

FED. SPEC. CLASS  
1304

32

32

32

SECTION THRU  
THREAD PROFILE

.047 ± .05  
DIAMETER

.300-30ULP-3A  
MIL-9-6879

.471  
DIA

.140  
H/M

.030  
H/M

.020  
H/M

.125  
H/M

.495  
H/M

.032  
H/M

.370  
DIA

.0138  
H/M

35° H/M

35° H/M TO ROOT  
OF DOUBLE HEXAGONS

CHAMFER  
25°-35°  
TO .342 DIA

35° H/M

.750  
DIA

.342  
H/M

WRENCHING CONFIGURATION  
PER AS 870 FOR  
THIS DISTANCE

HARD PART NUMBER  
AND MANUFACTURER'S IDENT  
PER AS 478 CLASS A

MS9890 (ASG)

PART NO.	L	K	APPROX. WEIGHT LB/100	PART NO.	L	K	APPROX. WEIGHT LB/100	PART NO.	L	K	APPROX. WEIGHT LB/100
MS9890-04	.812	.103-.125	7.99	MS9890-22	1.938	.625-.688	13.55	MS9890-40	4.125	2.815-2.875	26.27
MS9890-05	.875	.103-.125	8.25	MS9890-23	2.000	.690-.750	13.86	MS9890-41	4.250	2.940-3.000	26.88
MS9890-06	.938	.103-.125	8.59	MS9890-24	2.125	.815-.875	14.45	MS9890-42	4.375	3.065-3.125	27.49
MS9890-07	1.000	.103-.125	8.90	MS9890-25	2.250	.940-1.000	15.06	MS9890-43	4.500	3.190-3.250	28.10
MS9890-08	1.062	.103-.125	9.22	MS9890-26	2.375	1.065-1.125	15.68	MS9890-44	4.625	3.315-3.375	28.71
MS9890-09	1.125	.103-.125	9.54	MS9890-27	2.500	1.190-1.250	16.29	MS9890-45	4.750	3.440-3.500	29.32
MS9890-10	1.188	.103-.125	9.86	MS9890-28	2.625	1.315-1.375	16.91	MS9890-46	4.875	3.565-3.625	29.93
MS9890-11	1.250	.103-.125	10.18	MS9890-29	2.750	1.440-1.500	17.52	MS9890-47	5.000	3.690-3.750	30.54
MS9890-12	1.312	.103-.125	10.48	MS9890-30	2.875	1.565-1.625	18.13	MS9890-48	5.125	3.815-3.875	31.15
MS9890-13	1.375	.103-.125	10.78	MS9890-31	3.000	1.690-1.750	18.74	MS9890-49	5.250	3.940-4.000	31.76
MS9890-14	1.438	.125-.148	11.09	MS9890-32	3.125	1.815-1.875	19.35	MS9890-50	5.375	4.065-4.125	32.37
MS9890-15	1.500	.150-.250	11.40	MS9890-33	3.250	1.940-2.000	19.96	MS9890-51	5.500	4.190-4.250	32.98
MS9890-16	1.562	.250-.312	11.71	MS9890-34	3.375	2.065-2.125	20.58	MS9890-52	5.625	4.315-4.375	33.59
MS9890-17	1.625	.312-.375	12.02	MS9890-35	3.500	2.190-2.250	21.19	MS9890-53	5.750	4.440-4.500	34.20
MS9890-18	1.688	.375-.438	12.33	MS9890-36	3.625	2.315-2.375	21.81	MS9890-54	5.875	4.565-4.625	34.81
MS9890-19	1.750	.440-.500	12.64	MS9890-37	3.750	2.440-2.500	22.42	MS9890-55	6.000	4.690-4.750	35.42
MS9890-20	1.812	.502-.562	12.93	MS9890-38	3.875	2.565-2.625	23.04				
MS9890-21	1.875	.562-.625	13.24	MS9890-39	4.000	2.690-2.750	23.66				

1. CHAMFER SHALL BE STRAIGHT WITHIN .002 PER INCH OF BOLT LENGTH.
2. THE CONCENTRICITY OF THREAD TO IS RELATION TO THE CHAMFER SHALL BE WITHIN .006 DIA.
3. THE CONCENTRICITY OF THE CHAMFER IN RELATION TO THE HARDER FACE DIAMETER AND DOUBLE HEXAGONS SHALL BE WITHIN .012 DIA.
4. UNIFORMITY OF THREADS NOT TO ENTER FILLET.
5. MATERIAL: CORROSION RESISTANT STEEL AND 5416.
6. MANUFACTURING SPECIFICATION: AND 7470 EXCEPT CHAMFER SHALL BE CRYST.
7. CHAMFER TO DOUBLE FILLET SHALL BE COLD ROLLED AFTER HEAT TREATMENT TO REMOVE ALL VISUAL EVIDENCE OF GRINDING OR TOOL MARKS.
8. FINISHES: ROUGHENED CHAMFER.
9. SURFACE TREATMENT: MIL-STD-1312-1-1962. UNLESS OTHERWISE SPECIFIED, SURFACE TO BE 125 MICROINCHES EXCEPT CRYST CHAMFER.
10. MAGNETIC PARTICLES INSPECTED PER AMS 2640.
11. BREAK CHAMFER EDGES .003-.012 UNLESS OTHERWISE SPECIFIED.
12. CONCENTRICITY IN CHAMFER: UNLESS OTHERWISE SPECIFIED, TOLERANCES: LINEAR DIMENSIONS ± .010, ANGULAR DIMENSIONS ± 3°.
13. DO NOT USE CLASSIFIED PART NUMBER.

AS 4 AND ARE SOCIETY OF AUTOMOTIVE ENGINEERS, INC. PUBLICATIONS.  
THIS STANDARD WAS DEVELOPED COOPERATIVELY WITH THE MILITARY SERVICES BY THE AIR AND SPACE PART STANDARDS DIVISION.

P.A. CAP - 11  
Other Cap  
Rev - 15

TITLE  
BOLT, MACHINE - DOUBLE HEXAGON EXTENDED MACHINE HEAD,  
AND 5416, .500-20 CH/P-3A

PROCUREMENT SPECIFICATION  
SUPERSEDES

MILITARY STANDARD  
MS9890 (ASG)  
SHEET 1 OF 1

DD FORM 672-1 (Revised 10-64)  
150 use only

Project No. 5305-POLO  
U. S. GOVERNMENT PRINTING OFFICE: 1964-545-512/4-5522