Tramec
part of moonind

Made in Italy

Tramec srl
Management System Certified according to **ISO 9001** certificate Nr. **50 100 15789** and **ISO14001** certificate Nr. **50 100 16282**

RIDUTTORI EPICICLOIDALI
di precisione

Precision Planetary gearboxes
Hochgenauigkeits planetengetriebe

REP

moonind
MOVING ON INDUSTRIES
moon-ind.com

Tramec part of moonind · Bermar part of moonind · MT ELECTRIC MOTORS part of moonind · Varmec part of moonind

El grupo de empresas MOONIND, que reúne a TRAMEC srl, BERMAR srl, MT MOTORI ELETTRICI srl y VARMEC srl, cuenta con una presencia en 68 países en los 5 continentes, condicion indispensable para mantener una posición destacada en el sector.

The MOONIND Group, gathering together TRAMEC Srl, BERMAR Srl, MT ELECTRIC MOTORS, and VARMEC Srl, boasts a presence in 68 countries across 5 continents, which makes it a leading company in the industry.

Le groupe MOONIND, qui réunit TRAMEC srl, BERMAR srl, MT ELECTRIC MOTORS et VARMEC srl, est présent dans 68 pays répartis sur 5 continents, renforçant ainsi sa position de leader dans l'industrie.

Las empresas productoras del grupo y sus filiales representan centros comerciales y logísticos y apoyan al cliente con actividades de pre y postventa, desde la fase de diseño hasta el ciclo de vida completo del producto. Esta organización permite al grupo Moonind proponerse como un proveedor completo y versátil, capaz de realizar personalizaciones de producto a pedido.

The Group's manufacturing facilities together with the sales branches represent a real territorial presence which guarantees both sales and logistical support to customers through pre- and after-sales activities, starting from the design phase and covering the entire life cycle of the products being manufactured.

Grâce à l'implantation de ses filiales et de leurs sites de production, le groupe possède un solide réseau commercial et logistique. Cet écosystème soutient les clients dès la conception et tout au long du cycle de vie des produits, en offrant des services avant et après-vente.

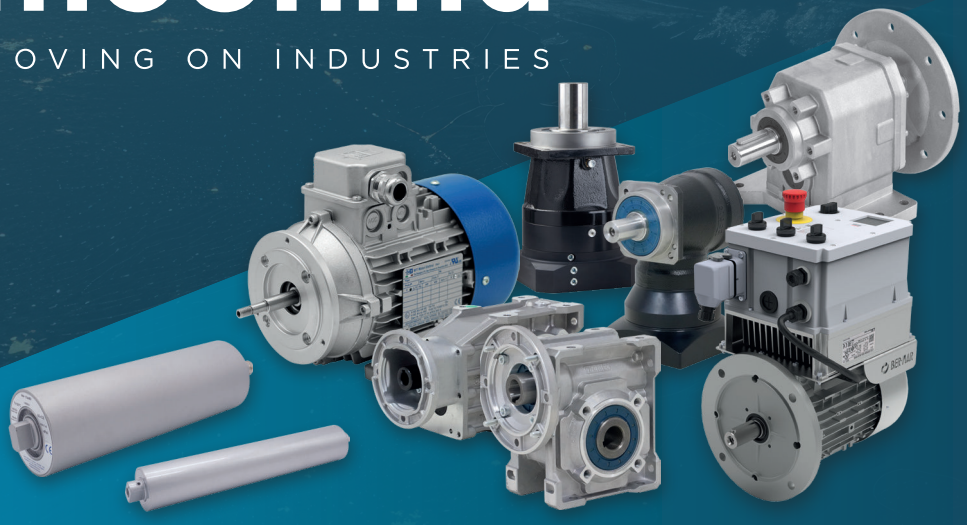
Estamos en condiciones de proponer soluciones adaptadas a las necesidades del cliente y de afrontar con rapidez y de manera altamente profesional los diferentes desafios del mercado en el mundo de las transmisiones mecánicas. Podemos brindar soluciones completas para la automatización.

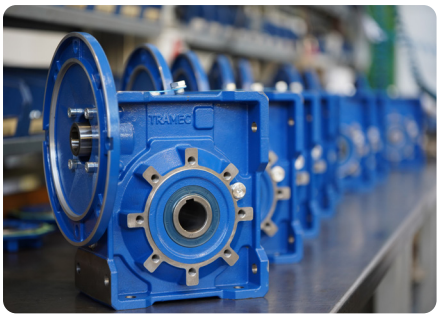
This organization allows the Moonind Group to present itself as a complete and dynamic supplier, capable of providing customized products based on customers' needs. We are able to deal promptly and professionally with the various challenges set by the market in the mechanical transmission related field. We can provide complete solutions for automation.

Cette structure permet au groupe Moonind de se présenter comme un partenaire complet et polyvalent, capable de personnaliser ses produits selon les exigences spécifiques de chaque client. Son savoir-faire dans les transmissions mécaniques lui permet de relever rapidement les défis du marché et de proposer des solutions d'automatisation optimales.

moonind

MOVING ON INDUSTRIES





Visión de empresa

- La filosofía de **TRAMEC** siempre se ha centrado en los siguientes pilares:
- La búsqueda de la excelencia en la producción y la calidad con la estricta **100%** producción **MADE IN ITALY**.
- El factor humano en la relación con empleados, clientes y colaboradores.
- Búsqueda continua de soluciones innovadoras.

Company Vision

***TRAMEC**'s philosophy has always been centred on the following cornerstones:*

- *The pursuit of production and quality excellence with strictly **100%** production **MADE IN ITALY**.*
- *The human factor in the relationship with employees, customers and collaborators.*
- *The continuous search for innovative solutions.*

La vision de l'entreprise

- La philosophie de **TRAMEC** a toujours été axée sur les éléments essentiels suivants :
- La poursuite de l'excellence en matière de production et de qualité avec une production rigoureusement **100% FABRIQUÉ EN ITALIE.**
- Le facteur humain dans la relation avec les salariés, les clients et les collaborateurs.
- La recherche incessante de solutions innovantes.

Misión de la empresa

- Ser un socio de referencia internacional para el diseño, la realización y la comercialización de soluciones avanzadas y fiables en el sector de la transmisión de energía.
- Proporcionar a los clientes una asistencia rápida y puntual, desde la fase de diseño hasta la posventa.
- Mejora continua de los procesos y el rendimiento en su Sistema Integrado de Gestión.

Company Mission

- *To be an international reference partner for the design, realisation and marketing of advanced and reliable solutions in the power transmission sector.*
- *Providing customers with fast and timely support, from the design phase to after-sales.*
- *Continuous improvement of processes and performance in its Integrated Management System.*

La mission de l'entreprise

- Être un partenaire international de référence pour la conception, la réalisation et la commercialisation de solutions avancées et fiables dans le secteur de la transmission d'énergie.
- Fournir aux clients une assistance rapide et précise, de la phase de conception au service après-vente.
- Amélioration continue des processus et des performances dans le cadre de son système de gestion intégré.

Medio ambiente, salud y seguridad

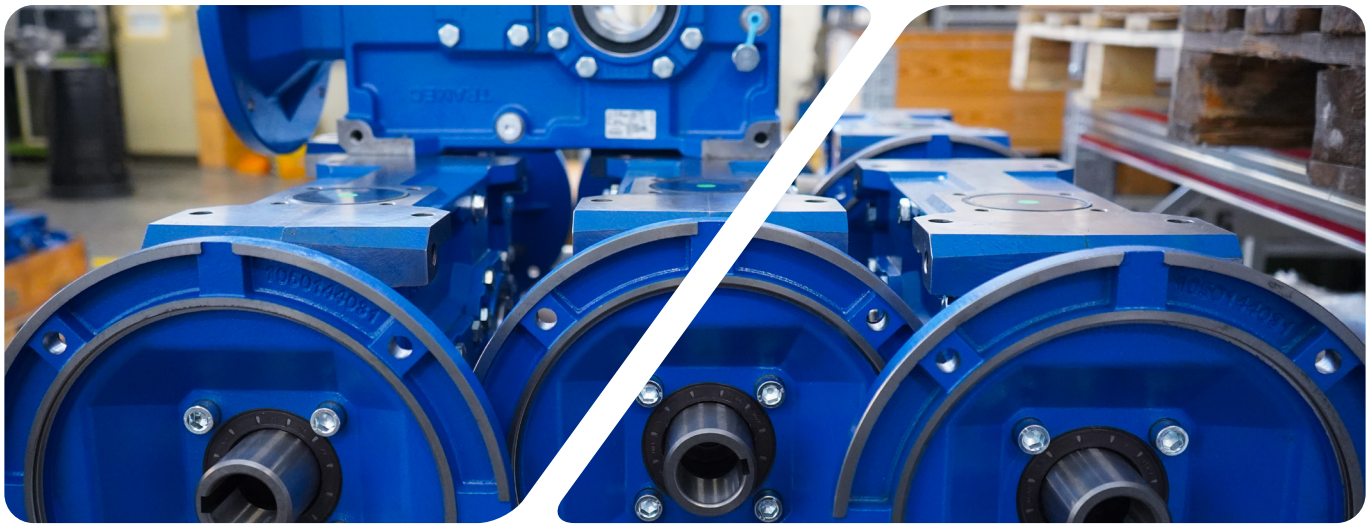
TRAMEC se distingue por una producción respetuosa con el medio ambiente y se adhiere a las directrices y normas con respecto a todas las partes interesadas. Esto significa la reducción del consumo de materias primas, el uso eficiente de la energía y la utilización cuidadosa y responsable de los contaminantes,
la reducción de las emisiones de residuos y la aplicación de todas las formas de seguridad laboral.

Environment, health and safety

***TRAMEC** distinguishes itself through environmentally friendly production and adheres to guidelines and standards in respect of all stakeholders. This means the reduction of raw material consumption, the efficient use of energy, and the careful and responsible use of pollutants, the reduction of waste emissions and the implementation of all forms of occupational safety.*

L'environnement, la santé et la sécurité

TRAMEC se distingue par une production respectueuse de l'environnement et adhère aux lignes directrices et aux normes dans le respect de toutes les parties prenantes. Cela signifie la réduction de la consommation de matières premières, l'utilisation efficace de l'énergie et l'utilisation prudente et responsable des polluants, la réduction des émissions de déchets et la mise en œuvre de toutes les formes de sécurité **au travail.**



Reductores para cada necesidad

TRAMEC se fundó en 1986 en Calderara di Reno, en el corazón del llamado"Valle del Motor", una porción de territorio entre Bolonia y Módena famosa por ser la cuna de la excelencia del **MADE IN ITALY** en los sectores de la automoción, la motocicleta y la mecánica de precisión.

Desde su fundación, **TRAMEC** se ha especializado en la fabricación de reductores y engranajes cónicos, paralelos y de eje, ampliando su gama con el paso del tiempo con nuevas líneas de productos como los reductores planetarios de precisión y los reductores de tornillo sin fin. Posteriormente, la oferta se amplió con motores y accionamientos eléctricos para la automatización.

El objetivo de la empresa es hacer frente a un mercado en constante evolución en términos de estrategias de competitividad cualitativa, económica y de presencia, a través de un apoyo adecuado ofrecido por todos sus departamentos (producción, técnico y comercial) y una red de ventas ramificada y muy competente.

En 2024 nace el grupo moonind, que reúne a **TRAMEC**, **BERMAR**, **MT** y **VARMEC**. **MOONIND** representa la fusión de competencias complementarias: desde los reductores de velocidad hasta los motores eléctricos, pasando por los sistemas de control de movimiento y las soluciones innovadoras para la transmisión de potencia. Con este paso sinérgico, ya no somos "solo" fabricantes de componentes individuales, sino un socio capaz de ofrecerle soluciones completas para la automatización industrial.

Gearboxes for every need

***TRAMEC** was founded in 1986 in Calderara di Reno, in the heart of the so-called "Motor Valley", a portion of territory between Bologna and Modena famous for being the home of **MADE IN ITALY** excellence in the automotive, motorbike and precision mechanics sectors.*

*Since its foundation, **TRAMEC** has specialised in the production of orthogonal, parallel and shaft-mounted gearboxes and bevel gearboxes, expanding its range over time with new product lines such as precision planetary gearboxes and worm gearboxes. Subsequently, the offer was expanded with electric motors and drives for automation.*

The company's aim is to cope with an ever-changing market in terms of qualitative, economic and presence competitiveness strategies through adequate support offered by all its departments (production, technical and commercial) and a branched and highly competent sales network.

*In 2024, the moonind group was born: which sees **TRAMEC, BERMAR, MT** and **VARMEC** together. **MOONIND**: represents the fusion of complementary skills: from speed reducers to electric motors, including motion control systems and innovative solutions for power transmission. With this synergistic step, we are no longer "only" manufacturers of individual components, but an integrated partner able to offer you complete solutions for industrial automation.*

Réducteurs pour toutes les exigences

TRAMEC a été fondée en 1986 à Calderara di Reno, au cœur de la «Motor Valley» une portion de territoire située entre Bologne et Modène, célèbre pour être le berceau de l'excellence du **MADE IN ITALY** dans les secteurs de l'automobile, de la moto et de la mécanique de précision.

Depuis sa création, **TRAMEC** s'est spécialisée dans la production de réducteurs à engrenages à arbres orthogonaux, parallèles, pendulaires et de renvois angulaires, en élargissant au fil du temps sa gamme avec de nouvelles lignes de produits telles que les réducteurs planétaires de précision et les réducteurs à vis sans fin. Par la suite, l'offre a été élargie avec les moteurs et les entraînements électriques pour l'automatisation.
L'objectif de l'entreprise consiste à faire face à un marché en constante évolution en termes de stratégies de compétitivité qualitative, économique et de présence, grâce à un soutien adéquat offert par tous ses départements (production, technique et commercial) et d'un réseau de vente ramifié et hautement compétent.

En 2024, le groupe Moonind est né, réunissant **TRAMEC**, **BERMAR**, **MT** et **VARMEC**. **MOONIND** incarne la fusion de compétences complémentaires : des réducteurs de vitesse aux moteurs électriques, en passant par les systèmes de contrôle de mouvement et des solutions innovantes pour la transmission de puissance. Grâce à cette approche synergique, nous ne sommes plus seulement des fabricants de composants individuels, mais un partenaire intégré en mesure de vous proposer des solutions complètes pour l'automatisation industrielle.

Gama de productos

Los productos **TRAMEC** cubren una amplia gama de necesidades y se pueden encontrar en diversas aplicaciones.

Robótica, automatización de máquinas herramienta, máquinas de impresión automáticas para el envasado y el embalaje, manipuladores, máquinas de serigrafía, guías lineales, máquinas para trabaOUIr la madera, son algunos de los ejemplos en los que se utilizan.

Product range

***TRAMEC** products cover a wide range of needs, and can be found in various applications.*

Robotics, machine tool automation, printing machines, automatic wrapping and packaging machines, manipulators, screen printing machines, linear guides, woodworking machines are some of the examples where they are used.

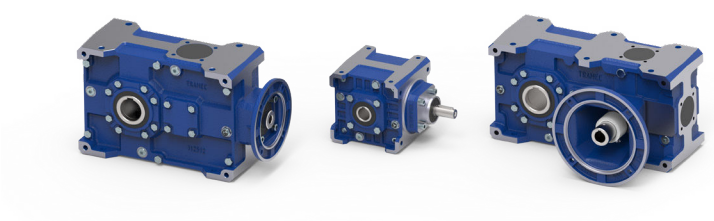
Gamme de produits

Les produits **TRAMEC** couvrent un large éventail de besoins et peuvent être utilisés dans diverses applications.

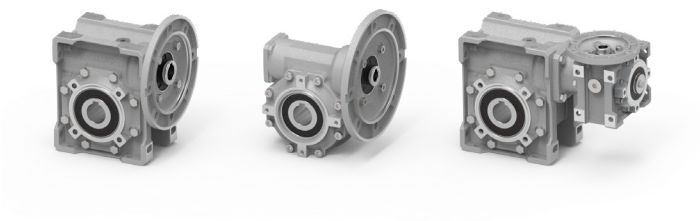
Robotique, automatisation, machines-outils, machines d'impression, machines automatiques de conditionnement et d'emballage, manipulateurs, machines de sérigraphie, guides linéaires, machines pour l'usinage du bois sont quelques exemples d'utilisation.

TRAMEC

Reductores cónicos y paralelos
Gear reducers orthogonal and parallel
Réducteurs à engrenages orthogonaux et parallèles



Reductores de tornillo sin fin
Worm gear reducers
Réducteurs à vis sans fin

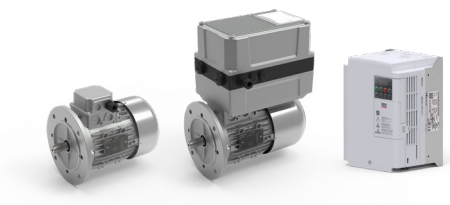


Reductores planetarios
Planetary gearboxes
Réducteurs planétaires

Reductores línea Gha
GHA line reducers
Réducteurs de ligne gha

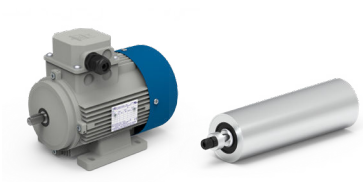
BERMAR

Productos / *Products* / Produits



MT Motori elettrici

Productos / *Products* / Produits



VARMEC

Productos / *Products* / Produits

Este catálogo anula y sustituye a los anteriores.
Los datos de este catálogo son indicativos y no vinculantes.

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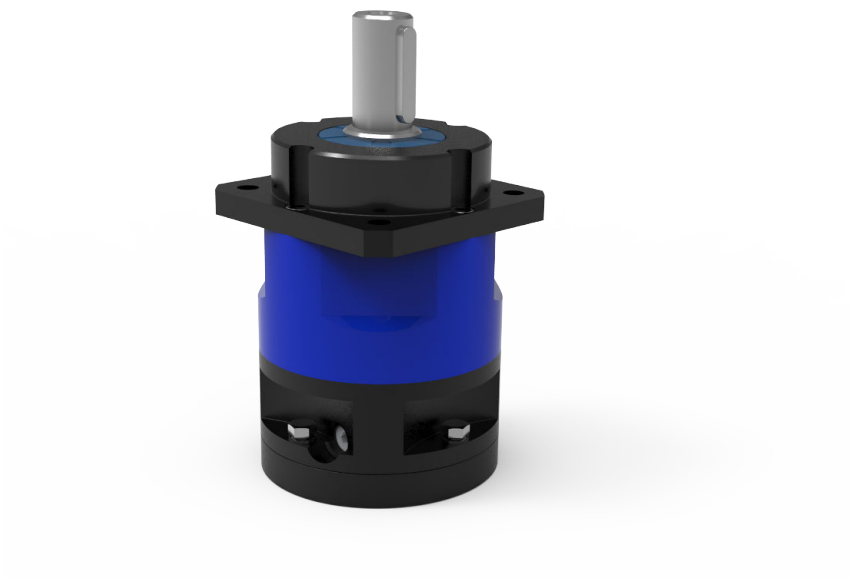
		Simbologia	*Symbols*	Symbolik
α_{max}	[arcmin]	Gioco angolare massimo	*Maximum backlash*	Maximales Winkelspiel
C_{eq}	[Nm]	Coppia dinamica cuscinetti	*Bearing dynamic torque*	Dynamisches Drehmoment des Lagers
F_{A2}	[N]	Carico assiale massimo in uscita	*Maximum output axial load*	Maximale axiale Abtriebslast
F_{a2}	[N]	Carico assiale applicato su albero uscita	*Axial load applied on output shaft*	Axialbelastung auf Abtriebswelle
F_{a2max}	[N]	Carico assiale max applicato su albero uscita	*Max. axial load applied on output shaft*	Max. Axialbelastung auf Abtriebswelle
F_{a2E}	[N]	Carico assiale medio applicato su albero uscita	*Average axial load applied on output shaft*	Durchschnittliche Axialbelastung auf Abtriebswelle
f_c	—	Fattore di ciclo	*Cycle factor*	Nutzungsfaktor
f_u	—	Fattore di utilizzo	*Usage factor*	Auslastungsfaktor
F_{R2}	[N]	Carico radiale massimo in uscita	*Maximum output radial load*	Maximale radiale Abtriebslast
F_{r2}	[N]	Carico radiale applicato su albero uscita	*Radial load applied on output shaft*	Radialbelastung auf Abtriebswelle
F_{r2max}	[N]	Carico radiale max applicato su albero uscita	*Max. radial load applied on output shaft*	Max. Radialbelastung auf Abtriebswelle
F_{r2E}	[N]	Carico radiale medio applicato su albero uscita	*Average radial load applied on output shaft*	Durchschnittliche Radialbelastung auf Abtriebswelle
i	—	Rapporto di riduzione nominale	*Nominal ratio*	Nenn-Untersetzungsverhältnis
J	[kg.cm^2]	Momento d'inerzia riferito all'albero entrata	*Moment of inertia referred to input shaft*	Trägheitsmoment bzgl. Antriebswelle
KU, KM	—	Coefficiente di utilizzo	*Duty coefficient*	Auslastungskoeffizient
L_{10h}	[h]	Durata cuscinetti	*Bearing life*	Lebensdauer der Lager
LpA	dB(A)	Livello di rumorosità dB(A) a 3000 min^{-1}	*Noise level dB(A) at 3000 min^{-1}*	Geräuschpegel dB(A) bei 3000 min^{-1}
M_{2R}	[Nm]	Coppia di ribaltamento massima	*Maximum tilting torque*	Maximales Kippmoment
M_{2rE}	[Nm]	Coppia di ribaltamento media applicata	*Average tilting torque applied*	Durchschnittliches angewandtes Kippmoment
M_{2rmax}	[Nm]	Coppia di ribaltamento massima applicata	*Maximum tilting torque applied*	Maximales angewandtes Kippmoment
$n_{1\ max}$	[min^{-1}]	Velocità massima in entrata	*Maximum input speed*	Maximale Antriebsdrehzahl
$n_{1\ nom}$	[min^{-1}]	Velocità nominale in entrata	*Nominal input speed*	Nenn-Antriebsdrehzahl
n_{2E}	[min^{-1}]	Velocità media in uscita	*Average output speed*	Durchschnittsdrehmoment am Abtrieb
R_d	—	Rendimento dinamico	*Dynamic efficiency*	Dynamischer Wirkungsgrad
R_t	[Nm / arcmin]	Rigidezza torsionale	*Torsional stiffness*	Torsionssteifigkeit
T_{1AMOT}	[Nm]	Massima coppia di accelerazione del motore	*Max. acceleration motor torque*	Maximales Beschleunigungsdrehmoment des Motors
T_{1n}	[Nm]	Coppia nominale del motore	*Motor rated torque*	Nenndrehmoment des Motors
T_{2A}	[Nm]	Massima coppia di accelerazione in uscita	*Max. acceleration output torque*	Maximales Beschleunigungsdrehmoment am Abtrieb
T_{2E}	[Nm]	Coppia media in uscita	*Average output torque*	Durchschnittsdrehmoment am Abtrieb
T_{2N}	[Nm]	Coppia nominale intermittente in uscita	*Rated intermittent output torque*	Kurzzeit-Nenndrehmoment am Abtrieb
T_{2S}	[Nm]	Coppia massima di emergenza in uscita	*Maximum emergency output torque*	Max. Notmoment am Abtrieb
Z_h	[1/h]	Numero di cicli ora	*Number or cycles per hour*	Zyklenzahl pro Stunde
p.xx		Richiamo alla pagina	*Reference to page*	Seitenverweis

RIDUTTORI EPICICLOIDALI SERIE REP — *PLANETARY GEARBOXES REP SERIES* — PLANETENGETRIEBE SERIE REP

REP



REP

Caratteristiche

La serie di riduttori epicicloidali REP è il risultato di un ottimo rapporto tra economicità del prezzo e garanzia di precisione delle caratteristiche di funzionamento.
I nostri riduttori sono stati realizzati per un utilizzo prevalente sulle seguenti applicazioni:

- Macchine utensili
- Macchine per la lavorazione del legno
- Linee transfer
- Macchine da stampa
- Macchine automatiche per confezionamento ed imballaggio
- Automazioni
- Manipolatori
- Macchine serigrafiche
- Guide lineari

La gamma dei riduttori REP è costituita da 4 grandezze (075, 100, 125 e 150), a 1, 2 e 3 stadi di riduzione, ognuna con due o tre tipi di alberi uscita (AU...) e flange uscita di tipo FLT e FLQ.

Characteristics

The planetary gearbox REP series is the result of the outstanding combination competitive price / precision guaranteed with regard to operating features.
Our gearboxes are manufactured for prevailing utilization in the following applications:

- *Machine tools*
- *Woodworking machines*
- *Transfer machines*
- *Printing machines*
- *Automatic packing & packaging machines*
- *Automations*
- *Mechanical hands*
- *Silk-screen process machines*
- *Linear guides*

The REP series is available in 4 sizes (075, 100, 125 and 150), with 1, 2 or 3 reduction stages, with two or three types of output shaft (AU...) and two types of output flange (FLT and FLQ).

Merkmale

Die REP Serie von Planetengetrieben ist das Ergebnis des hervorragenden Beziehung guter Preis / garantierte Präzision der Betriebseigenschaften.
Unsere Getriebe sind für überwiegende Verwendung in der folgenden Applikationen hergestellt:

- Werkzeugmaschinen
- Holzbearbeitungsmaschinen
- Transfermaschinen
- Druckmaschinen
- Automatische Verpackungsmaschinen
- Automation
- Manipulatoren
- Siebdruckmaschinen
- Linearführungen

Die REP Serie ist in 4 Größen (075, 100, 125 und 150) mit 1, 2 oder 3 Untersetzungsstufen, mit zwei oder drei Typen von Abtriebswellen (AU...) und zwei Typen von Abtriebsflanschen (FLT und FLQ) verfügbar.

Corpo: costruito in acciaio speciale da nitrurazione, garantisce robustezza e una elevata affidabilità nel tempo.

Flange: le flange in entrata ed in uscita sono costruite in alluminio e sono disponibili in molteplici varianti costruttive.

Alberi: sono costruiti in acciaio legato bonificato.

Ingranaggi: in acciaio legato da cementazione e tempra, con dentature rettificate.

Cuscinetti: di elevata qualità opportunamente dimensionati per garantire elevate durate e silenziosità di funzionamento.

Housing: *made of special nitrided steel to assure strength, high reliability and long life.*

Flanges: *input and output flanges made of aluminium and available in several versions.*

Shafts: *made of hardened and tempered alloy steel.*

Gears: *made of casehardened and tempered alloy steel, with ground toothing.*

Bearings: *high quality and suitably sized to assure long life and noiseless working.*

Gehäuse: aus Spezial-Nitrierstahl. Garantiert Robustheit und dauerhaft hohe Zuverlässigkeit.

Ein-u. Ausgangsflansche: aus Aluminium, in zahlreichen Varianten lieferbar.

Wellen: aus vergütetem Legierungs-stahl.

Zahnräder: aus geährteten Einsatz- stahl mit geschliffenen Zahnflanken.

Lager: sind hochwertig und zweckmäßig bemessen, um eine lange Lebensdauer und einen geräuscharmen Lauf zu garantieren.

REP

Designazione — *Designation* — Bezeichnung

Riduttore epicicloidale *Planetary gearbox* Planetengetriebe	Grandezza *Size* Größe	Numero di stadi *Steps* Untersetzungsstufen	*Coassiale* *Coaxial* *Koaxial*	Rapporto di riduzione *Ratio* Untersetzungsverhältnis	Albero uscita *Ouput shaft* Durchmesser Abtriebswelle	Flangia uscita *Output flange* Ausgangsflansch	Albero entrata *Input shaft* Durchmesser Eingangswelle	Flangia in entrata *Input flange* Eingangsflansch	Posizione di montaggio *Mounting position* Baulage
REP	**075**	**2**	**C**	**100**	**AU16**	**FLT**	**AE12**	**P03**	**B5**
	075 **100** **125** **150**	**1** **2** **3**	**C**	**3 - 343**	Vedi tabelle *See tables* Siehe Tab.	**FLT** **FLQ**	Vedi tabelle *See tables* Siehe Tab.	Vedi tabelle *See tables* Siehe Tab.	**B5** **V1** **V3** **OS**

Selezione — *Selection* — Getriebeauswahl

Per la selezione dei riduttori epicicloidali REP, seguire la procedura descritta al paragrafo a pag. C6

Make the selection of the planetary gearboxes REP Series as described at paragraph page C6.

Die Wahl der Planetengetriebe Serie REP wird wie im Abschnitt Seite C6.

REP

Verifica termica

Si deve individuare il valore del momento torcente massimo / potenza massima, applicabile, in modo continuativo, in ingresso al riduttore epicicloidale, tale per cui la temperatura del riduttore stesso non superi Tmax=95°C (massimo valore di temperatura raggiungibile nel caso di applicazioni standard). Tali valori devono risultare maggiori rispetto al momento torcente / potenza realmente applicati.

I massimi valori di coppia motrice / potenza applicabili in entrata al riduttore, in servizio continuativo, sono ricavabili dalle seguenti tabelle (tab. 2, tab. 3), in funzione del numero di stadi di riduzione e del numero di giri in entrata, considerata una temperatura ambiente T_0=20°C.

Temperature check

It is necessary to determine the max. torque/max. power applicable at the planetary gearbox input, continuous duty, so that gearbox temperature does not exceed Tmax=95°C (maximum permitted temperature for standard applications). The max applicable values have to be higher than the torque/power actually applied.
The maximum values of driving torque/power applicable at gearbox input, continuous duty, are listed in the following tables (table 2 and 3), depending on number of reduction stages, number of revolutions at input and considering an ambient temperature T_0 = 20°C.

Temperaturprüfung

Es muss berechnet werden, welches Maximaldrehmoment /welche Maximalleistung am Antrieb des Planetengetriebes im Dauerbetrieb angewendet werden darf, ohne dass die Getriebetemperatur über Tmax=95°C steigt (zulässige Maximaltemperatur bei Standardanwendungen). Der berechnete Wert muss höher als der wirklich angewendete Wert die maximal Werte von Drehmoment / Leistung sein.
Die Maximalwerte von Drehmoment / Leistung (Dauerbetrieb) werden in den folgenden Tabellen (Tab.2 und Tab.3) angegeben. Die Werte hängen von Zahl der Übersetzungsstufen und der Umdrehungen am Antrieb ab dabei wird eine Umgebungstemperatur T_0=20°C berücksichtigt.

Tab. 2 — **Potenza / *Power* / Leistung [kW]** (Limite termico / *Thermal capacities* / Temperaturgrenze)

	Stadi *Steps* Stufenzahl	n_1 [min^{-1}] 900	1400	2800	3600
REP 75	1	4.5	4.4	4.0	3.5
	2	2.5	2.3	2.0	1.8
	3	1.9	1.8	1.5	1.4
REP 100	1	6.0	6.0	4.6	3.8
	2	3.5	3.3	2.5	2.0
	3	2.7	2.5	2.0	1.6
REP 125	1	9.0	8.5	6.2	4.7
	2	5.5	4.8	3.4	2.5
	3	4.0	3.7	2.8	2.0
REP 150	1	11.0	10.0	5.6	2.8
	2	6.1	5.5	2.6	1.0
	3	4.7	4.3	2.3	0.9

Tab. 3 — **Coppia / *Torque* / Drehmoment [Nm]** (Limite termico / *Thermal capacities* / Temperaturgrenze)

	Stadi *Steps* Stufenzahl	n_1 [min^{-1}] 900	1400	2800	3600
REP 75	1	48	30	14	9
	2	27	16	7	5
	3	20	12	5	4
REP 100	1	64	41	16	10
	2	37	23	9	5
	3	29	17	7	4
REP 125	1	96	58	21	12
	2	58	33	12	7
	3	42	25	10	5
REP 150	1	117	68	19	7
	2	65	38	9	3
	3	50	29	8	2

Nel caso in cui l'applicazione preveda l'utilizzo di una coppia motrice / potenza maggiore del valore limite riportato nella tabella precedente, occorre valutare il massimo tempo di utilizzo, tmax (s), del riduttore, in servizio continuo, affinché la temperatura non superi il valore Tmax=95°C.
A tal fine: il massimo tempo di utilizzo, tmax, è ricavabile dalla seguente relazione:

In case the application requires a driving torque/power higher than the max. permitted values reported in the table above, it is necessary to calculate the maximum length of operation, tmax (s), of the gearbox in continuous duty so that temperature does not exceed Tmax=95°C .

The max. duration of operation, tmax, is to be calculated as follows:

Falls der verlangte Wert von Drehmoment / Leistung höher als der in den o.g. Tabellen angegebenen Wert ist, ist es notwendig, die maximale Anwendungsdauer tmax (s) im Dauerbetrieb zu bestimmen, damit die Temperatur unter Tmax=95°C bleibt.

Die maximale Anwendungsdauer tmax ist wie folgt zu berechnen:

$$tmax = -\tau c \cdot \ln \frac{T_S - T_{MAX}}{T_S - T_0} \quad [s]$$

Dove :
T_{MAX} = 95 °C (temperatura massima raggiungibile dal riduttore)
T_0 = temperatura ambiente (°C)
τc = costante di tempo (s) ricavabile consultando la seguente tabella (Tab. 4):

Where:
T_{MAX} = *95 °C (maximum permitted temperature)*
T_0 = *ambient temperature (°C)*
τc = *time constant (s), as reported in the following table (Tab. 4):*

Wobei:
T_{MAX} = 95 °C (zulässige Maximaltemperatur des Getriebes)
T_0 = Umgebungstemperatur (C°)
τc = Zeitkostante, aus der folgenden Tabelle erhältlich (Tab. 4):

Tab. 4

Stadi *Steps* Stufenzahl	REP 75			REP 100			REP 125			REP 150		
	1	2	3	1	2	3	1	2	3	1	2	3
τc (s)	Costante di tempo / *Time constant* / Zeitkostante											
	551	655	748	747	939	1111	1255	1590	1891	1858	2369	2824

T_S = temperatura massima (°C) alla quale il riduttore tenderà a stabilizzarsi nel caso in cui sia applicata in ingresso la potenza P1, in condizioni di funzionamento continuo. Il valore di T_S è ricavabile dalla seguente formula:

T_S = maximum temperature (°C) at which the gearbox will tend to stabilize in case P1 power is applied at input, continuous duty. Calculate Ts value with the following formula:

T_S = maximale Temperatur (C°), auf die das Getriebe sich stabilisieren wird, falls im Dauerbetrieb P1 Antriebsleistung angewendet wird. Ts ist mit der folgenden Formel zu berechnen:

$$T_S = T_0 + \frac{P_0 + P_\eta}{C \cdot f_V} \qquad [°C]$$

in cui:

P_0 = potenza persa a vuoto (W), ricavabile dalla seguente tabella (Tab. 5) in funzione della grandezza del riduttore, del numero degli stadi di riduzione e della velocità di rotazione in ingresso

Where:

P_0 = loadless friction power (W), reported in the following table (Tab. 5), depending on gearbox size, number of reduction stages and input rotation speed

Wobei:

P_0 = Verlustleistung ohne Last (W), ist aus der folgenden Tabelle zu entnehmen und hängt von Getriebegröße, Stufenzahl und Antriebsdrehzahl ab.

Tab. 5

	n_1= 900 [min^{-1}]			n_1= 1400 [min^{-1}]			n_1= 2800 [min^{-1}]			n_1= 3600 [min^{-1}]		
	Stadi / *Steps* / Stufenzahl											
	1	2	3	1	2	3	1	2	3	1	2	3
	P_0 - Potenza persa a vuoto / *Loadless friction power* / Verlustleistung ohne Last [W]											
REP 75	3	4	5	6	8	8	14	18	19	20	26	27
REP 100	7	9	9	12	15	16	30	38	39	42	53	55
REP 125	12	15	16	22	27	28	56	71	73	81	101	104
REP 150	22	27	28	39	50	51	106	132	136	151	191	196

C = Coefficiente di dispersione termica, ricavabile dalla seguente tabella (Tab.6), in funzione della grandezza del riduttore

C = loss of heat coefficient, listed in the following table (Tab. 6), according to gearbox size.

C = Wärmeverlustkoeffizient, wird in der folgenden Tabelle (Tab.6) angegeben und hängt von Getriebegröße ab.

Tab. 6

	Stadi / *Steps* / Stufenzahl		
	1	2	3
	C - Coefficiente di dispersione termica / *loss of heat coefficient* / Wärmeverlustkoeffizient		
REP 75	1.024	1.120	1.248
REP 100	1.410	1.620	1.800
REP 125	2.175	2.450	2.725
REP 150	2.680	3.020	3.380

f_V = fattore di ventilazione
1.45 con ventilazione forzata efficace con ventola dedicata 1.25 con ventilazione forzata secondaria ad altri dispositivi (pulegge, ventole motore, ecc.)

1 refrigerazione naturale (situazione standard)
0.5 in ambiente chiuso e ristretto (carter)

f_V = ventilation factor
1.45 for forced ventilation effective with special fan 1.25 for forced ventilation secondary to other devices (pulleys, motor fans, etc.)

1 for natural cooling (standard situation)
0.5 in a close and narrow place (housing)

f_V = Lüftungsfaktor
1.45 für wirksame Drücklüftung mit Sonderlaufrad
1.25 für Drücklüftung zweitrangig zu anderen Vorrichtungen (Scheiben, Motorlaufräder, u.s.w.)

1 für Naturallüftung (Standardsituation)
0.5 in geschlossenem und engem Raum (Gehäuse)

P_η = potenza persa proporzionale alla potenza applicata (W)
P1 . 0.015 (W) nel caso di 1 stadio di riduzione
P1 . 0.03 (W) nel caso di 2 stadi di riduzione
P1 . 0.044 (W) nel caso di 3 stadi di riduzione

P_h = friction power proportional to the applied power (W)
P1 . 0.015 (W) in case of 1 reduction stage
P1 . 0.03 (W) in case of 2 reduction stages
P1 . 0.044 (W) in case of 3 reduction stages

P_h = Verlustleistung proportional zu der angewandten Leistung (W)
P1 . 0.015 (W) im Falle von 1 Übersetzungsstufe
P1 . 0.03 (W) im Falle von 2 Übersetzungsstufen
P1 . 0.044 (W) iim Falle von 3 Übersetzungsstufen

REP

P1 è la potenza applicata in ingresso, da esprimersi in W. Nel caso in cui sia invece nota la coppia motrice applicata in ingresso T1, in Nm, si ricava il corrispondente valore di potenza, attraverso la relazione:

P1 is the power applied at gearbox input and is expressed in W. In case one only knows T1 (driving torque applied at input) expressed in Nm, the corresponding power value can be obtained as follows:

P1 ist die am Getriebeantrieb angewandte Leistung und wird in W ausgedrückt. Falls nur T1 (Antriebsdrehmoment in Nm) bekannt ist, dann ist den entsprechenden Leistungswert mit der folgenden Formel zu berechnen:

$$P1 = \frac{T1 \cdot n_1}{9550} \cdot 1000 \ [W]$$

con n_1 velocità di rotazione in ingresso in min^{-1}.
Se il ciclo di lavoro è variabile nel tempo, si determinino i valori della coppia media $T1_E$ e velocità media in ingresso $n1_E$ secondo le seguenti formule:

where n_1 is the input rotation speed in min^{-1}.
If the operation cycle changes in time, the values of $T1_E$ (average torque) and $n1_E$ (average input speed) can be determined with the following formulae:

Dabei ist n_1 die Antriebsdrehzahl in min^{-1}. Falls der Betriebszyklus in Laufe der Zeit wechselnd ist, dann sind Durchschnittsdrehmoment $T1_E$ und Durchschnittsdrehzahl am Antrieb $n1_E$ mit der folgenden Formel zu berechnen:

$$T1_E = \sqrt[3]{\frac{T1_{MAX}^3 \cdot n_{1m} \cdot ta + \ldots + T1_n^3 \cdot n_{1n} \cdot tn}{ta \cdot n_{1m} + \ldots + tn \cdot n_{1n}}} \ [Nm]$$

$T1_n$, n_{1n}, t_n = valori riferiti allo step ennesimo
= values referred to nth step.
= Werte mit Bezug auf n-te Stufe.

$$n_{1E} = \frac{n_{1m} \cdot ta + \ldots + n_{1n} \cdot tn}{ta + \ldots + tn} \ [min^{-1}]$$

Gioco Angolare (α_{max})

Gioco massimo [arcmin] misurato sull'albero uscita, con albero entrata bloccato applicando una coppia pari al 2% della coppia nominale.

Backlash (α_{max})

Max. backlash measured on output shaft with torque equal to 2% of the nominal torque value with input shaft blocked

Winkelspiel (α_{max})

Maximales Winkelspiel [arcmin], gemessen an der Abtriebswelle bei blockierter Eingangswelle mit Drehmoment gleich 2% des Nennmoments.

Carichi esterni su albero lento e durata dei cuscinetti uscita

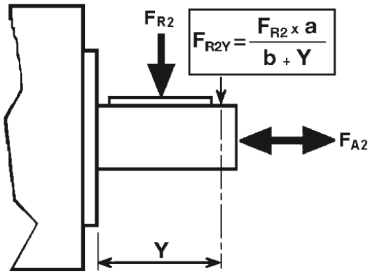
Nella tabella delle prestazioni sono indicati i valori, espressi in N, dei carichi assiali e radiali ammissibili alle diverse velocità per una durata dei cuscinetti di 20000 ore. Il carico radiale F_{R2} si considera applicato ad una distanza dalla battuta pari alla metà della lunghezza dell'albero lento. Per distanze y diverse, è possibile calcolare il nuovo carico massimo ammissibile F_{R2Y} utilizzando formula e coefficienti indicati nella tabella.

External loads on output shaft and life-span of output bearings

The table of performances shows admissible axial and radial load values expressed in N for different speeds and for a bearing life of 20000 hours. Radial load F_{R2} calculations have been based on loads applied to halfway the output shaft extension. For different y distance it is possible to calculate the new maximum admissible load by using formula and coefficient shown in the table.

Externe Belastungen auf die Abtriebswelle und Lebensdauer der Ausgangslager

Die Leistungstabelle enthält die in N ausgedrückten Werte der Axial- und Radiallasten für verschiedene Umdrehungszahlen. Diesen Werten liegt eine Lebensdauer der Lager von 20000 Stunden zugrunde. Die Radiallast F_{R2} greift hierbei auf der Mitte der Abtriebswelle an. Falls Y-distanz anders ist, ist die Zulässige radiallast F_{R2Y} mit den in der Tabelle angegebenen formel und Koeffizient zu berechnen:



	REP 75	REP 100	REP 125	REP 150
a	46	55	85	102
b	30	37	51	61

Lubrificazione

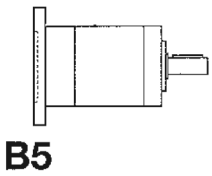
I riduttori REP sono forniti completi di lubrificante a vita pertanto non necessitano di manutenzione. In fase di ordine specificare la posizione di montaggio.

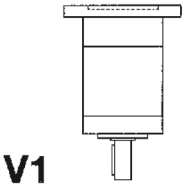
Lubrication

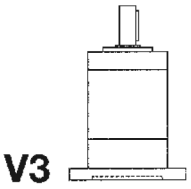
REP gearboxes are supplied filled with long-life lubricant and do not require any maintenance. When ordering it is important to specify the exact mounting position.

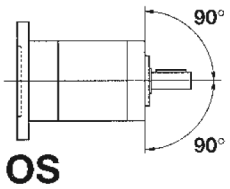
Schmierung

Die REP Planetengetriebe werden inklusiv Dauerschmierung geliefert und sind wartungsfrei. Bei der Bestellung bitte die Einbauposition angeben


B5


V1


V3



OS

REP

Momenti d'inerzia J — *Moments of inertia J* — Trägheitsmoment J

	REP 075										
	Albero entrata / *Input shaft* / Antriebswelle										
Stadi *Steps* Stufenzahl	i	6	6.35	7	8	9	9.525	11	12	12.7	14
1	3	0.16	0.16	0.16	0.19	0.19	0.19	0.21	0.21	0.21	0.25
	4	0.14	0.14	0.14	0.16	0.16	0.16	0.18	0.19	0.18	0.22
	5	0.12	0.12	0.12	0.14	0.14	0.14	0.16	0.16	0.16	0.20
	6	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.16	0.19
2	9	0.16	0.16	0.16	0.19	0.19	0.19	0.21	0.21	0.21	0.25
	12	0.16	0.16	0.16	0.19	0.19	0.18	0.21	0.21	0.21	0.25
	16	0.14	0.14	0.14	0.16	0.16	0.16	0.18	0.18	0.18	0.22
	20	0.12	0.12	0.12	0.14	0.14	0.14	0.16	0.16	0.16	0.20
	24	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.15	0.19
	30	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.15	0.19
	36	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.15	0.19
3	27	0.16	0.16	0.16	0.19	0.19	0.19	0.21	0.21	0.21	0.25
	36	0.16	0.16	0.16	0.19	0.19	0.19	0.21	0.21	0.21	0.25
	48	0.16	0.16	0.16	0.19	0.19	0.18	0.21	0.21	0.21	0.25
	64	0.14	0.14	0.14	0.16	0.16	0.16	0.18	0.18	0.18	0.22
	80	0.12	0.12	0.11	0.14	0.14	0.14	0.16	0.16	0.16	0.20
	100	0.11	0.11	0.11	0.14	0.14	0.14	0.16	0.16	0.16	0.20
	120	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.15	0.19
	144	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.15	0.19
	180	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.15	0.19
	216	0.11	0.11	0.11	0.13	0.13	0.13	0.15	0.16	0.15	0.19

	REP 100								
	Albero entrata / *Input shaft* / Antriebswelle								
Stadi *Steps* Stufenzahl	i	9	9.525	11	12.7	14	15.87	16	19
1	3	0.47	0.47	0.49	0.49	0.53	0.82	0.82	0.80
	4	0.35	0.35	0.37	0.37	0.41	0.70	0.70	0.69
	5	0.28	0.28	0.30	0.30	0.34	0.63	0.63	0.62
	6	0.26	0.26	0.28	0.28	0.32	0.61	0.61	0.60
2	9	0.48	0.48	0.50	0.51	0.55	0.83	0.83	0.82
	12	0.47	0.47	0.49	0.49	0.53	0.82	0.82	0.81
	16	0.34	0.34	0.36	0.36	0.41	0.69	0.69	0.68
	20	0.28	0.28	0.30	0.30	0.34	0.63	0.63	0.62
	24	0.26	0.26	0.28	0.28	0.32	0.61	0.61	0.59
	30	0.25	0.25	0.27	0.28	0.32	0.61	0.60	0.59
	36	0.25	0.25	0.27	0.28	0.32	0.60	0.60	0.59
3	27	0.49	0.49	0.51	0.51	0.55	0.84	0.84	0.82
	36	0.48	0.48	0.50	0.51	0.55	0.84	0.83	0.82
	48	0.47	0.47	0.49	0.49	0.53	0.82	0.82	0.81
	64	0.34	0.34	0.36	0.36	0.41	0.69	0.69	0.68
	80	0.28	0.28	0.30	0.30	0.34	0.63	0.63	0.62
	100	0.28	0.27	0.30	0.30	0.34	0.63	0.63	0.61
	120	0.25	0.25	0.27	0.28	0.32	0.61	0.60	0.59
	144	0.25	0.25	0.27	0.28	0.32	0.60	0.60	0.59
	180	0.25	0.25	0.27	0.28	0.32	0.60	0.60	0.59
	216	0.25	0.25	0.27	0.28	0.32	0.60	0.60	0.59

Momenti d'inerzia [kg·cm²] riferiti all'albero veloce in entrata

Moments of inertia [kg·cm²] referred to input shaft

Trägheitsmoment [kg·cm²] bez. Antriebswelle

Momenti d'inerzia J — *Moments of inertia J* — Trägheitsmoment J

Stadi *Steps* Stufenzahl	REP 125 Albero entrata / *Input shaft* / Antriebswelle i	12.7	14	15.87	16	19	22	24	28
1	**3**	1.91	1.98	2.26	2.26	2.24	4.95	4.91	5.10
	4	1.18	1.25	1.53	1.53	1.50	4.22	4.18	4.36
	5	0.84	0.91	1.19	1.19	1.16	3.88	3.84	4.02
	7	0.64	0.70	0.99	0.99	0.96	3.67	3.63	3.82
2	**9**	1.93	1.99	2.28	2.28	2.25	4.97	4.92	5.11
	12	1.85	1.91	2.20	2.20	2.17	4.88	4.84	5.03
	16	1.14	1.21	1.49	1.49	1.47	4.18	4.14	4.33
	20	0.82	0.88	1.17	1.16	1.14	3.85	3.81	4.00
	28	0.62	0.69	0.97	0.97	0.95	3.66	3.62	3.81
	35	0.63	0.69	0.98	0.98	0.95	3.66	3.62	3.81
	49	0.62	0.69	0.97	0.97	0.95	3.66	3.62	3.81
3	**36**	1.92	1.99	2.27	2.27	2.24	4.96	4.92	5.11
	48	1.84	1.91	2.19	2.19	2.17	4.88	4.84	5.03
	64	1.14	1.21	1.49	1.49	1.46	4.18	4.14	4.32
	80	0.81	0.88	1.16	1.16	1.14	3.85	3.81	4.00
	100	0.80	0.87	1.15	1.15	1.12	3.84	3.80	3.98
	140	0.62	0.68	0.97	0.97	0.94	3.65	3.61	3.80
	196	0.61	0.68	0.96	0.96	0.94	3.65	3.61	3.80
	245	0.61	0.68	0.96	0.96	0.93	3.65	3.61	3.79
	343	0.61	0.68	0.96	0.96	0.93	3.65	3.61	3.79

Stadi *Steps* Stufenzahl	REP 150 Albero entrata / *Input shaft* / Antriebswelle i	15.87	16	19	22	24	28	32	35	38
1	**3**	6.58	6.58	6.62	7.57	7.53	11.55	13.38	13.28	12.94
	4	4.64	4.64	4.68	5.63	5.59	9.62	11.44	11.34	11.00
	5	3.64	3.64	3.68	4.63	4.59	8.62	10.45	10.35	10.01
	7	3.05	3.05	3.09	4.04	4.00	8.03	9.86	9.76	9.42
2	**9**	6.54	6.54	6.58	7.53	7.49	11.51	13.34	13.24	12.90
	12	6.32	6.32	6.36	7.31	7.27	11.30	13.13	13.03	12.69
	16	4.49	4.49	4.53	5.48	5.44	9.47	11.30	11.20	10.86
	20	3.55	3.55	3.59	4.54	4.50	8.53	10.36	10.26	9.92
	28	3.01	3.01	3.05	4.00	3.96	7.98	9.81	9.71	9.37
	35	2.99	2.99	3.03	3.97	3.94	7.96	9.79	9.69	9.35
	49	2.97	2.97	3.01	3.96	3.92	7.95	9.78	9.68	9.34
3	**36**	6.51	6.51	6.55	7.50	7.46	11.49	13.31	13.21	12.87
	48	6.31	6.31	6.35	7.29	7.26	11.28	13.11	13.01	12.67
	64	4.49	4.48	4.52	5.47	5.44	9.46	11.29	11.19	10.85
	80	3.55	3.54	3.59	4.53	4.50	8.52	10.35	10.25	9.91
	100	3.51	3.51	3.55	4.50	4.46	8.48	10.31	10.21	9.87
	140	2.98	2.98	3.02	3.97	3.93	7.96	9.79	9.69	9.35
	196	2.97	2.97	3.01	3.96	3.92	7.95	9.78	9.68	9.34
	245	2.97	2.97	3.01	3.96	3.92	7.95	9.78	9.68	9.34
	343	2.97	2.97	3.01	3.96	3.92	7.95	9.78	9.68	9.34

Momenti d'inerzia [kg·cm²] riferiti all'albero veloce in entrata

Moments of inertia [kg·cm²] referred to input shaft

Trägheitsmoment [kg·cm²] bez. Antriebswelle

REP075

Dati tecnici — *Technical data* — Technische Daten

Stadi / *Steps* / Stufenzahl	1				2							3									
i	**3**	**4**	**5**	**6**	**9**	**12**	**16**	**20**	**24**	**30**	**36**	**27**	**36**	**48**	**64**	**80**	**100**	**120**	**144**	**180**	**216**
$n_{1\,nom}$	4000				4500							5000									
$n_{1\,max}$	6000																				
$T2_N$	35	45	35	30	40	50	50	50	50	40	35	40	55	55	55	55	55	55	55	40	35
$T2_A$	55	65	55	50	60	70	70	70	70	60	55	60	80	80	80	80	80	80	80	60	55
$T2_S$	110	130	110	100	120	140	140	140	140	120	110	120	150	150	150	150	150	150	150	120	110
J	Vedi pag. C56 / *See page C56* / Siehe auf Seite 56																				
LpA	< 70																				
R_d	0.96				0.93							0.91									
L_h	20000																				
F_{R2}	1400																				
F_{A2}	700																				
R_t	4																				
α_{max}	4′				6′							8′									
Kg	1.3				1.6							1.9									

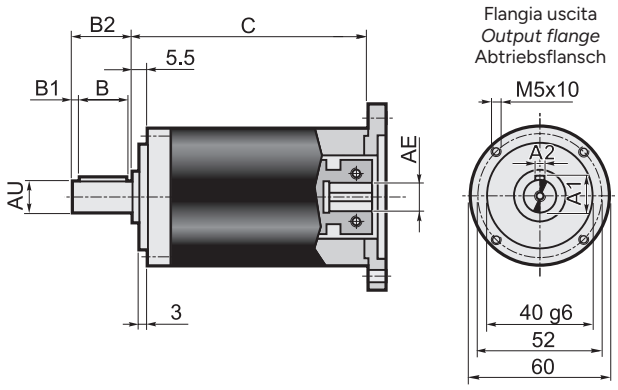
F_{R2} Carico radiale nominale in uscita [N] a 300 min^{-1} — *Rated output radial load [N] at 300 min^{-1}* — Nenn-Radiallast an der Abtriebswelle bei 300 min^{-1}

F_{A2} Carico assiale in uscita [N] a 300 min^{-1} — *Output axial load [N] at 300 min^{-1}* — Axiallast an der Abtriebswelle bei 300 min^{-1}

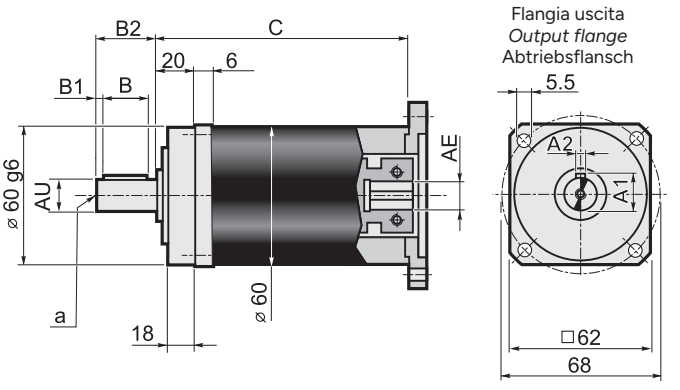
Dimensioni — *Dimensions* — Abmessungen

Dimensioni generali e uscite / *General and output dimensions* / General-und Abtriebsabmessungen

FLT



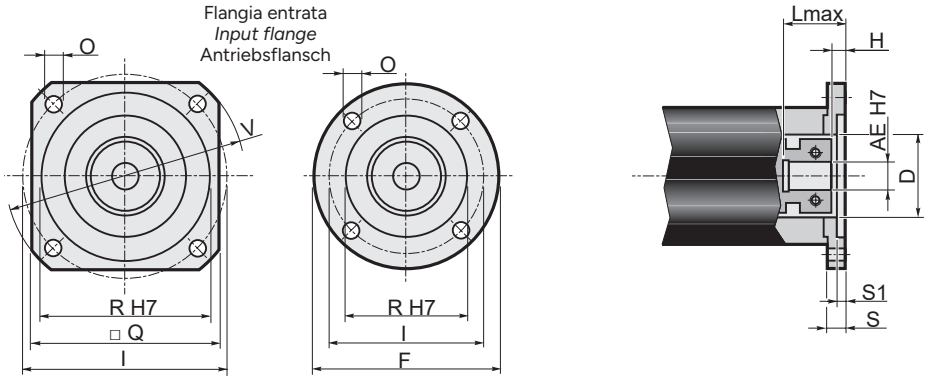
FLQ



Stadi / *Steps* / Stufenzahl	1	2	3	
C	86.2	103.9	121.6	AE= 6-6.35-7-8-9-9.52 11-12-12.7-14

	Albero uscita - *Output shaft* - Abtriebswelle						
	AU j6	**A1**	**A2**	**B**	**B1**	**B2**	**a**
AU12	12	13.5	4	15	3	21	M4x10
AU14	14	16	5	25	2	28	M5x13
AU16	16	18	5	25	2	28	M5x13

Dimensioni entrate / *Input dimensions* / Antriebsabmessungen



Flange entrata / *Input flange* / Antriebsflansch										Albero entrata / *Input shaft* / Antriebswelle																			
										AE																			
										6		6.35		7		8		9		9.525		11		12		12.7		14	
	F	Q	V	I	R (H7)	O	S	S1	D	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H
P01*	60	=	=	43.82	22	4.5	10	3	22	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P02*	=	60	80	66.67	38.1	5.5	10	3	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P03*	=	60	80	63	40	5.5	10	3.5	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P04	=	70	90	75	60	6.5	10.5	3.5	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P05	105	=	=	85	70	6.5	10.5	3.5	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P06	=	80	110	98.42	73.02	6	11	3.5	35	39	8.5	39	8.5	39	8.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5
P07	=	95	120	100	80	6.5	11.5	4	32	41	10.5	41	10.5	41	10.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5
P08	=	98	130	115	95	9	11.5	4	32	43.5	13	43.5	13	43.5	13	43.5	15	43.5	15	43.5	15	43.5	15	43.5	15	43.5	15	43.5	15
P09	=	116	160	130	110	9	12	4.5	32	37.5	7	37.5	7	37.5	7	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9
P10*	60	=	=	39	26	4.5	10	3	26	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P11*	60	=	=	42	32	4.5	10	3	32	37.5	7	37.5	7	37.5	7	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9
P12*	65	=	=	46	32	4.5	10	3.5	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P13*	80	=	=	65	50	5.5	10	3.5	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P14*	60	=	=	39	20	4.5	10	2.5	20	42.5	12	42.5	12	42.5	12	42.5	14	42.5	14	42.5	14	42.5	14	42.5	14	42.5	14	42.5	14
P15	=	75	100	90	60	5.8	12	3.5	32	39	8.5	39	8.5	39	8.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5
P16*	60	=	=	45	30	3.5	14	7	30	39	8.5	39	8.5	39	8.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5
P17	=	60	82	70	50	4.5	16.5	8	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P18	=	60	80	60	50	M4	10.5	3.5	32	39	8.5	39	8.5	39	8.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5
P19*	60	=	=	36	25	4.5	10	3	25	36	5.5	36	5.5	36	5.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5
P20	=	60	82	70	50	5.5	10.5	3.5	32	38	7.5	38	7.5	38	7.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5
P21*	60	=	=	46	30	4.5	10	3	30	39	8.5	39	8.5	39	8.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5	39	10.5
P22	=	60	80	70.71	36	4.5	10	2	32	38	7.5	38	7.5	38	7.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5
P23	=	62	85	70	50	5.5	15.5	3.5	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P24	=	75	100	90	70	5.8	12	3.5	32	38	7.5	38	7.5	38	7.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5
P25	=	70	95	85	55	5.8	12	3.5	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P26*	=	60	80	65.5	34	5.5	10	3.5	33	41	10.5	41	10.5	41	10.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5
P27	=	80	110	95	50	6.5	12	3.5	32	42	11.5	42	11.5	42	11.5	42	13.5	42	13.5	42	13.5	42	13.5	42	13.5	42	13.5	42	13.5
P28	=	60	80	66.67	38.1	M4	9	2.5	32	43.5	13	43.5	13	43.5	13	43.5	15	43.5	15	43.5	15	43.5	15	43.5	15	43.5	15	43.5	15
P29	60	=	=	45	30	M3	11	4	32	38	7.5	38	7.5	38	7.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5	38	9.5
P30	=	70	95	85	60	5.8	12	3.5	32	39	8.5	39	8.5	39	8.5	30	10.5	30	10.5	39	10.5	30	10.5	39	10.5	39	10.5	39	10.5
P31	=	62	85	70	50	M4	11	3.5	32	38	7.5	38	7.5	38	7.5	29	9.5	29	9.5	38	9.5	29	9.5	38	9.5	38	9.5	38	9.5
P32	=	60	80	65	40	M5	10	3.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P33	=	85	115	99	60	5.5	11	3.5	32	38	7.5	38	7.5	38	7.5	29	9.5	29	9.5	38	9.5	29	9.5	38	9.5	38	9.5	38	9.5
P34	=	65	87	73.54	40	M4	10	3.5	32	37	6.5	37	6.5	37	6.5	28	8.5	28	8.5	37	8.5	28	8.5	37	8.5	37	8.5	37	8.5
P35	=	60	80	70.71	36	M4	14	2	32	41	10.5	41	10.5	41	10.5	32	12.5	32	12.5	41	12.5	32	12.5	41	12.5	41	12.5	41	12.5
P36	=	85	115	98.42	73.02	6	15	3.5	35	42	11.5	42	11.5	42	11.5	33	13.5	33	13.5	42	13.5	33	13.5	42	13.5	42	13.5	42	13.5
P37	=	95	120	100	80	6.5	16.5	5	32	43.5	13	43.5	13	43.5	13	34.5	15	34.5	15	43.5	15	34.5	15	43.5	15	43.5	15	43.5	15
P38	60	=	=	48	30	M3	11	7	32	38	7.5	38	7.5	38	7.5	29	9.5	29	9.5	38	9.5	29	9.5	38	9.5	38	9.5	38	9.5
P41*	68	=	=	50	30	5.5	10	10	30	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P43	=	60	80	66.67	50	M5	9	2.5	32	36	5.5	36	5.5	36	5.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5
P44*	60	=	=	32	25	4.5	9	2.5	20	36	5.5	36	5.5	36	5.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5
P45	=	62	85	73.54	50	M5	10	3	32	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P46	70	=	=	55	45	4.5	9	3	32	36	5.5	36	5.5	36	5.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5	36	7.5
P47	=	90	118	104	83	6.5	14	3.5	32	41	10.5	41	10.5	41	10.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5	41	12.5
P48	60	=	=	38.88	25	4.5	10	3	25	37	6.5	37	6.5	37	6.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5	37	8.5
P49	=	70	90	75	60	M5	10.5	3.5	32	37.5	7	37.5	7	37.5	7	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9
P50	=	70	90	75	60	M6	10.5	3.5	32	37.5	7	37.5	7	37.5	7	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9	37.5	9

* Per assemblare il motore è necessario smontare la flangia dal riduttore (vedere **schema di montaggio 2** a pag. C67).

** Before the mounting of the motor it is necessary to remove the flange from the gearbox (see **structural arrangement 2** at the top of the page C67).*

* Vor dem Einbauen des Motors soll die Getriebeflansch abmontiert werden (siehe **Bauanleitung 2** auf Seite C77).

REP100

Dati tecnici — *Technical data* — Technische Daten

Stadi / *Steps* / Stufenzahl	1				2							3									
i	**3**	**4**	**5**	**6**	**9**	**12**	**16**	**20**	**24**	**30**	**36**	**27**	**36**	**48**	**64**	**80**	**100**	**120**	**144**	**180**	**216**
$n_{1\,nom}$	4000				4500							5000									
$n_{1\,max}$	6000																				
$T2_N$	90	110	90	75	100	115	115	115	115	85	75	100	120	120	120	120	120	120	120	95	80
$T2_A$	145	170	130	120	160	180	180	180	180	140	130	160	190	190	190	190	190	190	190	150	130
$T2_S$	290	340	260	240	320	360	360	360	360	280	260	320	380	380	380	380	380	380	380	300	260
J	Vedi pag. C56 / *See page C56* / Siehe auf Seite 56																				
LpA	< 70																				
R_d	0.96				0.93							0.91									
L_h	20000																				
F_{R2}	2100																				
F_{A2}	1050																				
R_t	11																				
α_{max}	4′				6′							8′									
Kg	2.7				3.5							4.3									

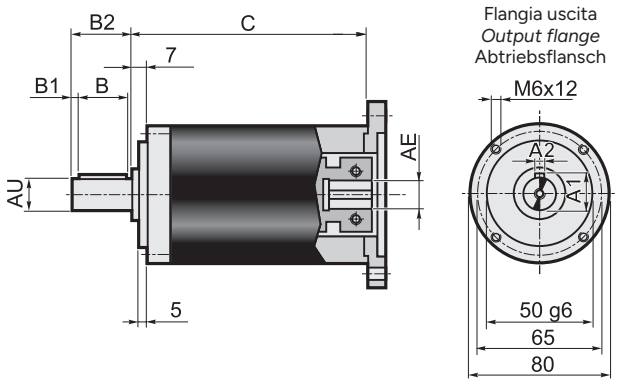
F_{R2} Carico radiale nominale in uscita [N] a 300 min^{-1} — *Rated output radial load [N] at 300 min^{-1}* — Nenn-Radiallast an der Abtriebswelle bei 300 min^{-1}

F_{A2} Carico assiale in uscita [N] a 300 min^{-1} — *Output axial load [N] at 300 min^{-1}* — Axiallast an der Abtriebswelle bei 300 min^{-1}

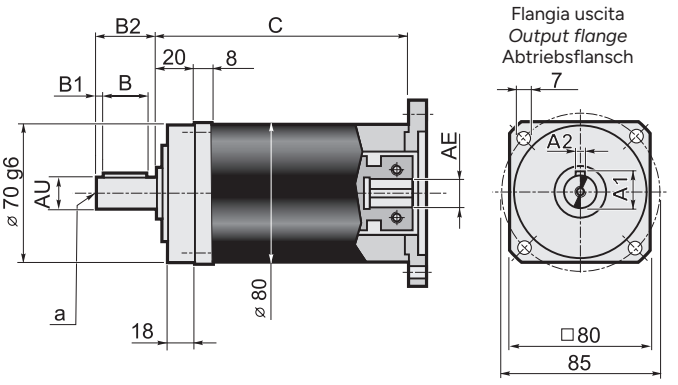
Dimensioni — *Dimensions* — Abmessungen

Dimensioni generali e uscite / *General and output dimensions* / General-und Abtriebsabmessungen

FLT



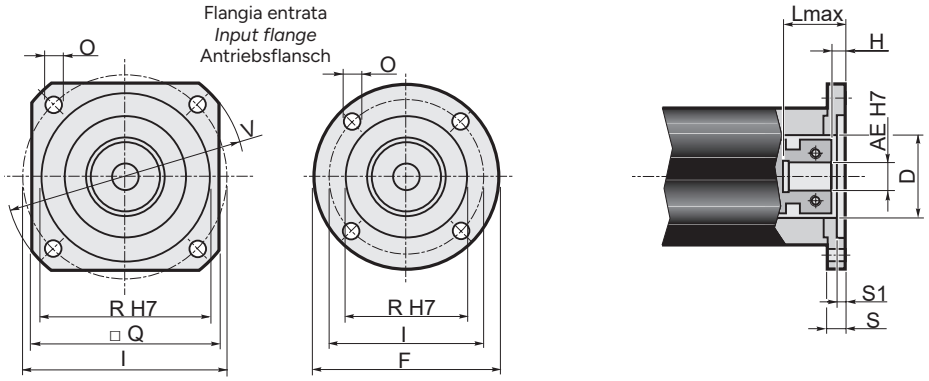
FLQ



Stadi / *Steps* / Stufenzahl	1	2	3	
C	102	127	152.5	AE= 9-9.52-11-12.7 14-15.87-16-19

	Albero uscita - *Output shaft* - Abtriebswelle						
	AU j6	**A1**	**A2**	**B**	**B1**	**B2**	**a**
AU19	19	21.5	6	30	3	36	M6x16
AU22	22	24.5	6	30	3	36	M6x16

Dimensioni entrate / *Input dimensions* / Antriebsabmessungen



Flange entrata / *Input flange* / Antriebsflansch										Albero entrata / *Input shaft* / Antriebswelle																	
										AE																	
										9		9.525		11		12		12.7		14		15.87		16		19	
	F	Q	V	I	R (H7)	O	S	S1	D	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H
P01*	80	=	=	66.67	38.1	5.5	12	3	38.1	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P02	=	106.5	140	125.72	55.52	7	11	3	45	40	2.5	40	5	40	5	40	5	40	5	40	5	40	5	40	5	40	5
P03*	=	80	90	75	60	5.5	12	3.5	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P04*	105	=	=	85	70	6.5	12	3.5	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P05	=	82.5	110	98.425	73.02	6.5	12	3	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P06	=	90	120	100	80	6.5	13	4	45	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P07	=	100	135	115	95	8.5	13	4.5	45	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P08	=	116	160	130	110	9	13	4.5	45	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P09*	80	=	=	39	26	4.5	12	4	26	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P10*	80	=	=	65	50	5.5	12	3.5	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P11	=	150	182	166	115	9	32	11	50x14	61	23.5	61	26	61	26	61	26	61	26	61	26	61	26	61	26	61	26
P12*	=	80	105	90	70	6.5	12	3.5	32	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P14 *	105	=	=	90	70	6	19	9	32	48	10.5	48	13	48	13	48	13	48	13	48	13	48	13	48	13	48	13
P15 *	80	=	=	70	50	4.5	17	8	45	46	8.5	46	11	46	11	46	11	46	11	46	11	46	11	46	11	46	11
P16	=	142	190	165	130	11	13	4.5	45	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P17*	80	=	=	63	40	5.5	12	3.5	40	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P18	=	130	170	145	110	M8	31	7	32	60	22.5	60	25	60	25	60	25	60	25	60	25	60	25	60	25	60	25
P19*	=	80	105	90	60	6.5	12	3.5	32	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P20*	=	80	105	85	55	5.5	12	3.5	36	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P21	=	80	110	95	50	M6	12	3.5	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P22	80	=	=	70	50	M4	12	4	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P23	=	80	90	75	60	M5	12	3.5	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P24	80	=	=	46	30	M4	12	4	30	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P26	80	=	=	65	40	M5	12	3.5	40	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	3.5
P27	=	80	110	82.02	36.8	M6	14	10	36.8	43	5.5	43	8	43	8	43	8	43	8	43	8	43	8	43	8	43	5.5
P28	=	90	120	100	80	6.5	28	4	45	57	19.5	57	22	57	22	57	22	57	22	57	22	57	22	57	22	57	22
P29*	80	=	=	66.67	50	5.5	12	3	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P30	=	115	155	130	80	9	13	4	45	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P31*	=	80	105	56	44	5.5	14	10	36.8	43	5.5	43	8	43	8	43	8	43	8	43	8	43	8	43	8	43	8
P32	=	80	105	90	70	M6	12	3.5	32	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P33	=	120	165	145	110	9	13	4.5	45	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P34	=	90	120	100	80	M6	19	5	45	48	10.5	48	13	48	13	48	13	48	13	48	13	48	13	48	13	48	13
P36	=	100	135	115	95	M8	25	4.5	45	54	16.5	54	19	54	19	54	19	54	19	54	19	54	19	54	19	54	19
P37	=	85	115	98.99	60	M6	12	3.5	32	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P38	80	=	=	70	50	M5	12	4	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P39	=	90	120	100	80	6.5	13	4.5	45	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P40	=	80	90	75	60	M6	12	3.5	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6
P42	=	110	145	125.72	55.5	M8	28	3	45	57	19.5	57	22	57	22	57	22	57	22	57	22	57	22	57	22	57	22
P44*	=	80	105	90	70	6	13	5	32	42	4.5	42	7	42	7	42	7	42	7	42	7	42	7	42	7	42	7
P46	=	100	135	115	95	8.5	17	8	45	46	8.5	46	11	46	11	46	11	46	11	46	11	46	11	46	11	46	11
P47	=	90	120	100	50	M6	12	4.5	45	41	3.5	41	6	41	6	41	6	41	6	41	6	41	6	41	6	41	6

* Per assemblare il motore è necessario smontare la flangia dal riduttore (vedere **schema di montaggio 2** a pag. C67).

** Before the mounting of the motor it is necessary to remove the flange from the gearbox (see **structural arrangement 2** at the top of the page C67).*

* Vor dem Einbauen des Motors soll die Getriebeflansch abmontiert werden (siehe **Bauanleitung 2** auf Seite C67).

REP125

Dati tecnici — *Technical data* — Technische Daten

Stadi / *Steps* / Stufenzahl	1				2							3								
i	**3**	**4**	**5**	**7**	**9**	**12**	**16**	**20**	**28**	**35**	**49**	**36**	**48**	**64**	**80**	**100**	**140**	**196**	**245**	**343**
$n_{1\,nom}$	3000				3500							4000								
$n_{1\,max}$	5000																			
$T2_N$	220	230	200	160	250	260	260	260	260	230	180	280	280	280	280	280	280	280	250	200
$T2_A$	350	370	320	300	400	420	420	420	420	370	350	450	450	450	450	450	450	450	400	370
$T2_S$	700	750	650	600	800	850	850	850	850	750	700	900	900	900	900	900	900	900	800	750
J	Vedi pag. C57 / *See page C57* / Siehe auf Seite 57																			
LpA	< 70																			
R_d	0.96				0.93							0.91								
L_h	20000																			
F_{R2}	3700																			
F_{A2}	1850																			
R_t	32																			
α_{max}	4′				6′							8′								
Kg	7.2				9.3							11.4								

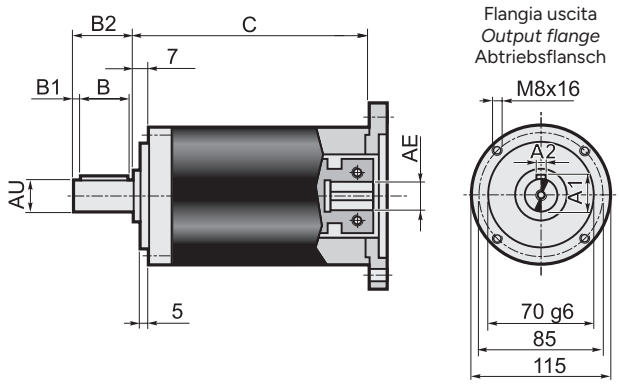
F_{R2} Carico radiale nominale in uscita [N] a 300 min^{-1} — *Rated output radial load [N] at 300 min^{-1}* — Nenn-Radiallast an der Abtriebswelle bei 300 min^{-1}

F_{A2} Carico assiale in uscita [N] a 300 min^{-1} — *Output axial load [N] at 300 min^{-1}* — Axiallast an der Abtriebswelle bei 300 min^{-1}

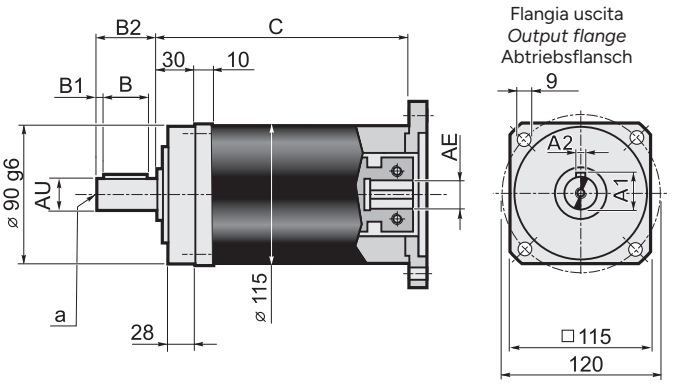
Dimensioni — *Dimensions* — Abmessungen

Dimensioni generali e uscite / *General and output dimensions* / General-und Abtriebsabmessungen

FLT



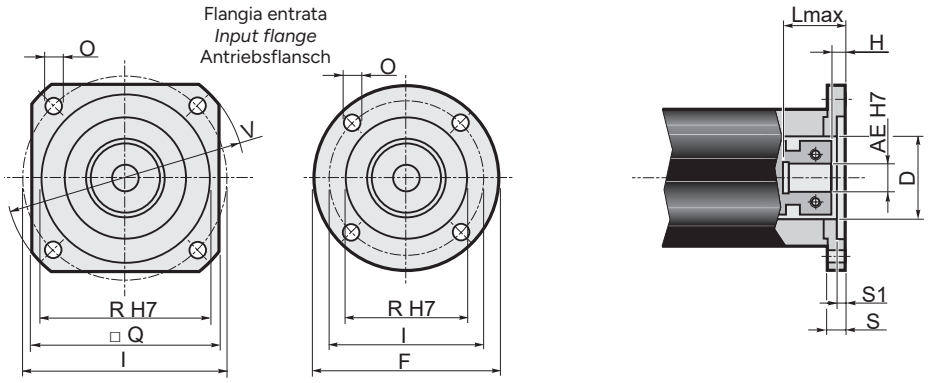
FLQ



Stadi / *Steps* / Stufenzahl	1	2	3	
C	126	158.4	191	AE= 12.7-14-15.87-16-19
	145	177	210	AE= 22-24-25-28

	Albero uscita - *Output shaft* - Abtriebswelle						
	AU j6	**A1**	**A2**	**B**	**B1**	**B2**	**a**
AU25	25	28	8	40	5	50	M8x20
AU32	32	35	10	50	4	58	M10x25

Dimensioni entrate / *Input dimensions* / Antriebsabmessungen



Flange entrata / *Input flange* / Antriebsflansch										Albero entrata / *Input shaft* / Antriebswelle																	
										AE																	
										12.7		14		15.87		16		19		22		24		25		28	
	F	Q	V	I	R (H7)	O	S	S1	D	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H
P01*	=	115	140	125.72	55.52	6.5	13	3	55.52	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P02*	115	=	=	75	60	5.5	13	3.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P03*	115	=	=	85	70	6.5	13	3.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P04*	115	=	=	98.42	73.02	6.5	13	3	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P05*	120	=	=	100	80	6.5	13	4	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P06*	=	115	140	115	95	9	13	4.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P07	=	115	160	130	110	8.5	13	4.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P08	=	142	190	165	130	11	13	4.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P09	=	192	250	215	180	13	14	4.5	60	44	7	44	7	44	7	44	7	44	7	63	7	63	7	63	7	63	7
P10*	115	=	=	65	50	6.5	13	3.5	50	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P11	=	130	170	145	110	M 8	31	7	60	61	24	61	24	61	24	61	24	61	24	80	24	80	24	80	24	80	24
P12	=	130	170	145	110	M 8	17	7	60	47	10	47	10	47	10	47	10	47	10	66	10	66	10	66	10	66	10
P13	=	115	160	130	110	M 8	13	4.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P14*	115	=	=	70	50	6.5	13	3.5	50	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P15	115	=	=	90	70	M5	11	3.5	60	41	4	41	4	41	4	41	4	41	4	60	4	60	4	60	4	60	4
P17*	115	=	=	90	70	6.5	13	3.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P18	=	115	155	130	95	8.5	13	4.5	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P19*	115	=	=	95	50	6.5	13	3.5	50	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P20	115	=	=	99	60	M6	13	4	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P21*	130	=	=	106	82.5	12.5	26.5	15	60	56.5	19.5	56.5	19.5	56.5	19.5	56.5	19.5	56.5	19.5	75.5	19.5	75.5	19.5	75.5	19.5	75.5	19.5
P22	=	144	190	165	110	11	15	4.5	60	45	8	45	8	45	8	45	8	45	8	64	8	64	8	64	8	64	8
P23*	115	=	=	63	40	5.5	11	3.5	40	41	4	41	4	41	4	41	4	41	4	60	4	60	4	60	4	60	4
P24	120	=	=	100	80	M6	18	7	60	48	11	48	11	48	11	48	11	48	11	67	11	67	11	67	11	67	11
P25	=	115	155	115	95	M8	27	4.5	60	57	20	57	20	57	20	57	20	57	20	76	20	76	20	76	20	76	20
P26	=	115	155	131.95	55.52	M8	27	4.5	60	57	20	57	20	57	20	57	20	57	20	76	20	76	20	76	20	76	20
P27	170	=	=	148	114	8.5	13	4	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6
P28	=	115	140	115	95	M8	16	6	60	46	9	46	9	46	9	46	9	46	9	65	9	65	9	65	9	65	9
P29	133,5	=	=	121.5	60	M6	13	13	60	43	6	43	6	43	6	43	6	43	6	62	6	62	6	62	6	62	6

* Per assemblare il motore è necessario smontare la flangia dal riduttore (vedere **schema di montaggio 2** a pag. C67).

** Before the mounting of the motor it is necessary to remove the flange from the gearbox (see **structural arrangement 2** at the top of the page C67).*

* Vor dem Einbauen des Motors soll die Getriebeflansch abmontiert werden (siehe **Bauanleitung 2** auf Seite C67).

REP150

1.9 Dati tecnici — *1.9 Technical data* — 1.9 Technische Daten

Stadi *Steps* Stufenzahl	1				2							3								
i	**3**	**4**	**5**	**7**	**9**	**12**	**16**	**20**	**28**	**35**	**49**	**36**	**48**	**64**	**80**	**100**	**140**	**196**	**245**	**343**
$n_{1\,nom}$	3000				3500							4000								
$n_{1\,max}$	5000																			
$T2_N$	430	470	410	340	500	560	560	560	560	470	370	600	600	600	600	600	600	600	500	450
$T2_A$	700	750	650	600	800	900	900	900	900	750	700	950	950	950	950	950	950	950	800	750
$T2_S$	1400	1500	1300	1200	1600	1800	1800	1800	1800	1500	1400	1900	1900	1900	1900	1900	1900	1900	1600	1500
J	Vedi pag. C57 / *See page C57* / Siehe auf Seite 57																			
LpA	< 70																			
R_d	0.96				0.93							0.91								
L_h	20000																			
F_{R2}	6600																			
F_{A2}	3300																			
R_t	60																			
α_{max}	4'				6'							8'								
Kg	13.0				17.0							21								

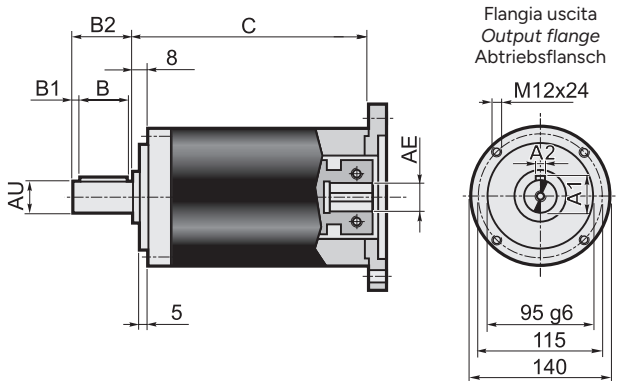
F_{R2} Carico radiale nominale in uscita [N] a 300 min^{-1} — *Rated output radial load [N] at 300 min^{-1}* — Nenn-Radiallast an der Abtriebswelle bei 300 min^{-1}

F_{A2} Carico assiale in uscita [N] a 300 min^{-1} — *Output axial load [N] at 300 min^{-1}* — Axiallast an der Abtriebswelle bei 300 min^{-1}

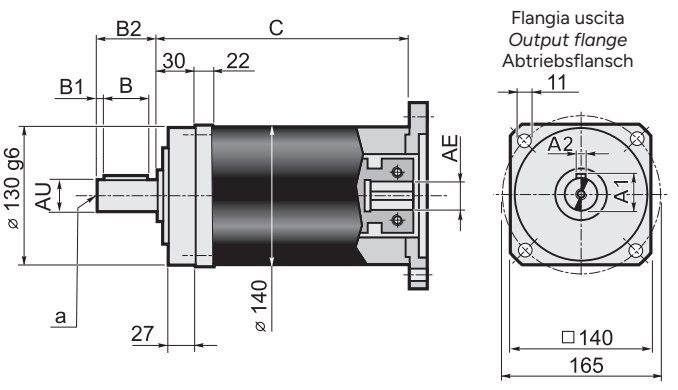
Dimensioni — *Dimensions* — Abmessungen

Dimensioni generali e uscite / *General and output dimensions* / General-und Abtriebsabmessungen

FLT



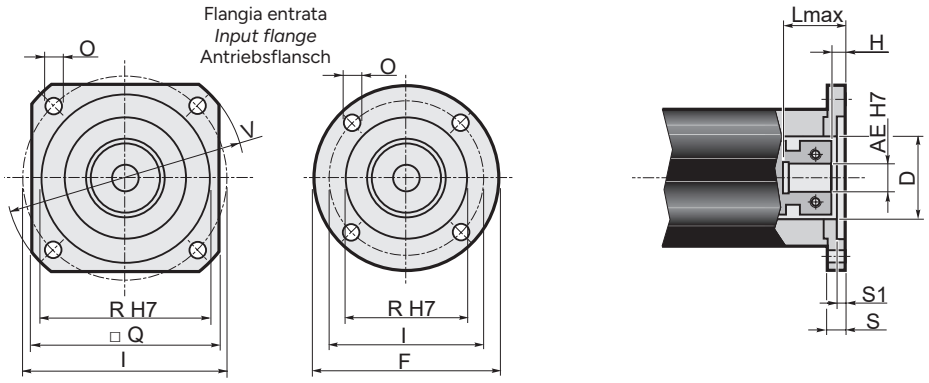
FLQ



Stadi / *Steps* / Stufenzahl	1	2	3	
C	160	201	242	AE= 15.87-16-19-22-24
	185	226	267	AE= 28-32-35-38

	Albero uscita - *Output shaft* - Abtriebswelle						
	AU j6	**A1**	**A2**	**B**	**B1**	**B2**	**a**
AU38	38	41	10	70	5	80	M10x25
AU40	40	43	12	70	5	80	M10x25

Dimensioni entrate / *Input dimensions* / Antriebsabmessungen



Flange entrata / *Input flange* / Antriebsflansch										Albero entrata / *Input shaft* / Antriebswelle																	
										AE																	
										15.87		16		19		22		24		28		32		35		38	
	F	Q	V	I	R (H7)	O	S	S1	D	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H	L max	H
P01*	140	=	=	125.72	55.52	6.5	15	4	55.52	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P02*	140	=	=	100	80	6.5	15	4	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P03*	140	=	=	115	95	8.5	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P04*	=	140	160	130	110	8.5	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P05	=	142	190	165	130	11	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P06	=	190	250	215	180	13	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P07	=	250	300	265	230	13	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P08	=	130	165	145	110	M 8	18	7	70	60.8	9.8	60.8	9.8	60.8	9.8	60.8	9.8	60.8	9.8	85.8	10.3	85.8	10.3	85.8	10.3	85.8	10.3
P09	=	180	230	200	114.3	13.5	22	11	70	64.8	13.8	64.8	13.8	64.8	13.8	64.8	13.8	64.8	13.8	89.8	14.3	89.8	14.3	89.8	14.3	89.8	14.3
P10	=	115	150	130	95	M 8	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P11	=	180	230	198	155	13.5	22	7	120x11	64.8	13.8	64.8	13.8	64.8	13.8	64.8	13.8	64.8	13.8	89.8	14.3	89.8	14.3	89.8	14.3	89.8	14.3
P12	=	220	270	235	200	13.5	15	5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P13	=	190	250	215	130	13	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P14	=	142	190	165	110	11	15	4.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P15*	140	=	=	90	70	6.5	15	4	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P16	=	146	200	177.8	114.3	10.5	15	3.5	70	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	57.8	6.8	82.8	7.3	82.8	7.3	82.8	7.3	82.8	7.3
P17	=	130	165	145	110	M 8	28	7	70	70.8	19.8	70.8	19.8	70.8	19.8	70.8	19.8	70.8	19.8	95.8	20.3	95.8	20.3	95.8	20.3	95.8	20.3
P18	140	=	=	100	80	M 6	22	6	70	64.8	13.8	64.8	13.8	64.8	13.8	64.8	13.8	64.8	13.8	89.8	14.3	89.8	14.3	89.8	14.3	89.8	14.3
P19	=	130	165	145	110	M 8	27	7	70	69.8	18.8	69.8	18.8	69.8	18.8	69.8	18.8	69.8	18.8	94.8	19.3	94.8	19.3	94.8	19.3	94.8	19.3

* Per assemblare il motore è necessario smontare la flangia dal riduttore (vedere **schema di montaggio 2** a pag. C67).

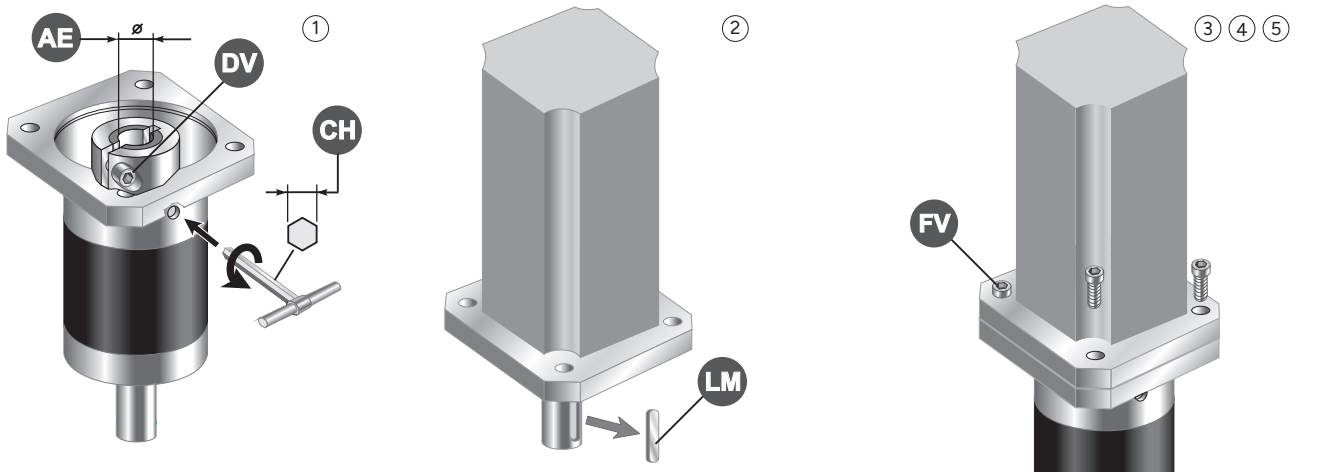
** Before the mounting of the motor it is necessary to remove the flange from the gearbox (see **structural arrangement 2** at the top of the page C67).*

* Vor dem Einbauen des Motors soll die Getriebeflansch abmontiert werden (siehe **Bauanleitung 2** auf Seite C67).

REP

Istruzioni per il montaggio del motore — *Instructions for motor assembly* — Anweisungen für die Montage des Motors

1 Schema di montaggio / *Assembly drawing* / Bauanleitung 1



1 - Allentare la vite di serraggio del morsetto (DV)
2 - Estrarre la linguetta (LM) dall'albero motore
3 - Pulire le superfici di contatto delle flange motore e riduttore
4 - Calettare il motore sul riduttore evitando urti
5 - Stringere le viti di assemblaggio (FV) in modo alternato
6 - Assicurarsi che il morsetto venga serrato posizionandolo verso il motore e rispettando la fasatura dei tagli
7 - Serrare la vite (o le viti) del morsetto (DV) alla coppia (CS) indicata in tabella

1 - Unloose the fastening screw (or screws) of the clamp (DV)
2 - Remove the key (LM) from motor shaft
3 - Clean the contact surfaces of motor flange/gearbox flange
4 - Avoid impacts while fitting motor to gearbox
5 - Tighten the assembling scews (FV) alternatively
6 - Fix the clamp towards the motor and tighten it in compliance with the cuts timing
7 - Tighten the clamp screw,or screws (DV) according to the torque (CS) reported in the table

1 - die Befestigungsscraube der Klammer (DV) lockern
2 - die Feder (LM) aus Motorwelle ziehen
3 - die Motorflansch / Getriebeflansch Kontaktfläche reinigen
4 - Motor und Getriebe ohne Stöße verkeilen
5 - die Befestigungsscrauben (FV) abwechselnd anziehen
6 - Die Klammer soll zum Motor angezogen. Dabei soll die Zuendeinstellung de Schnitte geachtet
7 - die Schraube (oder Schrauben) der Klammer (DV) zu dem in der Tabelle angegebenen Anzugsmoment anziehen

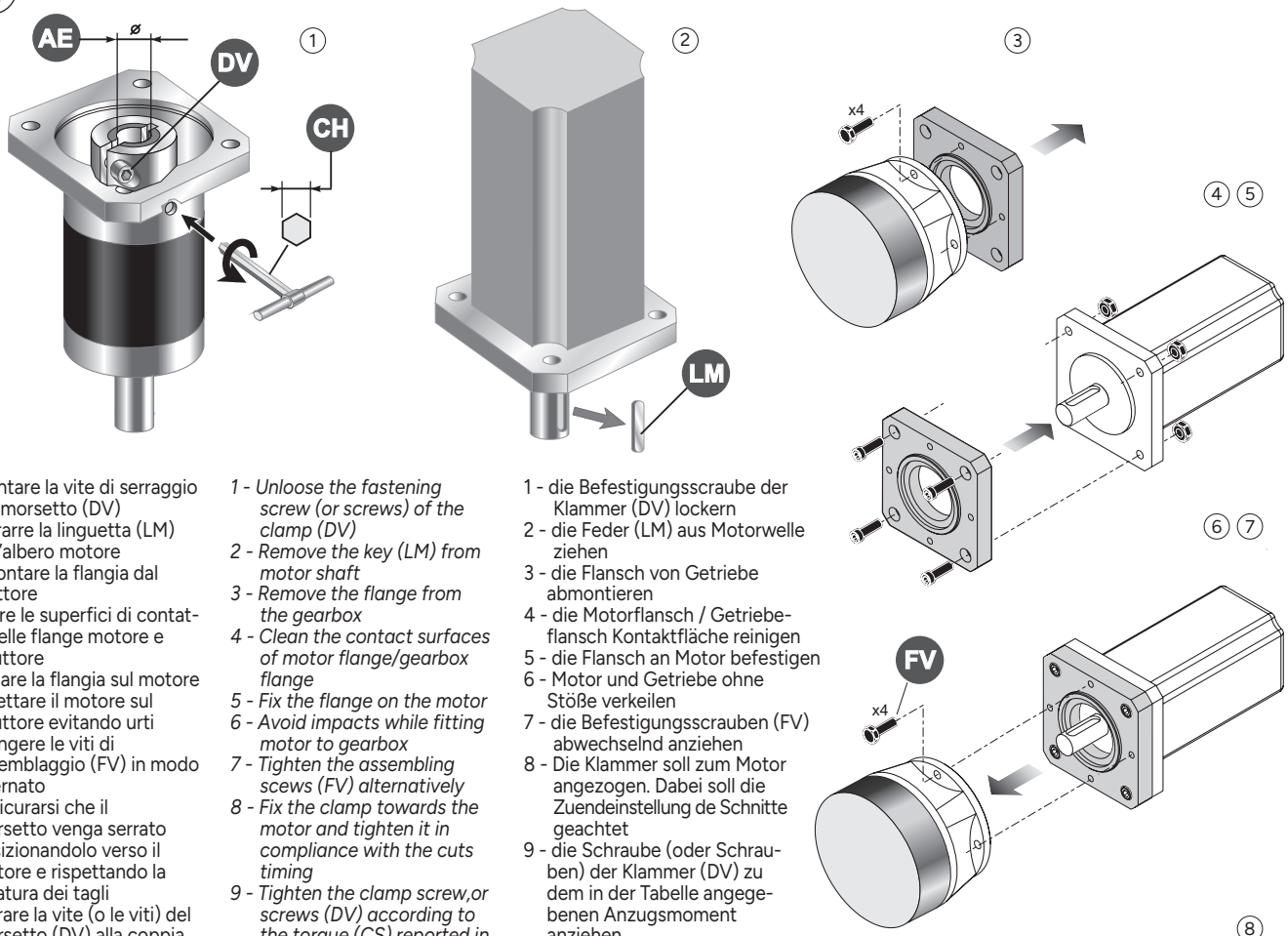
REP 075	**AE**	6	6.35	7	8	9	9.525	11	12	12.7	14
	DV	M4 x 16									
	NV	1									
	CH	3									
	CS [Nm]	4.8									
REP 100	**AE**	9	9.525	11	12	12.7	14	15.87	16	19	
	DV	M4 x 16						M5 x 20			
	NV	1						1			
	CH	3						4			
	CS [Nm]	4.8						9.4			
REP 125	**AE**	12.7	14	15.87	16	19	22	24	25	28	
	DV	M4 x 16		M5 x 20			M6 x 20				
	NV	1		1			2				
	CH	3		4			5				
	CS [Nm]	4.8		9.4			16.2				
REP 150	**AE**	15.87	16	19	22	24	28	32	35	38	
	DV	M6 x 20			M6 x 20			M6 x 20			
	NV	1			2			3			
	CH	5			5			5			
	CS [Nm]	16.2			16.2			16.2			

Tutte le viti hanno classe di resistenza 12.9
All screws supplied according to strenght class 12.9
Alle Schrauben nach Festigkeitsklasse 12.9 geliefert

AE= Albero entrata / *Input shaft* / Antriebswelle
DV= Diametro vite / *Screw diameter* / Schraubendurchmesser
NV= Numero viti / *Number of screw* / Schraubenanzahl
CS= Coppia di serraggio / *Setting torque* / Spannungsmoment

Istruzioni per il montaggio del motore — *Instructions for motor assembly* — Anweisungen für die Montage des Motors

2 Schema di montaggio / *Assembly drawing* / Bauanleitung 2



1 - Allentare la vite di serraggio del morsetto (DV)
2 - Estrarre la linguetta (LM) dall'albero motore
3 - Smontare la flangia dal riduttore
4 - Pulire le superfici di contatto delle flange motore e riduttore
5 - Fissare la flangia sul motore
6 - Calettare il motore sul riduttore evitando urti
7 - Stringere le viti di assemblaggio (FV) in modo alternato
8 - Assicurarsi che il morsetto venga serrato posizionandolo verso il motore e rispettando la fasatura dei tagli
9 - Serrare la vite (o le viti) del morsetto (DV) alla coppia (CS) indicata in tabella

1 - Unloose the fastening screw (or screws) of the clamp (DV)
2 - Remove the key (LM) from motor shaft
3 - Remove the flange from the gearbox
4 - Clean the contact surfaces of motor flange/gearbox flange
5 - Fix the flange on the motor
6 - Avoid impacts while fitting motor to gearbox
7 - Tighten the assembling scews (FV) alternatively
8 - Fix the clamp towards the motor and tighten it in compliance with the cuts timing
9 - Tighten the clamp screw,or screws (DV) according to the torque (CS) reported in the table

1 - die Befestigungsscraube der Klammer (DV) lockern
2 - die Feder (LM) aus Motorwelle ziehen
3 - die Flansch von Getriebe abmontieren
4 - die Motorflansch / Getriebeflansch Kontaktfläche reinigen
5 - die Flansch an Motor befestigen
6 - Motor und Getriebe ohne Stöße verkeilen
7 - die Befestigungsscrauben (FV) abwechselnd anziehen
8 - Die Klammer soll zum Motor angezogen. Dabei soll die Zuendeinstellung de Schnitte geachtet
9 - die Schraube (oder Schrauben) der Klammer (DV) zu dem in der Tabelle angegebenen Anzugsmoment anziehen

REP 075	**AE**	6	6.35	7	8	9	9.525	11	12	12.7	14
	DV	M4 x 16									
	NV	1									
	CH	3									
	CS [Nm]	4.8									
REP 100	**AE**	9	9.525	11	12	12.7	14	15.87	16	19	
	DV	M4 x 16						M5 x 20			
	NV	1						1			
	CH	3						4			
	CS [Nm]	4.8						9.4			
REP 125	**AE**	12.7	14	15.87	16	19	22	24	25	28	
	DV	M4 x 16		M5 x 20			M6 x 20				
	NV	1		1			2				
	CH	3		4			5				
	CS [Nm]	4.8		9.4			16.2				
REP 150	**AE**	15.87	16	19	22	24	28	32	35	38	
	DV	M6 x 20			M6 x 20			M6 x 20			
	NV	1			2			3			
	CH	5			5			5			
	CS [Nm]	16.2			16.2			16.2			

Tutte le viti hanno classe di resistenza 12.9
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AE= Albero entrata / *Input shaft* / Antriebswelle
DV= Diametro vite / *Screw diameter* / Schraubendurchmesser
NV= Numero viti / *Number of screw* / Schraubenanzahl
CS= Coppia di serraggio / *Setting torque* / Spannungsmoment

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Tramec srl
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Bologna (Italy)
tramec.it

Bermar srl
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40015 - San Vincenzo di Galliera
Bologna (Italy)
bermar.it

MT Motori Elettrici srl
via Bologna, 175
40017 - San Giovanni in Persiceto
Bologna (Italy)
electricmotorsmt.com

Varmec srl
Via dell'Industria, 13
36016 - Thiene
Vicenza (Italy)
varmec.com

Branches Italy:

Italtech srl (Centro)
italtech1.it

Tramec Sud srl (Sud)
tramecsud.it

Tramec Technology srl (Nord)
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Foreign Branches:

Tramec France sarl (France)
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Tramec Getriebe gmbh (Germany)
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