THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT

MS16632 — external crescent retaining ring, reduced section

MS16632: external crescent retaining ring for .125 to 2.000 shafts.

Specification

Item	Value
Type	External crescent retaining ring
Material	Carbon spring steel, grade 1060 thru 1095 (UNS G10600 thru G10950); corrosion-resistant steel, AMS 5520 (UNS S15700); beryllium copper, alloy 170 (UNS C17000) or 172 (UNS C17200), ASTM B194
Finish	Carbon steel, by dash number: cadmium plate, zinc coat or phosphate coat; corrosion-resistant steel: cleaned, descaled and passivated (QQ-P-35)
Procurement	MIL-R-21248, Type I, Class 6
Status	Check the current issue before design use. Notice 1 (Dec 1999) cancelled MS16632B in favour of ASME B18.27.2; Notice 2 (Feb 2003) reinstated it for acquisition.

Dimensions by size (1 of 2)

Dimension, in	.125	.156	.188	.219	.236	.250	.281	.312	.375	.406	.438	.500	.562
D — D free dia, basic	.102	.131	.161	.187	.203	.211	.242	.270	.328	.359	.386	.441	.497
D tolerance	+.002/-.004	+.002/-.004	+.002/-.004	+.003/-.005	+.003/-.005	+.003/-.005	+.003/-.005	+.003/-.005	+.003/-.005	+.003/-.005	+.003/-.005	±.006	±.006
E — E large section height, basic	.031	.037	.042	.044	.046	.050	.052	.053	.060	.063	.065	.070	.078
E tolerance	±.003	±.003	±.003	±.003	±.004	±.004	±.004	±.004	±.004	±.004	±.004	±.005	±.005
T — T thickness, basic	.015	.015	.015	.025	.025	.025	.025	.025	.025	.025	.025	.035	.035
T tolerance	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002
G — G groove dia, basic	.106	.135	.165	.193	.208	.220	.247	.276	.335	.364	.393	.450	.507
G tolerance	±.0015	±.0015	±.0015	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.003	±.003
FIM — Groove concentricity, FIM	.0015	.0015	.0015	.002	.002	.002	.002	.002	.002	.002	.002	.004	.004
W — W groove width, basic	.020	.020	.020	.030	.030	.030	.030	.030	.030	.030	.030	.040	.040

Showing 10 of 13 rows. Complete table: theaviationpoint.com/parts/pins/ms16632/

Dimensions by size (2 of 2)

Dimension, in	.625	.688	.750	.812	.875	.938	1.000	1.125	1.250	1.375	1.500	1.750	2.000
D — D free dia, basic	.553	.608	.665	.721	.777	.830	.887	.997	1.110	1.220	1.331	1.555	1.777
D tolerance	±.006	±.006	±.007	±.007	±.007	±.007	±.007	±.008	±.008	±.008	±.008	±.010	±.010
E — E large section height, basic	.081	.086	.090	.097	.105	.112	.120	.135	.150	.165	.180	.210	.240
E tolerance	±.005	±.005	±.005	±.005	±.005	±.005	±.005	±.007	±.007	±.007	±.007	±.007	±.007
T — T thickness, basic	.035	.042	.042	.042	.042	.042	.042	.050	.050	.050	.050	.062	.062
T tolerance	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.002	±.003	±.003
G — G groove dia, basic	.563	.619	.676	.732	.789	.843	.900	1.013	1.126	1.237	1.350	1.576	1.800
G tolerance	±.003	±.003	±.003	±.003	±.003	±.003	±.003	±.004	±.004	±.004	±.004	±.005	±.005
FIM — Groove concentricity, FIM	.004	.004	.004	.004	.004	.004	.004	.005	.005	.005	.005	.005	.005
W — W groove width, basic	.040	.047	.047	.047	.047	.047	.047	.056	.056	.056	.056	.068	.068

Showing 10 of 13 rows. Complete table: theaviationpoint.com/parts/pins/ms16632/

Dimensions in inches, as tabulated in the standard (letters as on its drawing). Groove and retained-part figures are recommendations (ref).

Part numbers

.125 5 part numbers

Part no.	Material and finish
MS16632-1012	Carbon steel, cadmium plate
MS16632-2012	Carbon steel, zinc coat
MS16632-3012	Carbon steel, phosphate coat
MS16632-4012	Corrosion-resistant steel
MS16632-5012	Beryllium copper

.156 5 part numbers

Part no.	Material and finish
MS16632-1015	Carbon steel, cadmium plate
MS16632-2015	Carbon steel, zinc coat
MS16632-3015	Carbon steel, phosphate coat
MS16632-4015	Corrosion-resistant steel
MS16632-5015	Beryllium copper

.188 5 part numbers

Part no.	Material and finish
MS16632-1018	Carbon steel, cadmium plate
MS16632-2018	Carbon steel, zinc coat
MS16632-3018	Carbon steel, phosphate coat
MS16632-4018	Corrosion-resistant steel
MS16632-5018	Beryllium copper

.219 5 part numbers

Part no.	Material and finish
MS16632-1021	Carbon steel, cadmium plate
MS16632-2021	Carbon steel, zinc coat
MS16632-3021	Carbon steel, phosphate coat
MS16632-4021	Corrosion-resistant steel
MS16632-5021	Beryllium copper

.236 5 part numbers

Part no.	Material and finish
MS16632-1023	Carbon steel, cadmium plate
MS16632-2023	Carbon steel, zinc coat
MS16632-3023	Carbon steel, phosphate coat
MS16632-4023	Corrosion-resistant steel
MS16632-5023	Beryllium copper

.250 5 part numbers

Part no.	Material and finish
MS16632-1025	Carbon steel, cadmium plate
MS16632-2025	Carbon steel, zinc coat
MS16632-3025	Carbon steel, phosphate coat
MS16632-4025	Corrosion-resistant steel
MS16632-5025	Beryllium copper

.281 5 part numbers

Part no.	Material and finish
MS16632-1028	Carbon steel, cadmium plate
MS16632-2028	Carbon steel, zinc coat
MS16632-3028	Carbon steel, phosphate coat
MS16632-4028	Corrosion-resistant steel
MS16632-5028	Beryllium copper

.312 5 part numbers

Part no.	Material and finish
MS16632-1031	Carbon steel, cadmium plate
MS16632-2031	Carbon steel, zinc coat
MS16632-3031	Carbon steel, phosphate coat
MS16632-4031	Corrosion-resistant steel
MS16632-5031	Beryllium copper

.375 5 part numbers

Part no.	Material and finish
MS16632-1037	Carbon steel, cadmium plate
MS16632-2037	Carbon steel, zinc coat
MS16632-3037	Carbon steel, phosphate coat
MS16632-4037	Corrosion-resistant steel
MS16632-5037	Beryllium copper

.406 5 part numbers

Part no.	Material and finish
MS16632-1040	Carbon steel, cadmium plate
MS16632-2040	Carbon steel, zinc coat
MS16632-3040	Carbon steel, phosphate coat
MS16632-4040	Corrosion-resistant steel
MS16632-5040	Beryllium copper

.438 5 part numbers

Part no.	Material and finish
MS16632-1043	Carbon steel, cadmium plate
MS16632-2043	Carbon steel, zinc coat
MS16632-3043	Carbon steel, phosphate coat
MS16632-4043	Corrosion-resistant steel
MS16632-5043	Beryllium copper

.500 5 part numbers

Part no.	Material and finish
MS16632-1050	Carbon steel, cadmium plate
MS16632-2050	Carbon steel, zinc coat
MS16632-3050	Carbon steel, phosphate coat
MS16632-4050	Corrosion-resistant steel
MS16632-5050	Beryllium copper

THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT

THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT

.562 5 part numbers

Part no.	Material and finish
MS16632-1056	Carbon steel, cadmium plate
MS16632-2056	Carbon steel, zinc coat
MS16632-3056	Carbon steel, phosphate coat
MS16632-4056	Corrosion-resistant steel
MS16632-5056	Beryllium copper

.625 5 part numbers

Part no.	Material and finish
MS16632-1062	Carbon steel, cadmium plate
MS16632-2062	Carbon steel, zinc coat
MS16632-3062	Carbon steel, phosphate coat
MS16632-4062	Corrosion-resistant steel
MS16632-5062	Beryllium copper

.688 5 part numbers

Part no.	Material and finish
MS16632-1068	Carbon steel, cadmium plate
MS16632-2068	Carbon steel, zinc coat
MS16632-3068	Carbon steel, phosphate coat
MS16632-4068	Corrosion-resistant steel
MS16632-5068	Beryllium copper

.750 5 part numbers

Part no.	Material and finish
MS16632-1075	Carbon steel, cadmium plate
MS16632-2075	Carbon steel, zinc coat
MS16632-3075	Carbon steel, phosphate coat
MS16632-4075	Corrosion-resistant steel
MS16632-5075	Beryllium copper

.812 5 part numbers

Part no.	Material and finish
MS16632-1081	Carbon steel, cadmium plate
MS16632-2081	Carbon steel, zinc coat
MS16632-3081	Carbon steel, phosphate coat
MS16632-4081	Corrosion-resistant steel
MS16632-5081	Beryllium copper

.875 5 part numbers

Part no.	Material and finish
MS16632-1087	Carbon steel, cadmium plate
MS16632-2087	Carbon steel, zinc coat
MS16632-3087	Carbon steel, phosphate coat
MS16632-4087	Corrosion-resistant steel
MS16632-5087	Beryllium copper

.938 5 part numbers

Part no.	Material and finish
MS16632-1093	Carbon steel, cadmium plate
MS16632-2093	Carbon steel, zinc coat
MS16632-3093	Carbon steel, phosphate coat
MS16632-4093	Corrosion-resistant steel
MS16632-5093	Beryllium copper

1.000 5 part numbers

Part no.	Material and finish
MS16632-1100	Carbon steel, cadmium plate
MS16632-2100	Carbon steel, zinc coat
MS16632-3100	Carbon steel, phosphate coat
MS16632-4100	Corrosion-resistant steel
MS16632-5100	Beryllium copper

1.125 5 part numbers

Part no.	Material and finish
MS16632-1112	Carbon steel, cadmium plate
MS16632-2112	Carbon steel, zinc coat
MS16632-3112	Carbon steel, phosphate coat
MS16632-4112	Corrosion-resistant steel
MS16632-5112	Beryllium copper

1.250 5 part numbers

Part no.	Material and finish
MS16632-1125	Carbon steel, cadmium plate
MS16632-2125	Carbon steel, zinc coat
MS16632-3125	Carbon steel, phosphate coat
MS16632-4125	Corrosion-resistant steel
MS16632-5125	Beryllium copper

1.375 5 part numbers

Part no.	Material and finish
MS16632-1137	Carbon steel, cadmium plate
MS16632-2137	Carbon steel, zinc coat
MS16632-3137	Carbon steel, phosphate coat
MS16632-4137	Corrosion-resistant steel
MS16632-5137	Beryllium copper

1.500 5 part numbers

Part no.	Material and finish
MS16632-1150	Carbon steel, cadmium plate
MS16632-2150	Carbon steel, zinc coat
MS16632-3150	Carbon steel, phosphate coat
MS16632-4150	Corrosion-resistant steel
MS16632-5150	Beryllium copper

1.750 5 part numbers

Part no.	Material and finish
MS16632-1175	Carbon steel, cadmium plate
MS16632-2175	Carbon steel, zinc coat
MS16632-3175	Carbon steel, phosphate coat
MS16632-4175	Corrosion-resistant steel
MS16632-5175	Beryllium copper

2.000 5 part numbers

Part no.	Material and finish
MS16632-1200	Carbon steel, cadmium plate
MS16632-2200	Carbon steel, zinc coat
MS16632-3200	Carbon steel, phosphate coat
MS16632-4200	Corrosion-resistant steel
MS16632-5200	Beryllium copper

How to read the part number

Part	Meaning
Format	MS16632-<dash>
Example	MS16632-1100 — Carbon steel, cadmium plate, for a 1.000 shaft

Table II: hardness

Shaft dia (ref), in	Carbon steel	Corrosion-resistant steel	Beryllium copper
.125 to .438 incl.	84.5 - 87.0 HR15N	82.5 - 86 HR15N	77 - 82 HR15N
.500 to .625 incl.	66.5 - 71.5 HR30N	—	54 - 62 HR30N
.688 to 1.000 incl.	52.5 - 58.5 HR45N	48 - 56 HR45N	36 - 47 HR45N
1.125 to 2.000 incl.	48 - 53 HRC	44 - 51 HRC	34 - 43 HRC

As printed in MS16632B Table II. Corrosion-resistant steel, .500 to .625: the value is not legible on the copy of the standard.

Notes

- Thickness T applies to unplated rings; for corrosion-resistant steel and plated rings add .002 to the maximum tolerance (±.002 becomes +.004/-.002).
- FIM (full indicator movement): maximum allowable deviation of concentricity between the groove and the shaft.
- R and CH: radii or chamfers allowable on the parts retained by the ring.
- Use corrosion-resistant steel in food processing machinery, in fuel or lubrication systems, or above 450°F.
- Groove bottom radius, max: .005 for shafts .125 to .438 incl., .010 for .500 to 1.000 incl., .015 for 1.125 and over.
- Inactive carbon steel numbers are replaced by the cadmium plated, zinc coated or phosphate coated carbon steel ring of the same shaft (pairs below).

SOURCES · MS16632 Rev. B, 30 Apr 1990 — Ring, Retaining, External, Crescent

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/pins/ms16632/

Reference data. The aircraft manufacturer's documentation (SRM / IPC) takes precedence.

THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT