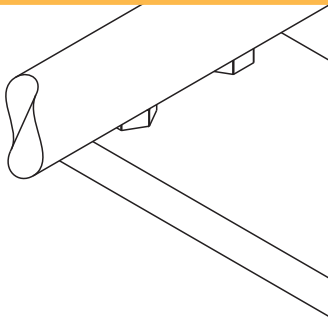
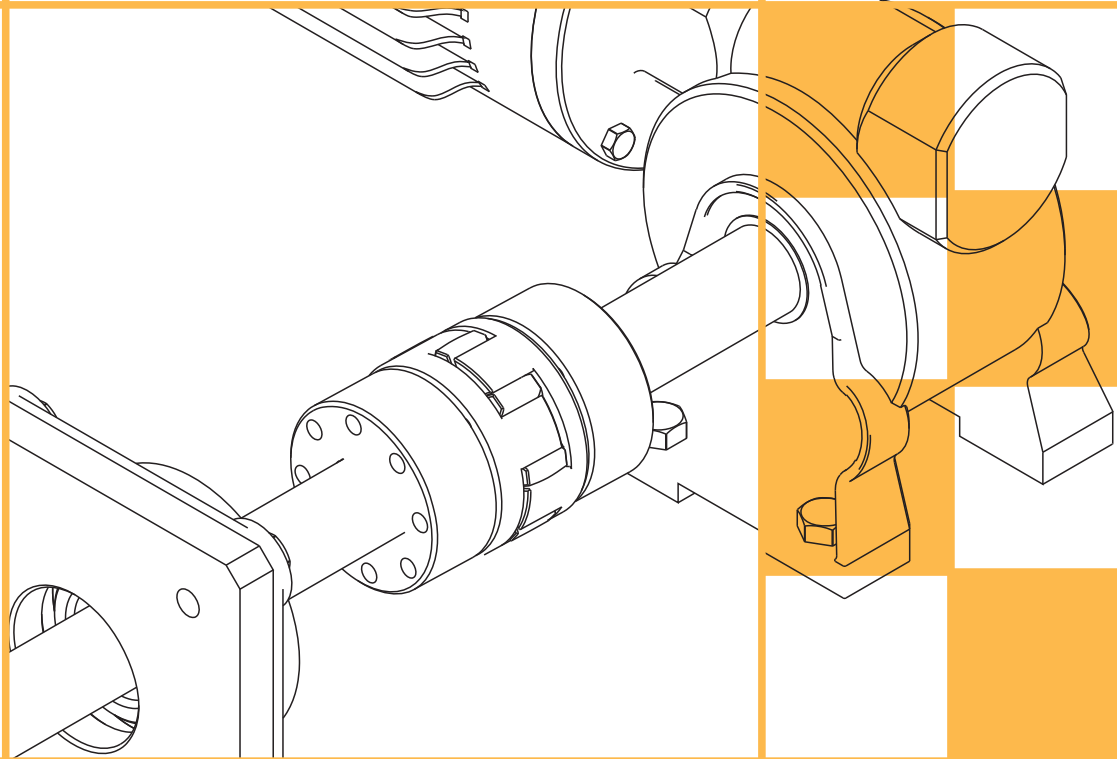
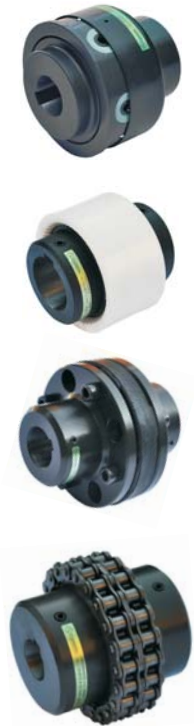


ELASTOMERIC COUPLINGS - RIGID COUPLINGS (BACKLASH FREE)



ComIntec[®]

ELASTOMERIC COUPLINGS - RIGID COUPLINGS (BACKLASH FREE): introduction

The aim of the flexible coupling is to transfer motion between two shafts on the same axis whilst accounting for possible misalignments. We have various styles of flexible couplings suitable for a wide range of applications. The quality of the materials used, the careful design and the precision in manufacturing ensure long lasting high performance, safety and reliability for even the most complex applications.

Strengths of our Models ...

- Available in fully turned steel.
- Good reliability.
- Different customization possibilities.
- Wide selection.
- Highly accurate manufacturing.
- Optimum protection against environmental conditions.
- Competitive pricing without sacrificing quality.
- "Made in Italy" with certified quality.



Our main product ranges ...

- "RIGID COUPLINGS (BACKLASH FREE)": for connections when high precision and high transmission torques are required.
- "ELASTOMERIC COUPLINGS": for connection between misaligned shafts with the need to absorb vibrations.

DISC COUPLING "GTR"



Torsionally rigid disc coupling with angular backlash free transfer of motion. Transmission and maximum flexibility in operation.
Max. torque 30000 Nm – max. bore \varnothing 140 mm.

RIGID COUPLING "GRI"



Rigid coupling, in steel, suitable for shaft connections with good alignment.
Max. torque 450 Nm – max. bore \varnothing 50 mm.

BELLOW COUPLING "GSF"



Bellow coupling in aluminium with high torsional rigidity. Backlash free, low inertia and high reliability.
Max. torque 300 Nm – max. bore \varnothing 45 mm.

BACKLASH FREE JAW COUPLING "GAS/SG"



Backlash free jaw coupling. Available with a range of hub connections and elastomeric elements.
Max. torque 2080 Nm – max. bore \varnothing 80 mm.

JAW COUPLING "GAS"



Elastomeric jaw coupling, good vibration dampening properties. Available with a range of elastomeric elements depending on the application requirements.
Max. torque 9000 Nm – max. bore \varnothing 110 mm.

COMPACT ELASTIC COUPLING "GEC"



Elastomeric coupling, compact and protected from environmental conditions. Fast maintenance possible without the need to move the shafts.
Max. torque 35000 Nm – max. bore \varnothing 180 mm.

GEAR COUPLING "GD"



Gear coupling without wear due to the polyamide sleeve, suitable for high axial misalignments.
Max. torque 5000 Nm – max. bore \varnothing 125 mm.

HIGHLY FLEXIBLE COUPLING "GF"



Highly flexible coupling with compact dimensions, suited for applications where high shaft misalignments are present. Maintenance without the need to move the shafts.
Max. torque 5100 Nm – max. bore \varnothing 85 mm.

CHAIN COUPLING "GC"



Simple, economic and easy to assemble **chain coupling**. Suitable for dry and dusty environments.
Max. torque 8000 Nm – max. bore \varnothing 110 mm.

GSF - bellow coupling: introduction



- Hubs made in aluminum fully turned and bellow in stainless steel.
- Suitable for applications with high temperatures (> 300 °C).
- High torsional rigidity and low inertia.
- Wear and maintenance free.
- Backlash free for precision and high speeds.
- Finished bore with ISO H8 tolerance and low roughness.

ON REQUEST

- Finished bore with keyway.
- Connection to the ComInTec backlash free torque limiter's range possible.
- Customized manufacturing for specific requirements.

The GSF bellow couplings have been designed and manufactured for all applications requiring excellent dynamic characteristics, necessary for high speeds, fast reversing and, at the same time, torsional rigidity with low inertia without compromising the high reliability.

The coupling is made in three different and modular elements, in order to obtain high flexibility in assembling and availability. The two shafts are connected to the bellow exploiting a simple mechanic system, easy and safe, by properly sized radial screws and without using bonding agents. In this way the coupling is able to operate and withstand high temperatures, up to 300 °C.

The coupling allows the compensation of all possible misalignments between the two shafts, to be connected in accordance to the values indicated in the table, assuring an infinite number of working cycles.

DIMENSIONING

The coupling's nominal torque must be higher than the maximum torque of the motor shaft, according to the generic formula on page 5. For further checks it is useful to verify: inertia on acceleration / deceleration, incorrect positioning in case of application when high precision is required, the natural frequency of the application (simplified system with two masses) according to formulas:

$$C_{nom} > C_{ad} \cdot K \cdot \frac{J_{uti}}{J_{mot} + J_{uti}}$$

$$\beta = \frac{180 \cdot C_{mot}}{\pi \cdot R_t}$$

$$f_e = \frac{1}{2\pi} \sqrt{R_t \cdot \frac{J_{uti} + J_{mot}}{J_{uti} \cdot J_{mot}}} > 2 \cdot f_{mot}$$

Where:

C_{nom} = nominal torque of the coupling [Nm]

C_{ad} = max value between acceleration torque on the motor side and deceleration torque on the user side [Nm]

C_{mot} = maximum torque on the motor side [Nm]

f_e = system frequency with two masses [Hz]

f_{mot} = frequency on the motor side [Hz]

J_{mot} = inertia on the motor side [Kgm²]

J_{uti} = inertia on the user side [Kgm²]

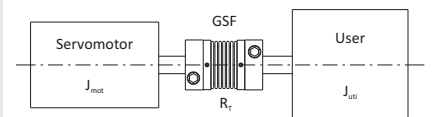
K = load factor

R_t = torsional rigidity of the coupling [Nm/rad]

β = rotation angle [°]

Load factor (K)

1,5	continuous load
2	discontinuous load
2÷3	machine tools
2,5 ÷ 4	shock load



Simplified system with two masses

FITTING

It is advised to machine the connection's shafts with:

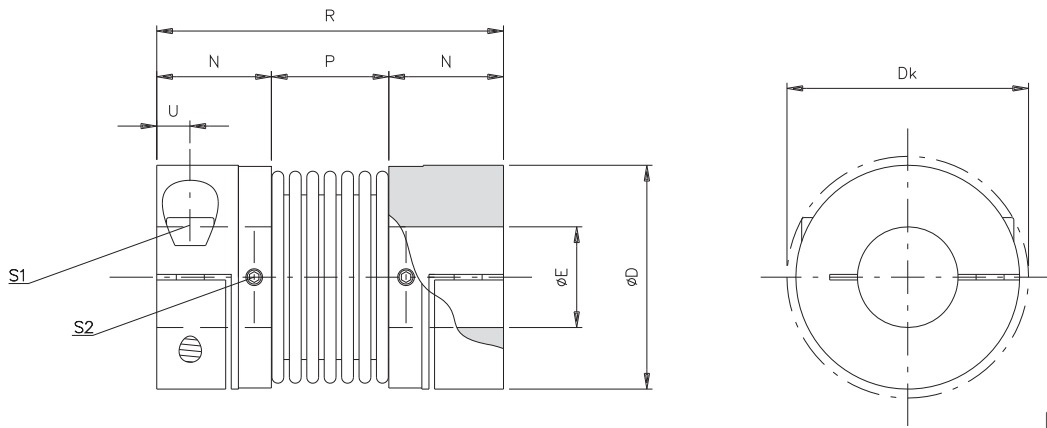
- Surface finish with Ra=1.6 µm.
- Coaxial precision 0.01 mm.
- Nominal tolerance h6.

At first, assemble the coupling by inserting the bellow into the relevant hubs and tighten the screws in sequence, respecting a cross sequence, continuously until you obtain the tightening torque indicated in the catalogue. Insert one hub on the first shaft along the N length and tighten the clamp locking screw with a torque wrench, respecting the tightening torque indicated on the catalogue. Leave the second shaft slides on the opposite hub along the whole N length and tighten the clamp locking screw with a torque wrench, respecting the tightening torque indicated on the catalogue.

It is important to consider that misalignments, axial, angular and parallel, must be considered paired together, as inversely proportional (one reduces when the other increases). If all types of misalignments occur, it is necessary that the sum in percentage respect to the maximum value doesn't exceed 100%.

If the metallic bellow is damaged, the whole coupling becomes unusable, so it is advised to be very careful in assembling and disassembling the individual components.

GSF - bellow coupling: technical data



DIMENSIONS

Size	Code	D	Dk	E H7		N	P	R	U
				Min	Max				
1	2AA971nnnuuu	34	36	5	16	17	16,5	50,5	4,5
2	2AA972nnnuuu	40	44	8	20	20,5	21	62	5,5
3	2AA973nnnuuu	55	58	10	30	22,5	27	72	6,5
4	2AA974nnnuuu	65	73	14	38	26	32	84	8
5	2AA975nnnuuu	83	89	14	45	31	41	103	9,5

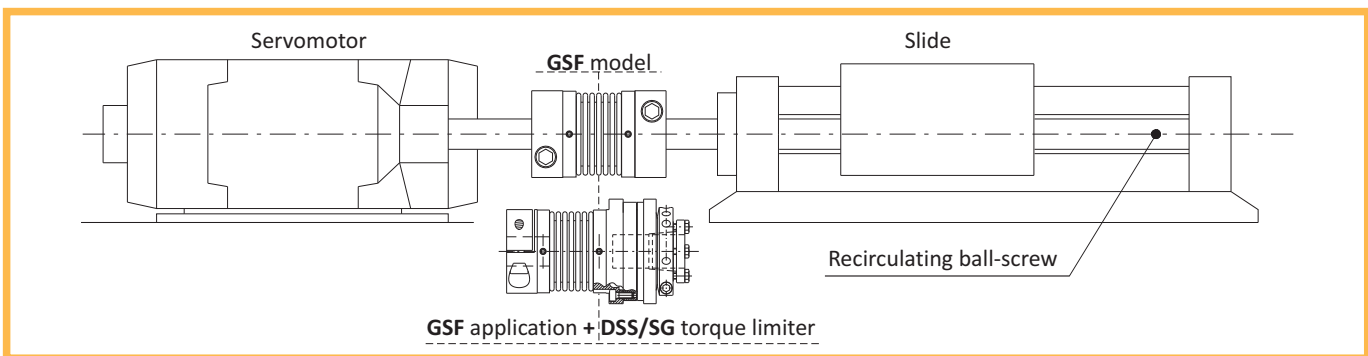
TECHNICAL CHARACTERISTICS

Size	Torque [Nm]		Weight [Kg]	Inertia [Kgm ²]	Max speed [Rpm]	Grubscrew S2	screw S1	Tightening torque [Nm]		Misalignments			Rigidity		
	Nom	Max						grubscrew S2	screw S1	angular α [°]	axial X [mm]	radial K [mm]	torsional R_t [Nm/rad • 10 ³]	axial R_a [N/mm]	radial R_r [N/mm]
1	5	10	0,07	0,000014	14000	M3	M4	2,9	0,8	1° 30'	±0,5	0,20	3,050	30	92
2	15	30	0,14	0,000032	12000	M3	M5	6	0,8	1° 30'	±0,6	0,20	7,000	45	129
3	35	70	0,29	0,000136	8500	M4	M6	10	2	2°	±0,8	0,25	16,300	69	160
4	65	130	0,45	0,000302	7000	M4	M8	25	2	2°	±0,8	0,25	33,000	74	227
5	150	300	0,93	0,001049	5500	M4	M10	49	2	2°	±1,0	0,30	64,100	87	480

TORQUE PERMISSIBLE WITH CLAMP LOCKING

Size	Torque transmitted [Nm] according to the ϕ finished bore [mm]																								
	5	6	7	8	9	10	11	12	14	15	16	18	19	20	24	25	28	30	32	35	38	40	42	45	
1	5	6	7	8	9	10	11	12	14	15	16														
2				13	14	16	18	19	22	24	25	29	30	32											
3							25	27	32	34	36	41	43	45	54	57	63	68							
4												75	79	83	100	104	116	124	133	145	158				
5															132	158	165	183	198	211	231	248	263	277	295

APPLICATION EXAMPLE



NOTES

- ⊗ **Code:** Item available only with finished bore. When ordering, please indicate on position "nnn" the finished bore of one hub, and on position "uuu" the finished bore of the second hub. Example: GSF size 1 finished bore ϕ 10-16 → 2AA971010016.
- ⊗ **Technical characteristics:** the weights refer to the coupling with minimum bore; inertias refer to the coupling with maximum bore.