

t2500 – ARC SPRING COUPLING



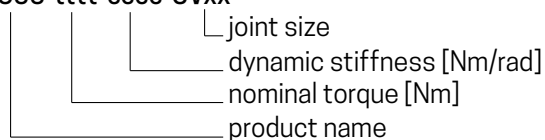
Description

The t2500 is an arc spring coupling especially designed for deployment in test beds. It works like a dual mass flywheel. Because of its modular spring design, it is possible to tailor its stiffness behavior to the unit under test.

Naming

The product is named according to the following convention:

t2500-tttt-cccc-CVxx



Example: t2500-3200-4000-CV32

Operating Range

Torque: up to 3400 Nm
Speed: up to 5000 rpm

Benefits

- suitable for high dynamic loads
- high damping and long lifetime
- stiffness adjusted by spring placement
- wide stiffness range

Function

As for a vehicle dual mass flywheel, the test bed dual mass flywheel boasts exceptional damping behavior.

Stiffness adjustment is achieved by using different spring configurations in the arc spring coupling. The standard t2500 specifications cover a nominal torque range of 1600 - 3400 Nm for a torsional stiffness of 2000 - 4000 Nm/rad.

Coupling	Joint	T_{KN} [Nm]	C_{Tdyn} [Nm/rad]	T_{Kmax} [Nm]	n_{max} [rpm]	m [kg]	x_s [mm]	J_1 [kgm ²]	J_2 [kgm ²]	Ψ [-]	d [Nms/rad]	φ_{max} [°]
t2500-1600-2000	CV21	1600	2000	2000	5000	55.16	54.0	1.135E+00	1.682E-01	0.8	2.0	57
	CV32	1600	2000	2000		54.68	53.5	1.135E+00	1.679E-01			
t2500-2200-2800	CV21	2200	2800	2800		57.53	56.4	1.167E+00	1.999E-01			
	CV32	2200	2800	2800		57.05	55.9	1.167E+00	2.005E-01			
t2500-2700-3400	CV21	2700	3400	3400		59.23	55.8	1.190E+00	2.240E-01			
	CV32	2700	3400	3400		58.75	55.3	1.190E+00	2.236E-01			
t2500-3400-4000	CV21	3400	4000	4000		60.93	56.5	1.214E+00	2.471E-01			
	CV32	3400	4000	4000		60.45	56.0	1.214E+00	2.468E-01			

T_{KN} - Nominal torque²⁵

C_{Tdyn} - Torsional stiffness

T_{Kmax} - Maximum torque

n_{max} - Maximum speed

m - Mass

x_s - Center of gravity flange-side

J_1 - Inertia flange-side

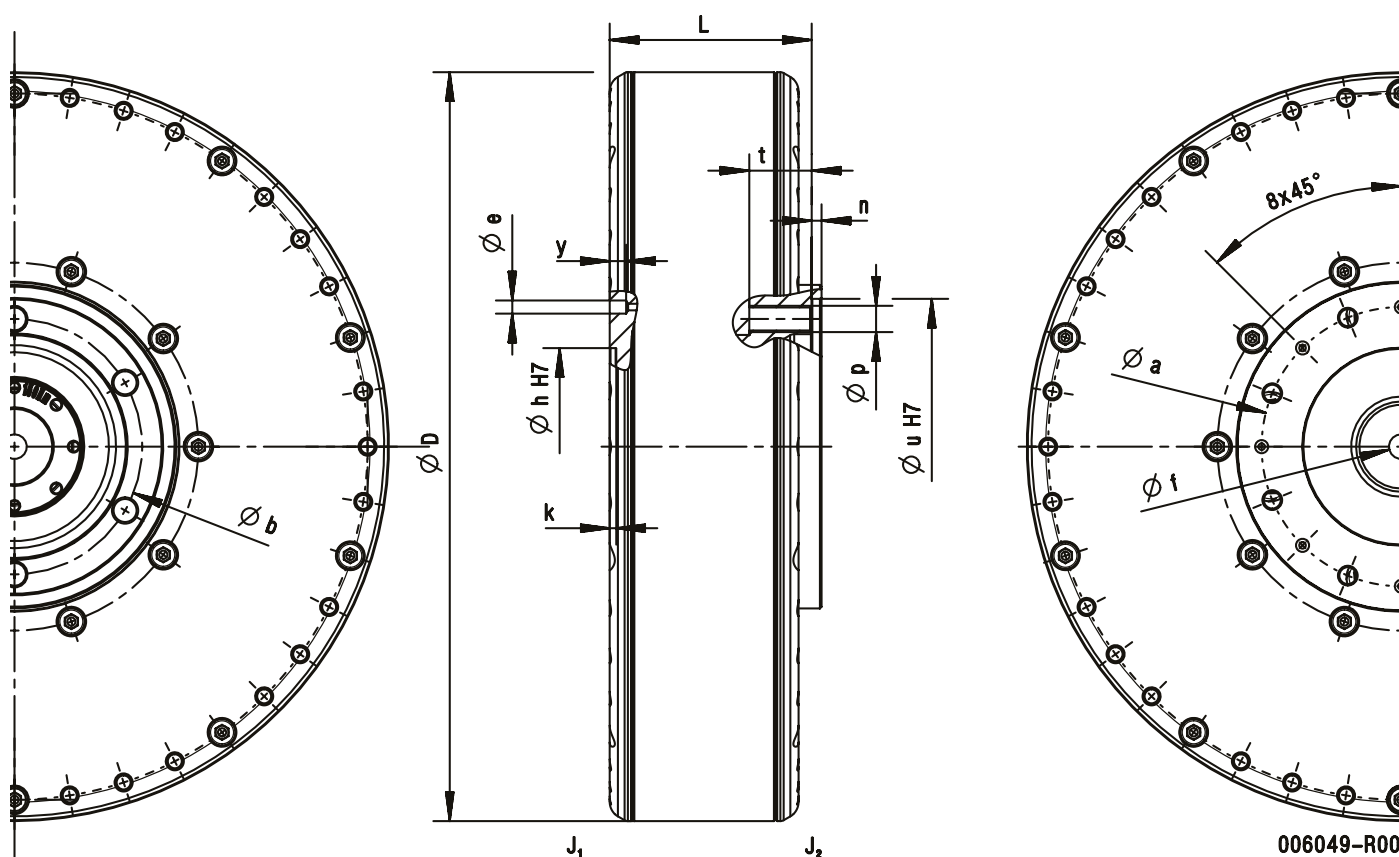
J_2 - Inertia shaft-side

Ψ - Relative damping

d - Damping

φ_{max} - Maximum torsional angle

Couplings for CV30 and CV42 joint sizes available on request



Coupling	Joint	D [mm]	L [mm]	a [mm]	b [mm]	e (m6) [mm]	f [mm]	h (H7) [mm]	k [mm]	n [mm]	p [-]	t [mm]	u (H7) [mm]	y [mm]
t2500	CV21	456	123	170	108	8	15	120	4	6	M12	38	128	10
	CV30	456	123	170	128	8	15	120	4	7	M12	38	148	10
	CV32	456	123	170	155.5	8	15	120	4	6	M16	38	180	10
	CV42	456	123	170	165	8	15	120	4	8	M16	38	192	10