

t70x SERIES

CV JOINT SHAFTS

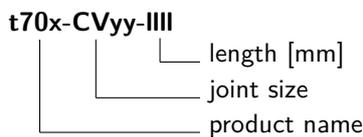


DESCRIPTION

The t70x series is a family of shafts with constant velocity joints (CV joints). The various types are especially optimized for their particular application. The design of a t70x shaft is determined not only by the maximum torque and the length, but also by the type of application. All shafts of this family provide a large amount of longitudinal and angular compensation.

NAMING

The product is named according to the following convention:



Example: t701-CV15-0303

OPERATING RANGE

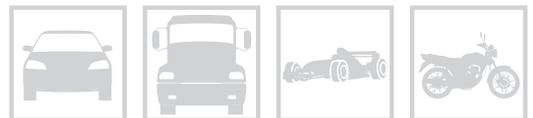
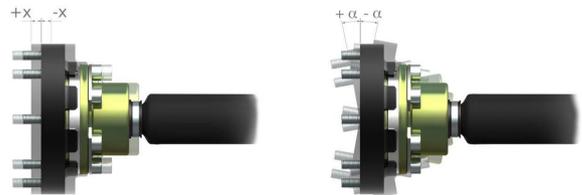
Torque: up to 40000 Nm
Speed: up to 10000 rpm

BENEFITS

- outstanding vibration decoupling
- low weight
- integrated load-insensitive longitudinal compensation
- precise concentricity

FUNCTION

The CV joint takes up the longitudinal, angular and axial displacement without adding any higher order speed or torque fluctuations to the drive train.



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t700 – CV Rod Shaft

The t700 is a CV 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.



t701 – CV Tubular Shaft

Due to its universal deployment capability, the t701 CV tubular shaft covers a wide range of standard applications. Compared with the t700 bar shaft, its welded tube allows longer installation lengths.



t702 – CV Precision Tubular Shaft

The high quality, high precision t702 CV tubular shaft exhibits exceptionally precise concentricity with unsurpassed balance, due to its glued steel tube design. It is particularly suited for long installation lengths running at high speed.



t703 – CV Carbon Fiber Composite Tubular Shaft

The t703 CV tubular shaft has a carbon-fiber composite tube and is ideal for special applications in motor sport and other special mechanical engineering applications. The use of carbon-fiber provides high stiffness, but at low weight.



t704 – CV Glass Fiber Composite Tubular Shaft

The t704 CV 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 t704 are electrically isolated from one another. The unit under test can therefore be electrically decoupled from the test bed, consequently providing electromagnetic interference immunity.



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Shaft	Joint	T _{max} [Nm]	n _{max} [rpm]	X [mm]	G [-]	α [°]	ϑ _{min} [°C]	ϑ _{max} [°C]
t700	CV05	1000	10000	±16	6.3	±10	-40	+110
	CV10	1500		±12				
	CV13	1300		±22				
	CV15	2500		±16				
	CV21	3500		±24				
	CV30	6600	5000	±25				
	CV32	8000						
	CV42	19700	3000	±24				
	CV48	22000		±25				
	CV60	40000		±30				
t701	CV05	580	10000	±16	6.3	±10	-40	+80
	CV10	1300		±12				
	CV13	1300		±22				
	CV15	2500		±16				
	CV21	3500		±24				
	CV30	3500	5000	±25				
	CV32	6000						
	CV42	10500	3000	±24				
	CV48	22000		±25				
	CV60	40000		±30				
						±3		

T_{max} - Maximum torque

n_{max} - Maximum speed

X - Maximum longitudinal compensation

G - Balance quality

α - Maximum angular displacement

ϑ_{min} - Minimum operating temperature

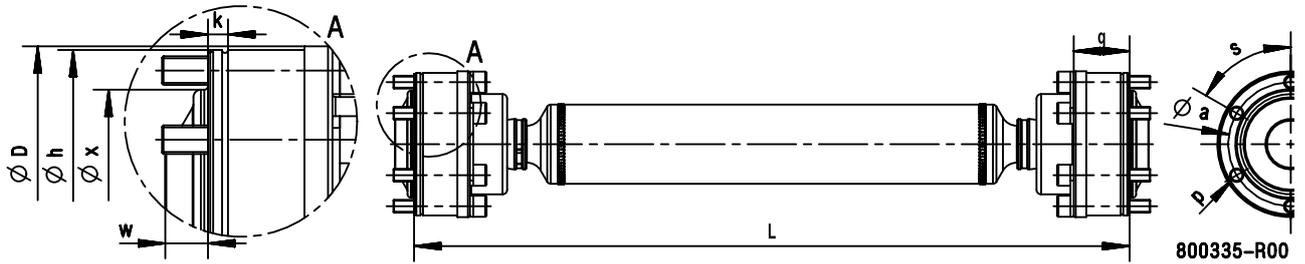
ϑ_{max} - Maximum operating temperature¹

Technical specifications for other versions of the t70x series are available on request

¹The t701 can be operated at up to 100°C for a short time.

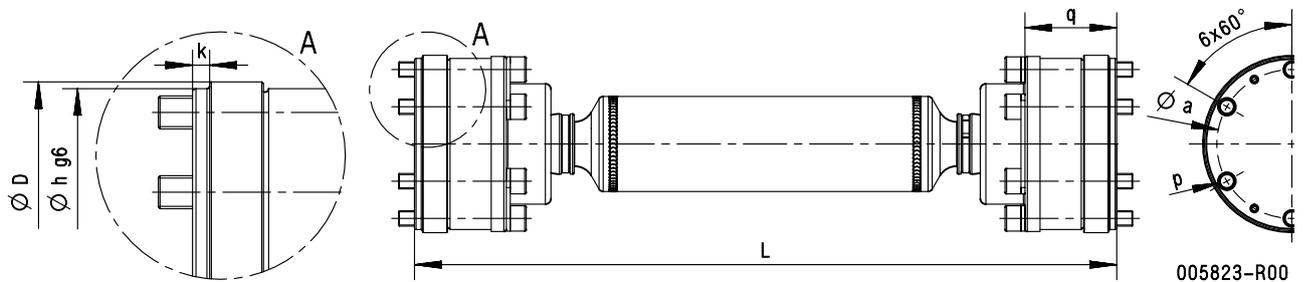
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Shaft	Joint	D [mm]	a [mm]	$h^{+0.00}_{-0.05}$ [mm]	k [mm]	p [-]	q [mm]	s [°]	w [mm]	x [mm]	
t70x	CV05	88.40	74.0	86.00	10.5	M8	22.80	6x60°	14.50	64.00	
	CV10	96.00	80.0	94.00	6.0		33.80		15.00		
	CV13	101.33	86.0	99.73	5.0		33.60		10.95		
	CV15	110.50	94.0	108.00	6.0	M10	42.00		14.40	81.00	
	CV21	132.00	108.0	128.00			47.90		18.10	90.00	
	CV30	150.20	128.0	148.00	7.0	M12	53.90		22.00	112.00	
	CV32	188.00	155.5	180.00			57.80		24.50	136.00	
	CV42	199.80	165.0	192.00	10.0	M16	79.35		29.70	144.40	
	CV48	224.00	196.0	220.00			8x45°		52.50	19.00	160.00
	CV60	284.80	245.0	275.00					15.0	M20	105.00

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.



Shaft	Joint	D [mm]	a [mm]	h (g6) [mm]	k [mm]	p [-]	q [mm]
t70x	CV10	98	80.0	94.00	5.5	M8	48.00
	CV15	112	94.0	108.00	5.0	M10	57.50
	CV21	134	108.0	128.00	6.5	M12	67.15
	CV30	154	128.0	148.00	8.0		78.10
	CV32	188	155.5	180.00	7.5	M16	82.80

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.