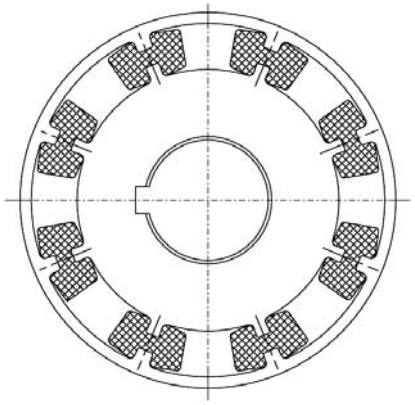
FLEXING COUPLING
Type N-EUPEX

Manual

Flexing Coupling



The fail safe N-EUPEX coupling
Pin coupling wich upon failure of flexible elements makes emergency torque transmission possible via the metallic parts (with fail-safe device)

Sommaire

1 CHARACTERISTIC FEATURES

BIPEX couplings are used for all engineering purposes where an uninterrupted transmission of power is required even in the presence of unavoidable shaft misalignment.
Due to their torsional flexibility BIPEX couplings offer the possibility of moving critical torsional vibrations from the operating arec of the mechanical equipment in such a vvay that no negative effects are to be expected.
Due to the high interna) damping property of the flexible elements BIPEX couplings allow passing of critical speed ranges, and resonance step-up can be limited. Furthermore, inherent shocks are dampened, thus protecting the coupled machine parts.
The salient features of the BIPEX couplings are small dimensions, low weights and low mass moments of inertia.
BIPEX couplings are fail-safe. Thus, they offer maximum operational reliability which is limited by the load carrying ability of the castings. They require no maintenance except for regular checking of the flexibles.
BIPEX couplings are available for torques from 13.5 to 3 700 Nm.
N-EUPEX couplings
N-EUPEX couplings are used for all engineering purposes where an uninterrupted transmission of power is required even in the presence of unavoidable shaft misalignments.
Due to their torsional flexibility N-EUPEX couplings offer the possibility of moving critical torsional vibrations from the operating area of the mechanical equipment in such a way that no negative effects are to be expected.
Due to the high internal damping property of the flexible elements N-EUPEX couplings allow passing of critical speed ranges, and resonance step-up can be limited. Furthermore, inherent shocks are dampened, thus protecting the coupled machine parts.
The salient features of the N-EUPEX couplings are small dimensions, low weights and low mass moments of inertia.
N-EUPEX couplings in standard design ensure uninterrupted transmission of power. Thus, they offer maximum operational reliability — even in the presence of unexpected overloads — which is limited by the load carrying capacity of the metallic parts. They require no maintenance except for regular checking of the flexibles. They are made in 7 types and 23 sizes and thus offer a wide range of installation possibilities. Several types and many sizes are available ex stock for torques from 19 to 62000 Nm (see first part of this brochure).

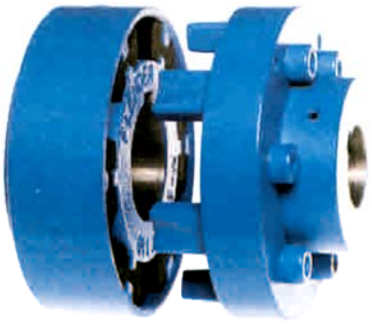
2 - DESIGN AND OPERATION

N-EUPEX couplings provide torsional, angular, transverse and axial flexibility, they give positive engagement and are suitable for both directions of rotation and for reversing operation. Furthermore, they are fail-safe until the shear torque of the metallic parts is achieved.
N-EUPEX couplings in standard design are made out of high-quality cast iron GG-25 They are in a cylindrical and compact form.
The torque is transmitted through flexible coupling elements located in recesses equally distributed over the circumference of coupling part 1 of types A, B, and H and part 10 of types D, E, 0, and P, respectively. These flexibles can be used at ambient temperatures from -30 °C up to +80 ° C. The suitably designed fingers of coupling part 3, or part 4 or 7 engage in the intermediate spaces.
When loaded, the flexible elements are mainly subjected to compression as the torque increases. The angle of twist φ initially grows rapidly and then levels off (Fig. 5.1). This non-linear spring characteristic of the N-EUPEX coupling and the favourable damping properties effectively counteract any dangerous increase of any occuring vibrations so that the transmission system is protected.
N-EUPEX couplings will compensate to a certain extent for parallel offset misalignent ΔK_r (Fig. 5.2), angular misalignment ΔK_w, (Fig. 5.3), and axial movement ΔK_a (Fig. 5.4) of the shafts, but it should be noted that accurate alignment will increase the working life of the coupling flexibles.
The designer has a choice of a large variety of assembly designs by combining N-EUPEX coupling parts with pulleys of all kinds, floating shafts, intermediate sleeves or brake drums.

In the basic type A which consists of three parts (page 15), releasing and withdrawing part 3 enables shafts and machines to be separated without axial displacement. The two-part type B (page 15) necessitates axial displacement by the length of the fingers for the purpose of separation.
The flanged parts 10 of types E and D (page 16 are suitable for bolting to pulleys, flywheels or brake disks.
Types 0 and P (page 17) are provided with brake drums according to DIN 15431 (Edition 04. 1980).
With type H (page 18) the intermediate sleeve enables the impeller and bearing assembly of a centrifugal pump drive to be dismantled without removing the motor.

Special designs:
N-EUPEX couplings can be made in special designs (see page 20). If required, flexibles with higher elasticity (60 Shore hardness) can be supplied, but a reduction by about 40% of the nominal coupling torque to be transmitted must be taken into consideration when selecting the size. It is also possible to supply flexibles with a lower elasticity (90 Shore hardness).

Part 1 with flexibles Part 3 with fingers Part 2



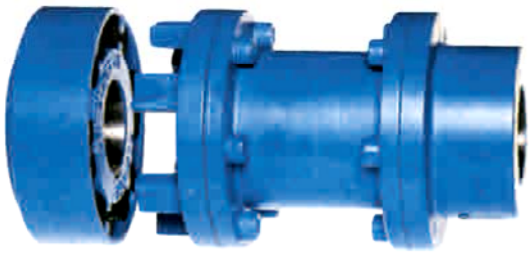
Part 1 Part 4

Type B, in 2 parts

Part 1 Part 2 Part 3

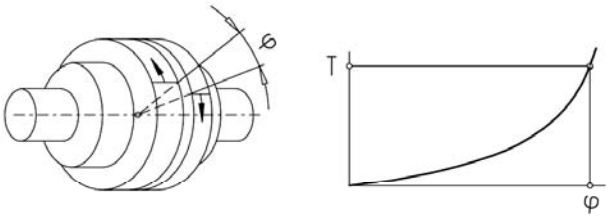
Type A, in 3 parts

Part 1 Part 7 Part 6 Part 5



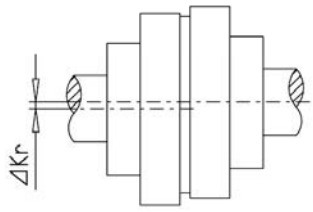
Type H, with intermediate sleeve

5.1



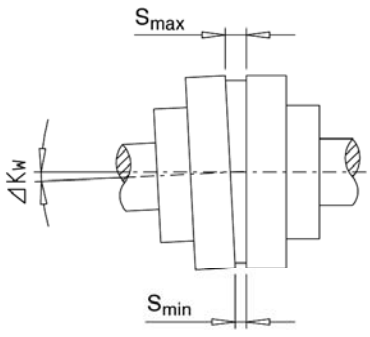
Torsional spring rate and torsion angle

5.2



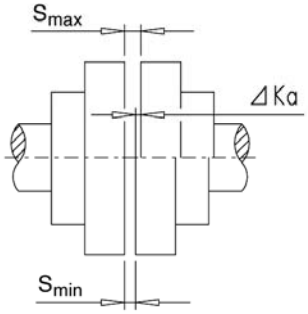
Parallel offset misalignment

5.3



Angular misalignment

5.4



Axial mivement $\Delta K_a = S_{max} - S_{min}$

3 - DESIGN HINTS FOR THE INSTALLATION

1. Flexible coupling elements

N-EUPEX couplings in standard design are supplied with flexible elements of synthetic rubber (Shore 80).
For reversing operation and for drives with very high mass acceleration and very heavy shock loads (reciprocating pumps, reciprocating compressors and the like) N-EUPEX couplings up to and including size 200 can be provided with oversize flexibles — almost without torsional play. Uninterrupted transmission of torque and reliability of operation cannot be guaranteed unless original N-EUPEX flexible elements are used.

2. Arrangement of coupling parts

The arrangement of the coupling parts on the shaft ends to be connected is optional.

3. Bores

For the appropriate tolerance ranges of finished bores, see table 34.1

4. Securing the coupling

N-EUPEX couplings are usually provided with parallel keyways according to DIN 6885/1 and set screws. Taper keyways according to DIN 6886, stressed-type fastening from the inside of the hub, are possible. For this design, however, it should be noted that the maximum permissible bores may be only 60% of those permitted for parallel keyways, unless the hub material is nodular graphite cast iron (GGG). If end plates are used, please refer to us.

In couplings of sizes 58, 68, 80, 95, and 110 and also on part 9 of sizes 125 and 140, the tapped holes for set screws are — depending on the bore size — partly opposite the keyway.

5. **Flange-mounted pulleys or flywheels** For types D and E the permissible peripheral speeds of the flange-mounted pulleys or flywheels should be checked. Pulleys and the like to be supplied by us are generally mounted to part 10.

6. Supporting the shaft ends

The shaft ends to be connected must be supported directly in front of and behind the coupling.

6. Fitting and removing shafts

N-EUPEX couplings of types A. D, P, and H enable shafts and machines to be fitted and dismantled without axial displacement.
With coupling types A, D and P dimension P in tables 15.1, 16.1 and 17.1 should be observed.

7. **Balancing** (acc. to DIN 740)

General remarks: The balancing quality of all coupling hubs with finished bores accords at least with G16 (to DIN 740 for n = 1500 min^{-1} or v max. = 30 m/s, for balancing in one plane).

Balancing is carried out with half parallel key (DIN-ISO 8821)
To be agreed: If operating or plant behaviour requires a higher balancing quality, this must be agreed separately. For peripheral speeds of v > 30 m/s, Render recommends a balancing quality of G6.3, which can be carried out in two planes, if required, and must also be ordered separately.

If balancing is required with full parallel key, **this must be expressly stated.**

8. Vibration calculations

Data for the design according to DIN 740/2 and for vibration calculations can be supplied on request.
Vibration calculations can also be ordered from Render's design department.

9. **Installation and putting into service** When installing and putting N-EUPEX couplings into service, please refer to the Operating Instructions.

4 - SELECTION OF SIZE

For the service factors empirical values were taken as a basis which generally assess the performance of input and output combinations in service. Predominant periodic excitation of the plant or starting and braking of large masses require a design according to DIN 740/2 or vibration calculations which can also be ordered from us. Data for calculations are available, if required.

When selecting the size of a coupling, the service factor f, of table 8.11 depending on the specific load classification symbol of table 8.1 must be allowed

for. This service factor is valid for up to **25 starts per hour.** For up to 120 starts per hour use the nearest larger service factor. For more frequent starting, please refer to us.

1. Application of the N-EUPEX coupling

1.1 Type of prime mover; power rating P_M in kW, speed n_M in min^{-1}

1.2 Type of driven machine; power rating $_{P2}$ in kW

2. Load conditions of prime mover and driven machine

2.1 Mode of operation: Uniform or non-uniform; any occurring shocks. Mass moments of inertia J of prime mover and driven machine can increase the torque to be transmitted due to service conditions.

2.2 Number of starts per hour

3. Ambient conditions

3.1 Ambient temperature in °C:
-30 °C s T„ s +80 °C

3.2 Ambient medium

I Load classification symbols listed acc. to applications and industries

Blowers, Ventilators 1)
- U Rotary piston blowers TN ≤ 75 Nm
- U M Rotary piston blowers TN ≤ 750 Nm
- H Rotary piston blowers TN > 750 Nm
- U Blowers (axial/radial) T_N ≤ 75 Nm
- U M Blowers (axial/radial) TN ≤ 750 Nm
- H Blowers (axial/radial) TN > 750 Nm
- U Cooling tower fans TN ≤ 75 Nm
- M Cooling tower fans TN ≤ 750 Nm
- H Cooling tower fans TN > 750 Nm
- U Induced draught fans TN ≤ 75 Nm
- M Induced draught fans T_N ≤ 750 Nm
- H Induced draught fans TN > 750 Nm
- U Turbo blowers TN ≤ 75 Nm
- M Turbo blowers TN ≤ 750 Nm
- H Turbo blowers TN > 750 Nm

Building machinery
- M Concrete mixers
- M Hoists
- M Road construction machinery

Chemical industry
- U Agitators (liquid material)
- M Agitators (semi-liquid material)
- M Centrifuges (heavy)
- U Centrifuges (light)
- M Cooling drums
- M Drying drums
- M Mixers

Compressors
- H Piston compressors
- M Turbo compressors

Conveyors
- M Apron conveyors
- M Ballast elevators
- M Band pocket conveyors
- M Belt conveyors (bulk material)
- H Belt conveyors (piece goods)
- U Bucket conveyors for flour
- M Chain conveyors
- M Circular conveyors M Goods lifts
- H Hoists
- H Inclined hoists
- M Link conveyors
- M Passenger lifts
- M Screw conveyors
- M Steel belt conveyors
- M Trough chain conveyors
- M Hauling winches

Cranes
- M Derricking jib gears
- H Hoisting gears
- U Lulling gears M Slewing gears
- H Travelling gears

Dredgers
- H Bucket conveyors
- H Bucket wheels
- H Cutter heads
- M Manoeuvring winches
- M Pumps
- M Slewing gears
- H Travelling gears (caterpillar)
- M Travelling gears (rails)

Food industry machinery
- U Bottling and container filling machines
- M Cane crushers
- M Cane knives
- M Cane mills
- H Kneading machines
- M Mash tubs, crystallizers
- U Packaging machines
- M Sugar beet cutters
- M Sugar beet washing machines

Generators, transformers
- H Frequency transformers
- H Generators
- H Welding generators

Laundries
- M Tumblers
- M Washing machines

Metal rolling mills
- H Billet shears
- M Chain transfers
- H Cold rolling mills
- H Continuous casting plants
- H M Cooling beds
- H Cropping shears
- H M Cross transfers
- H Descaling machines
- H Heavy and medium plate mills
- H Ingot and blooming mills
- H Ingot handling machinery
- H Ingot pushers
- H Manipulators
- H Plate shears
- M Plate filters
- M Roller adjustment drives
- M Roller straighteners
- H Roller tables (heavy)
- H M Roller tables (light)
- H Sheet mills
- M Trimming shears
- H Tube welding machines
- H M Winding machines (strip and wire)
- M Wire drawing benches

Metal working machines
- U Countershafts, line shafts
- H Forging presses
- H Hammers
- U Machine tools, auxiliary drives
- M Machine tools, main drives
- H Metal planing machines
- H Plate straightening machines
- H Presses
- H Punch presses
- M Shears
- M Sheet metal bending machines

Oil industry
- M Pipeline pumps
- H Rotary drilling equipment

Paper machines
- H Calenders
- H Couches
- H Drying cylinders
- H Glazing cylinders
- H Pulpers
- H Pulp grinders
- H Suction rolls
- H Suction presses Wet presses
- H Willows

Plastic industry machinery
- M Calenders
- M Crushers
- M Extruders
- M Mixers

Pumps
- U Centrifugal pumps (light liquids)
- M Centrifugal pumps (viscous liquids)
- H Piston pumps
- H Plunger pumps
- H Pressure pumps

Rubber machinery
- M Calenders
- H Extruders
- M Mixers
- H Pug mills
- H Rolling mills

Stone and clay working machines
- H Ball mills
- H Beater mills
- H Breakers
- H Brick presses
- H Hammer mills
- H Rotary kilns
- H Tube mills

Textile machines
- M Batchers
- M Looms
- M Printing and dyeing machines
- M Tanning vats
- M Willows

Water treatment
- M Aerators
- U Screw pumps

Wood working machines
- H Barkers
- M Planing machines
- H Saw frames
- U Wood working machines

U = Uniform load
M = Medium shock load
H = Heavy shock load

Listed load classification symbols may be modified after giving exact details of operating conditions.

1) P = Power rating of driven machine in kW, n = speed in min-1

II Service factor f_1 (Daily operationg period up to 24 hours)

PRIME MOVER	LOAD SYMBOL OF DRIVEN MACHINE		
	U	M	H
Electric motors, Turbines, Hydraulic motors	1	1,25	1,75
Piston engines 4 - 6 cylinders cyclic variation 1 : 100 - 1 : 200	1,25	1,5	2
Piston engines 1 - 3 cylinders cyclic variation to 1 : 100	1,5	2	2,5

5 - CALCULATION EXAMPLES

Calculation example 1

Required: A N-EUPEX coupling for the drive of a press, to be mounted between electric motor and gear unit.

Electric motor	P_M = 110 kW
Press	P_2 = 95 kW
Speed	n = 1430 min-1
Starts per hour	30
Ambient temperature	16 °C

Solution:

The coupling must be designed for a power rating $P_{2K} = P_2 \times f_1$. Table I lists load symbol H for this application, resulting in a service factor f_1=1.75 acc. to table II. Since the starting frequency per hour exceeds 25, the nearest larger service factor has to be used : in this case f, = 2.

Thus P_{2K} = 95 x 2 = 190 M.

On page 11, for speed n = 1430 min-1 and the nearest larger nominal power rating PN = 200 kW you find coupling size 200.

Selected: N-EUPEX coupling A 200 available ex Flender stock.

Calculation example 2

Required: A N-EUPEX coupling for the drive of a centrifugal pump (light liquids), to be mounted between electric motor and pump.

Electric motor	P_M = 30 kW
Pump	P_2 = 28 kW
Speed	n = 1450 min-1
Starts per hour	5
Ambient temperature	50 °C

A spacer of a minimum length of 180 mm isrequired.

Solution:

The coupling must be designed for a power rating $P_{2K} = P_2 \times f_1$. Table I lists load symbol U for this application, resulting in a service factor f1 = 1 acc. to table II. Starting frequency per hour and ambient temperature are within the permissible limits.

Thus $T_{2K} = f_1 \times 9550 \times P_2/n$= 184 Nm.

Selected: Taking into consideration the geometry and the bore to be carried out, N-EUPEX coupling H 125 with intermediate sleeve, part 6 L_Z = 185 mm for s_3 = 200 mm, is selected. The hub length l_2 of part 5 is 70 mm. Length s_3 has to be stated in the order.

6 - NOMINAL POWER RATING

The nominal power ratings P_N in kW shown in table III as well as the nominal values P_N : n and the nominal torques $_{TN}$ on pages 15 to 18 are valid for :

- shock-free operation,
- up to 25 starts per hour, the permissible starting torque being 3 times the running torque for a short period,
- properly aligned shafts,
- ambient temperature or temperature of the shaft ends to be connected -30 °C up to +80 'C.

III Speeds and nominal power ratings

Vitesse min-1	Coupling sizes 58	68	80	95	110	125	140	160	180	200	225	250	280	315	350	400	440	480	520	560	610	660	710
	Nominal power ratings P_N in kW																						
10	0.02	0.036	0.063	0.11	0.17	0.25	0.38	0.59	0.9	1.4	2.1	2.9	4.1	5.8	8	10.5	14	17.5	22	30	40	51	65
12.5	0.025	0.044	0.078	0.13	0.21	0.31	0.47	0.73	1.2	1.8	2.6	3.7	5.1	7.2	10	13.5	17.5	21.5	27.5	38	50	64	81
16	0M2	0.057	0.1	0.17	0.27	0.4	0.6	0.95	1.5	2.2	3.3	4.7	6.5	9.2	13	17	22.5	27.5	35.5	50	65	82	105
20	0.04	0.071	0.13	0.21	0.34	0.5	0.75	1.2	1.9	2.8	4.2	5.9	8.2	11.5	16	21.5	28.5	35	44	60	80	105	130
25	0.05	0.089	0.16	0.26	0.42	0.63	0.94	1.5	2.3	3.5	5.2	7.3	10	14.5	20	27	35	43	55	75	100	130	160
31.5	0.063	0.11	0.2	0.33	0.53	0.79	1.2	1.9	2.9	4.4	6.6	9.2	13	18	25.5	34	45	55	70	95	125	160	205
40	0.08	0.14	0.25	0.42	0.67	1	1.5	2.3	3.7	5.6	8.4	11.S	16.5	23	32	43	57	70	89	120	160	205	260
50	0.1	0.18	0.31	0.52	0.84	1.2	1.9	2.9	4.6	7	10.5	14.5	20.5	29	40	54	71	87	110	150	200	255	324
63	0.13	0.22	0.4	0.66	1	1.6	2.4	3.7	5.8	8.8	13	18.5	25.5	36	51	68	89	110	140	190	250	325	410
80	0.16	0.28	0.5	0.84	1.3	2	3	4.7	7.4	11	16.5	23.5	32.5	46	65	86	115	140	175	245	320	410	520
100	0.2	0.36	0.63	1.1	1.7	2.5	3.8	5.9	9.2	14	21	29.5	41	58	80.5	108	140	175	220	305	400	510	650
125	0.25	0.44	0.78	1.3	2.1	3.1	4.7	7.3	11.5	17.5	26	37	51	72	101	135	175	215	275	380	500	640	810
160	0.0	0.57	1	1.7	2.7	4	6	9.4	14.5	22.5	33.5	47	65	92	130	170	225	280	355	485	635	820	1050
200	0.4	0.71	1.3	2.1	3.4	5	7.5	11.5	18.5	28	42	59	82	115	160	215	285	350	445	605	795	1050	1300
224	0.45	0.8	1.4	2.3	3.8	5.6	8.4	13	20.5	31.5	47	65	91	130	180	240	315	390	500	680	890	1150	1450
280	0.56	1	1.8	2.9	4.7	7	10.5	16.5	26	39	59	82	115	160	225	300	395	485	620	850	1110	1440	1800
315	0.63	1.1	2	3.3	5.3	7.9	12	18.5	29	44	66	92	130	180	255	340	445	545	700	950	1250	1610	2050
400	0.8	1.4	2.5	4.2	6.7	10	15	23.5	37	56	84	115	165	230	320	430	565	695	890	1210	1590	2050	2600
500	0.99	1.8	3.1	5.2	8.4	12.5	19	29.5	46	70	105	145	205	290	400	540	710	870	1110	1520	1990	2550	3250
630	1.3	2.2	4	6.6	10.5	15.5	23.5	37	58	88	130	185	255	365	510	680	890	1100	1400	1910	2500	3250	4100
730	1.5	2.6	4.6	7.6	12	18.5	27.5	43	67	102	153	215	300	420	590	785	1030	1270	1620	2220	2900	3750	4750
750	1.53	2.7	4.7	7.8	12.5	19	28.5	44	69	105	157	220	305	430	605	810	1060	1300	1660	2280	2980	3850	4850
800	1.6	2.8	5	8.4	13.5	20	30	47	74	110	165	235	325	460	645	860	1130	1390	1775	2430	3200	4100	5200
950	1.9	3.4	6	9.9	16	24	36	56	87	133	200	280	390	550	765	1020	1350	1650	2100	2880	3780	4850	6150
980	1.93	3.5	6.2	10	16.5	24.5	37	57	90	137	205	290	400	565	790	1050	1385	1700	2175	2975	3900	5000	
1000	2	3.6	6.3	10.5	16.7	25	38	58	92	140	210	295	410	575	800	1080	1410	1750	2220	3030	4000	5100	
1120	2.2	4	7	11.5	19	28	42	66	103	155	235	330	460	645	900	1210	1580	1950	2500	3400			
1250	2.5	4.4	7.8	13	21	31	47	73	115	175	260	365	510	720	1000	1350	1760	2150	2750				
1430	2.8	5.1	9	15	24	36	54	84	130	200	300	420	585	825	1150	1540	2020						
1600	3.2	5.7	10	16.5	27	40	60	94	145	225	335	470	650	920	1290	1730							
1750	3.5	6.2	11	18.5	29	44	66	103	160	245	365	510	715	1010	1410								
2000	4	7.1	12.5	21	34	50	75	117	185	280	420	585	815	1150									
2500	5	8.9	15.5	26	42	63	94	146	230	350	525	735											
2940	5.8	10.5	18.5	31	49	74	110	172	270	410	615												
3150	6.3	11	20	33	53	79	115	185	290	440													
3500	7	12.5	22	37	59	88	132	205	320														
4000	8	14	25	42	67	100	150	235															
5000	9.9	17.5	31	52	84	125																	

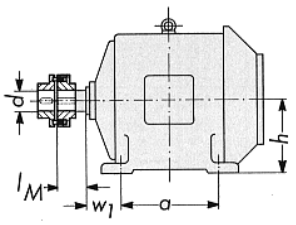
For differing operation conditions the service factor f_1 shuold be taken into account with reference to mechanical stress

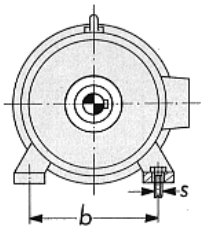
7 - FLEXING COUPLING FOR IEC MOTORS

Three-phase motors with squirrel cage rotor according to DIN 42673, part 1, April 1983 edition. The assignment of couplings to electric motors is valid for load classification symbols U and M for the driven machine taking into consideration tables I and II In case of a starting frequency of above 25 starts per hour the assignment is no longer valid.

Predominant periodic excitation of the plant or starting and braking of large masses require a design according to DIN 740/2 or vibration calculations which can also be ordered from us. Data for calculations are available, if required.

IV Power rating P_M of IEC motors ans assigned N-EUPEX couplings

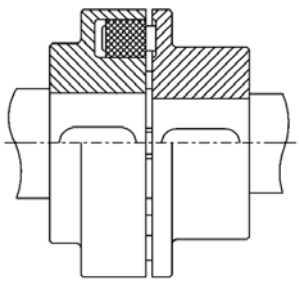




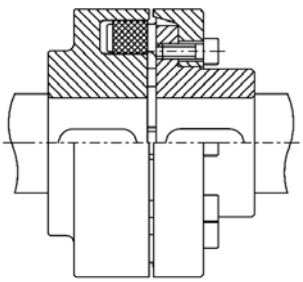
	3000 min-1		1500 min-1		1000 min-1		750 min-1		Fitting dimensions of IEC motors						
Motors size	Kw	Taille Accoup.	Kw	Taille Accoup.	Kw	Taille Accoup.	Kw	Taille Accoup.	h	a	b	w1	s	d x IM 3000	d x IM <= 1500
56	0,09	58	0,06	58					56	71	90	36	M5	9 x 20	
	0,12	58	0,09	58					56	71	90	36	M5	9 x 20	
63	0,18	58	0,12	58					63	80	100	40	M6	11 x 23	
	0,25	58	0,18	58					63	80	100	40	M6	11 x 23	
71	0,37	58	0,25	58					71	90	112	45	M6	14 x 30	
	0,55	58	0,37	58					71	90	112	45	M6	14 x 30	
80	0,75	58	0,55	58	0,37	58			80	100	125	50	M8	19 x 40	
	1,1	58	0,75	58	0,55	58			80	100	125	50	M8	19 x 40	
90 S	1,5	68	1,1	68	0,75	68			90	100	140	56	M8	24 x 50	
90 L	2,2	68	1,5	68	1,1	68			90	125	140	56	M8	24 x 50	
100 L	3	80	2,2	80	1,5	80	0,75	80	100	140	160	63	M10	28 x 60	
			3	80			1,1	80	100	140	160	63	M10	28 x 60	
112 M	4	80	4	80	2,2	80	1,5	80	112	140	190	70	M10	28 x 60	
132 S	5,5	95	5,5	95	3	95	2,2	95	132	140	216	89	M10	38 x 80	
	7,5	95							132	140	216	89	M10	38 x 80	
132 M			7,5	95	4	95	3	95	132	178	216	89	M10	38 x 80	
					5,5	95			132	178	216	89	M10	38 x 80	
160 M	11	95	11	95	7,5	95	4	95	160	210	254	108	M12	42 x 110	
	15	95					5,5	95	160	210	254	108	M12	42 x 110	
160 L	18,5	95	15	110	11	110	7,5	110	160	254	254	108	M12	42 x 110	
180 M	22	110	18,5	110					180	241	279	121	M12	48 x 110	
180 L			22	125	15	125	11	125	180	279	279	121	M12	48 x 110	
200 L	30	125	30	125	18,5	125	15	125	200	305	318	133	M16	55 x 110	
	37	125			22	140									
225 S			37	140			18,5	140	225	286	356	149	M16	55 x 110	60 x 140
225 M	45	125	45	140	30	140	22	140	225	311	356	149	M16	55 x 110	60 x 140
250 M	55	140	55	160	37	160	30	160	250	349	406	168	M20	60 x 140	65 x 140
280 S	75	160	75	180	45	180	37	180	280	368	457	190	M20	65 x 140	75 x 140
280 M	90	160	90	180	55	180	45	180	280	419	457	190	M20	65 x 140	75 x 140
315 S	110	160	110	200	75	200	55	200	315	406	508	216	M24	65 x 140	80 x 170
315 M	132	160	132	200	90	200	75	200	315	457	508	216	M24	65 x 140	80 x 170

8 - TYPES

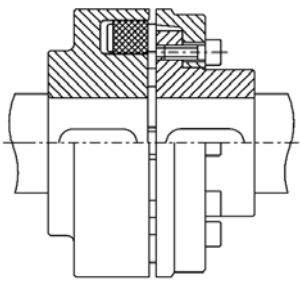
| B in 2 part **A** in 3 parts for 2 shafts coupling



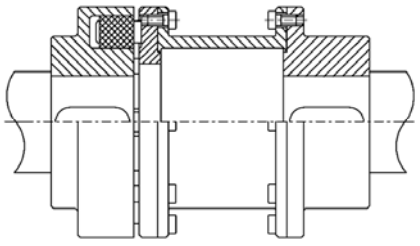
B size 58 to 280



A size 110 to 350



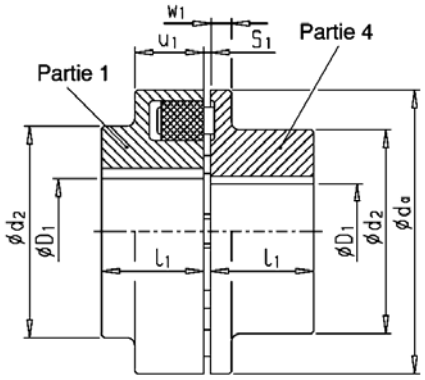
A size 400 to 710



H with intermediate sleeve

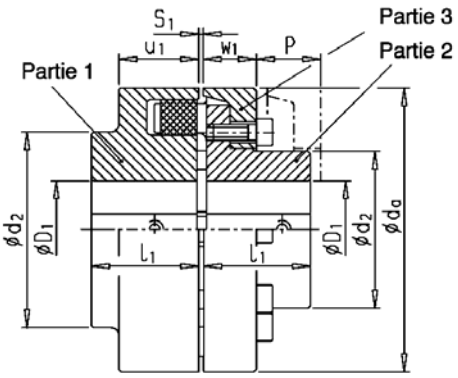
9 - FLEXIBLE COUPLING A and B FOR CONNECTING 2 SHAFT ENDS

B in 2 parts

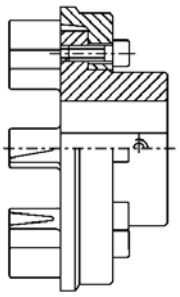


size 58 to 280

A in 3 parts



size 110 to 350



size 400 to 710

N-eupex				Bore D_1				Dimensions									Moment d'inertie J 2)			Poids 2)		
	1)			Part1		Part 4+2			d_2								Part	Part		Part	Part	
Type Taille	$\underline{P_N}$ n	$\underline{T_N}$ Nm	n max	Pilot Bore	to	Pilot Bore	to	d_a	Part 1	Part 4, 2	l_1	P	S_1	U_1	W_1	Part 1	4 o. 2 + 3	Total	1	4 o. 2 + 3	Total
			min-1	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*kgm2*	*kgm2*	*kgm2*	*kg*	*kg*	*kg*
B 58	0.002	19	5000		19	-	24	58		40	20		2...4	20	8	0.0001	0.0001	0.0002	0.22	0.23	0.45
B 68	0.0036	34	5000		24		28	68		50	20		2...4	20	8	0.0002	0.0001	0.0003	0.31	0.32	0.63
B 80	0.0063	60	5000		30		38	80		68	30		2...4	30	10	0.0006	0.0006	0.0012	0.79	0.72	1.51
B 95	0.011	100	5000		42		42	95	76	76	35		2...4	30	12	0.0013	0.0014	0.0027	1.2	1.4	2.6
B 110	0.017	160	5000		48		48	110	86	86	40		2...4	34	14	0.0027	0.0028	0.0055	1.9	2.0	3.9
B 125	0.025	240	5000		55		55	125	100	100	50		2...4	36	18	0.005	0.0057	0.0107	2.9	3.3	6.2
B 140	0.038	360	4900		60		60	140	100	100	55		2...4	34	20	0.007	0.007	0.014	3.3	3.6	6.9
B 160	0.059	560	4250		65		65	160	108	108	60		2...6	39	20	0.013	0.012	0.025	4.7	4.7	9.4
B 180	0.092	880	3800		75		75	180	125	125	70		2...6	42	20	0.023	0.022	0.045	6.9	7.1	14
B 200	0.14	1340	3400		85		85	200	140	140	80		2...6	47	24	0.04	0.04	0.08	9.5	10.5	20
B 225	0.21	2000	3000		90		90	225	150	150	90		2...6	52	18	0.07	0.065	0.135	11.5	13	24.5
B 250	0.29	2800	2750	44	100	44	100	250	165	165	100		3...8	60	18	0.12	0.11	0.23	17.5	16.5	34
B 280	0.41	3900	2450	47	110	52	110	280	180	180	110		3...8	65	20	0.2	0.17	0.37	24	21	45
A 110	0.017	160	5000	-	48	-	38	110	86	62	40	33	2...4	34	20	0.0027	0.002	0.0047	1.9	1.6	3.5
A 125	0.025	240	5000	-	55		45	125	100	75	50	38	2...4	36	23	0.005	0.0045	0.0095	2.9	2.7	5.6
A 140	0.038	360	4900	-	60		50	140	100	82	55	43	2...4	34	28	0.007	0.008	0.015	3.3	3.7	7
A 160	0.059	560	4250	-	65		58	160	108	95	60	47	2...6	39	28	0.013	0.015	0.028	4.7	5.1	9.8
A 180	0.092	880	3800	-	75		65	180	125	108	70	50	2...6	42	30	0.023	0.026	0.049	6.9	7.3	14.2
A 200	0.14	1340	3400	-	85		75	200	140	122	80	53	2...6	47	32	0.04	0.045	0.085	9.5	10.3	19.8
A 225	0.21	2000	3000	-	90		85	225	150	138	90	61	2...6	52	38	0.07	0.08	0.15	13	14	27
A 250	0.29	2800	2750	44	100		95	250	165	155	100	69	3...8	60	42	0.12	0.13	0.25	17.5	19.5	37
A 280	0.41	3900	2450	47	110	52	105	280	180	172	110	73	3...8	65	42	0.2	0.2	0.4	24	24	48
A 315	0.58	5500	2150	47 88	100 120	44 88	100 120	315	165 200	165 200	125	78	3...8	70	47	0.31 0.34	0.33 0.37	0.64 0.71	31 32	32 34	63 66
A 350	0.81	7700	1950	59 88	110 140	59 88	110 140	350	180 230	180 230	140	83	3...8	74	51	0.54 0.60	0.54 0.63	1.1 1.2	43 45	43 47	86 92
A 400	1.1	10300	1700	64 98	120 150	64 98	120 150	400	200 250	200 250	160	88	3...8	78	56	1 1.2	0.9 1	1.9 2.2	63 66	59 64	122 130
A 440	1.4	13500	1550	78 118	130 160	78 118	130 160	440	215 265	215 265	180	99	5...10	86	64	1.5 1.7	1.5 1.7	3 3.4	79 82	80 85	159 167
A 480	1.7	16600	1400	88 134	145 180	88 134	145 180	480	240 300	240 300	190	104	5...10	90	65	2.3 2.6	2.3 2.6	4.6 5.2	100 105	100 110	200 215
A 520	2.2	21200	1300	98 138	150 190	98 138	150 190	520	250 315	250 315	210	115	5..10	102	68	3.5 3.8	3.2 3.6	6.7 7.4	130 140	120 135	250 275
A 560	3	29000	1200	118	200	118	200	560	320	320	220	125	6...12	115	80	5.9	6	11.9	180	185	365
A 610	4	38000	1100	128	220	128	220	610	352	352	240	135	6...12	121	88	8.6	9.3	17.9	225	240	465
A 660	5.1	49000	1000	138	240	138	240	660	384	384	260	145	6...12	132	96	13	14	27	290	320	610
A 710	6.5	62000	950	138	260	138	260	710	416	416	290	155	6...12	138	102	18.5	20	38.5	370	400	770

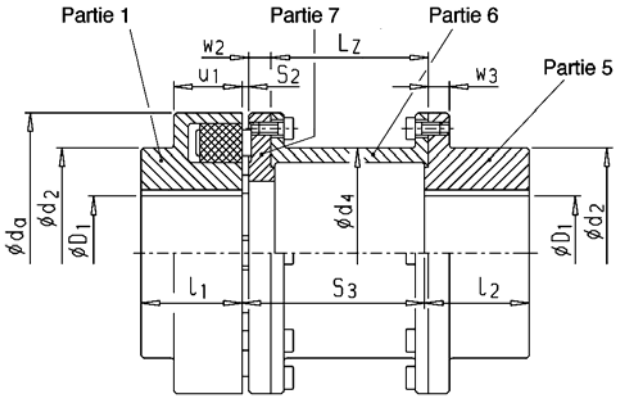
1) $\underline{P_N}$ = Nominal power rating kW
n = speed *min-1*

2) Mass moments of inertia J and weights refer to couplings with medium-sized bores.

Ordering example for type B

Drive of a press: Electric motor / gear unit
P_M = 55 kW, P_2 = 52 kW, n_M = 1430 min^{-1},
30 starts / h, ambient temperature 30 °C
Item 1 Qty.1
N-EUPEX coupling B 180
with oversize flexibles acc. to brochure K420, balanced in one plane, quality 016
Part 1:
Bore 65 H7, keyway acc. to DIN 6885/1, with set screw, balanced **after** keyseating
Part 4:
Bore 60 H7, keyway acc. to DIN 6885/1, with set screw, balanced **before** keyseating

10 - FLEXING COUPLINGS H WITH INTERMEDIATE SLEEVE

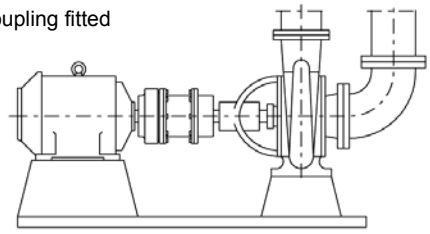


S_3 = Space between shafts
L_z = Length of intermediate sleeve
1)
P_N = Nominal power rating kW
n = Speed *min-1*
2) Nominal torque
3) Speed
4) Mass moment of inertia J and weights refer to couplings with medium-sized bores

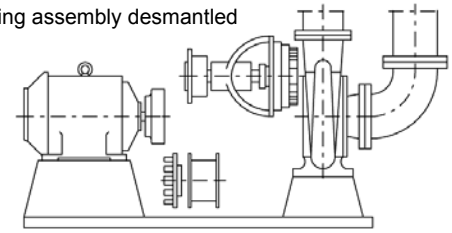
N-eupex				Alésage D_1				Dimensions													Moment d'inertie J 4)		Poids 4)		
				Part 1		Part 5			d_2																	
Type Taille	1) P_N n	2) T_N Nm	3) n max	Pilot bore	to	Pilot bore	to	d_a	Part 1	Part 5	d_4	l_1	l_2	l_z	S_2	S_3	U_1	W_2	W_3	Part 1	Part 5+6+7	Part 1	Part 5+6+7	Total
			min-1	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*	*kgm2*	*kgm2*	*kg*	*kg*	*kg*
H 80	0.0063	60	5000	-	30	-	32	80		55	51	30	45	87 127	5	100 140	30	10	9	0.0006	0.0014 0.0015	0.8	2 2.1	2.8 2.9
H 95	0.011	100	5000	-	42	-	42	95	76	70	63	35	45	87 127	5	100 140	30	10	9	0.0013	0.0028 0.0031	1.2	2.7 3	3.9 4.2
H 110	0.017	160	5000	-	48	-	48	110	86	80	73	40	50 50 60	85 125 165	5	100 140 180	34	12	11	0.0027	0.0056 0.006 0.0064	1.9	3.9 4.3 4.7	5.8 6.2 6.6
H 125	0.025	240	5000	-	55	-	55	125	100	90	85	50	50 50 60 70 80	85 125 165 185 235	5	100 140 180 200 250	36	12	11	0.005	0.0099 0.01 0.011 0.0115 0.012	2.9	5.3 5.8 6.3 6.6 7.1	8.2 8.7 9.2 9.5 10
H 140	0.038	360	4900	-	60	-	60	140	100	100	91	55	65 65 65 65 80	82 122 162 182 232	5	100 140 180 200 250	34	15	15	0.007	0.018 0.019 0.02 0.021 0.022	3.3	8 8.5 9 9.3 9.9	11.3 11.8 12.3 12.6 13.2
H 160	0.059	560	4250	-	65	-	65	160	108	108	111	60	70 70 70 70 80	81.5 121.5 161.5 181.5 231.5	6	100 140 180 200 250	39	15	15	0.013	0.03 0.032 0.034 0.035 0.037	4.7	9.8 10.5 11.3 11.7 12.7	14.5 15.2 16 16.4 17.4
H 180	0.092	880	3800	-	75	-	75	180	125	125	131	70	80	121.5 161.5 181.5 231.5	6	140 180 200 250	42	15	15	0.023	0.054 0.058 0.06 0.065	6.9	14.1 15 15.5 16.5	21 21.9 22.4 23.4
H 200	0.14	1340	3400	-	85	-	85	200	140	140	144	80	90	118.5 158.5 178.5 228.5	6	140 180 200 250	47	18	18	0.04	0.095 0.1 0.105 0.11	9.5	19.7 20.8 21.4 22.6	29.2 30.3 30.9 32.1
H 225	0.21	2000	3000	-	90	-	90	225	150	150	169	90	100	118.5 158.5 178.5 228.5	6	140 180 200 250	52	18	18	0.07	0.158 0.16 0.17 0.18	13	25.2 26 26.7 28.5	38.2 39 39.7 41.5
H 250	0.29	2800	2750	44	100	44	100	250	165	165	185	100	110	152.5 172.5 222.5	8	180 200 250	60	23	21	0.12	0.27 0.28 0.3	17.5	36 37.2 39	53.5 54.7 56.5

Installation example N-EUPEX coupling Type H

Coupling fitted



Bearing assembly desmantled



N-EUPEX coupling type H with intermediate sleeve for a centrifugal pump drive. The impeller and bearing assembly can be dismantled without removing the motor.

Ordering example for type H

4-cylinder-Diesel engine / centrifugal pump (viscous liquids)
P_M = 22 kW, P_2 = 20 kW, n_M = 750 min^{-1}

Item 1 Qty. 5
N-EUPEX coupling H 160 acc. to brochure K420, balanced in one plane, quality 016
Dimension s3 = 180, L_Z =161.5

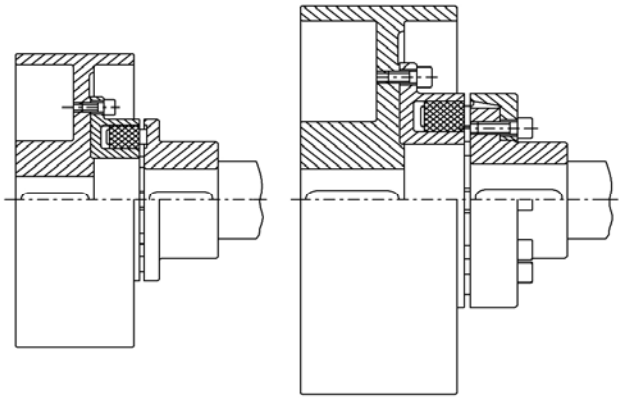
Part 1:
Bore 60 H7, keyway acc. to DIN 6885/1, with set screw, balanced **before** keyseating

Part 5:
Bore 55 H7, keyway acc. to DIN 6885/1, with set screw. balanced **before** keyseating

11 - SPECIAL DESIGN

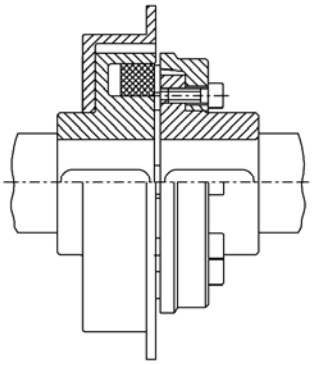
N-EUPEX couplings in special design are supplied for various types of application. We show here a few examples of how technical problems can be solved.
If you have any special requirements we are gladly prepared to place our many years' experience in this particular field at your disposal.

Types **L** et **K** (M420-1)



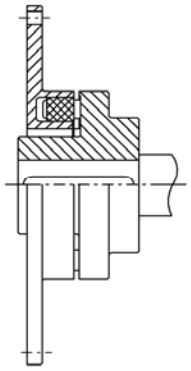
With brake drum acc. to DIN 15431

Types **B** et **A**



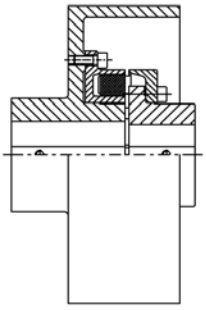
With brake for disk brake

Type **M**



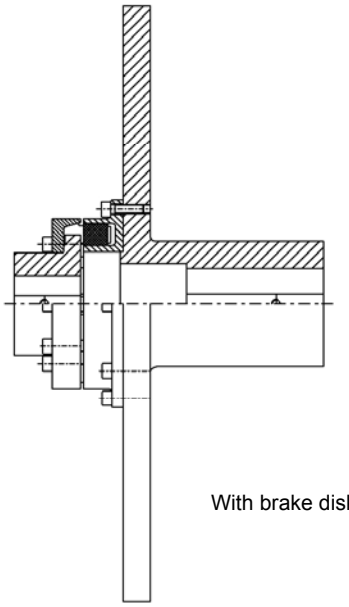
With large flange

Types **O** et **P**



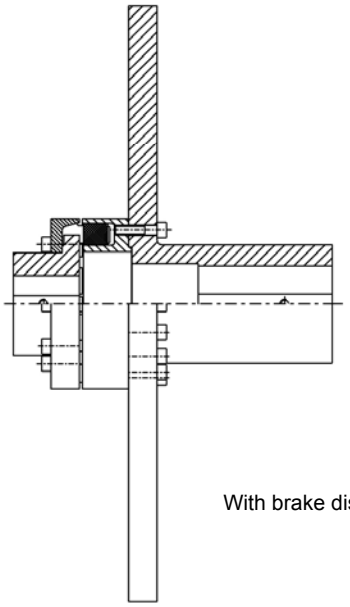
With brake drum and projecting hub

Types **O** et **P**



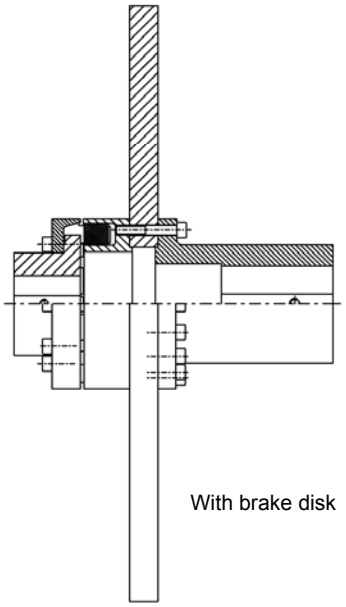
With brake disk

Types **EBD** et **DBD**



With brake disk

Type **DBDR**



With brake disk