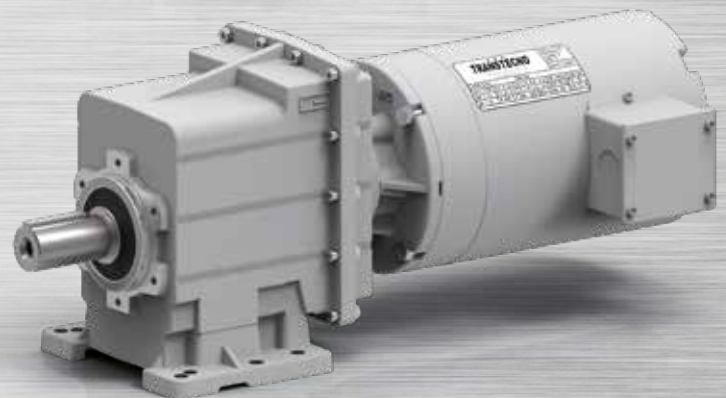
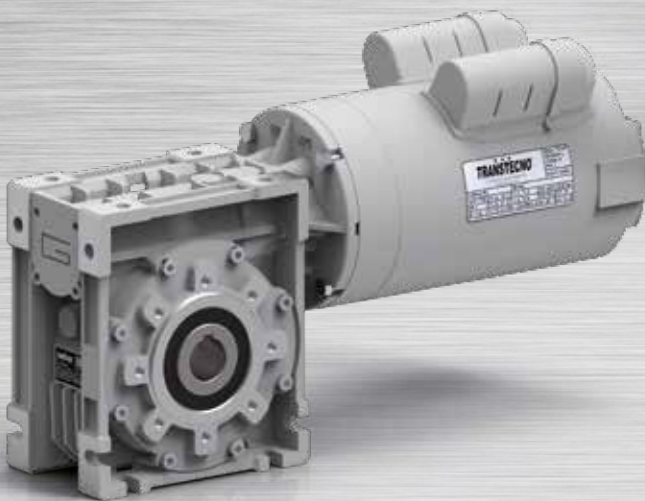


**TRANSTECNO**<sup>®</sup>  
the modular gearmotor

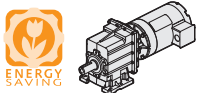
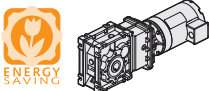
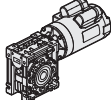
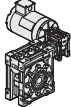
AC  
**Alu**

60Hz

**Nema**





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## Información general

## General information

Para una mejor comprensión de los temas y de los datos presentes en el catálogo, proponemos una simbología acompañada por la información necesaria para una selección correcta de los motorreductores y variadores.

*Information in this manual is provided with symbols in order to understand the subject matter and data. These symbols are intended to aid the user in selecting the right gearmotors.*

### Velocidad de entrada

$n_1$  [rpm]

### Input speed

Es la velocidad en la entrada del reductor y está relacionada con el tipo de motor seleccionado.

*This is the input speed at the gearbox related to the type of drive unit selected.*

Cuando se requieran otras velocidades, contactar con nuestro servicio técnico.

*When different speeds are required, contact our Technical Service.*

### Relación de reducción

$i$

### Gear ratio

Es una magnitud adimensional y está relacionada con el número de dientes de los engranajes internos del reductor. En los reductores sinfín corona se obtiene dividiendo el número de dientes de la corona entre el número de roscas del tornillo sinfín. Con los datos del catálogo se puede obtener con la siguiente fórmula:

*This value is strictly related to the size and number of teeth gears inside the gearbox.*

*This value is obtained in wormgearboxes by dividing the number of wheel teeth by the number of starts (Z) of the worm.*

*From the data given in the catalogue, the value can be calculated using the following formula:*

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

### Velocidad de salida

$n_2$  [rpm]

### Output speed

Es la velocidad resultante en el eje de salida del reductor y se obtiene de la fórmula anterior:

*This is the gearbox output speed calculated using the formula given above:*

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

En los motovariadores esto es el resultado de cálculos más complejos, para esto en el catálogo encontrara todos los valores de  $n_2$  en función de la velocidad en entrada y del campo de variación mínimo y máximo.

*In mechanical variators this value is more complicated to calculate. In fact the application data need to be known in order to calculate this value. All the  $n_2$  values are given in this catalogue according to the input speed and allowable range.*

### Par requerido

$Mr_2$  [lb-inch]

### Requested torque

Es el par requerido para la aplicación y es necesario para seleccionar la motorización. Puede ser comunicado por el usuario o calculado a través de los datos de la aplicación (si se conocen).

*This is the torque needed for the application and must be known when selecting a drive system. It can either be provided by the user or calculated according to the application data (if provided).*

**Par nominal****Mn<sub>2</sub>** [lb-inch]**Nominal torque**

Es el par transmisible a la salida del reductor, en base a la velocidad en entrada n<sub>1</sub> y a la relación de reducción i.

Se calcula considerando un servicio con una carga continua constante, que corresponde a un factor de servicio igual a 1. Este valor no aparece en el catálogo, pero se puede calcular aproximadamente mediante la relación siguiente entre M<sub>2</sub> (par de salida) y SF (factor de servicio):

*This is the output torque that can be transmitted by the gearbox according to input speed n<sub>1</sub> and gear ratio i. It is calculated based on service with a continuous steady load corresponding to a service factor equal to 1. This value is not given in the catalogue but can be calculated approximately with the following formula between M<sub>2</sub> (output torque) and sf (service factor):*

$$Mn_2 = M_2 \cdot sf$$

**Par transmitido****M<sub>2</sub>** [lb-inch]**Output torque**

Es el par transmitido en la salida del reductor.

Depende de la potencia P<sub>1</sub> del motor instalado, de las revoluciones de salida n<sub>2</sub> y del rendimiento dinámico Rd.

Se puede calcular mediante la relación:

*This is the gearbox's output torque. It is strictly related to power P<sub>1</sub> of the motor installed, output rpm n<sub>2</sub> and dynamic efficiency Rd. It can be calculated with the following formula:*

$$M_2 = \frac{63025 \cdot P_1 \cdot Rd}{n_2}$$

o:  
or:

$$M_2 = \frac{63025 \cdot P_2}{n_2}$$

dónde:  
where:

$$P_2 = P_2 \cdot R$$

**Rendimiento****Rd; Rs****Efficiency**

Los cálculos de rendimiento se basan en el rendimiento dinámico Rd de los reductores (el valor óptimo se alcanza en velocidad de marcha después del rodaje).

En los reductores combinados, el rendimiento total es el resultado del producto de los rendimientos de los dos reductores, considerando que en el segundo reductor el rendimiento se evaluará según la velocidad de entrada reducida que se obtiene dividiendo n<sub>1</sub> entre la relación de reducción del primer reductor.

Es necesario considerar que en los reductores sinfín corona hay también un rendimiento estático Rs, durante el arranque, que reduce el momento resultante: es importante tomarlo en consideración cuando se seleccionan motorreductores para aplicaciones intermitentes (ej. levantamientos).

En la tabla de la pág.D7 están indicados los valores del rendimiento dinámico y estático de los reductores sinfín corona.

En los reductores de engranajes CMG y CMB el rendimiento medio es 94%.

*Efficiency is calculated based on dynamic efficiency Rd of the gearboxes (optimal value reached when running at normal speed after the break in period).*

*In combination gearboxes, overall efficiency is obtained from the combined efficiency of the two gearboxes. However, keep in mind that efficiency of the second gearbox should be determined according to the reduced input speed obtained by dividing n<sub>1</sub> by ratio i of the first gearbox.*

*It is important to remember that wormgearboxes also have static efficiency value Rs present at start-up. This value notably reduces the resulting torque. As a result, it must be taken into consideration when selecting drive systems for intermittent operations (e.g. lifting) as it is a determinant factor.*

*Dynamic and static efficiency of wormgearboxes are given in the table on page D7.*

*On helical gearboxes CMG and CMB the average efficiency is 94%.*

**Potencia de entrada****P<sub>1</sub>** [hp]**Input power**

Es la potencia del motor aplicada en la entrada al reductor y se refiere a la velocidad n<sub>1</sub>.

Se puede calcular de la siguiente manera:

*This is the power applied by the motor at the gearbox input in reference to speed n<sub>1</sub>.*

*It can be calculated with the following formula:*

$$P_1 = \frac{M_2 \cdot n_2}{63025 \cdot Rd}$$

**Factor de servicio**

**sf**

**Service factor**

Es un magnitud adimensional que indica el sobredimensionamiento aplicable a una motorización para garantizar la resistencia a los choques y la durabilidad necesaria.

Las tablas del catálogo ofrecen una amplia selección de motorizaciones con factores de servicio diferentes que pueden satisfacer a la mayoría de las aplicaciones.

Para una correcta interpretación de los valores del factor de servicio sf en las selecciones propuestas, encontrarán en las tablas siguientes los valores aproximados de las clases de carga A, B, C, de las horas de funcionamiento cotidiano y del número de arranques por hora.

Una vez definida la clase de carga de la aplicación, se busca en la tabla el correspondiente valor de sf para elegir la unidad más adecuada.

	<b>A - Carga uniforme</b>	$fa \leq 0.3$
Tipo de carga	<b>B - Carga con choques moderados</b>	$fa \leq 3$
	<b>C - Carga con choques fuertes</b>	$fa \leq 10$

*This value indicates how a certain drive system is to be over-sized in order to assure the requested service and stand up to shocks.*

*The tables given in the catalogue offer a wide range of drive systems with different service factors able to satisfy most types of applications. To correctly understand service factor values sf given for each item, approximate values for load classes A, B and C along with the number of hours of daily operation h/d and number of start-ups/hours need to be known.*

*Once the load class required for the application has been determined, locate corresponding value sf to be used when selecting the most suitable drive system.*

	<b>A - Uniform</b>	$fa \leq 0.3$
Type of load	<b>B - Moderate shocks</b>	$fa \leq 3$
	<b>C - Heavy shocks</b>	$fa \leq 10$

$fa = \frac{Je}{Jm}$

- Je (kgm<sup>2</sup>) momento de inercia de las masas externas, referido al eje del motor.
- Jm (kgm<sup>2</sup>) momento de inercia del motor.

Para valores > 10 se recomienda contactar con el Servicio Técnico.

$fa = \frac{Je}{Jm}$

- Je (kgm<sup>2</sup>) moment of reduced external inertia at the drive-shaft
- Jm (kgm<sup>2</sup>) moment of inertia of motor.

If  $fa > 10$  call our Technical Service.

**A** Clase de carga / Load class  
**Carga uniforme / Uniform load**

sf									
h/d	n. arranques/hora / n. start-up/hour								
	2	4	8	16	32	63	125	250	500
4	0.8	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.2
8	1.0	1.0	1.1	1.1	1.3	1.3	1.3	1.3	1.3
16	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
24	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8

**A - Tornillos de Arquímedes para materiales ligeros, ventiladores, líneas de montaje, cintas transportadoras para materiales ligeros, pequeños agitadores, elevadores, máquinas limpiadoras, máquinas llenadoras, máquinas comprobadoras, cintas trasportadoras.**

**A - Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.**

**B** Clase de carga / Load class  
**Carga con choques moderados / Moderate shock load**

sf									
h/d	n. arranques/hora / n. start-up/hour								
	2	4	8	16	32	63	125	250	500
4	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3
8	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
16	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8
24	1.8	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2

**B - Dispositivos de enrollado, alimentadores de las máquinas para la madera, montacargas, equilibradores, roscadoras, agitadores medios y mezcladores, cintas transportadoras para materiales pesados, cabrestantes, puertas corredizas, raspadores de abono, máquinas empaquetadoras, hormigoneras, mecanismos para el movimiento de las grúas, fresadoras, plegadoras, bombas de engranajes.**

**B - Winding devices, woodworking machine feeders, goods lifts, balancers, threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.**

**C** Clase de carga / Load class  
**Carga con choques fuertes / Heavy shock load**

sf									
h/d	n. arranques/hora / n. start-up/hour								
	2	4	8	16	32	63	125	250	500
4	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
8	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8
16	1.8	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2
24	2.2	2.2	2.2	2.2	2.5	2.5	2.5	2.5	2.5

**C - Agitadores para materiales pesados, cizallas, prensas, centrifugadoras, soportes rotativos, cabrestantes y elevadores para materiales pesados, tornos para la rectificación, molinos de piedras, elevadores de cangilones, perforadoras, moledores a percusión, prensas de excéntrica, plegadoras, mesas giratorias, pulidoras, vibradores, cortadoras.**

**C - Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.**

Ejemplo de aplicación:

Cinta transportadora atribuible a la clase de carga B (**carga con choques moderados**), previsto para una hora de funcionamiento diaria (h/d) 16 horas y con 8 arranques/hora De la tabla obtenemos: **sf = 1.5**

Application example:

Conveyor belt assigned to load class B (**moderate shock load**), to be run 16 hours a day (h/d) with 8 start-ups/hour.

The following value is obtained from the table **sf = 1.5**



## Factor de servicio clase AGMA

## AGMA

## Service class AGMA

Los números de clases AGMA tienen la misma función del factor de servicio.

Las clases de aplicación son I, II y III siendo la clase III la más obligada para servicios críticos.

La relación entre el factor de servicio y las clases de aplicación pueden ser resumidas como sigue:

Aplicación clases AGMA <i>Application class AGMA</i>	Factor de servicio <i>Service factor</i>
I	0.8 - 1.39
II	1.4 - 1.99
III	≥ 2.00

AGMA class numbers have the same function as the service factor. The application classes are I, II, III with class III being the most severe service duty.

The relationship between the service factor and classes of application can be summarized as below:

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
<b>AGITADORES O MEZCLADORAS</b>	<b>AGITATORS (mixers)</b>			
Líquidos Puros	Pure Liquids	I	I	II
Líquidos y Sólidos	Liquids and Solids	I	II	II
Líquidos de densidad variable	Liquids - Variable Density	I	II	II
<b>SOPLADORES</b>	<b>BLOWERS</b>			
Centrífugos	Centrifugal	I	I	II
Lóbulo	Lobe	I	II	II
De Aspas	Vane	I	II	II
<b>FABRICACIÓN DE CERVEZA Y DESTILACIÓN</b>	<b>BREWING AND DISTILLING</b>			
Maquinaria para Embotellado	Bottling Machinery	I	I	II
Ollas de Hervor - Servicio Continuo	Brew Kettles - Continuous Duty	II	II	II
Cocinas - Servicio Continuo	Cookers - Continuous Duty	II	II	II
Cubos de Maceración - Servicio Continuo	Mash Tubs - Continuous Duty	II	II	II
Tolva Dosificadora - Arranques Frecuentes	Scale Hopper - Frequent Starts	II	II	II
<b>ENLATADORAS</b>	<b>CAN FILLING MACHINES</b>	I	I	II
<b>VUELCA VAGONES</b>	<b>CAR DUMPERS</b>	II	III	III
<b>REMOLCADOR DE VAGONES</b>	<b>CAR PULLERS</b>	I	II	II
<b>CLARIFICADORES</b>	<b>CLARIFIERS</b>	I	I	II
<b>CLASIFICADORES</b>	<b>CLASSIFIERS</b>	I	II	II
<b>MAQUINARIA PARA TRABAJAR ARCILLA</b>	<b>CLAY WORKING MACHINERY</b>			
Prensa para ladrillo	Brick Press	II	III	III
Máquina de briquetas	Briquette Machine	II	III	III
Amasadora	Pug Mill	I	II	II
<b>COMPACTADORES</b>	<b>COMPACTORS</b>	III	III	III
<b>COMPRESORES</b>	<b>COMPRESSORS</b>			
Centrífugos	Centrifugal	I	I	II
De Lóbulos	Lobe	I	II	II
Alternativos Multicilíndricos	Reciprocating, Multi-Cylinder	II	III	III
Alternativos de Cilindro Único	Reciprocating, Single-Cylinder	III	III	III

Factor de servicio clase AGMA

AGMA

Service class AGMA

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
<b>TRANSPORTADORAS - PROPÓSITO GENERAL</b>	<b>CONVEYORS - GENERAL PURPOSE</b>			
Uniformemente cargado o alimentado	<i>Uniformly loaded</i>	I	I	II
Servicio pesado	<i>Heavy Duty</i>	I	II	II
Servicio severo	<i>Severe Duty</i>	II	III	III
<b>GRÚAS</b>	<b>CRANES</b>			
Montacargas principal - Servicio medio	<i>Main Hoist - Medium Duty</i>	II	II	II
Montacargas principal - Servicio pesado	<i>Main Hoist - Heavy Duty</i>	III	III	III
Reversa	<i>Reversing</i>	II	II	II
Polipasto	<i>Skip Hoist</i>	II	II	II
Recorrido del Carro	<i>Trolley Drive</i>	II	II	II
Recorrido del Puente	<i>Bridge Drive</i>	II	II	II
<b>TRITURADORAS</b>	<b>CRUSHER</b>			
Piedra o mineral	<i>Stone or Ore</i>	III	III	III
<b>DRAGAS</b>	<b>DREDGES</b>			
Bobinas de cable	<i>Cable Reels</i>	II	II	II
Transportadoras	<i>Conveyors</i>	II	II	II
Unidades de Accionamiento de Cabezal Cortante	<i>Cutter Head Drives</i>	III	III	III
Bombas	<i>Pumps</i>	III	III	III
Cedazos	<i>Screen Drives</i>	III	III	III
Apiladores	<i>Stackers</i>	II	II	II
Cabrestantes Utilitarios (Malacates)	<i>Winches</i>	II	II	II
<b>ELEVADORES</b>	<b>ELEVATORS</b>			
De Cangilones	<i>Bucket</i>	I	II	II
Descarga Centrífuga	<i>Centrifugal Discharge</i>	I	I	II
Escaleras mecánicas	<i>Escalators</i>	I	I	II
Flete	<i>Freight</i>	I	II	II
Descarga por gravedad	<i>Gravity Discharge</i>	I	I	II
<b>EXTRUSORAS</b>	<b>EXTRUDERS</b>			
Generales	<i>General</i>	II	II	II
Plásticos - Variador de velocidad	<i>Plastics - Variable Speed Drive</i>	III	III	III
Plásticos - Accionador de velocidad fija	<i>Plastics - Fixed Speed Drive</i>	III	III	III
Caucho/Hule - Operación de tornillo continuo	<i>Rubber - Continuous Screw Operation</i>	III	III	III
Rubber - Operación de tornillo intermitente	<i>Rubber - Intermittent Screw Operation</i>	III	III	III

## Factor de servicio clase AGMA

## AGMA

## Service class AGMAA

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
<b>VENTILADORES</b>	<b>FANS</b>			
Centrífugos	Centrifugal	I	I	II
Torres de enfriamiento	Cooling Towers	III	III	III
Tiro forzado	Forced Draft	II	II	II
Tiro inducido	Induced Draft	II	II	II
Industrial y minería	Industrial and Mine	II	II	II
<b>ALIMENTADORES</b>	<b>FEEDERS</b>			
Salpicaderos (tipo Mandil)	Apron	I	II	II
Correas	Belt	I	II	II
Disco	Disc	I	I	II
Reciprocante	Reciprocating	II	III	III
Tornillo	Screw	I	II	II
<b>INDUSTRIA ALIMENTICIA</b>	<b>FOOD INDUSTRY</b>			
Cocina de Cereales	Cereal Cooker	I	I	II
Mezclador de pasta	Dough Mixer	II	II	II
Picadoras de carne	Meat Grinders	II	II	II
Rebanadoras	Slicers	I	II	II
<b>GENERADORES Y EXCITADORES</b>	<b>GENERATORS AND EXCITERS</b>	II	II	II
<b>MOLINOS DE MARTILLO</b>	<b>HAMMER MILLS</b>	III	III	III
<b>MONTACARGAS</b>	<b>HOISTS</b>			
Alta Resistencia	Heavy Duty	III	III	III
Resistencia Media	Medium Duty	II	II	II
Contenedor	Skip Hoist	II	II	II
<b>LAVADORAS</b>	<b>LAUNDRY</b>			
Tinas	Tumblers	II	II	II
Máquinas de lavado	Washers	II	II	III
<b>INDUSTRIA DE LA MADERA</b>	<b>LUMBER INDUSTRY</b>			
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Transportadoras - Principal o Servicio pesado	Conveyors - Main or Heavy Duty	II	II	II
Transportadora Principal de Troncos	Conveyors - Main log	III	III	III
Conveyors - Sierra de cadena, sierra de troceado	Conveyors - Re-saw, Merry-Go-Round	II	II	II
Transportador - Losas	Conveyors - Siab	III	III	III
Transportador - Carrusel	Conveyors - Transfer	II	II	II
Transferencia por cadena	Chains - Fioror	II	II	II
Transferencia de Vía de Grúa	Chains - Green	II	II	III

Factor de servicio clase AGMA

AGMA

Service class AGMA

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
Sierras cortadoras - Cadena	Cut-Off Saws - Chain	II	II	III
Sierras cortadoras - Arrastre	Cut-Off Saws - Drag	II	II	III
Tambores de descortezado	Debarking Drums	III	III	III
Alimentadores - De Canteadora	Feeds - Edger	II	II	II
Alimentadores - Multiple	Feeds - Gang	II	III	III
Alimentadores - de Desbastadora	Feeds - Trimmer	II	II	II
Plataforma de registro	Log Deck	III	III	III
Disparos de registro - tipo inclinado- tipo circular	Log Hauls - Incline - Well Type	III	III	III
Conexión de dispositivos giratorios	Log Turning Devices	III	III	III
Alimentación de la aplanadora	Planer Feed	II	II	II
Aplanadora en inclinación de elevadores	Planer Tilting Hoists	II	II	II
Rodillo - de extracción -activos - de Cajas	Rolls - live-off brg. - Roll Cases	III	III	III
Mesa de Clasificación	Sorting Table	II	II	II
Elevador con caja de volteo	Tipple Hoist	II	II	II
Transportador - De Cadenas	Transfers - Chain	II	II	III
Transportador -Tipo Grúa	Transfers - Craneway	II	II	III
Unidades de batea	Tray Drives	II	II	II
Sepilladora para chapas	Veneer Lathe Drives	II	II	II
<b>LAMINADORAS DE METAL</b>	<b>METAL MILLS</b>			
Accionamiento Principal y Carro de Banco de Estirado	Draw Bench Carriage and Main Drive	II	II	II
Mesa de salida - Controlador Grupal no reversible	Runout Table - Non reversing Group Drives	II	II	II
Mesa de salida - Controlador individual no reversible	Runout Table - Non reversing Individual Drives	III	III	III
Mesas Transportadoras Reversibles	Runout Table - Reversing	III	III	III
Impulsadores de Placa	Slab Pushers	II	II	II
Cizallas	Shears	III	III	III
Trefilado	Wire drawing	II	II	II
Máquina de bobinado de alambre	Wire Winding Machine	II	II	II
<b>BANDAS DE METAL -MAQUINARIA DE PROCESAMIENTO-</b>	<b>METAL STRIP PROCESSING MACHINERY</b>			
Bridas	Bridles	II	II	II
Bobinadoras y Desbobinadoras	Coilers and Uncoilers	I	I	II
Arista - Condensador de ajuste	Edge Trimmers	I	II	II
Laminadora de Rodillos	Flatteners	II	II	II
Acumuladores	Loopers (Accumulators)	I	I	I
Rodillos de arrastre	Pinch Rolls	II	II	I
Cuchillas de corte	Scrap Choppers	II	II	II
Cizalla	Shears	III	III	III
Cortadoras	Slitters	I	II	II

## Factor de servicio clase AGMA

## AGMA

## Service class AGMA

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
<b>MOLINOS TIPO ROTATORIO</b>	<b>MILLS, ROTARY TYPE</b>			
Bola y varilla - Engranaje tipo espolón	Ball and Rod - Spur Ring Gear	III	III	III
Bola y varilla - Engranaje anular helicoidal	Ball and Rod - Helical Ring Gear	II	II	II
Bola y varilla - Conexión directa	Ball and Rod - Direct Connected	III	III	III
Bola y varilla - Hornos de cemento	Ball and Rod - Cement Kilns	II	II	II
Bola y varilla - Secadores y enfriadores	Ball and Rod - Dryers and Coolers	II	II	II
<b>FABRICACIÓN DE PAPEL 1)</b>	<b>PAPER MILLS 1)</b>			
Agitador / Mezclador	Agitator (Mixer)	II	II	II
Agitador para líquidos puros	Agitator for Pure liquors	II	II	II
Descortezadora Híraulica	Barking Drums	III	III	III
Descortezadora - Mecánica	Barkers - Mechanical	III	III	III
Blanqueador	Beater	II	II	II
Batidora Desfibradora	Breaker Stack	II	II	II
Calandrador 2)	Calender 2)	II	II	II
Máquina Convertidora	Chipper	III	III	III
Alimentador de viruta	Chip Feeder	II	II	II
Rodillos de recubrimiento	Coating Rolls	II	II	II
Transportadoras - Viruta, corteza, químicos	Conveyors - Chip, Bark, Chemical	II	II	II
Transportadora - Troncos -incluye placa-	Conveyors - Log (including Slab)	III	III	III
Enrolladores	Couch Rolls	II	II	II
Cortadora	Cutter	III	III	III
Moldes cilíndricos	Cylinder Molds	III	III	III
Secadoras 2)	Dryers 2)			
Máquina de papel	Paper Machine	II	II	II
Transportadoras	Conveyor Type	II	II	II
Prensa de Impresión	Embosser	II	II	II
Extrusora	Extruder	II	II	II
Rodillos Fourdrinier	Fourdrinier Rolls	II	II	II
Refinadores cónicos Jordán	Jordan Pulverizer	II	II	II
Lavadoras y Espesadoras	Kiln Drive	II	II	II
Enrolladora de Papel	Paper Rolls	II	II	II
Tina de Mezcla	Platter	II	II	II
Prensadora -Fieltro y succión-	Presses - Felt & Suction	II	II	II
Despulpadora	Pulper	III	III	III
Bombas de vacío	Pumps - Vacuum	II	II	II
Carretes (tipo superficial)	Reel (Surface Type)	II	II	II
Mallas - Viruta	Screens - Chip	II	II	II

Factor de servicio clase AGMA

AGMA

Service class AGMA

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
Mallas - Rotatoria	Screens - Rotary	II	II	II
Mallas - Vibratoria	Screens - Vibrating	III	III	III
Prensa Encoladora	Size Press	II	II	II
Súper calandradora 3)	Supercalendar3)	II	II	II
Espesador (Motor AC)	Thickener (AC Motor)	II	II	II
Espesador (Motor DC)	Thickener (DC Motor)	II	II	II
Lavadora (Motor AC)	Washer (AC Motor)	II	II	II
Lavadora (Motor DC)	Washer (DC Motor)	II	II	II
Soporte de rollos	Wind and Unwind Stand	I	I	I
Enrolladoras (tipo superficial)	Winders (Surface Type)	II	II	II
Secadoras Yankee 2)	Yankee Dryers 2)	II	II	II
<b>INDUSTRIAS DE PLÁSTICOS - PROCESOS PRIMARIOS</b>	<b>PLASTICS INDUSTRY - PRIMARY PROCESSING</b>			
Mezcladores internos intensivos - por lotes	Intensive Internal Mixers - Batch Mixers	III	III	III
Mezcladores internos intensivos - continuos	Intensive Internal Mixers - Continuous Mixers	II	II	II
Molino de caída por lotes -2 rollos lisos-	Batch Drop Mill - 2 smooth rolls	II	II	II
Alimentación continua, mantenimiento y molino de mezcla	Continuous Feed, Holding & Blend Mill Calendars	II	II	II
<b>INDUSTRIAS DE PLÁSTICOS - PROCESOS SECUNDARIOS</b>	<b>PLASTICS INDUSTRY - SECONDARY PROCESSING</b>			
Moldeadores de Soplado	Blow Molders	II	II	II
De revestimiento	Coating	II	II	II
De Película	Film	II	II	II
De Tubo	Pipe	II	II	II
Pre plastificantes	Pre-Plasticizers	II	II	II
De Barras	Rods	II	II	II
De Lámina	Sheet	II	II	II
De Tubería	Tubing	II	II	II
<b>EXTRACTORES -REMOLQUE DE BARCAZAS</b>	<b>PULLERS - BARGE HAUL</b>	II	II	II
<b>BOMBAS</b>	<b>PUMPS</b>			
Centrifugas	Centrifugal	I	I	II
Dosificadoras	Proportioning	II	II	II
Reciprocante - Actuación simple, 3 o mas cilindros	Reciprocating - Single Acting, 3 or more cylinders	II	II	II
Reciprocante - Actuación doble, 2 o mas cilindros	Reciprocating - Double Acting, 2 or more cylinders	II	II	II
De engrane giratorio	Rotary - Gear Type	I	I	II
Rotatoria -Lóbulo	Rotary - Lobe	I	I	II
Rotatoria -Paletas	Rotary - Vane	I	I	II

## Factor de servicio clase AGMA

## AGMA

## Service class AGMA

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
<b>INDUSTRIA DEL CAUCHO</b>	<b>RUBBER INDUSTRY</b>			
Mezcladores internos intensivos - Mezcladoras por lotes	<i>Intensive Internal - Batch Mixers</i>	III	III	III
Mezcladores internos intensivos -Mezcladores continuos	<i>Intensive Internal - Continuous Mixers</i>	II	II	II
Molinos Mezcladores -2 rodillos lisos	<i>Mixing Mill - 2 smooth rolls</i>	II	II	II
Molinos Mezcladores -2 rollo, 1 rodillo corrugado-	<i>Mixing Mill - 1 or 2 corrugated rolls</i>	III	III	III
Molino de Lote Descendente – 2 rodillos lisos	<i>Batch Drop Mill - 2 smooth rolls</i>	II	II	II
Quebradora en Caliente – 2 rodillos, 1 rodillo corrugado	<i>Cracker Warmer - 2 roll, 1 corrugated roll</i>	III	III	III
Quebradora -2 rodillos corrugados	<i>Cracker - 2 corrugated rolls</i>	III	III	III
Ligas, Alimentación & molinos mezcladores - 2 rodillos	<i>Holding, Feed &amp; Blend Mill - 2 rolls</i>	II	II	II
Refinadores -2 rodillos	<i>Refiner - 2 rolls</i>	II	II	II
Calandrias para Caucho	<i>Calenders</i>	II	II	II
<b>MEZCLADOR DE ARENA</b>	<b>SAND MULLER</b>	II	II	II
<b>EQUIPOS DE TRATAMIENTO DE AGUAS RESIDUALES</b>	<b>SEWAGE DISPOSAL EQUIPMENT</b>			
Cribas de barra	<i>Bar Screens</i>	II	II	II
Alimentadores químicos	<i>Chemical Feeders</i>	II	II	II
Cribas de desagüe	<i>Dewatering Screens</i>	II	II	II
Rompedores de espuma	<i>Scum Breakers</i>	II	II	II
Mezcladores lentos o rápidos	<i>Slow or Rapid Mixers</i>	II	II	II
Colector de Sedimentos	<i>Sludge Collectors</i>	II	II	II
Espesadores	<i>Thickener</i>	II	II	II
Filtros de vacío	<i>Vacuum Filters</i>	II	II	II
<b>CRIBAS</b>	<b>SCREENS</b>			
Para limpieza de Aire	<i>Air Washing</i>	I	I	II
Giratorias de Piedra o Grava	<i>Rotary - Stone or Gravel</i>	II	II	II
Toma de Agua Movil	<i>Traveling Water Intake</i>	I	I	I
<b>TRANSPORTADORES HELICOIDALES</b>	<b>SCREW CONVEYORS</b>			
Uniformemente cargado o alimentado	<i>Uniformly loaded or Fed</i>	I	I	II
Servicio pesado	<i>Heavy Duty</i>	I	II	II
<b>INDUSTRIA AZUCARERA</b>	<b>SUGAR INDUSTRY</b>			
Cortadora de remolacha	<i>Beet Slicer</i>	III	III	III
Cortadoras de Caña	<i>Cane Knives</i>	II	II	II
Trituradoras	<i>Crushers</i>	II	II	II
Molinos (terminal de baja velocidad)	<i>Mills (low speed end)</i>	III	III	III

Factor de servicio clase AGMA

AGMA

Service class AGMA

APLICACIÓN	APPLICATION	OPERACIÓN TOTAL/LOAD DURATION		
		0/3 h	3/10 h	10/24 h
<b>INDUSTRIA TEXTIL</b>	<b>TEXTILE INDUSTRY</b>			
Enrolladoras	<i>Batchers</i>	II	II	II
Calandrias	<i>Calendars</i>	II	II	II
Cardas	<i>Cards</i>	II	II	II
Tambores de Secado	<i>Dry Cans</i>	II	II	II
Secadores	<i>Dyeing Machinery</i>	II	II	II
Telares	<i>Looms</i>	II	II	II
Planchadoras	<i>Mangles</i>	II	II	II
Perchadoras	<i>Nappers</i>	II	II	II
Rellenadoras	<i>Pads</i>	II	II	II
Encoladoras	<i>Slashers</i>	II	II	II
Enjabonadoras	<i>Soapers</i>	II	II	II
Hilanderas	<i>Spinners</i>	II	II	II
Bastidores Tensores	<i>Tenter Frames</i>	II	II	II
Lavadoras	<i>Washers</i>	II	II	II
Enrolladoras	<i>Winders</i>	II	II	II

Notas sobre la tabla de FACTOR DE SERVICIO PARA REDUCTORES:

1) La clasificación de los números listados para la aplicación de la industria del papel son consistentes con los mostrados en la información técnica de la TAPPI (Asociación Técnica de la industria del papel y la pulpa), hoja 0406- 18 1967: factores de servicio para engranajes en servicios pesados en la industria del papel y la pulpa.

2) Solo para transporte anti fricción.

3) Un factor de servicio de 1.00 puede ser aplicado a la velocidad base de una súper calandradora que opera sobre caballos de fuerza con un rango de velocidad constante y en el rango de la constante del torque donde la velocidad de la potencia sea mayor que 1.5 a 1. Un número de clase II es aplicable a súper calandradoras que operan en todo el rango de velocidad con par constante o cuando la gama de velocidades de los caballos de fuerza constante es menor de 1.5 a 1.

Notes to GEARMOTOR SERVICE FACTOR table:

1) The class numbers listed for paper mill applications are consistent with those shown in TAPPI (Technical Association of Pulp and Paper Industry) Technical Information Sheet 0406-18 1967, Service Factors for Gears on major Equipment in the Paper and Pulp Industry.

2) Anti-friction bearings only.

3) A Class Number of I may be applied at base speed of a supercalendar operating over a speed range of part-range constant horsepower and part-range constant torque where the constant horsepower speed range is greater than 1.5 to 1. A Class Number of II is applicable to supercalendars operating over the entire speed range at constant torque or where the constant horsepower speed range is less than 1.5 to 1.



**Carga radial**

**R; R<sub>2</sub> [N]**

**Radial load**

La aplicación en el eje de salida del reductor de piñones, poleas, etc. determina fuerzas radiales que es necesario considerar para evitar excesivo estrés y el riesgo de daños del reductor. El cálculo de la carga radial externa R que actúa sobre el eje del reductor se puede calcular de la siguiente manera:

*Pinions, pulleys, etc applied on the output shaft of the gearboxes create radial forces that must be taken into consideration to avoid excessive stress risking damage to the gearbox itself.*

*External radial load R that acts on the gearbox shaft can be calculated as follows:*

$$R = \frac{2 \cdot M_2 \cdot kr}{d} \leq R_2$$

donde:

- d [mm]** diámetro primitivo del piñón o polea
- kr** coeficiente con relación al tipo de transmisión:  
**kr = 1.4** transmisión por cadena  
**kr = 1.1** transmisión por cadena  
**kr = 1.5 - 2.5** polea para correa trapecial

where:

- d [mm]** diameter of the pinion or pulley
- kr** coefficient in relation to type of transmission:  
**kr = 1.4** sprocket wheel  
**kr = 1.1** gear  
**kr = 1.5 - 2.5** pulley for V belts

Señalamos que los valores R<sub>2</sub> son válidos para cargas aplicadas a la mitad del eje de salida, entonces la comparación debe hacerse en las mismas condiciones.

*Keep in mind that values R<sub>2</sub> refer to loads that act on the center-line of the output shaft (considering the shaft protrudes). As a result, the value should be compared under the same conditions.*

**Carga axial**

**A; A<sub>2</sub> [N]**

**Axial load**

A veces, junto con la carga radial también puede estar presente una fuerza A que actúa axialmente en el eje de salida; en este caso tener en cuenta que la carga axial admisible A<sub>2</sub> en el eje es:

*At times, along with the radial load, force A may be present that acts axially on the output shaft. In this case, keep in mind allowable axial load A<sub>2</sub> that can be applied on the shaft is:*

$$A_2 = R_2 \cdot 0.2$$

Si el valor de la carga axial A en el eje resulta superior a A<sub>2</sub>, consultar con nuestro servicio técnico.

*If axial load A that acts on the shaft is greater than A<sub>2</sub>, contact our Technical Service.*

**Seleccionando el motorreductor**

**Selecting the gearmotors**

Para seleccionar el motorreductor requerido realizar el siguiente procedimiento:

*To select the required gearmotor, perform the procedure below:*

1. Determinar el factor de servicio fs para la aplicación deseada haciendo referencia a los gráficos dados en la página A6. Esto está hecho considerando la clase de carga, la operación horas/días y el número de puesta en marcha/hora.
2. Si la potencia de salida del motor requerido P es conocida, ir al punto 3); si el torque de salida requerido M es conocido, determine la salida de del motor P usando las siguientes fórmulas:

1. *Determine the service factor sf for the desired application by referring to the charts given on page A6. This is to be done by considering the class of load, the operational hours/day and the number of start-ups/ hour.*
2. *If the required motor power output P is known, go to item 3); if the required output torque M is known, determine motor output P by using the following formulas:*

$$P = \frac{M \cdot n_2}{63025 \cdot Rd}$$

Motor reductor  
Gearmotor

donde Rd es para la eficiencia dinámica (indicada en la página D6) y n<sub>2</sub> indica la salida requerida RPM del motorreductor.

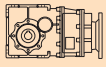

*where Rd stands for the dynamic efficiency (indicated on page D6) and n<sub>2</sub> indicates the required output rpm of the gearmotor.*



**Seleccionando el motorreductor**

**Selecting the gearmotors**

3. Use la gráfica de especificación para buscar la unidad de potencia donde  $P_1$  es mayor que o igual a  $P$  con una velocidad  $n_2/n_{2max}$  que se aproxima al valor deseado. Elija una unidad de potencia donde el factor de servicio indicado  $sf$  es igual o mayor que la unidad calculada en el punto 1).

3. Use the specification chart to search for the power unit where  $P_1$  is greater than or equal to  $P$  with a speed  $n_2/n_{2max}$  that approximates the desired one. Choose a power unit where the indicated service factor  $sf$  is equal to or greater than that calculated at point 1).

$P_1$ [hp]	$n_2$ [rpm]	$M_2$ [lb·in]	$sf$	AGMA	$i$		
<b>0.16</b>							
0.12 kW (1750 rpm)	<b>348</b>	28	12.7	III	5.03	<b>CMG002</b>	<b>56C</b>
	<b>287</b>	34	10.5	III	6.10		
	<b>234</b>	41	8.5	III	7.49		
	<b>195</b>	50	8.9	III	8.99		

$P_1$ [hp]	$n_2$ [rpm]	$M_2$ [lb·in]	$sf$	AGMA	$i$		
<b>0.25</b>							
0.18 kW (1750 rpm)	<b>350</b>	40	9.2	III	5	<b>CM040</b>	<b>56C</b>
	<b>233</b>	58	6.7	III	7.5		
	<b>175</b>	76	5.3	III	10		
	<b>117</b>	109	3.6	III	15		
	<b>88</b>	141	2.5	III	20		
	<b>70</b>	167	2.0	III	25		
	<b>58</b>	189	2.2	III	30		
	<b>44</b>	234	1.6	II	40		

Ejemplo / Example:

**Aplicación / Application:**  
Cinta transportadora / Conveyor belt

**P** : 0.16 hp  
**sf** : 8  
 **$n_2$**  : 230 rpm

Unidad de potencia seleccionado / Power unit selected:

**CMG002  $i = 7.49$ ,  $P_1 = 0.16$  hp,  $sf = 8.5$**

Ejemplo / Example:

**Aplicación / Application:**  
Cinta transportadora / Conveyor belt

**P** : 0.24 hp  
**sf** : 2.0  
 **$n_2$**  : 55 rpm

Unidad de potencia seleccionado / Power unit selected:

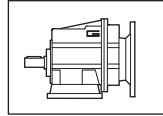
**CM040  $i = 30$ ,  $P_1 = 0.25$  hp,  $sf = 2.2$**

**Lubricación**

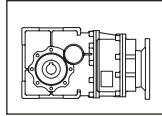
**Lubrication**

Los reductores de las serie CMG, CMB, CM, y de la CMM se suministran con lubricante sintético viscosidad 320 de larga duración y no requieren mantenimiento.

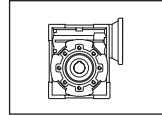
All unit sizes of CMG, CMB, CM and CMM series are complete with a long life synthetic lubricant, viscosity 320 and do not require maintenance.



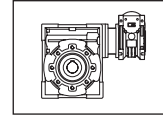
**CMG**



**CMB**



**CM**



**CMM**

SHELL	AGIP	KLUBER	CASTROL	ESSO	MOBIL
Shell Omala S4 WE320	Tellium VSF320	Klubersynth GH 6 320	Alphasyn PG320	S320	Mobil Glygoyle HE 320

Las tablas indican la cantidad aproximada de lubricante contenido y/o que se debe verter. Especifique siempre la posición de montaje deseada al momento de hacer el pedido.

The tables indicates the approximate amount of lubricant held and/or to be put in. Always specify the desired installation position at the time of order.

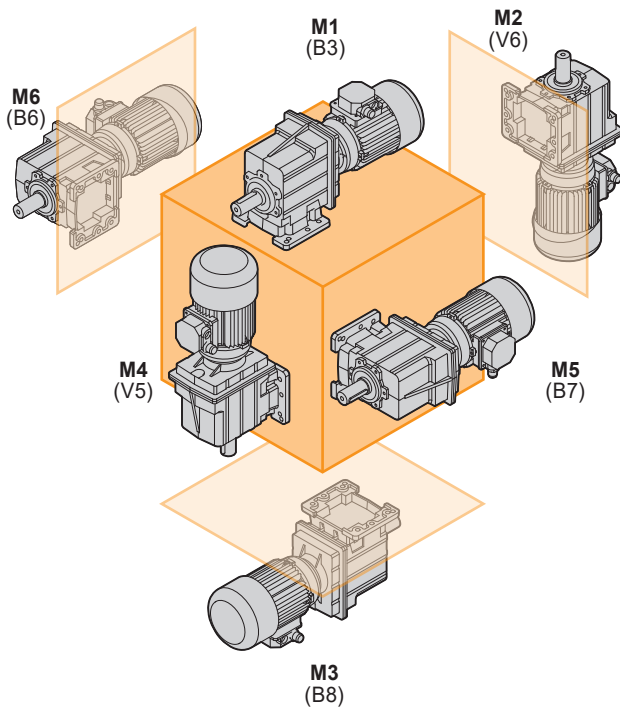
Verificar la cantidad de lubricante dependiendo de la posición de montaje en todos los reductores CM 130.

Check the lubricant quantity depending on the mounting position on all gearboxes CM 130.

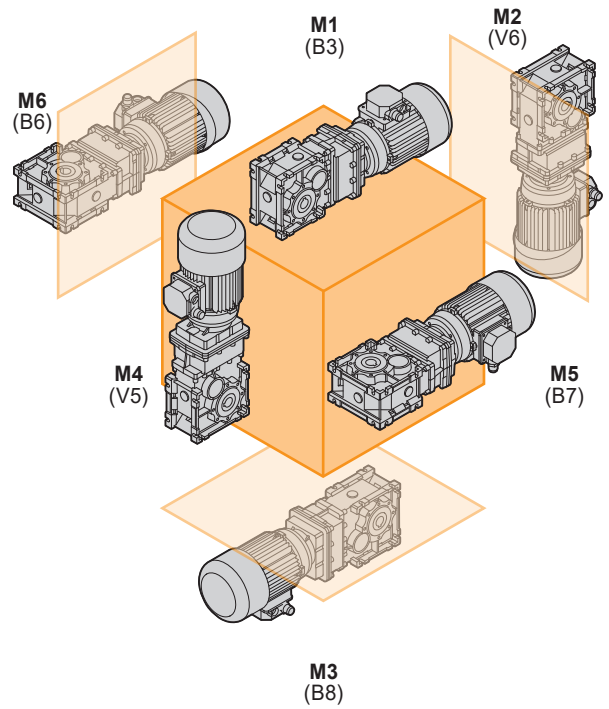
Posición de Montaje

Mounting positions

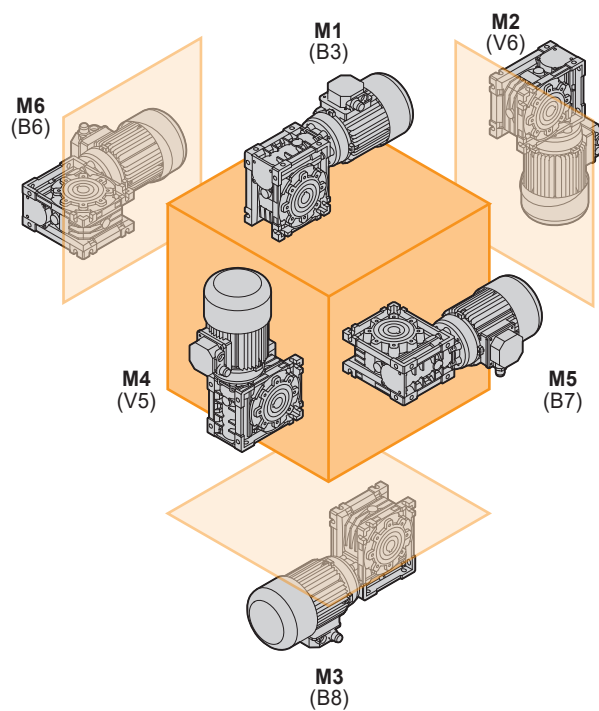
CMG



CMB



CM



**Temperatura de servicio**

**Operating temperature**

La temperatura ambiente afecta las especificaciones de los reductores. *The environmental temperature affects specifications of gearboxes.*

**Gama de temperatura estándar / Standard temperature range**

<b>CMG</b>	-35°C / +50°C	-31°F / +122°F
<b>CMB</b>	-35°C / +50°C	-31°F / +122°F
<b>CM040 - CM050</b>	-25°C / +50°C	-13°F / +122°F
<b>CM063 - CM110</b>	-35°C / +50°C	-31°F / +122°F

**Gamas de temperaturas especiales / Special temperature range**

	<-15°C / <-5°F	-35°C/-25°C / <-31°F-13°F	<-35°C / <-31°F	>+50°C / >+112°F
<b>CMG00 - CMG04</b>			usar sellos de aceite de silicona (VMQ) <i>use silicone (VMQ) oil seals</i>	usar sellos de aceite de Viton (FPM) <i>use Viton (FPM) oil seals</i>
<b>CMB633 - CMB903</b>				
<b>CM040 - CM050</b>		sustituir el sello de aceite con NBR <i>replace input oil seal with NBR</i>	usar lubricantes para bajas temperaturas <i>use low temperature lubricant</i>	usar lubricante para altas temperaturas <i>use high temperature lubricant</i>
<b>CM063 - CM110</b>				

Si la temperatura es <0°:

- verificar que el motor sea idóneo para trabajar a bajas temperaturas;
- verificar que el motor pueda proveer mayor par de arranque a causa del aumento de la viscosidad del lubricante;
- para una lubricación óptima accionar sin carga algunos minutos;

*For temperature <0°C refer to the following notes:*

- *check if the motor is suitable for low temperature;*
- *due to the high viscosity of the lubricant, check if the motor can supply high starting torque;*
- *let the group run for a few minutes without load to guarantee good lubrication;*

## Instalación y controles

Al momento de la instalación del equipo reductor es recomendable verificar que:

- Los datos en la placa correspondan al producto pedido;
- Las superficies de acoplamiento y los ejes sean limpios y sin abolladuras;
- Las superficies donde se instala el reductor (o motovariador) sean planas y bastante rígidas;
- El eje de la máquina operadora y del reductor sean correctamente alineados;
- Se hayan instalados los limitadores de par si hay probabilidad de golpes o bloqueo durante el funcionamiento;
- Las partes rotativas de las máquinas lleven las protecciones de seguridad necesarias;
- Para instalaciones al exterior, sean presentes adecuadas protecciones contra la exposición a los agentes atmosféricos;
- El ambiente de trabajo no sea expuesto a agentes corrosivos (a menos que no haya sido comunicado en el pedido, a fin de preparar el reductor o el motovariador para este uso);
- Los piñones y poleas sean correctamente ensamblados en el eje de salida o de entrada del reductor, para evitar cargas radiales y/o axiales superiores a las admitidas;
- Todos los acoplamientos sean tratados con adecuado producto anticorrosivo para evitar oxidaciones;
- Todos los tornillos de sujeción estén bien apretados;
- Verificar la cantidad de lubricante dependiendo de la posición de montaje en todos los motorreductores CM 130.

## Installation and inspection

While installing the gearbox, always make sure that:

- the specifications stamped on the rating plate match those indicated for the unit actually ordered;
- the mating surfaces and the shafts are thoroughly clean and free of dents;
- the surfaces where the gearbox are to be mounted on are flat and strong enough;
- the machine drive shaft and the gearbox shaft are perfectly aligned;
- the required torque limiters have been installed if the machine is likely to produce shocks or blockages during operation;
- the rotary parts have been provided with the required safety guards;
- adequate weatherproof covering has been provided if the machine is to be installed outdoor;
- the working environment is not exposed to corrosive agents (unless this has been indicated while placing the order so that the gearbox can be adequately set up);
- the pinions or pulleys on the gearbox input/output shafts are properly fitted in order not to produce radial and/or axial loads that exceed the maximum allowable limits;
- all the couplings have been treated with adequate rust preventive in order to avoid oxidation provoked by contact;
- all the mounting screws have been securely tightened;
- check the lubricant quantity depending on the mounting position on all gearboxes CM 130.

## Aplicaciones críticas

En estos casos consultar con nuestro Servicio Técnico

- uso como multiplicador;
- uso como montacargas;
- uso en posiciones no contempladas en el catálogo;
- uso en ambientes con presión diferente de la atmosférica;
- uso en ambiente con temperaturas <-35°C or >+50°C

## Critical applications

In these cases please contact the Technical Service

- used to increase speed;
- used as a hoist;
- used in mounting positions not shown in the catalogue;
- use in environment pressure other than atmospheric pressure;
- use in places with temperature <-35°C or >+50°C

**TRANSTECNO**<sup>®</sup>  
the modular gearmotor

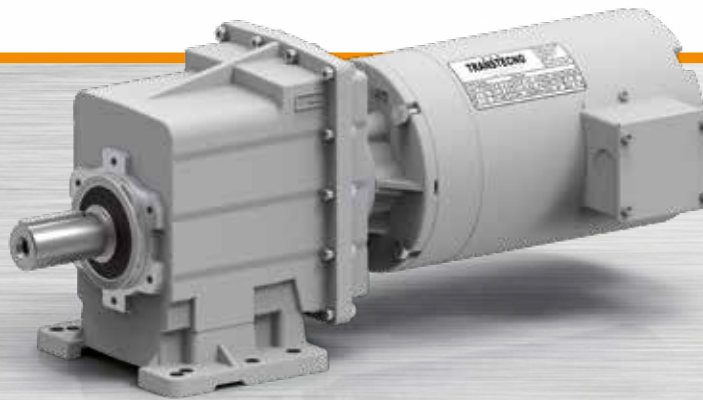
**CMG**



**60Hz**

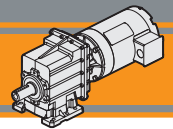
**Motorreductores a engranajes cilíndricos**  
**Helical in-line gearmotors**

**Nema**







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Clasificación  
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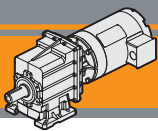
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Esta sección substituye y anula las ediciones y revisiones previas. Si usted obtiene este catálogo a través de canales de distribución no autorizados o fuera de nuestro control, la versión en vigor no estará garantizada. **En todo caso, la versión más actualizada está disponible en nuestra página de internet [www.transtecno.com](http://www.transtecno.com)**

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**Características técnicas**

**Technical features**

Los reductores de la serie CMG son caracterizados por un elevado grado de modularidad: partiendo de un cuerpo base, es posible configurarlo de acuerdo a las exigencias, con brida o base.

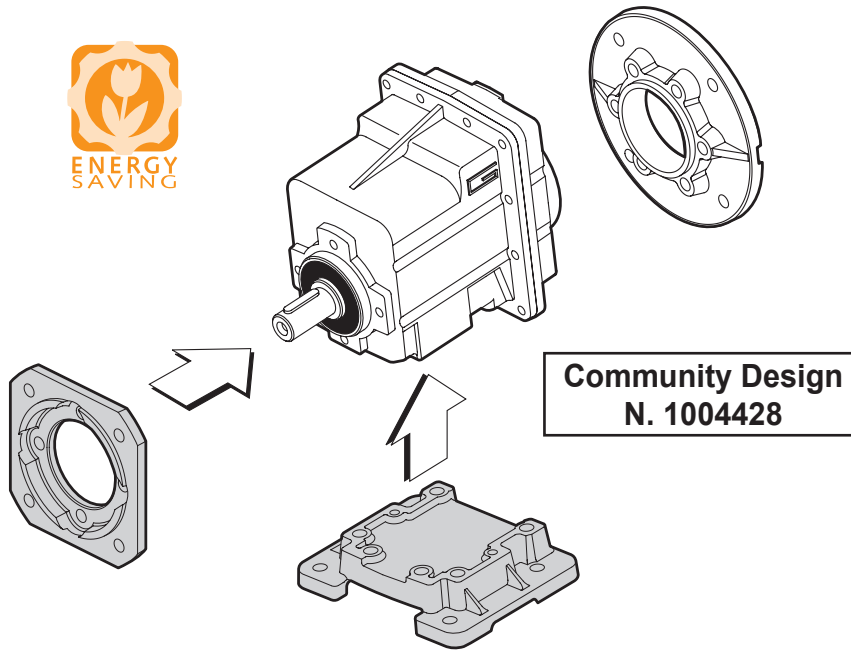
The high degree of modularity is a design feature of CMG helical gearboxes range. It is possible to set up the version required using flanges or feet.

Características comunes para toda la serie:

The main features of CMG range are:

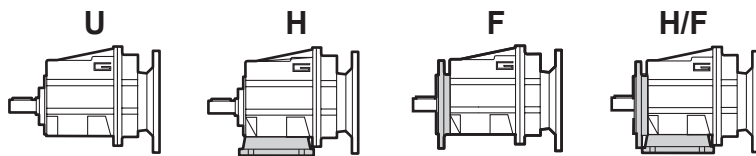
- Cuerpo y bridas de entrada en inyección de aluminio
- Bidas de salida y base en fierro vaciado;
- Engranajes siempre rectificadas;
- Lubricación permanente con aceite sintético.

- Die-cast aluminum housings and input flanges.
- Cast iron feet and output flanges;
- Ground-hardened helical gears;
- Permanent synthetic oil long-life lubrication.

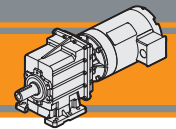


**Clasificación**

**Classification**

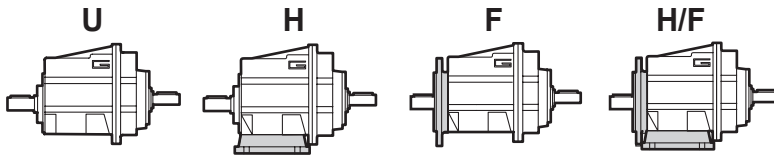


REDUCTOR / GEARBOX						
CMG	01	2	H65	9.81	D1.0	56C
Tipo Type	Tamaño Size	Etapas Stages	Versión Version	Relación de reducción Ratio	Eje de salida Output shaft	
CMG	00 01 02 03 04	2 3	U H F... H/F...	ver tablas see tables	ver tablas see tables	56C 140TC 180TC 210TC



Clasificación

Classification



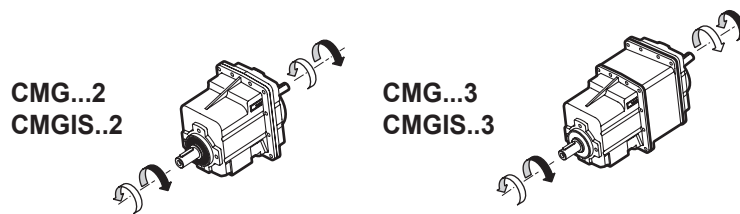
CMG

REDUCTOR / GEARBOX					
CMGIS	01	2	U	9.81	D1.0
Tipo Type	Tamaño Size	Etapas Stages	Versión Version	Relación de reducción Ratio	Eje de salida Output shaft
CMGIS	00 01 02 03 04	2 3	U H F... H/F...	ver tablas see tables	ver tablas see tables

MOTOR / MOTOR					
1 hp / 0.75kW	4p	3ph	220/440V	60Hz	T1
Potencia Power	Polos Poles	Fases Phases	Tensión Voltage	Frecuencia Frequency	Posición caja de bornes Terminal box pos.
ver tablas see tables	2p 4p 6p 8p	1ph 3ph	230V 230/400V - 220/440V	50Hz 60Hz	

Sentidos de rotación

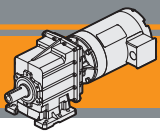
Direction of rotation



Nomenclatura

Symbols

- $n_1$  [rpm] Velocidad de entrada / Input speed
- $n_2$  [rpm] Velocidad de salida / Output speed
- $i$  Relación de reducción / Ratio
- $P_1$  [hp] Potencia en la entrada / Input power
- $M_2$  [lb·in] Par en la salida en función de  $P_1$  / Output torque referred to  $P_1$
- $P_{n1}$  [hp] Potencia nominal en la entrada / Nominal input power
- $M_{n2}$  [lb·in] Par nominal en la salida en función de  $P_{n1}$  / Nominal output torque referred to  $P_{n1}$
- $sf$  Rendimiento dinámico / Service factor
- $R_1$  [lb] Carga radial permitida a la entrada / Permitted input radial load
- $A_1$  [lb] Carga axial permitida a la entrada / Permitted input axial load
- $R_2$  [lb] Carga radial admisible en la salida / Maximum output radial load
- $A_2$  [lb] Carga axial admisible en la salida / Maximum output axial load



**Lubricación**

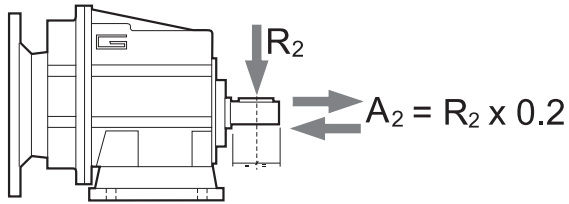
**Lubrication**

Todos los reductores de los tamaños 00, 01, 02, 03 y 04 son previamente lubricados con aceite sintético con grado de viscosidad 320, por lo tanto, pueden ser instalados en cualquier posición de montaje y no requieren mantenimiento.

*Permanent synthetic oil long-life lubrication (viscosity grade 320) makes it possible to use sizes 00, 01, 02, 03 and 04 in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*

**Cargas radiales**

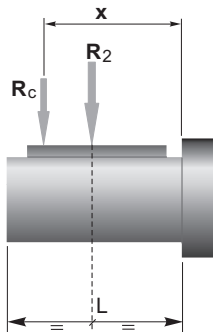
**Radial loads**



n <sub>2</sub> [rpm]	R <sub>2</sub> [lb]				
	CMG 00	CMG 01	CMG 02	CMG 03	CMG 04
700	93	172	344	447	535
600	98	181	362	470	563
500	104	192	384	500	598
400	113	207	414	538	644
250	132	242	484	630	754
180	147	297	574	747	876
150	168	316	610	793	954
120	181	367	779	855	1028
100	215	414	828	1013	1177
80	232	446	892	1133	1347
60	255	491	982	1248	1482
40	292	562	1124	1461	1798
10	292	562	1124	1461	1798

Cuando la carga radial no se aplica en el punto medio del eje, es necesario calcular la carga efectiva a través la siguiente fórmula:

*When the radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*

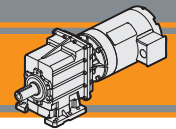


	CMG 00	CMG 01	CMG 02	CMG 03	CMG 04
<b>a</b>	2.874	0.394	4.606	5.197	5.905
<b>b</b>	2.087	3.307	3.622	4.016	4.528
<b>R<sub>2MAX</sub></b>	292	562	1124	1461	1798

$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

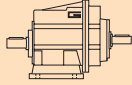
$$R \leq R_c$$

a, b = valores dados en la tabla  
a, b = values given in the table



Datos técnicos

Technical data

	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm		
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters 56 C
<b>CMG 002</b>					
	5.03	354	<b>348</b>	2.04	
	6.10	354	<b>287</b>	1.68	
	7.49	354	<b>234</b>	1.37	
	8.99	442	<b>195</b>	1.42	
	10.16	442	<b>172</b>	1.26	
	12.07	442	<b>145</b>	1.06	
	13.40	619	<b>131</b>	1.34	
	15.14	619	<b>116</b>	1.18	
	18.17	619	<b>96.3</b>	0.99	
	21.58	619	<b>81.1</b>	0.83	
	23.51	619	<b>74.4</b>	0.76	
	25.10	619	<b>69.7</b>	0.71	
	27.08	619	<b>64.6</b>	0.66	
	32.49	619	<b>53.9</b>	0.55	
	42.04	619	<b>41.6</b>	0.43	
	44.89	619	<b>39.0</b>	0.40	
	48.86	619	<b>35.8</b>	0.37	
	55.10	619	<b>31.8</b>	0.33	

CMG

NOTA

Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

NOTE

Highlighted áreas indicate the motor input flange available on each gearbox size.



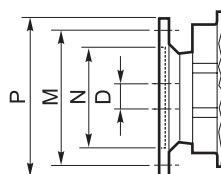
\* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico



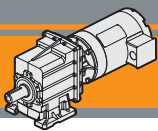
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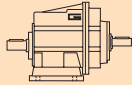


Dimensiones NEMA/ NEMA Dimensions	
	<b>56 C</b>
<b>N</b>	4.5
<b>M</b>	5.88
<b>P</b>	6.5
<b>D</b>	0.625



**Datos técnicos**


**Technical data**


	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm			
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters	
					56 C	140 TC
<b>CMG 012</b>						
	3.82	531	<b>458</b>	4.02		
	4.63	531	<b>378</b>	3.32		
	5.69	531	<b>308</b>	2.70		
	7.72	708	<b>227</b>	2.65		
	9.17	708	<b>191</b>	2.23		
	9.81	708	<b>178</b>	2.09		
	11.50	885	<b>152</b>	2.23		
	11.90	885	<b>147</b>	2.15		
	13.80	1062	<b>127</b>	2.23		
	14.62	1062	<b>120</b>	2.10		
	17.86	1062	<b>98.0</b>	1.72		
	19.07	1062	<b>91.8</b>	1.61		
	19.83	1062	<b>88.2</b>	1.55		
	23.56	1062	<b>74.3</b>	1.30		
	29.56	1062	<b>59.2</b>	1.04		
	35.47	1062	<b>49.3</b>	0.87		*
	45.89	1062	<b>38.1</b>	0.67		*
	49.00	1062	<b>35.7</b>	0.63		*
	53.33	1062	<b>32.8</b>	0.58		*
	60.15	1062	<b>29.1</b>	0.51		*

<b>CMG 013</b>						
	63.22	1062	<b>27.7</b>	0.50		*
	75.08	1062	<b>23.3</b>	0.42		*
	89.17	1062	<b>19.6</b>	0.35		*
	113.05	1062	<b>15.5</b>	0.28		*
	134.27	1062	<b>13.0</b>	0.23		*
	173.72	1062	<b>10.1</b>	0.18		*
	202.16	1062	<b>8.7</b>	0.16		*
	261.57	1062	<b>6.7</b>	0.12		*
	304.00	1062	<b>5.8</b>	0.10		*
	393.33	1062	<b>4.4</b>	0.08		*
	443.59	1062	<b>3.9</b>	0.07		*

NOTA  
Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

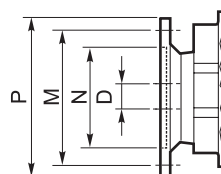
NOTE  
Highlighted áreas indicate the motor input flange available on each gearbox size.

 \* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico

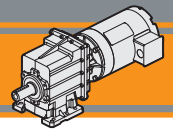
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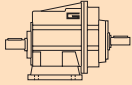


Dimensiones NEMA/ NEMA Dimensions		
	56 C	140 TC
<b>N</b>		4.5
<b>M</b>		5.88
<b>P</b>		6.5
<b>D</b>	0.625	0.875



Datos técnicos

Technical data

	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm		
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters
					56 C      140 TC
<b>CMG 022</b>					
	3.66	885	<b>479</b>	7.00	
	4.43	885	<b>395</b>	5.77	
	5.45	885	<b>321</b>	4.70	
	7.39	1062	<b>237</b>	4.16	
	8.78	1062	<b>199</b>	3.50	
	9.93	1062	<b>176</b>	3.09	
	11.01	1770	<b>159</b>	4.65	
	12.05	1770	<b>145</b>	4.25	
	13.21	1416	<b>132</b>	3.10	
	14.81	1770	<b>118</b>	3.46	
	17.10	1150	<b>102</b>	1.95	
	20.08	1770	<b>87.1</b>	2.55	
	23.85	1770	<b>73.4</b>	2.15	
	29.93	1770	<b>58.5</b>	1.71	
	35.91	1770	<b>48.7</b>	1.43	
	46.46	1770	<b>37.7</b>	1.10	
	49.61	1770	<b>35.3</b>	1.03	
	54.00	1770	<b>32.4</b>	0.95	
	60.90	1770	<b>28.7</b>	0.84	

<b>CMG 023</b>					
	64.01	1770	<b>27.3</b>	0.82	*
	76.02	1770	<b>23.0</b>	0.69	*
	90.29	1770	<b>19.4</b>	0.58	*
	114.46	1770	<b>15.3</b>	0.46	*
	135.95	1770	<b>12.9</b>	0.38	*
	175.89	1770	<b>9.9</b>	0.30	*
	204.69	1770	<b>8.5</b>	0.26	*
	264.84	1770	<b>6.6</b>	0.20	*
	307.80	1770	<b>5.7</b>	0.17	*
	398.25	1770	<b>4.4</b>	0.13	*
	449.14	1770	<b>3.99</b>	0.12	*

NOTA

Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

NOTE

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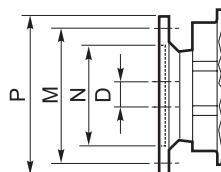
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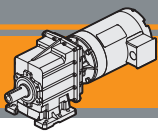
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Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas B10 a la B19.

Before selecting any gearbox, please read the performance values shown in the tables on page B10 to B19.

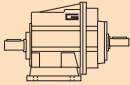


Dimensiones NEMA/ NEMA Dimensions		
	56 C	140 TC
<b>N</b>		4.5
<b>M</b>		5.88
<b>P</b>		6.5
<b>D</b>	0.625	0.875



**Datos técnicos**

**Technical data**

	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm				
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters		
					56 C	140 TC	180 TC
<b>CMG 032</b>							
	3.74	1327	468	10.26			
	4.50	1327	389	8.52			
	5.48	1327	319	7.00			
	6.31	1593	277	7.30			
	7.93	1593	221	5.81			
	9.08	1593	193	5.08			
	10.93	1593	160	4.22			
	12.60	2212	139	5.08			
	13.30	2212	132	4.81			
	15.30	2478	114	4.68			
	18.21	2124	96.1	3.37			
	19.24	2478	91.0	3.73			
	21.15	2124	82.7	2.90			
	24.99	2655	70.0	3.07			
	30.57	2655	57.2	2.51		*	
	34.20	2655	51.2	2.25		*	
	38.63	2655	45.3	1.99		*	
	44.18	2655	39.6	1.74		*	
	51.30	2655	34.1	1.50		*	
	60.80	2655	28.8	1.26		*	

<b>CMG 033</b>						
	72.83	2655	24.0	1.08		
	97.45	2655	18.0	0.80		*
	115.74	2655	15.1	0.68		*
	140.81	2655	12.4	0.56		*
	174.26	2655	10.0	0.45		*
	225.47	2655	7.8	0.35		*
	262.05	2655	6.7	0.30		*
	325.79	2655	5.4	0.24		*
	378.64	2655	4.6	0.21		*
	427.03	2655	4.1	0.18		*

**NOTA**

Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

**NOTE**

Highlighted areas indicate the motor input flange available on each gearbox size.



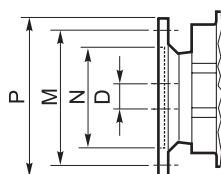
\* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico



\* = The service factor (sf) has to be selected depending on application: please contact our Technical Department.

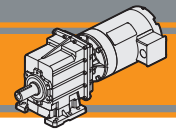
Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas B10 a la B19.

Before selecting any gearbox, please read the performance values shown in the tables on page B10 to B19.



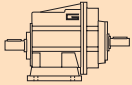
Dimensiones NEMA/ NEMA Dimensions			
	56 C	140 TC	180 TC
<b>N</b>	4.5	8.5	
<b>M</b>	5.88	7.25	
<b>P</b>	6.5	9	
<b>D</b>	0.625	0.875	1.125





Datos técnicos


Technical data


	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm				
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters		
					56 C	140 TC	180 TC
<b>CMG 042</b>							
	3.74	2035	468	15.73			
	4.50	2035	389	13.07			
	5.48	2035	319	10.74			
	6.31	2301	277	10.55			
	7.93	2301	221	8.39			
	9.08	2478	193	7.90			
	10.93	2478	160	6.56			
	12.60	3097	139	7.11			
	13.30	3097	132	6.74			
	15.30	3717	114	7.03			
	19.24	3717	91.0	5.59			
	24.99	4425	70.0	5.12			
	30.57	4425	57.2	4.19			
	34.20	4425	51.2	3.74			
	38.63	4425	45.3	3.31			
	44.18	4425	39.6	2.90			
	51.30	4425	34.1	2.49			*
	60.80	4248	28.8	2.02			*

<b>CMG 043</b>							
	72.83	4425	24.0	1.79			
	97.45	4425	18.0	1.34			
	115.74	4425	15.1	1.13			
	140.81	4425	12.4	0.93			
	174.26	4425	10.0	0.75		*	
	225.47	4425	7.8	0.58		*	
	262.05	4425	6.7	0.50		*	
	325.79	4425	5.4	0.40		*	
	378.64	4425	4.6	0.35		*	
	427.03	4425	4.1	0.31		*	

NOTA  
Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

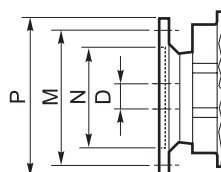
NOTE  
Highlighted áreas indicate the motor input flange available on each gearbox size.

 \* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico

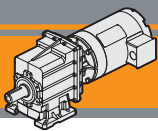
 \* = The service factor (sf) has to be selected depending on application: please contact our Technical Department.

Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas B10 a la B19.

Before selecting any gearbox, please read the performance values shown in the tables on page B10 to B19.



Dimensiones NEMA/ NEMA Dimensions			
	56 C	140 TC	180 TC
N		4.5	8.5
M		5.88	7.25
P		6.5	9
D	0.625	0.875	1.125



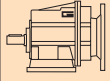

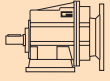

**CMG**

Motorreductores a engranajes cilíndricos  
Helical in-line gearmotors

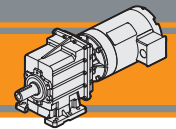
**Nema 60 Hz**

**Datos técnicos**

**Technical data**

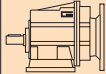

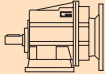

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i					
<b>0.16 hp</b>								<b>0.16 hp</b>										
0.12 kW (1750 rpm)	348	28	12.7	III	5.03	<b>CMG002</b>	<b>56C</b>	0.12 kW (1750 rpm)	27	347	5.1	III	64.01	<b>CMG023</b>	<b>56C</b>			
	287	34	10.5	III	6.10			23	412	4.3	III	76.02						
	234	41	8.5	III	7.49			19	489	3.6	III	90.29						
	195	50	8.9	III	8.99			15	620	2.9	III	114.46						
	172	56	7.9	III	10.16			13	736	2.4	III	135.95						
	145	67	6.6	III	12.07			10	953	1.9	II	175.89						
	131	74	8.4	III	13.40			8.5	1109	1.6	II	204.69						
	116	84	7.4	III	15.14			6.6	1434	1.2	I	264.84						
	96	101	6.2	III	18.17			5.7	1667	1.1	I	307.80						
	81	119	5.2	III	21.58			4.4	2157	0.8	I	398.25						
	74	130	4.8	III	23.51			3.9	2157	0.8	I	449.14						
	70	139	4.5	III	25.10													
	64	150	4.1	III	27.08													
	54	180	3.4	III	32.49													
	42	233	2.7	III	42.04													
	39	248	2.5	III	44.89													
	36	270	2.3	III	48.86													
	32	305	2.0	III	55.10													
	458	21	25.1	III	3.82			<b>CMG012</b>	<b>56C</b>	7.8	1221	3.6	III			225.47	<b>CMG043</b>	<b>56C</b>
	378	26	20.7	III	4.63					6.7	1419	3.1	III			262.05		
	308	31	16.9	III	5.69					5.4	1765	2.5	III			325.79		
	227	43	16.6	III	7.72					4.6	2051	2.2	III			378.64		
	191	51	14.0	III	9.17					4.1	2313	1.9	II			427.03		
	178	54	13.0	III	9.81													
	152	64	13.9	III	11.50													
	147	66	13.4	III	11.90													
	127	76	13.9	III	13.80													
	120	81	13.1	III	14.62													
	98	99	10.8	III	17.86													
	92	105	10.1	III	19.07													
	88	110	9.7	III	19.83													
	74	130	8.2	III	23.56													
59	163	6.5	III	29.56														
49	196	5.4	III	35.47														
38	254	4.2	III	45.89														
36	271	3.9	III	49.00														
33	295	3.6	III	53.33														
29	333	3.2	III	60.15														
28	342	3.1	III	63.22	<b>CMG013</b>	<b>56C</b>	32	476	1.3	I	55.10							
23	407	2.6	III	75.08			42	363	1.7	II	42.04							
20	483	2.2	III	89.17			39	388	1.6	II	44.89							
15	612	1.7	II	113.05			36	422	1.5	II	48.86							
13	727	1.5	II	134.27														
10	941	1.1	I	173.72														
8.7	1095	1.0	I	202.16														
6.7	1330	0.8	I	261.57														
5.8	1330	0.8	I	304.00														
4.4	1330	0.8	I	393.33														
3.9	1330	0.8	I	443.59														

Verificar que el par M<sub>2</sub> utilizado no exceda el valor indicado en la casilla en gris.  
Please check that the output torque M<sub>2</sub> does not exceed the value in the grey areas.

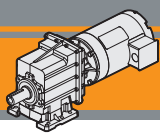


Datos técnicos

Technical data

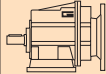

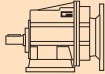

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i																								
<b>0.25 hp</b>								<b>0.33 hp</b>																													
0.18 kW (1750 rpm)	458	33	16.1	III	3.82	<b>CMG012</b>	<b>56C</b>	0.22 kW (1750 rpm)	348	57	6.2	III	5.03	<b>CMG002</b>	<b>56C</b>																						
	378	40	13.3	III	4.63				287	70	5.1	III	6.10																								
	308	49	10.8	III	5.69				234	85	4.1	III	7.49																								
	227	67	10.6	III	7.72				195	103	4.3	III	8.99																								
	191	79	8.9	III	9.17				172	116	3.8	III	10.16																								
	178	85	8.3	III	9.81				145	138	3.2	III	12.07																								
	152	99	8.9	III	11.50				131	153	4.1	III	13.40																								
	147	103	8.6	III	11.90				116	173	3.6	III	15.14																								
	127	119	8.9	III	13.80				96	207	3.0	III	18.17																								
	120	126	8.4	III	14.62				81	246	2.5	III	21.58																								
	98	154	6.9	III	17.86				74	268	2.3	III	23.51																								
	92	165	6.4	III	19.07				70	286	2.2	III	25.10																								
	88	171	6.2	III	19.83				65	309	2.0	III	27.08																								
	74	204	5.2	III	23.56				54	371	1.7	II	32.49																								
	59	255	4.2	III	29.56				42	480	1.3	I	42.04																								
	49	307	3.5	III	35.47				39	512	1.2	I	44.89																								
	38	397	2.7	III	45.89				36	557	1.1	I	48.86																								
	36	424	2.5	III	49.00				32	629	1.0	I	55.10																								
	33	461	2.3	III	53.33				<b>CMG012</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>			<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>																
	29	520	2.0	III	60.15																	458	44	12.2	III	3.82											
	<b>CMG013</b>	28	535	2.0	II																	63.22	378	53	10.0	III	4.63										
		23	635	1.7	II																	75.08	308	65	8.2	III	5.69										
		20	755	1.4	II																	89.17	227	88	8.0	III	7.72										
		15	957	1.1	I																	113.05	191	105	6.8	III	9.17										
		13	1136	0.9	I																	134.27	178	112	6.3	III	9.81										
		<b>CMG023</b>	27	542	3.3																	III	64.01	152	131	6.7	III	11.50									
			23	643	2.8																	III	76.02	147	136	6.5	III	11.90									
			19	764	2.3																	III	90.29	127	157	6.7	III	13.80									
			15	969	1.8																	II	114.46	120	167	6.4	III	14.62									
			13	1150	1.5																	II	135.95	98	204	5.2	III	17.86									
	10		1489	1.2	I																	175.89	92	218	4.9	III	19.07										
	8.5		1732	1.0	I																	204.69	88	226	4.7	III	19.83										
	<b>CMG033</b>		24	616	4.3																	III	72.83	74	269	4.0	III	23.56									
			18	825	3.2																	III	97.45	59	337	3.1	III	29.56									
			15	979	2.7																	III	115.74	49	405	2.6	III	35.47									
		12	1192	2.2	III																	140.81	38	524	2.0	III	45.89										
		10	1475	1.8	II																	174.26	36	559	1.9	II	49.00										
		7.8	1908	1.4	I																	225.47	33	608	1.7	II	53.33										
		6.7	2218	1.2	I																	262.05	29	686	1.5	II	60.15										
		5.4	2757	1.0	I																	325.79	<b>CMG013</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>							
		4.6	3204	0.8	I																	378.64									28	706	1.5	II	63.22		
		<b>CMG043</b>	10	1475	3.0																	III									174.26	23	839	1.3	I	75.08	
	7.8		1908	2.3	III																	225.47									20	996	1.1	I	89.17		
	6.7		2218	2.0	II																	262.05									15	1263	0.8	I	113.05		
	5.4		2757	1.6	II																	325.79									<b>CMG022</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>	<b>56C</b>
4.6	3204		1.4	I	378.64	38	530	3.3						III	46.46																						
4.1	3614		1.2	I	427.03	35	566	3.1						III	49.61																						
<b>CMG023</b>	10		1475	3.0	III	174.26	32	616						2.9	III							54.00															
	7.8		1908	2.3	III	225.47	29	706						2.5	III							60.90															
	6.7		2218	2.0	II	262.05	<b>CMG023</b>	<b>56C</b>						<b>56C</b>	<b>56C</b>							<b>56C</b>	<b>56C</b>	<b>56C</b>													
	5.4		2757	1.6	II	325.79																			27	715	2.5	III	64.01								
	4.6	3204	1.4	I	378.64	23																			849	2.1	III	76.02									
	4.1	3614	1.2	I	427.03	19																			1009	1.8	II	90.29									
						15																			1279	1.4	I	114.46									
						13																			1519	1.2	I	135.95									
						10																			1965	0.9	I	175.89									

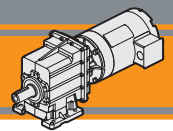
CMG



**Datos técnicos**

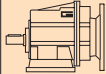

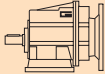

**Technical data**

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i							
<b>0.33 hp</b>								<b>0.5 hp</b>												
0.22 kW (1750 rpm)	24	814	3.3	III	72.83	<b>CMG033</b>	<b>56C</b>	0.37 kW (1750 rpm)	28	1070	1.0	I	63.22	<b>CMG013</b>	<b>56C</b>					
	18	1089	2.4	III	97.45			23	1271	0.8	I	75.08								
	15	1293	2.1	III	115.74			58	517	3.4	III	29.93	<b>CMG022</b>			<b>56C</b>				
	12	1573	1.7	II	140.81												49	621	2.9	III
	10	1947	1.4	I	174.26			38	803	2.2	III	46.46	<b>56C</b>							
	7.8	2519	1.1	I	225.47			35	858	2.1	III	49.61								
	6.7	2927	0.9	I	262.05			32	933	1.9	II	54.00	<b>56C</b>							
	12	1573	2.8	III	140.81			<b>CMG043</b>	<b>56C</b>	29	1045	1.7				II	60.90	<b>56C</b>		
		10	1947	2.3	III					174.26	27	1083	1.6			II	64.01		<b>CMG023</b>	<b>56C</b>
		7.8	2519	1.8	II					225.47										
6.7		2927	1.5	II	262.05	19	1528			1.2				I	90.29					
5.4		3639	1.2	I	325.79	15	1937			0.9				I	114.46					
4.6		4230	1.0	I	378.64	34	887			3.0				III	51.30					
4.1	4770	0.9	I	427.03	29			1051	2.5									III		
<b>0.5 hp</b>								<b>0.75 hp</b>												
0.37 kW (1750 rpm)	348	87	4.1	III	5.03	<b>CMG002</b>	<b>56C</b>	0.55 kW (1750 rpm)	348	130	2.7	III	5.03	<b>CMG002</b>	<b>56C</b>					
	287	105	3.4	III	6.10			287	158	2.2	III	6.10								
	234	129	2.7	III	7.49			234	194	1.8	II	7.49								
	195	155	2.8	III	8.99			195	233	1.9	II	8.99								
	172	176	2.5	III	10.16			172	263	1.7	II	10.16								
	145	209	2.1	III	12.07			145	313	1.4	II	12.07								
	131	232	2.7	III	13.40			131	347	1.8	II	13.40								
	116	262	2.4	III	15.14			116	393	1.6	II	15.14								
	96	314	2.0	II	18.17			96	471	1.3	I	18.17								
	81	373	1.7	II	21.58			81	560	1.1	I	21.58								
	74	406	1.5	II	23.51			74	610	1.0	I	23.51								
	70	434	1.4	II	25.10			70	651	1.0	I	25.10								
	65	468	1.3	I	27.08			65	702	0.9	I	27.08								
	54	562	1.1	I	32.49			<b>CMG012</b>	<b>56C</b>	56C	56C									
	42	727	0.9	I	42.04															
	458	66	8.0	III	3.82															
	378	80	6.6	III	4.63															
	308	98	5.4	III	5.69															
	227	133	5.3	III	7.72															
	191	158	4.5	III	9.17															
178	170	4.2	III	9.81																
152	199	4.5	III	11.50																
147	206	4.3	III	11.90																
127	239	4.5	III	13.80																
120	253	4.2	III	14.62																
98	309	3.4	III	17.86																
92	330	3.2	III	19.07																
88	343	3.1	III	19.83																
74	407	2.6	III	23.56																
59	511	2.1	III	29.56																
49	613	1.7	II	35.47																
38	793	1.3	I	45.89																
36	847	1.3	I	49.00																
33	922	1.2	I	53.33																
29	1040	1.0	I	60.15																

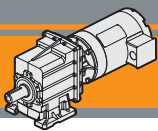


Datos técnicos

Technical data

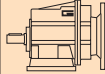

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>0.75 hp</b>								<b>1 hp</b>							
0.55 kW (1750 rpm)	458	99	5.4	III	3.82	CMG012	56C	0.75 kW (1750 rpm)	348	174	2.0	III	5.03	CMG002	56C
	378	120	4.4	III	4.63		56C		287	211	1.7	II	6.10		56C
	308	148	3.6	III	5.69		56C		234	259	1.4	I	7.49		56C
	227	200	3.5	III	7.72		56C		195	311	1.4	II	8.99		56C
	191	238	3.0	III	9.17		56C		172	351	1.3	I	10.16		56C
	178	254	2.8	III	9.81		56C		145	417	1.1	I	12.07		56C
	152	298	3.0	III	11.50		56C		131	463	1.3	I	13.40		56C
	147	309	2.9	III	11.90		56C		116	523	1.2	I	15.14		56C
	127	358	3.0	III	13.80		56C		96	628	1.0	I	18.17		56C
	120	379	2.8	III	14.62		56C		81	746	0.8	I	21.58		56C
	98	463	2.3	III	17.86		56C								
	92	494	2.1	III	19.07		56C								
	88	514	2.1	III	19.83	56C	458		132	4.0	III	3.82	CMG012	56C-140TC	
	74	611	1.7	II	23.56	56C	378		160	3.3	III	4.63		56C-140TC	
	59	766	1.4	I	29.56	56C	308		197	2.7	III	5.69		56C-140TC	
	49	920	1.2	I	35.47	56C	227		267	2.7	III	7.72		56C-140TC	
	38	1190	0.9	I	45.89	56C	191		317	2.2	III	9.17		56C-140TC	
	36	1271	0.8	I	49.00	56C	178		339	2.1	III	9.81		56C-140TC	
							152		398	2.2	III	11.50		56C-140TC	
	87	521	3.4	III	20.08	CMG022	56C		147	412	2.2	III		11.90	56C-140TC
	73	618	2.9	III	23.85		56C		127	477	2.2	III		13.80	56C-140TC
	58	776	2.3	III	29.93		56C		120	506	2.1	III		14.62	56C-140TC
	49	931	1.9	II	35.91		56C		98	617	1.7	II		17.86	56C-140TC
	38	1205	1.5	II	46.46		56C		92	659	1.6	II		19.07	56C-140TC
	35	1286	1.4	I	49.61		56C		88	686	1.5	II	19.83	56C-140TC	
	32	1400	1.3	I	54.00		56C		74	814	1.3	I	23.56	56C-140TC	
	29	1581	1.1	I	60.90		56C		59	1022	1.0	I	29.56	56C-140TC	
									49	1226	0.9	I	35.47	56C-140TC	
	27	1625	1.1	I	64.01		CMG023		56C						
	23	1930	0.9	I	76.02				56C						
	57	793	3.3	III	30.57	CMG032			56C	102	591	1.9	II	17.10	CMG022
51	887	3.0	III	34.20	56C			87	694	2.5	III	20.08	56C-140TC		
45	1002	2.7	III	38.63	56C			73	825	2.1	III	23.85	56C-140TC		
40	1145	2.3	III	44.18	56C			58	1035	1.7	II	29.93	56C-140TC		
34	1330	2.0	II	51.30	56C			49	1241	1.4	II	35.91	56C-140TC		
29	1576	1.7	II	60.80	56C			38	1606	1.1	I	46.46	56C-140TC		
								35	1715	1.0	I	49.61	56C-140TC		
								32	1867	0.9	I	54.00	56C-140TC		
24	1849	1.4	II	72.83	CMG033			56C	29	1553	1.1	I	60.90	56C-140TC	
18	2474	1.1	I	97.45			56C								
15	2938	0.9	I	115.74			56C								
								57	1057	2.5	III	30.57	CMG032	56C-140TC	
							51	1182	2.2	III	34.20	56C-140TC			
34	1330	3.3	III	51.30		CMG042	56C	45	1336	2.0	II	38.63		56C-140TC	
29	1576	2.7	III	60.80			56C	40	1527	1.7	II	44.18		56C-140TC	
								34	1774	1.5	II	51.30		56C-140TC	
								29	2102	1.3	I	60.80		56C-140TC	
24	1849	2.4	III	72.83			CMG043	56C							
18	2474	1.8	II	97.45				56C							
15	2938	1.5	II	115.74				56C	24	2465	1.1	I		72.83	CMG033
12	3575	1.2	I	140.81	56C										
10	4424	1.0	I	174.26	56C										
								45	1336	3.3	III	38.63		CMG042	
								40	1527	2.9	III	44.18	56C-140TC		
								34	1774	2.5	III	51.30	56C-140TC		
						29		2102	2.0	III	60.80	56C-140TC			

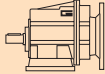

CMG



**Datos técnicos**

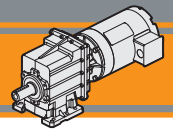
**Technical data**

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>1 hp</b>							
0.75 kW (1750 rpm)	24	2465	1.8	II	72.83	<b>CMG043</b>	<b>56C-140TC</b>
	18	3299	1.3	I	97.45		<b>56C-140TC</b>
	15	3918	1.1	I	115.74		<b>56C-140TC</b>
	12	4767	0.9	I	140.81		<b>56C-140TC</b>

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>1.5 hp</b>							
1.1 kW (1750 rpm)	57	1585	2.8	III	30.57	<b>CMG042</b>	<b>56C-140TC</b>
	51	1774	2.5	III	34.20		<b>56C-140TC</b>
	45	2003	2.2	III	38.63		<b>56C-140TC</b>
	40	2291	1.9	II	44.18		<b>56C-140TC</b>
	34	2660	1.7	II	51.30		<b>56C-140TC</b>
	29	3153	1.3	I	60.80	<b>56C-140TC</b>	
	24	3698	1.2	I	72.83	<b>CMG043</b>	<b>56C-140TC</b>
	18	4948	0.9	I	97.45		<b>56C-140TC</b>

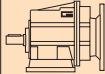

<b>1.5 hp</b>							
1.1 kW (1750 rpm)	458	198	2.7	III	3.82	<b>CMG012</b>	<b>56C-140TC</b>
	378	240	2.2	III	4.63		<b>56C-140TC</b>
	308	295	1.8	II	5.69		<b>56C-140TC</b>
	227	400	1.8	II	7.72		<b>56C-140TC</b>
	191	475	1.5	II	9.17		<b>56C-140TC</b>
	178	509	1.4	I	9.81		<b>56C-140TC</b>
	152	596	1.5	II	11.50		<b>56C-140TC</b>
	147	617	1.4	II	11.90		<b>56C-140TC</b>
	127	716	1.5	II	13.80		<b>56C-140TC</b>
	120	758	1.4	II	14.62		<b>56C-140TC</b>
	98	926	1.1	I	17.86	<b>56C-140TC</b>	
	92	989	1.1	I	19.07	<b>56C-140TC</b>	
	88	1029	1.0	I	19.83	<b>56C-140TC</b>	
	74	1222	0.9	I	23.56	<b>56C-140TC</b>	
	479	190	4.7	III	3.66	<b>CMG022</b>	<b>56C-140TC</b>
	395	230	3.8	III	4.43		<b>56C-140TC</b>
	321	283	3.1	III	5.45		<b>56C-140TC</b>
	237	383	2.8	III	7.39		<b>56C-140TC</b>
	199	455	2.3	III	8.78		<b>56C-140TC</b>
	176	515	2.1	III	9.93		<b>56C-140TC</b>
159	571	3.1	III	11.01	<b>56C-140TC</b>		
145	625	2.8	III	12.05	<b>56C-140TC</b>		
132	685	2.1	III	13.21	<b>56C-140TC</b>		
118	768	2.3	III	14.81	<b>56C-140TC</b>		
102	887	1.3	I	17.10	<b>56C-140TC</b>		
87	1041	1.7	II	20.08	<b>56C-140TC</b>		
73	1237	1.4	II	23.85	<b>56C-140TC</b>		
58	1552	1.1	I	29.93	<b>56C-140TC</b>		
49	1862	1.0	I	35.91	<b>56C-140TC</b>		
114	793	3.1	III	15.30	<b>CMG032</b>	<b>56C-140TC</b>	
96	944	2.2	III	18.21		<b>56C-140TC</b>	
91	998	2.5	III	19.24		<b>56C-140TC</b>	
83	1097	1.9	II	21.15		<b>56C-140TC</b>	
70	1296	2.0	III	24.99		<b>56C-140TC</b>	
57	1585	1.7	II	30.57		<b>56C-140TC</b>	
51	1774	1.5	II	34.20		<b>56C-140TC</b>	
45	2003	1.3	I	38.63		<b>56C-140TC</b>	
40	2291	1.2	I	44.18		<b>56C-140TC</b>	
34	2660	1.0	I	51.30		<b>56C-140TC</b>	
29	3153	0.8	I	60.80	<b>56C-140TC</b>		

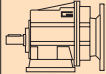

<b>2 hp</b>							
1.5 kW (1750 rpm)	458	264	2.0	III	3.82	<b>CMG012</b>	<b>56C-140TC</b>
	378	320	1.7	II	4.63		<b>56C-140TC</b>
	308	393	1.3	I	5.69		<b>56C-140TC</b>
	227	534	1.3	I	7.72		<b>56C-140TC</b>
	191	634	1.1	I	9.17		<b>56C-140TC</b>
	178	678	1.0	I	9.81		<b>56C-140TC</b>
	152	795	1.1	I	11.50		<b>56C-140TC</b>
	147	823	1.1	I	11.90		<b>56C-140TC</b>
	127	954	1.1	I	13.80		<b>56C-140TC</b>
	120	1011	1.1	I	14.62		<b>56C-140TC</b>
	98	1235	0.9	I	17.86	<b>56C-140TC</b>	
	92	1318	0.8	I	19.07	<b>56C-140TC</b>	
	479	253	3.5	III	3.66	<b>CMG022</b>	<b>56C-140TC</b>
	395	307	2.9	III	4.43		<b>56C-140TC</b>
	321	377	2.3	III	5.45		<b>56C-140TC</b>
	237	511	2.1	III	7.39		<b>56C-140TC</b>
	199	607	1.8	II	8.78		<b>56C-140TC</b>
	176	687	1.5	II	9.93		<b>56C-140TC</b>
	159	761	2.3	III	11.01		<b>56C-140TC</b>
	145	833	2.1	III	12.05		<b>56C-140TC</b>
132	914	1.5	II	13.21	<b>56C-140TC</b>		
118	1024	1.7	II	14.81	<b>56C-140TC</b>		
87	1388	1.3	I	20.08	<b>56C-140TC</b>		
73	1649	1.1	I	23.85	<b>56C-140TC</b>		
58	2069	0.9	I	29.93	<b>56C-140TC</b>		
221	548	2.9	III	7.93	<b>CMG032</b>	<b>56C-140TC</b>	
193	628	2.5	III	9.08		<b>56C-140TC</b>	
160	755	2.1	III	10.93		<b>56C-140TC</b>	
139	872	2.5	III	12.60		<b>56C-140TC</b>	
132	920	2.4	III	13.30		<b>56C-140TC</b>	
114	1058	2.3	III	15.30		<b>56C-140TC</b>	
96	1259	1.7	II	18.21		<b>56C-140TC</b>	
91	1330	1.9	II	19.24		<b>56C-140TC</b>	
83	1462	1.5	II	21.15		<b>56C-140TC</b>	
70	1728	1.5	II	24.99		<b>56C-140TC</b>	
57	2114	1.3	I	30.57	<b>56C-140TC</b>		
51	2365	1.1	I	34.20	<b>56C-140TC</b>		
45	2671	1.0	I	38.63	<b>56C-140TC</b>		
40	3054	0.9	I	44.18	<b>56C-140TC</b>		

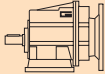



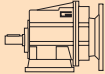

Datos técnicos

Technical data

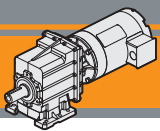
P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			
<b>2 hp</b>								
1.5 kW (1750 rpm)	91	1330	2.8	III	19.24	CMG042	56C-140TC	
	70	1728	2.6	III	24.99		56C-140TC	
	57	2114	2.1	III	30.57		56C-140TC	
	51	2365	1.9	II	34.20		56C-140TC	
	45	2671	1.7	II	38.63		56C-140TC	
	40	3054	1.4	II	44.18		56C-140TC	
	34	3547	1.2	I	51.30		56C-140TC	
	29	4204	1.0	I	60.80		56C-140TC	
	24	4931	0.9	I	72.83		CMG043	56C-140TC

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>3 hp</b>							
2.2 kW (1750 rpm)	458	396	1.3	I	3.82	CMG012	140TC-180TC
	378	480	1.1	I	4.63		140TC-180TC
	308	590	0.9	I	5.69		140TC-180TC
	227	800	0.9	I	7.72		140TC-180TC
	479	379	2.3	III	3.66	CMG022	140TC-180TC
	395	460	1.9	II	4.43		140TC-180TC
	321	565	1.6	II	5.45		140TC-180TC
	237	766	1.4	I	7.39		140TC-180TC
	199	910	1.2	I	8.78		140TC-180TC
	176	1030	1.0	I	9.93		140TC-180TC
	159	1142	1.5	II	11.01		140TC-180TC
	145	1250	1.4	II	12.05		140TC-180TC
	118	1536	1.2	I	14.81		140TC-180TC
	468	388	3.4	III	3.74		CMG032
	389	467	2.8	III	4.50	140TC-180TC	
	319	569	2.3	III	5.48	140TC-180TC	
	277	654	2.4	III	6.31	140TC-180TC	
	221	823	1.9	II	7.93	140TC-180TC	
	193	942	1.7	II	9.08	140TC-180TC	
	160	1133	1.4	II	10.93	140TC-180TC	
	139	1307	1.7	II	12.60	140TC-180TC	
	132	1379	1.6	II	13.30	140TC-180TC	
	114	1587	1.6	II	15.30	140TC-180TC	
	91	1995	1.2	I	19.24	140TC-180TC	
	70	2592	1.0	I	24.99	140TC-180TC	
	57	3171	0.8	I	30.57	140TC-180TC	

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>3 hp</b>							
2.2 kW (1750 rpm)	221	823	2.8	III	7.93	CMG042	140TC-180TC
	193	942	2.6	III	9.08		140TC-180TC
	160	1133	2.2	III	10.93		140TC-180TC
	139	1307	2.4	III	12.60		140TC-180TC
	132	1379	2.2	III	13.30		140TC-180TC
	114	1587	2.3	III	15.30		140TC-180TC
	91	1995	1.9	II	19.24		140TC-180TC
	70	2592	1.7	II	24.99		140TC-180TC
	57	3171	1.4	I	30.57		140TC-180TC
	51	3547	1.2	I	34.20		140TC-180TC
	45	4007	1.1	I	38.63		140TC-180TC
	40	4582	1.0	I	44.18		140TC-180TC
	34	5321	0.8	I	51.30		140TC-180TC

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>5 hp</b>							
3.7 kW (1750 rpm)	468	647	2.1	III	3.74	CMG032	180TC
	389	779	1.7	II	4.50		180TC
	319	948	1.4	II	5.48		180TC
	277	1090	1.5	II	6.31		180TC
	221	1371	1.2	I	7.93		180TC
	193	1569	1.0	I	9.08		180TC
	139	2179	1.0	I	12.60		180TC
	132	2299	1.0	I	13.30		180TC
	114	2645	0.9	I	15.30		180TC
	468	647	3.1	III	3.74		CMG042
	389	779	2.6	III	4.50	180TC	
	319	948	2.1	III	5.48	180TC	
	277	1090	2.1	III	6.31	180TC	
	221	1371	1.7	II	7.93	180TC	
	193	1569	1.6	II	9.08	180TC	
	160	1888	1.3	I	10.93	180TC	
	139	2179	1.4	II	12.60	180TC	
	132	2299	1.3	I	13.30	180TC	
	114	2645	1.4	II	15.30	180TC	
	91	3325	1.1	I	19.24	180TC	
70	4320	1.0	I	24.99	180TC		
57	5285	0.8	I	30.57	180TC		

CMG



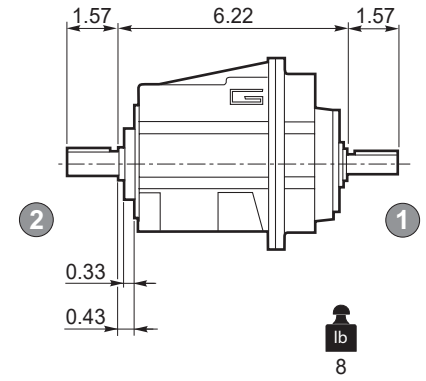
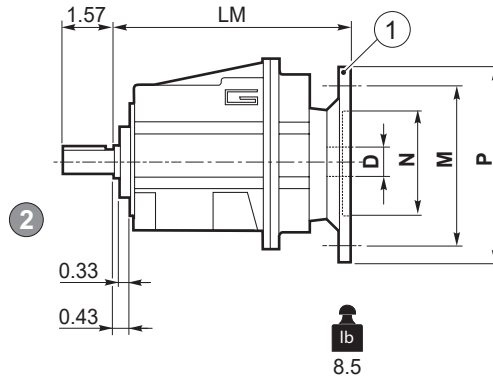
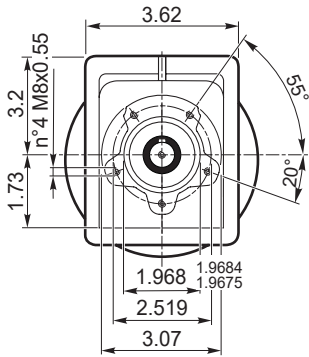
**Dimensiones**

**Dimensions**

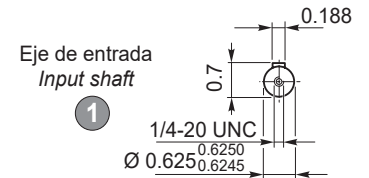
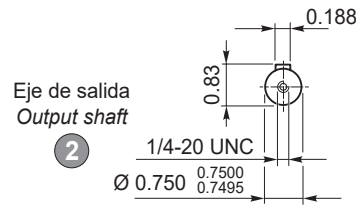
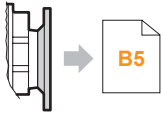
**CMG 002 U**

**CMG 002 U**

**CMGIS 002 U**

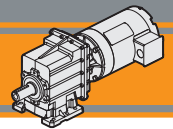


Bridas Motor  
NEMA C-FACE



Brida Motor / Motor flange	
① Dimensiones NEMA NEMA Dimensions	
	<b>56 C</b>
<b>N</b>	4.5
<b>M</b>	5.88
<b>P</b>	6.5
<b>D</b>	0.625
<b>LM 002</b>	6.61





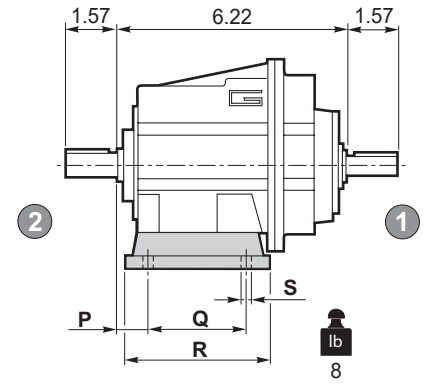
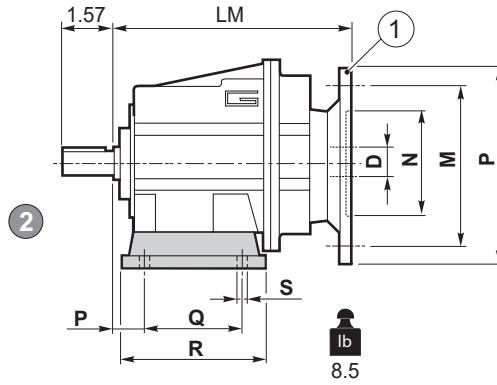
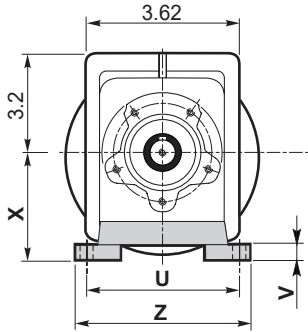
Dimensiones

Dimensions

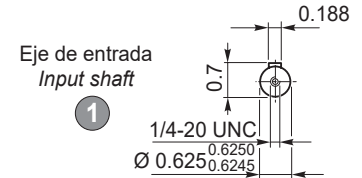
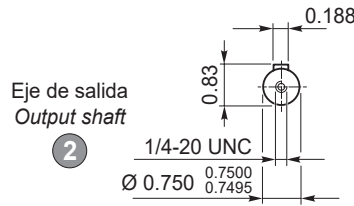
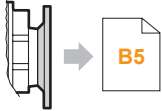
CMG 002 H

CMG 002 H..

CMGIS 002 H..



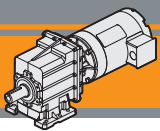
Bridas Motor  
NEMA C-FACE



Versión H / H Version										
CMG CMGIS	P	Q	R	S	U	V	X	Z	Patas / Foot	
									Tipo / Type	Peso / Weight [lb]
002	0.709	2.362	3.150	0.354	3.937	0.394	2.362	4.724	H60	0.44
	0.709	3.150	4.094	0.354	4.331-4.724	0.394	2.953	5.709	H75	0.66
	0.709	1.968-3.425	4.331	0.354	4.331	0.394	3.346	5.315	H85	0.88

Preferencial / Preferred

Brida Motor / Motor flange	
1	Dimensiones NEMA NEMA Dimensions
	56 C
N	4.5
M	5.88
P	6.5
D	0.625
LM 002	6.61



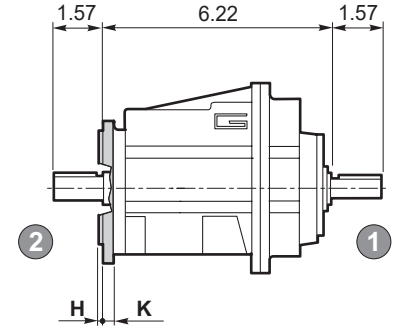
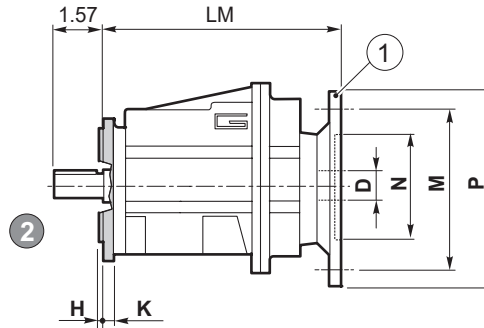
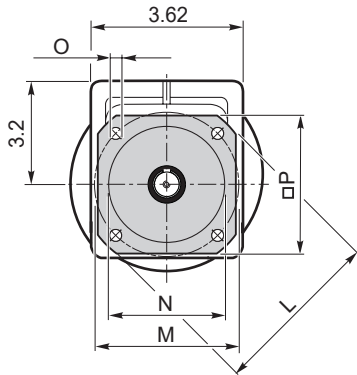
**Dimensiones**

**Dimensions**

**CMG 002 F**

**CMG 002 F..**

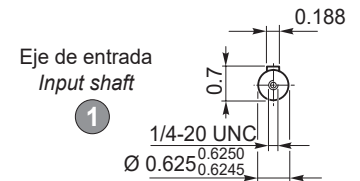
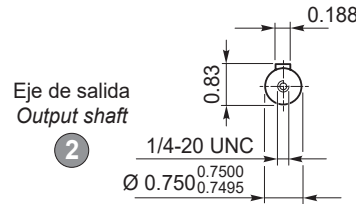
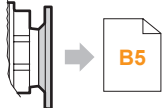
**CMGIS 002 F..**



lb  
8.5

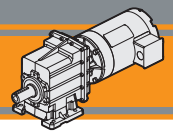
lb  
8

Bridas Motor  
NEMA C-FACE



Versión F / F Version										
CMG CMGIS	H	K	L	M	N	O	P	Brida / Flange		
								Tipo / Type	Peso / Weight [lb]	
002	0.138	0.276	4.134	3.346	2.756	2.7548 2.7536	0.256	3.543	F105	0.22
	0.138	0.315	4.724	3.937	3.150	3.1488 3.1476	0.354	3.937	F120	0.44
	0.138	0.315	5.512	4.528	3.740	3.7386 3.7372	0.354	4.528	F140	0.44

Brida Motor / Motor flange	
1	Dimensiones NEMA NEMA Dimensions
	56 C
N	4.5
M	5.88
P	6.5
D	0.625
LM 002	6.61



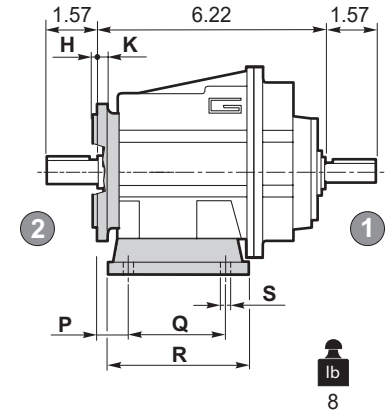
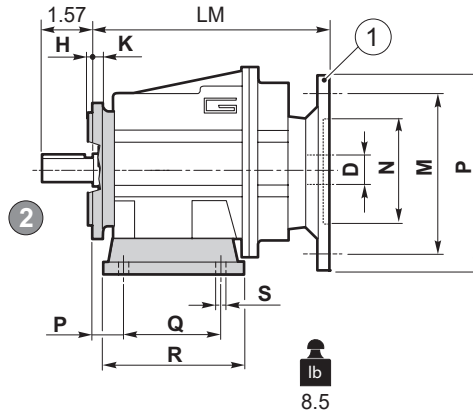
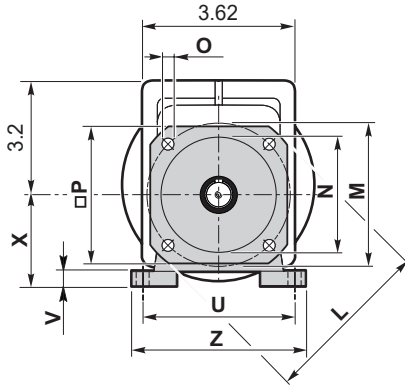
Dimensiones

Dimensions

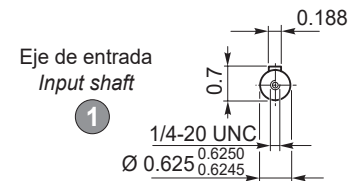
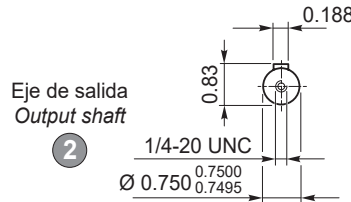
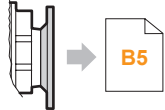
CMG 002 H../F..

CMG 002 H../F..

CMGIS 002 H../F..



Bridas Motor  
NEMA C-FACE



Versión F / F Version										
CMG CMGIS	H	K	L	M	N	O	P	Brida / Flange		
								Tipo / Type	Peso / Weight [lb]	
002	0.138	0.276	4.134	3.346	2.756	<sup>2.7548</sup> / <sub>2.7536</sub>	0.256	3.543	F105	0.22
	0.138	0.315	4.724	3.937	3.150	<sup>3.1488</sup> / <sub>3.1476</sub>	0.354	3.937	F120	0.44
	0.138	0.315	5.512	4.528	3.740	<sup>3.7386</sup> / <sub>3.7372</sub>	0.354	4.528	F140	0.44

Brida Motor / Motor flange	
1	Dimensiones NEMA NEMA Dimensions
	56 C
N	4.5
M	5.88
P	6.5
D	0.625
LM 002	6.61

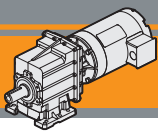
Versión H / H Version										
CMG CMGIS	P	Q	R	S	U	V	X	Z	Patas / Foot	
									Tipo / Type	Peso / Weight [lb]
002	0.709	2.362	3.150	0.354	3.937	0.394	2.362	4.724	H60	0.44
	0.709	3.150	4.094	0.354	4.331-4.724	0.394	2.953	5.709	H75	0.66
	0.709	1.968-3.425	4.331	0.354	4.331	0.394	3.346	5.315	H85	0.88

Combinaciones Posibles H/F Possible combinations H/F			
F105	F120	F140	
•	•	•	
•	•	•	
•	•	•	

Preferencial / Preferred

• Combinaciones posibles H/F / Possible combinations H/F

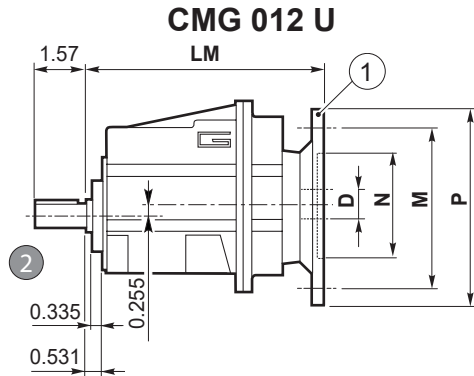
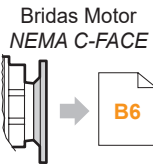
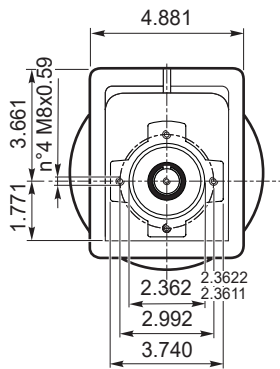
CMG



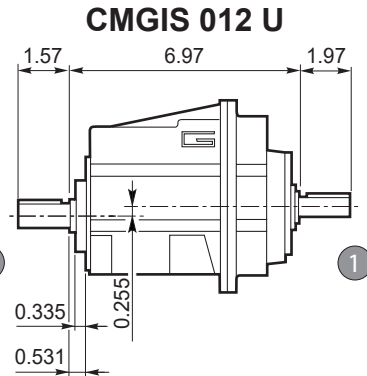
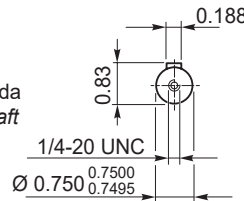
**Dimensiones**

**Dimensions**

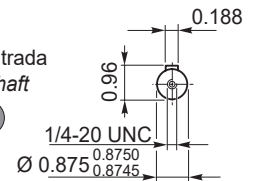
**CMG 012 U - CMG 013 U**



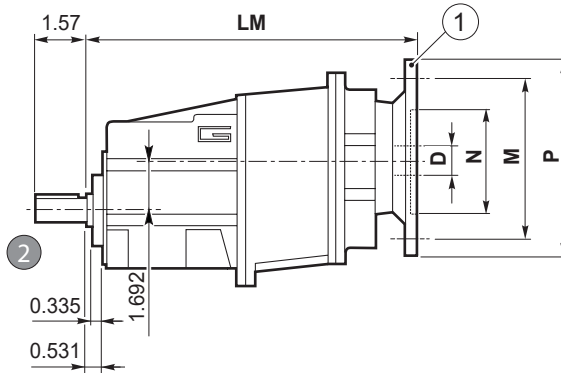
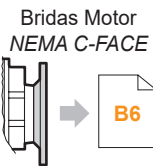
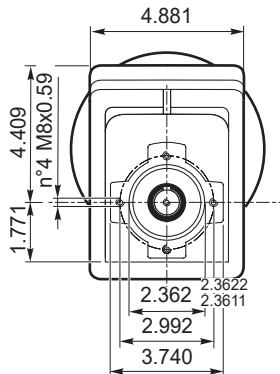
Eje de salida  
Output shaft



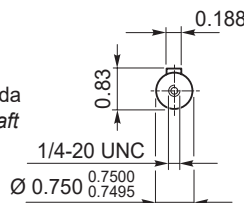
Eje de entrada  
Input shaft



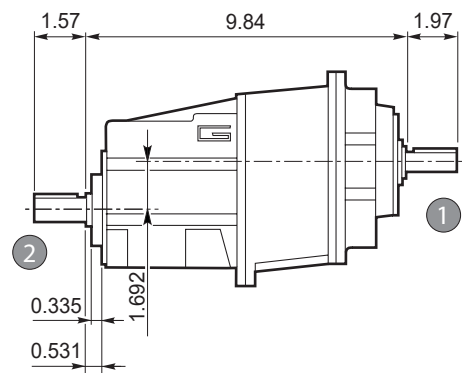
**CMG 013 U**



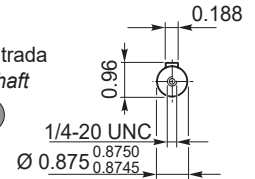
Eje de salida  
Output shaft



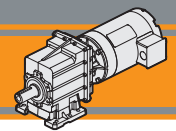
**CMGIS 013 U**



Eje de entrada  
Input shaft



Brida Motor / Motor flange		
① Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC
N		4.5
M		5.88
P		6.5
D	0.625	0.875
LM 012		7.87
LM 013		10.75



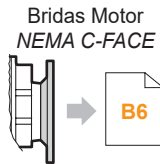
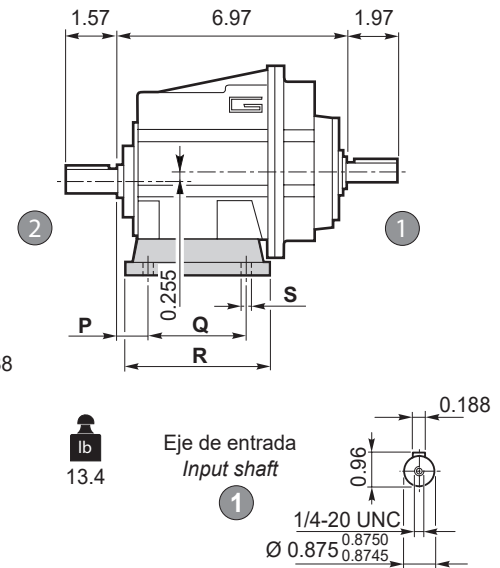
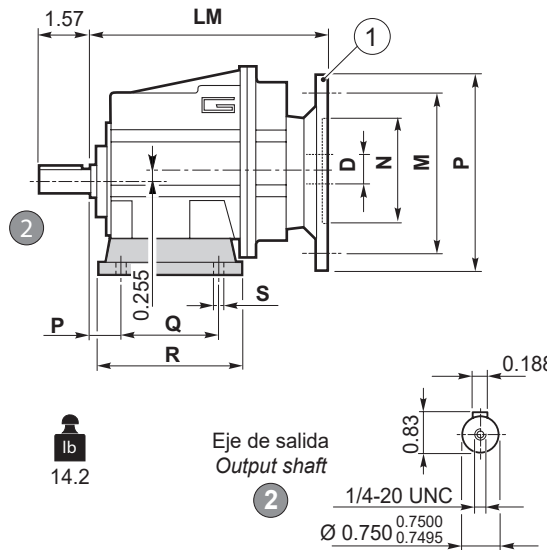
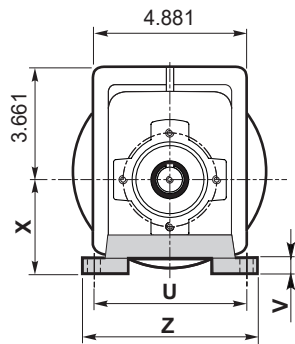
Dimensiones

Dimensions

CMG 012 H.. - CMG 013 H..

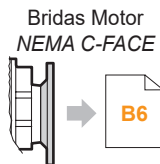
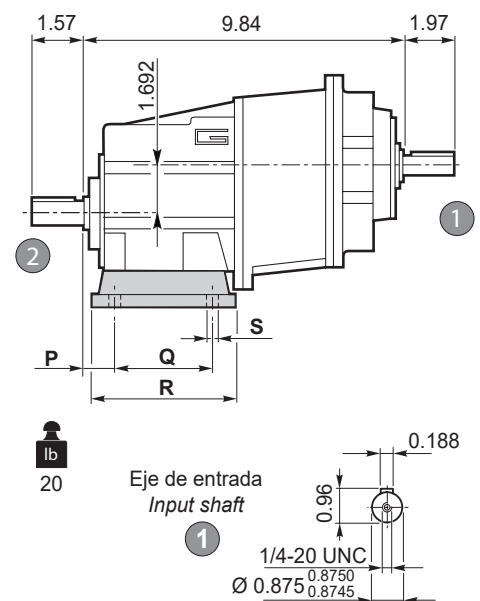
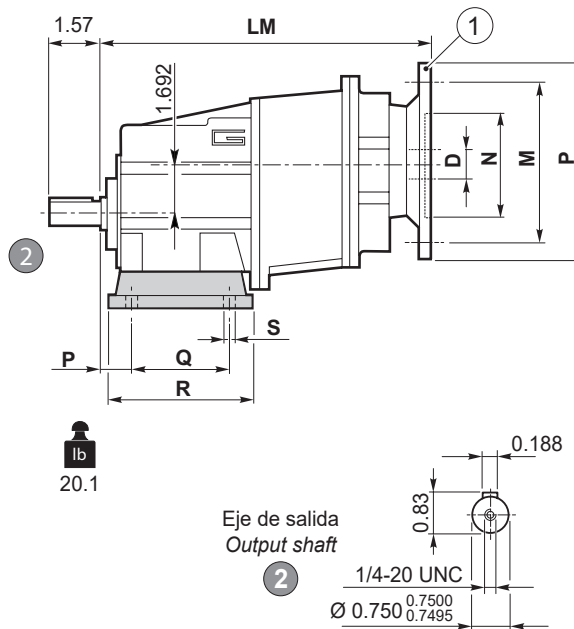
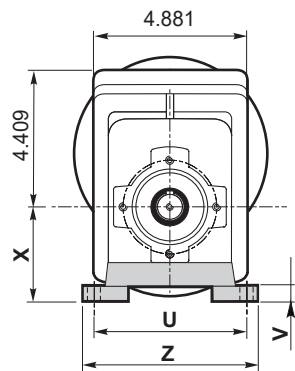
CMG 012 H..

CMGIS 012 H..



CMG 013 H..

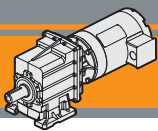
CMGIS 013 H..



Versión H / H Version										
CMG CMGIS	P	Q	R	S	U	V	X	Z	Patás / Foot	
									Tipo / Type	Peso / Weight [lb]
012 013	0.787	3.346	4.252	0.354	4.528	0.472	2.559	5.472	H65	1.543
	0.709	3.150	4.646	0.354	4.331	0.472	2.953	5.512	H75	2.205
	0.984	3.346	4.724	0.354	4.724	0.472	3.150	5.512	H80	2.425
	0.709	1.968-3.425	4.646	0.354	4.331	0.472	3.346	5.118	H85	2.646
	0.984	5.118	6.063	0.354	4.331	0.472	3.543	5.315	H90	3.307
	0.709	2.362-4.232	5.315	0.433	5.118	0.472	3.937	6.102	H100	3.748

Brida Motor / Motor flange		
1	Dimensiones NEMA NEMA Dimensions	
	56 C	140 TC
N	4.5	
M	5.88	
P	6.5	
D	0.625	0.875
LM 012	7.87	
LM 013	10.75	

Preferencial / Preferred



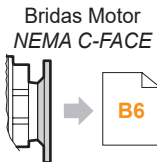
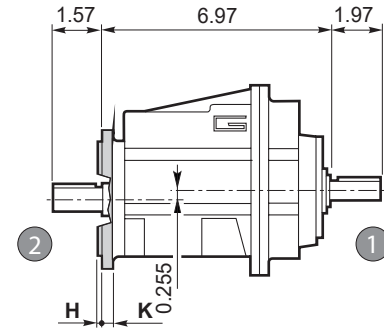
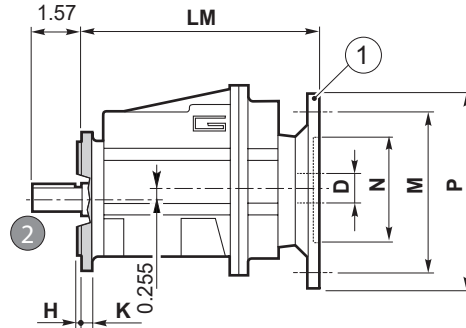
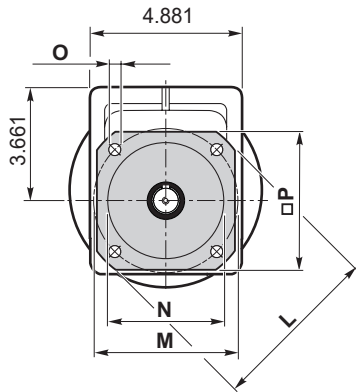
**Dimensiones**

**Dimensions**

**CMG 012 F - CMG 013 F**

**CMG 012 F..**

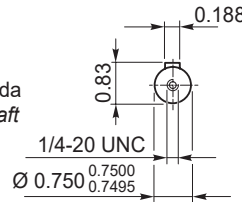
**CMGIS 012 F..**



lb  
14.2

Eje de salida  
Output shaft

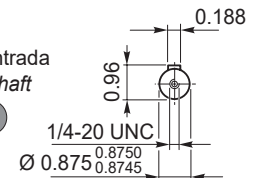
2



lb  
13.4

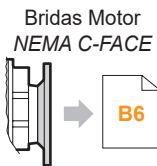
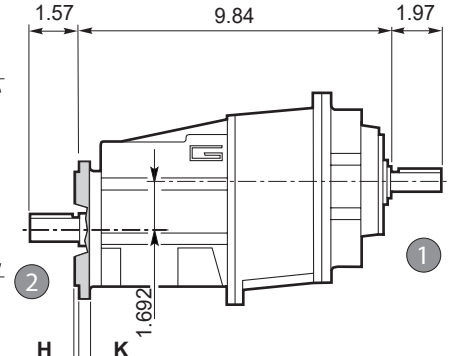
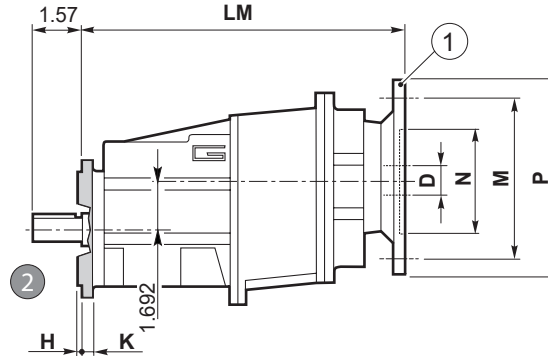
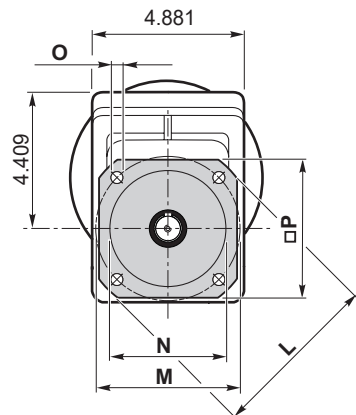
Eje de entrada  
Input shaft

1



**CMG 013 F..**

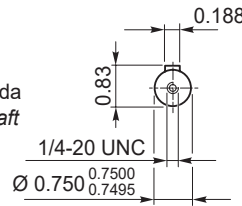
**CMGIS 013 F..**



lb  
20.1

Eje de salida  
Output shaft

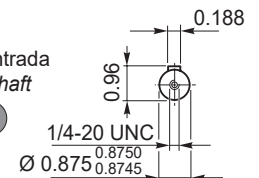
2



lb  
20

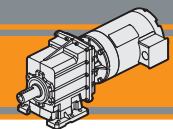
Eje de entrada  
Input shaft

1



Versión F / F Version										
CMG CMGIS	H	K	L	M	N	O	P	Brida / Flange		
								Tipo / Type	Peso / Weight [lb]	
012 013	0.118	0.354	4.724	3.937	3.150	3.1488 3.1476	0.354	4.173	F120	1.102
	0.138	0.354	5.512	4.528	3.740	3.7386 3.7372	0.354	4.528	F140	1.764
	0.138	0.354	6.299	5.118	4.331	4.3296 4.3282	0.354	4.961	F160	2.425
	0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968

Brida Motor / Motor flange		
1 Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC
N	4.5	
M	5.88	
P	6.5	
D	0.625	0.875
LM 012	7.87	
LM 013	10.75	



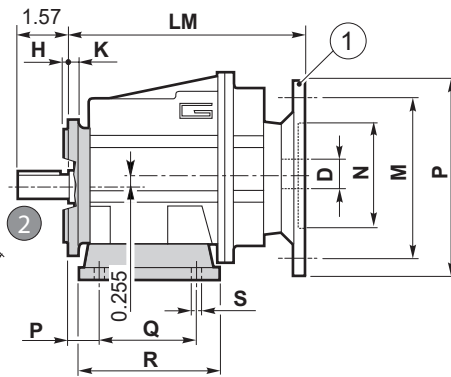
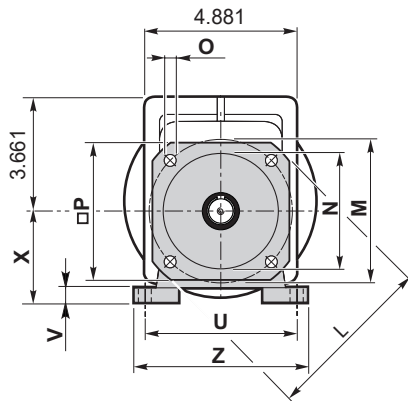
Dimensiones

Dimensions

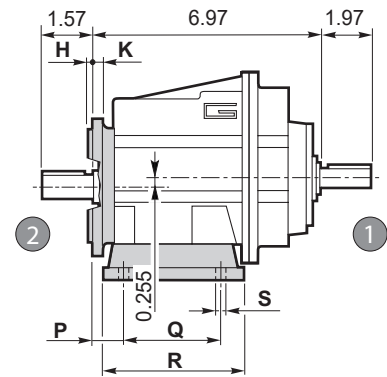
CMG 012 H../F.. - CMG 013 H../F..

CMG 012 H../F..

CMGIS 012 H../F..



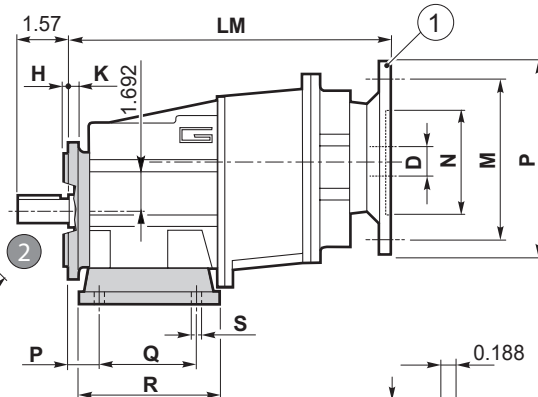
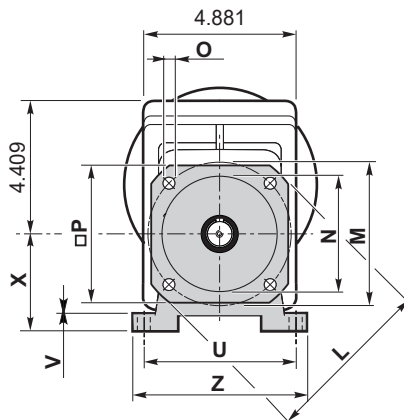
lb  
14.5



lb  
13.7

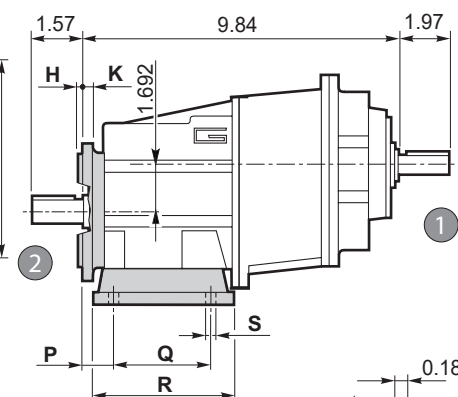
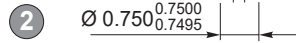
CMG 013 H../F..

CMGIS 013 H../F..



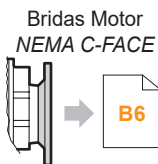
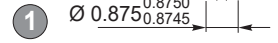
lb  
20.1

Eje de salida  
Output shaft 1/4-20 UNC



lb  
20

Eje de entrada  
Input shaft 1/4-20 UNC



CMG CMGIS	Versión F / F Version							Brida / Flange		
	H	K	L	M	N	O	P	Tipo / Type	Peso / Weight [lb]	
012 013	0.118	0.354	4.724	3.937	3.150	3.1488 3.1476	0.354	4.173	F120	1.102
	0.138	0.354	5.512	4.528	3.740	3.7386 3.7372	0.354	4.528	F140	1.764
	0.138	0.354	6.299	5.118	4.331	4.3296 4.3282	0.354	4.961	F160	2.425
	0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968

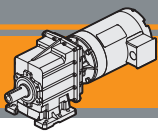
Brida Motor / Motor flange	
1	Dimensiones NEMA NEMA Dimensions
	56 C 140 TC
N	4.5
M	5.88
P	6.5
D	0.625 0.875
LM 012	7.87
LM 013	10.75

CMG CMGIS	Versión H / H Version								Combinaciones posibles H/F Possible combinations H/F					
	P	Q	R	S	U	V	X	Z	Patas / Foot		F120	F140	F160	F200
									Tipo / Type	Peso / Weight [lb]				
012 013	0.787	3.346	4.252	0.354	4.528	0.472	2.559	5.472	H65	1.543	•	•		
	0.709	3.150	4.646	0.354	4.331	0.472	2.953	5.512	H75	2.205	•	•	•	
	0.984	3.346	4.724	0.354	4.724	0.472	3.150	5.512	H80	2.425	•	•	•	
	0.709	1.968-3.425	4.646	0.354	4.331	0.472	3.346	5.118	H85	2.646	•	•	•	
	0.984	5.118	6.063	0.354	4.331	0.472	3.543	5.315	H90	3.307	•	•	•	•
	0.709	2.362-4.232	5.315	0.433	5.118	0.472	3.937	6.102	H100	3.748	•	•	•	•

Preferencial / Preferred

• Combinaciones posibles H/F / Possible combinations H/F

CMG



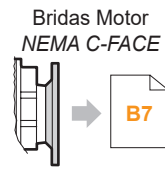
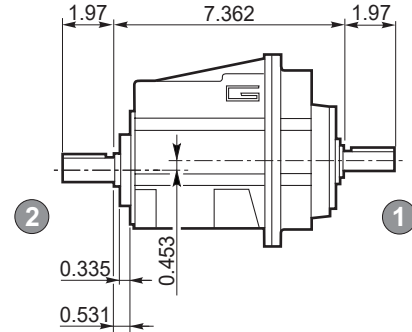
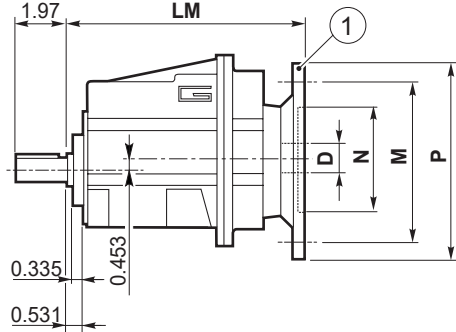
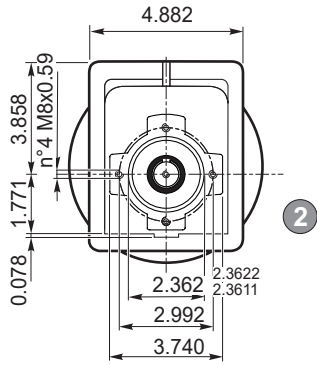
**Dimensiones**

**Dimensions**

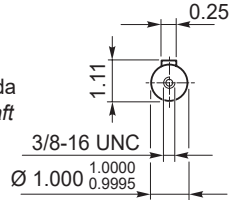
**CMG 022 U - CMG 023 U**

**CMG 022 U**

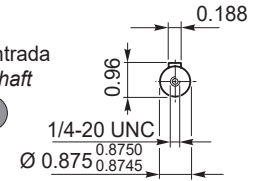
**CMGIS 022 U**



Eje de salida  
Output shaft

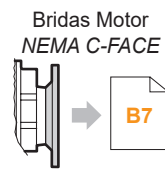
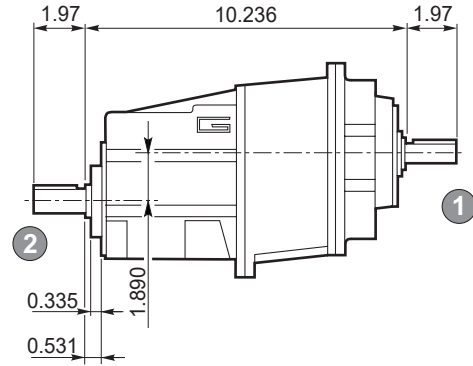
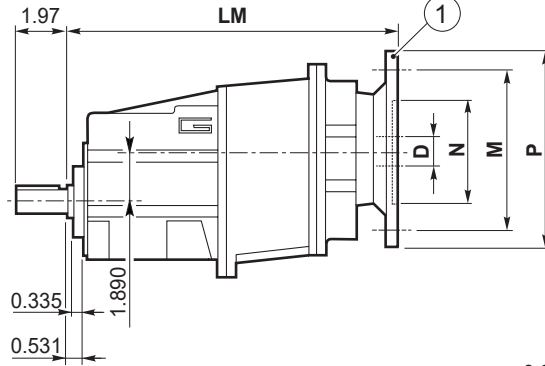
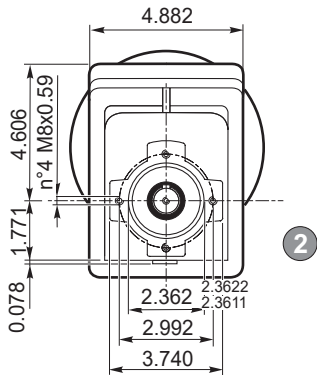


Eje de entrada  
Input shaft

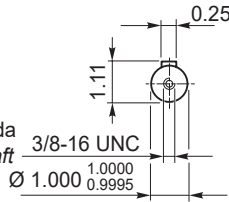


**CMG 023 U**

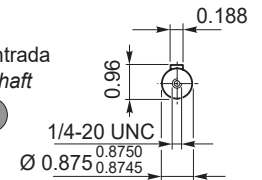
**CMGIS 023 U**



Eje de salida  
Output shaft

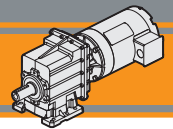


Eje de entrada  
Input shaft



Brida Motor / Motor flange		
① Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC
N		4.5
M		5.88
P		6.5
D	0.625	0.875
LM 022		8.268
LM 023		10.61





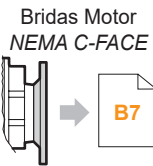
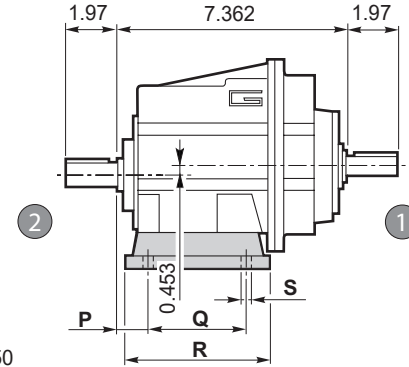
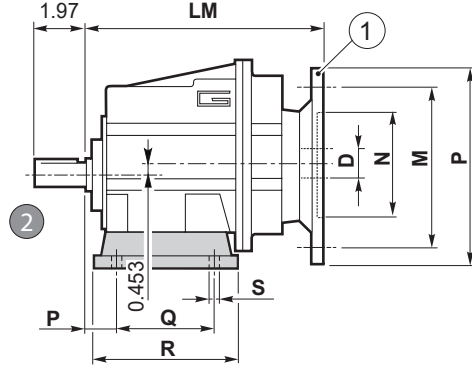
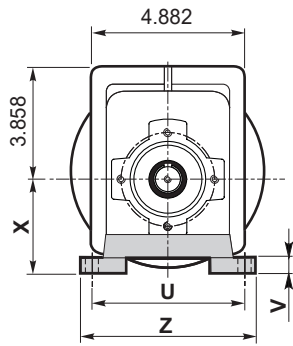
Dimensiones

Dimensions

CMG 022 H.. - CMG 023 H..

CMG 022 H..

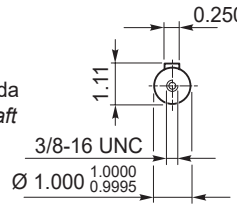
CMGIS 022 H..



16.6 lb

Eje de salida  
Output shaft

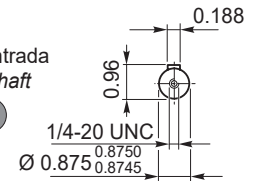
2



15.8 lb

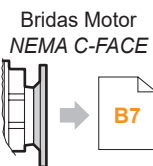
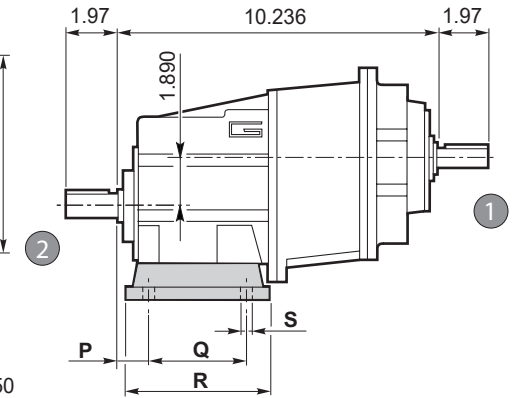
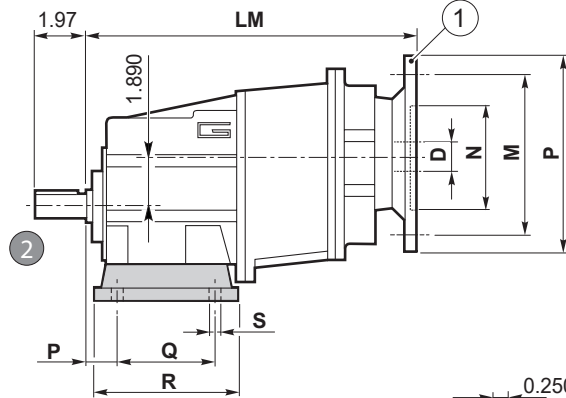
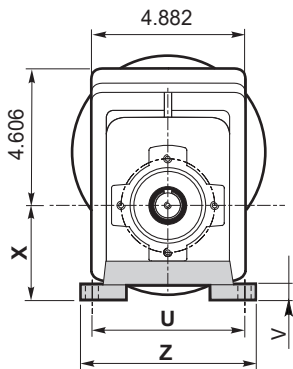
Eje de entrada  
Input shaft

1



CMG 023 H..

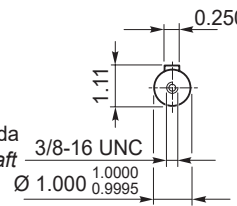
CMGIS 023 H..



23.3 lb

Eje de salida  
Output shaft

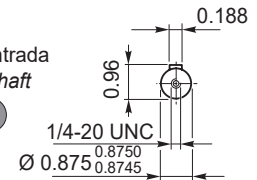
2



22.5 lb

Eje de entrada  
Input shaft

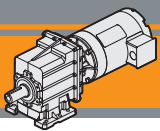
1



Versión H / H Version									Patas / Foot	
CMG CMGIS	P	Q	R	S	U	V	X	Z	Tipo / Type	Peso / Weight [lb]
022 023	0.787	3.346	4.252	0.354	4.528	0.472	2.559	5.472	H65	1.543
	0.709	3.150	4.646	0.354	4.331	0.472	2.953	5.512	H75	2.205
	0.984	3.346	4.724	0.354	4.724	0.472	3.150	5.512	H80	2.425
	0.709	1.968-3.425	4.646	0.354	4.331	0.472	3.346	5.118	H85	2.646
	0.984	5.118	6.063	0.354	4.331	0.472	3.543	5.315	H90	3.307
	0.709	2.362-4.232	5.315	0.433	5.118	0.472	3.937	6.102	H100	3.748

Brida Motor / Motor flange	
1 Dimensiones NEMA NEMA Dimensions	
	56 C 140 TC
N	4.5
M	5.88
P	6.5
D	0.625 0.875
LM 022	8.268
LM 023	10.61

Preferencial / Preferred



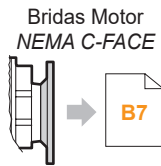
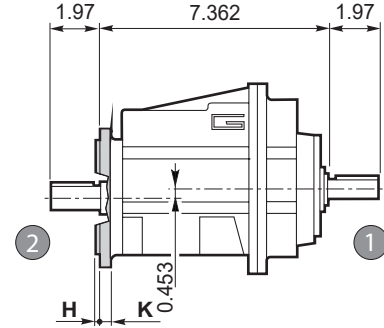
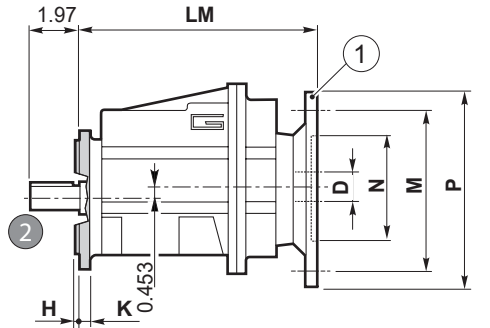
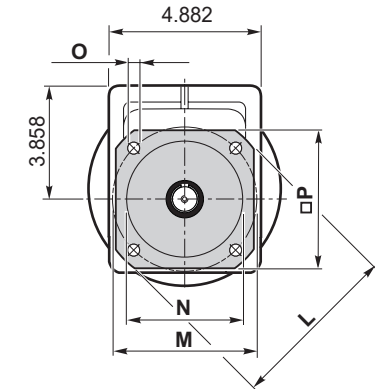
**Dimensiones**

**Dimensions**

**CMG 022 F.. - CMG 023 F..**

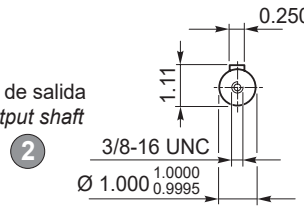
**CMG 022 F..**

**CMGIS 022 F..**



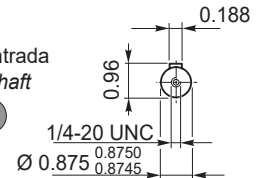
lb  
16.6

Eje de salida  
Output shaft



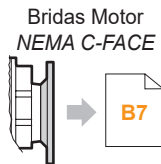
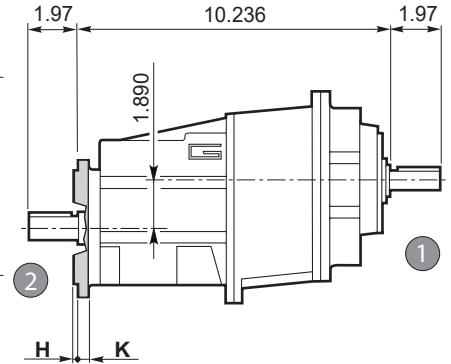
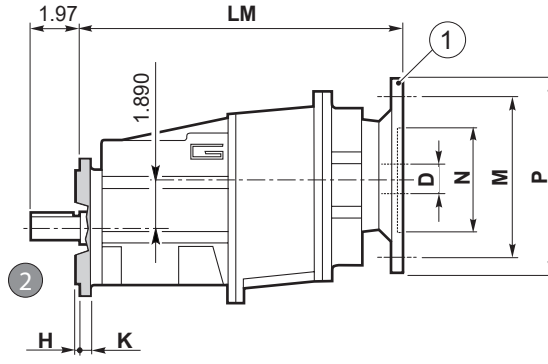
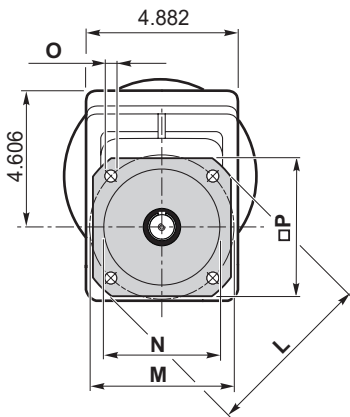
lb  
15.8

Eje de entrada  
Input shaft



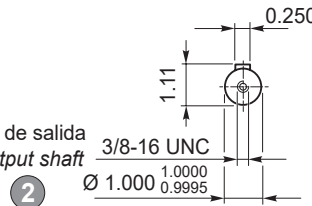
**CMG 023 F..**

**CMGIS 023 F..**



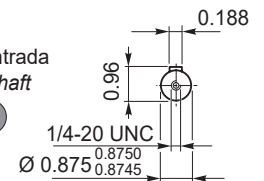
lb  
23.3

Eje de salida  
Output shaft



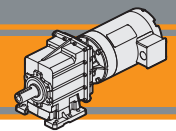
lb  
22.5

Eje de entrada  
Input shaft



Versión F / F Version										
CMG CMGIS	H	K	L	M	N	O	P	Brida / Flange		
								Tipo / Type	Peso / Weight [lb]	
022 023	0.118	0.354	4.724	3.937	3.150	3.1488 3.1476	0.354	4.173	F120	1.102
	0.138	0.354	5.512	4.528	3.740	3.7386 3.7372	0.354	4.528	F140	1.764
	0.138	0.354	6.299	5.118	4.331	4.3296 4.3282	0.354	4.961	F160	2.425
	0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968

Brida Motor / Motor flange		
① Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC
N	4.5	
M	5.88	
P	6.5	
D	0.625	0.875
LM 022	8.268	
LM 023	10.61	



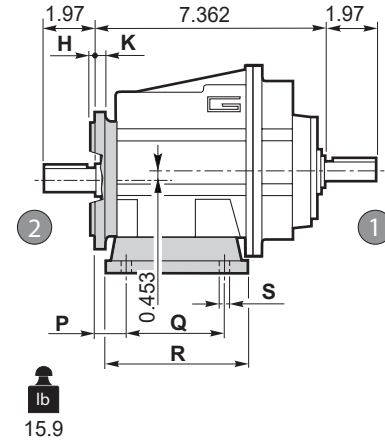
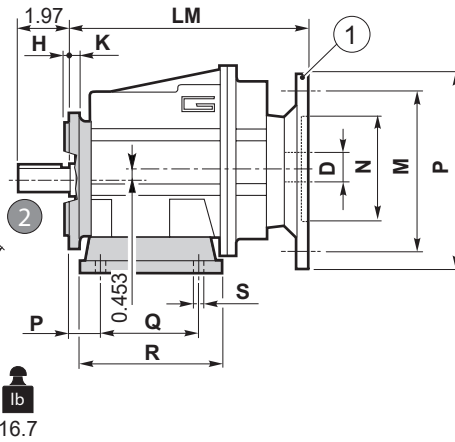
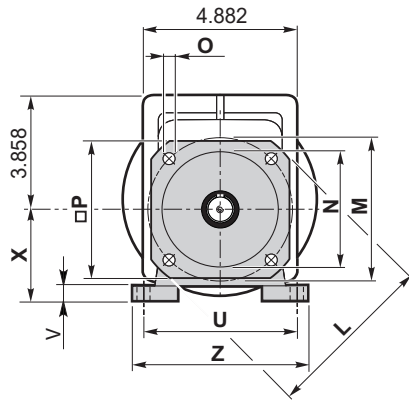
Dimensiones

Dimensions

CMG 022 H../F.. - CMG 023 H../F..

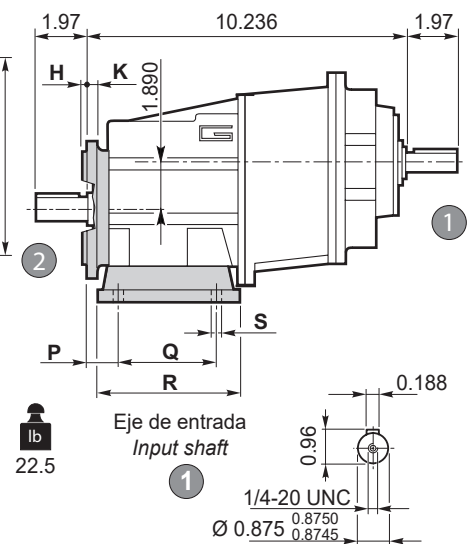
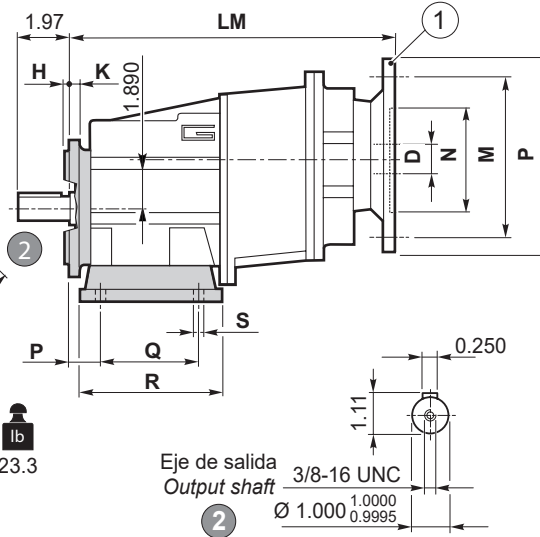
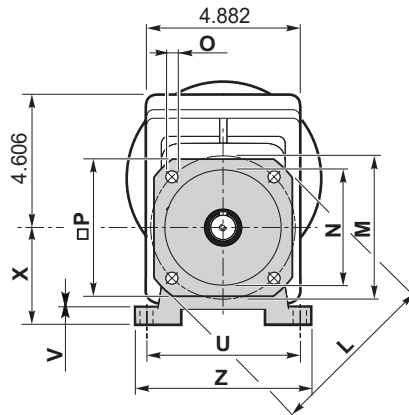
CMG 022 H../F..

CMGIS 022 H../F..

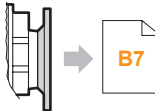


CMG 023 H../F..

CMGIS 023 H../F..



Bridas Motor NEMA C-FACE



CMG CMGIS	Versión F / F Version							Brida / Flange		
	H	K	L	M	N	O	P	Tipo / Type	Peso / Weight [lb]	
022 023	0.118	0.354	4.724	3.937	3.150	3.1488 3.1476	0.354	4.173	F120	1.102
	0.138	0.354	5.512	4.528	3.740	3.7386 3.7372	0.354	4.528	F140	1.764
	0.138	0.354	6.299	5.118	4.331	4.3296 4.3282	0.354	4.961	F160	2.425
	0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968

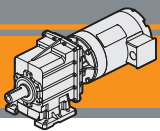
Brida Motor / Motor flange	
1	Dimensiones NEMA NEMA Dimensions
	56 C 140 TC
N	4.5
M	5.88
P	6.5
D	0.625 0.875
LM 022	8.268
LM 023	10.61

CMG CMGIS	Versión H / H Version								Combinaciones posibles H/F Possible combinations H/F					
	P	Q	R	S	U	V	X	Z	Patas / Foot		F120	F140	F160	F200
									Tipo / Type	Peso / Weight [lb]				
022 023	0.787	3.346	4.252	0.354	4.528	0.472	2.559	5.472	H65	1.543	•	•		
	0.709	3.150	4.646	0.354	4.331	0.472	2.953	5.512	H75	2.205	•	•	•	
	0.984	3.346	4.724	0.354	4.724	0.472	3.150	5.512	H80	2.425	•	•	•	
	0.709	1.968-3.425	4.646	0.354	4.331	0.472	3.346	5.118	H85	2.646	•	•	•	
	0.984	5.118	6.063	0.354	4.331	0.472	3.543	5.315	H90	3.307	•	•	•	•
	0.709	2.362-4.232	5.315	0.433	5.118	0.472	3.937	6.102	H100	3.748	•	•	•	•

Preferencial / Preferred

• Combinaciones posibles H/F / Possible combinations H/F

CMG



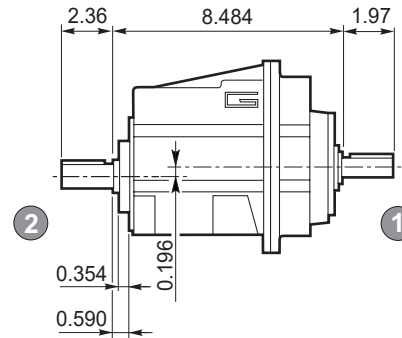
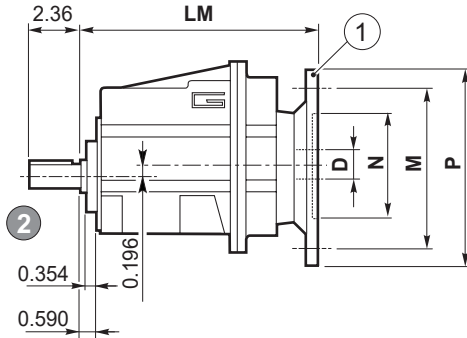
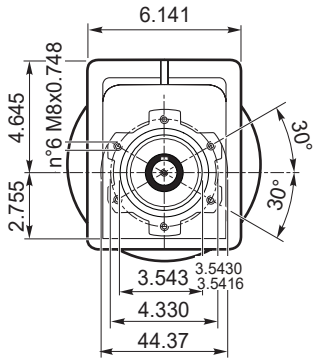
**Dimensiones**

**Dimensions**

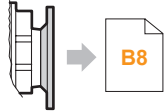
**CMG 032 U - CMG 033 U**

**CMG 032 U**

**CMGIS 032 U**



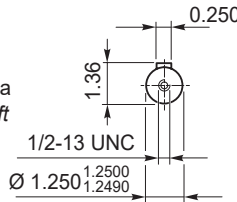
Bridas Motor  
NEMA C-FACE



lb  
24.9

Eje de salida  
Output shaft

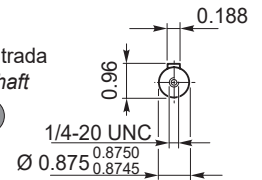
2



lb  
24.7

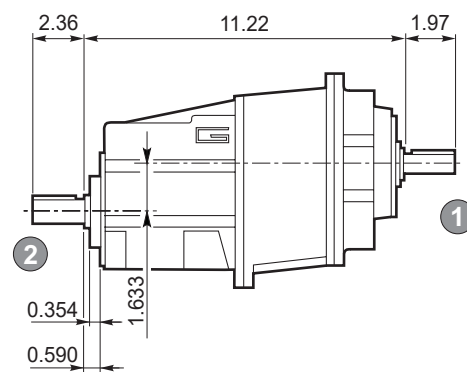
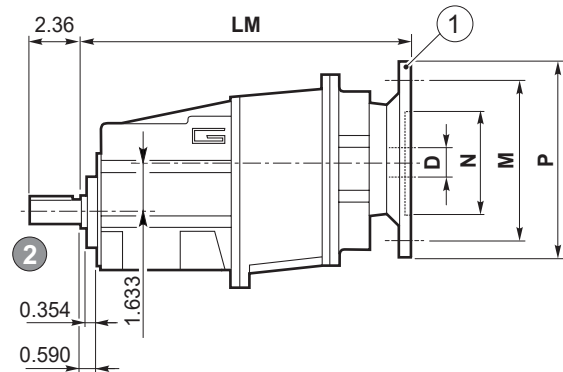
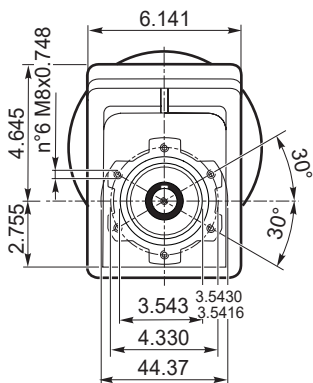
Eje de entrada  
Input shaft

1

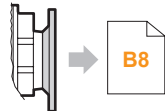


**CMG 033 U**

**CMGIS 033 U**



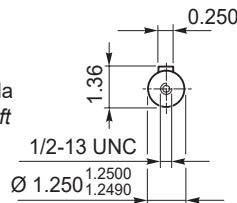
Bridas Motor  
NEMA C-FACE



lb  
30

Eje de salida  
Output shaft

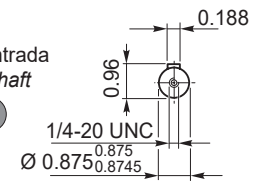
2



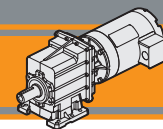
lb  
29.3

Eje de entrada  
Input shaft

1



Brida Motor / Motor flange			
1 Dimensiones NEMA NEMA Dimensions			
	56 C	140 TC	180 TC
N		4.5	4.5
M		5.88	7.25
P		6.5	9
D	0.625	0.875	1.125
LM 032		9.705	9.612
LM 033		12.126	-



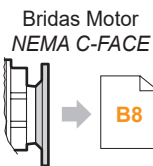
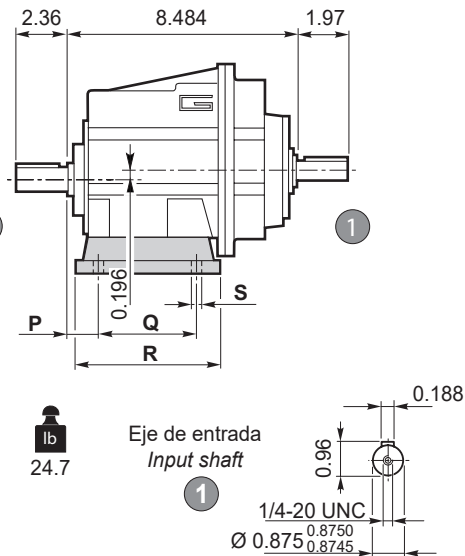
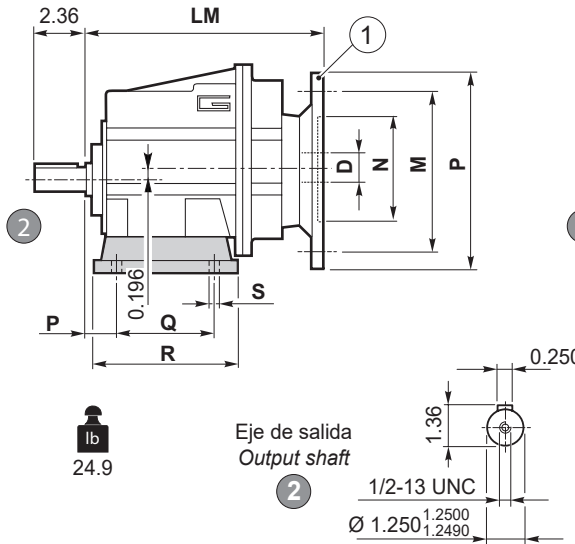
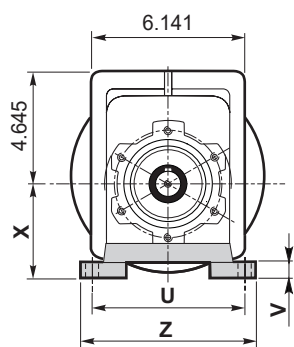
Dimensiones

Dimensions

CMG 032 H.. - CMG 033 H..

CMG 032 H..

CMGIS 032 H..



lb 24.9

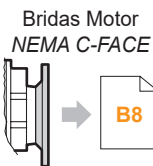
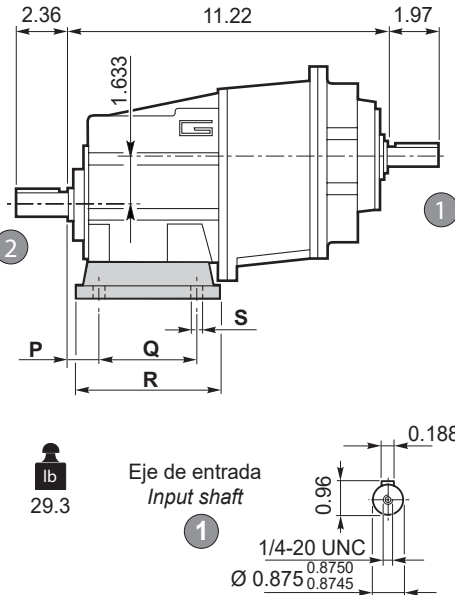
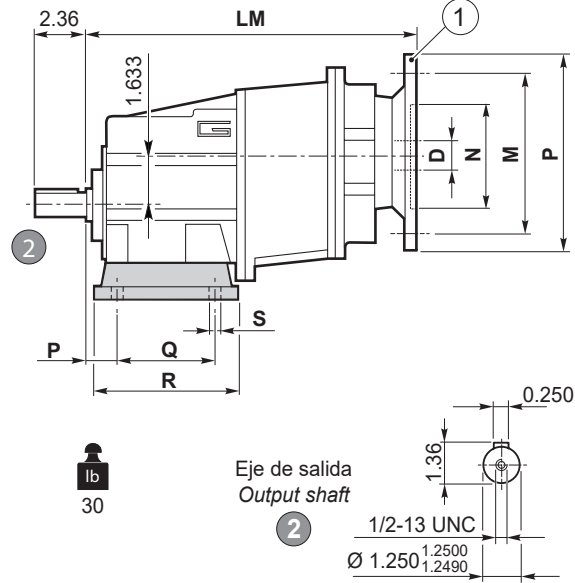
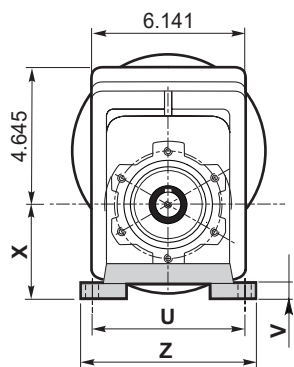
Eje de salida  
Output shaft

lb 24.7

Eje de entrada  
Input shaft

CMG 033 H..

CMGIS 033 H..



lb 30

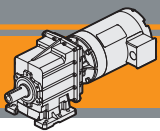
Eje de salida  
Output shaft

lb 29.3

Eje de entrada  
Input shaft

Versión H / H Version										
CMG CMGIS	P	Q	R	S	U	V	X	Z	Patas / Foot	
									Tipo / Type	Peso / Weight [lb]
032 033	1.181	4.134	5.354	0.551	6.299	0.551	3.740	7.638	H95	3.307
	1.181	3.937	5.905	0.433	5.905	0.551	4.331	7.283	H110	4.189
	0.709	2.756			6.299					
	1.181	6.496	7.677	0.551	5.315	0.551	4.528	6.693	H115	4.850
	1.378	4.331	6.299	0.551	6.693	0.551	4.724	8.268	H120	5.732
	0.768	5.885	7.244	0.551	7.086	0.709	5.118	8.425	H130	6.390

Brida Motor / Motor flange			
1	Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC	180 TC
N	4.5		4.5
M	5.88		7.25
P	6.5		9
D	0.625	0.875	1.125
LM 032	9.705		9.612
LM 033	12.126		-



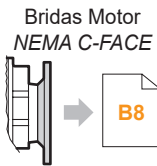
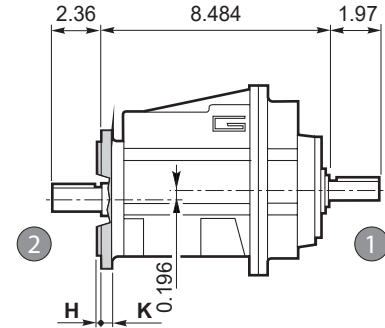
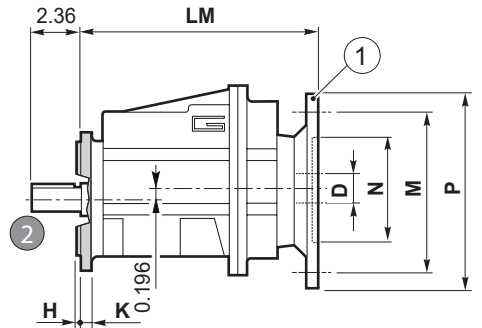
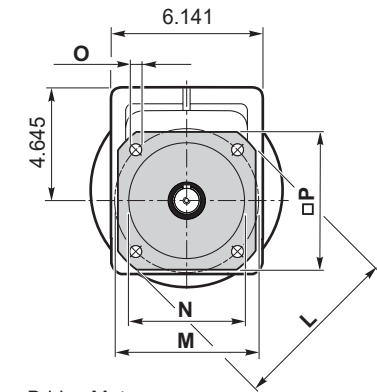
**Dimensiones**

**Dimensions**

**CMG 032 F.. - CMG 033 F..**

**CMG 032 F..**

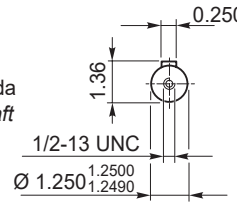
**CMGIS 032 F..**



**lb**  
24.9

Eje de salida  
Output shaft

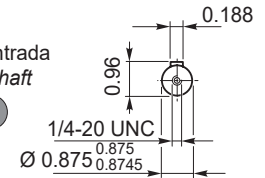
2



**lb**  
24.7

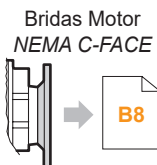
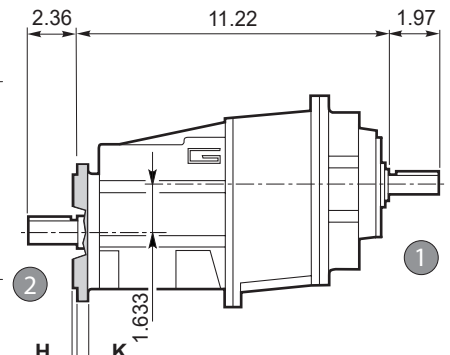
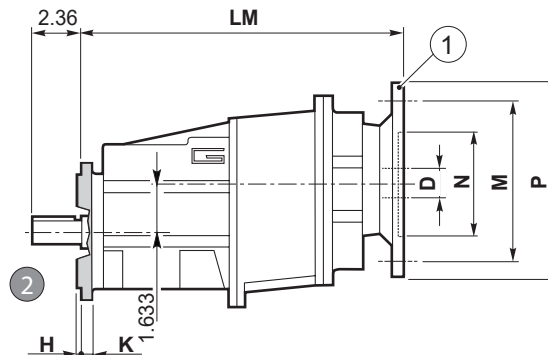
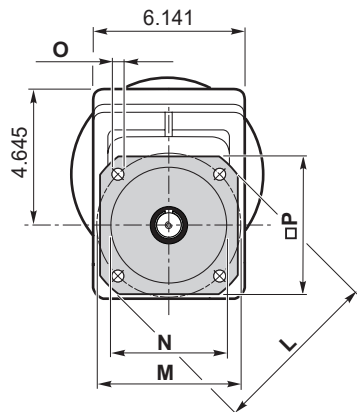
Eje de entrada  
Input shaft

1



**CMG 033 F..**

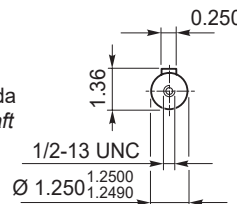
**CMGIS 033 F..**



**lb**  
30

Eje de salida  
Output shaft

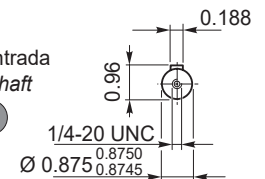
2



**lb**  
29.3

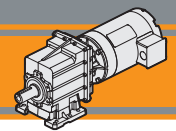
Eje de entrada  
Input shaft

1



Versión F / F Version										
CMG CMGIS	H	K	L	M	N	O	P	Brida / Flange		
								Tipo / Type	Peso / Weight [lb]	
032 033	0.138	0.433	6.299	5.118	4.331	4.3296 4.3282	0.354	5.512	F160	2.205
	0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968
	0.157	0.512	9.842	8.465	7.087	7.0853 7.0837	0.551	8.465	F250	6.393

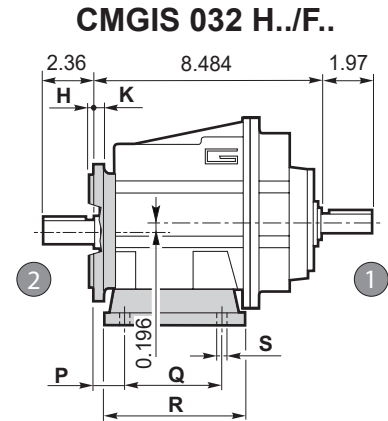
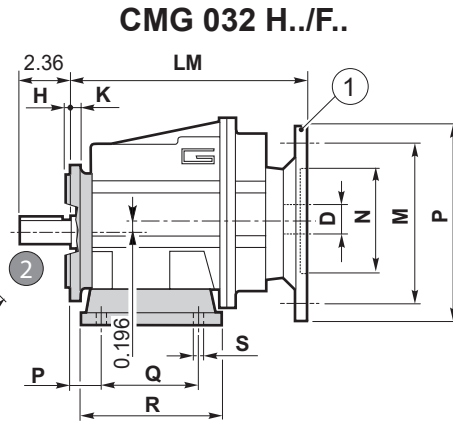
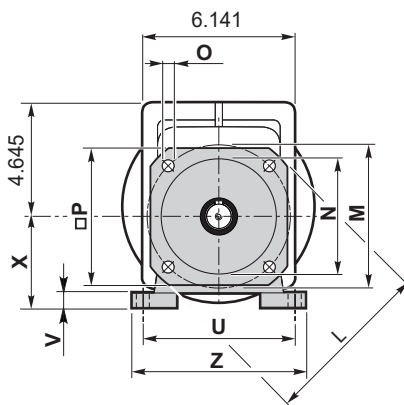
Brida Motor / Motor flange		
1	Dimensiones NEMA NEMA Dimensions	
	56 C	140 TC
N	4.5	4.5
M	5.88	7.25
P	6.5	9
D	0.625	0.875
LM 032	9.705	9.612
LM 033	12.126	



Dimensiones

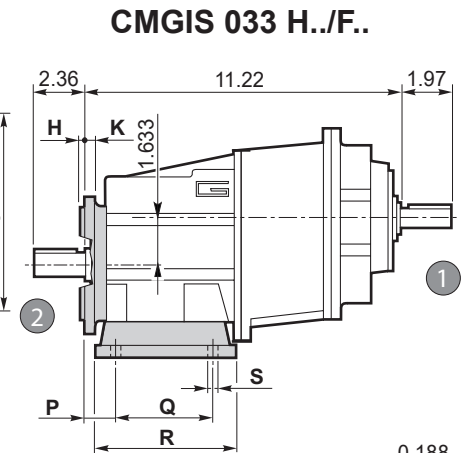
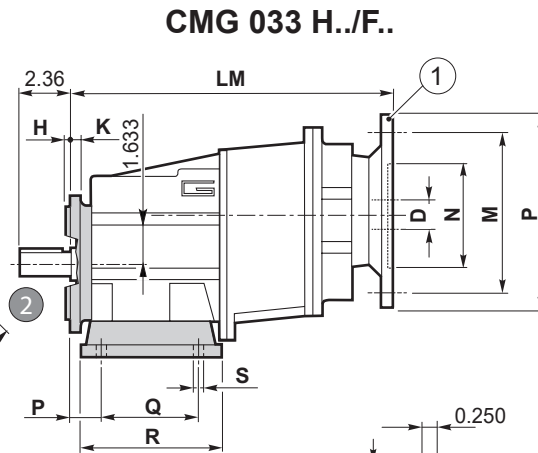
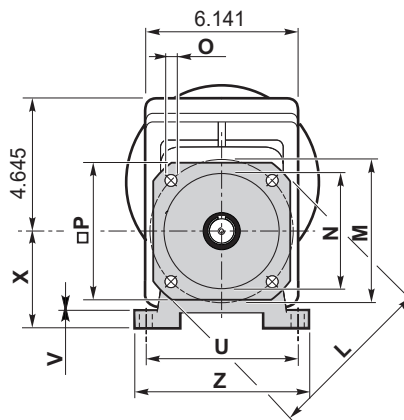
Dimensions

CMG 032 H../F.. - CMG 033 H../F..



lb  
24.9

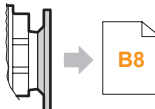
lb  
24.7



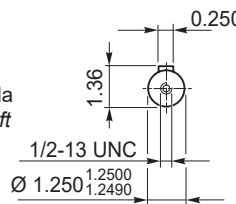
lb  
30

lb  
29.3

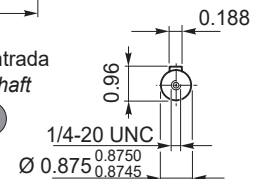
Bridas Motor  
NEMA C-FACE



Eje de salida  
Output shaft  
2



Eje de entrada  
Input shaft  
1



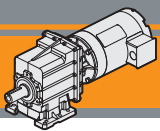
		Versión F / F Version							Brida / Flange		
CMG CMGIS		H	K	L	M	N	O	P	Brida / Flange		
									Tipo / Type	Peso / Weight [lb]	
032 033		0.138	0.433	6.299	5.118	4.331	4.3296 4.3282	0.354	5.512	F160	2.205
		0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968
		0.157	0.512	9.842	8.465	7.087	7.0853 7.0837	0.551	8.465	F250	6.393

Brida Motor / Motor flange			
1	Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC	180 TC
N	4.5		4.5
M	5.88		7.25
P	6.5		9
D	0.625	0.875	1.125
LM 032		9.705	9.612
LM 033		12.126	-

		Versión H / H Version								Combinaciones posibles H/F Possible combinations H/F				
CMG CMGIS		P	Q	R	S	U	V	X	Z	Patás / Foot		F160	F200	F250
										Tipo / Type	Peso / Weight [lb]			
032 033		1.181	4.134	5.354	0.551	6.299	0.551	3.740	7.638	H95	3.307	•	•	
		1.181	3.937	5.905	0.433	5.905	0.551	4.331	7.283	H110	4.189	•	•	
		0.709	2.756			6.299								
		1.181	6.496	7.677	0.551	5.315	0.551	4.528	6.693	H115	4.850	•	•	•
		1.378	4.331	6.299	0.551	6.693	0.551	4.724	8.268	H120	5.732	•	•	•
		0.768	5.885	7.244	0.551	7.086	0.709	5.118	8.425	H130	6.390	•	•	•

Preferencial / Preferred

• Combinaciones posibles H/F / Possible combinations H/F



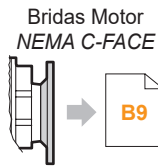
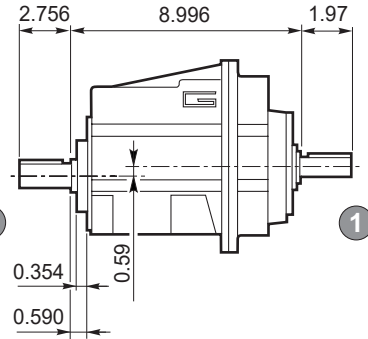
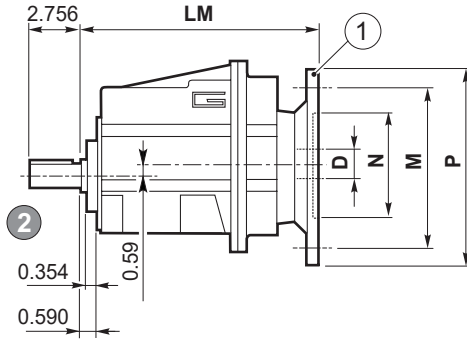
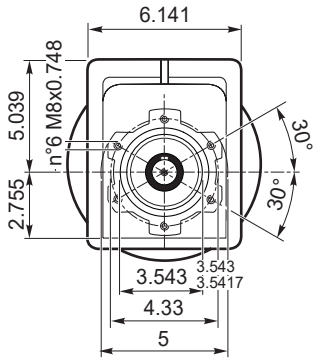
**Dimensiones**

**Dimensions**

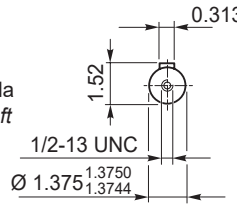
**CMG 042 U - CMG 043 U**

**CMG 042 U**

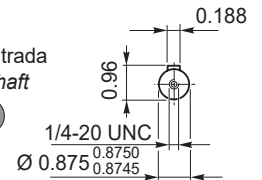
**CMGIS 042 U**



Eje de salida  
Output shaft

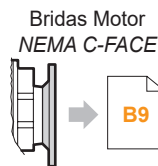
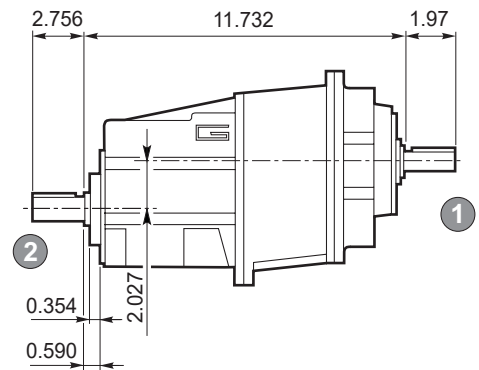
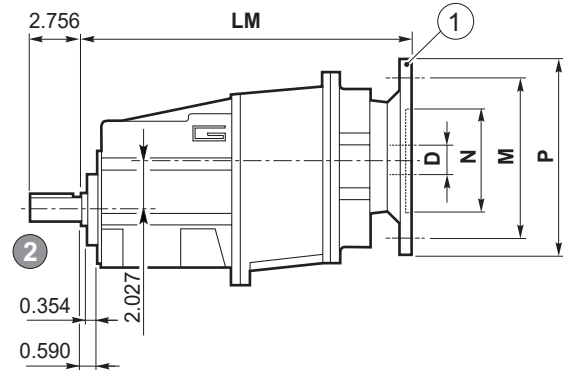
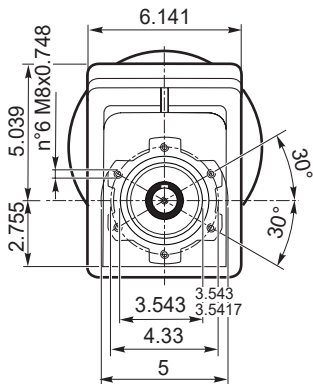


Eje de entrada  
Input shaft

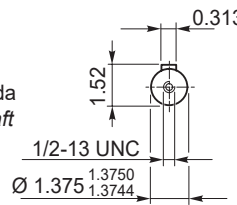


**CMG 043 U**

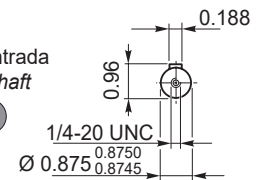
**CMGIS 043 U**



Eje de salida  
Output shaft

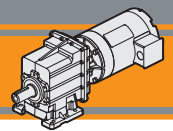


Eje de entrada  
Input shaft



Brida Motor / Motor flange			
① Dimensiones NEMA NEMA Dimensions			
	56 C	140 TC	180 TC
N		4.5	8.5
M		5.88	7.25
P		6.5	9
D	0.625	0.875	1.125
LM 042		10.217	10.124
LM 043		12.638	-





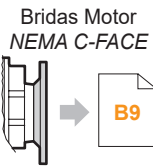
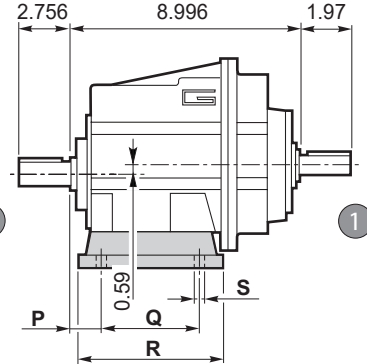
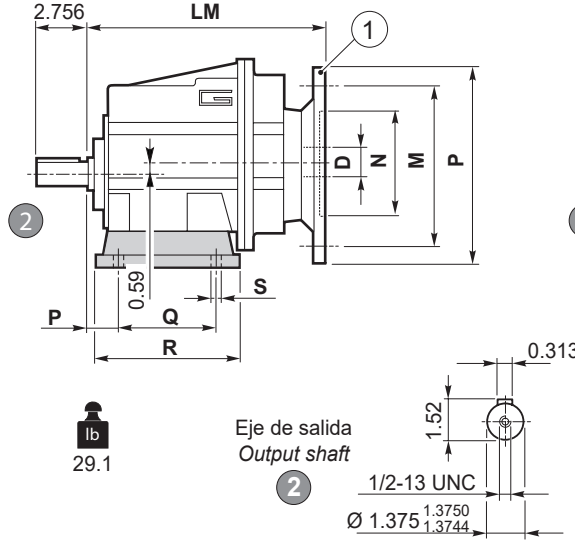
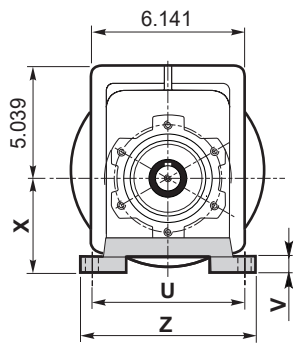
Dimensiones

Dimensions

CMG 042 H.. - CMG 043 H..

CMG 042 H..

CMGIS 042 H..



lb  
29.1

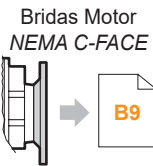
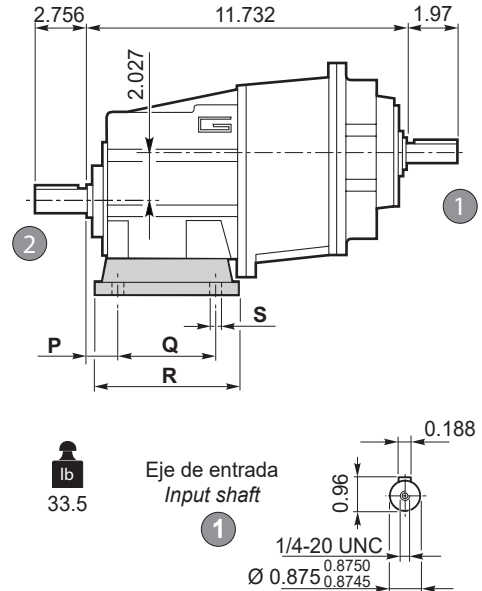
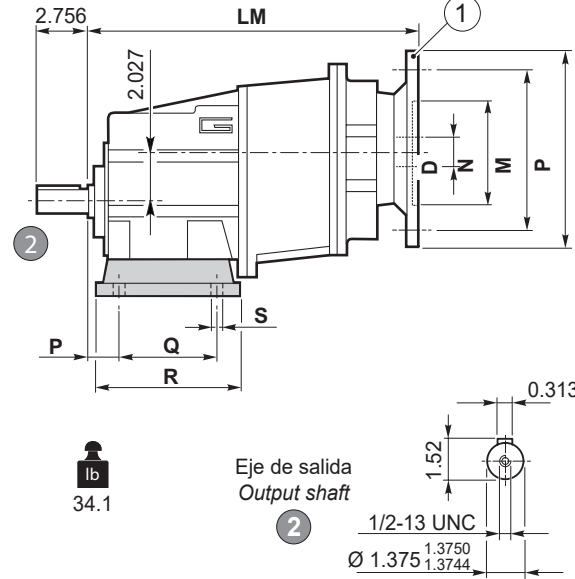
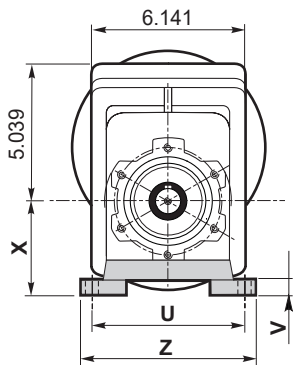
Eje de salida  
Output shaft

lb  
28.8

Eje de entrada  
Input shaft

CMG 043 H..

CMGIS 043 H..



lb  
34.1

Eje de salida  
Output shaft

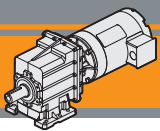
lb  
33.5

Eje de entrada  
Input shaft

Versión H / H Version										
CMG CMGIS	P	Q	R	S	U	V	X	Z	Patas / Foot	
									Tipo / Type	Peso / Weight [lb]
042 043	1.181	4.134	5.354	0.551	6.299	0.551	3.740	7.638	H95	3.307
	1.181	3.937	5.905	0.433	5.905	0.551	4.331	7.283	H110	4.189
	0.709	2.756			6.299					
	1.181	6.496	7.677	0.551	5.315	0.551	4.528	6.693	H115	4.850
	1.378	4.331	6.299	0.551	6.693	0.551	4.724	8.268	H120	5.732
0.768	5.885	7.244	0.551	7.086	0.709	5.118	8.425	H130	6.390	

Brida Motor / Motor flange			
①	Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC	180 TC
N	4.5	8.5	
M	5.88	7.25	
P	6.5	9	
D	0.625	0.875	1.125
LM 042	10.217	10.124	
LM 043	12.638	-	

Preferencial / Preferred



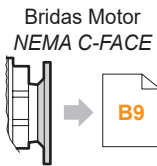
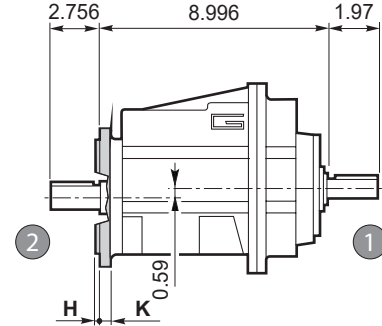
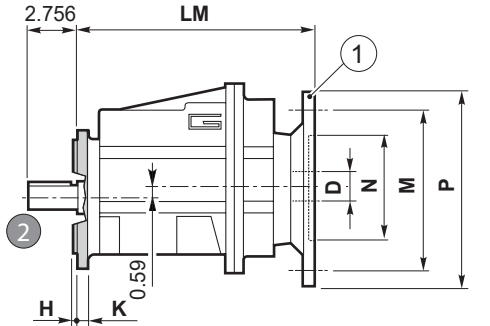
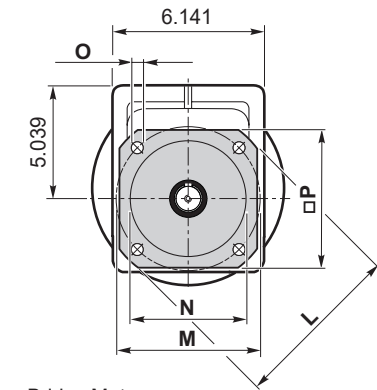
**Dimensiones**

**Dimensions**

**CMG 042 F.. - CMG 043 F..**

**CMG 042 F..**

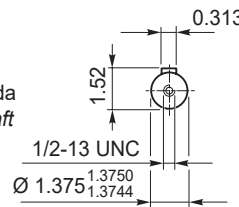
**CMGIS 042 F..**



lb  
29.1

Eje de salida  
Output shaft

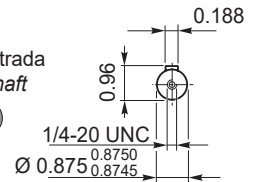
2



lb  
28.8

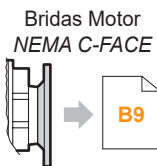
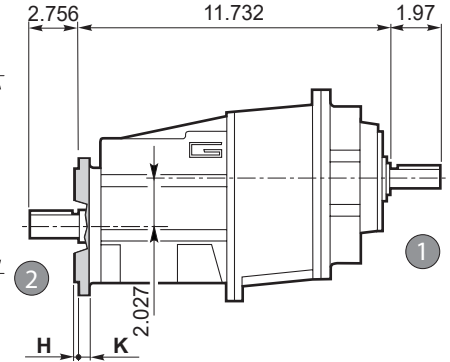
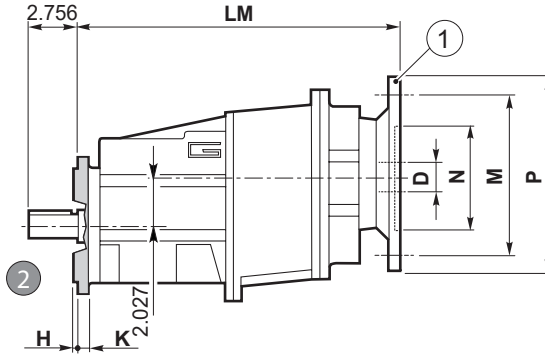
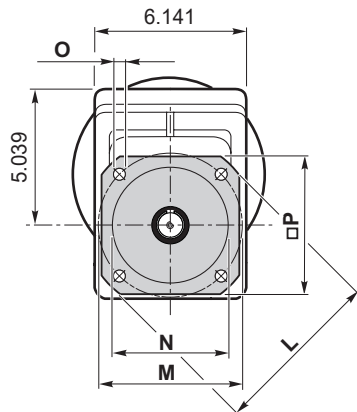
Eje de entrada  
Input shaft

1



**CMG 043 F..**

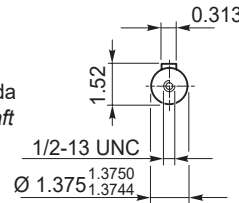
**CMGIS 043 F..**



lb  
34.1

Eje de salida  
Output shaft

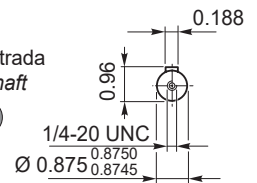
2



lb  
33.5

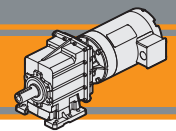
Eje de entrada  
Input shaft

1



		Versión F / F Version								
CMG CMGIS	H	K	L	M	N	O	P	Brida / Flange		
								Tipo / Type	Peso / Weight [lb]	
042 043	0.138	0.433	6.299	5.118	4.331	4.3296 4.3282	0.354	5.512	F160	2.205
	0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968
	0.157	0.512	9.842	8.465	7.087	7.0853 7.0837	0.551	8.465	F250	6.393

Brida Motor / Motor flange			
1	Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC	180 TC
N	4.5		8.5
M	5.88		7.25
P	6.5		9
D	0.625	0.875	1.125
LM 042	10.217		10.124
LM 043	12.638		-



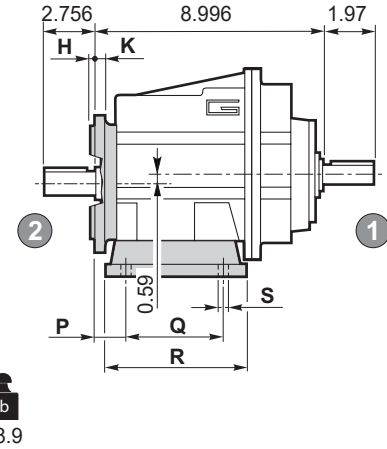
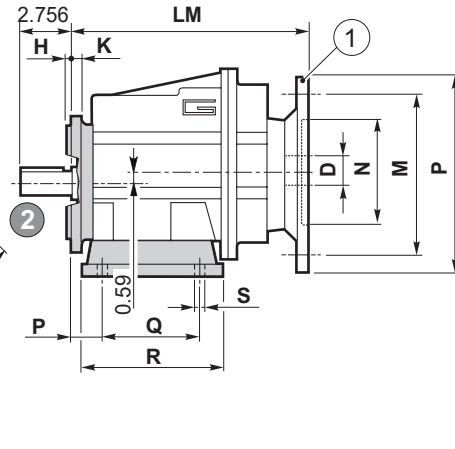
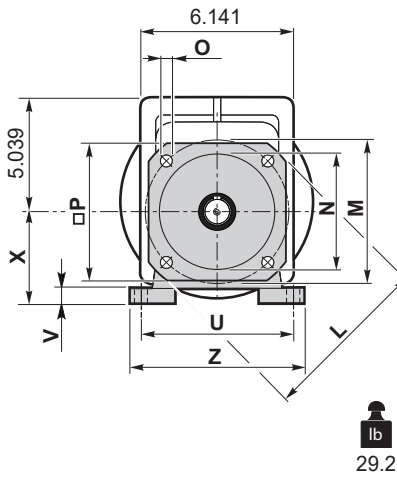
Dimensiones

Dimensions

CMG 042 H../F.. - CMG 043 H../F..

CMG 042 H../F..

CMGIS 042 H../F..

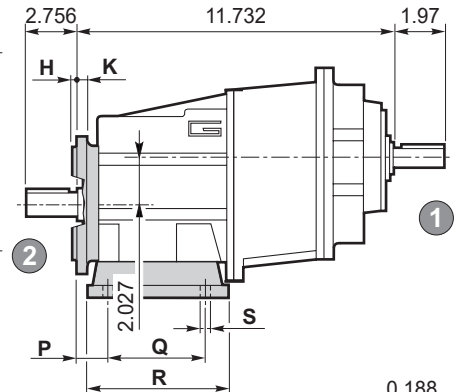
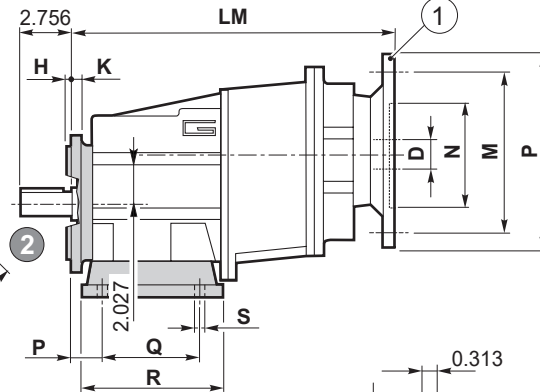
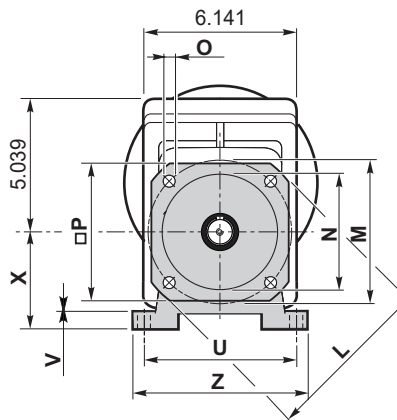


lb  
29.2

lb  
28.9

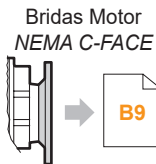
CMG 043 H../F..

CMGIS 043 H../F..

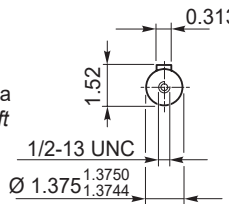


lb  
34.2

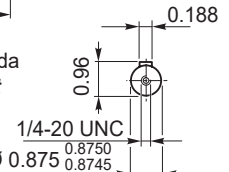
lb  
33.6



Eje de salida  
Output shaft  
2



Eje de entrada  
Input shaft  
1



		Versión F / F Version							Brida / Flange		
CMG	CMGIS	H	K	L	M	N	O	P	Tipo / Type	Peso / Weight [lb]	
042	043	0.138	0.433	6.299	5.118	4.331	4.3296 4.3282	0.354	5.512	F160	2.205
		0.138	0.433	7.874	6.496	5.118	5.1163 5.1147	0.433	6.496	F200	3.968
		0.157	0.512	9.842	8.465	7.087	7.0853 7.0837	0.551	8.465	F250	6.393

Brida Motor / Motor flange			
1 Dimensiones NEMA NEMA Dimensions			
	56 C	140 TC	180 TC
N	4.5		8.5
M	5.88		7.25
P	6.5		9
D	0.625	0.875	1.125
LM 042		10.217	10.124
LM 043		12.638	-

		Versión H / H Version								Combinaciones posibles H/F Possible combinations H/F				
CMG	CMGIS	P	Q	R	S	U	V	X	Z	Patás / Foot		F160	F200	F250
										Tipo / Type	Peso / Weight [lb]			
042	043	1.181	4.134	5.354	0.551	6.299	0.551	3.740	7.638	H95	3.307	•	•	
		1.181	3.937	5.905	0.433	5.905	0.551	4.331	7.283	H110	4.189	•	•	
		0.709	2.756			6.299						•	•	
		1.181	6.496	7.677	0.551	5.315	0.551	4.528	6.693	H115	4.850	•	•	•
		1.378	4.331	6.299	0.551	6.693	0.551	4.724	8.268	H120	5.732	•	•	•
		0.768	5.885	7.244	0.551	7.086	0.709	5.118	8.425	H130	6.390	•	•	•

Preferencial / Preferred

• Combinaciones posibles H/F / Possible combinations H/F



**TRANSTECNO**<sup>®</sup>  
the modular gearmotor

**CMB**



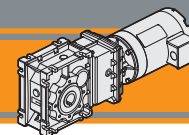
**60Hz**

Motorreductores de ejes ortogonales  
**Helical bevel gearmotors**

**Nema**



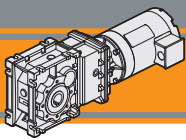




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Características técnicas	<i>Technical features</i>	<b>C2</b>
Clasificación	<i>Classification</i>	<b>C2</b>
Sentidos de rotación	<i>Direction of rotation</i>	<b>C3</b>
Nomenclatura	<i>Symbols</i>	<b>C3</b>
Lubricación	<i>Lubrication</i>	<b>C4</b>
Cargas radiales	<i>Radial loads</i>	<b>C4</b>
Esquema Intercambiable CMB - CM	<i>Interchangeability CMB - CM</i>	<b>C5</b>
Datos técnicos	<i>Technical data</i>	<b>C6</b>
Dimensiones	<i>Dimensions</i>	<b>C13</b>
Accesorios	<i>Accessories</i>	<b>C17</b>

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# CMB

## Motorreductores de ejes ortogonales Helical bevel gearmotors

### Nema 60 Hz

### Características técnicas

Los reductores ortogonales de engranajes helicoidales serie CMB se caracterizan por un alto grado de modularidad, de hecho, fueron desarrollados con una carcasa completamente intercambiable con la de los reductores de tornillo sinfin de la serie CM. Por lo tanto, se configuran de acuerdo con las necesidades de la aplicación: con brida de salida, eje de salida, brazo de reacción.

Características comunes a toda la serie:

- Carcasa en aluminio en los tamaños.
- Engranajes siempre rectificadas.
- Lubricación permanente con aceite sintético de larga vida..

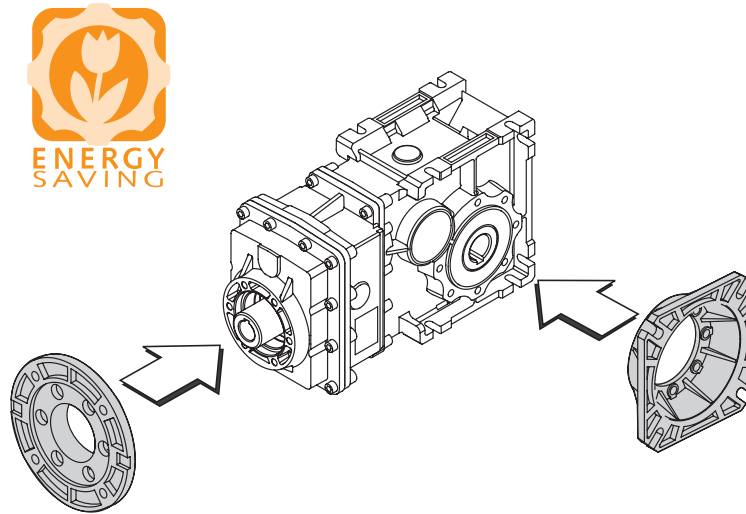
### Technical features

The high degree of modularity of CMB helical bevel gearbox allows it to be completely interchangeable with CM wormgearboxes.

With this feature, output flanges, output shafts and torque arms can be interchanged as required.

Common features of all CMB range are:

- Die-cast aluminum housing.
- Ground helical gears.
- Permanently filled with synthetic oil for long life lubrication.

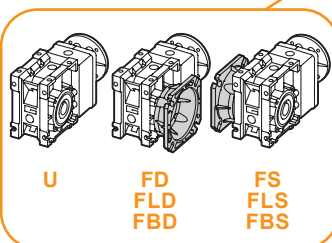


### Clasificación

### Classification

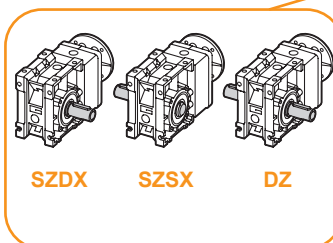
REDUCTOR / GEARBOX									
CMB	63	3	U	9.81	D1.125	56C	SZDX	BRSX	90°
Tipo Type	Tamaño Size	Etapas Stages	Versión Version	Relación de reducción Ratio	Eje de salida Output shaft		Eje de salida Output shaft	Brazo de reacción Torque arm	Ángulo Angle
<b>CMB</b> 	<b>40</b> <b>50</b> <b>63</b> <b>90</b>	<b>2</b> <b>3</b>	<b>U</b> <b>FD</b> <b>FS</b> <b>FBD</b> <b>FBS</b> <b>FLD</b> <b>FLS</b>	ver tablas see tables	ver tablas see tables	<b>56C</b> <b>140TC</b> <b>180TC</b> <b>210TC</b>	<b>SZDX</b> <b>SZSX</b> <b>DZ</b>	<b>BRSX</b> <b>BRDX</b>	<b>0°</b> <b>90°</b> <b>180°</b> <b>270°</b>

Relación de reducción  
Gearbox Version



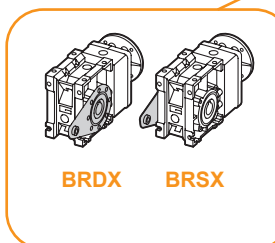
F....D = Lado derecho / Right side  
F....S = Lado izquierdo / Left side

Eje de salida  
Output shaft



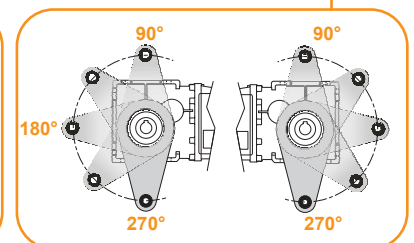
SZDX = Flecha sencilla lado derecho  
Single shaft right side  
DZ = Flecha doble / Double shaft  
SZSX = Flecha sencilla lado izquierdo  
Single shaft left side

Brazo de reacción  
Torque arm



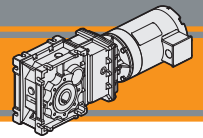
BRDX = Lado derecho / Right side  
BRSX = Lado izquierdo / Left side

Posición del Brazo  
Torque arm position \*



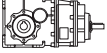
\* NOTA: El brazo de reacción se suministra desmontado.  
NOTE: the torque arm will be supplied not assembled.



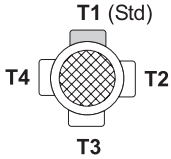


Clasificación

Classification

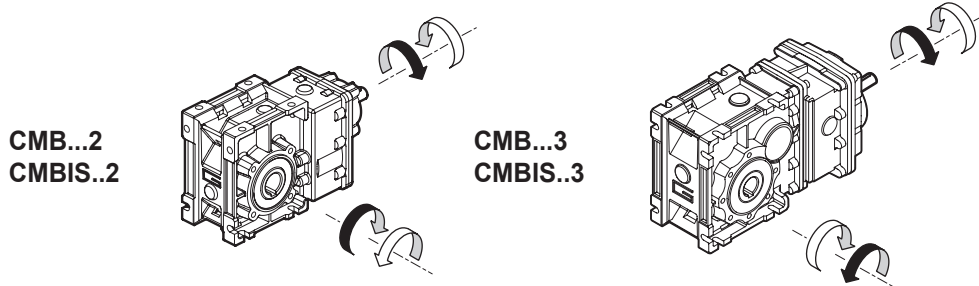
REDUCTOR / GEARBOX								
CMB	63	3	U	9.81	D1.125	SZDX	BRSX	90°
Tipo Type	Tamaño Size	Etapas Stages	Versión Version	Relación de reducción Ratio	Eje de salida Output shaft	Eje de salida Output shaft	Brazo de reacción Torque arm	Ángulo Angle
<b>CMBIS</b> 	<b>40</b> <b>50</b> <b>63</b> <b>90</b>	<b>2</b> <b>3</b>	<b>U</b> <b>FD</b> <b>FS</b> <b>FBD</b> <b>FBS</b> <b>FLD</b> <b>FLS</b>	ver tablas see tables	ver tablas see tables	<b>SZDX</b> <b>SZSX</b> <b>DZ</b>	<b>BRSX</b> <b>BRDX</b>	<b>0°</b> <b>90°</b> <b>180°</b> <b>270°</b>

CMB

MOTOR / MOTOR						
1 hp / 0.75 kW	4p	3ph	220/440V	60Hz	T1	
Potencia Power	Polos Poles	Fases Phases	Tensión Voltage	Frecuencia Frequency	Posición caja de bornes Terminal box pos.	
véase tablas see tables	<b>2p</b> <b>4p</b> <b>6p</b> <b>8p</b>	<b>1ph</b> <b>3ph</b>	<b>230V</b> <b>230/400V</b>  <b>220/440V</b>	<b>50Hz</b> <b>60Hz</b>		

Sentido de rotación

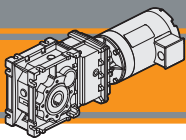
Direction of rotation



Nomenclatura

Symbols

- $n_1$  [rpm] Velocidad de entrada / *Input speed*
- $n_2$  [rpm] Velocidad de salida / *Output speed*
- $i$  Relación de reducción / *Ratio*
- $P_1$  [hp] Potencia en la entrada / *Input power*
- $M_2$  [lb·in] Par en la salida en función de  $P_1$  / *Output torque referred to  $P_1$*
- $P_{n1}$  [hp] Potencia nominal en la entrada / *Nominal input power*
- $M_{n2}$  [lb·in] Par nominal en la salida en función de  $P_{n1}$  / *Nominal output torque referred to  $P_{n1}$*
- $sf$  Rendimiento dinámico / *Service factor*
- $R_1$  [lb] Carga radial permitida a la entrada / *Permitted input radial load*
- $A_1$  [lb] Carga axial permitida a la entrada / *Permitted input axial load*
- $R_2$  [lb] Carga radial admisible en la salida / *Maximum output radial load*
- $A_2$  [lb] Carga axial admisible en la salida / *Maximum output axial load*



**Lubricación**

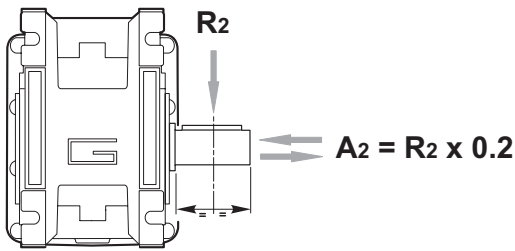
Todos los engranajes en los tamaños 402, 502, 633 y 903 se suministran con lubricante sintético, viscosidad 320, por lo que se pueden instalar en cualquier posición de montaje y no requieren mantenimiento.

**Lubrication**

*Permanently filled with synthetic oil for long-life lubrication (viscosity grade 320) makes it possible to use CMB gearboxes in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*

**Cargas radiales**

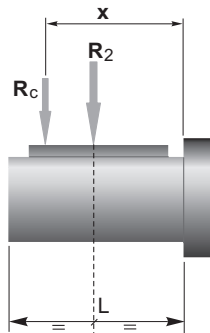
**Radial loads**



n <sub>2</sub> [rpm]	R <sub>2</sub> [lb]			
	CMB 402	CMB 502	CMB 633	CMB 903
400	204	251	413	603
300	224	276	454	664
200	256	316	520	760
170	271	334	549	802
140	318	392	585	856
100	356	438	655	1053
90	368	454	747	1091
60	460	560	855	1249
40	567	681	1010	1487
30	625	749	1160	1695
20	715	858	1328	1940
15	787	944	1461	2136
10	787	944	1461	2136

Cuando la carga radial no se aplica en el punto medio del eje, es necesario calcular la carga efectiva a través la siguiente fórmula:

*When the radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*

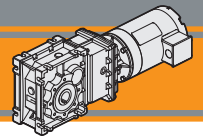


	CMB 402	CMB 502	CMB 633	CMB 903
<b>a</b>	3.386	4.094	4.646	6.181
<b>b</b>	2.598	3.110	3.661	4.606
<b>R<sub>2MAX</sub></b>	787	944	1461	2136

$$R_c = \frac{R_2 \cdot a}{(b + x)} \leq R_{2MAX}$$

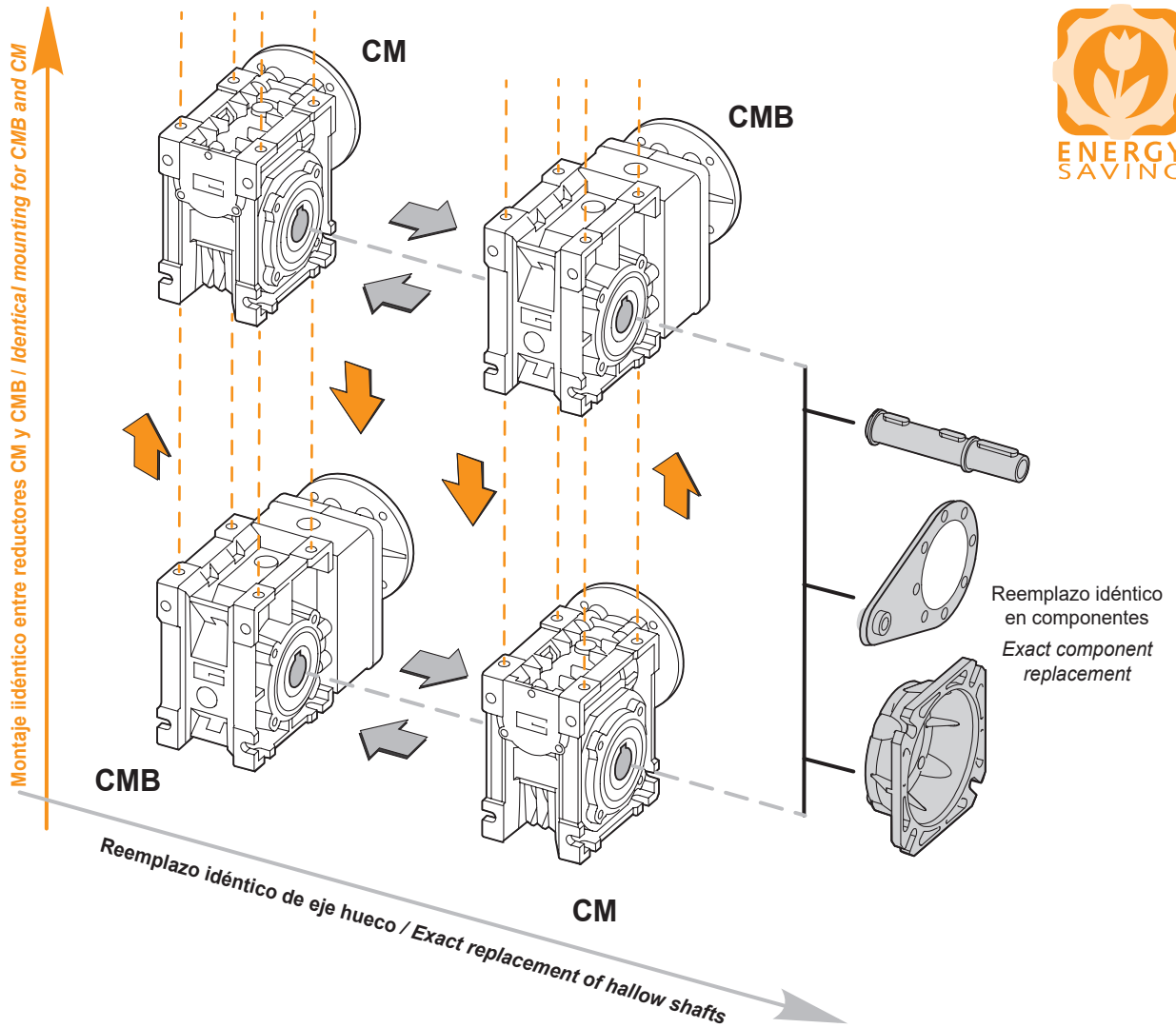
$$R \leq R_c$$

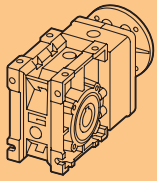
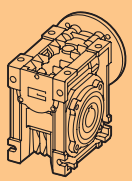








a, b = valores dados en la tabla  
a, b = values given in the table



Esquema Intercambiable CMB - CM

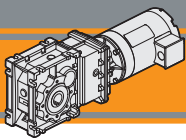
Interchangeability CMB - CM



CMB	CM
	
 <b>CMB 402</b>	<b>CM 040</b> 
 <b>CMB 502</b>	<b>CM 050</b> 
 <b>CMB 633</b>	<b>CM 063</b> 
 <b>CMB 903</b>	<b>CM 090</b> 

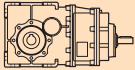
**CMB:** Reductores ejes Ortogonales  
Helical Bevel Gearboxes  
**CM:** Reductores sinfin Corona  
Wormgearboxes

CMB



**Datos técnicos**

**Technical data**

	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm		
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters 56 C
<b>CMBIS 402</b>					
	6.18	354	283	1.69	
	7.49	354	234	1.40	
	9.2	354	190	1.14	
	11.83	398	148	0.99	
	12.48	398	140	0.94	
	14.83	398	118	0.79	
	17.63	398	99.3	0.67	
	18.6	487	94.1	0.77	
	22.33	487	78.4	0.64	
	23.91	487	73.2	0.60	
	28.89	575	60.6	0.59	
	30.84	575	56.7	0.55	
	33.57	575	52.1	0.51	
	35.63	575	49.1	0.48	
	42.75	575	40.9	0.40	
	55.31	575	31.6	0.31	
	59.06	575	29.6	0.29	
	64.29	575	27.2	0.26	
	72.50	575	24.1	0.23	

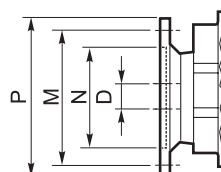
<b>CMBIS 502</b>					
	6.18	619	283	2.96	
	7.49	619	234	2.44	
	9.20	619	190	1.99	
	11.83	796	148	1.99	
	12.48	796	140	1.88	
	14.83	796	118	1.59	
	17.63	796	99.3	1.33	
	18.60	973	94.1	1.55	
	22.33	973	78.4	1.29	
	23.91	973	73.2	1.20	
	28.89	1106	60.6	1.13	
	30.84	1106	56.7	1.06	
	33.57	1106	52.1	0.97	
	35.63	1106	49.1	0.92	
	42.75	1106	40.9	0.76	
	55.31	1106	31.6	0.59	
	59.06	1106	29.6	0.55	
	64.29	1106	27.2	0.51	
	72.50	1106	24.1	0.45	

NOTA Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

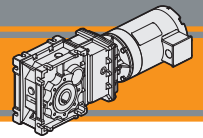
NOTE Highlighted areas indicate the motor input flange available on each gearbox size.

Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas C9 a la C15.

Before selecting any gearbox, please read the performance values shown in the tables on page C9 to C15.

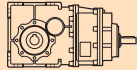


Dimensiones NEMA/ NEMA Dimensions	
	<b>56 C</b>
<b>N</b>	4.5
<b>M</b>	5.88
<b>P</b>	6.5
<b>D</b>	0.625



Datos técnicos

Technical data

	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm			
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters	
					56 C	140 TC
<b>CMBIS 633</b>						
	6.58	1327	266	5.95		
	7.99	1327	219	4.91		
	9.81	1327	178	4.00		
	10.44	1327	168	3.76		
	12.53	1327	140	3.13		
	13.31	1327	131	2.95		
	15.81	1504	111	2.81		
	17.77	1947	98.5	3.24		
	21.56	1947	81.2	2.67		
	26.48	1947	66.1	2.17		
	28.17	1947	62.1	2.04		
	33.81	1947	51.8	1.70		
	35.92	1947	48.7	1.60		
	38.88	2212	45.0	1.68		
	47.16	2212	37.1	1.39		
	57.93	2212	30.2	1.13		
	61.63	2212	28.4	1.06		
	73.96	2212	23.7	0.88		*
	78.58	2212	22.3	0.83		*
	93.33	2212	18.8	0.70		*
	140.52	2212	12.5	0.47		*
	181.81	2212	9.6	0.36		*
	211.31	2212	8.3	0.31		*
	238.31	2212	7.3	0.27		*

CMB

NOTA

Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

NOTE

Highlighted areas indicate the motor input flange available on each gearbox size.



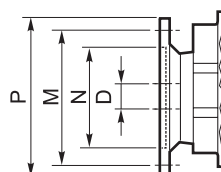
\* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico



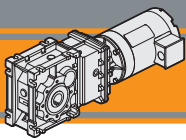
\* = The service factor (sf) has to be selected depending on application: please contact our Technical Department.

Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas C9 a la C15.

Before selecting any gearbox, please read the performance values shown in the tables on page C9 to C15.

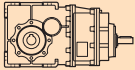


Dimensiones NEMA/ NEMA Dimensions		
	56 C	140 TC
N	4.5	
M	5.88	
P	6.5	
D	0.625	0.875



**Datos técnicos**

**Technical data**

	i	Mn <sub>2</sub> [lb·in]	n <sub>1</sub> = 1750 rpm				
			n <sub>2</sub> [rpm]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters		
					56 C	140 TC	180 TC
<b>CMBIS 903</b>							
	6.65	2478	263	11.01			
	8.00	2478	219	9.15			
	9.74	2478	180	7.51			
	11.21	2478	156	6.53			
	14.09	2655	124	5.56			
	17.95	3982	97.5	6.55			
	21.60	3982	81.0	5.45			
	26.30	3982	66.5	4.47			
	30.25	3982	57.9	3.89			
	39.26	4425	44.6	3.33			
	47.25	4425	37.0	2.77			
	57.52	4425	30.4	2.27			*
	66.17	4425	26.4	1.98			*
	83.20	4425	21.0	1.57			*
	108.09	4425	16.2	1.21			*
	132.23	4425	13.2	0.99			*
	147.92	4425	11.8	0.88		*	*
	167.09	4425	10.5	0.78		*	*
	191.06	4425	9.2	0.68		*	*
	221.88	4425	7.9	0.59		*	*
	262.96	4425	6.7	0.50		*	*

**NOTA**

Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

**NOTE**

Highlighted areas indicate the motor input flange available on each gearbox size.



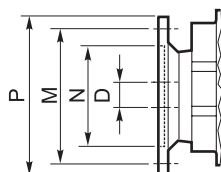
\* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico



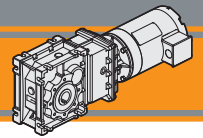
\* = The service factor (sf) has to be selected depending on application: please contact our Technical Department.

Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas C9 a la C15.

Before selecting any gearbox, please read the performance values shown in the tables on page C9 to C15.

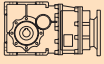

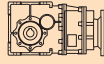



Dimensiones NEMA/ NEMA Dimensions			
	56 C	140 TC	180 TC
<b>N</b>		4.5	8.5
<b>M</b>		5.88	7.25
<b>P</b>		6.5	9
<b>D</b>	0.625	0.875	1.125

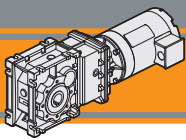


Datos técnicos

Technical data

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i								
<b>0.16 hp</b>								<b>0.25 hp</b>													
0.12 kW (1750 rpm)	<b>283</b>	33	10.6	III	6.18	<b>CMB402</b>	<b>56C</b>	0.18 kW (1750 rpm)	<b>283</b>	52	6.8	III	6.18	<b>CMB402</b>	<b>56C</b>						
	<b>234</b>	41	8.7	III	7.49				<b>234</b>	63	5.6	III	7.49				<b>56C</b>				
	<b>190</b>	50	7.1	III	9.20				<b>190</b>	78	4.5	III	9.20				<b>56C</b>				
	<b>148</b>	64	6.2	III	11.83				<b>148</b>	100	4.0	III	11.83				<b>56C</b>				
	<b>140</b>	68	5.9	III	12.48				<b>140</b>	106	3.8	III	12.48				<b>56C</b>				
	<b>118</b>	80	5.0	III	14.83				<b>118</b>	125	3.2	III	14.83				<b>56C</b>				
	<b>99</b>	95	4.2	III	17.63				<b>99</b>	149	2.7	III	17.63				<b>56C</b>				
	<b>94</b>	101	4.8	III	18.60				<b>94</b>	157	3.1	III	18.60				<b>56C</b>				
	<b>78</b>	121	4.0	III	22.33				<b>78</b>	189	2.6	III	22.33				<b>56C</b>				
	<b>73</b>	129	3.8	III	23.91				<b>73</b>	202	2.4	III	23.91				<b>56C</b>				
	<b>61</b>	156	3.7	III	28.89				<b>61</b>	244	2.4	III	28.89				<b>56C</b>				
	<b>57</b>	167	3.4	III	30.84				<b>57</b>	261	2.2	III	30.84				<b>56C</b>				
	<b>52</b>	182	3.2	III	33.57				<b>52</b>	284	2.0	III	33.57				<b>56C</b>				
	<b>49</b>	193	3.0	III	35.63				<b>49</b>	301	1.9	II	35.63				<b>56C</b>				
	<b>41</b>	232	2.5	III	42.75				<b>41</b>	362	1.6	II	42.75				<b>56C</b>				
	<b>32</b>	300	1.9	II	55.31				<b>32</b>	468	1.2	I	55.31				<b>56C</b>				
	<b>30</b>	320	1.8	II	59.06				<b>30</b>	500	1.2	I	59.06				<b>56C</b>				
	<b>27</b>	348	1.7	II	64.29				<b>27</b>	544	1.1	I	64.29				<b>56C</b>				
	<b>24</b>	393	1.5	II	72.50				<b>24</b>	614	0.9	I	72.50				<b>56C</b>				
	<b>283</b>	33	18.5	III	6.18			<b>CMB502</b>	<b>56C</b>	<b>283</b>	52	11.9	III			6.18	<b>CMB502</b>	<b>56C</b>			
	<b>234</b>	41	15.3	III	7.49						<b>234</b>	63	9.8			III			7.49		<b>56C</b>
	<b>190</b>	50	12.4	III	9.20						<b>190</b>	78	8.0			III			9.20		<b>56C</b>
	<b>148</b>	64	12.4	III	11.83						<b>148</b>	100	8.0			III			11.83		<b>56C</b>
	<b>140</b>	68	11.8	III	12.48						<b>140</b>	106	7.5			III			12.48		<b>56C</b>
	<b>118</b>	80	9.9	III	14.83		<b>118</b>			125	6.3	III	14.83		<b>56C</b>						
	<b>99</b>	95	8.3	III	17.63		<b>99</b>			149	5.3	III	17.63		<b>56C</b>						
	<b>94</b>	101	9.7	III	18.60		<b>94</b>			157	6.2	III	18.60		<b>56C</b>						
	<b>78</b>	121	8.1	III	22.33		<b>78</b>			189	5.2	III	22.33		<b>56C</b>						
	<b>73</b>	129	7.5	III	23.91		<b>73</b>			202	4.8	III	23.91		<b>56C</b>						
	<b>61</b>	156	7.1	III	28.89		<b>61</b>			244	4.5	III	28.89		<b>56C</b>						
	<b>57</b>	167	6.6	III	30.84		<b>57</b>			261	4.2	III	30.84		<b>56C</b>						
	<b>52</b>	182	6.1	III	33.57		<b>52</b>			284	3.9	III	33.57		<b>56C</b>						
	<b>49</b>	193	5.7	III	35.63		<b>49</b>			301	3.7	III	35.63		<b>56C</b>						
	<b>41</b>	232	4.8	III	42.75		<b>41</b>			362	3.1	III	42.75		<b>56C</b>						
	<b>32</b>	300	3.7	III	55.31		<b>32</b>			468	2.4	III	55.31		<b>56C</b>						
	<b>30</b>	320	3.5	III	59.06		<b>30</b>			500	2.2	III	59.06		<b>56C</b>						
	<b>27</b>	348	3.2	III	64.29		<b>27</b>			544	2.0	III	64.29		<b>56C</b>						
	<b>24</b>	393	2.8	III	72.50		<b>24</b>			614	1.8	II	72.50		<b>56C</b>						
	<b>24</b>	401	5.5	III	73.96	<b>CMB633</b>	<b>56C</b>			<b>24</b>	626	3.5	III	73.96	<b>CMB633</b>	<b>56C</b>					
	<b>22</b>	426	5.2	III	78.58						<b>22</b>	665	3.3	III					78.58		<b>56C</b>
	<b>19</b>	505	4.4	III	93.33						<b>19</b>	790	2.8	III					93.33		<b>56C</b>
	<b>12</b>	761	2.9	III	140.52						<b>12</b>	1189	1.9	II					140.52		<b>56C</b>
	<b>10</b>	985	2.2	III	181.81						<b>10</b>	1539	1.4	II					181.81		<b>56C</b>
	<b>8.3</b>	1145	1.9	II	211.31				<b>8.3</b>	1788	1.2	I	211.31				<b>56C</b>				
	<b>7.3</b>	1291	1.7	II	238.31				<b>7.3</b>	2017	1.1	I	238.31				<b>56C</b>				
	<b>9.2</b>	1035	4.3	III	191.06			<b>CMB903</b>	<b>56C</b>	<b>12</b>	1252	3.5	III	147.92			<b>CMB903</b>	<b>56C</b>			
	<b>7.9</b>	1202	3.7	III	221.88		<b>10</b>			1414	3.1	III	167.09		<b>56C</b>						
	<b>6.7</b>	1424	3.1	III	262.96		<b>9.2</b>			1617	2.7	III	191.06		<b>56C</b>						
							<b>7.9</b>			1878	2.4	III	221.88		<b>56C</b>						
							<b>6.7</b>			2225	2.0	II	262.96		<b>56C</b>						

CMB



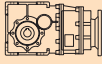

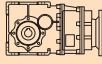

# CMB

## Motorreductores de ejes ortogonales Helical bevel gearmotors

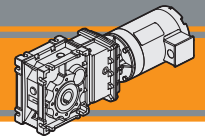
### Nema 60 Hz

#### Datos técnicos

#### Technical data

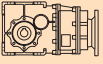

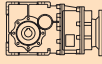

$P_1$ [hp]	$n_2$ [rpm]	$M_2$ [lb·in]	sf	AGMA	i			$P_1$ [hp]	$n_2$ [rpm]	$M_2$ [lb·in]	sf	AGMA	i		
<b>0.33 hp</b>								<b>0.5 hp</b>							
0.22 kW (1750 rpm)	<b>283</b>	69	5.1	III	6.18	<b>CMB402</b>	<b>56C</b>	0.37 kW (1750 rpm)	<b>283</b>	105	3.4	III	6.18	<b>CMB402</b>	<b>56C</b>
	<b>234</b>	84	4.2	III	7.49				<b>234</b>	127	2.8	III	7.49		
	<b>190</b>	103	3.4	III	9.20		<b>56C</b>		<b>190</b>	156	2.3	III	9.20		<b>56C</b>
	<b>148</b>	132	3.0	III	11.83		<b>56C</b>		<b>148</b>	200	2.0	II	11.83		<b>56C</b>
	<b>140</b>	139	2.9	III	12.48		<b>56C</b>		<b>140</b>	211	1.9	II	12.48		<b>56C</b>
	<b>118</b>	166	2.4	III	14.83		<b>56C</b>		<b>118</b>	251	1.6	II	14.83		<b>56C</b>
	<b>99</b>	197	2.0	III	17.63		<b>56C</b>		<b>99</b>	298	1.3	I	17.63		<b>56C</b>
	<b>94</b>	208	2.3	III	18.60		<b>56C</b>		<b>94</b>	315	1.5	II	18.60		<b>56C</b>
	<b>78</b>	249	2.0	II	22.33		<b>56C</b>		<b>78</b>	378	1.3	I	22.33		<b>56C</b>
	<b>73</b>	267	1.8	II	23.91		<b>56C</b>		<b>73</b>	405	1.2	I	23.91		<b>56C</b>
	<b>61</b>	323	1.8	II	28.89		<b>56C</b>		<b>61</b>	489	1.2	I	28.89		<b>56C</b>
	<b>57</b>	345	1.7	II	30.84		<b>56C</b>		<b>57</b>	522	1.1	I	30.84		<b>56C</b>
	<b>52</b>	375	1.5	II	33.57		<b>56C</b>		<b>52</b>	568	1.0	I	33.57		<b>56C</b>
	<b>49</b>	398	1.4	II	35.63		<b>56C</b>		<b>49</b>	603	1.0	I	35.63		<b>56C</b>
	<b>41</b>	478	1.2	I	42.75		<b>56C</b>								
	<b>32</b>	618	0.9	I	55.31		<b>56C</b>		<b>283</b>	105	5.9	III	6.18	<b>CMB502</b>	<b>56C</b>
	<b>30</b>	660	0.9	I	59.06		<b>56C</b>		<b>234</b>	127	4.9	III	7.49		
	<b>283</b>	69	9.0	III	6.18	<b>CMB502</b>	<b>56C</b>		<b>190</b>	156	4.0	III	9.20	<b>56C</b>	
	<b>234</b>	84	7.4	III	7.49			<b>148</b>	200	4.0	III	11.83	<b>56C</b>		
	<b>190</b>	103	6.0	III	9.20		<b>56C</b>		<b>140</b>	211	3.8	III	12.48	<b>56C</b>	
	<b>148</b>	132	6.0	III	11.83		<b>56C</b>		<b>118</b>	251	3.2	III	14.83	<b>56C</b>	
	<b>140</b>	139	5.7	III	12.48		<b>56C</b>		<b>99</b>	298	2.7	III	17.63	<b>56C</b>	
	<b>118</b>	166	4.8	III	14.83		<b>56C</b>		<b>94</b>	315	3.1	III	18.60	<b>56C</b>	
	<b>99</b>	197	4.0	III	17.63		<b>56C</b>		<b>78</b>	378	2.6	III	22.33	<b>56C</b>	
	<b>94</b>	208	4.7	III	18.60		<b>56C</b>		<b>73</b>	405	2.4	III	23.91	<b>56C</b>	
	<b>78</b>	249	3.9	III	22.33		<b>56C</b>		<b>61</b>	489	2.3	III	28.89	<b>56C</b>	
	<b>73</b>	267	3.6	III	23.91		<b>56C</b>		<b>57</b>	522	2.1	III	30.84	<b>56C</b>	
	<b>61</b>	323	3.4	III	28.89		<b>56C</b>		<b>52</b>	568	1.9	II	33.57	<b>56C</b>	
	<b>57</b>	345	3.2	III	30.84		<b>56C</b>		<b>49</b>	603	1.8	II	35.63	<b>56C</b>	
	<b>52</b>	375	2.9	III	33.57		<b>56C</b>		<b>41</b>	724	1.5	II	42.75	<b>56C</b>	
	<b>49</b>	398	2.8	III	35.63		<b>56C</b>		<b>32</b>	936	1.2	I	55.31	<b>56C</b>	
	<b>41</b>	478	2.3	III	42.75		<b>56C</b>		<b>30</b>	1000	1.1	I	59.06	<b>56C</b>	
	<b>32</b>	618	1.8	II	55.31		<b>56C</b>		<b>27</b>	1088	1.0	I	64.29	<b>56C</b>	
	<b>30</b>	660	1.7	II	59.06		<b>56C</b>		<b>24</b>	1227	0.9	I	72.50	<b>56C</b>	
	<b>27</b>	718	1.5	II	64.29		<b>56C</b>		<b>52</b>	572	3.4	III	33.81	<b>CMB633</b>	<b>56C</b>
	<b>24</b>	810	1.4	I	72.50		<b>56C</b>		<b>49</b>	608	3.2	III	35.92		
	<b>30</b>	647	3.4	III	57.93	<b>CMB633</b>	<b>56C</b>		<b>45</b>	658	3.4	III	38.88	<b>56C</b>	
	<b>28</b>	688	3.2	III	61.63			<b>37</b>	798	2.8	III	47.16	<b>56C</b>		
	<b>24</b>	826	2.7	III	73.96		<b>56C</b>		<b>30</b>	981	2.3	III	57.93	<b>56C</b>	
	<b>22</b>	878	2.5	III	78.58		<b>56C</b>		<b>28</b>	1043	2.1	III	61.63	<b>56C</b>	
	<b>19</b>	1043	2.1	III	93.33		<b>56C</b>		<b>24</b>	1252	1.8	II	73.96	<b>56C</b>	
	<b>12</b>	1570	1.4	II	140.52		<b>56C</b>		<b>22</b>	1330	1.7	II	78.58	<b>56C</b>	
	<b>10</b>	2031	1.1	I	181.81		<b>56C</b>		<b>19</b>	1580	1.4	II	93.33	<b>56C</b>	
	<b>8.3</b>	2361	0.9	I	211.31		<b>56C</b>		<b>12</b>	2378	0.9	I	140.52	<b>56C</b>	
	<b>7.3</b>	2662	0.8	I	238.31		<b>56C</b>		<b>26</b>	1120	4.0	III	66.17	<b>CMB903</b>	<b>56C</b>
	<b>12</b>	1652	2.7	III	147.92	<b>CMB903</b>	<b>56C</b>		<b>21</b>	1408	3.1	III	83.20		
	<b>10</b>	1867	2.4	III	167.09			<b>16</b>	1830	2.4	III	108.09	<b>56C</b>		
	<b>9.2</b>	2134	2.1	III	191.06		<b>56C</b>		<b>13</b>	2238	2.0	II	132.23	<b>56C</b>	
	<b>7.9</b>	2479	1.8	II	221.88		<b>56C</b>		<b>12</b>	2504	1.8	II	147.92	<b>56C</b>	
	<b>6.7</b>	2938	1.5	II	262.96		<b>56C</b>		<b>10</b>	2828	1.6	II	167.09	<b>56C</b>	
									<b>9.2</b>	3234	1.4	I	191.06	<b>56C</b>	
									<b>7.9</b>	3755	1.2	I	221.88	<b>56C</b>	
									<b>6.7</b>	4451	1.0	I	262.96	<b>56C</b>	



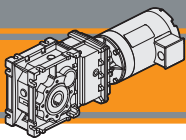


Datos técnicos

Technical data

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>0.75 hp</b>								<b>1 hp</b>							
0.55 kW (1750 rpm)	283	157	2.3	III	6.18	<b>CMB402</b>	<b>56C</b>	0.75 kW (1750 rpm)	283	209	1.7	II	6.18	<b>CMB402</b>	<b>56C</b>
	234	190	1.9	II	7.49			234	254	1.4	I	7.49			
190	234	1.5	II	9.20	190			312	1.1	I	9.20				
148	300	1.3	I	11.83	148			400	1.0	I	11.83				
140	317	1.3	I	12.48	140			423	0.9	I	12.48				
118	376	1.1	I	14.83											
99	447	0.9	I	17.63											
94	472	1.0	I	18.60											
78	567	0.9	I	22.33											
										283	209	3.0	III		
234	190	3.3	III	7.49	234	254	2.4	III	7.49						
190	234	2.7	III	9.20	190	312	2.0	II	9.20						
148	300	2.7	III	11.83	148	400	2.0	II	11.83						
140	317	2.5	III	12.48	140	423	1.9	II	12.48						
118	376	2.1	III	14.83	118	502	1.6	II	14.83						
99	447	1.8	II	17.63	99	597	1.3	I	17.63						
94	472	2.1	III	18.60	94	630	1.5	II	18.60						
78	567	1.7	II	22.33	78	756	1.3	I	22.33						
73	607	1.6	II	23.91	73	809	1.2	I	23.91						
61	733	1.5	II	28.89	61	978	1.1	I	28.89						
57	783	1.4	II	30.84	57	1044	1.1	I	30.84						
52	852	1.3	I	33.57	52	1136	1.0	I	33.57						
49	904	1.2	I	35.63	49	1206	0.9	I	35.63						
41	1085	1.0	I	42.75											
								266	223	6.0	III	6.58	<b>CMB633</b>	<b>56C-140TC</b>	
98	451	4.3	III	17.77	219	270	4.9	III	7.99						
81	547	3.6	III	21.56	178	332	4.0	III	9.81						
66	672	2.9	III	26.48	168	353	3.8	III	10.44						
62	715	2.7	III	28.17	140	424	3.1	III	12.53						
52	858	2.3	III	33.81	131	451	2.9	III	13.31						
49	912	2.1	III	35.92	111	535	2.8	III	15.81						
45	987	2.2	III	38.88	98	602	3.2	III	17.77						
37	1197	1.8	II	47.16	81	730	2.7	III	21.56						
30	1471	1.5	II	57.93	66	897	2.2	III	26.48						
28	1565	1.4	II	61.63	62	954	2.0	III	28.17						
24	1878	1.2	I	73.96	52	1145	1.7	II	33.81						
22	1995	1.1	I	78.58	49	1216	1.6	II	35.92						
19	2369	0.9	I	93.33	45	1316	1.7	II	38.88						
					37	1597	1.4	I	47.16						
					30	1961	1.1	I	57.93						
					28	2086	1.1	I	61.63						
					24	2504	0.9	I	73.96						
					22	2660	0.8	I	78.58						
					58	1024	3.9	III	30.25	<b>CMB903</b>	<b>56C-140TC</b>				
					45	1329	3.3	III	39.26						
					37	1600	2.8	III	47.25						
					30	1947	2.3	III	57.52						
					26	2240	2.0	II	66.17						
					21	2817	1.6	II	83.20						
					16	3659	1.2	I	108.09						
					13	4476	1.0	I	132.23						
					12	5007	0.9	I	147.92						

CMB



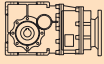

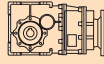

# CMB

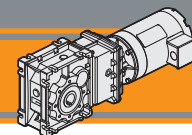
## Motorreductores de ejes ortogonales Helical bevel gearmotors

### Nema 60 Hz

#### Datos técnicos

#### Technical data

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i							
<b>1.5 hp</b>								<b>2 hp</b>												
1.1 kW (1750 rpm)	266	334	4.0	III	6.58	<b>CMB633</b>	<b>56C-140TC</b>	1.5 kW	263	450	5.5	III	6.65	<b>CMB903</b>	<b>56C-140TC</b>					
	219	406	3.3	III	7.99			(1750 rpm)	219	542	4.6	III	8.00							
	178	498	2.7	III	9.81			180	660	3.8	III	9.74								
	168	530	2.5	III	10.44			156	759	3.3	III	11.21								
	140	636	2.1	III	12.53			124	954	2.8	III	14.09								
	131	676	2.0	II	13.31			98	1215	3.3	III	17.95								
	111	803	1.9	II	15.81			81	1462	2.7	III	21.60								
	98	902	2.2	III	17.77			67	1780	2.2	III	26.30								
	81	1095	1.8	II	21.56			58	2048	1.9	II	30.25								
	66	1345	1.4	II	26.48			45	2658	1.7	II	39.26								
	62	1431	1.4	I	28.17			37	3199	1.4	I	47.25								
	52	1717	1.1	I	33.81			30	3894	1.1	I	57.52								
	49	1824	1.1	I	35.92			26	4480	1.0	I	66.17								
	45	1974	1.1	I	38.88															
	37	2395	0.9	I	47.16															
	<b>3 hp</b>								<b>5 hp</b>											
	1.1 kW (1750 rpm)	266	338	7.3	III			6.65	<b>CMB903</b>	<b>56C-140TC</b>	2.2 kW	266	669			2.0	II	6.58	<b>CMB633</b>	<b>140TC-180TC</b>
		219	406	6.1	III			8.00			(1750 rpm)	219	811			1.6	II	7.99		
		180	495	5.0	III			9.74			178	997	1.3			I	9.81			
		156	569	4.4	III			11.21			168	1060	1.3			I	10.44			
124		716	3.7	III	14.09	140	1272	1.0			I	12.53								
98		911	4.4	III	17.95	131	1352	1.0			I	13.31								
81		1097	3.6	III	21.60	111	1605	0.9			I	15.81								
67		1335	3.0	III	26.30	98	1805	1.1			I	17.77								
58		1536	2.6	III	30.25	81	2189	0.9			I	21.56								
45		1994	2.2	III	39.26															
37		2399	1.8	II	47.25															
30		2921	1.5	II	57.52															
26		3360	1.3	I	66.17															
21		4225	1.0	I	83.20															
<b>2 hp</b>								<b>3 hp</b>												
1.5 kW (1750 rpm)		266	446	3.0	III	6.58	<b>CMB633</b>	<b>56C-140TC</b>			2.2 kW	266	675	3.7	III	6.65	<b>CMB903</b>	<b>140TC-180TC</b>		
		219	541	2.5	III	7.99					(1750 rpm)	219	813	3.0	III	8.00				
		178	664	2.0	II	9.81					180	990	2.5	III	9.74					
		168	707	1.9	II	10.44					156	1138	2.2	III	11.21					
		140	848	1.6	II	12.53					124	1431	1.9	II	14.09					
	131	901	1.5	II	13.31	98			1823	2.2	III	17.95								
	111	1070	1.4	II	15.81	81			2194	1.8	II	21.60								
	98	1203	1.6	II	17.77	67			2671	1.5	II	26.30								
	81	1460	1.3	I	21.56	58			3072	1.3	I	30.25								
	66	1793	1.1	I	26.48	45			3987	1.1	I	39.26								
	62	1908	1.0	I	28.17	37			4799	0.9	I	47.25								
	52	2289	0.9	I	33.81															
	<b>5 hp</b>								<b>3 hp</b>											
	1.5 kW (1750 rpm)	263	1126	2.2	III	6.65			<b>CMB903</b>	<b>180TC</b>	3.7 kW	263	1126	2.2	III	6.65			<b>CMB903</b>	<b>180TC</b>
		219	1355	1.8	II	8.00					(1750 rpm)	219	1355	1.8	II	8.00				
		180	1649	1.5	II	9.74					180	1649	1.5	II	9.74					
		156	1897	1.3	I	11.21					156	1897	1.3	I	11.21					
		124	2385	1.1	I	14.09					124	2385	1.1	I	14.09					
		98	3038	1.3	I	17.95					98	3038	1.3	I	17.95					
		81	3656	1.1	I	21.60					81	3656	1.1	I	21.60					
67		4451	0.9	I	26.30	67	4451	0.9			I	26.30								



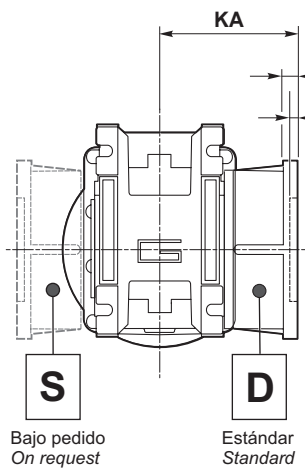
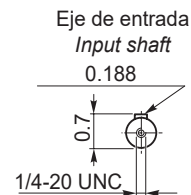
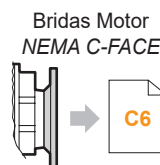
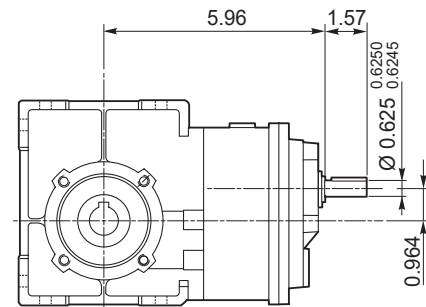
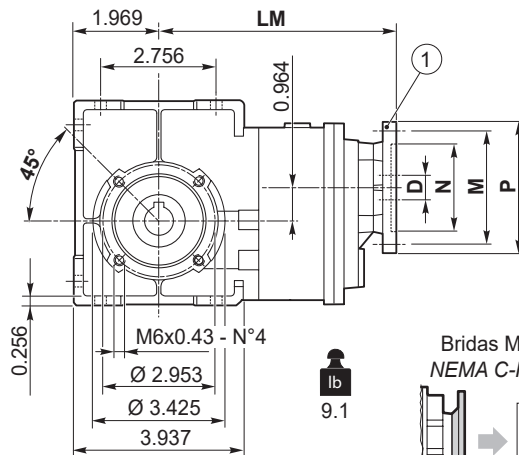
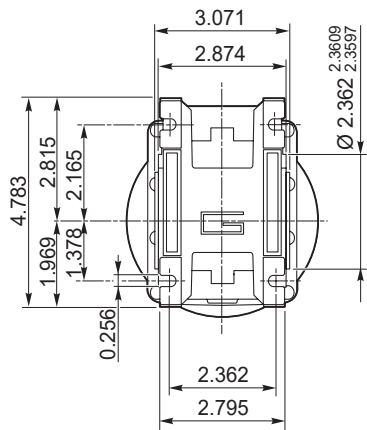
Dimensiones

Dimensions

CMB 402 - CMBIS 402

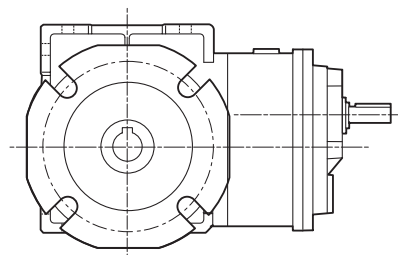
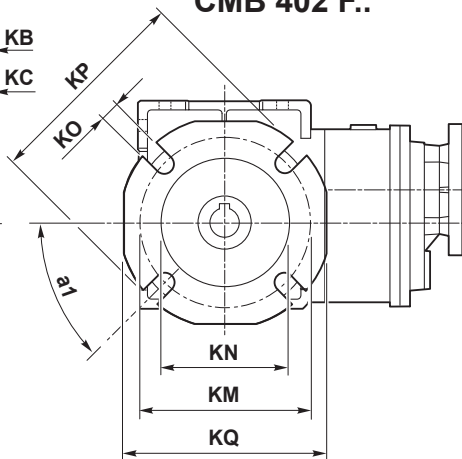
CMB 402 U

CMBIS 402 U



CMB 402 F..

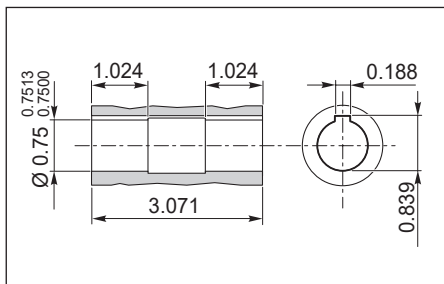
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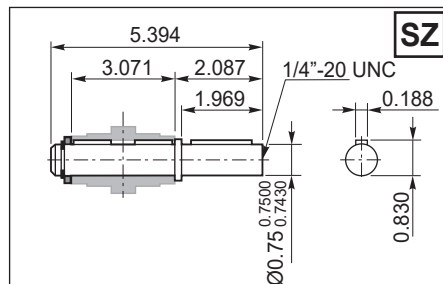
Versión F / F Version										
CMB / CMBIS	a <sub>1</sub>	KA	KB	KC	KM	KN	KO	KP	□ KQ	Brida / Flange Tipo / Type
402	45°	2.638	0.295	0.77	3.150-3.740	2.362 <sup>2.3640</sup> 2.3622	0.354	4.331	3.740	F
	45°	3.819	0.295	0.77	3.150-3.740	2.362 <sup>2.3640</sup> 2.3622	0.354	4.331	3.740	FL
	45°	3.150	0.335	0.197	4.527-4.921	3.740 <sup>3.7423</sup> 3.7402	0.374	5.512	4.409	FB

Brida Motor / Motor flange	
①	Dimensiones NEMA / NEMA Dimensions
	56 C
N	4.5
M	5.88
P	6.5
D	0.625
LM	6.72

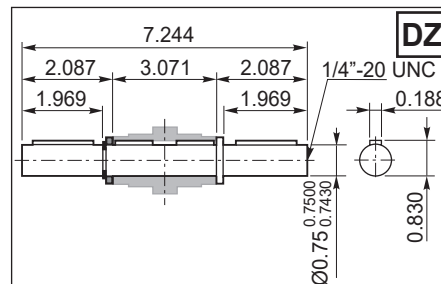
Eje de salida hueco / Hollow output shaft



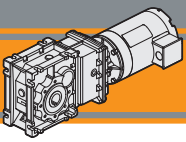
Eje de salida / Output shaft



Eje de salida / Output shaft



CMB



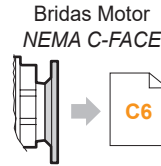
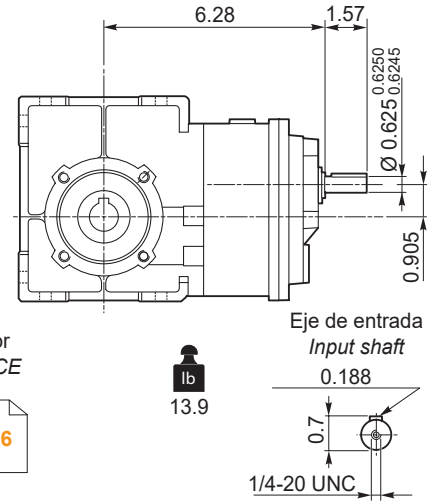
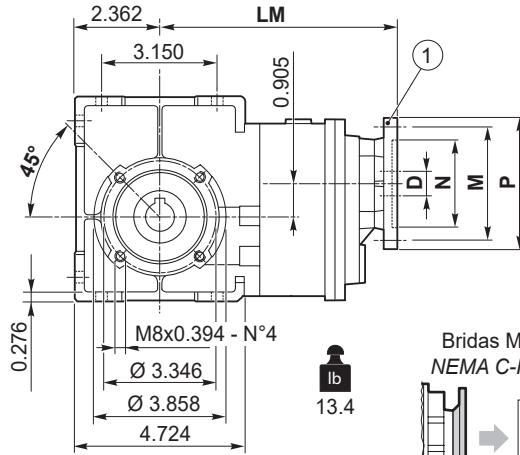
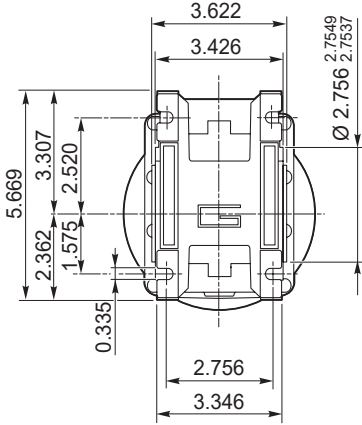
**Dimensiones**

**Dimensions**

**CMB 502 - CMBIS 502**

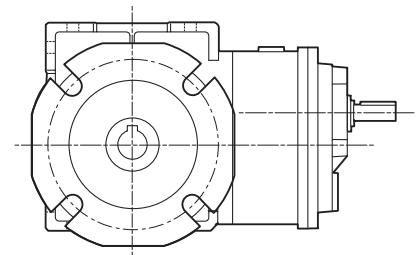
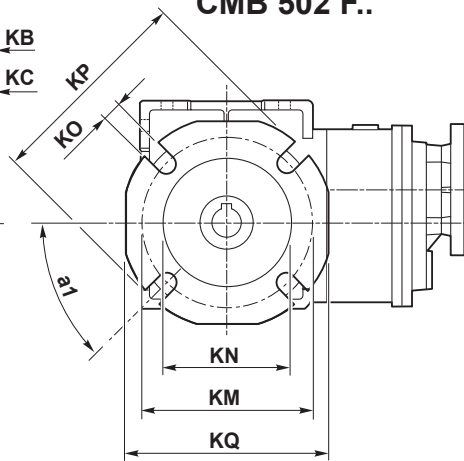
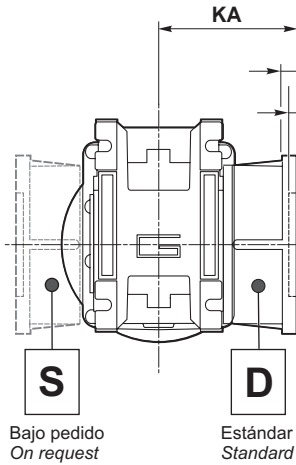
**CMB 502 U**

**CMBIS 502 U**



**CMB 502 F..**

**CMBIS 502 F..**



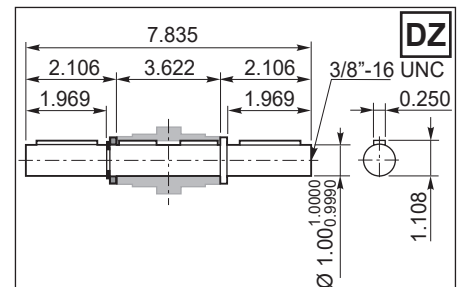
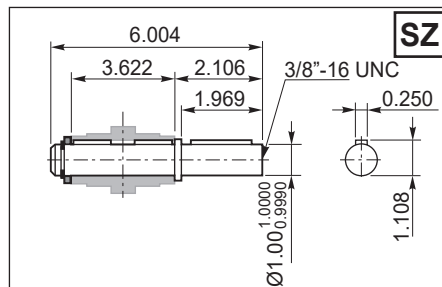
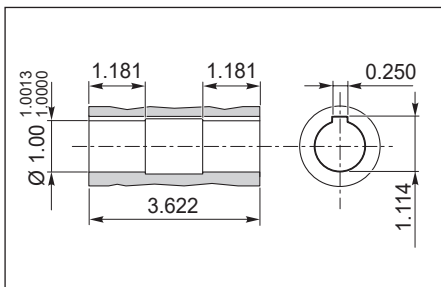
Versión F / F Version										
CMB CMBIS	a <sub>1</sub>	KA	KB	KC	KM	KN	KO	KP	□ KQ	Brida / Flange Tipo / Type
502	45°	3.543	0.354	0.197	3.543-4.331	2.756 <sup>2.7577</sup> 2.7559	0.433	4.921	4,331	F
	45°	4.724	0.354	0.197	3.543-4.331	2.756 <sup>2.7577</sup> 2.7559	0.433	4.921	4,331	FL
	45°	3.504	0.354	0.197	5.118-5.709	4.331 <sup>4.3328</sup> 4.3307	0.374	6.299	5,197	FB

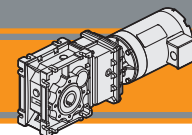
Brida Motor / Motor flange	
①	Dimensiones NEMA NEMA Dimensions
	56 C
N	4.5
M	5.88
P	6.5
D	0.625
LM	7.11

Eje de salida hueco / Hollow output shaft

Eje de salida / Output shaft

Eje de salida / Output shaft





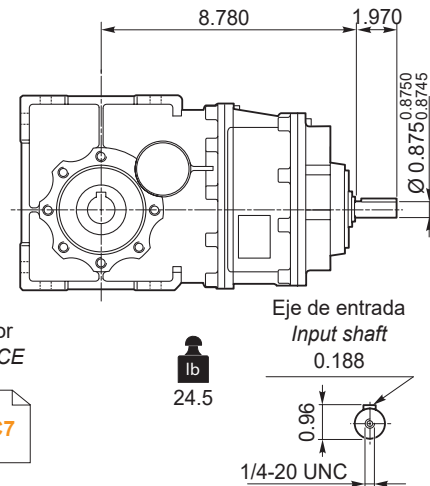
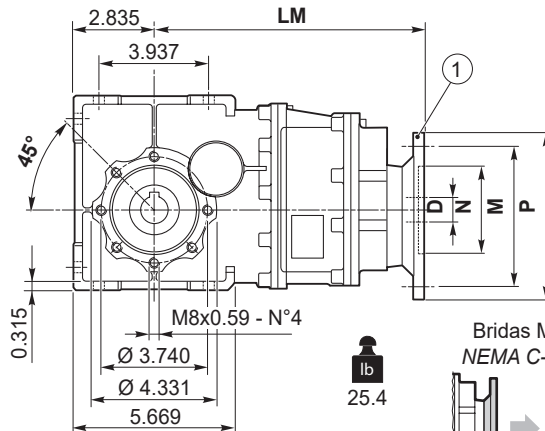
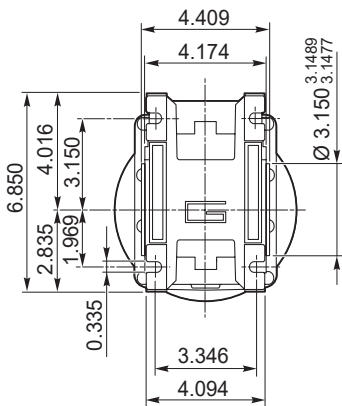
Dimensiones

Dimensions

CMB 633 - CMBIS 633

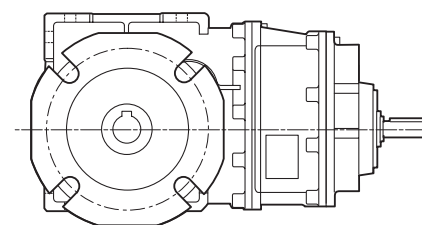
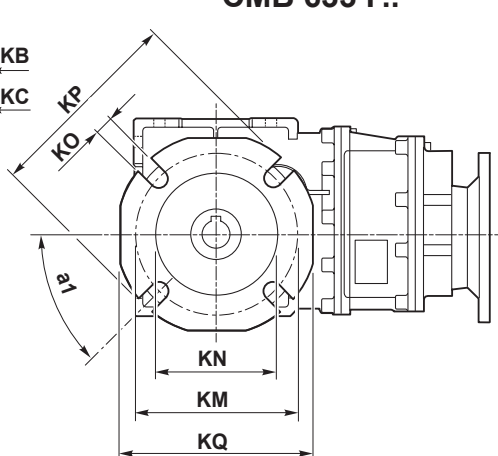
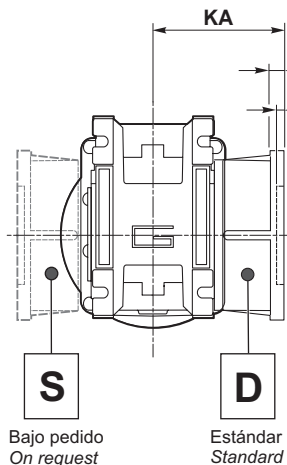
CMB 633 U

CMBIS 633 U



CMB 633 F..

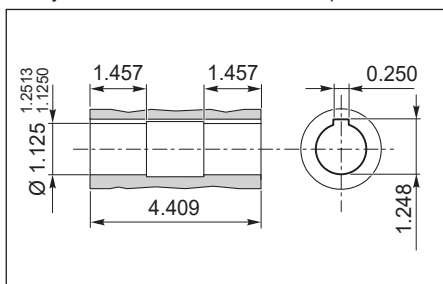
CMBIS 633 F..



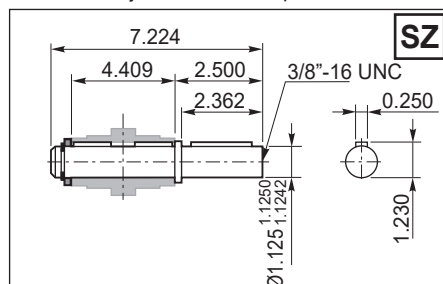
Versión F / F Version										
CMB / CMBIS	a <sub>1</sub>	KA	KB	KC	KM	KN	KO	KP	□ KQ	Brida / Flange Tipo / Type
633	45°	3.228	0.394	0.236	5.906-6.299	4.528 4.5276	0.433	7.087	5.591	F
	45°	4.409	0.394	0.314	5.906-6.299	4.528 4.5276	0.433	7.087	5.591	FL
	45°	3.858	0.433	0.197	6.496-7.087	5.118 5.1181	0.433	7.874	6.229	FB

Brida Motor / Motor flange		
①	Dimensiones NEMA / NEMA Dimensions	
	56 C	140 TC
N	4.5	4.5
M	5.88	5.88
P	6.5	6.5
D	0.625	0.875
LM	9.69	9.69

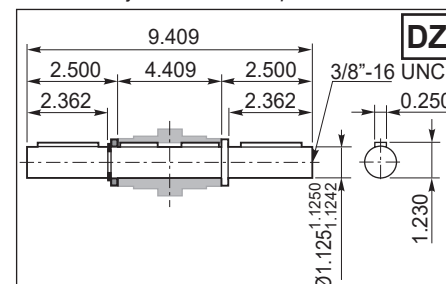
Eje de salida hueco / Hollow output shaft

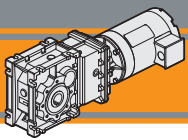


Eje de salida / Output shaft



Eje de salida / Output shaft





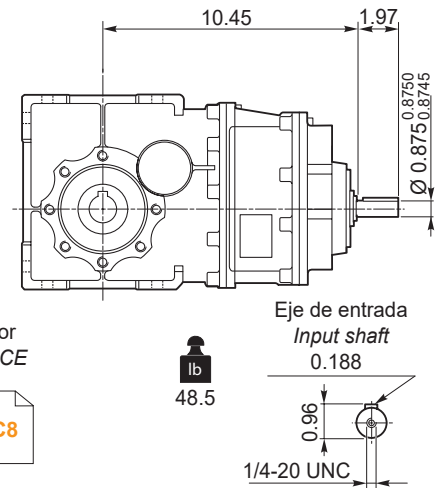
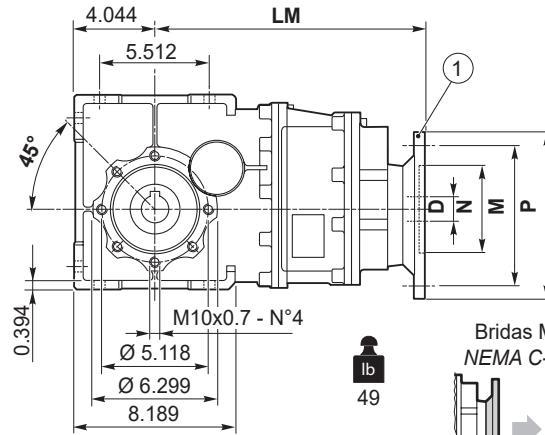
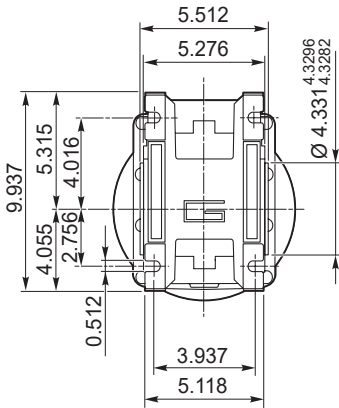
Dimensiones

Dimensions

**CMB 903 - CMBIS 903**

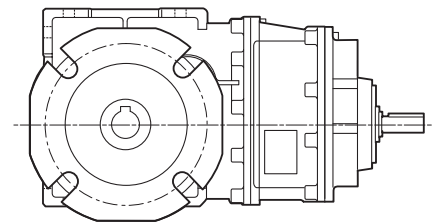
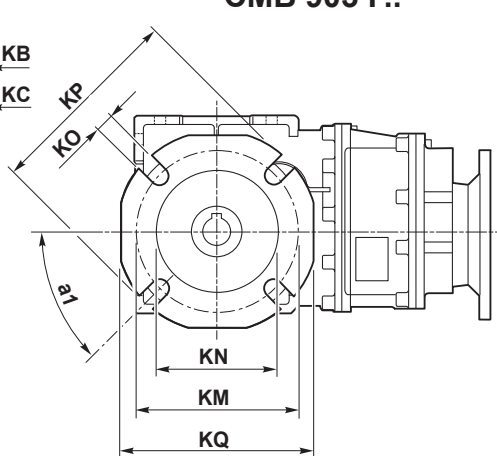
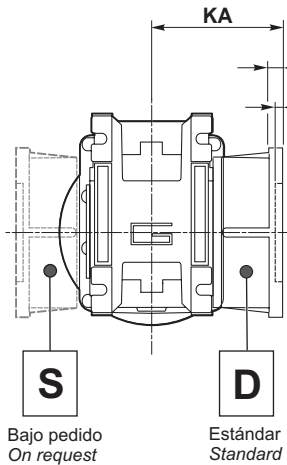
**CMB 903 U**

**CMBIS 903 U**



**CMB 903 F..**

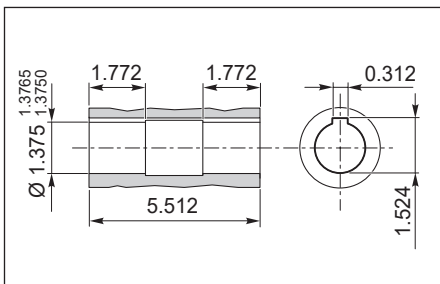
**CMBIS 903 F..**



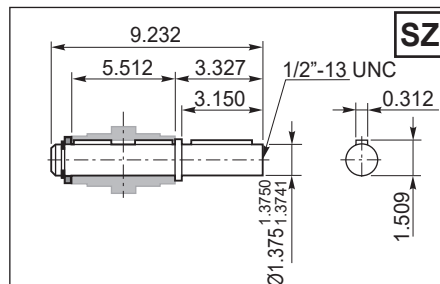
Versión F / F Version										
CMB CMBIS	a <sub>1</sub>	KA	KB	KC	KM	KN	KO	KP	□ KQ	Brida / Flange Tipo / Type
<b>933</b>	45°	4.37	0.512	0.236	6.890-7.480	5.984 5.9867 5.9843	0.551	8.268	7.874	<b>F</b>

Brida Motor / Motor flange			
①	Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC	180 TC
<b>N</b>	4.5	4.5	8.5
<b>M</b>	5.88	5.88	7.25
<b>P</b>	6.5	6.5	9
<b>D</b>	0.625	0.875	1.125
<b>LM</b>	11.67	11.67	11.58

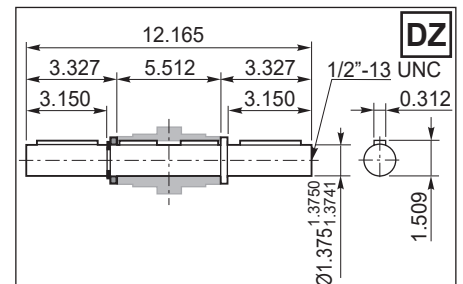
Eje de salida hueco / Hollow output shaft

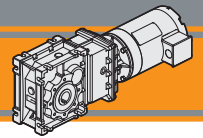


Eje de salida / Output shaft



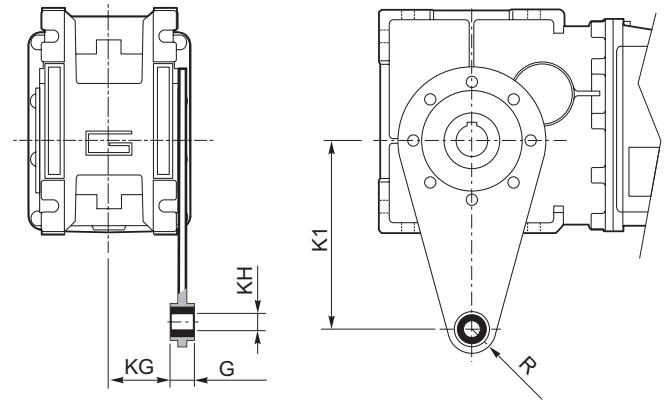
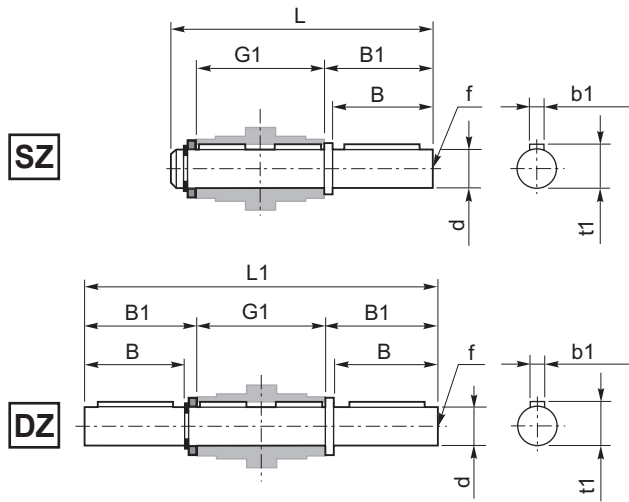
Eje de salida / Output shaft





Accesorios

Accessories



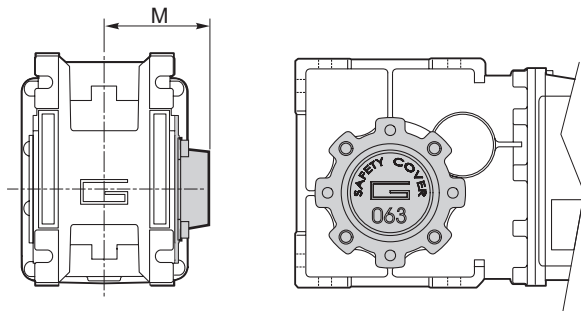
Eje de salida / Output shaft

Brazo de reacción / Torque arm

CMB	d	B	B1	G1	L	L1	f	b1	t1
402	0.750 0.7500 0.7430	1.969	20.87	3.071	5.394	7.244	1/4"-20	0.188	0.830
502	1.000 1.0000 0.9992	1.696	2.106	3.622	6.004	7.835	3/8"-16	0.250	1.108
633	1.125 1.1250 1.1242	2.362	2.500	4.409	7.224	9.409	3/8"-16	0.250	1.230
903	1.375 1.3750 1.3741	3.150	3.327	5.512	9.232	12.165	1/2"-13	0.312	1.509

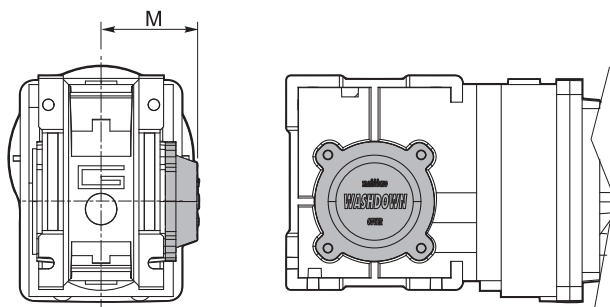
CMB	K1	G	KG	KH	R
402	3.937	0.551	1.220	0.394	0.709
502	3.937	0.551	1.496	0.394	0.709
633	5.906	0.551	1.870	0.394	0.709
903	7.874	0.984	2.224	0.787	1.181

SC - Cubierta de seguridad / Safety cover



CMB	M
402	2.146
502	2.461
633	2.874
903	3.701

WD - Kit washdown cover



CMB	M
402	2.18
502	2.50
633	2.81
903	3.74





**TRANSTECNO**<sup>®</sup>  
the modular gearmotor

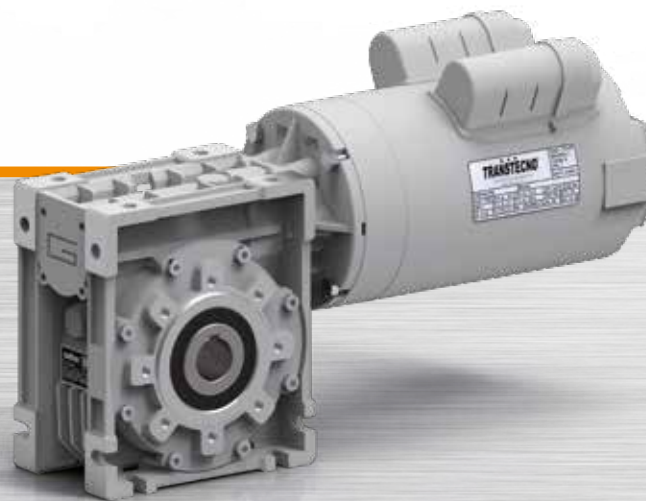
**CM**



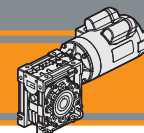
**60Hz**

**Nema**

Motorreductores sinfín corona  
**Wormgearmotors**



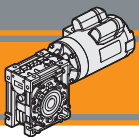




Índice	Index	Pág. Page
Características técnicas	<i>Technical features</i>	<b>D2</b>
Clasificación	<i>Classification</i>	<b>D2</b>
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Nomenclatura	<i>Symbols</i>	<b>D3</b>
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Cargas radiales	<i>Radial loads</i>	<b>D3</b>
Reversibilidad e irreversibilidad	<i>Reversibility and irreversibility</i>	<b>D4</b>
Datos de dentado	<i>Toothing data</i>	<b>D5</b>
Rendimiento	<i>Efficiency</i>	<b>D5</b>
Datos técnicos	<i>Technical data</i>	<b>D6</b>
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**CM**

Motorreductores sinfín corona  
Wormgearboxes

**Nema 60 Hz**

**Características técnicas**

**Technical features**

El elevado nivel de modularidad caracteriza a los reductores sinfín corona de la serie CM; los diversos kit de entrada y salida permiten una versatilidad extrema del reductor. Los reductores de la serie CM poseen las características siguientes:

The high degree of modularity is a design feature of CM wormgearboxes range thanks to a wide selection of input and output kits. Main features of CM range are:

- Los tamaños 040, 050, 063, 075, 090 y 110 están contruidos con carcasa de aluminio;
- Los tamaños 090 y 110 se suministran con rodamientos de rodillos cónicos en el sinfín;
- Die-cast aluminum housing on sizes 040, 050, 063, 075, 090 and 110;
- Double taper roller bearing on sizes 090 and 110;

**Clasificación**

**Classification**

**REDUCTORES SINFIN CORONA / WORMGEARBOXES**

REDUCTOR / GEARBOX								
CM	050	U	10	56C	SZDX	BRSX	90°	M1
Tipo Type	Tamaño Size	Versión de reductor Gearbox Version	Relación de reducción Ratio		Eje de salida Output shaft	Brazo de reacción Torque arm	Ángulo Angle	Posición de montaje Mounting position
<b>CM</b> 	<b>040</b> <b>050</b> <b>063</b> <b>075</b> <b>090</b> <b>110</b>	<b>U</b> <b>FD</b> <b>FS</b> <b>FBD</b> <b>FBS</b> <b>FLD</b> <b>FLS</b>	véase tablas see tables	<b>56C</b> <b>140TC</b> <b>180TC</b> <b>210TC</b>	<b>SZDX</b> <b>SZSX</b> <b>DZ</b>	<b>BRSX</b> <b>BRDX</b>	<b>0°</b> <b>90°</b> <b>180°</b> <b>270°</b>	<b>M1 (B3)</b> <b>M2 (V6)</b> <b>M3 (B8)</b> <b>M4 (V5)</b> <b>M5 (B7)</b> <b>M6 (B6)</b>

Relación de reducción  
Gearbox Version

**U**      **FD**      **FS**  
**FLD**      **FLS**  
**FBD**      **FBS**

F.....D = Lado derecho / Right side  
F.....S = Lado izquierdo / Left side

Eje de salida  
Output shaft

**SZDX**      **SZSX**      **DZ**

SZDX = Flecha sencilla lado derecho  
Single shaft right side  
DZ = Flecha doble / Double shaft  
SZSX = Flecha sencilla lado izquierdo  
Single shaft left side

Brazo de reacción  
Torque arm

**BRDX**      **BRSX**

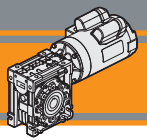
BRDX = Lado derecho / Right side  
BRSX = Lado izquierdo / Left side

Posición del Brazo  
Torque arm position \*

\* NOTA: El brazo de reacción se suministra desmontado.  
NOTE: the torque arm will be supplied not assembled.

**MOTOR / MOTOR**

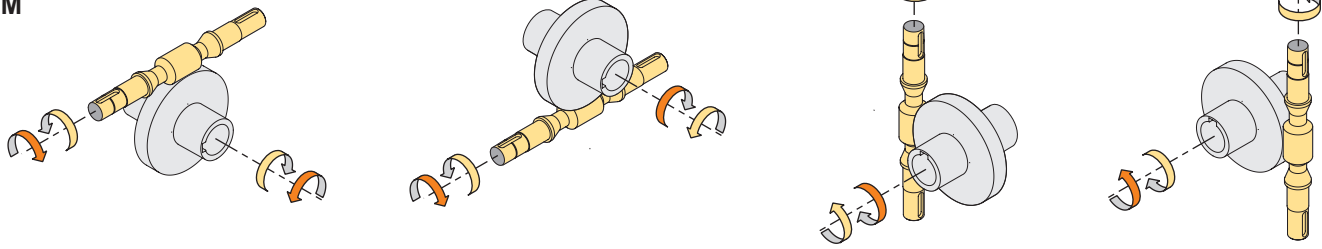
1 hp / 0.75kW	4p	3ph	220/440V	60Hz	T1
Potencia Power	Polos Poles	Fases Phases	Tensión Voltage	Frecuencia Frequency	Posición caja de bornes Terminal box pos.
véase tablas See tables	<b>2p</b> <b>4p</b> <b>6p</b> <b>8p</b>	<b>1ph</b> <b>3ph</b>	<b>230V</b> <b>230/400V</b> ... <b>220/440V</b>	<b>50Hz</b> <b>60Hz</b>	<b>T1 (Std)</b>  <b>T4</b> <b>T2</b> <b>T3</b>



Sentidos de rotación

Direction of rotation

CM



Nomenclatura

Symbols

$n_1$ [rpm]	Velocidad de entrada / <i>Input speed</i>	$sf$	Rendimiento dinámico / <i>Service factor</i>
$n_2$ [rpm]	Velocidad de salida / <i>Output speed</i>	$Rd$ %	Rendimiento dinámico / <i>Dynamic efficiency</i>
$i$	Relación de reducción / <i>Ratio</i>	$Rs$ %	Rendimiento estático / <i>Static efficiency</i>
$P_1$ [hp]	Potencia en la entrada / <i>Input power</i>	$R_2$ [lb]	Carga radial admisible en la salida / <i>Maximum output radial load</i>
$M_2$ [lb·in]	Par en la salida en función de $P_1$ / <i>Output torque referred to <math>P_1</math></i>	$A_2$ [lb]	Carga axial admisible en la salida / <i>Maximum output axial load</i>
$Pn_1$ [hp]	Potencia nominal en la entrada / <i>Nominal input power</i>	$Z$	Número de entradas del tornillo / <i>Worm starts</i>
$Mn_2$ [lb·in]	Par nominal en la salida en función de $Pn_1$ / <i>Nominal output torque referred to <math>Pn_1</math></i>	$\beta$	Ángulo de hélicoïdal / <i>Helix angle</i>

Lubricación

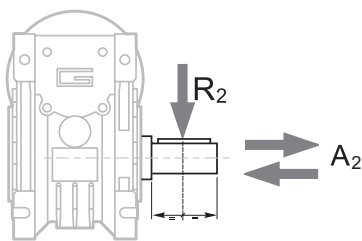
Lubrication

Lubricación permanente de aceite sintético de larga vida (grado de viscosidad 320) que hace posible utilizar los reductores en todas las posiciones de montaje, así mismo no requieren de mantenimiento eliminando el cambio de aceite.

*Permanent synthetic oil long-life lubrication (viscosity grade 320) makes it possible to use the gearboxes in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*

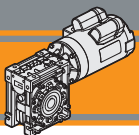
Cargas radiales

Radial loads



$A_2 = R_2 \times 0.2$

$n_2$ [rpm]	$R_2$ [lb]					
	CM040	CM050	CM063	CM075	CM090	CM110
187	284	398	550	635	711	1137
140	313	438	605	699	783	1252
93	359	502	694	801	897	1435
70	394	552	763	881	986	1578
56	425	595	821	949	1062	1699
47	450	631	871	1006	1126	1802
35	497	696	961	1110	1242	1988
28	535	749	1035	1195	1338	2141
23	572	800	1105	1277	1429	2286
18	620	868	1199	1385	1551	2481
14	674	944	1304	1506	1686	2698

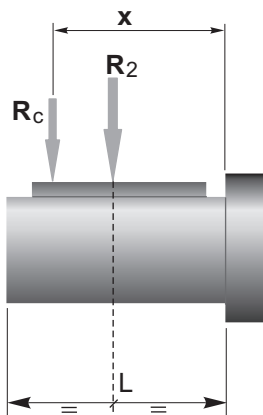


**Cargas radiales**

**Radial loads**

Cuando la carga radial no se aplica en el punto medio del eje, es necesario calcular la carga efectiva a través la siguiente fórmula:

When the radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:



	CM					
	040	050	063	075	090	110
a	84	101	120	131	182	176
b	64	76	95	101	122	136
R <sub>2MAX</sub>	674	944	1304	1506	1686	2698

$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$

a, b = valores dados en la tabla  
a, b = values given in the table

**Reversibilidad e irreversibilidad**

**Reversibility and irreversibility**

La reversibilidad en los motorreductores sinfín y corona es consecuencia directa de la eficiencia (estática y dinámica). Esto determina si la flecha de entrada puede o no ser rotada por la aplicación de un cierto torque en la flecha de salida.

Reversibility of the wormgearbox is the direct consequence of efficiency (static and dynamic). This determines whether or not the input shaft can be rotated by applying a certain torque on the output shaft.

El grado de reversibilidad (o irreversibilidad) de un reductor está determinado por la dificultad de poder o no poder rotarlo. Esta significativa característica de los reductores sinfín y corona es afectada por numerosos factores incluyendo el ángulo de diseño de los engranes (así como la relación de reducción), lubricación, temperatura, el maquinado de la superficie del sinfín, vibraciones, etc.

Whether or not this can be done and how difficult it actually is to determine the degree of reversibility (or irreversibility) of a gearbox. This feature, quite significant in wormgearboxes, is affected by numerous factors including the helix angle (therefore drive ratio), lubrication, temperature, surface finish of the worm, vibrations, etc...

En aplicaciones de traslación, una alta reversibilidad debe ser garantizada en el reductor para evitar inercias de las partes en movimiento o picos de carga inaceptables para los engranes.

In applications that include translations, high reversibility must be guaranteed to prevent inertia of the moving parts from creating unacceptable load peaks on the drive parts.

En las aplicaciones que requieren un “no-retorno” de la carga (ej. Elevadores o bandas transportadoras inclinadas) un reductor con alta irreversibilidad debe ser seleccionado cuando no se cuenta con un motor con freno.

In applications that require non-return of the load (e.g. lifting or inclined conveyor belts) a gearbox with high irreversibility must be chosen when a motor-brake unit is not present.

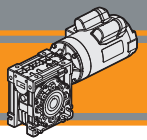
Sin embargo debemos mencionar que el no retorno de la carga debe ser totalmente garantizado solamente instalando un motor auto frenante (u otro dispositivo externo).

However, we would like to point out that non-return can be totally assured only by installing a self-braking motor or other external braking device.

La siguiente tabla se proporciona únicamente con fines de referencia. En esta se muestran los distintos grados de reversibilidad e irreversibilidad de los reductores sinfín y corona en relación a su eficiencia dinámica Rd y estática Rs.

The table below is provided for reference purposes only. It contains the various degrees of reversibility/irreversibility of wormgearboxes in relation to dynamic Rd and static Rs efficiency.

<b>Rd</b>	<b>Reversibilidad e irreversibilidad dinámica</b>	<b>Dynamic reversibility and irreversibility</b>
> 0.6	Reversibilidad dinámica	Dynamic reversibility
0.5 - 0.6	Reversibilidad dinámica incierta	Uncertain dynamic reversibility
0.4 - 0.5	Irreversibilidad dinámica efectiva	Good dynamic irreversibility
<0.4	Irreversibilidad dinámica	Dynamic irreversibility
<b>Rs</b>	<b>Reversibilidad e irreversibilidad estática</b>	<b>Static reversibility and irreversibility</b>
> 0.55	Irreversibilidad estática	Static reversibility
0.5 - 0.55	Opción A: Reversibilidad estática incierta	Uncertain static reversibility
<0.5	Irreversibilidad estática	Static irreversibility



Datos de dentado

Toothing data

	Datos del engranaje sinfin corona Worm wheel data	Relación de reducción / Ratio											
		5	7.5	10	15	20	25	30	40	50	60	80	100
CM040	Z	6	4	3	2	2	2	1	1	1	1	1	1
	$\beta$	34° 19'	24° 28'	18° 50'	12° 49'	10° 23'	8° 43'	6° 29'	5° 14'	4° 23'	3° 46'	2° 57'	2° 25'
CM050	Z		4	3	2	2	2	1	1	1	1	1	1
	$\beta$		23° 54'	18° 23'	12° 29'	10° 6'	8° 28'	6° 19'	5° 5'	4° 15'	3° 39'	2° 51'	2° 20'
CM063	Z		4	3	2	2	2	1	1	1	1	1	1
	$\beta$		24° 31'	18° 53'	12° 50'	10° 24'	8° 44'	6° 30'	5° 14'	4° 23'	3° 47'	2° 57'	2° 25'
CM075	Z		4	3	2	2	2	1	1	1	1	1	1
	$\beta$		26° 17'	20° 20'	13° 52'	11° 18'	9° 32'	7° 2'	5° 42'	4° 48'	4° 8'	3° 14'	2° 40'
CM090	Z		4	3	2	2	2	1	1	1	1	1	1
	$\beta$		29° 11'	22° 43'	15° 36'	12° 50'	10° 53'	7° 56'	6° 30'	5° 29'	4° 45'	3° 45'	3° 6'
CM110	Z		4	3	2	2	2	1	1	1	1	1	1
	$\beta$		28° 14'	21° 56'	15° 1'	14° 41'	12° 34'	7° 38'	7° 28'	6° 21'	5° 32'	4° 24'	3° 39'

CM

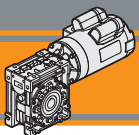
Rendimiento

Efficiency

	n <sub>1</sub> [rpm]	Rendimiento Efficiency	Relación de reducción / Ratio											
			5	7.5	10	15	20	25	30	40	50	60	80	100
CM040	1750	Rd	88	86	84	81	78	74	70	65	60	58	52	46
		Rs	74	71	67	60	55	51	45	40	36	32	28	24
CM050	1750	Rd	89	87	85	82	79	76	72	67	63	60	54	49
		Rs	73	70	66	59	55	51	44	39	35	32	27	23
CM063	1750	Rd	90	88	86	84	81	78	75	70	66	63	57	52
		Rs	73	71	67	60	55	51	45	40	36	33	28	24
CM075	1750	Rd		89	87	84	83	80	77	73	69	66	60	56
		Rs		73	69	62	59	55	48	43	39	36	31	27
CM090	1750	Rd		90	88	86	84	83	79	76	72	69	64	60
		Rs		74	71	65	61	59	51	46	42	39	34	30
CM110	1750	Rd		89	88	86	85	84	80	79	76	73	68	64
		Rs		74	71	64	64	60	50	49	46	42	37	33

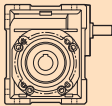


Rendimiento teórico del reductor después del rodaje  
Theoretical efficiency of the gearbox after the first running period



**Datos técnicos**

**Technical data**

	i	n <sub>1</sub> = 1750 rpm			<b>NEMA Motores aplicables</b> <b>NEMA Motor adapters</b> <b>56 C</b>
		n <sub>2</sub> [rpm]	Mn <sub>2</sub> [lb·in]	Pn <sub>1</sub> [hp]	
<b>CMIS 40</b>					
	5	350	363	2.29	
	7.5	233	389	1.68	
	10	175	398	1.32	
	15	117	398	0.91	
	20	88	354	0.63	
	25	70	336	0.50	
	30	58	425	0.56	
	40	44	372	0.40	
	50	35	345	0.32	
	60	29	319	0.25	
	80	22	292	0.19	
	100	18	274	0.17	

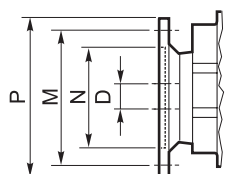
<b>CMIS 50</b>					
	5	350	664	4.14	
	7.5	233	699	2.97	
	10	175	726	2.37	
	15	117	726	1.64	
	20	88	637	1.12	
	25	70	620	0.90	
	30	58	779	1.00	
	40	44	673	0.70	
	50	35	637	0.56	
	60	29	611	0.47	
	80	22	531	0.34	
	100	18	496	0.28	

NOTA Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

NOTE Highlighted áreas indicate the motor input flange available on each gearbox size.

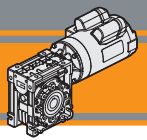
Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas C8 a la C11.

Before selecting any gearbox, please read the performance values shown in the tables on page C8 to C11.



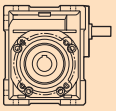
Dimensiones NEMA/ NEMA Dimensions	
	<b>56 C</b>
<b>N</b>	4.5
<b>M</b>	5.88
<b>P</b>	6.5
<b>D</b>	0.625





Datos técnicos

Technical data

	i	n <sub>1</sub> = 1750 rpm					
		n <sub>2</sub> [rpm]	Mn <sub>2</sub> [lb·in]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters		
					56 C	140 TC	180 TC
<b>CMIS 63</b>							
	5	350	1186	7.31	B		
	7.5	233	1274	5.36	B		
	10	175	1310	4.23	B		
	15	117	1363	3.00	B		
	20	88	1204	2.06	B		
	25	70	1195	1.70	B		
	30	58	1469	1.81	B		
	40	44	1257	1.25			
	50	35	1204	1.01			
	60	29	1115	0.82			
	80	22	1044	0.64			
	100	18	1027	0.55			

<b>CMIS 75</b>							
	7.5	233	2106	8.76	BS	B	
	10	175	2274	7.25	BS	B	
	15	117	2354	5.18	BS	B	
	20	88	2142	3.58	B		
	25	70	1991	2.76	B		
	30	58	2531	3.04	B		
	40	44	2221	2.11	B		
	50	35	2009	1.62	B		
	60	29	1929	1.35			
	80	22	1708	0.99			
	100	18	1620	0.80			

NOTA

Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

B/BS = Casquillo de reducción en acero.



\* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico

Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas C8 a la C11.

NOTE

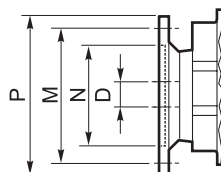
Highlighted áreas indicate the motor input flange available on each gearbox size.

B/BS = Metal shaft sleeve.

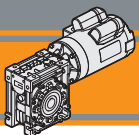


\* = The service factor (sf) has to be selected depending on application: please contact our Technical Department.

Before selecting any gearbox, please read the performance values shown in the tables on page C8 to C11.

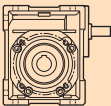


Dimensiones NEMA/ NEMA Dimensions			
	56 C	140 TC	180 TC
N	4.5		8.5
M	5.88		7.25
P	6.5		9
D	0.625	0.875	1.125



**Datos técnicos**

**Technical data**

	i	n <sub>1</sub> = 1750 rpm						
		n <sub>2</sub> [rpm]	Mn <sub>2</sub> [lb·in]	Pn <sub>1</sub> [hp]	NEMA Motores aplicables NEMA Motor adapters			
					56 C	140 TC	180 TC	210 TC
<b>CMIS 90</b>								
	7.5	233	3027	12.44	BS	B		
	10	175	3363	10.60	BS	B		
	15	117	3832	8.24	BS	B		
	20	88	3664	6.05	BS	B		
	25	70	3266	4.37	BS	B		
	30	58	4363	5.11	BS	B		
	40	44	3841	3.51	B			
	50	35	3407	2.63	B			
	60	29	3115	2.09	B			
	80	22	2867	1.55				
	100	18	2646	1.22				

<b>CMIS 110</b>							
	7.5	233	5354	22.26	BS	B	
	10	175	5921	18.67	BS	B	
	15	117	6461	13.90	BS	B	
	20	88	6549	10.69	BS	B	
	25	70	5930	7.83	B		
	30	58	7213	8.34	B		
	40	44	6797	5.97	B		
	50	35	6186	4.52	B		
	60	29	5540	3.51	B		
	80	22	4974	2.54			
	100	18	4629	2.01			

**NOTA**

Las áreas resaltadas indican el tamaño de carcasa del motor correspondiente.

**B/BS** = Casquillo de reducción en acero.



\* = Pn<sub>1</sub> es la potencia mecánica. La potencia aplicable resulta reducida por el factor térmico. Para más detalles consultar con nuestro servicio técnico

Antes de seleccionar cualquier reductor, favor de revisar los valores de desempeño en las páginas C8 a la C11.

**NOTE**

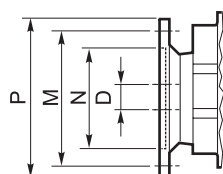
Highlighted areas indicate the motor input flange available on each gearbox size.

**B/BS** = Metal shaft sleeve.

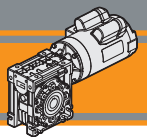


\* = The service factor (sf) has to be selected depending on application: please contact our Technical Department.

Before selecting any gearbox, please read the performance values shown in the tables on page C8 to C11.







<b>Dimensiones NEMA/ NEMA Dimensions</b>				
	56 C	140 TC	180 TC	210 TC
<b>N</b>	4.5		8.5	
<b>M</b>	5.88		7.25	
<b>P</b>	6.5		9	
<b>D</b>	0.625	0.875	1.125	1.375







Datos técnicos

Technical data

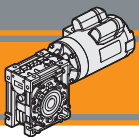
P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i				
<b>0.16 hp</b>									
0.12 kW (1750 rpm)	350	25	14.3	III	5	<b>CM040</b>	<b>56C</b>		
	233	37	10.5	III	7.5		<b>56C</b>		
	175	48	8.2	III	10		<b>56C</b>		
	117	70	5.7	III	15		<b>56C</b>		
	88	90	3.9	III	20		<b>56C</b>		
	70	107	3.2	III	25		<b>56C</b>		
	58	121	3.5	III	30		<b>56C</b>		
	44	150	2.5	III	40		<b>56C</b>		
	35	173	2.0	II	50		<b>56C</b>		
	29	201	1.6	II	60		<b>56C</b>		
	22	240	1.2	I	80		<b>56C</b>		
	18	265	1.0	I	100		<b>56C</b>		
	350	26	25.9	III	5		<b>CM050</b>	<b>56C</b>	
		233	38	18.6	III			7.5	<b>56C</b>
		175	49	14.8	III			10	<b>56C</b>
		117	71	10.2	III			15	<b>56C</b>
88		91	7.0	III	20	<b>56C</b>			
70		110	5.7	III	25	<b>56C</b>			
58		125	6.3	III	30	<b>56C</b>			
44		155	4.4	III	40	<b>56C</b>			
35		182	3.5	III	50	<b>56C</b>			
29		208	2.9	III	60	<b>56C</b>			
22		249	2.1	III	80	<b>56C</b>			
18		283	1.8	II	100	<b>56C</b>			
35		190	6.3	III	50	<b>CM063</b>		<b>56C</b>	
		29	218	5.1	III			60	<b>56C</b>
		22	263	4.0	III			80	<b>56C</b>
		18	300	3.4	III			100	<b>56C</b>

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i				
<b>0.25 hp</b>									
0.18 kW (1750 rpm)	35	297	4.0	III	50	<b>CM063</b>	<b>56C</b>		
	29	341	3.3	III	60		<b>56C</b>		
	22	411	2.5	III	80		<b>56C</b>		
	18	469	2.2	III	100		<b>56C</b>		
	<b>0.33 hp</b>								
	0.22 kW (1750 rpm)	350	52	6.9	III		5	<b>CM040</b>	<b>56C</b>
233		77	5.1	III	7.5	<b>56C</b>			
175		100	4.0	III	10	<b>56C</b>			
117		145	2.8	III	15	<b>56C</b>			
88		186	1.9	II	20	<b>56C</b>			
70		220	1.5	II	25	<b>56C</b>			
58		250	1.7	II	30	<b>56C</b>			
44		309	1.2	I	40	<b>56C</b>			
35		357	1.0	I	50	<b>56C</b>			
350		53	12.5	III	5	<b>CM050</b>	<b>56C</b>		
		233	78	9.0	III		7.5		<b>56C</b>
		175	101	7.2	III		10		<b>56C</b>
		117	146	5.0	III		15	<b>56C</b>	
		88	188	3.4	III		20	<b>56C</b>	
		70	226	2.7	III		25	<b>56C</b>	
		58	257	3.0	III		30	<b>56C</b>	
		44	319	2.1	III		40	<b>56C</b>	
		35	375	1.7	II		50	<b>56C</b>	
		29	428	1.4	II		60	<b>56C</b>	
		22	514	1.0	I		80	<b>56C</b>	
		18	583	0.9	I		100	<b>56C</b>	
35		393	3.1	III	50	<b>CM063</b>	<b>56C</b>		
		29	450	2.5	III		60	<b>56C</b>	
		22	542	1.9	II		80	<b>56C</b>	
	18	619	1.7	II	100		<b>56C</b>		
	22	571	3.0	III	80		<b>CM075</b>	<b>56C</b>	
		18	666	2.4	III			100	<b>56C</b>

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i				
<b>0.25 hp</b>									
0.18 kW (1750 rpm)	350	40	9.2	III	5	<b>CM040</b>	<b>56C</b>		
	233	58	6.7	III	7.5		<b>56C</b>		
	175	76	5.3	III	10		<b>56C</b>		
	117	109	3.6	III	15		<b>56C</b>		
	88	141	2.5	III	20		<b>56C</b>		
	70	167	2.0	III	25		<b>56C</b>		
	58	189	2.2	III	30		<b>56C</b>		
	44	234	1.6	II	40		<b>56C</b>		
	35	270	1.3	I	50		<b>56C</b>		
	29	314	1.0	I	60		<b>56C</b>		
	350	40	16.6	III	5		<b>CM050</b>	<b>56C</b>	
		233	59	11.9	III			7.5	<b>56C</b>
		175	77	9.5	III			10	<b>56C</b>
		117	111	6.5	III			15	<b>56C</b>
		88	142	4.5	III			20	<b>56C</b>
		70	171	3.6	III			25	<b>56C</b>
58		195	4.0	III	30	<b>56C</b>			
44		241	2.8	III	40	<b>56C</b>			
35		284	2.2	III	50	<b>56C</b>			
29		324	1.9	II	60	<b>56C</b>			
22		389	1.4	I	80	<b>56C</b>			
18		442	1.1	I	100	<b>56C</b>			

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
<b>0.5 hp</b>							
0.37 kW (1750 rpm)	350	79	4.6	III	5	<b>CM040</b>	<b>56C</b>
	233	116	3.4	III	7.5		<b>56C</b>
	175	151	2.6	III	10		<b>56C</b>
	117	219	1.8	II	15		<b>56C</b>
	88	281	1.3	I	20		<b>56C</b>
	70	333	1.0	I	25		<b>56C</b>
	58	378	1.1	I	30		<b>56C</b>

CM







**CM**

Motorreductores sinfín corona  
Wormgearboxes

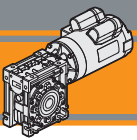
**Nema 60 Hz**

**Datos técnicos**

**Technical data**

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i			P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i					
<b>0.5 hp</b>								<b>1 hp</b>										
0.37 kW (1750 rpm)	350	80	8.3	III	5	<b>CM050</b>	<b>56C</b>	0.75 kW (1750 rpm)	350	160	4.1	III	5	<b>CM050</b>	<b>56C</b>			
	233	118	5.9	III	7.5				<b>56C</b>	233	235	3.0	III			7.5	<b>56C</b>	
	175	153	4.7	III	10				<b>56C</b>	175	306	2.4	III			10	<b>56C</b>	
	117	222	3.3	III	15				<b>56C</b>	117	443	1.6	II			15	<b>56C</b>	
	88	285	2.2	III	20				<b>56C</b>	88	570	1.1	I			20	<b>56C</b>	
	70	342	1.8	II	25				<b>56C</b>	70	685	0.9	I			25	<b>56C</b>	
	58	389	2.0	III	30	<b>56C</b>	58		779	1.0	I	30	<b>56C</b>					
	44	483	1.4	I	40	<b>56C</b>	350 233 175 117 88 70 58 44 35		162	7.3	III	5	<b>CM063</b>	<b>56C-140TC</b>				
	35	568	1.1	I	50	<b>56C</b>			238	5.4	III	7.5			<b>56C-140TC</b>			
	29	649	0.9	I	60	<b>56C</b>			310	4.2	III	10			<b>56C-140TC</b>			
	44	505	2.5	III	40	<b>CM063</b>			<b>56C</b>	454	3.0	III			15	<b>56C-140TC</b>		
	35	595	2.0	III	50				<b>56C</b>	584	2.1	III			20	<b>56C-140TC</b>		
	29	681	1.6	II	60				<b>56C</b>	703	1.7	II			25	<b>56C-140TC</b>		
	22	822	1.3	I	80		<b>56C</b>		811	1.8	II	30	<b>56C-140TC</b>					
	18	937	1.1	I	100		<b>56C</b>		1009	1.2	I	40	<b>56C</b>					
	29	714	2.7	III	60		<b>CM075</b>		<b>56C</b>	1189	1.0	I	50	<b>56C</b>				
	22	865	2.0	II	80	<b>56C</b>			70 58 44 35 29 22	721	2.8	III	25	<b>CM075</b>	<b>56C-140TC</b>			
	18	1009	1.6	II	100	<b>56C</b>				833	3.1	III	30			<b>56C-140TC</b>		
22	923	3.1	III	80	<b>CM090</b>	<b>56C</b>		1053		2.1	III	40	<b>56C-140TC</b>					
18	1081	2.4	III	100		<b>56C</b>		1244		1.6	II	50	<b>56C-140TC</b>					
								<b>56C</b>		1427	1.4	I	60			<b>56C</b>		
							<b>56C</b>	1730		1.0	I	80	<b>56C</b>					
							<b>56C</b>	35 29 22	1298	2.6	III	50	<b>CM090</b>	<b>56C-140TC</b>				
							<b>56C</b>		1492	2.1	III	60			<b>56C-140TC</b>			
						<b>56C</b>	1845		1.6	II	80	<b>56C</b>						
						<b>56C</b>	2163		1.2	I	100	<b>56C</b>						
						<b>56C</b>	22 18		1961	2.5	III	80			<b>CM110</b>	<b>140TC</b>		
						<b>56C</b>			2307	2.0	III	100					<b>140TC</b>	
						<b>56C</b>		<b>1.5 hp</b>										
						<b>56C</b>		1.1 kW (1750 rpm)	350	243	4.9	III	5	<b>CM063</b>			<b>56C-140TC</b>	
						<b>56C</b>			233	357	3.6	III	7.5					<b>56C-140TC</b>
						<b>56C</b>			175	465	2.8	III	10					<b>56C-140TC</b>
						<b>56C</b>	117		681	2.0	III	15	<b>56C-140TC</b>					
						<b>56C</b>	88		876	1.4	I	20	<b>56C-140TC</b>					
						<b>56C</b>	70		1054	1.1	I	25	<b>56C-140TC</b>					
						<b>56C</b>	58		1217	1.2	I	30	<b>56C-140TC</b>					
						<b>56C</b>	58		1217	1.2	I	30	<b>56C-140TC</b>					
						<b>56C</b>	233 175 117 88 70 58 44 35 29		361	5.8	III	7.5	<b>CM075</b>	<b>56C-140TC</b>				
						<b>56C</b>			470	4.8	III	10			<b>56C-140TC</b>			
						<b>56C</b>			681	3.5	III	15			<b>56C-140TC</b>			
						<b>56C</b>			898	2.4	III	20			<b>56C-140TC</b>			
						<b>56C</b>			1081	1.8	II	25			<b>56C-140TC</b>			
						<b>56C</b>			1249	2.0	III	30			<b>56C-140TC</b>			
						<b>56C</b>	1579		1.4	II	40	<b>56C-140TC</b>						
						<b>56C</b>	1865		1.1	I	50	<b>56C-140TC</b>						
						<b>56C</b>	2141		0.9	I	60	<b>56C</b>						





**CM**

Motorreductores sinfín corona  
Wormgearboxes

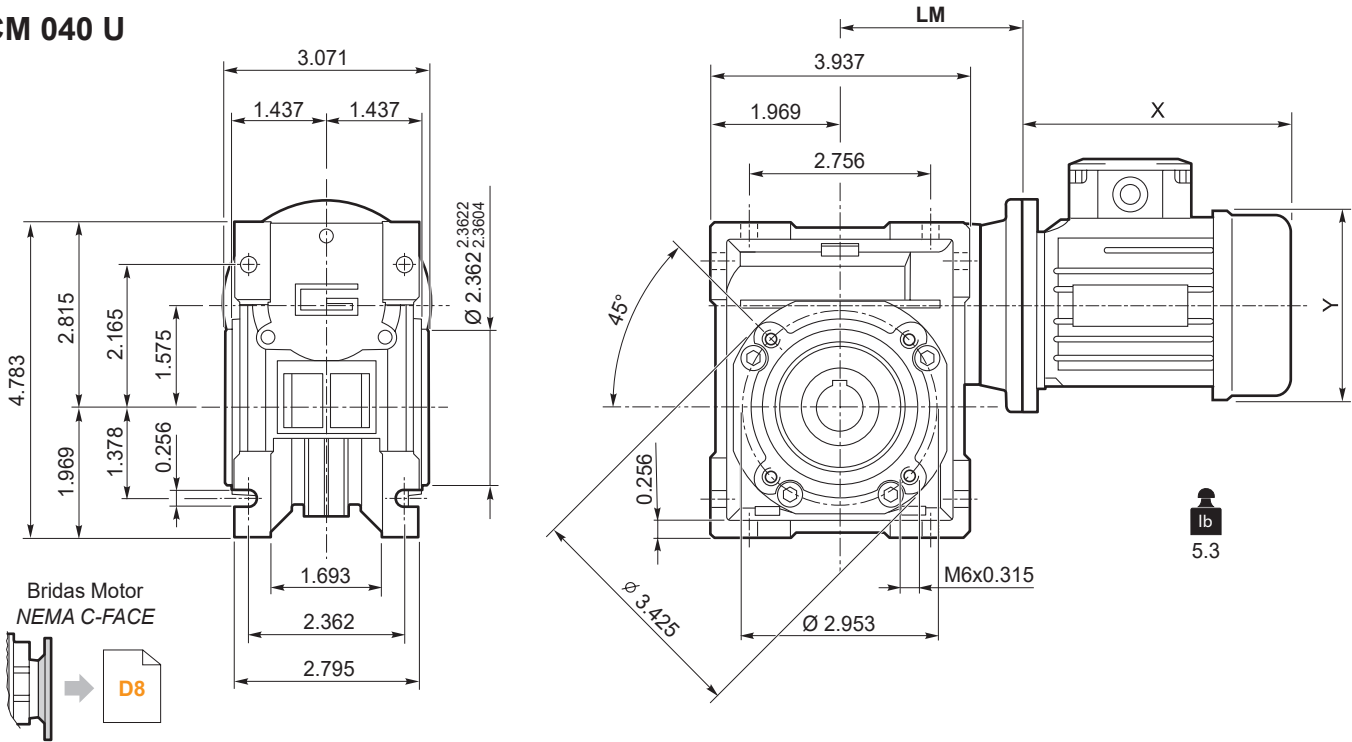
**Nema 60 Hz**

Dimensiones

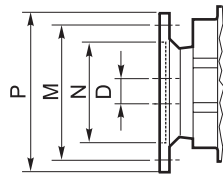
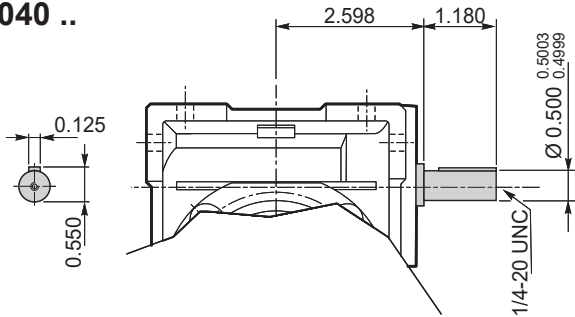
Dimensions

**CM 040 U - CMIS 040 U**

**CM 040 U**

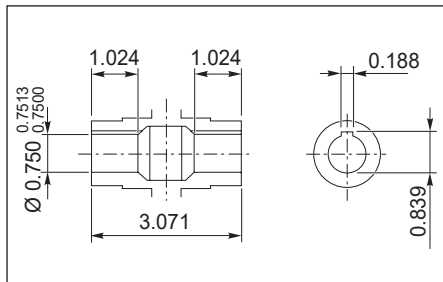


**CMIS 040 ..**

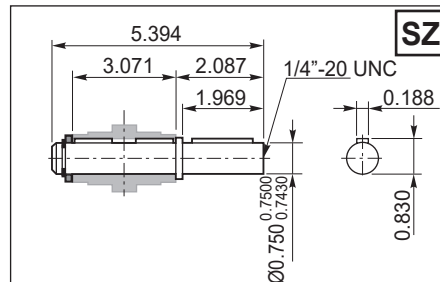


Brida Motor / Motor flange	
Dimensiones NEMA NEMA Dimensions	
	<b>56 C</b>
<b>N</b>	4.5
<b>M</b>	5.88
<b>P</b>	6.5
<b>D</b>	0.625
<b>LM</b>	3.150

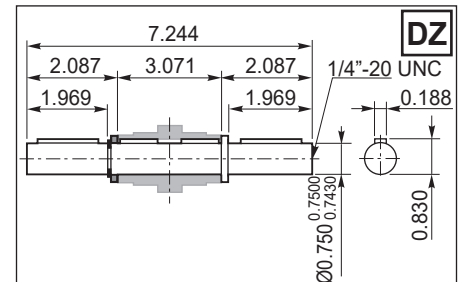
Eje de salida hueco / Hollow output shaft

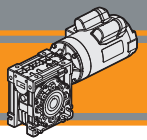


Eje de salida / Output shaft



Eje de salida / Output shaft



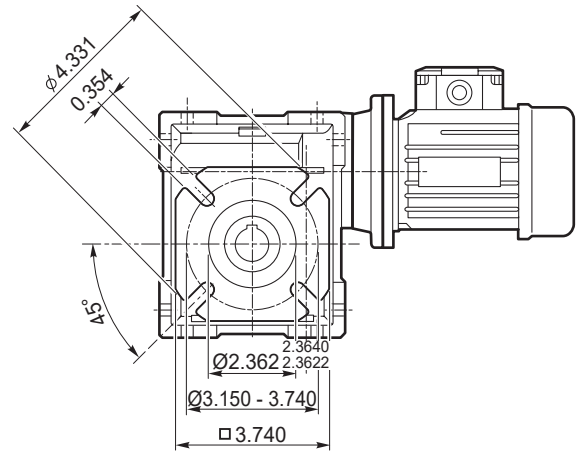
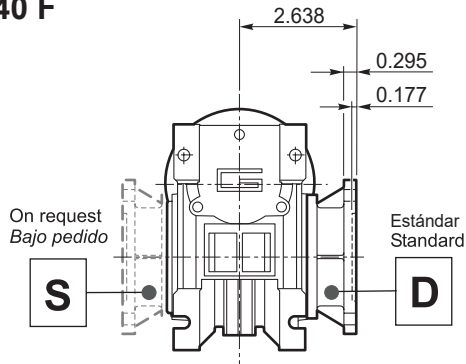


Dimensiones

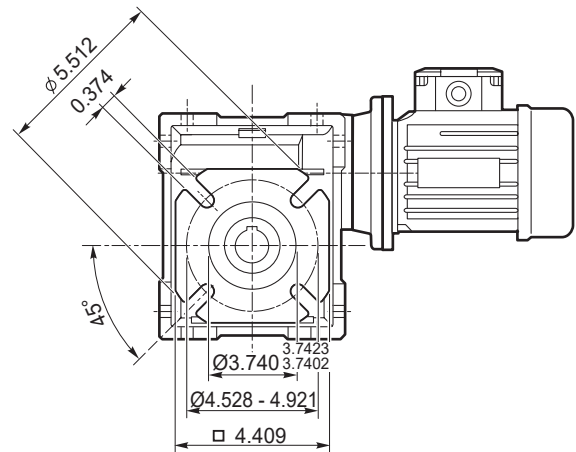
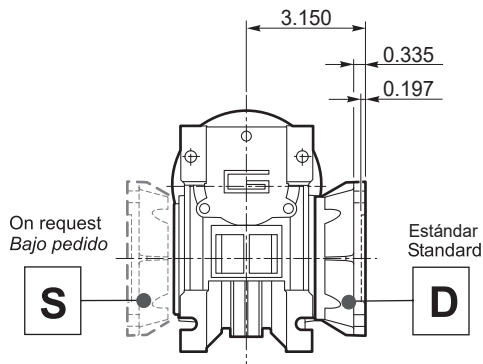
Dimensions

CM 040 F..

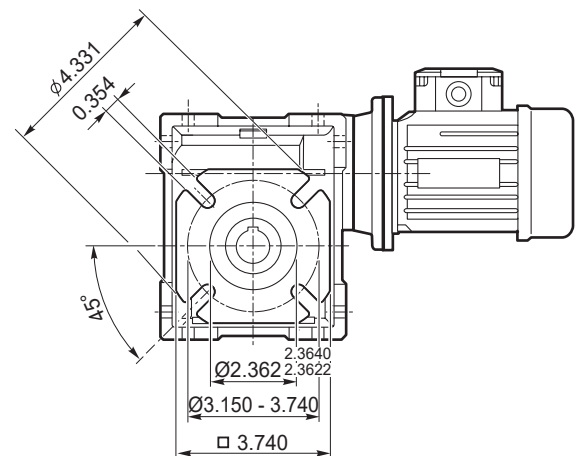
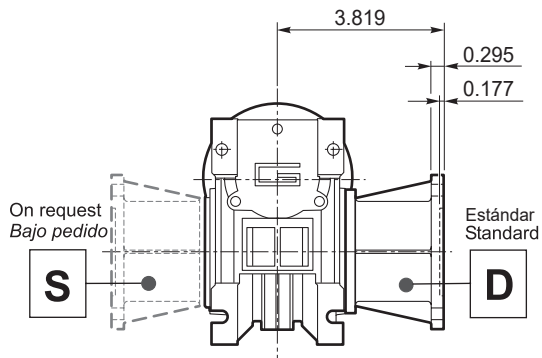
CM 040 F



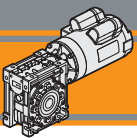
CM 040 FB



CM 040 FL



CM



**CM**

Motorreductores sinfín corona  
Wormgearboxes

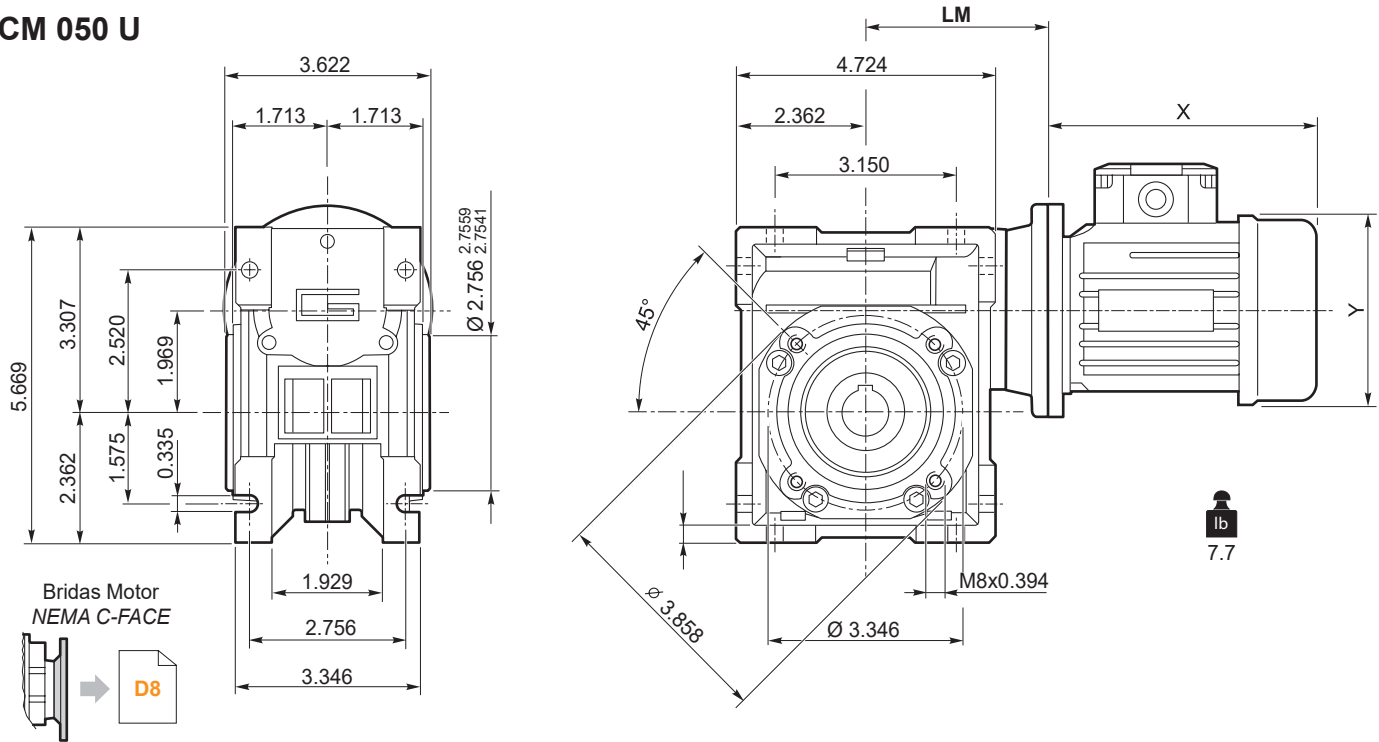
**Nema 60 Hz**

Dimensiones

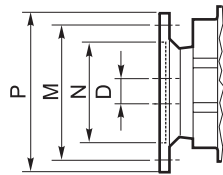
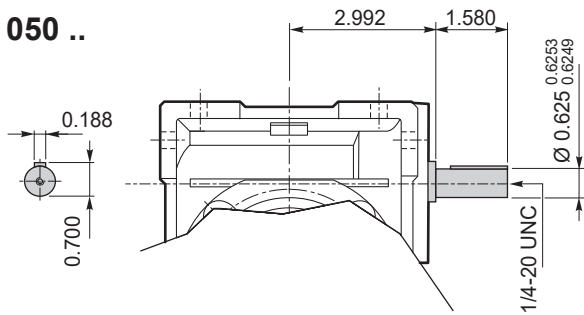
Dimensions

**CM 050 U - CMIS 050 U**

**CM 050 U**

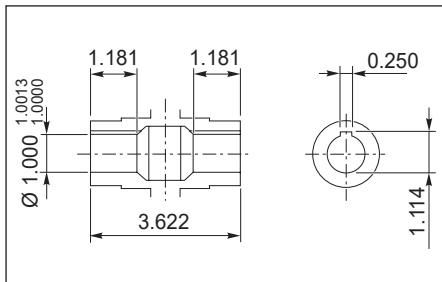


**CMIS 050 ..**

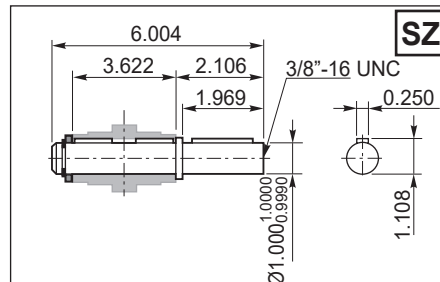


Brida Motor / Motor flange	
Dimensiones NEMA NEMA Dimensions	
	<b>56 C</b>
<b>N</b>	4.5
<b>M</b>	5.88
<b>P</b>	6.5
<b>D</b>	0.625
<b>LM</b>	3.346

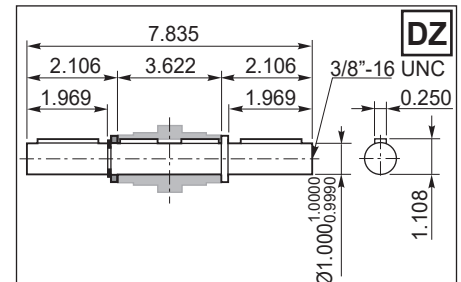
Eje de salida hueco / Hollow output shaft



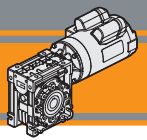
Eje de salida / Output shaft



Eje de salida / Output shaft





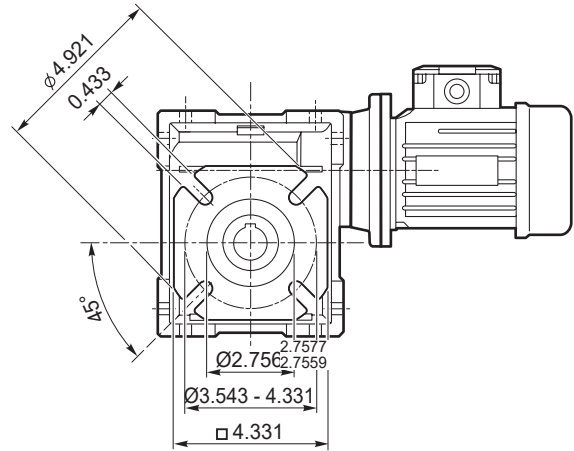
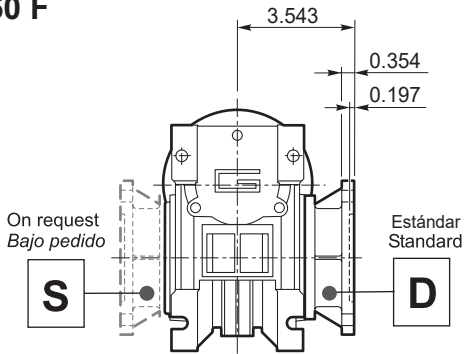


Dimensiones

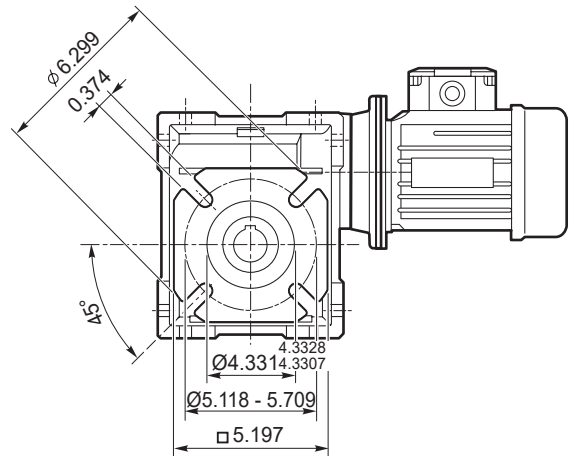
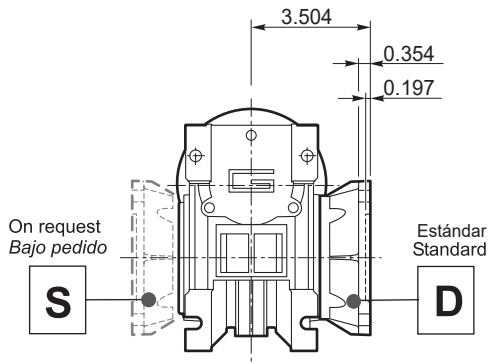
Dimensions

CM 050 F..

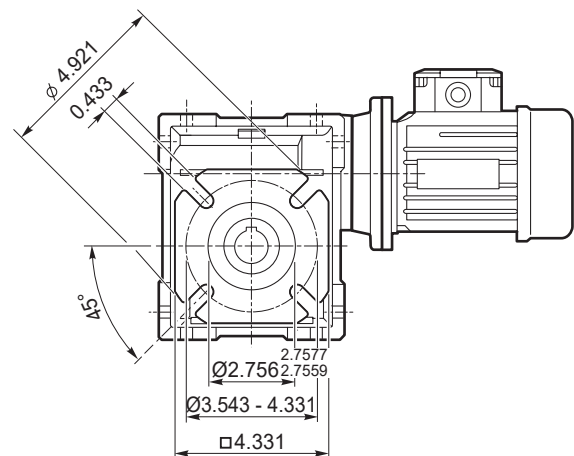
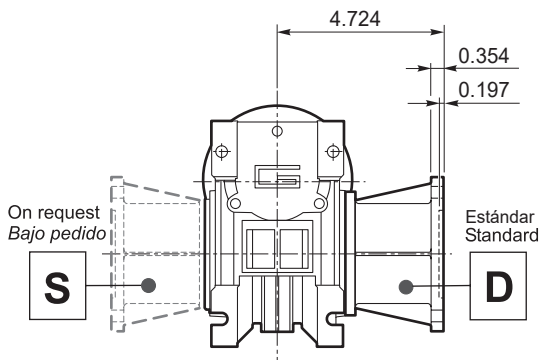
CM 050 F



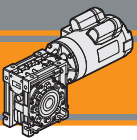
CM 050 FB



CM 050 FL



CM



**CM**

Motorreductores sin fin corona  
Wormgearboxes

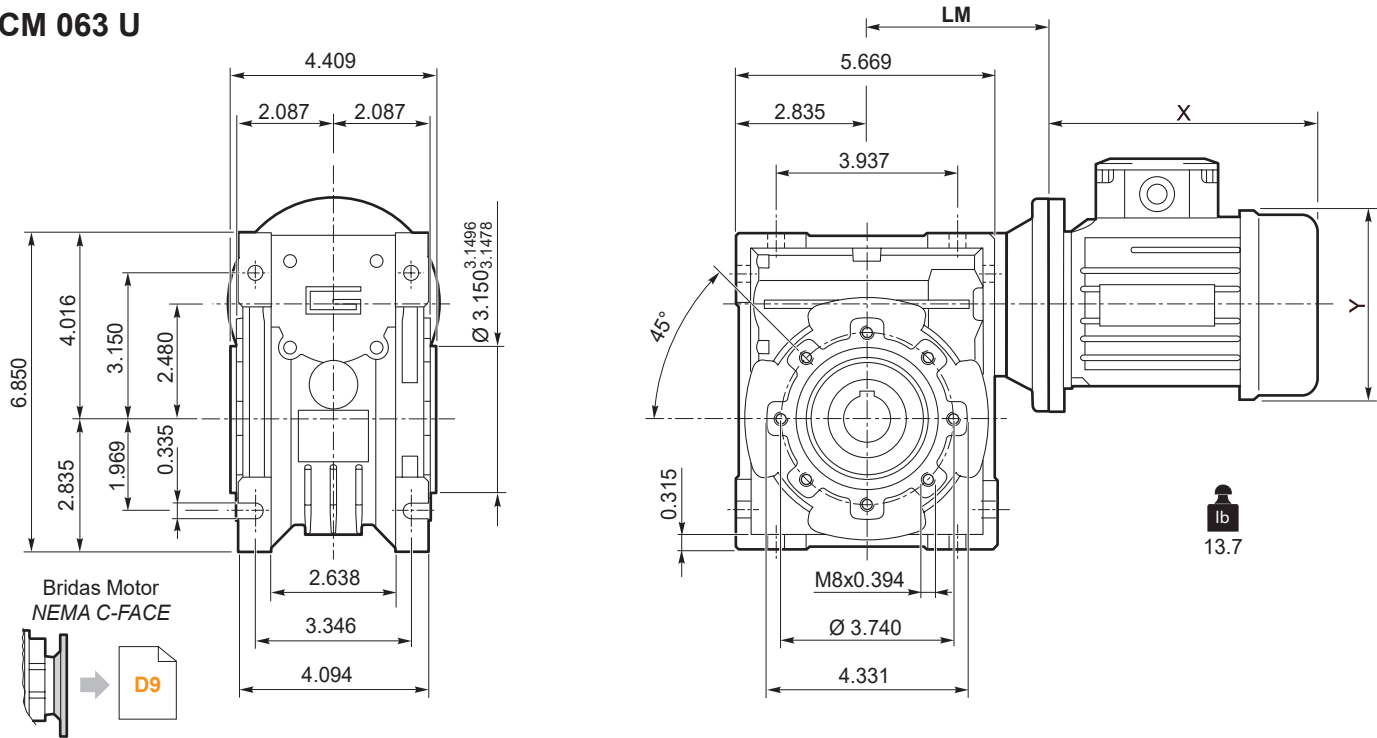
**Nema 60 Hz**

Dimensiones

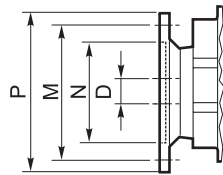
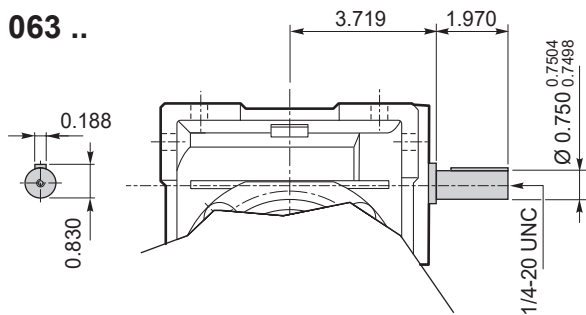
Dimensions

**CM 063 U - CMIS 063 U**

**CM 063 U**

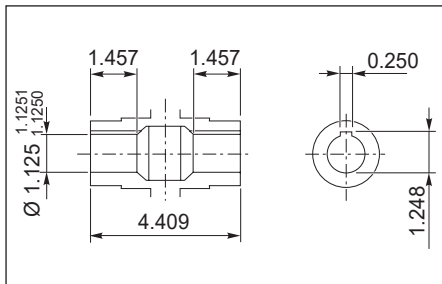


**CMIS 063 ..**

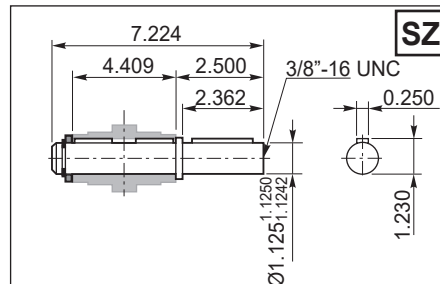


Brida Motor / Motor flange		
Dimensiones NEMA NEMA Dimensions		
	56 C	140 TC
N	4.5	
M	5.88	
P	6.5	
D	0.625	0.875
LM	4.055	

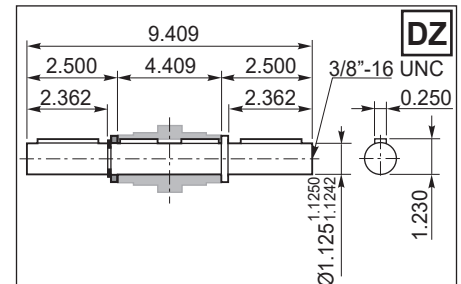
Eje de salida hueco / Hollow output shaft

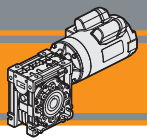


Eje de salida / Output shaft



Eje de salida / Output shaft



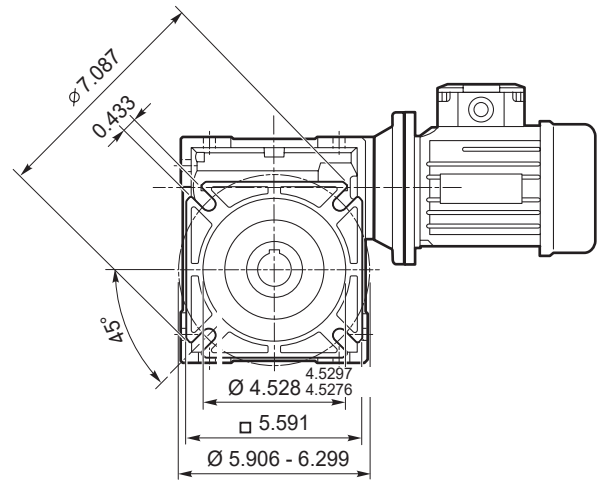
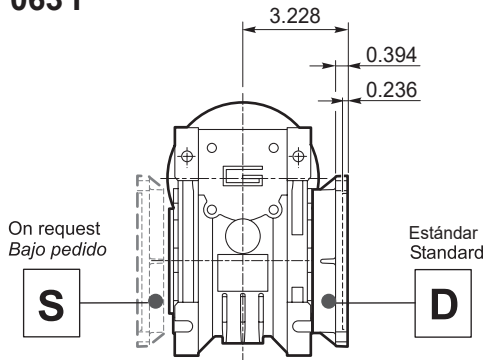


Dimensiones

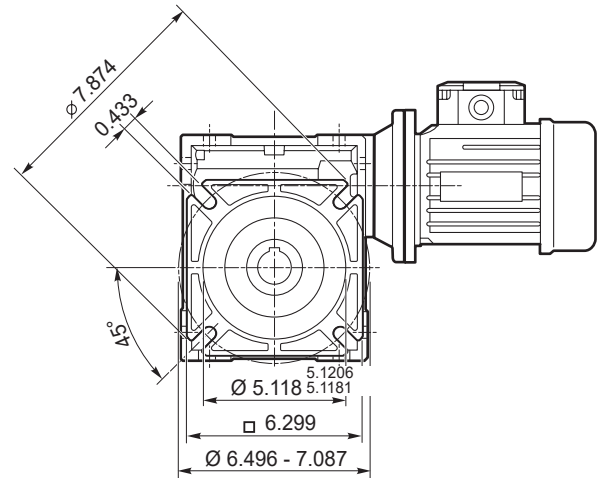
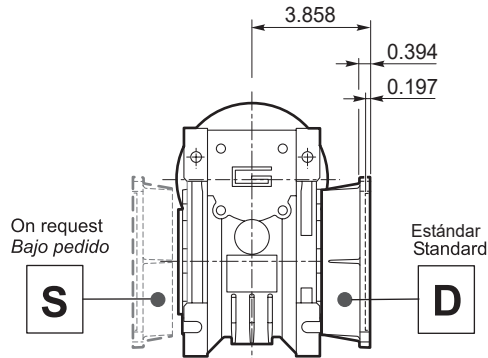
Dimensions

CM 063 F..

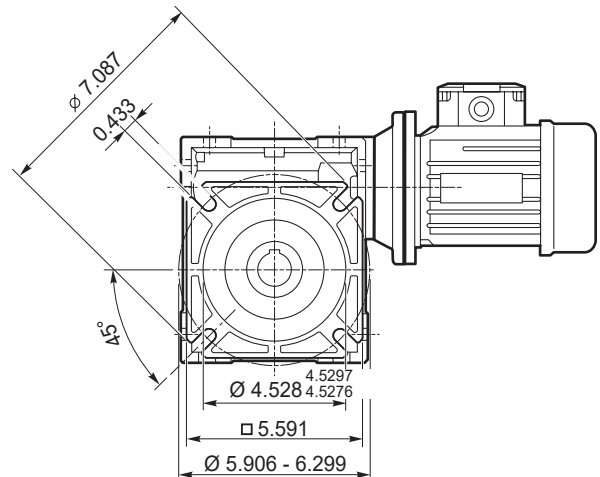
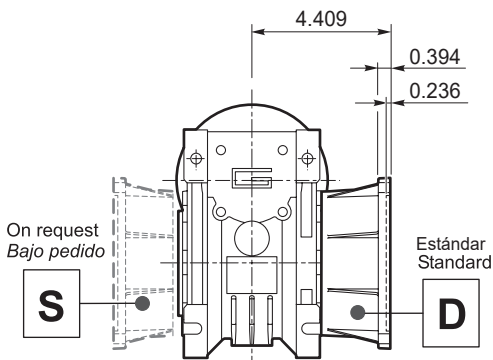
CM 063 F



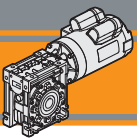
CM 063 FB



CM 063 FL



CM



**CM**

Motorreductores sinfín corona  
Wormgearboxes

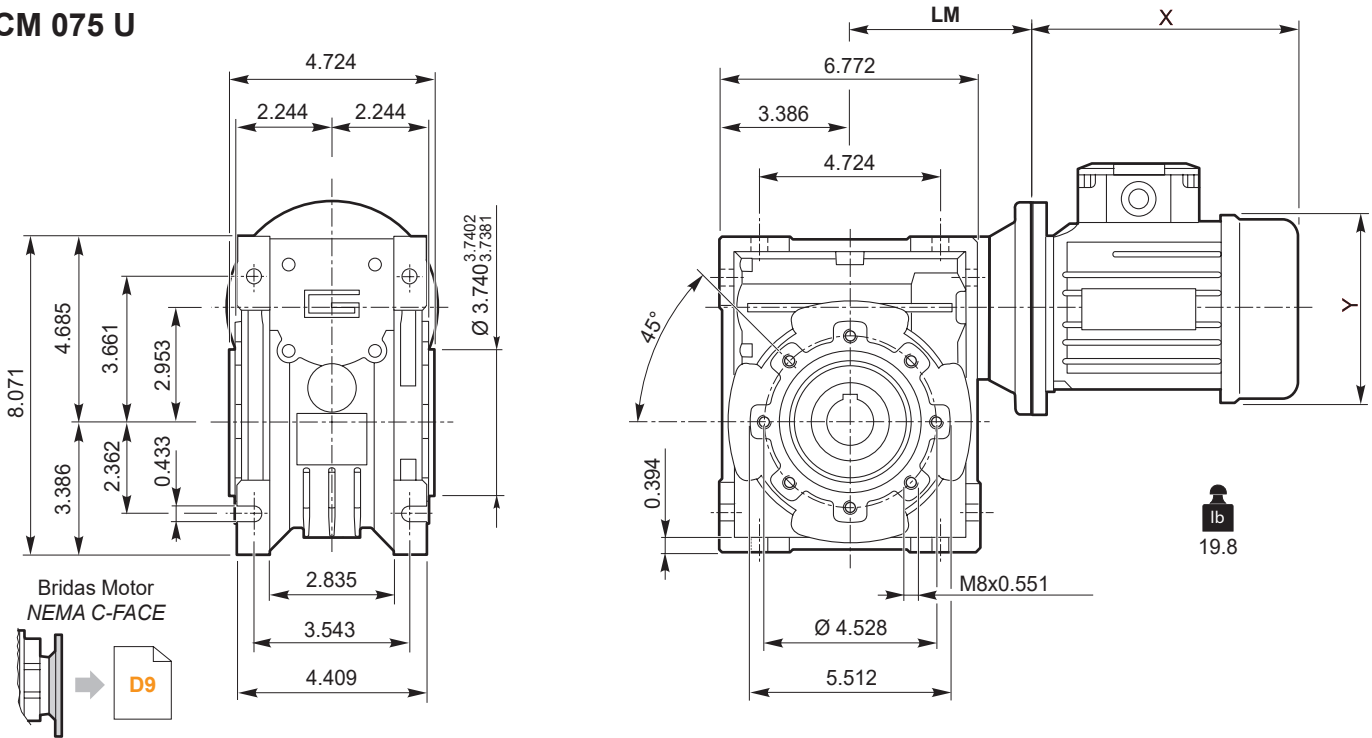
**Nema 60 Hz**

Dimensiones

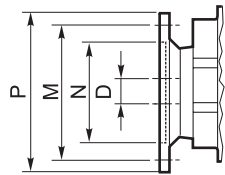
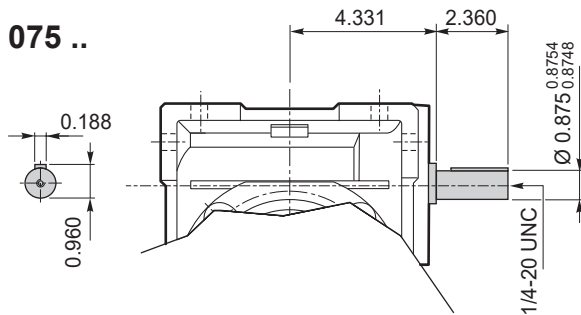
Dimensions

**CM 075 U - CMIS 075 U**

**CM 075 U**

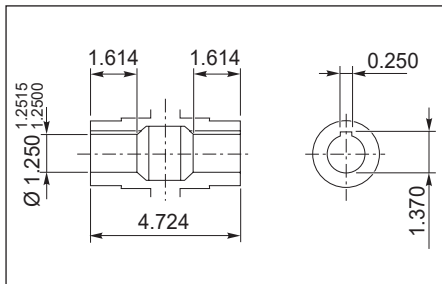


**CMIS 075 ..**

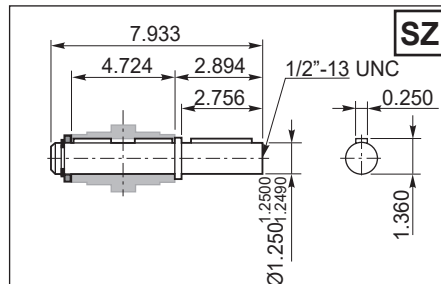


Brida Motor / Motor flange			
Dimensiones NEMA			
NEMA Dimensions			
	56 C	140 TC	180 TC
N	4.5		8.5
M	5.88		7.25
P	6.5		9
D	0.625	0.875	1.125
LM	4.842		4.961

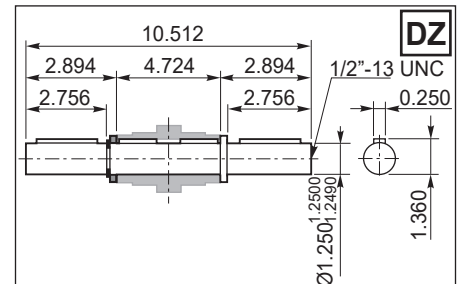
Eje de salida hueco / Hollow output shaft

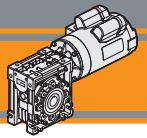


Eje de salida / Output shaft



Eje de salida / Output shaft



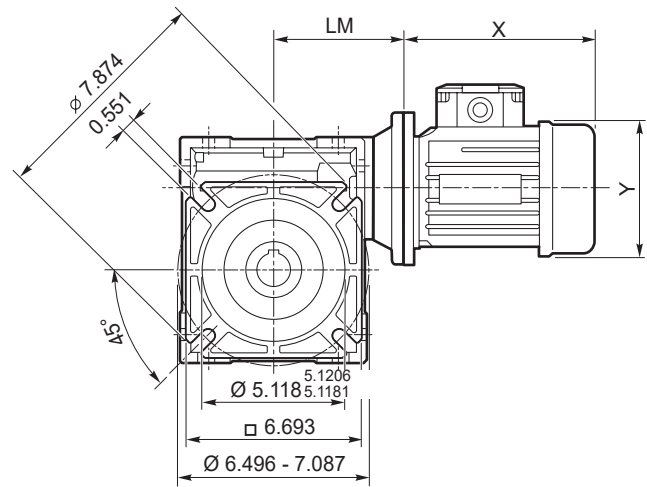
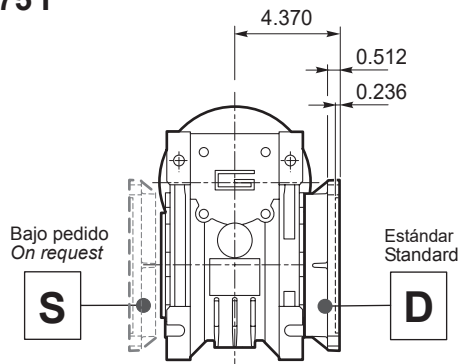


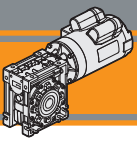
Dimensiones

Dimensions

CM 075 F..

CM 075 F





**CM**

Motorreductores sinfín corona  
Wormgearboxes

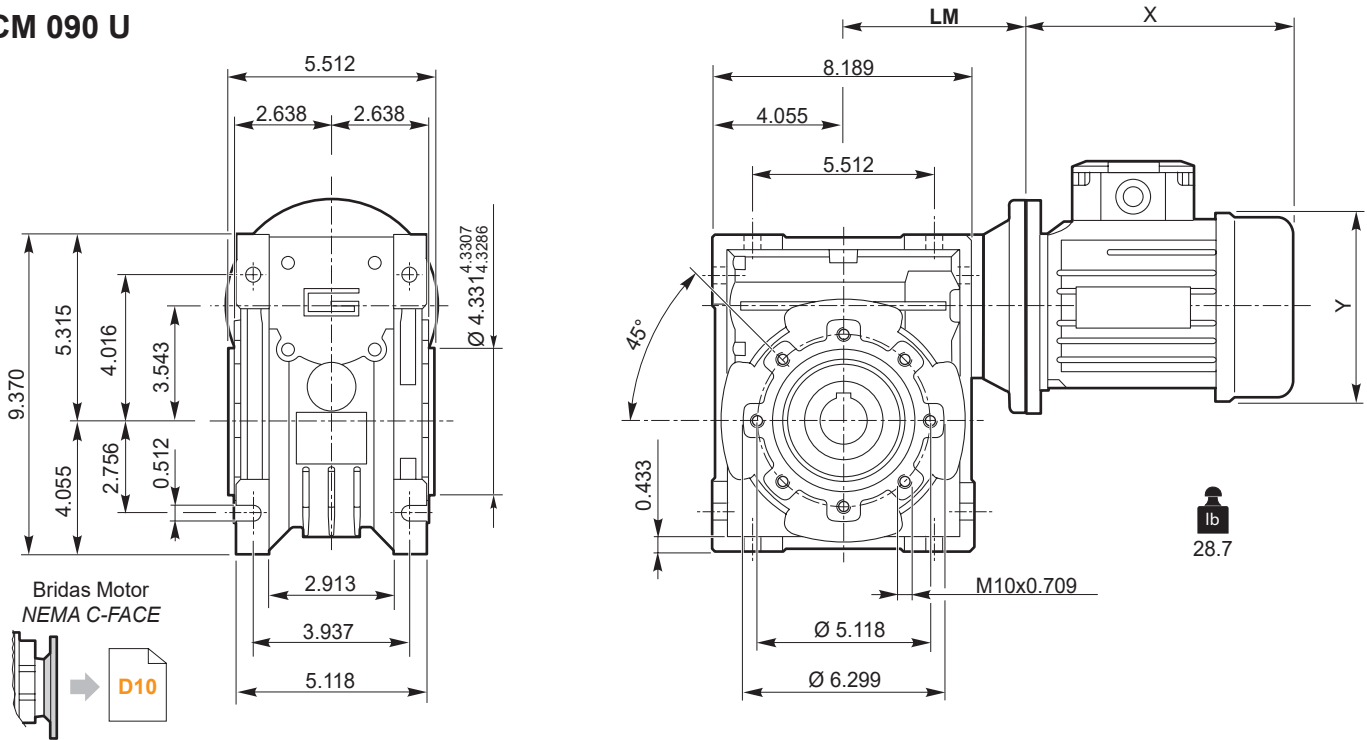
**Nema 60 Hz**

Dimensiones

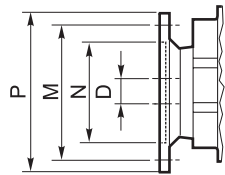
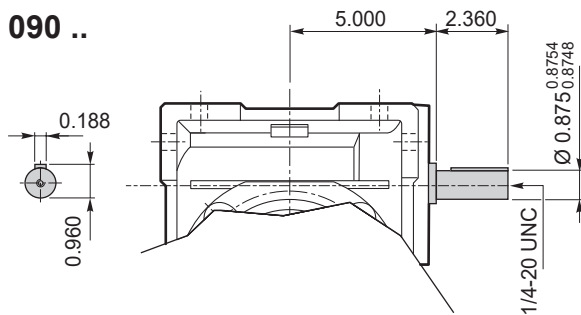
Dimensions

**CM 090 U - CMIS 090 U**

**CM 090 U**

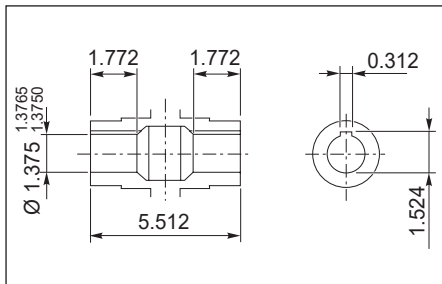


**CMIS 090 ..**

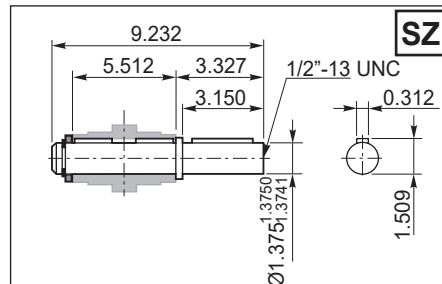


Brida Motor / Motor flange			
Dimensiones NEMA NEMA Dimensions			
	56 C	140 TC	180 TC
N	4.5	8.5	
M	5.88	7.25	
P	6.5	9	
D	0.625	0.875	1.125
LM	5.512		5.419

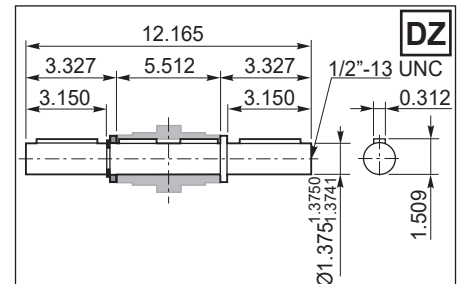
Eje de salida hueco / Hollow output shaft

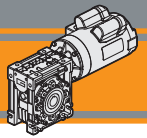


Eje de salida / Output shaft



Eje de salida / Output shaft



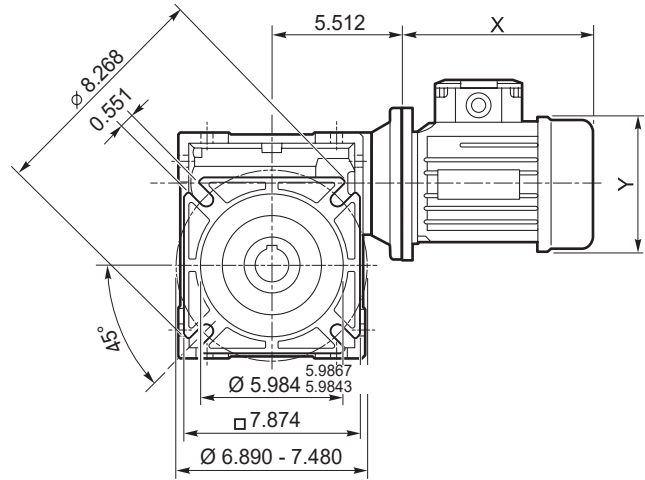
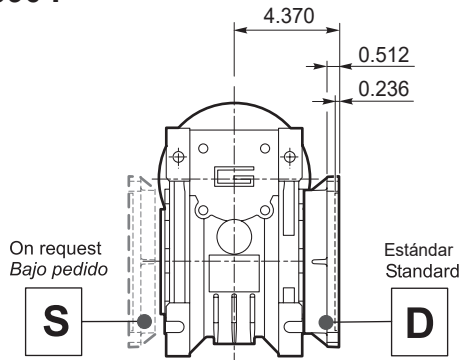


Dimensiones

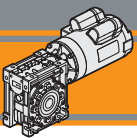
Dimensions

CM 090 F..

CM 090 F



CM



**CM**

Motorreductores sinfín corona  
Wormgearboxes

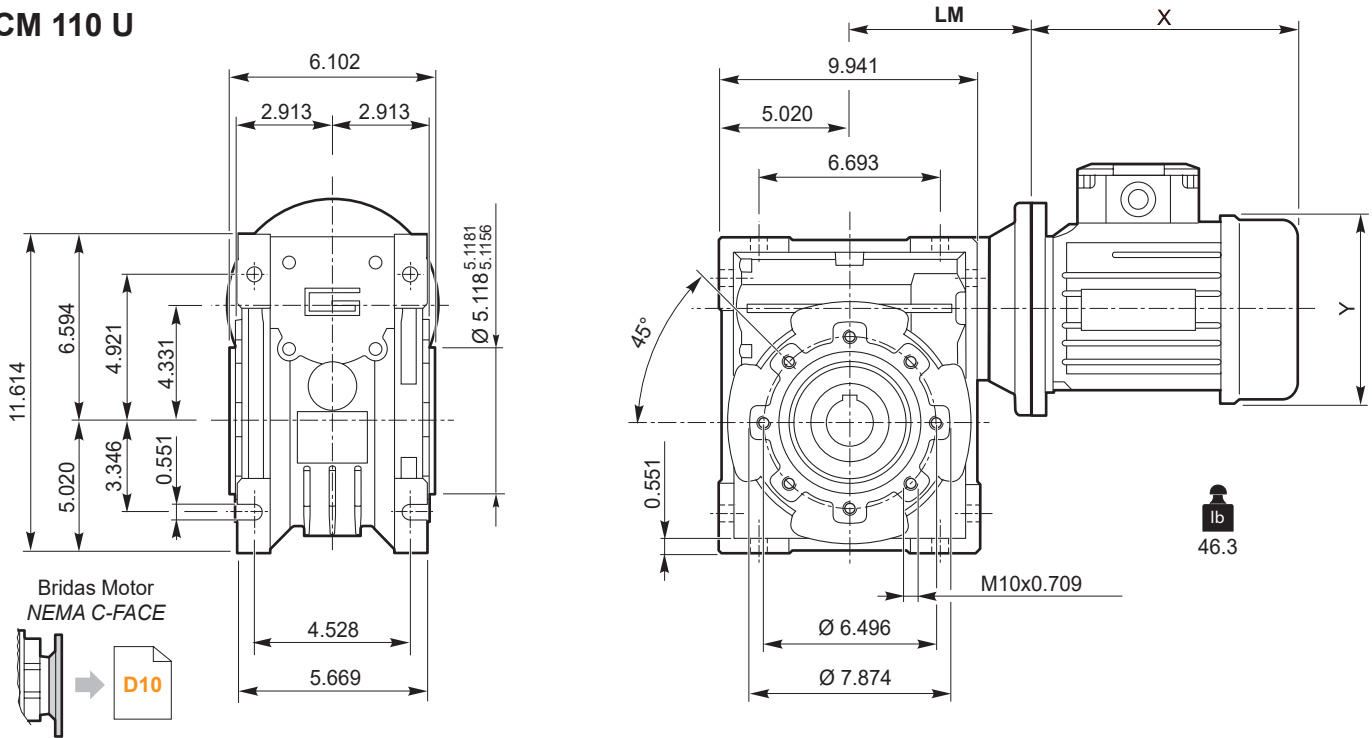
**Nema 60 Hz**

Dimensiones

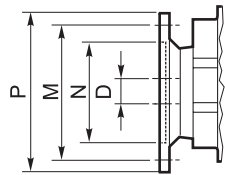
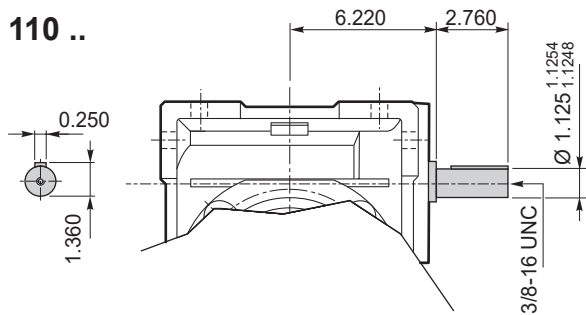
Dimensions

**CM 110 U - CMIS 110 U**

**CM 110 U**

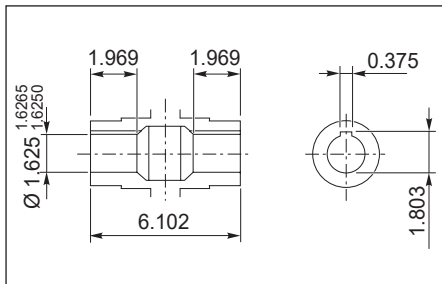


**CMIS 110 ..**

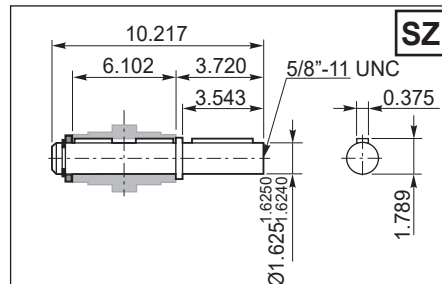


Brida Motor / Motor flange			
Dimensiones NEMA			
NEMA Dimensions			
	140 TC	180 TC	210 TC
N	4.5	8.5	
M	5.88	7.25	
P	6.5	9	
D	0.875	1.125	1.375
LM	6.693	6.693	

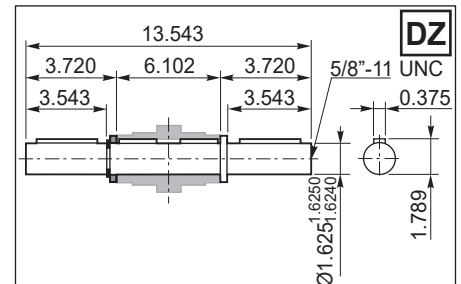
Eje de salida hueco / Hollow output shaft



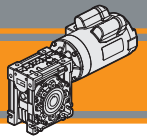
Eje de salida / Output shaft



Eje de salida / Output shaft





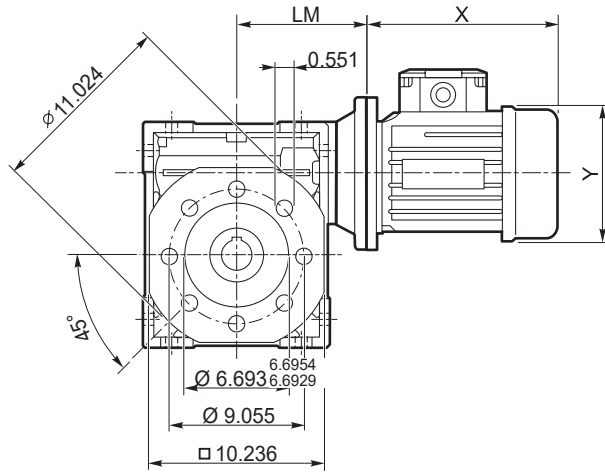
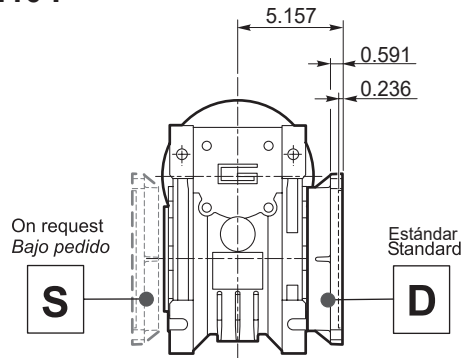


Dimensiones

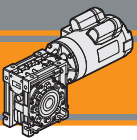
Dimensions

CM 110 F..

CM 110 F



CM



**CM**

Motorreductores sin fin corona  
Wormgearboxes

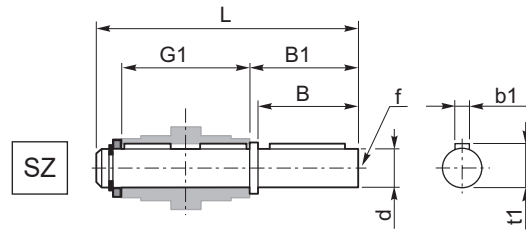
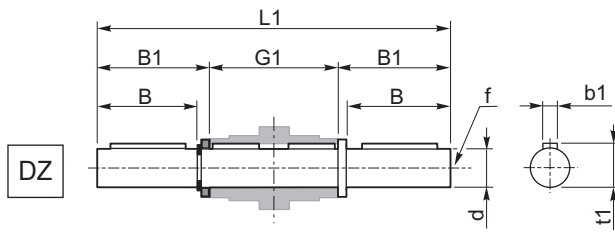
**Nema 60 Hz**

**Accesorios**

**Accessories**

**Eje de salida simple y doble**

**Single and double output shaft**

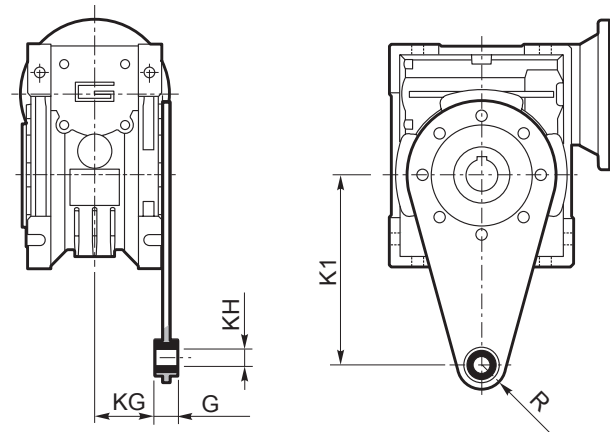


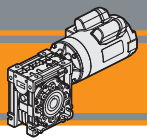
CM	d	B	B1	G1	L	L1	f	b1	t1
040	0.750 0.7500 0.7430	1.969	2.087	3.071	5.394	7.244	1/4"-20	0.188	0.830
050	1.000 1.0000 0.9992	1.969	2.106	3.622	6.004	7.835	3/8"-16	0.250	1.108
063	1.125 1.1250 1.1242	2.362	2.500	4.409	7.224	9.409	3/8"-16	0.250	1.230
075	1.250 1.2500 1.2490	2.756	2.894	4.724	7.933	10.512	1/2"-13	0.250	1.360
090	1.375 1.3750 1.3741	3.150	3.327	5.512	9.232	12.165	1/2"-13	0.312	1.509
110	1.625 1.6250 1.6240	3.543	3.720	6.102	10.217	13.543	5/8"-11	0.375	1.789

**Brazo de reacción**

**Torque arm**

CM	K1	G	KG	KH	R
040	3.937	0.551	1.220	0.394	0.709
050	3.937	0.551	1.496	0.394	0.709
063	5.906	0.551	1.870	0.394	0.709
075	7.874	0.984	1.831	0.787	1.181
090	7.874	0.984	2.224	0.787	1.181
110	9.843	1.181	2.441	0.984	1.378



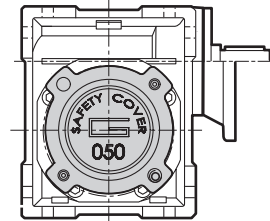
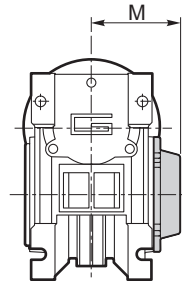


Opciones

Options

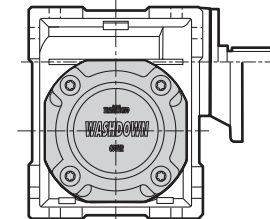
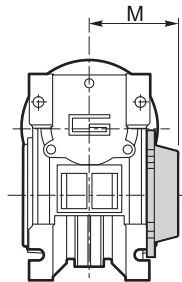
**SC** - Cubierta de seguridad - Safety Cover

CM	M
040	2.14
050	2.46
063	2.87
075	3.11
090	3.70
110	4.02



**WD** - Kit washdown cover

CM	M
040	2.19
050	2.50
063	2.81
075	3.15
090	3.74
110	4.06





**TRANSTECNO**<sup>®</sup>  
the modular gearmotor

**CMM**



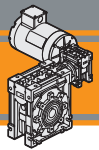
**60Hz**

**Nema**

Motorreductores sinfín corona  
de doble reducción  
**Double reduction wormgearmotors**



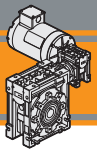




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Clasificación	<i>Classification</i>	<b>E2</b>
Nomenclatura	<i>Symbols</i>	<b>E3</b>
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Relaciones combinadas	<i>Combination ratio</i>	<b>E3</b>
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Dimensiones	<i>Dimensions</i>	<b>E7</b>
Accesorios	<i>Accessories</i>	<b>E10</b>
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### Características técnicas

### Technical features

El rango de combinación de los reductores CMM tienen las siguientes características principales:

CMM range double reduction worm-worm gearboxes have the following main features:

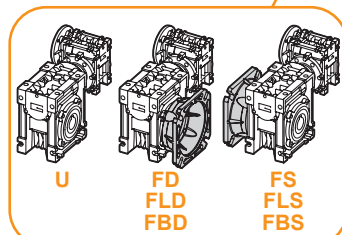
- Caja de aluminio para tamaños 040, 050, 063, 075, 090 y 110.
- Doble rodamiento de rodillos cónicos en tamaños 090 y 110.
- Lubricación permanente con aceite sintético.
- Die-cast aluminum housing on sizes 040, 050, 063, 075, 090 and 110.
- Double taper roller bearing on sizes 090 and 110.
- Permanent synthetic oil long-life lubrication.

### Clasificación

### Classification

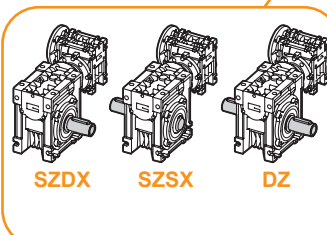
REDUCTOR / GEARBOX									
CMM	040/075	FD	300	56C	SZDX	BRSX	90	M1	US1
Tipo Type	Tamaño Size	Versión Version	Relación de reducción Ratio		Eje de salida Output shaft	Brazo de reacción Torque arm	Ángulo Angle	Posición de montaje Mounting position	Ejecución de montaje Mounting execution
<b>CMM</b> 	<b>040/075</b> <b>040/090</b> <b>050/110</b>	<b>U</b> <b>FD</b> <b>FS</b> <b>FBD</b> <b>FBS</b> <b>FLD</b> <b>FLS</b>	véase tablas see tables	<b>56C</b> <b>140TC</b>	<b>SZDX</b> <b>SZSX</b> <b>DZ</b>	<b>BRSX</b> <b>BRDX</b>	<b>0°</b> <b>90°</b> <b>180°</b> <b>270°</b>	<b>M1 (B3)</b> <b>M2 (V6)</b> <b>M3 (B8)</b> <b>M4 (V5)</b> <b>M5 (B7)</b> <b>M6 (B6)</b>	<b>UB1</b> <b>UB2</b> <b>US1</b> <b>US2</b> <b>UV1</b> <b>UV2</b> <b>UC1</b> <b>UC2</b>
<b>CMMIS</b> 									

Relación de reducción  
Gearbox Version



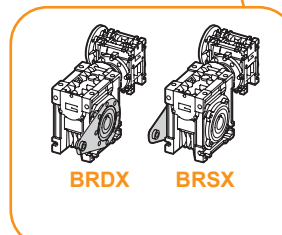
F.....D = Lado derecho / Right side  
F.....S = Lado izquierdo / Left side

Eje de salida  
Output shaft



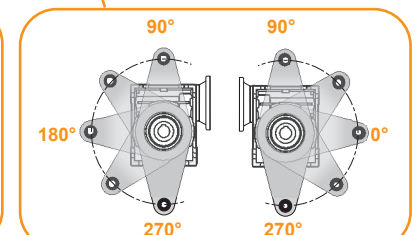
SZDX = Flecha sencilla lado derecho  
Single shaft right side  
DZ = Flecha doble / Double shaft  
SZSX = Flecha sencilla lado izquierdo  
Single shaft left side

Brazo de reacción  
Torque arm



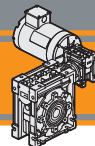
BRDX = Lado derecho / Right side  
BRSX = Lado izquierdo / Left side

Posición del Brazo  
Torque arm position \*



\* NOTA: El brazo de reacción se suministra desmontado.  
NOTE: the torque arm will be supplied not assembled.





Clasificación

Classification

MOTOR / MOTOR					
1 hp / 0.75kW	4p	3ph	220/440V	60Hz	T1
Potencia Power	Polos Poles	Fases Phases	Tensión Voltage	Frecuencia Frequency	Posición caja de bornes Terminal box pos.
véase tablas See tables	2p 4p 6p 8p	1ph 3ph	230V 230/400V ... 220/440V	50Hz 60Hz	T1 (Std)  T4 T2 T3

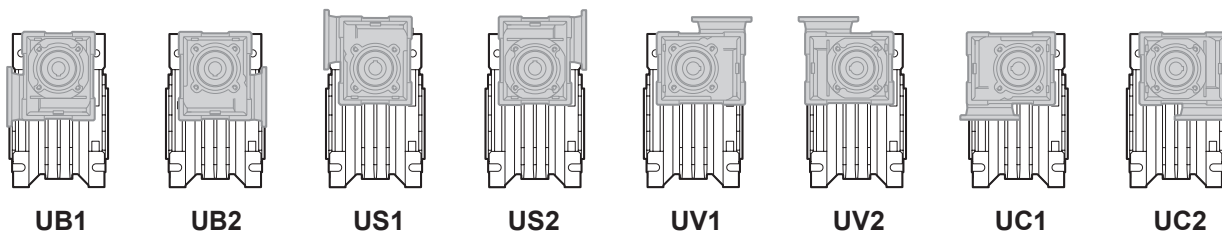
Nomenclatura

Symbols

$n_1$ [rpm]	Velocidad de entrada / <i>Input speed</i>	$Pn_1$ [hp]	Potencia nominal en la entrada / <i>Nominal input power</i>
$n_2$ [rpm]	Velocidad de salida / <i>Output speed</i>	$Mn_2$ [lb·in]	Par nominal en la salida en función de $Pn_1$ / <i>Nominal output torque referred to <math>Pn_1</math></i>
$i$	Relación de reducción / <i>Ratio</i>	sf	Rendimiento dinámico / <i>Service factor</i>
$P_1$ [hp]	Potencia en la entrada / <i>Input power</i>	$R_2$ [lb]	Carga radial admisible en la salida / <i>Maximum output radial load</i>
$M_2$ [lb·in]	Par en la salida en función de $P_1$ / <i>Output torque referred to <math>P_1</math></i>	$A_2$ [lb]	Carga axial admisible en la salida / <i>Maximum output axial load</i>

Ejecución de montaje

Mounting executions



Relaciones combinadas

Combination ratio

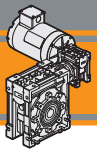
CMM 040/075 - CMM 040/090 - CMM 050/110 - CMM 063/130																	
		$i (i_1 \times i_2)$															
		75	100	150	200	250	300	400	500	600	750	900	1200	1500	1800	2400	3000
$i_1$		7.5	10	10	10	10	10	10	10	20	25	30	40	50	60	60	60
$i_2$		10	10	15	20	25	30	40	50	30	30	30	30	30	30	40	50

Lubricación

Lubrication

La lubricación permanente con aceite sintético de larga vida (grado de viscosidad 320) hace que sea posible el uso de los reductores tamaños 40, 50, 63, 75, 90 y 110 en todas las posiciones de montaje.



*Permanent synthetic oil long-life lubrication (viscosity grade 320) makes it possible to use the gearboxes size 40, 50, 63, 75, 90, 110 in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*



#### Datos técnicos

#### Technical data

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb-in]	sf	AGMA	i		
------------------------	-------------------------	---------------------------	----	------	---	---	---

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb-in]	sf	AGMA	i		
------------------------	-------------------------	---------------------------	----	------	---	---	---

#### 0.16 hp

0.12 kW (1750 rpm)	<b>23</b>	290	15.4	III	75	<b>CMM 040/075</b>	<b>56C</b>	
	<b>18</b>	377	11.8	III	100		<b>56C</b>	
	<b>12</b>	530	8.8	III	150		<b>56C</b>	
	<b>8.8</b>	667	6.2	III	200		<b>56C</b>	
	<b>7.0</b>	786	4.6	III	250		<b>56C</b>	
	<b>5.8</b>	871	5.6	III	300		<b>56C</b>	
	<b>4.4</b>	1064	3.9	III	400		<b>56C</b>	
	<b>3.5</b>	1209	2.9	III	500		<b>56C</b>	
	<b>2.9</b>	1617	3.0	III	600		<b>56C</b>	
	<b>2.3</b>	1917	2.5	III	750		<b>56C</b>	
	<b>1.9</b>	2177	2.2	III	900		<b>56C</b>	
	<b>1.5</b>	2695	1.8	II	1200		<b>56C</b>	
	<b>1.2</b>	3109	1.6	II	1500		<b>56C</b>	
	<b>0.97</b>	3607	1.3	I	1800		<b>56C</b>	
	<b>0.73</b>	4408	0.9	I	2400		<b>56C</b>	
	<b>0.58</b>	3952	0.9	I	3000		<b>56C</b>	
	<b>23</b>	301	22.2	III	75		<b>CMM 040/090</b>	<b>56C</b>
	<b>18</b>	392	17.0	III	100			<b>56C</b>
	<b>12</b>	544	14.2	III	150			<b>56C</b>
	<b>8.8</b>	696	10.3	III	200			<b>56C</b>
<b>7.0</b>	834	7.5	III	250	<b>56C</b>			
<b>5.8</b>	914	9.1	III	300	<b>56C</b>			
<b>4.4</b>	1122	6.4	III	400	<b>56C</b>			
<b>3.5</b>	1306	4.7	III	500	<b>56C</b>			
<b>2.9</b>	1698	4.9	III	600	<b>56C</b>			
<b>2.3</b>	2013	4.1	III	750	<b>56C</b>			
<b>1.9</b>	2285	3.7	III	900	<b>56C</b>			
<b>1.5</b>	2830	2.9	III	1200	<b>56C</b>			
<b>1.2</b>	3265	2.6	III	1500	<b>56C</b>			
<b>1.0</b>	3787	2.2	III	1800	<b>56C</b>			
<b>0.73</b>	4649	1.5	II	2400	<b>56C</b>			
<b>0.58</b>	5410	1.1	I	3000	<b>56C</b>			
<b>1.0</b>	3980	3.5	III	1800	<b>CMM 050/110</b>	<b>56C</b>		
<b>0.7</b>	5058	2.5	III	2400		<b>56C</b>		
<b>0.6</b>	6011	1.9	II	3000		<b>56C</b>		

#### 0.25 hp

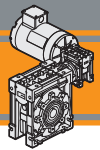
0.18 kW (1750 rpm)	<b>23</b>	470	14.2	III	75	<b>CMM 040/090</b>	<b>56C</b>	
	<b>18</b>	612	10.9	III	100		<b>56C</b>	
	<b>12</b>	850	9.1	III	150		<b>56C</b>	
	<b>8.8</b>	1088	6.6	III	200		<b>56C</b>	
	<b>7.0</b>	1304	4.8	III	250		<b>56C</b>	
	<b>5.8</b>	1428	5.8	III	300		<b>56C</b>	
	<b>4.4</b>	1753	4.1	III	400		<b>56C</b>	
	<b>3.5</b>	2041	3.0	III	500		<b>56C</b>	
	<b>2.9</b>	2653	3.1	III	600		<b>56C</b>	
	<b>2.3</b>	3146	2.7	III	750		<b>56C</b>	
	<b>1.9</b>	3571	2.3	III	900		<b>56C</b>	
	<b>1.5</b>	4421	1.9	II	1200		<b>56C</b>	
	<b>1.2</b>	5101	1.6	II	1500		<b>56C</b>	
	<b>1.0</b>	5917	1.4	II	1800		<b>56C</b>	
	<b>0.73</b>	7264	1.0	I	2400		<b>56C</b>	
	<b>1.9</b>	3731	3.8	III	900		<b>CMM 050/110</b>	<b>56C</b>
	<b>1.5</b>	4629	3.0	III	1200			<b>56C</b>
	<b>1.2</b>	5441	2.6	III	1500			<b>56C</b>
	<b>1.0</b>	6219	2.3	III	1800			<b>56C</b>
	<b>0.7</b>	7903	1.6	II	2400			<b>56C</b>
<b>0.6</b>	9393	1.2	I	3000	<b>56C</b>			

#### 0.33 hp

0.22 kW (1750 rpm)	<b>23</b>	597	7.5	III	75	<b>CMM 040/075</b>	<b>56C</b>	
	<b>18</b>	778	5.7	III	100		<b>56C</b>	
	<b>12</b>	1092	4.3	III	150		<b>56C</b>	
	<b>8.8</b>	1377	3.0	III	200		<b>56C</b>	
	<b>7.0</b>	1621	2.2	III	250		<b>56C</b>	
	<b>5.8</b>	1796	2.7	III	300		<b>56C</b>	
	<b>4.4</b>	2195	1.9	II	400		<b>56C</b>	
	<b>3.5</b>	2494	1.4	II	500		<b>56C</b>	
	<b>2.9</b>	3335	1.5	II	600		<b>56C</b>	
	<b>2.3</b>	3955	1.2	I	750		<b>56C</b>	
	<b>1.9</b>	4489	1.1	I	900		<b>56C</b>	
	<b>1.5</b>	5558	0.9	I	1200		<b>56C</b>	
	<b>23</b>	620	10.7	III	75		<b>CMM 040/090</b>	<b>56C</b>
	<b>18</b>	808	8.2	III	100			<b>56C</b>
	<b>12</b>	1122	6.9	III	150			<b>56C</b>
	<b>8.8</b>	1437	5.0	III	200			<b>56C</b>
	<b>7.0</b>	1721	3.7	III	250			<b>56C</b>
	<b>5.8</b>	1885	4.4	III	300			<b>56C</b>
	<b>4.4</b>	2314	3.1	III	400			<b>56C</b>
	<b>3.5</b>	2693	2.3	III	500			<b>56C</b>
<b>2.9</b>	3502	2.4	III	600	<b>56C</b>			
<b>2.3</b>	4152	2.0	III	750	<b>56C</b>			
<b>1.9</b>	4714	1.8	II	900	<b>56C</b>			
<b>1.5</b>	5836	1.4	II	1200	<b>56C</b>			
<b>1.2</b>	6734	1.2	I	1500	<b>56C</b>			
<b>1.0</b>	7811	1.1	I	1800	<b>56C</b>			

#### 0.25 hp



0.18 kW (1750 rpm)	<b>23</b>	453	9.8	III	75	<b>CMM 040/075</b>	<b>56C</b>
	<b>18</b>	589	7.6	III	100		<b>56C</b>
	<b>12</b>	828	5.7	III	150		<b>56C</b>
	<b>8.8</b>	1043	4.0	III	200		<b>56C</b>
	<b>7.0</b>	1228	2.9	III	250		<b>56C</b>
	<b>5.8</b>	1360	3.6	III	300		<b>56C</b>
	<b>4.4</b>	1663	2.5	III	400		<b>56C</b>
	<b>3.5</b>	1889	1.9	II	500		<b>56C</b>
	<b>2.9</b>	2526	1.9	II	600		<b>56C</b>
	<b>2.3</b>	2996	1.6	II	750		<b>56C</b>
	<b>1.9</b>	3401	1.4	II	900		<b>56C</b>
	<b>1.5</b>	4211	1.1	I	1200		<b>56C</b>
	<b>1.2</b>	4858	1.0	I	1500		<b>56C</b>
	<b>0.97</b>	5636	0.9	I	1800		<b>56C</b>



Datos técnicos

Technical data

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
------------------------	-------------------------	---------------------------	----	------	---	---	---

P <sub>1</sub> [hp]	n <sub>2</sub> [rpm]	M <sub>2</sub> [lb·in]	sf	AGMA	i		
------------------------	-------------------------	---------------------------	----	------	---	---	---

0.33 hp

0.22 kW (1750 rpm)	2.9	3603	3.9	III	600	CMM 050/110	56C
	2.3	4332	3.3	III	750		56C
	1.9	4925	2.9	III	900		56C
	1.5	6111	2.3	III	1200		56C
	1.2	7183	2.0	II	1500		56C
	1.0	8209	1.7	II	1800		56C
	0.7	10432	1.2	I	2400		56C
	0.6	12399	0.9	I	3000		56C

0.75 hp

0.55 kW (1750 rpm)	23	1427	8.3	III	75	CMM 050/110	56C
	18	1858	6.3	III	100		56C
	12	2615	5.0	III	150		56C
	8.8	3395	3.6	III	200		56C
	7.0	4130	2.8	III	250		56C
	5.8	4405	3.2	III	300		56C
	4.4	5598	2.3	III	400		56C
	3.5	6653	1.7	II	500		56C
	2.9	8188	1.7	II	600		56C
	2.3	9846	1.4	II	750		56C
	1.9	11194	1.3	I	900		56C
	1.5	13888	1.0	I	1200		56C
1.2	16324	0.9	I	1500	56C		

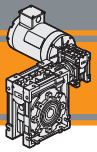
0.5 hp

0.37 kW (1750 rpm)	23	905	4.9	III	75	CMM 040/075	56C	
	18	1179	3.8	III	100		56C	
	12	1655	2.8	III	150		56C	
	8.8	2086	2.0	II	200		56C	
	7.0	2456	1.5	II	250		56C	
	5.8	2721	1.8	II	300		56C	
	4.4	3325	1.3	I	400		56C	
	3.5	3779	0.9	I	500		56C	
	2.9	5053	1.0	I	600		56C	
	23	940	7.1	III	75		CMM 040/090	56C
	18	1224	5.4	III	100			56C
	12	1700	4.5	III	150			56C
	8.8	2177	3.3	III	200			56C
	7.0	2607	2.4	III	250			56C
	5.8	2857	2.9	III	300			56C
4.4	3507	2.1	III	400	56C			
3.5	4081	1.5	II	500	56C			
2.9	5305	1.6	II	600	56C			
2.3	6292	1.3	I	750	56C			
1.9	7142	1.2	I	900	56C			
1.5	8842	0.9	I	1200	56C			
5.8	2937	4.8	III	300	CMM 050/110	56C		
4.4	3732	3.4	III	400		56C		
3.5	4436	2.5	III	500		56C		
2.9	5459	2.6	III	600		56C		
2.3	6564	2.2	III	750		56C		
1.9	7462	1.9	II	900		56C		
1.5	9259	1.5	II	1200		56C		
1.2	10883	1.3	I	1500	56C			
1.0	12437	1.1	I	1800	56C			

1 hp

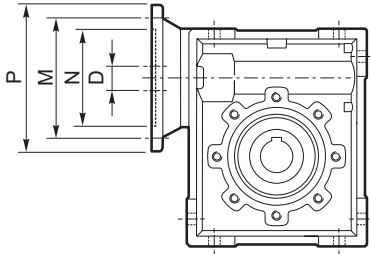
0.75 kW (1750 rpm)	23	1902	6.2	III	75	CMM 050/110	56C
	18	2478	4.8	III	100		56C
	12	3487	3.8	III	150		56C
	8.8	4527	2.7	III	200		56C
	7.0	5506	2.1	III	250		56C
	5.8	5873	2.4	III	300		56C
	4.4	7464	1.7	II	400		56C
	3.5	8871	1.3	I	500		56C
	2.9	10917	1.3	I	600		56C
	2.3	13128	1.1	I	750		56C
	1.9	14925	0.9	I	900		56C

CMM



**Motores Aplicables IEC**

**IEC Motor adapters**



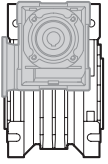
NOTA / NOTE

Las áreas grises indican la aplicabilidad del correspondiente tamaño del motor.

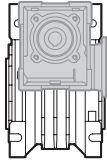
Grey areas indicate motor inputs available on each size of unit.

**B/BS = Buje de metal para flecha**

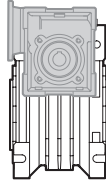
**B/BS = Metal shaft sleeve**



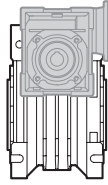
**UB1**



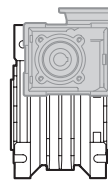
**UB2**



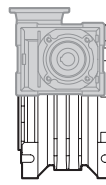
**US1**



**US2**

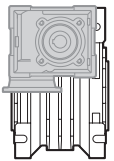


**UV1**

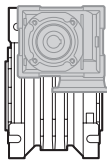


**UV2**

CMM	NEMA	N	M	P	D	i <sub>1</sub>								
						7.5	10	20	25	30	40	50	60	
040/075	56C	4.5	5.88	6.5	0.625									
040/090														
050/110														

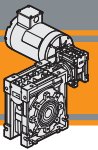


**UC1**



**UC2**

CMM	NEMA	N	M	P	D	i <sub>1</sub>							
						7.5	10	20	25	30	40	50	60
050/110	56C	4.5	5.88	6.5	0.625								

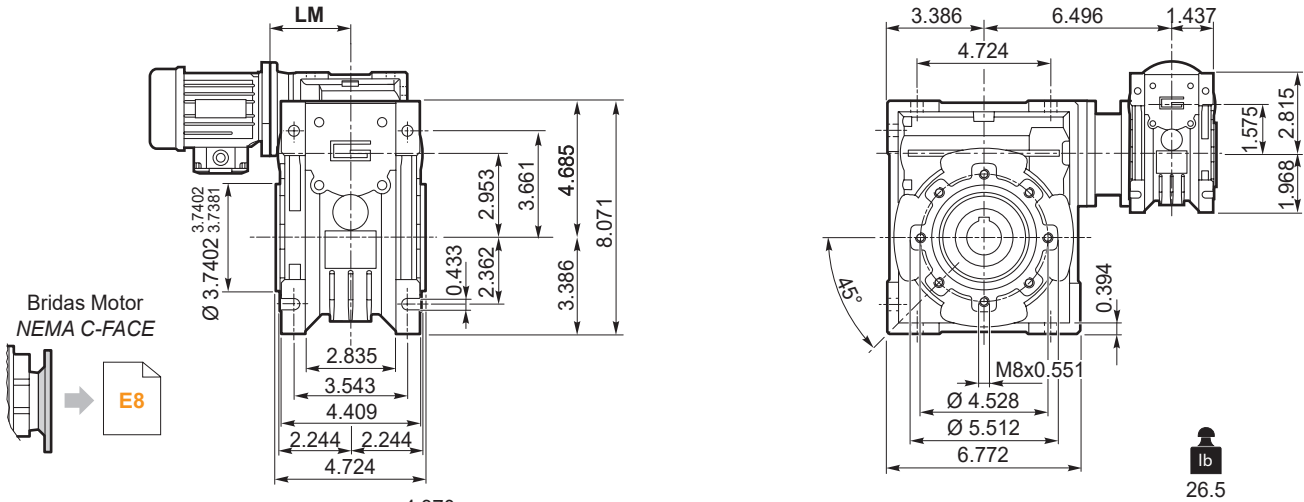


Dimensiones

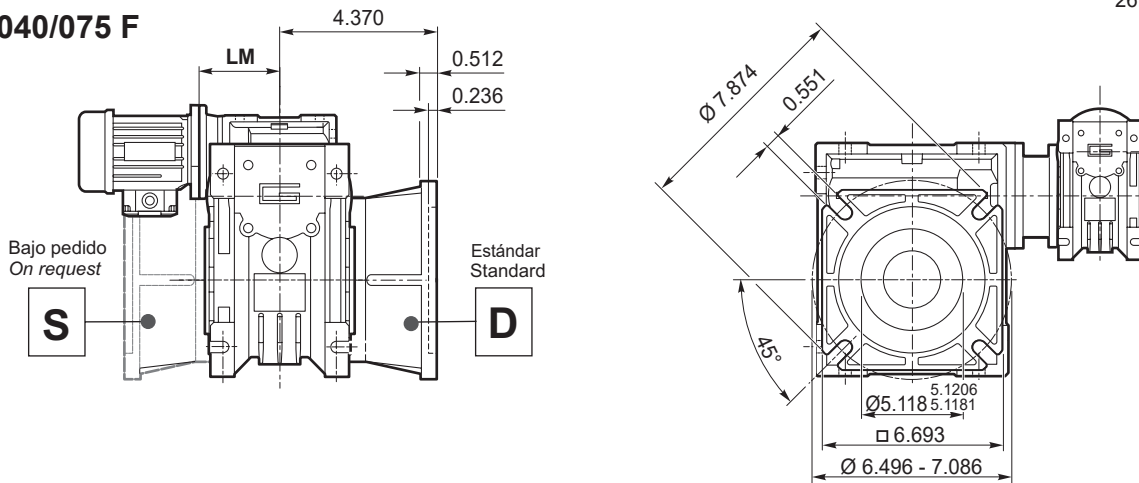
Dimensions

CMM 040/075

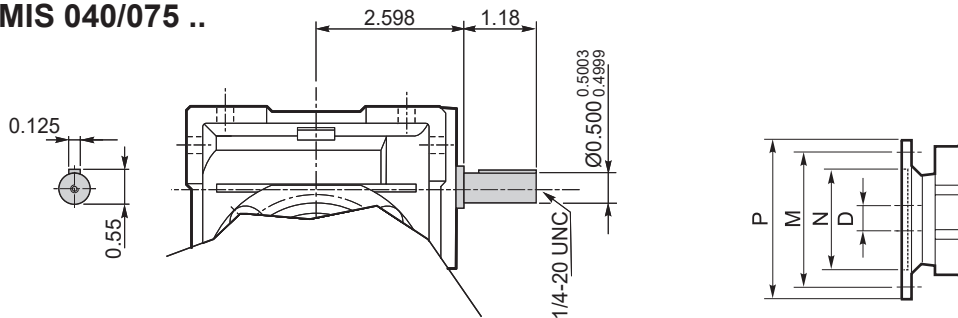
CMM 040/075 U



CMM 040/075 F

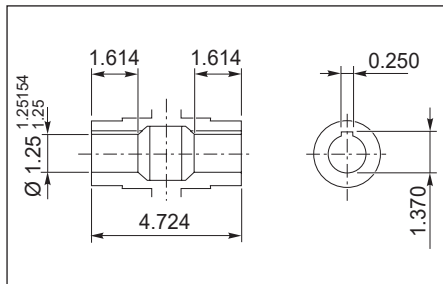


CMMIS 040/075 ..

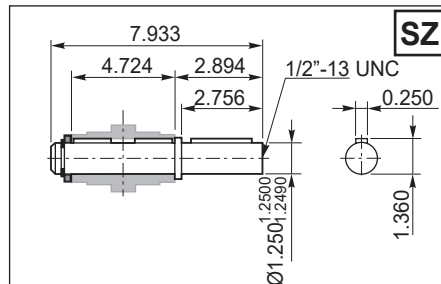


Brida Motor / Motor flange	
Dimensiones NEMA NEMA Dimensions	
	56 C
N	4.5
M	5.88
P	6.5
D	0.625
LM	3.15

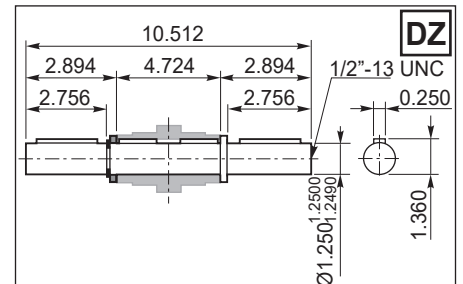
Eje de salida hueco / Hollow output shaft

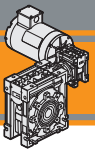


Eje de salida / Output shaft



Eje de salida / Output shaft



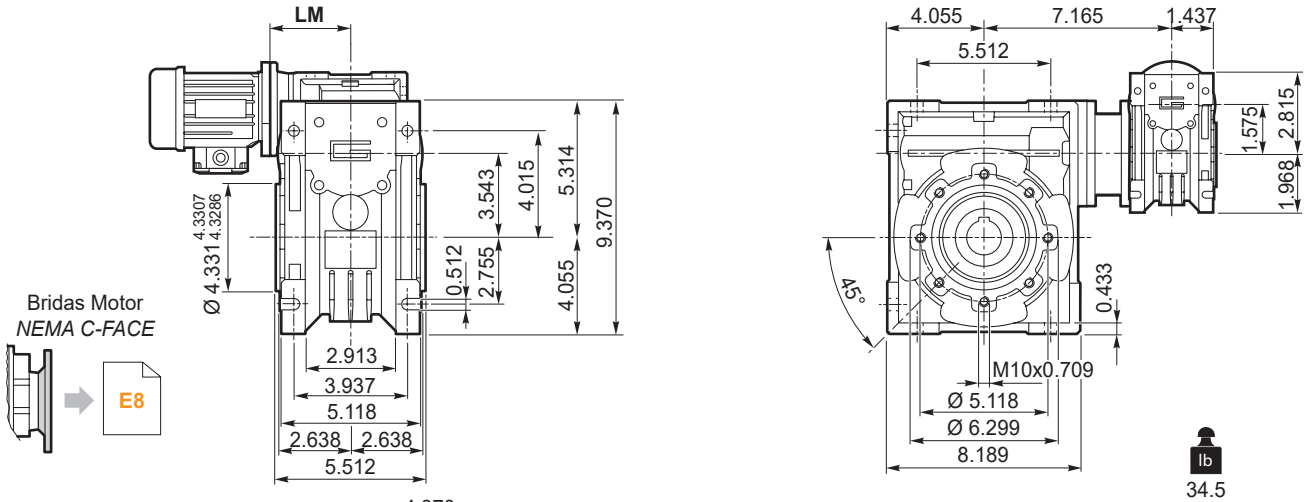


**Dimensiones**

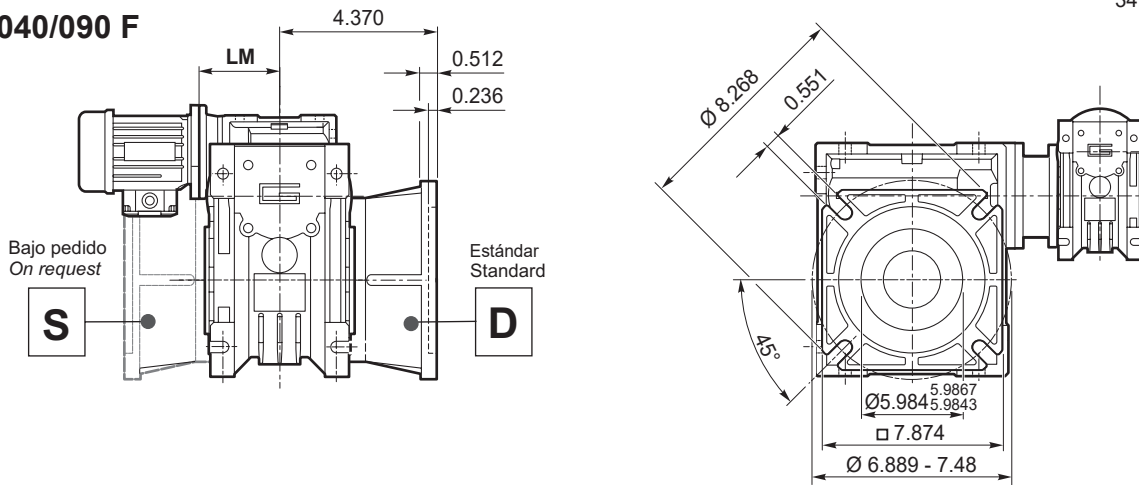
**Dimensions**

**CMM 040/090**

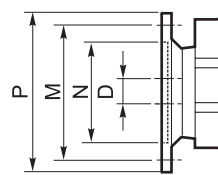
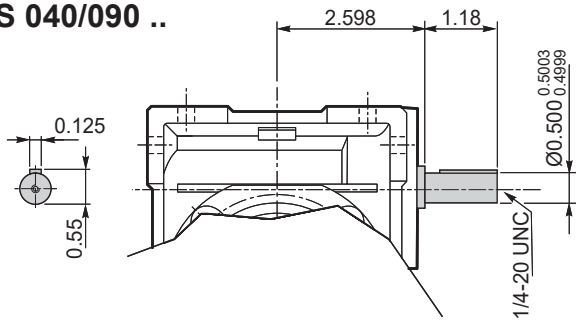
**CMM 040/090 U**



**CMM 040/090 F**

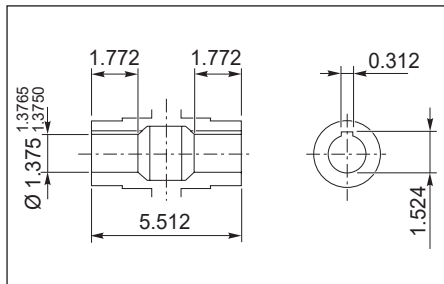


**CMMIS 040/090 ..**

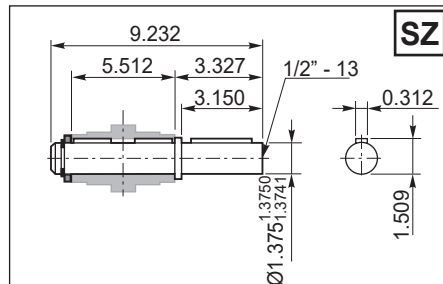


Brida Motor / Motor flange	
Dimensiones NEMA NEMA Dimensions	
	<b>56 C</b>
<b>N</b>	4.5
<b>M</b>	5.88
<b>P</b>	6.5
<b>D</b>	0.625
<b>LM</b>	3.15

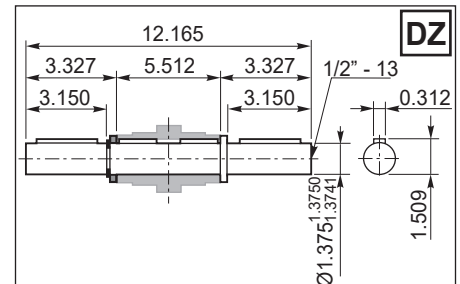
Eje de salida hueco / Hollow output shaft

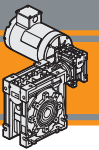


Eje de salida / Output shaft



Eje de salida / Output shaft



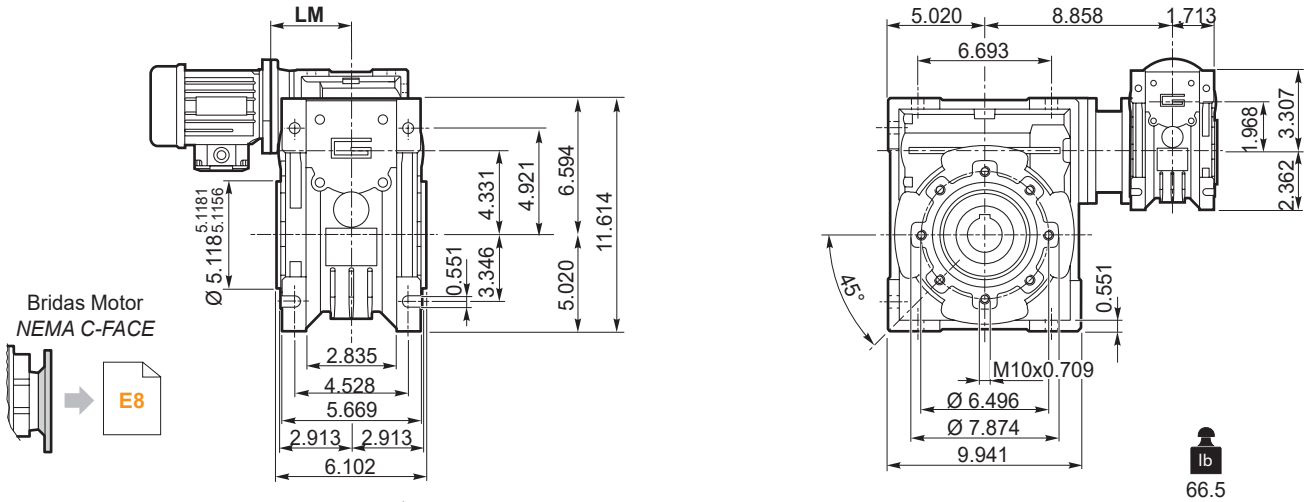


Dimensiones

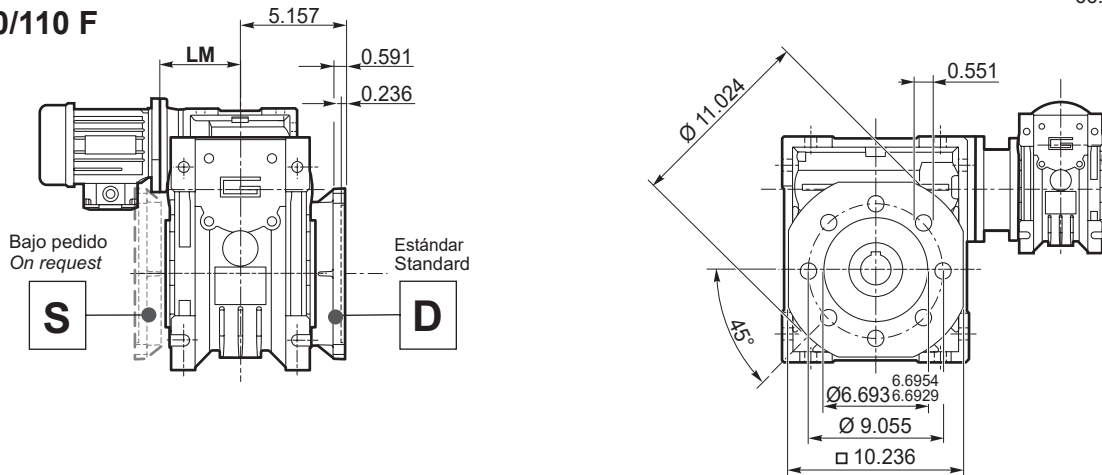
Dimensions

CMM 050/110

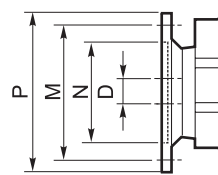
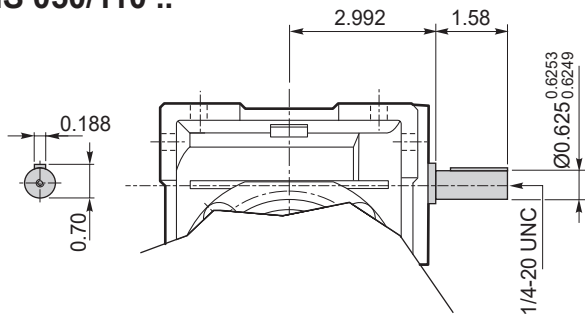
CMM 050/110 U



CMM 050/110 F

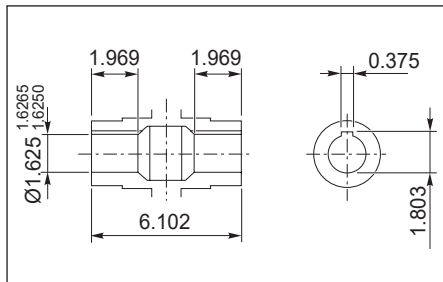


CMMIS 050/110 ..

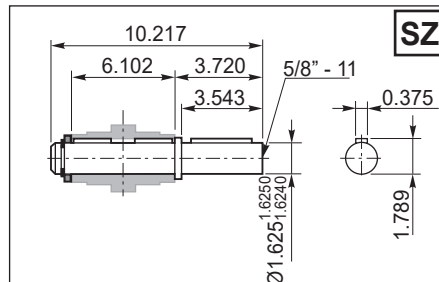


Brida Motor / Motor flange	
Dimensiones NEMA NEMA Dimensions	
	56 C
N	4.5
M	5.88
P	6.5
D	0.625
LM	3.346

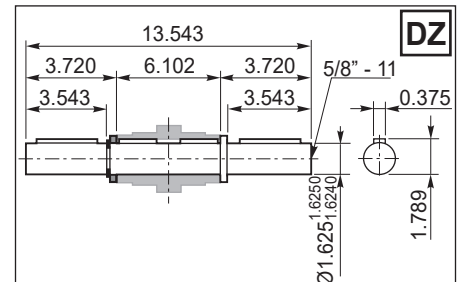
Eje de salida hueco / Hollow output shaft

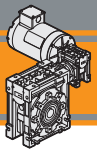


Eje de salida / Output shaft



Eje de salida / Output shaft



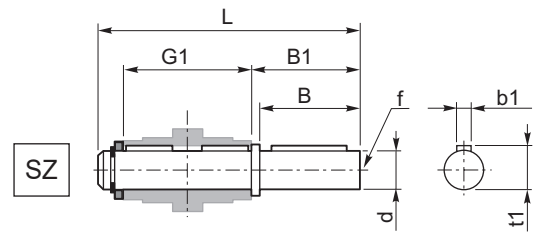
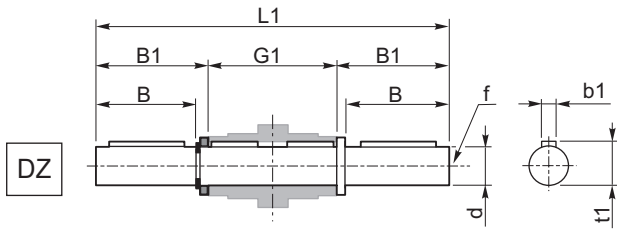


**Accesorios**

**Accessories**

**Eje de salida simple y doble**

**Single and double output shaft**

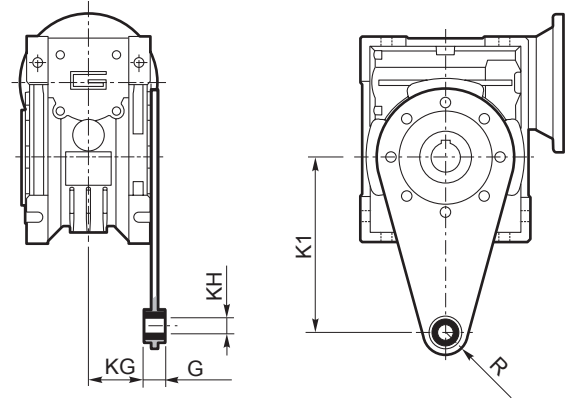


CMM	d	B	B1	G1	L	L1	f	b1	t1
040/075	1.250 <small>1.250 1.249</small>	2.756	2.894	4.724	7.933	10.512	1/2"-13	0.250	1.360
040/090	1.375 <small>1.375 1.3741</small>	3.150	3.327	5.512	9.232	12.165	1/2"-13	0.312	1.509
050/110	1.625 <small>1.625 1.624</small>	3.543	3.720	6.102	10.217	13.543	5/8"-11	0.375	1.789

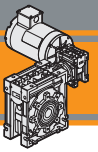
**Brazo de reacción**

**Torque arm**

CMM	K1	G	KG	KH	R
040/075	7.874	0.984	1.831	0.787	1.181
040/090	7.874	0.984	2.224	0.787	1.181
050/110	9.843	1.181	2.441	0.984	1.378

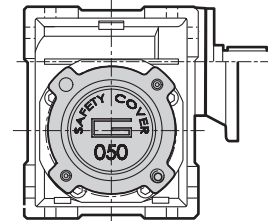
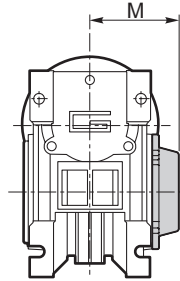






**SC** - Cubierta de seguridad / Safety Cover

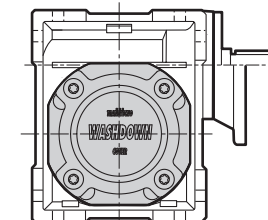
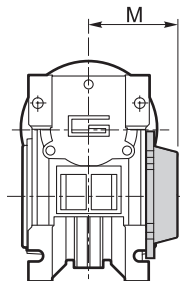
CM	M
040	2.14
050	2.46
075	3.11
090	3.70
110	4.02



CMM

**WD** - Kit washdown cover

CM	M
040	2.19
050	2.50
075	3.15
090	3.74
110	4.06







Apéndice  
**Appendix**

**60Hz**

**Nema**



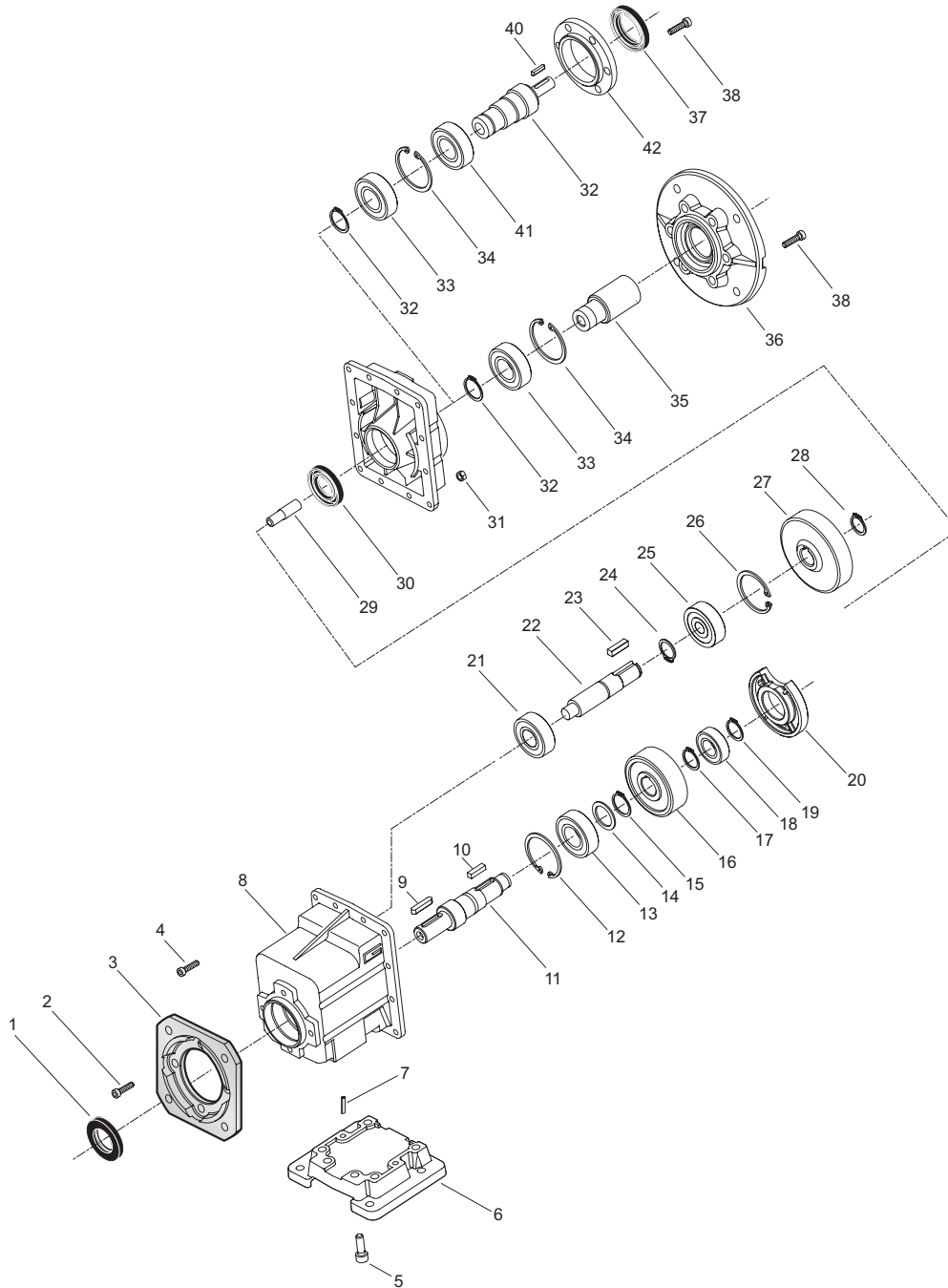


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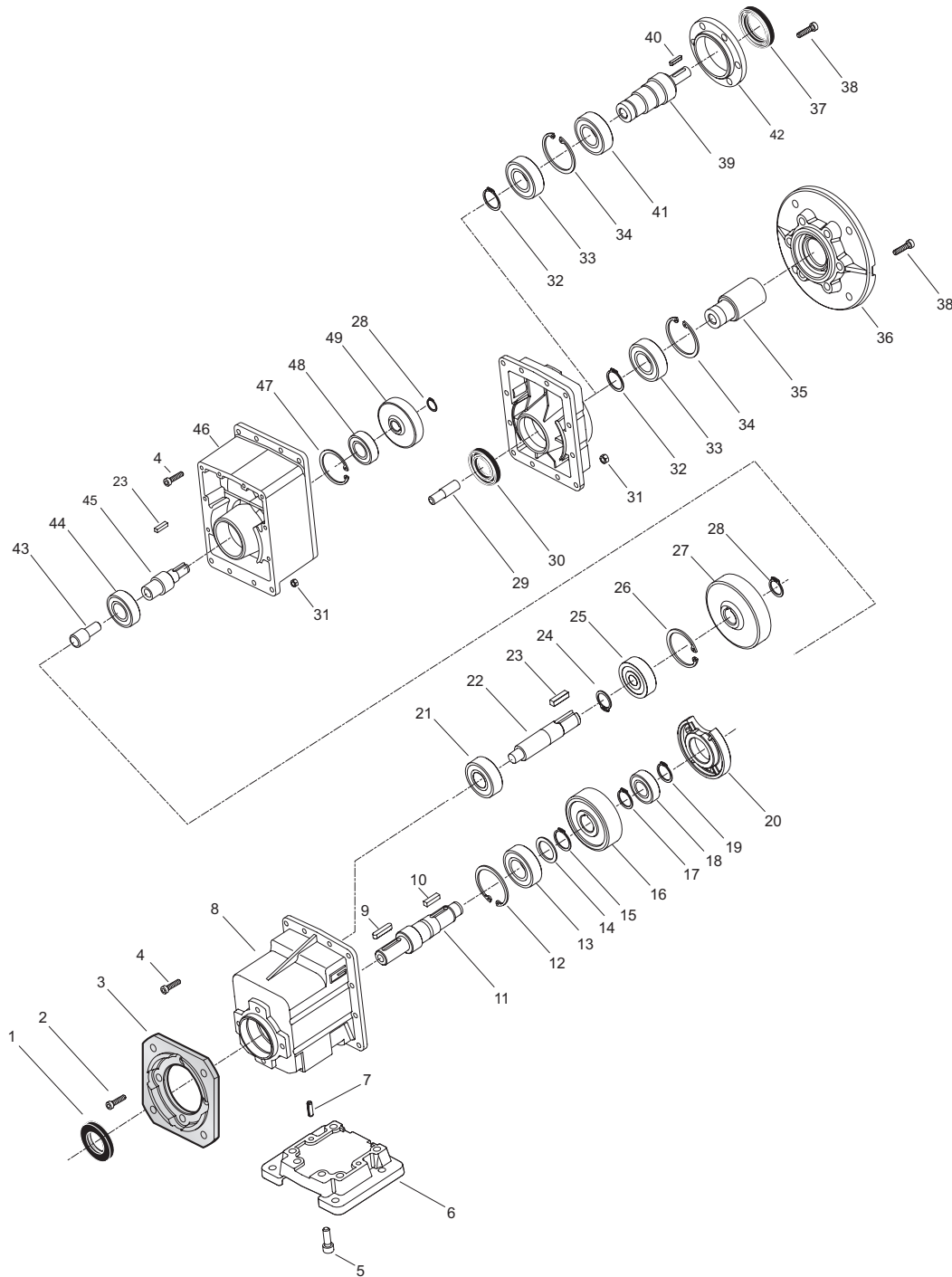
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**CMG..2**



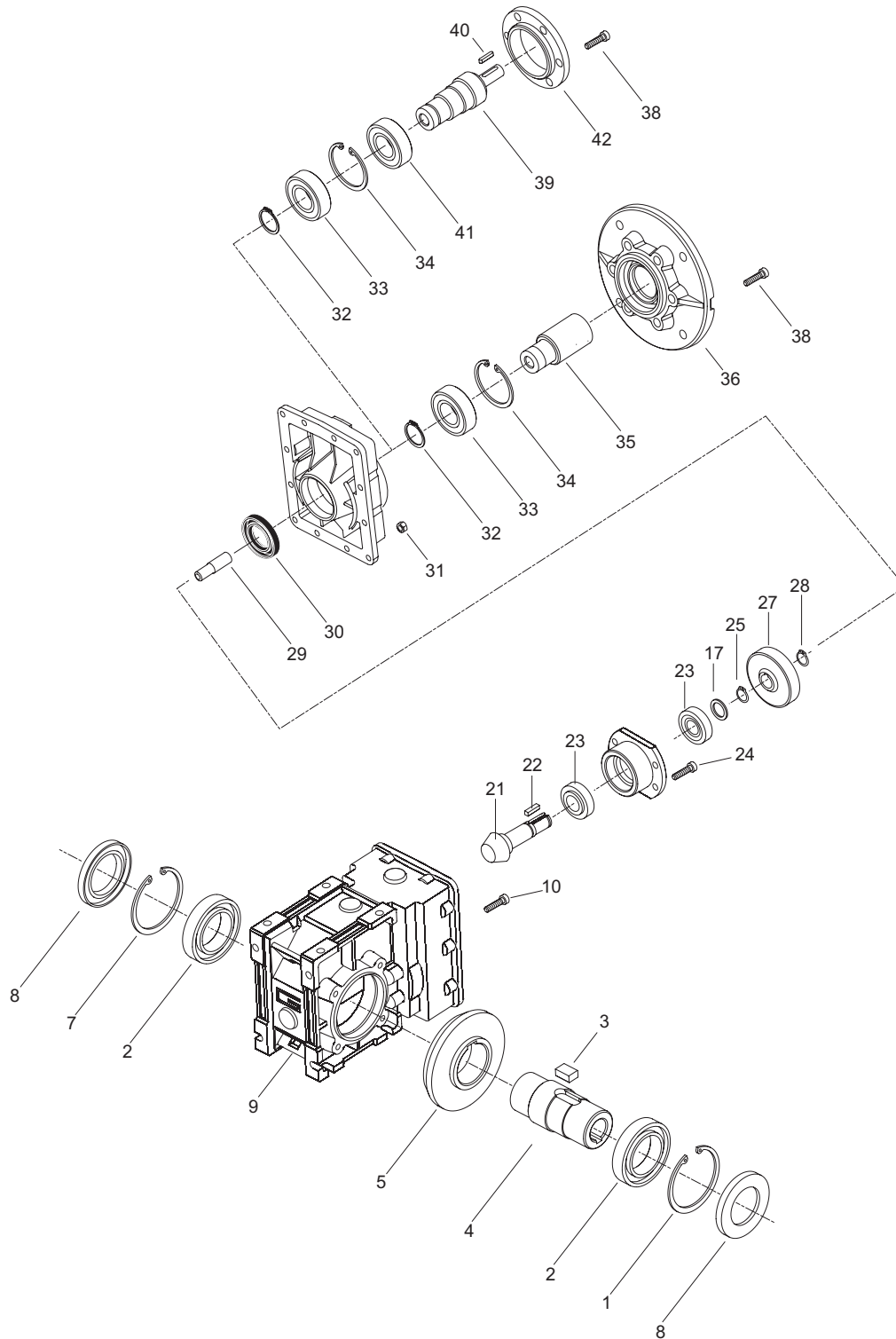
CMG	Rodamientos / Bearings						Sellos de aceite / Oil seals		
	13	18	21	25	33	41	1	30	37
<b>002</b>	<b>6203</b> 40x17x12	<b>6201</b> 32x12x10	<b>6200</b> 30x10x9	<b>6202 2RS</b> 35x15x11	<b>6004 2RS</b> 42x20x12	<b>6204-2RS</b> 47x20x14	22/40/7	20/37/7	—
<b>012</b>	<b>6205</b> 25/52/15	<b>6203</b> 17/40/12	<b>6300 2RS</b> 10/35/11	<b>6202 2RS</b> 15/35/11	<b>6205 2RS</b> 25/52/15	<b>6006 2RS</b> 30/55/13	30/52/7	25/47/7	35/52/7
<b>022</b>	<b>3205A</b> 25/52/20.6	<b>6204</b> 20/47/14	<b>6301 2RS</b> 12/37/12	<b>6302 2RS</b> 15/42/13	<b>6205 2RS</b> 25/52/15	<b>6006 2RS</b> 30/55/13	35/52/7	25/47/7	35/52/7
<b>032</b>	<b>6207</b> 35/72/17	<b>6205</b> 25/52/15	<b>6303 2RS</b> 17/47/14	<b>6204 2RS</b> 17/47/14	<b>6206 2RS</b> 30/62/16	<b>6007 2RS</b> 35/62/14	40/72/7	30/52/7	40/60/7
<b>042</b>	<b>3207A</b> 35/72/27	<b>6206</b> 30/62/16	<b>6304 2RS</b> 20/52/15	<b>6304 2RS</b> 20/52/15	<b>6206 2RS</b> 30/62/16	<b>6007 2RS</b> 35/62/14	45/72/7	30/52/7	40/60/7

**CMG..3**



CMG	Rodamientos / Bearings								Sellos de aceite / Oil seals		
	13	18	21	25	33	41	44	48	1	30	37
<b>013</b>	<b>6205</b> 25/52/15	<b>6203</b> 17/40/12	<b>6300 2RS</b> 10/35/11	<b>6202 2RS</b> 15/35/11	<b>6205 2RS</b> 25/52/15	<b>6006 2RS</b> 30/55/13	<b>6204</b> 20/47/14	<b>6203</b> 17/40/12	30/52/7	25/47/7	35/52/7
<b>023</b>	<b>3205A</b> 25/52/20.6	<b>6204</b> 20/47/14	<b>6301 2RS</b> 12/37/12	<b>6302 2RS</b> 15/42/13	<b>6205 2RS</b> 25/52/15	<b>6006 2RS</b> 30/55/13	<b>6204</b> 20/47/14	<b>6203</b> 17/40/12	35/52/7	25/47/7	35/52/7
<b>033</b>	<b>6207</b> 35/72/17	<b>6205</b> 25/52/15	<b>6303 2RS</b> 17/47/14	<b>6204 2RS</b> 17/47/14	<b>6206 2RS</b> 30/62/16	<b>6007 2RS</b> 35/62/14	<b>6205</b> 25/52/15	<b>6204</b> 20/47/14	40/72/7	30/52/7	40/60/7
<b>043</b>	<b>3207A</b> 35/72/27	<b>6206</b> 30/62/16	<b>6304 2RS</b> 20/52/15	<b>6304 2RS</b> 20/52/15	<b>6206 2RS</b> 30/62/16	<b>6007 2RS</b> 35/62/14	<b>6205</b> 25/52/15	<b>6204</b> 20/47/14	45/72/7	30/52/7	40/60/7

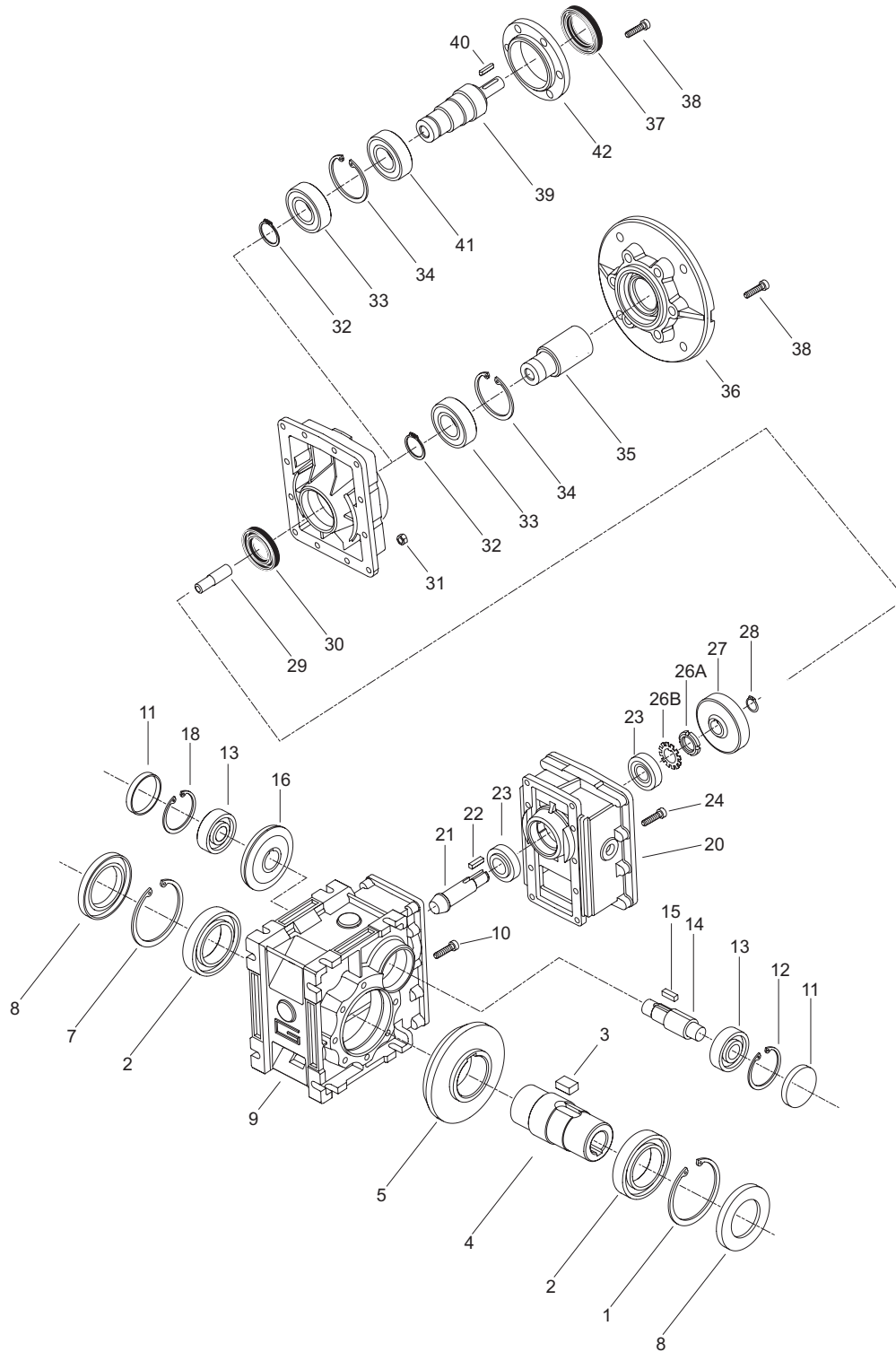
**CMB ..2**



CMB	Rodamientos / Bearings				Sellos de aceite / Oil seals	
	2	23	33	41	8	30
402	16006 30x55x9	7202 BE 15x35x11	6004 2RS 42x20x12	6204-2RS 47x20x14	30/55/7	20/37/7
502	61908 40x62x12	7203 BE 17x40x12	6004 2RS 42x20x12	6204-2RS 47x20x14	40/62/7	20/37/7



**CMB .3**

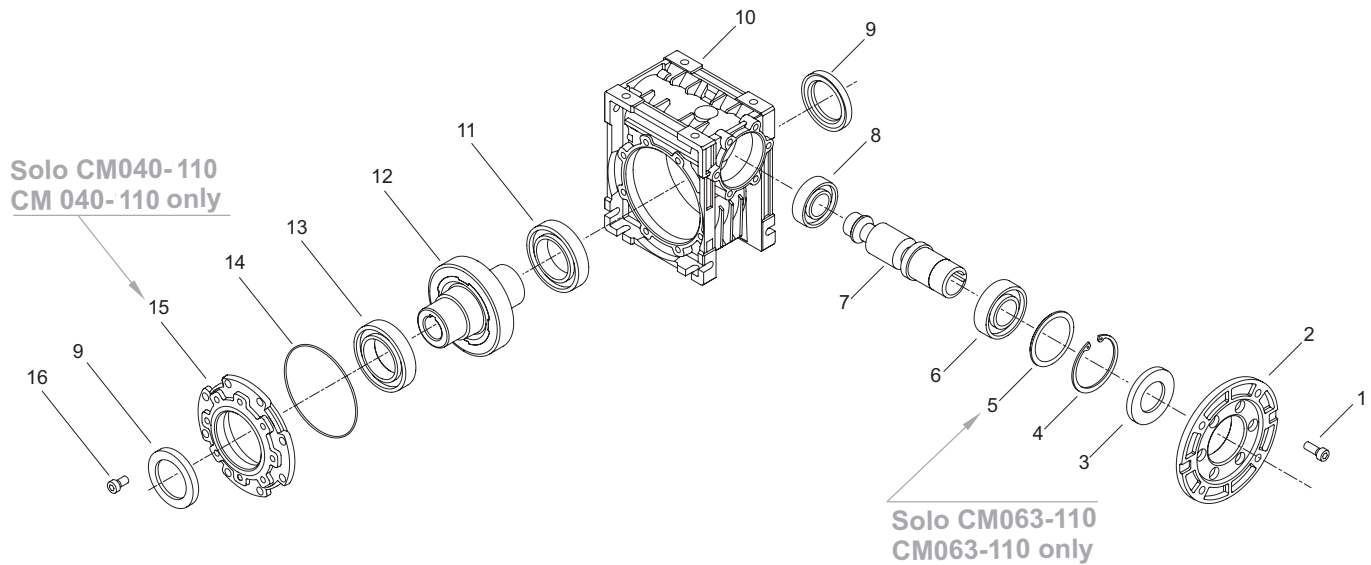


CMB	Rodamientos / Bearings					Sellos de aceite / Oil seals			RCA
	2	13	23	33	41	8	30	37	11
<b>633</b>	<b>6009</b> 75x45x16	<b>6303 2RS</b> 47x17x14	<b>30203</b> 17x40x13	<b>6205 2RS</b> 25x52x15	<b>6006 2RS</b> 30x55x13	45/75/8	25/47/7	35/52/7	47/7
<b>903</b>	<b>6011</b> 90x55x18	<b>6304 2RS</b> 52x20x15	<b>30204</b> 47x20x15	<b>6206 2RS</b> 30x62x16	<b>6007 2RS</b> 62x35x14	55/90/10	30/52/7	40/60/7	52/7

Listado de refacciones

Spare parts list

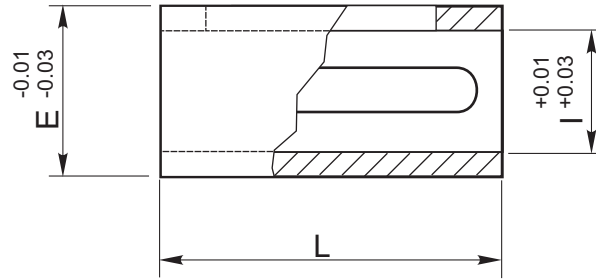
**CM040..CM110**



CM	Rodamientos / Bearings				Sellos de aceite / Oil seals	
	6	8	11	13	3	9
<b>040</b>	<b>61905</b> 25x42x9	<b>6202</b> 15x35x11	<b>6006</b> 30x55x13	<b>6006</b> 30x55x13	25/42/7	30/47/7
<b>050</b>	<b>61906</b> 30x47x9	<b>6203</b> 17x40x12	<b>6008</b> 40x68x15	<b>6008</b> 40x68x15	30/47/7	40/55/7
<b>063</b>	<b>6007</b> 35x62x14	<b>6205</b> 25x52x15	<b>6009</b> 45x75x16	<b>6009</b> 45x75x16	35/62/7	45/65/8
<b>070</b>	<b>6008</b> 40x68x15	<b>6304</b> 20x52x15	<b>6009</b> 45x75x16	<b>6009</b> 45x75x16	40/68/8	45/65/8
<b>075</b>	<b>6008</b> 40x68x15	<b>6206</b> 30x62x16	<b>6010</b> 50x80x16	<b>6010</b> 50x80x16	40/68/7	50/72/8
<b>090</b>	<b>32008</b> 40x68x19	<b>30206</b> 30x62x17.25	<b>6012</b> 60x95x18	<b>6012</b> 60x95x18	40/68/7	60/85/8
<b>110</b>	<b>32010</b> 50x80x20	<b>32207</b> 35x72x24.25	<b>6013</b> 65x100x18	<b>6013</b> 65x100x18	50/80/8	65/85/10

Bujes de reducción en flecha de acero

*Metal shaft sleeves*



Cantidad por caja Quantity each box	Tipo / Type	Dimensiones mm. / Dimensions mm.		
		I	E	L
50	<b>B 0.625-0.875</b>	0.625	0.875	1.73
30	<b>BS 0.625-1.125</b>	0.625	1.125	2.36
20	<b>B 0.875-1.125</b>	0.875	1.125	1.77
15	<b>BS 0.875-1.375</b>	0.875	1.375	2.95
15	<b>B 1.125-1.375</b>	1.125	1.375	2.36

Nota: Los bujes de flecha se suministran con cuñero completo  
 Note: The metal shaft sleeves are supplied complete with keys.

## Garantía

El fabricante garantiza que los bienes estarán libres de defectos de materiales y mano de obra por un periodo de 1 año a partir de la fecha de envío.

El fabricante únicamente garantiza que los bienes, cuando sean enviados, tendrán la capacidad que se indica en los documentos escritos incluyendo cotizaciones y catálogos, previendo que tales equipos serán instalados apropiadamente, tendrán mantenimiento adecuado, estarán correctamente lubricados, operaran bajo condiciones normales, con supervisión competente y con los límites de carga para los que fueron vendidos y siempre y cuando los equipos estén exentos de la velocidad crítica, de torsión y otro tipo de vibración sin importar lo que lo induzca.

Quedan excluidos de la garantía los casos de pérdida de lubricante debido al desgaste normal de los sellos.

La única obligación del fabricante bajo la garantía se limitará a la sustitución o reemplazo de productos defectuosos (o partes defectuosas de los mismos).

Esta garantía no cubre el costo de la instalación del equipo reparado o sustituido y tampoco cubre daños incidentales o emergentes de cualquier naturaleza y tipo (incluyendo el transporte) así como la no uso temporal de los bienes adquiridos. Los productos o piezas sustituidos están garantizados por el resto del período de la garantía aplicable a la mercancía originalmente suministrada.

Las piezas reemplazadas serán propiedad del fabricante.

Todos los reclamos por productos presuntamente defectuosos deberán hacerse dentro de los 10 días siguientes en los que el cliente se entera de tales defectos. Todas las reclamaciones que no se hagan por escrito y no sean recibidas por el vendedor en el plazo de los 10 días serán canceladas. El cliente deberá enviar el producto supuestamente defectuoso para la inspección del fabricante y ningún otro bien deberá ser devuelto sin el consentimiento por escrito del fabricante. Esta garantía no se extenderá a los bienes sujetos al mal uso, abuso, negligencia, accidente, instalación o mantenimiento inadecuado, lubricación incorrecta o bienes que hayan sido alterados o reparados por cualquier persona que no sea el fabricante o su personal autorizado o representante, así mismo el acoplamiento mecánico y la instalación eléctrica serán responsabilidad de los instaladores.

## Warranty

*Seller warrants to Buyer that the goods will be commercially free from defects in material and workmanship for a period of 1 year from the date of shipment.*

*Seller warrants only that the goods, when shipped, shall be capable of delivering the service rating as indicated in Seller's written documents, including quotations and catalogs, providing such equipments are properly installed and maintained, correctly lubricated, operating under normal conditions with competent supervision, and within the load limits for which they were sold and provided further that the equipments are free from critical speed, torsional or other type vibration, no matter how induced.*

*Excluded from the warranty are cases of lubricant loss due to normal wear of the seals.*

*Seller's sole obligation under the foregoing warranties is limited to either, at Seller's option, replacing or repairing defective goods (or defective parts thereof).*

*This warranty does not cover the cost of installation of the equipment repaired or replaced as also does not cover incidental or consequential damages of any nature and kind (including transportation) as well as the temporary non-use of the purchased goods. Replacement goods or parts are warranted for the remainder of the warranty period applicable to the goods originally supplied by Seller.*

*Replaced parts remain property of Seller.*

*All claims for allegedly defective goods must be made within 10 days after Buyer learns of such alleged defects. All claims not made in writing and not received by Seller within such 10 days period shall be deemed waived. Buyer shall return a sample of the alleged defective part for Seller's inspection, and no other goods shall be returned to Seller without Seller's written consent. This warranty shall not extend to goods subject to misuse, abuse, neglect, accident or improper installation or maintenance, incorrect lubrication, or goods which have been altered or repaired by anyone other than Seller or its authorized personnel or representative, likewise the mechanical coupling and incorrect electrical installation are under the responsibility of the installers.*

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