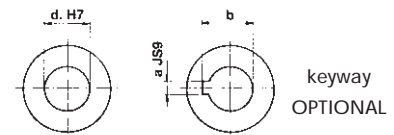
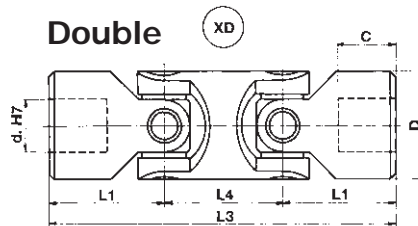
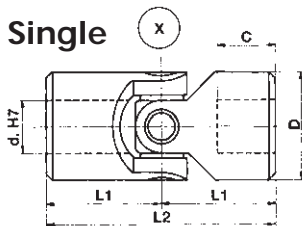


Stainless Steel Universal Joints - Series "X"

- Standard inch size bores
- Stainless steel AISI 304
- Maximum working angle: Single - 45°
Double - 90°
- Keyway optional
- Most sizes generally in stock
- Temperature range -292°F to +392°F



keyway
OPTIONAL

Part No.		Bore Inch d	Dimensions in mm								Max. Dynamic Torque lbf-ft.	Max. Breaking Torque lbf-ft.	Weight lbs.	
Single	Double		D	L2	L1	C	L4	L3	a	b			Single	Double
01X	01XD	1/4"	16	34	17	8	22	56	2	7	5	22	0.11	0.18
02X	02XD	3/8"	16	40	20	11	22	62	2	9	5	22	0.11	0.18
03X	03XD	3/8"	22	48	24	12	26	74	3	11.4	18	110	0.22	0.33
04X	04XD	1/2"	25	56	28	13	30	86	4	13.8	23	169	0.35	0.55
1X	1XD	5/8"	32	68	34	16	36	104	5	18.3	47	287	0.66	0.99
3X	3XD	3/4"	42	82	41	18	46	128	6	22.8	132	612	1.32	2.20
5X	5XD	1"	50	108	54	26	55	163	8	28.3	221	1180	2.65	4.40
6X	6XD	1 1/4"	58	122	61	29	68	190	8	33.3	295	1696	4.08	6.39



Precision Telescopic Universal Joints - Series "G"

Stainless steel - 1.4305 Din 808 - hardened & friction polished

Part No.	Size		D ₃	Length		L min -A	Tele- scope A	L max L ₅ ±1	Splined shaft Profile DIN ISO 14	Keyway DIN 6885		Square S	Approx Weight lbs
	D ₁ H7	D ₂		L ₁ -1	L ₄ ±0.5					B P9	T +0.2		
411S	8	13	13.0	13	21	130	40	170	With square	2	9.0	6	0.23
412S	10	16	19.5	10	20	150	50	200	6 x 11 x 14	3	11.4	8	0.52
413S	12	20	19.5	13	24	190	60	250	6 x 11 x 14	4	13.8	10	0.76
414S	16	25	26.5	23	37	230	70	300	6 x 13 x 16	5	18.3	14	1.45
415S	20	32	31.5	25	43	270	80	350	6 x 16 x 20	6	22.8	19	2.68
416S	25	40	39.5	32	54	400	100	500	6 x 21 x 25	8	28.3	24	5.52
417S	32	50	51.5	41	66	500	150	650	6 x 26 x 32	10	35.3	30	11.80
418S	40	63	59.5	47	83	550	200	750	8 x 32 x 38	12	43.3	36	19.36
419S	40	75	59.5	43	80	570	200	770	8 x 32 x 38	12	43.3	36	24.76
4110S	50	90	79.5	52	95	700	200	900	8 x 42 x 48	14	53.8	-	47.62

See page 8 for installation instructions and page 12 for maintenance and lubrication advice. See page 7 for bellows to suit. All dimensions are subject to change without notice.

Technical Appendix

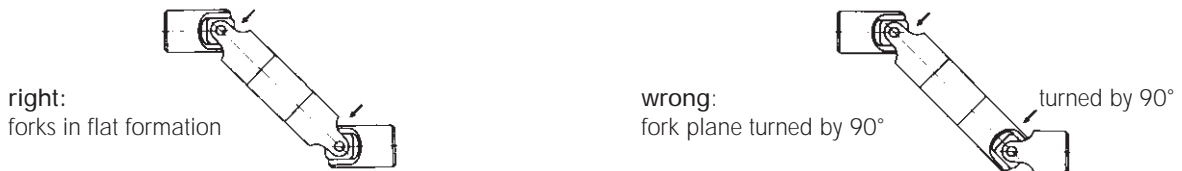
Installation Instructions

These universal joints and telescopic shafts are now, and will be in the future, indispensable and versatile components for transmitting rotary motion.

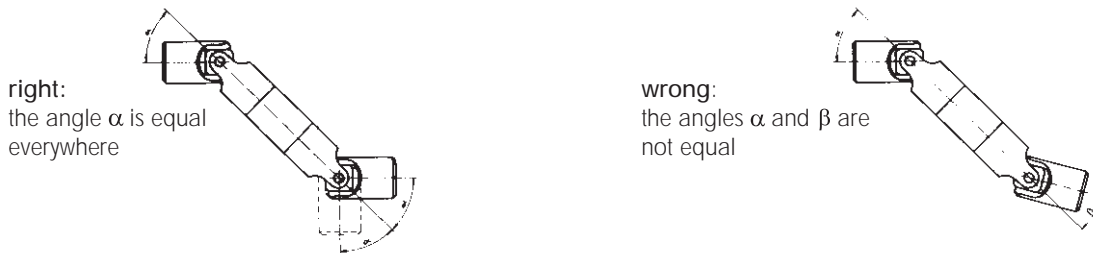
If two shafts, which are inclined towards each other at a given angle, are connected to each other via a universal joint, and if one of the shafts rotates with a constant regular speed, then the other shaft rotates with a variable angular velocity. This irregularity of motion - which is also called gimbal error - causes the rotating angle to advance and lag alternately, thus effecting the second shaft to rotate with sinusoidal fluctuations. The greater the deflection angle α , the greater the non uniformity of the rotating motion.

For this reason, single universal joints are only used when variable rotary motion is permissible. The non uniformity of motion can be compensated by using two single universal joints in sequence or by using a double universal joint. When properly installed, the second universal joint can compensate the irregular motion of the first one under the following conditions as enumerated by DIN 808.

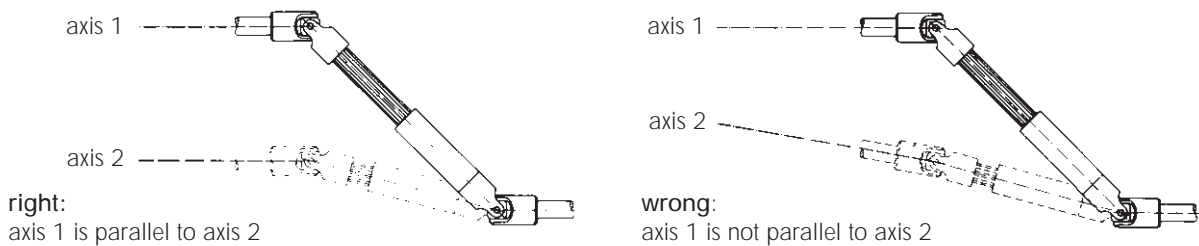
1. Correct fork position: when using two single universal joints make sure that the two inside forks are in flat formation, as in the case of double universal joints.



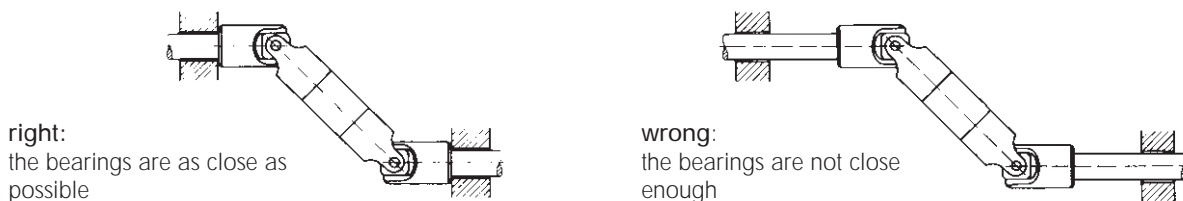
2. The deflection angles at both ends must be equal.



3. The driving and driven shafts may only be shifted in directions parallel to the shafts.



4. The bearings of the shaft joint - or of the double universal joint - should be positioned as close as possible to the universal joints.



The shaft joints are delivered without pinholes and clamping studs. The length of the dowel pins is determined by the outer diameter of the universal joint; it must be flush when set.

We recommend dowel pins DIN 1481.

Diam of bore	\emptyset	6	8	10	12	16	20	25	32	40	50
Diam of dowel Pin	\emptyset	2	3	4	5	6	8	10	12	14	16

Technical Appendix

Maintenance & Lubrication for Universal Joints with Friction Bearings and Telescopic Universal Joints.

Needle roller bearing universal joints are maintenance free due to their permanent lubrication, and are ideal for use in machine components that are difficult to access.

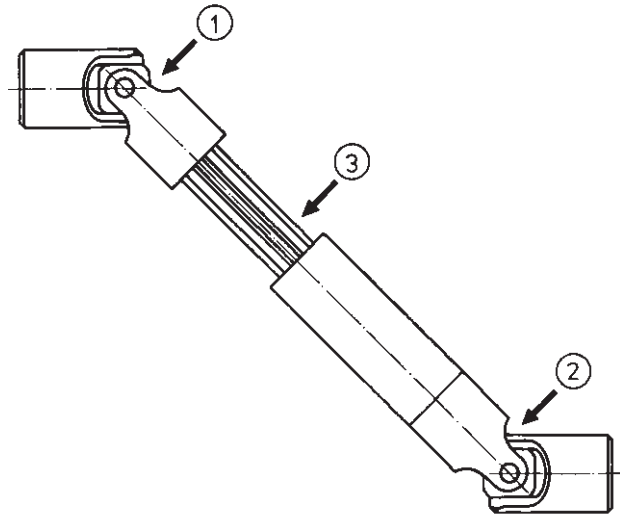
Friction bearing universal joints, single, double and telescopic should be lubricated at regular intervals.

Telescopic universal joints are ready for immediate use. They are lubricated with a lithium saponified extreme pressure lubricant on a mineral oil base.

Temperature range: -22°F - +250°F

Peak temperature: Maximum 284°F

Please use lubricants with the same specification when re-lubricating.



Lubricating Points:

Lubrication is required at least once daily for permanent operation at the lubricating points marked with arrows. For friction bearings, this means all the sliding parts on the cube, the fork piece and bearing pins (1) and (2), as well as, for telescopic joints, the sliding parts of the extendable splined profile (3).

In harsh environments, the sliding parts should be protected against fibrous particles and steam by means of a folding bellow. (See page 7) Permanent self-lubrication for an indefinite time is achieved by filling the folding bellow with the lubricating grease and clamping the ends tight.

Note: Maintenance work should be carried out at regular intervals; preferably while carrying out maintenance work on other machine parts. At such times, we also recommend that noise and backlash tests be conducted, or if the working noise and/or backlash of the joint and profile parts deviate from the standard values.

