where the world turns for couplings

Lovejoy®

Universal Joints

In This Section:

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- HD Type
- D Type Stainless
- NB (Needle Bearing) Type
- LOJ Type
- DD and DDX Type
- Universal Joint Boots

U

Universal Joints

⚠ Safety Warning

When using Lovejoy products, you must follow these instructions and take the following precautions. Failure to do so may cause the power transmission product to break and parts to be thrown with sufficient force to cause severe injury or death.

Refer to this Lovejoy Catalog for proper selection, sizing, horsepower, torque range, and speed range of power transmission products, including elastomeric elements for couplings. Follow the installation instructions included with the product, and in the individual product catalogs for proper installation of power transmission products. Do not exceed catalog ratings.

During start up and operation of power transmission product, avoid sudden shock loads. Coupling assembly should operate quietly and smoothly. If coupling assembly vibrates or makes beating sound, shut down immediately, and recheck alignment. Shortly after initial operation and periodically thereafter, where applicable, inspect coupling assembly for: alignment, wear of elastomeric element, bolt torques, and flexing elements for signs of fatigue. Do not operate coupling assembly if alignment is improper, or where applicable, if elastomeric element is damaged, or worn to less than 75% of its original thickness.

Do not use any of these power transmission products for elevators, man lifts, or other devices that carry people. If the power transmission product fails, the lift device could fall resulting in severe injury or death.

For all power transmission products, you must install suitable guards in accordance with OSHA and American Society of Mechanical Engineers Standards. Do not start power transmission product before suitable guards are in place. Failure to properly guard these products may result in severe injury or death from personnel contacting moving parts or from parts being thrown from assembly in the event the power transmission product fails.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500.

Universal Joints

Table of Contents

Lovejoy Pin & Block and Needle Bearing Industrial Universal Joints

Lovejoy has been manufacturing industrial universal joints for over 45 years. Our industrial universal joint product line is well established and provides you with a wide range of standard and specialized products. The shape of the yoke is a special feature which results in exceptionally high strength, yet allows full, free movement of the joint. This accounts for the high horsepower capacity at high speeds.

D Type

Features

- Industry standard
- Stainless steel and needle bearing available
- 13 sizes
- Pin & Block design
- Boot retaining grooves standard

HD Type

D Type

- Standard pin and block design
- Ideal for applications up to 25° of angular misalignment and speeds up to 1,750 RPM

D Stainless

HD Type

- The HD Type universal joint has induction hardened yoke ears provide longer life than standard D Type

D303 Stainless

- D Type universal joint is made from 303 stainless material
- Ideal for corrosive atmosphere or where sanitation requirements are a factor

Needle Bearing Type

NB (Needle bearing) Type

- Designed with high quality, pre-lubricated, and sealed needle bearings
- Ideal for applications up to 25° of angular misalignment and speeds up to 6,000 RPM

LOJ and JR-4

- Offset pin design ideal for use on hand operated, low torque drives
- Capable for operating angles up to 45° of angular misalignment

LOJ Type

DD and DDX Types

- Designed with two Lovejoy D Type universal joints and a center connecting shaft
- DD and DDX Type universal joints are tailored to your specific application requirements

Universal Joint Boots

- The life of a universal joint can be extended substantially if booted
- Wear areas of the universal joint are protected from dirt and contaminants, while lubrication is retained

DD and DDX Type

Universal Joint Boot

⚠ WARNING

You must refer to page UJ-2 (Page 330) for Important Safety Instructions and Precautions for the selection and use of these products. Failure to follow the instructions and precautions can result in severe injury or death.

Pin & Block Type Selection Process

List of Charts provided for Selection:

- Chart 1 – Application Service Factors (page UJ-6)
- Running Curves (page UJ-7)

Steps In Selecting A Universal Joint

Determine the correct universal joint size by working out the following calculations:

Step 1: Multiply revolutions per minute (RPM) by working angle.

Step 2: Determine the nominal torque of your application by using the following formulas:

$$\text{in-lbs} = \frac{\text{HP} \times 63025}{\text{RPM}}$$

$$\text{Nominal torque} = \text{Nm} = \frac{\text{KW} \times 9550}{\text{RPM}}$$

Step 3: Multiply the calculated torque by the desired Application Service Factor from Chart 1 on page UJ-6.

Step 4: Refer to the Running Curves on page UJ-7 that apply to the desired universal joint. For DD and DDX universal joints, use the curve that matches the universal joint being used. The required universal joint size can be determined by establishing the point of intersection of the RPM x Working Angle figure on the horizontal scale and the service factor torque of on the vertical scale. Size is stated against the curve immediately above this point.

Note: ■ Lubrication is required for optimal wear – boots and lubricant extend universal joint life.

Selection Example

A universal joint is needed to transmit a torque load of 180 in-lbs operating at 1,750 RPM. The working angle required is 5°, and the service factor is 2.

Step 1: RPM x Working Angle = 1,750 x 5 = 8,750

Step 2: Nominal Torque = 180 in-lbs

Step 3: Service Factor x Torque = 2.0 x 180 = 360

Step 4: Find the point of the intersection of 360 in-lbs on the torque scale (vertical) and 8,750 on the RPM x Working Angle scale (horizontal), and the curve immediately above that point will indicate the correct universal joint size. The proper universal joint size is D-13 or HD-13 for longer life.

Universal Joint Specification Chart

Universal Joint Type	Universal Joint Size	Max Angle Offset	Max Bore No Keyway Round in	Max Bore No Keyway Round mm	Max Square/ Hex Hole[3] in	Max Square/ Hex Hole[3] mm	Max RPM	Static Breaking* Torque in-lbs	Static Breaking* Torque Nm
D-Type	D-1 to D-14	25°	2.00	50	1.38	35	1,750	65,400	7 389
HD-Type	D-1 to D-14	25°	2.00	50	1.38	35	1,750	65,400	7 389
D Stainless	D4, 6, 8, 10, 12	25°	1.19	30	1.00	25	1,750	10,400	1 175
Needle Bearing	D6, 8, 10, 12	25°	1.19	30	1.00	25	6,000	10,500	1 186
LOJ	LOJ6, 8, 10	45°	See Data	—	See Data	—	—	3,480	393
LOJ JR-4	JR-4	45°	See Data	—	See Data	—	—	180	20
Multi-spindle	D-1 to D-14	25°	2.00	50	1.38	35	1,750	65,400	7 389

Notes:
- *** indicates: This is not a recommended operating torque.**
- 3 indicates: Square and hex bores are measured across the flats.
- Operation of all universal joints is determined by the angle/speed combinations of the application. Consult Lovejoy Engineering for specific limitations and recommendations.
- Applications that fall outside the limitations of these tables should be referred Lovejoy Engineering for assistance.

UJ

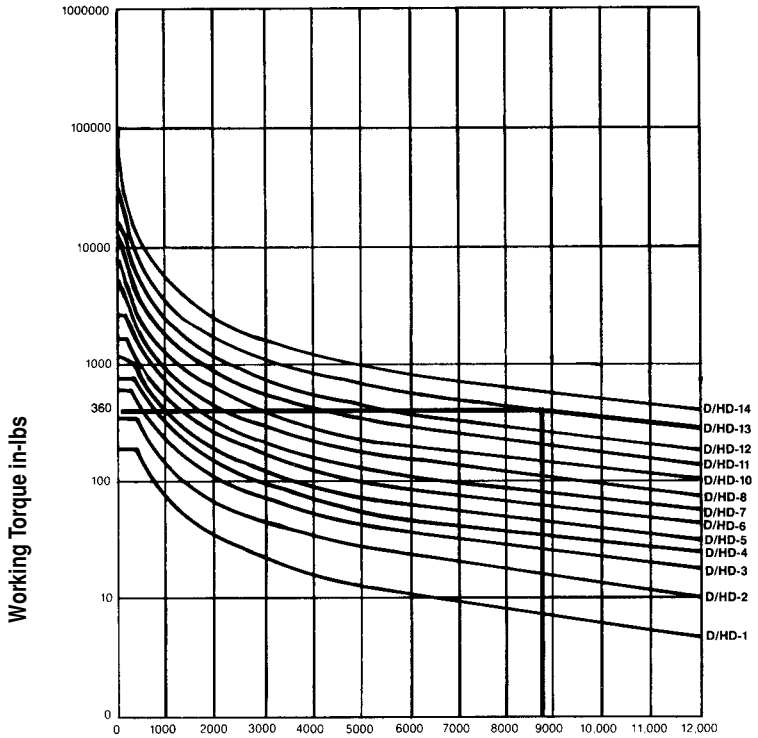
Application Service Factors ***Chart 1***

Agitators	
Pure Liquids	1.25
Liquids Variable	1.25
Barge Puller	2.00
Beaters	1.50
Blowers	
Centrifugal	1.25
Lobe	1.50
Vane	1.50
Can Filling Machinery	1.25
Car Dumpers	2.50
Car Pullers	1.50
Compressors	
Centrifugal	1.25
Lobe	1.50
Reciprocating	not recommended
Conveyors, Uniformly loaded or fed	
Assembly	1.25
Belt	1.25
Screw	1.25
Bucket	1.25
Live roll, shaker, and reciprocating	3.00
Conveyors (Heavy Duty), Not uniformly fed	
Assembly	1.20
Belt	1.20
Oven	1.20
Reciprocating	2.50
Screw	1.20
Shaker	3.00
Cranes & Hoists[1]	
Main Hoists	2.00
Reversing	2.00
Skip	2.00
Trolley Drive	2.00
Bridge Drive	2.00
Slope	2.00
Crushers	
Ore	3.00
Stone	3.00
Dredges	
Cable Reels	2.00
Conveyors	1.50
Cutter Head Drives	2.50
Maneuvering Winches	1.50
Pumps	1.50
Evaporators	
Consult Factory	1.25
Fans	
Centrifugal	1.25
Cooling Towers	2.00
Forced Draft	1.50
Induced Draft w/o Damper Control	2.00
Propellor	1.50
Induced Draft w/Damper Control	1.25
Feeders	
Belt	1.25
Screw	1.25
Reciprocating	2.50
Generators	
Not Welding	1.25
Welding	2.00
Hoist	1.50
Hammer Mills	2.00
Kilns	1.50
Laundry Washers	
Reversing	2.00
Line Shafting	
Any Processing Mach	1.50
Lumber Machinery	
Barkers	2.00
Edger Feed	2.00
Live Rolls	2.00
Planer	2.00
Slab Conveyor	2.00
Machine Tools	
Bending Roll	2.00
Plate Planer	2.00
Punch Press Gear Driven	2.00
Tapping Machinery	2.00
Other	
Main Drive	1.50
Aux. Drives	1.25
Metal Forming Machines	
Draw Bench Carriage	2.00
Draw Bench Main Drive	2.00
Extruder	2.00
Forming Machinery	2.00
Slitters	1.50
Table Conveyors	
Non-reversing	2.50
Reversing	2.50
Wire Drawing	2.00
Wire Winding	1.50
Coilers	1.50
Mills, Rotary Type	
Ball	2.00
Cement Kilns	2.00
Dryers, Coolers	2.00
Kilns	2.00
Pebble	2.00
Rolling	2.00
Tube	2.00
Tumbling	1.50
Mixers	
Concrete, Continous	1.75
Muller	1.50
Paper Mills	
Agitators (Mixers)	1.25
Barker, Mechanical	2.00
"Barking" Drum Spur Gear	2.50
Beater & Pulper	2.00
Calenders	1.50
Converting Machines	1.25
Conveyors	1.25
Dresses	2.00
Dryers	1.50
Jordans	2.00
Log Haul	2.00
Reel	1.25
Super Calenders	1.50
Winder	1.25
Printing Presses	1.50
Pug Mill	1.75
Pumps	
Centrifugal	1.25
Gear, Rotary, or Vane	1.25
Reciprocating	
1 cyl. single or double acting	2.00
2 cyl. single acting	2.00
2 cyl. double acting	1.75
3 or more cyl.	1.50
Rubber Machinery	
Mixer	2.50
Rubber Calender	2.00
Screens	
Air Washing	1.25
Rotary Stone or Gravel	1.50
Vibrating	2.50
Water	1.25
Grizzly	2.00
Shredders	1.50
Steering Gear	not recommended
Stokers	1.25
Textile Machinery	
Dryers	1.25
Dyeing Mach.	1.25
Tumbling Barrel	1.75
Windlass	2.00
Woodworking Machinery	1.50

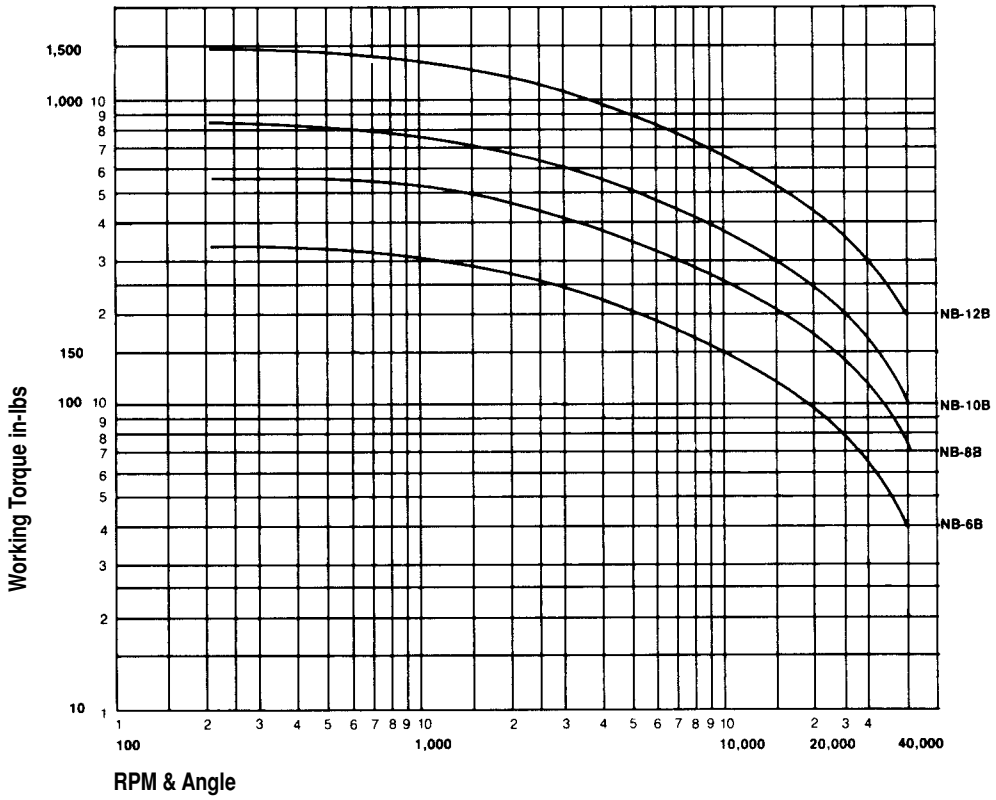
Notes:
- 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.
- The values contained in the table should be used as a general guide.
- For above average shock loads or start/stop conditions of not more than once per hour, add .5 to the table value.
- Universal joints are not recommended for internal combustion engine applications.
- For severe shock loads or reversing loads, or start/stop conditions of more than once per hour, add 1 to the table value.

Running Curves

D and HD Type



NB Type

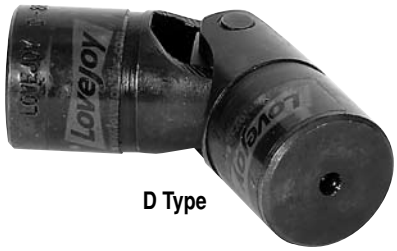


U

Universal Joints
D and HD Type
Dimensional Data

D Type

- Standard industrial type universal joint with pin & block design
- The D Type is ideal for applications with angles up to 25° and speeds of up to 1,750 RPM
- Available in your choice of round, hex, splined, or keyway bore
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life

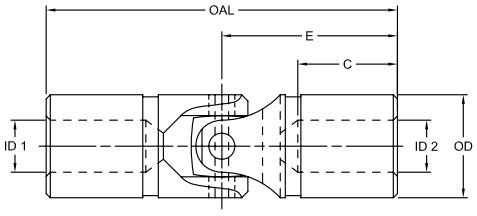


D Type

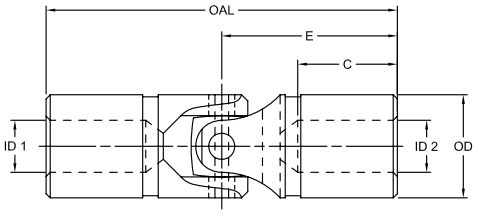
HD Type

- The HD Type universal joint has induction hardened yoke ears provide longer life than standard D Type
- The hardened yokes are matched fitted with the universal components
- HDD and HDDX drive line assemblies can also be provided to increase life of your drive line or drive shaft
- Available in your choice of round, hex, splined, or keyway bore
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life

HD Type



D Type



HD Type

D and HD Type Dimensional Data

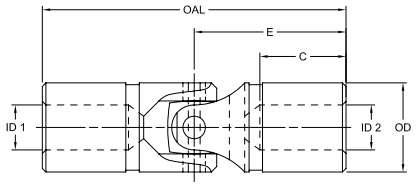
Size		OAL	E	C	Std	ID1 - ID2						OD	Static*		Weight	
			Main Pin	Bore	Bore	Max Bore No Keyway		Max Bore with Keyway		Max Square/ Hex Hole[3]			Breaking Torque		Solid	Bored
Solid	Bored	in	Height in	Depth in	in	in	mm	in	mm	in	mm	in	in-lb	Nm	lbs	lbs
D-1	D-1B	1.75	.88	.56	.19	.25	6	–	–	.19	4	.38	110	12	.05	.04
D-2	D-2B	2.00	1.00	.62	.25	.38	9	–	–	.25	6	.50	378	42	.10	.08
D-3	D-3B	2.25	1.12	.68	.31	.50	12	–	–	.31	8	.62	540	61	.17	.15
D-4	D-4B	2.68	1.34	.88	.38	.62	15	.44	11	.38	9	.75	768	86	.30	.25
D-5	D-5B	3.00	1.50	.88	.44	.69	17	.50	12	.44	11	.88	1,176	132	.45	.37
D-6	D-6B	3.38	1.68	1.00	.50	.75	19	.56	13	.50	12	1.00	1,560	176	.65	.55
D-7	D-7B	3.50	1.75	1.00	.56	.88	22	.62	15	.56	14	1.12	2,880	325	.85	.71
D-8	D-8B	3.75	1.88	1.06	.62	1.00	25	.75	18	.62	15	1.25	5,220	589	1.11	.94
D-10	D-10B	4.25	2.12	1.18	.75	1.12	28	.88	21	.75	19	1.50	7,920	895	1.80	1.50
D-11	D-11B	5.00	2.50	1.38	.88	1.25	31	1.00	25	.88	22	1.75	10,680	1 206	3.00	2.50
D-12	D-12B	5.44	2.72	1.50	1.00	1.50	38	1.19	30	1.00	25	2.00	15,600	1 762	4.20	3.50
D-13	D-13B	7.00	3.50	2.00	1.25	1.75	44	1.50	39	1.12	28	2.50	33,120	3 742	8.50	7.20
D-14	D-14B	9.06	4.53	2.75	1.50	2.00	50	1.81	48	1.38	35	3.00	65,400	7 389	16.00	13.00

Notes:
- *** indicates: This is not a recommended operating torque.**
- 3 indicates: Square and hex bores are measured across the flats.
- Operation of all universal joints is determined by the angle/speed combinations of the application. Consult Lovejoy Engineering for specific limitations and recommendations.
- Applications that fall outside the limitations of these tables should be referred to Lovejoy Engineering for assistance.

D Type 303 Stainless

- Made from 303 stainless steel
- Ideal for applications with exposure to corrosive chemicals, corrosive atmosphere, or sanitation requirements are a factor
- Available in sizes: 4, 6, 8, 10 and 12 (Other sizes are quantity dependent)
- Available in your choice of round, hex, splined, or keyway bore
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life
- Contact Lovejoy Engineering if you have specific questions or requirements

D-SS Type



D Type 303 Stainless Dimensional Data

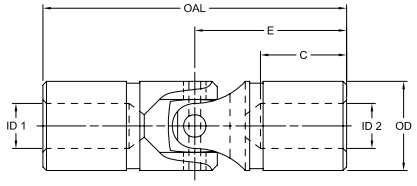
Size		OAL	E	C		ID1 - ID2						OD	Static*		Weight	
			Main Pin	Bore	Std	Max Bore		Max Bore		Max Square/			Breaking Torque			
			Height	Depth	Bore	No Keyway		with Keyway		Hex Hole[3]					Solid	Bored
Solid	Bored	in	in	in	in	in	mm	in	mm	in	mm	in	in-lb	Nm	lbs	lbs
D-4SS	D-4SSB	2.68	1.34	.88	.38	.62	15	.44	11	.38	9	.75	512	58	.30	.25
D-6SS	D-6SSB	3.38	1.68	1.00	.50	.75	19	.56	13	.50	12	1.00	1,040	117	.62	.55
D-8SS	D-8SSB	3.75	1.88	1.06	.62	1.00	25	.75	18	.62	15	1.25	3,480	393	1.11	.94
D-10SS	D-10SSB	4.25	2.12	1.18	.75	1.12	28	.88	21	.75	19	1.50	5,280	597	1.80	1.50
D-12SS	D-12SSB	5.44	2.72	1.50	1.00	1.50	38	1.19	30	.88	22	2.00	10,400	1 175	4.20	3.50

Notes:
- *** indicates: This is not recommended operating torque.**
- 3 indicates: Square and hex bore measured across the flats.
- Keyways, set screws, pin holes, or bores other than standard available at additional charge.
- Maximum operating angle for transmission of power is 25°.
- Applications that fall outside the limitations of these tables should be referred to Lovejoy Engineering for assistance.

Needle Bearing (NB) Type

- Designed with high quality, pre-lubricated, and sealed needle bearings
- Ideal for applications up to 25° of angular misalignment and speeds up to 6,000 RPM
- Available in sizes: 6, 8, 10 and 12 (Other sizes are quantity dependent) with your choice of round, hex, splined, or keyway bores
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life

NB Type



Needle Bearing Type Dimensional Data

Size		OAL	E	C		ID1 - ID2						OD	Static*		Weight
			Main Pin	Bore	Std	Max Bore		Max Bore		Max Square/			Breaking Torque		
			Height	Depth	Bore	No Keyway		with Keyway		Hex Hole[3]					Solid
Solid	Bored	in	in	in	in	in	mm	in	mm	in	mm	in	in-lb	Nm	lbs
NB-6	NB-6B	3.38	1.68	1.00	.50	.75	19	.56	13	.50	12	1.00	1,150	130	.53
NB-8	NB-8B	3.75	1.88	1.06	.62	1.00	25	.75	18	.62	15	1.25	2,500	282	.91
NB-10	NB-10B	4.25	2.12	1.18	.75	1.12	28	.88	21	.75	19	1.50	4,400	497	1.50
NB-12	NB-12B	5.44	2.72	1.50	1.00	1.50	38	1.19	30	.88	22	2.00	10,500	1 186	3.40

Notes:
- *** indicates: This is not recommended operating torque.**
- 3 indicates: Square and hex bore measured across the flats.
- Maximum operating angle for transmission of power is 25°.
- For greater angular operation, use double universal joint. Join two universal joints back to back and connect with a short shaft. Attach universal joints to shaft by drilling and pinning.
- Swing Diameter is the maximum diameter over bearings, clearance must be allowed.

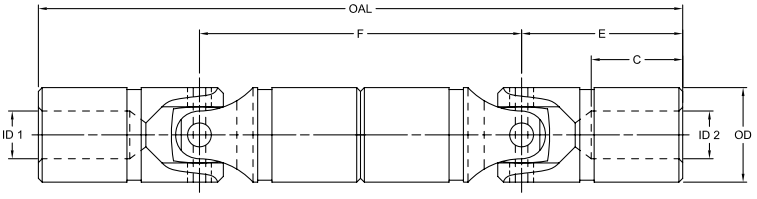
Universal Joints
DD and DDX Type
Dimensional Data

Double Joint Arrangement

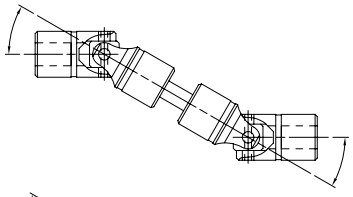
- Designed with two Lovejoy D Type universal joints and a center connecting shaft
- DD and DDX Type universal joints are tailored to your specific application requirements
- This configuration compensates for both parallel misalignment and shaft separation
- Round, hex, splined, or keyway bores are supplied per your requirements
- Boot retaining grooves are standard. See page UJ-11 for selection of on-site replaceable universal joint boots
- Lubrication is required for optimal wear – boots and lubricant extend universal joint life

DD Type

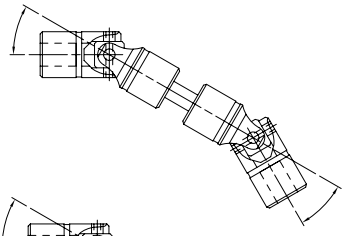
DDX Type



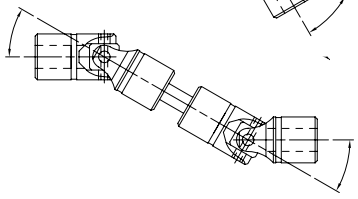
Correct Assembly
Yoke ears are aligned and angles are equal



Correct Assembly
Yoke ears are aligned and angles are equal



Incorrect Assembly
Yoke ears are not in alignment



DD and DDX Type Dimensional Data

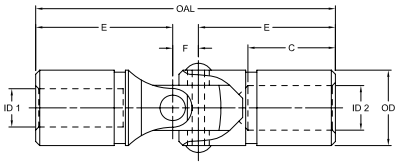
Size		OAL	F		E	C		ID1 - ID2				OD			Weight
			Std	Min	Main Pin Height	Bore Depth	Std Bore	Max Bore No Keyway		Max Square/ Hex Hole[3]			Static* Breaking Torque		Solid
Solid	Bored	in	in	in	in	in	in	in	mm	in	mm	in	in-lb	Nm	lbs
DD-1	DD-1B	3.50	1.75	1.18	0.88	0.56	0.19	0.25	6	0.19	4	0.38	110	12.4	0.09
DD-2	DD-2B	4.00	2.00	1.38	1.00	0.62	0.25	0.38	9	0.25	6	0.50	378	42.7	0.18
DD-3	DD-3B	4.50	2.25	1.56	1.12	0.68	0.31	0.50	12	0.31	7	0.62	540	61.0	0.32
DD-4	DD-4B	5.38	2.68	1.81	1.34	0.88	0.38	0.62	15	0.38	9	0.75	768	86.8	0.55
DD-5	DD-5B	6.00	3.00	2.12	1.50	0.88	0.44	0.69	17	0.44	11	0.88	1,176	133.0	0.82
DD-6	DD-6B	6.75	3.38	2.38	1.68	1.00	0.50	0.75	19	0.50	12	1.00	1,560	176.0	1.20
DD-7	DD-7B	7.00	3.50	2.50	1.75	1.00	0.56	0.88	22	0.56	14	1.12	2,880	325.0	1.56
DD-8	DD-8B	7.50	3.75	2.68	1.88	1.06	0.62	1.00	25	0.62	15	1.25	5,220	590.0	2.05
DD-10	DD-10B	8.50	4.25	3.06	2.12	1.18	0.75	1.12	28	0.75	19	1.50	7,920	895.0	3.30
DD-11	DD-11B	10.00	5.00	3.62	2.50	1.38	0.88	1.25	31	0.81	20	1.75	10,680	1 207.0	5.50
DD-12	DD-12B	10.88	5.44	3.94	2.72	1.50	1.00	1.50	38	0.88	22	2.00	15,600	1 762.0	7.70
DD-13	DD-13B	14.00	7.00	5.00	3.50	2.00	1.25	1.75	44	1.12	28	2.50	33,120	3 742.0	15.70
DD-14	DD-14B	18.12	9.06	6.31	4.53	2.75	1.50	2.00	50	1.38	35	3.00	65,400	7 389.0	29.00

Notes:
- *** indicates: This is not recommended operating torque.**
- 3 indicates: Square and hex bore measured across the flats.
- Bores other than shown are available at additional charge.
- Shorter centers upon request.
- For universal joint boot dimensions, see page UJ-11.

LOJ and JR-4 Types

- Offset pin design ideal for use on hand operated, low torque drives
- Capable for operating angles up to 45° of angular misalignment
- Application examples: remote control linkages, snow blowers, packaging machinery, awning devices, etc.
- The LOJ available with round, hex, splined, or keyway bores
- The JR-4 is made of tough Zytel® material, so it will not rust and no lubrication needed
- The JR-4 withstands oils, gasoline, salts, and temperatures from -40° to 225° F
- The JR-4 is available in .38 inch bore only

LOJ Type



LOJ - JR-4

LOJ Type Dimensional Data

Size		OAL	F	E	C	Std	ID1 - ID2				OD	Pin	Static*		Weight	
				Main Pin Height	Bore Depth	Bore	Max Bore No Keyway		Max Bore with Keyway			OD	Breaking Torque		Solid	Bored
Solid	Bored	in	in	in	in	in	in	mm	in	mm	in	in	in-lb	Nm	lbs	lbs
LOJ-6	LOJ-6B	2.94	0.25	1.35	0.75	0.50	0.62	15	0.44	11	0.75	0.88	840	95	0.30	0.25
LOJ-8	LOJ-8B	3.68	0.31	1.69	0.91	0.62	0.75	19	0.56	14	1.00	1.12	1,500	169	0.65	0.55
LOJ-10	LOJ-10B	3.75	0.38	1.69	1.00	0.75	1.00	25	0.75	19	1.25	1.44	3,480	393	1.11	0.94

Notes: ■ *** indicates: This is not a recommended operating torque.**
■ Maximum operating angle 45° for hand-operated applications.

JR-4 Type Dimensional Data

Size	OAL	F	E	C	ID1 - ID2	OD	Pin	Static*	
			Main Pin Height	Bore Depth	Std Bore		OD	Breaking Torque	
	in	in	in	in	in	in	in	in-lb	Nm
JR-4	3	0.31	1.69	0.62	0.38	0.68	1.18	160	20

Notes: ■ *** indicates: This is not a recommended operating torque.**
■ Maximum operating angle 45° for hand-operated applications.

Universal Joint Boots

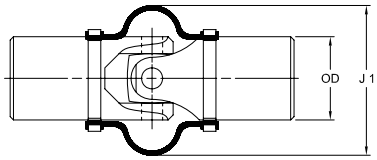
- Protects the universal joint from dirt and contaminants, while lubrication is retained
- Lovejoy on-site replacement boots ensure proper lubrication for up to five times longer universal joint life
- Installation and replacement is fast and easy, so your machine can be back in operation in minutes
- Lovejoy universal joints D, D SS, DD, DDX, HD, and NB come pre-grooved
- Use the larger type diameter Upper Type boots when possible and smaller diameter Lower Type boots when space is restricted
- Standard boots are packaged two to a bag

Boot Dimensional Data

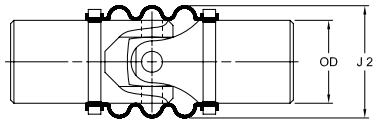
Size	OD in	J1 Upper in	J2 Lower in
D-1	0.38	0.72	0.62
D-2	0.50	0.91	0.75
D-3	0.62	1.09	0.94
D-4	0.75	1.34	1.06
D-5	0.88	1.50	1.25
D-6	1.00	1.75	1.38
D-7	1.12	2.03	1.50
D-8	1.25	2.03	1.68
D-10	1.50	2.56	1.94
D-11	1.75	–	2.18
D-12	2.00	–	2.59
D-13	2.50	–	3.25
D-14	3.00	–	4.25

Universal Joint Boots

Note: ■ Boot sizes D-11 through D-14 have 3-hump design similar to Lower Type Boot (L). Not shown.



Upper Type Boot (U)



Lower Type Boot (L)

U