

Modular “Building Block” Clutches

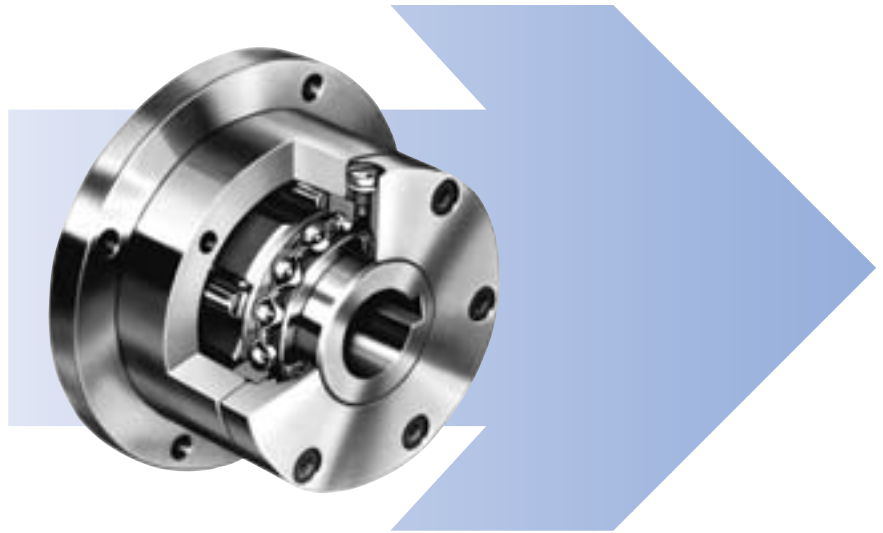
Building Block System

Modular Components Offer Extensive Combinations

The Models AL, GFR and RIZ have a modular design that offers a wide range of mounting options. A variety of cover, torque arm and coupling designs that can be assembled to the base clutch result in a mounting flexibility to meet any application.

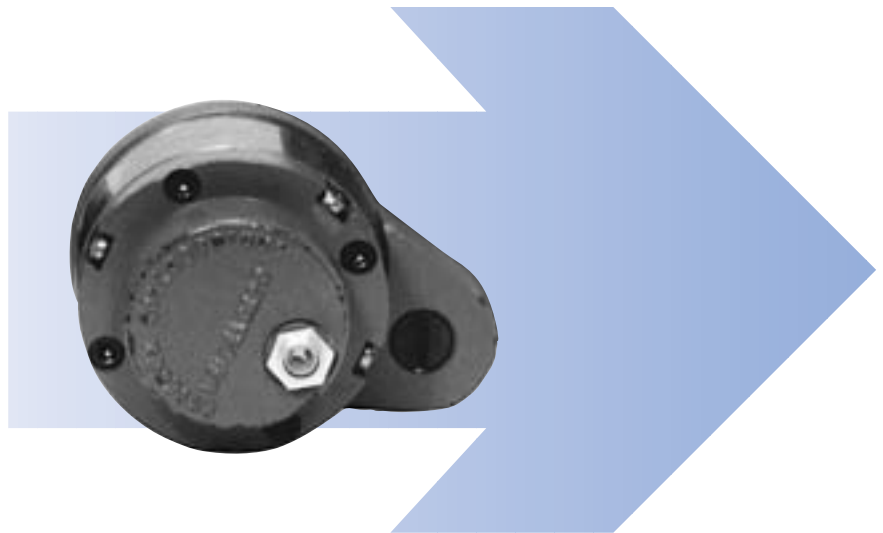
AL

The model AL..clutch assembled with the F2 and D2 covers provides a versatile clutch assembly. The F2 cover provides mounting holes countersunk from the out-board side which are used to secure and drive a gear or pulley mounted over the outer race. This mounting configuration provides the highest radial load capacity as the line of force from the gear or sprocket is located between the clutch bearings. The D2 cover encloses the other end of the clutch for through shaft mounting.



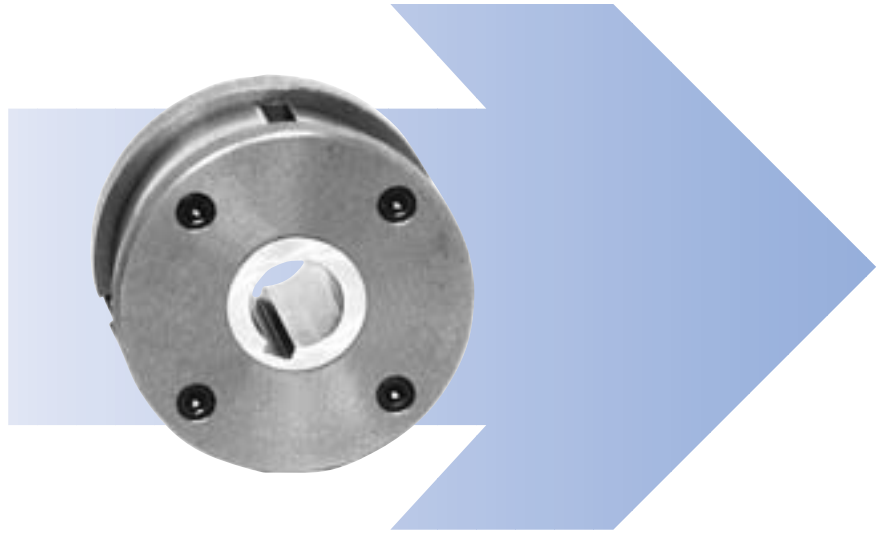
GFR

The model GFR clutch assembled with the F3 and F4 covers results in an excellent low speed backstop. The F3 cover encloses one side of the clutch and provides the torque arm with integrated restraining bolt necessary for backstopping applications. The F4 cover encloses the other side of the clutch and provides extra room for end of shaft restraint as well as added oil capacity.



RINZ

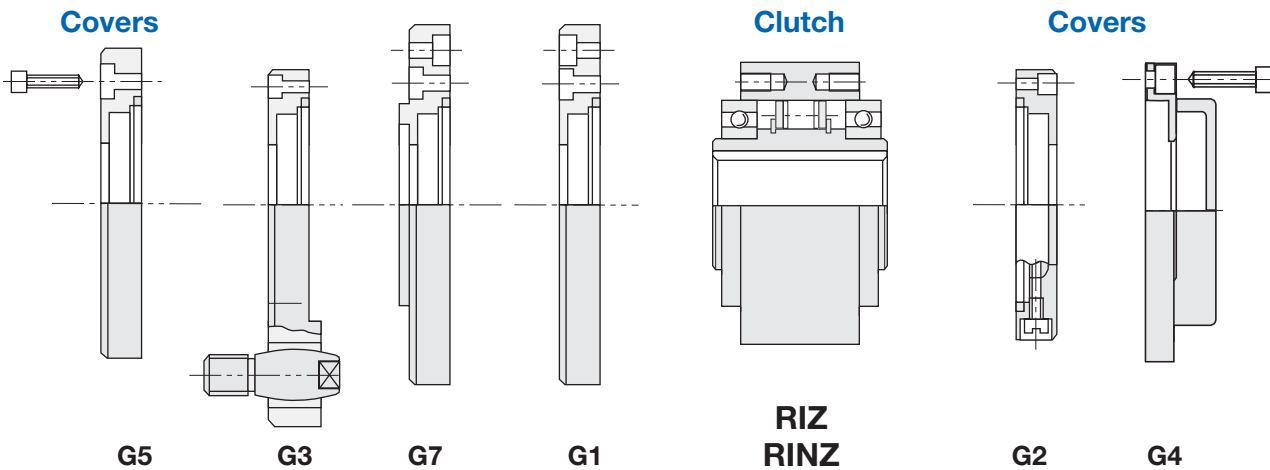
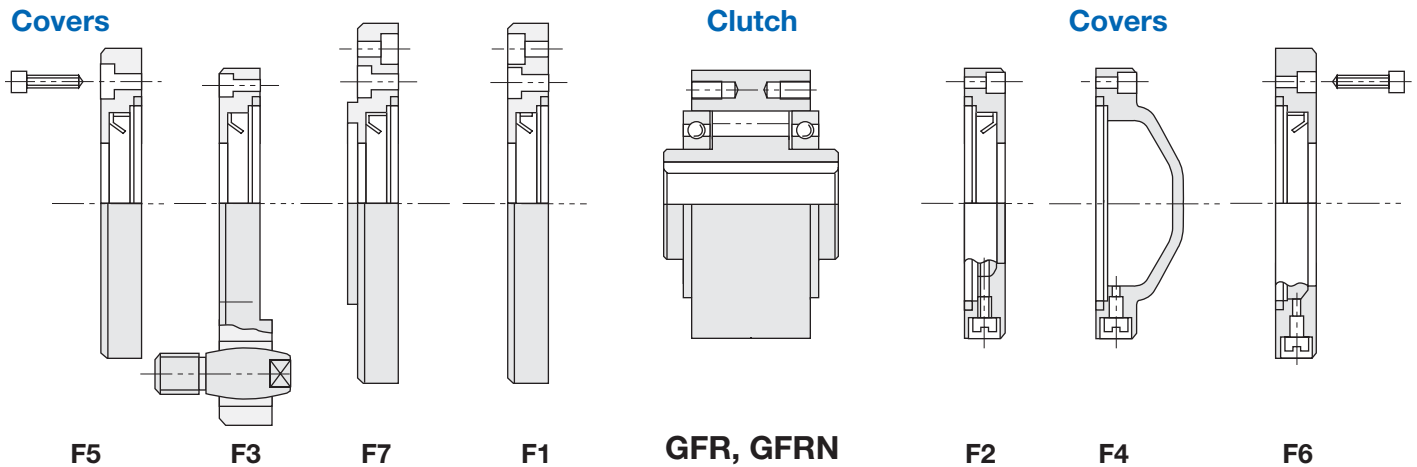
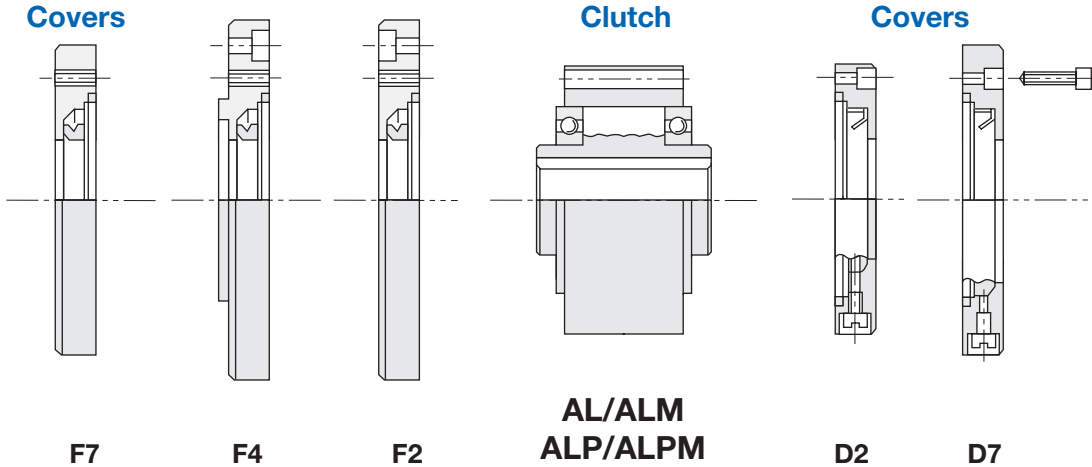
The model RINZ clutch assembled with the G5 covers on both sides provides a durable easy-to-use design. The G5 cover provides axial restraint of a gear or pulley mounted on the outer race. Torque is transmitted to the gear or pulley by the key located in the outer race outside keyseat.



Modular "Building Block" Clutches

Building Block System

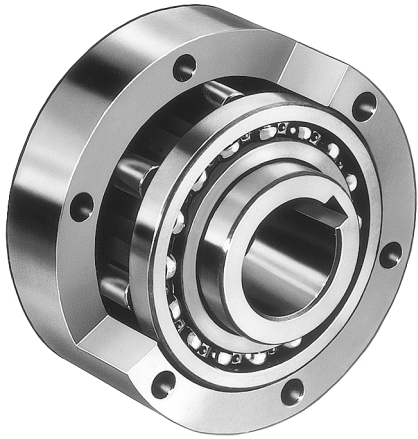
Clutch and Cover Combinations



Modular "Building Block" Clutches

AL/ALM

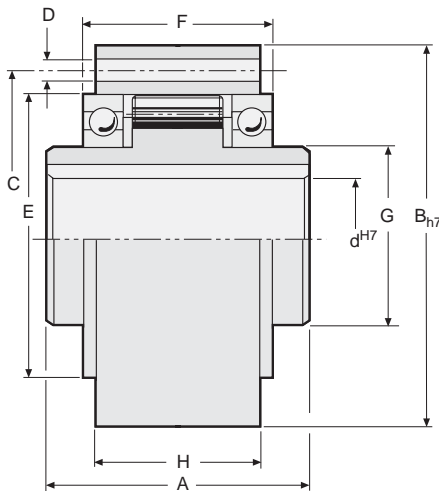
Overrunning, Indexing Ball Bearing Supported, Ramp & Roller Clutches



The model AL and ALM clutches are part of a Stieber Modular system. They are a ramp & roller type clutch that is ball bearing supported. Covers are used to transmit the torque and enclose the clutch, making it self-contained. A variety of cover designs are available and the cover combination selected would be based upon the drive arrangement. The bearings in this design cannot accept axial loads. These clutches are primarily used in overrunning and indexing applications. These clutches are oil lubricated.

This clutch is designed for oil lubrication. For grease lubrication, reduce the maximum overrunning speed to 50% of listed value.

For bolt tightening torque values, see page 126.



Specifications

Model	Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM		Resistance after run-in lb.in. (Ncm)	Shipping Weight lb. (kg)
			Inner Race	Outer Race		
AL	12	41 (55)	2,500	7,200	9.74 (11)	1.3 (0.6)
	15	92 (125)	1,900	6,500	13.28 (15)	2.0 (0.9)
	20	134 (181)	1,600	5,600	15.93 (18)	2.6 (1.2)
	25	213 (288)	1,400	4,500	31.86 (36)	4.0 (1.8)
	28	369 (500)	1,300	4,100	3.54 (4)	5.3 (2.4)
	30	369 (500)	1,300	4,100	3.54 (4)	5.3 (2.4)
	35	535 (725)	1,100	3,800	53.10 (60)	6.8 (3.1)
	40	756 (1025)	950	3,400	74.34 (84)	10.6 (4.8)
	45	830 (1125)	900	3,200	83.19 (94)	11 (4.9)
	50	1,568 (2125)	850	2,800	113.28 (128)	16 (6.9)
	55	1,937 (2625)	720	2,650	132.75 (150)	20 (9)
	60	2,583 (3500)	680	2,450	141.60 (160)	24 (11)
	70	4,244 (5750)	580	2,150	318.60 (360)	31 (14)
	80	6,273 (8500)	480	1,900	318.60 (360)	40 (18)
	90	10,701 (14500)	380	1,700	601.80 (680)	60 (27)
100	14,760 (20000)	350	1,450	778.80 (880)	101 (46)	
120	23,063 (31250)	250	1,250	1,062.00 (1200)	139 (63)	
150	51,660 (70000)	180	980	1,194.75 (1350)	282 (128)	
200	129,150 (175000)	120	750	3,717.00 (4200)	650 (293)	
250	212,175 (287500)	100	620	5,752.50 (6500)	1,034 (469)	
ALM	25	286 (388)	1,100	2,800	36.29 (41)	3.7 (1.8)
	30	434 (588)	1,000	2,500	56.64 (64)	5.3 (2.5)
	35	618 (838)	900	2,400	67.26 (76)	7.0 (3.2)

Modular “Building Block” Clutches AL/ALM

Dimensions inches (mm)

Model	Size	A	B _{H7}	C		D		E	F	G	H ⁽¹⁾
				Bolt Circle Dia.	Bolt Hole Dia. (No. Holes)	Bolt Hole Dia. (No. Holes)	Bolt Hole Dia. (No. Holes)				
AL	12	1.654 (42)	2.44 (62)	2.008 (51)	.217 (3) (5.5)	1.654 (42)	1.063 (27)	.787 (20)	.799 (20.3)		
	15	2.047 (52)	2.67 (68)	2.205 (56)	.217 (3) (5.5)	1.850 (47)	1.343 (34.1)	.984 (25)	1.193 (30.3)		
	20	2.244 (57)	2.953 (75)	2.520 (64)	.217 (4) (5.5)	2.165 (55)	1.539 (39.1)	1.181 (30)	1.350 (34.3)		
	25	2.362 (60)	3.543 (90)	3.071 (78)	.217 (6) (5.5)	2.677 (68)	1.657 (42.1)	1.575 (40)	1.469 (37.3)		
	28	2.677 (68)	3.937 (100)	3.425 (87)	.260 (6) (6.6)	2.953 (75)	1.933 (49.1)	1.772 (45)	1.744 (44.3)		
	30	2.677 (68)	3.937 (100)	3.425 (87)	.260 (6) (6.6)	2.953 (75)	1.933 (49.1)	1.772 (45)	1.744 (44.3)		
	35	2.913 (74)	4.331 (110)	3.780 (96)	.260 (6) (6.6)	3.150 (80)	2.130 (54.1)	1.969 (50)	1.902 (48.3)		
	40	3.386 (86)	4.921 (125)	4.252 (108)	.354 (6) (9)	3.543 (90)	2.445 (62.1)	2.165 (55)	2.217 (56.3)		
	45	3.386 (86)	5.118 (130)	4.409 (112)	.354 (8) (9)	3.740 (95)	2.445 (62.1)	2.362 (60)	2.217 (56.3)		
	50	3.622 (92)	5.906 (150)	5.197 (132)	.354 (8) (9)	4.331 (110)	2.720 (69.1)	2.756 (70)	2.492 (63.3)		
	55	4.094 (104)	6.299 (160)	5.433 (138)	.433 (8) (11)	4.528 (115)	2.878 (73.1)	2.953 (75)	2.638 (67)		
	60	4.488 (114)	6.693 (170)	5.906 (150)	.433 (10) (11)	4.921 (125)	3.307 (84)	3.150 (80)	3.071 (78)		
	70	5.276 (134)	7.480 (190)	6.496 (165)	.433 (10) (11)	5.512 (140)	4.056 (103)	3.543 (90)	3.740 (95)		
	80	5.669 (144)	8.268 (210)	7.283 (185)	.433 (10) (11)	6.299 (160)	4.882 (108)	4.133 (105)	3.937 (100)		
	90	6.220 (158)	9.055 (230)	8.110 (206)	.551 (10) (14)	7.087 (180)	5.630 (125)	4.724 (120)	4.528 (115)		
	100	7.165 (182)	10.630 (270)	9.449 (240)	.709 (10) (18)	8.268 (210)	5.157 (131)	5.512 (140)	4.724 (120)		
	120	7.953 (202)	12.205 (310)	10.945 (278)	.709 (12) (18)	9.449 (240)	5.984 (152)	6.299 (160)	5.512 (140)		
150	9.685 (246)	15.748 (400)	14.173 (360)	.866 (12) (22)	12.205 (310)	7.717 (190)	7.874 (200)	7.087 (180)			
200	12.834 (326)	20.472 (520)	18.110 (460)	1.024 (18) (26)	15.748 (400)	10.433 (265)	10.236 (260)	9.449 (240)			
250	15.591 (396)	24.016 (610)	21.457 (545)	1.299 (20) (33)	18.898 (480)	12.992 (330)	12.598 (320)	11.811 (300)			
ALM	25	2.362 (60)	3.543 (90)	3.071 (78)	.217 (6) (5.5)	2.677 (68)	1.657 (42.1)	1.575 (40)	1.468 (37.3)		
	30	2.677 (68)	3.937 (100)	3.425 (87)	.260 (6) (6.6)	2.953 (75)	1.933 (49.1)	1.772 (45)	1.744 (44.3)		
	35	2.913 (74)	4.331 (110)	3.780 (96)	.260 (6) (6.6)	3.150 (80)	2.130 (54.1)	1.969 (50)	1.902 (48.3)		

Bore sizes and keyseats inches (mm)

Size	d ^{H7} Bore Size	Keyseat*	Bore Range	
			Min.	Max.
12	.47 (12)	(4 X 1.8)	.354	.550
15	.59 (15)	(5 X 2.3)	.433	.689
20	.79 (20)	(6 X 2.8)	.433	.689
25	.98 (25)	(8 X 3.3)	.551	1.102
28	1.18 (30)	(8 X 3.3)	.748	1.338
30	1.18 (30)	(8 X 3.3)	.748	1.338
35	1.38 (35)	(10 X 3.3)	.944	1.496
40	1.57 (40)	(12 X 3.3)	1.102	1.692
45	1.77 (45)	(14 X 3.8)	1.102	1.811
50	1.97 (50)	(14 X 3.8)	1.496	2.165
55	2.17 (55)	(16 X 4.3)	1.496	2.362
60	2.36 (60)	(18 X 4.4)	1.890	2.440
70	2.76 (70)	(20 X 4.9)	1.890	2.874
80	3.15 (80)	(22 X 5.4)	2.165	3.385
90	3.54 (90)	(25 X 5.4)	2.362	3.779
100	3.94 (100)	(28 X 6.4)	2.755	4.488
120	4.72 (120)	(32 X 7.4)	3.149	4.803
150	5.91 (150)	(36 X 8.4)	3.937	6.614
200	7.87 (200)	—	4.724	8.740
250	9.84 (250)	—	5.905	10.708
25	.98 (25)	(8 X 3.3)	.551	1.102
30	1.18 (30)	(8 X 3.3)	.748	1.338
35	1.38 (35)	(10 X 3.3)	.944	1.496

Notes:

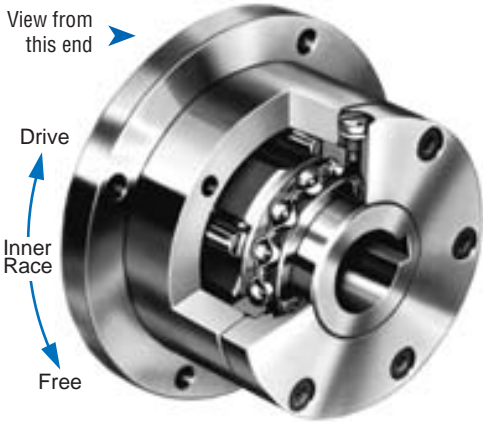
⁽¹⁾ The dimension “H” for models 12 to 50 have sealing discs. Both sides add .010 inches (.25 mm) for each disc. From model 55 and up, without sealing discs, use “O” ring seals.

* For keyseat sizes see DIN6885.1 table on page 123.

Modular “Building Block” Clutches

AL..F2D2, AL..F4D2; ALM..F2D2, ALM..F4D2

Overrunning, Indexing, Backstopping Ball Bearing Supported, Ramp & Roller Clutches



Right Hand rotation shown.
 (Left Hand opposite.)
 Specify direction of rotation when ordering.

The Model ALM clutch is a modified design for higher torque and lower overrunning speed applications.

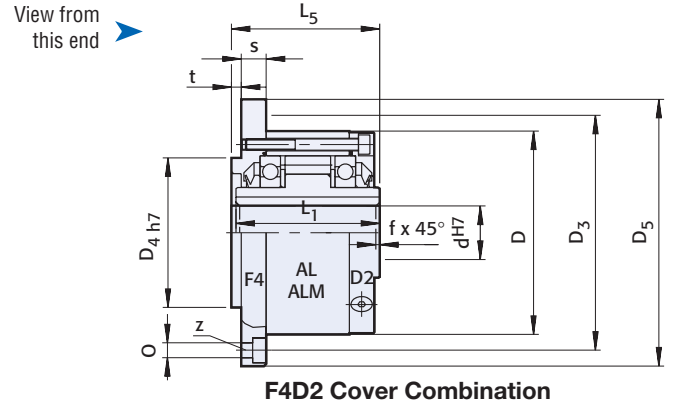
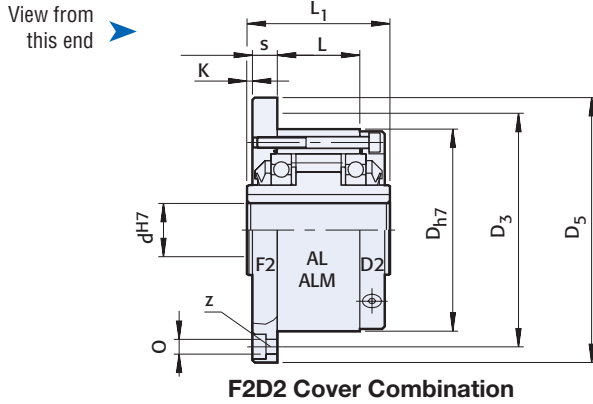
Specifications

Model	Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM		Resistance after run-in lb.in. (Ncm)	Shipping Weight lb. (kg)
			Inner Race	Outer Race		
AL..F2D2 AL..F4D2	12	41 (55)	2,500	7,200	9.74 (11)	1.98 (0.9)
	15	92 (125)	1,900	6,500	13.28 (15)	2.87 (1.3)
	20	134 (181)	1,600	5,600	15.93 (18)	3.75 (1.7)
	25	213 (288)	1,400	4,500	31.86 (36)	5.73 (2.6)
	28	369 (500)	1,300	4,100	3.54 (4)	7.72 (3.5)
	30	369 (500)	1,300	4,100	3.54 (4)	7.72 (3.5)
	35	535 (725)	1,100	3,800	53.10 (60)	9.92 (4.5)
	40	756 (1025)	950	3,400	74.34 (84)	15.21 (6.9)
	45	830 (1125)	900	3,200	83.19 (94)	15.66 (7.1)
	50	1,568 (2125)	850	2,800	113.28 (128)	22.27 (10.1)
	55	1,937 (2625)	720	2,650	132.75 (150)	28.89 (13.1)
	60	2,583 (3500)	680	2,450	141.60 (160)	34.40 (15.6)
	70	4,244 (5750)	580	2,150	318.60 (360)	44.98 (20.4)
	80	6,273 (8500)	480	1,900	318.60 (360)	58.87 (26.7)
	90	10,701 (14500)	380	1,700	601.80 (680)	86.00 (39)
	100	14,760 (20000)	350	1,450	778.80 (880)	145.53 (66)
	120	23,063 (31250)	250	1,250	1,062.00 (1200)	200.66 (91)
150	51,660 (70000)	180	980	1,194.75 (1350)	410.13 (186)	
200	129,150 (175000)	120	750	3,717.00 (4200)	937.12 (425)	
250	212,175 (287500)	100	620	5,752.50 (6500)	1,499.4 (680)	
ALM..F2D2 ALM..F4D2	25	286 (388)	1,100	2,800	36.29 (41)	5.95 (2.7)
	30	434 (588)	1,000	2,500	56.64 (64)	8.05 (3.65)
	35	618 (838)	900	2,400	67.26 (76)	10.36 (4.7)

Note: When ordering, please specify direction of rotation.

Modular "Building Block" Clutches

AL..F2D2, AL..F4D2; ALM..F2D2, ALM..F4D2



Dimensions inches (mm)

Model	Size	d ^{H7}	D _{h7}	L ₁	D ₅	D ₃	z	O	D _{4h7}	t	L ₅	K	s	f
AL..F2D2 AL..F4D2	12	0.47 (12)	2.44 (62)	1.65 (42)	3.35 (85)	2.83 (72)	3	0.22 (5.5)	1.65 (42)	0.12 (3)	1.73 (44)	0.02 (0.5)	0.41 (10.3)	0.02 (0.5)
	15	0.59 (15)	2.68 (68)	2.05 (52)	3.62 (92)	3.07 (78)	3	0.22 (5.5)	1.85 (47)	0.12 (3)	2.13 (54)	0.02 (0.5)	0.41 (10.3)	0.03 (0.8)
	20	0.79 (20)	2.95 (75)	2.24 (57)	3.86 (98)	3.35 (85)	4	0.22 (5.5)	2.17 (55)	0.12 (3)	2.32 (59)	0.02 (0.5)	0.43 (10.8)	0.03 (0.8)
	25	0.98 (25)	3.54 (90)	2.36 (60)	4.65 (118)	4.09 (104)	4	0.26 (6.6)	2.68 (68)	0.12 (3)	2.44 (62)	0.02 (0.5)	0.41 (10.5)	0.04 (1)
	28	1.18 (30)	3.94 (100)	2.68 (68)	5.04 (128)	4.49 (114)	6	0.26 (6.6)	2.95 (75)	0.12 (3)	2.76 (70)	0.02 (0.5)	0.44 (11.3)	0.04 (1)
	30	1.18 (30)	3.94 (100)	2.68 (68)	5.04 (128)	4.49 (114)	6	0.26 (6.6)	2.95 (75)	0.12 (3)	2.76 (70)	0.02 (0.5)	0.44 (11.3)	0.04 (1)
	35	1.38 (35)	4.33 (110)	2.91 (74)	5.43 (138)	4.88 (124)	6	0.26 (6.6)	3.15 (80)	0.14 (3.5)	2.99 (76)	0.04 (1)	0.46 (11.8)	0.04 (1)
	40	1.57 (40)	4.92 (125)	3.39 (86)	6.30 (160)	5.59 (142)	6	0.35 (9)	3.54 (90)	0.14 (3.5)	3.46 (88)	0.04 (1)	0.54 (13.8)	0.06 (1.5)
	45	1.77 (45)	5.12 (130)	3.39 (86)	6.50 (165)	5.75 (146)	8	0.35 (9)	3.74 (95)	0.14 (3.5)	3.46 (88)	0.04 (1)	0.54 (13.8)	0.06 (1.5)
	50	1.97 (50)	5.91 (150)	3.62 (92)	7.28 (185)	6.54 (166)	8	0.35 (9)	4.33 (110)	0.16 (4)	3.70 (94)	0.04 (1)	0.50 (12.8)	0.06 (1.5)
	55	2.17 (55)	6.30 (160)	4.09 (104)	8.03 (204)	7.17 (182)	8	0.43 (11)	4.53 (115)	0.16 (4)	4.17 (106)	0.06 (1.5)	0.66 (16.8)	0.08 (2)
	60	2.36 (60)	6.69 (170)	4.49 (114)	8.43 (214)	7.56 (192)	10	0.43 (11)	4.92 (125)	0.16 (4)	4.57 (116)	0.06 (1.5)	0.64 (16.3)	0.08 (2)
	70	2.76 (70)	7.48 (190)	5.28 (134)	9.21 (234)	8.35 (212)	10	0.43 (11)	5.51 (140)	0.16 (4)	5.35 (136)	0.06 (1.5)	0.70 (17.8)	0.10 (2.5)
	80	3.15 (80)	8.27 (210)	5.67 (144)	10.00 (254)	9.13 (232)	10	0.43 (11)	6.30 (160)	0.16 (4)	5.76 (146.3)	0.06 (1.5)	0.80 (20.3)	0.10 (2.5)
	90	3.54 (90)	9.06 (230)	6.22 (158)	10.94 (278)	10.00 (254)	10	0.55 (14)	7.09 (180)	0.18 (4.5)	6.34 (161)	0.06 (1.5)	0.79 (20)	0.12 (3)
100	3.94 (100)	10.63 (270)	7.17 (182)	13.19 (335)	12.01 (305)	10	0.71 (18)	8.27 (210)	0.20 (5)	7.24 (184)	0.10 (2.5)	1.10 (28)	0.12 (3)	
120	4.72 (120)	12.20 (310)	7.95 (202)	14.76 (375)	13.58 (345)	12	0.71 (18)	9.45 (240)	0.20 (5)	8.03 (204)	0.10 (2.5)	1.12 (28.5)	0.12 (3)	
150	5.91 (150)	15.75 (400)	9.69 (246)	19.09 (485)	17.52 (445)	12	0.87 (22)	12.20 (310)	0.20 (5)	9.80 (249)	0.10 (2.5)	1.22 (31)	0.16 (4)	
200	7.87 (200)	20.47 (520)	12.83 (326)	24.61 (625)	22.24 (565)	18	1.02 (26)	15.75 (400)	0.20 (5)	12.91 (328)	0.12 (3)	1.57 (40)	0.20 (5)	
250	9.84 (250)	24.02 (610)	15.59 (396)	29.13 (740)	26.77 (680)	20	1.30 (33)	18.90 (480)	0.20 (5)	15.67 (398)	0.12 (3)	1.77 (45)	0.20 (5)	
ALM..F2D2 ALM..F4D2	25	.098 (25)	3.54 (90)	2.36 (60)	4.65 (118)	4.09 (104)	4	0.26 (6.6)	2.68 (68)	0.12 (3)	2.44 (62)	0.02 (0.5)	0.41 (10.5)	0.04 (1)
	30	1.18 (30)	3.94 (100)	2.68 (68)	5.04 (128)	4.49 (114)	6	0.26 (6.6)	2.95 (75)	0.12 (3)	2.76 (70)	0.02 (0.5)	0.44 (11.3)	0.04 (1)
	35	1.38 (35)	4.33 (110)	2.91 (74)	5.43 (138)	4.88 (124)	6	0.26 (6.6)	3.15 (80)	0.14 (3.5)	2.99 (76)	0.04 (1)	0.46 (11.8)	0.04 (1)

Note: For bore and keyseat information see page 83.

Modular "Building Block" Clutches

ALP..F7D7, ALPM..F7D7

Overrunning, Indexing Ball Bearing Supported, Ramp & Roller Clutches



Right Hand rotation shown.
 (Left Hand opposite.)
 Specify direction of rotation when ordering.

Model ALP..F7D7 is a ramp & roller type clutch, self-contained, sealed and bearing supported using two 160 Series bearings. Unit is shipped oil lubricated.

This cover combination is mostly used as an overrunning or indexing clutch.

A keyway is machined on the outer race for the connection to the drive or driven member centered on its outside.

D7 cover is used to close the unit. It is equipped with two screws for oil filling, drain and level.

The shaft seal is a V-ring type. Cover and seal have been designed to provide sealing with minimum drag torque.

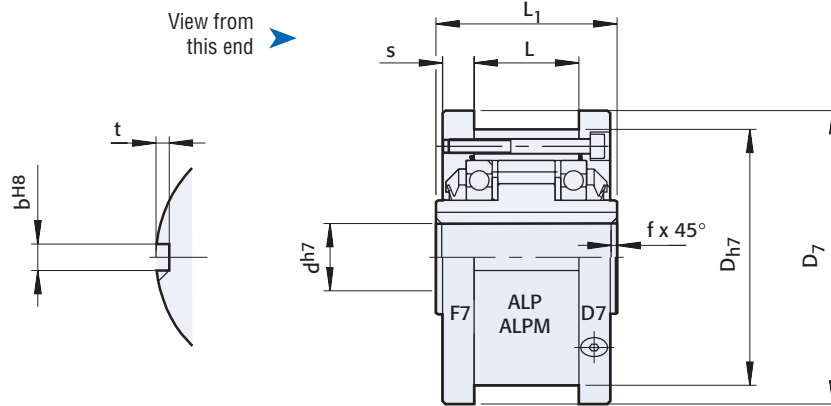
We recommend that the unit be supplied assembled.

Specifications

Model	Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM		Resistance after run-in lb.in. (Ncm)	Shipping Weight lb. (kg)
			Inner Race	Outer Race		
ALP.. F7D7	12	41 (55)	2,500	7,200	9.73 (11)	2.21 (1)
	15	92 (125)	1,900	6,500	13.28 (15)	3.09 (1.4)
	20	134 (181)	1,600	5,600	15.93 (18)	4.19 (1.9)
	25	213 (288)	1,400	4,500	31.86 (36)	6.17 (2.8)
	28	369 (500)	1,300	4,100	39.83 (45)	8.16 (3.7)
	30	369 (500)	1,300	4,100	39.83 (45)	8.16 (3.7)
	35	535 (725)	1,100	3,800	53.10 (60)	10.36 (4.7)
	40	756 (1025)	950	3,400	74.34 (84)	15.66 (7.1)
	45	830 (1125)	900	3,200	83.19 (94)	16.32 (7.4)
	50	1,568 (2125)	850	2,800	113.28 (128)	22.93 (10.4)
	55	1,937 (2625)	720	2,650	132.75 (150)	29.55 (13.4)
	60	2,583 (3500)	680	2,450	141.60 (160)	35.06 (15.9)
	70	4,244 (5750)	580	2,150	318.60 (360)	45.86 (20.8)
	80	6,273 (8500)	480	1,900	318.60 (360)	59.76 (27.1)
	90	10,701 (14500)	380	1,700	601.80 (680)	86.88 (39.4)
100	14,760 (20000)	350	1,450	778.80 (880)	146.41 (66.4)	
120	23,063 (31250)	250	1,250	1,062.00 (1200)	201.76 (91.5)	
150	51,660 (70000)	180	980	1,194.75 (1350)	412.34 (187)	
200	129,150 (175000)	120	750	3,717.00 (4200)	948.15 (430)	
250	212,175 (287500)	100	620	5,752.50 (6500)	1,517.04 (688)	
ALPM F7D7	25	286 (388)	1,100	2,800	36.29 (41)	6.39 (2.9)
	30	434 (588)	1,000	2,500	56.64 (64)	8.49 (3.85)
	35	618 (838)	900	2,400	67.26 (76)	10.80 (4.9)

Note: When ordering, please specify direction of rotation.

Modular "Building Block" Clutches ALP..F7D7, ALPM..F7D7



Dimensions inches (mm)

Model	Size	d ^{H7}	D _{h7}	L ₁	D ₇	s	L	b ^{H8}	t	f
ALP.. F7D7	12	0.47 (12)	2.44 (62)	1.65 (42)	2.76 (70)	0.41 (10.4)	0.79 (20)	0.16 (4)	0.09 (2.4)	0.02 (0.5)
	15	0.59 (15)	2.68 (68)	2.05 (52)	2.99 (76)	0.45 (11.4)	1.10 (28)	0.20 (5)	0.11 (2.9)	0.03 (0.8)
	20	0.79 (20)	2.95 (75)	2.24 (57)	3.31 (84)	0.43 (10.9)	1.34 (34)	0.24 (6)	0.14 (3.5)	0.03 (0.8)
	25	0.98 (25)	3.54 (90)	2.36 (60)	3.90 (99)	0.47 (11.9)	1.38 (35)	0.31 (8)	0.16 (4.1)	0.04 (1)
	28	1.18 (30)	3.94 (100)	2.68 (68)	4.29 (109)	0.47 (11.9)	1.69 (43)	0.31 (8)	0.16 (4.1)	0.04 (1)
	30	1.18 (30)	3.94 (100)	2.68 (68)	4.29 (109)	0.47 (11.9)	1.69 (43)	0.31 (8)	0.16 (4.1)	0.04 (1)
	35	1.38 (35)	4.33 (110)	2.91 (74)	4.69 (119)	0.53 (13.4)	1.77 (45)	0.39 (10)	0.19 (4.7)	0.04 (1)
	40	1.57 (40)	4.92 (125)	3.39 (86)	5.31 (135)	0.61 (15.4)	2.09 (53)	0.47 (12)	0.19 (4.9)	0.06 (1.5)
	45	1.77 (45)	5.12 (130)	3.39 (86)	5.51 (140)	0.61 (15.4)	2.09 (53)	0.55 (14)	0.22 (5.5)	0.06 (1.5)
	50	1.97 (50)	5.91 (150)	3.62 (92)	6.30 (160)	0.51 (12.9)	2.52 (64)	0.55 (14)	0.22 (5.5)	0.06 (1.5)
	55	2.17 (55)	6.30 (160)	4.09 (104)	6.69 (170)	0.69 (17.5)	2.60 (66)	0.63 (16)	0.24 (6.2)	0.08 (2)
	60	2.36 (60)	6.69 (170)	4.49 (114)	7.17 (182)	0.65 (16.5)	3.07 (78)	0.71 (18)	0.27 (6.8)	0.08 (2)
	70	2.76 (70)	7.48 (190)	5.28 (134)	7.95 (202)	0.71 (18)	3.74 (95)	0.79 (20)	0.29 (7.4)	0.10 (2.5)
	80	3.15 (80)	8.27 (210)	5.67 (144)	8.74 (222)	0.81 (20.5)	3.94 (100)	0.87 (22)	0.33 (8.5)	0.10 (2.5)
	90	3.54 (90)	9.06 (230)	6.22 (158)	9.53 (242)	0.79 (20)	4.53 (115)	0.98 (25)	0.34 (8.7)	0.12 (3)
	100	3.94 (100)	10.63 (270)	7.17 (182)	11.10 (282)	1.12 (28.5)	4.72 (120)	1.10 (28)	0.39 (9.9)	0.12 (3)
	120	4.72 (120)	12.20 (310)	7.95 (202)	12.68 (322)	0.89 (22.5)	5.98 (152)	1.26 (32)	0.44 (11.1)	0.12 (3)
	150	5.91 (150)	15.75 (400)	9.69 (246)	16.22 (412)	1.22 (31)	7.09 (180)	1.42 (36)	0.48 (12.3)	0.16 (4)
	200	7.87 (200)	20.47 (520)	12.83 (326)	21.26 (540)	1.57 (40)	9.45 (240)	1.77 (45)	0.59 (15)	0.20 (5)
	250	9.84 (250)	24.02 (610)	15.59 (396)	24.80 (630)	1.77 (45)	11.8 (300)	1.77 (45)	0.59 (15)	0.20 (5)
ALPM.. F7D7	25	0.98 (25)	3.54 (90)	2.36 (60)	3.90 (99)	0.47 (11.9)	1.38 (35)	0.31 (8)	0.16 (4.1)	0.04 (1)
	30	1.18 (30)	3.94 (100)	2.68 (68)	4.29 (109)	0.47 (11.9)	1.69 (43)	0.31 (8)	0.16 (4.1)	0.04 (1)
	35	1.38 (35)	4.33 (110)	2.91 (74)	4.69 (119)	0.53 (13.4)	1.77 (45)	0.39 (10)	0.19 (4.7)	0.04 (1)

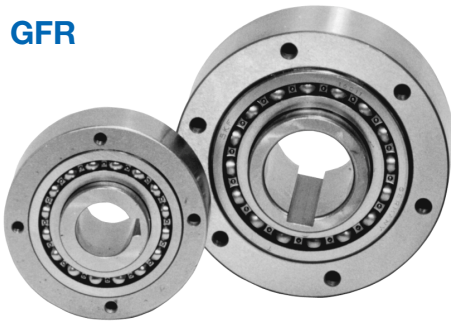
Note: For bore and keyseat information see page 83.

Modular “Building Block” Clutches

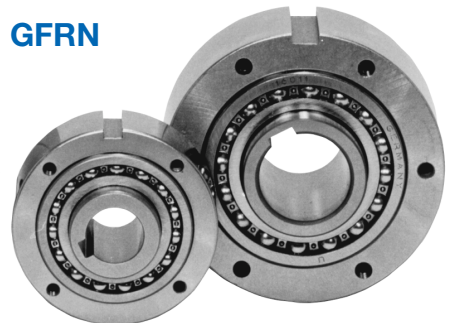
GFR/GFRN

Overrunning, Indexing, Backstopping Ball Bearing Supported, Ramp & Roller Clutches

GFR



GFRN



The GFR and GFRN are part of the Stieber modular system. They are bearing supported, using two 160 Series bearings, and require oil lubrication. These units may be used in designs providing oil lubrication and sealing as shown on the following pages.

The bearings must not be axially stressed. Typically, models GFR and GFRN are used with the F series covers that are designed to transmit torque and retain oil lubrication.

Usually, these covers are used in pairs according to combinations shown on the following pages.

The outer race of the GFR model is designed to support and center any

component bored to H7 tolerance. Torque is transmitted by bolts through the cover plate in this case. Models GFR and GFRN are identical, except that model GFRN has a keyseat on the outside diameter to transmit torque.

Two paper seals are shipped with each unit to be placed between the outer race and cover plates.

This clutch is designed for oil lubrication. For grease lubrication, reduce the maximum overrunning speed to 50% of listed value.

For bolt tightening torque values, see page 126

For Indexing Applications:

Maximum number indexes per minute is 350.

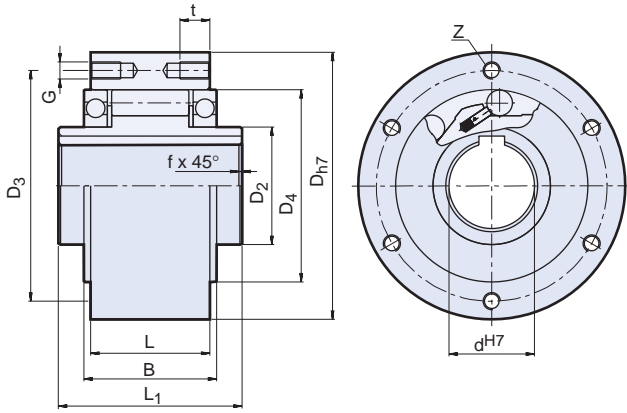
Specifications

Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM		Shipping Weight lb. (kg)
		Inner Race	Outer Race	
12	41 (55)	4,000	5,600	1.1 (0.5)
15	92 (125)	3,600	5,200	1.76 (0.8)
20	134 (181)	2,700	4,600	2.21 (1)
25	213 (288)	2,100	3,600	3.31 (1.5)
30	369 (500)	1,700	3,200	4.85 (2.2)
35	535 (725)	1,550	3,000	6.62 (3)
40	756 (1025)	1,150	2,600	10.14 (4.6)
45	830 (1125)	1,000	2,400	10.36 (4.7)
50	1,568 (2125)	800	2,150	15.88 (7.2)
55	1,937 (2625)	750	2,000	18.96 (8.6)
60	2,583 (3500)	650	1,900	23.15 (10.5)
70	4,244 (5750)	550	1,750	29.77 (13.5)
80	6,273 (8500)	500	1,600	40.13 (18.2)
90	10,701 (14500)	450	1,450	62.84 (28.5)
100	14,760 (20000)	350	1,250	93.71 (42.5)
130	23,063 (31250)	250	1,000	143.33 (65)
150	51,660 (70000)	200	800	304.29 (138)

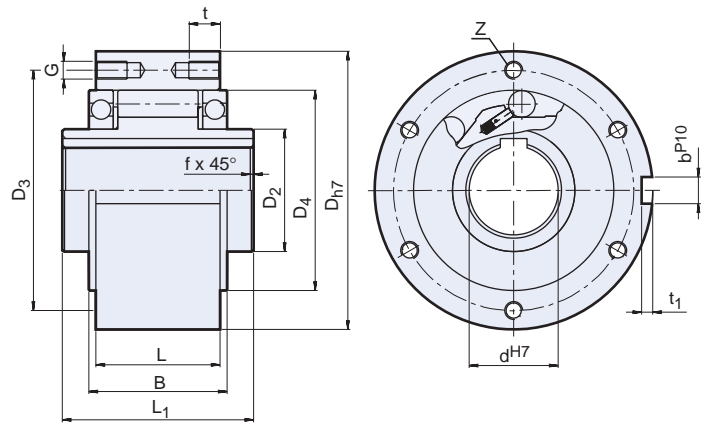
Note: Keyway to DIN 6885.1

Modular "Building Block" Clutches GFR/GFRN

GFR



GFRN



Dimensions inches (mm)

Size	d ^{H7}	D _{h7}	D ₂	D ₄	D ₃	t	L ₁	L	B	t ₁	b ^{P10}	f	G	Z
12	0.47 (12)	2.44 (62)	0.79 (20)	1.65 (42)	2.01 (51)	— (—)	1.65 (42)	0.79 (20)	1.06 (27)	0.10 (2.5)	0.16 (4)	1.10 (0.5)	(5.5)	2
15	0.59 (15)	2.68 (68)	0.98 (25)	1.85 (47)	2.20 (56)	0.31 (8)	2.05 (52)	1.10 (28)	1.26 (32)	0.12 (3)	0.20 (5)	0.03 (0.8)	M5	3
20	0.79 (20)	2.95 (75)	1.18 (30)	2.17 (55)	2.52 (64)	0.31 (8)	2.24 (57)	1.34 (34)	1.54 (39)	0.14 (3.5)	0.24 (6)	0.03 (0.8)	M5	3
25	0.98 (25)	3.54 (90)	1.57 (40)	2.68 (68)	3.07 (78)	0.39 (10)	2.36 (60)	1.38 (35)	1.57 (40)	0.16 (4)	0.31 (8)	0.04 (1)	M6	4
30	1.18 (30)	3.94 (100)	1.77 (45)	2.95 (75)	3.43 (87)	0.39 (10)	2.68 (68)	1.69 (43)	1.89 (48)	0.16 (4)	0.31 (8)	0.04 (1)	M6	4
35	1.38 (35)	4.33 (110)	1.97 (50)	3.15 (80)	3.78 (96)	0.47 (12)	2.91 (74)	1.77 (45)	2.01 (51)	0.20 (5)	0.39 (10)	0.04 (1)	M6	6
40	1.57 (40)	4.92 (125)	2.17 (55)	3.54 (90)	4.25 (108)	0.55 (14)	3.39 (86)	2.09 (53)	2.32 (59)	0.20 (5)	0.47 (12)	0.06 (1.5)	M8	6
45	1.77 (45)	5.12 (130)	2.36 (60)	3.74 (95)	4.41 (112)	0.55 (14)	3.39 (86)	2.09 (53)	2.32 (59)	0.22 (5.5)	0.55 (14)	0.06 (1.5)	M8	6
50	1.97 (50)	5.91 (150)	2.76 (70)	4.33 (110)	5.20 (132)	0.55 (14)	3.70 (94)	2.52 (64)	2.83 (72)	0.22 (5.5)	0.55 (14)	0.06 (1.5)	M8	8
55	2.17 (55)	6.30 (160)	2.95 (75)	4.53 (115)	5.43 (138)	0.63 (16)	4.09 (104)	2.60 (66)	2.83 (72)	0.24 (6)	0.63 (16)	0.08 (2)	M10	8
60	2.36 (60)	6.69 (170)	3.15 (80)	4.92 (125)	5.91 (150)	0.63 (16)	4.49 (114)	3.07 (78)	3.50 (89)	0.28 (7)	0.71 (18)	0.08 (2)	M10	10
70	2.76 (70)	7.48 (190)	3.54 (90)	5.51 (140)	6.50 (165)	0.63 (16)	5.28 (134)	3.74 (95)	4.25 (108)	0.30 (7.5)	0.79 (20)	0.10 (2.5)	M10	10
80	3.15 (80)	8.27 (210)	4.13 (105)	6.30 (160)	7.28 (185)	0.63 (16)	5.67 (144)	3.94 (100)	4.25 (108)	0.35 (9)	0.87 (22)	0.10 (2.5)	M10	10
90	3.54 (90)	9.06 (230)	4.72 (120)	7.09 (180)	8.11 (206)	0.79 (20)	6.22 (158)	4.53 (115)	4.92 (125)	0.35 (9)	0.98 (25)	0.12 (3)	M12	10
100	3.94 (100)	10.63 (270)	5.51 (140)	8.27 (210)	9.45 (240)	0.94 (24)	7.17 (182)	4.72 (120)	5.16 (131)	0.39 (10)	1.10 (28)	0.12 (3)	M16	10
130	4.72 (120)	12.20 (310)	6.30 (160)	9.45 (240)	10.94 (278)	0.94 (24)	8.35 (212)	5.98 (152)	6.61 (168)	0.43 (11)	32 (1.26)	0.12 (3)	M16	12
150	5.91 (150)	15.75 (400)	7.87 (200)	12.20 (310)	14.17 (360)	1.26 (32)	9.69 (246)	7.09 (180)	7.64 (194)	0.47 (12)	1.42 (36)	0.16 (4)	M20	12

Note: GFR 12 has through holes in outer race.

Bore sizes and keyseats inches (mm)

Size	d ^{H7} Bore Size	Keyseat*
12	0.47 (12)	(4 X 1.8)
15	0.59 (15)	(5 X 2.3)
20	0.79 (20)	(6 X 2.8)
25	0.98 (25)	(8 X 3.3)
30	1.18 (30)	(8 X 3.3)
35	1.38 (35)	(10 X 3.3)
40	1.57 (40)	(12 X 3.3)
45	1.77 (45)	(14 X 3.8)
50	1.97 (50)	(14 X 3.8)
55	2.17 (55)	(16 X 4.3)
60	2.36 (60)	(18 X 4.4)
70	2.76 (70)	(20 X 4.9)
80	3.15 (80)	(22 X 5.4)
90	3.54 (90)	(25 X 5.4)
100	3.94 (100)	(28 X 6.4)
130	5.12 (130)	(32 X 7.4)
150	5.91 (150)	(36 X 8.4)

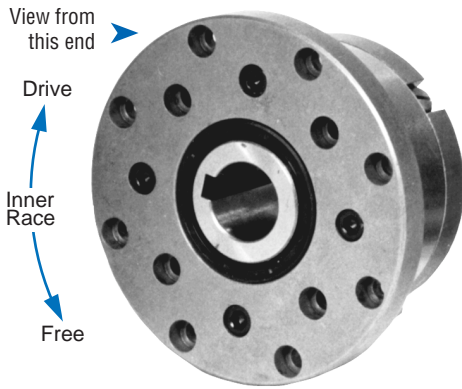
* For keyseat sizes see DIN 6885.1 table on page 123.

Modular “Building Block” Clutches

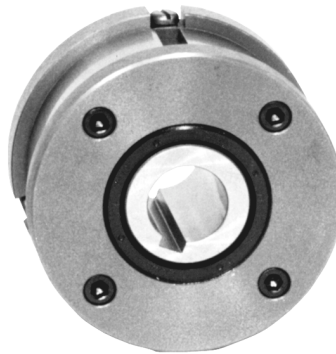
GFR..F1F2, GFR..F2F7, GFRN..F5F6

Overrunning, Indexing Ball Bearing Supported, Ramp & Roller Clutches

GFR..F1F2



GFRN..F5F6



Right Hand rotation shown.
(Left Hand opposite.)

Specify direction of rotation when ordering.

Models GFR..F1F2/F2F7 and GFRN..F5F6 are ramp & roller type clutches, self-contained, sealed and bearing supported, using two 160 Series bearings.

They use the GFR and GFRN base modules described on previous pages.

Units must be oil lubricated before use if they are shipped unassembled.

Primarily used as an overrunning or indexing clutches. The cover combination is selected according to the type of drive, attachments required.

F2 and F6 covers are used to enclose the unit. They are equipped with 3 screws for oil filling, drain and level.

This design uses standard lip seals.

Covers may be easily assembled by the user, allowing for easily changing the rotation.

Alternatively, units can be shipped assembled and lubricated.

For Indexing Applications:

Maximum number indexes per minute is 350.

Specifications

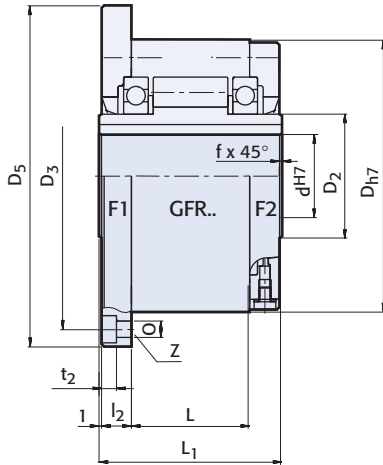
Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM		Shipping Weight lb. (kg)
		Inner Race	Outer Race	
12	41 (55)	3,100	4,700	2.65 (1.2)
15	92 (125)	2,800	4,400	3.53 (1.6)
20	134 (181)	2,400	4,100	4.19 (1.9)
25	213 (288)	1,600	3,800	6.39 (2.9)
30	369 (500)	1,300	2,800	8.60 (3.9)
35	535 (725)	1,200	2,600	10.80 (4.9)
40	756 (1025)	850	2,300	16.54 (7.5)
45	830 (1125)	740	2,200	17.20 (7.8)
50	1,568 (2125)	580	1,950	23.81 (10.8)
55	1,937 (2625)	550	1,800	30.87 (14)
60	2,583 (3500)	530	1,700	37.04 (16.8)
70	4,244 (5750)	500	1,600	45.86 (20.8)
80	6,273 (8500)	480	1,500	59.54 (27)
90	10,701 (14500)	450	1,300	88.20 (40)
100	14,760 (20000)	350	1,100	147.74 (67)
130	23,063 (31250)	250	900	207.27 (94)
150	51,660 (70000)	200	700	412.34 (187)

Note: When ordering, please specify direction of rotation.

Modular "Building Block" Clutches GFR..F1F2, GFR..F2F7, GFRN..F5F6

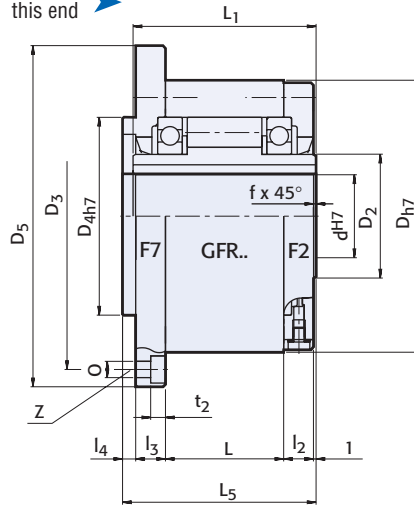
GFR..F1F2

View from this end



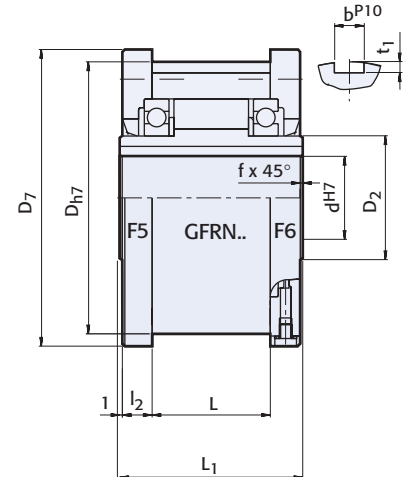
GFR..F2F7

View from this end



GFRN..F5F6

View from this end



Dimensions inches (mm)

Size	d ^{H7}	D _{h7}	D ₅	D ₇	D ₃	D _{4h7}	O	t ₂	L ₁	L ₅	L	L ₂	L ₃	L ₄	t ₁	b ^{P10}	f	z
12	0.47 (12)	2.44 (62)	3.35 (85)	2.76 (70)	2.83 (72)	1.65 (42)	0.22 (5.5)	0.22 (5.7)	1.65 (42)	1.73 (44)	0.79 (20)	0.39 (10)	0.39 (10)	0.12 (3)	0.10 (2.5)	0.16 (4)	0.02 (0.5)	2
15	0.59 (15)	2.68 (68)	3.62 (92)	2.99 (76)	3.07 (78)	1.85 (47)	0.22 (5.5)	0.22 (5.7)	2.05 (52)	2.13 (54)	1.10 (28)	0.43 (11)	0.43 (11)	0.12 (3)	0.12 (3)	0.20 (5)	0.03 (0.8)	3
20	0.79 (20)	2.95 (75)	3.86 (98)	3.31 (84)	3.35 (85)	2.17 (55)	0.22 (5.5)	0.22 (5.7)	2.24 (57)	2.32 (59)	1.34 (34)	0.41 (10.5)	0.41 (10.5)	0.12 (3)	0.14 (3.5)	0.24 (6)	0.03 (0.8)	3
25	0.98 (25)	3.54 (90)	4.65 (118)	3.90 (99)	4.09 (104)	2.68 (68)	0.26 (6.6)	0.27 (6.8)	2.36 (60)	2.44 (62)	1.38 (35)	0.45 (11.5)	0.45 (11.5)	0.12 (3)	0.16 (4)	0.31 (8)	0.04 (1)	4
30	1.18 (30)	3.94 (100)	5.04 (128)	4.29 (109)	4.49 (114)	2.95 (75)	0.26 (6.6)	0.27 (6.8)	2.68 (68)	2.76 (70)	1.69 (43)	0.45 (11.5)	0.45 (11.5)	0.12 (3)	0.16 (4)	0.31 (8)	0.04 (1)	4
35	1.38 (35)	4.33 (110)	5.51 (140)	4.69 (119)	4.88 (124)	3.15 (80)	0.26 (6.6)	0.27 (6.8)	2.91 (74)	2.99 (76)	1.77 (45)	0.53 (13.5)	0.51 (13)	0.14 (3.5)	0.20 (5)	0.39 (10)	0.04 (1)	6
40	1.57 (40)	4.92 (125)	6.30 (160)	5.31 (135)	5.59 (142)	3.54 (90)	0.35 (9)	0.35 (9)	3.39 (86)	3.46 (88)	2.09 (53)	0.61 (15.5)	0.59 (15)	0.14 (3.5)	0.20 (5)	0.47 (12)	0.06 (1.5)	6
45	1.77 (45)	5.12 (130)	6.50 (165)	5.51 (140)	5.75 (146)	3.74 (95)	0.35 (9)	0.35 (9)	3.39 (86)	3.46 (88)	2.09 (53)	0.61 (15.5)	0.59 (15)	0.14 (3.5)	0.22 (5.5)	0.55 (14)	0.06 (1.5)	6
50	1.97 (50)	5.91 (150)	7.28 (185)	6.30 (160)	6.54 (166)	4.33 (110)	0.35 (9)	0.35 (9)	3.70 (94)	3.78 (96)	2.52 (64)	0.55 (14)	0.51 (13)	0.16 (4)	0.22 (5.5)	0.55 (14)	0.06 (1.5)	8
55	2.17 (55)	6.30 (160)	8.03 (204)	6.69 (170)	7.17 (182)	4.53 (115)	0.43 (11)	0.43 (11)	4.09 (104)	4.17 (106)	2.60 (66)	0.71 (18)	0.67 (17)	0.16 (4)	0.24 (6)	0.63 (16)	0.08 (2)	8
60	2.36 (60)	6.69 (170)	8.43 (214)	7.17 (182)	7.56 (192)	4.92 (125)	0.43 (11)	0.43 (11)	4.49 (114)	4.57 (116)	3.07 (78)	0.67 (17)	0.63 (16)	0.16 (4)	0.28 (7)	0.71 (18)	0.08 (2)	10
70	2.76 (70)	7.48 (190)	9.21 (234)	7.95 (202)	8.35 (212)	5.51 (140)	0.43 (11)	0.43 (11)	5.28 (134)	5.35 (136)	3.74 (95)	0.73 (18.5)	0.69 (17.5)	0.16 (4)	0.30 (7.5)	0.79 (20)	0.10 (2.5)	10
80	3.15 (80)	8.27 (210)	10.00 (254)	8.74 (222)	9.13 (232)	6.30 (160)	0.43 (11)	0.43 (11)	5.67 (144)	5.75 (146)	3.94 (100)	0.83 (21)	0.79 (20)	0.16 (4)	0.35 (9)	0.87 (22)	0.10 (2.5)	10
90	3.54 (90)	9.06 (230)	10.94 (278)	9.53 (242)	10.00 (254)	7.09 (180)	0.55 (14)	0.51 (13)	6.22 (158)	6.30 (160)	4.53 (115)	0.81 (20.5)	0.75 (19)	0.18 (4.5)	0.35 (9)	0.98 (25)	0.12 (3)	10
100	3.94 (100)	10.63 (270)	13.19 (335)	11.10 (282)	12.01 (305)	8.27 (210)	0.71 (18)	0.69 (17.5)	7.17 (182)	7.24 (184)	4.72 (120)	1.18 (30)	1.10 (28)	0.20 (5)	0.39 (10)	1.10 (28)	0.12 (3)	10
130	5.12 (130)	12.20 (310)	14.96 (380)	12.68 (322)	13.58 (345)	9.45 (240)	0.71 (18)	0.69 (17.5)	8.35 (212)	8.43 (214)	5.98 (152)	1.14 (29)	1.06 (27)	0.20 (5)	0.43 (11)	1.26 (32)	0.12 (3)	12
150	5.91 (150)	15.75 (400)	19.09 (485)	16.22 (412)	17.52 (445)	12.20 (310)	0.87 (22)	0.85 (21.5)	9.69 (246)	9.76 (248)	7.09 (180)	1.26 (32)	1.18 (30)	0.20 (5)	0.47 (12)	1.42 (36)	0.16 (4)	12

Note: For bore and keyseat information see page 89.
Dimension D₂ listed on page 89.

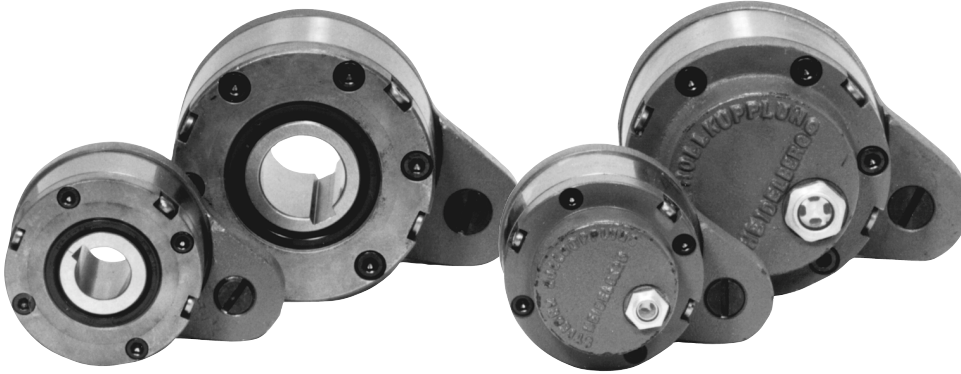
Modular “Building Block” Clutches

GFR..F2F3, GFR..F3F4

Backstopping Ball Bearing Supported, Ramp & Roller Clutches

GFR..F2F3

GFR..F3F4



Models GFR..F2F3/F3F4 are ramp & roller type clutches, self contained, sealed and bearing supported, using two 160 Series bearings.

They use the GFR base module. Units must be oil lubricated before use if they are shipped disassembled and, in any case, for the F3F4 combination.

These cover combinations are primarily used as backstops.

The F3 cover acts as a torque arm and has an integrated restraining bolt. The restraining bolt should go into a slot in a fixed part of the machine. The restraining bolt must have a radial clearance of 1% of the bolt's diameter. The torque arm and bearings must not be rigidly mounted.

F2 and F4 covers are used to enclose the unit. They are equipped with 3 screws for oil filling, drain and level.

If using cover type F4, the shaft end plate and its screw must be sealed to avoid oil leakage through the keyway.

Covers are easily removed, allowing for on site selection of rotation direction.

If requested, units can be shipped assembled and lubricated for the F2F3 combination.

For Indexing Applications:

Maximum number indexes per minute is 350.

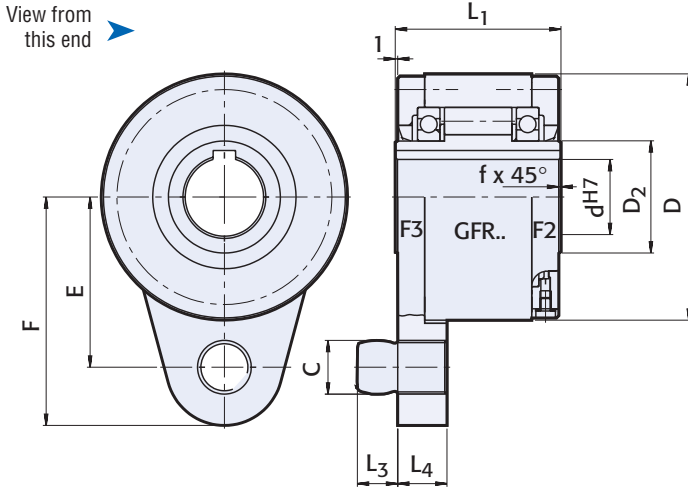
Specifications

Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM	Shipping Weight lb. (kg)
		Inner Race	
12	41 (55)	3,100	3.09 (1.4)
15	92 (125)	2,800	3.97 (1.8)
20	134 (181)	2,400	5.07 (2.3)
25	213 (288)	1,600	7.50 (3.4)
30	369 (500)	1,300	9.92 (4.5)
35	535 (725)	1,200	12.35 (5.6)
40	756 (1025)	850	18.74 (8.5)
45	830 (1125)	740	19.62 (8.9)
50	1,568 (2125)	580	28.22 (12.8)
55	1,937 (2625)	550	35.72 (16.2)
60	2,583 (3500)	530	42.56 (19.3)
70	4,244 (5750)	500	51.82 (23.5)
80	6,273 (8500)	480	70.56 (32)
90	10,701 (14500)	450	104.08 (47.2)
100	14,760 (20000)	350	167.58 (76)
130	23,063 (31250)	250	242.55 (110)
150	51,660 (70000)	200	471.87 (214)

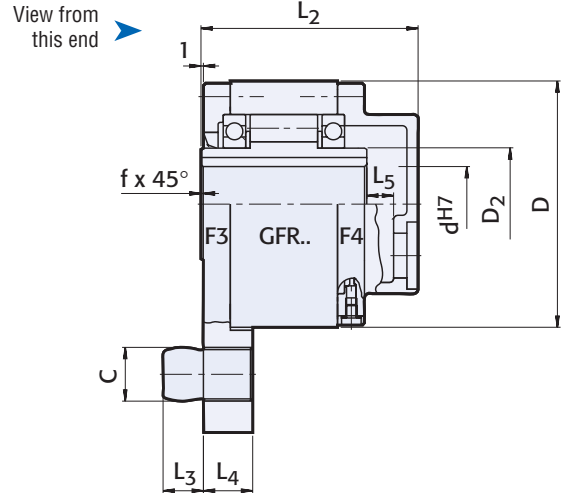
Note: When ordering, please specify direction of rotation.

Modular “Building Block” Clutches GFR..F2F3, GFR..F3F4

GFR..F2F3



GFR..F3F4



Dimensions inches (mm)

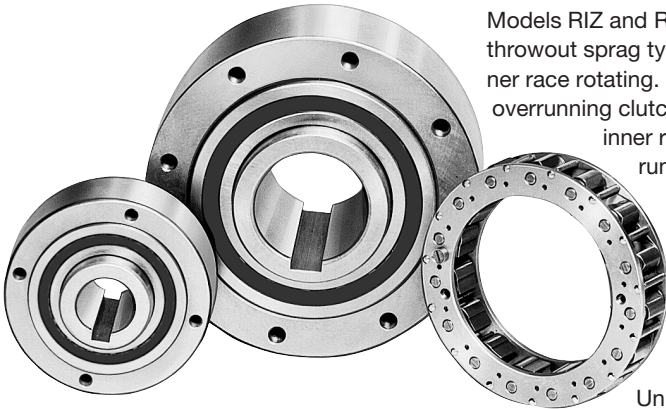
Size	dH7	D	D ₂	C	L ₁	L ₂	L ₃	L ₄	F	E	L ₅	f
12	0.47 (12)	2.44 (62)	0.79 (20)	0.39 (10)	1.65 (42)	2.52 (64)	0.39 (10)	0.51 (13)	2.32 (59)	1.73 (44)	0.24 (6)	0.02 (0.5)
15	0.59 (15)	2.68 (68)	0.98 (25)	0.39 (10)	2.05 (52)	3.07 (78)	0.39 (10)	0.51 (13)	2.44 (62)	1.85 (47)	0.39 (10)	0.03 (0.8)
20	0.79 (20)	2.95 (75)	1.18 (30)	0.47 (12)	2.24 (57)	3.23 (82)	0.43 (11)	0.59 (15)	2.83 (72)	2.13 (54)	0.39 (10)	0.03 (0.8)
25	0.98 (25)	3.54 (90)	1.57 (40)	0.63 (16)	2.36 (60)	3.35 (85)	0.55 (14)	0.71 (18)	3.31 (84)	2.44 (62)	0.39 (10)	0.04 (1)
30	1.18 (30)	3.94 (100)	1.77 (45)	0.63 (16)	2.68 (68)	3.74 (95)	0.55 (14)	0.71 (18)	3.62 (92)	2.68 (68)	0.39 (10)	0.04 (1)
35	1.38 (35)	4.33 (110)	1.97 (50)	0.79 (20)	2.91 (74)	4.02 (102)	0.71 (18)	0.98 (25)	4.02 (102)	2.99 (76)	0.47 (12)	0.04 (1)
40	1.57 (40)	4.92 (125)	2.17 (55)	0.79 (20)	3.39 (86)	4.53 (115)	0.71 (18)	0.98 (25)	4.41 (112)	3.35 (85)	0.47 (12)	0.06 (1.5)
45	1.77 (45)	5.12 (130)	2.36 (60)	0.98 (25)	3.39 (86)	4.53 (115)	0.87 (22)	0.98 (25)	4.72 (120)	3.54 (90)	0.47 (12)	0.06 (1.5)
50	1.97 (50)	5.91 (150)	2.76 (70)	0.98 (25)	3.70 (94)	4.84 (123)	0.87 (22)	0.98 (25)	5.31 (135)	4.02 (102)	0.47 (12)	0.06 (1.5)
55	2.17 (55)	6.30 (160)	2.95 (75)	1.26 (32)	4.09 (104)	5.43 (138)	0.98 (25)	1.18 (30)	5.59 (142)	4.25 (108)	0.59 (15)	0.08 (2)
60	2.36 (60)	6.69 (170)	3.15 (80)	1.26 (32)	4.49 (114)	5.79 (147)	0.98 (25)	1.18 (30)	5.71 (145)	4.41 (112)	0.59 (15)	0.08 (2)
70	2.76 (70)	7.48 (190)	3.54 (90)	1.50 (38)	5.28 (134)	6.61 (168)	1.18 (30)	1.38 (35)	6.89 (175)	5.31 (135)	0.63 (16)	0.10 (2.5)
80	3.15 (80)	8.27 (210)	4.13 (105)	1.50 (38)	5.67 (144)	7.01 (178)	1.18 (30)	1.38 (35)	7.28 (185)	5.71 (145)	0.63 (16)	0.10 (2.5)
90	3.54 (90)	9.06 (230)	4.72 (120)	1.97 (50)	6.22 (158)	7.56 (192)	1.57 (40)	1.77 (45)	8.07 (205)	6.10 (155)	0.63 (16)	0.12 (3)
100	3.94 (100)	10.63 (270)	5.51 (140)	1.97 (50)	7.17 (182)	8.54 (217)	1.57 (40)	1.77 (45)	9.06 (230)	7.09 (180)	0.63 (16)	0.12 (3)
130	5.12 (130)	12.20 (310)	6.30 (160)	2.68 (68)	8.35 (212)	9.84 (250)	2.17 (55)	2.36 (60)	10.55 (268)	8.07 (205)	0.71 (18)	0.12 (3)
150	5.91 (150)	15.75 (400)	7.87 (200)	2.68 (68)	9.69 (246)	11.26 (286)	2.17 (55)	2.36 (60)	12.80 (325)	10.04 (255)	0.79 (20)	0.16 (4)

Note: For bore and keyseat information see page 89.

Modular “Building Block” Clutches

RIZ/RINZ

Overrunning, Backstopping Ball Bearing Supported, Centrifugal Throwout (C/T) Sprag Clutches



Models RIZ and RINZ are centrifugal throwout sprag type clutches with the inner race rotating. Suitable for backstop, or overrunning clutch applications. Only the inner race is designed for overrunning.

These units are part of the Stieber modular system. They are bearing supported using Series 60 grease sealed bearings.

Units are shipped with grease and ready to install in either a horizontal or vertical position.

Models RIZ and RINZ are designed to be used with G series covers (see following pages). If the unit is to be installed inside a housing where oil lubrication is available, please specify type RIW and RIWN. To facilitate the oil flow the F series covers

from model GFR and GFRN are then used without seals. Models RIZ and RINZ are identical, except that model RINZ has a keyseat on the outside diameter to transmit torque.

For bolt tightening torque values, see page 126

Maintenance

The Model RIZ using grease sealed bearings has almost zero lubrication maintenance requirements. The C/T Sprag feature provides no Sprag contact or wear during overrunning when operated above the Sprag lift off speed. The typical recommended maintenance is to replace the bearing every three years. The Sprag assembly and race are to be re lubricated with grease for corrosion protection at this time. All applications should be reviewed by Formsprag Engineering for complete Maintenance recommendation.

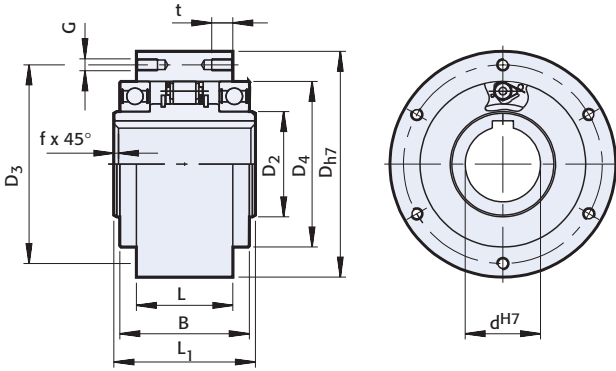
Specifications

Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM			Lubrication	Shipping Weight lb. (kg)
		Drive	Sprag Lift-off	Inner Race Overrunning		
30	231 (313)	350	780	9,000	Grease	5.07 (2.3)
35	277 (375)	320	740	8,500	Grease	7.06 (3.2)
40	576 (781)	315	720	7,500	Grease	10.58 (4.8)
45	660 (894)	285	665	6,600	Grease	11.03 (5)
50	1,033 (1400)	265	610	6,000	Grease	16.54 (7.5)
60	1,384 (1875)	200	490	5,300	Grease	28.00 (12.7)
70	2,077 (2815)	210	480	4,100	Grease	31.97 (14.5)
80	3,321 (4500)	190	450	3,600	Grease	41.90 (19)
90	4,244 (5750)	180	420	2,700	Grease	65.05 (29.5)
100	7,011 (9500)	200	455	2,700	Grease	93.71 (42.5)
130	12,454 (16875)	180	415	2,400	Grease	154.35 (70)

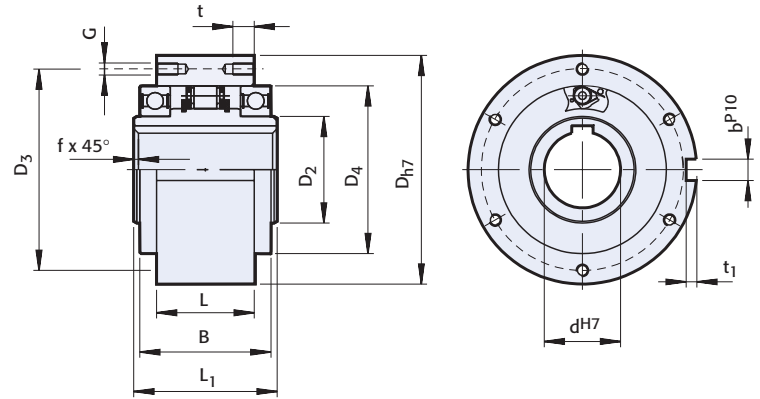
Note: When ordering, please specify direction of rotation.

Modular "Building Block" Clutches **RIZ/RINZ**

RIZ



RINZ



Dimensions inches (mm)

Size	d ^{H7}	D _{h7}	D ₂	D ₄	D ₃	G	Number of Holes	L ₁	L	B	t	f	t ₁	b ^{P10}
30	1.18 (30)	3.94 (100)	1.77 (45)	2.95 (75)	3.43 (87)	M6	6	2.68 (68)	1.69 (43)	2.38 (60.5)	0.39 (10)	0.04 (1)	0.16 (4)	0.31 (8)
35	1.38 (35)	4.33 (110)	1.97 (50)	3.15 (80)	3.78 (96)	M6	6	2.91 (74)	1.77 (45)	2.48 (63)	0.47 (12)	0.04 (1)	0.20 (5)	0.39 (10)
40	1.57 (40)	4.92 (125)	2.17 (55)	3.54 (90)	4.25 (108)	M8	6	3.39 (86)	2.09 (53)	2.87 (73)	0.55 (14)	0.06 (1.5)	0.20 (5)	0.47 (12)
45	1.77 (45)	5.12 (130)	2.36 (60)	3.74 (95)	4.41 (112)	M8	8	3.39 (86)	2.09 (53)	2.87 (73)	0.55 (14)	0.06 (1.5)	0.22 (5.5)	0.55 (14)
50	1.97 (50)	5.91 (150)	2.76 (70)	4.33 (110)	5.20 (132)	M8	8	3.70 (94)	2.52 (64)	3.39 (86)	0.55 (14)	0.06 (1.5)	0.22 (5.5)	0.55 (14)
60	2.36 (60)	6.69 (170)	3.15 (80)	4.92 (125)	5.91 (150)	M10	10	4.49 (114)	3.07 (78)	4.13 (105)	0.63 (16)	0.08 (2)	0.28 (7)	0.71 (18)
70	2.76 (70)	7.48 (190)	3.54 (90)	5.51 (140)	6.50 (165)	M10	10	5.28 (134)	3.74 (95)	4.88 (124)	0.63 (16)	0.10 (2.5)	0.30 (7.5)	0.79 (20)
80	3.15 (80)	8.27 (210)	4.13 (105)	6.30 (160)	7.28 (185)	M10	10	5.67 (144)	3.94 (100)	4.88 (124)	0.63 (16)	0.10 (2.5)	0.35 (9)	0.87 (22)
90	3.54 (90)	9.06 (230)	4.72 (120)	7.09 (180)	8.11 (206)	M12	10	6.22 (158)	4.53 (115)	5.63 (143)	0.79 (20)	0.12 (3)	0.35 (9)	0.98 (25)
100	3.94 (100)	10.63 (270)	5.51 (140)	8.27 (210)	9.45 (240)	M16	10	7.17 (182)	4.72 (120)	6.02 (153)	0.94 (24)	0.12 (3)	0.39 (10)	1.10 (28)
130	5.12 (130)	12.20 (310)	6.30 (160)	9.45 (240)	10.94 (278)	M16	12	8.35 (212)	5.98 (152)	7.64 (194)	0.94 (24)	0.12 (3)	0.43 (11)	1.26 (32)

Bore sizes and keyseats inches (mm)

Size	d ^{H7} Bore Size	Keyseat*
30	1.18 (30)	(8 X 3.3)
35	1.38 (35)	(10 X 3.3)
40	1.57 (40)	(12 X 3.3)
45	1.77 (45)	(14 X 3.8)
50	1.97 (50)	(14 X 3.8)
60	2.36 (60)	(18 X 4.4)
70	2.76 (70)	(20 X 4.9)
80	3.15 (80)	(22 X 5.4)
90	3.54 (90)	(25 X 5.4)
100	3.94 (100)	(28 X 6.4)
130	5.12 (130)	(32 X 7.4)

* For keyseat sizes see DIN 6885.1 table on page 123.

Modular “Building Block” Clutches

RIZ, RINZ..G1G2, G2G7, G5G5

Overrunning, Backstopping Ball Bearing Supported, Centrifugal Throwout (C/T) Sprag Clutches

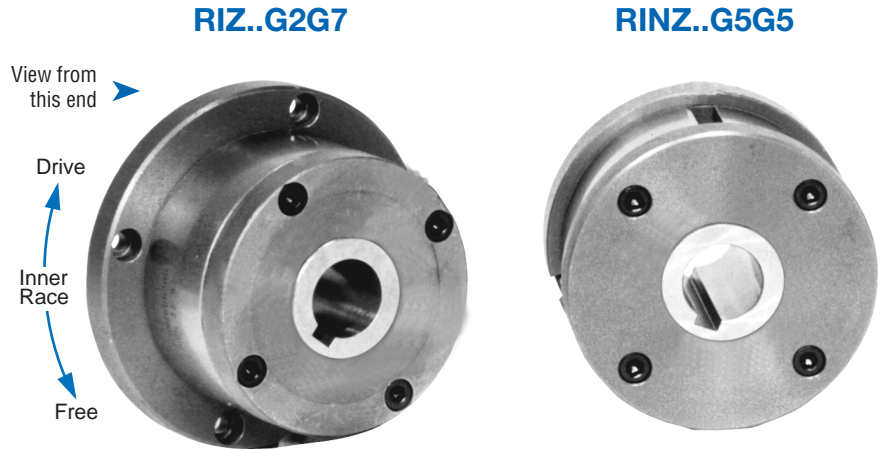
Models RIZ..G1G2/G7G2, RINZ..G5G5 are centrifugal throwout sprag type clutches with the inner race rotating. Only the inner race is designed for overrunning.

These are self-contained units designed for overrunning clutch applications. Typically used in creep drives, where the overrunning speed is high, but the drive speed is low, and does not exceed the maximum driving speed specified in the table.

Models RIZ and RINZ are equipped with G type covers featuring a grease pocket and contact-free seal.

When ordered complete, the unit is shipped grease lubricated, ready for either horizontal or vertical installation.

The Model RIZ using grease sealed bearings has almost zero lubrication maintenance requirements. The C/T Sprag feature provides no Sprag contact or wear during overrunning when operated above the Sprag lift off speed. The typical recommended maintenance is to replace the bearing every three years. The Sprag assembly and race are to be re lubricated with grease for corrosion protection at this time. All applications should be reviewed by Formsprag Engineering for complete Maintenance recommendation.



*Right Hand rotation shown.
 (Left Hand opposite.)
 Specify direction of rotation when ordering.*

Specifications

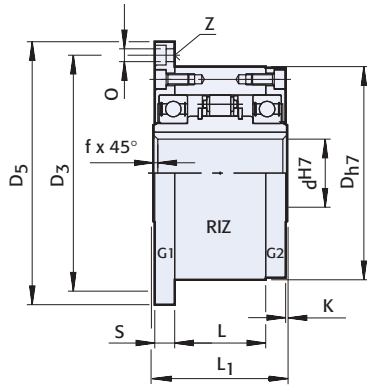
Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM			Lubrication	Shipping Weight lb. (kg)
		Max Drive	Sprag Lift-off	Inner Race Overrunning		
30	231 (313)	350	780	9,000	Grease	8.60 (3.9)
35	277 (375)	320	740	8,500	Grease	10.80 (4.9)
40	576 (781)	315	720	7,500	Grease	16.54 (7.5)
45	660 (894)	285	665	6,600	Grease	17.20 (7.8)
50	1,033 (1400)	265	610	6,000	Grease	23.81 (10.8)
60	1,384 (1875)	200	490	5,300	Grease	37.04 (16.8)
70	2,077 (2815)	210	480	4,100	Grease	45.86 (20.8)
80	3,321 (4500)	190	450	3,600	Grease	59.54 (27)
90	4,244 (5750)	180	420	2,700	Grease	88.20 (40)
100	7,011 (9500)	200	455	2,700	Grease	147.74 (67)
130	12,454 (16875)	180	415	2,400	Grease	207.27 (94)

Note: When ordering, please specify direction of rotation.

Modular "Building Block" Clutches RIZ, RINZ..G1G2, G2G7, G5G5

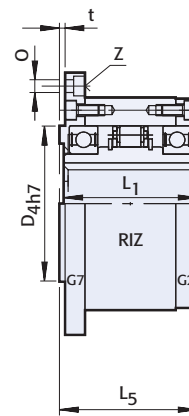
RIZ..G1G2

View from this end →

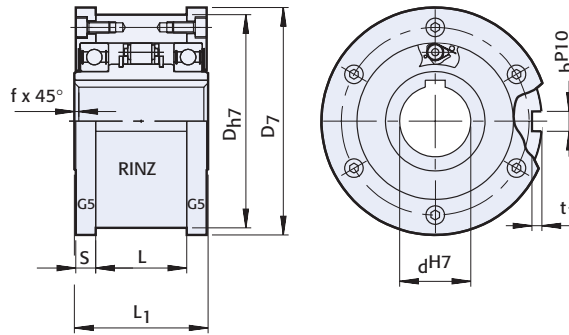


RIZ..G2G7

View from this end →



RINZ..G5G5



Dimensions inches (mm)

Size	d ^{H7}	D _{h7}	D ₃	D _{4h7}	D ₅	D ₇	O	S	L ₁	L	L ₅	t	t ₁	b ^{P10}	f
30	1.18 (30)	3.94 (100)	4.49 (114)	2.95 (75)	5.04 (128)	4.29 (109)	0.26 (6.6)	0.45 (11.5)	2.68 (68)	1.69 (43)	2.76 (70)	0.12 (3)	0.16 (4)	0.31 (8)	0.04 (1)
35	1.38 (35)	4.33 (110)	4.88 (124)	3.15 (80)	5.51 (140)	4.69 (119)	0.26 (6.6)	0.53 (13.5)	2.91 (74)	1.77 (45)	2.99 (76)	0.14 (3.5)	0.20 (5)	0.39 (10)	0.04 (1)
40	1.57 (40)	4.92 (125)	5.59 (142)	3.54 (90)	6.30 (160)	5.31 (135)	0.35 (9)	0.61 (15.5)	3.39 (86)	2.09 (53)	3.46 (88)	0.14 (3.5)	0.20 (5)	0.47 (12)	0.06 (1.5)
45	1.77 (45)	5.12 (130)	5.75 (146)	3.74 (95)	6.50 (165)	5.51 (140)	0.35 (9)	0.61 (15.5)	3.39 (86)	2.09 (53)	3.46 (88)	0.14 (3.5)	0.22 (5.5)	0.55 (14)	0.06 (1.5)
50	1.97 (50)	5.91 (150)	6.54 (166)	4.33 (110)	7.28 (185)	6.30 (160)	0.35 (9)	0.55 (14)	3.70 (94)	2.52 (64)	3.78 (96)	0.16 (4)	0.22 (5.5)	0.55 (14)	0.06 (1.5)
60	2.36 (60)	6.69 (170)	7.56 (192)	4.92 (125)	8.43 (214)	7.17 (182)	0.43 (11)	0.67 (17)	4.49 (114)	3.07 (78)	4.57 (116)	0.16 (4)	0.28 (7)	0.71 (18)	0.08 (2)
70	2.76 (70)	7.48 (190)	8.35 (212)	5.51 (140)	9.21 (234)	7.95 (202)	0.43 (11)	0.73 (18.5)	5.28 (134)	3.74 (95)	5.35 (136)	0.16 (4)	0.30 (7.5)	0.79 (20)	0.10 (2.5)
80	3.15 (80)	8.27 (210)	9.13 (232)	6.30 (160)	10.00 (254)	8.74 (222)	0.43 (11)	0.83 (21)	5.67 (144)	3.94 (100)	5.75 (146)	0.16 (4)	0.35 (9)	0.87 (22)	0.10 (2.5)
90	3.54 (90)	9.06 (230)	10.00 (254)	7.09 (180)	10.94 (278)	9.53 (242)	0.55 (14)	0.81 (20.5)	6.22 (158)	4.53 (115)	6.30 (160)	0.18 (4.5)	0.35 (9)	0.98 (25)	0.12 (3)
100	3.94 (100)	10.63 (270)	12.01 (305)	8.27 (210)	13.19 (335)	11.10 (282)	0.71 (18)	1.18 (30)	7.17 (182)	4.72 (120)	7.24 (184)	0.20 (5)	0.39 (10)	1.10 (28)	0.12 (3)
130	5.12 (130)	12.20 (310)	13.58 (345)	9.45 (240)	14.96 (380)	12.68 (322)	0.71 (18)	1.14 (29)	8.35 (212)	5.98 (152)	8.43 (214)	0.20 (5)	0.43 (11)	1.26 (32)	0.12 (3)

Note: For bore and keyseat information see page 95.

Modular “Building Block” Clutches

RIZ..G2G3, G3G4

Backstopping Ball Bearing Supported, Centrifugal Throwout (C/T) Sprag Clutches



Backstop Applications

Models RIZ..G2G3/G3G4 are centrifugal throwout sprag type clutches with the inner race rotating. Only the inner race is designed for overrunning.

They are self-contained units designed for backstop applications. The overrunning speed must not be less than the minimum specified in the table. This must be considered if using a variable speed drive.

The restraining bolt must be fitted into a slot on a fixed part of the machine. The radial clearance should be 1% of the bolt diameter. The torque arm and bearings must not be axially loaded.

Model RIZ is equipped with G type covers featuring grease pockets and contact-free seals.

When ordered complete, the unit is shipped grease lubricated, ready for either horizontal or vertical installation.

Specifications

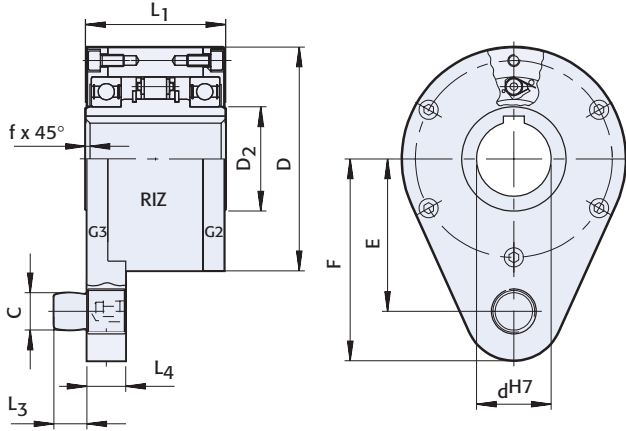
Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM			Lubrication	Shipping Weight lb. (kg)
		Max Drive	Sprag Lift-off	Inner Race Overrunning		
30	231 (313)	350	780	9,000	Grease	9.92 (4.5)
35	277 (375)	320	740	8,500	Grease	12.35 (5.6)
40	576 (781)	315	720	7,500	Grease	18.74 (8.5)
45	660 (894)	285	665	6,600	Grease	19.62 (8.9)
50	1,033 (1400)	265	610	6,000	Grease	28.22 (12.8)
60	1,384 (1875)	200	490	5,300	Grease	42.56 (19.3)
70	2,077 (2815)	210	480	4,100	Grease	51.82 (23.5)
80	3,321 (4500)	190	450	3,600	Grease	70.56 (32)
90	4,244 (5750)	180	420	2,700	Grease	104.08 (47.2)
100	7,011 (9500)	200	455	2,700	Grease	167.58 (76)
130	12,454 (16875)	180	415	2,400	Grease	242.55 (110)

Note: When ordering, please specify direction of rotation.

Modular “Building Block” Clutches RIZ..G2G3, G3G4

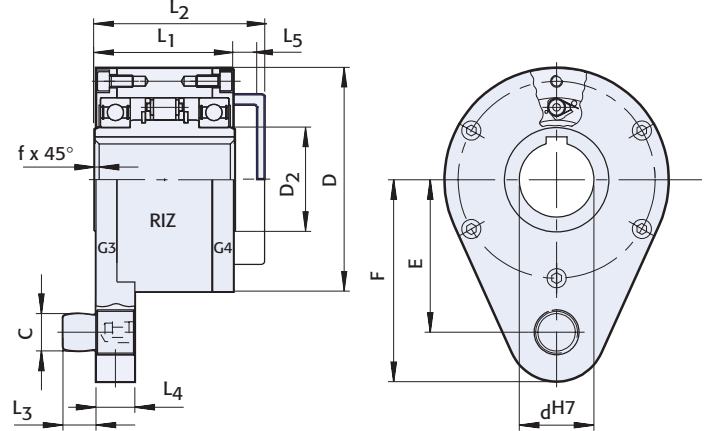
RIZ..G2G3

View from
 this end ➤



RIZ..G3G4

View from
 this end ➤



Dimensions inches (mm)

Size	d ^{H7}	D	D ₂	C	L ₁	L ₂	L ₃	L ₄	F	E	L ₅	f
30	1.18 (30)	3.94 (100)	1.77 (45)	0.63 (16)	2.68 (68)	3.46 (88)	0.55 (14)	0.71 (18)	3.62 (92)	2.68 (68)	0.39 (10)	0.04 (1)
35	1.38 (35)	4.33 (110)	1.97 (50)	0.79 (20)	2.91 (74)	3.78 (96)	0.71 (18)	0.98 (25)	4.02 (102)	2.99 (76)	0.47 (12)	0.04 (1)
40	1.57 (40)	4.92 (125)	2.17 (55)	0.79 (20)	3.39 (86)	4.29 (109)	0.71 (18)	0.98 (25)	4.41 (112)	3.35 (85)	0.47 (12)	0.06 (1.5)
45	1.77 (45)	5.12 (130)	2.36 (60)	0.98 (25)	3.39 (86)	4.29 (109)	0.87 (22)	0.98 (25)	4.72 (120)	3.54 (90)	0.47 (12)	0.06 (1.5)
50	1.97 (50)	5.91 (150)	2.76 (70)	0.98 (25)	3.70 (94)	4.57 (116)	0.87 (22)	0.98 (25)	5.31 (135)	4.02 (102)	0.47 (12)	0.06 (1.5)
60	2.36 (60)	6.69 (170)	3.15 (80)	1.26 (32)	4.49 (114)	5.47 (139)	0.98 (25)	1.18 (30)	5.71 (145)	4.41 (112)	0.59 (15)	0.08 (2)
70	2.76 (70)	7.48 (190)	3.54 (90)	1.50 (38)	5.28 (134)	6.61 (168)	1.18 (30)	1.38 (35)	6.89 (175)	5.31 (135)	0.63 (16)	0.10 (2.5)
80	3.15 (80)	8.27 (210)	4.13 (105)	1.50 (38)	5.67 (144)	7.01 (178)	1.18 (30)	1.38 (35)	7.28 (185)	5.71 (145)	0.63 (16)	0.10 (2.5)
90	3.54 (90)	9.06 (230)	4.72 (120)	1.97 (50)	6.22 (158)	7.56 (192)	1.57 (40)	1.77 (45)	8.07 (205)	6.10 (155)	0.63 (16)	0.12 (3)
100	3.94 (100)	10.63 (270)	5.51 (140)	1.97 (50)	7.17 (182)	8.54 (217)	1.57 (40)	1.77 (45)	9.06 (230)	7.09 (180)	0.63 (16)	0.12 (3)
130	5.12 (130)	12.20 (310)	6.30 (160)	2.68 (68)	8.35 (212)	9.84 (250)	2.17 (55)	2.36 (60)	10.55 (268)	8.07 (205)	0.71 (18)	0.12 (3)

Note: For bore and keyseat information see page 95.