

# Worm gearboxes type 030 ÷ 110

## A modular and compact product

### Single-piece aluminum alloy housing

Is vacuum impregnated (MIL-STD 276) for protection and sealing. No secondary finish required but readily accepts paint. Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing.

### Single piece alloy steel input shaft and worm shaft.

High helix angle worm is case-hardened (Rc 58-60), ground, teeth are profiled and radiused, for noise reduction and enhanced efficiency.

### Oversized bearings

Support positively-retained, high speed shaft for higher shock load capacity - ideal for frequent starting and reversing application. Premium, Nitrile® high temperature seals each end.

### Flange

Fully modular to IEC and compact integrated motor. NEMA C flange.

### Premium, high temperature

Nitrile® output seals

### Bronze alloy worm gears.

Is centrifugally cast onto an iron hub for maximum strength and superior life.

### Oversize bearing

For radial load capability and maximum hollow output shaft diameter.

### Standard hollow output shaft mounting

Reduces total drive envelope size, weight and cost. Single and double solid output shaft is available.

### Impregnated and machined bearing caps

With exterior machined surfaces enable a variety of mounting accessories. Extra-deep thread engagement provided for greater support strength. Zinc plated hardware.

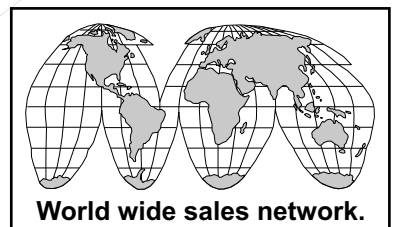
### Vent Free Design.

No breather or vents to leak! Factory lubricated for life with synthetic, semi-fluid gear lubricant with an operating range of -15°C to 130°C.

oil free



vent free



# Specific type datasheet on page...

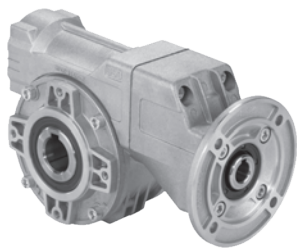
On page / A pagina / Auf Seite / En la página



Types / Tipi /  
Arten / Tipos →

2-5	2-7	2-9	2-11	2-13	2-15	2-17
<b>030</b> 21Nm	<b>045</b> 41Nm	<b>050</b> 72Nm	<b>063</b> 147Nm	<b>63A</b> 191Nm	<b>085</b> 347Nm	<b>110</b> 651Nm

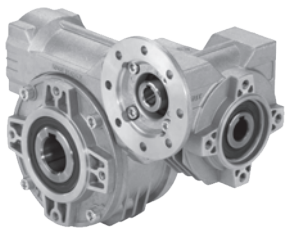
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Types / Tipi /  
Arten / Tipos →

2-19	2-21	2-23	2-25	2-27	2-29
<b>P45</b> 55Nm	<b>P50</b> 88Nm	<b>P63</b> 187Nm	<b>P6A</b> 218Nm	<b>P85</b> 440Nm	<b>P10</b> 803Nm

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



Types / Tipi /  
Arten / Tipos →

2-31	2-33	2-35	2-37	2-39	2-41	2-43	2-45	2-47
<b>303</b> 35Nm	<b>453</b> 69Nm	<b>503</b> 109Nm	<b>633</b> 230Nm	<b>634</b> 265Nm	<b>6A3</b> 290Nm	<b>6A4</b> 304Nm	<b>854</b> 518Nm	<b>115</b> 978Nm

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

For : / Per : / Für : / Para :

**Selection guide - fs**  
Guida alla selezione

**Reversibility**  
Reversibilità

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

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

**Thermal limit**  
Limite termico

**Interchangeability**  
Intercambiabilità

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

**Atex certification**  
Certificazione Atex

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

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

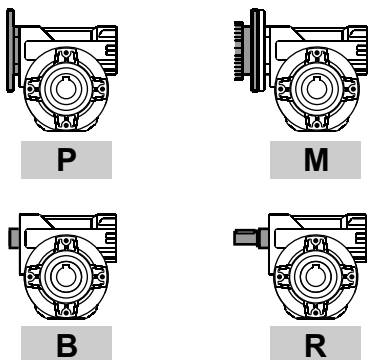
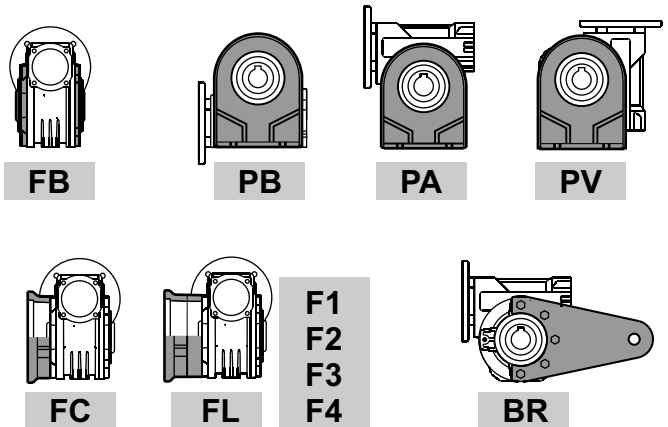
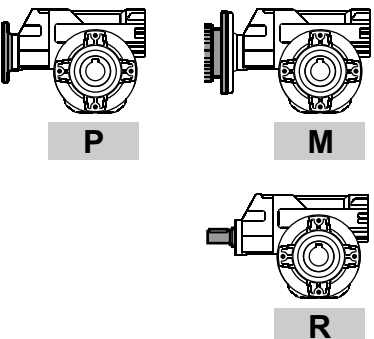
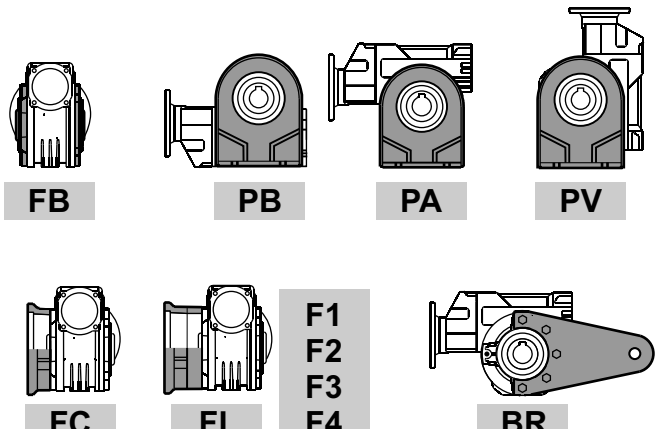
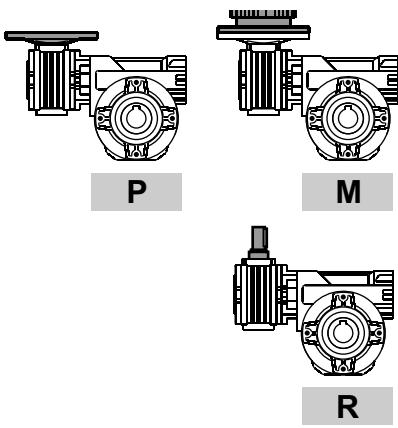
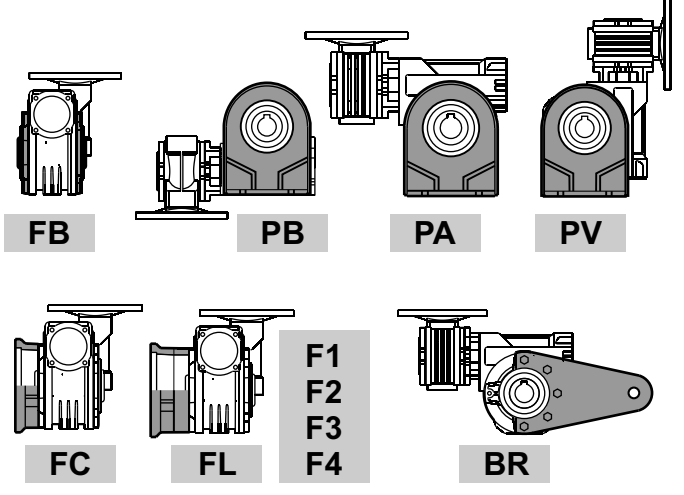
**Accessories**  
Accessori

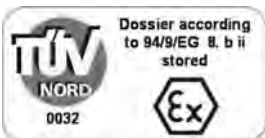
**Spare parts list**  
Liste parti di ricambio

Type - Tipo - Typ - Tipo

Size - Grandezza  
Größe - Tomaño

Mounting - Montaggio - Montage - Tipo de montaje

<b>P</b>	<b>045</b>	<b>PA</b>
<p><b>Worm gearboxes</b> Riduttori a vite senza fine Schneckengetriebe Reductores de corona sin fin</p>  <p><b>P</b>      <b>M</b> <b>B</b>      <b>R</b></p>	<p><b>030</b> <b>045</b> <b>050</b> <b>063</b> <b>63A</b> <b>085</b> <b>110</b></p>	 <p><b>FB</b>      <b>PB</b>      <b>PA</b>      <b>PV</b> <b>FC</b>      <b>FL</b>      <b>F1</b> <b>F2</b> <b>F3</b> <b>F4</b>      <b>BR</b></p>
<p><b>Worm gearboxes with primary reduction</b> Riduttori a vite senza fine con precoppia Schneckengetriebe mit stirnradstufe am Eintrieb Reductores corona sin fin con prerreductora de engranajes</p>  <p><b>P</b>      <b>M</b> <b>R</b></p>	<p><b>P45</b> <b>P50</b> <b>P63</b> <b>P6A</b> <b>P85</b> <b>P10</b></p>	 <p><b>FB</b>      <b>PB</b>      <b>PA</b>      <b>PV</b> <b>FC</b>      <b>FL</b>      <b>F1</b> <b>F2</b> <b>F3</b> <b>F4</b>      <b>BR</b></p>
<p><b>Combined worm gearboxes</b> Riduttori a vite senza fine combinati Schneckengetriebekombinationen Reductores combinados corona sin fin</p>  <p><b>P</b>      <b>M</b> <b>R</b></p>	<p><b>303</b> <b>453</b> <b>503</b> <b>633</b> <b>634</b> <b>6A3</b> <b>6A4</b> <b>854</b> <b>115</b></p>	 <p><b>FB</b>      <b>PB</b>      <b>PA</b>      <b>PV</b> <b>FC</b>      <b>FL</b>      <b>F1</b> <b>F2</b> <b>F3</b> <b>F4</b>      <b>BR</b></p>



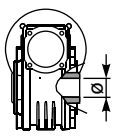
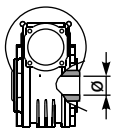
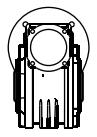
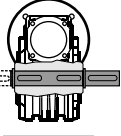
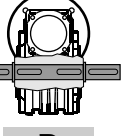
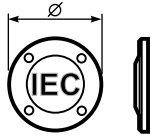
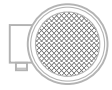
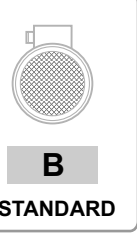
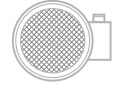

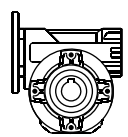
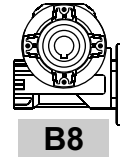
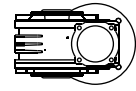
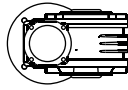
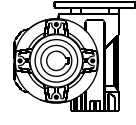
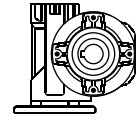
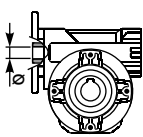
A richiesta possiamo fornire i nostri prodotti secondo le normative ATEX

On request we can deliver our products according to the ATEX

Auf Anfrage können wir unsere Produkte den Richtlinien ATEX entsprechend liefern

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

CODIFICA / HOW TO ORDER / TYPENBEZEICHNUNGEN / CODIFICACIÓN

Ratio - Rapporto Untersetzung Relación	Hub - Mozzo corona Hohlwelle Nucleo corona	Output shaft Albero lento Abtriebswelle Eje solida	Motor size Grandezza motore Motor Größe Tamaño motor	Terminal box position Posizione morsettiere Klemmkastenlage Posición caja de bornes	Mounting position Posizione montaggio Einbaulage Position de montaje	Reduced Input bore Foro entrata ridotto	Mountin position Esecuzione montaggio Einbaulage Posición de montaje
<b>10</b>	<b>C</b>	<b>∅</b>	<b>Q</b>	<b>B</b>	<b>B3</b>	<b>-</b>	<b>---</b>
See technical data table Vedi tabelle dati tecnici. Technisches Datenblatt beachten. Ver tabla datos técnicos	 <b>C</b> STANDARD 030 ⇨ ∅14 045 ⇨ ∅18 050 ⇨ ∅25 063 ⇨ ∅25 63A ⇨ ∅28 085 ⇨ ∅35 110 ⇨ ∅42  <b>I</b> Stainless steel hub Mozzo in acciaio inox  Special series Serie Speciale:  <b>S</b> 045 ⇨ ∅19 050 ⇨ ∅24  <b>X</b> Mozzo in acciaio inox Stainless steel hub   <b>U</b> INCH 045 ⇨ ∅0.750" 050 ⇨ ∅1.000" 063 ⇨ ∅1.125" 085 ⇨ ∅1.500"	 <b>∅</b>   <b>S</b>   <b>D</b>	 <b>M</b> without flange Senza flangia  <b>B5</b> <b>A</b> =56 (∅120) <b>B</b> =63 (∅140) <b>C</b> =71 (∅160) <b>D</b> =80 (∅200) <b>E</b> =90 (∅200) <b>F</b> =100+112 (∅250)  <b>B14</b> <b>O</b> =56 (∅80) <b>P</b> =63 (∅90) <b>Q</b> =71 (∅105) <b>R</b> =80 (∅120) <b>T</b> =90 (∅140) <b>U</b> =100+112 (∅160) <b>V</b> =132 (∅200)  <b>0</b> =Type R  Reduced Fl. <b>1</b> =56B5/∅11 <b>2</b> =63B5/∅14 <b>3</b> =71B5/∅19 <b>4</b> =71B5/∅24 <b>5</b> =90B5/∅28 <b>6</b> =100B5/∅38 <b>7</b> =132B5/∅42 <b>8</b> =80B14/∅11 <b>9</b> =100B5/∅24	 <b>A</b>   <b>B</b> STANDARD   <b>C</b>   <b>D</b>	 <b>B3/B5</b>   <b>B8</b>   <b>B6</b>   <b>B7</b>   <b>V5</b>   <b>V6</b>	 <b>-</b> Nothing indication standard bore Nessuna indicazione foro standard <b>P</b> Input bore reduced one size Foro entrata ridotto di una misura Ex. Input Flange 71 B14 Standard ∅14 Reduced ∅11  <b>Q</b> Input bore reduced two sizes Due grandezze ridutte foro entrata Ex. Input Flange 71 B14 Standard ∅14 Reduced ∅9	<p>Only for combined units See technical data table</p> <p>Solo per i riduttori combinati Vedi tabelle dati tecnici.</p> <p>Ausführungen für Getriebekombinationen it.</p> <p>Sólo para combinados ver tabla datos técnicos</p>

REQUIRED POWER / POTENZA RICHIESTA / ERFORDERLICHE LEISTUNG / POTENCIA NECESARIA

Lifting / sollevamento / hubantriebe / elevación

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

Rotation / rotazione / drehung / rotation

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

Linear movement / traslazione / linearbewegung / translacion

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

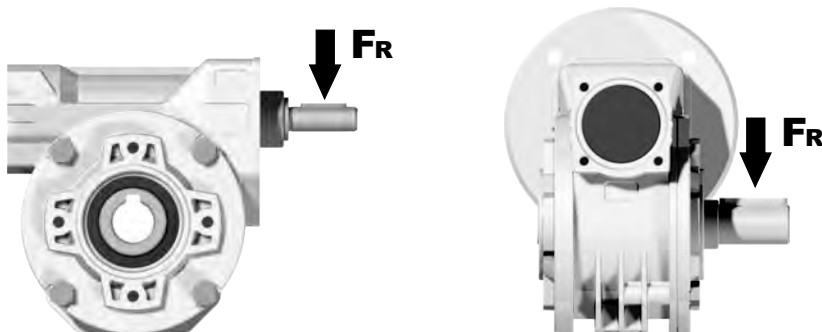
TORQUE / COPPIA / DREHMOMENT / PAR

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

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

RADIAL LOADS / CARICHI RADIALI / RADIALE - UND AXIALLASTEN / CARGA RADIAL Y AXIAL

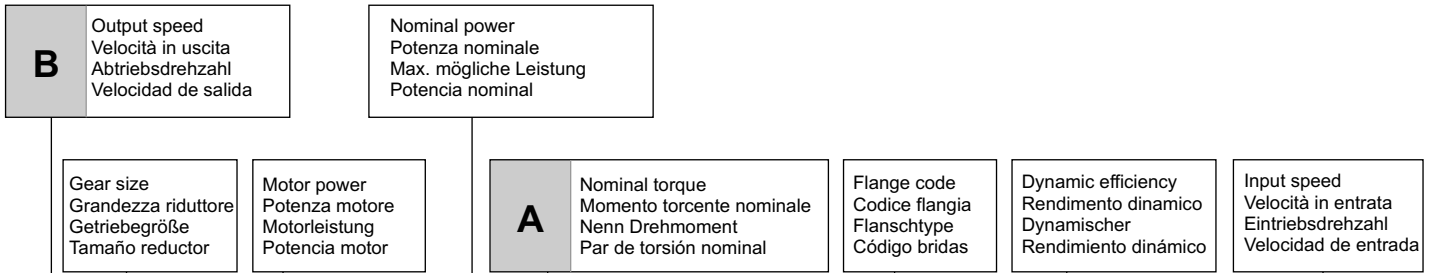
- Radial load generated by external transmissions keyed onto input and/or output shafts.
- Forza radiale generata da organi di trasmissione calettati sugli alberi di ingresso e/o uscita.
- Belastungen der Antriebs- bzw. Abtriebswellen durch von aussen eingebrachte Radiallasten.
- Cargas radiales, generada por transmisiones externas, aplicadas sobre los ejes de entrada y/o salida



	$F_R \text{ [N]} = \frac{M \text{ [Nm]} \cdot 2000}{d \text{ [mm]}} \cdot f_k$	$F_R \text{ [N]} = \frac{M \text{ [lb in]} \cdot 8.9}{d \text{ [in]}} \cdot f_k$
<b>M</b>	Output torque / Momento torcente / Abtriebsdrehmoment / Par torsion	
<b>d</b>	Diam. of driving element / Diametro primitivo / Durchmesser der Abtriebseinheit / Diámetro primitivo	
<b>f<sub>k</sub></b>	Factor / Coefficiente di trasformazione / Faktor / Coefficiente de transmisión <b>1.15</b> Gearwheels / Ingranaggi / Zahnrad / Engranaje <b>1.25</b> Chain sprochets / Catena / Antriebskette / Cadena <b>1.75</b> Narrow v-belt pulley / Cinghia Trapezoidale / Keilriemen / Correa trapezoidal <b>2.50</b> Flat-belt pulley / Cinghia piatta / Flachzahnriem. / Correa plana	

- If your application requires higher radial loads, contact our technical office. Higher load may be possible.
- Nel caso la vostra applicazione richieda carichi radiali superiori consultare il nostro ufficio tecnico, valori maggiori possono essere accettati.
- Wenn Ihre Anwendung höhere Radialbelastungen erfordert, so wenden Sie sich bitte an unser technischen Büro.
- En el caso en que una aplicación exija una carga radial superior a la especificada en el catálogo, consultar a nuestra oficinas técnica.

How to select a gearbox / Come selezionare un riduttore  
Wie wählt man ein Getriebe / Cómo seleccionar un reductor



**045** Rightangle - Gear  
**41Nm** Rating - Aluminum WORM GEARBOXES

QUICK SELECTION / Selezione veloce

Output Speed $n_2$ [min <sup>-1</sup> ]	Ratio $i$	Motor power $P_{1M}$ [kW]	Output torque $M_{2M}$ [Nm]	Service factor f.s.	Nominal power $P_{1R}$ [kW]	Nominal torque $M_{2R}$ [Nm]	Available		Available			Dynamic efficiency RD	Tooth Module Mn	Ratios code
							B5 motor flanges		B14 motor flanges					
							B	C	O	P	Q			
200	7	0.37	14	2.2	0.80	30	B		B-C	B-C		80	2.2	01
140	10	0.37	20	1.5	0.57	30	B		B-C	B-C		79	2.2	02
100	14	0.37	27	1.1	0.41	30	B		B-C	B-C		77	2.4	03



fs		Oper. hours per day Ore di funz. giorn.			
Type of load and starts per hour Tipo di carico e avviamenti per ora		<2 h	2 - 8 h	8 - 16 h	
Continuous or intermittent appl. with start / hour Applicazione cont. o interm. con n.ro operazioni/ora	≤ 10	Uniform / Uniforme	0.9	1	1.25
	Moderate / Moderato		1	1.25	1.5
		Heavy / Forte	1.25	1.5	1.75
Intermittent application with start / hour Applicazione intermittente con n.ro operazioni/ora	> 10	Uniform / Uniforme	1.25	1.5	1.75
		Moderate / Moderato	1.5	1.75	2
		Heavy / Forte	1.75	2	2.25

D	Motor flange available Flange disponibili Erhältliche Motorflansche Bridas disponibles
B)	Mounting with reduction ring Montaggio con boccia di riduzione Reduzierhülsen Montaje con casquillo de reducción
C)	Motor flangeholes position/terminal box position Posizione fori flangia/basetta motore Bohrungsposition am Motorflansch/-sockel Posición agujeros brida / base motor
B)	Available without reduction bushes Disponibile anche senza boccia Auch ohne Reduzierbuchse verfügbar Disponible tambien sin casquillo

<b>A</b>	Select required torque (according to service factor)	Seleziona la coppia desiderata (comprensiva del fattore di servizio)	Max. Drehmoment in Bezug zum Betriebsfaktor	Seleccionar el par deseado (incluyendo el factor de servicio)
<b>B</b>	Select output speed	Seleziona la velocità in uscita	Ausgewählte Abtriebsdrehzahl	Seleccionar la velocidad de salida
<b>C</b>	On the same line of selected geared motor, you can find the gear ratio	Sulla riga corrispondente alla motorizzazione prescelta si può rilevare il rapporto di riduzione	Auf der gleichen Linie wie die ausgewählte Motorleistung steht auch die Getriebeuntersetzung	En la línea correspondiente al motor preseleccionado es posible encontrar la relación de reducción
<b>D</b>	Select motor flange available (if requested)	Scegli la flangia disponibile (se richiesta)	Erhältliche Motorflansche (auf Anfrage)	Seleccionar la brida disponible (sobre pedido)