

TRASCO® Couplings



**TRASCO®
JUBOFLEX®
“P” COUPLINGS
BOLT COUPLINGS**

TRASCO® couplings

Description

TRASCO® flexible couplings consist of two metal hubs and an elastic gear ring which is resistant to oils, chemical agents and heat. The construction allows safe power transmission between driver and driven shafts, absorbing impact loads, and torsional vibrations.

In its class TRASCO® coupling transmits more power in relation to the physical space occupied.

It has a very compact design and allows safe power transmission by absorbing peak loads and torsional vibrations.

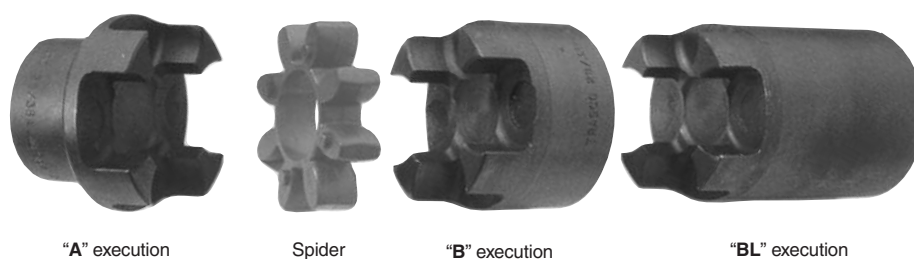
Moreover, the elastic deformation of the polyurethane gear ring compensates angular and radial misalignments and also absorbs

small shaft length variation.

The involute profile of the gear ring teeth prevents high stress concentration on reduced surfaces and the crowned profile avoids the transmission of axial stress.

The high duty factor of TRASCO® couplings is due to the fact that the elastic element works under compression and never under flexion.

TRASCO® couplings are suitable for working in both horizontal and in vertical positions and easily support any load variation or reversal. The two coupling halves are electrically insulated from each other.



ATEX 94/9/EC compliance

It is possible to ask for specific certification for use in hazardous area according to EC standard 94/9/EC. TRASCO couplings are

available with specific mounting/operating instruction manual and conformity. For information, please contact our technical office.

Hubs are available in cast iron GG25, die cast aluminum alloy or forged aluminum.

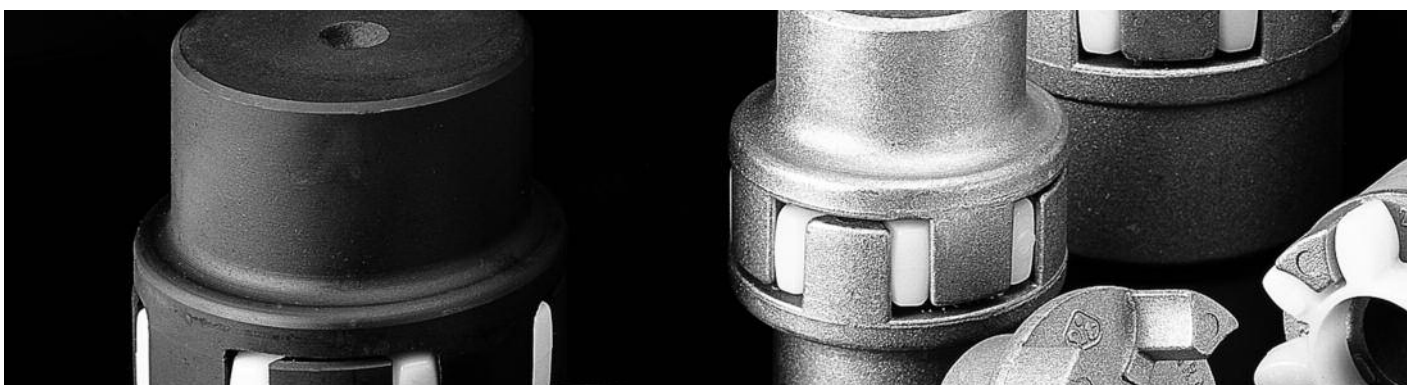
Special request hubs are available in steel or cast iron GGG40. In the base execution, "GR" TRASCO® couplings are available in two different versions: precision "P" or economy "S".

In all other executions, only the precision type is manufactured. The difference between "P" and "S" type hubs is that in the precision execution the circular sections of the hubs are precision machined, while in the economy execution, they are simply

deburred.

The "S" version allows lower axial displacement as indicated in the technical performance table. Each hub is available in two types "A" and "B", which can accommodate maximum bore size in mm corresponding respectively to the first and second number of the coupling designation.

Besides the various executions shown in the catalogue, it is always possible to manufacture coupling hubs for special applications.



Spider

The gear ring is made of a particular polyurethane resin which shows great advantages in comparison to the standard polyurethans on the market.

In fact it is very resistant to aging and hydrolysis (therefore, also suitable for tropical climates) as well as fatigue proof and abrasion proof. It is self-dampening and shows a great resistance

to the main chemical agents, acids, oils, and ozone.

Special types of gear rings are available in order to provide the right solution for each specific application covering a large range of temperatures and resisting specific chemical agents.

Standard spiders					
(Shore)	Colour	Compound	Admissible Temperature [°C]		Applications
			on work	peaks	
92 Sh A	Yellow	Polyurethane	from - 40 to + 90	from - 50 to + 120	• the most of industrial application (low-mid power)
98 Sh A	Red	Polyurethane	from - 30 to + 90	from - 40 to + 120	• high torque – narrow angular misalignment – torsion rigidity
64 Sh D	Green	Polyurethane	from - 30 to + 110	from - 30 to + 130	• dampened areas – internal combustion engines

Spiders for special applications					
(Shore)	Colour	Compound	Admissible Temperature [°C]		Applications
			on work	peaks	
94 Sh A-T	Orange	Polyurethane	from - 50 to + 110	from - 60 to + 130	• internal combustion engines / high dynamic solicitations / highly dampened areas
64 Sh D-H	Green	Hytrel	from - 50 to + 110	from - 60 to + 150	• high solicitation applications / high torsion rigidity / high temperature areas
PA	White	Polyurethane	from - 20 to + 110	from - 30 to + 150	• high torsion rigidity / high temperature areas / high resistance

TRASCO® coupling sizing as per DIN 740/2

TRASCO® coupling sizing is made according to DIN 740/2. Couplings must be selected to ensure that the max feasible torque is never exceeded during operation.

It is necessary to have correct sizing, so that all conditions hereunder are respected.

1) Verify the nominal torque

The nominal torque of the coupling must be higher or equal to the nominal torque of the drive multiplied by the temperature safety factor.

$$T_{KN} \geq T_N \cdot S_\theta \quad [\text{Nm}]$$

Note that:

$$T_N = 9550 \frac{P_N}{n} \quad [\text{Nm}]$$

Where P_N is the motor nominal power in kW.

2) Verify the maximum torque

The max torque of the coupling must be higher or equal to the starting torque T_s multiplied by the safety factors S_θ, S_z, S_u where S_u is the higher value between driver and driven units.

$$T_{Kmax} \geq T_s \cdot S_\theta \cdot S_z \cdot S_u \quad [\text{Nm}]$$

3) Verify torque with reversal

In case of torque with reversals it must be verified that:

$$T_{kw} \geq T_w \cdot S_\theta \quad [\text{Nm}]$$

where T_{kw} = torque with reversal, which the coupling can bear, and T_w = torque variation of the drive.

In case of drives with high torsional vibrations (eg. piston compressors, combustion engine) it is recommended to make a torsional vibration calculations in order to guarantee the correct functioning of the coupling. Please consult our technical office.

Shock load safety factor

Shock load type	S_u
Light	1,4
Medium	1,5
Hard	1,8

Temperature safety factor

T (°C)	-30°C / +30°C	+40°C	+60°C	+80°C
S_θ	1	1,2	1,4	1,8

Safety factor for frequency of starting

Starting/h	0÷100	101÷200	201÷400	401÷800
S_z	1	1,2	1,4	1,6

Hub shaft connection check

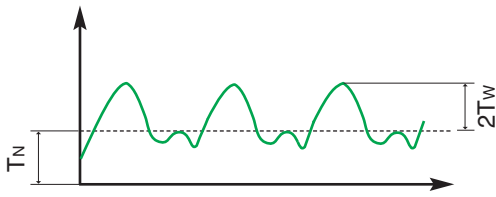
Hub shaft connection must always be checked by the user. It is important to verify the maximum torque in the drive is lower than the torque which the hub shaft connection can bear. In case of keyway connection, it is important to verify the tensile strength of the hub material with the load which the keyway seat must transmit.

color	Coupling nominal torque	Nm
T_{Kmax}	Coupling maximum torque	Nm
T_{KW}	Torque with reversal transmissible by the coupling	Nm
T_N	Motor nominal torque	Nm
T_S	Motor peak torque	Nm
T_W	Torque with reversal of the machine	Nm

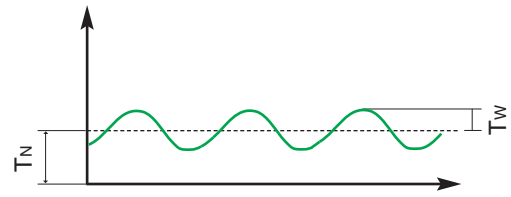
S_θ	Temperature factor	
S_z	Start frequency factor	
S_u	Motor or driven-side shock factor	
P_N	Motor nominal torque	kW
n	rpm	min ⁻¹

Type of stress

Periodic



Harmonic



Misalignment

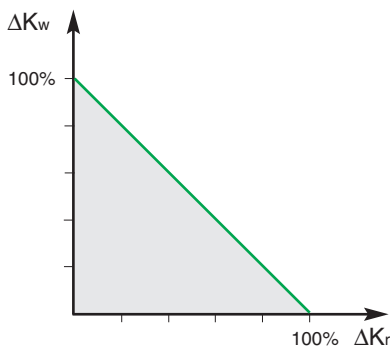
Type	ΔK_{aP} [mm]	ΔK_{aS} [mm]	ΔK_r [mm]	ΔK_w [°]
19/24	1,2	-	0,20	1,30
24/32	1,4	1,1	0,22	1,30
28/38	1,5	1,2	0,25	1,30
38/45	1,8	1,4	0,28	1,30
42/55	2,0	1,6	0,32	1,30
48/60	2,1	1,7	0,36	1,30
55/70	2,2	1,8	0,38	1,30
65/75	2,6	2,0	0,42	1,30
75/90	3,0	2,4	0,48	1,30
90/100	3,4	2,8	0,50	1,30
100/110	3,8	3,0	0,52	1,30
110/125	4,2	3,2	0,55	1,30
125/145	4,6	3,4	0,60	1,30

$n=1500 \text{ min}^{-1}$

The values shown in the table for radial and angular misalignment, must be corrected in case they are simultaneously acting on the coupling.

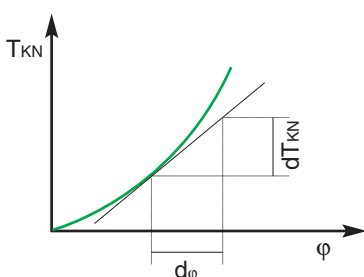
The sum of the admissible value (A) and the respective values shown in the table must be lower or equal to 1.

$$\frac{\Delta K_{rA}}{\Delta K_r} + \frac{\Delta K_{wA}}{\Delta K_w} \leq 1$$



ΔK_{aP}	Maximum axial misalignment - "P" execution	mm
ΔK_{aS}	Maximum axial misalignment - "S" execution	mm
ΔK_r	Maximum radial misalignment	mm
ΔK_w	Maximum angular misalignment	°

Dynamic torsional rigidity



Dynamic torsional rigidity CT_{din} is the first derivate of the nominal torque of half coupling in respect to the torsion angle. φ is the torsion angle of half coupling in respect to the second half.

As a general rule, CT_{din} is greater than CT and depends on the stress acting on the coupling.

Technical performances

The technical performances below refer to all types of TRASCO® executions and are valid for the indicated spiders when couplings are correctly selected.

For particular applications needed, such as very high chemical resistance, spiders made of special material are available. Contact our Technical Department.

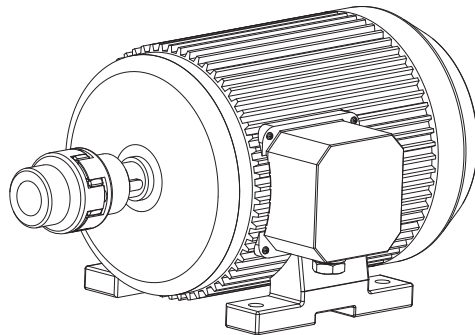
Spider - 92 Sh A - YELLOW															
Technical features			Type												
			19/24	24/32	28/38	38/45	42/55	48/60	55/70	65/75	75/90	90/100	100*	110*	125*
Torque	T_{KN}	[Nm]	10	35	95	190	265	310	410	625	1280	2400	3300	4800	6650
	T_{Kmax}	[Nm]	20	70	190	380	530	620	820	1250	2560	4800	6600	9600	13300
	T_{KW}	[Nm]	2,7	9	25	49	69	81	107	163	333	624	858	1248	1729
Max. speed	n (v=30m/s)	[min ⁻¹]	14000	10600	8500	7100	6000	5600	4750	4250	3550	2800	2500	2240	2000
	n (v=40m/s)	[min ⁻¹]	19000	14000	11800	9500	8000	7100	6300	5600	4750	3750	3350	3000	2650
Dynamic torsional rigidity	C_{Tdin} (1 T_{KN})	[Nm/rad]	1280	4860	10900	21050	23740	36700	50720	97130	113320	190090	253080	311610	474960
	C_{Tdin} (0,75 T_{KN})	[Nm/rad]	1050	3980	8940	17260	19470	30090	41590	79650	92920	155870	207530	255520	389390
	C_{Tdin} (0,5 T_{KN})	[Nm/rad]	800	3010	6760	13050	14720	22750	31450	60220	70260	117860	156910	193200	294410
	C_{Tdin} (0,25 T_{KN})	[Nm/rad]	470	1790	4010	7740	8730	13490	18640	35700	41650	69860	93010	114520	174510
Torsion angle	φ (T_{KN})	(°)	3,2°												
	φ (T_{Kmax})	(°)	5°												
Dampening factor	Ψ	(-)	0,80												
Resonance factor	V_R	(-)	7,90												

*= 95 Sh A

Spider - 98 Sh A - RED														
Technical features			Type											
			19/24	24/32	28/38	38/45	42/55	48/60	55/70	65/75	75/90	90/100		
Torque	T_{KN}	[Nm]	17	60	160	325	450	525	680	950	1950	3600		
	T_{Kmax}	[Nm]	34	120	320	650	900	1050	1250	1900	3900	7200		
	T_{KW}	[Nm]	4,4	16	42	85	117	137	178	245	500	936		
Max. speed	n (v=30m/s)	[min ⁻¹]	14000	10600	8500	7100	6000	5600	4750	4250	3550	2800		
	n (v=40m/s)	[min ⁻¹]	19000	14000	11800	9500	8000	7100	6300	5600	4750	3750		
Dynamic torsional rigidity	C_{Tdin} (1 T_{KN})	[Nm/rad]	2920	9930	26770	48570	54500	65290	94970	129510	197500	312200		
	C_{Tdin} (0,75 T_{KN})	[Nm/rad]	2390	8140	21950	39830	44690	53540	77880	106200	161950	256000		
	C_{Tdin} (0,5 T_{KN})	[Nm/rad]	1810	6160	16600	30110	33790	40480	58880	80300	122450	193560		
	C_{Tdin} (0,25 T_{KN})	[Nm/rad]	1070	3650	9840	17850	20030	24000	34900	47600	72580	114730		
Torsion angle	φ (T_{KN})	(°)	3,2°											
	φ (T_{Kmax})	(°)	5°											
Dampening factor	Ψ	(-)	0,80											
Resonance factor	V_R	(-)	7,90											

Spider - 64 Sh D - GREEN														
Technical features			Type											
			19/24	24/32	28/38	38/45	42/55	48/60	55/70	65/75	75/90	90/100		
Torque	T_{KN}	[Nm]	21	75	200	405	560	655	825	1175	2410	4500		
	T_{Kmax}	[Nm]	42	150	400	810	1120	1310	1650	2350	4820	9000		
	T_{KW}	[Nm]	5,5	19,5	52	105	145	170	215	305	625	1170		
Max. speed	n (v=30m/s)	[min ⁻¹]	14000	10600	8500	7100	6000	5600	4750	4250	3550	2800		
	n (v=40m/s)	[min ⁻¹]	19000	14000	11800	9500	8000	7100	6300	5600	4750	3750		
Dynamic torsional rigidity	C_{Tdin} (1 T_{KN})	[Nm/rad]	5350	15110	27520	70150	79860	95510	107920	151090	248220	674520		
	C_{Tdin} (0,75 T_{KN})	[Nm/rad]	4390	12390	22570	57520	65490	78320	88500	123900	203540	553110		
	C_{Tdin} (0,5 T_{KN})	[Nm/rad]	3320	9370	17060	43490	49520	59220	66910	93680	153900	418200		
	C_{Tdin} (0,25 T_{KN})	[Nm/rad]	1970	5550	10120	25780	29350	35100	39660	55530	91220	247890		
Torsion angle	φ (T_{KN})	(°)	2,5°											
	φ (T_{Kmax})	(°)	3,6°											
Dampening factor	Ψ	(-)	0,75											
Resonance factor	V_R	(-)	8,50											

TRASCO® couplings for motors according to IEC standards (spider hardness 92 shore)



Type	3000 [1/min]				1500 [1/min]				1000 [1/min]				750 [1/min]				d x l [mm]					
	P _N [kW]	T _N [Nm]	Type	K	P _N [kW]	T _N [Nm]	Type	K	P _N [kW]	T _N [Nm]	Type	K	P _N [kW]	T _N [Nm]	Type	K	2 poles	4 - 6 - 8 poles				
80	0,75	2,5	19/24	9,2	0,55	3,7	19/24	6,2	0,37	3,9	19/24	5,8	0,18	2,5	19/24	9,2	19x40					
	1,1	3,7		6,2	0,75	5,1		4,5	0,55	5,8		3,9	0,25	3,5		6,5						
90 S	1,5	5		4,6	1,1	7,5		3	0,75	8		2,8	0,37	5,3		4,3	24x50					
90 L	2,2	7,4		3,1	1,5	10		2,3	1,1	12		6,6	0,55	7,9		2,9						
100 L	3	9,8	24/32	8,1	2,2	15	24/32	5,3	1,5	15	24/32	5,3	0,75	11	24/32	7,2	28x60					
112 M				4	13	6,1		4					27	2,9		2,2			22	3,6	1,5	21
132 S	5,5	18		28/38	12,7	5,5		36	28/38	6,3		3	30	28/38		7,6	2,2	30	28/38	7,6	38x80	
	7,5	25			9,2																	
132 M			7,5		49	4,6	5,5	55		4,1												
160 M	11	36	38/45		12,5	11	72	38/45		6,2	7,5	74	38/45		6	4	54	38/45		8,3	42x110	
	15	49		9,1	4,5				11					108		4,1	7,5		100	4,5		
160 L	18,5	60		7,5	15	98	4,5		11	108	4,1	7,5		100	4,5							
180 M	22	71		8,7	18,5	121	5,1															
180 L			42/55	22	144	42/55	4,3	15	148	42/55	4,1	11	145	42/55	4,2	48x110						
200 L	30	97		6,3	30			196	3,1			18,5	181					3,4	15	198	3,1	55x110
	37	120		5,1					3,1			22	215			2,8						
225 S					37			240	3										18,5	244	48/60	2,9
225 M	45	145	4,2	45	292	2,4	30	293	2,4	22	290	48/60	2,4									
250 M	55	177	48/60	4	55	356	55/70	2,4	37	361	55/70	2,3	30	392	65	2,6	60x140	65x140				
280 S	75	241	55/70	3,5	75	484	75/90	5,1	45	438	75	5,7	37	483	75	5,1	75x140					
280 M	90	289		2,9	90	581		4,3	55	535		4,6	45	587		4,2						
315 S	110	353		2,4	110	707		75/90	3,5	75		727	75/90	3,4		55	712	75/90	3,5	65x140		
315 M	132	423		2,9	90	873			2,8	75		971		2,8		75	971		6,2			
315 L	160	513	75/90	4,8	160	1030	90/100	5,9	110	1070	90	5,7	90	1170	90	5,2	80x170					
	200	641		3,9	200	1290		4,7	132	1280		4,7	110	1420		4,2						
355 L	250	801		3,1	250	1610		90/100	3,7	160		1550	90/100	3,9		132	1710	90/100	3,5	75x140		
	315	1010		6					315	2020		3		250		2420	100		2,5			200
400 L	355	1140	5,3	355	2280	100	2,6		315	3040	100	2		250	3220	100	1,8		80x170	110x210		
	400	1280	4,7	400	2560		2,3															

P _N	Motor nominal torque	kW
T _N	Motor nominal torque	Nm
K	Safety factor	
d x l	Motor shaft's end	mm

“GR” base program

TRASCO® couplings are dimensionally manufactured to hub types “A” and “B”, the difference being the maximum shaft diameter which hubs can accept (corresponding respectively to the first and second code number).

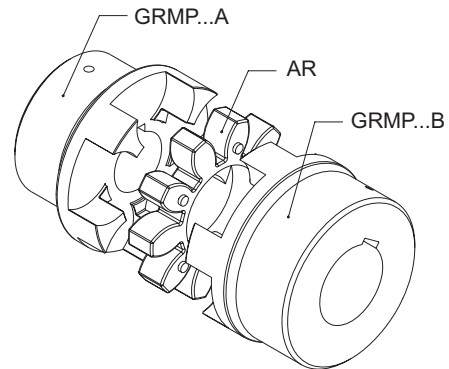
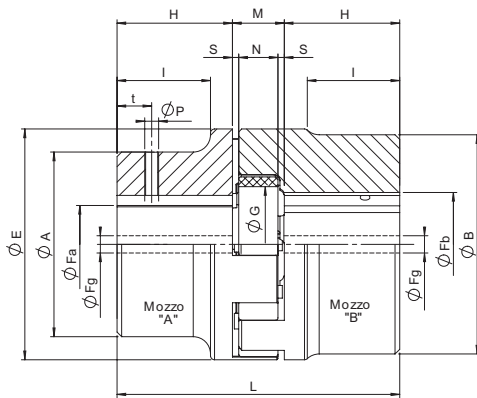
The long hub execution “L” (allows full cover of the motor shaft) is

available in both “A” and “B” executions.

Materials used for manufacture are:

- cast iron grade GG25 (all sizes);
- aluminum, diecasting
- cast iron grade GGG40 and steel upon request.

TRASCO®



Dimensional specification hubs in GG25

Type	Fa max [mm]	Fb max [mm]	Fg [mm] execution		E [mm]	A [mm]	B [mm]	A			B execution			AL execution			BL execution			M [mm]	S [mm]	N [mm]	G [mm]
			A	B				H [mm]	L [mm]	I [mm]	H [mm]	L [mm]	I [mm]	H [mm]	L [mm]	I [mm]	H [mm]	L [mm]	I [mm]				
19/24*	-	24	-	-	40	-	40	25	66	-	25	66	-	-	-	50	-	-	16	2	12	18	
24/32	24	32	8	10	55	40	55	30	78	24	30	78	-	50	128	44	60	128	18	2	14	27	
28/38	28	38	8	10	65	48	65	35	90	28	35	90	-	60	160	53	80	160	20	2,5	15	30	
38/45	38	45	10	12	80	66	80	45	114	37	45	114	-	80	214	72	110	214	24	3	18	38	
42/55	42	55	10	12	95	75	95	50	126	40	50	126	-	110	246	100	110	246	26	3	20	46	
48/60	48	60	12	12	105	85	105	56	140	45	56	140	-	110	278	99	140	278	28	3,5	21	51	
55/70	55	70	15	15	120	98	120	65	160	52	65	160	-	110	280	97	140	280	30	4	22	60	
65/75	65	75	15	15	135	115	135	75	185	61	75	185	-	140	315	126	140	315	35	4,5	26	68	
75/90	75	90	15	15	160	135	160	85	210	69	85	210	-	140	350	124	170	350	40	5	30	80	
90/100	90	100	20	20	200	160	180	100	245	81	100	245	81	170	425	151	210	425	45	5,5	34	100	
100/110	115	-	45	-	225	180	-	110	270	89	110	270	-	-	-	-	-	-	50	6	38	113	
110/125	125	-	55	-	255	200	-	120	295	96	120	295	-	-	-	-	-	-	55	6,5	42	127	
125/145	145	-	55	-	290	230	-	140	340	112	140	340	-	-	-	-	-	-	60	7	46	147	

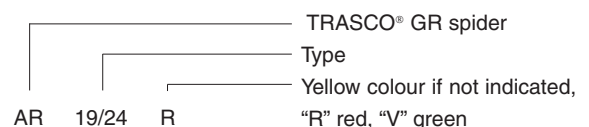
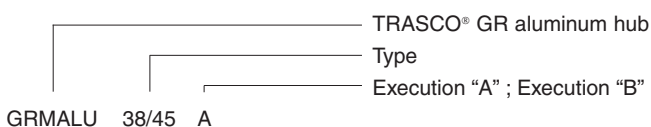
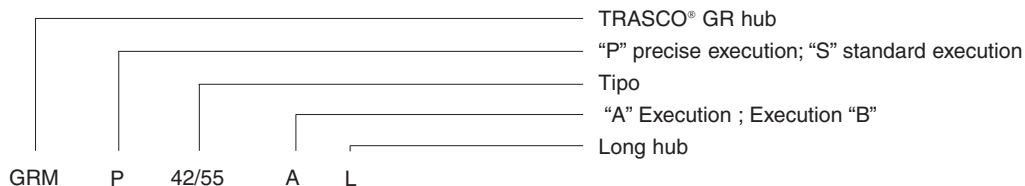
* Sintered steel

Valid bore for “P” execution

Dimensional specification hubs in aluminum

Type	Fa max [mm]	Fb max [mm]	Fg [mm] execution		E [mm]	A [mm]	B [mm]	L [mm]	H [mm]	M [mm]	S [mm]	N [mm]	I [mm]	G [mm]
			A	B										
19/24	-	24	-	4	40	40	40	66	25	16	2	12	-	18
24/32	24	32	6	22	55	40	55	78	30	18	2	14	24	27
28/38	28	38	8	26	65	48	65	90	35	20	2,5	15	28	30
38/45	38	45	10	36	80	66	77	114	45	24	3	18	37	38
42/55	-	55	-	15	95	-	95	126	50	26	3	20	-	46
48/60	-	60	-	24	105	-	105	140	56	28	3,5	21	-	51

Order form



Stock range

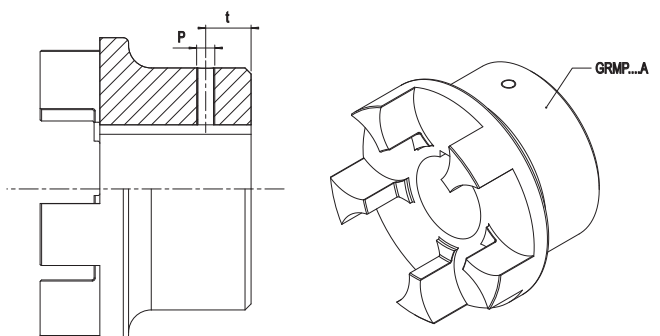
Hubs with finished bore H7, keyway, stop screw

Type	19/24		24/32				28/38				38/45				42/55			48/60			55/70		65/75		75/90		90/100	
Material*	ALU	AC	ALU	GG	ALU	GG	ALU	GG	ALU	GG	ALU	GG	ALU	GG	ALU	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	
Hub execution	B	B	A	B	A	B	A	B	A	B	A	B	A	B	B	A	B	A	B	A	B	A	A	A	A	A	A	
Stock range bore [mm]	10	•	•																									
	11	•	•																									
	12	•	•																									
	14	•	•	•		•		•		•																		
	15	•	•	•		•		•		•																		
	16	•	•	•		•		•		•																		
	18		•	•		•		•		•																		
	19	•	•	•		•		•		•																		
	20	•	•	•		•		•		•																		
	22			•		•		•		•				•														
	24	•	•	•	•	•	•		•		•		•															
	25				•	•	•		•		•		•		•	•												
	28				•	•	•		•		•		•		•	•												
	30							•		•	•		•		•	•		•		•								
	32									•	•		•		•	•		•		•								
	35								•	•	•		•		•		•		•		•							
	38								•		•	•		•		•	•		•		•							
	40												•		•	•		•		•		•						
	42												•		•	•		•		•		•						
	45														•		•	•		•		•		•		•		•
48														•		•	•		•		•		•		•		•	
50														•		•	•		•		•		•		•		•	
55														•		•	•		•		•		•		•		•	
60															•		•		•		•		•		•		•	
65																			•		•		•		•		•	
70																			•				•		•		•	
75																							•		•		•	
80																											•	
85																											•	
90																											•	

*ALU = Aluminum - AC = Steel - GG = Cast iron

Setscrew specifics per hub dimension

Hub dimension	P [mm]	t [mm]
19	M5	10
24/32	M5	10
28/38	M6	15
38/45	M8	15
42/55	M8	20
48/60	M8	20
55/70	M10	20
65/75	M10	20
75/90	M10	25
90/100	M12	30
100/100	M12	30
110/125	M16	35
125/145	M16	40



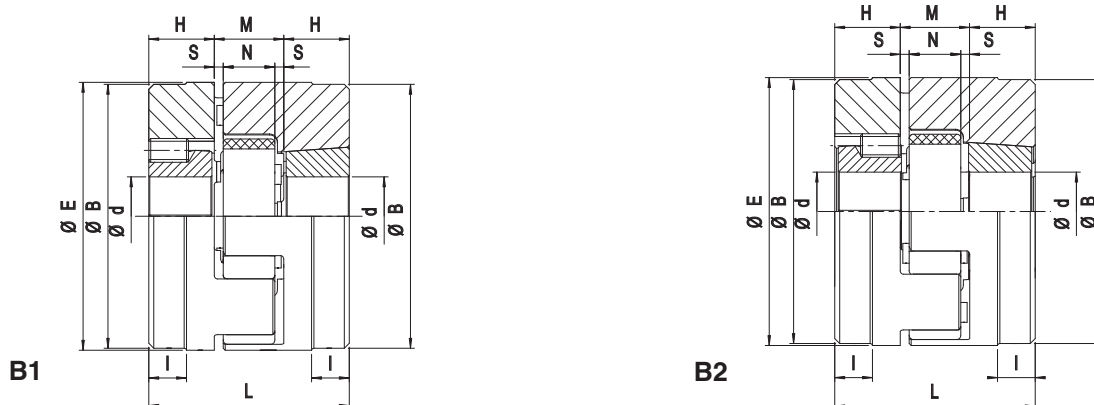
“GRB” taper bush series

TRASCO® couplings type GRB are manufactured in cast iron GG25. They combine the typical high performances of standard couplings with the mounting and dismounting advantages offered by the SER-SIT® taper bush:

- they are ready to be mounted;
- they are manufactured in two different executions:

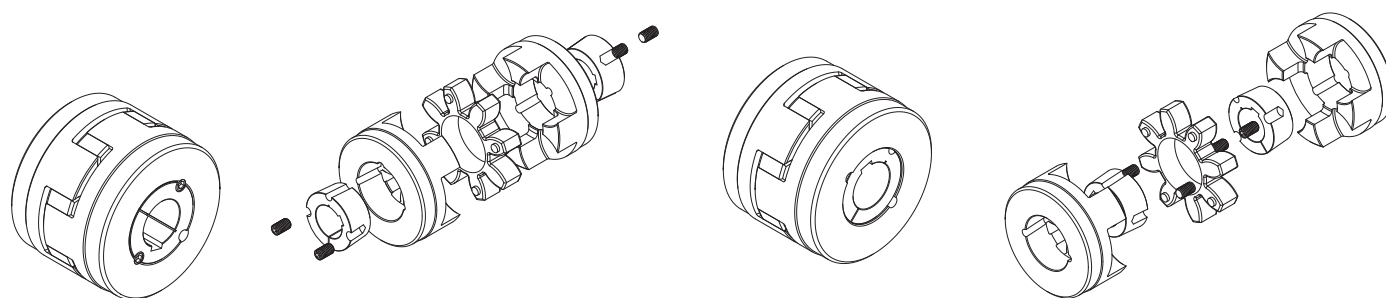
B1 and B2 (see picture);

- they solve the problem of fighting corrosion;
- hubs type B1 may be axially moved for spider replacement;
- they may be used in all types of machinery.



Type	Taper bush	E [mm]	B [mm]	L [mm]	H [mm]	M [mm]	S [mm]	N [mm]	I [mm]
28/38	1108 (2820)	65	65	66	23	20	2,5	15	-
38/45	1108 (2820)	80	78	70	23	24	3	18	15
42/55	1610 (4025)	95	94	78	26	26	3	20	16
48/60	1615 (4040)	105	104	106	39	28	3,5	21	28
55/70	2012 (5030)	120	118	96	33	30	4	22	20
65/75	2012 (5030)	135	133	101	33	35	4,5	26	19
75/90	2517 (6545)	160	158	130	45	40	5	30	36
90/100 *	3535 (9090)	200	180	223	89	45	5,5	34	70

* Only “B1” execution



Order form

TRASCO® GRMB hub for taper lock
 Type
 “B1” Execution ; “B2” Execution

GRMB 42/55 B1

Spider
 Type
 Yellow if not indicated, “R” red, “V” green

AR 19/24 R

Taper lock type	Transmissible torque [Nm]
1108 (2820)	150
1610 (4025)	490
1615 (4040)	490
2012 (5030)	800
2517 (6545)	1300
3535 (9090)	5000

“GRCAL” series for use with SIT-LOCK® elements type 8

This execution has been introduced to incorporate advantages offered by the SIT-LOCK® locking elements in the shaft-hub connection.

The system allows for a quick, safe and backlash free mounting without the use of keyway and eliminating the need for lock

washers, spacers and stop rings.

Many different solutions may be created to solve all kinds of application needs.

We include hereunder a very useful example. In fact, the same hub bore allows the fitting of different shaft diameters.

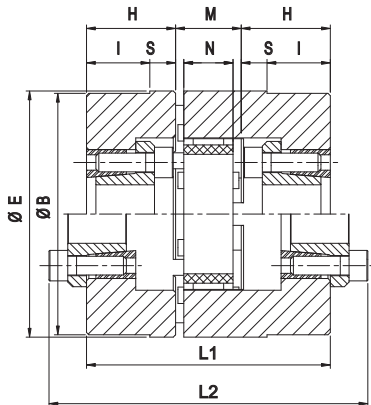


FIG 1

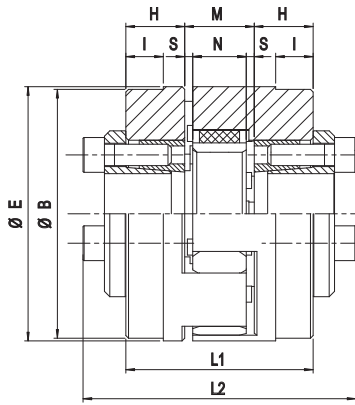


FIG 2

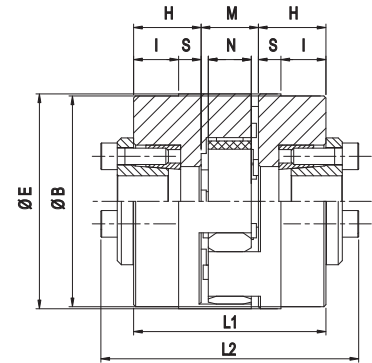


FIG 3

Type	d [mm]	D [mm]	H [mm]	E [mm]	B [mm]	L1 [mm]	L2 [mm]	M [mm]	S [mm]	N [mm]	I [mm]	Material*	Fig.
38/45	14 - 16 - 18 - 19 - 20 - 22 - 24 - 25 - 28 - 30	55	30	80	78	84	116	24	3	18	22	AC	3
42/55	14 - 16 - 18 - 19 - 20 - 22 - 24 - 25 - 28 - 30	55	22	95	93	70	102	26	3	20	14	GS-400	2
	24 - 25 - 28 - 30 - 32 - 35 - 38 - 40	65	32			90	122				22	AC	3
48/60	14 - 16 - 18 - 19 - 20 - 22 - 24 - 25 - 28 - 30	55	38	105	103	104	136	28	3,5	21	27	GS-400	1
	24 - 25 - 28 - 30 - 32 - 35 - 38 - 40	65	33			94	126				22	AC	3
55/70	14 - 16 - 18 - 19 - 20 - 22 - 24 - 25 - 28 - 30	55	38	120	118	106	138	30	4	22	25	GG25	1
	24 - 25 - 28 - 30 - 32 - 35 - 38 - 40	65	38			106	138				25	GS-400	1
	30 - 32 - 35 - 38 - 40 - 42 - 45 - 48 - 50	80	38			106	138				25	AC	3
65/75	14 - 16 - 18 - 19 - 20 - 22 - 24 - 25 - 28 - 30	55	38	135	133	111	143	35	4,5	26	24	GG25	1
	24 - 25 - 28 - 30 - 32 - 35 - 38 - 40	65	38			111	143				24	GS-400	1
	30 - 32 - 35 - 38 - 40 - 42 - 45 - 48 - 50	80	25			85	117				11	GS-400	2
75/90	14 - 16 - 18 - 19 - 20 - 22 - 24 - 25 - 28 - 30	55	38	160	158	116	148	40	5	30	22	GG25	1
	24 - 25 - 28 - 30 - 32 - 35 - 38 - 40	65	38			116	148				22	GG25	1
	30 - 32 - 35 - 38 - 40 - 42 - 45 - 48 - 50	80	41			122	154				25	GS-400	1
90/100	14 - 16 - 18 - 19 - 20 - 22 - 24 - 25 - 28 - 30	55	38	200	180	121	153	45	5,5	34	19	GG25	1
	24 - 25 - 28 - 30 - 32 - 35 - 38 - 40	65	38			121	153				19	GG25	1
	30 - 32 - 35 - 38 - 40 - 42 - 45 - 48 - 50	80	41			127	159				22	GG25	1

*: AC = steel / GG 25 = cast iron 25 / GS-400 = Spheroidal cast-iron 400

Order form

TRASCO® GRMC hub for SIT-LOCK® type 8
Type
GRMC 48/60

Spider
Type
Yellow if not indicated, "R" red, "V" green
AR 38/45 R

SIT-LOCK® element
Type
Bore diameter
External bore diameter
CAL 8 F20 / 55

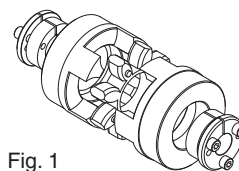


Fig. 1
External Cal

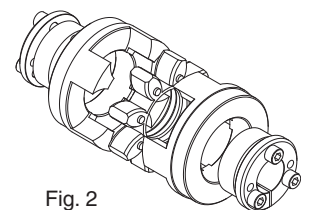


Fig. 2

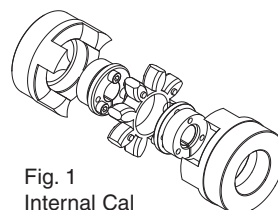


Fig. 1
Internal Cal

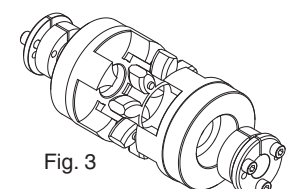
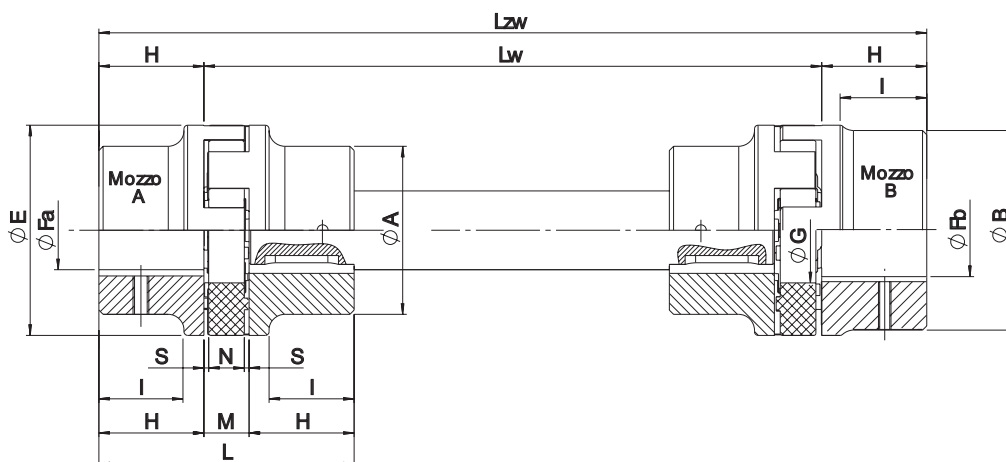


Fig. 3

“GRL” series with intermediate shaft

This series allows the joining of two shafts (even very distant) through two TRASCO® couplings and an intermediate shaft (length “Lw”) of customized dimension. The presence of two polyurethane rings allows high dampening

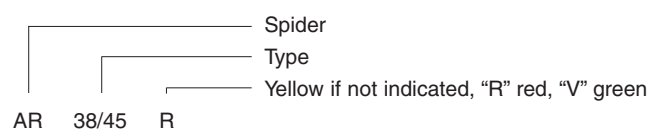
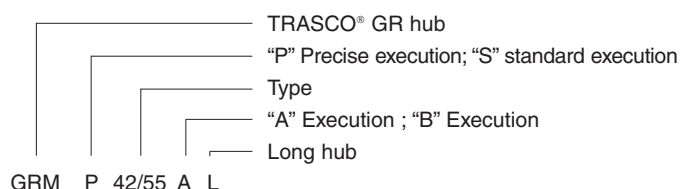
capability and large radial misalignments. Hubs are classically made from cast-iron, while shafts are from steel; though, different materials can be used, according to different applications.



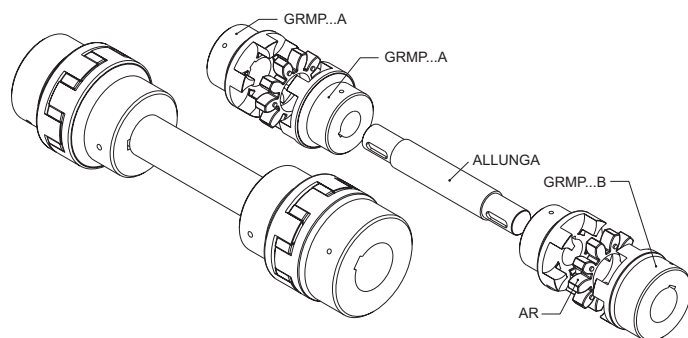
Type	Fa [mm]	Fb [mm]	E [mm]	A [mm]	B [mm]	H [mm] execution			L [mm]		M [mm]	S [mm]	N [mm]	I [mm] execution				G [mm]
						A-B	AL	BL	A-B	AL-BL				A	B	AL	BL	
24/32	9 - 24	11 - 32	55	40	55	30	50	60	78	128	18	2	14	24	-	44	-	27
28/38	9 - 28	11 - 38	65	48	65	35	60	80	90	160	20	2,5	15	28	-	53	-	30
38/45	11 - 38	13 - 45	80	66	80	45	80	110	114	214	24	3	18	37	-	72	-	38
42/55	11 - 42	13 - 55	95	75	95	50	110	110	126	246	26	3	20	40	-	100	-	46
48/60	13 - 48	13 - 60	105	85	105	56	110	140	140	278	28	3,5	21	45	-	99	-	51
55/70	16 - 55	16 - 70	120	98	120	65	110	140	160	280	30	4	22	52	-	97	-	60
65/75	16 - 65	16 - 75	135	115	135	75	140	140	185	315	35	4,5	26	61	-	126	-	68
75/90	16 - 75	16 - 90	160	135	160	85	140	170	210	350	40	5	30	69	-	124	-	80
90/100	21 - 90	21 - 100	200	160	180	100	170	210	245	425	45	5,5	34	81	81	151	191	100
100/110	46 - 115	-	225	180	-	110	-	-	270	-	50	6	38	89	-	-	-	113
110/125	56 - 125	-	255	200	-	120	-	-	295	-	55	6,5	42	96	-	-	-	127
125/145	56 - 145	-	290	230	-	140	-	-	340	-	60	7	46	112	-	-	-	147

valid bore for “P” execution

Order form



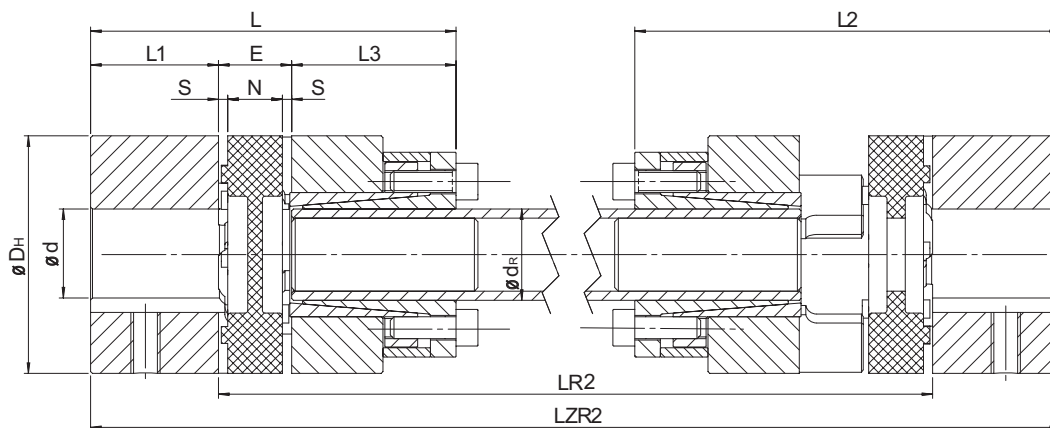
Shaft length on request.



“GRL CAL3” series with intermediate shaft

This series allows the joining of two shafts (even two spaced) through two TRASCO® couplings and an intermediate shaft (length “L_{R2}”) of customized dimension, fixed with hubs through shrink-disc.
The presence of two polyurethane elements allows high

dampening capability and large radial misalignments. Hubs are classically made of cast-iron, while shafts are made of steel; though different materials can be used according to different applications.



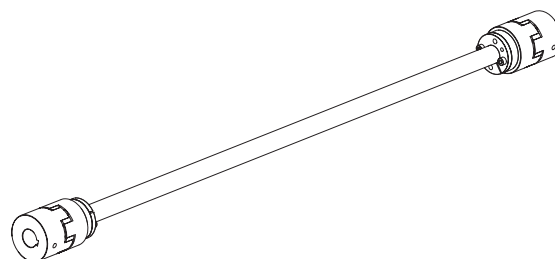
Type	External hub		Dimensions [mm] GRL-CAL3												Internal hub		
			DH	L ₁	L ₃	L	E	N	s	L ₂	L _{R2} min.	L _{ZR2}	Intermediate shaft		SITLOCK 3 elements		
	d _R	C [Nm/Rad·m]											Type	Screw Din 912-12.9 M-L	T _A [Nm]		
14	4	15	30	11	26	50	13	10	1,5	61,5	109	LR2+22	10x2.0	68,36	10x16	M4X10	4,9
19/24	6	24	40	25	26	67	16	12	2	81	120	LR2+50	12x2.0	130	12x18	M4X10	4,9
24/32	8	28	55	30	38	86	18	14	2	102	156	LR2+60	20x3.0	954,9	20x28	M6X18	17
28/38	10	38	65	35	45	100	20	15	2,5	117,5	177	LR2+70	25x2.5	1811	25x34	M6X18	17
38/45	12	45	80	45	45	114	24	18	3	135	192	LR2+90	32x3.5	5167	32x43	M6X18	17
42/55	14	55	95	50	52	128	26	20	3	151	214	LR2+100	40x4.0	11870	40x53	M6X18	17
48/60	15	60	105	56	70	154	28	21	3,5	178,5	261	LR2+112	45x4.0	17486	45x59	M8X22	41
5570	20	74	120	65	80	175	30	22	4	201	288	LR2+130	55x4.0	33543	55x71	M8X22	41
65/75	22	80	135	75	80	190	35	26	4,5	220,5	307	LR2+150	60x4.0	44362	60x77	M8X22	41

Order form

TRASCO® GR hub
Type
GRM 48/60 per cal 3

Spider
Type
Yellow if not indicated, “R” red, “V” green
AR 38/45 R

Intermediate shaft on request



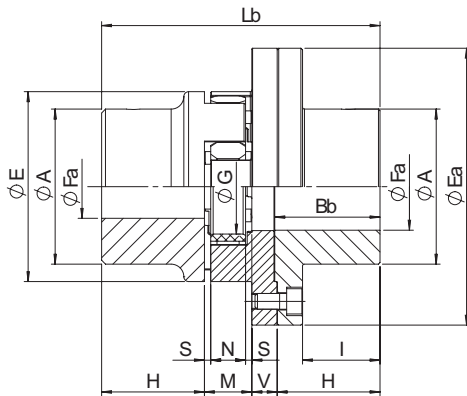
“GRF” flange series

This series, with flanges, has been developed for applications on heavy machinery and to combine different shafts and flanges solutions.

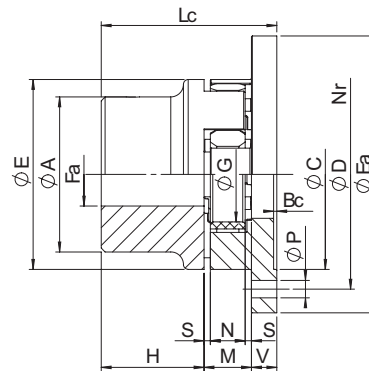
- Shaft-shaft: using two hubs type “BF”, allows the replacement of

the elastic element without traversing of either motor-machine or driven-machine.

- Shaft-flange: using one hub type “CF” and one type “GR”.
- Flange-Flange: using two hubs type “CF”.



BF



CF

Type	Fa min [mm]	Fa max [mm]	E [mm]	Ea [mm]	A [mm]	C [mm]	D [mm]	Nr [mm]	P [mm]	G [mm]	H [mm]	Bb [mm]	Bc [mm]	I [mm]	V [mm]	M [mm]	S [mm]	N [mm]	Lb [mm]	Lc [mm]
19/24	-	19	40	65	40/32	40	50	5	4,5	18	25	26	1,5	17	8	16	2	12	74	49
24/32	9	24	55	80	55/40	55	65	5	4,5	27	30	31	1,5	22	8	18	2	14	86	56
28/38	9	28	65	100	65/48	65	80	6	6,5	30	35	36	1,5	25	10	20	2,5	15	100	65
38/45	11	38	80	115	66	80	95	6	6,5	38	45	46	1,5	35	10	24	3	18	124	79
42/55	11	42	95	140	75	95	115	6	9	46	50	51	2	38	12	26	3	20	138	88
48/60	13	48	105	150	85	105	125	8	9	51	56	57	2	44	12	28	3,5	21	152	96
55/70	16	55	120	175	98	120	145	8	11	60	65	66	2	49	16	30	4	22	176	111
65/75	16	65	135	190	115	135	160	10	11	68	75	76	2	59	16	35	4,5	26	201	126
75/90	16	75	160	215	135	160	185	10	14	80	85	87	2,5	66	19	40	5	30	229	144
90/100	21	90	200	260	160	200	225	12	14	100	100	102	3	80	20	45	5,5	34	265	165
100/110	46	115	225	285	180	225	250	12	14	113	110	112	4	85	25	50	6	38	295	185
110/125	56	125	255	330	200	255	290	12	18	127	120	122	4	94	26	55	6,5	42	321	201
125/145	56	145	290	370	230	290	325	16	18	147	140	142	5	110	30	60	7	46	370	230

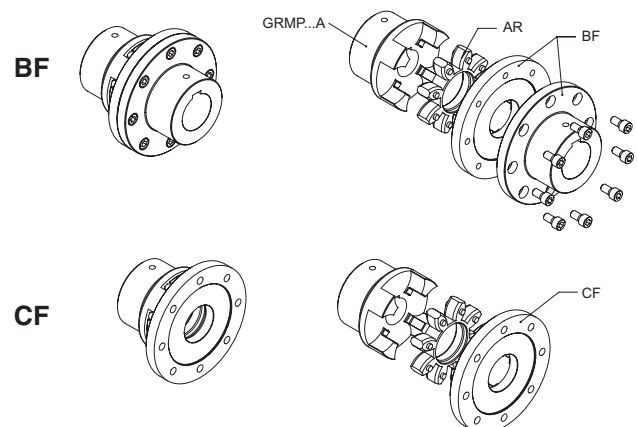
Valid bore for “P” execution.

Order form

Shaft side flange “BF” execution
Type
GRFBF 48

For hub “GR” order form please see TRASCO® GR base program

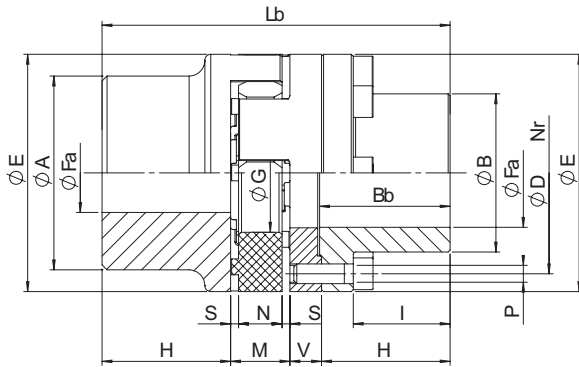
Ring side flange “BF” and “CF” execution
Type
GRFCF 48



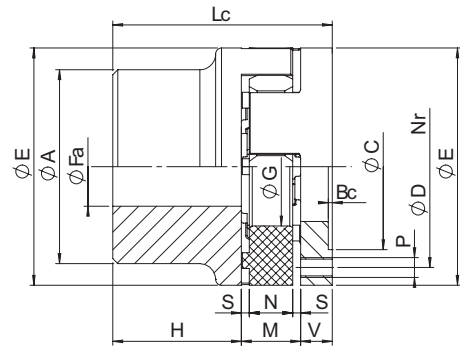
Nr Number of screws

“GRF C” flange series

The GRF C series has the same characteristics as the BF series, while being compact in dimension.



BFN

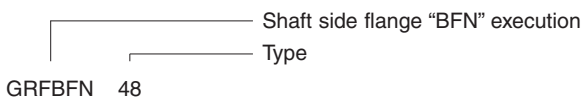


CFN

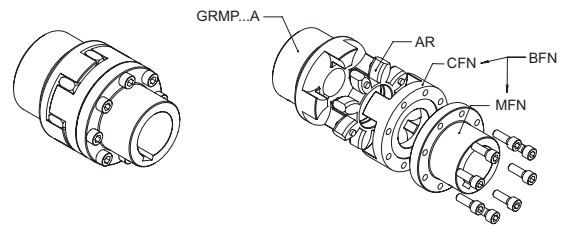
Type	Fa min [mm]	Fa max [mm]	E [mm]	A [mm]	B [mm]	H [mm]	I [mm]	Lb [mm]	Lc [mm]	V [mm]	M [mm]	S [mm]	N [mm]	Bb [mm]	Bc [mm]	G [mm]	D [mm]	Nr	C [mm]	P [mm]
24/32	9	24	55	40	36	30	22	86	56	8	18	2	14	31	1,5	27	45	8	36	M5
28/38	9	28	65	48	42	35	25	100	65	10	20	2,5	15	36	1,5	30	54	8	44	M6
38/45	11	38	80	66	52	45	35	124	79	10	24	3	18	46	1,5	38	66	8	54	M8
42/55	11	42	95	75	62	50	38	138	88	12	26	3	20	51	2	46	80	12	65	M8
48/60	13	48	105	85	70	56	44	152	96	12	28	3,5	21	57	2	51	90	12	75	M8
55/70	16	55	120	98	80	65	49	176	111	16	30	4	22	66	2	60	102	8	84	M10
65/75	16	65	135	115	94	75	59	201	126	16	35	4,5	26	76	2	68	116	12	96	M10
75/90	16	75	160	135	108	85	66	229	144	19	40	5	30	87	2,5	80	136	15	112	M12
90/100	21	90	200	160	142	100	80	265	165	20	45	5,5	34	102	3	100	172	15	145	M16
100/110	46	115	225	180	158	110	85	295	185	25	50	6	38	112	4	113	195	15	165	M16
110/125	56	125	255	200	178	120	94	321	201	26	55	6,5	42	122	4	127	218	15	180	M20
125/145	56	145	290	230	206	140	110	370	230	30	60	7	46	142	5	147	252	15	215	M20

Valid bore for “P” execution.

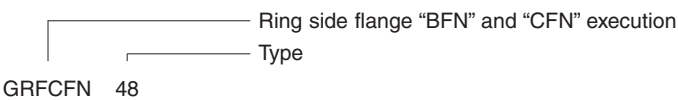
Order form



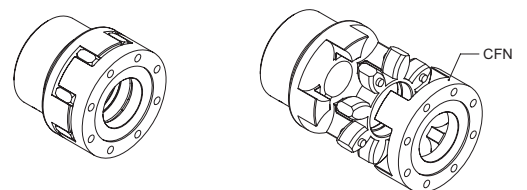
BFN



For hub “GR” order form please see TRASCO® GR base program



CFN



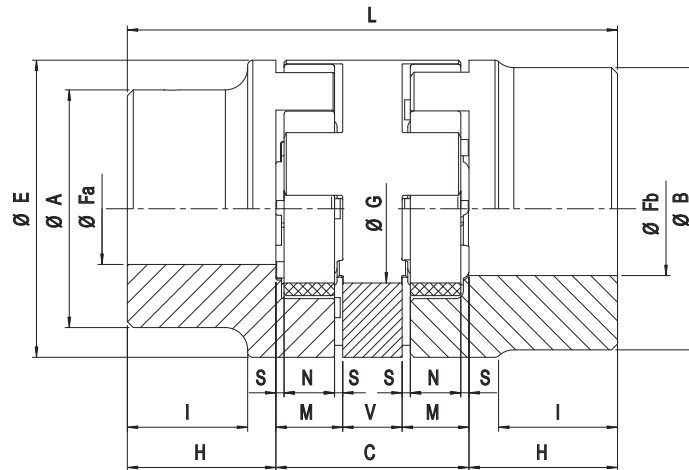
Nr Number of screws

“GRS” double cardanic series

It allows compensation of high axial, radial and angular misalignment. Moreover, the use of the double spider allows for

double the torsion angle and provides very high dampening effect.

TRASCO®

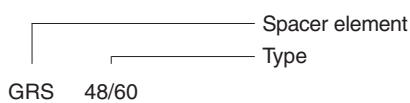


Type	Fa [mm]	Fb [mm]	H [mm]	V [mm]	C [mm]	M [mm]	S [mm]	N [mm]	L [mm]	E [mm]	A [mm]	B [mm]	G [mm]	ΔK_r [mm]	ΔK_w [°]
24/32	9 - 24	11 - 32	30	16	52	18	2	14	112	55	40	55	27	0,89	1°30'
28/38	9 - 28	11 - 38	35	18	58	20	2,5	15	128	65	48	65	30	1	
38/45	11 - 38	13 - 45	45	20	68	24	3	18	158	80	66	80	38	1,15	
42/55	11 - 42	13 - 55	50	22	74	26	3	20	174	95	75	95	46	1,26	
48/60	13 - 48	13 - 60	56	24	80	28	3,5	21	192	105	85	105	51	1,36	
55/70	16 - 55	16 - 70	65	28	88	30	4	22	218	120	98	120	60	1,52	
65/75	16 - 65	16 - 75	75	32	102	35	4,5	26	252	135	115	135	68	1,75	
75/90	16 - 75	16 - 90	85	36	116	40	5	30	286	160	135	160	80	2	
90/100	21 - 90	21 - 100	100	40	130	45	5,5	34	330	200	160	180	100	2,5	

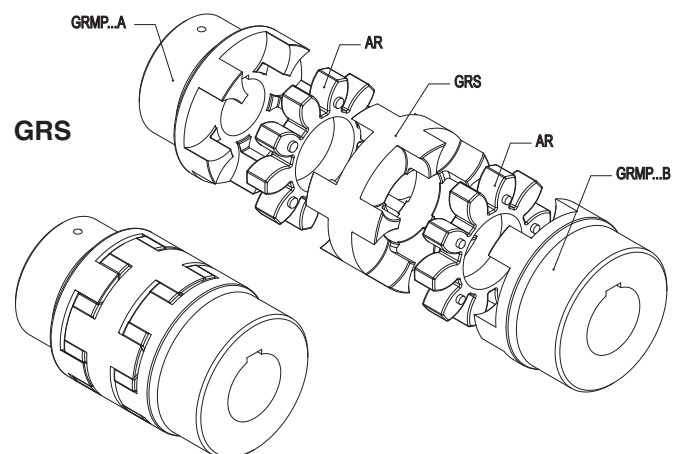
Valid bore for “P” execution

Order form

For hub “GR” order form please see TRASCO® GR base program



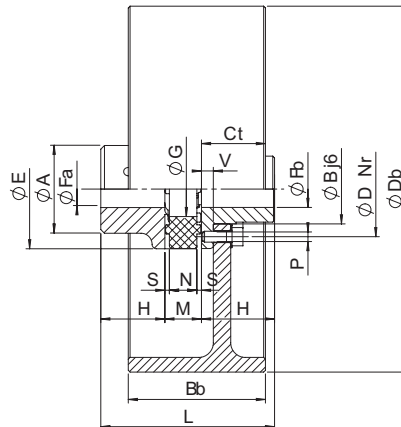
F _a	Bore of hub “A”	mm
F _b	Bore of hub “B”	mm
ΔK_r	Maximum radial misalignment	mm
ΔK_w	Maximum angular misalignment	°



“GR FRT” drum brake series

This series has been developed to suit drum-brake (FRT) transmissions. It is constituted as an elastic coupling screwed to the brake band. Components are either made of cast-iron (G25), spheroidal

cast-iron (GS400), or steel according to application. Also, assembling of different dimensioned brake bands to any kind of coupling is allowed. See below tables.



GR FRT - drum brake												W _{FRT} [kg]	J _{FRT} [kg m ²]	min ⁻¹ with V _{max} 30 m/s	
Db x Bb	28	38	42	48	55	65	75	90	100	110	125				
160x60	30	31	-	-	-	-	-	-	-	-	-	-	2,12	0,01	3580
200x75	35	36	38	39	41	-	-	-	-	-	-	-	3,45	0,03	2860
250x95	43	44	46	47	49	50	52	-	-	-	-	-	6,87	0,08	2290
315x118	-	-	55	56	58	59	61	64	-	-	-	-	14,95	0,28	1820
400x150	-	-	68	69	71	72	74	77	79	82	-	-	31,20	0,89	1430
500x190	-	-	-	-	-	87	89	92	94	97	101	-	60,00	2,70	1150
630x236	-	-	-	-	-	-	107	110	112	115	119	-	112,00	8,01	910
710x265	-	-	-	-	-	-	-	-	123	126	130	-	161,00	14,90	810
800x300	-	-	-	-	-	-	-	-	-	-	144	-	202,00	27,20	720

Type	Fa;Fb min [mm]	Fa;Fb max [mm]				E [mm]	A [mm]	B [mm]	H [mm]	L [mm]	G [mm]	Nr	V [mm]	M [mm]	S [mm]	N [mm]	D [mm]	P [mm]
		Fa	Fb (GG25)	Fb (GS400)	Fb (Steel)													
28 FR	10	28	20	22	24	65	48	38	35	90	30	8	6,5	20	2,5	15	52	M6
38 FR	12	38	28	32	34	80	66	50	45	114	38	8	7,5	24	3	18	66	M8
42 FR	14	42	30	38	42	95	75	60	50	126	46	12	9,5	26	3	20	80	M8
48 FR	15	48	35	45	48	105	85	68	56	140	51	12	10,5	28	3,5	21	90	M8
55 FR	20	55	42	50	55	120	98	78	65	160	60	8	12,5	30	4	22	102	M10
65 FR	22	65	48	55	65	135	115	92	75	185	68	12	13,5	35	4,5	26	116	M10
75 FR	30	75	58	70	75	160	135	106	85	210	80	15	15,5	40	5	30	136	M12
90 FR	40	90	75	90	100	200	160	140	100	245	100	15	18,5	45	5,5	34	172	M16
100 FR	45	115	-	100	-	225	180	156	110	270	113	15	20,5	50	6	38	195	M16
110 FR	55	125	-	110	-	255	200	176	120	295	127	15	23,5	55	6,5	42	218	M20
125 FR	55	145	-	130	-	290	230	204	140	340	147	15	27,5	60	7	46	252	M20

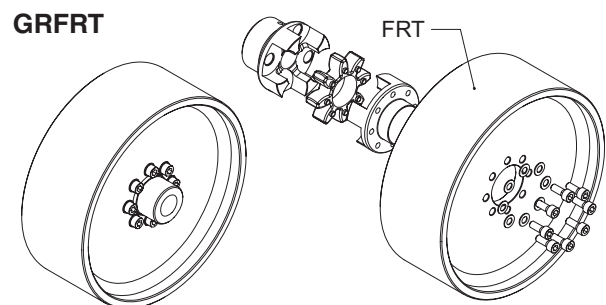
Order form

For hub “GR” order form please see TRASCO® GR base program

_____ Brake side hub
 _____ Type
 GRFR 48

Band on request.

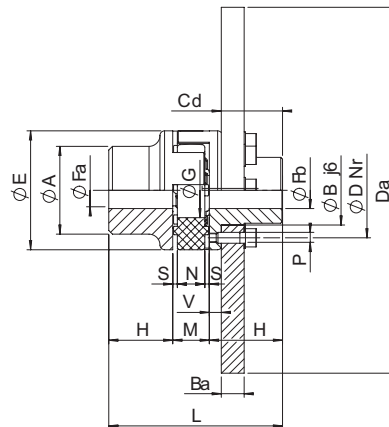
W_{FRT} “GRFRT” weight kg
 J_{FRT} “GRFRT” moment of inertia kgm²
 Nr Number of screws



“GR FRD” brake disc series

This series has been developed to suit disc-brake (FRD) transmissions according to DIN 15431/15435. It is constituted as an elastic coupling screwed to the brake band. Components are either made of cast-iron (G25), spheroidal

cast-iron (GS400), or steel according to application. Also, assembling of different dimensioned brake bands to any kind of coupling is allowed. See below tables.



GR FRD - brake disc												W _{FRD}	J _{FRD}	min ⁻¹ with V _{max} 40 m/s
Da x Ba	28	38	42	48	55	65	75	90	100	110	125	[kg]	[kg m ²]	
200x12,5	X	X	-	-	-	-	-	-	-	-	-	2,93	0,0154	3820
250x12,5	X	X	X	X	-	-	-	-	-	-	-	4,66	0,0376	3060
315x16	-	-	X	X	X	X	X	-	-	-	-	8,62	0,1118	2430
400x16	-	-	-	X	X	X	X	X	X	X	-	15,23	0,3152	1910
500x16	-	-	-	-	X	X	X	X	X	X	X	23,96	0,7680	1530
630x20	-	-	-	-	-	X	X	X	X	X	X	47,72	2,4264	1210
710x20	-	-	-	-	-	X	X	X	X	X	X	60,93	3,9151	1080
800x25	-	-	-	-	-	-	-	X	X	X	X	94,91	7,8790	950
900x25	-	-	-	-	-	-	-	-	-	X	X	118,95	12,6091	850

Type	Fa;Fb min [mm]	Fa;Fb max [mm]				E [mm]	A [mm]	B [mm]	H [mm]	L [mm]	G [mm]	Nr	V [mm]	M [mm]	S [mm]	N [mm]	D [mm]	Cd [mm]	P [mm]
		Fa	Fb (GG25)	Fb (GS400)	Fb (Steel)														
28 FR	10	28	20	22	24	65	48	38	35	90	30	8	6,5	20	2,5	15	52	28,5	M6
38 FR	12	38	28	32	34	80	66	50	45	114	38	8	7,5	24	3	18	66	37,5	M8
42 FR	14	42	30	38	42	95	75	60	50	126	46	12	9,5	26	3	20	80	40,5	M8
48 FR	15	48	35	45	48	105	85	68	56	140	51	12	10,5	28	3,5	21	90	45,5	M8
55 FR	20	55	42	50	55	120	98	78	65	160	60	8	12,5	30	4	22	102	52,5	M10
65 FR	22	65	48	55	65	135	115	92	75	185	68	12	13,5	35	4,5	26	116	61,5	M10
75 FR	30	75	58	70	75	160	135	106	85	210	80	15	15,5	40	5	30	136	69,5	M12
90 FR	40	90	75	90	100	200	160	140	100	245	100	15	18,5	45	5,5	34	172	81,5	M16
100 FR	45	115	-	100	-	225	180	156	110	270	113	15	20,5	50	6	38	195	89,5	M16
110 FR	55	125	-	110	-	255	200	176	120	295	127	15	23,5	55	6,5	42	218	96,5	M20
125 FR	55	145	-	130	-	290	230	204	140	340	147	15	27,5	60	7	46	252	112,5	M20

Order form

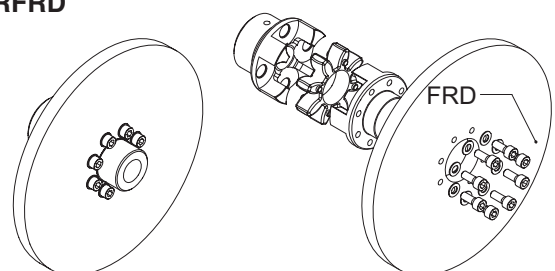
For hub “GR” order form please see TRASCO® GR base program

GRFRD

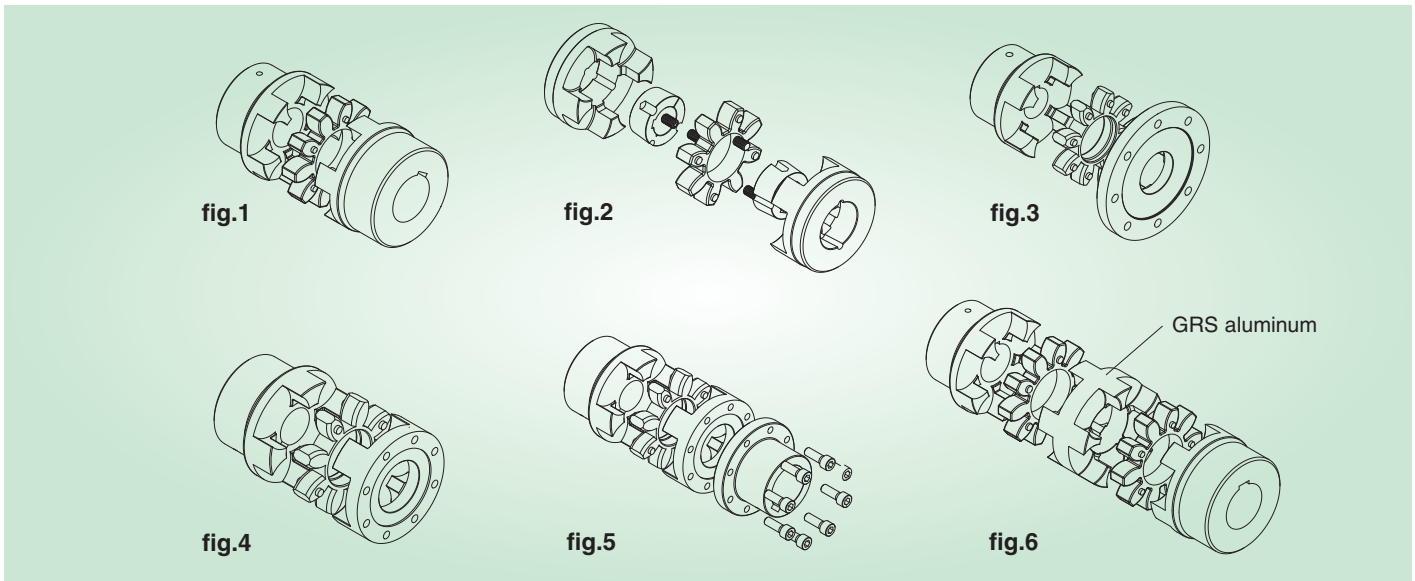
Brake side hub
Type
GRFR 48

Disc on request.

W _{FRD}	“GRFRD” disc weight	kg
J _{FRD}	“GRFRD” moment of inertia	kgm ²
Nr	Number of screws	



TRASCO® couplings weight and moment of inertia

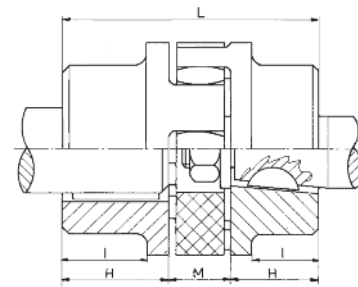
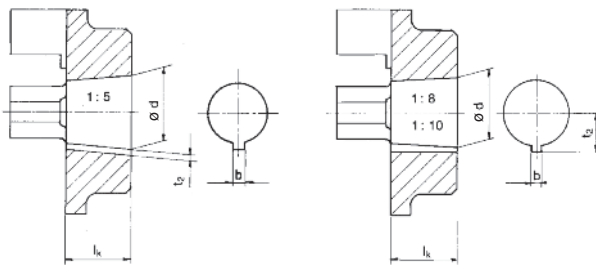


Type		GR (A esecuz.) fig. 1	GR (B esecuz.) fig. 1	GR (AB esecuz.) fig. 1	GRALU (esecuz. A) fig. 1	GRALU (B esecuz.) fig. 1	GRALU (AB esecuz.) fig. 1	GRB fig. 2	GRF (CF) fig. 3	GRF (CFN) fig. 4	GRF (BFN) fig. 5	Spacer element GRS fig. 6
19/24	W [kg]	-	0,37	-	-	0,14	-	-	0,23	-	-	-
	J [kgm ²]	-	0,0001	-	-	0,00004	-	-	0,00006	-	-	-
24/32	W [kg]	0,56	0,78	0,67	0,22	0,31	0,26	-	0,3	0,18	0,42	0,14
	J [kgm ²]	0,0002	0,0004	0,0003	0,00008	0,00015	0,00012	-	0,0003	0,00009	0,00018	0,00006
28/38	W [kg]	0,92	1,25	1,1	0,36	0,49	0,43	1	0,58	0,3	0,69	0,22
	J [kgm ²]	0,0005	0,0009	0,0007	0,0002	0,00034	0,00027	0,0007	0,0008	0,00021	0,00041	0,00013
38/45	W [kg]	1,97	2,5	2,25	0,77	0,98	0,9	1,7	0,8	0,313	0,933	0,35
	J [kgm ²]	0,0017	0,0027	0,002	0,0007	0,001	0,00084	0,0026	0,001	0,00047	0,00097	0,00035
42/55	W [kg]	3,1	3,85	3,46	-	1,5	-	2,8	1,41	0,76	1,81	0,51
	J [kgm ²]	0,0035	0,006	0,0047	-	0,002	-	0,0036	0,004	0,0012	0,0023	0,0007
48/60	W [kg]	4,2	5,3	4,75	-	2	-	4,7	1,62	0,89	2,27	0,67
	J [kgm ²]	0,006	0,01	0,008	-	0,004	-	0,0078	0,005	0,0017	0,0035	0,001
55/70	W [kg]	6,4	7,8	7,1	-	-	-	5	2,82	1,47	3,55	0,97
	J [kgm ²]	0,012	0,02	0,015	-	-	-	0,012	0,012	0,0035	0,007	0,002
65/75	W [kg]	9,7	11,8	10,8	-	-	-	6,9	3,46	1,89	4,89	1,43
	J [kgm ²]	0,024	0,035	0,03	-	-	-	0,014	0,017	0,0059	0,0123	0,004
75/90	W [kg]	15,2	20,8	18	-	-	-	14,8	5,03	3	7,86	2,2
	J [kgm ²]	0,051	0,082	0,07	-	-	-	0,065	0,032	0,0125	0,0275	0,009
90/100	W [kg]	26,2	30,2	28,2	-	-	-	35,4	7,9	4,87	13,54	3,9
	J [kgm ²]	0,13	0,17	0,15	-	-	-	0,162	0,073	0,033	0,108	0,025
100/110	W [kg]	32,6	-	-	-	-	-	-	13,5	7,55	20,15	-
	J [kgm ²]	0,22	-	-	-	-	-	-	0,139	0,063	0,14	-
110/125	W [kg]	45,5	-	-	-	-	-	-	18,8	10,15	27,05	-
	J [kgm ²]	0,38	-	-	-	-	-	-	0,255	0,11	0,242	-
125/145	W [kg]	68,8	-	-	-	-	-	-	27,4	14,9	40,9	-
	J [kgm ²]	0,76	-	-	-	-	-	-	0,463	0,21	0,48	-

Weight and moments of inertia are calculated on hubs with max diameter bore.

Tables for TRASCO® couplings with taper or splined bores

TRASCO®



Taper 1:5 per: BOSCH - BUCHER- LEDUC - DÜSTERLOH

Code	$\varnothing d + 0,05$	b JS9	$t2 + 0,1$	l_k
a1	9,85	2	1	11,5
a2	16,85	3	1,8	18,5
a3	19,85	4	2,2	21,5
a4	21,95	3	1,8	21,5
a5	24,85	5	2,9	26,5
a6	29,85	6	2,6	31,5
a7	34,85	6	2,6	36,5
a8	39,85	6	2,6	41,5

SAE splined profile

Code	Size	Head	Pitch	N. of teeth	\sphericalangle
PH-S	5/8"	14,28	16/32	9	30°
PI-S	3/4"	17,46	16/32	11	30°
PB-S	7/8"	20,63	16/32	13	30°
PB-BS	1"	23,81	16/32	15	30°
PJ	1 1/8"	26,98	16/32	17	30°
PC-S	1 1/4"	29,63	dic-24	14	30°
PA-S	1 3/8"	33,33	16/32	21	30°
PD-S	1 1/2"	36,51	16/32	23	30°
PE-S	1 3/4"	42,86	16/32	27	30°
PF	2 9/16"	63,5	16/32	40	30°

Taper 1:8 per: ATOS - CASAPPA - GARBE LAHMEYER - JOTTI & STROZZI MARZOCCHI - SALAMI - SAUER-FLUID

Code	$\varnothing d + 0,05$	b + 0,05	$t2 + 0,1$	l_k
b1	9,7	2,4	6	17
b2	11,6	3	7,1	16,5
b3	13	2,4	7,3	21
b4	14	3	8,5	17,5
b5	14,3	3,2	8,5	19,5
b6	17,287	3,2	9,6	24
b7	17,287	4	10,3	24
b8	17,287	3	9,7	24
b9	22,002	3,99	12,4	28
b10	25,463	4,78	15,1	36
b11	25,463	5	15,5	36
b12	27	4,78	15,3	32,5
b13	28,45	6	15,1	38,5
b14	33,176	6,38	18,8	44
b15	33,176	7	18,8	44
b16	43,057	7,95	3,378	51
b17	41,15	8	3,1	42,5

DIN 5482

Code	Size	Head	Pitch	N. of teeth	Tolerance
P 8217	A 17 x 14	14,4	1,6	9	0,6
P 8228	A 28 x 25	26,25	1,75	15	0,302
P 8230	A 30 x 27	28	1,75	16	0,327
P 8235	A 35 x 31	31,5	1,75	18	0,676
P 8240	A 40 x 36	38	1,9	20	0,049
P 8245	A 45 x 41	44	2	22	0,181
P 8250	A 50 x 45	48	2	24	0,181

DIN 5480

Size	Head	Pitch	N. of teeth
20 x 1 x 18 x 7 H	18	1	18
20 x 1,25 x 14 x 7 H	17,5	1,25	14
25 x 1,25 x 18 x 7 H	22,5	1,25	18
30 x 2 x 13 x 7 H	26	2	13
30 x 2 x 14 x 7 H	26	2	14
35 x 2 x 16 x 7 H	32	2	16
40 x 2 x 18 x 7 H	36	2	18
45 x 2 x 21 x 7 H	41	2	21
48 x 2 x 22 x 9 H	44	2	22
50 x 2 x 24 x 7 H	48	2	24

Taper 1:10 per: PARKER HANNIFIN NMF - TEVES

Code	$\varnothing d + 0,05$	b JS9	$t2 + 0,1$	l_k
c1	19,95	5	12,1	32
c2	24,95	6	14,1	45
c3	29,75	8	17	50