Overrunning, Indexing, Backstopping External Bearing Support Required, Sprag Clutches

Retainer Assemblies

Model DC is a sprag type dual cage retainer assembly without inner or outer races. It must be installed in a design providing races, bearing support for axial and radial loads, lubrication and sealing. The sprag annular space must be maintained. Inner and outer races must both have a minimum plain width "E", without any recess, to ensure the clutch functions correctly. Inner and outer races are also available, as shown on the following pages. Alternatively, races can be made in case hardened steel shafts, or housings, to the specification below. Surface hardness of the finished part should be HRC 60 to 62, for a depth of .024" (.6mm) minimum.

Core hardness should be HRC35 to 45. Surface roughness should not exceed 22Ra. Maximum taper between races: .0003" (.007mm) for .984" (25mm) width.

Specifications

Size	Torque Capacity lb.ft. (Nm)	Overrunning Speed Max. RPM Inner Race n_{imax}^2 (min.$^{-1}$)	Overrunning Speed Max. RPM Outer Race n_{amax}^3 (min.$^{-1}$)	Retainer I.D. A +.0003 -.0002 in. (mm)	Retainer O.D. C ±.0005 in. (mm)	Annular Space in.* (mm)	Retainer Width $E_{min.}$ in. (mm)	Retainer Width $D_{min.}$ in. (mm)	Retainer Width $B_{max.}$ in. (mm)	Shipping Weight lb. (kg)
DC2222G	46 (63)	8,600	4,300	0.875 (22.225)	1.531 (38.885)	0.33 (8.33)	0.39 (10)	1.97 (50)	0.67 (17)	0.07 (0.03)
DC2776	88 (119)	6,900	3,400	1.093 (27.762)	1.749 (44.422)	0.33 (8.33)	0.53 (13.5)	2.28 (58)	0.83 (21)	0.12 (0.055)
DC3034	92 (124)	6,300	3,100	1.194 (30.34)	1.850 (47)	0.33 (8.33)	0.53 (13.5)	2.44 (62)	0.91 (23)	0.13 (0.06)
DC3175 (3C)	117 (159)	6,000	3,000	1.250 (31.75)	1.906 (48.41)	0.33 (8.33)	0.53 (13.5)	2.48 (63)	0.94 (24)	0.13 (0.06)
DC3809A	203 (275)	5,000	2,500	1.499 (38.092)	2.156 (54.752)	0.33 (8.33)	0.63 (16)	2.80 (71)	1.14 (29)	0.19 (0.085)
DC4127(3C)	165 (224)	4,600	2,300	1.625 (41.275)	2.281 (57.935)	0.33 (8.33)	0.53 (13.5)	2.95 (75)	1.26 (32)	0.20 (0.09)
DC4445A	268 (363)	4,300	2,100	1.750 (44.45)	2.406 (61.11)	0.33 (8.33)	0.63 (16)	3.11 (79)	1.34 (34)	0.21 (0.095)
DC4972(4C)	226 (306)	3,800	1,900	1.958 (49.721)	2.613 (66.381)	0.33 (8.33)	0.53 (13.5)	3.39 (86)	1.50 (38)	0.22 (0.1)
DC5476A	387 (525)	3,500	1,700	2.156 (54.765)	2.812 (71.425)	0.33 (8.33)	0.63 (16)	3.62 (92)	1.65 (42)	0.24 (0.11)
DC5476A(4C)	387 (525)	3,500	1,700	2.156 (54.765)	2.812 (71.425)	0.33 (8.33)	0.63 (16)	3.62 (92)	1.65 (42)	0.29 (0.13)
DC5476B(4C)	568 (769)	3,500	1,700	2.156 (54.765)	2.812 (71.425)	0.33 (8.33)	0.83 (21)	3.62 (92)	1.65 (42)	0.40 (0.18)
DC5476C(4C)	731 (990)	3,500	1,700	2.156 (54.765)	2.812 (71.425)	0.33 (8.33)	1.0 (25.4)	3.62 (92)	1.65 (42)	0.44 (0.2)
DC5776A	446 (604)	3,300	1,600	2.274 (57.76)	2.930 (74.42)	0.33 (8.33)	0.63 (16)	3.86 (98)	1.73 (44)	0.24 (0.11)
DC6334B	595 (806)	3,000	1,500	2.494 (63.34)	3.150 (80)	0.33 (8.33)	0.83 (21)	4.09 (104)	1.97 (50)	0.39 (0.175)
DC7221(5C)	498 (675)	2,600	1,300	2.843 (72.217)	3.500 (88.877)	0.33 (8.33)	0.53 (13.5)	4.53 (115)	2.20 (56)	0.31 (0.14)
DC7221B	944 (1279)	2,600	1,300	2.843 (72.217)	3.500 (88.877)	0.33 (8.33)	0.83 (21)	4.53 (115)	2.20 (56)	0.41 (0.185)
DC7221B(5C)	944 (1279)	2,600	1,300	2.843 (72.217)	3.500 (88.877)	0.33 (8.33)	0.83 (21)	4.53 (115)	2.20 (56)	0.46 (0.21)
DC7969C(5C)	1504 (2038)	2,400	1,200	3.138 (79.698)	3.794 (96.358)	0.33 (8.33)	1.00 (25.4)	4.88 (124)	2.40 (61)	0.62 (0.28)
DC8334C	1517 (2055)	2,300	1,100	3.281 (83.34)	3.937 (100)	0.33 (8.33)	1.00 (25.4)	5.20 (132)	2.56 (65)	0.60 (0.27)
DC8729A	923 (1250)	2,200	1,100	3.437 (87.29)	4.093 (103.96)	0.33 (8.33)	0.63 (16)	5.28 (134)	2.64 (67)	0.36 (0.165)
DC10323A(3C)*	1190 (1612)	1,800	900	4.064 (103.231)	4.720 (119.891)	0.33 (8.33)	0.63 (16)	6.10 (155)	3.15 (80)	0.45 (0.205)
DC12334C*	3542 (4800)	1,500	750	4.856 (123.34)	5.512 (140)	0.33 (8.33)	1.00 (25.4)	7.24 (184)	3.78 (96)	0.88 (0.4)
DC12388C (11C)	3598 (4875)	1,500	750	4.878 (123.881)	5.625 (142.88)	0.37 (9.5)	1.00 (25.4)	7.32 (186)	3.78 (96)	0.88 (0.4)

* ±0.075mm, except size DC12388C(11C) is ±0.10mm

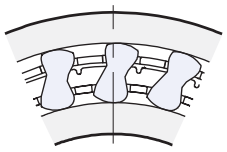
Races

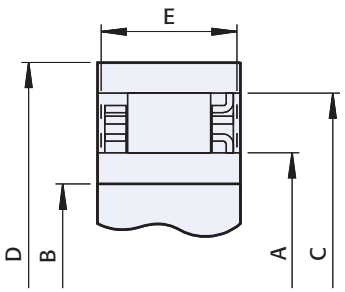
DC races are offered for use with the DC retainer assemblies. The retainer assembly and races make a nonbearing supported clutch. Bearing support for axial and radial loads must be provided along with lubrication and sealing. The annular space tolerance must not be exceeded when all bearing clearances and mounting tolerances are considered. Taper between races should be below .0003" (.007mm) for .984" (25mm) width.

Outer races type A and B should be pressed into housings that will not deform after assembly.

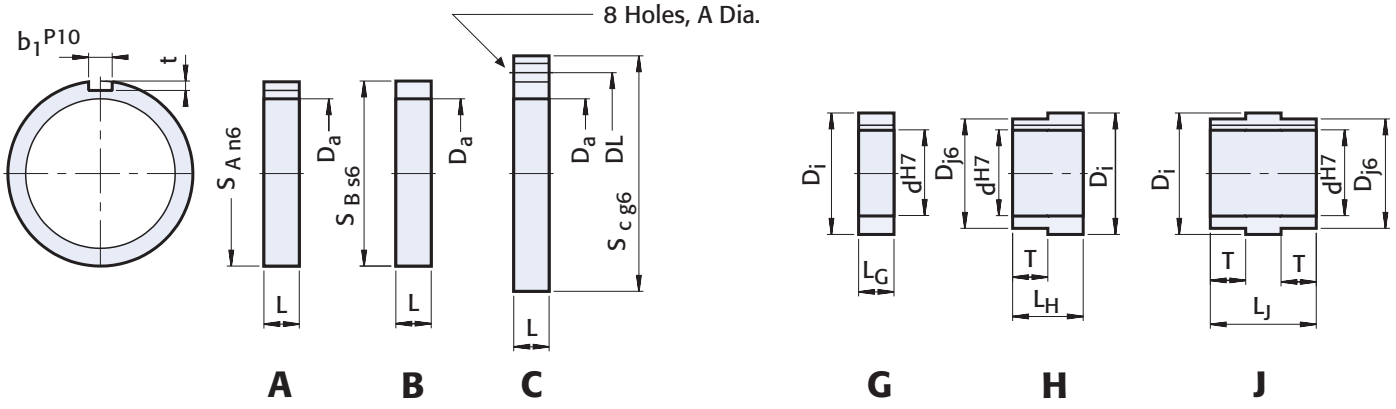
Please contact our technical department if you need to transmit maximum clutch torque capacity with A and G type.
Key stresses may have to be checked.

Sprag Retainer Assemblies





Outer races **Inner races**



Dimensions inches (mm)

Size	d^{H7}	L_G	L_H	L_J	D_{j6}	T	D_i $\left(^{+.008}_{-.005}\right)$	L	S_{An6}	$b_1{}^{P10}$	t	S_{Bs6}	S_{Cg6}	DL (±0.1)	A	D_a (±0.013)
To be used with DC size 3809A:																
DC230A								0.6 (16)	2.8 (72)	0.2 (6)	0.1 (3.5)					2.2 (54.752)
DC230B								0.6 (16)				2.8 (72)				2.2 (54.752)
DC230C								0.6 (16)					3.7 (95)	3.1 (78)	0.28 (7)	2.2 (54.752)
DC230G10	0.39 (10)	0.6 (16)					1.5 (38.092)									
DC230G15	0.79 (15)	0.6 (16)					1.5 (38.092)									
DC230G20	0.79 (20)	0.6 (16)					1.5 (38.092)									
DC230H10	0.39 (10)		1.3 (33)		1.4 (35)	0.7 (17)	1.5 (38.092)									
DC230H15	0.59 (15)		1.3 (33)		1.4 (35)	0.7 (17)	1.5 (38.092)									
DC230H20	0.79 (20)		1.3 (33)		1.4 (35)	0.7 (17)	1.5 (38.092)									
DC230J10	0.39 (10)			2.0 (50)	1.4 (35)	0.7 (17)	1.5 (38.092)									
DC230J15	0.59 (15)			2.0 (50)	1.4 (35)	0.7 (17)	1.5 (38.092)									
DC230J20	0.79 (20)			2.0 (50)	1.4 (35)	0.7 (17)	1.5 (38.092)									
To be used with DC sizes 5476A, 5476A(4C):																
DC167A								0.6 (16)	3.5 (90)	0.4 (10)	0.2 (5)					2.8 (71.425)
DC167B								0.6 (16)				3.5 (90)				2.8 (71.425)
DC167C								0.6 (16)					4.3 (110)	3.7 (95)	0.35 (9)	2.8 (71.425)
DC167G25	0.98 (25)	0.6 (16)					2.2 (54.765)									
DC167G30	1.18 (30)	0.6 (16)					2.2 (54.765)									
DC167G35	1.38 (35)	0.6 (16)					2.2 (54.765)									
DC167H25	0.98 (25)		1.4 (35)		2.0 (50)	0.7 (19)	2.2 (54.765)									
DC167H30	1.18 (30)		1.4 (35)		2.0 (50)	0.7 (19)	2.2 (54.765)									
DC167H35	1.38 (35)		1.4 (35)		2.0 (50)	0.7 (19)	2.2 (54.765)									
DC167J25	0.98 (25)			2.1 (54)	2.0 (50)	0.7 (19)	2.2 (54.765)									
DC167J30	1.18 (30)			2.1 (54)	2.0 (50)	0.7 (19)	2.2 (54.765)									
DC167J35	1.38 (35)			2.1 (54)	2.0 (50)	0.7 (19)	2.2 (54.765)									
To be used with DC sizes 7221 (5C), 7221B, 7221B (5C):																
DC168A								0.8 (21)	4.3 (110)	0.6 (14)	0.2 (5.5)					3.5 (88.877)
DC168B								0.8 (21)				4.3 (110)				3.5 (88.877)
DC168C								0.8 (21)					5.5 (140)	4.7 (120)	0.43 (11)	3.5 (88.877)
DC168G40	1.57 (40)	0.8 (21)					2.8 (72.217)									
DC168G45	1.77 (45)	0.8 (21)					2.8 (72.217)									
DC168G50	1.97 (50)	0.8 (21)					2.8 (72.217)									
DC168H40	1.57 (40)		1.7 (42)		2.6 (65)	0.8 (21)	2.8 (72.217)									
DC168H45	1.77 (45)		1.7 (42)		2.6 (65)	0.8 (21)	2.8 (72.217)									
DC168H50	1.97 (50)		1.7 (42)		2.6 (65)	0.8 (21)	2.8 (72.217)									
DC168J40	1.57 (40)			2.5 (63)	2.6 (65)	0.8 (21)	2.8 (72.217)									
DC168J45	1.77 (45)			2.5 (63)	2.6 (65)	0.8 (21)	2.8 (72.217)									
DC168J50	1.97 (50)			2.5 (63)	2.6 (65)	0.8 (21)	2.8 (72.217)									
To be used with DC size 10323A (3C):																
DC235A								0.6 (16)	5.9 (150)	0.8 (20)	0.3 (7.5)					4.7 (119.891)
DC235B								0.6 (16)				5.9 (150)				4.7 (119.891)
DC235C								0.6 (16)					7.5 (190)	6.7 (170)	0.43 (11)	4.7 (119.891)
DC235G55	2.17 (55)	0.6 (16)					4.1 (103.231)									
DC235G60	2.36 (60)	0.6 (16)					4.1 (103.231)									
DC235G75	2.95 (75)	0.6 (16)					4.1 (103.231)									
DC235H55	2.17 (55)		1.7 (43)		3.9 (100)	1.1 (27)	4.1 (103.231)									
DC235H60	2.36 (60)		1.7 (43)		3.9 (100)	1.1 (27)	4.1 (103.231)									
DC235H75	2.95 (75)		1.7 (43)		3.9 (100)	1.1 (27)	4.1 (103.231)									
DC235J55	2.17 (55)			2.8 (70)	3.9 (100)	1.1 (27)	4.1 (103.231)									
DC235J60	2.36 (60)			2.8 (70)	3.9 (100)	1.1 (27)	4.1 (103.231)									