

CSK One Way Bearing Clutches



Overrunning Indexing and Backstopping Clutches

Formsprag and Stieber have been designing, manufacturing and delivering dependable, long-lived, precision power transmission products for over 50 years, providing one of the broadest lines of overrunning clutches in the world.

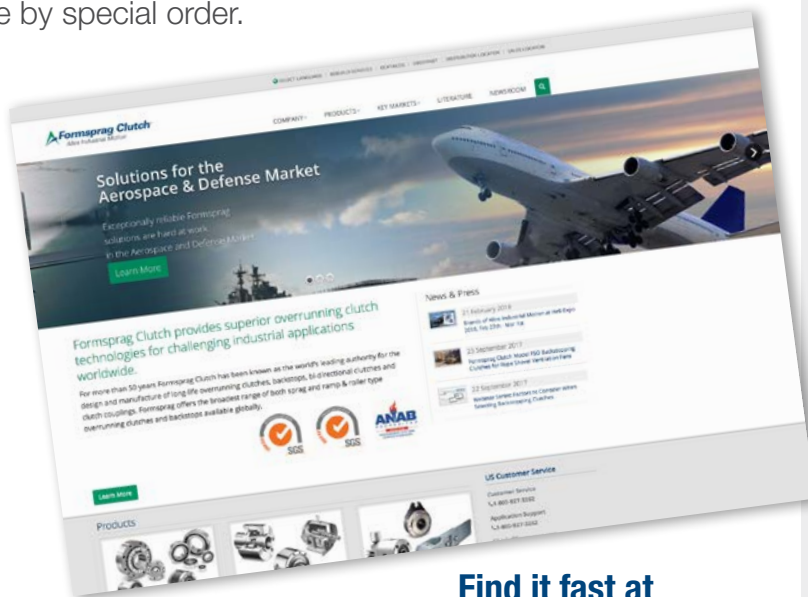
Formsprag and Stieber overrunning clutches deliver thoroughly proven, dependable power transmission. Careful selection of highest quality materials, precision manufacturing by experienced craftsmen, conscientious assembly, and rigid adherence to detail guarantee a reliable, quality product.

Overrunning clutches handle torque loads up to 700,000 lb.ft. (949200 Nm). Other sizes and designs are available by special order.



CSK Series Clutches

Bearing envelope (62 series) design sprag clutches for overrunning, indexing and backstopping applications.



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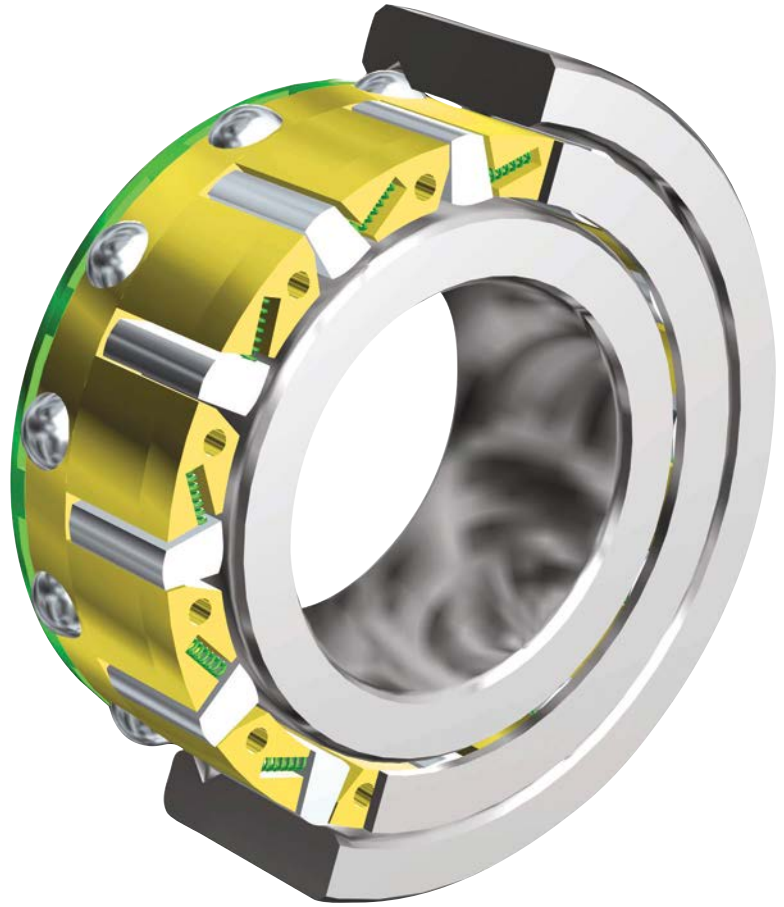
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- Exclusive “Competitor Interchange” feature lets you enter a competitor part number and find the specific replacement Formsprag model
- Fill out the Application Data Form to get assistance in determining your selection
- Submit an online RFQ to the distributor of your choice

Unique sprag design provides a better way to achieve a higher size for size torque rating!

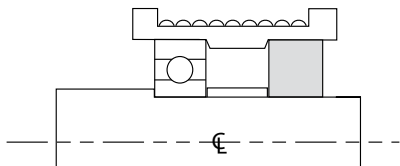
Design Features

- Four different mounting designs
- Wide bore range of 8 to 40 mm
- Self-contained, compact ball bearing design
- 2RS, lip-sealed design
- No maintenance, grease lubricated for life
- High speed range from 0-15,000 RPM
- Longer wearing life with Formchromed Sprags
- 27 different designs in stock
- Operating temperature range: 21 to 140°F (-6 to 60°C). Special grease available for operating temperatures: -40 to 212°F (-40 to 100°C).
- Outside dimensions same as 6200 Bearing Series



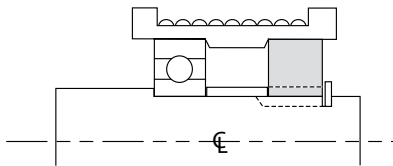
Three Mounting Configurations

Press Fit



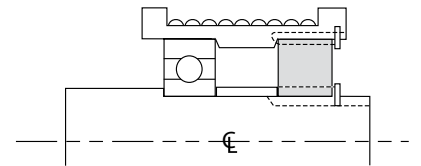
The Model CSK clutches must be mounted with a press fit on both the outer and inner races. The shaft diameter tolerance must be held to a n6. The bore of the housing for the outer race should be a N6 tolerance.

Keyseating Clutch Bore



The Model CSK..P clutches with a keyseat in the bore must be secured or axially retained on the customer's shaft by customer supplied snap ring, set collar, spacer or step in shaft diameter. The CSK..P outer race is mounted with a press fit into the bore of the housing.

Keyseat In Clutch OD & ID



The Model CSK..PP clutches have a keyseat on both the outer and inner race. The CSK..PP clutches must be axially restrained by the use of customer supplied snap ring, set collar, spacer, etc.

CSK Series CSK Advantages

CSK

Type CSK is a sprag type clutch integrated into a 62 Series ball bearing (except sizes 8 and 40). It is bearing supported, shipped grease lubricated and protected against dust larger than .012" (.3mm) diameter. The use of additional "nylos" type seals is recommended especially when the working temperature exceeds 122°F (50°C).

Oil bath lubrication is also possible if the original grease is first flushed out using a suitable solvent.

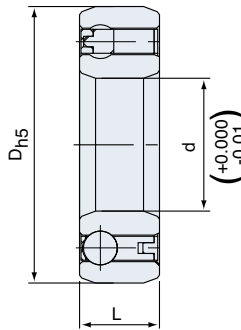
Torque transmission is ensured by a press fit assembly into a rigid outer housing with N6 tolerance, and onto a shaft with n6 tolerance. The initial bearing radial clearance is set at C5, and is reduced if using the press fit as specified.

One race may be glued. If both races are to be glued, performance will be reduced or a C3 bearing clearance will be necessary.

Operating temperature range: 21 to 140°F (-6 to 60°C). Special grease available for operating temperatures: -40 to 212°F (-40 to 100°C).

CSK..2RS

CSK..2RS clutches are .197" (5mm) wider than a standard 62 Series bearing, as they are equipped with lip seals for washdown applications.



Dimensions inches (mm)

Size	Bearing Series	CSK		CSK..2RS		Bore Sizes	
		Dh5 in (mm)	L in (mm)	L in (mm)	d in (mm)		
8		0.87 (22)	.035 (9)	*.035 (9)	.031 (8)		
12	6201	1.26 (32)	0.39 (10)	0.55 (14)	0.47 (12)		
15	6202	1.38 (35)	0.43 (11)	0.63 (16)	0.59 (15)		
17	6203	1.57 (40)	0.47 (12)	0.67 (17)	0.67 (17)		
20	6204	1.85 (47)	0.55 (14)	0.75 (19)	0.79 (20)		
25	6205	2.05 (52)	0.59 (15)	0.79 (20)	0.98 (25)		
30	6206	2.44 (62)	0.63 (16)	0.83 (21)	1.18 (30)		
35	6207	2.83 (72)	0.67 (17)	0.87 (22)	1.38 (35)		
40		3.15 (80)	0.87 (22)	1.06 (27)	1.57 (40)		

* CSK8-2RS has only one lip seal on ball bearing side.

Specifications inches (mm)

Size	Bearing Series	Torque Capacity	Max. Overrunning Speed	Resistance after run-in		Bearing Loads		Shipping Weight	
				CSK..2RS	CSK	CSK	CSK	CSK	CSK..2RS
		lb.ft (Nm)	RPM	lb.in (Ncm)	lb.in (Ncm)	Dynamic lb. (kN)	Static lb. (kN)	lb. (kg)	lb. (kg)
8		2.6 (3.5)	15,000	*0.07 (.8)	0.04 (0.5)	738 (3.28)	194 (0.86)	0.03 (0.015)	0.03 (0.015)
12	6201	8.8 (12)	10,000	0.27 (3.0)	0.06 (0.7)	1373 (6.1)	623 (2.77)	0.09 (0.04)	0.11 (0.05)
15	6202	14.7 (20)	8,400	0.35 (4.0)	0.08 (0.9)	1665 (7.4)	770 (3.42)	0.13 (0.06)	0.15 (0.07)
17	6203	30 (40)	7,350	0.50 (5.6)	0.09 (1.1)	1778 (7.9)	885 (3.8)	0.15 (0.07)	0.20 (0.09)
20	6204	50 (68)	6,000	0.53 (6.0)	0.12 (1.3)	2115 (9.4)	1004 (4.46)	0.24 (0.11)	0.32 (0.145)
25	6205	77 (105)	5,200	0.53 (6.0)	0.18 (2)	2408 (10.7)	1229 (5.46)	0.31 (0.14)	0.39 (0.175)
30	6206	133 (180)	4,200	0.66 (7.5)	0.39 (4.4)	2633 (11.7)	1451 (6.45)	0.46 (0.21)	0.60 (0.27)
35	6207	177 (240)	3,600	0.73 (8.2)	0.51 (5.8)	2835 (12.6)	1638 (7.8)	0.66 (0.3)	0.88 (0.4)
40		284 (385)	3,000	0.89 (10)	0.62 (7)	3497 (15.54)	2756 (12.25)	1.10 (0.5)	1.32 (0.6)

* CSK8-2RS has only one lip seal on ball bearing side.

The torque ratings are based upon 1 million load cycles at full catalog torque which is a standard in the North American Industrial Market.

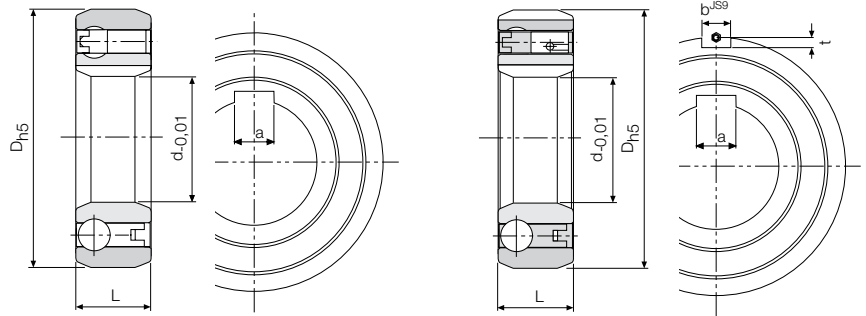
CSK Series CSK Clutches

CSK..P

CSK..P has the same construction and outside dimensions as type CSK, but has a keyway on the inner race.

These clutches can be mounted on a shaft to k6 tolerance.

The outer race must be pressed into a rigid housing to N6 tolerance.



CSK..P
Single Keyway

CSK..PP
Dual Keyways

CSK..2RS

CSK..2RS clutches are .197" (5mm) wider than a standard 62 Series bearing, as they are equipped with lip seals for washdown applications.

CSK..PP

CSK..PP features a keyway on both the inner and outer race. The recommended mounting tolerances are k6 on the shaft and K6 in a rigid housing. An h6 tolerance on the shaft or H6 in the housing are also acceptable for a light press fit assembly.

Operating temperature range: 21 to 140°F (-6 to 60°C). Special grease available for operating temperatures: -40 to 212°F (-40 to 100°C).

Dimensions inches (mm)

Size	Bearing Series	L					d		a
		CSK..P		CSK..P2RS		Bore Sizes		Keyseat*	
		Dh5 in (mm)	in (mm)	in (mm)	b in (mm)	t in (mm)	in (mm)	(mm)	
12	6201	1.26 (32)	0.39 (10)	0.55 (14)			0.47 (12)	(4 x 1.8)	
15	6202	1.38 (35)	0.43 (11)	0.63 (16)	0.08 (2)	0.02 (0.6)	0.59 (15)	(5 x 1.2)	
17	6203	1.57 (40)	0.47 (12)	0.67 (17)	0.08 (2)	0.04 (1.0)	0.67 (17)	(5 x 1.2)	
20	6204	1.85 (47)	0.55 (14)	0.75 (19)	0.12 (3)	0.06 (1.5)	0.79 (20)	(6 x 1.6)	
25	6205	2.05 (52)	0.59 (15)	0.78 (20)	0.24 (6)	0.08 (2)	0.98 (25)	(8 x 2)	
30	6206	2.44 (62)	0.63 (16)	0.82 (21)	0.24 (6)	0.08 (2)	1.18 (30)	(8 x 2)	
35	6207	2.83 (72)	0.67 (17)	0.87 (22)	0.31 (8)	0.10 (2.5)	1.38 (35)	(10 x 2.4)	
40		3.15 (80)	0.87 (22)	1.06 (27)	.39 (10)	.12 (3.0)	1.57 (40)	(12 x 3.3)	

*For keyseat sizes CSK 15–35 use DIN 6885.3. For size 40 use DIN 6885.1 in catalog P-956.

Specifications inches (mm)

Size	Bearing Series	Torque Capacity	Max. Overrunning Speed	Resistance after run-in		Bearing Loads		Shipping Weight	
				CSK..2RS	CSK	Dynamic	Static	CSK..P	CSK..PP
		lb.ft (Nm)	RPM	lb.in (Ncm)	lb.in (Ncm)	lb. (kN)	lb. (kN)	lb. (kg)	lb. (kg)
12	6201	8.8 (12)	10,000	0.27 (3.0)	0.06 (0.7)	1373 (6.1)	623 (2.77)	0.08 (0.04)	0.11 (0.05)
15	6202	14.7 (20)	8,400	0.35 (4.0)	0.08 (0.9)	1665 (7.4)	770 (3.42)	0.13 (0.06)	0.15 (0.07)
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20	6204	50 (68)	6,000	0.53 (6.0)	0.12 (1.3)	2115 (9.4)	1004 (4.46)	0.24 (0.11)	0.32 (0.14)
25	6205	77 (105)	5,200	0.53 (6.0)	0.18 (2)	2408 (10.7)	1229 (5.46)	0.31 (0.14)	0.39 (0.17)
30	6206	133 (180)	4,200	0.66 (7.5)	0.39 (4.4)	2633 (11.7)	1451 (6.45)	0.46 (0.21)	0.59 (0.27)
35	6207	177 (240)	3,600	0.73 (8.2)	0.51 (5.8)	2836 (12.6)	1638 (7.8)	0.66 (0.3)	0.88 (0.4)
40		284 (385)	3,000	0.89 (10)	0.62 (7)	3497 (15.54)	2756 (12.25)	1.10 (0.5)	1.32 (0.6)

Overrunning Clutches Application Data Form

For Application Assistance call 1-800-927-3262 or Fax (586) 758-5204

Date _____

Company name _____

Address _____

City _____ State _____ Zip _____

Name of contact _____ Title _____

Phone _____ Fax _____

Type of equipment

Type of application

- Overrunning Indexing
 Backstop Clutch Coupling

Maximum torque at clutch

_____ pound-feet, or
_____ HP at _____ RPM

Power Source

- Electric motor Diesel engine
 Turbine Air cylinder
 Gasoline engine

Load Application

- Smooth Moderate Shock

Lubrication

- Runs in oil Not accessible
 Accessible for lubricating

Type or specification of lubricant

For overrunning or backstop applications

Inner race speed during overrunning _____ RPM max.

Outer race speed during overrunning _____ RPM max.

If both members are rotating during overrunning, are they rotating in the

- Same direction Opposite directions

Time cycle of Formsprag clutch

Drive _____ minutes Rest _____ minutes

Overrun _____ minutes

For indexing applications

Indexes per minute _____ max.

Degrees per index _____ max.

Clutch operating time

_____ hours per day

Shaft diameter (give limits)

Size of keyseat in shaft

Environment

Temperature range _____ °F to _____ °F

Exposed location? _____

Radiation? _____

For non-symmetrical clutches and clutch-couplings

a. Identify the end from which the clutch is viewed

b. The (inner, outer) member (drives, overruns) in the (clockwise, counter-clockwise) direction

Anticipated quantity required

a. For this application

b. Annually

Supply a sketch of your installation.

Note: A clutch is not a coupling. When necessary to couple two shafts, a coupling must be used with the clutch. Ambient temperature should not exceed approximately 150°F. It is requested that prints of installation be supplied if available.

Completed by _____

The Power Of One, The Strength Of Many.

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