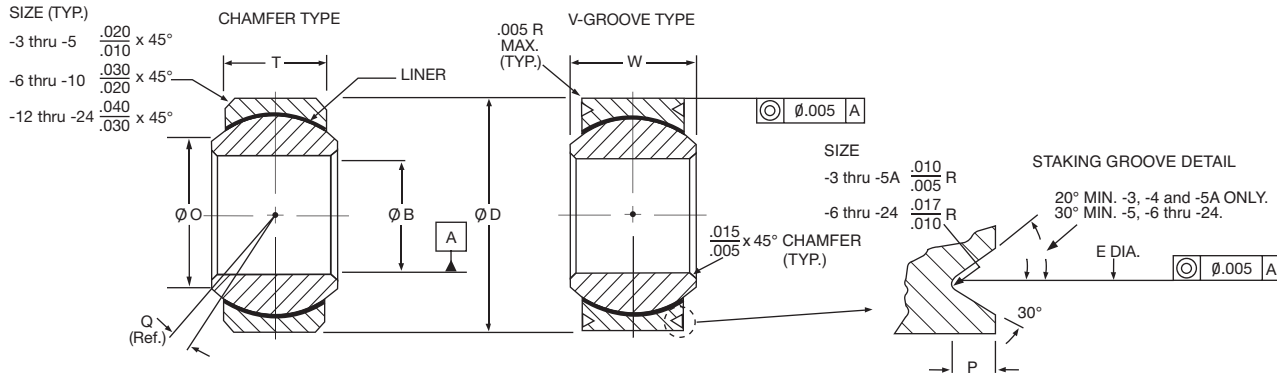


SPHERICAL BEARINGS – Self-Lubricating

AS81820 Narrow



Part Number	MS Dash No.	(B) Bore Diameter	(D) Outside Diameter	(W) Ball Width	(T) Race Width	(Ø) Shoulder Diameter	Ball Diameter	(E) Pitch Diameter	(P) Groove Depth	(Q°) Misalignment	Limit Static Radial Load	Limit Static Axial Load	Dynamic Osc. Radial Load	Weight
V-Grooved*		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Degree	lbs.	lbs.	lbs.	lbs.
MS14101		+0.000	+0.000	+0.000	±.005	Min.	Ref.	+0.000	+0.000	Ref.				Ref.
MS14104		-0.005	-0.005	-0.002				-0.008	-0.010					
ADB3V(L)	-3	.1900	.5625	.281	.218	.293	.406	.500	.025	10°	3975	150	1500	.020
ADB4V(L)	-4	.2500	.6562	.343	.250	.364	.500	.594	.025	10°	6040	430	3320	.020
ADB5V(L)	-5	.3125	.7500	.375	.281	.419	.562	.650	.035	10°	8750	700	5460	.030
ADB5VA(L)	-5A	.3125	.7500	.375	.281	.419	.562	.660	.035	10°	8750	700	5460	.030
ADB6V(L)	-6	.3750	.8125	.406	.312	.475	.656	.712	.035	9°	10540	1100	6600	.040
ADB7V(L)	-7	.4375	.9062	.437	.343	.530	.718	.806	.035	8°	13200	1400	8050	.050
ADB8V(L)	-8	.5000	1.0000	.500	.390	.600	.813	.876	.055	8°	17900	2100	10400	.070
ADB9V(L)	-9	.5625	1.0937	.562	.437	.670	.875	.970	.055	8°	23200	3680	13000	.090
ADB10V(L)	-10	.6250	1.1875	.625	.500	.739	.968	1.063	.055	8°	30500	4720	16450	.120
ADB12V(L)	-12	.7500	1.4375	.750	.593	.920	1.187	1.313	.055	8°	46400	6750	23600	.210
ADB14V(L)	-14	.8750	1.5625	.875	.703	.980	1.312	1.438	.055	8°	62200	9350	30250	.270
ADB16V(L)	-16	1.0000	1.7500	1.000	.797	1.118	1.500	1.626	.055	8°	82200	12160	38000	.390
ADB18V(L)	-	1.1250	2.1250	1.125	.900	1.334	1.750	2.003	.055	8°	105880	13500	42350	.720
ADB20V(L)	-	1.2500	2.3125	1.250	1.000	1.473	1.937	2.190	.055	8°	131230	16930	52490	.930
ADB22V(L)	-	1.3750	2.5625	1.375	1.100	1.654	2.156	2.440	.055	8°	161700	20750	64680	1.280
ADB24V(L)	-	1.5000	2.8125	1.500	1.200	1.794	2.344	2.690	.055	8°	191973	24950	77110	1.670

*For chamfered version, delete 'V' from part number.

Notes:

- Bearing sizes 3 through 16 listed in the tables are approved for procurement to AS81820 and Aerospace Standards AS14101 through AS14104.
- Bearing sizes 18 through 24 listed are not included in current Aerospace Standards, but are offered as NHBB catalog items only.
- Temperature: Operating temperature range per AS81820 is -65° to 325°F. Broader temperature capabilities are achievable.

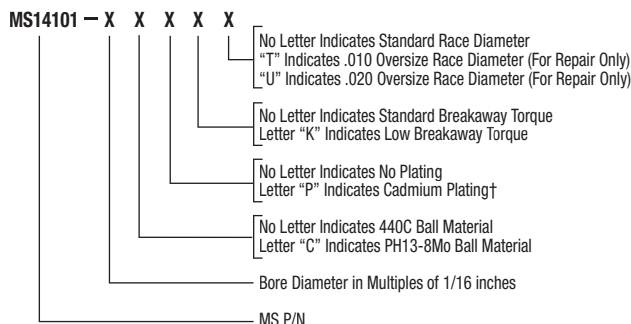
Materials

Part No.	Ball	Race	Liner
Catalog No.	CRES 440C AMS 5630 Rc55-62	CRES 17-4PH AMS 5643 Rc28-37	PTFE/Fabric Bonded to Race I.D. No Lub. Required
Catalog No. + 13-8	CRES PH13-8Mo AMS 5629 Rc43-47	CRES 17-4PH AMS 5643 Rc28-37	PTFE/Fabric Bonded to Race I.D. No Lub. Required

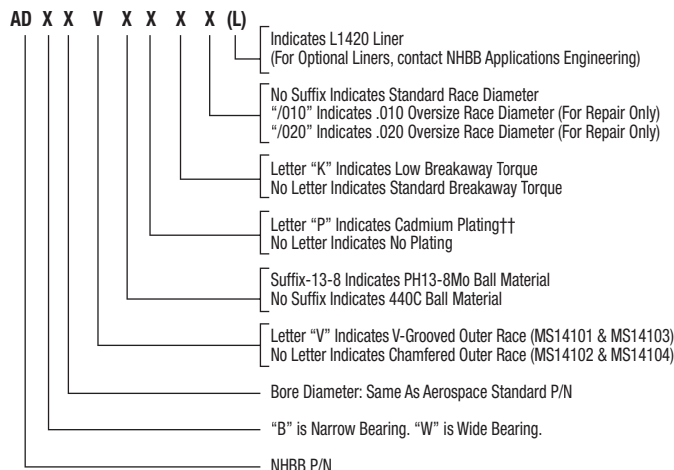


AS81820 Wide

Aerospace Standard P/N



NHBB P/N



P/N Series	NHBB P/N	Description
MS14101	ADB V	Narrow Grooved
MS14102	ADW	Wide Chamfered
MS14103	ADW V	Wide Grooved
MS14104	ADB	Narrow Chamfered

† Cadmium plate MS14102 & MS14104 O.D. and O.D. chamfers per AMS-QQ-P-416, Type II, Class 2. Dimensions apply after plating.

†† Cadmium plate MS14101 & MS14103 O.D. and on the flats between the outside diameter and the grooves per AMS-QQ-P-416, Type II, Class 2. Dimensions apply after plating.

Part Number	MS Dash No.	(B) Bore Diameter	(D) Outside Diameter	(W) Ball Width	(T) Race Width	(O) Shoulder Diameter	Ball Diameter	(E) Pitch Diameter	(P) Groove Depth	(Q°) Misalignment	Limit Static Radial Load	Limit Static Axial Load	Dynamic Osc. Radial Load	Weight
V-Grooved*		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Degree	lbs.	lbs.	lbs.	lbs.
MS14102		+ .0000	+ .0000	+ .000		Min.	Ref.	+ .000	+ .000	Ref.				Ref.
MS14103		- .0005	- .0005	- .002	± .005			- .008	- .010					
ADW3V(L)	-3	.1900	.6250	.437	.327	.300	.531	.563	.025	15°	2500	1770	4900	.031
ADW4V(L)	-4	.2500	.6250	.437	.327	.300	.531	.563	.025	15°	5500	1770	4900	.031
ADW5V(L)	-5	.3125	.6875	.437	.317	.360	.593	.625	.025	14°	9400	1640	6050	.035
ADW6V(L)	-6	.3750	.8125	.500	.406	.466	.687	.712	.035	8°	13700	2630	8310	.060
ADW7V(L)	-7	.4375	.9375	.562	.442	.537	.781	.837	.035	10°	20700	3650	11750	.080
ADW7V52(L)	-7A	.4375	.9062	.562	.442	.537	.781	.806	.035	10°	19700	3650	11750	.080
ADW8V(L)	-8	.5000	1.0000	.625	.505	.607	.875	.900	.035	9°	21400	4970	14950	.100
ADW9V(L)	-9	.5625	1.1250	.687	.536	.721	1.000	1.025	.035	10°	26600	5370	18100	.135
ADW10V(L)	-10	.6250	1.1875	.750	.567	.747	1.062	1.087	.035	12°	29000	6130	20250	.160
ADW12V(L)	-12	.7500	1.3750	.875	.630	.845	1.250	1.251	.055	13°	37000	7730	26200	.240
ADW14V(L)	-14	.8750	1.6250	.875	.755	.995	1.375	1.501	.055	6°	65200	10800	33600	.350
ADW16V(L)	-16	1.0000	2.1250	1.375	1.005	1.269	1.875	2.001	.055	12°	104000	19300	56250	.970
ADW18V(L)	-	1.1250	2.2500	1.437	1.067	1.338	1.968	2.128	.055	14°	142570	19640	57000	1.000
ADW20V(L)	-	1.2500	2.3750	1.500	1.130	1.460	2.093	2.253	.055	13°	159200	21970	63680	1.120
ADW20-5V(L)	-	1.2500	2.0000	1.093	.942	1.406	1.781	1.878	.055	6°	112360	14890	44940	.564
ADW22V(L)	-	1.3750	2.5625	1.687	1.223	1.535	2.281	2.440	.055	15°	190000	25970	76000	1.390
ADW24V(L)	-	1.5000	2.6875	1.687	1.223	1.693	2.390	2.567	.055	14°	199000	25970	79640	1.480

*For chamfered version, delete 'V' from part number.

No Load Breakaway Torque

Bore Sizes	Standard (in - lbs.)	"K" Type
3 & 4	0.25 to 5.0	0 to 0.5
5 to 12	0.25 to 8.0	0 to 1.0
14 & 16	0.25 to 12.0	0 to 2.0
18 & 20	0.25 to 18.0	0 to 2.0
22 & 24	0.25 to 24.0	0 to 2.0

Radial and Axial Play

P/N Series MS14101 & MS14104		
Bore Size	Max. Radial Play	Max. Axial Play
3K Thru 12K	0.0007 Inch	0.0028 Inch
14K Thru 16K	0.0010 Inch	0.0040 Inch

P/N Series MS14102 & MS14103		
Bore Size	Max. Radial Play	Max. Axial Play
3K Thru 12K	0.0007 Inch	0.0021 Inch
14K Thru 16K	0.0010 Inch	0.0030 Inch