GEISLINGER
SAE-COUPLING

COMPACT DESIGN

TORSIONAL
VIBRATION
CENTER

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GEISLINGER SAE-COUPLING

The technology behind the Geislinger steel spring coupling with its extraordinary reliability has been proven for more than 50 years. This successful design has now been further developed and optimized, resulting in the SAE-Coupling. In circumstances where reliability and cost of ownership are decisive factors, the Geislinger SAE-Coupling is the first choice for a wide variety of applications.

DESCRIPTION

The Geislinger SAE-Coupling with its modular concept, enlarged oil volume and the renowned fatigue resistant steel springs permits a short lead time and attractive pricing.
The SAE-Coupling is available in four different stiffness levels, and adapts perfectly to the stiffness and torque required by specific applications.

To meet all installation situations, customized adapters with splined interfaces are available to connect to the coupling inner part and allow for axial movement. The composite membrane enables thermal expansion of the oil and allows for a rapid oil exchange by flushing.

Resistant to heat and oil, the Geislinger SAE-Coupling is the perfect solution for installation in harsh environments, such as bell or bearing carrier housings with low air ventilation.

APPLICATIONS

- Marine
- Power generation
- Rail
- Mining
- Oil and gas

TECHNICAL DATA

- Torque range: 2.4 - 20 kNm
- Twist at nominal torque: 30, 60, 90 and 120 mrad
- Dimensionless damping factor: 0.07 – 0.154
- Ambient temperature: -10°C to 120°C
- SAE-Standard J620 outer connections: 14, 18, 21 and 24
- Inner connection: Spline, blind-assembly
- Multiple adapter options: flange, keyway or conical taper

ADVANTAGES

- Minimal weight and slim, low profile design
- Compact, high power density
- Reduction of lead time
- Superior reliability is achieved using original Geislinger-made steel springs
- Rapid oil exchange via VSTI-plugs
- Simple calculation using linear and constant parameters
- Longevity of coupling is unaffected by harsh environmental stresses
- Low life-cycle cost
- Geislinger Worldwide After Sales Service

Standardized interfaces for SAE- Standard J620 (outside) spline connections (inside) and VSTI-plugs for quick oil exchange.

Advanced composite membrane for oil volume expansion

New integrated skeleton for more compactness and less weight (patented).

Preamble

This catalog replaces all old catalog versions.

The content of this catalog is indicative and - based on new developments - Geislinger reserves the right to change the content without prior notice.

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Description

■ **Application**

Geislinger SAE-Couplings are torsional elastic steel spring couplings with the following advantages:

- ☐ Modular concept for SAE-flywheel sizes
- ☐ High torsional elasticity
- ☐ Torsional damping
- ☐ Longest lifetime
- ☐ Low weight, small size
- ☐ No aging, easy to service
- ☐ Low wear and maintenance
- ☐ Indifferent to high temperatures, dirt and oil
- ☐ Constant stiffness and damping over coupling life
- ☐ Suitable for high rotational speeds

Due to the increased power density of today's drivelines, more attention must be paid to torsional vibration issues. In many cases it is necessary to dampen torsional vibrations and to move damaging natural frequencies out of the operating speed range of the driven system. The Geislinger SAE-Coupling is capable to solve both of these tasks. The stiffness of the coupling leaf springs can be precisely tuned to isolate or move harmful natural frequencies. The Geislinger SAE-Coupling provides additionally a certain damping which dampens torsional vibrations. Without a SAE-Coupling these torsional vibrations create stresses in the driven system, dramatically shortening component life and reliability. The Geislinger SAE-Coupling allows for continuous operation within the operating speed range of the driven system, obtaining lower stresses in shafts and gears.

Geislinger SAE-Couplings meet the demands of all sorts of machinery. Applications such as all kinds of engine drivelines, marine- and pump-applications and other industrial machinery are typical examples. Data collection from many research tests have enabled precise torsional damping and torsional spring stiffness data to be established. This guarantees correct calculation of critical speeds, amplitudes and loads in all parts of the system. Torsional stiffness is available within a wide range to meet the needs of any installation.

Due to the fact, that the Geislinger SE-Coupling has no axial stiffness it can easily absorb thermal expansion of the driving and driven system parts. The SE-Coupling also permits radial and angular misalignments in a small range. For high misalignment needs in radial and axial direction the Geislinger SB-Coupling with internal axial/radial fixation of the driven flange is combined with a GESILCO® BF-Coupling. This coupling combination allows for very low reaction forces and homokinetic torque transmission. Adapters are tailor-made.

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■ Design SE-Coupling

The Geislinger SE-Coupling design is a further development of the Geislinger torsional elastic coupling GED using radially arranged steel springs. The unique skeleton forms the backbone of the coupling, accommodating the coupling springs. Spring fixing is done by

Fig. 1

side plate

inner star

backpack

skeleton

spring pack
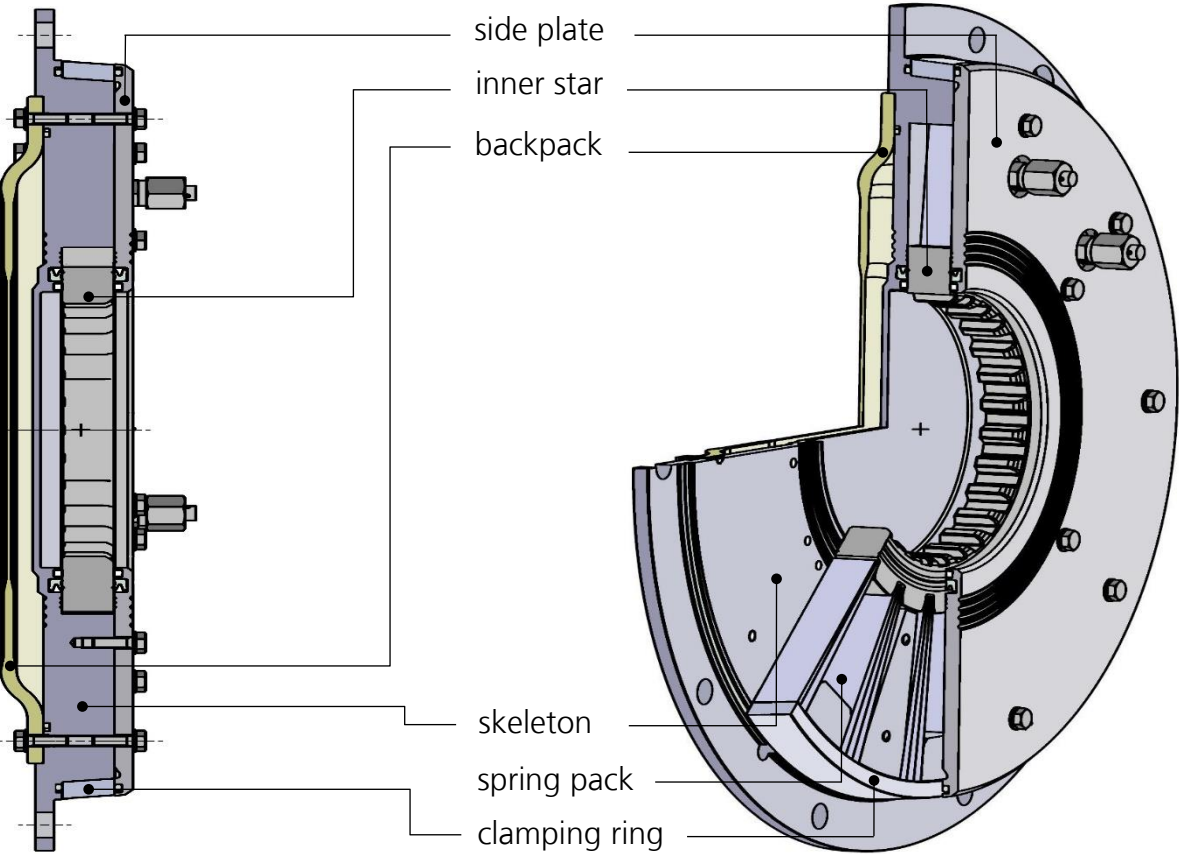
clamping ring

using a conical clamping ring which forces sets of three V-shaped springs radially into V-shaped clamping positions of the skeleton (international patents). All major coupling components are essentially made of the same materials as those used for the driving machinery and the associated driven components. The backpack is a FE-optimized glass fiber reinforced plastic membrane, compensating thermal expansion of the coupling oil. Axial misalignments are compensated by the splined inner star which also enables blind assembly of the coupling. All major components are shown in Fig. 1.

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▪ Design SF-Coupling

The Geislinger SF-Coupling design is a further development of the Geislinger torsional elastic coupling GED using radially arranged steel springs. The unique skeleton forms the backbone of the coupling, accommodating the coupling springs. Spring fixing is done by
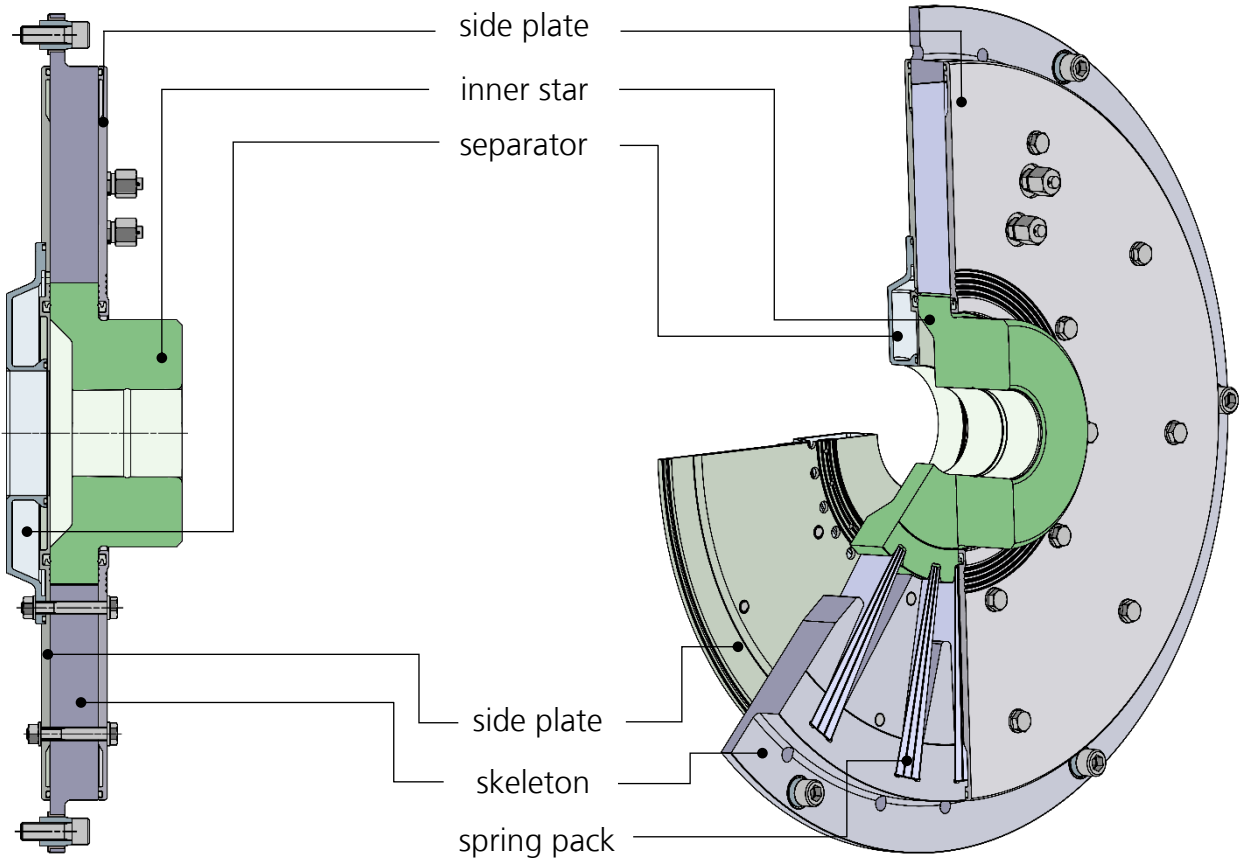
Fig. 2

side plate

inner star

separator

side plate

skeleton

spring pack

using sets of three V-shaped springs which are pressed into V-shaped clamping positions of the skeleton (international patents). All major coupling components are essentially made of the same materials as those used for the driving machinery and the associated driven components. An internal air reservoir is foreseen for compensating thermal expansion of the coupling oil. Plug-in sleeves and bolts are mounted onto the driving machinery. Durable low friction sleeves inserted into the skeleton flange compensate for axial misalignments and enable blind assembly of the coupling. All major components are shown in Fig. 2.

■ **Design SB+BF Coupling-Combination**

The Geislinger SB-Coupling design is a further development of the Geislinger SE-Coupling using radially arranged steel springs. The unique skeleton forms the backbone of the coupling with its flange part taking over the function of the clamping ring. Spring fixation

Fig. 3

side plate

bearing retainer

inner star

spring pack

skeleton

BF-Coupling

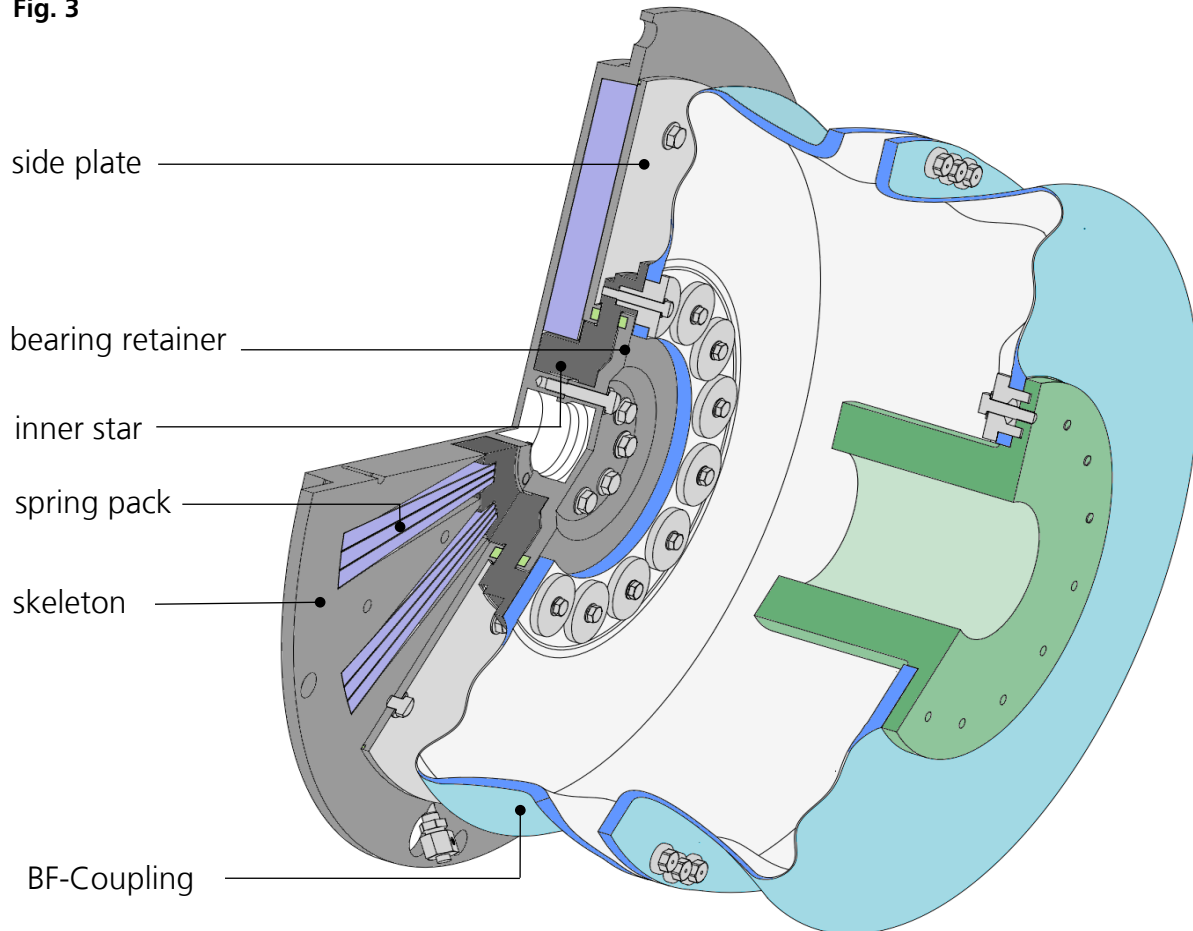is done by forcing sets of three V-shaped springs radially into V-shaped clamping positions of the skeleton (international patents). All major coupling components are essentially made of the same materials as those used for engines and the associated driven components. An internal air reservoir is foreseen for compensating thermal expansion of the coupling oil.

The SB-Coupling is combined with the GESILCO® BF-Coupling as a standard. The patented GESILCO® BF-Coupling consists of two membranes, an intermediate shaft with openings for assembly of fitted steel inserts and pre-stressed screws and two flanges. Membranes, intermediate shafts and flanges are manufactured as a single piece advanced composite structure.

The halves of the coupling are bolted together at the outer flanges with fitted bolts. By use of variable thickness spacers, installation tolerances can be compensated. At the inner flanges fitted steel inserts combined with pre-stressed screws are used to connect the BF-Coupling to the driving and driven components. All major components are shown in Fig. 3.

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It is possible to adjust the Gesilco® BF-Coupling installation length (i.e. 3 washer thicknesses can be installed in 3 different combinations to change the overall length of the BF-Coupling. See Fig. 4).

Fig. 4
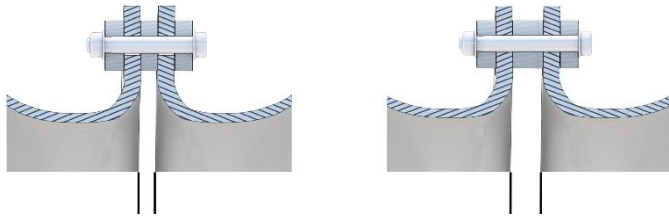
The BF-Coupling inner flange bolts are mounted through the openings with a torque spanner. See Fig. 5. Afterwards the coupling halves are turned into the operating position and bolted together. See Fig. 6.

Fig. 5   **Fig. 6**

Openings for mounting of inner flange bolts

■ Torsional Stiffness

The steel springs represent the core components of the Geislinger SAE-Coupling. Three V-shaped springs distanced by shims create a spring pack. They are produced in three to four basic stiffness series and develop by using several numbers of spring packs a fine graded stiffness range. The stiffness series, listed in this catalogue, form standard determinations based on the requirements of most applications.

Compared to the SAE-Coupling the GESILCO® BF-Coupling can be considered as more or less torsional stiff.

- ## Torsional Damping

The torsional damping of the oil filled Geislinger SAE-Coupling is mainly influenced by damping due to friction between the springs and between springs and inner star grooves, as the effect of hydrodynamic damping is set very low.

- ## Misalignment

Axial Misalignment

The Geislinger SE-Coupling provides axial displacement capacity due to a splined connection between inner star and the driven part. Instead of the axial compensating splined connection the Geislinger SF-Coupling is equipped with a plug-in connection at the outer flange. Both solutions enable absorption of axial thermal expansion of drive shaft components. In addition, the coupling's axial displacement capacity allows blind assembly and removal of any driven arrangement without disassembly of surrounding components.

The Geislinger SB+BF-Coupling-Combination provides axial displacement capacity due to the properties of the GESILCO® BF-Coupling. Each GESILCO® membrane is able for compensating axial misalignments. Reaction forces caused by axial deflections are nearly linear within a wide range.

The values for axial displacement are mentioned in the Technical Data tables.

Radial and Angular Misalignment

For the Geislinger SE-Coupling and SF-Coupling radial and angular misalignment capacity of the coupling is determined by the size of gap ΔK_r. Resulting reaction forces are determined by the stiffness of the coupling springs and are relatively small. Most importantly, no permanent deformation is occurring during misalignment compensation. This is due to the fact, that loads are absorbed elastically by the spring packs.

For the Geislinger SB+BF-Coupling-Combination radial and angular misalignment capacity are determined by the properties of the GESILCO® BF-Coupling. In radial direction, a single GESILCO® membrane is relatively stiff.

The combination of two membranes, coupled by a given length, allows for compensation of radial, angular and axial misalignments. Reaction forces caused by axial and angular deflections are nearly linear within a wide range.

Misalignment values can be seen in the Technical Data tables.

- ## Assembly

The SAE-Coupling is designed for standard connection of SAE-flywheel size 14, size 18, size 21 and size 24. In the same configuration there are also connection solutions available for nonstandard metric connecting bolts and/or for a different number of connecting bolts.

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The driven part of the SE-Coupling can connect directly to the coupling's inner spline or an adapter can be used for connecting a tapered shaft, a keyway shaft or a flange shaft. Even in the most difficult situations, assembly is possible through design optimization of an adapter.

SF-Couplings are combined with customized hubs. The inner star and the customized hub are normally one unit. A tapered hub or a keyway hub can be provided with customized dimensions.

SE- and SF-Couplings are foreseen for blind assembly. Typical applications are SAE-flange mounted gearboxes.

The driven part of the SB+BF-Coupling-Combination can connect directly to the BF-flange or a tapered hub, a keyway hub or a flange hub and can be provided additionally with customized dimensions.

■ Overload Capability

Due to the SAE-Coupling's design, spring packs can contact the spring bending limitation at 1.4 times of the nominal torque. This is referred to as torque on buffer. The coupling's standard design enables it to transmit transient shock torques up to 3.25 times of the nominal torque. With respect to marine applications, the spring bending limitations can help the coupling to act as a rigid coupling or as "homecoming device" if some spring packs are damaged.

■ Oil Supply

The Geislinger SAE-Coupling is oil filled directly after the assembly process. There are two connections for a quick oil change available on the side plate or the skeleton of the coupling. Oil change is done by flushing a certain oil volume through the coupling. Oil change intervals and a detailed description of the oil change process are mentioned in the coupling's manual.

■ Approval

All couplings are produced and certified in accordance with quality assurance requirements of DIN/ISO 9001 and DIN/ISO 14001. Geislinger's Quality Assurance System has been certified by all major classification societies.

All couplings can be supplied with approvals of major classification societies. Those classification society approvals do not require design alterations or compulsory spare parts.

For survey by a classification society, the following information is requested:

☐   Name of Classification Society

☐   Shipyard

☐   Hull number

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Designation

▪ Designation Code

In order to produce the Geislinger SAE-couplings as small and cost effective as possible, very torsional soft couplings are designed as non-reversible couplings.

Non-Reversible Type NC3

This design is used with non-reversible machinery. It has asymmetric bending capacity in forward and reverse direction.

Reversible Type UC3

This design has a symmetric spring bending capacity in forward and reverse direction. It can be used for reversible machinery. In reverse direction, this coupling can transmit the same torque as in forward direction ($1.0 \cdot T_{KN}$).

The SE-Coupling designation has the following meaning:

SE 41/2.2/120NC3/1/L/20/S14

SE:	SAE-type of engine flywheel. Inner connection of the SE-Coupling is a standardized spline connection. Different adaptors fitting to the spline connection are available on request.
41:	Outer diameter of the centre part in cm.
2.2:	Spring pack width in cm.
120:	Stiffness series and the approximate twist in mrad at nominal torque. Standard series are 30 (only SE-, SF-Coupling), 60, 90 and 120. Torsional stiffness and nominal torque can be varied by different number of spring packs.
NC3, UC3:	Directionality code for coupling type with 3-spring design. **NC3** non-reversible **UC3** reversible
L:	Left hand coupling rotation when looking to the side plate, if torque input from coupling outer part.
R:	Right hand coupling rotation when looking to the side plate, if torque input from inner star.
1/L:	Left hand coupling rotation when looking to the side plate, if torque input from inner star.
1/R:	Right hand coupling rotation when looking to the side plate, if torque input from coupling outer part.
20:	Number of spring packs per coupling (8, 10, 12, 14, 15, 16, 18 or 20)
S14:	Connection fitting for SAE-flywheel. **S14 :** fitting for SAE-flywheel size 14 (flange drillings for SAE- inch bolts) **M14/..:** fitting for SAE-flywheel size 14 (with customized drillings)

The SF-Coupling designation has the following meaning:

SF 41/2.2/120NC3/1/L/20/S14

SF:	SAE-type of engine flywheel. Inner connection of the SF-Coupling is a customized hub. Different hub connections are available on request.
41:	Outer diameter of centre part in cm
2.2:	Spring pack width in cm
120:	Stiffness series and the approximate twist in mrad at nominal torque. Standard series are 30, 60, 90 and 120. Torsional stiffness and nominal torque can be varied by different number of spring packs.
NC3, UC3:	Directionality code for coupling type with 3-spring design
	NC3 non-reversible
	UC3 reversible
L:	Left hand coupling rotation when looking to the side plate, if torque input from coupling outer part.
R:	Right hand coupling rotation when looking to the side plate, if torque input from inner star.
1/L:	Left hand coupling rotation when looking to the side plate, if torque input from inner star.
1/R:	Right hand coupling rotation when looking to the side plate, if torque input from coupling outer part.
20:	Number of spring packs per coupling 8, 10, 12, 14, 16, 18 or 20.
	S14: Connection fitting for SAE-flywheel
	S14 : fitting for SAE-flywheel size 14 (flange drillings for SAE- inch bolts)
	M14/..: fitting for SAE-flywheel size 14 (with customized drillings)

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The SB+BF-Coupling-Combination designation has the following meaning:

SB 50/2.3/120NC3/1/L/20/S14 + BF 50/50/2USO

SB:	SAE-type of engine flywheel. The SB-Coupling with its inner 0star fixation is always combined with the Gesilco® BF-Coupling connecting to a customized flange hub.
50:	Outer diameter of centre part in cm
2.3:	Spring pack width in cm
120:	Stiffness series and the approximate twist in mrad at nominal torque. Standard series are 60, 90 and 120. Torsional stiffness and nominal torque can be varied by different number of spring packs.
NC3, UC3:	Directionality code for coupling type with 3-spring design
	NC3 non-reversible
	UC3 reversible
L:	Left hand coupling rotation when looking to the side plate if torque input from coupling outer part.
R:	Right hand coupling rotation when looking to the side plate if torque input from inner star.
1/L:	Left hand coupling rotation when looking to the side plate if torque input from inner star.
1/R:	Right hand coupling rotation when looking to the side plate if torque input from coupling outer part.
20:	Number of spring packs per coupling (8, 10, 12, 14, or 16)
S14:	Connection fitting for SAE-flywheel
	S14 : fitting for SAE-flywheel size 14 (flange drillings for SAE- inch bolts)
	M14/..: fitting for SAE-flywheel size 14 (with customized drillings)

BF 50/50/2USO

BF	Gesilco® BF-Coupling consisting of 2 symmetrical coupling halves
50	nominal outside diameter of the coupling in cm
50	stiffness series
2	number of membranes
U	reversible
S	manufacturing technique
O	3 openings between the 2 coupling halves for assembly of inner flange bolts

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Selection

Technical data for each SAE-Coupling, depending on the outer clamping diameter of the centre part, width of the spring packs, stiffness of the spring packs and directionality code for the coupling type can be selected from the Technical Data sheets.

▪ Type NC3, UC3

Based on the application, it is necessary to determine whether a reversible or non-reversible coupling is required.

Torsional stiffer reversible coupling series (series 30UC3, series 60UC3) are selected as a first approach for generating sets, pump drives or other industrial applications, whereas torsional softer non-reversible coupling series (series 90NC3 and 90UC3, series 120NC3) are mainly considered for marine applications.

▪ Nominal Torque T_{KN}

The mean torque T is calculated from the engine power P and rotational speed n

$$T = 9.55 \cdot \frac{P}{n}$$

T	mean torque	kNm
P	engine power	kW
n	rotational speed	min^{-1}

The coupling size should be selected in order that the coupling's nominal torque T_{KN} is higher than the maximum mean torque T in the engine operating speed range specified by the prime mover or application.

$$T_{KN} > T$$

▪ Stiffness Series

Four different basic torsional stiffness series are listed in this catalog (series 30, 60, 90 and 120). In order to transmit the same nominal torque T_{KN} a wider or in diameter bigger coupling is required for a torsional softer coupling (series 120) than for a stiffer coupling (series 90).

In addition the number of spring packs (6, 8, 10, 12, 14, 15, 16, 18 and 20) can be varied in narrow steps for each stiffness series. By that a fine graded stiffness range is achieved.

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The following comparison illustrates the dependence of the coupling width on choice of stiffness for the same nominal torque T_{KN} .

SE 41/<u>1.4</u>/90NC3/20/.. T_{KN} = 6 kNm

SE 41/<u>2.2</u>/120NC3/20/.. T_{KN} = 6 kNm

For an initial calculation it is recommended that a torsional stiffer coupling is selected. The torsional stiffer reversible coupling series 30UC3 or 60UC3 are selected as a first approach for generating sets, pump drives or other industrial applications, whereas the torsional softer non- reversible coupling series 90NC3 or 120NC3 are mainly used for marine applications.

A torsional vibration calculation must be performed to confirm that a selected stiffness is suitable for a given application. The calculation must use the excitations of the total system and must be performed for all possible operating conditions (normal operation, misfiring of one cylinder, etc.) and speeds.

For these calculations, it is necessary to use the damping factor κ .

From the analyses results, for instance the vibratory torques can be determined. These consist of damping and elastic components and must be checked against the permitted values as described in the following chapters.

Stiffness:

This is the torsional stiffness value at a static nominal torque. It is shown in the Technical Data sheets as C . For a Geislinger SAE-Coupling the static stiffness is practically constant.

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Damping

Conversion table for different damping values

	k	κ	ψ	M
$k =$	--	$\dfrac{\kappa \cdot C}{\omega}$	$\dfrac{\psi \cdot C}{2 \cdot \pi \cdot \omega}$	$\dfrac{C}{\omega} \cdot \sqrt{\dfrac{1}{M^2 - 1}}$
$\kappa =$	$\dfrac{k \cdot \omega}{C}$	-	$\dfrac{\psi}{2 \cdot \pi}$	$\sqrt{\dfrac{1}{M^2 - 1}}$
$\psi =$	$\dfrac{2 \cdot \pi \cdot \omega \cdot k}{C}$	$2 \cdot \pi \cdot \kappa$	-	$\dfrac{2 \cdot \pi}{\sqrt{M^2 - 1}}$
$M =$	$\dfrac{\sqrt{C^2 + k^2 \cdot \omega^2}}{k \cdot \omega}$	$\dfrac{\sqrt{1 + \kappa^2}}{\kappa}$	$\dfrac{\sqrt{4 \cdot \pi^2 + \psi^2}}{\psi}$	-

k linear viscous damping Nms/rad C torsional stiffness Nm/rad
κ un-dimensioned damping factor ω phase velocity of vibration rad/s
ψ ratio of damping energy M magnifier

Geislinger uses the un-dimensioned damping factor κ.

The damping of the oil filled Geislinger SAE-Coupling is mainly influenced by damping due to friction, as the effect of hydrodynamic damping is very small. In general the damping at $T_v / T_{KN} = 0.3$ can be calculated by the following formula:

$$\kappa = 0.035 + 0.08 \cdot \frac{T_{stat}}{T_{KN}}$$

κ un-dimensioned damping factor T_v vibratory torque   kNm
T_{stat} static torque   kNm T_{KN} nominal torque   kNm

▪ **Permissible Elastic Vibratory Torque T_{el}**

From a total vibratory torque T_v, which is transmitted by the coupling only the elastic component T_{el} is important to be considered.

$$T_{el} = T_v \cdot \frac{1}{\sqrt{1 + \kappa^2}}$$

T_{el} elastic vibratory torque   kNm T_v vibratory torque   kNm
κ un-dimensioned damping factor

This calculation has to be made for each harmonic order and the synthesis value has to be derived.

Permissible elastic vibratory torques, for each coupling directionality type can be seen in the following diagrams. The diagrams show:

- the limits for elastic vibratory torques, which momentarily occur (e.g. transient condition),

- the limits for continuous permissible elastic vibratory torques and

- the vibratory torque on buffer (not valid for GESILCO® BF-Coupling).

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■ DIAGRAM SAE-Type-NC3, Non-Reversible

$$Y = \frac{T_{el}}{T_{KN}} = \frac{perm.\,elast.\,vibratory\,torque}{nominal\,torque}$$
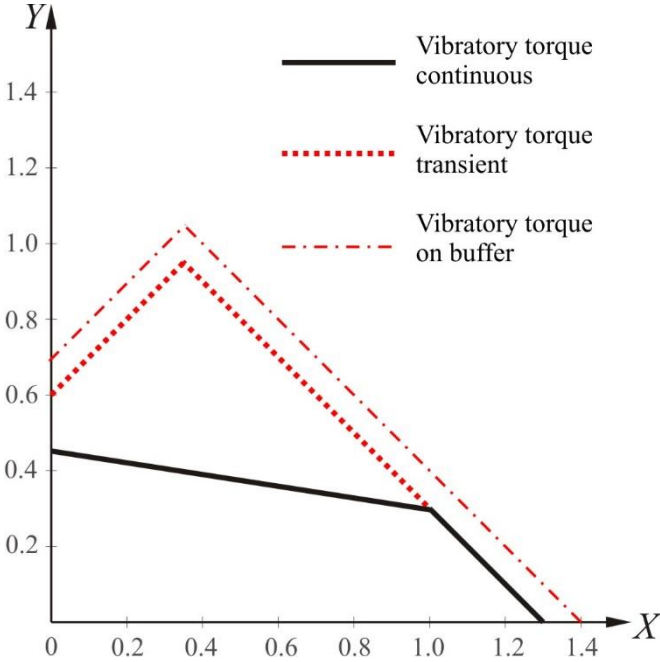
$$X = \frac{T}{T_{KN}} = \frac{mean\,torque}{nominal\,torque}$$

$$0 \le X \le 1 \qquad Y = 0.45 - 0.15 \cdot X$$

$$1 < X < 1.3 \qquad Y = 1.3 - X$$

The vibratory torque on buffer is not applied to the BF-Coupling.

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▪ DIAGRAM SAE-Type-UC3, BF-Type-USO, Reversible

$$Y = \frac{T_{el}}{T_{KN}} = \frac{perm.\,elast.\,vibratory\,torque}{nominal\,torque}$$
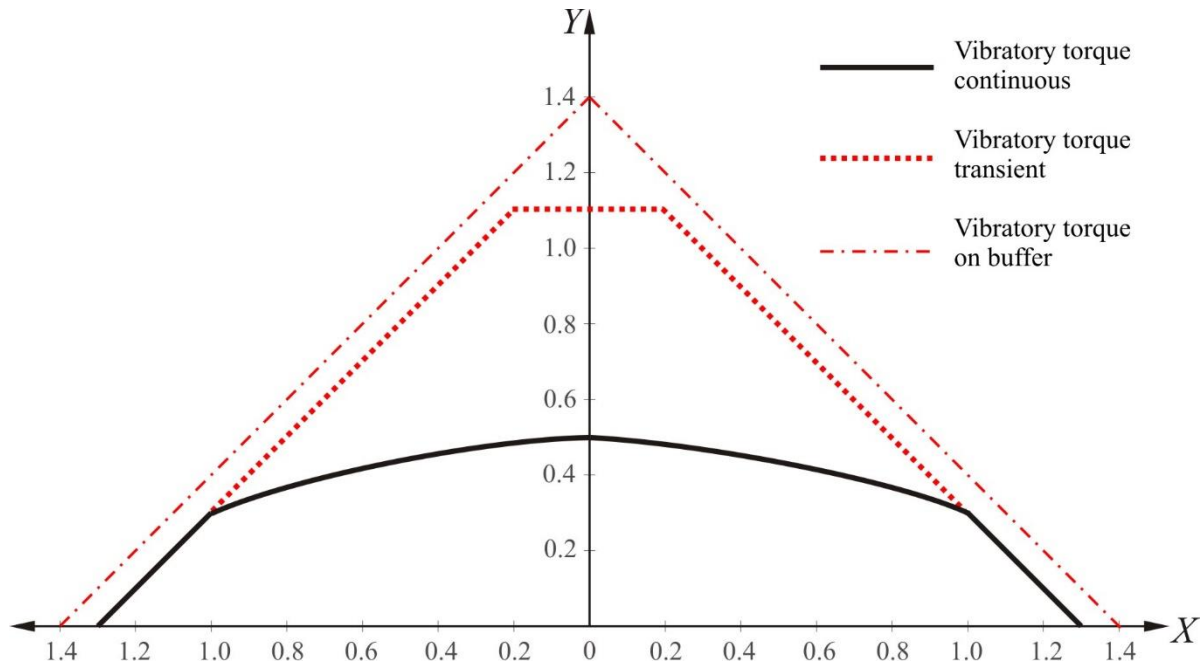
$$X = \frac{T}{T_{KN}} = \frac{mean\,torque}{nominal\,torque}$$

Reverse $\quad\quad 0 \leq X \leq 1$

$$Y = 0.5 - 0.08354 \cdot X - 0.04432 \cdot X^2 - 0.07209 \cdot X^3$$

$\quad\quad\quad\quad\quad 1 < X < 1.3 \quad\quad\quad Y = 1.3 - X$

Forward $\quad\quad 0 \leq X \leq 1$

$$Y = 0.5 - 0.08354 \cdot X - 0.04432 \cdot X^2 - 0.07209 \cdot X^3$$

$\quad\quad\quad\quad\quad 1 < X < 1.3 \quad\quad\quad Y = 1.3 - X$

The vibratory torque on buffer is not applied to the BF-Coupling.

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■ **Thermal Load P_{KW}**

Permissible values for thermal load in the SAE-Coupling also have to be checked. The permissible thermal load, shown in the catalogue section "Technical Data" is valid under the condition of good air circulation.

To obtain the thermal load P_{KW} the following formula applies:

$$P_{KW} = \frac{\pi}{60} 10^{-3} \cdot \sum \frac{\kappa \cdot T_v^2 \cdot i \cdot n}{(1 + \kappa^2) \cdot C}$$

P_{KW}	thermal load	kW
T_v	total transmitted vibratory torque due to harmonic order i	Nm
i	harmonic order	
n	speed of coupling	min⁻¹
κ	un-dimensioned damping factor	
C	stiffness	
Nm/rad		

The $\sum$ sign means that the thermal loads of all single orders are to be calculated separately and then to be added up.

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■ Permissible Transient Shock Torques

The couplings can transmit transient shock torques up to the maximum torque. It should be noted that if the nominal torque of the SAE-Coupling is exceeded by more than 1.4 times the coupling is approximately 10 times torsional stiffer. The maximum transient torque for the SAE-Coupling is at least 3.25 times of the nominal torque, and 2.5 times of the nominal torque for the GESILCO® BF-Coupling.

Fig. 7 shows the relationship between SAE-Coupling twist (in mrad) and torque.

Fig. 7

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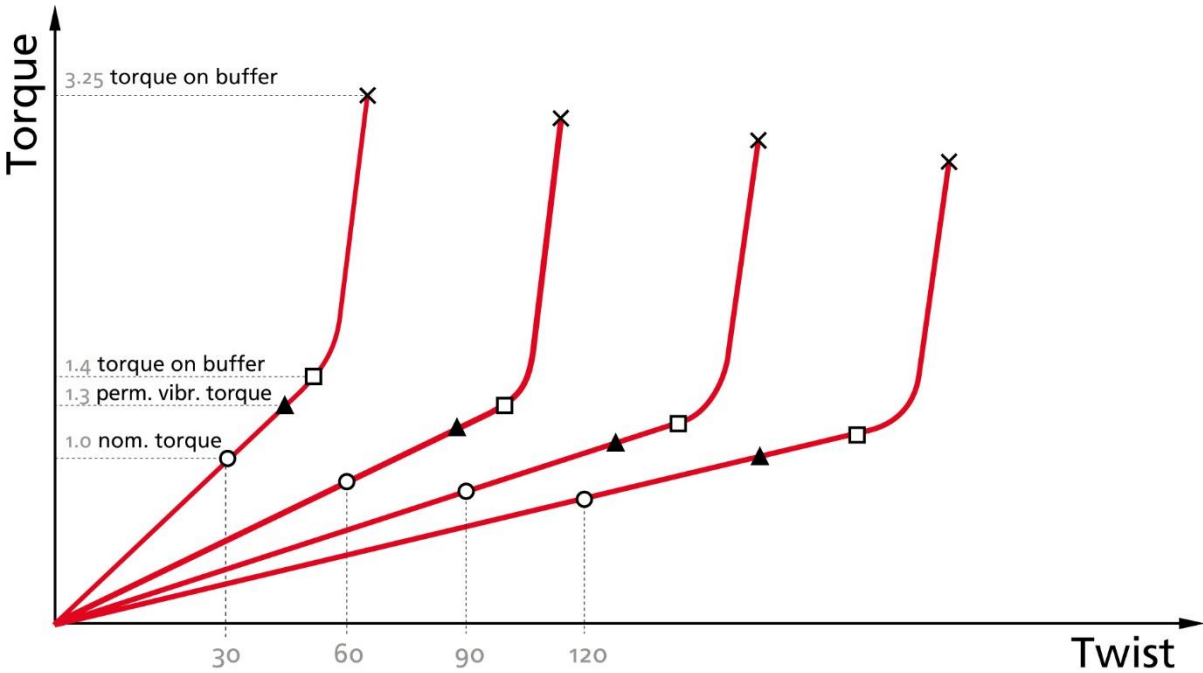
▪ Permissible Misalignment Values of SE- and SF-Couplings

It is also necessary to ensure that the permissible radial, axial and angular misalignment capabilities of the coupling are not exceeded during operation.

Axial Misalignment: ΔW_a

An axial misalignment ΔW_a is the deviation from the theoretical nominal length of the coupling. This deviation in length is caused by axial displacements of the adjoining shafts. Reasons for axial displacements include the following: errors in assembly distances, shaft movements or thermal expansion.

ΔK_a is the maximum permissible axial misalignment capacity of the coupling and must not be exceeded during operation. ΔK_a is determined by the sum of static and dynamic misalignments.

Radial Misalignment: ΔW_r

Radial misalignment ΔW_r is the misalignment of the driving side to the driven side in a direction perpendicular to the axis of rotation. The reasons for radial misalignment include: errors in assembly alignment, shaft movements or thermal expansion.

ΔK_r is the maximum permissible radial misalignment capacity of the coupling and must not be exceeded during operation. ΔK_r is determined by the sum of static and dynamic misalignments.

Radial misalignments are independent of rotational speed. The relationship between radial misalignment and angular misalignment is described below in the section titled "Angular Misalignment".

Angular Misalignment: ΔW_w

An angular misalignment ΔW_w is the inclination of the axis of rotation of the driving and the driven side of the coupling. ΔK_w is the maximum permissible angular misalignment capacity of the coupling and is only valid when used in conjunction with the given values for the maximum axial misalignment. The following equation should be noted in the case of simultaneous radial misalignment ΔW_r and angular misalignment ΔW_w.

$$\Delta W_r + \frac{\Delta K_r}{\Delta K_w} \cdot \Delta W_w \leq \Delta K_r$$

ΔW_r	actual radial misalignment	mm
ΔW_w	actual angular misalignment	mrad
ΔK_w	max. angular misalignment in accordance with the Technical Data sheet	mrad
ΔK_r	max. radial misalignment in accordance with the Technical Data sheet	mm

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■ Axial Reaction Force F_a of SE- and SF-Couplings

The axial reaction force F_a is a reaction force, which occurs during axial movement of the coupling under nominal torque. After the coupling has moved in response to an axial force, the coupling's reaction force returns to zero. The axial reaction force does not depend on the magnitude of the axial movement.

■ Radial Stiffness C_r of SE- and SF-Couplings

As a result of radial misalignments, radial reaction forces F_r are produced. These forces affect the driving and the driven side of the coupling.

$$F_r = C_r \cdot \Delta W_r$$

F_r	radial reaction force	kN
C_r	radial stiffness	kN/mm
ΔW_r	radial misalignment	mm

■ Bending Stiffness C_w of SE- and SF-Couplings

Angular misalignments produce a reaction torque M_w that affects the driving and driven side of the coupling.

$$M_w = C_w \cdot \Delta W_w$$

M_w	reaction torque	Nm
C_w	bending stiffness	kNm/rad
ΔW_w	angular misalignment	mrad

Permissible Misalignment Values of SB+BF-Coupling-Combinations

The SB-Coupling of these coupling combinations is equipped with inner-star-fixations thus all misalignment compensation is handled by the BF-Coupling. The BF-coupling's lifetime can be theoretically determined by analyzing application load spectrum data (magnitudes and frequencies). In fact, misalignment capacities of the BF-Coupling are defined by predetermined load cycle values. Therefore, the following data tables show angular deflection capacities (transient and continuous) along with their corresponding load cycles. Since the correct coupling selection is predominately influenced by the expected lifetime or load cycles, it is very important to determine accurate values for the required transient and continuous deflections. Permissible combinations of angular and axial deformation of the coupling can be calculated using the formulas in the chapter "Calculation of the Maximum Misalignment Capacity".

Axial Misalignment

An axial misalignment ΔW_a is the deviation from the theoretical nominal length of the coupling. This deviation in length is caused by axial displacements of the adjoining shafts. Reasons for axial displacements include the following: errors in assembly distances, shaft movements, variations in foundations (i.e. resiliently mounted engines), or thermal expansion. $\Delta K_{a,\,max}$ (transient) is the maximum permissible axial misalignment capacity of one membrane and must not be exceeded during operation. Using the formula given in the selection guidelines, $\Delta K_{a,\,max}$ can be calculated from the maximum permissible angular deflection capacity $\Delta K_{w,\,max}$ (transient) and the geometry parameter i of the membrane.

Radial Misalignment

Radial misalignment ΔW_r is the movement between driving and the driven shafts in a perpendicular direction (radial) to the axis of rotation. Radial misalignments can only be accommodated by use of two membranes with angular deflection capacity ΔK_w. Causes for radial misalignment are the following: assembly errors, shaft displacements, thermal expansions or elastically mounted driving or driven shafts.

$\Delta K_{w,\,max}$ (transient) is the maximum permissible angular deflection capacity of one membrane and must not be exceeded by static and dynamic misalignments during operation. The maximum permissible radial misalignment capacity of the coupling depends on the bending length L_b (distance between the planes of the membranes). Based on the bending length L_b, $\Delta K_{w,\,max}$ (transient) and the following formulas, the maximum permissible misalignment capacity can be determined.

Angular Misalignment

The angular misalignment ΔW_w is defined as the inclination of the axis of rotation between the driving- and the driven-side of the coupling. Angular misalignment ΔW_w can be compensated by using one membrane with a given angular deflection capacity ΔK_w.

$\Delta K_{w,\,max}$ (transient) is defined as the maximum permissible angular deflection of one membrane and should not be exceeded during operation. The relationship between axial and angular misalignments is shown in the formulae of the following chapter.

■ Calculation of the Maximum Misalignment Capacity of the BF-Coupling

W-Arrangement

This combination compensates for axial ΔW_a and angular ΔW_w misalignments. For both membranes, it must be proven that the maximum angular misalignment does not exceed the coupling's maximum permissible angular deflection capacity.
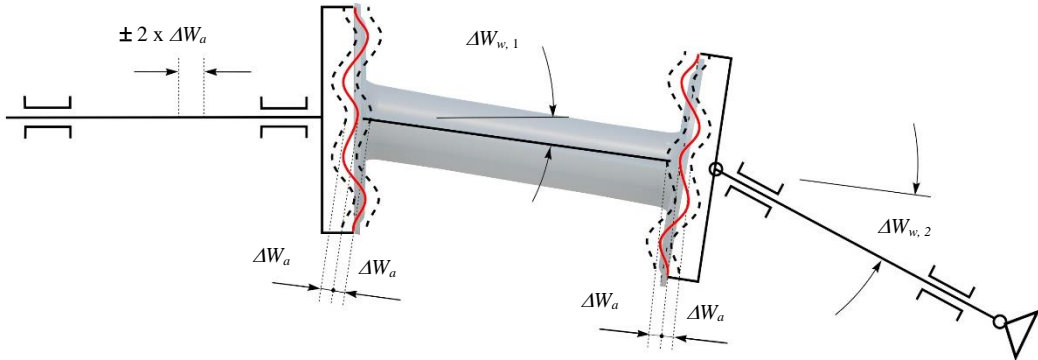
Continuous

$$\Delta W_{w,1} + \frac{|\Delta W_a|}{i} \leq \Delta K_w$$

$$\Delta W_{w,2} + \frac{|\Delta W_a|}{i} \leq \Delta K_w$$

Transient

$$\Delta W_{w,1} + \frac{|\Delta W_a|}{i} \leq \Delta K_{w,\,max}$$

$$\Delta W_{w,2} + \frac{|\Delta W_a|}{i} \leq \Delta K_{w,\,max}$$

ΔW_a	axial misalignment	mm
$\Delta W_{w,1}$	angle between input and intermediate shaft	rad
$\Delta W_{w,2}$	angle between intermediate and output shaft	rad
i	geometric parameter of the membrane	mm
ΔK_w	max. angular deflection of one membrane (continuous)	rad
$\Delta K_{w,\,max}$	max. angular deflection of one membrane (transient)	rad
1	First membrane	
2	Second membrane	

(ΔK_w, $\Delta K_{w,\,max}$ and i, see chapter 'Technical Data')

Z-Arrangement

This combination compensates axial ΔW_a and radial ΔW_r misalignments
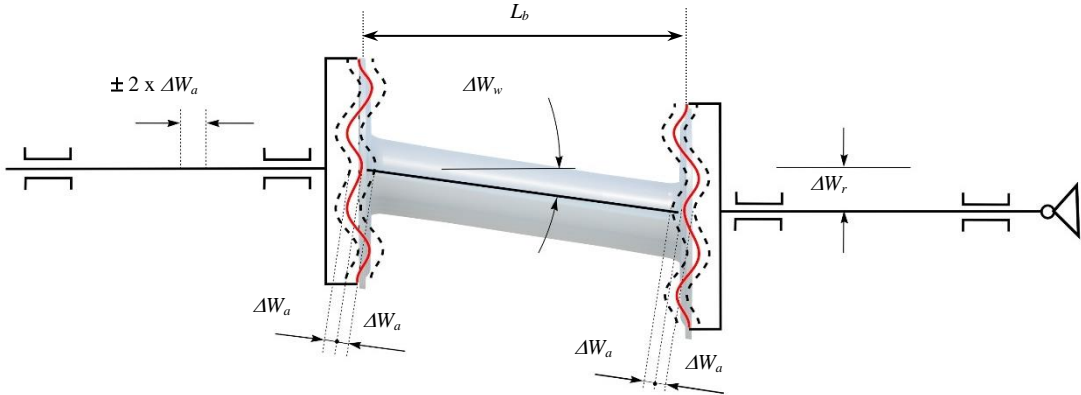
Continuous

$$\frac{|\Delta W_r|}{L_b} + \frac{|\Delta W_a|}{i} \leq \Delta K_w$$

Transient

$$\frac{|\Delta W_r|}{L_b} + \frac{|\Delta W_a|}{i} \leq \Delta K_{w,\,max}$$

ΔW_a	axial misalignment	mm
ΔW_w	angular misalignment	rad
ΔW_r	radial misalignment	mm
i	geometric parameter of the membrane	mm
ΔK_w	max. angular deflection of one membrane (continuous)	rad
$\Delta K_{w,\,max}$	max. angular deflection of one membrane (transient)	rad
L_b	bending length of the coupling	mm

■ Membrane`s Spring Rates

Torsional Stiffness C_T

The BF-Coupling can be considered as torsional stiff. Values for the torsional stiffness of membranes and intermediate shafts are given in the 'Technical Data' section.

Bending Stiffness C_w

The angular deflection ΔW_w of one BF-membrane produces a reaction moment M_b which acts as a bending moment on the driving and driven shafts. The bending moment is proportional to the bending stiffness C_w of the membrane.

The reaction moment M_b can be calculated as follows:

$$M_b = C_w \, \Delta W_w$$

M_b	reaction moment	kNm
C_w	bending stiffness	kNm/rad
ΔW_w	angular deflection	rad

Axial Stiffness C_a

The axial deflection ΔW_a of the BF-membrane produces a reaction force F_a which acts as an axial force on the driving and driven shafts. The axial force is proportional to the axial stiffness C_a of the membrane.

$$F_a = C_a \, \Delta W_a$$

F_a	axial reaction force	N
C_a	axial stiffness	N/mm
ΔW_a	axial deflection	mm

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Reaction Forces of Different BF-Coupling Deflection Arrangements

In the following chapter, the calculation of membrane reaction forces, due to torque and elastic deflection, are shown for different BF-Coupling deflection arrangements.

W-Arrangement
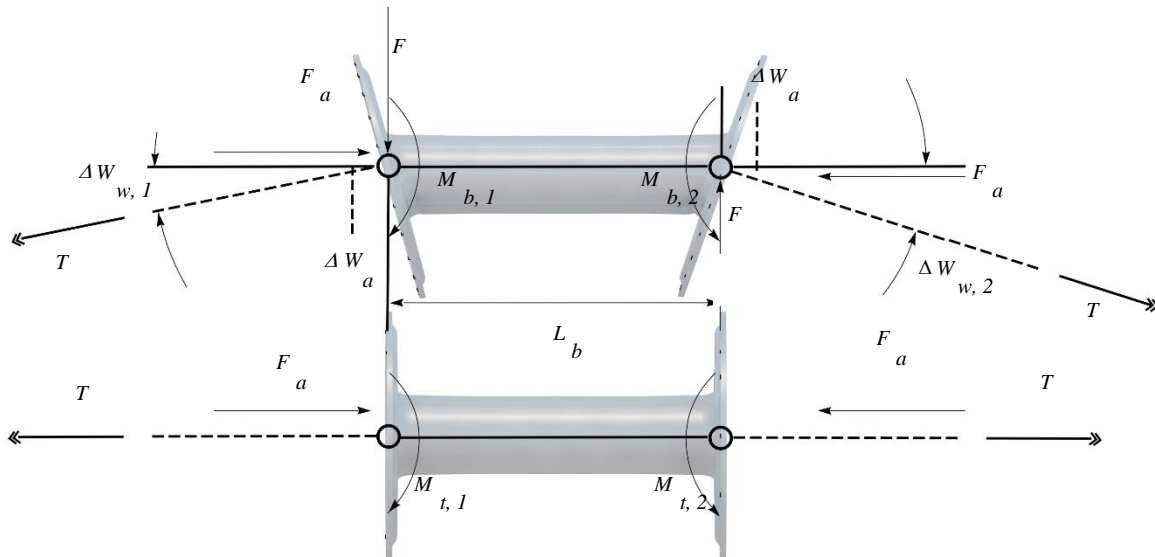
$$M_{b,1} = C_w \Delta W_{w,1}$$

$$M_{b,2} = C_w \Delta W_{w,2}$$

$$F = \frac{(M_{b,1} - M_{b,2})}{L_b}$$

$$F_a = C_a \Delta W_a$$

$$M_{t,1} = T \Delta W_{w,1}$$

$$M_{t,2} = T \Delta W_{w,2}$$

M_b	reaction moment due to the membrane`s bending stiffness	kNm
F	radial reaction force	N
F_a	axial reaction force	N
T	mean torque	kNm
M_t	reaction moment due to the mean torque T	kNm
C_w	bending stiffness	kNm/rad
C_a	axial stiffness	N/mm
ΔW_a	axial misalignment	mm
$\Delta W_{w,1}$, $\Delta W_{w,2}$	angular misalignment	rad
L_b	bending length	m

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Z-Arrangement
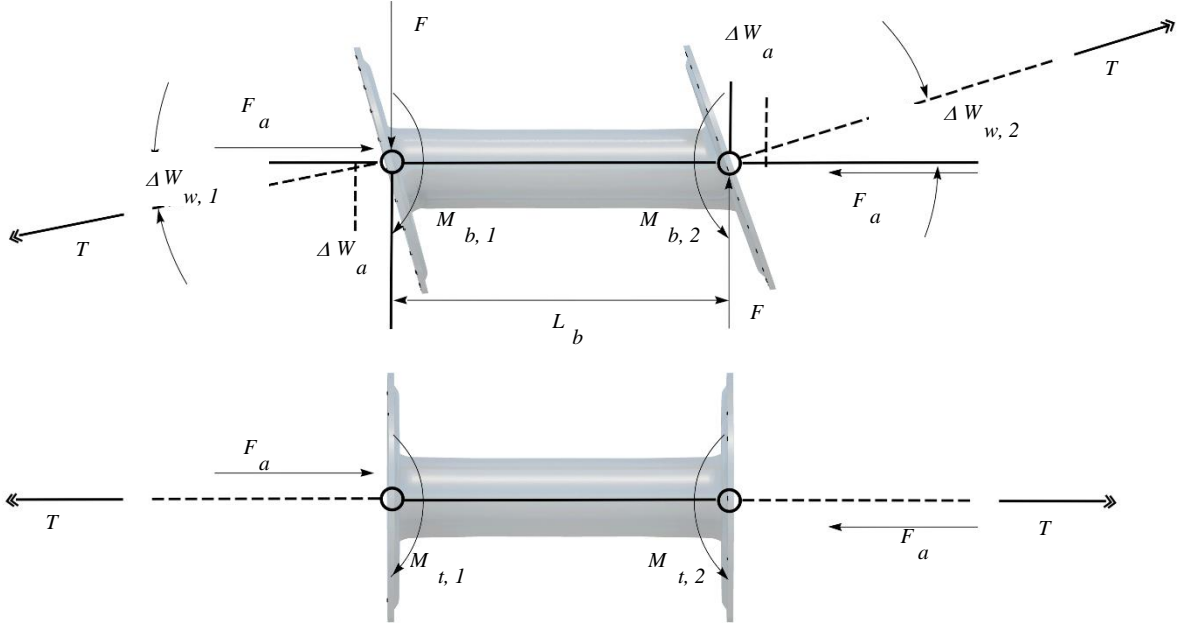
$$M_{b,1} = C_w \Delta W_{w,1}$$

$$M_{b,2} = C_w \Delta W_{w,2}$$

$$F = \frac{(M_{b,1} + M_{b,2})}{L_b}$$

$$C_r = \frac{2C_w}{L_b^2}$$

$$F_a = C_a \Delta W_a$$

$$M_{t,1} = T \Delta W_{w,1}$$

$$M_{t,2} = T \Delta W_{w,2}$$

M_b	reaction moment due to the membrane's bending stiffness	kNm
F	radial reaction force	N
F_a	axial reaction force	N
T	mean torque	kNm
M_t	reaction moment due to mean the torque T	kNm
C_w	bending stiffness	kNm/rad
C_a	axial stiffness	N/mm
C_r	radial stiffness	N/mm
ΔW_a	axial misalignment	mm
$\Delta W_{w,1}$, $\Delta W_{w,2}$	angular misalignment	rad
L_b	bending length	m

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■ Maximum Rotational Speed n_{max}

The maximum permissible speed is given in the 'Technical Data' section.

■ Temperature and Humidity

Proper selection of raw materials for the couplings depends on the desired service temperature and humidity. Normally, the couplings are designed for an ambient temperature of 80°C continuous engine room operation and 100°C for short term engine room environment. Higher temperature resistant raw materials can be delivered upon request.

■ Connections

Connection to flywheel:

The Geislinger standard SAE-Coupling (designation…/S..) is designed with a standard flange and drillings used for inch-bolts fitting to the standardized SAE-flywheels.

If metric bolts are used instead of inch bolts or the bolt size or the number of connecting bolts is differing from the SAE-Standard then a Geislinger SAE-Coupling can be ordered with customized drillings for the bolts (designation …/M../.).

In any case the customer has the responsibility for the bolt connection. The sum of the maximum static torque, the maximum vibratory torque according to the torsional vibration calculation, other maximum eventually occurring peak torques like arising from gearbox clutch engagement, reaction forces and static and dynamic forces when an additional mass moment of inertia is attached to the flywheel bolt connection have to be considered and multiplied with a certain safety factor. When required by classification societies the connection must be designed to meet the respective classification rules.

Connection to driving side:

The spline connection of the SE-Coupling to the driven part is standardized and cannot be changed. If a connection differing from the standard spline is needed, please contact Geislinger for offering a customized adapter.

The inner star/hub connection of the SF-Coupling is customized. Different keyways and tapered hub connections in different lengths are available on request.

In order to connect the BF-Coupling to a flange or shaft by the best possible method, predefined flange designs are available. In addition, Geislinger is always prepared to manufacture other connections, if economically and technically feasible. Should other assembly dimensions be required, please contact Geislinger. The type of the adapter will have an effect to the torsional vibration behaviour of the system.

Technical Data SE-Coupling

■ SE-Couplings Series 41

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Modifications reserved.

Series 41	Flywheel Size acc. to SAE J620	Nominal torque T_{KN} kNm	Torsional stiffness C MNm/rad	Maximum speed n 1/min	Perm. thermal load P_{KW} kW	Radial misalignment ΔK_r mm	Radial stiffness C_r kN/mm	Axial misalignment ΔK_a mm	Axial reaction force F_a kN	Angular misalignment ΔK_w mrad	Bending stiffness C_w kNm/rad
SE 41/1/30UC3/8/S14 SE 41/1/30UC3/8/S18	14 18		0.074		2		4.2		0.38		0.035
SE 41/2/60UC3/8/S14 SE 41/2/60UC3/8/S18	14 18	2.4	0.0395		2.1		2.1		0.39		0.068
SE 41/1.4/90NC3/8/S14 SE 41/1.4/90NC3/8/S18	14 18		0.0264		2.1		2.4		0.5		0.038
SE 41/2.2/120NC3/8/S14 SE 41/2.2/120NC3/8/S18	14 18		0.0198		2.1		1.9		0.51		0.076
SE 41/1/30UC3/10/S14 SE 41/1/30UC3/10/S18	14 18		0.0988		2		5.2		0.48		0.044
SE 41/2/60UC3/10/S14 SE 41/2/60UC3/10/S18	14 18	3	0.0493		2.1		2.6		0.48		0.085
SE 41/1.4/90NC3/10/S14 SE 41/1.4/90NC3/10/S18	14 18		0.033		2.1		3		0.63		0.047
SE 41/2.2/120NC3/10/S14 SE 41/2.2/120NC3/10/S18	14 18		0.0247		2.1		2.4		0.64		0.095
SE 41/1/30UC3/12/S14 SE 41/1/30UC3/12/S18	14 18		0.119		2		6.3		0.58		0.052
SE 41/2/60UC3/12/S14 SE 41/2/60UC3/12/S18	14 18	3.6	0.0592		2.1		3.2		0.58		0.1
SE 41/1.4/90NC3/12/S14 SE 41/1.4/90NC3/12/S18	14 18		0.0397		2.1		3.6		0.76		0.057
SE 41/2.2/120NC3/12/S14 SE 41/2.2/120NC3/12/S18	14 18		0.0297		2.1		2.8		0.77		0.11
SE 41/1/30UC3/14/S14 SE 41/1/30UC3/14/S18	14 18		0.138		2		7.3		0.67		0.061
SE 41/2/60UC3/14/S14 SE 41/2/60UC3/14/S18	14 18	4.2	0.069		2.1		3.7		0.67		0.12
SE 41/1.4/90NC3/14/S14 SE 41/1.4/90NC3/14/S18	14 18		0.0463		2.1		4.3		0.88		0.066
SE 41/2.2/120NC3/14/S14 SE 41/2.2/120NC3/14/S18	14 18		0.0346	2500	2.1	1	3.3	3	0.9	1.31	0.13
SE 41/1/30UC3/15/S14 SE 41/1/30UC3/15/S18	14 18		0.148		2		7.9		0.72		0.065
SE 41/2/60UC3/15/S14 SE 41/2/60UC3/15/S18	14 18	4.5	0.074		2.1		4		0.72		0.13
SE 41/1.4/90NC3/15/S14 SE 41/1.4/90NC3/15/S18	14 18		0.0496		2.1		4.6		0.95		0.071
SE 41/2.2/120NC3/15/S14 SE 41/2.2/120NC3/15/S18	14 18		0.0371		2.1		3.5		0.96		0.14
SE 41/1/30UC3/16/S14 SE 41/1/30UC3/16/S18	14 18		0.158		2		8.4		0.77		0.07
SE 41/2/60UC3/16/S14 SE 41/2/60UC3/16/S18	14 18	4.8	0.0789		2.1		4.2		0.77		0.14
SE 41/1.4/90NC3/16/S14 SE 41/1.4/90NC3/16/S18	14 18		0.0529		2.1		4.9		1		0.076
SE 41/2.2/120NC3/16/S14 SE 41/2.2/120NC3/16/S18	14 18		0.0396		2.1		3.8		1		0.15
SE 41/1/30UC3/18/S14 SE 41/1/30UC3/18/S18	14 18		0.178		2		9.4		0.86		0.079
SE 41/2/60UC3/18/S14 SE 41/2/60UC3/18/S18	14 18	5.4	0.0888		2.1		4.8		0.87		0.15
SE 41/1.4/90NC3/18/S14 SE 41/1.4/90NC3/18/S18	14 18		0.0595		2.1		5.5		1.1		0.085
SE 41/2.2/120NC3/18/S14 SE 41/2.2/120NC3/18/S18	14 18		0.0445		2.1		4.2		1.2		0.17
SE 41/1/30UC3/20/S14 SE 41/1/30UC3/20/S18	14 18		0.198		2		10		0.96		0.087
SE 41/2/60UC3/20/S14 SE 41/2/60UC3/20/S18	14 18	6	0.0986		2.1		5.3		0.96		0.17
SE 41/1.4/90NC3/20/S14 SE 41/1.4/90NC3/20/S18	14 18		0.0661		2.1		6.1		1.3		0.094
SE 41/2.2/120NC3/20/S14 SE 41/2.2/120NC3/20/S18	14 18		0.0494		2.1		4.7		1.3		0.19

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SE-Couplings Series 50

Series 50	Flywheel Size acc. to SAE J620	Nominal torque T_{KN} kNm	Torsional stiffness C MNm/rad	Maximum speed n 1/min	Perm. thermal load P_{KW} kW	Radial misalignment ΔK_r mm	Radial stiffness C_r kN/mm	Axial misalignment ΔK_a mm	Axial reaction force F_a kN	Angular misalignment ΔK_w mrad	Bending stiffness C_w kNm/rad
SE 50/1/30UC3/8/S18	18		0.132		3		4.6		0.52		0.038
SE 50/1/30UC3/8/S21	21										
SE 50/2.5/60UC3/8/S18	18		0.0661		3.2		2.3		0.52		0.12
SE 50/2.5/60UC3/8/S21	21	4									
SE 50/2/90NC3/8/S18	18		0.0438		3.1		2.3		0.64		0.08
SE 50/2/90NC3/8/S21	21										
SE 50/3.3/120NC3/8/S18	18		0.033		3.3		1.7		0.64		0.16
SE 50/3.3/120NC3/8/S21	21										
SE 50/1/30UC3/10/S18	18		0.165		3		5.7		0.65		0.048
SE 50/1/30UC3/10/S21	21										
SE 50/2.5/60UC3/10/S18	18		0.0826		3.2		2.9		0.65		0.15
SE 50/2.5/60UC3/10/S21	21	5									
SE 50/2/90NC3/10/S18	18		0.0548		3.1		2.9		0.8		0.1
SE 50/2/90NC3/10/S21	21										
SE 50/3.3/120NC3/10/S18	18		0.0412		3.3		2.2		0.8		0.2
SE 50/3.3/120NC3/10/S21	21										
SE 50/1/30UC3/12/S18	18		0.198		3		6.8		0.78		0.057
SE 50/1/30UC3/12/S21	21										
SE 50/2.5/60UC3/12/S18	18		0.0991		3.2		3.5		0.78		0.18
SE 50/2.5/60UC3/12/S21	21	6									
SE 50/2/90NC3/12/S18	18		0.0657		3.1		3.5		0.96		0.12
SE 50/2/90NC3/12/S21	21										
SE 50/3.3/120NC3/12/S18	18		0.0495		3.3		2.6		0.96		0.24
SE 50/3.3/120NC3/12/S21	21										
SE 50/1/30UC3/14/S18	18		0.23		3		8		0.91		0.067
SE 50/1/30UC3/14/S21	21										
SE 50/2.5/60UC3/14/S18	18		0.116		3.2		4		0.91		0.21
SE 50/2.5/60UC3/14/S21	21	7									
SE 50/2/90NC3/14/S18	18		0.0767		3.1		4		1.1		0.14
SE 50/2/90NC3/14/S21	21			2500		1		4		1.31	
SE 50/3.3/120NC3/14/S18	18		0.0577		3.3		3		1.1		0.28
SE 50/3.3/120NC3/14/S21	21										
SE 50/1/30UC3/15/S18	18		0.247		3		8.6		0.97		0.071
SE 50/1/30UC3/15/S21	21										
SE 50/2.5/60UC3/15/S18	18		0.124		3.2		4.3		0.97		0.22
SE 50/2.5/60UC3/15/S21	21	7.5									
SE 50/2/90NC3/15/S18	18		0.0821		3.1		4.3		1.2		0.15
SE 50/2/90NC3/15/S21	21										
SE 50/3.3/120NC3/15/S18	18		0.0619		3.3		3.3		1.2		0.3
SE 50/3.3/120NC3/15/S21	21										
SE 50/1/30UC3/16/S18	18		0.263		3		9.1		1		0.076
SE 50/1/30UC3/16/S21	21										
SE 50/2.5/60UC3/16/S18	18		0.132		3.2		4.6		1		0.24
SE 50/2.5/60UC3/16/S21	21	8									
SE 50/2/90NC3/16/S18	18		0.0876		3.1		4.6		1.3		0.16
SE 50/2/90NC3/16/S21	21										
SE 50/3.3/120NC3/16/S18	18		0.066		3.3		3.5		1.3		0.32
SE 50/3.3/120NC3/16/S21	21										
SE 50/1/30UC3/18/S18	18		0.296		3		10		1.2		0.086
SE 50/1/30UC3/18/S21	21										
SE 50/2.5/60UC3/18/S18	18		0.149		3.2		5.2		1.2		0.27
SE 50/2.5/60UC3/18/S21	21	9									
SE 50/2/90NC3/18/S18	18		0.0986		3.1		5.2		1.4		0.18
SE 50/2/90NC3/18/S21	21										
SE 50/3.3/120NC3/18/S18	18		0.0742		3.3		3.9		1.4		0.36
SE 50/3.3/120NC3/18/S21	21										
SE 50/1/30UC3/20/S18	18		0.329		3		11		1.3		0.095
SE 50/1/30UC3/20/S21	21										
SE 50/2.5/60UC3/20/S18	18		0.165		3.2		5.8		1.3		0.3
SE 50/2.5/60UC3/20/S21	21	10									
SE 50/2/90NC3/20/S18	18		0.11		3.1		5.8		1.6		0.2
SE 50/2/90NC3/20/S21	21										
SE 50/3.3/120NC3/20/S18	18		0.0825		3.3		4.4		1.6		0.39
SE 50/3.3/120NC3/20/S21	21										

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SE-Couplings Series 60

Series 60	Flywheel Size acc. to SAE J620	Nominal torque T_{KN} kNm	Torsional stiffness C MNm/rad	Maximum speed n 1/min	Perm. thermal load P_{KW} kW	Radial misalignment ΔK_r mm	Radial stiffness C_r kN/mm	Axial misalignment ΔK_a mm	Axial reaction force F_a kN	Angular misalignment ΔK_w mrad	Bending stiffness C_w kNm/rad
SE 60/1.1/30UC3/8/S21 SE 60/1.1/30UC3/8/S24	21 24		0.266		4.3		6.9		0.89		0.069
SE 60/3.1/60UC3/8/S21 SE 60/3.1/60UC3/8/S24	21 24		0.131		4.6		3.6		0.92		0.29
SE 60/3.2/90NC3/8/S21 SE 60/3.2/90NC3/8/S24	21 24	8	0.0874		4.6		3		1		0.26
SE 60/5/120NC3/8/S21 SE 60/5/120NC3/8/S24	21 24		0.0661		4.9		2.3		1		0.48
SE 60/1.1/30UC3/10/S21 SE 60/1.1/30UC3/10/S24	21 24		0.332		4.3		8.6		1.1		0.087
SE 60/3.1/60UC3/10/S21 SE 60/3.1/60UC3/10/S24	21 24	10	0.163		4.6		4.5		1.1		0.36
SE 60/3.2/90NC3/10/S21 SE 60/3.2/90NC3/10/S24	21 24		0.109		4.6		3.8		1.3		0.32
SE 60/5/120NC3/10/S21 SE 60/5/120NC3/10/S24	21 24		0.0826		4.9		2.9		1.3		0.6
SE 60/1.1/30UC3/12/S21 SE 60/1.1/30UC3/12/S24	21 24		0.399		4.3		10		1.3		0.1
SE 60/3.1/60UC3/12/S21 SE 60/3.1/60UC3/12/S24	21 24	12	0.196		4.6		5.3		1.4		0.43
SE 60/3.2/90NC3/12/S21 SE 60/3.2/90NC3/12/S24	21 24		0.131		4.6		4.5		1.5		0.39
SE 60/5/120NC3/12/S21 SE 60/5/120NC3/12/S24	21 24		0.0991		4.9		3.4		1.6		0.72
SE 60/1.1/30UC3/14/S21 SE 60/1.1/30UC3/14/S24	21 24		0.465		4.3		12		1.6		0.12
SE 60/3.1/60UC3/14/S21 SE 60/3.1/60UC3/14/S24	21 24	14	0.228		4.6		6.2		1.6		0.5
SE 60/3.2/90NC3/14/S21 SE 60/3.2/90NC3/14/S24	21 24		0.153		4.6		5.3		1.8		0.45
SE 60/5/120NC3/14/S21 SE 60/5/120NC3/14/S24	21 24		0.116	2000	4.9	1	4	5	1.8	1.05	0.84
SE 60/1.1/30UC3/15/S21 SE 60/1.1/30UC3/15/S24	21 24		0.498		4.3		13		1.7		0.13
SE 60/3.1/60UC3/15/S21 SE 60/3.1/60UC3/15/S24	21 24	15	0.245		4.6		6.7		1.7		0.54
SE 60/3.2/90NC3/15/S21 SE 60/3.2/90NC3/15/S24	21 24		0.164		4.6		5.7		1.9		0.48
SE 60/5/120NC3/15/S21 SE 60/5/120NC3/15/S24	21 24		0.124		4.9		4.3		1.9		0.9
SE 60/1.1/30UC3/16/S21 SE 60/1.1/30UC3/16/S24	21 24		0.532		4.3		14		1.8		0.14
SE 60/3.1/60UC3/16/S21 SE 60/3.1/60UC3/16/S24	21 24	16	0.261		4.6		7.1		1.8		0.57
SE 60/3.2/90NC3/16/S21 SE 60/3.2/90NC3/16/S24	21 24		0.175		4.6		6		2.1		0.51
SE 60/5/120NC3/16/S21 SE 60/5/120NC3/16/S24	21 24		0.132		4.9		4.6		2.1		0.96
SE 60/1.1/30UC3/18/S21 SE 60/1.1/30UC3/18/S24	21 24		0.598		4.3		15		2		0.16
SE 60/3.1/60UC3/18/S21 SE 60/3.1/60UC3/18/S24	21 24	18	0.294		4.6		8		2.1		0.64
SE 60/3.2/90NC3/18/S21 SE 60/3.2/90NC3/18/S24	21 24		0.197		4.6		6.8		2.3		0.58
SE 60/5/120NC3/18/S21 SE 60/5/120NC3/18/S24	21 24		0.149		4.9		5.2		2.3		1.1
SE 60/1.1/30UC3/20/S21 SE 60/1.1/30UC3/20/S24	21 24		0.664		4.3		17		2.2		0.17
SE 60/3.1/60UC3/20/S21 SE 60/3.1/60UC3/20/S24	21 24	20	0.326		4.6		8.9		2.3		0.71
SE 60/3.2/90NC3/20/S21 SE 60/3.2/90NC3/20/S24	21 24		0.218		4.6		7.5		2.6		0.64
SE 60/5/120NC3/20/S21 SE 60/5/120NC3/20/S24	21 24		0.165		4.9		5.7		2.6		1.2

All technical data are without warranty. Dimensions and design modifications reserved.

Dimensions SE-Coupling

■ Standard-Coupling Series 41

All technical data are without warranty. Technical data have to be seen as a guideline, detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.
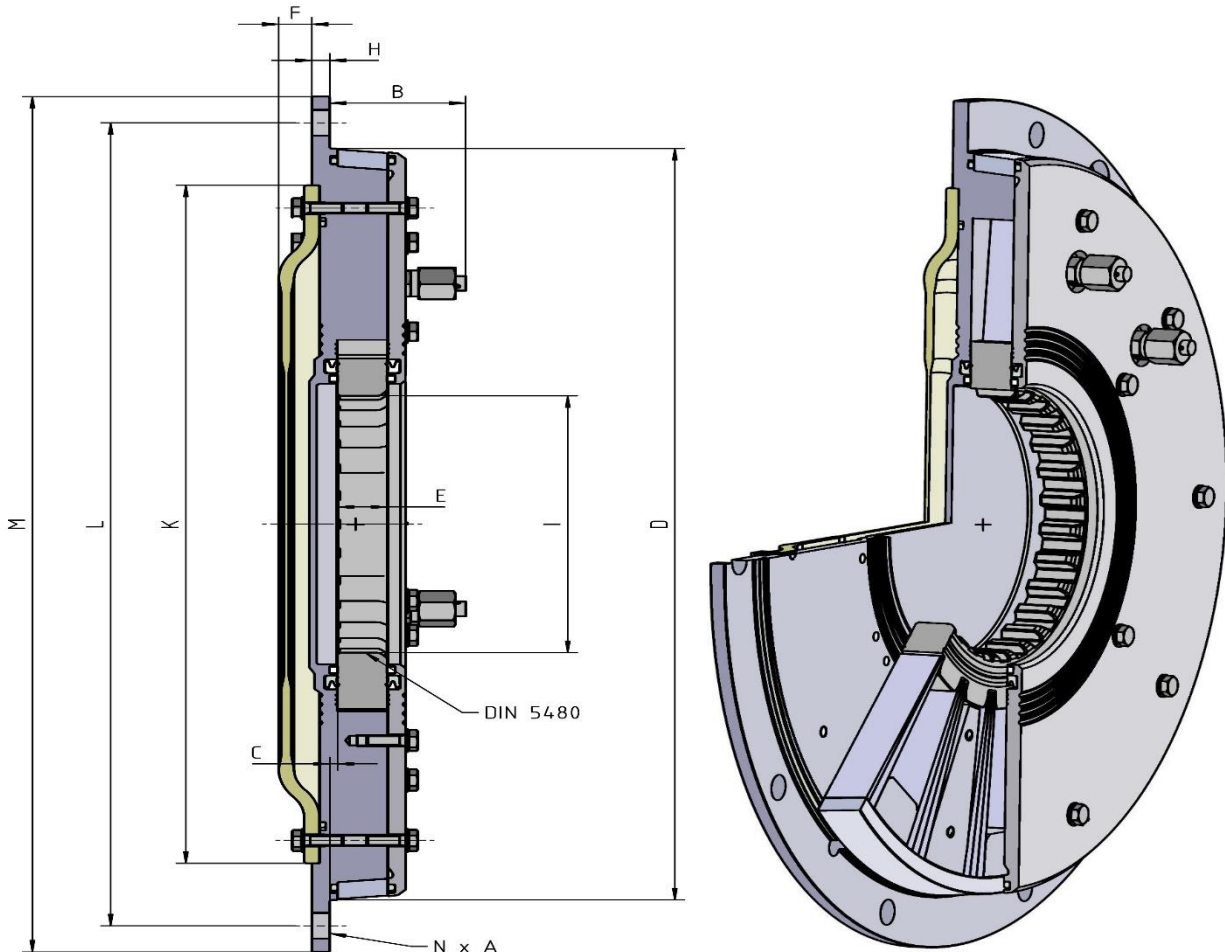
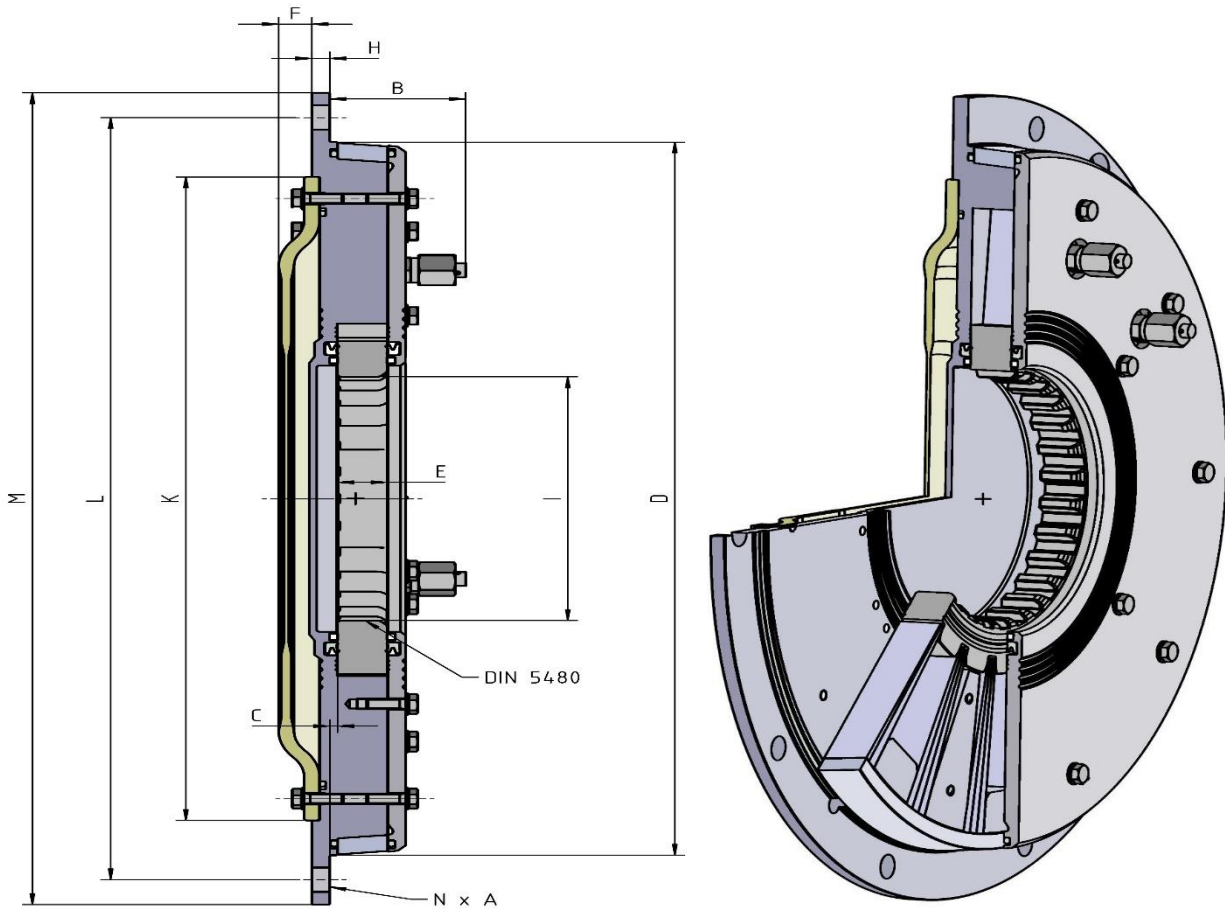| Series 41		Dimensions											Inertia		Weight		
		B	C	D	E	F	H	I	K	L	M	N x A	inner	outer	inner	outer	total
		mm										in	kgm²		kg		
SE 41/1/30UC3/..	S14	45	3	410	20	16	7	140	360	438.15	466.68	8 x 1/2"	0.01	0.57	1	21	23
SE 41/2/60UC3/..		53											0.02	0.73	2	27	29
SE 41/1.4/90NC3/..		48			40			90					0.006	0.65	2	25	27
SE 41/2.2/120NC3/..		57											0.007	0.81	2	31	33
SE 41/1/30UC3/..	S18	45	3	410	20	16	7	140	360	542.92	571.50	6 x 5/8"	0.01	0.89	1	25	26
SE 41/2/60UC3/..		53											0.02	1.05	2	31	33
SE 41/1.4/90NC3/..		48			40			90					0.006	0.97	2	29	31
SE 41/2.2/120NC3/..		57											0.007	1.13	2	35	37

Standard-Coupling Series 50

All technical data are without warranty. Technical data have to be seen as a guideline, detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.

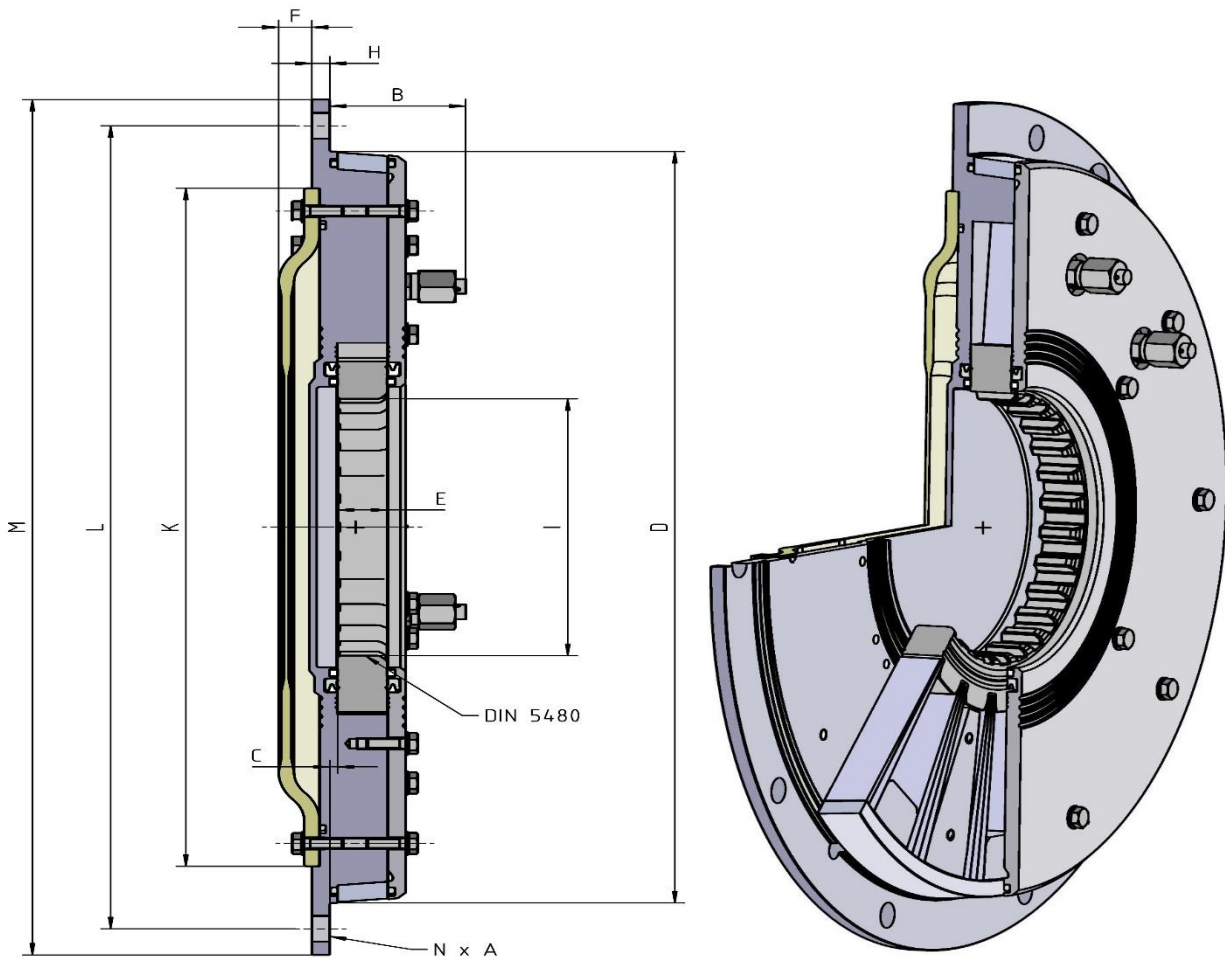| Series 50		Dimensions											Inertia		Weight		
		B	C	D	E	F	H	I	K	L	M	N x A	inner	outer	inner	outer	total
		mm										in	kgm²		kg		
SE 50/1/30UC3/..	S18	44	3	500	18	22	8	180	432	542.92	571.50	6 x 5/8"	0.02	1.48	2	36	38
SE 50/2.5/60UC3/..		59											0.04	2.04	4	49	53
SE 50/2/90NC3/..		54			29			140					0.02	1.94	2	49	51
SE 50/3.3/120NC3/..		67			33								0.03	2.48	4	63	67
SE 50/1/30UC3/..	S21	44	3	500	18	22	8	180	432	641.35	673.10	12 X 5/8"	0.02	2.07	2	42	44
SE 50/2.5/60UC3/..		59											0.04	2.64	4	55	59
SE 50/2/90NC3/..		54			29			140					0.02	2.54	2	56	58
SE 50/3.3/120NC3/..		67			33								0.03	3.07	4	69	73

Standard-Coupling Series 60

All technical data are without warranty. Technical data have to be seen as a guideline - detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.

Series 60		Dimensions											Inertia		Weight		
		B	C	D	E	F	H	I	K	L	M	N x A	inner	outer	inner	outer	total
		mm										in	kgm²		kg		
SE 60/1.1/30UC3/..	S21	45	3	600	26	26	9	210	520	641.35	673.10	12 X 5/8"	0.04	3.34	3	58	61
SE 60/3.1/60UC3/..		65			31								0.08	4.82	5	83	88
SE 60/3.2/90NC3/..		66			32			180					0.06	5.05	5	89	94
SE 60/5/120NC3/..		84			50								0.09	6.69	8	119	127
SE 60/1.1/30UC3/..	S24	45	3	600	26	26	9	210	520	692.15	733.42	12 X 3/4"	0.04	3.91	3	63	66
SE 60/3.1/60UC3/..		65			31								0.08	5.39	5	87	92
SE 60/3.2/90NC3/..		66			32			180					0.06	5.62	5	93	98
SE 60/5/120NC3/..		84			50								0.09	7.26	8	124	132

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Technical Data SF-Coupling

◼ SF-Couplings Series 41

Series 41	Flywheel Size acc. to SAE J620	Nominal torque T_{KN} kNm	Torsional stiffness C MNm/rad	Maximum speed n 1/min	Perm. thermal load P_{KW} kW	Radial misalignment ΔK_r mm	Radial stiffness C_r kN/mm	Axial misalignment ΔK_a mm	Axial reaction force F_a kN	Angular misalignment ΔK_w mrad	Bending stiffness C_w kNm/rad
SF 41/1/30UC3/8/S14	14		0.074		2		4.2		0.38		0.035
SF 41/1/30UC3/8/S18	18										
SF 41/2/60UC3/8/S14	14		0.0395		2.1		2.1		0.39		0.068
SF 41/2/60UC3/8/S18	18	2.4									
SF 41/1.4/90NC3/8/S14	14		0.0264		2.1		2.4		0.5		0.038
SF 41/1.4/90NC3/8/S18	18										
SF 41/2.2/120NC3/8/S14	14		0.0198		2.1		1.9		0.51		0.076
SF 41/2.2/120NC3/8/S18	18										
SF 41/1/30UC3/10/S14	14		0.0988		2		5.2		0.48		0.044
SF 41/1/30UC3/10/S18	18										
SF 41/2/60UC3/10/S14	14		0.0493		2.1		2.6		0.48		0.085
SF 41/2/60UC3/10/S18	18	3									
SF 41/1.4/90NC3/10/S14	14		0.033		2.1		3		0.63		0.047
SF 41/1.4/90NC3/10/S18	18										
SF 41/2.2/120NC3/10/S14	14		0.0247		2.1		2.4		0.64		0.095
SF 41/2.2/120NC3/10/S18	18										
SF 41/1/30UC3/12/S14	14		0.119		2		6.3		0.58		0.052
SF 41/1/30UC3/12/S18	18										
SF 41/2/60UC3/12/S14	14		0.0592		2.1		3.2		0.58		0.1
SF 41/2/60UC3/12/S18	18	3.6									
SF 41/1.4/90NC3/12/S14	14		0.0397		2.1		3.6		0.76		0.057
SF 41/1.4/90NC3/12/S18	18										
SF 41/2.2/120NC3/12/S14	14		0.0297		2.1		2.8		0.77		0.11
SF 41/2.2/120NC3/12/S18	18										
SF 41/1/30UC3/14/S14	14		0.138		2		7.3		0.67		0.061
SF 41/1/30UC3/14/S18	18										
SF 41/2/60UC3/14/S14	14		0.069		2.1		3.7		0.67		0.12
SF 41/2/60UC3/14/S18	18	4.2		2500		1		3		1.31	
SF 41/1.4/90NC3/14/S14	14		0.0463		2.1		4.3		0.88		0.066
SF 41/1.4/90NC3/14/S18	18										
SF 41/2.2/120NC3/14/S14	14		0.0346		2.1		3.3		0.9		0.13
SF 41/2.2/120NC3/14/S18	18										
SF 41/1/30UC3/16/S14	14		0.158		2		8.4		0.77		0.07
SF 41/1/30UC3/16/S18	18										
SF 41/2/60UC3/16/S14	14		0.0789		2.1		4.2		0.77		0.14
SF 41/2/60UC3/16/S18	18	4.8									
SF 41/1.4/90NC3/16/S14	14		0.0529		2.1		4.9		1		0.076
SF 41/1.4/90NC3/16/S18	18										
SF 41/2.2/120NC3/16/S14	14		0.0396		2.1		3.8		1		0.15
SF 41/2.2/120NC3/16/S18	18										
SF 41/1/30UC3/18/S14	14		0.178		2		9.4		0.86		0.079
SF 41/1/30UC3/18/S18	18										
SF 41/2/60UC3/18/S14	14		0.0888		2.1		4.8		0.87		0.15
SF 41/2/60UC3/18/S18	18	5.4									
SF 41/1.4/90NC3/18/S14	14		0.0595		2.1		5.5		1.1		0.085
SF 41/1.4/90NC3/18/S18	18										
SF 41/2.2/120NC3/18/S14	14		0.0445		2.1		4.2		1.2		0.17
SF 41/2.2/120NC3/18/S18	18										
SF 41/1/30UC3/20/S14	14		0.198		2		10		0.96		0.087
SF 41/1/30UC3/20/S18	18										
SF 41/2/60UC3/20/S14	14		0.0986		2.1		5.3		0.96		0.17
SF 41/2/60UC3/20/S18	18	6									
SF 41/1.4/90NC3/20/S14	14		0.0661		2.1		6.1		1.3		0.094
SF 41/1.4/90NC3/20/S18	18										
SF 41/2.2/120NC3/20/S14	14		0.0494		2.1		4.7		1.3		0.19
SF 41/2.2/120NC3/20/S18	18										

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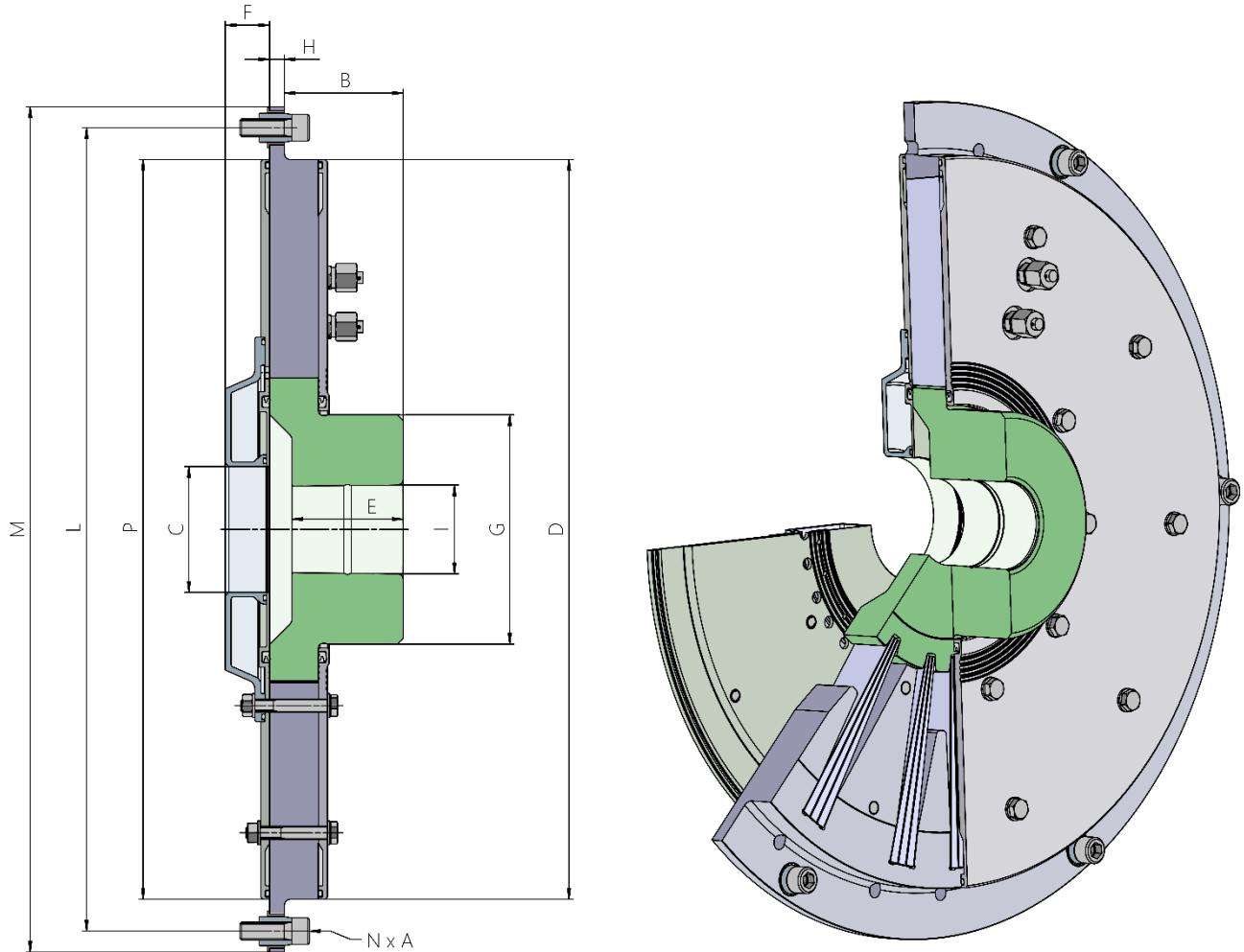
■ SF-Couplings Series 50

Series 50	Flywheel Size acc. to SAE J620	Nominal torque	Torsional stiffness	Maximum speed	Perm. thermal load	Radial misalignment	Radial stiffness	Axial misalignment	Axial reaction force	Angular misalignment	Bending stiffness
		T_{KN}	C	n	P_{KW}	ΔK_r	C_r	ΔK_a	F_a	ΔK_w	C_w
		kNm	MNm/rad	1/min	kW	mm	kN/mm	mm	kN	mrad	kNm/rad
SF 50/1/30UC3/8/S18 SF 50/1/30UC3/8/S21	18 21	4	0.132		3		4.6		0.52		0.038
SF 50/2.5/60UC3/8/S18 SF 50/2.5/60UC3/8/S21	18 21		0.0661		3.2		2.3		0.52		0.12
SF 50/2/90NC3/8/S18 SF 50/2/90NC3/8/S21	18 21		0.0438		3.1		2.3		0.64		0.08
SF 50/3.3/120NC3/8/S18 SF 50/3.3/120NC3/8/S21	18 21		0.033		3.3		1.7		0.64		0.16
SF 50/1/30UC3/10/S18 SF 50/1/30UC3/10/S21	18 21	5	0.165		3		5.7		0.65		0.048
SF 50/2.5/60UC3/10/S18 SF 50/2.5/60UC3/10/S21	18 21		0.0826		3.2		2.9		0.65		0.15
SF 50/2/90NC3/10/S18 SF 50/2/90NC3/10/S21	18 21		0.0548		3.1		2.9		0.8		0.1
SF 50/3.3/120NC3/10/S18 SF 50/3.3/120NC3/10/S21	18 21		0.0412		3.3		2.2		0.8		0.2
SF 50/1/30UC3/12/S18 SF 50/1/30UC3/12/S21	18 21	6	0.198		3		6.8		0.78		0.057
SF 50/2.5/60UC3/12/S18 SF 50/2.5/60UC3/12/S21	18 21		0.0991		3.2		3.5		0.78		0.18
SF 50/2/90NC3/12/S18 SF 50/2/90NC3/12/S21	18 21		0.0657		3.1		3.5		0.96		0.12
SF 50/3.3/120NC3/12/S18 SF 50/3.3/120NC3/12/S21	18 21		0.0495		3.3		2.6		0.96		0.24
SF 50/1/30UC3/14/S18 SF 50/1/30UC3/14/S21	18 21	7	0.23	2500	3	1	8	4	0.91	1.31	0.067
SF 50/2.5/60UC3/14/S18 SF 50/2.5/60UC3/14/S21	18 21		0.116		3.2		4		0.91		0.21
SF 50/2/90NC3/14/S18 SF 50/2/90NC3/14/S21	18 21		0.0767		3.1		4		1.1		0.14
SF 50/3.3/120NC3/14/S18 SF 50/3.3/120NC3/14/S21	18 21		0.0577		3.3		3		1.1		0.28
SF 50/1/30UC3/16/S18 SF 50/1/30UC3/16/S21	18 21	8	0.263		3		9.1		1		0.076
SF 50/2.5/60UC3/16/S18 SF 50/2.5/60UC3/16/S21	18 21		0.132		3.2		4.6		1		0.24
SF 50/2/90NC3/16/S18 SF 50/2/90NC3/16/S21	18 21		0.0876		3.1		4.6		1.3		0.16
SF 50/3.3/120NC3/16/S18 SF 50/3.3/120NC3/16/S21	18 21		0.066		3.3		3.5		1.3		0.32
SF 50/1/30UC3/18/S18 SF 50/1/30UC3/18/S21	18 21	9	0.296		3		10		1.2		0.086
SF 50/2.5/60UC3/18/S18 SF 50/2.5/60UC3/18/S21	18 21		0.149		3.2		5.2		1.2		0.27
SF 50/2/90NC3/18/S18 SF 50/2/90NC3/18/S21	18 21		0.0986		3.1		5.2		1.4		0.18
SF 50/3.3/120NC3/18/S18 SF 50/3.3/120NC3/18/S21	18 21		0.0742		3.3		3.9		1.4		0.36
SF 50/1/30UC3/20/S18 SF 50/1/30UC3/20/S21	18 21	10	0.329		3		11		1.3		0.095
SF 50/2.5/60UC3/20/S18 SF 50/2.5/60UC3/20/S21	18 21		0.165		3.2		5.8		1.3		0.3
SF 50/2/90NC3/20/S18 SF 50/2/90NC3/20/S21	18 21		0.11		3.1		5.8		1.6		0.2
SF 50/3.3/120NC3/20/S18 SF 50/3.3/120NC3/20/S21	18 21		0.0825		3.3		4.4		1.6		0.39

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▪ SF-Couplings Series 60

Series 60	Flywheel Size acc. to SAE J620	Nominal torque T_{KN} kNm	Torsional stiffness C MNm/rad	Maximum speed n 1/min	Perm. thermal load P_{KW} kW	Radial misalignment ΔK_r mm	Radial stiffness C_r kN/mm	Axial misalignment ΔK_a mm	Axial reaction force F_a kN	Angular misalignment ΔK_w mrad	Bending stiffness C_w kNm/rad
SF 60/1.1/30UC3/8/S21	21	8	0.266		4.3		6.9		0.89		0.069
SF 60/1.1/30UC3/8/S24	24										
SF 60/3.1/60UC3/8/S21	21		0.131		4.6		3.6		0.92		0.29
SF 60/3.1/60UC3/8/S24	24										
SF 60/3.2/90NC3/8/S21	21		0.0874		4.6		3		1		0.26
SF 60/3.2/90NC3/8/S24	24										
SF 60/5/120NC3/8/S21	21		0.0661		4.9		2.3		1		0.48
SF 60/5/120NC3/8/S24	24										
SF 60/1.1/30UC3/10/S21	21	10	0.332		4.3		8.6		1.1		0.087
SF 60/1.1/30UC3/10/S24	24										
SF 60/3.1/60UC3/10/S21	21		0.163		4.6		4.5		1.1		0.36
SF 60/3.1/60UC3/10/S24	24										
SF 60/3.2/90NC3/10/S21	21		0.109		4.6		3.8		1.3		0.32
SF 60/3.2/90NC3/10/S24	24										
SF 60/5/120NC3/10/S21	21		0.0826		4.9		2.9		1.3		0.6
SF 60/5/120NC3/10/S24	24										
SF 60/1.1/30UC3/12/S21	21	12	0.399		4.3		10		1.3		0.1
SF 60/1.1/30UC3/12/S24	24										
SF 60/3.1/60UC3/12/S21	21		0.196		4.6		5.3		1.4		0.43
SF 60/3.1/60UC3/12/S24	24										
SF 60/3.2/90NC3/12/S21	21		0.131		4.6		4.5		1.5		0.39
SF 60/3.2/90NC3/12/S24	24										
SF 60/5/120NC3/12/S21	21		0.0991		4.9		3.4		1.6		0.72
SF 60/5/120NC3/12/S24	24										
SF 60/1.1/30UC3/14/S21	21	14	0.465	2000	4.3	1	12	5	1.6	1.05	0.12
SF 60/1.1/30UC3/14/S24	24										
SF 60/3.1/60UC3/14/S21	21		0.228		4.6		6.2		1.6		0.5
SF 60/3.1/60UC3/14/S24	24										
SF 60/3.2/90NC3/14/S21	21		0.153		4.6		5.3		1.8		0.45
SF 60/3.2/90NC3/14/S24	24										
SF 60/5/120NC3/14/S21	21		0.116		4.9		4		1.8		0.84
SF 60/5/120NC3/14/S24	24										
SF 60/1.1/30UC3/16/S21	21	16	0.532		4.3		14		1.8		0.14
SF 60/1.1/30UC3/16/S24	24										
SF 60/3.1/60UC3/16/S21	21		0.261		4.6		7.1		1.8		0.57
SF 60/3.1/60UC3/16/S24	24										
SF 60/3.2/90NC3/16/S21	21		0.175		4.6		6		2.1		0.51
SF 60/3.2/90NC3/16/S24	24										
SF 60/5/120NC3/16/S21	21		0.132		4.9		4.6		2.1		0.96
SF 60/5/120NC3/16/S24	24										
SF 60/1.1/30UC3/18/S21	21	18	0.598		4.3		15		2		0.16
SF 60/1.1/30UC3/18/S24	24										
SF 60/3.1/60UC3/18/S21	21		0.294		4.6		8		2.1		0.64
SF 60/3.1/60UC3/18/S24	24										
SF 60/3.2/90NC3/18/S21	21		0.197		4.6		6.8		2.3		0.58
SF 60/3.2/90NC3/18/S24	24										
SF 60/5/120NC3/18/S21	21		0.149		4.9		5.2		2.3		1.1
SF 60/5/120NC3/18/S24	24										
SF 60/1.1/30UC3/20/S21	21	20	0.664		4.3		17		2.2		0.17
SF 60/1.1/30UC3/20/S24	24										
SF 60/3.1/60UC3/20/S21	21		0.326		4.6		8.9		2.3		0.71
SF 60/3.1/60UC3/20/S24	24										
SF 60/3.2/90NC3/20/S21	21		0.218		4.6		7.5		2.6		0.64
SF 60/3.2/90NC3/20/S24	24										
SF 60/5/120NC3/20/S21	21		0.165		4.9		5.7		2.6		1.2
SF 60/5/120NC3/20/S24	24										

All technical data are without warranty. Dimensions and design modifications reserved.

Dimensions SF-Coupling

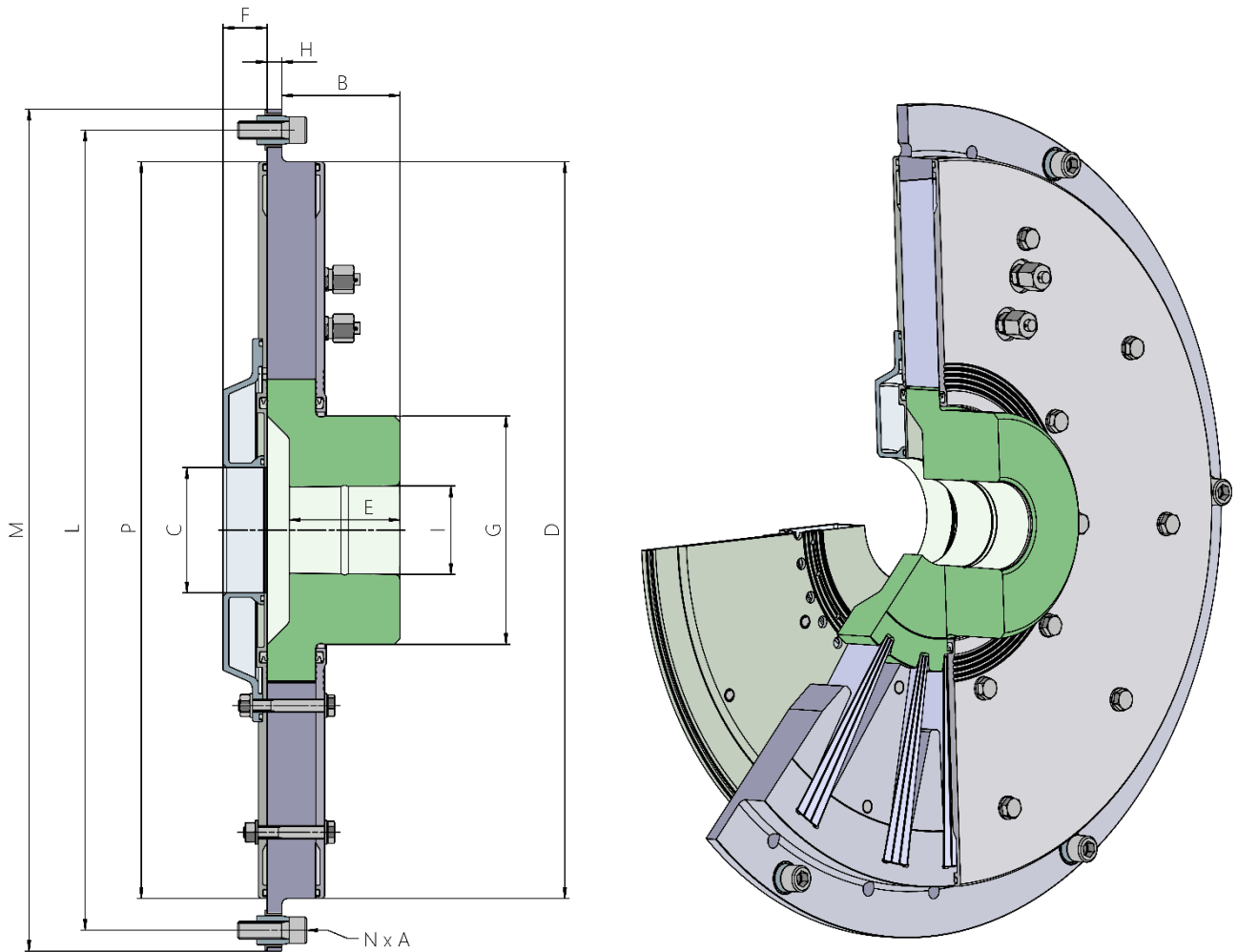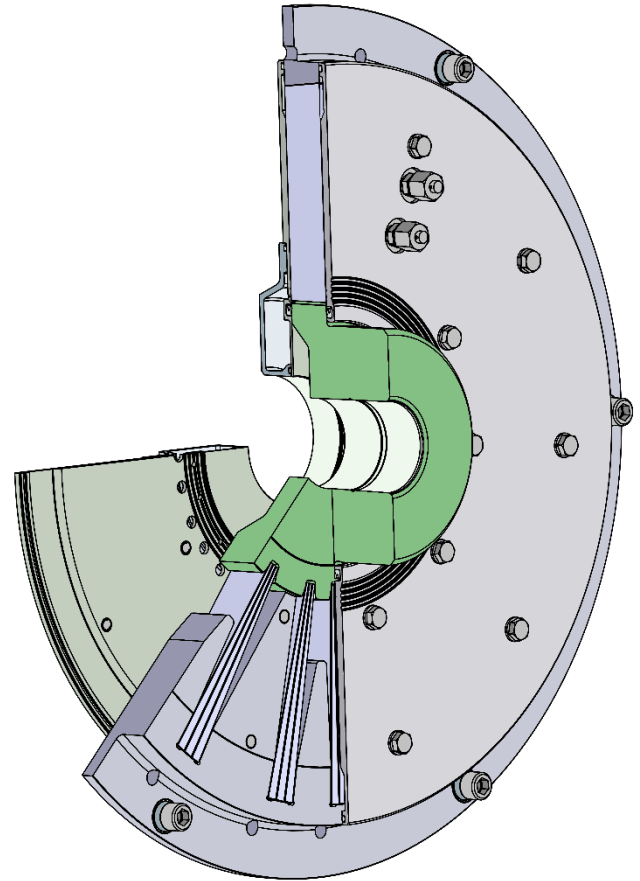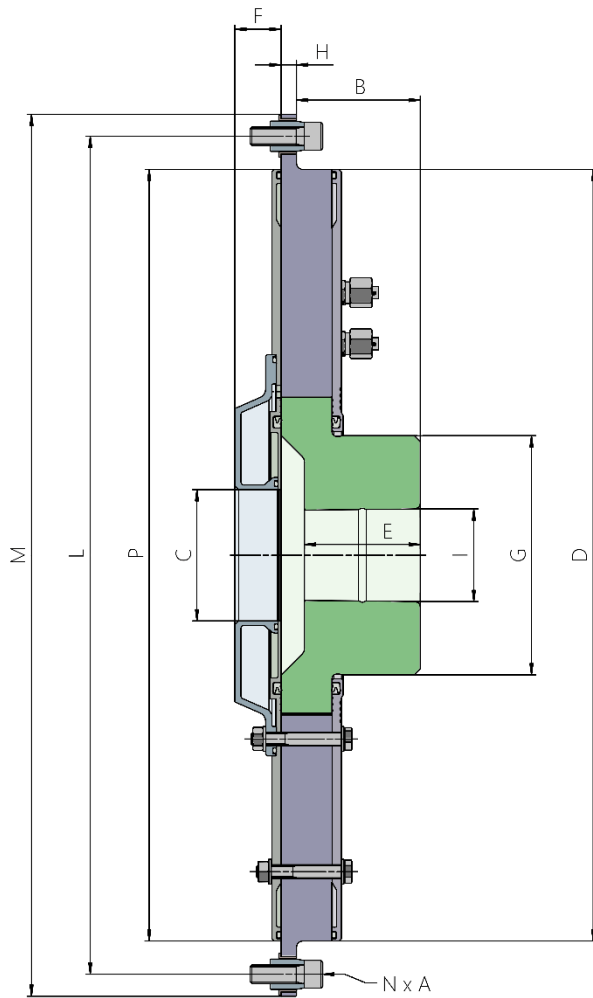## ▪ Standard-Coupling Series 41

All technical data are without warranty. Technical data have to be seen as a guideline - detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.

Series 41		Dimensions												Inertia		Weight		
		B	C	D	P	E	F	H	I (1:50)	G	L	M	N x A	inner	outer	inner	outer	total
		mm											in	kgm²		kg		
SF 41/1/30UC3/..	S14	67	115	410	408	60	28	8		90	438.15	466.68	8 x 1/2 "	0.029	0.52	6	20	26
SF 41/2/60UC3/..														0.036	0.70	7	27	34
SF 41/1.4/90NC3/..														0.013	0.60	6	24	30
SF 41/2.2/120NC3/..		87	75			80				50	108			0.014	0.76	6	30	36
SF 41/1/30UC3/..	S18	67	115	410	408	60	30	8		90	542.92	571.50	6 x 5/8 "	0.029	0.89	6	26	32
SF 41/2/60UC3/..														0.036	1.07	7	32	39
SF 41/1.4/90NC3/..														0.013	0.97	6	30	36
SF 41/2.2/120NC3/..		87	75			80				50	108			0.014	1.13	6	36	42

■ Standard-Coupling Series 50

All technical data are without warranty. Technical data have to be seen as a guideline - detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.

Series 50		Dimensions												Inertia		Weight		
		B	C	D	P	E	F	H	I (1:50)	G	L	M	N x A	inner	outer	inner	outer	total
		mm											in	kgm²		kg		
SF 50/1/30UC3/..	S18	65	115	500	496	60	30	10		90	542.92	571.50	6 x 5/8"	0.08	1.23	12	32	44
SF 50/2.5/60UC3/..														0.11	1.86	15	48	63
SF 50/2/90NC3/..		85	85			80				60		155		0.05	1.68	13	45	58
SF 50/3.3/120NC3/..														0.06	2.24	14	59	73
SF 50/1/30UC3/..	S21	65	115	500	496	60	30	10		90	641.35	673.10	12 x 5/8"	0.08	1.83	12	39	51
SF 50/2.5/60UC3/..														0.11	2.46	15	54	69
SF 50/2/90NC3/..		85	85			80				60		155		0.05	2.28	13	51	64
SF 50/3.3/120NC3/..														0.06	2.84	14	65	79

■ Standard-Coupling Series 60

All technical data are without warranty. Technical data have to be seen as a guideline - detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.
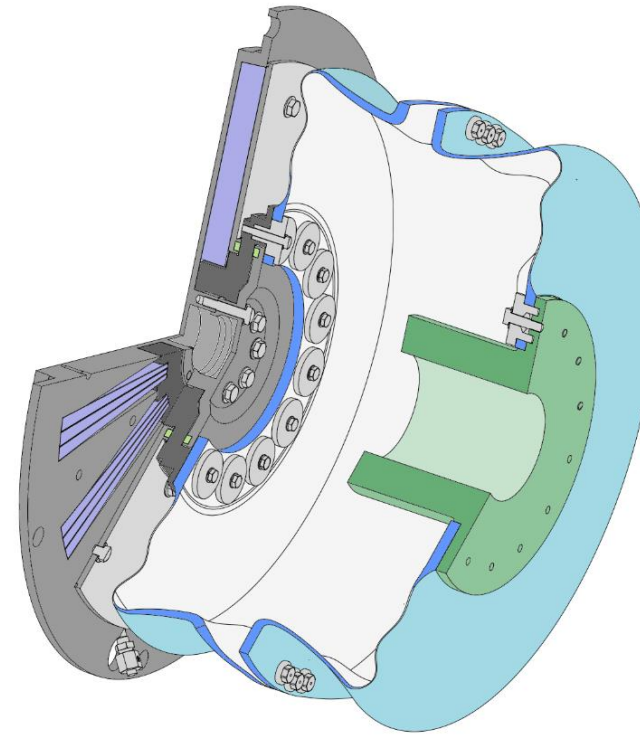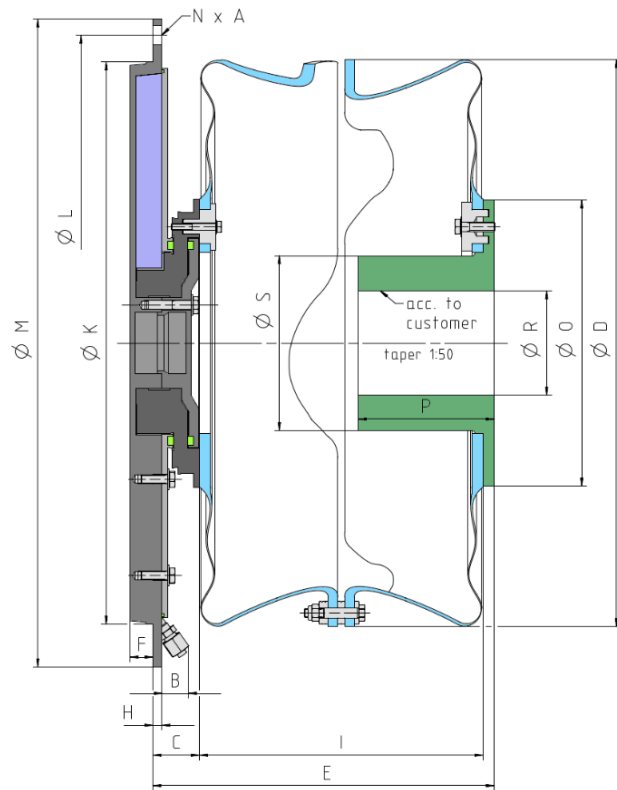

Series 60		Dimensions												Inertia		Weight		
		B	C	D	P	E	F	H	I (1:50)	G	L	M	N x A	inner	outer	inner	outer	total
		mm											in	kgm²		kg		
SF 60/1.1/30UC3/..	S21	73	135	600	582	70	30	12	110	217	641.35	673.10	12 x 5/8 "	0.14	2.89	16	53	69
SF 60/3.1/60UC3/..														0.19	4.69	20	84	104
SF 60/3.2/90NC3/..														0.15	4.83	20	89	109
SF 60/5/120NC3/..		83	115			80			90	197				0.18	6.42	22	117	139
SF 60/1.1/30UC3/..	S24	73	135	600	582	70	30	12	110	217	692.15	733.42	12 x 3/4 "	0.14	3.53	16	58	74
SF 60/3.1/60UC3/..														0.19	5.33	20	89	109
SF 60/3.2/90NC3/..														0.15	5.47	20	94	114
SF 60/5/120NC3/..		83	115			80			90	197				0.18	7.06	22	122	144

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Technical Data & Dimensions SB + BF-Series 44

■ SB + BF-Series 44

All technical data are without warranty. Technical data have to be seen as a guideline - detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.

Continuous, angular deflection capacity	ΔK_w	= 12 mrad
Transient, angular deflection capacity	$\Delta K_{w,\,max}$	= 24 mrad
Shock angular deflection capacity	$\Delta K_{w,\,max}$	= 36 mrad
Undimensioned damping factor membrane	$\kappa_M = 0.0064$	
Undimensioned damping factor intermediate shaft	$\kappa_Z = 0.008$	
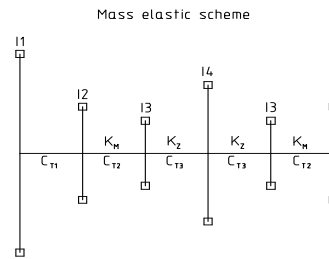
Mass elastic scheme

* value for one half of the GESILCO® Coupling
** value depending on design of flange hub (acc. to customer request)

Series 44		Flywheel Size acc. to SAE J620	Nominal torque	Parameter BF Coupling	Bending length	Torsional stiffness SB coupling	Torsional stiffness membrane	Torsional stiffness intermediate shaft	Bending stiffness membrane	Axial stiffness membrane	Maximum speed	Perm. thermal load	Inertia				
SB Size	BF Size		T_{KN}	i*	L_b	C_{T1}	C_{T2}*	C_{T3}*	C_w*	C_a*	n	P_{KW}	I_1	I_2	I_3	I_4	I_5**
			kNm	mm	mm	MNm/rad	MNm/rad	MNm/rad	kNm/rad	N/mm	1/min	kW			kgm²		
SB 34/2.3/60UC3/10/S14	BF 44/35/2HSO	14	4.28			0.0718						1.5	0.53				
SB 34/2.3/60UC3/10/S18		18											0.89				
SB 34/2.3/60UC3/12/S14		14	5.14			0.0862							0.53				
SB 34/2.3/60UC3/12/S18		18											0.89				
SB 34/2.3/60UC3/14/S14		14	6			0.101							0.53				
SB 34/2.3/60UC3/14/S18		18											0.89				
SB 40/2.3/90UC3/10/S14	BF 44/35/2HSO	14	4.29	198	234	0.0473	7.8	12.8	5	300	2500	2.1	0.74	0.04	0.024	0.11	0.06
SB 40/2.3/90UC3/10/S18		18											1.10				
SB 40/2.3/90UC3/12/S14		14	5.15			0.0568							0.74				
SB 40/2.3/90UC3/12/S18		18											1.10				
SB 40/2.3/90UC3/14/S14		14	6			0.063							0.74				
SB 40/2.3/90UC3/14/S18		18											1.10				
SB 41/2.3/120NC3/10/S14	BF 44/35/2HSO	14	4.28			0.0358						2.2	0.79				
SB 41/2.3/120NC3/10/S18		18											1.15				
SB 41/2.3/120NC3/12/S14		14	5.14			0.0429							0.79				
SB 41/2.3/120NC3/12/S18		18											1.15				
SB 41/2.3/120NC3/14/S14		14	6			0.0501							0.79				
SB 41/2.3/120NC3/14/S18		18											1.15				

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Series 44			Dimensions														Weight				
			B	C	D	E	F	H	I	K	L	M	N x A	O	P	R	S	outer SB	inner SB	BF	Flange Hub**	total**
SB Size		BF Size	mm										in		mm					kg		
SB 34/2.3/60/UC3/… SB 40/2.3/90UC3/… SB 41/2.3/120NC3/…	S14	BF 44/35/2HSO	21	34	440	294	20	8	250	340 400 406	438.15	466.72	6x 5/8"	223	max.120	81	140	26.4 32.3 33.4	4.9 4.9 4.9	6.6	12.4	50.3 56.2 57.3
SB 34/2.3/60/UC3/… SB 40/2.3/90UC3/… SB 41/2.3/120NC3/…	S18	BF 44/35/2HSO	21	34	440	294	20	8	250	340 400 406	542.92	571.5	8x 1/2"	223	max.120	81	140	31.7 37.6 38.7	4.9 4.9 4.9	6.6	12.4	55.6 61.5 62.6

** value depending on design of flange hub (acc. to customer request)

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■ SB + BF-Series 50

All technical data are without warranty. Technical data have to be seen as a guideline - detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.

Continuous, angular deflection capacity ΔK_w = 12 mrad
Transient, angular deflection capacity $\Delta K_{w,max}$ = 24 mrad
Shock angular deflection capacity $\Delta K_{w,max}$ = 36 mrad

Undimensioned damping factor membrane κ_M = 0.0064
Undimensioned damping factor intermediate shaft κ_Z = 0.008

Mass elastic scheme

* value for one half of the GESILCO® Coupling
** value depending on design of flange hub (acc. to customer request)

Series 50		Flywheel Size acc. to SAE J620	Nominal torque	Parameter BF Coupling	Bending length	Torsional stiffness SB coupling	Torsional stiffness membrane	Torsional stiffness intermediate shaft	Bending stiffness membrane	Axial stiffness membrane	Maximum speed	Perm. thermal load	Inertia				
SB Size	BF Size		T_{KN}	$i*$	L_b	C_{T1}	$C_{T2}*$	$C_{T3}*$	C_w*	C_a*	n	P_{KW}	I_1	I_2	I_3	I_4	I_5**
			kNm	mm	mm	MNm/rad	MNm/rad	MNm/rad	kNm/rad	N/mm	1/min	kW			kgm²		
SB 42/2.3/60UC3/10/S18		18	7.16			0.118							1.20				
SB 42/2.3/60UC3/10/S21		21											1.80				
SB 42/2.3/60UC3/12/S18	BF 50/50/2USO	18	8.60			0.142						2.3	1.20				
SB 42/2.3/60UC3/12/S21		21											1.80				
SB 42/2.3/60UC3/14/S18		18	10.0			0.166							1.20				
SB 42/2.3/60UC3/14/S21		21											1.80				
SB 48/2.3/90UC3/10/S18		18	7.17			0.0791							1.59				
SB 48/2.3/90UC3/10/S21		21											2.19				
SB 48/2.3/90UC3/12/S18	BF 50/50/2USO	18	8.61	225	234	0.0959	6.5	24	6.4	320	2500	2.9	1.59	0.05	0.04	0.19	0.09
SB 48/2.3/90UC3/12/S21		21											2.19				
SB 48/2.3/90UC3/14/S18		18	10.0			0.111							1.59				
SB 48/2.3/90UC3/14/S21		21											2.19				
SB 50/2.3/120NC3/10/S18		18	7.14			0.0599							1.73				
SB 50/2.3/120NC3/10/S20		21											2.33				
SB 50/2.3/120NC3/12/S18	BF 50/50/2USO	18	8.57			0.0719						3.2	1.73				
SB 50/2.3/120NC3/12/S20		21											2.33				
SB 50/2.3/120NC3/14/S18		18	10.0			0.0838							1.73				
SB 50/2.3/120NC3/14/S20		21											2.33				

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Geislinger SAE-Coupling
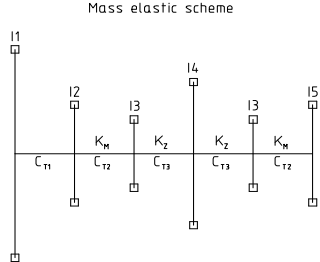
Series 50			Dimensions															Weight				
			B	C	D	E	F	H	I	K	L	M	N x A	O	P	R	S	outer SB	inner SB	BF	Flange Hub**	total**
SB Size		BF Size	mm										in		mm			kg				
SB 42/2.3/60UC3/… SB 48/2.3/90UC3/… SB 50/2.3/120NC3/…	S18	BF 50/50/2USO	24.5	41	500	301	20	8	250	420 480 496	542.92	571.50	6x 5/8"	252	max.120	92	154	40.2 47.4 49.8	7.6 7.6 7.6	9.5	12.6	69.9 77.1 79.5
SB 42/2.3/60UC3/… SB 48/2.3/90UC3/… SB 50/2.3/120NC3/…	S21	BF 50/50/2USO	24.5	41	500	301	20	8	250	420 480 496	641.35	673.10	12x 5/8"	252	max.120	92	154	46.3 53.5 55.9	7.6 7.6 7.6	9.5	12.6	76.0 83.2 85.6

** value depending on design of flange hub (acc. to customer request)

■ SB + BF-Series 63

All technical data are without warranty. Technical data have to be seen as a guideline - detailed data are available as tabular drawing on request. Modifications of dimensions and design reserved.

Continuous, angular deflection capacity	ΔK_w	= 12 mrad
Transient, angular deflection capacity	$\Delta K_{w,\,max}$	= 24 mrad
Shock angular deflection capacity	$\Delta K_{w,\,max}$	= 36 mrad
Undimensioned damping factor membrane	κ_M = 0.0064	
Undimensioned damping factor intermediate shaft	κ_Z = 0.008	

Mass elastic scheme

* value for one half of the GESILCO® Coupling
** value depending on design of flange hub (acc. to customer request)

Series 63		Flywheel Size acc. to SAE J620	Nominal torque	Parameter BF Coupling	Bending length	Torsional stiffness SB coupling	Torsional stiffness membrane	Torsional stiffness intermediate shaft	Bending stiffness membrane	Axial stiffness membrane	Maximum speed	Perm. thermal load	Inertia				
SB Size	BF Size		T_{KN}	$i*$	L_b	C_{T1}	$C_{T2}*$	$C_{T3}*$	C_w*	C_a*	n	P_{KW}	I_1	I_2	I_3	I_4	I_5**
			kNm	mm	mm	MNm/rad	MNm/rad	MNm/rad	kNm/rad	N/mm	1/min	kW	kgm²				
SB 49/3.5/60UC3/10/S21	BF 63/50/2USO	21	12.5	283.5	347	0.206	20	22	12.2	304	2000	3.2	3.28	0.17	0.13	0.65	0.27
SB 49/3.5/60UC3/10/S24		24											4.04				
SB 49/3.5/60UC3/12/S21		21	15.0			0.247							3.28				
SB 49/3.5/60UC3/12/S24		24											4.04				
SB 49/3.5/60UC3/14/S21		21	17.5			0.288							3.28				
SB 49/3.5/60UC3/14/S24		24											4.04				
SB 49/3.5/60UC3/16/S21		21	20.0			0.329							3.28				
SB 49/3.5/60UC3/16/S24		24											4.04				
SB 56/3.5/90UC3/10/S21	BF 63/50/2USO	21	12.5			0.138						4.1	4.28				
SB 56/3.5/90UC3/10/S24		24											5.04				
SB 56/3.5/90UC3/12/S21		21	15.0			0.165							4.28				
SB 56/3.5/90UC3/12/S24		24											5.04				
SB 56/3.5/90UC3/14/S21		21	17.5			0.193							4.28				
SB 56/3.5/90UC3/14/S24		24											5.04				
SB 56/3.5/90UC3/16/S21		21	20.0			0.220							4.28				
SB 56/3.5/90UC3/16/S24		24											5.04				
SB 58/3.5/120C3/10/S21	BF 63/50/2USO	21	12.5			0.104						4.4	4.67				
SB 58/3.5/120C3/10/S24		24											5.43				
SB 58/3.5/120C3/12/S21		21	15.0			0.124							4.67				
SB 58/3.5/120C3/12/S24		24											5.43				
SB 58/3.5/120C3/14/S21		21	17.5			0.145							4.67				
SB 58/3.5/120C3/14/S24		24											5.43				
SB 58/3.5/120C3/16/S21		21	20.0			0.166							4.67				
SB 58/3.5/120C3/16/S24		24											5.43				

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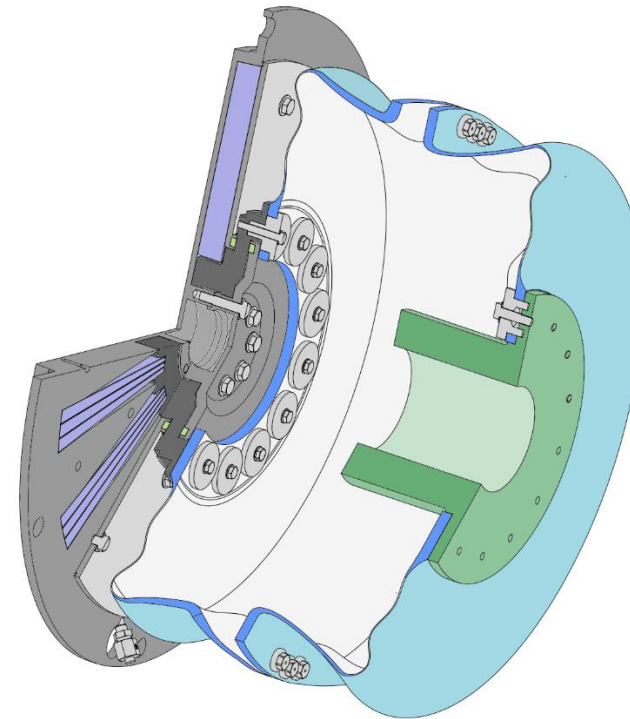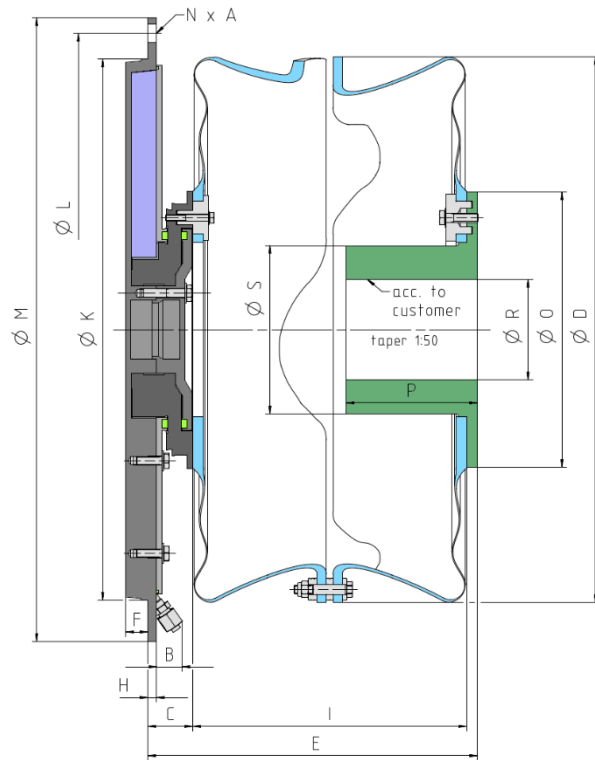
Series 63			Dimensions															Weight				
			B	C	D	E	F	H	I	K	L	M	N x A	O	P	R	S	outer SB	inner SB	BF	Flange Hub**	total**
SB Size		BF Size	mm										in	mm				kg				
SB 49/3.5/60UC3/… SB 56/3.5/90UC3/… SB 58/3.5/120NC3/…	S21	BF 63/50/2USO	24.5	52	630	427	29	12	363	490 560 580	641.35	673.10	12x 5/8"	320	max.185	105	175	76.9 90.0 95.0	15.5 15.5 15.5	18.6	26.3	137.3 150.4 155.4
SB 49/3.5/60UC3/… SB 56/3.5/90UC3/… SB 58/3.5/120NC3/…	S24	BF 63/50/2USO	24.5	52	630	427	29	12	363	490 560 580	692.15	733.42	12x 3/4"	320	max.185	105	175	83.1 96.2 101.2	15.5 15.5 15.5	18.6	26.3	143.5 156.6 161.6

** value depending on design of flange hub (acc. to customer request)

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Examples

- **Standard Geislinger SE-Coupling**
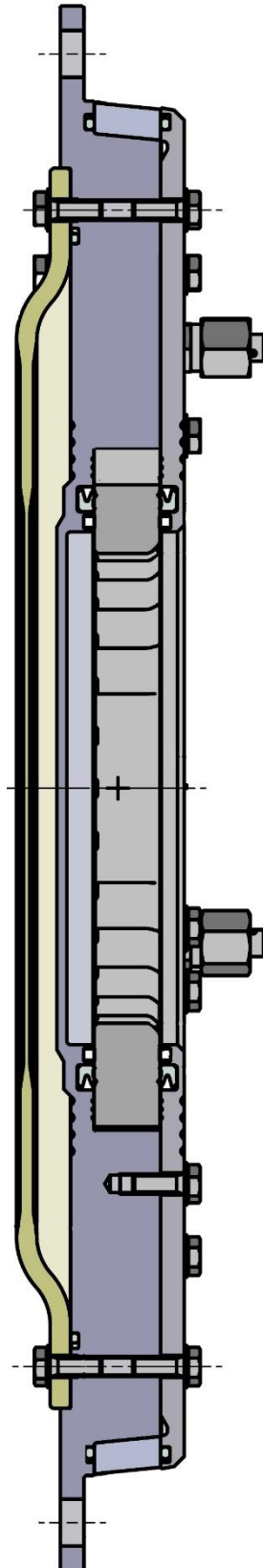
- **Standard Geislinger SE-Coupling with additional mass (optional part in green) for fine-tuning of torsional vibrations**

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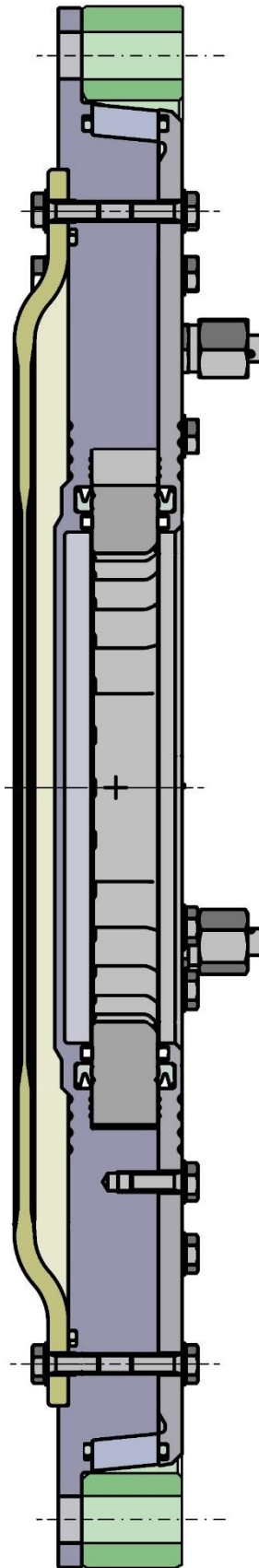
■ **Standard Geislinger SE-Coupling with split ring flange connection (optional parts in green) for radial disassembly/assembly**
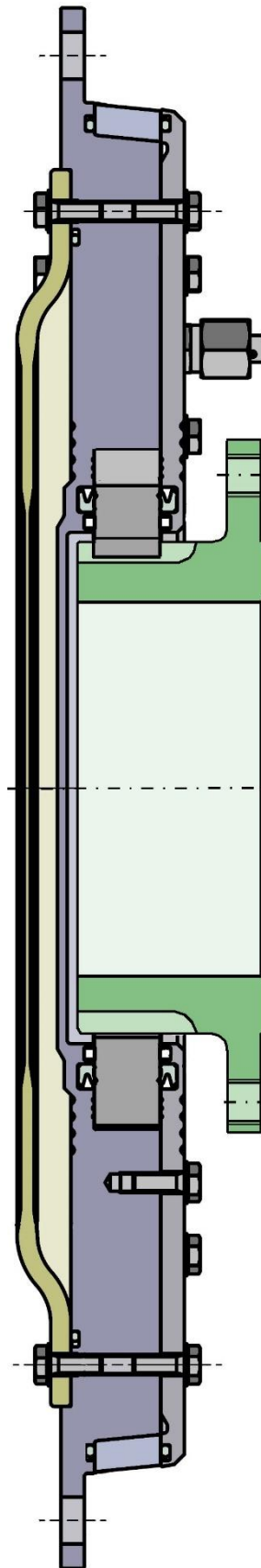
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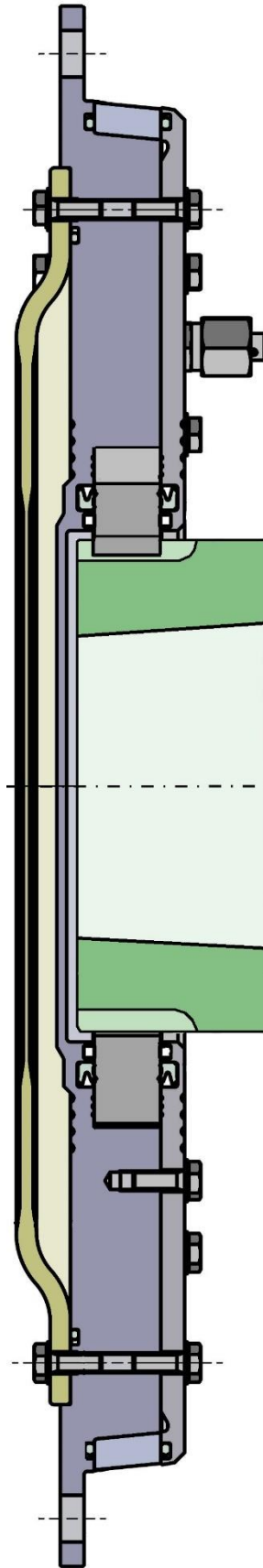POWERTRAIN SOLUTIONS. **BUILT TO LAST.**
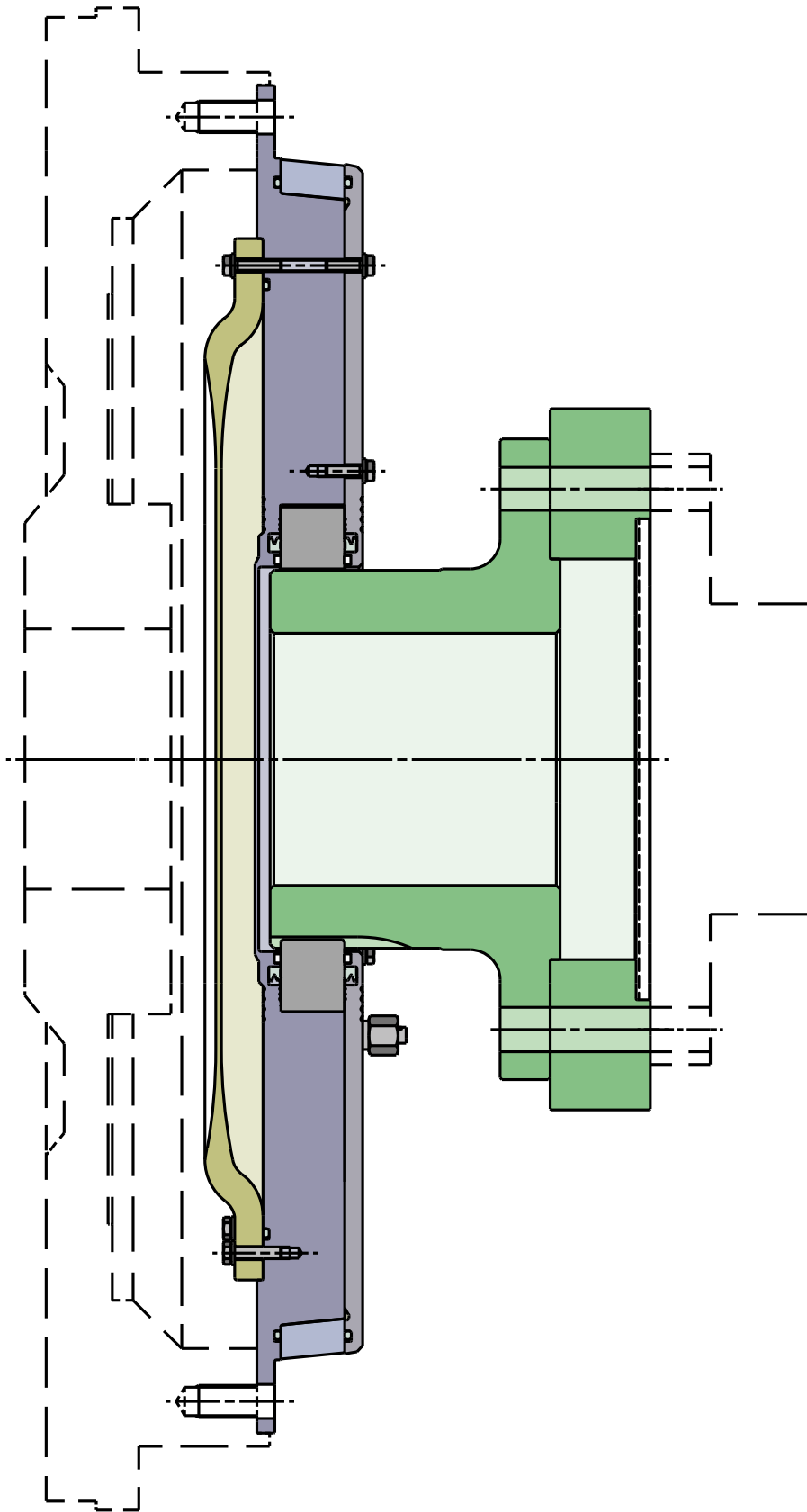
■ **Standard Geislinger SE-Coupling with conical flange hub connection (optional parts in green) for radial disassembly/assembly**
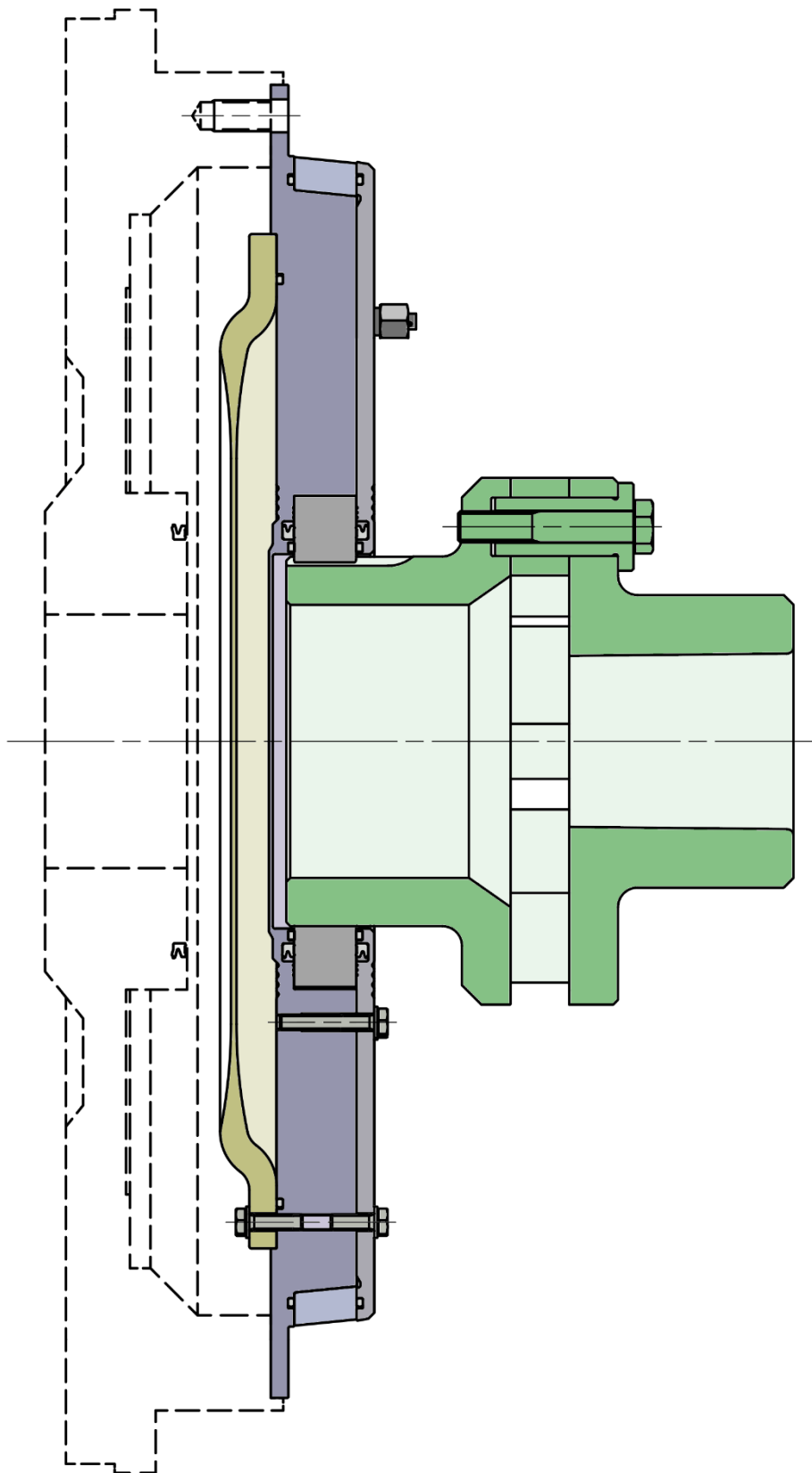
■ **Standard Geislinger SE-Coupling between keyway connection and flange connection (optional parts in green)**
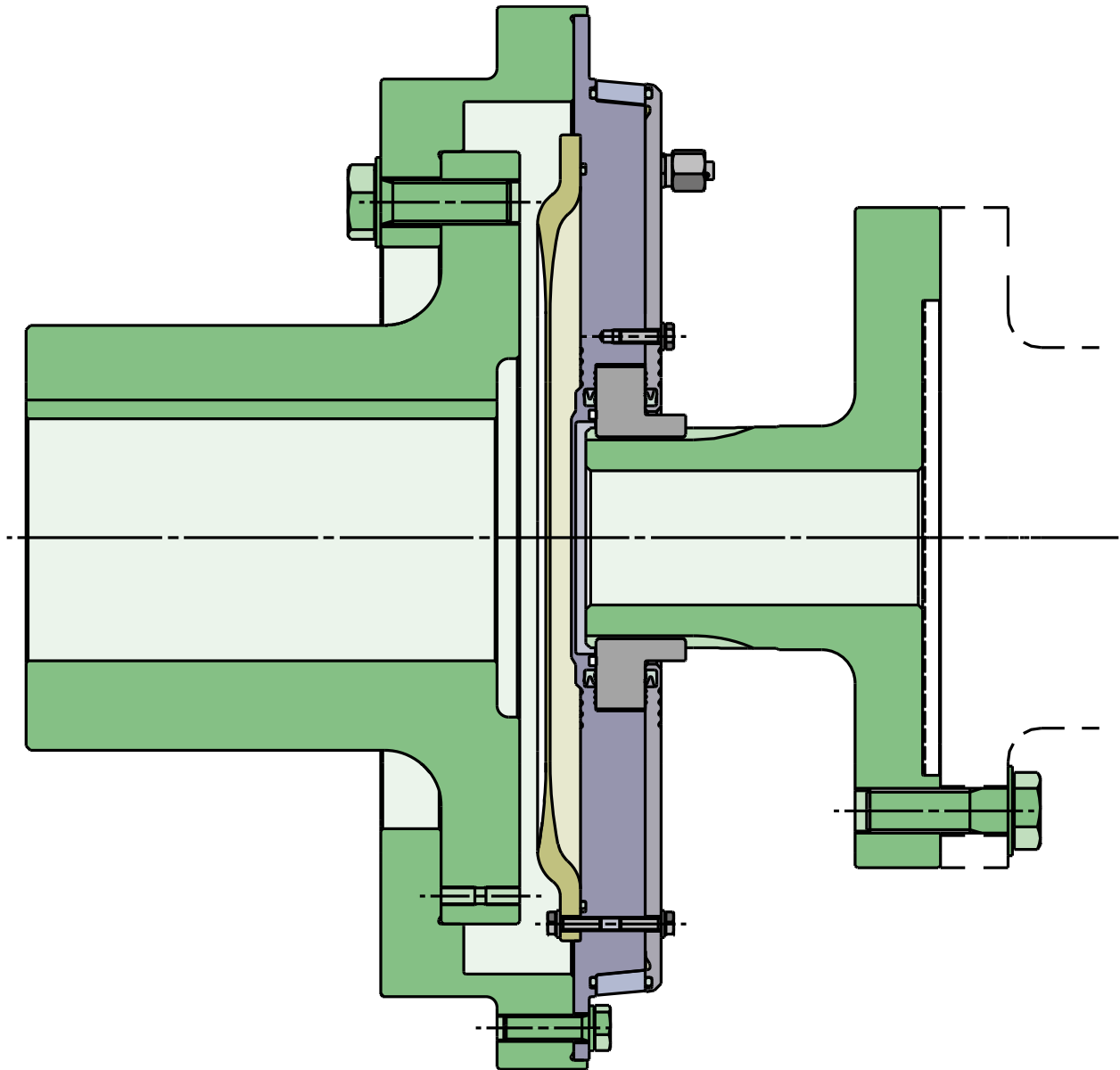
■ **Standard Geislinger SE-Coupling with flange connection (optional part in green)**

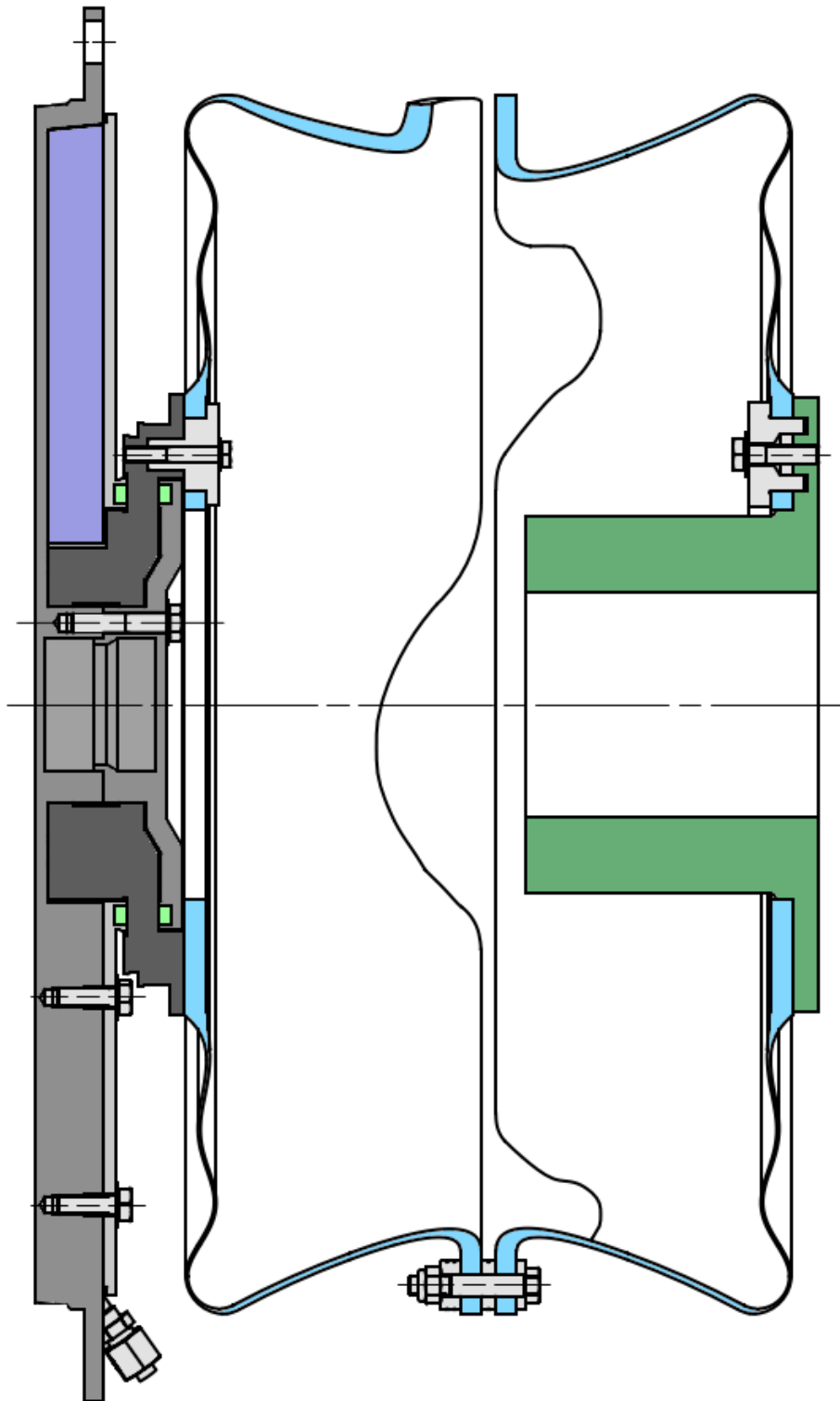■ **Standard Geislinger SE-Coupling with conical connection (optional part in green)**

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- **Standard Geislinger SE-Coupling with conical connection (optional part in green) for flange mounted gearbox**
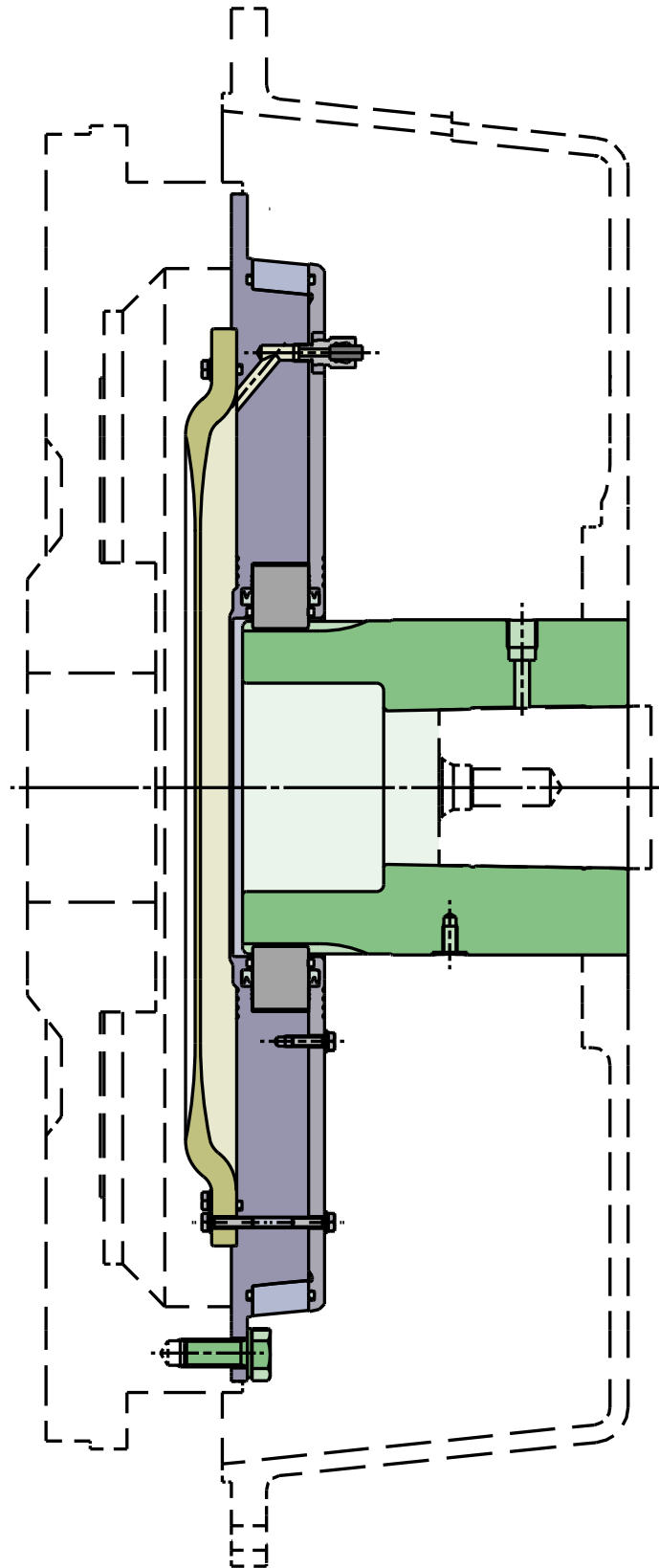
■ **Standard Geislinger SF-Coupling with conical connection (optional part in green)**

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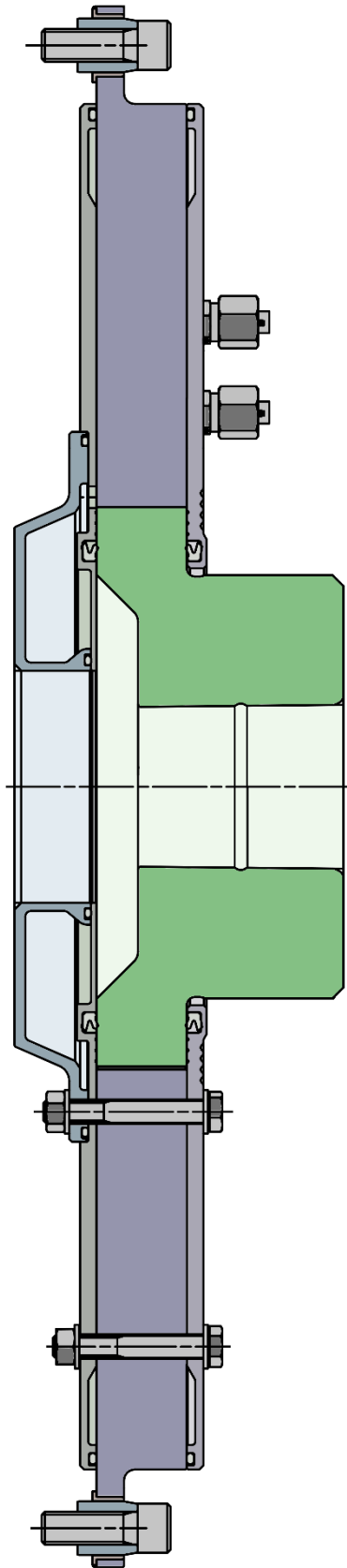
■ **Standard Geislinger SB+BF-Coupling-Combination with conical flange hub connection (optional part in green)**

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- **Standard Geislinger SB+BF-Coupling-Combination with adapter ring and conical flange hub connection (optional part in green)**
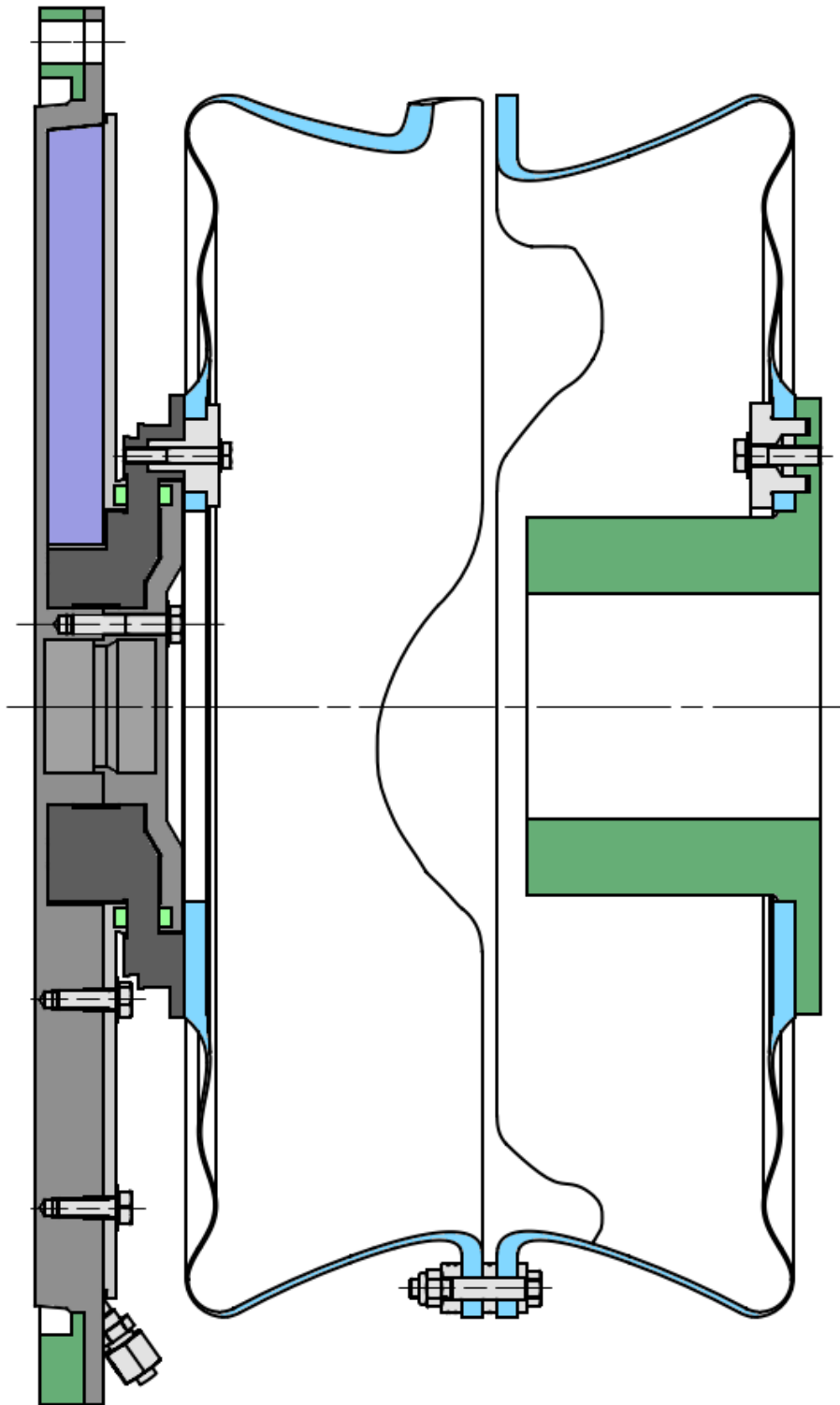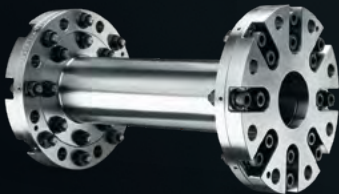
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Geislinger Silenco®

Geislinger Carbotorq®

Geislinger Monitoring

Geislinger Damper

Geislinger Flexlink

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