UPON REQUEST | |
| L_{10,Km} | DURATA LIFETIME Km | VEDI TABELLA / SEE TABLE pg. 154 | |

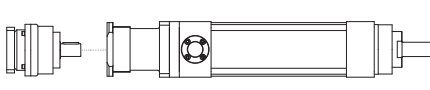
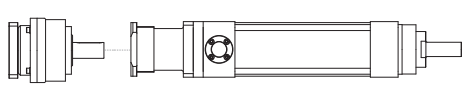
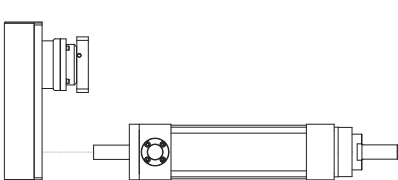
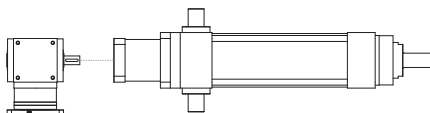
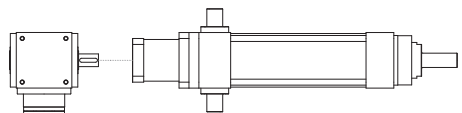
* Per le versioni R00/R01 controllare con i grafici delle pagina 156. / For R00/R01 types please check graph at page 156.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dept.

| ISOMOVE IE 125 | | 10 | 20 |
|--|--|--|------------------------------------|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | R00 / R120 / A110 / A140 / D-R120 / D-R155 | |
| $F_{a,p}$ | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX | [N] AE120/80000 AE155/80000 | AE120/45000*** AE155/75200*** |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX | [N] ATB110/37400*** ATB140/80000 | ATB110/18600*** ATB140/43000*** |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | NON DISPONIBILE / NOT AVAILABLE | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | |
|--|--|
| <p>TRASMISSIONE COASSIALE CON RIDUTTORE</p> <p>IN-LINE PLANETARY GEARBOX STAGE</p> <p>B+D</p> |  <p>AE120 MODULO BASE BASIC MODULE</p>  <p>AE155 MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE PARALLELA CON RIDUTTORE</p> <p>PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE</p> <p>B+R</p> |  <p>AE120 MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE ANGOLARE CON RINVIO</p> <p>ANGLE BEVEL GEARBOX STAGE</p> <p>B+A</p> |  <p>ATB110 MODULO BASE BASIC MODULE</p>  <p>ATB140 MODULO BASE BASIC MODULE</p> |

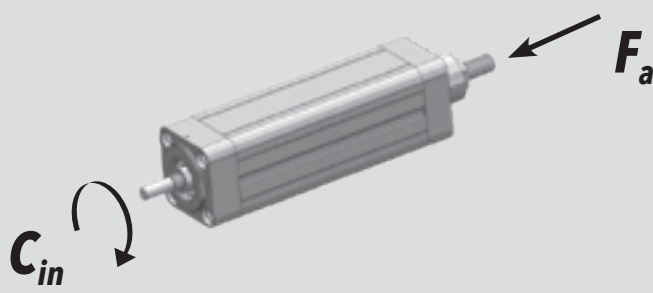
5.1.2 Calcolo durata

5.1.2 Lifetime calculation

| | | |
|---|---|--|
| <p>IE 125 P = 10 mm</p> | $L_{10,Km} = \left[\frac{107400}{F_{eq}} \right]^3 \cdot 10$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |
| <p>IE 125 P = 20 mm</p> | $L_{10,Km} = \left[\frac{84000}{F_{eq}} \right]^3 \cdot 20$ | <p>$L_{10,Km} = [Km]$ $F_{eq} = [N]$</p> |



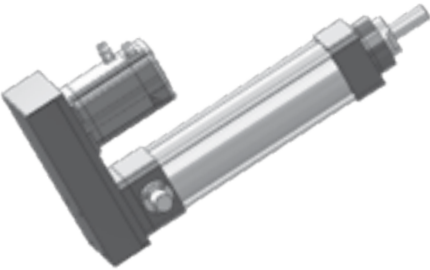
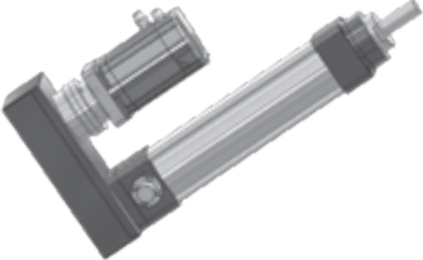
5.1.3 Calcolo coppia in ingresso al modulo base

5.1.3 Torque calculation at basic module input shaft

| | | |
|--|---|--|
|  <p>The diagram shows a motor shaft with an input torque C_{in} indicated by a curved arrow and an axial force F_a indicated by a straight arrow pointing towards the shaft.</p> | | |
| <p>IE 125 P = 10 mm</p> | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |
| <p>IE 125 P = 20 mm</p> | $C_{in} = \left[\frac{F_a \cdot 20}{5652} \right]$ | <p>$C_{in} = [Nm]$ $F_a = [N]$</p> |

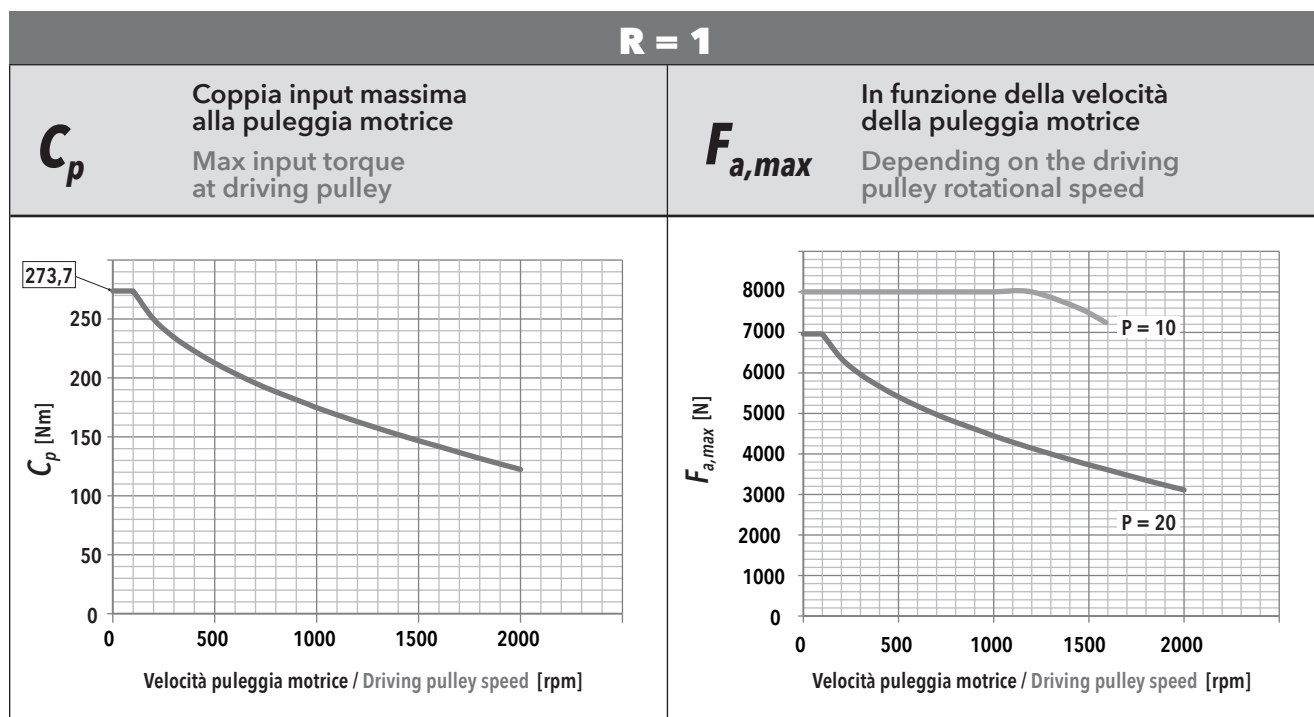
5.1.4 Calcolo coppia motore

5.1.4 Motor torque calculation

| | |
|---------------------------------|--|
| <p>CASO / CASE 1</p> | <p style="text-align: center;">ISOMOVE B</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE 2</p> | <p style="text-align: center;">ISOMOVE B+D / B+A</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p><i>R</i> = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio <i>η</i> = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 3</p> | <p style="text-align: center;">ISOMOVE B+R (R00)</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p><i>R</i> = rapporto di riduzione trasmissione a cinghia, disponibile R=1 belt gearbox reduction ratio, available R=1 <i>η</i> = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 4</p> | <p style="text-align: center;">ISOMOVE B+R (R120)</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p><i>R</i> = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio <i>η</i> = rendimento meccanico / mechanical efficiency = 0,81</p> |

5.1.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

5.1.5 Mechanical input power at belt gear stage (R type)

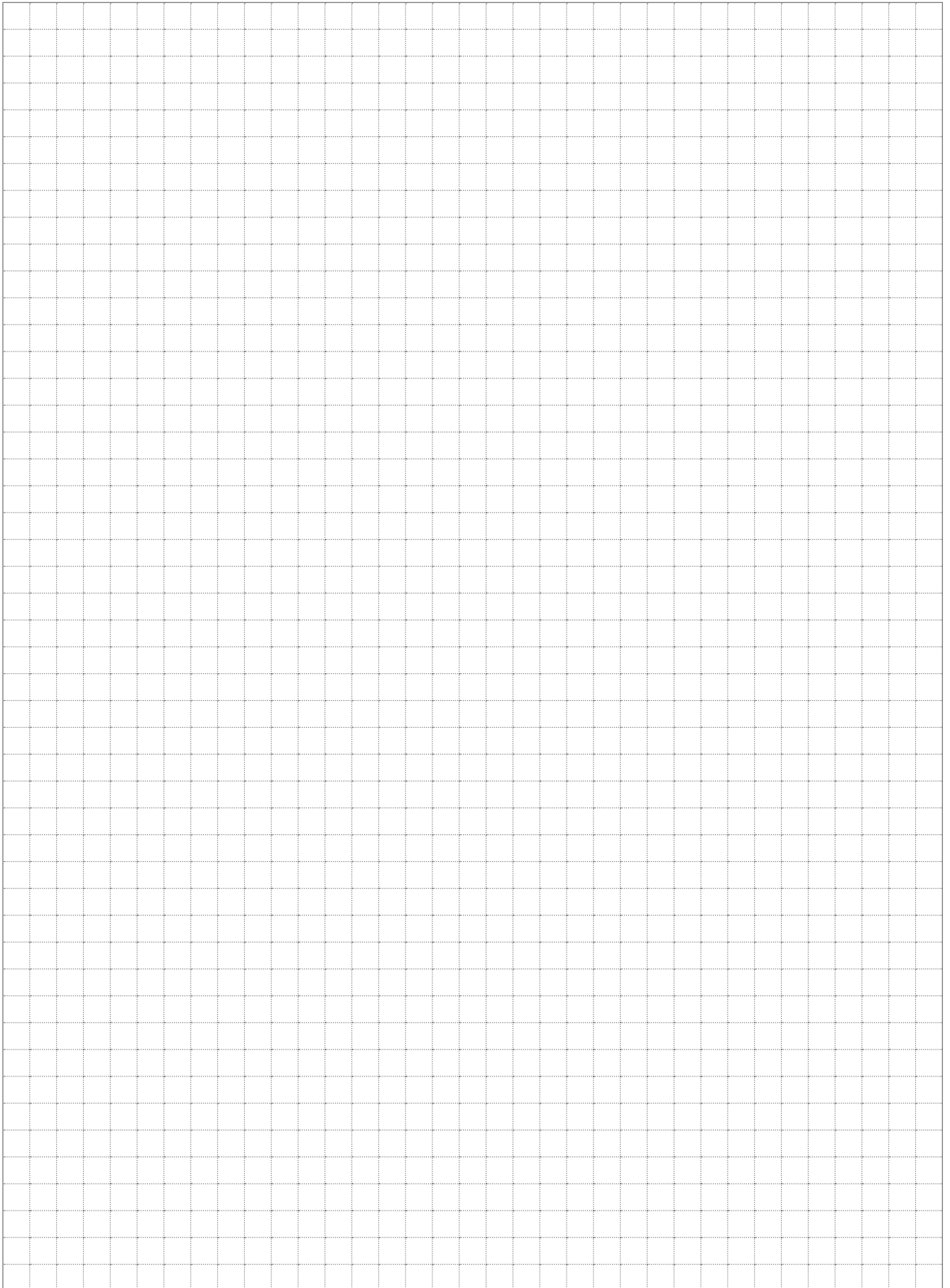


F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 125 - PASSO / PITCH 10 | | | | | |
|---------------------------|------------|------------------|------|-------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 26,5 | 106 | 185,5 | 265 |
| 80000 | F_r [N] | 2547 | 2561 | 2591 | |
| | f_t [Hz] | 120 | 121 | 121 | |
| 72000 | F_r [N] | 2292 | 2306 | 2337 | 2384 |
| | f_t [Hz] | 114 | 114 | 115 | 116 |
| 64000 | F_r [N] | 2038 | 2052 | 2082 | 2129 |
| | f_t [Hz] | 108 | 108 | 109 | 110 |
| 56000 | F_r [N] | 1783 | 1797 | 1827 | 1875 |
| | f_t [Hz] | 101 | 101 | 102 | 103 |
| 48000 | F_r [N] | 1529 | 1542 | 1573 | 1620 |
| | f_t [Hz] | 93 | 94 | 95 | 96 |
| 40000 | F_r [N] | 1274 | 1288 | 1318 | 1365 |
| | f_t [Hz] | 85 | 86 | 87 | 88 |
| 32000 | F_r [N] | 1019 | 1033 | 1063 | 1111 |
| | f_t [Hz] | 76 | 77 | 78 | 79 |
| 24000 | F_r [N] | 765 | 779 | 809 | 856 |
| | f_t [Hz] | 66 | 67 | 68 | 70 |
| 16000 | F_r [N] | 510 | 524 | 554 | 602 |
| | f_t [Hz] | 54 | 55 | 56 | 58 |
| 8000 | F_r [N] | 255 | 269 | 300 | 347 |
| | f_t [Hz] | 38 | 39 | 41 | 44 |

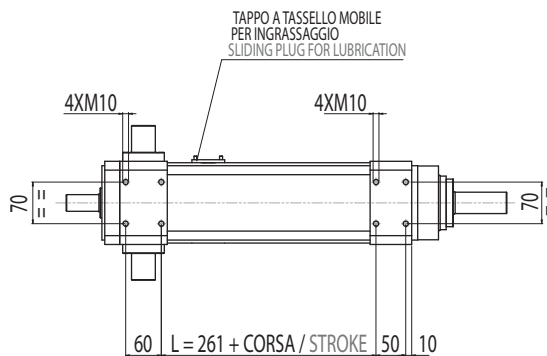
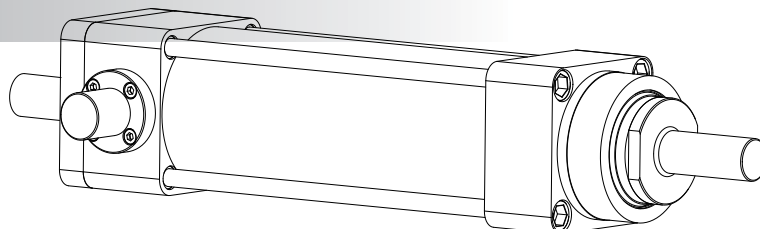
| IE 125 - PASSO / PITCH 20 | | | | | |
|---------------------------|------------|------------------|-------|-------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 66,7 | 266,8 | 466,9 | 667 |
| 80000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 72000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 64000 | F_r [N] | 4075 | | | |
| | f_t [Hz] | 152 | | | |
| 56000 | F_r [N] | 3566 | | | |
| | f_t [Hz] | 142 | | | |
| 48000 | F_r [N] | 3057 | 3079 | | |
| | f_t [Hz] | 132 | 132 | | |
| 40000 | F_r [N] | 2548 | 2569 | | |
| | f_t [Hz] | 120 | 121 | | |
| 32000 | F_r [N] | 2038 | 2060 | 2108 | |
| | f_t [Hz] | 108 | 108 | 109 | |
| 24000 | F_r [N] | 1529 | 1551 | 1599 | |
| | f_t [Hz] | 93 | 94 | 95 | |
| 16000 | F_r [N] | 1020 | 1042 | 1090 | 1165 |
| | f_t [Hz] | 76 | 77 | 79 | 81 |
| 8000 | F_r [N] | 656 | 532 | 581 | 656 |
| | f_t [Hz] | 61 | 55 | 57 | 61 |



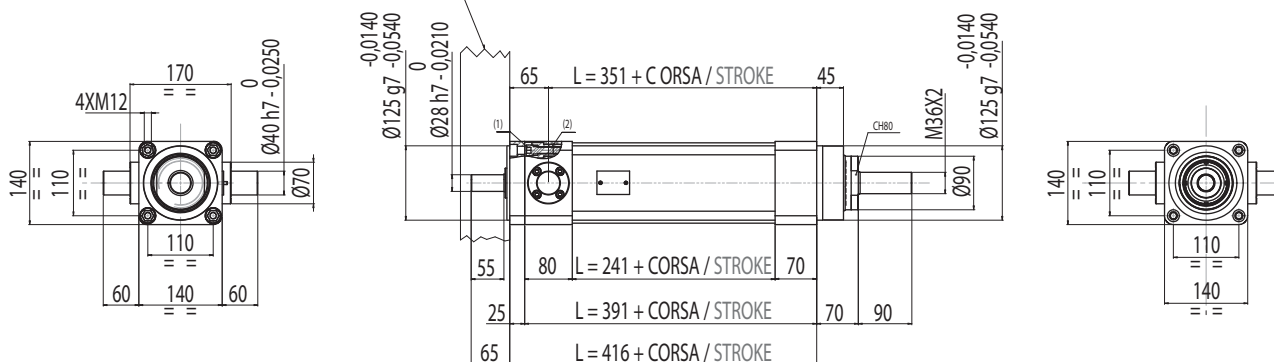
5.1.6 Caratteristiche dimensionali

5.1.6 Overall dimensions

B
MODULO BASE
BASIC MODULE



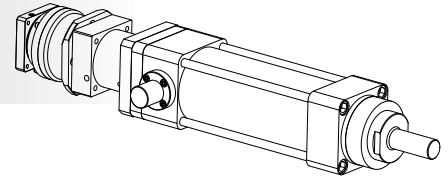
Per fissare la flangia indicata, rimuovere le 4 viti M12 (1) ed utilizzare le 4 filettature (2)
To assembly the flange indicated, unscrew the 4 screws M12 (1) and use the 4 screws (2)



B+D

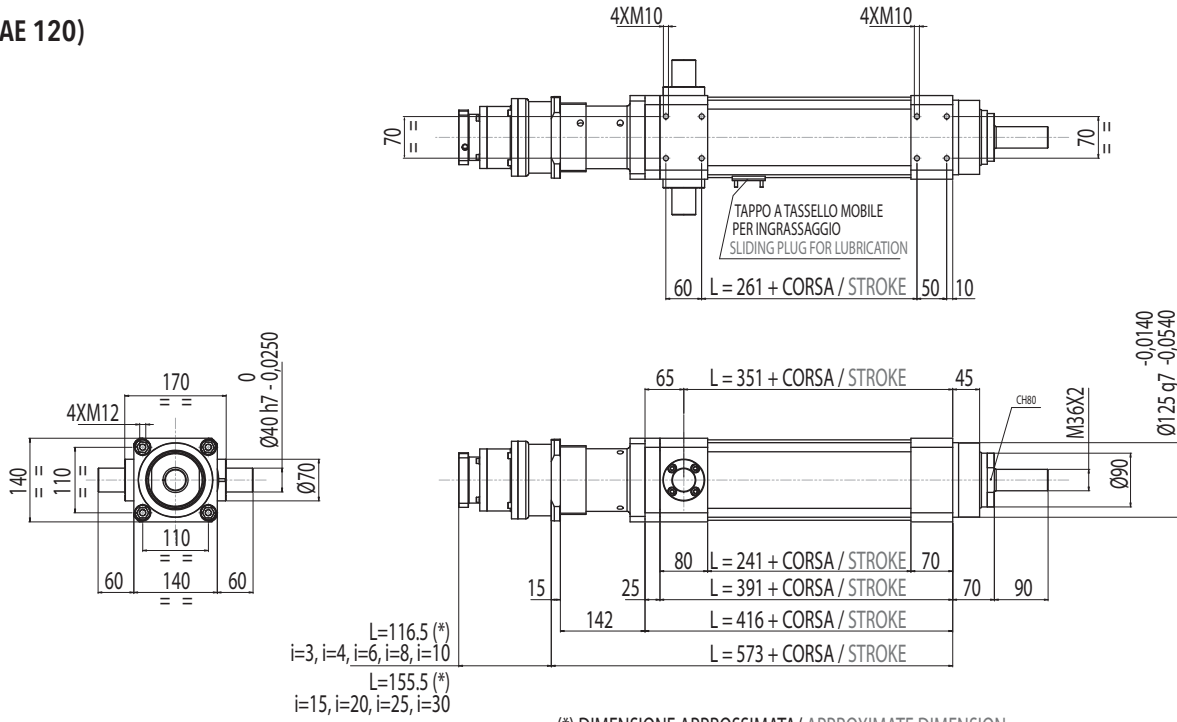
MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE

BASIC MODULE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE



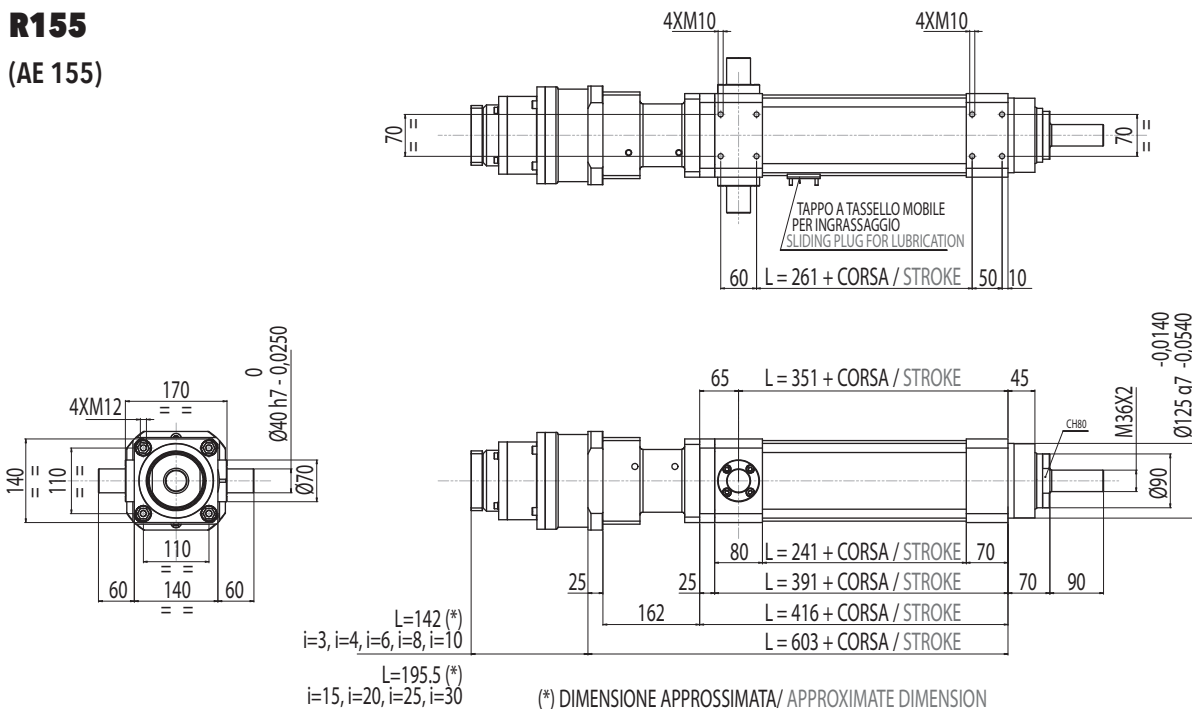
R120

(AE 120)

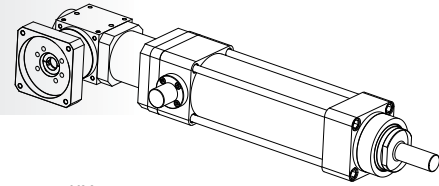


R155

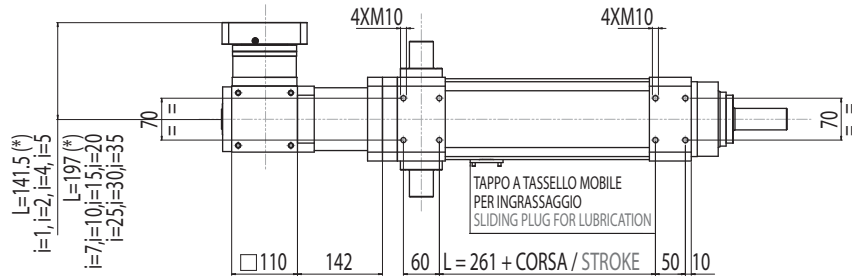
(AE 155)



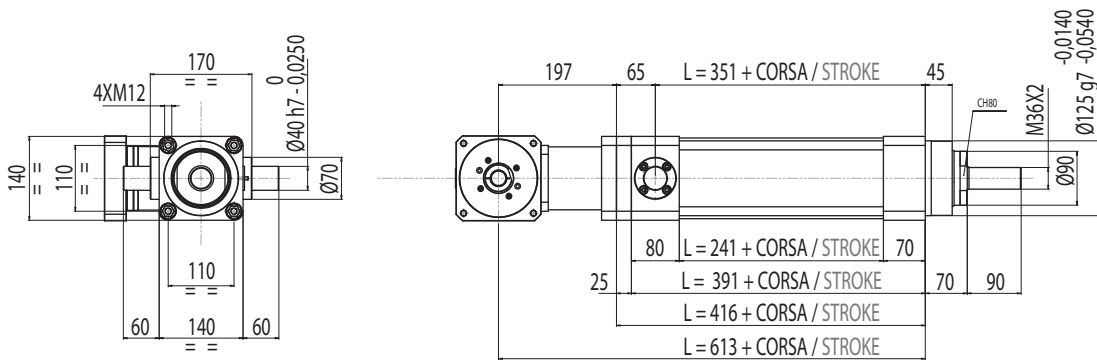
B+A
MODULO BASE + RINVIO ANGOLARE
BASIC MODULE + ANGLE BEVEL GEARBOX STAGE



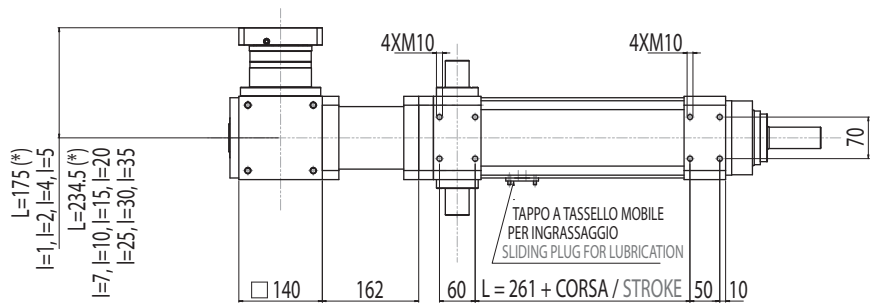
A110
(ATB110-FL1)



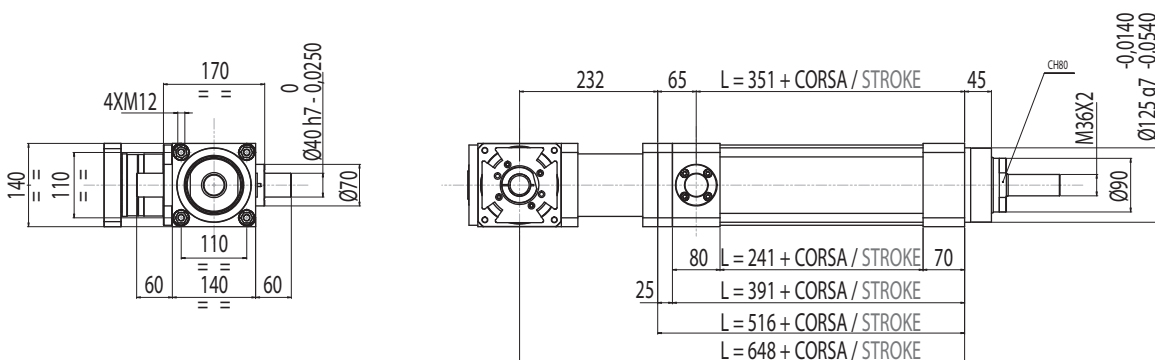
(*) DIMENSIONE APPROSSIMATA/ APPROXIMATE DIMENSION



A140
(ATB140-FL1)



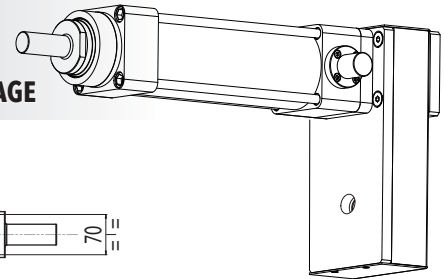
(*) DIMENSIONE APPROSSIMATA/ APPROXIMATE DIMENSION



B+R

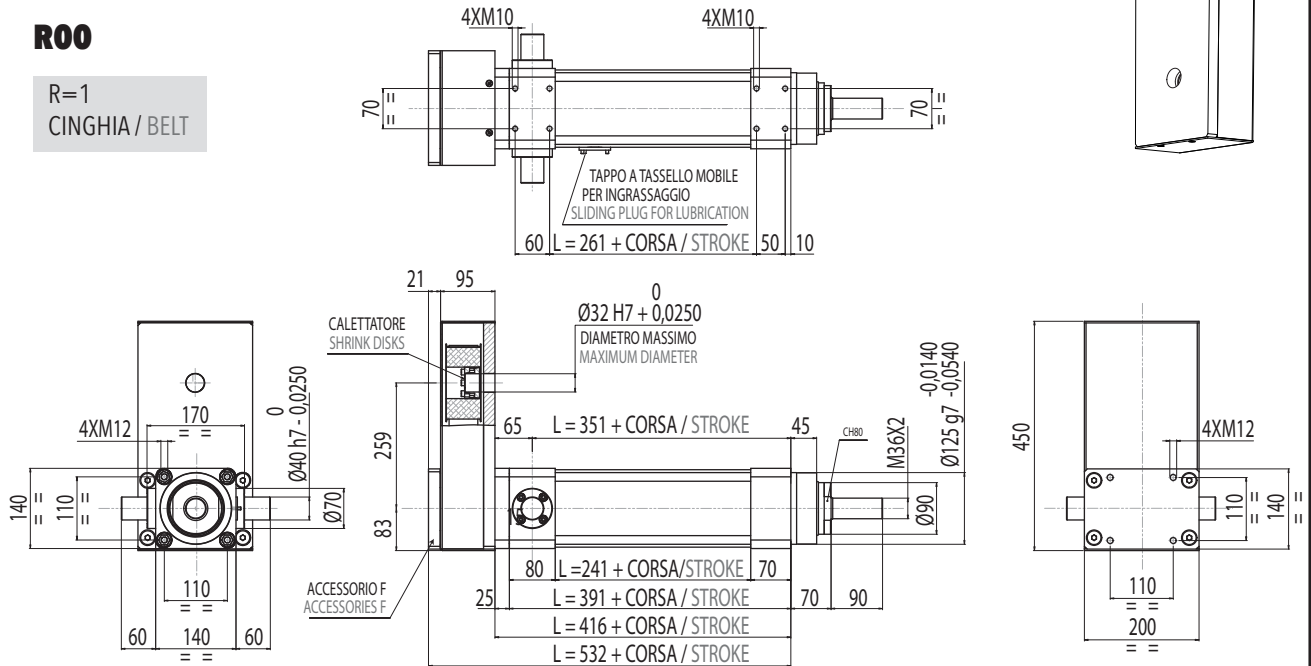
MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO
PER MOTORE CUSTOM

BASIC MODULE + PARALLEL FOR CUSTOM MOTORS BELT GEARBOX STAGE



R00

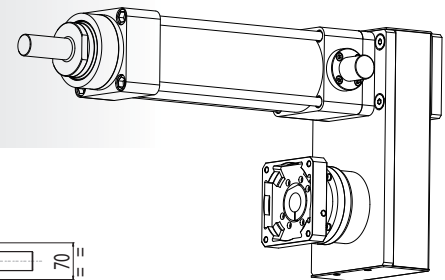
R=1
CINGHIA / BELT



B+R

MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO
+ RIDUTTORE EPICICLOIDALE R120

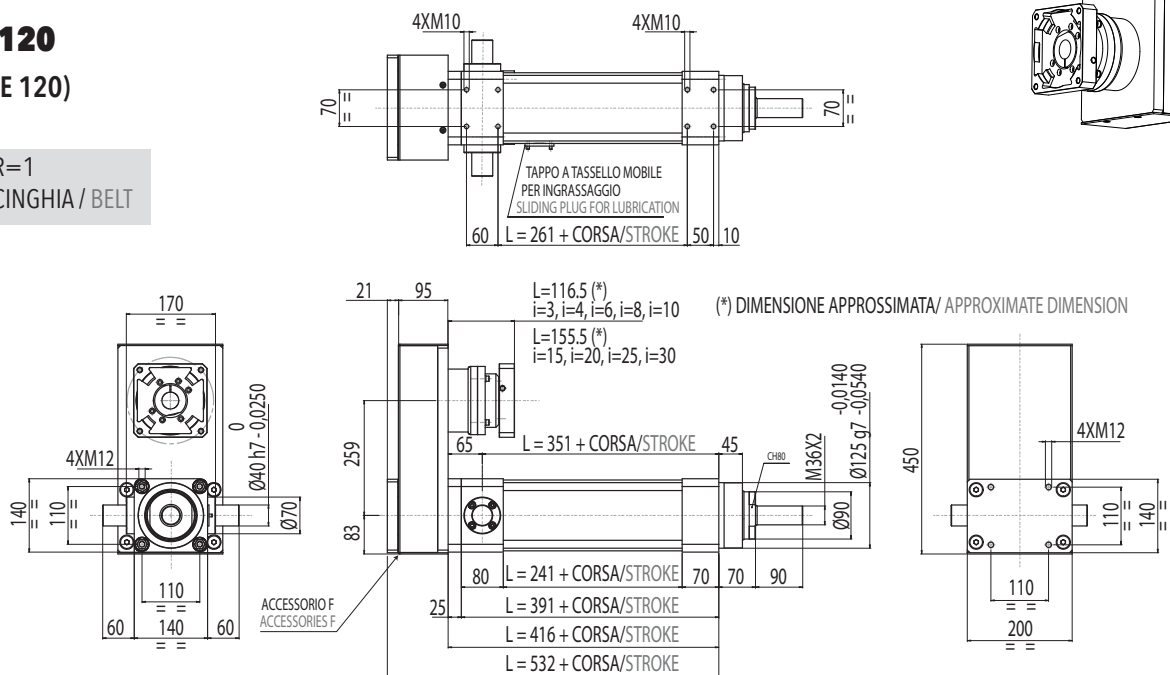
BASIC MODULE + PARALLEL BELT GEARBOX STAGE
+ IN-LINE PLANETARY GEARBOX REDUCTION STAGE R120



R120

(AE 120)

R=1
CINGHIA / BELT



5.2

IE 160

5.2.1 Caratteristiche tecniche

5.2.1 Technical features

| ISOMOVE IE 160 | | 10 | 20 |
|----------------------------|---|--|--------------------------------------|
| P | PASSO VITE SCREW LEAD [mm] | 10 | 20 |
| D | DIAMETRO VITE SCREW DIAMETER [mm] | 80 | 80 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD [N] | 100.000* | 120.000* |
| C_{in,max} | PER AVERE $F_a = F_d$ TO GET [Nm] | 177 | 424 |
| | "CASO 1" / "CASE 1": B [Nm] | 177 | 424 |
| | "CASO 2" / "CASE 2": B+D / B+A [Nm] | $\left[\frac{197}{R} \right] + C_s$ | $\left[\frac{471}{R} \right] + C_s$ |
| | | R = rapporto di riduzione del riduttore / rinvio angolare R = planetary / angle bevel gearbox reduction ratio | |
| C_{m,max} | "CASO 3" / "CASE 3": B+R (R00) [Nm] | 197 | 471 |
| | | R = rapporto di riduzione della trasmissione a cinghia (disponibile R=1) R = belt gearbox reduction ratio (available R=1) | |
| | "CASO 4" / "CASE 4": B+R (R120 / R155) [Nm] | $\frac{218}{R}$ | $\frac{523}{R}$ |
| | | R = rapporto di riduzione del riduttore epicicloidale R = planetary gearbox reduction ratio | |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD [N] | 160.000 | 160.000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS [mm/sec] | 208/1248 | 417/1251 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED [rpm] | | |
| a_{max} | ACCELERAZIONE MASSIMA IN USCITA MAX OUTPUT ACCELERATION [m/sec ²] | 2 | 3 |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE [mm] | 1200** | 1200** |
| | PESO MODULO BASE CORSA 0 mm / PESO OGNI 100 mm DI CORSA BASIC MODULE WEIGHT FOR 0 mm STROKE / WEIGHT FOR ADDITIONAL 100 mm STROKE [Kg] | 19,5 / 7 | 19,5 / 7 |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY mm | 0,06 | 0,06 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | NON DISPONIBILE / NOT AVAILABLE | |
| L_{10,Km} | DURATA LIFETIME Km | VEDI TABELLA / SEE TABLE pg. 164 | |

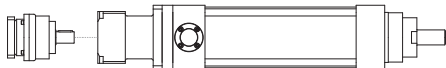
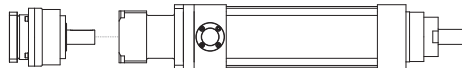
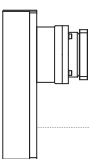
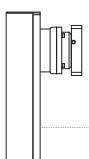
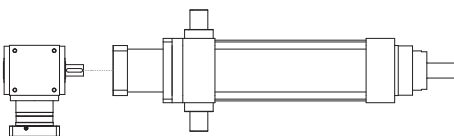
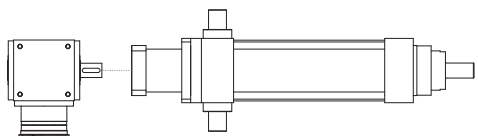
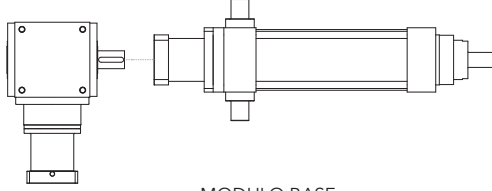
* Per le versioni R00/R01 controllare con i grafici della pagina 166. / For R00/R01 types please check graph at page 166.

** Per corse superiori, contattare il nostro servizio tecnico. / For longer strokes please contact our technical dpt.

| ISOMOVE IE 160 | | 5 | 20 |
|--|--|--|---|
| VERSIONI DISPONIBILI AVAILABLE TYPES | | R00 / R120 / R155 / A140 / A170 / A210 / D-R120 / D-R155 | |
| $F_{a,p}$ | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX | [N] | AE120/91000*** AE155/100000 |
| | POSSIBILE CON IL RINVIO ANGOLARE INDICATO POSSIBLE VALUE WITH THE INDICATED ANGLE BEVEL GEARBOX | [N] | ATB140/86000*** ATB170/100000 ATB210/100000 |
| ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | NON DISPONIBILE / NOT AVAILABLE | |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

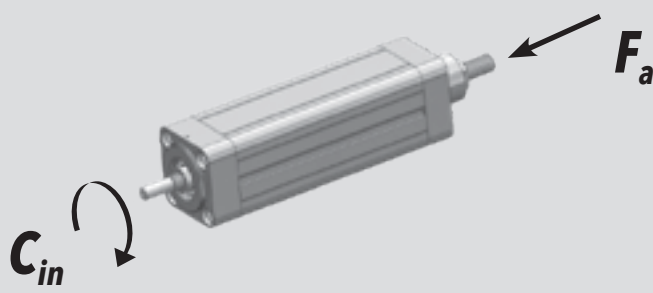
| | | |
|--|---|---|
| <p>TRASMISSIONE COASSIALE CON RIDUTTORE</p> <p>IN-LINE PLANETARY GEARBOX STAGE</p> <p>B+D</p> |  <p>AE120</p> <p>MODULO BASE BASIC MODULE</p> |  <p>AE155</p> <p>MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE PARALLELA CON RIDUTTORE</p> <p>PARALLEL BELT GEARBOX STAGE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE</p> <p>B+R</p> |  <p>AE155</p> <p>MODULO BASE BASIC MODULE</p> |  <p>AE120</p> <p>MODULO BASE BASIC MODULE</p> |
| <p>TRASMISSIONE ANGOLARE CON RINVIO</p> <p>ANGLE BEVEL GEARBOX STAGE</p> <p>B+A</p> |  <p>ATB140</p> <p>MODULO BASE BASIC MODULE</p> |  <p>ATB170</p> <p>MODULO BASE BASIC MODULE</p> |
| |  <p>ATB210</p> <p>MODULO BASE BASIC MODULE</p> | |

5.2.2 Calcolo durata

5.2.2 Lifetime calculation



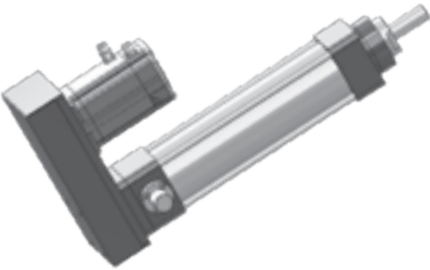
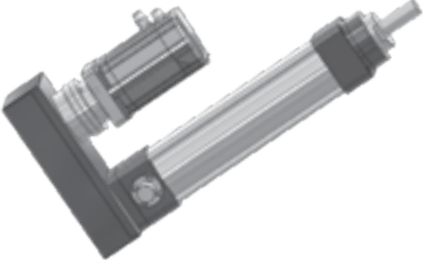
| | | |
|-----------------------------------|---|--------------------------------------|
| IE 160 P = 10 mm | $L_{10,Km} = \left[\frac{123800}{F_{eq}} \right]^3 \cdot 10$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |
| IE 160 P = 20 mm | $L_{10,Km} = \left[\frac{174000}{F_{eq}} \right]^3 \cdot 20$ | $L_{10,Km} = [Km]$ $F_{eq} = [N]$ |

5.2.3 Calcolo coppia in ingresso
al modulo base5.2.3 Torque calculation at basic
module input shaft

| | | |
|--|---|--------------------------------|
|  | | |
| IE 160 P = 10 mm | $C_{in} = \left[\frac{F_a \cdot 10}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |
| IE 160 P = 20 mm | $C_{in} = \left[\frac{F_a \cdot 20}{5652} \right]$ | $C_{in} = [Nm]$ $F_a = [N]$ |

5.2.4 Calcolo coppia motore

5.2.4 Motor torque calculation

| | |
|---------------------------------|---|
| <p>CASO / CASE 1</p> | <p style="text-align: center;">ISOMOVE B</p>  $C_m = C_{in} \quad [Nm]$ |
| <p>CASO / CASE 2</p> | <p style="text-align: center;">ISOMOVE B+D / B+A</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 3</p> | <p style="text-align: center;">ISOMOVE B+R (R00)</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] \quad [Nm]$ <p>R = rapporto di riduzione trasmissione a cinghia, disponibile R=1 belt gearbox reduction ratio, available R=1 η = rendimento meccanico / mechanical efficiency = 0,90</p> |
| <p>CASO / CASE 4</p> | <p style="text-align: center;">ISOMOVE B+R (R120 / R155)</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p>R = rapporto di riduzione riduttore epicicloidale planetary gearbox reduction ratio η = rendimento meccanico / mechanical efficiency = 0,81</p> |

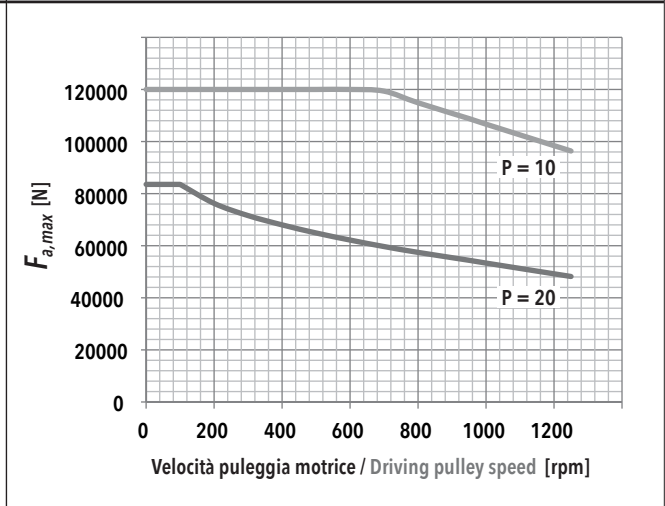
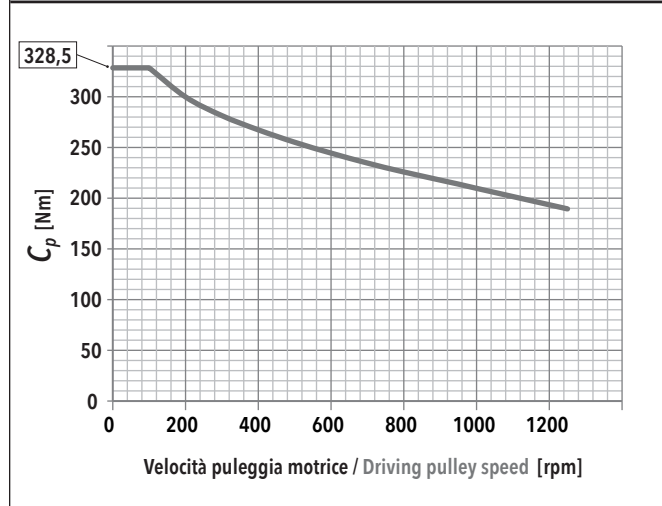
5.2.5 Potenza in ingresso alla trasmissione a cinghia (versione R)

5.2.5 Mechanical input power at belt gear stage (R type)

R = 1

C_p Coppia input massima alla puleggia motrice
Max input torque at driving pulley

$F_{a,max}$ In funzione della velocità della puleggia motrice
Depending on the driving pulley rotational speed

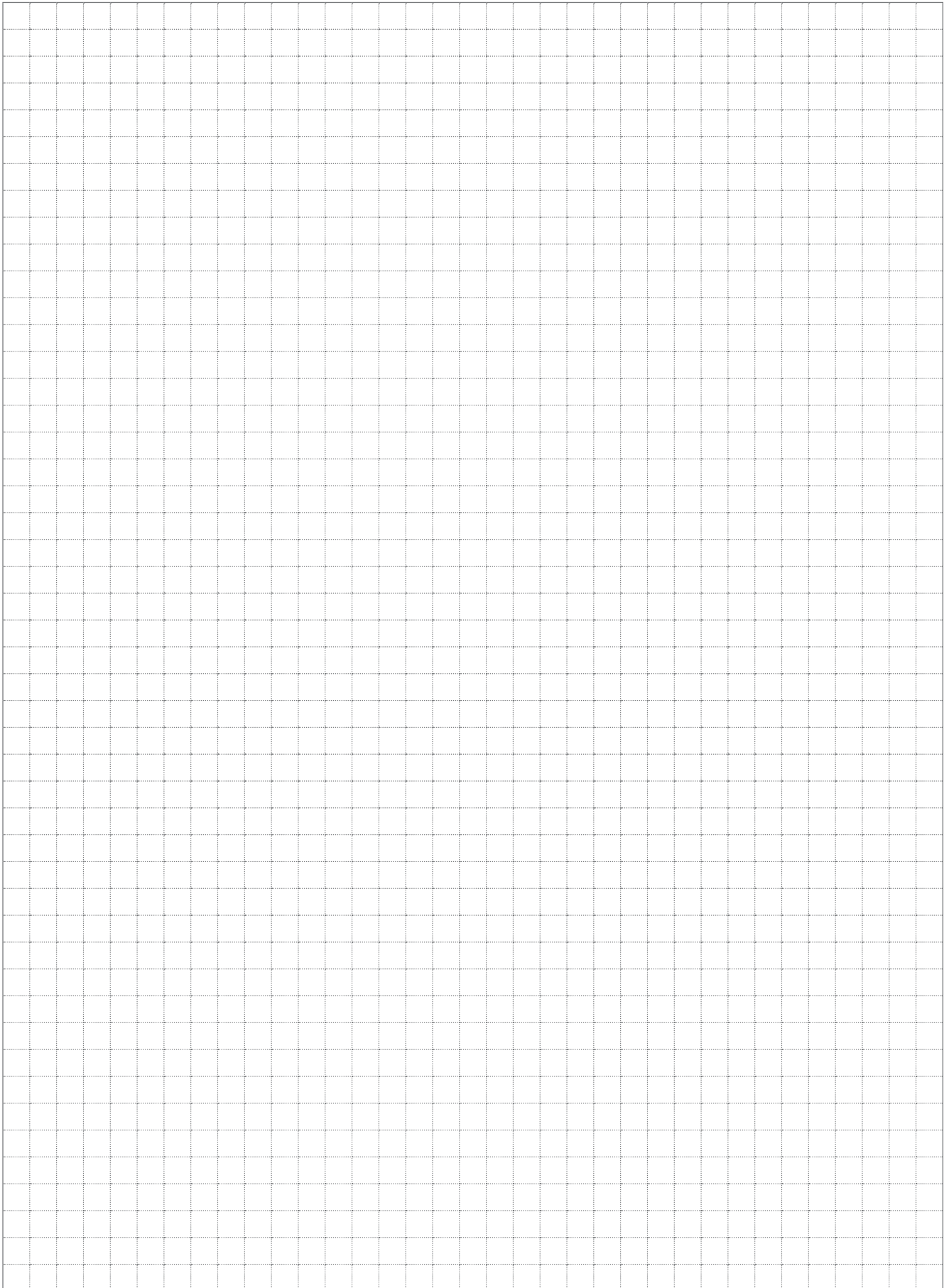


F_r Forza radiale su asse puleggia motrice in funzione di C_{in}
Radial force on driving pulley as a function of C_{in}

f_t Frequenza di vibrazione della cinghia per il tensionamento (al montaggio)
Vibration frequency of the belt for its tensioning (during assembly)

| IE 160 - PASSO / PITCH 10 | | | | | |
|---------------------------|------------|------------------|------|-------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 20,8 | 83,2 | 145,6 | 208 |
| 100000 | F_r [N] | 3183 | 3192 | 3210 | |
| | f_t [Hz] | 134 | 135 | 135 | |
| 90000 | F_r [N] | 2865 | 2873 | 2892 | 2921 |
| | f_t [Hz] | 128 | 128 | 128 | 129 |
| 80000 | F_r [N] | 2547 | 2555 | 2574 | 2603 |
| | f_t [Hz] | 120 | 120 | 121 | 122 |
| 70000 | F_r [N] | 2228 | 2237 | 2255 | 2285 |
| | f_t [Hz] | 113 | 113 | 113 | 114 |
| 60000 | F_r [N] | 1910 | 1919 | 1937 | 1966 |
| | f_t [Hz] | 104 | 104 | 105 | 106 |
| 50000 | F_r [N] | 1592 | 1600 | 1619 | 1648 |
| | f_t [Hz] | 95 | 95 | 96 | 97 |
| 40000 | F_r [N] | 1274 | 1282 | 1301 | 1330 |
| | f_t [Hz] | 85 | 85 | 86 | 87 |
| 30000 | F_r [N] | 955 | 964 | 982 | 1012 |
| | f_t [Hz] | 74 | 74 | 75 | 76 |
| 20000 | F_r [N] | 637 | 646 | 664 | 693 |
| | f_t [Hz] | 60 | 61 | 61 | 63 |
| 10000 | F_r [N] | 319 | 327 | 346 | 375 |
| | f_t [Hz] | 43 | 43 | 44 | 46 |

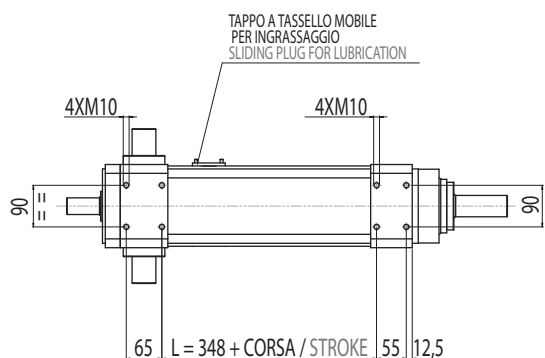
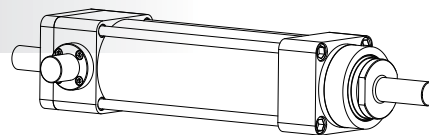
| IE 160 - PASSO / PITCH 20 | | | | | |
|---------------------------|------------|------------------|-------|-------|------|
| F_a [N] | | V_{out} [mm/s] | | | |
| | | 41,7 | 166,8 | 291,9 | 417 |
| 120000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 108000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 96000 | F_r [N] | | | | |
| | f_t [Hz] | | | | |
| 84000 | F_r [N] | 5347 | | | |
| | f_t [Hz] | 174 | | | |
| 72000 | F_r [N] | 4583 | | | |
| | f_t [Hz] | 161 | | | |
| 60000 | F_r [N] | 3820 | 3828 | | |
| | f_t [Hz] | 147 | 147 | | |
| 48000 | F_r [N] | 3056 | 3064 | 3083 | |
| | f_t [Hz] | 132 | 132 | 132 | |
| 36000 | F_r [N] | 2292 | 2301 | 2320 | 2349 |
| | f_t [Hz] | 114 | 114 | 115 | 116 |
| 24000 | F_r [N] | 1528 | 1537 | 1556 | 1585 |
| | f_t [Hz] | 93 | 93 | 94 | 95 |
| 12000 | F_r [N] | 764 | 773 | 792 | 821 |
| | f_t [Hz] | 66 | 66 | 67 | 68 |



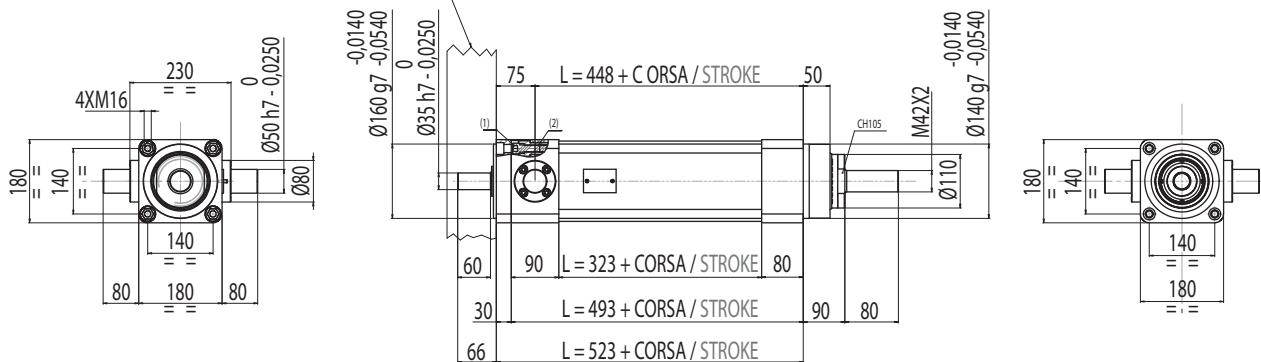
5.2.6 Caratteristiche dimensionali

5.2.6 Overall dimensions

B
MODULO BASE
BASIC MODULE



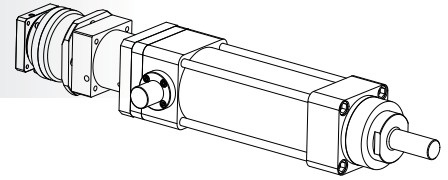
Per fissare la flangia indicata, rimuovere le 4 viti M12 (1) ed utilizzare le 4 filettature (2)
To assembly the flange indicated, unscrew the 4 screws M12 (1) and use the 4 screws (2)



B+D

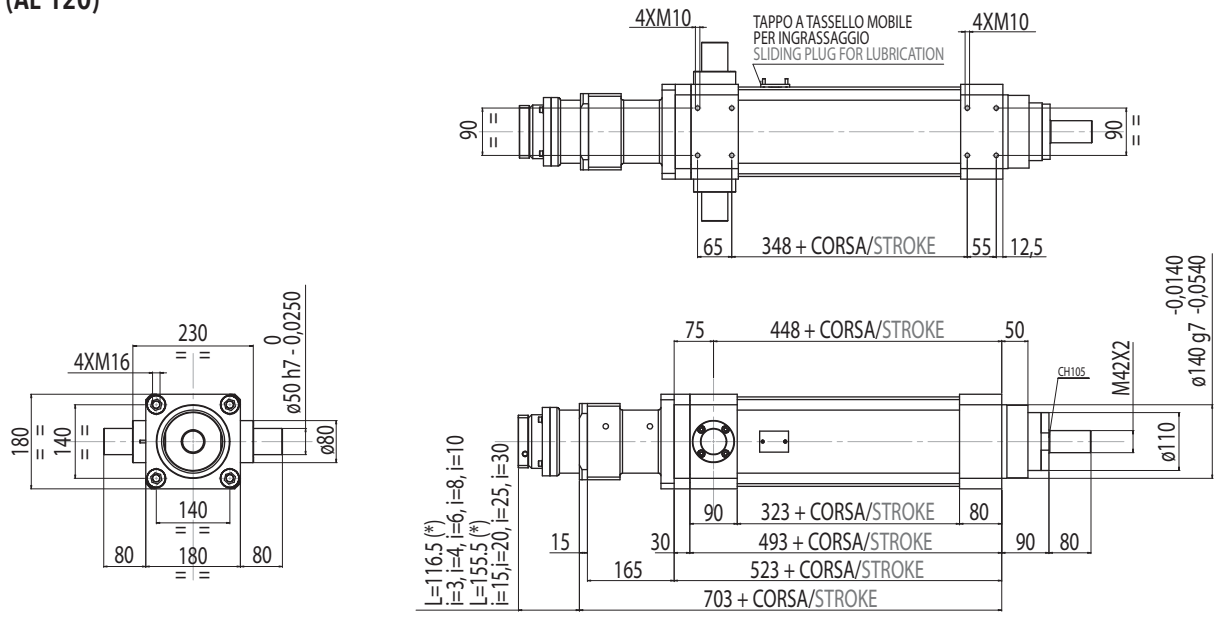
MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE

BASIC MODULE + IN-LINE PLANETARY GEARBOX REDUCTION STAGE



R120

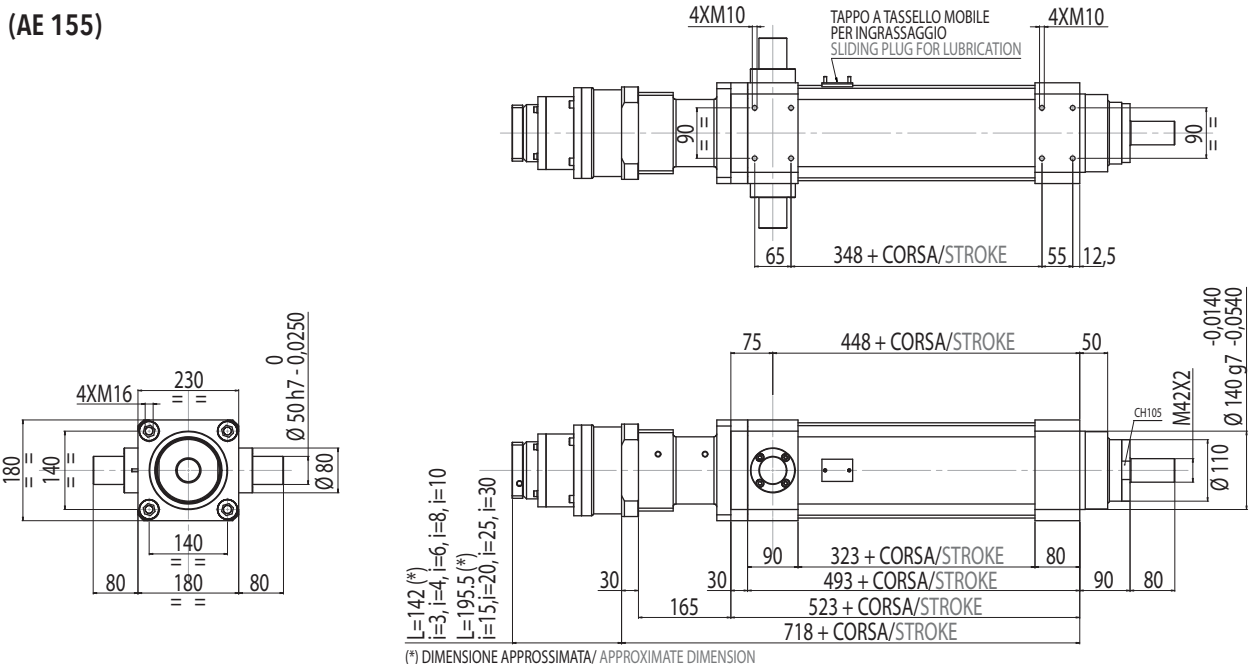
(AE 120)



(*) DIMENSIONE APPROSSIMATA / APPROXIMATE DIMENSION

R155

(AE 155)

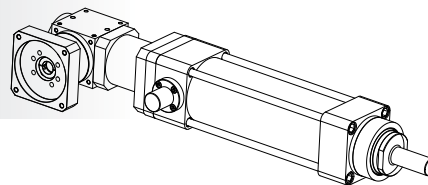


(*) DIMENSIONE APPROSSIMATA / APPROXIMATE DIMENSION

B+A

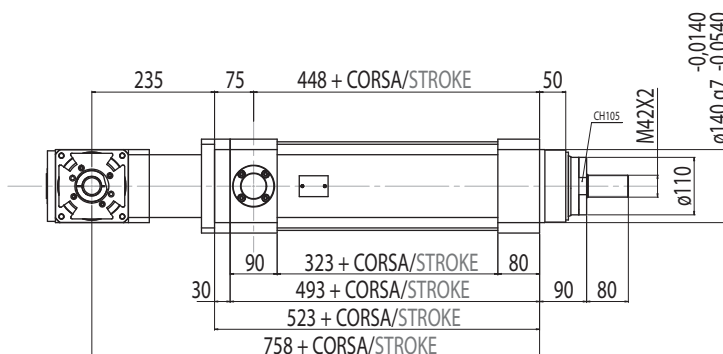
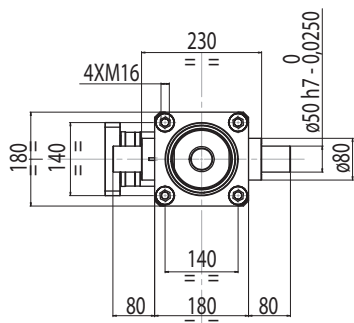
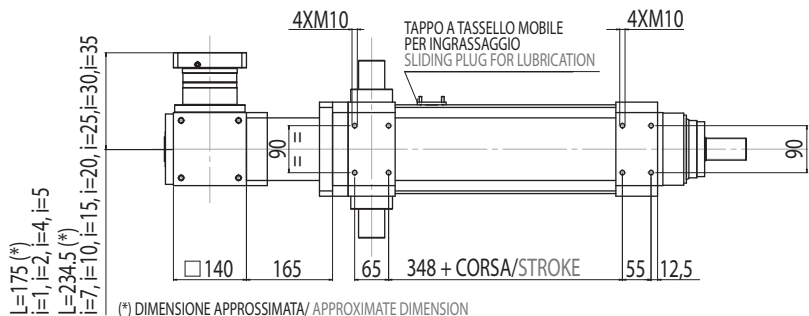
MODULO BASE + RINVIO ANGOLARE

BASIC MODULE + ANGLE BEVEL GEARBOX STAGE



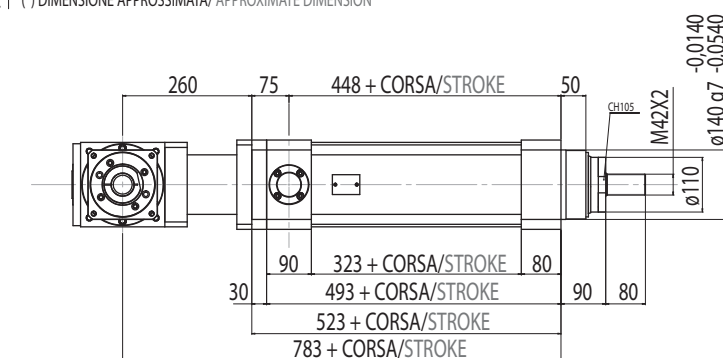
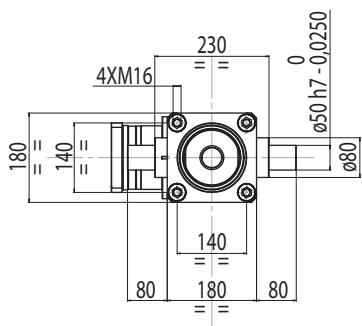
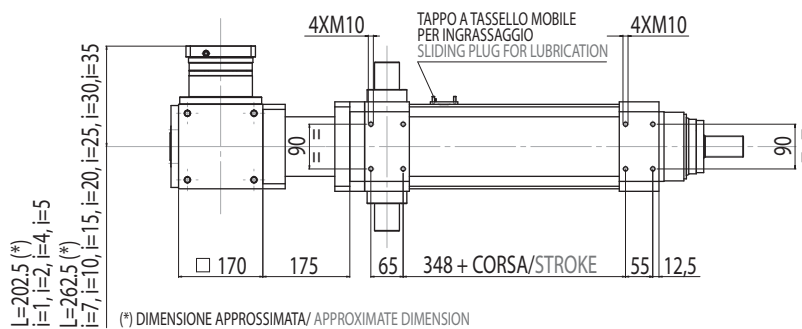
A140

(ATB140-FL1)



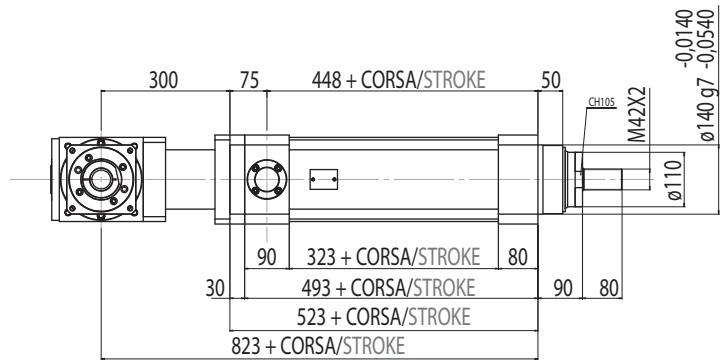
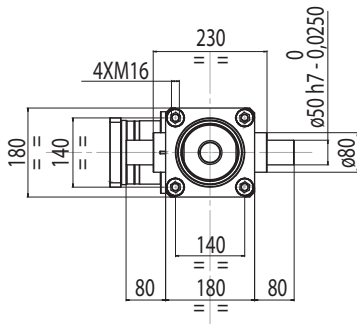
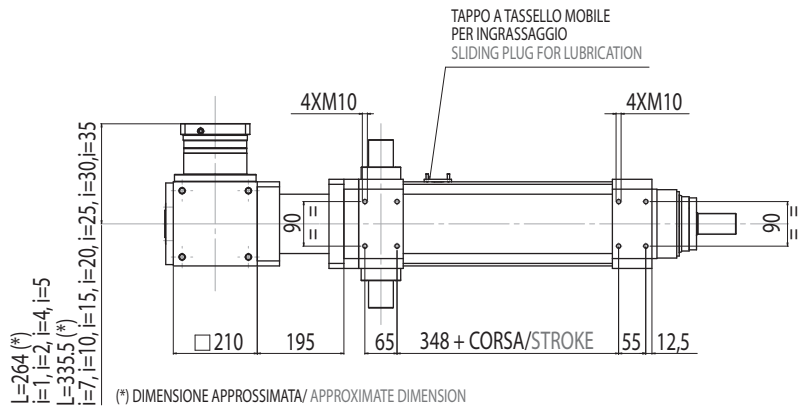
A170

(ATB170-FL1)



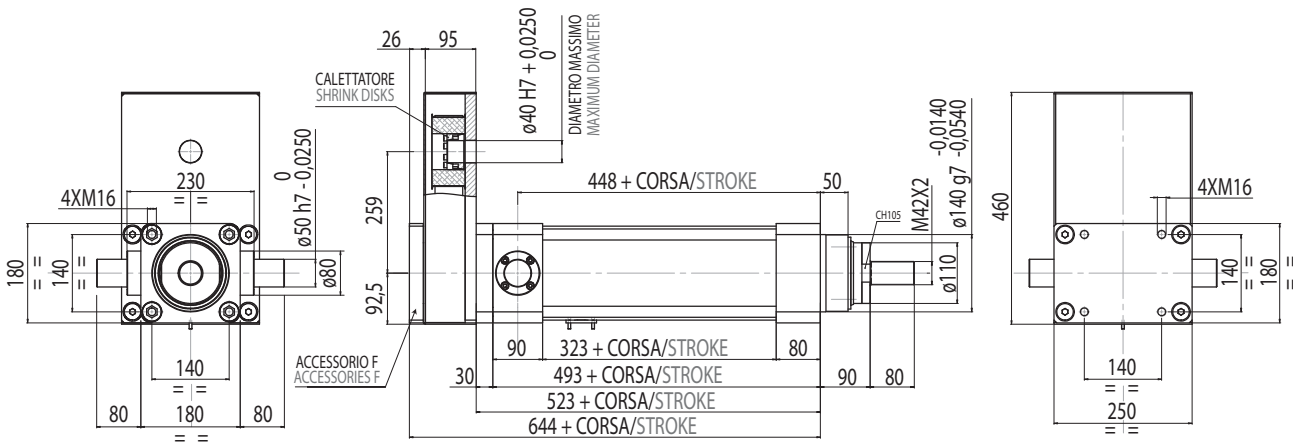
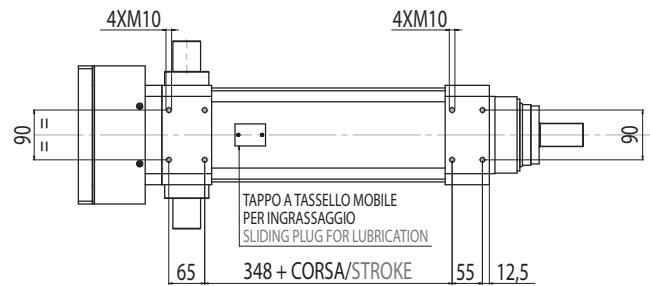
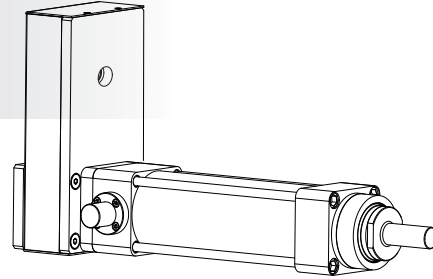
A210

(ATB210-FL1)



B+R
MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO
PER MOTORE CUSTOM
BASIC MODULE + PARALLEL FOR CUSTOM MOTORS
BELT GEARBOX STAGE

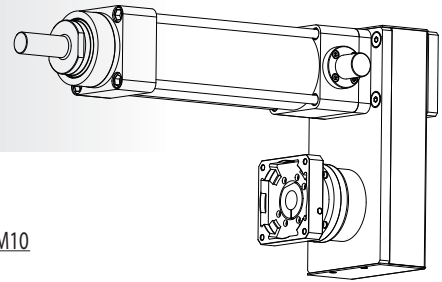
R00



B+R

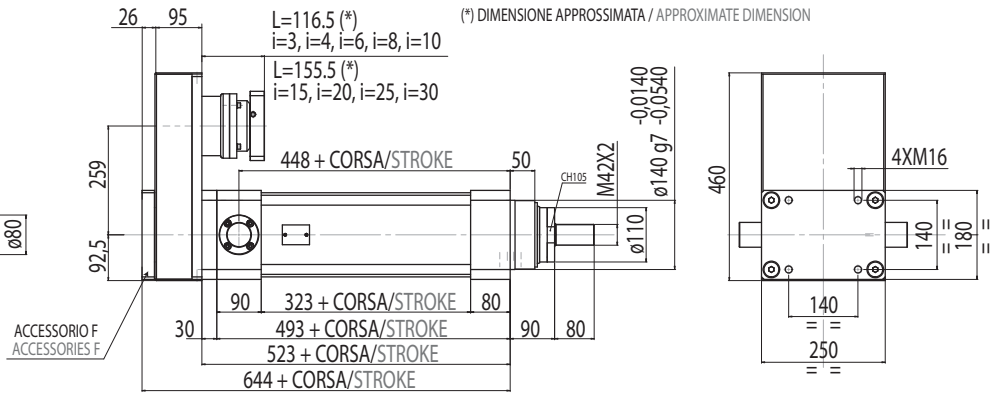
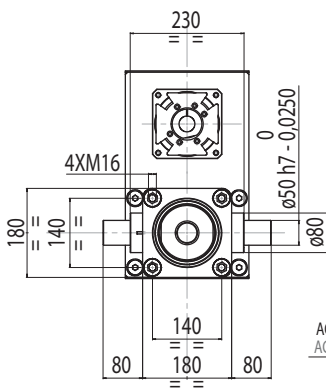
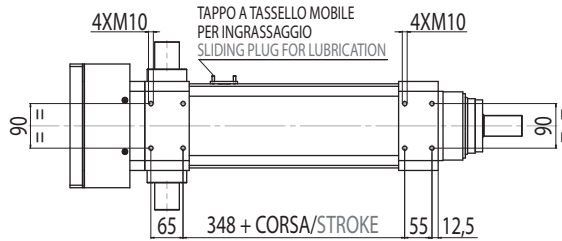
**MODULO BASE + TRASMISSIONE A CINGHIA IN PARALLELO
+ RIDUTTORE EPICICLOIDALE R120/R155**

**BASIC MODULE + PARALLEL BELT GEARBOX STAGE
+ IN-LINE PLANETARY GEARBOX REDUCTION STAGE R120/R155**



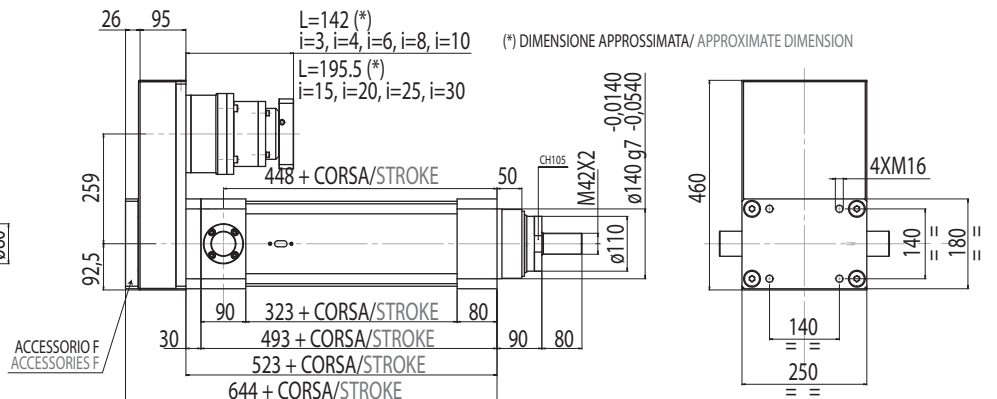
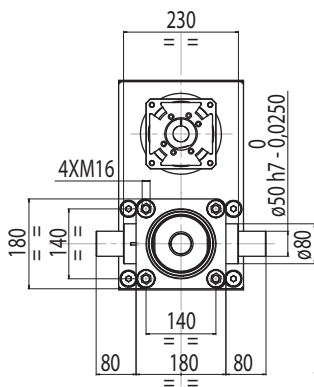
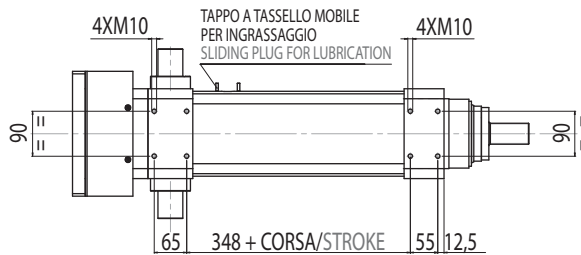
R120

(AE 120)



R155

(AE 155)



5.3

IE 240

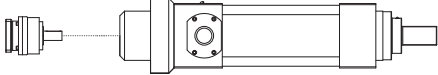
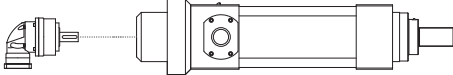
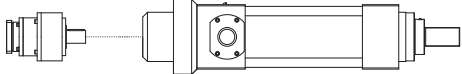
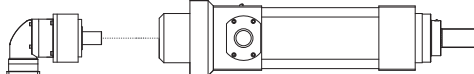
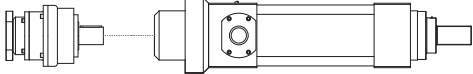
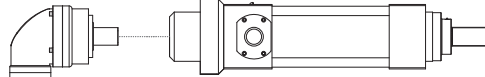
5.3.1 Caratteristiche tecniche

5.3.1 Technical features

| ISOMOVE IE 240 | | | 25 |
|----------------------------|--|----------|--|
| P | PASSO VITE SCREW LEAD | [mm] | 25 |
| D | DIAMETRO VITE SCREW DIAMETER | [mm] | 80 |
| F_d | CARICO MASSIMO DINAMICO APPLICABILE MAX ADMISSIBLE DYNAMIC LOAD | [N] | 350000 |
| C_{in,max} | PER AVERE TO GET $F_a = F_d$ | [Nm] | 1548 |
| C_{m,max} | "CASO 1" / "CASE 1": B | [Nm] | 1548 |
| | "CASO 2" / "CASE 2": B+D (R155/R205/R235/RA155/RA205/RA235) | [Nm] | $\left[\frac{1720}{R} \right] + C_s$ R = rapporto di riduzione del riduttore / riduttore rinviato R = planetary / angle bevel gearbox reduction ratio |
| F_{st} | CARICO MASSIMO STATICO APPLICABILE MAX ADMISSIBLE STATIC LOAD | [N] | 500000 |
| V_{out,max} | VELOCITÀ DI TRASLAZIONE MASSIMA IN USCITA / ROTAZIONE MASSIMA VITE RDS | [mm/sec] | 417/1000 |
| N_{in,max} | MAX OUTPUT SPEED / MAX BALLSCREW ROTATING INPUT SPEED | [rpm] | |
| S_{max} | CORSA MASSIMA STANDARD MAX STANDARD STROKE | [mm] | 1100** |
| G_{s,max} | GIOCO ASSIALE MASSIMO PER CHIOCCIOLA STANDARD MAX AXIAL BACKLASH FOR STANDARD BALLSCREW ASSEMBLY | mm | 0,05 |
| G_z | GIOCO "0" DELLA CHIOCCIOLA "0" BACKLASH BALLSCREW ASSEMBLY | | A RICHIESTA / UPON REQUEST |
| L_{10,Km} | DURATA LIFETIME | Km | VEDI TABELLA / SEE TABLE pg. 175 |
| | VERSIONI DISPONIBILI AVAILABLE TYPES | | D-R155 / D-R205 / D-R235 D-RA155 / D-RA205 / D-RA235 |
| F_{a,max} | POSSIBILE CON IL RIDUTTORE EPICICLOIDALE INDICATO POSSIBLE VALUE WITH THE INDICATED PLANETARY GEARBOX | [N] | AE155-AER155/60200*** AE205-AER205/103000*** AE235-AER235/350000*** |
| | ACCESSORI DISPONIBILI AVAILABLE ACCESSORIES | | NON DISPONIBILE / NOT AVAILABLE |

*** È il valore massimo ottenibile con il rapporto di riduzione disponibile avente il minore valore di coppia erogabile.
It is the max obtainable value with the available on tables reduction ratio which has the lowest value of nominal output torque.

RIDUTTORI-RINVII "STANDARD SETEC GROUP DISPONIBILI"
"STANDARD SETEC GROUP AVAILABLE" PLANETARY-ANGLE BEVEL GEARBOXES

| | | | | |
|--|---|-----------------------------|--|-----------------------------|
| TRASMISSIONE CON RIDUTTORE PLANETARY GEARBOX STAGE |  AE155 | MODULO BASE BASIC MODULE |  AER155 | MODULO BASE BASIC MODULE |
| |  AE205 | MODULO BASE BASIC MODULE |  AER205 | MODULO BASE BASIC MODULE |
| |  AE235 | MODULO BASE BASIC MODULE |  AER235 | MODULO BASE BASIC MODULE |

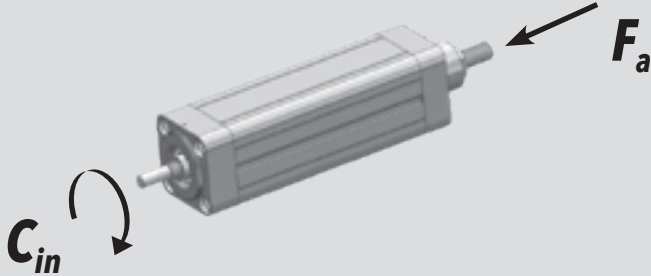
5.3.2 Calcolo durata

5.3.2 Lifetime calculation

| | | |
|-----------------------------------|---|--|
| IE 240 P = 25 mm | $L_{10,Km} = \left[\frac{800000}{F_{eq}} \right]^3 \cdot 25$ | L_{10,Km} = [Km] F_{eq} = [N] |
|-----------------------------------|---|--|



**5.2.3 Calcolo coppia in ingresso
al modulo base**

**5.2.3 Torque calculation at basic
module input shaft**

| | | |
|--|---|--|
|  | | |
| IE 240 P = 25 mm | $C_{in} = \left[\frac{F_a \cdot 25}{5652} \right]$ | C_{in} = [Nm] F_a = [N] |

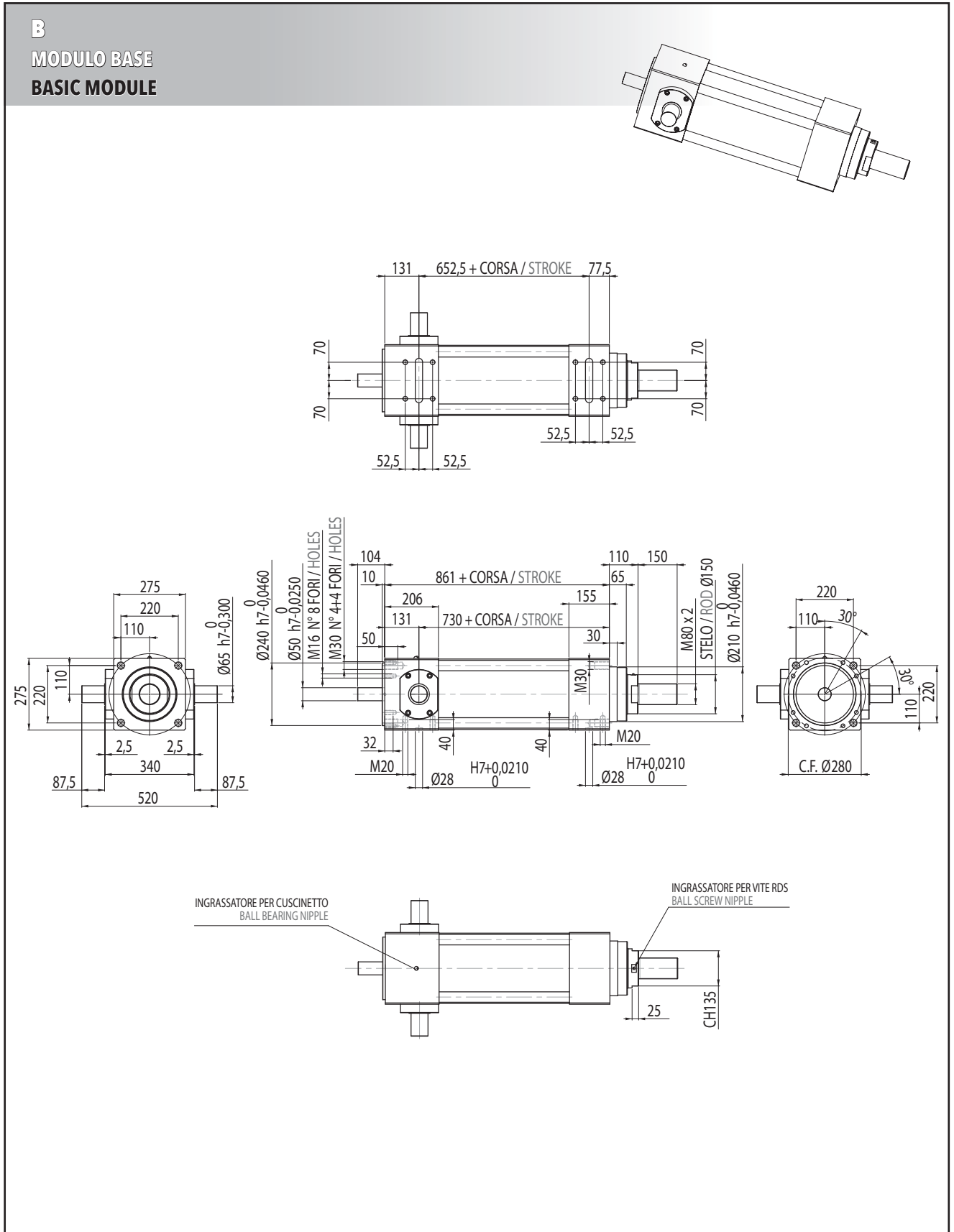
5.3.4 Calcolo coppia motore

5.3.4 Motor torque calculation

| | |
|-----------------------------|--|
| CASO / CASE 1 | <p style="text-align: center;">ISOMOVE B</p>  $C_m = C_{in} \quad [Nm]$ |
| CASO / CASE 2 | <p style="text-align: center;">ISOMOVE B+D (R155/R205/R235/RA155/RA205/RA235)</p>  $C_m = \left[\frac{C_{in}}{R \cdot \eta} \right] + C_s \quad [Nm]$ <p> <i>R</i> = rapporto di riduzione riduttore / rinvio planetary / angle bevel gearbox reduction ratio <i>η</i> = rendimento meccanico / mechanical efficiency = 0,90 </p> |

5.3.5 Caratteristiche dimensionali

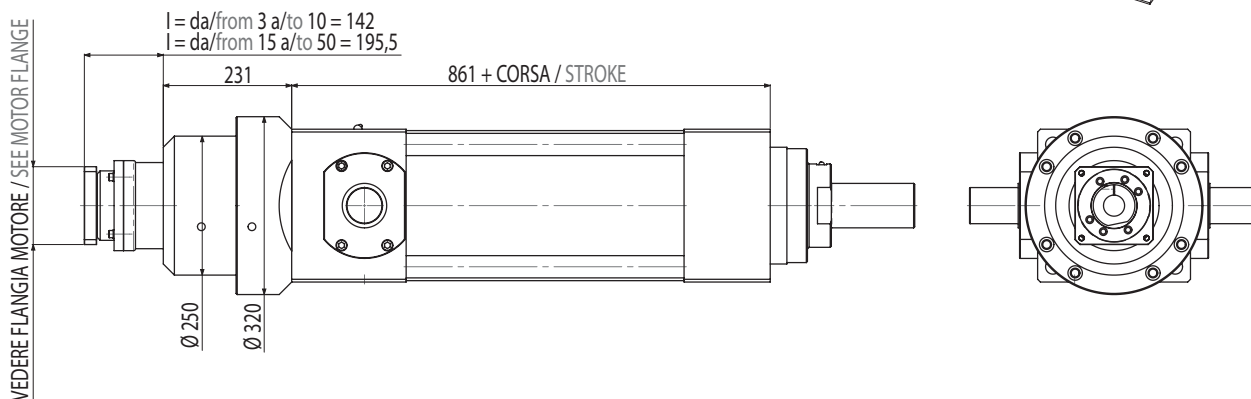
5.3.5 Overall dimensions



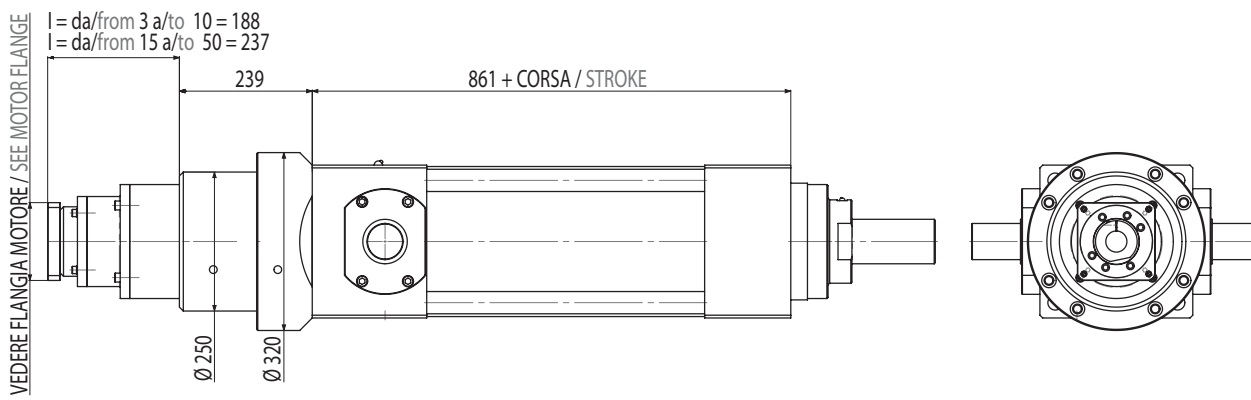
B+D

**MODULO BASE + RIDUTTORE EPICICLOIDALE COASSIALE
BASIC MODULE + IN-LINE PLANETARY GEARBOX STAGE**

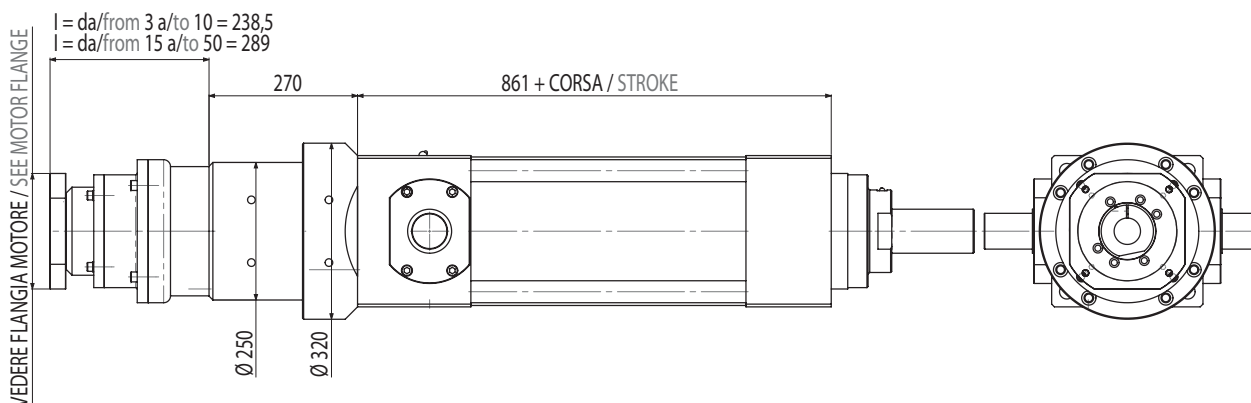
R155



R205

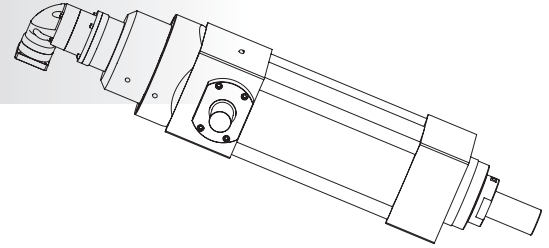


R235



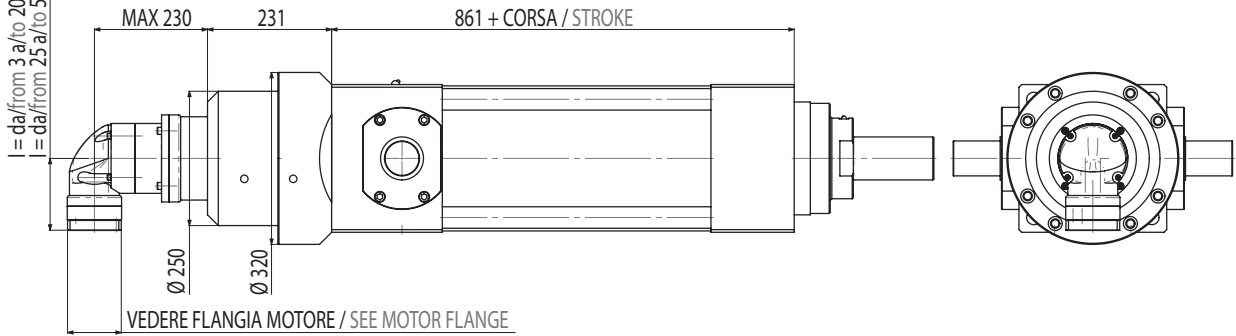
B+D

MODULO BASE + RIDUTTORE EPICICLOIDALE ANGOLARE
BASIC MODULE + PLANETARY ANGLE BEVEL GEARBOX STAGE



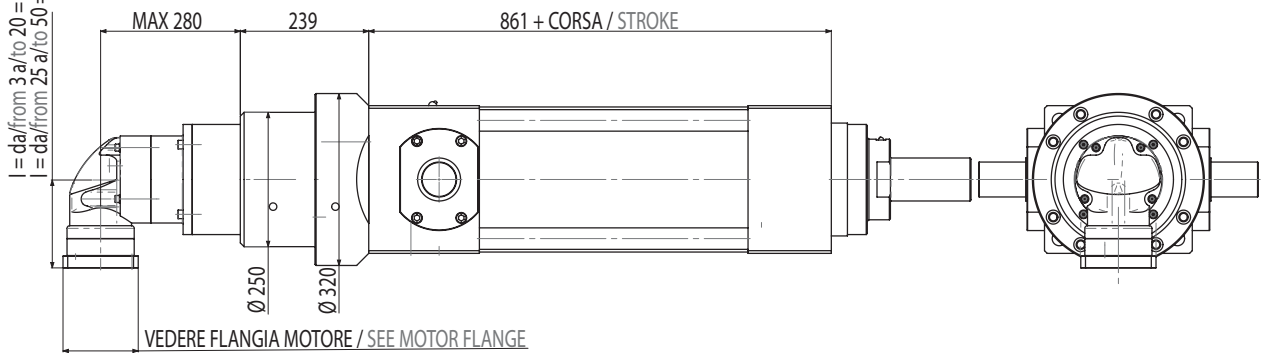
RA155

$l = da / \text{from } 3 \text{ a/to } 20 = 164,5$
 $l = da / \text{from } 25 \text{ a/to } 50 = 134$



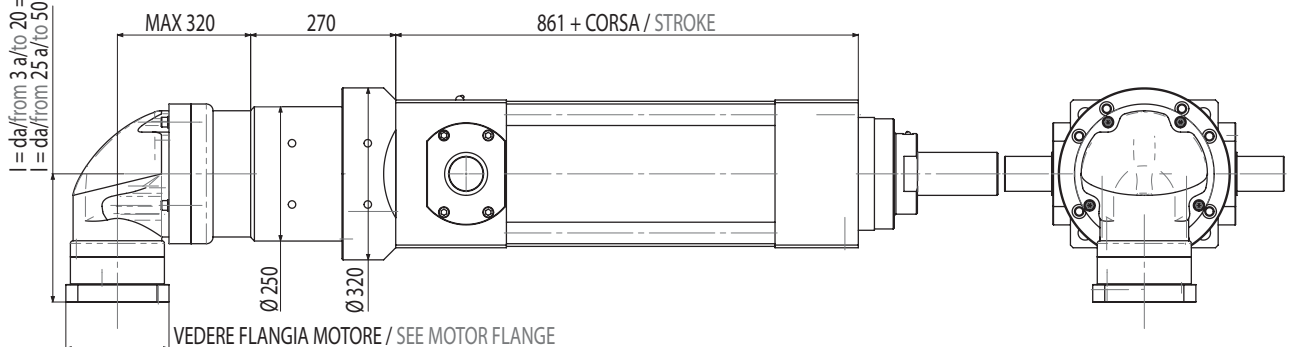
RA205

$l = da / \text{from } 3 \text{ a/to } 20 = 213,5$
 $l = da / \text{from } 25 \text{ a/to } 50 = 164,5$



RA235

$l = da / \text{from } 3 \text{ a/to } 20 = 268,5$
 $l = da / \text{from } 25 \text{ a/to } 50 = 213,5$



6.

Schede tecniche Riduttori / Rinvii angolari

Planetary gearboxes / Angle bevel gearboxes datasheets

Riduttori / Planetary gearboxes pg. 182

Rinvii angolari / Angle bevel gearboxes pg. 184

6.1

Scheda tecnica riduttori
Planetary gearboxes datasheets

| RIDUTTORI SERIE "AE" / PLANETARY GEARBOXES "AE" SERIES | | | | | | | | | |
|--|--|-------|-------|-------|-------|-----------------|-----------------|-----------------|------|
| MODELLO MODEL | R | AE050 | AE070 | AE090 | AE120 | AE155 AER155 | AE205 AER205 | AE235 AER235 | |
| MONOSTADIO / 1 STAGE | 3 | 14 | 39 | 91 | 146 | 239 | 412 | 798 | |
| | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 | |
| | 4 | 13 | 35 | 98 | 203 | 379 | 735 | 1190 | |
| | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 | |
| | 5 | 15 | 42 | 112 | 231 | 455 | 840 | 1400 | |
| | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 | |
| | C_{rid} COPPIA NOMINALE IN USCITA NOMINAL OUTPUT TORQUE [Nm] | 6 | 14 | 39 | 105 | 217 | 420 | 770 | 1330 |
| | | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 |
| | C_s COPPIA A VUOTO CHE ASSORBE IL RIDUTTORE IDLE TORQUE [Nm] | 7 | 13 | 35 | 98 | 210 | 385 | 770 | 1260 |
| | | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 |
| | 8 | 12 | 32 | 84 | 182 | 350 | 700 | 1120 | |
| | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 | |
| | 9 | 10 | 28 | 70 | 161 | 315 | 630 | 1050 | |
| | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 | |
| | 10 | 10 | 28 | 70 | 161 | 315 | 630 | 1050 | |
| | | 0,33 | 0,44 | 0,77 | 1,98 | 2,53 | 4,84 | 8,8 | |
| | BISTADIO / 2 STAGES | 15 | 14 | 39 | 91 | 146 | 239* | | |
| | | | 0,17 | 0,17 | 0,28 | 0,55 | 1,43 | | |
| 20 | | 13 | 35 | 98 | 203 | 379* | 735* | 1190* | |
| | | 0,17 | 0,17 | 0,28 | 0,55 | 1,43 | 2,42 | 5,5 | |
| 25 | | 15 | 42 | 112 | 231 | 455 | 840 | 1400 | |
| | | 0,17 | 0,17 | 0,28 | 0,55 | 1,43 | 2,42 | 5,5 | |
| C_{rid} COPPIA NOMINALE IN USCITA NOMINAL OUTPUT TORQUE [Nm] | | 30 | 14 | 39 | 105 | 217 | 420 | 770 | 1330 |
| | | | 0,17 | 0,17 | 0,28 | 0,55 | 1,43 | 2,42 | 5,5 |
| C_s COPPIA A VUOTO CHE ASSORBE IL RIDUTTORE IDLE TORQUE [Nm] | | 35 | 13 | 35 | 98 | 210 | 385 | 770 | 1260 |
| | | | 0,17 | 0,17 | 0,28 | 0,55 | 1,43 | 2,42 | 5,5 |
| 40 | | 11,9 | 31,5 | 84 | 182 | 350 | 700 | 1120 | |
| | | 0,17 | 0,17 | 0,28 | 0,55 | 1,43 | 2,42 | 5,5 | |
| 45 | | 10 | 28 | 70 | 161 | 315 | 630 | 1050 | |
| | | 0,17 | 0,17 | 0,28 | 0,55 | 1,43 | 2,42 | 5,5 | |
| VELOCITÀ MASSIMA IN INGRESSO AL RIDUTTORE [rpm] MAX GEARBOX INPUT SPEED | | | 5000 | 5000 | 4000 | 4000 | 3000 | 3000 | 2000 |
| η RENDIMENTO DEL RIDUTTORE GEARBOX MECHANICAL EFFICIENCY | | | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 |

* Non disponibili nella versione AER. / Not available in AER version.

| RIDUTTORI SERIE "PGII" / PLANETARY GEARBOXES "PGII" SERIES | | | | | |
|---|--|---------|---------|----------|------|
| MODELLO MODEL | R | PGII060 | PGII080 | PGII 120 | |
| <p>MONOSTADIO / 1 STAGE</p> <hr/> <p>C_{rid} COPPIA NOMINALE IN USCITA NOMINAL OUTPUTTORQUE [Nm]</p> <hr/> <p>C_s COPPIA A VUOTO CHE ASSORBE IL RIDUTTORE IDLE TORQUE [Nm]</p> | 3 | 29 | 77 | 152 | |
| | | 0,1 | 0,4 | 0,8 | |
| | 4 | 29 | 79 | 156 | |
| | | 0,1 | 0,4 | 0,8 | |
| | 5 | 28 | 83 | 154 | |
| | | 0,1 | 0,4 | 0,8 | |
| | 7 | 25 | 67 | 139 | |
| | | 0,1 | 0,4 | 0,8 | |
| | 10 | 19 | 48 | 109 | |
| | | 0,1 | 0,4 | 0,8 | |
| | <p>BISTADIO / 2 STAGES</p> <hr/> <p>C_{rid} COPPIA NOMINALE IN USCITA NOMINAL OUTPUTTORQUE [Nm]</p> <hr/> <p>C_s COPPIA A VUOTO CHE ASSORBE IL RIDUTTORE IDLE TORQUE [Nm]</p> | 15 | 28 | 76 | 149 |
| | | | 0,1 | 0,3 | 0,4 |
| 16 | | 29 | 81 | 160 | |
| | | 0,1 | 0,3 | 0,4 | |
| 20 | | 29 | 81 | 161 | |
| | | 0,1 | 0,3 | 0,4 | |
| 25 | | 28 | 86 | 160 | |
| | | 0,1 | 0,3 | 0,4 | |
| 30 | | 28 | 76 | 148 | |
| | | 0,1 | 0,3 | 0,4 | |
| 35 | | 25 | 70 | 144 | |
| | | 0,1 | 0,3 | 0,4 | |
| 40 | | 30 | 82 | 162 | |
| | | 0,1 | 0,3 | 0,4 | |
| 50 | | 28 | 86 | 160 | |
| | | 0,05 | 0,3 | 0,4 | |
| VELOCITÀ MASSIMA IN INGRESSO AL RIDUTTORE [rpm] MAX GEARBOX INPUT SPEED | | | 4000 | 3600 | 3600 |
| η RENDIMENTO DEL RIDUTTORE GEARBOX MECHANICAL EFFICIENCY | | | 0,9 | 0,9 | 0,9 |

6.2

Scheda tecnica rinvii angolari
Angle bevel gearboxes datasheets

| RINVII ANGOLARI SERIE "ATB" / ANGLE BEVEL GEARBOXES "ATB" SERIES | | | | | | | | | |
|--|---|--------|--------|--------|--------|--------|--------|--------|------|
| MODELLO MODEL | R | ATB065 | ATB075 | ATB090 | ATB110 | ATB140 | ATB170 | ATB210 | |
| MONOSTADIO / 1 STAGE <hr/> C_{rid} COPPIA NOMINALE IN USCITA NOMINAL OUTPUT TORQUE [Nm] <hr/> C_s COPPIA A VUOTO CHE ASSORBE IL RIDUTTORE IDLE TORQUE [Nm] | 1 | 18 | 32 | 55 | 105 | 252 | 410 | 910 | |
| | | 1,6 | 2,2 | 3,1 | 4,6 | 8,6 | 12,1 | 21,6 | |
| | 1,5 | 18 | 32 | 55 | 105 | 252 | 410 | 910 | |
| | | 1,6 | 2,2 | 3,1 | 4,6 | 7,5 | 11 | 18,9 | |
| | 2 | 17 | 29 | 48 | 105 | 231 | 381 | 854 | |
| | | 1,3 | 1,5 | 2,7 | 3,7 | 5 | 7,8 | 16,2 | |
| | 3 | 13 | 23 | 38 | 84 | 189 | 315 | 714 | |
| | | 1,3 | 1,5 | 1,8 | 3 | 4,4 | 5,9 | 14,3 | |
| | 4 | 9 | 20 | 34 | 70 | 157 | 263 | 602 | |
| | | 1,1 | 1,1 | 1,2 | 2,8 | 4 | 5,9 | 14,3 | |
| | 5 | 8 | 18 | 28 | 60 | 137 | 224 | 518 | |
| | | 1,1 | 1,1 | 1,2 | 2,6 | 4 | 5,4 | 13,8 | |
| | BISTADIO / 2 STAGES <hr/> C_{rid} COPPIA NOMINALE IN USCITA NOMINAL OUTPUT TORQUE [Nm] <hr/> C_s COPPIA A VUOTO CHE ASSORBE IL RIDUTTORE IDLE TORQUE [Nm] | 10 | 17 | 20 | 48 | 105 | 146 | 146 | 301 |
| | | | 0,8 | 0,9 | 1 | 2 | 2,4 | 3,9 | 9,7 |
| 15 | | 13 | 23 | 38 | 84 | 189 | 218 | 452 | |
| | | 0,8 | 0,9 | 1 | 2 | 2,4 | 3,9 | 9,7 | |
| 20 | | 9 | 20 | 34 | 70 | 157 | 263 | 602 | |
| | | 0,8 | 0,9 | 1 | 2 | 2,4 | 3,9 | 9,7 | |
| 25 | | 8 | 18 | 28 | 60 | 137 | 224 | 518 | |
| | | 0,8 | 0,9 | 1 | 2 | 2,4 | 3,9 | 9,7 | |
| 35 | | 8 | 18 | 28 | 60 | 137 | 224 | 518 | |
| | | 0,8 | 0,9 | 1 | 2 | 2,4 | 3,9 | 9,7 | |
| 50 | | 8 | 18 | 28 | 60 | 137 | 224 | 518 | |
| | | 0,8 | 0,9 | 1 | 2 | 2,4 | 3,9 | 9,7 | |
| VELOCITÀ MASSIMA IN INGRESSO AL RIDUTTORE [rpm] MAX GEARBOX INPUT SPEED | | | 7000 | 6000 | 5000 | 4000 | 3000 | 3000 | 3000 |
| η RENDIMENTO DEL RIDUTTORE GEARBOX MECHANICAL EFFICIENCY | | | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 | 0,9 |

7.

Note tecniche generali

General technical information

7.1

Extracorsa (corsa di sicurezza)
Extra-stroke (safety stroke)

L'attuatore non è costruito per usare la sua battuta meccanica interna per arrestarsi, pertanto nella scelta consigliamo di tenere in conto una corsa extra che eviti la collisione interna.

A titolo indicativo si può aggiungere alla corsa massima di lavoro S_I un valore per ogni lato pari 2 volte il passo $S_s = 2P$:

$$S = S_I + 2S_s$$

NOTA: per una corsa nominale S la corsa reale è comunque superiore di qualche millimetro.

The actuator is not built to stand internal mechanical stop, thus during selection process we advice take into account to add some additional stroke to avoid internal collision.

Just as an indication you can add to the max working stroke S_I an additional safety for each side which is twice the ballscrew pitch $S_s = 2P$:

corsa dell'attuatore
actuator's stroke

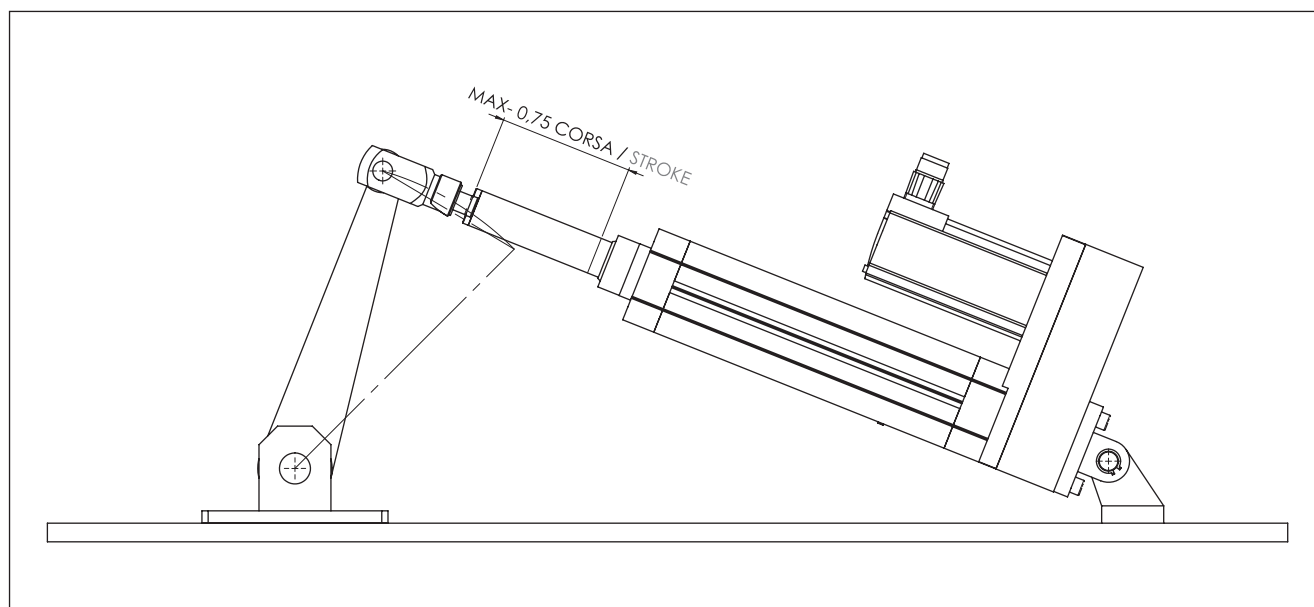
REMARK: the actual manufacturing stroke is anyway some millimeters longer the nominal stroke S .

7.2

Montaggio con attuatore basculante
Installation with tilting actuator

Nel caso in cui l'attuatore sia montato in modo da basculare con il suo asse durante la sua corsa (ovvero in tutti quei casi in cui non mantiene una posizione fissa nello spazio), ad esempio perché si usano i perni oscillanti laterali **PE** in combinazione con la forcella anteriore **FS** oppure con la testa a snodo sferico **SS**, il suo peso proprio lo sollecita a flessione. Prevedere pertanto di usare un massimo della corsa totale S pari al 75% della stessa.

In all cases where the actuator is tilting during its stroke (i.e. all the cases where the actuator doesn't keep a fixed position during motion), because for example **PE** pins together with **FS** fork or **SS** joint are used; its weight creates a bending force on the actuator itself. Use then only 75% of the actuator stroke S .



7.3

Grado protezione IP IP protection rate

Il MODULO BASE B00 ha un grado di protezione IP54.
Tutte le altre versioni: contattare il ns. ufficio tecnico.

BASIC MODULE B00 has an IP54 protection rate.
For all the other types: please contact our technical dept.

7.4

Lubrificazione Lubrication

La lubrificazione standard è a grasso.
L'attuatore è fornito lubrificato dal costruttore.
Per ogni altro dettaglio fare riferimento al MANUALE DI
INSTALLAZIONE-USO-MANUTENZIONE.

Standard lubrication is by grease.
The actuator is supplied already lubricated by the
manufacturer.
For any other detail please refer to INSTALLATION-
USE-MAINTENANCE HANDBOOK.

7.5

Posizione di montaggio Mounting position

L'attuatore, in linea generale, può essere montato
all'interno di un sistema in qualsiasi posizione.
Tuttavia, in fase di progettazione e scelta dell'attuatore,
vanno osservate tutte le condizioni di lavoro a cui verrà
sottoposto l'ISOMOVE.
Qualora l'attuatore venisse posizionato fisso in
orizzontale, tenere sempre in considerazione il peso
dello stesso al fine di selezionare il corretto sistema
di fissaggio: in questo caso si consiglia sempre di
supportare anteriormente e posteriormente l'attuatore.
Assicurarsi che il montaggio venga eseguito senza
deformazioni e sollecitazioni (assicurare ottime
planarità e ortogonalità delle superfici di appoggio).

In general terms the actuator can be mounted in any
position into the machine.
Anyway, during design and selection, please consider
all its the possible working condition.
If the actuator is mounted horizontally in a fixed
position, due to its proper weight it is always better to
use a front and a back support.
Please be sure during installation that its assembly into
the machine is not causing deformation and stresses to
the actuator itself (please respect very good tolerances
for planarity and orthogonality of the connection
machine parts).

7.6

Reversibilità Reversibility

In generale l'attuatore è reversibile, ovvero non
autobloccante.
Pertanto in applicazioni verticali prevedere un sistema
di frenatura esterno per ragioni di sicurezza.

In general terms the actuator is not self-locking; thus
consider to add an external braking system for safety
reason.

7.7

Capacità di fattore di servizio
Duty cycle rating

L'attuatore ha una capacità di fattore di servizio pari al 100%, ovvero per impiego continuo.

The actuator has duty cycle rating of 100%, i.e. for continuous duty.

7.8

Collegamento riduttore/rivio a modulo base
Torque transmission element between planetary /
angle bevel gearbox and basic module

IE 32 ÷ 100XL

Per tutti i modelli: si usano giunti a morsetto a gioco zero senza chiavetta / calettatori ad attrito.

For all models: zerobacklash servocouplings without keaway / friction shrink-disk are used.

IE 125 ÷ 160

B+R: calettatori ad attrito.

B+R: shrink-Disks.

B+D e B+A: giunto a morsetto a gioco zero con chiavetta.

B+D and B+A: zero backlash servocouplings with keaway.

ISOMOVE-E the evolution

Attuatori lineari meccanici di precisione per alta dinamica
Precision mechanical linear actuators for high dynamics



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