

UNIVERSAL JOINTS

**PIN AND BLOCK TYPE
STEEL AND STAINLESS STEEL**

J/JS SERIES



Boston Gear precision machined J and JS Series Universal Joints are designed for connecting shafts at angles up to 30 degrees and speeds up to 2000 RPM. All sizes are stocked with both solid and bored hubs.

Joints J100 and J100B and larger are equipped with self-closing, ball valve oilers, creating an oil reservoir to provide enclosed lubrication.

The self-locking assembly ring on joints with 7/8" and larger hub diameter, fits into recess provided in center bearing block and snaps around groove in small bearing pin—assuring locking of entire assembly—allowing for quick and easy disassembly and reassembly. Joints with 3/4" and smaller hub diameters are locked by riveting the small bearing pin.

Joint covers (boots) keep dirt and moisture out and lubricants in.

SELECTION

Torque ratings may be calculated from data in tables. The tables indicate the Rated Static Torque (Lb. Ins.) of alloy and stainless steel joints and Speed-Angle factors suggested for various operating conditions.

The approximate service torque rating of a particular joint is obtained by dividing the Rated Static Torque by the appropriate Speed-Angle factor.

Selecting a universal joint to satisfy a specified torque requirement is also made convenient with the data provided.

The designated torque load should be multiplied by the appropriate Speed-Angle factor to obtain an equivalent static torque load.

A universal joint with a rated static torque equal to or greater than the calculated torque load would then be selected.

EXAMPLE:

A pair of universal joints are desired to transmit 1/2 HP from one shaft running at 500 RPM to another located at an angle of 10 degrees (from a straight line).

The joints will be connected by an intermediate shaft and arranged to operate at equal angles of 5 degrees.

A Speed-Angle factor of 9 is indicated in the table for an operating angle of 5 degrees and a speed of 500 RPM.

$$\text{Torque Load} = \frac{63025 \times \text{HP}}{\text{RPM}} = \frac{63025 \times 1/2}{500} = 63 \text{ Lb. Ins.}$$

$$\text{Equivalent Static Load} = \text{Torque load} \times \text{Factor} = 63 \times 9 = 567 \text{ Lb. Ins.}$$

J100 size alloy steel or JS175 size stainless steel universals would be suggested for this application.

SPEED ANGLE FACTORS

Speed in RPM	Operating Angle — Degrees (Deviation from Straight Line)														
	0	1/2	1	2	3	4	5	6	8	10	12	15	20	25	30
2000	21	22	23.2	25.2	27.4	29.4	31.6	—	—	—	—	—	—	—	—
1800	19	20	21.0	22.8	24.8	26.6	28.6	30.4	—	—	—	—	—	—	—
1600	17	17.8	18.8	20.4	22.2	23.8	25.6	27.2	—	—	—	—	—	—	—
1400	15	15.8	16.6	18.0	19.6	21.0	22.6	24.0	27	—	—	—	—	—	—
1200	13	13.6	14.4	15.6	17.0	18.2	19.6	20.8	23.4	—	—	—	—	—	—
1000	11	11.6	12.2	13.2	14.4	15.4	16.6	17.6	19.8	22	—	—	—	—	—
900	10	10.6	11.0	12.0	13.0	14.0	15.0	16.0	18.0	20	22	—	—	—	—
800	9.0	9.4	10.0	10.8	11.8	12.6	13.6	14.4	16.2	18	19.8	—	—	—	—
700	8.0	8.4	8.8	9.6	10.4	11.2	12.0	12.8	14.4	16	17.6	20	—	—	—
600	7.0	7.4	7.8	8.4	9.2	9.8	10.6	11.2	12.6	14	15.4	17.6	—	—	—
500	6.0	6.4	6.6	7.2	7.8	8.4	9.0	9.6	10.8	12	13.2	15.0	18	—	—
400	5.0	5.2	5.6	6.0	6.6	7.0	7.6	8.0	9.0	10	11.0	12.6	15	17.6	—
300	4.0	4.2	4.4	4.8	5.2	5.6	6.0	6.4	7.2	8.0	8.8	10.0	12	14.0	16
200	3.0	3.2	3.4	3.6	4.0	4.2	4.6	4.8	5.4	6.0	6.6	7.6	9.0	10.6	12
100	2.0	2.2	2.2	2.4	2.6	2.8	3.0	3.2	3.6	4.0	4.4	5.0	6.0	7.0	8.0
50	1.5	1.6	1.7	1.8	2.0	2.2	2.2	2.4	2.8	3.0	3.4	3.8	4.6	5.2	6.0
25	1.3	1.3	1.4	1.5	1.6	1.8	1.9	2.0	2.2	2.6	2.8	3.2	3.8	4.4	5.0
10	1.1	1.2	1.2	1.3	1.4	1.5	1.7	1.8	2.0	2.2	2.4	2.8	3.4	3.8	4.4
0	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.8	2.0	2.2	2.6	3.0	3.6	4.0

RATED STATIC TORQUE (LB. INS.)

STRAIGHT LINE

ALLOY STEEL UNIVERSAL JOINTS

Catalog Number	J37	J50	J62	J75	J87	J100	J112	J125	J150	J175	J200	J250	J300	J400
Torque — Lb. Ins.	20	80	166	320	370	600	670	1040	1680	2500	4400	7000	11,000	26,400

STAINLESS STEEL UNIVERSAL JOINTS

Catalog Number	JS37	JS50	JS62	JS75	JS87	JS100	JS112	JS125	JS150	JS175	JS200	JS250	JS300	JS400
Torque — Lb. Ins.	6	24	50	96	110	180	200	310	500	750	1320	1900	3100	7360

BOSTON GEAR®