



A REGAL REXNORD BRAND

PRODUCT
CATALOG



HIGHLY FLEXIBLE COUPLINGS FOR CARDAN SHAFTS

SOLUTIONS FOR NEW TECHNOLOGIES



Stromag

Founded in 1932, Stromag has grown to become a globally recognized leader in the development and manufacture of innovative power transmission components for industrial drivetrain applications. Stromag engineers utilize the latest design technologies and materials to provide creative, energy-efficient solutions that meet their customer's most challenging requirements.

Stromag's extensive product range includes flexible couplings, disc brakes, limit switches, an array of hydraulically, pneumatically, and electrically actuated brakes, and a complete line of electric, hydraulic and pneumatic clutches.

Stromag engineered solutions improve drivetrain performance in a variety of key markets including energy, off-highway, metals, marine, transportation, printing, textiles, and material handling on applications such as wind turbines, conveyor systems, rolling mills, agriculture and construction machinery, municipal vehicles, forklifts, cranes, presses, deck winches, diesel engines, gensets and stage machinery.



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Stromag – Flexible Couplings

Highly Flexible Couplings for Cardan Shafts

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Stromag – Flexible Couplings

COUPLING AT A GLANCE

PERIFLEX® CS PRODUCT RANGE

PERIFLEX® CS SERIES

Nominal torque range: 560 – 14800 Nm

EXTERNAL



INTERNAL



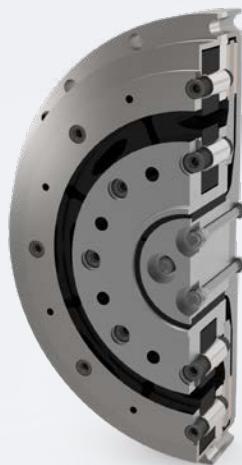
AFL/PERIFLEX®VN SERIES

Nominal torque range: 1000 – 20000 Nm



IGE...FG SERIES

Nominal torque range: 4000 – 25000 Nm



BENEFITS INCLUDE

STROMAG PERIFLEX® CS COUPLING

- Highly flexible rubber couplings with linear characteristic for connecting a cardan shaft directly to a diesel engine.
- Deflection angle of the cardan shaft of up to 5°.
- The radial and axial forces generated by the cardan shaft are absorbed by an internal plain bearing and transmitted to the engine bearing.
- Torque range between 560 Nm to 14.800 Nm.

STROMAG IGE...FG

- Highly flexible rubber coupling with a progressive characteristic for connecting a cardan shaft directly to a diesel engine.
- Deflection angle of the cardan shaft of up to 5°.
- The radial and axial forces generated by the cardan shaft are absorbed by an internal plain bearing and transmitted to the engine bearing.
- Torque range between 4000 Nm to 25.000 Nm.

STROMAG AFL/PERIFLEX® VN FLANGE BEARING

- Highly flexible rubber disc coupling with a linear characteristic for connecting a cardan shaft directly to a diesel engine.
- Deflection angle of the cardan shaft of up to 10°.
- The radial and axial forces generated by the cardan shaft are absorbed by an integrated bell housing and transmitted to the engine housing.
- Torque range between 1000 Nm to 20.000 Nm.

Stromag – Flexible Couplings

COUPLING AT A GLANCE

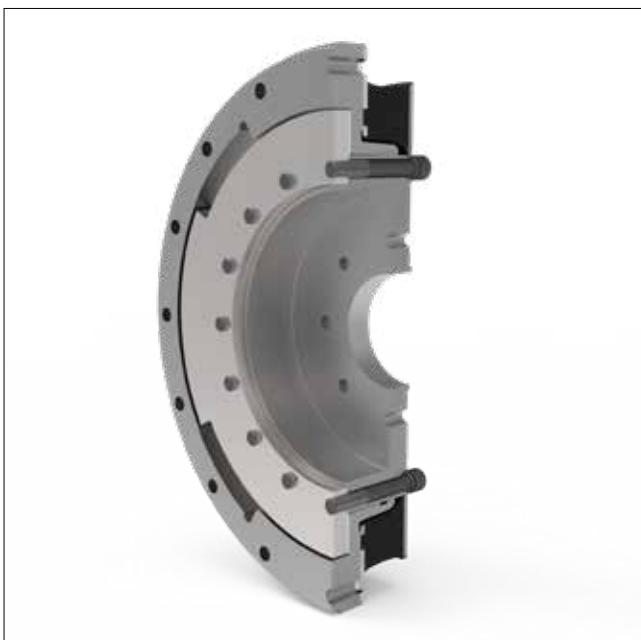
APPLICATION AREAS



- The Highly Flexible Couplings for Cardan Shafts is designed for applications with piston engines. The outer part can be bolted directly to the flywheel of an engine. The cardan shaft is flange mounted to the B-side of the coupling.
- Other application fields are railway industry and engine test cells.

FAIL-SAFE DEVICE

Stromag cardan shaft couplings are available with a fail-safe device. A rupture in the flexible element causes claws to intermesh, forming a torsionally rigid, backlash connection between the drive and output sides. Temporary emergency operation is possible with limited torque. The permissible torques and speeds must be calculated separately on the basis of torsional vibrations transferred via a torsionally rigid structure.



Stromag – Flexible Couplings

COUPLING AT A GLANCE

CLASSIFICATIONS



For survey of the coupling by a classification society, the regulations of the society have to be adhered to. The coupling characteristics may differ from the definitions given in this catalogue. Accordingly prepared data sheets are available on request.

A number of classification societies prescribe fail-safe devices on ships main drives.

TORQUE RANGE

- Stromag Periflex® CS: 560 up to 14,800 Nm
- Stromag AFL/PVN: 1000 up to 20,000 Nm
- Stromag IGE...FG: 4000 up to 25,000 Nm

INSTRUCTIONS FOR THE DESIGNER

The Stromag cardan shaft coupling is comprised of the combination of an element made from flexible rubber material with a bearing for the secure absorption of the reaction forces applied by a connected cardan shaft.

Three different series of the cardan shaft couplings have been developed in order to satisfy the different requirements in relation to the system torque, torsional stiffness and reaction force.

The highly flexible Stromag Periflex® CS series designs are preferred for standard applications.

The IGE series from the established highly flexible Stromag GE coupling product family is used for applications with high impact loads.

The Stromag flange bearing (AFL) assembly with a disc coupling as a cardan shaft coupling is recommended for an angle of deflection greater than 5°.

The couplings can be used in a temperature range of between -50°C and +80°C. The flexible elements may heat up as a result of damping work and reach higher temperatures than the ambient temperature. When covering the coupling with a protective enclosure, bear this fact in mind to assure sufficient ventilation and heat dissipation.

Static and dynamic characteristic values are available for the Stromag cardan shaft couplings. These values can help in the choice of a coupling size which is suitable for the specific application. The key factors for this are the loads arising from the power transmitted and torsional vibrations. Stationary operating modes must be based on T_{KN} , T_{KW} and P_{KV} , while T_{Kmax} values are to be used for nonstationary operating modes.

When suitably stored, rubber flexible elements maintain their characteristics for several years without change. The parts need to be stored against oxygen, ozone, heat, light, moisture and solvents. The temperature in the store should be between +10°C und +25°C. The relative humidity should not exceed 65%. Further details are given on DIN 7716 and ISO 2230.

COUPLING AT A GLANCE

THE TORSIONAL VIBRATION ANALYSIS

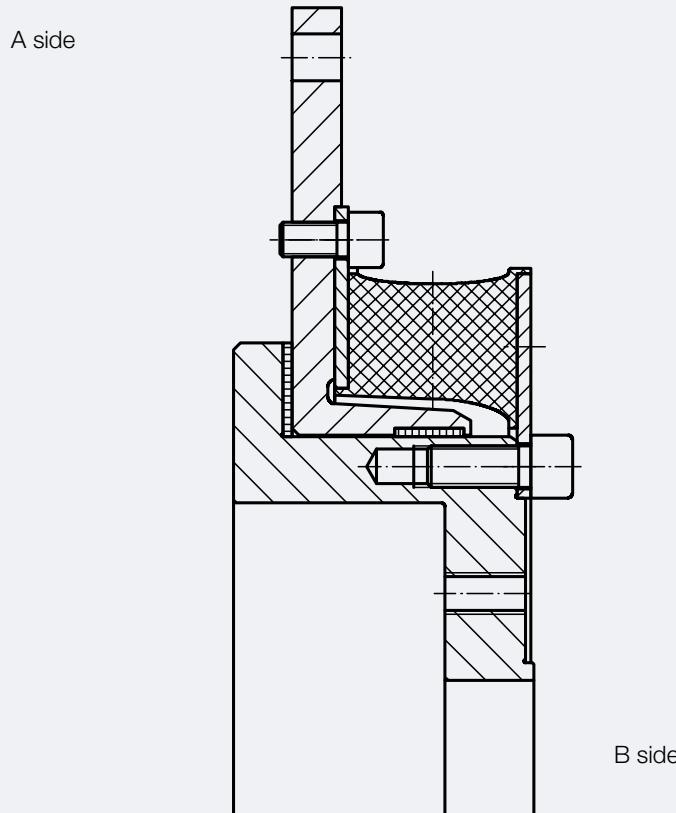


Stromag's Know-how in Torsional Vibration Analysis (TVA) constitutes the core of each coupling design. It provides a comprehensive analysis of loads in the crankshaft, coupling and driven side to ensure that no critical speeds occur during operation.

Unevenly rotating systems can severely degrade product quality and cause great harm to the powertrain. On a daily basis, the TVA experts at Stromag work on the challenge of detecting such deviations by measuring them and protecting the entire powertrain with ideal product selection. Stromag is capable of calculating stationary and transient operating conditions considering the stiffness and damping of the elastomers.

COUPLING AT A GLANCE

Periflex® CS Concept



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The Periflex® CS couplings are highly flexible rubber couplings with a linear spring characteristic for connecting a cardan shaft directly to a diesel engine drive. The ring element can be bolted directly to an engine's flywheel. The cardan shaft is flange-mounted to the B-side of the coupling. A deflection angle of the cardan shaft of up to 5° is generally permitted, larger angles are available on request.

The series covers the torque range from 560 to 14,800 Nm.

The connecting dimensions on the engine side primarily conform to SAE standard J620 or DIN 6281. The cardan shaft side is available in a range of metric sizes, including for Spicer, Mechanics or cross-toothed connections.

The Periflex® CS coupling is comprised of the combination of a ring element made from flexible rubber material with a bearing for the secure absorption of the reaction forces applied by a connected cardan shaft. The ring element is exclusively torsionally flexible. The bearing consists of an axial and radial plain bearing made from wear-free and maintenance-free composite material.

The metal parts of the Periflex® CS coupling are made from high-quality cast parts as standard. The ring element is manufactured from natural rubber (NR) in various rubber qualities and torsional stiffnesses. These allow precise adjustment to drives that are susceptible to torsional vibrations.

Stromag – Flexible Couplings

COUPLING AT A GLANCE

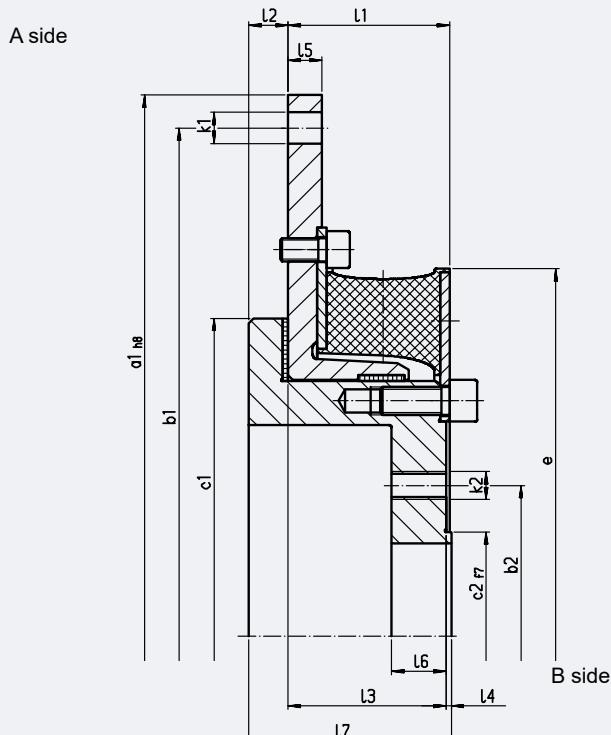
| Stromag Periflex® CS output table | | | | | | | | | |
|-----------------------------------|---------|----------------|-------------------------|-------------------------|-------------------------|------------------|---------------------------------|------------------|------------------------|
| Coupling Size | Element | Nominal Torque | Maximum Torque | | Adm. Alternating Torque | Adm. Speed | Torsional Stiffness | Relative Damping | Adm. Damping Power |
| | | T_{KN} Nm | T_{Kmax1} Nm 1) | T_{Kmax2} Nm 2) | T_{KW} Nm | n_{max} rpm | $C_{T,dyn}$ kNm/rad 3) 4) | ψ 3) 4) | $P_{KV,60}$ W 5) |
| CS 13 | 131 | 560 | 840 | 1680 | 140 | 4400 | 2.8 | 0.8 | 130 |
| | 132 | 700 | 1050 | 2100 | 175 | 4400 | 4.0 | 1.0 | 130 |
| | 133 | 900 | 1350 | 2700 | 225 | 4400 | 5.5 | 1.1 | 130 |
| CS 21 | 211 | 700 | 1050 | 2100 | 175 | 4200 | 4.0 | 0.8 | 200 |
| | 212 | 900 | 1350 | 2700 | 225 | 4200 | 5.5 | 1.0 | 200 |
| | 213 | 1100 | 1650 | 3300 | 275 | 4200 | 7.7 | 1.1 | 200 |
| CS 22 | 221 | 900 | 1350 | 2700 | 225 | 4200 | 4.7 | 0.8 | 220 |
| | 222 | 1100 | 1650 | 3300 | 275 | 4200 | 7.0 | 1.0 | 220 |
| | 223 | 1400 | 2100 | 4200 | 350 | 4200 | 9.1 | 1.1 | 220 |
| CS 31 | 311 | 1300 | 1950 | 3900 | 325 | 3800 | 6.9 | 0.8 | 260 |
| | 312 | 1700 | 2550 | 5100 | 425 | 3800 | 9.5 | 1.0 | 260 |
| | 313 | 2000 | 3000 | 6000 | 500 | 3800 | 13.5 | 1.1 | 260 |
| CS 32 | 321 | 1800 | 2700 | 5400 | 450 | 3800 | 10.5 | 0.8 | 340 |
| | 322 | 2200 | 3300 | 6600 | 550 | 3800 | 14.5 | 1.0 | 340 |
| | 323 | 2600 | 3900 | 7800 | 650 | 3800 | 20.0 | 1.1 | 340 |
| CS 41 | 411 | 2300 | 3450 | 6900 | 575 | 2800 | 19.0 | 0.8 | 360 |
| | 412 | 3000 | 4500 | 9000 | 750 | 2800 | 28.5 | 1.0 | 360 |
| | 413 | 4000 | 6000 | 12000 | 1000 | 2800 | 34.5 | 1.1 | 360 |
| CS 42 | 421 | 3500 | 5250 | 10500 | 875 | 2800 | 25.5 | 0.8 | 440 |
| | 422 | 3800 | 5700 | 11400 | 950 | 2800 | 34.5 | 1.0 | 440 |
| | 423 | 5200 | 7800 | 15600 | 1300 | 2800 | 42.0 | 1.1 | 440 |
| CS 43 | 431 | 4400 | 6600 | 13200 | 1100 | 2800 | 32.5 | 0.8 | 510 |
| | 432 | 5600 | 8400 | 16800 | 1400 | 2800 | 42.5 | 1.0 | 510 |
| | 433 | 6700 | 10050 | 20100 | 1675 | 2800 | 57.5 | 1.1 | 510 |
| CS 51 | 511 | 7200 | 10800 | 21600 | 1800 | 2300 | 60.0 | 0.8 | 580 |
| | 512 | 9400 | 14100 | 28200 | 2350 | 2300 | 82.5 | 1.0 | 580 |
| | 513 | 11400 | 17100 | 34200 | 2850 | 2300 | 105 | 1.1 | 580 |
| CS 52 | 521 | 9800 | 14700 | 29400 | 2450 | 2300 | 90.0 | 0.8 | 630 |
| | 522 | 13000 | 19500 | 39000 | 3250 | 2300 | 100 | 1.0 | 630 |
| | 523 | 14800 | 22200 | 44400 | 3700 | 2300 | 146 | 1.1 | 630 |

- 1) For periodic, short-term vibrations during start-stop, switching, etc.
- 2) For rare peak loads, e.g. generator short-circuit
- 3) For: $T_w = 0.2 \cdot T_{KN}$; $T = 0.8 \cdot T_{KN}$; $f = 10 \text{ Hz}$; $\theta = 30^\circ\text{C}$
- 4) Material-related tolerances as high as $\pm 15\%$ are possible.
- 5) The $P_{KV,60}$ value describes the damping performance that can be absorbed over 60 minutes. Permanently absorbable damping performance $P_{KV,\infty} = 0.5 \cdot P_{KV,60}$

Stromag – Flexible Couplings

COUPLING AT A GLANCE

Stromag Periflex® CS dimension table



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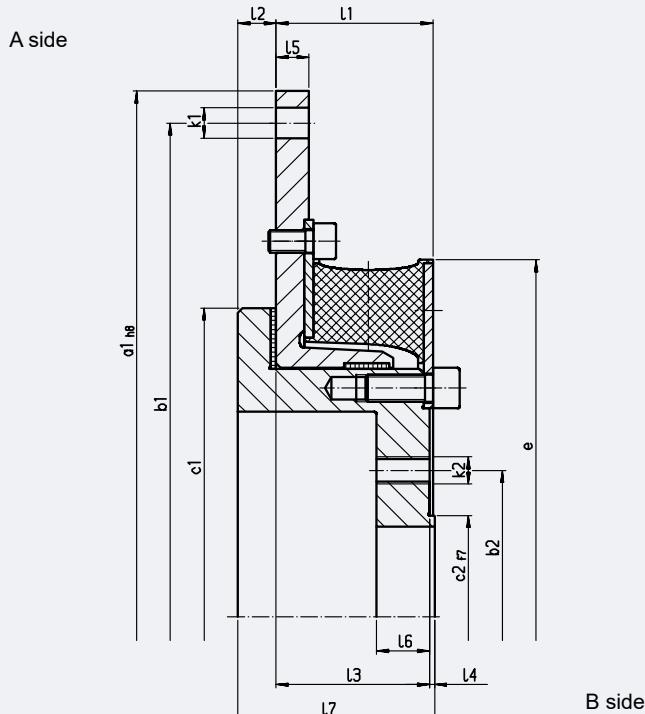
Metric, external cardan shaft connection

| Size | | CS 13 | | | | | | CS 21 | | | | | | CS 22 | | | | | |
|---|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SAE connection | | 8" | | | 10" | | | 10" | | | 11½" | | | 10" | | | 11½" | | |
| Cardan flange | | 75 | 90 | 100 | 75 | 90 | 100 | 90 | 100 | 120 | 90 | 100 | 120 | 90 | 100 | 120 | 90 | 100 | 120 |
| Diameter mm | a ₁ | 263.5 | 263.5 | 263.5 | 314.4 | 314.4 | 314.4 | 314.4 | 314.4 | 314.4 | 352.4 | 352.4 | 352.4 | 314.4 | 314.4 | 314.4 | 352.4 | 352.4 | 352.4 |
| | b ₁ | 244.5 | 244.5 | 244.5 | 295.3 | 295.3 | 295.3 | 295.3 | 295.3 | 295.3 | 333.4 | 333.4 | 333.4 | 295.3 | 295.3 | 295.3 | 333.4 | 333.4 | 333.4 |
| | c ₁ | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| | k ₁ | 6x11 | 6x11 | 6x11 | 8x11 |
| | b ₂ | 62 | 74.5 | 84 | 62 | 74.5 | 84 | 74.5 | 84 | 101.5 | 74.5 | 84 | 101.5 | 74.5 | 84 | 101.5 | 74.5 | 84 | 101.5 |
| | c ₂ | 42 | 47 | 57 | 42 | 47 | 57 | 47 | 57 | 75 | 47 | 57 | 75 | 47 | 57 | 75 | 47 | 57 | 75 |
| | k ₂ * | 6xM6 | 4xM8 | 6xM8 | 6xM6 | 4xM8 | 6xM8 | 4xM8 | 6xM8 | 6xM8 | 4xM8 | 6xM8 | 4xM8 | 6xM8 | 8xM10 | 8xM10 | 4xM8 | 6xM8 | 8xM10 |
| | e | 228 | 228 | 228 | 228 | 228 | 228 | 250 | 250 | 250 | 250 | 250 | 250 | 254 | 254 | 254 | 254 | 254 | 254 |
| Lengths mm | l ₁ | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 |
| | l ₂ | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 |
| | l ₃ | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | l ₄ | 2 | 2.3 | 2.3 | 2 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| | l ₅ | 11.5 | 11.5 | 11.5 | 13.5 | 13.5 | 13.5 | 11.5 | 11.5 | 11.5 | 13.5 | 13.5 | 13.5 | 11.5 | 11.5 | 11.5 | 13.5 | 13.5 | 13.5 |
| | l ₆ | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 19 | 19 | 19 |
| | l ₇ | 72.5 | 72.8 | 72.8 | 72.5 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 | 72.8 |
| Mass moment of inertia kgm ² | J _A side | 0.056 | 0.056 | 0.056 | 0.102 | 0.102 | 0.102 | 0.114 | 0.114 | 0.114 | 0.165 | 0.165 | 0.165 | 0.116 | 0.116 | 0.116 | 0.167 | 0.167 | 0.167 |
| | J _B side | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.044 | 0.044 | 0.044 | 0.044 | 0.044 | 0.044 | 0.046 | 0.046 | 0.046 | 0.046 | 0.046 | 0.046 |
| Mass kg | | 12.4 | 12.4 | 12.3 | 14.6 | 14.6 | 14.5 | 15.5 | 15.4 | 15.2 | 17.3 | 17.2 | 17.0 | 15.7 | 15.6 | 15.4 | 17.5 | 17.4 | 17.2 |

Stromag – Flexible Couplings

Stromag Periflex® CS Couplings

Stromag Periflex® CS dimension table



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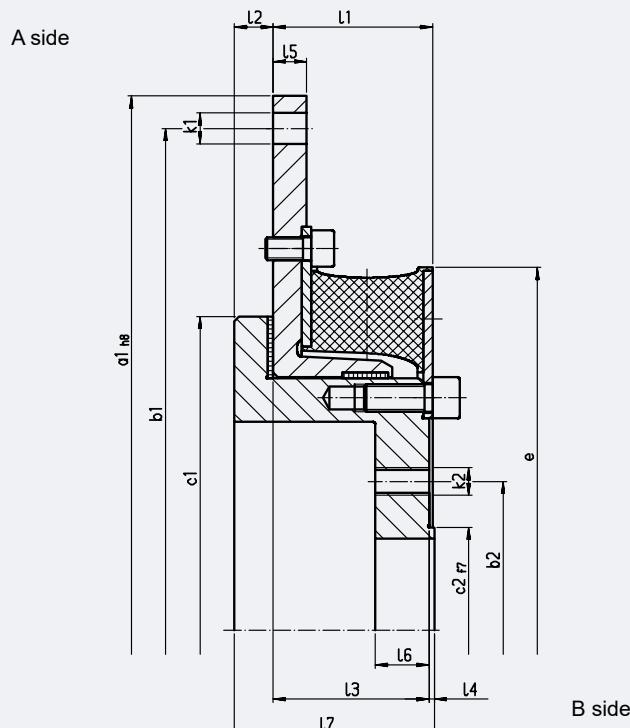
Metric, external cardan shaft connection

| Size | | CS 31 | | | | | | CS 32 | | | | | |
|---|---------------------|-------|-------|-------|--------|--------|--------|-------|-------|-------|--------|--------|--------|
| SAE connection | | 11½" | | | 14" | | | 11½" | | | 14" | | |
| Cardan flange | | 100 | 120 | 150 | 100 | 120 | 150 | 120 | 150 | 180 | 120 | 150 | 180 |
| Diameter mm | a ₁ | 352.4 | 352.4 | 352.4 | 466.7 | 466.7 | 466.7 | 352.4 | 352.4 | 352.4 | 466.7 | 466.7 | 466.7 |
| | b ₁ | 333.4 | 333.4 | 333.4 | 438.2 | 438.2 | 438.2 | 333.4 | 333.4 | 333.4 | 438.2 | 438.2 | 438.2 |
| | c ₁ | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 |
| | k ₁ | 8x11 | 8x11 | 8x11 | 8x13.5 | 8x13.5 | 8x13.5 | 8x11 | 8x11 | 8x11 | 8x13.5 | 8x13.5 | 8x13.5 |
| | b ₂ | 84 | 101.5 | 130 | 84 | 101.5 | 130 | 101.5 | 130 | 155.5 | 101.5 | 130 | 155.5 |
| | c ₂ | 57 | 75 | 90 | 57 | 75 | 90 | 75 | 90 | 110 | 75 | 90 | 110 |
| | k ₂ | 6xM8 | 8xM8 | 8xM10 | 6xM8 | 8xM8 | 8xM10 | 8xM8 | 8xM10 | 8xM14 | 8xM8 | 8xM10 | 8xM14 |
| Lengths mm | e | 314 | 314 | 314 | 314 | 314 | 314 | 317 | 317 | 317 | 317 | 317 | 317 |
| | l ₁ | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 |
| | l ₂ | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| | l ₃ | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 |
| | l ₄ | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.5 |
| | l ₅ | 12.5 | 12.5 | 12.5 | 14.5 | 14.5 | 14.5 | 12.5 | 12.5 | 12.5 | 14.5 | 14.5 | 14.5 |
| | l ₆ | 23 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |
| Mass moment of inertia kgm ² | J _A side | 0.187 | 0.187 | 0.187 | 0.511 | 0.511 | 0.511 | 0.121 | 0.191 | 0.191 | 0.515 | 0.515 | 0.515 |
| | J _B side | 0.166 | 0.165 | 0.165 | 0.166 | 0.165 | 0.165 | 0.169 | 0.169 | 0.168 | 0.169 | 0.169 | 0.168 |
| Mass kg | | 25 | 24.8 | 24.5 | 32.5 | 32.3 | 32.3 | 25.5 | 25.2 | 25.2 | 33.0 | 32.7 | 32.2 |

Stromag – Flexible Couplings

Stromag Periflex® CS Couplings

Stromag Periflex® CS dimension table



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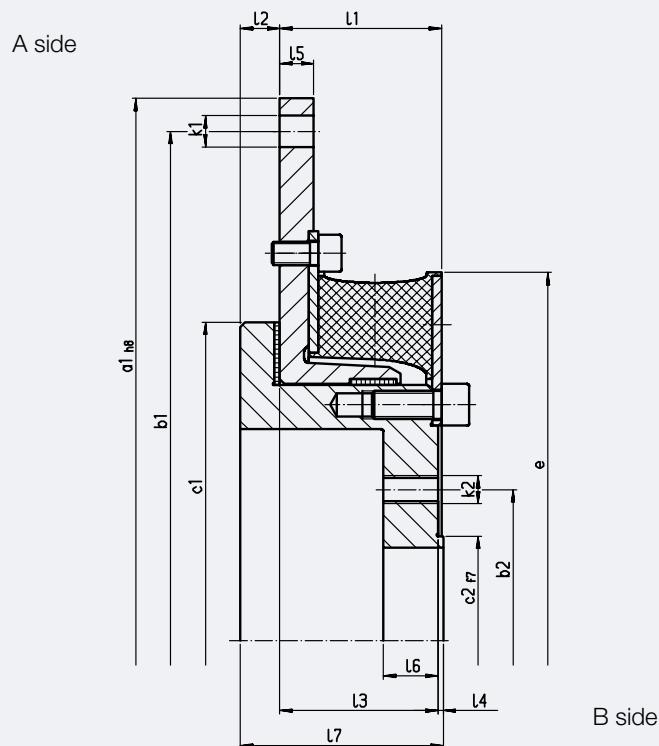
Metric, external cardan shaft connection

| Size | | CS 41 | | | CS 42 | | | CS 43 | | | | | | | | |
|---|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|
| SAE connection | | 14" | | | 14" | | | 14" | | | 16" | | | 18" | | |
| Cardan flange | | 150 | 180 | 225 | 150 | 180 | 225 | 180 | 225 | 250 | 180 | 225 | 250 | 180 | 225 | 250 |
| Diameter mm | a ₁ | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 517.5 | 517.5 | 517.5 | 571.5 | 571.5 | 571.5 |
| | b ₁ | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 489 | 489 | 489 | 542.9 | 542.9 | 542.9 |
| | c ₁ | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 |
| | k ₁ | 16x13.5 | 8x13.5 | 8x13.5 | 8x13.5 | 6x17.5 | 6x17.5 | 6x17.5 |
| | b ₂ | 130 | 155.5 | 196 | 130 | 155.5 | 196 | 155.5 | 196 | 218 | 155.5 | 196 | 218 | 218 | 218 | 218 |
| | c ₂ | 90 | 110 | 140 | 90 | 110 | 140 | 110 | 140 | 140 | 110 | 140 | 140 | 140 | 140 | 140 |
| | k ₂ | 8xM10 | 8xM14 | 8xM16 | 8xM10 | 8xM14 | 8xM16 | 8xM14 | 8xM16 | 8xM18 | 8xM14 | 8xM16 | 8xM18 | 8xM14 | 8xM16 | 8xM18 |
| Lengths mm | e | 417 | 417 | 417 | 417 | 417 | 417 | 417 | 420 | 420 | 420 | 420 | 420 | 420 | 420 | 420 |
| | l ₁ | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 |
| | l ₂ | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| | l ₃ | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 | 74.5 |
| | l ₄ | 2.3 | 2.3 | 4.5 | 2.3 | 2.3 | 4.5 | 2.3 | 4.5 | 5.5 | 2.3 | 4.5 | 5.5 | 2.3 | 4.5 | 5.5 |
| | l ₅ | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| | l ₆ | 27.0 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| Mass moment of inertia kgm ² | J _A side | 0.646 | 0.646 | 0.646 | 0.657 | 0.657 | 0.657 | 0.666 | 0.666 | 0.666 | 0.936 | 0.936 | 0.936 | 1.346 | 1.346 | 1.346 |
| | J _B side | 0.627 | 0.626 | 0.623 | 0.638 | 0.637 | 0.633 | 0.646 | 0.643 | 0.643 | 0.646 | 0.643 | 0.643 | 0.646 | 0.643 | 0.643 |
| Mass kg | | 50.5 | 49.9 | 48.9 | 51.5 | 50.5 | 49.5 | 50.9 | 49.9 | 49.9 | 55.3 | 54.3 | 54.3 | 60.9 | 59.9 | 59.9 |

Stromag – Flexible Couplings

Stromag Periflex® CS Couplings

Stromag Periflex® CS dimension table



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Metric, external cardan shaft connection

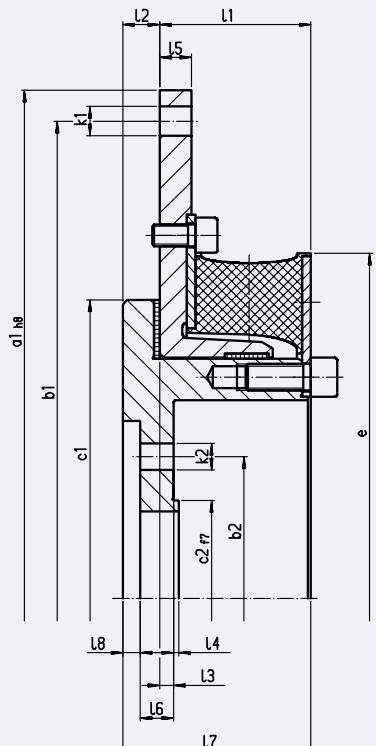
| Size | | CS 51 | | | CS 52 | |
|---|---|--|--|--|--|--|
| SAE connection | | 18" | | | 21" | |
| Cardan flange | | 225 | 250 | 285 | 250 | 285 |
| Diameter mm | a ₁ b ₁ c ₁ k ₁ b ₂ c ₂ k ₂ e | 571.5 542.9 440 12x17.5 196 140 8xM16 520 | 571.5 542.9 440 12x17.5 218 140 8xM18 520 | 571.5 542.9 440 12x17.5 245 175 8xM20 520 | 673.1 641.4 440 12x17.5 218 140 8xM18 525 | 673.1 641.4 440 12x17.5 245 175 8xM20 525 |
| Lengths mm | I ₁ I ₂ I ₃ I ₄ I ₅ I ₆ I ₇ | 93 21 90 4.5 16.0 30.5 115.5 | 93 21 90 5.5 16.0 30.5 116.5 | 93 21 90 5.5 16.0 30.5 116.5 | 93 21 90 5.5 16.0 30.5 116.5 | 93 21 90 5.5 16.0 30.5 116.5 |
| Mass moment of inertia kgm ² | J _A side J _B side | 1.745 1.514 | 1.745 1.514 | 1.745 1.505 | 3.380 1.569 | 3.380 1.559 |
| Mass kg | | 85.3 | 85.4 | 83.6 | 103.2 | 101.4 |

Stromag – Flexible Couplings

Stromag Periflex® CS Couplings

Stromag Periflex® CS dimension table

A side



B side

DD 880024 – 000

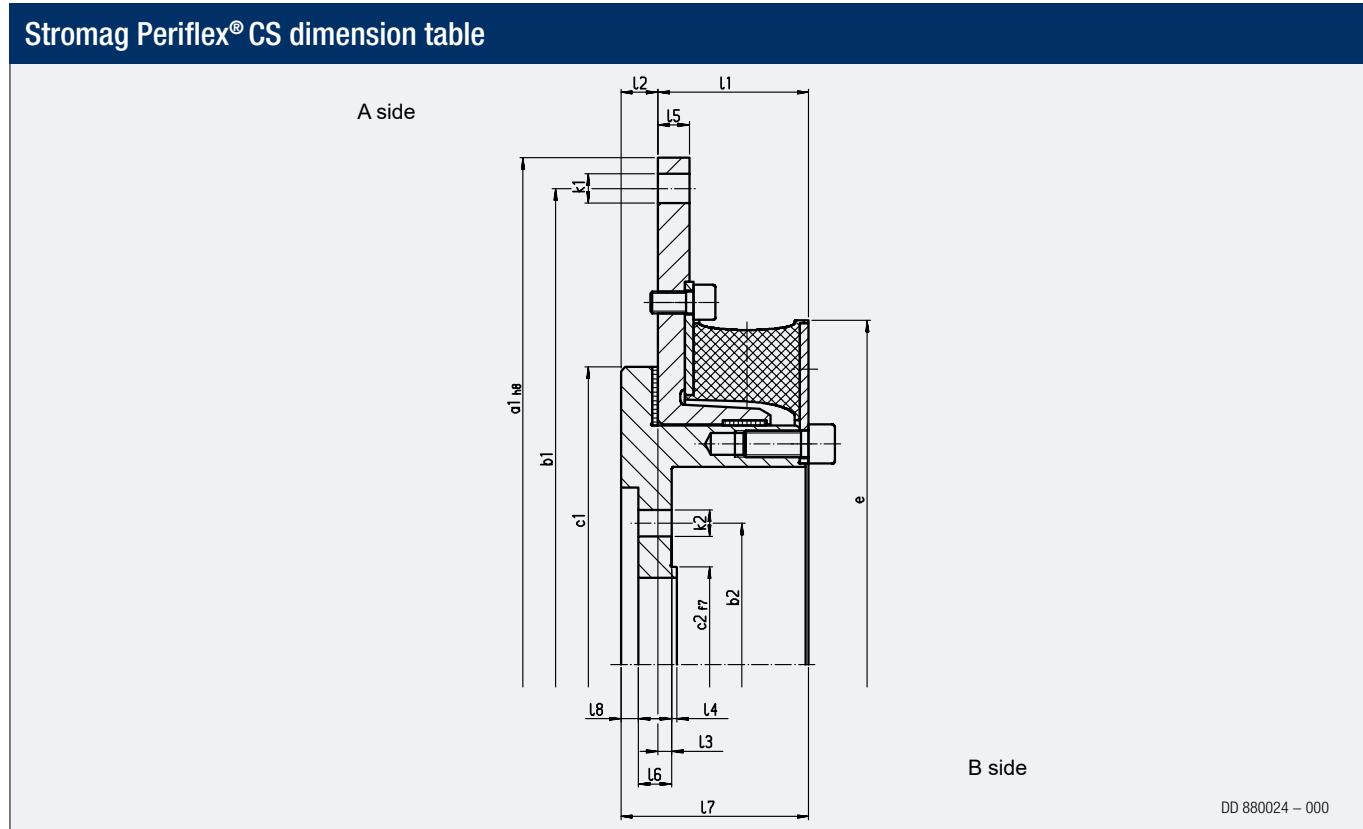
Metric, internal cardan shaft connection

| Size | | CS 13 | | | | | | CS 21 | | | | | | CS 22 | | | | | |
|---|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SAE connection | | 8" | | | 10" | | | 10" | | | 11½" | | | 10" | | | 11½" | | |
| Cardan flange | | 75 | 90 | 100 | 75 | 90 | 100 | 90 | 100 | 120 | 90 | 100 | 120 | 90 | 100 | 120 | 90 | 100 | 120 |
| Diameter mm | a ₁ | 263.5 | 263.5 | 263.5 | 314.4 | 314.4 | 314.4 | 314.4 | 314.4 | 314.4 | 352.4 | 352.4 | 352.4 | 314.4 | 314.4 | 314.4 | 352.4 | 352.4 | 352.4 |
| | b ₁ | 244.5 | 244.5 | 244.5 | 295.3 | 295.3 | 295.3 | 295.3 | 295.3 | 295.3 | 333.4 | 333.4 | 333.4 | 295.3 | 295.3 | 295.3 | 333.4 | 333.4 | 333.4 |
| | c ₁ | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| | k ₁ | 6x11 | 6x11 | 6x11 | 8x11 |
| | b ₂ | 62 | 74.5 | 84 | 62 | 74.5 | 84 | 74.5 | 84 | 101.5 | 74.5 | 84 | 101.5 | 74.5 | 84 | 101.5 | 74.5 | 84 | 101.5 |
| | c ₂ | 42 | 47 | 57 | 42 | 47 | 57 | 57 | 57 | 75 | 47 | 57 | 75 | 47 | 57 | 75 | 47 | 57 | 75 |
| | k ₂ * | 6x6.1 | 4x8.1 | 6x8.1 | 6x6.1 | 4x8.1 | 6x8.1 | 4x8.1 | 6x8.1 | 8x8.1 |
| | e | 228 | 228 | 228 | 228 | 228 | 228 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 |
| Lengths mm | l ₁ | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 | 61.5 |
| | l ₂ | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 |
| | l ₃ | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 |
| | l ₄ | 2.0 | 2.3 | 2.3 | 2.0 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| | l ₅ | 11.5 | 11.5 | 11.5 | 13.5 | 13.5 | 13.5 | 11.5 | 11.5 | 13.5 | 13.5 | 13.5 | 13.5 | 11.5 | 11.5 | 11.5 | 13.5 | 13.5 | 13.5 |
| | l ₆ | 17.3 | 16.0 | 16.0 | 17.3 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| | l ₇ | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 |
| | l ₈ | 4.7 | 6.0 | 6.0 | 4.7 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Mass moment of inertia kgm ² | J _A side | 0.056 | 0.056 | 0.056 | 0.102 | 0.102 | 0.102 | 0.114 | 0.114 | 0.114 | 0.165 | 0.165 | 0.165 | 0.116 | 0.116 | 0.116 | 0.167 | 0.167 | 0.167 |
| | J _B side | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.039 | 0.044 | 0.044 | 0.044 | 0.044 | 0.044 | 0.044 | 0.046 | 0.046 | 0.046 | 0.046 | 0.046 | 0.046 |
| Mass kg | | 12.5 | 12.3 | 12.2 | 14.7 | 14.5 | 14.4 | 15.5 | 15.3 | 15.0 | 17.3 | 17.1 | 16.8 | 15.7 | 15.5 | 15.2 | 17.5 | 17.3 | 17.0 |

Stromag – Flexible Couplings

Stromag Periflex® CS Couplings

Stromag Periflex® CS dimension table



DD 880024 – 000

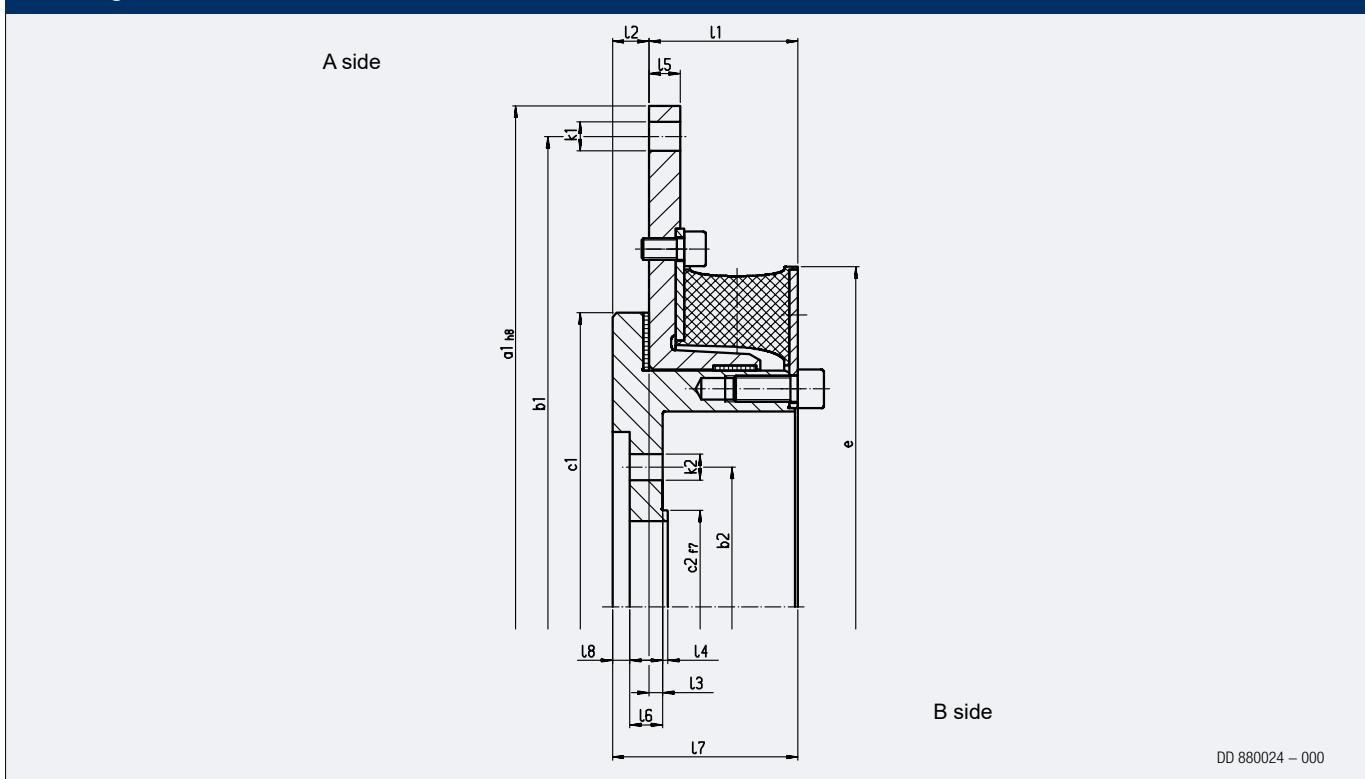
Metric, internal cardan shaft connection

| Size | | CS 31 | | | | | | CS 32 | | | | | |
|-----------------------------|------------|-------|-------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| SAE connection | | 11½" | | | 14" | | | 11½" | | | 14" | | |
| Cardan flange | | 100 | 120 | 150 | 100 | 120 | 150 | 120 | 150 | 180 | 120 | 150 | 180 |
| Diameter mm | a_1 | 352.4 | 352.4 | 352.4 | 466.7 | 466.7 | 466.7 | 352.4 | 352.4 | 352.4 | 466.7 | 466.7 | 466.7 |
| | b_1 | 333.4 | 333.4 | 333.4 | 438.2 | 438.2 | 438.2 | 333.4 | 333.4 | 333.4 | 438.2 | 438.2 | 438.2 |
| | c_1 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 |
| | k_1 | 8x11 | 8x11 | 8x11 | 8x13.5 | 8x13.5 | 8x13.5 | 8x11 | 8x11 | 8x11 | 8x13.5 | 8x13.5 | 8x13.5 |
| | b_2 | 84 | 101.5 | 130 | 84 | 101.5 | 130 | 101.5 | 130 | 155.5 | 101.5 | 130 | 155.5 |
| | c_2 | 57 | 75 | 90 | 57 | 75 | 90 | 75 | 90 | 110 | 75 | 90 | 110 |
| Lengths mm | k_2 | 6x8.1 | 8x8.1 | 8x10.1 | 6x8.1 | 8x8.1 | 8x10.1 | 8x8.1 | 8x10.1 | 8x14.1 | 8x8.1 | 8x10.1 | 8x14.1 |
| | e | 314 | 314 | 314 | 314 | 314 | 314 | 317 | 317 | 317 | 317 | 317 | 317 |
| | l_1 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 |
| | l_2 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| | l_3 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 |
| | l_4 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| Mass moment of inertia kgm² | l_5 | 12.5 | 12.5 | 12.5 | 14.5 | 14.5 | 14.5 | 12.5 | 12.5 | 12.5 | 14.5 | 14.5 | 14.5 |
| | l_6 | 20.5 | 20.5 | 19.5 | 20.5 | 20.5 | 19.5 | 20.5 | 19.5 | 17.5 | 20.5 | 19.5 | 17.5 |
| | l_7 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 | 86.5 |
| | l_8 | 6.0 | 6.0 | 7.0 | 6.0 | 7.0 | 6.0 | 7.0 | 9.0 | 6.0 | 7.0 | 9.0 | 9.0 |
| | J_A side | 0.187 | 0.187 | 0.187 | 0.511 | 0.511 | 0.511 | 0.191 | 0.191 | 0.191 | 0.515 | 0.515 | 0.515 |
| | J_B side | 0.167 | 0.167 | 0.164 | 0.167 | 0.167 | 0.164 | 0.171 | 0.168 | 0.162 | 0.171 | 0.168 | 0.162 |
| Mass kg | | 25.1 | 24.7 | 24.1 | 32.7 | 32.2 | 31.6 | 25.4 | 24.8 | 23.6 | 32.9 | 32.3 | 31.1 |

Stromag – Flexible Couplings

Stromag Periflex® CS Couplings

Stromag Periflex® CS dimension table



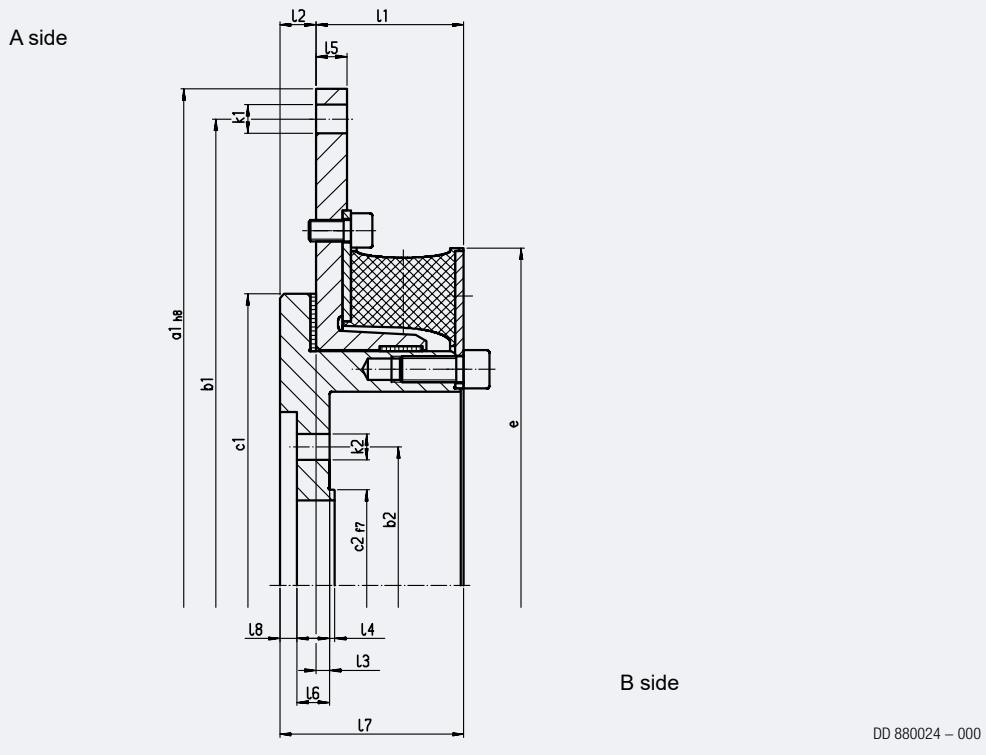
Metric, internal cardan shaft connection

| Size | | CS 41 | | | CS 42 | | | CS 43 | | | | | |
|-----------------------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|
| SAE connection | | 14" | | | 14" | | | 14" | | 16" | | 18" | |
| Cardan flange | | 150 | 180 | 225 | 150 | 180 | 225 | 180 | 225 | 180 | 225 | 180 | 225 |
| Diameter mm | a_1 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 466.7 | 517.5 | 517.5 | 571.5 | 571.5 |
| | b_1 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 438.2 | 489 | 489 | 542.9 | 542.9 |
| | c_1 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 |
| | k_1 | 16x13.5 | 8x13.5 | 8x13.5 | 6x17.5 | 6x17.5 |
| | b_2 | 130 | 155.5 | 196 | 130 | 155.5 | 196 | 155.5 | 196 | 155.5 | 196 | 155.5 | 196 |
| | c_2 | 90 | 110 | 140 | 90 | 110 | 140 | 110 | 140 | 110 | 140 | 110 | 140 |
| | k_2 | 8x10.1 | 8x14.1 | 8x16.1 | 8x10.1 | 8x14.1 | 8x16.1 | 8x14.1 | 8x16.1 | 8x14.1 | 8x16.1 | 8x14.1 | 8x16.1 |
| | e | 417 | 417 | 417 | 420 | 420 | 420 | 420 | 420 | 420 | 420 | 420 | 420 |
| Lengths mm | l_1 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 | 76.5 |
| | l_2 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| | l_3 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| | l_4 | 2.3 | 2.3 | 4.5 | 2.3 | 2.3 | 4.5 | 2.3 | 4.5 | 2.3 | 4.5 | 2.3 | 4.5 |
| | l_5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 14.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| | l_6 | 24.0 | 22.0 | 20.5 | 24.0 | 22.0 | 20.5 | 22.0 | 20.5 | 22.0 | 20.5 | 22.0 | 20.5 |
| | l_7 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 | 95.5 |
| | l_8 | 7.0 | 9.0 | 10.5 | 7.0 | 9.0 | 10.5 | 9.0 | 10.5 | 9.0 | 10.5 | 9.0 | 10.5 |
| Mass moment of inertia kgm² | J_A side | 0.646 | 0.646 | 0.646 | 0.657 | 0.657 | 0.657 | 0.666 | 0.666 | 0.936 | 0.936 | 1.346 | 1.346 |
| | J_B side | 0.634 | 0.628 | 0.611 | 0.645 | 0.638 | 0.622 | 0.648 | 0.631 | 0.648 | 0.632 | 0.648 | 0.645 |
| Mass kg | | 50.9 | 49.7 | 47.6 | 51.5 | 50.3 | 48.2 | 50.7 | 48.6 | 55.1 | 53.0 | 60.7 | 60.4 |

Stromag – Flexible Couplings

Stromag Periflex® CS Couplings

Stromag Periflex® CS dimension table



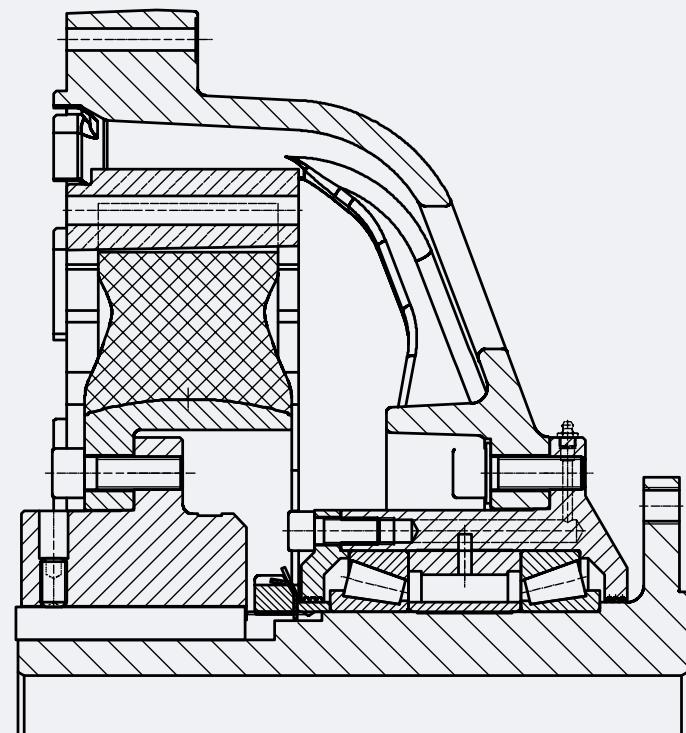
Metric, internal cardan shaft connection

| Size | | CS 51 | | | CS 52 | |
|---|--|---|---|---|---|---|
| SAE connection | | 18" | | | 21" | |
| Cardan flange | | 225 | 250 | 285 | 250 | 285 |
| Diameter mm | a ₁ , b ₁ , c ₁ , k ₁ , b ₂ , c ₂ , k ₂ , e | 571.5 542.9 440 12x17.5 196 140 8x16.1 520 | 571.5 542.9 440 12x17.5 218 140 8x18.1 520 | 571.5 542.9 440 12x17.5 245 175 8x20.1 520 | 673.1 641.4 440 12x17.5 218 140 8x18.1 525 | 673.1 641.4 440 12x17.5 245 175 8x20.1 525 |
| Lengths mm | I ₁ , I ₂ , I ₃ , I ₄ , I ₅ , I ₆ , I ₇ , I ₈ | 93 21 14.5 4.5 16.0 25.0 114 10.5 | 93 21 14.5 5.2 16.0 23.5 114 12.0 | 93 21 14.5 5.5 16.0 22.8 114 12.7 | 93 21 14.5 5.5 16.0 23.5 114 12.0 | 93 21 14.5 5.5 16.0 22.8 114 12.7 |
| Mass moment of inertia kgm ² | J _A side J _B side | 1.745 1.517 | 1.745 1.501 | 1.745 1.470 | 3.380 1.556 | 3.380 1.524 |
| Mass kg | | 84.9 | 83.8 | 81.1 | 101.6 | 98.9 |

Stromag – Flexible Couplings

Stromag AFL/PVN Couplings

AFL/PVN Series



DD_881003 – 000

The flange bearing is a bell that is mounted to the diesel engine. An axially mountable, plug-in, highly flexible Stromag Periflex® disc tire arranged inside the bell transmits the torque from the flywheel to the cardan shaft.

The disc tyre has a linear spring characteristic and ensures the balanced torsional vibration behavior of the system, while the integrated bearing transmits the cardan shaft's reaction forces to the engine housing via the bell. This means that the crankshaft bearings are not exposed to the reaction forces. As a rule, the AFL can be used up to a deflection angle of 10°, larger deflection angles are possible on request, depending on the operating conditions.

The torque transferred by the series is determined by the Stromag Periflex® disc tire used. The torque range extends from 1000 Nm to 20.000 Nm.

The bell's connecting dimensions to the engine housing are based on SAE standard J617. The connecting dimensions to the flywheel on the engine side primarily conform to SAE standard J620 or DIN 6281.

The cardan shaft side is available in a range of metric sizes, including for Spicer, Mechanics or cross-toothed connections on request.

The flange bearing's bell and the connection ring are manufactured from high-quality cast aluminum, while the other metal parts are steel.

The Stromag Periflex® disc tire is manufactured from natural rubber (NR) or a synthetic rubber in various torsion spring stiffnesses. These allow an adjustment to drives that are susceptible to torsional vibrations.

Stromag – Flexible Couplings

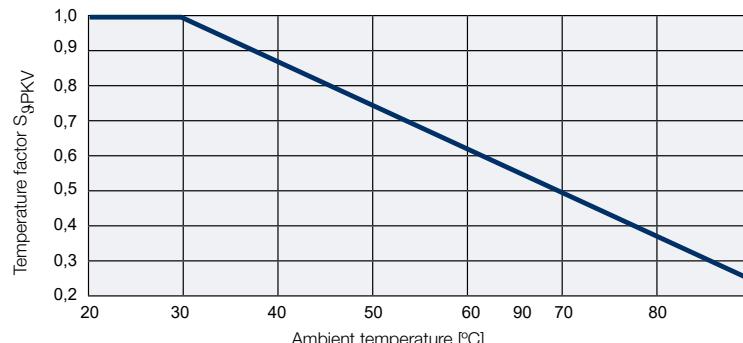
Stromag AFL/PVN Couplings

AFL/PVN output table

| Coupling size | Tyre | Nominal torque | Maximum torque | Adm. alternating torque | Torsional stiffness | Relative damping | Adm. damping power |
|---------------|-------|----------------|-------------------|-------------------------|---------------------------|------------------|----------------------|
| | | T_{KN} Nm | T_{Kmax} (1) Nm | T_{KW} Nm | $C_{T,dyn}$ (2) 4) Nm/rad | ψ 2) 4) | $P_{KV,60}$ (3) 5) W |
| PVN 350 | 35011 | 1000 | 3000 | 500 | 7660 | 0.80 | 260 |
| | 35031 | 1250 | 3000 | 625 | 11100 | 0.96 | 260 |
| | 35021 | 1250 | 3000 | 625 | 13990 | 1.00 | 260 |
| | 35041 | 1250 | 3000 | 625 | 16540 | 1.20 | 260 |
| | 35051 | 1250 | 3000 | 625 | 28860 | 1.30 | 260 |
| PVN 358 | 35811 | 1600 | 4800 | 800 | 16700 | 0.80 | 260 |
| | 35831 | 2000 | 4800 | 1000 | 24200 | 0.96 | 260 |
| | 35821 | 2000 | 4800 | 1000 | 33200 | 1.00 | 260 |
| | 35841 | 2000 | 4800 | 1000 | 36060 | 1.20 | 260 |
| | 35851 | 2000 | 4800 | 1000 | 58500 | 1.30 | 260 |
| PVN 430 | 43011 | 1600 | 4800 | 800 | 7800 | 0.80 | 494 |
| | 43031 | 2000 | 4800 | 1000 | 11300 | 0.96 | 494 |
| | 43021 | 2000 | 4800 | 1000 | 13900 | 1.00 | 494 |
| | 43041 | 2000 | 4800 | 1000 | 16840 | 1.20 | 494 |
| | 43051 | 2000 | 4800 | 1000 | 29380 | 1.30 | 494 |
| PVN 433 | 43311 | 2500 | 7500 | 1250 | 18630 | 0.80 | 520 |
| | 43331 | 3150 | 7500 | 1550 | 27000 | 0.96 | 520 |
| | 43321 | 3150 | 7500 | 1550 | 34020 | 1.00 | 520 |
| | 43341 | 3150 | 7500 | 1550 | 40230 | 1.20 | 520 |
| | 43351 | 3150 | 7500 | 1550 | 70200 | 1.30 | 520 |
| PVN 436 | 43611 | 4000 | 12000 | 2000 | 25400 | 0.80 | 572 |
| | 43631 | 5000 | 12000 | 2500 | 34600 | 0.96 | 572 |
| | 43621 | 5000 | 12000 | 2500 | 46600 | 1.00 | 572 |
| | 43641 | 5000 | 12000 | 2500 | 53640 | 1.20 | 572 |
| | 43651 | 5000 | 12000 | 2500 | 93600 | 1.30 | 572 |
| PVN 439 | 43911 | 3200 | 10000 | 1600 | 36230 | 0.80 | 390 |
| | 43931 | 4000 | 10000 | 2000 | 52500 | 0.96 | 390 |
| | 43941 | 4000 | 10000 | 2000 | 76000 | 1.20 | 390 |
| | 43951 | 4000 | 10000 | 2000 | 13650 | 1.30 | 390 |
| PVN 544 | 54411 | 6300 | 19000 | 3150 | 62790 | 0.80 | 622 |
| | 54431 | 8000 | 19000 | 4000 | 91000 | 0.96 | 622 |
| | 54421 | 8000 | 19000 | 4000 | 114700 | 1.00 | 622 |
| | 54441 | 8000 | 19000 | 4000 | 135600 | 1.20 | 622 |
| | 54451 | 8000 | 19000 | 4000 | 226400 | 1.30 | 622 |
| PVN 549 | 54911 | 8000 | 17000 | 4000 | 88320 | 0.80 | 650 |
| | 54931 | 9000 | 20000 | 4500 | 128000 | 0.96 | 650 |
| | 54921 | 9500 | 21000 | 4750 | 161300 | 1.00 | 650 |
| | 54941 | 11000 | 22000 | 5500 | 204700 | 1.20 | 650 |
| | 54951 | 12000 | 25000 | 6000 | 332800 | 1.30 | 650 |
| PVN 666 | 66611 | 16000 | 48000 | 8000 | 111800 | 0.80 | 1100 |
| | 66631 | 20000 | 48000 | 10000 | 162000 | 0.96 | 1100 |
| | 66621 | 20000 | 48000 | 10000 | 205000 | 1.00 | 1100 |
| | 66641 | 20000 | 48000 | 10000 | 241400 | 1.20 | 1100 |
| | 66651 | 20000 | 48000 | 10000 | 428500 | 1.30 | 1100 |

1) The values listed in the tables refer to the characteristic values of the disc tyre.

2) For: $T_w = 0,2 \cdot T_{KN}$; $T = 0,8 \cdot T_{KN}$; $f = 10 \text{ Hz}$; $\vartheta = 30^\circ\text{C}$



3) When coupling temperatures are higher than 30°C , this value must be reduced by the temperature factor.

4) Material-related tolerances as high as $\pm 15\%$ are possible.

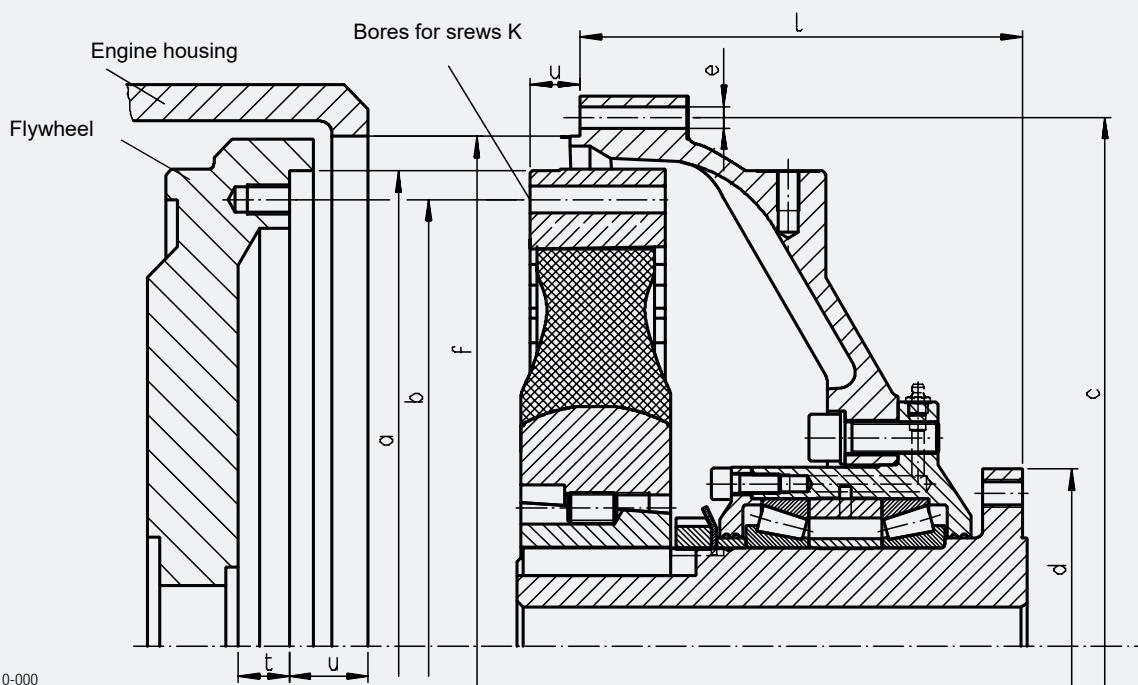
5) The $P_{KV,60}$ value describes the damping performance that can be absorbed over 60 minutes.

The damping power that can be absorbed permanently is $P_{KV,\infty} = 0,5 \cdot P_{KV,60}$.

Stromag – Flexible Couplings

Stromag AFL/PVN Couplings

AFL/PVN dimension table



| Housing | Flywheel | Coupling size | Adm. Speed | Diameter mm | | | | | | Length mm | | | Cardan shaft |
|---------|----------|--|------------|----------------|-------|-------|-------|----------|----------|-----------|------|------|---------------------------------|
| | | | | n_{\max} rpm | a mm | b mm | f mm | c mm | e mm | k mm | u mm | t mm | l mm |
| 2 | 11½" | PVN 350 PVN 358 | 3000 | 352.4 | 333.4 | 447.7 | 466.7 | 12x 10.5 | 8x 11 | 39.6 | 29 | 175 | 120 150 165 180 |
| 1 | 11½" | PVN 358 | 2000 | 352.4 | 333.4 | 511.2 | 530.2 | 12x 11 | 8x 11 | 39.6 | 29 | 225 | 150 165 180 225 250 |
| | 14" | PVN 430 PVN 433 PVN 439 PVN 436 | 2000 | 466.7 | 438.2 | 511.2 | 530.2 | 12x 11 | 8x 13.5 | 25.4 | 29 | 225 | |
| 0 | 14" | PVN 433 PVN 439 PVN 436 | 1600 | 466.7 | 438.2 | 647.7 | 679.5 | 16x 13.5 | 8x 13.5 | 25.4 | 29 | 325 | 180 225 250 285 315 |
| | 18" | PVN 544 PVN 549 | 1600 | 571.5 | 542.9 | 647.7 | 679.5 | 16x 13.5 | 12x 17.5 | 15.7 | 32 | 325 | |
| 00 | 18" | PVN 544 PVN 549 | 1600 | 571.5 | 542.9 | 787.4 | 850.9 | 16x 13.5 | 12x 17.5 | 0 | 32 | 395 | 250 285 315 350 |
| | 21" | PVN 666 | 1600 | 673.1 | 641.4 | 787.4 | 850.9 | 16x 13.5 | 12x 17.5 | 0 | 32 | 395 | |

Stromag – Flexible Couplings

Stromag IGE...FG Couplings

IGE...FG Series

IGE...FG Concept

The Stromag IGE...FG is a highly flexible rubber coupling with a progressive characteristic (see figure). It is ideal for the transmission of high torques with its particularly compact design and light weight.

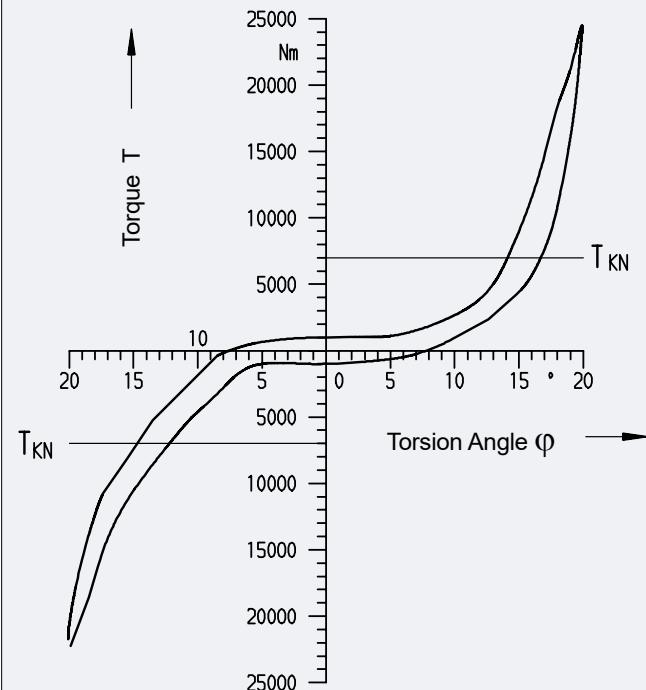
The coupling's outer part can be connected directly to a diesel engine's flywheel or a similar part. The torque is transmitted to the hub and the cardan shaft via rubber elements arranged in a star pattern. The inner part of the coupling, consisting of the hub and support flange, is radially supported in the outer part of the coupling via the shaft and bushing and fixed in the axial direction using rings.

The radial and axial forces generated by the cardan shaft are absorbed by the coupling and transmitted to the main engine bearing.

The series extends across a nominal torque range from 4000 Nm to 25,000 Nm.

The Stromag IGE...FG is manufactured exclusively from metal or high-quality cast parts. They are manufactured from turned parts to ensure that they run smoothly and quietly.

The Stromag IGE...FG coupling is ideal for absorbing large impact torques due to the use of rubber elements with embedded extremely strong fabric. Large alternating torques are also permitted, as the damping heat is easily dissipated via the space between the individual elements.



DD_881105 – 000

IGE...FG Series output table

| IGE-Coupling size | Nominal torque T_{KN} Nm | Maximum torque T_{Kmax} Nm | Adm. alternating torque | | | | | Dyn. torsional stiffness | | | | | Adm. speed n_{max} rpm | Relative damping Ψ 1) 2) | Adm. damping power P_{KV60} W 3) | | | |
|-------------------|----------------------------------|------------------------------------|--|------|------|-------|-------|---|------|------|------|------|--------------------------------|-------------------------------------|--|--|--|--|
| | | | T_{WZUL} (at...% preload) [kNm/rad] | | | | | $C_{T_{dyn}}$ (at...% preload) [kNm/rad] 1) 2) | | | | | | | | | | |
| | | | 10% | 25% | 50% | 75% | 100% | 10% | 25% | 50% | 75% | 100% | | | | | | |
| 4 | 4000 | 12000 | 0.20 | 0.80 | 1.30 | 1.69 | 2.08 | 14.0 | 31.6 | 60.9 | 90.2 | 120 | 3900 | 1.0 | 940 | | | |
| 8 | 8000 | 24000 | 0.40 | 1.60 | 2.60 | 3.38 | 4.16 | 36.2 | 73.2 | 135 | 196 | 258 | 2880 | 1.0 | 1200 | | | |
| 12.5 | 12500 | 37500 | 0.63 | 2.50 | 4.06 | 5.28 | 6.50 | 59.9 | 118 | 214 | 310 | 406 | 2500 | 1.0 | 1380 | | | |
| 25 | 25000 | 75000 | 1.25 | 5.00 | 8.13 | 10.56 | 13.00 | 139 | 274 | 497 | 721 | 945 | 2150 | 1.0 | 1800 | | | |

1) For: $T_w = 0,2 \cdot T_{KN}$; $f = 10$ Hz

2) Material-related tolerances as high as $\pm 15\%$ are possible.

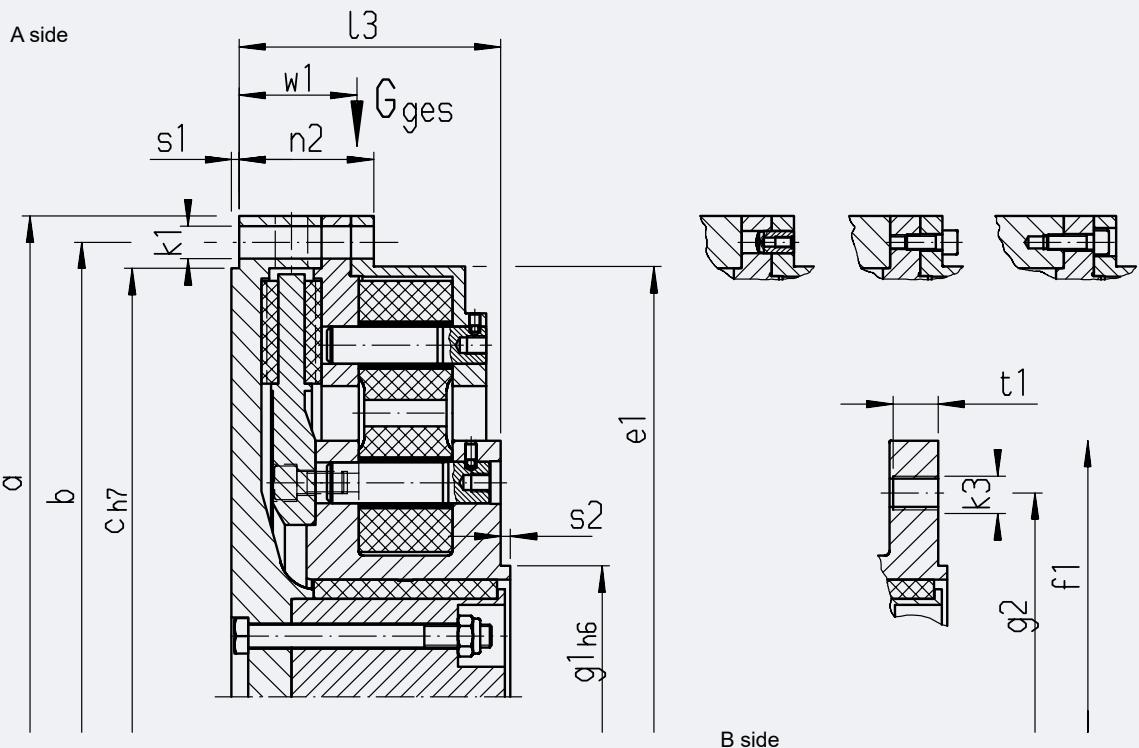
3) The P_{KV60} value describes the damping performance that can be absorbed over 60 minutes.

Permanently absorbable damping performance $P_{KV\infty} = 0,5 \cdot P_{KV60}$

Stromag – Flexible Couplings

Stromag IGE...FG Couplings

IGE...FG Series dimesion table



DD 881467 – 000

| Coupling size | | 4 | 8 | 12.5 | 25 |
|---|---|---|---|---|---|
| Cardan flange | | 225 | 250 | 285 | 315 |
| Diameter mm | a b c e_1 f_1 g_1 g_2 k_1 k_3 | 380 354 328 329 225 140 196 16x13.5 8xM16 | 514 486 458 460 274 140 218 16x17.5 8xM18 | 593 561 529 530 330 175 245 16x17.5 8xM20 | 690 650 610 612 400 175 280 16x22 8xM22 |
| Length mm | l_3 n_2 s_1 s_2 t_1 w_1 | 126 62.5 3 4 22 48 | 140 72 4 5 24 52 | 165 78 5 6 25 63 | 190 90 5 6 34 73 |
| Mass kg | G_{ges} | 64 | 129 | 190 | 310 |
| Mass moment of inertia kgm ² | J_i J_a | 0.23 0.83 | 0.83 3.07 | 1.60 5.98 | 3.30 13.40 |

Stromag – Flexible Couplings

Highly Flexible Couplings for Cardan Characteristics

T_{KN}

The coupling's nominal torque can be continuously transmitted over the whole permitted speed range. It must not be exceeded by the system's nominal torque T_N.

$$T_{KN} \geq T_N$$

T_{Kmax1}

The coupling's maximum torque T_{Kmax1} can be endured as a peak load and may not be exceeded by normal, non-stationary system peak torques T_{max1}.

A system's normal, non-stationary modes are unavoidable and occur repeatedly (e.g.: starting/stopping processes, resonance pass, switching processes, acceleration processes, etc.).

$$T_{Kmax1} \geq T_{max1}$$

T_{Kmax2}

The coupling's maximum torque T_{Kmax2} can be endured as a rarely occurring peak load and may not be exceeded by normal, non-stationary system peak torques T_{max2}.

Anomalous, non-stationary system peak torques are avoidable and are not part of the planned operating scheme (e.g.: emergency stop, sync failure, short circuit, etc.).

A coupling overload due to anomalous, non-stationary system peak torques T_{max2} shortens the system's service life and is tolerated in individual cases.

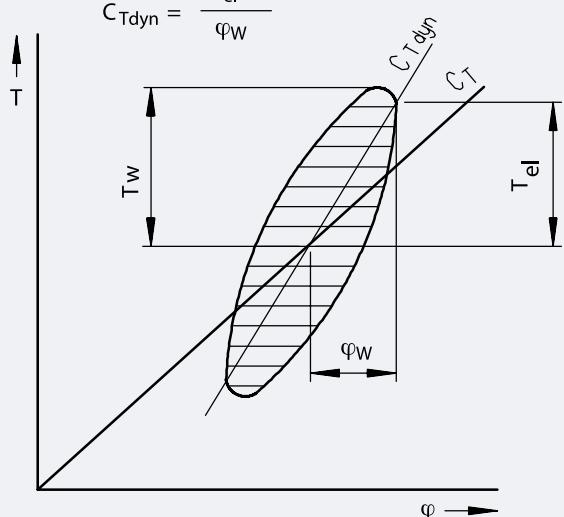
$$T_{Kmax2} \geq T_{max2}$$

T_{Kw}

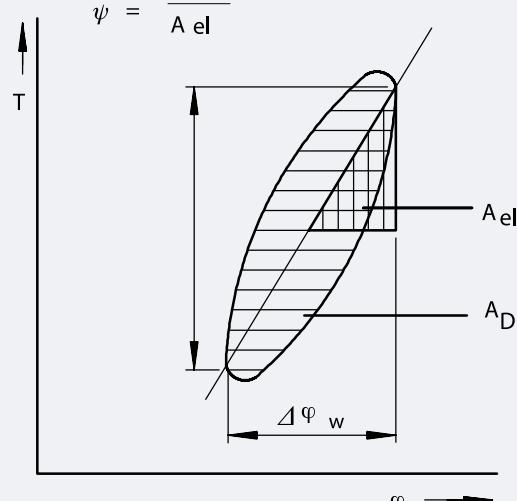
The admissible permanent alternating torque indicates the amplitude of the admissible permanent periodic torque fluctuation. This torque may be superimposed on a base load of T_{KN}.

In this process, the max damping power P_{kv} must also be checked.

$$C_{Tdyn} = \frac{T_{el}}{\varphi_w}$$



$$\psi = \frac{A_D}{A_{el}}$$



DD 8700103 – 000

Stromag – Flexible Couplings

Highly Flexible Couplings for Cardan Characteristics

C_{T_{dyn}}

The dynamic torsional stiffness indicates the ratio of torque amplitude to torsion angle amplitude during an oscillation.

The torque amplitude is superimposed on an initial load (coupling torque).

For couplings with a linear characteristic (Stromag Periflex® CS and AFL), the C_{T_{dyn}} value over the coupling torque is constant. However, it changes depending on the amplitude, the frequency and the temperature of the flexible element.

C_{T_{dyn}} data relate to a coupling torque of 0,8 • T_{KN}, an alternating torque of 0,2 • T_{KN} and a frequency of 10 Hz for a coupling at operating temperature with a surface temperature of about 30°C.

Stromag IGE coupling has a progressive characteristic. I.e. the C_{T_{dyn}} value also changes depending on the coupling torque.

$$C_{T_{dyn}} = \frac{T_{el}}{\Phi_w}$$

Ψ

The relative damping is a measure of the ability of the coupling to convert part of the vibration energy into heat.

The damping can be determined using the damping loop (hysteresis loop).

A_{el} surface represents the flexible strain energy W_{el} during a load.

The A_D surface is a measure for the damping work W_D during a vibration cycle.

The Ψ data relate to a coupling torque of 0.8 • T_{KN}, an alternating torque of 0.2 • T_{KN} and a frequency of 10 Hz for a coupling at operating temperature with a surface temperature of about 30°C.

$$\Psi = \frac{W_D}{W_{el}} = \frac{A_D}{A_{el}}$$

P_{kv}

The permitted damping power indicates how much damping (heat) the coupling can permanently absorb and dissipate. The sum of the damping performance from every vibration order (i.e. P_{vi}) must be less than the coupling's damping performance.

$$P_{vi} = \frac{\pi}{\sqrt{\left(\frac{2\pi}{\Psi}\right)^2 + 1}} \cdot \frac{T_{wi}^2 \cdot f_i}{C_{T_{dyn}}}$$

$$P_{kv} \geq \sum P_{vi}$$

P_{kv60} value describes the damping performance that can be absorbed over an hour.

P_{kv60} value needs to be multiplied by a factor of 0.5 to determine the damping performance that can be permanently absorbed (P_{kv∞}).

Stromag – Flexible Couplings

Coupling Design, question sheet

| Main engine | | |
|---|--|---------------------|
| Engine type (electric, combustion engine, etc.) | | |
| Engine make (manufacturer, type) | | |
| Engine installation (rigid, flexible) | | |
| Engine housing, SAE | | |
| Flywheel centering diameter | | (mm) |
| Nominal power | | (kW) |
| Nominal speed | | (rpm) |
| Speed range | | (rpm) |
| Nominal torque | | (Nm) |
| Maximum torque (breakdown torque) | | (Nm) |
| Mass moment of inertia | | (kgm ²) |
| Number of start-ups or reversals every hour | | |
| Cardan shaft | | |
| Deflection angle | | (°) |
| Type of cardan shaft deflection ("z" or "w") | | |
| Cardan shaft type (manufacturer, size) | | |
| Length of the cardan shaft | | (mm) |
| Slide coated splines? Yes/No | | |
| Mass moment of inertia | | (kgm ²) |
| Gear unit | | |
| Gear ratio | | |
| Mass moment of inertia | | (kgm ²) |
| Main engine | | |
| Type (generator, ventilator, compressor, fixed or variable pitch propeller) | | |
| Main or auxiliary drive | | |
| Design type (stand-alone or flange-mounted) | | |
| Mass moment of inertia | | (kgm ²) |
| Coupling | | |
| Location in the drive train (enclose schematic diagram) | | |
| Ambient temperature | | (°C, °K) |
| Classification society | | |
| Ship type | | |
| Ice class | | |

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