



GE Couplings





DECADES OF EXPERIENCE

Across Industries and Applications



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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FLEXIBLE COUPLINGS

GE Couplings

GE COUPLINGS PRODUCT RANGE

SERIES GEF...R

Nominal torque range: 2,000 – 270.000 Nm

Front perspective



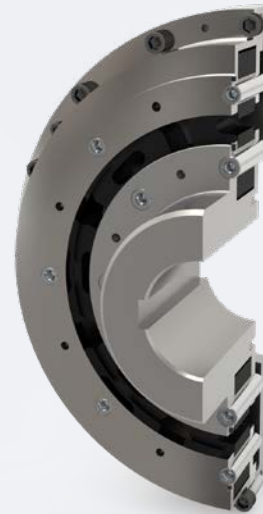
Back perspective



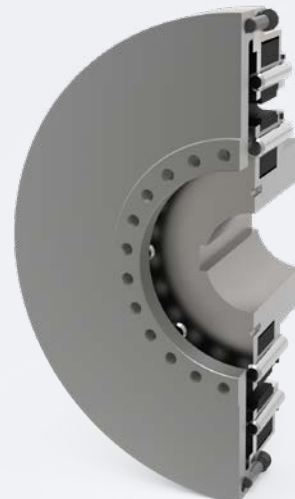
SERIES GET...R

Nominal torque range: 2,000 – 110.000 Nm

Front perspective



Back perspective



SERIES GEW...R

Nominal torque range: 2,000 – 270.000 Nm

Front perspective



Back perspective



FLEXIBLE COUPLINGS

AT A GLANCE

GE COUPLINGS

BENEFITS INCLUDE

- The Stromag GE Coupling is a highly flexible coupling perfect for the transmission of high torques.
- Allows the simple connection of a flange, e.g. a flywheel, with a shaft.
- Covers the torque range from 2 to 270 kNm. Special Designs up to 450kNm are also available.
- Torque is transmitted by passing from the input to the output via radially arranged rubber elements.
- Various stiffnesses by changing the number of rubber elements to get the perfect fit for your application.
- Radial replacement of the rubber elements without moving the coupled machines.
- The Stromag GE Coupling is best suitable to absorb high torque shock loads.

APPLICATION AREAS



- The Stromag GE Coupling is designed for applications with piston engines. The outer part can be bolted directly to the flywheel of an engine or compressor.
- Other application fields are electrical assemblies, shipbuilding industry, railway and construction machine drives, diesel and gas sets, cement mills as well as pumps and compressors.

FAIL-SAFE DEVICE

The Stromag GE Coupling is 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.



FLEXIBLE COUPLINGS

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.

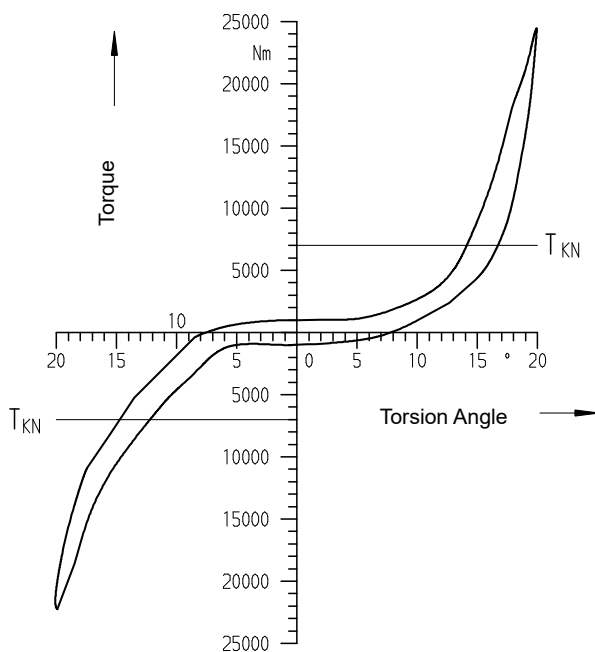
A number of classification societies prescribe fail-safe devices on ships main drives.

TORQUE RANGE

- 2,000 up to 270.000 Nm

INSTRUCTIONS FOR THE DESIGNER

Stromag GE Coupling size 700



All metal parts of the Stromag GE coupling are made of steel or GGG. The individual rubber elements can be mounted radially and can be connected to the coupling parts by cyl. Pins.

The transmitted torque causes a tensile strain in the elements which is absorbed by the vulcanized nylon fabric inserts. Smooth running by coupling operation and less rotating radial forces are obtained by selection and arrangement of the single rubber elements according to their tensile characteristic curve. The GE coupling can be used in the temperature range from -50°C up to $+80^{\circ}\text{C}$. The flexible elements can reach higher temperatures than the ambient temperature as a result of damping. For high ambient temperature, detect and adhere to the temperature factors from the diagram. When covering the coupling with a protective enclosure, bear this fact in mind to assure sufficient ventilation and heat dissipation.

The Stromag GE coupling has a progressive torsional characteristic curve. The static and dynamic characteristics are known. On the basis of these characteristics it is possible to select the suitable coupling size for the actual application. The decisive factors are the transmitted power and the torsional vibration charges. For stationary system conditions use T_{KN} , T_{KV} and P_{KV} ; for non-stationary systems conditions use T_{Kmax} .

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 $+10^{\circ}\text{C}$ und $+25^{\circ}\text{C}$. The relative humidity should not exceed 65%.

Further details are given on DIN 7716 or ISO 2230.

USE IN POTENTIALLY EXPLOSIVE ENVIROMENTS



The coupling conforms to the requirements under Directive 2014/34/EU and can be used as follows:

a. Zone 1 (gas, Category 2G) in Groups IIA, IIB, and IIC, T4

b. Zone 2 (gas, Category 3G) in Groups IIA, IIB, and IIC, T4

c. Zone 22 (dust, Category 3D) for dusts with a minimum ignition energy > 3 mJ, T 125°C

The Stromag GE Coupling compliance with the requirements for each of these zones / categories is documented in the form of the following codes on our products:

Use in gas atmospheres:

CE II 2G Ex h IIC (T4) Gb

Use in dust atmospheres:

CE II 3D Ex h IIIC T120°C Dc

Use in potentially explosive environments must be based on the request form annexed to this catalogue.

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.

FLEXIBLE COUPLINGS

GE Couplings

Output table									
Coupling Size	Nominal Torque	Maximum Torque	Adm. Alternating Torque				Adm. Speed	Adm. axial Displacement	Axial Stiffness
	T _{KN} kNm	T _{Kmax} kNm	T _{KW} kNm				n _{max} rpm	DK _a mm	C _a kN/mm 4) 5)
			0.25 x T _{KN}	0.5 x T _{KN}	0.75 x T _{KN}	1.0 x T _{KN}			
200 R	2.0	6.0	0.48	0.87	1.27	1.66	4360	3.0	0.32
320 R	3.2	9.6	0.76	1.39	2.03	2.66	3900	3.0	0.42
500 R	5.0	15	1.19	1.90	2.60	3.31	2880	5.0	0.61
700 R	7.0	21	1.66	2.59	3.51	4.43	2880	5.0	0.61
1200 R	12	36	2.85	4.90	6.95	9.00	2500	5.0	0.90
1600 R	16	48	3.80	6.77	9.73	12.7	2150	5.0	1.08
2100 R	21	63	4.99	8.66	12.3	16.0	2150	5.0	1.08
2900 R	29	87	6.90	12.4	17.8	23.3	1840	8.0	1.56
3500 R	35	105	8.30	14.2	20.1	26.0	1840	8.0	1.56
5000 R	50	150	11.9	20.3	28.6	37.0	1540	9.0	2.93
7000 R	70	210	16.6	26.7	36.9	47.0	1540	9.0	2.93
9000 R	90	270	21.4	34.3	47.1	60.0	1340	10.0	3.58
11000 R	110	330	26.0	41.8	57.7	73.5	1340	10.0	3.58
15000 R	150	450	35.6	49.7	63.9	78.0	1175	10.0	4.18
18000 R	180	540	42.8	59.7	76.7	93.6	1095	10.0	4.18
22500 R	225	675	53.4	74.6	95.8	117	1095	11.0	5.00
27000 R	270	810	56.0	90.0	112	135	1095	11.0	6.00

1) at $T_w = 0.2 \cdot T_{KN}$; $f = 10\text{Hz}$

2) referred to a torque of $T = 0.8 \cdot T_{KN}$

3) at $n_{max} = 600\text{ rpm}$. for higher speed ratings:

$$\Delta K_r(n) = \sqrt{\frac{600\text{ rpm}}{n}} \cdot \Delta K_r$$

4) Tolerances of $\pm 15\%$ related to the material are possible.

5) This value must be reduced by the temperature factor when the coupling temperatures are higher than 30°C (see page 19).

6) $C_{Tdyn\ warm}$ for coupling operation under high damping power.

7) The value P_{KV60} describes the damping power to be absorbed over 60 minutes.
Permanently absorbed damping power $P_{KV\infty} = 0.5 \cdot P_{KV60}$

FLEXIBLE COUPLINGS

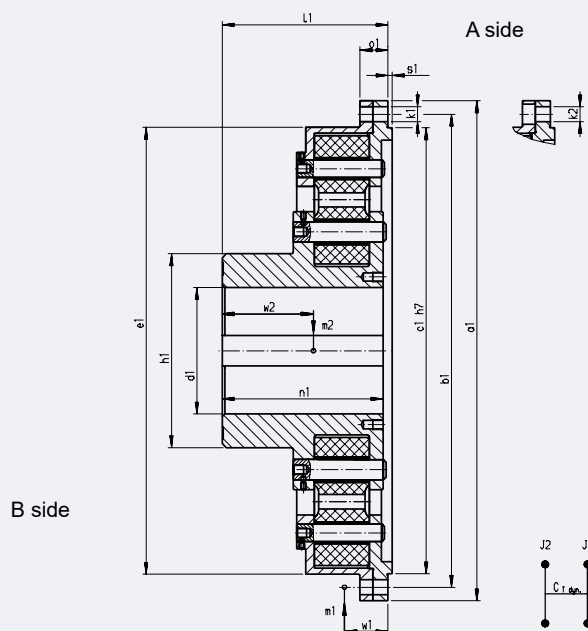
GE Couplings

Adm. radial Displacement	max. radial Displacement	Radial Stiffness	Torsional Stiffness						Relative Damping	Adm. Damping Power
DK _r mm 3) 5)	DK _{rmax} mm	C _r kN/mm 4) 5)	C _{T dyn} kNm/rad 1) 4)						y 1) 2) 4)	P _{KV 60} W 5) 7)
			6)	0.0 x T _{KN}	0.25 x T _{KN}	0.5 x T _{KN}	0.75 x T _{KN}	1.0 x T _{KN}		
w1.5	3.0	0.71		8.5	16.1	28.7	41.4	54.0	1.0	660
			warm	5.6	10.6	18.9	27.3	35.6		
1.5	3.0	0.95		13.1	27.6	51.8	76.0	100	1.0	940
			warm	8.6	18.2	34.2	50.2	66.0		
1.5	3.0	2.47		31	56.7	99.4	142	185	1.0	1080
			warm	20.5	37.4	65.6	93.7	122		
1.5	3.0	2.47		33.8	67.8	125	181	238	1.0	1200
			warm	22.3	44.8	82.5	119	157		
2.5	5.0	3.33		60	116	209	303	396	1.0	1380
			warm	39.6	76.6	138	200	261		
2.5	5.0	5.00		142	235	391	546	702	1.0	1600
			warm	93.7	155	258	360	463		
2.5	5.0	5.00		144	262	458	654	850	1.0	1800
			warm	95.0	173	302	432	561		
2.5	5.0	8.48		275	417	653	890	1126	1.0	2100
			warm	182	275	431	587	743		
2.5	5.0	8.48		282	450	731	1011	1291	1.0	2300
			warm	186	297	483	667	852		
3.0	6.0	14.9		749	943	1267	1590	1913	1.0	2900
			warm	494	622	836	1050	1263		
3.0	6.0	14.9		760	1019	1451	1883	2315	1.0	3600
			warm	502	673	958	1243	1528		
4.0	8.0	15.0		1071	1591	2457	3323	4189	1.0	4200
			warm	707	1050	1622	2193	2765		
4.0	8.0	15.0		1100	1724	2764	3805	4845	1.0	4750
			warm	726	1138	1824	2512	3198		
4.0	8.0	17.5		1857	2889	4610	6330	8050	1.0	5600
			warm	1226	1907	3043	4178	5314		
4.0	8.0	17.5		2398	3789	6107	8425	10744	1.0	6100
			warm	1583	2501	4031	5561	7092		
7.5	15.0	16.7		2648	3793	5702	7611	9519	1.0	6600
			warm	1748	2504	3764	5024	6283		
7.5	15.0	20.0		3178	4552	6843	9133	11424	1.0	6800
			warm	2098	3005	4517	6028	7541		

FLEXIBLE COUPLINGS

GE Couplings

Series GEF..R



DD-861123

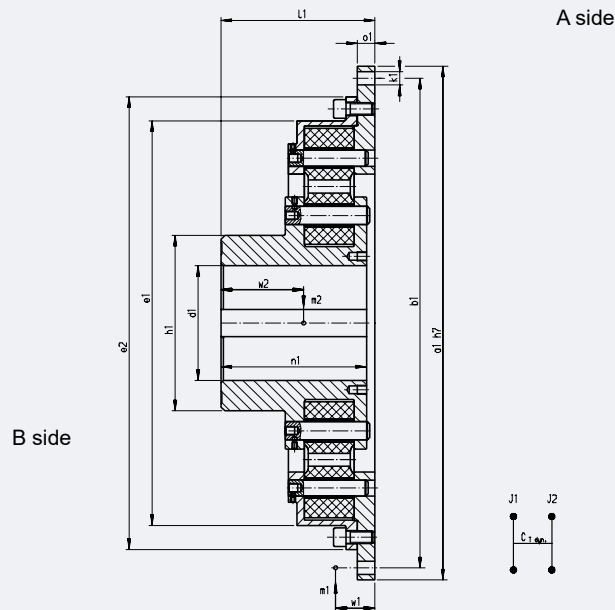
Coupling size	200 R	320 R	500 R	700 R	1200 R	1600 R	2100 R	2900 R	3500 R	5000 R	7000 R	9000 R	11000 R	15000 R	18000 R	22500 R	27000 R
Diameter [mm]																	
a ₁	340	380	514	514	593	690	690	808	808	958	958	1110	1110	1262	1386	1386	1386
b ₁	320	354	486	486	561	650	650	767	767	908	908	1051	1051	1195	1315	1315	1315
c ₁	278	328	458	458	529	610	610	726	726	858	858	992	992	1128	1244	1244	1244
d _{1 vor}	35	45	60	60	80	90	90	120	120	140	140	160	160	180	200	210	210
d _{1 max}	70	90	120	120	150	180	180	220	220	280	280	320	320	360	400	420	420
e ₁	300	329	460	460	530	612	612	726	726	860	860	995	995	1135	1236	1235	1235
h ₁	110	140	180	180	230	270	270	330	330	385	385	480	480	540	600	590	590
Bore [mm]																	
k ₁	12x 11	12x 13.5	16x 17.5	16x 17.5	16x 17.5	16x 22	16x 22	16x 26	16x 26	16x 33	16x 33	16x 36	16x 36	16x 36	24x 38	24x 38	24x 38
k ₂	2x 6.6	2x 6.6	2x 9	2x 9	2x 11	2x 13.5	2x 13.5	2x 13.5	2x 13.5	2x 17.5	2x 17.5	2x 22	2x 22	2x 22	2x 22	2x 22	2x 22
Lengths [mm]																	
l ₁	136	136	156	156	196	242	242	264	264	330	330	370	370	413	448	670	670
n ₁	135	135	155	155	190	235	235	260	260	325	325	367	367	410	440	665	665
o ₁	18	18	24	24	33	43	43	40	40	45	45	47	47	47	54	80	80
s ₁	3	3	4	4	5	5	5	6	6	8	8	8	8	8	8	10	10
w ₁	27	25	33	33	43	48	48	56	56	70	70	82	82	80	78	132	131
w ₂ *)	72	71	82	82	101	128	128	139	139	184	184	201	201	241	262	387	390
Masses m [kg]																	
m ₁	12	14	31	31	46	80	80	110	110	178	178	292	292	324	412	755	779
m ₂ *)	9	14	37	37	47	83	83	135	135	220	220	358	358	594	798	998	1020
m _{ges}	21	28	68	68	93	163	163	245	245	398	398	650	650	936	1210	1753	1799
Mass mom. of inertia J [kgm²]																	
J ₁	0.23	0.34	1.37	1.37	2.65	6.81	6.81	11.77	11.77	28.15	28.15	63.00	63.00	98.32	145.8	255.1	262.6
J ₂ *)	0.03	0.07	0.24	0.24	0.59	1.45	1.45	2.94	2.94	8.81	8.81	19.40	19.40	44.22	73.57	91.33	94.20

*) at max. bore diameter

Other coupling sizes on request

Dimensions and construction subject to change

Series GEF...R (SAE)



DD-861128

Coupling size	200 R	200 R	320 R	320 R	320 R	320 R	320 R	500 R 700 R	500 R 700 R	500 R 700 R	1200 R	1200 R	1600 R 2100 R
SAE connection	14"	16"	14"	16"	18"	18"	21"	16"	18"	21"	21"	24"	21"
Diameter [mm]													
a ₁	466.7	517.5	466.7	517.5	571.5	571.5	673.1	517.5	571.5	673.1	673.1	733.4	673.1
b ₁	438.2	488.9	438.2	488.9	542.9	542.9	641.4	488.9	542.9	641.4	641.4	692.2	641.4
c ₁	35	35	45	45	45	45	45	60	60	60	80	80	90
d _{1 vor}	70	70	90	90	90	90	90	120	120	120	150	150	180
d _{1 max}	300	300	329	329	329	329	329	460	460	460	530	530	612
e ₁	340	340	380	380	380	380	380	517.5	514	514	593	593	673.1
h ₁	110	110	140	140	140	140	140	180	180	180	230	230	270
Bore [mm]													
k ₁	8x 13.5	8x 13.5	8x 13.5	8x 13.5	6x 17.5	12x 17.5	12x 17.5	8x 13.5	12x 17.5	12x 17.5	12x 17.5	12x 20	12x 17.5
Lengths [mm]													
l ₁	139	139	139	139	139	139	139	160	160	160	200	200	247
n ₁	135	135	135	135	135	135	135	155	155	155	190	190	235
o ₁	13	13	13	13	13	13	28	16	16	16	23	23	48
w ₁	19	17	20	18	17	17	14	30	30	23	33	30	58
w ₂ *)	72	72	71	71	71	71	71	82	82	82	101	101	128
Masses m [kg]													
m ₁	21	25	21	25	30	30	40	33	40	52	70	82	77
m ₂ *)	9	9	14	14	14	14	14	37	37	37	47	47	83
m _{ges}	30	34	35	39	44	44	54	70	77	89	117	129	160
Mass mom. of inertia J [kgm²]													
J ₁	0.59	0.83	0.63	0.71	1.21	1.21	2.19	1.50	1.98	3.18	4.90	6.37	6.33
J ₂ *)	0.03	0.03	0.07	0.07	0.07	0.07	0.07	0.24	0.24	0.24	0.59	0.59	1.45

*) at max. bore diameter

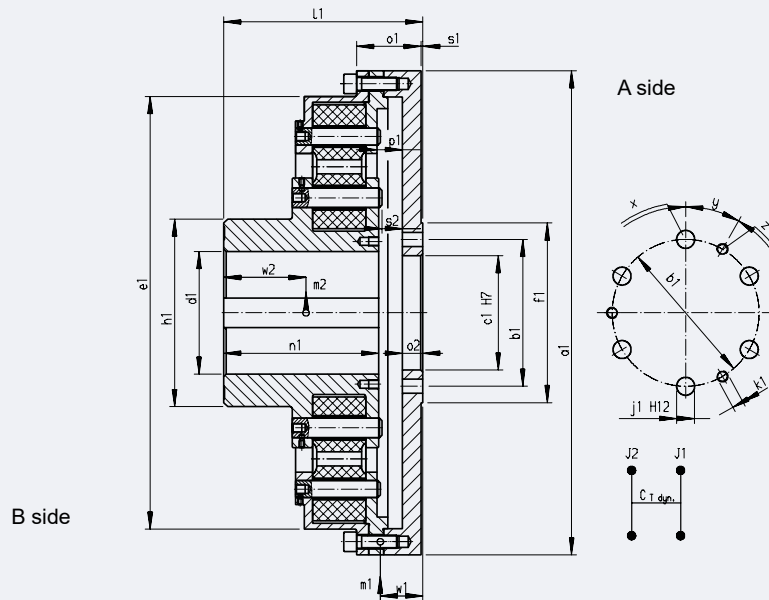
Other coupling sizes on request

Dimensions and construction subject to change

FLEXIBLE COUPLINGS

GE Couplings

Series GET...R



DD-861125

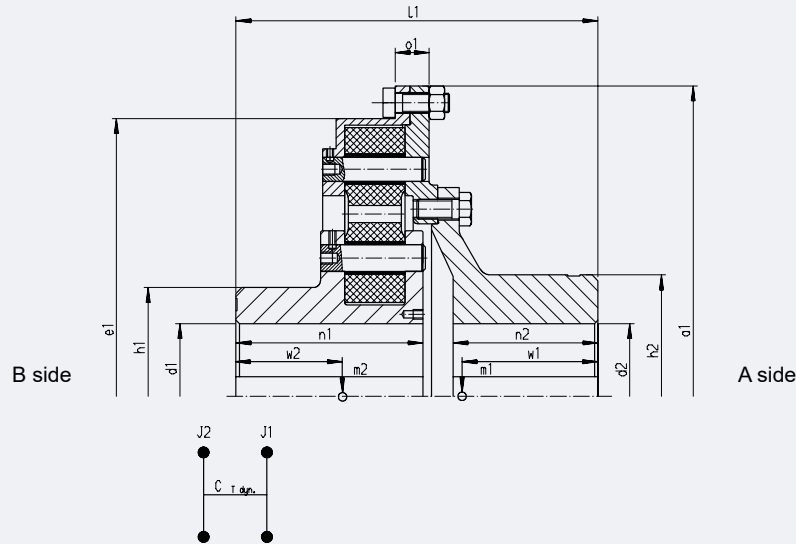
Coupling size	200 R	320 R	500 R	700 R	1200 R	1600 R	2100 R	2900 R	3500 R	5000 R	7000 R	9000 R	11000 R
Diameter [mm]													
a ₁	340	380	514	514	593	690	690	808	808	958	958	1110	1110
b ₁	198	198	230	230	264	322	322	378	378	480	480	565	565
c ₁	172	172	200	200	234	287	287	334	334	420	420	500	500
d _{1 vor}	35	45	60	60	80	90	90	120	120	140	140	160	160
d _{1 max}	70	90	120	120	150	180	180	220	220	280	280	320	320
e ₁	300	329	460	460	530	612	612	726	726	860	860	995	995
f ₁	230	230	271	271	298	358	358	420	420	540	540	630	630
h ₁	110	140	180	180	230	270	270	330	330	385	385	480	480
Bore [mm]													
j ₁	20	20	20	20	22	22	22	26	26	33	33	33	33
k ₂	M12	M12	M14	M14	M14	M16	M16	M20	M20	M24	M24	M27	M27
Lengths [mm]													
l ₁	173	173	205	205	243	294	294	337	337	411	411	472	472
n ₁	135	135	155	155	190	235	235	260	260	325	325	367	367
o ₁	53	53	70	70	77	91	91	108	108	121	121	144	144
o ₂	18	18	23	23	29	32	32	32	32	35	35	50	50
p ₁	20	20	27	27	24	27	27	45	45	51	51	55	55
s ₁	2	2	3	3	4	4	4	5	5	5	5	5	5
s ₂	2	2	2	2	3	5	5	5	5	5	5	5	5
w ₁	39	37	47	47	52	61	61	75	75	89	89	102	102
w ₂ *)	72	71	82	82	101	128	128	139	139	184	184	201	201
Angles [°]													
x	6x60°	6x60°	6x60°	6x60°	6x60°	8x45°	8x45°	8x45°	8x45°	8x45°	8x45°	12x30°	12x30°
y	30°	30°	30°	30°	30°	22.5°	22.5°	22.5°	22.5°	22.5°	22.5°	15°	15°
z	3x120°	3x120°	3x120°	3x120°	3x120°	4x90°	4x90°	4x90°	4x90°	4x90°	4x90°	6x60°	6x60°
Masses m [kg]													
m ₁	25	30	67	67	101	161	161	233	233	369	369	634	634
m ₂ *)	9	14	38	38	47	83	83	135	135	220	220	358	358
m _{ges}	34	44	105	105	148	244	244	368	368	589	589	992	992
Mass mom. of inertia J [kgm²]													
J ₁	0.50	0.72	2.94	2.94	5.63	12.91	12.91	25.06	25.06	57.57	57.57	129.0	129.0
J ₂ *)	0.03	0.07	0.24	0.24	0.59	1.45	1.45	2.94	2.94	8.81	8.81	19.40	19.40

*) at max. bore diameter

Other coupling sizes on request

Dimensions and construction subject to change

Series GEW...R



DD-861495

Coupling size	200 R	320 R	500 R	700 R	1200 R	1600 R	2100 R	2900 R	3500 R	5000 R	7000 R	9000 R	11000 R	15000 R	18000 R	22500 R	27000 R
Diameter [mm]																	
a ₁	340	380	514	514	593	690	690	808	808	958	958	1110	1110	1262	1386	1386	1386
d _{1 vor}	35	45	60	60	80	90	90	120	120	140	140	160	160	180	200	210	210
d _{1 max}	70	90	120	120	150	180	180	220	220	280	280	320	320	360	400	420	420
d _{2 vor}	35	45	60	60	80	90	90	120	120	140	140	160	160	180	200	210	210
d _{2 max}	90	100	135	135	170	250	250	270	270	300	300	350	350	400	440	480	480
e ₁	300	329	460	460	530	612	612	726	726	860	860	995	995	1135	1236	1225	1225
h ₁	110	140	180	180	230	270	270	330	330	385	385	480	480	540	600	590	590
h ₂	135	160	200	200	250	360	360	380	380	440	440	525	525	600	660	675	720
Lengths [mm]																	
l ₁	250	265	300	300	365	460	460	520	520	651	651	728	728	860	906	1147	1150
n ₁	135	135	155	155	190	235	235	260	260	325	325	367	367	410	440	665	665
n ₂	100	115	120	120	150	200	200	220	220	280	280	320	320	405	400	420	420
o ₁	18	21	28	28	33	43	43	39	39	46	46	49	49	55	54	80	80
w ₁ *)	110	114	136	136	161	189	189	221	221	281	281	305	305	355	350	430	416
w ₂ *)	72	71	82	82	101	128	128	139	139	184	184	201	201	241	262	388	392
Masses m [kg]																	
m ₁ *)	24	33	66	66	100	203	203	273	273	477	477	743	743	1098	1253	1806	1903
m ₂ *)	9	14	38	38	47	83	83	135	135	220	220	358	358	593	798	1001	1021
m _{ges}	33	47	104	104	147	286	286	408	408	697	697	1101	1101	1691	2051	2807	2924
Mass mom. of inertia J [kgm²]																	
J ₁ *)	0.30	0.49	2.04	2.04	3.73	10.88	10.88	19.75	19.75	47.75	47.75	97.00	97.00	179.3	235.3	392.8	413.2
J ₂ *)	0.03	0.07	0.24	0.24	0.59	1.45	1.45	2.94	2.94	8.81	8.81	19.40	19.40	44.22	73.57	91.89	94.01

*) at max. bore diameter

Other coupling sizes on request

Dimensions and construction subject to change

FLEXIBLE COUPLINGS

Characteristics

T_{KN}	
The coupling's nominal torque can be permanently transferred over the whole permitted speed range. It must be higher than the system's nominal torque T_N .	$T_{KN} \geq T_N$

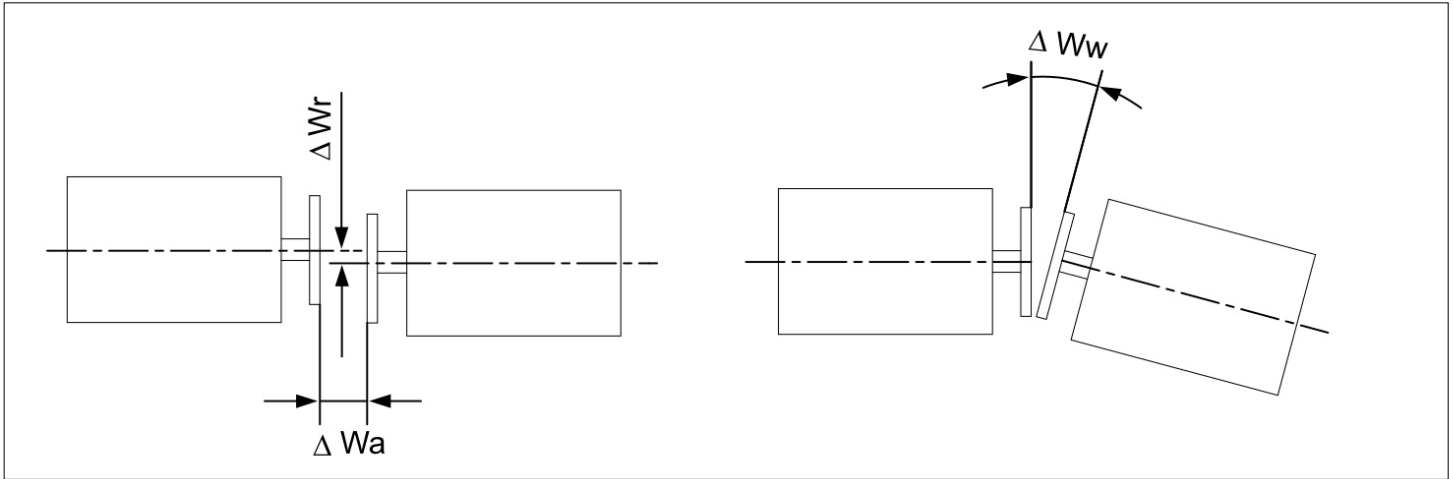
T_{Kmax}	
The maximum torque of the Stromag GE Couplings is 3 times greater than the nominal torque and is decisive for the fatigue strength of the coupling. The coupling's max. torque T_{Kmax} can be endured as a peak load and may not be exceeded by peak torques T_{max} when the system is operating in normal, nonstationary mode. A system's normal, nonstationary modes are unavoidable and occur repeatedly (e.g. starting/stopping, resonance passes, switchovers, accelerations, etc.).	$T_{Kmax} = 3 \cdot T_{KN}$ $T_{Kmax} \geq T_{Kmax1}$
The coupling's max. torque T_{Kmax} can be endured as a peak load and may not be exceeded by peak torques T_{max2} when the system is operating in anomalous, nonstationary mode. A system's anomalous, nonstationary modes are avoidable and are not part of the planned operating scheme (e.g. emergency stops, sync failure, short circuits, etc.). Overloading the Stromag GE coupling with peak torques T_{max2} in a system's anomalous, nonstationary mode shortens the service life and is tolerated in individual cases. T_{Kmax2} can be 4.5 times larger than the rated torque.	$T_{Kmax} \geq T_{Kmax2}$ $T_{Kmax(2)} = 4.5 \cdot T_{KN}$

T_{Kw}	
The admissible permanent alternating torque describes the amplitude of the max permanent periodic torque variation. This torque may be superimposed on a base load equal to T_{KN}. This requires in addition an analysis of the max damping power P_{KV}.	

ΔK_a	
Max axial displacement of the coupling. The shaft's axial displacement ΔW_a must be less than ΔK_a .	$\Delta K_a \geq \Delta W_a$

ΔK_r	
Max radial displacement of the coupling. The shaft's radial displacement ΔW_r must be less than ΔK_r.	$\Delta K_r \geq \Delta W_r$
The values of ΔK_r for the Stromag GE coupling refer to coupling shaft speeds up to 600 rpm. The conversion to other speeds is made by the equation	$\Delta K_r(n) = \sqrt{\frac{600 \text{ rpm}}{n}} \cdot \Delta K_r$
With ambient temperatures higher than 30°C, the admissible radial offset must be reduced by the temperature factor S_{gKr} .	$\Delta K_r(T_U) = \frac{\Delta K_r}{S_{gKr}}$

ΔK_w	
Max angular displacement of the coupling. The shaft's angular displacement ΔW_w must be less than ΔK_w. A ΔK_w value of 0.5° is permitted for GE couplings. This value, however, may be utilised to the full only when there are no other options for shaft displacement.	$\Delta K_w \geq \Delta W_w$



C_a

The axial stiffness indicates the axial restoring force after axial displacement.
At ambient temperatures above 30°C, the specified values must be reduced by temperature factor S_C ; see diagram on page 19.

$$C_a(T_U) = \frac{C_a}{S_{9C}}$$

C_r

The radial stiffness indicates the radial restoring force after radial displacement.
For ambient temperatures above 30°C, the indicated values must be reduced by the temperature factor S_C ; see diagram on page 19.

$$C_r(T_U) = \frac{C_r}{S_{9C}}$$

C_{Tdyn}

The dynamic torsional stiffness indicates the ratio of torque amplitude to torsion angle amplitude during an oscillation.
For Stromag GE couplings the C_{Tdyn} value increases over the coupling torque (progressive characteristic) and also changes depending on the amplitude, the frequency and the temperature of the flexible element.
 C_{Tdyn} data relate to a coupling alternating torque of $0.2 \cdot T_{KN}$ and a frequency of 10 Hz for coupling at ambient temperature of up to 30°C.
 $C_{Tdyn \text{ warm}}$ is additionally indicated, for the operation of the coupling under high power loss.

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

FLEXIBLE COUPLINGS

Characteristics

Ψ

The relative damping is a factor for the capacity of a coupling to convert a part of the occurring cyclic energy into heat.

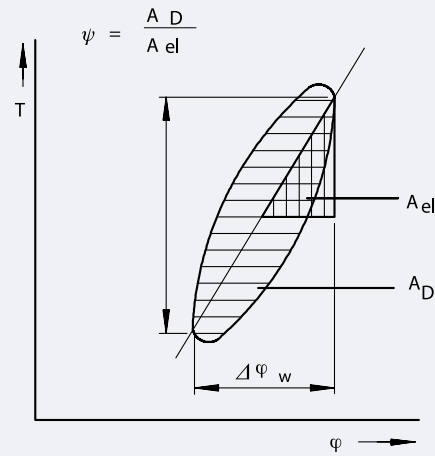
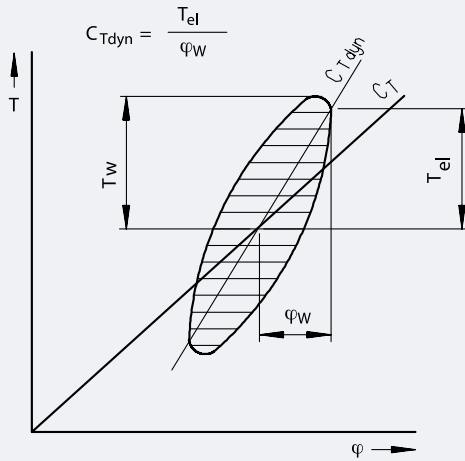
The damping can be determined by the damping loop (hysteresis loop).

The area A_D is a factor for the damping work W_D during a vibration cycle.

The area A_{el} represents the work done in deflection W_{el} at a given load.

The specified nominal values for Ψ are based on a coupling torque of $0.8 \cdot T_{KN}$, an alternating torque of $0.2 \cdot T_{KN}$, and a frequency of 10 Hz on 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 admissible damping power indicates how much damping (heat) the coupling can permanently absorb resp. dissipate. The sum of the damping power of each vibration order (i.e. ΣP_{vi}) must be less than the damping power of the coupling.

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

$$P_{KV} \geq \Sigma P_{vi}$$

The stated value P_{KV60} describes the damping power which can be absorbed over the period of 1 hour. To determine the damping power which can be permanently absorbed ($P_{KV\infty}$), the value P_{KV60} has to be multiplied by the factor 0.5. With an ambient temperature T_U higher than 30°C, the admissible damping power must be reduced by the temperature factor $S_{\theta PKV}$.

$$P_{KV}(T_U) = \frac{P_{KV}}{S_{\theta PKV}}$$

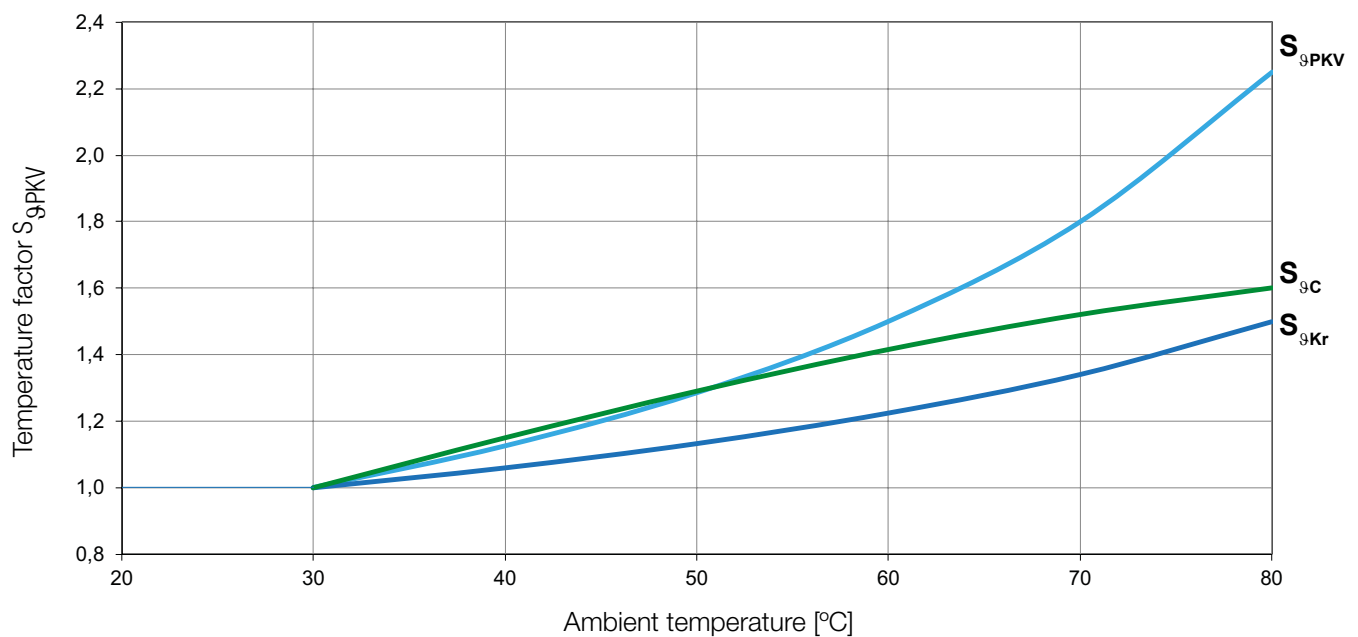
Temperature factors $S_{\vartheta Kr}$, $S_{\vartheta PKV}$ and $S_{\vartheta C}$

Temperature factors shall take into consideration the reduction of the physical characteristics of rubber-flexible material caused by heating.

The coupling temperature is determined by the ambient temperature plus an internal heating caused by internal material friction in the rubber volume, resulting from alternating torques and alternating loads due to shaft offsets.

With higher ambient temperatures the coupling characteristic values ΔK_r and P_{KV} must be reduced through the corresponding temperature factors $S_{\vartheta Kr}$ and $S_{\vartheta PKV}$.

C_r and C_a are set to a value that is reduced by the temperature factor $S_{\vartheta C}$ due to heat.



FLEXIBLE COUPLINGS

Coupling Design, question sheet

MAIN ENGINE		
Engine type (electric, combustion engine, etc.)		
Engine full designation		
Engine installation (rigid or flexible)		
Engine housing (SAE)		
Flywheel connection		Inch
Engine mass moment of inertia		kgm ²
Flywheel mass moment of inertia (for combustion engine)		kgm ²
Nominal power		kW
Nominal speed		rpm
Speed range (if application operates within a speed range)		rpm
Maximum torque (breakdown torque)		Nm
GEAR		
Gear ratio		
Moment of inertia		kgm ²
CARDAN SHAFT		
Type of cardan shaft deflection ("z" or "w")		
Cardan shaft type (manufacturer, size)		
Deflection angle		°
Moment of inertia		kgm ²
Length of the cardan shaft		mm
DRIVEN SIDE		
Type (generator, fan, compressor, fixed or variable pitch propeller)		
Main or auxiliary drive		
Type of construction (free-standing or flange-mounted?)		
Free-standing type (rigid or flexible installation?)		
Number of blades (in case of propeller application)		
Moment of inertia of driven side		kgm ²
Shaft length (l) and diameter (d)		mm
COUPLING		
Location in the drive train (enclose schematic diagram)		
Bore dimension for coupling hub		mm
Ambient temperature near the coupling		°C. °K
Maximum permissible coupling length		mm
Classification society		
ATEX certification		
Ice class		

Use in potentially explosive environments, question sheet

Applications		☐	Group II (above ground)
Potentially explosive atmosphere of air and		☐	gas
		☐	dust
Zone (Category)	gas	☐	Zone 1 (Category 2G)
		☐	Zone 2 (Category 3G)
	dust	☐	Zone 22 not electrically conducting (Category 3D)
Temperature category in atmosphere with gas	gas	☐	T1
		☐	T2
		☐	T3
		☐	T4
Max surface temperature	dust	☐	125 °C
		☐	< 120 °C
		☐	-20 °C to + 40 °C
Ambient temperature		☐	other ambient temperatures only with certain restrictions

FLEXIBLE COUPLINGS

Notes

[illegible]



Stop seeing individual parts. Start seeing unlimited possibilities.

Regardless of your objectives or the challenges with your application, Powertrain Solutions can help you achieve your unique goals. No matter what your application looks like, it relies on many components, all working together. But not all components are made to work together reliably and efficiently. Powertrain Solutions has the insight, experience and expertise to engineer your collection of components into a fully optimized system — giving you solutions that boost efficiency, improve reliability and performance, lower costs and simplify ordering and logistics.

WHERE OTHERS SEE PARTS, WE SEE A SYSTEM



Bearings



Belt & Chain
Drives



Clutches &
Brakes



Conveying



Disc & Gear
Couplings



Motors



Speed Reducers
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