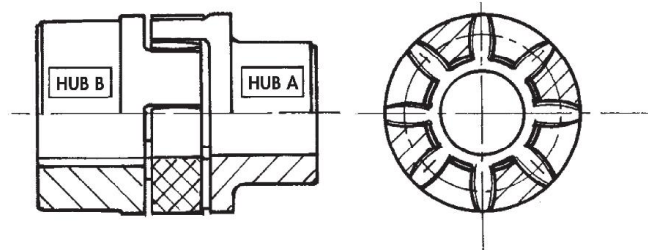# "GIFLEX®" GE-T COUPLINGS with FLEXIBLE SPIDER

TORSIONAL FLEXIBLE COUPLINGS PRECISE EXECUTION

INTRODUCTION

Flexible torsion couplings, which are connecting devices between rotating shafts, are designed to ensure shock-free torque transmission and to compensate minor alignment deviations in operation between the shafts in industrial use.

The GE-T range of flexible couplings ensures this level of performance and also provides excellent quality thanks to the machining accuracy and the choice of the materials used.

The general level of reliability provided by the GE-T couplings is ensured by a satisfactory useful working life of the couplings.
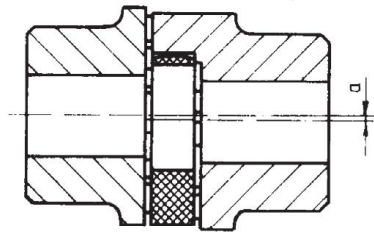
GENERAL

The GE-T range of flexible couplings represents torsionally flexible, mechanical couplings capable of transmitting a twisting moment proportional to the flexible yield of the intermediate component.

The couplings must also be capable of effectively absorbing possible torsional vibrations due to the load or self-induced, to attenuate impacts and torque peaks during the start-up phase and to compensate minor angular and parallel misalignments between the shafts, however ensuring an acceptable useful working life.
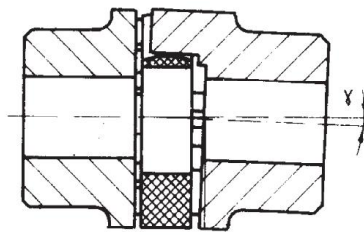
These features and more in general the performance required from the coupling depend almost exclusively on the quality of the intermediate component. The choice of the material used to manufacture the coupling is therefore fundamental. The curve that expresses the flexible characteristic of the intermediate component must have a progressive trend (yielding at low torque values and remaining rigid at higher torque values) to ensure operation without jerks at start-up and with a limited torsional yield at steady state conditions.

It is essential for the intermediate component to have a certain flexible hysteresis, proportional to the required absorbing effect that ensures the coupling can effi-
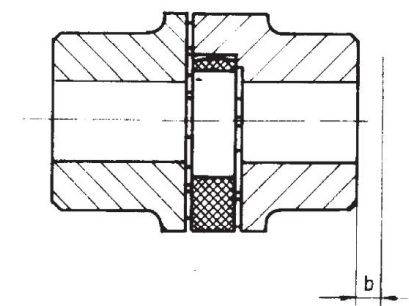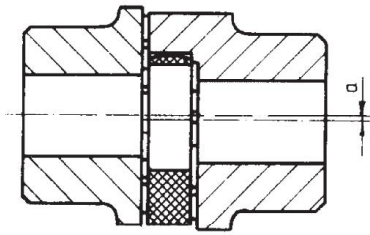
Radially displaced shafts

Angularly displaced shafts

Axially displaced shafts

94 SHORE A BLACK SPIDER THERMOPLASTIC RUBBER

TECHNICAL DATA													
TYPE	Max. R.p.m.	Torsion Angle		Toothed Star	Twisting Moment (Nm)			Torsional Rigidity (kNm/rad)				Axial displacement	Maximum misalignment	
	n. (min⁻¹)	TKN	TKmax	Hardness	TKN Norm.	MAX TKmax	TKW with Invers.	1.0 TKN	0.75 TKN	0.5 TKN	0.25 TKN	b m m	Radial α mm	Angular γ°
19/24	14000			94	10	20	2.6	0.68	0.57	0.44	0.28	1.2	0.2	1.2°
24/32	10600			94	35	70	9	2.19	1.82	1.40	0.90	1.4	0.2	0.9°
28/38	8500			94	95	190	25	5.20	4.31	3.32	2.12	1.5	0.25	0.9°
38/45	7100			94	190	380	49	10.00	8.30	6.39	4.08	1.8	0.28	1.0°
42/55	6000	3.0°	5°	94	265	530	69	17.00	14.11	10.86	6.94	2.0	0.32	1.0°
48/60	5600			94	310	620	81	20.00	16.59	12.77	8.16	2.1	0.36	1.1°
55/70	4750			94	410	820	105	21.99	18.25	14.05	8.98	2.2	0.38	1.1°
65/75	4250			94	625	1250	163	28.20	23.39	18.01	11.51	2.6	0.42	1.2°
75/90	3550			94	975	1950	254	67.99	56.41	43.44	27.75	3.0	0.48	1.2°
90/100	2800			94	2400	4800	624	110.0	91.26	70.27	44.89	3.4	0.50	1.2°

"GIFLEX®" GE-T FLEXIBLE COUPLINGS

Radially displaced shafts   Angularly displaced shafts   Axially displaced shafts
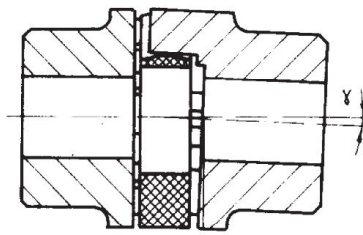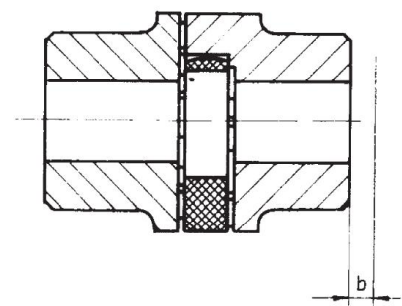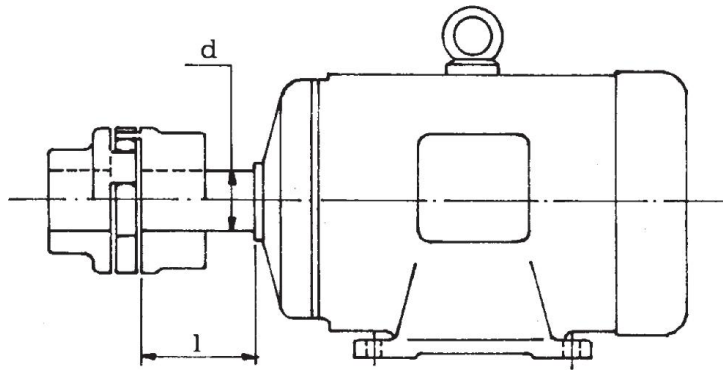
96 SHORE A RED SPIDER THERMOPLASTIC RUBBER
96 SHORE A YELLOW SPIDER POLYURETHANE

TECHNICAL DATA																
TYPE	Max. R.p.m.	Torsion Angle		Toothed Star	Twisting Moment (Nm)			Torsional Rigidity (kNm/rad)					Axial displacement	Maximum misalignment		
	n. (min⁻¹)	TKN	TKmax	Hardness	TKN Norm.	MAX TKmax	TKW with Inversion	1.0 TKN	0.75 TKN	0.5 TKN	0.25 TKN		b mm	Radial α mm	Angular γ°
19/24	14000			96	17	34	4.4	1.09	0.90	0.68	0.42		1.2	0.2	1.2°
24/32	10600			96	60	120	16	3.70	3.04	2.31	1.44		1.4	0.2	0.9°
28/38	8500			96	160	320	42	9.5	7.80	5.92	3.68		1.5	0.25	0.9°
38/45	7100			96	325	650	85	29.0	23.8	18.06	11.24		1.8	0.28	1.0°
42/55	6000	3.0°	5°	96	450	900	117	40.5	33.24	25.21	15.70		2.0	0.32	1.0°
48/60	5600			96	525	1050	137	48.56	39.86	30.23	18.82		2.1	0.36	1.1°
55/70	4750			96	625	1250	163	52.78	43.32	32.86	20.46		2.2	0.38	1.1°
65/75	4250			95	640	1280	166	57.5	47.19	35.80	22.29		2.6	0.42	1.2°
75/90	3550			95	1465	2930	381	150.0	123.12	93.39	58.14		3.0	0.48	1.2°
90/100	2800			95	3600	7200	936	250.0	205.19	155.65	96.90		3.4	0.50	1.2°

ELECTRIC MOTOR TYPE	Motor power output at 50 Hz. n = 3000 min.		COUPLING		Motor power output at 50 Hz. n = 1500 min.		COUPLING		Motor power output at 50 Hz. n = 1000 min.		COUPLING		Motor power output at 50 Hz. n = 750 min.		COUPLING		Shaft end dxl (mm)
	P (kW)	T (Nm)	GE-T TYPE	Fs	P (kW)	T (Nm)	GE-T TYPE	Fs	P (kW)	T (Nm)	GE-T TYPE	Fs	P (kW)	T (Nm)	GE-T TYPE	Fs	3000<1500
80	0.75	2.4		8.0	0.55	3.6		5.4	0.37	3.6	19/24	5.1	0.18	2.3	19/24	8.0	19x40
	1.1	3.6	19/24	5.4	0.75	4.9	19/24	3.9	0.55	5.4		3.4	0.25	3.2		5.7	
90 S	1.5	4.9		4.0	1.1	7.6		2.7	0.75	7.3		2.5	0.37	4.8		3.8	24x50
90 L	2.2	7.2		2.7	1.5	9.8		2.0	1.1	10.8		5.8	0.55	7.2		2.5	
					2.2	14.4		4.7					0.75	9.8		6.4	
100 L	3	9.8		7.1					1.5	14.7		4.7					28x60
					3	19.6	24/32	3.5					1.1	14.4	24/32	4.4	
112 M	4	13.1	24/32	5.4	4	26.2		2.6	2.2	21.6	24/32	3.2	1.5	19.7		3.3	
	5.5	18.0		10.6													
132 S					5.5	36		5.3	3	29.5		6.3	2.2	28.8		6.6	38x80
	7.5	24.6	28/38	7.6			28/38		4	39	28/38		3	39	28/38	4.8	
132 M					7.5	49		3.9	5.5	54		3.5	4	52		7.0	
	11	36		10.6													
160 M					11	72		5.3	7.5	73		5.1	5.5	72	38/45	5.1	42x110
	15	49	38/45	7.8	15	98	38/45	3.9					7.5	98		3.8	
160 L	18.5	60		6.3					11	108	38/45	3.5					
180 M	22	72		7.5	18.5	121		4.4					11	144		3.7	48x110
180 L					22	144		3.7	15	147		3.6					
	30	98		5.5	30	196	42/55	2.7	18.5	182	42/55	2.9	15	197	42/55	2.7	55x110
200 L									22	216		2.5					
	37	121	42/55	4.4	37	242	48/60	2.6			48/60		18.5	242	48/60	2.5	
225 S																	55x110 60x140
225 M	45	147		3.7	45	295		2.1	30	295		2.1	22	288		2.1	
250 M	55	180	48/60	3.5	55	360	55/70	2.1	37	364	55/70	2.1	30	394	65	2.2	60x140 65x140
280 S	75	246		3.1	75	492	75	4.0	45	442	75	4.4	37	485	75	4.0	75x140
280 M	90	295	55/70	2.6	90	590		3.4	55	541		3.6	45	591		3.3	
315 S	110	360		2.1	110	721	75/90	2.8	75	738	75/90	2.7	55	722	75/90	2.7	
315 M	132	433		4.6	132	866		2.3	90	885		2.3					65x140 80x170
	160	525		3.8	160	1030		4.7	110	1070		4.5	90	1170		4.1	
315 L			75/90				90				90				90		
	200	656	75/90	3.0	200	1290		3.7	132	1280		3.8	110	1420		3.4	
	250	820		2.4	250	1610		3.0	160	1550	90/100	3.1	132	1710	70/100	2.8	
355 L							90/100	2.4	200	1930		2.5	160	2070		3.2	75x140 95x170
	315	1010		4.8	315	2020			250	2420	100	2.7	200	2580	100	2.6	
	355	1140		4.2	355	2280		2.9									
400 L			90/100	3.8			100		315	3040							80x170 100x210
	400	1280			400	2560		2.6									

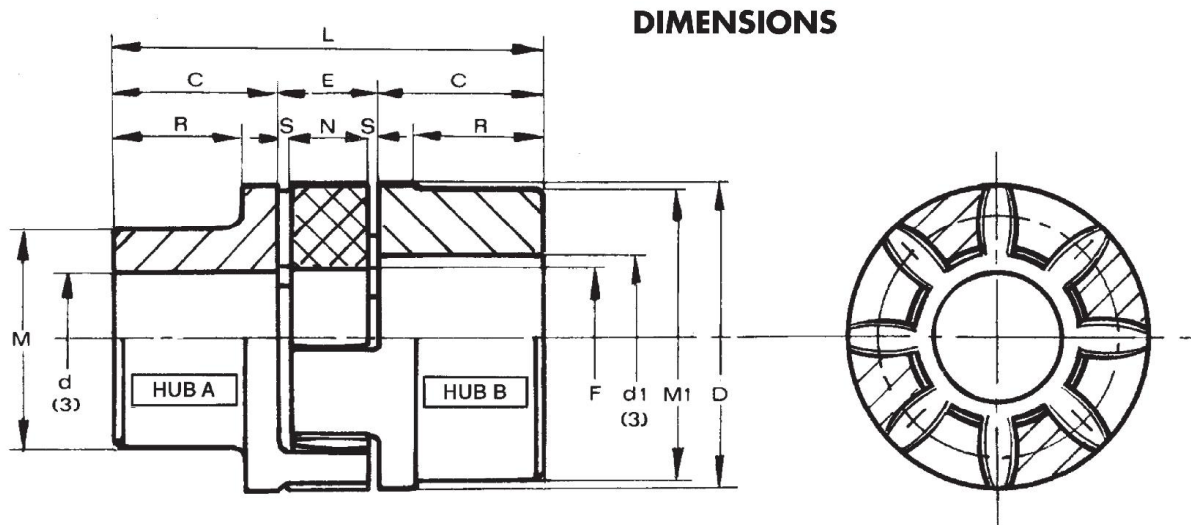# "GIFLEX®" GE-T PRECISION RANGE

Code interpretation
Example:
GE-T 19A - 24B = with hub A +hub B
GE-T 19A - 19A = with 2 hubs A
GE-T 24B - 24B = with 2 hubs B

DIMENSIONS

The characteristic size of the coupling is defined by the maximum bore diameter.

Material: G25 CAST IRON * STEEL

COUPLING TYPE	WITHOUT BORE		Finished bore d (3)		Measurements in mm. Normal range									Mass Kg.			J (2) Kg. cm²
	A	B	d max.	d1 max.	C	D	E (1)	F	M	M1	N	R	S	L	Flexible Component	Hub A	Hub B	Hubs A+B
GE-T 19A-24B*	-	-	19	24	25	40	16	18	30	40	12	19	2	66	0.004	0.18	0.25	0.8
GE-T 24A-32B	-	-	24	32	30	55	18	27	40	55	14	24	2	78	0.014	0.36	0.55	3
GE-T 28A-38B	-	-	28	38	35	65	20	30	48	65	15	27.5	2.5	90	0.025	0.60	0.85	7
GE-T 38A-45B	-	-	38	45	45	80	24	38	66	78	18	36.5	3	114	0.042	1.35	1.65	20
GE-T 42A-55B	-	-	42	55	50	95	26	46	75	94	20	40	3	126	0.066	2.00	2.30	50
GE-T 48A-60B	-	-	48	60	56	105	28	51	85	104	21	45	3.5	140	0.088	2.75	3.10	80
GE-T 55A-70B	-	-	55	70	65	120	30	60	98	118	22	52	4	160	0.116	4.20	4.50	160
GE-T 65A-75B	-	-	65	75	75	135	35	68	115	134	26	61	4.5	185	0.172	6.50	6.80	310
GE-T 75A-90B	-	-	75	90	85	160	40	60	135	158	30	69	5	210	0.325	10.00	10.80	680
GE-T 90A-100B	38	38	90	100	100	200	45	100	160	180	34	81	5.5	245	0.440	14.00	15.80	1590

(Table title: **MEASUREMENTS - WEIGHTS**)

(1) Assembly distances
(2) Coupling inertia moment with hubs A-B and max. bore Ø
(3) **On request:** Finished bore in compliance with ISO standards, H7 tolerance, keyway DIN 6885, sheet 1, JS9 tolerance. Dowel bore.

CHIARAVALLI Trasmissioni spa
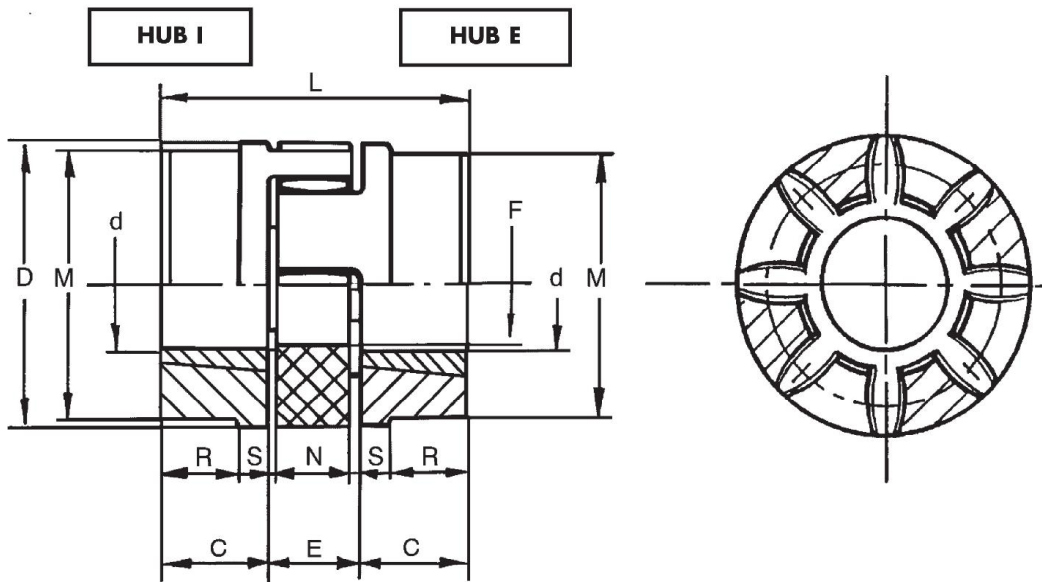
EXECUTION WITH TAPER-LOCK® BUSH

Code interpretation
Example:
GE-T 28I - 38E = with hub I + hub E
GE-T 28I - 28I = with 2 hubs I
GE-T 38E - 38E = with 2 hubs E

DIMENSIONS

HUB I HUB E

Material: G25 CAST IRON

		MEASUREMENTS - WEIGHTS													
COUPLING TYPE	Taper Lock Bush	Finished bore d		Measurements in mm.									Mass Kg.		J [2] Kg. cm² Hubs B₁
				Normal range											
		d min.	d max.	C	D	E [1]	F	M	N	S	L	R	Flexible Component	Hubs B₁ Max. Bore	Hubs B₁
GE-T28-38 B1-TL	1108	14	25	23	65	20	30	65	15	2.5	66		0.025	0.50	7
GE-T38-45 B1-TL	1108	14	25	23	80	24	38	78	18	3	70	15	0.042	0.88	26
GE-T42-55 B1-TL	1610	14	42	26	95	26	46	94	20	3	78	16	0.066	1.40	36
GE-T48-60 B1-TL	1615	19	40	39	105	28	51	104	21	3.5	106	28	0.088	2.33	78
GE-T55-70 B1-TL	2012	19	50	33	120	30	60	118	22	4	96	20	0.116	2.42	120
GE-T75-90 B1-TL	2517	19	65	52	160	40	80	158	30	5	144	36	0.325	6.80	630

(1) Assembly distances
(2) Coupling inertia moment with hubs I and E max. bore

"GIFLEX®" GE-T PRECISION RANGE

ALUMINIUM ALLOY EXECUTION

Code interpretation
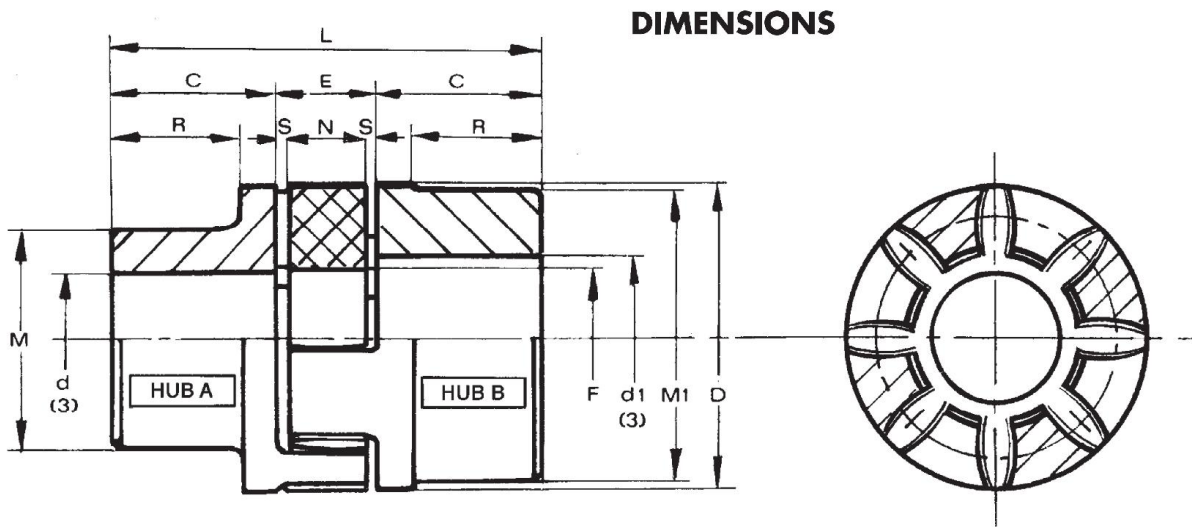
Example:

GE-T 19A - 24B/AL = with hub A + hub B
GE-T 19A - 19A/AL = with 2 hubs A
GE-T 24B - 24B/AL = with 2 hubs B

DIMENSIONS

Material: **ALUMINIUM ALLOY**

COUPLING TYPE	WITHOUT BORE		Finished bore d [3]		Measurements in mm.									Mass Kg.			J Kg. cm² Hubs A+B [2]
					Normal range												
	A	B	d max.	d1 max.	C	D	E [1]	F	M	M1	N	R	S	L	Flexible Component	Hub A	Hub B	
GE-T 19A-24B/AL	_	10	19	24	25	40	16	18	30	40	12	19	2	66	0.005	0.07	0.08	0.4
GE-T 24A-32B/AL	8	14	24	32	30	55	18	27	40	55	14	24	2	78	0.014	0.13	0.18	1.0
GE-T 28A-38B/AL	10	16	28	38	35	65	20	30	48	65	15	27.5	2.5	90	0.025	0.22	0.30	3.0
GE-T 38A-45B/AL	12	20	38	45	45	80	24	38	66	78	18	36.5	3	114	0.042	0.48	0.55	8.0

MEASUREMENTS · WEIGHTS

(1) Assembly distances
(2) Coupling inertia moment with hubs A and B and max. bore Ø
(3) **On request:** Finished bore in compliance with ISO standards, H7 tolerance, keyway DIN 6885, sheet 1, JS9 tolerance. Dowel bore.

N.B.: use of a polyurethane elastomer is recommended

"GIFLEX®" GE-T SG
BACKLASH-FREE TORSIONAL COUPLING

INTRODUCTION

The aluminium flexible couplings GE-T SG are made of three pre-tensioned elements in backlash-free execution.
They are meant for the coupling mounting and they are designed to fit low torque working units and industrial processing, where they must satisfy certain requirements.
Thanks to their limited dimensions and their easy mounting, they can operate in little space and any project can take big advantages of it.
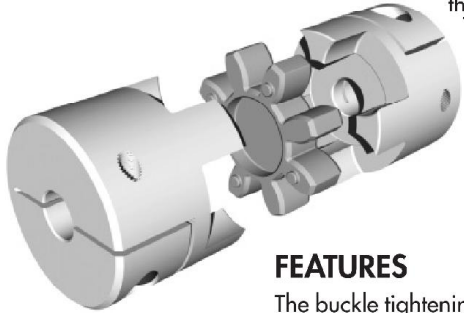
FEATURES

The buckle tightening guarantees a quick and sure fixing without extension between shaft and hub. It is however important to keep the screw tightening torque (MS) shown in the table.
Besides testing the size of the coupling given in the table, it is suggested to test the maximum torque of buckle to diameter (F).
The elastomeric element, that has a star shape, is set into the hubs' hollow seats with a light pre-tensioning , ensuring the needed transmission torque backlash-free execution.
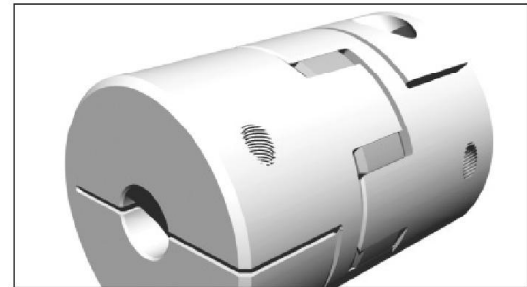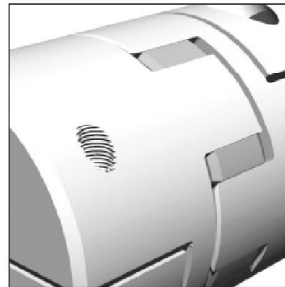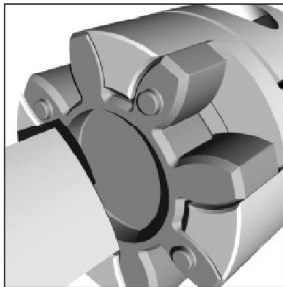
TECHNICAL DATA (Polyurethane elastomeric element in blu colour 80 shore A - in yellow colour 92 shore A - in red colour 98 shore A).

COUPLING GE-T SG	Elastomeric element hardness Shore A	N. max speed revolution V=30m/s	TORQUE (Nm)			STIFFNESS			WEIGHT		Mass inertia moment Kgm² x 10⁻⁶
			Tksg	Tkn	Tk mx	Torsion statica Nm/rad	Torsion dinam. Nm/rad	radial N/mm	Hub	Star	
9	80			1,8	3,6	17,02	52	125			
	92	28000	0,45	3,0	6,0	31,5	95	262	0,009	0,002	0,57
	98			5,0	10,0	51,5	150	518			
14	80			4,0	8,0	60,2	180	153			
	92	19000	1,0	7,5	15,0	114,6	344	336	0,020	0,005	3,25
	98			12,5	25,0	172,0	513	604			
19/24	80			4,9	9,8	343,8	1030	582			
	92	14000	2,5	10,0	20,0	573,0	1720	1120	0,066	0,007	21,90
	98			17,0	34,0	859,0	2580	2010			
24/28	80			17,0	34,0						
	92	10600		35,0	70,0	1432,0	4296	1480	0,132	0,018	58,30
	98			60,0	120,0	2063,0	6189	2560			
28/38	80			46,0	92,0						
	92	8500		95,0	190,0	2292,0	6879	1780	0,253	0,029	216,80
	98			160,0	320,0	3438,0	10315	3200			
38/45	80			94,0	188,0						
	92	7100		190,0	380,0	4589,0	13752	2350	0,455	0,049	445,20
	98			325,0	650,0	7160,0	21485	4400			

N.B. FOR EXTERNAL SPEED MORE THAN V=30m/s DYNAMIC BALANCING IS NEEDED.
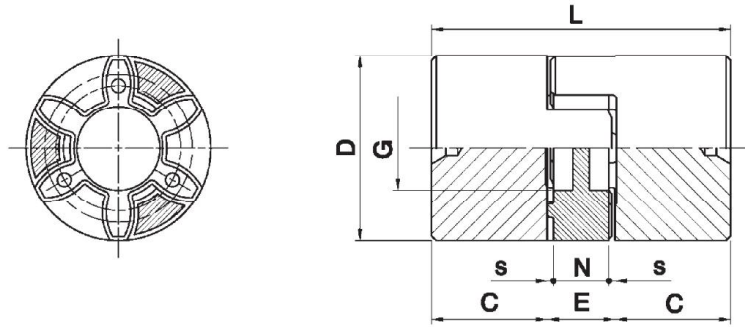
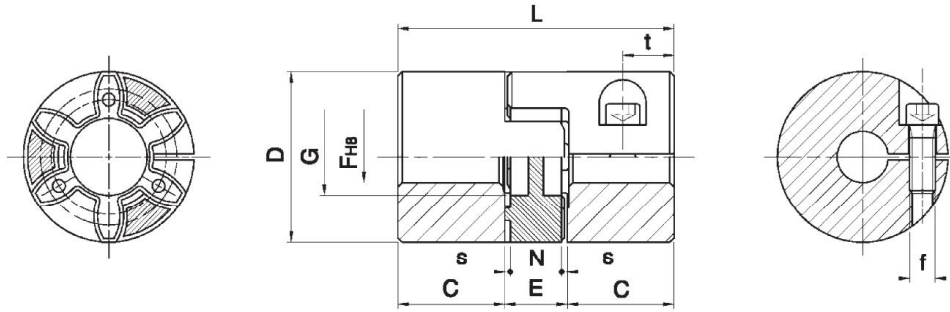| DIMENSIONS: EXECUTION A IN ALUMINIUM ALLOY WITH PLAIN HUB									
COUPLING TYPE	F min.	F max	D	G	L	C	E	N	s
9	4	10	20	7,2	30	10	10	8	1,0
14	4	16	30	10,5	35	11	13	10	1,5
19/24	8	20	40	18	66	25	16	12	2,0
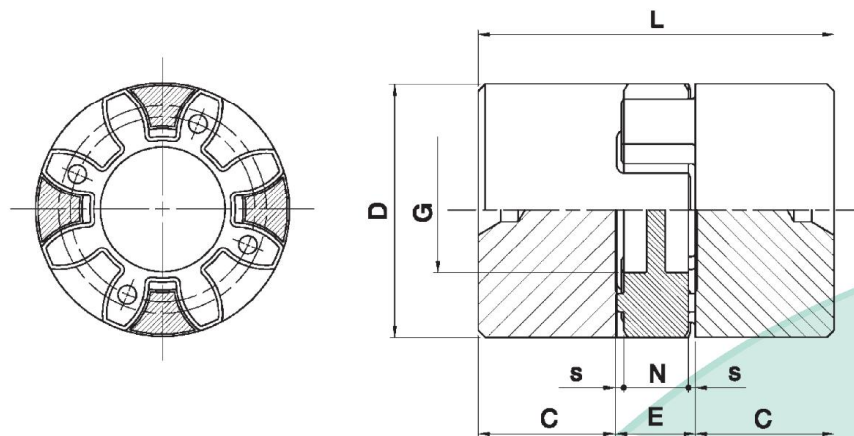
DIMENSIONS: EXECUTION B IN ALUMINIUM ALLOY WITH PLAIN HUB									
COUPLING TYPE	F min.	F max	D	G	L	C	E	N	s
24/28	12	28	55	27	78	30	18	14	2,0
28/38	18	35	65	30	90	35	20	20	2,5
38/45	18	45	80	38	114	45	24	18	3,0

DIMENSION: EXECUTION C IN ALUMINIUM ALLOY WITH SIMPLE SPLIT													
COUPLING TYPE	Execution	F min.	F max	D	G	L	C	E	N	s	f	Ms screws (Nm)	t
9	A	4	10	20	7,2	30	10	10	8	1,0	M2,5	0,75	5
14	A	4	16	30	10,5	35	11	13	10	1,5	M3	1,40	5
19/24	A	8	20	40	18	66	25	16	12	2,0	M6	11,0	12

ALLOWED TORQUE (Nm)																			
COUPLING TYPE	PRODUCED DIAMETER OF BORES (F)																		
	5	6	8	10	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40
9	1,55	1,63	1,79	1,94																
14	3,32	3,43	3,67	3,91	4,14	4,38	4,5	4,6												
19/24			18	19	20	21	21,5	22	22,5	23	24									
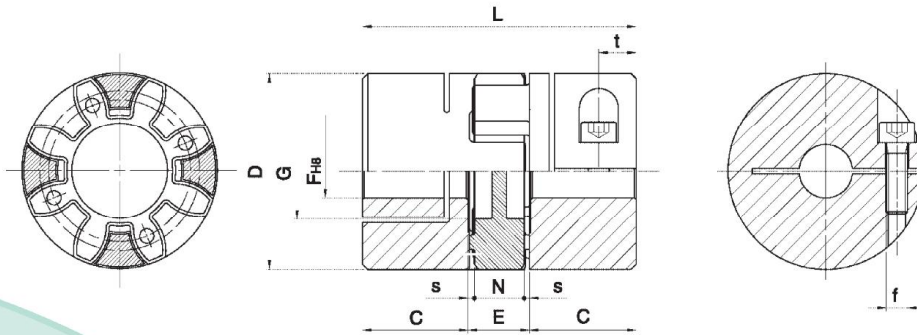
DIMENSIONS: EXECUTION D IN ALUMINIUM ALLOY WITH DOUBLE SPLIT													
COUPLING TYPE	Execution	F min.	F max	D	G	L	C	E	N	s	f	Ms screws (Nm)	t
24/28	B	12	28	55	27	78	30	18	14	2,0	M6	11,0	14
28/38	B	18	35	65	30	90	35	20	15	2,5	M8	25,0	15
38/45	B	18	45	80	38	114	45	24	18	3,0	M8	25,0	20

ALLOWED TORQUE (Nm)																			
COUPLING TYPE	PRODUCED DIAMETER OF BORES (F)																		
	5	6	8	10	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40
24/28						25	26	27	27,5	28	28,5	29	30	31	32	33				
28/38										60	61	62	63	65	66	69	71	73	75	
38/45										69	70	71	73	74	78	78	80	81	84	87	88

"GIFLEX®" GF COUPLINGS with POLYAMIDE SLEEVE

DUAL CURVATURE
FLEXIBLE TOOTHED COUPLINGS

PRESENTATION

The GIFLEX range of flexible toothed couplings are commercial couplings for general applications, which are however manufactured to a high quality standard and offer technical and performance features that are typical of industrial couplings.

The specific application sector refers to power transmissions for the flexible connection of rotating parts, with the possibility of compensating radial and angular misalignments and absorbing axial slippage.

The performance is in line with this class of couplings, rendered more demanding and better suited to the needs of industrial requirements by the design criteria adopted and the precision with which the couplings are machined and systematically tested.

CONSTRUCTION

In structural terms, the flexible toothed couplings consist of two symmetrical steel hubs and a synthetic resin sleeve, which ensures the coupling and power transmission between the two hubs.

The two hubs are manufactured from low carbon content steel and have been subjected to anti-corrosion surface treatment and are each fitted with a toothed ring.

The hollow sleeve with internal toothing formed by injection moulding comprises a high molecular weight semi-crystalline technical polymer, guaranteed by certification at origin, thermally conditioned and charged with a solid lubricant that contributes to enhance the self-lubricating features typical of the polymer. The toothing of the two hubs has a progressive dual curvature, produced using a Numerically Controlled machine tool, which ensures the coupling provides optimum performance. This solution enables dynamic type angular and radial misalignments to be compensated ALSO UNDER LOAD CONDITIONS. The specific geometry of the tooth for a given transmitted twisting moment significantly reduces the surface pressure, thereby increasing the coupling's capacity to

transmit the load and fatigue resistance.

The polymer's relative insensitivity to atmospheric humidity and its capacity to withstand temperatures between −20° and + 120° with brief peaks of up to +150° enable the coupling to withstand demanding working conditions also in an aggressive environment.

CHARACTERISTICS

The couplings provide the following performance in practical applications:
- Reduced overall dimensions, weight and inertia moment;
- Constant velocity behaviour at speed;
- Silent operation and the ability to absorb impacts and vibrations flexibly;
- Withstand the most common aggressive chemical agents and moderate heat, max. temp. 80°;
- Self-lubricating, electrically insulated and maintenance-free;
- Inexpensive, easily assembled and are suited to a variety of applications, also in demanding conditions.
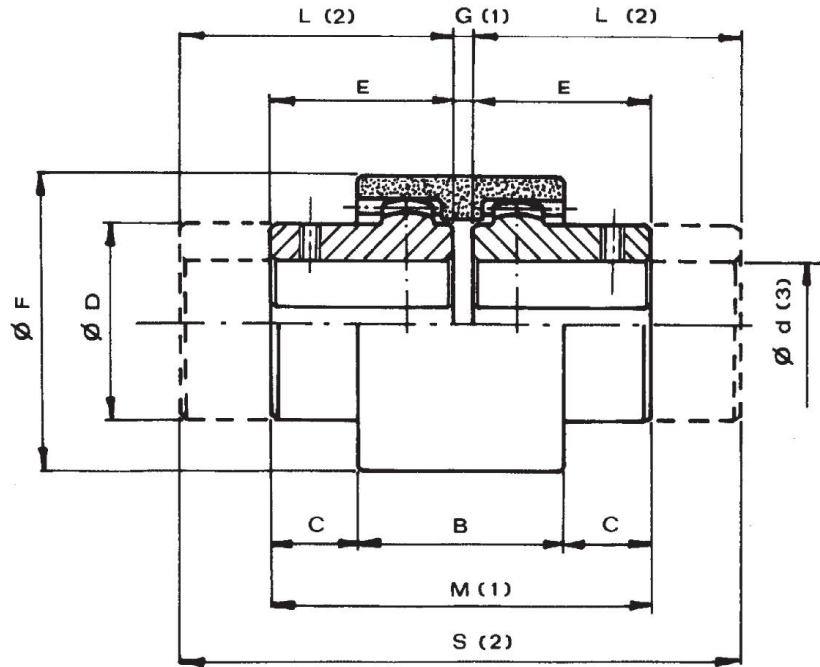
"GIFLEX®" GF FLEXIBLE COUPLINGS

Code interpretation
Example:
GF - 14-NN = with 2 normal hubs
GF - 14-NL = with one normal hub and a long hub
GF - 14-LL = with 2 long hubs

DIMENSIONS

The coupling's characteristic size is defined by the maximum bore diameter.

| COUPLING TYPE	WITHOUT BORE	Finished bore d [3]		Measurements in mm.									Mass Kg.		
				Normal range							Long Range			Normal Hub	Long Hub
		nom.	max.	B	C	ØD	E	ØF	G [1]	M [1]	L [2]	S [2]	Sleeve		
GF-14	-	6	14	38	6.5	25	23.5	41	4	51	30	64	0.022	0.10	0.13
GF-19	-	8	19	38	8.5	32	25.5	48	4	55	40	84	0.028	0.18	0.28
GF-24	-	10	24	42	7.5	36	26.5	52	4	57	50	104	0.037	0.23	0.42-
GF-28	-	10	28	48	19	45	41	68	4	86	60	124	0.086	0.54	0.79
GF-32	-	12	32	48	18	50	40	75	4	84	60	124	0.104	0.66	0.97
GF-38	-	14	38	50	17	58	40	85	4	84	80	164	0.131	0.93	1.83
GF-42	-	20	42	50	19	63	42	95	4	88	110	224	0.187	1.10	2.76
GF-48	-	20	48	50	27	68	50	100	4	104	110	224	0.198	1.50	3.21
GF-55	-	25	55	65	29.5	82	60	120	4	124	110	224	0.357	2.63	5.12
GF-65	-	25	65	72	36	95	70	140	4	144	140	284	0.595	4.02	7.92

MEASUREMENTS - WEIGHTS

(1) Assembly distances.
(2) Couplings with hub lengths to fully cover normal shafts for the UNEL-MEC range of motors.
(3) **On request:** finished bore in compliance with ISO standards, H7 tolerance, keyway DIN 6885, sheet 1, JS9 tolerance. Dowel bore.

"GIFLEX®" GF FLEXIBLE COUPLINGS
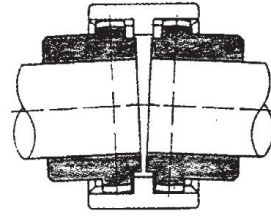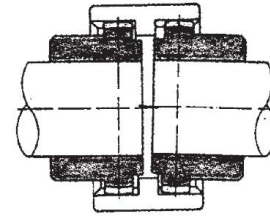
MISALIGNMENTS
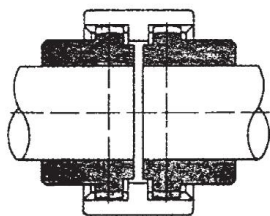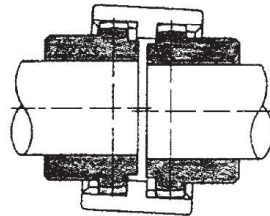
Aligned shafts   Radially displaced shafts   Angularly displaced shafts   Radially and angularly displaced shafts

COUPLING SELECTION

Torque based selection: the coupling must be selected so that the max motor torque does not exceed the coupling's permitted peak twisting moment.

	POWER FACTOR KW r.p.m.		TORQUE Nm		POWER TRANSMITTED IN KW AT R.P.M.								Max. R.P.M.	Mass Kg. (1)	J Kg cm² (1)	Maximum misalignment for each hub		Axial displacement
COUPLING TYPE					750		1000		1500		3000					Angular α (2)	Radial mm.	mm.
	norm.	max.	norm.	max.	norm.	max.	norm.	max.	norm.	max.	norm.	max.						
GF-14	0.0011	0.0023	11.5	23	0.8	1.5	1.1	2.0	1.6	3.0	3.3	6.0	14000	0.166	0.27	±2°	0.7	±1
GF-19	0.0019	0.0037	18.5	36.5	1.3	2.7	1.8	3.7	2.7	5.5	5.4	11.1	12000	0.276	0.64	±2°	0.8	±1
GF-24	0.0023	0.0047	23	46	1.7	3.5	2.3	4.7	3.4	7.0	6.9	14.1	10000	0.312	0.92	±2°	0.8	±1
GF-28	0.0053	0.0106	51.5	103.5	3.9	7.9	5.2	10.6	7.8	15.9	15.6	31.8	8000	0.779	3.45	±2°	1	±1
GF-32	0.0071	0.0142	69	138	5.2	10.5	7.0	14.1	10.5	21.1	21.0	42.3	7100	0.918	5.03	±2°	1	±1
GF-38	0.0090	0.0181	88	176	6.7	13.5	9.0	18.0	13.5	27.0	27.0	54.0	6300	1.278	9.59	±2°	0.9	±1
GF-42	0.0113	0.0226	110	220	8.4	16.8	11.2	22.5	16.8	33.7	33.6	67.5	6000	1.473	13.06	±2°	0.9	±1
GF-48	0.0158	0.0317	154	308	11.8	23.6	15.8	31.6	23.7	47.4	47.4	94.8	5600	1.777	18.15	±2°	0.9	±1
GF-55	0.029	0.058	285	570	21.7	43.5	29.0	58.0	43.5	87.0	87.0	174.0	4800	3.380	49.44	±2°	1.2	±1
GF-65	0.0432	0.0865	420	840	32.1	64.3	42.9	85.8	64.3	128.7	128.7	257.4	4000	4.988	106.34	±2°	1.3	±1

(1) Normal coupling reference complete with maximum bore without keyway.
(2) Per hub.

ASSEMBLY GUIDELINES
a) Position the two semi-couplings on the shafts, taking care that the internal surfaces are in line with the shaft ends.
b) Insert the sleeve on the two semi-couplings adjusting their distance (distance "G"), while the two shafts are aligned at the same time.
c) Clamp the two parts to be coupled together in position.
d) Check that the sleeve is free to move in an axial direction before the coupling is rotated.

CHIARAVALLI Trasmissioni spa

213

DUAL CURVATURE,
FLEXIBLE TOOTHED COUPLINGS
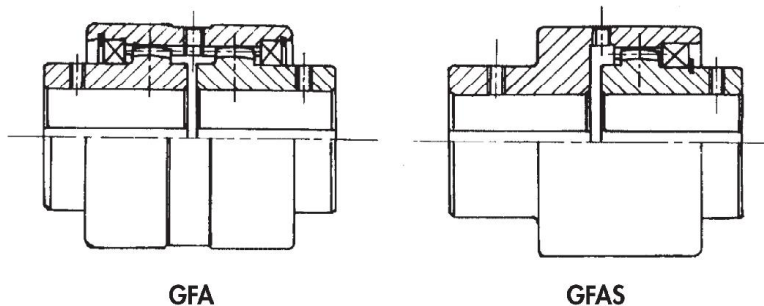
GFA   GFAS

PRESENTATION

The "GIFLEX" GFA - GFAS range of flexible couplings represent couplings designed with a compact structure for industrial applications, torsionally rigid and capable of compensating angular, parallel and combined misalignments.

The special configuration with the single-piece sleeve and the seals at the two ends renders the couplings suitable for use in aggressive environments and in particularly demanding operating conditions. The performance complies with the characteristics of a dual articulation, constant-velocity coupling intended to be used both for general and specific applications and with the possibility of also being mounted on shafts with a large free gap.

The operating limits defined by the maximum torque, by the rotating speed and the permitted angular misalignment are the result of a design based on a targeted choice of materials, the heat treatment and the toothing geometry.

The reliability of the stated operating limits has been confirmed by testing the fatigue limits both at the surface pressure (Hertzian pressure) and at bending and to destructive wear in accordance with calculation schemes based on the most authoritative international standards.

The CHIARAVALLI Trasmissioni Technical Department is available however, to examine problems that relate to the choice, application and maintenance of couplings in collaboration with users.

On specific request, special couplings by

their shape, execution and performance can be offered and produced, as an alternative to the normal execution couplings. For example:
- Couplings designed for high angular and parallel misalignments.
- Couplings manufactured using high resistance steel and with surface hardening heat treatment.
- Couplings with case hardened and hardened hubs and toothing finished by machine tools after heat treatment (skiving using a hard metal tool).
- Special couplings manufactured to a drawing.

STRUCTURAL CHARACTERISTICS

The **GFA** range of compact couplings, comprise two toothed hubs and an external connecting single-piece sleeve.

The lubricant seal inside the coupling is ensured by two ring gaskets, arranged at the two ends of the sleeve and held in position by spring washers (Seeger washers).

Two threaded dowels arranged radially on the sleeve in a counterposition allow a solid lubricant to be adopted.

The toothing adopted for the two hubs is profile corrected and has a progressive dual curvature achieved by machine the toothing on a fully Numerically Controlled gear cutting machine.

The sleeve's profile corrected toothing, which has a parallel generatrix, is obtained using a shaping tool.

The toothing is produced to category 7 precision, in compliance with DIN 3972 and has a degree of finish with a surface roughness of not more than Ra = 1.4 micrometres, thanks to the machining technology adopted.

Both the hubs and the sleeve are manufactured using hardened and tempered carbon steel with a tensile stress resistance of 800 N/mm. The couplings are subjected to a surface hardening thermo-chemical treatment at the end of the machining stage, which ensures a high resistance to wear and seizure and also confers a high resistance to corrosion caused by atmospheric agents.

The perfect seal achieved by the gaskets ensures the required lubricant containment and prevents penetration of contaminating elements from outside, thereby contributing to increase the average useful working life of the coupling, even if operating in an aggressive environment.

The two toothed hub bands are positioned at the maximum distance permitted by the sleeve length. This arrangement ensures a minimum angular misalignment for a given parallel misalignment and enhances the coupling's constant-velocity features.
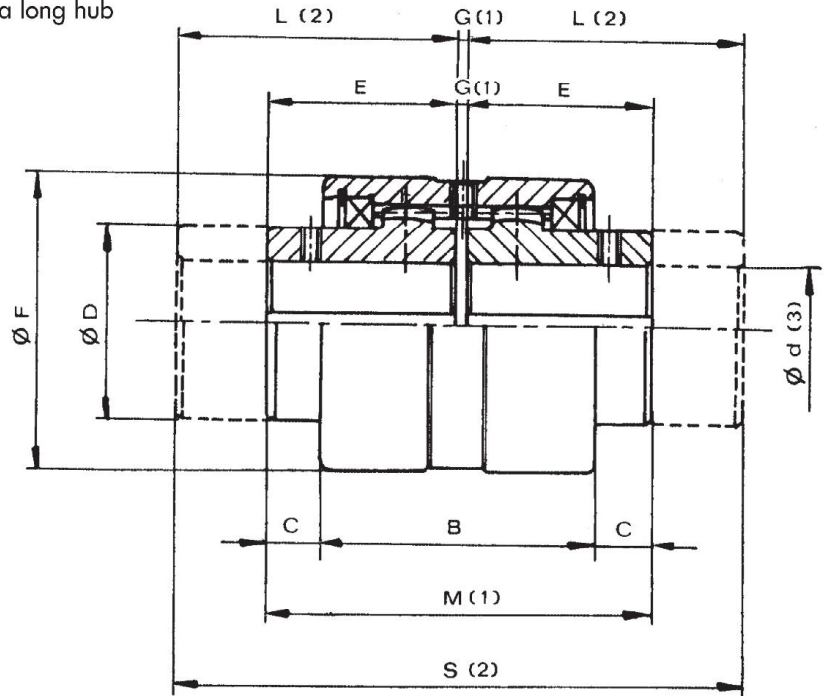
Code interpretation
Example:
GFA - 25-NN = with 2 normal hubs
GFA - 25-NL = with one normal hub and a long hub
GFA - 25-LL = with 2 long hubs

DIMENSIONS

The coupling's characteristic size is defined by the maximum bore diameter.

COUPLING TYPE	BORE	Finished bore d [3]		Measurements in mm.									Mass Kg		
				Normal range							Long Range				
		nom.	max.	B	C	ØD	E	ØF	G [1]	M [1]	L [2]	S [2]	Sleeve	Normal Hub	Long Hub
GFA-25	-	25	28	61	12	42	41	68	3	85	60	123	0.72	0.48	0.69
GFA-32	-	32	38	73	13.5	55	48.5	85	3	100	80	163	1.14	0.99	1.58
GFA-40	-	40	48	82	16.5	64	56	95	3	115	80	163	1.68	1.49	2.10
GFA-56	-	56	60	97	21.5	80	68	120	4	140	100	204	2.86	2.96	4.22
GFA-63	-	63	70	108	22.5	100	74.5	140	4	153	119.5	243	3.75	4.90	7.67
GFA-80	-	80	90	125	22.5	125	82.5	175	5	170	140	285	5.58	8.72	14.26
GFA-100	-	100	110	148	34	150	105	198	6	216	174.5	355	6.63	15.76	25.40
[4] GFA-125	40	125	140	214	39	190	140	245	8	288	207.5	423	17.70	32.60	49.50
[4] GFA-155	40	155	175	240	64	240	180	300	10	370	245	498	28.30	65.50	91.40

MISURE - PESO

(1) Assembly distances.
(2) Couplings with hub lengths to fully cover normal shafts for the UNEL-MEC range of motors.
(3) **On request:** finished bore in compliance with ISO standards, H7 tolerance, keyway DIN 6885, sheet 1, JS9 tolerance. Dowel bore.
(4) Construction material: hardened and tempered 39NiCrMo3.

"GIFLEX®" GFAS FLEXIBLE COUPLINGS
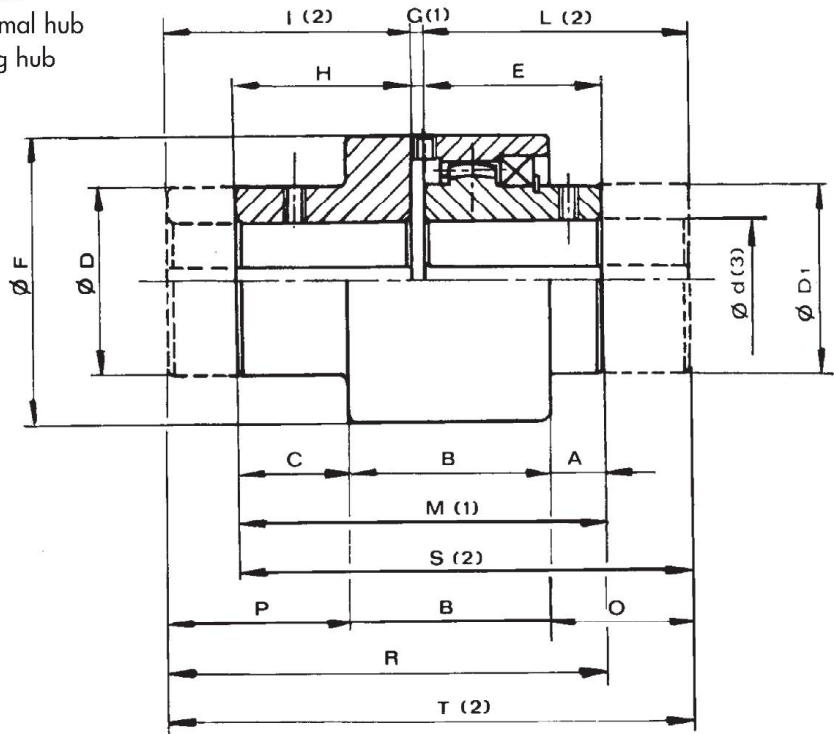
Code interpretation
Example:
GFAS - 25-NN = with cone and a normal hub
GFAS - 25-NL = with cone and a long hub
GFAS - 25-LN = with long cone and normal hub
GFAS - 25-LL = with long cone and long hub

DIMENSIONS

The coupling's characteristic size is defined by the maximum bore diameter.

COUPLING TYPE	WITHOUT BORE	Finished[3] bore d		Measurements in mm.																	Mass Kg.			
				Normal range									Long Range						[2]		Normal cone	Normal Hub	Long Cone	Long Hub
		nom.	max.	A	B	C	ØD	ØD1	E	ØF	G[1]	H	M[1]	I[2]	L[2]	O	P	R	S[2]	T[2]				
GFAS-25	-	25	28	13	43	29	42	40	41	70	3	41	85	60	60	32	48	104	104	123	1.03	0.48	1.30	0.69
GFAS-32	-	32	38	16	49	35	55	55	48.5	85	3	48.5	100	80	80	47.5	66.5	131.5	131.5	163	1.75	0.99	2.50	1.58
GFAS-40	-	40	48	18.5	54.5	42	64	64	56	95	3	56	115	80	80	42.5	66	139	139	163	2.71	1.49	3.40	2.10
GFAS-56	-	56	60	27	60	45	80	80	68	120	4	60	132	100	100	59	85	172	164	204	4.43	2.96	6.10	4.22
GFAS-63	-	63	75	31	63	46	100	100	74.5	140	4	61.5	140	119.5	119.5	76	104	198	185	243	6.62	4.90	10.20	7.67
GFAS-80	-	80	90	26	76	51	125	125	82.5	175	5	65.5	153	138	140	83.5	123.5	225.5	210.5	283	10.50	8.68	17.90	14.22
GFAS-100	-	100	110	38	92	71	150	150	105	198	6	90	201	162	174.5	107.5	143	273	270.5	342.5	28.20	15.70	38.10	25.30

MEASUREMENTS - WEIGHTS

(1) Assembly distances.
(2) Couplings with hub lengths to fully cover normal shafts for the UNEL-MEC range of motors.
(3) **On request:** finished bore in compliance with ISO standards, H7 tolerance, keyway DIN 6885, sheet 1, JS9 tolerance. Dowel bore.

TECHNICAL DATA

COUPLING TYPE	POWER FACTOR KW r.p.m.		TORQUE Nm		POWER TRANSMITTED IN KW AT R.P.M.				Max. R.P.M.	R.P.M. Recommended limit	Max. radial misalignment mm.	Mass Kg.	J Kg cm²
	norm.	except.	norm.	except.	750 norm.	1000 norm.	1500 norm.	3000 norm.					
GFA-25	0.061	0.157	600	1524	45	61	91	183	6000	5000	0.20	1.36	8.68
GFAS-25											-	1.35	7.31
GFA-32	0.103	0.259	1000	2520	77	103	154	309	5000	4000	0.26	2.51	25.10
GFAS-32											-	2.43	19.15
GFA-40	0.128	0.322	1250	3125	96	128	192	384	4200	3000	0.32	3.55	44.82
GFAS-40											-	3.64	34.13
GFA-56	0.257	0.639	2500	6200	192	257	385		3500	2200	0.37	6.15	132.60
GFAS-56											-	6.07	96.56
GFA-63	0.412	0.985	4000	9260	309	412	618		3000	1600	0.40	9.91	278.20
GFAS-63											-	10.00	207.32
GFA-80	0.773	1.855	7500	18000	579	773			2600	1200	0.48	16.20	558.6
GFAS-80											-	19.18	492.6
GFA-100	1.236	2.937	12000	28500	927				1400	700	0.65	23.00	1044.50
GFAS-100											-	28.00	1064.00
GFA-125	2.431	5.795	23600	56250	1823				950	460	0.70	49.15	3650
GFA-155	4.121	9.273	40000	90000	3090				700	350	0.80	91.30	9982

(1) Referred to the normal coupling complete with maximum bore without keyway.

N.B. Class G 2.5 dynamic balancing in compliance with ISO 1940 is recommended for actual operating speeds that exceed 3,600 r.p.m.
Couplings can operate with a parallel misalignment value that is double the suggested value and assembly with a misalignment value that is four times greater than the suggested value in exceptional cases.

COUPLING SIZE SELECTION INSTRUCTIONS

The torque, speed and useful working life data declared for the couplings are to be understood as valid referred to a Service Factor SF = 1.
The service factor must be determined therefore, based on the type of load, the load intensity and the range factor that characterises the type of load exerted on the coupling.
The values shown in the following table can be considered as a precautionary measure in the absence of reliable service factor design data.
It is appropriate to multiply the service factor taken from the table by an increasing factor equal to 1.4 in the case of continuously reversible operations under load.

SERVICE FACTORS

LOAD CONDITION	OPERATING CONDITIONS	TYPE OF DRIVE	
		Electric motor	Diesel engine
UNIFORM	Regular operation without impacts or overloads	1.25	1.5
LIGHT	Regular operation with minor and infrequent impacts and overloads	1.50	2.0
MEDIUM	Irregular operation with medium overloads for a short duration and frequent but moderate impacts	2.0	2.5
HEAVY	Markedly irregular operation with very frequent impacts and overloads and of major intensity.	2.5	3.0