



Couplings



Team Hydrostatic Spherical Couplings transmit tensile and compressive forces while allowing angular misalignment. They can be used in any application where angular movement is required.

The 420 and 421 Single Spherical Couplings transmit the actuator force in tension and compression, but do not transmit moment loads. This protects the actuator from damaging loads created by angular motion between the actuator and load. They provide three degrees of freedom (DoF) between the actuator and load, those DoFs being rotations about X,Y, and Z axes.

Features

- Compatible with Hydraulic or Electrodynamic Shakers
- Protects System from Misalignment Damage

The 422 and 423 Double Spherical Couplings (DSC) allow some lateral motion as well. These couplings provide 5 degrees of freedom between the actuator and load, those being the three rotational DoFs and two translational DoFs perpendicular to the actuator line of motion. Using DSCs between the actuators and table, backlash free multi-axis motion of the table can be achieved while protecting the actuators from misalignment and moment loads.

Applications

- Multi-Axis Test Systems
- Structural Fatigue Testing

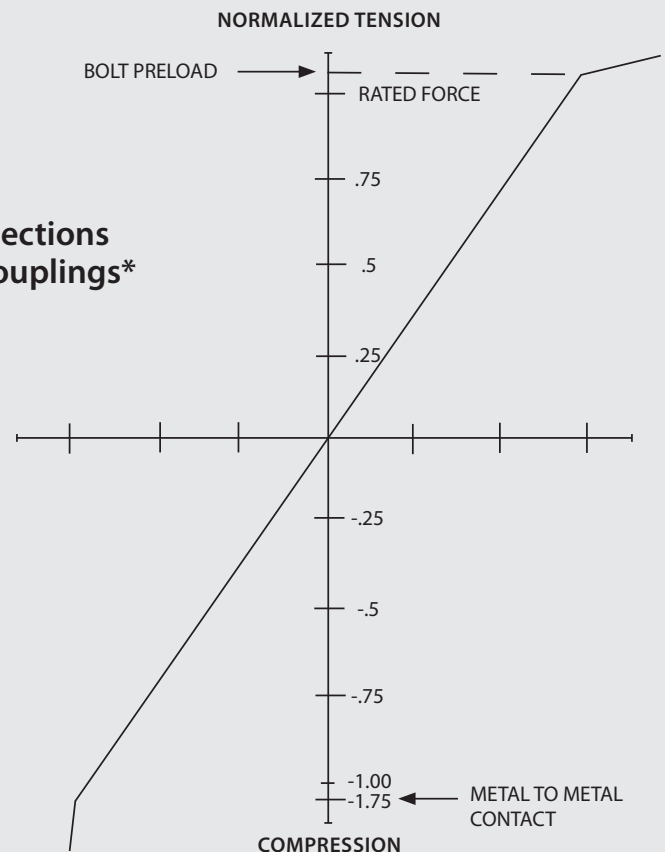
The 420 & 422 type of coupling is limited in its angular motion by the amount of bending permissible in the preload bolt. The maximum practical limit is $\pm 0.5^\circ$.

The 421 & 423 types have two oil surfaces and do not require the bolt to bend. They are capable of $\pm 6^\circ$ angular displacement.

The spring rate of the coupling in tension is equal to the spring rate in compression until the bolt preload is reached. At this point the coupling spring rate becomes equal to the bolt spring rate alone.

*Each coupling part number will have a unique deflection value at rated force.

**Force vs. Deflections
Typical of all Couplings***

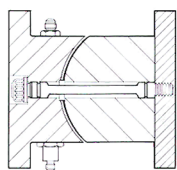


Hydrostatic Spherical Couplings

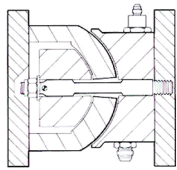
Components

Specifications	A		B		Weight		Angular Deflection	Peak Force Rating		Random Force Rating (rms)	
	mm	in.	mm	in.	kg	lbs	degrees	lbs	kN	lbs	kN
420.10	209.6	8.2	190.5	7.5	11.3	25.0	$\pm 0.5^\circ$	10,000	44.5	3,300	14.6
420.20	254.0	10.0	228.6	9.0	22.7	50.0	$\pm 0.5^\circ$	20,000	88.9	6,600	29.3
420.40	304.8	12.0	304.8	12.0	36.3	80.0	$\pm 0.5^\circ$	40,000	177.9	13,200	58.7
420.60	406.4	16.0	406.4	16.0	161.0	355.0	$\pm 0.5^\circ$	60,000	266.8	18,000	80.0
420.150	667.5	26.2	558.8	23.1	762.0	1680.0	$\pm 0.5^\circ$	150,000	667.2	45,000	200.1
421.10	230.2	9.06	190.5	7.5	8.1	17.8	$\pm 6.0^\circ$	10,000	44.4	3,300	14.6
421.110	473.4	18.6	530.9	20.9	206.3	455.0	$\pm 6.0^\circ$	110,000	489.3	36,300	161.4
421.20	254.0	10.0	228.6	9.0	20.8	45.8	$\pm 6.0^\circ$	20,000	88.9	6,600	29.3
421.40	292.1	11.5	355.6	14.0	54.4	120.0	$\pm 6.0^\circ$	40,000	177.9	13,200	58.7
422.10	292.1	11.5	172.7	6.8	10.4	23.0	$\pm 0.5^\circ$	10,000	44.5	3,300	14.6
422.20	304.8	12.0	254.0	10.0	27.2	60.0	$\pm 0.5^\circ$	20,000	88.9	6,600	29.3
422.40	488.9	19.2	295.1	11.6	54.4	120.0	$\pm 0.5^\circ$	40,000	177.9	13,200	58.7
423.10	304.8	12.0	190.5	7.5	13.6	30.0	$\pm 6.0^\circ$	10,000	44.5	3,300	14.6
423.20	317.5	12.5	228.6	9.0	24.5	54.0	$\pm 6.0^\circ$	20,000	88.9	6,600	29.3
423.40	457.2	18.0	374.7	14.7	79.8	176.0	$\pm 6.0^\circ$	40,000	177.9	13,200	58.7
423.60	935.5	36.8	457.2	18.0	474.5	1044.0	$\pm 6.0^\circ$	60,000	266.8	19,800	88.0

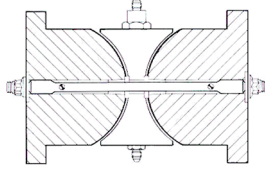
Single and Double pivot couplings are available, in either 0.5 degree or 6 degree configurations. Our double pivot couplings allow for angular and lateral misalignment. Each spherical surface is hydrostatically lubricated for extremely high stiffness, zero backlash, and infinite life. (When oil is maintained to ISO 15 13 10 standards.)



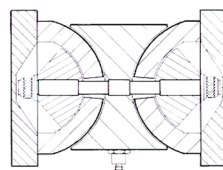
420.xx



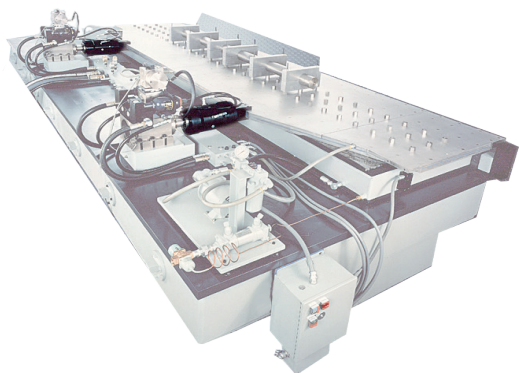
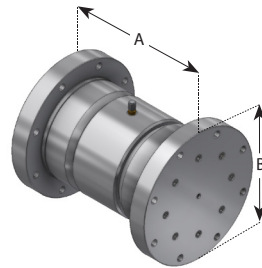
421.xx



422.xx



423.xx





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