

Gear Couplings



Overview

Lovejoy/Sier-Bath Nyflex & Mite

Lovejoy/Sier-Bath Nylon Couplings are compact and require no lubrication. They operate over a wide temperature range at speeds up to 5,000 RPM and are effectively used in applications such as motor/generator sets, pump sets and many light to medium duty industrial coupling applications.

No lubricants are ever required, eliminating the need for seals. The resilient nature of the Nylon material makes the contact of the hubs and sleeves almost frictionless. Not requiring lubrication readily permits the use of these couplings in vertical and blind assembly applications where the slip-together components offer easy inspection and adjustment.

When completely assembled, the Mite coupling weighs less than 1 lb (.45Kg) and the Nyflex only 3.50 lbs (1.59 Kg).



Features of mite and nyflex couplings:

- Molded nylon sleeve.
- No internal frictional loss or heat buildup.
- Minimum backlash
- High ambient temperature allowed.
- Resistance to dirt, moisture, most chemicals.
- Low maintenance (no seals, lubricant, retainers).
- High torque, low inertia.
- Standard bores are available.

2 Spirolox Retaining Rings
 Sleeve is securely held on the hubs by these spring-steel retaining rings. Removed in seconds, yet they'll withstand 5,000 lbs end-thrust.

Nylon Sleeve
 Resilient, lightweight, abrasion and corrosion resistant nylon is accurately molded to mesh precisely with hubs. Almost frictionless properties eliminate lubrication need.

2 Hubs
 Sintered Iron Hubs are standards in the Nyflex & Mite. Teeth are crowned to provide greater misalignment capacity and to prevent gouging of Nylon sleeve. Maintain .13" spacing between hubs.

Lovejoy/Sier-Bath Nylon Sleeve Series

Nyflex & Mite

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No lubricants are ever required, eliminating the need for seals. The resilient nature of the nylon material makes the contact of the hubs and sleeves almost frictionless. Not requiring lubrication readily permits the use of these couplings in vertical and blind assembly applications where the slip-together components offer easy inspection and adjustment.

Operationally, the coupling offers a minimum backlash solution that will operate in ambient temperature environments up to 400 F. The Nylon Sleeve coupling has a precision molded sleeve and hubs with no bolts, pins, flanges, or protrusions to affect balance or safety. The nylon sleeve permits misalignment up to .015 in. for the Nyflex and .01 in. for the Mite.

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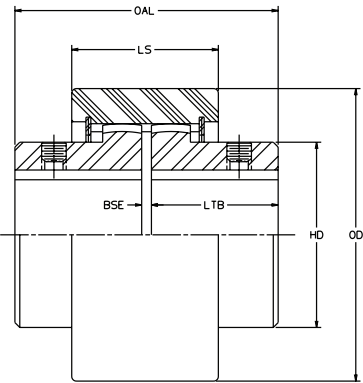
Nylon Sleeve
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Certain acids and alkalis are harmful to Nylon. If in doubt about your application, contact Lovejoy Engineering.

Speeds to 5,000 rpm

Speed RPM	Nyflex		Mite	
	H.P.	Torque (in-lbs)	H.P.	Torque (in-lbs)
100	2.25	1,420	.6	360
500	9.5	1,190	2.4	307
1,000	18.0	1,125	4.5	285
1,150	20.3	1,110	5.1	282
1,500	24.0	970	6.4	274
1,750	25.0	900	7.5	270
2,000	26.6	840	8.4	267
2,500	29.8	750	11.1	262
3,000	32.5	680	12.1	256
3,500	35.3	630	13.8	254
4,000	37.5	590	17.6	251
5,000	42.0	530	19.4	243



Bore sizes available from stock

	Nyflex		Mite	
	Bore Size	Keyway	Bore Size	Keyway
Clearance Fit	3/8 rough	none	5/16 rough	none
	.500	1/8 x 1/16	.500	1/8 x 1/16
	.625	3/16 x 3/32	.625	3/16 x 3/32
	.750	3/16 x 3/32	.750	3/16 x 3/32
	.875	3/16 x 3/32	.875	3/16 x 3/32
	.937	1/4 x 1/8	.9375	1/4 x 1/8
	1.000	1/4 x 1/8	1.000	1/4 x 1/8
	1.125	1/4 x 1/8	1.125	1/4 x 1/8
	1.187	1/4 x 1/8		
	1.250	1/4 x 1/8		
Interference Fit	1.311	5/16 x 5/32	All Bore Tolerances are +.001/-0.000 up to 1.25	
	1.374	5/16 x 5/32		
	1.436	3/8 x 3/16		
	1.499	3/8 x 3/16		
	1.624	3/8 x 3/16		

Dimensions

Coupling	OAL	LS	OD	HD	LTB	BSE	Weight lbs
Nyflex	3.38	1.88	3.75	2.38	1.63	.13	3.50
Mite	2.38	1.31	2.88	1.75	1.13	.13	<1.00

Blind Assembly

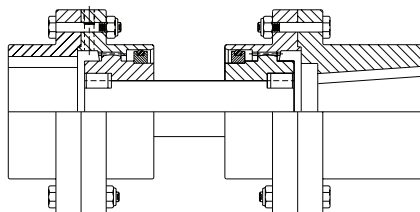
The no-lubrication feature of Lovejoy/Sier-Bath Nylon Sleeve couplings readily permits their use in vertical applications and for blind assembly. To install, mount both hubs on the shafts; then place the sleeve with a ring in the center groove over one hub. When the connected unit is placed in position, the coupling is fully installed.

Lovejoy Engineered Special Couplings

Engineered Centrifugal Pump—"FAC"

This coupling is designed specifically for centrifugal pumps and compressors. It is easy to install and replace, efficiently designed to reduce spare part inventory, and is precision manufactured.

Individual components are easy to assemble, and easy to replace. Component balanced parts eliminate your need to keep complete couplings in stock. Grease seals are replaceable without major disassembly. Four sizes accommodate 80% of all normally used shaft diameters. Other features include extended time between lubrications, infinitely adjustable BSE, M-F pilot for proper fit, vertical modification, center assembly independently replaceable, and conforms to API 610 6th Edition. Its precision balanced parts are made of high strength alloy 4140 steel. Bolts are weigh-balanced as sets.

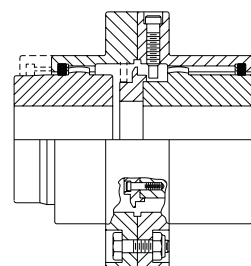


Engineered Cut-out Pin Engaged—"FCP"

The Pin Engaged Cut-out Gear coupling is for applications which require infrequent shifting. They consist of shrouded sleeves which can be shifted, when the coupling is stopped, into an engaged or disengaged position by loosening the screw type pins in the sleeve flange. Tightening of the pins prevents shifting and locks the sleeve in the desired position.

A complete coupling consists of modified hubs and sleeve assemblies: one hub machined to receive a stop ring, and the sleeve assemblies altered to house the locating screws.

Dual drive units commonly use cut-out couplings in pairs. An auxiliary drive is often used making it necessary to engage one of the couplings while the other is disengaged. This function is readily performed by the cut-out coupling.

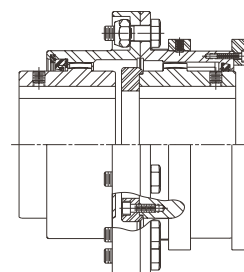


Engineered Cut-out Shifter Collar Engaged—"FCS"

This Shifter Collar Cut-out Gear coupling is similar to the pin engaged version. The shifter collar type was designed for applications which require more frequent shifting.

A bronze collar or cam roller bearing can be used with a shifter lever. A suitable means should be provided to support a shifter lever. Shifter levers are not furnished with the coupling.

Cut-out couplings are often used in pairs on twin drives where one drive is used as an auxiliary driver. Shifting is allowed only while the coupling is at a standstill, disengaging one and engaging the other.

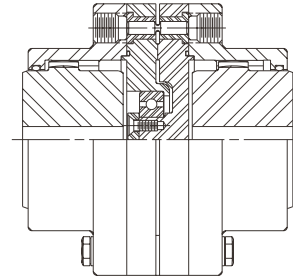


Lovejoy Engineered Special Couplings

Engineered Shear Pin—"FSHP" and "FSHPB"

Shear pin couplings are primarily used to limit transmitted torque to a predetermined load. This in turn disconnects the driver and driven shafts if torque exceeds the specified limits. They are especially suited to protect equipment when jams occur. Components are re-usable after pins shear. The coupling will retain lubricant for a short period to allow equipment to be shut down.

When ordering, please specify torque limit allowing for normal starting torque of the motor.

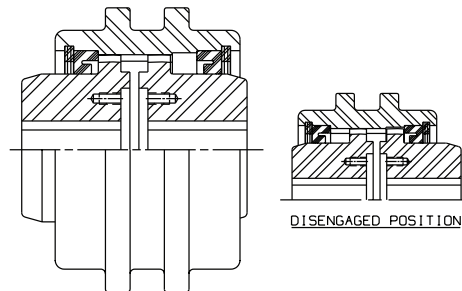


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Lovejoy/Sier-Bath Continuous Sleeve Series

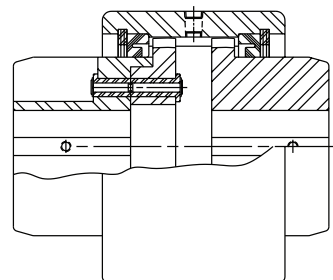
Cut-out Shifter Type—"CCS"

The Cut-out coupling is designed to permit quick disengagement between the driver and driven shafts without disassembling the coupling. This toe coupling is widely used on dual drives and on equipment operated in tandem. A special seal is provided on the hub that disengages to eliminate undue friction when the disengaged hub is turning in the sleeve. Cut-out type couplings are also manufactured with pins to maintain the sleeve in both engage and disengaged positions.



Shear Pin Type—"CSHP"

The Shear Pin coupling is designed to prevent damage to connected equipment resulting from excessive torque or sudden shock. The shear pins in the Lovejoy coupling are manufactured to shear at predetermined loads which are specified by the customer. New pins may be quickly inserted.



Coupling Grease

Lovejoy provides high quality coupling grease for low to high-speed applications. The grease is designed to address the problems that are unique to gear coupling applications such as high pressure, high centrifugal force, prolonged work periods, and corrosive environments. Please see pages G-20, 22, 23, and 24 for specific quantities per product line.

Changes in consistency to address different situations is the key to successful lubrication. Lovejoy grease is manufactured to a No. 1 consistency grade. During prolonged use, the grease will become semi-fluid. When inactive, the grease will thicken, become heavier, and will not leak out of the coupling. The ability to change consistency provides successful lubrication across the complete range of requirements.

Lubrication

Centrifugal separation of the oil and thickener during operation is a basic problem in gear coupling applications, especially high speed applications. The higher the operating speed, the greater the amount of separation can be expected. This causes the soap properties in the grease to accumulate in the areas where lubrication is required. The soap does not provide adequate lubrication which results in accelerating the coupling wear. The Lovejoy grease properties are designed to resist centrifugal separation.

Contents

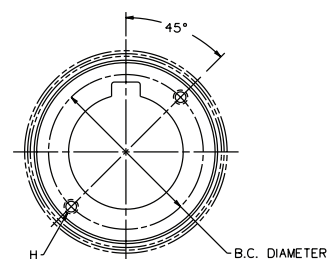
The Lovejoy grease contains ingredients that have been proven to operate successfully in gear coupling applications. The grease contains:

- Lithium Soap
- Highly Refined Paraffinic Mineral Oil
- Rust Inhibitors
- Anti-oxidants
- EP/Anti-wear additive

Hub Puller Hole Data—F Hubs

Size	Bolt Circle Diameter	Hole Size
1	None	None
1½	None	None
2	3.38	5/16-18 x .50 DP.
2½	3.94	3/8-16 x .56 DP.
3	4.94	1/2-13 x .75 DP.
3½	5.56	1/2-13 x .75 DP.
4	6.44	5/8-11 x .94 DP.

Size	Bolt Circle Diameter	Hole Size
4½	7.38	5/8-11 x .94 DP.
5	8.00	3/4-10 x 1.13 DP.
5½	9.00	1-8 x 1.50 DP.
6	9.75	1-8 x 1.50 DP.
7	11.63	1-8 x 1.50 DP.
8	14.00	1-8 x 1.50 DP.
9	15.25	1¼-7 x 1.88 DP.



PULLER HOLES

Standard & Universal Hub Dimensions

F Hubs—Inch

Size	L 1	L 2	L 3	TW	STD. UNIV. HUB	
					LTB	LTB 1
1	2.75	0.44	0.75	0.50	1.69	4.00
1½	3.13	0.56	0.81	0.56	1.94	4.50
2	3.63	0.56	1.25	0.63	2.44	5.50
2½	4.22	0.75	1.53	0.75	3.03	6.50
3	4.44	1.03	1.69	0.88	3.59	7.00
3½	4.63	1.31	1.88	1.00	4.19	7.50
4	4.97	1.47	2.16	1.13	4.75	8.25
4½	5.19	1.50	2.56	1.25	5.31	9.00
5	5.06	1.59	2.94	1.50	6.03	9.50
5½	5.56	1.97	3.19	1.75	6.91	10.50

C Hubs—Inch

Size	L 1	L 2	L 3	TW	STD. UNIV. HUB	
					LTB	LTB 1
7/8	3.38	1.13	0.13	0.25	1.50	3.75
1½	3.36	1.17	0.13	0.52	1.81	4.00
2	4.06	1.50	0.13	0.44	2.06	4.63
2½	4.39	1.52	0.16	0.58	2.25	5.13
3	4.89	1.77	0.25	0.61	2.63	5.75
3½	5.58	3.33	0.25	0.67	4.25	6.50
4	5.52	3.27	0.25	0.86	4.38	6.63
4½	6.64	3.89	0.25	0.86	5.00	7.75
5	6.39	4.52	0.25	1.23	6.00	7.88
6	7.64	4.52	0.25	1.61	6.38	9.50

