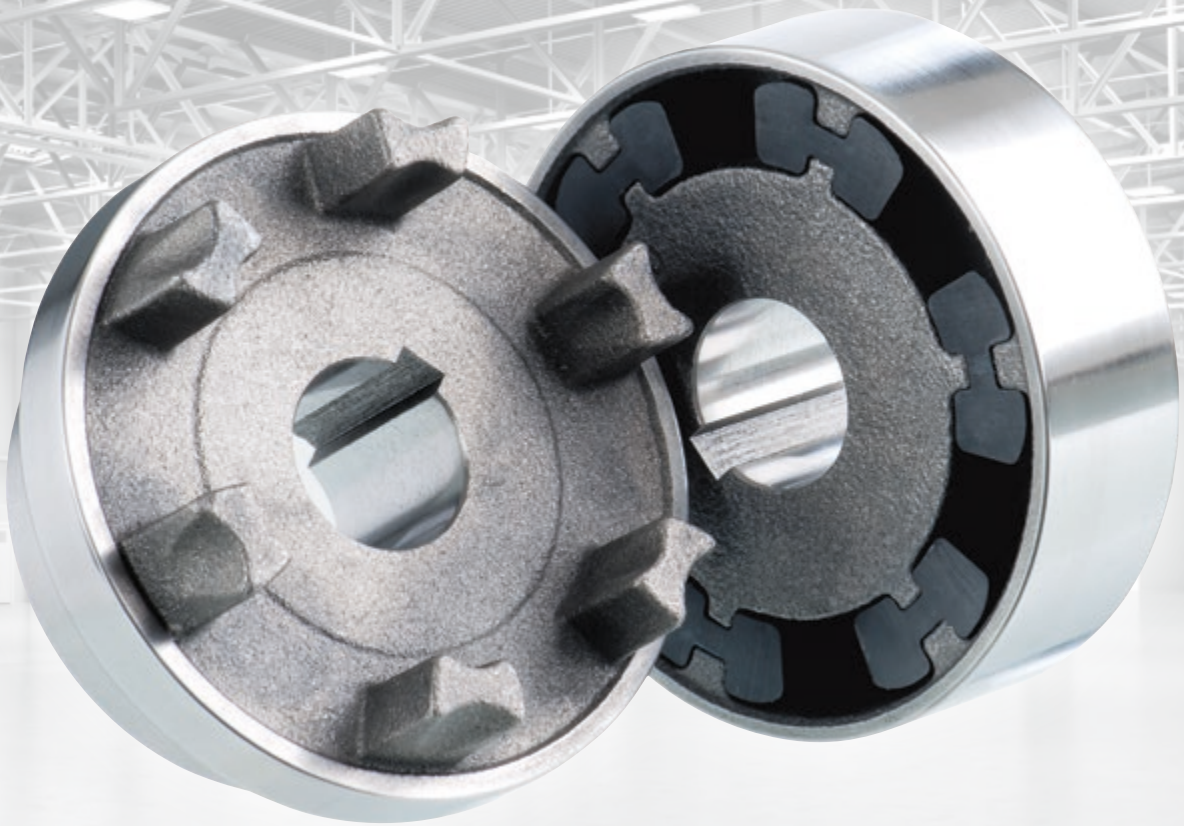


TECNAMIC

Dynamic Drive Technology

Flexible Couplings

PEX



PEX

The flexible Pex couplings are claw couplings with flexible elements to provide a torsionally flexible connection of shafts. The flexible elements excel in their wear resistance, ageing resistance and their temperature resistance from -30°C to $+80^{\circ}\text{C}$. Thanks to their flexibility, impacts, rotary vibrations and noises are effectively absorbed. The flexible elements are dimensioned such that radial, axial and angular movements between the two halves of the coupling are cancelled out.

The flexible Pex couplings are of the plug-in type for installation and do not involve any particularly rigorous requirements with respect to alignment accuracy. Pex couplings can be used in the whole of machine construction wherever a reliable shaft connection is needed between motor and working machine.

Type A

The Pex type A coupling is manufactured in three-piece design. With this design it is possible to install packages without axial displacement of the drive engine or working machine.

Type B

The Pex type B coupling is fail-safe up to the fracture moment of the cast iron transmission cam and this provides maximum operational safety. The flexible elements can be supplied with hardness 80° Shore A. With the fixed position of the flexible elements its deformability in axial direction is free, and so no damaging axial forces can act on the machine bearing even with alternating torque.



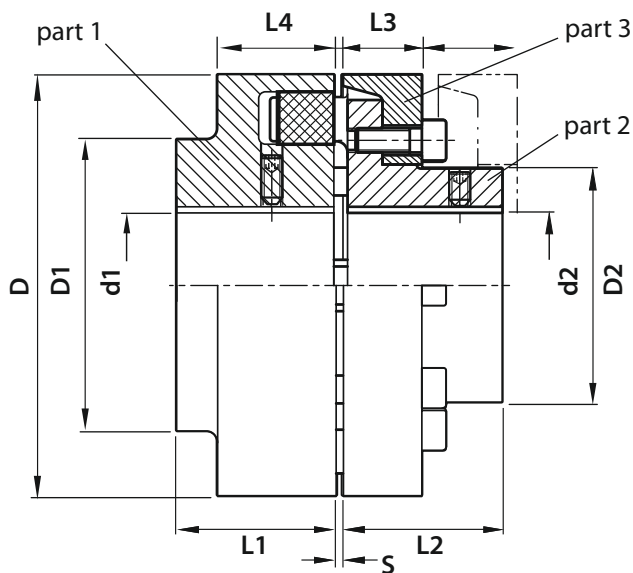
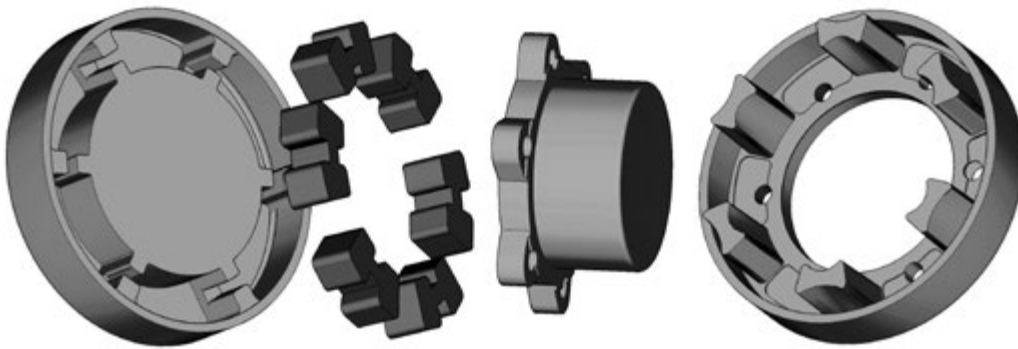
Selection

The torque of the machine T_{AN} is determined by:
$$T_{AN} [\text{Nm}] = 9550 \times \frac{P_{Motor} [\text{kW}]}{n [\text{rpm}]}$$

This torque T_{AN} multiplied by a safety factor S depending on the application and the temperature factor S_T (see table page 5) gives the required nominal coupling torque T_{KN} .

Result: $T_{KN} \geq S \times S_T \times T_{AN}$

PEX – Type A



➤ Materials: Coupling half EN-GJL-250
Flexible elements NBR 80° Shore A

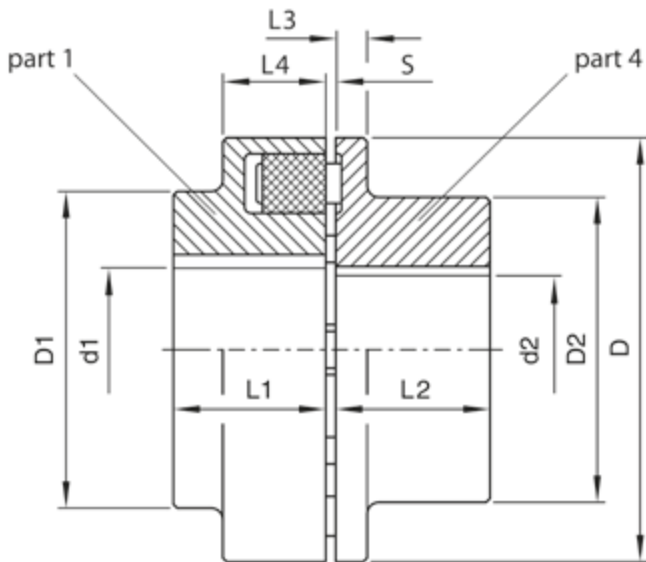
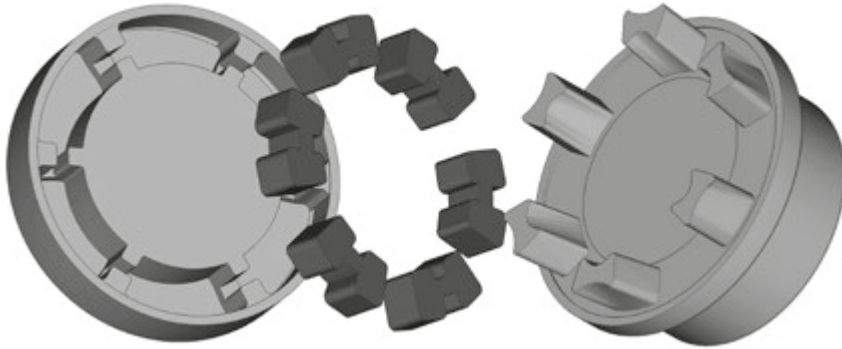
Type A

Size	Nominal torque Nm	Max. rotation speed rpm	Pre. bore		Max. bore		D	L1	L2	D1	D2	L3	L4	S	Weight ¹⁾ kg			Moments of inertia ¹⁾ kgm ²	Max. shaft misalignment at rotational speed n = 1500 rpm ²⁾		
			d1	d2	d1	d2									part 1	part 2	part 3		axial ΔK_a mm	radial ΔK_r mm	angular ΔK_w °
110	160	5300	17	12	48	38	110	40	40	86	62	20	34	3	1.95	1.38	1.97	0.003	0.20	0.20	0.10
125	240	5100	18	15	55	45	125	50	50	100	75	23	36	3	3.05	2.42	1.97	0.005	0.25	0.25	0.10
140	360	4900	20	17	60	50	140	55	55	100	82	28	34	3	3.65	3.04	2.50	0.008	0.25	0.25	0.10
160	560	4250	25	20	65	58	160	60	60	108	95	28	39	4	5.05	4.19	3.49	0.014	0.30	0.30	0.10
180	880	3800	25	20	75	65	180	70	70	125	108	30	42	4	7.80	5.94	4.41	0.025	0.30	0.30	0.10
200	1340	3400	30	25	85	75	200	80	80	140	122	32	47	4	11.00	8.61	6.02	0.04	0.30	0.30	0.09
225	2000	3000	35	30	90	85	225	90	90	150	136	38	52	4	15.00	12.06	8.93	0.08	0.35	0.35	0.09
250	2800	2750	45	45	100	95	250	100	100	165	155	42	60	6	19.50	17.41	11.70	0.13	0.35	0.35	0.08

1) The information concerning weights and moments of inertia apply for medium holes.

2) The values mentioned are valid for n = 1500 rpm and may occur only separately. At multiple misalignments or higher speeds the values must be reduced.

PEX – Type B



➤ Materials: Coupling half EN-GJL-250
Flexible elements NBR 80° Shore A

Type B

Size	Nominal torque Nm	Max. rotation speed rpm	Pre. bore		Max. bore		D	L1	L2	D1	D2	L3	L4	S	Weight ¹⁾ kg		Moments of inertia ¹⁾ kgm ²	Max. shaft misalignment at rotational speed n = 1500 rpm ²⁾		
			d1	d2	d1	d2									part 1	part 4		axial ΔK_a mm	radial ΔK_r mm	angular ΔK_w °
58	19	7500	-	-	19	24	58	20	20	-	40	8	20	3	0.24	0.28	0.0001	0.20	0.20	0.15
68	34	7000	-	-	24	28	68	20	20	-	50	8	20	3	0.32	0.45	0.0002	0.20	0.20	0.15
80	60	6000	12	12	30	38	80	30	30	-	68	10	30	3	0.75	0.94	0.0006	0.20	0.20	0.12
95	100	5500	12	12	42	42	95	35	35	76	76	12	30	3	1.30	1.55	0.0013	0.20	0.20	0.12
110	160	5300	17	17	48	48	110	40	40	86	86	14	34	3	1.95	2.25	0.003	0.20	0.20	0.100
125	240	5100	18	18	55	55	125	50	50	100	100	18	36	3	3.05	3.60	0.006	0.25	0.25	0.10
140	360	4900	20	20	60	60	140	55	55	100	100	20	34	3	3.65	4.50	0.007	0.25	0.25	0.10
160	560	4250	25	25	65	65	160	60	60	108	108	20	39	4	5.05	5.95	0.01	0.30	0.30	0.10
180	880	3800	25	25	75	75	180	70	70	125	125	20	42	4	7.80	8.50	0.02	0.30	0.30	0.10
200	1340	3400	30	30	85	85	200	80	80	140	140	24	47	4	11.00	12.40	0.04	0.30	0.30	0.09
225	2000	3000	35	35	90	90	225	90	90	150	150	18	52	4	15.00	15.50	0.07	0.35	0.35	0.09
250	2800	2750	45	45	100	100	250	100	100	165	165	18	60	6	19.50	19.50	0.12	0.35	0.35	0.08

1) The information concerning weights and moments of inertia apply for medium holes.

2) The values mentioned are valid for n = 1500 rpm and may occur only separately. At multiple misalignments or higher speeds the values must be reduced.

Safety Factor S

Assignment of load characteristics according to type of working machine

S	Dredgers	S	Rubber Machinery	S	Pumps
S	Bucket conveyor	M	Extruders	G	Piston pumps
M	Landing gear (caterpillar)	S	Calenders	M	Centrifugal pumps (light liquids)
M	Landing gear (rail)	M	Kneading mills	S	Centrifugal pumps (viscous liquids)
M	Manoeuvring winches	S	Mixers	S	Plunger pumps
M	Pumps	S	Rolling mills	S	Press pumps
S	Impellers		Wood Working Machines		Stone and Clay Working Machines
S	Cutter heads	S	Barkers	S	Crusher
M	Slewing gear	M	Planing machines	S	Rotary ovens
	Generators, Transformers	G	Wood working machines	S	Hammer mills
M	Frequency transformers	S	Saw frames	S	Ball mills
M	Generators		Cranes	S	Tube mills
M	Welding generators	G	Luffing gear block	S	Beater mills
	Chemical Industry	S	Travelling gear	S	Brick presses
M	Cooling drums	G	Hoist gear		Textile Machines
M	Mixers	M	Slewing gear	M	Batchers
G	Agitators (liquid material)	M	Derricking jib gear	M	Printing and dyeing machines
M	Agitators (semi-liquid material)		Plastic Industry Machines	M	Tanning vats
M	Drying drums	M	Extruders	M	Willows
G	Centrifuges (light)	M	Calenders	M	Looms
M	Centrifuges (heavy)	M	Mixers		Compressors
	Oil Industry	M	Crushers	S	Piston compressors
M	Pipeline pumps		Metal Working Machines	M	Turbo compressors
S	Rotary drilling equipment	M	Plate bending machines		Metal Rolling Mills
	Conveyors	S	Plate straightening machines	S	Plate shears
M	Pit-head winches	S	Hammers	M	Manipulator for turning sheets
S	Winding engines	S	Metal planning machines	S	Ingot pushers
M	Jointed-band conveyors	S	Presses	S	Ingot and slabbing-mill train
G	Belt conveyors (bulk material)	M	Shears	S	Ingot handling machinery
M	Belt conveyors (piece goods)	S	Forging presses	M	Wire drawing benches
M	Band pocket conveyors	G	Punch presses	S	Descaling machines
M	Chain conveyors	M	Countershafts, line shafts	S	Thin plate mills
M	Circular conveyors	M	Machine tools (main drives)	S	Heavy and medium plate mills
M	Load elevators	G	Machine tools (auxiliary drives)	M	Winding machines (strip and wire)
M	Bucket conveyors for flour		Food Industry Machinery	S	Cold rolling mills
M	Passenger lifts	G	Bottling and container filling machines	M	Chain tractor
M	Plate conveyors	M	Kneading machines	S	Billet shears
M	Screw conveyors	M	Mash tubs	M	Cooling beds
M	Ballast elevators	G	Packaging machines	M	Cross tractor
S	Inclined hoists	M	Cane crushers	M	Roller tables (light)
M	Steel belt conveyors	M	Cane cutters	S	Roller tables (heavy)
M	Drag chain conveyors	S	Cane mills	M	Roller straighteners
	Blowers, Ventilators	M	Sugar beet cutters	S	Tube welding machines
M	Rotary piston blowers	M	Sugar beet washing machines	M	Trimming shears
G	Blowers (axial/radial)		Paper Machines	S	Cropping shears
M	Cooling tower fans	S	Couches	S	Continuous casting plant
M	Induced draught fans	S	Glazing cylinders	M	Rollers adjustment drive
G	Turbo blowers	M	Pulper	S	Manipulators
	Building Machinery	S	Pulp grinders		Laundries
S	Hoists	M	Calenders	M	Tumblers
G	Concrete mixers	S	Wet presses	M	Washing machines
S	Road construction machinery	S	Willows		Water Treatment
		S	Suction presses	M	Aerators
		S	Suction rolls	M	Screw pumps
		S	Drying cylinders		

Operating factor S

Driving machines	Load characteristics of the working machine		
	G	M	S
Electric motors, turbines, hydraulic motors	1	1.25	1.75
Piston machines 4–6 cylinders	1.25	1.5	2
Piston machines 1–3 cylinders	1.5	2	2.5

Temperature factor S_T

θ [°C]	S _T
-20 < θ < +30	1.0
+30 < θ < +40	1.2
+40 < θ < +60	1.5
+60 < θ < +80	1.8

Tecnamic GmbH

Zunftweg 4
59463 Werl
Germany

T +49 2922 9273-888

F +49 2922 9273-880

E info@tecnamic.com



TECNAMIC

www.tecnamic.com