



PAGUFLEX® PLUS Shaft Couplings

Highly flexible, torsionally rigid, free of play, one-piece

PAGUFLEX® PLUS

... the sure, uncomplicated, economical solution, if angled, radial and/or axially displaced drive shafts are to be frictionally connected.

NEW:

Double loop-shaped, thermoplastic compensating coupling element made from HYTREL®, a Thermoplastic Ether Ester Elastomer (TEEE) from DuPont.

Owing to the high reverse bending strength of the flexible material and the cardan-like shaping of the power transmitter, this development is the ingenious, technical solution for shaft displacement problems in motive power engineering, and in measurement and control techniques.

Recommendations for our products are for the design of: shaft-angle encoders, counting mechanisms, tachogenerators, servo valves, elevating tables, feeding drives, pumps, compressors and ventilators, kitchen equipment, office systems, textile machines and for numerous applications in the automobile and aircraft industries.

The one-piece coupling is frictionless, wearless, and silent, and works without any troubling effects (ie without troubling structure-borne sounds).

Thus in changes of direction or rotation, or during torque fluctuations with load direction reversal, PAGUFLEX® PLUS enables play-free and shock-free power transmission, together with effective vibration damping and sound insulation.

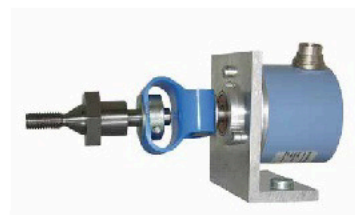
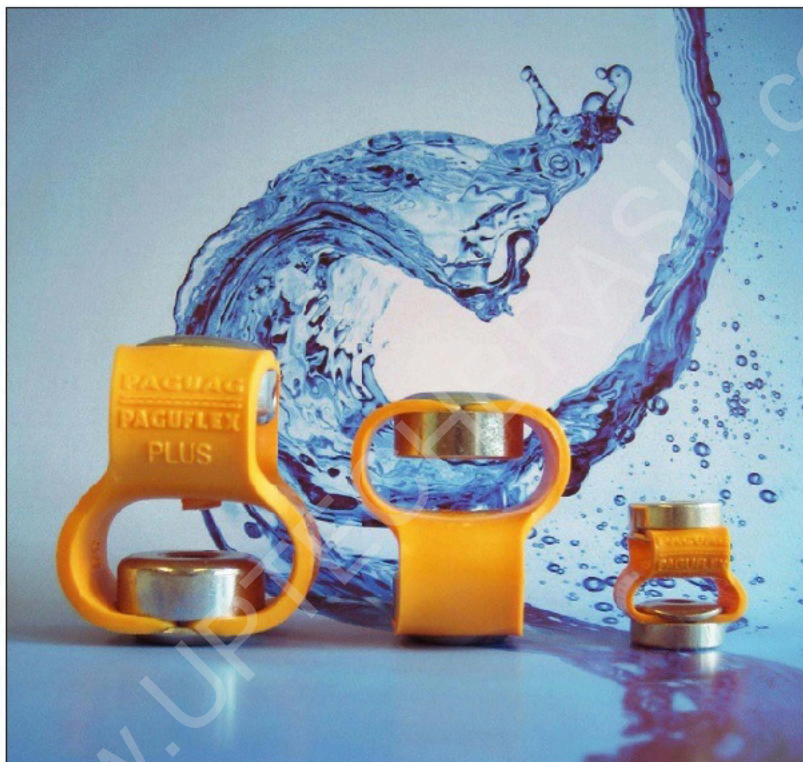
In numerous technical applica-

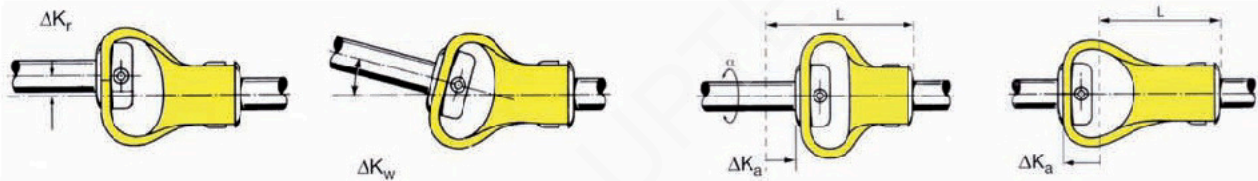
tions, the material HYTREL® has been successfully substituted not only for established thermoplastics, but also for elastomers. It combines ideally the advantages of both materials, and is therefore the best innovation for flexible shaft couplings.

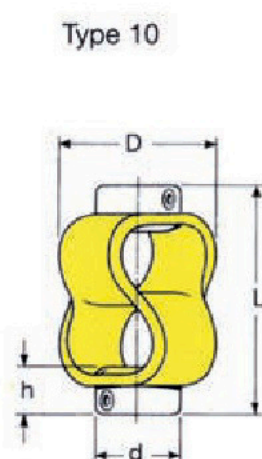
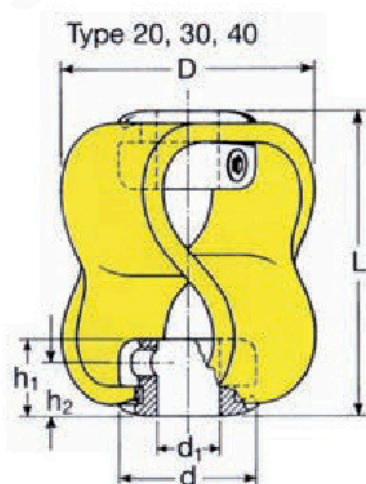
It enables the opening up of new areas of applications for extremely low and high temperatures. Also in association with media in which, owing to their sensitivity, elastic elements have shown themselves to be of 'limited use'. Further applications are those in which up to now the reverse bending strength of the material has set, narrow limits with regard to mechanical fatigue loading. In these,

PAGUFLEX® PLUS is now the solution.

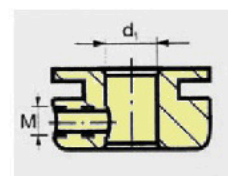
The high flexibility of the thermoplastic coupling element effectively lightens the burden on the shaft bearings of motors and machines, even in circumstances of large radial and angular alignment errors. With the help of PAGUFLEX® PLUS, the bearings run quieter, warm-up less, and achieve longer durability, thus lengthening service life.



Parameters	Symbols	Unit	Coupling Model No.			
			10	20	30	40
Max. torque:						
for displacement $K_w \leq 1^\circ$, $K_a \leq 2$ mm, $K_r \leq 0.5$ mm	$T_k \max_1$	Nm	0.8	3.0	8.0	18
for max. angular & radial displacement	$T_k \max_2$	Nm	0.5	1.8	5.0	10
Mobility:						
max. axial displacement	$2 \cdot \Delta K_a$	mm	9.0	15	17	22
max. radial displacement	ΔK_r	mm	2.6	3.2	3.2	3.2
max. angular displacement	ΔK_w	$^\circ$	10	15	15	15
Torsion angle at 50 % $T_k \max_1$	α	$^\circ$	4.0	8.0	10	24
Torsion spring rigidity up to 50 % $T_k \max_1$	C_t	Nm/rad	3.2	7.8	21	23
Axial spring rigidity up to 20 % ΔK_a	C_a	N/mm	31	13	33	72
Radial spring rigidity up to 20 % ΔK_r	C_r	N/mm	11	4.5	7.7	21
Angular spring rigidity up to 50 % ΔK_w	C_w	Nm/rad	5.2	9.5	13	17
Angular momentum of the coupling	J_k	kg·m ²	$0.1 \cdot 10^{-5}$	$0.91 \cdot 10^{-5}$	$1.87 \cdot 10^{-5}$	$1.65 \cdot 10^{-5}$
Mass - standard design	M_k	kg	0.024	0.077	0.119	0.114
						
Fitting dimensions: (in mm)	Symbols		10	20	30	40
Rotation diameter	D		26.0	48.0	54.0	54.0
Length, slack	L		28.0	48.0	58.0	61.0
Boss diameter	d		18.0	25.0	28.0	28.0
Boss height	h_1		7.9	12.7	15.9	15.9
Height of mounting bolt	h_2		5.5	7.9	10.4	11.2
Standard bore diameter	d_1		6.0	10.0	12.0	14.0
Max. permissible bore diameter	d_1		8.0	12.0	16.0	16.0
Bolt with hexagon socket DIN 916			M3	M4	M5	M6



Boss Detail:



Plus points ...

... of the PAGUFLEX® PLUS couplings

- high torsional rigidity with optimal bending and traction or thrust flexibility
- ingeniously simple construction principle
- one-piece design - without play, friction, wear and structure vibrations
- simple fitting, no extra machining of the shaft
- minimum fitting volume, radially and axially
- extremely high, permissible displacement error values: angular approx. $\varnothing \pm 15^\circ$, radial approx. $\varnothing \pm 3$ mm, and axial approx. 10 to 20 mm
- coupling can be used as an universal joint for large or intermittent bending angles of the shaft
- elastic element made of HYTREL® (Thermoplastic Ether Ester Elastomer, TEEE) enabling:
 - high operational reliability in the temperature range between -40°C and $+100^\circ\text{C}$
 - outstanding chemical resistance to acids, alkalis, solvents, oils, gases, ozone
 - high tear propagation resistance, high low-temperature flexibility, high abrasion resistance and reverse bending strength
- insulation from heat, structure-borne noise and leakage currents
- damping of vibration and shock
- relieves the motor/machine shaft bearings of lateral and axial forces
- steel bosses with corrosion-protected, electro-galvanised surface, or optionally available in special materials and designs
- couplings can be used as safety element: shearing off of the elastic body as a result of overload = limitation of damage

