

t80x SERIES

HIGH SPEED HK JOINT SHAFTS



DESCRIPTION

The t80x high speed shafts belong to a special family of shafts, which are tailored to customer requirements. They comprise exceptionally light homokinetic joints, which can be optimized for their specific application. The design of the homokinetic joints is determined not only by the spatial, speed, inertia and stiffness requirements but also by the type of application.

OPERATING RANGE

Torque: application-specific

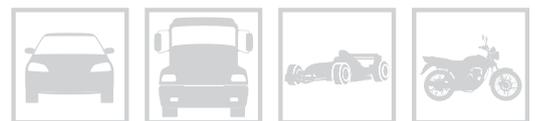
Speed: application-specific

BENEFITS

- low weight
- integrated load-insensitive longitudinal compensation
- precise concentricity
- adjustable angular compensation
- very low reaction forces

FUNCTION

The high-speed shaft achieves the longitudinal, angular and axial displacement without generating higher order speed or torque moments.



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t800 – HK Rod Shaft

The t800 is a HK joint bar shaft in a particularly compact and space-saving form. This design enables angular and axial compensation in confined spaces. The bar shaft is designed for optimum performance and manufactured with high strength materials.



t801 – HK Tubular Shaft

Due to its universal deployment capability, the t801 HK tubular shaft covers a wide range of standard applications. Compared with the t800 bar shaft, its welded tube allows longer installation lengths and higher speeds.



t802 – HK Precision Tubular Shaft

The high-quality t802 HK precision tubular shaft can be adjusted for stiffness, thanks to its glued steel tube. It is particularly suited for long installation lengths running at high speed.



t803 – HK Carbon Fiber Composite Tubular Shaft

The t803 HK tubular shaft as a carbon-fiber composite tube and is ideal for applications with weight-sensitive test objects and dynos and other special mechanical engineering applications. The use of carbon-fiber provides high stiffness, but at low weight.



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t804 – HK Glass Fiber Composite Tubular Shaft

The t804 HK tubular shaft has a glass-fiber composite tube and is used predominantly in E-mobility applications. Because glass-fiber does not conduct electricity, both ends of the t804 are electrically isolated from one another. The unit under test can therefore be electrically decoupled from the test bed, consequently providing electromagnetic interference immunity.



Shaft	Joint	T_{max} [Nm]	n_{max} [rpm]	X [mm]	G [-]	α [°]	ϑ_{min} [°C]	ϑ_{max} [°C]
t80x	HK06	300	20000	± 6	1	± 3	-40	+80
	HK08	600		± 3				
	HK10	1000						

T_{max} - Maximum torque

n_{max} - Maximum speed

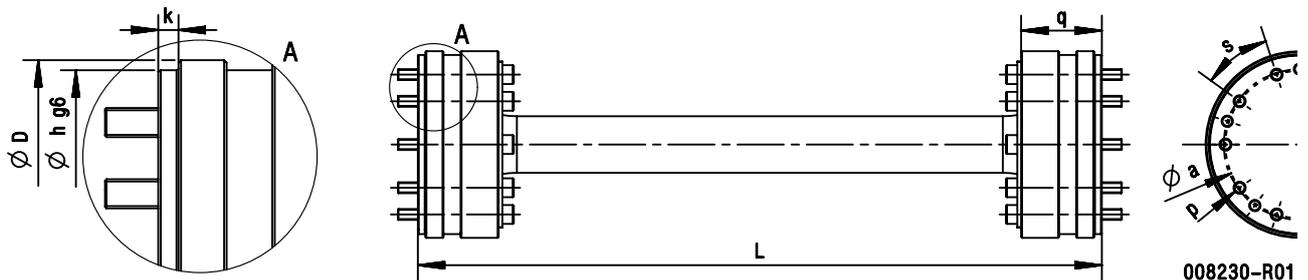
X - Maximum longitudinal compensation

G - Balance quality

α - Maximum angular displacement

ϑ_{min} - Minimum operating temperature

ϑ_{max} - Maximum operating temperature¹



Shaft	Joint	D [mm]	a [mm]	h (g6) [mm]	k [mm]	p [-]	q [mm]	s [°]
t80x	HK06	68	54	65	4	M6	39.5	6x60°
	HK08	83	65	80			42.5	8x45°
	HK10	99	78	95			44.5	10x36°

The length L is dependent on the application and is limited by the type of design and maximum speed.

Higher speeds are available on request.

¹The t80x can be operated at up to 100°C for a short time.