

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDS SPECIFIED IN THE SOLICITATION: MIL-P-8177

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE.

Form Approved
OASD No. 0704-0108

REQUIREMENT

1. MATERIAL

SLEEVE AND SERRATED PIN - ALLOY STEEL PER ASTM-A-331

MECHANICAL LOCK CARBON STEEL OR ALLOY STEEL CONFORMING TO THE CHEMICAL COMPOSITION OF 1010, 1020, 1144, 4037, OR 4130 OF FEDERAL STANDARD 66 OR A286 CRES CONFORMING TO THE CHEMICAL LIMITS OF AMS 5737, OR TYPE 316 CRES CONFORMING TO THE CHEMICAL REQUIREMENTS OF AMS 5690

2. HARDNESS

SLEEVE KNOOP (1000 GRAM LOAD) 328-408

SERRATED PIN ROCKWELL "C" 48 TO 53

MECHANICAL LOCK NOT APPLICABLE

3. PROTECTIVE TREATMENT

SLEEVE: CADMIUM PLATE PER QQ-P-416, TYPE 4, CLASS 2 OR ALUMINUM COATING PER MIL-C-83488.

SERRATED PIN: CADMIUM PLATE PER QQ-P-416, TYPE 1, CLASS 3 WITH HYDROGEN EMBRITTLEMENT RELIEF PER MIL-F-81177 OR ALUMINUM COATING PER MIL-C-83488.

MECHANICAL LOCK: CADMIUM PLATE PER QQ-P-416, TYPE 4, CLASS 2, (CARBON AND ALLOY STEEL) PASSIVATE PER QQ-P-35 (A286 AND TYPE 316 CRES) OR ALUMINUM COATING PER MIL-C-83488, AT MANUFACTURER'S OPTION.

4. INSPECTION

DUE TO INSTALLATION LOADS BEING HIGHER THAN PERFORMANCE LOAD REQUIREMENTS, MAGNETIC PARTICLE INSPECTION IS NOT REQUIRED.

5. LUBRICATION

NONE, EXCEPT MANUFACTURER'S OPTION TO LUBRICATE LOCK MECHANISM WITH LOX COMPATIBLE DRY FILM LUBRICANTION

6. EXAMPLE OF PART NUMBER

MS 90353 - 0808 D - 1/4 DIA. NOM SIZE, .156 MIN. GRIP, INSTALLED WITH A SINGLE ACTION TOOL.

"0" DENOTES ALUMINUM COATING, NO CODE DENOTES CADMIUM PLATING.

GRIP RANGE (SEE TABLE 8)

SIZE DASH NUMBER (SEE TABLE 1)

"-" DENOTES FASTENERS INSTALLED WITH A DOUBLE ACTION TOOL, FOR SIZES 05 AND 08.

"~" DENOTES FASTENERS INSTALLED WITH A SINGLE ACTION TOOL, FOR SIZES 08, 10, 12, 14, AND 16.

"S" DENOTES FASTENERS INSTALLED WITH A SINGLE ACTION TOOL, FOR SIZES 05 AND 08.

"U" DENOTES SINGLE ACTION FASTENERS INSTALLED WITH A SINGLE ACTION TOOL, FOR ALL SIZES (SEE SHEET 1, FOOTNOTE (d))

MS NUMBER

NOTES:

1. DIMENSIONS ARE IN INCHES. UNLESS OTHERWISE SPECIFIED TOLERANCES. DECIMALS \pm .010

2. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS DOCUMENT AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS DOCUMENT SHALL TAKE PRECEDENCE.

3. UNLESS OTHERWISE SPECIFIED, ISSUES OF REFERENCED DOCUMENTS ARE THOSE IN EFFECT AT THE TIME OF SOLICITATION.

PREPARING ACTIVITY: NAVY-AS CUSTODIANS: ARMY-AV NAVY-AS AIR FORCE-08 DLA-IS REVIEW: ML 82 USER: PROJECT NUMBER: 5320-0815	MILITARY SPECIFICATION SHEET TITLE: FASTENER, BLIND, HIGH STRENGTH, PULL TYPE, POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, ALLOY STEEL, 112 K.S.I. Fm	SPECIFICATION SHEET NUMBER MS90353 28 FEB 1994 REV U SUPERSEDING MS90353 T 13 AUG 1993 AMSC- N/A FSC 5320
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.		Page 4 of 4

DD Form 672, MAY 88

PREVIOUS EDITIONS ARE OBSOLETE

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TABLE II CRIP NUMBER TABULATION (CONTINUED)											
91/8 (-12)				97/16 (-14)				91/2 (-16)			
CRIP CASH NO	CRIP RANGE		L	CRIP CASH NO	CRIP RANGE		L	CRIP CASH NO	CRIP RANGE		L
	MIN	MAX			MIN	MAX			MIN	MAX	
-1204	219	262	548	-1405	281	345	882	-1685	344	407	815
-1205	281	345	810	-1406	344	407	724	-1686	408	470	908
-1206	344	407	811	-1407	408	470	787	-1687	469	532	940
-1207	408	470	735	-1408	469	532	849	-1688	531	595	1003
-1208	469	532	798	-1409	531	595	912	-1689	596	657	1065
-1209	531	595	860	-1410	594	657	974	-1690	658	720	1128
-1210	594	657	923	-1411	656	720	1037	-1691	721	782	1190
-1211	656	720	985	-1412	719	782	1100	-1692	783	845	1253
-1212	719	782	1048	-1413	781	845	1163	-1693	846	907	1315
-1213	781	845	1110	-1414	844	907	1224	-1694	908	970	1378
-1214	844	907	1173	-1415	906	970	1287	-1695	969	1032	1440
-1215	906	970	1235	-1416	968	1032	1349	-1696	1031	1095	1503
-1216	968	1032	1298	-1417	1031	1095	1412	-1697	1096	1157	1565
-1217	1031	1095	1360	-1418	1094	1157	1474	-1698	1158	1220	1628
-1218	1094	1157	1423	-1419	1156	1220	1537	-1699	1221	1282	1690
-1219	1156	1220	1485	-1420	1219	1282	1600	-1700	1283	1345	1753
-1220	1219	1282	1548	-1421	1281	1345	1663	-1701	1346	1407	1815
-1221	1281	1345	1610	-1422	1344	1407	1724	-1702	1408	1470	1878
-1222	1344	1407	1673	-1423	1406	1470	1787	-1703	1469	1532	1940
-1223	1406	1470	1735	-1424	1468	1532	1849	-1704	1531	1595	2003
-1224	1468	1532	1798	-1425	1531	1595	1912	-1705	1596	1657	2065
-1225	1531	1595	1860	-1426	1594	1657	1974	-1706	1658	1720	2128
-1226	1594	1657	1923	-1427	1656	1720	2037	-1707	1721	1782	2190
-1227	1656	1720	1985	-1428	1719	1782	2100	-1708	1783	1845	2253
-1228	1719	1782	2048	-1429	1781	1845	2162	-1709	1846	1907	2315
-1229	1781	1845	2110	-1430	1844	1907	2224	-1710	1908	1970	2378
-1230	1844	1907	2173	-1431	1906	1970	2287	-1711	1969	2032	2440
-1231	1906	1970	2235	-1432	1968	2032	2349	-1712	2031	2095	2503
-1232	1968	2032	2298	-1433	2031	2095	2412	-1713	2096	2157	2565
-1233	2031	2095	2360	-1434	2094	2157	2474	-1714	2158	2220	2628
-1234	2094	2157	2423	-1435	2156	2220	2537	-1715	2221	2282	2690
-1235	2156	2220	2485	-1436	2219	2282	2599	-1716	2283	2345	2753
-1236	2219	2282	2548					-1717	2346	2407	2815
								-1718	2408	2470	2878
								-1719	2469	2532	2940

PREPARING ACTIVITY: NAVY-AS CUSTODIANS: ARMY- AV NAVY- AS AIR FORCE- 98 DLA- IS REVISION: ML 82 USER: PROJECT NUMBER: 5320-0815	MILITARY SPECIFICATION SHEET TITLE FASTENER, BLIND, HIGH STRENGTH, PULL TYPE, POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD, ALLOY STEEL, 112 K.S.I. Fou	SPECIFICATION SHEET NUMBER MS90353 28 FEB 1994 REV U SUPERSEDING MS90353 T 13 AUG 1983 AMSC- N/A FBC 5396
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THE SOLUTION: ML-F-81177

TABLE E. CRIP NUMBER TABULATION

TABLE E. CRIP NUMBER EVALUATION															
05/32 (-05)				03/16 (-06)				01/4 (-08)				05/16 (-10)			
CRIP DASH NO	CRIP RANGE		L REF	C (U) MAX	CRIP DASH NO	CRIP RANGE		L REF	C (U) MAX	CRIP DASH NO	CRIP RANGE		L REF	C (U) MAX	
	MIN	MAX				MIN	MAX				MIN	MAX			
-0802	094	157	383	478	-0802	120	197	393	478	-0803	156	230	406	518	
-0803	156	230	395	541	-0804	156	282	395	604	-0804	219	345	506	605	
-0804	219	345	409	604	-0805	281	345	428	604	-0805	344	407	584	648	
-0805	344	407	450	728	-0806	344	407	463	728	-0806	406	470	648	728	
-0806	406	470	465	791	-0807	406	470	465	791	-0807	468	532	719	803	
-0807	468	532	465	854	-0808	468	532	465	854	-0808	531	595	756	840	
-0808	531	595	717	916	-0809	531	595	740	916	-0809	595	659	818	882	
-0809	594	657	780	979	-0810	594	657	803	979	-0810	659	723	882	946	
-0810	659	723	842	1041	-0811	659	723	842	1041	-0811	723	787	946	1010	
-0811	723	787	805	1104	-0812	723	787	805	1104	-0812	787	851	1010	1074	
-0812	787	851	867	1168	-0813	787	851	867	1168	-0813	851	915	1010	1074	
-0813	851	915	867	1231	-0814	851	915	867	1231	-0814	915	979	1010	1074	
-0814	915	979	1155	1294	-0815	915	979	1155	1294	-0815	979	1043	1010	1074	
-0815	979	1043	1155	1357	-0816	979	1043	1155	1357	-0816	1043	1107	1010	1074	
-0816	1043	1107	1155	1420	-0817	1043	1107	1155	1420	-0817	1107	1171	1010	1074	
-0817	1107	1171	1155	1483	-0818	1107	1171	1155	1483	-0818	1171	1235	1010	1074	
-0818	1171	1235	1155	1546	-0819	1171	1235	1155	1546	-0819	1235	1299	1010	1074	
-0819	1235	1299	1155	1609	-0820	1235	1299	1155	1609	-0820	1299	1363	1010	1074	
-0820	1299	1363	1155	1672	-0821	1299	1363	1155	1672	-0821	1363	1427	1010	1074	
-0821	1363	1427	1155	1735	-0822	1363	1427	1155	1735	-0822	1427	1491	1010	1074	
-0822	1427	1491	1155	1798	-0823	1427	1491	1155	1798	-0823	1491	1555	1010	1074	
-0823	1491	1555	1155	1861	-0824	1491	1555	1155	1861	-0824	1555	1619	1010	1074	
-0824	1555	1619	1155	1924	-0825	1555	1619	1155	1924	-0825	1619	1683	1010	1074	
-0825	1619	1683	1155	1987	-0826	1619	1683	1155	1987	-0826	1683	1747	1010	1074	
-0826	1683	1747	1155	2050	-0827	1683	1747	1155	2050	-0827	1747	1811	1010	1074	
-0827	1747	1811	1155	2113	-0828	1747	1811	1155	2113	-0828	1811	1875	1010	1074	
-0828	1811	1875	1155	2176	-0829	1811	1875	1155	2176	-0829	1875	1939	1010	1074	
-0829	1875	1939	1155	2239	-0830	1875	1939	1155	2239	-0830	1939	2003	1010	1074	
-0830	1939	2003	1155	2302	-0831	1939	2003	1155	2302	-0831	2003	2067	1010	1074	
-0831	2003	2067	1155	2365	-0832	2003	2067	1155	2365	-0832	2067	2131	1010	1074	
-0832	2067	2131	1155	2428	-0833	2067	2131	1155	2428	-0833	2131	2195	1010	1074	
-0833	2131	2195	1155	2491	-0834	2131	2195	1155	2491	-0834	2195	2259	1010	1074	
-0834	2195	2259	1155	2554	-0835	2195	2259	1155	2554	-0835	2259	2323	1010	1074	
-0835	2259	2323	1155	2617	-0836	2259	2323	1155	2617	-0836	2323	2387	1010	1074	
-0836	2323	2387	1155	2680	-0837	2323	2387	1155	2680	-0837	2387	2451	1010	1074	
-0837	2387	2451	1155	2743	-0838	2387	2451	1155	2743	-0838	2451	2515	1010	1074	
-0838	2451	2515	1155	2806	-0839	2451	2515	1155	2806	-0839	2515	2579	1010	1074	
-0839	2515	2579	1155	2869	-0840	2515	2579	1155	2869	-0840	2579	2643	1010	1074	
-0840	2579	2643	1155	2932	-0841	2579	2643	1155	2932	-0841	2643	2707	1010	1074	
-0841	2643	2707	1155	2995	-0842	2643	2707	1155	2995	-0842	2707	2771	1010	1074	
-0842	2707	2771	1155	3058	-0843	2707	2771	1155	3058	-0843	2771	2835	1010	1074	
-0843	2771	2835	1155	3121	-0844	2771	2835	1155	3121	-0844	2835	2899	1010	1074	
-0844	2835	2899	1155	3184	-0845	2835	2899	1155	3184	-0845	2899	2963	1010	1074	
-0845	2899	2963	1155	3247	-0846	2899	2963	1155	3247	-0846	2963	3027	1010	1074	
-0846	2963	3027	1155	3310	-0847	2963	3027	1155	3310	-0847	3027	3091	1010	1074	
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-0848	3091	3155	1155	3436	-0849	3091	3155	1155	3436	-0849	3155	3219	1010	1074	
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-0852	3347	3411	1155	3688	-0853	3347	3411	1155	3688	-0853	3411	3475	1010	1074	
-0853	3411	3475	1155	3751	-0854	3411	3475	1155	3751	-0854	3475	3539	1010	1074	
-0854	3475	3539	1155	3814	-0855	3475	3539	1155	3814	-0855	3539	3603	1010	1074	
-0855	3539	3603	1155	3877	-0856	3539	3603	1155	3877	-0856	3603	3667	1010	1074	
-0856	3603	3667	1155	3940	-0857	3603	3667	1155	3940	-0857	3667	3731	1010	1074	
-0857	3667	3731	1155	4003	-0858	3667	3731	1155	4003	-0858	3731	3795	1010	1074	
-0858	3731	3795	1155	4066	-0859	3731	3795	1155	4066	-0859	3795	3859	1010	1074	
-0859	3795	3859	1155	4129	-0860	3795	3859	1155	4129	-0860	3859	3923	1010	1074	
-0860	3859	3923	1155	4192	-0861	3859	3923	1155	4192	-0861	3923	3987	1010	1074	
-0861	3923	3987	1155	4255	-0862	3923	3987	1155	4255	-0862	3987	4051	1010	1074	
-0862	3987	4051	1155	4318	-0863	3987	4051	1155	4318	-0863	4051	4115	1010	1074	
-0863	4051	4115	1155	4381	-0864	4051	4115	1155	4381	-0864	4115	4179	1010	1074	
-0864	4115	4179	1155	4444	-0865	4115	4179	1155	4444	-0865	4179	4243	1010	1074	
-0865	4179	4243	1155	4507	-0866	4179	4243	1155	4507	-0866	4243	4307	1010	1074	
-0866	4243	4307	1155	4570	-0867	4243	4307	1155	4570	-0867	4307	4371	1010	1074	
-0867	4307	4371	1155	4633	-0868	4307	4371	1155	4633	-0868	4371	4435	1010	1074	
-0868	4371	4435	1155	4696	-0869	4371	4435	1155	4696	-0869	4435	4499	1010	1074	
-0869	4435	4499	1155	4759	-0870	4435	4499	1155	4759	-0870	4499	4563	1010	1074	
-0870	4499	4563	1155	4822	-0871	4499	4563	1155	4822	-0871	4563	4627	1010	1074	
-0871	4563	4627	1155	4885	-0872	4563	4627	1155	4885	-0872	4627	4691	1010	1074	
-0872	4627	4691	1155	4948	-0873	4627	4691	1155	4948	-0873	4691	4755	1010	1074	
-0873	4691	4755	1155	5011	-0874	4691	4755	1155	5011	-0874	4755	4819	1010	1074	
-0874	4755	4819	1155	5074	-0875	4755	4819	1155	5074	-0875	4819	4883	1010	1074	
-0875	4819	4883	1155	5137	-0876	4819	4883	1155	5137	-0876	4883	4947	1010	1074	
-0876	4883	4947	1155	5200	-0877	4883	4947	1155	5200	-0877	4947	5011	1010	1074	
-0877	4947	5011	1155	5263	-0878	4947	5011	1155	5263	-0878	5011	5075	1010	1074	
-0878	5011	5075	1155	5326	-0879	5011	5075	1155	5326	-0879	5075	5139	1010	1074	
-0879	5075	5139	1155	5389	-0880	5075	5139	1155	5389	-0880	5139	5203	1010	1074	
-0880	5139	5203	1155	5452	-0881	5139	5203	1155	5452	-0881	5203	5267	1010	1074	
-0881	5203	5267	1155	5515	-0882	5203	5267	1155	5515	-0882	5267	5331	1010	1074	
-0882	5267	5331	1155	5578	-0883	5267	5331	1155	5578	-0883	5331	5395	1010	1074	
-0883	5331	5395	1155	5641	-0884	5331	5395	1155	5641	-0884	5395	5459	1010	1074	
-0884	5395	5459	1155	5704	-0885	5395									

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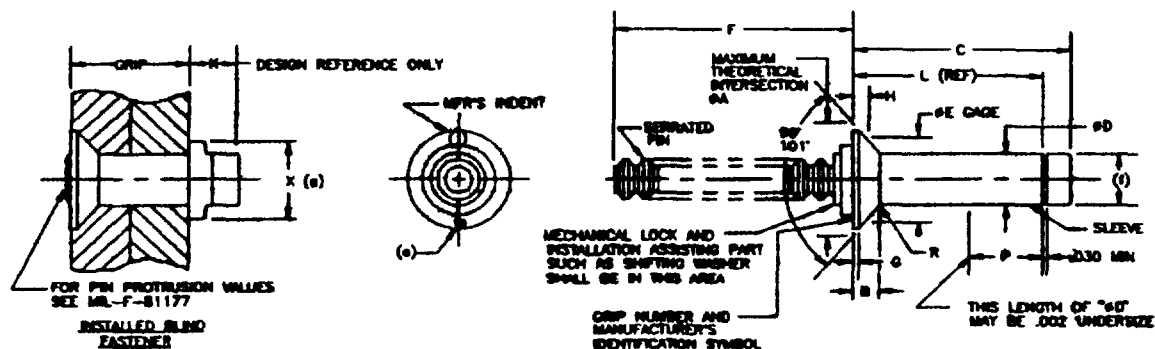


TABLE 1 FASTENER DIMENSIONS AND STRENGTHS

(b) SIZE DASH NUMBER		NOML SIZE	9A	B MAX.	9D	9E GAGE	F MIN.	G MAX.	H GAGE	K MAX.	P MAX.	R RAD MAX.	X (a) MIN.	INSTALLED FASTENER			
DOUBLE ACTION (c)	SINGLE ACTION													MINIMUM SINGLE SHEAR LBS.	MINIMUM TENSILE LBS.	HOLE LIMITS	
	(d)																(d)
<div><div></div><div>-06</div></div>	906	U06	5/32	.333	.072	.164 2630	.844	.011	.0204 .0171	.302	.215	.010	.185	2340	1350	.184 .187	
<div><div></div><div>-08</div></div>	908	U08	3/16	.308	.080	.189 3270	.873	.013	.0243 .0208	.331	.250	.015	.238	3450	2100	.198 .202	
-	-08	U08	1/4	.307	.106	.280 4318	1.000	.017	.0310 .0270	.379	.306	.020	.315	5800	3650	.280 .283	
-	-10	U10	5/16	.334	.137	.312 5448	1.218	.020	.0367 .0325	.318	.350	.025	.373	8300	5200	.312 .315	
-	-12	U12	3/8	.382	.166	.374 6082	1.688	.023	.0438 .0389	.384	.406	.030	.448	12280	7900	.374 .377	
-	-14	U14	7/16	.390	.183	.437 7782	1.862	.025	.0489 .0460	.418	.480	.032	.522	16780	10180	.437 .441	
-	-16	U16	1/2	1.047	.289	.488 8900	1.882	.028	.0522 .0456	.540	.598	.035	.588	21800	13500	.500 .504	

(a) MAXIMUM DIAMETER OF BLIND HEAD (X) SHALL NOT EXCEED MAXIMUM DIAMETER OF MANUFACTURED HEAD (A).

(b) SIZES "06" AND "08" WITH "-" ARE INSTALLED WITH A DOUBLE ACTION TOOL. ALL OTHER SIZES ARE INSTALLED WITH A SINGLE ACTION TOOL. SIZES "U06" AND "U08" MAY BE INSTALLED WITH A DOUBLE OR SINGLE ACTION TOOL. SEE MIL-F-81177, APPENDIX A FOR TOOL SELECTION CHART.

(c) -06, -08, -08S, -08L, -08, -10, -10S, -10L, -12, -12S, -12L, -14, -14S, -14L, -16, -16S, -16L ARE INACTIVE FOR NEW DESIGN AFTER 1 JAN 91 USE U06, U08, S06 AND S08.

(d) LETTER "U" SIGNIFIES SINGLE ACTION FASTENER WITHOUT FRAMBLE TYPE OF LOCKING COLLAR OR LOCKING COLLAR CAP. "U" AND "S" CODE FASTENERS IN SIZES "06" AND "08" ARE COLOR IDENTIFIED GREEN ON LOCKING COLLAR, SHIFTING WASHER, OR SERRATED PIN. "S" CODE FASTENERS MAY BE SUPPLIED WITH A LOCKING COLLAR CAP.

(e) SINGLE DIGIT MARKING IS PERMISSIBLE FOR GRIP DASH NUMBERS LESS THAN 10

(f) DIAMETER OF SERRATED PIN HEAD SHALL NOT EXCEED ".60" MAX AND MAY BE .002 BELOW ".60" MIN. IN AREA "F" ONLY

(U) DENOTES CHANGE(S)

INCH-POUND

PREPARING ACTIVITY: NAVY-AS

CUSTOMERS: ARMY-AM NAVY-AS

AIR FORCE-98 DLA-15

REVIEW: ML 82

PROJECT NUMBER: 5320-0815

DISTRIBUTION STATEMENT

MILITARY SPECIFICATION SHEET

TITLE
FASTENER, BLIND, HIGH STRENGTH, PULL TYPE,
POSITIVE MECHANICAL LOCK, 100° FLUSH HEAD,
ALUMINUM STEEL, 112 K.S.I. F_u

SPECIFICATION SHEET NUMBER

MS90353

28 FEB 94

REV U

SUPERSEDED
MS90353 T 13 AUG 1993

AMSC- N/A

FSC 5320

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