

t2400 – ARC SPRING COUPLING



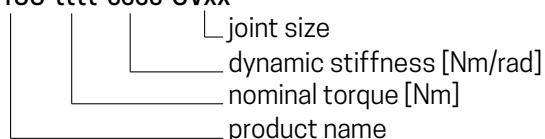
Description

The t2400 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:

t2400-tttt-cccc-CVxx



Example: t2400-2000-2500-CV30

Operating Range

Torque: up to 2000 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 t2400 specifications cover a nominal torque range of 1500 - 2000 Nm for a torsional stiffness of 1800 - 2500 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} [°]
t2400-1500-1800	CV21	1500	1800	1800	5000	36.09	70.5	4.05E-01	4.32E-02	0.8	2.0	57
	CV30	1500	1800	1800		36.02	70.5	4.05E-01	4.40E-02			
t2400-1800-2200	CV21	1800	2200	2200		37.17	71	4.14E-01	5.10E-02			
	CV30	1800	2200	2200		37.10	71	4.14E-01	5.18E-02			
t2400-2000-2500	CV21	2000	2500	2500		37.25	71	4.15E-01	5.10E-02			
	CV30	2000	2500	2500		37.18	71	4.15E-01	5.18E-02			

T_{KN} - Nominal torque²⁴

C_{Tdyn} - Torsional stiffness

T_{Kmax} - Maximum torque

n_{max} - Maximum speed

m - Mass

x_s - Center of gravity flange-side

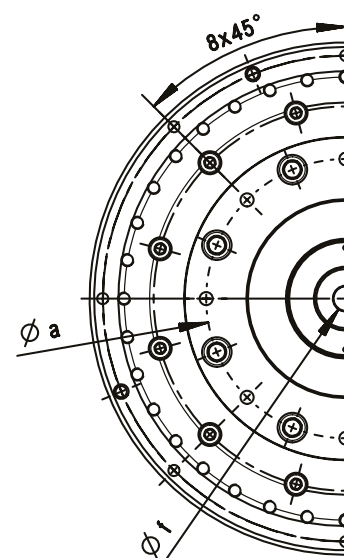
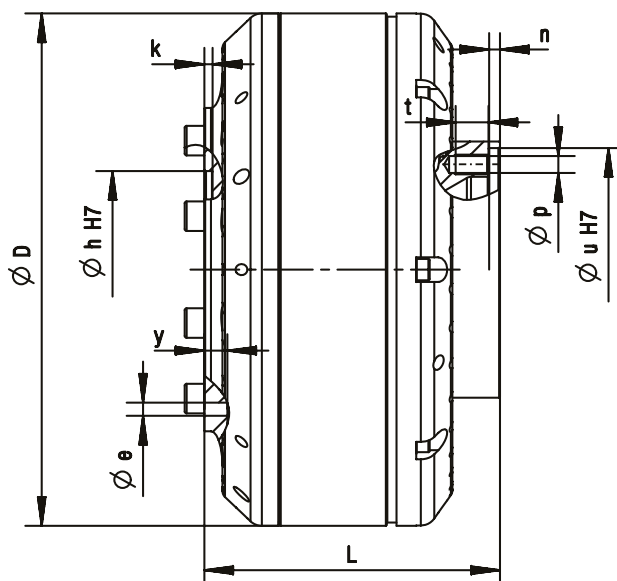
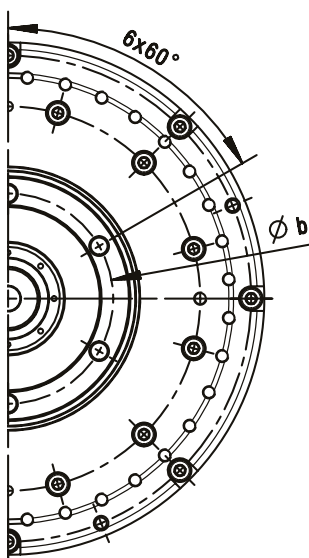
J_1 - Inertia flange-side

J_2 - Inertia shaft-side

Ψ - Relative damping

d - Damping

φ_{max} - Maximum torsional angle



006405-R00

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]
t2400	CV21	312	180	170	108	8	15	120	5	6	M12	20	128	14
	CV30	312	180	170	128	8	15	120	5	7	M12	20	148	14

Other dimensions available on request