

## How to Determine Keyways and Spiders for Jaw Couplings

### Spider Selection Procedure

- Select a Service Factor (SF) based upon the load classification.
  - Uniform = SF of 1.00
  - Moderate Shock = SF of 1.75
  - Heavy Shock = SF of 2.50
- Determine design load.

- Design Torque = Application Torque (T) x SF or Design HP = Application HP x SF
  - T = [HP(63025)]/rpm
- Select coupling size that has a HP rating equal to or greater than the design load.

### Keyway Chart

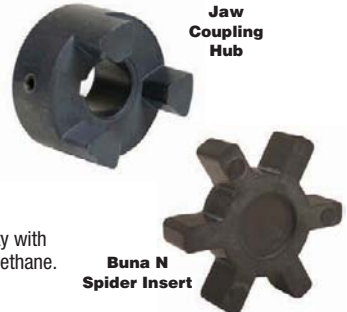
Use the coupling's bore diameter to determine the required keyway.

Bore	Keyway	Bore	Keyway	Bore	Keyway
1/2"	1/8 x 1/16"	1 1/4"	1/4 x 1/8"	2 1/2"	1/2 x 1/4"
3/8"	3/16 x 3/32"	1 3/8"	5/16 x 3/32"	2 3/4"	1/2 x 1/4"
3/4"	3/16 x 3/32"	1 1/2"	3/8 x 3/16"	2 3/8"	5/8 x 3/16"
7/8"	3/16 x 3/32"	1 5/8"	3/8 x 3/16"	2 1/2"	5/8 x 3/16"
1"	1/4 x 1/8"	1 3/4"	3/8 x 3/16"	2 3/4"	5/8 x 3/16"
1 1/8"	1/4 x 1/8"	1 7/8"	1/2 x 1/4"	2 7/8"	3/4 x 3/8"
—	—	2"	1/2 x 1/4"	3"	7/8 x 1/2"

## Jaw Couplings

An economical choice that's 100% interchangeable with industry-standard L-jaw couplings. No lubrication required. Standard keyway on 5/8" and larger bore sizes; 4X177, 3KX86, and 1/4" to 1/2" coupling hubs have no keyway (except where footnoted). Spiders have 0.015" max. parallel misalignment. Buna N and urethane spiders have 1° max. angular misalignment and Hytrel have 1/2°.

Note: A complete assembly requires 2 hubs and 1 spider, sold separately.



**Buna N Spider Inserts**—Made of oil-resistant, long-life material with excellent flexibility.

- Temp. range: -40° to 212°F (-40° to 100°C)

**Urethane Spider Inserts**—Provide 1.5-times greater torque capability than Buna N but with less dampening. Good resistance to oil and chemicals.

- Temp. range: -30° to 160°F (-34° to 71°C)

**Hytrel Spider Inserts**—Provide 2.5-times greater torque capability with excellent oil and chemical resistance compared with Buna N and urethane.

- Temp. range: -60° to 250°F (-51° to 121°C)

Size	Outside Dia.	Overall Length**	Bore Dia.															
			1/4 in	5/16 in	3/8 in	7/16 in	1/2 in	5/8 in	3/4 in	1 in	1 1/8 in	1 1/4 in	1 3/8 in	1 1/2 in	1 5/8 in	1 3/4 in	1 7/8 in	
<b>Coupling Hubs (Complete Assembly Requires 2 Hubs and 1 Jaw-Coupling Spider Insert, Sold Separately)</b>																		
<b>Sintered Iron</b>																		
L050	1.08 in	1.72 in	4X236 ‡	1A417 ‡	4X175 ‡	6X070 ‡	4X176 ‡	4X177 ‡	—	—	—	—	—	—	—	—	—	—
L070	1.36 in	2 in	—	—	—	5X401 ‡	4X178 ‡	4X179	4X180	—	—	—	—	—	—	—	—	—
L075	1.75 in	2.13 in	—	—	—	5X402 ‡	4X181 ‡	4X182	4X183	4X184	—	—	—	—	—	—	—	—
L075	1.75 in	2.13 in	—	—	—	1A073 ‡	5X447 ‡	—	—	—	—	—	—	—	—	—	—	—
L090	2.11 in	2.13 in	—	—	—	6JAW6 †	4X185 ‡	4X186	4X187	4X188	—	—	—	—	—	—	—	—
L095	2.11 in	2.5 in	—	—	—	1A914 †	6X071 ‡	6X072	4X191	4X192	4X193	6X073	—	—	—	—	—	—
L100	2.54 in	3.5 in	—	—	—	—	—	—	6X074	6X075	6X076	4X194	4X195	4X196	—	—	—	—
L110	3.32 in	4.23 in	—	—	—	—	—	—	1A418	3X708	3X709	3X710	3X711	3X712	3X713	3X714	—	—
L150	3.75 in	4.5 in	—	—	—	—	—	—	1A405	6JAW7	1A406	1A407	1A408	1A409	1A410	1A411	1A412	—
L190	4.5 in	4.88 in	—	—	—	—	—	—	—	1A916	1A917	1A918	1A919	1A920	1A921	6JAW8	1A922	—
<b>Aluminum</b>																		
AL050	1.08 in	1.72 in	3KX82 ‡	3KX83 ‡	3KX84 ‡	—	3KX85 ‡	3KX86 ‡	—	—	—	—	—	—	—	—	—	—
AL070	1.36 in	2 in	—	—	—	3KX88 ‡	3KX89 ‡	3KX90	3KX91	—	—	—	—	—	—	—	—	—
AL075	1.75 in	2.13 in	—	—	—	3KX93 ‡	3KX93 ‡	3KX95	3KX96	3KX97	—	—	—	—	—	—	—	—
AL075	1.75 in	2.13 in	—	—	—	—	3KX94 ‡	—	—	—	—	—	—	—	—	—	—	—
AL090	2.11 in	2.13 in	—	—	—	—	3KX98 ‡	3KX99	3KZ01	3KZ02	—	—	—	—	—	—	—	—
AL095	2.11 in	2.5 in	—	—	—	—	3KZ10 ‡	3KZ11	3KZ12	3KZ13	3KZ14	3KZ15	—	—	—	—	—	—
AL100	2.54 in	3.5 in	—	—	—	—	—	—	3KZ16	3KZ17	3KZ18	3KZ19	3KZ20	3KZ21	—	—	—	—
AL110	3.32 in	4.23 in	—	—	—	—	—	—	—	—	3KZ22	3KZ23	6JAW9	3KZ24	6JAX0	3KZ25	—	—
L150	3.75 in	4.5 in	—	—	—	—	—	—	—	—	48VF26	48VF25	48VF27	48VF24	48VF28	48VF30	48VF29	—
<b>Stainless Steel</b>																		
SS075	1.75 in	2.13 in	—	—	—	—	3KA91 *	3KA93	3KA95	—	—	—	—	—	—	—	—	—
SS095	2.11 in	2.5 in	—	—	—	—	3KA98 *	3KA99	3KB10	3KB11	3KB12	3KB13	—	—	—	—	—	—
SS100	2.54 in	3.5 in	—	—	—	—	—	—	3KB14	3KB15	3KB16	3KB17	—	—	—	—	—	—
SS110	3.32 in	4.23 in	—	—	—	—	—	—	—	—	—	—	3KB18	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	3KB21	3KB22	—	—	—	—

\* 1/8" x 1/16" keyway. † 3/32 x 3/64 keyway. ‡ No keyway. \*\* Total length of assembled coupling with jaws engaged to full depth (assembled coupling = 2 hubs + 1 spider).

Size	Outside Dia.	Overall Length**	Bore Dia.																								
			9 mm	10 mm	11 mm	12 mm	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm	20 mm	22 mm	24 mm	25 mm	28 mm	30 mm	32 mm	35 mm	38 mm	40 mm	42 mm	45 mm	48 mm		
<b>Metric Coupling Hubs (Complete Assembly Requires 2 Hubs and 1 Jaw-Coupling Spider Insert, Sold Separately)</b>																											
<b>Sintered Iron</b>																											
L050	27 mm	44 mm	1CXN8	1CXN9	1CXP1	1CXP2	1CXP3	1CXP4	1CXP5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L070	35 mm	51 mm	1CXP6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L075	44 mm	54 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L090	54 mm	54 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L095	54 mm	64 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L099	65 mm	73 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L100	65 mm	89 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L110	84 mm	107 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L150	95 mm	114 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Cast Iron</b>																											
L190	114 mm	124 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Size	Outside Dia.	Overall Length**	Bore Dia.												
			38 mm	40 mm	42 mm	45 mm	48 mm	50 mm	55 mm	60 mm					
<b>Metric Coupling Hubs (Complete Assembly Requires 2 Hubs and 1 Jaw-Coupling Spider Insert, Sold Separately)</b>															
<b>Cast Iron</b>															
L225			137 mm			1CYB9	1CYC1	1CYC2	1CYC3	1CYC4	1CYC5	1CYC6	1CYC7		
Size	Rated Torque	300	HP Rating @ Listed RPM	1200	1800	3600	Item No.	Size	Rated Torque	300	HP Rating @ Listed RPM	1200	1800	3600	Item No.
<b>Spider Inserts</b>															
<b>Buna N (Black Color)</b>															
L050	26 in-lb	0.1	0.5	0.8	1.5	1X409	—	—	—	—	—	—	—	—	—
L070	43 in-lb	0.2	0.8	1.2	2.5	1X408	—	—	—	—	—	—	—	—	—
L075	90 in-lb	0.4	1.7	2.6	5.0	2X814	—	—	—	—	—	—	—	—	—
L090/L095	144 in-lb	0.7/0.9	2.8/3.7	4.1/5.5	8.3/11	1X407	—	—	—	—	—	—	—	—	—
L099/L100	318 in-lb	2.0	7.9	12	24	1X406	—	—	—	—	—	—	—	—	—
L110	792 in-lb	3.8	15	23	46	3X715	—	—	—	—	—	—	—	—	—
L150	1,240 in-lb	6.0	24	36	72	1A413	—	—	—	—	—	—	—	—	—
L190	1,726 in-lb	8.1	32	49	98	1A928	—	—	—	—	—	—	—	—	—
L225	2,340 in-lb	11	44	67	133	3EMN9	—	—	—	—	—	—	—	—	—
<b>Urethane (Blue Color)</b>															
L050	39 in-lb	0.2	0.8	1.1	2.3	3KZ67	—	—	—	—	—	—	—	—	—
L070	65 in-lb	0.3	1.3	1.8	3.7	3KX87	—	—	—	—	—	—	—	—	—
L075	135 in-lb	0.6	2.5	3.9	7.7	3KX92	—	—	—	—	—	—	—	—	—
L090/L095	216 in-lb	1.0/1.4	4.1/5.6	6.2/8.3	12/17	3KZ03	—	—	—	—	—	—	—	—	—
<b>Spider Inserts (Cont.)</b>															
<b>Urethane (Blue Color) (Cont.)</b>															
L099/L100	477 in-lb	—	—	—	—	—	—	—	—	—	—	—	—	—	—
L110	1,188 in-lb	5.7	23	35	69	3KZ05	—	—	—	—	—	—	—	—	—
L150	1,860 in-lb	9.0	36	54	108	3KZ06	—	—	—	—	—	—	—	—	—
L190	2,592 in-lb	12	49	74	147	3KZ07	—	—	—	—	—	—	—	—	—
L225	3,510 in-lb	16	66	100	200	3EMP1	—	—	—	—	—	—	—	—	—
<b>Hytrel (Tan Color)</b>															
L070	114 in-lb	—	0.5	2.1	3.3	6.5	1A923	—	—	—	—	—	—	—	—