FLENDER
A Siemens Company

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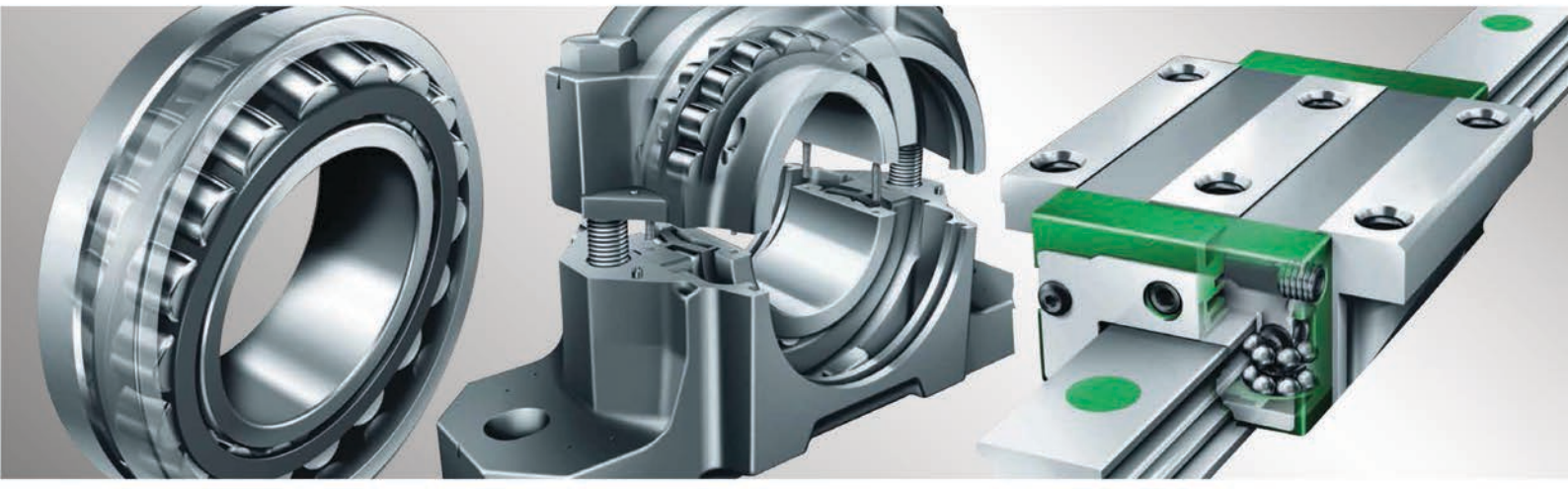
ACOPLAMENTOS RÍGIDOS
ZAPEX, N-ARPEX E ARPEX



PRODUTO - SERVIÇO - ENGENHARIA

FLENDER COUPLINGS
CATALOG **FLE 10.1**
EDITION 2020 EN

TORSIONALLY RIGID COUPLINGS
ZAPEX, N-ARPEX AND ARPEX

flender.com

FLENDER

FLE 10 CATALOG GROUP

Product catalog FLE 10.1
Torsionally Rigid Couplings

Product catalog FLE 10.3
Highly Flexible Couplings

Product catalog FLE 10.2
Flexible Couplings

Product catalog FLE 10.4
Fluid Couplings

For further coupling catalogs, see page A/6

TORSIONALLY RIGID COUPLINGS

Catalog FLE 10.1 Edition 2020 EN

INTRODUCTION

The mechanical drive train comprises individual units such as motor, gear unit and driven machine. The coupling connects these component assemblies.
As well as the transmission of rotary motion and torque, other requirements may be made of the coupling.

- Compensation for shaft misalignment with low restorative forces
- Control of characteristic angular vibration frequency and damping
- Interruption or limitation of torque
- Noise insulation, electrical insulation

Couplings are frequently chosen after the machines to be connected have already been selected. Thanks to a large number of different coupling assembly options, specified marginal conditions for clearance and connection geometry can be met from the standard range. The coupling also performs secondary functions, e.g. providing a brake disk or brake drum for operating or blocking brakes, devices to record speed or the attachment of sprockets or pulleys.

Couplings are divided into two main groups, couplings and clutches.

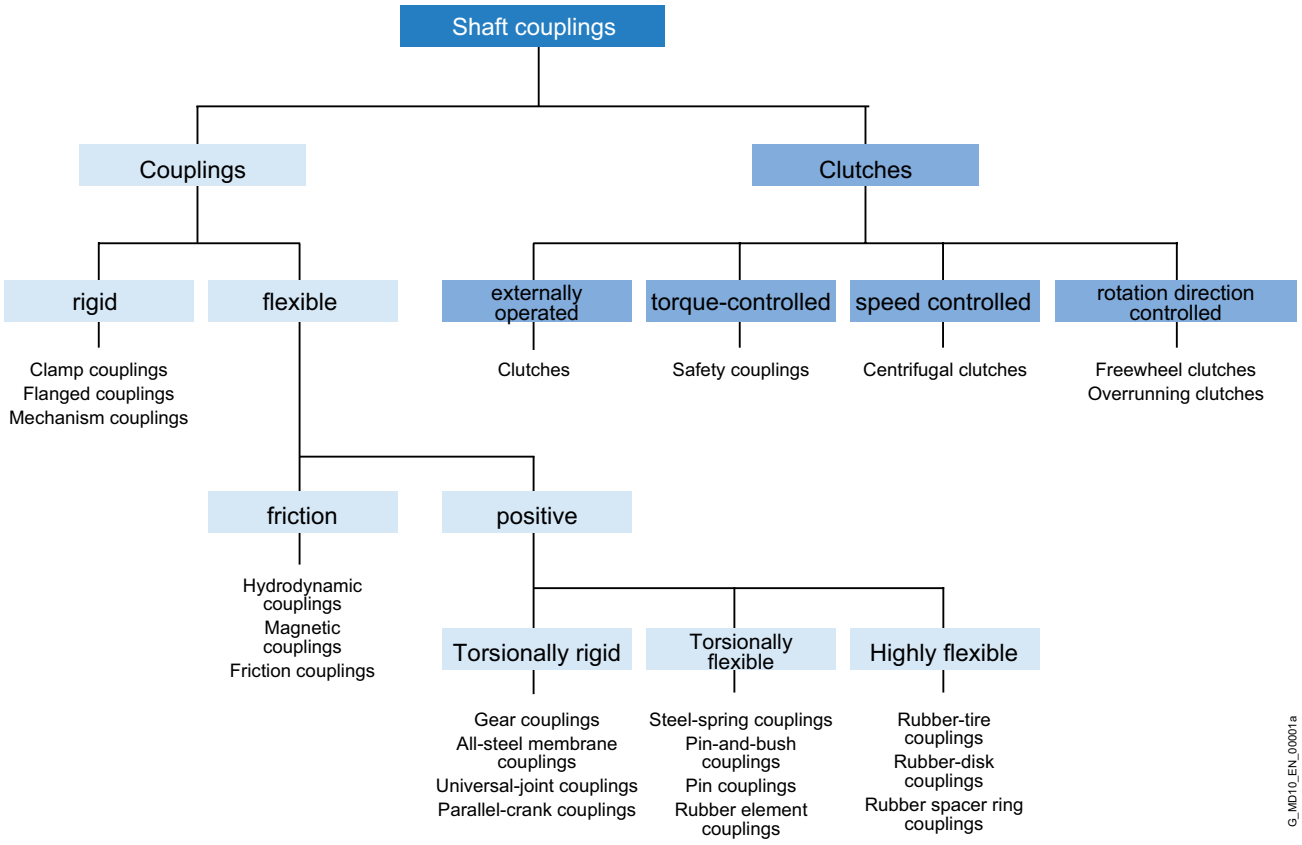
Clutches interrupt or limited the transmissible torque. The engaging and disengaging forces on externally operated clutches are introduced via a mechanically, electrically, hydraulically or pneumatically operating mechanism. Overload, centrifugal or freewheel clutches draw their engaging energy from the transmitted output.

Rigid couplings, designed as clamp, flanged or mechanism couplings, connect machines which must not undergo any shaft misalignment. Hydrodynamic couplings, often also called fluid or Föttinger couplings, are used as starting couplings in drives with high mass moments of inertia of the driven machine. In drive technology very often flexible, positive couplings, which may be designed to be torsionally rigid, torsionally flexible or highly flexible, are used.

Torsionally rigid couplings are designed to be rigid in a peripheral direction and flexible in radial and axial directions. The angle of rotation and torque are conducted through the coupling without a phase shift.

Torsionally flexible couplings have resilient elements usually manufactured from elastomer materials. Using an elastomer material with a suitable ShoreA hardness provides the most advantageous torsional stiffness and damping for the application. Shaft misalignment causes the resilient elements to deform.

Highly flexible couplings have large-volume (elastomer) resilient elements of low stiffness. The angle of rotation and torque are conducted through the coupling with a considerable phase shift.

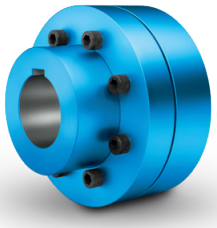

Shaft couplings
Couplings
Clutches
rigid
flexible
externally operated
torque-controlled
speed controlled
rotation direction controlled
Clamp couplings
Flanged couplings
Mechanism couplings
Clutches
Safety couplings
Centrifugal clutches
Freewheel clutches
Overrunning clutches
friction
positive
Hydrodynamic couplings
Magnetic couplings
Friction couplings
Torsionally rigid
Torsionally flexible
Highly flexible
Gear couplings
All-steel membrane couplings
Universal-joint couplings
Parallel-crank couplings
Steel-spring couplings
Pin-and-bush couplings
Pin couplings
Rubber element couplings
Rubber-tire couplings
Rubber-disk couplings
Rubber spacer ring couplings
G_MD10_EN_00001a

OUR COUPLING GROUPS AT A GLANCE

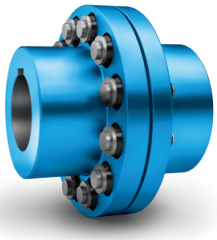
N-EUPEX, RUPEX and N-BIPEX

Flexible Couplings

Flexible Flender couplings have a wide range of possible applications. A broad standard modular system as well as specially designed application-specific couplings are available.



N-EUPEX
cam couplings
Rated torque:
19 Nm ... 62,000 Nm



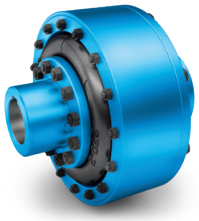
RUPEX
pin-and-bush couplings
Rated torque:
200 Nm ... 1,300,000 Nm

N-BIPEX
cam couplings
Rated torque:
12 Nm ... 4,650 Nm

ELPEX, ELPEX-B and ELPEX-S

Highly Flexible Couplings

ELPEX® couplings are free of circumferential back-lash. Their damping capacity and low torsional stiff-ness make them especially well-suited for coupling machines with strongly non-uniform torque characteristics or large shaft misalignment.



ELPEX
elastic ring couplings
Rated torque:
1,600 Nm ... 90,000 Nm

ELPEX-B
elastic tire couplings
Rated torque:
24 Nm ... 14,500 Nm

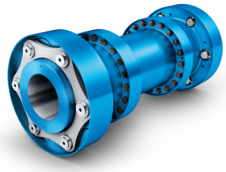
ELPEX-S
rubber disk couplings
Rated torque:
330 Nm ... 63,000 Nm

ZAPEX gear couplings and ARPEX all-steel couplings

Torsionally rigid couplings

For transmission of high torques, we offer both ARPEX all-steel couplings and ZAPEX gear couplings in a range of versions. Their purposes of application vary according to specific requirements with respect to shaft misalignment, temperature and torque.

ZAPEX
gear couplings
Rated torque:
1,300 Nm ... 7,200,000 Nm



ARPEX
high Performance Couplings
Rated torque:
1,000 Nm ... 588,500 Nm

N-ARPEX and ARPEX
all-steel couplings
Rated torque:
92 Nm ... 2,000,000 Nm

BIPEX-S and SIPEX

Backlash-free couplings

The vibration-damping, electrically insulating plug-in BIPEX-S elastomer couplings and SIPEX metal bellows couplings with very high torsional stiffness deliver especially isogonal torque transmission.

BIPEX-S and SIPEX
Rated torque:
0.1 Nm ... 5,000 Nm

FLUDEX

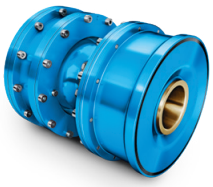
Hydrodynamic couplings

The FLUDEX hydrodynamic fluid coupling works according to the Föttinger principle. It functions entirely free of wear.

FLUDEX
fluid Couplings
Power:
1.2 kW ... 2,500 kW

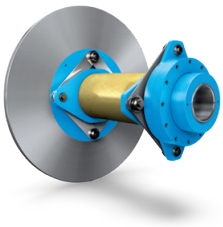
Application-specific couplings

Couplings for rail vehicles must meet high demands. Due to their high degree of standardization and wide variety, they can be used in the most diverse vehicle types.



Railway coupling
Rated torque:
1,000 Nm ... 9,500 Nm

Each wind turbine coupling is designed to optimally meet the requirements of the respective wind turbine. The coupling connects the fast-running gear shaft with the generator shaft and is available for wind turbines with a capacity of up to 12 MW.



Wind turbine couplings
Rated torque:
10,000 Nm ... 60,000 Nm

TECHNICAL INFORMATION AND COUPLING SELECTION

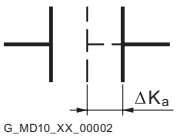
TECHNICAL INFORMATION

Shaft misalignment

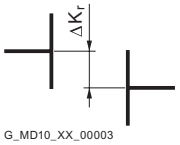
Shaft misalignment is the result of displacement during assembly and operation and, where machines constructed with two radial bearings each are rigidly coupled, will cause high loads being placed on the bearings. Elastic deformation of base frame, foundation and machine housing will lead to shaft misalignment which cannot be prevented, even by precise alignment.

Furthermore, because individual components of the drive train heat up differently during operation, heat expansion of the machine housings causes shaft misalignment. Poorly aligned drives are often the cause of seal, rolling bearing or coupling failure. Alignment should be carried out by specialist personnel in accordance with operating instructions.

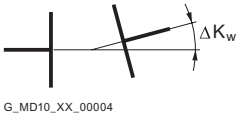
Depending on the direction of the effective shaft misalignment a distinction is made between:



Axial misalignment



Radial misalignment



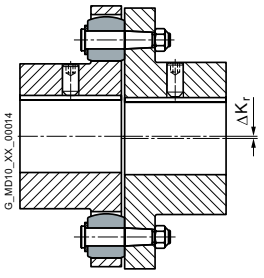
Angular misalignment

Couplings can be categorized into one of the following groups:

Single-joint couplings

Couplings with flexible elements mainly made of elastomer materials. Shaft misalignment results in deformation of the elastomer elements. The elastomer elements can absorb shaft misalignment as deformations in an axial, radial and angular direction. The degree of permissible misalignment depends on the coupling size, the speed and the type of elastomer element.
Single-joint couplings do not require an adapter and are therefore short versions.

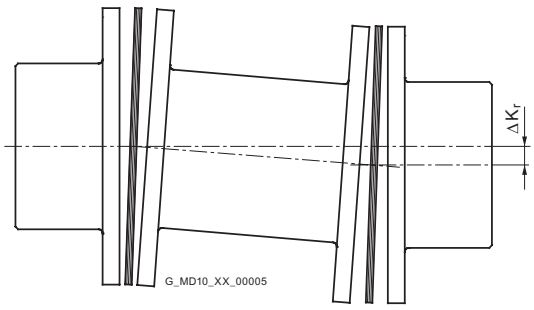
Example:
In the case of a RUPEX RWN 198 coupling with an outer diameter of 198 mm and a speed of 1500 rpm, the permitted radial misalignment is Δ_{Kr} = 0.3 mm.



Two-joint couplings

Two-joint couplings are always designed with an adapter. The two joint levels are able to absorb axial and angular misalignment. Radial misalignment occurs via the gap between the two joint levels and the angular displacement of the joint levels. The permitted angular misalignment per joint level is frequently about 0.5°. The permitted shaft misalignment of the coupling can be adjusted via the length of the adapter. If there are more than two joint levels, it is not possible to define the position of the coupling parts relative to the axis of rotation. (The less frequently used parallel-crank couplings are an exception).

Example:
N-ARPEX ARN-6 NEN 217-6 with a shaft distance of 140 mm with a permitted radial misalignment of ΔK_r = 2.2 mm (angle per joint level 1.0°).



Balancing

Balance quality levels
The so-called quality level G to DIN ISO 21940 indicates a range of permitted residual imbalance from zero up to an upper limit. Applications can be grouped on the basis of similarity analysis. For many applications a coupling balance quality of G 16 is sufficient. On drives susceptible to vibration the balance quality should be G 6.3. Only in special cases is a better balance quality required.

Balancing standard in accordance with DIN ISO 21940-32
Besides the required balance quality, it is necessary to set standards which define how the mass of the parallel key is to be taken into consideration when balancing. In the past, motor rotors have frequently been balanced in accordance with the full parallel key standard. The "appropriate" balance condition of the coupling hub was described as "balancing with open keyway" or "balancing after keyseating". Today it is usual for the motor rotor, as well as the gear unit and driven machine shaft, to be balanced in accordance with the half parallel key standard.

Full parallel key standard

The parallel key is inserted in the shaft keyway, then balancing is carried out. The coupling hub must be balanced without parallel key after keyseating.

Marking of shaft and hub with "F" (for "full").

Half parallel key standard

The balancing standard normally applied today. Before balancing, a half parallel key is inserted in the shaft and another in the coupling hub. Alternatively, balancing can be carried out before cutting the keyway.

The balanced parts must be marked with an "H". This marking can be dispensed with if it is absolutely clear which parallel key standard has been applied.

No parallel key standard

Balancing of shaft and coupling hub after keyseating, but without parallel key. Not used in practice. Marking of shaft and hub with "N" (for "no").
The length of the parallel key is determined by the shaft keyway. Coupling hubs may be designed considerably shorter than the shaft.

To prevent imbalance forces caused by projecting parallel key factors when balancing in accordance with the half parallel key standard in the case of applications with high balancing quality requirements, grooved spacer rings can be fitted or stepped parallel keys used.

Flender Balancing Standard

The balancing quality level, together with the operating speed, results in the maximum permissible eccentricity of the center of gravity of the coupling or the coupling subassembly. In the Flender article number the balancing quality can be preset with the help of the order code. Additionally, also the balance quality level to DIN ISO 21940 can be preset together with the operating speed belonging to it, which then be taken as priority.

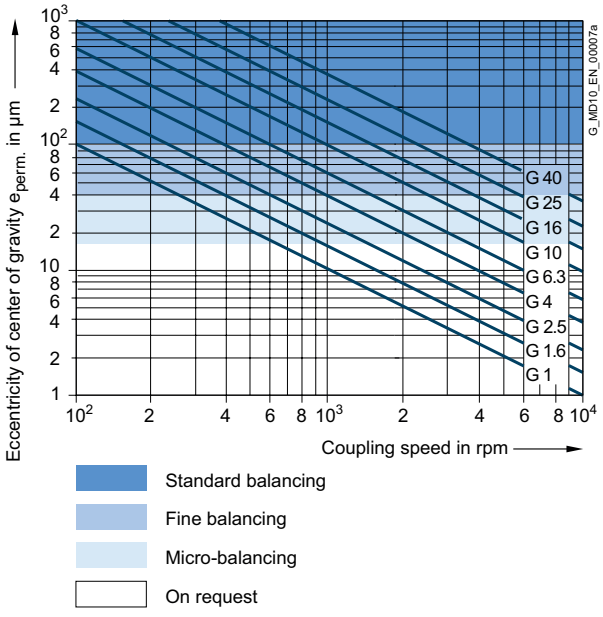
$$e_{perm} = 9550 \cdot \frac{G}{n}$$

$$e_{coupl} \leq e_{perm}$$

Permitted eccentricity of center of gravity	e_{perm}	in µm
Eccentricity of center of gravity of coupling	e_{coupl}	in µm
Balancing quality level	G	in mm/s
Coupling speed	n	in rpm

Eccentricity of center of gravity of coupling e_{coupl}	Flender balancing quality	Order code
maximum 100 µm	standard balancing	without specification
maximum 40 µm	fine balancing	W02
maximum 16 µm	micro-balancing	W03
better than 16 µm	special balancing	on request

TECHNICAL INFORMATION



Example:
Coupling speed = 1450 rpm
required balancing quality level G 6.3

$$e_{perm} = 9550 \cdot \frac{G}{n} = 9550 \cdot \frac{6.3}{1450}\ \mu m$$

Thus, the required eccentricity of center of gravity is 41.5 µm. The fine balancing with a maximum eccentricity of center of gravity of 40 mm fulfills this requirement; therefore, the order code W02 has to be specified when ordering.

For many applications the following balancing quality recommendation applies:

Coupling	standard balancing $v = DA \cdot n/19100$	fine balancing
short version with LG ⩽ 3 × DA	v ⩽ 30 m/s	v > 30 m/s
long version with LG > 3 × DA	v ⩽ 15 m/s	v > 15 m/s

Peripheral speed	v	in mm/s
Coupling outer diameter	DA	in mm
Coupling speed	n	in rpm
Coupling length	LG	in mm

The following standards on balancing must be observed:

- couplings are balanced in subassemblies.
- hub parts without finished bore are unbalanced.
- the number of balancing levels (one- or two-level balancing) is specified by Flender.
- without special specification balancing is done in accordance with the half-parallel-key standard. Balancing in accordance with the full-parallel-key standard must be specified in the order number.
- For FLUDEX couplings special balancing standards specified in Section 13 apply.
- ARPEX couplings in standard balancing quality are unbalanced. Thanks to steel components machined all over and precisely guided adapters the balancing quality of standard balancing is nearly always adhered to.

Shaft-hub connections

The bore and the shaft-hub connection of the coupling are determined by the design of the machine shaft. In the case of IEC standard motors, the shaft diameters and parallel key connections are specified in accordance with DIN EN 50347. For diesel motors, the flywheel connections are frequently specified in accordance with SAE J620d or DIN 6288. Besides the very widely used connection of shaft and hub with parallel keys to DIN 6885 and cylindrically bored hubs, couplings with Taper clamping bushes, clamping sets, shrink-fit connections and splines to DIN 5480 are common.

The form stability of the shaft/hub connection can only be demonstrated when shaft dimensions and details of the connection are available. The coupling torques specified in the tables of power ratings of the coupling series do not apply to the shaft-hub connection unrestrictedly.

In the case of the shaft-hub connection with parallel key, the coupling hub must be axially secured, e.g. with a set screw or end washer. The parallel key must be secured against axial displacement in the machine shaft.

All Flender couplings with a finished bore and parallel keyway are designed with a set screw. Exceptions are some couplings of the FLUDEX series, in which end washers are used. During assembly, Taper clamping bushes are frictionally connected to the machine shaft.

TECHNICAL INFORMATION

Standards

Machines

2006/42/EG	EC Machinery Directive
2014/34/EU	ATEX Directive – Manufacturer
1999/92/EG	ATEX Directive – Operator – and ATEX Guideline to Directive 1999/92/EC
DIN EN 80079-36	Non-electrical equipment for use in potentially explosive atmospheres
DIN EN 1127	Explosive atmospheres, explosion prevention and protection
DIN EN 50347	General-purpose three-phase induction motors having standard dimensions and outputs

Couplings

DIN 740	Flexible shaft couplings Part 1 and Part 2
VDI Guideline 2240	Shaft couplings - Systematic subdivision according to their properties VDI Technical Group Engineering Design 1971
API 610	Centrifugal Pumps for Petroleum, Chemical and Gas Industry Services
API 671	Special Purpose Couplings for Petroleum, Chemical and Gas Industry Services
ISO 10441	Petroleum, petrochemical and natural gas industries – Flexible couplings for mechanical power transmission-special-purpose applications
ISO 13709	Centrifugal pumps for petroleum, petrochemical and natural gas industries

Balancing

DIN ISO 21940	Requirements for the balancing quality of rigid rotors
DIN ISO 21940-32	Mechanical vibrations; standard governing the type of parallel key during balancing of shafts and composite parts

Shaft-hub connections

DIN 6885	Driver connections without taper action – parallel keys – keyways
SAE J620d	Flywheels for industrial engines ...
DIN 6288	Reciprocating internal combustion engines Dimensions and requirements for flywheels and flexible couplings
ASME B17.1	Keys and keyseats
DIN EN 50347	General-purpose three-phase induction motors with standard dimensions and output data
BS 46-1:1958	Keys and keyways and taper pins Specification

Key to symbols

Name	Symbols	Unit	Explanation
Torsional stiffness, dynamic	C_{Tdyn}	Nm/rad	For calculating torsional vibration
Excitation frequency	f_{err}	Hz	Excitation frequency of motor or driven machine
Moment of inertia	J	kgm^2	Moment of inertia of coupling sides 1 and 2
Axial misalignment	ΔK_a	mm	Axial misalignment of the coupling halves
Radial misalignment	ΔK_r	mm	Radial misalignment of the coupling halves
Angular misalignment	ΔK_w	°	Angular misalignment of the coupling halves
Service factor	FB		Factor expressing the real coupling load as a ratio of the nominal coupling load
Frequency factor	FF		Factor expressing the frequency dependence of the fatigue torque load
Temperature factor	FT		Factor taking into account the reduction in strength of flexible rubber materials at a higher temperature
Weight	m	kg	Weight of the coupling
Rated speed	n_N	rpm	Coupling speed
Maximum coupling speed	n_{Kmax}	rpm	Maximum permissible coupling speed
Rated power	P_N	kW	Rated output on the coupling, usually the output of the driven machine
Rated torque	T_N	Nm	Rated torque as nominal load on the coupling
Fatigue torque	T_W	Nm	Amplitude of the dynamic coupling load
Maximum torque	T_{max}	Nm	More frequently occurring maximum load, e.g. during starting
Overload torque	T_{OL}	Nm	Very infrequently occurring maximum load, e.g. during short circuit or blocking conditions
Rated coupling torque	T_{KN}	Nm	Torque which can be transmitted as static torque by the coupling over the period of use.
Maximum coupling torque	T_{Kmax}	Nm	Torque which can be frequently transmitted (up to 25 times an hour) as maximum torque by the coupling.
Coupling overload torque	T_{KOL}	Nm	Torque which can very infrequently be transmitted as maximum torque by the coupling.
Fatigue coupling torque	T_{KW}	Nm	Torque amplitude which can be transmitted by the coupling as dynamic torque at a frequency of 10 Hz over the period of use.
Resonance factor	V_R		Factor specifying the torque increase at resonance
Temperature	T_a	°C	Ambient temperature of the coupling in operation
Damping coefficient	Ψ	psi	Damping parameter

SELECTION OF THE COUPLING SERIES

The coupling series is frequently determined by the driven machine and the design of the drive train. Common selection criteria are listed below and assigned to coupling properties, which are used to select the coupling series. Additionally, the price of the coupling and availability are important criteria for determining the coupling series to be used.

The FLUDEX series operates positively and transmits the torque with the aid of a flowing oil or water filling.

FLUDEX couplings are used to reduce starting and/or overload torques. During starting, the motor may, for example, run up within a very short time; because of the FLUDEX coupling, the drive train with the driven machine may accelerate after a delay and without increased torque load.

The FLUDEX coupling cannot compensate for shaft misalignment and is therefore designed in combination with a displacement coupling, a cardan shaft or a belt drive. The displacement coupling may be selected in accordance with the criteria described below.

Selection criteria	Torque range Rated coupling torque T_{KN}	Speed range Peripheral speed $v_{max} = DA \cdot n_{max}/19100$	Torsional stiffness torsionally rigid	 torsionally flexible	 Highly flexible	Operating temperature range
ZAPEX	850 ... 7200000 Nm	60 m/s	■	–	–	-20 ... +80 °C
N-ARPEX	350 ... 2000000 Nm	110 m/s	■	–	–	-50 ... +280 °C
ARPEX	92 ... 2000000 Nm	100 m/s	■	–	–	-40 ... +280 °C
N-EUPEX	19 ... 62000 Nm	36 m/s	–	■	–	-50 ... +100 °C
N-EUPEX DS	19 ... 21200 Nm	36 m/s	–	■	–	-30 ... +80 °C
RUPEX	200 ... 1300000 Nm	60 m/s	–	■	–	-50 ... +100 °C
N-BIPEX	12 ... 4650 Nm	45 m/s	–	■	–	-50 ... +100 °C
ELPEX-B	24 ... 14500 Nm	35 m/s	–	–	■	-50 ... +70 °C
ELPEX-S	330 ... 63000 Nm	66 m/s	–	–	■	-40 ... +120 °C
ELPEX	1600 ... 90000 Nm	60 m/s	–	–	■	-40 ... +80 °C

Typical coupling solutions for different example applications

The specified application factors are recommendations; regulations, rules and practical experience take priority as assessment criteria.
No application factor need be taken into account with FLUDEX couplings.

In the case of highly flexible couplings of the ELPEX, ELPEX-S and ELPEX-B series, deviating application factors are stated in the product descriptions.
FLUDEX couplings are mostly mounted on the high-speed gear shaft.

Example applications	Application factor FB
Electric motor without gear unit	
Centrifugal pumps	1.0
Piston pumps	1.5
Vacuum pumps	1.5
Fans with T_N less than 75 Nm	1.5
Fans with T_N from 75 to 750 Nm	1.75
Fans with T_N larger than 750 Nm	1.75
Blowers	1.5
Frequency converters / generators	1.25
Reciprocating compressors	1.75
Screw-type compressors	1.5
Internal-combustion engine without gear unit	
Generators	1.75
Pumps	1.5
Fans	1.75
Hydraulic pumps, excavators, construction machines	1.5
Compressors / screw-type compressors	1.5
Agricultural machinery	1.75
Other	
Turbine gear units	1.5
Hydraulic motor - gear unit	1.25
Electric motor with gear unit	
Chemical industry	
Extruders	1.5
Pumps - centrifugal pumps	1.0
Pumps - piston pumps	1.75
Pumps - plunger pumps	1.5
Reciprocating compressors	1.75
Calenders	1.5
Kneaders	1.75
Cooling drums	1.25
Mixers	1.25
Stirrers	1.25
Toasters	1.25
Drying drums	1.25
Centrifuges	1.25
Crushers	1.5
Power generation and conversion	
Compressed air, reciprocating compressors	1.75
Compressed air, screw-type compressors	1.25
Air - Blowers	1.5
Air - Cooling tower fans	1.5
Air - Turbine blowers	1.5
Generators, converters	1.25
Welding generators	1.25
Metal production, iron and steel works	
Plate tilters	1.5
Ingot pushers	1.75
Slabbing mill	1.75
Coiling machines	1.5
Roller straightening machines	1.5
Roller tables	1.75
Shears	1.75
Rollers	1.75
Metal working machines	
Plate bending machines	1.5
Plate straightening machines	1.5
Hammers	1.75
Planing machines	1.75
Presses, forging presses	1.75
Shears	1.5
Grinding machines	1.25
Punches	1.5
Machine tools: Main drives	1.5
Machine tools: Auxiliary drives	1.25
Food industry	
Filling machines	1.25
Kneading machines	1.5
Mashers	1.5
Sugar cane production	1.5
Production machines	
Construction machines, hydraulic pumps	1.25
Construction machines, traversing gears	1.5
Construction machines, suction pumps	1.5
Construction machines, concrete mixers	1.5
Printing machines	1.25
Woodworking - barking drums	1.5
Woodworking - planing machines	1.5
Woodworking - reciprocating saws	1.5
Grinding machines	1.5
Textile machines - winders	1.5
Textile machines - printing machines	1.5
Textile machines - tanning vats	1.5
Textile machines - shredders	1.5
Textile machines - looms	1.5
Packaging machines	1.5
Brick molding machines	1.75
Transport and logistics	
Passenger transport - elevators	1.5
Passenger transport - escalators	1.5
Conveyor systems - bucket elevators	1.5
Conveyor systems - hauling winches	1.5
Conveyor systems - belt conveyors	1.5
Conveyor systems - endless-chain conveyors	1.5
Conveyor systems - circular conveyors	1.5
Conveyor systems - screw conveyors	1.5
Conveyor systems - inclined hoists	1.5
Crane traversing gear	1.5
Hoisting gear	1.5
Crane lifting gear	2.0
Crane traveling gear	1.5
Crane slewing gear	1.5
Crane fly jib hoists	1.5
Cable railways	1.5
Drag lifts	1.5
Winches	1.5
Cellulose and paper	
Paper-making machines, all	1.5
Pulper drives	1.5
Cement industry	
Crushers	1.75
Rotary furnaces	1.5
Hammer mills	1.75
Ball mills	1.75
Pug mills	1.75
Mixers	1.5
Pipe mills	1.5
Beater mills	1.75
Separators	1.5
Roller presses	1.75

SELECTION OF THE COUPLING SIZE

The torque load of the coupling must be determined from the output of the driven machine and the coupling speed.

Rated coupling load $T_N = 9550 \times P_N / n_N$
(T_N in Nm; P_N in kW; n_N in rpm)

The rated coupling load obtained in this way must be multiplied by factors and compared with the rated coupling torque. An ideal but expensive method is to measure the torque characteristic on the coupling. For this, Flender offers special adapters fitted with torque measuring devices.

The rated coupling torque T_{KN} is the torque which can be transmitted by the coupling over an appropriate period of use if the load is applied to the coupling purely statically at room temperature.

Application factors are to express the deviation of the real coupling load from the "ideal" load condition.

Coupling load in continuous operation

The operating principles of the driving and driven machines are divided into categories and the application factor FB derived from these in accordance with DIN 3990-1.

Application factor for N-EUPEX, N-EUPEX-DS, RUPEX, N-BIPEX, ELPEX-B, N-ARPEX, ARPEX, ZAPEX and FLUDEX

Application factor FB				
	Torque characteristic of the driven machine			
Torque characteristic of the driving machine	uniform	uniform with moderate shock loads	non uniform	very rough
uniform	1.0	1.25	1.5	1.75
uniform with moderate shock loads	1.25	1.5	1.75	2.0
non uniform	1.5	1.75	2.0	2.5

Examples of torque characteristic of driving machines:

- uniform: Electric motors with soft starting, steam turbines
- uniform with moderate shock loads: Electric motors without soft starting, hydraulic motors, gas and water turbines
- non uniform: Internal-combustion engines

Examples of torque characteristic in driven machines:

- uniform: Generators, centrifugal pumps for light fluids
- uniform with moderate shock loads: Centrifugal pumps for viscous fluids, elevators, machine tool drives, centrifuges, extruders, blowers, crane drives
- non uniform: Excavators, kneaders, conveyor systems, presses, mills
- very rough: Crushers, excavators, shredders, iron/smelting machinery

Temperature factor FT

Coupling	Elastomer material	Low temperature °C	Temperature T_a on the coupling under -30 °C	-30 °C up to 50 °C	up to 60 °C	up to 70 °C	up to 80 °C	up to 90 °C	up to 100 °C	up to 110 °C	up to 120 °C
N-EUPEX	NBR	-30	–	1.0	1.0	1.0	1.0	–	–	–	–
N-EUPEX	NR	-50	1.1 [1]	1.0	–	–	–	–	–	–	–
N-EUPEX	HNBR	-10	–	1.0	1.0	1.0	1.0	1.25	1.25	–	–
N-EUPEX DS	NBR	-30	–	1.0	1.0	1.0	1.0	–	–	–	–
RUPEX	NBR	-30	–	1.0	1.0	1.0	1.0	–	–	–	–
RUPEX	NR	-50	1.1	1.0	–	–	–	–	–	–	–
RUPEX	HNBR	-10	–	1.0	1.0	1.0	1.0	1.25	1.25	–	–
N-BIPEX	TPU	-50	1.0	1.0	1.0	1.0	1.0	1.0	1.0	–	–
ELPEX	NR	-40	1.1	1.0	1.25	1.40	1.60	–	–	–	–
ELPEX-B	NR	-50	1.1	1.0	–	–	–	–	–	–	–
ELPEX-B	CR	-15	–	1.0	1.0	1.0	–	–	–	–	–
ELPEX-S SN, NN, WN	NR	-40	1.1	1.0	1.25	1.40	1.60	–	–	–	–
ELPEX-S NX	VMQ	-40	1.1	1.0	1.0	1.0	1.0	1.1	1.25	1.4	1.6

NR = natural rubber, natural-synthetic rubber mixture
NBR = nitril-butadiene-rubber (Perbunan)
HNBR = hydrated acrylonitrile butadiene rubber
CR = chloroprene rubber (FRAS fire-resistant and anti-static)
VMQ = silicone
TPU = polyurethane

[1] The N-EUPEX coupling is not suitable for shock loads when used at low temperatures.

Coupling size $T_{KN} \geqslant T_N \cdot FB \cdot FT$

In the case of ARPEX and ZAPEX coupling types, no temperature factor (FT = 1.0) need be taken into account.

Coupling load at maximum and overload conditions

The maximum torque is the highest load acting on the coupling in normal operation.
Maximum torques at a frequency of up to 25 times an hour are permitted and must be lower than the maximum coupling torque. Examples of maximum torque conditions are: Starting operations, stopping operations or usual operating conditions with maximum load.

$T_{Kmax} \geqslant T_{Max} \cdot FT$

Overload torques are maximum loads which occur only in combination with special, infrequent operating conditions. Examples of overload torque conditions are: Motor short circuit, emergency stop or blocking because of component breakage. Overload torques at a frequency of once a month are permitted and must be lower than the maximum overload torque of the coupling. The overload condition may last only a short while, i.e. fractions of a second.

$T_{KOL} \geqslant T_{OL} \cdot FT$

Coupling load due to dynamic torque load

Applying the frequency factor FF, the dynamic torque load must be lower than the coupling fatigue torque.

Dynamic torque load

$T_{KW} \geqslant T_W \cdot FF$

Frequency of the dynamic torque load
$f_{err} \leqslant 10$ Hz frequency factor FF = 1.0

Frequency of the dynamic torque load
$f_{err} > 10$ Hz frequency factor $FF = \sqrt{(f_{err}/10\ Hz)}$

For the ZAPEX and ARPEX series, the frequency factor is always FF = 1.0.

SELECTION OF THE COUPLING SIZE

Checking the maximum speed

For all load situations $n_{Kmax} \geqslant n_{max}$

Checking permitted shaft misalignment

For all load situations, the actual shaft misalignment must be less than the permitted shaft misalignment.

Checking bore diameter, mounting geometry and coupling design

The check must be made on the basis of the dimension tables. The maximum bore diameter applies to parallel keyways to DIN 6885. For other keyway geometries, the maximum bore diameter can be reduced.

On request, couplings with adapted geometry can be provided.

Coupling behavior under overload conditions

The ZAPEX, N-ARPEX, ARPEX, N-EUPEX, RUPEX and N-BIPEX coupling series can withstand overloads until the breakage of metal parts. These coupling series are designated as fail-safe.
The N-EUPEX DS, ELPEX-B, ELPEX-S and ELPEX coupling series throw overload. The elastomer element of these couplings is irreparably damaged without damage to metal parts when subjected to excessive overload.

These coupling series are designated as non-fail-safe. These types that fail can be fitted with a so-called fail-safe device. This additional component enables emergency operation, even after the rubber element of the coupling has been irreparably damaged.

Checking shaft-hub connection

The torques specified in the tables of power ratings data of the coupling series do not necessarily apply to the shaft-hub connection. Depending on the shaft-hub connection, proof of form stability is required. Flender recommends obtaining proof of form strength by using calculation methods in accordance with the current state of the art.

Shaft-hub connection	Suggestion for calculation method
Keyway connection to DIN 6885-1	DIN 6892
Shrink fit	DIN 7190
Spline to DIN 5480	
Bolted flange connection	VDI 2230
Flange connection with close-fitting bolts	

Fitting recommendations for the shaft-hub connection are given in the **Appendix**.

The coupling hub is frequently fitted flush with the shaft end face. If the shaft projects, the risk of collision with other coupling parts must be checked. If the shaft is set back, in addition to the load-bearing capacity of the shaft-hub connection, the correct positioning of the hub must be ensured as well. If the bearing hub length is insufficient, restorative forces may cause tilting movements and so wear to and impairment of the axial retention. Also, the position of the set screw to be positioned on sufficient shaft or parallel key material must be noted.

Checking low temperature and chemically aggressive environment

The minimum permitted coupling temperature is specified in the Temperature factor FT table. In the case of chemically aggressive environments, please consult the manufacturer.

FEATURES OF THE STANDARD TYPE

Couplings	Features of the standard type
All coupling series except ARPEX clamping hubs and FLUDEX with keyway to ASME B17.1	Bore tolerance H7
N-ARPEX and ARPEX clamping hubs	Bore tolerance H6
FLUDEX couplings with keyway to ASME B17.1	Hollow shafts: bore tolerance K7
	other parts: Bore tolerance M7
All coupling series with bore diameter - imperial	Parallel keyway to ASME B17.1
Bore diameter metric in the case of ZAPEX, N-ARPEX and ARPEX coupling series as well as coupling hubs with applied brake disks or brake drums of the N-EUPEX and RUPEX series	Parallel keyway to DIN 6885-1 keyway width P9
Bore diameter metric in the case of the N-EUPEX, RUPEX, N-BIPEX, ELPEX-S, ELPEX-B, ELPEX, FLUDEX coupling series	Parallel keyway to DIN 6885-1 keyway width JS9
All coupling series except FLUDEX	Axial locking by means of set screw
FLUDEX coupling series	Axial lock by means of set screw or end washer
All coupling series	Balancing in accordance with half parallel key standard
ZAPEX, N-ARPEX, ARPEX, N-EUPEX, RUPEX, N-BIPEX, ELPEX-S, ELPEX-B and ELPEX coupling series	Balancing quality G16
FLUDEX coupling series	Balancing quality G6.3
All series	Unpainted
All series	Preservation with cleaning emulsion
FLUDEX couplings	Fuse 140 °C

Configurator

The article number can be obtained with the help of the Configurator. The coupling can be selected in a product configurator and specified using selection menus.

The Configurator is available under **flender.com**.

The coupling can be selected via "Technical selection" (technical selection) or via "Direct selection" (via article-no.).

TORSIONALLY RIGID GEAR COUPLINGS ZAPEX ZW SERIES

4

ZAPEX ZW
FLENDER

GENERAL

Coupling suitable for use in potentially explosive atmospheres.
Complies with the current ATEX Directive for:

- II 2G Ex h IIC T6 ... T5 Gb X
- II 2D Ex h IIIC T85 °C ... 100 °C Db X
- I M2 Ex h Mb X

Benefits

ZAPEX gear couplings link machine shafts and compensate for shaft misalignment with weak restorative forces. High transmissible torque combined with compactness and light weight are characteristic of ZAPEX couplings. ZAPEX coupling types are constructed on a modular principle.

This means that application-specific solutions can be delivered quickly. ZAPEX couplings require very little maintenance. Regular grease or oil changes at the prescribed intervals prolongs the service life of the coupling.

Application

ZAPEX couplings are especially suited for operation in harsh operating conditions, such as drives in the iron smelting or cement industry.

ZAPEX couplings are suitable for reverse operation and horizontal mounting positions and, in the case of type ZWNV, for vertical mounting positions.

GENERAL

Design and configurations

A ZAPEX coupling comprises two hub sections with external teeth which are mounted on the machine shafts. Each set of external teeth engages in a flanged socket with mating internal teeth. The flanged sleeves are connected via two flanges with close-fitting bolts.
The teeth are lubricated with oil or grease. On the ZAPEX type ZW, DUO sealing rings are used to seal the tooth space. The DUO sealing rings prevent the lubricant from escaping and dirt from entering the tooth space. The parallel keyways must be sealed during assembly to prevent lubricant from escaping.
Customized hub designs are described after the types.

Type	Description
ZWN	Standard type
ZZS	with adapter
ZZW	with intermediate shaft
ZWH	with coupling sleeve
ZWBT	with offset brake disk
ZWBG	with straight brake disk
ZWB	with brake drum
ZWTR	for rope drums
ZBR	with shear pins
ZWS	Clutch
ZWNV	Vertical type
ZWSE	Simple clutch-coupling combination

Further application-specific coupling types are available; dimension sheets for and information on these are available on request.

Function

The torque is transmitted through the coupling teeth.
The teeth are crowned, so angular displacement per tooth plane is possible. Radial displacement can be compensated for via the space VA between the tooth planes.
The internal teeth of the flanged sleeves are significantly wider than the external teeth of the hub parts, permitting a relatively high axial misalignment.

A small angular misalignment on the coupling teeth results in an advantageous distribution of the lubricant film and a very low wear rate. This favorable condition can be deliberately set by aligning the drive with the machine shafts with a slight radial misalignment.

Technical specifications

Power ratings						
Size	Rated torque T_{KN} Nm	Maximum torque T_{Kmax} Nm	Overload torque T_{KOL} Nm	Fatigue torque T_{KW} Nm	Torsional stiffness ZW C_{Tdyn} kNm/rad	Permitted axial shaft misalignment ΔK_a mm
112	1300	2600	5200	520	2000	1.0
128	2500	5000	10000	1000	3600	1.0
146	4300	8600	17200	1720	6900	1.0
175	7000	14000	28000	2800	9360	1.0
198	11600	23200	46400	4640	15600	1.0
230	19000	38000	76000	7600	26300	1.0
255	27000	54000	108000	10800	33400	1.5
290	39000	78000	156000	15600	44000	1.5
315	54000	108000	216000	21600	64100	1.5
342	69000	138000	276000	27600	81600	1.5
375	98000	196000	392000	39200	115600	1.5
415	130000	260000	520000	52000	106000	1.5
465	180000	360000	720000	72000	134600	2.0
505	250000	500000	1000000	100000	168700	2.0
545	320000	640000	1280000	128000	216900	2.0
585	400000	800000	1600000	160000	263200	2.0
640	510000	1020000	2040000	204000	356000	2.0
690	660000	1320000	2640000	264000	431000	2.0
730	790000	1580000	3160000	316000	538000	2.0
780	1000000	2000000	4000000	400000	696000	3.0
852	1200000	2400000	4800000	480000	926000	3.0
910	1600000	3200000	6400000	640000	1118000	3.0
1020	1900000	3800000	7600000	760000	1339000	3.0
1080	2200000	4400000	8800000	880000	1605000	3.0
1150	2700000	5400000	10800000	1080000	2120000	3.0
1160	3350000	6700000	13400000	1340000	2474000	3.0
1240	3800000	7600000	15200000	1520000	3079000	3.0
1310	4600000	9200000	18400000	1840000	3693000	4.0
1380	5300000	10600000	21200000	2120000	4383000	4.0
1440	6250000	12500000	25000000	2500000	5056000	4.0
1540	7200000	14400000	28800000	2880000	6115000	4.0

In the case of type ZWTR, the rated torques which deviate from the above are specified in the dimension table.

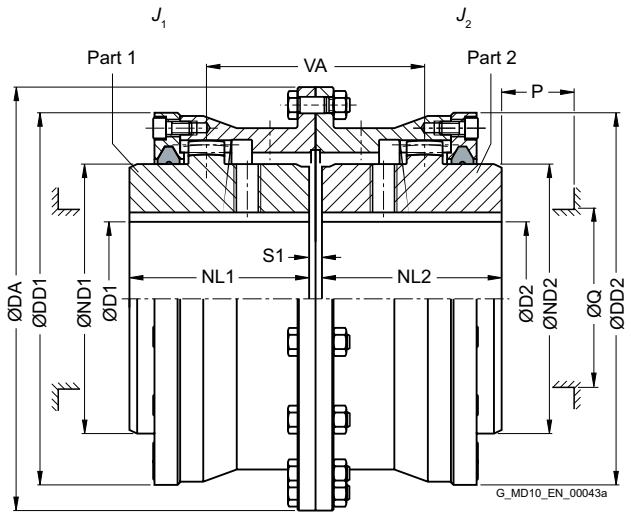
The stated torsional stiffness "ZW" applies to coupling types ZWN and ZWNV.
Torsional stiffness of the remaining types on request.

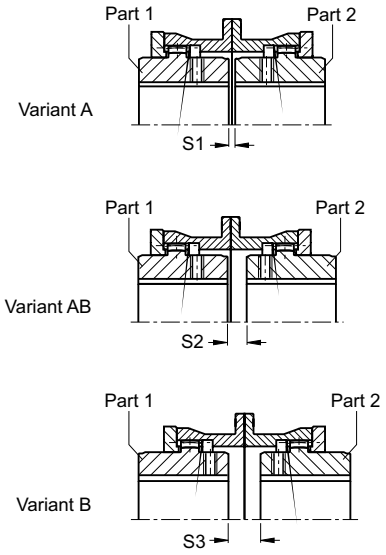
The axial misalignment ΔKa must be understood as the maximum permitted enlargement of the hub distance S of the coupling.
The axial misalignment for the types ZWBT, ZWBG and ZWNV is 1/2 · ΔK_a.

Angular misalignment ΔK_w
Types ZWN, ZZS, ZZW, ZWH, ZWB, ZBR, ZWS: $\Delta K_w = 1°$
Types ZWBT and ZWBG: $\Delta K_w = 0.2°$
Type ZWSE: $\Delta K_w = 0.4°$

Radial misalignment ΔK_r
Types ZWN, ZZS, ZZW, ZWH, ZWB, ZBR, ZWS:
$\Delta K_r \leqslant VA \cdot \tan 1°$
Types ZWBT and ZWBG: $\Delta K_r \leqslant VA \cdot \tan 0{,}2°$
Type ZWSE: $\Delta K_r \leqslant VA \cdot 0.4°$
For the tooth distance VA, see the relevant table for the subassembly.

TYPE ZWN





Size	Rated torque	Maximum speed	Dimensions in mm												Mass moment of inertia	↗ Article no. [1]			Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S1	S2	S3	VA	Q	P	J_1/J_2	Type			m
	Nm	rpm	min.	max.											kgm²	A	B	AB	kg
112	1300	9400	0	49	143	65	50	110	6	-	-	56	50	35	0.007	2LC0300-0AA	2LC0300-0AB	2LC0300-0AC	5.8
128	2500	8300	0	61	157	80	60	128	6	13	20	73	65	45	0.014	2LC0300-1AA	2LC0300-1AB	2LC0300-1AC	7.9
146	4300	7300	0	72	177	95	75	146	6	13	20	88	75	45	0.021	2LC0300-2AA	2LC0300-2AB	2LC0300-2AC	11.5
175	7000	6400	0	85	215	112	90	175	8	14	20	104	85	50	0.049	2LC0300-3AA	2LC0300-3AB	2LC0300-3AC	19
198	11600	5500	0	100	237	135	100	198	8	19	30	119	110	50	0.086	2LC0300-4AA	2LC0300-4AB	2LC0300-4AC	26.5
230	19000	4700	0	120	265	160	110	230	8	20	32	130	135	50	0.16	2LC0300-5AA	2LC0300-5AB	2LC0300-5AC	37
255	27000	4100	0	140	294	185	125	255	10	25	40	150	160	50	0.26	2LC0300-6AA	2LC0300-6AB	2LC0300-6AC	49
290	39000	3700	70	160	330	210	140	290	10	30	50	170	180	60	0.51	2LC0300-7AA	2LC0300-7AB	2LC0300-7AC	72
315	54000	3300	80	175	366	230	160	315	10	30	50	190	200	60	0.81	2LC0300-8AA	2LC0300-8AB	2LC0300-8AC	99
342	69000	3000	90	195	392	255	180	340	12	42	72	222	225	60	1.2	2LC0301-0AA	2LC0301-0AB	2LC0301-0AC	125
375	98000	2700	100	220	430	290	200	375	12	42	72	242	260	60	2	2LC0301-1AA	2LC0301-1AB	2LC0301-1AC	170
415	130000	2500	120	240	478	320	220	415	12	74	136	294	285	80	3.1	2LC0301-2AA	2LC0301-2AB	2LC0301-2AC	225
465	180000	2200	140	270	528	360	240	465	16	96	176	336	325	80	5.2	2LC0301-3AA	2LC0301-3AB	2LC0301-3AC	300
505	250000	2000	160	300	568	400	260	505	16	106	196	366	365	80	7.7	2LC0301-4AA	2LC0301-4AB	2LC0301-4AC	380
545	320000	1800	180	330	620	440	280	545	16	126	236	406	405	80	12	2LC0301-5AA	2LC0301-5AB	2LC0301-5AC	490
585	400000	1700	210	360	660	480	310	585	20	150	280	460	445	80	17	2LC0301-6AA	2LC0301-6AB	2LC0301-6AC	620
640	510000	1600	230	360	738	480	330	640	20	149	278	479	445	90	25	2LC0301-7AA	2LC0301-7AB	2LC0301-7AC	780
			>360	390		520							475		27				800
690	660000	1450	250	390	788	520	350	690	20	166	312	516	475	90	35	2LC0301-8AA	2LC0301-8AB	2LC0301-8AC	950
			>390	420		560							515		38				980
730	790000	1350	275	420	834	560	380	730	20	180	340	560	515	90	48	2LC0302-0AA	2LC0302-0AB	2LC0302-0AC	1150
			>420	450		600							555		52				1200

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Size	Rated torque	Maximum speed	Dimensions in mm											Mass moment of inertia	↗ Article no. [1]			Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S1	S2	S3	VA	Q	P	J_1/J_2	Type			m
	Nm	rpm	min.	max.											kgm²	A	B	AB	kg
780	**1000000**	1250	300	**450**	900	600	400	780	25	176	327	576	555	110	68	**2LC0302-1AA**	**2LC0302-1AB**	**2LC0302-1AC**	1450
			>450	**490**		650							595		77				1450
852	**1200000**	1150	325	**490**	970	650	420	850	25	185	345	605	595	110	100	**2LC0302-2AA**	**2LC0302-2AB**	**2LC0302-2AC**	1750
			>490	**535**		710							655		110				1800
910	**1600000**	1050	350	**535**	1030	710	450	910	25	215	405	665	655	110	140	**2LC0302-3AA**	**2LC0302-3AB**	**2LC0302-3AC**	2100
			>535	**570**		750							695		145				2150
1020	**1900000**	1000	375	**570**	1112	750	480	1020	25	213	401	693	695	130	200	**2LC0302-4AA**	**2LC0302-4AB**	**2LC0302-4AC**	2600
			>570	**600**		800							735		220				2800
1080	**2200000**	950	400	**600**	1162	800	500	1080	30	226	422	726	735	135	255	**2LC0302-5AA**	**2LC0302-5AB**	**2LC0302-5AC**	3100
			>600	**650**		860							795		285				3200
1150	**2700000**	900	425	**650**	1222	860	520	1150	30	238	446	758	795	135	330	**2LC0302-6AA**	**2LC0302-6AB**	**2LC0302-6AC**	3600
			>650	**705**		930							865		380				3700
1160	**3350000**	850	450	**650**	1292	860	550	1160	30	260	490	810	795	135	420	**2LC0302-7AA**	**2LC0302-7AB**	**2LC0302-7AC**	4000
			>650	**705**		930		1160					865		450				4100
			>705	**750**		990		1210					910		500				4300
1240	**3800000**	800	475	**705**	1400	930	580	1240	30	250	470	830	865	155	580	**2LC0302-8AA**	**2LC0302-8AB**	**2LC0302-8AC**	4900
			>705	**750**		990		1240					910		620				5000
			>750	**800**		1055		1290					975		700				5300
1310	**4600000**	750	500	**705**	1470	930	610	1310	35	265	495	875	865	155	730	**2LC0303-0AA**	**2LC0303-0AB**	**2LC0303-0AC**	5600
			>705	**750**		990		1310					910		770				5700
			>750	**800**		1055		1310					975		840				5900
			>800	**850**		1120		1370					1030		930				6200
1380	**5300000**	700	525	**750**	1540	990	640	1380	35	275	515	915	910	155	930	**2LC0303-1AA**	**2LC0303-1AB**	**2LC0303-1AC**	6500
			>750	**800**		1055		1380					975		1000				6800
			>800	**850**		1120		1380					1030		1050				6900
			>850	**890**		1170		1430					1080		1150				7100
1440	**6250000**	670	550	**800**	1600	1055	670	1440	35	295	555	965	975	155	1200	**2LC0303-2AA**	**2LC0303-2AB**	**2LC0303-2AC**	7500
			>800	**850**		1120		1440					1030		1250				7600
			>850	**890**		1170		1440					1080		1300				7700
			>890	**940**		1240		1510					1150		1450				8200
1540	**7200000**	630	575	**850**	1710	1120	700	1540	35	275	515	975	1030	175	1550	**2LC0303-3AA**	**2LC0303-3AB**	**2LC0303-3AC**	8800
			>850	**890**		1170		1540					1080		1600				8900
			>890	**940**		1240		1540					1150		1700				9200
			>940	**995**		1310		1610					1220		1900				9600

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

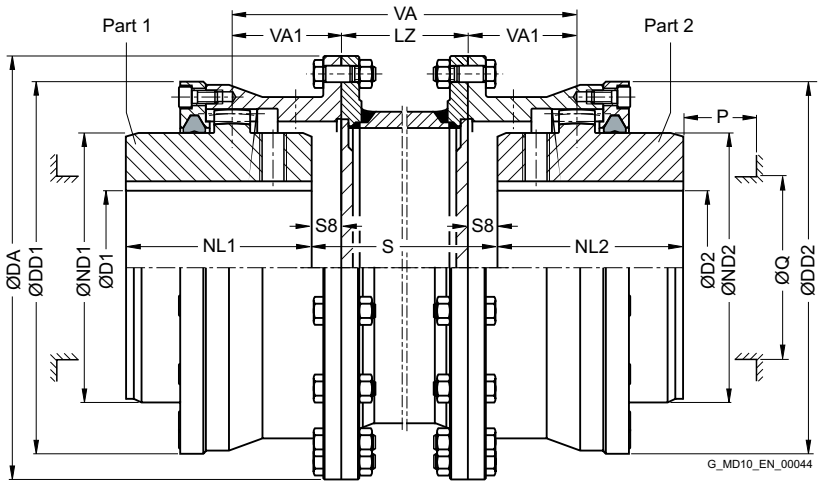
- ZAPEX ZWN coupling, size 146, variant A
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0300-2AA99-0AA0-Z L0W+M1A+M13

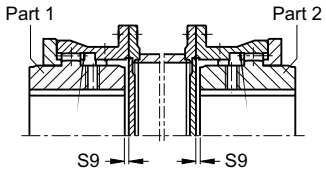
[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZZS



Variant B



Variant A

Size	Rated torque	Dimensions in mm												Article no. [1]		Weight each 100 mm pipe	
	T_{KN}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S8	S9	VA1	Q	P	LZ	Type		*m*	*m*
	Nm	min.	max.										min.	A	B	kg	kg
112	1300	0	49	143	65	50	110	3	3	28	50	35	120	2LC0300-0AD	2LC0300-0AE	0.8	9.4
128	2500	0	61	157	80	60	128	10	3	36.5	65	45	120	2LC0300-1AD	2LC0300-1AE	1.3	12.5
146	4300	0	72	177	95	75	146	10	3	44	75	45	120	2LC0300-2AD	2LC0300-2AE	1.8	17
175	7000	0	85	215	112	90	175	10	4	52	85	50	130	2LC0300-3AD	2LC0300-3AE	2.3	27.5
198	11600	0	100	237	135	100	198	15	4	59.5	110	50	130	2LC0300-4AD	2LC0300-4AE	3.5	37
230	19000	0	120	265	160	110	230	16	4	65	135	50	130	2LC0300-5AD	2LC0300-5AE	4.5	50
255	27000	0	140	294	185	125	255	20	5	75	160	50	140	2LC0300-6AD	2LC0300-6AE	6.3	68
290	39000	70	160	330	210	140	290	25	5	85	180	60	140	2LC0300-7AD	2LC0300-7AE	7.2	93
315	54000	80	175	366	230	160	315	25	5	95	200	60	180	2LC0300-8AD	2LC0300-8AE	9.1	135
342	69000	90	195	392	255	180	340	36	6	111	225	60	180	2LC0301-0AD	2LC0301-0AE	12	170
375	98000	100	220	430	290	200	375	36	6	121	260	60	180	2LC0301-1AD	2LC0301-1AE	15	220
415	130000	120	240	478	320	220	415	68	6	147	285	80	200	2LC0301-2AD	2LC0301-2AE	17	295
465	180000	140	270	528	360	240	465	88	8	168	325	80	200	2LC0301-3AD	2LC0301-3AE	19	380
505	250000	160	300	568	400	260	505	98	8	183	365	80	200	2LC0301-4AD	2LC0301-4AE	24	470
545	320000	180	330	620	440	280	545	118	8	203	405	80	220	2LC0301-5AD	2LC0301-5AE	30	640
585	400000	210	360	660	480	310	585	140	10	230	445	80	220	2LC0301-6AD	2LC0301-6AE	33	780
640	510000	230	360	738	480	330	640	139	10.0	239.5	445	90	250	2LC0301-7AD	2LC0301-7AE	39	1010
		>360	390		520						475						1050
690	660000	250	390	788	520	350	690	156	10.0	258	475	90	250	2LC0301-8AD	2LC0301-8AE	48	1200
		>390	420		560						515						1250
730	790000	275	420	834	560	380	730	170	10.0	280	515	90	250	2LC0302-0AD	2LC0302-0AE	51	1450
		>420	450		600						555						1500
780	1000000	300	450	900	600	400	780	163.5	12.5	288	555	110	280	2LC0302-1AD	2LC0302-1AE	55	1850
		>450	490		650						595						1900

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Size	Rated torque	Dimensions in mm												Article no. [1]		Weight each 100 mm pipe	
	T_{KN}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S8	S9	VA1	Q	P	LZ	Type		*m*	*m*
	Nm	min.	max.										min.	A	B	kg	kg
852	1200000	325	**490**	970	650	420	850	172.5	12.5	302.5	595	110	280	**2LC0302-2AD**	**2LC0302-2AE**	68	2300
		>490	**535**		710						655						2400
910	1600000	350	**535**	1030	710	450	910	202.5	12.5	332.5	655	110	280	**2LC0302-3AD**	**2LC0302-3AE**	94	2800
		>535	**570**		750						695						2850
1020	1900000	375	**570**	1112	750	480	1020	200.5	12.5	346.5	695	130	380	**2LC0302-4AD**	**2LC0302-4AE**		
		>570	**600**		800						735						
1080	2200000	400	**600**	1162	800	500	1080	211	15.0	363	735	135	380	**2LC0302-5AD**	**2LC0302-5AE**		
		>600	**650**		860						795						
1150	2700000	425	**650**	1222	860	520	1150	223	15.0	379	795	135	380	**2LC0302-6AD**	**2LC0302-6AE**		
		>650	**705**		930						865						
1160	3350000	450	**650**	1292	860	550	1160	245	15.0	405	795	135	380	**2LC0302-7AD**	**2LC0302-7AE**		
		>650	**705**		930		1160				865						
		>705	**750**		990		1210				910						
1240	3800000	475	**705**	1400	930	580	1240	235	15.0	415	865	155	400	**2LC0302-8AD**	**2LC0302-8AE**		
		>705	**750**		990		1240				910						
		>750	**800**		1055		1290				975						
1310	4600000	500	**705**	1470	930	610	1310	247.5	17.5	437.5	865	155	400	**2LC0303-0AD**	**2LC0303-0AE**		
		>705	**750**		990		1310				910						
		>750	**800**		1055		1310				975						
		>800	**850**		1120		1370				1030						
1380	5300000	525	**750**	1540	990	640	1380	257.5	17.5	457.5	910	155	400	**2LC0303-1AD**	**2LC0303-1AE**		
		>750	**800**		1055		1380				975						
		>800	**850**		1120		1380				1030						
		>850	**890**		1170		1430				1080						
1440	6250000	550	**800**	1600	1055	670	1440	277.5	17.5	482.5	975	155	400	**2LC0303-2AD**	**2LC0303-2AE**		
		>800	**850**		1120		1440				1030						
		>850	**890**		1170		1440				1080						
		>890	**940**		1240		1510				1150						
1540	7200000	575	**850**	1710	1120	700	1540	257.5	17.5	487.5	1030	175	600	**2LC0303-3AD**	**2LC0303-3AE**		
		>850	**890**		1170		1540				1080						
		>890	**940**		1240		1540				1150						
		>940	**995**		1310		1610				1220						

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to maximum bores and an adapter length of LZ min.
- Weights from size 1020 on request.
- VA = 2·VA1 + LZ
- Mass moment of inertia on request.
- Maximum speed, limited by weight and critical adapter speed, on request.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

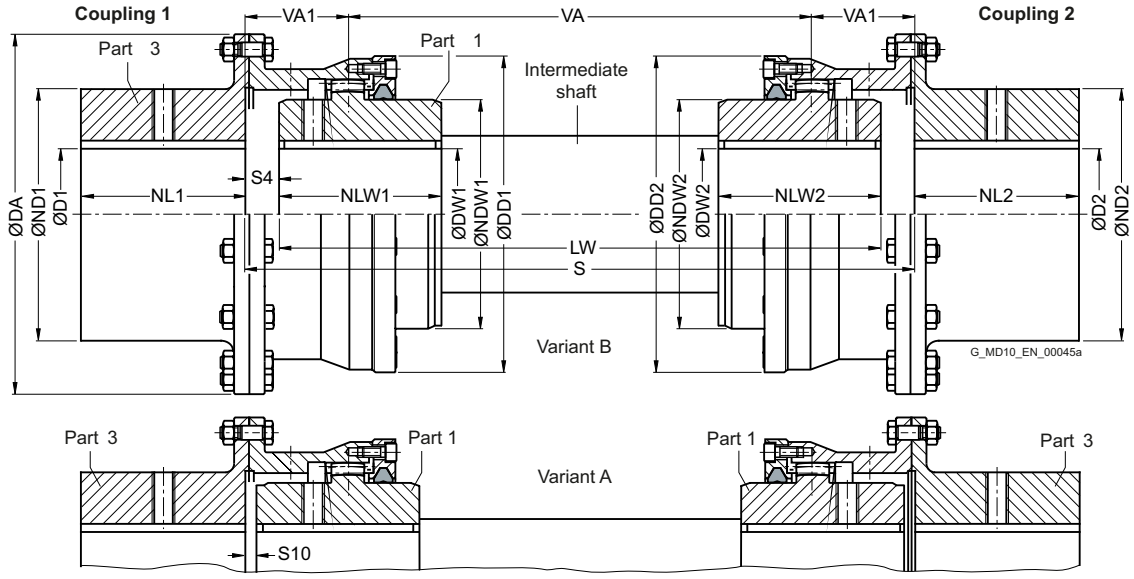
- ZAPEX ZZS coupling, size 146, variant B
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0300-2AE99-0AZ0-Z L0W+M1A+Q0Y+M13
Plain text to Q0Y: 250 mm (dimension S)

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZZW



Size	Rated torque	Dimensions in mm												↗ Article no. [1]		Weight
	T_{KN}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2/ NLW1/ NLW2	DW1, DW2 Keyway DIN 6885-1		NDW1/ NDW2	DD1/ DD2	S4	S10	VA1	Type		*m*
	Nm	min.	max.				min.	max.						A	B	kg
112	**1300**	20	**61**	143	80	50	0	49	65	110	12.5	12.5	37.5	**2LC0300-0BD**	**2LC0300-0BE**	5.1
128	**2500**	25	**72**	157	95	60	0	61	80	128	12.5	5.5	39	**2LC0300-1BD**	**2LC0300-1BE**	6.8
146	**4300**	30	**85**	177	112	75	0	72	95	146	12.5	5.5	46.5	**2LC0300-2BD**	**2LC0300-2BE**	9.8
175	**7000**	35	**100**	215	135	90	0	85	112	175	12.5	6.5	54.5	**2LC0300-3BD**	**2LC0300-3BE**	16.5
198	**11600**	40	**120**	237	160	100	0	100	135	198	17.5	6.5	62	**2LC0300-4BD**	**2LC0300-4BE**	23
230	**19000**	50	**140**	265	185	110	0	120	160	230	18.5	6.5	67.5	**2LC0300-5BD**	**2LC0300-5BE**	32
255	**27000**	60	**160**	294	210	125	0	140	185	255	23.5	8.5	78.5	**2LC0300-6BD**	**2LC0300-6BE**	43
290	**39000**	70	**175**	330	230	140	70	160	210	290	28.5	8.5	88.5	**2LC0300-7BD**	**2LC0300-7BE**	61
315	**54000**	80	**195**	366	255	160	80	175	230	315	28.5	8.5	98.5	**2LC0300-8BD**	**2LC0300-8BE**	86
342	**69000**	90	**220**	392	290	180	90	195	255	340	39.5	9.5	114.5	**2LC0301-0BD**	**2LC0301-0BE**	115
375	**98000**	100	**240**	430	320	200	100	220	290	375	39.5	9.5	124.5	**2LC0301-1BD**	**2LC0301-1BE**	150
415	**130000**	120	**270**	478	360	220	120	240	320	415	71.5	9.5	150.5	**2LC0301-2BD**	**2LC0301-2BE**	205
465	**180000**	140	**300**	528	400	240	140	270	360	465	91.5	11.5	171.5	**2LC0301-3BD**	**2LC0301-3BE**	275
505	**250000**	160	**330**	568	440	260	160	300	400	505	102.5	12.5	187.5	**2LC0301-4BD**	**2LC0301-4BE**	350
545	**320000**	180	**360**	620	480	280	180	330	440	545	122.5	12.5	207.5	**2LC0301-5BD**	**2LC0301-5BE**	450
585	**400000**	210	**360**	660	480	310	210	360	480	585	144.5	14.5	234.5	**2LC0301-6BD**	**2LC0301-6BE**	540
		>360	**390**		520											570
640	**510000**	230	**390**	738	520	330	230	360	480	640	143.5	14.5	244	**2LC0301-7BD**	**2LC0301-7BE**	700
		>390	**420**		560		>360	390	520							740
690	**660000**	250	**420**	788	560	350	250	390	520	690	160.5	14.5	262.5	**2LC0301-8BD**	**2LC0301-8BE**	850
		>420	**450**		600		>390	420	560							900
730	**790000**	275	**450**	834	600	380	275	420	560	730	176	16	286	**2LC0302-0BD**	**2LC0302-0BE**	1050
		>450	**490**		650		>420	450	600							1100
780	**1000000**	300	**490**	900	650	400	300	450	600	780	171.5	20.5	296	**2LC0302-1BD**	**2LC0302-1BE**	1300
		>490	**535**		710		>450	490	650							1350

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Size	Rated torque	Dimensions in mm												↗ Article no. [1]		Weight
	T_{KN}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2/ NLW1/ NLW2	DW1, DW2 Keyway DIN 6885-1		NDW1/ NDW2	DD1/ DD2	S4	S10	VA1	Type		*m*
	Nm	min.	max.				min.	max.						A	B	kg
852	**1200000**	325	**535**	970	710	420	325	490	650	850	180.5	20.5	310.5	**2LC0302-2BD**	**2LC0302-2BE**	1550
		>535	**570**		750		>490	535	710							1650
910	**1600000**	350	**570**	1030	750	450	350	535	710	910	210.5	20.5	340.5	**2LC0302-3BD**	**2LC0302-3BE**	1900
		>570	**600**		800		>535	570	750							2000
1020	**1900000**	375	**600**	1112	800	480	375	570	750	1020	210.5	22.5	356.5	**2LC0302-4BD**	**2LC0302-4BE**	2300
		>600	**650**		860		>570	600	800							2500
1080	**2200000**	400	**650**	1162	860	500	400	600	800	1080	221	25	373	**2LC0302-5BD**	**2LC0302-5BE**	2750
		>650	**705**		930		>600	650	860							2900
1150	**2700000**	425	**650**	1222	860	520	425	650	860	1150	233	25	389	**2LC0302-6BD**	**2LC0302-6BE**	3100
		>650	**705**		930		425	650	860							3200
		>705	**750**		990		>650	705	930							3400
1160	**3350000**	450	**705**	1292	930	550	450	650	860	1160	255	25	415	**2LC0302-7BD**	**2LC0302-7BE**	3600
		>705	**750**		990		>650	705	930	1160						3700
		>750	**800**		1055		>705	750	990	1210						4000
1240	**3800000**	475	**705**	1400	930	580	475	705	930	1240	245	25	425	**2LC0302-8BD**	**2LC0302-8BE**	4200
		>705	**750**		990		475	705	930	1240						4400
		>750	**800**		1055		>705	750	990	1240						4600
		>800	**850**		1120		>750	800	1055	1290						4900
1310	**4600000**	500	**750**	1470	990	610	500	705	930	1310	257.5	27.5	447.5	**2LC0303-0BD**	**2LC0303-0BE**	4900
		>750	**800**		1055		>705	750	990	1310						5100
		>800	**850**		1120		>750	800	1055	1310						5300
		>850	**890**		1170		>800	850	1120	1370						5600
1380	**5300000**	525	**800**	1540	1055	640	525	750	990	1380	267.5	27.5	467.5	**2LC0303-1BD**	**2LC0303-1BE**	5700
		>800	**850**		1120		>750	800	1055	1380						5900
		>850	**890**		1170		>800	850	1120	1380						6100
		>890	**940**		1240		>850	890	1170	1430						6500
1440	**6250000**	550	**850**	1600	1120	670	550	800	1055	1440	287.5	27.5	492.5	**2LC0303-2BD**	**2LC0303-2BE**	6500
		>850	**890**		1170		>800	850	1120	1440						6700
		>890	**940**		1240		>850	890	1170	1440						7000
		>940	**995**		1310		>890	940	1240	1510						7400
1540	**7200000**	575	**890**	1710	1170	700	575	850	1120	1540	267.5	27.5	497.5	**2LC0303-3BD**	**2LC0303-3BE**	7700
		575	**890**		1170		>850	890	1170	1540						7700
		>890	**940**		1240		>890	940	1240	1540						8100
		>940	**1040**		1390		>940	995	1310	1610						8900

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- VA = S – 2 · VA1
- Mass moment of inertia on request.
- Weights apply to either coupling 1 or 2 with maximum bore diameter, without intermediate shaft.
- Maximum speed, limited by weight and critical speed of intermediate shaft, on request.

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Ordering example

- Coupling 1:
  ZAPEX ZZW coupling, size 146, variant B,
  Part 3: Bore D1 = 45K7 mm, keyway to DIN 6885-1 P9 and set screw, Part 1: Bore DW1 = 45H7 mm, keyway to DIN 6885-1 P9 and set screw.

Article no.: 2LC0300-2BE99-0AA0-Z L1A+M1A+L13

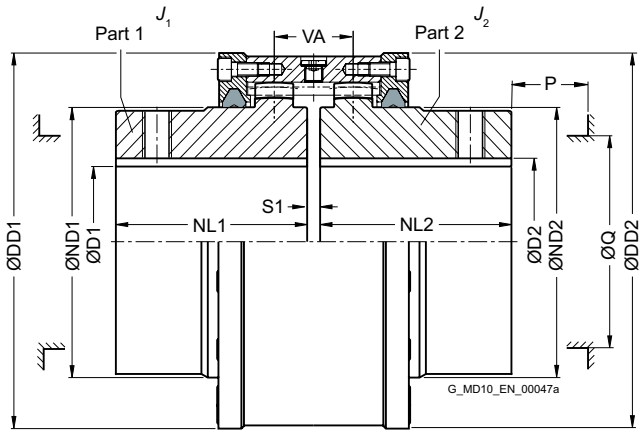
- Intermediate shaft:
  Intermediate shaft for ZAPEX coupling ZZW, size 146, length LW = 570 mm, for shaft distance S = 595 mm shaft journal Ø45p6 x 75 long; keyway DIN 6885-1.

Article no.: 2LC0308-8XX00-0AA0-Z Y99
Plain text to Y99: DW1 = 45p6 mm, NLW1 = 75 mm, DW2 = 45p6 mm, NLW2 = 75 mm, LW = 570 mm

- Coupling 2:
  ZAPEX ZZW coupling, size 146, variant B,
  Part 1: Bore DW2 = 45H7 mm, keyway to DIN 6885-1 P9 and set screw, Part 3: Bore D2 = 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article no.: 2LC0300-2BE99-0AA0-Z L1A+M1A+L13

TYPE ZWH



Size	Rated torque T_{KN}	Maximum speed n_{Kmax}	Dimensions in mm D1, D2 Keyway DIN 6885-1		ND1/ ND2	NL1/ NL2	DD1/ DD2	S1	VA	Q	P	Mass moment of inertia J_1/J_2	↗ Article no. [1]	Weight m
	Nm	rpm	min.	max.								kgm²		kg
112	1300	9400	0	49	65	50	110	6	28	50	35	0.003	2LC0300-0BB	3.5
128	2500	8300	0	61	80	60	128	6	30	65	45	0.007	2LC0300-1BB	5.1
146	4300	7300	0	72	95	75	146	6	33	75	45	0.012	2LC0300-2BB	7.8
175	7000	6400	0	85	112	90	175	8	46	85	50	0.031	2LC0300-3BB	13.5
198	11600	5500	0	100	135	100	198	8	48	110	50	0.056	2LC0300-4BB	20
230	19000	4700	0	120	160	110	230	8	50	135	50	0.11	2LC0300-5BB	28.5
255	27000	4100	0	140	185	125	255	10	55	160	50	0.18	2LC0300-6BB	38
290	39000	3700	70	160	210	140	290	10	58	180	60	0.35	2LC0300-7BB	56
315	54000	3300	80	175	230	160	315	10	62	200	60	0.55	2LC0300-8BB	74
342	69000	3000	90	195	255	180	340	12	70	225	60	0.82	2LC0301-0BB	95
375	98000	2700	100	220	290	200	375	12	72	260	60	1.3	2LC0301-1BB	130
415	130000	2500	120	240	320	220	415	12	76	285	80	2.3	2LC0301-2BB	175
465	180000	2200	140	270	360	240	465	16	90	325	80	4	2LC0301-3BB	245
505	250000	2000	160	300	400	260	505	16	92	365	80	6	2LC0301-4BB	310
545	320000	1800	180	330	440	280	545	16	96	405	80	8.8	2LC0301-5BB	390
585	400000	1700	210	360	480	310	585	20	102	445	80	13	2LC0301-6BB	500
640	510000	1600	230	360	480	330	640	20	105	445	90	18	2LC0301-7BB	620
			>360	390	520					475		19.5		650
690	660000	1450	250	390	520	350	690	20	108	475	90	25.5	2LC0301-8BB	760
			>390	420	560					515		28		790
730	790000	1350	275	420	560	380	730	20	112	515	90	35	2LC0302-0BB	920
			>420	450	600					555		39		950
780	1000000	1250	300	450	600	400	780	25	120	555	110	48	2LC0302-1BB	1150
			>450	490	650					595		57		

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Larger size couplings on request.
- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

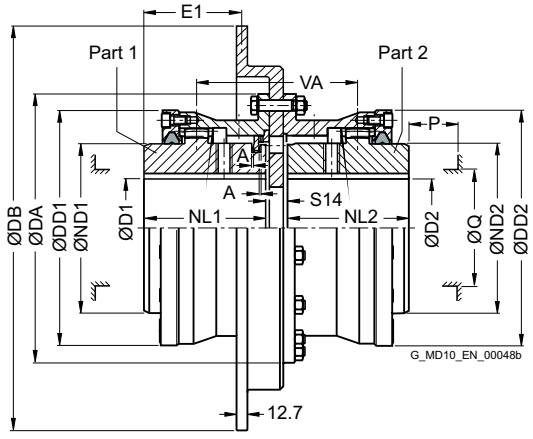
- ZAPEX ZWH coupling, size 146
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

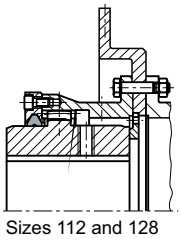
Article no.: 2LC0300-2BB99-0AA0-Z L0W+M1A+M13

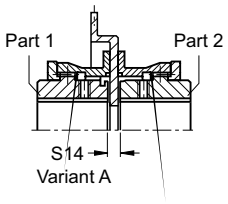
[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

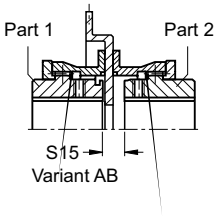
↗ For online configuration on **flender.com**, click on the item no.

TYPE ZWBT









Size	Rated torque	Maximum speed	Dimensions in mm															Brake disk		↗ Article no. [1]		Weight
	T_{KN}	n_{Kmax}	D1 Keyway DIN 6885-1		D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S14	S15	A	VA	Q	P	DB	E1	Type		m
	Nm	rpm	min.	max.	min.	max.													A	B	kg
112	1300	3800	0	49	0	49	143	65	50	110	20	–	0.5	70	50	35	300	32.35	2LC0300-0AS	2LC0300-0AT	13
		3200									23	–		73			356	22.35	2LC0300-0AS	2LC0300-0AT	16.5
128	2500	3200	0	61	0	61	157	80	60	128	23.5	30.5	0.5	90.5	65	45	356	32.85	2LC0300-1AS	2LC0300-1AT	19
		2800									20.5	27.5		87.5			406	29.85	2LC0300-1AS	2LC0300-1AT	21.5
146	4300	2800	0	65	0	72	177	95	75	146	19	26	0.5	101	75	45	406	43.35	2LC0300-2AS	2LC0300-2AT	25
		2500									22	29		104			457	46.35	2LC0300-2AS	2LC0300-2AT	30
175	7000	2800	0	80	0	85	215	112	90	175	21	27	0.5	117	85	50	406	59.35	2LC0300-3AS	2LC0300-3AT	33
		2500									24	30		120			457	62.35	2LC0300-3AS	2LC0300-3AT	38
		2200									24	30		120			514	62.35	2LC0300-3AS	2LC0300-3AT	43
198	11600	2500	0	95	0	100	237	135	100	198	24	35	0.5	135	110	50	457	72.35	2LC0300-4AS	2LC0300-4AT	46
		2200									24	35		135			514	72.35	2LC0300-4AS	2LC0300-4AT	51
230	19000	2200	0	117	0	120	265	160	110	230	24	36	0.5	146	135	50	514	82.35	2LC0300-5AS	2LC0300-5AT	62
		1850									24	36		146			610	82.35	2LC0300-5AS	2LC0300-5AT	73
255	27000	2200	0	140	0	140	294	185	125	255	26	41	1	166	160	50	514	98.35	2LC0300-6AS	2LC0300-6AT	73
		1850									26	41		166			610	98.35	2LC0300-6AS	2LC0300-6AT	84
290	39000	1850	70	155	70	160	330	210	140	290	26	46	1	186	180	60	610	113.35	2LC0300-7AS	2LC0300-7AT	110
		1600									29	49		189			711	116.35	2LC0300-7AS	2LC0300-7AT	125
315	54000	1850	80	175	80	175	366	230	160	315	26	46	1	206	200	60	610	133.35	2LC0300-8AS	2LC0300-8AT	135
		1600									29	49		209			711	136.35	2LC0300-8AS	2LC0300-8AT	150
342	69000	1600	90	195	90	195	392	255	180	340	31	61	1	241	225	60	711	157.35	2LC0301-0AS	2LC0301-0AT	180
375	98000	1600	100	220	100	220	430	290	200	375	31	61	1	261	260	60	711	177.35	2LC0301-1AS	2LC0301-1AT	220
415	130000	1400	120	240	120	240	478	320	220	415	37	99	1	319	285	80	812	203.35	2LC0301-2AS	2LC0301-2AT	320
465	180000	1400	140	270	140	270	528	360	240	465	41	121	1	361	325	80	812	225.35	2LC0301-3AS	2LC0301-3AT	400

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moment of inertia on request.
- Weights apply to maximum bores.
- Variant limited in displacement and axial movement. Max. displacement 0.2°.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

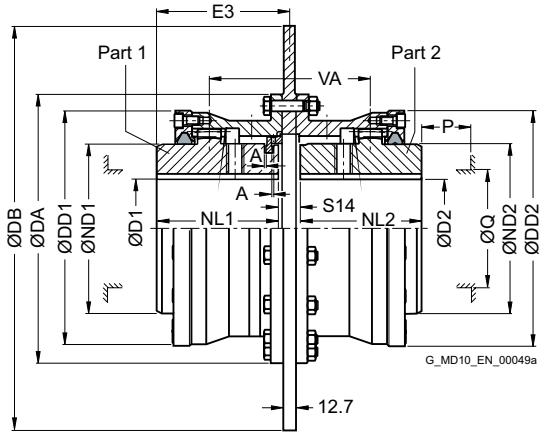
- ZAPEX ZWBT coupling, size 146, variant A, brake disk diameter DB = 457 mm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

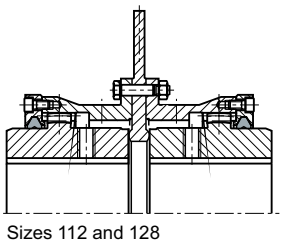
Article no.: 2LC0300-2AS99-0BA0-Z L0W+M1A+M13

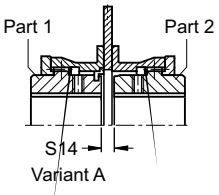
[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

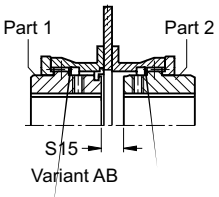
↗ For online configuration on **flender.com**, click on the item no.

TYPE ZWBG









Size	Rated torque	Maximum speed	Dimensions in mm															Brake disk		↗ Article no. [1]		Weight
	T_{KN}	n_{Kmax}	D1 Keyway DIN 6885-1		D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S14	S15	A	VA	Q	P			Type		m
	Nm	rpm	min.	max.	min.	max.												DB	E3	A	AB	kg
112	1300	3800	0	49	0	49	143	65	50	110	19	–	0.5	69	50	35		300	59.5	2LC0300-0AU	2LC0300-0AV	13
		3200									22	–		72				356	61	2LC0300-0AU	2LC0300-0AV	16
128	2500	3200	0	61	0	61	157	80	60	128	22	29	0.5	89	65	45		356	71	2LC0300-1AU	2LC0300-1AV	18
		2800									19	26		86				406	69.5	2LC0300-1AU	2LC0300-1AV	20.5
146	4300	2800	0	65	0	72	177	95	75	146	19	26	0.5	101	75	45		406	84.5	2LC0300-2AU	2LC0300-2AV	24
		2500									22	29		104				457	86	2LC0300-2AU	2LC0300-2AV	28.5
175	7000	2800	0	80	0	85	215	112	90	175	21	27	0.5	117	85	50		406	100.5	2LC0300-3AU	2LC0300-3AV	31
		2500									24	30		120				457	102	2LC0300-3AU	2LC0300-3AV	35
		2200									24	30		120				514	102	2LC0300-3AU	2LC0300-3AV	40
198	11600	2500	0	95	0	100	237	135	100	198	24	35	0.5	135	110	50		457	112	2LC0300-4AU	2LC0300-4AV	43
		2200									24	35		135				514	112	2LC0300-4AU	2LC0300-4AV	47
230	19000	2200	0	117	0	120	265	160	110	230	24	36	0.5	146	135	50		514	122	2LC0300-5AU	2LC0300-5AV	58
		1850									24	36		146				610	122	2LC0300-5AU	2LC0300-5AV	66
255	27000	2200	0	140	0	140	294	185	125	255	26	41	1	166	160	50		514	138	2LC0300-6AU	2LC0300-6AV	69
		1850									26	41		166				610	138	2LC0300-6AU	2LC0300-6AV	77
290	39000	1850	70	155	70	160	330	210	140	290	26	46	1	186	180	60		610	153	2LC0300-7AU	2LC0300-7AV	100
		1600									29	49		189				711	154.5	2LC0300-7AU	2LC0300-7AV	110
315	54000	1850	80	175	80	175	366	230	160	315	26	46	1	206	200	60		610	173	2LC0300-8AU	2LC0300-8AV	130
		1600									29	49		209				711	174.5	2LC0300-8AU	2LC0300-8AV	140
342	69000	1600	90	195	90	195	392	255	180	340	31	61	1	241	225	60		711	195.5	2LC0301-0AU	2LC0301-0AV	165
375	98000	1600	100	220	100	220	430	290	200	375	31	61	1	261	260	60		711	215.5	2LC0301-1AU	2LC0301-1AV	205
415	130000	1400	120	240	120	240	478	320	220	415	37	99	1	319	285	80		812	238.5	2LC0301-2AU	2LC0301-2AV	280
465	180000	1400	140	270	140	270	528	360	240	465	41	121	1	361	325	80		812	260.5	2LC0301-3AU	2LC0301-3AV	360

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moment of inertia on request.
- Weights apply to maximum bores.
- Variant limited in displacement and axial movement. Max. displacement 0.2°.
- Modified brake disk dimensions on request
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

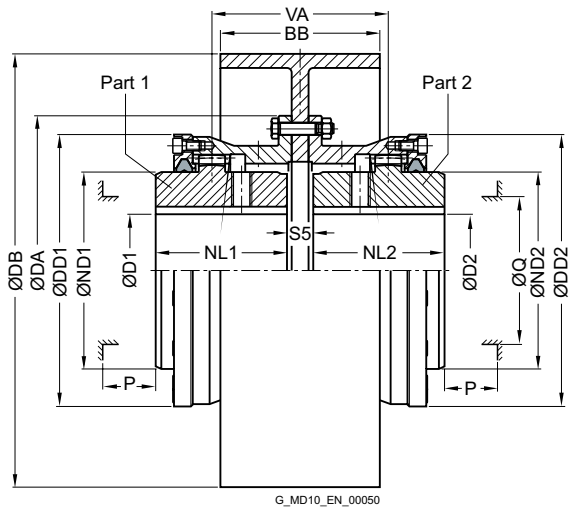
- ZAPEX ZWBG coupling, size 146, variant A, brake disk diameter DB = 457 mm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

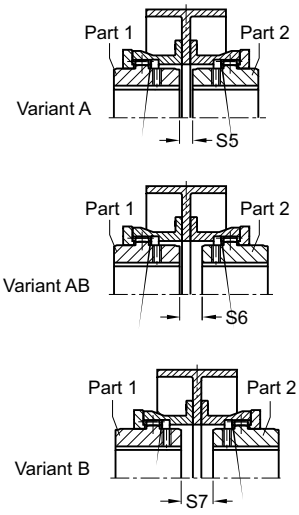
Article no.: 2LC0300-2AU99-0BA0-Z L0W+M1A+M13

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZWB





Size	Rated torque	Maximum speed	Dimensions in mm												Brake disk		↗ Article no. [1]			Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S5	S6	S7	VA	Q	P	DB	BB	Type			m
	Nm	rpm	min.	max.													A	B	AB	kg
128	2500	2500	0	61	157	80	60	128	16	23	30	83	60	45	200	75	2LC0300-1AW	2LC0300-1AX	2LC0300-1BA	12.5
		2000							16	23	30	83			250	95	2LC0300-1AW	2LC0300-1AX	2LC0300-1BA	15.5
146	4300	2000	0	72	177	95	75	146	16	23	30	98	75	45	250	95	2LC0300-2AW	2LC0300-2AX	2LC0300-2BA	19
		1600							18	25	32	100			315	118	2LC0300-2AW	2LC0300-2AX	2LC0300-2BA	26.5
175	7000	1600	0	85	215	112	90	175	20	26	32	116	85	50	315	118	2LC0300-3AW	2LC0300-3AX	2LC0300-3BA	33
		1250							22	28	34	118			400	150	2LC0300-3AW	2LC0300-3AX	2LC0300-3BA	47
198	11600	1600	0	100	237	135	100	198	20	31	42	131	110	50	315	118	2LC0300-4AW	2LC0300-4AX	2LC0300-4BA	41
		1250							22	33	44	133			400	150	2LC0300-4AW	2LC0300-4AX	2LC0300-4BA	54
230	19000	1250	0	120	265	160	110	230	22	34	46	144	135	50	400	150	2LC0300-5AW	2LC0300-5AX	2LC0300-5BA	64
		1000							23	35	47	145			500	190	2LC0300-5AW	2LC0300-5AX	2LC0300-5BA	85
255	27000	1000	0	140	294	185	125	255	25	40	55	165	160	50	500	190	2LC0300-6AW	2LC0300-6AX	2LC0300-6BA	95
		1000							28	43	58	168			630	236	2LC0300-6AW	2LC0300-6AX	2LC0300-6BA	140
290	39000	1000	70	160	330	210	140	290	28	48	68	188	180	60	630	236	2LC0300-7AW	2LC0300-7AX	2LC0300-7BA	160
		750							28	48	68	188			710	265	2LC0300-7AW	2LC0300-7AX	2LC0300-7BA	195

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moment of inertia on request.
- Weights apply to maximum bores.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

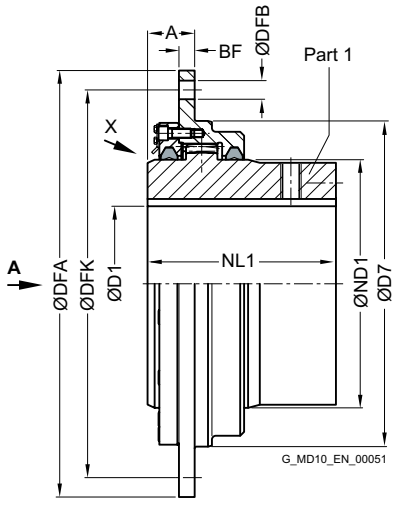
- ZAPEX ZWB coupling, size 146, variant A,
  brake disk diameter DB = 315 mm, BB = 118 mm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9
  and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9
  and set screw

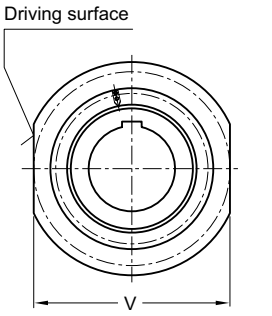
Article no.: 2LC0300-2AW99-0BA0-Z L0W+M1A+M13

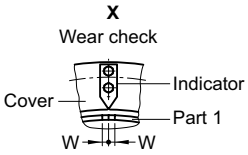
[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

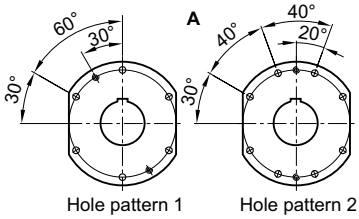
↗ For online configuration on **flender.com**, click on the item no.

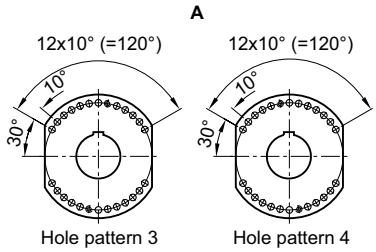
TYPE ZWTR











Size	Rated torque T_{KN}	Max. perm. radial load	Dimensions in mm													↗ Article no. [1]	Weight
			D1 Keyway DIN 6885-1		ND1	NL1	DFA	D7	V	A	BF	DFK	DFB	Hole pattern	Perm. wear		*m*
	Nm	N	min.	max.				h6	h9						W		kg
198	**14500**	32500	0	**95**	135	125	340	220	300	45	15	300	15	1	2	**2LC0300-4BN**	25
230	**17500**	36500	0	**110**	160	130	360	240	320	45	15	320	15	1	2	**2LC0300-5BN**	30
255	**24000**	45500	0	**125**	185	145	380	260	340	45	15	340	19	1	2	**2LC0300-6BN**	35
290 [2]	**31500**	50000	0	**145**	210	170	400	280	360	45	15	360	19	1	3	**2LC0300-7BN**	45
315	**42000**	70000	0	**160**	230	175	420	310	380	60	20	380	24	1	3	**2LC0300-8BN**	60
342 [2]	**55000**	90000	0	**180**	255	185	450	340	400	60	20	400	24	1	3	**2LC0301-0BN**	70
375	**78000**	110000	0	**200**	290	220	510	400	460	60	20	460	24	1	3	**2LC0301-1BN**	100
415 [2]	**104000**	150000	0	**220**	320	240	550	420	500	60	20	500	24	1	3	**2LC0301-2BN**	130
465 [2]	**155000**	165000	0	**250**	360	260	580	450	530	60	20	530	24	2	4	**2LC0301-3BN**	160
505 [2]	**235000**	200000	0	**275**	400	315	650	530	580	65	25	600	24	2	4	**2LC0301-4BN**	240
545 [2]	**390000**	325000	0	**300**	440	350	680	560	600	65	25	630	24	3	4	**2LC0301-5BN**	320
585 [2]	**460000**	380000	0	**330**	480	380	710	600	640	81	35	660	28	4	4	**2LC0301-6BN**	400
640 [2]	**600000**	420000	0	**360**	520	410	780	670	700	81	35	730	28	4	4	**2LC0301-7BN**	510
730 [2]	**880000**	500000	0	**415**	600	450	850	730	760	81	35	800	28	4	5	**2LC0302-0BN**	690

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore

Notes

- Total wear must not exceed 1 x W.
- Mass moment of inertia on request.
- Weights apply to maximum bores.

Ordering example

- ZAPEX ZWTR coupling, size 198, bore 80H7 mm, keyway to DIN 6885-1 P9 and set screw.

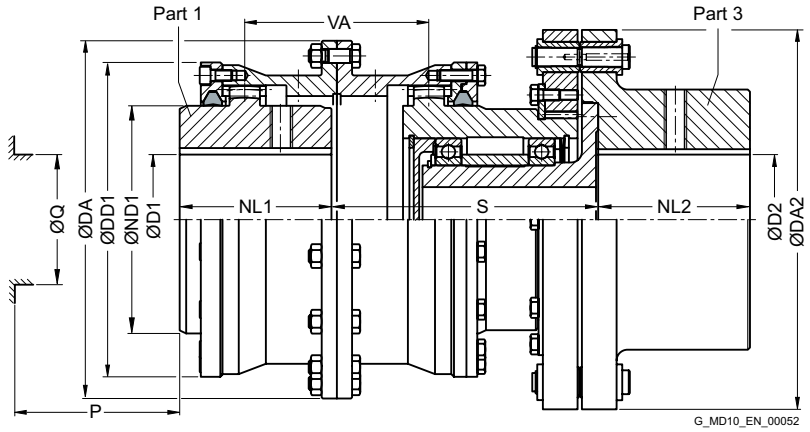
Article no.: 2LC0300-4BN90-0AA0-Z L1J

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

[2] These sizes have connection dimensions according to SEB 666 212.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZBR



Size	Rated torque T_{KN}	Max. shear torque T_{BR}	Maximum speed n_{Kmax}	Dimensions in mm														↗ Article no. [1]	Weight
				D1 Keyway DIN 6885-1		D2 Keyway DIN 6885-1		DA	ND1	NL1/ NL2	DA2	DD1	S	VA	Q	P			*m*
	Nm	Nm	rpm	min.	max.	min.	max.												kg
112	1300	1690	9400	0	49	0	60	143	65	50	170	110	115	56	50	35		2LC0300-0BH	14.5
128	2500	3250	8300	0	61	0	75	157	80	60	190	128	125	73	65	45		2LC0300-1BH	19
146	4300	5590	7300	0	72	0	90	177	95	75	205	146	140	88	75	45		2LC0300-2BH	27.5
175	7000	9100	6400	0	85	0	105	215	112	90	235	175	170	104	85	50		2LC0300-3BH	43
198	11600	15080	5500	0	100	0	120	237	135	100	285	198	185	119	110	50		2LC0300-4BH	67
230	19000	24700	4700	0	120	0	135	265	160	110	300	230	200	130	135	50		2LC0300-5BH	91
255	27000	35100	4100	0	140	0	155	294	185	125	335	255	215	150	160	50		2LC0300-6BH	120
290	39000	50700	3700	70	160	70	185	330	210	140	390	290	240	170	180	60		2LC0300-7BH	170
315	54000	70200	3300	80	175	80	200	366	230	160	415	315	257	190	200	60		2LC0300-8BH	215
342	69000	89700	3000	90	195	90	235	392	255	180	460	340	290	222	225	60		2LC0301-0BH	295
375	98000	127400	2700	100	220	100	240	430	290	200	495	375	300	242	260	60		2LC0301-1BH	380
415	130000	169000	2500	120	240	120	255	478	320	220	540	415	370	294	285	80		2LC0301-2BH	520
465	180000	234000	2200	140	270	140	285	528	360	240	635	465	400	336	325	80		2LC0301-3BH	720
505	250000	325000	2000	160	300	160	320	568	400	260	710	505	420	366	365	80		2LC0301-4BH	970
545	320000	416000	1800	180	330	180	370	620	440	280	800	545	460	406	405	80		2LC0301-5BH	1250
585	400000	520000	1700	210	360	210	390	660	480	310	860	585	500	460	445	80		2LC0301-6BH	1600
640	510000	663000	1600	230	360	230	425	738	480	330	900	640	530	479	445	90		2LC0301-7BH	1850
				>360	390				520						475				
690	660000	858000	1450	250	390	250	450	788	520	350	1020	690	580	516	475	90		2LC0301-8BH	2600
				>390	420				560						515				2650
730	790000	1027000	1350	275	420	275	485	834	560	380	1080	730	620	560	515	90		2LC0302-0BH	3200
				>420	450				600						555				

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moment of inertia on request.
- Weights apply to maximum bores.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

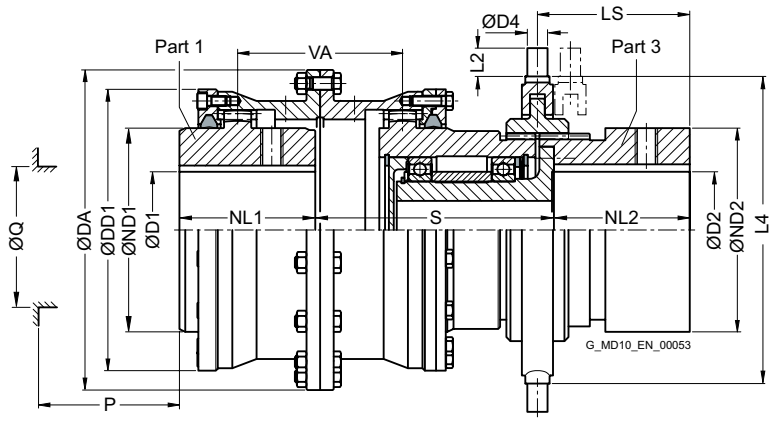
- ZAPEX coupling ZBR, size 146,
  ultimate moment T_{break} = 3500 Nm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9
  and set screw
- Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9
  and set screw

Article no.: 2LC0300-2BH99-0BA0-Z L0W+M1A+M13+Y99
Plain text to Y99: T_{break} = 3500 Nm

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZWS



Size	Rated torque	Maximum speed	Dimensions in mm																		Shift ring			Switch size		↗ Article no. [1]	Weight
	T_{KN}	n_{Kmax}	D1 Keyway DIN 6885-1		D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1	S	VA	Q	P	LS	L4	D4	L2	KSHN	KSZH							
	Nm	rpm	min.	max.	min.	max.																					m
																											kg
128	**2500**	1500	0	**61**	0	**50**	157	80	60	128	135	73	65	45	70	150	15	14	14/11	–	**2LC0300-1BK**	16
146	**4300**	1300	0	**72**	0	**50**	177	95	75	146	131	88	75	45	86	180	16	16	16/12	–	**2LC0300-2BK**	22
175	**7000**	1100	0	**85**	0	**70**	215	112	90	175	165	104	85	50	101	180	16	16	16/12	–	**2LC0300-3BK**	35
198	**11600**	960	0	**100**	0	**80**	237	135	100	198	182	119	110	50	116	210	20	18	18/13	–	**2LC0300-4BK**	52
230	**19000**	830	0	**120**	0	**90**	265	160	110	230	198	130	135	50	126	260	22	20	18/15	14/14	**2LC0300-5BK**	77
255	**27000**	750	0	**140**	0	**115**	294	185	125	255	215	150	160	50	142	300	25	22	21/17	16/17	**2LC0300-6BK**	98
290	**39000**	660	70	**160**	70	**130**	330	210	140	290	236	170	180	60	157	315	25	35	–	16/211	**2LC0300-7BK**	140
315	**54000**	600	80	**175**	80	**140**	366	230	160	315	257	190	200	60	182	360	30	24	–	18/18	**2LC0300-8BK**	200
342	**69000**	560	90	**195**	90	**160**	392	255	180	340	280	222	225	60	202	360	30	24	–	18/18	**2LC0301-0BK**	230
375	**98000**	510	100	**220**	100	**180**	430	290	200	375	292	242	260	60	222	430	34	26	–	24/20	**2LC0301-1BK**	340
415	**130000**	460	120	**240**	120	**210**	478	320	220	415	349	294	285	80	247	430	34	26	–	24/20	**2LC0301-2BK**	430
465	**180000**	410	140	**270**	140	**230**	528	360	240	465	380	336	325	80	267	–	–	–	–	–	**2LC0301-3BK**	570
505	**250000**	380	160	**300**	160	**260**	568	400	260	505	395	366	365	80	287	–	–	–	–	–	**2LC0301-4BK**	740
545	**320000**	350	180	**330**	180	**270**	620	440	280	545	460	406	405	80	315	–	–	–	–	–	**2LC0301-5BK**	1000

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moment of inertia on request.
- Weights apply to maximum bores.
- Pneumatically or hydraulically actuated switches also available.
- For engaging/disengaging during standstill.
- Part 3 should be mounted on the shaft while the shaft is disconnected and not being driven.
- KSHN Manual lever switch type KSHN to M4218
  KSZH Toothed rack type KSZH to M4215

Ordering example

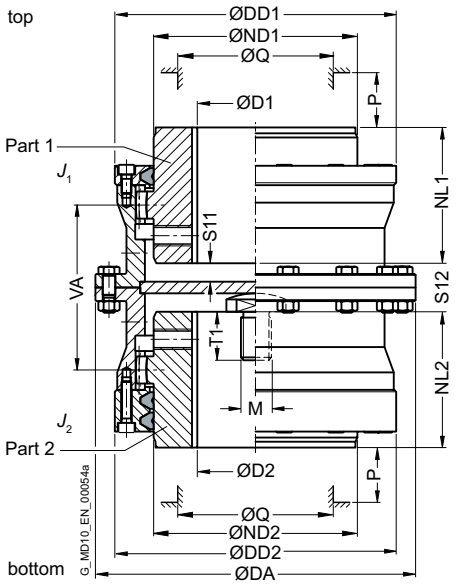
- ZAPEX ZWS coupling, size 146
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0300-2BK99-0AA0-Z L0W+M1A+M13

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZWNV



Size	Rated torque T_{KN}	Maximum speed n_{Kmax}	Dimensions in mm D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S11	S12	VA	Q	P	Mass moment of inertia J_1/J_2	↗ Article no. [1]	Weight m
	Nm	rpm	min.	max.										kgm²		kg
128	**2500**	8300	0	**61**	157	80	60	128	6.5	26	73	65	45	0.015	**2LC0300-1AH**	9.1
146	**4300**	7300	0	**72**	177	95	75	146	6	28	88	75	45	0.023	**2LC0300-2AH**	13
175	**7000**	6400	0	**85**	215	112	90	175	5.5	33	104	85	50	0.055	**2LC0300-3AH**	22
198	**11600**	5500	0	**100**	237	135	100	198	10	40	119	110	50	0.095	**2LC0300-4AH**	31
230	**19000**	4700	0	**120**	265	160	110	230	11	32	130	135	50	0.18	**2LC0300-5AH**	43
255	**27000**	4100	0	**140**	294	185	125	255	14	40	150	160	50	0.28	**2LC0300-6AH**	56
290	**39000**	3700	70	**160**	330	210	140	290	19	50	170	180	60	0.55	**2LC0300-7AH**	81
315	**54000**	3300	80	**175**	366	230	160	315	18	50	190	200	60	0.88	**2LC0300-8AH**	110
342	**69000**	3000	90	**195**	392	255	180	340	29	72	222	225	60	1.3	**2LC0301-0AH**	140
375	**98000**	2700	100	**220**	430	290	200	375	29	72	242	260	60	2.1	**2LC0301-1AH**	185
415	**130000**	2500	120	**240**	478	320	220	415	60	136	294	285	80	3.4	**2LC0301-2AH**	250
465	**180000**	2200	140	**270**	528	360	240	465	80	176	336	325	80	5.6	**2LC0301-3AH**	340
505	**250000**	2000	160	**300**	568	400	260	505	89	196	366	365	80	8.2	**2LC0301-4AH**	420

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- When ordering, state thread size M and thread length T1 of the thrust piece.
- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings.

Ordering example

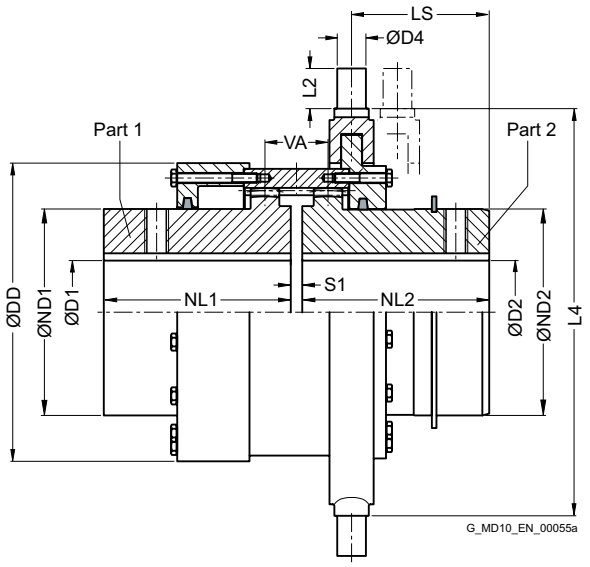
- ZAPEX ZWNV coupling, size 146, thread M10 x 20 deep
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0300-2AH99-0AA0-Z L0W+M1A+M13+Y99
Plain text to Y99: Thread M10 x 20 mm

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZWSE



Size	Rated torque	Maximum speed	Dimensions in mm												Shift ring			Switch size		↗ Article no. [1]	Weight
	T_{KN}	n_{Kmax}	D1 Keyway DIN 6885-1		D2 Keyway DIN 6885-1		ND1	ND2	NL1	NL2	DD	S1	VA	LS	L4	D4	L2	KSHN	KSZH		m
	Nm	rpm	min.	max.	min.	max.															kg
128	**2500**	730	0	**55**	0	**55**	76.5	75	60	60	130	6	30	36.5	180	16	16	16	–	**2LC0300-1BM**	8.8
146	**4300**	630	0	**69**	0	**65**	91.5	90	75	75	150	6	33	50	210	20	18	18	–	**2LC0300-2BM**	13.5
175	**7000**	530	0	**80**	0	**75**	108	105	90	90	180	8	46	56.5	250	20	30	18	–	**2LC0300-3BM**	23
198	**11600**	470	0	**95**	0	**95**	130	130	100	100	204	8	48	64.5	260	22	20	18	–	**2LC0300-4BM**	32
230	**19000**	410	0	**115**	0	**110**	155	155	110	110	236	8	50	73	300	25	22	21	–	**2LC0300-5BM**	44
255	**27000**	370	0	**135**	0	**130**	180	180	125	125	260	10	55	82	355	25	35	24	–	**2LC0300-6BM**	63
290	**39000**	330	70	**155**	70	**145**	210	210	140	140	295	10	38	64.5	355	25	35	24	–	**2LC0300-7BM**	82
315	**54000**	300	80	**170**	80	**165**	230	230	160	160	325	10	42	76	355	25	35	24	–	**2LC0300-8BM**	105
342	**69000**	280	90	**190**	90	**175**	255	255	180	180	345	12	46	82	430	34	26	–	24	**2LC0301-0BM**	145
375	**98000**	250	100	**210**	100	**200**	280	280	200	200	378	12	48	90	430	34	26	–	24	**2LC0301-1BM**	180
415	**130000**	220	120	**240**	120	**225**	320	320	220	240	425	12	52	120	580	40	40	–	24	**2LC0301-2BM**	295
465	**180000**	200	140	**270**	140	**250**	360	360	240	260	470	16	60	150	580	40	40	–	24	**2LC0301-3BM**	350
505	**250000**	180	160	**300**	160	**270**	400	400	260	280	510	16	62	161	–	–	–	–	24	**2LC0301-4BM**	400

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moment of inertia on request.
- Weights apply to maximum bores.
- For engaging/disengaging during standstill.
- Part 2 should be mounted on the shaft while the shaft is disconnected and not being driven.
- Protect sliding surfaces from dirt and corrosion; sprayed with adhesive grease.

Ordering example

- ZAPEX ZWSE coupling, size 146
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw,
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Article no.: 2LC0300-2BM99-0AA0-Z L0W+M1A+M13

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

CUSTOMIZED HUB DESIGN

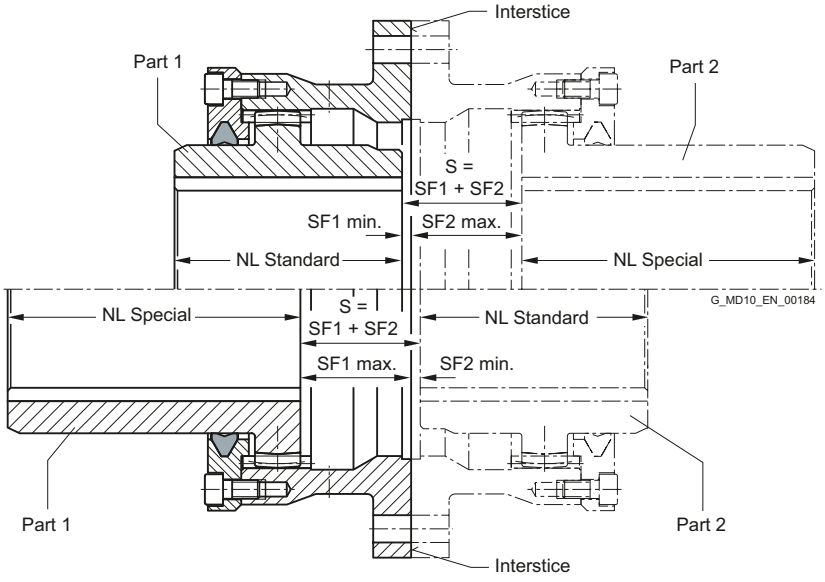
ZAPEX couplings can be provided with customized S-dimensions and hub lengths.

The entire dimension S results from the sum of the individual measurements SF1 and SF2. SF1 and SF2 are the measurements from the interstice of the coupling ring flange up to the beginning of the respective hub.
As standard SF1 and SF2 are identical to each other and the entire S-dimension arises in accordance with them.

SF1 and SF2 can be chosen different on customer request, however the minimal and maximum values of the following table have to be observed. Within these limits the measurements SF1 and SF2 may be chosen freely.

The distance VA of the coupling teeth, the permitted bore diameter and the hub diameter remain unchanged.

By stating the hub S-dimension and both hub lengths the coupling is completely described.



Geometric data			
Size	Standard hub length NL mm	Minimal dimension SF1 or SF2 mm	Maximum dimension SF1 or SF2 mm
112	50	3	23
128	60	3	30.5
146	75	3	36.5
175	90	4	43
198	100	4	49.5
230	110	4	54
255	125	5	62.5
290	140	5	71
315	160	5	79
342	180	6	94
375	200	6	103
415	220	6	127
465	240	8	146
505	260	8	160

The minimal hub lengths are not to fall below the standard hub lengths. If there's no other possibility, for hub lengths smaller than standard hub lengths the order codes "**Y50**" for part 1 and "**Y51**" for part 2 must be stated in plain text.

Article number

The Article number of the respective ZAPEX coupling type must be supplemented with "**-Z**" and order codes for non standard SF-dimensions (order code "**Y38**" for part 1 and "**Y39**" for part 2). For no standard hub lengths the order codes "**Y40**" to "**Y49**" must be specified (see table **Page 4/22**).

Ordering example

- ZAPEX coupling ZWN 175, variant A
- Hub left: Bore D1 = 70H7 mm, keyway to DIN 6885-1 P9 and set screw; NL1 = 160 mm; SF1 = 10 mm
- Hub right: Bore D2 = 75H7 mm, keyway to DIN 6885-1 P9and set screw; NL2 = 100 mm; SF2 = 25 mm

Article no.: 2LC0300-3AA99-0AA0-Z L1G M1H Y38 Y39 Y41 Y46
Plain text to Y38: SF1 = 10 mm
Plain text to Y39: SF2 = 25 mm
Plain text to Y46: NL1 = 160 mm
Plain text to Y41: NL2 = 100 mm

CUSTOMIZED HUB DESIGN

Order code for hub prolongations (Y4). (Std-NL = Standard hub length)

Part 1 Selected (special) hub length min.	max.	Order code (specification of hub length in plain text)
>Std-NL	≤1.25 · Std-NL	**Y40**
>1.25 · Std-NL	≤1.5 · Std-NL	**Y42**
>1.5 · Std-NL	≤1.75 · Std-NL	**Y44**
>1.75 · Std-NL	≤2 · Std-NL	**Y46**
>2 · Std-NL		**Y48**

Part 2 Selected (special) hub length min.	max.	Order code (specification of hub length in plain text)
>Std-NL	≤1.25 · Std-NL	**Y41**
>1.25 · Std-NL	≤1.5 · Std-NL	**Y43**
>1.5 · Std-NL	≤1.75 · Std-NL	**Y45**
>1.75 · Std-NL	≤2 · Std-NL	**Y47**
>2 · Std-NL		**Y49**

SPARE AND WEAR PARTS

DUO sealing rings

The DUO sealing rings are wear parts and must be replaced in accordance with the operating instructions.

Size	Hub diameter ND1/ND2 mm	Article No.
112	65	2LC0300-0XG00-0AA0
128	80	2LC0300-1XG00-0AA0
146	95	2LC0300-2XG00-0AA0
175	112	2LC0300-3XG00-0AA0
198	135	2LC0300-4XG00-0AA0
230	160	2LC0300-5XG00-0AA0
255	185	2LC0300-6XG00-0AA0
290	210	2LC0300-7XG00-0AA0
315	230	2LC0300-8XG00-0AA0
342	255	2LC0301-0XG00-0AA0
375	290	2LC0301-1XG00-0AA0
415	320	2LC0301-2XG00-0AA0
465	360	2LC0301-3XG00-0AA0
505	400	2LC0301-4XG00-0AA0
545	440	2LC0301-5XG00-0AA0
585	480	2LC0301-6XG00-0AA0
640	480	2LC0301-7XG10-0AA0
	520	2LC0301-7XG20-0AA0
690	520	2LC0301-8XG10-0AA0
	560	2LC0301-8XG20-0AA0
730	560	2LC0302-0XG10-0AA0
	600	2LC0302-0XG20-0AA0
780	600	2LC0302-1XG10-0AA0
	650	2LC0302-1XG20-0AA0
852	650	2LC0302-2XG10-0AA0
	710	2LC0302-2XG20-0AA0
910	710	2LC0302-3XG10-0AA0
	750	2LC0302-3XG20-0AA0

Size	Hub diameter ND1/ND2 mm	Article No.
1020	750	2LC0302-4XG10-0AA0
	800	2LC0302-4XG20-0AA0
1080	800	2LC0302-5XG10-0AA0
	860	2LC0302-5XG20-0AA0
1150	860	2LC0302-6XG10-0AA0
	930	2LC0302-6XG20-0AA0
1160	860	2LC0302-7XG10-0AA0
	930	2LC0302-7XG20-0AA0
	990	2LC0302-7XG30-0AA0
1240	930	2LC0302-8XG10-0AA0
	990	2LC0302-8XG20-0AA0
	1055	2LC0302-8XG30-0AA0
1310	930	2LC0303-0XG10-0AA0
	990	2LC0303-0XG20-0AA0
	1055	2LC0303-0XG30-0AA0
	1120	2LC0303-0XG40-0AA0
1380	990	2LC0303-1XG10-0AA0
	1055	2LC0303-1XG20-0AA0
	1120	2LC0303-1XG30-0AA0
	1170	2LC0303-1XG40-0AA0
1440	1055	2LC0303-2XG10-0AA0
	1120	2LC0303-2XG20-0AA0
	1170	2LC0303-2XG30-0AA0
	1240	2LC0303-2XG40-0AA0
1540	1120	2LC0303-3XG10-0AA0
	1170	2LC0303-3XG20-0AA0
	1240	2LC0303-3XG30-0AA0
	1310	2LC0303-3XG40-0AA0

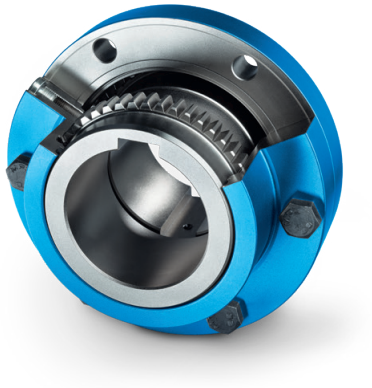
High-performance grease

Container	Content g	Article No.
Cartridge	300	FFA:000000501027

Sealing compound

Container	Content ml	Article No.
Tube	60	FFA:000001443780

TORSIONALLY RIGID GEAR COUPLINGS ZAPEX ZN SERIES



5

ZAPEX ZN
FLENDER

GENERAL

Coupling suitable for use in potentially explosive atmospheres.
Complies with the current ATEX Directive for:

CE II 2G Ex h IIC T6 ... T5 Gb X

II 2D Ex h IIIC T85 °C ... 100 °C Db X

I M2 Ex h Mb X

Materials

- Hubs and flanged sleeves: Steel
- O ring: Perbunan
- Lubricant: Grease filling

Benefits

ZAPEX gear couplings link machine shafts and compensate for shaft misalignment with weak restorative forces. High transmissible torque combined with compactness and light weight are characteristic of ZAPEX couplings. ZAPEX coupling types are constructed on a modular principle, so application-related solutions can be delivered quickly.

This coupling requires very little maintenance. Regular grease changes at the prescribed intervals prolong the service life of the coupling.

Application

ZAPEX couplings are especially suited for operation in harsh operating conditions, such as drives in the iron smelting or cement industry.

ZAPEX couplings are suitable for reverse operation and horizontal mounting positions and, in the case of type ZNNV, for vertical mounting positions.

GENERAL

Design and configurations

A ZAPEX coupling comprises two hub sections with external teeth which are mounted on the machine shafts. The external teeth engage with a flanged sleeve with corresponding internal teeth. The flanged sleeves are connected via two flanges with close-fitting bolts. The teeth are lubricated with grease. On the ZAPEX type ZN, O-rings are used to seal the tooth space. The O-rings prevent the lubricant from escaping and dirt from entering the tooth space. The parallel keyways must be sealed during assembly to prevent lubricant from escaping. Customized hub designs are described after the types.

Type	Description
ZNN	Standard type
ZNZS	with adapter
ZNW	with intermediate shaft
ZNBG	with straight brake disk
ZNNA	With axial backlash limiter
ZNZA	With adapter and axial backlash limiter
ZNNV	Vertical type
ZNN	For axial displacement

Further application-specific coupling types are available; dimension sheets for and information on these are available on request.

Function

The torque is transmitted through the coupling teeth. The teeth are crowned, so angular displacement per tooth plane is possible. Radial displacement can be compensated for via the space VA between the tooth planes. The internal teeth of the flanged sleeves are significantly wider than the external teeth of the hub parts, permitting a relatively high axial misalignment.

A small angular misalignment on the coupling teeth results in an advantageous distribution of the lubricant film in contact with the teeth and a very low wear rate. This favorable condition can be deliberately set by aligning the drive with the machine shafts with a slight radial misalignment.

Technical specifications

Power ratings

Size	Rated torque T_{KN} Nm	Maximum torque T_{Kmax} Nm	Overload torque T_{KOL} Nm	Fatigue torque T_{KW} Nm	Torsional stiffness ZN C_{Tdyn} kNm/rad	Permitted axial shaft misalignment ΔK_a mm
83	1020	2040	4080	408	500	1
107	2210	4420	8840	884	1400	1
130	4020	8040	16080	1600	2500	1
156	6600	13200	26400	2640	5800	1
181	11000	22000	44000	4400	9200	1
211	19200	38400	76800	7680	16600	1
250	30680	61360	122720	12270	27300	1
274	43550	87100	174200	17400	41500	1.5
307	61750	123500	247000	24700	61000	1.5
333	87100	174200	348400	34800	79000	1.5
364	117000	234000	468000	46800	99000	1.5
424	162500	325000	650000	64800	156000	1.5

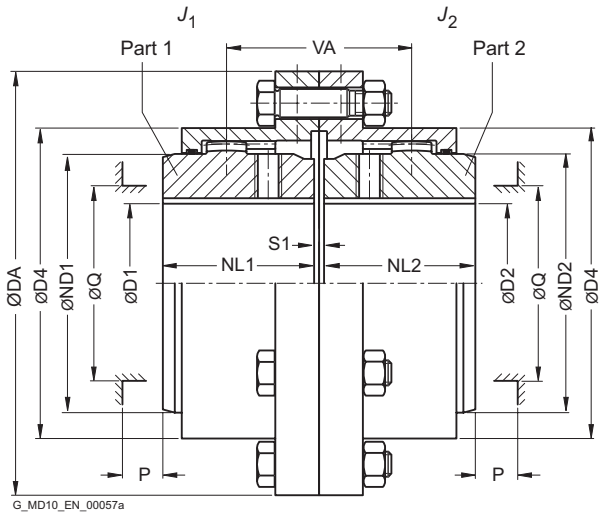
The specified torsional stiffness "ZN" applies to coupling types ZNN, ZNNA, ZNNV and ZNN for axial displacement. Torsional stiffness of types ZNZS, ZNW, ZNBG and ZNZA on request.

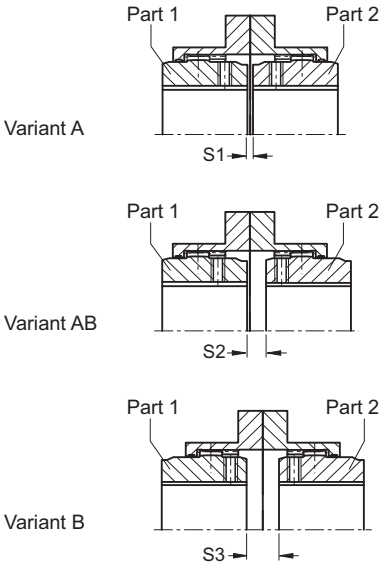
The axial misalignment ΔK_a must be understood as the maximum permitted enlargement of the hub distance S of the coupling.
The axial misalignment ΔK_a does not apply to the types ZNNA, ZNNV, ZNBG and ZNZA.

Angular misalignment ΔK_w
Types ZNN, ZNZS, ZNW, ZNNV, ZNN for axial displacement: $\Delta K_w = 0.5°$
Types ZNBG, ZNNA, ZNZA: $\Delta K_w = 0.2°$

Radial misalignment ΔK_r
Types ZNN, ZNZS, ZNW, ZNNV, ZNN for axial displacement: $\Delta K_r \leqslant VA \cdot \tan 0.5°$
Types ZNBG, ZNNA, ZNZA: $\Delta K_r \leqslant VA \cdot \tan 0.2°$
For the tooth distance VA, see the relevant table for the subassembly.

TYPE ZNN





Size	Rated torque	Maximum speed	Dimensions in mm											Mass moment of inertia	↗ Article no. [1]			Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S1	S2	S3	VA	Q	P	J_1/J_2	Type			m
	Nm	rpm	min.	max.				min.	max.						kgm²	A	B	AB	kg
83	1020	8500	0	50	117	67	43	83	3	12	21	55	52	31	0.003	2LC0330-0AA	2LC0330-0AB	2LC0330-0AC	3.2
107	2210	7700	0	65	152	87	50	107	3	9	15	59	68	34	0.009	2LC0330-1AA	2LC0330-1AB	2LC0330-1AC	6.5
130	4020	6900	0	82	178	108	62	129.5	3	17	31	79	85	42	0.02	2LC0330-2AA	2LC0330-2AB	2LC0330-2AC	9.8
156	6600	6200	0	100	213	130	76	156	5	17	29	93	110	47	0.05	2LC0330-3AA	2LC0330-3AB	2LC0330-3AC	17.5
181	11000	5800	0	116	240	153	90	181	5	19	33	109	130	58	0.09	2LC0330-4AA	2LC0330-4AB	2LC0330-4AC	25.5
211	19200	5100	0	137	280	180	105	211	6	23	40	128	150	67	0.21	2LC0330-5AA	2LC0330-5AB	2LC0330-5AC	43
250	30680	4500	0	164	318	214	120	249.5	6	24	42	144	175	72	0.39	2LC0330-6AA	2LC0330-6AB	2LC0330-6AC	60
274	43550	4000	80	178	347	233	135	274	8	29	50	164	190	81	0.59	2LC0330-7AA	2LC0330-7AB	2LC0330-7AC	82
307	61750	3750	90	198	390	260	150	307	8	32	56	182	220	91	1.1	2LC0330-8AA	2LC0330-8AB	2LC0330-8AC	115
333	87100	3550	100	216	425.5	283	175	332.5	8	39	70	214	250	104	1.8	2LC0331-0AA	2LC0331-0AB	2LC0331-0AC	155
364	117000	3400	120	242	457	312	190	364	8	46	84	236	265	126	2.3	2LC0331-1AA	2LC0331-1AB	2LC0331-1AC	180
424	162500	3200	150	288	527	371	220	423.5	10	43	76	263	300	140	4.9	2LC0331-2AA	2LC0331-2AB	2LC0331-2AC	275

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Ordering example

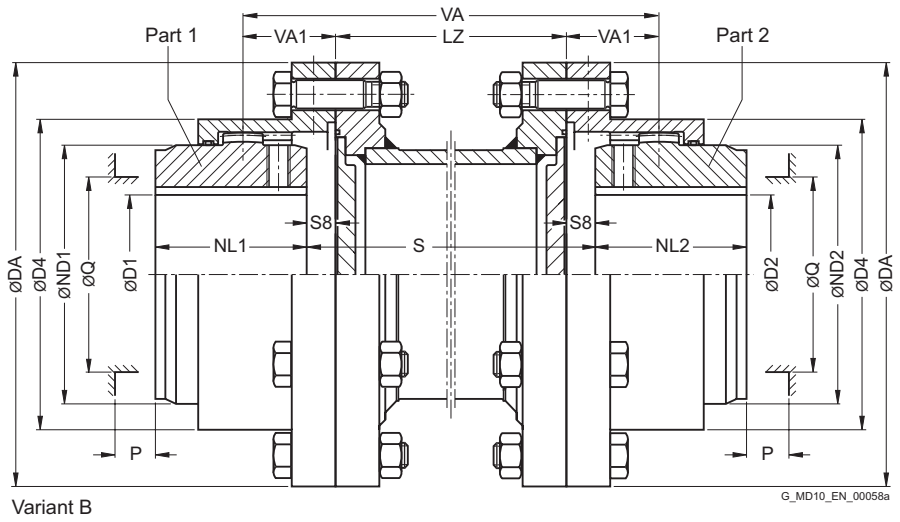
- ZAPEX ZNN coupling, size 107, variant A
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: **2LC0330-1AA99-0AA0-Z L0W+M1A+M13**

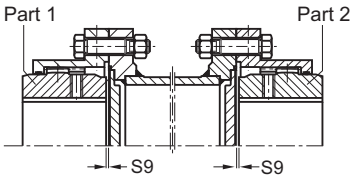
[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZNZS



Variant B



Variant A

Size	Rated torque	Dimensions in mm												↗ Article no. [1]		Weight each 100 mm pipe	
	T_{KN}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S8	S9	VA1	Q	P	LZ	Type		*m*	*m*
	Nm	min.	max.										min.	A	B	kg	kg
83	**1020**	0	**50**	117	67	43	83	10.5	1.5	27.5	52	31	75	**2LC0330-0AD**	**2LC0330-0AE**	0.9	5.5
107	**2210**	0	**65**	152	87	50	107	7.5	1.5	29.5	68	34	85	**2LC0330-1AD**	**2LC0330-1AE**	0.8	12
130	**4020**	0	**82**	178	108	62	129.5	15.5	1.5	39.5	85	42	95	**2LC0330-2AD**	**2LC0330-2AE**	1.2	16
156	**6600**	0	**100**	213	130	76	156	14.5	2.5	46.5	110	47	110	**2LC0330-3AD**	**2LC0330-3AE**	2.3	28
181	**11000**	0	**116**	240	153	90	181	16.5	2.5	54.5	130	58	110	**2LC0330-4AD**	**2LC0330-4AE**	3.5	40
211	**19200**	0	**137**	280	180	105	211	20	3	64	150	67	125	**2LC0330-5AD**	**2LC0330-5AE**	4.5	64
250	**30680**	0	**164**	318	214	120	249.5	21	3	72	175	72	125	**2LC0330-6AD**	**2LC0330-6AE**	6.3	91
274	**43550**	80	**178**	347	233	135	274	25	4	82	190	81	125	**2LC0330-7AD**	**2LC0330-7AE**	7.2	115
307	**61750**	90	**198**	390	260	150	307	28	4	91	220	91	145	**2LC0330-8AD**	**2LC0330-8AE**	9.1	175
333	**87100**	100	**216**	425.5	283	175	332.5	35	4	107	250	104	145	**2LC0331-0AD**	**2LC0331-0AE**	12	220
364	**117000**	120	**242**	457	312	190	364	42	4	118	265	126	145	**2LC0331-1AD**	**2LC0331-1AE**	15	245
424	**162500**	150	**288**	527	371	220	423.5	38	5	131.5	300	140	145	**2LC0331-2AD**	**2LC0331-2AE**	16	360

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- VA = 2 · VA1 + LZ
- Mass moment of inertia on request.
- Weights apply to the entire coupling with maximum bores and an adapter length of LZ min.
- Maximum speed, limited by weight and critical adapter speed, on request.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Ordering example

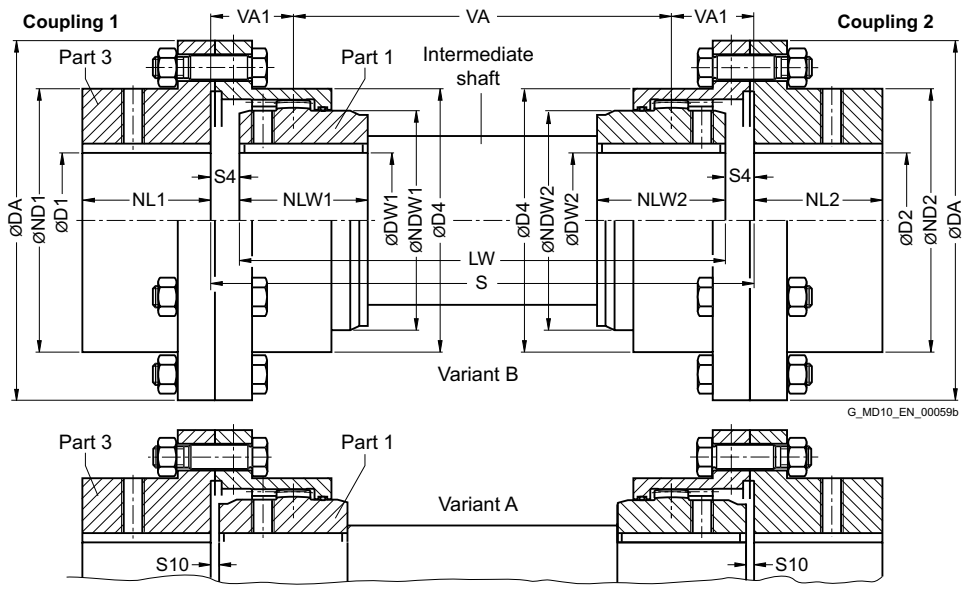
- ZAPEX ZNZS coupling, size 107, variant B, adapter for S = 250 mm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0330-1AE99-0AZ0-Z L0W+M1A+Q0Y+M13
Plain text to Q0Y: 250 mm (dimension S)

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZNW



Size	Rated torque	Dimensions in mm											↗ Article no. [1]		Weight
	T_{KN}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/NL2/ NLW1/LW2	DW1, DW2 Keyway DIN 6885-1		NDW1/ NDW2	D4	S4	S10	VA1	Type		*m*
	Nm	min.	max.				min.	max.						A	B	kg
83	**1020**	0	**61**	117	83	43	0	**50**	67	83	12	3	29	**2LC0330-0AV**	**2LC0330-0AW**	3.1
107	**2210**	0	**79**	152	107	50	0	**65**	87	107	9	3	31	**2LC0330-1AV**	**2LC0330-1AW**	6.2
130	**4020**	0	**96**	178	129.5	62	0	**82**	108	129.5	17	3	41	**2LC0330-2AV**	**2LC0330-2AW**	9.5
156	**6600**	0	**116**	213	156	76	0	**100**	130	156	17	5	49	**2LC0330-3AV**	**2LC0330-3AW**	17
181	**11000**	0	**134**	240	181	90	0	**116**	153	181	19	5	57	**2LC0330-4AV**	**2LC0330-4AW**	24.5
211	**19200**	0	**156**	280	211	105	0	**137**	180	211	23	6	67	**2LC0330-5AV**	**2LC0330-5AW**	41
250	**30680**	0	**184**	318	249.5	120	0	**164**	214	249.5	24	6	75	**2LC0330-6AV**	**2LC0330-6AW**	58
274	**43550**	80	**202**	347	274	135	80	**178**	233	274	29	8	86	**2LC0330-7AV**	**2LC0330-7AW**	76
307	**61750**	90	**228**	390	307	150	90	**198**	260	307	32	8	95	**2LC0330-8AV**	**2LC0330-8AW**	110
333	**87100**	100	**247**	425.5	332.5	175	100	**216**	283	332.5	39	8	111	**2LC0331-0AV**	**2LC0331-0AW**	150
364	**117000**	120	**270**	457	364	190	120	**242**	312	364	46	8	122	**2LC0331-1AV**	**2LC0331-1AW**	170
424	**162500**	150	**313**	527	423.5	220	150	**288**	371	423.5	43	10	136.5	**2LC0331-2AV**	**2LC0331-2AW**	270

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Notes

- VA = S – 2 · VA1
- Mass moment of inertia on request.
- Weights apply to either coupling 1 or 2 with maximum bores, without intermediate shaft.
- Maximum speed, limited by weight and critical speed of intermediate shaft, on request.

Ordering example

- Coupling 1:
  ZAPEX ZNW coupling, size 107, variant B,
  Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9
  and set screw, Part 1: Bore 45H7 mm,
  keyway to DIN 6885-1 P9 and set screw.

Article no.: 2LC0330-1AW99-0AA0-Z L1A+L13+M1A

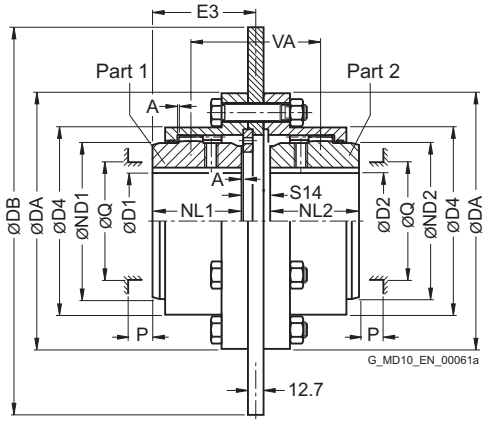
- Intermediate shaft:
  Intermediate shaft to ZAPEX ZNW coupling, size 107,
  length LW = 570 mm, shaft journal Ø45p6 x 50 long;
  keyway DIN 6885-1.

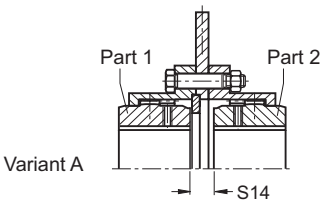
Article no.: 2LC9310-0XH00-0AA0-Z Y99
Plain text to Y99: DW1 = 45p6 mm, NLW1 = 50 mm,
DW2 = 45p6 mm, NLW2 = 50 mm, LW = 570 mm

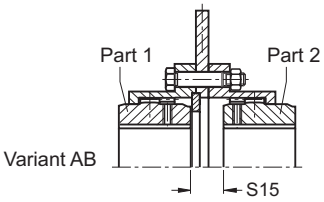
- Coupling 2:
  ZAPEX ZNW coupling, size 107, variant B,
  Part 1: Bore 45H7 mm, keyway to DIN 6885-1 P9
  and set screw, Part 3: Bore 45K7 mm,
  keyway to DIN 6885-1 P9 and set screw.

Article no.: 2LC0330-0AW99-0AA0-Z L1A+M1A+L13

TYPE ZNBG







Size	Rated torque	Maximum speed	Dimensions in mm												Brake disk		↗ Article no. [1]		Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S14	S15	A	VA	Q	P	DB	E3	Type		*m*
	Nm	rpm	min.	max.													A	AB	kg
83	**1020**	3800	0	**50**	117	67	43	83	17	26	0.5	69	52	31	300	52	**2LC0330-0AQ**	**2LC0330-0AR**	10
107	**2210**	3200	0	**65**	152	87	50	107	20.5	26.5	0.5	76.5	68	34	356	61	**2LC0330-1AQ**	**2LC0330-1AR**	16
130	**4020**	3200	0	**82**	178	108	62	129.5	20.5	34.5	0.5	96.5	85	42	356	73	**2LC0330-2AQ**	**2LC0330-2AR**	16.5
		2800							17.5	31.5		93.5			406	71.5	**2LC0330-2AQ**	**2LC0330-2AR**	19.5
156	**6600**	2800	0	**100**	213	130	76	156	20	32	0.5	108	110	47	406	87	**2LC0330-3AQ**	**2LC0330-3AR**	29
		2500							23	35		111			457	88.5	**2LC0330-3AQ**	**2LC0330-3AR**	33
181	**11000**	2800	0	**116**	240	153	90	181	20	34	0.5	124	130	58	406	101	**2LC0330-4AQ**	**2LC0330-4AR**	38
		2500							23	37		127			457	102.5	**2LC0330-4AQ**	**2LC0330-4AR**	42
		2200							23	37		127			514	102.5	**2LC0330-4AQ**	**2LC0330-4AR**	46
211	**19200**	2500	0	**137**	280	180	105	211	24.5	41.5	0.5	146.5	150	67	457	118.5	**2LC0330-5AQ**	**2LC0330-5AR**	58
		2200							24.5	41.5		146.5			514	118.5	**2LC0330-5AQ**	**2LC0330-5AR**	63
		1850							24.5	41.5		146.5			610	118.5	**2LC0330-5AQ**	**2LC0330-5AR**	71
250	**30680**	2200	0	**164**	318	214	120	249.5	24	42	1	162	175	72	514	133	**2LC0330-6AQ**	**2LC0330-6AR**	77
		1850							24	42		162			610	133	**2LC0330-6AQ**	**2LC0330-6AR**	87
		1600							27	45		165			711	134.5	**2LC0330-6AQ**	**2LC0330-6AR**	97

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Size	Rated torque	Maximum speed	Dimensions in mm												Brake disk		↗ Article no. [1]		Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S14	S15	A	VA	Q	P	DB	E3	Type		m
	Nm	rpm	min.	max.													A	AB	kg
274	43550	2200	80	178	347	233	135	274	26.5	47.5	1	182.5	190	81	514	149.5	2LC0330-7AQ	2LC0330-7AR	97
		1850							26.5	47.5		182.5			610	149.5	2LC0330-7AQ	2LC0330-7AR	105
		1600							29.5	50.5		185.5			711	151	2LC0330-7AQ	2LC0330-7AR	115
		1400							35.5	56.5		191.5			812	154	2LC0330-7AQ	2LC0330-7AR	130
307	61750	1850	90	198	390	260	150	307	27	51	1	201	220	91	610	165	2LC0330-8AQ	2LC0330-8AR	140
		1600							30	54		204			711	166.5	2LC0330-8AQ	2LC0330-8AR	155
		1400							36	60		210			812	169.5	2LC0330-8AQ	2LC0330-8AR	170
333	87100	1600	100	216	425.5	283	175	332.5	30	61	1	236	250	104	711	191.5	2LC0331-0AQ	2LC0331-0AR	190
		1400							36	67		242			812	194.5	2LC0331-0AQ	2LC0331-0AR	205
364	117000	1400	120	242	457	312	190	364	36	74	1	264	265	126	812	209.5	2LC0331-1AQ	2LC0331-1AR	235

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moment of inertia on request.
- Weights apply to maximum bores.
- Variant limited in displacement and axial movement. Max. displacement 0.2°.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Ordering example

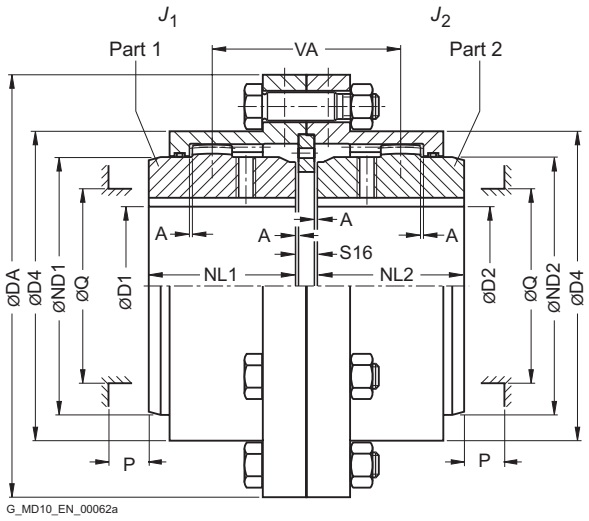
- ZAPEX ZNBG coupling, size 107, variant A, brake disk diameter DB = 356 mm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0330-1AQ99-0AA0-Z L0W+M1A+M13

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZNNA



Size	Rated torque	Maximum speed	Dimensions in mm										Mass moment of inertia	↗ Article no. [1]	Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S16	A	VA	Q	P	J_1/J_2		m
	Nm	rpm	min.	max.										kgm²		kg
83	**1020**	8500	0	**50**	117	67	43	83	5	0.5	57	52	31	0.003	**2LC0330-0AF**	3.3
107	**2210**	7700	0	**65**	152	87	50	107	6	0.5	62	68	34	0.01	**2LC0330-1AF**	6.7
130	**4020**	6900	0	**82**	178	108	62	129.5	6	0.5	82	85	42	0.021	**2LC0330-2AF**	10.5
156	**6600**	6200	0	**100**	213	130	76	156	9	0.5	97	110	47	0.05	**2LC0330-3AF**	18
181	**11000**	5800	0	**116**	240	153	90	181	9	0.5	113	130	58	0.095	**2LC0330-4AF**	26.5
211	**19200**	5100	0	**137**	280	180	105	211	11	0.5	133	150	67	0.22	**2LC0330-5AF**	44
250	**30680**	4500	0	**164**	318	214	120	249.5	10	1	148	175	72	0.4	**2LC0330-6AF**	62
274	**43550**	4000	80	**178**	347	233	135	274	13	1	169	190	81	0.64	**2LC0330-7AF**	82
307	**61750**	3750	90	**198**	390	260	150	307	14	1	188	220	91	1.1	**2LC0330-8AF**	115
333	**87100**	3550	100	**216**	425.5	283	175	332.5	14	1	220	250	104	1.8	**2LC0331-0AF**	155
364	**117000**	3400	120	**242**	457	312	190	364	14	1	242	265	126	2.4	**2LC0331-1AF**	185
424	**162500**	3200	150	**288**	527	371	220	423.5	18	1	271	300	140	4.9	**2LC0331-2AF**	285

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.
- Variant limited in displacement and axial movement. Max. displacement 0.2°.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Ordering example

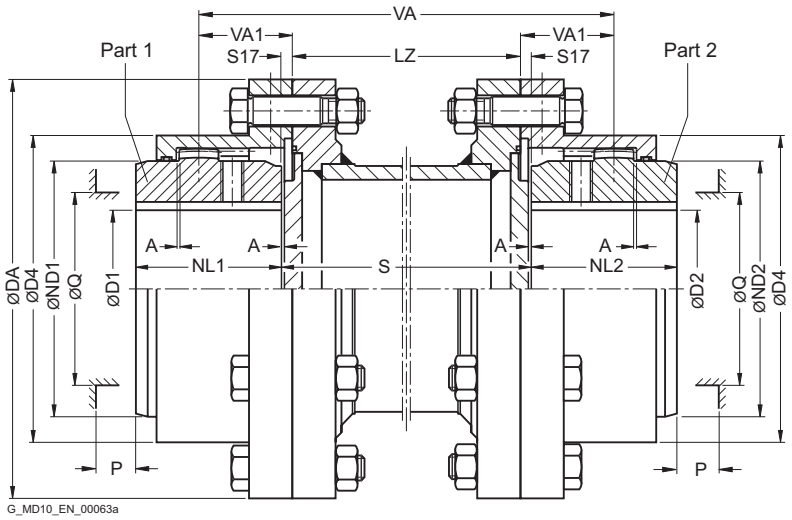
- ZAPEX ZNNA coupling, size 107
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0330-1AF99-0AA0-Z L0W+M1A+M13

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZNZA



Size	Rated torque	Dimensions in mm											Article no. [1]	Weight each 100 mm pipe	
	T_{KN}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S17	A	VA1	Q	P	LZ		*m*	*m*
	Nm	min.	max.										min.		kg	kg
83	**1020**	0	**50**	117	67	43	83	2.5	0.5	28.5	52	31	75	**2LC0330-0AG**	0.9	5.5
107	**2210**	0	**65**	152	87	50	107	3	0.5	31	68	34	85	**2LC0330-1AG**	0.8	12
130	**4020**	0	**82**	178	108	62	129.5	3	0.5	41	85	42	95	**2LC0330-2AG**	1.2	16
156	**6600**	0	**100**	213	130	76	156	4.5	0.5	48.5	110	47	110	**2LC0330-3AG**	2.3	28
181	**11000**	0	**116**	240	153	90	181	4.5	0.5	56.5	130	58	110	**2LC0330-4AG**	3.5	40
211	**19200**	0	**137**	280	180	105	211	5.5	0.5	66.5	150	67	125	**2LC0330-5AG**	4.5	64
250	**30680**	0	**164**	318	214	120	249.5	5	1	74	175	72	125	**2LC0330-6AG**	6.3	91
274	**43550**	80	**178**	347	233	135	274	6.5	1	84.5	190	81	125	**2LC0330-7AG**	7.2	115
307	**61750**	90	**198**	390	260	150	307	7	1	94	220	91	145	**2LC0330-8AG**	9.1	175
333	**87100**	100	**216**	425.5	283	175	332.5	7	1	110	250	104	145	**2LC0331-0AG**	12	220
364	**117000**	120	**242**	457	312	190	364	7	1	121	265	126	145	**2LC0331-1AG**	15	245
424	**162500**	150	**288**	527	371	220	423.5	9	1	135.5	300	140	145	**2LC0331-2AG**	16	360

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- VA = 2 · VA1 + LZ
- Mass moment of inertia on request.
- Weights apply to the entire coupling with maximum bores and an adapter length of LZ min.
- Maximum speed, limited by weight and critical adapter speed, on request.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Ordering example

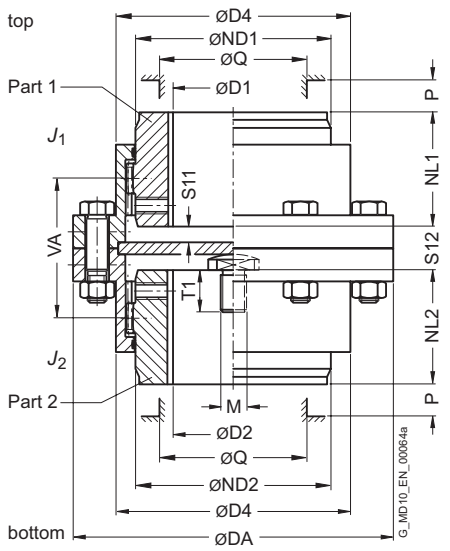
- ZAPEX ZNZA coupling, size 107, adapter for S = 250 mm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0330-1AG99-0AZ0-Z L0W+M1A+Q0Y+M13
Plain text to Q0Y: 250 mm (dimension S)

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZNNV



Size	Rated torque	Maximum speed	Dimensions in mm										Mass moment of inertia	↗ Article no. [1]	Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S11	S12	VA1	Q	P	J_1/J_2		m
	Nm	rpm	min.	max.										kgm²		kg
83	**1020**	8500	0	**50**	117	67	43	83	8	21	55	52	31	0.003	**2LC0330-0AH**	3.5
107	**2210**	7700	0	**65**	152	87	50	107	4.5	15	59	68	34	0.009	**2LC0330-1AH**	6.6
130	**4020**	6900	0	**82**	178	108	62	129.5	12.5	31	79	85	42	0.023	**2LC0330-2AH**	10.5
156	**6600**	6200	0	**100**	213	130	76	156	10.5	29	93	110	47	0.055	**2LC0330-3AH**	17
181	**11000**	5800	0	**116**	240	153	90	181	12.5	33	109	130	58	0.1	**2LC0330-4AH**	25.5
211	**19200**	5100	0	**137**	280	180	105	211	15	40	128	150	67	0.22	**2LC0330-5AH**	40
250	**30680**	4500	0	**164**	318	214	120	249.5	17	42	144	175	72	0.37	**2LC0330-6AH**	54
274	**43550**	4000	80	**178**	347	233	135	274	19.5	50	164	190	81	0.64	**2LC0330-7AH**	87
307	**61750**	3750	90	**198**	390	260	150	307	22	56	182	220	91	1.2	**2LC0330-8AH**	130
333	**87100**	3550	100	**216**	425.5	283	175	332.5	29	70	214	250	104	1.8	**2LC0331-0AH**	160
364	**117000**	3400	120	**242**	457	312	190	364	36	84	236	265	126	2.6	**2LC0331-1AH**	190
424	**162500**	3200	150	**288**	527	371	220	423.5	30	76	263	300	140	5.4	**2LC0331-2AH**	270

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.
- When ordering, state thread size M and thread length T1 of the thrust piece.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Ordering example

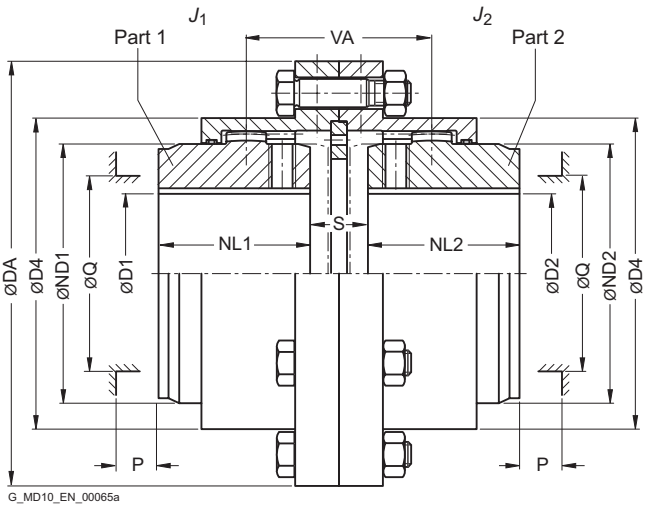
- ZAPEX ZNNV coupling, size 107
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw, thread M10 x 20 deep.

Article no.: 2LC0330-1AH99-0AA0-Z L0W+M1A+M13+Y99
Plain text to Y99: Thread M10 x 20

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options , please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE ZNN FOR AXIAL DISPLACEMENT



Size	Rated torque	Maximum speed	Dimensions in mm											Mass moment of inertia	↗ Article no. [1]	Weight
	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885-1		DA	ND1/ ND2	NL1/ NL2	D4	S		VA	Q	P	J_1/J_2		m
	Nm	rpm	min.	max.					min.	max.				kgm²		kg
83	**1020**	8500	0	**50**	117	67	43	83	6	21	55	52	31	0.003	**2LC0330-0AY**	3.3
107	**2210**	7700	0	**65**	152	87	50	107	7	15	59	68	34	0.01	**2LC0330-1AY**	6.7
130	**4020**	6900	0	**82**	178	108	62	129.5	16	31	79	85	42	0.021	**2LC0330-2AY**	10.5
156	**6600**	6200	0	**100**	213	130	76	156	11	29	93	110	47	0.05	**2LC0330-3AY**	18
181	**11000**	5800	0	**116**	240	153	90	181	11	33	109	130	58	0.095	**2LC0330-4AY**	26.5
211	**19200**	5100	0	**137**	280	180	105	211	14	40	128	150	67	0.22	**2LC0330-5AY**	44
250	**30680**	4500	0	**164**	318	214	120	249.5	12	42	144	175	72	0.4	**2LC0330-6AY**	62
274	**43550**	4000	80	**178**	347	233	135	274	16	50	164	190	81	0.64	**2LC0330-7AY**	82
307	**61750**	3750	90	**198**	390	260	150	307	17	56	182	220	91	1.1	**2LC0330-8AY**	115
333	**87100**	3550	100	**216**	425.5	283	175	332.5	17	70	214	250	104	1.8	**2LC0331-0AY**	155
364	**117000**	3400	120	**242**	457	312	190	364	17	84	236	265	126	2.4	**2LC0331-1AY**	185
424	**162500**	3200	150	**288**	527	371	220	423.5	23	76	263	300	140	4.9	**2LC0331-2AY**	285

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- VA Valid at S max.
- Mass moments of inertia apply to a coupling half with maximum bore diameter.
- Weights apply to the entire coupling with maximum bores.
- Q Diameter required for renewing the sealing rings.
  P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Ordering example

- ZAPEX ZNN coupling for axial displacement, size 107, S min. = 7 mm, S max. = 15 mm
- Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw
- Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw

Article no.: 2LC0330-0AY99-0AA0-Z L0W+M1A+M13

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

CUSTOMIZED HUB DESIGN

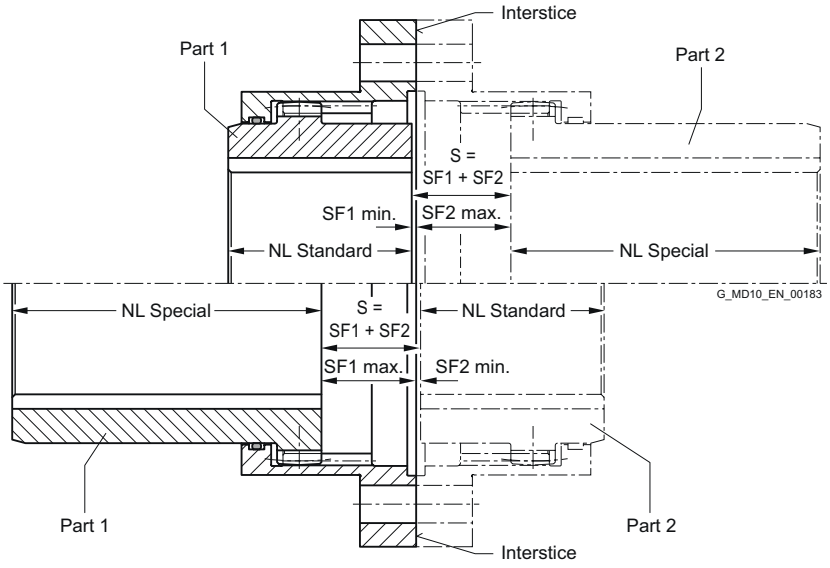
ZAPEX couplings can be provided with customized S-dimensions and hub lengths.

The entire dimension S results from the sum of the individual measurements SF1 and SF2. SF1 and SF2 are the measurements from the interstice of the coupling ring flange up to the beginning of the respective hub. As standard SF1 and SF2 are identical to each other and the entire S-dimension arises in accordance with them.

SF1 and SF2 can be chosen different on customer request, however the minimal and maximum values of the following table have to be observed. Within these limits the measurements SF1 and SF2 may be chosen freely.

The distance VA of the coupling teeth, the permitted bore diameter and the hub diameter remain unchanged.

By stating the hub S-dimension and both hub lengths the coupling is completely described.



Geometric data

Size	Standard hub length NL mm	Minimal dimension SF1 or SF2 mm	Maximum dimension SF1 or SF2 mm
83	43	1.5	22
107	50	1.5	23.5
130	62	1.5	32
156	76	2.5	36.5
181	90	2.5	43.5
211	105	3	51
250	120	3	59
274	135	4	64.5
307	150	4	72
333	175	4	85
364	190	4	92
424	220	5	100

The minimal hub lengths are not to fall below the standard hub lengths. If there's no other possibility, for hub lengths smaller than standard hub lengths the order codes **"Y50"** for part 1 and **"Y51"** for part 2 must be stated in plain text.

Article number

The Article number of the respective ZAPEX coupling type must be supplemented with **"-Z"** and order codes for non standard SF-dimensions (order code **"Y38"** for part 1 and **"Y39"** for part 2). For no standard hub lengths the order codes **"Y40"** to **"Y49"** must be specified (see **Page 5/17**).

Ordering example

- ZAPEX coupling ZNN 130, variant A
- Hub left: Bore D1 = 70H7 mm, keyway to DIN 6885-1 P9 and set screw; NL1 = 110 mm; SF1 = 10 mm
- Hub right: Bore D2 = 75H7 mm, keyway to DIN 6885-1 P9and set screw; NL2 = 75 mm; SF2 = 25 mm

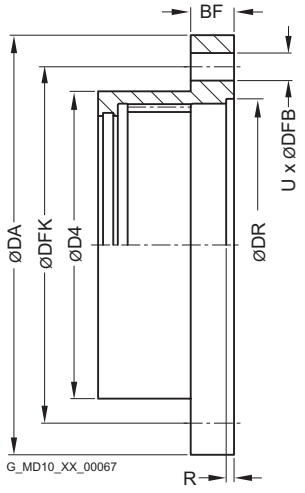
Article no.: 2LC0330-2AA99-0AA0-Z L1G M1H Y38 Y39 Y41 Y46
Plain text to Y38: SF1 = 10 mm
Plain text to Y39: SF2 = 25 mm
Plain text to Y46: NL1 = 110 mm
Plain text to Y41: NL2 = 75 mm

Order code for hub prolongations Y4. (Std-NL = Standard hub length)

Part 1 Selected (special) hub length min.	max.	Order code (specification of hub length in plain text)
>Std-NL	≤1.25 · Std-NL	**Y40**
>1.25 · Std-NL	≤1.5 · Std-NL	**Y42**
>1.5 · Std-NL	≤1.75 · Std-NL	**Y44**
>1.75 · Std-NL	≤2 · Std-NL	**Y46**
>2 · Std-NL		**Y48**

Part 2 Selected (special) hub length min.	max.	Order code (specification of hub length in plain text)
>Std-NL	≤1.25 · Std-NL	**Y41**
>1.25 · Std-NL	≤1.5 · Std-NL	**Y43**
>1.5 · Std-NL	≤1.75 · Std-NL	**Y45**
>1.75 · Std-NL	≤2 · Std-NL	**Y47**
>2 · Std-NL		**Y49**

TYPE ZN – FLANGE CONNECTION DIMENSIONS



Size	Dimensions in mm							
	DA	BF	D4	DFK	DFB	U Number	DR	R
83	117	14	83	100	9	6	82	2.5
107	152	19	107	131	11	6	105	3
130	178	19	129.5	157	11	8	130	3
156	213	22	156	188	13	6	153	4
181	240	22	181	213	13	10	178	4
211	280	28.5	211	249	17	8	205	5
250	318	28.5	249.5	287	17	10	243	4
274	347	28.5	274	315	17	12	265	5.5
307	390	38	307	352	21	12	302	6
333	425.5	38	332.5	385	21	14	320	6
364	457	26	364	416	21	16	353	6
424	527	28.5	423.5	482	25	16	412	8

SPARE AND WEAR PARTS

Sealing rings

The sealing rings are wear parts and must be replaced in accordance with the operating instructions.

Size	Hub diameter ND1/ND2 mm	Article No.
83	67	**2LC0330-0XE00-0AA0**
107	87	**2LC0330-1XE00-0AA0**
130	108	**2LC0330-2XE00-0AA0**
156	130	**2LC0330-3XE00-0AA0**
181	153	**2LC0330-4XE00-0AA0**
211	180	**2LC0330-5XE00-0AA0**
250	214	**2LC0330-6XE00-0AA0**
274	233	**2LC0330-7XE00-0AA0**
307	260	**2LC0330-8XE00-0AA0**
333	283	**2LC0331-0XE00-0AA0**
364	312	**2LC0331-1XE00-0AA0**
424	371	**2LC0331-2XE00-0AA0**

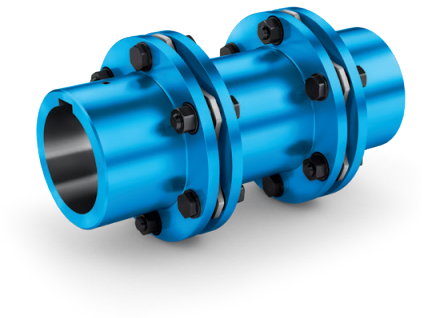
High-performance grease

Container	Content g	Article No.
Cartridge	300	**FFA:000000501027**

Sealing compound

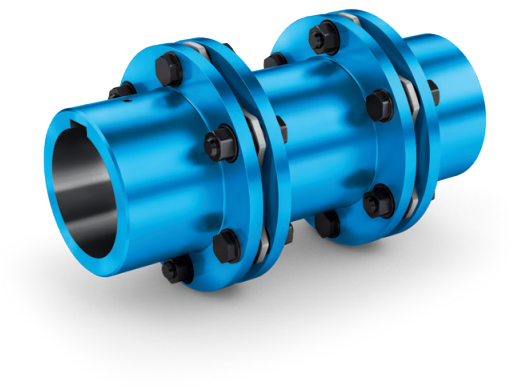
Container	Content ml	Article No.
Tube	60	**FFA:000001443780**

TORSIONALLY RIGID ALL-STEEL COUPLINGS N-ARPEX AND ARPEX SERIES



N-ARPEX
FLENDER

GENERAL



Coupling suitable for use in potentially explosive atmospheres.
Complies with the current ATEX Directive for:

- II 2G Ex h IIC T6 ... T2 Gb X
- II 2D Ex h IIIC T85 °C ... 250 °C Db X
- I M2 Ex h Mb X

Benefits

N-ARPEX couplings of the ARN-6/-8/-10 series are outstanding for their application-optimized construction. The NEN, BEB, MCECM, MFEFM series meet the requirement of **API 610**. Coupling type in accordance with **API 671** is also possible. For speeds of over 1,800 rpm the five-part version with pre-assembled intermediate unit is used.

A special catching device acts to secure the intermediate spacer in the event of plate breakage. Application of the N-ARPEX couplings in potentially explosive atmospheres in accordance with the current ATEX Directive is permitted.

GENERAL

Application

N-ARPEX couplings of the ARN-6/-8/-10 series are used wherever reliable torque transmission is called for, even in cases of often unavoidable shaft misalignment. They are universally applicable over a temperature range of from -50 °C (or even as low as -60 °C on request) up to +280 °C, are torsionally rigid, free of torsional backlash and enable quiet running at a constant angular velocity. They are wear-free and maintenance-free and, if correctly fitted, can be expected to have an unlimited service life.

Especial consideration is given to use in pump and compressor drives. Available for this are couplings with standardised intermediate spacer lengths from stock (see following tables).

Main areas of application for the ARN-6/-8-/10 series:

- Pumps
- Fans
- Compressors
- Generator and turbine drives
- Axial and radial blowers
- Paper-making machines and printing machines
- Mixers, Stirrers
- Extruders
- Lifting and traversing gears
- Marine drive
- Water screw drives

By the launch of the new FLENDER N-ARPEX all-steel multiple-disk couplings Flender is continuing the success story of the proven ARPEX coupling series.

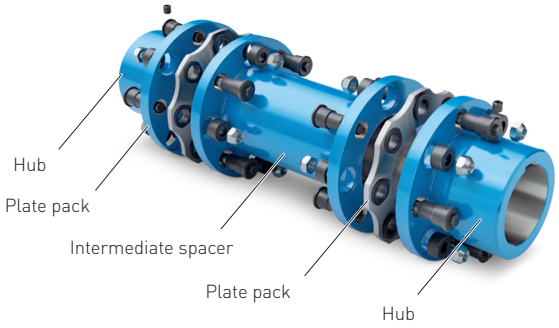
An optimised plate pack and a reworked component part design enable even higher torques and speeds to be transmitted.

In short, the new design of the plate packs, the closed flange geometry, the standard catching device of the intermediate spacer and FEM-optimised force distribution inside the all-steel multiple-disk coupling clearly show that the development has paid off.

Design and configurations

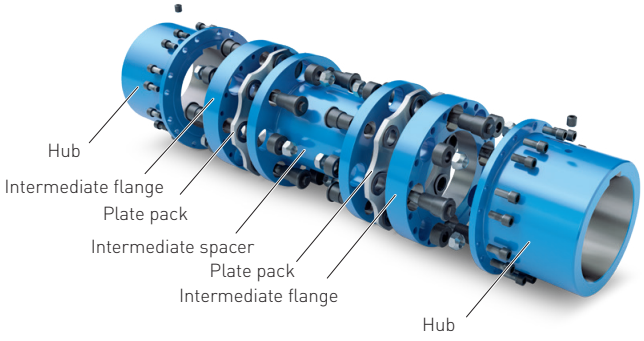
NEN

The design of an N-ARPEX type NEN is shown in the following illustration. The coupling comprises two hubs, an intermediate spacer and two plate packs that in the ARN-6 series are bolted together alternatingly with close-fitting bolts and in the ARN-8/-10 series by means of a Flender conical screw connection. The coupling is available in fixed lengths from stock. Other spacer lengths are manufactured to order. Hubs are designed with threaded pull-off holes.



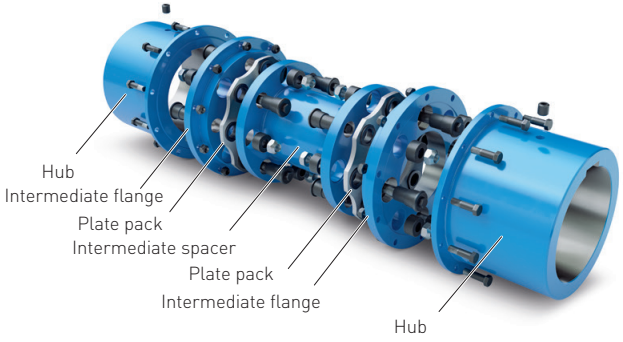
MCECM

The design of an N-ARPEX type MCECM is shown in the following illustration. The coupling comprises two hubs and a pre-assembled intermediate unit (CEC), where the plate packs are bolted together with an intermediate spacer and intermediate flanges at the factory. All that need be done at the construction site is to bolt the hubs with the intermediate flanges. The coupling is available in fixed lengths from stock. Other spacer lengths are manufactured to order. Hubs are designed with threaded pull-off holes.



MFEFM

The following illustration shows the N-ARPEX type MFEFM. It most differs from the type MCECM by the considerably increased bore capacity, for which reason this type is intended precisely for comparatively large shaft diameters. The coupling is available in fixed lengths from stock. Other spacer lengths are manufactured to order. Hubs are designed with threaded pull-off holes.



GENERAL

Variants of the N-ARPEX coupling, ARN-6/-8/-10 series

Type	Series ARN-6	ARN-8	ARN-10	Description
NEN	■	■	■	Variant with intermediate spacer machined on all sides, length variable
BEB	■	–	–	Variant with intermediate spacer machined on all sides
MCECM	■	■	–	Variant with preassembled intermediate unit and intermediate spacer machined on all sides, length variable
MFEFM	■	■	■	
NHN	■	■	■	Version with variable spacer tube – specially for greater shaft distances (up to 6,500 mm)
MCHCM	■	■	–	Version with pre-assembled intermediate unit and with variable spacer tube – specially for greater shaft distances (up to 6,500 mm)
MFHFM	■	■	■	

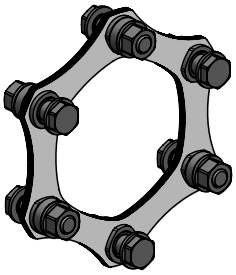
The coupling parts of the N-ARPEX ARN-6/-8/-10 series with the exception of the H spacers have been machined on all sides. The H spacers are delivered with unmachined, primed spacer tube.

Dimension sheets and 3D models of the standard types as well as application-related coupling types are available from the DTK selection module at **flender.com**.

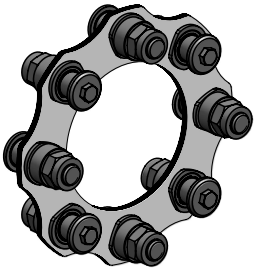
Plate-pack designs

The plate packs of the N-ARPEX ARN series are designed with hexagon, octagon and decagon plates, depending on the coupling size. The number of screw connections is indicated in the denomination of the ARN-6/-8/-10 series. Hexagon plates have 6 bolting points, octagon plates have 8 bolting points and decagon plates have 10 bolting points.

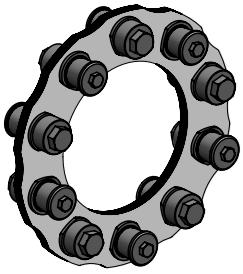
The hexagon plates, octagon plates and decagon plates up to size 631 are designed as ring plates. Sizes 694 to 988 are designed as segmented plates.



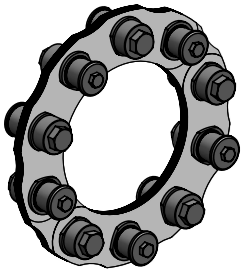
Size 86-6 to 343-6
(hexagon plates)



Size 219-8 to 631-8
(octagon plates)



Size 495-10 to 631-10
(decagon plates)

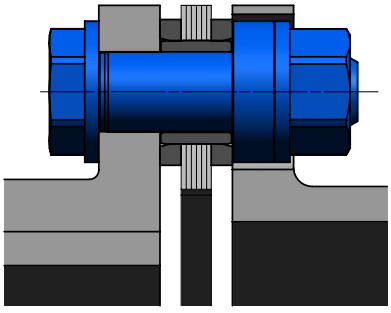


Size 694-10 to 988-10
(decagon plates/segment)

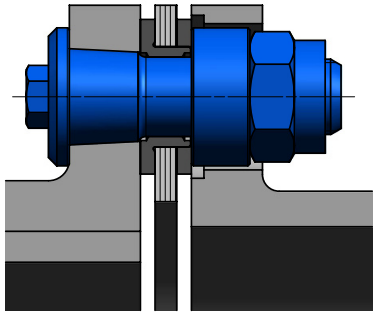
Plate pack screw connection

In the ARN-6 series the plate pack screw connection on N-ARPEX couplings is designed in the form of a close-fitting screw connection. In the ARN-8 and ARN-10 series a conical bolt connection by Flender is used.

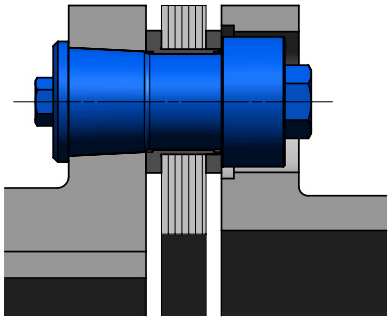
The advantage of this screw connection is the considerably simplified installation in the case of large screw connections.



Screw connection / ARN-6 series
Size 86-6 – 343-6



Screw connection / ARN-8 series
Size 219-8 to 354-8



Screw connection / ARN-8 /-10 series
Size 387-8 to 631-8 / Size 495-10 to 988-10

GENERAL

Technical specifications

Power ratings, NEN/NHN, BEB, MCECM/MCHCM and MFEFM/MFHFM series

Size DA mm	Type	Rated torque T_{KN} kNm	Maximum torque T_{Kmax} kNm	Overload torque T_{KOL} kNm	Fatigue torque T_{Kw0} $T_N = 0\%T_{KN}$ kNm	$T_{Kw} = T_{Kw0} \cdot (1 - T_N/T_{KN})$ 25%T_{KN} kNm	50%T_{KN} kNm	75%T_{KN} kNm	Maximum speed n_{Kmax} rpm	Maximum permitted shaft misalignment (The permissible radial misalignment ΔK_r depends on the total length of the coupling) ±ΔK_a mm	±ΔK_w	Torsional stiffness for a plate pack C_{Tdyn} MNm/rad
86-6	6-Bolt	0.35	0.7	0.875	0.175	0.131	0.088	0.044	24000	1.2	1.0 °	0.132
103-6		0.5	1	1.25	0.25	0.188	0.125	0.063	20000	1.4		0.206
122-6		0.95	1.9	2.375	0.475	0.356	0.238	0.119	17000	2		0.463
133-6		1.25	2.5	3.125	0.625	0.469	0.313	0.156	15000	2.2		0.608
159-6		2.1	4.2	5.25	1.05	0.788	0.525	0.263	13000	2.6		0.986
174-6		2.5	5	6.25	1.3	0.975	0.65	0.325	12000	3		1.19
184-6		3.8	7.6	9.5	1.9	1.425	0.95	0.475	11000	3.2		1.83
203-6		5	10	12.5	2.5	1.875	1.25	0.625	10000	3.4		2.59
217-6		6.2	12.4	15.5	3.1	2.325	1.55	0.775	9500	3.4		3.28
251-6		10.5	21	26.25	5.5	4.125	2.75	1.375	8000	4.1		4.71
268-6		13.8	27.6	34.5	6.9	5.175	3.45	1.725	7500	4.2		5.63
291-6		18.2	36.4	45.5	9.1	6.825	4.55	2.275	7000	4.6		8.27
318-6		23	46	57.5	11.5	8.625	5.75	2.875	6500	5		10.94
343-6		28	56	70	14	10.5	7	3.5	6000	5.3		12.15
219-8	8-Bolt	10	20	25	5	3.75	2.5	1.25	9500	1.7	0.4 °	6.31
241-8		15	30	37	7.5	5.625	3.75	1.875	8700	1.9		7.64
262-8		20	40	50	10	7.5	5	2.5	8000	2.1		9.09
285-8		27	54	67	13.5	10.125	6.75	3.375	7300	2.2		11.9
302-8		35	70	87	17.5	13.125	8.75	4.375	6900	2.4		16.2
321-8		43	86	107	21.5	16.125	10.75	5.375	6500	2.5		21.9
354-8		56	112	140	28	21	14	7	5900	3		29.1
387-8		72	144	180	36	27	18	9	5400	3.3		40
411-8		93	186	232	46.5	34.875	23.25	11.625	5100	3.4		46.9
447-8		122	244	305	61	45.75	30.5	15.25	4600	2.5		60.3
495-8		160	320	400	80	60	40	20	4200	3		76.9
546-8		212	424	530	106	79.5	53	26.5	3800	3.4		100
587-8		270	540	675	135	101.25	67.5	33.75	3500	3.6		116
631-8		350	700	875	175	131.25	87.5	43.75	3300	3.8		138
495-10	10-Bolt	200	350	450	80	60	40	20	4200	2	0.3 °	150
546-10		270	473	608	108	81	54	27	3800	2.3		194
587-10		352	616	792	140.8	105.6	70.4	35.2	3500	2.4		236
631-10		450	788	1013	180	135	90	45	3300	2.5		274
694-10		630	1103	1418	252	189	126	63	3000	2.7	0.2 °	405
734-10		760	1330	1710	304	228	152	76	2800	2.8		501
790-10		950	1663	2138	380	285	190	95	2600	3		632
887-10		1400	2450	3150	560	420	280	140	2300	3.5		858
988-10		2000	3500	4500	800	600	400	200	2100	3.9		1163

Notes

- The permitted shaft misalignments ΔK_a, ΔK_r and ΔK_w are maximum values and must not occur at the same time (see table on page **6/9**).
- The maximum permissible radial misalignment depends on the shaft distance S. It can be determined for the stated types by using the following formulas:
  NEN/NHN: $\Delta K_r = (S - S1) \cdot \tan(\Delta K_w)$
  BEB, MCECM/ MCHCM and MFEFM/ MFHFM: $\Delta K_r = (LZ + S1) \cdot \tan(\Delta K_w)$
- T_{Kmax} is permitted five times per hour.
- Length-related values like torsional stiffness, total weight and mass moment of inertia are listed in the tables on **pages 6/23 to 6/25**.
- The torsional stiffness of the plate packs relates to the nominal range of the coupling. For determination of torsional stiffness for a specific operating point outside the nominal range Flender must be consulted.

Permitted shaft misalignments, types NEN/NHN, BEB, MCECM/MCHCM and MFEFM/MFHFM

The permitted shaft misalignments ΔK_a, ΔK_r and ΔK_w are maximum values and must not occur at the same time. The specified axial misalignments apply to the complete coupling. The permissible angular misalignments have been specified per coupling joint. As all N-ARPEX types are designed to be double-jointed, there is a direct interrelation between radial and angular misalignment.

NEN/NHN: $\Delta K_r = (S - S1) \cdot \tan(\Delta K_w)$

BEB, MCECM/MCHCM and MFEFM/MFHFM: $\Delta K_r = (LZ + S1) \cdot \tan(\Delta K_w)$

To determine the permissible misalignment, values must, if necessary, be converted.

6

Size	Permitted angular misalignment $\pm\Delta K_w$										
	0.0 °	0.1 °	0.2 °	0.3 °	0.4 °	0.5 °	0.6 °	0.7 °	0.8 °	0.9 °	1.0 °
DA	Permitted axial misalignment $\pm\Delta K_a$ in mm										
86-6	1.2	1.1	1	0.8	0.7	0.6	0.5	0.4	0.2	0.1	0
103-6	1.4	1.3	1.1	1	0.8	0.7	0.6	0.4	0.3	0.1	0
122-6	2	1.8	1.6	1.4	1.2	1	0.8	0.6	0.4	0.2	0
133-6	2.2	2	1.8	1.5	1.3	1.1	0.9	0.7	0.4	0.2	0
159-6	2.6	2.3	2.1	1.8	1.6	1.3	1	0.8	0.5	0.3	0
174-6	3	2.7	2.4	2.1	1.8	1.5	1.2	0.9	0.6	0.3	0
184-6	3.2	2.9	2.6	2.2	1.9	1.6	1.3	1	0.6	0.3	0
203-6	3.4	3.1	2.7	2.4	2	1.7	1.4	1	0.7	0.3	0
217-6	3.4	3.1	2.7	2.4	2	1.7	1.4	1	0.7	0.3	0
251-6	4.1	3.7	3.3	2.9	2.5	2.1	1.6	1.2	0.8	0.4	0
268-6	4.2	3.8	3.4	2.9	2.5	2.1	1.7	1.3	0.8	0.4	0
291-6	4.6	4.1	3.7	3.2	2.8	2.3	1.8	1.4	0.9	0.5	0
318-6	5	4.5	4	3.5	3	2.5	2	1.5	1	0.5	0
343-6	5.3	4.8	4.2	3.7	3.2	2.7	2.1	1.6	1.1	0.5	0
219-8	1.7	1.28	0.85	0.43	0	-	-	-	-	-	-
241-8	1.9	1.43	0.95	0.48	0	-	-	-	-	-	-
262-8	2.1	1.58	1.05	0.53	0	-	-	-	-	-	-
285-8	2.2	1.65	1.1	0.55	0	-	-	-	-	-	-
302-8	2.4	1.8	1.2	0.6	0	-	-	-	-	-	-
321-8	2.5	1.88	1.25	0.63	0	-	-	-	-	-	-
354-8	3	2.25	1.5	0.75	0	-	-	-	-	-	-
387-8	3.3	2.48	1.65	0.83	0	-	-	-	-	-	-
411-8	3.4	2.55	1.7	0.85	0	-	-	-	-	-	-
447-8	2.5	1.88	1.25	0.63	0	-	-	-	-	-	-
495-8	3	2.25	1.5	0.75	0	-	-	-	-	-	-
546-8	3.4	2.55	1.7	0.85	0	-	-	-	-	-	-
587-8	3.6	2.7	1.8	0.9	0	-	-	-	-	-	-
631-8	3.8	2.85	1.9	0.95	0	-	-	-	-	-	-
495-10	2	1.33	0.67	0	-	-	-	-	-	-	-
546-10	2.3	1.53	0.77	0	-	-	-	-	-	-	-
587-10	2.4	1.6	0.8	0	-	-	-	-	-	-	-
631-10	2.5	1.67	0.83	0	-	-	-	-	-	-	-
694-10	2.7	1.35	0	-	-	-	-	-	-	-	-
734-10	2.8	1.4	0	-	-	-	-	-	-	-	-
790-10	3	1.5	0	-	-	-	-	-	-	-	-
887-10	3.5	1.75	0	-	-	-	-	-	-	-	-
988-10	3.9	1.95	0	-	-	-	-	-	-	-	-

GENERAL

Available standard dimensions for the shaft spacing S

Type NEN/NHN

Size DA	Shaft distance S NEN min.	Shaft distance S NHN min.	Preferred dimension V NEN	100	140	180	200	250	300	(88.9) 3.5"	(127) 5"	(177.8) 7"	(228.6) 9"	-
mm	mm	mm												
86-6	60	300	**100**	■										
103-6	60	300	**100**	■										
122-6	71	300	**100**	■										
133-6	73	300	**100**	■										
159-6	91	300	**100**	■										
174-6	92	300	**100**	■										
184-6	119	350	**140**		■									
203-6	120	350	**140**		■									
217-6	123	350	**140**		■									
251-6	149	350	**180**			■								
268-6	175	350	**180**			■								
291-6	177	350	**180**			■								
318-6	189	400	**200**				■							
343-6	190	400	**200**				■							
219-8	129	350	**140**		■									
241-8	135	350	**140**		■									
262-8	145	350	**180**			■								
285-8	162	350	**180**			■								
302-8	179	350	**180**			■								
321-8	196	400	**200**				■							
354-8	214	400	**250**					■						
387-8	246	400	**250**					■						
411-8	256	400	**300**						■					
447-8	270	400	**300**						■					
495-8	281	600	**300**						■					
546-8	299	600	**300**						■					
587-8	315	600	**320**											■
631-8	334	600	**340**											■
495-10	281	600	**300**						■					
546-10	299	600	**300**						■					
587-10	315	600	**320**											■
631-10	334	600	**340**											■
694-10	400	600	**400**											■
734-10	436	600	**440**											■
790-10	466	750	**470**											■
887-10	543	750	**550**											■
988-10	617	750	**620**											■

Type MCECM/MCHCM

Size DA	Shaft distance S MCECM min.	Shaft distance S MCHCM min.	Preferred dimension V MCECM	100	140	180	200	250	300	(127) 5"	(177.8) 7"	(228.6) 9"	-
mm	mm	mm											
86-6	100	340	**140**		■								
103-6	100	340	**140**		■								
122-6	111	340	**140**		■								
133-6	113	340	**140**		■								
159-6	131	340	**140**		■								
174-6	132	340	**140**		■								
184-6	179	410	**200**				■						
203-6	180	410	**200**				■						
217-6	183	410	**200**				■						
251-6	219	420	**250**					■					
268-6	245	420	**250**					■					
291-6	247	420	**250**					■					
318-6	289	500	**300**						■				
343-6	290	500	**300**						■				

■ Preferred dimensions ■ Available standard dimensions

Type MCECM/MCHCM

Size DA	Shaft distance S MCECM min.	Shaft distance S MCHCM min.	Preferred dimension V MCECM	100	140	180	200	250	300	(127) 5"	(177.8) 7"	(228.6) 9"	-
mm	mm	mm											
219-8	207	428	**218**										■
241-8	217	432	**222**										■
262-8	233	438	**268**										■
285-8	260	448	**278**										■
302-8	285	456	**286**										■
321-8	308	512	**312**										■
354-8	330	516	**366**										■
387-8	338	492	**342**										■
411-8	350	494	**394**										■
447-8	372	502	**402**										■
495-8	387	706	**406**										■
546-8	413	714	**414**										■
587-8	435	720	**440**										■
631-8	458	724	**464**										■

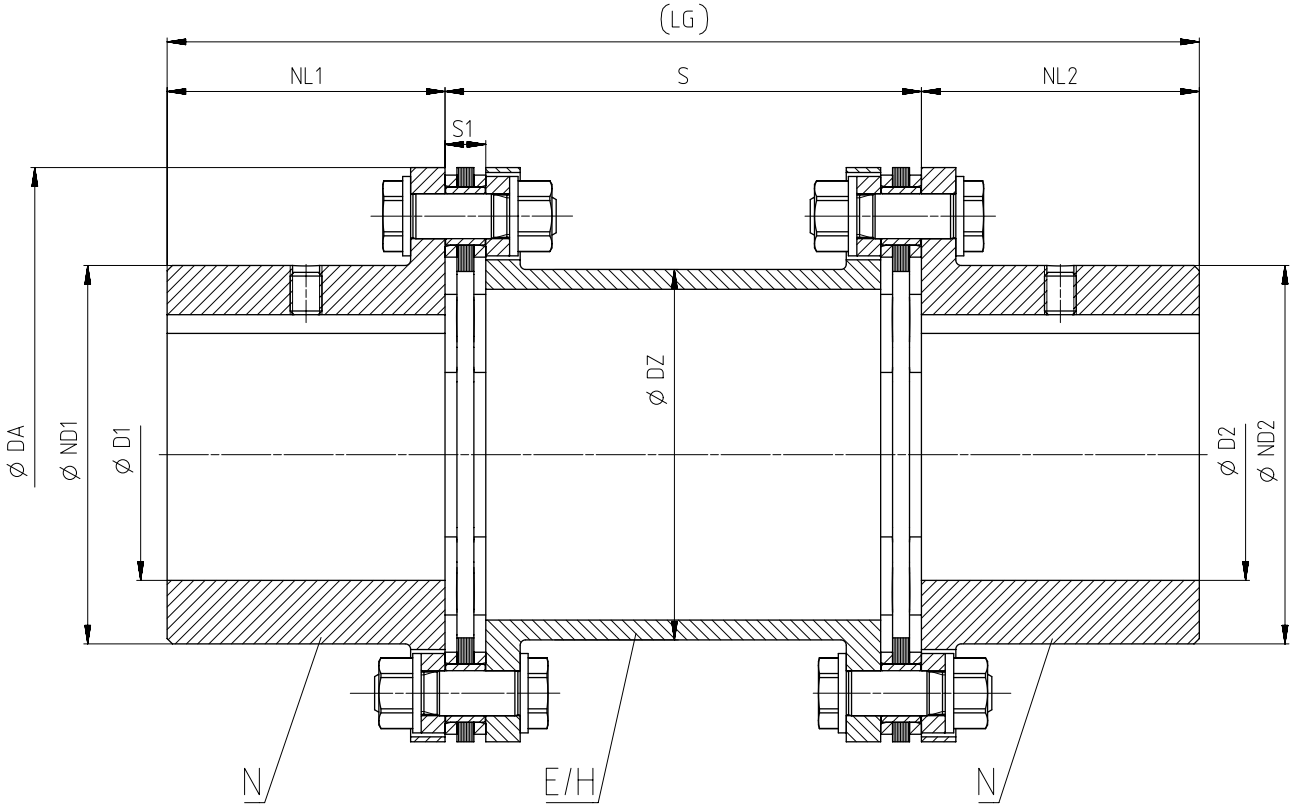
Type MFEFM/MFHFM

Size DA	Shaft distance S MFEFM min.	Shaft distance S MFHFM min.	Preferred dimension V MFEFM	100	140	180	200	250	300	(127) 5"	(177.8) 7"	(228.6) 9"	-
mm	mm	mm											
86-6	100	340	**140**		■								
103-6	100	340	**140**		■								
122-6	111	340	**140**		■								
133-6	113	340	**140**		■								
159-6	131	340	**140**		■								
174-6	132	340	**140**		■								
184-6	179	410	**200**				■						
203-6	180	410	**200**				■						
217-6	183	410	**200**				■						
251-6	219	420	**250**					■					
268-6	245	420	**250**					■					
291-6	297	470	**300**						■				
318-6	289	500	**300**						■				
343-6	290	500	**300**						■				
219-8	207	428	**218**										■
241-8	217	432	**222**										■
262-8	233	438	**268**										■
285-8	260	448	**278**										■
302-8	285	456	**286**										■
321-8	308	512	**312**										■
354-8	330	516	**366**										■
387-8	338	492	**342**										■
411-8	350	494	**394**										■
447-8	372	502	**402**										■
495-8	387	706	**406**										■
546-8	413	714	**414**										■
587-8	435	720	**440**										■
631-8	458	724	**464**										■
495-10	387	706	**406**										■
546-10	413	714	**414**										■
587-10	435	720	**440**										■
631-10	458	724	**464**										■
694-10	552	752	**552**										■
734-10	600	764	**604**										■
790-10	646	930	**650**										■
887-10	749	956	**756**										■
988-10	857	900	**860**										■

■ Preferred dimensions ■ Available standard dimensions

TYPE NEN/NHN

Torsionally rigid couplings of type NEN (NHN) with radially freely demountable intermediate spacer and catching device to secure the intermediate spacer in the event of plate breakage. Standard coupling type in accordance with **API 610**. Coupling type in accordance with **API 671** (up to n = 1800 rpm) possible.



Size DA	Rated torque T_{KN}	Maximum speed n_{Kmax}	Dimensions in mm D1/D2 Keyway DIN 6885-1	ND1/ ND2	NL1/ NL2	DZ	S1	Shaft distance S NEN min.	Shaft distance S NHN min.	Preferred dimension V NEN	LG	↗ Article no. [1] Intermediate spacer E spacer (NEN)	↗ Article no. [1] Intermediate spacer H spacer (NHN)	Weight m
mm	kNm	rpm	max.											kg
86-6	**0.35**	24000	**42**	56	45	45	8	60	300	100	190	**2LC0370-0AA**	**2LC0370-0AL**	1.9
103-6	**0.5**	20000	**55**	73	55	60	8.4	60	300	100	210	**2LC0370-1AA**	**2LC0370-1AL**	3
122-6	**0.95**	17000	**65**	85	65	73	8.8	71	300	100	230	**2LC0370-2AA**	**2LC0370-2AL**	5.1
133-6	**1.25**	15000	**75**	96	75	85	9.6	73	300	100	250	**2LC0370-3AA**	**2LC0370-3AL**	6.4
159-6	**2.1**	13000	**80**	104	80	97	11.6	91	300	100	260	**2LC0370-4AA**	**2LC0370-4AL**	9.6
174-6	**2.5**	12000	**90**	118	85	116	12.8	92	300	100	270	**2LC0370-5AA**	**2LC0370-5AL**	11.8
184-6	**3.8**	11000	**95**	124	90	123	14.6	119	350	140	320	**2LC0370-6AA**	**2LC0370-6AL**	16.4
203-6	**5**	10000	**100**	135	95	128	15	120	350	140	330	**2LC0370-7AA**	**2LC0370-7AL**	21.3
217-6	**6.2**	9500	**110**	143	105	140	15.4	123	350	140	350	**2LC0370-8AA**	**2LC0370-8AL**	24.4
251-6	**10.5**	8000	**120**	160	110	160	20.6	149	350	180	400	**2LC0371-0AA**	**2LC0371-0AL**	38
268-6	**13.8**	7500	**130**	170	130	166	22	175	350	180	440	**2LC0371-1AA**	**2LC0371-1AL**	48.6
291-6	**18.2**	7000	**145**	190	140	188	22.8	177	350	180	460	**2LC0371-2AA**	**2LC0371-2AL**	62.8
318-6	**23**	6500	**155**	205	150	197	23.2	189	400	200	500	**2LC0371-3AA**	**2LC0371-3AL**	83.9
343-6	**28**	6000	**170**	230	160	223	24	190	400	200	520	**2LC0371-4AA**	**2LC0371-4AL**	104

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

[2] The S shaft spacing standard dimensions available for each size can be found on **Page 6/10**.

↗ For online configuration on **flender.com**, click on the item no.

Size	Rated torque	Maximum speed	Dimensions in mm									↗ Article no. [1]		Weight
DA	T_{KN}	n_{Kmax}	D1/D2 Keyway DIN 6885-1	ND1/ ND2	NL1/ NL2	DZ	S1	Shaft distance S		Preferred dimension V	LG	Intermediate spacer		*m*
								NEN	NHN	NEN		E spacer	H spacer	
mm	kNm	rpm	max.					min.	min.			(NEN)	(NHN)	kg
219-8	**10**	9500	**100**	137	115	124	12.2	129	350	140	370	**2LC0380-0AA**	**2LC0380-0AL**	31.9
241-8	**15**	8700	**110**	150	127	135	12.6	135	350	140	394	**2LC0380-1AA**	**2LC0380-1AL**	41.3
262-8	**20**	8000	**120**	163	138	148	13.8	145	350	180	456	**2LC0380-2AA**	**2LC0380-2AL**	53.8
285-8	**27**	7300	**130**	177	150	162	15.2	162	350	180	480	**2LC0380-3AA**	**2LC0380-3AL**	70.8
302-8	**35**	6900	**140**	192	161	174	17.2	179	350	180	502	**2LC0380-4AA**	**2LC0380-4AL**	89.4
321-8	**43**	6500	**150**	206	173	189	21	196	400	200	546	**2LC0380-5AA**	**2LC0380-5AL**	109
354-8	**56**	5900	**170**	232	196	216	23.6	214	400	250	642	**2LC0380-6AA**	**2LC0380-6AL**	149
387-8	**72**	5400	**190**	258	219	240	26	246	400	250	688	**2LC0380-7AA**	**2LC0380-7AL**	193
411-8	**93**	5100	**200**	272	230	250	29.6	256	400	300	760	**2LC0380-8AA**	**2LC0380-8AL**	236
447-8	**122**	4600	**220**	299	253	275	32.6	270	400	300	806	**2LC0381-0AA**	**2LC0381-0AL**	299
495-8	**160**	4200	**250**	340	288	312	33.8	281	600	300	876	**2LC0381-1AA**	**2LC0381-1AL**	402
546-8	**212**	3800	**280**	381	322	351	40	299	600	300	944	**2LC0381-2AA**	**2LC0381-2AL**	547
587-8	**270**	3500	**300**	408	345	363	45	315	600	320	1010	**2LC0381-3AA**	**2LC0381-3AL**	690
631-8	**350**	3300	**320**	435	368	399	48.8	334	600	340	1076	**2LC0381-4AA**	**2LC0381-4AL**	835
495-10	**200**	4200	**250**	340	288	312	33.8	281	600	300	876	**2LC0390-0AA**	**2LC0390-0AL**	402
546-10	**270**	3800	**280**	381	322	351	40	299	600	300	944	**2LC0390-1AA**	**2LC0390-1AL**	547
587-10	**352**	3500	**300**	408	345	363	45	315	600	320	1010	**2LC0390-2AA**	**2LC0390-2AL**	690
631-10	**450**	3300	**320**	435	368	399	48.8	334	600	340	1076	**2LC0390-3AA**	**2LC0390-3AL**	834
694-10	**630**	3000	**350**	485	403	435	58	400	600	400	1206	**2LC0390-4AA**	**2LC0390-4AL**	1213
734-10	**760**	2800	**370**	512	426	459	63	436	600	440	1292	**2LC0390-5AA**	**2LC0390-5AL**	1463
790-10	**950**	2600	**400**	555	460	496	66	466	750	470	1390	**2LC0390-6AA**	**2LC0390-6AL**	1837
887-10	**1400**	2300	**450**	627	518	546	78	543	750	550	1586	**2LC0390-7AA**	**2LC0390-7AL**	2713
988-10	**2000**	2100	**500**	696	575	596	86	617	750	620	1770	**2LC0390-8AA**	**2LC0390-8AL**	3868

Configurable variants [1]

• ØD1	Without finished bore With finished bore	
• ØD2	Without finished bore With finished bore	
• Shaft distance S [2]	Metric (mm): Imperial (inches): Any required (mm)	100 mm, 140 mm, 180 mm, 200 mm, 250 mm, 300 mm 3.5" (88.9 mm), 5" (127 mm), 7" (177.8 mm), 9" (228.6 mm)

Notes

- Spacer sleeves (type NEN) designed as electrical cable sleeves are API compliant.
- Hubs are designed with threaded pull-off holes. Special lengths available upon request.
- The total lengths and the weights apply to the whole coupling of type NEN with maximum bores D1/D2 and the preferred shaft distance S = V.
- In cases with large shaft distances S the intermediate spacer can be designed as an H-spacer. The tube diameters here may slightly diverge. More precise coupling data in cases of variable shaft distances and E- / H-spacers are given on **pages 6/23 to 6/25**.
- E-spacers in preferred lengths up to size 343-6 are available from stock.

Ordering example

- N-ARPEX ARN-6 NEN coupling, size 217-6, with shaft distance S = 140 mm
- Bore ØD1 50H7 mm, keyway to DIN 6885-1 P9 and set screw **(L1C)**
- Bore ØD2 60H7 mm, keyway to DIN 6885-1 P9 and set screw **(M1E)**

Article no.: 2LC0370-8AA99-0AB0-Z L1C+M1E

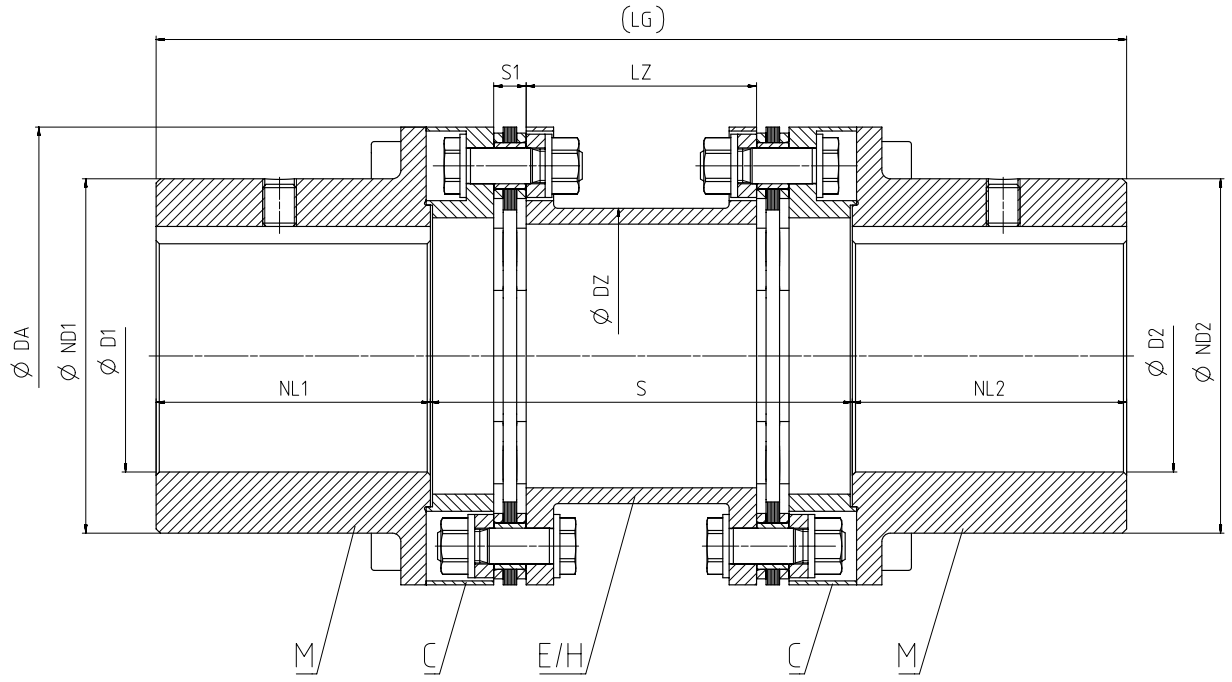
[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

[2] The S shaft spacing standard dimensions available for each size can be found on **Page 6/10**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE MCECM/MCHCM

Torsionally rigid couplings of type MCECM (MCHCM) with radially freely demountable pre-assembled intermediate unit and catching device to secure the intermediate spacer in the event of plate breakage. Standard coupling type in accordance with **API 610**. Coupling type in accordance with **API 671** possible.



Size DA	Rated torque T_{KN}	Maximum speed n_{Kmax}	Dimensions in mm										↗ Article no. [1]		Weight
			D1/D2 Keyway DIN 6885-1	ND1/ ND2	NL1/ NL2	DZ	LZ	S1	Shaft distance S		Preferred dimension V	LG	Intermediate spacer		*m*
									MCECM	MCHCM	MCECM		E spacer (MCECM)	H spacer (MCHCM)	
mm	kNm	rpm	max.						min.	min.					kg
86-6	**0.35**	24000	**42**	62	42	45	84	8	100	340	140	224	**2LC0370-0AC**	**2LC0370-0AM**	3.1
103-6	**0.5**	20000	**55**	72	55	60	83.2	8.4	100	340	140	250	**2LC0370-1AC**	**2LC0370-1AM**	4.7
122-6	**0.95**	17000	**70**	91	70	73	82.4	8.8	111	340	140	280	**2LC0370-2AC**	**2LC0370-2AM**	7.7
133-6	**1.25**	15000	**80**	103	80	85	80.8	9.6	113	340	140	300	**2LC0370-3AC**	**2LC0370-3AM**	9.6
159-6	**2.1**	13000	**95**	123	95	97	76.8	11.6	131	340	140	330	**2LC0370-4AC**	**2LC0370-4AM**	15.9
174-6	**2.5**	12000	**105**	136	105	116	74.4	12.8	132	340	140	350	**2LC0370-5AC**	**2LC0370-5AM**	19.3

Configurable variants [1]

• ØD1	Without finished bore With finished bore	
• ØD2	Without finished bore With finished bore	
• Shaft distance S [2]	Metric (mm): Imperial (inches): Any required (mm)	100 mm, 140 mm, 180 mm, 200 mm, 250 mm, 300 mm 5" (127 mm), 7" (177.8 mm), 9" (228.6 mm)

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

[2] The S shaft spacing standard dimensions available for each size can be found on **Page 6/10**.

↗ For online configuration on **flender.com**, click on the item no.

Size DA	Rated torque T_{KN}	Maximum speed n_{Kmax}	Dimensions in mm										↗ Article no. [1]		Weight
			D1/D2 Keyway DIN 6885-1	ND1/ ND2	NL1/ NL2	DZ	LZ	S1	Shaft distance S		Preferred dimension V	LG	Intermediate spacer		m
									MCECM	MCHCM	MCECM		E spacer (MCECM)	H spacer (MCHCM)	
mm	kNm	rpm	max.						min.	min.					kg
184-6	**3.8**	11000	**110**	142	110	123	110.8	14.6	179	410	200	420	**2LC0370-6AC**	**2LC0370-6AM**	26.6
203-6	**5**	10000	**115**	150	115	128	110	15	180	410	200	430	**2LC0370-7AC**	**2LC0370-7AM**	33.7
217-6	**6.2**	9500	**130**	168	130	140	109.2	15.4	183	410	200	460	**2LC0370-8AC**	**2LC0370-8AM**	40.3
251-6	**10.5**	8000	**150**	193	150	160	138.8	20.6	219	420	250	550	**2LC0371-0AC**	**2LC0371-0AM**	64.4
268-6	**13.8**	7500	**160**	206	160	166	136	22	245	420	250	570	**2LC0371-1AC**	**2LC0371-1AM**	78.8
291-6	**18.2**	7000	**170**	221	170	188	134.4	22.8	247	420	250	590	**2LC0371-2AC**	**2LC0371-2AM**	98.3
318-6	**23**	6500	**190**	245	190	197	153.6	23.2	289	500	300	680	**2LC0371-3AC**	**2LC0371-3AM**	139
343-6	**28**	6000	**205**	267	205	223	152	24	290	500	300	710	**2LC0371-4AC**	**2LC0371-4AM**	168
219-8	**10**	9500	**140**	179	140	124	115.6	12.2	207	428	218	498	**2LC0380-0AC**	**2LC0380-0AM**	50.3
241-8	**15**	8700	**155**	201	155	135	114.8	12.6	217	432	222	532	**2LC0380-1AC**	**2LC0380-1AM**	68.2
262-8	**20**	8000	**165**	218	165	148	152.4	13.8	233	438	268	598	**2LC0380-2AC**	**2LC0380-2AM**	89
285-8	**27**	7300	**185**	239	185	162	149.6	15.2	260	448	278	648	**2LC0380-3AC**	**2LC0380-3AM**	115
302-8	**35**	6900	**190**	250	190	174	145.6	17.2	285	456	286	666	**2LC0380-4AC**	**2LC0380-4AM**	140
321-8	**43**	6500	**205**	269	205	189	158	21	308	512	312	722	**2LC0380-5AC**	**2LC0380-5AM**	171
354-8	**56**	5900	**230**	296	230	216	202.8	23.6	330	516	366	826	**2LC0380-6AC**	**2LC0380-6AM**	220
387-8	**72**	5400	**255**	329	255	240	198	26	338	492	342	852	**2LC0380-7AC**	**2LC0380-7AM**	275
411-8	**93**	5100	**270**	347	270	250	240.8	29.6	350	494	394	934	**2LC0380-8AC**	**2LC0380-8AM**	332
447-8	**122**	4600	**290**	375	290	275	234.8	32.6	372	502	402	982	**2LC0381-0AC**	**2LC0381-0AM**	419
495-8	**160**	4200	**325**	423	325	312	232.4	33.8	387	706	406	1056	**2LC0381-1AC**	**2LC0381-1AM**	561
546-8	**212**	3800	**360**	468	360	351	220	40	413	714	414	1134	**2LC0381-2AC**	**2LC0381-2AM**	752
587-8	**270**	3500	**380**	499	380	363	230	45	435	720	440	1200	**2LC0381-3AC**	**2LC0381-3AM**	945
631-8	**350**	3300	**410**	535	410	399	242.4	48.8	458	724	464	1284	**2LC0381-4AC**	**2LC0381-4AM**	1146

Configurable variants [1]

• ØD1	Without finished bore With finished bore	
• ØD2	Without finished bore With finished bore	
• Shaft distance S [2]	Metric (mm): Imperial (inches): Any required (mm)	100 mm, 140 mm, 180 mm, 200 mm, 250 mm, 300 mm 5" (127 mm), 7" (177.8 mm), 9" (228.6 mm)

Notes

- Spacer sleeves (type MCECM) designed as electrical cable sleeves are API compliant.
- Hubs are designed with threaded pull-off holes. Special lengths available upon request.
- The total lengths, the spacer lenghts and the weights apply to the whole coupling of type MCECM with maximum bores D1/D2 and the preferred shaft distance S = V.
- In cases with large shaft distances S the intermediate spacer can be designed as an H-spacer. The tube diameters here may slightly diverge. More precise coupling data in cases of variable shaft distances and E- / H-spacers are given on **pages 6/23 to 6/25**.
- Plate packs in the CEC/CHC intermediate unit assembled at the factory.
- E-spacers in preferred lengths up to size 343-6 are available from stock.

Ordering example

- N-ARPEX ARN-6 MCECM coupling, size 217-6, with shaft distance S = 200 mm
- Bore ØD1 60H7 mm, keyway to DIN 6885-1 P9 and set screw **(L1G)**
- Bore ØD2 70H7 mm, keyway to DIN 6885-1 P9 and set screw **(M1G)**

Article no.: 2LC0370-8AC99-0AD0-Z L1G+M1G

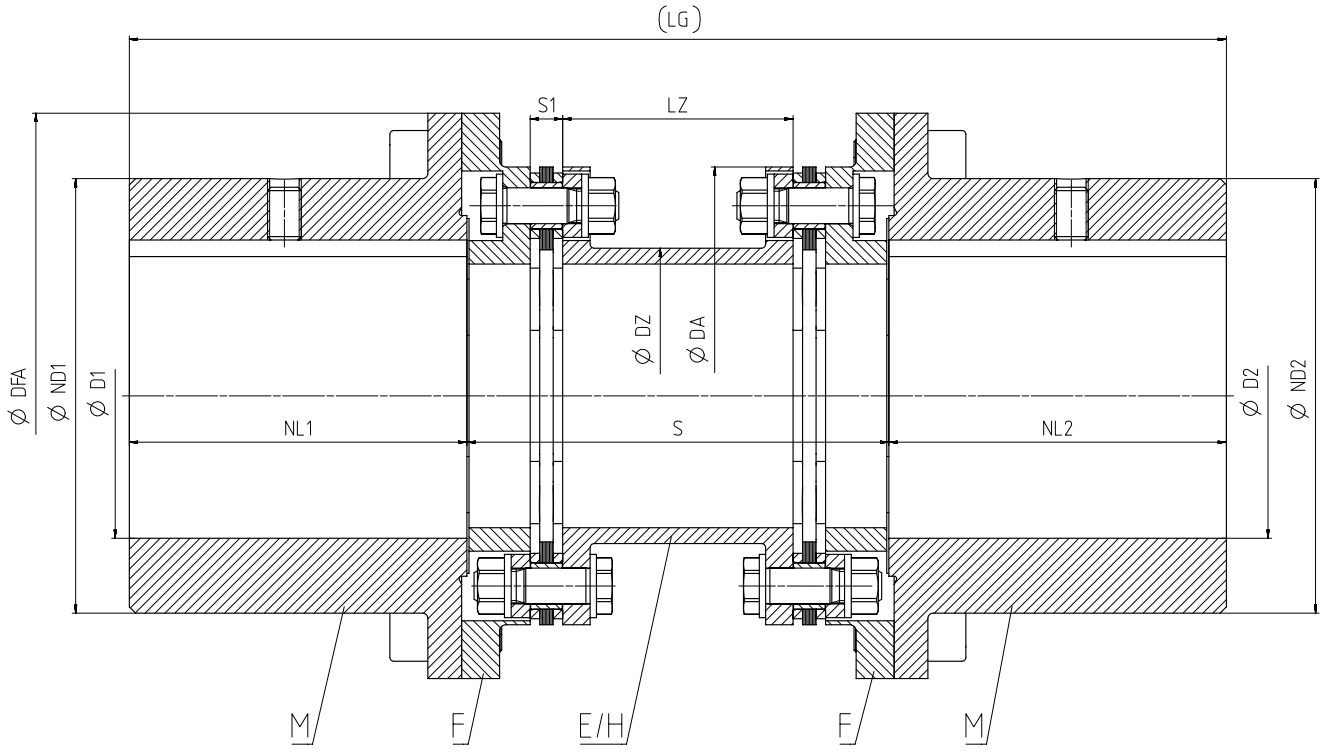
[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

[2] The S shaft spacing standard dimensions available for each size can be found on **Page 6/10**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE MFEFM/MFHFM

Torsionally rigid type MFEFM (MFHFM) couplings with enlarged bore capacity and radially freely demountable intermediate unit and catching device to secure the intermediate spacer in the event of plate breakage. Standard coupling type in accordance with **API 610**. Coupling type in accordance with **API 671** possible.



Size DA	Rated torque T_{KN}	Maximum speed n_{Kmax}	Dimensions in mm							Shaft distance S		Preferred dimension V	LG	↗ Article no. [1] Intermediate spacer		Weight m
			DFA	D1/D2 Keyway DIN 6885-1	ND1/ ND2	NL1/ NL2	DZ	LZ	S1	MFEFM min.	MFHFM min.	MFEFM		E spacer (MFEFM)	H spacer (MFHFM)	
mm	kNm	rpm		max.												kg
86-6	**0.35**	17000	122	**70**	91	70	45	84	8	100	340	140	280	**2LC0370-0BA**	**2LC0370-0BC**	6
103-6	**0.5**	15000	133	**80**	103	80	60	83.2	8.4	100	340	140	300	**2LC0370-1BA**	**2LC0370-1BC**	8
122-6	**0.95**	13000	159	**95**	123	95	73	82.4	8.8	111	340	140	330	**2LC0370-2BA**	**2LC0370-2BC**	13.6
133-6	**1.25**	12000	174	**105**	136	105	85	80.8	9.6	113	340	140	350	**2LC0370-3BA**	**2LC0370-3BC**	17.1
159-6	**2.1**	10000	203	**115**	150	115	97	76.8	11.6	131	340	140	370	**2LC0370-4BA**	**2LC0370-4BC**	22.9
174-6	**2.5**	9500	217	**130**	168	130	116	74.4	12.8	132	340	140	400	**2LC0370-5BA**	**2LC0370-5BC**	26.8
184-6	**3.8**	8000	251	**150**	193	150	123	110.8	14.6	179	410	200	500	**2LC0370-6BA**	**2LC0370-6BC**	40.1
203-6	**5**	8000	251	**150**	193	150	128	110	15	180	410	200	500	**2LC0370-7BA**	**2LC0370-7BC**	52.8
217-6	**6.2**	7500	268	**160**	206	160	140	109.2	15.4	183	410	200	520	**2LC0370-8BA**	**2LC0370-8BC**	63.4
251-6	**10.5**	6500	318	**190**	245	190	160	138.8	20.6	219	420	250	630	**2LC0371-0BA**	**2LC0371-0BC**	109

Configurable variants [1]

• ØD1	Without finished bore With finished bore	
• ØD2	Without finished bore With finished bore	
• Shaft distance S [2]	Metric (mm): Imperial (inches): Any required (mm)	100 mm, 140 mm, 180 mm, 200 mm, 250 mm, 300 mm 5" (127 mm), 7" (177.8 mm), 9" (228.6 mm)

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

[2] The S shaft spacing standard dimensions available for each size can be found on **Page 6/10**.

↗ For online configuration on **flender.com**, click on the item no.

Size	Rated torque	Maxi-mum speed	Dimensions in mm											↗ Article no. [1]		Weight
DA	T_{KN}	n_{Kmax}	DFA	D1/D2 Keyway DIN 6885-1	ND1/ ND2	NL1/ NL2	DZ	LZ	S1	Shaft distance S		Preferred dimension V	LG	Intermediate spacer		m
										MFEFM min.	MFHFM min.	MFEFM		E spacer (MFEFM)	H spacer (MFHFM)	
mm	kNm	rpm		max.												kg
268-6	**13.8**	6000	343	**205**	267	205	166	136	22	245	420	250	660	**2LC0371-1BA**	**2LC0371-1BC**	136
291-6	**18.2**	5500	356	**230**	302	230	188	134.4	22.8	297	470	300	760	**2LC0371-2BA**	**2LC0371-2BC**	190
318-6	**23**	5500	375	**245**	321	245	197	153.6	23.2	289	500	300	790	**2LC0371-3BA**	**2LC0371-3BC**	221
343-6	**28**	4500	424	**270**	354	270	223	152	24	290	500	300	840	**2LC0371-4BA**	**2LC0371-4BC**	284
219-8	**10**	7800	267	**165**	219	165	124	115.6	12.2	207	428	218	548	**2LC0380-0BA**	**2LC0380-0BC**	77.7
241-8	**15**	7200	289	**185**	241	185	135	114.8	12.6	217	432	222	592	**2LC0380-1BA**	**2LC0380-1BC**	98.6
262-8	**20**	6600	314	**200**	262	200	148	152.4	13.8	233	438	268	668	**2LC0380-2BA**	**2LC0380-2BC**	131
285-8	**27**	6100	339	**215**	285	215	162	149.6	15.2	260	448	278	708	**2LC0380-3BA**	**2LC0380-3BC**	169
302-8	**35**	5900	356	**230**	302	230	174	145.6	17.2	285	456	286	746	**2LC0380-4BA**	**2LC0380-4BC**	200
321-8	**43**	5600	375	**245**	321	245	189	158	21	308	512	312	802	**2LC0380-5BA**	**2LC0380-5BC**	237
354-8	**56**	4900	424	**270**	354	270	216	202.8	23.6	330	516	366	906	**2LC0380-6BA**	**2LC0380-6BC**	315
387-8	**72**	4500	457	**295**	387	295	240	198	26	338	492	342	932	**2LC0380-7BA**	**2LC0380-7BC**	384
411-8	**93**	4300	481	**315**	411	315	250	240.8	29.6	350	494	394	1024	**2LC0380-8BA**	**2LC0380-8BC**	460
447-8	**122**	4000	519	**340**	447	340	275	234.8	32.6	372	502	402	1082	**2LC0381-0BA**	**2LC0381-0BC**	586
495-8	**160**	3700	567	**380**	495	380	312	232.4	33.8	387	706	406	1166	**2LC0381-1BA**	**2LC0381-1BC**	758
546-8	**212**	3300	624	**420**	546	420	351	220	40	413	714	414	1254	**2LC0381-2BA**	**2LC0381-2BC**	1011
587-8	**270**	3100	669	**450**	587	450	363	230	45	435	720	440	1340	**2LC0381-3BA**	**2LC0381-3BC**	1270
631-8	**350**	2900	719	**480**	631	480	399	242.4	48.8	458	724	464	1424	**2LC0381-4BA**	**2LC0381-4BC**	1581
495-10	**200**	3700	567	**380**	495	380	312	232.4	33.8	387	706	406	1166	**2LC0390-0BA**	**2LC0390-0BC**	757
546-10	**270**	3300	624	**420**	546	420	351	220	40	413	714	414	1254	**2LC0390-1BA**	**2LC0390-1BC**	1010
587-10	**350**	3100	669	**450**	587	450	363	230	45	435	720	440	1340	**2LC0390-2BA**	**2LC0390-2BC**	1268
631-10	**450**	2900	719	**480**	631	480	399	242.4	48.8	458	724	464	1424	**2LC0390-3BA**	**2LC0390-3BC**	1578
694-10	**630**	2600	790	**530**	694	530	435	284	58	552	752	552	1612	**2LC0390-4BA**	**2LC0390-4BC**	2165
734-10	**750**	2500	830	**560**	734	560	459	314	63	600	764	604	1724	**2LC0390-5BA**	**2LC0390-5BC**	2586
790-10	**950**	2300	896	**600**	790	600	496	338	66	646	930	650	1850	**2LC0390-6BA**	**2LC0390-6BC**	3263
887-10	**1400**	2000	1013	**680**	887	680	546	394	78	749	956	756	2116	**2LC0390-7BA**	**2LC0390-7BC**	4716
988-10	**2000**	1800	1114	**760**	988	760	596	448	86	857	900	860	2380	**2LC0390-8BA**	**2LC0390-8BC**	6574

Configurable variants [1]

- ØD1 — Without finished bore / With finished bore
- ØD2 — Without finished bore / With finished bore
- Shaft distance S [2] — Metric (mm): 100 mm, 140 mm, 180 mm, 200 mm, 250 mm, 300 mm; Imperial (inches): 5" (127 mm), 7" (177.8 mm), 9" (228.6 mm); Any required (mm)

Notes

- Spacer sleeves (type MFEFM) designed as electrical cable sleeves are API compliant.
- Hubs are designed with threaded pull-off holes. Special lengths available upon request.
- The total lengths, the spacer lenghts and the weights apply to the whole coupling of type MFEFM with maximum bores D1/D2 and the preferred shaft distance S = V.
- In cases with large shaft distances S the intermediate spacer can be designed as an H-spacer. The tube diameters here may slightly diverge. More precise coupling data in cases of variable shaft distances and E- / H-spacers are given on **pages 6/23 to 6/25**.
- Plate packs in the FEF/FHF intermediate unit assembled at the factory.
- E-spacers in preferred lengths up to size 343-6 are available from stock.

Ordering example

- N-ARPEX ARN-6 MFEFM coupling, size 217-6, with shaft distance S = 200 mm
- Bore ØD1 80H7 mm, keyway to DIN 6885-1 P9 and set screw **(L1J)**
- Bore ØD2 90H7 mm, keyway to DIN 6885-1 P9 and set screw **(M1L)**

Article no.: 2LC0370-8BA99-0AD0-Z L1J+M1L

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

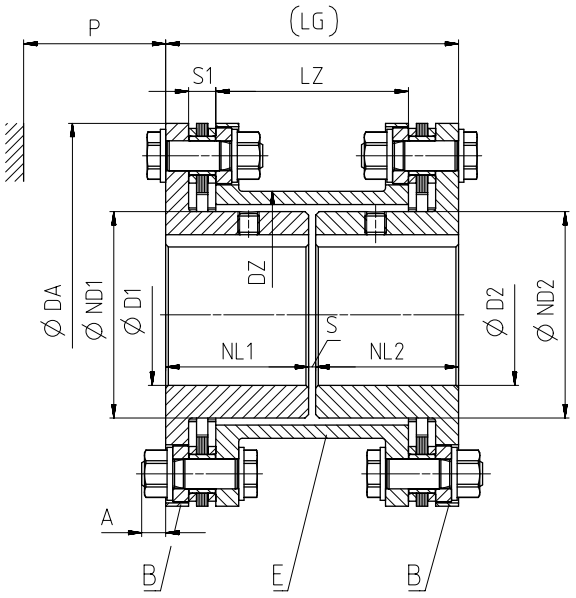
[2] The S shaft spacing standard dimensions available for each size can be found on **Page 6/10**.

↗ For online configuration on **flender.com**, click on the item no.

TYPE BEB

Torsionally rigid type BEB couplings with smallest possible shaft distance.

Type BEB cannot be freely demounted radially without shifting the units.



Size DA mm	Rated torque T_{KN} kNm	Maximum speed n_{Kmax} rpm	Dimensions in mm D1/D2 Keyway DIN 6885-1 max.	ND1/ ND2	NL1/ NL2	DZ	LZ	S1	Shaft distance S	A	P	LG	↗ Article no. [1]	Weight m kg
86-6	**350**	24000	**22**	35	30	45	44	8	12	8	32	72	**SLC0370-0AB**	1.5
103-6	**500**	20000	**38**	50	34	60	43.2	8.4	4	8	32	72	**SLC0370-1AB**	2.0
122-6	**950**	17000	**48**	62	56	73	82.4	8.8	4	8	38	116	**2LC0370-2AB**	4.2
133-6	**1250**	15000	**55**	72	56	85	80.8	9.6	4	7	38	116	**2LC0370-3AB**	5.1
159-6	**2100**	13000	**65**	84	57	97	76.8	11.6	6	9	48	120	**2LC0370-4AB**	8.1
174-6	**2500**	12000	**75**	102	77	116	114.4	12.8	4	10	48	158	**2LC0370-5AB**	11.4
184-6	**3800**	11000	**80**	106	80	123	110.8	14.6	6	15	64	166	**2LC0370-6AB**	15.2
203-6	**5000**	10000	**85**	111	80	128	110	15	6	14	64	166	**2LC0370-7AB**	18.2
217-6	**6200**	9500	**90**	124	81	140	109.2	15.4	4	14	66	166	**2LC0370-8AB**	22.0
251-6	**10500**	8000	**100**	137	102	160	138.8	20.6	6	15	77	210	**2LC0371-0AB**	35.6
268-6	**13800**	7500	**108**	143	105	166	136	22	12	11	89	222	**2LC0371-1AB**	44.8
291-6	**18200**	7000	**120**	162	106	188	134.4	22.8	10	11	89	222	**2LC0371-2AB**	56.7
318-6	**23000**	6500	**130**	164	118	197	153.6	23.2	6	20	100	242	**2LC0371-3AB**	70.2
343-6	**28000**	6000	**150**	186	143	223	202	24	6	19	100	292	**2LC0371-4AB**	87.7

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

Notes

- Hubs are designed with threaded pull-off holes. Special lengths available upon request.
- The total lengths and the weights apply to the whole coupling with maximum bores D1/D2 and the preferred shaft distance S = V.

Ordering example

- N-ARPEX ARN-6 BEB coupling, size 217-6, with shaft distance S = 4 mm
- Bore ØD1 50H7 mm, keyway to DIN 6885-1 and set screw **(L1C)**
- Bore ØD2 60H7 mm, keyway to DIN 6885-1 and set screw **(M1E)**

Article no.: 2LC0370-8AB99-0AA0-Z L1C+M1E

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

FURTHER HUBS

Clamping hubs, type 124 and 125

Type 124 and 125 standard clamping hubs can be combined with any spacer of the ARN-6 series.

It should be noted that the clamping hub can be used only as an "N hub" (hub core outside).

Function

N-ARPEX clamping hubs transmit torque with the aid of a flexible press fit. By pulling the clamping ring on by means of the tightening screws the necessary surface pressure is applied in the "shaft/hub" contact area. After the tightening operation the clamping ring lies up against the clamping hub.

Transmissible torque

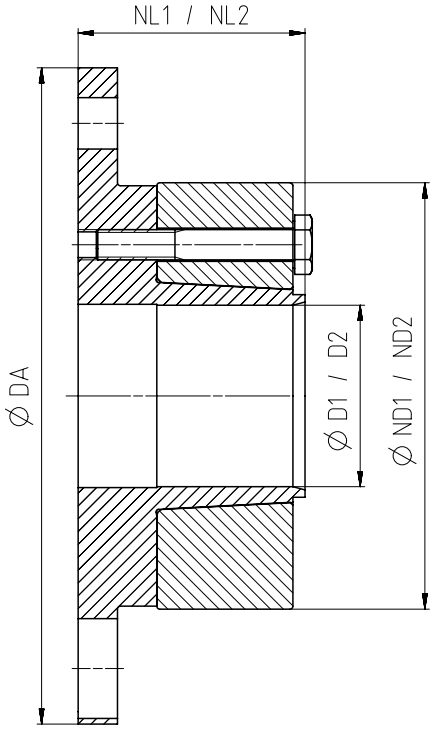
The clamping connections are designed to enable the specified maximum torques to be transmitted.

These maximum torques must not be exceeded, even in the case of overload.

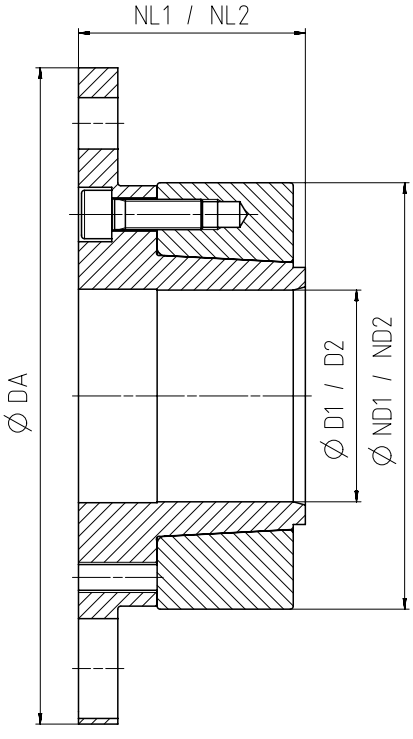
Fitting clearance and surface roughness

The transmissible torques allow for the maximum fitting clearance for a quality IT6 bore and shaft and maximum surface roughness. For other shaft tolerances reduced torques or other bore tolerances must be used. The surface roughness of the shaft should be ⩽ Ra = 1.6 µm.

The fit pairing G6/h6 should be used wherever possible. Divergent shaft tolerances must be specified when ordering.
The article no. for the specification must end in "**-Z**" and include the code "**Y26**" for the fit.



Type 124 (standard type)



Type 125

FURTHER HUBS

Clamping hubs, type 124 and 125

Size DA mm	Clamping hub Type	Dimensions in mm D1/D2 min.	D1/D2 max.	ND1/ND2	NL1/NL2	Mass moment of inertia J kgm²	↗ Article no. [1]	Weight m kg
86-6	124	19	**25**	50	35	0.0003	**2LC0370-0LM90-0AA0**	0.5
	125						**2LC0370-0LN90-0AA0**	
103-6	124	25	**38**	67	40	0.0009	**2LC0370-1LM90-0AA0**	0.9
	125						**2LC0370-1LN90-0AA0**	
122-6	124	30	**42**	77	45	0.0021	**2LC0370-2LM90-0AA0**	1.5
	125						**2LC0370-2LN90-0AA0**	
133-6	124	32	**50**	88	50	0.0034	**2LC0370-3LM90-0AA0**	2
	125						**2LC0370-3LN90-0AA0**	
159-6	124	35	**60**	105	55	0.0077	**2LC0370-4LM90-0AA0**	3.2
	125						**2LC0370-4LN90-0AA0**	
174-6	124	40	**70**	120	65	0.0135	**2LC0370-5LM90-0AA0**	4.6
	125						**2LC0370-5LN90-0AA0**	
184-6	124	45	**70**	126	70	0.0195	**2LC0370-6LM90-0AA0**	5.9
	125						**2LC0370-6LN90-0AA0**	
203-6	124	50	**80**	139	75	0.0298	**2LC0370-7LM90-0AA0**	7.4
	125						**2LC0370-7LN90-0AA0**	
217-6	124	60	**90**	147	90	0.0429	**2LC0370-8LM90-0AA0**	9.2
	125						**2LC0370-8LN90-0AA0**	
251-6	124	70	**95**	168	95	0.0837	**2LC0371-0LM90-0AA0**	14
	125						**2LC0371-0LN90-0AA0**	
268-6	124	75	**100**	175	115	0.1236	**2LC0371-1LM90-0AA0**	18.5
	125						**2LC0371-1LN90-0AA0**	
291-6	124	80	**120**	195	125	0.1907	**2LC0371-2LM90-0AA0**	22.9
	125						**2LC0371-2LN90-0AA0**	
318-6	124	85	**120**	209	140	0.2975	**2LC0371-3LM90-0AA0**	31.5
	125						**2LC0371-3LN90-0AA0**	
343-6	124	95	**140**	234	150	0.4539	**2LC0371-4LM90-0AA0**	39.6
	125						**2LC0371-4LN90-0AA0**	

Note

- Weights and mass moments of inertia apply to a clamping hub with a maximum bore D1/D2.

Ordering example:

- N-ARPEX clamping hub, type 124, size 133-6
- Shaft ØD1 = 40k6 (**L0W**)
- **Y26** / fit specification supplied

Article no.: 2LC0370-3LM90-0AA0-Z L0W+Y26
Plain text Y26: k6

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Dimensions and torques

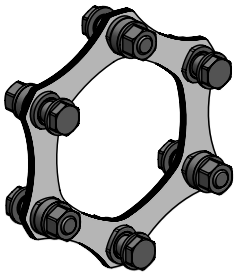
Finished bore/shaft in standard fit	DA size in mm													
	86-6	103-6	122-6	133-6	159-6	174-6	184-6	203-6	217-6	251-6	268-6	291-6	318-6	343-6
	Rated coupling torque T_{KN} in Nm													
	350	500	950	1250	2100	2400	3800	5000	6200	10500	13800	18200	23000	28000
$D1^{G6}/_{h6}$ mm	Maximum transmissible torque of the clamping hub Nm													
19	400	-	-	-	-	-	-	-	-	-	-	-	-	-
20	460	-	-	-	-	-	-	-	-	-	-	-	-	-
22	470	-	-	-	-	-	-	-	-	-	-	-	-	-
24	350	-	-	-	-	-	-	-	-	-	-	-	-	-
25	370	480	-	-	-	-	-	-	-	-	-	-	-	-
28	-	870	-	-	-	-	-	-	-	-	-	-	-	-
30	-	1150	1770	-	-	-	-	-	-	-	-	-	-	-
32	-	1140	1830	2300	-	-	-	-	-	-	-	-	-	-
35	-	570	1420	2360	3050	-	-	-	-	-	-	-	-	-
38	-	830	1720	3040	2710	-	-	-	-	-	-	-	-	-
40	-	-	1370	2610	3660	3680	-	-	-	-	-	-	-	-
42	-	-	1670	2930	2180	4020	-	-	-	-	-	-	-	-
45	-	-	-	2120	3750	4110	5780	-	-	-	-	-	-	-
48	-	-	-	2480	4160	4930	6200	-	-	-	-	-	-	-
50	-	-	-	2240	2300	4300	5840	7190	-	-	-	-	-	-
55	-	-	-	-	3310	5370	6410	7970	-	-	-	-	-	-
60	-	-	-	-	3260	3730	5370	8840	7570	-	-	-	-	-
65	-	-	-	-	-	4700	6240	8890	10390	-	-	-	-	-
70	-	-	-	-	-	4150	5920	8460	10640	14050	-	-	-	-
75	-	-	-	-	-	-	-	7960	9590	15350	20710	-	-	-
80	-	-	-	-	-	-	-	7340	8850	13510	20120	31840	-	-
85	-	-	-	-	-	-	-	-	7890	16370	21130	31230	36420	-
90	-	-	-	-	-	-	-	-	6290	14300	20810	33300	39050	-
95	-	-	-	-	-	-	-	-	-	13310	18570	33530	35940	54230
100	-	-	-	-	-	-	-	-	-	-	14440	31710	37500	56580
110	-	-	-	-	-	-	-	-	-	-	-	29020	35200	56900
120	-	-	-	-	-	-	-	-	-	-	-	22600	31490	53580
130	-	-	-	-	-	-	-	-	-	-	-	-	-	50910
140	-	-	-	-	-	-	-	-	-	-	-	-	-	43600

Note

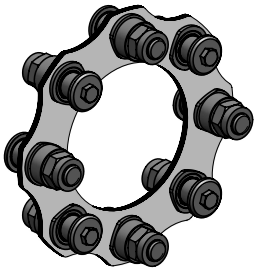
- The maximum transmissible torque of the clamping hub must not be exceeded! Further clamping hub sizes and higher torques on request.

SPARE AND WEAR PARTS

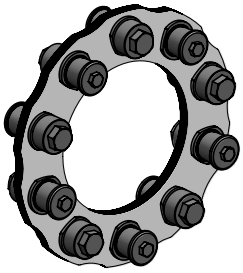
Plate pack



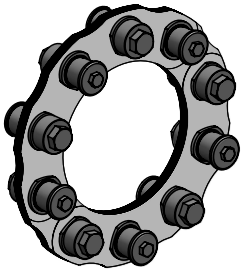
Size 86-6 to 343-6
(hexagon plates)



Size 219-8 to 631-8
(octagon plates)



Size 495-10 to 631-10
(decagon plates)



Size 694-10 to 988-10
(decagon plates/segment)

Size DA	Dimensions S1 mm	Mass moment of inertia *J* kgm²	Article No.	Weight *m* kg
86-6	8	0.00018	2LC0370-0LP00-0AA0	0.17
103-6	8.4	0.00032	2LC0370-1LP00-0AA0	0.19
122-6	8.8	0.001	2LC0370-2LP00-0AA0	0.43
133-6	9.6	0.0014	2LC0370-3LP00-0AA0	0.49
159-6	11.6	0.0033	2LC0370-4LP00-0AA0	0.8
174-6	12.8	0.0047	2LC0370-5LP00-0AA0	0.93
184-6	14.6	0.0078	2LC0370-6LP00-0AA0	1.38
203-6	15	0.012	2LC0370-7LP00-0AA0	1.79
217-6	15.4	0.018	2LC0370-8LP00-0AA0	2.25
251-6	20.6	0.037	2LC0371-0LP00-0AA0	3.61
268-6	22	0.056	2LC0371-1LP00-0AA0	4.83
291-6	22.8	0.08	2LC0371-2LP00-0AA0	5.78
318-6	23.2	0.13	2LC0371-3LP00-0AA0	8.12
343-6	24	0.17	2LC0371-4LP00-0AA0	8.68
219-8	12.2	0.028	2LC0380-0LP00-0AA0	3.58
241-8	12.6	0.042	2LC0380-1LP00-0AA0	4.67
262-8	13.8	0.067	2LC0380-2LP00-0AA0	6.05
285-8	15.2	0.11	2LC0380-3LP00-0AA0	8.28
302-8	17.2	0.15	2LC0380-4LP00-0AA0	10.3
321-8	21	0.22	2LC0380-5LP00-0AA0	13.6
354-8	23.6	0.34	2LC0380-6LP00-0AA0	17
387-8	26	0.49	2LC0380-7LP00-0AA0	20.2
411-8	29.6	0.7	2LC0380-8LP00-0AA0	26
447-8	32.6	1.01	2LC0381-0LP00-0AA0	31.5
495-8	33.8	1.54	2LC0381-1LP00-0AA0	38.7
546-8	40	2.57	2LC0381-2LP00-0AA0	52.9
587-8	45	3.74	2LC0381-3LP00-0AA0	67.2
631-8	48.8	5.38	2LC0381-4LP00-0AA0	85
495-10	33.8	1.76	2LC0390-0LP00-0AA0	43.4
546-10	40	2.9	2LC0390-1LP00-0AA0	58.5
587-10	45	4.19	2LC0390-2LP00-0AA0	73.7
631-10	48.8	5.98	2LC0390-3LP00-0AA0	92.6
694-10	58	11.8	2LC0390-4LP00-0AA0	148
734-10	63	16.3	2LC0390-5LP00-0AA0	182
790-10	66	23.4	2LC0390-6LP00-0AA0	226
887-10	78	43.7	2LC0390-7LP00-0AA0	335
988-10	86	75.8	2LC0390-8LP00-0AA0	468

Notes

- The plate pack of the ARN-6/-8 series is readily available as a spare part.
- The plate pack is delivered with screw connection.
- Mainly ring plates are used for the plate packs. Sizes 694-10 to 988-10 plate packs are designed with segmented plates.

Ordering example

- N-ARPEX ARN-8 plate pack, size 354-8, complete with screw connection

Article no.: 2LC0380-6LP00-0AA0

LENGTH-DEPENDENT SPECIFICATIONS

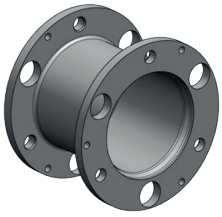
of types NEN/ NHN, BEB, MCECM/MCHCM and MFEFM/MFHFM

A variant with an E-spacer is standardly provided for each N-ARPEX type. This has been machined all over in accordance with the requirements of **API 610** and **671**. Particularly for large shaft distances S and therefore for correspondingly long intermediate spacer it is usual to leave the inside and outside diameters of the tube in the condition in which it was delivered. These spacers are then referred to as H-spacers.

If a coupling is fitted with an H-spacer, the type designation changes accordingly. For example, an NEN becomes an NHN, an MFEFM becomes an MFHFN. No version with an H-spacer is provided for the BEB type. Length-dependent technical specifications for the various coupling types are shown on the following table.
The shaft distance S must be specified in mm. The specifications with regard to weight and mass moment of inertia refer to the whole coupling with maximum bores D1/ D2.

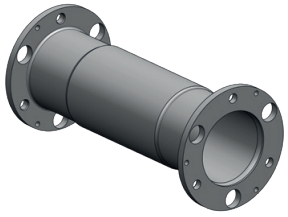
The values for torsional stiffness apply to the whole coupling (not including the hubs and customer shafts) and refer to the rated coupling torque T_{KN}. For determination of torsional stiffness for a specific operating point outside the nominal range Flender must be consulted.

Variant with E spacer



Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
86-6	**NEN**	1.55 + 0.003 · S	0.001 + 0.000002 · S	1/(1/0,08 + S/15)
	BEB	1.42 + 0.003 · S	0.001 + 0.000002 · S	1/(1/0,06 + S/15)
	MCECM	2.64 + 0.003 · S	0.003 + 0.000002 · S	1/(1/0,09 + S/15)
	MFEFM	5.54 + 0.003 · S	0.01 + 0.000002 · S	1/(1/0,09 + S/15)
103-6	**NEN**	2.52 + 0.005 · S	0.004 + 0.000004 · S	1/(1/0,11 + S/42)
	BEB	2.01 + 0.005 · S	0.003 + 0.000004 · S	1/(1/0,1 + S/42)
	MCECM	4 + 0.005 · S	0.006 + 0.000004 · S	1/(1/0,12 + S/42)
	MFEFM	7.28 + 0.005 · S	0.017 + 0.000004 · S	1/(1/0,12 + S/42)
122-6	**NEN**	4.39 + 0.007 · S	0.009 + 0.000008 · S	1/(1/0,26 + S/82)
	BEB	4.19 + 0.007 · S	0.008 + 0.000008 · S	1/(1/0,2 + S/82)
	MCECM	6.78 + 0.007 · S	0.015 + 0.000008 · S	1/(1/0,29 + S/82)
	MFEFM	12.6 + 0.007 · S	0.042 + 0.000008 · S	1/(1/0,29 + S/82)
133-6	**NEN**	5.5 + 0.009 · S	0.013 + 0.000014 · S	1/(1/0,33 + S/142)
	BEB	5.09 + 0.009 · S	0.011 + 0.000014 · S	1/(1/0,27 + S/142)
	MCECM	8.44 + 0.009 · S	0.023 + 0.000014 · S	1/(1/0,36 + S/142)
	MFEFM	15.86 + 0.009 · S	0.064 + 0.000014 · S	1/(1/0,36 + S/142)
159-6	**NEN**	8.54 + 0.011 · S	0.028 + 0.000023 · S	1/(1/0,54 + S/234)
	BEB	8 + 0.011 · S	0.026 + 0.000023 · S	1/(1/0,45 + S/234)
	MCECM	14.35 + 0.011 · S	0.055 + 0.000023 · S	1/(1/0,6 + S/234)
	MFEFM	21.37 + 0.011 · S	0.068 + 0.000023 · S	1/(1/0,6 + S/234)

Variant with H spacer

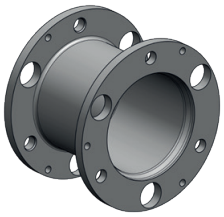


Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
86-6	**NHN**	1.11 + 0.005 · S	0.001 + 0.000003 · S	1/(1/0,05 + S/25)
	-	-	-	-
	MCHCM	2.13 + 0.005 · S	0.003 + 0.000003 · S	1/(1/0,06 + S/25)
	MFHFM	5.03 + 0.005 · S	0.01 + 0.000003 · S	1/(1/0,06 + S/25)
103-6	**NHN**	1.91 + 0.008 · S	0.003 + 0.000007 · S	1/(1/0,09 + S/68)
	-	-	-	-
	MCHCM	3.28 + 0.008 · S	0.006 + 0.000007 · S	1/(1/0,1 + S/68)
	MFHFM	6.56 + 0.008 · S	0.016 + 0.000007 · S	1/(1/0,1 + S/68)
122-6	**NHN**	3.72 + 0.01 · S	0.008 + 0.000012 · S	1/(1/0,21 + S/122)
	-	-	-	-
	MCHCM	6 + 0.01 · S	0.014 + 0.000012 · S	1/(1/0,22 + S/122)
	MFHFM	11.82 + 0.01 · S	0.041 + 0.000012 · S	1/(1/0,22 + S/122)
133-6	**NHN**	4.52 + 0.013 · S	0.012 + 0.000022 · S	1/(1/0,28 + S/221)
	-	-	-	-
	MCHCM	7.29 + 0.013 · S	0.021 + 0.000022 · S	1/(1/0,29 + S/221)
	MFHFM	14.71 + 0.013 · S	0.062 + 0.000022 · S	1/(1/0,29 + S/221)
159-6	**NHN**	7.17 + 0.017 · S	0.025 + 0.000037 · S	1/(1/0,45 + S/373)
	-	-	-	-
	MCHCM	12.76 + 0.017 · S	0.051 + 0.000037 · S	1/(1/0,47 + S/373)
	MFHFM	19.78 + 0.017 · S	0.064 + 0.000037 · S	1/(1/0,47 + S/373)

LENGTH-DEPENDENT SPECIFICATIONS

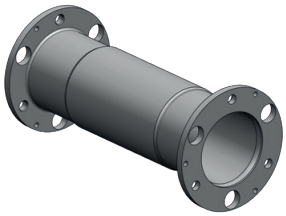
of types NEN/ NHN, BEB, MCECM/MCHCM and MFEFM/MFHFM

Variant with E spacer



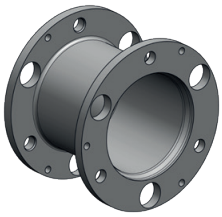
Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
174-6	NEN	10.57 + 0.013 · S	0.042 + 0.000039 · S	1/(1/0,64 + S/394)
	BEB	11.36 + 0.013 · S	0.041 + 0.000039 · S	1/(1/0,52 + S/394)
	MCECM	17.54 + 0.013 · S	0.08 + 0.000039 · S	1/(1/0,68 + S/394)
	MFEFM	25.02 + 0.013 · S	0.146 + 0.000039 · S	1/(1/0,68 + S/394)
184-6	NEN	13.94 + 0.017 · S	0.065 + 0.000059 · S	1/(1/1 + S/597)
	BEB	15.1 + 0.017 · S	0.066 + 0.000059 · S	1/(1/0,81 + S/597)
	MCECM	23.12 + 0.017 · S	0.081 + 0.000059 · S	1/(1/1,11 + S/597)
	MFEFM	36.59 + 0.017 · S	0.267 + 0.000059 · S	1/(1/1,11 + S/597)
203-6	NEN	18.62 + 0.019 · S	0.102 + 0.00007 · S	1/(1/1,44 + S/705)
	BEB	18.09 + 0.019 · S	0.096 + 0.00007 · S	1/(1/1,13 + S/705)
	MCECM	29.96 + 0.019 · S	0.185 + 0.00007 · S	1/(1/1,65 + S/705)
	MFEFM	49.06 + 0.019 · S	0.414 + 0.00007 · S	1/(1/1,65 + S/705)
217-6	NEN	21.68 + 0.019 · S	0.137 + 0.000087 · S	1/(1/1,84 + S/870)
	BEB	21.93 + 0.019 · S	0.131 + 0.000087 · S	1/(1/1,43 + S/870)
	MCECM	36.46 + 0.019 · S	0.262 + 0.000087 · S	1/(1/2,11 + S/870)
	MFEFM	59.53 + 0.019 · S	0.579 + 0.000087 · S	1/(1/2,11 + S/870)
251-6	NEN	32.32 + 0.032 · S	0.271 + 0.00018 · S	1/(1/2,24 + S/1827)
	BEB	35.42 + 0.032 · S	0.276 + 0.00018 · S	1/(1/1,85 + S/1827)
	MCECM	56.48 + 0.032 · S	0.539 + 0.00018 · S	1/(1/2,45 + S/1827)
	MFEFM	101.1 + 0.032 · S	1.397 + 0.00018 · S	1/(1/2,45 + S/1827)
268-6	NEN	44.91 + 0.02 · S	0.434 + 0.00013 · S	1/(1/2,78 + S/2063)
	BEB	44.58 + 0.02 · S	0.425 + 0.00013 · S	1/(1/2,27 + S/2063)
	MCECM	73.71 + 0.02 · S	0.8 + 0.00013 · S	1/(1/3,07 + S/2063)
	MFEFM	131.4 + 0.02 · S	2.07 + 0.00013 · S	1/(1/3,07 + S/2063)
291-6	NEN	55.18 + 0.042 · S	0.634 + 0.00034 · S	1/(1/3,77 + S/3400)
	BEB	56.23 + 0.042 · S	0.624 + 0.00034 · S	1/(1/3,17 + S/3400)
	MCECM	87.66 + 0.042 · S	1.124 + 0.00034 · S	1/(1/4,09 + S/3400)
	MFEFM	176.8 + 0.042 · S	3.213 + 0.00034 · S	1/(1/4,09 + S/3400)
318-6	NEN	72.12 + 0.059 · S	0.979 + 0.0005 · S	1/(1/5,13 + S/5040)
	BEB	69.81 + 0.059 · S	0.922 + 0.0005 · S	1/(1/4,29 + S/5040)
	MCECM	121.4 + 0.059 · S	1.89 + 0.0005 · S	1/(1/5,72 + S/5040)
	MFEFM	203.7 + 0.059 · S	4.214 + 0.0005 · S	1/(1/5,72 + S/5040)
343-6	NEN	89.26 + 0.075 · S	1.394 + 0.00081 · S	1/(1/5,26 + S/8178)
	BEB	87.3 + 0.075 · S	1.322 + 0.00081 · S	1/(1/4,55 + S/8178)
	MCECM	145.8 + 0.075 · S	2.639 + 0.00081 · S	1/(1/5,62 + S/8178)
	MFEFM	261.5 + 0.075 · S	6.626 + 0.00081 · S	1/(1/5,62 + S/8178)

Variant with H spacer



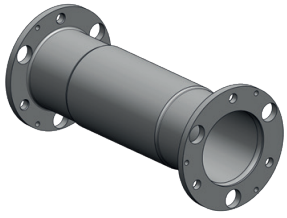
Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
174-6	NHN	8.79 + 0.02 · S	0.036 + 0.000065 · S	1/(1/0,55 + S/652)
	-	-	-	-
	MCHCM	15.46 + 0.02 · S	0.073 + 0.000065 · S	1/(1/0,57 + S/652)
	MFHFM	22.95 + 0.02 · S	0.139 + 0.000065 · S	1/(1/0,57 + S/652)
184-6	NHN	12.36 + 0.023 · S	0.059 + 0.000083 · S	1/(1/0,89 + S/839)
	-	-	-	-
	MCHCM	21.18 + 0.023 · S	0.074 + 0.000083 · S	1/(1/0,95 + S/839)
	MFHFM	34.65 + 0.023 · S	0.259 + 0.000083 · S	1/(1/0,95 + S/839)
203-6	NHN	16.56 + 0.027 · S	0.093 + 0.0001 · S	1/(1/1,23 + S/1049)
	-	-	-	-
	MCHCM	27.42 + 0.027 · S	0.174 + 0.0001 · S	1/(1/1,33 + S/1049)
	MFHFM	46.52 + 0.027 · S	0.403 + 0.0001 · S	1/(1/1,33 + S/1049)
217-6	NHN	18.96 + 0.03 · S	0.123 + 0.00014 · S	1/(1/1,52 + S/1413)
	-	-	-	-
	MCHCM	33.11 + 0.03 · S	0.245 + 0.00014 · S	1/(1/1,63 + S/1413)
	MFHFM	56.18 + 0.03 · S	0.562 + 0.00014 · S	1/(1/1,63 + S/1413)
251-6	NHN	29.54 + 0.042 · S	0.253 + 0.00025 · S	1/(1/2,05 + S/2505)
	-	-	-	-
	MCHCM	53 + 0.042 · S	0.516 + 0.00025 · S	1/(1/2,18 + S/2505)
	MFHFM	97.57 + 0.042 · S	1.374 + 0.00025 · S	1/(1/2,18 + S/2505)
268-6	NHN	41.38 + 0.043 · S	0.41 + 0.00028 · S	1/(1/2,52 + S/2803)
	-	-	-	-
	MCHCM	68.56 + 0.043 · S	0.765 + 0.00028 · S	1/(1/2,69 + S/2803)
	MFHFM	126.3 + 0.043 · S	2.035 + 0.00028 · S	1/(1/2,69 + S/2803)
291-6	NHN	51.32 + 0.056 · S	0.598 + 0.00046 · S	1/(1/3,48 + S/4627)
	-	-	-	-
	MCHCM	82.87 + 0.056 · S	1.08 + 0.00046 · S	1/(1/3,67 + S/4627)
	MFHFM	171.4 + 0.056 · S	3.163 + 0.00046 · S	1/(1/3,67 + S/4627)
318-6	NHN	67.86 + 0.074 · S	0.936 + 0.00065 · S	1/(1/4,81 + S/6527)
	-	-	-	-
	MCHCM	115.6 + 0.074 · S	1.832 + 0.00065 · S	1/(1/5,2 + S/6527)
	MFHFM	198 + 0.074 · S	4.157 + 0.00065 · S	1/(1/5,2 + S/6527)
343-6	NHN	84.41 + 0.091 · S	1.332 + 0.001 · S	1/(1/5,07 + S/10323)
	-	-	-	-
	MCHCM	139.3 + 0.091 · S	2.556 + 0.001 · S	1/(1/5,33 + S/10323)
	MFHFM	255 + 0.091 · S	6.542 + 0.001 · S	1/(1/5,33 + S/10323)

Variant with E spacer



Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
219-8	NEN	28.17 + 0.027 · S	0.177 + 0.000089 · S	1/(1/3,98 + S/889)
	MCECM	44.48 + 0.027 · S	0.338 + 0.000089 · S	1/(1/6,11 + S/889)
	MFEFM	71.89 + 0.027 · S	0.703 + 0.000089 · S	1/(1/6,11 + S/889)
241-8	NEN	36.79 + 0.032 · S	0.276 + 0.00013 · S	1/(1/4,69 + S/1264)
	MCECM	61.04 + 0.032 · S	0.56 + 0.00013 · S	1/(1/6,74 + S/1264)
	MFEFM	91.45 + 0.032 · S	1.074 + 0.00013 · S	1/(1/6,74 + S/1264)
262-8	NEN	46.53 + 0.04 · S	0.414 + 0.00019 · S	1/(1/5,4 + S/1884)
	MCECM	78.23 + 0.04 · S	0.846 + 0.00019 · S	1/(1/7,22 + S/1884)
	MFEFM	120.1 + 0.04 · S	1.692 + 0.00019 · S	1/(1/7,22 + S/1884)
285-8	NEN	61.59 + 0.051 · S	0.656 + 0.00028 · S	1/(1/7,04 + S/2836)
	MCECM	100.8 + 0.051 · S	1.315 + 0.00028 · S	1/(1/9,31 + S/2836)
	MFEFM	155 + 0.051 · S	2.552 + 0.00028 · S	1/(1/9,31 + S/2836)
302-8	NEN	78.21 + 0.062 · S	0.948 + 0.00039 · S	1/(1/9,87 + S/3948)
	MCECM	122.3 + 0.062 · S	1.774 + 0.00039 · S	1/(1/13,4 + S/3948)
	MFEFM	182 + 0.062 · S	3.359 + 0.00039 · S	1/(1/13,4 + S/3948)
321-8	NEN	96.07 + 0.066 · S	1.317 + 0.0005 · S	1/(1/13,9 + S/5053)
	MCECM	150 + 0.066 · S	2.469 + 0.0005 · S	1/(1/20,1 + S/5053)
	MFEFM	216.6 + 0.066 · S	4.48 + 0.0005 · S	1/(1/20,1 + S/5053)
354-8	NEN	129.1 + 0.079 · S	2.163 + 0.00079 · S	1/(1/18,2 + S/7977)
	MCECM	191.4 + 0.079 · S	3.866 + 0.00079 · S	1/(1/24,7 + S/7977)
	MFEFM	286.5 + 0.079 · S	7.246 + 0.00079 · S	1/(1/24,7 + S/7977)
387-8	NEN	169.6 + 0.093 · S	3.414 + 0.0012 · S	1/(1/25,3 + S/11742)
	MCECM	242.5 + 0.093 · S	5.88 + 0.0012 · S	1/(1/31,5 + S/11742)
	MFEFM	351.7 + 0.093 · S	10.62 + 0.0012 · S	1/(1/31,5 + S/11742)
411-8	NEN	201.9 + 0.113 · S	4.565 + 0.0015 · S	1/(1/29,4 + S/15183)
	MCECM	287.1 + 0.113 · S	7.821 + 0.0015 · S	1/(1/36 + S/15183)
	MFEFM	415.8 + 0.113 · S	14.1 + 0.0015 · S	1/(1/36 + S/15183)
447-8	NEN	260.7 + 0.129 · S	6.985 + 0.0021 · S	1/(1/38 + S/21062)
	MCECM	367.1 + 0.129 · S	11.74 + 0.0021 · S	1/(1/46,5 + S/21062)
	MFEFM	534.1 + 0.129 · S	21.22 + 0.0021 · S	1/(1/46,5 + S/21062)
495-8	NEN	354.4 + 0.157 · S	11.61 + 0.0033 · S	1/(1/46,4 + S/33418)
	MCECM	497.5 + 0.157 · S	19.74 + 0.0033 · S	1/(1/54,5 + S/33418)
	MFEFM	693.8 + 0.157 · S	33.95 + 0.0033 · S	1/(1/54,5 + S/33418)
546-8	NEN	483.3 + 0.212 · S	19.43 + 0.0056 · S	1/(1/59 + S/56448)
	MCECM	663.8 + 0.212 · S	32.27 + 0.0056 · S	1/(1/67 + S/56448)
	MFEFM	923.1 + 0.212 · S	55.39 + 0.0056 · S	1/(1/67 + S/56448)
587-8	NEN	600.7 + 0.279 · S	27.94 + 0.0076 · S	1/(1/67,3 + S/76570)
	MCECM	821.9 + 0.279 · S	45.85 + 0.0076 · S	1/(1/75,3 + S/76570)
	MFEFM	1147 + 0.279 · S	79.25 + 0.0076 · S	1/(1/75,3 + S/76570)
631-8	NEN	731.9 + 0.302 · S	39.04 + 0.01 · S	1/(1/79,6 + S/102143)
	MCECM	1006 + 0.302 · S	64.52 + 0.01 · S	1/(1/88,2 + S/102143)
	MFEFM	1441 + 0.302 · S	114.7 + 0.01 · S	1/(1/88,2 + S/102143)

Variant with H spacer

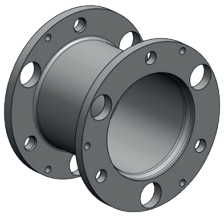


Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
219-8	NHN	26.88 + 0.035 · S	0.172 + 0.00012 · S	1/(1/3,35 + S/1176)
	MCHCM	42.52 + 0.035 · S	0.33 + 0.00012 · S	1/(1/4,3 + S/1176)
	MFHFM	69.94 + 0.035 · S	0.695 + 0.00012 · S	1/(1/4,3 + S/1176)
241-8	NHN	34.62 + 0.044 · S	0.266 + 0.00018 · S	1/(1/3,88 + S/1760)
	MCHCM	57.91 + 0.044 · S	0.546 + 0.00018 · S	1/(1/4,73 + S/1760)
	MFHFM	88.32 + 0.044 · S	1.06 + 0.00018 · S	1/(1/4,73 + S/1760)
262-8	NHN	44.21 + 0.054 · S	0.402 + 0.00025 · S	1/(1/4,72 + S/2549)
	MCHCM	74.72 + 0.054 · S	0.828 + 0.00025 · S	1/(1/5,65 + S/2549)
	MFHFM	116.5 + 0.054 · S	1.673 + 0.00025 · S	1/(1/5,65 + S/2549)
285-8	NHN	59.68 + 0.064 · S	0.643 + 0.00035 · S	1/(1/6,46 + S/3534)
	MCHCM	97.63 + 0.064 · S	1.296 + 0.00035 · S	1/(1/7,87 + S/3534)
	MFHFM	151.8 + 0.064 · S	2.533 + 0.00035 · S	1/(1/7,87 + S/3534)
302-8	NHN	75.6 + 0.078 · S	0.928 + 0.00049 · S	1/(1/8,95 + S/4945)
	MCHCM	118.1 + 0.078 · S	1.744 + 0.00049 · S	1/(1/11,1 + S/4945)
	MFHFM	177.7 + 0.078 · S	3.329 + 0.00049 · S	1/(1/11,1 + S/4945)
321-8	NHN	92.41 + 0.086 · S	1.285 + 0.00065 · S	1/(1/12,2 + S/6577)
	MCHCM	144.2 + 0.086 · S	2.419 + 0.00065 · S	1/(1/15,4 + S/6577)
	MFHFM	210.8 + 0.086 · S	4.43 + 0.00065 · S	1/(1/15,4 + S/6577)
354-8	NHN	126 + 0.098 · S	2.129 + 0.00098 · S	1/(1/16,7 + S/9874)
	MCHCM	186 + 0.098 · S	3.809 + 0.00098 · S	1/(1/20,8 + S/9874)
	MFHFM	281.2 + 0.098 · S	7.189 + 0.00098 · S	1/(1/20,8 + S/9874)
387-8	NHN	164.5 + 0.122 · S	3.343 + 0.0015 · S	1/(1/22,8 + S/15253)
	MCHCM	234.9 + 0.122 · S	5.777 + 0.0015 · S	1/(1/26,4 + S/15253)
	MFHFM	344.1 + 0.122 · S	10.51 + 0.0015 · S	1/(1/26,4 + S/15253)
411-8	NHN	196.8 + 0.141 · S	4.49 + 0.0019 · S	1/(1/27,1 + S/18813)
	MCHCM	279.5 + 0.141 · S	7.712 + 0.0019 · S	1/(1/31,3 + S/18813)
	MFHFM	408.1 + 0.141 · S	13.99 + 0.0019 · S	1/(1/31,3 + S/18813)
447-8	NHN	255.1 + 0.157 · S	6.883 + 0.0026 · S	1/(1/35,1 + S/25615)
	MCHCM	358.7 + 0.157 · S	11.59 + 0.0026 · S	1/(1/40,9 + S/25615)
	MFHFM	525.6 + 0.157 · S	21.07 + 0.0026 · S	1/(1/40,9 + S/25615)
495-8	NHN	345 + 0.2 · S	11.39 + 0.0042 · S	1/(1/43 + S/42683)
	MCHCM	483.5 + 0.2 · S	19.42 + 0.0042 · S	1/(1/48,2 + S/42683)
	MFHFM	679.8 + 0.2 · S	33.62 + 0.0042 · S	1/(1/48,2 + S/42683)
546-8	NHN	474 + 0.255 · S	19.16 + 0.0068 · S	1/(1/56,3 + S/67807)
	MCHCM	649.6 + 0.255 · S	31.86 + 0.0068 · S	1/(1/62,2 + S/67807)
	MFHFM	908.9 + 0.255 · S	54.99 + 0.0068 · S	1/(1/62,2 + S/67807)
587-8	NHN	590 + 0.324 · S	27.6 + 0.0088 · S	1/(1/65 + S/88708)
	MCHCM	806 + 0.324 · S	45.37 + 0.0088 · S	1/(1/71,2 + S/88708)
	MFHFM	1131 + 0.324 · S	78.77 + 0.0088 · S	1/(1/71,2 + S/88708)
631-8	NHN	715.1 + 0.361 · S	38.39 + 0.012 · S	1/(1/76,3 + S/123294)
	MCHCM	981.7 + 0.361 · S	63.61 + 0.012 · S	1/(1/82,6 + S/123294)
	MFHFM	1417 + 0.361 · S	113.8 + 0.012 · S	1/(1/82,6 + S/123294)

LENGTH-DEPENDENT SPECIFICATIONS

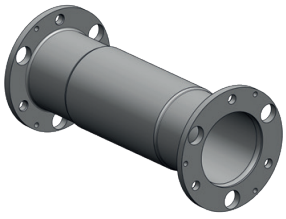
of types NEN/ NHN, BEB, MCECM/MCHCM and MFEFM/MFHFM

Variant with E spacer



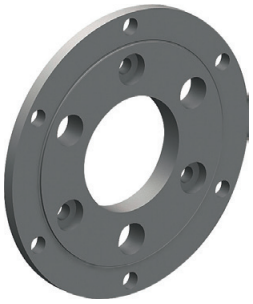
Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
495-10	NEN	355.1 + 0.157 · S	11.7 + 0.0033 · S	1/(1/113 + S/33418)
	MFEFM	693 + 0.157 · S	33.97 + 0.0033 · S	1/(1/176 + S/33418)
546-10	NEN	483.7 + 0.212 · S	19.56 + 0.0056 · S	1/(1/138 + S/56448)
	MFEFM	921.8 + 0.212 · S	55.43 + 0.0056 · S	1/(1/190 + S/56448)
587-10	NEN	600.5 + 0.279 · S	28.09 + 0.0076 · S	1/(1/165 + S/76570)
	MFEFM	1145 + 0.279 · S	79.29 + 0.0076 · S	1/(1/223 + S/76570)
631-10	NEN	731.3 + 0.302 · S	39.23 + 0.01 · S	1/(1/187 + S/102143)
	MFEFM	1438 + 0.302 · S	114.8 + 0.01 · S	1/(1/241 + S/102143)
694-10	NEN	1057 + 0.39 · S	69.77 + 0.015 · S	1/(1/293 + S/154224)
	MFEFM	1950 + 0.39 · S	188.1 + 0.015 · S	1/(1/412 + S/154224)
734-10	NEN	1265 + 0.45 · S	94.03 + 0.02 · S	1/(1/373 + S/196935)
	MFEFM	2314 + 0.45 · S	248.7 + 0.02 · S	1/(1/542 + S/196935)
790-10	NEN	1587 + 0.53 · S	136.9 + 0.027 · S	1/(1/467 + S/270335)
	MFEFM	2919 + 0.53 · S	363.4 + 0.027 · S	1/(1/677 + S/270335)
887-10	NEN	2335 + 0.687 · S	256 + 0.042 · S	1/(1/644 + S/418343)
	MFEFM	4197 + 0.687 · S	665.8 + 0.042 · S	1/(1/944 + S/418343)
988-10	NEN	3264 + 0.975 · S	447.8 + 0.067 · S	1/(1/856 + S/675886)
	MFEFM	5736 + 0.975 · S	1129 + 0.067 · S	1/(1/1229 + S/675886)

Variant with H spacer



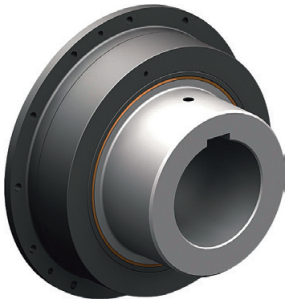
Size DA	Type	*m* kg	*J* kgm²	*C* MNm/rad
495-10	NHN	345.7 + 0.2 · S	11.47 + 0.0042 · S	1/(1/94,7 + S/42683)
	MFHFM	678.9 + 0.2 · S	33.65 + 0.0042 · S	1/(1/124 + S/42683)
546-10	NHN	474.4 + 0.255 · S	19.28 + 0.0068 · S	1/(1/124 + S/67807)
	MFHFM	907.5 + 0.255 · S	55.03 + 0.0068 · S	1/(1/156 + S/67807)
587-10	NHN	589.9 + 0.324 · S	27.76 + 0.0088 · S	1/(1/152 + S/88708)
	MFHFM	1129 + 0.324 · S	78.81 + 0.0088 · S	1/(1/191 + S/88708)
631-10	NHN	714.5 + 0.361 · S	38.57 + 0.012 · S	1/(1/169 + S/123294)
	MFHFM	1414 + 0.361 · S	113.9 + 0.012 · S	1/(1/204 + S/123294)
694-10	NHN	1028 + 0.487 · S	68.47 + 0.019 · S	1/(1/257 + S/193881)
	MFHFM	1906 + 0.487 · S	186.2 + 0.019 · S	1/(1/322 + S/193881)
734-10	NHN	1229 + 0.563 · S	92.27 + 0.025 · S	1/(1/325 + S/247708)
	MFHFM	2260 + 0.563 · S	246.1 + 0.025 · S	1/(1/414 + S/247708)
790-10	NHN	1544 + 0.663 · S	134.4 + 0.034 · S	1/(1/409 + S/340076)
	MFHFM	2852 + 0.663 · S	359.6 + 0.034 · S	1/(1/522 + S/340076)
887-10	NHN	2278 + 0.844 · S	252 + 0.051 · S	1/(1/568 + S/517255)
	MFHFM	4107 + 0.844 · S	659.8 + 0.051 · S	1/(1/734 + S/517255)
988-10	NHN	3192 + 1.154 · S	441.8 + 0.08 · S	1/(1/774 + S/807126)
	MFHFM	5620 + 1.154 · S	1120 + 0.08 · S	1/(1/1006 + S/807126)

OTHER DESIGN OPTIONS

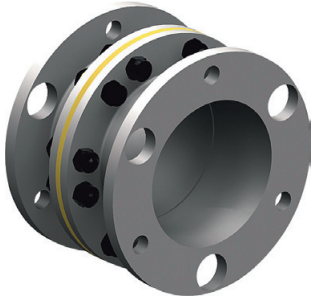


Flange version for adaptation to a customer flange

Intermediate spacer as a torsion shaft
for reducing the torsional stiffness



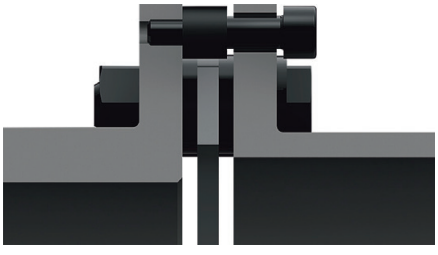
Slipping flanges for overload protection
against brief high-frequency torque shock loads



Version for avoiding leakage currents
between the connected units

Slipping hubs for overload protection
against brief high-frequency torque shock loads

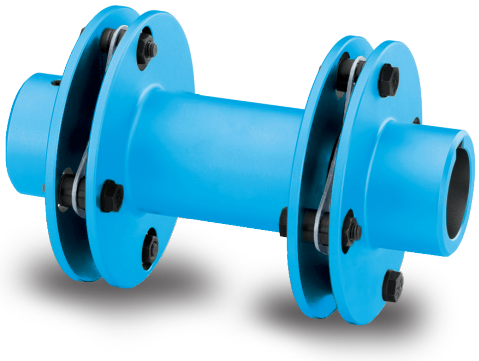
Vertical support for avoiding excessive axial loading of the plate
packs by the weight of the intermediate spacer



Axial backlash limiter

Brake disk/brake drum

GENERAL



Coupling suitable for use in potentially explosive atmospheres.
Complies with the current ATEX Directive for:

CE II 2G Ex h IIC T6 ... T2 Gb X

II 2D Ex h IIIC T85 °C ... 250 °C Db X

I M2 Ex h Mb X

Benefits

ARPEX couplings of the ARW-4/-6 series are outstanding for their large angular misalignment capacity of 3°. They were specially designed for drives where high misalignments which have to be compensated for by the coupling are to be expected. The intermediate spacer lengths are variable and are manufactured to customer specifications.

Application

ARPEX couplings of the ARW-4/-6 series are used where large misalignment capacities are required. In the paper-making machine industry, the ARW coupling has already proved itself as a maintenance-free alternative to the cardan shaft. Torques of between 92 and 80000 Nm can be transmitted at a permitted angular misalignment of 3.0°. The intermediate spacer can be fitted radially without moving the connected units.

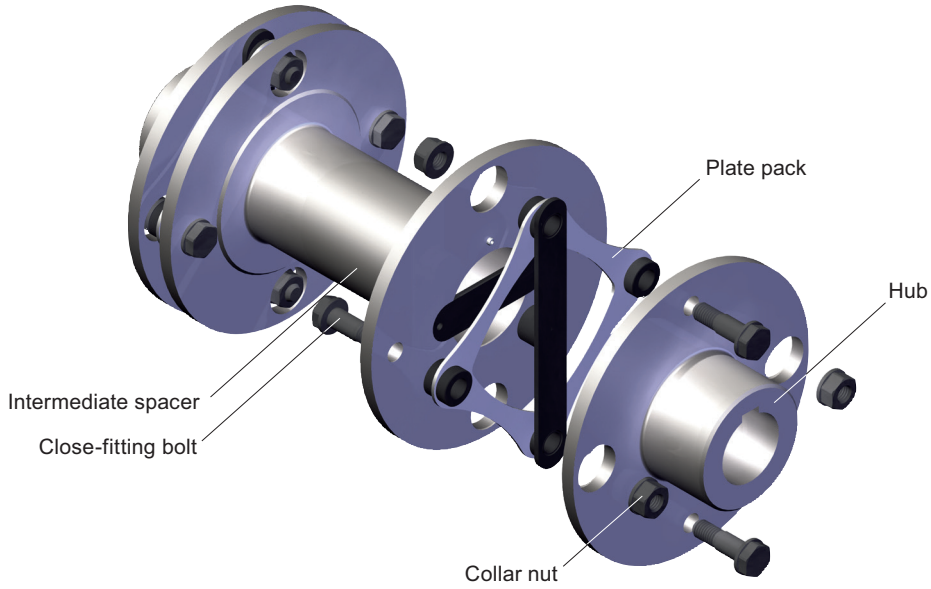
Main areas of application for the ARW-4/-6 series:

- Paper-making machines
- Wind power systems
- Traction drives

Design and configurations

The design of an ARPEX NHN coupling of the ARW-4/-6 series is shown in the following illustration. The plate packs are bolted alternately between the flanges of the coupling hubs and the intermediate spacer. Up to size 292-4 close-fitting bolts and from size 324-4 conical screw connections are used for fastening.

Up to size 647-4 plate packs in rectangular design, from size 695-6 in hexagonal design are used. The intermediate spacers are variable in length and are manufactured specifically to customer specifications.



Variants of the ARPEX coupling, ARW-4/-6 series

Variants of the ARPEX coupling, ARW-4/-6 series

Type	Description
NHN	Variant with unmachined intermediate spacer, with variable spacer length

The article number can be obtained with the help of the Configurator. The coupling can be selected in a product configurator and specified using selection menus.

The Configurator is available under **flender.com**

The coupling can be selected via "Technical selection" (technical selection) or via "Direct selection" (via article-no.).

The coupling parts of the ARPEX ARW-4/-6 series with the exception of H spacers are machined on all sides. These are delivered with unmachined, primed spacer tube.

GENERAL

Technical specifications

Power ratings

Size	Rated torque T_{KN} Nm	Maximum torque T_{Kmax} Nm	Overload torque T_{KOL} Nm	Fatigue torque T_{KW} Nm	Maximum speed n_{Kmax} rpm	Maximum permitted shaft misalignment $+\Delta K_a$ Tension mm	$-\Delta K_a$ Compression mm	$\pm\Delta K_w$	$\pm\Delta K_r$ mm	Torsional stiffness C_{Tdyn} MNm/rad
									for S = 1000 mm	for S = 1000 mm
101-4	92	140	230	37	10400	2.4	2		51.8	0.006
133-4	225	340	560	90	7850	3.3	2.2		51.7	0.012
167-4	450	680	1130	180	6250	4.2	2.2		51.6	0.028
196-4	800	1200	2000	320	5350	5.1	2.2		51.6	0.068
230-4	1250	1880	3200	500	4550	5.7	2.2		51.6	0.108
260-4	2000	3000	5000	800	4000	6.6	2.2		51.5	0.174
292-4	2700	4100	6800	1080	3550	7.5	2.8		51.4	0.275
324-4	3850	5800	9700	1540	3200	8.4	2.8		51.4	0.451
355-4	5250	7900	13200	2100	2950	9	2.8		51.4	0.622
389-4	6650	10000	16700	2660	2700	10	2.8	3.0 °	51.4	0.657
439-4	9850	15000	25000	3940	2350	11.1	3		51.3	1.08
499-4	13300	20000	34000	5320	2100	12.4	4.8		50.8	1.32
547-4	19000	29000	48000	7600	1900	13.4	4.8		50.7	2.03
600-4	25150	38000	63000	10060	1750	14.6	4.8		50.6	2.73
647-4	32500	49000	82000	13000	1600	16	4.8		50.6	3.93
695-6	41000	62000	103000	16400	1500	17	4.8		50.7	10.1
756-6	52000	78000	130000	20800	1350	18	4.8		50.6	14
817-6	65000	98000	163000	26000	1250	20	4.8		50.5	16.9
880-6	80000	120000	200000	32000	1150	22	4.8		50.5	21.2

The radial misalignment ΔK_r applies to a type NHN coupling with a shaft distance S = 1000 mm. The radial misalignment ΔK_r for other shaft distances S is calculated as follows: $\Delta K_r = (S - S1) \cdot \tan(\Delta K_w)$

The permitted shaft misalignments ΔK_a, ΔK_r and ΔK_w are maximum values and must not occur at the same time (see following table).

The torsional stiffness values apply to the entire coupling with shaft distance S = 1000 mm. The torsional stiffness of the plate packs applies to the rated coupling torque T_{KN}. To determine the torsional stiffness for a specific operating point, e.g. for calculating torsional vibration, the manufacturer must be consulted.

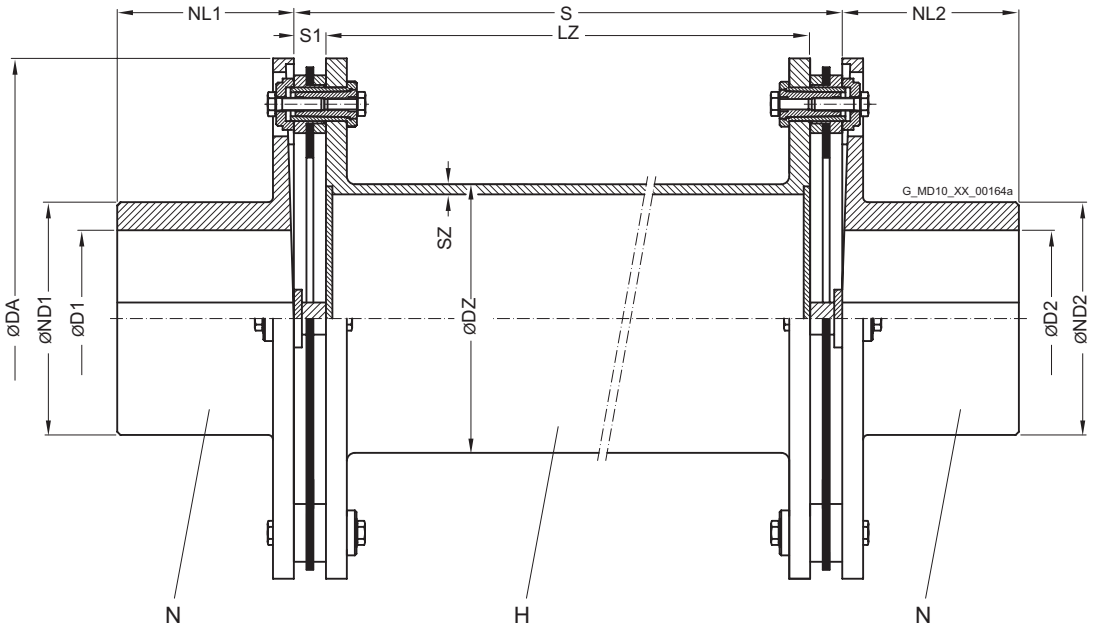
- T_{Kmax} permitted only five times per hour.
- T_{KW} for medium torque T_N = 0 Nm.
- If T_N and T_{KW} occur at the same time, the manufacturer must be consulted.

Permitted shaft misalignments						
Size	Permitted angular misalignment ΔK_w (tension +)			Permitted angular misalignment ΔK_w (compression –)		
	3.0 °	1.5 °	0.0 °	3.0 °	1.5 °	0.0 °
	Permitted axial misalignment ΔK_a in mm			Permitted axial misalignment ΔK_a in mm		
101-4	0.8	1.6	2.4	0.8	1.6	2
133-4	1.1	2.2	3.3	1.1	2.2	2.2
167-4	1.4	2.8	4.2	1.4	2.2	2.2
196-4	1.7	3.4	5.1	1.7	2.2	2.2
230-4	1.9	3.8	5.7	1.9	2.2	2.2
260-4	2.2	4.4	6.6	2.2	2.2	2.2
292-4	2.5	5	7.5	2.5	2.8	2.8
324-4	2.8	5.6	8.4	2.8	2.8	2.8
355-4	3	6	9	2.8	2.8	2.8
389-4	3.3	6.7	10	2.8	2.8	2.8
439-4	3.7	7.4	11.1	3	3	3
499-4	4.1	8.3	12.4	4.1	4.8	4.8
547-4	4.5	8.9	13.4	4.4	4.8	4.8
600-4	4.9	9.7	14.6	4.8	4.8	4.8
647-4	5.3	10.7	16	4.8	4.8	4.8
695-6	5.6	11.4	17	4.8	4.8	4.8
756-6	6	12.1	18	4.8	4.8	4.8
817-6	6.7	13.4	20	4.8	4.8	4.8
880-6	7.3	14.8	22	4.8	4.8	4.8

Because of design specifications, the maximum possible axial shaft misalignment with plate packs pulled apart (**tension +**) is greater than with plate packs pressed together (**compression –**).

TYPE NHN

Torsionally rigid type NHN coupling with high angular misalignment capacity up to 3° and radially freely dismountable intermediate spacer and variable shaft distance S.



Size	Rated torque	Maximum speed	Dimensions in mm								Mass moment of inertia	↗ Article no. [1]	Weight
DA	T_{KN}	n_{Kmax}	D1, D2 Keyway DIN 6885	ND1/ ND2	DZ	SZ	NL1/ NL2	S1	LZ	Shaft distance S	J		m
mm	Nm	rpm	max.								kgm²		kg
101-4	**92**	10400	**32**	45	45	2.9	32	11	43	65	0.002	**2LC0530-0AD**	1.5
133-4	**225**	7850	**45**	60	48	2.9	45	13	59	85	0.008	**2LC0530-1AD**	3.9
167-4	**450**	6250	**50**	70	64	4	50	15	70	100	0.022	**2LC0530-2AD**	7.1
196-4	**800**	5350	**60**	80	89	4	60	16	83	115	0.056	**2LC0530-3AD**	12.1
230-4	**1250**	4550	**75**	100	102	5	75	16	83	115	0.109	**2LC0530-4AD**	17.9
260-4	**2000**	4000	**90**	120	133	5	90	17	96	130	0.189	**2LC0530-5AD**	24.6
292-4	**2700**	3550	**100**	130	152	5	100	19	92	130	0.359	**2LC0530-6AD**	35.1
324-4	**3850**	3200	**110**	145	168	6.3	110	20	120	160	0.52	**2LC0530-7AD**	43.7
355-4	**5250**	2950	**120**	160	178	7.1	120	20	125	165	0.856	**2LC0530-8AD**	59.8
389-4	**6650**	2700	**130**	175	194	7.1	130	20	130	170	1.09	**2LC0531-0AD**	68.9
439-4	**9850**	2350	**150**	200	219	7.1	150	22	166	210	2.23	**2LC0531-1AD**	106
499-4	**13300**	2100	**165**	220	245	7.1	165	30	170	230	3.81	**2LC0531-2AD**	142
547-4	**19000**	1900	**190**	250	299	8.8	190	32	176	240	6.24	**2LC0531-3AD**	191
600-4	**25150**	1750	**205**	275	324	8.8	205	34	182	250	10.2	**2LC0531-4AD**	257
647-4	**32500**	1600	**225**	300	343	10	225	35	220	290	16.5	**2LC0531-5AD**	348
695-6	**41000**	1500	**240**	325	368	10	240	33	224	290	23.7	**2LC0540-0AD**	441
756-6	**52000**	1350	**255**	340	394	12.5	255	34	232	300	33.2	**2LC0540-1AD**	525
817-6	**65000**	1250	**270**	360	406	12.5	270	36	238	310	49.1	**2LC0540-2AD**	659
880-6	**80000**	1150	**300**	400	419	12.5	300	37	256	330	72.8	**2LC0540-3AD**	849

Configurable variants [1]

- ØD1 Without finished bore
  With finished bore
- ØD2 Without finished bore
  With finished bore

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Permitted shaft distance S of type NHN relative to speed

Size DA mm	Speed n_N 500 rpm	600	700	800	900	1000	1200	1400	1500	2000	2500	3000	4000
	Permitted shaft distance S in mm												
101-4	2822	2577	2387	2233	2106	1999	1825	1691	1634	1416	1268	1159	1005
133-4	2949	2693	2494	2334	2201	2089	1908	1767	1708	1481	1326	1212	1051
167-4	3376	3083	2856	2672	2520	2392	2185	2024	1956	1696	1518	1387	1203
196-4	4029	3679	3407	3188	3007	2854	2606	2414	2333	2022	1811	1654	1435
230-4	4297	3924	3634	3400	3207	3043	2779	2574	2488	2156	1930	1764	1530
260-4	4943	4514	4181	3912	3689	3500	3197	2961	2861	2480	2220	2028	1759
292-4	5305	4844	4487	4198	3959	3757	3431	3178	3071	2662	2383	2177	
324-4	5562	5079	4704	4401	4151	3939	3597	3332	3220	2791	2499	2283	
355-4	5709	5214	4828	4518	4261	4043	3692	3420	3305	2865	2564		
389-4	5968	5450	5047	4722	4453	4226	3859	3575	3454	2994	2680		
439-4	6361	5809	5380	5034	4747	4505	4114	3811	3682	3192			
499-4	6738	6154	5699	5333	5030	4773	4360	4039	3903	3384			
547-4	7442	6797	6295	5890	5555	5272	4815	4460	4310				
600-4	7762	7089	6565	6144	5794	5499	5022	4652	4496		Outside the permitted speed range		
647-4	7980	7287	6750	6316	5957	5653	5163	4783	4622				
695-6	8000	7553	6995	6545	6173	5858	5350	4956	4789				
756-6	8000	7797	7221	6757	6372	6047	5523						
817-6	8000	7920	7335	6864	6473	6143	5611						
880-6	8000	8000	7456	6977	6580	6244							

Notes

- The permitted length of the intermediate spacer depends on the maximum operating speed of the coupling. In the case of individual order of the intermediate spacer, the length (LZ) must be specified.
- Mass moments of inertia and weights apply to the entire NHN coupling with maximum bores D1/D2 and a shaft distance S = S min.

Ordering example

- ARPEX ARW-4 NHN coupling, size 133-4, with shaft distance S = 1000 mm,
- Bore ØD1 40H7 mm, with keyway to DIN 6885 and set screw
- Bore ØD2 45K7 mm, with keyway to DIN 6885 and set screw

Article no.: 2LC0530-1AD99-0AZ0-Z L0W+M1A+Q0Y+M13
Plain text to Q0Y: S = 1000 mm

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

SPARE AND WEAR PARTS

Plate pack, ARW-4/-6 series

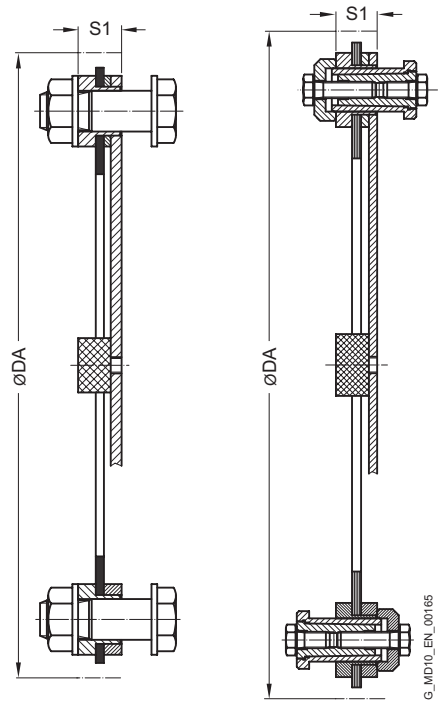


Figure 1

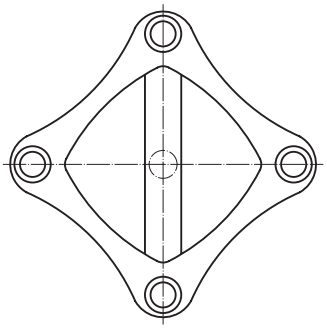
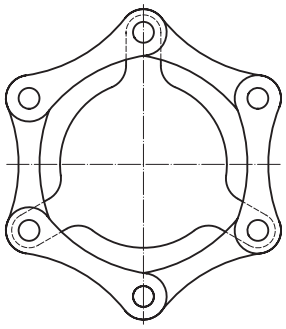


Figure 2



Size DA mm	Dimensions S1 mm	Mass moment of inertia *J* kgm²	Article No.	Weight *m* kg
101-4	11	0.0001	**2LC0530-0AB00-0AA0**	0.1
133-4	13	0.0005	**2LC0530-1AB00-0AA0**	0.2
167-4	15	0.0017	**2LC0530-2AB00-0AA0**	0.5
196-4	16	0.0037	**2LC0530-3AB00-0AA0**	0.7
230-4	16	0.0068	**2LC0530-4AB00-0AA0**	1
260-4	17	0.0136	**2LC0530-5AB00-0AA0**	1.5
292-4	19	0.0227	**2LC0530-6AB00-0AA0**	1.9
324-4	20	0.0288	**2LC0530-7AB00-0AA0**	2.1
355-4	20	0.0452	**2LC0530-8AB00-0AA0**	2.7
389-4	20	0.0645	**2LC0531-0AB00-0AA0**	3.2
439-4	22	0.1147	**2LC0531-1AB00-0AA0**	4.5
499-4	30	0.2235	**2LC0531-2AB00-0AA0**	6.9
547-4	32	0.3658	**2LC0531-3AB00-0AA0**	9.5
600-4	34	0.5355	**2LC0531-4AB00-0AA0**	11.4
647-4	35	0.7939	**2LC0531-5AB00-0AA0**	14.6
695-6	33	1.4624	**2LC0540-0AB00-0AA0**	24.6
756-6	34	1.225	**2LC0540-1AB00-0AA0**	20.2
817-6	36	1.7497	**2LC0540-2AB00-0AA0**	23.9
880-6	37	2.546	**2LC0540-3AB00-0AA0**	28.9

Notes

- Plate packs of the ARW-4 series comprise ring plates (Fig. 1), those of the ARW-6 series side-bar plates (Fig. 2).
- The plate pack of the ARW-4/-6 series is readily available as a spare part.
- The plate pack is delivered with screw connection.
- Up to size 292-4 close-fitting bolts with collar nuts, from size 324-4 conical screw connections are used.

Ordering example

- ARPEX ARW-4 plate pack, size 133-4, complete with screw connection.

Article no.: 2LC0530-1AB00-0AA0

GENERAL

Coupling suitable for use in potentially explosive atmospheres.
Complies with the current ATEX Directive for:

- II 2G Ex h IIC T6 ... T2 Gb X
- II 2D Ex h IIIC T85 °C ... 250 °C Db X
- I M2 Ex h Mb X

Benefits

ARPEX couplings of the ARF-6 series are extremely short and so suitable for drives with short shaft distances. They also serve as self-aligning couplings for axial, angular and radial misalignment. The hubs are available both as pure clamping hubs for smooth shafts and with parallel keyway for shafts with parallel key.
The variant with slit clamping hubs enables the delivery of fully preassembled couplings. This means that the entire coupling can be dismounted and fitted without moving the connected units.

Application

ARPEX couplings of the ARF-6 series are designed for minimum fitting spaces without having to sacrifice the advantages of the two-joint coupling. It is thus possible to compensate for both axial and angular as well as radial misalignment. By using half-shell clamping hubs, the coupling can be radially freely dismounted. Power is transmitted via hexagon socket head cap screws and close-fitting bolts with nuts and ring plate packs in hexagonal design. Torques of between 120 and 6100 Nm can be transmitted at a permitted angular misalignment of 0.7°.

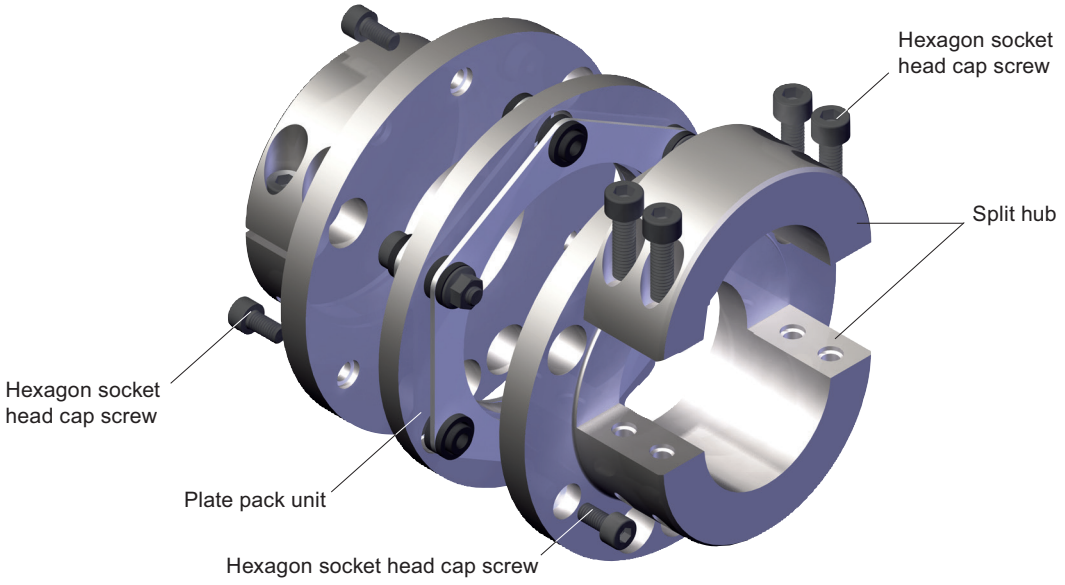
Main areas of application for the ARF-6 series:

- Film stretching machines
- Machines in the cellulose industry
- Machines in confined fitting situations

GENERAL

Design and configurations

The two plate packs form a unit with the adapter disk and are screwed together with close-fitting bolts and nuts at three points. The alternate connection of this intermediate unit with the flanges of the split coupling hubs is achieved by means of short hexagon socket head cap screws at further three points. The hubs are designed as axially slit clamping hubs with a half-shell. For larger bores these can be manufactured as jumbo hubs. Optionally, the hubs are also available without parallel keyway.



Design of the ARPEX coupling, ARF series

Variants of the ARF coupling

Type	Description
GG	Variant with 2 standard clamping hubs
GJ	Variant with 1 jumbo clamping hub for large bore diameters

The article number can be obtained with the help of the Configurator. The coupling can be selected in a product configurator and specified using selection menus.

The Configurator is available under **flender.com**

The coupling can be selected via "Technical selection" (technical selection) or via "Direct selection" (via article-no.).

Technical specifications

Power ratings, types GG and GJ									
Size	Rated torque T_{KN} Nm	Maximum torque T_{Kmax} Nm	Overload torque T_{KOL} Nm	Fatigue torque T_{KW} Nm	Maximum speed n_{Kmax} rpm	Maximum permitted shaft misalignment $\pm\Delta K_a$ mm	$\pm\Delta K_w$	$\pm\Delta K_r$ mm	Torsional stiffness C_T MNm/rad
84-6	120	220	330	55	12500	1.1	0.7 °	0.16	0.07
111-6	190	350	520	90	9450	1.8		0.16	0.13
132-6	350	650	950	160	7950	2.02		0.2	0.2
147-6	500	900	1350	230	7100	2.4		0.2	0.28
171-6	900	1700	2450	400	6100	2.74		0.24	0.57
182-6	1450	2600	4000	650	5750	2.86		0.29	0.66
202-6	2150	3900	5800	980	5200	3.06		0.29	0.77
218-6	3200	5800	8700	1450	4800	3.14		0.37	1.25
252-6	4500	8100	12000	2000	4150	3.7		0.45	1.55
267-6	6100	11000	16500	2800	3900	3.84		0.46	1.8

The permitted shaft misalignments ΔK_a, ΔK_r and ΔK_w are maximum values and must not occur at the same time (see following table).

- T_{Kmax} permitted only five times per hour.
- T_{KW} for medium torque T_N = 0 Nm.
- If T_N and T_{KW} occur at the same time, the manufacturer must be consulted.

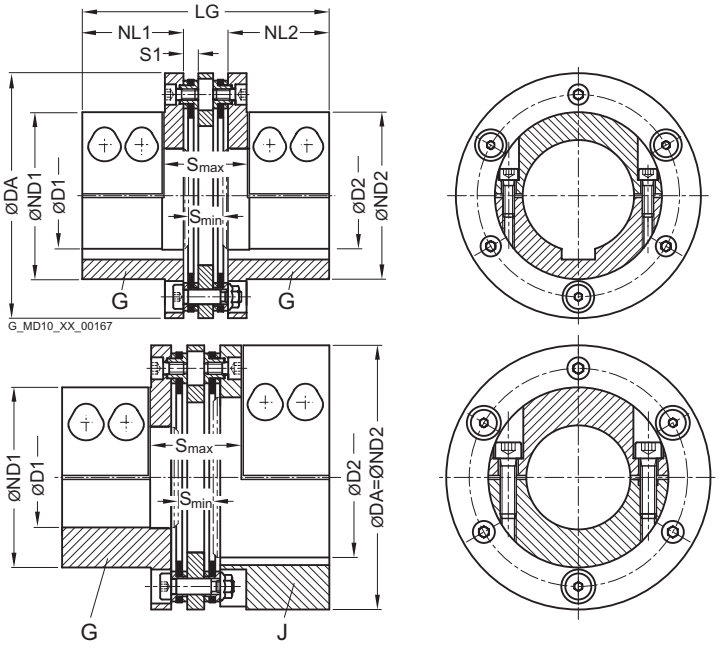
The values for torsional stiffness apply to the complete coupling. The torsional stiffness of the plate packs applies to the rated coupling torque T_{KN}. To determine the torsional stiffness for a specific operating point, e.g. for calculating torsional vibration, the manufacturer must be consulted.

Permitted shaft misalignments								
Size	Permitted angular misalignment $\pm\Delta K_w$							
	0.0 °	0.1 °	0.2 °	0.3 °	0.4 °	0.5 °	0.6 °	0.7 °
	Permitted axial misalignment $\pm\Delta K_a$ in mm							
84-6	1.1	0.94	0.79	0.63	0.47	0.31	0.16	0
111-6	1.8	1.54	1.29	1.03	0.77	0.51	0.26	0
132-6	2.02	1.73	1.44	1.15	0.87	0.58	0.29	0
147-6	2.4	2.06	1.71	1.37	1.03	0.69	0.34	0
171-6	2.74	2.35	1.96	1.57	1.17	0.78	0.39	0
182-6	2.86	2.45	2.04	1.63	1.23	0.82	0.41	0
202-6	3.06	2.62	2.19	1.75	1.31	0.87	0.44	0
218-6	3.14	2.69	2.24	1.79	1.35	0.9	0.45	0
252-6	3.7	3.17	2.64	2.11	1.59	1.06	0.53	0
267-6	3.84	3.29	2.74	2.19	1.65	1.1	0.55	0

TYPES GG AND GJ

Radially freely dismountable, torsionally rigid coupling, available as types GG and GJ.

Complete dismounting without moving the units with extremely short shaft distances.



Size DA mm	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Type	Dimensions in mm Keyway DIN 6885 D1 max. Parallel key/ Clamping seat	D2 max. Parallel key	D2 max. Clamping seat	ND1	ND2	NL1/ NL2	S1	Shaft distance S min	Shaft distance S max.	LG	Mass moment of inertia J kgm²	↗ Article no. [1]	Weight m kg
84-6	**120**	12500	GG	**25**	**25**	**25**	50	50	40	6	16	39	99	0.0013	**2LC0420-0AB99-0AA0**	1.7
			GJ		**40**	**48**		84						0.0021	**2LC0420-0AC99-0AA0**	2.1
111-6	**190**	9450	GG	**48**	**48**	**48**	76	76	40	6	16	39	99	0.0043	**2LC0420-1AB99-0AA0**	2.9
			GJ		**65**	**65**		111						0.0067	**2LC0420-1AC99-0AA0**	3.6
132-6	**350**	7950	GG	**52**	**52**	**52**	90	90	55	8	18.5	45	134	0.011	**2LC0420-2AB99-0AA0**	5.7
			GJ		**75**	**80**		132						0.0177	**2LC0420-2AC99-0AA0**	7
147-6	**500**	7100	GG	**60**	**60**	**60**	105	105	65	8	18.5	45	154	0.0199	**2LC0420-3AB99-0AA0**	8.3
			GJ		**85**	**85**		147						0.0324	**2LC0420-3AC99-0AA0**	10.4
171-6	**900**	6100	GG	**70**	**70**	**70**	122	122	75	9	22.5	56	179	0.0439	**2LC0420-4AB99-0AA0**	13.3
			GJ		**100**	**100**		171						0.0695	**2LC0420-4AC99-0AA0**	16.4
182-6	**1450**	5750	GG	**70**	**70**	**70**	126	126	85	11	29	71	205	0.0649	**2LC0420-5AB99-0AA0**	17.5
			GJ		**100**	**110**		182						0.1005	**2LC0420-5AC99-0AA0**	20.9
202-6	**2150**	5200	GG	**75**	**75**	**75**	138	138	85	11	29	71	205	0.0986	**2LC0420-6AB99-0AA0**	21.9
			GJ		**115**	**125**		202						0.1519	**2LC0420-6AC99-0AA0**	25.6
218-6	**3200**	4800	GG	**90**	**90**	**90**	149	149	95	14	35	86	234	0.1499	**2LC0420-7AB99-0AA0**	27.2
			GJ		**130**	**130**		218						0.2345	**2LC0420-7AC99-0AA0**	33.6
252-6	**4500**	4150	GG	**100**	**100**	**100**	166	166	105	17	40.5	101	264	0.2924	**2LC0420-8AB99-0AA0**	39.9
			GJ		**140**	**150**		252						0.4651	**2LC0420-8AC99-0AA0**	49.8
267-6	**6100**	3900	GG	**110**	**110**	**100**	177	177	110	17	40.5	102	275	0.3827	**2LC0421-0AB99-0AA0**	45.9
			GJ		**150**	**160**		267						0.6129	**2LC0421-0AC99-0AA0**	58.1

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

Notes

- The shaft tolerance must be specified in the order.
  To specify, "**-Z**" must be added to the article no. and the order codes "**Y26**" and "**Y27**" with plain text specification of the shaft tolerance for D1 and D2 must be added as well.
- Jumbo hubs for larger shaft diameters.
  G and J hubs in split clamping hub variant.
  The hub variant with keyway rates as standard. Optionally, the shaft/hub connection can be implemented without keyway as a pure clamping seat.
  For specification of plate pack, see **Page 6/40**.
- Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example

- ARPEX ARF-6 GG coupling, size 132-6
- for shaft diameter ØD1 45h6 mm, without keyway
- for shaft diameter ØD2 50k6 mm,
  with keyway to DIN 6885-1, keyway width P9.

Article no.: 2LC0420-2AB99-0AA0-Z L1A+M1C+L45+Y26+Y27
Plain text to Y26: h6
Plain text to Y27: k6

6

[1] To identify complete item numbers specifying the available finish boring options and – if necessary – further order options, please use our configurators on **flender.com**.

↗ For online configuration on **flender.com**, click on the item no.

SPARE AND WEAR PARTS

Plate pack, ARF-6 series

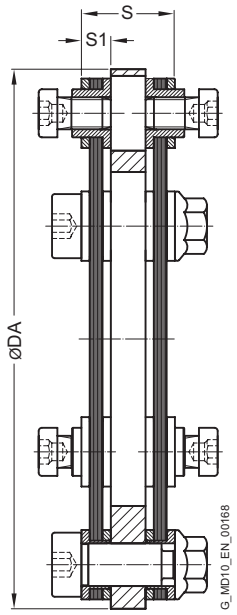
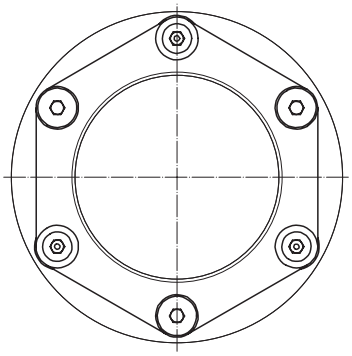


Figure 1



Size DA mm	Type	Dimensions S mm	S1 mm	Mass moment of inertia J kgm²	Article No.	Weight m kg
84-6	GG	19	6	0.0003	2LC0420-0AE00-0AA0	0.3
	GJ				2LC0420-0AH00-0AA0	
111-6	GG	19	6	0.0009	2LC0420-1AE00-0AA0	0.46
	GJ				2LC0420-1AH00-0AA0	
132-6	GG	24	8	0.0026	2LC0420-2AE00-0AA0	0.9
	GJ				2LC0420-2AH00-0AA0	
147-6	GG	24	8	0.0038	2LC0420-3AE00-0AA0	1.07
	GJ				2LC0420-3AH00-0AA0	
171-6	GG	29	9	0.0097	2LC0420-4AE00-0AA0	1.96
	GJ				2LC0420-4AH00-0AA0	
182-6	GG	35	11	0.0143	2LC0420-5AE00-0AA0	2.58
	GJ				2LC0420-5AH00-0AA0	
202-6	GG	35	11	0.024	2LC0420-6AE00-0AA0	3.53
	GJ				2LC0420-6AH00-0AA0	
218-6	GG	44	14	0.0383	2LC0420-7AE00-0AA0	4.89
	GJ				2LC0420-7AH00-0AA0	
252-6	GG	54	17	0.0812	2LC0420-8AE00-0AA0	7.9
	GJ				2LC0420-8AH00-0AA0	
267-6	GG	55	17	0.1152	2LC0421-0AE00-0AA0	9.6
	GJ				2LC0421-0AH00-0AA0	

Note

- Ring plates (Figure 1) are used for the plate packs.
- The plate pack unit for the ARF-6 series is readily available as a spare part in most sizes.
- The plate pack unit comprises two preassembled plate packs with adapter disk, including screw connection. The standard screw connection comprises hexagon socket head cap screws and close-fitting bolts with nuts.

APPENDIX

FITS

Fitting recommendations

For many applications, the fit assignment m6/H7 is especially suitable.

Description	Application	Shaft tolerance	Bore tolerance
Sliding fit with parallel key connection not suitable for reversing operation	For steel and cast hubs	j6	H7
		h6	J7
Press fit with parallel key connection not suitable for reversing operation	For steel and cast hubs	h6	K7
		k6	H7
Interference fit with parallel key connection suitable for reversing operation	For steel and cast hubs	m6	H7
		n6	H7
		h6	M7
	Only for steel hubs	h6	P7
	Preferred for ZAPEX and ARPEX coupling series.	k6	M7
		m6	K7
		n6	J7
		p6	H7
		s6	F7
Shrink fit connection without parallel key	Only for steel hubs	u6	H6
	The permitted hub tension must be urgently checked.	v6	H6
		x6	H6

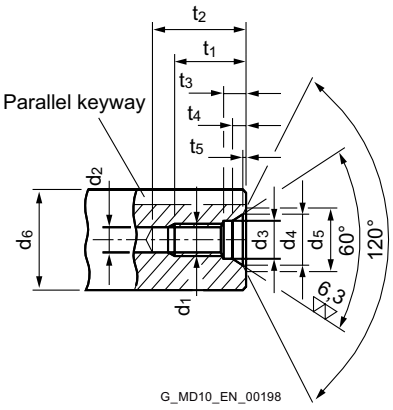
Deviation table to DIN ISO 286 for above-mentioned fits for bore diameters from 10 mm to 250 mm

Bore diameter		Deviations in µm											
		Bore						Shaft					
above	up to	F7	H7	J7	K7	M7	P7	h6	j6	k6	m6	n6	p6
10	18	+34	+18	+10	+6	0	-11	0	+8	+12	+18	+23	+29
		+16	0	-8	-12	-18	-29	-11	-3	+1	+7	+12	+18
18	30	+41	+21	+12	+6	0	-14	0	+9	+15	+21	+28	+35
		+20	0	-9	-15	-21	-35	-13	-4	+2	+8	+15	+22
30	50	+50	+25	+14	+7	0	-17	0	+11	+18	+25	+33	+42
		+25	0	-11	-18	-25	-42	-16	-5	+2	+9	+17	+26
50	80	+60	+30	+18	+9	0	-21	0	+12	+21	+30	+39	+51
		+30	0	-12	-21	-30	-51	-19	-7	+2	+11	+20	+32
80	120	+71	+35	+22	+10	0	-24	0	+13	+25	+35	+45	+59
		+36	0	-13	-25	-35	-59	-22	-9	+3	+13	+23	+37
120	180	+83	+40	+26	+12	0	-28	0	+14	+28	+40	+52	+68
		+43	0	-14	-28	-40	-68	-25	-11	+3	+15	+27	+43
180	250	+96	+46	+30	+13	0	-33	0	+16	+33	+46	+60	+79
		+50	0	-16	-33	-46	-79	-29	-13	+4	+17	+31	+50

Cylindrical shaft ends, extract from DIN 748 Part 1 (long)

	Diameter in mm																				
	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70	75	80	85	90	95	100
ISO tolerance zone	k6												m6									
End length in mm	50	60		80				110						140				170				210

Central holes according to DIN 332 Part 2



Form DS (with thread) DIN 332/2

Recommended diameter ranges d_6 [1]		DS form dimensions									
above	up to	d_1	d_2 [2]	d_3	d_4	d_5	t_1 +2	t_2 min.	t_3 +1	t_4 approx.	t_5 approx.
7	**10**	M3	2.5	3.2	5.3	5.8	9	12	2.6	1.8	0.2
10	**13**	M4	3.3	4.3	6.7	7.4	10	14	3.2	2.1	0.3
13	**16**	M5	4.2	5.3	8.1	8.8	12.5	17	4	2.4	0.3
16	**21**	M6	5	6.4	9.6	10.5	16	21	5	2.8	0.4
21	**24**	M8	6.8	8.4	12.2	13.2	19	25	6	3.3	0.4
24	**30**	M10	8.5	10.5	14.9	16.3	22	30	7.5	3.8	0.6
30	**38**	M12	10.2	13	18.1	19.8	28	37	9.5	4.4	0.7
38	**50**	M16	14	17	23	25.3	36	45	12	5.2	1.0
50	**85**	M20	17.5	21	28.4	31.3	42	53	15	6.4	1.3
85	**130**	M24	21	25	34.2	38	50	63	18	8	1.6
130	**225**	M30 [3]	26.5	31	40.2	44.6	60	77	22	8	1.9
225	**320**	M36 [3]	32	37	49.7	55	74	93	22	11	2.3
320	**500**	M42 [3]	37.5	43	60.3	66.6	84	105	26	15	2.7

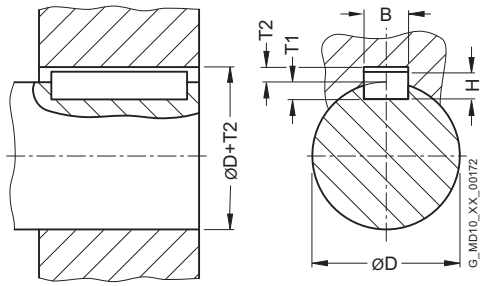
[1] Diameter refers to the finished workpiece

[2] Tap hole drill diameter according to DIN 336 Part 1

[3] Dimensions not acc. to DIN 332 Part 2

A

PARALLEL KEY CONNECTIONS TO DIN 6885-1



For moderate operating conditions, the hub keyway tolerance JS9 is recommended.

In harsh operating conditions or during reversing operation, the keyway width tolerance P9 must be preferred.

With two parallel keyways, the keyway width tolerance JS9 should be specified in order to simplify the assembly.

The shaft keyway width has to be specified with the tolerance N9.

Diameter		Keyway width	Parallel key height	Shaft keyway depth	Hub keyway depth	Deviation for shaft and hub keyway depth	Deviation table for keyway width B	
above D mm	up to mm	B mm	H mm	T1 mm	T2 mm	mm	JS9 µm	P9 µm
	10	3	3	1.8	1.4	+0.1	+12.5	-6
							-12.5	-31
10	12	4	4	2.5	1.8	+0.1	+15	-12
							-15	-42
12	17	5	5	3	2.3	+0.1	+15	-12
							-15	-42
17	22	6	6	3.5	2.8	+0.1	+15	-12
							-15	-42
22	30	8	7	4	3.3	+0.2	+18	-15
							-18	-51
30	38	10	8	5	3.3	+0.2	+18	-15
							-18	-51
38	44	12	8	5	3.3	+0.2	+21.5	-18
							-21.5	-61
44	50	14	9	5.5	3.8	+0.2	+21.5	-18
							-21.5	-61
50	58	16	10	6	4.3	+0.2	+21.5	-18
							-21.5	-61
58	65	18	11	7	4.4	+0.2	+21.5	-18
							-21.5	-61
65	75	20	12	7.5	4.9	+0.2	+26	-22
							-26	-74
75	85	22	14	9	5.4	+0.2	+26	-22
							-26	-74
85	95	25	14	9	5.4	+0.2	+26	-22
							-26	-74

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Diameter above D mm	Diameter up to mm	Keyway width B mm	Parallel key height H mm	Shaft keyway depth T1 mm	Hub keyway depth T2 mm	Deviation for shaft and hub keyway depth mm	Deviation table for keyway width B JS9 µm	Deviation table for keyway width B P9 µm
95	110	28	16	10	6.4	+0.2	+26	-22
							-26	-74
110	130	32	18	11	7.4	+0.2	+31	-26
							-31	-88
130	150	36	20	12	8.4	+0.3	+31	-26
							-31	-88
150	170	40	22	13	9.4	+0.3	+31	-26
							-31	-88
170	200	45	25	15	10.4	+0.3	+31	-26
							-31	-88
200	230	50	28	17	11.4	+0.3	+31	-26
							-31	-88
230	260	56	32	20	12.4	+0.3	+37	-32
							-37	-106
260	290	63	32	20	12.4	+0.3	+37	-32
							-37	-106
290	330	70	36	22	14.4	+0.3	+37	-32
							-37	-106
330	380	80	40	25	15.4	+0.3	+37	-32
							-37	-106
380	440	90	45	28	17.4	+0.3	+43.5	-37
							-43.5	-124
440	500	100	50	31	19.4	+0.3	+43.5	-37
							-43.5	-124

A

RELATED CATALOGS

Torsionally Rigid Couplings

FLE 10.1

FLEX-C10001-00-7600

Flexible Couplings

FLE 10.2

FLEX-C10002-00-7600

Highly Flexible Couplings

FLE 10.3

FLEX-C10003-00-7600

Fluid Couplings

FLE 10.4

FLEX-C10004-00-7600

ARPEX

High Performance Couplings
MD 10.2

PDMD-C10146-00

SIPEX and BIPEX-S

Backlash-free couplings
MD 10.3

PDMD-C10145-00

ARPEX

Composite Couplings
MD 10.5

PDMD-C10153-00

ARPEX

Safety couplings

MD 10.11

PDMD-C10147-00

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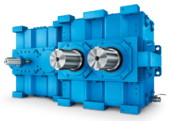
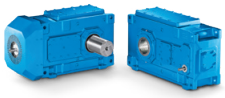
FLENDER SIP
Standard Industrial Planetary Gear Units
MD 31.1
PDMD-C10154-00

FLENDER CHG
Helical Gear Units
MD 20.10
PDMD-C10155-00



Gear units
Fast Track
MD 20.12
PDMD-C10156-00



Bucket Elevator Drives
MD 20.2
PDMD-C10157-00

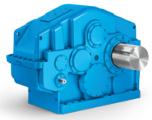
PLANUREX 2
Planetary Gear Units
MD 20.3
PDMD-C10158-00

Paper Machine Drives
MD 20.5
PDMD-C10159-00

Conveyor Belt Drives
MD 20.6
PDMD-C10160-00

Marine Reduction Gearboxes
MD 20.7
PDMD-C10161-00

DUORED 2
Helical Gear Units, Load-sharing
MD 20.8
PDMD-C10162-00



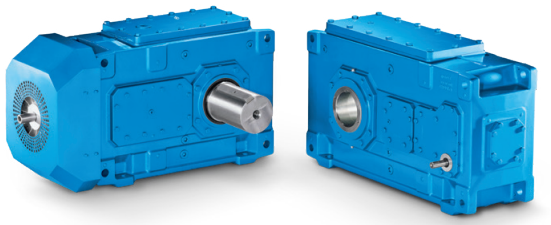
Pinion Drive for Tube Mills
MD 20.9
PDMD-C10163-00

A

THE RIGHT GEAR UNIT SOLUTION FOR ANY REQUIREMENT

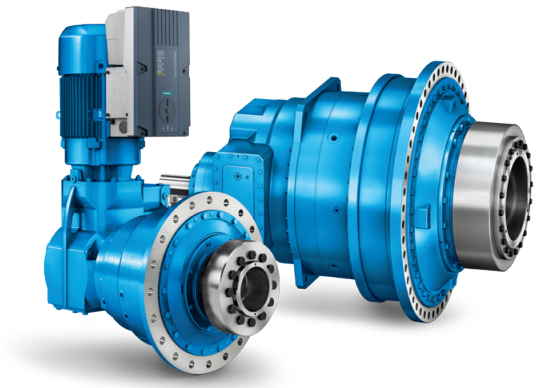
We provide helical and planetary gear units made up of standard modules or as a complete application solution.

Helical and planetary gear units from Flender are modern drive solutions that satisfy the most varying and extreme demands, day after day and year after year. For decades, plant operators have been achieving high system reliability and low lifecycle costs in every conceivable industry with our helical gear units.



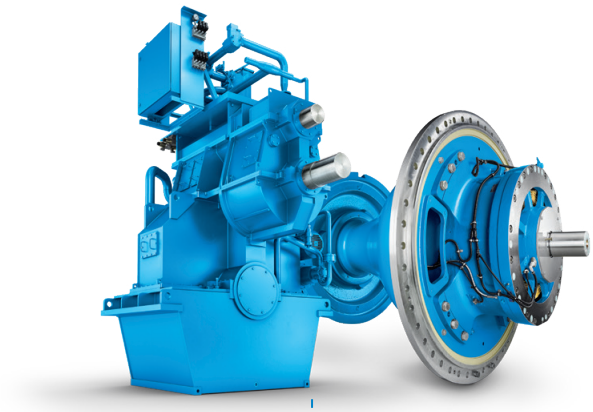
Helical and bevel helical gear units

Flender helical and bevel helical gear units are by far the most comprehensive range of industrial gear units in the world.
It ranges from a multi-faceted universal gear unit portfolio and application-specific gear units to customer-specific solutions.
Rated torque: 3,300 Nm ... 1,400,000 Nm



Planetary Gear Units

With Flender planetary gear units, we provide a range of durable, reliable and finely graduated gear unit solutions. The series wins customers over due to its highly integrated planetary geared motor and maximum conformity with all international motor standards.
It also brings quality and performance in a good ratio of lifecycle costs to price.
Rated torque: 10,000 Nm ... 5,450,000 Nm



Application-specific gear units

With application-specific gear units, Flender provides by far the most application solutions and thus covers nearly every drive-related need from hundreds of applications in industry and the acquisition of raw materials.
Rated torque: up to 10,000,000 Nm

Customer-specific designs

Our experts are available at any time for special requirements during the development of new products. From designing and simulating complex drive solutions to implementing them, we work together with you to resolve multi-layered tasks.

FLENDER COUPLINGS
CATALOG **FLE 10.1**
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flender.com/couplings

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