Jaw Couplings

IN THIS SECTION:

- L Type
- LC Type
- Al Type - Aluminum
- SS Type - Stainless
- RRS and RRSC Types - Spacer
- C and H Type - Medium / Heavy Duty
- RRC Type - Spacer

Warnings

WARNING

Failure to observe the following warnings could cause the power transmission product to break and parts to be thrown with sufficient force to cause serious injury or death.

Selection. Do not exceed catalog ratings. Refer to the Lovejoy catalog for proper selection, sizing, horsepower, torque range, and speed range of these products.

Installation. Proper maintenance, handling, and shop practices are critical. Follow all installation instructions included with the product and provided by your equipment manufacturer, and all applicable federal, state, and local regulations concerning the safe operation and maintenance of manufacturing equipment.

Operation. Avoid sudden shock loads during start up and operation.

Do not operate a coupling assembly with improper alignment or bolt torque or with damaged or worn elastomeric elements. Inspect the assembly for these conditions shortly after initial operation and periodically thereafter.

The coupling assembly should operate quietly and smoothly. If the coupling assembly vibrates or makes a beating sound, shut down the equipment immediately and recheck the alignment.

Disclaimer

This catalog is provided solely to give you analysis tools and data to assist you in your product selection. Product performance is affected by many factors beyond the control of Lovejoy. Therefore, you must validate the suitability and feasibility of all product selections for your applications.

Lovejoy does not manufacture or sell power transmission products for elevators, man lifts, or other devices that carry people. We make no representation or warranty concerning such uses disclaim all liability for harm that might result from the use of our products in those applications.

Lovejoy products are sold subject to Lovejoy terms and conditions of sale (view at www.lovejoy-inc.com/resources), which include our limited warranty and remedy. Please consult with your Lovejoy engineer for more information and assistance.

Every reasonable effort has been made to ensure the accuracy of the information in this writing, but no liability is accepted for errors, omissions or for any other reason.

If you have any questions, contact the Lovejoy Engineering Department at 1-630-852-0500 or email appleng@lovejoy-inc.com.

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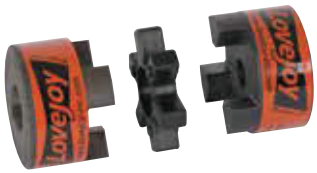
Jaw Type Couplings

The Jaw Type couplings from Lovejoy are offered in the industry's largest variety of stock bore/keyway combinations. These couplings require no lubrication and provide highly reliable service for light, medium, and heavy duty electrical motor and internal combustion power transmission applications.



L Type

LC Type

Features

- Fail-safe – will still perform if elastomer fails
- No metal to metal contact
- Resistant to oil, dirt, sand, moisture and grease
- More than 850,000 combinations of bore sizes
- Most types available from stock in 24 hours

Applications include power transmission to industrial equipment such as pumps, gear boxes, compressors, blowers, mixers, and conveyors. Lovejoy's Jaw Type couplings are available in 24 sizes from a minimum torque rating of 3.5 in–lbs to a maximum torque rating of 170,000 in–lbs and a bore range of .125 inches to 7 inches. Lovejoy's standard bore program covers AGMA, SAE, and DIN bore/keyway and spline bore combinations.

The Lovejoy Jaw Type coupling is available in a variety of metal hub and insert materials. Hubs are offered in sintered metal, aluminum, bronze, steel, stainless steel, and ductile iron.

AL Type Jaw

SS Type

L Type

- Coupling offers standard shaft-to-shaft connection for general industrial duty applications
- Standard L Type coupling hub materials are either sintered iron (L035-L190) or cast iron (L225-L276)

LC Type

- Uses the standard L Type hubs with a snap wrap and collar
- Suited for applications up to 3,600 RPM

AL Type

- Aluminum hubs offer light weight with low overhung load and low inertia
- Excellent resistance to atmospheric conditions, perfect for corrosive environment applications

SS Type

- The SS Type coupling provides maximum protection against harsh environmental conditions
- Sizes SS075-SS150 available from stock, other sizes available on request

RRS Type

RRS Type

- Center "drop out" section of this coupling provides proper shaft separation, while also allowing easy elastomer installation without disturbing the hubs or requiring the realignment of shafts
- Accommodates American and European industry standard pump/motor shaft separations
- The spacer is made of glass reinforced plastic, cast iron, or aluminum

SW Type

- Standard L Type coupling with a snap wrap elastomer with retaining ring
- Well suited for standard shaft to shaft connection in general industrial purpose applications under 1,750 RPM

SW Type

C & H Types

C & H Types

- Couplings provide standard shaft-to-shaft connection for medium (C) and Heavy (H) duty range applications
- Standard C coupling hub is made of cast iron, while the H is constructed of ductile iron

Elastomers In Compression

Lovejoy offers four types of elastomer designs to allow for additional flexibility in addressing specific application requirements. One piece designs are used in the "L" and "AL" models (referred to as spiders) and multiple part "load cushions" are used in the "C" and "H" model couplings. The load cushions are in sets of 6 to 14 pieces depending on coupling size.

Solid Center Spider

- The solid center design is commonly used design when shafts of the driver and driven equipment can be kept separate by a standard gap

Open Center Spider

- The open center design allows for the shafts of the driver and driven to be positioned within a short distance
- Open center spiders offer shaft positioning flexibility but have a lower RPM capacity (1,750 RPM maximum for NBR, 3,600 maximum for Urethane/Hytrel®)

Cushions

- Used exclusively for the C and H Type couplings
- Load cushions are held in place radially by a steel collar which is attached to one of the hubs

Snap Wrap Flexible Spider

- Design allows for easy removal of the spider without moving the hubs
- Allows for close shaft separation all the way up to the hubs maximum bore
- Maximum RPM is 1,750 RPM with the retaining ring, but if used with the LC Type (with collar) a 3,600 RPM rating of the coupling applies
- Style is available in NBR and Urethane only, and in limited sizes

Note: ■ Complete technical data for the new Jaw In-Shear elastomer is contained in the next section of this catalog, labeled "JIS" on the page tabs.

Spider Materials

SOX (NBR) Rubber

- The standard material that is highly flexible material that is oil resistant
- Resembles natural rubber in resilience and elasticity, and operates effectively in temperature ranges of -40° to 212° F (-40° to 100° C)

Urethane

- Has 1.5 times greater torque capacity than NBR
- Good resistance to oil and chemicals
- Material provides less dampening effect and operates at a temperature range of -30° to 160° F (-34° to 71° C)

Hytrel

- Flexible elastomer designed for high torque and high temperature operations
- Operates in temperatures of -60° to 250° F (-51° to 121° C)

Bronze

- Rigid, porous, oil-impregnated metal insert exclusively for low speed (max 250 RPM) applications requiring high torque capabilities
- Not affected by water, oil, dirt, or extreme temperatures – operates in temperatures of -40° to 450° F (-40° to 232° C)

⚠ WARNING

Failure to follow these cautions could create a risk of injury.

You must refer to page JW-2 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.

Jaw Type Coupling Selection Process

The selection process for determining the proper jaw coupling size and elastomer requires using the charts shown on the following pages. There are three components to be selected, two hubs and one elastomer. When the shaft size of the driver and driven of the application are of the same diameter, the hubs selected will be the same. When shaft diameters differ, hubs selected will differ accordingly.

Information necessary before a coupling can be selected:

- HP (or KW) and RPM or Torque of driver
- Shaft sizes of driver and driven equipment and corresponding keyways
- Application description
- Environmental conditions (i.e. extreme temperature, corrosive conditions, space limitations)

List of Charts provided for Selection:

- **Chart 1** – Application Service Factors (page JW-8)
- **Chart 2** – Spider Performance Data (page JW-10)
- **Chart 3** – Jaw Nominal Rated Torque (page JW-10)
- Jaw Type Performance Ratings (page JW-23)

Formulas:

$$\text{Nominal Torque} = \text{in-lb} = \frac{(HP \times 63025)}{RPM}$$

$$\text{Nm} = \frac{(KW \times 9550)}{RPM}$$

Design Torque = Nominal Torque x Application Service Factor

Steps In Selecting A Jaw Coupling

Step 1: Determine the Nominal Torque of your application by using the following formula:

$$\text{Nominal Torque} = \text{in-lb} = \frac{(HP \times 63025)}{RPM}$$

$$\text{Nm} = \frac{(KW \times 9550)}{RPM}$$

Step 2: Using the Application Service Factors Chart 1 (page JW-8) select the service factor which best corresponds to your application.

Step 3: Calculate the Design Torque of your application by multiplying the Nominal Torque calculated in Step 1 by the Application Service Factor determined in Step 2.

Design Torque = Nominal Torque x Application Service Factor

Step 4: Using the Spider Performance Data Chart 2 (page JW-10), select the elastomer material which best corresponds to your application.

Step 5: Using the Jaw Nominal Rated Torque Chart 3 (page JW-10), locate the appropriate elastomer material column for the elastomer selected in Step 4.

Scan down this column to the first entry where the Torque Value in the appropriate column is greater than or equal to the Design Torque calculated in Step 3.

Once this value is located, refer to the corresponding coupling size in the first column of the Jaw Nominal Rated Torque Chart 3 (page JW-10).

Refer to the maximum RPM value (page JW-23) for this elastomer torque capability to ensure that the application requirements are met. If the requirement is not satisfied at this point, another type of coupling may be required for the application. Please consult Lovejoy engineering for assistance.

Step 6: Compare the application driver/driven shaft sizes to the maximum bore size available on the coupling selected. If coupling bore size is not large enough for the shaft diameter, select the next largest coupling that will accommodate the driver/driven shaft diameters. Refer to Chart 3 (page JW-10).

Step 7: Using the UPC number selection table (pages JW-12 or JW-13), find the appropriate Bore and Keyway sizes required and locate the Lovejoy UPC number.

Selection Example

A coupling is needed to connect a 20 HP standard electric motor rated at 1,800 RPM to a rotary pump. The shaft size of the electric motor (driver) is 2.0 inches and the pump (driven) is 1.75 inches. There are no special environmental conditions and the general operating temperature is normal room temperature of 72° F. Less than 1° of misalignment is expected.

Step 1: Determine the Nominal Torque:

$$\text{Nominal Torque} = \frac{(\text{HP} \times 63025)}{\text{RPM}}$$

$$= \frac{(20 \times 63025)}{1800}$$

$$= 700.28 \text{ in-lb}$$

Step 2: Using the Application Service Factors Chart 1 (page JW-8), select the service factor which best corresponds to your application. The Application Service Factor for an electric motor with standard torque driving a rotary pump is 1.25. The value of 1.25 is found under the application category Pumps, Rotary, column: Electric Motor w/Standard Torque in Chart 1.

Step 3: Calculate the Design Torque of your application:

Design Torque = Nominal Torque x Application Service Factor
= 700.28 x 1.25
= 875.35 in-lb

Step 4: Using the Spider Performance Data Chart 2 (page JW-10), select the elastomer material which best corresponds to your application. Since there are no special environmental conditions, the operating temperature is 72° F and less than 1° of angular misalignment is required, the NBR elastomer material is selected.

Step 5: Using the Jaw Nominal Rated Torque Chart 3 (page JW-10), the NBR elastomer column is used to determine the proper coupling size. Scanning down the NBR column, the first entry to accommodate the Design Torque value of 875.35 in-lb is the size L150 with a nominal torque rating of 1,240 in-lb. Referring to page JW-21, the maximum RPM of 1,800 on the electric motor of the application does not exceed the 5,000 RPM maximum allowed for the L150 size coupling with an NBR elastomer.

Step 6: Compare the application driver/driven shaft size to the maximum bore available in the coupling selected (page JW-10). The electric motor (driver) of this application has a shaft size of 2.0 inches and the pump (driven) has a shaft size of 1.75 inches. The L150 coupling has a maximum bore less than the driver shaft size. Continuing down the Maximum Bore column, in Chart 3 (page JW-10), the L190 size is found to have a maximum bore size of 2.125 and is able to accommodate the driver/driven shaft sizes. Therefore, the proper coupling size for this application is a Lovejoy L190 with an NBR elastomer.

Step 7: Using the UPC number Selection table, locate the appropriate Lovejoy UPC numbers. The L Type Spider Table (page JW-11), and the L Type hub table (page JW-12), provides easy reference to the Lovejoy UPC numbers.

Locate the L Type Spider Table (page JW-11).

The spider is selected by scanning down the type column and locating the NBR (Solid) entry. Read across to the L190 column and locate the Lovejoy UPC number of 12274. This number should be prefixed with the Lovejoy UPC number of 685144.

Locate the L Type Hub Table (page JW-12).

The first bore size to be located is for the 2 inch shaft on the electric motor. Scan down the Bore/Keyway column to the 2 inch bore entry. Read across to the L190 column to locate the Lovejoy UPC number of 12303. This number should be prefixed with the Lovejoy UPC number of 685144.

The second bore size to be located is for the 1.75 inch shaft on the pump. Scan down the Bore/Keyway column to the 1-3/4 inch bore entry. Read across to the L190 column to locate the Lovejoy UPC number of 12299. This number should be prefixed with the Lovejoy UPC number of 685144.

Application Service Factors

Selection Data

Application Service Factors — *Chart 1*

	Service Factors		
	Electric Motor w/ Standard Torque	Electric Motor w/ High Torque	Turbines, Air & Hydraulic Motors
Agitators	1.25	1.50	1.00
Band Resaw (lumber)	1.50	2.00	1.25
Barge Haul Puller	2.00	2.50	1.50
Barking (lumber)	2.00	2.50	1.50
Bar Screen (sewage)	2.00	2.50	1.50
Batches (textile)	1.25	1.50	1.00
Beater and Pulper (paper)	1.50	2.00	1.25
Bending Roll (metal)	1.50	2.00	1.25
Bleacher (paper)	1.25	1.50	1.00
Blowers			
Centrifugal, Vane	1.25	1.50	1.00
Lobe	1.50	2.00	1.25
Bottling Machinery	1.25	1.50	1.00
Brew Kettles (distilling)	1.25	1.50	1.00
Bucket Elevator or Conveyor	1.50	2.00	1.25
Calenders			
Calender (paper)	1.50	2.00	1.25
Calender (rubber), Calender-super (paper)	2.00	2.50	1.50
Cane Knives (sugar)	1.50	2.00	1.25
Card Machine (textile)	2.00	2.50	1.50
Car Dumpers	2.00	2.50	1.50
Car Pullers	1.50	2.00	1.25
Cement Kiln	2.00	2.50	1.50
Centrifugal, Blower, Fans, Compressors, or Pumps	1.25	1.50	1.00
Chemical Feeders (sewage)	1.25	1.50	1.00
Chiller (oil)	1.50	2.00	1.25
Chipper (paper)	2.00	2.50	1.50
Circular Resaw (lumber)	1.50	2.00	1.25
Clarifier or Classifier	1.25	1.50	1.00
Clay Working M'cery	1.50	2.00	1.25
Collectors (sewage)	1.25	1.50	1.00
Compressors			
Centrifugal, Screw, Lobe	1.25	1.50	1.00
Reciprocating	See Note		
Concrete Mixers	1.50	2.00	1.25
Converting Machine (paper)	1.50	2.00	1.25
Conveyors			
Apron, Assembly, Belt, Flight, Oven, Screw	1.25	1.50	1.00
Bucket	1.50	2.00	1.25
Cookers—Brewing, Distilling, Food	1.25	1.50	1.00
Cooling Tower Fans	2.00	2.50	1.50
Couch (paper)	1.50	2.00	1.25
Cranes & Hoists[1]			
Heavy duty mine	2.00	2.50	1.50
Crushers—Cane (sugar), **Stone, Ore**	2.00	2.50	1.50
Cutter-Paper	2.00	2.50	1.50
Cylinder (paper)	2.00	2.50	1.50
Dewatering Screen (sewage)	1.50	2.00	1.25
Disc Feeder	1.25	1.50	1.00
Dough Mixer	1.50	2.00	1.25
Draw Bench Conveyor & Main Drive	2.00	2.50	1.50
Dredges			
Cable reef, Pumps	1.50	2.00	1.25
Cutter head, Jig, & Screen Drives	2.00	2.50	1.50
Maneuvering & Utility Winch, Stacker	1.50	2.00	1.25
Dynamometer	1.25	1.50	1.00
Dryers (rotary)	1.50	2.00	1.25
Edger (lumber)	2.00	2.50	1.50
Escalators[1]	1.25	1.50	1.00
Extruders (metal)	2.00	2.50	1.50
Fans			
Centrifugal	1.25	1.50	1.00
Cooling Towers	2.00	2.50	1.50
Forced Draft, Large Industrial	1.50	2.00	1.25
Feeders			
Apron, Belt, Disc	1.25	1.50	1.00
Reciprocating	2.00	2.50	1.50
Screw	1.50	2.00	1.25
Filter, Press-Oil	1.50	2.00	1.25
Generators			
Uniform Load	1.25	1.50	1.00
Varying Load, Hoist	1.50	2.00	1.25
Welders	2.00	2.50	1.50
Grit Collector (sewage)	1.25	1.50	1.00
Grizzly	2.00	2.50	1.50
Hammermills			
Light Duty, Intermittent	1.50	2.00	1.25
Heavy Duty, Continuous	2.00	2.50	1.50
Hoists			
Heavy Duty	2.00	2.50	1.50
Medium Duty	1.50	2.00	1.25
Jordan (paper)	2.00	2.50	1.50
Kiln, Rotary	2.00	2.50	1.50
Laundry Washer or Tumbler	2.00	2.50	1.50
Line Shafts	1.25	1.50	1.00
Log Haul (lumber)	2.00	2.50	1.50
Loom (textile)	1.50	2.00	1.25
Machine Tools, Main Drives	1.50	2.00	1.25
Mangle (textile)	1.25	1.50	1.00
Mash Tubs (distilling)	1.25	1.50	1.00
Meat Grinder	1.50	2.00	1.25
Metal Forming Machines	1.50	2.00	1.25
Mills			
Ball, Pebble, Rod, Tube, Rubber, Tumbling	2.00	2.50	1.50
Dryers, Coolers	1.50	2.00	1.25
Mixers			
Concrete, Muller	1.50	2.00	1.25
Banbury	2.00	2.50	1.50
Ore Crusher	2.00	2.50	1.50
Oven Conveyor	1.25	1.50	1.00
Planer (metal or wood)	1.50	2.00	1.25
Pressers			
Brick, Briquette Machine	2.00	2.50	1.50
Notching, Paper, Punch Printing	1.50	2.00	1.25
Pug Mill	1.50	2.00	1.25
Pulp Grinder (paper)	2.00	2.50	1.50
Pulverizers			
Hammermill—Light Duty, Roller	1.50	2.50	1.25
Hammermill—Heavy Duty Hog	2.00	2.50	1.50
Pumps			
Centrifugal, Axial	1.25	1.50	1.00
Gear, Lobe, Vane	1.50	2.00	1.25
Reciprocating—Sgl. or Dbl. Acting Cylinder	2.00	2.50	2.00
Reel, Rewinder (paper)			
Cable	1.50	2.00	1.25
Rod Mill	2.00	2.50	1.50
Saw Dust Conveyor	1.25	1.50	1.00
Screens			
Air Washing, Water	1.25	1.50	1.00
Rotary—Coal or Sand	1.50	2.00	1.25
Vibrating	2.00	2.50	2.00
Screw Conveyor	1.25	1.50	1.00
Slab Conveyor (lumber)	1.50	2.00	1.25
Slitters (metal)	1.50	2.00	1.25
Soapers (textile)	1.25	1.50	1.00
Sorting Table (lumber)	1.50	2.00	1.25
Spinner (textile)	1.50	2.00	1.25
Stoker	1.25	1.50	1.00
Suction Roll (paper)	1.50	2.00	1.25
Tenter Frames (textile)	1.50	2.00	1.25
Tire Building Machines	2.00	2.50	1.50
Tire & Tube Press Opener	1.25	1.50	1.00
Tumbling Barrels	2.00	2.50	1.50
Washer & Thickener (paper)	1.50	2.00	1.25
Winches	1.50	2.00	1.25
Winders—Paper, Textile, Wire	1.50	2.00	1.25
Windlass	1.50	2.00	1.25
Wire			
Drawing	2.00	2.50	1.50
Winding	1.50	2.00	1.25
Woodworking Machinery	1.25	1.50	1.00

Caution: Applications involving reciprocating engines and reciprocating driven devices are subject to critical rotational speeds which may damage the coupling and/or connected equipment. Contact Lovejoy Engineering with specific requirements.

Note: ■ 1 indicates: If people are transported, Lovejoy does not recommend and will not warranty the use of the coupling.

Nomenclature

A complete standard coupling unit consists of two hubs and one insert.

Hubs

L150	HUB	1/2	1/8 X 1/16KW	
Series L035, L/AL050, L/AL070, L/AL075, L/AL090, L/AL095, L/AL099, L/AL100, L/AL110, L150, AL150, L190, L225, L276, C226, C276, C280, C285, C295, C2955, H3067, H3567, H3667, H4067, H4567, SS75-SS150	L, C, H = available in sintered or cast iron; AL = aluminum; SS=stainless steel	**Bore Size** In inch or metric sizes; RSB = rough stock bore; SOLID = no bore; STL SOLID = Steel material from bar stock, no bore	**Keyway** In inch or metric sizes. NKW = no keyway N/KW = no keyway N/LBL = no label N/SS = no setscrew W/SS = with setscrew 2SS = 2 setscrews	**Suffix** W/L'LOC = with L'Loc Spline Clamping Feature LTB = special length through bore INLINE = in line keyways and/or setscrews NSSHOLE= no setscrew hole

Notes:
- Inch bore and keyway tolerances conform to ANSI/AGMA 9002.
- Metric bore tolerances conform to ISO 286-2 H7 for clearance fit and P7 for interference fit.
- Metric keyway tolerances conform to ANSI/AGMA 9112 Normal keyway width tolerance.

Inserts

L150	SPIDER HYTREL	OCT 1-1/4
Series L035, L/AL050, L/AL070, L/AL075, L/AL090, L/AL095, L/AL099, L/AL100, L/AL110, L150, AL150, L190, L225, L276, C226, C276, C280, C285, C295, C2955, H3067, H3567, H3667, H4067, H4567	**Insert Color/Type** Inserts available in Tan Hytrel, Black SOX (Rubber), Blue Urethane and Bronze URE = Urethane HY = Hytrel BNZ = Bronze	**Suffix** OCT = open center (NBR) = solid center 55-60 DURO = softer durometer rubber

Snap Wraps

SW150	SNAP WRAP	W/RING
Series SW90-SW225	**Insert Color/Type** Snap wrap or spider	**Suffix** Wrap only or with ring

Cushions (C&H Type)

C295	CUSHIONS HYTREL	Set of 6
Series C226, C276, C280, C285, C295, C2955	**Insert Color/Type** SXB, Black = Rubber, Hytrel, Tan	**Suffix** Set of 6 (C226 - C295), Set of 10 (C2955), Set of 14 (H3067 - H4567)

Collars and Kits

LC90	COLLAR W/SCREWS
Series C, LC, RRC, RRS, SW	**Type** Collar w/ screws; CLLR = collar; SW = snap wrap; SPDR = spider; MM = metric/milimeter; IN=inch/imperial; HDWR = hardware

Spacers and Spacer Assembly

RRS090/095	SPCR ASSY	3-1/2"
Series RRS090/095, RRS099/100, RRS110, RRS150, RRS190, RRS225, RRC 226, RRC276, RRC280, RRC285, RRC295, RRC 2955	**Type** SPCR ASSY	**BSE** 3-1/2", 5", 7", 100MM, 140MM, 180MM

Spider Performance Data

Chart 2

Characteristics	Temperature Range	Misalignment		Shore Hardness[1]	Dampening Capacity	Chemical Resistance[2]	Color
		Angular Degree	Parallel Inch				
SOX (NBR) Rubber – Nitrile Butadiene (Buna N) Rubber is a flexible elastomer material that is oil resistant, resembles natural rubber in resilience and elasticity and operates effectively in temperature range of -40° to 212° F (-40° to 100° C). Good resistance to oil. Standard elastomer. (Also applies to SXB Cushions.)	-40° to 212° F -40° to 100° C	1°	.015	80A	HIGH	GOOD	BLACK
URETHANE – Urethane has greater torque capability than NBR (1.5 times), provides less dampening effect, and operates at a temperature range of -30° to 160° F (-34° to 71° C). Good resistance to oil and chemicals. Not recommended for cyclic or start/stop applications.	-30° to 160° F -34° to 71° C	1°	.015	55D L050-L110 90-95A L150-L225	LOW	VERY GOOD	BLUE
HYTREL® – Hytrel is a flexible elastomer designed for high torque and high temperature operations. Hytrel can operate in temperatures of -60° to 250° F (-51° to 121° C) and has an excellent resistance to oil and chemicals. Not recommended for cyclic or start/stop applications.	-60° to 250° F -51° to 121° C	1/2°	.015	55D	LOW	EXCELLENT	TAN
BRONZE – Bronze is a rigid, porous oil-impregnated metal insert exclusively for slow speed (maximum 250 RPM) applications requiring high torque capabilities. Bronze operations are not affected by extreme temperatures, water, oil, or dirt.	-40° to 450° F -40° to 232° C	1/2°	.010	—	NONE	EXCELLENT	BRONZE

Notes: ■ 1 indicates: NBR standard shore hardness is 80A ±5A – Except L035=60A. Other softer or harder designs are available in NBR material; consult Lovejoy.
■ 2 indicates: Chemical Resistance chart shown in Engineering Data Section (page ED-9).

Jaw Nominal Rated Torque Data

Chart 3

Size	Max Bore		Spider Material							
			SOX (NBR) Torque		Urethane Torque		Hytrel Torque		Bronze Torque	
	in	mm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
L035	0.375	9	3.5	0.4	—	—	—	—	—	—
L/AL050	0.625	16	26.3	3.0	39	4.5	50	5.60	50	5.60
L/AL070	0.750	19	43.2	4.9	65	7.3	114	12.90	114	12.90
L/AL075	0.875	22	90.0	10.2	135	15.3	227	25.60	227	25.60
L/AL090	1.000	25	144.0	16.3	216	24.4	401	45.30	401	45.30
L/AL095	1.125	28	194.0	21.9	291	32.9	561	63.40	561	63.40
L/AL099	1.188	30	318.0	35.9	477	53.9	792	89.50	792	89.50
L/AL100	1.375	35	417.0	47.1	626	70.7	1,134	128.00	1,134	128.00
L/AL110	1.625	42	792.0	89.5	1,188	134.0	2,268	256.00	2,268	256.00
L150	1.875	48	1,240.0	140.0	1,860	210.0	3,708	419.00	3,706	419.00
AL150	1.875	48	1,450.0	163.8	—	—	—	—	—	—
L190	2.125	55	1,728.0	195.0	2,592	293.0	4,680	529.00	4,680	529.00
L225	2.625	65	2,340.0	264.0	3,510	397.0	6,228	704.00	6,228	704.00
L276	2.875	73	4,716.0	533.0	—	—	—	—	12,500	1 412.00
C226	2.500	64	2,988.0	338.0	—	—	5,940	671.00	5,940	671.00
C276	2.875	73	4,716.0	533.0	—	—	9,432	1 066.00	—	—
C280	3.000	76	7,560.0	854.0	—	—	13,866	1 567.00	—	—
C285	4.000	102	9,182.0	1 038.0	—	—	16,680	1 882.00	—	—
C295	3.500	89	11,340.0	1 281.0	—	—	22,680	2 563.00	22,680	2 563.00
C2955	4.000	102	18,900.0	2 136.0	—	—	37,800	4 271.00	37,800	4 271.00
H3067	4.500	114	33,395.0	3 774.0	—	—	47,196	5 333.00	47,196	5 333.00
H3567	5.000	127	46,632.0	5 269.0	—	—	63,000	7 119.00	63,000	7 119.00
H3667	5.629	143	64,812.0	7 323.0	—	—	88,200	9 966.00	88,200	9 966.00
H4067	6.250	159	88,224.0	9 969.0	—	—	126,000	14 237.00	126,000	14 237.00
H4567	7.000	178	119,700.0	13 525.0	—	—	170,000	19 209.00	170,000	19 209.00

Note: ■ Bronze has a maximum RPM capability of 250 RPM.

L Type Spiders / Hub Spline Bores
Item Selection

L Type Coupling

- Sizes range from L035 to L276
- Ordering requires selecting UPC numbers for two standard L hubs and one standard open or solid center elastomer (spider)

SW Type Coupling

- Sizes range from L090 to L190
- Ordering requires selecting UPC numbers for two standard L hubs and one snap wrap spider with snap ring
- Both L and SW Type couplings, select hubs from the standard bore and keyway chart (pages JW-11 and JW-12) maximum RPM for SW + Ring is 1,750 RPM
- LC coupling uses a snap wrap spider with a collar instead of a retaining ring

Jaw In-Shear Coupling

- Ordering requires selecting item numbers for two standard hubs, one In-Shear elastomer and one In-Shear ring. See pages JIS-1 through JIS-4

L Type Spider UPC Number Selection Table

Spider Type	Coupling Size										
	L035	L050	L070	L075	L090/095	L099/100	L110	L150	L190	L225	L276
SOX (NBR) (Solid)	10118	10194	10406	10621	11070	11494	11724	12001	12274	12409	—
SOX (NBR) (open center)	—	—	10393	10620	10968	11492	11711	37880	37881	12406	12612
Urethane (Solid)	—	37786	10395	—	—	—	—	—	—	12417	—
Urethane (open center)	—	—	10411	10626	11075	11499	11729	12006	12280	—	—
Hytrel® (Solid)	—	25307	—	—	—	—	11717	11993	12265	12401	—
Hytrel® (open center)	—	—	25308	25309	25310	11486	38097	38098	38099	12400	—
Bronze (open center)	—	10198	10409	10624	11073	11497	11727	12004	12277	34517	25767
Snap Wrap (NBR) w/ring	—	—	—	—	24669	24670	24671	24672	24673	—	—
Snap Wrap (NBR) w/o ring	—	—	—	—	11071	11495	11725	12002	12275	—	—
SOX (NBR) Bulk - pk 25	50115	50116	50117	50118	50119	—	—	—	—	—	—
SOX (NBR) Bulk - pk 10	—	—	—	—	—	50120	50121	50122	—	—	—
Snap Wrap Urethane - solid ring	—	—	—	—	—	41170	41171	—	28284	26093	—
In-Shear Elastomer	—	—	—	—	71706	71707	71708	71709	71710	71711	71712
In-Shear Ring	—	—	—	—	71679	71680	71681	71682	71683	71684	71685

Note: ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

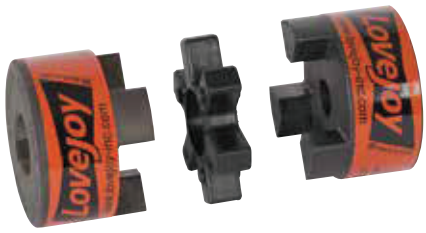
L Type Hub - Spline Bore UPC Number Selection Table

Teeth	Pitch	SAE	Spline Bore Diameters		Major	Coupling Size								
			Major	Minor	Dia	L090	L095	L099	L100	L110	L150	L190	L225	L276
9	16/32	A	0.651	0.509	0.625	38568	37900	38571	37904	—	—	—	—	—
11	16/32		0.776	0.631	0.750	38569	37901	38572	37905	37909	37917	37925	—	—
13	16/32	B	0.901	0.754	0.875	38570	37902	38573	37906	37910	37918	37926	37935	—
13	8/16	D, E	1.798	1.506	1.750	—	—	—	—	37915	37923	37931	37940	38576
14	12/24	C	1.289	1.087	1.250	—	—	—	—	37912	37920	37928	37937	38577
15	16/32	BB	1.026	0.877	1.000	—	—	38574	37907	37911	37919	37927	37936	38578
21	16/32		1.401	1.250	1.375	—	—	—	—	37913	37921	37929	37938	—
23	16/32		1.526	1.375	1.500	—	—	—	—	37914	37922	37930	37939	—
27	16/32		1.776	1.625	1.750	—	—	—	—	37916	37924	37932	37941	38579
15	8/16	F	2.048	1.753	2.000	—	—	—	—	—	—	37933	37942	—

Notes:
- ■ All pressure angles on above splines = 30°. Class 5 fit is standard, unless otherwise specified.
- ■ All stock spline bore hubs are supplied standard with Lovejoy's exclusive L-LOC Clamping Feature. See page T-7 for description.
- ■ When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

L Type Inch Bore / Keyway
Item Selection

The L Type coupling consists of two standard L Type hubs and one spider. Refer to pages JW-11, JW-12, and JW-10.



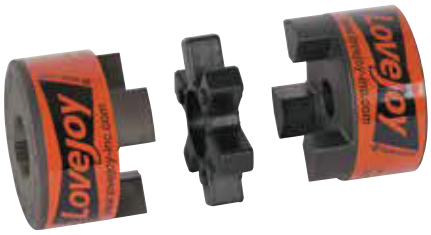
L-Type Hub (Imperial) UPC Selection Table

Bore	Keyway	L035	L050	L070	L075	L090	L095	L099	L100	L110	L150	L190	L225	L276
1/8	No Keyway	10124	—	—	—	—	—	—	—	—	—	—	—	—
3/16	No Keyway	10126	—	—	—	—	—	—	—	—	—	—	—	—
1/4	No Keyway	10127	10206	10416	10680	10766	—	—	—	—	—	—	—	—
1/4	1/8 x 1/16	—	—	—	35744	—	—	—	—	—	—	—	—	—
5/16	No Keyway	10128	10207	10417	10681	26209	—	—	—	—	—	—	—	—
3/8	No Keyway	24687	10208	10418	10682	10767	—	—	—	—	—	—	—	—
3/8	3/32 x 3/64	—	46121	41985	37234	37235	—	—	—	—	—	—	—	—
3/8	1/8 x 1/16	—	44136	48829	35745	37236	—	—	—	—	—	—	—	—
7/16	No Keyway	—	10209	10419	10683	10768	11082	31297	11505	—	—	—	—	—
7/16	3/32 x 3/64	—	44713	44007	28089	28877	27613	38198	37237	—	—	—	—	—
7/16	1/8 x 1/16	—	—	44066	28875	28878	28879	38199	37238	—	—	—	—	—
1/2	No Keyway	—	10210	10420	10684	10769	11083	11333	11506	—	—	—	—	—
1/2	1/8 x 1/16	—	10211	10421	10685	26087	26088	11334	26089	—	—	—	—	—
9/16	No Keyway	—	10212	52338	10686	24976	37239	11335	11508	—	—	—	—	—
9/16	1/8 x 1/16	—	10213	10423	10687	28876	11084	38200	11509	—	—	—	—	—
5/8	No Keyway	—	10214	24771	44322	46052	41911	44174	44291	11733	12101	—	—	—
5/8	5/32 x 5/64	—	—	51104	37240	37241	37242	38201	37243	37244	37245	—	—	—
5/8	3/16 x 3/32	—	—	10424	10688	10771	11085	11336	11510	26211	26212	—	—	—
11/16	3/16 x 3/32	—	—	10425	10689	10772	11086	11337	11511	11734	12102	—	—	—
3/4	No Keyway	—	—	46116	56140	54282	56887	49705	45212	—	—	12285	12422	—
3/4	1/8 x 1/16	—	—	51719	35881	37246	37074	38202	37247	37248	37249	37250	—	—
3/4	3/16 x 3/32	—	—	10426	10690	10773	11087	11338	11512	11735	12103	38468	35882	—
13/16	3/16 x 3/32	—	—	—	10691	10774	11088	11339	11513	11736	12104	37252	37255	—
7/8	No Keyway	—	—	—	56941	—	—	59063	—	—	—	—	—	12582
7/8	3/16 x 3/32	—	—	—	10692	10775	11089	11340	11514	11737	12105	12286	12423	12585
7/8	1/4 x 1/8	—	—	—	—	38188	35747	38203	35686	35749	35750	37256	35753	54883
15/16	1/4 x 1/8	—	—	—	—	32332	11090	11341	11515	11738	12160	12287	12424	—
1	1/4 x 1/8	—	—	—	—	31296	11091	11342	11516	11739	12107	12288	12425	12586
1	3/16 x 3/32	—	—	—	—	37257	37258	38204	37259	37260	37261	37262	37263	—
1-1/16	1/4 x 1/8	—	—	—	—	—	11092	11343	11517	11740	12108	12289	12426	—
1-1/8	1/4 x 1/8	—	—	—	—	—	11093	11344	11518	11741	12109	12290	12427	12587
1-3/16	1/4 x 1/8	—	—	—	—	—	—	11345	11519	11742	12110	12291	12428	—
1-1/4	1/4 x 1/8	—	—	—	—	—	—	—	11520	11743	12111	12292	12429	12588
1-1/4	5/16 x 5/32	—	—	—	—	—	—	—	35748	35752	35751	37294	35754	12589
1-5/16	5/16 x 5/32	—	—	—	—	—	—	—	11521	11744	12112	12293	26090	—
1-3/8	5/16 x 5/32	—	—	—	—	—	—	—	11522	11745	12113	12294	12430	12590
1-3/8	3/8 x 3/16	—	—	—	—	—	—	—	44348	37265	37266	37267	37268	46758
1-7/16	3/8 x 3/16	—	—	—	—	—	—	—	—	11746	12114	12295	12431	12591
1-1/2	5/16 x 5/32	—	—	—	—	—	—	—	—	37269	37270	37271	37272	—
1-1/2	3/8 x 3/16	—	—	—	—	—	—	—	—	11747	12115	12296	12432	12592
1-9/16	3/8 x 3/16	—	—	—	—	—	—	—	—	11748	12116	37273	12433	45689
1-5/8	3/8 x 3/16	—	—	—	—	—	—	—	—	11749	12117	12297	12434	12593
1-11/16	3/8 x 3/16	—	—	—	—	—	—	—	—	—	12118	12298	12435	60057
1-3/4	3/8 x 3/16	—	—	—	—	—	—	—	—	—	12119	12299	12436	12594
1-3/4	7/16 x 7/32	—	—	—	—	—	—	—	—	—	37274	37275	37276	48250
1-13/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	12120	12300	26091	—
1-7/8	1/2 x 1/4	—	—	—	—	—	—	—	—	—	12121	12301	12437	12595
1-15/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12302	12438	49762
2	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12303	12439	12596
2-1/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12304	26092	—
2-1/8	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	12305	12440	12597
2-3/16	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	—	12441	12598
2-1/4	1/2 x 1/4	—	—	—	—	—	—	—	—	—	—	—	12442	12599
2-3/8	5/8 x 5/16	—	—	—	—	—	—	—	—	—	—	—	12443	12602
2-5/8	5/8 x 5/16	—	—	—	—	—	—	—	—	—	—	—	41809	12605
2-7/8	3/4 x 3/8	—	—	—	—	—	—	—	—	—	—	—	—	12607

Notes:
- Tolerances for bore and keyways are found in Engineering Data section (pages ED-10 and ED-11). All hubs supplied standard with one set screw.
- Non-standard bores available – consult Lovejoy Engineering.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.

L Type Metric Bore / Keyway
Item Selection

The L Type coupling consists of two standard L Type hubs and one spider. Refer to pages JW-11, JW-13, and JW-11.



L Type Hub - Metric Bore and Keyway UPC Number Selection Table

Bore	Keyway	L035	L050	L070	L075	L090	L095	L099	L100	L110	L150	L190	L225	L276
4	No Keyway	41850	—	—	—	—	—	—	—	—	—	—	—	—
5	No Keyway	47419	46214	—	—	—	—	—	—	—	—	—	—	—
6	No Keyway	45872	50351	—	—	—	—	—	—	—	—	—	—	—
7	No Keyway	60679	10215	58803	—	—	—	—	—	—	—	—	—	—
8	No Keyway	55169	41460	46151	—	60945	—	—	—	—	—	—	—	—
9	3 x 1.4	—	41313	56177	44298	—	—	—	—	—	—	—	—	—
10	No Keyway	—	10216	41452	41456	—	—	—	—	—	—	—	—	—
10	3 x 1.4	—	41450	49870	41457	52828	—	—	—	—	—	—	—	—
11	4 x 1.8	—	41314	41453	50811	—	49424	—	—	—	—	—	—	—
12	No Keyway	—	48510	51562	—	48276	—	—	—	—	—	—	—	—
12	4 x 1.8	—	41315	41454	44153	44329	44832	—	55195	—	—	—	—	—
14	No Keyway	—	58036	47505	—	41461	41465	—	—	—	—	—	—	—
14	5 x 2.3	—	41316	41317	41321	51231	41466	60094	45101	—	—	—	—	—
15	No Keyway	—	60708	—	10693	—	46561	52697	41469	—	—	—	—	—
15	5 x 2.3	—	41451	41455	41454	52096	45778	46972	47123	—	—	—	—	—
16	5 x 2.3	—	56176	41318	41322	49198	41325	52098	55534	52092	52471	—	—	—
17	5 x 2.3	—	—	45333	49398	—	49704	—	56178	60067	60156	—	—	—
18	6 x 2.8	—	—	59724	41884	46433	46626	44647	41926	44288	—	—	—	—
19	No Keyway	—	—	—	—	10777	—	—	—	41471	—	—	—	—
19	6 x 2.8	—	—	41319	41323	41462	41326	44157	41329	49700	48821	46717	—	—
20	6 x 2.8	—	—	—	41459	41925	41467	47122	52093	41804	61218	61497	—	—
22	6 x 2.8	—	—	—	58246	41968	44827	41959	44467	45214	44720	—	—	—
24	8 x 3.3	—	—	—	—	41463	41327	41990	41330	48301	48182	59109	—	—
25	8 x 3.3	—	—	—	—	41464	41468	45055	41470	41906	46751	52153	—	—
28	No Keyway	—	—	—	—	—	—	—	—	—	56179	56182	—	—
28	8 x 3.3	—	—	—	—	—	41328	50103	41331	41333	45679	52976	—	—
30	8 x 3.3	—	—	—	—	—	—	47132	48317	45681	41738	44471	48982	—
32	No Keyway	—	—	—	—	—	—	—	—	—	41472	41473	48319	56232
32	10 x 3.3	—	—	—	—	—	—	—	—	41334	41873	45562	41849	41885
35	No Keyway	—	—	—	—	—	—	—	41332	—	56180	56183	56184	—
35	10 x 3.3	—	—	—	—	—	—	—	49925	45682	46562	58035	52197	—
38	10 x 3.3	—	—	—	—	—	—	—	—	41335	41337	41474	49664	52961
40	12 x 3.3	—	—	—	—	—	—	—	—	45683	48318	48320	49605	59308
42	12 x 3.3	—	—	—	—	—	—	—	—	41336	41338	41475	47492	45609
45	14 x 3.8	—	—	—	—	—	—	—	—	—	45102	56017	52674	50292
48	No Keyway	—	—	—	—	—	—	—	—	—	56181	—	—	—
48	14 x 3.8	—	—	—	—	—	—	—	—	—	56227	48322	47569	61202
50	No Keyway	—	—	—	—	—	—	—	—	—	—	56228	56230	56233
50	14 x 3.8	—	—	—	—	—	—	—	—	—	—	44392	48797	45062
55	No Keyway	—	—	—	—	—	—	—	—	—	—	56229	56231	56234
55	16 x 4.3	—	—	—	—	—	—	—	—	—	—	47006	44089	56067
60	No Keyway	—	—	—	—	—	—	—	—	—	—	—	56185	56235
60	18 x 4.4	—	—	—	—	—	—	—	—	—	—	—	44598	56236
65	No Keyway	—	—	—	—	—	—	—	—	—	—	—	—	56237
65	18 x 4.4	—	—	—	—	—	—	—	—	—	—	—	56544	50102
70	20 x 4.9	—	—	—	—	—	—	—	—	—	—	—	—	58268

Notes:
- Tolerances for bore and keyways are found in Engineering Data section (page ED-17 and ED-18). All hubs supplied standard with one set screw.
- Non-standard bores available – consult Lovejoy Engineering.
- When referencing the Lovejoy UPC number in this table, include 685144 as a prefix to the number shown.