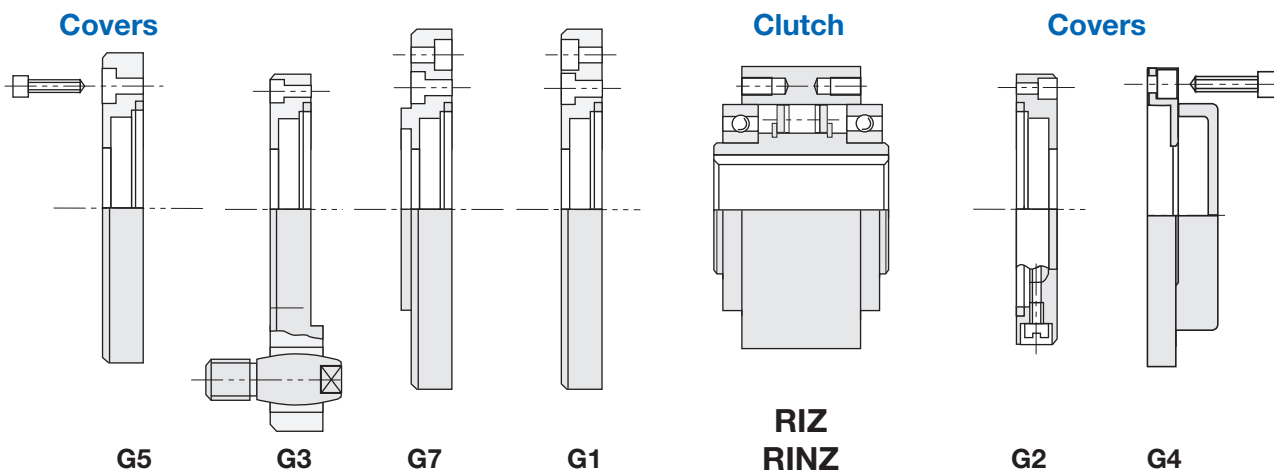
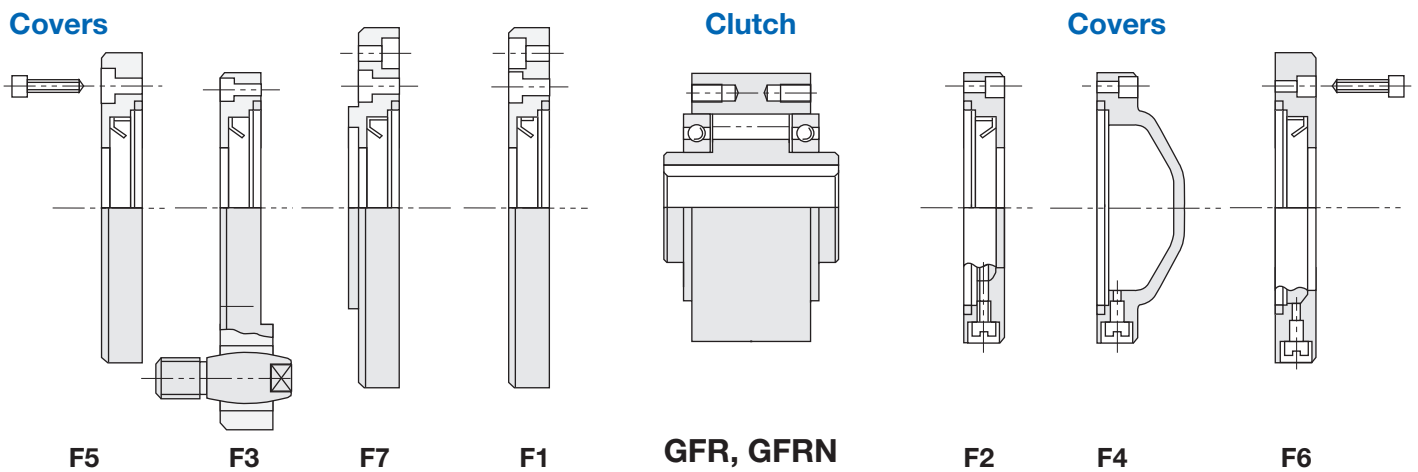
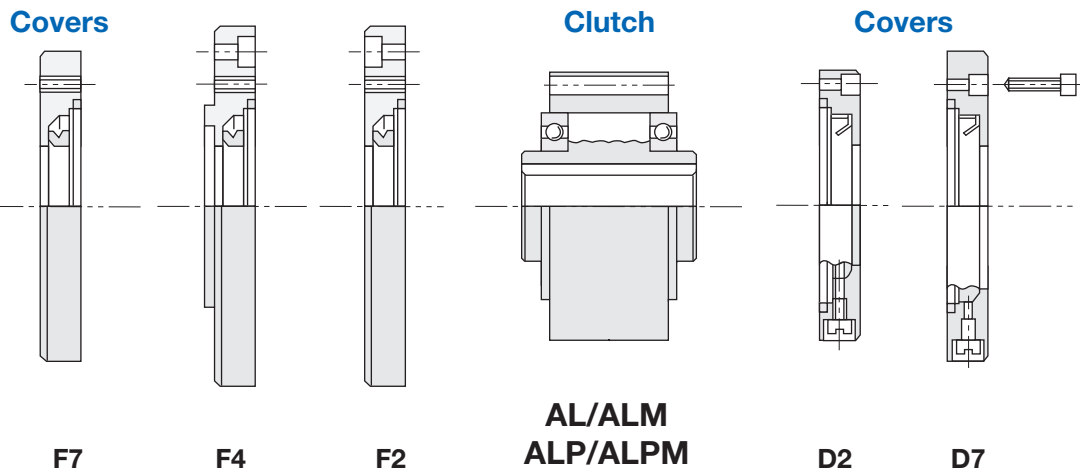


Modular “Building Block” Clutches Building Block System

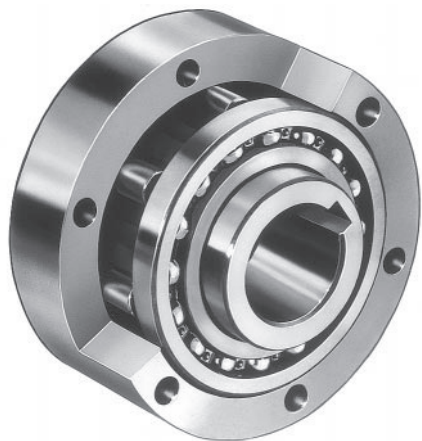
Clutch and Cover Combinations



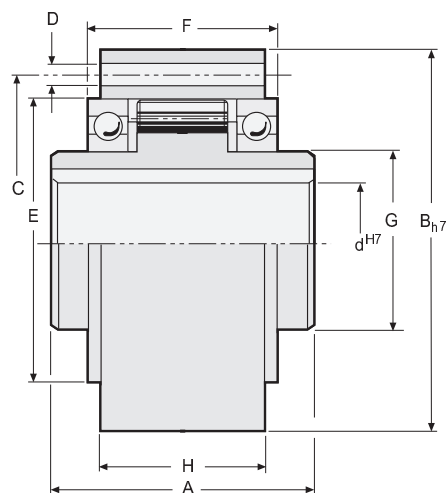
Modular “Building Block” Clutches

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.



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)
ALM	100	14,760 (20000)	350	1,450	778.80 (880)	101 (46)
	120	23,063 (31250)	250	1,250	1062.00 (1200)	139 (63)
	150	51,660 (70000)	180	980	1194.75 (1350)	282 (128)
	200	129,150 (175000)	120	750	3717.00 (4200)	650 (293)
	250	212,175 (287500)	100	620	5752.50 (6500)	1034 (469)
	25	286 (388)	1,100	2,800	36.29 (41)	3.7 (1.8)
ALM	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 Bolt Circle Dia.	D Bolt Hole Dia. (No. Holes)	E	F	G	H ⁽¹⁾
	12	1.654 (42)	2.44 (62)	2.008	.217 (3)	1.654	1.063	.787	.799
	15	2.047 (52)	2.67 (68)	2.205	.217 (3)	1.850	1.343	.984	1.193
	20	2.244 (57)	2.953 (75)	2.520	.217 (4)	2.165	1.539	1.181	1.350
	25	2.362 (60)	3.543 (90)	3.071	.217 (6)	2.677	1.657	1.575	1.469
	28	2.677 (68)	3.937 (100)	3.425	.260 (6)	2.953	1.933	1.772	1.744
	30	2.677 (68)	3.937 (100)	3.425	.260 (6)	2.953	1.933	1.772	1.744
	35	2.913 (74)	4.331 (110)	3.780	.260 (6)	3.150	2.130	1.969	1.902
	40	3.386 (86)	4.921 (125)	4.252	.354 (6)	3.543	2.445	2.165	2.217
	45	3.386 (86)	5.118 (130)	4.409	.354 (8)	3.740	2.445	2.362	2.217
	50	3.622 (92)	5.906 (150)	5.197	.354 (8)	4.331	2.720	2.756	2.492
AL	55	4.094 (104)	6.299 (160)	5.433	.433 (8)	4.528	2.878	2.953	2.638
	60	4.488 (114)	6.693 (170)	5.906	.433 (10)	4.921	3.307	3.150	3.071
	70	5.276 (134)	7.480 (190)	6.496	.433 (10)	5.512	4.056	3.543	3.740
	80	5.669 (144)	8.268 (210)	7.283	.433 (10)	6.299	4.882	4.133	3.937
	90	6.220 (158)	9.055 (230)	8.110	.551 (10)	7.087	5.630	4.724	4.528
	100	7.165 (182)	10.630 (270)	9.449	.709 (10)	8.268	5.157	5.512	4.724
	120	7.953 (202)	12.205 (310)	10.945	.709 (12)	9.449	5.984	6.299	5.512
	150	9.685 (246)	15.748 (400)	14.173	.866 (12)	12.205	7.717	7.874	7.087
	200	12.834 (326)	20.472 (520)	18.110	1.024 (18)	15.748	10.433	10.236	9.449
	250	15.591 (396)	24.016 (610)	21.457	1.299 (20)	18.898	12.992	12.598	11.811
ALM	25	2.362 (60)	3.543 (90)	3.071	.217 (6)	2.677	1.657	1.575	1.468
	30	2.677 (68)	3.937 (100)	3.425	.260 (6)	2.953	1.933	1.772	1.744
	35	2.913 (74)	4.331 (110)	3.780	.260 (6)	3.150	2.130	1.969	1.902

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.

Bore sizes and keyseats inches (mm)

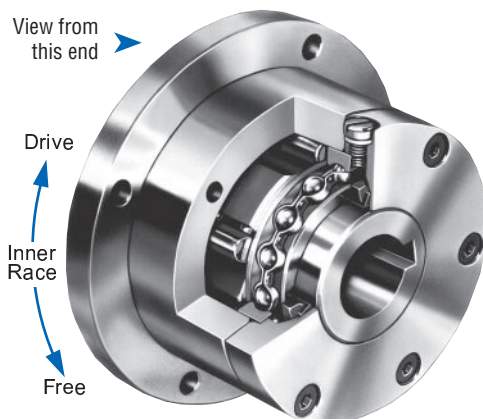
Size	d ^{H7} Bore Size	Keyseat	Bore Range	
			Min.	Max.
12	.47 (12)	*	.354	.550
15	.59 (15)	*	.433	.689
20	.79 (20)	*	.433	.689
25	.98 (25)	*	.551	1.102
28	1.18 (30)	*	.748	1.338
30	1.18 (30)	*	.748	1.338
35	1.38 (35)	*	.944	1.496
40	1.57 (40)	*	1.102	1.692
45	1.77 (45)	*	1.102	1.811
50	1.97 (50)	*	1.496	2.165
55	2.17 (55)	*	1.496	2.362
60	2.36 (60)	*	1.890	2.440
70	2.76 (70)	*	1.890	2.874
80	3.15 (80)	*	2.165	3.385
90	3.54 (90)	*	2.362	3.779
100	3.94 (100)	*	2.755	4.488
120	4.72 (120)	*	3.149	4.803
150	5.91 (150)	*	3.937	6.614
200	7.87 (200)	*	4.724	8.740
250	9.84 (250)	*	5.905	10.708
25	.98 (25)	*	.551	1.102
30	1.18 (30)	*	.748	1.338
35	1.38 (35)	*	.944	1.496

*For keyseat sizes see DIN6885.1 table on page 127.

Modular “Building Block” Clutches

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

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



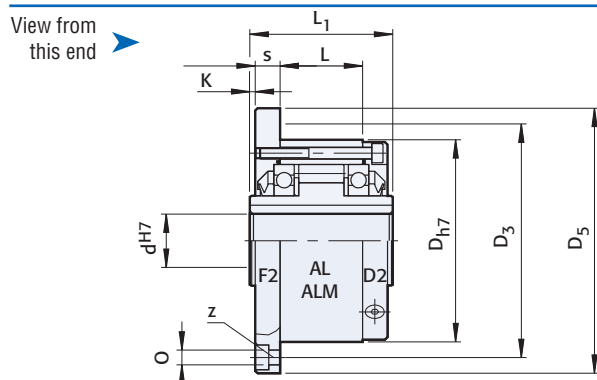
Specifications

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		
	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)
AL..F2D2 AL..F4D2	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	1062.00 (1200)	200.66 (91)
	150	51,660 (70000)	180	980	1194.75 (1350)	410.13 (186)
	200	129,150 (175000)	120	750	3717.00 (4200)	937.12 (425)
	250	212,175 (287500)	100	620	5752.50 (6500)	1499.4 (680)
	25	286 (388)	1,100	2,800	36.29 (41)	5.95 (2.7)
ALM..F2D2 ALM..F4D2	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)

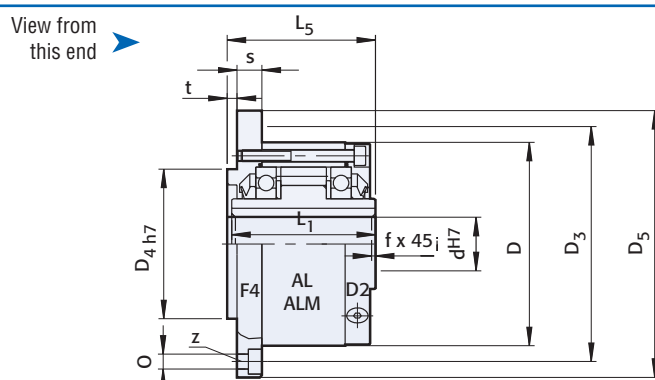
Note: When ordering, please specify direction of rotation.

Modular “Building Block” Clutches

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



F2D2 Cover Combination



F4D2 Cover Combination

Dimensions inches (mm)

Model	Size	D _{h7}	L ₁	D ₅	D ₃	z	0	D _{4h7}	t	L ₅	K	s	f
	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	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	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	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	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	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	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	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	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	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)
AL..F2D2 AL..F4D2	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	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	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	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	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	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	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	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	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	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)
	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)
ALM..F2D2 ALM..F4D2	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	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 87.

Warner Electric/Formsprag (800-927-3262)